

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|--------|--------|-----|------|
| 105481 | 1.0 | 19.4 | 416856 | 1.1 | 20.5 | 534114 | 1.2 | 21.4 | 394203 | 1.2 | 19.3 | 133474 | 1.3 | 19.8 | 374420 | 1.4 | 20.9 |
| 531865 | 1.0 | 20.9 | 288065 | 1.1 | 21.0 | 63978 | 1.2 | 19.9 | 155832 | 1.2 | 18.2 | 375959 | 1.3 | 21.5 | 417046 | 1.4 | 21.7 |
| 524379 | 1.0 | 21.3 | 382371 | 1.1 | 20.8 | 260871 | 1.2 | 21.0 | 417698 | 1.2 | 20.2 | 279752 | 1.3 | 19.3 | 150061 | 1.4 | 19.7 |
| 517696 | 1.0 | 19.4 | 91517 | 1.1 | 18.9 | 289495 | 1.2 | 20.2 | 329371 | 1.2 | 20.2 | 80193 | 1.3 | 18.7 | 352599 | 1.4 | 21.6 |
| 104575 | 1.0 | 19.5 | 184972 | 1.1 | 20.0 | 438873 | 1.2 | 20.9 | 502108 | 1.2 | 21.3 | 510473 | 1.3 | 21.9 | 36665 | 1.4 | 19.1 |
| 114605 | 1.0 | 20.4 | 54906 | 1.1 | 16.8 | 160347 | 1.2 | 19.1 | 74275 | 1.2 | 17.4 | 366598 | 1.3 | 20.2 | 109877 | 1.4 | 19.1 |
| 232886 | 1.0 | 20.6 | 71433 | 1.1 | 17.9 | 270515 | 1.2 | 20.5 | 162053 | 1.2 | 19.5 | 195336 | 1.3 | 19.0 | 288623 | 1.4 | 19.1 |
| 527756 | 1.0 | 21.8 | 261400 | 1.1 | 19.9 | 40760 | 1.2 | 17.9 | 152420 | 1.2 | 18.2 | 3585 | 1.3 | 17.5 | 544985 | 1.4 | 19.5 |
| 52572 | 1.0 | 17.5 | 176355 | 1.1 | 18.8 | 197043 | 1.2 | 19.4 | 143377 | 1.3 | 19.7 | 204181 | 1.3 | 19.9 | 220587 | 1.4 | 18.5 |
| 302024 | 1.0 | 18.2 | 285516 | 1.1 | 20.1 | 88443 | 1.2 | 18.3 | 527943 | 1.3 | 21.3 | 138553 | 1.3 | 19.2 | 147762 | 1.4 | 19.3 |
| 418203 | 1.0 | 20.9 | 356724 | 1.1 | 21.0 | 479890 | 1.2 | 21.4 | 390632 | 1.3 | 20.6 | 425844 | 1.3 | 20.6 | 491291 | 1.4 | 20.9 |
| 523969 | 1.0 | 19.5 | 161771 | 1.1 | 20.1 | 39517 | 1.2 | 18.0 | 369078 | 1.3 | 20.3 | 341307 | 1.3 | 20.7 | 372395 | 1.4 | 21.0 |
| 491967 | 1.0 | 21.2 | 279425 | 1.1 | 18.1 | 320934 | 1.2 | 20.3 | 145383 | 1.3 | 19.8 | 125497 | 1.3 | 19.1 | 152412 | 1.4 | 18.4 |
| 469827 | 1.0 | 21.4 | 206969 | 1.1 | 20.1 | 493510 | 1.2 | 20.3 | 73548 | 1.3 | 18.3 | 178708 | 1.4 | 19.9 | 58639 | 1.4 | 20.5 |
| 152271 | 1.0 | 21.0 | 284572 | 1.1 | 20.8 | 507843 | 1.2 | 20.6 | 247467 | 1.3 | 18.8 | 241951 | 1.4 | 20.7 | 262791 | 1.4 | 20.5 |
| 105461 | 1.0 | 18.3 | 426935 | 1.1 | 19.1 | 17389 | 1.2 | 16.7 | 542330 | 1.3 | 21.3 | 519438 | 1.4 | 21.1 | 285473 | 1.4 | 22.0 |
| 527677 | 1.0 | 20.9 | 458969 | 1.1 | 21.6 | 502011 | 1.2 | 22.0 | 412072 | 1.3 | 20.2 | 158900 | 1.4 | 19.6 | 287932 | 1.4 | 20.7 |
| 213584 | 1.0 | 18.5 | 467869 | 1.1 | 20.4 | 323400 | 1.2 | 21.4 | 463250 | 1.3 | 20.0 | 471501 | 1.4 | 18.6 | 504356 | 1.4 | 20.9 |
| 532518 | 1.0 | 20.1 | 61443 | 1.1 | 17.2 | 91977 | 1.2 | 19.5 | 86153 | 1.3 | 18.0 | 394354 | 1.4 | 20.7 | 288211 | 1.4 | 20.8 |
| 370183 | 1.0 | 20.8 | 346381 | 1.1 | 20.4 | 326960 | 1.2 | 19.5 | 136996 | 1.3 | 17.5 | 118214 | 1.4 | 18.7 | 60106 | 1.4 | 19.1 |
| 8602 | 1.0 | 15.9 | 305310 | 1.1 | 20.5 | 231535 | 1.2 | 19.9 | 473241 | 1.3 | 20.2 | 167702 | 1.4 | 20.2 | 316189 | 1.4 | 20.4 |
| 95047 | 1.0 | 18.9 | 228171 | 1.1 | 19.6 | 315385 | 1.2 | 20.3 | 471850 | 1.3 | 20.7 | 267503 | 1.4 | 18.6 | 395262 | 1.4 | 20.2 |
| 203925 | 1.0 | 18.5 | 164315 | 1.1 | 19.7 | 308203 | 1.2 | 20.9 | 419781 | 1.3 | 21.5 | 353518 | 1.4 | 20.8 | 233446 | 1.4 | 20.7 |
| 533172 | 1.0 | 21.6 | 540183 | 1.1 | 21.3 | 116898 | 1.2 | 17.9 | 438092 | 1.3 | 19.8 | 478120 | 1.4 | 20.3 | 304648 | 1.4 | 20.4 |
| 168915 | 1.0 | 20.4 | 39742 | 1.1 | 18.1 | 525700 | 1.2 | 19.1 | 540453 | 1.3 | 20.7 | 458251 | 1.4 | 20.8 | 530817 | 1.4 | 21.3 |
| 81343 | 1.0 | 20.0 | 1705 | 1.1 | 14.8 | 147802 | 1.2 | 18.6 | 105579 | 1.3 | 18.1 | 336213 | 1.4 | 20.7 | 297511 | 1.4 | 20.7 |
| 127429 | 1.0 | 19.6 | 87900 | 1.1 | 18.9 | 68801 | 1.2 | 17.7 | 451526 | 1.3 | 21.4 | 182682 | 1.4 | 21.7 | 417405 | 1.4 | 19.5 |
| 224389 | 1.0 | 20.6 | 88202 | 1.1 | 17.8 | 118323 | 1.2 | 19.6 | 97900 | 1.3 | 18.9 | 134213 | 1.4 | 19.1 | 62711 | 1.4 | 19.3 |
| 304745 | 1.0 | 19.8 | 181150 | 1.1 | 19.9 | 349461 | 1.2 | 21.1 | 287727 | 1.3 | 19.6 | 366311 | 1.4 | 21.8 | 236121 | 1.4 | 20.9 |
| 274472 | 1.0 | 18.7 | 260728 | 1.1 | 20.6 | 290059 | 1.2 | 19.6 | 331772 | 1.3 | 20.8 | 89270 | 1.4 | 17.9 | 293374 | 1.4 | 20.7 |
| 189187 | 1.0 | 18.4 | 308595 | 1.1 | 20.3 | 542679 | 1.2 | 20.1 | 30871 | 1.3 | 19.9 | 328236 | 1.4 | 19.6 | 522871 | 1.4 | 21.1 |
| 257236 | 1.0 | 19.5 | 294829 | 1.1 | 20.3 | 359923 | 1.2 | 19.7 | 477982 | 1.3 | 21.0 | 176530 | 1.4 | 19.9 | 156291 | 1.4 | 19.4 |
| 58690 | 1.0 | 19.1 | 108731 | 1.1 | 18.7 | 209939 | 1.2 | 18.7 | 316843 | 1.3 | 20.6 | 156443 | 1.4 | 20.3 | 70310 | 1.4 | 17.8 |
| 139959 | 1.0 | 20.1 | 295109 | 1.1 | 20.7 | 133348 | 1.2 | 18.6 | 38313 | 1.3 | 18.1 | 540958 | 1.4 | 21.2 | 29464 | 1.4 | 18.5 |
| 475543 | 1.0 | 20.6 | 395662 | 1.1 | 20.7 | 232823 | 1.2 | 20.9 | 286387 | 1.3 | 20.2 | 157642 | 1.4 | 19.9 | 96551 | 1.4 | 18.1 |
| 409416 | 1.0 | 21.3 | 537967 | 1.1 | 21.1 | 6908 | 1.2 | 16.8 | 89172 | 1.3 | 19.3 | 319382 | 1.4 | 19.7 | 376298 | 1.4 | 20.1 |
| 363769 | 1.0 | 19.8 | 149487 | 1.1 | 19.4 | 189744 | 1.2 | 20.2 | 247290 | 1.3 | 20.6 | 372383 | 1.4 | 19.9 | 19704 | 1.4 | 18.4 |
| 290585 | 1.0 | 18.4 | 373327 | 1.1 | 20.0 | 508754 | 1.2 | 19.9 | 178918 | 1.3 | 18.1 | 270537 | 1.4 | 20.7 | 384157 | 1.4 | 20.8 |
| 40591 | 1.0 | 17.8 | 539889 | 1.1 | 19.8 | 55294 | 1.2 | 18.8 | 155803 | 1.3 | 19.3 | 525832 | 1.4 | 21.0 | 5303 | 1.4 | 16.6 |
| 32606 | 1.0 | 18.5 | 391307 | 1.1 | 20.9 | 302418 | 1.2 | 20.0 | 348598 | 1.3 | 20.5 | 532480 | 1.4 | 21.1 | 187734 | 1.4 | 19.6 |
| 329184 | 1.0 | 20.1 | 272871 | 1.1 | 20.1 | 374067 | 1.2 | 20.3 | 363732 | 1.3 | 21.3 | 182073 | 1.4 | 20.7 | 311388 | 1.4 | 18.5 |
| 325179 | 1.0 | 18.7 | 85217 | 1.1 | 17.8 | 465374 | 1.2 | 21.7 | 240818 | 1.3 | 20.9 | 405875 | 1.4 | 20.5 | 539392 | 1.5 | 20.7 |
| 165405 | 1.0 | 19.4 | 119875 | 1.1 | 19.9 | 127068 | 1.2 | 18.8 | 159346 | 1.3 | 19.6 | 304594 | 1.4 | 21.3 | 90637 | 1.5 | 17.5 |
| 408209 | 1.0 | 19.7 | 203441 | 1.1 | 20.2 | 55515 | 1.2 | 18.6 | 263205 | 1.3 | 20.6 | 355202 | 1.4 | 20.5 | 306031 | 1.5 | 19.5 |
| 475603 | 1.0 | 21.3 | 475700 | 1.1 | 21.9 | 522750 | 1.2 | 20.3 | 266343 | 1.3 | 20.5 | 121316 | 1.4 | 18.1 | 388828 | 1.5 | 21.0 |
| 193507 | 1.0 | 19.7 | 30462 | 1.1 | 17.0 | 52512 | 1.2 | 18.6 | 270008 | 1.3 | 20.2 | 259562 | 1.4 | 18.6 | 153756 | 1.5 | 21.0 |
| 89443 | 1.0 | 19.2 | 336421 | 1.1 | 20.8 | 61282 | 1.2 | 18.0 | 126195 | 1.3 | 19.6 | 286350 | 1.4 | 19.6 | 132203 | 1.5 | 19.3 |
| 387759 | 1.0 | 20.1 | 13886 | 1.1 | 17.7 | 506047 | 1.2 | 21.7 | 434453 | 1.3 | 19.9 | 52002 | 1.4 | 17.3 | 134910 | 1.5 | 19.2 |
| 477212 | 1.0 | 20.5 | 26313 | 1.1 | 16.9 | 380624 | 1.2 | 20.8 | 535598 | 1.3 | 20.8 | 355638 | 1.4 | 21.5 | 474248 | 1.5 | 20.7 |
| 371653 | 1.1 | 19.4 | 382970 | 1.1 | 20.6 | 366289 | 1.2 | 20.6 | 103329 | 1.3 | 17.8 | 208589 | 1.4 | 19.8 | 165391 | 1.5 | 19.0 |
| 91395 | 1.1 | 18.8 | 17851 | 1.1 | 16.8 | 497182 | 1.2 | 19.9 | 146729 | 1.3 | 19.4 | 233698 | 1.4 | 19.6 | 109773 | 1.5 | 19.5 |
| 118748 | 1.1 | 19.3 | 69064 | 1.1 | 16.4 | 290124 | 1.2 | 20.7 | 96930 | 1.3 | 19.3 | 354718 | 1.4 | 21.0 | 259095 | 1.5 | 20.1 |
| 429276 | 1.1 | 20.6 | 314076 | 1.1 | 21.3 | 176057 | 1.2 | 19.3 | 431981 | 1.3 | 20.4 | 357362 | 1.4 | 19.4 | 442517 | 1.5 | 20.0 |
| 500731 | 1.1 | 21.6 | 504546 | 1.1 | 20.1 | 338567 | 1.2 | 23.0 | 91609 | 1.3 | 19.1 | 175362 | 1.4 | 19.8 | 309276 | 1.5 | 20.1 |
| 509274 | 1.1 | 22.1 | 126792 | 1.1 | 18.6 | 499342 | 1.2 | 21.0 | 370465 | 1.3 | 20.2 | 519101 | 1.4 | 20.5 | 398913 | 1.5 | 21.3 |
| 10330 | 1.1 | 17.7 | 379428 | 1.1 | 20.5 | 86293 | 1.2 | 17.9 | 184850 | 1.3 | 20.0 | 357146 | 1.4 | 20.5 | 301094 | 1.5 | 19.4 |
| 31193 | 1.1 | 18.7 | 90742 | 1.1 | 18.9 | 148528 | 1.2 | 19.2 | 430969 | 1.3 | 21.8 | 17129 | 1.4 | 16.1 | 355580 | 1.5 | 20.3 |
| 176014 | 1.1 | 20.9 | 473017 | 1.1 | 19.4 | 293275 | 1.2 | 20.1 | 519805 | 1.3 | 20.7 | 377122 | 1.4 | 21.8 | 184811 | 1.5 | 21.1 |
| 382785 | 1.1 | 20.8 | 152879 | 1.1 | 20.0 | 299895 | 1.2 | 20.0 | 117703 | 1.3 | 20.5 | 166246 | 1.4 | 19.2 | 458903 | 1.5 | 22.1 |
| 214229 | 1.1 | 20.4 | 229390 | 1.2 | 17.8 | 433798 | 1.2 | 20.5 | 349025 | 1.3 | 21.3 | 72230 | 1.4 | 19.4 | 296020 | 1.5 | 20.3 |
| 271694 | 1.1 | 20.6 | 355320 | 1.2 | 19.2 | 286130 | 1.2 | 20.4 | 308944 | 1.3 | 19.5 | 279443 | 1.4 | 19.8 | 467523 | 1.5 | 20.9 |
| 502306 | 1.1 | 20.0 | 285816 | 1.2 | 20.1 | 156117 | 1.2 | 18.0 | 351538 | 1.3 | 18.5 | 139886 | 1.4 | 20.1 | 69879 | 1.5 | 18.3 |
| 396968 | 1.1 | 19.2 | 313839 | 1.2 | 17.9 | 508182 | 1.2 | 20.1 | 15323 | 1.3 | 17.7 | 67665 | 1.4 | 16.7 | 93153 | 1.5 | 18.8 |
| 528008 | 1.1 | 21.6 | 225961 | 1.2 | 20.3 | 412891 | 1.2 | 20.6 | 199680 | 1.3 | 19.7 | 208211 | 1.4 | 18.3 | 107132 | 1.5 | 19.3 |
| 10956 | 1.1 | 18.0 | 16296 | 1.2 | 18.2 | 426451 | 1.2 | 20.5 | 179424 | 1.3 | 18.9 | 95359 | 1.4 | 18.4 | 407782 | 1.5 | 20.8 |
| 169099 | 1.1 | 19.8 | 309811 | 1.2 | 20.5 | 373136 | 1.2 | 20.8 | 396005 | 1.3 | 20.6 | 134023 | 1.4 | 19.4 | 389550 | 1.5 | 19.3 |
| 65766 | 1.1 | 17.7 | 20466 | 1.2 | 17.9 | 114658 | 1.2 | 18.5 | 520888 | 1.3 | 20.9 | 510502 | 1.4 | 21.0 | 500918 | 1.5 | 20.7 |
| 382871 | 1.1 | 22.4 | 91778 | 1.2 | 18.9 | 176598 | 1.2 | 19.3 | 120266 | 1.3 | 18.9 | 364206 | 1.4 | 18.2 | 254010 | 1.5 | 18.7 |
| 38462 | 1.1 | 19.6 | 359175 | 1.2 | 20.5 | 130880 | 1.2 | 17.4 | 538009 | 1.3 | 20.5 | 356610 | 1.4 | 20.2 | 170312 | 1.5 | 18.5 |
| 41964 | 1.1 | 18.3 | 70591 | 1.2 | 19.3 | 348935 | 1.2 | 20.4 | 439507 | 1.3 | 20.5 | 321858 | 1.4 | 20.6 | 342237 | 1.5 | 19.4 |
| 305523 | 1.1 | 20.7 | 53400 | 1.2 | 18.3 | 277755 | 1.2 | 20.1 | 41148 | 1.3 | 18.3 | 324603 | 1.4 | 20.0</ | | | |

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| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 359745 | 1.5 | 20.4 | 28556 | 1.6 | 16.6 | 435698 | 1.6 | 21.2 | 129667 | 1.7 | 17.6 | 524423 | 1.8 | 21.7 | 205581 | 1.9 | 19.1 |
| 247138 | 1.5 | 20.2 | 336430 | 1.6 | 20.2 | 207693 | 1.6 | 19.1 | 109327 | 1.7 | 18.0 | 384937 | 1.8 | 20.4 | 395234 | 1.9 | 20.3 |
| 248509 | 1.5 | 19.4 | 209603 | 1.6 | 20.7 | 457266 | 1.6 | 21.1 | 298789 | 1.7 | 18.4 | 199366 | 1.8 | 20.0 | 56485 | 1.9 | 18.2 |
| 427929 | 1.5 | 21.6 | 425191 | 1.6 | 20.6 | 544668 | 1.6 | 20.8 | 241897 | 1.7 | 19.9 | 187409 | 1.8 | 20.3 | 469299 | 1.9 | 20.5 |
| 399982 | 1.5 | 20.6 | 336836 | 1.6 | 19.4 | 439389 | 1.7 | 20.2 | 309725 | 1.7 | 21.0 | 406550 | 1.8 | 20.3 | 118251 | 1.9 | 20.0 |
| 298647 | 1.5 | 18.9 | 344857 | 1.6 | 20.5 | 157610 | 1.7 | 20.5 | 470024 | 1.7 | 20.2 | 527847 | 1.8 | 21.6 | 542326 | 1.9 | 21.2 |
| 144829 | 1.5 | 20.0 | 528940 | 1.6 | 20.8 | 91408 | 1.7 | 18.1 | 81563 | 1.7 | 17.7 | 279742 | 1.8 | 20.1 | 110047 | 1.9 | 20.2 |
| 67385 | 1.5 | 18.6 | 142697 | 1.6 | 20.6 | 176015 | 1.7 | 19.4 | 300165 | 1.7 | 21.3 | 192069 | 1.8 | 19.1 | 352837 | 1.9 | 20.8 |
| 62322 | 1.5 | 18.2 | 374549 | 1.6 | 20.4 | 7673 | 1.7 | 17.5 | 341259 | 1.7 | 19.6 | 230929 | 1.8 | 20.1 | 174645 | 1.9 | 19.2 |
| 208640 | 1.5 | 19.7 | 20565 | 1.6 | 17.7 | 344332 | 1.7 | 20.2 | 429285 | 1.7 | 21.4 | 269461 | 1.8 | 21.0 | 304343 | 1.9 | 19.6 |
| 479866 | 1.5 | 20.7 | 440502 | 1.6 | 20.2 | 433408 | 1.7 | 20.6 | 453885 | 1.7 | 21.3 | 186032 | 1.8 | 19.1 | 410348 | 1.9 | 20.3 |
| 2626 | 1.5 | 15.7 | 14437 | 1.6 | 17.4 | 86305 | 1.7 | 18.6 | 501926 | 1.7 | 20.8 | 174782 | 1.8 | 21.0 | 477627 | 1.9 | 19.9 |
| 125367 | 1.5 | 19.9 | 10506 | 1.6 | 18.0 | 303724 | 1.7 | 20.3 | 201612 | 1.7 | 18.6 | 508203 | 1.8 | 21.3 | 501198 | 1.9 | 20.1 |
| 209978 | 1.5 | 20.0 | 38237 | 1.6 | 18.3 | 501242 | 1.7 | 19.2 | 528665 | 1.7 | 21.1 | 426046 | 1.8 | 19.1 | 377374 | 1.9 | 19.6 |
| 483121 | 1.5 | 20.1 | 471822 | 1.6 | 20.5 | 304378 | 1.7 | 20.4 | 205530 | 1.7 | 19.5 | 62524 | 1.8 | 19.2 | 467740 | 1.9 | 20.6 |
| 341343 | 1.5 | 21.1 | 92524 | 1.6 | 19.1 | 467101 | 1.7 | 19.7 | 166968 | 1.7 | 18.4 | 88560 | 1.8 | 18.5 | 318090 | 1.9 | 20.9 |
| 213653 | 1.5 | 19.5 | 313389 | 1.6 | 19.5 | 503573 | 1.7 | 19.9 | 523664 | 1.7 | 16.9 | 352460 | 1.8 | 20.7 | 157523 | 1.9 | 19.5 |
| 351470 | 1.5 | 20.0 | 313765 | 1.6 | 21.3 | 274969 | 1.7 | 20.0 | 362557 | 1.7 | 20.3 | 99041 | 1.8 | 18.7 | 352047 | 1.9 | 20.2 |
| 303350 | 1.5 | 21.6 | 352040 | 1.6 | 21.3 | 531918 | 1.7 | 20.7 | 341518 | 1.7 | 21.2 | 11950 | 1.8 | 18.7 | 17040 | 1.9 | 17.5 |
| 470285 | 1.5 | 19.7 | 181992 | 1.6 | 20.4 | 248455 | 1.7 | 19.6 | 333899 | 1.7 | 19.6 | 388323 | 1.8 | 20.1 | 512566 | 1.9 | 20.2 |
| 246721 | 1.5 | 19.2 | 76704 | 1.6 | 19.2 | 17743 | 1.7 | 18.5 | 532106 | 1.7 | 21.3 | 490209 | 1.8 | 20.6 | 301071 | 1.9 | 19.6 |
| 146474 | 1.5 | 19.6 | 215130 | 1.6 | 18.1 | 365855 | 1.7 | 21.0 | 257829 | 1.7 | 19.7 | 435877 | 1.8 | 21.6 | 401098 | 1.9 | 19.9 |
| 113239 | 1.5 | 18.8 | 37532 | 1.6 | 18.1 | 540946 | 1.7 | 21.5 | 314603 | 1.7 | 21.3 | 178538 | 1.8 | 20.4 | 165530 | 1.9 | 20.0 |
| 14298 | 1.5 | 17.2 | 465371 | 1.6 | 22.1 | 526730 | 1.7 | 20.6 | 396227 | 1.7 | 21.3 | 535186 | 1.8 | 20.5 | 413861 | 1.9 | 20.2 |
| 527833 | 1.5 | 21.1 | 302239 | 1.6 | 21.1 | 304044 | 1.7 | 21.6 | 77081 | 1.7 | 18.9 | 57376 | 1.8 | 19.2 | 529986 | 1.9 | 20.5 |
| 290048 | 1.5 | 19.6 | 70302 | 1.6 | 17.6 | 173947 | 1.7 | 19.1 | 540740 | 1.7 | 20.9 | 151480 | 1.8 | 19.0 | 86240 | 1.9 | 19.0 |
| 86156 | 1.5 | 17.9 | 172041 | 1.6 | 20.0 | 387811 | 1.7 | 20.1 | 311239 | 1.7 | 20.4 | 189624 | 1.8 | 20.0 | 397322 | 1.9 | 21.1 |
| 370030 | 1.5 | 19.5 | 475790 | 1.6 | 20.9 | 504782 | 1.7 | 21.1 | 183877 | 1.7 | 19.6 | 148760 | 1.8 | 19.8 | 478051 | 1.9 | 20.9 |
| 423280 | 1.5 | 20.3 | 507797 | 1.6 | 20.7 | 297772 | 1.7 | 20.6 | 203364 | 1.7 | 20.6 | 406454 | 1.8 | 21.1 | 182896 | 1.9 | 21.0 |
| 94093 | 1.5 | 19.5 | 174515 | 1.6 | 20.7 | 94143 | 1.7 | 19.1 | 472221 | 1.7 | 20.8 | 390305 | 1.8 | 20.0 | 298587 | 1.9 | 20.4 |
| 509224 | 1.5 | 22.1 | 514728 | 1.6 | 21.6 | 401173 | 1.7 | 19.7 | 90172 | 1.7 | 19.7 | 475900 | 1.8 | 20.1 | 98658 | 1.9 | 19.2 |
| 151952 | 1.5 | 18.9 | 363949 | 1.6 | 20.7 | 352378 | 1.7 | 20.7 | 475281 | 1.7 | 21.0 | 82753 | 1.8 | 18.2 | 36114 | 1.9 | 17.5 |
| 242367 | 1.5 | 21.2 | 62056 | 1.6 | 18.3 | 499360 | 1.7 | 21.4 | 248842 | 1.7 | 20.1 | 401041 | 1.8 | 20.1 | 470211 | 1.9 | 20.3 |
| 280370 | 1.5 | 20.1 | 151416 | 1.6 | 19.7 | 40092 | 1.7 | 18.2 | 297761 | 1.7 | 21.2 | 302459 | 1.8 | 20.2 | 195521 | 1.9 | 19.5 |
| 305853 | 1.5 | 20.5 | 219075 | 1.6 | 20.5 | 533047 | 1.7 | 20.7 | 384738 | 1.8 | 19.9 | 479059 | 1.8 | 20.7 | 501012 | 1.9 | 20.6 |
| 400408 | 1.5 | 21.3 | 539497 | 1.6 | 20.1 | 157153 | 1.7 | 19.0 | 395986 | 1.8 | 20.4 | 965 | 1.8 | 15.9 | 191864 | 1.9 | 19.6 |
| 71837 | 1.5 | 19.0 | 334394 | 1.6 | 19.8 | 229532 | 1.7 | 20.5 | 371126 | 1.8 | 19.6 | 536459 | 1.8 | 20.3 | 533601 | 1.9 | 19.5 |
| 393044 | 1.5 | 20.1 | 201639 | 1.6 | 19.3 | 105015 | 1.7 | 18.9 | 540595 | 1.8 | 20.9 | 174531 | 1.8 | 19.0 | 298807 | 1.9 | 20.3 |
| 269004 | 1.5 | 19.8 | 37350 | 1.6 | 18.7 | 16512 | 1.7 | 17.9 | 198918 | 1.8 | 19.4 | 90630 | 1.8 | 18.8 | 160481 | 1.9 | 19.8 |
| 188954 | 1.5 | 19.7 | 119607 | 1.6 | 17.5 | 170925 | 1.7 | 19.3 | 383191 | 1.8 | 20.3 | 277732 | 1.8 | 20.0 | 407272 | 1.9 | 19.7 |
| 230889 | 1.5 | 19.5 | 96636 | 1.6 | 18.3 | 325267 | 1.7 | 20.8 | 257484 | 1.8 | 20.2 | 38991 | 1.8 | 17.8 | 193847 | 1.9 | 18.5 |
| 478179 | 1.5 | 20.6 | 22397 | 1.6 | 16.6 | 497316 | 1.7 | 20.5 | 170994 | 1.8 | 18.2 | 239165 | 1.8 | 18.6 | 50802 | 1.9 | 17.8 |
| 71084 | 1.5 | 18.6 | 300071 | 1.6 | 21.4 | 147604 | 1.7 | 19.9 | 325113 | 1.8 | 20.4 | 169616 | 1.8 | 20.1 | 398589 | 1.9 | 19.8 |
| 471483 | 1.5 | 20.1 | 43996 | 1.6 | 18.5 | 264326 | 1.7 | 19.5 | 143216 | 1.8 | 19.9 | 422817 | 1.8 | 20.5 | 497286 | 1.9 | 20.4 |
| 457293 | 1.5 | 19.9 | 497064 | 1.6 | 19.7 | 478374 | 1.7 | 19.7 | 131226 | 1.8 | 19.6 | 245409 | 1.8 | 20.0 | 377335 | 1.9 | 19.0 |
| 472224 | 1.5 | 20.4 | 472131 | 1.6 | 21.5 | 355218 | 1.7 | 19.9 | 267576 | 1.8 | 19.4 | 307428 | 1.8 | 18.6 | 499393 | 1.9 | 20.9 |
| 225890 | 1.5 | 20.1 | 538820 | 1.6 | 20.5 | 15207 | 1.7 | 15.9 | 34320 | 1.8 | 19.3 | 219077 | 1.8 | 19.7 | 352587 | 1.9 | 21.4 |
| 228319 | 1.5 | 19.4 | 394279 | 1.6 | 20.9 | 539560 | 1.7 | 21.3 | 302334 | 1.8 | 20.5 | 300113 | 1.8 | 21.3 | 394201 | 1.9 | 20.8 |
| 229259 | 1.5 | 20.1 | 511347 | 1.6 | 20.6 | 107217 | 1.7 | 20.0 | 200012 | 1.8 | 19.7 | 454160 | 1.8 | 21.1 | 308687 | 1.9 | 19.4 |
| 248510 | 1.5 | 20.4 | 85856 | 1.6 | 17.3 | 457728 | 1.7 | 21.4 | 423445 | 1.8 | 20.4 | 126717 | 1.8 | 19.4 | 430483 | 1.9 | 21.8 |
| 49660 | 1.5 | 18.4 | 190671 | 1.6 | 19.7 | 297005 | 1.7 | 20.7 | 354824 | 1.8 | 20.3 | 229597 | 1.8 | 19.6 | 355905 | 1.9 | 20.7 |
| 389736 | 1.5 | 20.6 | 118062 | 1.6 | 18.9 | 27208 | 1.7 | 19.0 | 203518 | 1.8 | 20.6 | 157383 | 1.8 | 18.9 | 418313 | 1.9 | 21.6 |
| 171554 | 1.5 | 18.4 | 101645 | 1.6 | 20.5 | 78812 | 1.7 | 17.7 | 531930 | 1.8 | 21.7 | 363340 | 1.8 | 20.0 | 258843 | 1.9 | 19.0 |
| 350781 | 1.5 | 21.0 | 297382 | 1.6 | 19.3 | 394307 | 1.7 | 21.0 | 35051 | 1.8 | 20.1 | 417635 | 1.8 | 19.9 | 106902 | 1.9 | 19.9 |
| 342551 | 1.5 | 20.6 | 342968 | 1.6 | 21.5 | 131907 | 1.7 | 19.1 | 387124 | 1.8 | 20.4 | 540218 | 1.8 | 21.1 | 169446 | 1.9 | 19.7 |
| 388304 | 1.5 | 21.4 | 457618 | 1.6 | 21.4 | 177546 | 1.7 | 18.5 | 297400 | 1.8 | 19.1 | 119052 | 1.8 | 18.6 | 47950 | 1.9 | 19.9 |
| 327840 | 1.6 | 21.7 | 86855 | 1.6 | 17.9 | 332957 | 1.7 | 19.3 | 395596 | 1.8 | 21.1 | 510314 | 1.8 | 20.0 | 203352 | 1.9 | 18.5 |
| 424064 | 1.6 | 23.0 | 499343 | 1.6 | 21.5 | 19781 | 1.7 | 16.8 | 512625 | 1.8 | 20.6 | 352128 | 1.8 | 20.2 | 19858 | 1.9 | 18.7 |
| 458869 | 1.6 | 20.7 | 470873 | 1.6 | 20.9 | 338201 | 1.7 | 20.8 | 21716 | 1.8 | 18.2 | 198606 | 1.8 | 21.0 | 416241 | 1.9 | 21.8 |
| 87316 | 1.6 | 18.6 | 225561 | 1.6 | 19.7 | 524258 | 1.7 | 20.7 | 71045 | 1.8 | 18.7 | 156355 | 1.8 | 19.4 | 111282 | 1.9 | 19.2 |
| 310628 | 1.6 | 19.8 | 351657 | 1.6 | 21.1 | 460011 | 1.7 | 20.0 | 304730 | 1.8 | 21.0 | 28060 | 1.8 | 17.5 | 213796 | 1.9 | 19.5 |
| 16641 | 1.6 | 15.9 | 159282 | 1.6 | 20.1 | 179826 | 1.7 | 19.3 | 68204 | 1.8 | 18.9 | 59877 | 1.8 | 17.2 | 115283 | 1.9 | 19.5 |
| 264626 | 1.6 | 21.2 | 292420 | 1.6 | 20.3 | 347723 | 1.7 | 20.4 | 250079 | 1.8 | 20.5 | 505282 | 1.8 | 22.3 | 170975 | 1.9 | 19.3 |
| 271826 | 1.6 | 20.3 | 117094 | 1.6 | 19.4 | 490170 | 1.7 | 21.8 | 203402 | 1.8 | 19.9 | 459296 | 1.8 | 20.5 | 532690 | 1.9 | 21.5 |
| 480434 | 1.6 | 20.0 | 62893 | 1.6 | 18.7 | 166189 | 1.7 | 19.5 | 151826 | 1.8 | 20.5 | 200722 | 1.8 | 19.5 | 241108 | 1.9 | 20.5 |
| 540260 | 1.6 | 21.0 | 133710 | 1.6 | 20.0 | 165446 | 1.7 | 20.0 | 387057 | 1.8 | 20.8 | 312868 | 1.8 | 19.7 | 478250 | 1.9 | 21.0 |
| 478071 | 1.6 | 20.6 | 95562 | 1.6 | 17.2 | 333225 | 1.7 | 19.7 | 230089 | 1.8 | 21.1 | 242675 | 1.8 | 19.6 | 520948 | 1.9 | 20.4 |
| 209622 | 1.6 | 20.5 | 491572 | 1.6 | 20.1 | 536818 | 1.7 | 22.0 | 120068 | 1.8 | 18.1 | 384586 | 1.8 | 20.0 | 497970 | 1.9 | 19.9 |
| 299870 | 1.6 | 20.4 | 94067 | 1.6 | 18.7 | 360934 | 1.7 | 21.8 | 312893 | 1.8 | 20.0 | 520982 | 1.9 | 20.8 | 289933 | 1.9 | 20.3 |
| 264505 | 1.6 | 19.1 | 474291 | 1.6 | 20.5 | 503232 | 1.7 | 22.2 | 94791 | 1.8 | 19.2 | 439167 | 1.9 | 20.0 | 469238 | 1.9 | 20.7 |
| 544950 | 1.6 | 20.5 | 186070 | 1.6 | 19.3 | 350796 | 1.7 | 20.6 | 504674 | 1.8 | 21.7 | 199862 | 1. | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 504624 | 1.9 | 21.5 | 527424 | 2.0 | 21.7 | 308011 | 2.1 | 20.6 | 82143 | 2.2 | 18.2 | 525934 | 2.2 | 21.5 | 383879 | 2.3 | 20.6 |
| 297718 | 1.9 | 20.0 | 300216 | 2.0 | 20.0 | 526322 | 2.1 | 21.2 | 508693 | 2.2 | 19.9 | 322273 | 2.2 | 19.9 | 250598 | 2.3 | 19.2 |
| 523023 | 1.9 | 21.0 | 524580 | 2.0 | 19.0 | 539612 | 2.1 | 20.8 | 151002 | 2.2 | 20.1 | 417679 | 2.2 | 21.2 | 227810 | 2.3 | 18.3 |
| 334764 | 1.9 | 19.4 | 211001 | 2.0 | 20.0 | 156723 | 2.1 | 19.7 | 536600 | 2.2 | 20.8 | 264283 | 2.2 | 20.7 | 534649 | 2.3 | 21.0 |
| 158739 | 1.9 | 18.9 | 458950 | 2.0 | 20.8 | 133487 | 2.1 | 19.8 | 474330 | 2.2 | 21.3 | 459104 | 2.2 | 21.5 | 253829 | 2.3 | 20.4 |
| 191862 | 1.9 | 19.7 | 270586 | 2.0 | 20.5 | 315485 | 2.1 | 20.8 | 276530 | 2.2 | 19.2 | 453323 | 2.2 | 20.6 | 298833 | 2.3 | 20.1 |
| 335112 | 1.9 | 19.7 | 192037 | 2.0 | 20.6 | 112895 | 2.1 | 19.3 | 83761 | 2.2 | 18.3 | 79343 | 2.2 | 20.0 | 114908 | 2.3 | 18.5 |
| 306265 | 1.9 | 19.8 | 458219 | 2.0 | 20.4 | 298941 | 2.1 | 19.0 | 152381 | 2.2 | 19.8 | 62967 | 2.2 | 19.1 | 497405 | 2.3 | 21.2 |
| 214971 | 1.9 | 20.0 | 382780 | 2.0 | 20.7 | 334195 | 2.1 | 21.4 | 422355 | 2.2 | 20.4 | 358074 | 2.2 | 20.7 | 67425 | 2.3 | 17.8 |
| 534214 | 1.9 | 21.4 | 436014 | 2.0 | 19.3 | 123729 | 2.1 | 18.8 | 203304 | 2.2 | 19.4 | 171079 | 2.2 | 19.5 | 118235 | 2.3 | 19.4 |
| 79166 | 1.9 | 18.2 | 523730 | 2.0 | 22.2 | 423966 | 2.1 | 20.6 | 371000 | 2.2 | 19.6 | 315419 | 2.3 | 21.5 | 177304 | 2.3 | 20.4 |
| 250473 | 1.9 | 20.5 | 215762 | 2.0 | 20.0 | 172072 | 2.1 | 20.0 | 497407 | 2.2 | 20.8 | 532580 | 2.3 | 21.4 | 495202 | 2.3 | 20.3 |
| 127364 | 1.9 | 19.6 | 434877 | 2.0 | 20.0 | 164496 | 2.1 | 20.5 | 258548 | 2.2 | 20.1 | 22935 | 2.3 | 18.8 | 504635 | 2.3 | 21.8 |
| 185436 | 1.9 | 20.6 | 536623 | 2.0 | 20.9 | 111546 | 2.1 | 20.3 | 55050 | 2.2 | 18.5 | 147318 | 2.3 | 19.8 | 186577 | 2.3 | 20.0 |
| 534776 | 1.9 | 21.8 | 204473 | 2.0 | 18.6 | 423713 | 2.1 | 20.7 | 542368 | 2.2 | 21.1 | 8970 | 2.3 | 18.8 | 354970 | 2.3 | 19.8 |
| 498842 | 1.9 | 21.1 | 174521 | 2.0 | 20.5 | 279861 | 2.1 | 20.9 | 131289 | 2.2 | 18.7 | 304613 | 2.3 | 21.0 | 54608 | 2.3 | 17.4 |
| 213586 | 1.9 | 19.0 | 151924 | 2.0 | 19.9 | 446287 | 2.1 | 20.0 | 14375 | 2.2 | 15.5 | 64809 | 2.3 | 17.7 | 107922 | 2.3 | 20.3 |
| 412136 | 1.9 | 20.1 | 140425 | 2.0 | 20.0 | 108803 | 2.1 | 18.3 | 343322 | 2.2 | 20.4 | 140251 | 2.3 | 19.4 | 467237 | 2.3 | 21.3 |
| 322572 | 1.9 | 20.6 | 55405 | 2.0 | 18.6 | 64664 | 2.1 | 20.1 | 255599 | 2.2 | 19.1 | 145573 | 2.3 | 17.5 | 188010 | 2.3 | 19.3 |
| 177354 | 1.9 | 19.7 | 111558 | 2.0 | 19.5 | 475305 | 2.1 | 21.0 | 55481 | 2.2 | 18.5 | 429754 | 2.3 | 20.9 | 359473 | 2.3 | 18.6 |
| 387102 | 1.9 | 20.5 | 245550 | 2.0 | 20.2 | 192553 | 2.1 | 20.3 | 503563 | 2.2 | 20.4 | 367787 | 2.3 | 20.6 | 539623 | 2.3 | 19.7 |
| 302469 | 1.9 | 20.1 | 437889 | 2.0 | 20.3 | 479249 | 2.1 | 20.7 | 301202 | 2.2 | 21.7 | 400205 | 2.3 | 21.1 | 303654 | 2.3 | 20.3 |
| 429195 | 1.9 | 21.8 | 500782 | 2.0 | 20.8 | 370134 | 2.1 | 20.6 | 67218 | 2.2 | 18.3 | 331932 | 2.3 | 18.4 | 401082 | 2.3 | 19.4 |
| 209632 | 1.9 | 20.1 | 235583 | 2.0 | 18.6 | 525451 | 2.1 | 21.1 | 403272 | 2.2 | 21.2 | 417270 | 2.3 | 20.9 | 397098 | 2.3 | 20.3 |
| 213059 | 1.9 | 18.8 | 114156 | 2.0 | 19.8 | 221589 | 2.1 | 19.3 | 205753 | 2.2 | 19.9 | 121387 | 2.3 | 19.5 | 328994 | 2.3 | 20.6 |
| 86549 | 1.9 | 18.3 | 74944 | 2.0 | 19.5 | 149598 | 2.1 | 19.5 | 50012 | 2.2 | 17.1 | 237105 | 2.3 | 21.5 | 75929 | 2.3 | 17.7 |
| 43318 | 1.9 | 17.6 | 501206 | 2.0 | 20.8 | 534099 | 2.1 | 21.0 | 456956 | 2.2 | 21.3 | 125934 | 2.3 | 19.5 | 426462 | 2.3 | 20.3 |
| 406480 | 1.9 | 19.4 | 511345 | 2.0 | 21.0 | 309189 | 2.1 | 20.8 | 433592 | 2.2 | 20.3 | 353580 | 2.3 | 19.9 | 136740 | 2.3 | 20.4 |
| 80329 | 1.9 | 17.6 | 106425 | 2.0 | 19.4 | 382918 | 2.1 | 19.6 | 499256 | 2.2 | 20.6 | 521245 | 2.3 | 20.4 | 67852 | 2.3 | 19.0 |
| 141160 | 1.9 | 19.2 | 241568 | 2.0 | 19.5 | 141296 | 2.1 | 19.6 | 124861 | 2.2 | 19.7 | 310254 | 2.3 | 19.8 | 158663 | 2.3 | 19.3 |
| 308432 | 1.9 | 20.6 | 309641 | 2.0 | 20.4 | 196877 | 2.1 | 19.6 | 1380 | 2.2 | 16.0 | 199986 | 2.3 | 18.1 | 437751 | 2.3 | 20.0 |
| 299843 | 1.9 | 20.7 | 394319 | 2.0 | 22.0 | 48145 | 2.1 | 17.5 | 364746 | 2.2 | 20.0 | 263869 | 2.3 | 20.1 | 538073 | 2.3 | 20.8 |
| 140011 | 1.9 | 19.1 | 180405 | 2.0 | 20.5 | 423451 | 2.1 | 21.5 | 219608 | 2.2 | 20.0 | 211855 | 2.3 | 19.9 | 300009 | 2.3 | 19.4 |
| 190386 | 1.9 | 18.1 | 198465 | 2.0 | 20.3 | 97627 | 2.1 | 19.4 | 479956 | 2.2 | 21.2 | 503754 | 2.3 | 20.7 | 530279 | 2.4 | 21.7 |
| 40795 | 1.9 | 17.0 | 71849 | 2.0 | 19.1 | 522349 | 2.1 | 20.3 | 27045 | 2.2 | 18.3 | 380194 | 2.3 | 19.9 | 362715 | 2.4 | 21.0 |
| 191992 | 1.9 | 18.4 | 6804 | 2.0 | 16.9 | 334850 | 2.1 | 19.9 | 535784 | 2.2 | 22.0 | 21387 | 2.3 | 17.0 | 278272 | 2.4 | 19.5 |
| 317491 | 1.9 | 19.9 | 539366 | 2.0 | 20.9 | 69173 | 2.1 | 18.1 | 284136 | 2.2 | 20.1 | 416962 | 2.3 | 18.8 | 204939 | 2.4 | 19.9 |
| 506244 | 1.9 | 20.5 | 355588 | 2.0 | 20.2 | 292633 | 2.1 | 19.5 | 15653 | 2.2 | 18.0 | 370459 | 2.3 | 20.6 | 174241 | 2.4 | 19.2 |
| 65316 | 1.9 | 19.0 | 370126 | 2.0 | 20.0 | 402918 | 2.1 | 19.6 | 425206 | 2.2 | 20.4 | 436870 | 2.3 | 20.9 | 123334 | 2.4 | 18.9 |
| 357175 | 1.9 | 20.5 | 231595 | 2.0 | 19.7 | 217989 | 2.1 | 18.9 | 505627 | 2.2 | 22.3 | 209434 | 2.3 | 19.8 | 511724 | 2.4 | 19.7 |
| 406833 | 1.9 | 20.5 | 356666 | 2.0 | 20.7 | 297893 | 2.1 | 21.2 | 386509 | 2.2 | 20.4 | 59562 | 2.3 | 17.2 | 352551 | 2.4 | 20.9 |
| 436336 | 1.9 | 19.5 | 202294 | 2.0 | 20.8 | 338298 | 2.1 | 21.0 | 147924 | 2.2 | 20.5 | 221340 | 2.3 | 18.9 | 184839 | 2.4 | 19.8 |
| 17963 | 1.9 | 18.3 | 300855 | 2.0 | 21.2 | 312197 | 2.1 | 19.6 | 297629 | 2.2 | 20.3 | 254443 | 2.3 | 19.3 | 93033 | 2.4 | 19.1 |
| 247484 | 1.9 | 19.1 | 309287 | 2.0 | 20.6 | 502720 | 2.1 | 20.6 | 531167 | 2.2 | 21.1 | 439383 | 2.3 | 20.7 | 148762 | 2.4 | 18.2 |
| 88228 | 1.9 | 18.5 | 250896 | 2.0 | 20.3 | 119981 | 2.1 | 20.3 | 87934 | 2.2 | 17.7 | 360518 | 2.3 | 18.3 | 454195 | 2.4 | 20.8 |
| 502726 | 1.9 | 21.0 | 305693 | 2.0 | 20.8 | 64574 | 2.1 | 18.9 | 226760 | 2.2 | 18.9 | 430774 | 2.3 | 19.9 | 70336 | 2.4 | 18.2 |
| 523050 | 1.9 | 19.4 | 443198 | 2.0 | 20.8 | 54905 | 2.1 | 19.3 | 472222 | 2.2 | 21.3 | 520153 | 2.3 | 19.9 | 185254 | 2.4 | 21.5 |
| 394044 | 1.9 | 20.5 | 240745 | 2.0 | 20.8 | 533202 | 2.1 | 20.9 | 357190 | 2.2 | 20.8 | 264503 | 2.3 | 19.3 | 5862 | 2.4 | 17.7 |
| 415689 | 1.9 | 20.9 | 373598 | 2.1 | 20.1 | 351529 | 2.1 | 20.2 | 65893 | 2.2 | 18.2 | 306673 | 2.3 | 20.3 | 11858 | 2.4 | 18.2 |
| 246380 | 1.9 | 20.1 | 501918 | 2.1 | 20.2 | 292966 | 2.1 | 21.0 | 502777 | 2.2 | 21.5 | 152650 | 2.3 | 19.5 | 160566 | 2.4 | 18.1 |
| 142217 | 1.9 | 18.6 | 213589 | 2.1 | 18.6 | 296049 | 2.1 | 19.9 | 91244 | 2.2 | 19.4 | 219576 | 2.3 | 20.2 | 133226 | 2.4 | 18.3 |
| 122264 | 1.9 | 18.1 | 63380 | 2.1 | 18.3 | 474304 | 2.1 | 20.6 | 85553 | 2.2 | 19.1 | 435279 | 2.3 | 20.7 | 383914 | 2.4 | 20.4 |
| 285364 | 1.9 | 20.6 | 19335 | 2.1 | 17.4 | 360389 | 2.1 | 21.6 | 149761 | 2.2 | 19.7 | 120061 | 2.3 | 21.9 | 352555 | 2.4 | 19.7 |
| 233965 | 1.9 | 19.4 | 374054 | 2.1 | 19.9 | 39895 | 2.1 | 18.9 | 257587 | 2.2 | 20.2 | 176461 | 2.3 | 20.1 | 333129 | 2.4 | 21.8 |
| 13513 | 1.9 | 18.4 | 474309 | 2.1 | 20.8 | 470272 | 2.1 | 20.8 | 277620 | 2.2 | 20.3 | 58748 | 2.3 | 19.6 | 178986 | 2.4 | 18.1 |
| 214961 | 1.9 | 20.0 | 64404 | 2.1 | 18.2 | 415162 | 2.1 | 20.8 | 144069 | 2.2 | 19.7 | 528492 | 2.3 | 20.6 | 427145 | 2.4 | 21.5 |
| 503055 | 1.9 | 20.8 | 266315 | 2.1 | 20.3 | 271672 | 2.1 | 19.5 | 348509 | 2.2 | 20.8 | 500498 | 2.3 | 21.2 | 475001 | 2.4 | 21.8 |
| 532050 | 1.9 | 21.0 | 312075 | 2.1 | 21.4 | 90640 | 2.1 | 18.9 | 96684 | 2.2 | 18.5 | 360542 | 2.3 | 18.3 | 478234 | 2.4 | 22.0 |
| 91417 | 1.9 | 18.0 | 312000 | 2.1 | 18.6 | 158607 | 2.1 | 19.2 | 304575 | 2.2 | 21.2 | 377817 | 2.3 | 20.4 | 505439 | 2.4 | 20.9 |
| 470535 | 1.9 | 20.6 | 470275 | 2.1 | 21.4 | 386246 | 2.1 | 19.2 | 345719 | 2.2 | 20.3 | 84862 | 2.3 | 17.2 | 219622 | 2.4 | 20.4 |
| 40950 | 1.9 | 19.3 | 438446 | 2.1 | 19.8 | 142278 | 2.1 | 20.1 | 122588 | 2.2 | 19.2 | 266693 | 2.3 | 19.6 | 365154 | 2.4 | 20.7 |
| 143918 | 1.9 | 18.2 | 26287 | 2.1 | 16.0 | 543523 | 2.1 | 18.4 | 531970 | 2.2 | 20.9 | 5898 | 2.3 | 16.9 | 289868 | 2.4 | 19.1 |
| 459082 | 1.9 | 21.5 | 411250 | 2.1 | 20.3 | 457722 | 2.1 | 21.0 | 454102 | 2.2 | 20.4 | 106726 | 2.3 | 19.1 | 9833 | 2.4 | 17.6 |
| 409051 | 1.9 | 20.8 | 234136 | 2.1 | 20.4 | 192869 | 2.1 | 20.2 | 170633 | 2.2 | 20.6 | 415990 | 2.3 | 20.5 | 94781 | 2.4 | 18.9 |
| 167985 | 1.9 | 20.4 | 300950 | 2.1 | 20.9 | 294179 | 2.1 | 18.9 | 447708 | 2.2 | 21.0 | 310033 | 2.3 | 19.1 | 452281 | 2.4 | 19.0 |
| 23533 | 1.9 | 17.7 | 381156 | 2.1 | 18.8 | 397671 | 2.2 | 21.6 | 399075 | 2.2 | 19.8 | 231890 | 2.3 | 19.3 | 347729 | 2.4 | 21.3 |
| 28583 | 1.9 | 18.3 | 163739 | 2.1 | 18.2 | 104294 | 2.2 | 19.7 | 472182 | 2.2 | 20.9 | 1522 | 2.3 | 15.7 | 538178 | 2.4 | 20.7 |
| 157636 | 1.9 | 19.9 | 488671 | 2.1 | 19.8 | 9986 | 2.2 | 16.2 | 93991 | 2.2 | 19.0 | 430143 | 2.3 | 21.0 | 30878 | 2.4 | 18.4 |
| 366800 | 1.9 | 21.5 | 32846 | 2.1 | 18.9 | 195447 | 2.2 | 19.5 | 480645 | 2.2 | 19.9 | 310403 | 2.3 | 19.1 | 72829 | 2.4 | 19.1 |
| 286077 | 1.9 | 18.7 | 189761 | 2.1 | 19.3 | 369722 | 2.2 | 20.4 | 153198 | 2.2 | 19.6 | 31057 | 2.3 | 17.2 | 38584 | 2.4 | 18.1 |
| 135300 | 1.9 | 19.2 | 514556 | 2.1 | 21.6 | 445885 | 2.2 | 19.5 | 79428 | 2.2 | 17.8 | 359137 | 2.3 | 20 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 529304 | 2.4 | 22.2 | 479303 | 2.5 | 20.5 | 377342 | 2.5 | 19.8 | 498606 | 2.6 | 20.3 | 433500 | 2.7 | 21.1 | 504605 | 2.8 | 21.2 |
| 350932 | 2.4 | 20.0 | 132129 | 2.5 | 18.8 | 459045 | 2.5 | 20.4 | 352024 | 2.6 | 21.1 | 591 | 2.7 | 14.6 | 521109 | 2.8 | 20.9 |
| 389264 | 2.4 | 20.4 | 379763 | 2.5 | 19.7 | 129416 | 2.5 | 19.4 | 437020 | 2.6 | 20.7 | 322803 | 2.7 | 19.4 | 176565 | 2.8 | 20.2 |
| 292382 | 2.4 | 19.8 | 453339 | 2.5 | 20.2 | 478151 | 2.5 | 20.1 | 532552 | 2.6 | 20.9 | 529886 | 2.7 | 20.1 | 408211 | 2.8 | 21.3 |
| 272717 | 2.4 | 21.0 | 403799 | 2.5 | 20.5 | 198931 | 2.5 | 20.8 | 225976 | 2.6 | 19.9 | 91301 | 2.7 | 18.9 | 258551 | 2.8 | 20.2 |
| 423663 | 2.4 | 21.5 | 528566 | 2.5 | 21.6 | 347451 | 2.5 | 20.2 | 422722 | 2.6 | 21.2 | 377439 | 2.7 | 19.6 | 540425 | 2.8 | 20.2 |
| 532905 | 2.4 | 22.0 | 111724 | 2.5 | 18.6 | 36578 | 2.5 | 18.8 | 20765 | 2.6 | 16.7 | 23668 | 2.7 | 18.8 | 192847 | 2.8 | 20.1 |
| 535816 | 2.4 | 22.2 | 65146 | 2.5 | 18.2 | 91272 | 2.5 | 17.8 | 49390 | 2.6 | 18.3 | 352113 | 2.7 | 20.3 | 56826 | 2.8 | 17.5 |
| 527796 | 2.4 | 20.8 | 102265 | 2.5 | 19.2 | 351556 | 2.6 | 20.5 | 478060 | 2.6 | 21.0 | 234793 | 2.7 | 20.0 | 94032 | 2.8 | 18.6 |
| 156579 | 2.4 | 18.8 | 32446 | 2.5 | 18.0 | 19886 | 2.6 | 19.2 | 48831 | 2.6 | 18.3 | 32719 | 2.7 | 17.6 | 246235 | 2.8 | 19.0 |
| 227551 | 2.4 | 20.9 | 508046 | 2.5 | 21.0 | 283751 | 2.6 | 20.2 | 190105 | 2.6 | 20.0 | 271735 | 2.7 | 19.7 | 439557 | 2.8 | 20.4 |
| 292503 | 2.4 | 20.4 | 403531 | 2.5 | 20.2 | 332679 | 2.6 | 20.2 | 518766 | 2.6 | 20.5 | 321848 | 2.7 | 20.9 | 5579 | 2.8 | 16.0 |
| 275446 | 2.4 | 18.5 | 193648 | 2.5 | 19.6 | 429899 | 2.6 | 19.6 | 245505 | 2.6 | 20.0 | 148698 | 2.7 | 19.1 | 125744 | 2.8 | 19.9 |
| 336347 | 2.4 | 21.4 | 497527 | 2.5 | 21.3 | 36810 | 2.6 | 18.2 | 491153 | 2.6 | 20.3 | 219602 | 2.7 | 19.0 | 185661 | 2.8 | 18.7 |
| 140887 | 2.4 | 20.8 | 535646 | 2.5 | 22.3 | 522851 | 2.6 | 20.5 | 249183 | 2.6 | 19.4 | 95816 | 2.7 | 19.0 | 349260 | 2.8 | 20.5 |
| 20555 | 2.4 | 18.3 | 245703 | 2.5 | 19.8 | 248926 | 2.6 | 19.1 | 3166 | 2.6 | 15.1 | 270569 | 2.7 | 20.0 | 328893 | 2.8 | 21.3 |
| 78992 | 2.4 | 18.8 | 262749 | 2.5 | 21.0 | 277663 | 2.6 | 20.4 | 143718 | 2.6 | 18.7 | 477202 | 2.7 | 20.7 | 138648 | 2.8 | 18.8 |
| 234391 | 2.4 | 19.2 | 362421 | 2.5 | 19.2 | 446819 | 2.6 | 19.1 | 141408 | 2.6 | 20.7 | 488674 | 2.7 | 20.3 | 176566 | 2.8 | 21.3 |
| 304646 | 2.4 | 19.5 | 391369 | 2.5 | 20.6 | 86331 | 2.6 | 19.2 | 532072 | 2.6 | 20.2 | 403842 | 2.7 | 20.9 | 374491 | 2.8 | 20.9 |
| 251638 | 2.4 | 19.2 | 69369 | 2.5 | 19.3 | 245254 | 2.6 | 19.2 | 14174 | 2.6 | 19.2 | 476375 | 2.7 | 20.6 | 341434 | 2.8 | 21.5 |
| 230280 | 2.4 | 21.5 | 269073 | 2.5 | 21.7 | 182017 | 2.6 | 20.9 | 168913 | 2.6 | 18.9 | 442482 | 2.7 | 20.4 | 293347 | 2.8 | 20.5 |
| 67689 | 2.4 | 18.7 | 62758 | 2.5 | 19.7 | 309152 | 2.6 | 21.0 | 380635 | 2.6 | 19.2 | 530319 | 2.7 | 21.9 | 106719 | 2.8 | 19.3 |
| 197516 | 2.4 | 19.4 | 416038 | 2.5 | 21.0 | 286166 | 2.6 | 20.5 | 540249 | 2.7 | 21.3 | 204470 | 2.7 | 20.1 | 182093 | 2.8 | 20.9 |
| 329398 | 2.4 | 19.3 | 380569 | 2.5 | 19.2 | 130220 | 2.6 | 18.6 | 266840 | 2.7 | 19.9 | 58120 | 2.7 | 17.5 | 47291 | 2.8 | 18.5 |
| 237069 | 2.4 | 21.0 | 182151 | 2.5 | 20.1 | 21144 | 2.6 | 18.4 | 56859 | 2.7 | 19.0 | 177393 | 2.7 | 20.3 | 526852 | 2.8 | 20.3 |
| 282731 | 2.4 | 20.9 | 78826 | 2.5 | 17.8 | 124663 | 2.6 | 19.9 | 85586 | 2.7 | 18.1 | 531014 | 2.7 | 20.4 | 251782 | 2.8 | 19.2 |
| 388350 | 2.4 | 20.2 | 419931 | 2.5 | 21.4 | 372930 | 2.6 | 21.0 | 159581 | 2.7 | 18.7 | 159400 | 2.7 | 18.9 | 511634 | 2.8 | 20.7 |
| 156994 | 2.4 | 17.8 | 19280 | 2.5 | 18.1 | 136925 | 2.6 | 21.1 | 312118 | 2.7 | 21.0 | 220534 | 2.7 | 18.6 | 148406 | 2.8 | 20.0 |
| 367118 | 2.4 | 19.6 | 231345 | 2.5 | 20.5 | 502696 | 2.6 | 20.7 | 467075 | 2.7 | 21.1 | 98313 | 2.7 | 19.9 | 115130 | 2.8 | 18.7 |
| 325189 | 2.4 | 20.2 | 46756 | 2.5 | 18.8 | 430041 | 2.6 | 19.4 | 346718 | 2.7 | 21.1 | 68710 | 2.7 | 19.4 | 524647 | 2.8 | 20.2 |
| 523130 | 2.4 | 20.8 | 155116 | 2.5 | 20.1 | 132610 | 2.6 | 19.7 | 134689 | 2.7 | 18.7 | 318066 | 2.7 | 18.7 | 283170 | 2.8 | 18.9 |
| 212919 | 2.4 | 19.6 | 296959 | 2.5 | 20.1 | 156415 | 2.6 | 20.3 | 342461 | 2.7 | 20.2 | 163777 | 2.7 | 18.8 | 377377 | 2.8 | 19.8 |
| 126962 | 2.4 | 19.4 | 328319 | 2.5 | 19.3 | 502855 | 2.6 | 20.4 | 488611 | 2.7 | 20.6 | 155212 | 2.7 | 20.4 | 488331 | 2.8 | 20.2 |
| 433072 | 2.4 | 20.7 | 91039 | 2.5 | 18.5 | 239643 | 2.6 | 20.2 | 455230 | 2.7 | 19.9 | 32176 | 2.7 | 17.8 | 379389 | 2.8 | 21.3 |
| 206293 | 2.4 | 19.2 | 392374 | 2.5 | 18.6 | 231916 | 2.6 | 19.5 | 538467 | 2.7 | 21.4 | 506910 | 2.7 | 22.1 | 84203 | 2.8 | 18.4 |
| 302238 | 2.4 | 20.4 | 479675 | 2.5 | 20.9 | 146893 | 2.6 | 20.4 | 475656 | 2.7 | 21.5 | 474214 | 2.7 | 20.4 | 531886 | 2.8 | 20.6 |
| 1649 | 2.4 | 16.6 | 416833 | 2.5 | 20.4 | 305431 | 2.6 | 21.1 | 441789 | 2.7 | 20.9 | 89690 | 2.7 | 18.6 | 5245 | 2.8 | 16.0 |
| 311476 | 2.4 | 21.5 | 412264 | 2.5 | 20.4 | 69971 | 2.6 | 18.7 | 524801 | 2.7 | 23.9 | 296417 | 2.7 | 19.5 | 226874 | 2.8 | 19.9 |
| 477943 | 2.4 | 21.3 | 49388 | 2.5 | 18.5 | 541007 | 2.6 | 21.1 | 467873 | 2.7 | 19.7 | 176578 | 2.7 | 20.4 | 398761 | 2.8 | 21.8 |
| 386447 | 2.4 | 20.5 | 508487 | 2.5 | 20.7 | 343013 | 2.6 | 21.4 | 270431 | 2.7 | 21.5 | 543816 | 2.7 | 21.3 | 57162 | 2.8 | 18.5 |
| 184131 | 2.4 | 19.5 | 336651 | 2.5 | 20.8 | 316683 | 2.6 | 21.3 | 497194 | 2.7 | 21.9 | 70355 | 2.7 | 17.6 | 428904 | 2.8 | 20.1 |
| 18441 | 2.4 | 18.0 | 407702 | 2.5 | 20.2 | 501231 | 2.6 | 21.2 | 18000 | 2.7 | 17.8 | 372519 | 2.7 | 22.3 | 297773 | 2.8 | 19.2 |
| 368954 | 2.4 | 20.4 | 358410 | 2.5 | 21.7 | 89965 | 2.6 | 19.0 | 98165 | 2.7 | 19.2 | 409880 | 2.7 | 19.7 | 114757 | 2.8 | 18.9 |
| 143478 | 2.4 | 20.4 | 58556 | 2.5 | 18.6 | 527266 | 2.6 | 21.4 | 258534 | 2.7 | 20.0 | 233679 | 2.7 | 19.4 | 377787 | 2.8 | 20.9 |
| 346730 | 2.4 | 21.2 | 470703 | 2.5 | 20.3 | 6957 | 2.6 | 16.8 | 400322 | 2.7 | 19.4 | 425201 | 2.8 | 21.5 | 12035 | 2.8 | 18.3 |
| 133104 | 2.4 | 18.8 | 505323 | 2.5 | 21.6 | 300921 | 2.6 | 20.0 | 62672 | 2.7 | 18.6 | 70189 | 2.8 | 17.2 | 133163 | 2.8 | 17.6 |
| 112711 | 2.4 | 18.8 | 394870 | 2.5 | 18.9 | 151030 | 2.6 | 19.2 | 494158 | 2.7 | 20.8 | 520738 | 2.8 | 20.7 | 213773 | 2.8 | 19.3 |
| 190388 | 2.4 | 19.3 | 432817 | 2.5 | 20.2 | 41894 | 2.6 | 18.2 | 528418 | 2.7 | 21.1 | 290722 | 2.8 | 19.1 | 468628 | 2.8 | 19.6 |
| 230121 | 2.4 | 20.3 | 149389 | 2.5 | 19.4 | 391706 | 2.6 | 21.0 | 408288 | 2.7 | 20.5 | 318352 | 2.8 | 19.7 | 439422 | 2.8 | 20.4 |
| 543449 | 2.4 | 20.5 | 219604 | 2.5 | 20.3 | 152168 | 2.6 | 19.1 | 32753 | 2.7 | 19.2 | 170090 | 2.8 | 19.5 | 204088 | 2.8 | 20.0 |
| 529488 | 2.4 | 20.8 | 424133 | 2.5 | 19.3 | 148434 | 2.6 | 18.8 | 12779 | 2.7 | 18.3 | 364986 | 2.8 | 19.7 | 281676 | 2.8 | 19.8 |
| 150795 | 2.4 | 19.3 | 166140 | 2.5 | 19.0 | 368674 | 2.6 | 20.1 | 452675 | 2.7 | 21.7 | 269089 | 2.8 | 20.3 | 270442 | 2.8 | 20.8 |
| 8118 | 2.4 | 16.3 | 250049 | 2.5 | 20.2 | 424019 | 2.6 | 21.0 | 141131 | 2.7 | 19.1 | 231791 | 2.8 | 18.8 | 361105 | 2.8 | 20.7 |
| 451688 | 2.4 | 20.3 | 204133 | 2.5 | 19.4 | 147265 | 2.6 | 19.7 | 35915 | 2.7 | 16.9 | 508540 | 2.8 | 20.2 | 66838 | 2.8 | 19.4 |
| 521205 | 2.4 | 21.2 | 214276 | 2.5 | 20.0 | 157599 | 2.6 | 19.8 | 111624 | 2.7 | 20.1 | 465376 | 2.8 | 22.2 | 465556 | 2.8 | 19.9 |
| 532780 | 2.4 | 21.8 | 380639 | 2.5 | 20.5 | 330899 | 2.6 | 19.2 | 401511 | 2.7 | 20.3 | 296212 | 2.8 | 20.6 | 206242 | 2.8 | 20.9 |
| 518863 | 2.4 | 21.3 | 63555 | 2.5 | 18.8 | 144367 | 2.6 | 20.1 | 150986 | 2.7 | 19.4 | 86171 | 2.8 | 18.6 | 243685 | 2.8 | 18.6 |
| 282763 | 2.5 | 20.1 | 528422 | 2.5 | 21.3 | 186073 | 2.6 | 19.6 | 476477 | 2.7 | 20.0 | 539433 | 2.8 | 21.4 | 122615 | 2.8 | 19.3 |
| 305504 | 2.5 | 19.2 | 333208 | 2.5 | 19.2 | 121593 | 2.6 | 18.8 | 72079 | 2.7 | 19.1 | 406340 | 2.8 | 21.0 | 61509 | 2.8 | 18.6 |
| 535164 | 2.5 | 21.0 | 352714 | 2.5 | 19.9 | 281019 | 2.6 | 20.4 | 428056 | 2.7 | 20.8 | 427301 | 2.8 | 21.4 | 530869 | 2.8 | 21.7 |
| 54546 | 2.5 | 19.0 | 501947 | 2.5 | 21.4 | 527206 | 2.6 | 20.0 | 306641 | 2.7 | 20.1 | 522984 | 2.8 | 20.9 | 215103 | 2.8 | 20.0 |
| 104315 | 2.5 | 18.9 | 406367 | 2.5 | 18.8 | 348853 | 2.6 | 21.0 | 117847 | 2.7 | 19.1 | 508677 | 2.8 | 20.5 | 200839 | 2.8 | 19.9 |
| 33615 | 2.5 | 16.9 | 53355 | 2.5 | 18.2 | 380469 | 2.6 | 21.3 | 533795 | 2.7 | 20.4 | 354772 | 2.8 | 21.0 | 394761 | 2.8 | 21.9 |
| 2143 | 2.5 | 15.7 | 504509 | 2.5 | 18.8 | 59881 | 2.6 | 18.5 | 286165 | 2.7 | 20.4 | 121393 | 2.8 | 18.8 | 88082 | 2.8 | 18.6 |
| 425216 | 2.5 | 20.9 | 165276 | 2.5 | 18.4 | 206980 | 2.6 | 20.4 | 312180 | 2.7 | 21.4 | 192876 | 2.8 | 18.0 | 73521 | 2.8 | 17.9 |
| 522201 | 2.5 | 21.3 | 238756 | 2.5 | 20.6 | 437319 | 2.6 | 20.7 | 25526 | 2.7 | 18.8 | 215885 | 2.8 | 20.6 | 405216 | 2.8 | 20.0 |
| 409165 | 2.5 | 20.3 | 499774 | 2.5 | 20.0 | 298908 | 2.6 | 20.6 | 515062 | 2.7 | 21.1 | 535998 | 2.8 | 21.1 | 430654 | 2.8 | 19.6 |
| 534985 | 2.5 | 21.4 | 154725 | 2.5 | 18.6 | 536309 | 2.6 | 20.3 | 32879 | 2.7 | 18.7 | 347918 | 2.8 | 19.9 | 401771 | 2.8 | 20.6 |
| 309435 | 2.5 | 21.4 | 386952 | 2.5 | 20.4 | 261053 | 2.6 | 20.5 | 308177 | 2.7 | 21.2 | 431002 | 2.8 | 21.5 | 198283 | 2.8 | 19.5 |
| 170748 | 2.5 | 19.5 | 224470 | 2.5 | 21.1 | 126564 | 2.6 | 19.3 | 85499 | 2.7 | 18.8 | 230401 | 2.8 | 19.3 | 423654 | 2.8 | 21.9 |
| 529687 | 2.5 | 20.8 | 385478 | 2.5 | 20.5 | 484060 | 2.6 | 21.0 | 161439 | 2.7 | 18.6 | 281044 | 2.8 | 20 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 58204 | 2.9 | 20.0 | 21681 | 2.9 | 17.9 | 298294 | 2.9 | 19.9 | 472042 | 3.1 | 20.7 | 402151 | 3.1 | 20.5 | 224198 | 3.2 | 19.2 |
| 64793 | 2.9 | 19.1 | 317662 | 2.9 | 20.5 | 182914 | 2.9 | 20.1 | 531894 | 3.1 | 21.9 | 167616 | 3.1 | 20.1 | 507509 | 3.2 | 21.1 |
| 479987 | 2.9 | 21.2 | 148829 | 2.9 | 19.2 | 28077 | 2.9 | 17.7 | 491928 | 3.1 | 20.7 | 333275 | 3.1 | 20.4 | 10781 | 3.2 | 17.1 |
| 120342 | 2.9 | 19.3 | 306821 | 2.9 | 19.0 | 319647 | 2.9 | 20.4 | 12826 | 3.1 | 16.4 | 94391 | 3.1 | 19.7 | 44899 | 3.2 | 19.4 |
| 140927 | 2.9 | 19.8 | 431484 | 2.9 | 19.5 | 208848 | 2.9 | 20.4 | 528441 | 3.1 | 21.0 | 410282 | 3.1 | 19.6 | 305477 | 3.2 | 20.0 |
| 290050 | 2.9 | 19.9 | 321800 | 2.9 | 20.4 | 316764 | 2.9 | 19.9 | 229376 | 3.1 | 19.8 | 30813 | 3.1 | 16.4 | 321817 | 3.2 | 21.0 |
| 393818 | 2.9 | 21.0 | 147856 | 2.9 | 18.2 | 208960 | 2.9 | 19.5 | 343157 | 3.1 | 21.0 | 14619 | 3.1 | 18.8 | 452332 | 3.2 | 21.6 |
| 282172 | 2.9 | 18.6 | 311252 | 2.9 | 20.1 | 129252 | 2.9 | 19.3 | 98879 | 3.1 | 18.1 | 499366 | 3.1 | 21.9 | 535729 | 3.2 | 21.2 |
| 78620 | 2.9 | 19.2 | 134158 | 2.9 | 20.3 | 455239 | 2.9 | 20.9 | 144417 | 3.1 | 19.4 | 505783 | 3.1 | 19.4 | 479166 | 3.2 | 20.5 |
| 396028 | 2.9 | 20.5 | 233723 | 2.9 | 20.4 | 404676 | 2.9 | 20.2 | 497513 | 3.1 | 20.9 | 192797 | 3.1 | 18.7 | 185435 | 3.2 | 19.8 |
| 527824 | 2.9 | 22.1 | 82739 | 2.9 | 19.0 | 521254 | 2.9 | 21.3 | 410431 | 3.1 | 21.0 | 397428 | 3.1 | 20.9 | 397159 | 3.2 | 19.8 |
| 300118 | 2.9 | 20.4 | 271750 | 2.9 | 19.8 | 315285 | 3.0 | 19.8 | 83179 | 3.1 | 17.4 | 393617 | 3.2 | 21.3 | 402974 | 3.2 | 19.4 |
| 115143 | 2.9 | 19.5 | 44956 | 2.9 | 18.2 | 313722 | 3.0 | 19.9 | 338398 | 3.1 | 20.6 | 283180 | 3.2 | 20.4 | 105848 | 3.2 | 18.6 |
| 43975 | 2.9 | 18.8 | 77109 | 2.9 | 18.5 | 122382 | 3.0 | 19.7 | 87936 | 3.1 | 19.0 | 163386 | 3.2 | 20.2 | 86940 | 3.2 | 17.7 |
| 443785 | 2.9 | 20.1 | 185454 | 2.9 | 21.3 | 82486 | 3.0 | 18.2 | 222765 | 3.1 | 20.4 | 407776 | 3.2 | 20.7 | 359909 | 3.2 | 21.0 |
| 95892 | 2.9 | 18.6 | 192721 | 2.9 | 19.8 | 173908 | 3.0 | 20.3 | 80066 | 3.1 | 19.2 | 43698 | 3.2 | 19.1 | 530229 | 3.2 | 21.7 |
| 19862 | 2.9 | 18.0 | 58882 | 2.9 | 17.3 | 141254 | 3.0 | 20.1 | 104545 | 3.1 | 19.3 | 96936 | 3.2 | 19.2 | 529661 | 3.2 | 20.3 |
| 11825 | 2.9 | 16.1 | 75076 | 2.9 | 17.8 | 89633 | 3.0 | 17.7 | 9280 | 3.1 | 17.7 | 144638 | 3.2 | 18.8 | 300197 | 3.2 | 19.7 |
| 396148 | 2.9 | 21.6 | 109130 | 2.9 | 19.0 | 10998 | 3.0 | 17.6 | 468172 | 3.1 | 20.7 | 510866 | 3.2 | 21.7 | 395621 | 3.2 | 20.4 |
| 284107 | 2.9 | 20.6 | 496486 | 2.9 | 19.9 | 530598 | 3.0 | 20.0 | 501239 | 3.1 | 20.6 | 94534 | 3.2 | 19.8 | 249470 | 3.2 | 20.4 |
| 355823 | 2.9 | 20.4 | 46856 | 2.9 | 17.4 | 37395 | 3.0 | 19.4 | 209544 | 3.1 | 20.3 | 333440 | 3.2 | 18.0 | 335840 | 3.2 | 19.3 |
| 462170 | 2.9 | 20.7 | 396249 | 2.9 | 20.6 | 423714 | 3.0 | 21.7 | 17639 | 3.1 | 17.5 | 429700 | 3.2 | 20.8 | 431556 | 3.2 | 20.7 |
| 493762 | 2.9 | 20.6 | 24397 | 2.9 | 17.5 | 350807 | 3.0 | 21.7 | 103080 | 3.1 | 19.8 | 141392 | 3.2 | 20.4 | 22360 | 3.2 | 17.2 |
| 517620 | 2.9 | 20.8 | 176451 | 2.9 | 19.0 | 67944 | 3.0 | 18.0 | 352733 | 3.1 | 19.6 | 86320 | 3.2 | 18.6 | 262748 | 3.2 | 17.7 |
| 323296 | 2.9 | 20.7 | 214396 | 2.9 | 20.7 | 204158 | 3.0 | 19.6 | 338869 | 3.1 | 20.8 | 270492 | 3.2 | 20.5 | 243988 | 3.2 | 18.8 |
| 508683 | 2.9 | 20.4 | 148444 | 2.9 | 20.3 | 373274 | 3.0 | 19.1 | 21781 | 3.1 | 18.2 | 309866 | 3.2 | 20.8 | 523716 | 3.2 | 22.0 |
| 480767 | 2.9 | 19.8 | 161552 | 2.9 | 18.3 | 540266 | 3.0 | 21.0 | 385041 | 3.1 | 20.1 | 428057 | 3.2 | 20.4 | 110110 | 3.2 | 19.6 |
| 191819 | 2.9 | 18.4 | 162589 | 2.9 | 19.9 | 240633 | 3.0 | 19.8 | 412530 | 3.1 | 19.9 | 388797 | 3.2 | 20.3 | 430012 | 3.2 | 21.1 |
| 54576 | 2.9 | 18.9 | 518139 | 2.9 | 21.2 | 86234 | 3.0 | 19.0 | 22456 | 3.1 | 18.2 | 542571 | 3.2 | 21.4 | 475258 | 3.2 | 20.3 |
| 45694 | 2.9 | 19.2 | 235008 | 2.9 | 19.2 | 106879 | 3.0 | 20.3 | 405484 | 3.1 | 20.2 | 432006 | 3.2 | 21.1 | 41005 | 3.2 | 16.8 |
| 454149 | 2.9 | 21.9 | 173310 | 2.9 | 19.0 | 165347 | 3.0 | 20.3 | 478261 | 3.1 | 21.7 | 85024 | 3.2 | 19.2 | 508301 | 3.2 | 20.5 |
| 151121 | 2.9 | 20.9 | 116377 | 2.9 | 19.3 | 6665 | 3.0 | 16.7 | 136262 | 3.1 | 19.8 | 250111 | 3.2 | 20.2 | 408134 | 3.2 | 21.2 |
| 314634 | 2.9 | 19.2 | 504641 | 2.9 | 21.3 | 523919 | 3.0 | 21.7 | 37318 | 3.1 | 17.4 | 158218 | 3.2 | 19.1 | 293811 | 3.2 | 19.3 |
| 85176 | 2.9 | 17.7 | 520928 | 2.9 | 20.7 | 379388 | 3.0 | 21.8 | 182786 | 3.1 | 20.0 | 31304 | 3.2 | 18.6 | 92954 | 3.2 | 19.0 |
| 270487 | 2.9 | 20.9 | 530858 | 2.9 | 20.0 | 470913 | 3.0 | 21.1 | 430357 | 3.1 | 20.2 | 359373 | 3.2 | 20.6 | 192108 | 3.2 | 20.0 |
| 319024 | 2.9 | 19.5 | 423605 | 2.9 | 22.5 | 261202 | 3.0 | 20.0 | 402917 | 3.1 | 20.0 | 239451 | 3.2 | 20.1 | 66821 | 3.2 | 19.0 |
| 207388 | 2.9 | 19.4 | 418387 | 2.9 | 20.9 | 391075 | 3.0 | 21.1 | 132042 | 3.1 | 20.0 | 205806 | 3.2 | 19.3 | 398583 | 3.2 | 21.0 |
| 503188 | 2.9 | 20.8 | 133453 | 2.9 | 19.2 | 274575 | 3.0 | 19.7 | 502717 | 3.1 | 21.3 | 140767 | 3.2 | 18.9 | 33049 | 3.2 | 17.6 |
| 206341 | 2.9 | 18.4 | 436006 | 2.9 | 19.8 | 362169 | 3.0 | 21.0 | 43700 | 3.1 | 18.8 | 447007 | 3.2 | 20.0 | 177338 | 3.2 | 20.3 |
| 172400 | 2.9 | 20.0 | 372965 | 2.9 | 21.2 | 257696 | 3.0 | 20.4 | 534069 | 3.1 | 20.3 | 338194 | 3.2 | 21.1 | 379809 | 3.2 | 20.6 |
| 7973 | 2.9 | 18.5 | 321066 | 2.9 | 19.2 | 109561 | 3.0 | 19.3 | 114727 | 3.1 | 19.6 | 77689 | 3.2 | 18.7 | 209843 | 3.2 | 19.8 |
| 427909 | 2.9 | 20.6 | 304027 | 2.9 | 20.0 | 174725 | 3.0 | 18.5 | 297472 | 3.1 | 20.1 | 538162 | 3.2 | 21.8 | 1989 | 3.2 | 16.0 |
| 178077 | 2.9 | 19.9 | 61854 | 2.9 | 19.5 | 6063 | 3.0 | 20.9 | 308073 | 3.1 | 21.2 | 534780 | 3.2 | 21.7 | 315599 | 3.2 | 19.5 |
| 41442 | 2.9 | 16.0 | 139924 | 2.9 | 19.9 | 242395 | 3.0 | 20.2 | 250798 | 3.1 | 19.8 | 88879 | 3.2 | 18.4 | 12161 | 3.2 | 18.9 |
| 77149 | 2.9 | 19.2 | 307237 | 2.9 | 20.7 | 31220 | 3.0 | 18.0 | 161276 | 3.1 | 20.3 | 5772 | 3.2 | 15.9 | 403525 | 3.2 | 19.2 |
| 527755 | 2.9 | 21.6 | 492788 | 2.9 | 19.4 | 43897 | 3.0 | 18.9 | 41786 | 3.1 | 19.0 | 374449 | 3.2 | 22.0 | 295166 | 3.2 | 21.0 |
| 391384 | 2.9 | 21.1 | 186362 | 2.9 | 20.5 | 266938 | 3.0 | 19.0 | 216281 | 3.1 | 19.3 | 497157 | 3.2 | 20.8 | 374401 | 3.2 | 19.5 |
| 299319 | 2.9 | 20.5 | 62160 | 2.9 | 18.1 | 197526 | 3.0 | 20.0 | 156303 | 3.1 | 19.9 | 7616 | 3.2 | 16.2 | 361632 | 3.2 | 19.9 |
| 281041 | 2.9 | 20.2 | 478023 | 2.9 | 20.7 | 374966 | 3.0 | 21.1 | 19343 | 3.1 | 18.9 | 415962 | 3.2 | 20.9 | 463229 | 3.2 | 22.0 |
| 210446 | 2.9 | 20.9 | 398849 | 2.9 | 22.1 | 38265 | 3.0 | 18.2 | 246390 | 3.1 | 20.0 | 211901 | 3.2 | 19.8 | 466973 | 3.2 | 20.9 |
| 166156 | 2.9 | 20.7 | 86314 | 2.9 | 18.4 | 149984 | 3.0 | 18.7 | 151097 | 3.1 | 18.1 | 410426 | 3.2 | 21.6 | 59208 | 3.3 | 19.6 |
| 308086 | 2.9 | 19.6 | 182886 | 2.9 | 20.6 | 532049 | 3.0 | 21.4 | 503600 | 3.1 | 20.5 | 198408 | 3.2 | 21.2 | 240868 | 3.3 | 20.5 |
| 201629 | 2.9 | 20.0 | 506938 | 2.9 | 22.0 | 369048 | 3.0 | 19.9 | 128309 | 3.1 | 19.0 | 101688 | 3.2 | 18.7 | 425700 | 3.3 | 21.0 |
| 334653 | 2.9 | 20.1 | 416157 | 2.9 | 20.0 | 228392 | 3.0 | 19.7 | 312519 | 3.1 | 20.4 | 426383 | 3.2 | 20.6 | 374452 | 3.3 | 19.7 |
| 29166 | 2.9 | 19.0 | 42354 | 2.9 | 18.6 | 506931 | 3.0 | 21.3 | 311304 | 3.1 | 20.8 | 393212 | 3.2 | 21.2 | 519027 | 3.3 | 19.9 |
| 238222 | 2.9 | 19.9 | 342903 | 2.9 | 19.3 | 528498 | 3.0 | 21.2 | 376797 | 3.1 | 18.7 | 496943 | 3.2 | 19.6 | 72177 | 3.3 | 19.2 |
| 351465 | 2.9 | 20.5 | 349784 | 2.9 | 20.1 | 68728 | 3.1 | 20.0 | 251443 | 3.1 | 20.5 | 299846 | 3.2 | 20.5 | 524028 | 3.3 | 21.5 |
| 272809 | 2.9 | 20.9 | 299949 | 2.9 | 19.9 | 538159 | 3.1 | 19.8 | 89158 | 3.1 | 18.9 | 64609 | 3.2 | 19.0 | 498852 | 3.3 | 20.4 |
| 24634 | 2.9 | 16.5 | 211870 | 2.9 | 20.1 | 507853 | 3.1 | 20.0 | 478198 | 3.1 | 21.2 | 141384 | 3.2 | 20.8 | 192055 | 3.3 | 18.8 |
| 109112 | 2.9 | 18.7 | 177623 | 2.9 | 19.6 | 239249 | 3.1 | 18.9 | 129496 | 3.1 | 19.5 | 297434 | 3.2 | 19.8 | 22609 | 3.3 | 16.2 |
| 19727 | 2.9 | 16.5 | 87317 | 2.9 | 18.8 | 347039 | 3.1 | 20.0 | 406873 | 3.1 | 19.6 | 344832 | 3.2 | 20.8 | 455285 | 3.3 | 20.7 |
| 272758 | 2.9 | 20.0 | 349275 | 2.9 | 20.6 | 318870 | 3.1 | 20.2 | 156301 | 3.1 | 18.8 | 447209 | 3.2 | 20.6 | 205512 | 3.3 | 19.6 |
| 170846 | 2.9 | 20.4 | 502914 | 2.9 | 21.3 | 327457 | 3.1 | 19.3 | 502292 | 3.1 | 21.5 | 186080 | 3.2 | 19.2 | 325756 | 3.3 | 19.0 |
| 162492 | 2.9 | 19.9 | 306461 | 2.9 | 20.7 | 417084 | 3.1 | 21.3 | 181395 | 3.1 | 20.2 | 123284 | 3.2 | 20.0 | 420294 | 3.3 | 19.9 |
| 328325 | 2.9 | 20.7 | 53270 | 2.9 | 17.7 | 122156 | 3.1 | 17.7 | 195291 | 3.1 | 19.3 | 512616 | 3.2 | 21.1 | 146122 | 3.3 | 18.5 |
| 47073 | 2.9 | 17.7 | 309155 | 2.9 | 20.9 | 463515 | 3.1 | 20.3 | 498630 | 3.1 | 19.4 | 220402 | 3.2 | 19.5 | 390988 | 3.3 | 19.9 |
| 55794 | 2.9 | 18.7 | 170701 | 2.9 | 20.3 | 93421 | 3.1 | 19.2 | 499336 | 3.1 | 19.5 | 146190 | 3.2 | 18.8 | 121359 | 3.3 | 19.3 |
| 413224 | 2.9 | 19.1 | 213806 | 2.9 | 20.4 | 305960 | 3.1 | 19.3 | 303778 | 3.1 | 20.6 | 414272 | 3.2 | 21.6 | 152428 | 3.3 | 20.3 |
| 318672 | 2.9 | 19.1 | 305927 | 2.9 | 21.0 | 492832 | 3.1 | 18.6 | 166763 | 3.1 | 20.5 | 214447 | 3.2 | 18.9 | 98297 | 3.3 | 18.8 |
| 344111 | 2.9 | 19.8 | 540529 | 2.9 | 20.7 | 325252 | 3.1 | 20.2 | 4227 | 3.1 | 17.2 | 177127 | 3.2 | 19.2 | 85828 | 3.3 | 18.4 |
| 270585 | 2.9 | 19.1 | 460326 | 2.9 | 20.3 | 527215 | 3.1 | 19.7 | 95519 | 3.1 | 19.6 | 509094 | 3.2 | 21.4 | 119434 | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 308392 | 3.3 | 20.7 | 497432 | 3.4 | 19.3 | 65063 | 3.5 | 18.2 | 491801 | 3.5 | 21.0 | 512408 | 3.6 | 20.5 | 504601 | 3.7 | 20.7 |
| 527942 | 3.3 | 22.5 | 21815 | 3.4 | 16.8 | 289334 | 3.5 | 21.2 | 239058 | 3.5 | 20.1 | 192532 | 3.6 | 18.6 | 140617 | 3.7 | 19.3 |
| 122231 | 3.3 | 17.3 | 255773 | 3.4 | 21.4 | 362054 | 3.5 | 21.0 | 506776 | 3.6 | 22.1 | 281534 | 3.6 | 20.8 | 141093 | 3.7 | 19.2 |
| 161619 | 3.3 | 18.8 | 304742 | 3.4 | 21.1 | 350955 | 3.5 | 19.9 | 42337 | 3.6 | 19.5 | 173346 | 3.6 | 20.1 | 174524 | 3.7 | 19.6 |
| 306610 | 3.3 | 18.5 | 420767 | 3.4 | 21.7 | 118681 | 3.5 | 18.7 | 7891 | 3.6 | 15.9 | 30637 | 3.6 | 18.5 | 121160 | 3.7 | 18.7 |
| 135147 | 3.3 | 19.2 | 361128 | 3.4 | 20.3 | 277596 | 3.5 | 22.0 | 478299 | 3.6 | 21.1 | 414457 | 3.6 | 20.8 | 366299 | 3.7 | 19.9 |
| 216193 | 3.3 | 20.3 | 504417 | 3.4 | 22.1 | 196882 | 3.5 | 19.3 | 127691 | 3.6 | 19.6 | 170809 | 3.6 | 20.1 | 127188 | 3.7 | 19.5 |
| 110437 | 3.3 | 19.3 | 167735 | 3.4 | 19.2 | 497497 | 3.5 | 19.9 | 471458 | 3.6 | 20.3 | 7731 | 3.6 | 16.6 | 447172 | 3.7 | 19.4 |
| 104781 | 3.3 | 18.8 | 528082 | 3.4 | 21.7 | 468180 | 3.5 | 20.4 | 51760 | 3.6 | 17.5 | 30138 | 3.6 | 19.4 | 512634 | 3.7 | 20.7 |
| 190410 | 3.3 | 19.8 | 391550 | 3.4 | 20.7 | 27022 | 3.5 | 18.2 | 205442 | 3.6 | 19.4 | 1371 | 3.6 | 16.1 | 143476 | 3.7 | 19.9 |
| 90233 | 3.3 | 18.3 | 93434 | 3.4 | 18.8 | 336435 | 3.5 | 20.5 | 202250 | 3.6 | 20.7 | 502774 | 3.6 | 20.6 | 151755 | 3.7 | 18.5 |
| 403301 | 3.3 | 21.2 | 434612 | 3.4 | 19.2 | 523941 | 3.5 | 23.8 | 179324 | 3.6 | 21.7 | 178755 | 3.6 | 19.1 | 527804 | 3.7 | 21.3 |
| 539658 | 3.3 | 20.7 | 243871 | 3.4 | 19.1 | 68777 | 3.5 | 16.9 | 143031 | 3.6 | 19.8 | 141062 | 3.6 | 20.8 | 306392 | 3.7 | 18.8 |
| 502872 | 3.3 | 21.9 | 230925 | 3.4 | 20.6 | 212728 | 3.5 | 18.8 | 159625 | 3.6 | 20.6 | 172606 | 3.6 | 20.5 | 235816 | 3.7 | 20.2 |
| 33032 | 3.3 | 18.1 | 57460 | 3.4 | 18.3 | 353319 | 3.5 | 19.5 | 238885 | 3.6 | 19.1 | 121157 | 3.6 | 19.8 | 539330 | 3.7 | 21.0 |
| 16697 | 3.3 | 18.8 | 58925 | 3.4 | 18.9 | 100504 | 3.5 | 20.6 | 497323 | 3.6 | 21.7 | 331774 | 3.6 | 19.3 | 105517 | 3.7 | 19.3 |
| 397434 | 3.3 | 20.4 | 488677 | 3.4 | 20.2 | 11730 | 3.5 | 18.0 | 39672 | 3.6 | 17.6 | 2774 | 3.6 | 15.8 | 365895 | 3.7 | 20.7 |
| 79472 | 3.3 | 17.3 | 363414 | 3.4 | 19.5 | 39562 | 3.5 | 16.3 | 406405 | 3.6 | 19.5 | 532820 | 3.6 | 20.8 | 198924 | 3.7 | 20.9 |
| 16086 | 3.3 | 18.5 | 54091 | 3.4 | 17.1 | 63068 | 3.5 | 19.9 | 371094 | 3.6 | 21.2 | 491264 | 3.6 | 21.3 | 300108 | 3.7 | 20.1 |
| 297739 | 3.3 | 20.0 | 370683 | 3.4 | 20.0 | 351504 | 3.5 | 20.5 | 265221 | 3.6 | 19.8 | 263023 | 3.6 | 20.2 | 453312 | 3.7 | 20.9 |
| 52455 | 3.3 | 18.9 | 23806 | 3.4 | 18.2 | 468437 | 3.5 | 20.8 | 249508 | 3.6 | 19.9 | 102157 | 3.6 | 18.7 | 123535 | 3.7 | 19.3 |
| 181234 | 3.3 | 19.2 | 383943 | 3.4 | 19.2 | 288572 | 3.5 | 20.5 | 176510 | 3.6 | 20.7 | 259620 | 3.6 | 20.6 | 306996 | 3.7 | 20.5 |
| 511335 | 3.3 | 20.7 | 111244 | 3.4 | 19.8 | 433497 | 3.5 | 21.2 | 216622 | 3.6 | 18.4 | 307681 | 3.6 | 21.4 | 92291 | 3.7 | 18.1 |
| 3728 | 3.3 | 16.6 | 233947 | 3.4 | 19.9 | 146105 | 3.5 | 18.8 | 190575 | 3.6 | 18.8 | 305547 | 3.6 | 19.3 | 286455 | 3.7 | 20.3 |
| 455590 | 3.3 | 20.1 | 346774 | 3.4 | 21.0 | 100549 | 3.5 | 19.6 | 114518 | 3.6 | 19.0 | 189246 | 3.6 | 18.8 | 158260 | 3.7 | 18.5 |
| 259026 | 3.3 | 19.4 | 205057 | 3.4 | 19.4 | 55865 | 3.5 | 18.1 | 157512 | 3.6 | 20.4 | 474718 | 3.6 | 20.5 | 490246 | 3.7 | 19.5 |
| 500232 | 3.3 | 21.3 | 374446 | 3.4 | 21.2 | 360381 | 3.5 | 21.2 | 480570 | 3.6 | 20.4 | 242998 | 3.6 | 19.6 | 57949 | 3.7 | 18.6 |
| 16952 | 3.3 | 18.0 | 257471 | 3.4 | 19.9 | 255066 | 3.5 | 18.9 | 501616 | 3.6 | 20.5 | 494773 | 3.6 | 20.0 | 540503 | 3.7 | 20.6 |
| 134189 | 3.3 | 19.1 | 203057 | 3.4 | 20.1 | 512020 | 3.5 | 20.4 | 257936 | 3.6 | 20.4 | 492628 | 3.6 | 20.4 | 467653 | 3.7 | 19.8 |
| 2016 | 3.3 | 15.5 | 406819 | 3.4 | 20.7 | 114712 | 3.5 | 18.7 | 36664 | 3.6 | 18.7 | 59731 | 3.6 | 18.2 | 50781 | 3.7 | 20.6 |
| 28392 | 3.3 | 17.4 | 232189 | 3.4 | 19.7 | 466612 | 3.5 | 20.9 | 290694 | 3.6 | 20.9 | 317913 | 3.6 | 21.0 | 229510 | 3.7 | 19.6 |
| 536166 | 3.3 | 22.1 | 209197 | 3.4 | 20.4 | 57436 | 3.5 | 19.2 | 503770 | 3.6 | 20.6 | 309342 | 3.6 | 20.8 | 207723 | 3.7 | 19.4 |
| 249459 | 3.3 | 19.6 | 198539 | 3.4 | 20.6 | 448449 | 3.5 | 21.0 | 15831 | 3.6 | 17.3 | 341250 | 3.6 | 20.3 | 225580 | 3.7 | 20.4 |
| 528358 | 3.3 | 20.9 | 167219 | 3.4 | 20.1 | 435316 | 3.5 | 21.6 | 347085 | 3.6 | 20.3 | 261164 | 3.6 | 21.0 | 40775 | 3.7 | 18.1 |
| 62412 | 3.3 | 18.7 | 63473 | 3.4 | 18.7 | 105997 | 3.5 | 19.2 | 277453 | 3.6 | 20.7 | 201792 | 3.6 | 19.4 | 286107 | 3.7 | 20.1 |
| 120651 | 3.3 | 18.1 | 415535 | 3.4 | 21.6 | 233252 | 3.5 | 18.7 | 38886 | 3.6 | 18.2 | 233416 | 3.6 | 20.8 | 368685 | 3.7 | 19.5 |
| 466153 | 3.3 | 19.7 | 112208 | 3.4 | 19.1 | 346171 | 3.5 | 20.1 | 381455 | 3.6 | 20.5 | 2800 | 3.6 | 16.4 | 502807 | 3.7 | 21.5 |
| 404209 | 3.3 | 20.9 | 372303 | 3.4 | 19.5 | 533177 | 3.5 | 21.1 | 109964 | 3.6 | 19.9 | 33161 | 3.6 | 18.4 | 29078 | 3.7 | 18.1 |
| 93680 | 3.3 | 19.3 | 410352 | 3.4 | 18.4 | 431969 | 3.5 | 20.2 | 94537 | 3.6 | 19.6 | 234850 | 3.6 | 20.0 | 7697 | 3.7 | 17.6 |
| 139989 | 3.3 | 18.9 | 261046 | 3.4 | 19.6 | 457444 | 3.5 | 20.1 | 305408 | 3.6 | 19.9 | 528002 | 3.7 | 21.5 | 72368 | 3.7 | 18.3 |
| 291952 | 3.3 | 18.8 | 424652 | 3.4 | 19.2 | 373019 | 3.5 | 21.2 | 35792 | 3.6 | 18.6 | 9326 | 3.7 | 17.6 | 263881 | 3.7 | 20.3 |
| 122182 | 3.3 | 18.4 | 428020 | 3.4 | 21.0 | 268943 | 3.5 | 21.1 | 426600 | 3.6 | 21.4 | 519313 | 3.7 | 21.2 | 333875 | 3.7 | 20.9 |
| 456803 | 3.3 | 19.5 | 224355 | 3.4 | 21.0 | 443023 | 3.5 | 21.5 | 431996 | 3.6 | 20.7 | 359120 | 3.7 | 20.0 | 457580 | 3.7 | 20.5 |
| 465381 | 3.3 | 19.9 | 470190 | 3.4 | 20.5 | 181591 | 3.5 | 19.9 | 407767 | 3.6 | 20.1 | 244553 | 3.7 | 19.3 | 202495 | 3.7 | 20.1 |
| 436369 | 3.3 | 19.3 | 133294 | 3.4 | 19.1 | 220280 | 3.5 | 19.6 | 170929 | 3.6 | 19.9 | 245080 | 3.7 | 18.4 | 66030 | 3.7 | 17.9 |
| 395686 | 3.3 | 20.4 | 176599 | 3.4 | 20.5 | 530390 | 3.5 | 21.0 | 471747 | 3.6 | 20.3 | 346089 | 3.7 | 19.3 | 295423 | 3.7 | 18.9 |
| 476422 | 3.3 | 20.7 | 173238 | 3.4 | 18.8 | 59795 | 3.5 | 17.8 | 310750 | 3.6 | 18.8 | 422280 | 3.7 | 20.4 | 200160 | 3.7 | 20.8 |
| 32408 | 3.3 | 18.4 | 233971 | 3.4 | 18.7 | 468527 | 3.5 | 20.6 | 172413 | 3.6 | 20.0 | 2730 | 3.7 | 14.9 | 525129 | 3.7 | 19.8 |
| 252974 | 3.3 | 19.9 | 210344 | 3.4 | 19.9 | 416250 | 3.5 | 19.9 | 228404 | 3.6 | 20.7 | 530632 | 3.7 | 20.6 | 378294 | 3.7 | 21.6 |
| 158427 | 3.3 | 20.7 | 534669 | 3.4 | 21.1 | 235934 | 3.5 | 19.9 | 398514 | 3.6 | 21.0 | 324533 | 3.7 | 20.3 | 308334 | 3.7 | 19.7 |
| 508243 | 3.3 | 21.0 | 432337 | 3.4 | 20.9 | 99616 | 3.5 | 18.5 | 189315 | 3.6 | 21.1 | 289788 | 3.7 | 20.1 | 235807 | 3.7 | 21.1 |
| 58101 | 3.3 | 18.1 | 341784 | 3.4 | 20.6 | 411739 | 3.5 | 21.3 | 303369 | 3.6 | 20.4 | 263873 | 3.7 | 19.3 | 413476 | 3.7 | 21.2 |
| 442821 | 3.3 | 19.9 | 125810 | 3.4 | 18.9 | 462006 | 3.5 | 20.8 | 392096 | 3.6 | 21.1 | 131903 | 3.7 | 19.1 | 143527 | 3.7 | 20.3 |
| 540626 | 3.3 | 21.4 | 35825 | 3.4 | 18.3 | 58127 | 3.5 | 19.5 | 17752 | 3.6 | 17.8 | 528487 | 3.7 | 21.3 | 394321 | 3.7 | 21.5 |
| 526902 | 3.3 | 21.9 | 365175 | 3.4 | 21.5 | 455981 | 3.5 | 20.5 | 527340 | 3.6 | 21.2 | 61566 | 3.7 | 18.4 | 19248 | 3.7 | 17.3 |
| 185709 | 3.3 | 19.4 | 289841 | 3.4 | 20.0 | 311579 | 3.5 | 19.5 | 387715 | 3.6 | 21.2 | 382865 | 3.7 | 22.0 | 344013 | 3.7 | 19.5 |
| 5961 | 3.3 | 17.5 | 374521 | 3.4 | 19.7 | 186900 | 3.5 | 17.6 | 377776 | 3.6 | 19.9 | 240751 | 3.7 | 20.5 | 328308 | 3.7 | 20.5 |
| 366382 | 3.3 | 19.0 | 359070 | 3.4 | 21.5 | 64694 | 3.5 | 19.3 | 303423 | 3.6 | 21.0 | 240253 | 3.7 | 19.5 | 310237 | 3.7 | 19.9 |
| 304614 | 3.3 | 20.3 | 106852 | 3.4 | 20.2 | 138687 | 3.5 | 19.3 | 463623 | 3.6 | 20.0 | 394736 | 3.7 | 21.0 | 327231 | 3.7 | 19.5 |
| 38847 | 3.3 | 19.4 | 98845 | 3.4 | 18.5 | 119461 | 3.5 | 18.1 | 333123 | 3.6 | 20.4 | 499160 | 3.7 | 20.2 | 379420 | 3.7 | 20.6 |
| 73632 | 3.3 | 18.0 | 50623 | 3.4 | 18.1 | 261132 | 3.5 | 20.2 | 200665 | 3.6 | 20.1 | 264660 | 3.7 | 20.8 | 250858 | 3.7 | 20.4 |
| 377447 | 3.3 | 19.7 | 540315 | 3.4 | 20.4 | 257403 | 3.5 | 20.1 | 88605 | 3.6 | 19.3 | 97844 | 3.7 | 17.8 | 466842 | 3.7 | 19.8 |
| 256962 | 3.3 | 20.2 | 420316 | 3.4 | 20.0 | 6725 | 3.5 | 17.5 | 88796 | 3.6 | 17.9 | 386582 | 3.7 | 21.9 | 385577 | 3.7 | 22.2 |
| 403273 | 3.3 | 20.9 | 328720 | 3.4 | 19.6 | 250516 | 3.5 | 19.1 | 15769 | 3.6 | 18.4 | 124615 | 3.7 | 19.2 | 388772 | 3.7 | 20.4 |
| 205568 | 3.3 | 18.9 | 302047 | 3.4 | 19.4 | 196327 | 3.5 | 20.0 | 299518 | 3.6 | 20.1 | 438830 | 3.7 | 21.6 | 108934 | 3.7 | 19.2 |
| 356836 | 3.3 | 20.6 | 74618 | 3.4 | 17.1 | 249826 | 3.5 | 19.7 | 393102 | 3.6 | 20.3 | 437709 | 3.7 | 20.5 | 388286 | 3.7 | 20.4 |
| 473259 | 3.3 | 19.7 | 438960 | 3.4 | 20.4 | 225622 | 3.5 | 20.0 | 31239 | 3.6 | 16.6 | 523045 | 3.7 | 20.8 | 367276 | 3.7 | 20.4 |
| 21467 | 3.4 | 18.2 | 245813 | 3.4 | 20.2 | 443951 | 3.5 | 20.9 | 502716 | 3.6 | 20.7 | 518170 | 3.7 | 19.1 | 360420 | 3.7 | 20.7 |
| 394378 | 3.4 | 19.7 | 438855 | 3.4 | 20.5 | 475502 | 3.5 | 20.9 | 215034 | 3.6 | 20.3 | 286609 | 3.7 | 20.2 | 40010 | 3.7 | 17.5 |
| 224422 | 3.4 | 19.5 | 262727 | 3.5 | 20.8 | 1280 | 3.5 | 15.0 | 439611 | 3.6 | 20.1 | 253010 | 3.7 | 19.2 | 113026 | 3.7 | 19.2 |
| 226088 | 3.4 | 19.2 | 139534 | 3.5 | 18.6 | 533880 | 3.5 | 20.3 | 219685 | 3.6 | 19.4 | 55936 | 3.7 | 19.1 | 15691 | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 307219 | 3.8 | 20.5 | 530766 | 3.9 | 18.9 | 428005 | 3.9 | 21.6 | 328258 | 3.9 | 19.9 | 539487 | 4.1 | 19.1 | 510320 | 4.1 | 20.7 |
| 62133 | 3.8 | 17.6 | 309134 | 3.9 | 20.8 | 301302 | 3.9 | 20.4 | 475074 | 3.9 | 20.9 | 156317 | 4.1 | 20.1 | 45628 | 4.1 | 18.9 |
| 100305 | 3.8 | 18.5 | 273750 | 3.9 | 20.5 | 391027 | 3.9 | 19.6 | 530890 | 3.9 | 21.2 | 10909 | 4.1 | 17.0 | 406520 | 4.1 | 21.4 |
| 379816 | 3.8 | 21.1 | 308481 | 3.9 | 20.1 | 434466 | 3.9 | 19.8 | 281954 | 3.9 | 19.5 | 297621 | 4.1 | 19.7 | 185339 | 4.1 | 19.4 |
| 153715 | 3.8 | 20.5 | 61333 | 3.9 | 18.2 | 341489 | 3.9 | 20.4 | 543344 | 3.9 | 19.6 | 296239 | 4.1 | 20.0 | 32805 | 4.1 | 16.1 |
| 463182 | 3.8 | 19.3 | 105032 | 3.9 | 19.0 | 391364 | 3.9 | 20.5 | 63961 | 3.9 | 18.9 | 288578 | 4.1 | 19.2 | 457702 | 4.1 | 21.0 |
| 301873 | 3.8 | 20.5 | 18447 | 3.9 | 18.7 | 479318 | 3.9 | 21.0 | 536615 | 3.9 | 20.9 | 371041 | 4.1 | 19.4 | 507338 | 4.1 | 21.2 |
| 341186 | 3.8 | 20.3 | 300123 | 3.9 | 20.1 | 56903 | 3.9 | 18.7 | 325141 | 3.9 | 20.2 | 464558 | 4.1 | 18.5 | 259526 | 4.1 | 18.8 |
| 304734 | 3.8 | 21.0 | 509565 | 3.9 | 21.9 | 296285 | 3.9 | 19.9 | 278962 | 3.9 | 19.9 | 151773 | 4.1 | 20.1 | 108781 | 4.1 | 18.4 |
| 150635 | 3.8 | 19.5 | 286422 | 3.9 | 21.0 | 55066 | 3.9 | 17.1 | 15466 | 3.9 | 17.4 | 16718 | 4.1 | 17.1 | 150171 | 4.1 | 19.3 |
| 168881 | 3.8 | 20.4 | 407834 | 3.9 | 20.8 | 276456 | 3.9 | 21.0 | 110560 | 3.9 | 18.1 | 222729 | 4.1 | 19.2 | 128834 | 4.1 | 19.0 |
| 214451 | 3.8 | 19.5 | 286724 | 3.9 | 20.7 | 36439 | 3.9 | 17.8 | 168368 | 3.9 | 18.7 | 278764 | 4.1 | 20.1 | 252889 | 4.1 | 20.7 |
| 375774 | 3.8 | 21.2 | 307245 | 3.9 | 19.7 | 1282 | 3.9 | 14.7 | 297466 | 3.9 | 19.7 | 453080 | 4.1 | 21.0 | 533246 | 4.1 | 20.7 |
| 228576 | 3.8 | 18.0 | 93026 | 3.9 | 19.0 | 247420 | 3.9 | 18.6 | 28754 | 3.9 | 18.2 | 500935 | 4.1 | 21.5 | 22236 | 4.1 | 17.8 |
| 173342 | 3.8 | 18.9 | 317843 | 3.9 | 20.5 | 177280 | 3.9 | 19.2 | 308188 | 3.9 | 21.1 | 144848 | 4.1 | 19.5 | 264061 | 4.1 | 20.5 |
| 346910 | 3.8 | 20.7 | 272776 | 3.9 | 20.3 | 194906 | 3.9 | 19.9 | 242814 | 3.9 | 19.1 | 379714 | 4.1 | 21.2 | 349090 | 4.1 | 20.4 |
| 147992 | 3.8 | 20.0 | 117973 | 3.9 | 20.0 | 72216 | 3.9 | 19.3 | 304412 | 3.9 | 20.4 | 535193 | 4.1 | 20.2 | 22997 | 4.1 | 18.5 |
| 106429 | 3.8 | 19.0 | 421560 | 3.9 | 20.7 | 120333 | 3.9 | 17.5 | 446940 | 3.9 | 21.2 | 377856 | 4.1 | 20.5 | 67499 | 4.1 | 18.5 |
| 94026 | 3.8 | 18.9 | 429629 | 3.9 | 20.5 | 367087 | 3.9 | 19.7 | 354919 | 4.0 | 19.7 | 56902 | 4.1 | 18.9 | 128429 | 4.1 | 18.9 |
| 432411 | 3.8 | 20.8 | 502925 | 3.9 | 21.0 | 269342 | 3.9 | 19.0 | 425731 | 4.0 | 19.6 | 425732 | 4.1 | 20.4 | 376168 | 4.2 | 19.9 |
| 138829 | 3.8 | 20.2 | 531997 | 3.9 | 20.7 | 214224 | 3.9 | 20.8 | 527901 | 4.0 | 21.7 | 280327 | 4.1 | 20.8 | 8784 | 4.2 | 17.4 |
| 526260 | 3.8 | 19.8 | 465397 | 3.9 | 20.6 | 272694 | 3.9 | 20.9 | 469744 | 4.0 | 20.9 | 19085 | 4.1 | 18.8 | 110328 | 4.2 | 18.8 |
| 114836 | 3.8 | 19.0 | 287541 | 3.9 | 19.7 | 425062 | 3.9 | 20.6 | 102306 | 4.0 | 18.0 | 95774 | 4.1 | 19.0 | 498741 | 4.2 | 20.9 |
| 256544 | 3.8 | 20.2 | 13061 | 3.9 | 17.0 | 437724 | 3.9 | 20.1 | 63984 | 4.0 | 18.2 | 148431 | 4.1 | 21.0 | 196742 | 4.2 | 19.5 |
| 192486 | 3.8 | 20.3 | 483204 | 3.9 | 20.9 | 70354 | 3.9 | 17.8 | 259330 | 4.0 | 19.7 | 535128 | 4.1 | 21.5 | 206783 | 4.2 | 19.4 |
| 452548 | 3.8 | 19.8 | 74853 | 3.9 | 20.3 | 180134 | 3.9 | 19.5 | 136578 | 4.0 | 19.5 | 386536 | 4.1 | 21.8 | 177129 | 4.2 | 19.3 |
| 171664 | 3.8 | 19.6 | 365062 | 3.9 | 21.5 | 172516 | 3.9 | 18.6 | 451932 | 4.0 | 19.2 | 475795 | 4.1 | 20.9 | 528125 | 4.2 | 20.3 |
| 377339 | 3.8 | 18.6 | 461223 | 3.9 | 20.4 | 63181 | 3.9 | 18.0 | 369535 | 4.0 | 20.4 | 66818 | 4.1 | 18.5 | 249158 | 4.2 | 20.2 |
| 83689 | 3.8 | 19.0 | 400531 | 3.9 | 20.4 | 168101 | 3.9 | 19.5 | 173882 | 4.0 | 20.1 | 468477 | 4.1 | 19.6 | 89868 | 4.2 | 18.5 |
| 479012 | 3.8 | 20.6 | 233588 | 3.9 | 18.3 | 177871 | 3.9 | 19.1 | 45245 | 4.0 | 18.3 | 504541 | 4.1 | 20.3 | 431062 | 4.2 | 20.8 |
| 178992 | 3.8 | 19.0 | 56253 | 3.9 | 17.1 | 390368 | 3.9 | 20.3 | 131757 | 4.0 | 19.5 | 333822 | 4.1 | 20.1 | 382414 | 4.2 | 20.0 |
| 93987 | 3.8 | 18.3 | 262259 | 3.9 | 19.3 | 70833 | 3.9 | 19.2 | 108880 | 4.0 | 18.4 | 209519 | 4.1 | 21.0 | 416167 | 4.2 | 20.9 |
| 536493 | 3.8 | 20.6 | 47442 | 3.9 | 18.0 | 326458 | 3.9 | 18.6 | 365847 | 4.0 | 21.2 | 81173 | 4.1 | 19.3 | 145846 | 4.2 | 19.4 |
| 418128 | 3.8 | 21.3 | 121396 | 3.9 | 19.0 | 520231 | 3.9 | 21.0 | 301033 | 4.0 | 20.4 | 407950 | 4.1 | 21.0 | 215991 | 4.2 | 19.4 |
| 539235 | 3.8 | 20.5 | 147851 | 3.9 | 18.8 | 34669 | 3.9 | 15.5 | 512753 | 4.0 | 20.0 | 529151 | 4.1 | 21.8 | 501957 | 4.2 | 19.7 |
| 231895 | 3.8 | 20.0 | 165128 | 3.9 | 18.7 | 340870 | 3.9 | 20.8 | 216244 | 4.0 | 19.7 | 250887 | 4.1 | 20.5 | 82633 | 4.2 | 17.7 |
| 198657 | 3.8 | 19.7 | 396324 | 3.9 | 21.0 | 540450 | 3.9 | 20.0 | 364243 | 4.0 | 20.9 | 351969 | 4.1 | 20.6 | 146085 | 4.2 | 20.0 |
| 34257 | 3.8 | 18.7 | 371010 | 3.9 | 21.2 | 272693 | 3.9 | 21.5 | 222582 | 4.0 | 20.2 | 297087 | 4.1 | 18.9 | 501008 | 4.2 | 19.5 |
| 457202 | 3.8 | 20.8 | 533356 | 3.9 | 20.6 | 175697 | 3.9 | 19.1 | 17166 | 4.0 | 17.8 | 469 | 4.1 | 13.5 | 426841 | 4.2 | 20.0 |
| 73090 | 3.8 | 18.8 | 176538 | 3.9 | 20.8 | 118688 | 3.9 | 16.1 | 502729 | 4.0 | 20.8 | 150961 | 4.1 | 19.1 | 529444 | 4.2 | 20.1 |
| 11844 | 3.8 | 16.7 | 29960 | 3.9 | 18.0 | 179335 | 3.9 | 20.3 | 429082 | 4.0 | 21.4 | 393466 | 4.1 | 21.4 | 244750 | 4.2 | 19.1 |
| 494449 | 3.8 | 21.0 | 111252 | 3.9 | 17.4 | 259146 | 3.9 | 21.8 | 394014 | 4.0 | 20.9 | 42937 | 4.1 | 19.0 | 301855 | 4.2 | 20.2 |
| 355102 | 3.8 | 21.5 | 397100 | 3.9 | 20.0 | 146161 | 3.9 | 19.7 | 12314 | 4.0 | 18.3 | 357906 | 4.1 | 21.4 | 34668 | 4.2 | 17.8 |
| 406521 | 3.8 | 21.4 | 249789 | 3.9 | 20.0 | 354740 | 3.9 | 20.6 | 74916 | 4.0 | 19.1 | 95787 | 4.1 | 18.3 | 21852 | 4.2 | 18.6 |
| 501937 | 3.8 | 20.3 | 46331 | 3.9 | 18.4 | 286460 | 3.9 | 20.9 | 57017 | 4.0 | 17.9 | 207484 | 4.1 | 19.4 | 381499 | 4.2 | 20.5 |
| 162523 | 3.8 | 19.0 | 277759 | 3.9 | 20.4 | 73231 | 3.9 | 19.0 | 505631 | 4.0 | 21.8 | 510801 | 4.1 | 20.8 | 313623 | 4.2 | 19.6 |
| 459206 | 3.8 | 20.4 | 173079 | 3.9 | 20.3 | 301850 | 3.9 | 21.5 | 507917 | 4.0 | 20.3 | 308164 | 4.1 | 21.2 | 141320 | 4.2 | 19.6 |
| 504636 | 3.8 | 21.1 | 392437 | 3.9 | 20.5 | 173964 | 3.9 | 20.5 | 432787 | 4.0 | 19.9 | 243112 | 4.1 | 18.8 | 528044 | 4.2 | 21.8 |
| 193945 | 3.8 | 20.2 | 215931 | 3.9 | 20.6 | 540505 | 3.9 | 20.8 | 315394 | 4.0 | 21.1 | 379291 | 4.1 | 19.6 | 198526 | 4.2 | 19.8 |
| 539311 | 3.8 | 21.3 | 533905 | 3.9 | 21.0 | 179433 | 3.9 | 20.1 | 188151 | 4.0 | 20.4 | 38634 | 4.1 | 17.4 | 66951 | 4.2 | 17.1 |
| 207932 | 3.8 | 20.0 | 376227 | 3.9 | 20.5 | 434712 | 3.9 | 21.4 | 432281 | 4.0 | 19.6 | 86366 | 4.1 | 17.9 | 505235 | 4.2 | 21.1 |
| 527262 | 3.8 | 21.6 | 462147 | 3.9 | 21.1 | 344829 | 3.9 | 21.4 | 132135 | 4.0 | 18.5 | 85928 | 4.1 | 18.9 | 466177 | 4.2 | 21.7 |
| 431113 | 3.8 | 20.8 | 32899 | 3.9 | 16.7 | 88548 | 3.9 | 18.6 | 56590 | 4.0 | 17.9 | 8301 | 4.1 | 17.8 | 204453 | 4.2 | 19.7 |
| 408654 | 3.8 | 19.5 | 498927 | 3.9 | 20.8 | 473863 | 3.9 | 20.8 | 19500 | 4.0 | 17.9 | 499744 | 4.1 | 20.3 | 200257 | 4.2 | 18.9 |
| 349019 | 3.8 | 22.2 | 292429 | 3.9 | 20.3 | 83343 | 3.9 | 19.2 | 230814 | 4.0 | 19.5 | 225952 | 4.1 | 20.2 | 272821 | 4.2 | 19.1 |
| 503926 | 3.8 | 22.3 | 273098 | 3.9 | 20.8 | 125412 | 3.9 | 20.4 | 231200 | 4.0 | 19.1 | 117499 | 4.1 | 19.5 | 394655 | 4.2 | 21.7 |
| 160490 | 3.8 | 21.3 | 348162 | 3.9 | 20.1 | 500950 | 3.9 | 20.8 | 488866 | 4.0 | 21.0 | 191366 | 4.1 | 18.3 | 159166 | 4.2 | 18.7 |
| 305441 | 3.8 | 20.8 | 284559 | 3.9 | 20.8 | 496306 | 3.9 | 21.0 | 363775 | 4.0 | 20.7 | 68633 | 4.1 | 18.5 | 12924 | 4.2 | 16.6 |
| 93247 | 3.8 | 19.1 | 239418 | 3.9 | 20.1 | 153447 | 3.9 | 18.1 | 100288 | 4.0 | 17.2 | 438649 | 4.1 | 20.9 | 492469 | 4.2 | 20.8 |
| 385196 | 3.8 | 21.3 | 401871 | 3.9 | 20.0 | 478183 | 3.9 | 20.7 | 376327 | 4.0 | 20.8 | 11521 | 4.1 | 18.1 | 455276 | 4.2 | 19.8 |
| 205896 | 3.8 | 19.9 | 302294 | 3.9 | 19.6 | 51980 | 3.9 | 18.0 | 434627 | 4.0 | 20.2 | 433301 | 4.1 | 19.4 | 85889 | 4.2 | 18.3 |
| 354754 | 3.8 | 20.9 | 30666 | 3.9 | 18.3 | 196736 | 3.9 | 20.1 | 540988 | 4.0 | 21.6 | 55241 | 4.1 | 19.1 | 399976 | 4.2 | 19.0 |
| 285123 | 3.8 | 21.0 | 333609 | 3.9 | 20.3 | 474220 | 3.9 | 21.1 | 232635 | 4.0 | 19.8 | 502342 | 4.1 | 20.4 | 43189 | 4.2 | 17.9 |
| 326985 | 3.8 | 19.3 | 127085 | 3.9 | 19.1 | 430809 | 3.9 | 20.9 | 396643 | 4.0 | 22.4 | 13956 | 4.1 | 17.1 | 491166 | 4.2 | 21.7 |
| 265710 | 3.8 | 20.2 | 128484 | 3.9 | 19.5 | 98684 | 3.9 | 16.7 | 420377 | 4.0 | 21.2 | 251813 | 4.1 | 19.0 | 120488 | 4.2 | 20.4 |
| 474118 | 3.8 | 21.2 | 126417 | 3.9 | 18.7 | 389603 | 3.9 | 19.6 | 37135 | 4.0 | 17.8 | 150608 | 4.1 | 19.0 | 256067 | 4.2 | 20.4 |
| 414155 | 3.8 | 19.8 | 37581 | 3.9 | 16.8 | 428022 | 3.9 | 21.2 | 427475 | 4.0 | 22.0 | 245482 | 4.1 | 18.7 | 348992 | 4.2 | 19.5 |
| 324010 | 3.8 | 19.6 | 43701 | 3.9 | 18.7 | 134831 | 3.9 | 19.4 | 519099 | 4.0 | 21.1 | 374587 | 4.1 | 20.6 | 299247 | 4.2 | 20.0 |
| 403844 | 3.8 | 19.4 | 300976 | 3.9 | 20.3 | 477680 | 3.9 | 20.7 | 353625 | 4.0 | 20.6 | 53412 | 4.1 | 16.5 | 538500 | 4.2 | 20.9 |
| 355701 | 3.8 | 20.6 | 151737 | 3.9 | 19.8 | 298296 | 3.9 | 20.9 | 239259 | 4.0 | 19.8 | 506680 | 4.1 | 21.3 | 539054 | 4.2 | 19.9 |
| 6029 | 3.8 | 16.4 | 452699 | 3.9 | 19.7 | 182947 | 3.9 | 20.8 | 467290 | 4.0 | 20.1 | 239238 | 4.1 | 19.6 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 281550 | 4.2 | 19.8 | 31118 | 4.3 | 17.3 | 106476 | 4.4 | 17.7 | 512842 | 4.4 | 20.3 | 488261 | 4.5 | 19.9 | 437698 | 4.6 | 20.1 |
| 422459 | 4.2 | 20.3 | 237463 | 4.3 | 20.8 | 484269 | 4.4 | 20.7 | 62396 | 4.4 | 16.7 | 254234 | 4.5 | 19.8 | 6907 | 4.6 | 17.3 |
| 273978 | 4.2 | 20.4 | 476341 | 4.3 | 21.1 | 330997 | 4.4 | 19.3 | 508442 | 4.5 | 19.4 | 69688 | 4.5 | 19.5 | 105486 | 4.6 | 18.9 |
| 170285 | 4.2 | 18.7 | 89333 | 4.3 | 19.0 | 147588 | 4.4 | 19.7 | 373139 | 4.5 | 20.9 | 356298 | 4.5 | 19.8 | 498008 | 4.6 | 20.5 |
| 201930 | 4.2 | 19.4 | 314338 | 4.3 | 20.9 | 433893 | 4.4 | 20.0 | 311375 | 4.5 | 21.2 | 524352 | 4.5 | 22.2 | 127502 | 4.6 | 19.3 |
| 459975 | 4.2 | 20.7 | 386929 | 4.3 | 18.1 | 475082 | 4.4 | 21.0 | 243207 | 4.5 | 18.6 | 513667 | 4.5 | 20.0 | 169013 | 4.6 | 21.1 |
| 128791 | 4.2 | 19.1 | 192650 | 4.3 | 19.1 | 219724 | 4.4 | 20.0 | 336391 | 4.5 | 19.4 | 372401 | 4.5 | 20.7 | 70499 | 4.6 | 18.7 |
| 107434 | 4.2 | 19.1 | 68381 | 4.3 | 18.5 | 376057 | 4.4 | 20.7 | 292545 | 4.5 | 19.7 | 520346 | 4.5 | 21.5 | 150983 | 4.6 | 18.2 |
| 394033 | 4.2 | 20.5 | 542960 | 4.3 | 20.8 | 70921 | 4.4 | 18.8 | 522548 | 4.5 | 21.1 | 455692 | 4.5 | 21.1 | 539274 | 4.6 | 20.8 |
| 402977 | 4.2 | 19.4 | 171778 | 4.3 | 19.5 | 471429 | 4.4 | 19.6 | 499904 | 4.5 | 20.8 | 130520 | 4.5 | 19.3 | 290735 | 4.6 | 19.7 |
| 467430 | 4.2 | 19.7 | 114055 | 4.3 | 18.8 | 310093 | 4.4 | 21.4 | 463568 | 4.5 | 20.8 | 22506 | 4.5 | 18.4 | 37160 | 4.6 | 17.3 |
| 213763 | 4.2 | 20.5 | 179506 | 4.3 | 19.7 | 311499 | 4.4 | 19.5 | 59878 | 4.5 | 18.0 | 153838 | 4.5 | 20.1 | 147814 | 4.6 | 18.5 |
| 468579 | 4.2 | 20.2 | 270397 | 4.3 | 21.3 | 222709 | 4.4 | 19.9 | 289146 | 4.5 | 19.8 | 247740 | 4.5 | 17.7 | 527781 | 4.6 | 21.5 |
| 375038 | 4.2 | 19.5 | 334852 | 4.3 | 20.0 | 404229 | 4.4 | 21.1 | 225815 | 4.5 | 19.1 | 199331 | 4.5 | 19.6 | 470484 | 4.6 | 20.2 |
| 152822 | 4.2 | 18.3 | 29329 | 4.3 | 18.3 | 22139 | 4.4 | 17.8 | 93926 | 4.5 | 18.7 | 238738 | 4.5 | 19.9 | 368207 | 4.6 | 18.9 |
| 291359 | 4.2 | 19.9 | 308172 | 4.3 | 20.5 | 315402 | 4.4 | 20.0 | 109514 | 4.5 | 18.6 | 31306 | 4.5 | 17.5 | 383952 | 4.6 | 20.2 |
| 36432 | 4.2 | 18.1 | 299374 | 4.3 | 20.1 | 542366 | 4.4 | 21.4 | 359032 | 4.5 | 20.1 | 213444 | 4.5 | 18.9 | 389174 | 4.6 | 20.4 |
| 242973 | 4.2 | 18.9 | 308144 | 4.3 | 19.0 | 353891 | 4.4 | 20.8 | 193642 | 4.5 | 19.3 | 275510 | 4.5 | 19.8 | 431899 | 4.6 | 20.2 |
| 423589 | 4.2 | 21.0 | 497397 | 4.3 | 21.1 | 167020 | 4.4 | 19.1 | 159719 | 4.5 | 19.9 | 179360 | 4.5 | 20.8 | 455723 | 4.6 | 20.7 |
| 336433 | 4.2 | 19.9 | 39677 | 4.3 | 17.9 | 178717 | 4.4 | 19.6 | 180136 | 4.5 | 18.8 | 541636 | 4.5 | 21.2 | 381146 | 4.6 | 19.5 |
| 330361 | 4.2 | 19.8 | 524934 | 4.3 | 21.5 | 478077 | 4.4 | 21.2 | 273635 | 4.5 | 20.9 | 200678 | 4.5 | 18.9 | 543439 | 4.6 | 19.2 |
| 289009 | 4.2 | 20.9 | 127747 | 4.3 | 18.0 | 434590 | 4.4 | 21.6 | 517968 | 4.5 | 21.0 | 212622 | 4.5 | 19.8 | 528994 | 4.6 | 21.5 |
| 313618 | 4.2 | 19.4 | 182765 | 4.3 | 21.1 | 465448 | 4.4 | 20.2 | 333921 | 4.5 | 19.4 | 440927 | 4.5 | 21.4 | 463262 | 4.6 | 19.6 |
| 410399 | 4.2 | 21.7 | 379951 | 4.3 | 20.3 | 355030 | 4.4 | 17.4 | 118000 | 4.5 | 19.1 | 236745 | 4.5 | 19.4 | 490182 | 4.6 | 20.3 |
| 467902 | 4.2 | 19.4 | 329396 | 4.3 | 18.7 | 516934 | 4.4 | 19.5 | 396036 | 4.5 | 21.1 | 317426 | 4.5 | 19.0 | 305871 | 4.6 | 20.3 |
| 90735 | 4.2 | 18.5 | 196747 | 4.3 | 18.7 | 519599 | 4.4 | 21.0 | 470944 | 4.5 | 20.3 | 528255 | 4.5 | 20.1 | 48790 | 4.6 | 18.3 |
| 90917 | 4.2 | 18.7 | 452669 | 4.3 | 20.5 | 131875 | 4.4 | 19.5 | 280017 | 4.5 | 20.7 | 30957 | 4.5 | 18.4 | 385290 | 4.6 | 19.6 |
| 111782 | 4.2 | 19.1 | 114665 | 4.3 | 18.2 | 41604 | 4.4 | 17.8 | 109764 | 4.5 | 18.0 | 347417 | 4.5 | 20.2 | 30264 | 4.6 | 17.8 |
| 291885 | 4.2 | 18.9 | 509261 | 4.3 | 21.7 | 190621 | 4.4 | 19.9 | 119644 | 4.5 | 19.3 | 503059 | 4.5 | 21.1 | 380640 | 4.6 | 21.5 |
| 60662 | 4.2 | 19.5 | 198668 | 4.3 | 20.8 | 105710 | 4.4 | 19.7 | 377783 | 4.5 | 21.1 | 457583 | 4.5 | 22.1 | 527090 | 4.6 | 21.7 |
| 185689 | 4.2 | 20.6 | 534252 | 4.3 | 21.2 | 438259 | 4.4 | 20.1 | 530936 | 4.5 | 19.3 | 534196 | 4.6 | 21.3 | 392675 | 4.6 | 20.5 |
| 101759 | 4.2 | 18.3 | 425882 | 4.3 | 20.9 | 35167 | 4.4 | 18.0 | 68730 | 4.5 | 20.2 | 479810 | 4.6 | 20.2 | 7549 | 4.6 | 17.4 |
| 5390 | 4.2 | 16.0 | 475120 | 4.3 | 21.5 | 193548 | 4.4 | 19.6 | 57789 | 4.5 | 18.8 | 144963 | 4.6 | 18.8 | 539380 | 4.6 | 20.5 |
| 89260 | 4.2 | 18.2 | 325633 | 4.3 | 19.6 | 438970 | 4.4 | 19.8 | 66994 | 4.5 | 18.7 | 506512 | 4.6 | 19.1 | 359169 | 4.6 | 20.5 |
| 174667 | 4.2 | 18.1 | 459324 | 4.3 | 20.5 | 88649 | 4.4 | 18.5 | 519647 | 4.5 | 20.9 | 436630 | 4.6 | 18.9 | 426536 | 4.6 | 19.5 |
| 379504 | 4.2 | 22.1 | 527562 | 4.3 | 20.3 | 158860 | 4.4 | 19.1 | 192921 | 4.5 | 20.7 | 35852 | 4.6 | 18.2 | 91263 | 4.6 | 19.1 |
| 401859 | 4.2 | 19.0 | 332073 | 4.3 | 19.7 | 412729 | 4.4 | 17.8 | 196624 | 4.5 | 20.0 | 529406 | 4.6 | 22.3 | 71384 | 4.6 | 17.8 |
| 437662 | 4.3 | 20.8 | 405820 | 4.3 | 20.8 | 214165 | 4.4 | 19.9 | 391563 | 4.5 | 20.7 | 398613 | 4.6 | 20.3 | 134429 | 4.6 | 18.3 |
| 201655 | 4.3 | 19.6 | 292403 | 4.3 | 19.9 | 118026 | 4.4 | 17.4 | 167301 | 4.5 | 20.9 | 205883 | 4.6 | 20.2 | 192701 | 4.6 | 19.7 |
| 500208 | 4.3 | 21.2 | 114214 | 4.3 | 19.8 | 542992 | 4.4 | 20.1 | 271323 | 4.5 | 18.3 | 436837 | 4.6 | 21.6 | 341744 | 4.6 | 21.0 |
| 416232 | 4.3 | 20.5 | 224902 | 4.3 | 20.5 | 236183 | 4.4 | 20.0 | 131195 | 4.5 | 20.0 | 131111 | 4.6 | 19.6 | 417458 | 4.6 | 19.2 |
| 211451 | 4.3 | 20.2 | 82720 | 4.3 | 18.8 | 232945 | 4.4 | 19.8 | 40964 | 4.5 | 19.1 | 248155 | 4.6 | 20.7 | 162548 | 4.6 | 18.3 |
| 169636 | 4.3 | 19.6 | 344726 | 4.3 | 19.6 | 391749 | 4.4 | 20.0 | 186074 | 4.5 | 19.4 | 161962 | 4.6 | 18.2 | 383931 | 4.6 | 21.4 |
| 501109 | 4.3 | 21.0 | 178693 | 4.3 | 19.7 | 374557 | 4.4 | 20.7 | 423698 | 4.5 | 21.4 | 531880 | 4.6 | 23.1 | 235658 | 4.6 | 18.9 |
| 107568 | 4.3 | 19.8 | 246326 | 4.3 | 19.8 | 158321 | 4.4 | 20.4 | 290986 | 4.5 | 19.8 | 168442 | 4.6 | 19.7 | 173971 | 4.6 | 19.4 |
| 206294 | 4.3 | 19.2 | 348303 | 4.3 | 20.2 | 292887 | 4.4 | 20.2 | 22778 | 4.5 | 18.2 | 537809 | 4.6 | 20.6 | 316211 | 4.6 | 20.7 |
| 189066 | 4.3 | 17.6 | 425820 | 4.3 | 21.9 | 519707 | 4.4 | 21.3 | 33384 | 4.5 | 16.2 | 259604 | 4.6 | 18.9 | 341246 | 4.6 | 20.8 |
| 385180 | 4.3 | 20.4 | 152673 | 4.3 | 18.4 | 49849 | 4.4 | 16.4 | 397044 | 4.5 | 19.2 | 224916 | 4.6 | 19.4 | 224305 | 4.6 | 20.5 |
| 311605 | 4.3 | 18.9 | 145725 | 4.3 | 20.0 | 503774 | 4.4 | 20.2 | 216353 | 4.5 | 19.9 | 477220 | 4.6 | 20.2 | 380054 | 4.6 | 17.7 |
| 210137 | 4.3 | 18.5 | 172415 | 4.3 | 20.2 | 253052 | 4.4 | 19.4 | 140429 | 4.5 | 19.3 | 131323 | 4.6 | 18.5 | 306639 | 4.6 | 19.2 |
| 429357 | 4.3 | 20.4 | 539159 | 4.3 | 20.8 | 289467 | 4.4 | 20.4 | 303729 | 4.5 | 19.1 | 105711 | 4.6 | 18.8 | 306322 | 4.6 | 20.9 |
| 352485 | 4.3 | 19.4 | 159604 | 4.3 | 19.4 | 308574 | 4.4 | 21.3 | 51869 | 4.5 | 18.1 | 126097 | 4.6 | 18.9 | 12629 | 4.6 | 17.7 |
| 67159 | 4.3 | 18.5 | 124210 | 4.3 | 17.6 | 149430 | 4.4 | 19.1 | 6322 | 4.5 | 21.6 | 188278 | 4.6 | 20.3 | 344805 | 4.6 | 20.2 |
| 533446 | 4.3 | 21.0 | 261415 | 4.3 | 19.5 | 341480 | 4.4 | 20.0 | 316818 | 4.5 | 19.6 | 221091 | 4.6 | 19.8 | 173266 | 4.6 | 19.0 |
| 299728 | 4.3 | 20.0 | 453842 | 4.3 | 20.1 | 527226 | 4.4 | 21.4 | 102078 | 4.5 | 18.4 | 89521 | 4.6 | 19.1 | 248330 | 4.6 | 19.1 |
| 399217 | 4.3 | 20.0 | 317641 | 4.3 | 19.8 | 304519 | 4.4 | 20.8 | 478130 | 4.5 | 20.3 | 370825 | 4.6 | 19.0 | 304687 | 4.6 | 19.5 |
| 98498 | 4.3 | 19.3 | 403828 | 4.3 | 20.2 | 503677 | 4.4 | 20.3 | 524364 | 4.5 | 20.1 | 117467 | 4.6 | 19.3 | 177123 | 4.6 | 20.5 |
| 477 | 4.3 | 12.2 | 499715 | 4.3 | 21.3 | 363314 | 4.4 | 19.1 | 524164 | 4.5 | 19.8 | 422771 | 4.6 | 19.8 | 497565 | 4.6 | 20.7 |
| 298765 | 4.3 | 19.7 | 540110 | 4.3 | 21.0 | 393037 | 4.4 | 19.9 | 393551 | 4.5 | 21.2 | 299962 | 4.6 | 19.5 | 32327 | 4.6 | 18.3 |
| 50157 | 4.3 | 19.7 | 223621 | 4.3 | 19.2 | 497245 | 4.4 | 22.5 | 295731 | 4.5 | 20.8 | 206744 | 4.6 | 19.5 | 406847 | 4.6 | 21.0 |
| 276711 | 4.3 | 20.2 | 420819 | 4.3 | 19.2 | 201776 | 4.4 | 19.0 | 322548 | 4.5 | 21.2 | 295673 | 4.6 | 20.5 | 123403 | 4.6 | 18.8 |
| 341504 | 4.3 | 21.6 | 224496 | 4.3 | 21.6 | 211940 | 4.4 | 20.8 | 370080 | 4.5 | 19.1 | 102911 | 4.6 | 18.0 | 189343 | 4.6 | 20.5 |
| 360586 | 4.3 | 19.5 | 105693 | 4.3 | 19.7 | 131948 | 4.4 | 18.4 | 297853 | 4.5 | 20.5 | 246652 | 4.6 | 20.1 | 300187 | 4.6 | 20.3 |
| 248689 | 4.3 | 18.9 | 407705 | 4.3 | 19.9 | 232734 | 4.4 | 20.3 | 374499 | 4.5 | 21.2 | 524538 | 4.6 | 21.1 | 424074 | 4.6 | 21.0 |
| 381481 | 4.3 | 19.4 | 31236 | 4.3 | 17.4 | 373239 | 4.4 | 19.8 | 180971 | 4.5 | 19.3 | 411232 | 4.6 | 19.5 | 240703 | 4.6 | 19.6 |
| 424683 | 4.3 | 20.4 | 506920 | 4.3 | 21.8 | 377812 | 4.4 | 20.1 | 73695 | 4.5 | 16.5 | 181446 | 4.6 | 20.7 | 210725 | 4.6 | 18.8 |
| 313742 | 4.3 | 20.6 | 129328 | 4.3 | 18.5 | 221787 | 4.4 | 22.2 | 22371 | 4.5 | 19.1 | 207960 | 4.6 | 19.1 | 6068 | 4.6 | 17.4 |
| 497570 | 4.3 | 20.8 | 182097 | 4.3 | 18.0 | 488647 | 4.4 | 19.0 | 102447 | 4.5 | 19.0 | 70477 | 4.6 | 18.0 | 316569 | 4.6 | 19.1 |
| 467422 | 4.3 | 20.5 | 354948 | 4.4 | 20.3 | 507725 | 4.4 | 19.4 | 130624 | 4.5 | 18.6 | 304394 | 4.6 | 20.1 | 403258 | 4.6 | 20.8 |
| 539304 | 4.3 | 20.7 | 299274 | 4.4 | 19.1 | 284682 | 4.4 | 19.3 | 123681 | 4.5 | 18.8 | 299957 | 4.6 | 19.6 | 55780 | 4.6 | 18.7 |
| 505157 | 4.3 | 19.4 | 302482 | 4.4 | 21.4 | 9631 | 4.4 | 17.1 | 346005 | 4.5 | 20.7 | 47 | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|--------|--------|-----|------|
| 123288 | 4.7 | 17.4 | 488984 | 4.7 | 21.0 | 305233 | 4.8 | 19.9 | 449109 | 4.9 | 21.1 | 530129 | 4.9 | 20.6 | 336477 | 5.0 | 20.4 |
| 27855 | 4.7 | 19.1 | 475778 | 4.7 | 21.6 | 83570 | 4.8 | 18.9 | 212300 | 4.9 | 19.7 | 289750 | 4.9 | 19.9 | 210686 | 5.0 | 19.1 |
| 461594 | 4.7 | 19.2 | 263229 | 4.7 | 20.5 | 388319 | 4.8 | 20.3 | 377947 | 4.9 | 21.2 | 64231 | 4.9 | 18.9 | 497353 | 5.0 | 21.4 |
| 528606 | 4.7 | 20.2 | 26591 | 4.7 | 16.2 | 349980 | 4.8 | 20.9 | 473120 | 4.9 | 20.4 | 41709 | 4.9 | 17.9 | 299738 | 5.0 | 20.6 |
| 523654 | 4.7 | 23.3 | 192640 | 4.7 | 18.6 | 79719 | 4.8 | 18.9 | 261895 | 4.9 | 19.3 | 119844 | 4.9 | 19.6 | 290768 | 5.0 | 20.2 |
| 394778 | 4.7 | 21.4 | 214173 | 4.7 | 20.3 | 437504 | 4.8 | 20.6 | 451043 | 4.9 | 22.1 | 89650 | 4.9 | 18.4 | 122320 | 5.0 | 18.4 |
| 358488 | 4.7 | 18.9 | 139991 | 4.7 | 19.6 | 314685 | 4.8 | 20.2 | 124827 | 4.9 | 20.3 | 235389 | 4.9 | 19.6 | 385624 | 5.0 | 19.8 |
| 55917 | 4.7 | 17.8 | 61954 | 4.7 | 19.1 | 461361 | 4.8 | 22.4 | 435717 | 4.9 | 20.4 | 297847 | 4.9 | 20.8 | 121578 | 5.1 | 20.0 |
| 290896 | 4.7 | 19.2 | 538552 | 4.7 | 19.5 | 54414 | 4.8 | 16.9 | 220926 | 4.9 | 19.7 | 2578 | 4.9 | 15.7 | 172028 | 5.1 | 19.4 |
| 96375 | 4.7 | 18.9 | 429850 | 4.7 | 20.1 | 468535 | 4.8 | 20.9 | 189188 | 4.9 | 18.7 | 320928 | 4.9 | 19.7 | 186338 | 5.1 | 20.6 |
| 149244 | 4.7 | 19.2 | 96176 | 4.7 | 18.0 | 248317 | 4.8 | 19.6 | 311306 | 4.9 | 20.2 | 143237 | 4.9 | 19.5 | 476488 | 5.1 | 20.8 |
| 438427 | 4.7 | 20.2 | 309487 | 4.7 | 21.2 | 420108 | 4.8 | 22.3 | 17406 | 4.9 | 18.3 | 388964 | 4.9 | 20.8 | 508723 | 5.1 | 21.0 |
| 3497 | 4.7 | 15.6 | 492664 | 4.7 | 19.8 | 541816 | 4.8 | 20.0 | 55475 | 4.9 | 17.9 | 542149 | 4.9 | 20.4 | 12634 | 5.1 | 17.8 |
| 172472 | 4.7 | 18.2 | 203489 | 4.7 | 17.9 | 501030 | 4.8 | 19.3 | 156441 | 4.9 | 19.3 | 4065 | 4.9 | 17.2 | 62126 | 5.1 | 17.9 |
| 251979 | 4.7 | 19.4 | 247569 | 4.7 | 19.1 | 475663 | 4.8 | 19.5 | 269317 | 4.9 | 18.9 | 436223 | 4.9 | 21.2 | 37647 | 5.1 | 17.7 |
| 299406 | 4.7 | 21.4 | 30922 | 4.7 | 16.4 | 427615 | 4.8 | 20.5 | 160570 | 4.9 | 18.2 | 364582 | 4.9 | 19.7 | 42643 | 5.1 | 19.0 |
| 279492 | 4.7 | 19.5 | 18546 | 4.7 | 17.6 | 199563 | 4.8 | 19.7 | 352116 | 4.9 | 20.8 | 370469 | 4.9 | 20.5 | 464907 | 5.1 | 19.6 |
| 212917 | 4.7 | 20.1 | 304574 | 4.7 | 20.0 | 310351 | 4.8 | 20.6 | 291241 | 4.9 | 19.5 | 3562 | 4.9 | 16.8 | 528407 | 5.1 | 21.0 |
| 333427 | 4.7 | 18.9 | 310234 | 4.7 | 20.0 | 480256 | 4.8 | 19.2 | 38554 | 4.9 | 18.1 | 248708 | 4.9 | 19.8 | 501466 | 5.1 | 20.9 |
| 82403 | 4.7 | 19.1 | 470065 | 4.7 | 20.7 | 310472 | 4.8 | 19.1 | 276565 | 4.9 | 19.3 | 337769 | 4.9 | 21.0 | 401463 | 5.1 | 19.3 |
| 300883 | 4.7 | 20.6 | 43659 | 4.7 | 18.9 | 523847 | 4.8 | 20.7 | 540669 | 4.9 | 19.1 | 342731 | 4.9 | 20.2 | 271802 | 5.1 | 20.6 |
| 297904 | 4.7 | 20.2 | 39386 | 4.7 | 17.0 | 68371 | 4.8 | 18.1 | 506556 | 4.9 | 21.8 | 190717 | 4.9 | 19.3 | 510348 | 5.1 | 21.8 |
| 1728 | 4.7 | 14.3 | 227480 | 4.7 | 19.8 | 417480 | 4.8 | 20.0 | 134026 | 4.9 | 19.4 | 54365 | 4.9 | 18.0 | 185136 | 5.1 | 19.8 |
| 506818 | 4.7 | 20.2 | 265703 | 4.7 | 20.4 | 371154 | 4.8 | 19.6 | 364711 | 4.9 | 21.1 | 184182 | 4.9 | 18.6 | 495827 | 5.1 | 19.6 |
| 316289 | 4.7 | 20.7 | 294468 | 4.7 | 19.7 | 162068 | 4.8 | 19.9 | 182835 | 4.9 | 20.1 | 230055 | 4.9 | 19.0 | 530995 | 5.1 | 21.4 |
| 135157 | 4.7 | 19.1 | 94324 | 4.7 | 19.4 | 263645 | 4.8 | 20.7 | 160339 | 4.9 | 18.6 | 395700 | 4.9 | 18.4 | 332288 | 5.1 | 18.8 |
| 99351 | 4.7 | 18.5 | 282524 | 4.7 | 18.8 | 89862 | 4.8 | 18.7 | 502061 | 4.9 | 21.0 | 193846 | 4.9 | 17.7 | 131805 | 5.1 | 19.9 |
| 153607 | 4.7 | 18.8 | 497361 | 4.7 | 20.7 | 163738 | 4.8 | 17.5 | 386483 | 4.9 | 20.2 | 381535 | 4.9 | 20.2 | 423635 | 5.1 | 21.6 |
| 101294 | 4.7 | 18.4 | 119609 | 4.7 | 19.6 | 11973 | 4.8 | 19.0 | 352572 | 4.9 | 20.3 | 417338 | 4.9 | 21.9 | 125855 | 5.1 | 19.4 |
| 403555 | 4.7 | 18.8 | 308578 | 4.7 | 20.6 | 91817 | 4.8 | 18.8 | 373479 | 4.9 | 20.6 | 330774 | 4.9 | 19.9 | 468950 | 5.1 | 21.1 |
| 526727 | 4.7 | 22.3 | 198940 | 4.7 | 20.1 | 119583 | 4.8 | 19.6 | 313691 | 4.9 | 19.9 | 182862 | 4.9 | 20.2 | 499322 | 5.1 | 20.7 |
| 447335 | 4.7 | 21.0 | 149504 | 4.8 | 19.2 | 148732 | 4.8 | 19.4 | 96240 | 4.9 | 18.2 | 31938 | 4.9 | 17.0 | 200151 | 5.1 | 20.4 |
| 30929 | 4.7 | 17.2 | 172577 | 4.8 | 20.3 | 333244 | 4.8 | 20.7 | 371104 | 4.9 | 19.8 | 430521 | 4.9 | 22.0 | 512651 | 5.1 | 21.0 |
| 213039 | 4.7 | 20.6 | 169021 | 4.8 | 20.1 | 68184 | 4.8 | 17.3 | 35331 | 4.9 | 18.2 | 543165 | 5.0 | 18.9 | 432750 | 5.1 | 19.9 |
| 347800 | 4.7 | 19.3 | 332359 | 4.8 | 19.8 | 114270 | 4.8 | 19.5 | 518394 | 4.9 | 20.4 | 502812 | 5.0 | 20.0 | 259383 | 5.1 | 21.1 |
| 524567 | 4.7 | 21.8 | 378864 | 4.8 | 20.2 | 96895 | 4.8 | 19.0 | 363071 | 4.9 | 22.4 | 67702 | 5.0 | 19.1 | 461424 | 5.1 | 20.8 |
| 344815 | 4.7 | 19.3 | 508711 | 4.8 | 19.8 | 52942 | 4.8 | 17.6 | 223479 | 4.9 | 19.3 | 383969 | 5.0 | 20.1 | 334848 | 5.1 | 20.3 |
| 377610 | 4.7 | 19.9 | 522241 | 4.8 | 20.0 | 177293 | 4.8 | 20.4 | 365092 | 4.9 | 21.0 | 124919 | 5.0 | 19.3 | 411718 | 5.1 | 20.3 |
| 394688 | 4.7 | 21.1 | 422644 | 4.8 | 21.0 | 122888 | 4.8 | 19.7 | 107518 | 4.9 | 19.0 | 96943 | 5.0 | 18.7 | 171038 | 5.1 | 21.2 |
| 467130 | 4.7 | 21.8 | 212128 | 4.8 | 19.8 | 22559 | 4.8 | 18.3 | 45875 | 4.9 | 18.0 | 217101 | 5.0 | 18.0 | 164204 | 5.1 | 19.8 |
| 347748 | 4.7 | 20.9 | 505068 | 4.8 | 20.2 | 197574 | 4.8 | 18.8 | 326944 | 4.9 | 21.0 | 375883 | 5.0 | 20.9 | 234233 | 5.1 | 20.0 |
| 227503 | 4.7 | 20.0 | 40683 | 4.8 | 17.2 | 260098 | 4.8 | 20.6 | 73507 | 4.9 | 19.3 | 509616 | 5.0 | 20.6 | 61704 | 5.1 | 18.0 |
| 91562 | 4.7 | 18.6 | 255132 | 4.8 | 19.5 | 529655 | 4.8 | 19.7 | 302488 | 4.9 | 20.3 | 388392 | 5.0 | 20.8 | 19554 | 5.1 | 17.0 |
| 420335 | 4.7 | 19.2 | 303903 | 4.8 | 19.0 | 499173 | 4.8 | 20.0 | 410743 | 4.9 | 21.1 | 373849 | 5.0 | 20.8 | 498743 | 5.1 | 21.2 |
| 512537 | 4.7 | 20.4 | 399245 | 4.8 | 22.6 | 206927 | 4.8 | 19.8 | 119359 | 4.9 | 19.1 | 490679 | 5.0 | 20.4 | 530775 | 5.1 | 21.2 |
| 52884 | 4.7 | 17.7 | 124633 | 4.8 | 19.1 | 500949 | 4.8 | 21.4 | 19923 | 4.9 | 18.4 | 500203 | 5.0 | 19.2 | 364183 | 5.1 | 19.0 |
| 115739 | 4.7 | 18.5 | 267009 | 4.8 | 20.6 | 532985 | 4.8 | 21.1 | 422807 | 4.9 | 21.1 | 188696 | 5.0 | 20.2 | 272659 | 5.1 | 20.1 |
| 531976 | 4.7 | 21.7 | 331940 | 4.8 | 18.6 | 540132 | 4.8 | 21.1 | 543884 | 4.9 | 20.4 | 138778 | 5.0 | 19.6 | 147965 | 5.1 | 18.9 |
| 397425 | 4.7 | 21.2 | 105570 | 4.8 | 17.6 | 355549 | 4.8 | 21.9 | 533914 | 4.9 | 19.0 | 357334 | 5.0 | 19.5 | 52540 | 5.1 | 17.5 |
| 352729 | 4.7 | 21.1 | 135649 | 4.8 | 18.7 | 488998 | 4.8 | 20.5 | 485384 | 4.9 | 21.2 | 446799 | 5.0 | 19.4 | 58564 | 5.1 | 17.0 |
| 509549 | 4.7 | 20.0 | 70006 | 4.8 | 18.6 | 324099 | 4.8 | 18.8 | 406338 | 4.9 | 19.4 | 184414 | 5.0 | 19.9 | 539296 | 5.1 | 20.8 |
| 195519 | 4.7 | 19.8 | 382984 | 4.8 | 20.8 | 227945 | 4.9 | 20.2 | 325047 | 4.9 | 21.2 | 248545 | 5.0 | 20.2 | 305569 | 5.1 | 21.1 |
| 64819 | 4.7 | 19.1 | 233764 | 4.8 | 20.5 | 25011 | 4.9 | 17.0 | 358785 | 4.9 | 21.1 | 61784 | 5.0 | 19.0 | 100285 | 5.1 | 18.6 |
| 539766 | 4.7 | 21.2 | 300186 | 4.8 | 20.1 | 221171 | 4.9 | 20.0 | 119711 | 4.9 | 19.0 | 527717 | 5.0 | 21.3 | 424788 | 5.1 | 20.4 |
| 299514 | 4.7 | 19.9 | 337344 | 4.8 | 20.3 | 304738 | 4.9 | 21.0 | 215989 | 4.9 | 19.7 | 249648 | 5.0 | 18.8 | 267316 | 5.1 | 20.6 |
| 99789 | 4.7 | 17.1 | 504637 | 4.8 | 21.0 | 35818 | 4.9 | 18.8 | 122098 | 4.9 | 19.6 | 533350 | 5.0 | 21.2 | 423637 | 5.1 | 21.7 |
| 411285 | 4.7 | 21.1 | 375287 | 4.8 | 18.9 | 303902 | 4.9 | 20.6 | 100777 | 4.9 | 20.4 | 259120 | 5.0 | 19.7 | 475452 | 5.1 | 20.8 |
| 535189 | 4.7 | 21.5 | 425898 | 4.8 | 19.3 | 470177 | 4.9 | 20.5 | 227460 | 4.9 | 18.4 | 120350 | 5.0 | 18.8 | 478172 | 5.1 | 21.3 |
| 359064 | 4.7 | 20.7 | 336377 | 4.8 | 20.2 | 351650 | 4.9 | 20.7 | 346242 | 4.9 | 21.6 | 373483 | 5.0 | 19.6 | 319119 | 5.1 | 21.0 |
| 38319 | 4.7 | 17.6 | 433023 | 4.8 | 19.5 | 247837 | 4.9 | 19.5 | 279388 | 4.9 | 19.8 | 134755 | 5.0 | 18.4 | 34199 | 5.1 | 18.7 |
| 64692 | 4.7 | 18.7 | 272920 | 4.8 | 18.9 | 354786 | 4.9 | 20.3 | 90226 | 4.9 | 18.8 | 110818 | 5.0 | 19.7 | 522668 | 5.1 | 20.6 |
| 420594 | 4.7 | 20.1 | 93013 | 4.8 | 19.2 | 66802 | 4.9 | 17.8 | 168250 | 4.9 | 19.0 | 111773 | 5.0 | 20.0 | 84950 | 5.1 | 17.5 |
| 510384 | 4.7 | 20.0 | 194034 | 4.8 | 19.9 | 165162 | 4.9 | 19.7 | 323769 | 4.9 | 19.7 | 240875 | 5.0 | 19.8 | 274406 | 5.1 | 19.5 |
| 147780 | 4.7 | 19.1 | 353311 | 4.8 | 19.3 | 41023 | 4.9 | 18.7 | 540304 | 4.9 | 20.0 | 198076 | 5.0 | 19.5 | 407891 | 5.1 | 20.8 |
| 166659 | 4.7 | 19.7 | 88643 | 4.8 | 19.1 | 380870 | 4.9 | 20.2 | 505 | 4.9 | 12.6 | 146654 | 5.0 | 19.1 | 469059 | 5.1 | 20.7 |
| 500518 | 4.7 | 19.5 | 458895 | 4.8 | 21.4 | 212593 | 4.9 | 20.3 | 275329 | 4.9 | 20.3 | 251581 | 5.0 | 18.7 | 309006 | 5.1 | 21.1 |
| 433535 | 4.7 | 19.1 | 123141 | 4.8 | 19.5 | 106540 | 4.9 | 17.7 | 113800 | 4.9 | 17.9 | 471126 | 5.0 | 19.8 | 291971 | 5.1 | 20.0 |
| 40455 | 4.7 | 19.1 | 465041 | 4.8 | 19.9 | 153120 | 4.9 | 18.3 | 479664 | 4.9 | 21.7 | 56306 | 5.0 | 17.3 | 273387 | 5.1 | 19.4 |
| 469430 | 4.7 | 20.6 | 219804 | 4.8 | 19.4 | 71382 | 4.9 | 18.9 | 186231 | 4.9 | 21.3 | 280344 | 5.0 | 19.7 | 61848 | 5.1 | 18.3 |
| 188496 | 4.7 | 19.1 | 272757 | 4.8 | 18.9 | 192832 | 4.9 | 20.4 | 286339 | 4.9 | 19.5 | 381153 | 5.0 | 20.2 | 393049 | 5.1 | 20.2 |
| 155232 | 4.7 | 18.2 | 420112 | 4.8 | 21.6 | 192406 | 4.9 | 20.2 | 146443 | 4.9 | 19.7 | 48035 | 5.0 | 18.5</ | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 61259 | 5.1 | 17.6 | 430758 | 5.2 | 19.3 | 74912 | 5.3 | 18.2 | 60249 | 5.4 | 17.8 | 311356 | 5.4 | 20.3 | 109931 | 5.5 | 19.0 |
| 299475 | 5.1 | 20.0 | 449552 | 5.2 | 20.1 | 186911 | 5.3 | 19.0 | 100735 | 5.4 | 20.0 | 401783 | 5.4 | 20.3 | 543956 | 5.5 | 19.9 |
| 451417 | 5.1 | 20.4 | 426336 | 5.2 | 19.3 | 108941 | 5.3 | 19.3 | 431278 | 5.4 | 20.0 | 429149 | 5.4 | 20.9 | 372528 | 5.5 | 19.6 |
| 182845 | 5.1 | 19.6 | 373059 | 5.2 | 20.7 | 199297 | 5.3 | 20.4 | 355479 | 5.4 | 20.1 | 301494 | 5.5 | 20.7 | 464852 | 5.5 | 19.8 |
| 171062 | 5.1 | 19.6 | 32681 | 5.2 | 19.1 | 531908 | 5.3 | 20.6 | 288026 | 5.4 | 19.9 | 438595 | 5.5 | 20.8 | 31112 | 5.5 | 18.6 |
| 304746 | 5.1 | 20.8 | 65052 | 5.2 | 18.4 | 376143 | 5.3 | 19.7 | 217622 | 5.4 | 18.7 | 434570 | 5.5 | 21.1 | 376503 | 5.5 | 19.6 |
| 503562 | 5.1 | 18.8 | 163733 | 5.2 | 18.7 | 422779 | 5.3 | 20.8 | 531933 | 5.4 | 20.6 | 429579 | 5.5 | 20.1 | 72874 | 5.5 | 18.2 |
| 302356 | 5.1 | 19.9 | 180507 | 5.2 | 20.4 | 409024 | 5.3 | 21.9 | 478979 | 5.4 | 20.5 | 499812 | 5.5 | 21.1 | 72102 | 5.5 | 18.7 |
| 466169 | 5.1 | 19.9 | 250558 | 5.2 | 18.9 | 64118 | 5.3 | 18.3 | 127910 | 5.4 | 19.5 | 17004 | 5.5 | 16.6 | 287513 | 5.5 | 19.7 |
| 31871 | 5.1 | 16.7 | 13154 | 5.2 | 16.3 | 147923 | 5.3 | 19.8 | 110823 | 5.4 | 17.9 | 522384 | 5.5 | 20.6 | 201646 | 5.5 | 19.9 |
| 233814 | 5.1 | 19.5 | 111789 | 5.2 | 18.5 | 498018 | 5.3 | 20.4 | 155377 | 5.4 | 20.1 | 216641 | 5.5 | 19.9 | 199457 | 5.5 | 19.1 |
| 399531 | 5.1 | 19.9 | 148524 | 5.2 | 17.9 | 529550 | 5.3 | 20.4 | 196754 | 5.4 | 19.3 | 174046 | 5.5 | 20.4 | 440125 | 5.5 | 19.9 |
| 333134 | 5.1 | 20.8 | 297123 | 5.2 | 19.7 | 430302 | 5.3 | 20.4 | 3916 | 5.4 | 17.2 | 125462 | 5.5 | 18.9 | 241905 | 5.5 | 20.1 |
| 378704 | 5.1 | 20.0 | 35381 | 5.2 | 19.3 | 117358 | 5.3 | 20.0 | 332591 | 5.4 | 17.7 | 497215 | 5.5 | 19.7 | 180126 | 5.5 | 20.2 |
| 114473 | 5.1 | 18.6 | 331788 | 5.2 | 19.5 | 528259 | 5.3 | 20.4 | 202529 | 5.4 | 21.4 | 120289 | 5.5 | 18.7 | 111530 | 5.5 | 18.8 |
| 370135 | 5.1 | 21.3 | 228348 | 5.2 | 20.2 | 119973 | 5.3 | 19.8 | 512769 | 5.4 | 19.4 | 170390 | 5.5 | 19.5 | 306745 | 5.5 | 19.7 |
| 190367 | 5.1 | 18.0 | 533919 | 5.2 | 19.9 | 236608 | 5.3 | 19.6 | 494245 | 5.4 | 20.5 | 136211 | 5.5 | 19.3 | 16421 | 5.5 | 16.2 |
| 352472 | 5.1 | 20.2 | 347162 | 5.2 | 20.4 | 527906 | 5.3 | 22.3 | 201064 | 5.4 | 19.5 | 323789 | 5.5 | 18.2 | 64501 | 5.5 | 19.0 |
| 7840 | 5.1 | 17.8 | 94553 | 5.2 | 18.8 | 72380 | 5.3 | 18.2 | 386593 | 5.4 | 20.2 | 124286 | 5.5 | 18.3 | 234137 | 5.6 | 20.0 |
| 459047 | 5.2 | 21.0 | 411787 | 5.2 | 20.0 | 250442 | 5.3 | 19.0 | 375939 | 5.4 | 20.7 | 9438 | 5.5 | 17.0 | 58861 | 5.6 | 19.7 |
| 278975 | 5.2 | 19.1 | 497575 | 5.2 | 21.0 | 98842 | 5.3 | 18.4 | 430259 | 5.4 | 20.9 | 352586 | 5.5 | 21.3 | 262797 | 5.6 | 19.8 |
| 530453 | 5.2 | 20.9 | 153989 | 5.2 | 19.3 | 398707 | 5.3 | 20.2 | 509089 | 5.4 | 21.5 | 526007 | 5.5 | 21.0 | 321662 | 5.6 | 20.1 |
| 146271 | 5.2 | 20.0 | 362018 | 5.2 | 20.9 | 44773 | 5.3 | 18.6 | 405488 | 5.4 | 20.6 | 62038 | 5.5 | 19.0 | 205783 | 5.6 | 18.5 |
| 4905 | 5.2 | 15.4 | 506750 | 5.2 | 20.9 | 534361 | 5.3 | 20.5 | 297642 | 5.4 | 19.8 | 69577 | 5.5 | 18.1 | 411280 | 5.6 | 22.6 |
| 126130 | 5.2 | 18.3 | 403266 | 5.2 | 20.7 | 62486 | 5.3 | 17.8 | 105291 | 5.4 | 18.7 | 232226 | 5.5 | 19.9 | 276121 | 5.6 | 21.4 |
| 529184 | 5.2 | 21.1 | 510313 | 5.2 | 20.5 | 308363 | 5.3 | 20.4 | 255691 | 5.4 | 19.3 | 210424 | 5.5 | 19.2 | 480612 | 5.6 | 20.2 |
| 527690 | 5.2 | 21.7 | 134207 | 5.2 | 19.7 | 367908 | 5.3 | 20.4 | 54232 | 5.4 | 18.9 | 106052 | 5.5 | 18.8 | 140969 | 5.6 | 19.5 |
| 103540 | 5.2 | 19.3 | 20633 | 5.2 | 18.4 | 414153 | 5.3 | 20.6 | 57811 | 5.4 | 19.8 | 227567 | 5.5 | 20.1 | 373035 | 5.6 | 19.8 |
| 381493 | 5.2 | 20.6 | 163112 | 5.2 | 19.1 | 422675 | 5.3 | 21.5 | 351860 | 5.4 | 21.3 | 470091 | 5.5 | 20.4 | 186567 | 5.6 | 19.7 |
| 63843 | 5.2 | 17.9 | 81598 | 5.2 | 18.5 | 98778 | 5.3 | 18.6 | 362418 | 5.4 | 18.9 | 192234 | 5.5 | 20.2 | 299463 | 5.6 | 19.7 |
| 392585 | 5.2 | 20.1 | 241309 | 5.2 | 20.3 | 310247 | 5.3 | 20.4 | 409854 | 5.4 | 19.5 | 14879 | 5.5 | 18.3 | 159415 | 5.6 | 18.6 |
| 434849 | 5.2 | 20.8 | 490430 | 5.2 | 20.4 | 88293 | 5.3 | 16.9 | 355155 | 5.4 | 20.6 | 224404 | 5.5 | 20.8 | 187361 | 5.6 | 20.2 |
| 186065 | 5.2 | 19.4 | 89299 | 5.3 | 18.6 | 296530 | 5.3 | 19.7 | 72945 | 5.4 | 18.7 | 165349 | 5.5 | 20.7 | 190151 | 5.6 | 18.0 |
| 457569 | 5.2 | 20.9 | 45991 | 5.3 | 16.1 | 140037 | 5.3 | 19.6 | 288940 | 5.4 | 19.5 | 467521 | 5.5 | 20.8 | 126828 | 5.6 | 19.9 |
| 106504 | 5.2 | 19.7 | 145373 | 5.3 | 19.5 | 86249 | 5.3 | 18.6 | 467063 | 5.4 | 18.4 | 331898 | 5.5 | 18.5 | 336899 | 5.6 | 20.0 |
| 172976 | 5.2 | 18.7 | 416005 | 5.3 | 19.4 | 385182 | 5.3 | 20.2 | 266218 | 5.4 | 20.4 | 504592 | 5.5 | 20.0 | 288758 | 5.6 | 18.7 |
| 359699 | 5.2 | 20.0 | 370977 | 5.3 | 20.3 | 532391 | 5.3 | 20.5 | 66957 | 5.4 | 18.3 | 280387 | 5.5 | 19.8 | 63184 | 5.6 | 17.6 |
| 33550 | 5.2 | 17.2 | 135172 | 5.3 | 17.7 | 238034 | 5.3 | 19.5 | 522374 | 5.4 | 19.9 | 59080 | 5.5 | 18.3 | 181185 | 5.6 | 18.6 |
| 32941 | 5.2 | 19.0 | 29579 | 5.3 | 18.5 | 34949 | 5.3 | 18.6 | 250754 | 5.4 | 20.0 | 205864 | 5.5 | 20.5 | 239744 | 5.6 | 19.2 |
| 134338 | 5.2 | 18.3 | 7554 | 5.3 | 18.3 | 354103 | 5.3 | 19.9 | 106867 | 5.4 | 18.8 | 278768 | 5.5 | 19.9 | 350131 | 5.6 | 21.1 |
| 526295 | 5.2 | 22.5 | 397755 | 5.3 | 21.7 | 286629 | 5.3 | 20.7 | 317807 | 5.4 | 19.5 | 295247 | 5.5 | 19.4 | 473100 | 5.6 | 20.6 |
| 251326 | 5.2 | 20.8 | 429310 | 5.3 | 20.1 | 492530 | 5.3 | 20.8 | 526731 | 5.4 | 22.7 | 118893 | 5.5 | 18.9 | 88000 | 5.6 | 17.8 |
| 512399 | 5.2 | 20.8 | 333096 | 5.3 | 20.9 | 188281 | 5.3 | 19.8 | 65558 | 5.4 | 17.6 | 430508 | 5.5 | 20.6 | 100768 | 5.6 | 19.9 |
| 202761 | 5.2 | 20.1 | 510488 | 5.3 | 20.5 | 16903 | 5.3 | 18.6 | 130202 | 5.4 | 18.8 | 239620 | 5.5 | 19.7 | 242786 | 5.6 | 17.8 |
| 344124 | 5.2 | 20.3 | 390018 | 5.3 | 21.1 | 398844 | 5.3 | 22.2 | 259280 | 5.4 | 20.3 | 477720 | 5.5 | 20.0 | 533148 | 5.6 | 20.7 |
| 492395 | 5.2 | 20.4 | 128567 | 5.3 | 19.4 | 443761 | 5.3 | 20.7 | 168955 | 5.4 | 20.1 | 245529 | 5.5 | 19.6 | 269591 | 5.6 | 18.5 |
| 374378 | 5.2 | 20.1 | 464831 | 5.3 | 21.1 | 159796 | 5.3 | 17.7 | 466532 | 5.4 | 21.6 | 201971 | 5.5 | 19.0 | 308390 | 5.6 | 20.2 |
| 184680 | 5.2 | 20.3 | 362649 | 5.3 | 20.6 | 81043 | 5.3 | 17.9 | 427937 | 5.4 | 20.9 | 455744 | 5.5 | 20.2 | 35811 | 5.6 | 17.7 |
| 185300 | 5.2 | 20.0 | 258550 | 5.3 | 20.2 | 393093 | 5.3 | 19.4 | 235891 | 5.4 | 20.6 | 165549 | 5.5 | 19.0 | 211772 | 5.6 | 20.1 |
| 89745 | 5.2 | 18.6 | 37075 | 5.3 | 18.3 | 91705 | 5.3 | 19.1 | 414174 | 5.4 | 20.8 | 294331 | 5.5 | 20.5 | 47172 | 5.6 | 19.0 |
| 188264 | 5.2 | 20.2 | 97886 | 5.3 | 17.7 | 321643 | 5.3 | 20.8 | 69072 | 5.4 | 18.7 | 32219 | 5.5 | 15.9 | 196774 | 5.6 | 19.6 |
| 539395 | 5.2 | 21.1 | 289976 | 5.3 | 19.3 | 410433 | 5.3 | 20.7 | 270272 | 5.4 | 18.8 | 405467 | 5.5 | 19.5 | 200503 | 5.6 | 18.5 |
| 528933 | 5.2 | 21.2 | 192761 | 5.3 | 19.2 | 199568 | 5.3 | 18.4 | 375828 | 5.4 | 21.1 | 308128 | 5.5 | 18.1 | 459522 | 5.6 | 19.4 |
| 156400 | 5.2 | 19.7 | 502969 | 5.3 | 20.2 | 85238 | 5.3 | 18.5 | 315326 | 5.4 | 19.5 | 346844 | 5.5 | 19.9 | 151917 | 5.6 | 19.0 |
| 524765 | 5.2 | 20.8 | 426638 | 5.3 | 20.8 | 461514 | 5.3 | 20.3 | 308563 | 5.4 | 20.3 | 207635 | 5.5 | 20.0 | 354199 | 5.6 | 20.8 |
| 290146 | 5.2 | 20.8 | 512622 | 5.3 | 20.9 | 53204 | 5.3 | 17.9 | 321198 | 5.4 | 19.4 | 19867 | 5.5 | 17.5 | 6698 | 5.6 | 17.1 |
| 523131 | 5.2 | 20.4 | 317824 | 5.3 | 20.4 | 519556 | 5.3 | 20.0 | 98483 | 5.4 | 19.3 | 503693 | 5.5 | 21.0 | 410440 | 5.6 | 21.2 |
| 246484 | 5.2 | 19.9 | 435271 | 5.3 | 20.8 | 380141 | 5.3 | 19.6 | 519015 | 5.4 | 19.2 | 288863 | 5.5 | 18.8 | 21806 | 5.6 | 16.3 |
| 407886 | 5.2 | 20.6 | 115585 | 5.3 | 17.8 | 301409 | 5.3 | 20.1 | 121474 | 5.4 | 19.3 | 540054 | 5.5 | 20.7 | 488853 | 5.6 | 20.5 |
| 4437 | 5.2 | 15.8 | 504565 | 5.3 | 20.9 | 499895 | 5.3 | 20.3 | 86345 | 5.4 | 18.7 | 497374 | 5.5 | 22.0 | 304679 | 5.6 | 20.3 |
| 352095 | 5.2 | 20.0 | 21222 | 5.3 | 17.5 | 6753 | 5.3 | 15.0 | 35916 | 5.4 | 18.9 | 416051 | 5.5 | 20.9 | 189175 | 5.6 | 18.3 |
| 302061 | 5.2 | 18.5 | 494328 | 5.3 | 19.9 | 111720 | 5.3 | 19.2 | 6683 | 5.4 | 17.4 | 229752 | 5.5 | 19.3 | 318530 | 5.6 | 19.3 |
| 117492 | 5.2 | 20.0 | 316309 | 5.3 | 19.4 | 405539 | 5.3 | 20.3 | 116902 | 5.4 | 19.3 | 342645 | 5.5 | 19.0 | 305453 | 5.6 | 18.9 |
| 102432 | 5.2 | 19.0 | 266227 | 5.3 | 19.6 | 236200 | 5.3 | 19.5 | 393196 | 5.4 | 21.2 | 200760 | 5.5 | 21.3 | 540547 | 5.6 | 20.5 |
| 206907 | 5.2 | 19.4 | 215149 | 5.3 | 18.3 | 406519 | 5.3 | 20.9 | 288667 | 5.4 | 19.4 | 267544 | 5.5 | 18.6 | 304674 | 5.6 | 21.8 |
| 269677 | 5.2 | 19.7 | 141342 | 5.3 | 20.0 | 533471 | 5.3 | 21.2 | 266424 | 5.4 | 19.6 | 172979 | 5.5 | 18.7 | 99786 | 5.6 | 19.9 |
| 393228 | 5.2 | 20.5 | 207074 | 5.3 | 20.1 | 133384 | 5.3 | 18.4 | 416748 | 5.4 | 20.2 | 58088 | 5.5 | 18.1 | 267290 | 5.6 | 20.4 |
| 527858 | 5.2 | 22.8 | 338663 | 5.3 | 20.2 | 427464 | 5.3 | 21.4 | 438252 | 5.4 | 20.0 | 466514 | 5.5 | 19.5 | 442914 | 5.6 | 20.2 |
| 7713 | 5.2 | 17.7 | 70203 | 5.3 | 18.4 | 119519 | 5.3 | 19.4 | 380907 | 5.4 | 19.9 | 322408 | 5.5 | 19.9 | 13529 | 5.6 | 16.7 |
| 242169 | 5.2 | 19.6 | 100160 | 5.3 | 19.5 | 308186 | 5.3 | 20.4 | 370200 | 5.4 | 20.1 | 174519 | 5.5 | 19.7 | 255503 | 5.6 | 20.1 |
| 81016 | 5.2 | 19.0 | 320649 | 5.3 | 20.0 | 199027 | 5.3 | 19.6 | 138174 | 5.4 | 19.4 | 190033 | 5.5 | 18.5 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 359930 | 5.6 | 19.9 | 522913 | 5.7 | 20.9 | 64379 | 5.8 | 19.8 | 125011 | 5.8 | 18.8 | 505212 | 5.9 | 21.0 | 203729 | 5.9 | 19.4 |
| 98396 | 5.6 | 17.5 | 513030 | 5.7 | 19.5 | 307596 | 5.8 | 17.7 | 365146 | 5.8 | 21.2 | 503061 | 5.9 | 20.7 | 476369 | 5.9 | 21.5 |
| 417521 | 5.6 | 19.8 | 334907 | 5.7 | 19.7 | 299324 | 5.8 | 20.6 | 47415 | 5.8 | 18.3 | 175363 | 5.9 | 18.9 | 105738 | 5.9 | 19.3 |
| 434819 | 5.6 | 19.9 | 140934 | 5.7 | 21.2 | 512565 | 5.8 | 21.3 | 305386 | 5.8 | 21.7 | 287796 | 5.9 | 19.8 | 431930 | 5.9 | 20.0 |
| 159265 | 5.6 | 20.6 | 386559 | 5.7 | 20.2 | 299734 | 5.8 | 20.2 | 241909 | 5.8 | 19.2 | 283467 | 5.9 | 18.7 | 266341 | 5.9 | 20.5 |
| 291746 | 5.6 | 19.8 | 188062 | 5.7 | 18.9 | 66352 | 5.8 | 18.6 | 356349 | 5.8 | 20.8 | 255243 | 5.9 | 19.8 | 510822 | 5.9 | 20.2 |
| 146148 | 5.6 | 18.5 | 290770 | 5.7 | 19.8 | 81940 | 5.8 | 18.5 | 118363 | 5.8 | 19.3 | 397126 | 5.9 | 19.3 | 216643 | 5.9 | 19.1 |
| 96490 | 5.6 | 18.9 | 607 | 5.7 | 13.9 | 522717 | 5.8 | 21.0 | 781 | 5.8 | 13.3 | 423782 | 5.9 | 20.5 | 431023 | 5.9 | 21.5 |
| 188821 | 5.6 | 19.9 | 186325 | 5.7 | 21.0 | 105755 | 5.8 | 19.2 | 179432 | 5.8 | 19.8 | 196856 | 5.9 | 19.0 | 195409 | 5.9 | 18.9 |
| 450447 | 5.6 | 20.7 | 56438 | 5.7 | 17.2 | 456090 | 5.8 | 21.7 | 475963 | 5.8 | 20.9 | 535216 | 5.9 | 21.1 | 16476 | 5.9 | 15.6 |
| 309803 | 5.6 | 20.7 | 62333 | 5.7 | 18.8 | 97326 | 5.8 | 18.7 | 228398 | 5.8 | 19.9 | 292785 | 5.9 | 20.0 | 374504 | 5.9 | 20.8 |
| 115253 | 5.6 | 19.0 | 301288 | 5.7 | 18.7 | 202835 | 5.8 | 20.8 | 101709 | 5.8 | 20.0 | 350946 | 5.9 | 19.1 | 526114 | 5.9 | 20.3 |
| 278879 | 5.6 | 19.7 | 255135 | 5.7 | 19.6 | 233702 | 5.8 | 20.2 | 177113 | 5.8 | 18.8 | 501253 | 5.9 | 21.0 | 330058 | 5.9 | 19.2 |
| 396037 | 5.6 | 21.3 | 394734 | 5.7 | 20.8 | 66250 | 5.8 | 18.8 | 172047 | 5.8 | 20.1 | 499134 | 5.9 | 19.6 | 379633 | 5.9 | 19.8 |
| 360587 | 5.6 | 19.0 | 524792 | 5.7 | 20.2 | 335546 | 5.8 | 20.1 | 498545 | 5.8 | 20.6 | 470 | 5.9 | 13.0 | 523014 | 5.9 | 21.0 |
| 156476 | 5.6 | 18.5 | 123533 | 5.7 | 18.2 | 6231 | 5.8 | 17.1 | 146777 | 5.8 | 20.8 | 519035 | 5.9 | 19.4 | 494380 | 5.9 | 20.1 |
| 501204 | 5.6 | 21.3 | 470133 | 5.7 | 20.7 | 474897 | 5.8 | 21.2 | 260710 | 5.8 | 18.8 | 160174 | 5.9 | 20.8 | 371651 | 5.9 | 20.5 |
| 283247 | 5.6 | 21.0 | 106498 | 5.7 | 19.8 | 451929 | 5.8 | 20.3 | 81257 | 5.8 | 17.5 | 505592 | 5.9 | 21.3 | 540418 | 5.9 | 20.1 |
| 457044 | 5.6 | 20.2 | 228512 | 5.7 | 19.7 | 425235 | 5.8 | 21.8 | 196299 | 5.9 | 20.5 | 128564 | 5.9 | 18.7 | 326695 | 5.9 | 19.6 |
| 527904 | 5.6 | 21.6 | 169915 | 5.7 | 19.7 | 357122 | 5.8 | 20.7 | 370157 | 5.9 | 21.3 | 185577 | 5.9 | 20.8 | 392131 | 5.9 | 21.0 |
| 284622 | 5.6 | 20.4 | 478375 | 5.7 | 20.0 | 279793 | 5.8 | 19.3 | 235213 | 5.9 | 19.2 | 102305 | 5.9 | 18.6 | 45969 | 5.9 | 17.8 |
| 147757 | 5.6 | 20.1 | 322409 | 5.7 | 19.1 | 398539 | 5.8 | 20.6 | 382477 | 5.9 | 18.9 | 73359 | 5.9 | 18.1 | 372544 | 5.9 | 19.3 |
| 381471 | 5.6 | 19.4 | 13817 | 5.7 | 17.1 | 326969 | 5.8 | 18.4 | 284121 | 5.9 | 20.4 | 472483 | 5.9 | 21.0 | 300890 | 5.9 | 20.0 |
| 138146 | 5.6 | 20.5 | 131844 | 5.7 | 19.6 | 238142 | 5.8 | 18.9 | 240306 | 5.9 | 20.5 | 353717 | 5.9 | 21.0 | 58896 | 5.9 | 18.0 |
| 5680 | 5.6 | 17.1 | 344524 | 5.7 | 20.1 | 55183 | 5.8 | 16.4 | 519512 | 5.9 | 20.8 | 284832 | 5.9 | 20.1 | 8144 | 5.9 | 17.4 |
| 21660 | 5.6 | 18.6 | 349030 | 5.7 | 21.0 | 360572 | 5.8 | 19.1 | 307513 | 5.9 | 19.7 | 521138 | 5.9 | 19.4 | 276581 | 6.0 | 19.6 |
| 307442 | 5.6 | 18.8 | 507518 | 5.7 | 22.2 | 453854 | 5.8 | 21.6 | 268991 | 5.9 | 19.8 | 22818 | 5.9 | 16.4 | 413837 | 6.0 | 20.8 |
| 426572 | 5.6 | 19.5 | 168500 | 5.7 | 17.8 | 397066 | 5.8 | 20.9 | 243621 | 5.9 | 19.8 | 365897 | 5.9 | 20.3 | 1322 | 6.0 | 14.9 |
| 540438 | 5.6 | 20.3 | 296066 | 5.7 | 19.6 | 144835 | 5.8 | 19.3 | 12989 | 5.9 | 18.8 | 333168 | 5.9 | 20.2 | 83658 | 6.0 | 19.2 |
| 306452 | 5.6 | 20.5 | 122768 | 5.7 | 19.0 | 121048 | 5.8 | 18.1 | 356799 | 5.9 | 21.1 | 256139 | 5.9 | 19.4 | 238664 | 6.0 | 20.1 |
| 458131 | 5.6 | 20.1 | 30620 | 5.7 | 17.7 | 410311 | 5.8 | 21.3 | 388782 | 5.9 | 20.7 | 539620 | 5.9 | 19.9 | 949 | 6.0 | 13.8 |
| 242161 | 5.6 | 18.9 | 370128 | 5.7 | 19.3 | 147398 | 5.8 | 18.7 | 349391 | 5.9 | 19.8 | 375832 | 5.9 | 19.6 | 174565 | 6.0 | 19.6 |
| 250942 | 5.6 | 20.4 | 244991 | 5.7 | 19.9 | 499384 | 5.8 | 21.4 | 458791 | 5.9 | 20.7 | 533922 | 5.9 | 20.4 | 409048 | 6.0 | 20.8 |
| 134732 | 5.6 | 19.4 | 522991 | 5.7 | 21.2 | 215573 | 5.8 | 19.8 | 343626 | 5.9 | 20.9 | 41511 | 5.9 | 18.0 | 425799 | 6.0 | 21.0 |
| 290324 | 5.6 | 20.1 | 105785 | 5.7 | 19.4 | 300050 | 5.8 | 19.6 | 351981 | 5.9 | 21.9 | 370940 | 5.9 | 20.4 | 475008 | 6.0 | 21.0 |
| 128912 | 5.6 | 19.8 | 6283 | 5.7 | 18.1 | 103287 | 5.8 | 18.6 | 516641 | 5.9 | 23.7 | 179498 | 5.9 | 20.7 | 238014 | 6.0 | 20.1 |
| 353299 | 5.6 | 21.2 | 24331 | 5.7 | 17.8 | 477221 | 5.8 | 19.5 | 412658 | 5.9 | 20.5 | 296343 | 5.9 | 19.1 | 393560 | 6.0 | 21.0 |
| 419537 | 5.6 | 20.2 | 478241 | 5.7 | 20.2 | 423619 | 5.8 | 20.1 | 302314 | 5.9 | 20.8 | 157963 | 5.9 | 19.4 | 477974 | 6.0 | 19.7 |
| 8215 | 5.7 | 16.9 | 530287 | 5.7 | 21.0 | 491131 | 5.8 | 20.3 | 2953 | 5.9 | 15.4 | 352030 | 5.9 | 21.2 | 68383 | 6.0 | 19.0 |
| 431816 | 5.7 | 20.8 | 341533 | 5.7 | 21.2 | 469874 | 5.8 | 20.2 | 501066 | 5.9 | 21.3 | 334887 | 5.9 | 20.3 | 140378 | 6.0 | 19.8 |
| 297681 | 5.7 | 20.8 | 540874 | 5.7 | 21.1 | 241064 | 5.8 | 19.1 | 447484 | 5.9 | 20.3 | 63822 | 5.9 | 18.2 | 437550 | 6.0 | 21.1 |
| 257799 | 5.7 | 20.8 | 514316 | 5.7 | 20.1 | 143491 | 5.8 | 20.0 | 243279 | 5.9 | 19.5 | 89225 | 5.9 | 19.7 | 246258 | 6.0 | 18.2 |
| 138818 | 5.7 | 20.4 | 181742 | 5.7 | 20.1 | 145457 | 5.8 | 18.8 | 490769 | 5.9 | 21.1 | 477621 | 5.9 | 19.9 | 31221 | 6.0 | 19.5 |
| 301555 | 5.7 | 19.3 | 498638 | 5.7 | 20.1 | 371683 | 5.8 | 20.5 | 404212 | 5.9 | 19.3 | 462180 | 5.9 | 18.8 | 162620 | 6.0 | 19.5 |
| 247859 | 5.7 | 18.7 | 193227 | 5.7 | 19.4 | 385177 | 5.8 | 18.9 | 153106 | 5.9 | 19.6 | 749 | 5.9 | 13.6 | 207317 | 6.0 | 20.5 |
| 266357 | 5.7 | 20.0 | 285634 | 5.7 | 18.7 | 56072 | 5.8 | 17.7 | 360150 | 5.9 | 20.4 | 276034 | 5.9 | 21.4 | 19254 | 6.0 | 17.0 |
| 347792 | 5.7 | 22.1 | 303883 | 5.7 | 20.5 | 112336 | 5.8 | 18.5 | 534840 | 5.9 | 21.6 | 395600 | 5.9 | 21.6 | 469468 | 6.0 | 20.3 |
| 112047 | 5.7 | 18.6 | 201197 | 5.7 | 19.3 | 483544 | 5.8 | 19.9 | 126816 | 5.9 | 19.1 | 255627 | 5.9 | 19.0 | 409163 | 6.0 | 20.5 |
| 200774 | 5.7 | 19.2 | 412378 | 5.7 | 19.5 | 56079 | 5.8 | 17.8 | 499316 | 5.9 | 21.0 | 320646 | 5.9 | 20.8 | 138842 | 6.0 | 18.6 |
| 409818 | 5.7 | 19.5 | 227450 | 5.7 | 20.8 | 300128 | 5.8 | 20.4 | 217629 | 5.9 | 19.5 | 408127 | 5.9 | 19.5 | 425105 | 6.0 | 21.2 |
| 236234 | 5.7 | 20.4 | 72522 | 5.7 | 18.7 | 59165 | 5.8 | 18.4 | 200216 | 5.9 | 19.7 | 506495 | 5.9 | 20.7 | 300930 | 6.0 | 20.3 |
| 422115 | 5.7 | 21.5 | 45565 | 5.7 | 17.8 | 434032 | 5.8 | 20.1 | 342858 | 5.9 | 21.3 | 131018 | 5.9 | 19.9 | 342760 | 6.0 | 20.0 |
| 276545 | 5.7 | 19.6 | 215356 | 5.7 | 20.5 | 150305 | 5.8 | 18.9 | 41126 | 5.9 | 19.9 | 338283 | 5.9 | 20.0 | 313145 | 6.0 | 19.1 |
| 117405 | 5.7 | 19.8 | 149172 | 5.7 | 20.2 | 242648 | 5.8 | 19.8 | 123084 | 5.9 | 19.1 | 365878 | 5.9 | 21.2 | 153818 | 6.0 | 20.8 |
| 274376 | 5.7 | 20.6 | 205774 | 5.7 | 20.1 | 130956 | 5.8 | 19.9 | 506986 | 5.9 | 19.6 | 256651 | 5.9 | 21.1 | 291878 | 6.0 | 18.8 |
| 34716 | 5.7 | 18.3 | 95334 | 5.7 | 18.8 | 141008 | 5.8 | 20.3 | 37124 | 5.9 | 19.5 | 406836 | 5.9 | 20.4 | 214860 | 6.0 | 19.2 |
| 240002 | 5.7 | 20.1 | 57349 | 5.7 | 17.8 | 350194 | 5.8 | 19.8 | 87525 | 5.9 | 18.3 | 101806 | 5.9 | 18.9 | 320229 | 6.0 | 20.1 |
| 332592 | 5.7 | 18.7 | 506880 | 5.7 | 21.2 | 36730 | 5.8 | 17.9 | 58433 | 5.9 | 18.1 | 528111 | 5.9 | 22.6 | 250550 | 6.0 | 19.4 |
| 186571 | 5.7 | 19.5 | 214856 | 5.7 | 19.5 | 123581 | 5.8 | 18.8 | 419655 | 5.9 | 21.2 | 242950 | 5.9 | 19.9 | 108915 | 6.0 | 18.4 |
| 244764 | 5.7 | 18.4 | 286587 | 5.7 | 20.6 | 519931 | 5.8 | 20.2 | 526532 | 5.9 | 21.4 | 215887 | 5.9 | 21.1 | 304079 | 6.0 | 19.8 |
| 468447 | 5.7 | 22.0 | 287567 | 5.7 | 20.0 | 12407 | 5.8 | 17.1 | 497311 | 5.9 | 20.6 | 538982 | 5.9 | 19.4 | 214202 | 6.0 | 19.6 |
| 121483 | 5.7 | 18.4 | 46502 | 5.7 | 17.7 | 305415 | 5.8 | 20.5 | 488387 | 5.9 | 19.5 | 305478 | 5.9 | 19.6 | 347762 | 6.0 | 20.2 |
| 439442 | 5.7 | 21.0 | 325147 | 5.7 | 21.2 | 61880 | 5.8 | 19.3 | 216238 | 5.9 | 20.0 | 3349 | 5.9 | 16.3 | 310543 | 6.0 | 20.9 |
| 126448 | 5.7 | 19.8 | 239905 | 5.8 | 17.9 | 37019 | 5.8 | 18.6 | 412248 | 5.9 | 20.0 | 507855 | 5.9 | 20.1 | 373565 | 6.0 | 20.2 |
| 336440 | 5.7 | 19.9 | 18946 | 5.8 | 17.8 | 250545 | 5.8 | 19.8 | 11782 | 5.9 | 16.6 | 15182 | 5.9 | 17.1 | 63905 | 6.0 | 19.0 |
| 216635 | 5.7 | 20.2 | 524962 | 5.8 | 19.6 | 540757 | 5.8 | 21.0 | 187314 | 5.9 | 20.7 | 282308 | 5.9 | 19.7 | 149514 | 6.0 | 19.4 |
| 255858 | 5.7 | 20.9 | 224467 | 5.8 | 19.2 | 249235 | 5.8 | 20.3 | 394692 | 5.9 | 21.0 | 10729 | 5.9 | 16.1 | 504401 | 6.0 | 22.3 |
| 451402 | 5.7 | 19.6 | 97238 | 5.8 | 19.4 | 161014 | 5.8 | 18.8 | 386471 | 5.9 | 20.3 | 323717 | 5.9 | 20.2 | 393975 | 6.0 | 21.0 |
| 118416 | 5.7 | 19.8 | 533315 | 5.8 | 19.9 | 37796 | 5.8 | 18.4 | 479192 | 5.9 | 20.6 | 418381 | 5.9 | 20.4 | 147803 | 6.0 | 18.8 |
| 372881 | 5.7 | 20.0 | 536290 | 5.8 | 21.4 | 118812 | 5.8 | 20.0 | 70294 | 5.9 | 18.3 | 293296 | 5.9 | 20.7 | 383853 | 6.0 | 18.6 |
| 250821 | 5.7 | 19.7 | 497449 | 5.8 | 20.1 | 392135 | 5.8 | 19.6 | 248152 | 5.9 | 20.1 | 382775 | 5.9 | 19.5 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-------|------|--------|-----|------|
| 297728 | 6.0 | 20.3 | 396312 | 6.1 | 20.4 | 473974 | 6.2 | 19.1 | 296375 | 6.3 | 19.6 | 240878 | 6.4 | 17.9 | 290864 | 6.5 | 19.8 |
| 405435 | 6.0 | 20.8 | 417814 | 6.1 | 20.2 | 154320 | 6.2 | 18.9 | 505356 | 6.3 | 21.0 | 261125 | 6.4 | 20.3 | 509494 | 6.5 | 20.5 |
| 384795 | 6.0 | 20.6 | 252921 | 6.1 | 18.4 | 507568 | 6.2 | 20.9 | 477116 | 6.3 | 20.2 | 196321 | 6.4 | 20.0 | 281623 | 6.5 | 20.0 |
| 474319 | 6.0 | 21.9 | 28339 | 6.1 | 17.2 | 219712 | 6.2 | 19.1 | 30650 | 6.3 | 17.6 | 528982 | 6.4 | 19.5 | 177663 | 6.5 | 19.8 |
| 66872 | 6.1 | 17.5 | 170251 | 6.1 | 19.3 | 352706 | 6.2 | 21.0 | 80540 | 6.3 | 18.5 | 377157 | 6.4 | 20.4 | 281816 | 6.5 | 19.7 |
| 395654 | 6.1 | 20.3 | 463525 | 6.1 | 20.5 | 62375 | 6.2 | 18.5 | 308441 | 6.3 | 19.5 | 532679 | 6.4 | 20.8 | 501153 | 6.5 | 21.0 |
| 530256 | 6.1 | 21.1 | 377799 | 6.1 | 19.8 | 500272 | 6.2 | 21.0 | 71286 | 6.3 | 18.4 | 369906 | 6.4 | 20.0 | 135503 | 6.5 | 17.9 |
| 219589 | 6.1 | 18.6 | 359012 | 6.1 | 20.7 | 542766 | 6.2 | 21.5 | 210988 | 6.3 | 19.6 | 239445 | 6.4 | 19.5 | 369908 | 6.5 | 19.2 |
| 213611 | 6.1 | 19.1 | 489573 | 6.1 | 19.2 | 171592 | 6.2 | 20.2 | 266422 | 6.3 | 20.9 | 464716 | 6.4 | 19.6 | 529572 | 6.5 | 20.0 |
| 533893 | 6.1 | 20.2 | 20717 | 6.1 | 17.2 | 389270 | 6.2 | 19.7 | 180536 | 6.3 | 19.2 | 236150 | 6.4 | 19.9 | 471226 | 6.5 | 21.2 |
| 387446 | 6.1 | 20.2 | 714 | 6.1 | 13.0 | 86339 | 6.2 | 18.1 | 122531 | 6.3 | 18.4 | 527763 | 6.4 | 21.1 | 540472 | 6.5 | 20.5 |
| 140513 | 6.1 | 19.1 | 145209 | 6.1 | 18.3 | 42690 | 6.2 | 17.9 | 293125 | 6.3 | 18.6 | 305773 | 6.4 | 21.0 | 251714 | 6.5 | 20.5 |
| 212653 | 6.1 | 18.6 | 199609 | 6.1 | 20.1 | 433471 | 6.2 | 20.8 | 70694 | 6.3 | 18.2 | 386568 | 6.4 | 20.2 | 363778 | 6.5 | 20.8 |
| 30996 | 6.1 | 18.5 | 380328 | 6.1 | 18.5 | 209367 | 6.2 | 19.0 | 116504 | 6.3 | 18.5 | 538649 | 6.4 | 20.5 | 267320 | 6.5 | 19.6 |
| 539547 | 6.1 | 20.2 | 468601 | 6.1 | 21.4 | 11465 | 6.2 | 17.7 | 29503 | 6.3 | 18.4 | 2247 | 6.4 | 16.5 | 64303 | 6.5 | 18.4 |
| 73226 | 6.1 | 18.7 | 259299 | 6.1 | 20.6 | 119388 | 6.2 | 19.4 | 148086 | 6.3 | 20.1 | 184099 | 6.4 | 20.2 | 522553 | 6.5 | 19.6 |
| 394673 | 6.1 | 21.1 | 347725 | 6.1 | 21.1 | 232323 | 6.2 | 18.2 | 338152 | 6.3 | 20.0 | 399686 | 6.4 | 19.5 | 440946 | 6.5 | 20.6 |
| 522849 | 6.1 | 20.8 | 525384 | 6.1 | 20.4 | 533373 | 6.2 | 21.1 | 299262 | 6.3 | 19.3 | 55163 | 6.4 | 18.6 | 351478 | 6.5 | 19.5 |
| 38559 | 6.1 | 17.8 | 244768 | 6.2 | 18.6 | 168828 | 6.2 | 18.6 | 394179 | 6.3 | 20.9 | 102304 | 6.4 | 18.2 | 152460 | 6.5 | 19.8 |
| 228139 | 6.1 | 19.4 | 374335 | 6.2 | 20.3 | 181590 | 6.2 | 19.0 | 79473 | 6.3 | 18.4 | 437374 | 6.4 | 20.2 | 390276 | 6.5 | 19.8 |
| 385011 | 6.1 | 20.5 | 278627 | 6.2 | 20.1 | 373497 | 6.2 | 21.3 | 107460 | 6.3 | 19.3 | 362416 | 6.4 | 19.2 | 104448 | 6.5 | 19.0 |
| 34311 | 6.1 | 18.8 | 216765 | 6.2 | 19.6 | 503751 | 6.2 | 20.6 | 302368 | 6.3 | 21.6 | 207620 | 6.4 | 20.0 | 57777 | 6.5 | 18.8 |
| 525295 | 6.1 | 20.2 | 531939 | 6.2 | 20.5 | 228674 | 6.2 | 19.9 | 420504 | 6.3 | 20.1 | 294951 | 6.4 | 20.1 | 298901 | 6.5 | 20.5 |
| 62854 | 6.1 | 19.5 | 151422 | 6.2 | 19.3 | 357231 | 6.2 | 20.0 | 111715 | 6.3 | 18.7 | 86669 | 6.4 | 19.7 | 292670 | 6.5 | 20.6 |
| 491184 | 6.1 | 20.9 | 389195 | 6.2 | 19.0 | 519086 | 6.2 | 20.1 | 464291 | 6.3 | 21.4 | 330069 | 6.4 | 20.1 | 107144 | 6.5 | 20.0 |
| 47983 | 6.1 | 18.0 | 275035 | 6.2 | 20.2 | 470243 | 6.2 | 19.9 | 210337 | 6.3 | 18.7 | 525903 | 6.4 | 21.3 | 299790 | 6.5 | 20.9 |
| 123463 | 6.1 | 19.2 | 278362 | 6.2 | 20.2 | 376957 | 6.2 | 20.6 | 124714 | 6.3 | 18.3 | 305535 | 6.4 | 21.1 | 297765 | 6.5 | 20.4 |
| 428685 | 6.1 | 20.1 | 281787 | 6.2 | 20.3 | 51089 | 6.2 | 18.9 | 150911 | 6.3 | 17.7 | 382349 | 6.4 | 20.4 | 144530 | 6.5 | 18.6 |
| 196871 | 6.1 | 19.6 | 382861 | 6.2 | 20.6 | 128670 | 6.2 | 19.0 | 123573 | 6.3 | 18.3 | 530004 | 6.4 | 22.0 | 222693 | 6.5 | 20.2 |
| 207679 | 6.1 | 19.3 | 165156 | 6.2 | 18.3 | 211468 | 6.2 | 19.7 | 151108 | 6.3 | 20.8 | 192830 | 6.4 | 19.1 | 240662 | 6.5 | 20.3 |
| 70533 | 6.1 | 18.5 | 18520 | 6.2 | 19.5 | 7138 | 6.2 | 16.7 | 106206 | 6.3 | 17.2 | 164980 | 6.4 | 19.1 | 411685 | 6.5 | 20.7 |
| 184723 | 6.1 | 19.2 | 20573 | 6.2 | 18.0 | 304923 | 6.2 | 19.1 | 88079 | 6.3 | 19.9 | 270382 | 6.4 | 21.6 | 249540 | 6.5 | 20.3 |
| 357770 | 6.1 | 22.0 | 364599 | 6.2 | 21.3 | 536361 | 6.2 | 21.0 | 300058 | 6.3 | 19.6 | 267384 | 6.4 | 20.7 | 192654 | 6.5 | 18.8 |
| 54971 | 6.1 | 17.7 | 182426 | 6.2 | 19.5 | 463310 | 6.2 | 20.0 | 382141 | 6.3 | 20.1 | 300081 | 6.4 | 19.4 | 122010 | 6.5 | 17.6 |
| 152953 | 6.1 | 19.9 | 309788 | 6.2 | 20.6 | 152852 | 6.2 | 20.2 | 408782 | 6.3 | 20.0 | 378879 | 6.4 | 20.9 | 336480 | 6.5 | 19.9 |
| 385601 | 6.1 | 20.8 | 220337 | 6.2 | 21.0 | 208691 | 6.2 | 19.1 | 56208 | 6.3 | 17.6 | 206874 | 6.4 | 19.4 | 242734 | 6.5 | 20.7 |
| 138944 | 6.1 | 18.8 | 507562 | 6.2 | 21.1 | 339476 | 6.2 | 19.6 | 235205 | 6.3 | 19.1 | 215857 | 6.4 | 19.8 | 15071 | 6.5 | 16.9 |
| 72574 | 6.1 | 18.2 | 178736 | 6.2 | 19.2 | 246099 | 6.2 | 20.3 | 265799 | 6.3 | 20.0 | 139896 | 6.4 | 18.3 | 435811 | 6.5 | 20.3 |
| 394045 | 6.1 | 20.1 | 186177 | 6.2 | 18.8 | 468766 | 6.2 | 19.6 | 404188 | 6.3 | 20.4 | 384498 | 6.4 | 20.8 | 121232 | 6.5 | 19.2 |
| 98802 | 6.1 | 19.0 | 315768 | 6.2 | 20.7 | 371065 | 6.2 | 21.7 | 431989 | 6.3 | 20.0 | 414265 | 6.4 | 19.7 | 39870 | 6.5 | 18.1 |
| 410242 | 6.1 | 21.4 | 137709 | 6.2 | 18.6 | 126907 | 6.2 | 18.9 | 462219 | 6.3 | 19.8 | 209402 | 6.4 | 18.9 | 81760 | 6.5 | 19.1 |
| 524886 | 6.1 | 22.2 | 33159 | 6.2 | 17.6 | 536889 | 6.2 | 21.9 | 305996 | 6.3 | 19.5 | 166157 | 6.4 | 19.9 | 3700 | 6.5 | 16.2 |
| 265016 | 6.1 | 20.8 | 520005 | 6.2 | 21.2 | 252964 | 6.2 | 18.9 | 353496 | 6.3 | 20.5 | 478013 | 6.4 | 20.3 | 276845 | 6.5 | 19.6 |
| 415062 | 6.1 | 20.4 | 353707 | 6.2 | 20.0 | 390507 | 6.3 | 19.9 | 318127 | 6.3 | 19.1 | 287547 | 6.4 | 19.7 | 125953 | 6.5 | 19.1 |
| 504001 | 6.1 | 20.7 | 469437 | 6.2 | 21.9 | 58710 | 6.3 | 19.3 | 64386 | 6.3 | 21.2 | 474940 | 6.4 | 20.6 | 65061 | 6.5 | 19.5 |
| 291114 | 6.1 | 21.0 | 131736 | 6.2 | 19.3 | 214195 | 6.3 | 20.6 | 162041 | 6.3 | 18.0 | 293248 | 6.4 | 19.0 | 217895 | 6.5 | 18.3 |
| 110183 | 6.1 | 20.3 | 8327 | 6.2 | 17.2 | 154944 | 6.3 | 18.3 | 304618 | 6.3 | 20.6 | 354721 | 6.4 | 19.8 | 408237 | 6.5 | 20.6 |
| 108233 | 6.1 | 20.3 | 227427 | 6.2 | 18.9 | 372435 | 6.3 | 19.6 | 187730 | 6.3 | 21.0 | 524758 | 6.4 | 22.0 | 354190 | 6.5 | 20.7 |
| 139336 | 6.1 | 18.9 | 501220 | 6.2 | 20.6 | 219634 | 6.3 | 19.7 | 334790 | 6.3 | 18.9 | 323738 | 6.4 | 19.3 | 375937 | 6.5 | 20.2 |
| 21617 | 6.1 | 16.9 | 205730 | 6.2 | 19.8 | 529590 | 6.3 | 21.8 | 228059 | 6.3 | 19.7 | 271671 | 6.4 | 19.7 | 219009 | 6.5 | 19.2 |
| 522317 | 6.1 | 19.5 | 25931 | 6.2 | 18.6 | 85189 | 6.3 | 16.8 | 1335 | 6.3 | 14.7 | 11306 | 6.4 | 17.1 | 169662 | 6.5 | 18.2 |
| 109832 | 6.1 | 18.3 | 160988 | 6.2 | 19.0 | 470482 | 6.3 | 21.1 | 525840 | 6.3 | 20.3 | 244786 | 6.4 | 19.3 | 96701 | 6.5 | 17.9 |
| 303329 | 6.1 | 19.9 | 61504 | 6.2 | 17.1 | 501345 | 6.3 | 20.5 | 336404 | 6.3 | 20.8 | 32547 | 6.4 | 16.9 | 168453 | 6.5 | 20.1 |
| 61108 | 6.1 | 16.7 | 24023 | 6.2 | 18.0 | 162518 | 6.3 | 18.4 | 176640 | 6.3 | 19.0 | 472306 | 6.4 | 21.0 | 491039 | 6.5 | 19.2 |
| 346235 | 6.1 | 22.1 | 173776 | 6.2 | 19.0 | 536660 | 6.3 | 20.8 | 312578 | 6.3 | 19.8 | 428122 | 6.4 | 19.6 | 416262 | 6.5 | 20.5 |
| 534014 | 6.1 | 20.0 | 325810 | 6.2 | 20.7 | 296393 | 6.3 | 19.7 | 199690 | 6.3 | 20.5 | 7162 | 6.4 | 16.7 | 527996 | 6.5 | 20.7 |
| 394360 | 6.1 | 20.5 | 399700 | 6.2 | 19.6 | 485130 | 6.3 | 20.1 | 280358 | 6.3 | 20.7 | 307595 | 6.4 | 18.7 | 193593 | 6.5 | 19.0 |
| 511599 | 6.1 | 19.8 | 242937 | 6.2 | 20.2 | 318020 | 6.3 | 20.9 | 374341 | 6.3 | 20.8 | 233961 | 6.4 | 19.4 | 423552 | 6.5 | 21.2 |
| 79268 | 6.1 | 19.0 | 408418 | 6.2 | 20.1 | 294345 | 6.3 | 20.8 | 406868 | 6.3 | 20.2 | 469768 | 6.4 | 20.7 | 313783 | 6.5 | 20.7 |
| 520916 | 6.1 | 21.1 | 42635 | 6.2 | 18.8 | 213659 | 6.3 | 19.0 | 305520 | 6.3 | 21.4 | 362775 | 6.4 | 19.3 | 465296 | 6.5 | 20.8 |
| 219610 | 6.1 | 18.2 | 279584 | 6.2 | 20.3 | 320626 | 6.3 | 21.5 | 531920 | 6.3 | 21.6 | 42076 | 6.4 | 18.7 | 55268 | 6.5 | 19.1 |
| 534377 | 6.1 | 21.4 | 473910 | 6.2 | 20.3 | 389295 | 6.3 | 21.2 | 530707 | 6.3 | 21.8 | 106938 | 6.4 | 19.9 | 78937 | 6.5 | 18.2 |
| 469896 | 6.1 | 23.1 | 162553 | 6.2 | 19.3 | 111403 | 6.3 | 18.6 | 160476 | 6.3 | 19.0 | 351489 | 6.4 | 20.5 | 433459 | 6.5 | 19.7 |
| 194066 | 6.1 | 19.5 | 504680 | 6.2 | 23.2 | 132138 | 6.3 | 19.2 | 433913 | 6.3 | 19.9 | 163220 | 6.4 | 20.4 | 472198 | 6.5 | 20.6 |
| 147389 | 6.1 | 18.2 | 176705 | 6.2 | 19.5 | 475097 | 6.3 | 21.7 | 189766 | 6.4 | 18.8 | 118738 | 6.4 | 18.3 | 506469 | 6.5 | 20.5 |
| 99131 | 6.1 | 19.0 | 2026 | 6.2 | 16.5 | 135399 | 6.3 | 18.3 | 536684 | 6.4 | 22.0 | 88292 | 6.4 | 17.3 | 309158 | 6.5 | 20.0 |
| 158416 | 6.1 | 20.4 | 111999 | 6.2 | 17.9 | 436242 | 6.3 | 20.7 | 520055 | 6.4 | 21.0 | 200907 | 6.4 | 19.9 | 278871 | 6.5 | 19.8 |
| 506397 | 6.1 | 19.8 | 381358 | 6.2 | 19.8 | 316306 | 6.3 | 19.4 | 539678 | 6.4 | 20.9 | 83763 | 6.4 | 17.7 | 84173 | 6.5 | 19.2 |
| 110302 | 6.1 | 17.8 | 293233 | 6.2 | 20.4 | 456828 | 6.3 | 21.3 | 334404 | 6.4 | 20.2 | 278391 | 6.4 | 19.0 | 535972 | 6.5 | 20.6 |
| 116927 | 6.1 | 18.1 | 110694 | 6.2 | 19.6 | 102315 | 6.3 | 18.2 | 350827 | 6.4 | 21.0 | 209467 | 6.4 | 20.0 | 62499 | 6.5 | 19.1 |
| 296179 | 6.1 | 20.7 | 275703 | 6.2 | 20.0 | 201899 | 6.3 | 18.7 | 306615 | 6.4 | 18.8 | 206860 | 6.4</ | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 151711 | 6.5 | 20.2 | 249326 | 6.6 | 20.3 | 429620 | 6.7 | 21.3 | 426420 | 6.8 | 20.9 | 259334 | 6.8 | 20.1 | 538311 | 6.9 | 21.1 |
| 112904 | 6.5 | 19.8 | 263654 | 6.6 | 20.3 | 240830 | 6.7 | 18.3 | 188810 | 6.8 | 17.0 | 188270 | 6.8 | 20.0 | 141006 | 6.9 | 19.1 |
| 530651 | 6.5 | 22.5 | 164418 | 6.6 | 19.1 | 477175 | 6.7 | 19.2 | 264645 | 6.8 | 19.3 | 152390 | 6.8 | 17.9 | 356534 | 6.9 | 18.8 |
| 528941 | 6.6 | 21.6 | 413844 | 6.6 | 21.9 | 318780 | 6.7 | 20.4 | 392636 | 6.8 | 21.2 | 48781 | 6.9 | 18.2 | 377863 | 6.9 | 20.6 |
| 286636 | 6.6 | 20.6 | 165027 | 6.6 | 20.1 | 525874 | 6.7 | 20.7 | 506490 | 6.8 | 19.4 | 404819 | 6.9 | 19.8 | 348256 | 6.9 | 19.4 |
| 360896 | 6.6 | 21.7 | 116562 | 6.6 | 19.5 | 333667 | 6.7 | 19.2 | 192112 | 6.8 | 20.0 | 524681 | 6.9 | 19.2 | 501301 | 6.9 | 21.1 |
| 290956 | 6.6 | 19.8 | 267425 | 6.6 | 19.2 | 402531 | 6.7 | 21.3 | 76818 | 6.8 | 15.8 | 318084 | 6.9 | 20.8 | 56563 | 6.9 | 16.8 |
| 28126 | 6.6 | 18.2 | 429565 | 6.6 | 22.1 | 17055 | 6.7 | 18.0 | 475828 | 6.8 | 20.9 | 91352 | 6.9 | 18.1 | 13129 | 6.9 | 17.3 |
| 125324 | 6.6 | 18.9 | 299072 | 6.6 | 19.8 | 254939 | 6.7 | 20.1 | 518816 | 6.8 | 20.6 | 63610 | 6.9 | 18.2 | 107260 | 6.9 | 19.3 |
| 433614 | 6.6 | 20.6 | 184593 | 6.6 | 19.7 | 132028 | 6.7 | 19.7 | 346749 | 6.8 | 20.5 | 397424 | 6.9 | 19.5 | 69804 | 6.9 | 17.8 |
| 16777 | 6.6 | 18.7 | 110261 | 6.6 | 19.8 | 525243 | 6.7 | 21.6 | 10762 | 6.8 | 17.3 | 185649 | 6.9 | 20.5 | 61656 | 6.9 | 18.5 |
| 120886 | 6.6 | 19.0 | 276108 | 6.6 | 20.2 | 149144 | 6.7 | 19.5 | 41670 | 6.8 | 18.4 | 160752 | 6.9 | 19.5 | 452086 | 6.9 | 19.7 |
| 378366 | 6.6 | 19.6 | 340831 | 6.6 | 20.4 | 348888 | 6.7 | 21.4 | 123053 | 6.8 | 20.0 | 479164 | 6.9 | 20.5 | 486935 | 6.9 | 20.4 |
| 385538 | 6.6 | 20.6 | 191685 | 6.6 | 18.9 | 304061 | 6.7 | 19.5 | 265324 | 6.8 | 18.1 | 465159 | 6.9 | 21.4 | 127623 | 6.9 | 19.2 |
| 497403 | 6.6 | 20.6 | 335791 | 6.6 | 19.7 | 225073 | 6.7 | 19.5 | 12490 | 6.8 | 18.8 | 138903 | 6.9 | 19.8 | 539314 | 6.9 | 20.8 |
| 272612 | 6.6 | 21.0 | 342944 | 6.6 | 21.3 | 245131 | 6.7 | 19.2 | 434319 | 6.8 | 20.4 | 311411 | 6.9 | 19.5 | 352593 | 6.9 | 20.9 |
| 148450 | 6.6 | 18.3 | 126754 | 6.6 | 19.2 | 458854 | 6.7 | 21.3 | 503123 | 6.8 | 19.8 | 243177 | 6.9 | 18.3 | 90469 | 6.9 | 19.9 |
| 494834 | 6.6 | 19.1 | 72371 | 6.6 | 18.9 | 112991 | 6.7 | 18.5 | 53138 | 6.8 | 19.2 | 477084 | 6.9 | 20.2 | 363415 | 6.9 | 18.9 |
| 25868 | 6.6 | 16.5 | 95785 | 6.6 | 19.4 | 536269 | 6.7 | 20.8 | 414835 | 6.8 | 21.3 | 475620 | 6.9 | 21.8 | 466669 | 6.9 | 20.3 |
| 242820 | 6.6 | 18.3 | 327407 | 6.6 | 18.8 | 105558 | 6.7 | 18.8 | 42103 | 6.8 | 18.8 | 66852 | 6.9 | 18.1 | 445259 | 6.9 | 20.1 |
| 385500 | 6.6 | 19.7 | 83151 | 6.6 | 19.0 | 69878 | 6.7 | 19.0 | 415166 | 6.8 | 21.4 | 394291 | 6.9 | 20.7 | 538328 | 6.9 | 20.8 |
| 367122 | 6.6 | 19.3 | 471439 | 6.6 | 20.2 | 433836 | 6.7 | 19.2 | 338949 | 6.8 | 20.8 | 311991 | 6.9 | 19.7 | 418327 | 6.9 | 20.3 |
| 162533 | 6.6 | 18.4 | 137287 | 6.6 | 18.7 | 417726 | 6.7 | 20.1 | 436636 | 6.8 | 20.1 | 420382 | 6.9 | 20.5 | 280398 | 6.9 | 20.1 |
| 143552 | 6.6 | 19.9 | 258688 | 6.7 | 20.1 | 131213 | 6.7 | 19.2 | 52311 | 6.8 | 19.1 | 19588 | 6.9 | 18.1 | 235219 | 6.9 | 19.1 |
| 47256 | 6.6 | 19.1 | 241191 | 6.7 | 20.7 | 126042 | 6.7 | 18.5 | 285244 | 6.8 | 20.6 | 316773 | 6.9 | 19.1 | 81752 | 6.9 | 18.1 |
| 386197 | 6.6 | 21.3 | 316595 | 6.7 | 21.3 | 502771 | 6.7 | 20.5 | 200883 | 6.8 | 19.6 | 535078 | 6.9 | 21.5 | 506352 | 6.9 | 19.0 |
| 538660 | 6.6 | 22.0 | 474926 | 6.7 | 20.5 | 519932 | 6.7 | 20.9 | 151764 | 6.8 | 19.1 | 519720 | 6.9 | 22.0 | 379367 | 6.9 | 20.5 |
| 394762 | 6.6 | 22.1 | 404616 | 6.7 | 20.9 | 39380 | 6.7 | 18.9 | 94446 | 6.8 | 19.5 | 157957 | 6.9 | 19.4 | 425647 | 6.9 | 19.5 |
| 429841 | 6.6 | 20.8 | 396075 | 6.7 | 20.6 | 56880 | 6.7 | 17.8 | 430284 | 6.8 | 21.2 | 432979 | 6.9 | 20.5 | 253470 | 6.9 | 19.1 |
| 339474 | 6.6 | 19.9 | 223424 | 6.7 | 19.0 | 294367 | 6.7 | 21.2 | 57234 | 6.8 | 17.9 | 118419 | 6.9 | 19.4 | 457725 | 6.9 | 20.5 |
| 537848 | 6.6 | 20.6 | 302247 | 6.7 | 19.8 | 230252 | 6.7 | 19.6 | 543636 | 6.8 | 20.3 | 470154 | 6.9 | 20.9 | 118478 | 6.9 | 19.0 |
| 219564 | 6.6 | 20.2 | 277698 | 6.7 | 19.7 | 495351 | 6.7 | 20.0 | 151778 | 6.8 | 20.1 | 38348 | 6.9 | 17.5 | 81061 | 6.9 | 17.8 |
| 131899 | 6.6 | 20.9 | 298851 | 6.7 | 20.2 | 526885 | 6.7 | 22.0 | 4598 | 6.8 | 16.3 | 253839 | 6.9 | 19.2 | 160100 | 6.9 | 17.2 |
| 523722 | 6.6 | 21.2 | 136517 | 6.7 | 18.9 | 146502 | 6.7 | 19.3 | 333939 | 6.8 | 19.8 | 38173 | 6.9 | 16.8 | 492267 | 6.9 | 20.9 |
| 242301 | 6.6 | 19.6 | 166146 | 6.7 | 19.3 | 303899 | 6.7 | 20.5 | 386071 | 6.8 | 19.9 | 37287 | 6.9 | 16.3 | 235236 | 6.9 | 20.0 |
| 352101 | 6.6 | 20.2 | 367497 | 6.7 | 20.4 | 420829 | 6.7 | 20.8 | 200861 | 6.8 | 19.3 | 532088 | 6.9 | 20.2 | 453283 | 6.9 | 21.8 |
| 211955 | 6.6 | 20.4 | 344856 | 6.7 | 19.9 | 436329 | 6.7 | 26.2 | 249506 | 6.8 | 21.0 | 98989 | 6.9 | 20.2 | 247398 | 6.9 | 19.8 |
| 305399 | 6.6 | 19.9 | 374582 | 6.7 | 20.5 | 54049 | 6.7 | 17.5 | 18258 | 6.8 | 17.9 | 497214 | 6.9 | 20.8 | 540476 | 6.9 | 20.4 |
| 39128 | 6.6 | 19.5 | 544728 | 6.7 | 21.1 | 211519 | 6.7 | 19.3 | 503256 | 6.8 | 20.1 | 523711 | 6.9 | 22.3 | 356878 | 6.9 | 20.1 |
| 19481 | 6.6 | 18.2 | 391012 | 6.7 | 20.7 | 522842 | 6.7 | 20.1 | 47695 | 6.8 | 18.6 | 501752 | 6.9 | 21.0 | 297638 | 6.9 | 18.9 |
| 438621 | 6.6 | 20.5 | 508172 | 6.7 | 20.7 | 528895 | 6.7 | 21.3 | 355763 | 6.8 | 19.4 | 71114 | 6.9 | 18.8 | 54929 | 6.9 | 16.4 |
| 105954 | 6.6 | 18.5 | 180144 | 6.7 | 20.0 | 445251 | 6.7 | 20.6 | 503565 | 6.8 | 20.0 | 349062 | 6.9 | 21.0 | 490228 | 6.9 | 20.7 |
| 291068 | 6.6 | 20.1 | 385465 | 6.7 | 19.9 | 412150 | 6.7 | 21.1 | 3412 | 6.8 | 15.9 | 498826 | 6.9 | 20.4 | 191389 | 6.9 | 18.4 |
| 402987 | 6.6 | 19.6 | 473083 | 6.7 | 20.6 | 492877 | 6.7 | 19.3 | 267700 | 6.8 | 20.4 | 54966 | 6.9 | 18.8 | 28787 | 6.9 | 17.1 |
| 285601 | 6.6 | 18.7 | 457696 | 6.7 | 21.8 | 540640 | 6.7 | 20.6 | 534938 | 6.8 | 20.3 | 507606 | 6.9 | 22.1 | 200618 | 6.9 | 18.8 |
| 176738 | 6.6 | 19.4 | 304565 | 6.7 | 20.8 | 35328 | 6.7 | 19.3 | 239235 | 6.8 | 20.0 | 506741 | 6.9 | 21.2 | 472168 | 6.9 | 20.6 |
| 510869 | 6.6 | 21.6 | 457688 | 6.7 | 21.2 | 473019 | 6.7 | 19.8 | 467303 | 6.8 | 20.0 | 220592 | 6.9 | 18.8 | 459012 | 6.9 | 20.8 |
| 239757 | 6.6 | 19.9 | 164140 | 6.7 | 18.4 | 240410 | 6.7 | 19.9 | 330696 | 6.8 | 20.9 | 388144 | 6.9 | 19.9 | 497372 | 6.9 | 21.4 |
| 251010 | 6.6 | 19.3 | 289624 | 6.7 | 19.8 | 371997 | 6.7 | 20.2 | 90418 | 6.8 | 19.1 | 404170 | 6.9 | 20.3 | 404168 | 6.9 | 20.4 |
| 499334 | 6.6 | 19.7 | 197603 | 6.7 | 18.9 | 71508 | 6.8 | 18.9 | 17013 | 6.8 | 15.2 | 519928 | 6.9 | 20.5 | 514649 | 6.9 | 21.2 |
| 6705 | 6.6 | 16.1 | 170577 | 6.7 | 19.4 | 452720 | 6.8 | 21.5 | 68625 | 6.8 | 18.7 | 535824 | 6.9 | 21.7 | 207990 | 6.9 | 21.1 |
| 164380 | 6.6 | 19.2 | 169561 | 6.7 | 19.4 | 247894 | 6.8 | 19.4 | 95204 | 6.8 | 19.0 | 222513 | 6.9 | 20.1 | 391189 | 6.9 | 19.8 |
| 253800 | 6.6 | 19.7 | 293310 | 6.7 | 21.4 | 315336 | 6.8 | 20.4 | 400573 | 6.8 | 19.6 | 378318 | 6.9 | 19.0 | 170337 | 6.9 | 19.7 |
| 119423 | 6.6 | 18.6 | 535692 | 6.7 | 20.2 | 180133 | 6.8 | 19.3 | 508649 | 6.8 | 20.0 | 45944 | 6.9 | 17.7 | 380647 | 6.9 | 18.9 |
| 362125 | 6.6 | 20.4 | 493194 | 6.7 | 19.4 | 235425 | 6.8 | 19.9 | 479834 | 6.8 | 20.9 | 537986 | 6.9 | 21.1 | 380856 | 6.9 | 20.3 |
| 108798 | 6.6 | 17.3 | 400781 | 6.7 | 20.7 | 505188 | 6.8 | 20.1 | 207768 | 6.8 | 19.5 | 250866 | 6.9 | 19.4 | 349878 | 6.9 | 21.8 |
| 428334 | 6.6 | 19.8 | 264162 | 6.7 | 20.0 | 200657 | 6.8 | 19.8 | 425780 | 6.8 | 21.4 | 52122 | 6.9 | 18.3 | 532664 | 6.9 | 20.4 |
| 413467 | 6.6 | 20.5 | 348926 | 6.7 | 21.7 | 57305 | 6.8 | 18.0 | 381983 | 6.8 | 21.7 | 250917 | 6.9 | 19.9 | 92834 | 6.9 | 17.9 |
| 358367 | 6.6 | 21.3 | 20185 | 6.7 | 17.6 | 243048 | 6.8 | 19.1 | 497881 | 6.8 | 21.2 | 7258 | 6.9 | 17.7 | 54550 | 7.0 | 18.3 |
| 211886 | 6.6 | 19.5 | 323362 | 6.7 | 20.8 | 126764 | 6.8 | 17.7 | 393476 | 6.8 | 20.9 | 268424 | 6.9 | 20.2 | 539512 | 7.0 | 20.5 |
| 67454 | 6.6 | 18.2 | 287033 | 6.7 | 20.0 | 343019 | 6.8 | 20.4 | 431093 | 6.8 | 21.3 | 351875 | 6.9 | 20.3 | 380313 | 7.0 | 19.7 |
| 126896 | 6.6 | 19.3 | 213766 | 6.7 | 19.4 | 430649 | 6.8 | 19.4 | 497563 | 6.8 | 21.1 | 303975 | 6.9 | 19.8 | 164392 | 7.0 | 19.9 |
| 347309 | 6.6 | 19.9 | 496093 | 6.7 | 20.9 | 353317 | 6.8 | 19.8 | 151081 | 6.8 | 19.1 | 307038 | 6.9 | 19.1 | 297213 | 7.0 | 20.0 |
| 261849 | 6.6 | 20.2 | 228555 | 6.7 | 20.3 | 265656 | 6.8 | 20.3 | 204736 | 6.8 | 19.5 | 408227 | 6.9 | 20.3 | 483019 | 7.0 | 20.3 |
| 20229 | 6.6 | 18.9 | 86517 | 6.7 | 18.7 | 19190 | 6.8 | 16.5 | 51960 | 6.8 | 18.1 | 432371 | 6.9 | 21.9 | 96858 | 7.0 | 17.7 |
| 294310 | 6.6 | 19.7 | 100637 | 6.7 | 19.2 | 512595 | 6.8 | 19.6 | 310493 | 6.8 | 19.8 | 20820 | 6.9 | 17.0 | 105508 | 7.0 | 19.5 |
| 3215 | 6.6 | 17.2 | 37389 | 6.7 | 19.2 | 269090 | 6.8 | 20.5 | 350702 | 6.8 | 20.4 | 355236 | 6.9 | 21.0 | 72389 | 7.0 | 18.5 |
| 502657 | 6.6 | 21.2 | 476359 | 6.7 | 20.8 | 285699 | 6.8 | 19.6 | 403809 | 6.8 | 20.4 | 278638 | 6.9 | 20.4 | 233536 | 7.0 | 20.4 |
| 34489 | 6.6 | 18.3 | 118343 | 6.7 | 19.9 | 381949 | 6.8 | 21.5 | 312034 | 6.8 | 18.4 | 319999 | 6.9 | 20.8 | 270893 | 7.0 | 18.5 |
| 102276 | 6.6 | 18.5 | 523157 | 6.7 | 20.3 | 286213 | 6.8 | 20.3 | 506589 | 6.8 | 19.1 | 349300 | 6.9 | 20.4 | 140959 | 7.0 | 20.0 |
| 192759 | 6.6 | 18.9 | 306418 | 6.7 | 19.1 | 178752 | 6.8 | 20.1 | 155241 | 6.8 | 19.5 | 109025 | 6.9 | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 106062 | 7.0 | 17.2 | 273595 | 7.1 | 19.5 | 503454 | 7.2 | 20.5 | 24630 | 7.3 | 17.7 | 2412 | 7.4 | 14.5 | 533258 | 7.4 | 21.2 |
| 467424 | 7.0 | 20.9 | 134679 | 7.1 | 17.6 | 419744 | 7.2 | 20.8 | 40883 | 7.3 | 18.1 | 93014 | 7.4 | 18.3 | 379712 | 7.4 | 20.5 |
| 182787 | 7.0 | 20.2 | 272195 | 7.1 | 18.2 | 539107 | 7.2 | 20.5 | 386420 | 7.3 | 21.1 | 203567 | 7.4 | 19.9 | 176491 | 7.4 | 20.3 |
| 527919 | 7.0 | 20.5 | 427776 | 7.1 | 19.6 | 501149 | 7.2 | 21.0 | 95346 | 7.3 | 18.7 | 40963 | 7.4 | 18.4 | 500493 | 7.4 | 21.2 |
| 413928 | 7.0 | 20.9 | 309683 | 7.1 | 20.3 | 159634 | 7.2 | 21.0 | 499205 | 7.3 | 20.8 | 418280 | 7.4 | 21.0 | 517659 | 7.4 | 21.1 |
| 437107 | 7.0 | 20.9 | 97099 | 7.1 | 20.5 | 31169 | 7.2 | 18.8 | 165410 | 7.3 | 18.9 | 32311 | 7.4 | 18.1 | 87543 | 7.4 | 18.4 |
| 531770 | 7.0 | 19.8 | 194194 | 7.1 | 19.5 | 201374 | 7.2 | 20.4 | 503174 | 7.3 | 21.0 | 525299 | 7.4 | 22.1 | 172500 | 7.4 | 18.7 |
| 391761 | 7.0 | 20.5 | 274578 | 7.1 | 19.4 | 34805 | 7.2 | 18.1 | 190682 | 7.3 | 19.5 | 375979 | 7.4 | 21.2 | 497503 | 7.4 | 20.0 |
| 140512 | 7.0 | 18.5 | 336569 | 7.1 | 19.2 | 512530 | 7.2 | 21.0 | 264652 | 7.3 | 19.8 | 320582 | 7.4 | 21.2 | 246383 | 7.5 | 17.8 |
| 55469 | 7.0 | 18.5 | 209945 | 7.1 | 20.3 | 106140 | 7.2 | 19.0 | 523864 | 7.3 | 20.2 | 131079 | 7.4 | 18.8 | 465335 | 7.5 | 21.0 |
| 344619 | 7.0 | 20.9 | 260885 | 7.1 | 19.4 | 332864 | 7.2 | 21.1 | 195250 | 7.3 | 19.4 | 121793 | 7.4 | 18.5 | 177900 | 7.5 | 20.0 |
| 61128 | 7.0 | 17.7 | 189479 | 7.1 | 19.4 | 341535 | 7.2 | 19.5 | 125726 | 7.3 | 18.9 | 474997 | 7.4 | 20.0 | 146566 | 7.5 | 19.1 |
| 297266 | 7.0 | 20.1 | 527724 | 7.1 | 21.1 | 287769 | 7.2 | 19.5 | 387812 | 7.3 | 20.4 | 133513 | 7.4 | 19.1 | 533216 | 7.5 | 21.1 |
| 427993 | 7.0 | 20.1 | 238764 | 7.1 | 20.5 | 352597 | 7.2 | 20.9 | 248070 | 7.3 | 18.9 | 250777 | 7.4 | 20.0 | 426672 | 7.5 | 20.4 |
| 27151 | 7.0 | 17.1 | 313696 | 7.1 | 20.3 | 38018 | 7.2 | 18.3 | 255634 | 7.3 | 19.3 | 363221 | 7.4 | 21.8 | 341147 | 7.5 | 19.1 |
| 310457 | 7.0 | 19.2 | 327020 | 7.1 | 18.9 | 374503 | 7.2 | 20.1 | 133204 | 7.3 | 18.3 | 291456 | 7.4 | 19.4 | 375013 | 7.5 | 19.3 |
| 177795 | 7.0 | 21.1 | 117247 | 7.1 | 18.1 | 184917 | 7.2 | 18.9 | 184647 | 7.3 | 19.7 | 505000 | 7.4 | 19.6 | 489712 | 7.5 | 20.7 |
| 365820 | 7.0 | 21.5 | 371023 | 7.1 | 20.8 | 35904 | 7.2 | 18.4 | 187727 | 7.3 | 19.7 | 499345 | 7.4 | 21.3 | 213412 | 7.5 | 20.2 |
| 401084 | 7.0 | 19.6 | 260456 | 7.1 | 20.3 | 303272 | 7.2 | 20.1 | 105613 | 7.3 | 17.7 | 404236 | 7.4 | 20.2 | 277361 | 7.5 | 21.2 |
| 111183 | 7.0 | 18.5 | 57628 | 7.1 | 19.4 | 370947 | 7.2 | 20.5 | 315383 | 7.3 | 21.4 | 472157 | 7.4 | 20.6 | 182228 | 7.5 | 20.1 |
| 171905 | 7.0 | 19.2 | 88296 | 7.1 | 17.0 | 308562 | 7.2 | 20.0 | 144852 | 7.3 | 19.3 | 19636 | 7.4 | 17.6 | 258927 | 7.5 | 19.3 |
| 357820 | 7.0 | 20.0 | 403545 | 7.1 | 19.3 | 512662 | 7.2 | 20.2 | 63936 | 7.3 | 18.1 | 323861 | 7.4 | 19.6 | 172797 | 7.5 | 20.2 |
| 475633 | 7.0 | 21.1 | 127125 | 7.1 | 18.6 | 503337 | 7.2 | 21.1 | 503899 | 7.3 | 22.2 | 81483 | 7.4 | 18.9 | 303346 | 7.5 | 19.1 |
| 512538 | 7.0 | 20.9 | 123825 | 7.1 | 18.9 | 127401 | 7.2 | 19.2 | 365894 | 7.3 | 21.6 | 102049 | 7.4 | 19.6 | 351937 | 7.5 | 21.0 |
| 517121 | 7.0 | 20.2 | 9491 | 7.1 | 16.9 | 385893 | 7.2 | 19.7 | 317073 | 7.3 | 20.0 | 419266 | 7.4 | 22.1 | 237936 | 7.5 | 20.0 |
| 238638 | 7.0 | 20.4 | 223264 | 7.1 | 20.4 | 530653 | 7.2 | 20.2 | 479954 | 7.3 | 21.9 | 370932 | 7.4 | 20.6 | 106314 | 7.5 | 18.8 |
| 353663 | 7.0 | 18.8 | 37922 | 7.1 | 18.9 | 514384 | 7.2 | 20.6 | 109248 | 7.3 | 19.0 | 524424 | 7.4 | 21.4 | 115412 | 7.5 | 20.3 |
| 367246 | 7.0 | 20.5 | 526917 | 7.1 | 21.0 | 418107 | 7.2 | 21.5 | 365165 | 7.3 | 21.0 | 179539 | 7.4 | 20.6 | 363396 | 7.5 | 20.5 |
| 66612 | 7.1 | 18.3 | 282223 | 7.1 | 19.1 | 20329 | 7.2 | 17.9 | 39076 | 7.3 | 18.6 | 507091 | 7.4 | 20.8 | 13484 | 7.5 | 16.8 |
| 18864 | 7.1 | 18.0 | 387792 | 7.1 | 20.5 | 415723 | 7.2 | 18.8 | 250532 | 7.3 | 19.1 | 517597 | 7.4 | 19.9 | 377801 | 7.5 | 20.3 |
| 30696 | 7.1 | 17.7 | 501537 | 7.1 | 20.7 | 354922 | 7.2 | 18.2 | 292838 | 7.3 | 21.2 | 87986 | 7.4 | 18.5 | 161671 | 7.5 | 18.4 |
| 181057 | 7.1 | 17.3 | 21855 | 7.1 | 17.7 | 11254 | 7.2 | 17.8 | 93820 | 7.3 | 19.1 | 235002 | 7.4 | 20.0 | 421062 | 7.5 | 20.8 |
| 269499 | 7.1 | 19.7 | 351499 | 7.1 | 19.3 | 384800 | 7.2 | 19.5 | 270817 | 7.3 | 18.4 | 531982 | 7.4 | 21.2 | 420645 | 7.5 | 20.9 |
| 229100 | 7.1 | 18.5 | 222686 | 7.1 | 19.1 | 470492 | 7.2 | 21.1 | 316696 | 7.3 | 19.5 | 269550 | 7.4 | 20.1 | 509909 | 7.5 | 19.8 |
| 375658 | 7.1 | 21.4 | 212529 | 7.1 | 20.4 | 84704 | 7.2 | 19.2 | 146596 | 7.3 | 20.0 | 492447 | 7.4 | 19.9 | 118832 | 7.5 | 19.7 |
| 471244 | 7.1 | 21.4 | 15517 | 7.1 | 17.2 | 160289 | 7.2 | 20.0 | 12481 | 7.3 | 16.7 | 55746 | 7.4 | 17.3 | 543658 | 7.5 | 20.8 |
| 520979 | 7.1 | 21.0 | 59838 | 7.1 | 18.6 | 160341 | 7.2 | 18.6 | 201554 | 7.3 | 20.2 | 463316 | 7.4 | 21.4 | 471378 | 7.5 | 20.8 |
| 332370 | 7.1 | 19.3 | 370146 | 7.1 | 20.1 | 73078 | 7.2 | 19.0 | 98549 | 7.3 | 19.9 | 114084 | 7.4 | 19.1 | 311450 | 7.5 | 20.3 |
| 54335 | 7.1 | 17.8 | 258417 | 7.1 | 20.2 | 146900 | 7.2 | 19.2 | 153661 | 7.3 | 20.1 | 534257 | 7.4 | 21.0 | 263200 | 7.5 | 20.1 |
| 359825 | 7.1 | 20.3 | 504741 | 7.1 | 21.7 | 155133 | 7.2 | 19.1 | 169006 | 7.3 | 20.3 | 303397 | 7.4 | 20.9 | 193456 | 7.5 | 19.6 |
| 539021 | 7.1 | 21.1 | 69574 | 7.1 | 18.3 | 480221 | 7.2 | 18.6 | 376967 | 7.3 | 20.4 | 238488 | 7.4 | 18.4 | 380911 | 7.5 | 19.8 |
| 406403 | 7.1 | 21.1 | 528927 | 7.1 | 20.9 | 314162 | 7.2 | 20.6 | 430077 | 7.3 | 21.4 | 382799 | 7.4 | 18.8 | 20612 | 7.5 | 17.1 |
| 95819 | 7.1 | 18.8 | 469642 | 7.1 | 19.1 | 146220 | 7.2 | 19.5 | 294831 | 7.3 | 20.5 | 58632 | 7.4 | 19.2 | 437614 | 7.5 | 20.9 |
| 332364 | 7.1 | 20.3 | 310077 | 7.1 | 20.3 | 354917 | 7.2 | 19.5 | 401394 | 7.3 | 20.1 | 309131 | 7.4 | 20.5 | 410173 | 7.5 | 18.8 |
| 502603 | 7.1 | 20.3 | 346047 | 7.1 | 20.5 | 36252 | 7.2 | 18.9 | 521340 | 7.3 | 20.5 | 469424 | 7.4 | 20.9 | 259503 | 7.5 | 20.1 |
| 50660 | 7.1 | 18.0 | 307125 | 7.1 | 19.5 | 370167 | 7.2 | 20.4 | 523859 | 7.3 | 20.9 | 181707 | 7.4 | 19.6 | 243345 | 7.5 | 20.1 |
| 389248 | 7.1 | 20.6 | 62995 | 7.1 | 17.3 | 31540 | 7.2 | 17.3 | 498706 | 7.3 | 20.6 | 470430 | 7.4 | 21.1 | 175024 | 7.5 | 19.8 |
| 103616 | 7.1 | 19.0 | 237801 | 7.1 | 18.6 | 540600 | 7.2 | 19.8 | 83660 | 7.3 | 18.7 | 352820 | 7.4 | 20.4 | 138605 | 7.5 | 18.6 |
| 17435 | 7.1 | 19.2 | 400254 | 7.1 | 19.1 | 536132 | 7.2 | 21.1 | 55349 | 7.3 | 19.4 | 474925 | 7.4 | 21.7 | 85243 | 7.5 | 19.2 |
| 214642 | 7.1 | 20.2 | 528509 | 7.1 | 19.4 | 110352 | 7.2 | 18.3 | 464559 | 7.3 | 20.6 | 31811 | 7.4 | 17.5 | 353551 | 7.5 | 20.3 |
| 174907 | 7.1 | 19.5 | 523512 | 7.1 | 19.5 | 222629 | 7.2 | 19.0 | 100353 | 7.3 | 18.2 | 536880 | 7.4 | 21.1 | 12300 | 7.5 | 16.8 |
| 149991 | 7.1 | 20.0 | 215670 | 7.1 | 19.8 | 282673 | 7.2 | 19.4 | 456802 | 7.3 | 20.6 | 129576 | 7.4 | 18.8 | 38019 | 7.5 | 18.1 |
| 216140 | 7.1 | 18.9 | 490424 | 7.1 | 20.6 | 208429 | 7.2 | 19.2 | 522902 | 7.3 | 20.1 | 239027 | 7.4 | 20.3 | 34095 | 7.5 | 16.5 |
| 62039 | 7.1 | 17.6 | 159221 | 7.1 | 19.6 | 293542 | 7.2 | 20.3 | 431895 | 7.3 | 20.3 | 318480 | 7.4 | 21.3 | 182938 | 7.5 | 20.2 |
| 206317 | 7.1 | 17.7 | 527174 | 7.1 | 19.3 | 256185 | 7.2 | 20.4 | 154804 | 7.3 | 18.3 | 331536 | 7.4 | 19.6 | 537450 | 7.5 | 21.0 |
| 469076 | 7.1 | 20.9 | 317930 | 7.1 | 21.8 | 496060 | 7.2 | 20.4 | 224484 | 7.3 | 21.3 | 354317 | 7.4 | 20.0 | 118880 | 7.5 | 19.1 |
| 87290 | 7.1 | 18.0 | 290780 | 7.1 | 20.0 | 355614 | 7.2 | 21.3 | 302504 | 7.3 | 20.4 | 99564 | 7.4 | 17.2 | 261134 | 7.5 | 20.0 |
| 18775 | 7.1 | 16.8 | 361138 | 7.1 | 20.2 | 85027 | 7.2 | 19.7 | 402945 | 7.3 | 19.5 | 371167 | 7.4 | 20.8 | 161400 | 7.5 | 19.5 |
| 513779 | 7.1 | 21.0 | 215881 | 7.1 | 20.5 | 86166 | 7.2 | 17.8 | 334885 | 7.3 | 20.5 | 260481 | 7.4 | 20.4 | 14803 | 7.5 | 18.6 |
| 109651 | 7.1 | 20.0 | 249539 | 7.2 | 18.9 | 309160 | 7.2 | 20.2 | 397125 | 7.3 | 20.1 | 309895 | 7.4 | 21.0 | 413307 | 7.5 | 19.9 |
| 393916 | 7.1 | 19.9 | 248949 | 7.2 | 19.6 | 87327 | 7.2 | 18.7 | 466115 | 7.3 | 22.4 | 543395 | 7.4 | 20.1 | 116697 | 7.5 | 18.5 |
| 525718 | 7.1 | 20.5 | 361176 | 7.2 | 19.0 | 371945 | 7.2 | 20.2 | 160568 | 7.3 | 18.2 | 237691 | 7.4 | 19.0 | 93890 | 7.5 | 20.2 |
| 75810 | 7.1 | 18.4 | 375925 | 7.2 | 19.1 | 4046 | 7.2 | 15.6 | 232805 | 7.3 | 19.2 | 24044 | 7.4 | 17.9 | 474595 | 7.5 | 19.6 |
| 529 | 7.1 | 14.3 | 539676 | 7.2 | 20.7 | 12792 | 7.2 | 16.7 | 82080 | 7.3 | 17.9 | 373845 | 7.4 | 19.9 | 410458 | 7.5 | 21.7 |
| 406363 | 7.1 | 20.5 | 423297 | 7.2 | 19.7 | 502690 | 7.2 | 21.1 | 190461 | 7.3 | 19.4 | 478274 | 7.4 | 20.9 | 199583 | 7.5 | 20.4 |
| 207052 | 7.1 | 19.7 | 25723 | 7.2 | 18.0 | 246503 | 7.2 | 19.0 | 96791 | 7.3 | 18.4 | 166236 | 7.4 | 19.0 | 227522 | 7.5 | 19.3 |
| 222669 | 7.1 | 19.5 | 479653 | 7.2 | 20.6 | 7845 | 7.2 | 18.7 | 134279 | 7.3 | 18.8 | 532359 | 7.4 | 22.1 | 94927 | 7.5 | 19.0 |
| 9771 | 7.1 | 17.2 | 247076 | 7.2 | 19.4 | 476451 | 7.2 | 20.7 | 350172 | 7.3 | 20.7 | 502841 | 7.4 | 19.5 | 304913 | 7.5 | 20.4 |
| 365942 | 7.1 | 20.6 | 164237 | 7.2 | 19.2 | 539909 | 7.2 | 19.5 | 192817 | 7.3 | 20.3 | 260966 | 7.4 | 20.7 | 512675 | 7.5 | 20.4 |
| 196696 | 7.1 | 19.7 | 309713 | 7.2 | 20.9 | 78112 | 7.2 | 16.9 | 474908 | 7.3 | 20.3 | 496062 | 7.4 | 20.5 | 143463 | 7.5 | 20.8 |
| 383311 | 7.1 | 21.4 | 271782 | 7.2 | 20.2 | 182834 | 7.2 | 20.2 | 39443 | 7.3 | 19.1 | 376812 | 7.4 | 19.0 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 268961 | 7.5 | 19.9 | 433896 | 7.6 | 20.2 | 101200 | 7.7 | 19.0 | 188285 | 7.8 | 20.3 | 3008 | 7.9 | 17.3 | 504557 | 7.9 | 20.3 |
| 131966 | 7.5 | 19.6 | 443684 | 7.6 | 19.2 | 186100 | 7.7 | 18.8 | 123859 | 7.8 | 19.2 | 375936 | 7.9 | 20.7 | 235949 | 7.9 | 20.4 |
| 404190 | 7.5 | 20.8 | 168554 | 7.6 | 20.1 | 102275 | 7.7 | 18.8 | 79035 | 7.8 | 18.2 | 122916 | 7.9 | 18.9 | 421794 | 7.9 | 20.1 |
| 182918 | 7.5 | 19.8 | 110847 | 7.6 | 19.7 | 313114 | 7.7 | 20.6 | 454188 | 7.8 | 20.1 | 378325 | 7.9 | 20.4 | 110642 | 7.9 | 19.6 |
| 540698 | 7.5 | 21.1 | 124424 | 7.6 | 19.7 | 215229 | 7.7 | 20.7 | 348993 | 7.8 | 20.0 | 175109 | 7.9 | 19.9 | 11298 | 7.9 | 18.0 |
| 198644 | 7.5 | 20.2 | 38183 | 7.6 | 16.5 | 264307 | 7.7 | 20.2 | 148347 | 7.8 | 19.4 | 400789 | 7.9 | 20.1 | 455561 | 7.9 | 19.2 |
| 379348 | 7.5 | 21.0 | 185933 | 7.6 | 19.8 | 299264 | 7.7 | 20.1 | 258602 | 7.8 | 20.0 | 140967 | 7.9 | 18.7 | 414453 | 7.9 | 19.8 |
| 154890 | 7.5 | 19.6 | 312079 | 7.6 | 20.3 | 197625 | 7.7 | 19.8 | 140978 | 7.8 | 18.3 | 264989 | 7.9 | 20.7 | 179737 | 7.9 | 19.4 |
| 57385 | 7.5 | 18.6 | 416126 | 7.6 | 20.0 | 520851 | 7.7 | 20.7 | 371908 | 7.8 | 20.3 | 36735 | 7.9 | 17.0 | 174061 | 7.9 | 19.0 |
| 62688 | 7.5 | 18.1 | 539267 | 7.6 | 19.9 | 209120 | 7.7 | 19.0 | 140850 | 7.8 | 19.8 | 173994 | 7.9 | 19.8 | 507431 | 7.9 | 19.5 |
| 392933 | 7.5 | 21.3 | 211563 | 7.6 | 18.5 | 17168 | 7.7 | 17.5 | 472294 | 7.8 | 20.5 | 304129 | 7.9 | 21.2 | 68789 | 7.9 | 19.1 |
| 464102 | 7.5 | 20.7 | 124915 | 7.6 | 19.1 | 162703 | 7.7 | 18.1 | 503078 | 7.8 | 20.1 | 358447 | 7.9 | 21.7 | 43222 | 7.9 | 16.5 |
| 274544 | 7.5 | 19.3 | 476387 | 7.6 | 21.2 | 365110 | 7.7 | 20.8 | 129749 | 7.8 | 20.2 | 510479 | 7.9 | 20.0 | 220566 | 7.9 | 18.8 |
| 95702 | 7.5 | 19.3 | 270384 | 7.6 | 20.9 | 539625 | 7.7 | 21.1 | 356311 | 7.8 | 20.3 | 427208 | 7.9 | 19.7 | 364735 | 7.9 | 19.3 |
| 530601 | 7.5 | 21.6 | 169681 | 7.6 | 19.5 | 492729 | 7.7 | 19.7 | 427792 | 7.8 | 21.1 | 525801 | 7.9 | 20.9 | 249198 | 7.9 | 19.2 |
| 381560 | 7.5 | 19.5 | 393124 | 7.6 | 20.8 | 297694 | 7.7 | 20.3 | 198913 | 7.8 | 20.1 | 267450 | 7.9 | 20.2 | 105213 | 7.9 | 19.3 |
| 230284 | 7.5 | 20.0 | 210282 | 7.6 | 19.5 | 171011 | 7.7 | 20.4 | 313824 | 7.8 | 18.4 | 501898 | 7.9 | 21.6 | 519168 | 7.9 | 19.8 |
| 395779 | 7.5 | 19.6 | 352765 | 7.6 | 20.6 | 191696 | 7.7 | 19.1 | 462346 | 7.8 | 18.7 | 208815 | 7.9 | 18.8 | 343849 | 7.9 | 19.9 |
| 58267 | 7.5 | 17.9 | 296147 | 7.6 | 20.8 | 272929 | 7.7 | 21.4 | 128612 | 7.8 | 19.2 | 42396 | 7.9 | 19.3 | 173605 | 7.9 | 20.2 |
| 396964 | 7.5 | 20.0 | 505220 | 7.6 | 20.5 | 283432 | 7.7 | 19.8 | 536041 | 7.8 | 21.1 | 155123 | 7.9 | 17.9 | 457714 | 7.9 | 20.9 |
| 42864 | 7.5 | 17.6 | 380187 | 7.6 | 18.4 | 227619 | 7.7 | 19.9 | 537470 | 7.8 | 20.6 | 2694 | 7.9 | 16.0 | 375831 | 7.9 | 19.3 |
| 170840 | 7.5 | 19.5 | 362065 | 7.6 | 20.6 | 304961 | 7.7 | 20.9 | 149758 | 7.8 | 18.8 | 459738 | 7.9 | 20.3 | 499145 | 7.9 | 19.4 |
| 216329 | 7.5 | 19.9 | 215000 | 7.6 | 19.6 | 277747 | 7.7 | 20.2 | 370954 | 7.8 | 20.2 | 155608 | 7.9 | 19.6 | 268415 | 7.9 | 20.7 |
| 117612 | 7.5 | 20.6 | 498850 | 7.6 | 20.6 | 350384 | 7.7 | 20.4 | 3141 | 7.8 | 15.9 | 356702 | 7.9 | 20.8 | 485395 | 7.9 | 20.1 |
| 532647 | 7.5 | 21.5 | 234813 | 7.6 | 19.6 | 38520 | 7.7 | 19.8 | 70055 | 7.8 | 17.2 | 438636 | 7.9 | 21.6 | 159092 | 7.9 | 19.7 |
| 60121 | 7.5 | 19.0 | 17038 | 7.6 | 17.2 | 281482 | 7.7 | 20.2 | 53245 | 7.8 | 18.9 | 184687 | 7.9 | 19.8 | 355165 | 7.9 | 20.7 |
| 387687 | 7.5 | 20.0 | 116972 | 7.6 | 19.1 | 54557 | 7.7 | 18.1 | 471491 | 7.8 | 20.3 | 345713 | 7.9 | 21.3 | 531716 | 7.9 | 21.6 |
| 393167 | 7.5 | 20.2 | 186096 | 7.6 | 19.5 | 352060 | 7.7 | 20.3 | 131496 | 7.8 | 18.1 | 330699 | 7.9 | 19.7 | 22147 | 7.9 | 16.9 |
| 55285 | 7.5 | 18.2 | 183302 | 7.6 | 19.7 | 428341 | 7.7 | 20.4 | 286693 | 7.8 | 21.2 | 497933 | 7.9 | 20.9 | 110758 | 7.9 | 18.5 |
| 52478 | 7.5 | 17.7 | 293098 | 7.6 | 19.8 | 372462 | 7.7 | 19.1 | 302443 | 7.8 | 20.6 | 274102 | 7.9 | 20.4 | 215810 | 7.9 | 20.0 |
| 272852 | 7.5 | 19.6 | 323946 | 7.6 | 19.4 | 456597 | 7.7 | 20.4 | 410240 | 7.8 | 20.0 | 213782 | 7.9 | 19.6 | 61335 | 7.9 | 18.3 |
| 251570 | 7.5 | 19.1 | 454114 | 7.6 | 21.4 | 512751 | 7.7 | 21.2 | 539873 | 7.8 | 20.1 | 3975 | 7.9 | 16.5 | 309127 | 7.9 | 21.1 |
| 282769 | 7.5 | 20.6 | 166969 | 7.6 | 18.4 | 389287 | 7.7 | 20.3 | 71930 | 7.8 | 19.0 | 97180 | 7.9 | 19.0 | 226031 | 7.9 | 20.7 |
| 301802 | 7.5 | 20.6 | 20557 | 7.6 | 16.4 | 66324 | 7.7 | 17.8 | 118071 | 7.8 | 17.6 | 335593 | 7.9 | 19.8 | 295588 | 7.9 | 20.9 |
| 211158 | 7.6 | 20.7 | 312165 | 7.6 | 21.0 | 392419 | 7.7 | 19.6 | 176554 | 7.8 | 18.9 | 531882 | 7.9 | 20.6 | 332567 | 7.9 | 19.2 |
| 10298 | 7.6 | 17.3 | 242668 | 7.6 | 18.0 | 535782 | 7.7 | 21.8 | 458784 | 7.8 | 20.8 | 315408 | 7.9 | 20.0 | 18847 | 7.9 | 16.8 |
| 233467 | 7.6 | 20.3 | 507504 | 7.6 | 21.3 | 79143 | 7.7 | 17.9 | 280377 | 7.8 | 18.9 | 363107 | 7.9 | 19.6 | 430301 | 7.9 | 20.7 |
| 203407 | 7.6 | 19.8 | 243596 | 7.6 | 18.8 | 272145 | 7.7 | 18.5 | 114368 | 7.8 | 18.8 | 272634 | 7.9 | 20.1 | 253768 | 7.9 | 19.6 |
| 167209 | 7.6 | 19.9 | 529904 | 7.6 | 21.5 | 429544 | 7.7 | 21.4 | 37595 | 7.8 | 17.6 | 474035 | 7.9 | 19.1 | 103674 | 7.9 | 18.0 |
| 352654 | 7.6 | 18.7 | 89293 | 7.6 | 19.4 | 526805 | 7.7 | 20.3 | 12178 | 7.8 | 18.4 | 97969 | 7.9 | 18.8 | 392873 | 7.9 | 19.6 |
| 79037 | 7.6 | 19.3 | 62395 | 7.6 | 18.5 | 147425 | 7.7 | 18.9 | 46327 | 7.8 | 18.7 | 382457 | 7.9 | 18.1 | 208715 | 7.9 | 19.3 |
| 250395 | 7.6 | 19.0 | 191265 | 7.6 | 19.4 | 40896 | 7.7 | 18.8 | 148607 | 7.8 | 18.9 | 16592 | 7.9 | 16.2 | 1671 | 7.9 | 15.7 |
| 507781 | 7.6 | 20.6 | 474314 | 7.6 | 21.0 | 374495 | 7.8 | 21.5 | 334775 | 7.8 | 19.7 | 239404 | 7.9 | 19.7 | 127627 | 7.9 | 19.6 |
| 174530 | 7.6 | 20.2 | 162507 | 7.7 | 18.9 | 534928 | 7.8 | 21.0 | 382437 | 7.8 | 19.3 | 505221 | 7.9 | 20.0 | 60046 | 7.9 | 18.0 |
| 138898 | 7.6 | 19.2 | 56744 | 7.7 | 17.7 | 306715 | 7.8 | 20.2 | 491137 | 7.8 | 20.7 | 212607 | 7.9 | 20.4 | 22642 | 7.9 | 17.8 |
| 191241 | 7.6 | 20.0 | 178735 | 7.7 | 20.1 | 362999 | 7.8 | 21.0 | 260036 | 7.8 | 19.7 | 244948 | 7.9 | 20.2 | 355117 | 7.9 | 20.2 |
| 174638 | 7.6 | 18.8 | 96860 | 7.7 | 18.0 | 285468 | 7.8 | 20.5 | 140407 | 7.8 | 20.0 | 50576 | 7.9 | 18.0 | 297706 | 7.9 | 20.2 |
| 479785 | 7.6 | 20.1 | 338119 | 7.7 | 20.0 | 214225 | 7.8 | 19.9 | 275163 | 7.8 | 20.4 | 438985 | 7.9 | 20.6 | 372577 | 7.9 | 20.2 |
| 479694 | 7.6 | 21.4 | 325847 | 7.7 | 21.2 | 528119 | 7.8 | 22.4 | 214096 | 7.8 | 19.1 | 421044 | 7.9 | 20.0 | 376799 | 7.9 | 20.6 |
| 21959 | 7.6 | 18.3 | 58829 | 7.7 | 20.1 | 157887 | 7.8 | 18.0 | 189063 | 7.8 | 18.8 | 19508 | 7.9 | 19.3 | 200231 | 7.9 | 19.5 |
| 307502 | 7.6 | 20.7 | 176471 | 7.7 | 19.1 | 311206 | 7.8 | 20.9 | 20518 | 7.8 | 17.3 | 496945 | 7.9 | 19.9 | 433040 | 7.9 | 19.8 |
| 123842 | 7.6 | 20.1 | 179476 | 7.7 | 20.5 | 242819 | 7.8 | 20.6 | 421842 | 7.8 | 20.2 | 243676 | 7.9 | 20.1 | 382125 | 7.9 | 20.4 |
| 172449 | 7.6 | 19.1 | 424093 | 7.7 | 21.3 | 80567 | 7.8 | 19.6 | 347317 | 7.8 | 19.8 | 282262 | 7.9 | 20.5 | 156114 | 7.9 | 18.2 |
| 530672 | 7.6 | 21.5 | 278841 | 7.7 | 19.7 | 35716 | 7.8 | 17.5 | 414132 | 7.8 | 21.2 | 89491 | 7.9 | 18.9 | 522981 | 7.9 | 21.1 |
| 474942 | 7.6 | 19.8 | 1813 | 7.7 | 15.8 | 310528 | 7.8 | 20.2 | 377343 | 7.8 | 19.6 | 468103 | 7.9 | 19.5 | 214216 | 7.9 | 20.9 |
| 17434 | 7.6 | 17.6 | 233770 | 7.7 | 20.1 | 539551 | 7.8 | 20.8 | 494382 | 7.8 | 20.5 | 370989 | 7.9 | 19.8 | 199944 | 7.9 | 19.0 |
| 309851 | 7.6 | 20.0 | 9452 | 7.7 | 18.2 | 358824 | 7.8 | 20.6 | 152436 | 7.8 | 20.0 | 372509 | 7.9 | 20.6 | 242667 | 7.9 | 20.3 |
| 372016 | 7.6 | 20.0 | 399092 | 7.7 | 19.9 | 204377 | 7.8 | 18.9 | 121525 | 7.8 | 18.8 | 40288 | 7.9 | 16.7 | 540585 | 7.9 | 21.1 |
| 22234 | 7.6 | 20.2 | 371106 | 7.7 | 20.8 | 457201 | 7.8 | 21.0 | 26385 | 7.8 | 17.0 | 357053 | 7.9 | 19.5 | 391301 | 7.9 | 21.2 |
| 348911 | 7.6 | 20.5 | 477962 | 7.7 | 19.8 | 125948 | 7.8 | 18.8 | 281516 | 7.8 | 20.0 | 21332 | 7.9 | 17.9 | 23321 | 7.9 | 17.9 |
| 298334 | 7.6 | 21.3 | 438394 | 7.7 | 21.0 | 67888 | 7.8 | 17.5 | 245833 | 7.8 | 18.7 | 182948 | 7.9 | 19.1 | 150779 | 7.9 | 17.9 |
| 311270 | 7.6 | 20.3 | 303893 | 7.7 | 20.1 | 410360 | 7.8 | 20.5 | 473252 | 7.8 | 20.5 | 280609 | 7.9 | 20.4 | 38667 | 7.9 | 18.5 |
| 447702 | 7.6 | 21.4 | 96481 | 7.7 | 19.1 | 287221 | 7.8 | 19.0 | 527982 | 7.8 | 21.2 | 528297 | 7.9 | 19.4 | 149736 | 7.9 | 17.5 |
| 195452 | 7.6 | 19.1 | 44982 | 7.7 | 17.7 | 173524 | 7.8 | 19.3 | 415552 | 7.8 | 20.6 | 321494 | 7.9 | 19.1 | 92899 | 7.9 | 17.9 |
| 336378 | 7.6 | 20.1 | 306899 | 7.7 | 19.4 | 17119 | 7.8 | 17.5 | 527286 | 7.8 | 21.5 | 340363 | 7.9 | 20.0 | 116874 | 7.9 | 19.0 |
| 406504 | 7.6 | 20.2 | 510772 | 7.7 | 20.0 | 317489 | 7.8 | 18.6 | 93943 | 7.8 | 19.2 | 242750 | 7.9 | 19.9 | 461625 | 7.9 | 21.9 |
| 347749 | 7.6 | 22.3 | 36561 | 7.7 | 18.3 | 255912 | 7.8 | 20.6 | 45289 | 7.8 | 18.7 | 358978 | 7.9 | 19.7 | 263243 | 7.9 | 20.7 |
| 461722 | 7.6 | 19.9 | 538000 | 7.7 | 20.5 | 300103 | 7.8 | 20.3 | 93148 | 7.8 | 19.1 | 503193 | 7.9 | 20.3 | 272684 | 7.9 | 20.1 |
| 406446 | 7.6 | 21.1 | 333690 | 7.7 | 19.2 | 96519 | 7.8 | 18.2 | 292372 | 7.8 | 20.4 | 105839 | 7.9 | 17.8 | 406527 | 7.9 | 20.7 |
| 140841 | 7.6 | 19.1 | 89349 | 7.7 | 18.6 | 44736 | 7.8 | 18.3 | 85201 | 7.8 | 19.9 | 479005 | 7.9 | 20.8 | 294555 | 7.9 | 20.5 |
| 374466 | 7.6 | 20.8 | 57029 | 7.7 | 18.0 | 26395 | 7.8 | 19.5 | 153977 | 7.8 | 19.7 | 472076 | 7.9 | 20.7 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 524226 | 8.0 | 20.6 | 490624 | 8.1 | 21.4 | 501150 | 8.2 | 20.8 | 533200 | 8.2 | 21.7 | 356752 | 8.3 | 21.1 | 259241 | 8.4 | 20.1 |
| 41866 | 8.0 | 16.7 | 314458 | 8.1 | 20.8 | 102847 | 8.2 | 18.0 | 95769 | 8.2 | 18.9 | 462065 | 8.3 | 20.8 | 9585 | 8.4 | 17.0 |
| 495335 | 8.0 | 19.0 | 223645 | 8.1 | 19.4 | 7608 | 8.2 | 17.3 | 132127 | 8.2 | 19.1 | 311274 | 8.3 | 20.9 | 207172 | 8.4 | 19.6 |
| 507362 | 8.0 | 21.3 | 353220 | 8.1 | 20.0 | 18634 | 8.2 | 18.6 | 504590 | 8.2 | 20.7 | 27770 | 8.3 | 16.6 | 298309 | 8.4 | 19.9 |
| 434086 | 8.0 | 20.8 | 71442 | 8.1 | 17.9 | 61877 | 8.2 | 18.6 | 110102 | 8.2 | 18.9 | 356545 | 8.3 | 21.1 | 435054 | 8.4 | 20.3 |
| 57867 | 8.0 | 19.0 | 253033 | 8.1 | 20.0 | 475050 | 8.2 | 21.1 | 323093 | 8.2 | 19.7 | 375977 | 8.3 | 20.2 | 115452 | 8.4 | 18.0 |
| 268436 | 8.0 | 19.6 | 56345 | 8.1 | 18.3 | 457759 | 8.2 | 21.0 | 80090 | 8.2 | 19.1 | 333937 | 8.3 | 20.8 | 225003 | 8.4 | 19.4 |
| 98409 | 8.0 | 20.3 | 7257 | 8.1 | 16.7 | 359066 | 8.2 | 20.2 | 472239 | 8.2 | 20.5 | 374395 | 8.3 | 20.7 | 371101 | 8.4 | 21.4 |
| 499859 | 8.0 | 21.6 | 93414 | 8.1 | 19.1 | 4205 | 8.2 | 15.5 | 347743 | 8.2 | 19.7 | 20056 | 8.3 | 18.1 | 46335 | 8.4 | 18.6 |
| 151761 | 8.0 | 18.1 | 514342 | 8.1 | 21.4 | 422464 | 8.2 | 21.2 | 394800 | 8.2 | 20.0 | 501434 | 8.3 | 20.5 | 382237 | 8.4 | 19.7 |
| 353613 | 8.0 | 20.1 | 343893 | 8.1 | 20.7 | 185637 | 8.2 | 19.6 | 248522 | 8.2 | 18.6 | 135585 | 8.3 | 18.2 | 538155 | 8.4 | 21.0 |
| 21747 | 8.0 | 19.0 | 271300 | 8.1 | 19.4 | 11880 | 8.2 | 16.9 | 26908 | 8.2 | 19.5 | 374128 | 8.3 | 19.5 | 299570 | 8.4 | 20.2 |
| 302385 | 8.0 | 20.7 | 471484 | 8.1 | 20.7 | 499228 | 8.2 | 19.4 | 492976 | 8.2 | 19.4 | 209690 | 8.3 | 19.5 | 533953 | 8.4 | 21.5 |
| 31241 | 8.0 | 18.4 | 127840 | 8.1 | 18.9 | 318161 | 8.2 | 19.7 | 172124 | 8.2 | 19.6 | 397769 | 8.3 | 21.5 | 217624 | 8.4 | 18.6 |
| 153587 | 8.0 | 20.3 | 345786 | 8.1 | 21.2 | 150614 | 8.2 | 19.7 | 53621 | 8.2 | 18.1 | 219648 | 8.3 | 19.2 | 32281 | 8.4 | 18.7 |
| 178168 | 8.0 | 20.6 | 49589 | 8.1 | 19.2 | 186389 | 8.2 | 20.1 | 159434 | 8.2 | 18.6 | 268969 | 8.3 | 20.6 | 27881 | 8.4 | 17.8 |
| 262648 | 8.0 | 19.7 | 304970 | 8.1 | 18.9 | 166268 | 8.2 | 20.3 | 344545 | 8.2 | 19.8 | 31125 | 8.3 | 17.9 | 541904 | 8.4 | 19.0 |
| 524634 | 8.0 | 20.4 | 361615 | 8.1 | 20.3 | 185624 | 8.2 | 19.9 | 517649 | 8.2 | 20.7 | 390841 | 8.3 | 20.0 | 68697 | 8.4 | 17.8 |
| 282562 | 8.0 | 20.3 | 332186 | 8.1 | 19.9 | 174030 | 8.2 | 20.2 | 461906 | 8.2 | 19.7 | 25132 | 8.3 | 18.2 | 202913 | 8.4 | 18.4 |
| 166141 | 8.0 | 20.8 | 467170 | 8.1 | 18.9 | 509071 | 8.2 | 20.7 | 177052 | 8.2 | 20.8 | 243809 | 8.3 | 20.3 | 275122 | 8.4 | 19.5 |
| 499756 | 8.0 | 21.1 | 289530 | 8.1 | 19.8 | 180843 | 8.2 | 20.4 | 525288 | 8.3 | 21.5 | 303714 | 8.3 | 19.6 | 406890 | 8.4 | 21.1 |
| 538186 | 8.0 | 20.8 | 539558 | 8.1 | 20.7 | 17721 | 8.2 | 18.6 | 287977 | 8.3 | 19.8 | 272991 | 8.3 | 20.7 | 82418 | 8.4 | 18.8 |
| 373492 | 8.0 | 20.7 | 241125 | 8.1 | 18.5 | 311241 | 8.2 | 20.9 | 181222 | 8.3 | 19.2 | 11968 | 8.3 | 17.6 | 182469 | 8.4 | 20.0 |
| 354137 | 8.0 | 20.0 | 63131 | 8.1 | 18.4 | 140444 | 8.2 | 19.0 | 533790 | 8.3 | 20.5 | 66299 | 8.3 | 17.7 | 54043 | 8.4 | 19.1 |
| 60127 | 8.0 | 18.1 | 479066 | 8.1 | 21.3 | 347783 | 8.2 | 20.0 | 380864 | 8.3 | 20.4 | 478204 | 8.3 | 20.8 | 407302 | 8.4 | 20.5 |
| 392896 | 8.0 | 20.3 | 296909 | 8.1 | 19.9 | 417481 | 8.2 | 21.3 | 489360 | 8.3 | 21.9 | 177922 | 8.3 | 20.0 | 463531 | 8.4 | 19.6 |
| 140838 | 8.0 | 19.0 | 175403 | 8.1 | 18.2 | 94520 | 8.2 | 19.3 | 247907 | 8.3 | 20.0 | 98819 | 8.3 | 18.4 | 88289 | 8.4 | 17.1 |
| 255686 | 8.0 | 19.2 | 267269 | 8.1 | 20.2 | 116949 | 8.2 | 19.6 | 324929 | 8.3 | 20.6 | 136317 | 8.3 | 17.5 | 176529 | 8.4 | 19.6 |
| 312161 | 8.0 | 20.3 | 28705 | 8.1 | 18.5 | 394317 | 8.2 | 20.6 | 526845 | 8.3 | 22.1 | 425657 | 8.4 | 20.4 | 299858 | 8.4 | 20.9 |
| 399174 | 8.0 | 20.4 | 245718 | 8.1 | 19.8 | 182894 | 8.2 | 19.5 | 433342 | 8.3 | 19.9 | 210733 | 8.4 | 19.5 | 114585 | 8.4 | 18.6 |
| 377825 | 8.0 | 21.4 | 64173 | 8.1 | 19.4 | 60416 | 8.2 | 18.7 | 243275 | 8.3 | 19.4 | 29879 | 8.4 | 17.4 | 353274 | 8.4 | 20.0 |
| 452746 | 8.0 | 20.9 | 33316 | 8.1 | 18.3 | 297145 | 8.2 | 20.3 | 543689 | 8.3 | 19.6 | 36920 | 8.4 | 19.3 | 211828 | 8.4 | 20.2 |
| 60914 | 8.0 | 19.4 | 503584 | 8.1 | 20.3 | 65808 | 8.2 | 17.1 | 336454 | 8.3 | 20.3 | 281865 | 8.3 | 20.2 | 76850 | 8.4 | 17.9 |
| 479237 | 8.0 | 20.7 | 509335 | 8.1 | 21.4 | 305715 | 8.2 | 20.3 | 484402 | 8.3 | 20.5 | 146855 | 8.4 | 20.8 | 527887 | 8.4 | 22.5 |
| 198302 | 8.0 | 20.3 | 38372 | 8.1 | 17.2 | 351501 | 8.2 | 19.9 | 53343 | 8.3 | 16.7 | 134415 | 8.4 | 18.8 | 542336 | 8.4 | 21.4 |
| 29786 | 8.0 | 18.1 | 75020 | 8.1 | 19.7 | 72141 | 8.2 | 18.3 | 22596 | 8.3 | 16.4 | 75721 | 8.4 | 18.4 | 4786 | 8.4 | 15.8 |
| 309709 | 8.0 | 19.9 | 225953 | 8.1 | 19.5 | 528457 | 8.2 | 19.3 | 406396 | 8.3 | 20.3 | 275382 | 8.4 | 21.1 | 277778 | 8.4 | 20.0 |
| 152831 | 8.0 | 20.2 | 171828 | 8.1 | 18.7 | 409405 | 8.2 | 21.1 | 198889 | 8.3 | 19.7 | 251414 | 8.4 | 19.8 | 162636 | 8.4 | 18.0 |
| 44565 | 8.0 | 18.1 | 439335 | 8.1 | 20.1 | 26056 | 8.2 | 17.6 | 430645 | 8.3 | 19.8 | 87904 | 8.4 | 18.0 | 300057 | 8.4 | 19.2 |
| 81945 | 8.0 | 17.1 | 362769 | 8.1 | 20.1 | 185432 | 8.2 | 19.7 | 188870 | 8.3 | 19.3 | 100692 | 8.4 | 18.3 | 153525 | 8.4 | 19.7 |
| 157669 | 8.0 | 19.1 | 475840 | 8.1 | 20.5 | 474783 | 8.2 | 21.1 | 68733 | 8.3 | 19.2 | 63937 | 8.4 | 19.5 | 166972 | 8.4 | 18.8 |
| 251008 | 8.0 | 18.9 | 144442 | 8.1 | 18.5 | 299693 | 8.2 | 20.9 | 406380 | 8.3 | 21.0 | 540322 | 8.4 | 21.9 | 377443 | 8.4 | 19.6 |
| 304383 | 8.0 | 20.7 | 346213 | 8.1 | 21.0 | 297723 | 8.2 | 20.7 | 167016 | 8.3 | 18.2 | 313600 | 8.4 | 18.9 | 151632 | 8.4 | 17.5 |
| 461583 | 8.0 | 18.7 | 160551 | 8.1 | 18.1 | 374141 | 8.2 | 20.0 | 499312 | 8.3 | 21.4 | 21778 | 8.4 | 18.5 | 502688 | 8.4 | 20.5 |
| 70226 | 8.0 | 16.4 | 131149 | 8.1 | 20.1 | 93628 | 8.2 | 19.6 | 114869 | 8.3 | 19.2 | 235577 | 8.4 | 20.1 | 162612 | 8.4 | 19.3 |
| 142294 | 8.0 | 19.4 | 383382 | 8.1 | 20.6 | 464669 | 8.2 | 19.2 | 321097 | 8.3 | 19.7 | 92155 | 8.4 | 18.9 | 225761 | 8.4 | 20.4 |
| 23476 | 8.0 | 18.3 | 402960 | 8.1 | 20.7 | 300860 | 8.2 | 20.2 | 262634 | 8.3 | 19.9 | 62696 | 8.4 | 19.9 | 102423 | 8.4 | 18.7 |
| 131800 | 8.0 | 19.2 | 343645 | 8.1 | 20.8 | 328636 | 8.2 | 19.6 | 304668 | 8.3 | 20.6 | 313774 | 8.4 | 20.0 | 482098 | 8.4 | 19.7 |
| 135107 | 8.0 | 18.8 | 531691 | 8.1 | 20.7 | 399301 | 8.2 | 20.2 | 530819 | 8.3 | 21.3 | 449105 | 8.4 | 21.0 | 478137 | 8.4 | 20.2 |
| 536901 | 8.0 | 21.1 | 269041 | 8.1 | 21.2 | 530106 | 8.2 | 21.6 | 143454 | 8.3 | 19.9 | 386254 | 8.4 | 20.3 | 521010 | 8.4 | 20.8 |
| 450996 | 8.0 | 21.0 | 215245 | 8.1 | 20.1 | 506357 | 8.2 | 20.3 | 389857 | 8.3 | 19.8 | 480399 | 8.4 | 20.6 | 11226 | 8.4 | 16.9 |
| 199565 | 8.1 | 19.5 | 194393 | 8.1 | 20.2 | 452382 | 8.2 | 20.8 | 318010 | 8.3 | 19.9 | 505786 | 8.4 | 20.8 | 143410 | 8.4 | 19.2 |
| 232268 | 8.1 | 18.8 | 275605 | 8.1 | 20.2 | 60964 | 8.2 | 17.9 | 126062 | 8.3 | 19.7 | 508520 | 8.4 | 20.7 | 536579 | 8.4 | 20.1 |
| 244032 | 8.1 | 18.9 | 456972 | 8.1 | 21.0 | 139718 | 8.2 | 19.1 | 9084 | 8.3 | 17.9 | 346865 | 8.4 | 20.2 | 258950 | 8.4 | 19.6 |
| 128503 | 8.1 | 18.8 | 168058 | 8.1 | 20.0 | 74787 | 8.2 | 18.2 | 59291 | 8.3 | 16.3 | 477969 | 8.4 | 21.3 | 59038 | 8.4 | 19.3 |
| 356782 | 8.1 | 19.8 | 303879 | 8.1 | 19.4 | 353604 | 8.2 | 20.2 | 222683 | 8.3 | 20.1 | 86536 | 8.4 | 17.3 | 268495 | 8.4 | 19.2 |
| 214158 | 8.1 | 20.6 | 118432 | 8.1 | 19.1 | 501064 | 8.2 | 20.4 | 199330 | 8.3 | 19.5 | 129787 | 8.4 | 18.9 | 422286 | 8.4 | 19.9 |
| 27611 | 8.1 | 19.6 | 126321 | 8.1 | 19.0 | 101771 | 8.2 | 18.4 | 303887 | 8.3 | 20.1 | 304490 | 8.4 | 20.4 | 495507 | 8.4 | 20.0 |
| 353163 | 8.1 | 20.1 | 529169 | 8.1 | 21.4 | 224421 | 8.2 | 18.8 | 357082 | 8.3 | 19.8 | 149915 | 8.4 | 20.1 | 18164 | 8.4 | 17.2 |
| 118442 | 8.1 | 20.6 | 528920 | 8.1 | 21.3 | 354840 | 8.2 | 20.6 | 352031 | 8.3 | 20.2 | 473274 | 8.4 | 20.1 | 340441 | 8.4 | 19.8 |
| 187732 | 8.1 | 19.6 | 420143 | 8.1 | 20.5 | 141234 | 8.2 | 18.3 | 54658 | 8.3 | 18.3 | 317883 | 8.4 | 20.0 | 397119 | 8.4 | 20.2 |
| 357176 | 8.1 | 21.5 | 365225 | 8.1 | 20.5 | 128604 | 8.2 | 18.7 | 76817 | 8.3 | 18.0 | 70790 | 8.4 | 18.8 | 146169 | 8.4 | 19.6 |
| 396456 | 8.1 | 20.7 | 431075 | 8.1 | 20.1 | 70801 | 8.2 | 17.5 | 233215 | 8.3 | 20.4 | 43127 | 8.4 | 19.1 | 83319 | 8.4 | 19.1 |
| 387065 | 8.1 | 19.8 | 236180 | 8.1 | 19.5 | 237972 | 8.2 | 19.4 | 478268 | 8.3 | 20.1 | 241530 | 8.4 | 20.3 | 230079 | 8.4 | 19.9 |
| 512605 | 8.1 | 20.9 | 507429 | 8.1 | 20.5 | 140583 | 8.2 | 18.8 | 67989 | 8.3 | 18.1 | 240881 | 8.4 | 19.4 | 133304 | 8.4 | 18.7 |
| 85419 | 8.1 | 19.1 | 420066 | 8.1 | 21.5 | 424136 | 8.2 | 22.0 | 192656 | 8.3 | 18.1 | 55299 | 8.4 | 19.1 | 235403 | 8.4 | 19.7 |
| 161776 | 8.1 | 19.9 | 372549 | 8.1 | 20.2 | 297452 | 8.2 | 20.8 | 75151 | 8.3 | 17.7 | 106722 | 8.4 | 19.1 | 87398 | 8.5 | 18.6 |
| 531977 | 8.1 | 21.4 | 87596 | 8.1 | 18.4 | 394022 | 8.2 | 21.2 | 253867 | 8.3 | 21.1 | 3421 | 8.4 | 16.7 | 55572 | 8.5 | 16.6 |
| 259581 | 8.1 | 18.4 | 125443 | 8.1 | 18.4 | 222704 | 8.2 | 18.9 | 191595 | 8.3 | 18.1 | 472230 | 8.4 | 20.4 | 464433 | 8.5 | 20.9 |
| 113153 | 8.1 | 18.2 | 406545 | 8.1 | 19.6 | 263332 | 8.2 | 19.9 | 155823 | 8.3 | 18.5 | 217958 | 8.4 | 20.6 | 378868 | 8.5 | 20.0 |
| 31086 | 8.1 | 20.3 | 82639 | 8.1 | 18.0 | 242757 | 8.2 | 18.9 | 354727 | 8.3 | 21.0 | 402776 | 8.4 | 21.0 | 141203 | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|
| 101790 | 8.5 | 18.2 | 202933 | 8.5 | 20.1 | 356528 | 8.6 | 20.6 | 156290 | 8.7 | 20.0 | 52940 | 8.8 | 18.5 | 475499 | 8.9 | 20.7 |
| 300840 | 8.5 | 20.2 | 498832 | 8.5 | 20.0 | 220296 | 8.6 | 20.6 | 198445 | 8.7 | 18.0 | 12744 | 8.8 | 16.8 | 468824 | 8.9 | 18.6 |
| 424764 | 8.5 | 20.0 | 538349 | 8.5 | 21.5 | 438443 | 8.6 | 20.1 | 166584 | 8.7 | 19.9 | 379726 | 8.8 | 20.1 | 233632 | 8.9 | 18.0 |
| 439582 | 8.5 | 20.6 | 93780 | 8.5 | 19.0 | 6056 | 8.6 | 16.8 | 307172 | 8.7 | 20.2 | 367739 | 8.8 | 20.8 | 540597 | 8.9 | 20.5 |
| 162606 | 8.5 | 19.6 | 118017 | 8.5 | 19.2 | 397161 | 8.6 | 21.0 | 454103 | 8.7 | 21.1 | 126708 | 8.8 | 20.1 | 490935 | 8.9 | 19.6 |
| 493697 | 8.5 | 20.2 | 37035 | 8.5 | 17.5 | 472180 | 8.6 | 19.7 | 423496 | 8.7 | 22.1 | 533740 | 8.8 | 20.2 | 72733 | 8.9 | 19.2 |
| 177878 | 8.5 | 20.0 | 78007 | 8.5 | 17.1 | 180557 | 8.6 | 20.4 | 234302 | 8.7 | 20.6 | 527265 | 8.8 | 21.9 | 125365 | 8.9 | 19.7 |
| 99513 | 8.5 | 17.0 | 72185 | 8.5 | 18.0 | 309643 | 8.6 | 21.2 | 183529 | 8.7 | 19.8 | 413853 | 8.8 | 20.1 | 14044 | 8.9 | 16.9 |
| 280833 | 8.5 | 18.4 | 179380 | 8.5 | 20.7 | 283095 | 8.6 | 20.3 | 129301 | 8.7 | 18.8 | 504195 | 8.8 | 20.8 | 500181 | 8.9 | 19.6 |
| 128525 | 8.5 | 19.0 | 454108 | 8.5 | 21.2 | 406871 | 8.6 | 21.5 | 305493 | 8.7 | 21.2 | 222572 | 8.8 | 20.0 | 182944 | 8.9 | 20.0 |
| 123628 | 8.5 | 19.1 | 314154 | 8.5 | 20.3 | 99621 | 8.6 | 19.1 | 194922 | 8.7 | 18.5 | 257937 | 8.8 | 19.4 | 434725 | 8.9 | 21.8 |
| 479191 | 8.5 | 21.0 | 264661 | 8.5 | 19.7 | 534533 | 8.6 | 19.7 | 32019 | 8.7 | 18.6 | 63256 | 8.8 | 18.8 | 522693 | 8.9 | 21.0 |
| 48586 | 8.5 | 18.1 | 404939 | 8.5 | 19.2 | 432033 | 8.6 | 20.6 | 161062 | 8.7 | 18.1 | 5842 | 8.8 | 15.8 | 201619 | 8.9 | 19.0 |
| 368115 | 8.5 | 20.4 | 381885 | 8.6 | 20.3 | 478246 | 8.6 | 21.4 | 211234 | 8.7 | 19.1 | 173934 | 8.8 | 20.1 | 151202 | 8.9 | 19.1 |
| 183206 | 8.5 | 19.2 | 25547 | 8.6 | 18.3 | 211826 | 8.6 | 19.6 | 359408 | 8.7 | 19.2 | 257717 | 8.8 | 20.9 | 354700 | 8.9 | 21.2 |
| 526870 | 8.5 | 21.6 | 364723 | 8.6 | 20.5 | 259603 | 8.6 | 20.0 | 143371 | 8.7 | 19.2 | 148409 | 8.8 | 19.6 | 497886 | 8.9 | 20.7 |
| 242294 | 8.5 | 20.2 | 204625 | 8.6 | 18.7 | 335165 | 8.6 | 20.9 | 272687 | 8.7 | 20.7 | 30931 | 8.8 | 19.1 | 352739 | 8.9 | 20.7 |
| 470146 | 8.5 | 20.1 | 310523 | 8.6 | 20.1 | 503648 | 8.6 | 19.9 | 390630 | 8.7 | 20.7 | 510090 | 8.8 | 20.2 | 80229 | 8.9 | 17.6 |
| 365136 | 8.5 | 21.1 | 395321 | 8.6 | 20.2 | 501507 | 8.6 | 20.4 | 357932 | 8.7 | 21.8 | 55109 | 8.8 | 19.2 | 35963 | 8.9 | 17.8 |
| 276939 | 8.5 | 21.0 | 398724 | 8.6 | 19.9 | 409845 | 8.6 | 20.1 | 467744 | 8.7 | 20.6 | 510458 | 8.8 | 21.2 | 303793 | 8.9 | 18.8 |
| 453336 | 8.5 | 21.2 | 472298 | 8.6 | 20.5 | 315990 | 8.7 | 20.9 | 188296 | 8.7 | 19.9 | 500487 | 8.8 | 20.8 | 13853 | 8.9 | 16.7 |
| 205535 | 8.5 | 19.6 | 269959 | 8.6 | 19.9 | 329793 | 8.7 | 19.7 | 198476 | 8.7 | 19.7 | 352029 | 8.8 | 20.3 | 91216 | 8.9 | 18.7 |
| 80082 | 8.5 | 19.0 | 536729 | 8.6 | 20.6 | 169495 | 8.7 | 18.4 | 17388 | 8.7 | 17.9 | 397656 | 8.8 | 20.7 | 505266 | 8.9 | 20.3 |
| 153123 | 8.5 | 19.1 | 371684 | 8.6 | 21.2 | 464519 | 8.7 | 18.9 | 431927 | 8.7 | 20.8 | 300970 | 8.8 | 20.3 | 35030 | 8.9 | 20.7 |
| 235388 | 8.5 | 19.6 | 302384 | 8.6 | 20.7 | 299270 | 8.7 | 19.4 | 361578 | 8.7 | 19.1 | 133942 | 8.8 | 19.5 | 215003 | 8.9 | 20.2 |
| 379655 | 8.5 | 19.9 | 469050 | 8.6 | 21.0 | 118076 | 8.7 | 18.6 | 466606 | 8.7 | 21.2 | 304036 | 8.8 | 20.1 | 303721 | 8.9 | 20.3 |
| 214759 | 8.5 | 19.8 | 265760 | 8.6 | 19.6 | 464614 | 8.7 | 20.2 | 238457 | 8.7 | 18.1 | 273762 | 8.8 | 20.8 | 95518 | 8.9 | 18.3 |
| 320437 | 8.5 | 21.5 | 61041 | 8.6 | 16.7 | 77370 | 8.7 | 17.7 | 110795 | 8.7 | 18.4 | 101598 | 8.8 | 18.7 | 391681 | 8.9 | 20.5 |
| 192544 | 8.5 | 19.0 | 86471 | 8.6 | 18.0 | 92853 | 8.7 | 18.7 | 494294 | 8.7 | 20.4 | 403365 | 8.8 | 20.5 | 362750 | 8.9 | 20.5 |
| 320279 | 8.5 | 20.7 | 103416 | 8.6 | 19.6 | 512578 | 8.7 | 21.0 | 246332 | 8.7 | 20.3 | 20985 | 8.8 | 17.1 | 328329 | 8.9 | 20.0 |
| 216207 | 8.5 | 20.6 | 109366 | 8.6 | 19.0 | 417632 | 8.7 | 22.0 | 436568 | 8.7 | 20.0 | 492353 | 8.8 | 20.1 | 506567 | 8.9 | 19.8 |
| 509087 | 8.5 | 21.4 | 219635 | 8.6 | 19.5 | 286679 | 8.7 | 20.5 | 405500 | 8.7 | 21.6 | 286439 | 8.8 | 19.9 | 458980 | 8.9 | 19.6 |
| 333075 | 8.5 | 19.3 | 311255 | 8.6 | 20.6 | 176392 | 8.7 | 19.8 | 380181 | 8.7 | 18.6 | 404669 | 8.8 | 21.2 | 72963 | 8.9 | 17.8 |
| 133440 | 8.5 | 18.0 | 198469 | 8.6 | 20.2 | 111565 | 8.7 | 18.9 | 492655 | 8.7 | 19.5 | 221098 | 8.8 | 18.7 | 437456 | 8.9 | 20.2 |
| 290197 | 8.5 | 20.7 | 479917 | 8.6 | 20.5 | 435932 | 8.7 | 20.6 | 386176 | 8.7 | 21.4 | 272819 | 8.8 | 19.6 | 127776 | 8.9 | 19.5 |
| 43043 | 8.5 | 18.5 | 352704 | 8.6 | 21.0 | 136761 | 8.7 | 18.3 | 539322 | 8.7 | 20.5 | 96916 | 8.8 | 18.4 | 271128 | 8.9 | 19.2 |
| 238538 | 8.5 | 18.5 | 106035 | 8.6 | 19.1 | 232353 | 8.7 | 19.5 | 1264 | 8.7 | 13.8 | 385582 | 8.8 | 19.6 | 280405 | 8.9 | 19.5 |
| 321932 | 8.5 | 21.2 | 60040 | 8.6 | 18.2 | 453862 | 8.7 | 20.8 | 406498 | 8.7 | 21.5 | 476544 | 8.8 | 20.9 | 136240 | 8.9 | 18.6 |
| 21049 | 8.5 | 15.9 | 505571 | 8.6 | 19.6 | 120895 | 8.7 | 17.2 | 131097 | 8.7 | 18.1 | 534216 | 8.8 | 21.0 | 65916 | 8.9 | 18.4 |
| 430956 | 8.5 | 21.6 | 66816 | 8.6 | 19.3 | 159660 | 8.7 | 19.0 | 258747 | 8.7 | 19.6 | 431091 | 8.8 | 21.0 | 209535 | 8.9 | 20.5 |
| 532059 | 8.5 | 20.4 | 148456 | 8.6 | 19.7 | 63868 | 8.7 | 19.6 | 535463 | 8.7 | 21.0 | 3702 | 8.8 | 14.2 | 133253 | 8.9 | 18.5 |
| 185938 | 8.5 | 19.9 | 429597 | 8.6 | 20.2 | 8597 | 8.7 | 16.3 | 249587 | 8.7 | 19.7 | 330108 | 8.8 | 19.6 | 382319 | 8.9 | 19.3 |
| 17559 | 8.5 | 17.7 | 377421 | 8.6 | 19.9 | 302308 | 8.7 | 20.3 | 7612 | 8.7 | 16.5 | 434393 | 8.8 | 20.9 | 81529 | 8.9 | 18.5 |
| 462633 | 8.5 | 19.6 | 475214 | 8.6 | 21.1 | 409351 | 8.7 | 20.0 | 57418 | 8.7 | 16.7 | 20681 | 8.8 | 17.5 | 528950 | 8.9 | 21.7 |
| 416003 | 8.5 | 21.2 | 73836 | 8.6 | 19.3 | 245660 | 8.7 | 20.4 | 292684 | 8.8 | 20.3 | 238896 | 8.8 | 20.1 | 287471 | 8.9 | 19.3 |
| 62064 | 8.5 | 18.5 | 530197 | 8.6 | 21.1 | 22798 | 8.7 | 17.6 | 530891 | 8.8 | 21.3 | 499940 | 8.8 | 21.9 | 954 | 8.9 | 13.5 |
| 14701 | 8.5 | 17.2 | 201630 | 8.6 | 19.9 | 346141 | 8.7 | 20.4 | 1457 | 8.8 | 14.1 | 242438 | 8.8 | 19.8 | 47349 | 8.9 | 17.3 |
| 193874 | 8.5 | 19.3 | 259529 | 8.6 | 20.3 | 179331 | 8.7 | 21.5 | 539683 | 8.8 | 19.6 | 69654 | 8.8 | 19.3 | 272481 | 8.9 | 21.2 |
| 508235 | 8.5 | 21.1 | 37330 | 8.6 | 17.3 | 120332 | 8.7 | 19.1 | 38231 | 8.8 | 21.1 | 38231 | 8.8 | 17.9 | 310312 | 8.9 | 19.6 |
| 323099 | 8.5 | 19.0 | 354739 | 8.6 | 21.5 | 251480 | 8.7 | 19.8 | 504643 | 8.8 | 21.7 | 48844 | 8.8 | 18.7 | 434449 | 8.9 | 19.0 |
| 528295 | 8.5 | 20.9 | 3278 | 8.6 | 16.1 | 102525 | 8.7 | 18.4 | 2761 | 8.8 | 17.4 | 360500 | 8.8 | 20.7 | 103941 | 8.9 | 19.0 |
| 106229 | 8.5 | 19.9 | 332669 | 8.6 | 20.2 | 290212 | 8.7 | 20.2 | 292446 | 8.8 | 19.7 | 297295 | 8.8 | 17.8 | 505054 | 8.9 | 20.4 |
| 139939 | 8.5 | 19.2 | 279599 | 8.6 | 21.2 | 106416 | 8.7 | 19.3 | 277703 | 8.8 | 20.5 | 87231 | 8.8 | 17.4 | 490664 | 8.9 | 19.6 |
| 240033 | 8.5 | 20.2 | 376438 | 8.6 | 18.9 | 362096 | 8.7 | 19.8 | 228532 | 8.8 | 21.2 | 505334 | 8.8 | 21.9 | 417179 | 8.9 | 21.0 |
| 407720 | 8.5 | 21.7 | 26621 | 8.6 | 16.7 | 449127 | 8.7 | 20.8 | 506402 | 8.8 | 20.2 | 38901 | 8.8 | 18.9 | 156330 | 8.9 | 20.3 |
| 281730 | 8.5 | 19.4 | 19379 | 8.6 | 16.2 | 120572 | 8.7 | 19.5 | 235673 | 8.8 | 19.1 | 315370 | 8.8 | 20.2 | 125110 | 8.9 | 19.5 |
| 328895 | 8.5 | 20.0 | 489426 | 8.6 | 20.4 | 5893 | 8.7 | 16.8 | 496876 | 8.8 | 20.3 | 70524 | 8.8 | 18.0 | 332386 | 8.9 | 20.4 |
| 74443 | 8.5 | 18.0 | 535253 | 8.6 | 20.9 | 305695 | 8.7 | 20.9 | 210044 | 8.8 | 19.9 | 382958 | 8.8 | 21.2 | 317965 | 8.9 | 21.0 |
| 271736 | 8.5 | 19.7 | 22575 | 8.6 | 18.5 | 362111 | 8.7 | 19.9 | 35875 | 8.8 | 16.3 | 203417 | 8.8 | 19.5 | 40513 | 8.9 | 18.4 |
| 462262 | 8.5 | 20.7 | 490419 | 8.6 | 20.6 | 214212 | 8.7 | 20.8 | 395575 | 8.8 | 19.8 | 247440 | 8.9 | 19.7 | 385149 | 8.9 | 20.6 |
| 380478 | 8.5 | 21.3 | 510418 | 8.6 | 20.4 | 27854 | 8.7 | 18.3 | 139187 | 8.8 | 19.4 | 163511 | 8.9 | 19.5 | 429367 | 8.9 | 20.5 |
| 452493 | 8.5 | 21.3 | 44181 | 8.6 | 18.7 | 520155 | 8.7 | 20.4 | 479090 | 8.8 | 20.8 | 35123 | 8.9 | 17.3 | 32273 | 8.9 | 18.4 |
| 439150 | 8.5 | 19.9 | 292594 | 8.6 | 21.0 | 311417 | 8.7 | 20.2 | 505758 | 8.8 | 20.1 | 198567 | 8.9 | 19.9 | 436607 | 8.9 | 20.2 |
| 398585 | 8.5 | 21.0 | 105876 | 8.6 | 17.7 | 212023 | 8.7 | 20.6 | 212040 | 8.8 | 19.8 | 11796 | 8.9 | 16.8 | 241730 | 8.9 | 19.7 |
| 64043 | 8.5 | 19.5 | 509128 | 8.6 | 20.8 | 300144 | 8.7 | 21.3 | 427098 | 8.8 | 19.9 | 475565 | 8.9 | 21.2 | 542425 | 8.9 | 20.7 |
| 386462 | 8.5 | 20.5 | 270432 | 8.6 | 20.3 | 499181 | 8.7 | 20.5 | 434264 | 8.8 | 20.5 | 496576 | 8.9 | 20.6 | 356321 | 8.9 | 20.5 |
| 315534 | 8.5 | 20.2 | 290897 | 8.6 | 19.3 | 125814 | 8.7 | 19.9 | 411281 | 8.8 | 19.6 | 155779 | 8.9 | 19.1 | 128425 | 8.9 | 18.8 |
| 520096 | 8.5 | 20.5 | 31470 | 8.6 | 18.2 | 109930 | 8.7 | 18.8 | 27595 | 8.8 | 18.4 | 501252 | 8.9 | 19.3 | 408137 | 8.9 | 20.8 |
| 306081 | 8.5 | 19.9 | 412174 | 8.6 | 19.2 | 53964 | 8.7 | 19.0 | 526652 | 8.8 | 19.8 | 332951 | 8.9 | 19.5 | 391052 | 8.9 | 20.3 |
| 484757 | 8.5 | 21.2 | 201732 | 8.6 | 18.8 | 353854 | 8.7 | 20.8 | 210299 | 8.8 | 18.5 | 81262 | 8.9 | 18.1 | 357793 | 8.9 | 20.3 |
| 398989 | 8.5 | 20.2 | 240392 | 8.6 | 20.1 | 63515 | 8.7 | 17.7 | 203536 | 8.8 | 19.2 | 356347 | 8.9 | 20.3 | 414198 | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|--------|-------|------|--------|-----|------|
| 106401 | 8.9 | 18.3 | 17370 | 9.0 | 17.4 | 180094 | 9.1 | 20.2 | 99794 | 9.2 | 17.8 | 138700 | 9.3 | 18.7 | 6276 | 9.4 | 16.8 |
| 249169 | 8.9 | 19.9 | 36557 | 9.1 | 18.3 | 506958 | 9.1 | 19.0 | 322400 | 9.2 | 19.8 | 237337 | 9.3 | 20.4 | 479121 | 9.4 | 21.4 |
| 346881 | 8.9 | 21.5 | 476479 | 9.1 | 21.4 | 225601 | 9.1 | 19.8 | 526796 | 9.2 | 21.4 | 313750 | 9.3 | 19.2 | 61668 | 9.4 | 19.1 |
| 404227 | 8.9 | 20.3 | 393816 | 9.1 | 20.6 | 76965 | 9.1 | 19.0 | 358803 | 9.2 | 20.8 | 531101 | 9.3 | 22.0 | 105354 | 9.4 | 18.9 |
| 538114 | 8.9 | 20.3 | 213397 | 9.1 | 19.9 | 132267 | 9.1 | 18.4 | 83359 | 9.2 | 19.0 | 304812 | 9.3 | 20.2 | 93458 | 9.4 | 19.0 |
| 123775 | 8.9 | 19.0 | 261405 | 9.1 | 21.2 | 533961 | 9.1 | 21.9 | 6112 | 9.2 | 15.9 | 434558 | 9.3 | 20.4 | 141450 | 9.4 | 20.4 |
| 524363 | 8.9 | 20.5 | 474806 | 9.1 | 20.9 | 304515 | 9.1 | 20.6 | 351968 | 9.2 | 21.7 | 524813 | 9.3 | 20.4 | 502341 | 9.4 | 20.9 |
| 533472 | 8.9 | 22.0 | 313011 | 9.1 | 19.5 | 456698 | 9.2 | 21.1 | 524290 | 9.2 | 21.1 | 507599 | 9.3 | 20.6 | 332870 | 9.4 | 20.8 |
| 463810 | 8.9 | 20.6 | 423030 | 9.1 | 20.2 | 307228 | 9.2 | 19.9 | 67999 | 9.2 | 19.0 | 155776 | 9.3 | 19.0 | 360026 | 9.4 | 21.5 |
| 106216 | 8.9 | 19.7 | 271892 | 9.1 | 20.3 | 291685 | 9.2 | 20.6 | 509324 | 9.2 | 21.4 | 524178 | 9.3 | 21.5 | 271758 | 9.4 | 19.2 |
| 539564 | 8.9 | 20.1 | 166725 | 9.1 | 20.0 | 117141 | 9.2 | 19.0 | 146371 | 9.3 | 18.7 | 299258 | 9.3 | 19.9 | 262522 | 9.4 | 21.1 |
| 259676 | 8.9 | 19.4 | 498759 | 9.1 | 20.5 | 373137 | 9.2 | 20.2 | 122639 | 9.3 | 19.3 | 496134 | 9.3 | 20.7 | 533358 | 9.4 | 21.8 |
| 56001 | 8.9 | 17.7 | 408757 | 9.1 | 20.2 | 529703 | 9.2 | 20.5 | 95967 | 9.3 | 17.0 | 14522 | 9.3 | 17.1 | 173583 | 9.4 | 18.6 |
| 60208 | 8.9 | 17.3 | 450415 | 9.1 | 21.3 | 15284 | 9.2 | 17.8 | 138773 | 9.3 | 20.1 | 421639 | 9.3 | 20.5 | 129415 | 9.4 | 19.6 |
| 539577 | 8.9 | 20.8 | 391658 | 9.1 | 20.5 | 142047 | 9.2 | 19.4 | 241491 | 9.3 | 19.9 | 309350 | 9.3 | 19.7 | 9592 | 9.4 | 17.1 |
| 24916 | 8.9 | 19.6 | 215397 | 9.1 | 19.1 | 302301 | 9.2 | 20.9 | 415961 | 9.3 | 20.2 | 298730 | 9.3 | 20.0 | 400807 | 9.4 | 19.4 |
| 315493 | 8.9 | 19.9 | 67769 | 9.1 | 18.9 | 332010 | 9.2 | 19.3 | 335609 | 9.3 | 20.4 | 236788 | 9.3 | 19.2 | 214251 | 9.4 | 19.2 |
| 379387 | 8.9 | 20.1 | 261263 | 9.1 | 19.9 | 303408 | 9.2 | 18.5 | 92471 | 9.3 | 18.5 | 343090 | 9.3 | 20.7 | 179376 | 9.4 | 19.7 |
| 17732 | 8.9 | 18.3 | 445903 | 9.1 | 20.7 | 399100 | 9.2 | 21.0 | 381486 | 9.3 | 19.7 | 56692 | 9.3 | 16.6 | 184160 | 9.4 | 18.2 |
| 246573 | 8.9 | 19.9 | 364874 | 9.1 | 21.3 | 462343 | 9.2 | 19.0 | 107010 | 9.3 | 18.8 | 540256 | 9.3 | 21.0 | 180113 | 9.4 | 19.9 |
| 209883 | 8.9 | 20.3 | 72699 | 9.1 | 18.6 | 72721 | 9.2 | 19.4 | 499740 | 9.3 | 21.9 | 146173 | 9.3 | 19.6 | 396264 | 9.4 | 19.8 |
| 322454 | 8.9 | 20.0 | 87407 | 9.1 | 18.2 | 189773 | 9.2 | 19.2 | 180975 | 9.3 | 19.6 | 248746 | 9.3 | 19.2 | 530190 | 9.4 | 21.9 |
| 522216 | 8.9 | 21.1 | 355767 | 9.1 | 19.0 | 414169 | 9.2 | 19.3 | 397704 | 9.3 | 21.8 | 302505 | 9.3 | 20.8 | 36424 | 9.4 | 18.0 |
| 230650 | 8.9 | 19.2 | 409809 | 9.1 | 20.9 | 516902 | 9.2 | 21.2 | 315777 | 9.3 | 20.6 | 312153 | 9.3 | 21.1 | 263446 | 9.4 | 19.4 |
| 87653 | 8.9 | 18.6 | 501050 | 9.1 | 20.3 | 332946 | 9.2 | 19.0 | 83745 | 9.3 | 18.5 | 505598 | 9.3 | 22.0 | 218871 | 9.4 | 19.3 |
| 379657 | 8.9 | 19.9 | 307393 | 9.1 | 19.9 | 311177 | 9.2 | 20.1 | 287546 | 9.3 | 21.4 | 499277 | 9.3 | 21.4 | 439165 | 9.4 | 19.7 |
| 254764 | 8.9 | 19.2 | 87942 | 9.1 | 18.3 | 465933 | 9.2 | 21.1 | 388681 | 9.3 | 21.3 | 259262 | 9.3 | 20.1 | 457638 | 9.4 | 21.6 |
| 248078 | 8.9 | 18.8 | 245202 | 9.1 | 18.3 | 250062 | 9.2 | 19.6 | 459673 | 9.3 | 20.7 | 161411 | 9.3 | 19.3 | 185433 | 9.4 | 18.2 |
| 361075 | 8.9 | 20.4 | 260568 | 9.1 | 20.1 | 467079 | 9.2 | 20.6 | 179455 | 9.3 | 20.8 | 410372 | 9.3 | 21.4 | 8612 | 9.4 | 18.4 |
| 525848 | 8.9 | 20.7 | 497388 | 9.1 | 21.0 | 509602 | 9.2 | 21.1 | 498466 | 9.3 | 22.1 | 348986 | 9.3 | 22.1 | 32328 | 9.4 | 16.4 |
| 134394 | 8.9 | 18.3 | 467246 | 9.1 | 19.9 | 488539 | 9.2 | 20.7 | 469047 | 9.3 | 20.1 | 11832 | 9.3 | 16.0 | 331244 | 9.4 | 19.5 |
| 61270 | 8.9 | 18.5 | 170980 | 9.1 | 20.1 | 304757 | 9.2 | 20.8 | 393915 | 9.3 | 20.4 | 335148 | 9.3 | 19.9 | 522424 | 9.4 | 20.7 |
| 479208 | 8.9 | 21.0 | 53325 | 9.1 | 17.6 | 111570 | 9.2 | 19.8 | 22848 | 9.3 | 18.5 | 347719 | 9.3 | 21.6 | 284144 | 9.4 | 19.2 |
| 250770 | 8.9 | 19.6 | 538024 | 9.1 | 20.9 | 9985 | 9.2 | 17.5 | 151739 | 9.3 | 19.7 | 199664 | 9.3 | 20.2 | 389265 | 9.4 | 20.5 |
| 300958 | 8.9 | 20.6 | 279792 | 9.1 | 19.9 | 69864 | 9.2 | 18.8 | 419287 | 9.3 | 20.2 | 29271 | 9.3 | 18.5 | 350027 | 9.4 | 19.6 |
| 125053 | 8.9 | 17.9 | 73818 | 9.1 | 18.5 | 257652 | 9.2 | 20.1 | 196983 | 9.3 | 18.8 | 235127 | 9.3 | 19.3 | 248489 | 9.4 | 19.4 |
| 462326 | 8.9 | 20.7 | 401996 | 9.1 | 21.6 | 324406 | 9.2 | 20.1 | 266316 | 9.3 | 21.0 | 498774 | 9.3 | 20.4 | 282568 | 9.4 | 20.3 |
| 410318 | 8.9 | 21.3 | 326424 | 9.1 | 20.4 | 335174 | 9.2 | 20.0 | 519709 | 9.3 | 21.3 | 47650 | 9.3 | 17.0 | 52856 | 9.4 | 18.0 |
| 220582 | 8.9 | 20.1 | 258755 | 9.1 | 21.4 | 516402 | 9.2 | 20.9 | 192506 | 9.3 | 19.2 | 499807 | 9.3 | 20.3 | 107574 | 9.4 | 20.3 |
| 267452 | 8.9 | 18.3 | 98437 | 9.1 | 19.0 | 114343 | 9.2 | 19.7 | 92109 | 9.3 | 18.7 | 297677 | 9.3 | 19.5 | 427143 | 9.4 | 20.6 |
| 64065 | 8.9 | 18.7 | 241514 | 9.1 | 19.7 | 178289 | 9.2 | 17.9 | 346697 | 9.3 | 21.0 | 543566 | 9.3 | 20.7 | 336867 | 9.4 | 19.1 |
| 397928 | 8.9 | 20.3 | 254133 | 9.1 | 19.4 | 501238 | 9.2 | 20.8 | 309901 | 9.3 | 20.1 | 489093 | 9.3 | 20.9 | 396130 | 9.4 | 20.4 |
| 190378 | 8.9 | 18.1 | 313636 | 9.1 | 19.9 | 375019 | 9.2 | 20.3 | 526079 | 9.3 | 20.1 | 308511 | 9.3 | 20.2 | 347456 | 9.4 | 19.8 |
| 406388 | 9.0 | 20.1 | 105338 | 9.1 | 19.0 | 257909 | 9.2 | 19.9 | 308079 | 9.3 | 20.5 | 430433 | 9.3 | 20.2 | 253810 | 9.4 | 20.4 |
| 37610 | 9.0 | 17.9 | 532700 | 9.1 | 20.7 | 242431 | 9.2 | 19.1 | 28729 | 9.3 | 19.1 | 273283 | 9.4 | 18.9 | 352100 | 9.4 | 20.2 |
| 26840 | 9.0 | 16.0 | 405499 | 9.1 | 20.6 | 214670 | 9.2 | 20.3 | 392944 | 9.3 | 20.8 | 304366 | 9.4 | 20.3 | 438836 | 9.4 | 21.8 |
| 278207 | 9.0 | 19.8 | 456920 | 9.1 | 21.0 | 131585 | 9.2 | 19.8 | 520286 | 9.3 | 20.6 | 408161 | 9.4 | 20.9 | 372551 | 9.4 | 20.1 |
| 126285 | 9.0 | 19.6 | 167011 | 9.1 | 17.8 | 399080 | 9.2 | 20.8 | 80174 | 9.3 | 18.3 | 425078 | 9.4 | 20.3 | 123807 | 9.4 | 19.1 |
| 424646 | 9.0 | 19.4 | 298830 | 9.1 | 19.5 | 365189 | 9.2 | 20.9 | 98452 | 9.3 | 19.8 | 215980 | 9.4 | 19.1 | 424154 | 9.4 | 21.2 |
| 109328 | 9.0 | 19.2 | 225886 | 9.1 | 20.5 | 303675 | 9.2 | 19.0 | 67428 | 9.3 | 18.1 | 309175 | 9.4 | 20.7 | 349097 | 9.4 | 20.3 |
| 477141 | 9.0 | 20.8 | 216821 | 9.1 | 20.8 | 71027 | 9.2 | 18.9 | 419693 | 9.3 | 19.4 | 453273 | 9.4 | 19.1 | 503658 | 9.4 | 20.6 |
| 80165 | 9.0 | 19.1 | 79076 | 9.1 | 20.4 | 502706 | 9.2 | 20.5 | 416013 | 9.3 | 20.3 | 314172 | 9.4 | 19.9 | 351207 | 9.4 | 19.7 |
| 529843 | 9.0 | 19.8 | 292563 | 9.1 | 19.3 | 315491 | 9.2 | 20.0 | 357898 | 9.3 | 19.4 | 310516 | 9.4 | 19.6 | 216606 | 9.4 | 19.0 |
| 299397 | 9.0 | 19.3 | 245406 | 9.1 | 19.2 | 264980 | 9.2 | 20.6 | 332899 | 9.3 | 19.9 | 427768 | 9.4 | 20.7 | 477678 | 9.4 | 20.5 |
| 9031 | 9.0 | 16.7 | 395962 | 9.1 | 22.1 | 425830 | 9.2 | 20.6 | 456854 | 9.3 | 19.6 | 95391 | 9.4 | 19.6 | 176754 | 9.4 | 18.2 |
| 356336 | 9.0 | 21.1 | 502939 | 9.1 | 21.5 | 196841 | 9.2 | 19.5 | 166655 | 9.3 | 19.1 | 475785 | 9.4 | 21.7 | 419892 | 9.4 | 20.1 |
| 131000 | 9.0 | 19.1 | 58847 | 9.1 | 17.6 | 437110 | 9.2 | 20.9 | 314174 | 9.3 | 21.3 | 5149 | 9.4 | 17.8 | 468573 | 9.4 | 21.7 |
| 6919 | 9.0 | 17.1 | 135507 | 9.1 | 19.6 | 105430 | 9.2 | 19.2 | 207439 | 9.3 | 19.2 | 353698 | 9.4 | 20.3 | 540465 | 9.4 | 21.2 |
| 55000 | 9.0 | 18.2 | 360484 | 9.1 | 19.7 | 522914 | 9.2 | 20.1 | 87770 | 9.3 | 18.0 | 380592 | 9.4 | 18.6 | 231564 | 9.4 | 19.8 |
| 115980 | 9.0 | 19.7 | 102376 | 9.1 | 18.6 | 153253 | 9.2 | 19.9 | 479668 | 9.3 | 21.0 | 498629 | 9.4 | 20.9 | 254185 | 9.5 | 19.7 |
| 21252 | 9.0 | 17.9 | 106751 | 9.1 | 18.5 | 544398 | 9.2 | 20.8 | 303358 | 9.3 | 18.6 | 310475 | 9.4 | 18.7 | 302419 | 9.5 | 20.9 |
| 431847 | 9.0 | 19.9 | 217865 | 9.1 | 17.9 | 49686 | 9.2 | 18.4 | 257609 | 9.3 | 21.1 | 304367 | 9.4 | 21.2 | 401440 | 9.5 | 20.7 |
| 121036 | 9.0 | 16.4 | 265602 | 9.1 | 18.4 | 512607 | 9.2 | 20.4 | 216769 | 9.3 | 18.9 | 22892 | 9.4 | 18.2 | 146253 | 9.5 | 19.7 |
| 387728 | 9.0 | 21.1 | 32577 | 9.1 | 17.7 | 200623 | 9.2 | 19.2 | 259331 | 9.3 | 19.9 | 375605 | 9.4 | 20.0 | 274352 | 9.5 | 19.5 |
| 266384 | 9.0 | 20.1 | 433995 | 9.1 | 18.9 | 100499 | 9.2 | 18.3 | 163039 | 9.3 | 20.8 | 510775 | 9.4 | 21.8 | 379545 | 9.5 | 20.6 |
| 293830 | 9.0 | 18.9 | 473227 | 9.1 | 19.6 | 415472 | 9.2 | 19.2 | 509328 | 9.3 | 20.7 | 250432 | 9.4 | 19.7 | 439231 | 9.5 | 22.0 |
| 435884 | 9.0 | 20.3 | 322427 | 9.1 | 19.9 | 227445 | 9.2 | 20.1 | 495106 | 9.3 | 19.8 | 528503 | 9.4 | 20.3 | 225284 | 9.5 | 20.5 |
| 428307 | 9.0 | 19.5 | 90227 | 9.1 | 18.4 | 274962 | 9.2 | 20.5 | 162616 | 9.3 | 19.0 | 313653 | 9.4 | 19.4 | 536555 | 9.5 | 21.7 |
| 188152 | 9.0 | 21.4 | 297843 | 9.1 | 20.0 | 436275 | 9.2 | 20.5 | 472233 | 9.3 | 20.2 | 166956 | 9.4 | 18.7 | 193534 | 9.5 | 20.0 |
| 475737 | 9.0 | 20.8 | 46006 | 9.1 | 18.8 | 15923 | 9.2 | 16.6 | 355151 | 9.3 | 20.6 | 466173 | 9.4 | 19.9 | 373307 | 9.5 | 20.9 |
| 212602 | 9.0 | 19.7 | 396125 | 9.1 | 21.3 | 305634 | 9.2 | 19.3 | 20672 | 9.3 | 18.8 | 138728 | 9.4</ | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|-----|------|--------|-----|------|--------|-----|------|--------|-----|------|---------|-----|------|--------|-----|------|
| 530880 | 9.5 | 20.8 | 281175 | 9.5 | 20.1 | 491320 | 9.6 | 21.0 | 414168 | 9.7 | 21.3 | 174029 | 9.8 | 20.1 | 152511 | 9.9 | 20.8 |
| 417599 | 9.5 | 21.9 | 69124 | 9.5 | 19.3 | 468446 | 9.6 | 20.8 | 396796 | 9.7 | 18.4 | 98938 | 9.8 | 18.9 | 318079 | 9.9 | 20.0 |
| 149448 | 9.5 | 19.0 | 128872 | 9.5 | 19.0 | 106282 | 9.6 | 19.2 | 319984 | 9.7 | 20.0 | 453917 | 9.8 | 21.8 | 539666 | 9.9 | 20.7 |
| 38971 | 9.5 | 18.0 | 388687 | 9.6 | 20.8 | 499371 | 9.7 | 20.5 | 174432 | 9.7 | 19.1 | 12036 | 9.8 | 17.4 | 509309 | 9.9 | 21.6 |
| 207751 | 9.5 | 20.7 | 219452 | 9.6 | 18.9 | 498099 | 9.7 | 21.2 | 356926 | 9.7 | 19.7 | 438652 | 9.8 | 21.3 | 539589 | 9.9 | 19.3 |
| 242428 | 9.5 | 19.3 | 540394 | 9.6 | 21.2 | 475595 | 9.7 | 21.0 | 263791 | 9.7 | 19.2 | 449130 | 9.8 | 20.4 | 198295 | 9.9 | 18.6 |
| 76219 | 9.5 | 18.4 | 299788 | 9.6 | 21.0 | 205923 | 9.7 | 19.6 | 74982 | 9.7 | 18.8 | 497132 | 9.8 | 19.1 | 270572 | 9.9 | 20.9 |
| 86501 | 9.5 | 18.7 | 499284 | 9.6 | 21.9 | 70212 | 9.7 | 18.0 | 300825 | 9.7 | 20.0 | 368258 | 9.8 | 19.1 | 491667 | 9.9 | 20.3 |
| 426900 | 9.5 | 19.3 | 44747 | 9.6 | 17.8 | 285397 | 9.7 | 18.9 | 400228 | 9.7 | 19.9 | 350730 | 9.8 | 21.0 | 402533 | 9.9 | 19.9 |
| 354960 | 9.5 | 18.9 | 91294 | 9.6 | 19.1 | 219717 | 9.7 | 20.2 | 81769 | 9.7 | 18.1 | 109314 | 9.8 | 18.9 | 501297 | 9.9 | 20.1 |
| 262803 | 9.5 | 19.6 | 15027 | 9.6 | 16.8 | 352613 | 9.7 | 19.4 | 187653 | 9.7 | 19.9 | 219693 | 9.8 | 20.7 | 494281 | 9.9 | 20.1 |
| 145735 | 9.5 | 18.8 | 479014 | 9.6 | 21.2 | 7626 | 9.7 | 17.0 | 128814 | 9.7 | 19.2 | 289626 | 9.8 | 19.8 | 525305 | 9.9 | 20.3 |
| 480680 | 9.5 | 20.6 | 365839 | 9.6 | 21.0 | 463178 | 9.7 | 22.0 | 175951 | 9.7 | 19.5 | 482144 | 9.8 | 19.5 | 113075 | 9.9 | 18.6 |
| 196548 | 9.5 | 19.9 | 180768 | 9.6 | 19.1 | 235315 | 9.7 | 19.6 | 397786 | 9.7 | 22.1 | 361003 | 9.8 | 20.9 | 479051 | 9.9 | 19.8 |
| 279851 | 9.5 | 20.2 | 398458 | 9.6 | 21.2 | 540951 | 9.7 | 21.2 | 452358 | 9.7 | 20.6 | 518165 | 9.8 | 20.1 | 352507 | 9.9 | 20.3 |
| 516547 | 9.5 | 21.0 | 314704 | 9.6 | 20.2 | 373614 | 9.7 | 20.3 | 282665 | 9.7 | 20.6 | 175036 | 9.8 | 20.4 | 277643 | 9.9 | 20.7 |
| 495830 | 9.5 | 20.9 | 194039 | 9.6 | 19.3 | 419106 | 9.7 | 20.5 | 219582 | 9.7 | 21.3 | 474210 | 9.8 | 20.3 | 495346 | 9.9 | 20.4 |
| 10676 | 9.5 | 17.7 | 292325 | 9.6 | 19.8 | 120239 | 9.7 | 18.6 | 100766 | 9.7 | 19.7 | 386282 | 9.8 | 20.6 | 63218 | 9.9 | 16.5 |
| 270446 | 9.5 | 19.9 | 215239 | 9.6 | 20.5 | 431858 | 9.7 | 19.9 | 107538 | 9.7 | 19.3 | 118881 | 9.8 | 19.4 | 306026 | 9.9 | 20.6 |
| 504587 | 9.5 | 21.0 | 190058 | 9.6 | 20.2 | 166162 | 9.7 | 20.1 | 59929 | 9.7 | 18.1 | 192887 | 9.8 | 18.6 | 225987 | 9.9 | 19.5 |
| 109390 | 9.5 | 19.6 | 221254 | 9.6 | 19.7 | 508531 | 9.7 | 20.7 | 256894 | 9.7 | 20.5 | 362926 | 9.8 | 20.1 | 20234 | 9.9 | 17.6 |
| 206758 | 9.5 | 20.6 | 62341 | 9.6 | 18.6 | 370998 | 9.7 | 20.1 | 386541 | 9.7 | 20.1 | 17066 | 9.8 | 17.9 | 418241 | 9.9 | 20.8 |
| 219732 | 9.5 | 19.5 | 302076 | 9.6 | 19.8 | 462039 | 9.7 | 20.7 | 270441 | 9.8 | 21.0 | 525152 | 9.8 | 20.2 | 479793 | 9.9 | 21.1 |
| 507343 | 9.5 | 21.7 | 503939 | 9.6 | 20.6 | 306072 | 9.7 | 19.3 | 350450 | 9.8 | 20.8 | 231344 | 9.8 | 20.2 | 205846 | 9.9 | 20.6 |
| 476372 | 9.5 | 20.8 | 371936 | 9.6 | 20.4 | 231318 | 9.7 | 19.5 | 222317 | 9.8 | 21.0 | 211449 | 9.8 | 18.8 | 430059 | 9.9 | 19.2 |
| 385165 | 9.5 | 18.3 | 299272 | 9.6 | 20.3 | 181186 | 9.7 | 19.7 | 491798 | 9.8 | 21.1 | 479098 | 9.8 | 21.0 | 63668 | 9.9 | 18.4 |
| 466 | 9.5 | 13.7 | 251565 | 9.6 | 19.2 | 382216 | 9.7 | 20.0 | 475173 | 9.8 | 19.2 | 354907 | 9.8 | 20.7 | 350585 | 9.9 | 18.9 |
| 268355 | 9.5 | 20.1 | 353581 | 9.6 | 19.4 | 218991 | 9.7 | 19.8 | 31530 | 9.8 | 18.0 | 477970 | 9.8 | 20.7 | 42465 | 9.9 | 19.1 |
| 470150 | 9.5 | 19.9 | 425788 | 9.6 | 22.0 | 235551 | 9.7 | 18.4 | 230454 | 9.8 | 18.8 | 463911 | 9.8 | 21.1 | 475123 | 9.9 | 20.6 |
| 230974 | 9.5 | 20.2 | 180763 | 9.6 | 18.8 | 483332 | 9.7 | 19.4 | 187279 | 9.8 | 20.1 | 13975 | 9.8 | 18.2 | 373153 | 9.9 | 18.9 |
| 375929 | 9.5 | 21.4 | 285617 | 9.6 | 18.8 | 227364 | 9.7 | 19.5 | 105484 | 9.8 | 18.6 | 200651 | 9.8 | 20.2 | 22246 | 9.9 | 18.8 |
| 71884 | 9.5 | 19.1 | 224471 | 9.6 | 20.8 | 222742 | 9.7 | 20.6 | 449111 | 9.8 | 20.6 | 213565 | 9.8 | 18.7 | 475931 | 9.9 | 21.2 |
| 147542 | 9.5 | 17.6 | 474929 | 9.6 | 20.8 | 53135 | 9.7 | 19.2 | 164292 | 9.8 | 18.7 | 501924 | 9.9 | 20.9 | 172481 | 9.9 | 18.6 |
| 439415 | 9.5 | 20.7 | 210355 | 9.6 | 19.8 | 286264 | 9.7 | 19.7 | 459028 | 9.8 | 20.8 | 500106 | 9.9 | 21.4 | 466518 | 9.9 | 20.9 |
| 235246 | 9.5 | 19.6 | 511420 | 9.6 | 21.4 | 310048 | 9.7 | 18.9 | 474265 | 9.8 | 20.6 | 43947 | 9.9 | 18.0 | 141217 | 9.9 | 17.8 |
| 502952 | 9.5 | 20.6 | 261054 | 9.6 | 20.0 | 315185 | 9.7 | 19.5 | 303648 | 9.8 | 20.3 | 381932 | 9.9 | 20.6 | 502060 | 9.9 | 21.3 |
| 528678 | 9.5 | 22.2 | 478270 | 9.6 | 21.0 | 227415 | 9.7 | 19.9 | 47061 | 9.8 | 17.7 | 308552 | 9.9 | 19.6 | 195322 | 9.9 | 18.9 |
| 219808 | 9.5 | 18.5 | 423592 | 9.6 | 19.5 | 534352 | 9.7 | 21.6 | 474087 | 9.8 | 20.5 | 312099 | 9.9 | 21.1 | 371131 | 9.9 | 20.9 |
| 229108 | 9.5 | 18.2 | 30278 | 9.6 | 17.7 | 524905 | 9.7 | 20.5 | 311254 | 9.8 | 20.4 | 26667 | 9.9 | 18.1 | 427959 | 9.9 | 20.4 |
| 455607 | 9.5 | 19.9 | 22934 | 9.6 | 18.2 | 299498 | 9.7 | 21.8 | 511268 | 9.8 | 21.4 | 507493 | 9.9 | 20.8 | 136887 | 9.9 | 18.8 |
| 522541 | 9.5 | 20.2 | 451665 | 9.6 | 21.1 | 339443 | 9.7 | 20.5 | 539519 | 9.8 | 21.3 | 269988 | 9.9 | 20.0 | 119480 | 9.9 | 20.4 |
| 355804 | 9.5 | 20.2 | 16762 | 9.6 | 16.9 | 204115 | 9.7 | 20.0 | 99687 | 9.8 | 18.2 | 96902 | 9.9 | 19.1 | 120666 | 9.9 | 18.2 |
| 263926 | 9.5 | 19.7 | 7573 | 9.6 | 17.3 | 221121 | 9.7 | 19.2 | 525905 | 9.8 | 22.5 | 232724 | 9.9 | 20.1 | 291334 | 9.9 | 19.7 |
| 238102 | 9.5 | 19.3 | 497385 | 9.6 | 19.7 | 176765 | 9.7 | 19.2 | 9929 | 9.8 | 17.7 | 58313 | 9.9 | 19.5 | 511832 | 9.9 | 20.5 |
| 536520 | 9.5 | 22.1 | 521002 | 9.6 | 21.0 | 117864 | 9.7 | 19.5 | 229770 | 9.8 | 18.5 | 334890 | 9.9 | 20.6 | 333146 | 9.9 | 21.2 |
| 502580 | 9.5 | 20.3 | 419956 | 9.6 | 20.0 | 507099 | 9.7 | 21.4 | 457246 | 9.8 | 19.5 | 505861 | 9.9 | 19.6 | 470475 | 9.9 | 21.0 |
| 529024 | 9.5 | 20.3 | 248191 | 9.6 | 20.2 | 256715 | 9.7 | 20.5 | 91246 | 9.8 | 18.7 | 426770 | 9.9 | 19.6 | 222275 | 9.9 | 18.3 |
| 540701 | 9.5 | 21.4 | 178925 | 9.6 | 19.4 | 106889 | 9.7 | 19.8 | 456801 | 9.8 | 21.2 | 498817 | 9.9 | 21.2 | 287570 | 9.9 | 20.7 |
| 314478 | 9.5 | 20.6 | 17124 | 9.6 | 17.3 | 283491 | 9.7 | 19.1 | 477981 | 9.8 | 19.7 | 471820 | 9.9 | 20.6 | 396017 | 9.9 | 21.5 |
| 176372 | 9.5 | 20.0 | 505591 | 9.6 | 21.4 | 167236 | 9.7 | 20.0 | 342290 | 9.8 | 19.8 | 116168 | 9.9 | 19.6 | 206027 | 9.9 | 19.4 |
| 268548 | 9.5 | 19.2 | 176284 | 9.6 | 20.2 | 412445 | 9.7 | 19.7 | 102476 | 9.8 | 19.4 | 308053 | 9.9 | 20.3 | 129698 | 9.9 | 18.4 |
| 190380 | 9.5 | 19.0 | 462917 | 9.6 | 19.9 | 363334 | 9.7 | 20.2 | 10489 | 9.8 | 16.3 | 299261 | 9.9 | 19.1 | 528735 | 9.9 | 22.0 |
| 507884 | 9.5 | 20.8 | 349897 | 9.6 | 19.9 | 412584 | 9.7 | 19.3 | 355164 | 9.8 | 21.9 | 30592 | 9.9 | 18.9 | 120693 | 9.9 | 20.0 |
| 191766 | 9.5 | 17.8 | 494995 | 9.6 | 20.9 | 428891 | 9.7 | 20.2 | 270411 | 9.8 | 19.8 | 353296 | 9.9 | 19.6 | 305370 | 9.9 | 20.1 |
| 104174 | 9.5 | 18.4 | 11967 | 9.6 | 17.4 | 415084 | 9.7 | 21.3 | 16861 | 9.8 | 17.3 | 353705 | 9.9 | 19.9 | 338609 | 9.9 | 20.0 |
| 56858 | 9.5 | 18.3 | 425446 | 9.6 | 20.9 | 478046 | 9.7 | 21.9 | 243340 | 9.8 | 21.3 | 105735 | 9.9 | 18.9 | 338593 | 9.9 | 19.4 |
| 474967 | 9.5 | 21.3 | 524716 | 9.6 | 20.2 | 376805 | 9.7 | 18.8 | 499361 | 9.8 | 21.8 | 53394 | 9.9 | 19.0 | 413338 | 9.9 | 21.0 |
| 381529 | 9.5 | 20.4 | 103608 | 9.6 | 17.8 | 377938 | 9.7 | 20.6 | 503909 | 9.8 | 21.5 | 507863 | 9.9 | 20.9 | 510064 | 9.9 | 21.0 |
| 271134 | 9.5 | 18.8 | 466738 | 9.6 | 20.6 | 475454 | 9.7 | 21.1 | 423533 | 9.8 | 21.8 | 80 | 9.9 | 10.0 | 141853 | 9.9 | 19.2 |
| 118192 | 9.5 | 19.2 | 376462 | 9.6 | 19.9 | 355116 | 9.7 | 20.7 | 336512 | 9.8 | 20.3 | 17668 | 9.9 | 17.3 | 31920 | 9.9 | 18.4 |
| 543657 | 9.5 | 20.1 | 229978 | 9.6 | 20.3 | 430807 | 9.7 | 21.1 | 254498 | 9.8 | 20.3 | 269083 | 9.9 | 20.0 | 208384 | 9.9 | 19.9 |
| 294372 | 9.5 | 20.3 | 465339 | 9.6 | 22.4 | 155046 | 9.7 | 19.7 | 264536 | 9.8 | 18.6 | 278153 | 9.9 | 21.1 | 2728 | 9.9 | 14.7 |
| 221371 | 9.5 | 19.2 | 290424 | 9.6 | 20.5 | 305474 | 9.7 | 20.2 | 109334 | 9.8 | 19.6 | 479199 | 9.9 | 20.6 | 469863 | 9.9 | 20.4 |
| 167822 | 9.5 | 20.5 | 132243 | 9.6 | 17.8 | 156403 | 9.7 | 19.8 | 526903 | 9.8 | 21.6 | 173106 | 9.9 | 20.8 | 533513 | 9.9 | 21.5 |
| 7092 | 9.5 | 20.7 | 171556 | 9.6 | 20.0 | 435784 | 9.7 | 21.4 | 94471 | 9.8 | 19.1 | 540648 | 9.9 | 20.3 | 507573 | 9.9 | 21.6 |
| 344399 | 9.5 | 22.5 | 525561 | 9.6 | 21.4 | 206986 | 9.7 | 19.4 | 288937 | 9.8 | 20.0 | 149427 | 9.9 | 19.3 | 127127 | 9.9 | 19.6 |
| 351944 | 9.5 | 20.4 | 247489 | 9.6 | 19.2 | 161725 | 9.7 | 19.7 | 234142 | 9.8 | 18.9 | 314370 | 9.9 | 20.5 | 208306 | 9.9 | 19.1 |
| 230915 | 9.5 | 20.8 | 149996 | 9.6 | 19.2 | 351972 | 9.7 | 20.0 | 396045 | 9.8 | 21.0 | 300954 | 9.9 | 20.5 | 501233 | 9.9 | 18.8 |
| 215623 | 9.5 | 19.7 | 49033 | 9.6 | 18.0 | 248471 | 9.7 | 19.8 | 250365 | 9.8 | 18.9 | 11545 | 9.9 | 17.4 | 395491 | 9.9 | 20.2 |
| 502525 | 9.5 | 21.3 | 171791 | 9.6 | 17.5 | 83354 | 9.7 | 19.2 | 240256 | 9.8 | 19.7 | 542775 | 9.9 | 20.5 | 57428 | 9.9 | 18.4 |
| 199052 | 9.5 | 19.6 | 305419 | 9.6 | 19.7 | 472242 | 9.7 | 21.0 | 413289 | 9.8 | 21.0 | 70962</ | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 530719 | 9.9 | 20.3 | 308512 | 10.1 | 19.8 | 202647 | 10.1 | 20.6 | 32300 | 10.2 | 19.1 | 317993 | 10.3 | 21.0 | 355131 | 10.4 | 20.4 |
| 194057 | 9.9 | 19.3 | 266887 | 10.1 | 18.7 | 167002 | 10.1 | 18.0 | 530644 | 10.2 | 21.1 | 513225 | 10.3 | 20.5 | 181292 | 10.4 | 19.0 |
| 530983 | 9.9 | 22.1 | 506897 | 10.1 | 21.9 | 494764 | 10.1 | 20.1 | 317936 | 10.2 | 19.8 | 430691 | 10.3 | 19.7 | 384463 | 10.4 | 20.5 |
| 193545 | 9.9 | 20.0 | 270359 | 10.1 | 20.0 | 394695 | 10.1 | 21.2 | 274319 | 10.2 | 19.1 | 102601 | 10.3 | 17.8 | 305428 | 10.4 | 20.9 |
| 25600 | 9.9 | 15.8 | 365501 | 10.1 | 19.8 | 182586 | 10.1 | 18.4 | 539701 | 10.2 | 20.1 | 171298 | 10.3 | 18.7 | 386139 | 10.4 | 20.4 |
| 329237 | 9.9 | 19.2 | 286681 | 10.1 | 20.8 | 359523 | 10.1 | 20.3 | 176436 | 10.2 | 20.5 | 507333 | 10.3 | 21.2 | 128379 | 10.4 | 20.2 |
| 16100 | 9.9 | 17.3 | 39727 | 10.1 | 18.4 | 340517 | 10.1 | 20.3 | 534077 | 10.2 | 21.0 | 504593 | 10.3 | 21.2 | 115384 | 10.4 | 19.9 |
| 52010 | 9.9 | 18.4 | 83438 | 10.1 | 18.0 | 127110 | 10.1 | 18.9 | 360958 | 10.2 | 20.5 | 97741 | 10.3 | 17.8 | 249277 | 10.4 | 20.1 |
| 496941 | 9.9 | 20.9 | 269933 | 10.1 | 19.5 | 220311 | 10.1 | 19.9 | 390456 | 10.2 | 20.3 | 90820 | 10.3 | 19.0 | 528993 | 10.4 | 21.3 |
| 165103 | 9.9 | 19.4 | 240780 | 10.1 | 18.0 | 56679 | 10.1 | 17.9 | 129595 | 10.2 | 20.3 | 116887 | 10.3 | 19.8 | 355576 | 10.4 | 21.1 |
| 393936 | 9.9 | 20.5 | 134661 | 10.1 | 20.5 | 533289 | 10.1 | 21.3 | 30085 | 10.2 | 17.5 | 29376 | 10.3 | 17.7 | 423692 | 10.4 | 20.8 |
| 489480 | 9.9 | 21.5 | 133812 | 10.1 | 19.8 | 279852 | 10.1 | 20.3 | 503017 | 10.2 | 19.7 | 304737 | 10.3 | 21.0 | 526782 | 10.4 | 20.6 |
| 231910 | 9.9 | 18.0 | 525827 | 10.1 | 20.6 | 243680 | 10.1 | 18.5 | 309151 | 10.2 | 20.5 | 177865 | 10.3 | 19.1 | 153949 | 10.4 | 18.5 |
| 93485 | 9.9 | 19.7 | 457637 | 10.1 | 21.7 | 36782 | 10.1 | 17.1 | 177101 | 10.2 | 20.3 | 72282 | 10.3 | 17.3 | 352092 | 10.4 | 19.6 |
| 162875 | 9.9 | 19.6 | 105513 | 10.1 | 18.9 | 114650 | 10.1 | 19.0 | 139614 | 10.2 | 18.8 | 94040 | 10.3 | 18.4 | 110173 | 10.4 | 19.5 |
| 374468 | 9.9 | 20.4 | 127813 | 10.1 | 18.7 | 159325 | 10.1 | 18.3 | 312089 | 10.2 | 21.2 | 410734 | 10.3 | 20.6 | 185523 | 10.4 | 20.2 |
| 198629 | 9.9 | 19.8 | 499465 | 10.1 | 21.5 | 478283 | 10.1 | 20.3 | 98356 | 10.2 | 19.4 | 30976 | 10.3 | 17.5 | 530689 | 10.4 | 20.7 |
| 198093 | 9.9 | 19.5 | 437165 | 10.1 | 21.0 | 360375 | 10.1 | 19.9 | 422781 | 10.2 | 21.6 | 522308 | 10.3 | 20.4 | 75315 | 10.4 | 17.8 |
| 371125 | 9.9 | 20.9 | 20148 | 10.1 | 17.8 | 146848 | 10.2 | 20.1 | 528557 | 10.2 | 21.3 | 122965 | 10.3 | 19.5 | 341152 | 10.4 | 19.1 |
| 315523 | 9.9 | 21.2 | 101851 | 10.1 | 18.8 | 38497 | 10.2 | 18.8 | 503750 | 10.2 | 20.1 | 479103 | 10.3 | 21.6 | 19581 | 10.4 | 16.7 |
| 99637 | 9.9 | 17.6 | 502653 | 10.1 | 19.8 | 184992 | 10.2 | 17.8 | 64411 | 10.2 | 18.2 | 477978 | 10.3 | 20.5 | 475794 | 10.4 | 21.0 |
| 225621 | 9.9 | 20.0 | 118740 | 10.1 | 19.2 | 173171 | 10.2 | 19.4 | 90610 | 10.2 | 17.9 | 39946 | 10.3 | 19.0 | 227638 | 10.4 | 19.3 |
| 279020 | 9.9 | 19.5 | 71393 | 10.1 | 17.8 | 387076 | 10.2 | 20.8 | 272840 | 10.2 | 21.2 | 540768 | 10.3 | 20.2 | 294191 | 10.4 | 20.4 |
| 430765 | 9.9 | 19.6 | 239755 | 10.1 | 20.3 | 127544 | 10.2 | 18.0 | 121448 | 10.2 | 17.6 | 106652 | 10.3 | 19.5 | 506874 | 10.4 | 21.6 |
| 107864 | 9.9 | 18.7 | 276768 | 10.1 | 19.2 | 335576 | 10.2 | 20.5 | 114309 | 10.2 | 18.8 | 412213 | 10.3 | 21.2 | 105730 | 10.4 | 19.3 |
| 362752 | 9.9 | 21.4 | 538556 | 10.1 | 21.4 | 156268 | 10.2 | 20.6 | 375840 | 10.2 | 19.8 | 55649 | 10.3 | 18.5 | 35902 | 10.4 | 18.1 |
| 477638 | 10.0 | 20.3 | 207823 | 10.1 | 20.7 | 419972 | 10.2 | 20.4 | 215977 | 10.2 | 19.4 | 155782 | 10.3 | 18.5 | 161470 | 10.4 | 19.8 |
| 309775 | 10.0 | 20.2 | 56787 | 10.1 | 18.6 | 300198 | 10.2 | 20.8 | 171995 | 10.2 | 19.6 | 343962 | 10.3 | 20.6 | 478079 | 10.4 | 21.0 |
| 380200 | 10.0 | 20.2 | 248661 | 10.1 | 20.0 | 385629 | 10.2 | 19.1 | 297794 | 10.2 | 20.1 | 527006 | 10.3 | 20.5 | 156436 | 10.4 | 20.8 |
| 39135 | 10.0 | 18.6 | 415809 | 10.1 | 18.9 | 205791 | 10.2 | 19.6 | 524875 | 10.2 | 21.1 | 98021 | 10.3 | 18.8 | 522714 | 10.4 | 20.5 |
| 246453 | 10.0 | 19.8 | 349926 | 10.1 | 20.7 | 497498 | 10.2 | 21.8 | 116882 | 10.2 | 19.3 | 305461 | 10.3 | 20.5 | 528380 | 10.4 | 19.1 |
| 541011 | 10.0 | 19.9 | 477608 | 10.1 | 20.0 | 214459 | 10.2 | 20.1 | 534827 | 10.2 | 20.9 | 450732 | 10.3 | 21.0 | 62199 | 10.4 | 18.9 |
| 411651 | 10.0 | 19.9 | 236170 | 10.1 | 20.2 | 429130 | 10.2 | 21.6 | 46345 | 10.2 | 17.2 | 201559 | 10.3 | 20.0 | 396270 | 10.4 | 20.3 |
| 22955 | 10.0 | 16.5 | 54121 | 10.1 | 18.3 | 312848 | 10.2 | 20.2 | 267417 | 10.3 | 20.3 | 408981 | 10.3 | 20.4 | 228339 | 10.4 | 19.0 |
| 134257 | 10.0 | 20.1 | 30406 | 10.1 | 17.5 | 470599 | 10.2 | 20.6 | 478008 | 10.3 | 21.3 | 251328 | 10.3 | 21.2 | 6904 | 10.4 | 17.5 |
| 350958 | 10.0 | 19.9 | 58909 | 10.1 | 19.0 | 356650 | 10.2 | 19.9 | 536491 | 10.3 | 21.7 | 497330 | 10.3 | 21.4 | 361557 | 10.4 | 18.7 |
| 270920 | 10.0 | 19.6 | 34715 | 10.1 | 17.7 | 507472 | 10.2 | 20.5 | 497506 | 10.3 | 21.5 | 296529 | 10.3 | 19.6 | 177357 | 10.4 | 19.3 |
| 406526 | 10.0 | 19.9 | 35778 | 10.1 | 18.6 | 518491 | 10.2 | 21.6 | 151830 | 10.3 | 20.7 | 135639 | 10.3 | 18.5 | 425289 | 10.4 | 21.4 |
| 51884 | 10.0 | 18.4 | 434304 | 10.1 | 19.9 | 336195 | 10.2 | 20.0 | 103192 | 10.3 | 18.4 | 302299 | 10.3 | 20.3 | 203331 | 10.4 | 19.8 |
| 502070 | 10.0 | 20.0 | 58302 | 10.1 | 19.2 | 73761 | 10.2 | 18.8 | 475219 | 10.3 | 21.3 | 517605 | 10.3 | 20.7 | 355730 | 10.4 | 21.9 |
| 188042 | 10.0 | 19.6 | 149451 | 10.1 | 19.1 | 497220 | 10.2 | 20.9 | 60348 | 10.3 | 19.1 | 83587 | 10.3 | 19.1 | 37751 | 10.4 | 17.2 |
| 11114 | 10.0 | 18.0 | 417747 | 10.1 | 21.0 | 269027 | 10.2 | 20.1 | 343807 | 10.3 | 19.9 | 453568 | 10.3 | 20.9 | 61749 | 10.4 | 18.8 |
| 431097 | 10.0 | 20.5 | 237335 | 10.1 | 20.2 | 229991 | 10.2 | 19.7 | 39701 | 10.3 | 17.0 | 180149 | 10.3 | 19.9 | 537902 | 10.4 | 21.5 |
| 153893 | 10.0 | 19.4 | 536633 | 10.1 | 20.4 | 26394 | 10.2 | 18.2 | 427479 | 10.3 | 20.0 | 9765 | 10.3 | 17.5 | 123646 | 10.4 | 19.9 |
| 332925 | 10.0 | 20.3 | 52151 | 10.1 | 18.0 | 344019 | 10.2 | 20.5 | 32984 | 10.3 | 17.9 | 529446 | 10.3 | 21.2 | 137436 | 10.4 | 18.4 |
| 498572 | 10.0 | 20.5 | 306712 | 10.1 | 21.6 | 331521 | 10.2 | 18.4 | 212472 | 10.3 | 18.1 | 83559 | 10.3 | 18.8 | 434441 | 10.4 | 18.6 |
| 539987 | 10.0 | 19.5 | 134008 | 10.1 | 20.1 | 503639 | 10.2 | 21.3 | 204515 | 10.3 | 19.6 | 479919 | 10.3 | 20.7 | 462229 | 10.4 | 22.0 |
| 111023 | 10.0 | 18.4 | 406900 | 10.1 | 21.7 | 146700 | 10.2 | 19.4 | 476473 | 10.3 | 20.2 | 505378 | 10.3 | 21.4 | 37756 | 10.4 | 17.4 |
| 36659 | 10.0 | 19.0 | 36418 | 10.1 | 18.2 | 21157 | 10.2 | 18.2 | 456033 | 10.3 | 20.5 | 243724 | 10.3 | 19.4 | 79248 | 10.4 | 17.7 |
| 63032 | 10.0 | 17.7 | 254534 | 10.1 | 19.8 | 159069 | 10.2 | 20.1 | 503675 | 10.3 | 20.8 | 4105 | 10.3 | 15.7 | 479060 | 10.4 | 20.8 |
| 39580 | 10.0 | 19.5 | 304877 | 10.1 | 18.8 | 411768 | 10.2 | 21.5 | 380682 | 10.3 | 20.5 | 29648 | 10.3 | 18.2 | 286473 | 10.4 | 19.9 |
| 533883 | 10.0 | 20.0 | 477988 | 10.1 | 20.7 | 276956 | 10.2 | 20.6 | 245497 | 10.3 | 19.9 | 102196 | 10.3 | 18.7 | 539531 | 10.4 | 20.8 |
| 424153 | 10.0 | 21.9 | 543437 | 10.1 | 19.9 | 462246 | 10.2 | 21.7 | 540219 | 10.3 | 20.8 | 311379 | 10.4 | 20.4 | 477631 | 10.4 | 19.4 |
| 381880 | 10.0 | 20.3 | 490627 | 10.1 | 21.6 | 29928 | 10.2 | 18.2 | 67893 | 10.3 | 18.4 | 131010 | 10.4 | 19.8 | 539525 | 10.4 | 20.7 |
| 39399 | 10.0 | 18.2 | 387147 | 10.1 | 20.2 | 305313 | 10.2 | 20.2 | 353428 | 10.3 | 20.0 | 461701 | 10.4 | 20.2 | 501283 | 10.4 | 20.9 |
| 399216 | 10.0 | 20.4 | 300206 | 10.1 | 19.0 | 401066 | 10.2 | 19.7 | 374576 | 10.3 | 19.9 | 174838 | 10.4 | 19.9 | 115453 | 10.4 | 19.0 |
| 479592 | 10.0 | 19.5 | 192920 | 10.1 | 20.3 | 342885 | 10.2 | 20.2 | 200680 | 10.3 | 20.1 | 182226 | 10.4 | 20.4 | 303885 | 10.4 | 19.8 |
| 85973 | 10.0 | 18.3 | 160344 | 10.1 | 18.7 | 278678 | 10.2 | 20.0 | 374554 | 10.3 | 21.0 | 281529 | 10.4 | 20.1 | 372529 | 10.4 | 19.4 |
| 186257 | 10.0 | 18.8 | 501921 | 10.1 | 21.5 | 141077 | 10.2 | 20.3 | 99752 | 10.3 | 19.1 | 252021 | 10.4 | 19.1 | 346359 | 10.4 | 19.2 |
| 58538 | 10.0 | 19.5 | 436864 | 10.1 | 20.2 | 430466 | 10.2 | 19.0 | 407694 | 10.3 | 21.5 | 437185 | 10.4 | 20.3 | 160724 | 10.4 | 19.2 |
| 83624 | 10.0 | 19.2 | 366690 | 10.1 | 20.6 | 530882 | 10.2 | 20.4 | 129507 | 10.3 | 19.4 | 253156 | 10.4 | 20.0 | 371123 | 10.4 | 21.0 |
| 348939 | 10.0 | 20.8 | 286416 | 10.1 | 20.8 | 421796 | 10.2 | 19.6 | 303764 | 10.3 | 20.0 | 241759 | 10.4 | 20.0 | 523937 | 10.4 | 19.9 |
| 456953 | 10.0 | 20.8 | 279747 | 10.1 | 20.1 | 401413 | 10.2 | 20.0 | 155730 | 10.3 | 19.4 | 508595 | 10.4 | 18.7 | 366310 | 10.4 | 21.9 |
| 530559 | 10.0 | 21.3 | 59434 | 10.1 | 19.5 | 391724 | 10.2 | 20.6 | 243205 | 10.3 | 17.7 | 106793 | 10.4 | 19.4 | 302360 | 10.4 | 21.2 |
| 131969 | 10.0 | 19.3 | 333183 | 10.1 | 20.1 | 144691 | 10.2 | 19.5 | 43684 | 10.3 | 16.6 | 182819 | 10.4 | 21.9 | 520950 | 10.4 | 20.8 |
| 504545 | 10.0 | 20.5 | 533829 | 10.1 | 19.4 | 275126 | 10.2 | 20.9 | 524259 | 10.3 | 21.3 | 530596 | 10.4 | 21.5 | 118901 | 10.4 | 19.0 |
| 312181 | 10.0 | 20.0 | 204372 | 10.1 | 18.4 | 12484 | 10.2 | 17.7 | 109545 | 10.3 | 19.1 | 525399 | 10.4 | 21.6 | 106900 | 10.4 | 18.3 |
| 530633 | 10.0 | 21.1 | 31551 | 10.1 | 18.4 | 502334 | 10.2 | 21.6 | 143428 | 10.3 | 20.2 | 149429 | 10.4 | 20.8 | 418106 | 10.4 | 19.9 |
| 141303 | 10.0 | 19.7 | 100657 | 10.1 | 19.8 | 180540 | 10.2 | 17.9 | 307489 | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 308442 | 10.5 | 20.5 | 534298 | 10.5 | 21.8 | 292883 | 10.6 | 19.9 | 225066 | 10.7 | 19.4 | 425246 | 10.7 | 20.0 | 508836 | 10.8 | 20.4 |
| 487582 | 10.5 | 19.8 | 157804 | 10.5 | 19.3 | 242733 | 10.6 | 19.2 | 506498 | 10.7 | 20.4 | 193747 | 10.7 | 20.1 | 225967 | 10.8 | 19.2 |
| 68058 | 10.5 | 17.7 | 533156 | 10.5 | 21.3 | 351985 | 10.6 | 21.5 | 479153 | 10.7 | 21.4 | 64074 | 10.8 | 18.2 | 365180 | 10.8 | 20.8 |
| 499385 | 10.5 | 21.6 | 117360 | 10.5 | 19.9 | 198518 | 10.6 | 18.7 | 271752 | 10.7 | 18.2 | 57343 | 10.8 | 17.8 | 94473 | 10.8 | 19.4 |
| 498549 | 10.5 | 19.2 | 150605 | 10.5 | 20.5 | 143819 | 10.6 | 19.0 | 235120 | 10.7 | 18.7 | 310623 | 10.8 | 18.8 | 213634 | 10.8 | 19.5 |
| 243128 | 10.5 | 19.6 | 540298 | 10.5 | 20.4 | 423218 | 10.6 | 19.7 | 225902 | 10.7 | 20.1 | 150716 | 10.8 | 18.9 | 94304 | 10.8 | 19.7 |
| 526317 | 10.5 | 22.2 | 540236 | 10.5 | 20.2 | 69055 | 10.6 | 19.8 | 168345 | 10.7 | 19.7 | 406416 | 10.8 | 19.8 | 200164 | 10.8 | 21.2 |
| 352037 | 10.5 | 20.3 | 496872 | 10.5 | 21.0 | 425609 | 10.6 | 19.9 | 91229 | 10.7 | 17.6 | 497012 | 10.8 | 21.2 | 418180 | 10.8 | 20.8 |
| 225543 | 10.5 | 19.4 | 404329 | 10.5 | 20.2 | 305452 | 10.6 | 20.6 | 126860 | 10.7 | 18.9 | 328326 | 10.8 | 21.4 | 233413 | 10.8 | 20.2 |
| 474073 | 10.5 | 20.2 | 360711 | 10.5 | 20.3 | 200693 | 10.6 | 19.1 | 442571 | 10.7 | 20.5 | 108751 | 10.8 | 18.5 | 299704 | 10.8 | 20.6 |
| 429193 | 10.5 | 19.4 | 544072 | 10.5 | 21.3 | 342990 | 10.6 | 20.7 | 148407 | 10.7 | 20.5 | 491074 | 10.8 | 20.4 | 272512 | 10.8 | 21.4 |
| 236134 | 10.5 | 20.1 | 1443 | 10.5 | 14.8 | 437143 | 10.6 | 20.5 | 480383 | 10.7 | 20.5 | 356825 | 10.8 | 20.4 | 451 | 10.8 | 11.2 |
| 463256 | 10.5 | 20.7 | 505186 | 10.5 | 21.2 | 419730 | 10.6 | 20.2 | 418404 | 10.7 | 20.2 | 502766 | 10.8 | 19.8 | 52716 | 10.8 | 19.3 |
| 273042 | 10.5 | 19.5 | 52788 | 10.5 | 16.9 | 70493 | 10.6 | 20.2 | 530568 | 10.7 | 20.7 | 40100 | 10.8 | 17.2 | 396457 | 10.8 | 20.5 |
| 419827 | 10.5 | 20.3 | 522448 | 10.5 | 19.4 | 283101 | 10.6 | 18.6 | 384122 | 10.7 | 21.0 | 64820 | 10.8 | 18.9 | 157439 | 10.8 | 19.0 |
| 393820 | 10.5 | 20.6 | 26189 | 10.5 | 20.6 | 111387 | 10.6 | 18.7 | 425112 | 10.7 | 21.6 | 503172 | 10.8 | 20.5 | 354749 | 10.8 | 21.7 |
| 465871 | 10.5 | 20.7 | 80156 | 10.5 | 18.5 | 431109 | 10.6 | 21.1 | 59790 | 10.7 | 17.4 | 91669 | 10.8 | 19.1 | 231924 | 10.8 | 19.1 |
| 534536 | 10.5 | 21.6 | 512959 | 10.5 | 21.3 | 488730 | 10.6 | 19.4 | 535349 | 10.7 | 20.9 | 497542 | 10.8 | 20.5 | 265694 | 10.8 | 20.4 |
| 88640 | 10.5 | 19.0 | 533438 | 10.5 | 20.9 | 62892 | 10.6 | 17.6 | 370175 | 10.7 | 20.1 | 200943 | 10.8 | 19.7 | 352591 | 10.8 | 20.7 |
| 427381 | 10.5 | 19.5 | 247445 | 10.6 | 20.1 | 274424 | 10.6 | 20.4 | 179369 | 10.7 | 19.6 | 251918 | 10.8 | 20.0 | 41623 | 10.8 | 18.1 |
| 509219 | 10.5 | 21.6 | 503005 | 10.6 | 21.8 | 519997 | 10.6 | 20.0 | 315809 | 10.7 | 21.3 | 346195 | 10.8 | 20.4 | 369978 | 10.8 | 20.3 |
| 411662 | 10.5 | 21.5 | 471838 | 10.6 | 20.1 | 244791 | 10.6 | 18.9 | 73625 | 10.7 | 18.9 | 302346 | 10.8 | 21.1 | 264995 | 10.8 | 19.9 |
| 439556 | 10.5 | 20.3 | 289125 | 10.6 | 18.2 | 95676 | 10.6 | 18.9 | 351997 | 10.7 | 21.3 | 416132 | 10.8 | 20.6 | 15040 | 10.8 | 15.6 |
| 68783 | 10.5 | 18.5 | 265754 | 10.6 | 19.7 | 56481 | 10.6 | 16.1 | 201667 | 10.7 | 20.1 | 456665 | 10.8 | 20.7 | 169226 | 10.8 | 20.7 |
| 475277 | 10.5 | 20.6 | 239306 | 10.6 | 20.4 | 229036 | 10.6 | 19.5 | 507769 | 10.7 | 20.5 | 520863 | 10.8 | 19.9 | 518446 | 10.8 | 20.9 |
| 263660 | 10.5 | 21.1 | 510441 | 10.6 | 19.6 | 126016 | 10.6 | 18.2 | 464431 | 10.7 | 21.8 | 328353 | 10.8 | 19.9 | 434663 | 10.8 | 21.8 |
| 383951 | 10.5 | 20.7 | 510445 | 10.6 | 21.1 | 15444 | 10.6 | 17.2 | 33581 | 10.7 | 18.3 | 286363 | 10.8 | 21.5 | 540268 | 10.8 | 22.3 |
| 302870 | 10.5 | 19.5 | 268385 | 10.6 | 21.1 | 389791 | 10.6 | 20.0 | 101406 | 10.7 | 19.8 | 493761 | 10.8 | 21.1 | 195589 | 10.8 | 20.0 |
| 355673 | 10.5 | 20.8 | 290485 | 10.6 | 19.9 | 135043 | 10.6 | 18.6 | 58145 | 10.7 | 17.0 | 144741 | 10.8 | 18.3 | 17067 | 10.8 | 17.3 |
| 225773 | 10.5 | 19.5 | 12504 | 10.6 | 16.3 | 182158 | 10.6 | 19.4 | 372609 | 10.7 | 20.7 | 215078 | 10.8 | 19.8 | 356715 | 10.8 | 21.0 |
| 463131 | 10.5 | 21.7 | 528466 | 10.6 | 20.4 | 239870 | 10.6 | 20.3 | 350812 | 10.7 | 21.1 | 4921 | 10.8 | 16.1 | 424829 | 10.8 | 20.7 |
| 394352 | 10.5 | 20.0 | 504731 | 10.6 | 20.9 | 155731 | 10.6 | 18.6 | 276948 | 10.7 | 20.0 | 531774 | 10.8 | 21.2 | 103013 | 10.8 | 18.4 |
| 183691 | 10.5 | 19.6 | 304705 | 10.6 | 20.6 | 502784 | 10.6 | 20.3 | 188024 | 10.7 | 19.3 | 428250 | 10.8 | 19.5 | 263848 | 10.8 | 20.2 |
| 439433 | 10.5 | 21.8 | 539892 | 10.6 | 19.6 | 336331 | 10.6 | 20.7 | 186090 | 10.7 | 20.3 | 404161 | 10.8 | 21.6 | 181147 | 10.8 | 19.3 |
| 458849 | 10.5 | 20.7 | 91163 | 10.6 | 18.0 | 180132 | 10.6 | 18.9 | 524537 | 10.7 | 20.2 | 290141 | 10.8 | 19.0 | 198589 | 10.9 | 20.3 |
| 172999 | 10.5 | 19.1 | 458765 | 10.6 | 21.9 | 351902 | 10.6 | 21.1 | 42630 | 10.7 | 18.7 | 225924 | 10.8 | 19.6 | 115801 | 10.9 | 20.8 |
| 398460 | 10.5 | 20.4 | 373841 | 10.6 | 19.8 | 17727 | 10.6 | 16.6 | 127284 | 10.7 | 18.4 | 478186 | 10.8 | 21.1 | 82399 | 10.9 | 19.2 |
| 29567 | 10.5 | 16.8 | 216732 | 10.6 | 19.9 | 475062 | 10.6 | 21.2 | 398459 | 10.7 | 20.3 | 1707 | 10.8 | 15.0 | 543067 | 10.9 | 20.1 |
| 116203 | 10.5 | 20.5 | 1232 | 10.6 | 14.7 | 470139 | 10.6 | 20.8 | 457552 | 10.7 | 21.5 | 340809 | 10.8 | 19.9 | 408422 | 10.9 | 20.7 |
| 368262 | 10.5 | 19.7 | 24159 | 10.6 | 19.0 | 74783 | 10.6 | 19.6 | 147608 | 10.7 | 19.5 | 297813 | 10.8 | 20.2 | 248911 | 10.9 | 20.8 |
| 502864 | 10.5 | 20.4 | 86243 | 10.6 | 19.3 | 390787 | 10.6 | 21.2 | 85381 | 10.7 | 18.7 | 530878 | 10.8 | 21.5 | 161452 | 10.9 | 19.1 |
| 513220 | 10.5 | 20.9 | 90348 | 10.6 | 18.3 | 5798 | 10.6 | 16.0 | 375663 | 10.7 | 19.7 | 389765 | 10.8 | 20.6 | 327410 | 10.9 | 19.2 |
| 281523 | 10.5 | 20.1 | 156454 | 10.6 | 20.2 | 233721 | 10.6 | 19.6 | 436366 | 10.7 | 19.7 | 279987 | 10.8 | 19.7 | 1556 | 10.9 | 15.1 |
| 499470 | 10.5 | 22.2 | 64555 | 10.6 | 19.6 | 28221 | 10.6 | 18.5 | 86252 | 10.7 | 17.8 | 303208 | 10.8 | 20.6 | 83600 | 10.9 | 18.3 |
| 340499 | 10.5 | 20.3 | 344480 | 10.6 | 20.5 | 427570 | 10.6 | 21.3 | 103167 | 10.7 | 17.9 | 352707 | 10.8 | 20.4 | 41070 | 10.9 | 17.9 |
| 88628 | 10.5 | 18.9 | 185580 | 10.6 | 20.4 | 191590 | 10.6 | 19.7 | 198701 | 10.7 | 19.2 | 336422 | 10.8 | 19.3 | 133041 | 10.9 | 19.0 |
| 396972 | 10.5 | 20.2 | 305958 | 10.6 | 19.7 | 411259 | 10.6 | 21.6 | 502949 | 10.7 | 20.0 | 129385 | 10.8 | 20.4 | 181573 | 10.9 | 19.6 |
| 203999 | 10.5 | 19.5 | 439485 | 10.6 | 21.3 | 91624 | 10.6 | 19.2 | 266860 | 10.7 | 19.3 | 78167 | 10.8 | 19.4 | 540987 | 10.9 | 21.3 |
| 100673 | 10.5 | 19.0 | 427977 | 10.6 | 19.9 | 351689 | 10.6 | 20.9 | 407693 | 10.7 | 20.2 | 143601 | 10.8 | 19.7 | 105908 | 10.9 | 18.4 |
| 304002 | 10.5 | 18.7 | 69482 | 10.6 | 19.2 | 529637 | 10.6 | 20.2 | 302421 | 10.7 | 21.7 | 176330 | 10.8 | 20.1 | 527442 | 10.9 | 21.4 |
| 310131 | 10.5 | 20.1 | 461982 | 10.6 | 21.1 | 409148 | 10.6 | 19.9 | 368452 | 10.7 | 19.6 | 88737 | 10.8 | 18.7 | 136021 | 10.9 | 18.9 |
| 474590 | 10.5 | 19.2 | 440981 | 10.6 | 21.2 | 71122 | 10.6 | 18.9 | 419562 | 10.7 | 19.6 | 255413 | 10.8 | 18.9 | 377371 | 10.9 | 19.8 |
| 397271 | 10.5 | 20.3 | 532086 | 10.6 | 21.6 | 374073 | 10.6 | 19.4 | 306263 | 10.7 | 20.0 | 371109 | 10.8 | 20.0 | 352083 | 10.9 | 21.6 |
| 397687 | 10.5 | 20.4 | 193008 | 10.6 | 20.0 | 424086 | 10.6 | 21.1 | 141402 | 10.7 | 20.9 | 232940 | 10.8 | 19.9 | 107059 | 10.9 | 19.6 |
| 497504 | 10.5 | 20.2 | 122956 | 10.6 | 18.7 | 506626 | 10.6 | 21.0 | 121639 | 10.7 | 20.2 | 312009 | 10.8 | 19.4 | 46967 | 10.9 | 18.4 |
| 351905 | 10.5 | 21.5 | 385523 | 10.6 | 20.4 | 507067 | 10.7 | 20.2 | 2651 | 10.7 | 15.2 | 10925 | 10.8 | 17.6 | 17135 | 10.9 | 16.9 |
| 155439 | 10.5 | 19.5 | 529931 | 10.6 | 20.8 | 412918 | 10.7 | 20.4 | 326709 | 10.7 | 20.0 | 89263 | 10.8 | 17.9 | 19989 | 10.9 | 17.8 |
| 370960 | 10.5 | 20.7 | 123586 | 10.6 | 17.9 | 502635 | 10.7 | 21.3 | 359906 | 10.7 | 21.6 | 130062 | 10.8 | 19.6 | 30599 | 10.9 | 18.1 |
| 479779 | 10.5 | 20.5 | 425380 | 10.6 | 20.7 | 180116 | 10.7 | 20.0 | 506476 | 10.7 | 21.2 | 17562 | 10.8 | 17.1 | 153835 | 10.9 | 19.3 |
| 71820 | 10.5 | 19.2 | 247899 | 10.6 | 19.2 | 97422 | 10.7 | 18.3 | 308579 | 10.7 | 20.5 | 91251 | 10.8 | 19.1 | 171421 | 10.9 | 19.9 |
| 472895 | 10.5 | 19.3 | 20711 | 10.6 | 18.5 | 8005 | 10.7 | 15.6 | 412467 | 10.7 | 19.4 | 335808 | 10.8 | 19.7 | 503900 | 10.9 | 22.0 |
| 126552 | 10.5 | 19.3 | 107835 | 10.6 | 19.7 | 373221 | 10.7 | 20.3 | 466094 | 10.7 | 21.2 | 513761 | 10.8 | 20.6 | 536601 | 10.9 | 20.9 |
| 380728 | 10.5 | 19.5 | 33787 | 10.6 | 18.0 | 271740 | 10.7 | 18.7 | 342940 | 10.7 | 18.7 | 342387 | 10.8 | 20.7 | 117034 | 10.9 | 19.8 |
| 32335 | 10.5 | 18.4 | 40718 | 10.6 | 18.4 | 302245 | 10.7 | 21.3 | 66693 | 10.7 | 18.1 | 130482 | 10.8 | 18.4 | 185373 | 10.9 | 19.4 |
| 507442 | 10.5 | 20.6 | 505217 | 10.6 | 19.6 | 525105 | 10.7 | 20.7 | 374419 | 10.7 | 20.1 | 491824 | 10.8 | 21.8 | 302417 | 10.9 | 21.3 |
| 469740 | 10.5 | 20.2 | 193051 | 10.6 | 20.1 | 300038 | 10.7 | 19.4 | 475200 | 10.7 | 21.2 | 227405 | 10.8 | 21.1 | 70728 | 10.9 | 17.3 |
| 360414 | 10.5 | 19.5 | 537926 | 10.6 | 21.2 | 80212 | 10.7 | 19.1 | 189221 | 10.7 | 20.1 | 459408 | 10.8 | 20.9 | 67834 | 10.9 | 18.6 |
| 284430 | 10.5 | 22.0 | 41475 | 10.6 | 18.8 | 437426 | 10.7 | 20.8 | 31104 | 10.7 | 17.4 | 480772 | 10.8 | 19.9 | 209384 | 10.9 | 19.5 |
| 497545 | 10.5 | 20.6 | 299975 | 10.6 | 21.1 | 90264 | 10.7 | 18 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|--------|------|--------|------|------|--------|------|------|--------|------|------|
| 417667 | 10.9 | 22.0 | 291733 | 10.9 | 20.6 | 311242 | 11.1 | 21.2 | 153488 | 11.2 | 19.8 | 543244 | 11.2 | 21.9 | 371720 | 11.3 | 21.0 |
| 328344 | 10.9 | 20.2 | 84025 | 10.9 | 18.2 | 540337 | 11.1 | 20.0 | 165244 | 11.2 | 18.4 | 396061 | 11.2 | 20.8 | 369359 | 11.3 | 19.5 |
| 46404 | 10.9 | 18.9 | 501334 | 10.9 | 21.4 | 250902 | 11.1 | 19.7 | 530916 | 11.2 | 22.1 | 55975 | 11.2 | 17.1 | 512515 | 11.3 | 19.3 |
| 428311 | 10.9 | 20.7 | 210016 | 10.9 | 20.0 | 41046 | 11.1 | 18.4 | 382807 | 11.2 | 20.2 | 149973 | 11.2 | 19.7 | 493878 | 11.3 | 19.8 |
| 100885 | 10.9 | 19.9 | 311398 | 10.9 | 20.3 | 475170 | 11.1 | 20.5 | 530909 | 11.2 | 20.6 | 214393 | 11.2 | 20.4 | 519391 | 11.3 | 21.4 |
| 160166 | 10.9 | 20.1 | 336474 | 10.9 | 20.6 | 529867 | 11.1 | 20.5 | 184504 | 11.2 | 19.8 | 92627 | 11.2 | 17.9 | 371951 | 11.3 | 20.4 |
| 133284 | 10.9 | 18.0 | 407781 | 10.9 | 21.1 | 381877 | 11.1 | 20.0 | 34102 | 11.2 | 18.8 | 390514 | 11.2 | 20.3 | 250031 | 11.3 | 19.5 |
| 30965 | 10.9 | 17.1 | 316983 | 10.9 | 19.7 | 147849 | 11.1 | 18.8 | 71995 | 11.2 | 19.8 | 270565 | 11.2 | 19.5 | 57700 | 11.3 | 19.1 |
| 302414 | 10.9 | 21.5 | 418386 | 10.9 | 20.9 | 286267 | 11.1 | 19.8 | 268423 | 11.2 | 20.5 | 83746 | 11.2 | 19.0 | 17701 | 11.3 | 17.5 |
| 504640 | 10.9 | 21.0 | 410316 | 10.9 | 21.6 | 265669 | 11.1 | 20.3 | 265788 | 11.2 | 21.0 | 75179 | 11.2 | 18.9 | 198394 | 11.3 | 19.8 |
| 346113 | 10.9 | 20.1 | 266383 | 10.9 | 20.1 | 66239 | 11.1 | 18.7 | 374980 | 11.2 | 19.3 | 179321 | 11.2 | 20.7 | 371674 | 11.3 | 21.2 |
| 540577 | 10.9 | 20.6 | 529014 | 10.9 | 21.0 | 360203 | 11.1 | 21.1 | 366383 | 11.2 | 20.0 | 199505 | 11.2 | 20.5 | 209684 | 11.3 | 20.7 |
| 408398 | 10.9 | 20.7 | 524485 | 10.9 | 19.1 | 261182 | 11.1 | 20.2 | 541995 | 11.2 | 22.5 | 108 | 11.2 | 12.7 | 59143 | 11.3 | 17.7 |
| 397045 | 10.9 | 21.3 | 125516 | 10.9 | 18.7 | 509081 | 11.1 | 22.5 | 465920 | 11.2 | 20.6 | 539454 | 11.2 | 20.2 | 5430 | 11.3 | 15.0 |
| 538959 | 10.9 | 21.5 | 363909 | 10.9 | 20.5 | 454279 | 11.1 | 20.0 | 207995 | 11.2 | 20.4 | 192883 | 11.2 | 18.6 | 105731 | 11.3 | 18.2 |
| 299783 | 10.9 | 20.2 | 58086 | 10.9 | 17.8 | 525178 | 11.1 | 21.3 | 506855 | 11.2 | 21.2 | 534399 | 11.2 | 21.1 | 437693 | 11.3 | 20.3 |
| 45159 | 10.9 | 18.8 | 210540 | 10.9 | 17.8 | 344037 | 11.1 | 20.9 | 192327 | 11.2 | 19.4 | 119570 | 11.2 | 18.9 | 179459 | 11.3 | 20.9 |
| 106975 | 10.9 | 18.1 | 523708 | 10.9 | 22.0 | 347899 | 11.1 | 20.3 | 106426 | 11.2 | 20.0 | 506849 | 11.2 | 21.1 | 363103 | 11.3 | 19.2 |
| 15419 | 10.9 | 16.7 | 240034 | 10.9 | 19.7 | 426933 | 11.1 | 21.1 | 425564 | 11.2 | 20.3 | 266336 | 11.2 | 21.6 | 153461 | 11.3 | 19.6 |
| 36460 | 10.9 | 17.7 | 365498 | 10.9 | 18.7 | 205521 | 11.1 | 19.9 | 434056 | 11.2 | 20.6 | 354797 | 11.2 | 20.6 | 504936 | 11.3 | 18.7 |
| 435829 | 10.9 | 21.9 | 88987 | 10.9 | 18.2 | 374454 | 11.1 | 20.2 | 312053 | 11.2 | 20.2 | 540116 | 11.2 | 20.7 | 59745 | 11.3 | 18.9 |
| 106191 | 10.9 | 19.1 | 504005 | 10.9 | 21.5 | 33469 | 11.1 | 18.9 | 275604 | 11.2 | 19.7 | 518663 | 11.2 | 20.6 | 219715 | 11.3 | 19.3 |
| 11664 | 10.9 | 17.7 | 33410 | 11.0 | 16.0 | 20818 | 11.1 | 18.7 | 456806 | 11.2 | 19.0 | 311249 | 11.2 | 20.5 | 533306 | 11.3 | 20.3 |
| 362760 | 10.9 | 20.2 | 377621 | 11.0 | 20.4 | 112687 | 11.1 | 18.7 | 460211 | 11.2 | 20.1 | 455529 | 11.2 | 21.9 | 155104 | 11.3 | 19.5 |
| 132436 | 10.9 | 18.0 | 482094 | 11.0 | 19.8 | 68869 | 11.1 | 17.7 | 203578 | 11.2 | 20.0 | 171800 | 11.2 | 19.6 | 21156 | 11.3 | 18.1 |
| 394774 | 10.9 | 21.7 | 123614 | 11.0 | 20.1 | 488744 | 11.1 | 19.1 | 111563 | 11.2 | 20.3 | 24249 | 11.2 | 17.2 | 222734 | 11.3 | 19.9 |
| 503910 | 10.9 | 20.1 | 457706 | 11.0 | 20.7 | 257285 | 11.1 | 19.8 | 197485 | 11.2 | 20.2 | 359927 | 11.2 | 20.4 | 197031 | 11.3 | 19.5 |
| 87985 | 10.9 | 18.0 | 390956 | 11.0 | 20.2 | 195172 | 11.1 | 19.2 | 432027 | 11.2 | 20.4 | 250878 | 11.2 | 19.2 | 120164 | 11.3 | 19.0 |
| 531870 | 10.9 | 21.2 | 303393 | 11.0 | 19.3 | 42979 | 11.1 | 17.6 | 342772 | 11.2 | 19.8 | 480152 | 11.2 | 19.4 | 290828 | 11.3 | 20.9 |
| 478078 | 10.9 | 21.7 | 127715 | 11.0 | 19.2 | 38113 | 11.1 | 17.8 | 207630 | 11.2 | 19.5 | 355191 | 11.2 | 21.1 | 121309 | 11.3 | 19.0 |
| 105614 | 10.9 | 18.6 | 390297 | 11.0 | 20.8 | 358507 | 11.1 | 19.6 | 101807 | 11.2 | 20.3 | 281455 | 11.2 | 20.6 | 480444 | 11.3 | 20.7 |
| 226772 | 10.9 | 20.2 | 102340 | 11.0 | 19.2 | 514304 | 11.1 | 21.1 | 349545 | 11.2 | 19.7 | 232825 | 11.3 | 20.7 | 510419 | 11.3 | 20.3 |
| 403249 | 10.9 | 20.9 | 367326 | 11.0 | 19.5 | 12098 | 11.1 | 16.3 | 115660 | 11.2 | 19.0 | 111661 | 11.3 | 18.5 | 87534 | 11.3 | 18.5 |
| 393087 | 10.9 | 21.2 | 302064 | 11.0 | 20.0 | 196780 | 11.1 | 18.9 | 22685 | 11.2 | 17.6 | 453790 | 11.3 | 21.2 | 59323 | 11.3 | 18.6 |
| 74652 | 10.9 | 18.7 | 55650 | 11.0 | 17.8 | 25753 | 11.1 | 16.6 | 528403 | 11.2 | 22.1 | 312185 | 11.3 | 21.0 | 365089 | 11.3 | 21.6 |
| 154661 | 10.9 | 18.6 | 356355 | 11.0 | 20.1 | 311440 | 11.1 | 21.0 | 157508 | 11.2 | 19.3 | 222578 | 11.3 | 19.8 | 353886 | 11.3 | 20.8 |
| 403030 | 10.9 | 20.5 | 42443 | 11.0 | 18.9 | 119912 | 11.1 | 19.6 | 314145 | 11.2 | 21.2 | 315423 | 11.3 | 19.8 | 273089 | 11.3 | 19.6 |
| 119895 | 10.9 | 19.1 | 170258 | 11.0 | 18.7 | 208217 | 11.1 | 19.5 | 482401 | 11.2 | 20.3 | 170385 | 11.3 | 18.4 | 12177 | 11.3 | 18.3 |
| 13101 | 10.9 | 17.2 | 184277 | 11.0 | 20.2 | 86375 | 11.1 | 18.6 | 536399 | 11.2 | 21.5 | 498633 | 11.3 | 20.5 | 336919 | 11.3 | 20.6 |
| 331437 | 10.9 | 19.1 | 147828 | 11.0 | 19.6 | 510726 | 11.1 | 21.0 | 528280 | 11.2 | 19.8 | 400212 | 11.3 | 20.9 | 119374 | 11.3 | 18.9 |
| 380605 | 10.9 | 19.9 | 506226 | 11.0 | 19.3 | 168393 | 11.1 | 19.6 | 530904 | 11.2 | 21.7 | 478348 | 11.3 | 20.4 | 543364 | 11.3 | 19.6 |
| 297829 | 10.9 | 20.3 | 140629 | 11.0 | 18.6 | 166104 | 11.1 | 18.9 | 244253 | 11.2 | 18.8 | 360022 | 11.3 | 21.0 | 152233 | 11.4 | 20.1 |
| 272608 | 10.9 | 20.3 | 14818 | 11.0 | 16.4 | 83514 | 11.1 | 19.0 | 272858 | 11.2 | 19.6 | 113992 | 11.3 | 18.7 | 314184 | 11.4 | 21.0 |
| 127560 | 10.9 | 18.7 | 422346 | 11.0 | 21.2 | 253368 | 11.1 | 20.1 | 341795 | 11.2 | 21.0 | 503739 | 11.3 | 20.8 | 196248 | 11.4 | 19.0 |
| 269042 | 10.9 | 19.6 | 468575 | 11.0 | 20.8 | 412094 | 11.1 | 20.6 | 360774 | 11.2 | 20.0 | 17747 | 11.3 | 19.1 | 278836 | 11.4 | 19.8 |
| 142500 | 10.9 | 19.1 | 505615 | 11.0 | 20.2 | 240571 | 11.1 | 19.6 | 94181 | 11.2 | 18.3 | 375745 | 11.3 | 19.7 | 475306 | 11.4 | 20.5 |
| 35025 | 10.9 | 18.6 | 76252 | 11.0 | 17.6 | 406434 | 11.1 | 19.6 | 212047 | 11.2 | 19.8 | 530737 | 11.3 | 20.2 | 39101 | 11.4 | 20.2 |
| 142369 | 10.9 | 20.2 | 459090 | 11.0 | 21.5 | 19951 | 11.1 | 17.8 | 5132 | 11.2 | 15.5 | 415463 | 11.3 | 19.7 | 410201 | 11.4 | 19.7 |
| 59813 | 10.9 | 18.2 | 404465 | 11.0 | 21.0 | 24319 | 11.1 | 16.5 | 289085 | 11.2 | 20.9 | 336355 | 11.3 | 20.2 | 172000 | 11.4 | 18.6 |
| 357847 | 10.9 | 21.2 | 108852 | 11.0 | 18.7 | 281458 | 11.1 | 20.7 | 475448 | 11.2 | 20.9 | 286402 | 11.3 | 19.8 | 162832 | 11.4 | 19.7 |
| 328940 | 10.9 | 21.1 | 384867 | 11.0 | 20.6 | 479301 | 11.1 | 20.9 | 496490 | 11.2 | 19.3 | 121257 | 11.3 | 19.1 | 379843 | 11.4 | 19.6 |
| 18010 | 10.9 | 18.7 | 503075 | 11.0 | 20.4 | 230090 | 11.1 | 20.6 | 83305 | 11.2 | 19.0 | 55781 | 11.3 | 19.4 | 22853 | 11.4 | 17.5 |
| 373562 | 10.9 | 20.7 | 479152 | 11.0 | 20.2 | 70606 | 11.1 | 19.3 | 519538 | 11.2 | 20.5 | 291262 | 11.3 | 20.1 | 18631 | 11.4 | 15.8 |
| 86023 | 10.9 | 18.4 | 284124 | 11.0 | 19.2 | 143635 | 11.1 | 20.1 | 170489 | 11.2 | 21.2 | 134662 | 11.3 | 19.0 | 431896 | 11.4 | 20.7 |
| 381185 | 10.9 | 19.8 | 87672 | 11.0 | 17.6 | 427493 | 11.1 | 21.1 | 540942 | 11.2 | 21.0 | 188043 | 11.3 | 19.9 | 462223 | 11.4 | 21.1 |
| 345996 | 10.9 | 20.6 | 62172 | 11.0 | 18.5 | 429984 | 11.1 | 19.2 | 535058 | 11.2 | 20.6 | 232400 | 11.3 | 19.2 | 195551 | 11.4 | 19.2 |
| 249668 | 10.9 | 20.5 | 201564 | 11.0 | 19.0 | 241971 | 11.1 | 20.5 | 29284 | 11.2 | 18.7 | 368753 | 11.3 | 20.2 | 459611 | 11.4 | 20.9 |
| 374952 | 10.9 | 20.0 | 101689 | 11.0 | 19.5 | 281946 | 11.1 | 19.7 | 88875 | 11.2 | 18.8 | 207142 | 11.3 | 20.0 | 377403 | 11.4 | 21.0 |
| 518506 | 10.9 | 21.0 | 432797 | 11.0 | 20.6 | 190695 | 11.1 | 19.3 | 56502 | 11.2 | 17.3 | 188896 | 11.3 | 19.3 | 289613 | 11.4 | 20.1 |
| 120595 | 10.9 | 20.2 | 394750 | 11.0 | 22.1 | 497452 | 11.1 | 21.2 | 224249 | 11.2 | 20.5 | 55275 | 11.3 | 18.0 | 498834 | 11.4 | 21.3 |
| 500395 | 10.9 | 21.2 | 344129 | 11.0 | 20.2 | 299928 | 11.1 | 19.7 | 209593 | 11.2 | 20.7 | 261194 | 11.3 | 20.7 | 465427 | 11.4 | 19.2 |
| 145609 | 10.9 | 18.4 | 405762 | 11.0 | 21.7 | 233756 | 11.1 | 20.3 | 389241 | 11.2 | 21.2 | 225965 | 11.3 | 20.3 | 7032 | 11.4 | 16.9 |
| 52831 | 10.9 | 19.3 | 239113 | 11.0 | 20.5 | 531876 | 11.1 | 22.9 | 277692 | 11.2 | 20.0 | 293255 | 11.3 | 21.4 | 126978 | 11.4 | 19.4 |
| 393281 | 10.9 | 20.7 | 247793 | 11.0 | 19.5 | 329265 | 11.1 | 20.6 | 474972 | 11.2 | 20.9 | 8387 | 11.3 | 16.9 | 324063 | 11.4 | 20.2 |
| 477925 | 10.9 | 20.2 | 491573 | 11.1 | 19.8 | 116445 | 11.1 | 18.5 | 370951 | 11.2 | 21.2 | 124901 | 11.3 | 19.0 | 303833 | 11.4 | 20.3 |
| 40553 | 10.9 | 17.7 | 184789 | 11.1 | 19.4 | 336348 | 11.1 | 20.0 | 528230 | 11.2 | 20.6 | 211224 | 11.3 | 18.6 | 344 | 11.4 | 10.4 |
| 201957 | 10.9 | 18.4 | 427998 | 11.1 | 21.0 | 415983 | 11.1 | 20.0 | 299739 | 11.2 | 21.2 | 72202 | 11.3 | 18.0 | 38691 | 11.4 | 17.6 |
| 474735 | 10.9 | 20.2 | 53804 | 11.1 | 17.8 | 37210 | 11.1 | 17.8 | 123097 | 11.2 | 19.2 | 117317 | 11.3 | 19.5 | 384971 | 11.4 | 20.2 |
| 502072 | 10.9 | 21.4 | 422157 | 11.1 | 20.5 | 215793 | 11.1</ | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 196282 | 11.4 | 19.2 | 92188 | 11.5 | 19.0 | 470382 | 11.6 | 20.9 | 502632 | 11.7 | 20.8 | 533201 | 11.7 | 21.2 | 527744 | 11.8 | 19.9 |
| 424117 | 11.4 | 21.3 | 47094 | 11.5 | 17.8 | 149176 | 11.6 | 18.5 | 233380 | 11.7 | 20.1 | 463692 | 11.7 | 20.1 | 136113 | 11.8 | 19.6 |
| 111466 | 11.4 | 19.0 | 242723 | 11.5 | 18.9 | 151615 | 11.6 | 19.3 | 505246 | 11.7 | 20.1 | 97936 | 11.7 | 18.3 | 537218 | 11.8 | 19.7 |
| 389645 | 11.4 | 19.4 | 423481 | 11.5 | 21.1 | 2270 | 11.6 | 15.4 | 480597 | 11.7 | 21.3 | 206812 | 11.7 | 20.3 | 373619 | 11.8 | 20.8 |
| 30314 | 11.4 | 18.0 | 308173 | 11.5 | 21.2 | 28799 | 11.6 | 17.4 | 137832 | 11.7 | 19.5 | 7447 | 11.7 | 16.3 | 461380 | 11.8 | 21.8 |
| 245129 | 11.4 | 18.5 | 127340 | 11.5 | 19.0 | 539585 | 11.6 | 20.6 | 153138 | 11.7 | 19.4 | 356780 | 11.7 | 20.0 | 342541 | 11.8 | 20.2 |
| 368100 | 11.4 | 20.0 | 531841 | 11.5 | 22.2 | 161486 | 11.6 | 19.6 | 89583 | 11.7 | 19.5 | 191244 | 11.8 | 17.7 | 146074 | 11.8 | 19.6 |
| 129495 | 11.4 | 19.1 | 202434 | 11.5 | 19.8 | 160717 | 11.6 | 18.6 | 22943 | 11.7 | 19.4 | 138688 | 11.8 | 19.2 | 245408 | 11.8 | 20.2 |
| 11740 | 11.4 | 17.5 | 129420 | 11.5 | 18.7 | 272397 | 11.6 | 19.1 | 148472 | 11.7 | 19.8 | 248405 | 11.8 | 19.4 | 224425 | 11.8 | 20.2 |
| 118939 | 11.4 | 18.8 | 96244 | 11.5 | 17.7 | 130213 | 11.6 | 19.8 | 80001 | 11.7 | 17.0 | 497130 | 11.8 | 18.4 | 249595 | 11.8 | 20.8 |
| 425869 | 11.4 | 20.7 | 543494 | 11.5 | 20.0 | 272940 | 11.6 | 19.8 | 50772 | 11.7 | 18.9 | 288710 | 11.8 | 19.3 | 334352 | 11.8 | 20.0 |
| 60285 | 11.4 | 18.4 | 334708 | 11.5 | 20.9 | 141187 | 11.6 | 18.9 | 466180 | 11.7 | 21.2 | 287916 | 11.8 | 19.8 | 143273 | 11.8 | 19.8 |
| 425757 | 11.4 | 21.7 | 287706 | 11.5 | 18.5 | 410231 | 11.6 | 19.4 | 531030 | 11.7 | 22.4 | 102799 | 11.8 | 19.3 | 497345 | 11.8 | 20.3 |
| 534129 | 11.4 | 21.5 | 361536 | 11.5 | 20.3 | 8324 | 11.6 | 16.6 | 533963 | 11.7 | 20.8 | 539258 | 11.8 | 20.1 | 107990 | 11.8 | 19.1 |
| 477639 | 11.4 | 19.2 | 55436 | 11.5 | 19.1 | 83950 | 11.6 | 19.0 | 507804 | 11.7 | 20.6 | 61241 | 11.8 | 16.8 | 13930 | 11.8 | 15.8 |
| 310531 | 11.4 | 20.7 | 197310 | 11.5 | 19.0 | 308403 | 11.6 | 21.1 | 64850 | 11.7 | 17.3 | 140589 | 11.8 | 18.5 | 176655 | 11.8 | 19.2 |
| 520053 | 11.4 | 20.0 | 95087 | 11.5 | 18.1 | 76866 | 11.6 | 17.5 | 544924 | 11.7 | 20.3 | 432943 | 11.8 | 19.3 | 152874 | 11.8 | 19.5 |
| 294967 | 11.4 | 19.6 | 394273 | 11.5 | 21.7 | 198425 | 11.6 | 18.9 | 406425 | 11.7 | 21.1 | 208693 | 11.8 | 18.6 | 459869 | 11.8 | 20.7 |
| 177149 | 11.4 | 18.7 | 33697 | 11.5 | 17.2 | 263084 | 11.6 | 20.7 | 470198 | 11.7 | 20.3 | 506655 | 11.8 | 21.3 | 431939 | 11.8 | 21.7 |
| 17010 | 11.4 | 16.7 | 524544 | 11.5 | 21.0 | 196730 | 11.6 | 19.4 | 196917 | 11.7 | 20.8 | 146820 | 11.8 | 19.9 | 66813 | 11.8 | 17.9 |
| 79503 | 11.4 | 18.7 | 64586 | 11.5 | 20.3 | 539528 | 11.6 | 20.3 | 180109 | 11.7 | 20.7 | 156261 | 11.8 | 20.1 | 332356 | 11.8 | 20.9 |
| 38916 | 11.4 | 18.9 | 35093 | 11.5 | 18.8 | 239781 | 11.6 | 20.3 | 106977 | 11.7 | 18.9 | 506514 | 11.8 | 20.2 | 306045 | 11.8 | 19.9 |
| 264724 | 11.4 | 20.9 | 74294 | 11.5 | 18.2 | 121642 | 11.6 | 18.7 | 252997 | 11.7 | 20.1 | 430329 | 11.8 | 18.9 | 374538 | 11.8 | 20.0 |
| 305792 | 11.4 | 21.0 | 499870 | 11.5 | 20.3 | 64137 | 11.6 | 19.6 | 457752 | 11.7 | 21.1 | 508266 | 11.8 | 20.8 | 378344 | 11.8 | 20.6 |
| 214254 | 11.4 | 19.9 | 6221 | 11.5 | 17.6 | 134272 | 11.6 | 19.2 | 402881 | 11.7 | 19.0 | 118399 | 11.8 | 18.7 | 45898 | 11.8 | 16.5 |
| 24079 | 11.4 | 18.2 | 537933 | 11.5 | 20.1 | 238691 | 11.6 | 20.1 | 64638 | 11.7 | 18.0 | 272575 | 11.8 | 21.1 | 311942 | 11.8 | 20.5 |
| 177103 | 11.4 | 20.3 | 118863 | 11.5 | 19.4 | 170950 | 11.6 | 20.5 | 278419 | 11.7 | 20.7 | 483333 | 11.8 | 19.9 | 122811 | 11.8 | 19.1 |
| 355193 | 11.4 | 21.3 | 141293 | 11.5 | 20.3 | 56904 | 11.6 | 18.8 | 420699 | 11.7 | 19.6 | 519933 | 11.8 | 21.0 | 33041 | 11.8 | 16.7 |
| 104850 | 11.4 | 19.4 | 267399 | 11.5 | 20.0 | 21668 | 11.6 | 18.5 | 302516 | 11.7 | 19.3 | 428888 | 11.8 | 20.4 | 62599 | 11.8 | 18.0 |
| 397024 | 11.4 | 19.3 | 200241 | 11.5 | 20.1 | 210375 | 11.6 | 19.4 | 22182 | 11.7 | 18.3 | 107070 | 11.8 | 19.6 | 182941 | 11.9 | 20.6 |
| 381578 | 11.4 | 20.0 | 125398 | 11.5 | 20.0 | 540296 | 11.6 | 21.1 | 539725 | 11.7 | 20.0 | 531336 | 11.8 | 20.5 | 410293 | 11.9 | 21.6 |
| 476332 | 11.4 | 20.5 | 162669 | 11.5 | 18.6 | 264331 | 11.6 | 20.2 | 241746 | 11.7 | 19.7 | 282467 | 11.8 | 18.9 | 62985 | 11.9 | 18.9 |
| 89392 | 11.4 | 18.3 | 430995 | 11.5 | 20.2 | 420859 | 11.6 | 19.5 | 457666 | 11.7 | 21.9 | 302480 | 11.8 | 20.2 | 187648 | 11.9 | 19.9 |
| 377751 | 11.4 | 20.5 | 154335 | 11.5 | 19.0 | 76002 | 11.6 | 19.1 | 440947 | 11.7 | 20.3 | 305558 | 11.8 | 20.2 | 538815 | 11.9 | 20.8 |
| 191854 | 11.4 | 18.9 | 58380 | 11.5 | 19.6 | 377358 | 11.6 | 20.4 | 260460 | 11.7 | 20.3 | 288851 | 11.8 | 19.5 | 342284 | 11.9 | 21.0 |
| 281167 | 11.4 | 20.2 | 306359 | 11.5 | 19.8 | 401360 | 11.6 | 20.2 | 200868 | 11.7 | 18.0 | 87630 | 11.8 | 18.0 | 422049 | 11.9 | 20.1 |
| 392733 | 11.4 | 20.1 | 108099 | 11.5 | 19.4 | 139735 | 11.6 | 18.2 | 143963 | 11.7 | 19.2 | 365131 | 11.8 | 21.4 | 303783 | 11.9 | 19.6 |
| 317968 | 11.4 | 20.7 | 15426 | 11.5 | 18.0 | 414446 | 11.6 | 20.2 | 290976 | 11.7 | 20.5 | 49952 | 11.8 | 16.4 | 532429 | 11.9 | 20.3 |
| 105573 | 11.4 | 19.3 | 420016 | 11.5 | 21.4 | 222584 | 11.6 | 19.9 | 382821 | 11.7 | 20.2 | 42634 | 11.8 | 18.9 | 258825 | 11.9 | 18.8 |
| 313669 | 11.4 | 19.9 | 380145 | 11.5 | 21.9 | 167161 | 11.6 | 19.8 | 419977 | 11.7 | 21.4 | 49592 | 11.8 | 18.1 | 517691 | 11.9 | 21.5 |
| 500059 | 11.4 | 21.0 | 506885 | 11.5 | 21.9 | 297423 | 11.6 | 19.1 | 236152 | 11.7 | 21.0 | 292734 | 11.8 | 21.8 | 178379 | 11.9 | 20.8 |
| 128548 | 11.4 | 19.4 | 331248 | 11.5 | 19.3 | 34523 | 11.6 | 18.9 | 461788 | 11.7 | 20.5 | 417806 | 11.8 | 22.1 | 330014 | 11.9 | 19.9 |
| 127644 | 11.4 | 18.8 | 441345 | 11.5 | 21.4 | 261624 | 11.6 | 19.6 | 6363 | 11.7 | 16.8 | 29926 | 11.8 | 17.0 | 87399 | 11.9 | 19.1 |
| 105706 | 11.4 | 18.7 | 417174 | 11.5 | 22.9 | 164119 | 11.6 | 19.8 | 357842 | 11.7 | 21.6 | 274213 | 11.8 | 20.2 | 286790 | 11.9 | 18.7 |
| 61840 | 11.4 | 18.6 | 150291 | 11.5 | 18.6 | 181496 | 11.6 | 20.5 | 270552 | 11.7 | 20.6 | 202601 | 11.8 | 19.6 | 407850 | 11.9 | 20.9 |
| 250841 | 11.5 | 19.9 | 30362 | 11.5 | 18.4 | 403274 | 11.6 | 20.2 | 248858 | 11.7 | 20.1 | 185679 | 11.8 | 22.0 | 262715 | 11.9 | 20.0 |
| 144588 | 11.5 | 20.4 | 330030 | 11.5 | 20.1 | 112013 | 11.6 | 18.6 | 411256 | 11.7 | 20.9 | 64614 | 11.8 | 17.9 | 120406 | 11.9 | 20.0 |
| 283479 | 11.5 | 19.7 | 161087 | 11.5 | 19.0 | 237906 | 11.6 | 19.1 | 445909 | 11.7 | 21.6 | 432496 | 11.8 | 21.1 | 215341 | 11.9 | 21.0 |
| 135522 | 11.5 | 19.8 | 58439 | 11.5 | 19.3 | 193697 | 11.6 | 19.9 | 354864 | 11.7 | 20.8 | 153677 | 11.8 | 19.2 | 151552 | 11.9 | 18.8 |
| 468517 | 11.5 | 19.5 | 360910 | 11.5 | 20.3 | 144532 | 11.6 | 18.2 | 503723 | 11.7 | 20.1 | 531891 | 11.8 | 21.9 | 98548 | 11.9 | 18.8 |
| 539527 | 11.5 | 20.6 | 528183 | 11.5 | 19.4 | 540317 | 11.6 | 21.4 | 270323 | 11.7 | 21.6 | 168919 | 11.8 | 20.4 | 395821 | 11.9 | 21.3 |
| 395565 | 11.5 | 21.7 | 166639 | 11.5 | 18.7 | 263483 | 11.6 | 20.0 | 503484 | 11.7 | 21.0 | 368206 | 11.8 | 18.3 | 131843 | 11.9 | 19.5 |
| 242798 | 11.5 | 19.7 | 90868 | 11.5 | 19.5 | 250794 | 11.6 | 20.5 | 409189 | 11.7 | 20.2 | 512340 | 11.8 | 20.0 | 204086 | 11.9 | 19.5 |
| 219599 | 11.5 | 20.3 | 524011 | 11.5 | 22.6 | 475719 | 11.6 | 20.7 | 531253 | 11.7 | 20.1 | 399916 | 11.8 | 20.1 | 19579 | 11.9 | 19.1 |
| 240774 | 11.5 | 20.5 | 85260 | 11.5 | 18.5 | 269821 | 11.6 | 21.3 | 75234 | 11.7 | 19.8 | 105581 | 11.8 | 18.8 | 508415 | 11.9 | 19.3 |
| 176382 | 11.5 | 20.4 | 349477 | 11.5 | 21.8 | 403847 | 11.6 | 19.7 | 538362 | 11.7 | 21.6 | 46384 | 11.8 | 19.0 | 62191 | 11.9 | 18.5 |
| 127003 | 11.5 | 18.1 | 98591 | 11.5 | 18.1 | 75420 | 11.6 | 19.4 | 21200 | 11.7 | 18.5 | 533749 | 11.8 | 20.4 | 466593 | 11.9 | 21.1 |
| 37332 | 11.5 | 17.9 | 128720 | 11.5 | 20.6 | 374967 | 11.6 | 19.8 | 308527 | 11.7 | 20.0 | 501046 | 11.8 | 20.2 | 535922 | 11.9 | 20.8 |
| 61429 | 11.5 | 18.7 | 232702 | 11.5 | 20.2 | 143604 | 11.6 | 20.4 | 234685 | 11.7 | 20.9 | 151804 | 11.8 | 20.7 | 69550 | 11.9 | 17.9 |
| 15051 | 11.5 | 17.9 | 437779 | 11.5 | 20.0 | 241258 | 11.6 | 20.3 | 474207 | 11.7 | 21.4 | 228380 | 11.8 | 20.6 | 526636 | 11.9 | 20.9 |
| 501154 | 11.5 | 19.8 | 540653 | 11.5 | 20.9 | 505002 | 11.6 | 20.9 | 210457 | 11.7 | 20.5 | 67375 | 11.8 | 17.0 | 471352 | 11.9 | 20.9 |
| 530751 | 11.5 | 19.2 | 303262 | 11.5 | 17.7 | 464448 | 11.6 | 20.4 | 58892 | 11.7 | 18.7 | 533946 | 11.8 | 20.7 | 466200 | 11.9 | 20.7 |
| 141438 | 11.5 | 19.4 | 296976 | 11.6 | 20.3 | 53536 | 11.6 | 16.6 | 396354 | 11.7 | 21.2 | 5731 | 11.8 | 21.1 | 177091 | 11.9 | 19.5 |
| 184623 | 11.5 | 19.7 | 302455 | 11.6 | 20.8 | 504617 | 11.6 | 21.2 | 129723 | 11.7 | 18.1 | 384443 | 11.8 | 20.4 | 527794 | 11.9 | 21.7 |
| 33368 | 11.5 | 16.1 | 262918 | 11.6 | 19.7 | 185764 | 11.6 | 18.8 | 100139 | 11.7 | 17.5 | 227344 | 11.8 | 21.7 | 276509 | 11.9 | 18.9 |
| 353723 | 11.5 | 19.6 | 84858 | 11.6 | 18.9 | 509203 | 11.6 | 21.6 | 166111 | 11.7 | 20.2 | 36294 | 11.8 | 17.6 | 201963 | 11.9 | 18.1 |
| 358075 | 11.5 | 21.4 | 62825 | 11.6 | 19.0 | 100830 | 11.6 | 19.7 | 434724 | 11.7 | 21.6 | 311284 | 11.8 | 21.0 | 387125 | 11.9 | 20.3 |
| 539363 | 11.5 | 20.0 | 107001 | 11.6 | 20.4 | 341904 | 11.6 | 19.5 | 103201 | 11.7 | 20.0 | 478335 | 11.8 | 21.3 | 42647 | 11.9 | 18.7 |
| 478096 | 11.5 | 21.2 | 355610 | 11.6 | 20.0 | 8455 | 11.6 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 140491 | 11.9 | 19.6 | 342336 | 11.9 | 20.6 | 95729 | 12.0 | 18.9 | 91083 | 12.1 | 18.9 | 203414 | 12.2 | 19.1 | 198244 | 12.3 | 20.4 |
| 181450 | 11.9 | 19.4 | 391617 | 11.9 | 20.2 | 306775 | 12.0 | 20.8 | 434698 | 12.1 | 20.5 | 368232 | 12.2 | 21.4 | 46692 | 12.3 | 18.6 |
| 530688 | 11.9 | 21.9 | 509259 | 11.9 | 21.4 | 153884 | 12.0 | 19.2 | 24845 | 12.1 | 19.0 | 439186 | 12.2 | 20.5 | 382796 | 12.3 | 19.2 |
| 322608 | 11.9 | 18.5 | 126547 | 11.9 | 19.7 | 539953 | 12.0 | 19.3 | 100538 | 12.1 | 19.9 | 467960 | 12.2 | 19.9 | 236660 | 12.3 | 20.1 |
| 524072 | 11.9 | 19.5 | 103972 | 11.9 | 17.9 | 474074 | 12.0 | 20.3 | 31912 | 12.1 | 18.2 | 510424 | 12.2 | 20.3 | 174546 | 12.3 | 19.6 |
| 9138 | 11.9 | 17.5 | 228360 | 11.9 | 20.8 | 121565 | 12.0 | 19.0 | 359689 | 12.1 | 20.4 | 528445 | 12.2 | 21.2 | 367716 | 12.3 | 20.5 |
| 176555 | 11.9 | 19.9 | 368209 | 11.9 | 19.2 | 118387 | 12.0 | 19.2 | 503933 | 12.1 | 20.9 | 499426 | 12.2 | 19.7 | 536817 | 12.3 | 21.6 |
| 353318 | 11.9 | 19.6 | 132182 | 11.9 | 20.2 | 508181 | 12.0 | 19.3 | 116712 | 12.1 | 18.4 | 65264 | 12.2 | 19.3 | 101593 | 12.3 | 19.5 |
| 39249 | 11.9 | 18.4 | 477191 | 11.9 | 20.7 | 466097 | 12.0 | 21.0 | 273403 | 12.1 | 20.2 | 526840 | 12.2 | 22.6 | 92337 | 12.3 | 17.2 |
| 409162 | 11.9 | 20.3 | 222563 | 11.9 | 19.6 | 422518 | 12.0 | 20.5 | 210369 | 12.1 | 19.3 | 289839 | 12.2 | 20.9 | 387009 | 12.3 | 18.6 |
| 38870 | 11.9 | 18.4 | 122475 | 11.9 | 18.9 | 118975 | 12.0 | 18.5 | 273831 | 12.1 | 21.8 | 522554 | 12.2 | 20.2 | 371740 | 12.3 | 20.3 |
| 160867 | 11.9 | 18.8 | 329792 | 11.9 | 19.4 | 422753 | 12.1 | 20.2 | 94137 | 12.1 | 19.3 | 458755 | 12.2 | 19.6 | 309848 | 12.3 | 19.8 |
| 67932 | 11.9 | 18.8 | 282900 | 11.9 | 20.0 | 384141 | 12.1 | 20.5 | 290478 | 12.1 | 18.0 | 263854 | 12.2 | 20.5 | 36535 | 12.3 | 18.6 |
| 255710 | 11.9 | 18.2 | 439411 | 11.9 | 20.6 | 327279 | 12.1 | 20.2 | 533470 | 12.1 | 22.1 | 408319 | 12.2 | 21.6 | 66928 | 12.3 | 19.3 |
| 441961 | 11.9 | 19.3 | 149017 | 11.9 | 19.2 | 241623 | 12.1 | 19.0 | 417711 | 12.1 | 21.1 | 500093 | 12.2 | 21.5 | 68173 | 12.3 | 19.0 |
| 399056 | 11.9 | 20.4 | 409068 | 11.9 | 20.8 | 540371 | 12.1 | 19.9 | 98336 | 12.1 | 18.4 | 74638 | 12.2 | 18.1 | 65771 | 12.3 | 19.4 |
| 336431 | 11.9 | 20.5 | 301063 | 11.9 | 20.2 | 377409 | 12.1 | 19.4 | 372497 | 12.1 | 18.7 | 163427 | 12.2 | 17.9 | 330386 | 12.3 | 20.6 |
| 532837 | 11.9 | 21.9 | 274225 | 11.9 | 21.1 | 313146 | 12.1 | 19.6 | 132268 | 12.1 | 19.4 | 520628 | 12.2 | 20.3 | 302354 | 12.3 | 18.3 |
| 36234 | 11.9 | 17.2 | 386493 | 11.9 | 21.1 | 358337 | 12.1 | 20.3 | 498786 | 12.1 | 21.5 | 529648 | 12.2 | 21.5 | 501187 | 12.3 | 20.6 |
| 267036 | 11.9 | 18.9 | 260868 | 11.9 | 20.1 | 50712 | 12.1 | 18.4 | 532676 | 12.1 | 21.0 | 505440 | 12.2 | 20.5 | 258792 | 12.3 | 20.5 |
| 8524 | 11.9 | 16.9 | 257841 | 11.9 | 19.5 | 117445 | 12.1 | 19.3 | 80286 | 12.1 | 18.5 | 312408 | 12.2 | 19.8 | 64928 | 12.3 | 19.8 |
| 270549 | 11.9 | 21.1 | 497583 | 11.9 | 19.9 | 420598 | 12.1 | 20.9 | 224296 | 12.1 | 21.4 | 309920 | 12.2 | 21.2 | 140210 | 12.3 | 19.8 |
| 379230 | 11.9 | 21.1 | 276934 | 11.9 | 20.8 | 98244 | 12.1 | 19.3 | 148674 | 12.1 | 19.8 | 531984 | 12.2 | 20.7 | 182186 | 12.3 | 19.9 |
| 18090 | 11.9 | 17.2 | 497537 | 11.9 | 21.9 | 258947 | 12.1 | 19.6 | 212655 | 12.1 | 19.3 | 114017 | 12.2 | 19.7 | 398496 | 12.3 | 20.2 |
| 8170 | 11.9 | 16.4 | 73713 | 11.9 | 17.7 | 338632 | 12.1 | 19.1 | 205615 | 12.1 | 18.3 | 56173 | 12.2 | 18.6 | 241651 | 12.3 | 20.4 |
| 35033 | 11.9 | 20.2 | 272697 | 11.9 | 20.5 | 488972 | 12.1 | 20.3 | 306380 | 12.1 | 19.5 | 278800 | 12.2 | 20.4 | 341488 | 12.3 | 20.7 |
| 125323 | 11.9 | 18.9 | 239582 | 11.9 | 19.9 | 461724 | 12.1 | 20.0 | 75258 | 12.1 | 19.0 | 96659 | 12.2 | 16.9 | 225999 | 12.3 | 20.1 |
| 35932 | 11.9 | 19.2 | 394743 | 11.9 | 21.6 | 221609 | 12.1 | 20.1 | 90218 | 12.1 | 18.4 | 75155 | 12.2 | 20.2 | 455695 | 12.3 | 21.1 |
| 208584 | 11.9 | 21.3 | 94492 | 11.9 | 18.5 | 241287 | 12.1 | 20.0 | 105410 | 12.1 | 19.1 | 13849 | 12.2 | 17.7 | 218762 | 12.3 | 18.8 |
| 267410 | 11.9 | 19.1 | 161491 | 11.9 | 19.4 | 430617 | 12.1 | 20.7 | 392611 | 12.1 | 20.3 | 417576 | 12.2 | 21.4 | 432290 | 12.3 | 21.8 |
| 377932 | 11.9 | 20.7 | 371108 | 11.9 | 20.8 | 100408 | 12.1 | 19.6 | 198767 | 12.1 | 20.7 | 376325 | 12.2 | 21.2 | 82358 | 12.3 | 17.4 |
| 498693 | 11.9 | 20.1 | 391770 | 11.9 | 21.5 | 392659 | 12.1 | 21.1 | 381536 | 12.1 | 19.9 | 359775 | 12.2 | 20.6 | 322295 | 12.3 | 20.3 |
| 403137 | 11.9 | 20.5 | 353161 | 11.9 | 21.5 | 204920 | 12.1 | 20.5 | 392130 | 12.1 | 19.9 | 215579 | 12.2 | 19.9 | 457598 | 12.3 | 21.6 |
| 86978 | 11.9 | 17.8 | 40663 | 11.9 | 18.2 | 524426 | 12.1 | 20.9 | 350996 | 12.1 | 19.9 | 428064 | 12.2 | 21.4 | 284566 | 12.3 | 20.2 |
| 513888 | 11.9 | 20.6 | 96497 | 11.9 | 19.0 | 437313 | 12.1 | 24.4 | 179556 | 12.1 | 19.1 | 291850 | 12.2 | 18.8 | 317871 | 12.3 | 19.9 |
| 544816 | 11.9 | 21.0 | 506035 | 11.9 | 21.1 | 156358 | 12.1 | 19.7 | 418254 | 12.1 | 21.9 | 497356 | 12.2 | 20.9 | 534205 | 12.3 | 20.8 |
| 162018 | 11.9 | 19.1 | 193798 | 11.9 | 18.6 | 94947 | 12.1 | 19.2 | 298314 | 12.1 | 20.9 | 510408 | 12.2 | 21.6 | 413367 | 12.3 | 21.8 |
| 504684 | 11.9 | 21.0 | 111399 | 11.9 | 19.3 | 275026 | 12.1 | 21.2 | 544265 | 12.1 | 21.0 | 489001 | 12.2 | 20.9 | 215032 | 12.3 | 19.6 |
| 498020 | 11.9 | 20.8 | 45771 | 11.9 | 16.5 | 83516 | 12.1 | 18.9 | 159418 | 12.1 | 18.8 | 25124 | 12.2 | 18.2 | 521383 | 12.3 | 20.7 |
| 127942 | 11.9 | 20.5 | 385378 | 12.0 | 19.6 | 320509 | 12.1 | 20.7 | 319272 | 12.1 | 20.9 | 7889 | 12.2 | 16.2 | 1655 | 12.3 | 15.2 |
| 358066 | 11.9 | 19.3 | 308454 | 12.0 | 20.0 | 123947 | 12.1 | 18.7 | 39629 | 12.2 | 17.7 | 299892 | 12.2 | 21.0 | 438233 | 12.3 | 19.5 |
| 34538 | 11.9 | 17.6 | 470794 | 12.0 | 21.0 | 362099 | 12.1 | 20.1 | 327399 | 12.2 | 19.2 | 539158 | 12.2 | 20.7 | 475784 | 12.3 | 21.0 |
| 26428 | 11.9 | 17.6 | 336968 | 12.0 | 19.4 | 344974 | 12.1 | 19.7 | 180594 | 12.2 | 20.7 | 353840 | 12.2 | 20.4 | 497188 | 12.3 | 20.3 |
| 486902 | 11.9 | 21.0 | 263304 | 12.0 | 19.7 | 370990 | 12.1 | 21.4 | 172485 | 12.2 | 18.5 | 362680 | 12.2 | 20.8 | 460811 | 12.3 | 21.1 |
| 117909 | 11.9 | 17.8 | 5335 | 12.0 | 26.0 | 357218 | 12.1 | 20.6 | 95423 | 12.2 | 19.6 | 48238 | 12.2 | 18.2 | 264292 | 12.3 | 19.9 |
| 433923 | 11.9 | 21.1 | 107297 | 12.0 | 19.1 | 130104 | 12.1 | 19.5 | 177125 | 12.2 | 18.5 | 20112 | 12.2 | 18.4 | 46215 | 12.3 | 19.4 |
| 80192 | 11.9 | 19.3 | 486684 | 12.0 | 20.6 | 544195 | 12.1 | 20.4 | 198456 | 12.2 | 19.1 | 304603 | 12.2 | 20.9 | 19199 | 12.3 | 18.0 |
| 55613 | 11.9 | 18.6 | 383944 | 12.0 | 21.0 | 219711 | 12.1 | 20.7 | 215135 | 12.2 | 19.6 | 410377 | 12.2 | 18.8 | 5100 | 12.3 | 17.5 |
| 320986 | 11.9 | 19.1 | 448094 | 12.0 | 20.8 | 175694 | 12.1 | 20.1 | 49863 | 12.2 | 17.4 | 421129 | 12.2 | 20.8 | 389236 | 12.3 | 19.8 |
| 508710 | 11.9 | 20.4 | 297658 | 12.0 | 20.3 | 406901 | 12.1 | 20.4 | 524408 | 12.2 | 20.5 | 172841 | 12.2 | 20.2 | 374357 | 12.3 | 20.8 |
| 55776 | 11.9 | 18.9 | 500589 | 12.0 | 21.5 | 408139 | 12.1 | 20.8 | 355793 | 12.2 | 21.0 | 102348 | 12.2 | 19.7 | 105913 | 12.3 | 19.8 |
| 437961 | 11.9 | 19.7 | 272954 | 12.0 | 19.0 | 62737 | 12.1 | 18.5 | 310195 | 12.2 | 19.2 | 321578 | 12.2 | 18.5 | 518240 | 12.3 | 20.3 |
| 505226 | 11.9 | 21.1 | 170343 | 12.0 | 19.4 | 53310 | 12.1 | 17.9 | 118495 | 12.2 | 19.6 | 409233 | 12.2 | 21.0 | 557 | 12.3 | 15.8 |
| 524100 | 11.9 | 19.3 | 489330 | 12.0 | 20.7 | 8404 | 12.1 | 16.3 | 478282 | 12.2 | 20.4 | 291709 | 12.2 | 21.0 | 308449 | 12.3 | 20.5 |
| 269940 | 11.9 | 19.1 | 191806 | 12.0 | 18.3 | 151054 | 12.1 | 20.1 | 511575 | 12.2 | 19.8 | 27822 | 12.2 | 17.5 | 81224 | 12.3 | 17.4 |
| 492427 | 11.9 | 21.7 | 222599 | 12.0 | 19.9 | 216700 | 12.1 | 19.5 | 341278 | 12.2 | 20.5 | 282390 | 12.2 | 20.5 | 382915 | 12.3 | 19.2 |
| 170700 | 11.9 | 20.8 | 492388 | 12.0 | 18.6 | 355744 | 12.1 | 21.4 | 320534 | 12.2 | 21.4 | 518169 | 12.2 | 20.6 | 306154 | 12.3 | 19.4 |
| 213866 | 11.9 | 18.9 | 167781 | 12.0 | 20.2 | 250838 | 12.1 | 19.3 | 167794 | 12.2 | 19.5 | 298822 | 12.2 | 19.4 | 241882 | 12.3 | 20.1 |
| 234479 | 11.9 | 19.8 | 131825 | 12.0 | 18.1 | 384453 | 12.1 | 21.2 | 22572 | 12.2 | 17.8 | 204704 | 12.2 | 21.0 | 504110 | 12.3 | 20.9 |
| 529224 | 11.9 | 20.6 | 164240 | 12.0 | 19.4 | 185391 | 12.1 | 20.6 | 122189 | 12.2 | 19.6 | 408370 | 12.2 | 20.9 | 224245 | 12.3 | 18.8 |
| 473209 | 11.9 | 19.8 | 15455 | 12.0 | 16.6 | 110054 | 12.1 | 18.3 | 379261 | 12.2 | 21.8 | 417754 | 12.2 | 21.3 | 346537 | 12.3 | 18.5 |
| 504479 | 11.9 | 21.5 | 21960 | 12.0 | 18.3 | 450458 | 12.1 | 21.2 | 170382 | 12.2 | 19.2 | 332275 | 12.2 | 19.3 | 370179 | 12.3 | 20.4 |
| 469942 | 11.9 | 20.4 | 355888 | 12.0 | 20.3 | 466474 | 12.1 | 19.7 | 478399 | 12.2 | 19.7 | 175557 | 12.2 | 18.8 | 117120 | 12.3 | 18.2 |
| 224331 | 11.9 | 19.2 | 532954 | 12.0 | 21.8 | 147972 | 12.1 | 20.4 | 250419 | 12.2 | 19.2 | 543558 | 12.2 | 20.1 | 392407 | 12.3 | 21.1 |
| 242517 | 11.9 | 20.6 | 472899 | 12.0 | 20.8 | 281099 | 12.1 | 20.9 | 535119 | 12.2 | 20.6 | 540980 | 12.2 | 20.8 | 330414 | 12.3 | 20.7 |
| 371078 | 11.9 | 20.2 | 105965 | 12.0 | 18.8 | 303827 | 12.1 | 19.4 | 1288 | 12.2 | 15.1 | 191729 | 12.2 | 19.3 | 281463 | 12.3 | 20.4 |
| 480527 | 11.9 | 20.6 | 299243 | 12.0 | 19.6 | 384832 | 12.1 | 20.1 | 453325 | 12.2 | 21.7 | 467778 | 12.2 | 19.1 | 241047 | 12.3 | 20.3 |
| 370979 | 11.9 | 19.7 | 106163 | 12.0 | 18.9 | 425722 | 12.1 | 19.0 | 198902 | 12.2 | 19.6 | 175096 | 12.2 | 19.8 | 165455 | 12.3 | 19.7 |
| 190506 | 11.9 | 18.4 | 27835 | 12.0 | 17.8 | 53148 | 12.1 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 79457 | 12.3 | 17.5 | 355232 | 12.4 | 19.9 | 400602 | 12.5 | 19.8 | 244634 | 12.6 | 20.3 | 41415 | 12.7 | 18.9 | 164670 | 12.8 | 17.4 |
| 40256 | 12.3 | 17.2 | 268141 | 12.4 | 20.3 | 44123 | 12.5 | 17.3 | 502672 | 12.6 | 20.0 | 56071 | 12.7 | 18.7 | 521176 | 12.8 | 20.8 |
| 303253 | 12.3 | 19.7 | 475053 | 12.4 | 20.2 | 124513 | 12.5 | 19.3 | 178743 | 12.6 | 20.1 | 257918 | 12.7 | 19.6 | 185944 | 12.8 | 20.7 |
| 471735 | 12.4 | 20.3 | 332898 | 12.4 | 20.6 | 529387 | 12.5 | 21.1 | 29342 | 12.6 | 18.3 | 368706 | 12.7 | 21.5 | 80784 | 12.8 | 19.3 |
| 175356 | 12.4 | 20.1 | 271890 | 12.4 | 20.2 | 210500 | 12.5 | 20.9 | 478217 | 12.6 | 20.7 | 333132 | 12.7 | 21.8 | 540870 | 12.8 | 21.6 |
| 183616 | 12.4 | 18.9 | 435626 | 12.4 | 20.9 | 361077 | 12.5 | 21.1 | 477107 | 12.6 | 21.0 | 186970 | 12.7 | 19.4 | 266358 | 12.8 | 20.5 |
| 66777 | 12.4 | 18.8 | 57117 | 12.4 | 18.6 | 128806 | 12.5 | 19.0 | 228582 | 12.6 | 19.4 | 380890 | 12.7 | 20.3 | 440934 | 12.8 | 20.8 |
| 456593 | 12.4 | 20.9 | 3651 | 12.4 | 16.7 | 358496 | 12.5 | 20.4 | 992 | 12.6 | 15.3 | 531310 | 12.7 | 20.6 | 183819 | 12.8 | 18.4 |
| 21956 | 12.4 | 18.3 | 123160 | 12.4 | 18.3 | 71039 | 12.5 | 18.7 | 114378 | 12.6 | 18.1 | 7455 | 12.7 | 17.5 | 179351 | 12.8 | 19.3 |
| 340855 | 12.4 | 20.1 | 273930 | 12.5 | 19.7 | 64997 | 12.5 | 18.5 | 387458 | 12.6 | 21.4 | 495491 | 12.7 | 19.1 | 213426 | 12.8 | 20.0 |
| 30185 | 12.4 | 16.8 | 507097 | 12.5 | 21.1 | 135114 | 12.5 | 17.8 | 401515 | 12.6 | 20.3 | 469223 | 12.7 | 20.4 | 491609 | 12.8 | 21.1 |
| 93621 | 12.4 | 17.5 | 214081 | 12.5 | 20.1 | 503982 | 12.5 | 19.9 | 497322 | 12.6 | 21.0 | 384552 | 12.7 | 21.3 | 191310 | 12.8 | 18.9 |
| 100440 | 12.4 | 18.0 | 82077 | 12.5 | 17.8 | 162707 | 12.5 | 18.7 | 325143 | 12.6 | 21.0 | 538086 | 12.7 | 20.5 | 441798 | 12.8 | 20.7 |
| 510924 | 12.4 | 20.9 | 488852 | 12.5 | 20.8 | 479922 | 12.5 | 21.6 | 374415 | 12.6 | 21.0 | 374961 | 12.7 | 19.9 | 407775 | 12.8 | 21.5 |
| 153131 | 12.4 | 18.5 | 227088 | 12.5 | 20.2 | 410756 | 12.5 | 19.9 | 140123 | 12.6 | 20.5 | 464759 | 12.7 | 20.9 | 69735 | 12.8 | 18.4 |
| 63839 | 12.4 | 18.7 | 310291 | 12.5 | 20.0 | 177401 | 12.5 | 20.3 | 87631 | 12.6 | 19.0 | 167642 | 12.7 | 19.7 | 25519 | 12.8 | 18.5 |
| 425921 | 12.4 | 20.9 | 528605 | 12.5 | 20.4 | 276560 | 12.5 | 18.8 | 153066 | 12.6 | 18.9 | 131103 | 12.7 | 17.9 | 468641 | 12.8 | 20.4 |
| 403327 | 12.4 | 20.6 | 3608 | 12.5 | 15.5 | 506492 | 12.5 | 20.0 | 470437 | 12.6 | 20.3 | 213973 | 12.7 | 20.9 | 13664 | 12.8 | 18.6 |
| 526117 | 12.4 | 22.1 | 410477 | 12.5 | 21.4 | 24707 | 12.5 | 17.4 | 165496 | 12.6 | 20.4 | 528363 | 12.7 | 21.2 | 103127 | 12.8 | 17.7 |
| 111738 | 12.4 | 18.5 | 54918 | 12.5 | 18.0 | 53284 | 12.5 | 15.8 | 40912 | 12.6 | 19.1 | 238810 | 12.7 | 20.3 | 430653 | 12.8 | 20.3 |
| 467751 | 12.4 | 20.5 | 24611 | 12.5 | 16.3 | 9988 | 12.6 | 17.4 | 365101 | 12.6 | 21.7 | 389267 | 12.7 | 20.6 | 398930 | 12.8 | 20.5 |
| 62705 | 12.4 | 18.9 | 497387 | 12.5 | 21.0 | 7520 | 12.6 | 16.6 | 58488 | 12.6 | 19.5 | 520360 | 12.7 | 21.0 | 425426 | 12.8 | 19.6 |
| 384914 | 12.4 | 20.3 | 118913 | 12.5 | 19.4 | 2865 | 12.6 | 14.6 | 199427 | 12.6 | 20.1 | 29885 | 12.7 | 18.3 | 430674 | 12.8 | 20.4 |
| 115046 | 12.4 | 19.3 | 210017 | 12.5 | 19.4 | 126336 | 12.6 | 19.4 | 540769 | 12.6 | 22.3 | 512377 | 12.7 | 21.4 | 469187 | 12.8 | 20.2 |
| 180176 | 12.4 | 19.1 | 372388 | 12.5 | 19.7 | 125635 | 12.6 | 19.8 | 508495 | 12.6 | 20.5 | 205764 | 12.7 | 20.5 | 377398 | 12.8 | 20.0 |
| 411711 | 12.4 | 19.9 | 302454 | 12.5 | 20.9 | 248953 | 12.6 | 19.1 | 103048 | 12.6 | 19.0 | 537437 | 12.7 | 20.6 | 102944 | 12.8 | 19.4 |
| 470544 | 12.4 | 21.6 | 507129 | 12.5 | 20.3 | 352053 | 12.6 | 19.3 | 510908 | 12.6 | 22.5 | 534660 | 12.7 | 21.4 | 340500 | 12.8 | 19.7 |
| 434263 | 12.4 | 20.7 | 539597 | 12.5 | 19.6 | 438964 | 12.6 | 19.3 | 497209 | 12.6 | 20.5 | 420046 | 12.7 | 20.8 | 276134 | 12.8 | 19.9 |
| 210707 | 12.4 | 20.3 | 104864 | 12.5 | 19.3 | 109669 | 12.6 | 19.2 | 414095 | 12.6 | 21.1 | 23986 | 12.7 | 18.1 | 540496 | 12.8 | 20.8 |
| 70528 | 12.4 | 18.1 | 63115 | 12.5 | 18.4 | 245197 | 12.6 | 18.9 | 138423 | 12.6 | 20.3 | 496760 | 12.7 | 21.1 | 110671 | 12.8 | 18.8 |
| 456705 | 12.4 | 20.3 | 372409 | 12.5 | 20.1 | 435722 | 12.6 | 21.5 | 301986 | 12.6 | 18.7 | 86777 | 12.7 | 18.8 | 31646 | 12.8 | 17.0 |
| 152652 | 12.4 | 20.3 | 522968 | 12.5 | 20.4 | 420540 | 12.6 | 20.8 | 211882 | 12.6 | 20.2 | 247386 | 12.7 | 19.0 | 290355 | 12.8 | 19.5 |
| 421843 | 12.4 | 20.7 | 413834 | 12.5 | 20.2 | 156406 | 12.6 | 20.4 | 183872 | 12.6 | 20.9 | 217953 | 12.7 | 18.7 | 509937 | 12.8 | 21.2 |
| 235787 | 12.4 | 21.0 | 501309 | 12.5 | 20.8 | 205161 | 12.6 | 20.6 | 533447 | 12.6 | 22.1 | 9422 | 12.7 | 17.5 | 255289 | 12.8 | 20.1 |
| 498758 | 12.4 | 21.5 | 369991 | 12.5 | 21.5 | 301982 | 12.6 | 18.5 | 529760 | 12.7 | 19.8 | 505750 | 12.7 | 19.9 | 224371 | 12.8 | 19.0 |
| 3647 | 12.4 | 14.9 | 171546 | 12.5 | 18.6 | 286305 | 12.6 | 19.9 | 47578 | 12.7 | 19.2 | 287889 | 12.7 | 20.8 | 43642 | 12.8 | 19.3 |
| 40828 | 12.4 | 17.9 | 425211 | 12.5 | 21.6 | 227096 | 12.6 | 20.3 | 504363 | 12.7 | 20.9 | 527378 | 12.7 | 22.1 | 273658 | 12.8 | 21.5 |
| 451721 | 12.4 | 21.6 | 410386 | 12.5 | 21.5 | 537251 | 12.6 | 21.6 | 231773 | 12.7 | 19.3 | 309163 | 12.7 | 20.6 | 464664 | 12.8 | 20.6 |
| 527453 | 12.4 | 21.6 | 425730 | 12.5 | 22.4 | 87739 | 12.6 | 18.9 | 516422 | 12.7 | 21.6 | 263444 | 12.7 | 20.5 | 464228 | 12.8 | 21.7 |
| 497963 | 12.4 | 22.1 | 117680 | 12.5 | 20.8 | 543573 | 12.6 | 20.8 | 384414 | 12.7 | 21.1 | 145884 | 12.7 | 18.5 | 244127 | 12.8 | 18.4 |
| 225943 | 12.4 | 20.4 | 420206 | 12.5 | 21.8 | 185163 | 12.6 | 20.4 | 273829 | 12.7 | 20.0 | 478327 | 12.7 | 20.9 | 405223 | 12.8 | 21.3 |
| 358016 | 12.4 | 20.6 | 202305 | 12.5 | 20.7 | 498304 | 12.6 | 22.1 | 39840 | 12.7 | 19.6 | 85555 | 12.7 | 18.3 | 489968 | 12.8 | 19.6 |
| 312653 | 12.4 | 20.0 | 522588 | 12.5 | 20.2 | 196785 | 12.6 | 19.9 | 93862 | 12.7 | 17.8 | 523555 | 12.7 | 21.3 | 355749 | 12.8 | 21.0 |
| 473929 | 12.4 | 20.3 | 373526 | 12.5 | 19.6 | 145554 | 12.6 | 18.0 | 161402 | 12.7 | 19.4 | 212129 | 12.7 | 18.8 | 196635 | 12.8 | 19.4 |
| 187997 | 12.4 | 19.8 | 492378 | 12.5 | 20.4 | 476408 | 12.6 | 20.9 | 139929 | 12.7 | 19.8 | 166735 | 12.7 | 19.2 | 68544 | 12.8 | 19.4 |
| 41803 | 12.4 | 19.0 | 31757 | 12.5 | 18.2 | 109559 | 12.6 | 19.0 | 302817 | 12.7 | 20.4 | 471088 | 12.7 | 20.5 | 348052 | 12.8 | 19.0 |
| 156070 | 12.4 | 18.7 | 450814 | 12.5 | 21.3 | 127681 | 12.6 | 18.6 | 206962 | 12.7 | 19.4 | 316653 | 12.7 | 19.9 | 234103 | 12.8 | 19.1 |
| 196163 | 12.4 | 19.8 | 162714 | 12.5 | 18.6 | 366808 | 12.6 | 21.1 | 22463 | 12.7 | 17.5 | 292106 | 12.7 | 20.1 | 412017 | 12.8 | 20.5 |
| 8389 | 12.4 | 18.4 | 199571 | 12.5 | 19.7 | 147930 | 12.6 | 19.5 | 510425 | 12.7 | 20.0 | 375995 | 12.7 | 20.8 | 242745 | 12.8 | 18.5 |
| 59366 | 12.4 | 18.8 | 363163 | 12.5 | 21.7 | 288220 | 12.6 | 20.1 | 98852 | 12.7 | 18.8 | 502870 | 12.7 | 20.1 | 268139 | 12.8 | 19.4 |
| 382849 | 12.4 | 21.2 | 145875 | 12.5 | 20.7 | 538896 | 12.6 | 21.9 | 499810 | 12.7 | 21.5 | 39834 | 12.7 | 17.5 | 250815 | 12.8 | 19.4 |
| 63506 | 12.4 | 17.6 | 79829 | 12.5 | 18.0 | 129612 | 12.6 | 19.2 | 401361 | 12.7 | 21.1 | 16227 | 12.7 | 17.4 | 285849 | 12.8 | 20.1 |
| 80671 | 12.4 | 17.2 | 510662 | 12.5 | 19.5 | 535637 | 12.6 | 21.0 | 392148 | 12.7 | 21.1 | 219684 | 12.7 | 18.9 | 233366 | 12.8 | 20.1 |
| 3411 | 12.4 | 16.7 | 91915 | 12.5 | 19.1 | 65007 | 12.6 | 19.2 | 64999 | 12.7 | 20.7 | 412249 | 12.7 | 20.9 | 97978 | 12.8 | 17.8 |
| 190295 | 12.4 | 19.9 | 506411 | 12.5 | 21.6 | 488727 | 12.6 | 20.4 | 466107 | 12.7 | 21.7 | 436451 | 12.7 | 22.0 | 459117 | 12.8 | 18.9 |
| 456716 | 12.4 | 21.7 | 62642 | 12.5 | 18.8 | 259464 | 12.6 | 18.3 | 198016 | 12.7 | 18.0 | 210469 | 12.7 | 19.4 | 156302 | 12.8 | 19.1 |
| 238850 | 12.4 | 19.4 | 375756 | 12.5 | 19.4 | 399144 | 12.6 | 20.3 | 481847 | 12.7 | 19.1 | 212717 | 12.8 | 19.9 | 463968 | 12.8 | 19.0 |
| 168148 | 12.4 | 19.5 | 456128 | 12.5 | 21.4 | 434883 | 12.6 | 20.0 | 102887 | 12.7 | 18.3 | 126648 | 12.8 | 19.9 | 235311 | 12.8 | 20.8 |
| 133125 | 12.4 | 18.1 | 263193 | 12.5 | 20.1 | 146889 | 12.6 | 20.6 | 519130 | 12.7 | 20.5 | 122786 | 12.8 | 19.7 | 531649 | 12.8 | 22.4 |
| 43085 | 12.4 | 18.9 | 388832 | 12.5 | 20.5 | 45256 | 12.6 | 17.0 | 374579 | 12.7 | 21.2 | 179478 | 12.8 | 20.4 | 294845 | 12.8 | 19.7 |
| 148088 | 12.4 | 20.3 | 144983 | 12.5 | 18.7 | 240821 | 12.6 | 20.7 | 255618 | 12.7 | 18.9 | 60015 | 12.8 | 17.9 | 376365 | 12.8 | 20.7 |
| 537765 | 12.4 | 21.2 | 290752 | 12.5 | 19.3 | 121544 | 12.6 | 19.4 | 219148 | 12.7 | 19.8 | 19052 | 12.8 | 18.6 | 353851 | 12.8 | 20.4 |
| 69424 | 12.4 | 18.1 | 250889 | 12.5 | 20.9 | 72356 | 12.6 | 19.4 | 510826 | 12.7 | 21.4 | 506869 | 12.8 | 21.5 | 250743 | 12.8 | 20.6 |
| 134922 | 12.4 | 19.2 | 232873 | 12.5 | 19.8 | 222453 | 12.6 | 18.8 | 141943 | 12.7 | 18.9 | 143530 | 12.8 | 20.0 | 354177 | 12.8 | 21.2 |
| 381951 | 12.4 | 20.4 | 149276 | 12.5 | 18.0 | 182536 | 12.6 | 18.4 | 368214 | 12.7 | 20.4 | 403878 | 12.8 | 19.9 | 397814 | 12.8 | 19.0 |
| 422967 | 12.4 | 21.3 | 164699 | 12.5 | 20.1 | 338656 | 12.6 | 20.5 | 314196 | 12.7 | 20.0 | 491144 | 12.8 | 19.9 | 432451 | 12.8 | 21.0 |
| 156008 | 12.4 | 19.5 | 506889 | 12.5 | 20.7 | 131185 | 12.6 | 20.4 | 70510 | 12.7 | 19.0 | 420231 | 12.8 | 20.2 | 402464 | 12.8 | 20.5 |
| 148447 | 12.4 | 19.4 | 174545 | 12.5 | 20.3 | 177883 | 12.6 | 20.4 | 96825 | 12.7 | 18.3 | 215066 | 12.8 | 19.6 | 106575 | 12.8 | 19.1 |
| 506392 | 12.4 | 19.4 | 415330 | 12.5 | 20.6 | 285387 | 12.6 | 18.6 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V |
|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|
| 203545 | 12.8 | 20.5 | 40730 | 12.9 | 16.9 | 264415 | 13.0 | 17.0 | 387719 | 13.1 | 19.6 | 521085 | 13.2 | 20.2 | 8434 | 13.2 | 18.4 |
| 531992 | 12.9 | 21.3 | 30585 | 12.9 | 17.3 | 530921 | 13.0 | 21.5 | 107519 | 13.1 | 20.0 | 93441 | 13.2 | 19.2 | 111823 | 13.2 | 18.9 |
| 111723 | 12.9 | 19.6 | 231754 | 12.9 | 20.3 | 216519 | 13.0 | 20.2 | 59520 | 13.1 | 17.3 | 192796 | 13.2 | 19.8 | 34547 | 13.2 | 17.9 |
| 308420 | 12.9 | 20.1 | 539584 | 12.9 | 20.3 | 93052 | 13.0 | 19.3 | 388370 | 13.1 | 20.3 | 113456 | 13.2 | 18.8 | 162672 | 13.2 | 18.8 |
| 362983 | 12.9 | 21.5 | 300151 | 12.9 | 20.4 | 402870 | 13.0 | 19.3 | 540171 | 13.1 | 21.5 | 86155 | 13.2 | 18.8 | 300957 | 13.2 | 20.3 |
| 34847 | 12.9 | 18.7 | 363337 | 12.9 | 20.3 | 504292 | 13.0 | 21.6 | 370454 | 13.1 | 21.1 | 130421 | 13.2 | 18.0 | 461485 | 13.2 | 20.1 |
| 435831 | 12.9 | 20.3 | 33427 | 12.9 | 18.2 | 533304 | 13.0 | 19.9 | 502660 | 13.1 | 20.8 | 248223 | 13.2 | 19.8 | 66763 | 13.2 | 18.1 |
| 534941 | 12.9 | 21.2 | 177493 | 12.9 | 19.4 | 500233 | 13.0 | 19.4 | 530782 | 13.1 | 21.8 | 502715 | 13.2 | 21.1 | 55555 | 13.2 | 16.5 |
| 467279 | 12.9 | 20.4 | 285712 | 12.9 | 20.2 | 191821 | 13.0 | 19.4 | 239263 | 13.1 | 20.8 | 494448 | 13.2 | 20.4 | 193715 | 13.3 | 19.4 |
| 532821 | 12.9 | 20.2 | 499698 | 12.9 | 20.6 | 309346 | 13.0 | 21.3 | 205245 | 13.1 | 18.1 | 76216 | 13.2 | 18.1 | 490098 | 13.3 | 21.3 |
| 346173 | 12.9 | 20.6 | 72648 | 12.9 | 18.6 | 185445 | 13.0 | 18.9 | 356593 | 13.1 | 20.8 | 498615 | 13.2 | 21.2 | 329991 | 13.3 | 20.7 |
| 151814 | 12.9 | 18.4 | 354528 | 12.9 | 19.6 | 426610 | 13.0 | 19.4 | 150948 | 13.1 | 17.4 | 187348 | 13.2 | 20.1 | 224428 | 13.3 | 20.5 |
| 358569 | 12.9 | 20.2 | 17817 | 12.9 | 16.9 | 70191 | 13.0 | 18.6 | 433362 | 13.1 | 20.3 | 513812 | 13.2 | 21.6 | 431077 | 13.3 | 21.0 |
| 474870 | 12.9 | 20.1 | 357971 | 12.9 | 21.7 | 395462 | 13.0 | 20.8 | 40269 | 13.1 | 18.6 | 131118 | 13.2 | 20.2 | 351971 | 13.3 | 21.0 |
| 301569 | 12.9 | 20.5 | 195256 | 12.9 | 19.9 | 494064 | 13.0 | 20.5 | 370928 | 13.1 | 19.6 | 281258 | 13.2 | 19.2 | 351993 | 13.3 | 20.0 |
| 254046 | 12.9 | 21.0 | 246770 | 12.9 | 19.9 | 536193 | 13.0 | 21.4 | 497151 | 13.1 | 19.8 | 214436 | 13.2 | 18.9 | 475554 | 13.3 | 20.7 |
| 377791 | 12.9 | 19.9 | 214853 | 12.9 | 20.2 | 387726 | 13.0 | 21.3 | 322809 | 13.1 | 19.4 | 118811 | 13.2 | 18.8 | 335579 | 13.3 | 21.3 |
| 466164 | 12.9 | 18.7 | 194220 | 12.9 | 18.8 | 491838 | 13.0 | 20.2 | 1323 | 13.1 | 15.2 | 31247 | 13.2 | 18.3 | 508139 | 13.3 | 20.3 |
| 41494 | 12.9 | 18.6 | 542337 | 12.9 | 20.4 | 506062 | 13.0 | 20.3 | 520518 | 13.1 | 19.7 | 510386 | 13.2 | 21.7 | 187883 | 13.3 | 18.5 |
| 214445 | 12.9 | 19.7 | 274941 | 12.9 | 19.4 | 370945 | 13.0 | 20.0 | 229632 | 13.1 | 20.4 | 131719 | 13.2 | 19.9 | 428777 | 13.3 | 19.7 |
| 511925 | 12.9 | 19.4 | 130613 | 12.9 | 19.1 | 413477 | 13.0 | 21.3 | 528919 | 13.1 | 21.1 | 176552 | 13.2 | 17.9 | 225832 | 13.3 | 19.7 |
| 357762 | 12.9 | 20.6 | 323122 | 12.9 | 20.5 | 20950 | 13.0 | 17.8 | 27004 | 13.1 | 17.7 | 270561 | 13.2 | 19.7 | 255703 | 13.3 | 19.7 |
| 304024 | 12.9 | 19.8 | 399195 | 12.9 | 21.5 | 501317 | 13.0 | 20.8 | 394618 | 13.1 | 22.3 | 224533 | 13.2 | 18.5 | 428262 | 13.3 | 21.0 |
| 497948 | 12.9 | 21.0 | 59722 | 12.9 | 16.8 | 230901 | 13.0 | 20.1 | 94095 | 13.1 | 20.2 | 9868 | 13.2 | 17.5 | 258528 | 13.3 | 19.2 |
| 226362 | 12.9 | 20.3 | 111316 | 12.9 | 18.6 | 352535 | 13.0 | 19.3 | 20925 | 13.1 | 19.3 | 453268 | 13.2 | 19.9 | 533124 | 13.3 | 20.5 |
| 204945 | 12.9 | 19.9 | 62600 | 12.9 | 18.0 | 64046 | 13.0 | 17.4 | 6611 | 13.1 | 20.3 | 524872 | 13.2 | 20.3 | 63100 | 13.3 | 18.6 |
| 458822 | 12.9 | 20.6 | 153406 | 12.9 | 19.1 | 345937 | 13.0 | 21.0 | 511984 | 13.1 | 19.0 | 451240 | 13.2 | 21.3 | 270327 | 13.3 | 21.0 |
| 31 | 12.9 | 12.5 | 433856 | 12.9 | 21.3 | 190103 | 13.0 | 18.7 | 353910 | 13.1 | 20.8 | 431928 | 13.2 | 20.6 | 412077 | 13.3 | 20.5 |
| 261691 | 12.9 | 20.3 | 146212 | 12.9 | 19.4 | 158461 | 13.0 | 20.3 | 332681 | 13.1 | 21.5 | 251346 | 13.2 | 21.0 | 295980 | 13.3 | 20.4 |
| 521296 | 12.9 | 21.1 | 184718 | 12.9 | 20.4 | 58 | 13.0 | 12.8 | 468630 | 13.1 | 20.6 | 123629 | 13.2 | 17.8 | 504805 | 13.3 | 21.5 |
| 92844 | 12.9 | 19.0 | 371688 | 12.9 | 21.3 | 102642 | 13.0 | 19.7 | 286508 | 13.1 | 21.1 | 206817 | 13.2 | 20.6 | 407737 | 13.3 | 21.4 |
| 39739 | 12.9 | 17.7 | 147245 | 12.9 | 19.8 | 198453 | 13.0 | 19.7 | 216757 | 13.1 | 19.6 | 250877 | 13.2 | 20.5 | 232793 | 13.3 | 19.0 |
| 90801 | 12.9 | 19.5 | 522613 | 12.9 | 20.9 | 216759 | 13.0 | 19.6 | 228536 | 13.1 | 19.1 | 244534 | 13.2 | 21.0 | 174773 | 13.3 | 21.2 |
| 416243 | 12.9 | 20.9 | 204166 | 12.9 | 19.7 | 474292 | 13.0 | 21.6 | 28367 | 13.1 | 18.6 | 65100 | 13.2 | 18.6 | 496304 | 13.3 | 20.5 |
| 447261 | 12.9 | 20.9 | 497159 | 12.9 | 19.7 | 55133 | 13.0 | 18.5 | 507042 | 13.1 | 20.0 | 119064 | 13.2 | 18.4 | 529442 | 13.3 | 20.8 |
| 429221 | 12.9 | 21.0 | 416257 | 12.9 | 20.5 | 81787 | 13.0 | 16.8 | 143348 | 13.1 | 19.3 | 471800 | 13.2 | 20.8 | 243352 | 13.3 | 20.5 |
| 182208 | 12.9 | 19.7 | 435320 | 12.9 | 20.6 | 346042 | 13.0 | 20.6 | 328323 | 13.1 | 19.6 | 530800 | 13.2 | 20.3 | 95247 | 13.3 | 18.6 |
| 64786 | 12.9 | 18.0 | 39396 | 12.9 | 18.7 | 135314 | 13.0 | 19.0 | 473215 | 13.1 | 20.9 | 195346 | 13.2 | 20.0 | 139863 | 13.3 | 19.3 |
| 540445 | 12.9 | 20.8 | 500225 | 12.9 | 21.4 | 214448 | 13.0 | 19.0 | 103383 | 13.1 | 18.7 | 538112 | 13.2 | 20.9 | 86341 | 13.3 | 19.4 |
| 301027 | 12.9 | 19.7 | 31454 | 12.9 | 17.3 | 228618 | 13.0 | 19.8 | 494451 | 13.1 | 20.8 | 345684 | 13.2 | 20.5 | 110762 | 13.3 | 19.2 |
| 224522 | 12.9 | 19.7 | 406045 | 12.9 | 19.8 | 344611 | 13.0 | 21.2 | 252911 | 13.1 | 18.1 | 262758 | 13.2 | 19.9 | 429986 | 13.3 | 20.4 |
| 172904 | 12.9 | 20.8 | 310434 | 12.9 | 18.3 | 397368 | 13.0 | 20.7 | 389720 | 13.1 | 20.2 | 200570 | 13.2 | 19.1 | 202041 | 13.3 | 19.6 |
| 149169 | 12.9 | 20.1 | 174810 | 12.9 | 19.1 | 131232 | 13.1 | 18.4 | 224392 | 13.1 | 19.3 | 335185 | 13.2 | 20.4 | 775 | 13.3 | 14.9 |
| 196310 | 12.9 | 19.7 | 65985 | 12.9 | 18.5 | 138528 | 13.1 | 18.2 | 217621 | 13.1 | 20.7 | 214219 | 13.2 | 19.3 | 111475 | 13.3 | 19.0 |
| 432678 | 12.9 | 20.4 | 208459 | 12.9 | 19.1 | 308491 | 13.1 | 20.9 | 1464 | 13.1 | 15.5 | 117407 | 13.2 | 20.1 | 378284 | 13.3 | 21.7 |
| 376802 | 12.9 | 20.4 | 181721 | 12.9 | 19.3 | 522136 | 13.1 | 20.5 | 491056 | 13.1 | 20.5 | 40677 | 13.2 | 18.7 | 188134 | 13.3 | 19.8 |
| 92982 | 12.9 | 18.3 | 277636 | 12.9 | 20.5 | 297008 | 13.1 | 19.3 | 527802 | 13.1 | 21.5 | 295897 | 13.2 | 20.1 | 416121 | 13.3 | 20.7 |
| 530863 | 12.9 | 22.1 | 497296 | 12.9 | 20.1 | 6916 | 13.1 | 14.6 | 195588 | 13.1 | 19.8 | 12403 | 13.2 | 17.2 | 259453 | 13.3 | 19.3 |
| 472218 | 12.9 | 21.3 | 139536 | 12.9 | 19.8 | 399109 | 13.1 | 20.3 | 505535 | 13.1 | 19.7 | 186323 | 13.2 | 21.4 | 358401 | 13.3 | 20.1 |
| 183518 | 12.9 | 20.5 | 68685 | 12.9 | 19.3 | 503137 | 13.1 | 20.7 | 113535 | 13.1 | 19.3 | 157571 | 13.2 | 21.4 | 533978 | 13.3 | 19.5 |
| 34770 | 12.9 | 18.9 | 367158 | 12.9 | 19.7 | 24465 | 13.1 | 17.5 | 22621 | 13.1 | 18.2 | 288672 | 13.2 | 19.7 | 75341 | 13.3 | 19.5 |
| 469189 | 12.9 | 21.3 | 14532 | 12.9 | 17.7 | 36886 | 13.1 | 18.0 | 423512 | 13.1 | 20.6 | 279398 | 13.2 | 19.4 | 160132 | 13.3 | 19.5 |
| 28372 | 12.9 | 17.4 | 282320 | 12.9 | 19.0 | 154271 | 13.1 | 20.2 | 386605 | 13.1 | 19.9 | 98288 | 13.2 | 19.7 | 50308 | 13.3 | 19.3 |
| 133167 | 12.9 | 18.1 | 267482 | 12.9 | 19.2 | 303281 | 13.1 | 18.9 | 408753 | 13.1 | 20.1 | 371920 | 13.2 | 19.8 | 409402 | 13.3 | 21.3 |
| 304741 | 12.9 | 19.6 | 359920 | 12.9 | 21.6 | 359911 | 13.1 | 20.3 | 121753 | 13.1 | 19.6 | 162541 | 13.2 | 18.8 | 406529 | 13.3 | 19.5 |
| 384080 | 12.9 | 20.0 | 101621 | 12.9 | 20.2 | 419454 | 13.1 | 19.9 | 234587 | 13.1 | 19.2 | 412312 | 13.2 | 20.5 | 124864 | 13.3 | 18.9 |
| 292045 | 12.9 | 20.8 | 20648 | 12.9 | 18.4 | 112704 | 13.1 | 19.5 | 505981 | 13.1 | 20.1 | 439750 | 13.2 | 20.1 | 48397 | 13.3 | 16.9 |
| 338094 | 12.9 | 19.9 | 426930 | 12.9 | 20.3 | 382850 | 13.1 | 21.3 | 320597 | 13.1 | 20.9 | 253756 | 13.2 | 20.6 | 373519 | 13.3 | 19.7 |
| 7798 | 12.9 | 17.1 | 192956 | 12.9 | 20.3 | 123052 | 13.1 | 18.0 | 456745 | 13.1 | 19.4 | 193100 | 13.2 | 20.5 | 413354 | 13.3 | 20.8 |
| 22832 | 12.9 | 17.9 | 190713 | 12.9 | 18.9 | 386203 | 13.1 | 20.2 | 291693 | 13.1 | 20.8 | 330434 | 13.2 | 20.6 | 380650 | 13.3 | 18.8 |
| 277631 | 12.9 | 21.6 | 112275 | 12.9 | 17.9 | 93408 | 13.1 | 18.9 | 243065 | 13.1 | 20.2 | 348410 | 13.2 | 20.4 | 491558 | 13.3 | 20.3 |
| 544033 | 12.9 | 19.4 | 198637 | 13.0 | 19.7 | 6222 | 13.1 | 17.0 | 170989 | 13.1 | 18.7 | 434389 | 13.2 | 22.4 | 415655 | 13.3 | 20.0 |
| 70458 | 12.9 | 18.9 | 518927 | 13.0 | 20.2 | 520272 | 13.1 | 21.0 | 245671 | 13.1 | 21.0 | 188416 | 13.2 | 19.8 | 174605 | 13.3 | 18.4 |
| 258484 | 12.9 | 19.6 | 436635 | 13.0 | 20.0 | 525854 | 13.1 | 20.7 | 536698 | 13.1 | 22.2 | 433268 | 13.2 | 18.7 | 97955 | 13.3 | 18.0 |
| 209637 | 12.9 | 20.5 | 395222 | 13.0 | 20.0 | 348601 | 13.1 | 20.4 | 91711 | 13.1 | 19.6 | 480474 | 13.2 | 19.2 | 204671 | 13.3 | 19.3 |
| 491017 | 12.9 | 20.3 | 400812 | 13.0 | 20.1 | 96382 | 13.1 | 20.1 | 125201 | 13.1 | 19.2 | 423801 | 13.2 | 20.2 | 138620 | 13.3 | 19.2 |
| 281693 | 12.9 | 20.0 | 360101 | 13.0 | 19.4 | 16148 | 13.1 | 17.9 | 204289 | 13.1 | 18.9 | 169005 | 13.2 | 19.5 | 303429 | 13.3 | 21.0 |
| 213890 | 12.9 | 18.8 | 525337 | 13.0 | 21.0 | 156278 | 13.1 | 19.7 | 459495 | 13.1 | 20.6 | 255036 | 13.2 | 19.9 | 433014 | 13.3 | 19.2 |
| 31624 | 12.9 | 17.8 | 181265 | 13.0 | 20.2 | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 368680 | 13.3 | 19.6 | 263103 | 13.4 | 20.0 | 23366 | 13.5 | 19.4 | 171812 | 13.6 | 20.9 | 318485 | 13.6 | 21.9 | 444675 | 13.7 | 21.1 |
| 160131 | 13.3 | 18.9 | 411743 | 13.4 | 20.7 | 335183 | 13.5 | 21.2 | 127827 | 13.6 | 19.5 | 359426 | 13.6 | 20.3 | 101012 | 13.7 | 18.1 |
| 187650 | 13.3 | 19.5 | 243094 | 13.4 | 19.2 | 534209 | 13.5 | 19.9 | 437799 | 13.6 | 20.5 | 497536 | 13.6 | 21.2 | 420399 | 13.7 | 21.4 |
| 466144 | 13.3 | 21.3 | 325015 | 13.4 | 21.7 | 365502 | 13.5 | 19.7 | 138912 | 13.6 | 20.2 | 123335 | 13.6 | 20.1 | 175898 | 13.7 | 20.3 |
| 146216 | 13.3 | 19.6 | 130721 | 13.4 | 18.0 | 408200 | 13.5 | 20.6 | 190370 | 13.6 | 19.3 | 118850 | 13.6 | 20.0 | 204839 | 13.7 | 19.1 |
| 255490 | 13.3 | 20.5 | 333214 | 13.4 | 19.4 | 36970 | 13.5 | 19.1 | 65873 | 13.6 | 18.3 | 512416 | 13.6 | 20.9 | 186477 | 13.7 | 20.1 |
| 329795 | 13.3 | 19.1 | 96117 | 13.4 | 18.3 | 119334 | 13.5 | 18.6 | 352490 | 13.6 | 22.0 | 92962 | 13.6 | 18.7 | 329696 | 13.7 | 20.3 |
| 507473 | 13.3 | 20.4 | 30304 | 13.4 | 19.0 | 249217 | 13.5 | 19.2 | 162501 | 13.6 | 19.0 | 379661 | 13.6 | 20.4 | 326408 | 13.7 | 19.6 |
| 124943 | 13.3 | 19.6 | 56775 | 13.4 | 17.5 | 57207 | 13.5 | 18.7 | 442931 | 13.6 | 20.8 | 496488 | 13.6 | 21.4 | 533407 | 13.7 | 21.4 |
| 255310 | 13.3 | 19.6 | 95942 | 13.4 | 17.8 | 477189 | 13.5 | 20.1 | 320520 | 13.6 | 21.7 | 421034 | 13.6 | 20.2 | 464406 | 13.7 | 21.6 |
| 174946 | 13.3 | 19.2 | 119131 | 13.4 | 18.7 | 352013 | 13.5 | 20.4 | 318134 | 13.6 | 18.8 | 372959 | 13.6 | 20.4 | 433878 | 13.7 | 20.2 |
| 121013 | 13.3 | 19.8 | 214211 | 13.4 | 20.5 | 470655 | 13.5 | 19.7 | 354583 | 13.6 | 18.8 | 518551 | 13.6 | 19.9 | 31266 | 13.7 | 18.2 |
| 264665 | 13.3 | 20.9 | 258943 | 13.4 | 20.5 | 189745 | 13.5 | 19.7 | 423636 | 13.6 | 21.6 | 425082 | 13.6 | 20.9 | 479868 | 13.7 | 20.8 |
| 284616 | 13.3 | 20.2 | 216967 | 13.4 | 20.4 | 402218 | 13.5 | 20.8 | 393075 | 13.6 | 21.3 | 106435 | 13.6 | 19.2 | 471196 | 13.7 | 21.4 |
| 244955 | 13.3 | 19.7 | 450292 | 13.4 | 20.4 | 155774 | 13.5 | 19.0 | 379394 | 13.6 | 20.2 | 260656 | 13.6 | 19.3 | 425813 | 13.7 | 21.6 |
| 263588 | 13.3 | 20.2 | 172818 | 13.4 | 18.9 | 527331 | 13.5 | 21.0 | 428697 | 13.6 | 21.0 | 479028 | 13.6 | 20.6 | 334862 | 13.7 | 19.5 |
| 356866 | 13.3 | 20.8 | 33758 | 13.4 | 17.9 | 382948 | 13.5 | 19.9 | 30290 | 13.6 | 18.7 | 159921 | 13.6 | 19.3 | 328867 | 13.7 | 20.8 |
| 497435 | 13.3 | 21.6 | 348541 | 13.4 | 20.3 | 61717 | 13.5 | 18.5 | 453007 | 13.6 | 20.3 | 383267 | 13.6 | 20.7 | 268532 | 13.7 | 20.1 |
| 386453 | 13.4 | 21.0 | 18669 | 13.4 | 18.1 | 33348 | 13.5 | 17.7 | 533366 | 13.6 | 20.6 | 497978 | 13.6 | 21.8 | 380151 | 13.7 | 20.3 |
| 498027 | 13.4 | 20.8 | 522484 | 13.4 | 21.2 | 370994 | 13.5 | 21.4 | 132151 | 13.6 | 18.3 | 532795 | 13.6 | 21.7 | 501929 | 13.7 | 20.1 |
| 416234 | 13.4 | 21.0 | 298817 | 13.4 | 18.9 | 525377 | 13.5 | 21.9 | 311500 | 13.6 | 19.9 | 507821 | 13.6 | 20.7 | 73113 | 13.7 | 18.3 |
| 431557 | 13.4 | 19.6 | 142667 | 13.4 | 19.2 | 458809 | 13.5 | 21.0 | 221075 | 13.6 | 18.9 | 385528 | 13.6 | 23.3 | 234749 | 13.7 | 19.5 |
| 330687 | 13.4 | 21.1 | 290807 | 13.4 | 21.2 | 417195 | 13.5 | 20.3 | 360443 | 13.6 | 19.4 | 355198 | 13.7 | 21.4 | 502323 | 13.7 | 20.2 |
| 314518 | 13.4 | 19.9 | 107000 | 13.4 | 20.1 | 232603 | 13.5 | 20.3 | 354911 | 13.6 | 19.8 | 148415 | 13.7 | 19.6 | 224445 | 13.7 | 19.5 |
| 144767 | 13.4 | 19.5 | 382233 | 13.4 | 20.1 | 228353 | 13.5 | 19.2 | 528117 | 13.6 | 20.8 | 255672 | 13.7 | 18.6 | 479034 | 13.7 | 20.4 |
| 250543 | 13.4 | 19.5 | 355275 | 13.4 | 19.3 | 134114 | 13.5 | 19.9 | 124740 | 13.6 | 19.3 | 168682 | 13.7 | 20.0 | 462647 | 13.7 | 20.4 |
| 334754 | 13.4 | 18.7 | 306756 | 13.4 | 19.9 | 208411 | 13.5 | 19.6 | 500805 | 13.6 | 22.2 | 433339 | 13.7 | 21.1 | 478301 | 13.7 | 19.9 |
| 177404 | 13.4 | 19.4 | 420796 | 13.4 | 20.1 | 33505 | 13.5 | 18.7 | 503419 | 13.6 | 21.4 | 57347 | 13.7 | 18.2 | 405526 | 13.7 | 20.2 |
| 375641 | 13.4 | 19.7 | 278786 | 13.4 | 20.5 | 532893 | 13.5 | 21.7 | 384777 | 13.6 | 20.7 | 312720 | 13.7 | 19.2 | 121470 | 13.7 | 18.8 |
| 432149 | 13.4 | 20.4 | 62750 | 13.4 | 18.0 | 323457 | 13.5 | 19.8 | 525892 | 13.6 | 21.3 | 357794 | 13.7 | 21.1 | 466102 | 13.7 | 21.2 |
| 507037 | 13.4 | 21.3 | 538401 | 13.4 | 21.3 | 504506 | 13.5 | 20.7 | 90326 | 13.6 | 16.8 | 520221 | 13.7 | 21.3 | 66773 | 13.7 | 18.1 |
| 122959 | 13.4 | 19.4 | 247906 | 13.4 | 20.3 | 93954 | 13.5 | 19.2 | 538475 | 13.6 | 22.4 | 170162 | 13.7 | 19.5 | 488846 | 13.7 | 20.1 |
| 98190 | 13.4 | 19.4 | 35015 | 13.4 | 19.1 | 385020 | 13.5 | 20.5 | 64787 | 13.6 | 19.4 | 419784 | 13.7 | 21.5 | 497572 | 13.7 | 21.7 |
| 57228 | 13.4 | 16.6 | 313882 | 13.4 | 20.6 | 264732 | 13.5 | 20.5 | 41924 | 13.6 | 18.5 | 128039 | 13.7 | 17.4 | 58382 | 13.7 | 20.3 |
| 277738 | 13.4 | 20.4 | 61645 | 13.4 | 18.3 | 318063 | 13.5 | 19.9 | 66699 | 13.6 | 18.2 | 334878 | 13.7 | 20.6 | 333607 | 13.7 | 20.2 |
| 197602 | 13.4 | 19.0 | 296516 | 13.4 | 20.3 | 457570 | 13.5 | 21.7 | 211932 | 13.6 | 19.0 | 326401 | 13.7 | 20.4 | 180754 | 13.7 | 19.5 |
| 351636 | 13.4 | 20.1 | 434080 | 13.4 | 20.5 | 67268 | 13.5 | 18.9 | 192991 | 13.6 | 19.8 | 378653 | 13.7 | 19.3 | 422143 | 13.7 | 20.0 |
| 327404 | 13.4 | 19.9 | 230817 | 13.4 | 20.3 | 288780 | 13.5 | 20.2 | 479109 | 13.6 | 20.7 | 394696 | 13.7 | 22.1 | 511285 | 13.7 | 20.9 |
| 115540 | 13.4 | 19.3 | 229535 | 13.4 | 20.8 | 302808 | 13.5 | 20.3 | 508685 | 13.6 | 20.9 | 426947 | 13.7 | 19.8 | 361106 | 13.8 | 20.5 |
| 62896 | 13.4 | 18.9 | 72737 | 13.4 | 19.1 | 246816 | 13.5 | 20.2 | 308502 | 13.6 | 18.9 | 19807 | 13.7 | 18.6 | 29403 | 13.8 | 18.9 |
| 281367 | 13.4 | 19.9 | 33811 | 13.4 | 15.4 | 261908 | 13.5 | 18.9 | 293995 | 13.6 | 20.8 | 43029 | 13.7 | 17.4 | 316290 | 13.8 | 18.7 |
| 129791 | 13.4 | 20.0 | 140643 | 13.4 | 18.1 | 76070 | 13.5 | 19.7 | 456512 | 13.6 | 20.6 | 90149 | 13.7 | 18.2 | 249666 | 13.8 | 20.3 |
| 2619 | 13.4 | 16.9 | 536398 | 13.4 | 22.1 | 518910 | 13.5 | 20.9 | 378919 | 13.6 | 20.4 | 395992 | 13.7 | 20.7 | 372897 | 13.8 | 20.9 |
| 533241 | 13.4 | 21.0 | 119406 | 13.4 | 19.6 | 470896 | 13.5 | 21.4 | 193313 | 13.6 | 19.8 | 528796 | 13.7 | 21.8 | 381960 | 13.8 | 21.4 |
| 394299 | 13.4 | 21.8 | 362700 | 13.4 | 20.6 | 505814 | 13.5 | 20.3 | 245095 | 13.6 | 19.0 | 172444 | 13.7 | 18.2 | 25897 | 13.8 | 16.7 |
| 525286 | 13.4 | 19.9 | 166628 | 13.4 | 18.7 | 162818 | 13.5 | 19.2 | 489862 | 13.6 | 21.9 | 542389 | 13.7 | 20.5 | 527776 | 13.8 | 21.1 |
| 331763 | 13.4 | 20.3 | 220908 | 13.4 | 19.6 | 79334 | 13.5 | 18.7 | 320865 | 13.6 | 19.2 | 330958 | 13.7 | 19.9 | 27030 | 13.8 | 18.3 |
| 392421 | 13.4 | 19.1 | 94310 | 13.4 | 19.4 | 460071 | 13.5 | 21.5 | 134698 | 13.6 | 19.5 | 527449 | 13.7 | 21.8 | 295773 | 13.8 | 20.7 |
| 329924 | 13.4 | 19.5 | 60449 | 13.4 | 18.0 | 212340 | 13.5 | 18.7 | 425859 | 13.6 | 22.0 | 369281 | 13.7 | 20.3 | 510366 | 13.8 | 20.1 |
| 508268 | 13.4 | 20.5 | 269263 | 13.4 | 19.3 | 30218 | 13.5 | 17.9 | 310482 | 13.6 | 18.2 | 388055 | 13.7 | 19.0 | 137928 | 13.8 | 19.9 |
| 387730 | 13.4 | 21.8 | 175320 | 13.4 | 19.9 | 10636 | 13.5 | 20.7 | 357210 | 13.6 | 20.2 | 127920 | 13.7 | 19.6 | 508690 | 13.8 | 20.7 |
| 181944 | 13.4 | 18.1 | 149475 | 13.4 | 20.5 | 63699 | 13.5 | 16.9 | 156306 | 13.6 | 19.8 | 536485 | 13.7 | 20.5 | 111859 | 13.8 | 19.4 |
| 58546 | 13.4 | 19.4 | 315411 | 13.4 | 20.4 | 268373 | 13.5 | 21.5 | 387142 | 13.6 | 20.2 | 320402 | 13.7 | 20.5 | 349488 | 13.8 | 20.8 |
| 370174 | 13.4 | 20.3 | 249617 | 13.5 | 19.3 | 168256 | 13.5 | 18.5 | 194215 | 13.6 | 18.5 | 399058 | 13.7 | 21.0 | 433357 | 13.8 | 20.4 |
| 533236 | 13.4 | 21.5 | 143785 | 13.5 | 19.7 | 399115 | 13.5 | 20.0 | 305500 | 13.6 | 20.4 | 125411 | 13.7 | 19.5 | 303758 | 13.8 | 19.4 |
| 527978 | 13.4 | 21.9 | 242268 | 13.5 | 21.1 | 478038 | 13.5 | 21.6 | 62861 | 13.6 | 18.4 | 324467 | 13.7 | 19.7 | 171018 | 13.8 | 19.5 |
| 32698 | 13.4 | 18.2 | 298842 | 13.5 | 20.2 | 31546 | 13.5 | 17.7 | 65537 | 13.6 | 20.0 | 262871 | 13.7 | 20.2 | 313150 | 13.8 | 19.8 |
| 37314 | 13.4 | 19.0 | 511330 | 13.5 | 20.3 | 146730 | 13.5 | 19.8 | 177053 | 13.6 | 20.9 | 294650 | 13.7 | 19.8 | 471471 | 13.8 | 21.3 |
| 338850 | 13.4 | 20.9 | 370150 | 13.5 | 19.5 | 70729 | 13.5 | 18.3 | 537846 | 13.6 | 20.8 | 272378 | 13.7 | 19.6 | 339465 | 13.8 | 20.0 |
| 424809 | 13.4 | 20.6 | 72159 | 13.5 | 19.1 | 290968 | 13.5 | 18.9 | 225940 | 13.6 | 20.1 | 83531 | 13.7 | 18.2 | 285908 | 13.8 | 18.9 |
| 267424 | 13.4 | 20.1 | 406464 | 13.5 | 21.3 | 328288 | 13.5 | 20.6 | 394689 | 13.6 | 21.6 | 122304 | 13.7 | 18.5 | 95246 | 13.8 | 18.7 |
| 501655 | 13.4 | 21.3 | 431956 | 13.5 | 20.3 | 128620 | 13.5 | 18.9 | 210948 | 13.6 | 19.1 | 32486 | 13.7 | 16.6 | 528546 | 13.8 | 21.9 |
| 136528 | 13.4 | 18.9 | 17426 | 13.5 | 17.7 | 260563 | 13.5 | 20.2 | 76021 | 13.6 | 20.0 | 106280 | 13.7 | 18.8 | 251971 | 13.8 | 20.2 |
| 59542 | 13.4 | 16.9 | 363144 | 13.5 | 19.2 | 200658 | 13.5 | 20.1 | 410223 | 13.6 | 20.2 | 375873 | 13.7 | 19.5 | 106965 | 13.8 | 19.7 |
| 202763 | 13.4 | 20.0 | 23577 | 13.5 | 18.3 | 327245 | 13.5 | 20.6 | 69515 | 13.6 | 19.3 | 481165 | 13.7 | 20.8 | 429854 | 13.8 | 20.4 |
| 230101 | 13.4 | 20.1 | 213227 | 13.5 | 19.8 | 287988 | 13.5 | 20.7 | 510451 | 13.6 | 20.5 | 136875 | 13.7 | 20.5 | 295662 | 13.8 | 20.5 |
| 20600 | 13.4 | 17.7 | 368222 | 13.5 | 19.0 | 174914 | 13.5 | 18.0 | 315478 | 13.6 | 20.7 | 497355 | 13.7 | 21.1 | 123189 | 13.8 | 18.7 |
| 475265 | 13.4 | 21.8 | 95905 | 13.5 | 19.0 | 521209 | 13.5 | 21.1 | 260047 | 13.6 | 19.7 | 505441 | 13.7 | 21.0 | 118367 | 13.8 | 20.2 |
| 398578 | 13.4 | 20.7 | 257112 | 13.5 | 20.1 | 312168 | 13.5 | 21.7 | 370687 | 13.6 | 19.0 | 376017 | 13.7 | 21.3 | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 261451 | 13.8 | 21.3 | 377400 | 13.9 | 20.0 | 107191 | 13.9 | 19.8 | 54457 | 14.0 | 17.7 | 532008 | 14.1 | 21.0 | 263350 | 14.2 | 20.0 |
| 302389 | 13.8 | 20.6 | 391042 | 13.9 | 19.6 | 357554 | 13.9 | 19.8 | 474964 | 14.0 | 21.8 | 68579 | 14.1 | 19.3 | 19023 | 14.2 | 18.6 |
| 330061 | 13.8 | 19.9 | 210487 | 13.9 | 18.8 | 102045 | 13.9 | 17.7 | 496820 | 14.0 | 21.1 | 475260 | 14.1 | 20.9 | 139239 | 14.2 | 18.8 |
| 477618 | 13.8 | 19.5 | 82888 | 13.9 | 17.5 | 318809 | 13.9 | 19.8 | 185075 | 14.0 | 19.4 | 90826 | 14.1 | 19.1 | 171321 | 14.2 | 18.9 |
| 13100 | 13.8 | 16.7 | 534721 | 13.9 | 20.0 | 21347 | 13.9 | 17.7 | 302330 | 14.0 | 20.1 | 248721 | 14.1 | 19.1 | 228192 | 14.2 | 20.0 |
| 5080 | 13.8 | 15.6 | 2613 | 13.9 | 16.2 | 503928 | 13.9 | 21.5 | 357845 | 14.0 | 20.6 | 375829 | 14.1 | 20.3 | 359198 | 14.2 | 19.7 |
| 80587 | 13.8 | 19.5 | 432772 | 13.9 | 20.7 | 207540 | 13.9 | 19.2 | 286088 | 14.1 | 18.0 | 352091 | 14.1 | 20.3 | 350840 | 14.2 | 20.5 |
| 132044 | 13.8 | 20.1 | 191101 | 13.9 | 19.8 | 431071 | 13.9 | 21.1 | 478021 | 14.1 | 20.9 | 145633 | 14.1 | 19.1 | 459488 | 14.2 | 20.3 |
| 245183 | 13.8 | 20.4 | 277707 | 13.9 | 20.4 | 293580 | 13.9 | 20.5 | 463121 | 14.1 | 20.3 | 304451 | 14.1 | 20.6 | 322689 | 14.2 | 20.4 |
| 263170 | 13.8 | 20.7 | 156219 | 13.9 | 19.8 | 6300 | 13.9 | 18.3 | 470441 | 14.1 | 20.8 | 332014 | 14.1 | 19.7 | 502336 | 14.2 | 20.3 |
| 425443 | 13.8 | 20.9 | 160561 | 13.9 | 17.8 | 277662 | 13.9 | 20.2 | 477196 | 14.1 | 20.1 | 67959 | 14.1 | 18.3 | 470224 | 14.2 | 20.1 |
| 4918 | 13.8 | 16.8 | 483531 | 13.9 | 21.0 | 162808 | 13.9 | 17.8 | 113025 | 14.1 | 18.4 | 42806 | 14.1 | 17.4 | 409225 | 14.2 | 20.5 |
| 41828 | 13.8 | 18.6 | 370930 | 13.9 | 20.6 | 536242 | 13.9 | 21.5 | 232121 | 14.1 | 19.0 | 443347 | 14.1 | 20.4 | 402170 | 14.2 | 20.6 |
| 499795 | 13.8 | 20.6 | 11209 | 13.9 | 17.0 | 342791 | 13.9 | 20.9 | 499248 | 14.1 | 21.2 | 203538 | 14.1 | 20.3 | 214198 | 14.2 | 20.4 |
| 100230 | 13.8 | 19.0 | 527775 | 13.9 | 19.4 | 124388 | 13.9 | 18.1 | 302814 | 14.1 | 20.7 | 452787 | 14.1 | 20.9 | 507329 | 14.2 | 20.7 |
| 217871 | 13.8 | 19.7 | 533290 | 13.9 | 20.6 | 506040 | 13.9 | 20.1 | 425989 | 14.1 | 19.2 | 236778 | 14.1 | 19.4 | 285763 | 14.2 | 20.8 |
| 76937 | 13.8 | 18.5 | 456536 | 13.9 | 21.7 | 296969 | 13.9 | 21.5 | 188169 | 14.1 | 21.1 | 525358 | 14.1 | 21.1 | 509694 | 14.2 | 19.6 |
| 355177 | 13.8 | 20.9 | 354923 | 13.9 | 20.7 | 370145 | 13.9 | 21.0 | 405113 | 14.1 | 21.2 | 25405 | 14.1 | 18.9 | 65764 | 14.2 | 17.2 |
| 276925 | 13.8 | 19.6 | 131706 | 13.9 | 19.7 | 229522 | 13.9 | 18.7 | 489978 | 14.1 | 19.9 | 505161 | 14.1 | 19.9 | 58312 | 14.2 | 18.0 |
| 438113 | 13.8 | 21.9 | 86164 | 13.9 | 18.7 | 76584 | 13.9 | 19.2 | 507426 | 14.1 | 20.9 | 360367 | 14.1 | 21.1 | 299989 | 14.2 | 20.8 |
| 119560 | 13.8 | 19.3 | 101090 | 13.9 | 19.7 | 522605 | 13.9 | 21.2 | 58582 | 14.1 | 17.2 | 529763 | 14.1 | 20.5 | 530703 | 14.2 | 21.0 |
| 497472 | 13.8 | 20.8 | 92444 | 13.9 | 17.9 | 297719 | 13.9 | 20.7 | 158641 | 14.1 | 19.7 | 203322 | 14.1 | 18.9 | 33777 | 14.2 | 17.9 |
| 132038 | 13.8 | 19.5 | 537264 | 13.9 | 21.0 | 96477 | 13.9 | 19.9 | 494733 | 14.1 | 20.9 | 516478 | 14.1 | 21.5 | 146785 | 14.2 | 19.7 |
| 506873 | 13.8 | 22.1 | 536340 | 13.9 | 20.7 | 395473 | 13.9 | 20.7 | 74933 | 14.1 | 19.3 | 502510 | 14.1 | 19.4 | 46620 | 14.2 | 16.7 |
| 511728 | 13.8 | 20.9 | 399343 | 13.9 | 19.4 | 127992 | 13.9 | 18.8 | 307011 | 14.1 | 20.3 | 241739 | 14.2 | 19.4 | 414161 | 14.2 | 20.8 |
| 357983 | 13.8 | 20.4 | 150903 | 13.9 | 20.8 | 95127 | 13.9 | 18.7 | 465099 | 14.1 | 21.3 | 23085 | 14.2 | 18.3 | 475139 | 14.2 | 19.4 |
| 179493 | 13.8 | 19.6 | 527928 | 13.9 | 22.2 | 48502 | 13.9 | 18.2 | 477724 | 14.1 | 19.8 | 113858 | 14.2 | 18.7 | 271703 | 14.2 | 19.3 |
| 398948 | 13.8 | 20.1 | 279769 | 13.9 | 18.9 | 300263 | 13.9 | 20.0 | 516675 | 14.1 | 20.5 | 124913 | 14.2 | 20.1 | 473794 | 14.2 | 20.0 |
| 15979 | 13.8 | 16.1 | 471395 | 13.9 | 20.2 | 261078 | 13.9 | 20.5 | 134792 | 14.1 | 18.4 | 275906 | 14.2 | 21.1 | 309065 | 14.2 | 19.7 |
| 115741 | 13.8 | 19.4 | 304257 | 13.9 | 21.0 | 233975 | 13.9 | 20.1 | 215966 | 14.1 | 19.5 | 304686 | 14.2 | 21.8 | 157308 | 14.2 | 19.0 |
| 409872 | 13.8 | 20.6 | 179559 | 13.9 | 20.5 | 255678 | 13.9 | 19.5 | 75596 | 14.1 | 19.5 | 350010 | 14.2 | 19.3 | 151080 | 14.2 | 18.6 |
| 395873 | 13.8 | 21.1 | 365863 | 13.9 | 21.5 | 93769 | 13.9 | 19.3 | 345859 | 14.1 | 19.1 | 406581 | 14.2 | 19.4 | 416273 | 14.2 | 21.5 |
| 414901 | 13.8 | 21.5 | 478115 | 13.9 | 20.7 | 473834 | 13.9 | 21.1 | 143322 | 14.1 | 20.2 | 125873 | 14.2 | 19.5 | 393949 | 14.2 | 19.7 |
| 150182 | 13.8 | 18.2 | 204846 | 13.9 | 20.3 | 307345 | 13.9 | 19.3 | 477156 | 14.1 | 20.3 | 475078 | 14.2 | 20.4 | 388773 | 14.2 | 20.5 |
| 344543 | 13.8 | 20.0 | 527852 | 13.9 | 20.6 | 69516 | 13.9 | 18.2 | 41121 | 14.1 | 17.9 | 302260 | 14.2 | 19.5 | 229996 | 14.2 | 19.9 |
| 270246 | 13.8 | 20.1 | 214426 | 13.9 | 19.4 | 519531 | 13.9 | 20.2 | 153456 | 14.1 | 19.5 | 123411 | 14.2 | 19.3 | 342688 | 14.2 | 20.8 |
| 427939 | 13.8 | 21.1 | 259710 | 13.9 | 21.1 | 241608 | 13.9 | 19.0 | 97414 | 14.1 | 18.9 | 247897 | 14.2 | 18.3 | 413865 | 14.2 | 19.9 |
| 148586 | 13.8 | 19.5 | 232605 | 13.9 | 19.4 | 497056 | 13.9 | 19.9 | 437674 | 14.1 | 19.9 | 501965 | 14.2 | 20.3 | 249661 | 14.2 | 18.9 |
| 197216 | 13.8 | 19.7 | 256908 | 13.9 | 21.0 | 146168 | 13.9 | 19.3 | 106660 | 14.1 | 19.5 | 54384 | 14.2 | 19.4 | 336345 | 14.2 | 20.6 |
| 343481 | 13.8 | 20.1 | 510802 | 13.9 | 20.3 | 503704 | 13.9 | 20.3 | 239886 | 14.1 | 18.8 | 475015 | 14.2 | 20.7 | 479124 | 14.2 | 20.4 |
| 478157 | 13.8 | 21.2 | 533230 | 13.9 | 21.2 | 36686 | 13.9 | 17.2 | 18006 | 14.1 | 17.2 | 88912 | 14.2 | 17.5 | 105842 | 14.2 | 19.2 |
| 255633 | 13.8 | 19.8 | 376803 | 13.9 | 19.6 | 321735 | 13.9 | 20.2 | 344526 | 14.1 | 18.6 | 471362 | 14.2 | 20.1 | 273092 | 14.2 | 18.4 |
| 209369 | 13.8 | 18.8 | 457657 | 13.9 | 22.5 | 233873 | 13.9 | 20.4 | 35338 | 14.1 | 18.4 | 499285 | 14.2 | 20.6 | 430528 | 14.2 | 19.7 |
| 36724 | 13.8 | 18.4 | 265709 | 13.9 | 19.6 | 66476 | 13.9 | 18.5 | 540758 | 14.1 | 19.5 | 252919 | 14.2 | 18.7 | 480742 | 14.2 | 19.4 |
| 236145 | 13.8 | 20.4 | 214269 | 13.9 | 20.1 | 205661 | 13.9 | 19.6 | 538301 | 14.1 | 20.2 | 351577 | 14.2 | 21.0 | 23407 | 14.2 | 18.3 |
| 215497 | 13.8 | 18.0 | 521397 | 13.9 | 20.6 | 534775 | 13.9 | 21.8 | 158430 | 14.1 | 19.3 | 87619 | 14.2 | 18.2 | 62883 | 14.2 | 18.7 |
| 98669 | 13.8 | 19.6 | 496753 | 13.9 | 20.6 | 501123 | 13.9 | 20.4 | 470318 | 14.1 | 18.7 | 63003 | 14.2 | 18.4 | 528324 | 14.2 | 19.6 |
| 64944 | 13.8 | 18.4 | 216278 | 13.9 | 19.9 | 61867 | 13.9 | 18.5 | 486683 | 14.1 | 20.0 | 299472 | 14.2 | 19.6 | 29263 | 14.2 | 18.7 |
| 482197 | 13.8 | 21.4 | 402890 | 13.9 | 20.2 | 375812 | 14.0 | 20.0 | 329225 | 14.1 | 20.7 | 505154 | 14.2 | 20.0 | 603 | 14.2 | 16.0 |
| 174806 | 13.9 | 22.3 | 126063 | 13.9 | 19.9 | 303254 | 14.0 | 19.3 | 540501 | 14.1 | 21.3 | 491946 | 14.2 | 22.0 | 257083 | 14.2 | 20.1 |
| 122740 | 13.9 | 18.9 | 425894 | 13.9 | 21.3 | 110470 | 14.0 | 19.2 | 14427 | 14.1 | 15.5 | 239937 | 14.2 | 19.9 | 408450 | 14.2 | 20.7 |
| 440924 | 13.9 | 21.9 | 476389 | 13.9 | 20.7 | 501520 | 14.0 | 22.0 | 20622 | 14.1 | 17.4 | 260218 | 14.2 | 19.3 | 94726 | 14.2 | 19.2 |
| 415681 | 13.9 | 20.0 | 11569 | 13.9 | 16.0 | 540599 | 14.0 | 21.6 | 126149 | 14.1 | 19.6 | 64840 | 14.2 | 18.6 | 309816 | 14.2 | 20.7 |
| 140905 | 13.9 | 18.9 | 50107 | 13.9 | 18.5 | 417681 | 14.0 | 21.5 | 67828 | 14.1 | 17.6 | 326066 | 14.2 | 20.0 | 479857 | 14.2 | 20.9 |
| 29487 | 13.9 | 17.3 | 287531 | 13.9 | 20.5 | 475117 | 14.0 | 19.5 | 159912 | 14.1 | 18.6 | 393395 | 14.2 | 19.7 | 18581 | 14.2 | 16.7 |
| 153707 | 13.9 | 20.2 | 528025 | 13.9 | 22.2 | 502586 | 14.0 | 20.5 | 165333 | 14.1 | 19.8 | 438666 | 14.2 | 20.3 | 436750 | 14.3 | 18.6 |
| 370051 | 13.9 | 20.2 | 471494 | 13.9 | 20.4 | 524401 | 14.0 | 21.7 | 59723 | 14.1 | 18.0 | 506022 | 14.2 | 19.3 | 518134 | 14.3 | 20.0 |
| 303361 | 13.9 | 20.1 | 179205 | 13.9 | 20.9 | 133252 | 14.0 | 18.6 | 35903 | 14.1 | 16.4 | 420087 | 14.2 | 22.0 | 461668 | 14.3 | 21.6 |
| 87975 | 13.9 | 18.7 | 533194 | 13.9 | 21.7 | 438409 | 14.0 | 20.4 | 512531 | 14.1 | 20.3 | 8944 | 14.2 | 18.3 | 37286 | 14.3 | 17.1 |
| 37653 | 13.9 | 19.1 | 181727 | 13.9 | 20.3 | 30344 | 14.0 | 17.7 | 158446 | 14.1 | 18.5 | 507667 | 14.2 | 20.8 | 476436 | 14.3 | 20.1 |
| 290013 | 13.9 | 20.2 | 460153 | 13.9 | 19.0 | 68177 | 14.0 | 16.5 | 525962 | 14.1 | 21.0 | 54540 | 14.2 | 18.8 | 55413 | 14.3 | 17.5 |
| 432491 | 13.9 | 21.4 | 262841 | 13.9 | 20.2 | 153743 | 14.0 | 19.1 | 70583 | 14.1 | 17.5 | 379268 | 14.2 | 21.1 | 478105 | 14.3 | 20.8 |
| 266853 | 13.9 | 20.0 | 306457 | 13.9 | 20.1 | 176059 | 14.0 | 18.9 | 431444 | 14.1 | 20.7 | 360894 | 14.2 | 20.2 | 250930 | 14.3 | 19.8 |
| 185530 | 13.9 | 20.0 | 335581 | 13.9 | 19.9 | 318578 | 14.0 | 21.2 | 525983 | 14.1 | 20.5 | 362123 | 14.2 | 19.9 | 19650 | 14.3 | 17.8 |
| 19024 | 13.9 | 17.6 | 459067 | 13.9 | 20.7 | 468454 | 14.0 | 18.6 | 351552 | 14.1 | 20.3 | 72798 | 14.2 | 18.4 | 219575 | 14.3 | 20.1 |
| 380642 | 13.9 | 20.8 | 328300 | 13.9 | 20.8 | 187877 | 14.0 | 17.9 | 185565 | 14.1 | 19.9 | 59630 | 14.2 | 17.1 | 468914 | 14.3 | 21.2 |
| 533741 | 13.9 | 20.8 | 505141 | 13.9 | 18.7 | 494293 | 14.0 | 20.8 | 286698 | 14.1 | 20.3 | 171803 | 14.2 | 19.8 | 380455 | 14.3 | 22.0 |
| 325842 | 13.9 | 19.9 | 116713 | 13.9 | 19.0 | 171766 | 14.0 | 19.4 | 373577 | 14.1 | 21.0 | 427916 | 14.2 | 20.2 | 34134 | 14.3 | 18.4 |
| 424626 | 13.9 | 20.7 | 258208 | 13.9 | 19.9 | 174590 | 14.0 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 92101 | 14.3 | 19.2 | 259328 | 14.3 | 20.2 | 391106 | 14.4 | 21.1 | 539286 | 14.5 | 20.6 | 215983 | 14.6 | 19.7 | 293049 | 14.6 | 20.6 |
| 313105 | 14.3 | 19.8 | 62671 | 14.3 | 18.9 | 416592 | 14.4 | 18.4 | 191794 | 14.5 | 19.0 | 4232 | 14.6 | 16.2 | 536288 | 14.6 | 20.7 |
| 204722 | 14.3 | 19.9 | 497982 | 14.3 | 20.9 | 121583 | 14.4 | 19.1 | 61960 | 14.5 | 18.1 | 191829 | 14.6 | 19.3 | 11679 | 14.6 | 17.2 |
| 425948 | 14.3 | 20.7 | 338100 | 14.3 | 20.5 | 502699 | 14.4 | 20.6 | 87114 | 14.5 | 16.6 | 464909 | 14.6 | 20.7 | 529551 | 14.6 | 21.1 |
| 538023 | 14.3 | 21.5 | 257256 | 14.3 | 19.6 | 177675 | 14.4 | 20.1 | 522900 | 14.5 | 20.8 | 339452 | 14.6 | 20.5 | 55805 | 14.6 | 18.5 |
| 180171 | 14.3 | 20.2 | 157839 | 14.3 | 19.3 | 166960 | 14.4 | 17.7 | 98255 | 14.5 | 19.3 | 300905 | 14.6 | 20.3 | 456022 | 14.6 | 20.8 |
| 53825 | 14.3 | 19.3 | 475624 | 14.4 | 19.7 | 259350 | 14.4 | 20.3 | 161940 | 14.5 | 18.6 | 39530 | 14.6 | 19.3 | 215804 | 14.6 | 18.5 |
| 275888 | 14.3 | 20.9 | 201424 | 14.4 | 19.7 | 480300 | 14.4 | 20.5 | 38835 | 14.5 | 17.7 | 73264 | 14.6 | 19.0 | 290220 | 14.6 | 20.6 |
| 505837 | 14.3 | 20.3 | 151864 | 14.4 | 20.1 | 145435 | 14.4 | 19.1 | 207127 | 14.5 | 20.3 | 162010 | 14.6 | 19.6 | 406493 | 14.6 | 20.7 |
| 526877 | 14.3 | 19.3 | 109217 | 14.4 | 19.0 | 139854 | 14.4 | 19.3 | 31953 | 14.5 | 17.6 | 391346 | 14.6 | 20.5 | 353507 | 14.6 | 19.9 |
| 360553 | 14.3 | 20.0 | 279074 | 14.4 | 19.4 | 398536 | 14.4 | 21.8 | 242022 | 14.5 | 19.4 | 313034 | 14.6 | 19.2 | 156272 | 14.6 | 20.2 |
| 150539 | 14.3 | 19.1 | 219661 | 14.4 | 18.2 | 497968 | 14.4 | 21.4 | 325273 | 14.5 | 19.0 | 112010 | 14.6 | 18.6 | 265755 | 14.6 | 19.9 |
| 214651 | 14.3 | 19.6 | 478111 | 14.4 | 20.4 | 42552 | 14.4 | 18.9 | 501195 | 14.5 | 21.3 | 393559 | 14.6 | 20.1 | 373840 | 14.6 | 20.3 |
| 525285 | 14.3 | 19.9 | 20825 | 14.4 | 17.7 | 432512 | 14.4 | 20.1 | 540743 | 14.5 | 20.7 | 235801 | 14.6 | 20.1 | 381911 | 14.6 | 21.5 |
| 419059 | 14.3 | 19.7 | 182762 | 14.4 | 21.1 | 350119 | 14.4 | 19.7 | 115504 | 14.5 | 19.4 | 332168 | 14.6 | 19.4 | 522478 | 14.6 | 21.2 |
| 129903 | 14.3 | 18.7 | 410800 | 14.4 | 21.1 | 8267 | 14.4 | 17.1 | 477606 | 14.5 | 18.9 | 125389 | 14.6 | 19.3 | 175819 | 14.6 | 19.2 |
| 504607 | 14.3 | 21.9 | 528607 | 14.4 | 20.2 | 508752 | 14.4 | 20.1 | 346049 | 14.5 | 20.8 | 491245 | 14.6 | 21.1 | 332391 | 14.6 | 19.7 |
| 525990 | 14.3 | 21.7 | 494679 | 14.4 | 19.0 | 13509 | 14.4 | 17.0 | 69132 | 14.5 | 17.7 | 170193 | 14.6 | 17.6 | 499182 | 14.6 | 20.6 |
| 171899 | 14.3 | 19.8 | 119413 | 14.4 | 19.6 | 170821 | 14.4 | 20.5 | 3453 | 14.5 | 14.7 | 176545 | 14.6 | 20.2 | 519526 | 14.7 | 21.7 |
| 207008 | 14.3 | 19.5 | 235173 | 14.4 | 19.3 | 472940 | 14.4 | 21.5 | 163436 | 14.5 | 18.0 | 196597 | 14.6 | 18.8 | 2952 | 14.7 | 16.3 |
| 309626 | 14.3 | 20.0 | 153701 | 14.4 | 19.5 | 478398 | 14.4 | 22.1 | 473847 | 14.5 | 21.5 | 115206 | 14.6 | 19.2 | 101153 | 14.7 | 18.6 |
| 239253 | 14.3 | 20.3 | 233512 | 14.4 | 19.8 | 1786 | 14.4 | 14.9 | 378316 | 14.5 | 19.1 | 276567 | 14.6 | 19.0 | 120123 | 14.7 | 20.0 |
| 67590 | 14.3 | 18.2 | 334846 | 14.4 | 18.9 | 333996 | 14.4 | 17.6 | 349324 | 14.5 | 20.4 | 349515 | 14.6 | 20.0 | 37623 | 14.7 | 17.7 |
| 175176 | 14.3 | 19.5 | 410273 | 14.4 | 19.1 | 430790 | 14.4 | 19.1 | 465048 | 14.5 | 19.7 | 81947 | 14.6 | 19.0 | 164273 | 14.7 | 18.0 |
| 184144 | 14.3 | 20.1 | 69779 | 14.4 | 17.4 | 507463 | 14.4 | 20.4 | 289344 | 14.5 | 19.6 | 22462 | 14.6 | 19.2 | 537956 | 14.7 | 21.1 |
| 162615 | 14.3 | 19.3 | 395496 | 14.4 | 20.0 | 347933 | 14.4 | 21.1 | 304610 | 14.5 | 20.2 | 36830 | 14.6 | 18.2 | 21350 | 14.7 | 18.5 |
| 372990 | 14.3 | 21.3 | 46312 | 14.4 | 18.6 | 269985 | 14.4 | 18.4 | 463732 | 14.5 | 20.3 | 528786 | 14.6 | 20.8 | 25375 | 14.7 | 18.6 |
| 539010 | 14.3 | 20.4 | 524500 | 14.4 | 20.6 | 396792 | 14.4 | 20.3 | 151127 | 14.5 | 19.0 | 315318 | 14.6 | 21.2 | 11258 | 14.7 | 17.9 |
| 280276 | 14.3 | 20.4 | 491147 | 14.4 | 19.7 | 386443 | 14.4 | 21.9 | 159350 | 14.5 | 20.3 | 270300 | 14.6 | 21.2 | 198962 | 14.7 | 19.6 |
| 243836 | 14.3 | 18.3 | 149157 | 14.4 | 20.0 | 523836 | 14.4 | 20.5 | 173337 | 14.5 | 18.5 | 453070 | 14.6 | 21.4 | 459205 | 14.7 | 21.5 |
| 328227 | 14.3 | 19.6 | 475143 | 14.4 | 20.8 | 8928 | 14.4 | 16.9 | 372451 | 14.5 | 20.0 | 419585 | 14.6 | 20.5 | 146082 | 14.7 | 19.3 |
| 156533 | 14.3 | 19.1 | 413272 | 14.4 | 20.3 | 78821 | 14.4 | 18.3 | 496599 | 14.5 | 20.3 | 53481 | 14.6 | 18.2 | 374436 | 14.7 | 20.7 |
| 309746 | 14.3 | 20.3 | 156950 | 14.4 | 21.2 | 332574 | 14.4 | 19.0 | 44678 | 14.5 | 18.8 | 494469 | 14.6 | 20.9 | 507842 | 14.7 | 20.3 |
| 368952 | 14.3 | 21.0 | 214091 | 14.4 | 19.2 | 287075 | 14.4 | 19.7 | 203980 | 14.5 | 18.7 | 371959 | 14.6 | 20.7 | 494828 | 14.7 | 19.5 |
| 432505 | 14.3 | 20.3 | 474113 | 14.4 | 19.6 | 494289 | 14.4 | 21.2 | 238678 | 14.5 | 20.5 | 386513 | 14.6 | 20.5 | 2065 | 14.7 | 15.1 |
| 492438 | 14.3 | 20.2 | 320017 | 14.4 | 19.6 | 398895 | 14.4 | 20.4 | 83928 | 14.5 | 18.2 | 194360 | 14.6 | 19.9 | 386528 | 14.7 | 20.2 |
| 307943 | 14.3 | 18.7 | 150995 | 14.4 | 19.1 | 354856 | 14.4 | 21.2 | 468931 | 14.5 | 21.1 | 543428 | 14.6 | 20.3 | 37255 | 14.7 | 18.5 |
| 19021 | 14.3 | 18.7 | 153732 | 14.4 | 18.3 | 536785 | 14.4 | 19.3 | 522347 | 14.5 | 20.8 | 8291 | 14.6 | 18.3 | 145822 | 14.7 | 18.4 |
| 212467 | 14.3 | 19.3 | 304602 | 14.4 | 21.3 | 169849 | 14.4 | 19.5 | 286195 | 14.5 | 19.5 | 300984 | 14.6 | 20.6 | 119510 | 14.7 | 17.8 |
| 528451 | 14.3 | 20.6 | 308459 | 14.4 | 21.2 | 456001 | 14.4 | 20.4 | 111647 | 14.5 | 19.8 | 362104 | 14.6 | 20.6 | 426557 | 14.7 | 20.5 |
| 323006 | 14.3 | 18.1 | 359427 | 14.4 | 18.3 | 141410 | 14.4 | 19.9 | 140156 | 14.5 | 19.3 | 544576 | 14.6 | 22.0 | 169033 | 14.7 | 20.1 |
| 456584 | 14.3 | 20.2 | 245122 | 14.4 | 18.8 | 208538 | 14.4 | 21.3 | 160295 | 14.5 | 18.3 | 425107 | 14.6 | 19.8 | 119484 | 14.7 | 19.2 |
| 217938 | 14.3 | 18.2 | 348536 | 14.4 | 20.4 | 7468 | 14.4 | 16.2 | 138561 | 14.5 | 17.9 | 170091 | 14.6 | 19.2 | 120833 | 14.7 | 18.2 |
| 247836 | 14.3 | 18.4 | 148676 | 14.4 | 19.5 | 233840 | 14.4 | 19.5 | 307243 | 14.5 | 21.7 | 438186 | 14.6 | 19.0 | 517305 | 14.7 | 20.9 |
| 512737 | 14.3 | 20.7 | 182930 | 14.4 | 20.1 | 153130 | 14.4 | 18.0 | 22966 | 14.5 | 17.2 | 88453 | 14.6 | 18.2 | 528421 | 14.7 | 20.0 |
| 303820 | 14.3 | 21.4 | 320336 | 14.4 | 20.3 | 431090 | 14.4 | 21.7 | 362011 | 14.5 | 21.1 | 530316 | 14.6 | 21.9 | 106600 | 14.7 | 19.4 |
| 300916 | 14.3 | 20.8 | 251607 | 14.4 | 20.1 | 134739 | 14.4 | 19.2 | 413921 | 14.5 | 21.3 | 302252 | 14.6 | 20.1 | 391716 | 14.7 | 21.0 |
| 81976 | 14.3 | 18.5 | 104756 | 14.4 | 18.8 | 276855 | 14.4 | 20.5 | 516199 | 14.5 | 20.1 | 217919 | 14.6 | 17.5 | 506401 | 14.7 | 21.0 |
| 420679 | 14.3 | 19.8 | 432529 | 14.4 | 20.8 | 73541 | 14.4 | 17.2 | 521325 | 14.5 | 21.2 | 528902 | 14.6 | 21.7 | 24866 | 14.7 | 16.9 |
| 187920 | 14.3 | 18.2 | 435202 | 14.4 | 20.5 | 64678 | 14.5 | 18.6 | 402159 | 14.5 | 20.6 | 134163 | 14.6 | 19.8 | 531214 | 14.7 | 20.8 |
| 303385 | 14.3 | 20.2 | 301562 | 14.4 | 21.0 | 498535 | 14.5 | 20.8 | 201108 | 14.5 | 18.8 | 348494 | 14.6 | 19.5 | 476406 | 14.7 | 20.9 |
| 526866 | 14.3 | 21.5 | 328919 | 14.4 | 21.4 | 318423 | 14.5 | 20.7 | 274334 | 14.5 | 18.4 | 269958 | 14.6 | 19.9 | 230398 | 14.7 | 19.0 |
| 355679 | 14.3 | 19.9 | 120865 | 14.4 | 17.2 | 247406 | 14.5 | 19.1 | 428707 | 14.5 | 18.8 | 463264 | 14.6 | 20.5 | 367525 | 14.7 | 18.9 |
| 192373 | 14.3 | 19.4 | 199395 | 14.4 | 18.2 | 393898 | 14.5 | 21.0 | 213187 | 14.5 | 18.8 | 357981 | 14.6 | 20.5 | 396145 | 14.7 | 20.8 |
| 530241 | 14.3 | 21.0 | 532005 | 14.4 | 20.5 | 33775 | 14.5 | 17.8 | 532035 | 14.5 | 20.6 | 271057 | 14.6 | 20.0 | 222614 | 14.7 | 20.2 |
| 148312 | 14.3 | 16.6 | 18344 | 14.4 | 16.2 | 537150 | 14.5 | 20.7 | 214658 | 14.5 | 19.5 | 466697 | 14.6 | 20.9 | 241385 | 14.7 | 21.0 |
| 528029 | 14.3 | 21.1 | 253067 | 14.4 | 18.9 | 334896 | 14.5 | 20.6 | 537362 | 14.5 | 20.4 | 253096 | 14.6 | 18.5 | 536350 | 14.7 | 20.1 |
| 194785 | 14.3 | 19.1 | 389132 | 14.4 | 20.4 | 461504 | 14.5 | 20.4 | 40034 | 14.5 | 18.8 | 187250 | 14.6 | 19.0 | 349343 | 14.7 | 20.5 |
| 46456 | 14.3 | 17.1 | 486687 | 14.4 | 21.3 | 404360 | 14.5 | 20.6 | 106089 | 14.5 | 19.0 | 55712 | 14.6 | 18.9 | 397860 | 14.7 | 18.6 |
| 121837 | 14.3 | 18.8 | 330890 | 14.4 | 19.0 | 238324 | 14.5 | 19.9 | 206004 | 14.5 | 18.9 | 45824 | 14.6 | 17.0 | 88410 | 14.7 | 17.5 |
| 237347 | 14.3 | 19.4 | 363959 | 14.4 | 20.2 | 499766 | 14.5 | 20.5 | 208169 | 14.5 | 18.6 | 495329 | 14.6 | 20.2 | 436723 | 14.7 | 19.4 |
| 110028 | 14.3 | 19.1 | 524776 | 14.4 | 20.7 | 33450 | 14.5 | 17.9 | 430520 | 14.5 | 19.5 | 146237 | 14.6 | 19.9 | 66687 | 14.7 | 18.7 |
| 288192 | 14.3 | 20.3 | 78431 | 14.4 | 19.6 | 508553 | 14.5 | 20.7 | 258636 | 14.5 | 21.1 | 191993 | 14.6 | 18.6 | 400214 | 14.7 | 20.9 |
| 373328 | 14.3 | 20.0 | 497444 | 14.4 | 20.8 | 315231 | 14.5 | 19.5 | 18160 | 14.5 | 17.4 | 154690 | 14.6 | 19.5 | 348574 | 14.7 | 20.2 |
| 242430 | 14.3 | 19.3 | 262920 | 14.4 | 20.7 | 135704 | 14.5 | 18.3 | 31446 | 14.5 | 16.7 | 527514 | 14.6 | 22.2 | 106635 | 14.7 | 18.8 |
| 216436 | 14.3 | 20.4 | 183272 | 14.4 | 19.9 | 424065 | 14.5 | 19.0 | 359876 | 14.5 | 21.5 | 54769 | 14.6 | 17.9 | 80388 | 14.7 | 18.8 |
| 264699 | 14.3 | 20.1 | 179442 | 14.4 | 18.8 | 528588 | 14.5 | 21.1 | 303611 | 14.5 | 20.6 | 92424 | 14.6 | 17.7 | 125455 | 14.7 | 20.2 |
| 175787 | 14.3 | 19.1 | 204636 | 14.4 | 18.6 | 65288 | 14.5 | 18.5 | 432417 | 14.6 | 21.3 | 395671 | 14.6 | 20.1 | 128043 | 14.7 | 17.8 |
| 399660 | 14.3 | 19.7 | 354812 | 14.4 | 18.3 | 5859 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 113591 | 14.7 | 19.3 | 141208 | 14.8 | 19.2 | 18559 | 14.9 | 18.1 | 110245 | 14.9 | 18.9 | 350971 | 15.1 | 19.9 | 191328 | 15.1 | 18.8 |
| 469108 | 14.7 | 20.5 | 16482 | 14.8 | 17.4 | 526664 | 14.9 | 20.6 | 296379 | 14.9 | 19.0 | 271787 | 15.1 | 18.5 | 37205 | 15.1 | 18.3 |
| 479058 | 14.7 | 20.5 | 504694 | 14.8 | 22.1 | 35705 | 14.9 | 18.1 | 470596 | 14.9 | 21.1 | 218266 | 15.1 | 20.0 | 29513 | 15.1 | 16.7 |
| 537307 | 14.7 | 19.8 | 240623 | 14.8 | 19.8 | 80032 | 14.9 | 18.3 | 91826 | 14.9 | 18.7 | 280369 | 15.1 | 20.0 | 344394 | 15.1 | 20.7 |
| 284127 | 14.7 | 20.4 | 54464 | 14.8 | 18.1 | 540530 | 14.9 | 19.7 | 158349 | 14.9 | 18.5 | 537234 | 15.1 | 21.4 | 213419 | 15.1 | 18.8 |
| 88782 | 14.7 | 18.8 | 432393 | 14.8 | 19.9 | 376194 | 14.9 | 20.6 | 533038 | 14.9 | 20.3 | 313918 | 15.1 | 18.6 | 285604 | 15.2 | 18.9 |
| 404693 | 14.7 | 20.0 | 23414 | 14.8 | 17.0 | 343059 | 14.9 | 20.8 | 500234 | 14.9 | 19.7 | 197533 | 15.1 | 18.1 | 183292 | 15.2 | 19.3 |
| 342506 | 14.7 | 20.0 | 357941 | 14.8 | 21.2 | 324338 | 14.9 | 19.6 | 371727 | 14.9 | 21.0 | 115109 | 15.1 | 18.2 | 176606 | 15.2 | 20.2 |
| 252958 | 14.7 | 18.6 | 20531 | 14.8 | 16.4 | 268945 | 14.9 | 20.2 | 446624 | 14.9 | 19.8 | 525511 | 15.1 | 22.1 | 541022 | 15.2 | 20.0 |
| 144837 | 14.7 | 19.0 | 41140 | 14.8 | 19.4 | 195441 | 14.9 | 19.0 | 200905 | 14.9 | 19.7 | 175413 | 15.1 | 18.7 | 120475 | 15.2 | 19.7 |
| 369745 | 14.7 | 19.9 | 106302 | 14.8 | 19.2 | 78839 | 14.9 | 17.9 | 185534 | 14.9 | 19.4 | 29064 | 15.1 | 17.5 | 169515 | 15.2 | 19.6 |
| 226755 | 14.7 | 19.6 | 270398 | 14.8 | 21.1 | 118789 | 14.9 | 18.5 | 454234 | 15.0 | 21.5 | 525239 | 15.1 | 21.3 | 468365 | 15.2 | 19.6 |
| 508741 | 14.7 | 20.9 | 307107 | 14.8 | 20.4 | 39630 | 14.9 | 16.8 | 227357 | 15.0 | 20.4 | 154569 | 15.1 | 19.2 | 543654 | 15.2 | 19.1 |
| 39409 | 14.7 | 18.6 | 394294 | 14.8 | 21.4 | 479656 | 14.9 | 20.4 | 86294 | 15.0 | 18.1 | 257596 | 15.1 | 20.0 | 16632 | 15.2 | 18.2 |
| 323096 | 14.7 | 19.1 | 157304 | 14.8 | 18.6 | 287894 | 14.9 | 19.6 | 323732 | 15.0 | 20.3 | 315035 | 15.1 | 19.8 | 192899 | 15.2 | 19.3 |
| 432023 | 14.7 | 20.2 | 118064 | 14.8 | 18.5 | 293050 | 14.9 | 20.1 | 43450 | 15.0 | 18.2 | 315011 | 15.1 | 19.6 | 469357 | 15.2 | 21.1 |
| 98993 | 14.8 | 18.9 | 494331 | 14.8 | 20.3 | 370138 | 14.9 | 21.6 | 356290 | 15.0 | 19.1 | 536003 | 15.1 | 21.2 | 462267 | 15.2 | 20.9 |
| 15576 | 14.8 | 18.1 | 468479 | 14.8 | 18.8 | 318029 | 14.9 | 19.2 | 489523 | 15.0 | 20.1 | 413208 | 15.1 | 21.3 | 478134 | 15.2 | 20.0 |
| 338654 | 14.8 | 20.3 | 417487 | 14.8 | 20.8 | 136764 | 14.9 | 19.0 | 100762 | 15.0 | 19.4 | 6550 | 15.1 | 17.3 | 120287 | 15.2 | 18.4 |
| 361998 | 14.8 | 20.4 | 60561 | 14.8 | 18.9 | 402447 | 14.9 | 19.7 | 48381 | 15.0 | 17.6 | 33458 | 15.1 | 18.1 | 542306 | 15.2 | 20.8 |
| 377407 | 14.8 | 19.8 | 36214 | 14.8 | 18.7 | 507413 | 14.9 | 17.9 | 454386 | 15.0 | 20.3 | 185043 | 15.1 | 20.1 | 212338 | 15.2 | 18.5 |
| 294588 | 14.8 | 19.7 | 222246 | 14.8 | 18.1 | 402185 | 14.9 | 19.6 | 537508 | 15.0 | 20.8 | 419716 | 15.1 | 21.7 | 52179 | 15.2 | 18.8 |
| 290029 | 14.8 | 19.3 | 251424 | 14.8 | 19.0 | 434161 | 14.9 | 19.4 | 523019 | 15.0 | 20.4 | 334833 | 15.1 | 20.8 | 201670 | 15.2 | 18.8 |
| 522235 | 14.8 | 20.2 | 125889 | 14.8 | 19.9 | 472656 | 14.9 | 19.8 | 395523 | 15.0 | 20.7 | 436895 | 15.1 | 20.7 | 198473 | 15.2 | 18.7 |
| 33694 | 14.8 | 18.5 | 394659 | 14.8 | 21.3 | 539657 | 14.9 | 20.6 | 52437 | 15.0 | 18.2 | 9180 | 15.1 | 17.6 | 107552 | 15.2 | 19.0 |
| 502954 | 14.8 | 20.3 | 259622 | 14.8 | 20.4 | 377894 | 14.9 | 20.9 | 416403 | 15.0 | 19.7 | 198404 | 15.1 | 19.7 | 277575 | 15.2 | 21.5 |
| 188538 | 14.8 | 20.1 | 320728 | 14.8 | 19.9 | 417774 | 14.9 | 21.9 | 502801 | 15.0 | 20.2 | 421199 | 15.1 | 20.0 | 329197 | 15.2 | 21.5 |
| 87570 | 14.8 | 18.7 | 171832 | 14.8 | 20.7 | 336447 | 14.9 | 19.8 | 382481 | 15.0 | 19.3 | 332586 | 15.1 | 19.2 | 478171 | 15.2 | 20.5 |
| 499760 | 14.8 | 21.0 | 346179 | 14.8 | 19.8 | 411793 | 14.9 | 20.9 | 497340 | 15.0 | 20.5 | 41433 | 15.1 | 16.7 | 193770 | 15.2 | 18.9 |
| 501361 | 14.8 | 20.7 | 179558 | 14.8 | 20.5 | 263953 | 14.9 | 19.3 | 65113 | 15.0 | 18.0 | 293118 | 15.1 | 20.7 | 418384 | 15.2 | 20.7 |
| 393983 | 14.8 | 19.4 | 251025 | 14.9 | 18.9 | 306697 | 14.9 | 18.9 | 496648 | 15.0 | 19.9 | 105428 | 15.1 | 19.0 | 312666 | 15.2 | 19.6 |
| 534301 | 14.8 | 20.4 | 113499 | 14.9 | 18.6 | 296210 | 14.9 | 21.2 | 320343 | 15.0 | 20.0 | 23001 | 15.1 | 18.7 | 519687 | 15.2 | 21.3 |
| 349012 | 14.8 | 20.7 | 230270 | 14.9 | 19.1 | 365066 | 14.9 | 21.1 | 18239 | 15.0 | 18.3 | 54940 | 15.1 | 17.1 | 30159 | 15.2 | 17.8 |
| 503652 | 14.8 | 20.1 | 107640 | 14.9 | 18.3 | 110319 | 14.9 | 18.1 | 156814 | 15.0 | 18.0 | 219758 | 15.1 | 20.2 | 117272 | 15.2 | 19.3 |
| 530934 | 14.8 | 20.4 | 533495 | 14.9 | 18.4 | 3016 | 14.9 | 16.2 | 537847 | 15.0 | 21.3 | 429106 | 15.1 | 20.8 | 487603 | 15.2 | 20.5 |
| 422844 | 14.8 | 20.0 | 485918 | 14.9 | 21.0 | 218922 | 14.9 | 20.9 | 395119 | 15.0 | 20.3 | 247180 | 15.1 | 19.1 | 161357 | 15.2 | 18.8 |
| 142056 | 14.8 | 18.9 | 28603 | 14.9 | 18.0 | 316763 | 14.9 | 21.3 | 417690 | 15.0 | 21.3 | 524174 | 15.1 | 20.3 | 336317 | 15.2 | 20.7 |
| 439170 | 14.8 | 20.2 | 300092 | 14.9 | 20.7 | 386489 | 14.9 | 19.3 | 430138 | 15.0 | 19.5 | 19170 | 15.1 | 18.4 | 450985 | 15.2 | 21.2 |
| 215806 | 14.8 | 19.7 | 527837 | 14.9 | 20.9 | 522382 | 14.9 | 20.1 | 308531 | 15.0 | 19.3 | 244703 | 15.1 | 18.7 | 457462 | 15.2 | 21.2 |
| 145739 | 14.8 | 19.5 | 317915 | 14.9 | 21.0 | 247112 | 14.9 | 20.0 | 363524 | 15.0 | 18.7 | 437727 | 15.1 | 20.1 | 144937 | 15.2 | 19.4 |
| 295302 | 14.8 | 20.1 | 530621 | 14.9 | 20.1 | 331490 | 14.9 | 20.3 | 328332 | 15.0 | 20.8 | 535546 | 15.1 | 20.9 | 389281 | 15.2 | 20.6 |
| 323328 | 14.8 | 19.9 | 424796 | 14.9 | 20.1 | 213935 | 14.9 | 19.7 | 28949 | 15.0 | 17.9 | 131094 | 15.1 | 19.4 | 257025 | 15.2 | 20.2 |
| 394238 | 14.8 | 22.3 | 91878 | 14.9 | 18.9 | 6787 | 14.9 | 15.0 | 362007 | 15.0 | 20.8 | 412131 | 15.1 | 19.5 | 224981 | 15.2 | 19.8 |
| 198328 | 14.8 | 20.4 | 316298 | 14.9 | 19.8 | 206305 | 14.9 | 18.3 | 356469 | 15.0 | 18.2 | 80170 | 15.1 | 18.2 | 84258 | 15.2 | 18.7 |
| 429698 | 14.8 | 20.7 | 329079 | 14.9 | 19.5 | 509584 | 14.9 | 22.0 | 505200 | 15.0 | 20.4 | 398508 | 15.1 | 20.5 | 229820 | 15.2 | 19.8 |
| 181768 | 14.8 | 21.1 | 108772 | 14.9 | 17.6 | 470107 | 14.9 | 20.1 | 68627 | 15.0 | 17.8 | 544080 | 15.1 | 20.4 | 117795 | 15.2 | 19.6 |
| 356624 | 14.8 | 20.1 | 41084 | 14.9 | 18.7 | 398546 | 14.9 | 20.3 | 27258 | 15.0 | 18.9 | 98806 | 15.1 | 18.5 | 498840 | 15.2 | 20.5 |
| 452381 | 14.8 | 21.1 | 432769 | 14.9 | 20.8 | 308145 | 14.9 | 21.0 | 397809 | 15.0 | 19.9 | 470008 | 15.1 | 19.5 | 71347 | 15.2 | 17.5 |
| 355233 | 14.8 | 19.9 | 56323 | 14.9 | 17.7 | 71401 | 14.9 | 18.9 | 224415 | 15.0 | 19.0 | 303910 | 15.1 | 21.1 | 309170 | 15.2 | 21.1 |
| 538715 | 14.8 | 21.2 | 95627 | 14.9 | 19.1 | 28208 | 14.9 | 18.4 | 211262 | 15.0 | 19.0 | 105687 | 15.1 | 18.7 | 354198 | 15.2 | 20.3 |
| 212135 | 14.8 | 20.2 | 532713 | 14.9 | 21.3 | 154710 | 14.9 | 18.8 | 224211 | 15.0 | 19.2 | 171561 | 15.1 | 20.1 | 190489 | 15.2 | 19.8 |
| 47993 | 14.8 | 17.2 | 512429 | 14.9 | 20.9 | 269321 | 14.9 | 19.1 | 19152 | 15.0 | 16.1 | 62206 | 15.1 | 19.8 | 504464 | 15.2 | 21.7 |
| 57514 | 14.8 | 18.1 | 70875 | 14.9 | 18.9 | 73812 | 14.9 | 20.2 | 519248 | 15.0 | 20.5 | 540164 | 15.1 | 20.6 | 86093 | 15.2 | 18.3 |
| 465161 | 14.8 | 20.5 | 276549 | 14.9 | 18.6 | 365087 | 14.9 | 20.4 | 226941 | 15.0 | 20.1 | 300119 | 15.1 | 19.4 | 479133 | 15.2 | 19.6 |
| 306261 | 14.8 | 20.2 | 107150 | 14.9 | 17.7 | 260443 | 14.9 | 20.1 | 376808 | 15.0 | 20.5 | 525215 | 15.1 | 20.6 | 425724 | 15.2 | 20.0 |
| 140520 | 14.8 | 18.7 | 473489 | 14.9 | 21.6 | 22106 | 14.9 | 18.0 | 170609 | 15.0 | 19.5 | 432888 | 15.1 | 20.3 | 533041 | 15.2 | 20.8 |
| 350219 | 14.8 | 19.4 | 204665 | 14.9 | 20.7 | 415194 | 14.9 | 21.2 | 31299 | 15.0 | 19.5 | 228533 | 15.1 | 20.0 | 215992 | 15.2 | 20.1 |
| 67630 | 14.8 | 18.3 | 13839 | 14.9 | 16.4 | 222913 | 14.9 | 19.4 | 93629 | 15.0 | 18.7 | 74794 | 15.1 | 18.1 | 143610 | 15.2 | 20.6 |
| 442794 | 14.8 | 21.5 | 201660 | 14.9 | 20.5 | 396600 | 14.9 | 19.2 | 161993 | 15.0 | 19.1 | 538119 | 15.1 | 19.6 | 245491 | 15.2 | 19.8 |
| 351516 | 14.8 | 20.4 | 111515 | 14.9 | 18.8 | 370731 | 14.9 | 19.5 | 179255 | 15.0 | 19.9 | 257854 | 15.1 | 18.6 | 264098 | 15.2 | 18.7 |
| 506474 | 14.8 | 21.2 | 146906 | 14.9 | 20.1 | 179338 | 14.9 | 19.7 | 230081 | 15.0 | 19.7 | 528004 | 15.1 | 22.3 | 366234 | 15.2 | 21.4 |
| 152252 | 14.8 | 20.2 | 523674 | 14.9 | 21.9 | 376933 | 14.9 | 20.8 | 172971 | 15.0 | 18.5 | 123035 | 15.1 | 18.9 | 431047 | 15.2 | 21.2 |
| 159976 | 14.8 | 19.0 | 190389 | 14.9 | 18.1 | 421118 | 14.9 | 20.2 | 68982 | 15.0 | 18.3 | 477712 | 15.1 | 20.9 | 518547 | 15.2 | 20.9 |
| 468485 | 14.8 | 19.0 | 414802 | 14.9 | 21.0 | 518499 | 14.9 | 21.5 | 42393 | 15.1 | 19.8 | 520068 | 15.1 | 20.6 | 414226 | 15.2 | 21.3 |
| 504004 | 14.8 | 20.0 | 345588 | 14.9 | 20.1 | 343119 | 14.9 | 19.9 | 497198 | 15.1 | 20.1 | 36397 | 15.1 | 17.5 | 349469 | 15.2 | 21.1 |
| 233567 | 14.8 | 19.1 | 475177 | 14.9 | 20.4 | 233392 | 14.9 | 20.1 | 201454 | 15.1 | 18.8 | 86265 | 15.1 | 19.4 | 106684 | 15.2 | 19.4 |
| 20548 | 14.8 | 18.2 | 524442 | 14.9 | 20.2 | 88343 | 14.9 | 17.6 | 267455 | 15.1 | 19.8 | 98314 | 15.1 | 18.8 | 58111 | 15.2 | 20.4 |
| 213413 | 14.8 | 19.0 | 458783 | 14.9 | 19.5 | 502621 | 14.9 | 20.3 | 506895 | 15.1 | 20.8 | 93713 | 15.1 | 19.8 | 291229 | 15.2 | 20.4 |
| 331949 | 14.8 | 18.8 | 516373 | 14.9 | 21.2 | 68307 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 156958 | 15.2 | 20.0 | 208479 | 15.3 | 18.1 | 162810 | 15.4 | 18.3 | 15641 | 15.5 | 18.4 | 336879 | 15.5 | 20.1 | 156347 | 15.6 | 20.7 |
| 497318 | 15.2 | 21.3 | 105571 | 15.3 | 18.8 | 497465 | 15.4 | 21.4 | 118698 | 15.5 | 23.7 | 151111 | 15.5 | 18.1 | 245634 | 15.6 | 20.3 |
| 212346 | 15.2 | 18.2 | 527367 | 15.3 | 20.7 | 248046 | 15.4 | 20.2 | 303829 | 15.5 | 19.8 | 457008 | 15.5 | 20.7 | 295061 | 15.6 | 20.5 |
| 310483 | 15.2 | 19.7 | 68706 | 15.3 | 18.0 | 460028 | 15.4 | 20.9 | 333492 | 15.5 | 19.8 | 41645 | 15.5 | 19.0 | 31564 | 15.6 | 17.3 |
| 16115 | 15.2 | 18.0 | 160918 | 15.3 | 20.2 | 425836 | 15.4 | 22.1 | 480660 | 15.5 | 19.6 | 85557 | 15.5 | 17.4 | 99341 | 15.6 | 18.8 |
| 376971 | 15.2 | 17.1 | 278566 | 15.3 | 19.5 | 261359 | 15.4 | 19.7 | 359827 | 15.5 | 21.6 | 148480 | 15.5 | 19.4 | 304683 | 15.6 | 19.2 |
| 3366 | 15.2 | 15.2 | 467311 | 15.3 | 20.3 | 260956 | 15.4 | 20.0 | 387111 | 15.5 | 20.9 | 69562 | 15.5 | 18.3 | 162569 | 15.6 | 18.0 |
| 30174 | 15.2 | 17.9 | 523075 | 15.3 | 20.6 | 22243 | 15.4 | 18.2 | 378699 | 15.5 | 19.3 | 538045 | 15.5 | 21.5 | 323413 | 15.6 | 20.3 |
| 385857 | 15.2 | 19.7 | 525508 | 15.3 | 20.6 | 231698 | 15.4 | 17.6 | 539203 | 15.5 | 20.7 | 430342 | 15.5 | 19.9 | 123387 | 15.6 | 17.8 |
| 450508 | 15.2 | 19.6 | 395315 | 15.3 | 19.9 | 101644 | 15.4 | 19.3 | 529865 | 15.5 | 20.8 | 111816 | 15.5 | 18.3 | 356879 | 15.6 | 20.1 |
| 35110 | 15.2 | 18.6 | 459890 | 15.3 | 18.9 | 506049 | 15.4 | 21.3 | 475830 | 15.5 | 19.8 | 95662 | 15.5 | 18.5 | 151779 | 15.6 | 20.5 |
| 536103 | 15.2 | 20.6 | 55106 | 15.3 | 18.8 | 261056 | 15.4 | 19.5 | 199002 | 15.5 | 19.1 | 512455 | 15.5 | 20.4 | 149929 | 15.6 | 19.3 |
| 532949 | 15.2 | 20.7 | 494218 | 15.3 | 19.9 | 395080 | 15.4 | 20.3 | 9649 | 15.5 | 16.5 | 85430 | 15.5 | 19.3 | 359054 | 15.6 | 19.5 |
| 459601 | 15.2 | 21.2 | 214245 | 15.3 | 19.5 | 316800 | 15.4 | 19.5 | 162407 | 15.5 | 20.1 | 258864 | 15.5 | 19.4 | 58364 | 15.6 | 19.8 |
| 139597 | 15.2 | 19.0 | 62934 | 15.3 | 19.0 | 206932 | 15.4 | 19.2 | 479180 | 15.5 | 21.1 | 438795 | 15.5 | 21.2 | 342848 | 15.6 | 20.3 |
| 125909 | 15.2 | 18.5 | 232159 | 15.3 | 19.7 | 459362 | 15.4 | 20.0 | 58805 | 15.5 | 19.2 | 261310 | 15.5 | 20.4 | 398983 | 15.6 | 21.1 |
| 281794 | 15.2 | 20.2 | 77245 | 15.3 | 20.0 | 536314 | 15.4 | 22.0 | 274893 | 15.5 | 20.6 | 530657 | 15.5 | 19.5 | 275582 | 15.6 | 18.5 |
| 130178 | 15.2 | 18.9 | 296450 | 15.3 | 20.4 | 290295 | 15.4 | 19.7 | 19287 | 15.5 | 17.2 | 140536 | 15.5 | 19.4 | 529884 | 15.6 | 21.5 |
| 323408 | 15.2 | 21.6 | 8390 | 15.3 | 16.9 | 140371 | 15.4 | 19.3 | 98013 | 15.5 | 18.7 | 86264 | 15.5 | 17.5 | 201457 | 15.6 | 19.8 |
| 199101 | 15.2 | 19.9 | 203478 | 15.3 | 20.4 | 363333 | 15.4 | 19.4 | 280646 | 15.5 | 19.7 | 310529 | 15.5 | 20.9 | 393101 | 15.6 | 20.7 |
| 199754 | 15.2 | 19.8 | 331539 | 15.3 | 18.7 | 101173 | 15.4 | 17.7 | 357171 | 15.5 | 20.8 | 386478 | 15.5 | 20.8 | 140366 | 15.6 | 19.4 |
| 384036 | 15.2 | 20.3 | 29925 | 15.3 | 17.3 | 333849 | 15.4 | 20.1 | 480100 | 15.5 | 19.8 | 525349 | 15.5 | 21.6 | 425499 | 15.6 | 19.8 |
| 199992 | 15.2 | 19.8 | 115576 | 15.3 | 19.0 | 526702 | 15.4 | 21.0 | 303584 | 15.5 | 19.7 | 343584 | 15.5 | 20.3 | 35359 | 15.6 | 17.8 |
| 235562 | 15.3 | 19.6 | 311914 | 15.3 | 20.1 | 423608 | 15.4 | 20.6 | 200185 | 15.5 | 18.6 | 358414 | 15.5 | 19.9 | 534454 | 15.6 | 19.6 |
| 312169 | 15.3 | 21.6 | 120697 | 15.3 | 19.8 | 405330 | 15.4 | 20.1 | 37384 | 15.5 | 21.8 | 476379 | 15.5 | 20.6 | 167733 | 15.6 | 20.1 |
| 195108 | 15.3 | 19.3 | 369879 | 15.3 | 20.3 | 423559 | 15.4 | 21.4 | 463166 | 15.5 | 19.1 | 89129 | 15.5 | 18.6 | 301547 | 15.6 | 20.9 |
| 424095 | 15.3 | 20.6 | 332737 | 15.3 | 20.1 | 37520 | 15.4 | 18.6 | 525352 | 15.5 | 20.5 | 225907 | 15.6 | 19.2 | 359568 | 15.6 | 20.3 |
| 205878 | 15.3 | 20.0 | 308214 | 15.3 | 21.4 | 9283 | 15.4 | 17.2 | 406357 | 15.5 | 20.9 | 74843 | 15.6 | 18.6 | 287638 | 15.6 | 19.7 |
| 251805 | 15.3 | 20.5 | 537455 | 15.3 | 21.1 | 93941 | 15.4 | 18.9 | 476357 | 15.5 | 20.5 | 346709 | 15.6 | 20.9 | 258468 | 15.6 | 19.9 |
| 531861 | 15.3 | 21.2 | 363392 | 15.3 | 19.6 | 408261 | 15.4 | 20.9 | 34255 | 15.5 | 18.7 | 431920 | 15.6 | 20.0 | 210749 | 15.6 | 20.3 |
| 352501 | 15.3 | 20.0 | 247152 | 15.3 | 18.1 | 248478 | 15.4 | 20.5 | 507490 | 15.5 | 19.8 | 516458 | 15.6 | 20.3 | 395441 | 15.6 | 20.8 |
| 102965 | 15.3 | 19.7 | 478097 | 15.3 | 19.8 | 504575 | 15.4 | 21.1 | 211452 | 15.5 | 19.7 | 345986 | 15.6 | 19.7 | 351978 | 15.6 | 21.2 |
| 28113 | 15.3 | 18.0 | 473073 | 15.3 | 20.6 | 281694 | 15.4 | 20.3 | 468320 | 15.5 | 20.4 | 18617 | 15.6 | 17.2 | 311196 | 15.6 | 19.7 |
| 219076 | 15.3 | 20.3 | 104350 | 15.3 | 19.8 | 266694 | 15.4 | 19.3 | 497532 | 15.5 | 20.0 | 231703 | 15.6 | 19.3 | 134946 | 15.6 | 19.6 |
| 495113 | 15.3 | 20.5 | 128619 | 15.3 | 19.0 | 538869 | 15.4 | 20.3 | 456025 | 15.5 | 21.0 | 520011 | 15.6 | 21.6 | 499195 | 15.6 | 19.8 |
| 396961 | 15.3 | 20.1 | 332762 | 15.3 | 20.5 | 367314 | 15.4 | 20.5 | 397729 | 15.5 | 20.9 | 310465 | 15.6 | 18.7 | 297137 | 15.6 | 20.0 |
| 119809 | 15.3 | 20.2 | 407266 | 15.3 | 20.6 | 323445 | 15.4 | 20.2 | 22321 | 15.5 | 15.6 | 180592 | 15.6 | 19.3 | 363270 | 15.6 | 20.8 |
| 305990 | 15.3 | 20.6 | 374362 | 15.3 | 20.1 | 202680 | 15.4 | 18.8 | 201765 | 15.5 | 18.8 | 496296 | 15.6 | 21.3 | 209581 | 15.6 | 19.4 |
| 64962 | 15.3 | 18.4 | 437258 | 15.3 | 20.5 | 192041 | 15.4 | 18.8 | 505138 | 15.5 | 19.2 | 99437 | 15.6 | 19.2 | 209077 | 15.6 | 18.8 |
| 452801 | 15.3 | 21.3 | 402905 | 15.3 | 19.3 | 82090 | 15.4 | 18.7 | 462082 | 15.5 | 20.1 | 215371 | 15.6 | 20.5 | 360059 | 15.6 | 19.9 |
| 390231 | 15.3 | 21.1 | 475199 | 15.3 | 20.2 | 68615 | 15.4 | 18.2 | 41886 | 15.5 | 17.3 | 528806 | 15.6 | 20.9 | 155566 | 15.6 | 20.4 |
| 115843 | 15.3 | 19.0 | 497351 | 15.3 | 20.3 | 430339 | 15.4 | 20.1 | 307558 | 15.5 | 20.2 | 27405 | 15.6 | 17.4 | 192731 | 15.6 | 18.5 |
| 326307 | 15.3 | 18.5 | 83445 | 15.4 | 18.1 | 268077 | 15.4 | 18.5 | 58572 | 15.5 | 17.5 | 73875 | 15.6 | 18.0 | 259436 | 15.6 | 19.5 |
| 425708 | 15.3 | 18.8 | 93283 | 15.4 | 19.4 | 394643 | 15.4 | 21.1 | 306121 | 15.5 | 20.6 | 300042 | 15.6 | 20.5 | 530929 | 15.6 | 21.4 |
| 387496 | 15.3 | 20.8 | 227459 | 15.4 | 19.7 | 475047 | 15.4 | 21.4 | 129492 | 15.5 | 19.7 | 263891 | 15.6 | 19.4 | 209578 | 15.6 | 19.9 |
| 497313 | 15.3 | 20.4 | 69057 | 15.4 | 19.3 | 202832 | 15.4 | 18.3 | 59339 | 15.5 | 19.3 | 414804 | 15.6 | 20.4 | 191917 | 15.6 | 18.5 |
| 146189 | 15.3 | 19.9 | 338109 | 15.4 | 19.9 | 168307 | 15.4 | 17.5 | 363262 | 15.5 | 21.2 | 247760 | 15.6 | 18.2 | 2894 | 15.6 | 17.6 |
| 32194 | 15.3 | 18.8 | 470388 | 15.4 | 20.8 | 90136 | 15.4 | 19.3 | 67560 | 15.5 | 18.4 | 59110 | 15.6 | 17.3 | 289981 | 15.6 | 19.4 |
| 277627 | 15.3 | 20.1 | 361691 | 15.4 | 19.5 | 478189 | 15.4 | 20.1 | 405907 | 15.5 | 21.0 | 366305 | 15.6 | 19.8 | 360606 | 15.6 | 19.6 |
| 232582 | 15.3 | 20.9 | 519437 | 15.4 | 20.6 | 20660 | 15.4 | 18.3 | 279258 | 15.5 | 19.8 | 158831 | 15.6 | 19.3 | 504467 | 15.7 | 21.3 |
| 18519 | 15.3 | 17.9 | 204633 | 15.4 | 19.9 | 480818 | 15.4 | 18.9 | 209099 | 15.5 | 18.9 | 38652 | 15.6 | 18.5 | 411667 | 15.7 | 19.5 |
| 508961 | 15.3 | 19.8 | 196387 | 15.4 | 19.6 | 168971 | 15.4 | 20.0 | 496789 | 15.5 | 20.4 | 127689 | 15.6 | 18.3 | 246961 | 15.7 | 19.6 |
| 534187 | 15.3 | 20.0 | 309586 | 15.4 | 20.7 | 170240 | 15.4 | 18.2 | 297804 | 15.5 | 20.9 | 431871 | 15.6 | 19.4 | 139649 | 15.7 | 19.2 |
| 458377 | 15.3 | 19.4 | 31014 | 15.4 | 17.6 | 282471 | 15.4 | 19.6 | 479797 | 15.5 | 20.7 | 431954 | 15.6 | 20.9 | 34535 | 15.7 | 18.3 |
| 23178 | 15.3 | 18.8 | 71251 | 15.4 | 18.0 | 48992 | 15.4 | 17.0 | 233355 | 15.5 | 21.0 | 275609 | 15.6 | 20.9 | 10598 | 15.7 | 17.0 |
| 346189 | 15.3 | 19.4 | 356604 | 15.4 | 20.7 | 530578 | 15.4 | 20.5 | 250816 | 15.5 | 20.2 | 95531 | 15.6 | 19.0 | 161852 | 15.7 | 19.9 |
| 61548 | 15.3 | 18.6 | 453387 | 15.4 | 21.5 | 372454 | 15.4 | 20.6 | 261417 | 15.5 | 19.8 | 490117 | 15.6 | 20.5 | 506730 | 15.7 | 21.9 |
| 300893 | 15.3 | 20.1 | 501001 | 15.4 | 20.0 | 43470 | 15.4 | 18.5 | 83458 | 15.5 | 17.8 | 183163 | 15.6 | 19.0 | 255789 | 15.7 | 19.0 |
| 189158 | 15.3 | 19.9 | 497965 | 15.4 | 21.3 | 394718 | 15.4 | 20.7 | 334418 | 15.5 | 20.4 | 122127 | 15.6 | 16.4 | 262514 | 15.7 | 20.4 |
| 96789 | 15.3 | 19.2 | 207595 | 15.4 | 19.8 | 208180 | 15.4 | 18.1 | 98881 | 15.5 | 19.1 | 160332 | 15.6 | 18.3 | 123445 | 15.7 | 19.0 |
| 354729 | 15.3 | 20.0 | 430188 | 15.4 | 20.5 | 174828 | 15.4 | 19.9 | 251429 | 15.5 | 20.4 | 512485 | 15.6 | 19.3 | 513316 | 15.7 | 20.2 |
| 281590 | 15.3 | 19.8 | 379363 | 15.4 | 21.4 | 494446 | 15.4 | 20.7 | 431957 | 15.5 | 20.6 | 62694 | 15.6 | 19.2 | 447761 | 15.7 | 21.2 |
| 189305 | 15.3 | 18.6 | 249139 | 15.4 | 18.6 | 129157 | 15.4 | 18.9 | 35369 | 15.5 | 18.2 | 439173 | 15.6 | 21.3 | 520914 | 15.7 | 21.2 |
| 499714 | 15.3 | 21.0 | 354089 | 15.4 | 19.4 | 208675 | 15.4 | 18.0 | 385156 | 15.5 | 20.6 | 142268 | 15.6 | 19.0 | 299361 | 15.7 | 19.7 |
| 16598 | 15.3 | 17.1 | 107483 | 15.4 | 19.3 | 240564 | 15.4 | 18.7 | 540611 | 15.5 | 20.6 | 527732 | 15.6 | 20.8 | 507691 | 15.7 | 20.9 |
| 541066 | 15.3 | 19.6 | 501125 | 15.4 | 20.3 | 220274 | 15.4 | 19.9 | 431817 | 15.5 | 19.8 | 538721 | 15.6 | 21.2 | 325070 | 15.7 | 20.4 |
| 215792 | 15.3 | 18.9 | 481338 | 15.4 | 19.5 | 190598 | 15.4 | 19.9 | 505990 | 15.5 | 20.9 | 277797 | 15.6 | 20.1 | 3112 | 15.7 | 14.9 |
| 302869 | 15.3 | 19.6 | 143416 | 15.4 | 19.9 | 395658 | 15.4 | 20.0 | 492203 | 15.5 | 20.0 | 245177 | 15.6 | 19.4 | 198616 | 15.7 | 18.9 |
| 127740 | 15.3 | 17.4 | 62082 | 15.4 | 18.7 | 480636 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 302323 | 15.7 | 20.4 | 80694 | 15.8 | 19.8 | 264611 | 15.8 | 19.7 | 383897 | 15.9 | 20.3 | 15507 | 16.0 | 17.9 | 388767 | 16.1 | 20.0 |
| 239561 | 15.7 | 20.4 | 479801 | 15.8 | 19.7 | 395535 | 15.8 | 20.0 | 33604 | 15.9 | 18.7 | 22215 | 16.0 | 16.8 | 510811 | 16.1 | 21.3 |
| 131806 | 15.7 | 19.7 | 193701 | 15.8 | 18.5 | 439696 | 15.8 | 20.7 | 201625 | 15.9 | 19.6 | 107663 | 16.0 | 20.0 | 325814 | 16.1 | 19.5 |
| 530939 | 15.7 | 22.3 | 453924 | 15.8 | 19.3 | 396293 | 15.8 | 20.4 | 93586 | 15.9 | 19.1 | 357755 | 16.0 | 20.8 | 312764 | 16.1 | 20.6 |
| 159493 | 15.7 | 16.4 | 184712 | 15.8 | 19.8 | 446616 | 15.8 | 20.2 | 421433 | 15.9 | 19.6 | 496346 | 16.0 | 19.9 | 475890 | 16.1 | 21.6 |
| 317834 | 15.7 | 20.7 | 338193 | 15.8 | 20.4 | 241913 | 15.9 | 19.5 | 495992 | 15.9 | 19.5 | 423521 | 16.0 | 22.2 | 217914 | 16.1 | 19.4 |
| 125764 | 15.7 | 18.2 | 259472 | 15.8 | 18.9 | 63636 | 15.9 | 18.3 | 159819 | 15.9 | 19.4 | 58945 | 16.0 | 17.9 | 141069 | 16.1 | 19.9 |
| 510373 | 15.7 | 20.8 | 470119 | 15.8 | 20.8 | 13256 | 15.9 | 15.9 | 533483 | 15.9 | 21.2 | 158473 | 16.0 | 19.8 | 453053 | 16.1 | 20.6 |
| 231322 | 15.7 | 19.6 | 107582 | 15.8 | 19.5 | 415042 | 15.9 | 21.6 | 533533 | 15.9 | 21.6 | 90219 | 16.0 | 19.2 | 502236 | 16.1 | 21.0 |
| 357986 | 15.7 | 21.0 | 52485 | 15.8 | 17.9 | 452365 | 15.9 | 20.9 | 319546 | 15.9 | 20.0 | 305972 | 16.0 | 20.7 | 189756 | 16.1 | 19.0 |
| 70403 | 15.7 | 18.6 | 160408 | 15.8 | 18.2 | 379336 | 15.9 | 19.9 | 120225 | 15.9 | 18.1 | 115071 | 16.0 | 18.3 | 107154 | 16.1 | 19.2 |
| 259277 | 15.7 | 20.1 | 485127 | 15.8 | 20.9 | 532971 | 15.9 | 20.8 | 102178 | 15.9 | 18.4 | 33248 | 16.0 | 18.6 | 106758 | 16.1 | 19.1 |
| 178750 | 15.7 | 19.3 | 162537 | 15.8 | 19.0 | 371681 | 15.9 | 20.8 | 157211 | 15.9 | 19.4 | 494993 | 16.0 | 20.4 | 88826 | 16.1 | 18.7 |
| 351471 | 15.7 | 19.7 | 61521 | 15.8 | 17.4 | 275154 | 15.9 | 20.0 | 525224 | 15.9 | 20.5 | 172276 | 16.0 | 18.7 | 475124 | 16.1 | 20.5 |
| 38887 | 15.7 | 19.6 | 539027 | 15.8 | 21.3 | 358347 | 15.9 | 21.8 | 334859 | 15.9 | 19.2 | 119313 | 16.0 | 18.1 | 230674 | 16.1 | 19.2 |
| 141285 | 15.7 | 20.5 | 376720 | 15.8 | 20.3 | 262792 | 15.9 | 20.3 | 146927 | 15.9 | 19.8 | 29601 | 16.0 | 19.3 | 499357 | 16.1 | 20.5 |
| 480417 | 15.7 | 20.6 | 524635 | 15.8 | 18.2 | 501193 | 15.9 | 19.0 | 530383 | 15.9 | 20.0 | 251341 | 16.0 | 18.4 | 70227 | 16.1 | 17.0 |
| 54136 | 15.7 | 18.7 | 86505 | 15.8 | 17.7 | 203027 | 15.9 | 19.5 | 404282 | 15.9 | 20.0 | 426025 | 16.0 | 21.0 | 106859 | 16.1 | 19.5 |
| 364866 | 15.7 | 20.2 | 51664 | 15.8 | 17.3 | 196204 | 15.9 | 20.1 | 2178 | 15.9 | 15.1 | 277519 | 16.0 | 20.7 | 425278 | 16.1 | 20.7 |
| 516189 | 15.7 | 20.1 | 174504 | 15.8 | 19.7 | 356374 | 15.9 | 19.6 | 98046 | 15.9 | 16.8 | 435701 | 16.0 | 21.6 | 412687 | 16.1 | 19.5 |
| 178179 | 15.7 | 20.1 | 230261 | 15.8 | 20.6 | 128027 | 15.9 | 18.8 | 540493 | 15.9 | 20.6 | 302440 | 16.0 | 19.4 | 199542 | 16.1 | 19.6 |
| 517326 | 15.7 | 20.3 | 412100 | 15.8 | 20.2 | 432401 | 15.9 | 21.1 | 67890 | 15.9 | 18.5 | 416235 | 16.0 | 21.0 | 471856 | 16.1 | 20.6 |
| 330385 | 15.7 | 20.4 | 530024 | 15.8 | 20.1 | 65284 | 15.9 | 18.4 | 266727 | 15.9 | 20.2 | 191787 | 16.0 | 20.7 | 125956 | 16.1 | 19.8 |
| 300871 | 15.7 | 20.4 | 175378 | 15.8 | 20.1 | 498744 | 15.9 | 20.6 | 416026 | 15.9 | 21.4 | 502880 | 16.0 | 21.4 | 140656 | 16.1 | 18.5 |
| 256511 | 15.7 | 20.7 | 437644 | 15.8 | 20.8 | 538348 | 15.9 | 21.6 | 292345 | 15.9 | 20.9 | 339106 | 16.0 | 19.2 | 265376 | 16.1 | 19.8 |
| 296121 | 15.7 | 20.8 | 100564 | 15.8 | 19.1 | 156265 | 15.9 | 19.8 | 377667 | 15.9 | 19.9 | 349938 | 16.0 | 19.7 | 243866 | 16.1 | 19.0 |
| 221737 | 15.7 | 19.6 | 356294 | 15.8 | 20.5 | 303819 | 15.9 | 19.3 | 300949 | 15.9 | 19.5 | 119010 | 16.0 | 19.4 | 303766 | 16.1 | 19.2 |
| 149123 | 15.7 | 19.8 | 273680 | 15.8 | 20.3 | 72916 | 15.9 | 19.0 | 227477 | 15.9 | 18.3 | 372774 | 16.0 | 20.8 | 100485 | 16.1 | 19.1 |
| 475056 | 15.7 | 20.2 | 177055 | 15.8 | 20.1 | 255646 | 15.9 | 19.5 | 248645 | 15.9 | 20.6 | 471049 | 16.0 | 21.0 | 308147 | 16.1 | 20.3 |
| 438644 | 15.7 | 19.9 | 469036 | 15.8 | 20.7 | 526548 | 15.9 | 20.7 | 326971 | 15.9 | 20.0 | 374364 | 16.0 | 20.3 | 477642 | 16.1 | 19.8 |
| 52340 | 15.7 | 22.3 | 499764 | 15.8 | 22.0 | 520035 | 15.9 | 20.6 | 430203 | 15.9 | 17.7 | 420855 | 16.0 | 20.0 | 205818 | 16.1 | 20.7 |
| 38817 | 15.7 | 17.2 | 99053 | 15.8 | 19.7 | 371052 | 15.9 | 18.4 | 496167 | 15.9 | 20.1 | 477214 | 16.0 | 20.4 | 380646 | 16.1 | 21.0 |
| 85995 | 15.7 | 19.7 | 93599 | 15.8 | 19.8 | 56303 | 15.9 | 17.7 | 118980 | 15.9 | 18.3 | 491310 | 16.0 | 20.8 | 370934 | 16.1 | 20.4 |
| 273085 | 15.7 | 20.0 | 475600 | 15.8 | 20.2 | 191825 | 15.9 | 19.6 | 196988 | 15.9 | 18.5 | 405209 | 16.0 | 18.6 | 506866 | 16.1 | 21.2 |
| 219790 | 15.7 | 19.4 | 333235 | 15.8 | 19.2 | 230960 | 15.9 | 18.6 | 56222 | 15.9 | 18.5 | 248074 | 16.0 | 19.0 | 530823 | 16.1 | 20.8 |
| 3670 | 15.7 | 15.9 | 186908 | 15.8 | 17.5 | 207614 | 15.9 | 20.0 | 18680 | 15.9 | 17.8 | 403204 | 16.0 | 21.1 | 152574 | 16.1 | 19.8 |
| 525389 | 15.7 | 20.4 | 525888 | 15.8 | 20.4 | 506970 | 15.9 | 19.5 | 246956 | 15.9 | 18.6 | 381568 | 16.0 | 21.0 | 294933 | 16.1 | 19.8 |
| 87132 | 15.7 | 18.6 | 362102 | 15.8 | 20.1 | 431971 | 15.9 | 20.6 | 31195 | 15.9 | 18.6 | 90887 | 16.0 | 19.7 | 408111 | 16.1 | 20.2 |
| 431921 | 15.7 | 19.2 | 182899 | 15.8 | 19.6 | 359803 | 15.9 | 19.9 | 137513 | 15.9 | 19.2 | 507585 | 16.0 | 22.4 | 146228 | 16.1 | 20.3 |
| 31144 | 15.7 | 17.2 | 3491 | 15.8 | 15.9 | 64667 | 15.9 | 20.0 | 6755 | 15.9 | 16.3 | 15965 | 16.0 | 17.2 | 168701 | 16.1 | 20.2 |
| 6299 | 15.7 | 16.0 | 103726 | 15.8 | 19.3 | 543492 | 15.9 | 20.7 | 518976 | 15.9 | 21.3 | 319871 | 16.0 | 19.8 | 261897 | 16.1 | 20.2 |
| 441994 | 15.7 | 20.3 | 485054 | 15.8 | 20.6 | 99077 | 15.9 | 18.9 | 477211 | 15.9 | 18.6 | 72933 | 16.0 | 17.5 | 216390 | 16.1 | 19.3 |
| 41018 | 15.7 | 18.6 | 78095 | 15.8 | 17.1 | 64730 | 15.9 | 16.8 | 121210 | 15.9 | 17.0 | 523638 | 16.0 | 23.9 | 297663 | 16.1 | 19.9 |
| 528291 | 15.7 | 19.8 | 192789 | 15.8 | 20.4 | 49653 | 15.9 | 17.0 | 260097 | 15.9 | 20.2 | 277606 | 16.0 | 20.3 | 88657 | 16.1 | 18.6 |
| 526739 | 15.7 | 22.5 | 143386 | 15.8 | 19.6 | 318604 | 15.9 | 19.7 | 438997 | 15.9 | 20.7 | 292478 | 16.0 | 20.7 | 72274 | 16.1 | 18.6 |
| 101631 | 15.7 | 19.1 | 201643 | 15.8 | 20.8 | 202914 | 15.9 | 16.6 | 528621 | 15.9 | 21.1 | 386249 | 16.0 | 19.5 | 64617 | 16.1 | 16.8 |
| 163175 | 15.7 | 20.3 | 296160 | 15.8 | 19.7 | 233426 | 15.9 | 20.5 | 61286 | 15.9 | 18.4 | 143278 | 16.1 | 20.1 | 380862 | 16.1 | 20.9 |
| 237851 | 15.7 | 19.2 | 539661 | 15.8 | 20.0 | 195311 | 15.9 | 19.0 | 147229 | 15.9 | 19.4 | 62434 | 16.1 | 18.8 | 503925 | 16.1 | 21.0 |
| 540915 | 15.7 | 21.2 | 324612 | 15.8 | 19.4 | 380150 | 15.9 | 20.7 | 336826 | 15.9 | 20.1 | 148532 | 16.1 | 18.9 | 268940 | 16.1 | 20.8 |
| 362078 | 15.7 | 20.1 | 401410 | 15.8 | 21.0 | 225547 | 15.9 | 18.1 | 91332 | 15.9 | 18.5 | 394686 | 16.1 | 20.8 | 189139 | 16.2 | 19.2 |
| 303991 | 15.7 | 19.2 | 3232 | 15.8 | 15.6 | 70951 | 15.9 | 19.1 | 369312 | 15.9 | 20.1 | 456970 | 16.1 | 21.4 | 116481 | 16.2 | 19.1 |
| 309108 | 15.7 | 20.2 | 451404 | 15.8 | 18.5 | 109445 | 15.9 | 19.3 | 235769 | 15.9 | 20.1 | 140921 | 16.1 | 18.8 | 499933 | 16.2 | 21.1 |
| 251588 | 15.7 | 20.0 | 282604 | 15.8 | 20.1 | 17826 | 15.9 | 18.8 | 44920 | 15.9 | 17.7 | 449503 | 16.1 | 20.7 | 125435 | 16.2 | 19.2 |
| 40856 | 15.7 | 17.4 | 342590 | 15.8 | 20.6 | 62936 | 15.9 | 18.5 | 63821 | 15.9 | 18.2 | 429621 | 16.1 | 20.6 | 189398 | 16.2 | 18.7 |
| 301849 | 15.7 | 20.3 | 95042 | 15.8 | 19.4 | 317524 | 15.9 | 19.3 | 528594 | 15.9 | 20.9 | 349 | 16.1 | 9.7 | 65077 | 16.2 | 18.5 |
| 201648 | 15.7 | 19.6 | 458874 | 15.8 | 20.5 | 175493 | 15.9 | 19.6 | 503124 | 15.9 | 20.4 | 91484 | 16.1 | 16.7 | 124457 | 16.2 | 17.7 |
| 427913 | 15.7 | 21.0 | 277624 | 15.8 | 20.4 | 521319 | 15.9 | 20.4 | 96768 | 15.9 | 16.8 | 83065 | 16.1 | 18.3 | 199257 | 16.2 | 19.3 |
| 259588 | 15.7 | 20.8 | 162695 | 15.8 | 24.5 | 89188 | 15.9 | 17.6 | 311543 | 15.9 | 19.4 | 136995 | 16.1 | 18.0 | 349470 | 16.2 | 20.6 |
| 224335 | 15.7 | 21.0 | 467857 | 15.8 | 21.0 | 233758 | 15.9 | 20.4 | 307443 | 15.9 | 19.2 | 166107 | 16.1 | 20.1 | 74527 | 16.2 | 18.0 |
| 242727 | 15.7 | 20.7 | 200813 | 15.8 | 19.6 | 83509 | 15.9 | 19.3 | 255653 | 15.9 | 18.0 | 433638 | 16.1 | 20.2 | 416024 | 16.2 | 20.8 |
| 296818 | 15.7 | 20.8 | 540825 | 15.8 | 19.6 | 7368 | 15.9 | 16.8 | 519243 | 15.9 | 19.7 | 9581 | 16.1 | 16.0 | 89068 | 16.2 | 18.6 |
| 525935 | 15.7 | 21.1 | 116348 | 15.8 | 20.3 | 530771 | 15.9 | 21.3 | 37442 | 15.9 | 18.0 | 238848 | 16.1 | 21.3 | 37166 | 16.2 | 18.4 |
| 17768 | 15.7 | 17.7 | 390967 | 15.8 | 19.1 | 512692 | 15.9 | 20.0 | 222298 | 15.9 | 19.2 | 313612 | 16.1 | 18.7 | 146149 | 16.2 | 19.1 |
| 529888 | 15.7 | 19.5 | 406920 | 15.8 | 20.6 | 157812 | 15.9 | 19.6 | 327720 | 15.9 | 19.3 | 347754 | 16.1 | 20.6 | 278880 | 16.2 | 19.3 |
| 474819 | 15.7 | 21.0 | 432437 | 15.8 | 19.3 | 508706 | 15.9 | 20.5 | 14697 | 15.9 | 17.0 | 354896 | 16.1 | 19.2 | 63531 | 16.2 | 18.4 |
| 539135 | 15.7 | 20.9 | 102614 | 15.8 | 17.8 | 149240 | 15.9 | 19.5 | 379519 | 15.9 | 18.8 | 181958 | 16.1 | 17.4 | 254646 | 16.2 | 19.5 |
| 25680 | 15.7 | 18.3 | 241903 | 15.8 | 20.1 | 534473 | 15.9 | 21.9 | 496425 | 15.9 | 20.9 | 510789 | 16.1 | 20.3 | 416053 | 16.2 | 21.7 |
| 53814 | 15.7 | 18.7 | 524118 | 15.8 | 20.5 | 478321 | 15.9 | 21.2 | 100668 | 15.9 | 20.0 | 401943 | 16.1 | 21.1 | 126316 | 16.2 | 19.1 |
| 278863 | 15.8 | 20.0 | 266408 | 15.8 | 21.5 | 121056 | 15.9 | 18 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 71197 | 16.2 | 19.0 | 143589 | 16.3 | 20.6 | 411746 | 16.3 | 21.4 | 310003 | 16.4 | 19.5 | 231465 | 16.5 | 19.9 | 301532 | 16.6 | 19.4 |
| 493569 | 16.2 | 20.1 | 419064 | 16.3 | 19.7 | 90195 | 16.3 | 19.4 | 74510 | 16.4 | 18.2 | 411796 | 16.5 | 20.1 | 417778 | 16.6 | 21.7 |
| 317331 | 16.2 | 20.0 | 314148 | 16.3 | 20.8 | 318299 | 16.3 | 21.0 | 115123 | 16.4 | 18.1 | 83737 | 16.5 | 17.3 | 363050 | 16.6 | 20.3 |
| 540515 | 16.2 | 21.2 | 519496 | 16.3 | 20.7 | 92547 | 16.3 | 17.9 | 480735 | 16.4 | 19.9 | 69700 | 16.5 | 19.3 | 443485 | 16.6 | 20.3 |
| 519995 | 16.2 | 21.1 | 25193 | 16.3 | 18.2 | 42334 | 16.3 | 18.9 | 456307 | 16.4 | 21.1 | 33097 | 16.5 | 16.4 | 146132 | 16.6 | 18.9 |
| 232133 | 16.2 | 19.7 | 310215 | 16.3 | 20.3 | 530518 | 16.3 | 20.5 | 483413 | 16.4 | 20.9 | 364027 | 16.5 | 20.6 | 62149 | 16.6 | 17.1 |
| 4041 | 16.2 | 15.3 | 168386 | 16.3 | 19.7 | 57334 | 16.3 | 18.2 | 275580 | 16.4 | 18.6 | 298735 | 16.5 | 20.2 | 358022 | 16.6 | 18.8 |
| 20287 | 16.2 | 17.0 | 173938 | 16.3 | 19.3 | 225024 | 16.3 | 19.9 | 214275 | 16.4 | 19.7 | 456072 | 16.5 | 21.3 | 430670 | 16.6 | 18.9 |
| 303278 | 16.2 | 19.9 | 342787 | 16.3 | 19.2 | 475089 | 16.3 | 21.2 | 509115 | 16.4 | 20.9 | 143344 | 16.5 | 19.4 | 466375 | 16.6 | 19.9 |
| 250434 | 16.2 | 20.1 | 536711 | 16.3 | 19.8 | 247446 | 16.3 | 19.7 | 329295 | 16.4 | 18.4 | 119676 | 16.5 | 19.0 | 506884 | 16.6 | 20.9 |
| 523875 | 16.2 | 20.5 | 503491 | 16.3 | 20.9 | 264672 | 16.3 | 19.7 | 388936 | 16.4 | 21.4 | 42889 | 16.5 | 17.3 | 299721 | 16.6 | 19.8 |
| 119516 | 16.2 | 18.5 | 6840 | 16.3 | 17.3 | 533487 | 16.3 | 21.2 | 56225 | 16.4 | 18.1 | 230303 | 16.5 | 20.7 | 360405 | 16.6 | 21.3 |
| 437101 | 16.2 | 20.9 | 539166 | 16.3 | 20.4 | 36434 | 16.3 | 18.3 | 86385 | 16.4 | 18.1 | 334028 | 16.5 | 18.7 | 234513 | 16.6 | 18.4 |
| 308541 | 16.2 | 20.3 | 530962 | 16.3 | 22.1 | 53336 | 16.4 | 17.0 | 326120 | 16.4 | 20.0 | 119769 | 16.5 | 19.5 | 191727 | 16.6 | 19.8 |
| 364749 | 16.2 | 20.0 | 27826 | 16.3 | 16.3 | 200764 | 16.4 | 19.3 | 397102 | 16.4 | 21.0 | 34343 | 16.5 | 18.5 | 391379 | 16.6 | 20.9 |
| 210709 | 16.2 | 18.9 | 275607 | 16.3 | 19.2 | 267043 | 16.4 | 20.4 | 32258 | 16.4 | 18.1 | 387350 | 16.5 | 19.9 | 186045 | 16.6 | 19.3 |
| 457607 | 16.2 | 21.6 | 401345 | 16.3 | 19.6 | 526339 | 16.4 | 21.7 | 491553 | 16.4 | 20.1 | 472725 | 16.5 | 20.7 | 56171 | 16.6 | 19.8 |
| 271113 | 16.2 | 18.4 | 279153 | 16.3 | 20.4 | 291531 | 16.4 | 20.4 | 234028 | 16.4 | 18.1 | 245113 | 16.5 | 18.7 | 176045 | 16.6 | 19.8 |
| 381161 | 16.2 | 19.0 | 255642 | 16.3 | 18.5 | 322226 | 16.4 | 19.4 | 371998 | 16.4 | 20.3 | 504481 | 16.5 | 22.0 | 68528 | 16.6 | 18.4 |
| 255620 | 16.2 | 19.1 | 406460 | 16.3 | 18.7 | 519954 | 16.4 | 21.6 | 300928 | 16.4 | 20.2 | 340421 | 16.5 | 20.4 | 434422 | 16.6 | 19.6 |
| 432995 | 16.2 | 20.3 | 425856 | 16.3 | 20.0 | 367293 | 16.4 | 20.6 | 488 | 16.4 | 13.3 | 128243 | 16.5 | 20.0 | 133781 | 16.6 | 19.0 |
| 264627 | 16.2 | 19.5 | 32310 | 16.3 | 18.0 | 405507 | 16.4 | 20.2 | 506475 | 16.4 | 21.9 | 158244 | 16.5 | 17.7 | 58540 | 16.6 | 17.2 |
| 200300 | 16.2 | 20.0 | 87442 | 16.3 | 19.1 | 462554 | 16.4 | 21.4 | 152298 | 16.4 | 20.2 | 66309 | 16.5 | 17.1 | 302070 | 16.6 | 19.7 |
| 501276 | 16.2 | 21.8 | 97210 | 16.3 | 18.5 | 336437 | 16.4 | 20.6 | 147395 | 16.4 | 19.4 | 130515 | 16.5 | 18.2 | 52271 | 16.6 | 16.8 |
| 106340 | 16.2 | 19.3 | 210252 | 16.3 | 20.2 | 308458 | 16.4 | 20.1 | 384980 | 16.4 | 20.4 | 515363 | 16.5 | 21.2 | 115981 | 16.6 | 19.5 |
| 243260 | 16.2 | 20.3 | 507543 | 16.3 | 21.5 | 17848 | 16.4 | 17.3 | 325202 | 16.4 | 20.5 | 83124 | 16.5 | 18.5 | 152391 | 16.6 | 19.6 |
| 45890 | 16.2 | 17.5 | 13406 | 16.3 | 16.9 | 251461 | 16.4 | 19.0 | 323329 | 16.4 | 20.9 | 280640 | 16.5 | 19.7 | 506963 | 16.6 | 19.5 |
| 504563 | 16.2 | 21.2 | 69242 | 16.3 | 18.6 | 352757 | 16.4 | 20.6 | 403347 | 16.4 | 20.1 | 38053 | 16.5 | 18.2 | 35734 | 16.6 | 18.1 |
| 533569 | 16.2 | 20.9 | 426726 | 16.3 | 19.4 | 39694 | 16.4 | 19.8 | 105747 | 16.4 | 18.9 | 534284 | 16.5 | 20.8 | 142154 | 16.6 | 19.0 |
| 382444 | 16.2 | 20.9 | 309438 | 16.3 | 20.2 | 345766 | 16.4 | 20.9 | 512597 | 16.4 | 19.7 | 427489 | 16.5 | 20.8 | 384059 | 16.6 | 20.7 |
| 151836 | 16.2 | 19.1 | 66319 | 16.3 | 18.2 | 501533 | 16.4 | 21.5 | 491237 | 16.4 | 19.9 | 24857 | 16.5 | 18.8 | 358068 | 16.6 | 19.8 |
| 44624 | 16.2 | 17.2 | 416116 | 16.3 | 19.5 | 531117 | 16.4 | 21.6 | 341252 | 16.4 | 19.5 | 286029 | 16.5 | 20.1 | 535708 | 16.6 | 21.3 |
| 149074 | 16.2 | 19.1 | 536799 | 16.3 | 20.2 | 356801 | 16.4 | 21.0 | 179547 | 16.4 | 19.2 | 32733 | 16.5 | 16.7 | 36698 | 16.6 | 18.8 |
| 289863 | 16.2 | 18.8 | 311465 | 16.3 | 19.6 | 507418 | 16.4 | 20.6 | 245626 | 16.4 | 20.1 | 414792 | 16.5 | 20.2 | 121175 | 16.6 | 18.7 |
| 383234 | 16.2 | 19.5 | 46405 | 16.3 | 18.5 | 281762 | 16.4 | 18.4 | 3401 | 16.4 | 15.0 | 120924 | 16.5 | 18.6 | 179261 | 16.6 | 20.3 |
| 537262 | 16.2 | 20.9 | 106382 | 16.3 | 18.6 | 478308 | 16.4 | 20.7 | 344535 | 16.4 | 20.7 | 276129 | 16.5 | 20.1 | 459539 | 16.6 | 20.0 |
| 501397 | 16.2 | 19.2 | 150896 | 16.3 | 19.9 | 153059 | 16.4 | 19.0 | 51111 | 16.4 | 18.7 | 519695 | 16.5 | 21.3 | 132614 | 16.6 | 18.7 |
| 281518 | 16.2 | 20.6 | 133565 | 16.3 | 19.1 | 94896 | 16.4 | 17.7 | 24114 | 16.4 | 17.3 | 303917 | 16.5 | 19.6 | 540645 | 16.6 | 17.1 |
| 32834 | 16.2 | 17.5 | 227386 | 16.3 | 19.6 | 486869 | 16.4 | 19.5 | 100514 | 16.4 | 18.1 | 159215 | 16.5 | 19.6 | 102344 | 16.6 | 19.4 |
| 318450 | 16.2 | 21.2 | 222635 | 16.3 | 19.4 | 297592 | 16.4 | 20.0 | 205874 | 16.4 | 19.8 | 432330 | 16.5 | 20.5 | 107351 | 16.6 | 19.6 |
| 517594 | 16.2 | 20.6 | 243831 | 16.3 | 18.6 | 139169 | 16.4 | 19.0 | 288973 | 16.4 | 18.0 | 94751 | 16.5 | 18.9 | 107539 | 16.6 | 19.0 |
| 151980 | 16.2 | 19.6 | 302050 | 16.3 | 19.2 | 99304 | 16.4 | 19.4 | 510860 | 16.4 | 21.7 | 206779 | 16.5 | 20.3 | 31314 | 16.6 | 19.3 |
| 192293 | 16.2 | 19.6 | 371073 | 16.3 | 19.9 | 287957 | 16.4 | 19.4 | 154013 | 16.4 | 18.7 | 175355 | 16.5 | 18.3 | 215225 | 16.6 | 20.3 |
| 183403 | 16.2 | 19.6 | 479572 | 16.3 | 20.1 | 479044 | 16.4 | 20.6 | 23654 | 16.4 | 18.2 | 473062 | 16.5 | 19.7 | 277537 | 16.6 | 21.2 |
| 489342 | 16.2 | 21.6 | 451661 | 16.3 | 20.2 | 466559 | 16.4 | 20.9 | 96056 | 16.4 | 18.8 | 320782 | 16.5 | 20.8 | 471784 | 16.6 | 21.0 |
| 70968 | 16.2 | 17.9 | 532814 | 16.3 | 20.5 | 398627 | 16.4 | 19.7 | 396056 | 16.4 | 20.5 | 500199 | 16.5 | 21.1 | 455629 | 16.6 | 17.7 |
| 233161 | 16.2 | 19.5 | 197018 | 16.3 | 20.3 | 237115 | 16.4 | 19.3 | 423754 | 16.5 | 19.2 | 49380 | 16.5 | 19.0 | 496046 | 16.6 | 20.2 |
| 496835 | 16.2 | 21.0 | 471180 | 16.3 | 18.2 | 233741 | 16.4 | 20.7 | 110570 | 16.5 | 18.5 | 7126 | 16.5 | 17.1 | 190513 | 16.6 | 19.4 |
| 168185 | 16.2 | 19.6 | 202407 | 16.3 | 19.5 | 77735 | 16.4 | 17.8 | 68125 | 16.5 | 18.6 | 174494 | 16.5 | 19.3 | 31534 | 16.6 | 18.0 |
| 131033 | 16.2 | 19.5 | 89730 | 16.3 | 17.5 | 477695 | 16.4 | 20.6 | 266420 | 16.5 | 19.1 | 359420 | 16.5 | 19.7 | 156135 | 16.6 | 18.8 |
| 308956 | 16.2 | 20.1 | 412218 | 16.3 | 19.9 | 117112 | 16.4 | 19.2 | 215580 | 16.5 | 20.0 | 393848 | 16.5 | 20.4 | 122641 | 16.6 | 18.6 |
| 94014 | 16.2 | 19.7 | 2115 | 16.3 | 15.5 | 112423 | 16.4 | 17.3 | 281457 | 16.5 | 20.1 | 289714 | 16.5 | 20.9 | 29646 | 16.6 | 19.0 |
| 540897 | 16.2 | 21.6 | 251052 | 16.3 | 19.9 | 277712 | 16.4 | 20.3 | 177765 | 16.5 | 19.1 | 542282 | 16.5 | 19.7 | 332753 | 16.6 | 19.4 |
| 279775 | 16.2 | 20.4 | 24289 | 16.3 | 16.9 | 372950 | 16.4 | 20.9 | 375993 | 16.5 | 20.6 | 76459 | 16.5 | 18.4 | 86988 | 16.6 | 18.3 |
| 154662 | 16.2 | 19.0 | 510839 | 16.3 | 21.5 | 97230 | 16.4 | 18.4 | 107472 | 16.5 | 19.7 | 66249 | 16.5 | 17.5 | 286709 | 16.6 | 20.3 |
| 297703 | 16.2 | 19.2 | 56966 | 16.3 | 17.8 | 8888 | 16.4 | 17.2 | 351892 | 16.5 | 20.5 | 475175 | 16.5 | 20.1 | 259666 | 16.6 | 20.1 |
| 355228 | 16.2 | 19.8 | 300085 | 16.3 | 20.1 | 289947 | 16.4 | 19.5 | 436629 | 16.5 | 20.3 | 303672 | 16.5 | 19.6 | 394237 | 16.6 | 21.0 |
| 354944 | 16.2 | 20.3 | 110754 | 16.3 | 18.3 | 44761 | 16.4 | 18.4 | 207372 | 16.5 | 20.4 | 233819 | 16.5 | 20.0 | 169547 | 16.6 | 19.6 |
| 255693 | 16.2 | 18.2 | 5295 | 16.3 | 16.7 | 8741 | 16.4 | 17.5 | 61779 | 16.5 | 19.3 | 398933 | 16.5 | 21.1 | 92259 | 16.6 | 19.2 |
| 290191 | 16.2 | 21.2 | 224530 | 16.3 | 20.6 | 38450 | 16.4 | 18.9 | 30600 | 16.5 | 17.1 | 333791 | 16.5 | 19.5 | 360032 | 16.6 | 20.5 |
| 390294 | 16.2 | 20.0 | 110767 | 16.3 | 19.3 | 301539 | 16.4 | 20.8 | 289459 | 16.5 | 21.0 | 281965 | 16.6 | 22.0 | 48261 | 16.6 | 18.1 |
| 404614 | 16.2 | 20.5 | 187808 | 16.3 | 18.7 | 510402 | 16.4 | 21.8 | 538028 | 16.5 | 21.2 | 28592 | 16.6 | 16.8 | 456136 | 16.6 | 21.1 |
| 290417 | 16.2 | 19.6 | 360365 | 16.3 | 20.7 | 519946 | 16.4 | 19.8 | 88497 | 16.5 | 18.5 | 27946 | 16.6 | 17.6 | 85458 | 16.6 | 18.7 |
| 186892 | 16.2 | 20.3 | 243690 | 16.3 | 21.2 | 264188 | 16.4 | 20.4 | 244505 | 16.5 | 19.6 | 393284 | 16.6 | 20.4 | 377395 | 16.6 | 20.8 |
| 532548 | 16.2 | 21.2 | 4506 | 16.3 | 16.6 | 388336 | 16.4 | 19.9 | 469852 | 16.5 | 20.4 | 171069 | 16.6 | 19.3 | 123257 | 16.6 | 18.5 |
| 290745 | 16.2 | 18.5 | 356728 | 16.3 | 20.2 | 532002 | 16.4 | 20.5 | 311223 | 16.5 | 20.4 | 123192 | 16.6 | 19.4 | 440977 | 16.6 | 21.3 |
| 286258 | 16.2 | 20.4 | 121885 | 16.3 | 19.4 | 471961 | 16.4 | 20.4 | 502964 | 16.5 | 20.4 | 277622 | 16.6 | 20.6 | 423719 | 16.6 | 20.3 |
| 497438 | 16.2 | 21.0 | 367119 | 16.3 | 19.7 | 456871 | 16.4 | 21.3 | 86195 | 16.5 | 18.1 | 473277 | 16.6 | 20.1 | 89470 | 16.7 | 18.0 |
| 193729 | 16.2 | 19.9 | 539133 | 16.3 | 21.1 | 140723 | 16.4 | 19.0 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 436855 | 16.7 | 20.8 | 512573 | 16.7 | 20.1 | 151799 | 16.8 | 18.6 | 535240 | 16.9 | 20.9 | 49841 | 16.9 | 18.7 | 140746 | 17.0 | 19.6 |
| 532012 | 16.7 | 21.5 | 371038 | 16.7 | 20.3 | 219571 | 16.8 | 19.6 | 285806 | 16.9 | 19.4 | 147670 | 16.9 | 18.5 | 261118 | 17.0 | 20.4 |
| 387072 | 16.7 | 20.2 | 331611 | 16.7 | 18.9 | 69103 | 16.8 | 18.4 | 267471 | 16.9 | 20.0 | 308162 | 16.9 | 20.1 | 123336 | 17.0 | 19.8 |
| 83072 | 16.7 | 18.5 | 227516 | 16.7 | 19.9 | 375341 | 16.8 | 20.8 | 278464 | 16.9 | 19.1 | 538990 | 16.9 | 20.7 | 66289 | 17.1 | 18.0 |
| 123578 | 16.7 | 18.8 | 30932 | 16.7 | 19.3 | 3053 | 16.8 | 14.7 | 133224 | 16.9 | 18.1 | 209527 | 16.9 | 20.4 | 83982 | 17.1 | 21.8 |
| 315457 | 16.7 | 21.1 | 432381 | 16.7 | 20.7 | 205949 | 16.8 | 19.9 | 271091 | 16.9 | 18.1 | 507594 | 16.9 | 21.3 | 110979 | 17.1 | 20.1 |
| 232601 | 16.7 | 19.0 | 220265 | 16.7 | 19.6 | 349342 | 16.8 | 20.0 | 88155 | 16.9 | 18.9 | 203440 | 16.9 | 20.6 | 465399 | 17.1 | 19.6 |
| 184201 | 16.7 | 18.9 | 121008 | 16.7 | 19.3 | 38560 | 16.8 | 17.9 | 398651 | 16.9 | 20.9 | 125328 | 16.9 | 19.4 | 136895 | 17.1 | 19.2 |
| 165249 | 16.7 | 19.0 | 458757 | 16.7 | 19.1 | 495223 | 16.8 | 20.0 | 113392 | 16.9 | 18.6 | 503843 | 16.9 | 19.8 | 292192 | 17.1 | 20.3 |
| 186123 | 16.7 | 18.4 | 289185 | 16.7 | 19.7 | 463221 | 16.8 | 21.1 | 219645 | 16.9 | 20.8 | 118344 | 16.9 | 19.1 | 94608 | 17.1 | 19.5 |
| 147912 | 16.7 | 19.8 | 127115 | 16.7 | 19.8 | 508875 | 16.8 | 20.9 | 336375 | 16.9 | 20.1 | 391673 | 16.9 | 20.6 | 194293 | 17.1 | 19.4 |
| 176368 | 16.7 | 19.7 | 96301 | 16.7 | 20.3 | 21404 | 16.8 | 16.7 | 301660 | 16.9 | 19.9 | 542400 | 16.9 | 20.4 | 382816 | 17.1 | 20.1 |
| 229772 | 16.7 | 17.2 | 19731 | 16.7 | 17.4 | 7729 | 16.8 | 15.0 | 297624 | 16.9 | 19.5 | 191153 | 16.9 | 19.1 | 120051 | 17.1 | 18.6 |
| 161403 | 16.7 | 19.0 | 373606 | 16.7 | 19.5 | 420001 | 16.8 | 19.6 | 39901 | 16.9 | 19.1 | 480598 | 16.9 | 20.1 | 464041 | 17.1 | 20.6 |
| 39699 | 16.7 | 16.7 | 225311 | 16.7 | 20.3 | 468489 | 16.8 | 20.5 | 187862 | 16.9 | 17.9 | 233256 | 16.9 | 19.9 | 386843 | 17.1 | 19.4 |
| 217298 | 16.7 | 17.6 | 539154 | 16.7 | 20.2 | 270324 | 16.8 | 17.5 | 259745 | 16.9 | 19.2 | 524697 | 16.9 | 20.3 | 65799 | 17.1 | 17.4 |
| 463763 | 16.7 | 17.5 | 175817 | 16.7 | 17.6 | 134259 | 16.8 | 20.0 | 531947 | 16.9 | 22.2 | 421117 | 16.9 | 19.9 | 248352 | 17.1 | 20.3 |
| 152419 | 16.7 | 19.3 | 168538 | 16.7 | 20.5 | 526950 | 16.8 | 20.1 | 537466 | 16.9 | 20.3 | 149911 | 16.9 | 19.7 | 471851 | 17.1 | 21.1 |
| 238519 | 16.7 | 17.1 | 217007 | 16.7 | 20.9 | 507072 | 16.8 | 21.5 | 72601 | 16.9 | 19.1 | 190374 | 16.9 | 18.8 | 525255 | 17.1 | 20.9 |
| 544049 | 16.7 | 21.2 | 433437 | 16.7 | 20.4 | 164769 | 16.8 | 18.5 | 46884 | 16.9 | 17.2 | 253847 | 16.9 | 20.1 | 291331 | 17.1 | 20.9 |
| 478220 | 16.7 | 20.9 | 263620 | 16.7 | 19.9 | 195514 | 16.8 | 18.4 | 390373 | 16.9 | 19.8 | 182221 | 16.9 | 19.2 | 321673 | 17.1 | 19.2 |
| 62036 | 16.7 | 17.5 | 446753 | 16.7 | 19.7 | 364203 | 16.8 | 18.8 | 118118 | 16.9 | 20.5 | 406420 | 16.9 | 17.8 | 113154 | 17.1 | 18.8 |
| 375723 | 16.7 | 20.5 | 106568 | 16.7 | 19.8 | 311237 | 16.8 | 20.7 | 416961 | 16.9 | 20.5 | 8725 | 16.9 | 16.6 | 93189 | 17.1 | 18.0 |
| 213440 | 16.7 | 20.1 | 5846 | 16.7 | 18.2 | 102080 | 16.8 | 17.9 | 65598 | 16.9 | 19.4 | 505540 | 16.9 | 20.8 | 445880 | 17.1 | 20.1 |
| 508912 | 16.7 | 22.2 | 416498 | 16.7 | 20.9 | 443786 | 16.8 | 20.2 | 42332 | 16.9 | 18.5 | 100334 | 16.9 | 18.5 | 224912 | 17.1 | 20.4 |
| 31668 | 16.7 | 16.6 | 94460 | 16.7 | 18.7 | 396959 | 16.8 | 19.4 | 538432 | 16.9 | 21.6 | 503927 | 16.9 | 21.7 | 368443 | 17.1 | 20.4 |
| 259125 | 16.7 | 19.6 | 309890 | 16.7 | 19.2 | 55968 | 16.8 | 18.1 | 543767 | 16.9 | 20.1 | 308394 | 16.9 | 20.2 | 26014 | 17.1 | 17.6 |
| 538122 | 16.7 | 21.1 | 166193 | 16.7 | 19.9 | 95445 | 16.8 | 19.2 | 383998 | 16.9 | 20.1 | 400202 | 16.9 | 20.4 | 244839 | 17.1 | 20.4 |
| 537506 | 16.7 | 20.3 | 381876 | 16.7 | 20.0 | 509693 | 16.8 | 20.4 | 443618 | 16.9 | 21.5 | 397739 | 16.9 | 21.8 | 537480 | 17.1 | 21.0 |
| 214259 | 16.7 | 20.7 | 61475 | 16.7 | 18.4 | 504522 | 16.8 | 20.0 | 14768 | 16.9 | 17.9 | 179456 | 16.9 | 19.2 | 510380 | 17.1 | 21.2 |
| 361554 | 16.7 | 19.5 | 19162 | 16.7 | 16.9 | 458901 | 16.8 | 21.7 | 146969 | 16.9 | 17.2 | 365210 | 17.0 | 20.0 | 290243 | 17.1 | 19.8 |
| 306082 | 16.7 | 19.7 | 525908 | 16.7 | 20.5 | 429557 | 16.8 | 21.1 | 41906 | 16.9 | 19.6 | 11177 | 17.0 | 17.2 | 477725 | 17.1 | 20.5 |
| 218016 | 16.7 | 18.6 | 7297 | 16.8 | 15.7 | 20494 | 16.8 | 16.9 | 507371 | 16.9 | 20.8 | 136599 | 17.0 | 19.5 | 521130 | 17.1 | 20.1 |
| 508663 | 16.7 | 20.2 | 272454 | 16.8 | 21.1 | 110858 | 16.8 | 18.8 | 117990 | 16.9 | 17.8 | 102954 | 17.0 | 18.1 | 362973 | 17.1 | 19.9 |
| 210291 | 16.7 | 20.2 | 331629 | 16.8 | 21.1 | 393896 | 16.8 | 20.8 | 123556 | 16.9 | 19.3 | 410396 | 17.0 | 20.0 | 529130 | 17.1 | 21.0 |
| 265720 | 16.7 | 20.0 | 181741 | 16.8 | 20.3 | 481072 | 16.8 | 20.0 | 537889 | 16.9 | 21.5 | 86360 | 17.0 | 17.5 | 527601 | 17.1 | 19.3 |
| 446628 | 16.7 | 19.9 | 530349 | 16.8 | 21.9 | 228553 | 16.8 | 20.5 | 397728 | 16.9 | 20.0 | 62257 | 17.0 | 19.0 | 260023 | 17.1 | 20.2 |
| 336948 | 16.7 | 20.0 | 430039 | 16.8 | 20.6 | 315325 | 16.8 | 19.3 | 305718 | 16.9 | 20.7 | 307120 | 17.0 | 20.2 | 499175 | 17.1 | 21.0 |
| 336276 | 16.7 | 19.4 | 392522 | 16.8 | 19.5 | 478110 | 16.8 | 20.6 | 283923 | 16.9 | 19.5 | 331007 | 17.0 | 19.0 | 488736 | 17.1 | 19.2 |
| 106013 | 16.7 | 17.5 | 20171 | 16.8 | 17.6 | 140537 | 16.8 | 18.8 | 188819 | 16.9 | 19.6 | 369554 | 17.0 | 19.8 | 391690 | 17.1 | 21.0 |
| 401346 | 16.7 | 21.7 | 38367 | 16.8 | 17.8 | 245103 | 16.8 | 19.3 | 313616 | 16.9 | 18.2 | 204074 | 17.0 | 19.1 | 6457 | 17.1 | 16.9 |
| 525902 | 16.7 | 19.5 | 228092 | 16.8 | 18.6 | 510472 | 16.8 | 19.8 | 160816 | 16.9 | 17.7 | 424190 | 17.0 | 19.9 | 96657 | 17.1 | 17.9 |
| 179450 | 16.7 | 19.3 | 106326 | 16.8 | 18.7 | 325428 | 16.8 | 19.8 | 343064 | 16.9 | 20.3 | 462067 | 17.0 | 20.2 | 469800 | 17.1 | 19.8 |
| 410429 | 16.7 | 20.2 | 207433 | 16.8 | 19.9 | 8718 | 16.8 | 17.0 | 299723 | 16.9 | 19.7 | 418955 | 17.0 | 19.7 | 386258 | 17.1 | 20.1 |
| 20267 | 16.7 | 17.5 | 380925 | 16.8 | 20.7 | 216735 | 16.8 | 21.4 | 106317 | 16.9 | 18.7 | 160452 | 17.0 | 18.7 | 193288 | 17.1 | 19.5 |
| 127357 | 16.7 | 19.2 | 237481 | 16.8 | 19.5 | 183722 | 16.8 | 20.7 | 33132 | 16.9 | 17.3 | 365528 | 17.0 | 19.5 | 491294 | 17.1 | 20.9 |
| 13274 | 16.7 | 17.8 | 292737 | 16.8 | 20.7 | 199510 | 16.8 | 20.4 | 478178 | 16.9 | 21.0 | 146166 | 17.0 | 19.5 | 524975 | 17.1 | 19.4 |
| 206897 | 16.7 | 19.7 | 353107 | 16.8 | 19.3 | 243261 | 16.8 | 19.6 | 192356 | 16.9 | 20.4 | 179530 | 17.0 | 19.7 | 273044 | 17.1 | 20.5 |
| 479790 | 16.7 | 21.1 | 217 | 16.8 | 11.7 | 313718 | 16.9 | 21.4 | 144257 | 16.9 | 18.3 | 530666 | 17.0 | 20.9 | 181141 | 17.1 | 18.7 |
| 380889 | 16.7 | 19.8 | 159667 | 16.8 | 19.2 | 361452 | 16.9 | 21.1 | 324403 | 16.9 | 20.7 | 150932 | 17.0 | 20.0 | 519926 | 17.1 | 20.6 |
| 179292 | 16.7 | 20.3 | 376938 | 16.8 | 20.6 | 419900 | 16.9 | 18.3 | 114006 | 16.9 | 18.4 | 285341 | 17.0 | 20.0 | 433309 | 17.1 | 18.8 |
| 508329 | 16.7 | 20.3 | 228537 | 16.8 | 19.2 | 96109 | 16.9 | 19.7 | 304413 | 16.9 | 21.0 | 36385 | 17.0 | 16.9 | 24115 | 17.1 | 16.4 |
| 409432 | 16.7 | 19.7 | 341320 | 16.8 | 20.7 | 118187 | 16.9 | 18.9 | 355175 | 16.9 | 20.7 | 82659 | 17.0 | 18.6 | 64322 | 17.1 | 19.2 |
| 182508 | 16.7 | 19.0 | 83190 | 16.8 | 18.5 | 158068 | 16.9 | 19.2 | 150943 | 16.9 | 18.6 | 36705 | 17.0 | 17.5 | 2092 | 17.1 | 15.6 |
| 314182 | 16.7 | 19.2 | 466491 | 16.8 | 19.0 | 170462 | 16.9 | 20.4 | 349866 | 16.9 | 19.5 | 96354 | 17.0 | 19.3 | 313773 | 17.1 | 18.0 |
| 185543 | 16.7 | 20.0 | 90163 | 16.8 | 19.2 | 365099 | 16.9 | 21.1 | 231907 | 16.9 | 19.9 | 522471 | 17.0 | 20.2 | 521281 | 17.1 | 21.1 |
| 207401 | 16.7 | 19.8 | 242176 | 16.8 | 19.6 | 170981 | 16.9 | 19.7 | 118958 | 16.9 | 19.6 | 289499 | 17.0 | 19.8 | 79468 | 17.1 | 18.9 |
| 288740 | 16.7 | 19.1 | 105748 | 16.8 | 19.0 | 44182 | 16.9 | 17.4 | 170907 | 16.9 | 19.4 | 454166 | 17.0 | 21.5 | 233175 | 17.1 | 18.0 |
| 1488 | 16.7 | 15.0 | 176456 | 16.8 | 20.4 | 380588 | 16.9 | 19.8 | 62374 | 16.9 | 18.9 | 475109 | 17.0 | 19.6 | 359404 | 17.1 | 20.4 |
| 96985 | 16.7 | 19.7 | 470561 | 16.8 | 21.4 | 380655 | 16.9 | 20.7 | 505847 | 16.9 | 20.3 | 431559 | 17.0 | 19.8 | 531857 | 17.1 | 20.8 |
| 382109 | 16.7 | 20.4 | 356675 | 16.8 | 20.2 | 523520 | 16.9 | 18.6 | 537438 | 16.9 | 20.8 | 5991 | 17.0 | 17.5 | 363234 | 17.1 | 20.4 |
| 196234 | 16.7 | 19.4 | 156205 | 16.8 | 19.9 | 525463 | 16.9 | 21.2 | 332837 | 16.9 | 20.1 | 202436 | 17.0 | 19.0 | 232224 | 17.1 | 21.0 |
| 521225 | 16.7 | 20.2 | 47651 | 16.8 | 18.4 | 286000 | 16.9 | 19.3 | 157128 | 16.9 | 17.9 | 312090 | 17.0 | 21.4 | 144887 | 17.1 | 19.6 |
| 411194 | 16.7 | 19.5 | 381467 | 16.8 | 20.5 | 87763 | 16.9 | 18.7 | 297235 | 16.9 | 21.1 | 171004 | 17.0 | 20.2 | 170824 | 17.1 | 20.3 |
| 41484 | 16.7 | 18.4 | 64071 | 16.8 | 18.2 | 182227 | 16.9 | 19.3 | 34973 | 16.9 | 19.0 | 357192 | 17.0 | 20.3 | 95581 | 17.1 | 19.2 |
| 160236 | 16.7 | 19.0 | 429634 | 16.8 | 20.0 | 123515 | 16.9 | 19.1 | 332374 | 16.9 | 20.0 | 11084 | 17.0 | 18.7 | 64468 | 17.1 | 17.8 |
| 105266 | 16.7 | 19.1 | 282352 | 16.8 | 19.2 | 263396 | 16.9 | 20.1 | 273626 | 16.9 | 20.4 | 86970 | 17.0 | 17.3 | 505501 | 17.1 | 21.2 |
| 217940 | 16.7 | 19.2 | 285697 | 16.8 | 19.7 | 176558 | 16.9 | 19.7 | 382772 | 16.9 | 20.2 | 533681 | 17.0 | 20.5 | 306743 | 17.1 | 19.8 |
| 61614 | 16.7 | 18.3 | 224302 | 16.8 | 18.3 | 311606 | 16.9 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 20968 | 17.1 | 19.5 | 111191 | 17.2 | 18.7 | 121943 | 17.3 | 19.8 | 156397 | 17.3 | 19.1 | 496231 | 17.4 | 21.5 | 209562 | 17.5 | 20.6 |
| 67006 | 17.1 | 18.4 | 141331 | 17.2 | 19.5 | 429641 | 17.3 | 21.3 | 277770 | 17.3 | 20.1 | 230804 | 17.4 | 19.2 | 430522 | 17.5 | 21.4 |
| 20244 | 17.1 | 17.5 | 359040 | 17.2 | 19.6 | 179373 | 17.3 | 19.3 | 432366 | 17.3 | 21.0 | 369021 | 17.4 | 20.3 | 227887 | 17.5 | 20.0 |
| 155977 | 17.1 | 17.7 | 279237 | 17.2 | 20.7 | 497410 | 17.3 | 21.2 | 243109 | 17.4 | 18.3 | 26620 | 17.4 | 17.8 | 376314 | 17.5 | 20.6 |
| 454119 | 17.1 | 20.8 | 312107 | 17.2 | 19.0 | 35168 | 17.3 | 16.9 | 327448 | 17.4 | 19.0 | 530236 | 17.4 | 22.5 | 132377 | 17.5 | 17.9 |
| 535443 | 17.1 | 21.5 | 136590 | 17.2 | 20.3 | 130722 | 17.3 | 19.2 | 314655 | 17.4 | 18.3 | 338220 | 17.4 | 20.0 | 290356 | 17.5 | 21.2 |
| 276412 | 17.1 | 19.9 | 346787 | 17.2 | 20.0 | 193831 | 17.3 | 18.8 | 503743 | 17.4 | 20.7 | 524763 | 17.4 | 21.0 | 299741 | 17.5 | 20.3 |
| 502665 | 17.1 | 20.7 | 534049 | 17.2 | 20.7 | 380841 | 17.3 | 19.4 | 395402 | 17.4 | 19.1 | 333572 | 17.4 | 19.8 | 469069 | 17.5 | 19.7 |
| 49722 | 17.1 | 18.2 | 394358 | 17.2 | 20.4 | 405904 | 17.3 | 20.5 | 193486 | 17.4 | 19.0 | 43 | 17.4 | 9.5 | 189173 | 17.5 | 23.8 |
| 347209 | 17.1 | 20.2 | 207882 | 17.2 | 19.9 | 231604 | 17.3 | 19.9 | 126201 | 17.4 | 19.0 | 16237 | 17.4 | 16.7 | 69626 | 17.5 | 19.0 |
| 371984 | 17.1 | 19.3 | 328318 | 17.2 | 20.0 | 34596 | 17.3 | 17.2 | 222574 | 17.4 | 19.8 | 162719 | 17.4 | 17.6 | 308485 | 17.5 | 21.1 |
| 373406 | 17.1 | 18.9 | 306079 | 17.2 | 18.8 | 299881 | 17.3 | 19.7 | 357804 | 17.4 | 20.7 | 215564 | 17.4 | 19.4 | 256861 | 17.5 | 20.0 |
| 355571 | 17.1 | 20.6 | 224538 | 17.2 | 19.2 | 39820 | 17.3 | 19.5 | 330675 | 17.4 | 20.4 | 427515 | 17.4 | 19.1 | 329159 | 17.5 | 20.7 |
| 303848 | 17.1 | 20.3 | 385886 | 17.2 | 20.7 | 205831 | 17.3 | 20.6 | 536529 | 17.4 | 21.3 | 382897 | 17.4 | 18.5 | 60081 | 17.5 | 19.0 |
| 377960 | 17.1 | 19.5 | 125850 | 17.2 | 19.1 | 238064 | 17.3 | 19.7 | 64704 | 17.4 | 18.4 | 425764 | 17.4 | 21.4 | 179472 | 17.5 | 19.9 |
| 459676 | 17.1 | 21.4 | 48323 | 17.2 | 16.0 | 198686 | 17.3 | 19.9 | 93118 | 17.4 | 18.9 | 123046 | 17.4 | 18.9 | 212084 | 17.5 | 19.9 |
| 507094 | 17.1 | 20.6 | 542895 | 17.2 | 20.1 | 489016 | 17.3 | 20.3 | 225979 | 17.4 | 19.7 | 406402 | 17.4 | 19.5 | 222754 | 17.5 | 19.9 |
| 48654 | 17.1 | 19.5 | 494375 | 17.2 | 20.3 | 539196 | 17.3 | 20.6 | 162803 | 17.4 | 19.9 | 183050 | 17.4 | 20.1 | 398605 | 17.5 | 20.4 |
| 31190 | 17.1 | 17.4 | 179382 | 17.2 | 20.5 | 400778 | 17.3 | 20.4 | 235875 | 17.4 | 19.8 | 214444 | 17.4 | 19.4 | 503081 | 17.5 | 20.4 |
| 429287 | 17.1 | 20.9 | 75219 | 17.2 | 19.4 | 344818 | 17.3 | 20.0 | 119156 | 17.4 | 17.5 | 73354 | 17.4 | 19.2 | 71441 | 17.5 | 18.6 |
| 280962 | 17.1 | 20.4 | 431080 | 17.2 | 21.4 | 7686 | 17.3 | 16.7 | 382967 | 17.4 | 19.9 | 312876 | 17.4 | 19.8 | 530985 | 17.5 | 21.6 |
| 155173 | 17.1 | 18.4 | 222678 | 17.2 | 20.0 | 377469 | 17.3 | 21.9 | 359829 | 17.4 | 21.0 | 171773 | 17.4 | 20.6 | 381447 | 17.5 | 20.6 |
| 397676 | 17.1 | 19.6 | 193024 | 17.2 | 19.9 | 150627 | 17.3 | 20.4 | 308542 | 17.4 | 19.4 | 172706 | 17.4 | 19.6 | 233368 | 17.5 | 20.3 |
| 512954 | 17.1 | 18.7 | 241702 | 17.2 | 20.3 | 244879 | 17.3 | 19.9 | 102067 | 17.4 | 18.1 | 29701 | 17.5 | 18.9 | 241574 | 17.5 | 19.8 |
| 323833 | 17.2 | 19.5 | 483568 | 17.2 | 21.0 | 47237 | 17.3 | 17.9 | 473999 | 17.4 | 20.1 | 377959 | 17.5 | 21.1 | 326368 | 17.5 | 20.8 |
| 426179 | 17.2 | 20.5 | 352170 | 17.2 | 20.4 | 336181 | 17.3 | 19.6 | 297722 | 17.4 | 20.6 | 120334 | 17.5 | 18.5 | 354188 | 17.5 | 21.0 |
| 357165 | 17.2 | 21.2 | 189052 | 17.2 | 19.0 | 182841 | 17.3 | 19.6 | 532933 | 17.4 | 21.7 | 374367 | 17.5 | 21.2 | 497229 | 17.5 | 21.6 |
| 501535 | 17.2 | 21.5 | 189124 | 17.2 | 19.6 | 77126 | 17.3 | 19.7 | 316618 | 17.4 | 20.4 | 440661 | 17.5 | 20.9 | 42083 | 17.5 | 19.2 |
| 3501 | 17.2 | 15.4 | 206045 | 17.2 | 20.1 | 182518 | 17.3 | 19.1 | 520003 | 17.4 | 20.3 | 172809 | 17.5 | 20.1 | 387950 | 17.5 | 20.6 |
| 284806 | 17.2 | 19.8 | 394257 | 17.2 | 21.1 | 303876 | 17.3 | 20.7 | 362762 | 17.4 | 21.0 | 319329 | 17.5 | 20.3 | 379225 | 17.5 | 19.3 |
| 189571 | 17.2 | 18.5 | 62709 | 17.2 | 18.0 | 53670 | 17.3 | 19.5 | 20067 | 17.4 | 18.1 | 278432 | 17.5 | 18.3 | 433032 | 17.5 | 20.3 |
| 501176 | 17.2 | 20.4 | 253487 | 17.2 | 19.0 | 473920 | 17.3 | 21.1 | 58743 | 17.4 | 19.0 | 277793 | 17.5 | 20.4 | 115318 | 17.6 | 19.3 |
| 293228 | 17.2 | 20.6 | 133534 | 17.2 | 19.2 | 311470 | 17.3 | 19.9 | 475544 | 17.4 | 21.0 | 529559 | 17.5 | 21.7 | 263264 | 17.6 | 19.9 |
| 420538 | 17.2 | 20.3 | 327366 | 17.2 | 20.1 | 148118 | 17.3 | 20.3 | 42325 | 17.4 | 18.8 | 422503 | 17.5 | 21.4 | 263333 | 17.6 | 19.9 |
| 11452 | 17.2 | 15.9 | 228345 | 17.2 | 19.0 | 430662 | 17.3 | 21.1 | 7603 | 17.4 | 17.3 | 374562 | 17.5 | 20.6 | 263763 | 17.6 | 19.7 |
| 342495 | 17.2 | 19.6 | 528843 | 17.2 | 22.1 | 375846 | 17.3 | 20.2 | 119073 | 17.4 | 17.4 | 374142 | 17.5 | 19.8 | 319580 | 17.6 | 21.2 |
| 389118 | 17.2 | 19.6 | 413203 | 17.3 | 20.5 | 136330 | 17.3 | 19.8 | 103885 | 17.4 | 19.5 | 533499 | 17.5 | 20.9 | 12310 | 17.6 | 16.9 |
| 503975 | 17.2 | 20.3 | 68607 | 17.3 | 18.8 | 350979 | 17.3 | 20.6 | 334876 | 17.4 | 20.4 | 418160 | 17.5 | 20.0 | 149248 | 17.6 | 18.9 |
| 430926 | 17.2 | 21.3 | 226727 | 17.3 | 18.8 | 512353 | 17.3 | 20.1 | 2586 | 17.4 | 15.4 | 527861 | 17.5 | 22.2 | 330113 | 17.6 | 19.9 |
| 167834 | 17.2 | 20.0 | 172049 | 17.3 | 18.9 | 391360 | 17.3 | 20.0 | 375262 | 17.4 | 19.9 | 252105 | 17.5 | 19.9 | 537697 | 17.6 | 20.1 |
| 363767 | 17.2 | 19.7 | 350991 | 17.3 | 21.1 | 380567 | 17.3 | 18.7 | 177168 | 17.4 | 18.5 | 347221 | 17.5 | 19.3 | 264951 | 17.6 | 20.1 |
| 44064 | 17.2 | 17.2 | 513285 | 17.3 | 21.0 | 469690 | 17.3 | 20.3 | 525202 | 17.4 | 20.9 | 313614 | 17.5 | 19.1 | 287103 | 17.6 | 19.8 |
| 57377 | 17.2 | 18.8 | 537892 | 17.3 | 21.1 | 179362 | 17.3 | 19.1 | 427975 | 17.4 | 20.4 | 275141 | 17.5 | 20.7 | 406830 | 17.6 | 19.5 |
| 303304 | 17.2 | 18.8 | 504445 | 17.3 | 21.0 | 344088 | 17.3 | 21.1 | 249541 | 17.4 | 19.4 | 399167 | 17.5 | 20.8 | 232577 | 17.6 | 20.3 |
| 247843 | 17.2 | 19.0 | 199661 | 17.3 | 19.6 | 208231 | 17.3 | 19.3 | 253019 | 17.4 | 19.1 | 402219 | 17.5 | 20.2 | 361453 | 17.6 | 21.1 |
| 338779 | 17.2 | 19.8 | 355217 | 17.3 | 21.0 | 502985 | 17.3 | 20.8 | 297802 | 17.4 | 20.3 | 123589 | 17.5 | 19.7 | 35582 | 17.6 | 17.8 |
| 492636 | 17.2 | 19.7 | 523156 | 17.3 | 20.3 | 205863 | 17.3 | 19.0 | 475730 | 17.4 | 20.6 | 104933 | 17.5 | 19.4 | 486809 | 17.6 | 19.0 |
| 387722 | 17.2 | 21.3 | 306929 | 17.3 | 19.7 | 239057 | 17.3 | 21.4 | 166294 | 17.4 | 18.1 | 119397 | 17.5 | 19.4 | 528737 | 17.6 | 22.1 |
| 361477 | 17.2 | 20.6 | 464629 | 17.3 | 20.9 | 316208 | 17.3 | 19.7 | 531896 | 17.4 | 20.7 | 59904 | 17.5 | 18.6 | 28967 | 17.6 | 16.6 |
| 205856 | 17.2 | 18.8 | 268983 | 17.3 | 20.6 | 134746 | 17.3 | 18.0 | 149898 | 17.4 | 19.2 | 341271 | 17.5 | 19.9 | 458157 | 17.6 | 19.2 |
| 263490 | 17.2 | 19.6 | 433452 | 17.3 | 20.2 | 526093 | 17.3 | 20.5 | 384779 | 17.4 | 20.3 | 140722 | 17.5 | 18.9 | 295483 | 17.6 | 20.8 |
| 470210 | 17.2 | 20.9 | 455169 | 17.3 | 18.8 | 224493 | 17.3 | 20.2 | 405106 | 17.4 | 20.9 | 532053 | 17.5 | 21.9 | 78915 | 17.6 | 18.8 |
| 144294 | 17.2 | 18.7 | 333121 | 17.3 | 19.7 | 174670 | 17.3 | 19.6 | 500993 | 17.4 | 19.2 | 533353 | 17.5 | 21.6 | 312163 | 17.6 | 21.4 |
| 268138 | 17.2 | 19.7 | 211839 | 17.3 | 19.1 | 111940 | 17.3 | 19.5 | 414970 | 17.4 | 21.4 | 130579 | 17.5 | 18.2 | 3967 | 17.6 | 16.4 |
| 140342 | 17.2 | 18.9 | 428745 | 17.3 | 19.1 | 96487 | 17.3 | 18.8 | 471547 | 17.4 | 20.1 | 536059 | 17.5 | 21.6 | 114574 | 17.6 | 18.2 |
| 133056 | 17.2 | 19.9 | 430753 | 17.3 | 19.1 | 401107 | 17.3 | 21.5 | 538002 | 17.4 | 20.8 | 89771 | 17.5 | 16.9 | 540643 | 17.6 | 20.8 |
| 463759 | 17.2 | 21.0 | 248508 | 17.3 | 20.8 | 95115 | 17.3 | 19.0 | 428038 | 17.4 | 21.0 | 463117 | 17.5 | 21.0 | 358383 | 17.6 | 20.3 |
| 246067 | 17.2 | 19.0 | 119581 | 17.3 | 19.3 | 153127 | 17.3 | 19.4 | 108089 | 17.4 | 18.2 | 528146 | 17.5 | 22.3 | 121155 | 17.6 | 18.9 |
| 502619 | 17.2 | 20.8 | 38297 | 17.3 | 18.2 | 482126 | 17.3 | 18.9 | 341354 | 17.4 | 19.6 | 21823 | 17.5 | 16.6 | 471492 | 17.6 | 20.0 |
| 106138 | 17.2 | 18.9 | 367135 | 17.3 | 19.7 | 288584 | 17.3 | 20.0 | 382096 | 17.4 | 20.3 | 37248 | 17.5 | 18.1 | 463133 | 17.6 | 20.2 |
| 432796 | 17.2 | 21.2 | 62601 | 17.3 | 18.8 | 102523 | 17.3 | 18.0 | 185189 | 17.4 | 19.5 | 380821 | 17.5 | 21.2 | 344533 | 17.6 | 19.1 |
| 353479 | 17.2 | 20.5 | 366304 | 17.3 | 21.6 | 239625 | 17.3 | 20.6 | 384098 | 17.4 | 20.9 | 510903 | 17.5 | 20.3 | 1454 | 17.6 | 16.2 |
| 437822 | 17.2 | 21.0 | 123590 | 17.3 | 19.6 | 7877 | 17.3 | 19.0 | 104927 | 17.4 | 18.7 | 419599 | 17.5 | 19.9 | 37328 | 17.6 | 17.7 |
| 83700 | 17.2 | 19.1 | 83447 | 17.3 | 17.9 | 121374 | 17.3 | 19.1 | 123081 | 17.4 | 18.8 | 275509 | 17.5 | 19.4 | 349400 | 17.6 | 20.2 |
| 446246 | 17.2 | 20.6 | 231310 | 17.3 | 20.0 | 349313 | 17.3 | 19.4 | 457683 | 17.4 | 21.7 | 65226 | 17.5 | 18.8 | 233789 | 17.6 | 20.2 |
| 346193 | 17.2 | 20.8 | 43691 | 17.3 | 19.3 | 52945 | 17.3 | 18.6 | 106978 | 17.4 | 19.9 | 471873 | 17.5 | 20.9 | 152344 | 17.6 | 19.1 |
| 507807 | 17.2 | 20.3 | 178062 | 17.3 | 20.4 | 436839 | 17.3 | 19.8 | 193099 | 17.4 | 19.2 | 153433 | 17.5 | 19.2 | 99063 | 17.6 | 19.4 |
| 73044 | 17.2 | 18.8 | 460408 | 17.3 | 21.6 | 361687 | 17.3 | 20.0 | 338155 | 17.4 | 20.4 | 159914 | 17.5 | 19.2 | 510613 | 17.6 | 20.5 |
| 536446 | 17.2 | 20.8 | 52482 | 17.3 | 18.1 | 404685 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 81314 | 17.6 | 17.7 | 371088 | 17.7 | 21.1 | 78642 | 17.8 | 18.8 | 54301 | 17.9 | 18.4 | 3079 | 17.9 | 18.1 | 109197 | 17.9 | 17.1 |
| 255255 | 17.6 | 20.5 | 248881 | 17.7 | 19.3 | 317907 | 17.8 | 19.1 | 521330 | 17.9 | 20.3 | 62826 | 17.9 | 17.8 | 480558 | 17.9 | 20.1 |
| 331523 | 17.6 | 18.5 | 152921 | 17.7 | 17.9 | 410413 | 17.8 | 19.7 | 539570 | 17.9 | 20.2 | 124259 | 17.9 | 18.2 | 167157 | 17.9 | 19.7 |
| 121598 | 17.6 | 19.7 | 156283 | 17.7 | 19.5 | 420526 | 17.8 | 21.2 | 333662 | 17.9 | 19.1 | 496909 | 17.9 | 20.1 | 502065 | 17.9 | 21.5 |
| 140455 | 17.6 | 18.9 | 370154 | 17.7 | 20.9 | 462079 | 17.8 | 20.9 | 334777 | 17.9 | 19.5 | 539505 | 17.9 | 21.3 | 352563 | 17.9 | 21.7 |
| 381521 | 17.6 | 20.4 | 470683 | 17.7 | 21.2 | 302836 | 17.8 | 20.8 | 523953 | 17.9 | 20.6 | 150620 | 17.9 | 20.4 | 81669 | 17.9 | 18.8 |
| 143420 | 17.6 | 19.4 | 100032 | 17.7 | 18.5 | 389263 | 17.8 | 20.3 | 380547 | 17.9 | 18.8 | 466120 | 17.9 | 22.3 | 464538 | 17.9 | 20.6 |
| 102781 | 17.6 | 18.9 | 543484 | 17.7 | 20.5 | 102438 | 17.8 | 18.2 | 139677 | 17.9 | 18.8 | 501247 | 17.9 | 20.4 | 52836 | 17.9 | 17.3 |
| 204983 | 17.6 | 20.7 | 368213 | 17.7 | 19.8 | 534590 | 17.8 | 20.8 | 441964 | 17.9 | 20.4 | 162534 | 17.9 | 18.2 | 363756 | 18.0 | 20.8 |
| 417362 | 17.6 | 20.7 | 4807 | 17.7 | 16.3 | 468481 | 17.8 | 22.1 | 439616 | 17.9 | 20.4 | 316054 | 17.9 | 20.1 | 31213 | 18.0 | 18.5 |
| 373626 | 17.6 | 21.4 | 128573 | 17.7 | 18.0 | 235914 | 17.8 | 20.6 | 407724 | 17.9 | 21.1 | 202757 | 17.9 | 18.8 | 175892 | 18.0 | 20.0 |
| 221175 | 17.6 | 19.3 | 403810 | 17.7 | 19.3 | 420018 | 17.8 | 20.6 | 297744 | 17.9 | 21.6 | 257565 | 17.9 | 19.2 | 308590 | 18.0 | 20.3 |
| 379280 | 17.6 | 19.8 | 104735 | 17.7 | 19.8 | 34213 | 17.8 | 18.4 | 107964 | 17.9 | 19.7 | 221318 | 17.9 | 18.9 | 68400 | 18.0 | 18.0 |
| 205477 | 17.6 | 18.7 | 507551 | 17.7 | 20.4 | 385506 | 17.8 | 20.1 | 213881 | 17.9 | 18.8 | 430831 | 17.9 | 18.7 | 218624 | 18.0 | 19.4 |
| 189290 | 17.6 | 20.7 | 234565 | 17.7 | 18.9 | 260086 | 17.8 | 20.5 | 151008 | 17.9 | 19.9 | 197617 | 17.9 | 19.3 | 333217 | 18.0 | 19.5 |
| 522533 | 17.6 | 20.8 | 504403 | 17.7 | 21.4 | 203713 | 17.8 | 19.7 | 69240 | 17.9 | 18.3 | 65087 | 17.9 | 18.2 | 49676 | 18.0 | 16.6 |
| 414786 | 17.6 | 20.5 | 19089 | 17.7 | 18.3 | 501086 | 17.8 | 20.0 | 106670 | 17.9 | 20.5 | 106222 | 17.9 | 19.0 | 411738 | 18.0 | 21.1 |
| 508110 | 17.6 | 20.4 | 494336 | 17.7 | 20.6 | 152892 | 17.8 | 18.2 | 428769 | 17.9 | 19.0 | 522239 | 17.9 | 20.3 | 401310 | 18.0 | 20.5 |
| 398608 | 17.6 | 20.6 | 140240 | 17.7 | 18.9 | 455714 | 17.8 | 20.7 | 539747 | 17.9 | 19.2 | 215861 | 17.9 | 19.7 | 400556 | 18.0 | 20.8 |
| 390512 | 17.6 | 19.6 | 504947 | 17.7 | 20.9 | 245143 | 17.8 | 18.9 | 313117 | 17.9 | 20.8 | 274491 | 17.9 | 19.0 | 416032 | 18.0 | 24.3 |
| 69478 | 17.6 | 19.2 | 310135 | 17.7 | 19.6 | 1274 | 17.8 | 14.4 | 233516 | 17.9 | 19.4 | 112707 | 17.9 | 19.4 | 518368 | 18.0 | 20.4 |
| 377744 | 17.6 | 21.5 | 221163 | 17.7 | 20.7 | 173004 | 17.8 | 19.4 | 308580 | 17.9 | 20.7 | 424050 | 17.9 | 19.4 | 369925 | 18.0 | 21.0 |
| 226048 | 17.6 | 20.0 | 28621 | 17.7 | 17.9 | 479189 | 17.8 | 21.6 | 14082 | 17.9 | 17.5 | 135434 | 17.9 | 19.6 | 428245 | 18.0 | 21.2 |
| 479072 | 17.6 | 19.9 | 291151 | 17.7 | 21.1 | 278745 | 17.8 | 19.7 | 179480 | 17.9 | 19.9 | 200712 | 17.9 | 20.0 | 538261 | 18.0 | 20.7 |
| 379344 | 17.6 | 20.1 | 510401 | 17.7 | 21.5 | 404607 | 17.8 | 20.5 | 383287 | 17.9 | 19.5 | 8109 | 17.9 | 18.0 | 286011 | 18.0 | 19.4 |
| 119571 | 17.6 | 19.6 | 394007 | 17.7 | 20.2 | 270395 | 17.8 | 19.8 | 529362 | 17.9 | 21.8 | 127368 | 17.9 | 20.0 | 341716 | 18.0 | 21.0 |
| 8372 | 17.6 | 17.2 | 529660 | 17.7 | 21.2 | 240273 | 17.8 | 20.6 | 156390 | 17.9 | 19.5 | 38489 | 17.9 | 18.1 | 229147 | 18.0 | 19.3 |
| 200261 | 17.6 | 19.8 | 149797 | 17.7 | 19.2 | 445016 | 17.8 | 21.7 | 230247 | 17.9 | 19.2 | 233786 | 17.9 | 19.4 | 44639 | 18.0 | 18.0 |
| 95287 | 17.6 | 18.9 | 275074 | 17.7 | 19.0 | 376290 | 17.8 | 20.0 | 394375 | 17.9 | 20.2 | 367946 | 17.9 | 18.6 | 309828 | 18.0 | 20.9 |
| 121064 | 17.6 | 19.8 | 371548 | 17.7 | 20.4 | 409388 | 17.8 | 21.0 | 1047 | 17.9 | 13.8 | 287621 | 17.9 | 19.3 | 507507 | 18.0 | 20.8 |
| 199300 | 17.6 | 19.1 | 118500 | 17.7 | 19.2 | 533412 | 17.8 | 20.5 | 316564 | 17.9 | 20.7 | 73010 | 17.9 | 18.5 | 258379 | 18.0 | 18.8 |
| 111812 | 17.6 | 19.5 | 404447 | 17.7 | 20.8 | 146813 | 17.8 | 19.1 | 56230 | 17.9 | 18.2 | 338696 | 17.9 | 19.1 | 131970 | 18.0 | 19.1 |
| 422488 | 17.6 | 19.4 | 245244 | 17.7 | 19.9 | 526225 | 17.8 | 21.8 | 133515 | 17.9 | 18.6 | 248682 | 17.9 | 19.3 | 273364 | 18.0 | 17.8 |
| 126306 | 17.6 | 20.0 | 525329 | 17.7 | 21.2 | 287096 | 17.8 | 19.1 | 93415 | 17.9 | 18.2 | 397684 | 17.9 | 21.6 | 214121 | 18.0 | 21.1 |
| 493591 | 17.6 | 21.0 | 188193 | 17.7 | 18.6 | 236696 | 17.8 | 18.9 | 475044 | 17.9 | 21.0 | 424057 | 17.9 | 20.5 | 31519 | 18.0 | 18.0 |
| 298853 | 17.6 | 18.7 | 288002 | 17.7 | 20.4 | 211802 | 17.8 | 19.9 | 424745 | 17.9 | 20.1 | 177078 | 17.9 | 20.5 | 201675 | 18.0 | 19.9 |
| 130646 | 17.6 | 18.4 | 88250 | 17.7 | 18.0 | 181201 | 17.8 | 19.4 | 495212 | 17.9 | 20.1 | 93735 | 17.9 | 18.6 | 297781 | 18.0 | 18.9 |
| 347494 | 17.6 | 21.5 | 470494 | 17.7 | 21.1 | 144783 | 17.8 | 18.7 | 211642 | 17.9 | 18.3 | 153874 | 17.9 | 19.6 | 158360 | 18.0 | 18.8 |
| 136902 | 17.6 | 20.3 | 92366 | 17.7 | 18.6 | 436740 | 17.8 | 20.0 | 186311 | 17.9 | 19.7 | 311964 | 17.9 | 20.2 | 242629 | 18.0 | 19.3 |
| 358858 | 17.6 | 21.5 | 12359 | 17.7 | 17.0 | 404183 | 17.8 | 20.4 | 60690 | 17.9 | 18.3 | 430755 | 17.9 | 19.5 | 254549 | 18.0 | 19.2 |
| 389752 | 17.6 | 20.4 | 23109 | 17.7 | 18.3 | 193064 | 17.8 | 20.2 | 166748 | 17.9 | 19.5 | 91918 | 17.9 | 19.9 | 325794 | 18.0 | 20.3 |
| 67117 | 17.6 | 17.4 | 62318 | 17.7 | 18.1 | 528534 | 17.8 | 21.4 | 303918 | 17.9 | 21.2 | 352679 | 17.9 | 20.9 | 259255 | 18.0 | 21.4 |
| 302448 | 17.6 | 20.6 | 130564 | 17.7 | 17.7 | 457664 | 17.8 | 20.7 | 338845 | 17.9 | 19.6 | 120119 | 17.9 | 19.5 | 78028 | 18.0 | 17.9 |
| 70773 | 17.6 | 19.0 | 13692 | 17.7 | 16.8 | 205853 | 17.8 | 20.7 | 426533 | 17.9 | 20.9 | 95356 | 17.9 | 19.1 | 166789 | 18.0 | 19.5 |
| 23139 | 17.6 | 16.9 | 201718 | 17.7 | 19.7 | 207320 | 17.8 | 20.0 | 459042 | 17.9 | 19.5 | 230093 | 17.9 | 20.7 | 35343 | 18.0 | 18.8 |
| 21766 | 17.6 | 16.2 | 336719 | 17.7 | 19.9 | 109873 | 17.8 | 18.4 | 439426 | 17.9 | 19.6 | 28028 | 17.9 | 17.5 | 505885 | 18.0 | 20.4 |
| 179428 | 17.6 | 19.3 | 417620 | 17.7 | 20.1 | 498669 | 17.8 | 20.2 | 165459 | 17.9 | 20.2 | 27756 | 17.9 | 17.0 | 229615 | 18.0 | 21.6 |
| 7418 | 17.6 | 16.4 | 197767 | 17.7 | 18.3 | 60714 | 17.8 | 17.1 | 395301 | 17.9 | 19.8 | 150092 | 17.9 | 19.5 | 312052 | 18.0 | 19.3 |
| 209917 | 17.6 | 19.6 | 122529 | 17.7 | 17.9 | 380320 | 17.8 | 20.7 | 115214 | 17.9 | 19.8 | 11517 | 17.9 | 18.2 | 423545 | 18.0 | 21.7 |
| 101831 | 17.6 | 18.9 | 119664 | 17.7 | 19.4 | 275425 | 17.8 | 20.0 | 456101 | 17.9 | 21.6 | 370139 | 17.9 | 19.5 | 159636 | 18.0 | 19.1 |
| 90740 | 17.6 | 19.6 | 72969 | 17.7 | 17.2 | 425867 | 17.8 | 20.6 | 342832 | 17.9 | 20.8 | 202870 | 17.9 | 19.9 | 434334 | 18.0 | 19.8 |
| 241930 | 17.6 | 19.5 | 304628 | 17.7 | 20.1 | 11536 | 17.8 | 17.2 | 440714 | 17.9 | 21.0 | 212956 | 17.9 | 19.9 | 238843 | 18.0 | 20.6 |
| 530267 | 17.6 | 22.6 | 36448 | 17.7 | 17.4 | 280393 | 17.8 | 19.2 | 93207 | 17.9 | 18.7 | 303816 | 17.9 | 21.0 | 302008 | 18.0 | 19.7 |
| 151726 | 17.6 | 19.0 | 83468 | 17.7 | 18.7 | 489790 | 17.8 | 21.5 | 305522 | 17.9 | 19.8 | 275728 | 17.9 | 20.0 | 158074 | 18.0 | 19.1 |
| 338895 | 17.7 | 19.5 | 285185 | 17.7 | 21.6 | 270394 | 17.8 | 20.1 | 453241 | 17.9 | 20.4 | 122181 | 17.9 | 16.8 | 296291 | 18.0 | 20.9 |
| 97865 | 17.7 | 17.5 | 230920 | 17.7 | 20.1 | 56250 | 17.8 | 18.4 | 191662 | 17.9 | 17.6 | 285805 | 17.9 | 20.3 | 236997 | 18.0 | 18.1 |
| 55891 | 17.7 | 18.4 | 181184 | 17.7 | 20.0 | 342313 | 17.8 | 19.5 | 57439 | 17.9 | 18.6 | 419759 | 17.9 | 19.5 | 279699 | 18.0 | 20.6 |
| 404149 | 17.7 | 20.5 | 238888 | 17.7 | 20.2 | 101570 | 17.8 | 18.6 | 419597 | 17.9 | 20.1 | 229102 | 17.9 | 19.3 | 20344 | 18.0 | 19.0 |
| 375899 | 17.7 | 19.4 | 210024 | 17.7 | 18.6 | 204584 | 17.8 | 19.8 | 229197 | 17.9 | 19.2 | 35264 | 17.9 | 16.7 | 357994 | 18.1 | 20.2 |
| 503936 | 17.7 | 19.8 | 391373 | 17.7 | 20.9 | 3592 | 17.8 | 17.2 | 436906 | 17.9 | 20.2 | 453004 | 17.9 | 19.4 | 393068 | 18.1 | 19.0 |
| 289668 | 17.7 | 20.3 | 276966 | 17.7 | 19.3 | 398015 | 17.8 | 20.5 | 179846 | 17.9 | 19.2 | 306431 | 17.9 | 21.3 | 133892 | 18.1 | 19.7 |
| 505142 | 17.7 | 20.0 | 301021 | 17.7 | 19.2 | 510496 | 17.8 | 20.4 | 309797 | 17.9 | 19.5 | 270119 | 17.9 | 18.7 | 387439 | 18.1 | 20.0 |
| 249640 | 17.7 | 19.6 | 538154 | 17.7 | 20.4 | 352082 | 17.8 | 21.4 | 36516 | 17.9 | 18.0 | 459587 | 17.9 | 20.6 | 179411 | 18.1 | 19.9 |
| 529414 | 17.7 | 21.5 | 7763 | 17.7 | 16.3 | 295087 | 17.8 | 20.1 | 7724 | 17.9 | 15.0 | 199670 | 17.9 | 19.5 | 380451 | 18.1 | 20.4 |
| 55367 | 17.7 | 19.1 | 478303 | 17.7 | 20.9 | 365448 | 17.8 | 20.0 | 506831 | 17.9 | 20.8 | 475836 | 17.9 | 19.7 | 7151 | 18.1 | 16.5 |
| 249751 | 17.7 | 19.6 | 28926 | 17.7 | 16.9 | 131208 | 17.8 | 19.3 | 41952 | 17.9 | 18.9 | 436354 | 17.9 | 19.6 | 102663 | 18.1 | 19.7 |
| 178158 | 17.7 | 19.9 | 536407 | 17.7 | 20.9 | 502215 | 17.8 | 20.1 | 258495 | 17.9 | 20.5 | 423722 | 17.9 | 21.3 | 381577 | 18.1 | 21.0 |
| 508665 | 17.7 | 20.0 | 204827 | 17.7 | 18.6 | 109763 | 17.8 | 18.0 | 369981 | 17.9 | 19.9 | 56275 | 17.9 | 18.1 | 119360 | 18.1 | 18.7 |
| 70288 | 17.7 | 17.5 | 65518 | 17.7 | 19.1 | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 140453 | 18.1 | 18.6 | 533779 | 18.1 | 21.1 | 530693 | 18.2 | 19.2 | 370130 | 18.3 | 18.8 | 86245 | 18.4 | 18.5 | 34169 | 18.5 | 18.8 |
| 389851 | 18.1 | 20.7 | 338321 | 18.1 | 20.4 | 142781 | 18.2 | 19.8 | 71927 | 18.3 | 19.1 | 301824 | 18.4 | 20.4 | 237345 | 18.5 | 19.9 |
| 129401 | 18.1 | 18.4 | 264427 | 18.1 | 18.7 | 92404 | 18.2 | 17.9 | 373615 | 18.3 | 20.2 | 528878 | 18.4 | 20.5 | 38205 | 18.5 | 16.3 |
| 69237 | 18.1 | 17.6 | 128441 | 18.1 | 18.5 | 231120 | 18.2 | 20.1 | 364729 | 18.3 | 20.3 | 468827 | 18.4 | 20.4 | 53539 | 18.5 | 19.1 |
| 281596 | 18.1 | 20.0 | 215967 | 18.1 | 20.2 | 421239 | 18.2 | 20.3 | 241429 | 18.3 | 20.1 | 490120 | 18.4 | 20.7 | 504540 | 18.5 | 20.5 |
| 304650 | 18.1 | 20.1 | 393553 | 18.1 | 21.6 | 158071 | 18.2 | 19.8 | 109006 | 18.3 | 19.4 | 94588 | 18.4 | 18.7 | 526693 | 18.5 | 20.5 |
| 455728 | 18.1 | 21.0 | 140889 | 18.1 | 19.8 | 363761 | 18.2 | 20.3 | 30782 | 18.3 | 18.8 | 499230 | 18.4 | 21.1 | 411865 | 18.5 | 21.5 |
| 343372 | 18.1 | 19.9 | 403859 | 18.1 | 20.5 | 312714 | 18.2 | 19.5 | 365202 | 18.3 | 20.4 | 505526 | 18.4 | 21.7 | 203354 | 18.5 | 19.8 |
| 451934 | 18.1 | 20.2 | 90798 | 18.1 | 19.0 | 488561 | 18.2 | 19.9 | 411317 | 18.3 | 21.3 | 292995 | 18.4 | 20.6 | 296889 | 18.5 | 19.9 |
| 185357 | 18.1 | 20.1 | 392581 | 18.2 | 20.7 | 105945 | 18.2 | 18.8 | 478197 | 18.3 | 21.2 | 468197 | 18.4 | 20.7 | 149442 | 18.5 | 20.5 |
| 365194 | 18.1 | 20.5 | 522615 | 18.2 | 21.0 | 378315 | 18.2 | 20.1 | 123338 | 18.3 | 18.9 | 398777 | 18.4 | 20.3 | 177112 | 18.5 | 20.1 |
| 502548 | 18.1 | 20.1 | 417800 | 18.2 | 22.3 | 18880 | 18.2 | 18.5 | 513666 | 18.3 | 21.6 | 123630 | 18.4 | 19.1 | 430291 | 18.5 | 20.4 |
| 37443 | 18.1 | 17.8 | 93914 | 18.2 | 18.9 | 312748 | 18.2 | 21.2 | 373486 | 18.3 | 20.0 | 540633 | 18.4 | 19.9 | 406857 | 18.5 | 21.2 |
| 57453 | 18.1 | 17.4 | 468580 | 18.2 | 19.7 | 148882 | 18.2 | 19.8 | 307934 | 18.3 | 19.5 | 199674 | 18.4 | 19.8 | 141158 | 18.5 | 20.0 |
| 24270 | 18.1 | 16.8 | 302374 | 18.2 | 20.9 | 287763 | 18.2 | 19.7 | 263102 | 18.3 | 20.6 | 304701 | 18.4 | 20.5 | 134677 | 18.5 | 18.3 |
| 290325 | 18.1 | 20.0 | 290365 | 18.2 | 19.7 | 6672 | 18.2 | 16.5 | 98797 | 18.3 | 19.4 | 352072 | 18.4 | 21.5 | 472818 | 18.5 | 20.2 |
| 141090 | 18.1 | 20.1 | 497147 | 18.2 | 19.0 | 529553 | 18.2 | 21.6 | 479054 | 18.3 | 21.2 | 495932 | 18.4 | 20.9 | 15722 | 18.5 | 16.5 |
| 346155 | 18.1 | 20.7 | 329361 | 18.2 | 19.2 | 232625 | 18.2 | 19.7 | 498779 | 18.3 | 21.1 | 344671 | 18.4 | 19.4 | 100367 | 18.5 | 18.7 |
| 151162 | 18.1 | 18.9 | 536537 | 18.2 | 20.6 | 169592 | 18.2 | 19.2 | 230049 | 18.3 | 20.1 | 365844 | 18.4 | 20.9 | 93963 | 18.5 | 19.0 |
| 430703 | 18.1 | 20.0 | 273277 | 18.2 | 19.5 | 222761 | 18.2 | 19.6 | 390617 | 18.3 | 20.6 | 211982 | 18.4 | 20.8 | 106655 | 18.5 | 18.2 |
| 305479 | 18.1 | 20.9 | 381835 | 18.2 | 20.3 | 24264 | 18.2 | 18.2 | 228222 | 18.3 | 20.7 | 111352 | 18.4 | 19.1 | 272503 | 18.5 | 19.5 |
| 449561 | 18.1 | 20.6 | 463235 | 18.2 | 22.0 | 13445 | 18.2 | 17.6 | 357859 | 18.3 | 21.4 | 307167 | 18.4 | 19.7 | 225922 | 18.5 | 20.7 |
| 475524 | 18.1 | 20.0 | 673 | 18.2 | 13.9 | 121411 | 18.2 | 19.5 | 343669 | 18.3 | 21.1 | 62660 | 18.4 | 19.4 | 423649 | 18.5 | 19.6 |
| 456207 | 18.1 | 21.1 | 254484 | 18.2 | 20.3 | 429979 | 18.2 | 19.1 | 23814 | 18.3 | 17.4 | 146133 | 18.4 | 18.3 | 381503 | 18.5 | 20.6 |
| 192943 | 18.1 | 21.0 | 142357 | 18.2 | 19.1 | 1491 | 18.3 | 16.4 | 310496 | 18.3 | 19.5 | 504658 | 18.4 | 20.5 | 89277 | 18.5 | 18.6 |
| 436965 | 18.1 | 21.1 | 61118 | 18.2 | 16.4 | 560 | 18.3 | 15.4 | 54432 | 18.3 | 15.7 | 323436 | 18.4 | 19.6 | 475630 | 18.5 | 21.5 |
| 96797 | 18.1 | 18.5 | 407884 | 18.2 | 20.6 | 179578 | 18.3 | 19.0 | 211170 | 18.3 | 18.8 | 224228 | 18.4 | 19.8 | 281593 | 18.5 | 19.9 |
| 147942 | 18.1 | 18.6 | 117906 | 18.2 | 18.3 | 85588 | 18.3 | 16.7 | 414462 | 18.3 | 21.1 | 304526 | 18.4 | 20.6 | 302355 | 18.5 | 21.1 |
| 192441 | 18.1 | 17.3 | 234468 | 18.2 | 19.3 | 257707 | 18.3 | 19.7 | 330011 | 18.3 | 19.8 | 105629 | 18.4 | 18.8 | 73386 | 18.5 | 18.9 |
| 245812 | 18.1 | 19.2 | 300404 | 18.2 | 20.0 | 93463 | 18.3 | 18.8 | 499946 | 18.3 | 20.3 | 192730 | 18.4 | 18.8 | 11813 | 18.5 | 17.8 |
| 154785 | 18.1 | 18.7 | 266362 | 18.2 | 20.5 | 230369 | 18.3 | 20.5 | 384037 | 18.3 | 20.8 | 428738 | 18.4 | 20.6 | 505997 | 18.5 | 20.8 |
| 59614 | 18.1 | 18.9 | 129876 | 18.2 | 18.1 | 244722 | 18.3 | 18.5 | 217933 | 18.3 | 19.3 | 64923 | 18.4 | 19.0 | 373514 | 18.5 | 20.3 |
| 70711 | 18.1 | 18.4 | 126685 | 18.2 | 19.5 | 242417 | 18.3 | 18.1 | 411613 | 18.3 | 20.7 | 140468 | 18.4 | 18.6 | 32044 | 18.5 | 16.6 |
| 355169 | 18.1 | 22.2 | 527091 | 18.2 | 20.1 | 248158 | 18.3 | 19.8 | 196946 | 18.3 | 19.1 | 2144 | 18.4 | 15.2 | 212658 | 18.5 | 19.2 |
| 153665 | 18.1 | 20.2 | 311402 | 18.2 | 20.5 | 390965 | 18.3 | 19.8 | 30578 | 18.3 | 17.6 | 422598 | 18.4 | 20.8 | 209595 | 18.5 | 19.6 |
| 119366 | 18.1 | 19.6 | 72219 | 18.2 | 18.9 | 496888 | 18.3 | 20.4 | 158444 | 18.3 | 19.7 | 468753 | 18.4 | 20.8 | 251517 | 18.5 | 20.0 |
| 274538 | 18.1 | 19.4 | 336857 | 18.2 | 19.9 | 488315 | 18.3 | 20.6 | 435634 | 18.3 | 18.9 | 143883 | 18.4 | 20.2 | 1990 | 18.5 | 15.4 |
| 99731 | 18.1 | 19.7 | 150977 | 18.2 | 19.5 | 410330 | 18.3 | 21.0 | 250285 | 18.3 | 19.3 | 352561 | 18.4 | 19.7 | 63044 | 18.5 | 17.1 |
| 385491 | 18.1 | 21.5 | 164530 | 18.2 | 18.4 | 475540 | 18.3 | 20.9 | 145508 | 18.3 | 19.3 | 61627 | 18.4 | 17.7 | 362696 | 18.5 | 19.8 |
| 379307 | 18.1 | 20.0 | 525716 | 18.2 | 19.3 | 80038 | 18.3 | 17.8 | 169537 | 18.3 | 18.9 | 134646 | 18.4 | 19.1 | 344048 | 18.5 | 19.5 |
| 16114 | 18.1 | 16.1 | 336379 | 18.2 | 20.4 | 19121 | 18.3 | 19.5 | 83314 | 18.3 | 18.8 | 1892 | 18.4 | 15.0 | 362751 | 18.5 | 19.8 |
| 208680 | 18.1 | 19.7 | 72508 | 18.2 | 19.5 | 536021 | 18.3 | 20.7 | 470456 | 18.4 | 21.1 | 518615 | 18.4 | 20.0 | 240148 | 18.5 | 19.6 |
| 421285 | 18.1 | 21.1 | 475224 | 18.2 | 20.8 | 446602 | 18.3 | 20.1 | 135201 | 18.4 | 18.8 | 457679 | 18.4 | 21.8 | 478226 | 18.5 | 20.6 |
| 439194 | 18.1 | 20.8 | 150665 | 18.2 | 19.2 | 414466 | 18.3 | 20.6 | 182809 | 18.4 | 20.5 | 235904 | 18.4 | 19.8 | 370988 | 18.5 | 20.2 |
| 342261 | 18.1 | 19.4 | 74202 | 18.2 | 17.5 | 334736 | 18.3 | 16.9 | 28914 | 18.4 | 18.2 | 454605 | 18.4 | 20.0 | 178757 | 18.5 | 19.0 |
| 504543 | 18.1 | 20.8 | 334746 | 18.2 | 19.2 | 98099 | 18.3 | 17.7 | 297690 | 18.4 | 20.4 | 167704 | 18.4 | 20.1 | 245941 | 18.5 | 19.9 |
| 160305 | 18.1 | 20.2 | 249656 | 18.2 | 19.3 | 191143 | 18.3 | 18.8 | 140790 | 18.4 | 19.2 | 205743 | 18.4 | 20.2 | 178584 | 18.5 | 19.2 |
| 120912 | 18.1 | 17.7 | 399953 | 18.2 | 21.0 | 497404 | 18.3 | 20.8 | 301395 | 18.4 | 21.3 | 246151 | 18.4 | 19.0 | 382241 | 18.5 | 20.7 |
| 146872 | 18.1 | 20.4 | 427955 | 18.2 | 20.9 | 485848 | 18.3 | 20.4 | 248353 | 18.4 | 19.4 | 462208 | 18.4 | 21.7 | 480615 | 18.5 | 20.2 |
| 516177 | 18.1 | 21.7 | 497510 | 18.2 | 20.2 | 511669 | 18.3 | 21.1 | 477711 | 18.4 | 20.5 | 465715 | 18.4 | 19.8 | 90490 | 18.5 | 19.3 |
| 501546 | 18.1 | 20.6 | 309236 | 18.2 | 19.3 | 398453 | 18.3 | 18.7 | 100309 | 18.4 | 19.6 | 467501 | 18.4 | 20.7 | 346728 | 18.5 | 21.2 |
| 42941 | 18.1 | 18.5 | 310041 | 18.2 | 18.9 | 519689 | 18.3 | 20.5 | 208683 | 18.4 | 19.6 | 529830 | 18.4 | 20.1 | 314122 | 18.5 | 20.3 |
| 315355 | 18.1 | 20.5 | 135388 | 18.2 | 18.3 | 467307 | 18.3 | 20.9 | 64481 | 18.4 | 17.9 | 354730 | 18.4 | 20.3 | 377827 | 18.5 | 20.7 |
| 465416 | 18.1 | 20.0 | 27664 | 18.2 | 16.8 | 199380 | 18.3 | 20.0 | 320589 | 18.4 | 20.8 | 504561 | 18.4 | 21.8 | 134699 | 18.5 | 18.2 |
| 40492 | 18.1 | 17.4 | 225948 | 18.2 | 20.1 | 6141 | 18.3 | 16.3 | 534995 | 18.4 | 20.7 | 427573 | 18.4 | 20.6 | 377796 | 18.5 | 21.6 |
| 281939 | 18.1 | 20.5 | 477614 | 18.2 | 19.1 | 142274 | 18.3 | 19.4 | 110406 | 18.4 | 19.5 | 308360 | 18.4 | 19.2 | 409943 | 18.5 | 19.9 |
| 43633 | 18.1 | 18.1 | 165317 | 18.2 | 19.7 | 133328 | 18.3 | 19.4 | 506333 | 18.4 | 19.4 | 338714 | 18.4 | 20.6 | 64378 | 18.5 | 19.8 |
| 250937 | 18.1 | 20.6 | 59776 | 18.2 | 18.0 | 251906 | 18.3 | 20.6 | 298315 | 18.4 | 20.6 | 5697 | 18.4 | 16.8 | 31285 | 18.5 | 18.7 |
| 303259 | 18.1 | 19.4 | 128404 | 18.2 | 17.6 | 410341 | 18.3 | 20.9 | 371601 | 18.4 | 20.9 | 459540 | 18.4 | 21.7 | 379437 | 18.5 | 19.5 |
| 462189 | 18.1 | 21.6 | 373314 | 18.2 | 20.6 | 459056 | 18.3 | 20.7 | 210471 | 18.4 | 19.2 | 278269 | 18.4 | 21.6 | 480491 | 18.5 | 20.3 |
| 449663 | 18.1 | 19.8 | 103784 | 18.2 | 18.8 | 98846 | 18.3 | 19.2 | 419564 | 18.4 | 19.2 | 356713 | 18.4 | 17.7 | 278397 | 18.5 | 18.3 |
| 312542 | 18.1 | 20.1 | 521260 | 18.2 | 20.3 | 192682 | 18.3 | 19.6 | 365166 | 18.4 | 20.0 | 137155 | 18.4 | 20.6 | 133354 | 18.5 | 18.6 |
| 428900 | 18.1 | 20.2 | 91965 | 18.2 | 19.0 | 40766 | 18.3 | 17.8 | 149747 | 18.4 | 18.8 | 476361 | 18.4 | 20.7 | 198330 | 18.5 | 20.4 |
| 360760 | 18.1 | 19.5 | 216014 | 18.2 | 18.5 | 346701 | 18.3 | 20.2 | 46341 | 18.4 | 19.0 | 147835 | 18.4 | 20.3 | 308148 | 18.5 | 20.4 |
| 533309 | 18.1 | 20.5 | 305380 | 18.2 | 20.6 | 235259 | 18.3 | 20.8 | 500971 | 18.4 | 20.7 | 143585 | 18.4 | 19.4 | 308499 | 18.5 | 20.9 |
| 303723 | 18.1 | 19.9 | 505265 | 18.2 | 21.1 | 144831 | 18.3 | 20.2 | 478010 | 18.4 | 20.4 | 229983 | 18.4 | 20.5 | 520310 | 18.5 | 20.2 |
| 362094 | 18.1 | 21.1 | 316677 | 18.2 | 21.1 | 283480 | 18.3 | 19.6 | 421712 | 18.4 | 19.4 | 123727 | 18.4 | 18.5 | 131347 | 18.5 | 19.2 |
| 502848 | 18.1 | 20.4 | 375040 | 18.2 | 20.7 | 150856 | 18.3 | 19.2 | 491269 | 18.4 | 18.5 | 110568 | 18.4 | 19.4 | 530414 | 18.5 | 22.3 |
| 182599 | 18.1 | 18.1 | 479782 | 18.2 | 20.6 | 209534 | 1 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 236503 | 18.5 | 20.0 | 18448 | 18.6 | 17.1 | 56206 | 18.7 | 18.0 | 235299 | 18.8 | 19.7 | 480575 | 18.9 | 21.3 | 202465 | 18.9 | 20.9 |
| 46535 | 18.5 | 19.2 | 480255 | 18.6 | 21.0 | 525915 | 18.7 | 20.1 | 524085 | 18.8 | 20.1 | 355192 | 18.9 | 21.4 | 130024 | 18.9 | 19.1 |
| 245964 | 18.6 | 19.3 | 51847 | 18.6 | 17.8 | 353275 | 18.7 | 20.3 | 217156 | 18.8 | 19.5 | 508716 | 18.9 | 20.2 | 469833 | 18.9 | 20.2 |
| 420595 | 18.6 | 19.5 | 312049 | 18.6 | 20.5 | 497901 | 18.7 | 20.1 | 287995 | 18.8 | 19.4 | 394336 | 18.9 | 20.8 | 374888 | 18.9 | 21.7 |
| 371533 | 18.6 | 19.9 | 29756 | 18.6 | 18.0 | 348870 | 18.7 | 20.4 | 237200 | 18.8 | 21.3 | 470399 | 18.9 | 21.3 | 538621 | 18.9 | 21.8 |
| 499224 | 18.6 | 19.3 | 262435 | 18.6 | 19.3 | 8287 | 18.7 | 16.8 | 446570 | 18.8 | 20.4 | 344836 | 18.9 | 20.3 | 282760 | 18.9 | 21.0 |
| 244205 | 18.6 | 19.3 | 257573 | 18.6 | 20.9 | 121602 | 18.7 | 20.3 | 254464 | 18.8 | 19.3 | 148403 | 18.9 | 19.9 | 54280 | 18.9 | 17.6 |
| 147766 | 18.6 | 19.2 | 109902 | 18.6 | 18.6 | 470072 | 18.7 | 20.5 | 203418 | 18.8 | 19.3 | 531032 | 18.9 | 20.4 | 459776 | 18.9 | 20.5 |
| 337061 | 18.6 | 20.4 | 289433 | 18.6 | 20.0 | 171028 | 18.7 | 18.7 | 414787 | 18.8 | 19.7 | 198010 | 18.9 | 19.0 | 259102 | 18.9 | 20.2 |
| 1895 | 18.6 | 17.1 | 475849 | 18.6 | 19.4 | 359741 | 18.7 | 20.9 | 384474 | 18.8 | 20.5 | 33300 | 18.9 | 18.7 | 77019 | 18.9 | 19.4 |
| 512445 | 18.6 | 21.0 | 368447 | 18.6 | 20.5 | 90848 | 18.7 | 19.3 | 454106 | 18.8 | 20.0 | 167603 | 18.9 | 20.2 | 286134 | 18.9 | 19.8 |
| 192635 | 18.6 | 19.6 | 49092 | 18.6 | 18.2 | 255040 | 18.7 | 19.6 | 86415 | 18.8 | 18.7 | 59799 | 18.9 | 17.9 | 480798 | 18.9 | 20.1 |
| 335589 | 18.6 | 20.0 | 42978 | 18.6 | 18.8 | 163307 | 18.7 | 18.3 | 93525 | 18.8 | 19.0 | 540636 | 18.9 | 21.0 | 67593 | 18.9 | 18.9 |
| 85280 | 18.6 | 17.7 | 283148 | 18.6 | 19.5 | 382786 | 18.7 | 20.4 | 527423 | 18.8 | 21.4 | 168671 | 18.9 | 19.9 | 224342 | 18.9 | 19.1 |
| 353654 | 18.6 | 19.9 | 129255 | 18.6 | 18.7 | 423499 | 18.7 | 21.1 | 222815 | 18.8 | 20.0 | 196477 | 18.9 | 19.7 | 331935 | 18.9 | 20.5 |
| 302317 | 18.6 | 20.3 | 110041 | 18.6 | 19.1 | 394312 | 18.7 | 21.3 | 525333 | 18.8 | 21.0 | 187393 | 18.9 | 18.2 | 521165 | 18.9 | 20.7 |
| 272861 | 18.6 | 19.7 | 283195 | 18.6 | 20.4 | 224915 | 18.7 | 20.9 | 475815 | 18.8 | 20.6 | 311386 | 18.9 | 21.1 | 505146 | 18.9 | 20.1 |
| 99067 | 18.6 | 19.0 | 418365 | 18.6 | 19.8 | 414806 | 18.7 | 20.3 | 439704 | 18.8 | 20.9 | 338777 | 18.9 | 20.2 | 202232 | 18.9 | 18.8 |
| 51788 | 18.6 | 18.8 | 65032 | 18.6 | 19.2 | 470232 | 18.7 | 20.9 | 454430 | 18.8 | 19.9 | 118236 | 18.9 | 19.1 | 419003 | 18.9 | 19.7 |
| 74285 | 18.6 | 17.5 | 479595 | 18.6 | 20.6 | 55855 | 18.7 | 18.5 | 539139 | 18.8 | 20.5 | 401442 | 18.9 | 19.4 | 501637 | 18.9 | 21.3 |
| 149937 | 18.6 | 19.1 | 87914 | 18.6 | 17.7 | 416041 | 18.7 | 21.0 | 144651 | 18.8 | 20.3 | 277491 | 18.9 | 19.6 | 184121 | 18.9 | 19.2 |
| 387644 | 18.6 | 19.9 | 248502 | 18.6 | 19.1 | 243069 | 18.7 | 20.5 | 476093 | 18.8 | 24.5 | 118436 | 18.9 | 19.6 | 396197 | 18.9 | 20.4 |
| 14502 | 18.6 | 18.8 | 522162 | 18.6 | 21.6 | 491890 | 18.7 | 20.8 | 527816 | 18.8 | 22.4 | 78692 | 18.9 | 17.8 | 140521 | 18.9 | 18.9 |
| 15332 | 18.6 | 16.8 | 379411 | 18.6 | 20.3 | 315288 | 18.7 | 20.6 | 64380 | 18.8 | 19.2 | 199554 | 18.9 | 19.8 | 240474 | 18.9 | 20.1 |
| 228767 | 18.6 | 19.0 | 62928 | 18.6 | 19.4 | 335607 | 18.7 | 20.0 | 146233 | 18.8 | 19.3 | 37015 | 18.9 | 19.1 | 129411 | 18.9 | 18.9 |
| 293031 | 18.6 | 21.7 | 102268 | 18.6 | 20.2 | 295858 | 18.7 | 20.6 | 49219 | 18.8 | 18.1 | 309240 | 18.9 | 19.9 | 62220 | 18.9 | 18.3 |
| 203797 | 18.6 | 19.6 | 533933 | 18.6 | 21.5 | 424179 | 18.7 | 19.7 | 299507 | 18.8 | 19.7 | 304542 | 18.9 | 20.2 | 119453 | 18.9 | 18.8 |
| 63183 | 18.6 | 18.8 | 379624 | 18.6 | 20.9 | 248022 | 18.7 | 19.2 | 59851 | 18.8 | 18.2 | 180459 | 18.9 | 20.5 | 377451 | 18.9 | 21.6 |
| 26214 | 18.6 | 18.0 | 459910 | 18.6 | 19.0 | 299856 | 18.7 | 22.1 | 368699 | 18.8 | 18.8 | 269973 | 18.9 | 20.3 | 14112 | 18.9 | 17.3 |
| 416251 | 18.6 | 21.0 | 102234 | 18.6 | 18.0 | 527087 | 18.7 | 20.0 | 94554 | 18.8 | 18.1 | 506518 | 18.9 | 20.6 | 397581 | 18.9 | 19.9 |
| 360092 | 18.6 | 21.5 | 312745 | 18.6 | 20.5 | 302446 | 18.7 | 20.4 | 479943 | 18.8 | 21.6 | 404849 | 18.9 | 20.8 | 520009 | 18.9 | 20.9 |
| 121273 | 18.6 | 19.8 | 114680 | 18.6 | 19.5 | 477997 | 18.7 | 21.0 | 299763 | 18.8 | 19.0 | 370114 | 18.9 | 20.9 | 351463 | 18.9 | 19.4 |
| 270392 | 18.6 | 19.7 | 377865 | 18.7 | 20.9 | 530184 | 18.7 | 22.6 | 351960 | 18.8 | 20.2 | 412997 | 18.9 | 20.6 | 341144 | 18.9 | 18.4 |
| 349028 | 18.6 | 21.2 | 217911 | 18.7 | 19.8 | 176458 | 18.7 | 20.0 | 76306 | 18.8 | 19.5 | 21261 | 18.9 | 17.4 | 292193 | 18.9 | 20.0 |
| 393876 | 18.6 | 20.2 | 540424 | 18.7 | 19.4 | 298756 | 18.7 | 19.8 | 190190 | 18.8 | 19.1 | 266367 | 18.9 | 19.8 | 239717 | 18.9 | 19.3 |
| 422915 | 18.6 | 20.5 | 175918 | 18.7 | 20.0 | 356312 | 18.7 | 19.3 | 111850 | 18.8 | 19.8 | 479213 | 18.9 | 20.5 | 397152 | 18.9 | 20.4 |
| 214467 | 18.6 | 19.6 | 105849 | 18.7 | 19.1 | 44575 | 18.7 | 18.2 | 538210 | 18.8 | 21.4 | 173324 | 18.9 | 20.1 | 381507 | 18.9 | 20.6 |
| 312189 | 18.6 | 20.5 | 130164 | 18.7 | 18.4 | 109063 | 18.7 | 17.6 | 150701 | 18.8 | 18.8 | 248328 | 18.9 | 19.3 | 106513 | 18.9 | 19.6 |
| 68178 | 18.6 | 17.3 | 235318 | 18.7 | 20.0 | 265791 | 18.7 | 18.7 | 242754 | 18.8 | 18.9 | 80000 | 18.9 | 17.5 | 309891 | 18.9 | 20.0 |
| 58381 | 18.6 | 19.3 | 501754 | 18.7 | 21.1 | 512534 | 18.7 | 21.1 | 329584 | 18.8 | 20.9 | 2879 | 18.9 | 16.2 | 517571 | 18.9 | 20.6 |
| 297649 | 18.6 | 20.0 | 97261 | 18.7 | 19.1 | 91629 | 18.7 | 19.1 | 354335 | 18.8 | 19.5 | 463161 | 18.9 | 21.0 | 397310 | 18.9 | 20.5 |
| 362964 | 18.6 | 19.8 | 336513 | 18.7 | 18.9 | 147357 | 18.7 | 20.5 | 293346 | 18.8 | 20.2 | 338131 | 18.9 | 19.7 | 499787 | 18.9 | 21.1 |
| 540862 | 18.6 | 20.5 | 217037 | 18.7 | 18.4 | 528415 | 18.7 | 21.4 | 206741 | 18.8 | 20.0 | 477677 | 18.9 | 20.5 | 179562 | 18.9 | 19.9 |
| 381541 | 18.6 | 20.2 | 262958 | 18.7 | 19.8 | 275944 | 18.7 | 22.0 | 65153 | 18.8 | 18.9 | 536693 | 18.9 | 22.1 | 533485 | 18.9 | 21.1 |
| 537912 | 18.6 | 20.4 | 224750 | 18.7 | 19.5 | 311487 | 18.7 | 21.1 | 94788 | 18.8 | 20.0 | 356847 | 18.9 | 21.0 | 230119 | 18.9 | 19.8 |
| 108871 | 18.6 | 18.2 | 399055 | 18.7 | 19.9 | 280389 | 18.7 | 19.7 | 389244 | 18.8 | 20.3 | 62613 | 18.9 | 19.0 | 247166 | 18.9 | 19.8 |
| 375660 | 18.6 | 19.8 | 282345 | 18.7 | 20.0 | 96903 | 18.7 | 19.8 | 295967 | 18.8 | 19.8 | 138840 | 18.9 | 19.2 | 446999 | 18.9 | 21.8 |
| 252999 | 18.6 | 19.5 | 392100 | 18.7 | 21.0 | 180676 | 18.7 | 19.5 | 533931 | 18.8 | 20.6 | 88750 | 18.9 | 17.5 | 501864 | 18.9 | 21.1 |
| 154870 | 18.6 | 19.4 | 280988 | 18.7 | 20.1 | 430 | 18.7 | 15.2 | 146956 | 18.8 | 19.9 | 121539 | 18.9 | 18.7 | 130901 | 18.9 | 20.0 |
| 156911 | 18.6 | 18.9 | 371703 | 18.7 | 19.9 | 90272 | 18.7 | 19.2 | 302394 | 18.8 | 20.4 | 282009 | 18.9 | 19.7 | 266894 | 18.9 | 20.0 |
| 38645 | 18.6 | 17.1 | 508477 | 18.7 | 20.1 | 99506 | 18.7 | 17.9 | 188177 | 18.8 | 20.3 | 462168 | 18.9 | 21.6 | 122557 | 18.9 | 19.3 |
| 521320 | 18.6 | 20.7 | 497455 | 18.7 | 22.0 | 398532 | 18.8 | 21.0 | 129534 | 18.8 | 18.3 | 509038 | 18.9 | 20.6 | 195999 | 18.9 | 20.6 |
| 314103 | 18.6 | 19.8 | 274397 | 18.7 | 19.4 | 332031 | 18.8 | 19.2 | 415320 | 18.8 | 19.9 | 477657 | 18.9 | 19.5 | 386128 | 18.9 | 20.2 |
| 537543 | 18.6 | 20.8 | 507789 | 18.7 | 21.3 | 219654 | 18.8 | 20.0 | 480627 | 18.8 | 20.2 | 203312 | 18.9 | 20.2 | 191084 | 18.9 | 19.8 |
| 250584 | 18.6 | 19.7 | 30805 | 18.7 | 17.1 | 35799 | 18.8 | 18.6 | 295297 | 18.8 | 19.9 | 232806 | 18.9 | 21.5 | 523024 | 18.9 | 21.6 |
| 327373 | 18.6 | 19.4 | 338522 | 18.7 | 19.2 | 362034 | 18.8 | 20.8 | 363497 | 18.8 | 21.0 | 86660 | 18.9 | 18.0 | 534253 | 18.9 | 20.9 |
| 438034 | 18.6 | 21.1 | 192860 | 18.7 | 19.9 | 145506 | 18.8 | 19.7 | 392442 | 18.8 | 19.9 | 458907 | 18.9 | 21.5 | 169848 | 18.9 | 19.1 |
| 250568 | 18.6 | 19.8 | 544542 | 18.7 | 21.4 | 69191 | 18.8 | 19.2 | 22090 | 18.8 | 18.6 | 117071 | 18.9 | 18.8 | 265020 | 19.0 | 20.4 |
| 313007 | 18.6 | 20.4 | 369868 | 18.7 | 18.2 | 465645 | 18.8 | 19.5 | 303821 | 18.8 | 19.0 | 94445 | 18.9 | 19.1 | 497354 | 19.0 | 20.5 |
| 428760 | 18.6 | 20.7 | 397833 | 18.7 | 19.2 | 38858 | 18.8 | 18.4 | 385040 | 18.8 | 19.8 | 543864 | 18.9 | 20.3 | 438441 | 19.0 | 19.7 |
| 510931 | 18.6 | 21.0 | 64174 | 18.7 | 20.0 | 170933 | 18.8 | 20.2 | 376130 | 18.8 | 19.9 | 261153 | 18.9 | 20.5 | 115797 | 19.0 | 19.3 |
| 174318 | 18.6 | 20.6 | 264507 | 18.7 | 19.1 | 52096 | 18.8 | 18.7 | 118272 | 18.8 | 18.7 | 197359 | 18.9 | 19.6 | 427178 | 19.0 | 19.4 |
| 66529 | 18.6 | 18.7 | 420556 | 18.7 | 20.0 | 174738 | 18.8 | 18.3 | 322471 | 18.8 | 19.5 | 93850 | 18.9 | 18.9 | 500243 | 19.0 | 20.8 |
| 148360 | 18.6 | 19.6 | 507057 | 18.7 | 20.0 | 57768 | 18.8 | 19.2 | 171799 | 18.8 | 19.5 | 466145 | 18.9 | 20.2 | 251820 | 19.0 | 19.1 |
| 94262 | 18.6 | 19.4 | 466161 | 18.7 | 20.3 | 478174 | 18.8 | 20.5 | 151059 | 18.8 | 19.3 | 384684 | 18.9 | 20.0 | 532101 | 19.0 | 20.8 |
| 360344 | 18.6 | 20.4 | 269595 | 18.7 | 20.1 | 315145 | 18.8 | 20.8 | 139249 | 18.8 | 19.2 | 134376 | 18.9 | 18.9 | 352506 | 19.0 | 21.3 |
| 279275 | 18.6 | 20.5 | 200759 | 18.7 | 18.5 | 362055 | 18.8 | 20.7 | 180329 | 18.8 | 20.4 | 31503 | 18.9 | 19.1 | 410192 | 19.0 | 21.1 |
| 415055 | 18.6 | 20.8 | 79541 | 18.7 | 17.4 | 69136 | 18.8 | 19.1 | 336821 | 18.8 | 20.0 | 35214 | 18.9 | 20.1 | 185264 | 19.0 | 19.8 |
| 5704 | 18.6 | 16.9 | 386189 | 18.7 | 20.1 | 465091 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 466436 | 19.0 | 20.2 | 333429 | 19.1 | 18.3 | 362394 | 19.2 | 20.7 | 410776 | 19.3 | 20.9 | 475259 | 19.4 | 20.9 | 477572 | 19.4 | 19.9 |
| 179293 | 19.0 | 20.1 | 94671 | 19.1 | 19.5 | 237227 | 19.2 | 20.4 | 257906 | 19.3 | 19.9 | 497421 | 19.4 | 21.1 | 384430 | 19.4 | 18.9 |
| 71 | 19.0 | 11.1 | 119703 | 19.1 | 19.5 | 398841 | 19.2 | 20.5 | 233594 | 19.3 | 19.7 | 351963 | 19.4 | 20.7 | 439346 | 19.4 | 20.2 |
| 124597 | 19.0 | 19.6 | 225975 | 19.1 | 20.2 | 478360 | 19.2 | 20.2 | 512601 | 19.3 | 20.3 | 301871 | 19.4 | 20.4 | 44946 | 19.4 | 18.4 |
| 189347 | 19.0 | 19.4 | 425150 | 19.1 | 20.6 | 443753 | 19.2 | 20.8 | 533052 | 19.3 | 21.6 | 392635 | 19.4 | 21.5 | 71918 | 19.4 | 18.8 |
| 169496 | 19.0 | 19.5 | 268468 | 19.1 | 21.2 | 523721 | 19.2 | 21.9 | 392151 | 19.3 | 21.4 | 439462 | 19.4 | 20.3 | 509863 | 19.4 | 19.3 |
| 255803 | 19.0 | 18.9 | 529405 | 19.1 | 20.5 | 42639 | 19.2 | 18.4 | 438551 | 19.3 | 21.1 | 185320 | 19.4 | 19.9 | 311243 | 19.4 | 21.7 |
| 365217 | 19.0 | 19.4 | 230869 | 19.1 | 19.4 | 349472 | 19.2 | 20.0 | 82670 | 19.3 | 18.6 | 68252 | 19.4 | 18.8 | 146680 | 19.4 | 20.0 |
| 323453 | 19.0 | 19.2 | 90861 | 19.1 | 18.9 | 341322 | 19.2 | 20.0 | 450138 | 19.3 | 21.7 | 207164 | 19.4 | 20.1 | 30644 | 19.4 | 17.4 |
| 239303 | 19.0 | 19.2 | 465680 | 19.1 | 20.1 | 499163 | 19.2 | 21.0 | 302884 | 19.3 | 19.2 | 309731 | 19.4 | 20.8 | 530976 | 19.4 | 20.0 |
| 342830 | 19.0 | 20.8 | 192362 | 19.1 | 19.8 | 371064 | 19.2 | 20.5 | 55467 | 19.3 | 18.1 | 422541 | 19.4 | 19.7 | 105492 | 19.4 | 19.1 |
| 290238 | 19.0 | 20.2 | 289210 | 19.1 | 19.9 | 46426 | 19.2 | 18.0 | 317881 | 19.3 | 19.1 | 498860 | 19.4 | 21.2 | 12155 | 19.4 | 17.4 |
| 55885 | 19.0 | 19.8 | 42425 | 19.1 | 18.4 | 57 | 19.2 | 11.6 | 525086 | 19.3 | 19.3 | 503208 | 19.4 | 20.9 | 531759 | 19.4 | 21.2 |
| 12759 | 19.0 | 17.9 | 30823 | 19.1 | 16.5 | 219659 | 19.2 | 20.6 | 481884 | 19.3 | 19.9 | 70169 | 19.4 | 17.8 | 533195 | 19.4 | 21.3 |
| 242324 | 19.0 | 19.9 | 200589 | 19.1 | 18.9 | 304596 | 19.2 | 18.8 | 478289 | 19.3 | 20.8 | 218915 | 19.4 | 18.0 | 422821 | 19.4 | 19.4 |
| 158290 | 19.0 | 20.6 | 332340 | 19.1 | 20.8 | 190026 | 19.2 | 17.7 | 275451 | 19.3 | 20.3 | 311371 | 19.4 | 20.8 | 391698 | 19.4 | 20.0 |
| 528308 | 19.0 | 21.9 | 475781 | 19.1 | 21.9 | 478346 | 19.2 | 20.3 | 202095 | 19.3 | 18.4 | 354889 | 19.4 | 21.2 | 302248 | 19.4 | 21.0 |
| 440618 | 19.0 | 21.0 | 112356 | 19.1 | 18.0 | 277751 | 19.2 | 20.3 | 179415 | 19.3 | 21.0 | 132065 | 19.4 | 19.1 | 428907 | 19.4 | 20.5 |
| 290980 | 19.0 | 20.5 | 231697 | 19.1 | 19.7 | 193180 | 19.2 | 18.8 | 507106 | 19.3 | 20.9 | 70535 | 19.4 | 18.0 | 80603 | 19.4 | 14.2 |
| 8308 | 19.0 | 16.4 | 95888 | 19.1 | 18.8 | 284154 | 19.2 | 19.8 | 219568 | 19.3 | 19.7 | 267431 | 19.4 | 21.5 | 150110 | 19.4 | 20.9 |
| 346322 | 19.0 | 20.0 | 221861 | 19.1 | 20.2 | 501025 | 19.2 | 18.7 | 228262 | 19.3 | 19.6 | 498689 | 19.4 | 20.5 | 70281 | 19.5 | 18.5 |
| 224388 | 19.0 | 20.0 | 224957 | 19.1 | 20.4 | 85713 | 19.2 | 20.2 | 426989 | 19.3 | 20.1 | 478319 | 19.4 | 20.2 | 435732 | 19.5 | 20.8 |
| 203396 | 19.1 | 18.5 | 452697 | 19.1 | 22.1 | 127145 | 19.2 | 19.3 | 394287 | 19.3 | 20.5 | 438597 | 19.4 | 20.7 | 507044 | 19.5 | 21.2 |
| 186169 | 19.1 | 19.4 | 303377 | 19.1 | 20.5 | 532978 | 19.2 | 20.2 | 131951 | 19.3 | 19.5 | 288612 | 19.4 | 18.1 | 34276 | 19.5 | 17.9 |
| 199230 | 19.1 | 19.6 | 168116 | 19.1 | 19.0 | 141666 | 19.2 | 18.8 | 384119 | 19.3 | 20.8 | 1225 | 19.4 | 14.9 | 454331 | 19.5 | 20.0 |
| 367111 | 19.1 | 19.3 | 178723 | 19.1 | 19.6 | 521395 | 19.2 | 20.8 | 125800 | 19.3 | 19.3 | 233427 | 19.4 | 20.3 | 524582 | 19.5 | 21.8 |
| 254228 | 19.1 | 19.2 | 33234 | 19.1 | 17.7 | 179175 | 19.2 | 20.0 | 313674 | 19.3 | 19.4 | 474869 | 19.4 | 20.1 | 106671 | 19.5 | 17.7 |
| 285131 | 19.1 | 19.6 | 406406 | 19.1 | 19.2 | 490749 | 19.2 | 21.3 | 420103 | 19.3 | 20.9 | 96150 | 19.4 | 18.7 | 45604 | 19.5 | 17.3 |
| 468376 | 19.1 | 20.6 | 156295 | 19.1 | 20.0 | 252789 | 19.2 | 20.6 | 512727 | 19.3 | 21.0 | 170825 | 19.4 | 20.1 | 386474 | 19.5 | 20.5 |
| 481848 | 19.1 | 20.5 | 340378 | 19.1 | 19.7 | 137044 | 19.2 | 21.1 | 8004 | 19.3 | 16.4 | 82105 | 19.4 | 16.0 | 12632 | 19.5 | 18.2 |
| 69803 | 19.1 | 17.7 | 179420 | 19.1 | 19.2 | 268109 | 19.2 | 20.6 | 276945 | 19.3 | 20.7 | 148060 | 19.4 | 19.1 | 431990 | 19.5 | 20.5 |
| 360771 | 19.1 | 19.8 | 64891 | 19.1 | 18.8 | 192729 | 19.2 | 20.1 | 314153 | 19.3 | 20.6 | 475857 | 19.4 | 21.1 | 533787 | 19.5 | 21.1 |
| 425142 | 19.1 | 20.2 | 309666 | 19.1 | 19.7 | 235852 | 19.2 | 20.4 | 17921 | 19.3 | 17.4 | 239758 | 19.4 | 20.0 | 411817 | 19.5 | 19.8 |
| 225032 | 19.1 | 19.9 | 47522 | 19.1 | 19.0 | 379391 | 19.2 | 21.0 | 208615 | 19.3 | 21.3 | 115229 | 19.4 | 18.7 | 73514 | 19.5 | 18.9 |
| 479252 | 19.1 | 20.7 | 132079 | 19.1 | 19.5 | 471393 | 19.2 | 20.0 | 101728 | 19.3 | 18.2 | 419829 | 19.4 | 23.5 | 214309 | 19.5 | 18.1 |
| 374482 | 19.1 | 20.9 | 172877 | 19.1 | 18.3 | 202274 | 19.2 | 19.8 | 64528 | 19.3 | 18.1 | 7869 | 19.4 | 16.3 | 314404 | 19.5 | 20.5 |
| 499888 | 19.1 | 20.1 | 355122 | 19.1 | 21.7 | 332107 | 19.2 | 19.9 | 533231 | 19.3 | 20.7 | 61113 | 19.4 | 17.0 | 417516 | 19.5 | 19.6 |
| 1794 | 19.1 | 16.1 | 457584 | 19.1 | 21.6 | 72505 | 19.2 | 19.9 | 190082 | 19.3 | 19.1 | 266346 | 19.4 | 21.6 | 500229 | 19.5 | 21.0 |
| 152651 | 19.1 | 19.9 | 162654 | 19.1 | 18.3 | 276989 | 19.2 | 19.5 | 113628 | 19.3 | 18.5 | 481135 | 19.4 | 20.8 | 123773 | 19.5 | 19.7 |
| 297750 | 19.1 | 19.5 | 519672 | 19.1 | 20.8 | 285176 | 19.2 | 21.1 | 401359 | 19.3 | 20.5 | 354765 | 19.4 | 20.7 | 118668 | 19.5 | 17.6 |
| 153865 | 19.1 | 19.6 | 36906 | 19.1 | 17.8 | 509848 | 19.2 | 20.3 | 350138 | 19.3 | 20.1 | 289103 | 19.4 | 19.7 | 64753 | 19.5 | 19.9 |
| 317903 | 19.1 | 18.6 | 532542 | 19.1 | 21.0 | 322707 | 19.2 | 22.5 | 529535 | 19.3 | 20.6 | 240855 | 19.4 | 20.3 | 531964 | 19.5 | 22.0 |
| 528251 | 19.1 | 21.3 | 16422 | 19.1 | 17.6 | 166730 | 19.2 | 19.7 | 538214 | 19.3 | 20.7 | 540635 | 19.4 | 21.3 | 348503 | 19.5 | 20.8 |
| 199548 | 19.1 | 19.1 | 247830 | 19.2 | 19.8 | 302456 | 19.2 | 20.7 | 354883 | 19.3 | 21.1 | 151017 | 19.4 | 20.1 | 498833 | 19.5 | 20.9 |
| 509104 | 19.1 | 22.7 | 386289 | 19.2 | 21.4 | 470606 | 19.2 | 19.5 | 224951 | 19.3 | 19.7 | 72707 | 19.4 | 18.1 | 464319 | 19.5 | 20.9 |
| 89492 | 19.1 | 19.0 | 200125 | 19.2 | 19.5 | 265606 | 19.2 | 20.5 | 57244 | 19.3 | 18.5 | 427492 | 19.4 | 21.1 | 31015 | 19.5 | 19.0 |
| 497199 | 19.1 | 20.5 | 393857 | 19.2 | 19.5 | 279857 | 19.2 | 20.4 | 382142 | 19.3 | 20.0 | 9762 | 19.4 | 17.9 | 384493 | 19.5 | 21.1 |
| 168475 | 19.1 | 18.7 | 459621 | 19.2 | 20.2 | 67991 | 19.2 | 18.8 | 404141 | 19.3 | 21.2 | 134007 | 19.4 | 19.5 | 180135 | 19.5 | 19.7 |
| 431903 | 19.1 | 19.9 | 249160 | 19.2 | 19.5 | 26030 | 19.2 | 19.0 | 188684 | 19.3 | 18.2 | 391030 | 19.4 | 19.5 | 406345 | 19.5 | 21.2 |
| 99484 | 19.1 | 18.4 | 435914 | 19.2 | 19.8 | 174538 | 19.2 | 20.1 | 457766 | 19.3 | 20.6 | 181391 | 19.4 | 21.4 | 390320 | 19.5 | 19.9 |
| 166011 | 19.1 | 20.0 | 430432 | 19.2 | 20.6 | 439399 | 19.2 | 20.7 | 352580 | 19.3 | 20.7 | 395717 | 19.4 | 20.0 | 492468 | 19.5 | 20.7 |
| 119600 | 19.1 | 19.2 | 526583 | 19.2 | 19.7 | 153679 | 19.2 | 20.3 | 425195 | 19.3 | 20.0 | 68347 | 19.4 | 20.5 | 90935 | 19.5 | 17.9 |
| 295054 | 19.1 | 19.9 | 528068 | 19.2 | 21.7 | 453278 | 19.2 | 20.9 | 95474 | 19.3 | 18.8 | 266300 | 19.4 | 19.6 | 518664 | 19.5 | 20.7 |
| 498004 | 19.1 | 20.6 | 540746 | 19.2 | 20.7 | 149052 | 19.2 | 18.3 | 310744 | 19.3 | 20.2 | 394969 | 19.4 | 21.1 | 344591 | 19.5 | 20.7 |
| 171816 | 19.1 | 19.8 | 469206 | 19.2 | 21.1 | 442915 | 19.2 | 21.3 | 442742 | 19.3 | 18.9 | 276996 | 19.4 | 19.1 | 488434 | 19.5 | 19.7 |
| 97108 | 19.1 | 19.3 | 141871 | 19.2 | 19.1 | 475806 | 19.3 | 20.8 | 109656 | 19.3 | 18.8 | 304960 | 19.4 | 19.4 | 538185 | 19.5 | 21.3 |
| 13214 | 19.1 | 17.5 | 31823 | 19.2 | 19.7 | 302335 | 19.3 | 19.9 | 235625 | 19.3 | 19.5 | 507071 | 19.4 | 20.3 | 304795 | 19.5 | 19.1 |
| 157510 | 19.1 | 20.4 | 82640 | 19.2 | 17.7 | 127286 | 19.3 | 19.7 | 403862 | 19.3 | 19.7 | 248901 | 19.4 | 20.2 | 383025 | 19.5 | 20.3 |
| 317375 | 19.1 | 20.1 | 153397 | 19.2 | 18.4 | 180115 | 19.3 | 19.3 | 172652 | 19.3 | 20.1 | 347926 | 19.4 | 21.2 | 409201 | 19.5 | 20.3 |
| 31275 | 19.1 | 19.1 | 379575 | 19.2 | 20.7 | 357856 | 19.3 | 19.2 | 355241 | 19.3 | 19.9 | 336765 | 19.4 | 18.8 | 361218 | 19.5 | 19.0 |
| 90346 | 19.1 | 18.9 | 430252 | 19.2 | 21.1 | 106016 | 19.3 | 19.3 | 4314 | 19.3 | 16.8 | 107540 | 19.4 | 19.0 | 467872 | 19.5 | 20.2 |
| 189095 | 19.1 | 19.5 | 253569 | 19.2 | 19.3 | 386965 | 19.3 | 20.0 | 415369 | 19.3 | 20.0 | 302080 | 19.4 | 20.3 | 80140 | 19.5 | 19.6 |
| 460260 | 19.1 | 19.7 | 111378 | 19.2 | 19.7 | 352425 | 19.3 | 20.4 | 179337 | 19.3 | 19.8 | 231372 | 19.4 | 20.2 | 271792 | 19.5 | 19.8 |
| 310381 | 19.1 | 20.4 | 2609 | 19.2 | 15.8 | 111277 | 19.3 | 19.5 | 434513 | 19.3 | 19.7 | 419673 | 19.4 | 20.0 | 540969 | 19.5 | 21.0 |
| 231243 | 19.1 | 19.7 | 525382 | 19.2 | 21.7 | 305476 | 19.3 | 20.2 | 355558 | 19.3 | 20.4 | 525887 | 19.4 | 21.0 | 285973 | 19.5 | 18.7 |
| 278181 | 19.1 | 20.4 | 119012 | 19.2 | 18.4 | 479968 | 19.3 | 21.3 | 527849 | 19.3 | 21.7 | 200363 | 19.4 | 19.0 | 97327 | 19.5 | 19.2 |
| 512290 | 19.1 | 21.5 | 45277 | 19.2 | 18.2 | 8088 | 19.3 | 16.1 | 370187 | 19.3 | 20.2 | 293300 | 19.4 | 21.3 | 355615 | 19.5 | 21.3 |
| 383949 | 19.1 | 20.5 | 176537 | 19.2 | 20.0 | 497306 | 19.3 | 21.6 | 419748 | 19.3 | 21.6 | 177096 | 19.4 | 19.5 | 128877 | 19.5 | 19.6 |
| 179345 | 19.1 | 20.4 | 465396 | 19.2 | 20.1 | 455210 | 19.3 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V |
|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|
| 236589 | 19.5 | 20.4 | 54560 | 19.6 | 16.4 | 246996 | 19.7 | 18.5 | 264643 | 19.8 | 20.3 | 128691 | 19.8 | 19.7 | 181136 | 19.9 | 19.9 |
| 270573 | 19.5 | 20.2 | 277661 | 19.6 | 20.6 | 349005 | 19.7 | 20.3 | 182806 | 19.8 | 20.5 | 68820 | 19.8 | 18.4 | 432415 | 19.9 | 19.0 |
| 87004 | 19.5 | 17.7 | 115538 | 19.6 | 19.8 | 166300 | 19.7 | 19.7 | 132632 | 19.8 | 19.9 | 250527 | 19.8 | 19.4 | 303823 | 19.9 | 20.2 |
| 176056 | 19.5 | 19.5 | 62373 | 19.6 | 18.5 | 365104 | 19.7 | 21.6 | 252980 | 19.8 | 19.8 | 141099 | 19.8 | 19.3 | 199234 | 19.9 | 20.5 |
| 277944 | 19.5 | 19.2 | 180423 | 19.6 | 19.8 | 519084 | 19.7 | 20.4 | 62135 | 19.8 | 17.5 | 457564 | 19.9 | 20.7 | 231206 | 19.9 | 19.8 |
| 444404 | 19.5 | 20.4 | 141913 | 19.6 | 18.9 | 352798 | 19.7 | 19.5 | 254281 | 19.8 | 19.6 | 526584 | 19.9 | 21.4 | 215693 | 19.9 | 19.7 |
| 40885 | 19.5 | 19.3 | 514620 | 19.6 | 19.7 | 119847 | 19.7 | 19.0 | 352583 | 19.8 | 20.2 | 80240 | 19.9 | 19.3 | 539393 | 19.9 | 21.4 |
| 537775 | 19.5 | 19.3 | 532959 | 19.6 | 22.0 | 73225 | 19.7 | 18.9 | 317230 | 19.8 | 20.2 | 12149 | 19.9 | 17.6 | 305363 | 19.9 | 21.2 |
| 428708 | 19.5 | 21.2 | 178946 | 19.6 | 18.7 | 251596 | 19.7 | 19.7 | 35747 | 19.8 | 16.8 | 334766 | 19.9 | 19.8 | 398570 | 19.9 | 20.7 |
| 458929 | 19.5 | 20.2 | 388328 | 19.6 | 21.0 | 192158 | 19.7 | 19.8 | 302329 | 19.8 | 20.6 | 401090 | 19.9 | 18.9 | 305716 | 19.9 | 20.6 |
| 437317 | 19.5 | 19.1 | 534893 | 19.6 | 20.1 | 102269 | 19.7 | 19.4 | 475292 | 19.8 | 20.2 | 310509 | 19.9 | 19.2 | 393083 | 19.9 | 20.1 |
| 240922 | 19.5 | 20.2 | 138006 | 19.6 | 19.1 | 58844 | 19.7 | 17.8 | 125112 | 19.8 | 18.3 | 26085 | 19.9 | 18.0 | 540788 | 19.9 | 21.0 |
| 381462 | 19.5 | 20.7 | 305501 | 19.6 | 20.0 | 507572 | 19.7 | 21.3 | 529245 | 19.8 | 22.0 | 270322 | 19.9 | 20.1 | 433962 | 19.9 | 18.6 |
| 425800 | 19.5 | 20.9 | 264551 | 19.6 | 19.6 | 45201 | 19.7 | 17.3 | 473713 | 19.8 | 19.8 | 379439 | 19.9 | 21.6 | 248975 | 19.9 | 19.6 |
| 242697 | 19.5 | 20.0 | 306732 | 19.6 | 20.1 | 524808 | 19.7 | 21.6 | 159817 | 19.8 | 18.8 | 160089 | 19.9 | 16.8 | 392083 | 19.9 | 19.9 |
| 381915 | 19.5 | 19.9 | 445834 | 19.6 | 20.0 | 499365 | 19.7 | 20.8 | 251982 | 19.8 | 19.9 | 18368 | 19.9 | 17.6 | 237273 | 19.9 | 19.9 |
| 357809 | 19.5 | 20.6 | 426873 | 19.6 | 20.8 | 196857 | 19.7 | 20.6 | 537299 | 19.8 | 19.9 | 303197 | 19.9 | 19.0 | 415271 | 19.9 | 19.8 |
| 250449 | 19.5 | 19.2 | 178265 | 19.6 | 20.5 | 511404 | 19.7 | 21.9 | 471900 | 19.8 | 20.0 | 395954 | 19.9 | 20.2 | 335592 | 19.9 | 20.2 |
| 412191 | 19.5 | 19.9 | 248542 | 19.6 | 19.0 | 115808 | 19.7 | 19.0 | 380946 | 19.8 | 20.9 | 540997 | 19.9 | 20.8 | 456576 | 19.9 | 20.2 |
| 70003 | 19.5 | 19.1 | 539593 | 19.6 | 20.3 | 358987 | 19.7 | 20.5 | 378298 | 19.8 | 20.4 | 499451 | 19.9 | 20.6 | 289998 | 19.9 | 19.3 |
| 19242 | 19.5 | 17.9 | 348492 | 19.6 | 20.2 | 323455 | 19.7 | 18.9 | 357988 | 19.8 | 20.3 | 227434 | 19.9 | 18.8 | 425367 | 19.9 | 19.4 |
| 214242 | 19.5 | 19.5 | 158415 | 19.6 | 20.5 | 342795 | 19.7 | 20.1 | 390662 | 19.8 | 18.8 | 476400 | 19.9 | 21.1 | 255978 | 19.9 | 19.8 |
| 64139 | 19.5 | 19.0 | 288375 | 19.6 | 19.8 | 501847 | 19.7 | 20.9 | 8945 | 19.8 | 18.0 | 317886 | 19.9 | 20.3 | 116988 | 19.9 | 17.2 |
| 520288 | 19.5 | 20.8 | 215236 | 19.6 | 19.5 | 465338 | 19.7 | 21.8 | 534280 | 19.8 | 19.4 | 207797 | 19.9 | 18.5 | 59953 | 19.9 | 18.5 |
| 71239 | 19.5 | 17.4 | 462319 | 19.6 | 21.2 | 369866 | 19.7 | 20.4 | 13932 | 19.8 | 17.2 | 457652 | 19.9 | 22.0 | 31208 | 19.9 | 17.6 |
| 346572 | 19.5 | 20.2 | 413922 | 19.6 | 20.2 | 389707 | 19.7 | 20.7 | 430939 | 19.8 | 22.0 | 389932 | 19.9 | 19.7 | 97514 | 19.9 | 18.0 |
| 376940 | 19.5 | 20.4 | 313053 | 19.6 | 18.7 | 536766 | 19.7 | 20.9 | 205810 | 19.8 | 19.1 | 33610 | 19.9 | 19.1 | 139628 | 19.9 | 19.4 |
| 399297 | 19.5 | 19.6 | 17294 | 19.6 | 16.8 | 415085 | 19.7 | 21.0 | 275719 | 19.8 | 20.4 | 534133 | 19.9 | 19.9 | 268400 | 19.9 | 21.5 |
| 20453 | 19.5 | 16.1 | 238100 | 19.6 | 18.3 | 248402 | 19.7 | 18.9 | 408108 | 19.8 | 20.6 | 507859 | 19.9 | 21.9 | 227924 | 19.9 | 19.4 |
| 539734 | 19.5 | 20.9 | 398269 | 19.6 | 20.8 | 310201 | 19.7 | 20.0 | 327006 | 19.8 | 20.9 | 122099 | 19.9 | 20.0 | 365182 | 19.9 | 19.5 |
| 471814 | 19.5 | 20.7 | 93174 | 19.6 | 18.6 | 99384 | 19.7 | 16.5 | 138942 | 19.8 | 19.6 | 472924 | 19.9 | 21.1 | 310491 | 19.9 | 19.0 |
| 171827 | 19.5 | 19.1 | 62420 | 19.6 | 18.7 | 352498 | 19.7 | 21.4 | 280363 | 19.8 | 19.7 | 129940 | 19.9 | 18.3 | 222568 | 19.9 | 20.2 |
| 41267 | 19.5 | 18.7 | 149431 | 19.6 | 17.7 | 182693 | 19.7 | 19.8 | 154943 | 19.8 | 19.9 | 270513 | 19.9 | 20.4 | 477660 | 19.9 | 20.0 |
| 123580 | 19.5 | 17.9 | 179040 | 19.6 | 18.7 | 149146 | 19.7 | 19.7 | 219559 | 19.8 | 19.9 | 299841 | 19.9 | 21.3 | 207231 | 19.9 | 19.5 |
| 70426 | 19.5 | 17.8 | 442594 | 19.6 | 20.5 | 165436 | 19.7 | 19.8 | 19906 | 19.8 | 18.1 | 425672 | 19.9 | 20.3 | 333087 | 19.9 | 19.0 |
| 510476 | 19.5 | 19.9 | 305413 | 19.6 | 20.3 | 11341 | 19.7 | 16.8 | 133924 | 19.8 | 20.5 | 370155 | 19.9 | 20.1 | 119643 | 19.9 | 19.2 |
| 304029 | 19.5 | 20.0 | 69202 | 19.6 | 18.9 | 533727 | 19.7 | 19.2 | 344550 | 19.8 | 19.0 | 526778 | 19.9 | 22.6 | 404328 | 19.9 | 19.6 |
| 94232 | 19.5 | 19.6 | 132284 | 19.6 | 18.9 | 537972 | 19.7 | 21.0 | 21964 | 19.8 | 18.6 | 423810 | 19.9 | 20.5 | 28677 | 19.9 | 17.8 |
| 474320 | 19.6 | 21.0 | 93195 | 19.6 | 19.2 | 276906 | 19.7 | 19.9 | 112283 | 19.8 | 18.0 | 388811 | 19.9 | 20.4 | 161364 | 19.9 | 18.4 |
| 69300 | 19.6 | 19.3 | 270360 | 19.6 | 20.1 | 260842 | 19.7 | 20.4 | 24573 | 19.8 | 18.7 | 394657 | 19.9 | 21.8 | 406780 | 19.9 | 21.0 |
| 205690 | 19.6 | 19.0 | 530661 | 19.6 | 20.3 | 508167 | 19.7 | 21.2 | 204716 | 19.8 | 20.2 | 464464 | 19.9 | 21.4 | 189683 | 19.9 | 17.6 |
| 87502 | 19.6 | 18.7 | 356646 | 19.6 | 20.6 | 19501 | 19.7 | 16.5 | 309150 | 19.8 | 21.2 | 524415 | 19.9 | 19.4 | 431832 | 19.9 | 18.8 |
| 153782 | 19.6 | 20.1 | 349415 | 19.6 | 19.3 | 501129 | 19.7 | 20.4 | 141038 | 19.8 | 20.7 | 111265 | 19.9 | 19.1 | 58187 | 19.9 | 17.7 |
| 333825 | 19.6 | 19.8 | 511572 | 19.6 | 19.7 | 432376 | 19.7 | 21.1 | 71865 | 19.8 | 18.6 | 281765 | 19.9 | 19.6 | 712 | 19.9 | 11.9 |
| 231276 | 19.6 | 20.3 | 75235 | 19.6 | 18.9 | 54568 | 19.7 | 17.6 | 480610 | 19.8 | 20.6 | 56008 | 19.9 | 19.4 | 155609 | 19.9 | 18.4 |
| 40333 | 19.6 | 17.6 | 229219 | 19.6 | 19.5 | 253799 | 19.7 | 20.1 | 524092 | 19.8 | 20.1 | 244957 | 19.9 | 19.9 | 355689 | 19.9 | 21.1 |
| 115756 | 19.6 | 18.9 | 234141 | 19.6 | 20.0 | 99510 | 19.7 | 17.3 | 329919 | 19.8 | 18.3 | 425738 | 19.9 | 21.1 | 427501 | 19.9 | 21.6 |
| 509636 | 19.6 | 21.7 | 285789 | 19.6 | 19.9 | 478146 | 19.7 | 20.4 | 399445 | 19.8 | 20.4 | 28794 | 19.9 | 16.4 | 371102 | 19.9 | 20.0 |
| 186369 | 19.6 | 19.8 | 12280 | 19.6 | 16.8 | 70462 | 19.7 | 19.5 | 326346 | 19.8 | 18.8 | 162555 | 19.9 | 19.2 | 65685 | 19.9 | 19.1 |
| 113541 | 19.6 | 18.7 | 210496 | 19.6 | 20.2 | 4701 | 19.7 | 16.4 | 57296 | 19.8 | 18.2 | 243452 | 19.9 | 19.8 | 301843 | 19.9 | 21.5 |
| 233869 | 19.6 | 19.8 | 409801 | 19.6 | 19.1 | 93440 | 19.7 | 19.3 | 532559 | 19.8 | 21.1 | 518931 | 19.9 | 19.8 | 292312 | 19.9 | 20.4 |
| 384548 | 19.6 | 21.2 | 423653 | 19.6 | 20.4 | 410336 | 19.7 | 21.1 | 475698 | 19.8 | 20.1 | 380330 | 19.9 | 19.9 | 295858 | 19.9 | 20.3 |
| 429433 | 19.6 | 20.6 | 291528 | 19.6 | 20.3 | 133962 | 19.7 | 19.6 | 373513 | 19.8 | 19.0 | 542204 | 19.9 | 20.8 | 236521 | 19.9 | 20.1 |
| 417804 | 19.6 | 21.7 | 412223 | 19.6 | 20.8 | 369772 | 19.7 | 19.8 | 52660 | 19.8 | 19.0 | 344759 | 19.9 | 20.7 | 346748 | 19.9 | 21.1 |
| 470890 | 19.6 | 20.5 | 148742 | 19.6 | 18.4 | 513663 | 19.7 | 21.7 | 371121 | 19.8 | 20.6 | 106522 | 19.9 | 20.8 | 83461 | 19.9 | 18.0 |
| 198375 | 19.6 | 19.6 | 140107 | 19.6 | 19.4 | 247723 | 19.7 | 19.8 | 536460 | 19.8 | 20.7 | 335104 | 19.9 | 20.3 | 389523 | 19.9 | 19.8 |
| 457633 | 19.6 | 21.7 | 24494 | 19.6 | 18.2 | 419388 | 19.7 | 20.2 | 272990 | 19.8 | 19.2 | 121886 | 19.9 | 19.2 | 127639 | 19.9 | 18.9 |
| 491333 | 19.6 | 20.5 | 496645 | 19.6 | 21.3 | 535786 | 19.7 | 21.5 | 107577 | 19.8 | 19.4 | 62577 | 19.9 | 17.5 | 278743 | 19.9 | 20.1 |
| 356357 | 19.6 | 19.2 | 499729 | 19.6 | 20.4 | 441390 | 19.7 | 20.5 | 173316 | 19.8 | 19.7 | 296396 | 19.9 | 20.7 | 95137 | 19.9 | 19.0 |
| 360327 | 19.6 | 19.8 | 356747 | 19.6 | 21.3 | 251309 | 19.7 | 19.9 | 197571 | 19.8 | 19.4 | 417837 | 19.9 | 21.8 | 539599 | 19.9 | 20.6 |
| 478 | 19.6 | 12.8 | 427279 | 19.7 | 20.5 | 501605 | 19.7 | 20.9 | 466933 | 19.8 | 20.7 | 1544 | 19.9 | 14.7 | 295035 | 19.9 | 20.3 |
| 85105 | 19.6 | 17.9 | 305360 | 19.7 | 20.5 | 412051 | 19.7 | 19.6 | 104758 | 19.8 | 19.0 | 276881 | 19.9 | 19.6 | 203947 | 19.9 | 18.2 |
| 266939 | 19.6 | 20.4 | 525272 | 19.7 | 19.9 | 539546 | 19.7 | 20.2 | 369086 | 19.8 | 20.0 | 334809 | 19.9 | 19.0 | 228379 | 19.9 | 20.1 |
| 351569 | 19.6 | 20.0 | 241976 | 19.7 | 19.0 | 83197 | 19.7 | 18.9 | 56750 | 19.8 | 17.8 | 364768 | 19.9 | 19.5 | 362931 | 20.0 | 19.9 |
| 29008 | 19.6 | 17.7 | 501993 | 19.7 | 21.4 | 198675 | 19.7 | 20.1 | 359936 | 19.8 | 19.4 | 379352 | 19.9 | 20.7 | 172492 | 20.0 | 19.0 |
| 141243 | 19.6 | 19.8 | 344830 | 19.7 | 20.7 | 497015 | 19.7 | 20.3 | 210699 | 19.8 | 19.4 | 405893 | 19.9 | 20.3 | 389240 | 20.0 | 21.1 |
| 320604 | 19.6 | 19.9 | 240717 | 19.7 | 19.5 | 390341 | 19.7 | 19.0 | 185080 | 19.8 | 20.7 | 507139 | 19.9 | 20.3 | 142674 | 20.0 | 19.2 |
| 394713 | 19.6 | 21.0 | 382977 | 19.7 | 20.4 | 301686 | 19.7 | 20.2 | 10647 | 19.8 | 17.8 | 428337 | 19.9 | 20.3 | 380573 | 20.0 | 19.7 |
| 531768 | 19.6 | 20. | | | | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 539136 | 20.0 | 20.7 | 389554 | 20.1 | 20.9 | 278950 | 20.2 | 20.2 | 224314 | 20.3 | 20.3 | 253594 | 20.3 | 19.6 | 506755 | 20.4 | 21.9 |
| 334409 | 20.0 | 21.5 | 205941 | 20.1 | 20.9 | 456976 | 20.2 | 21.5 | 517656 | 20.3 | 20.8 | 316583 | 20.3 | 20.7 | 432012 | 20.4 | 20.4 |
| 178628 | 20.0 | 19.8 | 533523 | 20.1 | 20.8 | 397715 | 20.2 | 22.4 | 219364 | 20.3 | 18.2 | 376263 | 20.3 | 20.9 | 204699 | 20.4 | 19.1 |
| 45913 | 20.0 | 19.2 | 321230 | 20.1 | 20.9 | 65587 | 20.2 | 18.3 | 531966 | 20.3 | 21.7 | 362051 | 20.3 | 20.8 | 136018 | 20.4 | 18.9 |
| 105140 | 20.0 | 18.4 | 93307 | 20.1 | 18.3 | 153811 | 20.2 | 18.7 | 500262 | 20.3 | 21.4 | 231887 | 20.3 | 20.4 | 70290 | 20.4 | 18.0 |
| 346498 | 20.0 | 20.0 | 166002 | 20.1 | 19.8 | 155437 | 20.2 | 20.3 | 497216 | 20.3 | 20.7 | 531925 | 20.3 | 20.8 | 526594 | 20.4 | 20.3 |
| 341473 | 20.0 | 20.3 | 199200 | 20.1 | 18.9 | 31324 | 20.2 | 18.4 | 134270 | 20.3 | 19.8 | 438940 | 20.3 | 19.7 | 88473 | 20.4 | 18.8 |
| 418137 | 20.0 | 20.5 | 540190 | 20.1 | 21.2 | 231662 | 20.2 | 19.6 | 510101 | 20.3 | 20.3 | 304552 | 20.3 | 21.1 | 121545 | 20.4 | 20.6 |
| 419697 | 20.0 | 20.8 | 22101 | 20.1 | 17.7 | 34317 | 20.2 | 17.6 | 303718 | 20.3 | 19.3 | 423761 | 20.3 | 18.1 | 526832 | 20.4 | 21.6 |
| 441914 | 20.0 | 20.4 | 132237 | 20.1 | 19.2 | 300138 | 20.2 | 20.5 | 95777 | 20.3 | 19.4 | 243639 | 20.3 | 19.8 | 201633 | 20.4 | 20.4 |
| 55251 | 20.0 | 19.3 | 503863 | 20.1 | 19.5 | 5325 | 20.2 | 14.5 | 239592 | 20.3 | 19.2 | 340404 | 20.3 | 19.4 | 20245 | 20.4 | 18.1 |
| 523926 | 20.0 | 21.1 | 78923 | 20.1 | 18.6 | 413090 | 20.2 | 21.4 | 104499 | 20.3 | 17.6 | 368093 | 20.3 | 19.9 | 492891 | 20.4 | 20.8 |
| 293500 | 20.0 | 20.0 | 446935 | 20.1 | 23.1 | 58523 | 20.2 | 19.7 | 494319 | 20.3 | 19.7 | 389683 | 20.3 | 20.4 | 208660 | 20.4 | 20.1 |
| 174535 | 20.0 | 19.9 | 365133 | 20.1 | 20.7 | 211830 | 20.2 | 19.9 | 506369 | 20.3 | 21.0 | 378306 | 20.3 | 20.7 | 12180 | 20.4 | 17.8 |
| 494804 | 20.0 | 20.6 | 394612 | 20.1 | 21.7 | 193698 | 20.2 | 20.1 | 219749 | 20.3 | 18.8 | 390699 | 20.3 | 22.5 | 460061 | 20.4 | 18.5 |
| 404657 | 20.0 | 20.0 | 531916 | 20.1 | 21.6 | 338715 | 20.2 | 18.4 | 514335 | 20.3 | 20.2 | 496893 | 20.3 | 20.9 | 180490 | 20.4 | 20.4 |
| 510382 | 20.0 | 22.0 | 531848 | 20.1 | 20.7 | 62350 | 20.2 | 18.6 | 89892 | 20.3 | 18.5 | 377039 | 20.3 | 20.2 | 199639 | 20.4 | 19.7 |
| 267182 | 20.0 | 18.0 | 105282 | 20.1 | 18.4 | 117785 | 20.2 | 20.3 | 531910 | 20.3 | 22.4 | 272653 | 20.3 | 20.0 | 305257 | 20.4 | 19.6 |
| 374369 | 20.0 | 21.4 | 76986 | 20.1 | 19.5 | 228373 | 20.2 | 18.3 | 73890 | 20.3 | 18.6 | 83727 | 20.3 | 18.3 | 126338 | 20.4 | 19.4 |
| 32697 | 20.0 | 18.1 | 36642 | 20.1 | 18.7 | 499820 | 20.2 | 20.6 | 533390 | 20.3 | 21.3 | 2089 | 20.3 | 14.4 | 64562 | 20.4 | 19.2 |
| 19690 | 20.0 | 16.4 | 298345 | 20.1 | 21.1 | 261324 | 20.2 | 20.1 | 379699 | 20.3 | 21.1 | 396112 | 20.3 | 20.5 | 211609 | 20.4 | 19.0 |
| 507414 | 20.0 | 20.2 | 229563 | 20.1 | 20.2 | 173307 | 20.2 | 19.3 | 118120 | 20.3 | 19.5 | 475225 | 20.3 | 20.3 | 336678 | 20.4 | 21.0 |
| 474814 | 20.0 | 20.4 | 329809 | 20.1 | 19.0 | 374368 | 20.2 | 20.7 | 180517 | 20.3 | 20.2 | 341256 | 20.3 | 20.4 | 465052 | 20.4 | 20.2 |
| 309805 | 20.0 | 21.4 | 506012 | 20.1 | 20.4 | 54128 | 20.2 | 18.3 | 95387 | 20.3 | 19.8 | 514662 | 20.3 | 20.6 | 430982 | 20.4 | 19.8 |
| 389806 | 20.0 | 21.2 | 491215 | 20.1 | 18.8 | 169437 | 20.2 | 20.1 | 299842 | 20.3 | 20.2 | 264608 | 20.3 | 20.1 | 420062 | 20.4 | 22.8 |
| 132793 | 20.0 | 19.6 | 250943 | 20.1 | 19.6 | 187719 | 20.2 | 19.8 | 190680 | 20.3 | 19.1 | 412861 | 20.3 | 20.5 | 352598 | 20.4 | 21.5 |
| 393521 | 20.0 | 19.7 | 170793 | 20.1 | 19.8 | 156115 | 20.2 | 19.8 | 269950 | 20.3 | 19.3 | 381468 | 20.3 | 20.8 | 98072 | 20.4 | 18.9 |
| 349552 | 20.0 | 19.3 | 356356 | 20.1 | 19.6 | 503129 | 20.2 | 20.1 | 512764 | 20.3 | 20.8 | 290733 | 20.3 | 19.1 | 504639 | 20.4 | 21.1 |
| 109897 | 20.0 | 17.9 | 307153 | 20.1 | 21.1 | 430719 | 20.2 | 19.1 | 96090 | 20.3 | 17.7 | 36474 | 20.3 | 18.2 | 6751 | 20.4 | 15.9 |
| 184800 | 20.0 | 20.1 | 12401 | 20.1 | 16.9 | 52583 | 20.2 | 18.1 | 215395 | 20.3 | 19.2 | 520986 | 20.3 | 20.9 | 270348 | 20.4 | 20.2 |
| 70352 | 20.0 | 18.9 | 431860 | 20.1 | 20.1 | 383883 | 20.2 | 20.4 | 162573 | 20.3 | 18.7 | 253499 | 20.3 | 18.7 | 188809 | 20.4 | 19.9 |
| 418354 | 20.0 | 20.9 | 207293 | 20.1 | 20.1 | 128018 | 20.2 | 18.7 | 163250 | 20.3 | 21.4 | 70580 | 20.3 | 20.1 | 153768 | 20.4 | 18.6 |
| 203777 | 20.0 | 19.2 | 163387 | 20.1 | 19.5 | 404322 | 20.2 | 19.7 | 181087 | 20.3 | 19.2 | 512299 | 20.3 | 19.6 | 502399 | 20.4 | 20.0 |
| 275700 | 20.0 | 20.2 | 35646 | 20.1 | 19.2 | 313602 | 20.2 | 17.8 | 519103 | 20.3 | 20.0 | 102272 | 20.3 | 19.1 | 199544 | 20.4 | 19.8 |
| 31494 | 20.0 | 16.1 | 478222 | 20.1 | 20.6 | 149731 | 20.2 | 18.5 | 23082 | 20.3 | 18.3 | 479097 | 20.3 | 20.6 | 250042 | 20.4 | 19.7 |
| 392408 | 20.0 | 19.3 | 208416 | 20.1 | 20.0 | 536806 | 20.2 | 21.0 | 39373 | 20.3 | 18.0 | 191795 | 20.3 | 19.0 | 509091 | 20.4 | 21.4 |
| 87540 | 20.0 | 18.4 | 159456 | 20.1 | 19.5 | 149847 | 20.2 | 19.7 | 507434 | 20.3 | 20.3 | 402496 | 20.3 | 20.2 | 387753 | 20.4 | 19.7 |
| 207062 | 20.1 | 20.3 | 202558 | 20.1 | 20.1 | 153738 | 20.2 | 21.2 | 2431 | 20.3 | 14.2 | 302318 | 20.4 | 21.0 | 248462 | 20.4 | 19.1 |
| 174748 | 20.1 | 19.9 | 56933 | 20.1 | 16.9 | 293326 | 20.2 | 21.2 | 502218 | 20.3 | 20.9 | 470440 | 20.4 | 20.5 | 470419 | 20.4 | 20.7 |
| 24569 | 20.1 | 16.9 | 267429 | 20.1 | 20.4 | 140023 | 20.2 | 18.4 | 59821 | 20.3 | 18.1 | 306124 | 20.4 | 19.6 | 427011 | 20.4 | 20.0 |
| 219063 | 20.1 | 20.3 | 42073 | 20.1 | 19.9 | 102932 | 20.2 | 18.9 | 35094 | 20.3 | 18.4 | 90728 | 20.4 | 19.4 | 295300 | 20.4 | 20.6 |
| 502630 | 20.1 | 20.4 | 237099 | 20.1 | 20.4 | 256721 | 20.2 | 21.0 | 528103 | 20.3 | 22.1 | 205654 | 20.4 | 21.0 | 407663 | 20.4 | 19.3 |
| 131911 | 20.1 | 20.0 | 12217 | 20.1 | 17.5 | 98899 | 20.2 | 19.6 | 148000 | 20.3 | 18.7 | 479223 | 20.4 | 21.0 | 66220 | 20.4 | 18.4 |
| 25635 | 20.1 | 16.8 | 172966 | 20.1 | 18.9 | 225829 | 20.2 | 20.0 | 238004 | 20.3 | 19.5 | 504442 | 20.4 | 21.5 | 71154 | 20.4 | 17.5 |
| 88004 | 20.1 | 18.3 | 157689 | 20.1 | 19.1 | 199418 | 20.2 | 19.6 | 467328 | 20.3 | 20.3 | 365083 | 20.4 | 20.6 | 309048 | 20.4 | 20.8 |
| 276280 | 20.1 | 18.4 | 497424 | 20.1 | 20.0 | 303751 | 20.2 | 19.1 | 396167 | 20.3 | 21.2 | 399688 | 20.4 | 20.2 | 36984 | 20.4 | 18.4 |
| 439484 | 20.1 | 21.3 | 112641 | 20.1 | 18.4 | 121037 | 20.2 | 19.8 | 361084 | 20.3 | 21.5 | 214188 | 20.4 | 20.6 | 374365 | 20.4 | 19.9 |
| 362015 | 20.1 | 20.5 | 320697 | 20.1 | 20.9 | 503163 | 20.2 | 20.2 | 206703 | 20.3 | 19.8 | 417771 | 20.4 | 21.1 | 363041 | 20.4 | 18.7 |
| 234117 | 20.1 | 20.3 | 121458 | 20.1 | 18.9 | 453256 | 20.2 | 19.0 | 394768 | 20.3 | 20.8 | 316621 | 20.4 | 20.6 | 306872 | 20.4 | 19.0 |
| 489290 | 20.1 | 20.6 | 215998 | 20.1 | 20.0 | 20603 | 20.2 | 18.5 | 216691 | 20.3 | 20.0 | 161372 | 20.4 | 18.9 | 94402 | 20.4 | 18.9 |
| 410781 | 20.1 | 20.1 | 373576 | 20.1 | 20.6 | 309668 | 20.2 | 20.2 | 335612 | 20.3 | 20.4 | 535014 | 20.4 | 21.7 | 196765 | 20.4 | 19.0 |
| 380119 | 20.1 | 21.4 | 67881 | 20.1 | 19.1 | 524570 | 20.2 | 21.2 | 510159 | 20.3 | 21.7 | 297783 | 20.4 | 20.2 | 303968 | 20.4 | 19.9 |
| 32427 | 20.1 | 19.0 | 501332 | 20.1 | 20.4 | 501251 | 20.2 | 20.6 | 313751 | 20.3 | 20.9 | 329318 | 20.4 | 17.7 | 211993 | 20.4 | 20.1 |
| 298305 | 20.1 | 20.2 | 322762 | 20.1 | 20.5 | 297670 | 20.2 | 19.1 | 246720 | 20.3 | 19.6 | 237146 | 20.4 | 20.3 | 45973 | 20.4 | 18.7 |
| 158502 | 20.1 | 20.0 | 387506 | 20.1 | 21.0 | 129427 | 20.2 | 20.3 | 531979 | 20.3 | 21.9 | 237102 | 20.4 | 20.4 | 109589 | 20.4 | 18.5 |
| 77169 | 20.1 | 19.4 | 3379 | 20.1 | 16.5 | 37484 | 20.2 | 18.9 | 152060 | 20.3 | 19.6 | 341552 | 20.4 | 20.3 | 241747 | 20.4 | 19.9 |
| 186386 | 20.1 | 19.5 | 533955 | 20.1 | 20.6 | 21113 | 20.2 | 17.4 | 235015 | 20.3 | 19.2 | 425828 | 20.4 | 21.7 | 86047 | 20.4 | 23.1 |
| 166150 | 20.1 | 19.6 | 474742 | 20.1 | 21.4 | 177116 | 20.2 | 20.2 | 469255 | 20.3 | 20.4 | 265748 | 20.4 | 19.7 | 14330 | 20.4 | 18.5 |
| 246125 | 20.1 | 18.5 | 321876 | 20.1 | 21.0 | 236736 | 20.2 | 18.8 | 470428 | 20.3 | 21.0 | 397429 | 20.4 | 20.8 | 465955 | 20.4 | 20.4 |
| 158402 | 20.1 | 19.6 | 5733 | 20.1 | 17.0 | 429672 | 20.2 | 21.3 | 512301 | 20.3 | 20.8 | 457684 | 20.4 | 21.6 | 117212 | 20.4 | 19.0 |
| 391115 | 20.1 | 19.6 | 133402 | 20.1 | 19.1 | 231889 | 20.2 | 18.9 | 540622 | 20.3 | 20.3 | 392040 | 20.4 | 19.9 | 45309 | 20.4 | 17.5 |
| 334348 | 20.1 | 21.0 | 4471 | 20.1 | 15.6 | 540589 | 20.2 | 20.7 | 88236 | 20.3 | 17.9 | 411726 | 20.4 | 21.7 | 221648 | 20.4 | 21.1 |
| 414165 | 20.1 | 20.4 | 163174 | 20.2 | 19.4 | 471464 | 20.2 | 19.1 | 352705 | 20.3 | 18.9 | 122016 | 20.4 | 18.5 | 375932 | 20.4 | 20.5 |
| 379398 | 20.1 | 20.2 | 313611 | 20.2 | 18.4 | 119427 | 20.2 | 18.0 | 496359 | 20.3 | 20.6 | 241323 | 20.4 | 20.2 | 55941 | 20.4 | 19.1 |
| 312830 | 20.1 | 19.9 | 464706 | 20.2 | 20.0 | 205884 | 20.2 | 19.0 | 478304 | 20.3 | 21.0 | 398848 | 20.4 | 20.5 | 154580 | 20.4 | 20.5 |
| 474338 | 20.1 | 20.2 | 223635 | 20.2 | 18.7 | 207831 | 20.2 | 20.3 | 39188 | 20.3 | 18.2 | 136560 | 20.4 | 19.6 | 36400 | 20.4 | 17.5 |
| 17081 | 20.1 | 15.5 | 70193 | 20.2 | 18.3 | 60593 | 20.2 | 19.1 | 435765 | 20.3 | 19.6 | 314130 | 20.4 | 21.2 | 338786 | 20.4 | 19.6 |
| 80793 | 20.1 | 19.3 | 284718 | 20.2 | 18.7 | 93588 | 20.2 | 18.7 | 162529 | 20.3 | 18.4 | 308006 | 20.4 | 19.5 | 26021 | 20.4 | 18.1 |
| 321031 | 20.1 | 19.7 | 117882 | 20.2 | 18.9 | 251020 | 20.2 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 396394 | 20.5 | 20.5 | 140671 | 20.6 | 19.3 | 2607 | 20.6 | 14.9 | 101699 | 20.7 | 18.2 | 268997 | 20.8 | 19.4 | 198150 | 20.9 | 20.4 |
| 122837 | 20.5 | 18.3 | 146560 | 20.6 | 18.8 | 302319 | 20.6 | 20.4 | 522606 | 20.7 | 21.2 | 268374 | 20.8 | 19.5 | 235261 | 20.9 | 20.2 |
| 459991 | 20.5 | 21.1 | 258014 | 20.6 | 19.4 | 64194 | 20.6 | 18.2 | 377786 | 20.7 | 20.9 | 302372 | 20.8 | 20.7 | 92646 | 20.9 | 17.7 |
| 473086 | 20.5 | 21.1 | 468299 | 20.6 | 20.1 | 203377 | 20.6 | 18.3 | 98473 | 20.7 | 17.0 | 409363 | 20.8 | 20.5 | 62458 | 20.9 | 17.5 |
| 321668 | 20.5 | 20.2 | 490288 | 20.6 | 21.4 | 128696 | 20.6 | 19.2 | 173367 | 20.7 | 20.4 | 276951 | 20.8 | 20.4 | 365838 | 20.9 | 21.0 |
| 361640 | 20.5 | 17.7 | 327841 | 20.6 | 21.0 | 17450 | 20.6 | 17.2 | 524160 | 20.7 | 21.0 | 443756 | 20.8 | 19.8 | 256299 | 20.9 | 20.2 |
| 255597 | 20.5 | 18.9 | 523725 | 20.6 | 22.2 | 66956 | 20.6 | 18.9 | 219709 | 20.7 | 19.1 | 466981 | 20.8 | 21.8 | 58646 | 20.9 | 17.9 |
| 488665 | 20.5 | 21.3 | 536368 | 20.6 | 20.8 | 158496 | 20.6 | 19.3 | 212663 | 20.7 | 19.4 | 294312 | 20.8 | 21.0 | 222674 | 20.9 | 19.1 |
| 90723 | 20.5 | 19.2 | 338569 | 20.6 | 18.8 | 259315 | 20.6 | 20.6 | 422136 | 20.7 | 19.7 | 143415 | 20.8 | 20.4 | 225706 | 20.9 | 18.6 |
| 240781 | 20.5 | 19.4 | 135183 | 20.6 | 19.2 | 390 | 20.6 | 14.4 | 7077 | 20.7 | 17.4 | 498722 | 20.8 | 19.1 | 353521 | 20.9 | 20.7 |
| 436368 | 20.5 | 19.3 | 290376 | 20.6 | 20.3 | 129646 | 20.6 | 18.6 | 475275 | 20.7 | 20.8 | 141866 | 20.8 | 19.1 | 31032 | 20.9 | 19.1 |
| 431946 | 20.5 | 19.9 | 335610 | 20.6 | 20.9 | 249161 | 20.6 | 19.3 | 151759 | 20.7 | 19.7 | 478376 | 20.8 | 20.7 | 280365 | 20.9 | 19.0 |
| 131984 | 20.5 | 19.1 | 375834 | 20.6 | 20.6 | 478019 | 20.6 | 20.9 | 305848 | 20.7 | 21.1 | 51049 | 20.8 | 17.8 | 525817 | 20.9 | 21.5 |
| 298327 | 20.5 | 20.4 | 215875 | 20.6 | 19.5 | 388021 | 20.6 | 20.1 | 250099 | 20.7 | 19.3 | 508629 | 20.8 | 18.9 | 299433 | 20.9 | 21.6 |
| 140226 | 20.5 | 20.3 | 6274 | 20.6 | 15.8 | 338721 | 20.6 | 20.1 | 355735 | 20.7 | 20.0 | 540910 | 20.8 | 21.3 | 218246 | 20.9 | 19.9 |
| 455067 | 20.5 | 19.5 | 375858 | 20.6 | 20.6 | 259040 | 20.6 | 19.4 | 18711 | 20.7 | 18.5 | 338649 | 20.8 | 20.6 | 244909 | 20.9 | 21.0 |
| 425833 | 20.5 | 20.1 | 430785 | 20.6 | 20.5 | 168979 | 20.6 | 19.8 | 423187 | 20.7 | 19.2 | 90669 | 20.8 | 18.9 | 151458 | 20.9 | 19.6 |
| 129993 | 20.5 | 18.0 | 461641 | 20.6 | 21.9 | 433453 | 20.6 | 20.1 | 1215 | 20.7 | 14.0 | 425934 | 20.8 | 20.9 | 466150 | 20.9 | 20.6 |
| 478977 | 20.5 | 21.4 | 257877 | 20.6 | 19.8 | 355663 | 20.6 | 20.2 | 300169 | 20.7 | 19.0 | 396331 | 20.8 | 20.1 | 281270 | 20.9 | 20.2 |
| 506826 | 20.5 | 20.6 | 250935 | 20.6 | 18.8 | 68740 | 20.6 | 18.2 | 492310 | 20.7 | 21.2 | 384710 | 20.8 | 19.8 | 237072 | 20.9 | 19.8 |
| 452783 | 20.5 | 22.4 | 500150 | 20.6 | 20.8 | 524287 | 20.6 | 20.6 | 36021 | 20.7 | 17.2 | 150993 | 20.8 | 20.6 | 402845 | 20.9 | 19.1 |
| 181731 | 20.5 | 21.3 | 86064 | 20.6 | 18.8 | 377811 | 20.6 | 20.8 | 7462 | 20.7 | 16.9 | 64162 | 20.8 | 19.1 | 475473 | 20.9 | 20.7 |
| 467265 | 20.5 | 19.7 | 410356 | 20.6 | 18.5 | 532752 | 20.6 | 20.5 | 431132 | 20.7 | 19.2 | 240621 | 20.8 | 18.1 | 269297 | 20.9 | 18.6 |
| 505760 | 20.5 | 21.2 | 307191 | 20.6 | 20.7 | 294557 | 20.6 | 20.1 | 421549 | 20.7 | 19.3 | 411653 | 20.8 | 21.2 | 53989 | 20.9 | 19.9 |
| 412450 | 20.5 | 21.5 | 531019 | 20.6 | 20.1 | 327418 | 20.6 | 20.7 | 390166 | 20.7 | 20.5 | 431121 | 20.8 | 22.1 | 12694 | 20.9 | 18.8 |
| 110557 | 20.5 | 18.2 | 289526 | 20.6 | 21.0 | 358373 | 20.6 | 21.8 | 419846 | 20.7 | 19.6 | 522097 | 20.8 | 20.5 | 68772 | 20.9 | 17.7 |
| 241400 | 20.5 | 21.0 | 204076 | 20.6 | 20.1 | 536828 | 20.6 | 19.9 | 281612 | 20.7 | 19.8 | 156012 | 20.8 | 18.1 | 196563 | 20.9 | 19.1 |
| 21322 | 20.5 | 19.9 | 451892 | 20.6 | 20.5 | 74614 | 20.6 | 19.1 | 208605 | 20.7 | 21.1 | 36828 | 20.8 | 18.8 | 244232 | 20.9 | 18.8 |
| 365575 | 20.5 | 19.8 | 147730 | 20.6 | 19.4 | 248381 | 20.7 | 18.4 | 272525 | 20.7 | 19.0 | 166946 | 20.8 | 20.4 | 316664 | 20.9 | 21.8 |
| 502593 | 20.5 | 20.5 | 521379 | 20.6 | 21.0 | 13418 | 20.7 | 16.1 | 248621 | 20.7 | 20.9 | 490033 | 20.8 | 19.7 | 164325 | 20.9 | 19.7 |
| 279220 | 20.5 | 20.4 | 307164 | 20.6 | 19.8 | 499775 | 20.7 | 22.0 | 118418 | 20.7 | 18.8 | 383889 | 20.8 | 18.2 | 377829 | 20.9 | 21.1 |
| 172073 | 20.5 | 18.7 | 415064 | 20.6 | 18.6 | 3068 | 20.7 | 16.1 | 309253 | 20.7 | 20.4 | 21256 | 20.8 | 19.2 | 237257 | 20.9 | 20.4 |
| 230248 | 20.5 | 21.3 | 196704 | 20.6 | 19.6 | 133396 | 20.7 | 18.6 | 402948 | 20.7 | 20.2 | 359675 | 20.8 | 20.9 | 14950 | 20.9 | 16.9 |
| 353483 | 20.5 | 19.3 | 495943 | 20.6 | 20.3 | 74890 | 20.7 | 18.5 | 63121 | 20.7 | 18.6 | 482821 | 20.8 | 19.2 | 501303 | 20.9 | 20.9 |
| 305995 | 20.5 | 19.6 | 391819 | 20.6 | 21.0 | 342870 | 20.7 | 20.2 | 141497 | 20.7 | 20.2 | 112056 | 20.8 | 19.6 | 281048 | 20.9 | 20.8 |
| 524398 | 20.5 | 20.4 | 463127 | 20.6 | 21.1 | 509839 | 20.7 | 20.0 | 234805 | 20.7 | 19.8 | 509341 | 20.8 | 19.9 | 264782 | 20.9 | 19.3 |
| 185317 | 20.5 | 19.7 | 295356 | 20.6 | 20.1 | 532592 | 20.7 | 20.4 | 201636 | 20.7 | 19.0 | 351509 | 20.8 | 20.0 | 302481 | 20.9 | 20.3 |
| 320098 | 20.5 | 19.3 | 293199 | 20.6 | 19.7 | 359074 | 20.7 | 20.0 | 305970 | 20.7 | 20.9 | 282545 | 20.8 | 18.5 | 15150 | 20.9 | 16.0 |
| 151113 | 20.5 | 20.2 | 496232 | 20.6 | 21.2 | 101829 | 20.7 | 19.8 | 516666 | 20.7 | 20.9 | 455086 | 20.8 | 20.5 | 82577 | 20.9 | 18.2 |
| 290426 | 20.5 | 20.0 | 404133 | 20.6 | 20.9 | 293247 | 20.7 | 21.1 | 313400 | 20.7 | 19.6 | 520046 | 20.8 | 21.6 | 332060 | 20.9 | 19.6 |
| 502605 | 20.5 | 20.4 | 466166 | 20.6 | 20.2 | 203013 | 20.7 | 20.4 | 497402 | 20.7 | 18.5 | 24182 | 20.8 | 17.9 | 162634 | 20.9 | 19.3 |
| 32271 | 20.5 | 18.0 | 107686 | 20.6 | 19.2 | 276432 | 20.7 | 21.5 | 175456 | 20.7 | 20.5 | 426162 | 20.8 | 19.1 | 175534 | 20.9 | 17.8 |
| 35028 | 20.5 | 19.7 | 303374 | 20.6 | 19.8 | 250549 | 20.7 | 20.4 | 12014 | 20.7 | 17.2 | 132173 | 20.8 | 19.6 | 21192 | 20.9 | 17.5 |
| 223477 | 20.5 | 19.9 | 502822 | 20.6 | 20.3 | 91944 | 20.7 | 18.8 | 298283 | 20.7 | 21.1 | 190596 | 20.8 | 19.2 | 117793 | 20.9 | 20.6 |
| 166504 | 20.5 | 19.3 | 78140 | 20.6 | 17.7 | 150290 | 20.7 | 18.9 | 48281 | 20.7 | 18.4 | 313743 | 20.8 | 19.3 | 219526 | 20.9 | 18.3 |
| 371060 | 20.5 | 20.8 | 8665 | 20.6 | 18.0 | 173975 | 20.7 | 21.0 | 89712 | 20.7 | 18.1 | 101744 | 20.8 | 19.3 | 535814 | 20.9 | 21.5 |
| 175399 | 20.5 | 19.4 | 287047 | 20.6 | 20.2 | 2098 | 20.7 | 14.7 | 125815 | 20.7 | 18.6 | 493543 | 20.8 | 20.2 | 412416 | 20.9 | 19.8 |
| 179368 | 20.5 | 20.3 | 28038 | 20.6 | 19.3 | 435785 | 20.7 | 21.0 | 310507 | 20.7 | 19.3 | 70904 | 20.8 | 19.1 | 250736 | 20.9 | 20.4 |
| 331895 | 20.5 | 18.7 | 469274 | 20.6 | 19.6 | 255380 | 20.7 | 19.7 | 510770 | 20.7 | 20.5 | 172404 | 20.8 | 19.6 | 437432 | 20.9 | 20.3 |
| 215072 | 20.5 | 19.9 | 490678 | 20.6 | 19.5 | 179465 | 20.7 | 20.2 | 16688 | 20.7 | 17.9 | 396452 | 20.8 | 20.7 | 155529 | 20.9 | 19.2 |
| 501249 | 20.5 | 19.8 | 475685 | 20.6 | 19.4 | 368901 | 20.7 | 19.3 | 292026 | 20.7 | 20.5 | 35180 | 20.8 | 17.0 | 534172 | 20.9 | 20.5 |
| 40425 | 20.5 | 18.4 | 144796 | 20.6 | 19.7 | 330313 | 20.7 | 21.3 | 147878 | 20.7 | 18.8 | 88567 | 20.8 | 18.7 | 219813 | 20.9 | 19.0 |
| 68653 | 20.5 | 18.0 | 539615 | 20.6 | 21.2 | 177087 | 20.7 | 20.1 | 276936 | 20.7 | 19.9 | 540655 | 20.8 | 20.9 | 302842 | 20.9 | 18.8 |
| 477653 | 20.5 | 19.9 | 499874 | 20.6 | 20.2 | 78993 | 20.7 | 19.4 | 191822 | 20.7 | 18.8 | 432840 | 20.8 | 21.2 | 439698 | 20.9 | 21.3 |
| 258562 | 20.5 | 19.7 | 244136 | 20.6 | 19.4 | 278708 | 20.7 | 20.2 | 439470 | 20.7 | 21.5 | 280362 | 20.8 | 20.3 | 129493 | 20.9 | 20.2 |
| 437231 | 20.5 | 20.5 | 282627 | 20.6 | 20.2 | 429560 | 20.7 | 21.6 | 92979 | 20.7 | 18.1 | 476512 | 20.8 | 21.0 | 221451 | 20.9 | 19.3 |
| 491863 | 20.5 | 21.3 | 357943 | 20.6 | 20.6 | 478280 | 20.7 | 21.5 | 58518 | 20.7 | 19.2 | 513211 | 20.8 | 21.6 | 247396 | 20.9 | 19.3 |
| 161629 | 20.5 | 19.5 | 206747 | 20.6 | 19.7 | 270472 | 20.7 | 20.7 | 87334 | 20.8 | 18.4 | 53230 | 20.8 | 19.1 | 416047 | 20.9 | 20.5 |
| 380410 | 20.5 | 19.8 | 197870 | 20.6 | 18.8 | 382893 | 20.7 | 19.6 | 289729 | 20.8 | 19.9 | 266946 | 20.8 | 21.0 | 204262 | 20.9 | 20.3 |
| 56837 | 20.5 | 18.0 | 534453 | 20.6 | 20.5 | 192328 | 20.7 | 19.9 | 475252 | 20.8 | 20.6 | 204904 | 20.8 | 20.1 | 155031 | 20.9 | 19.5 |
| 371120 | 20.5 | 20.1 | 346044 | 20.6 | 19.6 | 387835 | 20.7 | 20.6 | 359505 | 20.8 | 19.3 | 293458 | 20.8 | 20.0 | 501265 | 20.9 | 19.1 |
| 31480 | 20.5 | 18.0 | 350655 | 20.6 | 20.1 | 340538 | 20.7 | 20.1 | 282474 | 20.8 | 19.9 | 31061 | 20.8 | 19.0 | 492292 | 20.9 | 21.5 |
| 211988 | 20.5 | 20.8 | 213858 | 20.6 | 19.6 | 404165 | 20.7 | 20.4 | 278228 | 20.8 | 21.1 | 105867 | 20.8 | 18.2 | 229389 | 20.9 | 20.6 |
| 271051 | 20.5 | 21.2 | 214546 | 20.6 | 19.0 | 333828 | 20.7 | 20.6 | 162195 | 20.8 | 21.9 | 302802 | 20.8 | 21.4 | 490623 | 20.9 | 21.3 |
| 70245 | 20.5 | 18.9 | 298757 | 20.6 | 20.0 | 39201 | 20.7 | 16.9 | 141033 | 20.8 | 19.8 | 497543 | 20.8 | 20.3 | 73701 | 20.9 | 18.8 |
| 305538 | 20.5 | 20.4 | 3744 | 20.6 | 16.0 | 15578 | 20.7 | 17.4 | 100033 | 20.8 | 19.6 | 514678 | 20.8 | 21.3 | 512486 | 20.9 | 19.6 |
| 478339 | 20.5 | 20.8 | 241524 | 20.6 | 19.8 | 347094 | 20.7 | 20.6 | 497433 | 20.8 | 21.1 | 201842 | 20.8 | 20.1 | 85876 | 20.9 | 16.3 |
| 475738 | 20.5 | 20.7 | 183091 | 20.6 | 19.8 | 87401 | 20.7 | 18.2 | 27582 | 20.8 | 18.4 | 519047 | 20.8 | 20.6 | 162099 | 20.9 | 17.3 |
| 192791 | 20.5 | 18.5 | 414183 | 20.6 | 21.9 | 464735 | 20 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V | N _e | 08 | V |
|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|
| 100042 | 20.9 | 17.2 | 224508 | 20.9 | 19.5 | 225002 | 21.1 | 19.2 | 55462 | 21.1 | 17.5 | 405874 | 21.3 | 20.9 | 396626 | 21.3 | 19.0 |
| 464405 | 20.9 | 21.1 | 537147 | 20.9 | 20.3 | 73105 | 21.1 | 17.2 | 257884 | 21.1 | 19.7 | 473953 | 21.3 | 21.3 | 525712 | 21.3 | 20.3 |
| 19433 | 20.9 | 18.0 | 468438 | 20.9 | 20.6 | 191429 | 21.1 | 19.2 | 388847 | 21.1 | 20.4 | 3549 | 21.3 | 17.1 | 498760 | 21.3 | 20.5 |
| 396531 | 20.9 | 21.1 | 192777 | 20.9 | 19.8 | 401052 | 21.1 | 21.7 | 55981 | 21.1 | 18.9 | 215129 | 21.3 | 18.8 | 382879 | 21.3 | 17.5 |
| 175912 | 20.9 | 19.9 | 532974 | 20.9 | 21.5 | 35760 | 21.1 | 19.1 | 357214 | 21.2 | 18.8 | 428686 | 21.3 | 19.4 | 523112 | 21.3 | 20.4 |
| 107897 | 20.9 | 19.7 | 156496 | 21.0 | 20.2 | 524939 | 21.1 | 20.3 | 536690 | 21.2 | 21.7 | 203603 | 21.3 | 20.5 | 204687 | 21.3 | 20.5 |
| 217628 | 20.9 | 22.3 | 502966 | 21.0 | 20.7 | 156967 | 21.1 | 21.2 | 73410 | 21.2 | 17.9 | 479999 | 21.3 | 21.1 | 497315 | 21.3 | 21.4 |
| 146121 | 20.9 | 18.4 | 523163 | 21.0 | 20.3 | 314820 | 21.1 | 20.6 | 84253 | 21.2 | 19.4 | 244260 | 21.3 | 20.6 | 173281 | 21.4 | 18.7 |
| 115057 | 20.9 | 18.7 | 424157 | 21.0 | 22.3 | 125481 | 21.1 | 20.1 | 261223 | 21.2 | 21.3 | 320376 | 21.3 | 19.9 | 523727 | 21.4 | 20.1 |
| 363765 | 20.9 | 20.2 | 427733 | 21.0 | 18.4 | 500073 | 21.1 | 20.6 | 457613 | 21.2 | 20.4 | 528413 | 21.3 | 19.8 | 379403 | 21.4 | 20.5 |
| 371049 | 20.9 | 19.9 | 389298 | 21.0 | 20.2 | 291271 | 21.1 | 19.9 | 216905 | 21.2 | 20.0 | 324405 | 21.3 | 19.9 | 227350 | 21.4 | 19.2 |
| 523614 | 20.9 | 25.2 | 245504 | 21.0 | 19.2 | 234192 | 21.1 | 18.3 | 530332 | 21.2 | 22.4 | 68536 | 21.3 | 17.5 | 516215 | 21.4 | 20.6 |
| 470935 | 20.9 | 20.3 | 12466 | 21.0 | 16.9 | 328226 | 21.1 | 19.7 | 279361 | 21.2 | 19.9 | 302411 | 21.3 | 20.4 | 192748 | 21.4 | 18.7 |
| 432420 | 20.9 | 20.3 | 477625 | 21.0 | 19.9 | 107703 | 21.1 | 18.4 | 17385 | 21.2 | 19.1 | 69265 | 21.3 | 17.8 | 374310 | 21.4 | 20.3 |
| 64772 | 20.9 | 19.1 | 129774 | 21.0 | 20.3 | 426846 | 21.1 | 19.9 | 36127 | 21.2 | 17.6 | 463906 | 21.3 | 21.0 | 253515 | 21.4 | 19.2 |
| 344614 | 20.9 | 20.7 | 20964 | 21.0 | 17.0 | 534991 | 21.1 | 20.6 | 476378 | 21.2 | 21.0 | 47979 | 21.3 | 18.4 | 285156 | 21.4 | 20.8 |
| 506056 | 20.9 | 20.2 | 438242 | 21.0 | 19.8 | 293214 | 21.1 | 22.0 | 308448 | 21.2 | 20.0 | 88761 | 21.3 | 18.3 | 43363 | 21.4 | 18.6 |
| 17378 | 20.9 | 18.6 | 325154 | 21.0 | 20.2 | 230975 | 21.1 | 19.7 | 358452 | 21.2 | 19.6 | 160947 | 21.3 | 19.1 | 17371 | 21.4 | 17.9 |
| 241978 | 20.9 | 19.5 | 521057 | 21.0 | 21.2 | 469051 | 21.1 | 20.7 | 415728 | 21.2 | 21.4 | 191922 | 21.3 | 20.2 | 244218 | 21.4 | 20.1 |
| 391280 | 20.9 | 20.7 | 533303 | 21.0 | 20.2 | 245046 | 21.1 | 18.4 | 175064 | 21.2 | 19.5 | 272719 | 21.3 | 20.2 | 519153 | 21.4 | 20.7 |
| 57469 | 20.9 | 19.5 | 451867 | 21.0 | 18.9 | 304626 | 21.1 | 20.9 | 202819 | 21.2 | 20.2 | 443013 | 21.3 | 20.8 | 293010 | 21.4 | 20.4 |
| 199459 | 20.9 | 19.8 | 351224 | 21.0 | 19.0 | 203779 | 21.1 | 19.6 | 457724 | 21.2 | 21.0 | 532000 | 21.3 | 20.6 | 152269 | 21.4 | 20.8 |
| 518069 | 20.9 | 20.7 | 533484 | 21.0 | 21.4 | 287229 | 21.1 | 20.0 | 129228 | 21.2 | 19.9 | 249137 | 21.3 | 20.4 | 36969 | 21.4 | 17.5 |
| 501572 | 20.9 | 20.9 | 323754 | 21.0 | 18.9 | 153820 | 21.1 | 19.9 | 396220 | 21.2 | 20.0 | 477095 | 21.3 | 20.6 | 304147 | 21.4 | 21.5 |
| 352559 | 20.9 | 20.1 | 412316 | 21.0 | 19.2 | 471361 | 21.1 | 20.6 | 151993 | 21.2 | 19.6 | 326190 | 21.3 | 20.8 | 354888 | 21.4 | 20.2 |
| 126171 | 20.9 | 19.9 | 423799 | 21.0 | 20.1 | 525473 | 21.1 | 21.5 | 188367 | 21.2 | 17.6 | 439724 | 21.3 | 20.9 | 174808 | 21.4 | 19.6 |
| 274523 | 20.9 | 19.5 | 212527 | 21.0 | 20.1 | 475495 | 21.1 | 21.2 | 28547 | 21.2 | 18.3 | 339029 | 21.3 | 20.1 | 524541 | 21.4 | 21.0 |
| 381919 | 20.9 | 21.2 | 195455 | 21.0 | 19.5 | 454156 | 21.1 | 21.9 | 122785 | 21.2 | 18.5 | 291884 | 21.3 | 18.7 | 539280 | 21.4 | 20.6 |
| 124643 | 20.9 | 18.3 | 23849 | 21.0 | 18.1 | 131910 | 21.1 | 19.1 | 434482 | 21.2 | 19.5 | 315147 | 21.3 | 20.9 | 29866 | 21.4 | 17.9 |
| 176824 | 20.9 | 18.7 | 307506 | 21.0 | 20.2 | 83181 | 21.1 | 19.1 | 128589 | 21.2 | 19.3 | 296905 | 21.3 | 21.1 | 464774 | 21.4 | 20.6 |
| 161279 | 20.9 | 18.8 | 377329 | 21.0 | 18.2 | 209358 | 21.1 | 20.0 | 136915 | 21.2 | 19.8 | 35003 | 21.3 | 17.3 | 250562 | 21.4 | 20.0 |
| 452415 | 20.9 | 18.9 | 428293 | 21.0 | 19.4 | 392183 | 21.1 | 18.2 | 275066 | 21.2 | 20.0 | 102368 | 21.3 | 19.5 | 45204 | 21.4 | 18.6 |
| 31147 | 20.9 | 17.2 | 434669 | 21.0 | 21.3 | 361126 | 21.1 | 20.7 | 191597 | 21.2 | 19.6 | 394727 | 21.3 | 20.0 | 210573 | 21.4 | 19.5 |
| 479965 | 20.9 | 20.6 | 46755 | 21.0 | 15.9 | 19350 | 21.1 | 18.0 | 359816 | 21.2 | 20.3 | 303303 | 21.3 | 21.4 | 540318 | 21.4 | 20.6 |
| 530185 | 20.9 | 21.7 | 96700 | 21.0 | 17.9 | 418066 | 21.1 | 20.6 | 380283 | 21.2 | 20.5 | 216784 | 21.3 | 20.3 | 513549 | 21.4 | 19.3 |
| 242793 | 20.9 | 20.0 | 355200 | 21.0 | 21.2 | 159507 | 21.1 | 19.1 | 540882 | 21.2 | 21.2 | 349367 | 21.3 | 20.4 | 101067 | 21.4 | 19.0 |
| 44682 | 20.9 | 18.0 | 278853 | 21.0 | 19.6 | 239584 | 21.1 | 20.5 | 350982 | 21.2 | 20.3 | 193766 | 21.3 | 19.2 | 70585 | 21.4 | 18.9 |
| 14025 | 20.9 | 17.4 | 435281 | 21.0 | 20.1 | 284690 | 21.1 | 20.1 | 105360 | 21.2 | 19.0 | 278911 | 21.3 | 20.5 | 283286 | 21.4 | 19.8 |
| 460205 | 20.9 | 19.6 | 86207 | 21.0 | 18.8 | 528683 | 21.1 | 19.7 | 535820 | 21.2 | 21.9 | 192123 | 21.3 | 19.7 | 167787 | 21.4 | 19.9 |
| 192950 | 20.9 | 20.4 | 129336 | 21.0 | 20.1 | 225851 | 21.1 | 19.4 | 229229 | 21.2 | 20.5 | 240402 | 21.3 | 19.9 | 260998 | 21.4 | 20.6 |
| 527787 | 20.9 | 20.7 | 106972 | 21.0 | 18.3 | 102798 | 21.1 | 19.2 | 444030 | 21.2 | 20.8 | 356841 | 21.3 | 20.9 | 470316 | 21.4 | 20.7 |
| 72550 | 20.9 | 19.1 | 301576 | 21.0 | 20.8 | 157060 | 21.1 | 19.3 | 381528 | 21.2 | 20.9 | 98144 | 21.3 | 18.1 | 130126 | 21.4 | 18.7 |
| 60340 | 20.9 | 18.4 | 302232 | 21.0 | 18.6 | 40277 | 21.1 | 18.8 | 190417 | 21.2 | 19.1 | 155522 | 21.3 | 17.5 | 177848 | 21.4 | 19.9 |
| 471447 | 20.9 | 19.5 | 353169 | 21.0 | 20.3 | 276127 | 21.1 | 20.5 | 323759 | 21.2 | 19.9 | 654 | 21.3 | 12.8 | 124758 | 21.4 | 20.1 |
| 531073 | 20.9 | 22.3 | 499915 | 21.0 | 20.7 | 59756 | 21.1 | 18.4 | 212019 | 21.2 | 20.4 | 305614 | 21.3 | 20.2 | 434680 | 21.4 | 21.7 |
| 115794 | 20.9 | 19.1 | 479900 | 21.0 | 20.4 | 472336 | 21.1 | 20.1 | 248534 | 21.2 | 20.0 | 311366 | 21.3 | 19.8 | 223179 | 21.4 | 20.3 |
| 308971 | 20.9 | 19.2 | 534786 | 21.0 | 21.1 | 224459 | 21.1 | 19.9 | 305378 | 21.2 | 21.1 | 304760 | 21.3 | 20.7 | 355644 | 21.4 | 20.9 |
| 47276 | 20.9 | 18.2 | 528973 | 21.0 | 21.2 | 201749 | 21.1 | 19.3 | 100438 | 21.2 | 18.4 | 18139 | 21.3 | 17.8 | 95583 | 21.4 | 18.9 |
| 308455 | 20.9 | 19.6 | 512491 | 21.0 | 19.4 | 475874 | 21.1 | 21.6 | 413362 | 21.2 | 21.1 | 253985 | 21.3 | 21.2 | 45839 | 21.4 | 18.2 |
| 151827 | 20.9 | 18.7 | 26268 | 21.0 | 17.6 | 505095 | 21.1 | 19.5 | 39916 | 21.2 | 18.3 | 472953 | 21.3 | 20.4 | 299366 | 21.4 | 20.0 |
| 18553 | 20.9 | 17.4 | 464327 | 21.0 | 20.8 | 307372 | 21.1 | 19.7 | 272853 | 21.2 | 20.6 | 123617 | 21.3 | 19.5 | 70511 | 21.4 | 18.7 |
| 309153 | 20.9 | 21.0 | 427946 | 21.0 | 20.4 | 524480 | 21.1 | 19.7 | 79470 | 21.2 | 19.7 | 533793 | 21.3 | 20.6 | 285799 | 21.4 | 19.9 |
| 270301 | 20.9 | 19.6 | 143558 | 21.0 | 19.7 | 297023 | 21.1 | 19.3 | 65824 | 21.2 | 17.5 | 309144 | 21.3 | 20.6 | 310127 | 21.4 | 19.9 |
| 190608 | 20.9 | 19.0 | 285064 | 21.0 | 19.6 | 329579 | 21.1 | 19.9 | 264531 | 21.2 | 20.0 | 36627 | 21.3 | 18.6 | 362079 | 21.4 | 20.6 |
| 4679 | 20.9 | 16.6 | 362668 | 21.0 | 20.3 | 366272 | 21.1 | 19.1 | 503657 | 21.2 | 19.5 | 521362 | 21.3 | 20.4 | 463434 | 21.4 | 21.2 |
| 466058 | 20.9 | 20.2 | 127680 | 21.0 | 18.5 | 230866 | 21.1 | 19.2 | 539908 | 21.2 | 19.4 | 379302 | 21.3 | 19.5 | 526172 | 21.4 | 22.3 |
| 499249 | 20.9 | 21.0 | 394777 | 21.1 | 22.0 | 202459 | 21.1 | 20.2 | 419633 | 21.2 | 20.1 | 57382 | 21.3 | 18.3 | 213318 | 21.4 | 18.9 |
| 224450 | 20.9 | 17.9 | 170927 | 21.1 | 19.3 | 162619 | 21.1 | 18.1 | 58048 | 21.2 | 16.6 | 463487 | 21.3 | 20.6 | 295156 | 21.4 | 19.9 |
| 59697 | 20.9 | 19.3 | 261851 | 21.1 | 20.9 | 183062 | 21.1 | 20.0 | 411691 | 21.2 | 20.2 | 60184 | 21.3 | 19.4 | 250045 | 21.4 | 21.0 |
| 125181 | 20.9 | 18.8 | 354893 | 21.1 | 21.1 | 274886 | 21.1 | 21.0 | 470889 | 21.2 | 21.0 | 240020 | 21.3 | 19.2 | 503363 | 21.4 | 20.9 |
| 530853 | 20.9 | 20.5 | 523161 | 21.1 | 21.1 | 498442 | 21.1 | 21.5 | 478012 | 21.2 | 20.4 | 69634 | 21.3 | 19.4 | 33448 | 21.4 | 17.9 |
| 414179 | 20.9 | 21.2 | 295307 | 21.1 | 20.0 | 477188 | 21.1 | 20.7 | 3116 | 21.2 | 13.8 | 399958 | 21.3 | 19.6 | 396047 | 21.4 | 20.9 |
| 350171 | 20.9 | 19.5 | 463244 | 21.1 | 20.8 | 539171 | 21.1 | 21.0 | 531846 | 21.2 | 20.6 | 421884 | 21.3 | 21.1 | 150109 | 21.4 | 18.8 |
| 502256 | 20.9 | 20.2 | 511360 | 21.1 | 20.4 | 538324 | 21.1 | 21.0 | 540210 | 21.2 | 20.5 | 161260 | 21.3 | 19.3 | 98352 | 21.4 | 18.2 |
| 394332 | 20.9 | 20.3 | 184000 | 21.1 | 20.8 | 153826 | 21.1 | 20.9 | 145962 | 21.2 | 19.1 | 140657 | 21.3 | 19.7 | 138493 | 21.4 | 19.7 |
| 478159 | 20.9 | 20.1 | 70988 | 21.1 | 18.8 | 19390 | 21.1 | 17.9 | 424087 | 21.2 | 22.2 | 539231 | 21.3 | 21.2 | 163946 | 21.4 | 18.8 |
| 297776 | 20.9 | 20.5 | 231998 | 21.1 | 18.5 | 361068 | 21.1 | 21.0 | 95675 | 21.2 | 20.1 | 518586 | 21.3 | 21.0 | 214126 | 21.4 | 20.7 |
| 478066 | 20.9 | 19.9 | 479230 | 21.1 | 21.2 | 515177 | 21.1 | 22.1 | 308170 | 21.2 | 21.3 | 465047 | 21.3 | 19.8 | 511740 | 21.4 | 21.4 |
| 394315 | 20.9 | 20.4 | 333464</ | | | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 394737 | 21.4 | 21.3 | 461925 | 21.5 | 21.1 | 439155 | 21.6 | 19.7 | 439749 | 21.7 | 20.2 | 96324 | 21.8 | 19.4 | 486764 | 21.9 | 21.0 |
| 52845 | 21.4 | 18.2 | 510492 | 21.5 | 21.7 | 301622 | 21.6 | 20.7 | 92144 | 21.7 | 18.5 | 225163 | 21.8 | 19.4 | 55428 | 21.9 | 19.2 |
| 95330 | 21.4 | 18.8 | 519539 | 21.5 | 21.4 | 148466 | 21.6 | 19.1 | 539548 | 21.7 | 20.4 | 147159 | 21.8 | 18.6 | 45269 | 21.9 | 17.6 |
| 380652 | 21.4 | 20.2 | 199199 | 21.5 | 18.3 | 282123 | 21.6 | 20.5 | 295453 | 21.7 | 20.8 | 131833 | 21.8 | 19.3 | 9687 | 21.9 | 17.7 |
| 451939 | 21.4 | 20.1 | 157474 | 21.5 | 19.8 | 322884 | 21.6 | 18.3 | 178223 | 21.7 | 19.6 | 279622 | 21.8 | 21.0 | 514100 | 21.9 | 19.9 |
| 352453 | 21.4 | 20.1 | 525543 | 21.5 | 20.8 | 471348 | 21.6 | 19.8 | 362093 | 21.7 | 20.6 | 537174 | 21.8 | 21.5 | 35040 | 21.9 | 18.9 |
| 502257 | 21.4 | 20.6 | 123248 | 21.5 | 20.3 | 500018 | 21.6 | 21.2 | 67493 | 21.7 | 18.9 | 43563 | 21.8 | 17.4 | 255197 | 21.9 | 20.5 |
| 477650 | 21.4 | 20.8 | 305335 | 21.5 | 19.9 | 41476 | 21.6 | 17.8 | 59438 | 21.7 | 19.4 | 85616 | 21.8 | 18.6 | 166606 | 21.9 | 19.2 |
| 17950 | 21.4 | 16.4 | 458816 | 21.5 | 19.0 | 305503 | 21.6 | 20.6 | 506816 | 21.7 | 20.8 | 251996 | 21.8 | 20.4 | 299481 | 21.9 | 19.1 |
| 302327 | 21.4 | 20.1 | 351654 | 21.5 | 19.1 | 385097 | 21.6 | 20.5 | 302496 | 21.7 | 20.6 | 138490 | 21.8 | 19.6 | 287588 | 21.9 | 21.2 |
| 255393 | 21.4 | 19.5 | 376280 | 21.5 | 21.6 | 309270 | 21.6 | 19.2 | 74182 | 21.7 | 18.3 | 391788 | 21.8 | 19.5 | 93534 | 21.9 | 18.9 |
| 390498 | 21.4 | 20.2 | 357746 | 21.5 | 19.9 | 92901 | 21.6 | 18.7 | 496461 | 21.7 | 20.6 | 335783 | 21.8 | 19.7 | 534180 | 21.9 | 19.6 |
| 288327 | 21.4 | 20.3 | 525338 | 21.5 | 21.4 | 98366 | 21.6 | 20.0 | 126254 | 21.7 | 19.9 | 78139 | 21.8 | 18.5 | 280126 | 21.9 | 20.8 |
| 106674 | 21.4 | 18.6 | 286027 | 21.5 | 18.7 | 33142 | 21.6 | 18.2 | 308583 | 21.7 | 20.2 | 527742 | 21.8 | 21.2 | 216634 | 21.9 | 20.4 |
| 299923 | 21.4 | 21.7 | 270452 | 21.5 | 21.3 | 360371 | 21.6 | 20.7 | 93996 | 21.7 | 18.4 | 19432 | 21.8 | 17.9 | 19620 | 21.9 | 18.0 |
| 168229 | 21.4 | 18.5 | 60692 | 21.5 | 18.5 | 136303 | 21.6 | 19.3 | 308015 | 21.7 | 19.1 | 223669 | 21.8 | 19.5 | 199151 | 21.9 | 19.8 |
| 60991 | 21.4 | 17.3 | 305650 | 21.5 | 21.1 | 302332 | 21.6 | 20.3 | 199435 | 21.7 | 19.4 | 428702 | 21.8 | 19.1 | 280336 | 21.9 | 18.9 |
| 118934 | 21.4 | 19.5 | 506481 | 21.5 | 20.9 | 170333 | 21.6 | 18.7 | 34635 | 21.7 | 18.1 | 315927 | 21.8 | 19.4 | 203310 | 21.9 | 19.4 |
| 62570 | 21.4 | 18.2 | 131286 | 21.5 | 19.2 | 526325 | 21.6 | 20.3 | 110440 | 21.7 | 19.3 | 158465 | 21.8 | 19.7 | 505190 | 21.9 | 20.5 |
| 19183 | 21.4 | 16.9 | 171560 | 21.5 | 18.9 | 311266 | 21.6 | 19.6 | 479970 | 21.7 | 21.6 | 53348 | 21.8 | 18.1 | 535540 | 21.9 | 20.4 |
| 394622 | 21.4 | 22.0 | 406861 | 21.5 | 20.7 | 132168 | 21.6 | 19.1 | 341154 | 21.7 | 19.3 | 386152 | 21.8 | 21.3 | 333644 | 21.9 | 19.7 |
| 317866 | 21.4 | 20.0 | 278801 | 21.5 | 19.8 | 508523 | 21.6 | 20.3 | 251920 | 21.7 | 20.7 | 92026 | 21.8 | 17.9 | 191099 | 21.9 | 19.1 |
| 292128 | 21.4 | 20.5 | 199691 | 21.5 | 20.8 | 266838 | 21.6 | 19.6 | 1532 | 21.7 | 15.2 | 531863 | 21.8 | 21.0 | 390799 | 21.9 | 20.7 |
| 396032 | 21.4 | 21.0 | 151047 | 21.5 | 19.1 | 454142 | 21.6 | 21.0 | 31566 | 21.7 | 17.2 | 264636 | 21.8 | 20.3 | 455410 | 21.9 | 21.0 |
| 31735 | 21.4 | 17.3 | 188568 | 21.5 | 19.8 | 42684 | 21.6 | 19.8 | 2137 | 21.7 | 15.8 | 446653 | 21.8 | 20.8 | 250931 | 21.9 | 19.5 |
| 465700 | 21.5 | 20.0 | 204350 | 21.5 | 20.2 | 521285 | 21.6 | 21.0 | 466117 | 21.7 | 21.3 | 217860 | 21.8 | 19.6 | 29208 | 21.9 | 17.2 |
| 250893 | 21.5 | 19.0 | 100836 | 21.5 | 18.3 | 99905 | 21.6 | 19.7 | 139549 | 21.7 | 18.5 | 497505 | 21.8 | 20.7 | 161731 | 21.9 | 19.0 |
| 200781 | 21.5 | 19.6 | 64898 | 21.5 | 19.8 | 212699 | 21.6 | 19.5 | 323041 | 21.7 | 19.7 | 465423 | 21.8 | 19.2 | 350308 | 21.9 | 20.4 |
| 534761 | 21.5 | 21.3 | 214418 | 21.5 | 19.2 | 240775 | 21.6 | 19.1 | 272733 | 21.7 | 20.0 | 335566 | 21.8 | 20.0 | 190449 | 21.9 | 18.8 |
| 275213 | 21.5 | 20.2 | 31774 | 21.5 | 18.7 | 370460 | 21.6 | 20.9 | 117490 | 21.7 | 18.7 | 141163 | 21.8 | 18.0 | 239953 | 21.9 | 20.7 |
| 366589 | 21.5 | 20.2 | 179510 | 21.5 | 20.4 | 356620 | 21.6 | 21.2 | 328686 | 21.7 | 19.7 | 255607 | 21.8 | 19.6 | 246104 | 21.9 | 19.8 |
| 420376 | 21.5 | 19.4 | 141205 | 21.5 | 18.7 | 505797 | 21.6 | 20.6 | 356368 | 21.7 | 19.4 | 183585 | 21.8 | 18.4 | 418064 | 21.9 | 20.6 |
| 420549 | 21.5 | 20.8 | 279312 | 21.5 | 19.9 | 41188 | 21.6 | 17.6 | 419756 | 21.7 | 20.5 | 206684 | 21.8 | 20.0 | 14064 | 21.9 | 18.3 |
| 374972 | 21.5 | 20.7 | 352451 | 21.5 | 20.5 | 488734 | 21.6 | 19.5 | 243736 | 21.7 | 17.3 | 12410 | 21.8 | 19.0 | 436743 | 21.9 | 20.2 |
| 389809 | 21.5 | 19.6 | 434901 | 21.5 | 20.4 | 394052 | 21.6 | 20.1 | 96400 | 21.7 | 19.3 | 256805 | 21.8 | 19.6 | 359838 | 21.9 | 20.6 |
| 296481 | 21.5 | 20.3 | 292211 | 21.5 | 19.7 | 78594 | 21.6 | 19.5 | 20521 | 21.7 | 17.5 | 295066 | 21.8 | 19.7 | 314616 | 21.9 | 20.0 |
| 331061 | 21.5 | 20.0 | 268171 | 21.5 | 18.5 | 136050 | 21.6 | 19.1 | 301689 | 21.7 | 20.7 | 37434 | 21.8 | 19.1 | 530746 | 21.9 | 20.6 |
| 141202 | 21.5 | 19.8 | 526328 | 21.5 | 21.1 | 492598 | 21.6 | 20.3 | 107060 | 21.7 | 19.5 | 85438 | 21.8 | 19.1 | 143538 | 21.9 | 19.4 |
| 412582 | 21.5 | 19.5 | 304429 | 21.5 | 19.6 | 233319 | 21.6 | 19.7 | 152444 | 21.7 | 20.0 | 205698 | 21.8 | 20.2 | 532065 | 21.9 | 21.2 |
| 66746 | 21.5 | 19.4 | 235225 | 21.5 | 19.8 | 528726 | 21.6 | 20.6 | 276091 | 21.7 | 21.2 | 4084 | 21.8 | 16.2 | 491912 | 21.9 | 20.4 |
| 421870 | 21.5 | 20.2 | 232526 | 21.5 | 19.5 | 86665 | 21.6 | 18.3 | 276041 | 21.7 | 21.1 | 98579 | 21.8 | 19.0 | 336926 | 21.9 | 20.1 |
| 463259 | 21.5 | 20.1 | 75133 | 21.5 | 18.0 | 258635 | 21.6 | 19.3 | 334872 | 21.7 | 20.2 | 261276 | 21.8 | 19.0 | 286824 | 21.9 | 18.5 |
| 193104 | 21.5 | 19.8 | 437691 | 21.5 | 20.7 | 138814 | 21.6 | 19.7 | 416124 | 21.7 | 19.5 | 479041 | 21.8 | 20.9 | 69177 | 21.9 | 18.7 |
| 316423 | 21.5 | 20.6 | 310293 | 21.5 | 20.4 | 286005 | 21.6 | 19.8 | 99775 | 21.7 | 18.9 | 535285 | 21.8 | 21.4 | 438658 | 21.9 | 20.4 |
| 392172 | 21.5 | 20.5 | 124138 | 21.5 | 18.2 | 244077 | 21.6 | 19.2 | 390493 | 21.7 | 19.7 | 175438 | 21.8 | 18.4 | 512428 | 21.9 | 20.4 |
| 500991 | 21.5 | 21.1 | 382890 | 21.5 | 18.4 | 1080 | 21.6 | 15.0 | 232129 | 21.7 | 18.2 | 814 | 21.8 | 12.5 | 151460 | 21.9 | 20.4 |
| 23121 | 21.5 | 18.1 | 400217 | 21.5 | 21.0 | 526043 | 21.6 | 21.6 | 85025 | 21.7 | 18.7 | 471813 | 21.8 | 20.5 | 187460 | 21.9 | 21.2 |
| 58434 | 21.5 | 18.1 | 503057 | 21.5 | 20.4 | 539716 | 21.6 | 20.6 | 336146 | 21.7 | 19.5 | 315227 | 21.8 | 20.3 | 398554 | 21.9 | 21.0 |
| 205742 | 21.5 | 20.7 | 499287 | 21.6 | 21.1 | 442504 | 21.6 | 21.1 | 345098 | 21.7 | 21.2 | 206411 | 21.8 | 19.6 | 292635 | 21.9 | 20.1 |
| 118424 | 21.5 | 18.8 | 428758 | 21.6 | 20.4 | 132366 | 21.6 | 18.0 | 522951 | 21.7 | 20.7 | 457538 | 21.8 | 21.0 | 243828 | 21.9 | 19.4 |
| 429179 | 21.5 | 20.6 | 157604 | 21.6 | 20.5 | 366341 | 21.6 | 19.3 | 438244 | 21.7 | 20.6 | 303791 | 21.8 | 20.5 | 462321 | 21.9 | 20.1 |
| 241557 | 21.5 | 20.9 | 389285 | 21.6 | 21.0 | 514343 | 21.6 | 21.9 | 209569 | 21.7 | 20.2 | 204831 | 21.8 | 19.5 | 457542 | 21.9 | 20.8 |
| 399839 | 21.5 | 20.1 | 143945 | 21.6 | 19.8 | 55920 | 21.7 | 19.0 | 71177 | 21.7 | 19.3 | 320333 | 21.8 | 20.7 | 501058 | 21.9 | 19.8 |
| 436858 | 21.5 | 19.6 | 153765 | 21.6 | 19.7 | 38133 | 21.7 | 18.4 | 463084 | 21.7 | 20.7 | 537377 | 21.8 | 20.4 | 537918 | 21.9 | 22.0 |
| 295629 | 21.5 | 19.6 | 407668 | 21.6 | 20.3 | 426195 | 21.7 | 20.2 | 405505 | 21.8 | 21.0 | 292901 | 21.8 | 20.8 | 212012 | 21.9 | 20.2 |
| 228100 | 21.5 | 18.5 | 502140 | 21.6 | 20.3 | 261077 | 21.7 | 19.5 | 463184 | 21.8 | 21.9 | 196245 | 21.8 | 19.8 | 409847 | 21.9 | 20.5 |
| 499324 | 21.5 | 20.6 | 533405 | 21.6 | 20.9 | 498560 | 21.7 | 19.9 | 178227 | 21.8 | 19.4 | 278701 | 21.8 | 19.8 | 326345 | 21.9 | 19.0 |
| 390217 | 21.5 | 20.7 | 403867 | 21.6 | 20.7 | 192665 | 21.7 | 19.7 | 389203 | 21.8 | 20.1 | 505315 | 21.9 | 21.4 | 59499 | 21.9 | 17.7 |
| 465328 | 21.5 | 21.4 | 485386 | 21.6 | 20.0 | 507448 | 21.7 | 20.4 | 393148 | 21.8 | 20.5 | 229314 | 21.9 | 19.8 | 308430 | 21.9 | 19.7 |
| 310029 | 21.5 | 20.4 | 530556 | 21.6 | 17.4 | 149452 | 21.7 | 18.4 | 272588 | 21.8 | 21.5 | 298865 | 21.9 | 19.5 | 93978 | 21.9 | 18.5 |
| 8081 | 21.5 | 17.9 | 287707 | 21.6 | 17.7 | 86382 | 21.7 | 18.0 | 294858 | 21.8 | 20.0 | 169411 | 21.9 | 19.9 | 541769 | 21.9 | 20.9 |
| 302404 | 21.5 | 20.6 | 200629 | 21.6 | 18.9 | 427976 | 21.7 | 21.8 | 520172 | 21.8 | 20.5 | 226728 | 21.9 | 19.2 | 242849 | 21.9 | 19.3 |
| 528347 | 21.5 | 20.3 | 297655 | 21.6 | 19.1 | 456662 | 21.7 | 20.4 | 287922 | 21.8 | 19.5 | 60637 | 21.9 | 19.3 | 15195 | 21.9 | 18.2 |
| 20291 | 21.5 | 17.9 | 332882 | 21.6 | 20.4 | 299732 | 21.7 | 20.8 | 290699 | 21.8 | 20.0 | 465415 | 21.9 | 21.3 | 127553 | 21.9 | 18.7 |
| 392118 | 21.5 | 21.6 | 466517 | 21.6 | 20.6 | 170710 | 21.7 | 20.1 | 540492 | 21.8 | 21.5 | 508708 | 21.9 | 20.3 | 89037 | 21.9 | 18.1 |
| 129856 | 21.5 | 17.9 | 536169 | 21.6 | 20.5 | 341177 | 21.7 | 19.1 | 525372 | 21.8 | 21.3 | 122057 | 21.9 | 18.1 | 336398 | 21.9 | 20.4 |
| 334781 | 21.5 | 20.1 | 128422 | 21.6 | 18.5 | 250017 | 21.7 | 19.9 | 429119 | 21.8 | 19.6 | 499305 | 21.9 | 20.7 | 330877 | 21.9 | 19.8 |
| 164010 | 21.5 | 19.6 | 154001 | 21.6 | 19.2 | 6008 | 21.7 | 16.7 | 249827 | 21.8 | 20.1 | 219803 | 21.9 | 18.3 | 63840 | 21.9 | 18.6 |
| 86268 | 21.5 | 19.2 | 474817 | 21.6 | 20.2 | 167742 | 21. | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 61015 | 21.9 | 17.3 | 65715 | 22.0 | 18.3 | 475821 | 22.1 | 21.1 | 66920 | 22.2 | 18.6 | 71307 | 22.3 | 18.7 | 360377 | 22.4 | 20.2 |
| 270255 | 21.9 | 21.3 | 21846 | 22.0 | 18.1 | 31779 | 22.1 | 18.0 | 144514 | 22.2 | 19.8 | 188667 | 22.3 | 20.4 | 16140 | 22.4 | 18.0 |
| 173252 | 21.9 | 19.3 | 77237 | 22.0 | 19.8 | 264717 | 22.1 | 20.3 | 82078 | 22.2 | 17.4 | 299594 | 22.3 | 21.2 | 497189 | 22.4 | 20.8 |
| 378358 | 21.9 | 22.5 | 510452 | 22.0 | 20.3 | 199777 | 22.1 | 20.5 | 86851 | 22.2 | 18.9 | 258317 | 22.3 | 20.4 | 529856 | 22.4 | 19.9 |
| 510964 | 21.9 | 21.1 | 210742 | 22.0 | 18.9 | 75024 | 22.1 | 18.8 | 177028 | 22.2 | 21.3 | 531994 | 22.3 | 21.7 | 341130 | 22.4 | 20.2 |
| 250865 | 21.9 | 20.0 | 379789 | 22.1 | 20.5 | 479672 | 22.1 | 21.6 | 306414 | 22.2 | 20.9 | 329927 | 22.3 | 19.5 | 391303 | 22.4 | 20.8 |
| 757 | 21.9 | 13.2 | 210723 | 22.1 | 18.6 | 442996 | 22.1 | 20.2 | 294496 | 22.2 | 20.5 | 38118 | 22.3 | 18.0 | 468521 | 22.4 | 21.0 |
| 33644 | 21.9 | 18.0 | 431064 | 22.1 | 21.6 | 536763 | 22.1 | 20.3 | 125191 | 22.2 | 19.6 | 65029 | 22.3 | 18.5 | 171021 | 22.4 | 19.8 |
| 75889 | 21.9 | 19.5 | 408346 | 22.1 | 20.5 | 528676 | 22.1 | 20.2 | 404471 | 22.2 | 20.6 | 195317 | 22.3 | 20.1 | 322534 | 22.4 | 20.1 |
| 434743 | 21.9 | 22.5 | 475948 | 22.1 | 21.8 | 250376 | 22.1 | 19.5 | 156173 | 22.2 | 21.1 | 223741 | 22.3 | 19.1 | 312221 | 22.4 | 20.5 |
| 378323 | 21.9 | 21.2 | 410424 | 22.1 | 21.4 | 437271 | 22.1 | 20.0 | 119879 | 22.2 | 20.4 | 278922 | 22.3 | 18.6 | 42558 | 22.4 | 18.7 |
| 12626 | 21.9 | 17.8 | 170895 | 22.1 | 19.1 | 436844 | 22.1 | 20.3 | 311596 | 22.2 | 21.1 | 193949 | 22.3 | 19.0 | 83097 | 22.4 | 19.1 |
| 430899 | 21.9 | 20.1 | 455679 | 22.1 | 21.4 | 407714 | 22.1 | 19.6 | 18293 | 22.2 | 16.4 | 479206 | 22.3 | 21.0 | 442580 | 22.4 | 20.3 |
| 34385 | 21.9 | 16.4 | 363035 | 22.1 | 18.4 | 247428 | 22.1 | 19.5 | 405537 | 22.2 | 20.7 | 367177 | 22.3 | 19.1 | 249622 | 22.4 | 19.4 |
| 535445 | 21.9 | 19.9 | 74372 | 22.1 | 19.8 | 298300 | 22.2 | 21.0 | 472772 | 22.2 | 21.4 | 292826 | 22.3 | 20.0 | 308102 | 22.4 | 20.5 |
| 121590 | 21.9 | 19.6 | 478109 | 22.1 | 20.6 | 293195 | 22.2 | 20.4 | 156473 | 22.2 | 19.0 | 117158 | 22.3 | 19.1 | 18928 | 22.4 | 17.4 |
| 261488 | 21.9 | 20.9 | 539383 | 22.1 | 20.9 | 530587 | 22.2 | 20.4 | 126902 | 22.2 | 18.6 | 391753 | 22.3 | 19.5 | 530416 | 22.4 | 22.5 |
| 455199 | 21.9 | 23.3 | 270557 | 22.1 | 20.4 | 75844 | 22.2 | 19.0 | 457546 | 22.2 | 21.3 | 240779 | 22.3 | 18.7 | 157632 | 22.4 | 19.6 |
| 204476 | 21.9 | 20.9 | 71901 | 22.1 | 17.8 | 174136 | 22.2 | 18.4 | 499835 | 22.2 | 21.2 | 71221 | 22.3 | 19.4 | 213785 | 22.4 | 19.3 |
| 470532 | 21.9 | 20.6 | 374973 | 22.1 | 20.3 | 357956 | 22.2 | 21.0 | 497517 | 22.2 | 21.5 | 469858 | 22.3 | 20.3 | 177253 | 22.4 | 19.5 |
| 263270 | 21.9 | 19.8 | 404404 | 22.1 | 20.7 | 188891 | 22.2 | 20.2 | 148930 | 22.2 | 20.3 | 367912 | 22.3 | 20.5 | 350142 | 22.4 | 20.3 |
| 106165 | 21.9 | 19.6 | 528587 | 22.1 | 21.1 | 275674 | 22.2 | 18.5 | 321688 | 22.2 | 19.6 | 157354 | 22.3 | 19.8 | 35354 | 22.4 | 18.3 |
| 522942 | 21.9 | 21.1 | 332138 | 22.1 | 19.1 | 127203 | 22.2 | 20.2 | 146137 | 22.2 | 19.2 | 174147 | 22.3 | 20.0 | 459295 | 22.4 | 20.6 |
| 247877 | 21.9 | 18.2 | 128490 | 22.1 | 19.0 | 201461 | 22.2 | 20.4 | 233190 | 22.2 | 19.5 | 126703 | 22.3 | 19.2 | 70937 | 22.4 | 18.9 |
| 283307 | 21.9 | 20.5 | 386606 | 22.1 | 19.4 | 531988 | 22.2 | 21.4 | 151201 | 22.2 | 19.9 | 215079 | 22.3 | 20.2 | 365183 | 22.4 | 20.4 |
| 362024 | 21.9 | 20.8 | 371944 | 22.1 | 20.1 | 69999 | 22.2 | 19.1 | 165034 | 22.3 | 18.8 | 277041 | 22.3 | 20.7 | 352020 | 22.4 | 20.7 |
| 488676 | 21.9 | 20.1 | 379374 | 22.1 | 21.5 | 89 | 22.2 | 9.0 | 328339 | 22.3 | 20.3 | 284125 | 22.3 | 20.7 | 213387 | 22.4 | 20.3 |
| 122907 | 21.9 | 18.6 | 434938 | 22.1 | 19.3 | 343540 | 22.2 | 20.2 | 395732 | 22.3 | 20.5 | 293201 | 22.3 | 20.6 | 535465 | 22.4 | 20.6 |
| 437509 | 21.9 | 20.6 | 390972 | 22.1 | 20.8 | 101718 | 22.2 | 18.6 | 406435 | 22.3 | 19.5 | 528450 | 22.3 | 20.4 | 313844 | 22.4 | 19.2 |
| 25115 | 22.0 | 18.3 | 281578 | 22.1 | 19.4 | 250831 | 22.2 | 20.4 | 325860 | 22.3 | 21.4 | 233494 | 22.3 | 19.8 | 361115 | 22.4 | 21.2 |
| 79532 | 22.0 | 17.4 | 431035 | 22.1 | 20.6 | 477714 | 22.2 | 20.7 | 173598 | 22.3 | 20.2 | 258809 | 22.3 | 19.2 | 499724 | 22.4 | 21.3 |
| 498694 | 22.0 | 19.3 | 538008 | 22.1 | 20.7 | 336877 | 22.2 | 19.8 | 421395 | 22.3 | 20.3 | 188277 | 22.3 | 19.9 | 401113 | 22.4 | 19.6 |
| 117240 | 22.0 | 18.2 | 262012 | 22.1 | 19.2 | 283918 | 22.2 | 19.0 | 271033 | 22.3 | 21.0 | 386570 | 22.3 | 20.5 | 219623 | 22.4 | 20.5 |
| 455652 | 22.0 | 20.8 | 104261 | 22.1 | 19.5 | 303989 | 22.2 | 20.1 | 200289 | 22.3 | 20.3 | 5548 | 22.3 | 16.8 | 503349 | 22.4 | 20.4 |
| 363055 | 22.0 | 18.9 | 526658 | 22.1 | 21.8 | 89574 | 22.2 | 17.8 | 299281 | 22.3 | 19.4 | 288244 | 22.3 | 20.4 | 3885 | 22.4 | 16.2 |
| 202602 | 22.0 | 19.8 | 263911 | 22.1 | 19.9 | 2386 | 22.2 | 14.7 | 162782 | 22.3 | 18.8 | 528734 | 22.3 | 22.3 | 331011 | 22.4 | 19.4 |
| 215587 | 22.0 | 19.9 | 478424 | 22.1 | 20.4 | 179471 | 22.2 | 19.9 | 183562 | 22.3 | 20.1 | 122982 | 22.3 | 18.7 | 155271 | 22.4 | 18.3 |
| 150963 | 22.0 | 20.7 | 71323 | 22.1 | 18.8 | 259080 | 22.2 | 18.8 | 532069 | 22.3 | 21.8 | 160165 | 22.3 | 20.4 | 533164 | 22.4 | 21.3 |
| 133361 | 22.0 | 20.1 | 429101 | 22.1 | 21.2 | 201115 | 22.2 | 18.2 | 537496 | 22.3 | 20.4 | 40765 | 22.3 | 18.0 | 471391 | 22.4 | 21.1 |
| 57454 | 22.0 | 17.0 | 349450 | 22.1 | 20.6 | 314499 | 22.2 | 21.6 | 8403 | 22.3 | 16.9 | 461462 | 22.3 | 19.4 | 355235 | 22.4 | 21.0 |
| 393275 | 22.0 | 19.9 | 409820 | 22.1 | 20.2 | 180480 | 22.2 | 19.9 | 75228 | 22.3 | 18.4 | 442960 | 22.3 | 21.8 | 362004 | 22.4 | 20.8 |
| 8966 | 22.0 | 19.0 | 410520 | 22.1 | 20.5 | 34333 | 22.2 | 18.4 | 152497 | 22.3 | 19.6 | 107008 | 22.3 | 19.3 | 28581 | 22.4 | 18.6 |
| 391076 | 22.0 | 20.9 | 19791 | 22.1 | 17.1 | 41283 | 22.2 | 17.0 | 63213 | 22.3 | 18.6 | 355668 | 22.3 | 20.6 | 200605 | 22.4 | 19.4 |
| 14455 | 22.0 | 16.0 | 397359 | 22.1 | 21.3 | 523518 | 22.2 | 21.5 | 279297 | 22.3 | 20.2 | 94348 | 22.3 | 18.1 | 75405 | 22.4 | 18.8 |
| 420596 | 22.0 | 20.1 | 248809 | 22.1 | 20.0 | 112585 | 22.2 | 17.9 | 357852 | 22.3 | 21.1 | 475934 | 22.3 | 21.0 | 387373 | 22.4 | 19.5 |
| 308479 | 22.0 | 20.0 | 477734 | 22.1 | 21.0 | 274676 | 22.2 | 20.3 | 105776 | 22.3 | 18.9 | 289430 | 22.3 | 19.9 | 425241 | 22.4 | 19.7 |
| 119727 | 22.0 | 19.9 | 152687 | 22.1 | 19.4 | 469484 | 22.2 | 19.5 | 196770 | 22.3 | 19.2 | 518620 | 22.3 | 20.7 | 160238 | 22.4 | 18.8 |
| 376442 | 22.0 | 19.5 | 384708 | 22.1 | 19.9 | 480254 | 22.2 | 19.4 | 379746 | 22.3 | 20.4 | 429230 | 22.3 | 20.7 | 28692 | 22.4 | 18.1 |
| 38502 | 22.0 | 17.4 | 435812 | 22.1 | 21.1 | 215454 | 22.2 | 19.1 | 443000 | 22.3 | 20.8 | 91423 | 22.3 | 18.4 | 310485 | 22.4 | 19.9 |
| 540451 | 22.0 | 21.1 | 522441 | 22.1 | 21.9 | 516196 | 22.2 | 21.2 | 105664 | 22.3 | 19.7 | 22653 | 22.3 | 17.9 | 117097 | 22.4 | 18.2 |
| 381561 | 22.0 | 20.3 | 427484 | 22.1 | 20.8 | 33304 | 22.2 | 17.8 | 369785 | 22.3 | 20.2 | 435903 | 22.3 | 20.4 | 540641 | 22.4 | 21.4 |
| 155016 | 22.0 | 20.0 | 453405 | 22.1 | 21.4 | 365098 | 22.2 | 21.0 | 410737 | 22.3 | 20.0 | 230458 | 22.3 | 18.3 | 475861 | 22.4 | 20.4 |
| 6528 | 22.0 | 15.7 | 429721 | 22.1 | 20.0 | 69405 | 22.2 | 18.0 | 473251 | 22.3 | 20.2 | 146257 | 22.3 | 20.4 | 114163 | 22.4 | 19.2 |
| 501214 | 22.0 | 20.8 | 172397 | 22.1 | 19.5 | 294816 | 22.2 | 20.8 | 269087 | 22.3 | 19.7 | 293761 | 22.4 | 19.8 | 313947 | 22.4 | 20.4 |
| 105771 | 22.0 | 18.0 | 524814 | 22.1 | 20.4 | 286131 | 22.2 | 20.5 | 312182 | 22.3 | 20.3 | 407758 | 22.4 | 20.5 | 148026 | 22.4 | 20.0 |
| 10668 | 22.0 | 17.6 | 312026 | 22.1 | 18.3 | 508762 | 22.2 | 20.6 | 15996 | 22.3 | 16.8 | 29300 | 22.4 | 17.8 | 42524 | 22.4 | 18.6 |
| 423652 | 22.0 | 20.6 | 354723 | 22.1 | 20.5 | 274668 | 22.2 | 19.4 | 300881 | 22.3 | 20.2 | 92123 | 22.4 | 19.1 | 308593 | 22.4 | 21.5 |
| 373322 | 22.0 | 20.8 | 531924 | 22.1 | 21.9 | 309685 | 22.2 | 20.0 | 54778 | 22.3 | 16.8 | 43273 | 22.4 | 18.2 | 352502 | 22.4 | 20.2 |
| 24982 | 22.0 | 17.8 | 195561 | 22.1 | 20.1 | 358379 | 22.2 | 19.7 | 57880 | 22.3 | 18.7 | 206765 | 22.4 | 20.2 | 75499 | 22.4 | 19.1 |
| 336996 | 22.0 | 20.3 | 195606 | 22.1 | 19.0 | 302514 | 22.2 | 20.1 | 125730 | 22.3 | 18.6 | 62907 | 22.4 | 19.2 | 302428 | 22.4 | 20.6 |
| 56207 | 22.0 | 17.3 | 423582 | 22.1 | 19.8 | 526018 | 22.2 | 21.5 | 197778 | 22.3 | 18.8 | 314508 | 22.4 | 20.4 | 311232 | 22.4 | 21.1 |
| 433502 | 22.0 | 20.7 | 151713 | 22.1 | 18.7 | 130498 | 22.2 | 18.2 | 459894 | 22.3 | 20.5 | 436163 | 22.4 | 20.4 | 106639 | 22.4 | 20.1 |
| 369927 | 22.0 | 20.3 | 290667 | 22.1 | 20.2 | 82066 | 22.2 | 18.0 | 93789 | 22.3 | 19.0 | 477635 | 22.4 | 20.5 | 368563 | 22.4 | 19.2 |
| 179359 | 22.0 | 19.6 | 84886 | 22.1 | 19.1 | 106247 | 22.2 | 19.0 | 486856 | 22.3 | 19.6 | 479615 | 22.4 | 20.8 | 34951 | 22.4 | 19.0 |
| 71337 | 22.0 | 17.2 | 195234 | 22.1 | 18.9 | 423616 | 22.2 | 20.6 | 527972 | 22.3 | 21.1 | 537557 | 22.4 | 20.4 | 153110 | 22.4 | 19.3 |
| 249281 | 22.0 | 20.0 | 585 | 22.1 | 14.3 | 192837 | 22.2 | 20.2 | 250801 | 22.3 | 19.2 | 255702 | 22.4 | 18.9 | 43089 | 22.4 | 18.5 |
| 475799 | 22.0 | 21.8 | 94231 | 22.1 | 19.3 | 419681 | 22.2 | 20.1 | 187193 | 22.3 | 19.9 | 504645 | 22.4 | 20.6 | 232358 | 22.4 | 19.3 |
| 143572 | 22.0 | 20.0 | 375898 | 22.1 | 20.4 | 380023 | 22.2 | 19.8 | 257430 | 22.3 | 18.9 | 354156 | 22.4 | 20.6 | 502860 | 22.4 | 20.4 |
| 280199 | 22.0 | 18.8 | 43949 | 22.1 | 18.4 | 157903 | 22.2 | 18.9 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 277444 | 22.5 | 21.2 | 534695 | 22.6 | 19.3 | 51976 | 22.6 | 18.0 | 101646 | 22.7 | 19.5 | 377874 | 22.8 | 20.8 | 322314 | 22.9 | 19.7 |
| 377850 | 22.5 | 20.6 | 475159 | 22.6 | 20.2 | 244958 | 22.6 | 20.1 | 256504 | 22.7 | 21.2 | 209079 | 22.8 | 20.0 | 239710 | 22.9 | 20.4 |
| 497554 | 22.5 | 20.3 | 331768 | 22.6 | 21.1 | 490685 | 22.6 | 19.9 | 111104 | 22.7 | 19.8 | 350984 | 22.8 | 21.9 | 479137 | 22.9 | 20.1 |
| 93728 | 22.5 | 19.3 | 187188 | 22.6 | 20.2 | 309919 | 22.6 | 20.6 | 70762 | 22.7 | 19.3 | 51750 | 22.8 | 18.6 | 389252 | 22.9 | 21.6 |
| 519873 | 22.5 | 20.3 | 515208 | 22.6 | 21.4 | 467924 | 22.6 | 20.7 | 496641 | 22.7 | 21.8 | 480028 | 22.8 | 19.6 | 32839 | 22.9 | 19.0 |
| 68061 | 22.5 | 19.0 | 505770 | 22.6 | 20.1 | 249616 | 22.6 | 18.3 | 307101 | 22.7 | 19.9 | 15244 | 22.8 | 17.5 | 315275 | 22.9 | 20.6 |
| 76927 | 22.5 | 19.2 | 357962 | 22.6 | 21.0 | 172925 | 22.6 | 19.8 | 357807 | 22.7 | 20.2 | 536129 | 22.8 | 21.6 | 189375 | 22.9 | 19.8 |
| 502516 | 22.5 | 21.1 | 176509 | 22.6 | 19.5 | 458759 | 22.6 | 21.2 | 242185 | 22.7 | 20.2 | 252204 | 22.8 | 20.6 | 399287 | 22.9 | 20.7 |
| 465280 | 22.5 | 20.6 | 343365 | 22.6 | 21.1 | 522385 | 22.6 | 20.2 | 310231 | 22.7 | 20.4 | 427930 | 22.8 | 20.9 | 532028 | 22.9 | 21.4 |
| 400248 | 22.5 | 19.0 | 376821 | 22.6 | 21.1 | 478292 | 22.6 | 20.5 | 28665 | 22.7 | 18.4 | 119943 | 22.8 | 19.6 | 271661 | 22.9 | 19.9 |
| 478148 | 22.5 | 21.0 | 206658 | 22.6 | 20.3 | 95399 | 22.6 | 18.2 | 122985 | 22.7 | 18.6 | 185085 | 22.8 | 20.2 | 397923 | 22.9 | 20.0 |
| 300068 | 22.5 | 19.2 | 64302 | 22.6 | 18.4 | 406919 | 22.6 | 21.8 | 342518 | 22.7 | 20.3 | 501191 | 22.8 | 20.5 | 195157 | 22.9 | 19.8 |
| 220307 | 22.5 | 20.8 | 109720 | 22.6 | 19.2 | 180751 | 22.6 | 18.3 | 4781 | 22.7 | 15.3 | 466939 | 22.8 | 21.1 | 304645 | 22.9 | 20.8 |
| 94185 | 22.5 | 18.8 | 45360 | 22.6 | 17.3 | 92940 | 22.6 | 17.7 | 34972 | 22.7 | 18.6 | 157108 | 22.8 | 19.4 | 169396 | 22.9 | 19.0 |
| 143977 | 22.5 | 19.3 | 55233 | 22.6 | 18.4 | 355703 | 22.6 | 20.4 | 379700 | 22.7 | 20.0 | 314553 | 22.8 | 20.2 | 498674 | 22.9 | 20.1 |
| 518623 | 22.5 | 21.0 | 539633 | 22.6 | 20.3 | 59198 | 22.6 | 18.9 | 135204 | 22.7 | 19.1 | 146947 | 22.8 | 20.7 | 68413 | 22.9 | 19.1 |
| 351230 | 22.5 | 19.2 | 497364 | 22.6 | 21.3 | 525986 | 22.6 | 20.2 | 29409 | 22.7 | 17.9 | 133895 | 22.8 | 19.5 | 252420 | 22.9 | 19.3 |
| 17111 | 22.5 | 16.2 | 174865 | 22.6 | 20.3 | 232912 | 22.6 | 20.4 | 309640 | 22.7 | 20.4 | 311263 | 22.8 | 21.7 | 227569 | 22.9 | 20.9 |
| 336490 | 22.5 | 19.8 | 184560 | 22.6 | 19.9 | 302307 | 22.6 | 19.1 | 276457 | 22.7 | 19.2 | 328251 | 22.8 | 19.8 | 526535 | 22.9 | 19.7 |
| 338780 | 22.5 | 20.8 | 39094 | 22.6 | 19.6 | 128013 | 22.7 | 18.7 | 71152 | 22.7 | 19.1 | 127883 | 22.8 | 19.6 | 326961 | 22.9 | 20.4 |
| 412354 | 22.5 | 21.2 | 148839 | 22.6 | 19.8 | 230046 | 22.7 | 20.0 | 170995 | 22.7 | 19.8 | 271749 | 22.8 | 20.4 | 529276 | 22.9 | 21.3 |
| 247792 | 22.5 | 18.6 | 280357 | 22.6 | 20.4 | 315199 | 22.7 | 19.0 | 290412 | 22.7 | 20.2 | 216521 | 22.8 | 19.2 | 219649 | 22.9 | 18.7 |
| 122687 | 22.5 | 18.4 | 165652 | 22.6 | 19.2 | 259847 | 22.7 | 20.6 | 198503 | 22.7 | 20.4 | 426743 | 22.8 | 20.8 | 333683 | 22.9 | 19.5 |
| 128755 | 22.5 | 19.6 | 384055 | 22.6 | 20.3 | 382901 | 22.7 | 19.4 | 500963 | 22.7 | 21.3 | 510422 | 22.8 | 21.2 | 222680 | 22.9 | 20.1 |
| 416110 | 22.5 | 20.2 | 456256 | 22.6 | 19.1 | 303287 | 22.7 | 20.6 | 93743 | 22.7 | 18.5 | 230645 | 22.8 | 18.8 | 535263 | 22.9 | 21.1 |
| 433565 | 22.5 | 20.5 | 216738 | 22.6 | 18.8 | 192703 | 22.7 | 19.0 | 471797 | 22.7 | 20.7 | 172540 | 22.8 | 19.4 | 325767 | 22.9 | 19.6 |
| 32758 | 22.5 | 19.1 | 208868 | 22.6 | 18.4 | 232665 | 22.7 | 20.6 | 522864 | 22.7 | 21.1 | 54564 | 22.8 | 18.1 | 432445 | 22.9 | 21.1 |
| 85735 | 22.5 | 17.3 | 230806 | 22.6 | 19.1 | 442919 | 22.7 | 20.8 | 346055 | 22.7 | 20.8 | 111999 | 22.8 | 19.1 | 111047 | 22.9 | 18.1 |
| 13277 | 22.5 | 16.8 | 89448 | 22.6 | 19.0 | 307778 | 22.7 | 19.2 | 1614 | 22.7 | 15.4 | 266365 | 22.8 | 21.2 | 153077 | 22.9 | 19.2 |
| 57622 | 22.5 | 19.4 | 141281 | 22.6 | 18.9 | 194179 | 22.7 | 19.2 | 436243 | 22.8 | 21.5 | 402453 | 22.8 | 20.7 | 154297 | 22.9 | 17.9 |
| 457577 | 22.5 | 20.1 | 120382 | 22.6 | 19.7 | 44115 | 22.7 | 18.5 | 10114 | 22.8 | 16.9 | 396342 | 22.8 | 20.7 | 100718 | 22.9 | 19.6 |
| 108040 | 22.5 | 17.7 | 200811 | 22.6 | 19.6 | 22324 | 22.7 | 16.3 | 532115 | 22.8 | 20.1 | 377422 | 22.8 | 20.2 | 23140 | 22.9 | 17.6 |
| 296515 | 22.5 | 20.1 | 478896 | 22.6 | 20.3 | 439425 | 22.7 | 21.3 | 379339 | 22.8 | 20.0 | 7089 | 22.8 | 16.6 | 181153 | 22.9 | 19.1 |
| 477723 | 22.5 | 21.3 | 475942 | 22.6 | 20.5 | 393038 | 22.7 | 20.7 | 120096 | 22.8 | 18.7 | 503274 | 22.8 | 20.6 | 68415 | 22.9 | 18.1 |
| 290199 | 22.5 | 20.3 | 282684 | 22.6 | 19.7 | 243068 | 22.7 | 20.3 | 537076 | 22.8 | 21.8 | 244641 | 22.8 | 20.6 | 95885 | 22.9 | 18.6 |
| 64131 | 22.5 | 18.9 | 303720 | 22.6 | 19.8 | 125958 | 22.7 | 18.8 | 342389 | 22.8 | 21.0 | 126136 | 22.8 | 18.7 | 312014 | 22.9 | 20.2 |
| 442989 | 22.5 | 21.6 | 336194 | 22.6 | 19.8 | 46066 | 22.7 | 18.3 | 497474 | 22.8 | 20.3 | 227377 | 22.8 | 20.0 | 466976 | 22.9 | 22.0 |
| 462216 | 22.5 | 21.2 | 93162 | 22.6 | 18.6 | 504806 | 22.7 | 21.2 | 137867 | 22.8 | 20.5 | 17608 | 22.8 | 18.1 | 267326 | 22.9 | 20.5 |
| 58788 | 22.5 | 19.0 | 219713 | 22.6 | 19.1 | 282353 | 22.7 | 20.6 | 325180 | 22.8 | 21.1 | 433773 | 22.8 | 21.2 | 478041 | 22.9 | 20.5 |
| 122276 | 22.5 | 18.0 | 381874 | 22.6 | 20.2 | 239989 | 22.7 | 19.9 | 195531 | 22.8 | 19.3 | 122084 | 22.9 | 19.9 | 379478 | 22.9 | 19.9 |
| 96463 | 22.5 | 19.5 | 83493 | 22.6 | 17.1 | 109896 | 22.7 | 19.0 | 487140 | 22.8 | 19.7 | 539630 | 22.9 | 21.0 | 480189 | 22.9 | 21.4 |
| 294173 | 22.5 | 20.4 | 154562 | 22.6 | 19.5 | 514366 | 22.7 | 19.7 | 125033 | 22.8 | 18.6 | 136847 | 22.9 | 20.3 | 101802 | 22.9 | 19.3 |
| 41296 | 22.5 | 18.2 | 289478 | 22.6 | 21.0 | 79197 | 22.7 | 18.7 | 306922 | 22.8 | 18.9 | 388 | 22.9 | 12.5 | 375778 | 22.9 | 17.9 |
| 248374 | 22.5 | 18.9 | 173049 | 22.6 | 19.6 | 64052 | 22.7 | 19.2 | 266806 | 22.8 | 20.7 | 198859 | 22.9 | 18.7 | 120176 | 22.9 | 19.9 |
| 3021 | 22.5 | 17.2 | 334204 | 22.6 | 20.5 | 208963 | 22.7 | 19.9 | 471920 | 22.8 | 20.1 | 462838 | 22.9 | 18.7 | 528974 | 22.9 | 21.7 |
| 162643 | 22.5 | 18.8 | 141151 | 22.6 | 19.5 | 84319 | 22.7 | 19.1 | 458851 | 22.8 | 20.4 | 102631 | 22.9 | 19.6 | 242679 | 22.9 | 19.5 |
| 230063 | 22.5 | 19.2 | 420632 | 22.6 | 20.2 | 305467 | 22.7 | 20.4 | 52612 | 22.8 | 18.5 | 330830 | 22.9 | 20.8 | 382911 | 22.9 | 19.0 |
| 75190 | 22.5 | 17.8 | 430981 | 22.6 | 20.1 | 456026 | 22.7 | 20.0 | 251645 | 22.8 | 19.1 | 522858 | 22.9 | 19.8 | 193487 | 22.9 | 19.9 |
| 377396 | 22.5 | 20.5 | 325568 | 22.6 | 18.8 | 411788 | 22.7 | 21.8 | 150277 | 22.8 | 20.5 | 71475 | 22.9 | 18.6 | 68233 | 22.9 | 18.0 |
| 17258 | 22.5 | 17.7 | 192940 | 22.6 | 19.2 | 225501 | 22.7 | 18.7 | 215605 | 22.8 | 20.3 | 338130 | 22.9 | 19.4 | 145764 | 22.9 | 20.5 |
| 501115 | 22.5 | 18.8 | 336859 | 22.6 | 19.3 | 286595 | 22.7 | 20.3 | 269987 | 22.8 | 18.6 | 121440 | 22.9 | 18.9 | 393664 | 22.9 | 19.7 |
| 70572 | 22.5 | 19.0 | 52401 | 22.6 | 17.8 | 453577 | 22.7 | 20.3 | 370946 | 22.8 | 21.5 | 501325 | 22.9 | 20.2 | 492288 | 22.9 | 20.8 |
| 247383 | 22.5 | 20.1 | 393197 | 22.6 | 20.3 | 507736 | 22.7 | 20.1 | 105828 | 22.8 | 18.7 | 126756 | 22.9 | 19.8 | 359451 | 22.9 | 19.3 |
| 258565 | 22.5 | 20.8 | 250733 | 22.6 | 19.5 | 407853 | 22.7 | 20.8 | 197631 | 22.8 | 19.2 | 114936 | 22.9 | 19.3 | 282094 | 22.9 | 18.9 |
| 396977 | 22.5 | 19.9 | 119889 | 22.6 | 19.3 | 385227 | 22.7 | 21.3 | 523714 | 22.8 | 21.8 | 322374 | 22.9 | 19.9 | 323170 | 22.9 | 19.9 |
| 233504 | 22.5 | 20.2 | 86205 | 22.6 | 18.8 | 294955 | 22.7 | 20.6 | 501830 | 22.8 | 19.2 | 412056 | 22.9 | 20.7 | 423738 | 22.9 | 20.3 |
| 153813 | 22.5 | 19.2 | 393256 | 22.6 | 20.7 | 139768 | 22.7 | 19.1 | 153521 | 22.8 | 19.5 | 99726 | 22.9 | 19.7 | 59369 | 22.9 | 19.2 |
| 241103 | 22.5 | 20.8 | 146259 | 22.6 | 18.8 | 138371 | 22.7 | 19.5 | 38010 | 22.8 | 18.5 | 473035 | 22.9 | 20.5 | 476319 | 22.9 | 20.9 |
| 42482 | 22.5 | 17.6 | 270547 | 22.6 | 20.3 | 443664 | 22.7 | 19.8 | 88525 | 22.8 | 18.2 | 438461 | 22.9 | 20.0 | 238041 | 22.9 | 20.1 |
| 252899 | 22.5 | 20.2 | 121471 | 22.6 | 19.6 | 193514 | 22.7 | 19.1 | 505585 | 22.8 | 20.9 | 24990 | 22.9 | 16.4 | 427935 | 22.9 | 21.1 |
| 184633 | 22.5 | 20.2 | 540339 | 22.6 | 21.6 | 528056 | 22.7 | 21.2 | 143412 | 22.8 | 20.7 | 338686 | 22.9 | 21.1 | 148419 | 22.9 | 20.0 |
| 374445 | 22.5 | 20.7 | 156979 | 22.6 | 18.5 | 407753 | 22.7 | 21.5 | 385208 | 22.8 | 19.2 | 11856 | 22.9 | 17.2 | 429089 | 22.9 | 20.6 |
| 37293 | 22.5 | 17.9 | 83444 | 22.6 | 18.6 | 530810 | 22.7 | 22.2 | 420387 | 22.8 | 21.0 | 73263 | 22.9 | 19.8 | 526337 | 22.9 | 22.4 |
| 397421 | 22.5 | 20.2 | 314369 | 22.6 | 20.4 | 394062 | 22.7 | 20.3 | 524360 | 22.8 | 19.6 | 352585 | 22.9 | 20.8 | 296500 | 22.9 | 20.5 |
| 330705 | 22.5 | 19.9 | 519278 | 22.6 | 20.5 | 179518 | 22.7 | 19.7 | 433537 | 22.8 | 20.0 | 296660 | 22.9 | 20.4 | 304509 | 22.9 | 20.2 |
| 235334 | 22.5 | 19.9 | 537475 | 22.6 | 21.3 | 364196 | 22.7 | 19.2 | 177361 | 22.8 | 20.6 | 472447 | 22.9 | 20.0 | 540625 | 22.9 | 20.8 |
| 325656 | 22.5 | 19.4 | 131154 | 22.6 | 20.7 | 53397 | 22.7 | 18.9 | 462186 | 22.8 | 19.3 | 533754 | 22.9 | 20.8 | 263450 | 22.9 | 20.8 |
| 245120 | 22.5 | 19.3 | 358924 | 22.6 | 21.0 | 398719 | 22.7 | 20.3 | 88513 | 22.8 | 19.4 | 473045 | 22.9 | 20.6 | 505466 | 22.9 | 21.0 |
| 351974 | 22.5 | 20.1 | 543001 | 22.6 | 19.2 | 115205 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 43829 | 22.9 | 18.4 | 123219 | 23.1 | 19.1 | 234296 | 23.1 | 20.6 | 537799 | 23.2 | 20.7 | 24484 | 23.3 | 19.9 | 434972 | 23.4 | 20.4 |
| 377353 | 22.9 | 19.1 | 9378 | 23.1 | 18.1 | 348370 | 23.1 | 21.2 | 407296 | 23.2 | 20.4 | 133563 | 23.3 | 19.6 | 427642 | 23.4 | 21.1 |
| 129112 | 22.9 | 19.6 | 497339 | 23.1 | 21.1 | 407706 | 23.1 | 21.2 | 426523 | 23.2 | 19.5 | 34574 | 23.3 | 18.0 | 525107 | 23.4 | 21.9 |
| 520359 | 22.9 | 21.1 | 216019 | 23.1 | 19.6 | 415228 | 23.1 | 21.4 | 213614 | 23.2 | 19.2 | 526498 | 23.3 | 20.1 | 502752 | 23.4 | 21.1 |
| 355753 | 22.9 | 19.4 | 204664 | 23.1 | 20.7 | 402928 | 23.1 | 19.1 | 159230 | 23.2 | 21.2 | 456067 | 23.3 | 21.0 | 277506 | 23.4 | 20.3 |
| 18840 | 22.9 | 16.8 | 285464 | 23.1 | 20.9 | 436847 | 23.1 | 20.8 | 44947 | 23.2 | 17.3 | 375976 | 23.3 | 20.6 | 840 | 23.4 | 14.4 |
| 309143 | 22.9 | 20.2 | 348970 | 23.1 | 20.6 | 384879 | 23.1 | 20.3 | 55993 | 23.2 | 18.4 | 494267 | 23.3 | 20.6 | 167757 | 23.4 | 20.2 |
| 309074 | 22.9 | 20.4 | 475284 | 23.1 | 20.5 | 410245 | 23.1 | 19.6 | 370122 | 23.2 | 21.1 | 356654 | 23.3 | 20.4 | 423058 | 23.4 | 20.6 |
| 181348 | 22.9 | 20.2 | 253831 | 23.1 | 20.2 | 379811 | 23.1 | 20.1 | 280036 | 23.2 | 20.4 | 2458 | 23.3 | 15.7 | 358082 | 23.4 | 20.7 |
| 7634 | 22.9 | 17.2 | 74981 | 23.1 | 18.0 | 252387 | 23.1 | 20.6 | 507174 | 23.2 | 20.1 | 532965 | 23.3 | 22.2 | 174019 | 23.4 | 19.8 |
| 231914 | 22.9 | 19.4 | 390202 | 23.1 | 20.9 | 505546 | 23.1 | 21.0 | 1239 | 23.2 | 16.8 | 49038 | 23.3 | 16.7 | 151822 | 23.4 | 20.2 |
| 479198 | 22.9 | 20.7 | 453384 | 23.1 | 21.8 | 184246 | 23.1 | 19.2 | 242741 | 23.2 | 18.8 | 238715 | 23.3 | 20.0 | 213843 | 23.4 | 19.9 |
| 65573 | 22.9 | 17.3 | 166082 | 23.1 | 19.9 | 346033 | 23.1 | 20.5 | 459891 | 23.2 | 19.3 | 331024 | 23.3 | 19.5 | 428052 | 23.4 | 20.7 |
| 520903 | 22.9 | 21.0 | 382894 | 23.1 | 18.6 | 22370 | 23.1 | 18.1 | 402183 | 23.2 | 20.1 | 205920 | 23.3 | 20.4 | 338051 | 23.4 | 19.2 |
| 433924 | 22.9 | 22.2 | 68440 | 23.1 | 19.3 | 141111 | 23.1 | 17.8 | 278371 | 23.2 | 19.6 | 129868 | 23.3 | 18.5 | 381454 | 23.4 | 21.0 |
| 262661 | 22.9 | 20.1 | 28987 | 23.1 | 18.1 | 140286 | 23.1 | 18.3 | 379340 | 23.2 | 20.4 | 525998 | 23.3 | 21.3 | 192691 | 23.4 | 18.4 |
| 530988 | 22.9 | 22.3 | 413827 | 23.1 | 21.2 | 420060 | 23.1 | 21.7 | 58281 | 23.2 | 17.4 | 415355 | 23.3 | 20.5 | 305884 | 23.4 | 19.6 |
| 140319 | 22.9 | 19.5 | 503978 | 23.1 | 20.5 | 42194 | 23.1 | 18.6 | 509095 | 23.2 | 21.8 | 543869 | 23.3 | 20.2 | 496431 | 23.4 | 21.5 |
| 14137 | 22.9 | 19.0 | 113494 | 23.1 | 19.1 | 311883 | 23.1 | 20.0 | 338758 | 23.2 | 19.9 | 120669 | 23.3 | 19.7 | 261446 | 23.4 | 20.6 |
| 475744 | 22.9 | 21.1 | 525347 | 23.1 | 21.1 | 353175 | 23.1 | 19.7 | 214420 | 23.2 | 19.4 | 391067 | 23.3 | 20.0 | 529710 | 23.4 | 20.3 |
| 247875 | 22.9 | 19.0 | 454748 | 23.1 | 20.2 | 242761 | 23.1 | 21.0 | 164348 | 23.2 | 20.4 | 455284 | 23.3 | 20.5 | 147179 | 23.4 | 19.3 |
| 65511 | 22.9 | 18.5 | 425721 | 23.1 | 21.1 | 380180 | 23.1 | 18.3 | 531873 | 23.2 | 20.0 | 331488 | 23.3 | 20.8 | 277667 | 23.4 | 20.5 |
| 44416 | 22.9 | 18.5 | 66923 | 23.1 | 19.6 | 229793 | 23.2 | 19.7 | 117498 | 23.2 | 19.0 | 284520 | 23.3 | 19.7 | 526356 | 23.4 | 20.8 |
| 455739 | 22.9 | 20.6 | 127214 | 23.1 | 18.9 | 32388 | 23.2 | 18.7 | 330831 | 23.2 | 21.4 | 173351 | 23.3 | 18.4 | 429585 | 23.4 | 20.8 |
| 352625 | 22.9 | 20.6 | 213627 | 23.1 | 20.0 | 148940 | 23.2 | 20.8 | 313749 | 23.2 | 19.7 | 21646 | 23.3 | 18.0 | 304704 | 23.4 | 20.2 |
| 518191 | 22.9 | 20.4 | 106494 | 23.1 | 19.5 | 70660 | 23.2 | 19.0 | 20195 | 23.2 | 18.6 | 232519 | 23.3 | 19.7 | 350181 | 23.4 | 19.6 |
| 305395 | 22.9 | 21.1 | 496012 | 23.1 | 20.2 | 382975 | 23.2 | 20.9 | 293137 | 23.2 | 20.0 | 177601 | 23.3 | 20.3 | 424562 | 23.4 | 21.7 |
| 527205 | 22.9 | 19.6 | 138623 | 23.1 | 19.0 | 257871 | 23.2 | 19.6 | 220285 | 23.2 | 19.4 | 419865 | 23.3 | 21.6 | 72475 | 23.4 | 19.0 |
| 33184 | 22.9 | 19.1 | 61355 | 23.1 | 18.4 | 499199 | 23.2 | 20.9 | 48083 | 23.2 | 19.7 | 308599 | 23.3 | 20.3 | 417688 | 23.4 | 21.2 |
| 389799 | 22.9 | 20.1 | 230853 | 23.1 | 19.1 | 507447 | 23.2 | 20.5 | 361373 | 23.2 | 21.4 | 467418 | 23.3 | 20.8 | 159677 | 23.4 | 22.4 |
| 504801 | 22.9 | 21.3 | 277846 | 23.1 | 20.3 | 462185 | 23.2 | 20.3 | 540544 | 23.2 | 21.2 | 80103 | 23.3 | 17.6 | 392080 | 23.4 | 20.3 |
| 361114 | 22.9 | 20.5 | 294057 | 23.1 | 20.2 | 523613 | 23.2 | 21.5 | 360395 | 23.2 | 21.6 | 216872 | 23.3 | 20.2 | 311294 | 23.4 | 21.3 |
| 97073 | 22.9 | 19.9 | 338836 | 23.1 | 20.1 | 403520 | 23.2 | 18.1 | 9892 | 23.2 | 17.2 | 371677 | 23.3 | 20.4 | 238067 | 23.4 | 18.8 |
| 436645 | 23.0 | 18.9 | 99365 | 23.1 | 17.8 | 64722 | 23.2 | 19.1 | 70709 | 23.2 | 19.1 | 373852 | 23.3 | 20.1 | 123276 | 23.4 | 19.7 |
| 395965 | 23.0 | 20.7 | 464014 | 23.1 | 20.6 | 346753 | 23.2 | 20.8 | 135681 | 23.2 | 19.3 | 71151 | 23.3 | 19.3 | 87224 | 23.4 | 18.0 |
| 80033 | 23.0 | 20.0 | 108191 | 23.1 | 18.8 | 247916 | 23.2 | 18.4 | 463332 | 23.2 | 20.9 | 6675 | 23.3 | 19.6 | 391339 | 23.4 | 20.1 |
| 540414 | 23.0 | 20.9 | 203468 | 23.1 | 19.4 | 166128 | 23.2 | 19.5 | 37109 | 23.2 | 17.3 | 477727 | 23.3 | 21.1 | 411706 | 23.4 | 20.8 |
| 159181 | 23.0 | 20.3 | 163781 | 23.1 | 18.4 | 86951 | 23.2 | 17.8 | 355802 | 23.2 | 19.0 | 301867 | 23.3 | 20.9 | 187915 | 23.4 | 19.9 |
| 497519 | 23.0 | 21.2 | 84406 | 23.1 | 20.0 | 8275 | 23.2 | 17.4 | 415047 | 23.2 | 21.8 | 216011 | 23.3 | 18.4 | 427711 | 23.4 | 20.2 |
| 54520 | 23.0 | 25.3 | 9396 | 23.1 | 16.9 | 191109 | 23.2 | 19.7 | 352144 | 23.2 | 20.9 | 182100 | 23.3 | 19.3 | 155288 | 23.4 | 19.8 |
| 518243 | 23.0 | 20.9 | 89373 | 23.1 | 19.4 | 317478 | 23.2 | 19.7 | 521188 | 23.2 | 21.1 | 166251 | 23.3 | 19.7 | 428269 | 23.4 | 20.8 |
| 331917 | 23.0 | 18.9 | 457176 | 23.1 | 21.2 | 505460 | 23.2 | 20.5 | 54531 | 23.2 | 17.1 | 27966 | 23.3 | 18.5 | 316280 | 23.4 | 18.8 |
| 402516 | 23.0 | 19.5 | 509327 | 23.1 | 21.2 | 377883 | 23.2 | 21.1 | 175895 | 23.2 | 19.5 | 285187 | 23.3 | 20.3 | 434247 | 23.4 | 20.8 |
| 492428 | 23.0 | 19.6 | 374360 | 23.1 | 20.2 | 387571 | 23.2 | 20.7 | 82785 | 23.2 | 17.9 | 14911 | 23.3 | 16.5 | 228660 | 23.4 | 20.6 |
| 12134 | 23.0 | 18.8 | 140098 | 23.1 | 19.3 | 11608 | 23.2 | 17.2 | 4031 | 23.2 | 15.2 | 386403 | 23.3 | 19.6 | 9048 | 23.4 | 16.4 |
| 349141 | 23.0 | 20.1 | 379676 | 23.1 | 21.4 | 381456 | 23.2 | 20.8 | 250697 | 23.2 | 20.1 | 311545 | 23.3 | 21.1 | 35039 | 23.4 | 19.9 |
| 529195 | 23.0 | 22.1 | 74297 | 23.1 | 18.2 | 482169 | 23.2 | 20.8 | 192504 | 23.2 | 18.8 | 158935 | 23.3 | 18.9 | 65820 | 23.4 | 17.7 |
| 14823 | 23.0 | 16.8 | 354795 | 23.1 | 20.3 | 505198 | 23.2 | 21.3 | 31308 | 23.2 | 19.0 | 259285 | 23.3 | 20.4 | 526757 | 23.4 | 20.9 |
| 216001 | 23.0 | 19.8 | 428273 | 23.1 | 21.9 | 198307 | 23.2 | 18.9 | 43484 | 23.2 | 18.9 | 406515 | 23.3 | 20.0 | 244282 | 23.4 | 19.9 |
| 243572 | 23.0 | 19.1 | 38973 | 23.1 | 17.3 | 247178 | 23.2 | 19.8 | 3299 | 23.2 | 16.7 | 225568 | 23.3 | 20.4 | 312158 | 23.4 | 20.7 |
| 57673 | 23.0 | 18.3 | 439902 | 23.1 | 19.7 | 214551 | 23.2 | 19.4 | 131597 | 23.2 | 19.1 | 317944 | 23.3 | 20.6 | 316400 | 23.4 | 20.5 |
| 312913 | 23.0 | 20.6 | 184425 | 23.1 | 20.0 | 206570 | 23.2 | 19.4 | 34641 | 23.3 | 18.2 | 168895 | 23.3 | 18.6 | 504169 | 23.4 | 21.0 |
| 460159 | 23.0 | 20.3 | 59114 | 23.1 | 19.0 | 142227 | 23.2 | 18.7 | 305312 | 23.3 | 19.9 | 192527 | 23.3 | 18.7 | 355676 | 23.4 | 19.7 |
| 241419 | 23.0 | 20.7 | 158468 | 23.1 | 19.3 | 80316 | 23.2 | 19.9 | 310143 | 23.3 | 19.6 | 499215 | 23.3 | 20.6 | 63676 | 23.4 | 17.1 |
| 281646 | 23.0 | 19.5 | 492499 | 23.1 | 20.7 | 238816 | 23.2 | 19.8 | 480475 | 23.3 | 20.3 | 483377 | 23.3 | 20.4 | 404533 | 23.4 | 20.1 |
| 173124 | 23.0 | 19.8 | 274914 | 23.1 | 21.1 | 292799 | 23.2 | 20.5 | 299909 | 23.3 | 19.9 | 356827 | 23.3 | 20.5 | 149814 | 23.4 | 19.6 |
| 306450 | 23.0 | 18.6 | 396999 | 23.1 | 21.0 | 175812 | 23.2 | 18.3 | 152551 | 23.3 | 19.9 | 165288 | 23.3 | 18.9 | 86070 | 23.4 | 17.9 |
| 323463 | 23.0 | 20.1 | 93705 | 23.1 | 19.0 | 483380 | 23.2 | 19.8 | 353552 | 23.3 | 20.3 | 324978 | 23.3 | 21.3 | 247802 | 23.4 | 19.0 |
| 365173 | 23.0 | 21.5 | 458889 | 23.1 | 20.3 | 26855 | 23.2 | 18.0 | 360148 | 23.3 | 19.3 | 333089 | 23.3 | 19.2 | 522700 | 23.4 | 20.5 |
| 281468 | 23.0 | 20.5 | 506871 | 23.1 | 21.8 | 286996 | 23.2 | 19.7 | 499889 | 23.3 | 21.3 | 408657 | 23.3 | 20.1 | 251298 | 23.4 | 19.8 |
| 54694 | 23.0 | 18.1 | 407285 | 23.1 | 20.7 | 381872 | 23.2 | 20.5 | 257046 | 23.3 | 20.7 | 533442 | 23.3 | 21.4 | 106769 | 23.4 | 18.1 |
| 425907 | 23.0 | 21.7 | 378335 | 23.1 | 20.7 | 98771 | 23.2 | 19.9 | 205841 | 23.3 | 20.1 | 243338 | 23.3 | 21.0 | 57457 | 23.4 | 18.6 |
| 475596 | 23.0 | 21.1 | 187001 | 23.1 | 19.6 | 478206 | 23.2 | 21.3 | 255981 | 23.3 | 19.4 | 302805 | 23.3 | 20.0 | 359460 | 23.4 | 20.1 |
| 117997 | 23.0 | 18.7 | 182437 | 23.1 | 19.6 | 469864 | 23.2 | 21.4 | 68176 | 23.3 | 19.5 | 33994 | 23.4 | 18.1 | 502987 | 23.4 | 22.0 |
| 533404 | 23.0 | 21.2 | 528205 | 23.1 | 19.5 | 128183 | 23.2 | 18.0 | 250805 | 23.3 | 20.4 | 480484 | 23.4 | 20.8 | 536023 | 23.4 | 20.9 |
| 471861 | 23.0 | 20.7 | 427990 | 23.1 | 21.4 | 338128 | 23.2 | 19.5 | 505167 | 23.3 | 20.9 | 537821 | 23.4 | 21.1 | 519423 | 23.4 | 21.2 |
| 428305 | 23.0 | 20.7 | 353404 | 23.1 | 19.7 | 415657 | 23.2 | 20.3 | 114440 | 23.3 | 18.8 | 73715 | 23.4 | 18.4 | 358087 | 23.4 | 20.2 |
| 94056 | 23.0 | 19.8 | 536777 | 23.1 | 21.4 | 353697 | 23.2 | 20.3 | 341352 | 23.3 | 21.1 | 479150 | 23.4 | 20.9 | 536998 | 23.4 | 22.0 |
| 194137 | 23.0 | 20.7 | 268442 | 23.1 | 19.9 | 33057 | 23.2 | 17. | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 22257 | 23.4 | 17.2 | 358931 | 23.5 | 21.3 | 416302 | 23.6 | 19.4 | 62506 | 23.7 | 18.0 | 372756 | 23.8 | 20.1 | 471829 | 23.8 | 20.8 |
| 106526 | 23.4 | 19.3 | 525091 | 23.5 | 18.8 | 156328 | 23.6 | 18.0 | 106462 | 23.7 | 18.6 | 99078 | 23.8 | 19.1 | 107113 | 23.8 | 18.1 |
| 158413 | 23.4 | 21.0 | 471840 | 23.5 | 20.3 | 294754 | 23.6 | 20.2 | 362713 | 23.7 | 22.1 | 485938 | 23.8 | 19.3 | 290717 | 23.8 | 20.2 |
| 504628 | 23.4 | 19.7 | 356340 | 23.5 | 19.2 | 192820 | 23.6 | 17.9 | 441311 | 23.7 | 20.6 | 526806 | 23.8 | 22.9 | 510120 | 23.8 | 19.9 |
| 357104 | 23.4 | 19.5 | 214222 | 23.5 | 21.3 | 160960 | 23.6 | 18.5 | 192212 | 23.7 | 19.9 | 365141 | 23.8 | 21.3 | 481121 | 23.8 | 21.7 |
| 293949 | 23.4 | 19.8 | 531616 | 23.5 | 20.2 | 479883 | 23.6 | 21.4 | 129854 | 23.7 | 18.9 | 304417 | 23.8 | 19.7 | 6812 | 23.8 | 17.4 |
| 300095 | 23.4 | 21.9 | 179678 | 23.5 | 20.0 | 286500 | 23.6 | 20.5 | 20509 | 23.7 | 18.5 | 177130 | 23.8 | 19.7 | 380950 | 23.8 | 21.4 |
| 410491 | 23.4 | 21.3 | 281003 | 23.5 | 20.7 | 60756 | 23.6 | 19.2 | 90365 | 23.7 | 19.2 | 305457 | 23.8 | 20.0 | 28220 | 23.8 | 19.0 |
| 265338 | 23.4 | 19.2 | 235917 | 23.5 | 19.5 | 232729 | 23.6 | 20.2 | 168468 | 23.7 | 19.5 | 151418 | 23.8 | 20.7 | 349261 | 23.8 | 20.9 |
| 58700 | 23.4 | 19.5 | 108978 | 23.5 | 18.1 | 290550 | 23.6 | 20.5 | 510653 | 23.7 | 20.9 | 279787 | 23.8 | 20.5 | 404622 | 23.8 | 20.8 |
| 433511 | 23.4 | 20.7 | 98003 | 23.5 | 18.0 | 81338 | 23.6 | 19.0 | 283103 | 23.7 | 20.0 | 475208 | 23.8 | 21.6 | 208725 | 23.8 | 20.3 |
| 433536 | 23.4 | 19.9 | 149009 | 23.5 | 19.6 | 531972 | 23.6 | 21.8 | 508488 | 23.7 | 21.2 | 524106 | 23.8 | 19.1 | 87941 | 23.9 | 18.2 |
| 389279 | 23.5 | 20.7 | 507446 | 23.5 | 20.9 | 109455 | 23.6 | 19.3 | 333292 | 23.7 | 19.0 | 338728 | 23.8 | 20.8 | 457529 | 23.9 | 20.4 |
| 497530 | 23.5 | 21.0 | 303300 | 23.5 | 20.5 | 426897 | 23.6 | 20.7 | 258653 | 23.7 | 20.4 | 121736 | 23.8 | 19.0 | 539069 | 23.9 | 19.9 |
| 273847 | 23.5 | 19.4 | 445775 | 23.5 | 18.2 | 131973 | 23.6 | 19.3 | 423661 | 23.7 | 21.4 | 419577 | 23.8 | 19.8 | 131038 | 23.9 | 20.8 |
| 386590 | 23.5 | 19.6 | 180100 | 23.5 | 19.8 | 309182 | 23.6 | 20.0 | 348161 | 23.7 | 21.0 | 332347 | 23.8 | 20.8 | 117140 | 23.9 | 18.4 |
| 115640 | 23.5 | 19.6 | 242171 | 23.5 | 20.0 | 222575 | 23.6 | 19.7 | 289362 | 23.7 | 20.0 | 131230 | 23.8 | 19.7 | 18817 | 23.9 | 18.1 |
| 280154 | 23.5 | 19.4 | 468476 | 23.5 | 18.3 | 166003 | 23.6 | 19.3 | 214118 | 23.7 | 20.4 | 267372 | 23.8 | 19.1 | 389208 | 23.9 | 20.1 |
| 445265 | 23.5 | 21.2 | 469141 | 23.5 | 21.2 | 474315 | 23.6 | 22.1 | 146069 | 23.7 | 18.8 | 166670 | 23.8 | 19.6 | 137833 | 23.9 | 20.0 |
| 391707 | 23.5 | 21.2 | 114569 | 23.5 | 18.4 | 329030 | 23.6 | 20.3 | 173577 | 23.7 | 19.0 | 268063 | 23.8 | 18.9 | 370974 | 23.9 | 18.9 |
| 505521 | 23.5 | 20.8 | 210551 | 23.5 | 19.3 | 504536 | 23.6 | 19.6 | 62147 | 23.7 | 19.4 | 293332 | 23.8 | 21.3 | 430647 | 23.9 | 19.4 |
| 229541 | 23.5 | 20.1 | 102511 | 23.5 | 20.4 | 215006 | 23.6 | 20.0 | 532711 | 23.7 | 21.2 | 467038 | 23.8 | 21.1 | 370137 | 23.9 | 20.6 |
| 179761 | 23.5 | 20.1 | 540113 | 23.5 | 20.2 | 300045 | 23.6 | 20.9 | 135605 | 23.7 | 19.1 | 524620 | 23.8 | 20.9 | 233807 | 23.9 | 20.4 |
| 532692 | 23.5 | 20.3 | 332081 | 23.5 | 20.7 | 331594 | 23.6 | 20.1 | 309116 | 23.7 | 21.7 | 374375 | 23.8 | 21.1 | 21943 | 23.9 | 16.3 |
| 58905 | 23.5 | 18.0 | 520345 | 23.5 | 20.6 | 320327 | 23.6 | 20.4 | 311483 | 23.7 | 21.3 | 310357 | 23.8 | 19.9 | 114735 | 23.9 | 18.5 |
| 542349 | 23.5 | 21.5 | 98706 | 23.5 | 17.3 | 477701 | 23.6 | 20.7 | 33800 | 23.7 | 16.5 | 316380 | 23.8 | 20.6 | 389166 | 23.9 | 19.8 |
| 193238 | 23.5 | 19.3 | 420061 | 23.5 | 20.9 | 467513 | 23.6 | 20.2 | 337014 | 23.7 | 20.6 | 8531 | 23.8 | 17.9 | 398902 | 23.9 | 21.4 |
| 82031 | 23.5 | 17.4 | 458239 | 23.6 | 21.0 | 382939 | 23.6 | 19.7 | 137864 | 23.7 | 19.8 | 195537 | 23.8 | 17.9 | 463378 | 23.9 | 20.6 |
| 466515 | 23.5 | 20.2 | 158939 | 23.6 | 19.4 | 504595 | 23.6 | 20.1 | 138555 | 23.7 | 19.2 | 312728 | 23.8 | 20.1 | 91652 | 23.9 | 18.4 |
| 281840 | 23.5 | 20.2 | 417604 | 23.6 | 21.2 | 80360 | 23.6 | 19.0 | 179263 | 23.7 | 20.5 | 69352 | 23.8 | 19.5 | 249356 | 23.9 | 20.3 |
| 278888 | 23.5 | 18.8 | 431853 | 23.6 | 20.0 | 320561 | 23.6 | 21.0 | 406436 | 23.7 | 21.4 | 150478 | 23.8 | 18.0 | 69266 | 23.9 | 17.5 |
| 507396 | 23.5 | 19.8 | 331148 | 23.6 | 20.2 | 475150 | 23.6 | 20.4 | 234130 | 23.7 | 19.9 | 46767 | 23.8 | 19.0 | 355786 | 23.9 | 19.4 |
| 323415 | 23.5 | 21.4 | 318815 | 23.6 | 20.8 | 205821 | 23.6 | 20.6 | 424402 | 23.7 | 19.9 | 451409 | 23.8 | 19.3 | 357136 | 23.9 | 20.6 |
| 134565 | 23.5 | 18.0 | 476330 | 23.6 | 20.6 | 186084 | 23.6 | 19.2 | 325224 | 23.7 | 19.8 | 17902 | 23.8 | 18.0 | 183061 | 23.9 | 20.4 |
| 446419 | 23.5 | 21.5 | 90620 | 23.6 | 18.9 | 499824 | 23.6 | 20.9 | 422651 | 23.7 | 21.5 | 433308 | 23.8 | 20.5 | 262165 | 23.9 | 21.3 |
| 47253 | 23.5 | 19.4 | 22603 | 23.6 | 18.1 | 295311 | 23.6 | 19.0 | 406370 | 23.7 | 20.4 | 185013 | 23.8 | 19.4 | 250533 | 23.9 | 19.4 |
| 384759 | 23.5 | 19.8 | 323435 | 23.6 | 20.0 | 454932 | 23.6 | 20.0 | 532711 | 23.7 | 20.7 | 185100 | 23.8 | 20.2 | 504305 | 23.9 | 19.5 |
| 499260 | 23.5 | 20.6 | 86925 | 23.6 | 19.3 | 178917 | 23.6 | 18.9 | 385425 | 23.7 | 21.0 | 254305 | 23.8 | 20.0 | 272394 | 23.9 | 19.2 |
| 516802 | 23.5 | 20.4 | 165023 | 23.6 | 19.5 | 42853 | 23.6 | 18.6 | 267418 | 23.7 | 18.7 | 24803 | 23.8 | 18.7 | 211674 | 23.9 | 19.6 |
| 264586 | 23.5 | 19.9 | 114668 | 23.6 | 19.2 | 91857 | 23.6 | 19.4 | 509751 | 23.7 | 20.6 | 303757 | 23.8 | 20.4 | 380183 | 23.9 | 19.3 |
| 381183 | 23.5 | 20.7 | 493595 | 23.6 | 20.5 | 463720 | 23.6 | 21.5 | 435806 | 23.7 | 20.6 | 403283 | 23.8 | 19.7 | 235933 | 23.9 | 19.3 |
| 188115 | 23.5 | 19.8 | 241618 | 23.6 | 18.9 | 72143 | 23.6 | 19.1 | 498309 | 23.7 | 21.4 | 527387 | 23.8 | 21.4 | 544175 | 23.9 | 21.2 |
| 56573 | 23.5 | 16.7 | 221733 | 23.6 | 18.8 | 356709 | 23.6 | 19.8 | 235203 | 23.7 | 20.3 | 123483 | 23.8 | 19.5 | 353097 | 23.9 | 19.7 |
| 527956 | 23.5 | 22.4 | 419789 | 23.6 | 21.4 | 86053 | 23.7 | 17.8 | 80037 | 23.7 | 17.8 | 351749 | 23.8 | 20.7 | 266926 | 23.9 | 20.5 |
| 262655 | 23.5 | 20.2 | 74803 | 23.6 | 18.6 | 233735 | 23.7 | 20.8 | 304025 | 23.7 | 20.4 | 197648 | 23.8 | 19.6 | 70620 | 23.9 | 18.7 |
| 250842 | 23.5 | 20.6 | 336336 | 23.6 | 20.2 | 536588 | 23.7 | 21.8 | 123006 | 23.7 | 19.4 | 208561 | 23.8 | 19.6 | 287834 | 23.9 | 20.4 |
| 126127 | 23.5 | 20.6 | 249146 | 23.6 | 19.7 | 91326 | 23.7 | 18.2 | 540779 | 23.7 | 20.6 | 432770 | 23.8 | 20.5 | 318086 | 23.9 | 21.0 |
| 93140 | 23.5 | 19.3 | 463217 | 23.6 | 20.6 | 34836 | 23.7 | 18.8 | 334817 | 23.7 | 20.2 | 518969 | 23.8 | 20.5 | 289463 | 23.9 | 19.9 |
| 39106 | 23.5 | 16.6 | 520271 | 23.6 | 20.5 | 25542 | 23.7 | 18.4 | 246126 | 23.7 | 20.7 | 538472 | 23.8 | 21.4 | 370970 | 23.9 | 20.8 |
| 203760 | 23.5 | 19.6 | 281860 | 23.6 | 20.5 | 171019 | 23.7 | 20.5 | 126948 | 23.7 | 19.3 | 160145 | 23.8 | 19.8 | 427765 | 23.9 | 20.8 |
| 121556 | 23.5 | 18.4 | 210497 | 23.6 | 20.7 | 187211 | 23.7 | 18.2 | 381480 | 23.7 | 20.4 | 1222 | 23.8 | 14.4 | 258651 | 23.9 | 21.2 |
| 465067 | 23.5 | 20.0 | 517274 | 23.6 | 20.8 | 194021 | 23.7 | 17.9 | 532056 | 23.7 | 21.3 | 276807 | 23.8 | 19.7 | 104206 | 23.9 | 19.5 |
| 385527 | 23.5 | 22.8 | 69235 | 23.6 | 19.6 | 392575 | 23.7 | 21.1 | 387979 | 23.7 | 20.1 | 52184 | 23.8 | 18.1 | 259636 | 23.9 | 20.8 |
| 352099 | 23.5 | 20.2 | 92827 | 23.6 | 18.9 | 183051 | 23.7 | 19.5 | 92137 | 23.7 | 18.5 | 33163 | 23.8 | 18.0 | 239673 | 23.9 | 20.4 |
| 526458 | 23.5 | 19.9 | 161428 | 23.6 | 19.4 | 185564 | 23.7 | 20.4 | 533158 | 23.7 | 20.3 | 475531 | 23.8 | 21.1 | 65129 | 23.9 | 18.1 |
| 247101 | 23.5 | 19.4 | 193585 | 23.6 | 19.8 | 197559 | 23.7 | 19.6 | 306688 | 23.7 | 19.6 | 215882 | 23.8 | 20.9 | 208068 | 23.9 | 19.7 |
| 150333 | 23.5 | 20.1 | 269046 | 23.6 | 19.7 | 65564 | 23.7 | 18.6 | 222682 | 23.7 | 19.5 | 296501 | 23.8 | 19.8 | 407801 | 23.9 | 20.7 |
| 190099 | 23.5 | 18.1 | 101861 | 23.6 | 18.9 | 199227 | 23.7 | 19.3 | 525020 | 23.7 | 19.6 | 395669 | 23.8 | 20.0 | 413237 | 23.9 | 19.1 |
| 116503 | 23.5 | 19.6 | 456857 | 23.6 | 20.8 | 140370 | 23.7 | 19.7 | 338866 | 23.7 | 19.2 | 156959 | 23.8 | 19.8 | 317190 | 23.9 | 20.1 |
| 212357 | 23.5 | 18.6 | 295196 | 23.6 | 19.8 | 315362 | 23.7 | 21.3 | 95966 | 23.7 | 19.4 | 281034 | 23.8 | 20.7 | 183158 | 23.9 | 19.8 |
| 334701 | 23.5 | 19.9 | 302439 | 23.6 | 20.7 | 57713 | 23.7 | 18.7 | 394775 | 23.7 | 21.1 | 68461 | 23.8 | 17.6 | 125820 | 23.9 | 19.3 |
| 49448 | 23.5 | 18.9 | 68396 | 23.6 | 18.3 | 114541 | 23.7 | 19.3 | 190090 | 23.7 | 18.6 | 499420 | 23.8 | 20.4 | 289421 | 23.9 | 21.4 |
| 181082 | 23.5 | 19.0 | 422507 | 23.6 | 20.5 | 231375 | 23.7 | 20.8 | 363018 | 23.7 | 18.8 | 430416 | 23.8 | 21.6 | 182856 | 23.9 | 20.9 |
| 45351 | 23.5 | 17.9 | 368158 | 23.6 | 20.0 | 82193 | 23.7 | 18.3 | 143306 | 23.7 | 20.2 | 500777 | 23.8 | 20.8 | 424083 | 23.9 | 21.4 |
| 527643 | 23.5 | 21.1 | 189157 | 23.6 | 20.6 | 408201 | 23.7 | 21.1 | 474958 | 23.7 | 20.3 | 397783 | 23.8 | 20.8 | 41705 | 23.9 | 18.0 |
| 99651 | 23.5 | 18.9 | 317448 | 23.6 | 20.1 | 200296 | 23.7 | 19.6 | 212312 | 23.7 | 19.1 | 415061 | 23.8 | 21.6 | 162888 | 23.9 | 18.9 |
| 184634 | 23.5 | 18.5 | 159218 | 23.6 | 20.3 | 459626 | 23.7 | 20.9 | 395584 | 23.8 | 20.5 | 501457 | 23.8 | 21.3 | 83598 | 23.9 | 18.5 |
| 509547 | 23.5 | 21.8 | 363330 | 23.6 | 22.1 | 170296 | 23.7 | 19.2 | 268444 | 23.8 | 21.1 | 152442 | 23.8 | 19.5 | 213341 | 23.9 | 19.4 |
| 255491 | 23.5 | 20.7 | 536098 | 23.6 | 22.2 | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| N _o | 08 | V | N _o | 08 | V | N _o | 08 | V | N _o | 08 | V | N _o | 08 | V | N _o | 08 | V |
|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|----------------|------|------|
| 168874 | 23.9 | 19.0 | 118448 | 23.9 | 19.8 | 262450 | 24.1 | 20.2 | 94502 | 24.1 | 18.6 | 383873 | 24.2 | 19.7 | 350495 | 24.3 | 19.5 |
| 470295 | 23.9 | 21.3 | 149059 | 23.9 | 20.1 | 417463 | 24.1 | 18.7 | 319608 | 24.1 | 20.5 | 178683 | 24.2 | 19.0 | 278340 | 24.3 | 20.1 |
| 31148 | 23.9 | 16.9 | 504528 | 23.9 | 20.7 | 480593 | 24.1 | 19.7 | 341149 | 24.1 | 20.6 | 228328 | 24.2 | 18.6 | 95099 | 24.3 | 18.5 |
| 259364 | 23.9 | 20.4 | 427241 | 23.9 | 20.3 | 269326 | 24.1 | 19.5 | 539887 | 24.1 | 19.6 | 338827 | 24.2 | 19.5 | 465343 | 24.3 | 21.1 |
| 427972 | 23.9 | 21.5 | 501346 | 23.9 | 21.5 | 153324 | 24.1 | 19.1 | 301661 | 24.1 | 19.9 | 424156 | 24.2 | 21.3 | 312032 | 24.3 | 19.6 |
| 42917 | 23.9 | 16.5 | 432326 | 23.9 | 20.8 | 462188 | 24.1 | 18.8 | 533476 | 24.1 | 21.9 | 193267 | 24.2 | 19.0 | 542931 | 24.3 | 19.2 |
| 360565 | 23.9 | 19.3 | 415658 | 23.9 | 20.1 | 304598 | 24.1 | 21.4 | 239672 | 24.1 | 20.1 | 295077 | 24.2 | 19.6 | 507822 | 24.3 | 21.2 |
| 173828 | 23.9 | 19.4 | 429654 | 23.9 | 21.3 | 459049 | 24.1 | 21.1 | 452610 | 24.1 | 19.1 | 359554 | 24.2 | 20.2 | 351561 | 24.3 | 20.1 |
| 368670 | 23.9 | 19.8 | 531907 | 23.9 | 21.2 | 216638 | 24.1 | 19.6 | 336455 | 24.1 | 20.2 | 100507 | 24.2 | 18.6 | 104433 | 24.3 | 20.3 |
| 408777 | 23.9 | 19.2 | 255940 | 23.9 | 20.1 | 387462 | 24.1 | 20.6 | 216360 | 24.1 | 20.2 | 516164 | 24.2 | 20.3 | 90987 | 24.3 | 18.8 |
| 136935 | 23.9 | 18.7 | 32931 | 23.9 | 18.8 | 281710 | 24.1 | 19.6 | 384012 | 24.1 | 20.7 | 362404 | 24.2 | 18.6 | 352595 | 24.3 | 21.5 |
| 205593 | 23.9 | 19.0 | 72499 | 23.9 | 19.0 | 399654 | 24.1 | 20.0 | 31114 | 24.1 | 19.1 | 178754 | 24.2 | 19.5 | 238637 | 24.3 | 20.4 |
| 370071 | 23.9 | 19.3 | 176994 | 23.9 | 18.5 | 530604 | 24.1 | 20.7 | 106595 | 24.1 | 19.2 | 353624 | 24.2 | 20.0 | 75734 | 24.3 | 15.8 |
| 522373 | 23.9 | 20.4 | 415052 | 23.9 | 20.4 | 211941 | 24.1 | 20.9 | 170350 | 24.1 | 19.6 | 73173 | 24.2 | 17.6 | 400989 | 24.3 | 20.4 |
| 201713 | 23.9 | 19.8 | 202229 | 23.9 | 19.9 | 392961 | 24.1 | 20.1 | 15987 | 24.1 | 17.8 | 454097 | 24.2 | 21.2 | 12773 | 24.3 | 17.4 |
| 115522 | 23.9 | 20.1 | 182920 | 23.9 | 19.0 | 310500 | 24.1 | 18.6 | 7299 | 24.1 | 17.7 | 397144 | 24.2 | 18.9 | 280901 | 24.3 | 19.9 |
| 475039 | 23.9 | 21.5 | 494408 | 23.9 | 20.4 | 175361 | 24.1 | 19.8 | 111440 | 24.1 | 18.9 | 512016 | 24.2 | 20.4 | 510756 | 24.3 | 19.7 |
| 461608 | 23.9 | 20.9 | 104680 | 23.9 | 18.6 | 504084 | 24.1 | 18.6 | 139527 | 24.1 | 18.9 | 242689 | 24.2 | 18.9 | 359418 | 24.3 | 18.8 |
| 134222 | 23.9 | 18.6 | 28227 | 24.0 | 17.4 | 8094 | 24.1 | 16.7 | 90906 | 24.1 | 18.9 | 32862 | 24.2 | 17.7 | 423466 | 24.3 | 19.5 |
| 451231 | 23.9 | 20.4 | 268437 | 24.0 | 21.6 | 64836 | 24.1 | 18.8 | 457492 | 24.1 | 20.6 | 526166 | 24.2 | 21.1 | 57702 | 24.3 | 18.9 |
| 422392 | 23.9 | 20.0 | 157567 | 24.0 | 19.2 | 156204 | 24.1 | 19.7 | 166593 | 24.1 | 19.8 | 32456 | 24.2 | 18.5 | 214824 | 24.3 | 20.2 |
| 383958 | 23.9 | 20.6 | 221285 | 24.0 | 19.5 | 395484 | 24.1 | 20.0 | 236500 | 24.1 | 21.2 | 201604 | 24.2 | 19.1 | 382941 | 24.3 | 19.4 |
| 258017 | 23.9 | 20.6 | 161757 | 24.0 | 19.4 | 505438 | 24.1 | 20.4 | 494324 | 24.2 | 20.1 | 976 | 24.2 | 14.2 | 540847 | 24.3 | 20.9 |
| 394767 | 23.9 | 21.2 | 476457 | 24.0 | 20.9 | 203371 | 24.1 | 18.0 | 50024 | 24.2 | 18.1 | 171007 | 24.2 | 19.7 | 467796 | 24.3 | 19.2 |
| 321036 | 23.9 | 19.0 | 41519 | 24.0 | 18.2 | 302258 | 24.1 | 20.4 | 96871 | 24.2 | 18.9 | 478039 | 24.2 | 21.4 | 125774 | 24.3 | 19.1 |
| 331090 | 23.9 | 18.7 | 34968 | 24.0 | 18.2 | 162593 | 24.1 | 17.6 | 251450 | 24.2 | 20.2 | 368420 | 24.2 | 20.5 | 249154 | 24.3 | 19.2 |
| 537540 | 23.9 | 21.8 | 374463 | 24.0 | 21.2 | 373850 | 24.1 | 21.2 | 366268 | 24.2 | 19.8 | 209430 | 24.2 | 19.5 | 476518 | 24.3 | 20.7 |
| 461598 | 23.9 | 19.6 | 31016 | 24.0 | 18.2 | 412625 | 24.1 | 20.1 | 251603 | 24.2 | 19.9 | 35641 | 24.2 | 18.0 | 526507 | 24.3 | 21.1 |
| 338865 | 23.9 | 20.6 | 255664 | 24.0 | 18.4 | 235308 | 24.1 | 20.0 | 146138 | 24.2 | 19.2 | 60033 | 24.2 | 18.0 | 504786 | 24.3 | 19.9 |
| 312098 | 23.9 | 19.8 | 522745 | 24.0 | 21.1 | 416018 | 24.1 | 20.5 | 187922 | 24.2 | 19.6 | 116270 | 24.2 | 18.0 | 514475 | 24.3 | 22.0 |
| 270321 | 23.9 | 20.7 | 243552 | 24.0 | 19.5 | 438124 | 24.1 | 19.8 | 316922 | 24.2 | 20.6 | 465662 | 24.2 | 20.8 | 316381 | 24.3 | 20.8 |
| 367487 | 23.9 | 20.7 | 250556 | 24.0 | 19.3 | 526341 | 24.1 | 20.9 | 144352 | 24.2 | 19.2 | 92553 | 24.2 | 18.5 | 384457 | 24.3 | 20.0 |
| 285931 | 23.9 | 18.5 | 199603 | 24.0 | 20.1 | 260575 | 24.1 | 20.7 | 400767 | 24.2 | 21.0 | 105364 | 24.2 | 18.7 | 279791 | 24.3 | 19.6 |
| 196196 | 23.9 | 19.9 | 537996 | 24.0 | 21.3 | 70409 | 24.1 | 18.2 | 378351 | 24.2 | 19.9 | 375889 | 24.2 | 19.8 | 497423 | 24.3 | 20.2 |
| 471421 | 23.9 | 19.4 | 269013 | 24.0 | 19.9 | 34285 | 24.1 | 18.5 | 28336 | 24.2 | 18.2 | 37437 | 24.2 | 17.3 | 375282 | 24.3 | 19.5 |
| 175890 | 23.9 | 19.0 | 91292 | 24.0 | 17.7 | 179495 | 24.1 | 19.7 | 341162 | 24.2 | 19.6 | 311493 | 24.2 | 20.8 | 127176 | 24.3 | 19.0 |
| 501431 | 23.9 | 20.5 | 514466 | 24.0 | 20.5 | 531239 | 24.1 | 21.5 | 499621 | 24.2 | 20.9 | 508550 | 24.2 | 20.0 | 424076 | 24.3 | 21.3 |
| 315334 | 23.9 | 18.5 | 168982 | 24.0 | 20.2 | 393809 | 24.1 | 19.9 | 255742 | 24.2 | 20.2 | 332350 | 24.2 | 19.3 | 256878 | 24.3 | 20.4 |
| 215900 | 23.9 | 19.3 | 288875 | 24.0 | 19.6 | 423598 | 24.1 | 20.6 | 415093 | 24.2 | 19.8 | 534150 | 24.3 | 19.9 | 257624 | 24.3 | 20.0 |
| 39601 | 23.9 | 19.4 | 520218 | 24.0 | 21.0 | 437005 | 24.1 | 20.5 | 414176 | 24.2 | 20.7 | 198286 | 24.3 | 19.4 | 44836 | 24.3 | 19.3 |
| 499772 | 23.9 | 20.9 | 186112 | 24.0 | 18.7 | 359542 | 24.1 | 20.1 | 143557 | 24.2 | 19.6 | 488929 | 24.3 | 20.0 | 148402 | 24.3 | 19.0 |
| 350967 | 23.9 | 19.6 | 347252 | 24.0 | 19.2 | 330449 | 24.1 | 20.3 | 135125 | 24.2 | 18.0 | 439246 | 24.3 | 21.3 | 425776 | 24.3 | 21.1 |
| 338534 | 23.9 | 19.8 | 123813 | 24.0 | 19.1 | 353710 | 24.1 | 20.2 | 469203 | 24.2 | 20.3 | 33677 | 24.3 | 18.5 | 180157 | 24.3 | 19.2 |
| 503987 | 23.9 | 20.4 | 355566 | 24.0 | 20.8 | 505560 | 24.1 | 20.4 | 46711 | 24.2 | 18.8 | 512078 | 24.3 | 20.4 | 427029 | 24.3 | 20.5 |
| 123417 | 23.9 | 19.5 | 498681 | 24.0 | 21.1 | 174456 | 24.1 | 18.5 | 242426 | 24.2 | 19.0 | 286472 | 24.3 | 19.1 | 36776 | 24.3 | 18.4 |
| 379915 | 23.9 | 20.9 | 219787 | 24.0 | 20.6 | 203422 | 24.1 | 19.3 | 83095 | 24.2 | 19.4 | 222485 | 24.3 | 20.0 | 39260 | 24.3 | 19.2 |
| 397029 | 23.9 | 19.5 | 421812 | 24.0 | 20.3 | 354742 | 24.1 | 19.2 | 275389 | 24.2 | 21.0 | 13781 | 24.3 | 16.6 | 254647 | 24.3 | 19.7 |
| 208639 | 23.9 | 20.0 | 272826 | 24.0 | 20.1 | 428709 | 24.1 | 19.8 | 483379 | 24.2 | 20.7 | 148140 | 24.3 | 19.5 | 359989 | 24.3 | 19.8 |
| 297721 | 23.9 | 19.5 | 538110 | 24.0 | 21.8 | 301131 | 24.1 | 19.4 | 422913 | 24.2 | 20.5 | 463193 | 24.3 | 21.3 | 375843 | 24.3 | 21.2 |
| 505921 | 23.9 | 18.9 | 215655 | 24.0 | 19.5 | 297858 | 24.1 | 20.7 | 187369 | 24.2 | 18.3 | 180089 | 24.3 | 18.8 | 442875 | 24.3 | 20.9 |
| 41451 | 23.9 | 17.3 | 118434 | 24.0 | 18.7 | 158407 | 24.1 | 20.4 | 54720 | 24.2 | 18.1 | 238565 | 24.3 | 20.0 | 93561 | 24.3 | 19.5 |
| 149382 | 23.9 | 20.1 | 137952 | 24.0 | 19.4 | 456856 | 24.1 | 22.0 | 37633 | 24.2 | 18.1 | 362838 | 24.3 | 20.0 | 82974 | 24.4 | 18.7 |
| 526244 | 23.9 | 21.1 | 190032 | 24.0 | 19.4 | 406541 | 24.1 | 20.5 | 110554 | 24.2 | 19.5 | 465410 | 24.3 | 20.6 | 370992 | 24.4 | 20.2 |
| 328197 | 23.9 | 20.4 | 424667 | 24.0 | 20.3 | 471622 | 24.1 | 20.3 | 164120 | 24.2 | 20.8 | 55220 | 24.3 | 18.3 | 196651 | 24.4 | 19.3 |
| 207854 | 23.9 | 20.7 | 56249 | 24.0 | 16.9 | 54702 | 24.1 | 16.7 | 526522 | 24.2 | 21.7 | 288459 | 24.3 | 21.7 | 56188 | 24.4 | 18.3 |
| 236527 | 23.9 | 19.6 | 253072 | 24.0 | 18.8 | 119831 | 24.1 | 19.5 | 186982 | 24.2 | 19.4 | 236579 | 24.3 | 19.6 | 235882 | 24.4 | 20.8 |
| 6286 | 23.9 | 16.6 | 267013 | 24.0 | 19.2 | 162566 | 24.1 | 20.1 | 62554 | 24.2 | 19.2 | 101541 | 24.3 | 18.3 | 281037 | 24.4 | 20.0 |
| 307144 | 23.9 | 20.2 | 156555 | 24.0 | 18.6 | 423682 | 24.1 | 20.1 | 464210 | 24.2 | 18.9 | 31667 | 24.3 | 18.6 | 222530 | 24.4 | 19.5 |
| 23086 | 23.9 | 18.7 | 89789 | 24.0 | 19.1 | 276982 | 24.1 | 19.6 | 465202 | 24.2 | 20.1 | 9460 | 24.3 | 16.7 | 324968 | 24.4 | 20.5 |
| 358073 | 23.9 | 20.6 | 207470 | 24.0 | 19.9 | 152488 | 24.1 | 19.1 | 132076 | 24.2 | 20.5 | 536813 | 24.3 | 21.1 | 79667 | 24.4 | 19.0 |
| 55966 | 23.9 | 19.8 | 222557 | 24.0 | 18.3 | 391722 | 24.1 | 20.0 | 472033 | 24.2 | 19.7 | 358310 | 24.3 | 22.1 | 186696 | 24.4 | 19.7 |
| 149520 | 23.9 | 20.7 | 148438 | 24.0 | 18.6 | 208823 | 24.1 | 19.4 | 237539 | 24.2 | 19.0 | 127915 | 24.3 | 19.1 | 519557 | 24.4 | 20.0 |
| 357915 | 23.9 | 20.0 | 336715 | 24.0 | 20.2 | 200338 | 24.1 | 18.3 | 33560 | 24.2 | 17.0 | 335605 | 24.3 | 21.0 | 529681 | 24.4 | 20.4 |
| 192530 | 23.9 | 20.0 | 143059 | 24.0 | 19.8 | 287946 | 24.1 | 19.6 | 328304 | 24.2 | 19.4 | 47619 | 24.3 | 18.7 | 140535 | 24.4 | 19.0 |
| 475024 | 23.9 | 20.6 | 434428 | 24.0 | 19.5 | 438958 | 24.1 | 20.5 | 284303 | 24.2 | 18.9 | 103352 | 24.3 | 18.7 | 510406 | 24.4 | 19.9 |
| 34036 | 23.9 | 17.1 | 353156 | 24.0 | 20.9 | 382784 | 24.1 | 19.4 | 107183 | 24.2 | 18.7 | 505800 | 24.3 | 20.1 | 284466 | 24.4 | 19.1 |
| 309401 | 23.9 | 20.1 | 278869 | 24.0 | 19.9 | 47971 | 24.1 | 19.7 | 511960 | 24.2 | 20.6 | 107569 | 24.3 | 19.8 | 464536 | 24.4 | 20.3 |
| 64612 | 23.9 | 18.0 | 141486 | 24.0 | 18.3 | 343822 | 24.1 | 20.8 | 543557 | 24.2 | 20.1 | 272903 | 24.3 | 20.8 | 119005 | 24.4 | 19.5 |
| 535773 | | | | | | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 125926 | 24.4 | 19.1 | 472143 | 24.5 | 20.7 | 537789 | 24.6 | 20.7 | 62411 | 24.6 | 17.7 | 417462 | 24.7 | 18.0 | 439649 | 24.8 | 20.5 |
| 542232 | 24.4 | 21.0 | 291382 | 24.5 | 19.5 | 423024 | 24.6 | 19.9 | 45823 | 24.6 | 17.9 | 526373 | 24.7 | 21.0 | 148096 | 24.8 | 20.1 |
| 259399 | 24.4 | 18.0 | 342505 | 24.5 | 19.7 | 262999 | 24.6 | 19.7 | 510578 | 24.6 | 19.2 | 438449 | 24.7 | 20.7 | 512796 | 24.8 | 19.7 |
| 378245 | 24.4 | 20.5 | 111920 | 24.5 | 19.6 | 293779 | 24.6 | 20.0 | 202939 | 24.6 | 19.9 | 316378 | 24.7 | 19.9 | 355184 | 24.8 | 20.9 |
| 468519 | 24.4 | 19.3 | 524233 | 24.5 | 20.0 | 79229 | 24.6 | 17.6 | 475191 | 24.6 | 20.4 | 227478 | 24.7 | 19.5 | 523085 | 24.8 | 20.7 |
| 531854 | 24.4 | 21.5 | 462833 | 24.5 | 20.4 | 504562 | 24.6 | 20.5 | 537943 | 24.6 | 21.4 | 119626 | 24.7 | 19.0 | 471912 | 24.8 | 19.5 |
| 308496 | 24.4 | 21.0 | 47976 | 24.5 | 18.2 | 119295 | 24.6 | 18.5 | 488419 | 24.6 | 19.8 | 156960 | 24.7 | 19.9 | 461524 | 24.8 | 20.0 |
| 33923 | 24.4 | 17.9 | 373351 | 24.5 | 20.4 | 533406 | 24.6 | 21.6 | 435961 | 24.6 | 20.4 | 219700 | 24.7 | 19.3 | 28596 | 24.8 | 18.0 |
| 286710 | 24.4 | 19.5 | 188532 | 24.5 | 17.5 | 197181 | 24.6 | 19.9 | 406516 | 24.6 | 19.2 | 412957 | 24.7 | 19.6 | 199058 | 24.8 | 18.1 |
| 103206 | 24.4 | 18.7 | 95332 | 24.5 | 18.4 | 528971 | 24.6 | 21.7 | 371014 | 24.6 | 19.8 | 268951 | 24.7 | 20.3 | 501222 | 24.8 | 20.1 |
| 277991 | 24.4 | 20.0 | 21041 | 24.5 | 17.1 | 69480 | 24.6 | 19.1 | 149394 | 24.6 | 20.7 | 366187 | 24.7 | 19.8 | 459548 | 24.8 | 20.4 |
| 501071 | 24.4 | 19.8 | 502087 | 24.5 | 20.7 | 140618 | 24.6 | 19.2 | 304408 | 24.6 | 20.6 | 34360 | 24.7 | 18.3 | 252931 | 24.8 | 19.0 |
| 504314 | 24.4 | 20.7 | 26029 | 24.5 | 16.6 | 540646 | 24.6 | 20.6 | 297616 | 24.6 | 19.0 | 148397 | 24.7 | 19.8 | 342932 | 24.8 | 19.9 |
| 187403 | 24.4 | 20.0 | 533700 | 24.5 | 19.2 | 278799 | 24.6 | 20.4 | 345458 | 24.6 | 20.3 | 60153 | 24.7 | 17.3 | 457606 | 24.8 | 21.4 |
| 399979 | 24.4 | 19.2 | 395896 | 24.5 | 20.8 | 95070 | 24.6 | 17.6 | 200981 | 24.7 | 19.8 | 338825 | 24.7 | 19.3 | 178851 | 24.8 | 19.0 |
| 536390 | 24.4 | 21.1 | 151758 | 24.5 | 20.1 | 155242 | 24.6 | 20.1 | 530975 | 24.7 | 21.3 | 437460 | 24.7 | 19.9 | 94879 | 24.8 | 19.1 |
| 522774 | 24.4 | 20.6 | 132430 | 24.5 | 19.6 | 401614 | 24.6 | 19.6 | 243633 | 24.7 | 19.1 | 83817 | 24.7 | 19.2 | 149445 | 24.8 | 18.4 |
| 363747 | 24.4 | 20.3 | 96974 | 24.5 | 18.8 | 263344 | 24.6 | 20.8 | 540618 | 24.7 | 20.9 | 369505 | 24.7 | 20.5 | 525581 | 24.8 | 20.7 |
| 427876 | 24.4 | 21.3 | 37454 | 24.5 | 18.6 | 495213 | 24.6 | 20.0 | 137776 | 24.7 | 20.0 | 245640 | 24.7 | 19.7 | 305148 | 24.8 | 20.9 |
| 231353 | 24.4 | 19.8 | 463196 | 24.5 | 19.7 | 530711 | 24.6 | 21.3 | 41633 | 24.7 | 18.6 | 29439 | 24.7 | 17.8 | 142447 | 24.8 | 18.9 |
| 418152 | 24.4 | 21.2 | 324061 | 24.5 | 20.3 | 40109 | 24.6 | 16.7 | 542578 | 24.7 | 20.7 | 238429 | 24.7 | 20.7 | 4242 | 24.8 | 16.8 |
| 352446 | 24.4 | 20.0 | 358069 | 24.5 | 20.5 | 218268 | 24.6 | 20.7 | 389200 | 24.7 | 22.2 | 193070 | 24.7 | 19.8 | 538031 | 24.8 | 20.5 |
| 536005 | 24.4 | 21.3 | 477617 | 24.5 | 19.7 | 162521 | 24.6 | 19.0 | 268060 | 24.7 | 19.4 | 100297 | 24.7 | 19.1 | 26642 | 24.8 | 17.9 |
| 509649 | 24.4 | 21.8 | 55919 | 24.5 | 18.2 | 36367 | 24.6 | 17.1 | 128997 | 24.7 | 19.3 | 20150 | 24.7 | 16.9 | 262870 | 24.8 | 20.0 |
| 424134 | 24.4 | 20.3 | 131557 | 24.5 | 19.7 | 371691 | 24.6 | 20.7 | 425284 | 24.7 | 19.9 | 353700 | 24.7 | 20.4 | 201438 | 24.8 | 19.0 |
| 134004 | 24.4 | 18.3 | 173294 | 24.5 | 18.7 | 86298 | 24.6 | 17.5 | 471090 | 24.7 | 21.2 | 520912 | 24.7 | 20.8 | 311220 | 24.8 | 19.9 |
| 156460 | 24.4 | 19.5 | 208612 | 24.5 | 20.0 | 244124 | 24.6 | 18.7 | 250116 | 24.7 | 18.7 | 392085 | 24.7 | 20.9 | 205733 | 24.8 | 20.3 |
| 519048 | 24.4 | 20.3 | 506524 | 24.5 | 20.1 | 257833 | 24.6 | 20.0 | 376898 | 24.7 | 19.3 | 108057 | 24.7 | 20.1 | 313736 | 24.8 | 18.7 |
| 415800 | 24.4 | 19.8 | 96711 | 24.5 | 19.1 | 66794 | 24.6 | 18.0 | 474549 | 24.7 | 23.2 | 5845 | 24.7 | 16.8 | 472641 | 24.8 | 20.0 |
| 192877 | 24.4 | 20.0 | 397002 | 24.5 | 21.9 | 141274 | 24.6 | 19.7 | 178505 | 24.7 | 19.2 | 343423 | 24.7 | 19.8 | 80040 | 24.8 | 18.8 |
| 172427 | 24.4 | 17.6 | 477726 | 24.5 | 19.9 | 99853 | 24.6 | 19.8 | 5383 | 24.7 | 16.6 | 189362 | 24.7 | 20.2 | 81381 | 24.8 | 18.7 |
| 374493 | 24.4 | 19.9 | 540810 | 24.5 | 20.8 | 177157 | 24.6 | 18.8 | 490149 | 24.7 | 21.3 | 359758 | 24.7 | 20.1 | 372466 | 24.8 | 20.3 |
| 9476 | 24.4 | 16.5 | 93422 | 24.5 | 19.0 | 431856 | 24.6 | 19.9 | 415727 | 24.7 | 19.7 | 84658 | 24.7 | 18.9 | 266250 | 24.8 | 20.7 |
| 111328 | 24.4 | 19.0 | 63739 | 24.5 | 18.5 | 543419 | 24.6 | 21.0 | 98781 | 24.7 | 19.1 | 131129 | 24.7 | 19.2 | 90257 | 24.8 | 18.6 |
| 398198 | 24.4 | 19.9 | 204703 | 24.5 | 19.5 | 42440 | 24.6 | 19.6 | 37882 | 24.7 | 16.8 | 110092 | 24.7 | 19.0 | 23665 | 24.8 | 17.3 |
| 34463 | 24.4 | 16.8 | 338787 | 24.5 | 19.8 | 473242 | 24.6 | 20.3 | 215358 | 24.7 | 19.0 | 418169 | 24.7 | 21.9 | 175628 | 24.8 | 19.5 |
| 133746 | 24.4 | 19.0 | 22864 | 24.5 | 16.1 | 521208 | 24.6 | 20.8 | 370950 | 24.7 | 20.3 | 209089 | 24.7 | 20.1 | 278790 | 24.8 | 20.1 |
| 304091 | 24.4 | 20.6 | 275056 | 24.5 | 19.9 | 136929 | 24.6 | 18.0 | 91892 | 24.7 | 19.7 | 247177 | 24.7 | 18.8 | 176562 | 24.8 | 19.7 |
| 222697 | 24.4 | 19.8 | 362082 | 24.5 | 19.8 | 376184 | 24.6 | 20.8 | 201595 | 24.7 | 19.0 | 433363 | 24.8 | 20.4 | 68229 | 24.8 | 19.5 |
| 410194 | 24.4 | 19.0 | 236215 | 24.5 | 20.7 | 275476 | 24.6 | 21.3 | 436281 | 24.7 | 21.3 | 8242 | 24.8 | 17.3 | 538187 | 24.8 | 21.3 |
| 182225 | 24.4 | 20.1 | 208519 | 24.5 | 19.8 | 85647 | 24.6 | 17.9 | 119924 | 24.7 | 19.9 | 72042 | 24.8 | 18.8 | 221165 | 24.8 | 20.7 |
| 280319 | 24.4 | 18.9 | 362134 | 24.5 | 19.8 | 425870 | 24.6 | 21.3 | 377759 | 24.7 | 19.5 | 302860 | 24.8 | 19.8 | 193955 | 24.8 | 18.3 |
| 182840 | 24.4 | 20.7 | 91865 | 24.5 | 18.0 | 245125 | 24.6 | 19.7 | 511780 | 24.7 | 20.8 | 106682 | 24.8 | 18.2 | 470828 | 24.8 | 20.5 |
| 202195 | 24.4 | 20.1 | 154824 | 24.5 | 20.3 | 346685 | 24.6 | 20.8 | 536463 | 24.7 | 21.9 | 170405 | 24.8 | 20.6 | 346678 | 24.8 | 19.9 |
| 352454 | 24.4 | 20.0 | 61080 | 24.5 | 16.9 | 111230 | 24.6 | 19.8 | 110494 | 24.7 | 19.4 | 136957 | 24.8 | 18.3 | 18867 | 24.8 | 17.7 |
| 465069 | 24.4 | 18.5 | 379631 | 24.5 | 19.6 | 312130 | 24.6 | 20.6 | 290136 | 24.7 | 19.5 | 315253 | 24.8 | 19.0 | 348837 | 24.8 | 21.1 |
| 355112 | 24.4 | 20.7 | 238505 | 24.5 | 20.1 | 533408 | 24.6 | 20.1 | 550797 | 24.7 | 20.0 | 397427 | 24.8 | 20.0 | 284167 | 24.8 | 19.6 |
| 341414 | 24.4 | 19.6 | 125079 | 24.5 | 20.3 | 306134 | 24.6 | 20.3 | 114930 | 24.7 | 17.2 | 416444 | 24.8 | 20.9 | 12034 | 24.8 | 16.2 |
| 77965 | 24.4 | 18.4 | 84068 | 24.5 | 18.0 | 37398 | 24.6 | 18.6 | 186027 | 24.7 | 18.4 | 391342 | 24.8 | 21.0 | 88921 | 24.8 | 17.6 |
| 433959 | 24.4 | 22.3 | 297799 | 24.5 | 19.9 | 235331 | 24.6 | 19.5 | 526095 | 24.7 | 20.9 | 256803 | 24.8 | 20.7 | 371700 | 24.8 | 21.6 |
| 80818 | 24.4 | 19.2 | 199291 | 24.5 | 19.7 | 189046 | 24.6 | 17.4 | 475516 | 24.7 | 20.2 | 212774 | 24.8 | 18.4 | 239598 | 24.8 | 19.8 |
| 436173 | 24.4 | 21.4 | 141721 | 24.5 | 18.7 | 308477 | 24.6 | 19.5 | 15984 | 24.7 | 18.0 | 143516 | 24.8 | 19.2 | 186383 | 24.8 | 20.3 |
| 192819 | 24.4 | 18.6 | 105929 | 24.5 | 17.9 | 43058 | 24.6 | 18.2 | 505721 | 24.7 | 20.3 | 44729 | 24.8 | 18.2 | 502785 | 24.9 | 19.6 |
| 497490 | 24.4 | 21.6 | 219665 | 24.5 | 19.1 | 27293 | 24.6 | 16.7 | 131174 | 24.7 | 19.9 | 538433 | 24.8 | 21.2 | 62590 | 24.9 | 19.5 |
| 284810 | 24.4 | 20.6 | 182207 | 24.5 | 19.1 | 39141 | 24.6 | 18.4 | 324943 | 24.7 | 20.6 | 158301 | 24.8 | 18.5 | 202227 | 24.9 | 20.3 |
| 286483 | 24.4 | 19.8 | 130620 | 24.5 | 18.7 | 237805 | 24.6 | 16.6 | 358330 | 24.7 | 20.5 | 140849 | 24.8 | 19.9 | 156969 | 24.9 | 19.6 |
| 334774 | 24.4 | 19.6 | 349393 | 24.5 | 20.2 | 501759 | 24.6 | 21.1 | 530888 | 24.7 | 21.1 | 525380 | 24.8 | 22.1 | 189345 | 24.9 | 19.8 |
| 173189 | 24.5 | 19.8 | 497463 | 24.5 | 19.7 | 10562 | 24.6 | 15.7 | 81240 | 24.7 | 18.0 | 478123 | 24.8 | 20.1 | 321173 | 24.9 | 19.8 |
| 125500 | 24.5 | 19.1 | 360110 | 24.5 | 21.3 | 229985 | 24.6 | 19.9 | 411643 | 24.7 | 20.1 | 503881 | 24.8 | 20.0 | 26144 | 24.9 | 18.9 |
| 116695 | 24.5 | 16.5 | 382949 | 24.5 | 19.7 | 86389 | 24.6 | 17.7 | 543459 | 24.7 | 20.2 | 133405 | 24.8 | 19.1 | 234176 | 24.9 | 19.1 |
| 482097 | 24.5 | 19.4 | 521025 | 24.5 | 20.5 | 522925 | 24.6 | 20.9 | 124544 | 24.7 | 19.9 | 429529 | 24.8 | 21.3 | 240560 | 24.9 | 19.5 |
| 439438 | 24.5 | 20.1 | 8101 | 24.5 | 17.5 | 341212 | 24.6 | 19.0 | 207480 | 24.7 | 18.6 | 246742 | 24.8 | 18.9 | 61549 | 24.9 | 18.0 |
| 191945 | 24.5 | 18.0 | 455232 | 24.5 | 19.2 | 193700 | 24.6 | 19.9 | 176593 | 24.7 | 18.9 | 352606 | 24.8 | 20.7 | 399254 | 24.9 | 20.2 |
| 437832 | 24.5 | 19.9 | 127620 | 24.5 | 19.4 | 499225 | 24.6 | 18.6 | 230885 | 24.7 | 19.6 | 192673 | 24.8 | 18.5 | 332091 | 24.9 | 20.8 |
| 467066 | 24.5 | 21.3 | 391090 | 24.5 | 19.9 | 331552 | 24.6 | 19.9 | 381441 | 24.7 | 18.9 | 304671 | 24.8 | 20.7 | 261214 | 24.9 | 18.9 |
| 185882 | 24.5 | 18.2 | 174215 | 24.5 | 19.8 | 385079 | 24.6 | 19.7 | 275199 | 24.7 | 19.2 | 468822 | 24.8 | 20.3 | 275593 | 24.9 | 20.4 |
| 536658 | 24.5 | 20.4 | 293034 | 24.5 | 19.8 | 181282 | 24.6 | 18.5 | 83129 | 24.7 | 18.9 | 75706 | 24.8 | 18.8 | 10732 | 24.9 | 17.9 |
| 478182 | 24.5 | 20.5 | 307192 | 24.5 | 20.6 | 281776 | 24.6 | 19.9 | 268104 | 24.7 | 19.4 | 504287 | 24.8 | 22.4 | 214243 | 24.9 | 19.0 |
| 253088 | 24.5 | 18.2 | 300030 | 24.5 | 20.0 | 51303 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 159551 | 24.9 | 18.4 | 512632 | 24.9 | 20.9 | 306897 | 25.0 | 19.7 | 322375 | 25.1 | 19.4 | 3208 | 25.2 | 16.9 | 101650 | 25.3 | 19.3 |
| 381871 | 24.9 | 20.3 | 389218 | 24.9 | 19.9 | 242900 | 25.0 | 19.5 | 249505 | 25.1 | 19.7 | 296503 | 25.2 | 18.6 | 266272 | 25.3 | 20.9 |
| 370078 | 24.9 | 19.5 | 479032 | 24.9 | 21.5 | 509477 | 25.0 | 20.6 | 52420 | 25.1 | 19.0 | 25184 | 25.2 | 18.5 | 98711 | 25.3 | 18.4 |
| 313100 | 24.9 | 20.0 | 309161 | 24.9 | 20.3 | 123914 | 25.0 | 19.7 | 181442 | 25.1 | 19.9 | 242536 | 25.2 | 20.1 | 56929 | 25.3 | 18.5 |
| 91433 | 24.9 | 17.6 | 530297 | 24.9 | 21.6 | 219569 | 25.0 | 19.1 | 297733 | 25.1 | 19.9 | 192751 | 25.2 | 19.2 | 304072 | 25.3 | 21.3 |
| 245496 | 24.9 | 17.9 | 17273 | 24.9 | 16.9 | 170830 | 25.0 | 20.6 | 123339 | 25.1 | 18.2 | 533254 | 25.2 | 21.1 | 55206 | 25.3 | 18.9 |
| 300965 | 24.9 | 21.2 | 333911 | 24.9 | 20.1 | 107481 | 25.0 | 19.9 | 540559 | 25.1 | 20.7 | 371650 | 25.2 | 21.5 | 338790 | 25.3 | 20.4 |
| 77929 | 24.9 | 18.0 | 301205 | 24.9 | 20.1 | 194061 | 25.0 | 18.6 | 96668 | 25.1 | 16.7 | 443562 | 25.2 | 19.7 | 360707 | 25.3 | 20.3 |
| 475681 | 24.9 | 20.9 | 125592 | 24.9 | 18.1 | 389202 | 25.0 | 20.9 | 39234 | 25.1 | 18.9 | 475319 | 25.2 | 21.0 | 29655 | 25.3 | 17.5 |
| 479185 | 24.9 | 20.4 | 280350 | 24.9 | 18.9 | 59536 | 25.0 | 19.4 | 526934 | 25.1 | 20.2 | 473786 | 25.2 | 21.0 | 348142 | 25.3 | 21.1 |
| 271808 | 24.9 | 19.7 | 451012 | 24.9 | 20.6 | 521251 | 25.0 | 21.0 | 499856 | 25.1 | 21.5 | 394714 | 25.2 | 21.0 | 165038 | 25.3 | 19.6 |
| 275328 | 24.9 | 21.1 | 417498 | 24.9 | 20.2 | 250452 | 25.0 | 18.4 | 535492 | 25.1 | 20.5 | 358850 | 25.2 | 20.2 | 231740 | 25.3 | 18.6 |
| 468123 | 24.9 | 21.0 | 429545 | 24.9 | 21.0 | 495116 | 25.0 | 20.0 | 468150 | 25.1 | 21.3 | 141975 | 25.2 | 18.2 | 338239 | 25.3 | 19.6 |
| 509572 | 24.9 | 21.2 | 84554 | 24.9 | 19.1 | 38660 | 25.0 | 17.0 | 473503 | 25.1 | 20.8 | 273853 | 25.2 | 20.7 | 333603 | 25.3 | 20.0 |
| 348443 | 24.9 | 19.6 | 194578 | 24.9 | 18.8 | 352811 | 25.0 | 20.6 | 96112 | 25.1 | 17.7 | 492363 | 25.2 | 20.8 | 197642 | 25.3 | 19.1 |
| 60041 | 24.9 | 18.0 | 381180 | 24.9 | 20.2 | 536431 | 25.0 | 20.6 | 34864 | 25.1 | 17.3 | 36898 | 25.2 | 17.9 | 432016 | 25.3 | 19.3 |
| 466991 | 24.9 | 20.0 | 301655 | 24.9 | 20.1 | 31202 | 25.0 | 18.0 | 479188 | 25.1 | 20.7 | 427895 | 25.2 | 20.9 | 438037 | 25.3 | 20.5 |
| 126302 | 24.9 | 19.6 | 408785 | 24.9 | 19.2 | 494109 | 25.0 | 19.0 | 150054 | 25.1 | 18.5 | 270474 | 25.2 | 20.0 | 116221 | 25.3 | 17.2 |
| 278926 | 24.9 | 19.6 | 497473 | 24.9 | 20.9 | 523967 | 25.0 | 21.0 | 354819 | 25.1 | 20.6 | 28236 | 25.2 | 17.7 | 88128 | 25.3 | 17.1 |
| 265071 | 24.9 | 19.5 | 292027 | 24.9 | 20.1 | 83883 | 25.0 | 18.0 | 525968 | 25.1 | 22.8 | 352497 | 25.2 | 20.9 | 205916 | 25.3 | 18.2 |
| 77567 | 24.9 | 18.6 | 529007 | 24.9 | 21.9 | 346285 | 25.0 | 20.3 | 178340 | 25.1 | 19.6 | 10649 | 25.2 | 18.7 | 326059 | 25.3 | 20.8 |
| 368126 | 24.9 | 20.2 | 319295 | 24.9 | 20.6 | 117989 | 25.0 | 19.4 | 17196 | 25.1 | 18.2 | 332401 | 25.2 | 20.1 | 411704 | 25.3 | 20.5 |
| 380204 | 24.9 | 20.5 | 402521 | 24.9 | 19.8 | 126340 | 25.0 | 19.0 | 305454 | 25.1 | 21.0 | 172471 | 25.2 | 18.4 | 89894 | 25.3 | 18.0 |
| 150814 | 24.9 | 18.8 | 70353 | 24.9 | 18.0 | 1616 | 25.0 | 15.3 | 285552 | 25.1 | 20.1 | 147233 | 25.2 | 19.8 | 442929 | 25.3 | 20.5 |
| 299863 | 24.9 | 20.0 | 248335 | 24.9 | 19.4 | 401579 | 25.0 | 19.9 | 121594 | 25.1 | 19.3 | 459662 | 25.2 | 21.4 | 153639 | 25.3 | 19.0 |
| 526929 | 24.9 | 20.5 | 292686 | 24.9 | 20.0 | 429617 | 25.0 | 20.1 | 151990 | 25.1 | 20.2 | 188854 | 25.2 | 21.1 | 206238 | 25.3 | 19.2 |
| 149418 | 24.9 | 19.5 | 192776 | 24.9 | 19.0 | 221191 | 25.0 | 18.8 | 375810 | 25.1 | 21.8 | 236655 | 25.2 | 21.1 | 306727 | 25.3 | 20.1 |
| 507352 | 24.9 | 21.2 | 360754 | 24.9 | 19.5 | 309935 | 25.0 | 21.4 | 538464 | 25.1 | 21.4 | 332387 | 25.2 | 20.6 | 4577 | 25.3 | 17.1 |
| 144738 | 24.9 | 19.8 | 304066 | 24.9 | 20.0 | 370476 | 25.0 | 20.4 | 221090 | 25.1 | 19.8 | 488791 | 25.2 | 19.4 | 45183 | 25.3 | 17.1 |
| 496466 | 24.9 | 20.8 | 302490 | 24.9 | 20.0 | 74278 | 25.0 | 18.5 | 16309 | 25.1 | 16.7 | 502760 | 25.2 | 21.0 | 304744 | 25.3 | 20.7 |
| 120493 | 24.9 | 19.5 | 159388 | 24.9 | 17.5 | 191587 | 25.0 | 19.4 | 12256 | 25.1 | 17.1 | 479181 | 25.2 | 20.4 | 120736 | 25.3 | 17.9 |
| 362335 | 24.9 | 18.2 | 51917 | 24.9 | 16.3 | 245624 | 25.1 | 19.1 | 45802 | 25.1 | 24.4 | 191740 | 25.2 | 18.4 | 212836 | 25.3 | 20.0 |
| 353763 | 24.9 | 19.0 | 356350 | 24.9 | 20.0 | 230112 | 25.1 | 20.2 | 112470 | 25.1 | 19.8 | 409185 | 25.2 | 19.1 | 328730 | 25.3 | 18.8 |
| 307127 | 24.9 | 21.4 | 467785 | 24.9 | 20.1 | 135456 | 25.1 | 18.4 | 368995 | 25.1 | 20.9 | 185430 | 25.2 | 19.8 | 6929 | 25.3 | 16.6 |
| 111219 | 24.9 | 17.2 | 529483 | 24.9 | 20.1 | 15718 | 25.1 | 17.5 | 210963 | 25.1 | 19.3 | 507482 | 25.2 | 20.5 | 92075 | 25.3 | 19.1 |
| 183424 | 24.9 | 20.7 | 429844 | 24.9 | 19.6 | 384979 | 25.1 | 19.9 | 407669 | 25.1 | 19.7 | 239887 | 25.2 | 18.8 | 470174 | 25.3 | 20.1 |
| 413253 | 24.9 | 20.7 | 285070 | 24.9 | 19.7 | 163346 | 25.1 | 18.4 | 522258 | 25.1 | 21.2 | 212758 | 25.2 | 20.3 | 515396 | 25.3 | 20.4 |
| 107414 | 24.9 | 19.7 | 60065 | 24.9 | 17.8 | 525054 | 25.1 | 21.1 | 225917 | 25.1 | 20.4 | 99761 | 25.2 | 20.1 | 504539 | 25.3 | 19.9 |
| 270568 | 24.9 | 20.5 | 100904 | 24.9 | 19.1 | 320687 | 25.1 | 19.9 | 496892 | 25.1 | 20.3 | 497454 | 25.2 | 21.9 | 213859 | 25.3 | 19.0 |
| 189605 | 24.9 | 17.9 | 350187 | 24.9 | 20.3 | 345485 | 25.1 | 20.4 | 55025 | 25.1 | 18.2 | 33872 | 25.2 | 17.2 | 89036 | 25.3 | 16.8 |
| 526088 | 24.9 | 21.7 | 512770 | 24.9 | 19.6 | 270523 | 25.1 | 20.1 | 289007 | 25.1 | 20.4 | 333955 | 25.2 | 20.4 | 182906 | 25.3 | 19.6 |
| 261179 | 24.9 | 20.1 | 271232 | 24.9 | 19.4 | 125860 | 25.1 | 19.4 | 311391 | 25.1 | 20.0 | 104201 | 25.2 | 19.2 | 118202 | 25.3 | 19.8 |
| 55125 | 24.9 | 18.3 | 227583 | 24.9 | 20.1 | 258673 | 25.1 | 20.0 | 144569 | 25.1 | 19.6 | 251818 | 25.2 | 19.0 | 394019 | 25.3 | 20.7 |
| 490325 | 24.9 | 21.0 | 275878 | 24.9 | 19.9 | 524542 | 25.1 | 23.4 | 225530 | 25.1 | 18.4 | 209582 | 25.2 | 19.6 | 297949 | 25.3 | 21.3 |
| 140730 | 24.9 | 19.6 | 33415 | 24.9 | 18.1 | 435199 | 25.1 | 19.6 | 35995 | 25.1 | 18.8 | 149035 | 25.2 | 19.5 | 333743 | 25.3 | 20.0 |
| 377392 | 24.9 | 20.7 | 310971 | 24.9 | 20.6 | 529367 | 25.1 | 21.0 | 271789 | 25.1 | 19.6 | 118052 | 25.2 | 19.0 | 497177 | 25.3 | 20.5 |
| 423217 | 24.9 | 19.2 | 537190 | 24.9 | 20.6 | 330039 | 25.1 | 19.7 | 357744 | 25.1 | 20.2 | 497293 | 25.2 | 19.5 | 234121 | 25.3 | 19.1 |
| 418960 | 24.9 | 20.2 | 308395 | 24.9 | 20.3 | 356299 | 25.1 | 19.4 | 395595 | 25.1 | 20.3 | 53389 | 25.2 | 19.1 | 273075 | 25.3 | 20.1 |
| 230881 | 24.9 | 20.7 | 236595 | 24.9 | 20.3 | 377423 | 25.1 | 20.0 | 73712 | 25.1 | 18.0 | 237802 | 25.2 | 19.1 | 311511 | 25.3 | 20.0 |
| 241606 | 24.9 | 17.8 | 291467 | 24.9 | 19.9 | 497835 | 25.1 | 21.1 | 374380 | 25.1 | 19.9 | 348535 | 25.2 | 19.1 | 33977 | 25.3 | 17.6 |
| 540961 | 24.9 | 20.3 | 88137 | 24.9 | 18.2 | 56798 | 25.1 | 17.8 | 527517 | 25.1 | 19.4 | 475865 | 25.2 | 20.9 | 132134 | 25.3 | 19.9 |
| 28897 | 24.9 | 17.3 | 493528 | 24.9 | 21.2 | 92446 | 25.1 | 17.5 | 442057 | 25.2 | 19.6 | 83256 | 25.2 | 18.2 | 430944 | 25.3 | 20.7 |
| 143492 | 24.9 | 19.5 | 330033 | 24.9 | 19.6 | 1116 | 25.1 | 14.1 | 200038 | 25.2 | 20.0 | 438996 | 25.2 | 20.3 | 366376 | 25.3 | 19.3 |
| 522286 | 24.9 | 20.6 | 89040 | 24.9 | 18.5 | 138678 | 25.1 | 18.3 | 31957 | 25.2 | 17.7 | 426365 | 25.2 | 19.2 | 408122 | 25.3 | 21.2 |
| 190643 | 24.9 | 19.2 | 526787 | 24.9 | 21.0 | 45918 | 25.1 | 19.1 | 393864 | 25.2 | 20.4 | 308608 | 25.2 | 19.8 | 476383 | 25.3 | 19.6 |
| 238716 | 24.9 | 19.6 | 308312 | 24.9 | 19.2 | 101988 | 25.1 | 18.2 | 33750 | 25.2 | 18.6 | 196686 | 25.2 | 18.2 | 176535 | 25.3 | 20.0 |
| 142216 | 24.9 | 19.5 | 424344 | 24.9 | 20.3 | 34600 | 25.1 | 18.8 | 390287 | 25.2 | 19.7 | 529960 | 25.2 | 21.5 | 493632 | 25.3 | 20.3 |
| 35597 | 24.9 | 18.2 | 93909 | 24.9 | 18.2 | 11511 | 25.1 | 17.0 | 486769 | 25.2 | 21.3 | 37377 | 25.2 | 17.3 | 94584 | 25.3 | 18.2 |
| 335617 | 24.9 | 19.5 | 390786 | 25.0 | 21.3 | 531710 | 25.1 | 21.6 | 503778 | 25.2 | 19.8 | 31997 | 25.2 | 17.3 | 410347 | 25.3 | 19.5 |
| 276087 | 24.9 | 21.1 | 36395 | 25.0 | 18.0 | 209554 | 25.1 | 19.0 | 95134 | 25.2 | 18.8 | 280995 | 25.2 | 20.3 | 464671 | 25.3 | 20.1 |
| 518395 | 24.9 | 20.6 | 302847 | 25.0 | 20.9 | 399104 | 25.1 | 20.7 | 437438 | 25.2 | 20.7 | 362426 | 25.3 | 19.4 | 433598 | 25.3 | 20.3 |
| 529196 | 24.9 | 21.3 | 93741 | 25.0 | 17.6 | 214192 | 25.1 | 19.7 | 215001 | 25.2 | 19.4 | 477713 | 25.3 | 21.0 | 412134 | 25.3 | 20.5 |
| 127952 | 24.9 | 19.5 | 303327 | 25.0 | 20.2 | 324987 | 25.1 | 21.1 | 251792 | 25.2 | 19.4 | 530365 | 25.3 | 21.2 | 30601 | 25.3 | 17.1 |
| 474605 | 24.9 | 19.8 | 505496 | 25.0 | 19.8 | 241743 | 25.1 | 18.8 | 97187 | 25.2 | 18.9 | 182099 | 25.3 | 20.1 | 80124 | 25.3 | 18.9 |
| 112540 | 24.9 | 18.2 | 527705 | 25.0 | 21.6 | 268464 | 25.1 | 20.7 | 412718 | 25.2 | 19.0 | 133267 | 25.3 | 18.9 | 15338 | 25.3 | 18.7 |
| 376319 | 24.9 | 20.9 | 379722 | 25.0 | 21.3 | 363784 | 25.1 | 19.6 | 32622 | 25.2 | 17.9 | 464139 | 25.3 | 20.1 | 63289 | 25.3 | 18.7 |
| 146797 | 24.9 | 20.6 | 416861 | 25.0 | 19.5 | 470321 | 25.1 | 20.5 | 522581 | 25.2 | 20.3 | 518391 | 25.3 | 19.6 | 478147 | 25.3 | 20.1 |
| 336492 | 24.9 | 20.1 | 538312 | 25.0 | 21.2 | 107377 | 25.1 | 19.3 | 340425 | 25.2 | 20.8 | 497297 | 25.3 | 19.3 | 508057 | 25.3 | 20.5 |
| 205897 | 24.9 | 19.7 | 501949 | 25.0 | 20.3 | 527461 | 25.1 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 362637 | 25.3 | 20.5 | 276544 | 25.4 | 19.3 | 493582 | 25.5 | 19.9 | 144543 | 25.6 | 18.8 | 439209 | 25.7 | 20.8 | 223275 | 25.7 | 20.4 |
| 284590 | 25.4 | 20.0 | 145463 | 25.4 | 19.4 | 322554 | 25.5 | 20.6 | 195597 | 25.6 | 18.7 | 524563 | 25.7 | 20.8 | 174479 | 25.7 | 19.0 |
| 78554 | 25.4 | 17.9 | 102658 | 25.4 | 19.5 | 240727 | 25.5 | 20.2 | 388617 | 25.6 | 20.9 | 521326 | 25.7 | 20.4 | 221097 | 25.7 | 18.8 |
| 205156 | 25.4 | 20.6 | 171113 | 25.4 | 19.4 | 83882 | 25.5 | 18.9 | 402947 | 25.6 | 18.0 | 233841 | 25.7 | 19.9 | 235948 | 25.7 | 20.2 |
| 217866 | 25.4 | 18.9 | 55102 | 25.4 | 18.0 | 72396 | 25.5 | 17.4 | 371991 | 25.6 | 19.9 | 107652 | 25.7 | 18.2 | 534476 | 25.7 | 20.5 |
| 536651 | 25.4 | 21.0 | 312520 | 25.4 | 21.9 | 156333 | 25.5 | 20.7 | 516913 | 25.6 | 20.9 | 499741 | 25.7 | 21.7 | 129429 | 25.7 | 19.4 |
| 173977 | 25.4 | 17.9 | 438268 | 25.4 | 19.9 | 64351 | 25.5 | 18.0 | 358371 | 25.6 | 21.7 | 424070 | 25.7 | 21.4 | 429233 | 25.7 | 21.3 |
| 394984 | 25.4 | 20.4 | 13382 | 25.4 | 16.6 | 505579 | 25.5 | 21.0 | 92423 | 25.6 | 18.2 | 534962 | 25.7 | 20.2 | 89777 | 25.7 | 19.0 |
| 464739 | 25.4 | 20.1 | 509296 | 25.4 | 20.6 | 412619 | 25.5 | 20.5 | 24037 | 25.6 | 17.0 | 360434 | 25.7 | 19.7 | 355890 | 25.7 | 20.9 |
| 149024 | 25.4 | 19.6 | 126758 | 25.4 | 19.4 | 201514 | 25.5 | 18.3 | 215556 | 25.6 | 20.4 | 343103 | 25.7 | 21.3 | 229540 | 25.7 | 20.2 |
| 311265 | 25.4 | 20.6 | 490085 | 25.4 | 19.9 | 19087 | 25.5 | 18.5 | 317932 | 25.6 | 20.7 | 23107 | 25.7 | 18.8 | 77090 | 25.7 | 18.4 |
| 433441 | 25.4 | 20.1 | 338558 | 25.4 | 18.9 | 201678 | 25.5 | 19.0 | 175260 | 25.6 | 19.8 | 130052 | 25.7 | 20.0 | 170488 | 25.7 | 19.8 |
| 270268 | 25.4 | 19.6 | 375938 | 25.4 | 20.8 | 436234 | 25.5 | 20.5 | 405884 | 25.6 | 20.7 | 338615 | 25.7 | 19.5 | 151465 | 25.7 | 20.3 |
| 519405 | 25.4 | 21.1 | 428857 | 25.4 | 20.6 | 164664 | 25.5 | 20.0 | 422736 | 25.6 | 20.2 | 176241 | 25.7 | 19.5 | 162660 | 25.7 | 18.4 |
| 179436 | 25.4 | 19.8 | 325055 | 25.4 | 21.2 | 97254 | 25.5 | 19.6 | 463176 | 25.6 | 21.6 | 326676 | 25.7 | 20.4 | 538121 | 25.7 | 20.2 |
| 353451 | 25.4 | 19.8 | 472515 | 25.4 | 20.1 | 27760 | 25.5 | 16.5 | 2962 | 25.6 | 15.1 | 437098 | 25.7 | 20.0 | 499711 | 25.7 | 21.1 |
| 277713 | 25.4 | 20.4 | 338054 | 25.4 | 20.1 | 41247 | 25.5 | 17.1 | 12502 | 25.6 | 16.1 | 279797 | 25.7 | 19.9 | 403238 | 25.7 | 21.1 |
| 305532 | 25.4 | 20.8 | 510590 | 25.4 | 20.0 | 28000 | 25.5 | 17.4 | 481932 | 25.6 | 19.9 | 435872 | 25.7 | 21.0 | 533878 | 25.8 | 20.8 |
| 483344 | 25.4 | 20.0 | 297755 | 25.4 | 20.3 | 52113 | 25.5 | 18.1 | 428295 | 25.6 | 20.9 | 25894 | 25.7 | 18.6 | 480559 | 25.8 | 20.2 |
| 85375 | 25.4 | 19.7 | 182814 | 25.4 | 20.7 | 534351 | 25.5 | 21.4 | 363208 | 25.6 | 20.3 | 727 | 25.7 | 12.7 | 158399 | 25.8 | 20.3 |
| 539688 | 25.4 | 21.1 | 283182 | 25.4 | 19.8 | 93379 | 25.5 | 19.0 | 173726 | 25.6 | 19.3 | 354939 | 25.7 | 20.2 | 463296 | 25.8 | 20.8 |
| 213224 | 25.4 | 19.5 | 134643 | 25.4 | 19.0 | 488767 | 25.5 | 19.8 | 305668 | 25.6 | 21.0 | 504510 | 25.7 | 20.5 | 4324 | 25.8 | 14.7 |
| 541061 | 25.4 | 20.9 | 140199 | 25.5 | 19.8 | 229132 | 25.5 | 18.4 | 503228 | 25.6 | 20.8 | 423813 | 25.7 | 21.7 | 289417 | 25.8 | 20.3 |
| 95930 | 25.4 | 19.3 | 507784 | 25.5 | 21.7 | 63781 | 25.5 | 18.9 | 38396 | 25.6 | 17.3 | 441698 | 25.7 | 20.9 | 236731 | 25.8 | 19.6 |
| 298697 | 25.4 | 19.9 | 154521 | 25.5 | 20.6 | 498768 | 25.5 | 20.9 | 39363 | 25.6 | 18.6 | 272895 | 25.7 | 18.7 | 528989 | 25.8 | 21.4 |
| 477622 | 25.4 | 20.2 | 111468 | 25.5 | 19.4 | 186523 | 25.5 | 19.9 | 26678 | 25.6 | 16.9 | 308719 | 25.7 | 19.3 | 91966 | 25.8 | 19.3 |
| 358352 | 25.4 | 21.8 | 335588 | 25.5 | 19.3 | 530147 | 25.5 | 21.8 | 91122 | 25.6 | 19.2 | 505144 | 25.7 | 19.6 | 361111 | 25.8 | 21.0 |
| 263510 | 25.4 | 19.8 | 459286 | 25.5 | 19.1 | 152053 | 25.5 | 19.5 | 250787 | 25.6 | 19.9 | 540180 | 25.7 | 20.4 | 353605 | 25.8 | 18.5 |
| 363258 | 25.4 | 21.4 | 63991 | 25.5 | 17.0 | 71970 | 25.5 | 17.9 | 115955 | 25.6 | 19.6 | 17853 | 25.7 | 16.5 | 51321 | 25.8 | 18.2 |
| 515216 | 25.4 | 21.2 | 302283 | 25.5 | 19.3 | 510385 | 25.5 | 20.9 | 83322 | 25.6 | 18.6 | 440346 | 25.7 | 20.2 | 24209 | 25.8 | 17.4 |
| 331896 | 25.4 | 19.0 | 407283 | 25.5 | 20.0 | 161568 | 25.5 | 18.8 | 133282 | 25.6 | 19.6 | 499735 | 25.7 | 20.6 | 343539 | 25.8 | 20.3 |
| 503067 | 25.4 | 20.5 | 539050 | 25.5 | 21.0 | 277748 | 25.5 | 19.2 | 72097 | 25.6 | 18.2 | 472814 | 25.7 | 20.1 | 285768 | 25.8 | 19.4 |
| 248401 | 25.4 | 19.3 | 187248 | 25.5 | 19.8 | 475490 | 25.5 | 19.9 | 536275 | 25.6 | 21.1 | 359526 | 25.7 | 19.9 | 75669 | 25.8 | 19.2 |
| 34592 | 25.4 | 18.5 | 385508 | 25.5 | 20.0 | 131819 | 25.5 | 20.8 | 267413 | 25.6 | 20.6 | 215896 | 25.7 | 20.2 | 265556 | 25.8 | 19.2 |
| 9843 | 25.4 | 17.1 | 474977 | 25.5 | 20.8 | 384933 | 25.5 | 19.9 | 362137 | 25.6 | 19.8 | 394837 | 25.7 | 18.3 | 395571 | 25.8 | 20.5 |
| 532118 | 25.4 | 20.9 | 8679 | 25.5 | 17.0 | 2830 | 25.5 | 16.7 | 750 | 25.6 | 16.0 | 270375 | 25.7 | 20.4 | 202098 | 25.8 | 20.5 |
| 371685 | 25.4 | 20.0 | 209130 | 25.5 | 19.3 | 121708 | 25.5 | 18.2 | 394006 | 25.6 | 18.2 | 315365 | 25.7 | 19.1 | 391375 | 25.8 | 20.4 |
| 6365 | 25.4 | 17.9 | 532279 | 25.5 | 20.2 | 309142 | 25.5 | 21.1 | 540499 | 25.6 | 21.2 | 247884 | 25.7 | 18.9 | 158434 | 25.8 | 20.0 |
| 277615 | 25.4 | 20.1 | 175613 | 25.5 | 19.7 | 132282 | 25.5 | 19.2 | 181219 | 25.6 | 18.3 | 233421 | 25.7 | 19.6 | 342806 | 25.8 | 21.3 |
| 12708 | 25.4 | 17.7 | 355697 | 25.5 | 20.6 | 239615 | 25.5 | 20.6 | 464496 | 25.6 | 19.9 | 509393 | 25.7 | 20.6 | 265684 | 25.8 | 21.4 |
| 250680 | 25.4 | 18.9 | 33198 | 25.5 | 18.9 | 299959 | 25.5 | 19.1 | 57180 | 25.6 | 18.3 | 61116 | 25.7 | 18.2 | 238044 | 25.8 | 20.8 |
| 60583 | 25.4 | 19.0 | 68431 | 25.5 | 18.8 | 355734 | 25.6 | 20.9 | 320543 | 25.6 | 19.1 | 313084 | 25.7 | 19.7 | 165279 | 25.8 | 18.9 |
| 478357 | 25.4 | 20.6 | 502234 | 25.5 | 19.7 | 56174 | 25.6 | 18.3 | 453263 | 25.6 | 20.3 | 22122 | 25.7 | 18.1 | 257577 | 25.8 | 20.1 |
| 280864 | 25.4 | 18.7 | 354157 | 25.5 | 21.5 | 267217 | 25.6 | 18.8 | 19682 | 25.6 | 18.4 | 468661 | 25.7 | 21.0 | 298297 | 25.8 | 19.1 |
| 112700 | 25.4 | 19.5 | 491658 | 25.5 | 21.1 | 516678 | 25.6 | 21.4 | 119402 | 25.6 | 19.4 | 174510 | 25.7 | 20.2 | 246190 | 25.8 | 18.9 |
| 354790 | 25.4 | 20.6 | 217847 | 25.5 | 18.5 | 79567 | 25.6 | 18.0 | 40588 | 25.6 | 18.3 | 513531 | 25.7 | 20.2 | 53414 | 25.8 | 19.1 |
| 438387 | 25.4 | 20.4 | 503935 | 25.5 | 20.5 | 255425 | 25.6 | 20.2 | 43906 | 25.6 | 17.8 | 364672 | 25.7 | 19.4 | 331217 | 25.8 | 19.7 |
| 147781 | 25.4 | 18.7 | 529775 | 25.5 | 20.6 | 470386 | 25.6 | 19.8 | 460494 | 25.6 | 19.3 | 133218 | 25.7 | 18.2 | 180846 | 25.8 | 20.0 |
| 322442 | 25.4 | 19.9 | 109364 | 25.5 | 18.8 | 43679 | 25.6 | 19.3 | 513288 | 25.6 | 19.2 | 105782 | 25.7 | 18.4 | 399268 | 25.8 | 20.2 |
| 10297 | 25.4 | 17.3 | 478329 | 25.5 | 21.4 | 169019 | 25.6 | 20.6 | 413892 | 25.6 | 20.9 | 402506 | 25.7 | 20.9 | 145397 | 25.8 | 19.3 |
| 214841 | 25.4 | 19.7 | 497382 | 25.5 | 20.3 | 78254 | 25.6 | 18.4 | 292051 | 25.6 | 19.4 | 16032 | 25.7 | 17.2 | 537315 | 25.8 | 20.2 |
| 312055 | 25.4 | 19.9 | 212035 | 25.5 | 19.0 | 275087 | 25.6 | 19.7 | 431363 | 25.6 | 21.7 | 477566 | 25.7 | 20.4 | 49332 | 25.8 | 17.1 |
| 57541 | 25.4 | 17.8 | 531613 | 25.5 | 20.6 | 206937 | 25.6 | 20.0 | 497181 | 25.6 | 19.3 | 174555 | 25.7 | 20.1 | 62270 | 25.8 | 19.1 |
| 507047 | 25.4 | 21.5 | 387115 | 25.5 | 19.5 | 393861 | 25.6 | 20.0 | 131104 | 25.6 | 19.9 | 283060 | 25.7 | 18.4 | 68878 | 25.8 | 16.5 |
| 438251 | 25.4 | 20.8 | 287578 | 25.5 | 18.9 | 357500 | 25.6 | 18.8 | 100252 | 25.6 | 19.4 | 365736 | 25.7 | 20.3 | 401868 | 25.8 | 18.9 |
| 312658 | 25.4 | 19.3 | 62123 | 25.5 | 17.5 | 303240 | 25.6 | 19.0 | 213498 | 25.6 | 20.6 | 354821 | 25.7 | 20.6 | 375058 | 25.8 | 19.0 |
| 349371 | 25.4 | 20.2 | 4042 | 25.5 | 17.4 | 539655 | 25.6 | 20.3 | 538680 | 25.6 | 21.6 | 106811 | 25.7 | 18.9 | 523034 | 25.8 | 20.5 |
| 353671 | 25.4 | 20.6 | 35609 | 25.5 | 18.3 | 7599 | 25.6 | 17.6 | 434635 | 25.6 | 21.7 | 533380 | 25.7 | 20.9 | 250726 | 25.8 | 19.7 |
| 475705 | 25.4 | 20.1 | 323021 | 25.5 | 20.2 | 27579 | 25.6 | 17.7 | 140672 | 25.6 | 18.5 | 268935 | 25.7 | 19.5 | 478129 | 25.8 | 21.0 |
| 504571 | 25.4 | 20.1 | 276555 | 25.5 | 19.1 | 351507 | 25.6 | 20.0 | 382223 | 25.6 | 19.6 | 385829 | 25.7 | 21.7 | 230105 | 25.8 | 19.9 |
| 75846 | 25.4 | 19.3 | 226038 | 25.5 | 20.7 | 311497 | 25.6 | 20.4 | 540838 | 25.6 | 20.9 | 308096 | 25.7 | 19.9 | 253097 | 25.8 | 19.6 |
| 118948 | 25.4 | 19.1 | 12135 | 25.5 | 17.8 | 130530 | 25.6 | 18.3 | 242483 | 25.6 | 20.1 | 304592 | 25.7 | 20.6 | 95698 | 25.8 | 19.1 |
| 328297 | 25.4 | 20.7 | 338105 | 25.5 | 19.6 | 376189 | 25.6 | 19.6 | 13022 | 25.7 | 15.7 | 153650 | 25.7 | 18.3 | 198535 | 25.8 | 18.8 |
| 298916 | 25.4 | 19.9 | 462316 | 25.5 | 19.8 | 272919 | 25.6 | 19.2 | 389727 | 25.7 | 20.8 | 203425 | 25.7 | 19.6 | 282862 | 25.8 | 19.5 |
| 396448 | 25.4 | 20.8 | 126886 | 25.5 | 20.1 | 172648 | 25.6 | 20.1 | 530433 | 25.7 | 20.8 | 533039 | 25.7 | 21.2 | 115615 | 25.8 | 18.7 |
| 228497 | 25.4 | 19.6 | 86067 | 25.5 | 17.8 | 67626 | 25.6 | 17.1 | 278339 | 25.7 | 20.1 | 271870 | 25.7 | 19.6 | 401931 | 25.8 | 20.9 |
| 54535 | 25.4 | 18.1 | 56264 | 25.5 | 17.9 | 491905 | 25.6 | 21.5 | 374540 | 25.7 | 20.8 | 431018 | 25.7 | 20.6 | 245096 | 25.8 | 18.8 |
| 284585 | 25.4 | 20.2 | 531472 | 25.5 | 20.7 | 265292 | 25.6 | 19.8 | 311289 | 25.7 | 21.0 | 244910 | 25.7 | 18.3 | 258004 | 25.8 | 20.3 |
| 472807 | 25.4 | 20.6 | 56307 | 25.5 | 17.0 | 253747 | 25.6 | 20 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 92040 | 25.8 | 18.7 | 122739 | 25.9 | 19.4 | 257867 | 26.0 | 19.4 | 368444 | 26.1 | 19.6 | 506812 | 26.2 | 19.9 | 92539 | 26.3 | 16.1 |
| 225930 | 25.8 | 19.1 | 53495 | 25.9 | 18.9 | 252895 | 26.0 | 20.8 | 219538 | 26.1 | 19.0 | 310170 | 26.2 | 20.0 | 526634 | 26.3 | 20.9 |
| 202412 | 25.8 | 18.6 | 360023 | 25.9 | 17.3 | 454134 | 26.0 | 20.8 | 17659 | 26.1 | 18.1 | 370177 | 26.2 | 21.4 | 314509 | 26.3 | 19.0 |
| 96703 | 25.8 | 18.4 | 462220 | 25.9 | 20.1 | 266116 | 26.0 | 20.1 | 96468 | 26.1 | 19.1 | 153248 | 26.2 | 20.3 | 475221 | 26.3 | 21.5 |
| 478075 | 25.8 | 20.0 | 179339 | 25.9 | 20.3 | 243796 | 26.0 | 17.9 | 304607 | 26.1 | 20.5 | 506952 | 26.2 | 21.9 | 169653 | 26.3 | 20.2 |
| 217274 | 25.8 | 19.2 | 211464 | 25.9 | 20.8 | 417316 | 26.0 | 19.6 | 497556 | 26.1 | 20.6 | 357740 | 26.2 | 19.3 | 87817 | 26.3 | 17.3 |
| 25075 | 25.8 | 18.0 | 21811 | 25.9 | 18.7 | 146269 | 26.0 | 19.0 | 8919 | 26.1 | 17.0 | 301822 | 26.2 | 20.0 | 202212 | 26.3 | 18.9 |
| 478409 | 25.8 | 21.5 | 129797 | 25.9 | 19.4 | 87932 | 26.0 | 18.6 | 291696 | 26.1 | 20.7 | 407660 | 26.2 | 20.6 | 149733 | 26.3 | 18.5 |
| 117650 | 25.8 | 19.5 | 38937 | 25.9 | 17.8 | 29743 | 26.0 | 18.3 | 33682 | 26.1 | 18.6 | 401009 | 26.2 | 18.5 | 254242 | 26.3 | 19.0 |
| 119594 | 25.8 | 19.7 | 341213 | 25.9 | 19.5 | 118377 | 26.0 | 20.3 | 46366 | 26.1 | 17.3 | 376954 | 26.2 | 21.1 | 305608 | 26.3 | 21.1 |
| 535971 | 25.8 | 20.3 | 499944 | 25.9 | 20.7 | 371999 | 26.0 | 19.8 | 396739 | 26.1 | 19.2 | 492357 | 26.2 | 20.7 | 431003 | 26.3 | 20.2 |
| 499169 | 25.8 | 21.3 | 502695 | 25.9 | 20.1 | 210476 | 26.0 | 19.2 | 247887 | 26.1 | 20.6 | 99666 | 26.2 | 19.2 | 230115 | 26.3 | 19.8 |
| 241906 | 25.8 | 19.8 | 386800 | 25.9 | 20.8 | 44554 | 26.0 | 18.8 | 357187 | 26.1 | 20.6 | 501045 | 26.2 | 19.6 | 250547 | 26.3 | 19.8 |
| 136663 | 25.8 | 19.8 | 117013 | 25.9 | 17.9 | 68773 | 26.0 | 18.4 | 357718 | 26.1 | 20.1 | 475316 | 26.2 | 20.8 | 150857 | 26.3 | 18.9 |
| 180178 | 25.8 | 19.9 | 292856 | 25.9 | 19.7 | 259524 | 26.0 | 18.9 | 266416 | 26.1 | 19.0 | 160714 | 26.2 | 18.0 | 474838 | 26.3 | 20.6 |
| 331615 | 25.8 | 18.9 | 400579 | 25.9 | 20.2 | 494362 | 26.0 | 20.2 | 120058 | 26.1 | 19.5 | 3413 | 26.2 | 16.0 | 390145 | 26.3 | 21.5 |
| 430962 | 25.8 | 21.2 | 37486 | 25.9 | 20.1 | 371110 | 26.0 | 21.3 | 219162 | 26.1 | 17.5 | 343376 | 26.2 | 19.8 | 497425 | 26.3 | 21.5 |
| 239180 | 25.8 | 20.6 | 196830 | 25.9 | 20.6 | 516476 | 26.0 | 21.2 | 395526 | 26.1 | 20.5 | 153900 | 26.2 | 19.7 | 190060 | 26.3 | 17.6 |
| 31002 | 25.8 | 18.1 | 191970 | 25.9 | 18.8 | 243287 | 26.0 | 20.4 | 330681 | 26.1 | 19.9 | 470468 | 26.2 | 20.3 | 214615 | 26.3 | 19.9 |
| 78025 | 25.8 | 18.3 | 459907 | 25.9 | 19.9 | 354869 | 26.0 | 20.7 | 532481 | 26.1 | 20.0 | 104474 | 26.2 | 19.1 | 533527 | 26.3 | 21.7 |
| 55438 | 25.8 | 17.9 | 75709 | 25.9 | 18.8 | 410248 | 26.0 | 21.1 | 527913 | 26.1 | 20.6 | 301034 | 26.2 | 20.1 | 301001 | 26.3 | 20.8 |
| 462146 | 25.8 | 21.2 | 316250 | 25.9 | 19.8 | 189181 | 26.0 | 18.8 | 214464 | 26.1 | 18.6 | 367914 | 26.2 | 20.9 | 466975 | 26.3 | 19.8 |
| 214450 | 25.8 | 18.6 | 6040 | 25.9 | 18.1 | 127809 | 26.0 | 18.6 | 252218 | 26.1 | 19.8 | 36016 | 26.2 | 16.7 | 542756 | 26.3 | 20.8 |
| 249653 | 25.8 | 19.8 | 393162 | 25.9 | 19.7 | 382480 | 26.0 | 19.6 | 192509 | 26.1 | 19.1 | 123851 | 26.2 | 18.7 | 361449 | 26.3 | 21.4 |
| 416092 | 25.8 | 19.9 | 438625 | 25.9 | 20.0 | 173009 | 26.0 | 19.2 | 442995 | 26.1 | 21.4 | 468413 | 26.2 | 20.3 | 138987 | 26.3 | 19.8 |
| 62155 | 25.8 | 18.2 | 472045 | 25.9 | 19.7 | 31420 | 26.0 | 16.9 | 248388 | 26.1 | 19.3 | 35376 | 26.2 | 16.6 | 409392 | 26.3 | 21.3 |
| 508731 | 25.8 | 20.8 | 501118 | 25.9 | 20.1 | 212664 | 26.0 | 19.4 | 197130 | 26.1 | 19.2 | 61220 | 26.2 | 17.7 | 12813 | 26.3 | 18.0 |
| 58026 | 25.8 | 17.9 | 209380 | 25.9 | 20.7 | 337942 | 26.0 | 20.7 | 130147 | 26.1 | 19.8 | 20197 | 26.2 | 18.0 | 356725 | 26.3 | 21.7 |
| 478081 | 25.8 | 20.3 | 413490 | 25.9 | 19.7 | 221598 | 26.0 | 20.3 | 294536 | 26.1 | 20.2 | 238226 | 26.2 | 19.7 | 280353 | 26.3 | 20.0 |
| 384422 | 25.8 | 20.5 | 200734 | 25.9 | 18.6 | 532809 | 26.0 | 20.3 | 6540 | 26.1 | 15.2 | 174824 | 26.2 | 18.4 | 133691 | 26.3 | 19.3 |
| 536483 | 25.9 | 19.8 | 140954 | 25.9 | 20.9 | 211098 | 26.0 | 20.1 | 386437 | 26.1 | 20.5 | 342194 | 26.2 | 21.0 | 527965 | 26.3 | 21.1 |
| 101891 | 25.9 | 18.3 | 348311 | 25.9 | 19.4 | 98402 | 26.0 | 18.7 | 248064 | 26.1 | 18.3 | 108243 | 26.2 | 18.8 | 516406 | 26.3 | 19.5 |
| 193346 | 25.9 | 20.2 | 308553 | 25.9 | 20.1 | 236506 | 26.0 | 18.6 | 360214 | 26.1 | 19.0 | 287803 | 26.2 | 19.7 | 89035 | 26.3 | 18.5 |
| 254164 | 25.9 | 19.3 | 311415 | 25.9 | 19.8 | 111400 | 26.0 | 19.3 | 20167 | 26.1 | 15.7 | 406501 | 26.2 | 19.8 | 499514 | 26.3 | 21.2 |
| 287966 | 25.9 | 20.1 | 128514 | 25.9 | 18.6 | 305319 | 26.0 | 21.3 | 350140 | 26.1 | 21.3 | 529354 | 26.2 | 20.2 | 259270 | 26.3 | 20.2 |
| 390372 | 25.9 | 20.2 | 240836 | 25.9 | 18.9 | 535926 | 26.0 | 21.1 | 386168 | 26.1 | 20.2 | 247408 | 26.2 | 19.7 | 311357 | 26.3 | 19.5 |
| 410250 | 25.9 | 21.0 | 528856 | 25.9 | 20.4 | 399909 | 26.0 | 20.3 | 38067 | 26.1 | 16.4 | 284686 | 26.2 | 19.6 | 185978 | 26.3 | 18.7 |
| 229782 | 25.9 | 18.7 | 475740 | 25.9 | 20.6 | 475804 | 26.0 | 21.7 | 358368 | 26.1 | 21.4 | 275512 | 26.2 | 19.9 | 507081 | 26.3 | 21.2 |
| 107329 | 25.9 | 20.0 | 437508 | 25.9 | 20.4 | 498028 | 26.0 | 20.3 | 20901 | 26.1 | 17.0 | 185128 | 26.2 | 20.3 | 532869 | 26.3 | 21.8 |
| 536258 | 25.9 | 20.5 | 384905 | 25.9 | 20.4 | 477632 | 26.0 | 20.0 | 364632 | 26.1 | 19.0 | 125710 | 26.2 | 19.5 | 250412 | 26.3 | 19.7 |
| 497756 | 25.9 | 19.8 | 13700 | 25.9 | 16.0 | 460114 | 26.1 | 19.6 | 420825 | 26.1 | 19.4 | 187168 | 26.2 | 20.2 | 302349 | 26.3 | 19.8 |
| 179391 | 25.9 | 20.8 | 455263 | 25.9 | 22.2 | 474809 | 26.1 | 20.9 | 308352 | 26.1 | 19.9 | 478286 | 26.2 | 20.4 | 286060 | 26.3 | 18.5 |
| 503993 | 25.9 | 19.5 | 339493 | 25.9 | 20.4 | 39775 | 26.1 | 18.0 | 132074 | 26.1 | 19.2 | 274192 | 26.2 | 19.4 | 64914 | 26.3 | 19.6 |
| 441396 | 25.9 | 22.0 | 336830 | 25.9 | 19.7 | 475488 | 26.1 | 20.6 | 293685 | 26.1 | 18.8 | 401333 | 26.2 | 21.0 | 272443 | 26.3 | 20.9 |
| 127137 | 25.9 | 19.9 | 215899 | 25.9 | 20.2 | 468084 | 26.1 | 19.9 | 397756 | 26.1 | 20.6 | 141186 | 26.2 | 20.5 | 224525 | 26.3 | 20.0 |
| 94511 | 25.9 | 18.1 | 165260 | 25.9 | 18.4 | 263617 | 26.1 | 19.3 | 52102 | 26.1 | 18.8 | 361266 | 26.2 | 21.1 | 394671 | 26.3 | 21.7 |
| 255741 | 25.9 | 19.3 | 540594 | 25.9 | 20.6 | 43977 | 26.1 | 17.7 | 29383 | 26.1 | 18.1 | 365819 | 26.2 | 20.4 | 57020 | 26.3 | 17.7 |
| 54579 | 25.9 | 18.6 | 531013 | 25.9 | 20.1 | 309424 | 26.1 | 18.9 | 228780 | 26.1 | 19.7 | 72071 | 26.2 | 19.3 | 103267 | 26.3 | 18.1 |
| 268955 | 25.9 | 21.4 | 437810 | 25.9 | 20.4 | 378679 | 26.1 | 19.3 | 330671 | 26.1 | 18.7 | 426866 | 26.2 | 18.7 | 144832 | 26.3 | 19.3 |
| 160563 | 25.9 | 18.6 | 464818 | 25.9 | 19.2 | 317208 | 26.1 | 20.3 | 235065 | 26.1 | 19.2 | 39147 | 26.2 | 18.6 | 504971 | 26.3 | 21.3 |
| 495205 | 25.9 | 20.9 | 497964 | 25.9 | 20.8 | 370186 | 26.1 | 20.2 | 396101 | 26.1 | 21.3 | 208 | 26.2 | 13.1 | 60309 | 26.3 | 16.1 |
| 504670 | 25.9 | 20.7 | 246793 | 25.9 | 20.4 | 238727 | 26.1 | 19.8 | 270399 | 26.1 | 20.4 | 141117 | 26.2 | 18.7 | 405506 | 26.3 | 20.9 |
| 320395 | 25.9 | 19.7 | 293102 | 25.9 | 19.6 | 100295 | 26.1 | 19.4 | 358366 | 26.1 | 20.4 | 411688 | 26.2 | 20.8 | 54985 | 26.3 | 19.0 |
| 526682 | 25.9 | 20.2 | 498685 | 25.9 | 20.9 | 480095 | 26.1 | 21.2 | 526424 | 26.1 | 20.9 | 430511 | 26.2 | 22.1 | 463640 | 26.3 | 19.9 |
| 141016 | 25.9 | 20.2 | 31177 | 25.9 | 17.7 | 426416 | 26.1 | 19.7 | 297729 | 26.1 | 19.6 | 188761 | 26.2 | 19.8 | 494453 | 26.3 | 20.7 |
| 345751 | 25.9 | 20.5 | 308377 | 25.9 | 18.6 | 371649 | 26.1 | 20.9 | 501024 | 26.2 | 19.8 | 441402 | 26.2 | 20.6 | 534574 | 26.3 | 19.6 |
| 163084 | 25.9 | 18.5 | 289244 | 25.9 | 18.8 | 504606 | 26.1 | 20.5 | 353735 | 26.2 | 19.3 | 252757 | 26.2 | 20.3 | 530798 | 26.3 | 20.3 |
| 378288 | 25.9 | 20.2 | 409755 | 25.9 | 20.0 | 314390 | 26.1 | 21.0 | 346021 | 26.2 | 20.2 | 354886 | 26.2 | 21.9 | 540668 | 26.3 | 20.4 |
| 330023 | 25.9 | 19.0 | 356308 | 25.9 | 20.8 | 250567 | 26.1 | 19.5 | 194231 | 26.2 | 19.6 | 86696 | 26.2 | 18.0 | 137700 | 26.3 | 18.8 |
| 21093 | 25.9 | 18.4 | 541929 | 25.9 | 19.9 | 481137 | 26.1 | 20.0 | 117420 | 26.2 | 19.9 | 197001 | 26.2 | 19.7 | 425754 | 26.3 | 19.7 |
| 459369 | 25.9 | 20.4 | 446432 | 25.9 | 19.9 | 133321 | 26.1 | 18.9 | 250741 | 26.2 | 19.8 | 537483 | 26.2 | 19.6 | 390229 | 26.3 | 20.8 |
| 441301 | 25.9 | 20.0 | 59847 | 25.9 | 18.0 | 478365 | 26.1 | 19.8 | 383651 | 26.2 | 21.1 | 510782 | 26.2 | 22.5 | 477623 | 26.3 | 19.7 |
| 448 | 25.9 | 13.8 | 508545 | 25.9 | 20.5 | 342928 | 26.1 | 20.1 | 139923 | 26.2 | 19.1 | 439305 | 26.2 | 20.3 | 131131 | 26.3 | 19.2 |
| 188470 | 25.9 | 19.5 | 467024 | 25.9 | 19.6 | 465271 | 26.1 | 21.4 | 263727 | 26.2 | 20.3 | 423558 | 26.2 | 20.1 | 434417 | 26.3 | 19.6 |
| 525971 | 25.9 | 20.7 | 243136 | 25.9 | 18.8 | 163340 | 26.1 | 18.7 | 126988 | 26.2 | 19.0 | 523885 | 26.2 | 20.7 | 353475 | 26.3 | 20.6 |
| 489344 | 25.9 | 21.2 | 243686 | 25.9 | 18.8 | 139197 | 26.1 | 19.1 | 523920 | 26.2 | 21.1 | 455746 | 26.2 | 20.4 | 418162 | 26.3 | 20.4 |
| 375794 | 25.9 | 20.9 | 373597 | 25.9 | 21.2 | 4067 | 26.1 | 15.8 | 178759 | 26.2 | 19.3 | 93077 | 26.2 | 19.4 | 199747 | 26.3 | 20.0 |
| 535241 | 25.9 | 21.0 | 41899 | 25.9 | 17.4 | 463090 | 26.1 | 20.1 | 538255 | 26.2 | 20.8 | 475046 | 26.2 | 20.8 | 480560 | 26.3 | 20.1 |
| 536657 | 25.9 | 21.5 | 402910 | 25.9 | 20.2 | 20 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 27862 | 26.4 | 17.8 | 115307 | 26.4 | 19.3 | 229699 | 26.5 | 19.5 | 527372 | 26.6 | 22.1 | 137595 | 26.7 | 18.7 | 260623 | 26.8 | 19.7 |
| 354855 | 26.4 | 21.1 | 489983 | 26.4 | 20.3 | 91576 | 26.5 | 16.9 | 523625 | 26.6 | 23.2 | 35177 | 26.7 | 18.3 | 387110 | 26.8 | 21.0 |
| 475267 | 26.4 | 19.0 | 254908 | 26.4 | 19.5 | 424181 | 26.5 | 20.4 | 432323 | 26.6 | 19.6 | 57600 | 26.7 | 18.4 | 464918 | 26.8 | 20.4 |
| 504663 | 26.4 | 20.9 | 64537 | 26.4 | 18.5 | 200752 | 26.5 | 19.4 | 389813 | 26.6 | 19.9 | 302338 | 26.7 | 20.5 | 338725 | 26.8 | 19.7 |
| 521403 | 26.4 | 20.8 | 539456 | 26.4 | 21.1 | 465670 | 26.5 | 20.6 | 304660 | 26.6 | 20.3 | 182189 | 26.7 | 19.3 | 220294 | 26.8 | 19.4 |
| 177630 | 26.4 | 18.7 | 5354 | 26.4 | 16.6 | 532732 | 26.5 | 21.2 | 492656 | 26.6 | 19.5 | 3091 | 26.7 | 16.4 | 136804 | 26.8 | 20.1 |
| 485078 | 26.4 | 21.2 | 199152 | 26.4 | 19.1 | 140409 | 26.5 | 18.2 | 516562 | 26.6 | 19.9 | 331257 | 26.7 | 19.5 | 438078 | 26.8 | 19.8 |
| 199904 | 26.4 | 19.3 | 25010 | 26.4 | 16.9 | 140813 | 26.5 | 19.9 | 275168 | 26.6 | 19.5 | 263501 | 26.7 | 21.3 | 129100 | 26.8 | 18.9 |
| 308699 | 26.4 | 19.9 | 334742 | 26.4 | 19.3 | 120402 | 26.5 | 18.3 | 297713 | 26.6 | 19.4 | 61841 | 26.7 | 18.6 | 75028 | 26.8 | 18.5 |
| 103075 | 26.4 | 20.5 | 159500 | 26.4 | 19.4 | 379993 | 26.5 | 19.9 | 461472 | 26.6 | 18.9 | 253731 | 26.7 | 19.8 | 244868 | 26.8 | 19.2 |
| 412209 | 26.4 | 20.5 | 310276 | 26.4 | 19.7 | 533022 | 26.5 | 20.7 | 162526 | 26.6 | 17.8 | 380443 | 26.7 | 20.6 | 6233 | 26.8 | 18.3 |
| 189040 | 26.4 | 20.5 | 16699 | 26.4 | 18.9 | 296882 | 26.5 | 20.9 | 198282 | 26.6 | 18.7 | 497129 | 26.7 | 19.1 | 182864 | 26.8 | 21.0 |
| 393993 | 26.4 | 20.9 | 60675 | 26.4 | 18.7 | 152366 | 26.5 | 19.9 | 506473 | 26.6 | 21.7 | 419686 | 26.7 | 19.2 | 125536 | 26.8 | 18.0 |
| 133373 | 26.4 | 18.3 | 507059 | 26.4 | 20.4 | 156916 | 26.5 | 19.4 | 539681 | 26.6 | 21.0 | 174820 | 26.7 | 20.6 | 196918 | 26.8 | 19.9 |
| 536536 | 26.4 | 21.8 | 33965 | 26.4 | 17.1 | 311954 | 26.5 | 20.4 | 40564 | 26.6 | 17.9 | 528406 | 26.7 | 21.3 | 68464 | 26.8 | 18.9 |
| 151003 | 26.4 | 19.9 | 213194 | 26.4 | 19.3 | 271801 | 26.5 | 19.9 | 61810 | 26.6 | 17.5 | 161394 | 26.7 | 18.2 | 323366 | 26.8 | 20.8 |
| 317880 | 26.4 | 20.4 | 283450 | 26.4 | 19.0 | 323437 | 26.5 | 20.7 | 194261 | 26.6 | 20.0 | 20281 | 26.7 | 17.3 | 444307 | 26.8 | 20.6 |
| 306126 | 26.4 | 19.6 | 359419 | 26.4 | 18.7 | 315403 | 26.5 | 20.3 | 19405 | 26.6 | 17.7 | 92667 | 26.7 | 18.1 | 155 | 26.8 | 15.5 |
| 512853 | 26.4 | 21.0 | 510377 | 26.4 | 19.9 | 172533 | 26.5 | 20.2 | 320657 | 26.6 | 20.9 | 511412 | 26.7 | 21.6 | 124535 | 26.8 | 19.0 |
| 106093 | 26.4 | 18.7 | 443793 | 26.4 | 18.8 | 357893 | 26.5 | 20.3 | 33070 | 26.6 | 17.9 | 11909 | 26.7 | 16.6 | 533437 | 26.8 | 21.1 |
| 425709 | 26.4 | 20.5 | 505815 | 26.4 | 19.8 | 475834 | 26.5 | 21.8 | 34322 | 26.6 | 18.1 | 469882 | 26.7 | 20.8 | 507727 | 26.8 | 21.3 |
| 315281 | 26.4 | 19.1 | 494831 | 26.5 | 19.0 | 473216 | 26.5 | 20.8 | 472396 | 26.6 | 20.9 | 325996 | 26.7 | 20.0 | 205741 | 26.8 | 20.1 |
| 415331 | 26.4 | 19.8 | 369598 | 26.5 | 20.6 | 125636 | 26.5 | 19.6 | 152304 | 26.6 | 19.6 | 177927 | 26.7 | 19.5 | 238651 | 26.8 | 21.3 |
| 75489 | 26.4 | 17.9 | 351894 | 26.5 | 20.2 | 97034 | 26.5 | 17.3 | 457955 | 26.6 | 20.2 | 496480 | 26.7 | 20.3 | 150545 | 26.8 | 17.7 |
| 295097 | 26.4 | 19.9 | 417862 | 26.5 | 20.6 | 18726 | 26.5 | 19.8 | 10927 | 26.6 | 17.3 | 185763 | 26.7 | 20.7 | 239439 | 26.8 | 19.8 |
| 290343 | 26.4 | 20.4 | 262612 | 26.5 | 20.0 | 106311 | 26.5 | 19.0 | 111509 | 26.6 | 19.6 | 209439 | 26.7 | 20.4 | 395420 | 26.8 | 19.9 |
| 111105 | 26.4 | 19.2 | 55013 | 26.5 | 17.3 | 261108 | 26.5 | 20.4 | 499267 | 26.6 | 20.2 | 1624 | 26.7 | 16.2 | 405327 | 26.8 | 20.1 |
| 94522 | 26.4 | 19.7 | 144206 | 26.5 | 18.8 | 507051 | 26.5 | 21.5 | 240758 | 26.6 | 18.6 | 336737 | 26.7 | 19.7 | 75797 | 26.8 | 19.1 |
| 463827 | 26.4 | 20.5 | 156790 | 26.5 | 20.6 | 32361 | 26.5 | 17.5 | 127914 | 26.6 | 19.3 | 83558 | 26.7 | 19.2 | 362806 | 26.8 | 20.6 |
| 527854 | 26.4 | 19.6 | 245532 | 26.5 | 18.3 | 519050 | 26.5 | 20.1 | 362357 | 26.6 | 19.1 | 387050 | 26.7 | 19.5 | 352731 | 26.8 | 18.3 |
| 272565 | 26.4 | 18.8 | 362959 | 26.5 | 19.3 | 14230 | 26.5 | 17.7 | 302841 | 26.6 | 19.9 | 544235 | 26.7 | 21.3 | 252893 | 26.8 | 20.0 |
| 530567 | 26.4 | 20.3 | 90398 | 26.5 | 19.0 | 422833 | 26.5 | 20.6 | 433424 | 26.6 | 21.3 | 354818 | 26.7 | 20.5 | 393235 | 26.8 | 18.7 |
| 538499 | 26.4 | 20.0 | 121761 | 26.5 | 19.3 | 185568 | 26.5 | 19.9 | 211209 | 26.6 | 19.8 | 338674 | 26.7 | 20.4 | 73767 | 26.8 | 18.0 |
| 477649 | 26.4 | 20.4 | 32960 | 26.5 | 16.8 | 504003 | 26.5 | 20.9 | 302474 | 26.6 | 20.1 | 438653 | 26.7 | 20.6 | 500986 | 26.8 | 20.7 |
| 31983 | 26.4 | 17.8 | 106636 | 26.5 | 19.1 | 90113 | 26.5 | 19.7 | 479037 | 26.6 | 20.8 | 64361 | 26.7 | 18.0 | 443177 | 26.8 | 20.4 |
| 9195 | 26.4 | 16.7 | 319094 | 26.5 | 19.5 | 4702 | 26.5 | 16.9 | 224434 | 26.6 | 19.3 | 381446 | 26.7 | 19.6 | 338622 | 26.8 | 19.0 |
| 19840 | 26.4 | 15.9 | 106288 | 26.5 | 19.1 | 479717 | 26.5 | 20.8 | 424556 | 26.6 | 20.3 | 540835 | 26.7 | 20.9 | 256624 | 26.8 | 19.9 |
| 304546 | 26.4 | 20.8 | 274066 | 26.5 | 19.8 | 148013 | 26.5 | 19.7 | 166472 | 26.6 | 19.1 | 471680 | 26.7 | 20.7 | 361690 | 26.8 | 18.5 |
| 445779 | 26.4 | 20.9 | 46922 | 26.5 | 18.7 | 420965 | 26.5 | 20.0 | 92090 | 26.6 | 18.7 | 517678 | 26.7 | 21.2 | 297135 | 26.8 | 19.5 |
| 172842 | 26.4 | 19.7 | 147430 | 26.5 | 19.1 | 510660 | 26.5 | 20.8 | 417511 | 26.6 | 20.8 | 193792 | 26.7 | 18.6 | 88825 | 26.8 | 18.4 |
| 531621 | 26.4 | 21.2 | 27242 | 26.5 | 18.7 | 303949 | 26.5 | 20.6 | 476091 | 26.6 | 20.9 | 74987 | 26.7 | 18.0 | 311288 | 26.8 | 21.0 |
| 270527 | 26.4 | 20.0 | 131908 | 26.5 | 20.2 | 313643 | 26.5 | 19.1 | 205762 | 26.6 | 19.8 | 20178 | 26.7 | 17.8 | 286454 | 26.8 | 19.7 |
| 370097 | 26.4 | 19.7 | 133248 | 26.5 | 18.4 | 15622 | 26.5 | 17.7 | 163109 | 26.6 | 19.9 | 113003 | 26.7 | 18.1 | 476364 | 26.8 | 20.6 |
| 173447 | 26.4 | 18.3 | 253912 | 26.5 | 19.3 | 304727 | 26.5 | 20.0 | 505511 | 26.6 | 20.0 | 31325 | 26.7 | 18.2 | 158432 | 26.8 | 19.8 |
| 126027 | 26.4 | 19.1 | 513563 | 26.5 | 20.4 | 150503 | 26.5 | 17.9 | 531971 | 26.6 | 21.3 | 439676 | 26.7 | 20.7 | 195052 | 26.8 | 19.5 |
| 377356 | 26.4 | 19.5 | 428075 | 26.5 | 20.3 | 277700 | 26.5 | 20.0 | 382976 | 26.6 | 21.2 | 442843 | 26.7 | 19.6 | 82081 | 26.8 | 18.4 |
| 361635 | 26.4 | 19.6 | 79644 | 26.5 | 18.4 | 1766 | 26.5 | 15.5 | 507753 | 26.6 | 22.0 | 134239 | 26.7 | 19.8 | 500541 | 26.8 | 20.1 |
| 365245 | 26.4 | 19.9 | 175643 | 26.5 | 19.6 | 377770 | 26.5 | 20.3 | 115319 | 26.6 | 19.8 | 388794 | 26.7 | 20.0 | 156513 | 26.8 | 19.7 |
| 544172 | 26.4 | 19.7 | 471899 | 26.5 | 19.6 | 468754 | 26.5 | 20.2 | 26296 | 26.6 | 17.3 | 76909 | 26.7 | 18.8 | 229530 | 26.8 | 19.2 |
| 128953 | 26.4 | 18.3 | 23032 | 26.5 | 18.1 | 258085 | 26.5 | 18.4 | 503125 | 26.6 | 22.0 | 66223 | 26.7 | 16.4 | 51553 | 26.8 | 18.8 |
| 245086 | 26.4 | 19.2 | 38421 | 26.5 | 16.6 | 22494 | 26.5 | 17.9 | 118466 | 26.6 | 19.6 | 157641 | 26.7 | 20.7 | 528494 | 26.8 | 21.1 |
| 210129 | 26.4 | 20.1 | 406368 | 26.5 | 20.3 | 436994 | 26.5 | 20.7 | 17110 | 26.6 | 16.8 | 307672 | 26.7 | 19.6 | 462575 | 26.8 | 20.2 |
| 462101 | 26.4 | 18.8 | 227586 | 26.5 | 20.3 | 44407 | 26.6 | 18.6 | 341608 | 26.6 | 20.0 | 303728 | 26.7 | 20.1 | 209125 | 26.8 | 18.2 |
| 196732 | 26.4 | 19.0 | 475256 | 26.5 | 20.7 | 436307 | 26.6 | 21.5 | 445919 | 26.6 | 20.6 | 161811 | 26.7 | 20.6 | 286706 | 26.8 | 20.0 |
| 204130 | 26.4 | 18.5 | 472349 | 26.5 | 20.1 | 205787 | 26.6 | 19.8 | 371107 | 26.6 | 20.6 | 431099 | 26.7 | 22.0 | 532793 | 26.8 | 21.3 |
| 238047 | 26.4 | 19.9 | 526510 | 26.5 | 21.6 | 536255 | 26.6 | 20.9 | 171792 | 26.6 | 20.6 | 39644 | 26.7 | 18.8 | 196962 | 26.8 | 18.8 |
| 280406 | 26.4 | 19.0 | 318866 | 26.5 | 19.0 | 123104 | 26.6 | 18.6 | 71848 | 26.6 | 18.4 | 22083 | 26.7 | 17.7 | 241634 | 26.8 | 19.3 |
| 256991 | 26.4 | 20.4 | 317902 | 26.5 | 20.5 | 96093 | 26.6 | 18.5 | 12745 | 26.6 | 15.7 | 361103 | 26.7 | 20.6 | 363225 | 26.8 | 20.4 |
| 303292 | 26.4 | 19.4 | 493608 | 26.5 | 20.2 | 90627 | 26.6 | 18.2 | 370464 | 26.6 | 20.6 | 423232 | 26.7 | 19.7 | 174574 | 26.8 | 17.7 |
| 101617 | 26.4 | 19.5 | 477708 | 26.5 | 20.7 | 243653 | 26.6 | 18.4 | 533992 | 26.6 | 19.2 | 29170 | 26.7 | 17.2 | 312816 | 26.8 | 18.8 |
| 280278 | 26.4 | 21.1 | 334393 | 26.5 | 20.5 | 430459 | 26.6 | 21.4 | 534923 | 26.6 | 21.1 | 41986 | 26.7 | 18.9 | 463154 | 26.8 | 21.2 |
| 202478 | 26.4 | 20.4 | 320450 | 26.5 | 21.0 | 31576 | 26.6 | 19.3 | 182874 | 26.6 | 19.6 | 464477 | 26.7 | 22.0 | 59318 | 26.8 | 18.0 |
| 533942 | 26.4 | 20.3 | 477959 | 26.5 | 20.9 | 287945 | 26.6 | 20.4 | 124115 | 26.6 | 18.3 | 7303 | 26.7 | 16.3 | 340519 | 26.8 | 19.7 |
| 540770 | 26.4 | 19.8 | 189768 | 26.5 | 18.8 | 305756 | 26.6 | 20.6 | 414082 | 26.6 | 20.1 | 475216 | 26.7 | 21.2 | 520016 | 26.8 | 21.4 |
| 56472 | 26.4 | 18.2 | 184496 | 26.5 | 19.8 | 365159 | 26.6 | 21.0 | 233422 | 26.6 | 20.4 | 475724 | 26.7 | 20.8 | 497384 | 26.8 | 21.6 |
| 126993 | 26.4 | 19.5 | 71270 | 26.5 | 18.4 | 311277 | 26.6 | 21.4 | 409368 | 26.6 | 21.3 | 167000 | 26.7 | 18.8 | 382213 | 26.8 | 19.9 |
| 506935 | 26.4 | 21.8 | 433347 | 26.5 | 21.0 | 432403 | 26.6 | 20.9 | 346007 | 26.6 | 20.3 | 470859 | 26.7 | 20.2 | 187821 | 26.8 | 20.2 |
| 494920 | 26.4 | 19.8 | 234976 | 26.5 | 19.4 | 312078 | 26.6 | 18.9 | 336359 | 26.7 | 20.2 | 178280 | 26.7 | 19.3 | 103546 | 26.8 | 19.2 |
| 243879 | 26.4 | 19.6 | 524991 | 26.5 | 19.3 | 164778 | 26.6 | 19.5 | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 417052 | 26.8 | 21.0 | 26619 | 26.9 | 17.5 | 56015 | 26.9 | 18.8 | 103710 | 27.1 | 18.8 | 82530 | 27.1 | 17.5 | 332192 | 27.2 | 20.1 |
| 91330 | 26.8 | 18.9 | 225529 | 26.9 | 18.6 | 494240 | 26.9 | 21.1 | 42160 | 27.1 | 18.5 | 260204 | 27.1 | 19.6 | 201566 | 27.2 | 19.7 |
| 508199 | 26.8 | 20.7 | 505218 | 26.9 | 20.0 | 232650 | 26.9 | 19.9 | 90292 | 27.1 | 18.6 | 496489 | 27.1 | 20.4 | 36648 | 27.2 | 18.4 |
| 257576 | 26.8 | 19.1 | 209824 | 26.9 | 20.1 | 310284 | 26.9 | 20.3 | 425784 | 27.1 | 19.8 | 478369 | 27.1 | 21.6 | 344740 | 27.2 | 19.1 |
| 498031 | 26.8 | 19.9 | 540223 | 26.9 | 20.3 | 424815 | 26.9 | 20.2 | 117538 | 27.1 | 18.2 | 504734 | 27.1 | 21.7 | 161768 | 27.2 | 18.6 |
| 361157 | 26.8 | 19.1 | 456831 | 26.9 | 19.3 | 263190 | 26.9 | 20.7 | 406373 | 27.1 | 20.4 | 135643 | 27.2 | 19.1 | 319446 | 27.2 | 20.0 |
| 88857 | 26.8 | 18.9 | 353119 | 26.9 | 19.8 | 157834 | 26.9 | 20.6 | 412104 | 27.1 | 20.0 | 291254 | 27.2 | 19.4 | 107053 | 27.2 | 17.5 |
| 293713 | 26.8 | 19.0 | 295799 | 26.9 | 21.1 | 503049 | 26.9 | 21.6 | 435742 | 27.1 | 21.6 | 275809 | 27.2 | 21.8 | 312531 | 27.2 | 21.3 |
| 64632 | 26.8 | 18.9 | 379479 | 26.9 | 20.4 | 81857 | 26.9 | 17.5 | 228701 | 27.1 | 19.3 | 468750 | 27.2 | 20.8 | 148833 | 27.2 | 20.1 |
| 176808 | 26.8 | 18.9 | 315968 | 26.9 | 19.9 | 404912 | 26.9 | 20.9 | 307511 | 27.1 | 20.6 | 25376 | 27.2 | 18.7 | 201617 | 27.2 | 19.0 |
| 373472 | 26.8 | 18.5 | 243369 | 26.9 | 19.3 | 247027 | 26.9 | 19.0 | 457566 | 27.1 | 21.1 | 20497 | 27.2 | 18.2 | 184036 | 27.2 | 19.2 |
| 429642 | 26.8 | 21.9 | 429223 | 26.9 | 20.6 | 533521 | 26.9 | 20.5 | 386467 | 27.1 | 19.9 | 128478 | 27.2 | 18.7 | 463134 | 27.2 | 21.3 |
| 86281 | 26.8 | 17.6 | 161425 | 26.9 | 17.9 | 131628 | 27.0 | 19.3 | 16900 | 27.1 | 18.1 | 397403 | 27.2 | 20.9 | 277639 | 27.2 | 19.5 |
| 392277 | 26.8 | 19.7 | 145368 | 26.9 | 19.2 | 440109 | 27.0 | 21.2 | 200671 | 27.1 | 19.1 | 366373 | 27.2 | 19.0 | 596584 | 27.2 | 19.0 |
| 473726 | 26.8 | 20.6 | 177902 | 26.9 | 19.6 | 219859 | 27.0 | 18.2 | 42044 | 27.1 | 18.4 | 241745 | 27.2 | 19.5 | 382619 | 27.2 | 19.3 |
| 540674 | 26.8 | 20.8 | 53208 | 26.9 | 19.5 | 525191 | 27.0 | 20.7 | 502480 | 27.1 | 21.6 | 504092 | 27.2 | 20.9 | 31590 | 27.2 | 18.5 |
| 436333 | 26.8 | 19.2 | 341192 | 26.9 | 20.1 | 49821 | 27.0 | 18.6 | 351512 | 27.1 | 19.7 | 144399 | 27.2 | 19.4 | 304446 | 27.2 | 21.3 |
| 313823 | 26.8 | 19.0 | 6133 | 26.9 | 16.4 | 355714 | 27.0 | 19.8 | 397016 | 27.1 | 18.7 | 111474 | 27.2 | 19.3 | 302084 | 27.2 | 21.1 |
| 358393 | 26.8 | 21.3 | 30609 | 26.9 | 17.3 | 311350 | 27.0 | 19.7 | 70434 | 27.1 | 18.0 | 297675 | 27.2 | 19.6 | 359110 | 27.2 | 20.6 |
| 37643 | 26.8 | 16.9 | 44918 | 26.9 | 16.9 | 360342 | 27.0 | 20.2 | 202993 | 27.1 | 20.5 | 161397 | 27.2 | 19.5 | 148073 | 27.2 | 19.8 |
| 111845 | 26.8 | 19.9 | 316648 | 26.9 | 20.0 | 153555 | 27.0 | 19.5 | 413821 | 27.1 | 19.5 | 367703 | 27.2 | 20.1 | 425713 | 27.2 | 20.2 |
| 101945 | 26.8 | 19.2 | 257107 | 26.9 | 20.9 | 248877 | 27.0 | 19.7 | 266669 | 27.1 | 19.5 | 374492 | 27.2 | 19.6 | 473946 | 27.2 | 20.7 |
| 478121 | 26.8 | 20.5 | 339437 | 26.9 | 21.3 | 474988 | 27.0 | 21.3 | 533095 | 27.1 | 20.5 | 126408 | 27.2 | 18.3 | 433350 | 27.2 | 20.5 |
| 368150 | 26.8 | 22.1 | 166130 | 26.9 | 20.0 | 499317 | 27.0 | 20.5 | 206727 | 27.1 | 19.9 | 177912 | 27.2 | 18.5 | 15185 | 27.2 | 16.3 |
| 22347 | 26.8 | 17.4 | 378347 | 26.9 | 20.4 | 53886 | 27.0 | 16.6 | 408163 | 27.1 | 19.0 | 312060 | 27.2 | 19.6 | 187302 | 27.2 | 20.0 |
| 293848 | 26.9 | 18.9 | 205404 | 26.9 | 20.2 | 357869 | 27.0 | 20.2 | 115247 | 27.1 | 19.2 | 13659 | 27.2 | 16.5 | 200750 | 27.2 | 20.2 |
| 527937 | 26.9 | 21.2 | 43033 | 26.9 | 18.6 | 503050 | 27.0 | 21.9 | 309684 | 27.1 | 20.7 | 175234 | 27.2 | 19.7 | 398886 | 27.2 | 21.2 |
| 506862 | 26.9 | 20.5 | 58855 | 26.9 | 19.1 | 336777 | 27.0 | 20.3 | 435904 | 27.1 | 19.9 | 201451 | 27.2 | 19.7 | 60051 | 27.2 | 17.9 |
| 150003 | 26.9 | 19.1 | 176533 | 26.9 | 19.2 | 241281 | 27.0 | 17.8 | 492704 | 27.1 | 20.2 | 479038 | 27.2 | 20.8 | 248476 | 27.3 | 19.2 |
| 474218 | 26.9 | 20.1 | 355240 | 26.9 | 21.7 | 197874 | 27.0 | 19.4 | 371631 | 27.1 | 20.8 | 22282 | 27.2 | 16.5 | 94885 | 27.3 | 19.2 |
| 497134 | 26.9 | 19.0 | 116634 | 26.9 | 19.4 | 517665 | 27.0 | 20.4 | 119592 | 27.1 | 19.4 | 53341 | 27.2 | 18.4 | 169629 | 27.3 | 19.4 |
| 295973 | 26.9 | 19.2 | 84574 | 26.9 | 18.4 | 5377 | 27.0 | 16.3 | 536344 | 27.1 | 20.9 | 493524 | 27.2 | 20.6 | 351915 | 27.3 | 20.2 |
| 107860 | 26.9 | 19.8 | 205673 | 26.9 | 19.7 | 321723 | 27.0 | 19.2 | 399172 | 27.1 | 19.4 | 412044 | 27.2 | 20.1 | 195438 | 27.3 | 18.4 |
| 423626 | 26.9 | 21.9 | 439606 | 26.9 | 19.8 | 210908 | 27.0 | 19.5 | 75451 | 27.1 | 18.5 | 42397 | 27.2 | 18.2 | 264432 | 27.3 | 19.3 |
| 477685 | 26.9 | 20.0 | 501063 | 26.9 | 20.1 | 354788 | 27.0 | 20.5 | 56687 | 27.1 | 17.4 | 350253 | 27.2 | 19.6 | 11619 | 27.3 | 15.9 |
| 32837 | 26.9 | 19.1 | 476348 | 26.9 | 20.6 | 463172 | 27.0 | 21.5 | 377718 | 27.1 | 20.3 | 511332 | 27.2 | 20.5 | 368703 | 27.3 | 19.9 |
| 398493 | 26.9 | 21.1 | 309304 | 26.9 | 19.9 | 299530 | 27.0 | 20.2 | 43445 | 27.1 | 18.5 | 488927 | 27.2 | 19.8 | 304667 | 27.3 | 19.6 |
| 508056 | 26.9 | 21.4 | 472612 | 26.9 | 21.3 | 512590 | 27.0 | 18.9 | 46337 | 27.1 | 17.7 | 219565 | 27.2 | 19.8 | 412230 | 27.3 | 19.5 |
| 498009 | 26.9 | 21.3 | 110326 | 26.9 | 17.1 | 86407 | 27.0 | 18.6 | 233538 | 27.1 | 19.2 | 385807 | 27.2 | 20.6 | 543516 | 27.3 | 19.9 |
| 34666 | 26.9 | 18.7 | 183605 | 26.9 | 19.5 | 57411 | 27.0 | 18.8 | 310542 | 27.1 | 20.2 | 495656 | 27.2 | 19.8 | 475007 | 27.3 | 20.4 |
| 379518 | 26.9 | 19.9 | 387999 | 26.9 | 20.5 | 325133 | 27.0 | 18.6 | 542622 | 27.1 | 21.0 | 201839 | 27.2 | 20.1 | 270538 | 27.3 | 20.4 |
| 250903 | 26.9 | 19.9 | 264438 | 26.9 | 19.3 | 359465 | 27.0 | 19.8 | 355216 | 27.1 | 21.2 | 533283 | 27.2 | 20.3 | 437665 | 27.3 | 20.9 |
| 354908 | 26.9 | 19.4 | 388380 | 26.9 | 19.9 | 519049 | 27.0 | 20.8 | 97204 | 27.1 | 19.0 | 480528 | 27.2 | 20.1 | 142315 | 27.3 | 19.7 |
| 498989 | 26.9 | 21.1 | 27012 | 26.9 | 17.3 | 122640 | 27.0 | 18.4 | 105642 | 27.1 | 18.6 | 297682 | 27.2 | 19.7 | 377784 | 27.3 | 21.0 |
| 502805 | 26.9 | 21.3 | 328238 | 26.9 | 20.1 | 255440 | 27.0 | 19.9 | 388352 | 27.1 | 20.8 | 202586 | 27.2 | 20.1 | 29532 | 27.3 | 18.4 |
| 377327 | 26.9 | 18.6 | 217897 | 26.9 | 19.6 | 20687 | 27.0 | 17.5 | 128469 | 27.1 | 19.1 | 129357 | 27.2 | 19.1 | 540482 | 27.3 | 19.8 |
| 415573 | 26.9 | 19.5 | 111488 | 26.9 | 18.5 | 107290 | 27.0 | 20.1 | 419675 | 27.1 | 20.7 | 317266 | 27.2 | 20.5 | 61420 | 27.3 | 18.0 |
| 269105 | 26.9 | 20.9 | 85078 | 26.9 | 17.8 | 297737 | 27.0 | 20.0 | 124494 | 27.1 | 18.5 | 369075 | 27.2 | 19.9 | 102009 | 27.3 | 18.3 |
| 202062 | 26.9 | 19.8 | 504574 | 26.9 | 20.2 | 143576 | 27.0 | 19.4 | 394707 | 27.1 | 21.2 | 432396 | 27.2 | 21.6 | 338258 | 27.3 | 19.4 |
| 305513 | 26.9 | 20.6 | 173915 | 26.9 | 18.7 | 214751 | 27.0 | 19.7 | 249352 | 27.1 | 20.0 | 253929 | 27.2 | 20.3 | 355696 | 27.3 | 20.7 |
| 137191 | 26.9 | 19.1 | 52176 | 26.9 | 18.1 | 103334 | 27.0 | 18.8 | 460100 | 27.1 | 20.3 | 357751 | 27.2 | 19.2 | 499648 | 27.3 | 21.0 |
| 375902 | 26.9 | 20.6 | 87058 | 26.9 | 18.6 | 357965 | 27.0 | 19.9 | 350841 | 27.1 | 21.0 | 405455 | 27.2 | 20.2 | 386898 | 27.3 | 20.5 |
| 230323 | 26.9 | 20.2 | 230865 | 26.9 | 19.3 | 175756 | 27.0 | 18.3 | 529159 | 27.1 | 21.3 | 172940 | 27.2 | 19.4 | 535691 | 27.3 | 21.6 |
| 436314 | 26.9 | 20.2 | 278308 | 26.9 | 19.4 | 153273 | 27.0 | 20.2 | 523897 | 27.1 | 20.6 | 251856 | 27.2 | 20.0 | 295489 | 27.3 | 20.1 |
| 543653 | 26.9 | 19.1 | 521388 | 26.9 | 20.5 | 156092 | 27.0 | 18.7 | 121860 | 27.1 | 18.6 | 532266 | 27.2 | 20.9 | 95136 | 27.3 | 19.3 |
| 117208 | 26.9 | 19.4 | 308515 | 26.9 | 20.0 | 133752 | 27.1 | 18.8 | 211959 | 27.1 | 20.2 | 216789 | 27.2 | 19.2 | 368144 | 27.3 | 17.3 |
| 198391 | 26.9 | 20.0 | 273679 | 26.9 | 21.0 | 219609 | 27.1 | 20.3 | 383985 | 27.1 | 19.8 | 413847 | 27.2 | 20.2 | 529653 | 27.3 | 21.1 |
| 86739 | 26.9 | 18.4 | 331188 | 26.9 | 20.2 | 131609 | 27.1 | 18.1 | 533938 | 27.1 | 20.0 | 150310 | 27.2 | 20.0 | 204428 | 27.3 | 19.8 |
| 64169 | 26.9 | 19.3 | 247866 | 26.9 | 18.7 | 360582 | 27.1 | 20.5 | 140683 | 27.1 | 19.1 | 519665 | 27.2 | 20.5 | 410358 | 27.3 | 21.3 |
| 151771 | 26.9 | 19.8 | 381547 | 26.9 | 19.7 | 14474 | 27.1 | 17.8 | 240295 | 27.1 | 20.6 | 384473 | 27.2 | 21.0 | 17212 | 27.3 | 16.5 |
| 519114 | 26.9 | 20.3 | 17251 | 26.9 | 15.8 | 420409 | 27.1 | 20.1 | 19585 | 27.1 | 17.6 | 505830 | 27.2 | 19.3 | 258019 | 27.3 | 19.4 |
| 269101 | 26.9 | 20.0 | 298353 | 26.9 | 20.9 | 350133 | 27.1 | 21.4 | 154216 | 27.1 | 20.3 | 431419 | 27.2 | 21.4 | 447709 | 27.3 | 21.4 |
| 6539 | 26.9 | 16.1 | 198613 | 26.9 | 20.0 | 442913 | 27.1 | 19.9 | 412093 | 27.1 | 20.3 | 214955 | 27.2 | 19.1 | 168908 | 27.3 | 19.4 |
| 501262 | 26.9 | 21.0 | 184116 | 26.9 | 19.5 | 69276 | 27.1 | 18.6 | 510606 | 27.1 | 19.6 | 95424 | 27.2 | 18.9 | 33634 | 27.3 | 17.5 |
| 30701 | 26.9 | 17.4 | 308728 | 26.9 | 20.4 | 439397 | 27.1 | 21.9 | 53729 | 27.1 | 18.6 | 401398 | 27.2 | 20.6 | 164379 | 27.3 | 19.0 |
| 43331 | 26.9 | 17.2 | 476453 | 26.9 | 20.6 | 109585 | 27.1 | 18.6 | 411201 | 27.1 | 19.6 | 365934 | 27.2 | 20.8 | 302297 | 27.3 | 19.2 |
| 528049 | 26.9 | 20.3 | 184290 | 26.9 | 20.4 | 191315 | 27.1 | 19.8 | 9279 | 27.1 | 18.2 | 399658 | 27.2 | 19.9 | 259175 | 27.3 | 19.9 |
| 74262 | 26.9 | 18.1 | 505197 | 26.9 | 21.0 | 143475 | 27.1 | 19.8 | 182749 | 27.1 | 20.1 | 269039 | 27.2 | 20.2 | 533600 | 27.3 | 20.9 |
| 93627 | 26.9 | 18.2 | 414054 | 26.9 | 20.5 | 77958 | 27.1 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 206953 | 27.3 | 19.2 | 290614 | 27.4 | 20.6 | 296416 | 27.5 | 19.8 | 175826 | 27.6 | 19.3 | 480465 | 27.6 | 19.8 | 394742 | 27.7 | 20.5 |
| 49997 | 27.3 | 18.8 | 285987 | 27.4 | 19.0 | 255283 | 27.5 | 19.6 | 193659 | 27.6 | 20.0 | 17622 | 27.6 | 17.1 | 418361 | 27.7 | 21.4 |
| 397351 | 27.3 | 21.4 | 302408 | 27.4 | 21.4 | 376457 | 27.5 | 19.9 | 306592 | 27.6 | 20.4 | 8182 | 27.6 | 16.3 | 100167 | 27.7 | 20.2 |
| 18683 | 27.3 | 16.8 | 285477 | 27.4 | 19.7 | 227426 | 27.5 | 18.8 | 534856 | 27.6 | 21.3 | 87478 | 27.6 | 18.3 | 500071 | 27.7 | 20.1 |
| 510089 | 27.3 | 19.9 | 6791 | 27.4 | 18.0 | 445025 | 27.5 | 23.6 | 297771 | 27.6 | 20.4 | 91004 | 27.6 | 16.4 | 273041 | 27.7 | 19.5 |
| 432821 | 27.3 | 20.2 | 223235 | 27.4 | 20.3 | 389294 | 27.5 | 21.2 | 133441 | 27.6 | 18.6 | 11783 | 27.6 | 17.0 | 384074 | 27.7 | 20.2 |
| 195421 | 27.3 | 18.9 | 373311 | 27.4 | 20.8 | 393981 | 27.5 | 20.5 | 457516 | 27.6 | 21.2 | 406386 | 27.6 | 20.2 | 510287 | 27.7 | 20.0 |
| 86353 | 27.3 | 17.7 | 365327 | 27.4 | 20.4 | 418219 | 27.5 | 20.6 | 37057 | 27.6 | 18.4 | 119298 | 27.6 | 19.3 | 5987 | 27.7 | 15.7 |
| 497329 | 27.3 | 21.8 | 170283 | 27.4 | 18.8 | 245915 | 27.5 | 19.2 | 375288 | 27.6 | 20.7 | 326914 | 27.6 | 22.2 | 188001 | 27.7 | 19.2 |
| 382065 | 27.3 | 20.1 | 17649 | 27.4 | 17.4 | 533305 | 27.5 | 20.8 | 292903 | 27.6 | 20.0 | 360959 | 27.6 | 20.8 | 248339 | 27.7 | 19.4 |
| 533591 | 27.3 | 21.8 | 162817 | 27.4 | 19.2 | 173465 | 27.5 | 18.9 | 189241 | 27.6 | 20.6 | 410321 | 27.6 | 20.0 | 11899 | 27.7 | 17.8 |
| 240742 | 27.3 | 19.7 | 407723 | 27.4 | 20.3 | 145032 | 27.5 | 18.3 | 532562 | 27.6 | 19.7 | 538229 | 27.6 | 21.4 | 361163 | 27.7 | 20.1 |
| 243669 | 27.3 | 18.7 | 492654 | 27.4 | 20.1 | 493587 | 27.5 | 20.2 | 397399 | 27.6 | 20.9 | 302432 | 27.6 | 20.2 | 49504 | 27.7 | 18.6 |
| 272679 | 27.3 | 19.0 | 62465 | 27.4 | 18.8 | 329297 | 27.5 | 18.6 | 222797 | 27.6 | 20.3 | 72498 | 27.6 | 18.3 | 282643 | 27.7 | 19.1 |
| 510460 | 27.3 | 19.7 | 440500 | 27.4 | 21.0 | 344626 | 27.5 | 22.1 | 234105 | 27.6 | 20.1 | 145894 | 27.6 | 19.4 | 512577 | 27.7 | 20.0 |
| 275281 | 27.3 | 21.7 | 117599 | 27.4 | 19.0 | 161906 | 27.5 | 19.7 | 39336 | 27.6 | 20.0 | 25309 | 27.6 | 16.3 | 542617 | 27.7 | 21.6 |
| 247140 | 27.3 | 19.0 | 5892 | 27.4 | 16.6 | 35530 | 27.5 | 18.7 | 463608 | 27.6 | 19.8 | 432020 | 27.6 | 20.5 | 42610 | 27.7 | 19.1 |
| 388754 | 27.3 | 20.6 | 252776 | 27.4 | 20.4 | 179524 | 27.5 | 18.8 | 465095 | 27.6 | 20.1 | 355592 | 27.6 | 19.4 | 478364 | 27.7 | 21.3 |
| 424711 | 27.3 | 20.1 | 469217 | 27.4 | 20.2 | 55252 | 27.5 | 19.1 | 201443 | 27.6 | 19.2 | 338069 | 27.6 | 19.5 | 538613 | 27.7 | 21.6 |
| 434283 | 27.3 | 20.0 | 131051 | 27.4 | 19.9 | 290450 | 27.5 | 19.8 | 48814 | 27.6 | 18.1 | 529026 | 27.6 | 21.8 | 480352 | 27.7 | 20.4 |
| 439876 | 27.3 | 20.2 | 441388 | 27.4 | 21.2 | 131151 | 27.5 | 19.3 | 429632 | 27.6 | 19.9 | 499818 | 27.6 | 21.5 | 389555 | 27.7 | 19.9 |
| 470397 | 27.3 | 19.0 | 215362 | 27.4 | 19.4 | 124776 | 27.5 | 19.2 | 169887 | 27.6 | 20.0 | 159654 | 27.6 | 20.4 | 105772 | 27.7 | 18.5 |
| 276102 | 27.3 | 21.2 | 111377 | 27.4 | 19.2 | 198495 | 27.5 | 19.3 | 243644 | 27.6 | 20.2 | 320496 | 27.6 | 20.8 | 234828 | 27.7 | 19.6 |
| 512513 | 27.3 | 20.1 | 131958 | 27.4 | 19.4 | 279859 | 27.5 | 19.9 | 533794 | 27.6 | 20.5 | 528252 | 27.6 | 20.7 | 379346 | 27.7 | 20.9 |
| 92529 | 27.3 | 17.6 | 118018 | 27.4 | 19.5 | 368080 | 27.5 | 19.5 | 471498 | 27.6 | 19.7 | 348569 | 27.6 | 20.6 | 379069 | 27.7 | 20.5 |
| 316811 | 27.3 | 20.5 | 185158 | 27.4 | 20.4 | 209466 | 27.5 | 19.7 | 389781 | 27.6 | 20.0 | 133201 | 27.6 | 19.0 | 197562 | 27.7 | 19.1 |
| 437465 | 27.3 | 20.5 | 501263 | 27.4 | 20.8 | 83898 | 27.5 | 19.2 | 525139 | 27.6 | 21.3 | 31601 | 27.6 | 16.3 | 40014 | 27.7 | 18.1 |
| 277503 | 27.3 | 20.7 | 277704 | 27.4 | 19.9 | 62890 | 27.5 | 18.2 | 320484 | 27.6 | 19.7 | 72760 | 27.6 | 18.9 | 425083 | 27.7 | 19.6 |
| 94080 | 27.3 | 18.2 | 387112 | 27.4 | 20.6 | 506899 | 27.5 | 20.7 | 190139 | 27.6 | 20.4 | 427349 | 27.6 | 20.0 | 9364 | 27.7 | 16.9 |
| 538012 | 27.3 | 21.3 | 353326 | 27.4 | 18.8 | 142038 | 27.5 | 20.2 | 321347 | 27.6 | 20.8 | 304019 | 27.6 | 19.4 | 297821 | 27.7 | 19.9 |
| 509304 | 27.3 | 20.8 | 14903 | 27.4 | 17.3 | 53724 | 27.5 | 18.8 | 309634 | 27.6 | 20.5 | 242694 | 27.6 | 20.1 | 538217 | 27.7 | 20.4 |
| 373347 | 27.3 | 21.2 | 301168 | 27.4 | 19.7 | 105994 | 27.5 | 18.6 | 459664 | 27.6 | 20.8 | 526793 | 27.7 | 22.5 | 22878 | 27.7 | 18.6 |
| 4857 | 27.3 | 17.6 | 422678 | 27.4 | 21.4 | 20172 | 27.5 | 19.4 | 182734 | 27.6 | 20.9 | 195301 | 27.7 | 19.9 | 106873 | 27.7 | 17.7 |
| 11618 | 27.3 | 17.3 | 216031 | 27.4 | 19.7 | 128668 | 27.5 | 18.7 | 90749 | 27.6 | 19.0 | 355150 | 27.7 | 21.3 | 427813 | 27.7 | 20.1 |
| 106814 | 27.3 | 18.4 | 391267 | 27.4 | 21.0 | 287573 | 27.5 | 20.2 | 503406 | 27.6 | 20.8 | 350339 | 27.7 | 20.7 | 419903 | 27.7 | 20.9 |
| 408230 | 27.3 | 21.3 | 528327 | 27.4 | 20.2 | 197900 | 27.5 | 18.8 | 86506 | 27.6 | 18.1 | 133987 | 27.7 | 19.0 | 141468 | 27.7 | 19.8 |
| 475628 | 27.3 | 20.2 | 352530 | 27.4 | 20.9 | 261060 | 27.5 | 20.0 | 129005 | 27.6 | 20.1 | 43021 | 27.7 | 17.5 | 32880 | 27.7 | 18.7 |
| 526810 | 27.3 | 21.1 | 479216 | 27.4 | 20.9 | 345754 | 27.5 | 20.5 | 303956 | 27.6 | 20.2 | 199711 | 27.7 | 19.8 | 375263 | 27.7 | 19.7 |
| 158258 | 27.3 | 19.2 | 178312 | 27.4 | 20.5 | 423780 | 27.5 | 20.4 | 479048 | 27.6 | 20.9 | 390523 | 27.7 | 20.4 | 428024 | 27.7 | 21.9 |
| 404300 | 27.3 | 19.7 | 497931 | 27.4 | 20.2 | 147911 | 27.5 | 19.5 | 91502 | 27.6 | 16.6 | 455544 | 27.7 | 19.6 | 459876 | 27.7 | 20.1 |
| 297801 | 27.3 | 19.9 | 310336 | 27.4 | 20.0 | 529274 | 27.5 | 21.8 | 42950 | 27.6 | 17.1 | 25720 | 27.7 | 18.7 | 261049 | 27.7 | 19.5 |
| 447349 | 27.3 | 20.4 | 90872 | 27.4 | 18.4 | 242701 | 27.5 | 19.4 | 177137 | 27.6 | 18.5 | 484223 | 27.7 | 21.2 | 192995 | 27.7 | 20.2 |
| 380148 | 27.3 | 20.2 | 195363 | 27.4 | 18.6 | 41668 | 27.5 | 18.1 | 169565 | 27.6 | 18.6 | 509109 | 27.7 | 20.8 | 105598 | 27.8 | 18.3 |
| 355824 | 27.3 | 18.7 | 231919 | 27.4 | 19.9 | 235967 | 27.5 | 18.6 | 14281 | 27.6 | 16.7 | 335793 | 27.7 | 19.9 | 165295 | 27.8 | 20.0 |
| 436244 | 27.3 | 21.2 | 89831 | 27.4 | 19.4 | 222650 | 27.5 | 19.7 | 290531 | 27.6 | 19.3 | 233287 | 27.7 | 19.4 | 14610 | 27.8 | 18.0 |
| 490659 | 27.3 | 20.0 | 384858 | 27.4 | 19.9 | 23830 | 27.5 | 17.8 | 533567 | 27.6 | 21.9 | 110697 | 27.7 | 19.8 | 185483 | 27.8 | 19.1 |
| 344552 | 27.3 | 20.1 | 507848 | 27.4 | 21.4 | 188881 | 27.5 | 19.3 | 474794 | 27.6 | 20.0 | 212640 | 27.7 | 20.3 | 305484 | 27.8 | 20.0 |
| 167767 | 27.3 | 18.4 | 64870 | 27.4 | 18.7 | 29167 | 27.5 | 17.3 | 188691 | 27.6 | 19.5 | 193622 | 27.7 | 18.3 | 531351 | 27.8 | 18.7 |
| 223253 | 27.3 | 19.3 | 529471 | 27.4 | 19.9 | 91737 | 27.5 | 19.1 | 474052 | 27.6 | 20.7 | 381559 | 27.7 | 19.9 | 492663 | 27.8 | 20.3 |
| 339390 | 27.3 | 20.0 | 351929 | 27.4 | 20.5 | 235167 | 27.5 | 17.7 | 539059 | 27.6 | 20.1 | 438532 | 27.7 | 20.2 | 153904 | 27.8 | 19.6 |
| 295887 | 27.3 | 20.6 | 312224 | 27.4 | 19.3 | 375830 | 27.5 | 19.5 | 385181 | 27.6 | 18.8 | 307171 | 27.7 | 20.3 | 180130 | 27.8 | 20.0 |
| 542219 | 27.3 | 20.6 | 194895 | 27.4 | 20.1 | 508717 | 27.5 | 20.2 | 110200 | 27.6 | 20.0 | 521241 | 27.7 | 20.1 | 459255 | 27.8 | 20.2 |
| 358806 | 27.3 | 21.5 | 354956 | 27.4 | 20.0 | 240286 | 27.5 | 19.2 | 494253 | 27.6 | 20.5 | 530435 | 27.7 | 20.8 | 424135 | 27.8 | 20.1 |
| 268807 | 27.3 | 19.7 | 68875 | 27.4 | 17.1 | 438075 | 27.5 | 19.5 | 390010 | 27.6 | 20.4 | 118098 | 27.7 | 19.5 | 405310 | 27.8 | 19.5 |
| 502851 | 27.3 | 20.2 | 204689 | 27.4 | 19.4 | 381979 | 27.5 | 20.6 | 1378 | 27.6 | 15.0 | 488786 | 27.7 | 19.7 | 331045 | 27.8 | 19.6 |
| 56498 | 27.3 | 17.5 | 250920 | 27.4 | 20.9 | 248325 | 27.5 | 19.9 | 363755 | 27.6 | 20.2 | 186285 | 27.7 | 20.3 | 118200 | 27.8 | 18.7 |
| 331528 | 27.3 | 18.8 | 418083 | 27.4 | 21.2 | 184115 | 27.5 | 19.7 | 88435 | 27.6 | 16.9 | 507167 | 27.7 | 19.2 | 353677 | 27.8 | 20.1 |
| 332952 | 27.3 | 20.7 | 99124 | 27.4 | 19.2 | 372506 | 27.5 | 21.0 | 540174 | 27.6 | 21.0 | 151925 | 27.7 | 19.3 | 98432 | 27.8 | 18.7 |
| 58851 | 27.3 | 19.5 | 475503 | 27.4 | 20.6 | 367250 | 27.5 | 19.5 | 109128 | 27.6 | 19.1 | 221106 | 27.7 | 21.0 | 203802 | 27.8 | 20.1 |
| 460316 | 27.4 | 20.3 | 490189 | 27.4 | 20.5 | 104494 | 27.5 | 18.7 | 183931 | 27.6 | 21.2 | 126944 | 27.7 | 18.6 | 393223 | 27.8 | 20.0 |
| 352632 | 27.4 | 21.8 | 170310 | 27.4 | 19.2 | 243518 | 27.5 | 21.4 | 322456 | 27.6 | 19.7 | 19803 | 27.7 | 18.8 | 53525 | 27.8 | 17.7 |
| 271060 | 27.4 | 19.5 | 522564 | 27.4 | 21.5 | 276077 | 27.5 | 21.1 | 46000 | 27.6 | 17.7 | 197555 | 27.7 | 19.2 | 453401 | 27.8 | 21.6 |
| 396989 | 27.4 | 20.8 | 1842 | 27.4 | 14.2 | 471260 | 27.5 | 20.4 | 492937 | 27.6 | 19.9 | 289273 | 27.7 | 18.7 | 475911 | 27.8 | 20.9 |
| 525901 | 27.4 | 21.2 | 403822 | 27.4 | 19.4 | 312174 | 27.5 | 20.5 | 412534 | 27.6 | 19.1 | 80683 | 27.7 | 17.6 | 470414 | 27.8 | 20.7 |
| 131302 | 27.4 | 19.8 | 311303 | 27.4 | 21.5 | 308551 | 27.5 | 21.0 | 468337 | 27.6 | 19.9 | 499350 | 27.7 | 21.6 | 522998 | 27.8 | 20.6 |
| 167751 | 27.4 | 19.9 | 316091 | 27.4 | 20.5 | 14985 | 27.5 | 17.3 | 152877 | 27.6 | 18.9 | 314576 | 27.7 | 20.9 | 338833 | 27.8 | 19.9 |
| 9315 | 27.4 | 16.4 | 519270 | 27.5 | 20.9 | 291967 | 27.5 | 19.3 | 363261 | 27.6 | 20.4 | 96462 | 27.7 | 18.9 | 42491 | 27.8 | 17.0 |
| 529519 | 27.4 | 22.0 | 417720 | 27.5 | 21.3 | 394720 | 27.5 | 20.7 | 60867 | 27.6 | 17.1 | 76981 | 27.7 | 18.9 | 375456 | 27.8 | 20.0 |
| 480488 | 27.4 | 20.6 | 14904 | 27.5 | 18.3 | 309710 | 27 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|---------|------|------|--------|------|------|--------|------|------|---------|------|------|--------|------|------|--------|------|------|
| 408329 | 27.8 | 21.1 | 153241 | 27.9 | 20.6 | 296345 | 27.9 | 19.6 | 362617 | 28.1 | 19.2 | 146920 | 28.1 | 20.4 | 396615 | 28.2 | 19.1 |
| 349344 | 27.8 | 19.7 | 302399 | 27.9 | 20.6 | 353653 | 27.9 | 20.9 | 170171 | 28.1 | 20.5 | 168412 | 28.1 | 19.8 | 178767 | 28.2 | 19.1 |
| 377853 | 27.8 | 20.4 | 543710 | 27.9 | 19.4 | 300888 | 27.9 | 20.5 | 155245 | 28.1 | 20.1 | 32372 | 28.1 | 18.4 | 236908 | 28.2 | 19.7 |
| 415031 | 27.8 | 19.5 | 7738 | 27.9 | 15.8 | 93757 | 27.9 | 19.4 | 148142 | 28.1 | 18.8 | 494351 | 28.1 | 20.9 | 34971 | 28.2 | 19.2 |
| 542564 | 27.8 | 19.0 | 510358 | 27.9 | 21.0 | 95030 | 27.9 | 19.6 | 496756 | 28.1 | 21.0 | 473731 | 28.1 | 20.7 | 364810 | 28.2 | 20.2 |
| 534367 | 27.8 | 21.1 | 355660 | 27.9 | 20.4 | 25079 | 27.9 | 17.5 | 169516 | 28.1 | 18.3 | 175553 | 28.1 | 19.8 | 58427 | 28.2 | 18.3 |
| 435657 | 27.8 | 20.9 | 354801 | 27.9 | 20.2 | 164793 | 27.9 | 19.7 | 397722 | 28.1 | 20.5 | 111615 | 28.1 | 19.3 | 384814 | 28.2 | 19.6 |
| 335826 | 27.8 | 20.0 | 332169 | 27.9 | 18.7 | 304388 | 27.9 | 20.8 | 532003 | 28.1 | 21.4 | 396173 | 28.1 | 20.5 | 150318 | 28.2 | 18.7 |
| 157667 | 27.8 | 18.6 | 23394 | 27.9 | 17.3 | 276153 | 27.9 | 19.9 | 305975 | 28.1 | 21.0 | 248073 | 28.1 | 18.7 | 322231 | 28.2 | 20.7 |
| 531967 | 27.8 | 21.6 | 111312 | 27.9 | 18.4 | 250448 | 27.9 | 19.7 | 459091 | 28.1 | 20.9 | 259141 | 28.1 | 19.8 | 88111 | 28.2 | 18.8 |
| 50574 | 27.8 | 18.3 | 69814 | 27.9 | 17.8 | 278804 | 27.9 | 19.9 | 253850 | 28.1 | 20.1 | 245231 | 28.2 | 19.0 | 107781 | 28.2 | 19.4 |
| 512964 | 27.8 | 19.5 | 349955 | 27.9 | 20.1 | 124187 | 27.9 | 18.3 | 428735 | 28.1 | 18.9 | 209432 | 28.2 | 20.2 | 499767 | 28.2 | 20.2 |
| 282575 | 27.8 | 20.1 | 127890 | 27.9 | 18.7 | 425560 | 27.9 | 20.1 | 180454 | 28.1 | 20.4 | 174539 | 28.2 | 20.6 | 250809 | 28.2 | 20.0 |
| 216109 | 27.8 | 19.7 | 521156 | 27.9 | 20.6 | 47335 | 27.9 | 18.3 | 96275 | 28.1 | 19.7 | 359796 | 28.2 | 20.2 | 70110 | 28.2 | 16.9 |
| 241902 | 27.8 | 20.2 | 87424 | 27.9 | 18.2 | 526619 | 27.9 | 21.0 | 51388 | 28.1 | 18.1 | 475193 | 28.2 | 21.0 | 415138 | 28.2 | 20.1 |
| 122086 | 27.8 | 19.1 | 311516 | 27.9 | 19.6 | 190326 | 27.9 | 18.1 | 300201 | 28.1 | 19.8 | 385543 | 28.2 | 19.6 | 468769 | 28.2 | 19.4 |
| 363404 | 27.8 | 18.7 | 214469 | 27.9 | 18.8 | 346583 | 27.9 | 20.2 | 141334 | 28.1 | 19.9 | 410340 | 28.2 | 21.3 | 494404 | 28.2 | 20.6 |
| 38908 | 27.8 | 17.6 | 75977 | 27.9 | 19.2 | 393870 | 27.9 | 19.9 | 374534 | 28.1 | 20.3 | 539700 | 28.2 | 20.7 | 310463 | 28.2 | 18.3 |
| 454876 | 27.8 | 21.0 | 85689 | 27.9 | 18.6 | 195556 | 27.9 | 18.5 | 169650 | 28.1 | 18.9 | 275879 | 28.2 | 19.6 | 86247 | 28.2 | 18.1 |
| 177925 | 27.8 | 19.1 | 37323 | 27.9 | 18.6 | 299567 | 27.9 | 19.5 | 442938 | 28.1 | 20.6 | 494355 | 28.2 | 20.5 | 107458 | 28.2 | 18.2 |
| 181662 | 27.8 | 21.0 | 22435 | 27.9 | 18.3 | 204764 | 27.9 | 21.0 | 263637 | 28.1 | 19.8 | 409373 | 28.2 | 19.9 | 37841 | 28.2 | 17.8 |
| 260970 | 27.8 | 20.3 | 63194 | 27.9 | 18.5 | 147824 | 27.9 | 20.4 | 301370 | 28.1 | 19.9 | 214904 | 28.2 | 19.2 | 125633 | 28.2 | 18.7 |
| 156315 | 27.8 | 19.2 | 97400 | 27.9 | 19.3 | 347946 | 27.9 | 20.9 | 169640 | 28.1 | 19.5 | 438959 | 28.2 | 19.9 | 455251 | 28.2 | 20.0 |
| 28015 | 27.8 | 18.1 | 126675 | 27.9 | 18.8 | 322421 | 27.9 | 19.1 | 404738 | 28.1 | 22.1 | 151043 | 28.2 | 19.1 | 297567 | 28.2 | 19.1 |
| 480545 | 27.8 | 19.8 | 248506 | 27.9 | 20.2 | 396566 | 27.9 | 19.9 | 114496 | 28.1 | 19.6 | 169957 | 28.2 | 19.9 | 307176 | 28.2 | 20.9 |
| 193115 | 27.8 | 19.7 | 491580 | 27.9 | 20.9 | 245132 | 27.9 | 18.7 | 63844 | 28.1 | 18.0 | 300912 | 28.2 | 20.7 | 175417 | 28.2 | 18.7 |
| 326105 | 27.8 | 19.6 | 39975 | 27.9 | 18.1 | 281690 | 27.9 | 19.5 | 64773 | 28.1 | 18.3 | 11058 | 28.2 | 16.2 | 501141 | 28.2 | 19.1 |
| 177307 | 27.8 | 19.4 | 427781 | 27.9 | 21.6 | 376560 | 27.9 | 20.2 | 181884 | 28.1 | 19.1 | 25475 | 28.2 | 18.5 | 346691 | 28.2 | 20.5 |
| 277515 | 27.8 | 20.1 | 268429 | 27.9 | 21.3 | 140946 | 27.9 | 18.1 | 502116 | 28.1 | 20.7 | 531270 | 28.2 | 20.7 | 401067 | 28.2 | 20.2 |
| 518759 | 27.8 | 21.7 | 479811 | 27.9 | 21.6 | 298854 | 27.9 | 18.6 | 311464 | 28.1 | 19.6 | 146420 | 28.2 | 18.8 | 323653 | 28.3 | 20.4 |
| 484213 | 27.8 | 21.6 | 203026 | 27.9 | 20.0 | 162585 | 27.9 | 19.2 | 356670 | 28.1 | 21.1 | 499144 | 28.2 | 21.0 | 414175 | 28.3 | 21.3 |
| 474563 | 27.8 | 20.3 | 355276 | 27.9 | 18.9 | 68602 | 27.9 | 19.1 | 386930 | 28.1 | 19.6 | 426922 | 28.2 | 20.8 | 158621 | 28.3 | 19.5 |
| 137387 | 27.8 | 18.2 | 213396 | 27.9 | 19.4 | 478755 | 27.9 | 21.3 | 292695 | 28.1 | 20.5 | 304004 | 28.2 | 20.9 | 396082 | 28.3 | 20.4 |
| 241977 | 27.8 | 18.0 | 353174 | 27.9 | 19.5 | 219781 | 27.9 | 18.6 | 376232 | 28.1 | 20.7 | 320409 | 28.2 | 20.1 | 358357 | 28.3 | 21.2 |
| 259109 | 27.8 | 19.5 | 147848 | 27.9 | 19.3 | 44658 | 27.9 | 17.2 | 156323 | 28.1 | 18.6 | 242887 | 28.2 | 20.4 | 168950 | 28.3 | 19.2 |
| 471140 | 27.8 | 21.4 | 524670 | 27.9 | 20.9 | 183927 | 27.9 | 20.5 | 246474 | 28.1 | 19.8 | 38311 | 28.2 | 18.7 | 374460 | 28.3 | 19.8 |
| 472691 | 27.8 | 21.3 | 507841 | 27.9 | 20.9 | 285217 | 28.0 | 18.8 | 504598 | 28.1 | 21.5 | 243563 | 28.2 | 19.3 | 391313 | 28.3 | 21.0 |
| 519551 | 27.8 | 19.5 | 191717 | 27.9 | 19.6 | 322565 | 28.0 | 21.2 | 3648439 | 28.1 | 20.2 | 131199 | 28.2 | 19.1 | 347380 | 28.3 | 19.4 |
| 531838 | 27.8 | 21.4 | 123864 | 27.9 | 19.2 | 371628 | 28.0 | 21.5 | 211163 | 28.1 | 20.7 | 75690 | 28.2 | 19.3 | 351895 | 28.3 | 21.0 |
| 342362 | 27.8 | 19.3 | 207459 | 27.9 | 20.2 | 127248 | 28.0 | 18.9 | 358350 | 28.1 | 21.4 | 72814 | 28.2 | 19.1 | 62586 | 28.3 | 19.3 |
| 159476 | 27.8 | 16.6 | 132532 | 27.9 | 18.3 | 144499 | 28.0 | 19.7 | 311216 | 28.1 | 19.7 | 240749 | 28.2 | 19.9 | 149145 | 28.3 | 20.5 |
| 15604 | 27.8 | 16.5 | 430667 | 27.9 | 20.3 | 456308 | 28.0 | 20.5 | 94234 | 28.1 | 18.3 | 457642 | 28.2 | 21.7 | 151979 | 28.3 | 19.1 |
| 519206 | 27.8 | 20.2 | 53560 | 27.9 | 19.7 | 527773 | 28.0 | 21.9 | 225951 | 28.1 | 19.7 | 480149 | 28.2 | 20.0 | 463304 | 28.3 | 21.0 |
| 381525 | 27.8 | 20.3 | 203984 | 27.9 | 20.4 | 502119 | 28.0 | 21.2 | 397716 | 28.1 | 21.4 | 249812 | 28.2 | 19.2 | 385474 | 28.3 | 21.2 |
| 278360 | 27.8 | 18.9 | 308509 | 27.9 | 20.1 | 35291 | 28.0 | 17.7 | 30961 | 28.1 | 18.0 | 315388 | 28.2 | 19.3 | 100860 | 28.3 | 18.7 |
| 306609 | 27.8 | 17.6 | 64179 | 27.9 | 18.7 | 69749 | 28.0 | 17.7 | 301594 | 28.1 | 18.9 | 481903 | 28.2 | 19.8 | 105609 | 28.3 | 18.5 |
| 12892 | 27.8 | 17.1 | 486950 | 27.9 | 19.8 | 165378 | 28.0 | 20.0 | 528535 | 28.1 | 20.9 | 331331 | 28.2 | 19.8 | 513678 | 28.3 | 21.8 |
| 236227 | 27.9 | 20.3 | 65036 | 27.9 | 18.7 | 402539 | 28.0 | 21.0 | 169522 | 28.1 | 20.0 | 229128 | 28.2 | 19.6 | 377402 | 28.3 | 19.7 |
| 411616 | 27.9 | 20.8 | 24190 | 27.9 | 18.2 | 278071 | 28.0 | 20.4 | 417708 | 28.1 | 20.1 | 36216 | 28.2 | 18.3 | 373580 | 28.3 | 19.4 |
| 319547 | 27.9 | 19.5 | 425849 | 27.9 | 22.1 | 31545 | 28.0 | 17.8 | 535558 | 28.1 | 21.0 | 190298 | 28.2 | 20.2 | 278730 | 28.3 | 19.9 |
| 343636 | 27.9 | 21.2 | 502035 | 27.9 | 19.5 | 106262 | 28.0 | 18.6 | 29916 | 28.1 | 19.3 | 106508 | 28.2 | 18.6 | 440918 | 28.3 | 20.3 |
| 306958 | 27.9 | 20.6 | 257928 | 27.9 | 20.2 | 520336 | 28.0 | 21.1 | 155539 | 28.1 | 17.9 | 70626 | 28.2 | 18.9 | 498665 | 28.3 | 19.9 |
| 263747 | 27.9 | 20.8 | 441435 | 27.9 | 21.6 | 377816 | 28.0 | 21.1 | 298311 | 28.1 | 20.9 | 513209 | 28.2 | 21.0 | 285294 | 28.3 | 20.3 |
| 534349 | 27.9 | 20.0 | 496794 | 27.9 | 19.7 | 229806 | 28.0 | 19.6 | 238163 | 28.1 | 19.2 | 12964 | 28.2 | 16.2 | 388823 | 28.3 | 19.4 |
| 1510463 | 27.9 | 21.2 | 132140 | 27.9 | 19.7 | 191859 | 28.0 | 19.2 | 157974 | 28.1 | 20.2 | 349073 | 28.2 | 19.5 | 249788 | 28.3 | 19.9 |
| 299328 | 27.9 | 19.8 | 118909 | 27.9 | 18.9 | 342470 | 28.0 | 20.3 | 4183 | 28.1 | 18.4 | 470260 | 28.2 | 21.5 | 196510 | 28.3 | 18.6 |
| 503671 | 27.9 | 19.2 | 266401 | 27.9 | 19.7 | 128208 | 28.0 | 19.2 | 106818 | 28.1 | 19.3 | 56199 | 28.2 | 17.4 | 529466 | 28.3 | 20.5 |
| 224559 | 27.9 | 20.8 | 46125 | 27.9 | 16.9 | 521063 | 28.0 | 21.2 | 207494 | 28.1 | 20.3 | 125190 | 28.2 | 19.3 | 187245 | 28.3 | 19.9 |
| 127301 | 27.9 | 20.4 | 465080 | 27.9 | 20.8 | 390161 | 28.0 | 20.5 | 534462 | 28.1 | 19.8 | 216298 | 28.2 | 18.8 | 272721 | 28.3 | 20.2 |
| 216842 | 27.9 | 19.6 | 196145 | 27.9 | 19.0 | 104604 | 28.0 | 18.8 | 325343 | 28.1 | 19.7 | 209552 | 28.2 | 19.6 | 505304 | 28.3 | 21.8 |
| 401494 | 27.9 | 20.3 | 243960 | 27.9 | 19.4 | 379897 | 28.0 | 19.4 | 7330 | 28.1 | 16.7 | 37425 | 28.2 | 17.1 | 537554 | 28.3 | 20.3 |
| 364742 | 27.9 | 19.9 | 507041 | 27.9 | 20.4 | 182200 | 28.0 | 19.5 | 73696 | 28.1 | 16.8 | 165293 | 28.2 | 20.0 | 56116 | 28.3 | 15.8 |
| 338857 | 27.9 | 19.9 | 161532 | 27.9 | 18.9 | 539488 | 28.0 | 20.8 | 476470 | 28.1 | 21.2 | 238692 | 28.2 | 20.3 | 285843 | 28.3 | 20.7 |
| 53264 | 27.9 | 18.4 | 509317 | 27.9 | 21.3 | 427182 | 28.0 | 21.3 | 182735 | 28.1 | 20.2 | 196860 | 28.2 | 19.4 | 202275 | 28.3 | 20.4 |
| 113066 | 27.9 | 18.0 | 271663 | 27.9 | 19.2 | 241972 | 28.0 | 20.4 | 368813 | 28.1 | 18.7 | 527821 | 28.2 | 19.5 | 533144 | 28.3 | 20.9 |
| 462325 | 27.9 | 21.1 | 745 | 27.9 | 15.3 | 481246 | 28.0 | 20.8 | 146181 | 28.1 | 19.3 | 163134 | 28.2 | 19.8 | 80810 | 28.3 | 19.1 |
| 496660 | 27.9 | 21.3 | 344033 | 27.9 | 20.2 | 432980 | 28.0 | 21.2 | 383253 | 28.1 | 19.1 | 414195 | 28.2 | 20.9 | 248801 | 28.3 | 19.3 |
| 149910 | 27.9 | 19.4 | 65759 | 27.9 | 18.6 | 347696 | 28.0 | 21.8 | 52531 | 28.1 | 17.9 | 525100 | 28.2 | 20.8 | 488346 | 28.3 | 20.6 |
| 166653 | 27.9 | 19.9 | 153872 | 27.9 | 19.5 | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 425823 | 28.3 | 20.7 | 472692 | 28.4 | 21.2 | 94100 | 28.5 | 18.8 | 95308 | 28.6 | 18.8 | 269946 | 28.6 | 19.0 | 138011 | 28.7 | 19.4 |
| 19070 | 28.3 | 18.4 | 36814 | 28.4 | 18.6 | 499871 | 28.5 | 20.8 | 476351 | 28.6 | 20.9 | 510978 | 28.6 | 21.3 | 208670 | 28.7 | 19.5 |
| 290779 | 28.3 | 19.6 | 29318 | 28.4 | 17.5 | 409180 | 28.5 | 20.1 | 214493 | 28.6 | 18.1 | 25419 | 28.7 | 16.6 | 485045 | 28.7 | 20.9 |
| 286674 | 28.3 | 20.7 | 383957 | 28.4 | 20.6 | 62342 | 28.5 | 18.5 | 499879 | 28.6 | 20.0 | 415471 | 28.7 | 21.3 | 438603 | 28.7 | 20.8 |
| 83372 | 28.3 | 18.8 | 125441 | 28.4 | 18.1 | 515233 | 28.5 | 21.8 | 490665 | 28.6 | 20.9 | 386480 | 28.7 | 20.3 | 115918 | 28.7 | 19.4 |
| 309124 | 28.3 | 19.7 | 222543 | 28.4 | 21.1 | 478218 | 28.5 | 20.1 | 37327 | 28.6 | 18.2 | 408722 | 28.7 | 20.4 | 539435 | 28.7 | 20.4 |
| 278809 | 28.3 | 20.4 | 78820 | 28.4 | 17.9 | 185482 | 28.5 | 18.9 | 380282 | 28.6 | 21.2 | 186013 | 28.7 | 19.1 | 265699 | 28.7 | 20.7 |
| 413485 | 28.3 | 20.2 | 436320 | 28.4 | 20.7 | 377359 | 28.5 | 19.0 | 254349 | 28.6 | 20.3 | 271721 | 28.7 | 20.1 | 255791 | 28.7 | 19.2 |
| 440554 | 28.3 | 21.4 | 289424 | 28.4 | 20.5 | 441959 | 28.5 | 20.3 | 16340 | 28.6 | 17.5 | 458770 | 28.7 | 20.8 | 24093 | 28.7 | 18.1 |
| 173747 | 28.3 | 19.1 | 243968 | 28.4 | 18.8 | 429827 | 28.5 | 20.3 | 83669 | 28.6 | 19.2 | 96232 | 28.7 | 20.0 | 381465 | 28.7 | 19.5 |
| 524078 | 28.3 | 20.6 | 378299 | 28.4 | 19.5 | 31716 | 28.5 | 18.3 | 180078 | 28.6 | 18.8 | 498654 | 28.7 | 20.6 | 307215 | 28.7 | 20.1 |
| 456969 | 28.3 | 21.4 | 71379 | 28.4 | 17.2 | 501988 | 28.5 | 20.8 | 539607 | 28.6 | 20.4 | 92405 | 28.7 | 18.4 | 88803 | 28.7 | 19.2 |
| 9473 | 28.3 | 18.2 | 79536 | 28.4 | 19.4 | 455915 | 28.5 | 20.6 | 250443 | 28.6 | 20.5 | 39013 | 28.7 | 18.5 | 406837 | 28.7 | 21.1 |
| 273037 | 28.3 | 19.5 | 443599 | 28.4 | 20.4 | 468653 | 28.5 | 20.8 | 502967 | 28.6 | 19.7 | 239403 | 28.7 | 19.6 | 348460 | 28.7 | 20.4 |
| 103705 | 28.3 | 17.7 | 268441 | 28.4 | 20.9 | 58006 | 28.5 | 19.4 | 40892 | 28.6 | 19.6 | 465393 | 28.7 | 21.2 | 398689 | 28.7 | 20.7 |
| 242742 | 28.3 | 19.4 | 461153 | 28.4 | 20.3 | 235346 | 28.5 | 18.9 | 408741 | 28.6 | 20.4 | 214076 | 28.7 | 20.7 | 383293 | 28.7 | 20.5 |
| 45179 | 28.3 | 17.5 | 114831 | 28.4 | 17.8 | 532597 | 28.5 | 21.5 | 374477 | 28.6 | 21.0 | 388197 | 28.7 | 19.7 | 259902 | 28.7 | 20.2 |
| 148379 | 28.3 | 19.0 | 490208 | 28.4 | 21.6 | 376937 | 28.5 | 20.8 | 218998 | 28.6 | 20.2 | 317548 | 28.7 | 20.6 | 290230 | 28.7 | 20.6 |
| 219676 | 28.3 | 19.0 | 451003 | 28.4 | 22.5 | 33665 | 28.5 | 17.6 | 238823 | 28.6 | 18.7 | 72191 | 28.7 | 18.7 | 311409 | 28.7 | 20.9 |
| 410435 | 28.3 | 20.9 | 292841 | 28.4 | 19.6 | 406450 | 28.5 | 19.3 | 53246 | 28.6 | 18.7 | 536478 | 28.7 | 20.1 | 531046 | 28.7 | 21.7 |
| 62121 | 28.3 | 18.0 | 98455 | 28.4 | 19.2 | 503647 | 28.5 | 19.5 | 235743 | 28.6 | 19.0 | 141415 | 28.7 | 20.5 | 150028 | 28.7 | 19.1 |
| 467666 | 28.3 | 19.1 | 207777 | 28.4 | 19.7 | 238018 | 28.5 | 18.6 | 77209 | 28.6 | 19.8 | 47691 | 28.7 | 17.5 | 526443 | 28.8 | 20.5 |
| 250061 | 28.4 | 19.8 | 408119 | 28.4 | 20.1 | 531338 | 28.5 | 20.1 | 104478 | 28.6 | 19.6 | 500228 | 28.7 | 20.9 | 381196 | 28.8 | 20.0 |
| 105595 | 28.4 | 18.7 | 122770 | 28.4 | 18.9 | 367125 | 28.5 | 20.4 | 353322 | 28.6 | 19.0 | 100471 | 28.7 | 20.1 | 248529 | 28.8 | 19.9 |
| 240302 | 28.4 | 19.8 | 410343 | 28.4 | 21.3 | 172212 | 28.5 | 20.1 | 238745 | 28.6 | 19.7 | 21314 | 28.7 | 18.9 | 275108 | 28.8 | 19.7 |
| 203404 | 28.4 | 20.5 | 215242 | 28.4 | 18.8 | 57607 | 28.5 | 18.3 | 406914 | 28.6 | 21.4 | 255343 | 28.7 | 19.3 | 175965 | 28.8 | 19.0 |
| 481213 | 28.4 | 20.5 | 280582 | 28.4 | 20.1 | 350167 | 28.5 | 19.5 | 395819 | 28.6 | 21.5 | 76092 | 28.7 | 18.7 | 236136 | 28.8 | 20.9 |
| 224505 | 28.4 | 21.0 | 315467 | 28.4 | 20.8 | 84483 | 28.5 | 19.0 | 342033 | 28.6 | 19.2 | 400763 | 28.7 | 20.1 | 384706 | 28.8 | 19.7 |
| 508636 | 28.4 | 19.1 | 357761 | 28.4 | 21.0 | 106199 | 28.5 | 18.4 | 146606 | 28.6 | 19.4 | 311140 | 28.7 | 19.2 | 24921 | 28.8 | 18.9 |
| 225873 | 28.4 | 20.1 | 111476 | 28.4 | 19.2 | 58087 | 28.5 | 18.8 | 228261 | 28.6 | 18.9 | 478099 | 28.7 | 20.6 | 538928 | 28.8 | 20.5 |
| 250517 | 28.4 | 18.4 | 307014 | 28.4 | 18.4 | 191040 | 28.5 | 18.1 | 505407 | 28.6 | 20.0 | 437161 | 28.7 | 20.3 | 90591 | 28.8 | 17.2 |
| 156334 | 28.4 | 21.1 | 510113 | 28.4 | 19.9 | 308560 | 28.5 | 21.2 | 36890 | 28.6 | 18.4 | 298287 | 28.7 | 20.3 | 270548 | 28.8 | 20.6 |
| 417594 | 28.4 | 20.9 | 399911 | 28.4 | 20.3 | 128861 | 28.5 | 18.2 | 540293 | 28.6 | 21.4 | 529885 | 28.7 | 21.4 | 112452 | 28.8 | 19.5 |
| 427130 | 28.4 | 20.3 | 247141 | 28.4 | 18.6 | 37175 | 28.5 | 18.6 | 231319 | 28.6 | 19.8 | 533274 | 28.7 | 19.9 | 519334 | 28.8 | 20.5 |
| 170084 | 28.4 | 19.9 | 507916 | 28.4 | 21.1 | 391380 | 28.5 | 20.2 | 240323 | 28.6 | 18.5 | 476418 | 28.7 | 20.6 | 91331 | 28.8 | 19.5 |
| 284112 | 28.4 | 21.0 | 298821 | 28.4 | 19.0 | 532689 | 28.5 | 21.2 | 152658 | 28.6 | 20.3 | 161009 | 28.7 | 18.7 | 75704 | 28.8 | 19.1 |
| 110219 | 28.4 | 18.9 | 56152 | 28.4 | 17.2 | 323344 | 28.5 | 19.8 | 174594 | 28.6 | 17.8 | 318871 | 28.7 | 19.7 | 170211 | 28.8 | 18.7 |
| 531412 | 28.4 | 20.9 | 434174 | 28.4 | 20.4 | 530421 | 28.5 | 21.8 | 532042 | 28.6 | 20.4 | 308348 | 28.7 | 20.2 | 336472 | 28.8 | 20.6 |
| 18779 | 28.4 | 17.5 | 73899 | 28.4 | 19.9 | 505722 | 28.5 | 21.7 | 178246 | 28.6 | 19.3 | 314450 | 28.7 | 20.2 | 408708 | 28.8 | 20.1 |
| 177043 | 28.4 | 20.4 | 240187 | 28.4 | 19.5 | 509294 | 28.5 | 21.2 | 498017 | 28.6 | 20.6 | 381508 | 28.7 | 18.6 | 258610 | 28.8 | 20.2 |
| 92214 | 28.4 | 18.7 | 191824 | 28.4 | 18.7 | 376801 | 28.5 | 20.7 | 366301 | 28.6 | 20.0 | 126568 | 28.7 | 19.4 | 67993 | 28.8 | 18.0 |
| 437399 | 28.4 | 20.3 | 497328 | 28.4 | 21.3 | 149112 | 28.5 | 19.2 | 388740 | 28.6 | 20.4 | 537766 | 28.7 | 20.5 | 54406 | 28.8 | 17.3 |
| 435297 | 28.4 | 20.3 | 292674 | 28.4 | 19.5 | 269707 | 28.5 | 20.2 | 207996 | 28.6 | 20.1 | 379300 | 28.7 | 20.8 | 878 | 28.8 | 16.1 |
| 355590 | 28.4 | 20.2 | 238531 | 28.4 | 19.3 | 214490 | 28.5 | 19.0 | 250874 | 28.6 | 19.3 | 439181 | 28.7 | 20.9 | 343136 | 28.8 | 20.3 |
| 458908 | 28.4 | 20.4 | 127962 | 28.5 | 19.5 | 459582 | 28.5 | 21.3 | 70375 | 28.6 | 17.3 | 181152 | 28.7 | 20.6 | 539663 | 28.8 | 20.3 |
| 544894 | 28.4 | 21.1 | 71648 | 28.5 | 19.1 | 491579 | 28.5 | 20.3 | 505494 | 28.6 | 20.7 | 169670 | 28.7 | 19.5 | 358394 | 28.8 | 20.8 |
| 530946 | 28.4 | 21.5 | 20416 | 28.5 | 18.1 | 437344 | 28.5 | 20.6 | 322315 | 28.6 | 21.3 | 341204 | 28.7 | 20.0 | 9235 | 28.8 | 18.4 |
| 503038 | 28.4 | 20.6 | 200591 | 28.5 | 19.2 | 498001 | 28.5 | 20.9 | 343031 | 28.6 | 20.6 | 376171 | 28.7 | 20.5 | 477192 | 28.8 | 21.2 |
| 189587 | 28.4 | 18.9 | 237979 | 28.5 | 19.3 | 496973 | 28.5 | 19.7 | 258079 | 28.6 | 18.8 | 115884 | 28.7 | 20.2 | 2824 | 28.8 | 14.9 |
| 466818 | 28.4 | 20.1 | 391764 | 28.5 | 21.2 | 373478 | 28.5 | 20.2 | 286007 | 28.6 | 20.0 | 35390 | 28.7 | 17.3 | 503801 | 28.8 | 20.4 |
| 341453 | 28.4 | 20.7 | 112176 | 28.5 | 19.8 | 316854 | 28.5 | 19.7 | 73716 | 28.6 | 18.3 | 409097 | 28.7 | 21.0 | 192897 | 28.8 | 18.6 |
| 392793 | 28.4 | 20.5 | 261026 | 28.5 | 20.3 | 528660 | 28.5 | 21.9 | 416194 | 28.6 | 19.9 | 95466 | 28.7 | 17.9 | 209608 | 28.8 | 20.2 |
| 226336 | 28.4 | 20.6 | 184618 | 28.5 | 20.0 | 7471 | 28.5 | 17.7 | 36186 | 28.6 | 17.4 | 355185 | 28.7 | 20.6 | 166624 | 28.8 | 19.6 |
| 196023 | 28.4 | 19.7 | 398219 | 28.5 | 20.0 | 137174 | 28.5 | 20.7 | 314757 | 28.6 | 20.4 | 320361 | 28.7 | 20.5 | 143901 | 28.8 | 20.3 |
| 527822 | 28.4 | 21.4 | 469922 | 28.5 | 22.3 | 160966 | 28.5 | 19.6 | 85970 | 28.6 | 19.4 | 198457 | 28.7 | 17.8 | 419667 | 28.8 | 20.0 |
| 262858 | 28.4 | 20.0 | 529522 | 28.5 | 21.7 | 296194 | 28.5 | 20.0 | 26052 | 28.6 | 18.9 | 539708 | 28.7 | 20.2 | 269289 | 28.8 | 20.1 |
| 132728 | 28.4 | 19.1 | 418415 | 28.5 | 19.7 | 187400 | 28.5 | 20.2 | 295053 | 28.6 | 20.0 | 456917 | 28.7 | 21.4 | 92400 | 28.8 | 18.2 |
| 397426 | 28.4 | 20.6 | 256757 | 28.5 | 19.5 | 403849 | 28.5 | 20.6 | 334712 | 28.6 | 20.0 | 474846 | 28.7 | 19.3 | 111944 | 28.8 | 19.6 |
| 470845 | 28.4 | 20.7 | 90671 | 28.5 | 19.2 | 333942 | 28.5 | 20.6 | 351728 | 28.6 | 20.4 | 312535 | 28.7 | 19.6 | 202948 | 28.8 | 19.7 |
| 423634 | 28.4 | 20.0 | 404908 | 28.5 | 19.6 | 139084 | 28.5 | 19.4 | 153623 | 28.6 | 19.3 | 70284 | 28.7 | 18.6 | 262530 | 28.8 | 19.5 |
| 443742 | 28.4 | 19.9 | 377379 | 28.5 | 19.0 | 147543 | 28.5 | 19.7 | 263226 | 28.6 | 19.7 | 376883 | 28.7 | 21.8 | 129467 | 28.8 | 18.6 |
| 286437 | 28.4 | 20.5 | 345978 | 28.5 | 21.6 | 17514 | 28.5 | 17.5 | 395603 | 28.6 | 21.5 | 507623 | 28.7 | 22.2 | 359777 | 28.8 | 19.5 |
| 207860 | 28.4 | 19.9 | 402537 | 28.5 | 20.0 | 200661 | 28.5 | 18.7 | 311431 | 28.6 | 20.1 | 353728 | 28.7 | 19.9 | 406398 | 28.8 | 19.1 |
| 502271 | 28.4 | 21.2 | 254512 | 28.5 | 19.5 | 503393 | 28.5 | 21.1 | 174487 | 28.6 | 19.9 | 277743 | 28.7 | 20.4 | 216640 | 28.8 | 20.2 |
| 69662 | 28.4 | 19.2 | 533220 | 28.5 | 20.8 | 106740 | 28.5 | 19.2 | 193926 | 28.6 | 19.2 | 399611 | 28.7 | 18.7 | 149453 | 28.8 | 20.7 |
| 65707 | 28.4 | 16.9 | 384733 | 28.5 | 20.0 | 477588 | 28.5 | 21.2 | 200701 | 28.6 | 21.6 | 506319 | 28.7 | 19.0 | 28714 | 28.8 | 15.9 |
| 120319 | 28.4 | 18.7 | 380188 | 28.5 | 24.4 | 346183 | 28.5 | 19.6 | 318673 | 28.6 | 19.7 | 313443 | 28.7 | 19.2 | 305510 | 28.8 | 21.0 |
| 150600 | 28.4 | 19.6 | 34266 | 28.5 | 18.0 | 304682 | 28.5 | 21.0 | 331334 | 28.6 | 20.8 | 255737 | 28.7 | 19.8 | 371098 | 28.8 | 20.9 |
| 104111 | 28.4 | 18.3 | 417761 | 28.5 | 19.8 | 169568 | 28.5 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|----------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 248988 | 28.8 | 19.4 | 203609 | 28.9 | 20.8 | 395659 | 28.9 | 20.4 | 431037 | 29.1 | 20.8 | 389216 | 29.1 | 21.4 | 325006 | 29.2 | 19.5 |
| 35238 | 28.8 | 18.6 | 297693 | 28.9 | 19.6 | 371672 | 28.9 | 19.6 | 321660 | 29.1 | 20.4 | 254633 | 29.1 | 19.6 | 52313 | 29.2 | 17.5 |
| 147868 | 28.8 | 18.8 | 438069 | 28.9 | 19.0 | 163086 | 28.9 | 18.8 | 71864 | 29.1 | 19.1 | 21358 | 29.1 | 18.1 | 443751 | 29.2 | 20.5 |
| 59589 | 28.8 | 18.4 | 480852 | 28.9 | 21.3 | 42658 | 28.9 | 19.0 | 303875 | 29.1 | 20.2 | 208696 | 29.1 | 18.5 | 276940 | 29.2 | 20.8 |
| 479201 | 28.8 | 21.1 | 152104 | 28.9 | 20.2 | 118100 | 28.9 | 19.0 | 530967 | 29.1 | 20.5 | 452681 | 29.1 | 22.0 | 193526 | 29.2 | 19.5 |
| 416252 | 28.8 | 20.2 | 59957 | 28.9 | 17.8 | 231181 | 28.9 | 19.5 | 4301 | 29.1 | 17.5 | 240060 | 29.1 | 19.4 | 395975 | 29.2 | 21.0 |
| 479680 | 28.8 | 20.3 | 306830 | 28.9 | 19.2 | 155044 | 28.9 | 19.5 | 123647 | 29.1 | 20.2 | 101997 | 29.1 | 18.6 | 368228 | 29.2 | 18.9 |
| 437635 | 28.8 | 19.7 | 497986 | 28.9 | 21.2 | 405856 | 28.9 | 20.9 | 170448 | 29.1 | 19.0 | 467930 | 29.1 | 21.5 | 480007 | 29.2 | 21.2 |
| 501264 | 28.8 | 20.9 | 48442 | 28.9 | 18.6 | 234128 | 28.9 | 19.7 | 202230 | 29.1 | 19.4 | 192875 | 29.1 | 19.3 | 98833 | 29.2 | 19.1 |
| 189274 | 28.8 | 18.5 | 259363 | 28.9 | 20.6 | 530252 | 28.9 | 19.1 | 424166 | 29.1 | 20.7 | 96960 | 29.1 | 18.3 | 172746 | 29.2 | 19.7 |
| 344482 | 28.8 | 19.9 | 240713 | 28.9 | 19.6 | 39570 | 28.9 | 17.2 | 495418 | 29.1 | 19.6 | 482054 | 29.1 | 21.1 | 349325 | 29.2 | 20.6 |
| 306951 | 28.8 | 18.6 | 329195 | 28.9 | 20.6 | 266374 | 28.9 | 21.1 | 93857 | 29.1 | 18.5 | 535289 | 29.1 | 20.9 | 168038 | 29.2 | 19.7 |
| 295304 | 28.8 | 20.2 | 431084 | 28.9 | 20.0 | 457625 | 28.9 | 21.4 | 238089 | 29.1 | 19.1 | 484270 | 29.1 | 20.6 | 71075 | 29.2 | 18.1 |
| 352602 | 28.8 | 20.8 | 91623 | 28.9 | 20.7 | 297612 | 28.9 | 18.6 | 203453 | 29.1 | 20.4 | 530595 | 29.1 | 21.1 | 424186 | 29.2 | 20.2 |
| 507021 | 28.8 | 20.0 | 301723 | 28.9 | 20.7 | 540528 | 28.9 | 20.4 | 143465 | 29.1 | 19.3 | 125818 | 29.2 | 18.7 | 458818 | 29.2 | 19.0 |
| 60563 | 28.8 | 19.3 | 431812 | 28.9 | 20.2 | 143482 | 28.9 | 19.8 | 531936 | 29.1 | 20.6 | 531905 | 29.2 | 21.1 | 130796 | 29.2 | 18.2 |
| 257434 | 28.8 | 19.7 | 243356 | 28.9 | 18.2 | 243665 | 28.9 | 19.5 | 501168 | 29.1 | 20.5 | 312878 | 29.2 | 19.8 | 313362 | 29.2 | 19.5 |
| 230328 | 28.8 | 19.5 | 58818 | 28.9 | 18.5 | 527799 | 28.9 | 20.5 | 165301 | 29.1 | 19.2 | 151989 | 29.2 | 19.9 | 193695 | 29.2 | 20.3 |
| 55785 | 28.8 | 17.2 | 477688 | 28.9 | 20.1 | 87895 | 28.9 | 18.2 | 163601 | 29.1 | 18.2 | 141270 | 29.2 | 19.3 | 380604 | 29.2 | 20.1 |
| 327367 | 28.8 | 19.7 | 122520 | 28.9 | 18.9 | 533428 | 28.9 | 21.5 | 225499 | 29.1 | 19.9 | 439697 | 29.2 | 19.8 | 240761 | 29.2 | 19.9 |
| 55018 | 28.8 | 18.0 | 463236 | 28.9 | 21.0 | 86297 | 28.9 | 17.9 | 354154 | 29.1 | 19.9 | 311541 | 29.2 | 20.1 | 107606 | 29.2 | 19.4 |
| 278830 | 28.8 | 18.6 | 371749 | 28.9 | 20.0 | 156365 | 28.9 | 19.9 | 87953 | 29.1 | 18.6 | 1780 | 29.2 | 14.9 | 213439 | 29.2 | 19.8 |
| 221214 | 28.8 | 20.1 | 118585 | 28.9 | 18.5 | 163205 | 28.9 | 20.1 | 368942 | 29.1 | 20.9 | 365190 | 29.2 | 20.7 | 155408 | 29.2 | 18.1 |
| 283223 | 28.8 | 19.5 | 214581 | 28.9 | 18.5 | 274080 | 28.9 | 19.9 | 214495 | 29.1 | 20.8 | 116541 | 29.2 | 19.5 | 496479 | 29.2 | 19.7 |
| 222586 | 28.8 | 19.5 | 265573 | 28.9 | 20.7 | 370085 | 28.9 | 19.9 | 25487 | 29.1 | 18.2 | 353264 | 29.2 | 21.0 | 539656 | 29.2 | 20.3 |
| 307088 | 28.8 | 19.4 | 381169 | 28.9 | 19.3 | 181752 | 29.0 | 20.2 | 299119 | 29.1 | 19.9 | 522122 | 29.2 | 21.4 | 93940 | 29.2 | 18.6 |
| 503023 | 28.8 | 20.1 | 480490 | 28.9 | 19.9 | 145904 | 29.0 | 19.2 | 51887 | 29.1 | 17.6 | 384066 | 29.2 | 20.4 | 385420 | 29.2 | 19.9 |
| 215651 | 28.8 | 19.4 | 501230 | 28.9 | 19.9 | 328793 | 29.0 | 19.9 | 524515 | 29.1 | 20.4 | 518548 | 29.2 | 21.2 | 397036 | 29.2 | 19.6 |
| 17425 | 28.8 | 18.1 | 529000 | 28.9 | 21.7 | 125147 | 29.0 | 19.3 | 462311 | 29.1 | 20.9 | 300088 | 29.2 | 19.8 | 65401 | 29.2 | 18.6 |
| 239771 | 28.8 | 20.9 | 255748 | 28.9 | 20.6 | 221874 | 29.0 | 19.9 | 524169 | 29.1 | 21.1 | 536622 | 29.2 | 21.0 | 171023 | 29.2 | 20.2 |
| 356352 | 28.8 | 19.7 | 428852 | 28.9 | 20.5 | 123651 | 29.0 | 19.8 | 390226 | 29.1 | 20.4 | 38460 | 29.2 | 17.8 | 144879 | 29.2 | 19.3 |
| 134047 | 28.8 | 18.7 | 527648 | 28.9 | 20.3 | 329788 | 29.0 | 18.5 | 151888 | 29.1 | 19.5 | 307186 | 29.2 | 20.4 | 292497 | 29.3 | 20.2 |
| 417682 | 28.8 | 21.5 | 395540 | 28.9 | 20.5 | 440646 | 29.0 | 21.2 | 531664 | 29.1 | 21.5 | 49133 | 29.2 | 17.7 | 432318 | 29.3 | 20.0 |
| 178274 | 28.8 | 19.5 | 377756 | 28.9 | 21.0 | 425777 | 29.0 | 20.9 | 479294 | 29.1 | 21.7 | 241437 | 29.2 | 19.7 | 66552 | 29.3 | 17.9 |
| 212011 | 28.8 | 20.1 | 405898 | 28.9 | 20.2 | 306044 | 29.0 | 19.5 | 262930 | 29.1 | 20.0 | 503628 | 29.2 | 20.5 | 238135 | 29.3 | 19.4 |
| 369457 | 28.8 | 19.2 | 477210 | 28.9 | 19.1 | 148442 | 29.0 | 18.7 | 249794 | 29.1 | 19.8 | 400802 | 29.2 | 20.3 | 531843 | 29.3 | 20.7 |
| 274264 | 28.8 | 19.6 | 100416 | 28.9 | 17.4 | 361700 | 29.0 | 19.9 | 38820 | 29.1 | 17.2 | 367133 | 29.2 | 20.2 | 128063 | 29.3 | 17.9 |
| 258623 | 28.8 | 20.2 | 287558 | 28.9 | 19.3 | 427750 | 29.0 | 19.4 | 292833 | 29.1 | 21.3 | 2439 | 29.2 | 16.4 | 462123 | 29.3 | 21.3 |
| 237066 | 28.8 | 19.8 | 184539 | 28.9 | 18.4 | 233436 | 29.0 | 20.2 | 40539 | 29.1 | 18.2 | 336503 | 29.2 | 20.2 | 124436 | 29.3 | 18.1 |
| 152050 | 28.8 | 18.6 | 21752 | 28.9 | 17.8 | 352395 | 29.0 | 20.7 | 133932 | 29.1 | 18.4 | 9969 | 29.2 | 19.4 | 504809 | 29.3 | 21.0 |
| 378349 | 28.8 | 19.6 | 361473 | 28.9 | 21.0 | 181859 | 29.0 | 18.1 | 539423 | 29.1 | 21.0 | 502138 | 29.2 | 20.9 | 251378 | 29.3 | 20.2 |
| 436692 | 28.8 | 20.2 | 150015 | 28.9 | 18.8 | 298302 | 29.0 | 21.0 | 162610 | 29.1 | 18.1 | 463954 | 29.2 | 19.3 | 106325 | 29.3 | 19.2 |
| 78131 | 28.8 | 18.5 | 539526 | 28.9 | 20.7 | 528611 | 29.0 | 19.6 | 363449 | 29.1 | 18.9 | 363913 | 29.2 | 20.8 | 270293 | 29.3 | 20.5 |
| 59207 | 28.8 | 18.4 | 133114 | 28.9 | 18.0 | 34881 | 29.0 | 19.4 | 466620 | 29.1 | 19.8 | 241990 | 29.2 | 19.8 | 6732 | 29.3 | 17.3 |
| 393921 | 28.8 | 20.2 | 133472 | 28.9 | 18.5 | 335788 | 29.0 | 20.4 | 18185 | 29.1 | 17.8 | 192844 | 29.2 | 20.3 | 511696 | 29.3 | 20.6 |
| 2495 | 28.8 | 16.9 | 316938 | 28.9 | 19.6 | 34567 | 29.0 | 18.3 | 472690 | 29.1 | 20.7 | 416061 | 29.2 | 20.6 | 519810 | 29.3 | 21.9 |
| 12164 | 28.8 | 17.2 | 446145 | 28.9 | 20.7 | 181089 | 29.0 | 19.5 | 391319 | 29.1 | 21.1 | 70850 | 29.2 | 18.3 | 262885 | 29.3 | 20.5 |
| 532024 | 28.8 | 22.2 | 163952 | 28.9 | 19.2 | 206734 | 29.0 | 20.1 | 286418 | 29.1 | 20.4 | 269016 | 29.2 | 20.5 | 499422 | 29.3 | 21.3 |
| 192758 | 28.8 | 19.6 | 523902 | 28.9 | 19.8 | 58510 | 29.0 | 18.0 | 245259 | 29.1 | 21.0 | 221227 | 29.2 | 20.0 | 243008 | 29.3 | 19.5 |
| 308407 | 28.8 | 19.9 | 521420 | 28.9 | 21.0 | 164331 | 29.0 | 19.4 | 239441 | 29.1 | 19.8 | 397085 | 29.2 | 20.9 | 167091 | 29.3 | 19.8 |
| 335151 | 28.8 | 20.1 | 505878 | 28.9 | 21.2 | 41790 | 29.0 | 18.7 | 23819 | 29.1 | 17.2 | 339427 | 29.2 | 20.1 | 527716 | 29.3 | 21.3 |
| 320202 | 28.8 | 20.6 | 244377 | 28.9 | 19.5 | 370144 | 29.0 | 20.5 | 478706 | 29.1 | 20.6 | 370298 | 29.2 | 19.7 | 150591 | 29.3 | 19.7 |
| 248131 | 28.8 | 20.4 | 65425 | 28.9 | 17.4 | 335118 | 29.0 | 20.0 | 349382 | 29.1 | 20.1 | 290483 | 29.2 | 19.9 | 243468 | 29.3 | 20.3 |
| 136171 | 28.8 | 19.9 | 304555 | 28.9 | 20.7 | 9531 | 29.0 | 15.2 | 267331 | 29.1 | 20.2 | 196507 | 29.2 | 19.4 | 54216 | 29.3 | 17.2 |
| 62369 | 28.8 | 18.1 | 53444 | 28.9 | 18.4 | 499883 | 29.0 | 21.6 | 251973 | 29.1 | 20.3 | 86391 | 29.2 | 18.8 | 391352 | 29.3 | 19.6 |
| 409408 | 28.8 | 20.7 | 8402 | 28.9 | 18.1 | 502797 | 29.0 | 20.7 | 412062 | 29.1 | 20.2 | 72105 | 29.2 | 18.9 | 39333 | 29.3 | 19.1 |
| 140770 | 28.9 | 18.7 | 77024 | 28.9 | 18.1 | 188459 | 29.0 | 17.9 | 454473 | 29.1 | 20.4 | 349444 | 29.2 | 20.6 | 2661 | 29.3 | 15.8 |
| 94693 | 28.9 | 18.7 | 494769 | 28.9 | 20.2 | 188021 | 29.0 | 18.5 | 40282 | 29.1 | 17.3 | 497342 | 29.2 | 21.2 | 26252 | 29.3 | 16.8 |
| 478307 | 28.9 | 20.4 | 526638 | 28.9 | 21.7 | 337092 | 29.0 | 19.8 | 297377 | 29.1 | 20.4 | 426821 | 29.2 | 19.7 | 154062 | 29.3 | 17.6 |
| 309333 | 28.9 | 19.5 | 293699 | 28.9 | 18.7 | 170962 | 29.0 | 20.3 | 17763 | 29.1 | 18.2 | 410408 | 29.2 | 21.3 | 463495 | 29.3 | 20.7 |
| 122697 | 28.9 | 19.0 | 30643 | 28.9 | 17.9 | 52430 | 29.0 | 18.4 | 357917 | 29.1 | 21.2 | 66737 | 29.2 | 18.3 | 82175 | 29.3 | 19.0 |
| 259633 | 28.9 | 20.1 | 425847 | 28.9 | 19.9 | 185836 | 29.0 | 19.7 | 225798 | 29.1 | 20.2 | 504923 | 29.2 | 21.5 | 276076 | 29.3 | 19.5 |
| 138779 | 28.9 | 19.2 | 381197 | 28.9 | 18.7 | 476365 | 29.0 | 20.7 | 408402 | 29.1 | 20.5 | 520998 | 29.2 | 20.1 | 275532 | 29.3 | 20.6 |
| 32445 | 28.9 | 16.8 | 123115 | 28.9 | 19.9 | 290835 | 29.0 | 18.9 | 507830 | 29.1 | 21.0 | 172589 | 29.2 | 18.7 | 425224 | 29.3 | 19.9 |
| 213898 | 28.9 | 18.6 | 418171 | 28.9 | 20.9 | 526456 | 29.0 | 18.6 | 161399 | 29.1 | 19.1 | 187524 | 29.2 | 21.1 | 57099 | 29.3 | 17.7 |
| 495104 | 28.9 | 19.9 | 74990 | 28.9 | 18.3 | 478102 | 29.0 | 20.6 | 24682 | 29.1 | 19.2 | 278971 | 29.2 | 20.4 | 381549 | 29.3 | 20.6 |
| 61511 | 28.9 | 17.9 | 203681 | 28.9 | 17.8 | 316643 | 29.0 | 19.9 | 354151 | 29.1 | 20.9 | 523069 | 29.2 | 20.3 | 146147 | 29.3 | 18.9 |
| 486645 | 28.9 | 18.7 | 394000 | 28.9 | 18.7 | 37231 | 29.0 | 17.5 | 330406 | 29.1 | 20.2 | 323302 | 29.2 | 20.1 | 16676 | 29.3 | 16.5 |
| 480650 | 28.9 | 20.6 | 118067 | 28.9 | 18.7 | 242192</ | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 335538 | 29.3 | 20.0 | 38461 | 29.4 | 19.0 | 401439 | 29.5 | 19.4 | 360128 | 29.6 | 20.7 | 529225 | 29.7 | 20.3 | 153780 | 29.7 | 18.5 |
| 462555 | 29.3 | 22.1 | 466137 | 29.4 | 21.1 | 303373 | 29.5 | 19.9 | 85053 | 29.6 | 18.4 | 394009 | 29.7 | 20.8 | 532603 | 29.7 | 21.1 |
| 544196 | 29.3 | 19.7 | 198437 | 29.4 | 20.3 | 539206 | 29.5 | 20.6 | 508906 | 29.6 | 22.3 | 529632 | 29.7 | 21.1 | 168994 | 29.7 | 19.7 |
| 69184 | 29.3 | 18.8 | 488289 | 29.4 | 20.6 | 164243 | 29.5 | 19.1 | 477644 | 29.6 | 19.5 | 208241 | 29.7 | 18.3 | 467977 | 29.7 | 21.5 |
| 311515 | 29.3 | 21.0 | 432773 | 29.4 | 22.6 | 333648 | 29.5 | 18.9 | 131275 | 29.6 | 19.8 | 489466 | 29.7 | 20.9 | 374944 | 29.7 | 21.1 |
| 306906 | 29.3 | 20.1 | 436154 | 29.4 | 21.5 | 506568 | 29.5 | 19.6 | 81496 | 29.6 | 17.8 | 313272 | 29.7 | 21.0 | 298836 | 29.7 | 19.5 |
| 436589 | 29.3 | 21.2 | 98767 | 29.4 | 19.3 | 503731 | 29.5 | 20.4 | 478373 | 29.6 | 21.8 | 341350 | 29.7 | 20.4 | 106743 | 29.7 | 18.2 |
| 156322 | 29.3 | 20.0 | 2464 | 29.4 | 16.6 | 116772 | 29.5 | 18.3 | 26569 | 29.6 | 16.0 | 157083 | 29.7 | 18.9 | 442072 | 29.7 | 20.5 |
| 23375 | 29.3 | 18.3 | 383855 | 29.4 | 19.8 | 118902 | 29.5 | 19.3 | 232382 | 29.6 | 19.1 | 313955 | 29.7 | 20.2 | 341249 | 29.7 | 20.5 |
| 177050 | 29.3 | 21.0 | 316200 | 29.4 | 20.5 | 154882 | 29.5 | 18.7 | 414145 | 29.6 | 20.8 | 252194 | 29.7 | 19.9 | 349454 | 29.8 | 21.9 |
| 427343 | 29.3 | 20.9 | 305574 | 29.4 | 19.9 | 334726 | 29.5 | 19.7 | 355915 | 29.6 | 20.5 | 466080 | 29.7 | 20.6 | 252826 | 29.8 | 20.5 |
| 126803 | 29.3 | 19.6 | 61334 | 29.4 | 17.4 | 382823 | 29.5 | 19.4 | 69703 | 29.6 | 17.6 | 118905 | 29.7 | 19.7 | 342961 | 29.8 | 20.4 |
| 56741 | 29.3 | 18.1 | 83766 | 29.4 | 17.5 | 303941 | 29.5 | 20.3 | 99609 | 29.6 | 18.7 | 370104 | 29.7 | 18.8 | 361488 | 29.8 | 20.6 |
| 365168 | 29.3 | 20.5 | 69428 | 29.4 | 19.5 | 64700 | 29.5 | 19.1 | 150651 | 29.6 | 20.1 | 351947 | 29.7 | 20.6 | 394665 | 29.8 | 20.5 |
| 379928 | 29.3 | 20.0 | 152482 | 29.4 | 19.0 | 25313 | 29.5 | 17.6 | 237600 | 29.6 | 18.7 | 41100 | 29.7 | 17.8 | 52985 | 29.8 | 17.8 |
| 219627 | 29.3 | 19.3 | 229086 | 29.4 | 19.1 | 204287 | 29.5 | 18.8 | 299917 | 29.6 | 20.6 | 91869 | 29.7 | 18.5 | 138899 | 29.8 | 18.9 |
| 309852 | 29.3 | 20.4 | 293343 | 29.4 | 20.3 | 94099 | 29.5 | 18.1 | 537975 | 29.6 | 21.3 | 96088 | 29.7 | 18.9 | 352442 | 29.8 | 21.4 |
| 495896 | 29.3 | 19.2 | 273026 | 29.4 | 20.1 | 41518 | 29.5 | 18.8 | 355726 | 29.6 | 21.4 | 259337 | 29.7 | 19.6 | 128723 | 29.8 | 19.5 |
| 280930 | 29.3 | 21.6 | 367892 | 29.4 | 20.5 | 250860 | 29.5 | 19.9 | 181663 | 29.6 | 19.6 | 16433 | 29.7 | 16.9 | 395494 | 29.8 | 20.2 |
| 182740 | 29.3 | 20.0 | 180158 | 29.4 | 19.1 | 442551 | 29.5 | 20.6 | 329966 | 29.6 | 18.6 | 164527 | 29.7 | 19.3 | 92868 | 29.8 | 19.0 |
| 174776 | 29.3 | 19.4 | 417546 | 29.4 | 20.2 | 536036 | 29.5 | 20.7 | 539645 | 29.6 | 19.8 | 115058 | 29.7 | 19.9 | 308069 | 29.8 | 20.4 |
| 208583 | 29.3 | 21.1 | 162235 | 29.4 | 18.4 | 354117 | 29.5 | 20.3 | 439664 | 29.6 | 21.3 | 170093 | 29.7 | 18.3 | 374486 | 29.8 | 20.1 |
| 66930 | 29.3 | 18.3 | 114883 | 29.4 | 19.5 | 317863 | 29.5 | 20.4 | 365450 | 29.6 | 19.3 | 407655 | 29.7 | 19.7 | 29164 | 29.8 | 16.8 |
| 157299 | 29.3 | 18.7 | 233176 | 29.4 | 19.1 | 251034 | 29.5 | 19.5 | 39714 | 29.6 | 18.8 | 338542 | 29.7 | 19.7 | 248383 | 29.8 | 19.0 |
| 88010 | 29.3 | 18.5 | 116135 | 29.4 | 20.3 | 385515 | 29.5 | 19.9 | 301862 | 29.6 | 21.0 | 470556 | 29.7 | 20.9 | 261545 | 29.8 | 19.8 |
| 384946 | 29.3 | 20.3 | 377461 | 29.4 | 19.8 | 364548 | 29.5 | 21.0 | 203301 | 29.6 | 18.7 | 277278 | 29.7 | 18.5 | 492367 | 29.8 | 21.0 |
| 110184 | 29.3 | 19.2 | 259201 | 29.4 | 20.6 | 253885 | 29.5 | 19.9 | 538116 | 29.6 | 20.9 | 8537 | 29.7 | 16.3 | 350149 | 29.8 | 20.0 |
| 519617 | 29.3 | 21.0 | 497221 | 29.4 | 20.1 | 321859 | 29.5 | 20.9 | 355303 | 29.6 | 19.6 | 13416 | 29.7 | 16.1 | 384133 | 29.8 | 19.9 |
| 460079 | 29.3 | 19.7 | 287931 | 29.4 | 19.7 | 473186 | 29.5 | 20.0 | 534693 | 29.6 | 20.7 | 528001 | 29.7 | 21.3 | 128627 | 29.8 | 18.8 |
| 300069 | 29.3 | 18.9 | 526380 | 29.4 | 20.8 | 523957 | 29.5 | 20.7 | 175384 | 29.6 | 18.3 | 296380 | 29.7 | 19.7 | 75646 | 29.8 | 19.3 |
| 530369 | 29.3 | 22.3 | 53672 | 29.4 | 17.2 | 39524 | 29.5 | 17.5 | 525777 | 29.6 | 21.0 | 11222 | 29.7 | 16.9 | 34493 | 29.8 | 18.2 |
| 94356 | 29.3 | 18.3 | 163344 | 29.4 | 18.9 | 515215 | 29.5 | 20.6 | 435817 | 29.6 | 20.7 | 13170 | 29.7 | 16.4 | 89296 | 29.8 | 18.3 |
| 51095 | 29.3 | 18.7 | 137909 | 29.4 | 19.8 | 204552 | 29.5 | 19.7 | 296439 | 29.6 | 19.2 | 356771 | 29.7 | 19.7 | 5402 | 29.8 | 15.7 |
| 342635 | 29.3 | 20.8 | 297791 | 29.4 | 20.4 | 157266 | 29.5 | 19.3 | 92124 | 29.6 | 19.1 | 62490 | 29.7 | 18.1 | 376247 | 29.8 | 21.3 |
| 266740 | 29.3 | 21.0 | 242868 | 29.4 | 20.2 | 192407 | 29.5 | 20.2 | 272487 | 29.6 | 19.1 | 370997 | 29.7 | 20.5 | 184084 | 29.8 | 19.9 |
| 162830 | 29.3 | 18.8 | 91455 | 29.4 | 18.1 | 497922 | 29.5 | 20.2 | 36827 | 29.6 | 19.3 | 381875 | 29.7 | 19.8 | 241285 | 29.8 | 20.8 |
| 173918 | 29.3 | 19.4 | 345233 | 29.4 | 18.7 | 144938 | 29.5 | 20.0 | 425929 | 29.6 | 19.4 | 306309 | 29.7 | 19.7 | 148440 | 29.8 | 19.2 |
| 531868 | 29.3 | 21.7 | 310446 | 29.4 | 19.5 | 357800 | 29.5 | 20.6 | 322328 | 29.6 | 20.2 | 360406 | 29.7 | 20.6 | 36789 | 29.8 | 20.5 |
| 288645 | 29.3 | 18.1 | 163345 | 29.4 | 19.1 | 420118 | 29.5 | 21.4 | 305361 | 29.6 | 21.4 | 463110 | 29.7 | 19.7 | 212426 | 29.8 | 18.6 |
| 434726 | 29.3 | 21.4 | 283615 | 29.4 | 19.3 | 346518 | 29.5 | 19.6 | 232262 | 29.6 | 20.0 | 34248 | 29.7 | 18.2 | 123616 | 29.8 | 20.9 |
| 233806 | 29.3 | 20.1 | 201856 | 29.4 | 18.7 | 438659 | 29.5 | 21.1 | 10841 | 29.6 | 17.7 | 93797 | 29.7 | 19.3 | 396561 | 29.8 | 20.4 |
| 350509 | 29.3 | 20.2 | 354904 | 29.4 | 20.0 | 467415 | 29.5 | 20.4 | 115809 | 29.6 | 19.0 | 336350 | 29.7 | 20.6 | 510610 | 29.8 | 20.7 |
| 62417 | 29.3 | 18.1 | 285306 | 29.4 | 20.0 | 507614 | 29.5 | 22.0 | 170698 | 29.6 | 19.5 | 380580 | 29.7 | 20.1 | 117765 | 29.8 | 20.1 |
| 338772 | 29.3 | 20.2 | 459450 | 29.4 | 20.9 | 125662 | 29.5 | 19.2 | 168844 | 29.6 | 19.9 | 527917 | 29.7 | 18.1 | 105584 | 29.8 | 18.7 |
| 536356 | 29.3 | 21.0 | 290782 | 29.4 | 19.7 | 255707 | 29.5 | 19.7 | 54930 | 29.6 | 17.9 | 249312 | 29.7 | 20.0 | 508077 | 29.8 | 20.7 |
| 336668 | 29.3 | 20.3 | 390278 | 29.4 | 19.4 | 331899 | 29.5 | 18.9 | 310202 | 29.6 | 20.2 | 126135 | 29.7 | 18.8 | 468281 | 29.8 | 20.4 |
| 53236 | 29.3 | 17.8 | 373613 | 29.4 | 21.0 | 267751 | 29.5 | 19.6 | 435711 | 29.6 | 21.5 | 527966 | 29.7 | 21.7 | 432789 | 29.8 | 22.1 |
| 207918 | 29.3 | 19.9 | 389804 | 29.4 | 19.8 | 498468 | 29.5 | 22.1 | 166221 | 29.6 | 18.4 | 161973 | 29.7 | 20.0 | 252976 | 29.8 | 19.3 |
| 469615 | 29.3 | 21.6 | 302386 | 29.4 | 20.4 | 153304 | 29.5 | 18.1 | 98854 | 29.6 | 20.1 | 522888 | 29.7 | 20.3 | 353940 | 29.8 | 18.4 |
| 466076 | 29.3 | 20.7 | 281974 | 29.4 | 19.5 | 395155 | 29.5 | 19.4 | 311532 | 29.6 | 21.0 | 131607 | 29.7 | 19.1 | 306160 | 29.8 | 19.3 |
| 60904 | 29.3 | 19.5 | 34477 | 29.5 | 18.5 | 18114 | 29.5 | 17.2 | 82582 | 29.6 | 17.8 | 353709 | 29.7 | 20.8 | 252884 | 29.8 | 19.1 |
| 469412 | 29.4 | 21.1 | 443768 | 29.5 | 20.4 | 89782 | 29.5 | 18.8 | 496061 | 29.6 | 20.1 | 331477 | 29.7 | 19.7 | 159579 | 29.8 | 19.8 |
| 253968 | 29.4 | 20.4 | 95836 | 29.5 | 19.2 | 393141 | 29.5 | 19.5 | 334980 | 29.6 | 20.7 | 93528 | 29.7 | 18.9 | 352061 | 29.8 | 20.1 |
| 188279 | 29.4 | 19.1 | 381586 | 29.5 | 20.8 | 167135 | 29.5 | 19.3 | 152485 | 29.6 | 19.3 | 323082 | 29.7 | 19.4 | 417625 | 29.8 | 21.5 |
| 18348 | 29.4 | 16.7 | 371948 | 29.5 | 19.9 | 350096 | 29.5 | 19.6 | 364410 | 29.6 | 21.2 | 240121 | 29.7 | 20.4 | 424075 | 29.8 | 20.4 |
| 330700 | 29.4 | 21.3 | 358036 | 29.5 | 20.2 | 188805 | 29.5 | 17.0 | 232927 | 29.6 | 19.7 | 476978 | 29.7 | 21.4 | 349912 | 29.8 | 21.0 |
| 146739 | 29.4 | 18.9 | 398426 | 29.5 | 20.2 | 40661 | 29.6 | 17.0 | 188162 | 29.6 | 20.7 | 406458 | 29.7 | 19.2 | 499801 | 29.8 | 19.7 |
| 531590 | 29.4 | 20.9 | 523709 | 29.5 | 22.1 | 304639 | 29.6 | 20.1 | 301575 | 29.6 | 19.4 | 398612 | 29.7 | 20.9 | 286615 | 29.8 | 18.8 |
| 338918 | 29.4 | 20.2 | 536216 | 29.5 | 21.5 | 205893 | 29.6 | 19.0 | 506992 | 29.6 | 20.7 | 9207 | 29.7 | 17.6 | 271873 | 29.8 | 19.7 |
| 396758 | 29.4 | 20.8 | 33983 | 29.5 | 18.0 | 336428 | 29.6 | 20.0 | 534700 | 29.6 | 21.5 | 216182 | 29.7 | 19.8 | 507793 | 29.8 | 20.1 |
| 470685 | 29.4 | 20.0 | 311488 | 29.5 | 19.9 | 282759 | 29.6 | 20.2 | 54708 | 29.6 | 16.8 | 464326 | 29.7 | 20.7 | 237529 | 29.8 | 18.9 |
| 312847 | 29.4 | 20.2 | 376339 | 29.5 | 20.9 | 44241 | 29.6 | 18.0 | 406486 | 29.6 | 19.9 | 347331 | 29.7 | 20.6 | 410249 | 29.8 | 21.5 |
| 429144 | 29.4 | 21.1 | 496950 | 29.5 | 21.2 | 174581 | 29.6 | 18.4 | 91073 | 29.6 | 18.3 | 324950 | 29.7 | 20.7 | 523151 | 29.8 | 19.9 |
| 506848 | 29.4 | 21.0 | 80515 | 29.5 | 19.0 | 333287 | 29.6 | 18.4 | 414181 | 29.6 | 21.6 | 473965 | 29.7 | 21.0 | 211912 | 29.8 | 19.1 |
| 428753 | 29.4 | 20.2 | 35666 | 29.5 | 16.9 | 526141 | 29.6 | 21.7 | 269756 | 29.6 | 18.7 | 455202 | 29.7 | 21.1 | 536396 | 29.8 | 21.2 |
| 280552 | 29.4 | 20.1 | 170321 | 29.5 | 19.0 | 188471 | 29.6 | 19.5 | 192000 | 29.6 | 19.5 | 289485 | 29.7 | 20.6 | 58206 | 29.8 | 20.2 |
| 59675 | 29.4 | 18.2 | 12897 | 29.5 | 17.4 | 533190 | 29.6 | 21.6 | 208692 | 29.6 | 20.7 | 377705 | 29.7 | 18.9 | 118385 | 29.8 | 19.4 |
| 379396 | 29.4 | 20.3 | 192080 | 29.5 | 20.6 | 507141 | 29.6 | 20.4 | 122385 | 29.6 | 19.0 | 136394 | 29.7 | 19.7 | 446587 | 29.8 | 21.0 |
| 145708 | 29.4 | 19.5 | 346383 | 29.5 | 19.0 | 95573 | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 212132 | 29.8 | 18.4 | 257175 | 29.9 | 20.5 | 242691 | 29.9 | 19.5 | 469176 | 30.1 | 20.5 | 232111 | 30.1 | 20.5 | 250054 | 30.2 | 19.0 |
| 476412 | 29.8 | 21.7 | 128344 | 29.9 | 19.6 | 358421 | 29.9 | 20.8 | 218033 | 30.1 | 17.3 | 363043 | 30.1 | 19.4 | 379786 | 30.2 | 20.0 |
| 44313 | 29.8 | 18.3 | 523990 | 29.9 | 20.6 | 160026 | 29.9 | 20.4 | 492623 | 30.1 | 20.0 | 97259 | 30.1 | 19.7 | 258757 | 30.2 | 18.8 |
| 129119 | 29.8 | 19.1 | 252973 | 29.9 | 19.5 | 425840 | 29.9 | 20.9 | 89389 | 30.1 | 19.7 | 355587 | 30.1 | 19.8 | 503963 | 30.2 | 20.0 |
| 437641 | 29.8 | 20.7 | 497291 | 29.9 | 21.1 | 170988 | 29.9 | 19.3 | 250924 | 30.1 | 19.5 | 253712 | 30.1 | 20.2 | 31318 | 30.2 | 19.5 |
| 83536 | 29.8 | 17.6 | 32317 | 29.9 | 18.1 | 311492 | 29.9 | 19.6 | 497414 | 30.1 | 21.1 | 537428 | 30.1 | 20.9 | 462315 | 30.2 | 21.4 |
| 110574 | 29.8 | 18.6 | 49798 | 29.9 | 18.5 | 32043 | 29.9 | 16.8 | 159627 | 30.1 | 21.3 | 248432 | 30.1 | 19.3 | 146143 | 30.2 | 19.0 |
| 228529 | 29.8 | 20.0 | 121681 | 29.9 | 19.8 | 406371 | 29.9 | 20.8 | 179430 | 30.1 | 19.9 | 479120 | 30.1 | 20.6 | 251802 | 30.2 | 20.3 |
| 350985 | 29.8 | 20.9 | 525943 | 29.9 | 19.0 | 49904 | 29.9 | 17.4 | 266957 | 30.1 | 20.8 | 477664 | 30.1 | 20.4 | 99815 | 30.2 | 17.7 |
| 399710 | 29.8 | 19.3 | 267192 | 29.9 | 19.0 | 308700 | 29.9 | 19.0 | 150601 | 30.1 | 20.3 | 30697 | 30.1 | 18.7 | 217130 | 30.2 | 19.0 |
| 260888 | 29.8 | 19.7 | 310942 | 29.9 | 20.3 | 469711 | 29.9 | 21.2 | 58438 | 30.1 | 19.4 | 99639 | 30.1 | 18.0 | 267409 | 30.2 | 20.1 |
| 51292 | 29.8 | 17.9 | 125432 | 29.9 | 17.8 | 381869 | 29.9 | 21.2 | 540490 | 30.1 | 20.6 | 123696 | 30.1 | 19.2 | 504996 | 30.2 | 20.6 |
| 296496 | 29.8 | 19.7 | 175368 | 29.9 | 20.7 | 251533 | 29.9 | 20.1 | 80314 | 30.1 | 20.2 | 336159 | 30.1 | 20.4 | 374363 | 30.2 | 18.9 |
| 462029 | 29.8 | 19.8 | 216572 | 29.9 | 19.1 | 52143 | 29.9 | 17.4 | 169577 | 30.1 | 20.0 | 429203 | 30.1 | 20.8 | 391530 | 30.2 | 18.8 |
| 236542 | 29.8 | 20.3 | 304751 | 29.9 | 20.2 | 118402 | 29.9 | 19.1 | 434399 | 30.1 | 21.3 | 270646 | 30.1 | 19.4 | 513866 | 30.2 | 22.3 |
| 525315 | 29.8 | 20.5 | 6801 | 29.9 | 15.5 | 2932 | 29.9 | 16.2 | 273884 | 30.1 | 21.0 | 347356 | 30.1 | 19.8 | 3614 | 30.2 | 15.2 |
| 512083 | 29.8 | 19.9 | 292825 | 29.9 | 20.3 | 101858 | 29.9 | 19.9 | 308556 | 30.1 | 20.1 | 50218 | 30.1 | 18.6 | 112734 | 30.2 | 18.1 |
| 525862 | 29.8 | 20.7 | 459003 | 29.9 | 20.9 | 362338 | 29.9 | 20.1 | 309667 | 30.1 | 19.7 | 111223 | 30.1 | 18.0 | 477736 | 30.2 | 20.7 |
| 533475 | 29.8 | 20.6 | 404793 | 29.9 | 20.0 | 251873 | 29.9 | 19.6 | 240387 | 30.1 | 20.3 | 431937 | 30.1 | 20.6 | 467223 | 30.2 | 21.7 |
| 30517 | 29.8 | 17.7 | 163365 | 29.9 | 18.4 | 303343 | 29.9 | 20.3 | 131201 | 30.1 | 20.3 | 444954 | 30.2 | 21.6 | 309172 | 30.2 | 20.5 |
| 415136 | 29.8 | 21.4 | 24441 | 29.9 | 16.6 | 502057 | 29.9 | 21.2 | 160968 | 30.1 | 18.6 | 536858 | 30.2 | 21.2 | 354806 | 30.2 | 20.6 |
| 184238 | 29.8 | 18.7 | 390249 | 29.9 | 21.3 | 89282 | 29.9 | 18.5 | 313093 | 30.1 | 18.9 | 38422 | 30.2 | 17.9 | 314085 | 30.2 | 20.5 |
| 215835 | 29.8 | 19.4 | 19675 | 29.9 | 18.3 | 191665 | 29.9 | 18.3 | 439702 | 30.1 | 20.0 | 70481 | 30.2 | 19.0 | 87441 | 30.2 | 18.0 |
| 253210 | 29.8 | 20.2 | 186246 | 29.9 | 20.1 | 80659 | 29.9 | 18.6 | 514395 | 30.1 | 21.1 | 307108 | 30.2 | 19.4 | 229525 | 30.2 | 20.7 |
| 326970 | 29.8 | 19.8 | 531814 | 29.9 | 20.7 | 542289 | 29.9 | 21.3 | 351487 | 30.1 | 20.4 | 340303 | 30.2 | 20.9 | 285964 | 30.2 | 19.1 |
| 150914 | 29.8 | 18.5 | 297840 | 29.9 | 19.9 | 494373 | 29.9 | 20.4 | 15234 | 30.1 | 17.9 | 210501 | 30.2 | 20.5 | 536829 | 30.2 | 20.9 |
| 335521 | 29.8 | 20.2 | 39355 | 29.9 | 18.4 | 425819 | 29.9 | 20.5 | 238281 | 30.1 | 19.2 | 178479 | 30.2 | 19.0 | 256713 | 30.2 | 19.7 |
| 388844 | 29.8 | 20.7 | 22938 | 29.9 | 19.3 | 406360 | 30.0 | 20.3 | 181416 | 30.1 | 20.2 | 438373 | 30.2 | 20.2 | 499912 | 30.2 | 21.3 |
| 97907 | 29.8 | 20.4 | 217923 | 29.9 | 18.7 | 72412 | 30.0 | 19.4 | 111608 | 30.1 | 19.0 | 311424 | 30.2 | 20.3 | 498688 | 30.2 | 19.7 |
| 91943 | 29.8 | 18.8 | 225505 | 29.9 | 18.4 | 205724 | 30.0 | 21.2 | 436986 | 30.1 | 20.6 | 283049 | 30.2 | 20.7 | 382077 | 30.2 | 20.2 |
| 300946 | 29.8 | 20.4 | 214178 | 29.9 | 20.9 | 416973 | 30.0 | 21.6 | 22369 | 30.1 | 17.1 | 473204 | 30.2 | 21.9 | 243450 | 30.2 | 19.6 |
| 367191 | 29.8 | 19.6 | 263536 | 29.9 | 20.5 | 392570 | 30.0 | 19.7 | 401086 | 30.1 | 20.2 | 471699 | 30.2 | 20.3 | 109443 | 30.2 | 18.2 |
| 256769 | 29.8 | 21.5 | 12454 | 29.9 | 18.1 | 195370 | 30.0 | 19.4 | 355564 | 30.1 | 20.4 | 246055 | 30.2 | 18.7 | 376297 | 30.2 | 21.3 |
| 150044 | 29.8 | 18.9 | 245443 | 29.9 | 20.3 | 92732 | 30.0 | 18.1 | 333605 | 30.1 | 20.7 | 382759 | 30.2 | 20.3 | 320549 | 30.2 | 19.5 |
| 360424 | 29.8 | 20.6 | 411686 | 29.9 | 20.3 | 336200 | 30.0 | 19.3 | 150589 | 30.1 | 19.6 | 216241 | 30.2 | 19.6 | 59713 | 30.2 | 18.2 |
| 385479 | 29.8 | 20.0 | 29780 | 29.9 | 18.4 | 337323 | 30.0 | 19.6 | 99972 | 30.1 | 19.3 | 393013 | 30.2 | 21.7 | 38310 | 30.2 | 17.4 |
| 150918 | 29.8 | 20.1 | 241687 | 29.9 | 19.3 | 237240 | 30.0 | 19.6 | 358272 | 30.1 | 21.7 | 126361 | 30.2 | 20.3 | 170563 | 30.2 | 20.8 |
| 391742 | 29.8 | 20.8 | 392173 | 29.9 | 20.3 | 472970 | 30.0 | 20.4 | 346450 | 30.1 | 20.2 | 349335 | 30.2 | 21.1 | 503654 | 30.2 | 20.1 |
| 1078 | 29.9 | 14.8 | 247028 | 29.9 | 17.8 | 428806 | 30.0 | 19.5 | 21807 | 30.1 | 16.9 | 459610 | 30.2 | 20.3 | 181241 | 30.2 | 19.7 |
| 379698 | 29.9 | 21.0 | 477213 | 29.9 | 20.7 | 201689 | 30.0 | 19.7 | 264635 | 30.1 | 20.1 | 19826 | 30.2 | 18.7 | 305400 | 30.2 | 20.5 |
| 72174 | 29.9 | 17.4 | 329352 | 29.9 | 19.5 | 229117 | 30.0 | 19.7 | 365093 | 30.1 | 20.8 | 198471 | 30.2 | 19.9 | 430187 | 30.2 | 20.4 |
| 441739 | 29.9 | 21.5 | 155329 | 29.9 | 17.4 | 284441 | 30.0 | 21.5 | 55866 | 30.1 | 16.7 | 133493 | 30.2 | 19.9 | 312454 | 30.2 | 19.9 |
| 174466 | 29.9 | 20.9 | 406491 | 29.9 | 20.1 | 166284 | 30.0 | 19.0 | 446872 | 30.1 | 20.9 | 429481 | 30.2 | 21.3 | 103253 | 30.2 | 19.0 |
| 123840 | 29.9 | 19.9 | 119279 | 29.9 | 18.9 | 270320 | 30.0 | 21.6 | 406827 | 30.1 | 21.1 | 55176 | 30.2 | 18.2 | 476454 | 30.3 | 21.7 |
| 434367 | 29.9 | 20.5 | 526722 | 29.9 | 21.1 | 242208 | 30.0 | 17.8 | 495923 | 30.1 | 21.8 | 344460 | 30.2 | 19.6 | 7192 | 30.3 | 16.2 |
| 16176 | 29.9 | 16.2 | 137788 | 29.9 | 19.6 | 250871 | 30.0 | 19.6 | 93564 | 30.1 | 17.9 | 229596 | 30.2 | 18.0 | 375286 | 30.3 | 19.2 |
| 425762 | 29.9 | 20.3 | 150321 | 29.9 | 18.9 | 396333 | 30.0 | 20.4 | 230107 | 30.1 | 19.9 | 310116 | 30.2 | 19.0 | 23072 | 30.3 | 17.0 |
| 304080 | 29.9 | 20.2 | 393813 | 29.9 | 19.6 | 532016 | 30.0 | 20.5 | 11185 | 30.1 | 17.9 | 435579 | 30.2 | 21.2 | 92763 | 30.3 | 18.4 |
| 400395 | 29.9 | 21.0 | 53641 | 29.9 | 16.8 | 121922 | 30.0 | 19.0 | 457557 | 30.1 | 20.9 | 31608 | 30.2 | 18.6 | 273773 | 30.3 | 20.4 |
| 524985 | 29.9 | 18.7 | 503037 | 29.9 | 20.2 | 313796 | 30.0 | 20.4 | 410207 | 30.1 | 21.3 | 499167 | 30.2 | 21.0 | 87348 | 30.3 | 18.4 |
| 43357 | 29.9 | 18.0 | 4466 | 29.9 | 16.2 | 45230 | 30.0 | 18.8 | 471568 | 30.1 | 20.3 | 305459 | 30.2 | 20.2 | 57003 | 30.3 | 18.5 |
| 123558 | 29.9 | 19.2 | 47133 | 29.9 | 17.7 | 270498 | 30.0 | 19.8 | 529957 | 30.1 | 19.8 | 82708 | 30.2 | 17.9 | 512611 | 30.3 | 21.3 |
| 137415 | 29.9 | 18.8 | 215975 | 29.9 | 19.7 | 173323 | 30.0 | 19.7 | 350928 | 30.1 | 18.4 | 431020 | 30.2 | 20.7 | 162163 | 30.3 | 18.5 |
| 93060 | 29.9 | 18.4 | 379759 | 29.9 | 20.5 | 33845 | 30.0 | 17.9 | 355821 | 30.1 | 21.1 | 133323 | 30.2 | 18.8 | 125336 | 30.3 | 18.3 |
| 287052 | 29.9 | 20.1 | 294537 | 29.9 | 20.2 | 425548 | 30.0 | 19.8 | 28760 | 30.1 | 18.4 | 431005 | 30.2 | 20.1 | 193078 | 30.3 | 19.8 |
| 438164 | 29.9 | 19.6 | 203289 | 29.9 | 19.0 | 32342 | 30.0 | 18.0 | 368678 | 30.1 | 19.8 | 526802 | 30.2 | 22.2 | 359748 | 30.3 | 20.6 |
| 488905 | 29.9 | 20.5 | 263667 | 29.9 | 20.9 | 259359 | 30.0 | 20.4 | 136568 | 30.1 | 19.1 | 489705 | 30.2 | 21.1 | 537247 | 30.3 | 21.1 |
| 291744 | 29.9 | 20.2 | 512055 | 29.9 | 20.7 | 160300 | 30.0 | 20.8 | 389672 | 30.1 | 19.4 | 20695 | 30.2 | 18.7 | 387270 | 30.3 | 20.4 |
| 410064 | 29.9 | 22.0 | 403790 | 29.9 | 20.6 | 198314 | 30.0 | 19.2 | 224564 | 30.1 | 19.7 | 466456 | 30.2 | 19.5 | 438851 | 30.3 | 19.4 |
| 157837 | 29.9 | 19.5 | 77080 | 29.9 | 20.3 | 286023 | 30.0 | 20.0 | 317791 | 30.1 | 19.1 | 406544 | 30.2 | 21.2 | 416361 | 30.3 | 21.3 |
| 126804 | 29.9 | 19.7 | 507027 | 29.9 | 22.0 | 12920 | 30.0 | 15.6 | 148328 | 30.1 | 17.8 | 377437 | 30.2 | 19.9 | 467092 | 30.3 | 21.2 |
| 155611 | 29.9 | 19.4 | 199846 | 29.9 | 19.3 | 355229 | 30.0 | 20.4 | 374947 | 30.1 | 21.1 | 117978 | 30.2 | 19.2 | 480507 | 30.3 | 19.3 |
| 95286 | 29.9 | 20.1 | 108175 | 29.9 | 19.5 | 135619 | 30.0 | 19.4 | 438225 | 30.1 | 20.4 | 501602 | 30.2 | 19.5 | 167654 | 30.3 | 19.5 |
| 211172 | 29.9 | 19.7 | 251430 | 29.9 | 19.3 | 223218 | 30.0 | 20.4 | 412069 | 30.1 | 21.1 | 155080 | 30.2 | 18.3 | 340245 | 30.3 | 19.8 |
| 387455 | 29.9 | 20.2 | 249804 | 29.9 | 20.1 | 191287 | 30.0 | 19.2 | 231533 | 30.1 | 20.3 | 169645 | 30.2 | 19.6 | 95233 | 30.3 | 19.5 |
| 174035 | 29.9 | 19.4 | 21115 | 29.9 | 17.9 | 334430 | 30.0 | 20.4 | 41128 | 30.1 | 19.2 | 468522 | 30.2 | 20.9 | 214499 | 30.3 | 18.5 |
| 211917 | 29.9 | 19.6 | 322477 | 29.9 | 19.1 | 377765 | 30.0 | 21.0 | 530281 | 30.1 | 21.4 | 540112 | 30.2 | 20.3 | 434733 | 30.3 | 20.1 |
| 362348 | 29.9 | 20.1 | 16397 | 29.9 | 17.7 | 539523 | 30.0 | 21.8 | 433868 | 30.1 | 20.5 | 479310 | 30.2 | 19.2 | 164780 | 30.3 | 19.9 |
| 9728 | 29.9 | 16.9 | 522512 | 29.9 | 21.1 | 287268 | 30.0 | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 216485 | 30.3 | 19.8 | 100856 | 30.4 | 19.5 | 159661 | 30.5 | 20.4 | 203372 | 30.5 | 19.7 | 527968 | 30.6 | 20.4 | 416616 | 30.7 | 19.0 |
| 301567 | 30.3 | 20.3 | 342623 | 30.4 | 20.2 | 475188 | 30.5 | 21.4 | 204400 | 30.5 | 18.9 | 204602 | 30.6 | 20.2 | 371690 | 30.7 | 20.9 |
| 523095 | 30.3 | 20.4 | 119914 | 30.4 | 19.4 | 300053 | 30.5 | 19.8 | 471839 | 30.5 | 20.7 | 360366 | 30.6 | 21.5 | 141966 | 30.7 | 18.7 |
| 523648 | 30.3 | 22.1 | 68120 | 30.4 | 17.5 | 433054 | 30.5 | 20.4 | 257655 | 30.5 | 20.4 | 18082 | 30.6 | 15.9 | 478403 | 30.7 | 20.8 |
| 310100 | 30.3 | 21.0 | 500252 | 30.4 | 21.2 | 329921 | 30.5 | 19.0 | 178730 | 30.5 | 20.1 | 141007 | 30.6 | 19.7 | 314116 | 30.7 | 21.2 |
| 81141 | 30.3 | 17.9 | 268472 | 30.4 | 19.3 | 359438 | 30.5 | 20.5 | 145741 | 30.5 | 19.0 | 248446 | 30.6 | 19.5 | 457302 | 30.7 | 20.8 |
| 110886 | 30.3 | 18.8 | 314681 | 30.4 | 18.3 | 63107 | 30.5 | 18.3 | 504743 | 30.5 | 21.1 | 128392 | 30.6 | 18.9 | 156343 | 30.7 | 19.8 |
| 245661 | 30.3 | 20.6 | 87090 | 30.4 | 17.8 | 525370 | 30.5 | 21.2 | 393555 | 30.5 | 21.8 | 222667 | 30.6 | 19.3 | 352439 | 30.7 | 20.1 |
| 136017 | 30.3 | 19.2 | 394709 | 30.4 | 21.7 | 519658 | 30.5 | 20.4 | 430797 | 30.5 | 20.4 | 350969 | 30.6 | 21.5 | 536597 | 30.7 | 20.5 |
| 186309 | 30.3 | 20.8 | 129684 | 30.4 | 18.6 | 198515 | 30.5 | 18.9 | 352560 | 30.5 | 20.3 | 225518 | 30.6 | 18.1 | 357967 | 30.7 | 19.5 |
| 203320 | 30.3 | 19.9 | 219647 | 30.4 | 18.8 | 183614 | 30.5 | 19.2 | 92268 | 30.6 | 19.5 | 164744 | 30.6 | 19.7 | 497439 | 30.7 | 20.6 |
| 498586 | 30.3 | 18.7 | 49901 | 30.4 | 17.2 | 426946 | 30.5 | 19.3 | 22033 | 30.6 | 18.6 | 397771 | 30.6 | 21.6 | 126015 | 30.7 | 19.1 |
| 536310 | 30.3 | 21.0 | 353670 | 30.4 | 19.2 | 249822 | 30.5 | 20.2 | 529626 | 30.6 | 20.5 | 305322 | 30.6 | 20.9 | 301123 | 30.7 | 19.6 |
| 249779 | 30.3 | 19.8 | 213551 | 30.4 | 20.3 | 355678 | 30.5 | 20.3 | 36775 | 30.6 | 17.1 | 360403 | 30.6 | 21.1 | 295399 | 30.7 | 19.4 |
| 524652 | 30.3 | 20.6 | 463211 | 30.4 | 21.9 | 98662 | 30.5 | 18.8 | 384872 | 30.6 | 20.8 | 538290 | 30.6 | 21.2 | 199428 | 30.7 | 20.4 |
| 427224 | 30.3 | 20.3 | 263152 | 30.4 | 20.2 | 121404 | 30.5 | 19.6 | 392562 | 30.6 | 19.8 | 42140 | 30.6 | 18.1 | 34556 | 30.7 | 17.1 |
| 204344 | 30.3 | 18.4 | 302326 | 30.4 | 21.5 | 431509 | 30.5 | 20.1 | 192064 | 30.6 | 19.7 | 41588 | 30.6 | 18.1 | 357537 | 30.7 | 20.1 |
| 56835 | 30.3 | 18.5 | 31110 | 30.4 | 18.7 | 401600 | 30.5 | 20.6 | 453304 | 30.6 | 21.1 | 397999 | 30.6 | 20.7 | 251031 | 30.7 | 18.7 |
| 534771 | 30.3 | 19.5 | 357926 | 30.4 | 21.3 | 272773 | 30.5 | 19.2 | 307201 | 30.6 | 21.0 | 374227 | 30.6 | 22.4 | 55681 | 30.7 | 18.2 |
| 62958 | 30.3 | 18.0 | 109306 | 30.4 | 18.0 | 61141 | 30.5 | 17.1 | 258660 | 30.6 | 20.9 | 241619 | 30.6 | 18.1 | 380066 | 30.7 | 20.0 |
| 164782 | 30.3 | 20.0 | 278497 | 30.4 | 19.5 | 405822 | 30.5 | 20.2 | 491832 | 30.6 | 21.7 | 370125 | 30.6 | 19.7 | 164025 | 30.7 | 19.6 |
| 248456 | 30.3 | 19.9 | 382928 | 30.4 | 19.0 | 88086 | 30.5 | 17.5 | 365162 | 30.6 | 19.3 | 476367 | 30.6 | 20.0 | 400197 | 30.7 | 19.9 |
| 439678 | 30.3 | 20.0 | 216846 | 30.4 | 19.9 | 305333 | 30.5 | 19.8 | 160311 | 30.6 | 19.7 | 182083 | 30.6 | 19.2 | 422826 | 30.7 | 19.2 |
| 501648 | 30.3 | 19.6 | 394281 | 30.4 | 20.8 | 425824 | 30.5 | 21.4 | 518227 | 30.6 | 20.2 | 297669 | 30.6 | 19.0 | 94506 | 30.7 | 19.0 |
| 31780 | 30.3 | 17.8 | 127802 | 30.4 | 19.3 | 181361 | 30.5 | 21.2 | 426264 | 30.6 | 19.2 | 25159 | 30.6 | 16.8 | 123579 | 30.7 | 18.8 |
| 405862 | 30.3 | 21.5 | 187718 | 30.4 | 19.9 | 240904 | 30.5 | 19.0 | 302451 | 30.6 | 21.1 | 94504 | 30.6 | 19.8 | 409381 | 30.7 | 19.9 |
| 479855 | 30.3 | 21.3 | 385485 | 30.4 | 20.6 | 359174 | 30.5 | 20.5 | 54627 | 30.6 | 17.9 | 459060 | 30.6 | 21.4 | 525924 | 30.7 | 20.0 |
| 318421 | 30.3 | 20.2 | 428168 | 30.4 | 19.6 | 110765 | 30.5 | 18.4 | 239384 | 30.6 | 17.9 | 16769 | 30.6 | 17.0 | 431835 | 30.7 | 21.3 |
| 394310 | 30.3 | 20.9 | 358922 | 30.4 | 21.2 | 370101 | 30.5 | 19.3 | 315225 | 30.6 | 21.1 | 529487 | 30.6 | 20.0 | 525070 | 30.7 | 19.6 |
| 508730 | 30.3 | 19.9 | 510624 | 30.4 | 21.1 | 172557 | 30.5 | 19.7 | 241273 | 30.6 | 20.1 | 499157 | 30.6 | 20.3 | 505644 | 30.7 | 21.4 |
| 472598 | 30.3 | 21.5 | 313677 | 30.4 | 18.3 | 480583 | 30.5 | 20.5 | 533643 | 30.6 | 22.4 | 353991 | 30.6 | 19.2 | 295722 | 30.7 | 21.0 |
| 307982 | 30.3 | 20.9 | 510497 | 30.4 | 20.1 | 245611 | 30.5 | 20.6 | 287334 | 30.6 | 18.8 | 447929 | 30.6 | 20.8 | 467139 | 30.7 | 20.6 |
| 417722 | 30.3 | 21.5 | 309679 | 30.4 | 20.2 | 16754 | 30.5 | 17.9 | 193690 | 30.6 | 21.0 | 279184 | 30.6 | 19.1 | 151913 | 30.7 | 19.2 |
| 379849 | 30.3 | 20.7 | 95684 | 30.4 | 19.0 | 506507 | 30.5 | 21.9 | 281626 | 30.6 | 20.3 | 543535 | 30.6 | 21.1 | 82213 | 30.7 | 17.1 |
| 393032 | 30.3 | 20.6 | 56969 | 30.4 | 18.3 | 303813 | 30.5 | 20.5 | 253039 | 30.6 | 18.9 | 332296 | 30.6 | 19.6 | 71183 | 30.7 | 19.9 |
| 382922 | 30.3 | 19.5 | 44110 | 30.4 | 17.7 | 335728 | 30.5 | 20.9 | 149107 | 30.6 | 19.5 | 418413 | 30.6 | 20.3 | 71814 | 30.7 | 19.3 |
| 477684 | 30.3 | 19.7 | 208704 | 30.4 | 19.2 | 382436 | 30.5 | 18.6 | 386949 | 30.6 | 19.7 | 12364 | 30.6 | 17.3 | 16895 | 30.7 | 17.2 |
| 456610 | 30.3 | 20.6 | 29663 | 30.4 | 18.7 | 222677 | 30.5 | 19.6 | 153947 | 30.6 | 18.0 | 479254 | 30.6 | 21.2 | 36972 | 30.7 | 19.4 |
| 482432 | 30.3 | 20.4 | 523908 | 30.4 | 19.3 | 504484 | 30.5 | 19.9 | 261483 | 30.6 | 20.6 | 121276 | 30.6 | 17.5 | 163242 | 30.7 | 18.7 |
| 217903 | 30.3 | 19.7 | 502905 | 30.4 | 20.9 | 507432 | 30.5 | 19.9 | 398579 | 30.6 | 21.2 | 326286 | 30.6 | 20.2 | 20399 | 30.7 | 18.3 |
| 119599 | 30.3 | 18.0 | 37654 | 30.4 | 18.4 | 33849 | 30.5 | 18.0 | 110233 | 30.6 | 19.0 | 205666 | 30.7 | 20.1 | 236837 | 30.8 | 19.3 |
| 505427 | 30.3 | 20.3 | 290057 | 30.4 | 19.3 | 297562 | 30.5 | 19.5 | 481069 | 30.6 | 19.9 | 216068 | 30.7 | 19.5 | 308521 | 30.8 | 20.8 |
| 358770 | 30.3 | 19.6 | 74610 | 30.4 | 17.8 | 374484 | 30.5 | 19.7 | 50228 | 30.6 | 18.6 | 173130 | 30.7 | 21.3 | 387456 | 30.8 | 21.3 |
| 163871 | 30.3 | 18.9 | 60198 | 30.4 | 18.9 | 402486 | 30.5 | 20.5 | 153943 | 30.6 | 18.1 | 512621 | 30.7 | 20.7 | 258849 | 30.8 | 18.4 |
| 410749 | 30.3 | 20.1 | 162398 | 30.4 | 19.3 | 298711 | 30.5 | 19.9 | 68782 | 30.6 | 17.4 | 101694 | 30.7 | 18.0 | 468414 | 30.8 | 20.7 |
| 384602 | 30.3 | 19.1 | 503340 | 30.4 | 20.9 | 512749 | 30.5 | 20.0 | 338137 | 30.6 | 20.1 | 417729 | 30.7 | 20.4 | 473728 | 30.8 | 20.5 |
| 534798 | 30.3 | 20.1 | 391572 | 30.4 | 20.4 | 48276 | 30.5 | 17.5 | 72687 | 30.6 | 18.5 | 152100 | 30.7 | 18.0 | 139934 | 30.8 | 19.3 |
| 304629 | 30.3 | 20.3 | 461654 | 30.4 | 21.9 | 204693 | 30.5 | 19.0 | 501862 | 30.6 | 21.4 | 22820 | 30.7 | 17.7 | 418079 | 30.8 | 20.6 |
| 106567 | 30.3 | 17.0 | 121035 | 30.4 | 18.4 | 502551 | 30.5 | 20.3 | 508571 | 30.6 | 20.0 | 267456 | 30.7 | 20.0 | 369852 | 30.8 | 19.7 |
| 303218 | 30.3 | 20.3 | 351247 | 30.4 | 19.2 | 478074 | 30.5 | 21.2 | 125668 | 30.6 | 20.4 | 535977 | 30.7 | 21.0 | 331892 | 30.8 | 19.8 |
| 71317 | 30.3 | 17.9 | 478028 | 30.4 | 20.6 | 92797 | 30.5 | 18.9 | 129456 | 30.6 | 20.2 | 480619 | 30.7 | 20.5 | 306997 | 30.8 | 19.2 |
| 279749 | 30.3 | 18.4 | 505856 | 30.4 | 20.8 | 387098 | 30.5 | 20.3 | 467624 | 30.6 | 21.9 | 11215 | 30.7 | 16.8 | 248845 | 30.8 | 20.5 |
| 65286 | 30.3 | 18.3 | 83757 | 30.4 | 18.7 | 475782 | 30.5 | 21.3 | 75175 | 30.6 | 19.4 | 315455 | 30.7 | 20.0 | 524161 | 30.8 | 20.4 |
| 278677 | 30.3 | 20.4 | 353171 | 30.4 | 21.3 | 502117 | 30.5 | 21.7 | 94838 | 30.6 | 18.8 | 170997 | 30.7 | 20.5 | 116000 | 30.8 | 19.0 |
| 31680 | 30.4 | 18.8 | 496758 | 30.4 | 21.2 | 25666 | 30.5 | 16.6 | 185688 | 30.6 | 21.7 | 302348 | 30.7 | 19.3 | 276099 | 30.8 | 20.8 |
| 314698 | 30.4 | 20.9 | 382793 | 30.4 | 21.0 | 138129 | 30.5 | 20.2 | 37674 | 30.6 | 19.9 | 526725 | 30.7 | 22.1 | 176981 | 30.8 | 20.1 |
| 269788 | 30.4 | 18.4 | 492748 | 30.4 | 20.1 | 152303 | 30.5 | 19.2 | 198096 | 30.6 | 19.2 | 502710 | 30.7 | 20.2 | 404599 | 30.8 | 20.0 |
| 336902 | 30.4 | 20.1 | 91721 | 30.4 | 19.8 | 175302 | 30.5 | 20.5 | 433360 | 30.6 | 20.2 | 136195 | 30.7 | 19.1 | 249101 | 30.8 | 20.0 |
| 140591 | 30.4 | 18.7 | 410773 | 30.4 | 21.5 | 64063 | 30.5 | 18.7 | 505481 | 30.6 | 19.9 | 239386 | 30.7 | 20.0 | 260944 | 30.8 | 20.4 |
| 194337 | 30.4 | 20.5 | 39852 | 30.4 | 18.3 | 184762 | 30.5 | 20.4 | 170918 | 30.6 | 19.8 | 137599 | 30.7 | 19.3 | 497366 | 30.8 | 20.9 |
| 18873 | 30.4 | 16.8 | 1474 | 30.4 | 14.0 | 478367 | 30.5 | 20.8 | 431841 | 30.6 | 19.9 | 426133 | 30.7 | 20.1 | 399873 | 30.8 | 21.6 |
| 343958 | 30.4 | 19.8 | 83934 | 30.4 | 18.0 | 185512 | 30.5 | 19.4 | 249615 | 30.6 | 21.1 | 277013 | 30.7 | 18.6 | 358338 | 30.8 | 22.2 |
| 517069 | 30.4 | 21.3 | 305365 | 30.4 | 20.8 | 101640 | 30.5 | 18.9 | 309990 | 30.6 | 19.4 | 242164 | 30.7 | 19.4 | 33679 | 30.8 | 17.8 |
| 213967 | 30.4 | 19.3 | 527450 | 30.4 | 19.9 | 173558 | 30.5 | 18.6 | 225874 | 30.6 | 19.5 | 227315 | 30.7 | 19.6 | 354874 | 30.8 | 20.5 |
| 528795 | 30.4 | 21.9 | 264604 | 30.4 | 19.8 | 98348 | 30.5 | 19.3 | 41781 | 30.6 | 17.7 | 375924 | 30.7 | 20.5 | 73670 | 30.8 | 16.2 |
| 275101 | 30.4 | 20.2 | 475882 | 30.4 | 21.2 | 161623 | 30.5 | 19.3 | 280750 | 30.6 | 19.9 | 496575 | 30.7 | 20.2 | 399211 | 30.8 | 20.9 |
| 259981 | 30.4 | 21.4 | 113418 | 30.4 | 18.5 | 272492 | 30.5 | 20.5 | 495402 | 30.6 | 20.2 | 453237 | 30.7 | 19.4 | 398059 | 30.8 | 20.7 |
| 56554 | 30.4 | 18.0 | 353256 | 30.4 | 20.1 | 148681 | 30.5 | 19.2 | 285303 | 30.6 | 20.8 | 87048 | 30.7 | 17.7 | 62078 | 30.8 | 18.6 |
| 504921 | 30.4 | 19.7 | 353534 | 3 | | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| Nº | 08 | V | Nº | 08 | V | Nº | 08 | V | Nº | 08 | V | Nº | 08 | V | Nº | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|----------|------|------|--------|------|------|--------|------|------|
| 12291 | 30.8 | 17.0 | 23002 | 30.9 | 18.3 | 380611 | 30.9 | 20.9 | 44929 | 31.0 | 17.8 | 66714 | 31.1 | 19.3 | 462324 | 31.2 | 20.9 |
| 171549 | 30.8 | 18.5 | 507674 | 30.9 | 20.5 | 141072 | 30.9 | 19.2 | 56955 | 31.0 | 17.9 | 39828 | 31.1 | 19.3 | 332731 | 31.2 | 20.3 |
| 503636 | 30.8 | 20.8 | 280904 | 30.9 | 20.9 | 255809 | 30.9 | 19.8 | 374339 | 31.0 | 19.8 | 64951 | 31.1 | 18.8 | 532100 | 31.2 | 20.5 |
| 260492 | 30.8 | 20.3 | 278373 | 30.9 | 19.6 | 53990 | 30.9 | 18.7 | 38200 | 31.0 | 17.2 | 509129 | 31.1 | 21.5 | 79024 | 31.2 | 19.3 |
| 71806 | 30.8 | 19.3 | 537413 | 30.9 | 20.4 | 510461 | 30.9 | 22.1 | 205252 | 31.0 | 18.4 | 505689 | 31.1 | 20.6 | 153909 | 31.2 | 18.3 |
| 373842 | 30.8 | 19.9 | 61527 | 30.9 | 18.5 | 472620 | 30.9 | 20.5 | 106555 | 31.0 | 19.4 | 377779 | 31.1 | 20.7 | 148183 | 31.2 | 18.8 |
| 382323 | 30.8 | 20.6 | 88958 | 30.9 | 17.5 | 213210 | 30.9 | 17.7 | 174663 | 31.0 | 19.9 | 79754 | 31.1 | 19.0 | 66282 | 31.2 | 17.6 |
| 318492 | 30.8 | 20.8 | 529237 | 30.9 | 20.9 | 374325 | 30.9 | 21.1 | 339512 | 31.0 | 20.1 | 326795 | 31.1 | 20.1 | 348975 | 31.2 | 20.2 |
| 462531 | 30.8 | 20.4 | 241694 | 30.9 | 19.2 | 534566 | 30.9 | 20.7 | 67511 | 31.0 | 17.0 | 206635 | 31.1 | 19.7 | 44943 | 31.2 | 18.9 |
| 44786 | 30.8 | 18.8 | 545040 | 30.9 | 20.4 | 845 | 30.9 | 14.1 | 298244 | 31.0 | 20.8 | 107838 | 31.1 | 19.7 | 144184 | 31.2 | 19.2 |
| 344756 | 30.8 | 20.9 | 430453 | 30.9 | 18.6 | 513676 | 30.9 | 21.7 | 357828 | 31.0 | 20.8 | 65713 | 31.1 | 18.0 | 82178 | 31.2 | 19.2 |
| 430113 | 30.8 | 19.4 | 111855 | 30.9 | 19.9 | 169007 | 30.9 | 19.9 | 504785 | 31.0 | 19.4 | 504527 | 31.1 | 21.1 | 36229 | 31.2 | 17.8 |
| 383991 | 30.8 | 20.8 | 2549 | 30.9 | 16.6 | 434245 | 30.9 | 20.3 | 54467 | 31.0 | 17.2 | 334422 | 31.1 | 20.1 | 134701 | 31.2 | 18.4 |
| 305465 | 30.8 | 21.4 | 160033 | 30.9 | 17.7 | 359102 | 30.9 | 19.3 | 384855 | 31.0 | 20.3 | 402529 | 31.1 | 21.0 | 489784 | 31.2 | 21.2 |
| 311426 | 30.8 | 20.9 | 423070 | 30.9 | 18.9 | 404355 | 30.9 | 20.7 | 492491 | 31.0 | 19.0 | 308450 | 31.1 | 21.0 | 119738 | 31.2 | 19.4 |
| 525366 | 30.8 | 19.8 | 70084 | 30.9 | 17.8 | 80220 | 30.9 | 19.4 | 382107 | 31.1 | 20.5 | 455879 | 31.1 | 20.5 | 241616 | 31.2 | 19.0 |
| 474750 | 30.8 | 20.4 | 182952 | 30.9 | 20.6 | 483248 | 30.9 | 20.6 | 479814 | 31.1 | 20.9 | 528226 | 31.1 | 20.4 | 286680 | 31.2 | 20.5 |
| 540345 | 30.8 | 20.5 | 423964 | 30.9 | 19.5 | 332161 | 30.9 | 19.6 | 34382 | 31.1 | 17.5 | 499178 | 31.1 | 21.9 | 69578 | 31.2 | 19.2 |
| 169861 | 30.8 | 19.2 | 235930 | 30.9 | 20.3 | 49550 | 30.9 | 18.6 | 424131 | 31.1 | 20.9 | 231257 | 31.1 | 19.9 | 540659 | 31.2 | 20.5 |
| 48199 | 30.8 | 19.6 | 357749 | 30.9 | 20.8 | 397438 | 30.9 | 20.9 | 471894 | 31.1 | 20.6 | 38622 | 31.1 | 18.8 | 286336 | 31.2 | 19.8 |
| 505986 | 30.8 | 21.0 | 347909 | 30.9 | 20.2 | 93488 | 30.9 | 19.5 | 222607 | 31.1 | 18.4 | 502906 | 31.1 | 20.5 | 332853 | 31.2 | 19.9 |
| 125281 | 30.8 | 18.5 | 76007 | 30.9 | 19.0 | 90896 | 30.9 | 18.5 | 351954 | 31.1 | 20.7 | 254238 | 31.1 | 18.7 | 419228 | 31.2 | 21.2 |
| 107410 | 30.8 | 20.4 | 30251 | 30.9 | 18.3 | 135727 | 30.9 | 18.7 | 15369 | 31.1 | 17.0 | 480587 | 31.1 | 21.6 | 346830 | 31.2 | 21.3 |
| 23021 | 30.8 | 17.1 | 258676 | 30.9 | 20.7 | 497005 | 30.9 | 18.6 | 538756 | 31.1 | 21.8 | 173082 | 31.1 | 18.0 | 504787 | 31.2 | 21.5 |
| 6681 | 30.8 | 15.4 | 79026 | 30.9 | 18.2 | 458954 | 30.9 | 20.1 | 64435 | 31.1 | 20.1 | 485739 | 31.1 | 19.1 | 28342 | 31.2 | 18.0 |
| 439401 | 30.8 | 20.5 | 463125 | 30.9 | 20.1 | 524712 | 30.9 | 19.8 | 103419 | 31.1 | 19.3 | 529906 | 31.1 | 21.1 | 7624 | 31.2 | 16.8 |
| 57618 | 30.8 | 19.4 | 316619 | 30.9 | 20.4 | 52615 | 30.9 | 19.1 | 311944 | 31.1 | 20.8 | 96496 | 31.1 | 18.3 | 519792 | 31.2 | 20.9 |
| 467284 | 30.8 | 20.6 | 121503 | 30.9 | 19.4 | 207704 | 30.9 | 19.3 | 380179 | 31.1 | 18.8 | 507844 | 31.1 | 21.1 | 443790 | 31.2 | 19.5 |
| 110744 | 30.8 | 19.6 | 456323 | 30.9 | 19.5 | 532444 | 30.9 | 20.0 | 183634 | 31.1 | 20.6 | 471188 | 31.1 | 19.4 | 418210 | 31.2 | 21.4 |
| 272382 | 30.8 | 20.3 | 157717 | 30.9 | 20.3 | 195216 | 30.9 | 20.1 | 335616 | 31.1 | 20.4 | 303321 | 31.1 | 20.4 | 497208 | 31.2 | 21.1 |
| 433402 | 30.8 | 22.0 | 236206 | 30.9 | 18.2 | 341448 | 30.9 | 20.3 | 201225 | 31.1 | 19.5 | 478156 | 31.1 | 20.3 | 67031 | 31.2 | 17.8 |
| 97855 | 30.8 | 17.4 | 279860 | 30.9 | 20.4 | 339449 | 30.9 | 19.8 | 212809 | 31.1 | 20.4 | 362698 | 31.1 | 21.2 | 231596 | 31.2 | 21.1 |
| 22470 | 30.8 | 19.1 | 482135 | 30.9 | 20.5 | 355733 | 30.9 | 20.7 | 479126 | 31.1 | 20.0 | 134678 | 31.1 | 18.7 | 268471 | 31.2 | 17.9 |
| 117982 | 30.8 | 19.2 | 25402 | 30.9 | 19.0 | 16204 | 30.9 | 18.1 | 428825 | 31.1 | 20.6 | 394036 | 31.1 | 18.8 | 424161 | 31.2 | 21.2 |
| 259567 | 30.8 | 20.3 | 171779 | 30.9 | 21.2 | 93420 | 30.9 | 18.1 | 326904 | 31.1 | 20.3 | 235287 | 31.2 | 20.6 | 525184 | 31.2 | 20.2 |
| 512545 | 30.8 | 20.6 | 406844 | 30.9 | 20.3 | 375014 | 30.9 | 20.0 | 93257 | 31.1 | 19.6 | 9646 | 31.2 | 17.9 | 140116 | 31.2 | 19.1 |
| 91842 | 30.8 | 18.2 | 298337 | 30.9 | 20.8 | 373602 | 30.9 | 21.2 | 95718 | 31.1 | 19.4 | 514235 | 31.2 | 20.5 | 279433 | 31.2 | 20.1 |
| 192410 | 30.8 | 19.7 | 210313 | 30.9 | 18.4 | 342909 | 30.9 | 20.6 | 29900 | 31.1 | 17.7 | 534075 | 31.2 | 20.4 | 111904 | 31.2 | 19.4 |
| 250922 | 30.8 | 20.4 | 129152 | 30.9 | 19.7 | 483036 | 30.9 | 20.0 | 342850 | 31.1 | 20.4 | 37347 | 31.2 | 18.1 | 96949 | 31.2 | 19.3 |
| 359783 | 30.8 | 19.9 | 346064 | 30.9 | 20.3 | 537054 | 30.9 | 21.3 | 394024 | 31.1 | 20.7 | 469571 | 31.2 | 20.4 | 196265 | 31.2 | 20.2 |
| 476469 | 30.8 | 20.7 | 520282 | 30.9 | 20.9 | 19907 | 30.9 | 18.6 | 504526 | 31.1 | 20.3 | 393945 | 31.2 | 20.1 | 455137 | 31.2 | 19.2 |
| 352434 | 30.8 | 20.3 | 307195 | 30.9 | 20.2 | 311201 | 30.9 | 20.6 | 200294 | 31.1 | 20.0 | 404195 | 31.2 | 20.5 | 478349 | 31.2 | 21.1 |
| 278220 | 30.8 | 20.7 | 250857 | 30.9 | 19.8 | 392629 | 30.9 | 20.3 | 530285 | 31.1 | 20.7 | 254662 | 31.2 | 20.0 | 141041 | 31.2 | 20.2 |
| 325153 | 30.8 | 20.5 | 62595 | 30.9 | 18.6 | 530845 | 30.9 | 20.1 | 157824 | 31.1 | 19.1 | 190814 | 31.2 | 18.5 | 200653 | 31.2 | 19.0 |
| 507829 | 30.8 | 20.2 | 511354 | 30.9 | 20.0 | 370094 | 30.9 | 19.4 | 124532 | 31.1 | 18.9 | 512643 | 31.2 | 21.0 | 16138 | 31.2 | 17.5 |
| 267305 | 30.8 | 20.5 | 173941 | 30.9 | 19.5 | 31267 | 30.9 | 16.7 | 180705 | 31.1 | 19.2 | 15063 | 31.2 | 17.6 | 234113 | 31.2 | 20.7 |
| 33512 | 30.8 | 16.6 | 18637 | 30.9 | 17.5 | 466512 | 30.9 | 20.3 | 28720 | 31.1 | 18.0 | 62969 | 31.2 | 18.1 | 146954 | 31.2 | 19.7 |
| 92561 | 30.8 | 16.6 | 91639 | 30.9 | 18.2 | 131986 | 30.9 | 19.2 | 238889 | 31.1 | 19.8 | 40997 | 31.2 | 18.1 | 62008 | 31.2 | 18.4 |
| 17496 | 30.8 | 17.8 | 21343 | 30.9 | 17.9 | 225949 | 30.9 | 20.0 | 421542 | 31.1 | 20.7 | 388068 | 31.2 | 19.7 | 325352 | 31.2 | 20.5 |
| 339464 | 30.8 | 20.2 | 236157 | 30.9 | 20.5 | 466165 | 31.0 | 21.0 | 104508 | 31.1 | 19.2 | 403820 | 31.2 | 20.1 | 159626 | 31.2 | 19.3 |
| 309764 | 30.8 | 19.6 | 205253 | 30.9 | 18.5 | 522933 | 31.0 | 20.0 | 33243 | 31.1 | 17.8 | 95313 | 31.2 | 19.2 | 279854 | 31.2 | 20.7 |
| 501349 | 30.8 | 19.2 | 182880 | 30.9 | 20.0 | 384921 | 31.0 | 20.3 | 66374 | 31.1 | 18.2 | 457275 | 31.2 | 20.1 | 435205 | 31.2 | 20.8 |
| 329353 | 30.8 | 19.5 | 90419 | 30.9 | 19.7 | 377659 | 31.0 | 20.1 | 254582 | 31.1 | 19.9 | 1778 | 31.2 | 16.2 | 56163 | 31.2 | 19.5 |
| 501157 | 30.8 | 20.3 | 497014 | 30.9 | 21.0 | 369775 | 31.0 | 19.8 | 69682 | 31.1 | 19.2 | 465631 | 31.2 | 21.8 | 474729 | 31.2 | 19.9 |
| 436993 | 30.8 | 20.0 | 251917 | 30.9 | 19.9 | 61750 | 31.0 | 19.0 | 313661 | 31.1 | 19.9 | 372989 | 31.2 | 20.0 | 335162 | 31.2 | 19.9 |
| 231757 | 30.8 | 19.6 | 299389 | 30.9 | 19.9 | 381856 | 31.0 | 20.4 | 534316 | 31.1 | 21.4 | 415177 | 31.2 | 20.9 | 86159 | 31.2 | 18.8 |
| 438195 | 30.8 | 19.7 | 501272 | 30.9 | 20.2 | 295889 | 31.0 | 20.2 | 121711 | 31.1 | 17.5 | 313709 | 31.2 | 19.7 | 244209 | 31.3 | 18.9 |
| 286476 | 30.8 | 20.0 | 363423 | 30.9 | 18.9 | 130082 | 31.0 | 17.2 | 409211 | 31.1 | 19.4 | 215369 | 31.2 | 20.2 | 373596 | 31.3 | 21.0 |
| 497282 | 30.8 | 19.9 | 88621 | 30.9 | 16.8 | 510834 | 31.0 | 21.9 | 17632 | 31.1 | 18.1 | 214686 | 31.2 | 20.4 | 355537 | 31.3 | 21.5 |
| 6031 | 30.8 | 16.1 | 16573 | 30.9 | 16.9 | 176544 | 31.0 | 19.6 | 239201 | 31.1 | 20.2 | 525355 | 31.2 | 21.5 | 268412 | 31.3 | 19.7 |
| 417479 | 30.8 | 18.8 | 95647 | 30.9 | 18.4 | 28131 | 31.0 | 18.1 | 192908 | 31.1 | 20.7 | 376943 | 31.2 | 21.8 | 46473 | 31.3 | 17.8 |
| 320298 | 30.8 | 22.5 | 215879 | 30.9 | 20.7 | 479693 | 31.0 | 20.7 | 70376 | 31.1 | 17.8 | 240712 | 31.2 | 20.1 | 259354 | 31.3 | 20.7 |
| 534561 | 30.8 | 20.9 | 277394 | 30.9 | 19.7 | 56317 | 31.0 | 17.3 | 384958 | 31.1 | 20.5 | 107956 | 31.2 | 19.0 | 167740 | 31.3 | 20.2 |
| 212484 | 30.9 | 19.2 | 170513 | 30.9 | 19.3 | 354865 | 31.0 | 21.3 | 501409 | 31.1 | 20.5 | 411714 | 31.2 | 21.5 | 437568 | 31.3 | 21.0 |
| 131808 | 30.9 | 20.7 | 48001 | 30.9 | 17.7 | 492485 | 31.0 | 19.4 | 155452 | 31.1 | 19.6 | 144819 | 31.2 | 19.3 | 466964 | 31.3 | 21.0 |
| 47982 | 30.9 | 18.4 | 87923 | 30.9 | 16.4 | 285997 | 31.0 | 19.5 | 88209 | 31.1 | 18.1 | 238629 | 31.2 | 19.5 | 101736 | 31.3 | 19.9 |
| 426874 | 30.9 | 20.8 | 266617 | 30.9 | 19.0 | 294721 | 31.0 | 20.5 | 10087 | 31.1 | 15.3 | 525928 | 31.2 | 20.8 | 235010 | 31.3 | 19.5 |
| 338606 | 30.9 | 19.5 | 526090 | 30.9 | 20.6 | 236143 | 31.0 | 19.7 | 459318 | 31.1 | 19.4 | 145627 | 31.2 | 19.0 | 311396 | 31.3 | 20.1 |
| 106205 | 30.9 | 19.9 | 475917 | 30.9 | 21.2 | 250076 | 31.0 | 20.1 | 211894</ | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 474413 | 31.3 | 20.9 | 191136 | 31.4 | 19.4 | 101607 | 31.5 | 17.4 | 91883 | 31.5 | 19.0 | 98704 | 31.6 | 18.4 | 501414 | 31.7 | 20.2 |
| 534756 | 31.3 | 20.2 | 282415 | 31.4 | 19.5 | 501315 | 31.5 | 20.3 | 113307 | 31.5 | 19.4 | 156269 | 31.6 | 19.9 | 23760 | 31.7 | 18.0 |
| 243699 | 31.3 | 19.9 | 170684 | 31.4 | 20.0 | 451412 | 31.5 | 19.5 | 352578 | 31.5 | 21.0 | 526254 | 31.6 | 21.7 | 475844 | 31.7 | 20.2 |
| 103716 | 31.3 | 18.1 | 308565 | 31.4 | 19.8 | 25694 | 31.5 | 18.1 | 380849 | 31.5 | 20.9 | 159612 | 31.6 | 16.5 | 221202 | 31.7 | 20.6 |
| 377868 | 31.3 | 20.5 | 496323 | 31.4 | 20.7 | 123898 | 31.5 | 19.2 | 232492 | 31.5 | 19.1 | 395231 | 31.6 | 19.8 | 393127 | 31.7 | 20.9 |
| 530806 | 31.3 | 20.4 | 70670 | 31.4 | 19.1 | 327694 | 31.5 | 21.2 | 467768 | 31.5 | 20.1 | 206898 | 31.6 | 20.3 | 382991 | 31.7 | 21.4 |
| 141113 | 31.3 | 19.7 | 123106 | 31.4 | 17.7 | 146856 | 31.5 | 19.7 | 33915 | 31.5 | 17.0 | 309821 | 31.6 | 19.7 | 201810 | 31.7 | 18.9 |
| 295738 | 31.3 | 19.5 | 303836 | 31.4 | 20.4 | 148932 | 31.5 | 17.9 | 88207 | 31.5 | 19.4 | 250870 | 31.6 | 19.8 | 73628 | 31.7 | 18.5 |
| 20049 | 31.3 | 19.5 | 195382 | 31.4 | 18.8 | 531268 | 31.5 | 20.5 | 249813 | 31.5 | 20.6 | 504443 | 31.6 | 22.5 | 369958 | 31.7 | 19.7 |
| 280613 | 31.3 | 20.3 | 152424 | 31.4 | 19.9 | 326936 | 31.5 | 21.1 | 19122 | 31.5 | 17.2 | 41553 | 31.6 | 18.6 | 439533 | 31.7 | 21.0 |
| 216766 | 31.3 | 18.7 | 6024 | 31.4 | 15.8 | 185546 | 31.5 | 20.5 | 288139 | 31.5 | 20.7 | 398046 | 31.6 | 20.2 | 528581 | 31.7 | 21.2 |
| 57552 | 31.3 | 18.2 | 130908 | 31.4 | 18.3 | 168669 | 31.5 | 19.5 | 478413 | 31.5 | 20.3 | 297764 | 31.6 | 20.0 | 269678 | 31.7 | 20.1 |
| 301055 | 31.3 | 21.1 | 477721 | 31.4 | 20.6 | 312871 | 31.5 | 20.1 | 342236 | 31.5 | 20.0 | 397688 | 31.6 | 21.7 | 290413 | 31.7 | 19.7 |
| 88197 | 31.3 | 18.4 | 89579 | 31.4 | 17.8 | 418388 | 31.5 | 21.1 | 130127 | 31.5 | 19.4 | 117742 | 31.6 | 18.1 | 201859 | 31.7 | 18.5 |
| 461381 | 31.3 | 20.9 | 73178 | 31.4 | 18.8 | 1249 | 31.5 | 14.4 | 188552 | 31.5 | 19.7 | 379812 | 31.6 | 20.4 | 424045 | 31.7 | 21.5 |
| 50540 | 31.3 | 17.7 | 466629 | 31.4 | 20.7 | 314374 | 31.5 | 21.4 | 458792 | 31.5 | 20.5 | 539108 | 31.6 | 20.3 | 133390 | 31.7 | 19.0 |
| 167813 | 31.3 | 19.2 | 533100 | 31.4 | 21.8 | 423586 | 31.5 | 20.0 | 131300 | 31.5 | 19.5 | 510347 | 31.6 | 21.5 | 69466 | 31.7 | 19.9 |
| 503989 | 31.3 | 20.3 | 22114 | 31.4 | 17.0 | 50632 | 31.5 | 19.0 | 296245 | 31.5 | 18.4 | 471672 | 31.6 | 20.9 | 35556 | 31.7 | 17.8 |
| 299250 | 31.3 | 19.9 | 437487 | 31.4 | 20.4 | 240309 | 31.5 | 20.3 | 501335 | 31.5 | 21.0 | 391040 | 31.6 | 19.8 | 197643 | 31.7 | 19.9 |
| 529873 | 31.3 | 21.0 | 40738 | 31.4 | 17.3 | 338113 | 31.5 | 19.5 | 365756 | 31.6 | 23.0 | 512047 | 31.6 | 21.8 | 56161 | 31.7 | 18.5 |
| 278244 | 31.3 | 20.3 | 479214 | 31.4 | 19.9 | 330423 | 31.5 | 18.8 | 314128 | 31.6 | 21.2 | 41092 | 31.6 | 19.3 | 480846 | 31.7 | 19.4 |
| 309098 | 31.3 | 20.5 | 121713 | 31.4 | 19.0 | 200646 | 31.5 | 20.6 | 106436 | 31.6 | 18.7 | 86283 | 31.6 | 18.3 | 120828 | 31.7 | 19.6 |
| 120495 | 31.3 | 20.2 | 93580 | 31.4 | 20.3 | 141467 | 31.5 | 20.0 | 18414 | 31.6 | 15.9 | 216813 | 31.6 | 20.4 | 389821 | 31.7 | 19.8 |
| 488787 | 31.3 | 20.9 | 434706 | 31.4 | 21.5 | 17705 | 31.5 | 17.1 | 355661 | 31.6 | 20.6 | 395094 | 31.6 | 20.2 | 182854 | 31.7 | 20.0 |
| 100613 | 31.3 | 20.2 | 73372 | 31.4 | 18.2 | 468067 | 31.5 | 19.8 | 505544 | 31.6 | 21.6 | 498650 | 31.6 | 21.1 | 67962 | 31.7 | 18.6 |
| 309180 | 31.3 | 20.3 | 475750 | 31.4 | 20.1 | 434155 | 31.5 | 19.4 | 425947 | 31.6 | 20.8 | 176483 | 31.6 | 19.4 | 281139 | 31.7 | 20.8 |
| 536465 | 31.3 | 20.9 | 512575 | 31.4 | 20.5 | 482191 | 31.5 | 20.9 | 275727 | 31.6 | 19.3 | 252991 | 31.6 | 19.4 | 114789 | 31.7 | 19.0 |
| 140713 | 31.3 | 18.9 | 325138 | 31.4 | 21.6 | 339504 | 31.5 | 20.2 | 426604 | 31.6 | 19.5 | 160482 | 31.6 | 20.4 | 262163 | 31.7 | 20.4 |
| 539971 | 31.3 | 20.3 | 20676 | 31.4 | 18.0 | 131563 | 31.5 | 18.3 | 437646 | 31.6 | 20.0 | 126010 | 31.6 | 18.4 | 91077 | 31.7 | 19.3 |
| 431066 | 31.3 | 20.3 | 87658 | 31.4 | 19.0 | 498782 | 31.5 | 21.0 | 2954 | 31.6 | 16.6 | 53302 | 31.6 | 17.7 | 39083 | 31.7 | 19.1 |
| 132035 | 31.3 | 20.2 | 162495 | 31.4 | 19.1 | 297726 | 31.5 | 20.4 | 393374 | 31.6 | 20.3 | 152701 | 31.6 | 17.8 | 88270 | 31.7 | 19.0 |
| 305602 | 31.3 | 21.5 | 141401 | 31.4 | 19.8 | 304715 | 31.5 | 20.5 | 457670 | 31.6 | 21.2 | 230113 | 31.6 | 19.8 | 351934 | 31.7 | 21.1 |
| 103462 | 31.3 | 18.8 | 441372 | 31.4 | 20.3 | 503398 | 31.5 | 20.8 | 404245 | 31.6 | 21.4 | 409389 | 31.6 | 21.3 | 525359 | 31.7 | 20.6 |
| 467483 | 31.3 | 21.1 | 311473 | 31.4 | 19.7 | 469700 | 31.5 | 20.5 | 178371 | 31.6 | 20.5 | 54188 | 31.6 | 18.2 | 112269 | 31.7 | 18.0 |
| 5095 | 31.3 | 14.8 | 16093 | 31.4 | 18.1 | 56270 | 31.5 | 17.9 | 332747 | 31.6 | 19.3 | 74595 | 31.6 | 18.4 | 307116 | 31.7 | 20.1 |
| 16025 | 31.3 | 16.3 | 171869 | 31.4 | 19.5 | 38920 | 31.5 | 18.0 | 312141 | 31.6 | 21.4 | 346148 | 31.6 | 20.0 | 150582 | 31.7 | 19.1 |
| 517626 | 31.3 | 21.3 | 408667 | 31.4 | 19.6 | 377320 | 31.5 | 20.5 | 233168 | 31.6 | 19.4 | 187451 | 31.6 | 19.7 | 227451 | 31.7 | 20.0 |
| 501353 | 31.3 | 20.3 | 293705 | 31.4 | 19.3 | 509299 | 31.5 | 21.1 | 401023 | 31.6 | 18.7 | 175854 | 31.6 | 19.4 | 526288 | 31.7 | 20.8 |
| 178142 | 31.3 | 19.5 | 137816 | 31.4 | 18.6 | 203217 | 31.5 | 21.4 | 79958 | 31.6 | 18.5 | 496310 | 31.6 | 21.5 | 184278 | 31.7 | 20.3 |
| 17503 | 31.3 | 18.7 | 94423 | 31.4 | 18.9 | 457686 | 31.5 | 20.6 | 378281 | 31.6 | 19.4 | 255302 | 31.6 | 20.4 | 338736 | 31.7 | 20.3 |
| 52755 | 31.3 | 18.6 | 443682 | 31.4 | 19.6 | 193764 | 31.5 | 17.3 | 112089 | 31.6 | 19.3 | 88762 | 31.6 | 18.4 | 462565 | 31.7 | 21.6 |
| 524013 | 31.3 | 20.3 | 468991 | 31.4 | 21.8 | 449108 | 31.5 | 20.7 | 535519 | 31.6 | 21.8 | 481089 | 31.6 | 20.5 | 121659 | 31.7 | 18.0 |
| 450716 | 31.3 | 21.1 | 509436 | 31.4 | 21.5 | 362746 | 31.5 | 20.8 | 82847 | 31.6 | 18.6 | 174770 | 31.6 | 19.6 | 303922 | 31.7 | 21.1 |
| 524571 | 31.3 | 19.7 | 151130 | 31.4 | 20.0 | 262586 | 31.5 | 20.4 | 504518 | 31.6 | 20.0 | 262636 | 31.7 | 20.5 | 117069 | 31.7 | 18.0 |
| 497833 | 31.3 | 20.1 | 118481 | 31.4 | 18.3 | 151805 | 31.5 | 20.1 | 430563 | 31.6 | 19.8 | 147968 | 31.7 | 18.8 | 328389 | 31.7 | 18.6 |
| 230047 | 31.3 | 19.7 | 389785 | 31.4 | 19.9 | 320504 | 31.5 | 20.3 | 279009 | 31.6 | 20.1 | 115651 | 31.7 | 19.6 | 433621 | 31.7 | 19.9 |
| 158297 | 31.3 | 18.8 | 75754 | 31.4 | 19.7 | 257241 | 31.5 | 20.3 | 18607 | 31.6 | 16.5 | 250731 | 31.7 | 19.4 | 296497 | 31.7 | 19.4 |
| 332694 | 31.3 | 20.0 | 491321 | 31.4 | 21.2 | 509392 | 31.5 | 21.3 | 59987 | 31.6 | 18.0 | 233373 | 31.7 | 19.3 | 262214 | 31.7 | 19.9 |
| 139593 | 31.3 | 18.9 | 139776 | 31.4 | 19.2 | 540725 | 31.5 | 20.4 | 192096 | 31.6 | 19.8 | 174132 | 31.7 | 18.1 | 248977 | 31.7 | 18.5 |
| 358109 | 31.3 | 17.8 | 238857 | 31.4 | 19.9 | 398863 | 31.5 | 19.9 | 51547 | 31.6 | 18.7 | 381901 | 31.7 | 20.0 | 315216 | 31.7 | 19.7 |
| 482356 | 31.3 | 20.6 | 373611 | 31.4 | 21.0 | 410715 | 31.5 | 21.7 | 189602 | 31.6 | 19.3 | 406347 | 31.7 | 20.5 | 30063 | 31.7 | 17.5 |
| 26184 | 31.3 | 18.6 | 425727 | 31.4 | 20.2 | 345914 | 31.5 | 20.8 | 507464 | 31.6 | 20.9 | 163204 | 31.7 | 20.1 | 154778 | 31.7 | 19.3 |
| 539174 | 31.3 | 21.2 | 523003 | 31.4 | 20.4 | 219573 | 31.5 | 20.0 | 430948 | 31.6 | 21.3 | 68954 | 31.7 | 17.5 | 371992 | 31.7 | 19.7 |
| 437315 | 31.3 | 20.2 | 230890 | 31.4 | 19.7 | 250592 | 31.5 | 20.1 | 158412 | 31.6 | 19.7 | 19895 | 31.7 | 17.2 | 118622 | 31.7 | 19.0 |
| 354947 | 31.3 | 20.9 | 539648 | 31.4 | 20.3 | 179710 | 31.5 | 19.0 | 75166 | 31.6 | 19.3 | 505999 | 31.7 | 21.5 | 296453 | 31.7 | 19.5 |
| 63776 | 31.3 | 17.2 | 525244 | 31.4 | 20.5 | 168696 | 31.5 | 19.7 | 182925 | 31.6 | 20.0 | 325734 | 31.7 | 20.1 | 332182 | 31.7 | 20.0 |
| 133029 | 31.3 | 19.4 | 462140 | 31.4 | 20.9 | 338732 | 31.5 | 20.4 | 99473 | 31.6 | 19.4 | 281120 | 31.7 | 20.1 | 519911 | 31.7 | 19.7 |
| 334375 | 31.3 | 19.7 | 499204 | 31.4 | 19.5 | 286746 | 31.5 | 21.2 | 39653 | 31.6 | 18.6 | 402971 | 31.7 | 20.4 | 367886 | 31.7 | 20.0 |
| 12097 | 31.3 | 15.7 | 31066 | 31.4 | 17.9 | 309654 | 31.5 | 20.2 | 531435 | 31.6 | 18.8 | 374309 | 31.7 | 21.3 | 459557 | 31.7 | 21.8 |
| 149401 | 31.3 | 19.3 | 202828 | 31.4 | 18.6 | 317126 | 31.5 | 20.4 | 102260 | 31.6 | 19.1 | 436731 | 31.7 | 19.7 | 297578 | 31.7 | 19.5 |
| 38079 | 31.3 | 18.2 | 72445 | 31.4 | 19.1 | 214779 | 31.5 | 19.7 | 81280 | 31.6 | 18.9 | 535250 | 31.7 | 21.5 | 398213 | 31.7 | 19.8 |
| 172071 | 31.3 | 19.3 | 310389 | 31.4 | 20.2 | 225895 | 31.5 | 19.1 | 440857 | 31.6 | 20.7 | 496321 | 31.7 | 21.2 | 474437 | 31.7 | 21.1 |
| 45304 | 31.3 | 16.4 | 473998 | 31.4 | 20.5 | 80298 | 31.5 | 18.4 | 43879 | 31.6 | 18.2 | 340448 | 31.7 | 20.2 | 288624 | 31.7 | 19.9 |
| 528977 | 31.3 | 21.7 | 523042 | 31.4 | 20.8 | 86161 | 31.5 | 18.1 | 469079 | 31.6 | 19.6 | 182373 | 31.7 | 18.0 | 311571 | 31.7 | 19.2 |
| 506197 | 31.4 | 20.9 | 367916 | 31.4 | 20.0 | 27026 | 31.5 | 17.9 | 435830 | 31.6 | 20.8 | 290025 | 31.7 | 20.3 | 540860 | 31.8 | 21.3 |
| 86418 | 31.4 | 18.4 | 250513 | 31.4 | 18.6 | 157229 | 31.5 | 19.8 | 258958 | 31.6 | 19.9 | 380586 | 31.7 | 20.4 | 80868 | 31.8 | 20.4 |
| 59523 | 31.4 | 17.6 | 92884 | 31.4 | 19.1 | 303704 | 31.5 | 19.9 | 131839 | 31.6 | 19.2 | 197610 | 31.7 | 18.8 | 248439 | 31.8 | 20.0 |
| 519984 | 31.4 | 21.2 | 310479 | 31.5 | 19.4 | 370106 | 31.5 | 20.7 | 2781 | 31.6 | 15.8 | 98480 | 31.7 | 18.6 | 356345 | 31.8 | 19.0 |
| 40935 | 31.4 | 19.0 | 454318 | 31.5 | 20.0 | | | | | | | | | | | | |

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2021

| № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V | № | 08 | V |
|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| 73414 | 31.8 | 19.1 | 102705 | 31.8 | 18.1 | 290026 | 31.9 | 19.4 | 310305 | 31.9 | 21.0 | 532769 | 31.9 | 22.0 | 431017 | 31.9 | 19.7 |
| 315495 | 31.8 | 20.4 | 267362 | 31.8 | 19.2 | 210473 | 31.9 | 20.2 | 20547 | 31.9 | 17.6 | 25882 | 31.9 | 17.5 | 184865 | 31.9 | 20.3 |
| 126450 | 31.8 | 19.0 | 95989 | 31.8 | 19.2 | 177397 | 31.9 | 19.7 | 408323 | 31.9 | 19.5 | 503512 | 31.9 | 21.7 | 353568 | 31.9 | 20.2 |
| 10378 | 31.8 | 17.4 | 155398 | 31.8 | 19.6 | 85354 | 31.9 | 20.0 | 99977 | 31.9 | 20.3 | 505578 | 31.9 | 21.1 | 48857 | 31.9 | 18.1 |
| 363641 | 31.8 | 21.2 | 508252 | 31.8 | 21.3 | 113147 | 31.9 | 18.3 | 474913 | 31.9 | 19.3 | 281562 | 31.9 | 20.1 | 412446 | 31.9 | 21.4 |
| 295184 | 31.8 | 20.9 | 333903 | 31.8 | 18.8 | 376283 | 31.9 | 20.3 | 262960 | 31.9 | 20.0 | 488290 | 31.9 | 21.7 | 194944 | 31.9 | 20.1 |
| 266415 | 31.8 | 20.2 | 16239 | 31.8 | 17.3 | 408294 | 31.9 | 20.5 | 121217 | 31.9 | 18.7 | 409948 | 31.9 | 19.7 | 452621 | 31.9 | 19.4 |
| 198855 | 31.8 | 19.1 | 42296 | 31.8 | 18.2 | 525336 | 31.9 | 21.8 | 492306 | 31.9 | 20.5 | 50624 | 31.9 | 18.5 | 229807 | 31.9 | 19.2 |
| 390269 | 31.8 | 20.8 | 472633 | 31.8 | 20.7 | 406867 | 31.9 | 20.6 | 204124 | 31.9 | 18.5 | 30356 | 31.9 | 17.5 | 506229 | 31.9 | 20.0 |
| 183693 | 31.8 | 20.5 | 105657 | 31.8 | 19.3 | 497907 | 31.9 | 20.7 | 19668 | 31.9 | 17.1 | 363459 | 31.9 | 19.3 | 504085 | 31.9 | 19.7 |
| 2242 | 31.8 | 15.9 | 350489 | 31.8 | 19.4 | 491703 | 31.9 | 21.2 | 184661 | 31.9 | 19.9 | 397708 | 31.9 | 20.8 | 55208 | 31.9 | 18.7 |
| 288615 | 31.8 | 19.5 | 281030 | 31.8 | 19.4 | 505855 | 31.9 | 21.1 | 473723 | 31.9 | 20.6 | 375887 | 31.9 | 20.2 | 479106 | 31.9 | 21.8 |
| 528016 | 31.8 | 21.7 | 539417 | 31.8 | 20.8 | 295875 | 31.9 | 20.5 | 51108 | 31.9 | 19.3 | 312518 | 31.9 | 21.1 | 514559 | 31.9 | 20.2 |
| 54392 | 31.8 | 18.6 | 427811 | 31.8 | 19.6 | 15970 | 31.9 | 16.9 | 379359 | 31.9 | 20.6 | 417857 | 31.9 | 22.1 | 75107 | 31.9 | 18.3 |
| 353693 | 31.8 | 20.1 | 214151 | 31.8 | 20.2 | 215871 | 31.9 | 20.8 | 465138 | 31.9 | 20.9 | 236533 | 31.9 | 19.9 | 255504 | 31.9 | 19.9 |
| 40974 | 31.8 | 19.4 | 143680 | 31.8 | 19.8 | 197907 | 31.9 | 18.8 | 438460 | 31.9 | 20.3 | 504974 | 31.9 | 20.3 | 133289 | 31.9 | 19.0 |
| 85638 | 31.8 | 18.3 | 87029 | 31.8 | 19.0 | 254111 | 31.9 | 18.6 | 235848 | 31.9 | 20.4 | 477158 | 31.9 | 20.6 | 520214 | 31.9 | 21.2 |
| 531324 | 31.8 | 20.3 | 155396 | 31.8 | 19.0 | 310506 | 31.9 | 20.7 | 266546 | 31.9 | 19.0 | 61926 | 31.9 | 17.9 | 194282 | 31.9 | 19.5 |
| 100291 | 31.8 | 19.4 | 244334 | 31.8 | 20.2 | 302424 | 31.9 | 20.6 | 287368 | 31.9 | 20.8 | 121654 | 31.9 | 19.8 | 12284 | 31.9 | 18.0 |
| 29607 | 31.8 | 18.1 | 209951 | 31.8 | 19.1 | 529725 | 31.9 | 20.8 | 184797 | 31.9 | 20.4 | 366817 | 31.9 | 20.4 | | | |
| 358058 | 31.8 | 20.7 | 362110 | 31.8 | 20.6 | 184088 | 31.9 | 20.5 | 271197 | 31.9 | 20.0 | 425792 | 31.9 | 20.9 | | | |
| 35350 | 31.8 | 18.0 | 261574 | 31.8 | 20.6 | 54511 | 31.9 | 17.8 | 42636 | 31.9 | 18.3 | 53520 | 31.9 | 18.3 | | | |
| 33569 | 31.8 | 18.3 | 199870 | 31.8 | 20.2 | 387865 | 31.9 | 18.9 | 243016 | 31.9 | 20.8 | 179486 | 31.9 | 20.0 | | | |
| 40439 | 31.8 | 18.3 | 36492 | 31.8 | 17.5 | 130878 | 31.9 | 18.1 | 18262 | 31.9 | 17.4 | 421441 | 31.9 | 19.5 | | | |
| 230635 | 31.8 | 19.3 | 324735 | 31.8 | 21.0 | 168893 | 31.9 | 20.3 | 346097 | 31.9 | 20.0 | 309998 | 31.9 | 20.0 | | | |
| 118911 | 31.8 | 18.3 | 91265 | 31.8 | 19.3 | 303649 | 31.9 | 20.2 | 286038 | 31.9 | 19.7 | 380548 | 31.9 | 19.0 | | | |
| 481464 | 31.8 | 19.7 | 510949 | 31.8 | 20.5 | 490733 | 31.9 | 20.3 | 89694 | 31.9 | 17.6 | 41209 | 31.9 | 18.0 | | | |
| 110559 | 31.8 | 18.2 | 393938 | 31.8 | 20.0 | 376892 | 31.9 | 20.2 | 42644 | 31.9 | 17.0 | 94670 | 31.9 | 17.3 | | | |
| 429894 | 31.8 | 20.4 | 63028 | 31.8 | 18.3 | 306809 | 31.9 | 18.7 | 87064 | 31.9 | 18.0 | 126303 | 31.9 | 19.4 | | | |
| 262138 | 31.8 | 19.0 | 409896 | 31.8 | 19.6 | 92503 | 31.9 | 17.7 | 209232 | 31.9 | 19.3 | 384882 | 31.9 | 20.1 | | | |
| 39682 | 31.8 | 17.5 | 265616 | 31.8 | 20.0 | 498418 | 31.9 | 21.2 | 11901 | 31.9 | 16.7 | 304669 | 31.9 | 20.4 | | | |
| 141982 | 31.8 | 18.8 | 99137 | 31.8 | 19.5 | 362921 | 31.9 | 20.5 | 305483 | 31.9 | 21.1 | 526305 | 31.9 | 21.5 | | | |
| 84494 | 31.8 | 18.6 | 307203 | 31.8 | 21.0 | 78829 | 31.9 | 18.9 | 291661 | 31.9 | 20.0 | 344026 | 31.9 | 20.0 | | | |
| 354814 | 31.8 | 21.1 | 202271 | 31.9 | 19.6 | 69908 | 31.9 | 18.8 | 419707 | 31.9 | 20.5 | 225962 | 31.9 | 20.2 | | | |
| 34470 | 31.8 | 18.3 | 360285 | 31.9 | 17.5 | 184902 | 31.9 | 19.7 | 290750 | 31.9 | 20.1 | 208405 | 31.9 | 19.5 | | | |
| 308572 | 31.8 | 20.9 | 111217 | 31.9 | 18.4 | 63018 | 31.9 | 18.5 | 364098 | 31.9 | 20.9 | 89051 | 31.9 | 18.6 | | | |
| 341142 | 31.8 | 19.4 | 536984 | 31.9 | 20.3 | 291539 | 31.9 | 21.1 | 222561 | 31.9 | 20.9 | 171789 | 31.9 | 20.2 | | | |
| 388834 | 31.8 | 20.5 | 180720 | 31.9 | 19.9 | 31570 | 31.9 | 18.6 | 41025 | 31.9 | 17.8 | 269278 | 31.9 | 20.6 | | | |
| 507535 | 31.8 | 20.6 | 102678 | 31.9 | 17.3 | 419678 | 31.9 | 20.6 | 10885 | 31.9 | 16.7 | 374622 | 31.9 | 20.6 | | | |
| 479809 | 31.8 | 20.8 | 532074 | 31.9 | 22.1 | 468378 | 31.9 | 20.9 | 525038 | 31.9 | 20.1 | 210553 | 31.9 | 18.5 | | | |
| 184638 | 31.8 | 19.7 | 205885 | 31.9 | 20.5 | 93812 | 31.9 | 17.7 | 105280 | 31.9 | 19.9 | 192243 | 31.9 | 20.1 | | | |
| 140792 | 31.8 | 19.7 | 37240 | 31.9 | 18.7 | 514468 | 31.9 | 20.4 | 446617 | 31.9 | 19.7 | 413468 | 31.9 | 21.7 | | | |
| 150433 | 31.8 | 19.8 | 399667 | 31.9 | 20.5 | 56215 | 31.9 | 16.7 | 43658 | 31.9 | 17.4 | 11784 | 31.9 | 16.5 | | | |
| 151104 | 31.8 | 19.9 | 200163 | 31.9 | 19.8 | 512658 | 31.9 | 20.5 | 171748 | 31.9 | 19.8 | 430810 | 31.9 | 19.7 | | | |
| 477690 | 31.8 | 20.4 | 246971 | 31.9 | 18.5 | 54034 | 31.9 | 19.2 | 74788 | 31.9 | 18.6 | 438954 | 31.9 | 19.9 | | | |