

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 168001 | 2005 | GW ₁₃₃ | 15.7 | X | 327.85715 | 214.78808 | 80.27917 | 3.05778 | 0.0509469 | 0.20440251 | 2.8541617 | 20 | 6 13.5 | 19.3 |
| 168002 | 2005 | GS ₁₃₆ | 15.1 | X | 82.32213 | 219.95103 | 187.07332 | 12.99683 | 0.1381213 | 0.17956954 | 3.1115798 | 20 | 1 19.1 | 19.4 |
| 168003 | 2005 | GZ ₁₃₇ | 15.6 | X | 152.89983 | 207.93170 | 221.31159 | 12.86418 | 0.1338981 | 0.19822210 | 2.9131846 | 20 | 5 4.5 | 20.1 |
| 168004 | 2005 | GP ₁₅₉ | 16.0 | X | 288.38722 | 158.92068 | 185.28594 | 1.44298 | 0.0814590 | 0.20543963 | 2.8445478 | 20 | 6 18.6 | 19.8 |
| 168005 | 2005 | GT ₁₆₁ | 15.7 | X | 248.04795 | 320.68699 | 165.32602 | 12.38389 | 0.1098631 | 0.22864094 | 2.6487037 | 20 | 11 1.8 | 19.3 |
| 168006 | 2005 | GV ₁₇₀ | 14.8 | X | 210.24307 | 157.84677 | 71.93599 | 11.51358 | 0.0270468 | 0.17119952 | 3.2121885 | 20 | — | — |
| 168007 | 2005 | GE ₁₈₁ | 15.6 | X | 37.72064 | 92.81999 | 114.37136 | 3.15609 | 0.0043957 | 0.20319005 | 2.8655045 | 20 | 5 25.7 | 19.5 |
| 168008 | 2005 | GZ ₁₈₁ | 16.1 | X | 345.24127 | 346.49072 | 61.91589 | 3.83391 | 0.0947340 | 0.23119035 | 2.6291957 | 20 | 12 18.2 | 19.0 |
| 168009 | 2005 | GK ₂₀₃ | 16.8 | X | 66.49606 | 177.00532 | 192.97791 | 3.66604 | 0.2265441 | 0.24431848 | 2.5341772 | 20 | — | — |
| 168010 | 2005 | HP | 16.5 | X | 236.52866 | 106.86875 | 4.80225 | 5.35813 | 0.1472598 | 0.22387477 | 2.6861645 | 20 | 9 20.4 | 20.2 |
| 168011 | 2005 | HF ₁ | 16.0 | X | 183.70660 | 346.70354 | 54.12411 | 2.78686 | 0.0765179 | 0.19807746 | 2.9146025 | 20 | 4 28.9 | 20.4 |
| 168012 | 2005 | HP ₁ | 15.6 | X | 349.82774 | 300.12774 | 155.89991 | 0.79742 | 0.1043509 | 0.17461157 | 3.1702051 | 20 | — | — |
| 168013 | 2005 | HK ₄ | 15.1 | X | 289.28714 | 348.70315 | 252.69205 | 10.86319 | 0.0742734 | 0.18620162 | 3.0372691 | 20 | 2 7.0 | 19.6 |
| 168014 | 2005 | HS ₄ | 15.4 | X | 323.17109 | 124.31215 | 111.64936 | 3.41439 | 0.1274249 | 0.19144244 | 2.9815642 | 20 | 3 12.9 | 19.1 |
| 168015 | 2005 | HK ₅ | 14.9 | X | 234.65588 | 166.25242 | 85.46179 | 6.35238 | 0.1052568 | 0.17770012 | 3.1333644 | 20 | — | — |
| 168016 | 2005 | HZ ₇ | 15.3 | X | 236.33494 | 137.54913 | 187.10893 | 9.77069 | 0.0302678 | 0.19208375 | 2.9749223 | 20 | 3 26.5 | 19.5 |
| 168017 | 2005 | JK ₂ | 15.5 | X | 64.87869 | 182.95311 | 197.07354 | 4.22892 | 0.1839092 | 0.24067316 | 2.5596718 | 20 | — | — |
| 168018 | 2005 | JG ₈ | 16.2 | X | 283.84785 | 159.87327 | 201.38604 | 5.69909 | 0.0759036 | 0.20872085 | 2.8146571 | 20 | 7 5.4 | 20.0 |
| 168019 | 2005 | JX ₈ | 15.8 | X | 117.06511 | 358.06736 | 33.38234 | 1.33496 | 0.1199689 | 0.18513528 | 3.0489005 | 20 | 2 11.5 | 20.0 |
| 168020 | 2005 | JJ ₂₁ | 15.8 | X | 285.34182 | 322.53350 | 283.17766 | 0.78265 | 0.1032160 | 0.18581632 | 3.0414462 | 20 | 2 7.9 | 20.2 |
| 168021 | 2005 | JX ₂₃ | 16.6 | X | 23.78300 | 23.73475 | 138.06421 | 1.41348 | 0.1026434 | 0.19090515 | 2.9871540 | 20 | 3 13.5 | 20.0 |
| 168022 | 2005 | JK ₄₄ | 14.9 | X | 145.44526 | 253.02824 | 49.69926 | 19.35317 | 0.1231433 | 0.16930444 | 3.2361141 | 20 | — | — |
| 168023 | 2005 | JX ₄₆ | 15.4 | X | 183.16494 | 255.54681 | 68.94110 | 2.88623 | 0.0924667 | 0.18064426 | 3.0992262 | 20 | 1 30.1 | 20.2 |
| 168024 | 2005 | JC ₇₇ | 15.2 | X | 24.28471 | 200.06311 | 236.42277 | 21.89407 | 0.0370568 | 0.24191933 | 2.5508740 | 20 | — | — |
| 168025 | 2005 | JS ₈₄ | 15.6 | X | 62.17359 | 354.69387 | 18.14364 | 1.74017 | 0.0573627 | 0.17164135 | 3.2066736 | 20 | — | — |
| 168026 | 2005 | JA ₈₉ | 16.0 | X | 330.39708 | 307.85998 | 167.13055 | 3.63647 | 0.1415284 | 0.23958677 | 2.5674037 | 20 | — | — |
| 168027 | 2005 | JK ₉₂ | 14.8 | X | 213.82481 | 1.02513 | 261.01790 | 15.07800 | 0.0341847 | 0.17519549 | 3.1631571 | 20 | — | — |
| 168028 | 2005 | JK ₉₄ | 15.1 | X | 172.86311 | 323.17589 | 41.21339 | 9.85034 | 0.0971881 | 0.18581042 | 3.0415106 | 20 | 3 10.1 | 19.9 |
| 168029 | 2005 | JF ₉₈ | 15.1 | X | 156.44819 | 278.94266 | 67.79406 | 11.44126 | 0.0937432 | 0.17905951 | 3.1174856 | 20 | 1 31.7 | 20.0 |
| 168030 | 2005 | JK ₁₀₀ | 15.1 | X | 282.57166 | 160.43373 | 76.85684 | 4.51641 | 0.0278386 | 0.18455162 | 3.0553254 | 20 | 2 6.3 | 19.4 |
| 168031 | 2005 | JH ₁₀₃ | 15.0 | X | 44.93721 | 305.60364 | 125.29938 | 18.48519 | 0.1535584 | 0.17326404 | 3.1866211 | 20 | — | — |
| 168032 | 2005 | JB ₁₀₅ | 16.3 | X | 312.27039 | 280.04951 | 191.00117 | 8.44892 | 0.1190258 | 0.23889819 | 2.5723347 | 20 | — | — |
| 168033 | 2005 | JJ ₁₄₃ | 12.5 | X | 332.41580 | 252.48851 | 121.67317 | 5.66881 | 0.1390957 | 0.08258524 | 5.2223715 | 20 | 9 13.4 | 18.7 |
| 168034 | 2005 | JN ₁₅₁ | 15.3 | X | 328.75795 | 320.45490 | 40.70938 | 14.80810 | 0.1094639 | 0.21908500 | 2.7251743 | 20 | 9 21.8 | 18.6 |
| 168035 | 2005 | JV ₁₅₁ | 15.1 | X | 308.54100 | 14.54781 | 183.41092 | 11.12036 | 0.0327284 | 0.18726977 | 3.0256889 | 20 | 1 16.9 | 19.5 |
| 168036 | 2005 | JS ₁₅₆ | 14.9 | X | 195.92038 | 88.10066 | 180.24212 | 20.83753 | 0.0938156 | 0.17323395 | 3.1869901 | 20 | — | — |
| 168037 | 2005 | JK ₁₅₇ | 15.2 | X | 137.33750 | 90.77841 | 235.88845 | 6.54555 | 0.0292116 | 0.17212966 | 3.2006062 | 20 | — | — |
| 168038 | 2005 | JC ₁₇₈ | 15.8 | X | 323.94035 | 234.00254 | 40.52230 | 2.58266 | 0.0610902 | 0.19869795 | 2.9085316 | 20 | 5 9.8 | 19.6 |
| 168039 | 2005 | LR ₁ | 15.1 | X | 57.91966 | 160.91306 | 170.32444 | 8.92596 | 0.1374948 | 0.15412782 | 3.4452073 | 20 | 12 6.9 | 20.2 |
| 168040 | 2005 | LT ₅₁ | 15.4 | X | 65.26278 | 269.37337 | 199.29105 | 8.52999 | 0.1075594 | 0.18486180 | 3.0519068 | 20 | 3 7.3 | 19.4 |
| 168041 | 2005 | ML ₁₈ | 15.3 | X | 52.55409 | 286.05119 | 149.95792 | 10.03901 | 0.0792948 | 0.17536513 | 3.1611169 | 20 | 1 8.7 | 19.5 |
| 168042 | 2005 | MN ₂₃ | 15.2 | X | 319.78344 | 345.82710 | 202.02293 | 17.91941 | 0.1453848 | 0.18056348 | 3.1001504 | 20 | 1 3.7 | 19.7 |
| 168043 | 2005 | NW ₇₀ | 14.9 | X | 274.05115 | 296.91308 | 238.58281 | 15.16467 | 0.0933682 | 0.17008120 | 3.2262536 | 20 | — | — |
| 168044 | 2005 | SG | 19.0 | X | 142.08634 | 205.51976 | 23.52757 | 34.83581 | 0.2831296 | 0.10436952 | 0.9810066 | 20 | — | — |
| 168045 | 2005 | YX ₂₁₄ | 16.2 | X | 272.14516 | 270.52591 | 4.02297 | 20.11882 | 0.0310942 | 0.35372147 | 1.9801364 | 20 | 2 25.5 | 18.5 |
| 168046 | 2006 | AQ ₁ | 17.2 | X | 156.64929 | 193.15362 | 328.78047 | 17.60729 | 0.0401956 | 0.37832335 | 1.8933342 | 20 | 9 15.9 | 19.4 |
| 168047 | 2006 | BV ₅ | 17.5 | X | 185.31575 | 118.97496 | 350.46782 | 18.71371 | 0.0735739 | 0.37548272 | 1.9028713 | 20 | 8 17.1 | 19.8 |
| 168048 | 2006 | BG ₃₄ | 17.0 | X | 346.63249 | 326.37643 | 331.55287 | 1.62388 | 0.2310116 | 0.29682700 | 2.2257025 | 20 | 7 26.6 | 17.8 |
| 168049 | 2006 | BH ₄₁ | 16.9 | X | 348.46099 | 312.64021 | 342.85278 | 17.89664 | 0.0805690 | 0.37036717 | 1.9203530 | 20 | 8 8.8 | 18.4 |
| 168050 | 2006 | BD ₅₆ | 16.8 | X | 260.04096 | 337.78098 | 328.76807 | 3.64293 | 0.1532291 | 0.28476026 | 2.2881428 | 20 | 3 9.8 | 20.1 |
| 168051 | 2006 | BM ₈₁ | 17.7 | X | 42.58004 | 267.74056 | 3.69166 | 5.79254 | 0.0791017 | 0.30428390 | 2.1891897 | 20 | 9 20.3 | 19.9 |
| 168052 | 2006 | BK ₉₅ | 17.0 | X | 222.40545 | 48.35255 | 198.24220 | 0.90411 | 0.1428191 | 0.26366127 | 2.4086396 | 20 | — | — |
| 168053 | 2006 | BT ₉₅ | 17.4 | X | 31.19942 | 356.99517 | 241.23867 | 0.52338 | 0.1741668 | 0.29389987 | 2.2404562 | 20 | 7 25.3 | 19.2 |
| 168054 | 2006 | BQ ₁₀₂ | 16.8 | X | 207.90164 | 84.80827 | 184.65952 | 1.97324 | 0.1931297 | 0.26678085 | 2.3898260 | 20 | — | — |
| 168055 | 2006 | BD ₁₂₄ | 17.0 | X | 79.58923 | 298.26273 | 340.47563 | 3.40921 | 0.1609636 | 0.31208947 | 2.1525338 | 20 | 11 27.2 | 20.0 |
| 168056 | 2006 | BD ₁₅₇ | 16.8 | X | 328.44621 | 217.70539 | 19.97676 | 3.53842 | 0.0747634 | 0.28364970 | 2.2941114 | 20 | 3 19.4 | 19.3 |
| 168057 | 2006 | BA ₁₆₇ | 16.7 | X | 175.15110 | 304.78396 | 356.26137 | 1.22540 | 0.1917195 | 0.26724621 | 2.3870509 | 20 | — | — |
| 168058 | 2006 | BL ₁₉₉ | 17.0 | X | 346.44410 | 11.54048 | 182.38829 | 2.04422 | 0.1406196 | 0.27902179 | 2.3194088 | 20 | 2 3.7 | 19.2 |
| 168059 | 2006 | BW ₂₅₀ | 17.6 | X | 3.54525 | 94.19097 | 145.16837 | 4.67677 | 0.1177382 | 0.29108602 | 2.2548716 | 20 | 5 22.7 | 19.5 |
| 168060 | 2006 | BM ₂₅₄ | 17.7 | X | 318.84085 | 100.89229 | 154.73085 | 2.85959 | 0.0896649 | 0.28708160 | 2.2757915 | 20 | 3 27.8 | 20.1 |
| 168061 | 2006 | BJ ₂₅₆ | 16.1 | X | 18.69218 | 278.46720 | 346.17726 | 6.53782 | 0.1776059 | 0.29752616 | 2.2222143 | 20 | 8 15.9 | 17.8 |
| 168062 | 2006 | BB ₂₆₆ | 16.0 | X | 111.03482 | 78.42134 | 180.91016 | 4.87952 | 0.2988236 | 0.23526127 | 2.5987774 | 20 | 11 26.9 | 20.8 |
| 168063 | 2006 | BH ₂₆₆ | 15.4 | X | 185.13314 | 33.09826 | 175.91078 | 5.37651 | 0.1289103 | 0.17356852 | 3.1828933 | 20 | 11 19.8 | 20.4 |
| 168064 | 2006 | BL ₂₆₆ | 16.3 | X | 103.72287 | 155.03437 | 93.83456 | 3.53391 | 0.1824608 | 0.23292973 | 2.6160905 | 20 | 11 3.6 | 20.5 |
| 168065 | 2006 | BM ₂₆₆ | 16.8 | X | 290.68023 | 125.74194 | 109.06661 | 3.18960 | 0.1108353 | 0.26732430 | 2.3865860 | 20 | 1 19.2 | 20.0 |
| 168066 | 2006 | BO ₂₆₉ | 14.7 | X | 324.46124 | 189.79657 | 71.88162 | 9.62170 | 0.2844087 | 0.21322137 | 2.7749099 | 20 | 3 26.2 | 18.0 |
| 168067 | 2006 | CO ₇ | 16.7 | X | 91.80478 | 83.41351 | 198.82449 | 2.65282 | 0.1669209 | 0.24561583 | 2.5252157 | 20 | 12 3.2 | 20.6 |
| 168068 | 2006 | CC ₂₃ | 16.5 | X | 2.02141 | 230.25661 | 44.75793 | 6.16229 | 0.1575377 | 0.28756985 | 2.2732148 | 20 | 7 22.5 | 18.3 |
| 168069 | 2006 | CT ₃₈ | 16.5 | X | 249.90495 | 339.25063 | 271.52574 | 1.64671 | 0.1692981 | 0.26914579 | 2.3758061 | 20 | — | — |
| 168070 | 2006 | CK ₄₁ | 17.0 | X | 339.05183 | 107.52011 | 197.00641 | 4.56343 | 0.1671914 | 0.29714278 | 2.2241254 | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168081 2006 DB ₅₉ | 17.2 | X | 126.16861 | 250.94746 | 324.04390 | 1.66906 | 0.0963358 | 0.30793345 | 2.1718582 | 20 | 10 18.9 | 20.0 |
| 168082 2006 DJ ₆₀ | 17.5 | X | 274.85930 | 42.96396 | 217.92814 | 0.64463 | 0.1669895 | 0.27234471 | 2.3571656 | 20 | 1 27.4 | 20.9 |
| 168083 2006 DE ₆₂ | 15.5 | X | 26.44893 | 60.55106 | 183.61950 | 12.65691 | 0.3779421 | 0.22125746 | 2.7073066 | 20 | 8 21.1 | 18.3 |
| 168084 2006 DC ₆₈ | 17.0 | X | 256.34687 | 235.42054 | 195.10393 | 21.96383 | 0.0467738 | 0.37793801 | 1.8946210 | 20 | 10 1.3 | 18.4 |
| 168085 2006 DC ₇₀ | 16.1 | X | 67.93177 | 80.22075 | 148.98334 | 3.01515 | 0.0689866 | 0.22932332 | 2.6434468 | 20 | 8 15.0 | 19.6 |
| 168086 2006 DF ₇₀ | 17.2 | X | 332.81970 | 244.30282 | 2.95381 | 7.79539 | 0.0834202 | 0.28306260 | 2.2972824 | 20 | 4 6.3 | 19.6 |
| 168087 2006 DW ₇₅ | 17.1 | X | 9.57445 | 252.22474 | 352.58988 | 7.04515 | 0.0611139 | 0.29305653 | 2.2447524 | 20 | 6 8.3 | 19.5 |
| 168088 2006 DY ₇₉ | 16.7 | X | 162.01329 | 122.00009 | 180.54863 | 2.20576 | 0.1591770 | 0.26203623 | 2.4185876 | 20 | — | — |
| 168089 2006 DM ₈₄ | 17.2 | X | 14.16913 | 128.18682 | 230.09762 | 1.38397 | 0.0668549 | 0.29537556 | 2.2329878 | 20 | 7 9.7 | 19.5 |
| 168090 2006 DO ₉₆ | 16.8 | X | 51.71208 | 110.35400 | 183.73560 | 7.43120 | 0.1914544 | 0.23498179 | 2.6008377 | 20 | 11 8.7 | 20.4 |
| 168091 2006 DY ₉₇ | 15.8 | X | 98.48760 | 90.34318 | 155.98938 | 13.83496 | 0.0938668 | 0.23112473 | 2.6296934 | 20 | 10 21.9 | 19.8 |
| 168092 2006 DM ₁₀₂ | 16.9 | X | 28.60962 | 270.40227 | 354.61091 | 7.09199 | 0.1186426 | 0.29860572 | 2.2168551 | 20 | 8 25.9 | 19.0 |
| 168093 2006 DT ₁₀₃ | 16.9 | X | 22.84087 | 292.83096 | 357.50969 | 3.70559 | 0.1777113 | 0.23188943 | 2.6239088 | 20 | 9 19.4 | 19.6 |
| 168094 2006 DB ₁₁₈ | 16.6 | X | 220.36161 | 143.14578 | 166.76023 | 5.30505 | 0.1857272 | 0.27133123 | 2.3630316 | 20 | 2 5.0 | 20.4 |
| 168095 2006 DD ₁₂₃ | 16.8 | X | 246.64925 | 72.98348 | 169.51286 | 4.69820 | 0.1108987 | 0.26719112 | 2.3873790 | 20 | — | — |
| 168096 2006 DU ₁₄₁ | 16.6 | X | 258.66536 | 174.92039 | 111.69428 | 3.96046 | 0.2347652 | 0.27525588 | 2.3405162 | 20 | 2 7.9 | 20.4 |
| 168097 2006 DL ₁₉₂ | 16.4 | X | 7.13892 | 180.82066 | 82.80034 | 3.39809 | 0.1200754 | 0.29130979 | 2.2537167 | 20 | 7 9.6 | 18.3 |
| 168098 2006 DO ₁₉₉ | 16.9 | X | 45.76681 | 230.66120 | 18.13122 | 7.43810 | 0.0899217 | 0.29902262 | 2.2147941 | 20 | 8 26.1 | 19.3 |
| 168099 2006 DQ ₂₀₈ | 15.6 | X | 26.52285 | 295.05714 | 340.51557 | 6.75647 | 0.1679026 | 0.22656648 | 2.6648470 | 20 | 9 2.1 | 18.5 |
| 168100 2006 DD ₂₁₀ | 17.1 | X | 59.21984 | 125.29046 | 145.30794 | 2.38816 | 0.1974542 | 0.23281262 | 2.6169677 | 20 | 10 18.4 | 20.7 |
| 168101 2006 DJ ₂₁₀ | 17.2 | X | 288.67985 | 233.65474 | 15.51555 | 2.28985 | 0.1606399 | 0.27385862 | 2.3484705 | 20 | 1 28.8 | 20.5 |
| 168102 2006 DB ₂₁₂ | 16.8 | X | 217.05727 | 78.57455 | 183.17767 | 4.55345 | 0.1615498 | 0.26252146 | 2.4156064 | 20 | — | — |
| 168103 2006 DS ₂₁₂ | 16.4 | X | 346.35344 | 250.74405 | 43.49782 | 21.77387 | 0.0539772 | 0.36529417 | 1.9380913 | 20 | 8 3.1 | 18.7 |
| 168104 2006 EQ ₈ | 16.1 | X | 151.24427 | 293.27238 | 22.68715 | 2.46713 | 0.2100512 | 0.26116279 | 2.4239771 | 20 | — | — |
| 168105 2006 EJ ₁₉ | 16.2 | X | 266.98827 | 135.95381 | 168.04010 | 3.39975 | 0.1854006 | 0.27878437 | 2.3207255 | 20 | 3 11.9 | 19.7 |
| 168106 2006 EK ₄₁ | 17.2 | X | 45.49911 | 10.30330 | 268.10564 | 1.31227 | 0.1058312 | 0.30282516 | 2.1962144 | 20 | 10 7.9 | 19.8 |
| 168107 2006 EQ ₄₁ | 16.5 | X | 43.37415 | 273.23056 | 318.81108 | 4.53342 | 0.1282670 | 0.22207674 | 2.7006440 | 20 | 8 7.1 | 19.7 |
| 168108 2006 EM ₅₁ | 16.6 | X | 75.05563 | 144.57544 | 156.19191 | 13.03747 | 0.1646184 | 0.24455011 | 2.5325467 | 20 | 12 10.7 | 20.7 |
| 168109 2006 EN ₅₃ | 16.4 | X | 188.26760 | 228.18728 | 28.87328 | 7.71974 | 0.0737794 | 0.25569973 | 2.4583811 | 20 | — | — |
| 168110 2006 EE ₆₁ | 16.3 | X | 231.46721 | 60.01192 | 228.30470 | 4.89828 | 0.1161277 | 0.27130307 | 2.3631951 | 20 | 1 20.8 | 20.0 |
| 168111 2006 EZ ₆₂ | 17.1 | X | 358.46716 | 323.20616 | 247.25784 | 2.40377 | 0.1057296 | 0.28156079 | 2.3054441 | 20 | 3 24.7 | 19.2 |
| 168112 2006 FG | 15.3 | X | 358.23930 | 238.37758 | 33.47793 | 16.08488 | 0.3349063 | 0.21853045 | 2.7297827 | 20 | 7 10.5 | 17.3 |
| 168113 2006 FB ₃ | 15.1 | X | 133.38147 | 93.57048 | 190.93117 | 15.71976 | 0.2258212 | 0.17629165 | 3.1500315 | 20 | 12 29.1 | 20.8 |
| 168114 2006 FU ₈ | 16.6 | X | 215.37485 | 140.38131 | 186.96587 | 2.39458 | 0.1837082 | 0.27098595 | 2.3650384 | 20 | 2 22.4 | 20.3 |
| 168115 2006 FQ ₉ | 15.7 | X | 42.07180 | 42.37737 | 171.16852 | 9.10699 | 0.1270575 | 0.21983446 | 2.7189770 | 20 | 6 24.1 | 19.1 |
| 168116 2006 FL ₁₁ | 16.5 | X | 280.65596 | 236.59200 | 33.44241 | 7.29288 | 0.1105392 | 0.27648017 | 2.3336017 | 20 | 2 24.5 | 19.6 |
| 168117 2006 FW ₁₁ | 16.9 | X | 57.15484 | 285.19569 | 13.95519 | 12.71239 | 0.2057859 | 0.23727133 | 2.5840795 | 20 | 11 18.2 | 20.8 |
| 168118 2006 FS ₂₃ | 16.6 | X | 155.16318 | 274.20056 | 71.28312 | 2.30429 | 0.2021239 | 0.26356691 | 2.4092144 | 20 | 1 25.7 | 20.2 |
| 168119 2006 FZ ₂₇ | 16.8 | X | 36.20072 | 68.23362 | 190.17009 | 4.29261 | 0.1044101 | 0.29395931 | 2.2401541 | 20 | 8 22.0 | 19.1 |
| 168120 2006 FM ₃₀ | 17.4 | X | 115.60410 | 53.98449 | 203.89876 | 4.24511 | 0.2291579 | 0.23892951 | 2.5721099 | 20 | 11 26.5 | 21.9 |
| 168121 2006 FN ₃₂ | 16.3 | X | 275.70233 | 130.31005 | 195.75833 | 8.76898 | 0.2313312 | 0.21070083 | 2.7969963 | 20 | 4 17.9 | 20.5 |
| 168122 2006 FV ₃₄ | 16.6 | X | 61.14574 | 3.77836 | 212.46513 | 6.36602 | 0.0954477 | 0.29127900 | 2.2538756 | 20 | 7 25.8 | 19.3 |
| 168123 2006 FP ₃₇ | 16.3 | X | 32.29318 | 248.62767 | 333.83661 | 5.08152 | 0.1584660 | 0.28659441 | 2.2783699 | 20 | 6 28.5 | 18.4 |
| 168124 2006 FL ₄₄ | 17.3 | X | 14.78090 | 241.99788 | 18.85916 | 0.79758 | 0.1254349 | 0.29271890 | 2.2464782 | 20 | 7 21.9 | 20.4 |
| 168125 2006 FS ₄₄ | 17.1 | X | 280.32880 | 267.94828 | 339.46957 | 1.77258 | 0.1791466 | 0.27227938 | 2.3575426 | 20 | 1 15.4 | 20.4 |
| 168126 Chengbruce | 15.9 | X | 140.85374 | 56.22117 | 158.50447 | 9.19281 | 0.0829683 | 0.23807750 | 2.5784228 | 20 | 10 27.2 | 19.8 |
| 168127 2006 GC ₃ | 16.9 | X | 95.80510 | 43.82739 | 121.79396 | 5.20773 | 0.1119508 | 0.29202813 | 2.2500194 | 20 | 7 5.3 | 19.7 |
| 168128 2006 GO ₇ | 16.5 | X | 227.94042 | 271.30152 | 46.44816 | 10.31636 | 0.2727406 | 0.27110431 | 2.3643500 | 20 | 2 24.4 | 20.8 |
| 168129 2006 GS ₁₉ | 17.1 | X | 251.68614 | 212.89644 | 171.38475 | 4.68070 | 0.1786181 | 0.29210032 | 2.2496486 | 20 | 6 12.2 | 20.1 |
| 168130 2006 GD ₂₈ | 16.7 | X | 228.57183 | 221.80516 | 71.01017 | 3.64327 | 0.2101297 | 0.26457278 | 2.4031042 | 20 | 1 24.1 | 20.6 |
| 168131 2006 GZ ₃₁ | 16.1 | X | 32.84188 | 77.73196 | 195.44529 | 12.45376 | 0.2477966 | 0.22449286 | 2.6812318 | 20 | 9 20.6 | 19.2 |
| 168132 2006 GE ₃₂ | 15.1 | X | 85.61769 | 292.98793 | 356.00848 | 11.09238 | 0.2513636 | 0.23518321 | 2.5993525 | 20 | 12 8.0 | 19.6 |
| 168133 2006 GE ₃₇ | 16.9 | X | 332.32727 | 103.48855 | 153.43354 | 2.54191 | 0.1593816 | 0.28124983 | 2.3071431 | 20 | 4 11.8 | 18.8 |
| 168134 2006 GP ₃₇ | 16.9 | X | 26.70605 | 8.38495 | 210.49327 | 2.80740 | 0.1759618 | 0.28507412 | 2.2864631 | 20 | 6 12.5 | 18.5 |
| 168135 2006 GU ₃₈ | 16.1 | X | 65.58707 | 43.18073 | 247.38626 | 9.84362 | 0.2391989 | 0.23210094 | 2.6223145 | 20 | 11 22.5 | 20.1 |
| 168136 2006 GP ₄₁ | 16.9 | X | 334.76491 | 255.97240 | 14.83721 | 3.03461 | 0.1919517 | 0.28445243 | 2.2897933 | 20 | 5 2.2 | 18.5 |
| 168137 2006 GD ₄₂ | 16.2 | X | 103.01484 | 53.42838 | 186.25747 | 14.18576 | 0.1729955 | 0.23286743 | 2.6165571 | 20 | 10 22.7 | 20.3 |
| 168138 2006 GW ₄₉ | 15.6 | X | 74.87623 | 61.14956 | 193.69580 | 11.49211 | 0.1480689 | 0.22830000 | 2.6513401 | 20 | 10 8.1 | 19.2 |
| 168139 2006 GA ₅₀ | 14.7 | X | 147.60927 | 293.10248 | 2.23867 | 23.61354 | 0.2230805 | 0.17906235 | 3.1174526 | 20 | — | — |
| 168140 2006 GB ₅₂ | 16.2 | X | 95.61554 | 255.66044 | 328.47139 | 5.85664 | 0.1067881 | 0.30115941 | 2.2043054 | 20 | 9 24.7 | 19.2 |
| 168141 2006 HL | 16.5 | X | 200.02371 | 233.82577 | 44.41194 | 7.22028 | 0.1320753 | 0.26049171 | 2.4281385 | 20 | — | — |
| 168142 2006 HB ₃ | 16.4 | X | 196.01906 | 240.18787 | 98.04327 | 3.91215 | 0.1604577 | 0.26917240 | 2.3756495 | 20 | 2 20.8 | 20.2 |
| 168143 2006 HX ₇ | 16.9 | X | 75.12920 | 84.57812 | 209.92890 | 3.08524 | 0.1740951 | 0.30799916 | 2.1715493 | 20 | 12 14.2 | 20.1 |
| 168144 2006 HP ₈ | 16.8 | X | 162.41895 | 94.23104 | 238.35293 | 1.38912 | 0.1740941 | 0.26543934 | 2.3978712 | 20 | 1 13.3 | 20.2 |
| 168145 2006 HA ₂₄ | 17.1 | X | 142.14232 | 136.76594 | 114.42293 | 2.35676 | 0.0406792 | 0.24273252 | 2.5451736 | 20 | 12 11.9 | 20.6 |
| 168146 2006 HY ₂₄ | 16.3 | X | 309.78761 | 313.42698 | 137.09256 | 3.34071 | 0.0316786 | 0.24400028 | 2.5363499 | 20 | 12 22.1 | 19.4 |
| 168147 2006 HV ₂₇ | 15.9 | X | 11.33685 | 234.81619 | 80.47382 | 13.36406 | 0.1446595 | 0.22591259 | 2.6699867 | 20 | 10 7.2 | 19.2 |
| 168148 2006 HP ₃₀ | 15.8 | X | 324.95474 | 87.63052 | 165.10085 | 9.40726 | 0.1080495 | 0.20940563 | 2.8085176 | 20 | 4 8.2 | 19.3 |
| 168149 2006 HH ₃₁ | 16.4 | X | 204.91551 | 235.85784 | 36.31195 | 6.79864 | 0.0905543 | 0.25990733 | 2.4317767 | 20 | — | — |
| 168150 2006 HA ₃₃ | 16.5 | X | 335.69507 | 263.97281 | 342.19972 | 6.47408 | 0.0429398 | 0.28359521 | 2.2944052 | 20 | 4 12.9 | 19.1 |
| 168151 2006 HC ₃₅ | 15.5 | X | 179.62771 | 76.08680 | 215.33939 | 1.18361 | 0.2206754 | 0.18273425 | 3.0755497 | 20 | — | — |
| 168152 2006 HO ₄₀ | 16.6 | X | 62.66875 | 17.30900 | 178.29509 | 4.96549 | 0.0776412 | 0.28710514 | 2.2756671 | 20 | 6 25.5 | 19.2 |
| 168153 2006 HJ ₄₂ | 16.8 | X | 227.52556 | 248.14308 | 41.37468 | 2.65333 | 0.1870738 | 0.26821692 | 2.3812881 | 20 | 1 19.3 | 20.7 |
| 168154 2006 HM ₄₂ | 14.4 | X | 143.60446 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168161 2006 HE ₅₇ | 16.7 | X | 348.02536 | 198.49953 | 59.38758 | 7.15543 | 0.0733748 | 0.28447937 | 2.2896488 | 20 | 5 21.8 | 18.7 |
| 168162 2006 HK ₅₇ | 16.0 | X | 45.88025 | 201.72724 | 107.78109 | 3.71307 | 0.2142932 | 0.23176557 | 2.6248436 | 20 | 11 23.1 | 19.6 |
| 168163 2006 HW ₅₉ | 15.9 | X | 103.96380 | 71.47035 | 192.72639 | 14.53719 | 0.0904723 | 0.23706993 | 2.5855428 | 20 | 11 17.8 | 19.8 |
| 168164 2006 HV ₆₀ | 16.1 | X | 47.20714 | 118.33457 | 171.31399 | 13.01669 | 0.1866039 | 0.23031767 | 2.6358329 | 20 | 10 28.5 | 19.8 |
| 168165 2006 HA ₆₁ | 16.0 | X | 115.09008 | 49.21353 | 232.01589 | 17.20087 | 0.2127863 | 0.23873602 | 2.5734994 | 20 | 12 20.9 | 20.5 |
| 168166 2006 HT ₆₃ | 16.5 | X | 311.72411 | 156.10254 | 166.89162 | 2.99200 | 0.0772300 | 0.21814729 | 2.7329782 | 20 | 6 25.0 | 19.9 |
| 168167 2006 HU ₆₃ | 16.1 | X | 344.91616 | 126.64310 | 185.00696 | 3.42371 | 0.1100347 | 0.22167746 | 2.7038859 | 20 | 8 1.5 | 19.0 |
| 168168 2006 HD ₆₉ | 16.1 | X | 263.94123 | 140.72235 | 213.13870 | 4.30291 | 0.1752388 | 0.21223560 | 2.7834958 | 20 | 5 17.1 | 20.2 |
| 168169 2006 HP ₆₉ | 15.7 | X | 32.42506 | 194.27949 | 85.55766 | 12.95038 | 0.1596848 | 0.22395196 | 2.6855473 | 20 | 9 23.9 | 19.2 |
| 168170 2006 HX ₇₆ | 16.5 | X | 91.36991 | 249.16777 | 23.48283 | 4.24706 | 0.1486397 | 0.23459278 | 2.6037121 | 20 | 11 16.7 | 20.6 |
| 168171 2006 HM ₇₇ | 15.7 | X | 340.87616 | 266.62221 | 106.09512 | 13.33164 | 0.1857230 | 0.23012881 | 2.6372748 | 20 | 11 4.7 | 18.5 |
| 168172 2006 HE ₈₀ | 16.9 | X | 344.88988 | 138.73447 | 215.80131 | 1.90017 | 0.0583432 | 0.23064081 | 2.6333704 | 20 | 10 2.5 | 20.0 |
| 168173 2006 HF ₈₂ | 16.1 | X | 120.38242 | 324.16489 | 54.21508 | 7.43391 | 0.1414990 | 0.26051596 | 2.4279877 | 20 | 1 23.8 | 19.3 |
| 168174 2006 HG ₈₂ | 16.8 | X | 326.69237 | 292.41898 | 206.43810 | 1.67907 | 0.1410012 | 0.25899042 | 2.4375129 | 20 | — | — |
| 168175 2006 HP ₈₃ | 15.9 | X | 324.82472 | 97.52321 | 195.32172 | 6.54893 | 0.1074785 | 0.21329155 | 2.7743012 | 20 | 5 31.8 | 19.2 |
| 168176 2006 HS ₈₃ | 15.3 | X | 124.81626 | 180.42375 | 133.94877 | 4.98512 | 0.1710193 | 0.17622416 | 3.1508357 | 20 | — | — |
| 168177 2006 HU ₈₃ | 16.7 | X | 292.64225 | 202.18592 | 191.39300 | 6.67417 | 0.1622998 | 0.29708572 | 2.2244101 | 20 | 8 31.9 | 18.6 |
| 168178 2006 HN ₈₄ | 16.0 | X | 331.21227 | 101.17251 | 213.64464 | 11.21846 | 0.1284289 | 0.21749167 | 2.7384677 | 20 | 7 8.8 | 19.3 |
| 168179 2006 HT ₈₅ | 17.4 | X | 244.08417 | 307.93304 | 83.62218 | 1.55319 | 0.1051903 | 0.29421607 | 2.2388506 | 20 | 6 22.8 | 20.1 |
| 168180 2006 HV ₈₈ | 15.7 | X | 64.30294 | 173.53710 | 150.96129 | 14.00848 | 0.1467512 | 0.23692124 | 2.5866245 | 20 | 12 24.3 | 19.8 |
| 168181 2006 HQ ₉₀ | 17.0 | X | 170.02349 | 121.94053 | 204.36279 | 4.54302 | 0.1122920 | 0.25946177 | 2.4345599 | 20 | 1 8.1 | 20.6 |
| 168182 2006 HS ₉₀ | 15.6 | X | 351.90450 | 177.59439 | 145.07629 | 15.55769 | 0.1126761 | 0.22536231 | 2.6743312 | 20 | 9 2.7 | 18.5 |
| 168183 2006 HT ₉₆ | 15.8 | X | 4.47375 | 113.60891 | 220.25744 | 3.28640 | 0.2338409 | 0.22631220 | 2.6668427 | 20 | 10 25.7 | 18.4 |
| 168184 2006 HH ₁₀₂ | 16.7 | X | 333.79871 | 191.91377 | 158.85247 | 4.05669 | 0.1170780 | 0.22531979 | 2.6746676 | 20 | 9 9.1 | 19.3 |
| 168185 2006 HV ₁₀₂ | 16.4 | X | 266.79422 | 180.00998 | 144.46156 | 2.94306 | 0.0825564 | 0.20851561 | 2.8165038 | 20 | 4 25.8 | 20.3 |
| 168186 2006 HX ₁₀₈ | 15.8 | X | 38.73005 | 194.45835 | 114.29613 | 7.17739 | 0.1800541 | 0.22960195 | 2.6413077 | 20 | 11 9.9 | 19.3 |
| 168187 2006 HG ₁₁₄ | 16.7 | X | 314.91460 | 212.75419 | 63.23298 | 3.83298 | 0.2383923 | 0.27635292 | 2.3343179 | 20 | 3 28.2 | 19.2 |
| 168188 2006 HN ₁₁₅ | 16.9 | X | 115.91327 | 201.08236 | 72.55065 | 1.60351 | 0.1341978 | 0.24106268 | 2.5569137 | 20 | 12 12.4 | 20.9 |
| 168189 2006 HF ₁₁₇ | 15.7 | X | 65.95068 | 76.50737 | 223.83777 | 12.01090 | 0.1828917 | 0.23195892 | 2.6233848 | 20 | 11 29.2 | 19.6 |
| 168190 2006 HA ₁₂₁ | 16.7 | X | 270.14868 | 182.15076 | 178.95276 | 6.49222 | 0.0475521 | 0.21615705 | 2.7497282 | 20 | 6 21.7 | 20.5 |
| 168191 2006 HQ ₁₅₂ | 15.7 | X | 135.06264 | 89.24146 | 161.08464 | 7.45342 | 0.1541137 | 0.23780077 | 2.5802426 | 20 | 12 2.8 | 20.0 |
| 168192 2006 JZ | 16.2 | X | 121.59205 | 263.23412 | 1.26163 | 7.80846 | 0.1280304 | 0.24045956 | 2.5611874 | 20 | 12 5.1 | 20.4 |
| 168193 2006 JH ₁ | 15.7 | X | 198.91618 | 178.34747 | 95.14804 | 2.89713 | 0.1385252 | 0.18864479 | 3.0109682 | 20 | — | — |
| 168194 2006 JT ₁ | 16.4 | X | 249.33666 | 219.56380 | 38.00605 | 5.65827 | 0.0984213 | 0.26445986 | 2.4037882 | 20 | 1 4.3 | 19.9 |
| 168195 2006 JZ ₁ | 17.2 | X | 238.65308 | 195.85682 | 36.33794 | 4.54046 | 0.1729257 | 0.25788495 | 2.4444738 | 20 | — | — |
| 168196 2006 JL ₅ | 16.9 | X | 187.07442 | 191.45738 | 216.74021 | 6.15970 | 0.0826868 | 0.28323784 | 2.2963348 | 20 | 5 9.9 | 20.1 |
| 168197 2006 JV ₁₀ | 16.8 | X | 112.65845 | 47.04689 | 19.24885 | 4.28045 | 0.1025578 | 0.27109008 | 2.3644328 | 20 | 3 9.7 | 19.8 |
| 168198 2006 JR ₁₇ | 16.3 | X | 262.05233 | 265.54009 | 91.90366 | 3.35618 | 0.2363045 | 0.21174977 | 2.7877517 | 20 | 5 12.5 | 20.5 |
| 168199 2006 JY ₁₈ | 16.6 | X | 71.83302 | 115.02816 | 150.68876 | 3.54395 | 0.0801508 | 0.23032982 | 2.6357402 | 20 | 10 11.1 | 20.1 |
| 168200 2006 JZ ₁₉ | 15.9 | X | 314.52806 | 161.45926 | 174.20150 | 10.01864 | 0.1166074 | 0.21902136 | 2.7257022 | 20 | 7 11.6 | 19.2 |
| 168201 2006 JJ ₂₃ | 16.4 | X | 305.79042 | 325.67516 | 11.59662 | 1.74399 | 0.2349385 | 0.21717020 | 2.7411695 | 20 | 6 11.1 | 19.3 |
| 168202 2006 JP ₂₆ | 16.2 | X | 130.80544 | 322.58251 | 313.06478 | 4.90966 | 0.1717979 | 0.24309447 | 2.5426466 | 20 | 12 29.2 | 20.3 |
| 168203 2006 JB ₂₇ | 17.6 | X | 241.63640 | 119.64073 | 138.14821 | 2.97463 | 0.1656282 | 0.26219379 | 2.4176186 | 20 | — | — |
| 168204 2006 JP ₂₇ | 16.5 | X | 356.24525 | 219.89189 | 55.69517 | 6.54982 | 0.1550643 | 0.28535235 | 2.2849766 | 20 | 7 7.6 | 18.3 |
| 168205 2006 JE ₂₈ | 16.0 | X | 23.42716 | 214.90009 | 69.86850 | 4.46395 | 0.1260047 | 0.22487384 | 2.6782026 | 20 | 9 5.9 | 19.1 |
| 168206 2006 JH ₂₉ | 16.3 | X | 345.17118 | 223.17159 | 77.82223 | 5.13968 | 0.1672813 | 0.21897950 | 2.7260495 | 20 | 7 17.6 | 19.0 |
| 168207 2006 JK ₂₉ | 16.2 | X | 325.86699 | 166.91738 | 136.24669 | 3.73133 | 0.0845739 | 0.21714524 | 2.7413796 | 20 | 6 19.0 | 19.6 |
| 168208 2006 JH ₃₀ | 16.8 | X | 178.11989 | 177.12963 | 195.12055 | 6.24376 | 0.1400103 | 0.27213052 | 2.3584022 | 20 | 3 14.2 | 20.3 |
| 168209 2006 JP ₃₀ | 17.1 | X | 306.46778 | 311.93257 | 65.16023 | 7.14793 | 0.1478681 | 0.29790132 | 2.2203483 | 20 | 9 12.7 | 18.9 |
| 168210 2006 JW ₃₇ | 17.1 | X | 123.75035 | 121.53140 | 117.59344 | 5.60219 | 0.0773696 | 0.30716463 | 2.1754808 | 20 | 11 19.8 | 20.0 |
| 168211 2006 JF ₃₉ | 15.6 | X | 12.87340 | 252.54143 | 92.78610 | 4.88362 | 0.2301634 | 0.22819474 | 2.6521553 | 20 | 11 26.6 | 18.6 |
| 168212 2006 JU ₄₃ | 16.1 | X | 341.59132 | 126.44855 | 176.72415 | 8.17406 | 0.1386162 | 0.21931656 | 2.7232558 | 20 | 7 12.3 | 19.1 |
| 168213 2006 JE ₄₅ | 15.2 | X | 186.65026 | 219.10750 | 65.34517 | 4.31053 | 0.1338989 | 0.18342358 | 3.0678392 | 20 | — | — |
| 168214 2006 JO ₄₆ | 15.6 | X | 274.31056 | 220.09433 | 199.77396 | 13.30565 | 0.0837376 | 0.21716260 | 2.7412335 | 20 | 9 6.7 | 19.4 |
| 168215 2006 JF ₄₇ | 15.7 | X | 204.59938 | 139.47129 | 42.45684 | 14.75305 | 0.0342790 | 0.24099469 | 2.5573945 | 20 | 11 26.5 | 19.3 |
| 168216 2006 JS ₄₈ | 15.8 | X | 98.40164 | 196.07362 | 38.03362 | 6.47295 | 0.2034096 | 0.22946876 | 2.6423297 | 20 | 10 12.9 | 20.0 |
| 168217 2006 JH ₅₃ | 16.4 | X | 316.52563 | 228.06710 | 60.98409 | 7.77822 | 0.1048681 | 0.28085585 | 2.3093003 | 20 | 5 11.1 | 18.6 |
| 168218 2006 JV ₅₄ | 16.3 | X | 97.54119 | 67.13560 | 214.42877 | 11.50522 | 0.2712476 | 0.23433504 | 2.6056209 | 20 | 12 11.1 | 20.9 |
| 168219 2006 JK ₅₅ | 15.6 | X | 324.76783 | 222.37014 | 89.81665 | 6.42021 | 0.0784471 | 0.21582381 | 2.7525580 | 20 | 6 30.4 | 18.7 |
| 168220 2006 JQ ₅₇ | 15.7 | X | 331.55735 | 3.94714 | 195.05933 | 2.54512 | 0.2068212 | 0.19906180 | 2.9049863 | 20 | 1 23.2 | 19.1 |
| 168221 Donjennings | 16.5 | X | 270.07478 | 304.14366 | 53.14755 | 3.63643 | 0.1887927 | 0.21363445 | 2.7713318 | 20 | 5 26.2 | 20.4 |
| 168222 2006 KU | 16.7 | X | 160.01985 | 90.22950 | 112.40376 | 3.05441 | 0.0591014 | 0.30595296 | 2.1812207 | 20 | 11 13.2 | 19.4 |
| 168223 2006 KY ₁ | 15.0 | X | 36.80786 | 292.72929 | 37.05909 | 15.55134 | 0.2911482 | 0.22975895 | 2.6401043 | 20 | 12 15.1 | 19.0 |
| 168224 2006 KA ₇ | 16.6 | X | 75.22923 | 125.19494 | 234.11506 | 2.66787 | 0.0780788 | 0.24770532 | 2.5109949 | 20 | — | — |
| 168225 2006 KV ₁₀ | 16.4 | X | 236.54491 | 284.48754 | 229.18981 | 3.62587 | 0.1022547 | 0.24246183 | 2.5470675 | 20 | 11 23.6 | 19.7 |
| 168226 2006 KH ₁₅ | 16.4 | X | 75.28705 | 349.39865 | 274.08229 | 1.18703 | 0.1711058 | 0.22915083 | 2.6447731 | 20 | 10 21.7 | 20.2 |
| 168227 2006 KQ ₂₇ | 16.3 | X | 64.51997 | 229.19973 | 52.82985 | 3.29265 | 0.1145791 | 0.23125561 | 2.6287011 | 20 | 10 27.3 | 20.0 |
| 168228 2006 KA ₃₂ | 17.1 | X | 136.93999 | 132.60162 | 269.80384 | 1.19096 | 0.1975573 | 0.26965132 | 2.3728358 | 20 | 3 16.9 | 20.6 |
| 168229 2006 KH ₃₅ | 16.5 | X | 203.31008 | 149.84675 | 227.89294 | 1.98268 | 0.1895911 | 0.27448107 | 2.3449186 | 20 | 4 14.6 | 20.2 |
| 168230 2006 KV ₃₉ | 16.1 | X | 23.17298 | 267.33410 | 349.29301 | 12.77036 | 0.1799047 | 0.22020756 | 2.7159049 | 20 | 8 4.7 | 19.1 |
| 168231 2006 KK ₄₀ | 15.2 | X | 232.99973 | 80.42418 | 206.66284 | 9.99671 | 0.0913830 | 0.19271451 | 2.9684275 | 20 | 1 30.2 | 20.0 |
| 168232 2006 KO ₄₁ | 15.8 | X | 146.77050 | 32.78584 | 191.30520 | 7.49546 | 0.1210646 | 0.23625904 | 2.5914555 | 20 | 11 11.9 | 19.8 |
| 168233 2006 KC ₄₄ | 16.1 | X | 14.50139 | 189.79763 | 144.87967 | 10.81374 | 0.1824127 | 0.23152224 | 2.6266825 | 20 | 11 11.2 | 19.3 |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168241 2006 <i>KD</i> ₈₆ | 15.4 | X | 1.85467 | 232.99555 | 125.92554 | 13.70672 | 0.2752501 | 0.23040150 | 2.6351935 | 20 | 12 6.8 | 18.3 |
| 168242 2006 <i>KO</i> ₈₆ | 15.9 | X | 70.21946 | 351.29809 | 230.86374 | 9.72725 | 0.1911230 | 0.22111210 | 2.7084930 | 20 | 8 21.7 | 19.9 |
| 168243 2006 <i>KB</i> ₉₀ | 15.4 | X | 222.40410 | 315.90269 | 315.71837 | 5.58121 | 0.1450108 | 0.18826295 | 3.0150381 | 20 | 1 4.3 | 20.2 |
| 168244 2006 <i>KW</i> ₉₈ | 15.1 | X | 10.16404 | 179.64311 | 81.59525 | 18.58063 | 0.1974753 | 0.21451695 | 2.7637260 | 20 | 7 12.4 | 17.9 |
| 168245 2006 <i>KX</i> ₉₈ | 16.4 | X | 116.36122 | 150.53852 | 124.94906 | 4.83193 | 0.1673396 | 0.23793323 | 2.5792849 | 20 | 12 15.7 | 20.7 |
| 168246 2006 <i>KF</i> ₁₀₁ | 16.6 | X | 26.11289 | 38.80336 | 236.56085 | 5.19061 | 0.1322033 | 0.22379564 | 2.6867977 | 20 | 8 23.4 | 19.8 |
| 168247 2006 <i>KA</i> ₁₀₂ | 15.6 | X | 169.54810 | 166.12220 | 153.61246 | 9.59458 | 0.1216448 | 0.18577631 | 3.0418829 | 20 | 1 10.9 | 20.5 |
| 168248 2006 <i>KC</i> ₁₀₃ | 16.2 | X | 122.21957 | 113.78230 | 184.40579 | 14.82713 | 0.1403522 | 0.24290807 | 2.5439472 | 20 | — | — |
| 168249 2006 <i>KF</i> ₁₀₅ | 15.8 | X | 56.70799 | 142.96772 | 190.64449 | 14.89236 | 0.1567601 | 0.23551913 | 2.5968802 | 20 | 12 26.7 | 19.9 |
| 168250 2006 <i>KU</i> ₁₀₉ | 16.5 | X | 193.59129 | 335.54109 | 35.49078 | 7.64579 | 0.1352964 | 0.27476572 | 2.3432989 | 20 | 3 30.8 | 20.1 |
| 168251 2006 <i>KY</i> ₁₂₁ | 15.9 | X | 32.60867 | 263.45297 | 30.42205 | 4.76477 | 0.1533820 | 0.22492730 | 2.6777782 | 20 | 10 5.7 | 19.2 |
| 168252 2006 <i>LA</i> ₁ | 15.3 | X | 162.94620 | 259.33282 | 35.84976 | 9.61684 | 0.1356329 | 0.17939080 | 3.1136463 | 20 | — | — |
| 168253 2006 <i>LZ</i> ₂ | 15.9 | X | 3.34440 | 140.92362 | 158.24631 | 5.41628 | 0.1049400 | 0.21887781 | 2.7268938 | 20 | 8 16.5 | 19.0 |
| 168254 2006 <i>LY</i> ₃ | 17.2 | X | 266.67567 | 44.12513 | 186.71231 | 4.98429 | 0.1099547 | 0.26079159 | 2.4262767 | 20 | — | — |
| 168255 2006 <i>LO</i> ₇ | 14.7 | X | 205.37776 | 241.18887 | 3.30516 | 25.37120 | 0.0881569 | 0.17444083 | 3.1722735 | 20 | — | — |
| 168256 2006 <i>MY</i> | 16.4 | X | 200.61617 | 262.23433 | 114.88674 | 12.76175 | 0.2144140 | 0.27462811 | 2.3440816 | 20 | 4 17.7 | 20.5 |
| 168257 2006 <i>MF</i> ₁ | 15.6 | X | 36.01919 | 129.19174 | 211.50923 | 14.36669 | 0.1649895 | 0.23237911 | 2.6202214 | 20 | 12 12.9 | 19.3 |
| 168258 2006 <i>MO</i> ₃ | 15.3 | X | 105.68493 | 115.04867 | 219.66991 | 14.61107 | 0.1808134 | 0.24319511 | 2.5419451 | 20 | — | — |
| 168259 2006 <i>MM</i> ₉ | 15.6 | X | 91.81078 | 165.53556 | 128.09907 | 15.12347 | 0.0354782 | 0.23053721 | 2.6341593 | 20 | 12 6.2 | 19.5 |
| 168260 2006 <i>NT</i> | 15.5 | X | 278.75466 | 194.63409 | 264.94242 | 11.69194 | 0.0561970 | 0.22653232 | 2.6651149 | 20 | 11 11.9 | 19.0 |
| 168261 Puglia | 15.3 | X | 312.44907 | 53.12318 | 151.32555 | 12.33988 | 0.0360423 | 0.18524368 | 3.0477111 | 20 | 1 30.4 | 19.7 |
| 168262 2006 <i>PJ</i> ₂₇ | 14.6 | X | 163.48775 | 289.73868 | 61.17108 | 19.09915 | 0.1920177 | 0.18107653 | 3.0942919 | 20 | 2 24.0 | 20.1 |
| 168263 2006 <i>PX</i> ₃₆ | 15.3 | X | 191.08997 | 294.51641 | 60.21030 | 3.82098 | 0.1655539 | 0.18737731 | 3.0245310 | 20 | 3 13.5 | 19.8 |
| 168264 2006 <i>PO</i> ₃₇ | 15.3 | X | 169.99264 | 29.19615 | 301.90758 | 8.03091 | 0.0706638 | 0.18129762 | 3.0917757 | 20 | 1 22.7 | 19.7 |
| 168265 2006 <i>QH</i> ₃₇ | 15.9 | X | 145.71878 | 111.68467 | 79.60825 | 6.35815 | 0.0630895 | 0.21825602 | 2.7320704 | 20 | 9 30.3 | 19.9 |
| 168266 2006 <i>QJ</i> ₄₆ | 15.1 | X | 316.40134 | 243.33470 | 355.23032 | 8.65488 | 0.0843532 | 0.19132938 | 2.9827368 | 20 | 3 11.6 | 19.1 |
| 168267 2006 <i>SA</i> ₃₅₃ | 15.4 | X | 141.71215 | 289.02494 | 96.57382 | 3.13099 | 0.1249814 | 0.17351329 | 3.1835687 | 20 | 3 4.1 | 20.2 |
| 168268 2007 <i>PQ</i> ₁ | 15.9 | X | 261.52009 | 140.90948 | 183.75862 | 7.62842 | 0.2333855 | 0.20988453 | 2.8042438 | 20 | 4 1.6 | 20.2 |
| 168269 2007 <i>PS</i> ₁ | 16.6 | X | 144.13189 | 50.63293 | 275.88032 | 0.47470 | 0.1934909 | 0.26244432 | 2.4160798 | 20 | — | — |
| 168270 2007 <i>PY</i> ₁ | 16.1 | X | 85.31256 | 141.45916 | 141.72264 | 26.22894 | 0.0547789 | 0.24309285 | 2.5426578 | 20 | 11 24.7 | 20.3 |
| 168271 2007 <i>PE</i> ₆ | 15.8 | X | 160.88751 | 0.53364 | 13.84214 | 10.88361 | 0.2305497 | 0.26709310 | 2.3879631 | 20 | 3 10.4 | 19.8 |
| 168272 2007 <i>PY</i> ₇ | 16.3 | X | 249.68504 | 202.21735 | 135.37931 | 3.06453 | 0.2312035 | 0.21046228 | 2.7991094 | 20 | 4 7.5 | 20.9 |
| 168273 2007 <i>PJ</i> ₁₆ | 15.1 | X | 78.07356 | 354.57629 | 357.41888 | 15.38585 | 0.2652375 | 0.17273666 | 3.1931038 | 20 | — | — |
| 168274 2007 <i>PU</i> ₁₆ | 16.3 | X | 172.55247 | 283.74917 | 60.36294 | 3.16744 | 0.2266365 | 0.26793296 | 2.3829703 | 20 | 2 10.3 | 20.3 |
| 168275 2007 <i>PZ</i> ₁₆ | 16.4 | X | 169.78794 | 238.28466 | 101.25783 | 3.64418 | 0.2067099 | 0.26533455 | 2.3985025 | 20 | 1 31.8 | 20.3 |
| 168276 2007 <i>PS</i> ₁₇ | 15.2 | X | 46.60676 | 256.60332 | 171.78136 | 17.04110 | 0.1247241 | 0.22209937 | 2.7004605 | 20 | 7 5.8 | 18.7 |
| 168277 2007 <i>PP</i> ₂₁ | 14.7 | X | 51.33514 | 228.14320 | 158.20119 | 21.66216 | 0.0397204 | 0.17443659 | 3.1723249 | 20 | — | — |
| 168278 2007 <i>PJ</i> ₂₉ | 17.0 | X | 178.99102 | 82.48215 | 254.91628 | 1.73437 | 0.2407461 | 0.27050739 | 2.3678269 | 20 | 2 6.0 | 21.0 |
| 168279 2007 <i>PV</i> ₃₂ | 16.6 | X | 116.80606 | 178.48969 | 200.20985 | 1.61291 | 0.2240393 | 0.26338457 | 2.4103262 | 20 | 1 28.8 | 19.8 |
| 168280 2007 <i>QR</i> ₅ | 13.0 | X | 1.11650 | 90.01286 | 281.23222 | 1.34026 | 0.0534784 | 0.08115826 | 5.2834090 | 20 | 10 17.8 | 19.8 |
| 168281 2007 <i>QM</i> ₈ | 16.5 | X | 138.68010 | 198.59147 | 164.78415 | 5.30238 | 0.2035258 | 0.26410947 | 2.4059138 | 20 | 1 30.3 | 20.1 |
| 168282 2007 <i>QU</i> ₉ | 15.4 | X | 104.15548 | 152.74841 | 175.04608 | 1.60602 | 0.1602771 | 0.17395794 | 3.1781414 | 20 | — | — |
| 168283 2007 <i>RR</i> ₂₃ | 14.8 | X | 89.33055 | 191.49040 | 177.56931 | 15.41792 | 0.0858396 | 0.17764844 | 3.1339720 | 20 | — | — |
| 168284 2007 <i>RT</i> ₃₆ | 16.0 | X | 282.47018 | 18.21190 | 3.10357 | 9.73931 | 0.2408280 | 0.21759849 | 2.7375715 | 20 | 7 7.4 | 19.8 |
| 168285 2007 <i>RZ</i> ₇₇ | 15.9 | X | 154.72732 | 159.79189 | 167.24306 | 10.39136 | 0.1313574 | 0.18573349 | 3.0423505 | 20 | 1 5.9 | 20.7 |
| 168286 2007 <i>RJ</i> ₁₁₇ | 17.5 | X | 21.59353 | 325.44151 | 330.39487 | 3.08899 | 0.1961625 | 0.30508368 | 2.1853621 | 20 | 10 12.6 | 19.6 |
| 168287 2007 <i>RG</i> ₁₄₅ | 16.7 | X | 357.42834 | 19.96286 | 287.53193 | 1.85008 | 0.1642923 | 0.29985576 | 2.2106897 | 20 | 9 6.7 | 18.3 |
| 168288 2007 <i>RO</i> ₂₁₀ | 16.4 | X | 204.39237 | 79.66497 | 214.46479 | 2.38124 | 0.1796713 | 0.19154516 | 2.9804964 | 20 | 1 13.2 | 21.3 |
| 168289 2007 <i>SD</i> | 16.6 | X | 198.40604 | 343.45432 | 351.14113 | 1.92458 | 0.2316175 | 0.27161648 | 2.3613769 | 20 | 2 18.3 | 20.6 |
| 168290 2045 <i>P-L</i> | 17.2 | X | 280.54812 | 24.24491 | 3.81781 | 6.73717 | 0.2137215 | 0.29407948 | 2.2395439 | 20 | 7 24.9 | 19.6 |
| 168291 3041 <i>P-L</i> | 15.6 | X | 180.85488 | 95.37565 | 242.73073 | 8.91242 | 0.3061885 | 0.18968838 | 2.9999146 | 20 | 2 13.5 | 21.2 |
| 168292 4267 <i>P-L</i> | 15.2 | X | 233.98775 | 290.80556 | 1.26014 | 11.05063 | 0.0262668 | 0.18915974 | 3.0055012 | 20 | 2 17.2 | 19.6 |
| 168293 4724 <i>P-L</i> | 17.4 | X | 172.06738 | 348.49284 | 4.83413 | 4.78335 | 0.2315019 | 0.27190044 | 2.3597325 | 20 | 2 21.0 | 21.2 |
| 168294 4883 <i>P-L</i> | 17.3 | X | 133.28709 | 186.48707 | 217.40834 | 1.75334 | 0.2012623 | 0.27176976 | 2.3604889 | 20 | 3 15.4 | 20.7 |
| 168295 6280 <i>P-L</i> | 15.3 | X | 78.46372 | 45.04486 | 345.26101 | 5.27320 | 0.1594756 | 0.17105872 | 3.2139509 | 20 | — | — |
| 168296 6740 <i>P-L</i> | 15.1 | X | 67.78066 | 4.76429 | 23.55614 | 5.49888 | 0.1232679 | 0.17029130 | 3.2235995 | 20 | — | — |
| 168297 7575 <i>P-L</i> | 16.4 | X | 279.24824 | 321.68834 | 35.80342 | 6.54262 | 0.1962944 | 0.29344325 | 2.2427798 | 20 | 6 5.7 | 19.1 |
| 168298 3230 <i>T-1</i> | 16.2 | X | 332.96789 | 347.37692 | 198.14509 | 8.74996 | 0.1466316 | 0.25874173 | 2.4390745 | 20 | 1 4.2 | 19.2 |
| 168299 1048 <i>T-2</i> | 14.9 | X | 69.63202 | 82.64157 | 354.95071 | 15.86852 | 0.0843345 | 0.17730253 | 3.1380469 | 20 | 2 9.4 | 19.2 |
| 168300 1217 <i>T-2</i> | 15.4 | X | 65.45245 | 56.27412 | 20.05959 | 4.04191 | 0.1795710 | 0.17681119 | 3.1438577 | 20 | 2 10.2 | 19.3 |
| 168301 1315 <i>T-2</i> | 15.7 | X | 31.62481 | 314.83852 | 5.58304 | 11.89394 | 0.1973712 | 0.23252834 | 2.6191003 | 20 | 11 12.2 | 19.2 |
| 168302 1428 <i>T-2</i> | 17.0 | X | 242.21005 | 47.38560 | 354.95924 | 5.78078 | 0.1921308 | 0.29013757 | 2.2597830 | 20 | 6 24.6 | 20.2 |
| 168303 2223 <i>T-2</i> | 15.8 | X | 128.35843 | 293.66978 | 24.67012 | 4.43335 | 0.2833407 | 0.17263068 | 3.1944105 | 20 | — | — |
| 168304 3125 <i>T-2</i> | 14.5 | X | 52.84415 | 272.30842 | 180.46124 | 26.42157 | 0.1224445 | 0.17695227 | 3.1421864 | 20 | 1 30.8 | 18.9 |
| 168305 3205 <i>T-2</i> | 16.3 | X | 16.21436 | 213.69594 | 144.70234 | 3.32675 | 0.2135371 | 0.23303640 | 2.6152922 | 20 | 12 17.2 | 19.3 |
| 168306 4255 <i>T-2</i> | 15.2 | X | 103.67479 | 169.40147 | 167.98012 | 12.02160 | 0.1304732 | 0.17323629 | 3.1869614 | 20 | — | — |
| 168307 1206 <i>T-3</i> | 16.4 | X | 232.48575 | 81.30841 | 258.92600 | 4.18096 | 0.2616457 | 0.26778338 | 2.3838576 | 20 | 3 19.2 | 20.6 |
| 168308 1216 <i>T-3</i> | 16.6 | X | 344.78777 | 104.92352 | 233.99073 | 11.15276 | 0.2809055 | 0.22869924 | 2.6482536 | 20 | 9 15.1 | 18.7 |
| 168309 2167 <i>T-3</i> | 16.3 | X | 97.84303 | 60.85932 | 345.49123 | 6.13665 | 0.1429808 | 0.26199946 | 2.4188139 | 20 | 1 30.1 | 19.1 |
| 168310 2316 <i>T-3</i> | 16.7 | X | 287.84730 | 6.68422 | 16.16256 | 7.69205 | 0.2037901 | 0.29590757 | 2.2303105 | 20 | 8 2.1 | 18.8 |
| 168311 3312 <i>T-3</i> | 17.2 | X | 263.33197 | 193.45598 | 151.42827 | 1.82659 | 0.1873363 | 0.29291102 | 2.2454958 | 20 | 5 1.1 | 20.1 |
| 168312 3396 <i>T-3</i> | 16.6 | X | 310.87208 | 343.19189 | 52.86064 | 3.01894 | 0.2101129 | 0.22868840 | 2.6483373 | 20 | 9 26.0 | 19.0 |
| 168313 5009 <i>T-3</i> | 16.1 | X | 316.56371 | 307.92417 | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|------------------------------|-------------------|----------|-----------|-----------|-----------|----------|------------|------------|-----------|----|---------|----------|
| 168321 Josephschmidt | 16.5 ^m | X | 40.29730 | 71.61766 | 255.28831 | 3.64734 | 0.2531220 | 0.24244379 | 2.5471939 | 20 | 12 15.2 | 20.1 |
| 168322 1992 EX ₇ | 16.3 | X | 280.58588 | 175.58948 | 335.45024 | 5.41010 | 0.2345697 | 0.23598301 | 2.5934760 | 20 | — | — |
| 168323 1992 ED ₂₃ | 16.9 | X | 172.00280 | 99.57506 | 66.95038 | 5.96279 | 0.0711498 | 0.29629663 | 2.2283577 | 20 | 10 8.7 | 19.8 |
| 168324 1993 FA ₁₉ | 15.1 | X | 225.38976 | 142.93142 | 132.54191 | 6.00591 | 0.1306237 | 0.17417408 | 3.1755116 | 20 | 1 12.7 | 20.1 |
| 168325 1993 FT ₂₇ | 15.4 | X | 273.91928 | 273.24564 | 323.85870 | 4.38302 | 0.0998686 | 0.17633095 | 3.1495634 | 20 | 1 18.6 | 20.1 |
| 168326 1993 FJ ₅₉ | 15.9 | X | 106.73920 | 201.80682 | 332.86675 | 0.69364 | 0.1172691 | 0.19072915 | 2.9889914 | 20 | 7 26.1 | 20.3 |
| 168327 1993 FZ ₆₀ | 15.7 | X | 317.80123 | 22.36554 | 188.58279 | 4.48260 | 0.0935097 | 0.17852747 | 3.1236762 | 20 | 2 7.0 | 20.0 |
| 168328 1993 NX ₁ | 17.5 | X | 272.60846 | 218.44990 | 85.17100 | 1.27089 | 0.2296023 | 0.28526774 | 2.2854283 | 20 | 3 12.6 | 20.6 |
| 168329 1993 TZ ₆ | 16.8 | X | 5.75084 | 91.92169 | 269.45569 | 2.05494 | 0.2048616 | 0.22098523 | 2.7095295 | 20 | 11 29.5 | 19.6 |
| 168330 1993 TZ ₇ | 15.8 | X | 359.14691 | 299.05558 | 339.92994 | 4.35327 | 0.1304540 | 0.21264446 | 2.7799266 | 20 | 7 12.5 | 18.7 |
| 168331 1993 TA ₈ | 16.5 | X | 307.08777 | 336.00595 | 0.20316 | 6.59811 | 0.1228236 | 0.21269356 | 2.7794988 | 20 | 6 30.6 | 19.9 |
| 168332 1993 TC ₂₈ | 15.9 | X | 254.53582 | 346.57401 | 49.37799 | 5.04955 | 0.0735624 | 0.21205472 | 2.7850783 | 20 | 7 14.6 | 19.7 |
| 168333 1994 CU ₁₇ | 16.5 | X | 1.41805 | 110.56717 | 58.59002 | 3.34302 | 0.1085280 | 0.26357963 | 2.4091369 | 20 | 2 3.2 | 18.9 |
| 168334 1994 PQ ₁ | 16.0 | X | 357.57556 | 266.02522 | 80.30538 | 27.33730 | 0.3388850 | 0.22979797 | 2.6398055 | 20 | 11 24.8 | 18.5 |
| 168335 1994 PW ₂₄ | 16.2 | X | 30.17449 | 348.99625 | 334.03419 | 3.12664 | 0.1878732 | 0.23223870 | 2.6212774 | 20 | 11 15.1 | 19.6 |
| 168336 1994 PV ₂₈ | 16.2 | X | 20.61743 | 247.28511 | 118.29930 | 3.51111 | 0.2366277 | 0.23368128 | 2.6104784 | 20 | — | — |
| 168337 1994 SK ₁ | 15.3 | X | 36.61845 | 79.39216 | 55.03443 | 2.90404 | 0.2613645 | 0.16717113 | 3.2635871 | 20 | 3 17.1 | 18.5 |
| 168338 1994 UW ₁₀ | 16.1 | X | 255.76204 | 270.30585 | 229.28970 | 10.89975 | 0.1354955 | 0.22985028 | 2.6394049 | 20 | 11 23.4 | 19.4 |
| 168339 1995 FS ₈ | 16.6 | X | 100.71731 | 119.26330 | 50.95249 | 5.69338 | 0.1307305 | 0.28345040 | 2.2951866 | 20 | 7 21.8 | 19.7 |
| 168340 1995 JE ₁ | 16.7 | X | 232.28192 | 314.15035 | 64.09805 | 22.21868 | 0.0923695 | 0.35572760 | 1.9726847 | 20 | 5 21.2 | 18.7 |
| 168341 1995 MT ₁ | 16.7 | X | 196.38616 | 229.23742 | 126.63199 | 8.46751 | 0.1862947 | 0.26839031 | 2.3802623 | 20 | 3 15.8 | 20.6 |
| 168342 1995 MG ₄ | 16.5 | X | 269.11792 | 72.14031 | 175.67799 | 6.67386 | 0.0872871 | 0.26181693 | 2.4199379 | 20 | 1 13.4 | 19.9 |
| 168343 1995 OJ ₂ | 15.4 | X | 117.14177 | 244.05243 | 160.27496 | 13.46095 | 0.1350911 | 0.18064276 | 3.0992434 | 20 | 2 28.8 | 20.0 |
| 168344 1995 OD ₁₄ | 16.0 | X | 183.97060 | 101.44501 | 233.15152 | 4.24009 | 0.1339234 | 0.18118060 | 3.0931068 | 20 | 2 10.3 | 21.1 |
| 168345 1995 SR ₃₀ | 16.7 | X | 333.21466 | 199.94766 | 14.56629 | 1.35744 | 0.1303507 | 0.26335674 | 2.4104960 | 20 | 2 16.9 | 19.3 |
| 168346 1995 SH ₈₉ | 16.6 | X | 17.02156 | 117.82332 | 205.00136 | 3.08169 | 0.1618125 | 0.23655408 | 2.5893003 | 20 | 10 24.1 | 19.5 |
| 168347 1995 UG ₁₃ | 16.7 | X | 119.11834 | 71.39248 | 356.74215 | 0.87071 | 0.1640945 | 0.25712699 | 2.4492753 | 20 | 3 28.7 | 20.1 |
| 168348 1995 UZ ₁₈ | 16.1 | X | 56.30860 | 333.12967 | 79.99167 | 2.85495 | 0.0536960 | 0.17052408 | 3.2206651 | 20 | — | — |
| 168349 1995 UZ ₃₀ | 15.5 | X | 17.28753 | 51.40290 | 120.92972 | 3.00392 | 0.0734640 | 0.17509320 | 3.1643890 | 20 | 3 19.1 | 19.6 |
| 168350 1995 UX ₄₂ | 17.2 | X | 111.09188 | 288.97610 | 18.76357 | 2.20706 | 0.1399283 | 0.24563431 | 2.5250890 | 20 | — | — |
| 168351 1995 UY ₅₁ | 17.2 | X | 77.20912 | 228.97705 | 125.91185 | 2.30232 | 0.2354828 | 0.24552864 | 2.5258135 | 20 | — | — |
| 168352 1995 VV ₃ | 15.7 | X | 77.99464 | 40.39579 | 82.74860 | 6.51463 | 0.10912880 | 0.17751496 | 3.1355429 | 20 | 4 15.4 | 20.0 |
| 168353 1995 VQ ₅ | 15.3 | X | 182.60694 | 244.63187 | 54.89990 | 17.89565 | 0.0985729 | 0.17103852 | 3.2142039 | 20 | 1 1.1 | 20.5 |
| 168354 1996 AE ₆ | 16.6 | X | 37.47149 | 303.77737 | 81.39724 | 3.94479 | 0.0936111 | 0.23723492 | 2.5843439 | 20 | — | — |
| 168355 1996 AU ₈ | 17.4 | X | 73.87174 | 181.67365 | 153.03600 | 2.99397 | 0.0660824 | 0.31593542 | 2.1350293 | 20 | — | — |
| 168356 1996 AF ₁₅ | 16.0 | X | 275.05215 | 45.86601 | 323.34022 | 7.04603 | 0.1486713 | 0.22215121 | 2.7000404 | 20 | 6 24.2 | 19.6 |
| 168357 1996 CF ₂ | 16.3 | X | 112.90377 | 324.31177 | 351.36722 | 2.63789 | 0.0904516 | 0.31656855 | 2.1321817 | 20 | — | — |
| 168358 Casca | 16.8 | X | 354.38804 | 59.74691 | 352.92867 | 2.98044 | 0.0894803 | 0.31391894 | 2.1441625 | 20 | — | — |
| 168359 1996 DH ₃ | 15.9 | X | 61.55396 | 28.54518 | 221.08396 | 8.73776 | 0.0303133 | 0.21935971 | 2.7228986 | 20 | 8 23.2 | 19.7 |
| 168360 1996 PC | 15.6 | X | 154.49622 | 151.60484 | 216.81063 | 8.37921 | 0.1533665 | 0.18833956 | 3.0142205 | 20 | 2 21.8 | 20.5 |
| 168361 1996 RB ₁₈ | 17.1 | X | 196.26899 | 31.49004 | 8.94415 | 2.20563 | 0.0643007 | 0.27769809 | 2.3267735 | 20 | 5 9.6 | 20.3 |
| 168362 1996 RV ₂₈ | 12.6 | X | 313.60347 | 158.53951 | 240.64129 | 4.85212 | 0.0813185 | 0.08186713 | 5.2528663 | 20 | 9 16.4 | 19.3 |
| 168363 1996 TG ₁₈ | 16.7 | X | 234.27516 | 250.58919 | 25.94573 | 5.79714 | 0.1645915 | 0.26546876 | 2.3976941 | 20 | 1 11.2 | 20.5 |
| 168364 1996 TZ ₁₉ | 12.7 | X | 54.53146 | 342.87896 | 311.90576 | 9.11155 | 0.0394297 | 0.08306737 | 5.2021446 | 20 | 9 22.4 | 19.6 |
| 168365 1996 TT ₂₅ | 17.5 | X | 179.83135 | 202.47309 | 181.45141 | 0.89566 | 0.2007739 | 0.27058384 | 2.3673810 | 20 | 4 2.7 | 21.2 |
| 168366 1996 TC ₄₂ | 16.4 | X | 239.19194 | 223.15254 | 112.32731 | 3.55489 | 0.1738465 | 0.27535041 | 2.3399805 | 20 | 3 27.6 | 20.0 |
| 168367 1996 UT ₄ | 16.6 | X | 142.00126 | 154.01044 | 112.56785 | 6.09603 | 0.1365637 | 0.26365809 | 2.4086590 | 20 | 1 29.1 | 20.1 |
| 168368 1996 WU ₃ | 15.0 | X | 265.58889 | 234.95263 | 91.31778 | 13.86358 | 0.1216449 | 0.18982129 | 2.9985141 | 20 | 4 27.3 | 19.6 |
| 168369 1996 WP ₆ | 15.3 | X | 141.36172 | 343.91322 | 20.73658 | 10.29188 | 0.0710945 | 0.17919153 | 3.1159542 | 20 | 2 4.8 | 20.0 |
| 168370 1996 XA ₁₇ | 16.0 | X | 50.19796 | 318.56053 | 52.27158 | 0.98051 | 0.1781194 | 0.17003398 | 3.2268509 | 20 | — | — |
| 168371 1996 XF ₂₀ | 15.4 | X | 82.00819 | 123.07078 | 246.09404 | 3.57129 | 0.2463876 | 0.17471941 | 3.1689006 | 20 | — | — |
| 168372 1996 XV ₂₂ | 15.2 | X | 109.56279 | 269.20502 | 99.49158 | 12.02337 | 0.1377343 | 0.17614293 | 3.1518043 | 20 | 1 10.2 | 19.7 |
| 168373 1997 CC ₁₁ | 17.4 | X | 88.69781 | 117.84362 | 317.08144 | 1.88326 | 0.1588413 | 0.25938359 | 2.4350490 | 20 | 2 25.7 | 20.1 |
| 168374 1997 CH ₂₃ | 15.8 | X | 73.88154 | 311.13443 | 130.28963 | 2.58891 | 0.2054802 | 0.17420456 | 3.1751411 | 20 | 3 3.4 | 19.7 |
| 168375 1997 EE ₁ | 16.5 | X | 81.51192 | 94.27773 | 179.67539 | 14.14383 | 0.1003717 | 0.23446645 | 2.6046472 | 20 | 11 6.7 | 20.4 |
| 168376 1997 EK ₁₅ | 16.9 | X | 247.96781 | 207.84626 | 358.27797 | 9.54589 | 0.2062407 | 0.24371222 | 2.5383481 | 20 | — | — |
| 168377 1997 EY ₁₆ | 16.1 | X | 65.80273 | 185.63550 | 230.33151 | 5.62319 | 0.1162836 | 0.25171148 | 2.4842809 | 20 | — | — |
| 168378 1997 ET ₃₀ | 16.8 | X | 81.86397 | 263.32518 | 23.28078 | 6.81424 | 0.4486761 | 0.31533318 | 2.1377468 | 20 | 12 24.0 | 21.1 |
| 168379 1997 GB ₁₅ | 16.6 | X | 71.76228 | 196.80086 | 280.68869 | 1.56812 | 0.1499300 | 0.25654007 | 2.4530095 | 20 | 3 28.4 | 19.3 |
| 168380 1997 HX ₁₆ | 16.4 | X | 358.09916 | 132.78807 | 202.69008 | 7.94788 | 0.1951947 | 0.22293329 | 2.6937220 | 20 | 10 8.3 | 18.8 |
| 168381 1997 LY ₄ | 16.7 | X | 154.93275 | 51.36920 | 252.72615 | 8.35796 | 0.2716993 | 0.40693382 | 1.8035168 | 20 | — | — |
| 168382 1997 MC ₆ | 15.8 | X | 63.28591 | 107.19352 | 176.08370 | 12.54625 | 0.0272681 | 0.22036597 | 2.7146033 | 20 | 10 14.4 | 19.5 |
| 168383 1997 MG ₈ | 16.8 | X | 8.84297 | 12.24193 | 292.59159 | 3.52092 | 0.1670695 | 0.30247820 | 2.1978936 | 20 | 9 26.6 | 18.7 |
| 168384 1997 NP ₃ | 15.9 | X | 356.77986 | 128.84304 | 149.99248 | 3.90694 | 0.1497347 | 0.21252487 | 2.7809694 | 20 | 7 6.8 | 18.8 |
| 168385 1997 RH ₄ | 16.6 | X | 338.92021 | 33.29129 | 12.68642 | 6.33439 | 0.2834186 | 0.30341832 | 2.1933512 | 20 | — | — |
| 168386 1997 SR ₂₃ | 16.2 | X | 282.79072 | 310.45848 | 0.00313 | 1.44891 | 0.0574662 | 0.19982114 | 2.8976222 | 20 | 4 30.4 | 20.3 |
| 168387 1997 SJ ₃₀ | 16.4 | X | 222.42992 | 111.80695 | 291.85148 | 0.95893 | 0.0676875 | 0.20253843 | 2.8716473 | 20 | 6 14.8 | 20.5 |
| 168388 1997 TF ₅ | 16.6 | X | 59.28444 | 349.45635 | 333.84249 | 3.41300 | 0.2175463 | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168401 1998 EF ₁₁ | 16.3 | X | 2.22749 | 115.78785 | 110.29871 | 3.38098 | 0.2138037 | 0.27128828 | 2.3632810 | 20 | 4 25.7 | 17.7 |
| 168402 1998 FT ₄₇ | 16.6 | X | 50.27975 | 262.84515 | 273.68347 | 1.92402 | 0.1423567 | 0.27230580 | 2.3573901 | 20 | 5 16.7 | 18.9 |
| 168403 1998 FW ₇₆ | 16.2 | X | 344.50704 | 126.57130 | 44.61655 | 6.48499 | 0.0750683 | 0.26255938 | 2.4153738 | 20 | 1 14.3 | 19.0 |
| 168404 1998 FP ₉₂ | 16.3 | X | 90.30167 | 186.83030 | 36.99711 | 5.80310 | 0.1133046 | 0.28256393 | 2.2999845 | 20 | 9 20.7 | 19.3 |
| 168405 1998 FW ₁₁₅ | 16.2 | X | 116.23321 | 289.13751 | 222.07114 | 6.24150 | 0.0885398 | 0.27670282 | 2.3323497 | 20 | 7 6.3 | 19.4 |
| 168406 1998 FP ₁₁₉ | 16.8 | X | 85.43491 | 68.27747 | 123.66519 | 1.11753 | 0.1594621 | 0.27913764 | 2.3187670 | 20 | 8 4.7 | 19.8 |
| 168407 1998 FP ₁₃₈ | 17.3 | X | 65.72822 | 330.69868 | 199.66792 | 3.79965 | 0.1859554 | 0.27333498 | 2.3514689 | 20 | 6 11.3 | 19.9 |
| 168408 1998 HY ₁₁ | 17.3 | X | 191.46835 | 116.18262 | 56.74603 | 1.76627 | 0.1353369 | 0.29074317 | 2.2566439 | 20 | 10 30.6 | 20.3 |
| 168409 1998 HA ₂₅ | 15.0 | X | 39.46947 | 79.84327 | 136.79017 | 10.15313 | 0.0376993 | 0.18241811 | 3.0791020 | 20 | 6 13.2 | 19.3 |
| 168410 1998 HG ₉₉ | 16.2 | X | 350.24818 | 115.66541 | 103.44457 | 2.20149 | 0.1347234 | 0.26666824 | 2.3904988 | 20 | 3 24.3 | 18.3 |
| 168411 1998 HO ₁₁₃ | 15.2 | X | 126.93029 | 40.29866 | 146.00756 | 6.04069 | 0.1869115 | 0.19245331 | 2.9711127 | 20 | 9 4.9 | 20.1 |
| 168412 1998 HW ₁₅₄ | 16.3 | X | 96.13660 | 295.72954 | 190.07117 | 1.88856 | 0.1675087 | 0.27258810 | 2.3557622 | 20 | 5 18.2 | 19.3 |
| 168413 1998 QJ ₁₀ | 15.6 | X | 43.92228 | 203.67707 | 136.45428 | 6.55505 | 0.3091824 | 0.23325987 | 2.6136215 | 20 | — | — |
| 168414 1998 QJ ₁₂ | 15.7 | X | 41.58861 | 97.44847 | 296.49362 | 4.30782 | 0.3399392 | 0.23645889 | 2.5899952 | 20 | — | — |
| 168415 1998 QJ ₂₂ | 16.3 | X | 35.87453 | 131.91749 | 262.29153 | 4.22633 | 0.3106224 | 0.23530511 | 2.5984547 | 20 | — | — |
| 168416 1998 QE ₃₀ | 15.7 | X | 159.11278 | 91.39685 | 184.65080 | 10.17667 | 0.1723052 | 0.24126730 | 2.5554678 | 20 | — | — |
| 168417 1998 QE ₄₂ | 15.8 | X | 6.58569 | 335.84626 | 343.18598 | 11.65268 | 0.1948984 | 0.22566061 | 2.6719739 | 20 | 9 28.6 | 18.5 |
| 168418 1998 QC ₅₀ | 15.5 | X | 6.98103 | 16.83923 | 351.75864 | 12.70228 | 0.2966877 | 0.22914381 | 2.6448272 | 20 | 12 30.7 | 18.8 |
| 168419 1998 QE ₅₀ | 15.9 | X | 358.15211 | 8.28582 | 4.96019 | 8.25622 | 0.2889848 | 0.22840196 | 2.6505510 | 20 | 12 18.5 | 18.7 |
| 168420 1998 QG ₅₆ | 16.8 | X | 309.41719 | 232.00548 | 171.25983 | 2.04122 | 0.0534161 | 0.22645159 | 2.6657483 | 20 | 10 15.1 | 20.1 |
| 168421 1998 QW ₇₅ | 15.8 | X | 38.74982 | 137.70034 | 183.74374 | 16.93733 | 0.2417751 | 0.22966396 | 2.6408323 | 20 | 12 3.9 | 19.8 |
| 168422 1998 QE ₈₂ | 15.4 | X | 355.12457 | 142.05536 | 231.43627 | 10.99878 | 0.1692434 | 0.22937967 | 2.6430138 | 20 | 11 25.5 | 18.2 |
| 168423 1998 QG ₉₆ | 15.7 | X | 359.89699 | 100.95082 | 248.16450 | 9.86154 | 0.2036979 | 0.22672845 | 2.6635777 | 20 | 11 1.8 | 18.4 |
| 168424 1998 QG ₁₀₄ | 16.4 | X | 346.51832 | 6.37096 | 21.83548 | 6.65602 | 0.2349048 | 0.22768880 | 2.6560828 | 20 | 12 6.6 | 19.0 |
| 168425 1998 RB ₂₉ | 15.8 | X | 144.77771 | 266.08893 | 353.39321 | 11.26554 | 0.2718449 | 0.23828791 | 2.5767248 | 20 | 12 18.7 | 20.6 |
| 168426 1998 SJ ₅₄ | 15.6 | X | 35.56643 | 342.55376 | 356.18497 | 11.93781 | 0.0875485 | 0.22932043 | 2.6434690 | 20 | 11 24.3 | 19.3 |
| 168427 1998 SL ₆₉ | 15.7 | X | 340.20170 | 106.84253 | 311.14933 | 10.54172 | 0.2937553 | 0.22923798 | 2.6441028 | 20 | — | — |
| 168428 1998 SG ₈₇ | 15.9 | X | 6.58520 | 137.14255 | 245.03967 | 4.57847 | 0.2895397 | 0.22911256 | 2.6450677 | 20 | — | — |
| 168429 1998 SP ₉₀ | 16.2 | X | 358.05081 | 245.86131 | 90.37752 | 2.96537 | 0.2294107 | 0.22512256 | 2.6762296 | 20 | 10 16.6 | 18.6 |
| 168430 1998 SR ₉₆ | 16.1 | X | 17.85436 | 313.39732 | 15.05190 | 14.36446 | 0.0635202 | 0.22560036 | 2.6724496 | 20 | 10 15.2 | 19.5 |
| 168431 1998 SB ₁₃₀ | 15.6 | X | 51.02279 | 301.41067 | 17.30021 | 14.84605 | 0.1535475 | 0.22831605 | 2.6512158 | 20 | 11 27.0 | 19.5 |
| 168432 1998 TZ ₈ | 16.3 | X | 290.58486 | 327.26173 | 21.25996 | 2.80617 | 0.0426373 | 0.21404688 | 2.7677707 | 20 | 7 3.9 | 19.9 |
| 168433 1998 UM ₅ | 16.1 | X | 343.40702 | 241.74556 | 92.40914 | 3.53331 | 0.2230120 | 0.22120774 | 2.7077122 | 20 | 9 6.2 | 18.3 |
| 168434 1998 VA ₁₆ | 15.6 | X | 260.90813 | 355.48944 | 51.32580 | 14.05730 | 0.1556091 | 0.21631389 | 2.7483990 | 20 | 7 28.4 | 19.7 |
| 168435 1998 VL ₂₁ | 15.4 | X | 358.66583 | 128.67906 | 237.00567 | 10.66608 | 0.2113035 | 0.22522787 | 2.6753953 | 20 | 11 25.5 | 18.2 |
| 168436 1998 VH ₂₂ | 15.8 | X | 271.74816 | 138.29134 | 251.90219 | 6.70163 | 0.2294096 | 0.21588841 | 2.7520089 | 20 | 7 4.4 | 19.6 |
| 168437 1998 VC ₂₃ | 16.8 | X | 260.91700 | 175.50781 | 242.37816 | 2.02374 | 0.3139392 | 0.21606818 | 2.7504822 | 20 | 7 16.9 | 21.0 |
| 168438 1998 VT ₃₉ | 15.4 | X | 326.95104 | 293.78183 | 59.77453 | 10.37189 | 0.1691362 | 0.21903650 | 2.7255766 | 20 | 9 2.8 | 18.3 |
| 168439 1998 VS ₅₂ | 15.1 | X | 271.43528 | 301.11946 | 75.26399 | 25.04440 | 0.2144163 | 0.21378234 | 2.7700536 | 20 | 6 16.9 | 19.1 |
| 168440 1998 WT ₂ | 15.9 | X | 338.07765 | 334.38289 | 91.98666 | 6.71229 | 0.0585656 | 0.22325788 | 2.6911104 | 20 | 11 3.8 | 19.2 |
| 168441 1998 WD ₃ | 16.3 | X | 290.50832 | 271.73423 | 91.68182 | 8.66306 | 0.3169772 | 0.21683610 | 2.7439845 | 20 | 6 10.4 | 19.7 |
| 168442 1998 XO ₅ | 15.9 | X | 72.68878 | 63.70899 | 86.90071 | 3.18859 | 0.0043509 | 0.20440497 | 2.8541388 | 20 | 4 27.9 | 19.8 |
| 168443 1998 XL ₉ | 15.7 | X | 340.24322 | 40.72684 | 50.74431 | 5.70148 | 0.1850685 | 0.23002890 | 2.6380384 | 20 | — | — |
| 168444 1998 XX ₂₂ | 15.9 | X | 202.40361 | 15.38419 | 65.80814 | 6.11074 | 0.1339014 | 0.21051128 | 2.7986750 | 20 | 7 6.8 | 20.3 |
| 168445 1998 YE ₈ | 15.9 | X | 348.09528 | 8.42776 | 85.10722 | 7.76901 | 0.2783710 | 0.22899551 | 2.6459689 | 20 | — | — |
| 168446 1998 YM ₂₁ | 16.1 | X | 16.84746 | 56.77141 | 278.75796 | 1.57947 | 0.0440851 | 0.21466553 | 2.7624505 | 20 | 10 19.2 | 19.6 |
| 168447 1999 AT ₁ | 16.8 | X | 308.83038 | 49.99376 | 301.88649 | 4.56423 | 0.1923123 | 0.30236323 | 2.1984507 | 20 | 7 24.5 | 18.2 |
| 168448 1999 AE ₄ | 14.9 | X | 229.81112 | 226.72021 | 251.01862 | 40.50840 | 0.2754634 | 0.21713341 | 2.7414791 | 20 | 8 14.5 | 20.4 |
| 168449 1999 AN ₁₃ | 15.3 | X | 6.43680 | 107.22331 | 302.99965 | 12.85481 | 0.1670782 | 0.22405983 | 2.6846853 | 20 | — | — |
| 168450 1999 AD ₂₂ | 15.6 | X | 316.34809 | 3.37899 | 65.79839 | 15.06203 | 0.2284048 | 0.22545211 | 2.6736210 | 20 | 11 26.1 | 17.8 |
| 168451 1999 CG ₄₃ | 15.3 | X | 336.14423 | 128.27003 | 74.69087 | 2.64626 | 0.1740082 | 0.18663195 | 3.0325785 | 20 | 2 13.2 | 18.8 |
| 168452 1999 CC ₁₁₇ | 15.4 | X | 356.33772 | 39.85864 | 166.81919 | 5.72409 | 0.1809514 | 0.18926696 | 3.0043660 | 20 | 3 23.6 | 18.4 |
| 168453 1999 CG ₁₃₀ | 16.6 | X | 254.80389 | 292.59010 | 42.82548 | 2.51916 | 0.0770902 | 0.19916114 | 2.9040203 | 20 | 4 25.4 | 20.7 |
| 168454 1999 EB ₁₀ | 15.5 | X | 46.14828 | 60.59668 | 341.29844 | 8.61822 | 0.1142790 | 0.17704725 | 3.1410626 | 20 | — | — |
| 168455 1999 FM ₁ | 17.0 | X | 274.49851 | 313.01183 | 341.72307 | 6.92225 | 0.1170724 | 0.28266421 | 2.2994405 | 20 | 3 14.9 | 19.9 |
| 168456 1999 FC ₄ | 16.2 | X | 279.22283 | 108.39676 | 317.69955 | 3.05701 | 0.1925729 | 0.21177856 | 2.7874990 | 20 | 9 6.9 | 19.7 |
| 168457 1999 FE ₅ | 16.5 | X | 2.79974 | 29.02054 | 347.66883 | 6.76335 | 0.1069482 | 0.30667109 | 2.1778142 | 20 | 12 28.1 | 18.9 |
| 168458 1999 FK ₁₂ | 15.2 | X | 169.90808 | 338.28430 | 12.04425 | 8.70001 | 0.0780886 | 0.18099086 | 3.0952682 | 20 | 2 17.7 | 19.9 |
| 168459 1999 FV ₂₀ | 15.3 | X | 296.46389 | 136.19026 | 4.80855 | 11.61280 | 0.0753328 | 0.17316647 | 3.1878179 | 20 | — | — |
| 168460 1999 GM ₃ | 16.5 | X | 328.00139 | 288.92636 | 14.77624 | 5.53221 | 0.2260299 | 0.28712455 | 2.2755646 | 20 | 6 6.7 | 18.1 |
| 168461 1999 HY ₄ | 15.3 | X | 248.04130 | 230.38528 | 20.85637 | 6.30690 | 0.1524759 | 0.17755420 | 3.1350808 | 20 | 1 4.8 | 20.3 |
| 168462 1999 JT ₂₉ | 16.7 | X | 7.31140 | 55.00555 | 214.63231 | 5.92158 | 0.1738581 | 0.28604583 | 2.2812820 | 20 | 7 22.9 | 18.5 |
| 168463 1999 JD ₄₇ | 14.9 | X | 327.93428 | 110.55334 | 58.74431 | 5.99322 | 0.2244950 | 0.17733352 | 3.1376813 | 20 | — | — |
| 168464 1999 JR ₇₁ | 16.6 | X | 105.75007 | 153.89687 | 83.33057 | 6.32996 | 0.1334701 | 0.29598611 | 2.2299160 | 20 | 10 29.5 | 19.8 |
| 168465 1999 JR ₈₉ | 14.4 | X | 4.07732 | 87.54813 | 69.95997 | 22.56207 | 0.2067110 | 0.18201073 | 3.0836948 | 20 | 2 5.6 | 18.1 |
| 168466 1999 JM ₁₁₂ | 15.2 | X | 283.21438 | 349.66353 | 216.42471 | 10.06176 | 0.1688762 | 0.17443464 | 3.1723485 | 20 | — | — |
| 168467 1999 JW ₁₂₇ | 15.0 | X | 2.42112 | 147.66083 | 41.71257 | 13.07096 | 0.1210318 | 0.18418433 | 3.0593859 | 20 | 3 20.9 | 18.8 |
| 168468 1999 KK ₂ | 17.1 | X | 291.55237 | 54.64484 | 202.24131 | 2.19141 | 0.1817432 | 0.27445182 | 2.3450853 | 20 | 2 6.7 | 20.3 |
| 168469 1999 KS ₁₀ | 16.4 | X | 97.27823 | 97.29606 | 91.47904 | 6.56342 | 0.1028040 | 0.28845767 | 2.2685481 | 20 | 8 10.1 | 19.3 |
| 168470 1999 LT ₂₉ | 16.7 | X | 119.97234 | 195.14622 | 70.90739 | 4.76203 | 0.0599618 | 0.29989494 | 2.2104971 | 20 | 12 17.9 | 19.4 |
| 168471 1999 LS ₃₀ | 16.7 | X | 286.32933 | 226.91591 | 83.31559 | 5.63932 | 0.2067801 | 0.27841650 | 2.3227693 | 20 | 4 11.3 | 19.7 |
| 168472 1999 PQ ₄ | 16.7 | X | 264.90289 | 248.95152 | 61.43403 | 2.74955 | 0.1629938 | 0.27066925 | 2.3668829 | 20 | 3 22.4 | 19.9 |
| 168473 1999 QU ₁ | 16.1 | X | 222.01726 | 81.37041 | 296.48066 | 5.38958 | 0.2704068 | 0.26905140 | 2.3763617 | 20 | 4 25.8 | 20.3 |
| 168474 1999 RN ₃ | 16.2 | X | 29.65695 | 142.29468 | 207.9 | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168481 1999 RN ₈₅ | 16.5 | X | 157.31630 | 220.78383 | 115.46165 | 2.34903 | 0.1900298 | 0.25710742 | 2.4493996 | 20 | 1 15.6 | 20.1 |
| 168482 1999 RD ₁₂₃ | 16.8 | X | 219.38833 | 92.12711 | 238.14498 | 3.80994 | 0.1538511 | 0.26519697 | 2.3993320 | 20 | 2 29.4 | 20.7 |
| 168483 1999 RV ₁₂₄ | 16.9 | X | 354.38648 | 76.47767 | 340.78897 | 5.43188 | 0.2897890 | 0.24285786 | 2.5442978 | 20 | — | — |
| 168484 1999 RP ₁₂₅ | 15.7 | X | 163.61650 | 34.02558 | 325.44082 | 6.79572 | 0.2026278 | 0.26100753 | 2.4249383 | 20 | 2 18.9 | 19.6 |
| 168485 1999 RP ₁₃₄ | 16.0 | X | 183.07295 | 21.69616 | 317.05944 | 6.67004 | 0.1882217 | 0.26198460 | 2.4189054 | 20 | 2 9.9 | 20.0 |
| 168486 1999 RS ₁₃₄ | 16.1 | X | 190.16993 | 111.15423 | 309.36314 | 6.08377 | 0.1676335 | 0.27135593 | 2.3628882 | 20 | 5 27.5 | 19.9 |
| 168487 1999 RV ₁₃₈ | 16.7 | X | 185.75863 | 93.20923 | 242.42477 | 2.32460 | 0.2390371 | 0.26186847 | 2.4196204 | 20 | 2 9.5 | 20.9 |
| 168488 1999 RZ ₁₄₇ | 16.1 | X | 330.50024 | 198.13690 | 226.16813 | 4.01516 | 0.2676953 | 0.24123764 | 2.5556772 | 20 | — | — |
| 168489 1999 RM ₁₅₀ | 17.1 | X | 131.80796 | 350.03663 | 0.05781 | 0.98944 | 0.2518113 | 0.25570664 | 2.4583368 | 20 | 1 14.6 | 20.5 |
| 168490 1999 RC ₁₅₂ | 16.5 | X | 229.74991 | 311.75953 | 353.02913 | 5.10409 | 0.2293806 | 0.26503765 | 2.4002934 | 20 | 2 8.3 | 20.6 |
| 168491 1999 RT ₁₅₃ | 15.8 | X | 36.30602 | 325.81907 | 324.43254 | 13.99155 | 0.1742417 | 0.23753671 | 2.5821545 | 20 | 10 3.5 | 19.3 |
| 168492 1999 RL ₁₅₉ | 16.6 | X | 178.04691 | 297.58364 | 49.69644 | 2.13473 | 0.1915665 | 0.26156565 | 2.4214876 | 20 | 2 17.3 | 20.5 |
| 168493 1999 RQ ₁₆₃ | 16.2 | X | 112.24401 | 155.83812 | 256.81638 | 1.85378 | 0.1669760 | 0.25934267 | 2.4353052 | 20 | 2 28.5 | 19.4 |
| 168494 1999 RE ₁₇₇ | 16.4 | X | 133.05997 | 53.81243 | 340.55098 | 1.82202 | 0.1945018 | 0.25945630 | 2.4345941 | 20 | 3 3.9 | 19.8 |
| 168495 1999 RB ₁₈₈ | 16.5 | X | 109.07725 | 307.22257 | 106.08351 | 2.26597 | 0.1857433 | 0.25834824 | 2.4415505 | 20 | 3 1.2 | 19.7 |
| 168496 1999 RN ₁₉₁ | 16.5 | X | 259.02783 | 230.89744 | 112.14653 | 3.17243 | 0.2410360 | 0.27188657 | 2.3598128 | 20 | 4 19.5 | 20.2 |
| 168497 1999 RX ₂₀₇ | 16.1 | X | 161.39253 | 126.17767 | 286.26979 | 5.92200 | 0.2514890 | 0.26333463 | 2.4106309 | 20 | 4 22.5 | 20.3 |
| 168498 1999 RG ₂₀₈ | 15.5 | X | 306.64182 | 43.52907 | 323.43774 | 13.67713 | 0.1223047 | 0.23054045 | 2.6341345 | 20 | 8 14.5 | 18.4 |
| 168499 1999 RK ₂₂₃ | 16.1 | X | 220.61898 | 29.79334 | 352.75585 | 8.09409 | 0.1796244 | 0.27146114 | 2.3622777 | 20 | 5 4.4 | 19.9 |
| 168500 1999 RJ ₂₄₉ | 16.1 | X | 265.94173 | 238.75324 | 40.20992 | 4.92270 | 0.2199302 | 0.26612500 | 2.3937508 | 20 | 2 8.3 | 19.9 |
| 168501 1999 RQ ₂₄₉ | 15.5 | X | 120.37846 | 154.73631 | 275.68230 | 10.41228 | 0.2417752 | 0.26181951 | 2.4199220 | 20 | 4 5.9 | 19.4 |
| 168502 1999 SS ₁₀ | 16.7 | X | 247.36083 | 34.58378 | 328.75930 | 3.50087 | 0.2457445 | 0.27106995 | 2.3645498 | 20 | 5 1.2 | 20.3 |
| 168503 1999 TL ₈ | 15.6 | X | 155.51949 | 343.81946 | 29.85133 | 9.98173 | 0.1856834 | 0.25882575 | 2.4385466 | 20 | 3 3.8 | 19.5 |
| 168504 1999 TL ₁₅ | 17.4 | X | 74.26861 | 266.48436 | 177.22643 | 1.05459 | 0.1673080 | 0.25515173 | 2.4618998 | 20 | 2 17.0 | 19.9 |
| 168505 1999 TJ ₃₇ | 15.9 | X | 131.33142 | 283.84753 | 93.88970 | 7.58643 | 0.1978888 | 0.25572618 | 2.4582115 | 20 | 2 13.1 | 19.5 |
| 168506 1999 TQ ₅₀ | 17.3 | X | 224.59672 | 82.05709 | 213.46126 | 0.88505 | 0.1832492 | 0.26188224 | 2.4195356 | 20 | 1 23.9 | 21.1 |
| 168507 1999 TC ₆₄ | 17.4 | X | 134.86653 | 13.98954 | 358.33404 | 1.39465 | 0.1785436 | 0.25759446 | 2.4463112 | 20 | 2 5.8 | 20.8 |
| 168508 1999 TT ₆₈ | 16.5 | X | 326.10002 | 94.38447 | 311.08524 | 2.31541 | 0.1538992 | 0.23665410 | 2.5885707 | 20 | 11 15.3 | 19.1 |
| 168509 1999 TU ₆₈ | 16.5 | X | 228.57432 | 170.56234 | 345.49312 | 3.70363 | 0.0532177 | 0.23833672 | 2.5763730 | 20 | 11 21.4 | 19.9 |
| 168510 1999 TK ₈₁ | 16.6 | X | 102.53167 | 118.49498 | 324.60990 | 3.67115 | 0.1760369 | 0.26057872 | 2.4275979 | 20 | 3 28.4 | 19.8 |
| 168511 1999 TH ₉₈ | 15.8 | X | 173.45564 | 261.17418 | 86.12224 | 9.50715 | 0.1458635 | 0.25882270 | 2.4385657 | 20 | 2 12.8 | 19.6 |
| 168512 1999 TV ₁₀₄ | 16.5 | X | 230.79287 | 76.51611 | 283.23661 | 1.96837 | 0.1542060 | 0.26752961 | 2.3853648 | 20 | 4 18.6 | 20.2 |
| 168513 1999 TE ₁₃₁ | 16.9 | X | 176.55022 | 86.54146 | 344.61619 | 1.83305 | 0.1924939 | 0.26784718 | 2.3834790 | 20 | 5 29.4 | 20.8 |
| 168514 1999 TX ₁₃₄ | 16.9 | X | 36.98577 | 132.03999 | 202.63737 | 7.98064 | 0.1764075 | 0.23963239 | 2.5670778 | 20 | 12 10.4 | 20.4 |
| 168515 1999 TY ₁₄₂ | 16.8 | X | 163.69245 | 119.32300 | 224.94933 | 3.03623 | 0.2045395 | 0.25815672 | 2.4427579 | 20 | 1 31.2 | 20.8 |
| 168516 1999 TY ₁₅₉ | 16.2 | X | 101.24075 | 163.49145 | 243.97664 | 2.40481 | 0.1646713 | 0.25630823 | 2.4544886 | 20 | 2 7.2 | 19.2 |
| 168517 1999 TJ ₁₆₆ | 14.1 | X | 227.55013 | 130.25974 | 234.34005 | 10.49960 | 0.1996907 | 0.12498029 | 3.9619443 | 20 | 4 23.4 | 20.4 |
| 168518 1999 TX ₁₇₀ | 16.7 | X | 54.49048 | 84.60635 | 354.50168 | 1.27208 | 0.1508464 | 0.25165195 | 2.4846727 | 20 | 1 3.9 | 18.8 |
| 168519 1999 TS ₁₉₃ | 16.0 | X | 159.58407 | 122.50611 | 276.74414 | 5.61620 | 0.1323926 | 0.26079042 | 2.4262839 | 20 | 3 28.4 | 19.8 |
| 168520 1999 TV ₂₃₃ | 14.9 | X | 201.55808 | 123.03793 | 279.50106 | 9.61889 | 0.2873081 | 0.12440466 | 3.9741563 | 20 | 5 12.9 | 21.7 |
| 168521 1999 TV ₂₃₆ | 16.4 | X | 52.21527 | 277.12838 | 92.60097 | 7.42575 | 0.2431066 | 0.24397339 | 2.5365363 | 20 | — | — |
| 168522 1999 TM ₂₃₈ | 16.6 | X | 352.19187 | 25.16297 | 45.35176 | 9.31668 | 0.1844557 | 0.24247303 | 2.5469891 | 20 | — | — |
| 168523 1999 TN ₂₄₂ | 16.0 | X | 101.54629 | 256.54499 | 134.83503 | 6.03248 | 0.1308668 | 0.25200649 | 2.4823417 | 20 | 1 13.3 | 18.9 |
| 168524 1999 TU ₂₅₃ | 16.8 | X | 240.05751 | 325.58379 | 313.08412 | 2.48178 | 0.1906604 | 0.26247764 | 2.4158753 | 20 | 1 16.9 | 20.7 |
| 168525 1999 TM ₂₅₉ | 14.5 | X | 225.00838 | 335.13394 | 52.38453 | 3.58494 | 0.2682594 | 0.12566677 | 3.9475024 | 20 | 5 14.5 | 21.0 |
| 168526 1999 TG ₂₇₉ | 16.7 | X | 28.95354 | 345.89834 | 334.92842 | 4.70402 | 0.2909888 | 0.23922374 | 2.5700004 | 20 | 11 27.9 | 20.0 |
| 168527 1999 TV ₃₁₈ | 17.4 | X | 109.59112 | 123.39478 | 182.26378 | 1.11496 | 0.1185356 | 0.24421057 | 2.5348936 | 20 | — | — |
| 168528 1999 UA ₁₆ | 16.1 | X | 121.43012 | 339.95768 | 77.13864 | 3.10532 | 0.2068642 | 0.25754867 | 2.4466011 | 20 | 3 23.9 | 19.5 |
| 168529 1999 UQ ₂₀ | 16.4 | X | 15.36999 | 201.21628 | 193.85262 | 9.72422 | 0.1287411 | 0.24277330 | 2.5448886 | 20 | — | — |
| 168530 1999 UU ₃₃ | 14.5 | X | 242.21118 | 318.52676 | 36.16575 | 2.74609 | 0.1838848 | 0.12456210 | 3.9708069 | 20 | 4 27.0 | 20.6 |
| 168531 Joshuakammer | 17.1 | X | 128.93936 | 125.92796 | 40.37211 | 23.52090 | 0.0825930 | 0.36807444 | 1.9283193 | 20 | 9 8.0 | 20.1 |
| 168532 1999 VV ₂₁ | 16.1 | X | 31.43570 | 145.11888 | 229.87012 | 4.42201 | 0.1649562 | 0.24020531 | 2.5629944 | 20 | — | — |
| 168533 1999 VQ ₃₉ | 16.8 | X | 26.93233 | 319.38655 | 57.22022 | 6.07287 | 0.2536184 | 0.24009588 | 2.5637730 | 20 | — | — |
| 168534 1999 VU ₄₅ | 15.6 | X | 115.62501 | 26.42687 | 351.25508 | 6.09567 | 0.1284594 | 0.25314906 | 2.4748668 | 20 | 1 15.6 | 19.0 |
| 168535 1999 VF ₆₅ | 16.5 | X | 24.53949 | 1.46372 | 63.53190 | 0.87148 | 0.2315868 | 0.24461797 | 2.5320784 | 20 | — | — |
| 168536 1999 VU ₆₆ | 16.3 | X | 131.43333 | 291.67424 | 52.08547 | 6.96525 | 0.2492392 | 0.25159615 | 2.4850401 | 20 | 1 7.0 | 19.9 |
| 168537 1999 VG ₆₈ | 16.5 | X | 143.59772 | 297.26636 | 128.08416 | 0.67198 | 0.2082987 | 0.25997796 | 2.4313363 | 20 | 4 23.9 | 20.2 |
| 168538 1999 VA ₈₅ | 16.8 | X | 54.62235 | 98.13496 | 52.72910 | 3.23390 | 0.1430119 | 0.25869132 | 2.4393913 | 20 | 4 17.4 | 19.3 |
| 168539 1999 VF ₈₉ | 17.0 | X | 140.43797 | 235.45327 | 201.16390 | 1.44610 | 0.1982549 | 0.26075124 | 2.4265270 | 20 | 5 4.5 | 20.7 |
| 168540 1999 VT ₉₅ | 14.9 | X | 243.62360 | 149.63852 | 34.41337 | 10.50560 | 0.0532450 | 0.24396640 | 2.5365847 | 20 | — | — |
| 168541 1999 VY ₉₉ | 17.5 | X | 44.56440 | 303.68131 | 67.75330 | 0.83296 | 0.2015790 | 0.24233605 | 2.5479488 | 20 | — | — |
| 168542 1999 VL ₁₂₃ | 15.8 | X | 57.37541 | 354.53918 | 214.09559 | 4.84021 | 0.0061670 | 0.21984201 | 2.7189147 | 20 | 6 22.8 | 19.4 |
| 168543 1999 VL ₁₂₈ | 16.7 | X | 255.21632 | 196.49458 | 40.63118 | 3.16033 | 0.0087766 | 0.25120702 | 2.4876056 | 20 | — | — |
| 168544 1999 VE ₁₄₉ | 16.0 | X | 66.27536 | 261.80490 | 82.38211 | 5.48810 | 0.1096335 | 0.24050900 | 2.5608364 | 20 | — | — |
| 168545 1999 VJ ₁₆₉ | 14.3 | X | 219.57920 | 339.89866 | 48.98260 | 4.45526 | 0.2689227 | 0.12247716 | 4.0157437 | 20 | 5 12.1 | 20.8 |
| 168546 1999 VA ₁₈₉ | 16.0 | X | 144.49861 | 290.10459 | 102.79340 | 4.22922 | 0.1821191 | 0.25706433 | 2.4496733 | 20 | 3 14.6 | 19.7 |
| 168547 1999 VK ₁₉₁ | 17.1 | X | 297.20926 | 257.05843 | 230.68888 | 4.42497 | 0.1776676 | 0.23891728 | 2.5721976 | 20 | — | — |
| 168548 1999 VH ₁₉₄ | 16.5 | X | 184.75871 | 215.97719 | 259.24686 | 18.49124 | 0.0850757 | 0.36957841 | 1.9230843 | 20 | 8 6.5 | 19.3 |
| 168549 1999 VR ₂₀₉ | 15.8 | X | 331.60193 | 164.25096 | 260.45288 | 5.40035 | 0.1537194 | 0.23887791 | 2.5724803 | 20 | 12 25.4 | 18.4 |
| 168550 1999 VQ ₂₁₂ | 14.6 | X | 271.83622 | 114.10733 | 234.53016 | 7.46399 | 0.1499695 | 0.12511930 | 3.9590092 | 20 | 5 23.7 | 20.2 |
| 168551 1999 WH ₄ | 16.5 | X | 203.22964 | 319.79745 | 73.06887 | 2.60872 | 0.1890412 | 0.26591025 | 2.3950394 | 20 | 5 4.9 | 20.3 |
| 168552 1999 WV ₇ | 16.3 | X | 254.14353 | 186.92913 | 264.03030 | 19.69884 | 0.1361174 | 0.37083856 | 1.9187252 | 20 | 10 3.4 | 18.6 |
| 168553 1999 WF ₉ | 15.4 | X | 116.48576 | 87.35411 | 309.78919 | 10.90178 | 0.1786053 | 0.25328449 | 2.4739846 | 20 | 2 14.9 | 18.7 |
| 168554 1999 WS ₁₃ | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168561 1999 <i>XP</i> ₂₇ | 15.7 | X | 205.52998 | 267.74280 | 64.62242 | 5.65224 | 0.2107073 | 0.25966077 | 2.4333158 | 20 | 2 24.3 | 19.8 |
| 168562 1999 <i>XM</i> ₃₉ | 15.3 | X | 256.62283 | 135.82849 | 224.01641 | 7.74167 | 0.1050631 | 0.21843332 | 2.7305919 | 20 | 5 25.4 | 19.1 |
| 168563 1999 <i>XR</i> ₇₇ | 15.5 | X | 334.32861 | 2.83123 | 91.55062 | 14.20268 | 0.2105176 | 0.23816943 | 2.5775793 | 20 | — | — |
| 168564 1999 <i>XM</i> ₈₅ | 15.4 | X | 296.46230 | 178.77835 | 279.97167 | 12.10541 | 0.1284964 | 0.23249867 | 2.6193231 | 20 | 12 4.8 | 18.4 |
| 168565 1999 <i>XL</i> ₈₆ | 15.5 | X | 280.29806 | 30.68157 | 93.67313 | 14.91359 | 0.1991233 | 0.23237543 | 2.6202491 | 20 | 12 5.2 | 18.3 |
| 168566 1999 <i>XE</i> ₉₄ | 15.1 | X | 254.58019 | 65.44217 | 102.38819 | 17.33291 | 0.2031030 | 0.23207942 | 2.6224767 | 20 | 12 19.6 | 18.2 |
| 168567 1999 <i>XH</i> ₉₄ | 15.8 | X | 311.50556 | 173.84051 | 280.88652 | 4.49243 | 0.2393363 | 0.23352364 | 2.6116530 | 20 | 12 27.4 | 17.4 |
| 168568 1999 <i>XP</i> ₁₁₉ | 15.8 | X | 101.46452 | 41.04868 | 44.80560 | 9.36789 | 0.1809623 | 0.25636017 | 2.4541571 | 20 | 4 5.6 | 19.0 |
| 168569 1999 <i>XY</i> ₁₃₀ | 15.5 | X | 343.20907 | 78.04631 | 294.52536 | 12.32540 | 0.1936352 | 0.23263946 | 2.6182662 | 20 | 10 29.4 | 18.2 |
| 168570 1999 <i>XU</i> ₁₃₂ | 15.5 | X | 15.43799 | 330.50278 | 33.05687 | 8.41192 | 0.2077968 | 0.23452558 | 2.6042094 | 20 | 12 21.9 | 18.7 |
| 168571 1999 <i>XB</i> ₁₃₆ | 16.5 | X | 262.66215 | 75.53528 | 306.28070 | 17.87732 | 0.1670686 | 0.36529017 | 1.9381054 | 20 | 6 29.6 | 18.7 |
| 168572 1999 <i>XS</i> ₁₄₁ | 16.1 | X | 223.28427 | 59.14083 | 92.88830 | 22.39440 | 0.0474525 | 0.37305060 | 1.9111329 | 20 | 12 17.7 | 17.5 |
| 168573 1999 <i>XZ</i> ₁₄₁ | 16.3 | X | 331.39971 | 114.83232 | 272.17709 | 19.14194 | 0.0637259 | 0.37594857 | 1.9012990 | 20 | 12 7.6 | 17.7 |
| 168574 1999 <i>XD</i> ₁₄₂ | 15.8 | X | 318.13996 | 68.76571 | 57.65103 | 17.21857 | 0.2190229 | 0.23965774 | 2.5668968 | 20 | — | — |
| 168575 1999 <i>XL</i> ₁₄₂ | 16.4 | X | 39.93899 | 29.46536 | 284.94273 | 19.56985 | 0.0463193 | 0.37343999 | 1.9098042 | 20 | 11 28.9 | 18.6 |
| 168576 1999 <i>XM</i> ₁₄₂ | 16.4 | X | 190.97697 | 112.97393 | 74.93268 | 23.34998 | 0.0610771 | 0.37461624 | 1.9058043 | 20 | 12 17.8 | 18.1 |
| 168577 1999 <i>XO</i> ₁₄₂ | 15.9 | X | 289.08636 | 63.79438 | 79.19991 | 31.13202 | 0.2037739 | 0.23564938 | 2.5959233 | 20 | — | — |
| 168578 1999 <i>XJ</i> ₁₇₉ | 15.7 | X | 274.68682 | 17.65285 | 68.92445 | 12.83538 | 0.1498911 | 0.22703102 | 2.6612107 | 20 | 10 14.9 | 19.1 |
| 168579 1999 <i>XG</i> ₁₈₂ | 15.5 | X | 283.87084 | 49.03811 | 43.12017 | 14.09875 | 0.1491997 | 0.23283828 | 2.6167755 | 20 | 11 2.1 | 18.3 |
| 168580 1999 <i>XJ</i> ₂₀₈ | 15.7 | X | 43.23391 | 107.31239 | 301.39232 | 11.23683 | 0.2977107 | 0.24475092 | 2.5311613 | 20 | — | — |
| 168581 1999 <i>XO</i> ₂₁₆ | 16.3 | X | 48.47867 | 72.63632 | 283.41425 | 1.39878 | 0.0849348 | 0.23419045 | 2.6066933 | 20 | — | — |
| 168582 1999 <i>XP</i> ₂₂₈ | 16.3 | X | 187.77044 | 221.87702 | 84.92789 | 3.59067 | 0.1424741 | 0.24574100 | 2.5243581 | 20 | 1 6.7 | 20.2 |
| 168583 1999 <i>XJ</i> ₂₃₁ | 16.2 | X | 237.91724 | 135.68406 | 348.14470 | 19.62875 | 0.0605227 | 0.36956518 | 1.9231302 | 20 | 11 12.4 | 18.6 |
| 168584 1999 <i>XN</i> ₂₃₃ | 16.4 | X | 42.98889 | 255.77043 | 139.70111 | 10.67646 | 0.3091631 | 0.24412625 | 2.5354773 | 20 | — | — |
| 168585 1999 <i>XJ</i> ₂₃₆ | 16.0 | X | 18.07221 | 301.66100 | 93.00580 | 7.06872 | 0.2616215 | 0.23761945 | 2.5815551 | 20 | — | — |
| 168586 1999 <i>YN</i> ₁ | 16.9 | X | 135.41271 | 44.57233 | 48.09061 | 22.60321 | 0.0969487 | 0.35508503 | 1.9750638 | 20 | 5 8.7 | 19.1 |
| 168587 1999 <i>YM</i> ₆ | 16.5 | X | 245.37249 | 204.99316 | 299.61311 | 19.28975 | 0.1145882 | 0.37664174 | 1.8989655 | 20 | — | — |
| 168588 1999 <i>YN</i> ₁₉ | 16.8 | X | 312.45923 | 154.60100 | 293.17140 | 3.47635 | 0.2167917 | 0.23312460 | 2.6146324 | 20 | 12 18.7 | 18.7 |
| 168589 1999 <i>YJ</i> ₂₇ | 15.0 | X | 75.60444 | 32.83655 | 16.91721 | 12.77950 | 0.2203552 | 0.24642976 | 2.5196523 | 20 | 1 16.1 | 17.8 |
| 168590 2000 <i>AE</i> ₉ | 16.4 | X | 344.22494 | 78.77487 | 17.85061 | 4.47536 | 0.1526050 | 0.23909899 | 2.5708943 | 20 | — | — |
| 168591 2000 <i>AF</i> ₁₆ | 15.2 | X | 283.72748 | 118.63073 | 275.98914 | 12.35514 | 0.2562000 | 0.22604646 | 2.6689324 | 20 | 7 21.7 | 18.5 |
| 168592 2000 <i>AY</i> ₂₄ | 16.1 | X | 271.06579 | 248.39968 | 278.41319 | 2.59587 | 0.1401053 | 0.23615539 | 2.5922138 | 20 | — | — |
| 168593 2000 <i>AS</i> ₂₈ | 16.0 | X | 357.70062 | 309.92763 | 89.93726 | 8.50559 | 0.2279870 | 0.23533560 | 2.5982302 | 20 | — | — |
| 168594 2000 <i>AV</i> ₃₁ | 15.7 | X | 227.10048 | 194.45021 | 313.05821 | 12.82735 | 0.1857218 | 0.22714584 | 2.6603137 | 20 | 10 13.7 | 19.9 |
| 168595 2000 <i>AP</i> ₃₅ | 15.8 | X | 335.93234 | 138.22881 | 284.79835 | 4.19635 | 0.1524794 | 0.23460790 | 2.6036002 | 20 | 12 29.5 | 18.3 |
| 168596 2000 <i>AV</i> ₄₂ | 15.3 | X | 330.68254 | 316.91322 | 123.41413 | 34.75549 | 0.3439253 | 0.23476772 | 2.6024184 | 20 | — | — |
| 168597 2000 <i>AW</i> ₄₇ | 15.8 | X | 5.01803 | 331.67984 | 106.59128 | 5.32191 | 0.2390223 | 0.23816429 | 2.5776164 | 20 | — | — |
| 168598 2000 <i>AG</i> ₄₉ | 16.6 | X | 194.58925 | 275.83309 | 272.09199 | 17.82812 | 0.0848859 | 0.37402353 | 1.9078172 | 20 | 12 20.9 | 18.2 |
| 168599 2000 <i>AY</i> ₆₃ | 16.0 | X | 309.55201 | 325.63987 | 118.33601 | 6.67369 | 0.1900048 | 0.23111715 | 2.6297508 | 20 | 12 6.8 | 18.5 |
| 168600 2000 <i>AA</i> ₆₉ | 16.1 | X | 116.50320 | 334.27985 | 103.68057 | 7.04552 | 0.1865203 | 0.25669244 | 2.4520388 | 20 | 4 14.2 | 19.7 |
| 168601 2000 <i>AD</i> ₇₄ | 15.9 | X | 104.41376 | 277.80611 | 145.31931 | 5.21450 | 0.2492265 | 0.25345125 | 2.4728993 | 20 | 3 18.4 | 19.2 |
| 168602 2000 <i>AA</i> ₈₈ | 15.6 | X | 273.32785 | 31.09463 | 122.33212 | 19.60362 | 0.1533647 | 0.23353298 | 2.6115834 | 20 | — | — |
| 168603 2000 <i>AH</i> ₁₂₆ | 16.4 | X | 286.50880 | 68.68127 | 288.31804 | 16.79819 | 0.1502984 | 0.36153973 | 1.9514857 | 20 | 6 30.1 | 17.7 |
| 168604 2000 <i>AJ</i> ₁₃₃ | 15.0 | X | 286.26591 | 80.66977 | 73.94399 | 17.19751 | 0.2243897 | 0.23225313 | 2.6211688 | 20 | — | — |
| 168605 2000 <i>AG</i> ₁₃₄ | 15.1 | X | 48.88712 | 58.55762 | 284.47149 | 12.29357 | 0.2044894 | 0.23499551 | 2.6007364 | 20 | — | — |
| 168606 2000 <i>AS</i> ₁₅₄ | 15.4 | X | 29.80396 | 110.84899 | 295.66091 | 5.11281 | 0.1121094 | 0.24239168 | 2.5475589 | 20 | — | — |
| 168607 2000 <i>AV</i> ₁₆₇ | 15.6 | X | 1.52563 | 182.77376 | 248.83458 | 13.96631 | 0.0813361 | 0.23692780 | 2.5865767 | 20 | — | — |
| 168608 2000 <i>AA</i> ₁₇₆ | 15.9 | X | 329.83283 | 195.89457 | 250.53779 | 11.85183 | 0.1932430 | 0.23646299 | 2.5899652 | 20 | — | — |
| 168609 2000 <i>AO</i> ₁₈₁ | 16.0 | X | 303.53302 | 184.07193 | 269.79247 | 13.19182 | 0.2327276 | 0.23276233 | 2.6173447 | 20 | 12 4.9 | 18.2 |
| 168610 2000 <i>AD</i> ₁₉₆ | 15.6 | X | 234.97093 | 206.02346 | 231.96926 | 9.89094 | 0.1870942 | 0.22009338 | 2.7168442 | 20 | 7 28.1 | 20.0 |
| 168611 2000 <i>AJ</i> ₂₁₄ | 16.2 | X | 163.72685 | 356.21465 | 170.27154 | 1.37919 | 0.1182171 | 0.21995962 | 2.7179455 | 20 | 9 14.9 | 20.4 |
| 168612 2000 <i>AP</i> ₂₂₉ | 15.4 | X | 98.71911 | 130.28149 | 75.38352 | 10.30014 | 0.1104997 | 0.21749332 | 2.7384539 | 20 | 9 1.2 | 19.6 |
| 168613 2000 <i>AA</i> ₂₄₆ | 16.7 | X | 281.70133 | 336.25775 | 9.25293 | 2.73450 | 0.1905365 | 0.27646838 | 2.3336680 | 20 | 5 23.9 | 19.5 |
| 168614 2000 <i>BW</i> ₆ | 15.9 | X | 119.12707 | 35.37229 | 21.32691 | 14.86043 | 0.0941125 | 0.25245280 | 2.4794152 | 20 | 3 10.7 | 19.3 |
| 168615 2000 <i>BC</i> ₁₂ | 16.0 | X | 3.96999 | 284.09104 | 123.45383 | 2.33083 | 0.0824927 | 0.23415872 | 2.6069287 | 20 | — | — |
| 168616 2000 <i>BN</i> ₂₁ | 15.7 | X | 351.18038 | 324.98876 | 312.67469 | 8.05853 | 0.1316888 | 0.21068765 | 2.7971129 | 20 | 6 24.7 | 18.8 |
| 168617 2000 <i>BH</i> ₂₆ | 16.4 | X | 280.60297 | 177.99879 | 336.84631 | 5.36787 | 0.2246893 | 0.23344696 | 2.6122249 | 20 | — | — |
| 168618 2000 <i>BT</i> ₂₆ | 16.1 | X | 235.73471 | 34.71111 | 119.64580 | 3.69119 | 0.1754166 | 0.22736651 | 2.6585922 | 20 | 11 10.7 | 19.7 |
| 168619 2000 <i>BB</i> ₄₀ | 15.7 | X | 13.18665 | 12.65074 | 307.13371 | 4.42943 | 0.0547508 | 0.22038982 | 2.7144074 | 20 | 9 23.9 | 19.2 |
| 168620 2000 <i>BD</i> ₄₁ | 16.3 | X | 196.44707 | 126.55078 | 306.83796 | 1.90554 | 0.0451696 | 0.21280423 | 2.7785351 | 20 | 6 24.7 | 20.2 |
| 168621 2000 <i>CD</i> ₂ | 15.6 | X | 349.24419 | 35.32869 | 88.61079 | 4.63204 | 0.2010184 | 0.23866631 | 2.5740006 | 20 | — | — |
| 168622 2000 <i>CA</i> ₁₄ | 16.0 | X | 224.24554 | 294.57799 | 220.14782 | 4.50840 | 0.2202595 | 0.22630256 | 2.6669184 | 20 | 10 21.9 | 20.0 |
| 168623 2000 <i>CU</i> ₁₅ | 16.0 | X | 298.53621 | 330.17717 | 128.61778 | 15.53560 | 0.1255811 | 0.23180620 | 2.6245369 | 20 | 12 11.5 | 19.1 |
| 168624 2000 <i>CW</i> ₂₂ | 16.2 | X | 250.46006 | 269.95111 | 239.08088 | 3.44736 | 0.1920528 | 0.22880731 | 2.6474196 | 20 | 11 19.0 | 19.4 |
| 168625 2000 <i>CN</i> ₂₈ | 16.2 | X | 33.61727 | 188.46122 | 248.07364 | 2.52212 | 0.2540960 | 0.24153599 | 2.5535722 | 20 | — | — |
| 168626 2000 <i>CE</i> ₅₅ | 16.5 | X | 234.06075 | 143.25703 | 354.94482 | 1.94167 | 0.1476952 | 0.22629329 | 2.6669913 | 20 | 10 20.9 | 20.1 |
| 168627 2000 <i>CO</i> ₆₅ | 15.1 | X | 62.85258 | 309.83554 | 147.70452 | 12.89076 | 0.1623633 | 0.19750244 | 2.9202570 | 20 | 2 26.8 | 18.5 |
| 168628 2000 <i>CU</i> ₆₆ | 15.4 | X | 209.33884 | 332.17139 | 240.55858 | 11.05272 | 0.1049057 | 0.23156744 | 2.6263406 | 20 | 12 30.6 | 19.2 |
| 168629 2000 <i>CB</i> ₆₉ | 15.9 | X | 34.81300 | 321.64767 | 312.98407 | 3.51480 | 0.1087778 | 0.21619328 | 2.7494211 | 20 | 9 2.5 | 19.3 |
| 168630 2000 <i>CO</i> ₈₃ | 15.7 | X | 224.28687 | 1.29625 | 123.21373 | 7.52327 | 0.1676759 | 0.22235060 | 2.6984260 | 20 | 9 23.1 | 19.8 |
| 168631 2000 <i>CG</i> ₈₄ | 15.6 | X | 244.51988 | 328.73679 | 147.03789 | 12.85434 | 0.1981902 | 0.22439475 | 2.6820133 | 20 | 10 1.4 | 19.5 |
| 168632 2000 <i>CB</i> ₈₈ | 16.3 | X | 280.9144 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|------------|----|---------|----------|
| 168641 2000 DA ₁₁ | 16.1 | X | 258.97452 | 164.49844 | 337.94008 | 2.78335 | 0.0937113 | 0.22882075 | 2.6473160 | 20 | 12 6.9 | 19.5 |
| 168642 2000 DT ₃₆ | 15.7 | X | 336.02599 | 156.19030 | 148.43419 | 4.08485 | 0.0347461 | 0.21109205 | 2.7935394 | 20 | 7 9.7 | 19.4 |
| 168643 2000 DP ₄₀ | 15.6 | X | 247.08160 | 275.98204 | 166.47195 | 5.67773 | 0.0759064 | 0.21909902 | 2.7250580 | 20 | 9 4.2 | 19.3 |
| 168644 2000 DY ₄₁ | 16.0 | X | 108.77465 | 80.97906 | 151.01875 | 7.06788 | 0.1474087 | 0.21763708 | 2.7372478 | 20 | 10 15.6 | 20.3 |
| 168645 2000 DU ₄₈ | 16.4 | X | 189.86959 | 241.47030 | 312.22695 | 1.48792 | 0.0231074 | 0.22549807 | 2.6732577 | 20 | 11 23.2 | 20.1 |
| 168646 2000 DE ₅₄ | 15.5 | X | 321.97068 | 68.57996 | 324.12222 | 5.18467 | 0.0388433 | 0.22144339 | 2.7057909 | 20 | 10 15.9 | 19.1 |
| 168647 2000 DF ₅₄ | 15.5 | X | 341.64357 | 168.27349 | 166.69214 | 13.41279 | 0.0781803 | 0.21551946 | 2.7551488 | 20 | 8 28.5 | 18.9 |
| 168648 2000 DD ₅₆ | 16.1 | X | 44.24083 | 309.10759 | 182.01695 | 2.49861 | 0.0861105 | 0.24592848 | 2.5230750 | 20 | 2 24.5 | 18.8 |
| 168649 2000 DZ ₆₀ | 15.5 | X | 236.44937 | 51.11566 | 162.66027 | 10.46489 | 0.0425535 | 0.18416099 | 3.0596444 | 20 | — | — |
| 168650 2000 DN ₆₃ | 15.6 | X | 120.64569 | 213.52396 | 311.71643 | 3.21268 | 0.0411741 | 0.21079192 | 2.7961904 | 20 | 7 23.4 | 19.4 |
| 168651 2000 DL ₆₇ | 16.1 | X | 272.33937 | 116.41737 | 337.67763 | 11.55132 | 0.2185792 | 0.22543703 | 2.6737402 | 20 | 9 29.2 | 19.4 |
| 168652 2000 DH ₆₈ | 15.4 | X | 110.20046 | 187.07150 | 348.00899 | 9.08438 | 0.0765739 | 0.21042583 | 2.7994326 | 20 | 7 29.8 | 19.5 |
| 168653 2000 DJ ₈₂ | 16.0 | X | 205.35912 | 87.93460 | 96.71493 | 4.09273 | 0.0946842 | 0.22667529 | 2.6639941 | 20 | 11 23.3 | 19.8 |
| 168654 2000 DP ₈₃ | 16.1 | X | 116.53273 | 163.64430 | 358.03456 | 7.89349 | 0.1529559 | 0.21105539 | 2.7938629 | 20 | 7 27.1 | 20.5 |
| 168655 2000 DV ₈₄ | 16.0 | X | 186.96626 | 93.87280 | 53.04269 | 4.39272 | 0.0674236 | 0.22043464 | 2.7140395 | 20 | 9 19.1 | 19.9 |
| 168656 2000 DV ₁₀₅ | 15.5 | X | 190.80527 | 42.02721 | 115.43917 | 6.08242 | 0.0981147 | 0.21962661 | 2.7206922 | 20 | 10 5.3 | 19.6 |
| 168657 2000 ED ₁₀ | 16.5 | X | 305.77368 | 242.33941 | 278.67687 | 1.18358 | 0.0624766 | 0.23520150 | 2.5992177 | 20 | — | — |
| 168658 2000 EK ₁₈ | 15.9 | X | 117.61913 | 162.39877 | 354.11804 | 8.80525 | 0.1318249 | 0.21041509 | 2.7995278 | 20 | 7 19.6 | 20.3 |
| 168659 2000 EH ₂₂ | 16.0 | X | 52.78766 | 90.43171 | 154.19977 | 5.48144 | 0.1181277 | 0.21358015 | 2.7718015 | 20 | 8 20.9 | 19.4 |
| 168660 2000 EN ₃₃ | 15.3 | X | 91.81040 | 66.21909 | 139.15387 | 13.20040 | 0.0871935 | 0.21169193 | 2.7882595 | 20 | 8 15.3 | 19.2 |
| 168661 2000 EA ₅₃ | 15.8 | X | 298.67311 | 235.52574 | 166.89195 | 4.15339 | 0.0889312 | 0.21964705 | 2.7205234 | 20 | 9 22.9 | 19.0 |
| 168662 2000 EH ₈₉ | 15.4 | X | 65.78026 | 79.23641 | 128.58666 | 9.76881 | 0.0849634 | 0.20851258 | 2.8165310 | 20 | 7 14.6 | 19.1 |
| 168663 2000 EM ₁₀₄ | 14.9 | X | 240.30814 | 65.59700 | 78.75648 | 12.42711 | 0.2071745 | 0.22441341 | 2.6818646 | 20 | 11 1.6 | 18.8 |
| 168664 2000 EC ₁₁₀ | 16.1 | X | 213.56883 | 150.14954 | 16.62575 | 9.53407 | 0.2305106 | 0.22343505 | 2.6896877 | 20 | 10 23.9 | 20.4 |
| 168665 2000 EJ ₁₁₃ | 16.8 | X | 293.55925 | 90.03941 | 27.45715 | 6.21576 | 0.2543864 | 0.23157382 | 2.6262924 | 20 | 12 13.3 | 19.0 |
| 168666 2000 EV ₁₁₈ | 15.7 | X | 214.62576 | 109.32654 | 23.32257 | 11.89627 | 0.0997126 | 0.22148776 | 2.7054295 | 20 | 9 29.8 | 19.6 |
| 168667 2000 EF ₁₄₁ | 16.4 | X | 245.29985 | 100.08449 | 341.79654 | 2.93591 | 0.0469119 | 0.21795366 | 2.7345967 | 20 | 9 5.5 | 20.1 |
| 168668 2000 EK ₁₄₉ | 15.7 | X | 156.62776 | 55.37951 | 131.45366 | 5.77856 | 0.0462018 | 0.21976826 | 2.7195230 | 20 | 10 6.3 | 19.6 |
| 168669 2000 ED ₁₅₃ | 15.4 | X | 24.54297 | 42.06307 | 174.81907 | 13.84599 | 0.0451470 | 0.20367636 | 2.8609414 | 20 | 5 25.3 | 19.4 |
| 168670 2000 ED ₁₆₄ | 16.1 | X | 239.25915 | 126.71066 | 341.88346 | 2.14222 | 0.0820634 | 0.21998293 | 2.7177535 | 20 | 9 27.4 | 19.9 |
| 168671 2000 EH ₁₇₆ | 16.3 | X | 309.14987 | 50.30926 | 231.75226 | 0.94340 | 0.0612919 | 0.20280215 | 2.8691572 | 20 | 4 28.5 | 20.1 |
| 168672 2000 EF ₁₈₁ | 15.8 | X | 198.84890 | 96.48322 | 32.60564 | 9.81561 | 0.1688673 | 0.21859634 | 2.7292341 | 20 | 9 4.5 | 20.3 |
| 168673 2000 EX ₁₉₈ | 16.2 | X | 287.55593 | 134.14974 | 289.63298 | 1.14245 | 0.0775235 | 0.22340873 | 2.6898989 | 20 | 10 5.9 | 19.6 |
| 168674 2000 FC | 15.7 | X | 43.81259 | 169.74824 | 247.46362 | 4.42269 | 0.2677230 | 0.23811808 | 2.5779499 | 20 | — | — |
| 168675 2000 FX ₁ | 15.7 | X | 194.72120 | 175.27630 | 115.27087 | 0.28937 | 0.1485714 | 0.18317515 | 3.0706125 | 20 | 1 2.2 | 20.5 |
| 168676 2000 FN ₃ | 15.6 | X | 152.04108 | 89.88386 | 107.42061 | 7.90400 | 0.1998846 | 0.21757351 | 2.7377810 | 20 | 10 14.9 | 20.3 |
| 168677 2000 FP ₄ | 16.1 | X | 265.64127 | 189.70077 | 210.31834 | 3.77055 | 0.0735000 | 0.21091138 | 2.7951345 | 20 | 8 1.5 | 19.8 |
| 168678 2000 FC ₅ | 15.6 | X | 281.86286 | 25.75838 | 18.22736 | 5.79470 | 0.0682930 | 0.21387528 | 2.7692510 | 20 | 9 3.3 | 19.1 |
| 168679 2000 FU ₇ | 14.9 | X | 34.55138 | 35.12335 | 86.83654 | 31.67790 | 0.1675850 | 0.24198619 | 2.5504041 | 20 | 2 1.4 | 17.9 |
| 168680 2000 FU ₁₂ | 15.5 | X | 5.89429 | 1.97622 | 112.05530 | 12.92996 | 0.1789187 | 0.23883120 | 2.5728157 | 20 | — | — |
| 168681 2000 FP ₁₉ | 15.5 | X | 161.52143 | 47.22297 | 128.04310 | 8.07059 | 0.1377438 | 0.21660505 | 2.7459355 | 20 | 9 26.1 | 19.9 |
| 168682 2000 FN ₅₄ | 15.9 | X | 10.40113 | 341.73963 | 237.32684 | 1.05078 | 0.0332029 | 0.20003420 | 2.8955643 | 20 | 5 4.8 | 19.6 |
| 168683 2000 FE ₆₉ | 15.8 | X | 294.65965 | 45.78163 | 19.16259 | 3.21479 | 0.2090270 | 0.22067968 | 2.7120300 | 20 | 10 2.1 | 18.5 |
| 168684 2000 FD ₇₂ | 15.6 | X | 334.15271 | 344.62334 | 357.31181 | 8.50782 | 0.0737524 | 0.21381794 | 2.7697461 | 20 | 8 28.9 | 19.0 |
| 168685 2000 GM ₁₂ | 14.7 | X | 175.64753 | 57.39971 | 190.14739 | 14.10179 | 0.2485590 | 0.17523264 | 3.1627100 | 20 | 12 18.7 | 20.4 |
| 168686 2000 GH ₁₉ | 16.0 | X | 245.87545 | 227.72978 | 213.75212 | 3.58389 | 0.0422526 | 0.21449976 | 2.7638736 | 20 | 9 4.5 | 19.8 |
| 168687 2000 GP ₁₉ | 16.3 | X | 337.90079 | 229.33013 | 243.54845 | 1.02754 | 0.1568333 | 0.23290768 | 2.6162556 | 20 | — | — |
| 168688 2000 GN ₂₉ | 15.5 | X | 197.48728 | 117.45463 | 11.57453 | 14.70808 | 0.0871220 | 0.21433261 | 2.7653104 | 20 | 9 8.6 | 19.7 |
| 168689 2000 GM ₃₀ | 15.7 | X | 274.81307 | 238.55939 | 198.33585 | 2.29736 | 0.0640498 | 0.21766058 | 2.7370508 | 20 | 10 6.2 | 19.3 |
| 168690 2000 GL ₃₇ | 15.5 | X | 68.14094 | 211.16391 | 191.20943 | 6.74481 | 0.0729636 | 0.18417758 | 3.0594607 | 20 | — | — |
| 168691 2000 GT ₄₆ | 15.4 | X | 251.31635 | 333.39083 | 259.29126 | 0.39161 | 0.0776905 | 0.18417100 | 3.0593355 | 20 | — | — |
| 168692 2000 GU ₅₆ | 15.4 | X | 212.41021 | 125.84521 | 28.65350 | 14.78316 | 0.1336527 | 0.21917664 | 2.7244146 | 20 | 10 18.8 | 19.3 |
| 168693 2000 GV ₅₉ | 15.6 | X | 115.00562 | 151.06811 | 41.33238 | 5.28468 | 0.2166141 | 0.21000050 | 2.8032112 | 20 | 9 6.9 | 20.3 |
| 168694 2000 GN ₆₆ | 15.4 | X | 303.24919 | 227.53390 | 356.12529 | 2.27825 | 0.1022473 | 0.18942401 | 3.0027052 | 20 | 2 3.0 | 19.4 |
| 168695 2000 GT ₁₁₈ | 16.5 | X | 237.27389 | 268.93145 | 195.42428 | 4.54416 | 0.0748736 | 0.21858142 | 2.7293583 | 20 | 9 20.0 | 20.2 |
| 168696 2000 GY ₁₁₉ | 16.4 | X | 255.91565 | 343.19516 | 8.37198 | 1.77999 | 0.0942296 | 0.20239542 | 2.8729998 | 20 | 5 14.5 | 20.5 |
| 168697 2000 GQ ₁₂₂ | 15.3 | X | 194.38639 | 82.40490 | 200.93372 | 10.93138 | 0.2725364 | 0.18037684 | 3.1022886 | 20 | — | — |
| 168698 Robpickman | 16.1 | X | 156.21367 | 304.24054 | 237.09242 | 3.63284 | 0.0968340 | 0.21602908 | 2.7508141 | 20 | 9 24.0 | 20.4 |
| 168699 2000 GO ₁₄₄ | 17.5 | X | 127.01451 | 115.99373 | 208.12207 | 2.12793 | 0.1381530 | 0.32481018 | 2.0959598 | 20 | — | — |
| 168700 2000 GE ₁₄₇ | 8.3 | X | 23.55329 | 50.94855 | 154.80403 | 4.99043 | 0.2339461 | 0.00395269 | 39.6163322 | 20 | 5 25.6 | 23.3 |
| 168701 2000 GU ₁₅₉ | 15.5 | X | 75.78468 | 279.56030 | 237.09860 | 5.14885 | 0.1321251 | 0.20166451 | 2.8799375 | 20 | 5 28.3 | 19.4 |
| 168702 2000 GC ₁₇₅ | 15.9 | X | 358.66401 | 166.74207 | 299.72667 | 4.99143 | 0.2875053 | 0.23667894 | 2.5883895 | 20 | — | — |
| 168703 2000 GP ₁₈₃ | 6.0 | X | 355.09950 | 222.07677 | 23.41326 | 4.91985 | 0.0807475 | 0.00389224 | 40.0254393 | 20 | 5 19.7 | 21.7 |
| 168704 2000 GA ₁₈₆ | 15.4 | X | 221.96676 | 68.66255 | 173.17268 | 0.35648 | 0.1046072 | 0.18059326 | 3.0998096 | 20 | — | — |
| 168705 2000 HN | 16.0 | X | 209.74142 | 283.57879 | 194.80825 | 7.06202 | 0.0898038 | 0.21378118 | 2.7700636 | 20 | 9 1.7 | 20.1 |
| 168706 2000 HE ₁ | 16.1 | X | 144.16298 | 276.61613 | 42.47620 | 1.41107 | 0.1372045 | 0.17719105 | 3.1393630 | 20 | — | — |
| 168707 2000 HR ₆ | 15.3 | X | 260.52219 | 201.36850 | 41.59561 | 11.52424 | 0.2102268 | 0.18383188 | 3.0632951 | 20 | — | — |
| 168708 2000 HJ ₁₀ | 15.5 | X | 248.32876 | 108.45115 | 49.83729 | 15.33039 | 0.2483520 | 0.22439884 | 2.6819807 | 20 | 11 17.8 | 18.9 |
| 168709 2000 HS ₃₄ | 15.6 | X | 199.51681 | 105.32545 | 34.52305 | 9.66508 | 0.1039403 | 0.21501842 | 2.7594272 | 20 | 9 22.2 | 19.8 |
| 168710 2000 HE ₄₁ | 16.2 | X | 74.81073 | 204.43536 | 103.58269 | 9.42096 | 0.2488701 | 0.31232772 | 2.1514390 | 20 | — | — |
| 168711 2000 HM ₇₄ | 14.6 | X | 150.39000 | 108.97479 | 86.14065 | 26.58543 | 0.2596212 | 0.21555593 | 2.7548380 | 20 | 10 21.5 | 20.0 |
| 168712 2000 HY ₇₉ | 15.1 | X | 156.07192 | 85.94516 | 74.98083 | 25.48818 | 0.1456379 | 0.21147195 | 2.7901928 | 20 | 9 13.5 | 20.2 |
| 168713 2000 HN ₈₆ | 17.0 | X | 81.19309 | 223.11875 | 77.36098 | 5.11186 | 0.2802743 | 0.31197115 | 2.1530780 | 20 | — | — |
| 168714 2000 JQ ₁₀ | 16.9 | X | 338.16402 | 100.79614 | 223. | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|------------|------------|-----------|----|---------|----------|
| 168721 2000 <i>KB</i> ₄₅ | 15.4 | X | 213.17269 | 214.16727 | 85.55357 | 14.86413 | 0.1305845 | 0.18359738 | 3.0659029 | 20 | 1 30.8 | 20.5 |
| 168722 2000 <i>LH</i> | 15.4 | X | 310.52934 | 168.31148 | 101.58308 | 4.33473 | 0.0453289 | 0.19353831 | 2.9599980 | 20 | 4 19.3 | 19.4 |
| 168723 2000 <i>OR</i> ₉ | 16.9 | X | 331.05436 | 40.44937 | 258.60778 | 4.24284 | 0.1737009 | 0.29267681 | 2.2466935 | 20 | 6 15.3 | 18.4 |
| 168724 2000 <i>OG</i> ₁₀ | 14.6 | X | 178.26675 | 349.86585 | 290.24274 | 13.76190 | 0.1670261 | 0.17158356 | 3.2073936 | 20 | — | — |
| 168725 2000 <i>OH</i> ₁₆ | 16.5 | X | 353.04512 | 348.38117 | 326.84885 | 4.97702 | 0.1659179 | 0.29751059 | 2.2222919 | 20 | 9 9.3 | 17.9 |
| 168726 2000 <i>OP</i> ₂₉ | 16.2 | X | 91.36069 | 94.62575 | 190.24570 | 5.17276 | 0.1982042 | 0.30869645 | 2.1682780 | 20 | 12 18.5 | 19.6 |
| 168727 2000 <i>OJ</i> ₃₀ | 16.7 | X | 328.99517 | 45.64959 | 242.24899 | 4.20218 | 0.1570465 | 0.29174924 | 2.2514530 | 20 | 5 24.3 | 18.4 |
| 168728 2000 <i>OZ</i> ₃₃ | 16.8 | X | 186.49861 | 108.81816 | 259.76948 | 4.46627 | 0.3084729 | 0.27861320 | 2.3216759 | 20 | 3 19.5 | 21.2 |
| 168729 2000 <i>OA</i> ₄₄ | 16.5 | X | 1.36299 | 22.52333 | 291.54508 | 6.02041 | 0.2459180 | 0.29732955 | 2.2231939 | 20 | 10 7.3 | 18.3 |
| 168730 2000 <i>OX</i> ₅₁ | 17.0 | X | 298.56949 | 98.83470 | 219.09117 | 6.81886 | 0.3031929 | 0.28910405 | 2.2651655 | 20 | 4 18.8 | 19.8 |
| 168731 2000 <i>OF</i> ₅₅ | 16.9 | X | 79.41981 | 350.35969 | 312.38320 | 1.61720 | 0.0847102 | 0.30849549 | 2.1692195 | 20 | 12 22.7 | 19.7 |
| 168732 2000 <i>OT</i> ₅₅ | 17.1 | X | 336.29532 | 196.57775 | 159.15793 | 3.02116 | 0.2094363 | 0.29900805 | 2.2148661 | 20 | 10 17.6 | 18.3 |
| 168733 2000 <i>PD</i> ₂ | 16.7 | X | 191.41834 | 354.58928 | 329.60479 | 9.86962 | 0.2378420 | 0.27528501 | 2.3403510 | 20 | 2 1.4 | 20.6 |
| 168734 2000 <i>PB</i> ₂₈ | 16.8 | X | 54.39877 | 171.89797 | 116.70126 | 4.44405 | 0.1760962 | 0.30471669 | 2.1871163 | 20 | 11 15.7 | 19.7 |
| 168735 2000 <i>QX</i> ₇ | 17.0 | X | 324.92836 | 62.59464 | 261.96163 | 2.35839 | 0.2578070 | 0.29276498 | 2.2462425 | 20 | 7 3.6 | 17.9 |
| 168736 2000 <i>QF</i> ₂₂ | 16.5 | X | 346.63267 | 168.93837 | 164.32821 | 5.03290 | 0.1839068 | 0.29593580 | 2.2301687 | 20 | 9 29.9 | 17.8 |
| 168737 2000 <i>QT</i> ₃₂ | 16.4 | X | 41.45452 | 198.10181 | 105.63550 | 8.19791 | 0.1757409 | 0.30201612 | 2.2001349 | 20 | 11 20.9 | 19.2 |
| 168738 2000 <i>QN</i> ₄₇ | 16.2 | X | 347.63011 | 20.43055 | 343.70596 | 4.96943 | 0.1455416 | 0.30065571 | 2.2067666 | 20 | 11 15.2 | 18.2 |
| 168739 2000 <i>QG</i> ₅₇ | 16.5 | X | 46.06632 | 131.56401 | 136.23835 | 4.96464 | 0.1564252 | 0.29856304 | 2.2170663 | 20 | 10 4.1 | 19.0 |
| 168740 2000 <i>QG</i> ₈₁ | 16.4 | X | 221.72091 | 311.87633 | 171.52646 | 7.35151 | 0.15752815 | 0.29935867 | 2.2131362 | 20 | 10 10.7 | 18.9 |
| 168741 2000 <i>QZ</i> ₈₈ | 16.4 | X | 53.35535 | 50.44202 | 237.02038 | 4.69068 | 0.2068816 | 0.30200970 | 2.2001660 | 20 | 11 14.8 | 19.4 |
| 168742 2000 <i>QY</i> ₉₂ | 16.6 | X | 134.47314 | 37.27504 | 326.40083 | 5.99000 | 0.1210371 | 0.26982594 | 2.3718119 | 20 | 1 16.7 | 19.7 |
| 168743 2000 <i>QO</i> ₉₇ | 16.5 | X | 33.18193 | 117.71209 | 153.94817 | 5.96493 | 0.1873407 | 0.29608999 | 2.2293943 | 20 | 9 24.6 | 18.7 |
| 168744 2000 <i>QB</i> ₁₀₂ | 16.8 | X | 295.37846 | 255.45162 | 114.82483 | 6.78420 | 0.1749948 | 0.29207244 | 2.2497918 | 20 | 7 29.1 | 18.9 |
| 168745 2000 <i>QJ</i> ₁₀₂ | 16.5 | X | 240.43073 | 250.89076 | 73.81254 | 4.59054 | 0.2048709 | 0.28032548 | 2.3122121 | 20 | 3 12.9 | 20.1 |
| 168746 2000 <i>QY</i> ₁₁₈ | 16.4 | X | 13.60018 | 14.33473 | 298.76391 | 5.14331 | 0.1881537 | 0.29792200 | 2.2202455 | 20 | 10 20.6 | 18.5 |
| 168747 2000 <i>QJ</i> ₁₂₁ | 16.1 | X | 316.02406 | 45.13935 | 248.55542 | 5.59240 | 0.1439577 | 0.28677995 | 2.2773871 | 20 | 5 9.4 | 18.4 |
| 168748 2000 <i>QB</i> ₁₂₄ | 15.9 | X | 357.91036 | 321.08661 | 24.12210 | 6.33616 | 0.2054579 | 0.29772648 | 2.2212174 | 20 | 11 14.9 | 17.8 |
| 168749 2000 <i>QA</i> ₁₅₈ | 14.6 | X | 113.72372 | 151.05362 | 267.20001 | 10.24511 | 0.2096008 | 0.17361108 | 3.1823731 | 20 | 3 16.9 | 19.7 |
| 168750 2000 <i>QZ</i> ₁₆₂ | 15.0 | X | 224.63337 | 69.97110 | 279.87856 | 8.87371 | 0.1259007 | 0.18316194 | 3.0707601 | 20 | 4 2.6 | 20.0 |
| 168751 2000 <i>QP</i> ₁₇₄ | 16.8 | X | 41.26195 | 126.74005 | 198.64538 | 5.56410 | 0.0764500 | 0.30401080 | 2.1905006 | 20 | 12 4.7 | 19.4 |
| 168752 2000 <i>QQ</i> ₁₇₄ | 15.3 | X | 301.00798 | 46.87161 | 304.83743 | 9.60287 | 0.0379044 | 0.19233951 | 2.9722846 | 20 | 7 22.3 | 19.1 |
| 168753 2000 <i>QJ</i> ₁₈₅ | 17.0 | X | 256.64481 | 266.18453 | 110.74080 | 4.53484 | 0.2159536 | 0.28906994 | 2.2653436 | 20 | 6 3.0 | 20.0 |
| 168754 2000 <i>QM</i> ₁₉₀ | 16.4 | X | 349.39781 | 236.78083 | 73.83873 | 5.32918 | 0.1436489 | 0.29499955 | 2.2348848 | 20 | 8 25.7 | 18.1 |
| 168755 2000 <i>QY</i> ₁₉₀ | 16.8 | X | 108.83658 | 229.17353 | 60.59102 | 4.64584 | 0.1827262 | 0.30974526 | 2.1633806 | 20 | — | — |
| 168756 2000 <i>QJ</i> ₁₉₉ | 16.8 | X | 288.89784 | 34.57088 | 1.10506 | 5.59543 | 0.1554848 | 0.29552555 | 2.2322322 | 20 | 9 1.3 | 18.6 |
| 168757 2000 <i>QV</i> ₂₀₀ | 16.6 | X | 295.52174 | 353.23801 | 357.09031 | 7.80168 | 0.1587496 | 0.29143680 | 2.2530619 | 20 | 6 30.2 | 18.9 |
| 168758 2000 <i>QH</i> ₂₀₂ | 16.9 | X | 352.58268 | 223.08304 | 119.07781 | 2.57971 | 0.1438678 | 0.29842410 | 2.2177544 | 20 | 10 23.7 | 18.7 |
| 168759 2000 <i>QM</i> ₂₀₆ | 16.8 | X | 313.82581 | 243.54892 | 114.76681 | 0.89055 | 0.1891416 | 0.29375162 | 2.2412099 | 20 | 8 17.2 | 18.3 |
| 168760 2000 <i>QB</i> ₂₁₂ | 15.6 | X | 143.65999 | 157.60350 | 347.91093 | 7.42805 | 0.0284425 | 0.28993075 | 2.2608575 | 20 | 8 2.1 | 18.4 |
| 168761 2000 <i>QQ</i> ₂₁₂ | 16.4 | X | 239.42427 | 90.49041 | 337.07339 | 3.93982 | 0.1933735 | 0.29156279 | 2.2524128 | 20 | 7 27.2 | 19.5 |
| 168762 2000 <i>QG</i> ₂₁₅ | 16.9 | X | 250.14291 | 283.57238 | 113.46651 | 3.89347 | 0.1430334 | 0.28916215 | 2.2648620 | 20 | 7 2.9 | 19.6 |
| 168763 2000 <i>QM</i> ₂₁₅ | 17.0 | X | 71.84512 | 255.65311 | 36.62802 | 1.90251 | 0.1255475 | 0.30318125 | 2.1944945 | 20 | 12 2.5 | 19.9 |
| 168764 2000 <i>QH</i> ₂₂₀ | 16.5 | X | 332.01416 | 250.03275 | 170.71087 | 6.18293 | 0.0805393 | 0.30409761 | 2.1900837 | 20 | 12 8.8 | 18.6 |
| 168765 2000 <i>QH</i> ₂₂₃ | 16.2 | X | 355.09892 | 301.04593 | 96.92815 | 6.08728 | 0.1479464 | 0.30579287 | 2.1819819 | 20 | — | — |
| 168766 2000 <i>QF</i> ₂₂₄ | 16.6 | X | 94.93598 | 68.45102 | 190.37115 | 5.65872 | 0.1827638 | 0.30303191 | 2.1952154 | 20 | 11 18.2 | 19.9 |
| 168767 Kochte | 17.0 | X | 257.24900 | 87.25783 | 329.17737 | 7.87269 | 0.2104547 | 0.29390291 | 2.2404407 | 20 | 8 1.0 | 19.6 |
| 168768 2000 <i>RN</i> ₁₅ | 16.6 | X | 104.08228 | 24.02500 | 241.58551 | 5.90560 | 0.1494973 | 0.30528462 | 2.1844030 | 20 | 12 3.4 | 19.8 |
| 168769 2000 <i>RO</i> ₁₆ | 16.8 | X | 303.19789 | 95.07971 | 215.05250 | 6.22957 | 0.1674877 | 0.28813448 | 2.2702441 | 20 | 5 9.3 | 19.2 |
| 168770 2000 <i>RD</i> ₁₇ | 16.6 | X | 341.32943 | 61.31907 | 221.30411 | 7.63159 | 0.2332648 | 0.29115624 | 2.2545090 | 20 | 6 5.6 | 17.7 |
| 168771 2000 <i>RM</i> ₁₉ | 16.5 | X | 287.05439 | 35.97973 | 271.76887 | 6.59954 | 0.1441408 | 0.28520485 | 2.2857643 | 20 | 4 11.7 | 19.4 |
| 168772 2000 <i>RO</i> ₂₁ | 16.4 | X | 276.03637 | 41.30345 | 279.34177 | 4.57408 | 0.2306749 | 0.28532875 | 2.2851025 | 20 | 4 4.1 | 19.6 |
| 168773 2000 <i>RA</i> ₂₂ | 17.0 | X | 71.46078 | 82.13132 | 305.28913 | 4.08385 | 0.1820328 | 0.31282802 | 2.1491445 | 20 | — | — |
| 168774 2000 <i>RC</i> ₂₈ | 16.7 | X | 290.25657 | 100.49958 | 258.61274 | 5.76320 | 0.1257940 | 0.29053497 | 2.2572719 | 20 | 7 8.9 | 19.1 |
| 168775 2000 <i>RD</i> ₃₀ | 16.9 | X | 309.21918 | 114.01694 | 240.36527 | 5.10816 | 0.1986090 | 0.29251249 | 2.2475349 | 20 | 7 25.5 | 18.7 |
| 168776 2000 <i>RU</i> ₃₀ | 16.7 | X | 56.16271 | 79.40629 | 303.94963 | 6.03310 | 0.1515067 | 0.31019458 | 2.1612910 | 20 | — | — |
| 168777 2000 <i>RD</i> ₃₇ | 15.7 | X | 123.83642 | 179.22559 | 334.74100 | 25.05539 | 0.1111274 | 0.28841894 | 2.2687512 | 20 | 7 31.9 | 19.2 |
| 168778 2000 <i>RK</i> ₄₈ | 15.9 | X | 266.88647 | 48.42580 | 272.14475 | 7.22558 | 0.2477775 | 0.28152974 | 2.3056136 | 20 | 3 22.4 | 19.5 |
| 168779 2000 <i>RX</i> ₄₈ | 16.2 | X | 278.83385 | 99.20324 | 316.96207 | 6.22966 | 0.1760957 | 0.29222829 | 2.2489918 | 20 | 9 6.8 | 18.5 |
| 168780 2000 <i>RN</i> ₅₂ | 16.6 | X | 223.24147 | 176.69368 | 231.13950 | 7.18599 | 0.1085387 | 0.29005558 | 2.2602088 | 20 | 6 18.9 | 19.8 |
| 168781 2000 <i>RO</i> ₅₉ | 16.8 | X | 314.23123 | 86.78426 | 232.77172 | 3.58126 | 0.1830671 | 0.28924378 | 2.2644359 | 20 | 6 10.9 | 18.5 |
| 168782 2000 <i>RN</i> ₆₃ | 16.4 | X | 144.19355 | 232.96868 | 166.38764 | 4.45136 | 0.2499915 | 0.27654918 | 2.3332134 | 20 | 3 25.4 | 20.0 |
| 168783 2000 <i>RB</i> ₁₀₄ | 16.5 | X | 276.19564 | 66.07312 | 294.74092 | 5.82905 | 0.1348615 | 0.28719060 | 2.2752157 | 20 | 6 17.7 | 19.2 |
| 168784 2000 <i>SQ</i> ₂ | 15.5 | X | 196.80411 | 347.11105 | 91.78607 | 25.49502 | 0.2715654 | 0.28226102 | 2.3016297 | 20 | 6 24.3 | 19.4 |
| 168785 2000 <i>SS</i> ₇ | 16.6 | X | 216.45960 | 196.57959 | 252.98823 | 5.46132 | 0.1072218 | 0.28922474 | 2.2645353 | 20 | 8 6.9 | 19.8 |
| 168786 2000 <i>SK</i> ₁₁ | 16.0 | X | 14.19930 | 81.93828 | 178.17776 | 22.08507 | 0.1608870 | 0.29029474 | 2.2589673 | 20 | 7 20.2 | 18.5 |
| 168787 2000 <i>SE</i> ₂₂ | 16.9 | X | 245.23131 | 304.85487 | 96.32065 | 4.39448 | 0.2360383 | 0.28820079 | 2.2698959 | 20 | 6 20.8 | 19.9 |
| 168788 2000 <i>SN</i> ₂₈ | 17.0 | X | 214.28047 | 197.47893 | 245.45410 | 2.69565 | 0.1790850 | 0.28864181 | 2.2675832 | 20 | 7 20.5 | 20.2 |
| 168789 2000 <i>SF</i> ₃₃ | 17.4 | X | 259.81568 | 200.24649 | 132.35591 | 2.84728 | 0.1879955 | 0.28365567 | 2.2940792 | 20 | 4 11.5 | 20.6 |
| 168790 2000 <i>SR</i> ₃₆ | 16.7 | X | 273.84122 | 61.34339 | 15.29798 | 3.00438 | 0.0722383 | 0.29789222 | 2.2203935 | 20 | 10 19.5 | 18.7 |
| 168791 2000 <i>SQ</i> ₄₃ | 18.7 | X | 258.70012 | 144.71729 | 170.92145 | 5.18305 | 0.5052184 | 0.28355568 | 2. | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|--------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 168801 | 2000 | <i>SM</i> ₁₀₉ | 17.0 | X | 280.52159 | 168.98598 | 193.26562 | 2.69897 | 0.1734275 | 0.28850798 | 2.2682843 | 20 | 6 19.7 | 19.7 |
| 168802 | 2000 | <i>ST</i> ₁₁₀ | 16.1 | X | 83.64346 | 219.46413 | 185.85826 | 5.37303 | 0.1727612 | 0.26533486 | 2.3985006 | 20 | 1 7.5 | 18.6 |
| 168803 | 2000 | <i>SG</i> ₁₁₈ | 16.4 | X | 309.62416 | 329.25446 | 28.88448 | 7.24406 | 0.1457585 | 0.29142637 | 2.2531156 | 20 | 8 16.2 | 18.4 |
| 168804 | 2000 | <i>SF</i> ₁₃₄ | 16.4 | X | 210.56733 | 191.93522 | 234.58024 | 6.81813 | 0.1698025 | 0.28588228 | 2.2821520 | 20 | 6 25.2 | 19.9 |
| 168805 | 2000 | <i>SN</i> ₁₃₇ | 15.9 | X | 88.43012 | 198.73030 | 221.60909 | 6.01826 | 0.1978730 | 0.26784654 | 2.3834828 | 20 | 2 7.7 | 18.6 |
| 168806 | 2000 | <i>SV</i> ₁₃₇ | 16.3 | X | 256.21105 | 140.52364 | 219.14369 | 6.83270 | 0.1350893 | 0.28507812 | 2.2864417 | 20 | 5 19.9 | 19.4 |
| 168807 | 2000 | <i>SE</i> ₁₄₆ | 16.6 | X | 269.54076 | 164.06049 | 207.27297 | 6.54950 | 0.2023990 | 0.28763898 | 2.2728506 | 20 | 6 12.6 | 19.5 |
| 168808 | 2000 | <i>SD</i> ₁₄₇ | 16.8 | X | 334.49031 | 324.62501 | 6.54640 | 3.29087 | 0.1084951 | 0.29167943 | 2.2518123 | 20 | 8 24.1 | 18.6 |
| 168809 | 2000 | <i>SZ</i> ₁₆₈ | 16.8 | X | 325.13333 | 116.52859 | 225.93422 | 5.62609 | 0.1418727 | 0.29190436 | 2.2506554 | 20 | 8 17.1 | 18.8 |
| 168810 | 2000 | <i>SR</i> ₁₇₄ | 14.9 | X | 228.88435 | 54.37285 | 302.85063 | 8.96723 | 0.1201360 | 0.17974481 | 3.1095566 | 20 | 4 16.3 | 19.9 |
| 168811 | 2000 | <i>SE</i> ₁₈₄ | 16.1 | X | 266.96008 | 120.17758 | 214.23331 | 6.14752 | 0.1490811 | 0.28266543 | 2.2994338 | 20 | 4 25.7 | 19.1 |
| 168812 | 2000 | <i>SA</i> ₁₈₉ | 16.5 | X | 340.63179 | 74.55908 | 201.07105 | 5.34598 | 0.1374514 | 0.28702033 | 2.2761154 | 20 | 6 1.3 | 18.3 |
| 168813 | 2000 | <i>SC</i> ₁₈₉ | 17.0 | X | 110.13986 | 92.40275 | 323.73447 | 2.41590 | 0.2209625 | 0.27028923 | 2.3691009 | 20 | 3 8.4 | 20.1 |
| 168814 | 2000 | <i>SX</i> ₂₁₉ | 15.8 | X | 288.04600 | 293.94676 | 77.60134 | 7.77638 | 0.1273228 | 0.28908768 | 2.2652510 | 20 | 7 26.8 | 18.2 |
| 168815 | 2000 | <i>ST</i> ₂₂₀ | 16.5 | X | 320.22953 | 239.81697 | 108.44401 | 6.89236 | 0.2109212 | 0.29195628 | 2.2503885 | 20 | 8 14.5 | 17.7 |
| 168816 | 2000 | <i>SR</i> ₂₂₄ | 16.2 | X | 321.62161 | 13.27925 | 232.05553 | 5.40269 | 0.1216667 | 0.28030555 | 2.3123217 | 20 | 3 9.1 | 18.9 |
| 168817 | 2000 | <i>SD</i> ₂₅₅ | 16.3 | X | 327.26582 | 225.46630 | 63.71330 | 4.07515 | 0.1252207 | 0.28664859 | 2.2780828 | 20 | 5 27.4 | 18.3 |
| 168818 | 2000 | <i>SF</i> ₂₆₃ | 16.5 | X | 211.69229 | 22.61527 | 56.44789 | 6.94439 | 0.1398766 | 0.28774191 | 2.2723085 | 20 | 7 17.7 | 19.8 |
| 168819 | 2000 | <i>SC</i> ₂₆₅ | 16.6 | X | 308.93318 | 209.37435 | 124.08827 | 2.56486 | 0.1852512 | 0.28979868 | 2.2615444 | 20 | 6 22.8 | 19.4 |
| 168820 | 2000 | <i>SK</i> ₂₆₆ | 16.6 | X | 239.31395 | 330.67316 | 91.35795 | 5.88268 | 0.1401310 | 0.28784476 | 2.2717672 | 20 | 7 26.2 | 19.5 |
| 168821 | 2000 | <i>SH</i> ₂₇₀ | 17.0 | X | 199.31102 | 258.53191 | 174.02909 | 5.98802 | 0.1367324 | 0.28340724 | 2.2954196 | 20 | 6 23.9 | 20.4 |
| 168822 | 2000 | <i>SL</i> ₂₇₀ | 17.2 | X | 214.51296 | 265.73639 | 73.45262 | 3.01019 | 0.2214264 | 0.27658819 | 2.3329941 | 20 | 3 8.3 | 21.1 |
| 168823 | 2000 | <i>SN</i> ₂₇₁ | 16.4 | X | 237.33023 | 353.52928 | 57.22740 | 8.86872 | 0.1115549 | 0.28611652 | 2.2809062 | 20 | 7 11.4 | 19.4 |
| 168824 | 2000 | <i>SE</i> ₂₇₄ | 17.0 | X | 307.59662 | 299.31203 | 39.51632 | 6.67815 | 0.2335540 | 0.28937771 | 2.2637371 | 20 | 6 19.2 | 19.1 |
| 168825 | 2000 | <i>SK</i> ₂₈₈ | 16.9 | X | 238.41630 | 189.05126 | 245.04246 | 5.26717 | 0.1197655 | 0.29138622 | 2.2533226 | 20 | 8 11.3 | 19.8 |
| 168826 | 2000 | <i>SB</i> ₂₉₁ | 16.8 | X | 266.76109 | 218.36628 | 209.82436 | 6.86818 | 0.1249920 | 0.29410424 | 2.2394182 | 20 | 9 13.5 | 19.2 |
| 168827 | 2000 | <i>SY</i> ₃₀₈ | 16.2 | X | 39.60234 | 300.16627 | 308.04784 | 6.85120 | 0.0923844 | 0.28831685 | 2.2692867 | 20 | 8 9.9 | 18.4 |
| 168828 | 2000 | <i>SY</i> ₃₂₀ | 15.9 | X | 192.92126 | 136.23573 | 267.87171 | 23.09055 | 0.3123190 | 0.27426237 | 2.3461651 | 20 | 5 5.4 | 20.5 |
| 168829 | 2000 | <i>SF</i> ₃₂₂ | 17.1 | X | 77.59262 | 352.99986 | 294.93926 | 1.40974 | 0.1562620 | 0.30388565 | 2.1911020 | 20 | 12 5.8 | 20.3 |
| 168830 | 2000 | <i>SK</i> ₃₃₄ | 16.9 | X | 230.83403 | 211.22965 | 164.43735 | 6.72693 | 0.1162841 | 0.28446015 | 2.2897519 | 20 | 5 15.4 | 20.1 |
| 168831 | 2000 | <i>SZ</i> ₃₃₄ | 16.3 | X | 14.49104 | 285.45684 | 62.64911 | 5.48672 | 0.1840495 | 0.30101378 | 2.2050163 | 20 | 12 14.9 | 18.7 |
| 168832 | 2000 | <i>SD</i> ₃₄₀ | 16.7 | X | 63.34984 | 268.37251 | 13.00398 | 5.76460 | 0.1670966 | 0.30193007 | 2.2005528 | 20 | 11 11.6 | 19.7 |
| 168833 | 2000 | <i>SP</i> ₃₄₃ | 16.6 | X | 6.71105 | 341.18523 | 294.43269 | 4.55496 | 0.0585579 | 0.29061172 | 2.2573243 | 20 | 7 22.9 | 18.7 |
| 168834 | 2000 | <i>SB</i> ₃₅₂ | 16.9 | X | 26.14505 | 201.98777 | 107.06126 | 3.05277 | 0.1246152 | 0.29771165 | 2.2212912 | 20 | 10 28.3 | 19.2 |
| 168835 | 2000 | <i>SD</i> ₃₆₄ | 17.3 | X | 324.84119 | 228.13731 | 70.83902 | 5.09729 | 0.2529920 | 0.29110027 | 2.2547980 | 20 | 5 17.6 | 18.9 |
| 168836 | 2000 | <i>SH</i> ₃₆₄ | 15.1 | X | 210.30772 | 241.32091 | 112.08073 | 11.08368 | 0.1304398 | 0.18036315 | 3.1024456 | 20 | 4 2.8 | 20.2 |
| 168837 | 2000 | <i>TZ</i> ₃₆ | 14.8 | X | 29.21055 | 15.88967 | 0.47368 | 8.05854 | 0.1273134 | 0.15732912 | 3.3983125 | 20 | 12 23.6 | 19.5 |
| 168838 | 2000 | <i>TB</i> ₄₀ | 16.7 | X | 290.24913 | 306.50594 | 89.63914 | 6.51235 | 0.1666390 | 0.29460092 | 2.2369004 | 20 | 9 5.1 | 18.7 |
| 168839 | 2000 | <i>TX</i> ₄₈ | 16.1 | X | 311.36767 | 241.02827 | 54.59978 | 6.49289 | 0.1662309 | 0.28670141 | 2.2778030 | 20 | 5 1.7 | 18.2 |
| 168840 | 2000 | <i>TF</i> ₅₈ | 17.1 | X | 267.09190 | 191.12581 | 167.94858 | 5.03848 | 0.1633693 | 0.28577260 | 2.2827359 | 20 | 5 29.5 | 20.1 |
| 168841 | 2000 | <i>TB</i> ₆₃ | 17.1 | X | 262.80007 | 309.80849 | 52.69600 | 3.94118 | 0.1340061 | 0.28488893 | 2.2874538 | 20 | 5 31.9 | 19.8 |
| 168842 | 2000 | <i>UP</i> ₆₃ | 16.4 | X | 213.61415 | 262.22175 | 63.83211 | 8.06650 | 0.2525157 | 0.27436447 | 2.3455830 | 20 | 2 22.7 | 20.6 |
| 168843 | 2000 | <i>UG</i> ₄ | 16.5 | X | 246.88499 | 349.87948 | 27.03245 | 8.04187 | 0.1346058 | 0.28351397 | 2.2948435 | 20 | 5 30.6 | 19.8 |
| 168844 | 2000 | <i>UX</i> ₁₉ | 17.0 | X | 146.56595 | 20.09402 | 62.22958 | 3.07477 | 0.1776098 | 0.27699385 | 2.3307157 | 20 | 5 16.0 | 20.5 |
| 168845 | 2000 | <i>UJ</i> ₂₈ | 16.8 | X | 199.67368 | 207.57238 | 239.21015 | 3.33830 | 0.0828447 | 0.28632827 | 2.2797815 | 20 | 7 16.9 | 19.9 |
| 168846 | 2000 | <i>UQ</i> ₃₄ | 17.3 | X | 218.02240 | 97.74273 | 348.53179 | 1.75725 | 0.1979811 | 0.28654709 | 2.2786207 | 20 | 7 28.2 | 20.7 |
| 168847 | 2000 | <i>UU</i> ₃₄ | 16.6 | X | 177.59498 | 178.84110 | 259.98165 | 1.13467 | 0.1755875 | 0.28050544 | 2.3112230 | 20 | 6 9.7 | 20.3 |
| 168848 | 2000 | <i>UD</i> ₄₇ | 16.4 | X | 231.80282 | 267.57475 | 58.02284 | 2.93509 | 0.2185527 | 0.27596413 | 2.3365099 | 20 | 3 5.8 | 20.2 |
| 168849 | 2000 | <i>UK</i> ₅₁ | 16.9 | X | 220.73467 | 222.46857 | 211.33175 | 3.19613 | 0.1157953 | 0.28540980 | 2.2844699 | 20 | 7 20.9 | 19.9 |
| 168850 | 2000 | <i>UN</i> ₆₃ | 17.0 | X | 228.26387 | 170.35404 | 277.21597 | 2.36141 | 0.1255872 | 0.28879092 | 2.2668025 | 20 | 8 17.9 | 20.1 |
| 168851 | 2000 | <i>UQ</i> ₆₇ | 16.3 | X | 84.65962 | 212.63593 | 258.57470 | 6.19727 | 0.0678324 | 0.27272668 | 2.3549641 | 20 | 3 22.0 | 19.1 |
| 168852 | 2000 | <i>UJ</i> ₇₁ | 16.6 | X | 156.23393 | 123.70098 | 320.09549 | 1.73172 | 0.1206204 | 0.27797690 | 2.3252175 | 20 | 5 24.0 | 19.9 |
| 168853 | 2000 | <i>UJ</i> ₇₆ | 16.7 | X | 102.27594 | 50.10515 | 47.07178 | 4.21089 | 0.1542965 | 0.27254126 | 2.3560322 | 20 | 4 14.8 | 19.6 |
| 168854 | 2000 | <i>UP</i> ₈₄ | 16.2 | X | 142.05607 | 71.06345 | 55.33012 | 5.80683 | 0.1210916 | 0.28183514 | 2.3039477 | 20 | 7 6.7 | 19.6 |
| 168855 | 2000 | <i>UC</i> ₉₀ | 16.5 | X | 127.46644 | 79.92066 | 16.97580 | 5.59217 | 0.0838034 | 0.27670349 | 2.3323459 | 20 | 5 4.2 | 19.5 |
| 168856 | 2000 | <i>UY</i> ₁₀₁ | 16.7 | X | 238.41885 | 292.76859 | 16.02715 | 4.89718 | 0.2575278 | 0.27594204 | 2.3366346 | 20 | 2 18.4 | 20.7 |
| 168857 | 2000 | <i>UA</i> ₁₀₂ | 17.1 | X | 8.69568 | 79.42037 | 273.63797 | 4.47055 | 0.1892008 | 0.29834430 | 2.2181499 | 20 | 12 13.8 | 19.4 |
| 168858 | 2000 | <i>VN</i> ₈ | 17.0 | X | 146.45837 | 232.50033 | 209.79910 | 2.58630 | 0.1366229 | 0.27672134 | 2.3322456 | 20 | 5 13.2 | 20.2 |
| 168859 | 2000 | <i>VG</i> ₁₈ | 16.7 | X | 350.88033 | 270.31704 | 88.21330 | 6.26583 | 0.2171459 | 0.29602535 | 2.2297189 | 20 | 11 26.1 | 18.5 |
| 168860 | 2000 | <i>VH</i> ₂₁ | 16.4 | X | 44.54298 | 267.32377 | 213.57766 | 7.11289 | 0.1076352 | 0.26687150 | 2.3892848 | 20 | 2 5.6 | 18.9 |
| 168861 | 2000 | <i>VM</i> ₂₂ | 16.6 | X | 200.46338 | 233.86133 | 195.84159 | 5.97566 | 0.0926107 | 0.28165429 | 2.3049339 | 20 | 6 23.6 | 19.8 |
| 168862 | 2000 | <i>VS</i> ₂₂ | 16.8 | X | 170.95981 | 200.40581 | 243.78407 | 1.91125 | 0.1954950 | 0.27935743 | 2.3175507 | 20 | 6 10.8 | 20.3 |
| 168863 | 2000 | <i>VW</i> ₂₄ | 16.9 | X | 184.59150 | 145.38158 | 264.89362 | 1.37072 | 0.2059845 | 0.27763823 | 2.3271080 | 20 | 5 9.6 | 20.8 |
| 168864 | 2000 | <i>VW</i> ₂₅ | 16.5 | X | 182.06945 | 21.00953 | 32.54191 | 6.64911 | 0.1049897 | 0.27845104 | 2.3225772 | 20 | 5 10.4 | 19.9 |
| 168865 | 2000 | <i>VX</i> ₄₁ | 17.1 | X | 229.11798 | 96.66040 | 285.90215 | 2.89084 | 0.1672005 | 0.28207104 | 2.3026630 | 20 | 5 15.9 | 20.5 |
| 168866 | 2000 | <i>VR</i> ₄₂ | 16.8 | X | 189.75057 | 33.94427 | 31.13119 | 9.03679 | 0.1286000 | 0.28063247 | 2.3105255 | 20 | 6 2.4 | 20.3 |
| 168867 | 2000 | <i>VP</i> ₄₄ | 16.7 | X | 207.83035 | 274.48027 | 194.17148 | 0.28510 | 0.1314350 | 0.28764548 | 2.2728163 | 20 | 8 22.7 | 19.7 |
| 168868 | 2000 | <i>VV</i> ₅₂ | 16.4 | X | 1 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

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| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 168881 | 2000 | WN ₄₈ | 16.8 | X | 147.76486 | 319.58745 | 118.03415 | 4.26698 | 0.3001415 | 0.27271838 | 2.3550119 | 20 | 5 18.9 | 21.0 |
| 168882 | 2000 | WZ ₅₆ | 16.8 | X | 191.64133 | 216.22594 | 230.99395 | 4.06581 | 0.1961897 | 0.28105366 | 2.3082165 | 20 | 7 3.0 | 20.4 |
| 168883 | 2000 | WL ₅₇ | 16.5 | X | 200.85125 | 338.15563 | 91.76333 | 6.04098 | 0.1847221 | 0.28055096 | 2.3109730 | 20 | 6 19.7 | 20.2 |
| 168884 | 2000 | WB ₇₁ | 16.1 | X | 151.25066 | 186.41055 | 261.80955 | 8.86612 | 0.0877149 | 0.27796911 | 2.3252609 | 20 | 5 22.3 | 19.2 |
| 168885 | 2000 | WO ₇₆ | 16.8 | X | 194.26608 | 177.71740 | 260.60630 | 4.64753 | 0.0980001 | 0.28177670 | 2.3042663 | 20 | 6 28.1 | 20.1 |
| 168886 | 2000 | WH ₇₈ | 17.0 | X | 151.78706 | 134.26856 | 322.43329 | 1.69891 | 0.1290303 | 0.27774547 | 2.3265089 | 20 | 6 6.4 | 20.4 |
| 168887 | 2000 | WB ₈₃ | 16.3 | X | 114.65669 | 126.09196 | 268.26780 | 6.29332 | 0.1188894 | 0.26494010 | 2.4008826 | 20 | 1 29.7 | 19.4 |
| 168888 | 2000 | WH ₉₀ | 16.4 | X | 167.32917 | 356.15348 | 55.21339 | 7.54213 | 0.0789942 | 0.27409397 | 2.3471259 | 20 | 4 22.7 | 19.6 |
| 168889 | 2000 | WO ₉₅ | 16.3 | X | 306.93880 | 88.87196 | 275.27762 | 3.69084 | 0.2773867 | 0.28973794 | 2.2618605 | 20 | 7 22.9 | 17.6 |
| 168890 | 2000 | WK ₁₁₆ | 16.2 | X | 178.79851 | 151.56141 | 283.04082 | 5.12457 | 0.2104364 | 0.27739164 | 2.3284869 | 20 | 6 5.0 | 20.0 |
| 168891 | 2000 | WO ₁₂₂ | 16.4 | X | 232.25153 | 88.13334 | 266.96932 | 5.15171 | 0.1437811 | 0.27668734 | 2.3324367 | 20 | 4 13.1 | 19.9 |
| 168892 | 2000 | WK ₁₂₄ | 16.2 | X | 151.94836 | 93.32690 | 44.44966 | 23.95441 | 0.2365605 | 0.28091841 | 2.3089574 | 20 | 8 14.8 | 20.7 |
| 168893 | 2000 | WS ₁₂₈ | 16.8 | X | 119.84563 | 247.51607 | 222.21159 | 1.64724 | 0.1702702 | 0.27402095 | 2.3475429 | 20 | 5 24.3 | 20.0 |
| 168894 | 2000 | WE ₁₃₀ | 16.7 | X | 229.67716 | 206.09052 | 250.35918 | 5.68934 | 0.1173101 | 0.28730761 | 2.2745979 | 20 | 8 30.9 | 19.7 |
| 168895 | 2000 | WE ₁₃₁ | 16.2 | X | 234.74225 | 116.93907 | 217.18021 | 6.15693 | 0.1115806 | 0.27517324 | 2.3409848 | 20 | 3 22.1 | 19.5 |
| 168896 | 2000 | WC ₁₃₄ | 16.2 | X | 198.42100 | 90.99015 | 330.33126 | 4.70583 | 0.2052688 | 0.28073147 | 2.3099823 | 20 | 6 4.6 | 20.0 |
| 168897 | 2000 | WA ₁₃₆ | 16.6 | X | 197.19324 | 320.99521 | 122.53061 | 4.17404 | 0.1414732 | 0.28279442 | 2.2987346 | 20 | 7 6.4 | 20.0 |
| 168898 | 2000 | WQ ₁₃₇ | 15.7 | X | 40.68010 | 86.70736 | 51.36322 | 5.05056 | 0.1537161 | 0.26290296 | 2.4132690 | 20 | 3 4.8 | 17.8 |
| 168899 | 2000 | WV ₁₄₇ | 16.9 | X | 176.10469 | 207.68286 | 246.44478 | 2.87820 | 0.0876695 | 0.28059994 | 2.3107041 | 20 | 6 29.2 | 20.2 |
| 168900 | 2000 | WW ₁₆₀ | 16.4 | X | 228.03260 | 212.52201 | 129.63441 | 7.51743 | 0.2341437 | 0.27704920 | 2.3304052 | 20 | 3 23.4 | 20.3 |
| 168901 | 2000 | WJ ₁₆₄ | 16.2 | X | 241.83485 | 134.45390 | 201.38251 | 12.12896 | 0.2462964 | 0.27841871 | 2.3227570 | 20 | 3 22.1 | 20.0 |
| 168902 | 2000 | WR ₁₆₆ | 17.1 | X | 254.66805 | 267.16193 | 103.32201 | 3.14590 | 0.1348954 | 0.28324312 | 2.2963062 | 20 | 6 2.2 | 20.0 |
| 168903 | 2000 | WW ₁₈₈ | 16.8 | X | 243.55380 | 108.51030 | 263.73222 | 3.65690 | 0.1349386 | 0.28281941 | 2.2985991 | 20 | 5 21.3 | 19.8 |
| 168904 | 2000 | WY ₁₈₉ | 17.5 | X | 199.52899 | 22.87309 | 15.45398 | 2.45879 | 0.2134769 | 0.27911616 | 2.3188860 | 20 | 5 6.8 | 21.3 |
| 168905 | 2000 | XT ₁ | 16.7 | X | 87.40725 | 164.73756 | 268.50931 | 2.78875 | 0.2079188 | 0.26387200 | 2.4073570 | 20 | 2 27.7 | 19.4 |
| 168906 | 2000 | XE ₁₂ | 16.0 | X | 285.92620 | 66.39325 | 309.43177 | 5.82407 | 0.2022927 | 0.28730390 | 2.2746175 | 20 | 7 14.8 | 18.2 |
| 168907 | 2000 | XN ₁₉ | 16.6 | X | 186.31050 | 77.28394 | 353.02202 | 6.59733 | 0.0954032 | 0.27927155 | 2.3180258 | 20 | 6 7.0 | 20.0 |
| 168908 | 2000 | XH ₂₁ | 16.5 | X | 135.45347 | 74.36753 | 6.72653 | 7.40301 | 0.0747578 | 0.27302501 | 2.3532484 | 20 | 4 20.8 | 19.8 |
| 168909 | 2000 | XV ₃₀ | 16.0 | X | 131.98582 | 134.39398 | 322.80929 | 7.13401 | 0.0736101 | 0.27393929 | 2.3480094 | 20 | 5 7.5 | 19.3 |
| 168910 | 2000 | XC ₅₂ | 16.8 | X | 217.85963 | 37.66687 | 354.67352 | 4.62034 | 0.2416240 | 0.27923203 | 2.3182444 | 20 | 5 12.7 | 20.6 |
| 168911 | 2000 | XM ₅₃ | 16.5 | X | 176.71874 | 72.57359 | 256.80996 | 6.45204 | 0.1333503 | 0.26459041 | 2.4029975 | 20 | 1 19.2 | 20.2 |
| 168912 | 2000 | YV ₂ | 15.8 | X | 3.44176 | 83.84802 | 58.61558 | 7.64179 | 0.0951807 | 0.25959934 | 2.4336997 | 20 | 1 1.1 | 18.6 |
| 168913 | 2000 | YA ₃ | 16.6 | X | 222.49208 | 87.61450 | 251.24177 | 5.78513 | 0.1375215 | 0.27293395 | 2.3537718 | 20 | 3 12.9 | 20.2 |
| 168914 | 2000 | YU ₂₁ | 16.5 | X | 56.11762 | 27.32920 | 85.63721 | 10.28798 | 0.2077890 | 0.26232918 | 2.4167867 | 20 | 3 8.4 | 18.8 |
| 168915 | 2000 | YV ₃₇ | 16.8 | X | 127.29506 | 290.60272 | 153.81613 | 2.72013 | 0.2023304 | 0.27027125 | 2.3692060 | 20 | 5 2.7 | 20.2 |
| 168916 | 2000 | YZ ₄₂ | 16.8 | X | 191.81861 | 35.86246 | 23.63851 | 0.57813 | 0.1554509 | 0.27657650 | 2.3330598 | 20 | 5 28.9 | 20.4 |
| 168917 | 2000 | YM ₄₄ | 16.3 | X | 19.25307 | 217.02883 | 285.27842 | 1.67862 | 0.1310241 | 0.26098444 | 2.4250813 | 20 | 1 24.7 | 18.4 |
| 168918 | 2000 | YX ₄₄ | 16.5 | X | 21.10632 | 232.71063 | 262.18541 | 1.61089 | 0.1460292 | 0.26022948 | 2.4297694 | 20 | 1 16.6 | 18.6 |
| 168919 | 2000 | YR ₄₉ | 16.9 | X | 90.45766 | 201.76128 | 275.46928 | 1.60089 | 0.1196244 | 0.26802295 | 2.3824368 | 20 | 4 19.7 | 19.9 |
| 168920 | 2000 | YK ₅₀ | 16.7 | X | 157.60731 | 261.58581 | 131.11255 | 6.56819 | 0.2433405 | 0.26909342 | 2.3761143 | 20 | 3 30.5 | 20.7 |
| 168921 | 2000 | YT ₅₃ | 16.2 | X | 105.73686 | 358.53803 | 91.43210 | 5.07756 | 0.1247162 | 0.26689972 | 2.3891164 | 20 | 4 7.2 | 19.3 |
| 168922 | 2000 | YL ₅₅ | 16.8 | X | 154.00105 | 244.43801 | 222.11437 | 2.73105 | 0.1445156 | 0.27607317 | 2.3358946 | 20 | 6 22.8 | 20.2 |
| 168923 | 2000 | YU ₅₆ | 16.4 | X | 72.75793 | 315.32228 | 130.72657 | 2.62469 | 0.1076044 | 0.26198374 | 2.4189107 | 20 | 2 8.3 | 19.0 |
| 168924 | 2000 | YE ₅₉ | 16.5 | X | 152.89477 | 354.27426 | 89.55785 | 4.01608 | 0.1082789 | 0.27285281 | 2.3542384 | 20 | 5 20.8 | 19.9 |
| 168925 | 2000 | YV ₅₉ | 16.5 | X | 74.72752 | 333.51634 | 117.23062 | 7.27404 | 0.0877979 | 0.26231641 | 2.4168651 | 20 | 2 16.7 | 19.2 |
| 168926 | 2000 | YN ₆₅ | 16.2 | X | 332.08619 | 254.12991 | 257.84019 | 3.87751 | 0.1339075 | 0.25625684 | 2.4548167 | 20 | — | — |
| 168927 | 2000 | YD ₆₈ | 15.3 | X | 118.86298 | 319.02894 | 132.38692 | 24.55931 | 0.1541590 | 0.26618792 | 2.3933735 | 20 | 5 6.7 | 19.3 |
| 168928 | 2000 | YG ₇₁ | 16.2 | X | 76.66820 | 6.42770 | 85.65137 | 8.15515 | 0.0770330 | 0.26595513 | 2.3947700 | 20 | 2 21.6 | 19.0 |
| 168929 | 2000 | YT ₇₂ | 17.2 | X | 105.72613 | 47.45750 | 0.83326 | 1.41404 | 0.2250554 | 0.26549401 | 2.3975421 | 20 | 2 23.7 | 20.1 |
| 168930 | 2000 | YV ₇₃ | 16.5 | X | 269.47108 | 328.12630 | 107.37959 | 6.32920 | 0.1114724 | 0.29015584 | 2.2596881 | 20 | 10 7.1 | 18.9 |
| 168931 | 2000 | YL ₈₂ | 16.3 | X | 350.52246 | 110.33665 | 279.81720 | 6.57208 | 0.1199869 | 0.29643123 | 2.2276831 | 20 | 12 26.3 | 18.6 |
| 168932 | 2000 | YG ₈₆ | 16.8 | X | 168.49916 | 238.41877 | 216.56851 | 1.98207 | 0.1909827 | 0.27702519 | 2.3305399 | 20 | 6 22.6 | 20.4 |
| 168933 | 2000 | YQ ₈₈ | 16.9 | X | 315.88870 | 77.74475 | 294.87453 | 5.06441 | 0.1638066 | 0.28902688 | 2.2655687 | 20 | 9 14.7 | 17.7 |
| 168934 | 2000 | YR ₉₁ | 15.9 | X | 250.73351 | 78.02866 | 310.89577 | 1.70844 | 0.2120842 | 0.28144596 | 2.3060712 | 20 | 6 12.6 | 20.0 |
| 168935 | 2000 | YC ₉₅ | 16.8 | X | 50.27934 | 21.49656 | 112.24582 | 3.37858 | 0.1446294 | 0.26404864 | 2.4062833 | 20 | 3 15.1 | 19.0 |
| 168936 | 2000 | YN ₉₅ | 16.3 | X | 29.70609 | 205.28155 | 301.87225 | 2.58843 | 0.0707678 | 0.26282302 | 2.4137583 | 20 | 2 19.7 | 19.0 |
| 168937 | 2000 | YU ₉₅ | 16.1 | X | 301.22795 | 259.26324 | 100.49392 | 7.76964 | 0.1435442 | 0.28521544 | 2.2857077 | 20 | 7 28.7 | 18.3 |
| 168938 | 2000 | YS ₁₀₇ | 16.8 | X | 135.06262 | 116.66362 | 347.77145 | 1.78868 | 0.1751781 | 0.27310465 | 2.3527908 | 20 | 6 2.3 | 20.2 |
| 168939 | 2000 | YB ₁₀₈ | 16.6 | X | 33.87223 | 159.00486 | 341.68157 | 2.25077 | 0.1634240 | 0.26252056 | 2.4156119 | 20 | 2 21.1 | 18.3 |
| 168940 | 2000 | YL ₁₀₉ | 16.5 | X | 37.16890 | 132.15574 | 45.90642 | 2.80861 | 0.1279848 | 0.26749176 | 2.3855898 | 20 | 4 23.0 | 18.5 |
| 168941 | 2000 | YO ₁₁₁ | 15.9 | X | 254.05419 | 282.76603 | 89.73134 | 7.07213 | 0.1550889 | 0.27848226 | 2.3224036 | 20 | 6 1.7 | 18.9 |
| 168942 | 2000 | YL ₁₁₄ | 16.3 | X | 308.05964 | 267.88145 | 94.83965 | 8.52904 | 0.1497232 | 0.28485210 | 2.2876510 | 20 | 8 18.0 | 18.4 |
| 168943 | 2000 | YG ₁₁₈ | 16.6 | X | 265.89362 | 325.07718 | 94.94918 | 3.95486 | 0.1581485 | 0.28450728 | 2.2894990 | 20 | 8 27.6 | 19.2 |
| 168944 | 2000 | YK ₁₂₆ | 15.2 | X | 229.41425 | 135.00240 | 88.75418 | 15.58417 | 0.1577556 | 0.24575345 | 2.5242729 | 20 | — | — |
| 168945 | 2000 | YN ₁₃₁ | 16.5 | X | 304.53052 | 26.82282 | 57.51093 | 4.74397 | 0.1005780 | 0.29448477 | 2.2374885 | 20 | 12 21.9 | 18.4 |
| 168946 | 2000 | YY ₁₃₅ | 16.9 | X | 144.53929 | 62.18961 | 9.60277 | 5.91967 | 0.2000616 | 0.27068698 | 2.3667795 | 20 | 4 30.3 | 20.7 |
| 168947 | 2000 | YB ₁₃₉ | 16.5 | X | 217.49566 | 279.24172 | 89.37179 | 4.24452 | 0.1900415 | 0.27665690 | 2.3326077 | 20 | 4 17.8 | 20.2 |
| 168948 | 2000 | Silvestri | 16.0 | X | 103.86303 | 126.85364 | 143.47216 | 4.72936 | 0.0962521 | 0.23295166 | 2.6159263 | 20 | 11 24.3 | 19.9 |
| 168949 | 2001 | AV ₁₈ | 17.6 | X | 116.55776 | 234.99986 | 216.61944 | 2.19608 | 0.2860105 | 0.26873530 | 2.3782248 | 20 | 5 9.2 | 21.3 |

ELEMENTS AND OPPOSITION DATES IN 2020

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| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 168961 2001 BF ₂₃ | 16.7 | X | 34.36195 | 39.36171 | 107.52752 | 3.22977 | 0.0751572 | 0.26199781 | 2.4188241 | 20 | 2 29.3 | 19.3 |
| 168962 2001 BK ₂₇ | 16.8 | X | 76.04717 | 301.43374 | 165.53999 | 2.31967 | 0.1629551 | 0.26323252 | 2.4112543 | 20 | 3 23.0 | 19.2 |
| 168963 2001 BT ₃₂ | 16.2 | X | 157.41258 | 289.65675 | 187.63635 | 1.81938 | 0.1551110 | 0.27446188 | 2.3450280 | 20 | 7 10.7 | 19.7 |
| 168964 2001 BF ₃₆ | 15.8 | X | 24.76211 | 75.40970 | 66.62781 | 2.09935 | 0.1319148 | 0.26026959 | 2.4295197 | 20 | 2 5.2 | 18.0 |
| 168965 2001 BL ₃₇ | 17.1 | X | 346.83884 | 352.48311 | 130.63330 | 2.82347 | 0.1289299 | 0.25278963 | 2.4772122 | 20 | — | — |
| 168966 2001 BC ₃₈ | 16.2 | X | 339.53830 | 55.98719 | 125.93357 | 7.08381 | 0.0519692 | 0.25949899 | 2.4343271 | 20 | 1 24.0 | 18.9 |
| 168967 2001 BB ₄₃ | 15.9 | X | 211.94712 | 154.07289 | 281.02121 | 8.73760 | 0.1576507 | 0.27809575 | 2.3245550 | 20 | 7 9.1 | 19.4 |
| 168968 2001 BY ₄₅ | 15.3 | X | 174.22027 | 79.44329 | 164.75808 | 14.77732 | 0.2326006 | 0.24236077 | 2.5477756 | 20 | 12 25.4 | 19.9 |
| 168969 2001 BX ₅₅ | 16.6 | X | 34.16257 | 27.93903 | 84.53590 | 3.80817 | 0.1302025 | 0.25864482 | 2.4396837 | 20 | 1 10.6 | 19.0 |
| 168970 2001 BT ₅₆ | 16.5 | X | 58.19441 | 330.96500 | 125.37722 | 7.08461 | 0.0852594 | 0.25917417 | 2.4363606 | 20 | 1 27.9 | 19.1 |
| 168971 2001 BA ₅₈ | 16.7 | X | 130.62590 | 275.52798 | 173.75189 | 2.26424 | 0.1599382 | 0.26914981 | 2.3757824 | 20 | 5 8.1 | 20.2 |
| 168972 2001 BL ₅₉ | 15.4 | X | 24.52356 | 225.98101 | 174.42439 | 13.29408 | 0.2636855 | 0.25013976 | 2.4946765 | 20 | — | — |
| 168973 2001 BQ ₆₄ | 16.5 | X | 47.75857 | 333.21218 | 157.27514 | 7.50802 | 0.1819961 | 0.26060264 | 2.4274494 | 20 | 3 8.9 | 18.5 |
| 168974 2001 BD ₆₅ | 15.1 | X | 330.87853 | 5.44971 | 197.27868 | 7.41777 | 0.1851208 | 0.20663945 | 2.8335262 | 20 | 1 27.4 | 18.7 |
| 168975 2001 BO ₆₆ | 15.8 | X | 254.44418 | 100.85383 | 88.07095 | 5.00729 | 0.1813086 | 0.24205458 | 2.5499876 | 20 | — | — |
| 168976 2001 BE ₆₈ | 16.0 | X | 125.06459 | 41.91329 | 93.90973 | 3.19741 | 0.1467844 | 0.27112957 | 2.3642032 | 20 | 7 1.9 | 19.3 |
| 168977 2001 BE ₇₅ | 16.9 | X | 13.01332 | 333.44198 | 193.75068 | 0.72806 | 0.1098698 | 0.26047905 | 2.4282171 | 20 | 2 19.8 | 19.4 |
| 168978 2001 BO ₇₅ | 16.5 | X | 343.60898 | 44.18463 | 124.24016 | 3.12712 | 0.1389558 | 0.25579753 | 2.4577544 | 20 | — | — |
| 168979 2001 CS ₁ | 16.4 | X | 129.42549 | 342.50626 | 111.30053 | 3.01405 | 0.1634978 | 0.26823788 | 2.3811640 | 20 | 5 13.5 | 19.8 |
| 168980 2001 CS ₂ | 16.6 | X | 141.25716 | 142.81756 | 18.72970 | 2.65395 | 0.1667314 | 0.27693578 | 2.3310415 | 20 | 8 24.4 | 20.2 |
| 168981 2001 CT ₃ | 15.6 | X | 265.37742 | 261.76618 | 111.28487 | 7.64924 | 0.3065598 | 0.27806394 | 2.3247322 | 20 | 5 27.9 | 19.1 |
| 168982 2001 CV ₉ | 16.7 | X | 34.55413 | 171.02923 | 359.97197 | 2.46730 | 0.1410859 | 0.26311828 | 2.4119522 | 20 | 4 7.6 | 18.9 |
| 168983 2001 CV ₁₁ | 16.9 | X | 169.65582 | 82.43185 | 44.15057 | 3.23393 | 0.1844103 | 0.27817118 | 2.3241347 | 20 | 8 5.5 | 20.6 |
| 168984 2001 CQ ₁₄ | 17.2 | X | 5.94849 | 116.96132 | 37.40123 | 3.08231 | 0.1716972 | 0.25774903 | 2.4453331 | 20 | 1 14.6 | 19.4 |
| 168985 2001 CQ ₁₈ | 16.8 | X | 101.66368 | 177.85412 | 307.29604 | 2.13611 | 0.1270138 | 0.26888206 | 2.3773593 | 20 | 5 17.4 | 19.9 |
| 168986 2001 CV ₂₂ | 16.9 | X | 82.53401 | 17.95317 | 123.08406 | 5.74444 | 0.1656902 | 0.26757957 | 2.3850679 | 20 | 5 22.4 | 19.8 |
| 168987 2001 CE ₂₅ | 15.9 | X | 346.92473 | 46.47484 | 97.05859 | 3.58361 | 0.0148536 | 0.25404159 | 2.4690668 | 20 | — | — |
| 168988 2001 CF ₂₅ | 16.5 | X | 15.18865 | 116.39577 | 42.04374 | 2.02051 | 0.1306961 | 0.25955790 | 2.4339588 | 20 | 2 11.3 | 18.6 |
| 168989 2001 CH ₂₉ | 15.8 | X | 182.74991 | 20.10613 | 42.32745 | 4.81823 | 0.1388731 | 0.27188205 | 2.3598389 | 20 | 5 23.5 | 19.3 |
| 168990 2001 CO ₃₀ | 15.8 | X | 106.54823 | 2.04298 | 64.51121 | 7.14223 | 0.1123258 | 0.26038888 | 2.4287777 | 20 | 3 7.4 | 18.9 |
| 168991 2001 CO ₃₈ | 15.7 | X | 326.53636 | 119.18051 | 65.35238 | 12.35082 | 0.1986263 | 0.25596713 | 2.4566687 | 20 | — | — |
| 168992 2001 CR ₃₉ | 16.3 | X | 81.09903 | 48.78975 | 93.85344 | 13.03926 | 0.1371956 | 0.26813480 | 2.3817743 | 20 | 5 19.8 | 19.3 |
| 168993 2001 CH ₄₀ | 16.0 | X | 185.81143 | 49.10624 | 21.71358 | 6.82301 | 0.0926558 | 0.27266676 | 2.3553092 | 20 | 6 7.1 | 19.5 |
| 168994 2001 CZ ₄₇ | 16.0 | X | 34.56180 | 89.53291 | 84.20348 | 4.26448 | 0.1325840 | 0.26553662 | 2.3972855 | 20 | 4 13.8 | 18.2 |
| 168995 2001 DV ₄ | 15.6 | X | 142.95862 | 241.84955 | 351.49599 | 11.64339 | 0.1253048 | 0.23520023 | 2.5992271 | 20 | 11 14.0 | 19.9 |
| 168996 2001 DK ₆ | 15.7 | X | 53.98975 | 90.54556 | 21.24538 | 7.17159 | 0.1584895 | 0.25919620 | 2.4362226 | 20 | 2 22.5 | 18.0 |
| 168997 2001 DP ₁₉ | 15.4 | X | 74.06296 | 237.35531 | 16.43642 | 13.01438 | 0.2302503 | 0.22453073 | 2.6809303 | 20 | 10 14.2 | 19.5 |
| 168998 2001 DA ₂₅ | 16.8 | X | 30.80733 | 45.05398 | 63.30001 | 3.33850 | 0.1442442 | 0.25567343 | 2.4585497 | 20 | — | — |
| 168999 2001 DR ₂₆ | 16.5 | X | 38.76733 | 6.59228 | 85.72754 | 3.36554 | 0.1730874 | 0.25496464 | 2.4631040 | 20 | — | — |
| 169000 2001 DA ₃₀ | 16.4 | X | 125.65173 | 63.98413 | 87.25996 | 3.15825 | 0.1013998 | 0.27278698 | 2.3546171 | 20 | 7 20.3 | 19.5 |
| 169001 2001 DN ₃₁ | 16.2 | X | 67.60384 | 41.15179 | 86.04177 | 3.18483 | 0.1525470 | 0.26206933 | 2.4183839 | 20 | 4 7.3 | 18.7 |
| 169002 2001 DG ₃₂ | 16.0 | X | 159.61774 | 196.05666 | 122.58760 | 5.03056 | 0.0327116 | 0.25127421 | 2.4871622 | 20 | — | — |
| 169003 2001 DG ₃₃ | 16.3 | X | 131.37978 | 84.54025 | 85.06723 | 3.87859 | 0.2103822 | 0.27544730 | 2.3394317 | 20 | 8 27.9 | 20.1 |
| 169004 2001 DO ₃₆ | 16.2 | X | 121.82378 | 94.48918 | 316.41737 | 6.19567 | 0.0834287 | 0.26110627 | 2.4243269 | 20 | 2 25.6 | 19.3 |
| 169005 2001 DC ₃₇ | 16.5 | X | 159.28048 | 275.15385 | 150.79813 | 2.88707 | 0.2044478 | 0.27023927 | 2.3693929 | 20 | 5 9.0 | 20.4 |
| 169006 2001 DU ₃₇ | 16.9 | X | 128.67577 | 72.96792 | 12.67593 | 2.31549 | 0.1749000 | 0.26801170 | 2.3825035 | 20 | 5 1.5 | 20.2 |
| 169007 2001 DC ₃₈ | 16.2 | X | 359.14338 | 11.96788 | 189.98994 | 4.23750 | 0.1969174 | 0.26227316 | 2.4171308 | 20 | 3 7.4 | 18.1 |
| 169008 2001 DR ₄₀ | 15.7 | X | 145.02058 | 160.13903 | 18.43649 | 4.99097 | 0.0910116 | 0.22756329 | 2.6570593 | 20 | 9 13.0 | 19.6 |
| 169009 2001 DD ₄₂ | 16.5 | X | 208.61148 | 86.21643 | 344.42103 | 3.29688 | 0.1682698 | 0.27653623 | 2.3332862 | 20 | 6 29.3 | 20.1 |
| 169010 2001 DT ₄₂ | 16.6 | X | 107.02806 | 278.65388 | 132.57665 | 2.59924 | 0.2013904 | 0.25998652 | 2.4312829 | 20 | 2 26.5 | 19.7 |
| 169011 2001 DW ₄₃ | 17.0 | X | 135.52232 | 212.51774 | 293.30910 | 1.28747 | 0.1530706 | 0.27392778 | 2.3480752 | 20 | 7 26.9 | 20.6 |
| 169012 2001 DD ₄₅ | 16.1 | X | 128.34081 | 299.32340 | 171.75882 | 3.23012 | 0.1788176 | 0.26608225 | 2.3940072 | 20 | 4 27.5 | 19.6 |
| 169013 2001 DP ₅₃ | 17.4 | X | 52.55488 | 164.37239 | 337.30255 | 4.71393 | 0.1709782 | 0.26295585 | 2.4129454 | 20 | 3 31.6 | 19.8 |
| 169014 2001 DM ₆₀ | 16.7 | X | 4.03972 | 13.21761 | 151.66350 | 2.76866 | 0.1195716 | 0.25870373 | 2.4393133 | 20 | 1 30.8 | 19.3 |
| 169015 2001 DS ₆₁ | 16.2 | X | 251.88461 | 74.87263 | 153.04844 | 3.38506 | 0.0419052 | 0.25152851 | 2.4854855 | 20 | — | — |
| 169016 2001 DD ₆₆ | 15.9 | X | 186.30891 | 93.32079 | 161.43169 | 6.17888 | 0.0406861 | 0.24472800 | 2.5313193 | 20 | — | — |
| 169017 2001 DU ₆₇ | 16.3 | X | 175.09821 | 142.60638 | 316.52637 | 1.68436 | 0.1631474 | 0.27422733 | 2.3463649 | 20 | 7 4.3 | 19.9 |
| 169018 2001 DV ₆₈ | 16.9 | X | 12.90314 | 298.46816 | 221.02258 | 1.68003 | 0.1351310 | 0.25769898 | 2.4456497 | 20 | 2 6.8 | 19.2 |
| 169019 2001 DL ₇₅ | 17.2 | X | 65.75463 | 13.01631 | 134.10472 | 5.23580 | 0.1246700 | 0.26601447 | 2.3944138 | 20 | 4 29.3 | 19.9 |
| 169020 2001 DD ₈₉ | 16.2 | X | 226.51224 | 231.81563 | 12.40793 | 3.47215 | 0.0367554 | 0.24678946 | 2.5172034 | 20 | — | — |
| 169021 2001 DP ₉₀ | 16.2 | X | 54.76137 | 206.50789 | 295.48809 | 8.12011 | 0.2002297 | 0.26060475 | 2.4274362 | 20 | 4 7.0 | 18.7 |
| 169022 2001 DP ₉₁ | 15.7 | X | 93.68778 | 338.17719 | 340.67815 | 11.45724 | 0.0269654 | 0.23968399 | 2.5667094 | 20 | — | — |
| 169023 2001 DX ₉₃ | 17.2 | X | 189.80262 | 47.72292 | 20.36961 | 0.04990 | 0.1848216 | 0.27358827 | 2.3500173 | 20 | 6 6.8 | 21.0 |
| 169024 2001 DX ₉₅ | 17.4 | X | 108.67418 | 73.89631 | 48.64862 | 2.98688 | 0.1932449 | 0.26921555 | 2.3753957 | 20 | 5 31.5 | 20.6 |
| 169025 2001 DY ₉₅ | 16.6 | X | 163.10546 | 134.98094 | 9.04345 | 5.03181 | 0.1388004 | 0.27909004 | 2.3190307 | 20 | 8 23.4 | 20.0 |
| 169026 2001 DY ₁₀₄ | 16.7 | X | 54.77324 | 120.48628 | 337.70486 | 1.13109 | 0.1392972 | 0.25813828 | 2.4428742 | 20 | 1 29.8 | 19.0 |
| 169027 2001 DD ₁₀₇ | 17.1 | X | 114.32969 | 313.35714 | 129.85664 | 6.26804 | 0.1694105 | 0.26674432 | 2.3900442 | 20 | 4 15.3 | 20.4 |
| 169028 2001 EU ₃ | 16.6 | X | 21.29467 | 7.07434 | 123.45724 | 3.31721 | 0.1418374 | 0.25551018 | 2.4595967 | 20 | 1 12.2 | 18.6 |
| 169029 2001 ES ₇ | 16.3 | X | 196.22840 | 170.89748 | 5.44395 | 7.61228 | 0.1636401 | 0.23341843 | 2.6124378 | 20 | 10 26.1 | 20.5 |
| 169030 2001 EA ₉ | 16.5 | X | 179.73553 | 191.77011 | 37.55532 | 2.85863 | 0.1145922 | 0.23769616 | 2.5809996 | 20 | 12 20.1 | 20.3 |
| 169031 2001 EZ ₁₃ | 15.9 | X | 115.30886 | 11.63955 | 68.71069 | 7.34976 | 0.1268820 | 0.26223339 | 2.4173752 | 20 | 4 7.7 | 19.2 |
| 169032 2001 FR ₁₀ | 16.9 | X | 109.45791 | 177.31051 | 334.56616 | 1.11014 | 0.1288405 | 0.26895064 | 2.3769552 | 20 | 7 4.4 | 20.1 |
| 169033 2001 FA ₁₄ | 16.1 | X | 80.28026 | 95.29541 | 34.42673 | 2.94872 | 0.1981324 | 0.26302666 | 2.4125123 | 20 | 5 6.5 | 18.9 |
| 169034 2001 FM ₁₆ | 15.1 | X | 19.18939 | 269.06710 | 13.79626 | 7.63269 | 0.2904788 | 0.2174598 | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|------------|----------|---------|------|
| 169041 | 2001 | FE ₄₃ | 16.2 | X | 91.68982 | 259.09908 | 344.18303 | 4.89831 | 0.2197508 | 0.22412348 | 2.6841770 | 20 | 10 15.9 | 20.6 |
| 169042 | 2001 | FS ₄₃ | 16.1 | X | 189.48145 | 218.79461 | 347.86503 | 4.20337 | 0.0996852 | 0.23469766 | 2.6029363 | 20 | 12 2.6 | 19.9 |
| 169043 | 2001 | FV ₄₈ | 15.5 | X | 121.22387 | 187.37535 | 16.89905 | 15.38739 | 0.1490033 | 0.22332913 | 2.6905380 | 20 | 9 25.0 | 19.8 |
| 169044 | 2001 | FB ₄₉ | 16.1 | X | 293.46617 | 159.19902 | 344.30773 | 6.25215 | 0.1640657 | 0.24242963 | 2.5472931 | 20 | — | — |
| 169045 | 2001 | FE ₅₄ | 15.3 | X | 216.92841 | 132.73103 | 27.67829 | 32.56447 | 0.2002100 | 0.23153490 | 2.6265867 | 20 | 10 23.3 | 19.3 |
| 169046 | 2001 | FU ₅₅ | 16.2 | X | 304.49723 | 70.77572 | 69.36723 | 5.99521 | 0.1414140 | 0.24387357 | 2.5372284 | 20 | — | — |
| 169047 | 2001 | FK ₅₉ | 16.2 | X | 137.28151 | 87.53210 | 31.83735 | 2.78302 | 0.1663723 | 0.27051239 | 2.3677978 | 20 | 6 24.1 | 19.8 |
| 169048 | 2001 | FP ₆₁ | 16.5 | X | 254.24619 | 132.25363 | 11.58717 | 13.31868 | 0.1462929 | 0.23868225 | 2.5738860 | 20 | 11 23.1 | 19.9 |
| 169049 | 2001 | FU ₈₆ | 16.7 | X | 123.64257 | 51.49331 | 109.18731 | 7.08229 | 0.1461004 | 0.27126944 | 2.3633904 | 20 | 8 3.8 | 20.1 |
| 169050 | 2001 | FL ₈₈ | 16.5 | X | 76.10414 | 229.75249 | 53.32849 | 2.07574 | 0.0438037 | 0.23068318 | 2.6330479 | 20 | 11 1.9 | 20.0 |
| 169051 | 2001 | FF ₉₂ | 15.4 | X | 6.46357 | 243.26275 | 10.66075 | 18.34180 | 0.1921939 | 0.21472808 | 2.7619141 | 20 | 6 20.9 | 18.5 |
| 169052 | 2001 | FF ₉₂ | 15.9 | X | 266.96749 | 61.75127 | 127.08551 | 7.54444 | 0.1330828 | 0.24496102 | 2.5297138 | 20 | — | — |
| 169053 | 2001 | FO ₉₂ | 16.1 | X | 53.95210 | 126.83021 | 36.91793 | 9.94418 | 0.0988254 | 0.26320718 | 2.4114091 | 20 | 4 27.7 | 18.7 |
| 169054 | 2001 | FF ₉₈ | 16.2 | X | 102.60896 | 126.05224 | 163.21501 | 5.41352 | 0.1196341 | 0.23370453 | 2.6103052 | 20 | 12 16.8 | 20.3 |
| 169055 | 2001 | FE ₁₀₅ | 16.7 | X | 27.83348 | 356.29212 | 151.93784 | 2.54971 | 0.1349317 | 0.25863421 | 2.4397504 | 20 | 2 19.9 | 19.0 |
| 169056 | 2001 | FW ₁₁₅ | 14.8 | X | 63.03516 | 4.72519 | 359.55572 | 19.20700 | 0.1811137 | 0.23981748 | 2.5657568 | 20 | — | — |
| 169057 | 2001 | FN ₁₁₆ | 15.9 | X | 155.61410 | 209.93127 | 16.67609 | 13.73869 | 0.0521362 | 0.23411132 | 2.6072806 | 20 | 11 20.4 | 19.8 |
| 169058 | 2001 | FC ₁₁₇ | 15.7 | X | 247.65490 | 95.64173 | 9.40732 | 11.88550 | 0.0136140 | 0.23036940 | 2.6354383 | 20 | 10 14.4 | 19.2 |
| 169059 | 2001 | FV ₁₂₄ | 16.3 | X | 275.21276 | 150.29002 | 29.26901 | 15.06903 | 0.0747475 | 0.24326726 | 2.5414424 | 20 | — | — |
| 169060 | 2001 | FY ₁₂₄ | 16.7 | X | 281.36872 | 137.17572 | 15.07803 | 10.60467 | 0.1103757 | 0.24142153 | 2.5543793 | 20 | — | — |
| 169061 | 2001 | FP ₁₂₆ | 16.2 | X | 243.15484 | 108.65877 | 74.89398 | 5.21470 | 0.1610046 | 0.23977232 | 2.5660790 | 20 | 12 31.8 | 19.3 |
| 169062 | 2001 | FN ₁₃₇ | 16.1 | X | 101.02420 | 78.45398 | 82.22778 | 6.65457 | 0.1463002 | 0.26691610 | 2.3890186 | 20 | 7 8.7 | 19.4 |
| 169063 | 2001 | FO ₁₄₄ | 15.9 | X | 103.85712 | 225.72049 | 40.02726 | 12.56156 | 0.2109965 | 0.22728175 | 2.6592531 | 20 | 11 21.8 | 20.4 |
| 169064 | 2001 | FM ₁₄₆ | 16.2 | X | 323.97233 | 340.08606 | 283.39956 | 6.46102 | 0.0935805 | 0.26153005 | 2.4217073 | 20 | 4 13.8 | 19.0 |
| 169065 | 2001 | FO ₁₅₆ | 16.2 | X | 167.39539 | 10.87022 | 124.84614 | 6.50885 | 0.1098320 | 0.27488880 | 2.3425994 | 20 | 8 15.9 | 19.6 |
| 169066 | 2001 | FR ₁₅₇ | 15.9 | X | 107.18871 | 59.76003 | 82.28113 | 6.10359 | 0.1735399 | 0.26718359 | 2.3874238 | 20 | 6 23.3 | 19.2 |
| 169067 | 2001 | FK ₁₆₇ | 17.0 | X | 173.82196 | 109.31922 | 26.93414 | 21.69411 | 0.0673413 | 0.37614365 | 1.9006416 | 20 | 9 18.2 | 19.5 |
| 169068 | 2001 | FX ₁₆₇ | 16.6 | X | 159.15653 | 270.95929 | 1.33086 | 3.23375 | 0.0887155 | 0.23978129 | 2.5660150 | 20 | — | — |
| 169069 | 2001 | FC ₁₇₁ | 16.5 | X | 182.44580 | 55.29158 | 128.05394 | 10.04848 | 0.2001645 | 0.28330649 | 2.2959638 | 20 | 11 1.2 | 20.2 |
| 169070 | 2001 | FM ₁₇₆ | 16.4 | X | 94.01028 | 59.95342 | 92.96119 | 8.33165 | 0.1128835 | 0.26660662 | 2.3908671 | 20 | 6 14.3 | 19.4 |
| 169071 | 2001 | FR ₁₈₅ | 8.0 | X | 344.41370 | 336.10520 | 287.67325 | 5.62471 | 0.1972110 | 0.00396427 | 39.5391316 | 20 | 5 20.3 | 23.1 |
| 169072 | 2001 | FN ₁₉₆ | 15.7 | X | 167.01502 | 152.32912 | 63.04339 | 10.50087 | 0.1478683 | 0.23075268 | 2.6325192 | 20 | 11 18.0 | 19.7 |
| 169073 | 2001 | GZ ₃ | 15.6 | X | 178.89038 | 19.21891 | 116.64136 | 13.99088 | 0.2139514 | 0.22463997 | 2.6800611 | 20 | 8 22.4 | 20.2 |
| 169074 | 2001 | GK ₇ | 15.4 | X | 343.43691 | 215.65275 | 70.31716 | 15.52840 | 0.2069795 | 0.21192838 | 2.7861851 | 20 | 6 15.8 | 18.0 |
| 169075 | 2001 | GX ₁₀ | 16.4 | X | 143.42258 | 14.05982 | 119.48429 | 3.64883 | 0.1045140 | 0.27000464 | 2.3707653 | 20 | 7 16.1 | 19.8 |
| 169076 | 2001 | GY ₁₀ | 15.7 | X | 106.59908 | 198.92634 | 52.44033 | 11.05319 | 0.0532250 | 0.22843032 | 2.6503316 | 20 | 10 31.1 | 19.4 |
| 169077 | 2001 | HT ₃ | 15.7 | X | 167.63693 | 355.66329 | 187.55160 | 13.66614 | 0.0968054 | 0.22715960 | 2.6602063 | 20 | 10 12.1 | 19.6 |
| 169078 | 2001 | Chuckshaw | 16.1 | X | 186.95223 | 134.08955 | 65.82613 | 14.35679 | 0.2009677 | 0.23399177 | 2.6081686 | 20 | 11 15.7 | 20.4 |
| 169079 | 2001 | HO ₁₄ | 16.2 | X | 305.29725 | 133.75075 | 19.94077 | 10.50612 | 0.0417338 | 0.24451834 | 2.5327661 | 20 | — | — |
| 169080 | 2001 | HT ₃₂ | 16.1 | X | 64.58314 | 220.19796 | 48.89124 | 10.23721 | 0.1940630 | 0.22116717 | 2.7080433 | 20 | 10 21.5 | 20.0 |
| 169081 | 2001 | HZ ₃₃ | 15.9 | X | 215.12793 | 155.13857 | 40.33416 | 12.30656 | 0.1642837 | 0.23454225 | 2.6040860 | 20 | 12 8.4 | 19.7 |
| 169082 | 2001 | HK ₃₅ | 16.1 | X | 218.48137 | 322.54208 | 226.52880 | 13.16457 | 0.1493446 | 0.23410619 | 2.6073187 | 20 | 12 7.8 | 19.8 |
| 169083 | 2001 | HA ₄₀ | 16.0 | X | 261.33017 | 275.10045 | 214.55143 | 13.11653 | 0.1453508 | 0.23430418 | 2.6058497 | 20 | 11 18.5 | 19.1 |
| 169084 | 2001 | HF ₄₉ | 16.1 | X | 13.02333 | 245.54221 | 274.08493 | 5.26148 | 0.2232128 | 0.25490992 | 2.4634565 | 20 | 1 31.0 | 18.1 |
| 169085 | 2001 | HH ₅₀ | 15.4 | X | 166.92109 | 244.03281 | 328.16711 | 13.08870 | 0.1457979 | 0.23210492 | 2.6222846 | 20 | 11 8.9 | 19.8 |
| 169086 | 2001 | HW ₅₄ | 16.0 | X | 62.41699 | 47.27248 | 225.22398 | 11.09963 | 0.1638179 | 0.22065720 | 2.7122142 | 20 | 10 15.4 | 19.9 |
| 169087 | 2001 | HL ₅₉ | 16.4 | X | 87.72188 | 197.30803 | 23.33770 | 5.76981 | 0.0948836 | 0.27154225 | 2.3618072 | 20 | 9 9.4 | 19.5 |
| 169088 | 2001 | JG ₃ | 15.8 | X | 237.32718 | 345.78253 | 231.26043 | 12.32587 | 0.0980562 | 0.24042630 | 2.5614236 | 20 | — | — |
| 169089 | 2001 | JC ₇ | 15.7 | X | 263.67372 | 68.66956 | 77.57000 | 8.62429 | 0.1639760 | 0.23662707 | 2.5887678 | 20 | 12 11.3 | 18.6 |
| 169090 | 2001 | JT ₇ | 15.9 | X | 120.14768 | 204.94657 | 64.23306 | 10.90064 | 0.1609110 | 0.22930297 | 2.6436032 | 20 | 12 9.0 | 20.1 |
| 169091 | 2001 | KA ₁₄ | 14.8 | X | 37.97085 | 82.42526 | 200.34514 | 14.47979 | 0.1852174 | 0.21912786 | 2.7248190 | 20 | 9 30.5 | 18.2 |
| 169092 | 2001 | KN ₂₁ | 15.3 | X | 354.68954 | 304.07726 | 60.66732 | 14.50725 | 0.1841678 | 0.22209965 | 2.7004583 | 20 | 11 17.2 | 18.0 |
| 169093 | 2001 | KK ₂₂ | 16.1 | X | 188.38492 | 330.77759 | 241.58109 | 12.48410 | 0.1191824 | 0.23143384 | 2.6273513 | 20 | 12 6.8 | 20.1 |
| 169094 | 2001 | KQ ₃₂ | 15.8 | X | 268.55935 | 143.67986 | 217.54861 | 10.06154 | 0.1715591 | 0.20926778 | 2.8097508 | 20 | 6 1.6 | 19.8 |
| 169095 | 2001 | KT ₃₆ | 15.9 | X | 34.18759 | 226.30472 | 68.67136 | 14.50174 | 0.1914926 | 0.21819266 | 2.7325994 | 20 | 10 20.0 | 19.5 |
| 169096 | 2001 | KP ₄₉ | 15.6 | X | 73.41966 | 187.05322 | 73.08663 | 14.61635 | 0.1424706 | 0.21931178 | 2.7232953 | 20 | 10 18.1 | 19.8 |
| 169097 | 2001 | KT ₅₃ | 16.2 | X | 113.70374 | 19.20348 | 175.04640 | 5.06192 | 0.1562153 | 0.21890775 | 2.7266452 | 20 | 9 1.4 | 20.4 |
| 169098 | 2001 | KW ₅₈ | 15.4 | X | 59.52820 | 57.45171 | 212.72331 | 12.08246 | 0.1178453 | 0.21758743 | 2.7376642 | 20 | 10 1.5 | 19.2 |
| 169099 | 2001 | KC ₆₃ | 15.8 | X | 43.88892 | 39.31337 | 105.98509 | 6.92563 | 0.2135578 | 0.25873655 | 2.4391071 | 20 | 4 1.1 | 17.9 |
| 169100 | 2001 | KX ₆₉ | 15.9 | X | 172.26190 | 113.42760 | 106.71170 | 4.95111 | 0.0773187 | 0.23049917 | 2.6344491 | 20 | 12 3.1 | 19.8 |
| 169101 | 2001 | KD ₇₂ | 15.9 | X | 205.92450 | 2.08973 | 275.75063 | 5.10288 | 0.1838275 | 0.24082596 | 2.5585889 | 20 | — | — |
| 169102 | 2001 | KW ₇₅ | 15.6 | X | 26.46714 | 82.78353 | 172.18360 | 9.15464 | 0.1191916 | 0.21199838 | 2.7855718 | 20 | 7 23.8 | 19.0 |
| 169103 | 2001 | LB ₃ | 15.7 | X | 116.68874 | 6.77195 | 243.43112 | 5.10999 | 0.2862425 | 0.22457309 | 2.6805932 | 20 | 11 17.6 | 20.4 |
| 169104 | 2001 | NN ₈ | 15.5 | X | 267.73881 | 188.35044 | 115.75463 | 3.29604 | 0.0748219 | 0.19640121 | 2.9311628 | 20 | 4 3.3 | 19.6 |
| 169105 | 2001 | NK ₁₀ | 15.6 | X | 202.73019 | 188.66378 | 122.69424 | 2.88730 | 0.2129943 | 0.18721816 | 3.0262448 | 20 | 2 1.4 | 20.6 |
| 169106 | 2001 | OK ₄ | 15.6 | X | 287.81199 | 245.23088 | 90.23700 | 6.92804 | 0.0710586 | 0.20299959 | 2.8672965 | 20 | 6 7.8 | 19.5 |
| 169107 | 2001 | OW ₇ | 15.1 | X | 175.34422 | 149.51434 | 186.89193 | 6.04693 | 0.1957356 | 0.18422603 | 3.0589243 | 20 | 2 7.0 | 20.3 |
| 169108 | 2001 | OO ₁₇ | 15.8 | X | 180.20116 | 1.75136 | 297.27462 | 2.67822 | 0.2614714 | 0.18210649 | 3.0826137 | 20 | 1 3.9 | 21.1 |
| 169109 | 2001 | OY ₂₄ | 15.0 | X | 97.02787 | 126.75396 | 256.28613 | 8.83821 | 0.2362106 | 0.17774033 | 3.1328918 | 20 | 1 23.4 | 19.4 |
| 169110 | 2001 | OF ₃₄ | 15.7 | X | 265.43195 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|-------------|-----------|----|---------|----------|
| 169121 2001 <i>PJ</i> ₁₆ | 15.3 | X | 152.02074 | 1.68934 | 359.40831 | 5.13234 | 0.1720695 | 0.18474056 | 3.0532419 | 20 | 2 17.1 | 20.2 |
| 169122 2001 <i>PQ</i> ₂₄ | 14.9 | X | 195.49958 | 309.10967 | 343.15393 | 16.91290 | 0.1590815 | 0.18104173 | 3.0946884 | 20 | 1 8.8 | 20.2 |
| 169123 2001 <i>PD</i> ₂₅ | 15.3 | X | 97.33747 | 177.13560 | 207.32022 | 4.68995 | 0.2003820 | 0.17680379 | 3.1439454 | 20 | 1 21.7 | 19.8 |
| 169124 2001 <i>PZ</i> ₂₅ | 15.6 | X | 315.36048 | 283.51342 | 132.74858 | 9.83794 | 0.1536489 | 0.21246557 | 2.7814868 | 20 | 11 6.9 | 18.7 |
| 169125 2001 <i>PZ</i> ₂₇ | 15.3 | X | 189.48427 | 285.02413 | 72.63202 | 5.38093 | 0.1811013 | 0.18967167 | 3.0000908 | 20 | 3 17.1 | 20.3 |
| 169126 2001 <i>PP</i> ₃₀ | 15.3 | X | 123.04504 | 354.30824 | 19.25425 | 10.04209 | 0.1047705 | 0.18241619 | 3.0791236 | 20 | 1 29.3 | 19.9 |
| 169127 2001 <i>PD</i> ₃₁ | 15.6 | X | 136.82203 | 125.58849 | 189.22369 | 17.12061 | 0.1512911 | 0.17573011 | 3.1567384 | 20 | — | — |
| 169128 2001 <i>PT</i> ₃₄ | 14.8 | X | 122.82436 | 121.03332 | 274.49821 | 8.61922 | 0.0934826 | 0.18207484 | 3.0829708 | 20 | 2 15.9 | 19.4 |
| 169129 2001 <i>PW</i> ₃₅ | 15.1 | X | 61.86956 | 319.97623 | 276.06066 | 11.82757 | 0.1418658 | 0.20975096 | 2.8054341 | 20 | 8 19.9 | 19.1 |
| 169130 2001 <i>PV</i> ₄₀ | 16.3 | X | 237.44855 | 89.92495 | 310.90920 | 16.66210 | 0.1251606 | 0.35625617 | 1.9707330 | 20 | 6 29.7 | 18.8 |
| 169131 2001 <i>PR</i> ₄₆ | 15.7 | X | 136.98360 | 270.05079 | 54.46306 | 7.51376 | 0.2619406 | 0.17801482 | 3.1296704 | 20 | — | — |
| 169132 2001 <i>PP</i> ₅₂ | 15.2 | X | 192.77126 | 346.61361 | 29.80231 | 11.29312 | 0.1181188 | 0.19042953 | 2.9921258 | 20 | 4 9.5 | 20.0 |
| 169133 2001 <i>PT</i> ₅₄ | 15.7 | X | 235.76813 | 150.76998 | 170.25501 | 3.86658 | 0.1271054 | 0.19214725 | 2.9742669 | 20 | 3 13.8 | 20.2 |
| 169134 2001 <i>QB</i> ₃₆ | 15.1 | X | 183.96134 | 55.29399 | 319.14667 | 10.75865 | 0.1422666 | 0.19157097 | 2.9802287 | 20 | 3 24.0 | 20.0 |
| 169135 2001 <i>QM</i> ₄₂ | 15.3 | X | 164.48133 | 64.74618 | 326.38746 | 10.02664 | 0.0820544 | 0.191177301 | 2.9843631 | 20 | 3 23.9 | 19.9 |
| 169136 2001 <i>QD</i> ₅₂ | 15.2 | X | 116.24723 | 29.76518 | 336.07368 | 16.46645 | 0.2023103 | 0.17927617 | 3.1149734 | 20 | 1 25.9 | 20.0 |
| 169137 2001 <i>QP</i> ₅₇ | 15.0 | X | 94.66806 | 260.34059 | 134.23304 | 12.09488 | 0.2595830 | 0.17747253 | 3.1360426 | 20 | 2 9.1 | 19.4 |
| 169138 2001 <i>QG</i> ₅₉ | 14.8 | X | 95.29539 | 83.16989 | 326.30475 | 14.49885 | 0.2323678 | 0.17695262 | 3.1421823 | 20 | 2 22.5 | 19.2 |
| 169139 2001 <i>QK</i> ₇₂ | 15.8 | X | 184.81260 | 110.16225 | 169.78749 | 1.65481 | 0.1882819 | 0.17908356 | 3.1172065 | 20 | — | — |
| 169140 2001 <i>QO</i> ₈₇ | 15.1 | X | 35.50472 | 183.21804 | 257.34619 | 12.78720 | 0.1885016 | 0.17271774 | 3.1933370 | 20 | — | — |
| 169141 2001 <i>QQ</i> ₉₂ | 15.5 | X | 201.51723 | 309.40637 | 26.71997 | 9.18187 | 0.0510601 | 0.18832684 | 3.0143562 | 20 | 3 4.1 | 20.0 |
| 169142 2001 <i>QO</i> ₁₀₈ | 15.5 | X | 200.12981 | 208.59874 | 108.64234 | 2.93906 | 0.1783996 | 0.18458780 | 3.0549262 | 20 | 2 6.6 | 20.6 |
| 169143 2001 <i>QG</i> ₁₁₃ | 14.8 | X | 50.56135 | 99.76156 | 278.28159 | 7.49251 | 0.1350546 | 0.16843876 | 3.2471925 | 20 | — | — |
| 169144 2001 <i>QT</i> ₁₁₅ | 15.2 | X | 214.81758 | 148.00105 | 188.86773 | 12.60767 | 0.1138684 | 0.18811414 | 3.0166280 | 20 | 3 12.0 | 19.9 |
| 169145 2001 <i>QH</i> ₁₂₁ | 15.1 | X | 155.15926 | 53.04564 | 345.86188 | 9.85044 | 0.1169577 | 0.18990311 | 2.9976528 | 20 | 3 26.9 | 19.8 |
| 169146 2001 <i>QL</i> ₁₂₁ | 15.5 | X | 278.35568 | 235.31181 | 94.42194 | 3.25814 | 0.0985786 | 0.19884474 | 2.9071001 | 20 | 5 14.8 | 19.4 |
| 169147 2001 <i>QB</i> ₁₂₆ | 15.5 | X | 174.05700 | 138.09129 | 209.75544 | 10.76048 | 0.1633043 | 0.18306672 | 3.0718249 | 20 | 2 15.9 | 20.7 |
| 169148 2001 <i>QK</i> ₁₂₇ | 14.9 | X | 104.37448 | 39.68876 | 288.96144 | 10.90524 | 0.1938728 | 0.17268319 | 3.1937629 | 20 | — | — |
| 169149 2001 <i>QO</i> ₁₃₃ | 15.0 | X | 200.41836 | 82.14926 | 253.15282 | 8.26168 | 0.0808995 | 0.18649412 | 3.0340725 | 20 | 2 23.3 | 19.8 |
| 169150 2001 <i>QB</i> ₁₅₆ | 15.6 | X | 100.89814 | 109.76670 | 245.50045 | 3.25588 | 0.1770815 | 0.17453816 | 3.1710941 | 20 | — | — |
| 169151 2001 <i>QA</i> ₁₅₇ | 15.1 | X | 158.12490 | 56.16698 | 245.98875 | 4.11191 | 0.1374039 | 0.17697645 | 3.1419002 | 20 | — | — |
| 169152 2001 <i>QA</i> ₁₆₃ | 15.2 | X | 163.87025 | 118.12449 | 224.10016 | 4.80184 | 0.1537682 | 0.18303745 | 3.0721523 | 20 | 2 1.9 | 20.1 |
| 169153 2001 <i>QJ</i> ₁₆₆ | 14.9 | X | 181.12540 | 275.64318 | 117.27996 | 12.37373 | 0.1316583 | 0.19162531 | 2.9796652 | 20 | 4 22.7 | 19.9 |
| 169154 2001 <i>QJ</i> ₁₇₂ | 15.3 | X | 206.76617 | 69.01466 | 204.35561 | 9.04625 | 0.0548740 | 0.17949797 | 3.1124068 | 20 | — | — |
| 169155 2001 <i>QS</i> ₁₇₉ | 15.7 | X | 224.30032 | 309.43231 | 56.96773 | 3.48752 | 0.2395544 | 0.19258323 | 2.9697764 | 20 | 4 20.4 | 20.9 |
| 169156 2001 <i>QS</i> ₁₈₃ | 15.7 | X | 50.86170 | 230.34906 | 181.94210 | 11.82804 | 0.1112160 | 0.17074683 | 3.2178635 | 20 | — | — |
| 169157 2001 <i>QH</i> ₁₈₇ | 14.3 | X | 162.88101 | 72.68706 | 246.80101 | 18.29647 | 0.3087729 | 0.17839447 | 3.1252286 | 20 | 1 12.9 | 20.1 |
| 169158 2001 <i>QZ</i> ₁₈₇ | 15.0 | X | 87.82042 | 93.68251 | 282.44269 | 12.82167 | 0.0317437 | 0.17364922 | 3.1819071 | 20 | — | — |
| 169159 2001 <i>QQ</i> ₁₉₁ | 14.6 | X | 151.26552 | 136.79257 | 257.71814 | 14.75074 | 0.1264383 | 0.18507005 | 3.0496169 | 20 | 3 14.8 | 19.6 |
| 169160 2001 <i>QG</i> ₁₉₄ | 15.3 | X | 55.03689 | 21.39989 | 300.39040 | 12.00746 | 0.1176525 | 0.21381796 | 2.7697459 | 20 | 11 30.4 | 19.4 |
| 169161 2001 <i>QJ</i> ₂₀₂ | 15.7 | X | 330.94900 | 184.03161 | 96.79157 | 4.84538 | 0.1123880 | 0.20072749 | 2.8888932 | 20 | 5 24.8 | 19.1 |
| 169162 2001 <i>QJ</i> ₂₀₄ | 15.4 | X | 279.17446 | 1.28609 | 289.03011 | 8.97480 | 0.0560084 | 0.19269260 | 2.9686524 | 20 | 3 27.2 | 19.8 |
| 169163 2001 <i>QZ</i> ₂₀₅ | 15.5 | X | 207.46072 | 124.90903 | 177.63456 | 4.49328 | 0.1548909 | 0.18413958 | 3.0598816 | 20 | 1 25.7 | 20.5 |
| 169164 2001 <i>QF</i> ₂₀₉ | 15.5 | X | 188.70575 | 173.48375 | 158.04222 | 7.05051 | 0.1027292 | 0.18560355 | 3.0437702 | 20 | 2 10.9 | 20.4 |
| 169165 2001 <i>QF</i> ₂₁₃ | 15.1 | X | 89.19921 | 263.18829 | 170.14553 | 25.56551 | 0.2892501 | 0.17856003 | 3.1232965 | 20 | 3 25.5 | 19.6 |
| 169166 2001 <i>QD</i> ₂₁₈ | 16.1 | X | 205.49457 | 328.88350 | 350.66177 | 3.15669 | 0.2141711 | 0.18622921 | 3.0369491 | 20 | 2 13.2 | 21.2 |
| 169167 2001 <i>QO</i> ₂₂₅ | 15.1 | X | 210.19392 | 91.21473 | 274.68459 | 8.61238 | 0.0770510 | 0.19076781 | 2.9885876 | 20 | 4 10.1 | 19.9 |
| 169168 2001 <i>QS</i> ₂₂₅ | 14.5 | X | 108.05379 | 53.30052 | 320.77118 | 15.61174 | 0.2220794 | 0.17635084 | 3.1493266 | 20 | 1 27.6 | 19.1 |
| 169169 2001 <i>QO</i> ₂₂₅ | 15.2 | X | 192.51587 | 113.36053 | 220.97028 | 10.33285 | 0.0275837 | 0.18360755 | 3.0657896 | 20 | 2 13.8 | 19.8 |
| 169170 2001 <i>QQ</i> ₂₃₁ | 15.3 | X | 146.46442 | 166.10619 | 197.41358 | 11.76041 | 0.0882845 | 0.18286802 | 3.0740496 | 20 | 2 3.3 | 20.1 |
| 169171 2001 <i>QW</i> ₂₃₁ | 15.3 | X | 266.44980 | 0.49214 | 248.61257 | 7.22550 | 0.0927540 | 0.18522343 | 3.0479331 | 20 | 1 21.9 | 20.0 |
| 169172 2001 <i>QA</i> ₂₃₂ | 15.0 | X | 97.85330 | 140.23850 | 281.70038 | 10.14423 | 0.1118099 | 0.18149015 | 3.0895888 | 20 | 3 4.2 | 19.6 |
| 169173 2001 <i>QU</i> ₂₃₃ | 15.2 | X | 125.71324 | 57.42314 | 347.22738 | 9.02273 | 0.1332092 | 0.18233682 | 3.0800172 | 20 | 3 8.9 | 19.8 |
| 169174 2001 <i>QZ</i> ₂₃₄ | 15.1 | X | 153.87338 | 10.75291 | 348.43979 | 4.86187 | 0.1801391 | 0.18171233 | 3.0870698 | 20 | 2 16.9 | 20.1 |
| 169175 2001 <i>QZ</i> ₂₄₁ | 15.6 | X | 172.57888 | 334.05089 | 21.10443 | 1.32409 | 0.1820020 | 0.18345741 | 3.0674622 | 20 | 2 27.5 | 20.7 |
| 169176 2001 <i>QN</i> ₂₅₃ | 15.7 | X | 223.40835 | 342.03134 | 11.09660 | 3.28612 | 0.0920218 | 0.19341559 | 2.9612499 | 20 | 4 10.9 | 20.3 |
| 169177 2001 <i>QP</i> ₂₅₉ | 15.2 | X | 146.70790 | 135.19043 | 230.61500 | 9.00774 | 0.1117469 | 0.18060227 | 3.0997065 | 20 | 2 8.3 | 20.1 |
| 169178 2001 <i>QH</i> ₂₆₀ | 15.1 | X | 54.22469 | 240.96029 | 200.07294 | 15.45042 | 0.2101582 | 0.17447804 | 3.1718224 | 20 | 1 27.5 | 19.0 |
| 169179 2001 <i>QF</i> ₂₆₆ | 15.2 | X | 69.61023 | 166.68724 | 194.82400 | 15.47619 | 0.2232641 | 0.17260956 | 3.1946711 | 20 | — | — |
| 169180 2001 <i>QE</i> ₂₆₉ | 14.9 | X | 192.05717 | 171.48018 | 228.05679 | 9.89950 | 0.1004651 | 0.19161108 | 2.9798127 | 20 | 5 5.7 | 19.5 |
| 169181 2001 <i>QQ</i> ₂₇₆ | 14.6 | X | 149.98710 | 345.98565 | 2.55143 | 13.27059 | 0.2676096 | 0.18152119 | 3.0892365 | 20 | 2 11.1 | 20.0 |
| 169182 2001 <i>QJ</i> ₂₈₃ | 14.8 | X | 130.48543 | 155.57177 | 222.36541 | 12.49761 | 0.2211580 | 0.18099657 | 3.0952031 | 20 | 2 15.9 | 19.9 |
| 169183 2001 <i>QN</i> ₂₈₉ | 15.4 | X | 123.55233 | 248.44486 | 146.85873 | 16.38968 | 0.3398951 | 0.18177453 | 3.0863656 | 20 | 3 18.8 | 20.7 |
| 169184 Jameslee | 15.5 | X | 108.27612 | 101.34396 | 274.14549 | 2.06419 | 0.0921675 | 0.17751859 | 3.1355001 | 20 | 1 10.2 | 19.9 |
| 169185 2001 <i>RL</i> ₂ | 14.4 | X | 198.68336 | 49.25829 | 247.46516 | 26.11378 | 0.1136791 | 0.17907943 | 3.1172544 | 20 | 1 6.8 | 19.7 |
| 169186 2001 <i>RZ</i> ₂ | 14.9 | X | 110.27820 | 215.90127 | 209.29021 | 14.94613 | 0.3194794 | 0.18133461 | 3.0913552 | 20 | 4 6.2 | 19.9 |
| 169187 2001 <i>RZ</i> ₉ | 14.8 | X | 66.92879 | 179.86431 | 249.89648 | 26.51721 | 0.1136558 | 0.17617747 | 3.1513924 | 20 | 1 16.5 | 19.3 |
| 169188 2001 <i>RF</i> ₁₈ | 15.2 | X | 103.43301 | 56.04082 | 313.22465 | 8.04724 | 0.1461340 | 0.17750609 | 3.1356473 | 20 | 1 5.3 | 19.5 |
| 169189 2001 <i>RZ</i> ₂₈ | 15.3 | X | 205.71321 | 133.12447 | 169.72370 | 12.97933 | 0.1267743 | 0.18334408 | 3.0687261 | 20 | 1 23.9 | 20.3 |
| 169190 2001 <i>RT</i> ₂₉ | 14.9 | X | 184.87452 | 281.88811 | 343.45649 | 9.61970 | 0.1766155 | 0.17547887 | 3.1597508 | 20 | — | — |
| 169191 2001 <i>RF</i> ₃₀ | 15.7 | X | 154.62457 | 287.87914 | 116.85599 | 2.01272 | 0.1245554 | 0.18756637 | 3.02249 | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|-------------------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 169201 2001 RC ₈₂ | 15.0 ^m | X | 136.83135 | 75.31435 | 254.49237 | 8.74341 | 0.1394684 | 0.17604368 | 3.1529888 | 20 | — | — |
| 169202 2001 RD ₈₂ | 15.1 | X | 86.56496 | 219.11860 | 198.45100 | 16.80388 | 0.2171499 | 0.17771637 | 3.1331734 | 20 | 2 16.6 | 19.6 |
| 169203 2001 RK ₈₂ | 15.0 | X | 79.67824 | 121.60673 | 265.25279 | 8.03691 | 0.1021486 | 0.17406522 | 3.1768354 | 20 | — | — |
| 169204 2001 RO ₈₂ | 15.0 | X | 194.42113 | 134.34543 | 191.84226 | 14.85682 | 0.1267173 | 0.18380926 | 3.0635464 | 20 | 2 8.0 | 20.2 |
| 169205 2001 RS ₈₂ | 15.5 | X | 202.02371 | 18.55015 | 313.26639 | 8.65933 | 0.0912555 | 0.18580804 | 3.0415366 | 20 | 2 22.9 | 20.2 |
| 169206 2001 RU ₈₉ | 15.0 | X | 226.41105 | 305.44843 | 14.82196 | 9.03964 | 0.0890874 | 0.18666367 | 3.0322350 | 20 | 3 8.9 | 19.7 |
| 169207 2001 RX ₉₅ | 15.1 | X | 110.85194 | 244.13423 | 184.44548 | 22.22281 | 0.1611468 | 0.18076332 | 3.0978651 | 20 | 3 25.3 | 19.6 |
| 169208 2001 RD ₁₀₀ | 15.1 | X | 147.24418 | 347.21294 | 2.09367 | 10.66477 | 0.1183327 | 0.18096102 | 3.0956085 | 20 | 1 27.9 | 19.9 |
| 169209 2001 RS ₁₀₁ | 15.0 | X | 154.82011 | 206.33906 | 150.83380 | 12.11198 | 0.0932788 | 0.18240594 | 3.0792390 | 20 | 2 7.4 | 19.7 |
| 169210 2001 RE ₁₀₆ | 15.3 | X | 21.74256 | 9.19421 | 159.41633 | 9.73906 | 0.0736156 | 0.18897867 | 3.0074208 | 20 | 3 19.5 | 19.1 |
| 169211 2001 RF ₁₁₀ | 15.2 | X | 71.72817 | 90.64530 | 0.86766 | 9.13844 | 0.0243136 | 0.18354408 | 3.0664964 | 20 | 2 18.4 | 19.5 |
| 169212 2001 RS ₁₁₀ | 15.3 | X | 161.66936 | 288.54535 | 2.33770 | 9.51737 | 0.2008856 | 0.17563154 | 3.1579194 | 20 | — | — |
| 169213 2001 RQ ₁₁₁ | 15.7 | X | 149.55091 | 53.37169 | 8.42407 | 0.77991 | 0.1634494 | 0.18826652 | 3.0150000 | 20 | 4 23.9 | 20.5 |
| 169214 2001 RO ₁₁₅ | 15.8 | X | 186.82839 | 183.11736 | 142.90267 | 3.55349 | 0.0495252 | 0.18227073 | 3.0807616 | 20 | 2 2.1 | 20.2 |
| 169215 2001 RX ₁₁₆ | 15.1 | X | 183.91566 | 317.25187 | 23.15999 | 10.19401 | 0.0920316 | 0.18388765 | 3.0626756 | 20 | 2 21.5 | 19.9 |
| 169216 2001 RH ₁₂₀ | 14.8 | X | 100.75106 | 21.47634 | 13.19662 | 14.15463 | 0.3078229 | 0.17664614 | 3.1458157 | 20 | 2 27.1 | 19.6 |
| 169217 2001 RP ₁₂₁ | 15.0 | X | 279.20669 | 243.39680 | 3.74748 | 13.12262 | 0.0789776 | 0.18463368 | 3.0544200 | 20 | 2 10.9 | 19.6 |
| 169218 2001 RP ₁₂₇ | 15.3 | X | 127.35944 | 293.93378 | 87.15434 | 2.89698 | 0.2097313 | 0.17989256 | 3.1078538 | 20 | 2 21.4 | 20.1 |
| 169219 2001 RP ₁₃₃ | 15.1 | X | 80.50064 | 271.99077 | 166.74033 | 15.04494 | 0.1306796 | 0.17961622 | 3.1110406 | 20 | 2 24.9 | 19.2 |
| 169220 2001 RP ₁₃₇ | 16.1 | X | 210.78045 | 242.14294 | 166.23197 | 0.82499 | 0.0217315 | 0.19714790 | 2.9235750 | 20 | 6 10.7 | 20.0 |
| 169221 2001 RZ ₁₃₉ | 15.7 | X | 128.24228 | 65.66246 | 26.64428 | 4.20088 | 0.1086639 | 0.18890626 | 3.0081893 | 20 | 5 5.1 | 20.2 |
| 169222 2001 RJ ₁₄₅ | 15.0 | X | 202.76503 | 86.81584 | 287.53608 | 8.78751 | 0.1231495 | 0.19302930 | 2.9651994 | 20 | 4 10.9 | 20.0 |
| 169223 2001 RO ₁₄₆ | 14.7 | X | 144.85027 | 49.00456 | 279.18015 | 14.45566 | 0.0594262 | 0.17681430 | 3.1438209 | 20 | — | — |
| 169224 2001 RO ₁₄₈ | 15.1 | X | 215.03469 | 314.89646 | 23.78774 | 9.76904 | 0.0727686 | 0.18997941 | 2.9968502 | 20 | 3 19.9 | 19.7 |
| 169225 2001 RU ₁₅₁ | 15.5 | X | 149.76621 | 310.10821 | 56.75936 | 9.03090 | 0.2080852 | 0.18149728 | 3.0895079 | 20 | 2 27.5 | 20.7 |
| 169226 2001 SS ₆ | 15.4 | X | 129.53475 | 310.36377 | 167.86639 | 1.59982 | 0.2648642 | 0.19073491 | 2.9889313 | 20 | 6 20.5 | 20.4 |
| 169227 2001 SX ₁₀ | 14.6 | X | 72.14985 | 123.44466 | 315.46195 | 26.23189 | 0.1783481 | 0.17955541 | 3.1117430 | 20 | 2 16.4 | 18.7 |
| 169228 2001 SD ₁₄ | 15.2 | X | 97.78671 | 22.49276 | 9.86556 | 4.25661 | 0.0891206 | 0.17702943 | 3.1412734 | 20 | 1 18.4 | 19.6 |
| 169229 2001 SB ₁₇ | 15.0 | X | 72.81789 | 77.47734 | 3.77970 | 13.92240 | 0.1662759 | 0.17799627 | 3.1298879 | 20 | 2 27.9 | 19.1 |
| 169230 2001 SF ₁₇ | 14.9 | X | 304.29082 | 232.58162 | 6.36035 | 10.65243 | 0.0925965 | 0.18609916 | 3.0383638 | 20 | 2 27.4 | 19.1 |
| 169231 2001 SO ₁₇ | 14.9 | X | 46.18678 | 140.43702 | 8.55594 | 12.10944 | 0.1022521 | 0.18529661 | 3.0471305 | 20 | 3 31.7 | 18.8 |
| 169232 2001 SB ₂₄ | 15.1 | X | 67.06358 | 236.83823 | 183.41219 | 9.02920 | 0.0942377 | 0.17506422 | 3.1647382 | 20 | 1 10.5 | 19.4 |
| 169233 2001 SF ₃₂ | 15.5 | X | 182.57579 | 196.75379 | 102.69598 | 1.97896 | 0.1627687 | 0.17683729 | 3.1435484 | 20 | 1 3.2 | 20.5 |
| 169234 2001 SQ ₃₂ | 15.7 | X | 275.27121 | 312.25259 | 38.19710 | 2.58275 | 0.1192010 | 0.19630027 | 2.9321676 | 20 | 6 2.8 | 19.7 |
| 169235 2001 SO ₃₅ | 15.6 | X | 251.45849 | 268.85307 | 129.86175 | 3.06073 | 0.0688922 | 0.19789320 | 2.9164115 | 20 | 7 13.2 | 19.6 |
| 169236 2001 SW ₅₈ | 15.5 | X | 165.70001 | 299.32160 | 104.02827 | 2.76264 | 0.1704428 | 0.18496227 | 3.0508015 | 20 | 4 18.2 | 20.5 |
| 169237 2001 SE ₇₂ | 15.6 | X | 150.29470 | 289.27049 | 90.69381 | 7.02338 | 0.3093078 | 0.18004588 | 3.1060892 | 20 | 3 18.9 | 21.2 |
| 169238 2001 SF ₇₇ | 14.8 | X | 154.03931 | 103.54863 | 212.44618 | 11.24394 | 0.0462680 | 0.17412442 | 3.1761153 | 20 | — | — |
| 169239 2001 ST ₇₉ | 15.4 | X | 97.21195 | 131.07715 | 239.22841 | 3.52994 | 0.1384065 | 0.17685251 | 3.1433680 | 20 | — | — |
| 169240 2001 SN ₈₃ | 16.2 | X | 320.25306 | 137.16987 | 288.86881 | 3.78225 | 0.1052028 | 0.21505049 | 2.7591528 | 20 | 11 26.2 | 19.5 |
| 169241 2001 SV ₈₅ | 15.2 | X | 54.32889 | 256.80617 | 187.20294 | 10.63750 | 0.1262045 | 0.17807583 | 3.1289556 | 20 | 1 23.1 | 19.2 |
| 169242 2001 SR ₉₁ | 15.0 | X | 278.88328 | 255.97861 | 340.04488 | 10.56515 | 0.0767478 | 0.18272788 | 3.0756212 | 20 | 1 26.5 | 19.5 |
| 169243 2001 SR ₉₂ | 15.4 | X | 147.99484 | 329.78471 | 329.54799 | 2.34594 | 0.0542293 | 0.17254039 | 3.1955248 | 20 | — | — |
| 169244 2001 SG ₉₄ | 15.7 | X | 156.89257 | 45.80992 | 132.90870 | 5.98161 | 0.1864183 | 0.18175916 | 3.0865396 | 20 | 2 17.7 | 20.8 |
| 169245 2001 SM ₉₄ | 15.0 | X | 227.76814 | 345.63748 | 324.97759 | 9.08842 | 0.0278761 | 0.18479358 | 3.0526578 | 20 | 2 27.9 | 19.5 |
| 169246 2001 SQ ₉₆ | 15.4 | X | 74.89430 | 154.09555 | 280.30616 | 7.00900 | 0.1971675 | 0.17744154 | 3.1364078 | 20 | 2 22.5 | 19.3 |
| 169247 2001 SF ₉₈ | 15.0 | X | 353.66754 | 293.84906 | 226.60335 | 4.60857 | 0.1202920 | 0.18003619 | 3.1062007 | 20 | 1 22.8 | 18.8 |
| 169248 2001 ST ₉₈ | 15.6 | X | 121.36941 | 177.21840 | 184.85979 | 9.83300 | 0.0844249 | 0.17670698 | 3.1450936 | 20 | 1 7.5 | 20.3 |
| 169249 2001 SA ₁₀₂ | 15.5 | X | 222.91142 | 105.50347 | 189.32708 | 6.88927 | 0.1340954 | 0.18323953 | 3.0698932 | 20 | 1 29.7 | 20.6 |
| 169250 2001 SW ₁₀₂ | 15.2 | X | 7.74216 | 239.08893 | 227.87628 | 4.02475 | 0.1444478 | 0.17227210 | 3.1988417 | 20 | — | — |
| 169251 2001 SG ₁₁₃ | 15.2 | X | 66.69408 | 284.83637 | 204.44704 | 10.09129 | 0.0644982 | 0.18481135 | 3.0524622 | 20 | 3 30.8 | 19.4 |
| 169252 2001 SC ₁₁₆ | 15.2 | X | 133.74540 | 28.44393 | 325.12666 | 4.26902 | 0.1568474 | 0.17784471 | 3.1316658 | 20 | 1 20.9 | 20.0 |
| 169253 2001 SZ ₁₁₈ | 15.3 | X | 185.59483 | 189.39803 | 207.11532 | 7.92811 | 0.0219475 | 0.19126343 | 2.9834224 | 20 | 4 25.8 | 19.5 |
| 169254 2001 SH ₁₂₀ | 15.5 | X | 321.97875 | 54.73474 | 231.29313 | 4.06406 | 0.0826231 | 0.19649104 | 2.9302694 | 20 | 5 20.2 | 19.3 |
| 169255 2001 SP ₁₂₉ | 15.0 | X | 159.66181 | 116.29072 | 195.33722 | 9.48263 | 0.2023866 | 0.17659111 | 3.1464692 | 20 | — | — |
| 169256 2001 SW ₁₄₇ | 15.2 | X | 107.96661 | 92.15492 | 315.52545 | 6.84395 | 0.1028949 | 0.17940037 | 3.1135355 | 20 | 2 17.7 | 19.7 |
| 169257 2001 SB ₁₅₀ | 15.3 | X | 174.96544 | 109.43801 | 223.72898 | 4.92794 | 0.0716026 | 0.17942683 | 3.1132294 | 20 | 1 28.9 | 20.1 |
| 169258 2001 SH ₁₅₇ | 15.1 | X | 122.30632 | 70.89891 | 285.82483 | 5.56787 | 0.1855755 | 0.17489464 | 3.1667835 | 20 | 1 15.9 | 19.8 |
| 169259 2001 ST ₁₆₅ | 15.8 | X | 97.08797 | 168.37236 | 220.62120 | 0.44290 | 0.1990339 | 0.17650574 | 3.1474837 | 20 | 1 27.7 | 20.1 |
| 169260 2001 SM ₁₆₉ | 15.3 | X | 217.70300 | 207.99342 | 79.31412 | 6.18185 | 0.1239914 | 0.18083871 | 3.0970041 | 20 | 1 19.7 | 20.3 |
| 169261 2001 SN ₁₇₀ | 14.9 | X | 79.81413 | 103.05386 | 337.92388 | 14.88192 | 0.0773374 | 0.18089416 | 3.0963712 | 20 | 2 21.3 | 18.9 |
| 169262 2001 SZ ₁₇₀ | 15.8 | X | 219.17731 | 79.66188 | 169.86714 | 2.93424 | 0.1720030 | 0.17823839 | 3.1270528 | 20 | — | — |
| 169263 2001 SV ₁₇₅ | 14.8 | X | 77.37527 | 357.53571 | 101.60393 | 6.03873 | 0.1469269 | 0.17939350 | 3.1136150 | 20 | 3 23.5 | 19.0 |
| 169264 2001 SQ ₁₇₆ | 15.3 | X | 129.95058 | 295.20574 | 77.96149 | 5.90932 | 0.1168117 | 0.17701092 | 3.1414924 | 20 | 2 5.7 | 20.0 |
| 169265 2001 SV ₁₇₆ | 14.6 | X | 156.38961 | 304.21849 | 54.76492 | 12.04246 | 0.0529382 | 0.17845849 | 3.1244811 | 20 | 2 13.9 | 19.4 |
| 169266 2001 SP ₁₈₂ | 15.5 | X | 164.43622 | 90.63733 | 339.88197 | 3.42634 | 0.1628282 | 0.19274852 | 2.9680783 | 20 | 5 17.0 | 20.4 |
| 169267 2001 SE ₁₈₆ | 15.0 | X | 255.47331 | 65.91630 | 168.99495 | 22.66769 | 0.0334135 | 0.17964010 | 3.1107650 | 20 | 1 1.7 | 2 |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|--------|----------|
| 169281 2001 <i>SM</i> ₂₃₄ | 15.3 | X | 35.41221 | 283.26458 | 160.97399 | 3.41670 | 0.2830226 | 0.16903129 | 3.2395994 | 20 | 1 4.6 | 18.1 |
| 169282 2001 <i>ST</i> ₂₃₈ | 14.8 | X | 107.63558 | 334.58840 | 53.86275 | 10.22580 | 0.0885103 | 0.17520041 | 3.1630979 | 20 | 1 27.4 | 19.4 |
| 169283 2001 <i>SS</i> ₂₃₉ | 15.4 | X | 81.22362 | 324.89967 | 29.35172 | 5.32805 | 0.0995741 | 0.16851065 | 3.2462688 | 20 | — | — |
| 169284 2001 <i>SB</i> ₂₄₈ | 15.6 | X | 217.76146 | 251.74045 | 112.03248 | 2.80252 | 0.1778246 | 0.18883235 | 3.0089741 | 20 | 4 15.6 | 20.5 |
| 169285 2001 <i>SY</i> ₂₅₁ | 15.2 | X | 102.70233 | 239.47610 | 149.53365 | 2.68386 | 0.1364098 | 0.17413177 | 3.1760260 | 20 | 1 25.9 | 19.6 |
| 169286 2001 <i>SG</i> ₂₅₅ | 15.5 | X | 173.89419 | 107.94142 | 187.10521 | 9.61641 | 0.2012394 | 0.17415670 | 3.1757229 | 20 | — | — |
| 169287 2001 <i>ST</i> ₂₆₄ | 15.7 | X | 86.38727 | 193.40612 | 193.84411 | 4.59966 | 0.0866462 | 0.17317496 | 3.1877137 | 20 | — | — |
| 169288 2001 <i>SD</i> ₂₉₀ | 14.8 | X | 116.57764 | 201.23154 | 273.19030 | 10.45509 | 0.0800396 | 0.19032847 | 2.9931849 | 20 | 5 15.7 | 19.2 |
| 169289 2001 <i>SD</i> ₂₉₉ | 15.2 | X | 215.42608 | 51.60525 | 194.96508 | 5.74080 | 0.1380701 | 0.17557153 | 3.1586389 | 20 | — | — |
| 169290 2001 <i>SM</i> ₃₀₂ | 15.7 | X | 163.79201 | 53.11325 | 244.40700 | 1.55558 | 0.1259189 | 0.17433256 | 3.1735868 | 20 | — | — |
| 169291 2001 <i>SG</i> ₃₀₄ | 16.0 | X | 248.06559 | 125.61724 | 254.59037 | 1.03668 | 0.0778468 | 0.19594272 | 2.9357335 | 20 | 6 13.7 | 20.1 |
| 169292 2001 <i>SF</i> ₃₀₆ | 15.8 | X | 117.49439 | 16.64850 | 5.95778 | 7.59977 | 0.0522109 | 0.17704245 | 3.1411193 | 20 | 1 26.5 | 20.3 |
| 169293 2001 <i>SQ</i> ₃₁₄ | 15.0 | X | 354.78057 | 72.81691 | 42.99558 | 7.03978 | 0.0966406 | 0.17215044 | 3.2003486 | 20 | — | — |
| 169294 2001 <i>SC</i> ₃₁₅ | 14.6 | X | 43.38229 | 239.37563 | 251.53528 | 11.30102 | 0.1805861 | 0.18030248 | 3.1031415 | 20 | 3 6.8 | 18.4 |
| 169295 2001 <i>SP</i> ₃₂₄ | 15.0 | X | 227.71803 | 29.29544 | 246.56740 | 8.52292 | 0.0466213 | 0.18114243 | 3.0935413 | 20 | 1 16.5 | 19.7 |
| 169296 2001 <i>SW</i> ₃₃₃ | 15.3 | X | 305.61226 | 187.51747 | 19.31501 | 11.24712 | 0.0555220 | 0.17876282 | 3.1209340 | 20 | 1 27.9 | 19.8 |
| 169297 2001 <i>SR</i> ₃₄₉ | 15.1 | X | 158.77578 | 101.75371 | 240.14434 | 13.86285 | 0.0979827 | 0.17757808 | 3.1347998 | 20 | 1 22.1 | 20.1 |
| 169298 2001 <i>SS</i> ₃₄₉ | 15.2 | X | 194.22218 | 91.15644 | 246.46379 | 10.57228 | 0.0836974 | 0.18246998 | 3.0785185 | 20 | 2 19.4 | 20.2 |
| 169299 Sirko | 15.0 | X | 133.68796 | 328.06750 | 80.89065 | 11.49818 | 0.0804031 | 0.18121567 | 3.0927078 | 20 | 3 23.3 | 19.8 |
| 169300 2001 <i>SL</i> ₃₅₃ | 15.6 | X | 169.77096 | 125.12221 | 194.89658 | 11.42501 | 0.0538678 | 0.17564244 | 3.1512788 | 20 | 1 7.6 | 20.5 |
| 169301 2001 <i>TO</i> ₂ | 15.5 | X | 129.80453 | 28.07779 | 355.74082 | 7.19832 | 0.1056109 | 0.17956856 | 3.1115911 | 20 | 2 16.6 | 20.1 |
| 169302 2001 <i>TF</i> ₃ | 15.3 | X | 14.59093 | 247.71215 | 221.09004 | 8.92062 | 0.0971883 | 0.17143085 | 3.2092981 | 20 | — | — |
| 169303 2001 <i>TB</i> ₁₂ | 14.8 | X | 92.54950 | 331.54367 | 49.35402 | 17.79023 | 0.1893229 | 0.17178631 | 3.2048695 | 20 | 1 13.8 | 19.4 |
| 169304 2001 <i>TB</i> ₂₃ | 15.8 | X | 191.01517 | 27.69506 | 304.53860 | 1.70382 | 0.2141618 | 0.18290012 | 3.0736899 | 20 | 2 16.1 | 21.1 |
| 169305 2001 <i>TJ</i> ₄₉ | 15.1 | X | 71.98238 | 205.89033 | 241.87824 | 6.07475 | 0.1041660 | 0.17619103 | 3.1512306 | 20 | 2 24.2 | 19.3 |
| 169306 2001 <i>TX</i> ₆₀ | 15.1 | X | 150.14560 | 323.42565 | 12.65452 | 6.26454 | 0.1663785 | 0.17575852 | 3.1563983 | 20 | 1 18.5 | 20.2 |
| 169307 2001 <i>TC</i> ₆₆ | 15.2 | X | 124.14045 | 15.21912 | 343.51061 | 1.90408 | 0.1972540 | 0.17414251 | 3.1758954 | 20 | 1 22.1 | 19.9 |
| 169308 2001 <i>TA</i> ₇₀ | 15.2 | X | 235.65728 | 60.99890 | 206.50059 | 13.41471 | 0.1145796 | 0.17789502 | 3.1310754 | 20 | 1 11.1 | 20.4 |
| 169309 2001 <i>TF</i> ₈₁ | 14.5 | X | 353.81950 | 153.94959 | 352.66507 | 16.25045 | 0.0925726 | 0.17681218 | 3.1438460 | 20 | 1 14.7 | 18.8 |
| 169310 2001 <i>TQ</i> ₈₁ | 15.4 | X | 81.08877 | 121.51200 | 281.36742 | 4.88458 | 0.1433955 | 0.17433651 | 3.1735389 | 20 | 1 16.1 | 19.5 |
| 169311 2001 <i>TV</i> ₈₁ | 15.5 | X | 234.56280 | 354.56307 | 299.97257 | 4.29542 | 0.1518906 | 0.18446952 | 3.0562320 | 20 | 2 9.2 | 20.5 |
| 169312 2001 <i>TM</i> ₉₉ | 15.0 | X | 311.41183 | 345.35352 | 242.32483 | 3.51554 | 0.1229901 | 0.18262530 | 3.0767728 | 20 | 2 14.1 | 19.2 |
| 169313 2001 <i>TJ</i> ₁₀₆ | 14.7 | X | 111.92243 | 355.77663 | 62.45842 | 16.63198 | 0.2683245 | 0.17516460 | 3.1635290 | 20 | 4 3.8 | 19.9 |
| 169314 2001 <i>TP</i> ₁₀₉ | 15.0 | X | 129.46982 | 132.97419 | 235.72106 | 8.28171 | 0.0885787 | 0.17520449 | 3.1630488 | 20 | 1 23.9 | 19.7 |
| 169315 2001 <i>TH</i> ₁₁₁ | 14.9 | X | 53.18309 | 81.29975 | 357.32374 | 4.37249 | 0.1516814 | 0.17150885 | 3.2083250 | 20 | 1 21.8 | 18.8 |
| 169316 2001 <i>TJ</i> ₁₂₀ | 14.9 | X | 49.53639 | 116.75932 | 311.40825 | 12.56663 | 0.0801506 | 0.17105217 | 3.2140329 | 20 | — | — |
| 169317 2001 <i>TZ</i> ₁₂₄ | 14.8 | X | 87.13252 | 89.17175 | 328.22932 | 10.31194 | 0.0860664 | 0.17583270 | 3.1555104 | 20 | 2 4.1 | 19.0 |
| 169318 2001 <i>TH</i> ₁₃₂ | 15.5 | X | 141.76527 | 293.34950 | 47.88202 | 16.37933 | 0.1086844 | 0.17566007 | 3.1575775 | 20 | 1 10.8 | 20.5 |
| 169319 2001 <i>TS</i> ₁₃₃ | 14.9 | X | 50.70163 | 351.58256 | 88.74227 | 11.94213 | 0.0915314 | 0.17232625 | 3.1981715 | 20 | 1 13.9 | 19.0 |
| 169320 2001 <i>TC</i> ₁₃₈ | 14.2 | X | 172.10715 | 234.90069 | 57.67815 | 28.13126 | 0.2261500 | 0.17296835 | 3.1902517 | 20 | — | — |
| 169321 2001 <i>TP</i> ₁₄₂ | 15.6 | X | 171.46383 | 241.69444 | 82.38938 | 4.37184 | 0.1822395 | 0.17889781 | 3.1193638 | 20 | 1 22.9 | 20.7 |
| 169322 2001 <i>TJ</i> ₁₄₄ | 14.9 | X | 14.12459 | 296.24015 | 180.87659 | 18.77904 | 0.1277965 | 0.17290604 | 3.1910181 | 20 | 1 2.1 | 19.1 |
| 169323 2001 <i>TK</i> ₁₄₆ | 15.2 | X | 152.02853 | 277.39101 | 32.61376 | 23.19861 | 0.1677397 | 0.17344256 | 3.1844341 | 20 | — | — |
| 169324 2001 <i>TU</i> ₁₄₉ | 15.2 | X | 173.48232 | 235.84073 | 102.96349 | 4.49853 | 0.1960153 | 0.18008692 | 3.1056173 | 20 | 2 11.0 | 20.3 |
| 169325 2001 <i>TO</i> ₁₅₀ | 15.5 | X | 79.86469 | 260.34535 | 122.59172 | 6.17879 | 0.1806748 | 0.17060289 | 3.2196732 | 20 | — | — |
| 169326 2001 <i>TL</i> ₁₅₁ | 15.1 | X | 158.42597 | 297.62193 | 60.51730 | 10.47817 | 0.0572721 | 0.17820716 | 3.1274181 | 20 | 2 15.4 | 19.9 |
| 169327 2001 <i>TX</i> ₁₅₄ | 15.1 | X | 132.28483 | 274.42863 | 64.96732 | 13.77671 | 0.0843277 | 0.17233174 | 3.1981037 | 20 | — | — |
| 169328 2001 <i>TN</i> ₁₅₇ | 16.3 | X | 196.11546 | 248.73014 | 139.81546 | 2.12778 | 0.1734015 | 0.18647205 | 3.0343119 | 20 | 4 26.2 | 21.3 |
| 169329 2001 <i>TJ</i> ₁₅₉ | 15.1 | X | 17.00985 | 148.50355 | 303.84347 | 10.53037 | 0.0490143 | 0.17094309 | 3.2154000 | 20 | — | — |
| 169330 2001 <i>TZ</i> ₁₆₂ | 15.7 | X | 199.63868 | 330.92301 | 357.11437 | 3.99271 | 0.1061841 | 0.18250749 | 3.0780966 | 20 | 2 19.1 | 20.6 |
| 169331 2001 <i>TB</i> ₁₆₅ | 15.7 | X | 196.59795 | 280.39140 | 5.68221 | 10.40883 | 0.1677664 | 0.17730518 | 3.1380156 | 20 | — | — |
| 169332 2001 <i>TU</i> ₁₆₆ | 14.5 | X | 142.83690 | 131.38106 | 247.48812 | 19.52499 | 0.1117560 | 0.17754148 | 3.1352306 | 20 | 2 14.6 | 19.7 |
| 169333 2001 <i>TE</i> ₁₇₂ | 15.1 | X | 207.26004 | 340.54111 | 22.83177 | 7.75816 | 0.0706577 | 0.18866194 | 3.0107857 | 20 | 4 10.7 | 19.4 |
| 169334 2001 <i>TK</i> ₁₇₆ | 15.6 | X | 272.59030 | 42.25307 | 31.49929 | 1.11483 | 0.0681847 | 0.19428431 | 2.9524161 | 20 | 6 11.4 | 19.5 |
| 169335 2001 <i>TK</i> ₁₇₈ | 15.0 | X | 42.40510 | 245.04090 | 225.95305 | 8.29694 | 0.0969559 | 0.17619275 | 3.1512101 | 20 | 2 4.7 | 19.1 |
| 169336 2001 <i>TO</i> ₁₇₈ | 15.0 | X | 35.25351 | 293.61848 | 213.63167 | 16.38042 | 0.0873647 | 0.18062421 | 3.0994555 | 20 | 3 8.0 | 19.2 |
| 169337 2001 <i>TP</i> ₁₇₈ | 15.4 | X | 142.53152 | 177.76187 | 216.44494 | 9.19140 | 0.0938524 | 0.18122794 | 3.0925681 | 20 | 3 7.3 | 20.2 |
| 169338 2001 <i>TP</i> ₁₈₆ | 15.3 | X | 239.26153 | 30.05481 | 211.18242 | 8.89768 | 0.0392582 | 0.17449075 | 3.1716684 | 20 | — | — |
| 169339 2001 <i>TO</i> ₁₉₁ | 14.5 | X | 86.09672 | 7.47596 | 20.57715 | 5.28219 | 0.1384998 | 0.16981455 | 3.2296301 | 20 | 1 6.1 | 18.8 |
| 169340 2001 <i>TR</i> ₁₉₃ | 15.4 | X | 94.48973 | 256.41397 | 203.02238 | 7.50978 | 0.1158098 | 0.18333821 | 3.0687915 | 20 | 4 6.6 | 19.7 |
| 169341 2001 <i>TL</i> ₂₀₀ | 14.8 | X | 95.48968 | 208.46705 | 167.34167 | 18.22499 | 0.1178493 | 0.17320568 | 3.1873369 | 20 | — | — |
| 169342 2001 <i>TA</i> ₂₀₄ | 15.1 | X | 106.63921 | 284.81205 | 154.83049 | 11.21101 | 0.0935954 | 0.18361275 | 3.0657318 | 20 | 3 27.4 | 19.5 |
| 169343 2001 <i>TD</i> ₂₀₅ | 15.0 | X | 94.24111 | 353.70753 | 77.83667 | 10.81936 | 0.0822280 | 0.17962638 | 3.1109233 | 20 | 3 4.1 | 19.5 |
| 169344 2001 <i>TW</i> ₂₀₇ | 16.2 | X | 81.54138 | 293.99517 | 51.90455 | 1.71893 | 0.1442528 | 0.16746160 | 3.2598121 | 20 | — | — |
| 169345 2001 <i>TS</i> ₂₁₁ | 14.8 | X | 103.57681 | 287.76666 | 79.00844 | 18.15519 | 0.1409870 | 0.17319735 | 3.1874391 | 20 | 1 1.2 | 19.4 |
| 169346 2001 <i>TZ</i> ₂₂₁ | 15.5 | X | 118.53752 | 68.21617 | 295 | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|-------------|-----------|------|---------|----------|
| 169361 2001 UQ ₇₅ | 14.5 | X | 104.04422 | 302.21699 | 68.53229 | 12.56855 | 0.0971051 | 0.17011003 | 3.2258891 | 20 | 1 1.4 | 19.1 |
| 169362 2001 UV ₈₄ | 15.0 | X | 64.45487 | 46.86745 | 49.29725 | 12.00656 | 0.0756140 | 0.17528391 | 3.1620933 | 20 | 2 25.0 | 19.4 |
| 169363 2001 UE ₈₅ | 16.5 | X | 189.87842 | 164.80386 | 164.68777 | 0.77688 | 0.1674171 | 0.18220126 | 3.0815446 | 20 | 2 11.7 | 21.4 |
| 169364 2001 UH ₈₉ | 14.7 | X | 84.65581 | 4.67415 | 38.38231 | 27.17963 | 0.0769647 | 0.17548587 | 3.1596668 | 20 | 1 16.1 | 19.5 |
| 169365 2001 UO ₉₆ | 15.5 | X | 123.03433 | 194.31034 | 193.74330 | 11.28242 | 0.0979939 | 0.17688190 | 3.1430198 | 20 | 2 9.0 | 20.3 |
| 169366 2001 UF ₁₀₃ | 15.8 | X | 153.56502 | 278.04178 | 47.66166 | 9.70877 | 0.2059147 | 0.17551456 | 3.1593224 | 20 | 1 12.4 | 21.1 |
| 169367 2001 UA ₁₀₅ | 15.6 | X | 89.72117 | 204.82145 | 153.13305 | 2.31668 | 0.1802418 | 0.16932524 | 3.2358490 | 20 | — | — |
| 169368 2001 UJ ₁₁₁ | 14.7 | X | 145.85861 | 80.53780 | 245.57783 | 9.41462 | 0.1755418 | 0.17260480 | 3.1947298 | 20 | 1 2.0 | 19.7 |
| 169369 2001 UK ₁₁₁ | 15.2 | X | 96.24225 | 31.65814 | 327.49291 | 4.21574 | 0.1315808 | 0.16901982 | 3.2397459 | 20 | — | — |
| 169370 2001 UY ₁₂₅ | 15.0 | X | 217.52413 | 187.34394 | 106.45294 | 12.22711 | 0.1477166 | 0.17986613 | 3.1081583 | 20 | 1 26.4 | 20.0 |
| 169371 2001 UX ₁₃₆ | 15.4 | X | 29.98445 | 75.16095 | 39.45564 | 5.64496 | 0.1360526 | 0.17337592 | 3.1852501 | 20 | 1 28.1 | 19.2 |
| 169372 2001 UF ₁₃₇ | 15.5 | X | 151.76894 | 135.34462 | 199.38378 | 8.21607 | 0.0731512 | 0.17577901 | 3.1561529 | 20 | 1 7.6 | 20.3 |
| 169373 2001 UT ₁₅₀ | 14.7 | X | 102.21906 | 328.30687 | 61.68491 | 12.00018 | 0.0600404 | 0.17086980 | 3.2163195 | 20 | 1 18.6 | 19.4 |
| 169374 2001 UK ₁₆₁ | 14.7 | X | 66.87259 | 58.34147 | 76.58933 | 11.01340 | 0.1844631 | 0.17712565 | 3.1401356 | 20 | 4 29.7 | 18.9 |
| 169375 2001 UK ₁₇₃ | 15.8 | X | 92.19944 | 213.29626 | 172.56117 | 0.15368 | 0.1796374 | 0.17167480 | 3.2062571 | 20 | 1 16.1 | 20.1 |
| 169376 2001 UA ₁₇₄ | 15.1 | X | 205.70942 | 248.27928 | 43.45385 | 10.25317 | 0.0603992 | 0.17367694 | 3.1815685 | 20 | 1 16.1 | 20.0 |
| 169377 2001 UF ₁₇₈ | 14.6 | X | 87.60222 | 340.35087 | 80.00643 | 10.57870 | 0.2086906 | 0.17618506 | 3.1513017 | 20 | 2 29.2 | 19.0 |
| 169378 2001 UR ₁₈₂ | 15.1 | X | 98.83099 | 48.61624 | 37.35313 | 11.01220 | 0.0971618 | 0.18176945 | 3.0864231 | 20 | 3 27.8 | 19.5 |
| 169379 2001 UH ₁₈₉ | 14.8 | X | 156.78017 | 46.40091 | 276.73382 | 13.80891 | 0.0793605 | 0.17528322 | 3.1621017 | 20 | 1 1.1 | 19.6 |
| 169380 2001 UD ₁₉₃ | 15.3 | X | 58.01697 | 249.54699 | 176.82416 | 6.89358 | 0.1234562 | 0.17758388 | 3.1347316 | 20 | 2 25.1 | 19.3 |
| 169381 2001 UF ₂₀₅ | 14.1 | X | 80.00173 | 150.72986 | 314.08453 | 2.56910 | 0.0666818 | 0.12657384 | 3.9286205 | 20 | 3 23.1 | 19.5 |
| 169382 2001 UL ₂₀₉ | 15.2 | X | 239.32691 | 58.24115 | 245.71564 | 8.57991 | 0.0702430 | 0.18414223 | 3.0598522 | 20 | 2 26.9 | 20.0 |
| 169383 2001 VY ₇ | 15.4 | X | 50.79217 | 177.46144 | 275.33557 | 2.66439 | 0.1493446 | 0.17236643 | 3.1976746 | 20 | 2 2.6 | 19.1 |
| 169384 2001 VU ₁₉ | 17.1 | X | 329.48022 | 122.53860 | 229.53821 | 4.61876 | 0.1675054 | 0.30790357 | 2.1719987 | 20 | 9 18.1 | 18.3 |
| 169385 2001 VC ₂₆ | 15.3 | X | 110.73200 | 297.23303 | 65.52397 | 19.51909 | 0.1252679 | 0.17053911 | 3.2204759 | 20 | 1 16.4 | 20.3 |
| 169386 2001 VB ₂₉ | 15.2 | X | 102.61909 | 2.73019 | 59.24690 | 3.20100 | 0.2163194 | 0.17446160 | 3.1720216 | 20 | 3 17.4 | 19.8 |
| 169387 2001 VC ₄₀ | 14.8 | X | 313.56307 | 181.85956 | 253.93559 | 4.88839 | 0.0923587 | 0.15399449 | 3.4471956 | 20 | 11 12.3 | 19.2 |
| 169388 2001 VP ₄₃ | 14.7 | X | 67.37741 | 206.02419 | 261.10521 | 15.97844 | 0.1411230 | 0.172977747 | 3.1901397 | 20 | 3 7.8 | 19.2 |
| 169389 2001 VD ₅₀ | 14.9 | X | 97.06024 | 140.77762 | 285.69109 | 8.28332 | 0.0783512 | 0.17684438 | 3.1434644 | 20 | 2 21.7 | 19.3 |
| 169390 2001 VR ₅₁ | 14.9 | X | 101.08303 | 149.28549 | 265.04986 | 9.58333 | 0.0918334 | 0.17623733 | 3.1506786 | 20 | 2 13.2 | 19.4 |
| 169391 2001 VU ₆₁ | 15.4 | X | 172.41194 | 45.73546 | 339.71579 | 4.27334 | 0.1636258 | 0.18228794 | 3.0805677 | 20 | 3 31.3 | 20.6 |
| 169392 2001 VA ₆₅ | 14.7 | X | 61.18513 | 68.87557 | 36.61088 | 11.87383 | 0.1980800 | 0.17316763 | 3.1878037 | 20 | 3 18.3 | 18.7 |
| 169393 2001 VN ₉₀ | 14.8 | X | 111.54308 | 4.26010 | 88.09030 | 19.50421 | 0.0983552 | 0.18100327 | 3.0951267 | 20 | 4 25.6 | 19.6 |
| 169394 2001 VQ ₉₃ | 14.6 | X | 122.57664 | 310.31186 | 98.23296 | 19.10336 | 0.2411357 | 0.17646095 | 3.1480163 | 20 | 3 31.6 | 20.0 |
| 169395 2001 VL ₉₄ | 15.1 | X | 108.74799 | 337.66420 | 115.53621 | 18.78413 | 0.1855842 | 0.17820504 | 3.1274429 | 20 | 5 3.1 | 20.2 |
| 169396 2001 VS ₁₀₄ | 15.4 | X | 237.25947 | 55.23488 | 324.86960 | 1.90793 | 0.1604716 | 0.19047643 | 2.9916346 | 20 | 5 22.8 | 20.0 |
| 169397 2001 VE ₁₁₃ | 15.2 | X | 159.79066 | 87.43181 | 268.13220 | 8.11604 | 0.2368210 | 0.17703554 | 3.1412011 | 20 | 2 17.2 | 20.7 |
| 169398 2001 VP ₁₁₉ | 14.9 | X | 116.48763 | 146.11706 | 273.10518 | 8.04223 | 0.0838077 | 0.17556968 | 3.1586612 | 20 | 3 6.9 | 19.6 |
| 169399 2001 WX | 17.3 | X | 308.26815 | 48.28509 | 238.64603 | 3.09913 | 0.1324670 | 0.29362725 | 2.2418428 | 20 | 4 16.9 | 19.7 |
| 169400 2001 WA ₃₀ | 14.4 | X | 148.80945 | 291.26436 | 90.73220 | 15.58309 | 0.2189936 | 0.17750098 | 3.1357076 | 20 | 3 19.3 | 19.9 |
| 169401 2001 WS ₃₇ | 14.8 | X | 263.66003 | 137.56396 | 73.96289 | 10.36175 | 0.0391509 | 0.16833181 | 3.2485677 | 20 | — | — |
| 169402 2001 WE ₆₇ | 15.9 | X | 120.89511 | 55.14168 | 53.73852 | 1.64329 | 0.0419534 | 0.18610681 | 3.0382805 | 20 | 5 10.7 | 20.3 |
| 169403 2001 WY ₈₉ | 14.7 | X | 62.48418 | 205.56625 | 248.20423 | 11.98607 | 0.1736548 | 0.17489251 | 3.1668092 | 20 | 2 19.7 | 18.9 |
| 169404 2001 XF ₁₅ | 14.6 | X | 317.13113 | 140.91872 | 253.01911 | 8.82621 | 0.1040375 | 0.15091423 | 3.4939439 | 20 | 9 21.8 | 19.0 |
| 169405 2001 XK ₃₉ | 14.6 | X | 155.67055 | 8.49866 | 358.16216 | 10.36685 | 0.2277445 | 0.17588637 | 3.1548684 | 20 | 3 2.2 | 19.9 |
| 169406 2001 XR ₄₁ | 14.7 | X | 99.44476 | 157.42734 | 299.28708 | 15.16977 | 0.3003985 | 0.17524865 | 3.1625174 | 20 | 4 27.5 | 19.9 |
| 169407 2001 XC ₅₀ | 15.5 | X | 189.59026 | 119.43083 | 246.59144 | 1.81318 | 0.1490492 | 0.18157151 | 3.0886658 | 20 | 3 23.7 | 20.4 |
| 169408 2001 XP ₁₀₆ | 14.8 | X | 72.66574 | 225.70583 | 265.53774 | 16.12891 | 0.0867850 | 0.17903049 | 3.1178224 | 20 | 4 8.5 | 19.4 |
| 169409 2001 XJ ₁₀₉ | 15.1 | X | 68.79831 | 266.89392 | 290.61348 | 10.50291 | 0.0887700 | 0.18686902 | 3.0300131 | 20 | 7 5.0 | 19.2 |
| 169410 2001 XD ₁₂₀ | 14.8 | X | 98.22939 | 308.25588 | 50.00519 | 20.26815 | 0.1451774 | 0.17056225 | 3.2201846 | 20 | — | — |
| 169411 2001 XS ₁₂₉ | 15.6 | X | 188.19921 | 156.80745 | 268.06430 | 1.04221 | 0.0678377 | 0.18696664 | 3.0289583 | 20 | 6 2.9 | 20.0 |
| 169412 2001 XH ₁₇₂ | 16.5 | X | 170.39844 | 168.66657 | 252.52973 | 5.30375 | 0.1382966 | 0.28994985 | 2.2607583 | 20 | 5 22.6 | 19.7 |
| 169413 2001 XU ₁₈₇ | 16.8 | X | 8.40935 | 116.85976 | 253.88156 | 2.76983 | 0.1295427 | 0.31048993 | 2.1599202 | 20 | — | — |
| 169414 2001 XW ₁₈₉ | 16.1 | X | 243.25889 | 105.59965 | 265.36361 | 6.98714 | 0.2296999 | 0.29318037 | 2.2441202 | 20 | 5 8.4 | 19.6 |
| 169415 2001 XM ₂₀₀ | 15.0 | X | 290.01223 | 93.35548 | 49.58864 | 9.16860 | 0.0727815 | 0.15971600 | 3.3643702 | 20 | — | — |
| 169416 2001 XM ₂₀₁ | 17.1 | X | 283.41021 | 343.53023 | 135.04644 | 0.88338 | 0.0208581 | 0.30976016 | 2.1633113 | 20 | — | — |
| 169417 2001 XZ ₂₀₇ | 15.1 | X | 213.45296 | 256.78404 | 124.26121 | 8.48543 | 0.1544415 | 0.18537564 | 3.0462645 | 20 | 5 5.5 | 20.1 |
| 169418 2001 XF ₂₀₈ | 15.1 | X | 112.87504 | 299.98240 | 89.37453 | 28.39876 | 0.2683990 | 0.17275396 | 3.1928907 | 20 | 3 4.1 | 20.6 |
| 169419 2001 XV ₂₂₈ | 15.2 | X | 229.50661 | 53.49373 | 275.19379 | 8.42574 | 0.0662264 | 0.17977063 | 3.1092590 | 20 | 3 17.3 | 20.0 |
| 169420 2001 XR ₂₄₃ | 16.3 | X | 91.43313 | 207.47032 | 246.03350 | 0.98241 | 0.1224012 | 0.27915720 | 2.3186587 | 20 | 3 18.2 | 18.9 |
| 169421 2001 XZ ₂₅₁ | 15.8 | X | 118.66890 | 315.62630 | 134.89553 | 2.00330 | 0.1571361 | 0.17768814 | 3.1335053 | 20 | 4 29.6 | 20.6 |
| 169422 2001 XV ₂₅₈ | 14.8 | X | 250.24978 | 231.15378 | 97.80824 | 12.30315 | 0.1560532 | 0.18651686 | 3.0338259 | 20 | 4 10.6 | 19.7 |
| 169423 2001 YV ₁₁ | 16.5 | X | 190.55437 | 228.26001 | 316.97083 | 4.07993 | 0.0586359 | 0.30896250 | 2.1670331 | 20 | 11 26.8 | 19.3 |
| 169424 2001 YB ₂₅ | 15.2 | X | 94.99636 | 53.95275 | 57.76736 | 1.89343 | 0.1369066 | 0.17847201 | 3.1243234 | 20 | 4 26.4 | 19.6 |
| 169425 2001 YA ₅₄ | 17.6 | X | 265.79465 | 102.67456 | 8.31714 | 2.12885 | 0.1545204 | 0.30908007 | 2.1664835 | 20 | 11 17.8 | 19.2 |
| 169426 2001 YB ₇₃ | 17.1 | X | 328.26590 | 145.99283 | 299.42122 | 2.57824 | 0.0564908 | 0.31400137 | 2.1437873 | 20 | — | — |
| 169427 2001 YP ₁₀₃ | 16.4 | X | 123.41733 | 348.05200 | 213.23958 | 3.15617 | 0.2274427 | 0.29726257 | 2.2352728 | 20 | 9 30.7 | 19.9 |
| 169428 2001 YL ₁₂₇ | 15.3 | X | 164.76557 | 36.01182 | 38.35130 | 5.07584 | 0.1422979 | 0.18226119 | 3.0808691 | 20 | 5 21.9 | 20.2 |
| 169429 2001 YP ₁₄₉ | 14.4 | X | 295.92980 | 23.83079 | 54.41633 | 10.73174 | 0.0745349 | 0.14945625 | 3.5166298 | 20 | 10 25.3 | 19.2 |
| 169430 2002 AH ₅ | 16.5 | X | 161.18859 | 167.57728 | 6.86603 | 4.25473 | 0.0534165 | 0.29915828 | 2.2141245 | 20 | 10 4.5 | 19.3 |
| 169431 2002 AK ₂₆ | 17.0 | X | 345.52510 | 27.39602 | 348.42557 | 2.61968 | 0.0568733 | 0.30400006 | 2.1905522 | 20 | 11 19.7 | 19.1 |
| 169432 2002 AM ₃₀ | 16.9 | X | 199.24960 | 43.87540 | 117.42684 | 3.83675 | 0.0358754 | 0.30492854 | 2.1861032 | 20 | 11 9.7 | 19.4 |
| 169433 2002 AY ₄₂ | 15.7 | X | 128.06979 | 305.93115 | 142.26402 | 5.61996 | 0.1140363 | 0.17736236 | 3.1373411 | 20</ | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 169441 2002 AR ₁₃₁ | 14.4 | X | 153.01793 | 116.25668 | 268.13924 | 20.55730 | 0.1990584 | 0.17958657 | 3.1113830 | 20 | 3 5.9 | 20.0 |
| 169442 2002 AT ₁₅₂ | 16.7 | X | 118.59489 | 124.74903 | 353.68637 | 1.72735 | 0.1928590 | 0.28449233 | 2.2895792 | 20 | 6 5.8 | 20.0 |
| 169443 2002 AO ₁₅₆ | 17.1 | X | 277.32920 | 330.18402 | 147.13408 | 4.05350 | 0.0223849 | 0.31035083 | 2.1605655 | 20 | 12 31.9 | 19.4 |
| 169444 2002 AC ₁₅₇ | 17.1 | X | 66.81385 | 322.90036 | 211.58623 | 2.15933 | 0.0963562 | 0.28403685 | 2.2920263 | 20 | 6 3.5 | 19.5 |
| 169445 2002 AG ₁₇₃ | 16.8 | X | 330.78915 | 50.03980 | 304.07576 | 4.84923 | 0.0991140 | 0.29974837 | 2.2112177 | 20 | 9 20.7 | 18.7 |
| 169446 2002 AA ₁₉₃ | 15.3 | X | 354.56691 | 56.94403 | 168.35456 | 1.79372 | 0.1431106 | 0.17263845 | 3.1943147 | 20 | 4 18.4 | 19.0 |
| 169447 2002 BW | 16.5 | X | 345.27398 | 31.74558 | 19.26321 | 4.96265 | 0.1007299 | 0.30809838 | 2.1710831 | 20 | — | — |
| 169448 2002 BY ₁₁ | 16.8 | X | 126.29148 | 242.38739 | 304.22812 | 1.47134 | 0.1162250 | 0.29310335 | 2.2445134 | 20 | 9 9.5 | 19.8 |
| 169449 2002 BX ₁₅ | 16.6 | X | 190.48030 | 254.76454 | 305.14569 | 4.47653 | 0.0976416 | 0.30530410 | 2.1843101 | 20 | 12 11.4 | 19.3 |
| 169450 2002 BU ₁₆ | 16.5 | X | 160.16189 | 320.93934 | 181.56804 | 2.21143 | 0.0665202 | 0.29230877 | 2.2485790 | 20 | 8 17.5 | 19.5 |
| 169451 2002 BF ₂₂ | 16.5 | X | 61.74458 | 215.90852 | 351.92072 | 7.71018 | 0.1274155 | 0.28756734 | 2.2732281 | 20 | 7 24.1 | 19.1 |
| 169452 2002 CD ₆ | 16.6 | X | 220.17224 | 175.85411 | 346.71038 | 3.53619 | 0.1051923 | 0.30388080 | 2.1911253 | 20 | 11 26.7 | 19.3 |
| 169453 2002 CY ₇ | 16.3 | X | 23.92859 | 305.69358 | 59.23690 | 3.17974 | 0.1355848 | 0.30938777 | 2.1650468 | 20 | — | — |
| 169454 2002 CZ ₁₀ | 15.3 | X | 76.57218 | 122.21087 | 72.79830 | 23.25779 | 0.2447683 | 0.28299069 | 2.2976716 | 20 | 8 18.7 | 19.0 |
| 169455 2002 CB ₁₄ | 16.6 | X | 83.06492 | 59.89179 | 145.00287 | 5.52809 | 0.1846010 | 0.28705783 | 2.2759172 | 20 | 8 24.1 | 19.6 |
| 169456 2002 CZ ₂₁ | 14.5 | X | 186.81730 | 272.07297 | 147.03632 | 6.85837 | 0.1993564 | 0.12606892 | 3.9391032 | 20 | 5 25.7 | 21.0 |
| 169457 2002 CN ₃₃ | 16.8 | X | 242.45484 | 27.68647 | 39.04952 | 7.36032 | 0.0481068 | 0.29507200 | 2.2345190 | 20 | 8 24.9 | 19.5 |
| 169458 2002 CU ₃₆ | 17.1 | X | 224.56969 | 264.36646 | 172.96742 | 5.45799 | 0.0912576 | 0.29429885 | 2.2384308 | 20 | 8 3.2 | 20.0 |
| 169459 2002 CP ₄₃ | 16.6 | X | 106.06533 | 259.80336 | 321.28649 | 5.45414 | 0.1255404 | 0.29542177 | 2.2327549 | 20 | 10 2.8 | 19.8 |
| 169460 2002 CD ₄₈ | 16.7 | X | 164.15264 | 349.57414 | 209.68085 | 5.88154 | 0.0632774 | 0.30233575 | 2.1985839 | 20 | 11 12.2 | 19.4 |
| 169461 2002 CX ₅₇ | 16.7 | X | 357.02867 | 163.86273 | 279.63213 | 0.53433 | 0.0790670 | 0.31379471 | 2.1447284 | 20 | — | — |
| 169462 2002 CN ₅₉ | 16.6 | X | 253.93061 | 246.70814 | 359.73324 | 2.81033 | 0.1357322 | 0.26422119 | 2.4052356 | 20 | — | — |
| 169463 2002 CZ ₆₀ | 16.5 | X | 177.41901 | 65.33386 | 69.96545 | 7.57579 | 0.0543288 | 0.29548620 | 2.2324304 | 20 | 9 4.1 | 19.5 |
| 169464 2002 CK ₆₆ | 16.5 | X | 169.50854 | 337.81429 | 301.82904 | 1.82119 | 0.0835658 | 0.26268398 | 2.4146100 | 20 | — | — |
| 169465 2002 CB ₆₉ | 17.3 | X | 190.83857 | 79.87915 | 1.25359 | 3.17504 | 0.1338151 | 0.29139854 | 2.2532591 | 20 | 6 27.3 | 20.6 |
| 169466 2002 CE ₇₀ | 16.0 | X | 202.07224 | 39.51986 | 340.51271 | 6.02773 | 0.1874709 | 0.28533303 | 2.2850797 | 20 | 4 13.9 | 19.7 |
| 169467 2002 CT ₇₃ | 16.6 | X | 134.18269 | 75.59402 | 337.02464 | 6.89112 | 0.0943542 | 0.27791176 | 2.2525808 | 20 | 3 14.0 | 19.6 |
| 169468 2002 CD ₈₃ | 16.3 | X | 322.94448 | 185.65825 | 340.97758 | 6.25615 | 0.0617331 | 0.26591154 | 2.3950317 | 20 | — | — |
| 169469 2002 CM ₈₄ | 16.6 | X | 339.96663 | 315.78650 | 338.97191 | 4.62218 | 0.1067480 | 0.28639948 | 2.2794036 | 20 | 7 4.3 | 18.6 |
| 169470 2002 CJ ₉₁ | 16.8 | X | 314.84302 | 331.14276 | 83.87262 | 2.88413 | 0.0882652 | 0.30392625 | 2.1909068 | 20 | 11 29.6 | 18.6 |
| 169471 2002 CS ₉₄ | 16.2 | X | 11.80901 | 223.29650 | 353.09621 | 4.81520 | 0.1627324 | 0.27842404 | 2.3227273 | 20 | 4 29.5 | 18.1 |
| 169472 2002 CN ₉₈ | 16.3 | X | 334.28602 | 243.35205 | 345.78421 | 5.60115 | 0.0899373 | 0.27512052 | 2.3412838 | 20 | 3 13.8 | 18.6 |
| 169473 2002 CH ₁₀₁ | 16.5 | X | 226.76418 | 313.24122 | 132.55425 | 7.50794 | 0.0543436 | 0.29340315 | 2.2429841 | 20 | 8 26.2 | 19.2 |
| 169474 2002 CK ₁₀₇ | 16.8 | X | 154.63765 | 13.57897 | 130.76787 | 5.91049 | 0.0929031 | 0.28998202 | 2.2605910 | 20 | 8 14.4 | 19.9 |
| 169475 2002 CZ ₁₁₄ | 16.4 | X | 149.67795 | 118.77734 | 83.11143 | 6.71514 | 0.1732106 | 0.29638796 | 2.2278999 | 20 | 10 27.2 | 19.9 |
| 169476 2002 CC ₁₁₅ | 16.4 | X | 289.79132 | 326.58589 | 331.48187 | 5.78756 | 0.1126292 | 0.28226842 | 2.3015894 | 20 | 4 7.6 | 19.3 |
| 169477 2002 CM ₁₂₁ | 14.4 | X | 10.89483 | 117.36733 | 138.30517 | 25.98899 | 0.3239217 | 0.17678868 | 3.1441246 | 20 | 7 16.6 | 17.3 |
| 169478 2002 CS ₁₂₈ | 17.1 | X | 107.28013 | 252.08106 | 288.85305 | 3.49302 | 0.0598194 | 0.29025871 | 2.2591542 | 20 | 8 4.2 | 19.9 |
| 169479 2002 CB ₁₃₄ | 16.9 | X | 197.28359 | 295.79606 | 162.51118 | 4.17670 | 0.0599348 | 0.29119260 | 2.2543214 | 20 | 8 1.6 | 19.7 |
| 169480 2002 CX ₁₃₇ | 16.4 | X | 289.06415 | 237.03946 | 190.45496 | 6.32973 | 0.0626714 | 0.30331420 | 2.1938532 | 20 | 11 4.4 | 18.5 |
| 169481 2002 CC ₁₃₈ | 16.0 | X | 198.85556 | 24.43436 | 195.46235 | 6.15836 | 0.0919231 | 0.25590876 | 2.4570422 | 20 | — | — |
| 169482 2002 CL ₁₄₄ | 16.7 | X | 303.15215 | 102.51412 | 318.28649 | 4.10510 | 0.0827580 | 0.30251064 | 2.1977365 | 20 | 11 14.7 | 18.8 |
| 169483 2002 CL ₁₄₆ | 16.7 | X | 261.28452 | 145.37326 | 293.19148 | 1.87793 | 0.1524455 | 0.29863877 | 2.2166915 | 20 | 9 17.5 | 19.1 |
| 169484 2002 CL ₁₄₈ | 16.7 | X | 337.06583 | 322.04461 | 303.09849 | 4.70872 | 0.1412762 | 0.28188564 | 2.3036726 | 20 | 5 3.7 | 18.8 |
| 169485 2002 CS ₁₅₉ | 17.0 | X | 1.76699 | 178.90318 | 137.48662 | 2.00134 | 0.0744380 | 0.29360558 | 2.2419530 | 20 | 9 19.4 | 19.0 |
| 169486 2002 CU ₁₆₇ | 16.7 | X | 36.26080 | 171.39519 | 14.36930 | 3.96081 | 0.1275001 | 0.27895536 | 2.3197770 | 20 | 5 1.2 | 18.6 |
| 169487 2002 CH ₁₆₈ | 16.7 | X | 235.45770 | 99.24520 | 65.21053 | 3.95170 | 0.0824999 | 0.30642033 | 2.1790022 | 20 | 12 27.4 | 18.8 |
| 169488 2002 CS ₁₆₈ | 16.3 | X | 283.69816 | 35.46924 | 44.48458 | 4.08409 | 0.1045871 | 0.30279409 | 2.1963647 | 20 | 11 8.5 | 18.0 |
| 169489 2002 CJ ₁₆₉ | 16.1 | X | 95.17037 | 202.05550 | 359.21445 | 7.12308 | 0.1486507 | 0.28907503 | 2.2653171 | 20 | 8 30.5 | 19.1 |
| 169490 2002 CT ₁₇₉ | 17.0 | X | 316.30149 | 224.29568 | 137.01733 | 5.00433 | 0.1531066 | 0.29861821 | 2.2167932 | 20 | 9 3.7 | 18.5 |
| 169491 2002 CV ₁₉₀ | 16.8 | X | 337.65240 | 302.83206 | 88.58980 | 3.62447 | 0.1155731 | 0.30609717 | 2.1805356 | 20 | 12 8.6 | 18.5 |
| 169492 2002 CJ ₁₉₂ | 16.7 | X | 15.39144 | 237.25816 | 13.53921 | 3.97131 | 0.1347237 | 0.28533794 | 2.2850535 | 20 | 7 7.1 | 18.7 |
| 169493 2002 CU ₁₉₇ | 17.0 | X | 358.67111 | 143.49914 | 121.63531 | 2.60659 | 0.1824491 | 0.28439679 | 2.2900920 | 20 | 6 24.9 | 18.4 |
| 169494 2002 CQ ₂₀₉ | 16.6 | X | 323.68152 | 156.60388 | 131.12998 | 7.19525 | 0.1236407 | 0.28264984 | 2.2995184 | 20 | 5 20.9 | 19.0 |
| 169495 2002 CS ₂₁₂ | 16.3 | X | 275.47147 | 298.82367 | 331.15343 | 4.33909 | 0.1522173 | 0.27293082 | 2.3537897 | 20 | 2 10.7 | 19.7 |
| 169496 2002 CX ₂₁₄ | 16.8 | X | 318.30563 | 191.97845 | 40.51189 | 2.80348 | 0.1100439 | 0.27314470 | 2.3525608 | 20 | 2 21.9 | 19.4 |
| 169497 2002 CM ₂₁₅ | 16.7 | X | 189.08930 | 19.92274 | 151.73627 | 3.24529 | 0.0400105 | 0.30024703 | 2.2087687 | 20 | 11 8.7 | 19.3 |
| 169498 2002 CC ₂₁₆ | 17.2 | X | 319.94666 | 130.92044 | 81.44691 | 2.45412 | 0.1335556 | 0.27007748 | 2.3703390 | 20 | 1 23.6 | 19.9 |
| 169499 2002 CP ₂₁₆ | 16.4 | X | 51.32150 | 210.09821 | 339.23212 | 5.93714 | 0.0482658 | 0.28149064 | 2.3058271 | 20 | 5 22.1 | 19.0 |
| 169500 2002 CD ₂₁₇ | 17.0 | X | 84.01524 | 127.58525 | 4.18059 | 6.02641 | 0.0489200 | 0.27862944 | 2.3215857 | 20 | 4 17.9 | 19.8 |
| 169501 2002 CR ₂₁₈ | 16.6 | X | 251.36557 | 216.16404 | 4.48854 | 6.63868 | 0.1159978 | 0.26060830 | 2.4274142 | 20 | — | — |
| 169502 2002 CS ₂₂₂ | 16.9 | X | 54.70544 | 45.68834 | 200.10231 | 2.72114 | 0.1109216 | 0.29071788 | 2.2567748 | 20 | 9 2.2 | 19.4 |
| 169503 2002 CA ₂₃₈ | 16.5 | X | 110.28651 | 213.72651 | 310.77398 | 7.05533 | 0.0361520 | 0.28682269 | 2.2771609 | 20 | 7 13.4 | 19.2 |
| 169504 2002 CZ ₂₄₁ | 15.9 | X | 32.81794 | 29.62169 | 192.06344 | 5.31688 | 0.1348201 | 0.28171684 | 2.3045927 | 20 | 6 23.5 | 18.1 |
| 169505 2002 CS ₂₄₃ | 16.1 | X | 320.36063 | 303.28198 | 328.45036 | 5.78546 | 0.1004901 | 0.27753882 | 2.3276636 | 20 | 4 18.3 | 18.8 |
| 169506 2002 CE ₂₄₅ | 16.4 | X | 267.02676 | 132.41953 | 290.99258 | 6.53945 | 0.1163159 | 0.29785695 | 2.2205688 | 20 | 9 7.4 | 19.0 |
| 169507 2002 CX ₂₅₂ | 16.8 | X | 183.16399 | 239.33319 | 169.10440 | 4.88405 | 0.1355718 | 0.28550671 | 2.2841529 | 20 | 5 7.1 | 20.2 |
| 169508 2002 CT ₂₆₇ | 14.4 | X | 217.33685 | 246.31306 | 133.82123 | 7.69013 | 0.1445747 | 0.12368398 | 3.9895790 | 20 | 5 9.3 | 20.7 |
| 169509 2002 CV ₂₆₉ | 14.4 | X | 199.57375 | 5.73232 | 40.25799 | 3.33525 | 0.2560151 | 0.12529318 | 3.9553455 | 20 | 5 17.5 | 21.0 |
| 169510 2002 CQ ₂₇₆ | 16.9 | X | 164.44704 | 76.51235 | 297.20269 | 1.98297 | 0.1826559 | 0.27703283 | 2.3304970 | 20 | 3 5.1 | 20.4 |
| 169511 2002 CX ₂₉₈ | 17.1 | X | 277.31160 | 56.33984 | 329.52554 | 0.57413 | 0.0989982 | 0.29253473 | 2.2474210 | 20 | 8 3.6 | 19.4 |
| 169512 2002 CD ₃₀₂ | 16.2 | X | 294.64845 | 205.04512 | 103.39062 | 6.75053 | 0.0748343 | 0.28428293 | 2.2907034 | 20 | 5 11.4 | 18.8 |
| 169513 2002 DN ₁₅ | 16.7 | X | 59.09265 | 82.51139 | 274.95240 | 2.77608 | 0.1755048 | 0.31108010 | 2.1571875 | 20 | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-------------|---------|-----------|------------|-----------|----------|---------|------|
| 169521 | 2002 | EA ₃₃ | 16.5 | X | 224.57033 | 226.00317 | 96.10688 | 6.77923 | 0.1403249 | 0.27387261 | 2.3483905 | 20 | 2 28.4 | 20.1 |
| 169522 | 2002 | EF ₄₀ | 16.5 | X | 5.83730 | 355.73859 | 196.06182 | 2.55667 | 0.1808663 | 0.27292825 | 2.3538045 | 20 | 3 6.2 | 18.2 |
| 169523 | 2002 | EW ₄₁ | 16.3 | X | 115.67403 | 22.03965 | 223.05477 | 3.33810 | 0.1298144 | 0.24315085 | 2.5422535 | 20 | 11 7.6 | 20.0 |
| 169524 | 2002 | EW ₄₂ | 16.1 | X | 7.86051 | 32.60859 | 196.91759 | 5.65985 | 0.1764972 | 0.27800610 | 2.3250547 | 20 | 5 16.5 | 17.7 |
| 169525 | 2002 | EF ₄₈ | 16.8 | X | 286.45219 | 36.67791 | 264.73205 | 1.22337 | 0.2211947 | 0.27538040 | 2.3398106 | 20 | 3 25.0 | 19.9 |
| 169526 | 2002 | ET ₅₀ | 17.0 | X | 202.97273 | 276.82063 | 351.41097 | 0.94228 | 0.1666739 | 0.25813500 | 2.4428949 | 20 | — | — |
| 169527 | 2002 | EY ₅₁ | 16.9 | X | 242.44603 | 298.21887 | 127.43603 | 3.37938 | 0.0923005 | 0.29328285 | 2.2435975 | 20 | 8 11.9 | 19.4 |
| 169528 | 2002 | EF ₆₃ | 16.8 | X | 211.02901 | 351.81410 | 263.30954 | 0.52991 | 0.1555762 | 0.25805081 | 2.4434262 | 20 | — | — |
| 169529 | 2002 | EA ₆₅ | 16.4 | X | 306.70208 | 267.14150 | 344.74776 | 4.59228 | 0.1634297 | 0.27170388 | 2.3608704 | 20 | 2 23.0 | 19.1 |
| 169530 | 2002 | EZ ₆₅ | 17.3 | X | 9.88077 | 44.33586 | 213.06572 | 3.70912 | 0.1059263 | 0.28246226 | 2.3005363 | 20 | 7 2.3 | 19.4 |
| 169531 | 2002 | EK ₆₆ | 17.0 | X | 3.71587 | 38.64463 | 206.97539 | 1.73557 | 0.1722925 | 0.27902309 | 2.3194016 | 20 | 6 2.5 | 18.4 |
| 169532 | 2002 | EO ₆₇ | 16.5 | X | 333.23020 | 350.55716 | 265.06345 | 2.01824 | 0.1549319 | 0.27581397 | 2.3373579 | 20 | 4 10.5 | 18.8 |
| 169533 | 2002 | EW ₆₇ | 16.4 | X | 342.34550 | 32.26618 | 197.03971 | 1.77477 | 0.1514119 | 0.27634549 | 2.3343598 | 20 | 4 20.2 | 18.5 |
| 169534 | 2002 | ED ₆₉ | 16.4 | X | 93.85576 | 322.92889 | 217.44059 | 5.19389 | 0.0740261 | 0.28214544 | 2.3022582 | 20 | 6 18.9 | 19.3 |
| 169535 | 2002 | EE ₆₉ | 16.9 | X | 58.55278 | 197.71176 | 325.29015 | 2.11123 | 0.1400306 | 0.27756775 | 2.3275019 | 20 | 5 9.6 | 19.3 |
| 169536 | 2002 | EU ₇₀ | 16.5 | X | 174.86873 | 324.29860 | 197.93929 | 5.79825 | 0.0995460 | 0.29479001 | 2.2359438 | 20 | 9 30.5 | 19.4 |
| 169537 | 2002 | EH ₇₃ | 16.3 | X | 304.61174 | 333.98850 | 266.15051 | 1.90626 | 0.1955186 | 0.26824520 | 2.3811207 | 20 | 1 30.5 | 19.5 |
| 169538 | 2002 | EH ₇₄ | 16.4 | X | 1.42658 | 229.12938 | 352.49723 | 2.38832 | 0.1137471 | 0.27487320 | 2.3426880 | 20 | 4 17.7 | 18.6 |
| 169539 | 2002 | EV ₈₀ | 16.8 | X | 49.05027 | 288.83549 | 261.87850 | 3.80744 | 0.0766129 | 0.28220241 | 2.3019483 | 20 | 5 26.3 | 19.2 |
| 169540 | 2002 | EK ₈₁ | 16.2 | X | 92.76460 | 129.57187 | 220.93800 | 1.70002 | 0.1954405 | 0.25801097 | 2.4436778 | 20 | — | — |
| 169541 | 2002 | EX ₈₃ | 16.8 | X | 337.56584 | 233.14822 | 21.82010 | 2.36279 | 0.1816550 | 0.27621852 | 2.3350751 | 20 | 4 15.1 | 18.7 |
| 169542 | 2002 | EJ ₈₇ | 16.5 | X | 33.13695 | 212.33848 | 22.33698 | 6.34600 | 0.0486760 | 0.28335834 | 2.2956837 | 20 | 7 3.5 | 19.1 |
| 169543 | 2002 | EY ₈₇ | 17.3 | X | 209.64676 | 36.01619 | 82.55434 | 2.14600 | 0.1625816 | 0.29482175 | 2.2357833 | 20 | 9 6.3 | 20.5 |
| 169544 | 2002 | EZ ₈₇ | 16.3 | X | 4.94816 | 82.74201 | 153.56028 | 4.83852 | 0.0871113 | 0.27808287 | 2.3246267 | 20 | 5 20.7 | 18.7 |
| 169545 | 2002 | EM ₈₉ | 16.4 | X | 344.79081 | 17.78351 | 207.24893 | 5.74883 | 0.1549762 | 0.27564198 | 2.3383300 | 20 | 3 15.7 | 18.6 |
| 169546 | 2002 | EV ₉₁ | 16.5 | X | 14.04450 | 187.55126 | 57.58696 | 4.04386 | 0.1938851 | 0.27964899 | 2.3159395 | 20 | 6 30.2 | 18.0 |
| 169547 | 2002 | EO ₉₄ | 16.9 | X | 318.82271 | 213.89984 | 13.37444 | 2.79732 | 0.1452839 | 0.27131470 | 2.2631276 | 20 | 2 9.8 | 19.8 |
| 169548 | 2002 | EQ ₉₇ | 16.5 | X | 88.13524 | 341.91306 | 223.05016 | 6.88519 | 0.0823844 | 0.28908706 | 2.2652542 | 20 | 8 13.6 | 19.5 |
| 169549 | 2002 | EQ ₁₀₅ | 16.5 | X | 240.40327 | 33.22303 | 52.37353 | 5.89348 | 0.0990363 | 0.29616354 | 2.2290252 | 20 | 9 9.8 | 19.1 |
| 169550 | 2002 | EF ₁₀₆ | 16.5 | X | 165.07059 | 72.98142 | 84.07292 | 6.88258 | 0.0674762 | 0.29302908 | 2.2448926 | 20 | 9 17.9 | 19.6 |
| 169551 | 2002 | EB ₁₀₈ | 17.2 | X | 2.39696 | 3.76395 | 245.88827 | 0.48385 | 0.0843338 | 0.28206115 | 2.3027168 | 20 | 6 4.4 | 19.3 |
| 169552 | 2002 | EP ₁₀₉ | 16.6 | X | 300.13574 | 160.05986 | 147.50437 | 5.03786 | 0.1432368 | 0.28034887 | 2.3120835 | 20 | 5 6.7 | 19.2 |
| 169553 | 2002 | EY ₁₁₀ | 17.0 | X | 275.06122 | 22.46080 | 53.22132 | 5.84454 | 0.1281044 | 0.29864607 | 2.2166554 | 20 | 10 14.7 | 19.0 |
| 169554 | 2002 | EB ₁₁₅ | 15.9 | X | 66.43032 | 105.17673 | 89.41205 | 6.58973 | 0.1435139 | 0.28142351 | 2.3061938 | 20 | 7 11.5 | 18.4 |
| 169555 | 2002 | ES ₁₁₅ | 16.6 | X | 79.74189 | 129.66443 | 56.02003 | 7.41315 | 0.0648814 | 0.28328307 | 2.2960903 | 20 | 7 4.8 | 19.4 |
| 169556 | 2002 | EN ₁₁₆ | 16.8 | X | 136.86418 | 205.62925 | 204.08550 | 1.75709 | 0.1997482 | 0.27723063 | 2.3293884 | 20 | 3 26.3 | 20.2 |
| 169557 | 2002 | ES ₁₃₂ | 17.0 | X | 15.59878 | 64.99101 | 199.39944 | 3.30830 | 0.1205306 | 0.28570656 | 2.2830876 | 20 | 7 26.5 | 19.1 |
| 169558 | 2002 | EM ₁₃₇ | 17.1 | X | 312.86512 | 248.22550 | 10.55483 | 3.14964 | 0.1694003 | 0.27359208 | 2.3499955 | 20 | 3 11.2 | 19.9 |
| 169559 | 2002 | EP ₁₃₉ | 16.5 | X | 179.27315 | 180.45384 | 93.09929 | 3.52141 | 0.1625061 | 0.25775614 | 2.4452881 | 20 | — | — |
| 169560 | 2002 | EP ₁₃₉ | 16.6 | X | 95.94075 | 38.20012 | 137.50103 | 2.88512 | 0.0619089 | 0.28318984 | 2.2965942 | 20 | 7 12.2 | 19.3 |
| 169561 | 2002 | EY ₁₃₉ | 17.0 | X | 305.55098 | 208.13579 | 27.34422 | 1.46878 | 0.1407910 | 0.27094411 | 2.3652819 | 20 | 2 3.1 | 19.8 |
| 169562 | 2002 | ET ₁₄₅ | 17.0 | X | 37.63662 | 272.64466 | 324.04777 | 5.25126 | 0.0882363 | 0.28415990 | 2.2913645 | 20 | 7 20.2 | 19.3 |
| 169563 | 2002 | EM ₁₅₅ | 16.7 | X | 215.54994 | 29.96807 | 35.12215 | 6.53934 | 0.1559835 | 0.28986028 | 2.2612240 | 20 | 6 30.4 | 20.0 |
| 169564 | 2002 | EO ₁₅₅ | 17.1 | X | 280.45111 | 180.45385 | 64.14655 | 3.60093 | 0.1938692 | 0.26737194 | 2.3863025 | 20 | 1 11.3 | 20.8 |
| 169565 | 2002 | EP ₁₅₅ | 16.5 | X | 286.77381 | 223.72337 | 33.61984 | 4.82264 | 0.2516591 | 0.26904925 | 2.3763714 | 20 | 1 28.3 | 20.1 |
| 169566 | 2002 | FG ₄ | 16.4 | X | 35.54849 | 180.60314 | 86.77730 | 7.31506 | 0.1461616 | 0.28442220 | 2.2899555 | 20 | 8 14.8 | 18.8 |
| 169567 | 2002 | FO ₄ | 16.3 | X | 103.10922 | 77.10412 | 66.44366 | 1.86319 | 0.2037221 | 0.28301861 | 2.2975205 | 20 | 7 22.5 | 19.5 |
| 169568 | 2002 | Baranaukas | 16.1 | X | 0.81780 | 73.32532 | 126.49011 | 3.18199 | 0.1145006 | 0.27293492 | 2.3537661 | 20 | 3 16.2 | 18.2 |
| 169569 | 2002 | FD ₉ | 17.1 | X | 107.92953 | 214.88753 | 328.28039 | 4.95467 | 0.1143616 | 0.28751070 | 2.2735266 | 20 | 8 14.9 | 20.1 |
| 169570 | 2002 | FS ₉ | 16.5 | X | 9.80818 | 147.32358 | 20.35579 | 5.63984 | 0.1192719 | 0.27013312 | 2.3700136 | 20 | 2 15.1 | 18.8 |
| 169571 | 2002 | FW ₁₁ | 16.4 | X | 118.15834 | 173.35261 | 19.21370 | 6.93338 | 0.0386423 | 0.29187902 | 2.2507856 | 20 | 9 6.1 | 19.2 |
| 169572 | 2002 | FE ₁₃ | 16.5 | X | 292.07213 | 182.63250 | 82.90486 | 3.33414 | 0.1701172 | 0.26965940 | 2.3727884 | 20 | 2 23.0 | 19.6 |
| 169573 | 2002 | FQ ₂₁ | 16.7 | X | 194.81111 | 268.14342 | 180.82092 | 6.95325 | 0.0680709 | 0.28592369 | 2.2819316 | 20 | 7 14.5 | 19.8 |
| 169574 | 2002 | FZ ₂₄ | 17.0 | X | 165.14915 | 95.50101 | 6.62276 | 8.63007 | 0.0683308 | 0.28429132 | 2.2906583 | 20 | 6 28.0 | 20.3 |
| 169575 | 2002 | GQ ₇ | 16.6 | X | 134.03910 | 10.86407 | 161.05806 | 4.00259 | 0.0777509 | 0.28773385 | 2.2723510 | 20 | 8 27.1 | 19.7 |
| 169576 | 2002 | GB ₈ | 16.2 | X | 317.04150 | 120.75279 | 117.78164 | 4.30017 | 0.1375961 | 0.27000448 | 2.3707663 | 20 | 2 24.3 | 18.9 |
| 169577 | 2002 | GO ₁₄ | 16.4 | X | 40.04395 | 152.98639 | 11.68693 | 7.69838 | 0.1607104 | 0.27655110 | 2.3332026 | 20 | 4 9.2 | 18.4 |
| 169578 | 2002 | GA ₁₅ | 16.9 | X | 23.09392 | 68.57629 | 149.28396 | 1.64179 | 0.1280098 | 0.27890205 | 2.3200726 | 20 | 5 28.1 | 18.9 |
| 169579 | 2002 | GZ ₁₈ | 16.8 | X | 243.12952 | 228.50580 | 20.82032 | 2.53181 | 0.1582951 | 0.25913239 | 2.4366225 | 20 | — | — |
| 169580 | 2002 | GT ₂₀ | 16.8 | X | 34.81718 | 205.35646 | 358.44581 | 3.10586 | 0.1065238 | 0.27597450 | 2.3364514 | 20 | 5 24.8 | 19.1 |
| 169581 | 2002 | GW ₂₀ | 16.3 | X | 343.89612 | 190.93321 | 35.87550 | 7.21793 | 0.0720891 | 0.27139988 | 2.3626331 | 20 | 3 31.6 | 18.9 |
| 169582 | 2002 | GB ₂₂ | 16.1 | X | 322.80056 | 221.26343 | 56.58875 | 7.69535 | 0.1373114 | 0.27542112 | 2.3395799 | 20 | 4 30.7 | 18.5 |
| 169583 | 2002 | GE ₂₇ | 17.0 | X | 136.69143 | 273.97462 | 204.83016 | 2.85557 | 0.0655344 | 0.27769503 | 2.3267906 | 20 | 6 15.1 | 20.0 |
| 169584 | 2002 | GL ₃₃ | 16.8 | X | 291.09384 | 339.04327 | 65.22042 | 6.37900 | 0.0750896 | 0.29807202 | 2.2195005 | 20 | 10 3.3 | 19.0 |
| 169585 | 2002 | GE ₃₅ | 16.6 | X | 61.46419 | 126.01068 | 91.41718 | 6.91631 | 0.0843899 | 0.28474557 | 2.2882215 | 20 | 7 29.1 | 19.3 |
| 169586 | 2002 | GW ₄₀ | 16.9 | X | 259.18408 | 62.60654 | 211.77229 | 5.13677 | 0.1587146 | 0.26631796 | 2.3925944 | 20 | 1 28.6 | 20.6 |
| 169587 | 2002 | GT ₄₈ | 16.5 | X | 183.55173 | 123.27241 | 201.64726 | 6.51560 | 0.1245698 | 0.26194256 | 2.4191641 | 20 | 1 19.9 | 20.3 |
| 169588 | 2002 | GO ₅₆ | 15.9 | X | 270.79716 | 339.70600 | 352.57856 | 6.64857 | 0.1324344 | 0.27647869 | 2.3336100 | 20 | 4 27.6 | 19.1 |
| 169589 | 2002 | GZ ₆₂ | 16.7 | X | 187.04982 | 219.47449 | 60.41603 | 3.25793 | 0.1629833 | 0.25403370 | 2.4691179 | 20 | — | — |
| 169590 | 2002 | GJ ₆₈ | 15.6 | X | 97.45680 | 158.07260 | 129.02732</ | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 169601 | 2002 | GA ₈₄ | 16.5 | X | 358.04673 | 59.14508 | 163.09756 | 6.19411 | 0.1810989 | 0.27335529 | 2.3513524 | 20 | 4 10.2 | 18.3 |
| 169602 | 2002 | GF ₈₄ | 16.2 | X | 293.91064 | 124.39237 | 124.43878 | 5.17722 | 0.1085523 | 0.26712237 | 2.3877886 | 20 | 2 11.3 | 19.1 |
| 169603 | 2002 | GP ₈₄ | 16.1 | X | 20.63369 | 131.55533 | 79.44616 | 6.24814 | 0.0880756 | 0.27552159 | 2.3390111 | 20 | 5 10.4 | 18.5 |
| 169604 | 2002 | GQ ₈₅ | 16.7 | X | 310.80351 | 147.03950 | 105.30015 | 3.68446 | 0.0957162 | 0.27107031 | 2.3645477 | 20 | 3 12.7 | 19.4 |
| 169605 | 2002 | GT ₉₂ | 16.8 | X | 36.04703 | 266.18551 | 305.03969 | 2.29487 | 0.1055261 | 0.27879076 | 2.3206900 | 20 | 6 8.5 | 19.1 |
| 169606 | 2002 | GF ₉₅ | 16.7 | X | 160.96527 | 248.18543 | 271.28914 | 4.44149 | 0.1290208 | 0.29091246 | 2.2557684 | 20 | 9 7.9 | 20.2 |
| 169607 | 2002 | GM ₁₀₁ | 16.5 | X | 37.26818 | 111.81322 | 26.37160 | 2.22357 | 0.0726531 | 0.26913638 | 2.3758614 | 20 | 2 20.1 | 19.1 |
| 169608 | 2002 | GA ₁₀₂ | 16.4 | X | 31.76672 | 169.50225 | 79.13856 | 6.81649 | 0.0791653 | 0.28195586 | 2.3032901 | 20 | 7 27.8 | 18.9 |
| 169609 | 2002 | GD ₁₀₃ | 16.6 | X | 122.64262 | 91.86683 | 38.34254 | 7.43456 | 0.0428577 | 0.28076768 | 2.3097837 | 20 | 6 9.4 | 19.6 |
| 169610 | 2002 | GH ₁₀₈ | 16.3 | X | 265.79158 | 176.30194 | 105.10848 | 7.25541 | 0.1144277 | 0.26769876 | 2.3843599 | 20 | 2 21.3 | 19.6 |
| 169611 | 2002 | GN ₁₁₂ | 16.4 | X | 201.41982 | 7.31894 | 95.43265 | 6.77247 | 0.1188742 | 0.28775761 | 2.2722259 | 20 | 8 10.2 | 19.5 |
| 169612 | 2002 | GM ₁₁₃ | 16.3 | X | 216.48419 | 99.77326 | 126.29532 | 4.91553 | 0.1357895 | 0.25405136 | 2.4690035 | 20 | — | — |
| 169613 | 2002 | GY ₁₁₃ | 16.3 | X | 116.24655 | 158.41285 | 56.00927 | 8.35006 | 0.0522671 | 0.29218220 | 2.2492283 | 20 | 10 6.7 | 19.3 |
| 169614 | 2002 | GK ₁₁₅ | 16.5 | X | 104.12986 | 61.26726 | 74.53202 | 6.90891 | 0.0561880 | 0.27891254 | 2.3200144 | 20 | 5 26.1 | 19.3 |
| 169615 | 2002 | GK ₁₂₁ | 16.2 | X | 205.74717 | 320.11481 | 32.80918 | 6.60244 | 0.1103692 | 0.27010314 | 2.3701889 | 20 | 3 20.3 | 19.7 |
| 169616 | 2002 | GN ₁₂₁ | 16.9 | X | 352.94489 | 13.13692 | 180.51120 | 6.25513 | 0.0768795 | 0.27104922 | 2.3646704 | 20 | 2 23.4 | 19.4 |
| 169617 | 2002 | GC ₁₂₈ | 16.2 | X | 257.12500 | 262.88628 | 15.29532 | 7.21548 | 0.1060207 | 0.26722350 | 2.3871861 | 20 | 2 9.1 | 19.7 |
| 169618 | 2002 | GB ₁₃₀ | 16.4 | X | 266.14550 | 29.76545 | 213.25983 | 6.46025 | 0.1049032 | 0.26291926 | 2.4131693 | 20 | 1 2.4 | 19.9 |
| 169619 | 2002 | GS ₁₃₆ | 16.6 | X | 32.56253 | 288.45698 | 22.27614 | 4.76580 | 0.3426895 | 0.23291088 | 2.6162316 | 20 | 11 25.7 | 20.2 |
| 169620 | 2002 | GE ₁₄₄ | 17.0 | X | 286.68111 | 349.31160 | 227.38953 | 4.52701 | 0.1483593 | 0.26249305 | 2.4157807 | 20 | — | — |
| 169621 | 2002 | GA ₁₄₈ | 16.6 | X | 265.05248 | 255.95311 | 94.53735 | 5.00547 | 0.0904398 | 0.27918822 | 2.3184870 | 20 | 5 25.5 | 19.4 |
| 169622 | 2002 | GZ ₁₅₀ | 16.2 | X | 198.12088 | 249.36750 | 30.44646 | 6.18742 | 0.1146977 | 0.25608474 | 2.4559164 | 20 | — | — |
| 169623 | 2002 | GB ₁₆₄ | 16.1 | X | 83.94794 | 324.88687 | 46.92659 | 6.22983 | 0.0718176 | 0.25541369 | 2.4602162 | 20 | — | — |
| 169624 | 2002 | GF ₁₆₅ | 16.8 | X | 12.00661 | 64.96591 | 164.32907 | 4.01550 | 0.1492841 | 0.27556781 | 2.3387496 | 20 | 5 25.2 | 18.7 |
| 169625 | 2002 | GY ₁₆₇ | 16.9 | X | 54.55802 | 351.28261 | 200.50776 | 3.67979 | 0.0975724 | 0.28409690 | 2.2917033 | 20 | 8 7.7 | 19.6 |
| 169626 | 2002 | GL ₁₆₉ | 17.0 | X | 175.79475 | 261.10502 | 253.85959 | 3.54551 | 0.0829124 | 0.29158837 | 2.2522811 | 20 | 9 20.8 | 20.0 |
| 169627 | 2002 | GE ₁₇₁ | 16.8 | X | 144.18138 | 178.76051 | 359.52486 | 3.98233 | 0.1076642 | 0.28984222 | 2.2613179 | 20 | 9 17.9 | 20.1 |
| 169628 | 2002 | GE ₁₇₉ | 16.6 | X | 313.70638 | 333.58508 | 282.04973 | 2.61251 | 0.1510943 | 0.27214488 | 2.3583193 | 20 | 3 9.0 | 19.4 |
| 169629 | 2002 | GZ ₁₇₁ | 17.0 | X | 293.77293 | 202.70510 | 57.63219 | 3.24056 | 0.1546691 | 0.26974399 | 2.3722923 | 20 | 2 20.5 | 20.2 |
| 169630 | 2002 | GK ₁₈₁ | 17.2 | X | 94.95716 | 46.73756 | 228.96081 | 3.02326 | 0.1778508 | 0.23867308 | 2.5739519 | 20 | 11 27.6 | 21.1 |
| 169631 | 2002 | HJ ₁ | 16.1 | X | 318.29886 | 142.24190 | 112.80378 | 7.31307 | 0.2329879 | 0.27175864 | 2.3605533 | 20 | 3 5.9 | 18.8 |
| 169632 | 2002 | HG ₆ | 16.5 | X | 80.33031 | 277.88626 | 8.17152 | 4.87974 | 0.3254919 | 0.23602582 | 2.5931623 | 20 | 12 6.5 | 21.2 |
| 169633 | 2002 | HQ ₁₂ | 16.1 | X | 232.94752 | 181.97883 | 97.15446 | 16.49250 | 0.2056698 | 0.26214249 | 2.4179340 | 20 | 1 11.0 | 20.2 |
| 169634 | 2002 | JW ₁₂ | 15.9 | X | 177.71076 | 60.16914 | 56.61920 | 20.92860 | 0.2043753 | 0.28617588 | 2.2805908 | 20 | 8 5.2 | 20.1 |
| 169635 | 2002 | JZ ₁₃ | 15.5 | X | 154.45068 | 60.19650 | 83.62474 | 23.15595 | 0.2374443 | 0.28564227 | 2.2834302 | 20 | 8 20.6 | 19.8 |
| 169636 | 2002 | JT ₁₅ | 16.5 | X | 312.97188 | 19.89298 | 204.64621 | 11.00283 | 0.2010581 | 0.26513443 | 2.3997093 | 20 | 1 17.8 | 19.9 |
| 169637 | 2002 | JY ₂₀ | 16.7 | X | 31.61648 | 253.26802 | 332.66225 | 1.92088 | 0.1223585 | 0.27770256 | 2.3667486 | 20 | 6 26.3 | 18.9 |
| 169638 | 2002 | JJ ₂₁ | 16.7 | X | 341.06898 | 228.13207 | 5.83495 | 3.59286 | 0.1825649 | 0.27085375 | 2.3258079 | 20 | 3 20.8 | 18.9 |
| 169639 | 2002 | JF ₂₂ | 16.4 | X | 63.64493 | 60.58662 | 64.21114 | 2.91697 | 0.1538659 | 0.27148690 | 2.3621282 | 20 | 3 26.8 | 18.6 |
| 169640 | 2002 | JD ₂₃ | 16.7 | X | 321.27905 | 87.86243 | 148.72591 | 2.96382 | 0.1273516 | 0.26890907 | 2.3772001 | 20 | 2 28.8 | 19.4 |
| 169641 | 2002 | JJ ₂₄ | 15.3 | X | 334.26797 | 194.67072 | 67.21494 | 7.86427 | 0.0897402 | 0.27498242 | 2.3420676 | 20 | 5 4.1 | 17.6 |
| 169642 | 2002 | JG ₂₇ | 16.6 | X | 284.87400 | 14.38675 | 202.72243 | 6.82047 | 0.0702941 | 0.26057924 | 2.4275946 | 20 | — | — |
| 169643 | 2002 | JN ₂₇ | 16.7 | X | 311.86267 | 175.77859 | 80.86181 | 4.99440 | 0.2109917 | 0.26925617 | 2.3751567 | 20 | 3 2.5 | 19.5 |
| 169644 | 2002 | JH ₂₉ | 17.1 | X | 190.23217 | 139.94620 | 57.62704 | 6.27946 | 0.0973436 | 0.29791295 | 2.2202905 | 20 | 12 6.1 | 20.0 |
| 169645 | 2002 | JP ₂₉ | 16.8 | X | 316.70130 | 150.58079 | 82.29843 | 4.55568 | 0.2062387 | 0.26688058 | 2.3892306 | 20 | 2 5.8 | 19.7 |
| 169646 | 2002 | JJ ₃₂ | 16.0 | X | 333.00242 | 322.80551 | 200.90874 | 6.08932 | 0.0617866 | 0.25952064 | 2.4341917 | 20 | — | — |
| 169647 | 2002 | JY ₃₆ | 15.9 | X | 242.36332 | 177.58033 | 96.59406 | 6.55157 | 0.1436324 | 0.26087712 | 2.4257463 | 20 | 1 15.9 | 19.6 |
| 169648 | 2002 | JN ₃₇ | 16.2 | X | 347.37411 | 330.21804 | 266.13302 | 6.35773 | 0.0745169 | 0.27248699 | 2.3563450 | 20 | 4 15.0 | 18.8 |
| 169649 | 2002 | JE ₄₂ | 16.2 | X | 343.09594 | 161.62611 | 38.31093 | 7.04540 | 0.0588336 | 0.26798339 | 2.3826713 | 20 | 2 24.5 | 19.0 |
| 169650 | 2002 | JC ₄₇ | 16.5 | X | 307.03999 | 270.84994 | 343.64189 | 4.39919 | 0.0981193 | 0.26854435 | 2.3793520 | 20 | 3 8.1 | 19.4 |
| 169651 | 2002 | JR ₄₈ | 16.0 | X | 33.07388 | 79.47367 | 234.23601 | 12.42899 | 0.3184076 | 0.23134518 | 2.6280225 | 20 | 11 27.4 | 19.5 |
| 169652 | 2002 | JY ₄₈ | 16.3 | X | 2.64281 | 166.23125 | 33.82760 | 3.89741 | 0.1707104 | 0.27042853 | 2.3682872 | 20 | 3 16.3 | 18.1 |
| 169653 | 2002 | JC ₄₉ | 16.4 | X | 52.06850 | 258.31238 | 259.44522 | 3.93934 | 0.1703035 | 0.27273994 | 2.3548878 | 20 | 4 24.2 | 18.5 |
| 169654 | 2002 | JU ₅₀ | 16.5 | X | 263.76753 | 192.15714 | 50.61549 | 8.33095 | 0.1257516 | 0.25967153 | 2.4332486 | 20 | — | — |
| 169655 | 2002 | JP ₅₁ | 16.6 | X | 130.94003 | 200.05799 | 37.20965 | 4.31135 | 0.2250536 | 0.23866646 | 2.5739995 | 20 | 11 13.0 | 21.0 |
| 169656 | 2002 | JZ ₅₂ | 16.4 | X | 158.67861 | 132.22631 | 15.22351 | 5.98163 | 0.0937715 | 0.28696910 | 2.2763863 | 20 | 8 25.1 | 19.6 |
| 169657 | 2002 | JY ₆₃ | 16.3 | X | 4.41258 | 161.32023 | 76.73983 | 3.07939 | 0.1709093 | 0.27344020 | 2.3508656 | 20 | 5 21.9 | 17.8 |
| 169658 | 2002 | JT ₆₅ | 16.7 | X | 338.14185 | 139.28425 | 101.50217 | 3.68206 | 0.1510065 | 0.26970628 | 2.3725134 | 20 | 4 1.7 | 18.9 |
| 169659 | 2002 | JE ₆₆ | 16.2 | X | 336.07686 | 176.25462 | 73.74232 | 6.33008 | 0.1068761 | 0.27090240 | 2.3655247 | 20 | 4 18.4 | 18.7 |
| 169660 | 2002 | JG ₆₆ | 16.5 | X | 183.40079 | 162.14013 | 77.39753 | 6.20679 | 0.2592766 | 0.30059005 | 2.2070880 | 20 | — | — |
| 169661 | 2002 | JF ₆₇ | 16.4 | X | 146.93480 | 90.83959 | 59.88245 | 5.70651 | 0.1373859 | 0.28539361 | 2.2847563 | 20 | 8 17.2 | 19.9 |
| 169662 | 2002 | JS ₆₉ | 15.9 | X | 267.82037 | 177.71162 | 106.24728 | 7.57014 | 0.1023795 | 0.26816566 | 2.3815915 | 20 | 2 28.8 | 19.2 |
| 169663 | 2002 | JJ ₇₀ | 15.8 | X | 356.27342 | 82.94603 | 156.12941 | 9.55957 | 0.1436952 | 0.21929145 | 2.7234637 | 20 | 5 10.9 | 18.8 |
| 169664 | 2002 | JP ₇₀ | 16.9 | X | 132.12923 | 170.64052 | 21.38926 | 5.28975 | 0.1070083 | 0.29034786 | 2.2586917 | 20 | 9 24.4 | 20.1 |
| 169665 | 2002 | JM ₇₄ | 16.4 | X | 34.36796 | 355.13025 | 252.74655 | 9.17869 | 0.1102982 | 0.28180264 | 2.3041249 | 20 | 7 30.7 | 18.9 |
| 169666 | 2002 | JR ₇₆ | 17.2 | X | 214.20045 | 313.46499 | 252.83042 | 1.49071 | 0.1172053 | 0.30484250 | 2.1865145 | 20 | — | — |
| 169667 | 2002 | JL ₈₀ | 16.4 | X | 83.83898 | 103.70397 | 40.46819 | 8.16548 | 0.0583329 | 0.27575343 | 2.3377000 | 20 | 5 8.4 | 19.2 |
| 169668 | 2002 | JD ₈₄ | 17.4 | X | 112.75355 | 142.34388 | 24.42072 | 3.57196 | 0.1721510 | 0.28353664 | 2.2947212 | 20 | 8 4.1 | 20.7 |
| 169669 | 2002 | JK ₈₆ | 16.6 | X | 50.43047 | 261.26101 | 18.73785 | 1.99883 | 0.1783175 | 0.23196664 | 2.6233266 | 20 | 10 16.0 | 20.1 |
| 169670 | 2002 | JT ₈₇ | 16.8 | X | 298.91485 | 41.54398 | 282 | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 169681 | 2002 | JM ₁₁₂ | 17.1 | X | 300.95726 | 187.68289 | 52.68201 | 3.13555 | 0.1724078 | 0.26412543 | 2.4058169 | 20 | 1 31.8 | 20.4 |
| 169682 | 2002 | JX ₁₁₃ | 17.0 | X | 244.13327 | 260.93546 | 298.55418 | 5.29509 | 0.0726932 | 0.30697810 | 2.1763619 | 20 | — | — |
| 169683 | 2002 | JD ₁₁₄ | 16.7 | X | 294.75488 | 68.06480 | 253.24527 | 6.20984 | 0.1399584 | 0.27495244 | 2.3422379 | 20 | 5 16.7 | 19.4 |
| 169684 | 2002 | JM ₁₂₅ | 16.4 | X | 155.56584 | 217.86859 | 351.68249 | 2.70769 | 0.0926008 | 0.24041894 | 2.5614758 | 20 | 11 1.8 | 20.2 |
| 169685 | 2002 | JZ ₁₂₅ | 16.4 | X | 94.09816 | 24.39435 | 147.48248 | 5.17132 | 0.0815819 | 0.28023307 | 2.3127204 | 20 | 7 6.7 | 19.3 |
| 169686 | 2002 | JF ₁₃₂ | 16.3 | X | 228.86327 | 305.50838 | 284.89881 | 3.65355 | 0.0925776 | 0.25416959 | 2.4682378 | 20 | — | — |
| 169687 | 2002 | JT ₁₃₃ | 16.8 | X | 42.38077 | 253.33593 | 296.31683 | 3.08521 | 0.1375415 | 0.27462186 | 2.3441172 | 20 | 5 21.2 | 18.9 |
| 169688 | 2002 | JX ₁₃₈ | 15.8 | X | 353.02192 | 111.29908 | 228.46261 | 5.30862 | 0.3442263 | 0.22740833 | 2.6582662 | 20 | 10 26.9 | 17.6 |
| 169689 | 2002 | JA ₁₄₁ | 16.4 | X | 19.42160 | 66.57908 | 92.71601 | 7.35024 | 0.0488760 | 0.26508844 | 2.3999868 | 20 | 2 24.1 | 19.2 |
| 169690 | 2002 | JK ₁₄₉ | 16.3 | X | 92.29642 | 65.17102 | 185.33183 | 15.10731 | 0.1086668 | 0.23471418 | 2.6028142 | 20 | 10 20.1 | 20.1 |
| 169691 | 2002 | KL ₁ | 16.0 | X | 216.02602 | 293.70240 | 220.91986 | 4.03566 | 0.0929752 | 0.24169498 | 2.5524523 | 20 | 10 31.0 | 19.4 |
| 169692 | 2002 | LC ₁ | 16.1 | X | 166.55779 | 150.50608 | 169.20141 | 5.88279 | 0.1297290 | 0.25427642 | 2.4675464 | 20 | — | — |
| 169693 | 2002 | LS ₄ | 16.5 | X | 128.49704 | 161.00171 | 126.72382 | 7.00200 | 0.2595323 | 0.24110922 | 2.5656586 | 20 | — | — |
| 169694 | 2002 | LC ₅ | 16.3 | X | 95.83788 | 189.79452 | 75.66194 | 4.07624 | 0.1509152 | 0.23288907 | 2.6163950 | 20 | 11 13.6 | 20.3 |
| 169695 | 2002 | LK ₇ | 16.4 | X | 87.26481 | 202.98635 | 98.55469 | 11.26564 | 0.1547512 | 0.23896581 | 2.5718494 | 20 | 12 20.1 | 20.3 |
| 169696 | 2002 | LZ ₁₀ | 15.3 | X | 88.85165 | 152.21749 | 215.87082 | 6.81897 | 0.3008081 | 0.24442385 | 2.5334188 | 20 | — | — |
| 169697 | 2002 | LZ ₁₂ | 15.9 | X | 163.75851 | 63.17903 | 210.56421 | 5.37109 | 0.2121291 | 0.24401453 | 2.5362512 | 20 | — | — |
| 169698 | 2002 | LR ₁₇ | 16.7 | X | 283.55992 | 40.21040 | 196.69715 | 2.37383 | 0.1737384 | 0.26084837 | 2.4259246 | 20 | 1 7.1 | 20.3 |
| 169699 | 2002 | LM ₁₈ | 15.4 | X | 100.83567 | 79.62222 | 256.65882 | 5.11597 | 0.2469878 | 0.24258479 | 2.5462068 | 20 | — | — |
| 169700 | 2002 | LK ₂₇ | 15.6 | X | 36.04586 | 199.03044 | 118.93190 | 15.55802 | 0.2556793 | 0.22768360 | 2.6561232 | 20 | 11 30.2 | 19.4 |
| 169701 | 2002 | LZ ₂₇ | 16.2 | X | 238.85055 | 342.37974 | 261.63058 | 0.97517 | 0.0944501 | 0.25452093 | 2.4659658 | 20 | — | — |
| 169702 | 2002 | LP ₂₈ | 16.2 | X | 109.35563 | 55.68285 | 240.97210 | 11.30394 | 0.2283521 | 0.23951154 | 2.5679412 | 20 | — | — |
| 169703 | 2002 | LR ₃₄ | 15.9 | X | 55.74377 | 282.74953 | 46.59345 | 8.37843 | 0.1970802 | 0.23660504 | 2.5889285 | 20 | 12 26.1 | 19.9 |
| 169704 | 2002 | LE ₃₆ | 15.8 | X | 359.33698 | 49.31808 | 235.40693 | 7.73239 | 0.2921882 | 0.22002702 | 2.7173904 | 20 | 7 28.7 | 17.8 |
| 169705 | 2002 | LZ ₃₆ | 16.5 | X | 126.03406 | 62.04790 | 209.73978 | 3.85087 | 0.2673536 | 0.23826882 | 2.5768625 | 20 | 12 20.2 | 21.1 |
| 169706 | 2002 | LP ₃₈ | 16.0 | X | 328.24761 | 42.89991 | 243.33198 | 3.85544 | 0.1515370 | 0.21919947 | 2.7242255 | 20 | 5 22.0 | 18.7 |
| 169707 | 2002 | LZ ₃₉ | 16.1 | X | 220.19070 | 105.61672 | 186.52974 | 7.23258 | 0.1682588 | 0.25747506 | 2.4470674 | 20 | 1 15.7 | 20.1 |
| 169708 | 2002 | LE ₄₀ | 16.1 | X | 111.20850 | 134.69238 | 163.47972 | 5.89110 | 0.2835430 | 0.24000691 | 2.5644066 | 20 | — | — |
| 169709 | 2002 | LW ₄₂ | 15.4 | X | 192.56596 | 86.37453 | 141.51090 | 12.56677 | 0.2002715 | 0.24358518 | 2.5392306 | 20 | 12 25.1 | 19.5 |
| 169710 | 2002 | LA ₄₄ | 15.5 | X | 7.30455 | 92.45912 | 238.05156 | 11.12011 | 0.2251096 | 0.22314667 | 2.6920045 | 20 | 10 22.1 | 18.3 |
| 169711 | 2002 | LD ₄₅ | 16.9 | X | 89.08115 | 355.06461 | 280.28495 | 4.55508 | 0.1766337 | 0.23688730 | 2.5868715 | 20 | 11 20.5 | 20.9 |
| 169712 | 2002 | LX ₄₆ | 15.8 | X | 85.55971 | 178.62448 | 134.70101 | 14.03727 | 0.1814943 | 0.23802706 | 2.5786071 | 20 | — | — |
| 169713 | 2002 | LQ ₅₀ | 15.6 | X | 81.41979 | 46.48720 | 258.84665 | 14.13331 | 0.1039550 | 0.23401130 | 2.6080235 | 20 | 12 13.2 | 19.4 |
| 169714 | 2002 | LB ₅₂ | 16.1 | X | 209.67399 | 152.26158 | 136.86934 | 6.76528 | 0.1297398 | 0.25574705 | 2.4580778 | 20 | 1 3.8 | 19.8 |
| 169715 | 2002 | LR ₅₃ | 15.1 | X | 9.33152 | 114.59874 | 205.28199 | 13.62502 | 0.2757140 | 0.22208872 | 2.7005469 | 20 | 10 21.3 | 17.6 |
| 169716 | 2002 | LF ₆₂ | 16.5 | X | 324.34665 | 172.68759 | 347.05852 | 2.24559 | 0.1256063 | 0.25755819 | 2.4465409 | 20 | — | — |
| 169717 | 2002 | MF | 15.9 | X | 77.40110 | 202.34132 | 120.43905 | 14.72870 | 0.1816717 | 0.23874083 | 2.5734649 | 20 | — | — |
| 169718 | 2002 | MJ | 15.7 | X | 39.12257 | 174.48753 | 115.47104 | 15.66844 | 0.0934918 | 0.22629368 | 2.6669882 | 20 | 10 7.8 | 19.4 |
| 169719 | 2002 | MU ₁ | 16.4 | X | 106.34620 | 158.44339 | 87.92792 | 7.88858 | 0.0677502 | 0.28944527 | 2.2633849 | 20 | 11 6.5 | 19.5 |
| 169720 | 2002 | NQ ₈ | 16.4 | X | 20.09154 | 173.28461 | 137.21871 | 7.53125 | 0.1466757 | 0.22568378 | 2.6717910 | 20 | 10 10.5 | 19.6 |
| 169721 | 2002 | NL ₁₀ | 16.1 | X | 120.05729 | 225.57168 | 145.55678 | 1.76100 | 0.3075377 | 0.24616158 | 2.5214820 | 20 | 2 5.2 | 19.8 |
| 169722 | 2002 | NZ ₁₂ | 15.8 | X | 78.09205 | 185.09807 | 196.16125 | 1.66194 | 0.1141808 | 0.24310388 | 2.5425810 | 20 | — | — |
| 169723 | 2002 | NG ₁₅ | 16.0 | X | 33.86349 | 306.12596 | 324.50447 | 8.25131 | 0.2037827 | 0.22299096 | 2.6932575 | 20 | 9 10.2 | 19.1 |
| 169724 | 2002 | NJ ₂₈ | 15.8 | X | 150.48456 | 206.20592 | 95.59400 | 4.25807 | 0.1110969 | 0.24477084 | 2.5310240 | 20 | — | — |
| 169725 | 2002 | NB ₂₉ | 15.8 | X | 85.51841 | 174.15365 | 111.57685 | 9.87960 | 0.0792258 | 0.23139965 | 2.6276101 | 20 | 11 23.1 | 19.7 |
| 169726 | 2002 | NE ₃₂ | 16.2 | X | 45.40921 | 78.82517 | 230.88023 | 11.95970 | 0.2948946 | 0.22754488 | 2.6572026 | 20 | 12 1.9 | 20.1 |
| 169727 | 2002 | NM ₃₄ | 16.2 | X | 91.81470 | 116.51533 | 185.41368 | 7.04253 | 0.1930587 | 0.23496523 | 2.6009599 | 20 | 12 25.9 | 20.6 |
| 169728 | 2002 | NH ₃₆ | 16.5 | X | 156.92478 | 12.72707 | 265.37909 | 6.24249 | 0.2269033 | 0.24224182 | 2.5486095 | 20 | — | — |
| 169729 | 2002 | NQ ₃₇ | 15.6 | X | 93.01945 | 344.04473 | 283.64405 | 11.25590 | 0.1540124 | 0.23013637 | 2.6372171 | 20 | 11 10.2 | 19.8 |
| 169730 | 2002 | NW ₄₆ | 15.9 | X | 327.39050 | 135.98442 | 204.53002 | 4.50772 | 0.1350060 | 0.21797244 | 2.7344395 | 20 | 8 8.8 | 19.0 |
| 169731 | 2002 | NQ ₄₇ | 15.6 | X | 269.71690 | 107.93859 | 274.11880 | 3.10758 | 0.2219730 | 0.21582586 | 2.7525405 | 20 | 6 22.9 | 19.4 |
| 169732 | 2002 | NM ₄₇ | 16.3 | X | 7.41132 | 99.43980 | 229.55285 | 2.85934 | 0.1845048 | 0.22508604 | 2.6765191 | 20 | 10 15.9 | 19.2 |
| 169733 | 2002 | NF ₅₂ | 16.1 | X | 36.72894 | 279.19863 | 100.10112 | 3.49499 | 0.1351433 | 0.23541968 | 2.5976116 | 20 | — | — |
| 169734 | 2002 | NJ ₅₆ | 15.9 | X | 304.23088 | 131.30491 | 226.16292 | 5.12839 | 0.0518539 | 0.22002242 | 2.7174283 | 20 | 8 2.1 | 19.4 |
| 169735 | 2002 | NJ ₅₈ | 15.8 | X | 323.12145 | 89.90393 | 242.22447 | 12.76176 | 0.1398469 | 0.21761740 | 2.7374128 | 20 | 7 16.8 | 19.1 |
| 169736 | 2002 | NB ₆₁ | 16.6 | X | 6.67133 | 317.14879 | 100.06267 | 6.39769 | 0.1025295 | 0.23694004 | 2.5864877 | 20 | — | — |
| 169737 | 2002 | OM ₁ | 16.0 | X | 115.80322 | 49.23191 | 245.28685 | 6.96175 | 0.1754093 | 0.23659656 | 2.5889903 | 20 | — | — |
| 169738 | 2002 | ON ₁ | 15.0 | X | 355.48832 | 87.87952 | 284.53493 | 25.70705 | 0.3290701 | 0.22462873 | 2.6801505 | 20 | 12 20.5 | 17.6 |
| 169739 | 2002 | ON ₂ | 15.3 | X | 46.60106 | 5.76609 | 281.45258 | 10.68859 | 0.1675166 | 0.22356522 | 2.6886435 | 20 | 10 12.1 | 19.1 |
| 169740 | 2002 | OC ₅ | 15.3 | X | 340.59961 | 248.51730 | 174.95935 | 21.91310 | 0.0865272 | 0.23314698 | 2.6144651 | 20 | 12 30.5 | 19.0 |
| 169741 | 2002 | OK ₆ | 16.1 | X | 277.53584 | 119.38095 | 222.10113 | 6.87563 | 0.2405779 | 0.21108160 | 2.7936316 | 20 | 5 7.8 | 20.2 |
| 169742 | 2002 | OZ ₁₁ | 15.8 | X | 353.42406 | 142.45042 | 186.69756 | 14.38726 | 0.1177388 | 0.22269340 | 2.6956561 | 20 | 9 11.3 | 18.8 |
| 169743 | 2002 | OK ₁₃ | 16.0 | X | 341.62240 | 183.78336 | 163.28419 | 12.58404 | 0.1944819 | 0.22241729 | 2.6978865 | 20 | 9 21.1 | 18.3 |
| 169744 | 2002 | OF ₁₈ | 15.7 | X | 99.31494 | 24.47198 | 238.91465 | 6.87902 | 0.1754011 | 0.23072380 | 2.6327389 | 20 | 11 14.9 | 19.9 |
| 169745 | 2002 | OT ₁₈ | 15.7 | X | 247.28516 | 119.49720 | 257.56316 | 9.96024 | 0.2096169 | 0.21187964 | 2.7866124 | 20 | 5 24.2 | 20.0 |
| 169746 | 2002 | OQ ₁₉ | 16.2 | X | 0.22113 | 126.25274 | 214.16339 | 4.53141 | 0.0515413 | 0.22454499 | 2.6808168 | 20 | 10 4.4 | 19.6 |
| 169747 | 2002 | OY ₂₄ | 15.7 | X | 267.47731 | 279.31121 | 333.78082 | 5.26669 | 0.0413360 | 0.19764150 | 2.9188870 | 20 | 2 3.5 | 19.7 |
| 169748 | 2002 | OL ₂₅ | 16.8 | X | 73.61816 | 72.79428 | 304.53773 | 3.65866 | 0.2305700 | 0.23761284 | 2.5816029 | 20 | — | — |
| 169749 | 2002 | PA ₃ | 15.9 | X | 138.31742 | 58.58988 | 270.23645 | 11.87889 | 0.1969878 | 0.24296661 | 2.5435385 | 20 | — | — |
| 169750 | 2002 | PD ₅ | 15.5 | X | 341.04420 | 150.49583 | 256.79952 | 12.12876 | 0.0902422 | 0.23022788 | 2.6365182 | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 169761 | 2002 | PE ₄₈ | 15.2 | X | 324.14407 | 67.51016 | 283.06639 | 7.76374 | 0.1769585 | 0.21724156 | 2.7405692 | 20 | 8 12.8 | 18.0 |
| 169762 | 2002 | PF ₄₉ | 15.7 | X | 136.58874 | 51.53486 | 236.39320 | 6.89254 | 0.1820684 | 0.23767848 | 2.5811276 | 20 | — | — |
| 169763 | 2002 | PL ₅₁ | 16.0 | X | 359.87528 | 285.14526 | 85.10601 | 2.93796 | 0.0616436 | 0.22949620 | 2.6421191 | 20 | 11 16.3 | 19.3 |
| 169764 | 2002 | PC ₅₇ | 15.0 | X | 23.51645 | 338.44747 | 322.68110 | 9.78112 | 0.2048351 | 0.22171755 | 2.7035599 | 20 | 10 2.9 | 18.3 |
| 169765 | 2002 | PF ₆₀ | 15.5 | X | 355.24481 | 138.10172 | 150.11651 | 18.48336 | 0.2863608 | 0.21700171 | 2.7425883 | 20 | 7 22.7 | 17.6 |
| 169766 | 2002 | PJ ₇₁ | 16.2 | X | 16.35315 | 132.82451 | 180.71751 | 11.11088 | 0.1903474 | 0.22460596 | 2.6803316 | 20 | 10 13.1 | 19.1 |
| 169767 | 2002 | PS ₇₃ | 15.6 | X | 323.86789 | 90.58319 | 271.31760 | 11.39728 | 0.1438273 | 0.22037162 | 2.7145568 | 20 | 8 28.4 | 18.9 |
| 169768 | 2002 | PY ₇₇ | 15.4 | X | 289.21386 | 240.14827 | 95.51819 | 8.11401 | 0.2236844 | 0.21162630 | 2.7888358 | 20 | 5 18.7 | 19.2 |
| 169769 | 2002 | PW ₈₅ | 16.2 | X | 112.71468 | 338.18660 | 7.85986 | 3.61206 | 0.2472527 | 0.24144628 | 2.5542047 | 20 | — | — |
| 169770 | 2002 | PJ ₈₉ | 15.6 | X | 310.29263 | 235.74381 | 224.64228 | 14.80503 | 0.0239098 | 0.23385392 | 2.6091934 | 20 | 12 30.4 | 19.2 |
| 169771 | 2002 | PV ₈₉ | 15.2 | X | 332.17649 | 126.65168 | 254.79117 | 12.46373 | 0.1176459 | 0.22315376 | 2.6919475 | 20 | 10 14.9 | 18.5 |
| 169772 | 2002 | PD ₉₀ | 15.6 | X | 24.28350 | 113.11060 | 220.03171 | 12.06427 | 0.0956917 | 0.22648260 | 2.6655049 | 20 | 11 5.9 | 19.0 |
| 169773 | 2002 | PM ₉₀ | 15.3 | X | 86.28745 | 12.18840 | 253.60594 | 13.84229 | 0.1087990 | 0.22732934 | 2.6588819 | 20 | 10 27.0 | 19.4 |
| 169774 | 2002 | PP ₉₀ | 15.2 | X | 131.37164 | 256.96314 | 303.42794 | 25.10939 | 0.1031574 | 0.22286569 | 2.6942667 | 20 | 9 9.8 | 19.8 |
| 169775 | 2002 | PM ₉₉ | 15.6 | X | 57.26908 | 280.48784 | 0.51720 | 14.20787 | 0.1105783 | 0.22440915 | 2.6818985 | 20 | 10 11.4 | 19.3 |
| 169776 | 2002 | PF ₁₀₂ | 15.9 | X | 283.09639 | 114.90746 | 227.91159 | 7.09127 | 0.1043391 | 0.21249612 | 2.7812202 | 20 | 6 5.9 | 19.6 |
| 169777 | 2002 | PU ₁₀₂ | 15.3 | X | 342.34246 | 185.95921 | 159.53439 | 15.08744 | 0.1455487 | 0.22281460 | 2.6946784 | 20 | 9 19.1 | 18.0 |
| 169778 | 2002 | PW ₁₀₂ | 16.0 | X | 342.31277 | 105.33231 | 281.36534 | 10.17691 | 0.0209726 | 0.22884748 | 2.6471098 | 20 | 11 6.3 | 19.7 |
| 169779 | 2002 | PC ₁₀₄ | 15.8 | X | 15.67146 | 138.82375 | 192.12266 | 8.73259 | 0.1211735 | 0.22483847 | 2.6784834 | 20 | 10 25.4 | 19.0 |
| 169780 | 2002 | PR ₁₁₆ | 15.5 | X | 4.90346 | 35.25740 | 301.97230 | 6.68488 | 0.1440569 | 0.22189513 | 2.7021173 | 20 | 10 13.7 | 18.7 |
| 169781 | 2002 | PG ₁₂₁ | 15.2 | X | 296.39924 | 88.32974 | 295.66280 | 7.92426 | 0.2124440 | 0.21686916 | 2.7437057 | 20 | 8 4.1 | 18.3 |
| 169782 | 2002 | PT ₁₂₃ | 16.0 | X | 326.16611 | 141.78870 | 185.87842 | 8.10591 | 0.2362490 | 0.21673122 | 2.7448697 | 20 | 7 7.3 | 18.7 |
| 169783 | 2002 | PB ₁₃₃ | 16.5 | X | 253.45451 | 357.52839 | 324.36550 | 0.99127 | 0.1840891 | 0.26220356 | 2.4175585 | 20 | 4 7.4 | 20.0 |
| 169784 | 2002 | PP ₁₃₃ | 15.7 | X | 41.93276 | 171.39749 | 145.98014 | 11.86787 | 0.0984276 | 0.22716043 | 2.6601998 | 20 | 11 13.7 | 19.4 |
| 169785 | 2002 | PX ₁₃₄ | 15.7 | X | 24.93173 | 353.15863 | 7.46649 | 8.55989 | 0.1620201 | 0.22915049 | 2.6447758 | 20 | 12 22.9 | 19.2 |
| 169786 | 2002 | PS ₁₃₆ | 16.2 | X | 77.69826 | 260.43439 | 87.68002 | 3.54008 | 0.0507916 | 0.23774965 | 2.5806125 | 20 | — | — |
| 169787 | 2002 | PH ₁₃₇ | 15.6 | X | 280.04279 | 53.75958 | 350.01652 | 4.45903 | 0.0956452 | 0.21904237 | 2.7255279 | 20 | 8 26.5 | 19.1 |
| 169788 | 2002 | PT ₁₃₉ | 15.3 | X | 322.47830 | 318.07462 | 356.11470 | 13.20265 | 0.1963236 | 0.21492352 | 2.7602394 | 20 | 6 14.1 | 18.5 |
| 169789 | 2002 | PZ ₁₅₆ | 16.8 | X | 148.07629 | 153.69232 | 112.72744 | 2.18942 | 0.1513380 | 0.23848823 | 2.5752817 | 20 | — | — |
| 169790 | 2002 | PD ₁₅₇ | 16.3 | X | 140.46908 | 266.76935 | 324.00496 | 4.66769 | 0.0339251 | 0.23059075 | 2.6337515 | 20 | 11 9.8 | 20.0 |
| 169791 | 2002 | PB ₁₅₈ | 16.0 | X | 33.42267 | 328.33965 | 42.39440 | 2.28563 | 0.1085375 | 0.23323665 | 2.6137950 | 20 | — | — |
| 169792 | 2002 | PP ₁₆₁ | 16.3 | X | 77.37923 | 168.75325 | 126.63872 | 2.64529 | 0.0924448 | 0.23026332 | 2.6362477 | 20 | 11 25.2 | 20.1 |
| 169793 | 2002 | PU ₁₆₄ | 16.6 | X | 67.92411 | 303.82354 | 73.57009 | 1.80403 | 0.1805043 | 0.23891248 | 2.5722321 | 20 | — | — |
| 169794 | 2002 | PD ₁₇₁ | 16.2 | X | 76.69664 | 180.61501 | 159.88043 | 4.86387 | 0.0678667 | 0.23755471 | 2.5820240 | 20 | — | — |
| 169795 | 2002 | PE ₁₇₃ | 15.7 | X | 332.40284 | 2.78433 | 0.13204 | 14.46571 | 0.1501575 | 0.22117312 | 2.7079948 | 20 | 9 22.8 | 18.4 |
| 169796 | 2002 | PV ₁₇₇ | 16.6 | X | 356.32054 | 237.56973 | 79.04865 | 2.68253 | 0.0650482 | 0.22072920 | 2.7116244 | 20 | 8 29.3 | 19.8 |
| 169797 | 2002 | PU ₁₈₀ | 17.9 | X | 29.66502 | 76.77753 | 214.98100 | 5.98578 | 0.2776322 | 0.22356545 | 2.6886417 | 20 | 10 16.9 | 21.2 |
| 169798 | 2002 | PZ ₁₈₀ | 16.0 | X | 329.12056 | 7.02664 | 37.90834 | 3.55093 | 0.0875865 | 0.22878802 | 2.6475685 | 20 | 11 16.2 | 19.1 |
| 169799 | 2002 | QO | 15.0 | X | 263.14599 | 137.28217 | 259.39146 | 6.80375 | 0.2330025 | 0.21114473 | 2.7930747 | 20 | 7 2.2 | 19.0 |
| 169800 | 2002 | QJ ₄ | 16.1 | X | 253.98034 | 171.65219 | 190.91145 | 3.74766 | 0.1191151 | 0.20958922 | 2.8068773 | 20 | 5 25.2 | 20.1 |
| 169801 | 2002 | QP ₆ | 16.0 | X | 306.79301 | 110.29742 | 259.61950 | 6.58670 | 0.1326593 | 0.21643632 | 2.7473624 | 20 | 8 12.5 | 19.2 |
| 169802 | 2002 | QK ₇ | 15.9 | X | 301.60812 | 234.10018 | 107.78001 | 7.03612 | 0.1342794 | 0.21510555 | 2.7586820 | 20 | 6 27.4 | 19.3 |
| 169803 | 2002 | QG ₁₁ | 16.6 | X | 13.25243 | 167.58248 | 198.12638 | 2.51334 | 0.0948161 | 0.22936984 | 2.6430894 | 20 | 12 3.6 | 19.9 |
| 169804 | 2002 | QJ ₁₆ | 15.9 | X | 322.94256 | 101.70221 | 212.58635 | 3.89215 | 0.0600639 | 0.21365029 | 2.7711948 | 20 | 7 1.6 | 19.3 |
| 169805 | 2002 | QO ₁₆ | 16.1 | X | 330.12134 | 147.31485 | 183.45146 | 8.22036 | 0.2129086 | 0.21713159 | 2.7414945 | 20 | 7 23.8 | 18.8 |
| 169806 | 2002 | QQ ₁₈ | 15.9 | X | 233.65332 | 310.02725 | 104.31149 | 4.67262 | 0.0854077 | 0.21275361 | 2.7789757 | 20 | 7 10.5 | 19.7 |
| 169807 | 2002 | QE ₁₉ | 15.9 | X | 344.88873 | 339.68005 | 10.86089 | 4.95887 | 0.1200746 | 0.22134395 | 2.7066013 | 20 | 9 28.5 | 18.6 |
| 169808 | 2002 | QG ₁₉ | 16.4 | X | 172.37508 | 199.45887 | 79.10552 | 3.06198 | 0.1813961 | 0.24210378 | 2.5495782 | 20 | — | — |
| 169809 | 2002 | QN ₂₀ | 15.7 | X | 0.35727 | 304.82969 | 357.50725 | 2.35405 | 0.0590227 | 0.21680217 | 2.7442714 | 20 | 8 14.2 | 19.0 |
| 169810 | 2002 | QU ₂₉ | 16.7 | X | 77.10086 | 314.34819 | 20.59826 | 2.88850 | 0.0821077 | 0.23481016 | 2.6021049 | 20 | — | — |
| 169811 | 2002 | QU ₃₁ | 15.7 | X | 330.42414 | 266.46285 | 140.14931 | 15.55307 | 0.0954385 | 0.22715808 | 2.6602182 | 20 | 11 25.5 | 19.1 |
| 169812 | 2002 | QT ₃₅ | 15.5 | X | 264.68831 | 295.04374 | 150.25688 | 22.04294 | 0.0787743 | 0.22196564 | 2.7015450 | 20 | 10 6.9 | 19.3 |
| 169813 | 2002 | QU ₄₁ | 15.8 | X | 55.47062 | 198.77453 | 122.22588 | 5.29688 | 0.0709248 | 0.23043177 | 2.6349627 | 20 | 11 29.3 | 19.4 |
| 169814 | 2002 | QH ₄₆ | 15.6 | X | 306.97991 | 265.60531 | 100.10580 | 5.98569 | 0.1743748 | 0.21904178 | 2.7255328 | 20 | 8 5.6 | 18.6 |
| 169815 | 2002 | QH ₅₄ | 15.9 | X | 289.23008 | 293.05210 | 176.79004 | 11.91331 | 0.0439433 | 0.23065780 | 2.6332411 | 20 | 12 14.8 | 19.5 |
| 169816 | 2002 | QK ₅₅ | 16.4 | X | 273.42879 | 27.89454 | 20.20465 | 6.09637 | 0.0453617 | 0.21912344 | 2.7248556 | 20 | 9 1.2 | 19.9 |
| 169817 | 2002 | QS ₅₅ | 16.4 | X | 116.55114 | 274.26919 | 349.71950 | 5.12692 | 0.1324898 | 0.23112245 | 2.6297106 | 20 | 11 28.4 | 20.5 |
| 169818 | 2002 | QC ₅₆ | 15.7 | X | 261.60370 | 282.84800 | 141.72336 | 10.02627 | 0.1130302 | 0.21839422 | 2.7309177 | 20 | 8 25.7 | 19.3 |
| 169819 | 2002 | QE ₅₇ | 15.6 | X | 332.77431 | 171.85811 | 134.47286 | 10.41879 | 0.1130604 | 0.21419667 | 2.7664802 | 20 | 7 2.6 | 18.8 |
| 169820 | 2002 | QO ₅₇ | 16.4 | X | 335.41000 | 33.49265 | 311.68078 | 4.45924 | 0.0528333 | 0.21985221 | 2.7188307 | 20 | 9 2.2 | 19.7 |
| 169821 | 2002 | QT ₅₇ | 15.6 | X | 188.20400 | 222.73840 | 343.16891 | 9.80518 | 0.0527539 | 0.23154577 | 2.6265045 | 20 | 12 3.4 | 19.5 |
| 169822 | 2002 | QU ₅₈ | 16.3 | X | 331.17461 | 130.96652 | 215.78592 | 4.67285 | 0.0764454 | 0.21909664 | 2.7250778 | 20 | 8 27.3 | 19.7 |
| 169823 | 2002 | QL ₆₂ | 17.0 | X | 104.79996 | 108.02468 | 267.99628 | 0.55265 | 0.0899747 | 0.24390700 | 2.5369966 | 20 | — | — |
| 169824 | 2002 | QM ₆₇ | 15.7 | X | 271.85170 | 24.74011 | 339.64293 | 4.66213 | 0.0836312 | 0.21276679 | 2.7788610 | 20 | 6 22.9 | 19.4 |
| 169825 | 2002 | QO ₆₇ | 16.6 | X | 327.50095 | 3.88461 | 3.73903 | 4.93968 | 0.1084460 | 0.22144463 | 2.7057808 | 20 | 9 21.4 | 19.5 |
| 169826 | 2002 | QQ ₆₈ | 15.8 | X | 138.74457 | 167.71805 | 149.20873 | 6.51347 | 0.1863937 | 0.18581353 | 3.0414767 | 20 | — | — |
| 169827 | 2002 | QH ₆₉ | 15.8 | X | 289.03073 | 306.02566 | 137.35945 | 12.91554 | 0.1419993 | 0.22620254 | 2.6677045 | 20 | 11 2.9 | 19.1 |
| 169828 | 2002 | QU ₇₁ | 16.5 | X | 129.91937 | 307.67681 | 329.10812 | 2.93163 | 0.1301487 | 0.23545567 | 2.5973468 | 20 | 12 28.2 | 20.5 |
| 169829 | 2002 | QF ₇₂ | 16.3 | X | 260.12411 | 85.13224 | 334.57351 | 2.56696 | 0.1224345 | 0.21790094 | 2.7350377 | 20 | 8 15.3 | 20.0 |
| 169830 | 2002 | QW | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 169841 2002 RZ ₃ | 16.1 | X | 2.74669 | 149.71895 | 245.96901 | 10.84958 | 0.0298055 | 0.23197071 | 2.6232959 | 20 | 12 19.5 | 19.5 |
| 169842 2002 RF ₇ | 15.5 | X | 41.73890 | 332.41879 | 326.48146 | 9.35484 | 0.2198148 | 0.22688049 | 2.6623876 | 20 | 10 30.5 | 19.2 |
| 169843 2002 RT ₈ | 15.5 | X | 279.58783 | 2.00026 | 50.54077 | 7.61552 | 0.2778213 | 0.21214684 | 2.7842720 | 20 | 8 10.0 | 19.1 |
| 169844 2002 RD ₉ | 16.0 | X | 43.91369 | 215.37655 | 122.48328 | 3.07491 | 0.1022545 | 0.22935895 | 2.6431730 | 20 | 12 9.8 | 19.5 |
| 169845 2002 RG ₁₀ | 15.5 | X | 235.51580 | 262.99138 | 152.98595 | 7.63500 | 0.1699088 | 0.21185615 | 2.7868184 | 20 | 7 4.8 | 19.8 |
| 169846 2002 RS ₁₁ | 15.8 | X | 278.35686 | 189.97864 | 187.72133 | 4.12372 | 0.0833662 | 0.21262642 | 2.7800838 | 20 | 7 18.9 | 19.6 |
| 169847 2002 RF ₁₅ | 16.5 | X | 324.03413 | 137.84625 | 172.76960 | 7.71290 | 0.2146612 | 0.21317979 | 2.7752708 | 20 | 6 11.1 | 19.4 |
| 169848 2002 RJ ₂₁ | 15.5 | X | 217.33514 | 288.38025 | 95.38256 | 3.10191 | 0.0761866 | 0.20509424 | 2.8477405 | 20 | 5 14.4 | 19.6 |
| 169849 2002 RQ ₂₃ | 15.9 | X | 201.01397 | 230.93310 | 169.96573 | 2.18562 | 0.0939234 | 0.20522050 | 2.8465723 | 20 | 5 17.3 | 20.2 |
| 169850 2002 RC ₃₀ | 14.7 | X | 78.59939 | 43.02455 | 321.31875 | 10.98125 | 0.1506579 | 0.18112179 | 3.0937764 | 20 | — | — |
| 169851 2002 RL ₃₄ | 15.4 | X | 303.42177 | 272.71511 | 63.58901 | 4.62536 | 0.1258341 | 0.21117554 | 2.7928031 | 20 | 6 23.5 | 18.7 |
| 169852 2002 RH ₃₈ | 15.6 | X | 278.60140 | 120.35974 | 321.07499 | 10.79233 | 0.1613952 | 0.22277979 | 2.6949592 | 20 | 9 29.2 | 19.0 |
| 169853 2002 RK ₃₈ | 16.4 | X | 297.32720 | 162.53627 | 181.29621 | 7.86564 | 0.2286942 | 0.21314933 | 2.7755352 | 20 | 6 8.5 | 20.0 |
| 169854 2002 RB ₃₉ | 15.5 | X | 295.17284 | 186.37795 | 130.50446 | 5.17047 | 0.1964572 | 0.21060490 | 2.7978455 | 20 | 5 6.3 | 19.2 |
| 169855 2002 RU ₄₁ | 14.9 | X | 95.94063 | 268.74004 | 152.24789 | 11.37214 | 0.1259908 | 0.19196372 | 2.9761623 | 20 | 2 21.8 | 18.8 |
| 169856 2002 RD ₄₂ | 15.7 | X | 351.33853 | 211.94270 | 138.08131 | 6.91888 | 0.0650061 | 0.22205362 | 2.7008314 | 20 | 10 8.4 | 19.0 |
| 169857 2002 RF ₄₃ | 16.1 | X | 98.40509 | 257.79394 | 14.44057 | 4.03217 | 0.2484590 | 0.23056498 | 2.6339478 | 20 | 11 28.5 | 20.5 |
| 169858 2002 RG ₄₄ | 15.8 | X | 355.35551 | 289.79583 | 29.74374 | 5.29467 | 0.0630254 | 0.21779875 | 2.7358931 | 20 | 9 1.5 | 19.1 |
| 169859 2002 RD ₄₅ | 16.3 | X | 80.36288 | 311.16115 | 39.91404 | 3.59818 | 0.1755613 | 0.23525801 | 2.5988015 | 20 | — | — |
| 169860 2002 RW ₅₆ | 15.5 | X | 249.81866 | 214.75086 | 188.00146 | 11.49426 | 0.0580560 | 0.21132236 | 2.7915093 | 20 | 7 16.8 | 19.6 |
| 169861 2002 RU ₅₇ | 15.6 | X | 257.37468 | 74.87075 | 273.87767 | 4.80629 | 0.0557848 | 0.20593894 | 2.8399481 | 20 | 5 17.4 | 19.6 |
| 169862 2002 RY ₆₀ | 15.4 | X | 257.44798 | 252.85273 | 151.83311 | 9.33270 | 0.1569457 | 0.21073244 | 2.7967165 | 20 | 7 16.1 | 19.5 |
| 169863 2002 RO ₆₅ | 14.4 | X | 71.41346 | 44.36703 | 46.87016 | 17.85246 | 0.1423465 | 0.18415226 | 3.0597411 | 20 | 3 11.3 | 18.7 |
| 169864 2002 RP ₇₅ | 16.1 | X | 266.79651 | 109.99744 | 251.69163 | 1.59822 | 0.1171619 | 0.20999574 | 2.8032537 | 20 | 6 7.4 | 20.0 |
| 169865 2002 RW ₇₅ | 15.7 | X | 352.07851 | 293.94717 | 327.50110 | 2.92452 | 0.1536785 | 0.21066786 | 2.7972881 | 20 | 5 31.6 | 18.5 |
| 169866 2002 RG ₇₆ | 15.7 | X | 21.66614 | 284.71935 | 358.21022 | 5.10385 | 0.0285016 | 0.21631361 | 2.7484013 | 20 | 8 17.6 | 19.3 |
| 169867 2002 RD ₈₉ | 16.1 | X | 270.40791 | 63.64757 | 314.00683 | 2.52407 | 0.1086092 | 0.21229213 | 2.7830016 | 20 | 7 5.0 | 19.8 |
| 169868 2002 RT ₉₃ | 15.9 | X | 220.45569 | 158.74564 | 261.92817 | 4.52106 | 0.0962248 | 0.20890550 | 2.8129982 | 20 | 7 1.9 | 20.0 |
| 169869 2002 RE ₉₄ | 15.1 | X | 341.69343 | 152.00216 | 176.54032 | 9.27281 | 0.2155049 | 0.21618373 | 2.7495020 | 20 | 8 18.1 | 17.7 |
| 169870 2002 RA ₉₆ | 15.4 | X | 279.12666 | 51.06801 | 345.48510 | 4.38496 | 0.1652239 | 0.21292851 | 2.774538 | 20 | 8 3.9 | 18.9 |
| 169871 2002 RQ ₉₈ | 15.3 | X | 331.22291 | 298.15069 | 16.69977 | 12.14894 | 0.1748373 | 0.21195292 | 2.7859701 | 20 | 7 9.2 | 18.5 |
| 169872 2002 RN ₁₀₃ | 15.6 | X | 235.61364 | 59.37203 | 0.51616 | 8.56435 | 0.1434943 | 0.20861801 | 2.8155820 | 20 | 7 15.0 | 19.9 |
| 169873 2002 RP ₁₀₅ | 15.3 | X | 290.28043 | 17.06754 | 28.17697 | 14.09980 | 0.1888069 | 0.21358298 | 2.7717770 | 20 | 9 5.2 | 18.8 |
| 169874 2002 RN ₁₁₆ | 15.3 | X | 259.30566 | 120.13341 | 298.86699 | 8.14765 | 0.2717923 | 0.21316449 | 2.7754036 | 20 | 7 22.2 | 19.3 |
| 169875 2002 RF ₁₁₈ | 15.5 | X | 304.84103 | 113.26851 | 253.16367 | 3.15326 | 0.1258270 | 0.21394464 | 2.7686524 | 20 | 8 6.5 | 18.8 |
| 169876 2002 RC ₁₂₀ | 15.8 | X | 293.36393 | 297.09585 | 143.70775 | 22.45301 | 0.0400202 | 0.22708953 | 2.6607535 | 20 | 11 18.5 | 19.8 |
| 169877 2002 RC ₁₂₉ | 14.7 | X | 268.12277 | 97.68895 | 340.49936 | 17.01149 | 0.2811884 | 0.21672832 | 2.7448942 | 20 | 8 27.2 | 18.5 |
| 169878 2002 RC ₁₃₁ | 16.0 | X | 228.63308 | 281.92360 | 339.49477 | 5.17688 | 0.0781199 | 0.18959358 | 3.0009146 | 20 | — | — |
| 169879 2002 RO ₁₃₉ | 15.1 | X | 278.40433 | 283.48261 | 116.70844 | 14.25617 | 0.1895165 | 0.21428502 | 2.7657197 | 20 | 8 3.7 | 18.6 |
| 169880 2002 RH ₁₄₃ | 15.9 | X | 239.38736 | 142.54820 | 222.10868 | 1.53457 | 0.1168179 | 0.20567150 | 2.8424095 | 20 | 5 10.2 | 20.2 |
| 169881 2002 RM ₁₄₄ | 15.8 | X | 166.20598 | 208.04618 | 347.58575 | 7.05230 | 0.0230028 | 0.22389803 | 2.6859785 | 20 | 10 25.1 | 19.7 |
| 169882 2002 RH ₁₄₆ | 15.6 | X | 123.73326 | 161.53696 | 208.46904 | 7.06475 | 0.0881217 | 0.18798145 | 3.0180474 | 20 | 1 17.8 | 20.0 |
| 169883 2002 RL ₁₅₁ | 16.0 | X | 349.37531 | 148.37976 | 271.47537 | 9.33417 | 0.2055936 | 0.22872907 | 2.6480233 | 20 | — | — |
| 169884 2002 RZ ₁₅₁ | 15.7 | X | 225.03787 | 215.39428 | 222.45421 | 8.54094 | 0.1349458 | 0.21228545 | 2.7830600 | 20 | 7 23.2 | 20.0 |
| 169885 2002 RE ₁₅₂ | 15.7 | X | 47.07886 | 71.81782 | 207.78118 | 12.22576 | 0.0353874 | 0.21914002 | 2.7247181 | 20 | 9 14.1 | 19.5 |
| 169886 2002 RA ₁₅₈ | 16.0 | X | 214.45839 | 128.24560 | 335.77472 | 7.30802 | 0.1821523 | 0.21348928 | 2.7725880 | 20 | 8 13.9 | 20.4 |
| 169887 2002 RM ₁₆₅ | 16.3 | X | 304.68819 | 289.12902 | 4.70088 | 1.96947 | 0.0283116 | 0.20559832 | 2.8430839 | 20 | 5 11.9 | 20.0 |
| 169888 2002 RE ₁₆₇ | 15.9 | X | 290.38299 | 15.16353 | 343.42837 | 3.65666 | 0.2177731 | 0.21343757 | 2.7730357 | 20 | 6 19.5 | 19.5 |
| 169889 2002 RL ₁₆₈ | 15.7 | X | 66.84473 | 227.99805 | 339.87127 | 3.50688 | 0.1409363 | 0.21124144 | 2.7922222 | 20 | 7 26.1 | 19.4 |
| 169890 2002 RC ₁₇₂ | 16.8 | X | 323.49691 | 263.07690 | 30.24720 | 8.52264 | 0.2881131 | 0.21260192 | 2.7802975 | 20 | 4 30.9 | 19.8 |
| 169891 2002 RN ₁₇₂ | 15.0 | X | 194.03397 | 65.04479 | 184.45491 | 10.83926 | 0.0802246 | 0.18364572 | 3.0653649 | 20 | — | — |
| 169892 2002 RL ₁₇₃ | 15.4 | X | 324.04377 | 243.92714 | 97.28384 | 9.93977 | 0.1329093 | 0.21455630 | 2.7633880 | 20 | 8 6.9 | 18.5 |
| 169893 2002 RP ₁₇₄ | 16.4 | X | 345.49251 | 141.53283 | 201.39747 | 3.38297 | 0.0923665 | 0.22609840 | 2.6685236 | 20 | 11 26.1 | 19.9 |
| 169894 2002 RP ₁₇₄ | 15.1 | X | 85.33668 | 63.20380 | 351.37115 | 8.09176 | 0.1025036 | 0.18200840 | 3.0837211 | 20 | — | — |
| 169895 2002 RB ₁₇₆ | 15.5 | X | 338.71030 | 100.54906 | 259.15141 | 5.15370 | 0.0377167 | 0.22050382 | 2.7134718 | 20 | 9 25.5 | 19.1 |
| 169896 2002 RD ₁₈₂ | 15.3 | X | 297.15535 | 187.20604 | 276.30873 | 13.11198 | 0.1377271 | 0.22785570 | 2.6547856 | 20 | 12 10.8 | 18.1 |
| 169897 2002 RE ₁₈₆ | 15.2 | X | 272.88661 | 229.81564 | 248.50410 | 9.92887 | 0.0913348 | 0.22614729 | 2.6681391 | 20 | 11 25.3 | 18.5 |
| 169898 2002 RJ ₁₈₉ | 15.8 | X | 13.33996 | 57.03222 | 182.04052 | 12.50809 | 0.1750807 | 0.21068950 | 2.7970965 | 20 | 6 13.6 | 18.9 |
| 169899 2002 RX ₂₀₃ | 16.6 | X | 292.41325 | 147.49268 | 162.97856 | 2.01597 | 0.2435969 | 0.21008700 | 2.8024418 | 20 | 4 15.6 | 20.4 |
| 169900 2002 RH ₂₀₄ | 15.7 | X | 341.91724 | 183.66381 | 190.76704 | 5.82075 | 0.0552005 | 0.22449539 | 2.6812117 | 20 | 10 24.9 | 19.0 |
| 169901 2002 RT ₂₀₆ | 16.0 | X | 288.55752 | 250.50488 | 200.70795 | 4.34313 | 0.0239015 | 0.22580694 | 2.6708194 | 20 | 11 20.0 | 19.4 |
| 169902 2002 RL ₂₀₇ | 15.7 | X | 55.33350 | 229.55619 | 4.87207 | 3.49293 | 0.0410223 | 0.21247521 | 2.7814027 | 20 | 7 31.0 | 19.3 |
| 169903 2002 RM ₂₀₉ | 16.3 | X | 304.60563 | 145.97833 | 178.33808 | 2.55108 | 0.0935600 | 0.20913824 | 2.8109110 | 20 | 6 13.6 | 19.8 |
| 169904 2002 RV ₂₁₁ | 15.6 | X | 55.79178 | 99.28407 | 194.13956 | 8.61836 | 0.1013894 | 0.22338394 | 2.6900979 | 20 | 10 28.5 | 19.2 |
| 169905 2002 RR ₂₂₇ | 16.1 | X | 245.84815 | 100.33917 | 290.78355 | 2.94504 | 0.1106940 | 0.20936366 | 2.8088929 | 20 | 6 21.3 | 20.0 |
| 169906 2002 RS ₂₃₀ | 15.9 | X | 39.29762 | 269.17445 | 62.64044 | 2.88463 | 0.0672982 | 0.22616122 | 2.6680295 | 20 | 11 20.2 | 19.3 |
| 169907 2002 RS ₂₃₃ | 16.2 | X | 199.75983 | 329.51973 | 178.24528 | 1.62788 | 0.0163860 | 0.22322686 | 2.6913597 | 20 | 10 8.6 | 19.6 |
| 169908 2002 RU ₂₃₈ | 16.3 | X | 302.90356 | 333.96728 | 130.77785 | 3.06310 | 0.1710317 | 0.22912842 | 2.6449456 | 20 | 12 22.0 | 18.8 |
| 169909 2002 RY ₂₃₈ | 16.5 | X | 8.64905 | 136.35812 | 301.28908 | 2.89355 | 0.1728905 | 0.23546582 | 2.5972722 | 20 | — | — |
| 169910 2002 RP ₂₄₇ | 16.3 | X | 348.14693 | 292.00296 | 359.03943 | 5.05464 | 0.0891363 | 0.21453014 | 2.7636127 | 20 | 7 9.8 | 19.6 |
| 169911 2002 RY ₂₅₅ | 16.2 | X | 226.96042 | 41.96119 | 195.48591 | 11.76542 | 0.2011022 | 0.24576358 | 2.5242035 | 20 | — | — |
| 169912 2002 RP ₂₆₈ | 16.1 | X | 126.94006 | 298.87572 | 159.12582 | 5.39072 | 0.1322845 | 0.20303086 | 2.8670021 | 20 | 5 15.1 | 20.5 |
| 169913 2002 RL ₂₇₂ | 16.7 | X | 274.28657 | 290.53963 | 169.03902 | 2.47437 | 0.1120101 | 0.22623132 | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 169921 2002 SB ₁₅ | 14.9 | X | 11.41660 | 109.97907 | 253.59703 | 12.93491 | 0.2069966 | 0.22437191 | 2.6821953 | 20 | 12 13.0 | 18.0 |
| 169922 2002 SE ₁₈ | 15.7 | X | 161.22241 | 313.14769 | 186.08002 | 8.08631 | 0.1101839 | 0.21015062 | 2.8018761 | 20 | 8 6.1 | 20.2 |
| 169923 2002 SS ₂₀ | 16.3 | X | 45.09014 | 143.62894 | 161.01945 | 2.60256 | 0.1251764 | 0.22256080 | 2.6967267 | 20 | 11 1.4 | 19.8 |
| 169924 2002 SR ₂₆ | 15.8 | X | 2.22903 | 328.36191 | 1.17821 | 5.80122 | 0.0648711 | 0.21884884 | 2.7271345 | 20 | 9 23.7 | 19.1 |
| 169925 2002 SP ₃₃ | 15.6 | X | 332.90822 | 79.93728 | 357.66521 | 12.74527 | 0.1540635 | 0.22626029 | 2.6672506 | 20 | — | — |
| 169926 2002 SD ₄₀ | 16.2 | X | 326.71296 | 187.80895 | 109.91139 | 4.27637 | 0.2367950 | 0.21146740 | 2.7902328 | 20 | 5 25.0 | 18.9 |
| 169927 2002 SN ₄₇ | 15.4 | X | 111.88645 | 129.78629 | 193.14934 | 9.83104 | 0.0943603 | 0.17936037 | 3.1139984 | 20 | — | — |
| 169928 2002 SR ₄₉ | 15.4 | X | 317.27694 | 333.35329 | 40.45418 | 6.39450 | 0.0825389 | 0.21653666 | 2.7465136 | 20 | 9 15.9 | 18.7 |
| 169929 2002 ST ₆₀ | 15.6 | X | 357.50384 | 210.42797 | 59.67125 | 4.68253 | 0.0573746 | 0.20946280 | 2.8080066 | 20 | 6 24.3 | 19.1 |
| 169930 2002 TZ ₇ | 16.0 | X | 20.98157 | 326.85570 | 6.51628 | 1.94356 | 0.0944333 | 0.22181831 | 2.7027411 | 20 | 10 30.5 | 19.2 |
| 169931 2002 TW ₁₀ | 15.8 | X | 48.11680 | 63.14095 | 234.86655 | 11.83516 | 0.2618634 | 0.22548854 | 2.6733330 | 20 | 11 15.6 | 19.7 |
| 169932 2002 TX ₁₁ | 15.5 | X | 307.78560 | 302.81171 | 34.96363 | 6.39550 | 0.0808803 | 0.21243248 | 2.7817757 | 20 | 7 9.9 | 19.1 |
| 169933 2002 TB ₁₂ | 16.0 | X | 268.22698 | 42.90142 | 27.57147 | 2.21231 | 0.0651202 | 0.21829082 | 2.7317801 | 20 | 9 19.2 | 19.4 |
| 169934 2002 TA ₁₆ | 15.7 | X | 274.66323 | 215.76599 | 194.16771 | 6.66850 | 0.0666623 | 0.21618902 | 2.7494572 | 20 | 8 28.5 | 19.5 |
| 169935 2002 TP ₂₂ | 15.8 | X | 306.38185 | 184.71153 | 154.58280 | 4.07184 | 0.1044643 | 0.20948608 | 2.8077985 | 20 | 7 5.2 | 19.3 |
| 169936 2002 TE ₂₈ | 15.5 | X | 255.61638 | 119.43998 | 229.78514 | 1.14071 | 0.1004114 | 0.20285100 | 2.8686966 | 20 | 5 10.8 | 19.7 |
| 169937 2002 TA ₂₈ | 15.3 | X | 132.26087 | 349.57558 | 55.35607 | 8.79577 | 0.2423376 | 0.18974895 | 2.9992762 | 20 | 3 23.6 | 20.3 |
| 169938 2002 TQ ₃₀ | 15.9 | X | 191.06508 | 351.81148 | 18.20171 | 6.88476 | 0.2354636 | 0.19634036 | 2.9317684 | 20 | 3 30.4 | 21.1 |
| 169939 2002 TV ₃₂ | 15.6 | X | 337.14231 | 107.74912 | 192.85497 | 12.86939 | 0.1888094 | 0.21256519 | 2.7806177 | 20 | 6 25.7 | 18.7 |
| 169940 2002 TM ₃₄ | 15.8 | X | 301.24291 | 353.37557 | 5.80701 | 5.79431 | 0.0616854 | 0.21171989 | 2.7880139 | 20 | 8 2.1 | 19.4 |
| 169941 2002 TX ₃₄ | 15.1 | X | 61.52164 | 265.16867 | 193.72909 | 17.65543 | 0.0963097 | 0.18812269 | 3.0165366 | 20 | 2 14.9 | 19.3 |
| 169942 2002 TL ₄₀ | 15.2 | X | 61.17221 | 174.07669 | 187.09828 | 10.49303 | 0.2076749 | 0.17445907 | 3.1720523 | 20 | — | — |
| 169943 2002 TJ ₄₅ | 15.0 | X | 46.07125 | 152.95575 | 218.67034 | 10.39059 | 0.1177874 | 0.17261058 | 3.1946585 | 20 | — | — |
| 169944 2002 TO ₄₅ | 15.0 | X | 234.19975 | 308.54627 | 27.25674 | 12.38891 | 0.1944030 | 0.19824156 | 2.9129939 | 20 | 3 27.9 | 19.8 |
| 169945 2002 TM ₄₇ | 15.5 | X | 132.59896 | 348.66423 | 46.01201 | 3.00219 | 0.1379747 | 0.18835156 | 3.0140925 | 20 | 3 5.6 | 20.0 |
| 169946 2002 TG ₄₉ | 15.3 | X | 261.47708 | 227.05022 | 220.90966 | 13.17240 | 0.1470784 | 0.21416034 | 2.7667931 | 20 | 9 14.8 | 19.3 |
| 169947 2002 TD ₅₄ | 15.4 | X | 301.55543 | 116.14844 | 280.76567 | 3.70330 | 0.1947155 | 0.21225846 | 2.7832959 | 20 | 9 2.7 | 18.4 |
| 169948 2002 TZ ₆₂ | 15.6 | X | 116.86422 | 323.89919 | 218.62804 | 8.74727 | 0.0787907 | 0.21079747 | 2.7961413 | 20 | 8 10.6 | 19.8 |
| 169949 2002 TG ₆₅ | 15.5 | X | 165.01750 | 337.09214 | 4.85078 | 9.90475 | 0.1063316 | 0.18887532 | 3.0085177 | 20 | 2 3.9 | 20.2 |
| 169950 2002 TL ₆₆ | 14.4 | X | 296.14464 | 234.21438 | 268.13959 | 29.92595 | 0.2952154 | 0.22925317 | 2.6439860 | 20 | — | — |
| 169951 2002 TO ₆₉ | 15.7 | X | 49.23187 | 90.37426 | 306.82158 | 5.68033 | 0.0755154 | 0.23510130 | 2.5999562 | 20 | — | — |
| 169952 2002 TZ ₇₃ | 16.2 | X | 261.08717 | 93.42978 | 234.03610 | 6.08363 | 0.3330784 | 0.20443498 | 2.8538594 | 20 | 3 24.3 | 21.1 |
| 169953 2002 TY ₇₉ | 15.8 | X | 233.88722 | 258.25577 | 82.77437 | 7.42773 | 0.2896005 | 0.20016486 | 2.8943041 | 20 | 3 29.1 | 21.0 |
| 169954 2002 TX ₈₇ | 15.9 | X | 194.04629 | 101.38209 | 317.53615 | 1.08033 | 0.0648774 | 0.20338710 | 2.8636534 | 20 | 6 1.8 | 20.0 |
| 169955 2002 TJ ₉₄ | 15.7 | X | 59.63504 | 239.19349 | 26.76137 | 5.09183 | 0.0761621 | 0.21873657 | 2.7280675 | 20 | 9 23.6 | 19.3 |
| 169956 2002 TW ₉₇ | 16.0 | X | 79.96042 | 84.32162 | 293.86983 | 10.90240 | 0.2036618 | 0.23700701 | 2.5860004 | 20 | — | — |
| 169957 2002 TN ₉₈ | 16.0 | X | 163.42554 | 74.88871 | 5.71580 | 6.05141 | 0.0260843 | 0.20304928 | 2.8668287 | 20 | 5 23.1 | 20.1 |
| 169958 2002 TP ₁₀₁ | 15.8 | X | 299.52648 | 136.12355 | 240.79576 | 4.75863 | 0.0209308 | 0.21464407 | 2.7626346 | 20 | 8 24.3 | 19.5 |
| 169959 2002 TG ₁₁₃ | 15.6 | X | 280.21877 | 164.93517 | 267.69854 | 8.43031 | 0.1449936 | 0.21854903 | 2.7296280 | 20 | 9 21.9 | 19.1 |
| 169960 2002 TF ₁₁₆ | 15.2 | X | 165.26548 | 72.90157 | 313.59338 | 9.48811 | 0.0251336 | 0.19477278 | 2.9474778 | 20 | 3 15.3 | 19.5 |
| 169961 2002 TZ ₁₁₆ | 14.7 | X | 200.40640 | 57.67248 | 260.67407 | 9.85046 | 0.1403070 | 0.19156453 | 2.9802954 | 20 | 2 3.5 | 19.6 |
| 169962 2002 TZ ₁₁₉ | 15.5 | X | 246.08905 | 131.65810 | 312.80162 | 8.56558 | 0.1765959 | 0.21276757 | 2.7788542 | 20 | 8 20.5 | 19.4 |
| 169963 2002 TP ₁₂₇ | 15.4 | X | 295.34383 | 39.16826 | 307.67955 | 7.35661 | 0.2007591 | 0.21112749 | 2.7932267 | 20 | 6 13.4 | 18.9 |
| 169964 2002 TD ₁₃₀ | 15.1 | X | 258.43080 | 228.72803 | 110.15876 | 7.58694 | 0.0711451 | 0.20429214 | 2.8551895 | 20 | 5 7.5 | 19.2 |
| 169965 2002 TW ₁₃₁ | 15.4 | X | 293.93139 | 86.55201 | 279.64767 | 5.19594 | 0.1189044 | 0.21198464 | 2.7856922 | 20 | 7 20.9 | 18.7 |
| 169966 2002 TE ₁₃₂ | 15.5 | X | 255.06505 | 179.36513 | 241.63631 | 3.93915 | 0.0570845 | 0.21351340 | 2.7723792 | 20 | 8 17.7 | 19.4 |
| 169967 2002 TB ₁₃₆ | 15.1 | X | 144.56910 | 93.62062 | 288.35606 | 8.91362 | 0.1285314 | 0.18962069 | 3.0006285 | 20 | 2 25.5 | 19.8 |
| 169968 2002 TE ₁₄₃ | 15.9 | X | 18.26215 | 286.87817 | 182.90852 | 7.63835 | 0.2156362 | 0.22548209 | 2.6733809 | 20 | — | — |
| 169969 2002 TD ₁₄₇ | 16.5 | X | 61.35565 | 35.49412 | 249.57147 | 2.40814 | 0.1782177 | 0.22250020 | 2.6972163 | 20 | 11 2.4 | 20.3 |
| 169970 2002 TP ₁₅₈ | 15.7 | X | 307.60878 | 351.12276 | 65.56607 | 16.31487 | 0.2188720 | 0.21913682 | 2.7247446 | 20 | 10 22.7 | 18.5 |
| 169971 2002 TJ ₁₆₈ | 16.3 | X | 352.36066 | 345.96349 | 83.22239 | 2.69087 | 0.1922328 | 0.22944562 | 2.6425073 | 20 | — | — |
| 169972 2002 TO ₁₆₈ | 15.4 | X | 341.93632 | 125.17225 | 266.44670 | 10.70813 | 0.0770967 | 0.22371993 | 2.6874038 | 20 | 11 15.8 | 18.8 |
| 169973 2002 TK ₁₇₂ | 14.8 | X | 268.72495 | 142.24474 | 250.79548 | 12.62214 | 0.1924010 | 0.21298029 | 2.7770036 | 20 | 7 8.3 | 18.8 |
| 169974 2002 TU ₁₇₅ | 15.3 | X | 241.68149 | 180.94311 | 279.64167 | 11.76841 | 0.0814557 | 0.21891584 | 2.7265780 | 20 | 9 13.6 | 19.4 |
| 169975 2002 TJ ₁₇₆ | 15.7 | X | 354.00377 | 133.20203 | 290.48735 | 11.65002 | 0.2028422 | 0.23027206 | 2.6361810 | 20 | — | — |
| 169976 2002 TZ ₁₈₄ | 15.0 | X | 10.44810 | 83.99102 | 315.46041 | 3.46137 | 0.1668924 | 0.17350862 | 3.1836258 | 20 | — | — |
| 169977 2002 TT ₁₈₅ | 15.4 | X | 181.14193 | 98.51977 | 346.95063 | 14.29680 | 0.1199278 | 0.20490154 | 2.8495256 | 20 | 6 21.5 | 20.1 |
| 169978 2002 TW ₁₉₁ | 15.5 | X | 348.96743 | 150.75309 | 326.18840 | 11.39406 | 0.2108979 | 0.23174910 | 2.6249680 | 20 | — | — |
| 169979 2002 TP ₁₉₂ | 14.8 | X | 320.63232 | 298.08084 | 239.74370 | 27.24792 | 0.1091251 | 0.23858294 | 2.5746002 | 20 | — | — |
| 169980 2002 TS ₁₉₄ | 16.5 | X | 335.72726 | 191.62323 | 180.46252 | 2.95039 | 0.1137579 | 0.22050729 | 2.7134433 | 20 | 10 12.4 | 19.4 |
| 169981 2002 TH ₁₉₇ | 15.3 | X | 171.56980 | 120.82493 | 193.35508 | 19.09085 | 0.1587242 | 0.18806275 | 3.0171775 | 20 | 1 6.6 | 20.5 |
| 169982 2002 TF ₂₀₀ | 15.7 | X | 142.96702 | 274.98184 | 118.08167 | 3.61673 | 0.1393484 | 0.18856492 | 3.0118184 | 20 | 3 14.2 | 20.3 |
| 169983 2002 TP ₂₁₁ | 14.8 | X | 77.92449 | 296.35857 | 95.90088 | 15.63578 | 0.1477919 | 0.18115926 | 3.0933497 | 20 | — | — |
| 169984 2002 TS ₂₁₁ | 15.7 | X | 256.34907 | 300.65132 | 123.64362 | 11.02595 | 0.1310957 | 0.21476325 | 2.7616125 | 20 | 8 15.7 | 19.5 |
| 169985 2002 TJ ₂₁₃ | 16.0 | X | 233.81848 | 14.55236 | 336.35552 | 1.00277 | 0.0824239 | 0.20051794 | 2.8909055 | 20 | 4 19.8 | 20.4 |
| 169986 2002 TB ₂₁₇ | 16.2 | X | 79.62096 | 308.16566 | 133.31781 | 6.51748 | 0.0316766 | 0.24527707 | 2.5275403 | 20 | 2 5.3 | 19.3 |
| 169987 2002 TK ₂₁₉ | 15.7 | X | 325.61611 | 89.16415 | 286.07745 | 5.38178 | 0.0407004 | 0.21808440 | 2.7335036 | 20 | 9 26.6 | 19.4 |
| 169988 2002 TC ₂₂₀ | 14.5 | X | 99.17506 | 79.60620 | 225.05250 | 18.60082 | 0.0618898 | 0.17204266 | 3.2016852 | 20 | 12 13.7 | 19.4 |
| 169989 2002 TN ₂₃₄ | 14.9 | X | 311.33285 | 151.16169 | 264.57030 | 12.62163 | 0.1498699 | 0.22004195 | 2.7172675 | 20 | 10 23.2 | 18.0 |
| 169990 2002 TZ ₂₄₀ | 15.8 | X | 201.23322 | 162.47000 | 206.48130 | 5.62233 | 0.0767753 | 0.19717068 | 2.9235318 | 20 | 4 7.5 | 20.2 |
| 169991 2002 TH ₂₄₅ | 15.2 | X | 107.29857 | 157.95814 | 165.43019 | 9.81512 | 0.0581355 | 0.17550987 | 3.1593787 | 20 | — | — |
| 169992 2002 TN ₂₄₇ | 16.1 | X | 28.45424 | 254.28786 | 40.85537 | 5.82990 | 0.0479432 | 0.21461026 | 2.7629248 | 20 | 9 15.9 | 19.7 |
| 169993 2002 TG ₂₄₈ | 16.0 | X | 215.11414 | 213.57557 | 143.28785 | 2.93487 | 0.0888055 | 0.19852989 | 2.9101728 | 20 | 4 8.3 | 20.4 |
| 169994 2002 TE ₂₅₀ | | | | | | | | | | | | |

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170001 2002 <i>TS</i> ₂₈₃ | 16.1 | X | 95.54487 | 85.19948 | 286.28073 | 2.50247 | 0.2441882 | 0.23647971 | 2.5898431 | 20 | — | — |
| 170002 2002 <i>TJ</i> ₂₈₆ | 15.0 | X | 304.55119 | 60.31419 | 342.33184 | 8.46410 | 0.1740156 | 0.21540928 | 2.7560882 | 20 | 9 20.4 | 17.9 |
| 170003 2002 <i>TI</i> ₂₈₆ | 14.9 | X | 289.97010 | 36.84236 | 11.13573 | 13.27268 | 0.1898036 | 0.21344603 | 2.7729625 | 20 | 9 5.7 | 18.2 |
| 170004 2002 <i>TF</i> ₂₉₆ | 16.2 | X | 349.49149 | 241.59708 | 70.11250 | 4.88323 | 0.0943401 | 0.21314318 | 2.7755885 | 20 | 8 11.7 | 19.4 |
| 170005 2002 <i>TR</i> ₂₉₆ | 16.0 | X | 307.59376 | 264.84473 | 94.98543 | 5.15550 | 0.0870844 | 0.21270784 | 2.7793743 | 20 | 8 9.0 | 19.3 |
| 170006 Stoughton | 15.7 | X | 100.30872 | 146.63725 | 165.65657 | 11.68491 | 0.0726914 | 0.17347947 | 3.1839824 | 20 | 12 25.8 | 20.7 |
| 170007 Strateva | 16.4 | X | 67.81424 | 98.20403 | 181.46377 | 9.24830 | 0.1564224 | 0.22355143 | 2.6887541 | 20 | 11 2.6 | 20.3 |
| 170008 Michaelstraus | 15.7 | X | 182.14064 | 306.77086 | 155.53086 | 6.50993 | 0.0203336 | 0.20848576 | 2.8167726 | 20 | 7 15.2 | 19.7 |
| 170009 Subbarao | 16.1 | X | 215.11019 | 350.60006 | 50.36743 | 9.72920 | 0.0864047 | 0.20402661 | 2.8576663 | 20 | 5 31.4 | 20.3 |
| 170010 Szalay | 16.4 | X | 106.50502 | 158.64135 | 82.16292 | 5.96162 | 0.0568480 | 0.21938585 | 2.7226824 | 20 | 10 17.5 | 20.4 |
| 170011 Szkody | 15.7 | X | 302.32743 | 109.91523 | 276.45966 | 5.43476 | 0.0766296 | 0.21861417 | 2.7290857 | 20 | 9 4.3 | 19.2 |
| 170012 Anithakar | 16.0 | X | 112.23630 | 193.88566 | 11.44572 | 4.64283 | 0.0381528 | 0.21584657 | 2.7523645 | 20 | 9 5.0 | 19.8 |
| 170013 2002 <i>UO</i> ₃ | 17.7 | X | 140.75654 | 329.27547 | 184.78700 | 24.48772 | 0.7967577 | 0.19229449 | 2.9272484 | 20 | 8 19.8 | 24.8 |
| 170014 2002 <i>UZ</i> ₄ | 16.1 | X | 353.94720 | 323.06615 | 105.52338 | 8.35682 | 0.1848782 | 0.22695545 | 2.6618014 | 20 | — | — |
| 170015 2002 <i>UE</i> ₈ | 15.4 | X | 16.26229 | 253.90433 | 110.38932 | 9.52547 | 0.2590020 | 0.22363534 | 2.6880814 | 20 | 12 29.3 | 18.6 |
| 170016 2002 <i>UY</i> ₁₀ | 16.0 | X | 3.76318 | 72.84814 | 241.35933 | 2.46051 | 0.0890272 | 0.21374872 | 2.7703440 | 20 | 9 4.7 | 19.3 |
| 170017 2002 <i>UC</i> ₂₂ | 15.0 | X | 83.02312 | 146.48021 | 240.88124 | 9.33331 | 0.1196656 | 0.17842667 | 3.1228525 | 20 | — | — |
| 170018 2002 <i>UU</i> ₂₃ | 15.7 | X | 273.14098 | 130.10170 | 285.60543 | 3.68200 | 0.0156477 | 0.21370726 | 2.7707023 | 20 | 9 10.1 | 19.4 |
| 170019 2002 <i>UV</i> ₂₃ | 15.2 | X | 214.60767 | 95.12076 | 265.34611 | 4.77914 | 0.1088762 | 0.19740083 | 2.9212590 | 20 | 4 8.0 | 19.8 |
| 170020 2002 <i>UW</i> ₂₃ | 15.3 | X | 36.53608 | 76.87039 | 19.19148 | 11.96134 | 0.1400633 | 0.18115216 | 3.0934305 | 20 | 1 14.8 | 19.1 |
| 170021 2002 <i>UE</i> ₄₁ | 16.2 | X | 311.52082 | 307.64106 | 111.28793 | 2.70726 | 0.1564924 | 0.21828837 | 2.7318005 | 20 | 11 1.8 | 18.9 |
| 170022 Douglastucker | 16.2 | X | 141.12868 | 351.50853 | 127.49271 | 3.02004 | 0.0221727 | 0.20504814 | 2.8481673 | 20 | 6 15.9 | 20.2 |
| 170023 Vogeley | 15.9 | X | 328.92537 | 214.97174 | 118.44666 | 5.18504 | 0.1086882 | 0.21263157 | 2.7800390 | 20 | 8 4.6 | 19.0 |
| 170024 2002 <i>VH</i> | 15.3 | X | 156.15997 | 318.99810 | 69.47201 | 9.86099 | 0.1951071 | 0.19172194 | 2.9786639 | 20 | 3 28.0 | 20.3 |
| 170025 2002 <i>VO</i> | 15.6 | X | 350.49393 | 75.87633 | 225.07040 | 10.53956 | 0.0861969 | 0.18417668 | 3.0594706 | 20 | 1 19.9 | 19.9 |
| 170026 2002 <i>VV</i> ₂ | 15.2 | X | 145.44922 | 103.49817 | 48.63621 | 11.05020 | 0.1033507 | 0.20544289 | 2.8445177 | 20 | 8 12.4 | 19.8 |
| 170027 2002 <i>VH</i> ₅ | 15.8 | X | 58.62874 | 308.66023 | 212.75881 | 3.41342 | 0.0303337 | 0.19495436 | 2.9456473 | 20 | 4 26.2 | 19.7 |
| 170028 2002 <i>VW</i> ₆ | 15.2 | X | 137.55009 | 52.37136 | 9.15030 | 4.75933 | 0.0809524 | 0.19145484 | 2.9814337 | 20 | 4 4.6 | 19.5 |
| 170029 2002 <i>VB</i> ₉ | 15.6 | X | 77.75910 | 95.01318 | 275.64022 | 6.11454 | 0.2078366 | 0.23334925 | 2.6129540 | 20 | — | — |
| 170030 2002 <i>VA</i> ₁₁ | 15.2 | X | 135.55866 | 27.18316 | 46.28507 | 9.70282 | 0.0851719 | 0.19271647 | 2.9684074 | 20 | 4 19.5 | 19.6 |
| 170031 2002 <i>VV</i> ₁₅ | 14.9 | X | 16.24046 | 243.85301 | 228.19391 | 8.56603 | 0.2072076 | 0.17546259 | 3.1599463 | 20 | — | — |
| 170032 2002 <i>VF</i> ₂₁ | 15.0 | X | 52.52531 | 163.59343 | 271.33641 | 8.14302 | 0.0751790 | 0.18200553 | 3.0837535 | 20 | 1 5.8 | 18.9 |
| 170033 2002 <i>VY</i> ₂₁ | 15.8 | X | 209.95579 | 78.18804 | 349.32586 | 4.49795 | 0.0829828 | 0.20379531 | 2.8598281 | 20 | 6 30.5 | 20.0 |
| 170034 2002 <i>VH</i> ₂₂ | 15.1 | X | 223.99720 | 97.28677 | 239.58182 | 9.57313 | 0.0589571 | 0.19365839 | 2.9587743 | 20 | 3 21.4 | 19.7 |
| 170035 2002 <i>VG</i> ₂₈ | 15.6 | X | 101.31218 | 187.35885 | 243.95340 | 2.74771 | 0.1600775 | 0.18643162 | 3.0347505 | 20 | 3 15.9 | 19.9 |
| 170036 2002 <i>VA</i> ₃₁ | 15.7 | X | 337.57686 | 329.82524 | 66.42138 | 2.50742 | 0.1539433 | 0.21849397 | 2.7300865 | 20 | 11 19.5 | 18.4 |
| 170037 2002 <i>VB</i> ₃₁ | 14.5 | X | 166.49305 | 285.83570 | 62.08404 | 22.74596 | 0.1328215 | 0.18554659 | 3.0443932 | 20 | 2 20.6 | 19.7 |
| 170038 2002 <i>VJ</i> ₃₂ | 15.0 | X | 105.69035 | 154.15647 | 237.88834 | 5.03546 | 0.1829537 | 0.18203400 | 3.0834320 | 20 | 2 5.6 | 19.5 |
| 170039 2002 <i>VS</i> ₃₃ | 14.4 | X | 35.36086 | 30.88714 | 69.47559 | 17.58392 | 0.1814028 | 0.17753873 | 3.1352630 | 20 | 1 20.2 | 18.1 |
| 170040 2002 <i>VB</i> ₃₆ | 15.4 | X | 183.96392 | 130.71078 | 225.31997 | 8.73462 | 0.0576080 | 0.18955106 | 3.0013633 | 20 | 3 1.8 | 20.1 |
| 170041 2002 <i>VS</i> ₃₆ | 15.0 | X | 60.10591 | 70.55052 | 63.01603 | 9.36858 | 0.2270542 | 0.18670222 | 3.0318175 | 20 | 4 22.9 | 18.7 |
| 170042 2002 <i>VK</i> ₃₇ | 16.0 | X | 37.72602 | 270.84236 | 94.22208 | 7.35808 | 0.0681443 | 0.22485358 | 2.6783635 | 20 | 12 30.0 | 19.5 |
| 170043 2002 <i>VJ</i> ₄₂ | 15.9 | X | 314.56379 | 311.64695 | 81.25282 | 10.14338 | 0.1636800 | 0.21566948 | 2.7538710 | 20 | 10 5.2 | 18.9 |
| 170044 2002 <i>VA</i> ₄₃ | 15.2 | X | 248.04254 | 75.01776 | 60.07824 | 12.13398 | 0.1497820 | 0.21838953 | 2.7309568 | 20 | 11 4.3 | 18.9 |
| 170045 2002 <i>VO</i> ₄₇ | 15.6 | X | 123.56082 | 252.53499 | 145.64972 | 2.51230 | 0.1978308 | 0.18567987 | 3.0429361 | 20 | 3 6.3 | 20.2 |
| 170046 2002 <i>VA</i> ₅₀ | 15.7 | X | 66.34345 | 327.54888 | 92.13268 | 6.10451 | 0.0755975 | 0.23601645 | 2.5932310 | 20 | — | — |
| 170047 2002 <i>VB</i> ₅₂ | 15.7 | X | 247.79491 | 31.76048 | 62.04861 | 12.90306 | 0.2465678 | 0.21231607 | 2.7827924 | 20 | 9 2.5 | 20.1 |
| 170048 2002 <i>VT</i> ₅₃ | 15.9 | X | 21.92556 | 299.08748 | 78.28443 | 6.91091 | 0.0688022 | 0.22516299 | 2.6759093 | 20 | 12 25.4 | 19.4 |
| 170049 2002 <i>VY</i> ₅₄ | 15.2 | X | 174.48103 | 35.88680 | 303.28707 | 9.19210 | 0.1074099 | 0.18726341 | 3.0257574 | 20 | 2 5.9 | 19.9 |
| 170050 2002 <i>VY</i> ₅₄ | 15.9 | X | 109.25751 | 356.08363 | 350.09618 | 1.55830 | 0.0936385 | 0.23295831 | 2.6158765 | 20 | — | — |
| 170051 2002 <i>VV</i> ₅₇ | 15.6 | X | 137.29540 | 281.69290 | 129.91883 | 5.45748 | 0.1981440 | 0.19118048 | 2.9842854 | 20 | 4 5.5 | 20.4 |
| 170052 2002 <i>VG</i> ₆₀ | 15.7 | X | 100.24619 | 256.01384 | 189.66417 | 3.96583 | 0.1635401 | 0.18816979 | 3.0160332 | 20 | 4 3.2 | 19.9 |
| 170053 2002 <i>VH</i> ₆₅ | 15.5 | X | 322.22031 | 243.31242 | 91.54065 | 4.66675 | 0.1052319 | 0.20940391 | 2.8085330 | 20 | 7 26.1 | 18.8 |
| 170054 2002 <i>VM</i> ₆₈ | 15.0 | X | 156.46399 | 40.72207 | 314.07402 | 9.53245 | 0.1258985 | 0.18742890 | 3.0239760 | 20 | 2 8.5 | 19.7 |
| 170055 2002 <i>VQ</i> ₇₃ | 14.9 | X | 136.53649 | 130.30946 | 214.78307 | 17.59108 | 0.1018718 | 0.18092385 | 3.0960324 | 20 | 1 4.0 | 19.8 |
| 170056 2002 <i>VO</i> ₇₅ | 15.1 | X | 329.54469 | 329.74034 | 143.35632 | 6.09378 | 0.1553916 | 0.17109849 | 3.2134529 | 20 | — | — |
| 170057 2002 <i>VB</i> ₈₀ | 15.0 | X | 96.22068 | 209.59432 | 215.03626 | 9.77779 | 0.1060167 | 0.18416818 | 3.0595648 | 20 | 2 21.1 | 19.4 |
| 170058 2002 <i>VR</i> ₈₁ | 14.9 | X | 63.54485 | 12.42507 | 91.76469 | 14.66536 | 0.1066341 | 0.18330128 | 3.0692037 | 20 | 3 8.0 | 19.1 |
| 170059 2002 <i>VD</i> ₈₃ | 14.9 | X | 48.80883 | 337.16049 | 150.30250 | 4.53931 | 0.1687975 | 0.18380010 | 3.0636481 | 20 | 3 16.9 | 18.4 |
| 170060 2002 <i>VP</i> ₈₃ | 15.0 | X | 55.02762 | 244.26188 | 232.51856 | 15.64684 | 0.2368968 | 0.18203258 | 3.0834481 | 20 | 3 16.5 | 18.8 |
| 170061 2002 <i>VT</i> ₈₃ | 15.1 | X | 338.94829 | 279.35527 | 97.60480 | 13.68052 | 0.0376920 | 0.21388278 | 2.7691863 | 20 | 10 27.1 | 18.9 |
| 170062 2002 <i>VE</i> ₈₈ | 15.8 | X | 103.85417 | 33.99997 | 41.81026 | 8.88953 | 0.1560944 | 0.18697136 | 3.0289073 | 20 | 3 28.4 | 20.2 |
| 170063 2002 <i>VP</i> ₉₂ | 15.8 | X | 229.77565 | 41.48760 | 100.25821 | 3.05754 | 0.0698647 | 0.21711384 | 2.7416439 | 20 | 10 31.2 | 19.5 |
| 170064 2002 <i>VA</i> ₉₃ | 15.0 | X | 3.97107 | 61.26312 | 80.42266 | 12.81670 | 0.0550048 | 0.18108585 | 3.0941857 | 20 | 1 21.8 | 19.2 |
| 170065 2002 <i>VQ</i> ₉₆ | 14.9 | X | 89.97018 | 164.22008 | 263.54846 | 10.19100 | 0.1018973 | 0.18605206 | 3.0388765 | 20 | 2 15.3 | 19.2 |
| 170066 2002 <i>VU</i> ₁₀₆ | 15.1 | X | 218.06242 | 233.27782 | 38.35761 | 16.56846 | 0.0611114 | 0.18190843 | 3.0848508 | 20 | 1 2.9 | 20.0 |
| 170067 2002 <i>VU</i> ₁₀₈ | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|------------|----|---------|----------|
| 170081 2002 WL ₉ | 15.5 | X | 124.62742 | 302.16612 | 60.74105 | 1.53373 | 0.1061774 | 0.18098308 | 3.0953570 | 20 | 1 15.7 | 19.9 |
| 170082 2002 WK ₁₂ | 15.0 | X | 49.89381 | 341.39880 | 126.94153 | 16.81332 | 0.1691170 | 0.18103075 | 3.0948134 | 20 | 2 24.7 | 18.7 |
| 170083 2002 WF ₁₆ | 15.3 | X | 118.44344 | 311.92465 | 136.58111 | 10.62771 | 0.1048726 | 0.18971911 | 2.9995906 | 20 | 4 23.9 | 19.9 |
| 170084 2002 WZ ₁₆ | 15.1 | X | 139.77777 | 274.70718 | 205.83724 | 12.32390 | 0.1485701 | 0.19574668 | 2.9376933 | 20 | 6 24.2 | 20.0 |
| 170085 2002 XU ₁ | 15.4 | X | 44.26308 | 43.78180 | 85.08376 | 10.13876 | 0.0959940 | 0.18433599 | 3.0577077 | 20 | 3 8.0 | 19.4 |
| 170086 2002 XR ₁₄ | 18.0 | X | 190.46640 | 120.11755 | 75.66568 | 2.13004 | 0.6253016 | 0.37473867 | 1.9053892 | 20 | 10 31.1 | 21.7 |
| 170087 2002 XD ₁₅ | 15.4 | X | 266.46772 | 185.57733 | 292.51033 | 12.53922 | 0.2432988 | 0.21918640 | 2.7243338 | 20 | 10 15.1 | 19.2 |
| 170088 2002 XV ₁₇ | 16.1 | X | 129.43093 | 39.76963 | 20.84401 | 0.35210 | 0.0975730 | 0.18780010 | 3.0199900 | 20 | 3 27.9 | 20.6 |
| 170089 2002 XR ₃₅ | 15.6 | X | 244.38679 | 202.41264 | 255.81979 | 7.30396 | 0.1146544 | 0.21085047 | 2.7956727 | 20 | 9 10.9 | 19.6 |
| 170090 2002 XK ₄₁ | 15.6 | X | 282.60908 | 217.32066 | 86.57523 | 3.07429 | 0.0394766 | 0.19320793 | 2.9633714 | 20 | 4 26.2 | 19.7 |
| 170091 2002 XK ₄₅ | 15.6 | X | 219.70549 | 308.19006 | 76.64455 | 3.19058 | 0.1061973 | 0.19696618 | 2.9255551 | 20 | 5 16.0 | 20.0 |
| 170092 2002 XE ₅₄ | 16.5 | X | 348.42181 | 291.26820 | 141.54489 | 2.23468 | 0.1234641 | 0.22394022 | 2.6856412 | 20 | — | — |
| 170093 2002 XJ ₅₆ | 14.8 | X | 232.09539 | 0.75534 | 29.22519 | 18.88774 | 0.2629723 | 0.19781807 | 2.9171798 | 20 | 5 17.9 | 20.0 |
| 170094 2002 XQ ₅₆ | 15.7 | X | 81.37846 | 47.60380 | 30.86778 | 1.70696 | 0.1330657 | 0.18380373 | 3.0636078 | 20 | 2 27.2 | 19.7 |
| 170095 2002 XH ₅₇ | 14.8 | X | 52.58645 | 63.98430 | 60.72378 | 25.05637 | 0.1504941 | 0.17892230 | 3.1190792 | 20 | 4 1.7 | 19.2 |
| 170096 2002 XV ₅₇ | 15.0 | X | 55.89151 | 4.06913 | 89.30147 | 5.65980 | 0.1733946 | 0.17875109 | 3.12210705 | 20 | 2 15.8 | 18.7 |
| 170097 2002 XW ₅₉ | 15.0 | X | 27.20949 | 187.97235 | 341.13461 | 9.47695 | 0.0444214 | 0.18757362 | 3.0224204 | 20 | 3 23.3 | 19.0 |
| 170098 2002 XH ₆₂ | 14.5 | X | 338.21150 | 98.73024 | 83.79300 | 16.26969 | 0.1929505 | 0.17748491 | 3.1358967 | 20 | 1 20.8 | 18.5 |
| 170099 2002 XV ₆₂ | 14.9 | X | 106.71373 | 62.20785 | 52.22852 | 10.56422 | 0.0423395 | 0.19122308 | 2.9838421 | 20 | 5 1.3 | 19.0 |
| 170100 2002 XP ₆₇ | 14.9 | X | 28.59611 | 313.85931 | 243.59380 | 9.01785 | 0.0268316 | 0.19190580 | 2.9767611 | 20 | 4 30.8 | 19.0 |
| 170101 2002 XM ₇₀ | 15.0 | X | 98.96207 | 327.40887 | 70.95417 | 12.37113 | 0.0819506 | 0.17908556 | 3.1171832 | 20 | 1 26.9 | 19.5 |
| 170102 2002 XM ₇₄ | 14.9 | X | 78.37428 | 209.30693 | 282.37113 | 8.55018 | 0.0469180 | 0.18905656 | 3.0065947 | 20 | 4 12.6 | 19.2 |
| 170103 2002 XT ₇₄ | 14.3 | X | 14.34542 | 236.78893 | 271.41960 | 15.49618 | 0.1217084 | 0.18009617 | 3.1055109 | 20 | 2 4.7 | 18.3 |
| 170104 2002 XR ₇₅ | 14.6 | X | 23.78121 | 28.46948 | 76.76650 | 16.30137 | 0.0959157 | 0.17504742 | 3.1649407 | 20 | 1 3.5 | 18.6 |
| 170105 2002 XA ₈₅ | 15.4 | X | 40.97473 | 158.42840 | 313.66706 | 3.53160 | 0.1337829 | 0.18022610 | 3.1040182 | 20 | 2 8.7 | 19.1 |
| 170106 2002 XW ₈₇ | 14.9 | X | 95.73788 | 85.87801 | 337.02415 | 10.13511 | 0.1281025 | 0.18386511 | 3.0629260 | 20 | 2 25.3 | 19.1 |
| 170107 2002 XJ ₈₈ | 15.4 | X | 63.42643 | 78.66687 | 24.71097 | 11.81590 | 0.1240060 | 0.18026975 | 3.1035171 | 20 | 3 7.6 | 19.5 |
| 170108 2002 XW ₈₉ | 15.1 | X | 39.21025 | 201.82328 | 225.45612 | 16.71298 | 0.2216740 | 0.17469944 | 3.1691420 | 20 | — | — |
| 170109 2002 XX ₉₂ | 14.7 | X | 77.95458 | 195.42192 | 269.03427 | 4.56361 | 0.1703933 | 0.18464017 | 3.0543485 | 20 | 3 28.5 | 18.8 |
| 170110 2002 XH ₉₅ | 15.8 | X | 124.15414 | 313.34822 | 79.17873 | 1.34501 | 0.1838330 | 0.18580588 | 3.0415602 | 20 | 2 27.9 | 20.4 |
| 170111 2002 XH ₁₀₁ | 15.5 | X | 67.89197 | 41.87173 | 77.25235 | 13.21866 | 0.1083194 | 0.18542509 | 3.0457229 | 20 | 4 2.8 | 19.7 |
| 170112 2002 XK ₁₀₂ | 15.4 | X | 88.39587 | 183.56553 | 249.04488 | 7.68078 | 0.0474174 | 0.18257075 | 3.0773856 | 20 | 2 13.3 | 19.8 |
| 170113 2002 XJ ₁₀₃ | 15.1 | X | 137.63635 | 328.94595 | 80.27317 | 10.78067 | 0.1027660 | 0.18604339 | 3.0389710 | 20 | 3 29.3 | 19.8 |
| 170114 2002 XN ₁₀₄ | 15.4 | X | 124.15650 | 303.24547 | 81.19052 | 10.74614 | 0.1449277 | 0.18301653 | 3.0723864 | 20 | 2 17.4 | 20.1 |
| 170115 2002 XV ₁₀₅ | 15.2 | X | 165.88992 | 81.36564 | 282.34053 | 9.41263 | 0.1438318 | 0.18838435 | 3.0137427 | 20 | 2 25.1 | 20.2 |
| 170116 2002 XA ₁₁₀ | 15.4 | X | 113.27848 | 197.69886 | 267.11465 | 9.26599 | 0.0693714 | 0.19169759 | 2.9789162 | 20 | 4 27.0 | 19.8 |
| 170117 2002 YD ₁₃ | 14.9 | X | 92.18713 | 195.19018 | 245.44243 | 8.02157 | 0.0560802 | 0.18344473 | 3.0676035 | 20 | 2 28.4 | 19.4 |
| 170118 2002 YJ ₁₅ | 17.1 | X | 202.25245 | 74.05897 | 323.65432 | 18.25042 | 0.1050004 | 0.36162531 | 1.9511777 | 20 | 4 30.4 | 20.2 |
| 170119 2002 YY ₁₆ | 15.0 | X | 119.86150 | 308.48976 | 77.87109 | 12.12137 | 0.0958839 | 0.18160579 | 3.0882771 | 20 | 2 8.9 | 19.6 |
| 170120 2002 YR ₁₈ | 15.2 | X | 114.65835 | 318.12982 | 95.77028 | 6.16772 | 0.2440739 | 0.18468829 | 3.0538179 | 20 | 3 24.0 | 20.0 |
| 170121 2002 YE ₂₃ | 15.2 | X | 77.29055 | 151.82603 | 278.82793 | 9.20846 | 0.0693714 | 0.17835360 | 3.1257060 | 20 | 2 7.9 | 19.4 |
| 170122 2002 YU ₂₆ | 14.3 | X | 343.69443 | 208.87734 | 287.94288 | 20.32032 | 0.0969427 | 0.17109812 | 3.2134574 | 20 | — | — |
| 170123 2002 YV ₃₂ | 15.0 | X | 42.61099 | 49.27560 | 65.25737 | 9.80532 | 0.1506361 | 0.18098213 | 3.0953677 | 20 | 2 20.6 | 18.8 |
| 170124 2003 AE ₄ | 16.9 | X | 273.89258 | 293.10229 | 142.25211 | 23.67159 | 0.0810050 | 0.38100465 | 1.8844409 | 20 | 11 19.3 | 19.1 |
| 170125 2003 AL ₄ | 14.8 | X | 328.44955 | 96.07796 | 98.62700 | 14.48812 | 0.0786799 | 0.17741037 | 3.1367751 | 20 | 2 6.9 | 19.1 |
| 170126 2003 AT ₉ | 15.6 | X | 124.93521 | 121.01625 | 306.92532 | 0.94064 | 0.1447226 | 0.18803790 | 3.0174433 | 20 | 4 5.6 | 20.1 |
| 170127 2003 AZ ₁₂ | 14.3 | X | 27.20095 | 0.19145 | 119.97760 | 28.74630 | 0.1249455 | 0.17595064 | 3.1541002 | 20 | 1 27.9 | 18.0 |
| 170128 2003 AN ₁₇ | 14.9 | X | 88.39834 | 109.24957 | 332.80999 | 13.07776 | 0.1264244 | 0.18224194 | 3.0810861 | 20 | 3 7.9 | 19.2 |
| 170129 2003 AF ₁₉ | 15.7 | X | 86.25873 | 357.98131 | 104.22327 | 6.64993 | 0.1303241 | 0.18121552 | 3.0927095 | 20 | 4 5.8 | 20.0 |
| 170130 2003 AH ₁₉ | 15.1 | X | 213.45273 | 105.80233 | 68.93723 | 24.95237 | 0.2082709 | 0.21512054 | 2.7585538 | 20 | 11 10.9 | 19.6 |
| 170131 2003 AC ₂₆ | 15.3 | X | 42.48193 | 167.04449 | 296.02036 | 9.40654 | 0.1214163 | 0.17604913 | 3.1529237 | 20 | 1 29.8 | 19.2 |
| 170132 2003 AK ₂₇ | 14.7 | X | 86.70252 | 283.69782 | 111.80921 | 16.44202 | 0.1557814 | 0.17434379 | 3.1734505 | 20 | 1 16.8 | 18.9 |
| 170133 2003 AB ₃₆ | 15.1 | X | 140.27590 | 278.07394 | 109.06554 | 12.35471 | 0.1662246 | 0.18554633 | 3.0443959 | 20 | 3 10.3 | 20.0 |
| 170134 2003 AZ ₄₂ | 14.7 | X | 99.33084 | 90.83117 | 297.29614 | 11.46090 | 0.0246466 | 0.17525238 | 3.1624726 | 20 | 1 6.4 | 19.1 |
| 170135 2003 AH ₅₆ | 15.4 | X | 96.23545 | 231.28687 | 221.27968 | 7.30931 | 0.1696924 | 0.18248072 | 3.0783976 | 20 | 4 6.8 | 19.8 |
| 170136 2003 AV ₆₂ | 15.6 | X | 0.56814 | 196.06093 | 325.37090 | 0.45590 | 0.1334320 | 0.17659488 | 3.1464245 | 20 | 2 5.0 | 19.3 |
| 170137 2003 AP ₆₅ | 14.8 | X | 39.14145 | 39.92835 | 73.72669 | 17.06811 | 0.1130986 | 0.17611057 | 3.1521903 | 20 | 2 12.9 | 19.0 |
| 170138 2003 AC ₆₇ | 15.1 | X | 106.51011 | 46.60574 | 70.05599 | 10.88747 | 0.1934320 | 0.18308394 | 3.0716323 | 20 | 5 22.8 | 19.7 |
| 170139 2003 AM ₇₀ | 14.7 | X | 114.14330 | 292.59898 | 91.21184 | 27.42602 | 0.1968905 | 0.17717550 | 3.1395467 | 20 | 2 14.2 | 19.8 |
| 170140 2003 AQ ₇₁ | 15.9 | X | 348.88850 | 22.10585 | 285.50155 | 19.65002 | 0.0556859 | 0.36789896 | 1.9289324 | 20 | 8 11.8 | 17.8 |
| 170141 2003 AQ ₇₆ | 15.3 | X | 47.21059 | 52.30628 | 54.98645 | 12.29166 | 0.2848243 | 0.17659971 | 3.1463671 | 20 | 3 10.1 | 18.7 |
| 170142 2003 AH ₇₉ | 15.0 | X | 118.64630 | 14.64698 | 60.44222 | 18.72351 | 0.1934168 | 0.18256015 | 3.0775047 | 20 | 4 20.4 | 19.9 |
| 170143 2003 AD ₈₁ | 15.4 | X | 93.44883 | 44.33235 | 6.37669 | 16.56306 | 0.2884110 | 0.18016146 | 3.1047606 | 20 | 3 5.8 | 19.9 |
| 170144 2003 AN ₈₁ | 15.0 | X | 36.29717 | 55.70830 | 55.97253 | 16.84779 | 0.0562249 | 0.17574911 | 3.1565109 | 20 | 2 2.9 | 19.5 |
| 170145 2003 BF ₁ | 15.8 | X | 298.93543 | 270.15493 | 144.20435 | 5.02588 | 0.2422575 | 0.21125753 | 2.7920804 | 20 | 9 18.8 | 18.5 |
| 170146 2003 BX ₁₈ | 16.4 | X | 330.97308 | 156.56176 | 306.53039 | 23.11374 | 0.1059788 | 0.38947608 | 1.8570155 | 20 | — | — |
| 170147 2003 BA ₂₉ | 15.1 | X | 74.66811 | 323.60038 | 117.96917 | 12.66396 | 0.1326729 | 0.18062525 | 3.0994436 | 20 | 2 24.3 | 19.2 |
| 170148 2003 BZ ₄₈ | 14.8 | X | 155.65518 | 67.13239 | 323.14589 | 15.46665 | 0.2412528 | 0.18167250 | 3.0875210 | 20 | 3 21.2 | 20.3 |
| 170149 2003 BB ₄₉ | 15.2 | X | 120.75217 | 99.94036 | 136.85132 | 9.16642 | 0.2182118 | 0.20129518 | 2.8834591 | 20 | 11 3.5 | 20.2 |
| 170150 2003 BW ₈₈ | 15.1 | X | 196.96011 | 70.08506 | 301.48775 | 7.76456 | 0.0957455 | 0.18390175 | 3.0625191 | 20 | 4 3.1 | 20.0 |
| 170151 2003 CE ₁ | 16.5 | X | 231.85313 | 240.80481 | 142.21611 | 24.52375 | 0.1258760 | 0.36007003 | 1.9567923 | 20 | 5 30.8 | 19.7 |
| 170152 2003 CU ₁₄ | 15.2 | X | 57.53794 | 287.88077 | 166.45057 | 7.45217 | 0.1187879 | 0.17405716 | 3.1769335 | 20 | 2 10.9 | 19.3 |
| 170153 2003 CY ₁₄ | 15.5 | X | 64.70627 | 136.68866 | 70.87653 | 3.69442 | 0.1577919 | 0.18945990 | 3.0023260 | 20 | 7 23. | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 170161 | 2003 | EX ₅₉ | 16.3 | X | 142.32236 | 100.61033 | 58.75334 | 22.15977 | 0.0744709 | 0.36183671 | 1.9504177 | 20 | 9 12.9 | 19.3 |
| 170162 | | Nicolashayek | 15.4 | X | 335.78902 | 246.01721 | 9.88761 | 1.67503 | 0.1012686 | 0.17865765 | 3.1221586 | 20 | 4 29.4 | 19.4 |
| 170163 | 2003 | FE ₃₁ | 14.8 | X | 241.16677 | 104.80681 | 43.34234 | 10.49589 | 0.0144831 | 0.15030631 | 3.5033585 | 20 | 11 14.4 | 19.8 |
| 170164 | 2003 | FS ₄₁ | 14.8 | X | 350.04301 | 116.72962 | 67.50790 | 6.78684 | 0.0718788 | 0.17053735 | 3.2204981 | 20 | 2 26.3 | 19.1 |
| 170165 | 2003 | FN ₄₄ | 16.9 | X | 292.70048 | 316.25778 | 347.42518 | 7.30351 | 0.1600931 | 0.29199318 | 2.2501989 | 20 | 4 11.2 | 19.5 |
| 170166 | 2003 | FC ₅₅ | 16.2 | X | 6.82880 | 168.57957 | 130.11428 | 9.21572 | 0.2393391 | 0.29911980 | 2.2143144 | 20 | 10 2.1 | 18.0 |
| 170167 | 2003 | FN ₇₈ | 15.2 | X | 310.12711 | 274.20307 | 28.07185 | 8.03130 | 0.0579178 | 0.18102192 | 3.0949142 | 20 | 5 25.9 | 19.4 |
| 170168 | 2003 | FF ₈₆ | 15.5 | X | 49.04299 | 201.66600 | 308.97656 | 3.98823 | 0.1170199 | 0.17543943 | 3.1602243 | 20 | 4 8.1 | 19.6 |
| 170169 | 2003 | FG ₁₀₆ | 15.0 | X | 303.33594 | 267.73045 | 38.86670 | 9.68116 | 0.0870133 | 0.17999854 | 3.1066337 | 20 | 5 18.4 | 19.2 |
| 170170 | 2003 | FY ₁₃₀ | 17.0 | X | 27.94575 | 312.76583 | 337.61564 | 3.38828 | 0.2138079 | 0.30189342 | 2.2007310 | 20 | 10 17.0 | 19.4 |
| 170171 | 2003 | GZ ₁₆ | 15.2 | X | 77.37400 | 37.73448 | 129.02326 | 12.13646 | 0.2130931 | 0.18146572 | 3.0898661 | 20 | 6 24.8 | 19.7 |
| 170172 | 2003 | HV ₇ | 16.5 | X | 61.48652 | 287.22011 | 29.86168 | 1.27647 | 0.2515622 | 0.30949971 | 2.1645247 | 20 | — | — |
| 170173 | 2003 | HF ₃₈ | 16.4 | X | 17.90974 | 30.66231 | 248.22309 | 3.26432 | 0.1721262 | 0.29846999 | 2.2175271 | 20 | 9 2.4 | 18.3 |
| 170174 | 2003 | KF ₅ | 17.4 | X | 32.98902 | 80.85192 | 232.79660 | 3.84599 | 0.1868399 | 0.30571995 | 2.1823289 | 20 | 11 24.2 | 20.0 |
| 170175 | 2003 | KE ₉ | 16.5 | X | 27.70545 | 155.19904 | 114.34853 | 7.20349 | 0.1790946 | 0.29850066 | 2.2173752 | 20 | 9 12.9 | 18.6 |
| 170176 | 2003 | MU ₁ | 16.7 | X | 308.57787 | 213.55783 | 70.24862 | 3.41287 | 0.3024343 | 0.28243047 | 2.3007090 | 20 | 3 18.6 | 19.5 |
| 170177 | 2003 | MX ₁ | 16.3 | X | 276.84075 | 182.50513 | 127.28182 | 5.62003 | 0.2421353 | 0.27842596 | 2.3227166 | 20 | 3 25.7 | 19.6 |
| 170178 | 2003 | MR ₂ | 16.9 | X | 260.10226 | 350.03171 | 311.00767 | 2.87050 | 0.2903166 | 0.27554970 | 2.3388520 | 20 | 2 21.6 | 20.6 |
| 170179 | 2003 | MR ₃ | 16.3 | X | 288.13211 | 4.63938 | 297.93210 | 5.28552 | 0.1898805 | 0.28148943 | 2.3058337 | 20 | 3 30.3 | 19.5 |
| 170180 | 2003 | MP ₅ | 15.8 | X | 168.38923 | 46.84447 | 250.45881 | 8.36860 | 0.2101259 | 0.26047183 | 2.4282620 | 20 | — | — |
| 170181 | 2003 | MS ₆ | 16.6 | X | 292.16673 | 91.58772 | 241.16033 | 5.00968 | 0.2104102 | 0.28281236 | 2.2986373 | 20 | 5 17.6 | 19.2 |
| 170182 | 2003 | MR ₈ | 16.6 | X | 258.60362 | 79.28352 | 247.37666 | 5.51053 | 0.1330692 | 0.27885408 | 2.3203387 | 20 | 4 5.1 | 19.9 |
| 170183 | 2003 | MB ₁₁ | 17.5 | X | 275.99268 | 114.89109 | 202.05415 | 3.43001 | 0.2148544 | 0.28096035 | 2.3087276 | 20 | 4 3.7 | 20.6 |
| 170184 | 2003 | MV ₁₁ | 16.3 | X | 262.75204 | 170.66251 | 128.40000 | 6.23590 | 0.2357990 | 0.27417020 | 2.3466908 | 20 | 2 27.5 | 20.0 |
| 170185 | 2003 | NY ₃ | 16.7 | X | 280.01723 | 346.65003 | 295.93427 | 5.86428 | 0.2174363 | 0.27578648 | 2.3375132 | 20 | 3 4.3 | 19.8 |
| 170186 | 2003 | NS ₆ | 16.6 | X | 319.21809 | 232.96538 | 47.94531 | 5.91578 | 0.1660193 | 0.28438402 | 2.2901605 | 20 | 4 23.1 | 18.6 |
| 170187 | 2003 | NF ₁₀ | 17.2 | X | 275.62552 | 94.52454 | 223.17593 | 4.53079 | 0.1098368 | 0.27999023 | 2.3140574 | 20 | 4 18.8 | 20.2 |
| 170188 | 2003 | OE ₂ | 17.0 | X | 285.00376 | 225.76204 | 99.55955 | 2.49098 | 0.1986738 | 0.28288593 | 2.2982388 | 20 | 4 29.7 | 19.9 |
| 170189 | 2003 | OF ₄ | 16.4 | X | 184.27167 | 133.27977 | 245.69552 | 2.45812 | 0.1913805 | 0.27255435 | 2.3559567 | 20 | 3 29.9 | 20.3 |
| 170190 | 2003 | OU ₄ | 16.2 | X | 236.16548 | 332.67000 | 319.95962 | 5.77494 | 0.1253034 | 0.26994570 | 2.3711104 | 20 | 2 1.4 | 19.5 |
| 170191 | 2003 | OY ₄ | 16.4 | X | 214.56022 | 217.70588 | 146.25649 | 2.44175 | 0.2289540 | 0.27447485 | 2.3449541 | 20 | 4 7.2 | 20.3 |
| 170192 | 2003 | OH ₅ | 16.6 | X | 20.10454 | 344.22838 | 301.80841 | 2.95977 | 0.1449959 | 0.29250421 | 2.2475773 | 20 | 9 12.8 | 18.7 |
| 170193 | 2003 | OA ₆ | 16.3 | X | 246.29712 | 36.53582 | 274.85345 | 4.35380 | 0.2185242 | 0.27441541 | 2.3452927 | 20 | 2 26.2 | 20.2 |
| 170194 | 2003 | OL ₇ | 16.1 | X | 77.18907 | 77.93501 | 216.19309 | 5.74386 | 0.2136677 | 0.24545130 | 2.5263440 | 20 | 12 7.7 | 20.0 |
| 170195 | 2003 | OP ₇ | 16.8 | X | 313.79021 | 93.46185 | 190.29295 | 5.24859 | 0.1728936 | 0.28237377 | 2.3010170 | 20 | 4 16.6 | 19.1 |
| 170196 | 2003 | OM ₈ | 16.6 | X | 249.16272 | 334.23771 | 8.00366 | 3.01524 | 0.1793019 | 0.27895413 | 2.3197839 | 20 | 4 12.4 | 19.8 |
| 170197 | 2003 | OW ₉ | 17.0 | X | 224.83306 | 105.87972 | 192.43067 | 4.39038 | 0.1407726 | 0.26957940 | 2.3732578 | 20 | 1 26.5 | 20.7 |
| 170198 | 2003 | OD ₁₀ | 16.0 | X | 167.08749 | 41.52362 | 301.70085 | 6.84497 | 0.1435201 | 0.26496371 | 2.4007400 | 20 | 1 28.5 | 19.6 |
| 170199 | 2003 | OV ₁₆ | 17.1 | X | 307.35353 | 115.77248 | 188.10368 | 3.70600 | 0.1717885 | 0.28357497 | 2.2945144 | 20 | 5 6.6 | 19.4 |
| 170200 | 2003 | OP ₁₉ | 16.5 | X | 37.86060 | 110.65615 | 212.60941 | 6.21633 | 0.2325740 | 0.24103348 | 2.5571202 | 20 | 12 5.2 | 20.0 |
| 170201 | 2003 | OR ₁₉ | 16.7 | X | 259.10218 | 82.14255 | 188.21030 | 8.43632 | 0.1411252 | 0.27038418 | 2.3685462 | 20 | 1 24.1 | 20.3 |
| 170202 | 2003 | OX ₂₂ | 15.9 | X | 247.28022 | 36.95410 | 359.97409 | 13.46139 | 0.2345740 | 0.27895411 | 2.3197840 | 20 | 6 16.4 | 19.6 |
| 170203 | 2003 | OX ₂₃ | 17.3 | X | 142.36414 | 151.21217 | 199.89260 | 5.95181 | 0.1611956 | 0.26263994 | 2.4148799 | 20 | 1 13.8 | 20.7 |
| 170204 | 2003 | OR ₂₆ | 17.4 | X | 280.26016 | 144.45339 | 175.08178 | 2.21922 | 0.1698429 | 0.28076070 | 2.3098219 | 20 | 4 19.5 | 20.4 |
| 170205 | 2003 | OD ₃₁ | 16.2 | X | 285.22424 | 359.46102 | 318.59430 | 6.65446 | 0.1298324 | 0.27815887 | 2.3242033 | 20 | 4 26.5 | 19.2 |
| 170206 | 2003 | PP ₅ | 16.9 | X | 168.39438 | 159.70284 | 188.47887 | 5.41788 | 0.2170896 | 0.26458488 | 2.4030310 | 20 | 2 8.8 | 20.9 |
| 170207 | 2003 | PV ₅ | 16.9 | X | 203.35270 | 135.98451 | 184.49785 | 5.15835 | 0.2433357 | 0.26723671 | 2.3871075 | 20 | 2 4.1 | 21.0 |
| 170208 | 2003 | PF ₈ | 16.9 | X | 281.50258 | 144.59091 | 170.01643 | 6.65912 | 0.1298555 | 0.27879072 | 2.3206902 | 20 | 4 21.8 | 19.7 |
| 170209 | 2003 | PN ₈ | 16.6 | X | 187.28948 | 198.38284 | 166.10662 | 4.86082 | 0.2945505 | 0.26939745 | 2.3743262 | 20 | 3 18.1 | 20.9 |
| 170210 | 2003 | PU ₈ | 16.6 | X | 319.85175 | 334.68774 | 287.18676 | 3.19424 | 0.2288180 | 0.28088797 | 2.3091242 | 20 | 3 12.7 | 19.0 |
| 170211 | 2003 | PW ₈ | 17.0 | X | 236.60257 | 11.08181 | 322.35359 | 4.12477 | 0.1442726 | 0.27512067 | 2.3412829 | 20 | 3 21.1 | 20.6 |
| 170212 | 2003 | QS | 17.0 | X | 114.40237 | 130.54479 | 223.52463 | 3.77767 | 0.1617749 | 0.25659795 | 2.4526407 | 20 | — | — |
| 170213 | 2003 | QX ₃ | 16.9 | X | 174.33659 | 54.87629 | 213.77828 | 0.45301 | 0.2000675 | 0.26815011 | 2.3816836 | 20 | 3 9.9 | 20.8 |
| 170214 | 2003 | QU ₄ | 16.4 | X | 324.87284 | 24.45106 | 253.76503 | 6.36589 | 0.1718138 | 0.28164475 | 2.3049859 | 20 | 4 25.9 | 18.6 |
| 170215 | 2003 | QV ₅ | 16.7 | X | 254.78178 | 249.31330 | 27.34860 | 5.68307 | 0.2508802 | 0.27090860 | 2.3654886 | 20 | 1 24.3 | 20.7 |
| 170216 | 2003 | QN ₆ | 16.7 | X | 190.45865 | 21.11481 | 358.66933 | 0.40631 | 0.1759325 | 0.27103799 | 2.3647357 | 20 | 4 6.2 | 20.4 |
| 170217 | 2003 | QK ₇ | 17.1 | X | 191.48408 | 15.90027 | 340.65787 | 1.10078 | 0.1958810 | 0.26918324 | 2.3755857 | 20 | 3 9.5 | 21.0 |
| 170218 | 2003 | QT ₇ | 17.4 | X | 171.43524 | 234.81885 | 148.39070 | 2.86371 | 0.2013646 | 0.26865805 | 2.3786807 | 20 | 3 26.5 | 21.2 |
| 170219 | 2003 | QG ₈ | 16.3 | X | 262.67227 | 159.08289 | 194.25518 | 6.42500 | 0.1369609 | 0.27980599 | 2.3150731 | 20 | 5 19.7 | 19.4 |
| 170220 | 2003 | QM ₁₁ | 16.5 | X | 212.14765 | 308.40560 | 354.15286 | 7.12659 | 0.1908351 | 0.26698791 | 2.3885903 | 20 | 1 23.4 | 20.4 |
| 170221 | 2003 | QC ₁₃ | 16.1 | X | 205.83559 | 222.32989 | 98.90816 | 3.69828 | 0.2035105 | 0.26627914 | 2.3928269 | 20 | 2 8.8 | 20.1 |
| 170222 | 2003 | QM ₁₃ | 16.1 | X | 260.93762 | 267.40491 | 6.01712 | 12.11955 | 0.2464048 | 0.26992566 | 2.3712278 | 20 | 1 28.1 | 20.2 |
| 170223 | 2003 | QB ₁₆ | 16.7 | X | 202.94990 | 136.22012 | 218.96688 | 4.44731 | 0.2052358 | 0.27005832 | 2.3704511 | 20 | 3 16.0 | 20.6 |
| 170224 | 2003 | QD ₁₆ | 17.0 | X | 89.97649 | 50.98583 | 273.17609 | 4.71192 | 0.0336802 | 0.30608281 | 2.1806037 | 20 | — | — |
| 170225 | 2003 | QY ₁₆ | 16.9 | X | 220.71745 | 350.01638 | 334.91637 | 0.87960 | 0.2685271 | 0.27035615 | 2.3687099 | 20 | 2 22.9 | 20.9 |
| 170226 | 2003 | QF ₁₈ | 16.8 | X | 148.49233 | 0.20675 | 20.00971 | 3.04463 | 0.2009509 | 0.26447286 | 2.4037094 | 20 | 3 2.6 | 20.4 |
| 170227 | 2003 | QL ₁₈ | 16.7 | X | 117.75979 | 201.63493 | 168.63838 | 1.38154 | 0.1946036 | 0.25839879 | 2.4412321 | 20 | 1 15.9 | 19.8 |
| 170228 | 2003 | QG ₁₉ | 16.9 | X | 215.14644 | 195.03865 | 119.02372 | 3.44550 | 0.1927249 | 0.26750369 | 2.3855189 | 20 | 2 7.2 | 20.8 |
| 170229 | 2003 | QC ₂₀ | 16.2 | X | 213.98064 | 238.51357 | 138.75340 | 7.50757 | 0.1356960 | 0.27433125 | 2.3457723 | 20 | 4 29.3 | 19.8 |
| 170230 | 2003 | QK ₂₀ | 16.9 | X | 157.72683 | 253.80991 | 10 | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170241 2003 QM ₃₄ | 16.8 | X | 215.14884 | 76.58779 | 332.14174 | 6.75355 | 0.1002208 | 0.28136558 | 2.3065103 | 20 | 6 10.9 | 20.0 |
| 170242 2003 QL ₃₅ | 16.9 | X | 136.74626 | 30.49927 | 2.62708 | 1.09691 | 0.1876302 | 0.26482438 | 2.4015819 | 20 | 3 5.1 | 20.3 |
| 170243 2003 QG ₃₆ | 16.4 | X | 224.09391 | 30.34789 | 332.65576 | 6.50262 | 0.1291676 | 0.27439130 | 2.3454301 | 20 | 4 15.3 | 19.9 |
| 170244 2003 QO ₃₆ | 17.0 | X | 118.43406 | 254.95654 | 141.90552 | 2.16434 | 0.1933076 | 0.26205317 | 2.4184834 | 20 | 2 19.8 | 20.3 |
| 170245 2003 QF ₃₈ | 16.8 | X | 238.39838 | 148.65201 | 152.19676 | 3.40171 | 0.1866383 | 0.27067371 | 2.3668569 | 20 | 2 10.2 | 20.7 |
| 170246 2003 QN ₄₁ | 16.3 | X | 180.16330 | 221.00307 | 145.81037 | 2.93867 | 0.2108202 | 0.26691450 | 2.3890282 | 20 | 3 13.9 | 20.1 |
| 170247 2003 QN ₄₃ | 16.9 | X | 188.36726 | 154.70087 | 163.82074 | 2.09198 | 0.2233374 | 0.26359072 | 2.4090693 | 20 | 1 22.1 | 20.8 |
| 170248 2003 QP ₄₃ | 16.5 | X | 185.84667 | 293.02275 | 142.73535 | 3.21292 | 0.1475841 | 0.27759766 | 2.3273347 | 20 | 6 14.2 | 20.0 |
| 170249 2003 QH ₄₅ | 17.2 | X | 196.82006 | 234.02292 | 90.41416 | 4.07677 | 0.1949485 | 0.26614813 | 2.3936121 | 20 | 2 5.3 | 21.1 |
| 170250 2003 QP ₄₆ | 16.1 | X | 349.67108 | 345.92688 | 23.11952 | 7.06749 | 0.3031318 | 0.23357043 | 2.6113043 | 20 | 11 27.8 | 18.2 |
| 170251 2003 QQ ₄₈ | 16.8 | X | 170.20828 | 56.11950 | 349.96659 | 1.77621 | 0.1781196 | 0.27160278 | 2.3614563 | 20 | 4 20.8 | 20.6 |
| 170252 2003 QS ₅₀ | 17.3 | X | 259.25968 | 207.85065 | 114.41828 | 2.30113 | 0.1990118 | 0.27511638 | 2.3413073 | 20 | 3 27.6 | 20.7 |
| 170253 2003 QZ ₅₀ | 16.9 | X | 42.71792 | 315.50163 | 63.80015 | 3.96919 | 0.1988888 | 0.24544423 | 2.5263926 | 20 | — | — |
| 170254 2003 QV ₅₃ | 16.8 | X | 185.17447 | 278.85100 | 76.25293 | 2.43548 | 0.2057133 | 0.26742154 | 2.3860075 | 20 | 3 4.1 | 20.6 |
| 170255 2003 QY ₅₄ | 16.7 | X | 235.50503 | 203.69065 | 107.03174 | 3.16858 | 0.2186492 | 0.27080230 | 2.3661075 | 20 | 2 19.6 | 20.7 |
| 170256 2003 QZ ₅₄ | 16.8 | X | 196.50822 | 221.32417 | 106.61624 | 3.60441 | 0.1871759 | 0.26611250 | 2.3938257 | 20 | 2 8.8 | 20.7 |
| 170257 2003 QA ₅₅ | 16.5 | X | 262.23783 | 229.38946 | 91.07330 | 3.15532 | 0.1133962 | 0.27569077 | 2.3380541 | 20 | 4 7.6 | 19.6 |
| 170258 2003 QH ₅₅ | 16.6 | X | 207.76632 | 239.32231 | 123.76211 | 6.11230 | 0.1590569 | 0.27209088 | 2.3586313 | 20 | 4 3.9 | 20.3 |
| 170259 2003 QJ ₅₆ | 16.4 | X | 260.24632 | 276.15264 | 25.22757 | 5.16314 | 0.2367524 | 0.27370499 | 2.3493492 | 20 | 2 28.8 | 20.2 |
| 170260 2003 QU ₅₆ | 16.6 | X | 186.25137 | 266.98840 | 52.64025 | 4.70328 | 0.2029193 | 0.26305521 | 2.4123377 | 20 | 1 22.4 | 20.5 |
| 170261 2003 QW ₅₆ | 16.6 | X | 217.37454 | 237.40116 | 88.67369 | 3.98851 | 0.1644762 | 0.26869458 | 2.3784650 | 20 | 2 25.4 | 20.3 |
| 170262 2003 QX ₅₇ | 16.0 | X | 168.10559 | 76.30564 | 272.27138 | 6.20172 | 0.1660814 | 0.26408878 | 2.4060395 | 20 | 2 5.3 | 19.7 |
| 170263 2003 QJ ₅₉ | 17.1 | X | 299.59520 | 249.61828 | 60.06006 | 3.31271 | 0.1809522 | 0.28008254 | 2.3135489 | 20 | 4 30.8 | 19.8 |
| 170264 2003 QW ₆₅ | 16.2 | X | 211.71015 | 141.62505 | 115.12195 | 7.89355 | 0.2180695 | 0.27115567 | 2.3640515 | 20 | 3 24.6 | 20.2 |
| 170265 2003 QH ₆₆ | 16.8 | X | 260.84055 | 350.13073 | 208.39234 | 1.64696 | 0.2192735 | 0.27389122 | 2.3482841 | 20 | 2 24.8 | 20.4 |
| 170266 2003 QR ₇₂ | 16.7 | X | 278.60314 | 64.27384 | 225.13371 | 6.71608 | 0.1176493 | 0.27453071 | 2.3446360 | 20 | 3 11.7 | 20.0 |
| 170267 2003 QM ₇₃ | 16.7 | X | 198.64665 | 139.41795 | 174.39966 | 5.15636 | 0.2482433 | 0.26545515 | 2.3977760 | 20 | 1 24.3 | 20.8 |
| 170268 2003 QY ₇₃ | 16.6 | X | 230.06498 | 359.86155 | 292.84226 | 7.64427 | 0.1793678 | 0.26856654 | 2.3792210 | 20 | 1 24.3 | 20.3 |
| 170269 2003 QC ₇₅ | 16.5 | X | 279.96181 | 344.77466 | 312.74627 | 6.85307 | 0.1185172 | 0.27566051 | 2.3382252 | 20 | 3 23.5 | 19.6 |
| 170270 2003 QG ₇₇ | 16.9 | X | 268.69686 | 94.34361 | 207.53028 | 4.53304 | 0.2742443 | 0.27463497 | 2.3440426 | 20 | 2 29.9 | 20.8 |
| 170271 2003 QL ₇₈ | 16.6 | X | 167.80540 | 33.54647 | 325.48968 | 5.19753 | 0.2412304 | 0.26289843 | 2.4132967 | 20 | 2 23.9 | 20.5 |
| 170272 2003 QC ₈₄ | 17.0 | X | 162.05269 | 76.94667 | 316.12194 | 1.97327 | 0.1827849 | 0.26913860 | 2.3758484 | 20 | 3 27.8 | 20.7 |
| 170273 2003 QO ₈₄ | 17.1 | X | 121.80552 | 0.51705 | 24.65994 | 1.10471 | 0.1873296 | 0.26124711 | 2.4234555 | 20 | 2 8.2 | 20.4 |
| 170274 2003 QO ₈₅ | 16.7 | X | 166.03332 | 122.90384 | 206.62104 | 6.22459 | 0.1292338 | 0.25994540 | 2.4315393 | 20 | 1 9.0 | 20.4 |
| 170275 2003 QD ₈₉ | 17.1 | X | 253.09205 | 192.79063 | 109.31725 | 2.27551 | 0.1836720 | 0.27246813 | 2.3564537 | 20 | 2 26.2 | 20.7 |
| 170276 2003 QH ₉₂ | 16.8 | X | 197.06791 | 113.09160 | 237.51347 | 1.88417 | 0.2499856 | 0.26785567 | 2.3834286 | 20 | 3 6.7 | 20.9 |
| 170277 2003 QW ₉₂ | 16.4 | X | 153.83452 | 347.02297 | 62.04539 | 6.22270 | 0.2246067 | 0.26803228 | 2.3823815 | 20 | 4 15.1 | 20.2 |
| 170278 2003 QD ₉₉ | 16.5 | X | 262.54419 | 218.68552 | 79.04320 | 6.25339 | 0.2230931 | 0.27472103 | 2.3435530 | 20 | 2 28.3 | 20.2 |
| 170279 2003 QE ₉₉ | 16.8 | X | 335.18119 | 230.80114 | 40.71354 | 5.93742 | 0.1554986 | 0.28265089 | 2.2995127 | 20 | 5 10.1 | 18.8 |
| 170280 2003 QY ₁₀₄ | 15.8 | X | 132.77118 | 352.80598 | 64.82609 | 13.28321 | 0.1747462 | 0.26295978 | 2.4129213 | 20 | 4 6.7 | 19.5 |
| 170281 2003 QY ₁₀₅ | 16.9 | X | 206.66344 | 171.34990 | 173.26046 | 2.27189 | 0.2441674 | 0.26854588 | 2.3793430 | 20 | 3 7.4 | 21.0 |
| 170282 2003 QY ₁₀₆ | 15.5 | X | 311.96147 | 115.04286 | 187.97970 | 6.65070 | 0.0205646 | 0.21826248 | 2.7320165 | 20 | 6 5.5 | 19.2 |
| 170283 2003 QR ₁₀₉ | 16.4 | X | 212.90961 | 340.82002 | 18.75313 | 6.91831 | 0.0962298 | 0.27387511 | 2.3483762 | 20 | 4 3.7 | 19.6 |
| 170284 2003 QC ₁₁₄ | 17.2 | X | 89.67361 | 10.51740 | 13.88103 | 2.71658 | 0.1878635 | 0.25426028 | 2.4676508 | 20 | — | — |
| 170285 2003 QO ₁₁₄ | 16.9 | X | 206.22879 | 294.28157 | 71.87211 | 3.48978 | 0.2128380 | 0.27147313 | 2.3622081 | 20 | 4 4.2 | 20.8 |
| 170286 2003 RT ₆ | 16.3 | X | 185.83052 | 65.06293 | 290.90954 | 5.63830 | 0.1247055 | 0.26572193 | 2.3961709 | 20 | 2 28.8 | 20.0 |
| 170287 2003 RA ₁₂ | 16.8 | X | 261.17737 | 123.66349 | 191.62203 | 6.11383 | 0.2515509 | 0.27650560 | 2.3334586 | 20 | 3 13.5 | 20.4 |
| 170288 2003 RD ₁₃ | 17.0 | X | 178.71205 | 208.53629 | 188.61305 | 0.95324 | 0.1841224 | 0.27067852 | 2.3668289 | 20 | 4 18.1 | 20.8 |
| 170289 2003 RV ₁₄ | 16.1 | X | 213.92049 | 275.60090 | 68.58824 | 3.03838 | 0.2015195 | 0.27045682 | 2.3681221 | 20 | 3 14.7 | 19.9 |
| 170290 2003 RE ₁₆ | 17.6 | X | 163.45448 | 359.68226 | 34.56454 | 1.66628 | 0.1937489 | 0.26797341 | 2.3827305 | 20 | 4 1.4 | 21.2 |
| 170291 2003 RL ₁₆ | 16.7 | X | 162.81391 | 118.98818 | 208.02415 | 7.12910 | 0.1450149 | 0.25975013 | 2.4327578 | 20 | 1 4.2 | 20.3 |
| 170292 2003 RL ₁₉ | 17.1 | X | 157.82940 | 145.22292 | 172.12972 | 1.60141 | 0.1536309 | 0.25763638 | 2.4460458 | 20 | — | — |
| 170293 2003 RM ₂₀ | 16.8 | X | 221.81828 | 159.68419 | 139.19626 | 2.76128 | 0.2115577 | 0.26597658 | 2.3946412 | 20 | 1 24.9 | 20.7 |
| 170294 2003 RQ ₂₀ | 16.5 | X | 176.92001 | 243.01639 | 124.95167 | 3.09799 | 0.2198728 | 0.26649001 | 2.3915645 | 20 | 3 13.5 | 20.4 |
| 170295 2003 SW | 17.2 | X | 112.46943 | 117.61838 | 301.58420 | 0.95533 | 0.2052870 | 0.26228033 | 2.4170867 | 20 | 3 13.9 | 20.3 |
| 170296 2003 SS ₇ | 16.7 | X | 283.58405 | 49.11418 | 221.30385 | 6.34999 | 0.1717460 | 0.27177601 | 2.3604527 | 20 | 2 14.9 | 20.1 |
| 170297 2003 SL ₁₁ | 16.6 | X | 121.74165 | 82.99218 | 329.05754 | 4.08640 | 0.1786867 | 0.26322026 | 2.4113292 | 20 | 3 11.2 | 20.0 |
| 170298 2003 SM ₁₁ | 16.8 | X | 98.64717 | 153.40015 | 282.63597 | 1.81424 | 0.1665618 | 0.26293257 | 2.4130878 | 20 | 3 12.6 | 19.6 |
| 170299 2003 SH ₁₂ | 16.7 | X | 211.59570 | 179.45711 | 154.65832 | 6.88940 | 0.1688203 | 0.26857925 | 2.3791459 | 20 | 2 28.6 | 20.5 |
| 170300 2003 SA ₁₄ | 16.9 | X | 165.40160 | 125.69275 | 280.32412 | 0.63986 | 0.1787115 | 0.26922624 | 2.3753327 | 20 | 4 16.7 | 20.6 |
| 170301 2003 ST ₁₄ | 17.2 | X | 264.80813 | 147.03713 | 161.23803 | 2.51696 | 0.2130620 | 0.27441636 | 2.3452873 | 20 | 3 12.9 | 20.5 |
| 170302 2003 SW ₁₄ | 16.8 | X | 257.23355 | 253.13553 | 20.00024 | 2.53555 | 0.1775643 | 0.26896541 | 2.3768681 | 20 | 2 2.5 | 20.3 |
| 170303 2003 SU ₁₇ | 17.3 | X | 191.94409 | 15.05230 | 312.48083 | 1.58606 | 0.1806876 | 0.26421004 | 2.4053033 | 20 | 2 3.7 | 21.0 |
| 170304 2003 SQ ₂₂ | 16.3 | X | 265.33104 | 86.28403 | 343.23551 | 1.60159 | 0.1937209 | 0.22678750 | 2.6631153 | 20 | 8 25.3 | 19.8 |
| 170305 2003 SP ₂₆ | 16.4 | X | 7.41753 | 165.17546 | 160.22226 | 3.68383 | 0.2847370 | 0.23448269 | 2.6045270 | 20 | 11 1.0 | 18.8 |
| 170306 Augustzátka | 16.2 | X | 140.04922 | 344.76901 | 40.09722 | 7.01877 | 0.1412278 | 0.26104389 | 2.4247131 | 20 | 2 25.7 | 19.7 |
| 170307 2003 SN ₃₃ | 17.1 | X | 262.35796 | 250.95517 | 51.38232 | 2.85654 | 0.2021133 | 0.27274951 | 2.3548327 | 20 | 3 5.4 | 20.6 |
| 170308 2003 SW ₃₅ | 16.5 | X | 187.52259 | 223.11230 | 90.59084 | 4.90825 | 0.1868703 | 0.26101609 | 2.4248853 | 20 | 1 15.1 | 20.3 |
| 170309 2003 SS ₃₆ | 15.9 | X | 169.42780 | 336.94796 | 4.71220 | 6.05735 | 0.1427327 | 0.26054665 | 2.4277971 | 20 | 1 31.6 | 19.6 |
| 170310 2003 SM ₃₈ | 15.3 | X | 236.17826 | 76.93308 | 286.48256 | 7.82078 | 0.0092571 | 0.21521324 | 2.7577616 | 20 | 5 14.5 | 19.1 |
| 170311 2003 SJ ₄₀ | 16.4 | X | 237.96386 | 119.72415 | 223.34772 | 5.93589 | 0.1717107 | 0.27252317 | 2.3561364 | 20 | 4 2.2 | 19.9 |
| 170312 2003 SD ₄₃ | 16.4 | X | 246.07259 | 86.33627 | 221.24058 | 5.61521 | 0.1561094 | 0.27173295 | 2.3607021 | 20 | 2 25.2 | 20.1 |
| 170313 2003 SU ₄₃ | 16.8 | X | 133.54368 | 170.45833 | 210.19009 | 2.79294 | 0.2472053 | 0.26146744 | 2.4220939 | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170321 2003 <i>ST</i> ₇₃ | 15.9 | X | 260.63546 | 30.07379 | 307.24120 | 1.60706 | 0.0966155 | 0.21644268 | 2.7473086 | 20 | 4 30.8 | 19.9 |
| 170322 2003 <i>SG</i> ₇₄ | 16.1 | X | 302.89043 | 212.14218 | 252.23352 | 2.92596 | 0.2031898 | 0.23985908 | 2.5654602 | 20 | 12 24.8 | 18.2 |
| 170323 2003 <i>SL</i> ₇₅ | 17.0 | X | 156.39692 | 101.19393 | 255.46084 | 0.49902 | 0.1986581 | 0.26135471 | 2.4227903 | 20 | 2 8.8 | 20.8 |
| 170324 2003 <i>ST</i> ₇₅ | 17.2 | X | 143.41240 | 253.78224 | 154.11043 | 1.67016 | 0.1849083 | 0.26526413 | 2.3989270 | 20 | 3 30.6 | 20.9 |
| 170325 2003 <i>SA</i> ₇₈ | 16.7 | X | 221.12710 | 54.51390 | 232.56131 | 5.83128 | 0.1069463 | 0.26238132 | 2.4164665 | 20 | 1 10.6 | 20.4 |
| 170326 2003 <i>SE</i> ₈₃ | 17.6 | X | 178.77982 | 156.84421 | 161.96179 | 1.39831 | 0.1986292 | 0.26059889 | 2.4274726 | 20 | 1 13.8 | 21.4 |
| 170327 2003 <i>SO</i> ₈₃ | 16.9 | X | 184.85770 | 235.50689 | 45.40438 | 3.17098 | 0.1828522 | 0.25643858 | 2.4536567 | 20 | — | — |
| 170328 2003 <i>SO</i> ₈₇ | 16.4 | X | 210.62398 | 214.59250 | 71.23204 | 7.11141 | 0.2318556 | 0.26252786 | 2.4155671 | 20 | 1 1.4 | 20.6 |
| 170329 2003 <i>SY</i> ₈₉ | 16.2 | X | 90.66341 | 193.66272 | 268.48655 | 6.15769 | 0.0753891 | 0.26566943 | 2.3964865 | 20 | 3 19.8 | 19.3 |
| 170330 2003 <i>SA</i> ₉₅ | 17.1 | X | 64.35448 | 300.22402 | 286.50530 | 4.14611 | 0.1262952 | 0.28590069 | 2.2820540 | 20 | 8 20.6 | 19.8 |
| 170331 2003 <i>SV</i> ₁₀₁ | 16.6 | X | 259.54734 | 139.64296 | 296.30512 | 4.97402 | 0.0847617 | 0.28812332 | 2.2703028 | 20 | 9 18.8 | 19.1 |
| 170332 2003 <i>SF</i> ₁₀₃ | 16.8 | X | 179.81049 | 154.74333 | 210.51092 | 1.56944 | 0.1960402 | 0.26575415 | 2.3959772 | 20 | 3 10.1 | 20.8 |
| 170333 2003 <i>SJ</i> ₁₀₆ | 16.1 | X | 243.17918 | 64.33568 | 261.21468 | 6.39365 | 0.0897200 | 0.27072326 | 2.3665681 | 20 | 3 20.6 | 19.6 |
| 170334 2003 <i>ST</i> ₁₀₈ | 16.1 | X | 167.09542 | 339.34714 | 279.39338 | 1.75111 | 0.1305734 | 0.24629401 | 2.5205781 | 20 | — | — |
| 170335 2003 <i>SW</i> ₁₀₈ | 15.9 | X | 112.90769 | 167.32044 | 272.08414 | 5.66929 | 0.0872429 | 0.26387137 | 2.4073609 | 20 | 3 21.5 | 19.2 |
| 170336 2003 <i>SF</i> ₁₁₆ | 16.3 | X | 285.23553 | 264.23056 | 45.02450 | 5.52238 | 0.1446604 | 0.27654114 | 2.3332586 | 20 | 4 16.2 | 19.1 |
| 170337 2003 <i>SQ</i> ₁₁₉ | 16.2 | X | 10.75254 | 190.70844 | 345.56643 | 11.16135 | 0.1103980 | 0.26708051 | 2.3880381 | 20 | 2 29.0 | 18.6 |
| 170338 2003 <i>SK</i> ₁₂₂ | 16.8 | X | 160.59806 | 203.14266 | 116.99545 | 4.65620 | 0.1971964 | 0.25749762 | 2.4469245 | 20 | — | — |
| 170339 2003 <i>SZ</i> ₁₂₅ | 16.7 | X | 180.48018 | 233.01194 | 96.87681 | 4.06790 | 0.1897838 | 0.26188810 | 2.4194995 | 20 | 1 28.8 | 20.6 |
| 170340 2003 <i>SA</i> ₁₂₆ | 16.0 | X | 85.07911 | 28.14669 | 22.05945 | 6.00098 | 0.1003922 | 0.25591514 | 2.4570014 | 20 | 1 10.4 | 18.9 |
| 170341 2003 <i>SH</i> ₁₃₇ | 16.1 | X | 126.64649 | 239.99153 | 221.93162 | 5.24250 | 0.0736455 | 0.26889965 | 2.3772557 | 20 | 5 10.6 | 19.3 |
| 170342 2003 <i>SM</i> ₁₅₅ | 16.8 | X | 233.30604 | 342.32678 | 324.54521 | 1.82255 | 0.1282770 | 0.26748035 | 2.3856577 | 20 | 2 12.5 | 20.6 |
| 170343 2003 <i>SN</i> ₁₅₆ | 16.4 | X | 151.85425 | 57.20814 | 359.78774 | 2.67982 | 0.0676046 | 0.26820450 | 2.3813616 | 20 | 4 9.1 | 19.7 |
| 170344 2003 <i>SH</i> ₁₅₇ | 16.5 | X | 205.81250 | 288.08949 | 22.58058 | 2.85209 | 0.1834895 | 0.26299831 | 2.4126857 | 20 | 1 27.3 | 20.4 |
| 170345 2003 <i>SB</i> ₁₆₀ | 16.5 | X | 114.27948 | 156.70950 | 280.65808 | 1.67160 | 0.1915420 | 0.26386984 | 2.4073702 | 20 | 4 6.6 | 19.8 |
| 170346 2003 <i>SJ</i> ₁₆₁ | 17.1 | X | 207.58225 | 169.84482 | 146.12577 | 5.94866 | 0.1860734 | 0.26537711 | 2.3982461 | 20 | 2 2.6 | 20.9 |
| 170347 2003 <i>SR</i> ₁₆₆ | 16.8 | X | 148.34098 | 94.30251 | 174.52291 | 1.46900 | 0.2081348 | 0.25996087 | 2.4314428 | 20 | 2 16.8 | 20.5 |
| 170348 2003 <i>ST</i> ₁₆₈ | 15.9 | X | 258.42765 | 215.35200 | 146.80802 | 5.08002 | 0.1106398 | 0.21962787 | 2.7206818 | 20 | 5 30.6 | 19.9 |
| 170349 2003 <i>SW</i> ₁₇₁ | 17.0 | X | 268.30847 | 161.65615 | 281.06689 | 2.36933 | 0.0832169 | 0.29280682 | 2.2460284 | 20 | 10 15.7 | 19.4 |
| 170350 2003 <i>SH</i> ₁₇₄ | 16.6 | X | 130.41556 | 105.03861 | 344.54644 | 6.11515 | 0.1093978 | 0.27018187 | 2.3697284 | 20 | 4 29.7 | 20.0 |
| 170351 2003 <i>SG</i> ₁₇₆ | 17.2 | X | 183.56826 | 293.13395 | 6.53860 | 2.50155 | 0.1607587 | 0.25906606 | 2.4370384 | 20 | — | — |
| 170352 2003 <i>ST</i> ₁₇₆ | 16.7 | X | 148.72571 | 297.02960 | 1.64814 | 3.45706 | 0.1926711 | 0.25342091 | 2.4730966 | 20 | — | — |
| 170353 2003 <i>SO</i> ₁₇₇ | 17.0 | X | 313.31246 | 338.36609 | 83.80719 | 3.51905 | 0.1181360 | 0.29525950 | 2.2335729 | 20 | 12 5.8 | 18.9 |
| 170354 2003 <i>SG</i> ₁₈₀ | 15.6 | X | 135.03227 | 175.28501 | 282.82541 | 3.09893 | 0.0653943 | 0.21258346 | 2.7804584 | 20 | 5 15.2 | 19.6 |
| 170355 2003 <i>SC</i> ₁₈₄ | 16.4 | X | 123.09656 | 109.50758 | 5.00747 | 7.57433 | 0.1077205 | 0.27201172 | 2.3590889 | 20 | 5 25.5 | 19.7 |
| 170356 2003 <i>SY</i> ₁₈₆ | 16.7 | X | 205.40989 | 140.94455 | 150.94785 | 4.91695 | 0.1804832 | 0.26123230 | 2.4235471 | 20 | 1 3.4 | 20.6 |
| 170357 2003 <i>SZ</i> ₁₉₀ | 16.8 | X | 123.24204 | 2.31260 | 5.83914 | 1.22804 | 0.1719389 | 0.25676157 | 2.4515986 | 20 | 1 17.4 | 20.0 |
| 170358 2003 <i>SJ</i> ₁₉₁ | 16.6 | X | 240.15605 | 30.32429 | 36.77454 | 5.63125 | 0.0975315 | 0.28398010 | 2.2923316 | 20 | 8 11.4 | 19.5 |
| 170359 2003 <i>SH</i> ₁₉₄ | 16.6 | X | 305.45290 | 336.09998 | 285.61960 | 6.99402 | 0.2319526 | 0.27424916 | 2.3462404 | 20 | 2 20.4 | 19.9 |
| 170360 2003 <i>SB</i> ₂₀₃ | 16.6 | X | 184.59414 | 305.43882 | 350.47392 | 4.38959 | 0.1775151 | 0.25890345 | 2.4380587 | 20 | — | — |
| 170361 2003 <i>SE</i> ₂₀₉ | 16.4 | X | 110.77081 | 197.24334 | 211.07366 | 3.60462 | 0.1317900 | 0.26267588 | 2.4146596 | 20 | 2 14.7 | 19.4 |
| 170362 2003 <i>SL</i> ₂₀₉ | 16.7 | X | 327.18212 | 91.15865 | 346.38510 | 6.84440 | 0.1780219 | 0.23985369 | 2.5654986 | 20 | — | — |
| 170363 2003 <i>ST</i> ₂₁₀ | 16.5 | X | 337.31647 | 56.61153 | 233.11284 | 5.67615 | 0.1161578 | 0.28441655 | 2.2899859 | 20 | 6 18.8 | 18.6 |
| 170364 2003 <i>SV</i> ₂₁₀ | 16.4 | X | 319.62016 | 57.67557 | 217.11938 | 6.85624 | 0.1026112 | 0.27917776 | 2.3185449 | 20 | 4 24.2 | 18.7 |
| 170365 2003 <i>SW</i> ₂₁₂ | 16.5 | X | 264.24821 | 254.65890 | 42.97886 | 7.41297 | 0.1620049 | 0.27304172 | 2.3531523 | 20 | 3 7.4 | 20.0 |
| 170366 2003 <i>SJ</i> ₂₁₆ | 16.7 | X | 216.93024 | 328.00827 | 48.55492 | 1.46201 | 0.2327089 | 0.27222516 | 2.3578556 | 20 | 4 24.1 | 20.5 |
| 170367 2003 <i>SE</i> ₂₂₅ | 16.9 | X | 259.66908 | 62.45597 | 214.22260 | 2.27372 | 0.1978650 | 0.26941446 | 2.3742263 | 20 | 1 29.5 | 20.7 |
| 170368 2003 <i>ST</i> ₂₃₀ | 16.5 | X | 231.14002 | 172.65880 | 135.81585 | 7.15799 | 0.1321750 | 0.26878778 | 2.3779152 | 20 | 2 16.2 | 20.0 |
| 170369 2003 <i>SC</i> ₂₃₄ | 16.5 | X | 167.55261 | 320.47965 | 68.18680 | 3.50497 | 0.1970068 | 0.26631862 | 2.3925904 | 20 | 3 30.6 | 20.4 |
| 170370 2003 <i>SE</i> ₂₃₇ | 16.9 | X | 20.67245 | 163.23261 | 176.32521 | 2.98307 | 0.1001819 | 0.23631384 | 2.5910549 | 20 | 11 12.8 | 20.0 |
| 170371 2003 <i>SP</i> ₂₃₈ | 16.7 | X | 330.33524 | 76.74243 | 214.63314 | 5.00728 | 0.1278371 | 0.28138119 | 2.3064250 | 20 | 6 6.3 | 18.8 |
| 170372 2003 <i>SA</i> ₂₄₄ | 16.4 | X | 137.79009 | 11.27470 | 40.75876 | 5.87975 | 0.0451182 | 0.26411571 | 2.4058759 | 20 | 3 16.8 | 19.5 |
| 170373 2003 <i>SK</i> ₂₄₅ | 17.1 | X | 116.46373 | 16.58317 | 15.91866 | 1.46604 | 0.1906654 | 0.25886355 | 2.4383092 | 20 | 2 12.3 | 20.2 |
| 170374 2003 <i>SV</i> ₂₅₁ | 16.6 | X | 11.00183 | 21.49274 | 47.87719 | 5.51589 | 0.2857075 | 0.24152436 | 2.5536542 | 20 | — | — |
| 170375 2003 <i>SU</i> ₂₅₃ | 16.4 | X | 292.67494 | 233.51812 | 199.27921 | 6.02510 | 0.2423649 | 0.23058352 | 2.6338065 | 20 | 10 6.1 | 19.0 |
| 170376 2003 <i>ST</i> ₂₆₀ | 17.1 | X | 177.47018 | 12.76977 | 271.65819 | 1.85082 | 0.1727869 | 0.25633260 | 2.4543330 | 20 | — | — |
| 170377 2003 <i>SC</i> ₂₇₁ | 16.7 | X | 0.23536 | 243.28241 | 125.62359 | 8.93128 | 0.1740090 | 0.29482333 | 2.2357753 | 20 | 12 20.2 | 19.0 |
| 170378 2003 <i>SD</i> ₂₇₂ | 15.5 | X | 266.07280 | 268.56523 | 165.18018 | 21.79259 | 0.0604718 | 0.23553757 | 2.5967447 | 20 | 9 25.2 | 18.8 |
| 170379 2003 <i>SN</i> ₂₇₂ | 16.4 | X | 221.76630 | 336.16291 | 293.05657 | 3.26059 | 0.0799928 | 0.25769598 | 2.4456687 | 20 | — | — |
| 170380 2003 <i>SC</i> ₂₇₄ | 16.8 | X | 118.52551 | 17.71459 | 44.74495 | 3.28488 | 0.0855228 | 0.26310072 | 2.4120596 | 20 | 3 10.8 | 19.9 |
| 170381 2003 <i>SD</i> ₂₈₄ | 16.1 | X | 59.82703 | 158.13033 | 253.11174 | 7.05023 | 0.0948098 | 0.25326855 | 2.4740883 | 20 | — | — |
| 170382 2003 <i>SB</i> ₂₈₅ | 16.6 | X | 280.40989 | 13.00829 | 261.82397 | 5.58820 | 0.0979065 | 0.26959510 | 2.3731657 | 20 | 2 26.5 | 19.9 |
| 170383 2003 <i>SP</i> ₂₈₈ | 16.5 | X | 139.24279 | 303.42269 | 122.65684 | 2.69215 | 0.1824555 | 0.26615716 | 2.3935579 | 20 | 4 19.4 | 20.1 |
| 170384 2003 <i>SY</i> ₂₈₈ | 16.5 | X | 33.23296 | 59.30097 | 38.13654 | 7.04312 | 0.1000389 | 0.25429900 | 2.4674003 | 20 | — | — |
| 170385 2003 <i>SN</i> ₂₈₉ | 16.3 | X | 280.66114 | 136.61509 | 125.77288 | 5.52741 | 0.2030744 | 0.26869235 | 2.3784782 | 20 | 2 1.3 | 19.6 |
| 170386 2003 <i>SH</i> ₂₉₃ | 16.4 | X | 246.56895 | 3.28977 | 272.01638 | 4.53792 | 0.0913517 | 0.26395229 | 2.4068688 | 20 | 1 22.9 | 19.7 |
| 170387 2003 <i>SN</i> ₂₉₄ | 16.2 | X | 91.68205 | 165.75053 | 156.64678 | 5.16208 | 0.2698968 | 0.24472922 | 2.5313109 | 20 | — | — |
| 170388 2003 <i>SK</i> ₂₉₅ | 17.0 | X | 148.27174 | 126.36003 | 208.18183 | 13.87189 | 0.1732069 | 0.25727002 | 2.4483674 | 20 | — | — |
| 170389 2003 <i>SD</i> ₂₉₈ | 16.4 | X | 188.31422 | 9.73731 | 309.04885 | 10.50958 | 0.2650011 | 0.26285590 | 2.4135570 | 20 | 1 24.7 | 20.5 |
| 170390 2003 <i>SK</i> ₂₉₈ | 17.0 | X | 169.46884 | 36.10614 | 11.04533 | 1.33041 | 0.1764429 | 0.26941182 | 2.3742418 | 20 | 4 21.8 | 20.6 |
| 170391 2003 <i>SU</i> ₃₀₄ | 16.5 | X | 181.01813 | 82.46784 | 50.10525 | 5.03080 | 0.0827604 | 0.28355122 | 2.2946425 | 20 | 8 30.9 | 19. |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170401 2003 TX ₁₇ | 16.5 | X | 56.31909 | 320.92723 | 170.89086 | 5.18794 | 0.1045984 | 0.26302056 | 2.4125496 | 20 | 3 16.9 | 19.0 |
| 170402 2003 TS ₁₉ | 16.6 | X | 188.55674 | 261.51921 | 72.63842 | 2.60456 | 0.1557107 | 0.26271305 | 2.4144319 | 20 | 2 9.0 | 20.4 |
| 170403 2003 TZ ₄₉ | 15.8 | X | 74.16495 | 351.55647 | 61.20612 | 13.60893 | 0.1585312 | 0.25458311 | 2.4655642 | 20 | 1 2.8 | 18.4 |
| 170404 2003 UQ ₁ | 16.2 | X | 235.33278 | 306.04693 | 215.35029 | 11.46825 | 0.1167964 | 0.23854559 | 2.5748689 | 20 | 11 29.4 | 19.6 |
| 170405 2003 UK ₄ | 15.8 | X | 116.37694 | 247.20408 | 240.71903 | 20.47885 | 0.3422251 | 0.26726430 | 2.3869432 | 20 | 6 26.2 | 20.2 |
| 170406 2003 UJ ₁₅ | 17.0 | X | 359.94457 | 62.20254 | 23.38572 | 13.67906 | 0.1598544 | 0.24440305 | 2.5335626 | 20 | — | — |
| 170407 2003 UT ₁₆ | 16.0 | X | 282.07418 | 28.37607 | 3.70090 | 13.22311 | 0.1094929 | 0.22389093 | 2.6860353 | 20 | 8 16.6 | 19.5 |
| 170408 2003 UL ₂₀ | 16.8 | X | 42.60234 | 69.40537 | 22.06966 | 3.59238 | 0.1444831 | 0.25312914 | 2.4749967 | 20 | — | — |
| 170409 2003 UQ ₂₇ | 16.5 | X | 121.27933 | 239.04154 | 117.17032 | 8.61144 | 0.2504343 | 0.25310335 | 2.4751648 | 20 | 1 10.9 | 19.9 |
| 170410 2003 UN ₂₇ | 16.3 | X | 282.89574 | 251.25827 | 39.86350 | 6.74991 | 0.2485635 | 0.27393541 | 2.3480316 | 20 | 3 8.3 | 19.8 |
| 170411 2003 UT ₂₇ | 16.4 | X | 165.48784 | 59.00950 | 67.72535 | 7.09450 | 0.0557678 | 0.27997931 | 2.3141176 | 20 | 8 3.8 | 19.5 |
| 170412 2003 UX ₂₈ | 17.3 | X | 170.02835 | 124.66877 | 300.59286 | 0.57954 | 0.1662655 | 0.26879672 | 2.3778625 | 20 | 5 15.5 | 21.0 |
| 170413 2003 UG ₃₁ | 15.6 | X | 281.33207 | 111.58070 | 208.27747 | 5.11886 | 0.0762326 | 0.21541427 | 2.7560456 | 20 | 5 8.4 | 19.3 |
| 170414 2003 UQ ₃₂ | 16.2 | X | 112.75741 | 221.56888 | 21.47848 | 7.95076 | 0.1659367 | 0.23406602 | 2.6076170 | 20 | 11 1.5 | 20.4 |
| 170415 2003 UV ₄₇ | 15.7 | X | 200.65219 | 264.34421 | 205.37029 | 12.61873 | 0.1658786 | 0.21832683 | 2.7314797 | 20 | 8 4.6 | 20.3 |
| 170416 2003 UU ₅₂ | 15.4 | X | 108.48166 | 325.68801 | 254.72550 | 13.81730 | 0.0604662 | 0.22704680 | 2.6610873 | 20 | 9 15.2 | 19.6 |
| 170417 2003 UF ₅₄ | 15.0 | X | 275.73379 | 98.24314 | 247.95032 | 13.02390 | 0.1658347 | 0.21715756 | 2.7412759 | 20 | 5 21.8 | 18.6 |
| 170418 2003 UC ₅₆ | 15.7 | X | 294.73078 | 133.38142 | 179.70266 | 12.16288 | 0.1705879 | 0.21760065 | 2.7375534 | 20 | 5 4.9 | 19.4 |
| 170419 2003 UN ₆₅ | 15.8 | X | 19.12163 | 353.58654 | 61.76222 | 15.03821 | 0.1186821 | 0.24447150 | 2.5330896 | 20 | — | — |
| 170420 2003 UL ₇₁ | 16.3 | X | 219.25916 | 242.48483 | 175.43539 | 3.35369 | 0.0534659 | 0.21986656 | 2.7187123 | 20 | 7 1.3 | 20.1 |
| 170421 2003 UY ₇₂ | 16.4 | X | 10.54859 | 81.45291 | 233.93491 | 1.57203 | 0.2837293 | 0.23045226 | 2.6348066 | 20 | 10 20.4 | 18.8 |
| 170422 2003 UQ ₇₅ | 16.3 | X | 81.85782 | 164.11353 | 288.30496 | 4.31626 | 0.0869429 | 0.26092045 | 2.4254778 | 20 | 2 26.5 | 19.2 |
| 170423 2003 UO ₈₆ | 15.8 | X | 320.69005 | 286.50754 | 192.12031 | 13.51151 | 0.1064473 | 0.24190533 | 2.5509724 | 20 | — | — |
| 170424 2003 UO ₈₆ | 16.4 | X | 279.22099 | 260.51891 | 192.95467 | 12.75562 | 0.2335648 | 0.22984281 | 2.6394621 | 20 | 10 12.9 | 19.2 |
| 170425 2003 US ₉₀ | 16.6 | X | 240.34146 | 23.13082 | 68.95415 | 6.10323 | 0.0132628 | 0.28710341 | 2.2756763 | 20 | 10 1.9 | 19.3 |
| 170426 2003 UT ₉₀ | 17.0 | X | 65.66067 | 208.54518 | 158.17912 | 4.55962 | 0.1739563 | 0.24554394 | 2.5257086 | 20 | — | — |
| 170427 2003 UY ₉₂ | 16.5 | X | 88.18654 | 167.68757 | 270.98243 | 2.22122 | 0.1719122 | 0.25707033 | 2.4496352 | 20 | 3 2.7 | 19.2 |
| 170428 2003 UL ₉₄ | 17.1 | X | 163.04263 | 19.65997 | 339.96970 | 1.19614 | 0.1577941 | 0.26097354 | 2.4251488 | 20 | 2 15.9 | 20.7 |
| 170429 2003 UP ₉₅ | 16.8 | X | 55.49567 | 263.38080 | 200.60809 | 2.06444 | 0.1540517 | 0.25641020 | 2.4538378 | 20 | 2 9.5 | 19.2 |
| 170430 2003 UJ ₉₈ | 16.2 | X | 200.18454 | 353.38604 | 97.63227 | 6.42557 | 0.2134642 | 0.27537990 | 2.3398134 | 20 | 7 15.5 | 19.9 |
| 170431 2003 UT ₁₀₁ | 16.8 | X | 294.61024 | 293.53484 | 80.39817 | 3.62465 | 0.1738762 | 0.28427662 | 2.2907373 | 20 | 8 2.6 | 18.8 |
| 170432 2003 UL ₁₁₂ | 16.2 | X | 274.48662 | 304.75748 | 59.92580 | 8.21611 | 0.1219188 | 0.27917162 | 2.3185788 | 20 | 6 22.5 | 18.9 |
| 170433 2003 UQ ₁₁₂ | 15.7 | X | 182.80867 | 276.65308 | 173.51193 | 8.18722 | 0.0935528 | 0.21589701 | 2.7519358 | 20 | 6 28.5 | 20.1 |
| 170434 2003 UP ₁₁₇ | 16.5 | X | 162.10547 | 18.97902 | 58.74193 | 3.18763 | 0.1568508 | 0.27029021 | 2.3690951 | 20 | 5 23.9 | 20.0 |
| 170435 2003 UR ₁₁₈ | 16.6 | X | 53.22487 | 317.11625 | 226.83832 | 5.50325 | 0.0697681 | 0.27240321 | 2.3568281 | 20 | 5 22.6 | 19.0 |
| 170436 2003 UV ₁₂₂ | 16.3 | X | 26.97218 | 265.09492 | 100.71078 | 15.30947 | 0.3053093 | 0.23821028 | 2.5772846 | 20 | — | — |
| 170437 2003 UY ₁₂₃ | 15.8 | X | 168.69078 | 341.76562 | 277.87639 | 13.94937 | 0.0554895 | 0.24716495 | 2.5146633 | 20 | — | — |
| 170438 2003 UF ₁₃₂ | 15.8 | X | 217.07040 | 239.46231 | 259.85109 | 8.05706 | 0.0478607 | 0.22846647 | 2.6500521 | 20 | 10 12.9 | 19.6 |
| 170439 2003 UT ₁₃₂ | 16.4 | X | 330.70873 | 59.28316 | 5.15290 | 4.80240 | 0.2038040 | 0.23480723 | 2.6021265 | 20 | 12 26.5 | 18.8 |
| 170440 2003 UC ₁₃₆ | 15.6 | X | 128.01795 | 261.24669 | 240.62002 | 20.46833 | 0.2805506 | 0.27135451 | 2.3628964 | 20 | 7 15.8 | 20.0 |
| 170441 2003 UV ₁₄₁ | 16.5 | X | 212.23074 | 191.84863 | 102.68389 | 5.18753 | 0.2118297 | 0.26267264 | 2.4146795 | 20 | 1 12.8 | 20.4 |
| 170442 2003 UH ₁₄₄ | 16.8 | X | 5.11798 | 9.02904 | 12.26935 | 3.25476 | 0.2464590 | 0.23604923 | 2.5929909 | 20 | — | — |
| 170443 2003 UF ₁₄₅ | 16.5 | X | 263.24370 | 304.08044 | 42.13072 | 3.66557 | 0.1881355 | 0.27408726 | 2.3471643 | 20 | 5 2.6 | 19.6 |
| 170444 2003 UK ₁₄₉ | 15.9 | X | 213.60288 | 287.07733 | 186.83564 | 12.17358 | 0.1187130 | 0.22569290 | 2.6717190 | 20 | 8 29.2 | 19.9 |
| 170445 2003 UY ₁₅₁ | 16.1 | X | 355.79923 | 337.98982 | 112.72953 | 3.04257 | 0.0259559 | 0.24429857 | 2.5342849 | 20 | — | — |
| 170446 2003 UQ ₁₅₂ | 16.6 | X | 329.84071 | 255.24928 | 188.99470 | 8.30792 | 0.1352008 | 0.23910671 | 2.5708390 | 20 | — | — |
| 170447 2003 UR ₁₅₂ | 16.5 | X | 98.08348 | 134.02183 | 189.56189 | 9.59658 | 0.0882648 | 0.24366100 | 2.5387038 | 20 | — | — |
| 170448 2003 UX ₁₆₃ | 16.2 | X | 181.35437 | 305.63125 | 93.29217 | 7.06321 | 0.0810168 | 0.26669114 | 2.3903619 | 20 | 4 24.1 | 19.6 |
| 170449 2003 UT ₁₆₅ | 16.9 | X | 70.36511 | 307.25823 | 33.75945 | 6.75862 | 0.2639946 | 0.24360234 | 2.5391113 | 20 | — | — |
| 170450 2003 UK ₁₇₀ | 16.0 | X | 311.66158 | 137.12971 | 213.94959 | 5.63402 | 0.0320979 | 0.22187943 | 2.7022448 | 20 | 8 6.2 | 19.6 |
| 170451 2003 UJ ₁₇₂ | 16.9 | X | 163.81453 | 216.23172 | 219.42943 | 4.95285 | 0.1883518 | 0.27207981 | 2.3586953 | 20 | 5 24.4 | 20.6 |
| 170452 2003 UQ ₁₇₃ | 17.3 | X | 339.13048 | 242.33699 | 155.98409 | 2.44856 | 0.2486217 | 0.23373308 | 2.6100927 | 20 | 12 11.0 | 19.3 |
| 170453 2003 UH ₁₈₀ | 16.8 | X | 97.71062 | 243.02955 | 101.54426 | 4.96399 | 0.1526114 | 0.24700681 | 2.5157265 | 20 | — | — |
| 170454 2003 UL ₁₈₃ | 15.5 | X | 244.47076 | 137.78728 | 122.53194 | 2.81051 | 0.0644423 | 0.19730713 | 2.9221838 | 20 | 1 14.4 | 19.7 |
| 170455 2003 UD ₁₈₄ | 16.5 | X | 56.22808 | 283.56265 | 43.13555 | 12.06054 | 0.2826201 | 0.23993099 | 2.5649475 | 20 | — | — |
| 170456 2003 UF ₁₈₄ | 16.3 | X | 186.24595 | 248.65978 | 179.50268 | 1.80269 | 0.2050111 | 0.27158393 | 2.3615655 | 20 | 6 3.7 | 20.1 |
| 170457 2003 UY ₁₈₈ | 16.5 | X | 237.64873 | 272.27362 | 278.56528 | 4.34641 | 0.1211394 | 0.30114746 | 2.2043637 | 20 | — | — |
| 170458 2003 UX ₁₉₂ | 16.5 | X | 42.17711 | 236.30413 | 215.08399 | 5.60966 | 0.1153252 | 0.25624225 | 2.4549099 | 20 | — | — |
| 170459 2003 UQ ₁₉₆ | 17.2 | X | 269.55315 | 40.89915 | 333.83251 | 1.65640 | 0.0823578 | 0.27883732 | 2.3204316 | 20 | 7 7.4 | 19.9 |
| 170460 2003 UG ₂₀₆ | 15.6 | X | 46.39049 | 107.29757 | 233.31967 | 20.89637 | 0.0971481 | 0.23568344 | 2.5956731 | 20 | 12 15.4 | 19.3 |
| 170461 2003 UO ₂₀₆ | 16.0 | X | 215.84041 | 307.20951 | 59.23627 | 7.25576 | 0.1581424 | 0.26807436 | 2.3821322 | 20 | 4 15.6 | 19.7 |
| 170462 2003 US ₂₀₆ | 16.7 | X | 68.26208 | 259.66573 | 240.88303 | 1.44200 | 0.1304124 | 0.26347472 | 2.4097764 | 20 | 4 21.9 | 19.1 |
| 170463 2003 UD ₂₀₇ | 16.0 | X | 99.08232 | 280.68572 | 357.16892 | 11.67793 | 0.2035670 | 0.23770906 | 2.5809062 | 20 | 12 2.7 | 20.5 |
| 170464 2003 UE ₂₀₉ | 15.8 | X | 191.35303 | 109.37088 | 259.47115 | 3.53224 | 0.0813459 | 0.20559451 | 2.8431190 | 20 | 3 26.0 | 20.1 |
| 170465 2003 UE ₂₁₁ | 16.8 | X | 73.50710 | 86.63903 | 233.53584 | 7.64383 | 0.1720891 | 0.23905803 | 2.5711880 | 20 | 12 29.9 | 20.8 |
| 170466 2003 UL ₂₁₂ | 16.1 | X | 270.48654 | 104.73332 | 43.06325 | 11.29779 | 0.0844048 | 0.23690859 | 2.5867166 | 20 | — | — |
| 170467 2003 UE ₂₂₀ | 15.5 | X | 307.77830 | 347.84655 | 85.98150 | 14.44836 | 0.1356173 | 0.22964272 | 2.6409951 | 20 | 11 22.4 | 18.4 |
| 170468 2003 UY ₂₂₇ | 16.3 | X | 205.24526 | 41.46115 | 268.16826 | 4.21310 | 0.1053899 | 0.25864551 | 2.4396794 | 20 | 1 23.3 | 19.8 |
| 170469 2003 UC ₂₃₄ | 15.3 | X | 27.24438 | 109.24343 | 234.30896 | 21.16572 | 0.0717923 | 0.23255944 | 2.6188668 | 20 | 11 21.4 | 18.6 |
| 170470 2003 UU ₂₃₆ | 16.5 | X | 61.97485 | 256.01726 | 120.57361 | 3.80578 | 0.1774915 | 0.24632098 | 2.5203940 | 20 | — | — |
| 170471 2003 UJ ₂₃₇ | 16.4 | X | 241.21058 | 47.34651 | 243.96856 | 8.21462 | 0.1923070 | 0.26433993 | 2.4045153 | 20 | 1 29.9 | 20.5 |
| 170472 2003 UF ₂₃₉ | 16.9 | X | 112.84558 | 230.75355 | 216.78306 | 4.37260 | 0.0673333 | 0.26463108 | 2.4027513 | 20 | 3 31.9 | 20.1 |
| 170473 2003 UM ₂₄₂ | 16.1 | X | 280.03537 | 73.85791 | 47.40517 | 13.27459 | 0.1273013 | 0.23529761 | 2.5985099 | 20 | 12 6.9 | 19.2 |
| 170474 2003 UH ₂₄₄ | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170481 2003 <i>UH</i> ₂₆₈ | 15.9 | X | 249.82785 | 303.88381 | 215.02841 | 10.99123 | 0.0328925 | 0.23747842 | 2.5825770 | 20 | 12 25.8 | 19.5 |
| 170482 2003 <i>UC</i> ₂₆₉ | 15.9 | X | 189.43322 | 247.76785 | 61.43172 | 7.24295 | 0.0261462 | 0.25307785 | 2.4753311 | 20 | 1 3.9 | 19.2 |
| 170483 2003 <i>UU</i> ₂₇₁ | 16.6 | X | 2.61672 | 105.83685 | 212.24143 | 3.78367 | 0.2871139 | 0.22996618 | 2.6385181 | 20 | 10 7.5 | 18.8 |
| 170484 2003 <i>UN</i> ₂₇₂ | 16.2 | X | 23.31547 | 151.87551 | 53.45183 | 9.08668 | 0.0584139 | 0.26935157 | 2.3745959 | 20 | 5 4.4 | 18.7 |
| 170485 2003 <i>UC</i> ₂₇₇ | 16.0 | X | 23.13161 | 132.62986 | 232.52640 | 10.77480 | 0.1990687 | 0.23609060 | 2.5926879 | 20 | — | — |
| 170486 2003 <i>UE</i> ₂₈₁ | 15.9 | X | 108.18694 | 260.48352 | 42.96955 | 2.43715 | 0.0983424 | 0.23974536 | 2.5662713 | 20 | — | — |
| 170487 Mallder | 16.9 | X | 299.33720 | 163.90543 | 49.04580 | 3.19453 | 0.1186523 | 0.25782495 | 2.4448530 | 20 | 1 2.0 | 20.1 |
| 170488 2003 <i>UQ</i> ₂₈₇ | 16.6 | X | 87.54059 | 88.83398 | 37.70907 | 3.80492 | 0.0750226 | 0.26725892 | 2.3869752 | 20 | 4 22.4 | 19.2 |
| 170489 2003 <i>UG</i> ₂₉₈ | 17.5 | X | 85.30817 | 257.57663 | 226.20291 | 1.70046 | 0.1609437 | 0.26388951 | 2.4072506 | 20 | 4 29.3 | 20.4 |
| 170490 2003 <i>UZ</i> ₃₀₀ | 16.3 | X | 246.13717 | 334.13548 | 315.21747 | 4.64457 | 0.1147113 | 0.26484326 | 2.4014678 | 20 | 2 8.2 | 19.8 |
| 170491 2003 <i>UJ</i> ₃₁₀ | 16.0 | X | 320.23918 | 22.62800 | 268.37152 | 7.97163 | 0.1236523 | 0.27918345 | 2.3185133 | 20 | 5 15.9 | 18.4 |
| 170492 2003 <i>UJ</i> ₃₁₄ | 16.0 | X | 325.95281 | 327.33093 | 67.91381 | 3.24138 | 0.0915113 | 0.23042253 | 2.6350332 | 20 | 10 30.4 | 18.8 |
| 170493 2003 <i>UY</i> ₃₁₄ | 16.8 | X | 23.44441 | 9.43362 | 15.94261 | 4.38810 | 0.0688818 | 0.23958980 | 2.5673820 | 20 | — | — |
| 170494 2003 <i>VE</i> ₄ | 16.3 | X | 148.53199 | 88.83641 | 273.64375 | 4.90835 | 0.1627708 | 0.25686015 | 2.4509713 | 20 | 2 4.3 | 19.9 |
| 170495 2003 <i>VQ</i> ₇ | 16.2 | X | 335.29663 | 28.35625 | 50.49812 | 4.44252 | 0.1323833 | 0.23744154 | 2.5828444 | 20 | — | — |
| 170496 2003 <i>VK</i> ₈ | 15.5 | X | 90.12543 | 203.01739 | 62.51666 | 15.24129 | 0.0818920 | 0.23066368 | 2.6331963 | 20 | 11 3.9 | 19.3 |
| 170497 2003 <i>WE</i> ₂ | 15.9 | X | 273.51361 | 338.73115 | 41.84741 | 3.10444 | 0.0975674 | 0.21921222 | 2.7241199 | 20 | 7 15.8 | 19.5 |
| 170498 2003 <i>WW</i> ₅ | 15.8 | X | 300.32864 | 238.48910 | 216.11355 | 4.92182 | 0.1878656 | 0.23268645 | 2.6179136 | 20 | 12 2.6 | 18.2 |
| 170499 2003 <i>WY</i> ₅ | 15.5 | X | 183.78817 | 74.40995 | 69.87853 | 13.58798 | 0.1511182 | 0.22030000 | 2.7151451 | 20 | 9 13.2 | 20.1 |
| 170500 2003 <i>WJ</i> ₆ | 16.4 | X | 307.37847 | 162.28697 | 351.36549 | 4.97512 | 0.2051068 | 0.24225459 | 2.5485831 | 20 | — | — |
| 170501 2003 <i>WS</i> ₆ | 16.2 | X | 312.51389 | 105.97453 | 354.41389 | 5.51077 | 0.0486648 | 0.23897981 | 2.5717490 | 20 | — | — |
| 170502 2003 <i>WM</i> ₇ | 17.2 | X | 52.21377 | 143.78493 | 48.56274 | 10.40670 | 0.8801071 | 0.25285059 | 2.4768140 | 20 | 9 23.8 | 22.5 |
| 170503 2003 <i>WU</i> ₁₀ | 15.4 | X | 68.00339 | 192.99662 | 22.39202 | 9.50720 | 0.0491627 | 0.21580891 | 2.7526847 | 20 | 7 26.4 | 19.2 |
| 170504 2003 <i>WF</i> ₁₄ | 16.9 | X | 260.60241 | 23.79508 | 230.67396 | 2.29089 | 0.1619950 | 0.25763919 | 2.4460281 | 20 | 1 7.7 | 20.7 |
| 170505 2003 <i>WV</i> ₁₅ | 16.3 | X | 232.02946 | 107.98659 | 188.08090 | 1.92034 | 0.1764482 | 0.26159570 | 2.4213021 | 20 | 1 30.9 | 20.3 |
| 170506 2003 <i>WC</i> ₁₆ | 16.7 | X | 100.27249 | 261.34069 | 57.33083 | 2.64670 | 0.1824576 | 0.24327917 | 2.5413595 | 20 | — | — |
| 170507 2003 <i>WO</i> ₂₁ | 16.5 | X | 63.18300 | 16.82934 | 295.10745 | 1.90344 | 0.1984125 | 0.23490029 | 2.6014392 | 20 | 12 12.3 | 20.4 |
| 170508 2003 <i>WC</i> ₃₂ | 16.0 | X | 352.75206 | 337.63593 | 46.49195 | 12.74691 | 0.0442389 | 0.23243920 | 2.6197698 | 20 | 11 21.5 | 19.3 |
| 170509 2003 <i>WG</i> ₃₂ | 15.7 | X | 178.73843 | 322.97935 | 244.52521 | 14.25597 | 0.0385938 | 0.23319857 | 2.6140796 | 20 | 11 27.7 | 19.1 |
| 170510 2003 <i>WS</i> ₃₄ | 15.4 | X | 328.03864 | 224.69902 | 267.35333 | 4.61468 | 0.0358104 | 0.18474276 | 3.0532177 | 20 | — | — |
| 170511 2003 <i>WX</i> ₃₄ | 16.3 | X | 291.03266 | 94.19938 | 32.73647 | 3.52236 | 0.1023823 | 0.23630728 | 2.5911028 | 20 | — | — |
| 170512 2003 <i>WH</i> ₅₄ | 16.2 | X | 280.18019 | 168.43767 | 291.33362 | 3.21679 | 0.1115803 | 0.23230195 | 2.6208016 | 20 | 11 9.7 | 19.2 |
| 170513 2003 <i>WW</i> ₅₄ | 15.5 | X | 273.59276 | 340.00562 | 346.65357 | 4.99200 | 0.0246336 | 0.21085534 | 2.7956297 | 20 | 5 12.9 | 19.3 |
| 170514 2003 <i>WK</i> ₅₆ | 16.1 | X | 121.47472 | 319.35279 | 336.25135 | 3.16933 | 0.1600842 | 0.23995391 | 2.5647842 | 20 | — | — |
| 170515 2003 <i>WO</i> ₅₇ | 17.0 | X | 337.50676 | 10.72204 | 19.29265 | 2.34704 | 0.1225618 | 0.23122796 | 2.6289106 | 20 | 11 11.9 | 19.8 |
| 170516 2003 <i>WF</i> ₅₈ | 16.5 | X | 54.11165 | 61.35963 | 51.73212 | 8.12823 | 0.1904206 | 0.25381897 | 2.4705103 | 20 | 3 2.3 | 18.9 |
| 170517 2003 <i>WM</i> ₅₉ | 16.1 | X | 70.47771 | 246.34270 | 67.32745 | 8.50272 | 0.1737164 | 0.23641624 | 2.5903067 | 20 | 12 19.1 | 20.0 |
| 170518 2003 <i>WV</i> ₆₀ | 17.2 | X | 321.31005 | 166.91976 | 256.32122 | 1.87704 | 0.1318031 | 0.23288982 | 2.6163894 | 20 | 11 30.6 | 19.8 |
| 170519 2003 <i>WM</i> ₆₂ | 16.3 | X | 120.91282 | 138.21007 | 174.24559 | 1.51171 | 0.2222764 | 0.24508004 | 2.5288948 | 20 | — | — |
| 170520 2003 <i>WQ</i> ₇₃ | 16.0 | X | 164.98203 | 234.41025 | 264.95722 | 8.83760 | 0.1433294 | 0.21503642 | 2.7592732 | 20 | 8 9.2 | 20.5 |
| 170521 2003 <i>WS</i> ₇₄ | 16.3 | X | 202.92759 | 157.85518 | 297.64795 | 12.82289 | 0.0605715 | 0.27615175 | 2.3354515 | 20 | 8 2.7 | 19.4 |
| 170522 2003 <i>WX</i> ₇₄ | 14.9 | X | 32.34749 | 50.09229 | 359.03693 | 12.95711 | 0.1849293 | 0.23979636 | 2.5659075 | 20 | — | — |
| 170523 2003 <i>WB</i> ₇₇ | 16.1 | X | 286.92867 | 163.96045 | 199.78558 | 14.30281 | 0.2306770 | 0.21924064 | 2.7238844 | 20 | 6 19.0 | 20.0 |
| 170524 2003 <i>WL</i> ₇₈ | 16.0 | X | 256.89269 | 82.56485 | 87.83917 | 4.37119 | 0.0358725 | 0.21925827 | 2.7237384 | 20 | 7 29.4 | 19.7 |
| 170525 2003 <i>WQ</i> ₈₅ | 16.0 | X | 359.52051 | 217.28189 | 306.81053 | 4.72123 | 0.1337979 | 0.25287882 | 2.4766297 | 20 | 1 21.9 | 18.7 |
| 170526 2003 <i>WB</i> ₈₉ | 16.4 | X | 307.70670 | 303.04572 | 124.46149 | 3.04170 | 0.1586658 | 0.23119789 | 2.6291386 | 20 | 11 10.5 | 18.9 |
| 170527 2003 <i>WD</i> ₈₉ | 15.7 | X | 58.57846 | 234.36716 | 70.79917 | 14.25143 | 0.1589920 | 0.23239169 | 2.6201269 | 20 | 11 24.9 | 19.5 |
| 170528 2003 <i>WQ</i> ₉₀ | 15.9 | X | 176.22482 | 17.05393 | 257.78074 | 12.06348 | 0.0971889 | 0.24558566 | 2.5254225 | 20 | — | — |
| 170529 2003 <i>WF</i> ₉₄ | 16.4 | X | 200.23030 | 313.72753 | 324.87172 | 6.05420 | 0.0459515 | 0.25180862 | 2.4836420 | 20 | — | — |
| 170530 2003 <i>WR</i> ₉₅ | 16.5 | X | 17.55487 | 283.29981 | 62.79090 | 13.99827 | 0.2228767 | 0.23359576 | 2.6111155 | 20 | 12 3.7 | 19.6 |
| 170531 2003 <i>WF</i> ₉₆ | 16.2 | X | 316.01532 | 358.67341 | 232.58530 | 6.32684 | 0.0742050 | 0.26121117 | 2.4236778 | 20 | 2 19.8 | 19.4 |
| 170532 2003 <i>WA</i> ₉₆ | 16.8 | X | 279.02098 | 77.11530 | 53.40114 | 4.39780 | 0.1875629 | 0.23485018 | 2.6018092 | 20 | 12 11.8 | 19.4 |
| 170533 2003 <i>WV</i> ₉₆ | 15.8 | X | 193.67477 | 335.99073 | 220.32699 | 14.35966 | 0.1097791 | 0.23322376 | 2.6138913 | 20 | 11 24.4 | 19.7 |
| 170534 2003 <i>WJ</i> ₁₀₁ | 16.9 | X | 300.75216 | 77.59418 | 45.43214 | 1.45068 | 0.1103648 | 0.23919791 | 2.5701855 | 20 | — | — |
| 170535 2003 <i>WR</i> ₁₀₃ | 16.0 | X | 16.65367 | 345.86442 | 56.04244 | 1.59971 | 0.1130429 | 0.23812327 | 2.5779124 | 20 | — | — |
| 170536 2003 <i>WJ</i> ₁₀₈ | 15.9 | X | 4.24771 | 95.61690 | 230.97985 | 13.87707 | 0.1673328 | 0.23017801 | 2.6368990 | 20 | 10 1.9 | 18.9 |
| 170537 2003 <i>WA</i> ₁₁₁ | 15.7 | X | 133.17395 | 217.32793 | 42.36960 | 14.75986 | 0.1229014 | 0.23503869 | 2.6004179 | 20 | 12 8.4 | 19.9 |
| 170538 2003 <i>WX</i> ₁₁₂ | 16.4 | X | 311.34901 | 125.64068 | 46.56281 | 13.21929 | 0.1017091 | 0.24675454 | 2.5174409 | 20 | — | — |
| 170539 2003 <i>WJ</i> ₁₁₄ | 16.1 | X | 269.24173 | 212.48630 | 329.97338 | 4.80867 | 0.1633694 | 0.24060568 | 2.5601503 | 20 | — | — |
| 170540 2003 <i>WL</i> ₁₁₄ | 16.0 | X | 77.30608 | 213.60908 | 38.19754 | 9.87702 | 0.0455571 | 0.22489299 | 2.6780505 | 20 | 9 26.7 | 19.7 |
| 170541 2003 <i>WV</i> ₁₁₅ | 15.1 | X | 104.77524 | 108.37857 | 274.03485 | 7.53499 | 0.1014146 | 0.19041205 | 2.9923089 | 20 | 1 12.8 | 19.1 |
| 170542 2003 <i>WZ</i> ₁₁₆ | 15.4 | X | 67.19108 | 300.06686 | 17.75253 | 4.34333 | 0.2057730 | 0.23534058 | 2.5981936 | 20 | 12 24.2 | 19.5 |
| 170543 2003 <i>WM</i> ₁₂₀ | 16.1 | X | 272.20558 | 56.49993 | 45.47138 | 5.81527 | 0.1259245 | 0.22786986 | 2.6546756 | 20 | 10 29.7 | 19.1 |
| 170544 2003 <i>WV</i> ₁₂₁ | 15.2 | X | 45.60286 | 335.07027 | 69.27215 | 15.59419 | 0.1584780 | 0.24203858 | 2.5500361 | 20 | — | — |
| 170545 2003 <i>WR</i> ₁₂₂ | 16.0 | X | 322.26040 | 190.50578 | 299.98270 | 3.54669 | 0.1000704 | 0.24115946 | 2.5562295 | 20 | — | — |
| 170546 2003 <i>WL</i> ₁₂₄ | 15.6 | X | 331.81192 | 6.02262 | 330.58416 | 4.57160 | 0.0165471 | 0.21884717 | 2.7271484 | 20 | 8 18.4 | 19.2 |
| 170547 2003 <i>WL</i> ₁₂₇ | 16.0 | X | 4.09754 | 143.89625 | 280.35554 | 12.42291 | 0.1375480 | 0.23618586 | 2.5919908 | 20 | — | — |
| 170548 2003 <i>WZ</i> ₁₂₇ | 15.3 | X | 9.50046 | 330.07079 | 98.43122 | 16.74930 | 0.1569156 | 0.23572881 | 2.5953401 | 20 | — | — |
| 170549 2003 <i>WU</i> ₁₂₉ | 15.5 | X | 112.90652 | 228.19575 | 61.80970 | 15.22944 | 0.1007273 | 0.23682948 | 2.5872926 | 20 | 12 26.6 | 19.6 |
| 170550 2003 <i>WJ</i> ₁₃₀ | 16.3 | X | 150.11244 | 19.43110 | 67.66165 | 7.31981 | 0.0748457 | 0.26673676 | 2.3900893 | 20 | 5 19.6 | 19.6 |
| 170551 2003 <i>WV</i> ₁₃₂ | 16.5 | X | 261.88797 | 266.32394 | 204.47886 | 1.72378 | 0.1510017 | 0.22873149 | 2.6480047 | 20 | 10 22.1 | 19.7 |
| 170552 2003 <i>WR</i> ₁₃₅ | 15.5 | X | 211.93436 | 102.33200 | 75.0 | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170561 2003 WA ₁₅₂ | 15.9 | X | 47.53156 | 321.54359 | 41.78275 | 1.79217 | 0.0483768 | 0.23571434 | 2.5954463 | 20 | — | — |
| 170562 2003 WG ₁₅₄ | 16.1 | X | 318.89284 | 49.32160 | 79.13662 | 13.97144 | 0.1158334 | 0.24139398 | 2.5545736 | 20 | — | — |
| 170563 2003 WO ₁₆₀ | 17.1 | X | 89.26147 | 303.80234 | 190.16234 | 0.80150 | 0.1258429 | 0.26283601 | 2.4136788 | 20 | 5 13.9 | 20.0 |
| 170564 2003 WW ₁₆₅ | 16.8 | X | 220.06049 | 214.16824 | 203.83662 | 1.65277 | 0.1887987 | 0.27409405 | 2.3471255 | 20 | 6 22.1 | 20.3 |
| 170565 2003 WO ₁₆₉ | 15.8 | X | 187.01240 | 79.94075 | 62.44833 | 13.90321 | 0.2581559 | 0.21416450 | 2.7667573 | 20 | 9 8.7 | 20.9 |
| 170566 2003 WG ₁₇₁ | 15.8 | X | 16.62226 | 314.75888 | 103.22111 | 10.55072 | 0.0747462 | 0.24357000 | 2.5393361 | 20 | — | — |
| 170567 2003 WM ₁₇₄ | 17.0 | X | 214.35722 | 206.74159 | 88.04656 | 2.45596 | 0.1790250 | 0.25963967 | 2.4334477 | 20 | 1 15.1 | 20.9 |
| 170568 2003 WM ₁₉₀ | 16.1 | X | 99.96852 | 230.30204 | 169.55382 | 23.20421 | 0.1596457 | 0.25429761 | 2.4674093 | 20 | 1 24.7 | 19.5 |
| 170569 2003 WQ ₁₉₂ | 16.2 | X | 305.62504 | 185.36797 | 312.69106 | 3.18628 | 0.0845716 | 0.24113222 | 2.5664220 | 20 | — | — |
| 170570 2003 XT ₂ | 16.4 | X | 328.05727 | 235.08930 | 128.30218 | 5.58890 | 0.1497268 | 0.28506496 | 2.2865120 | 20 | 10 3.7 | 18.2 |
| 170571 2003 XB ₄ | 16.3 | X | 81.66006 | 342.13378 | 133.16608 | 2.16419 | 0.1355388 | 0.25818428 | 2.4425841 | 20 | 4 9.3 | 19.2 |
| 170572 2003 XR ₅ | 16.3 | X | 240.53230 | 158.37658 | 285.93490 | 7.08036 | 0.0685487 | 0.28184570 | 2.3038902 | 20 | 9 3.7 | 19.3 |
| 170573 2003 XN ₆ | 15.7 | X | 45.71738 | 237.72842 | 124.16599 | 3.53432 | 0.2355375 | 0.23744930 | 2.5827882 | 20 | — | — |
| 170574 2003 XA ₇ | 15.6 | X | 133.59505 | 68.40628 | 349.98038 | 14.64234 | 0.1884505 | 0.25697606 | 2.4502343 | 20 | 3 30.6 | 19.4 |
| 170575 2003 XM ₉ | 15.2 | X | 234.14666 | 73.63566 | 41.05597 | 21.89665 | 0.1031745 | 0.22292205 | 2.6938125 | 20 | 10 6.4 | 19.2 |
| 170576 2003 XE ₁₀ | 15.3 | X | 32.54739 | 333.91573 | 66.03260 | 27.58543 | 0.2174632 | 0.23880964 | 2.5729705 | 20 | — | — |
| 170577 2003 XR ₁₁ | 16.1 | X | 154.64757 | 137.05823 | 296.33766 | 7.50644 | 0.2525949 | 0.26495308 | 2.4008042 | 20 | 5 13.8 | 20.3 |
| 170578 2003 XU ₁₃ | 16.7 | X | 314.96065 | 251.03495 | 168.09124 | 2.70838 | 0.2068719 | 0.23042593 | 2.6350073 | 20 | 11 10.6 | 18.8 |
| 170579 2003 XC ₁₅ | 15.4 | X | 348.28670 | 315.60367 | 100.35425 | 15.88344 | 0.2712644 | 0.23386992 | 2.6090744 | 20 | — | — |
| 170580 2003 XC ₁₅ | 16.1 | X | 305.52800 | 217.44998 | 177.67336 | 14.31374 | 0.1126377 | 0.23061863 | 2.6335393 | 20 | 11 19.3 | 19.0 |
| 170581 2003 XC ₁₈ | 16.2 | X | 221.00938 | 74.98991 | 359.06296 | 7.27149 | 0.0731809 | 0.27255414 | 2.3559579 | 20 | 7 29.2 | 19.4 |
| 170582 2003 XO ₁₉ | 15.4 | X | 210.19807 | 194.29547 | 251.45806 | 24.52499 | 0.1775630 | 0.27769922 | 2.3267672 | 20 | 7 13.1 | 19.4 |
| 170583 2003 XO ₂₀ | 16.6 | X | 352.40390 | 41.10008 | 331.69127 | 2.66081 | 0.0996050 | 0.22943263 | 2.6426071 | 20 | 11 10.6 | 19.6 |
| 170584 2003 XA ₂₂ | 15.7 | X | 14.08766 | 250.58293 | 149.00379 | 12.42728 | 0.2503707 | 0.23752597 | 2.5822323 | 20 | — | — |
| 170585 2003 XC ₂₄ | 16.6 | X | 64.83680 | 114.78482 | 211.43965 | 1.03784 | 0.2091048 | 0.23668998 | 2.5883091 | 20 | — | — |
| 170586 2003 XF ₂₅ | 16.0 | X | 258.22119 | 228.69507 | 199.38817 | 5.11760 | 0.0373011 | 0.22246821 | 2.6974749 | 20 | 9 4.9 | 19.7 |
| 170587 2003 XZ ₂₉ | 15.7 | X | 123.32043 | 163.69957 | 65.96506 | 11.92138 | 0.1209009 | 0.22606003 | 2.6688256 | 20 | 10 27.8 | 19.9 |
| 170588 2003 XJ ₃₈ | 15.6 | X | 290.70839 | 53.51144 | 11.78288 | 12.72106 | 0.1627136 | 0.22667785 | 2.6639740 | 20 | 10 3.4 | 18.5 |
| 170589 2003 XL ₄₀ | 16.6 | X | 319.92371 | 81.01342 | 37.20214 | 4.05691 | 0.1716253 | 0.23833942 | 2.5763536 | 20 | — | — |
| 170590 2003 XL ₄₃ | 16.2 | X | 31.21997 | 196.38392 | 158.55584 | 4.31146 | 0.2695652 | 0.23605604 | 2.5929410 | 20 | — | — |
| 170591 2003 YK ₁ | 15.9 | X | 19.73085 | 268.64242 | 79.52293 | 29.14059 | 0.3564190 | 0.23202653 | 2.6228751 | 20 | 12 27.9 | 19.5 |
| 170592 2003 YB ₃ | 15.8 | X | 199.61042 | 166.84408 | 306.23097 | 3.83669 | 0.0375988 | 0.21406676 | 2.7675994 | 20 | 8 19.8 | 19.6 |
| 170593 2003 YK ₁₄ | 16.2 | X | 279.82845 | 68.12155 | 330.67988 | 13.36419 | 0.1448270 | 0.21842097 | 2.7306948 | 20 | 8 12.5 | 19.6 |
| 170594 2003 YN ₁₄ | 15.5 | X | 297.18230 | 125.55039 | 47.51538 | 13.97921 | 0.0885058 | 0.23976459 | 2.5661342 | 20 | — | — |
| 170595 2003 YT ₁₄ | 15.4 | X | 183.36159 | 115.40248 | 69.67355 | 14.24622 | 0.1632827 | 0.22222094 | 2.6994756 | 20 | 10 29.6 | 19.8 |
| 170596 2003 YU ₁₉ | 15.7 | X | 11.82930 | 10.35762 | 314.15733 | 7.60024 | 0.0741356 | 0.21873770 | 2.7280581 | 20 | 9 28.4 | 19.1 |
| 170597 2003 YA ₂₀ | 15.6 | X | 232.95061 | 337.85086 | 76.01888 | 5.43282 | 0.0643850 | 0.21007491 | 2.8025493 | 20 | 7 11.8 | 19.5 |
| 170598 2003 YG ₂₀ | 15.8 | X | 304.47452 | 257.49789 | 86.93504 | 7.35937 | 0.0260848 | 0.20974883 | 2.8054532 | 20 | 7 20.4 | 19.5 |
| 170599 2003 YT ₂₃ | 16.3 | X | 268.27814 | 350.81668 | 111.57797 | 4.24104 | 0.1451943 | 0.22808535 | 2.6530033 | 20 | 10 23.1 | 19.5 |
| 170600 2003 YF ₂₅ | 16.7 | X | 207.99166 | 141.75454 | 289.06674 | 3.70049 | 0.1480329 | 0.27175611 | 2.3605679 | 20 | 6 29.9 | 20.3 |
| 170601 2003 YC ₂₆ | 15.9 | X | 244.60281 | 45.35128 | 87.82272 | 12.25286 | 0.1524610 | 0.22384551 | 2.6863986 | 20 | 10 31.9 | 19.7 |
| 170602 2003 YN ₂₆ | 15.0 | X | 85.75481 | 293.97826 | 30.62218 | 11.86076 | 0.3150838 | 0.23804098 | 2.5785065 | 20 | — | — |
| 170603 2003 YC ₂₉ | 16.0 | X | 317.19433 | 211.29025 | 265.95537 | 2.65992 | 0.1594243 | 0.23440458 | 2.6051055 | 20 | — | — |
| 170604 2003 YC ₃₀ | 16.0 | X | 148.16588 | 299.20919 | 15.17065 | 2.26902 | 0.0859237 | 0.24691046 | 2.5163810 | 20 | — | — |
| 170605 2003 YW ₃₀ | 15.3 | X | 279.09219 | 289.49067 | 279.87902 | 6.00354 | 0.2373279 | 0.24317446 | 2.5420890 | 20 | — | — |
| 170606 2003 YG ₃₃ | 15.4 | X | 67.45531 | 219.66945 | 97.29548 | 16.79022 | 0.1713162 | 0.23455719 | 2.6039754 | 20 | 12 20.3 | 19.3 |
| 170607 2003 YT ₃₈ | 17.1 | X | 286.99960 | 117.74978 | 339.22950 | 1.40839 | 0.1630144 | 0.23106170 | 2.6301715 | 20 | 11 10.9 | 19.8 |
| 170608 2003 YR ₃₉ | 16.9 | X | 255.44024 | 90.31033 | 3.25263 | 2.79649 | 0.1757983 | 0.22097743 | 2.7095933 | 20 | 9 15.5 | 20.6 |
| 170609 2003 YV ₄₁ | 16.0 | X | 317.42676 | 310.87406 | 320.41373 | 0.79308 | 0.0665149 | 0.19885216 | 2.9070277 | 20 | 4 25.2 | 19.7 |
| 170610 2003 YG ₄₄ | 15.9 | X | 123.44167 | 234.77998 | 302.34041 | 3.14394 | 0.0415079 | 0.21034352 | 2.8001628 | 20 | 8 10.9 | 19.7 |
| 170611 2003 YT ₄₆ | 16.2 | X | 43.06109 | 297.07370 | 80.70570 | 2.85280 | 0.0207513 | 0.23716922 | 2.5848211 | 20 | — | — |
| 170612 2003 YX ₄₆ | 16.0 | X | 207.38084 | 87.00774 | 92.69638 | 4.00137 | 0.0852565 | 0.22993519 | 2.6387551 | 20 | 11 21.2 | 19.7 |
| 170613 2003 YS ₄₇ | 15.7 | X | 215.98141 | 81.43643 | 77.74099 | 14.71507 | 0.0488916 | 0.22802982 | 2.6534340 | 20 | 11 12.7 | 19.4 |
| 170614 2003 YU ₄₇ | 16.1 | X | 274.58550 | 184.66520 | 282.82009 | 2.48222 | 0.0590867 | 0.22955593 | 2.6416607 | 20 | 11 17.9 | 19.3 |
| 170615 2003 YT ₄₉ | 16.1 | X | 289.47245 | 10.12839 | 48.61586 | 1.65287 | 0.0428696 | 0.22410892 | 2.6842932 | 20 | 10 7.3 | 19.6 |
| 170616 2003 YG ₅₀ | 15.8 | X | 250.16822 | 226.22305 | 271.24627 | 11.74705 | 0.1279439 | 0.22823948 | 2.6518088 | 20 | 11 11.3 | 19.4 |
| 170617 2003 YW ₅₀ | 16.2 | X | 251.43937 | 211.41165 | 279.12508 | 8.04766 | 0.2650828 | 0.22530408 | 2.6747920 | 20 | 10 11.8 | 20.1 |
| 170618 2003 YX ₅₀ | 15.7 | X | 272.30114 | 267.73733 | 88.85738 | 13.86358 | 0.2089570 | 0.21265412 | 2.7798424 | 20 | 5 27.4 | 19.8 |
| 170619 2003 YC ₅₁ | 15.7 | X | 156.85928 | 101.39882 | 41.58241 | 4.09154 | 0.0343401 | 0.21316695 | 2.7753823 | 20 | 8 9.0 | 19.6 |
| 170620 2003 YP ₅₁ | 15.9 | X | 181.08511 | 141.34223 | 287.53118 | 5.58240 | 0.0811342 | 0.26570861 | 2.3962510 | 20 | 5 30.5 | 19.4 |
| 170621 2003 YX ₅₁ | 16.1 | X | 348.30637 | 328.41268 | 84.90293 | 4.15259 | 0.1301821 | 0.23180791 | 2.6245240 | 20 | — | — |
| 170622 2003 YJ ₅₅ | 15.3 | X | 254.11277 | 11.72119 | 87.53338 | 13.01896 | 0.1547983 | 0.22448755 | 2.6812740 | 20 | 10 2.3 | 19.1 |
| 170623 2003 YJ ₅₇ | 15.7 | X | 244.96591 | 278.59452 | 248.76401 | 12.76213 | 0.1018417 | 0.23282015 | 2.6169113 | 20 | 12 19.6 | 19.0 |
| 170624 2003 YK ₅₈ | 15.9 | X | 264.17540 | 20.64799 | 101.23687 | 5.34981 | 0.1251512 | 0.22798154 | 2.6538086 | 20 | 11 14.6 | 19.2 |
| 170625 2003 YN ₆₁ | 16.0 | X | 342.67642 | 40.57740 | 127.65733 | 1.46817 | 0.0674740 | 0.24717663 | 2.5145741 | 20 | 1 10.5 | 19.1 |
| 170626 2003 YD ₆₂ | 16.2 | X | 1.67559 | 86.94582 | 293.27929 | 1.99282 | 0.2265006 | 0.23070240 | 2.6329017 | 20 | 12 25.1 | 19.1 |
| 170627 2003 YV ₆₂ | 15.4 | X | 217.56160 | 33.52924 | 101.14026 | 10.54383 | 0.0810095 | 0.22039034 | 2.7144031 | 20 | 10 10.9 | 19.4 |
| 170628 2003 YL ₆₅ | 15.5 | X | 256.87267 | 330.89856 | 111.58559 | 8.82725 | 0.1251386 | 0.21891860 | 2.7265551 | 20 | 9 13.6 | 19.2 |
| 170629 2003 YX ₆₅ | 16.2 | X | 330.04141 | 169.75709 | 255.05814 | 1.72992 | 0.2137775 | 0.23214638 | 2.6219724 | 20 | 12 24.9 | 18.5 |
| 170630 2003 YQ ₆₈ | 16.0 | X | 257.73312 | 5.19516 | 116.68763 | 6.66275 | 0.1446589 | 0.22435868 | 2.6823007 | 20 | 11 2.9 | 19.5 |
| 170631 2003 YX ₆₉ | 15.7 | X | 287.69443 | 55.84434 | 113.58926 | 5.69003 | 0.1976657 | 0.24055632 | 2.5605005 | 20 | — | — |
| 170632 2003 YK ₇₀ | 15.8 | X | 226.83098 | 350.21825 | 119.36224 | 9.64999 | 0.2578829 | 0.21793163 | 2.7347809 | 20 | 8 27.2 | 20.3 |
| 170633 2003 YT ₇₁ | 15.8 | X | 102.50618 | 162.27205 | 320.69593 | 1.14482 | 0.1435246 | 0.20193851 | 2.8773318 | 20 | 5 19.1 | 20.0 |
| 170634 2003 YE ₇₂ | 15.8</ | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170641 2003 YF ₉₄ | 15.4 | X | 333.55976 | 133.58548 | 82.97025 | 3.39706 | 0.0060090 | 0.19196510 | 2.9761481 | 20 | 3 17.2 | 19.5 |
| 170642 2003 YX ₉₅ | 15.7 | X | 216.68916 | 267.30500 | 246.14582 | 10.42295 | 0.1422112 | 0.22554349 | 2.6728988 | 20 | 10 19.0 | 19.7 |
| 170643 2003 YN ₉₈ | 15.5 | X | 142.23337 | 167.07472 | 142.05869 | 3.07549 | 0.1924868 | 0.24421481 | 2.5348643 | 20 | — | — |
| 170644 2003 YW ₁₀₇ | 15.4 | X | 296.82509 | 103.48886 | 60.56826 | 11.01570 | 0.0517410 | 0.18104894 | 3.0946062 | 20 | — | — |
| 170645 2003 YU ₁₀₈ | 16.3 | X | 287.32436 | 75.60221 | 40.98569 | 3.72360 | 0.0957853 | 0.23255584 | 2.6188938 | 20 | 12 16.5 | 19.4 |
| 170646 2003 YB ₁₁₂ | 16.3 | X | 47.76795 | 27.87339 | 354.40653 | 4.83989 | 0.2174137 | 0.24097361 | 2.5575437 | 20 | — | — |
| 170647 2003 YA ₁₁₃ | 15.3 | X | 217.32277 | 192.11713 | 298.77975 | 11.73907 | 0.1006220 | 0.22008464 | 2.7169161 | 20 | 9 21.2 | 19.5 |
| 170648 2003 YA ₁₁₄ | 17.1 | X | 21.95890 | 52.34773 | 343.83733 | 6.06772 | 0.3654176 | 0.23963959 | 2.5670264 | 20 | — | — |
| 170649 2003 YC ₁₁₄ | 17.1 | X | 313.56006 | 24.57857 | 98.29531 | 3.44016 | 0.1270982 | 0.23735010 | 2.5835077 | 20 | — | — |
| 170650 2003 YR ₁₁₄ | 15.5 | X | 259.74808 | 353.17147 | 104.63918 | 15.85089 | 0.0363629 | 0.22191360 | 2.7019674 | 20 | 10 26.0 | 19.4 |
| 170651 2003 YT ₁₁₄ | 15.9 | X | 331.80518 | 318.04935 | 100.33137 | 4.68874 | 0.1384626 | 0.22917110 | 2.6446172 | 20 | 12 12.4 | 18.6 |
| 170652 2003 YJ ₁₁₆ | 16.0 | X | 90.18846 | 309.29266 | 85.72163 | 5.04963 | 0.2132447 | 0.24616288 | 2.5214731 | 20 | 1 16.4 | 18.7 |
| 170653 2003 YG ₁₁₉ | 16.3 | X | 42.39477 | 351.10660 | 50.64058 | 6.48652 | 0.2155506 | 0.24098624 | 2.5574543 | 20 | — | — |
| 170654 2003 YI ₁₂₈ | 15.7 | X | 208.80421 | 49.54520 | 68.79869 | 6.65885 | 0.1058422 | 0.21526772 | 2.7572963 | 20 | 9 5.7 | 19.9 |
| 170655 2003 YD ₁₂₉ | 15.2 | X | 278.93887 | 309.34096 | 88.47565 | 14.78578 | 0.1572176 | 0.21547792 | 2.7555029 | 20 | 8 9.1 | 18.9 |
| 170656 2003 YR ₁₃₀ | 16.3 | X | 339.03549 | 74.40607 | 20.26144 | 4.60734 | 0.1351440 | 0.23616524 | 2.5921417 | 20 | — | — |
| 170657 2003 YO ₁₃₂ | 15.8 | X | 316.86474 | 341.74576 | 18.93120 | 9.16703 | 0.1498994 | 0.21786323 | 2.7353533 | 20 | 8 23.3 | 18.8 |
| 170658 2003 YJ ₁₃₄ | 15.8 | X | 163.85356 | 96.30827 | 51.97309 | 10.72340 | 0.0558799 | 0.21281164 | 2.7784706 | 20 | 8 28.4 | 20.0 |
| 170659 2003 YL ₁₃₅ | 16.1 | X | 292.88160 | 22.89457 | 50.99197 | 9.27916 | 0.2291953 | 0.22527603 | 2.6750140 | 20 | 10 12.9 | 18.8 |
| 170660 2003 YS ₁₃₇ | 15.6 | X | 177.27218 | 21.10615 | 103.35071 | 10.33508 | 0.1157047 | 0.21055910 | 2.7982512 | 20 | 8 7.3 | 20.0 |
| 170661 2003 YV ₁₃₇ | 15.7 | X | 98.53270 | 138.80346 | 80.83090 | 5.00905 | 0.0386171 | 0.21299539 | 2.7768724 | 20 | 9 7.7 | 19.6 |
| 170662 2003 YD ₁₄₁ | 15.4 | X | 218.63118 | 82.66541 | 54.42871 | 13.82086 | 0.1258347 | 0.22209472 | 2.7004982 | 20 | 10 10.4 | 19.5 |
| 170663 2003 YF ₁₄₅ | 15.4 | X | 79.68391 | 186.18696 | 25.19834 | 9.58336 | 0.0282746 | 0.20822888 | 2.8190887 | 20 | 8 2.5 | 19.4 |
| 170664 2003 YT ₁₄₅ | 15.3 | X | 4.68187 | 305.80918 | 83.90759 | 15.91233 | 0.1723130 | 0.22845680 | 2.6501268 | 20 | — | — |
| 170665 2003 YU ₁₄₇ | 15.9 | X | 283.95113 | 37.12393 | 33.82514 | 12.17230 | 0.1676939 | 0.22577146 | 2.6710992 | 20 | 10 2.6 | 19.0 |
| 170666 2003 YV ₁₅₁ | 15.3 | X | 46.19462 | 62.05339 | 346.27534 | 12.59004 | 0.1872033 | 0.24004545 | 2.5641321 | 20 | — | — |
| 170667 2003 YR ₁₅₂ | 15.5 | X | 336.80666 | 161.78074 | 110.11088 | 5.69490 | 0.1103977 | 0.20345467 | 2.8630193 | 20 | 5 22.9 | 18.8 |
| 170668 2003 YH ₁₅₅ | 16.0 | X | 232.30900 | 267.61918 | 209.87720 | 6.51983 | 0.1578421 | 0.21928362 | 2.7235284 | 20 | 9 18.9 | 19.9 |
| 170669 2003 YH ₁₅₈ | 15.9 | X | 339.21253 | 67.96101 | 320.12119 | 10.69302 | 0.1856997 | 0.23115676 | 2.6294504 | 20 | 11 13.3 | 18.7 |
| 170670 2003 YP ₁₆₆ | 16.5 | X | 356.74332 | 183.86791 | 236.52820 | 3.01504 | 0.0943280 | 0.23349680 | 2.6118532 | 20 | — | — |
| 170671 2003 YX ₁₆₈ | 15.5 | X | 244.90505 | 142.25620 | 313.24802 | 6.98578 | 0.0702225 | 0.22063411 | 2.7124034 | 20 | 9 16.9 | 19.4 |
| 170672 2003 YT ₁₇₀ | 15.4 | X | 172.41248 | 114.79334 | 83.20499 | 12.44346 | 0.1393592 | 0.22236942 | 2.6982738 | 20 | 11 4.8 | 19.8 |
| 170673 2003 YG ₁₇₄ | 16.0 | X | 165.99790 | 148.65231 | 96.21709 | 4.13220 | 0.1117433 | 0.23508903 | 2.6000467 | 20 | 12 24.8 | 20.0 |
| 170674 2003 YM ₁₇₄ | 15.7 | X | 190.37585 | 68.76721 | 114.10086 | 4.69582 | 0.0297651 | 0.22487841 | 2.6781663 | 20 | 11 11.3 | 19.4 |
| 170675 2003 YS ₁₇₄ | 16.0 | X | 352.76069 | 271.30424 | 316.89351 | 5.12372 | 0.1308427 | 0.25871023 | 2.4392725 | 20 | 4 8.9 | 18.5 |
| 170676 2003 YE ₁₈₀ | 16.1 | X | 316.01681 | 151.53125 | 32.27420 | 4.55322 | 0.0307256 | 0.24384546 | 2.5374234 | 20 | 1 1.0 | 19.5 |
| 170677 2003 YP ₁₈₀ | 15.5 | X | 72.54934 | 204.85411 | 2.90318 | 5.41683 | 0.2069735 | 0.20337808 | 2.8637380 | 20 | 8 12.5 | 19.5 |
| 170678 2003 YQ ₁₈₀ | 16.4 | X | 156.58071 | 320.33037 | 160.89780 | 2.78491 | 0.1373999 | 0.20543714 | 2.8445708 | 20 | 7 11.7 | 20.8 |
| 170679 2004 AE ₁ | 15.5 | X | 268.12720 | 228.86080 | 260.43479 | 10.64208 | 0.2213305 | 0.22521270 | 2.6755155 | 20 | 11 11.8 | 18.7 |
| 170680 2004 AX ₁ | 15.8 | X | 208.79528 | 285.03476 | 183.13156 | 8.48086 | 0.1469725 | 0.21378369 | 2.7700419 | 20 | 8 13.5 | 20.2 |
| 170681 2004 AF ₃ | 15.8 | X | 220.64218 | 154.83492 | 320.99416 | 10.49277 | 0.0774461 | 0.21745036 | 2.7388145 | 20 | 9 11.3 | 19.8 |
| 170682 2004 AM ₃ | 16.0 | X | 239.31995 | 96.93559 | 336.82333 | 6.90577 | 0.2062306 | 0.21508957 | 2.7588186 | 20 | 7 29.6 | 20.3 |
| 170683 2004 AO ₄ | 15.9 | X | 51.12193 | 105.01302 | 37.79191 | 5.10638 | 0.1359407 | 0.19227927 | 2.9729052 | 20 | 4 5.2 | 19.4 |
| 170684 2004 AO ₅ | 16.8 | X | 151.36856 | 296.13994 | 152.32827 | 1.37102 | 0.1945475 | 0.26210857 | 2.4181426 | 20 | 5 29.8 | 20.7 |
| 170685 2004 AS ₈ | 16.1 | X | 249.96027 | 265.52121 | 178.34628 | 9.00498 | 0.1919787 | 0.21738973 | 2.7393237 | 20 | 8 22.3 | 20.0 |
| 170686 2004 AK ₂₄ | 15.9 | X | 224.39194 | 317.34138 | 128.11037 | 10.48943 | 0.1645724 | 0.21400372 | 2.7681428 | 20 | 7 31.9 | 20.0 |
| 170687 2004 AV ₂₄ | 16.1 | X | 292.82931 | 12.52162 | 13.91863 | 3.45316 | 0.0901798 | 0.21577910 | 2.7529382 | 20 | 8 22.9 | 19.4 |
| 170688 2004 BJ ₁ | 16.4 | X | 272.88893 | 335.92457 | 271.46924 | 4.04058 | 0.0665039 | 0.24613024 | 2.5216960 | 20 | 1 22.3 | 19.7 |
| 170689 2004 BN ₂ | 15.6 | X | 102.91088 | 102.84987 | 301.06031 | 8.25523 | 0.2453707 | 0.18950535 | 3.0018459 | 20 | 2 23.4 | 20.0 |
| 170690 2004 BX ₃ | 16.5 | X | 136.98804 | 338.99939 | 78.10471 | 3.78988 | 0.1508775 | 0.25529848 | 2.4609563 | 20 | 4 3.7 | 20.0 |
| 170691 2004 BN ₄ | 16.3 | X | 188.40113 | 6.88944 | 94.42095 | 2.91822 | 0.0880964 | 0.20813331 | 2.8199516 | 20 | 7 19.9 | 20.6 |
| 170692 2004 BV ₉ | 15.3 | X | 264.15716 | 215.40167 | 160.07799 | 3.84253 | 0.1172239 | 0.17123490 | 3.1883282 | 20 | — | — |
| 170693 2004 BR ₁₀ | 15.6 | X | 328.00710 | 160.67706 | 248.87288 | 13.03175 | 0.2086627 | 0.22706820 | 2.6609201 | 20 | 11 24.5 | 17.9 |
| 170694 2004 BW ₁₄ | 16.3 | X | 142.52902 | 93.41436 | 318.76582 | 1.48596 | 0.2022272 | 0.25665409 | 2.4522830 | 20 | 4 4.7 | 20.1 |
| 170695 2004 BB ₁₆ | 15.9 | X | 353.60421 | 328.21035 | 87.38884 | 6.39841 | 0.2378717 | 0.23087770 | 2.6315688 | 20 | — | — |
| 170696 2004 BY ₁₈ | 15.3 | X | 253.32670 | 195.60500 | 262.62702 | 8.76291 | 0.2066946 | 0.21940780 | 2.7225007 | 20 | 9 8.9 | 19.2 |
| 170697 2004 BT ₂₀ | 15.6 | X | 79.14501 | 8.28812 | 73.70401 | 3.02287 | 0.0883410 | 0.18855723 | 3.0119003 | 20 | 2 22.4 | 19.5 |
| 170698 2004 BD ₂₃ | 15.6 | X | 342.76656 | 132.91454 | 123.61075 | 3.36510 | 0.0532653 | 0.19817477 | 2.9136844 | 20 | 5 15.4 | 19.3 |
| 170699 2004 BL ₂₃ | 16.1 | X | 94.86682 | 192.76873 | 328.76582 | 1.15188 | 0.1099676 | 0.20016831 | 2.8942708 | 20 | 6 24.8 | 20.2 |
| 170700 2004 BY ₂₃ | 17.0 | X | 40.04039 | 223.95800 | 297.71306 | 1.38446 | 0.1394451 | 0.25325980 | 2.4741453 | 20 | 4 4.7 | 19.3 |
| 170701 2004 BX ₂₄ | 16.2 | X | 177.98375 | 216.56171 | 196.39682 | 1.46015 | 0.0494393 | 0.19946601 | 2.9010605 | 20 | 5 7.5 | 20.4 |
| 170702 2004 BJ ₂₅ | 15.2 | X | 279.33953 | 78.94237 | 298.74394 | 10.54254 | 0.1153543 | 0.21167504 | 2.7884077 | 20 | 7 16.5 | 18.8 |
| 170703 2004 BB ₂₆ | 16.1 | X | 289.38533 | 268.35073 | 158.77177 | 14.16699 | 0.0580374 | 0.22101922 | 2.7092517 | 20 | 10 19.6 | 19.7 |
| 170704 2004 BP ₂₉ | 16.6 | X | 300.83199 | 15.24075 | 66.56048 | 2.26529 | 0.1872749 | 0.22517396 | 2.6758223 | 20 | 11 12.0 | 19.1 |
| 170705 2004 BC ₃₀ | 15.5 | X | 7.97581 | 52.47467 | 85.74168 | 2.78987 | 0.1270014 | 0.18223118 | 3.0812074 | 20 | 1 18.2 | 19.2 |
| 170706 2004 BA ₃₁ | 15.3 | X | 107.73175 | 316.34459 | 134.27098 | 12.00546 | 0.0620764 | 0.19187692 | 2.9770598 | 20 | 4 8.8 | 19.7 |
| 170707 2004 BU ₃₁ | 16.0 | X | 263.04695 | 303.07735 | 90.54357 | 5.14770 | 0.1031707 | 0.21184644 | 2.7869035 | 20 | 7 17.7 | 19.8 |
| 170708 2004 BD ₃₂ | 15.3 | X | 238.31153 | 198.93119 | 85.97188 | 3.65562 | 0.0416843 | 0.18687074 | 3.0299945 | 20 | 2 10.2 | 19.8 |
| 170709 2004 BJ ₃₇ | 16.2 | X | 134.52510 | 56.73760 | 4.63926 | 1.82353 | 0.0217669 | 0.19251728 | 2.9704545 | 20 | 3 25.7 | 20.3 |
| 170710 2004 BC ₃₈ | 15.2 | X | 110.35505 | 158.28659 | 336.14123 | 7.29809 | 0.1778226 | 0.19839430 | 2.9114986 | 20 | 6 15.6 | 19.8 |
| 170711 2004 BD ₄₀ | 15.7 | X | 262.90563 | 117.72999 | 294.62433 | 3.00918 | 0.0956396 | 0.21351383 | 2.7723754 | 20 | 8 11.9 | 19.3 |
| 170712 2004 BV ₄₂ | 14.7 | X | 286.29690 | 220.52334 | 328.51817 | 12.01666 | 0.0990760 | 0.17458901 | 3.1704782 | 20 | — | — |
| 170713 2004 BK ₄₃ | 16.0 | X | 245.85809 | 93.52911 | 75.61981 | 3.12518 | 0.0630585 | 0.22658698 | 2.6646862 | 20 | 12 27.5 | 19.3 |
| 1 | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 170721 2004 BS ₅₀ | 15.8 | X | 204.36338 | 331.17778 | 135.84655 | 7.13471 | 0.1864343 | 0.21242124 | 2.7818738 | 20 | 8 6.8 | 20.4 |
| 170722 2004 BJ ₅₅ | 16.2 | X | 252.35085 | 293.78125 | 126.98088 | 5.24253 | 0.0627942 | 0.21231305 | 2.7828187 | 20 | 8 15.2 | 20.0 |
| 170723 2004 BQ ₅₇ | 15.2 | X | 96.81439 | 168.17287 | 272.44484 | 9.80716 | 0.0277852 | 0.18967321 | 3.0000746 | 20 | 2 28.4 | 19.6 |
| 170724 2004 BH ₅₉ | 16.1 | X | 5.48192 | 185.18327 | 284.95983 | 10.38798 | 0.0886321 | 0.23911515 | 2.5707784 | 20 | — | — |
| 170725 2004 BB ₇₂ | 15.1 | X | 46.79966 | 103.78777 | 271.37060 | 9.92780 | 0.3544136 | 0.23639302 | 2.5904762 | 20 | — | — |
| 170726 2004 BN ₇₃ | 15.5 | X | 308.61684 | 341.68343 | 250.06460 | 1.78974 | 0.0151096 | 0.18849470 | 3.0125664 | 20 | 3 1.3 | 19.8 |
| 170727 2004 BU ₇₃ | 15.0 | X | 294.61586 | 66.44004 | 129.41121 | 6.24116 | 0.1177830 | 0.17798954 | 3.1299668 | 20 | — | — |
| 170728 2004 BG ₇₄ | 15.7 | X | 151.14185 | 213.68008 | 212.94789 | 0.96309 | 0.0518399 | 0.19595030 | 2.9356578 | 20 | 4 23.8 | 19.9 |
| 170729 2004 BR ₇₅ | 15.4 | X | 167.96645 | 282.26210 | 105.85485 | 10.34748 | 0.0650032 | 0.19168958 | 2.9789991 | 20 | 4 1.2 | 20.0 |
| 170730 2004 BO ₇₉ | 15.1 | X | 30.58968 | 288.11399 | 229.75209 | 9.03286 | 0.0421018 | 0.18883283 | 3.0089691 | 20 | 3 12.3 | 19.2 |
| 170731 2004 BK ₈₃ | 15.0 | X | 75.48459 | 129.60107 | 257.54741 | 25.04422 | 0.2917117 | 0.24242929 | 2.5472955 | 20 | — | — |
| 170732 2004 BC ₉₀ | 15.0 | X | 18.84989 | 209.27500 | 291.64681 | 9.96214 | 0.1050865 | 0.18283977 | 3.0743663 | 20 | 2 6.1 | 18.8 |
| 170733 2004 BL ₉₀ | 14.9 | X | 257.89027 | 262.94045 | 296.68437 | 6.33394 | 0.1006469 | 0.17261249 | 3.1946349 | 20 | — | — |
| 170734 2004 BO ₉₁ | 16.1 | X | 18.96346 | 282.50341 | 146.71423 | 12.93734 | 0.2361716 | 0.23644746 | 2.5900786 | 20 | — | — |
| 170735 2004 BO ₉₂ | 15.2 | X | 239.74994 | 302.91926 | 271.13168 | 11.69721 | 0.1555967 | 0.23225938 | 2.6211218 | 20 | — | — |
| 170736 2004 BV ₉₂ | 15.9 | X | 298.04836 | 253.71687 | 211.21854 | 7.07972 | 0.1896617 | 0.22763844 | 2.6564745 | 20 | 12 10.6 | 18.4 |
| 170737 2004 BC ₉₅ | 16.2 | X | 277.37789 | 250.60846 | 205.80540 | 12.58125 | 0.2471549 | 0.22301506 | 2.6933065 | 20 | 10 8.6 | 19.1 |
| 170738 2004 BM ₉₈ | 15.4 | X | 110.40160 | 210.02092 | 167.10446 | 10.81524 | 0.0880923 | 0.17557458 | 3.1586024 | 20 | 1 13.3 | 20.0 |
| 170739 2004 BU ₁₀₃ | 14.9 | X | 7.98208 | 203.52049 | 355.25007 | 9.09370 | 0.0578029 | 0.19070187 | 2.9892764 | 20 | 4 3.4 | 18.7 |
| 170740 2004 BE ₁₀₅ | 16.5 | X | 62.16816 | 299.50855 | 250.08659 | 1.42791 | 0.1261823 | 0.25967868 | 2.4332040 | 20 | 6 23.2 | 19.2 |
| 170741 2004 BM ₁₀₅ | 15.2 | X | 178.85928 | 231.04295 | 139.50758 | 11.83245 | 0.0324130 | 0.19030261 | 2.9934561 | 20 | 3 19.5 | 19.6 |
| 170742 2004 BF ₁₀₆ | 15.3 | X | 182.67873 | 183.30902 | 337.87131 | 6.84850 | 0.2275054 | 0.21493592 | 2.7601332 | 20 | 9 20.3 | 20.0 |
| 170743 2004 BG ₁₀₆ | 15.8 | X | 13.16877 | 185.28348 | 102.69174 | 5.50677 | 0.0379308 | 0.21041739 | 2.7995075 | 20 | 8 12.2 | 19.4 |
| 170744 2004 BH ₁₀₇ | 16.0 | X | 63.56168 | 342.35038 | 67.38763 | 6.79605 | 0.2610085 | 0.24212653 | 2.5494185 | 20 | — | — |
| 170745 2004 BR ₁₁₃ | 15.8 | X | 264.91505 | 74.29315 | 16.37083 | 7.91107 | 0.1264385 | 0.22058869 | 2.7127757 | 20 | 9 12.4 | 19.4 |
| 170746 2004 BW ₁₁₆ | 15.2 | X | 13.74614 | 186.25587 | 350.03624 | 11.09705 | 0.0220691 | 0.19049733 | 2.9914158 | 20 | 3 15.2 | 19.2 |
| 170747 2004 BV ₁₂₅ | 16.5 | X | 225.43500 | 18.59030 | 18.52862 | 2.15488 | 0.1023735 | 0.20616060 | 2.8379121 | 20 | 6 6.4 | 20.8 |
| 170748 2004 BC ₁₃₁ | 15.8 | X | 235.07182 | 200.85133 | 155.81063 | 2.54736 | 0.0928680 | 0.20060332 | 2.8900851 | 20 | 4 28.7 | 20.1 |
| 170749 2004 BT ₁₃₉ | 16.1 | X | 118.56805 | 254.07302 | 329.14308 | 2.06880 | 0.0703086 | 0.21580074 | 2.7527542 | 20 | 10 6.0 | 20.2 |
| 170750 2004 BR ₁₄₇ | 15.8 | X | 208.28858 | 325.83459 | 114.42455 | 2.95178 | 0.0721392 | 0.21122292 | 2.7923853 | 20 | 7 15.8 | 19.9 |
| 170751 2004 BC ₁₆₃ | 15.9 | X | 205.51428 | 293.62748 | 141.81518 | 2.68772 | 0.0333885 | 0.20558179 | 2.8432363 | 20 | 7 8.7 | 20.0 |
| 170752 2004 CX ₁ | 15.9 | X | 34.65320 | 181.86010 | 41.99938 | 3.25982 | 0.1542214 | 0.25884281 | 2.4384394 | 20 | 7 2.9 | 18.3 |
| 170753 2004 CW ₄ | 15.8 | X | 123.73184 | 129.62948 | 58.55864 | 4.58064 | 0.0347592 | 0.20974960 | 2.8054462 | 20 | 8 27.8 | 19.8 |
| 170754 2004 CF ₈ | 15.1 | X | 296.86026 | 111.75228 | 79.35377 | 10.75311 | 0.0318035 | 0.17780034 | 3.1321868 | 20 | — | — |
| 170755 2004 CF ₁₇ | 15.8 | X | 223.05570 | 142.55087 | 136.58863 | 7.12037 | 0.0767538 | 0.23966142 | 2.5668705 | 20 | 1 7.2 | 19.6 |
| 170756 2004 CS ₁₈ | 16.1 | X | 243.81719 | 51.88455 | 47.44481 | 5.32361 | 0.1285400 | 0.21653393 | 2.7465367 | 20 | 9 17.0 | 20.0 |
| 170757 2004 CH ₁₉ | 16.3 | X | 161.11694 | 160.43964 | 288.53503 | 1.03748 | 0.0296019 | 0.20202162 | 2.8765427 | 20 | 6 1.7 | 20.2 |
| 170758 2004 CA ₂₄ | 15.5 | X | 149.39676 | 305.83761 | 181.04386 | 15.17233 | 0.0882622 | 0.20432882 | 2.8548479 | 20 | 7 8.4 | 20.2 |
| 170759 2004 CW ₂₄ | 15.3 | X | 290.86514 | 303.89421 | 304.15199 | 10.09715 | 0.0128371 | 0.18568164 | 3.0429168 | 20 | 2 26.5 | 19.7 |
| 170760 2004 CL ₂₅ | 16.1 | X | 232.72675 | 273.32364 | 120.72756 | 7.42845 | 0.0737140 | 0.20494560 | 2.8491173 | 20 | 6 14.5 | 20.2 |
| 170761 2004 CF ₂₇ | 15.1 | X | 245.66464 | 125.60110 | 142.69341 | 10.76517 | 0.0496960 | 0.18089909 | 3.0963150 | 20 | 1 28.1 | 19.7 |
| 170762 2004 CJ ₄₂ | 16.4 | X | 60.53540 | 343.38984 | 115.46665 | 6.00038 | 0.1322560 | 0.24588308 | 2.5233856 | 20 | 2 12.9 | 18.9 |
| 170763 2004 CB ₄₃ | 14.9 | X | 62.72438 | 93.80126 | 347.53822 | 15.49621 | 0.0609934 | 0.18165325 | 3.0877391 | 20 | 1 31.7 | 19.2 |
| 170764 2004 CM ₅₁ | 15.4 | X | 278.32590 | 4.58022 | 81.46010 | 9.44032 | 0.1163150 | 0.22062798 | 2.7124536 | 20 | 10 21.4 | 18.8 |
| 170765 2004 CN ₅₇ | 15.4 | X | 89.44835 | 355.53802 | 96.40747 | 12.22377 | 0.0802331 | 0.18985708 | 2.9981373 | 20 | 3 22.9 | 19.8 |
| 170766 2004 CM ₆₆ | 15.3 | X | 244.89677 | 196.10849 | 92.51233 | 8.28837 | 0.0413869 | 0.18470192 | 3.0536677 | 20 | 2 11.8 | 19.8 |
| 170767 2004 CA ₆₈ | 15.2 | X | 281.16503 | 169.96216 | 43.51071 | 5.72837 | 0.0872211 | 0.17775715 | 3.1326941 | 20 | — | — |
| 170768 2004 CJ ₆₈ | 15.8 | X | 223.22011 | 169.46578 | 250.33094 | 2.69425 | 0.1051007 | 0.20911089 | 2.8111560 | 20 | 7 3.0 | 19.9 |
| 170769 2004 CT ₆₈ | 17.0 | X | 0.68082 | 45.24750 | 24.12714 | 4.78666 | 0.2037190 | 0.23334524 | 2.6129840 | 20 | — | — |
| 170770 2004 CV ₇₃ | 15.1 | X | 234.31329 | 160.80128 | 104.87506 | 9.27991 | 0.1357867 | 0.17968714 | 3.1102219 | 20 | 1 8.9 | 20.1 |
| 170771 2004 CB ₇₃ | 15.3 | X | 48.31405 | 54.15567 | 100.78473 | 7.06561 | 0.0083615 | 0.19274668 | 2.9680971 | 20 | 4 5.8 | 19.5 |
| 170772 2004 CB ₇₄ | 14.9 | X | 301.99320 | 131.63376 | 60.33767 | 11.16485 | 0.1698155 | 0.17551060 | 3.1593699 | 20 | — | — |
| 170773 2004 CB ₇₈ | 15.4 | X | 3.48280 | 93.68004 | 85.96835 | 2.86608 | 0.0911192 | 0.18604802 | 3.0389206 | 20 | 3 6.2 | 19.1 |
| 170774 2004 CL ₇₈ | 16.4 | X | 67.20382 | 310.16901 | 129.29834 | 5.16566 | 0.1678955 | 0.24451754 | 2.5327716 | 20 | 2 1.1 | 18.7 |
| 170775 2004 CY ₈₃ | 15.8 | X | 156.37419 | 251.05440 | 158.95681 | 4.00357 | 0.0242820 | 0.19162764 | 2.9796410 | 20 | 4 8.4 | 20.1 |
| 170776 2004 CA ₉₅ | 15.4 | X | 93.48311 | 127.15100 | 335.74755 | 8.48735 | 0.0998827 | 0.18947503 | 3.0021661 | 20 | 4 3.9 | 19.6 |
| 170777 2004 BC ₉₆ | 15.1 | X | 331.95759 | 194.99724 | 321.75274 | 4.26510 | 0.1013626 | 0.17724922 | 3.1386760 | 20 | — | — |
| 170778 2004 CP ₉₆ | 15.5 | X | 340.00485 | 359.16415 | 49.58398 | 15.43306 | 0.2422990 | 0.22987461 | 2.6392187 | 20 | 12 24.6 | 18.1 |
| 170779 2004 CD ₉₈ | 15.1 | X | 20.12906 | 121.82124 | 45.54363 | 13.17043 | 0.0469839 | 0.18843764 | 3.0131745 | 20 | 3 20.3 | 19.2 |
| 170780 2004 CU ₁₀₁ | 15.8 | X | 307.37156 | 186.95468 | 242.86352 | 11.17771 | 0.2107702 | 0.22492667 | 2.6777832 | 20 | 11 4.6 | 18.3 |
| 170781 2004 CL ₁₀₃ | 15.3 | X | 330.36104 | 325.23029 | 255.73973 | 7.05430 | 0.0593656 | 0.18634899 | 3.0356476 | 20 | 3 8.0 | 19.5 |
| 170782 2004 CG ₁₀₄ | 15.4 | X | 346.05355 | 333.19687 | 191.21590 | 17.09199 | 0.1461157 | 0.18111292 | 3.0938774 | 20 | 1 11.7 | 19.7 |
| 170783 2004 CT ₁₀₅ | 15.5 | X | 112.94527 | 175.87012 | 262.92435 | 10.31700 | 0.1327484 | 0.19065720 | 2.9897433 | 20 | 3 31.2 | 20.1 |
| 170784 2004 CK ₁₀₆ | 15.1 | X | 300.58442 | 337.80872 | 188.45467 | 16.48610 | 0.1542178 | 0.17280903 | 3.1922123 | 20 | — | — |
| 170785 2004 CH ₁₁₂ | 15.1 | X | 141.18193 | 250.48997 | 110.10897 | 12.44206 | 0.0989126 | 0.18364222 | 3.0654038 | 20 | 1 30.1 | 19.7 |
| 170786 2004 CK ₁₁₃ | 15.9 | X | 203.61635 | 145.53151 | 89.02108 | 10.99064 | 0.0695212 | 0.23104307 | 2.6303129 | 20 | — | — |
| 170787 2004 CM ₁₁₆ | 15.3 | X | 287.62779 | 236.20867 | 9.50093 | 3.41077 | 0.0924399 | 0.18578699 | 3.0417663 | 20 | 2 13.3 | 19.5 |
| 170788 2004 CC ₁₂₁ | 15.9 | X | 279.01974 | 167.17742 | 166.14322 | 1.81034 | 0.0426752 | 0.19927196 | 2.9029435 | 20 | 5 28.4 | 19.9 |
| 170789 2004 DD ₂ | 15.8 | X | 184.83091 | 305.15163 | 188.90658 | 11.51499 | 0.1021497 | 0.21139181 | 2.7908978 | 20 | 8 23.7 | 20.2 |
| 170790 2004 DY ₄ | 15.1 | X | 298.43506 | 177.83988 | 251.97235 | 15.68685 | 0.1286726 | 0.17604700 | 3.1529491 | 20 | 1 1.9 | 19.9 |
| 170791 2004 DZ ₆ | 16.1 | X | 355.66136 | 180.18086 | 308.41130 | 3.10866 | 0.0408147 | 0.23700136 | 2.5860415 | 20 | — | — |
| 170792 2004 DL ₁₀ | 15.4 | X | 148.20359 | 169.33139 | 259.67384 | 3.63086 | 0.1214243 | 0.19516535 | 2.9435240 | 20 | 4 27.7 | 20.0 |
| 170793 2004 DJ ₁₁ | 15.6 | X | 74.46194 | 60.98127 | 102.01111 | 3.10662 | 0.0352531 | 0.19642114 | 2.9309646 | 20 | 5 20.7 | 19.7 |
| 170794 2004 DF ₁₂ | 15.5 | X | 197.84696 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 170801 | 2004 | DF ₂₉ | 15.5 | X | 198.55252 | 37.46212 | 15.70277 | 2.18715 | 0.0320605 | 0.19849921 | 2.9104727 | 20 | 5 31.7 | 19.5 |
| 170802 | 2004 | DP ₂₉ | 15.8 | X | 202.24877 | 306.75137 | 131.26312 | 2.98337 | 0.0346254 | 0.20284814 | 2.8687235 | 20 | 7 7.9 | 19.9 |
| 170803 | 2004 | DY ₂₉ | 15.1 | X | 133.87203 | 87.91919 | 337.61364 | 14.55797 | 0.0623158 | 0.19106565 | 2.9854810 | 20 | 3 29.2 | 19.6 |
| 170804 | 2004 | DW ₃₀ | 15.3 | X | 251.41062 | 246.17430 | 346.64172 | 6.37765 | 0.1075598 | 0.17500027 | 3.1655092 | 20 | — | — |
| 170805 | 2004 | DW ₃₅ | 15.2 | X | 88.67896 | 157.29266 | 301.48135 | 9.13059 | 0.0728628 | 0.18797319 | 3.0181358 | 20 | 3 18.5 | 19.5 |
| 170806 | 2004 | DX ₃₆ | 15.2 | X | 48.50699 | 317.01015 | 149.44315 | 6.21419 | 0.0684862 | 0.18036430 | 3.1024324 | 20 | 2 7.8 | 19.3 |
| 170807 | 2004 | DP ₃₇ | 14.8 | X | 284.14640 | 79.92919 | 162.15501 | 15.61711 | 0.0057282 | 0.18059894 | 3.0997447 | 20 | 2 15.0 | 19.2 |
| 170808 | 2004 | DD ₃₈ | 15.0 | X | 355.33978 | 236.72606 | 298.28427 | 8.02671 | 0.0378471 | 0.18263629 | 3.0766493 | 20 | 2 17.3 | 19.2 |
| 170809 | 2004 | DB ₄₉ | 15.4 | X | 49.08640 | 357.73950 | 174.82035 | 9.62542 | 0.1175965 | 0.19018621 | 2.9946773 | 20 | 5 10.6 | 19.3 |
| 170810 | 2004 | DU ₅₁ | 15.1 | X | 320.79001 | 14.68189 | 143.34420 | 6.53095 | 0.0638454 | 0.17297366 | 3.1901865 | 20 | — | — |
| 170811 | 2004 | DY ₅₁ | 15.1 | X | 93.89660 | 304.02186 | 154.97510 | 11.15129 | 0.0764439 | 0.18658200 | 3.0331198 | 20 | 4 2.6 | 19.4 |
| 170812 | 2004 | DT ₆₅ | 15.8 | X | 310.71329 | 233.95431 | 88.84837 | 3.13980 | 0.0789021 | 0.20441230 | 2.8540706 | 20 | 6 22.6 | 19.3 |
| 170813 | 2004 | DW ₇₁ | 15.1 | X | 156.06800 | 323.23033 | 338.73848 | 10.24871 | 0.0426036 | 0.16944654 | 3.2343046 | 20 | — | — |
| 170814 | 2004 | DO ₇₅ | 16.0 | X | 100.14904 | 40.33056 | 271.27832 | 1.99990 | 0.0677461 | 0.22432004 | 2.6826087 | 20 | — | — |
| 170815 | 2004 | EE ₂ | 15.7 | X | 331.88192 | 77.77286 | 121.61162 | 7.47171 | 0.1596473 | 0.17902338 | 3.1179050 | 20 | 2 4.9 | 19.5 |
| 170816 | 2004 | EC ₃ | 15.2 | X | 96.40435 | 19.90154 | 45.58324 | 12.12499 | 0.0577161 | 0.18309907 | 3.0714631 | 20 | 2 25.4 | 19.7 |
| 170817 | 2004 | EV ₄ | 15.7 | X | 109.59534 | 344.86256 | 158.83168 | 2.40465 | 0.0819181 | 0.19644897 | 2.9306878 | 20 | 6 15.7 | 19.9 |
| 170818 | 2004 | EL ₅ | 15.5 | X | 32.66470 | 67.07286 | 35.74525 | 1.69052 | 0.0255883 | 0.17596994 | 3.1538696 | 20 | 1 12.7 | 19.7 |
| 170819 | 2004 | EU ₁₀ | 15.1 | X | 319.99346 | 125.03525 | 106.40862 | 2.55172 | 0.0913396 | 0.18327147 | 3.0695365 | 20 | 3 8.2 | 19.1 |
| 170820 | 2004 | ER ₁₂ | 15.4 | X | 264.94038 | 52.12726 | 168.26876 | 0.57853 | 0.1199823 | 0.17257357 | 3.1951153 | 20 | — | — |
| 170821 | 2004 | EA ₁₃ | 16.0 | X | 84.20750 | 59.73546 | 90.05635 | 1.24659 | 0.1127834 | 0.19326235 | 2.9628151 | 20 | 5 27.5 | 20.1 |
| 170822 | 2004 | EB ₁₃ | 15.1 | X | 50.01481 | 279.74716 | 156.40344 | 12.15691 | 0.1267902 | 0.17712409 | 3.1401541 | 20 | 1 8.3 | 19.1 |
| 170823 | 2004 | EO ₁₄ | 15.5 | X | 132.17068 | 160.59991 | 76.11702 | 6.05271 | 0.0996614 | 0.21299642 | 2.7768634 | 20 | 11 9.0 | 19.7 |
| 170824 | 2004 | EO ₃₄ | 15.9 | X | 93.58483 | 155.41310 | 349.01835 | 2.32535 | 0.0771967 | 0.19325276 | 2.9628671 | 20 | 5 26.6 | 20.0 |
| 170825 | 2004 | EE ₃₇ | 15.0 | X | 70.51631 | 112.40042 | 48.13954 | 14.55968 | 0.1234041 | 0.18993204 | 2.9973484 | 20 | 5 23.1 | 19.0 |
| 170826 | 2004 | EM ₅₇ | 15.5 | X | 303.43456 | 88.38200 | 168.59047 | 2.13595 | 0.0815745 | 0.18697713 | 3.0288451 | 20 | 3 18.1 | 19.6 |
| 170827 | 2004 | EG ₅₉ | 15.6 | X | 1.71880 | 173.70398 | 38.27651 | 4.31684 | 0.1154874 | 0.18764988 | 3.0216016 | 20 | 4 12.9 | 19.0 |
| 170828 | 2004 | EY ₆₁ | 16.3 | X | 90.40197 | 247.35937 | 228.62627 | 0.59091 | 0.2003186 | 0.19068693 | 2.9894326 | 20 | 5 4.3 | 20.5 |
| 170829 | 2004 | EL ₆₃ | 15.1 | X | 260.59257 | 38.01463 | 195.41179 | 4.71515 | 0.0767813 | 0.17326553 | 3.1866029 | 20 | 1 2.1 | 19.8 |
| 170830 | 2004 | ET ₆₆ | 15.7 | X | 133.36836 | 118.48869 | 4.71428 | 6.01890 | 0.2447900 | 0.19736697 | 2.9215931 | 20 | 6 28.9 | 20.8 |
| 170831 | 2004 | EK ₆₇ | 15.3 | X | 137.95884 | 170.66251 | 175.26647 | 8.46717 | 0.0648228 | 0.17394948 | 3.1782444 | 20 | 1 5.6 | 20.0 |
| 170832 | 2004 | EF ₇₅ | 15.0 | X | 52.37956 | 251.20574 | 211.55326 | 11.89143 | 0.1505292 | 0.18037185 | 3.1023458 | 20 | 2 12.9 | 18.9 |
| 170833 | 2004 | EF ₈₄ | 16.4 | X | 317.93331 | 314.42717 | 245.53299 | 2.69070 | 0.0559674 | 0.24279017 | 2.5447707 | 20 | 1 19.9 | 19.7 |
| 170834 | 2004 | EY ₈₅ | 15.9 | X | 165.68565 | 110.49435 | 97.10591 | 4.89255 | 0.0468937 | 0.21458271 | 2.7631613 | 20 | 11 9.9 | 19.8 |
| 170835 | 2004 | EH ₁₀₈ | 15.9 | X | 189.25060 | 68.42751 | 263.33244 | 0.98541 | 0.0763745 | 0.17952755 | 3.1120649 | 20 | 2 12.1 | 20.5 |
| 170836 | 2004 | FK ₁₇ | 14.9 | X | 67.36415 | 331.26522 | 113.22004 | 12.87670 | 0.0128928 | 0.17836964 | 3.1255187 | 20 | 2 2.2 | 19.2 |
| 170837 | 2004 | FO ₂₀ | 15.5 | X | 69.49355 | 323.58171 | 189.45817 | 9.35419 | 0.1143653 | 0.18947470 | 3.0021696 | 20 | 5 13.7 | 19.0 |
| 170838 | 2004 | FO ₂₄ | 14.8 | X | 330.31248 | 333.06894 | 238.52427 | 10.59896 | 0.1323166 | 0.18193394 | 3.0845625 | 20 | 2 15.7 | 19.5 |
| 170839 | 2004 | FP ₃₄ | 15.1 | X | 317.19179 | 353.81246 | 206.54012 | 9.88017 | 0.0551674 | 0.17897394 | 3.1184792 | 20 | 1 27.8 | 19.6 |
| 170840 | 2004 | FM ₃₈ | 15.0 | X | 82.56348 | 184.70677 | 322.31447 | 7.08938 | 0.0889292 | 0.19062703 | 2.9900588 | 20 | 5 15.8 | 19.2 |
| 170841 | 2004 | FQ ₄₆ | 15.5 | X | 272.79097 | 276.40269 | 307.71667 | 3.46221 | 0.1201110 | 0.17184291 | 3.2041658 | 20 | — | — |
| 170842 | 2004 | FC ₄₉ | 15.5 | X | 78.80997 | 264.73913 | 196.94537 | 9.03777 | 0.1133358 | 0.18528091 | 3.0473028 | 20 | 3 18.8 | 19.6 |
| 170843 | 2004 | FU ₅₁ | 15.3 | X | 122.14872 | 286.99108 | 153.74193 | 11.46546 | 0.1469242 | 0.19154726 | 2.9804745 | 20 | 4 22.5 | 20.0 |
| 170844 | 2004 | FK ₅₂ | 15.5 | X | 354.25760 | 27.34708 | 92.80068 | 2.90967 | 0.0831709 | 0.17210864 | 3.2008668 | 20 | — | — |
| 170845 | 2004 | FK ₆₅ | 15.5 | X | 44.76133 | 28.06553 | 128.46421 | 2.73386 | 0.1979093 | 0.18554144 | 3.0444494 | 20 | 4 21.8 | 18.9 |
| 170846 | 2004 | FR ₇₆ | 15.8 | X | 93.39699 | 318.80771 | 177.20924 | 11.51500 | 0.0427396 | 0.19225833 | 2.9731211 | 20 | 5 13.4 | 20.1 |
| 170847 | 2004 | FX ₈₁ | 14.9 | X | 180.70556 | 285.78269 | 113.11808 | 10.40340 | 0.0715053 | 0.19153064 | 2.9806470 | 20 | 4 27.8 | 19.5 |
| 170848 | 2004 | FR ₈₂ | 15.1 | X | 130.28666 | 223.77604 | 126.48561 | 11.39792 | 0.1097911 | 0.17367224 | 3.1816259 | 20 | 1 8.2 | 19.8 |
| 170849 | 2004 | FA ₉₂ | 14.5 | X | 341.96222 | 99.79469 | 32.59889 | 21.45533 | 0.0643093 | 0.17174572 | 3.2053745 | 20 | — | — |
| 170850 | 2004 | FV ₉₂ | 15.6 | X | 287.03446 | 207.97436 | 346.11395 | 0.67194 | 0.1091467 | 0.17049943 | 3.2209755 | 20 | — | — |
| 170851 | 2004 | FA ₁₀₃ | 16.1 | X | 140.59249 | 226.88005 | 165.74564 | 1.28195 | 0.0623397 | 0.18303243 | 3.0722085 | 20 | 3 2.9 | 20.4 |
| 170852 | 2004 | FE ₁₀₅ | 15.1 | X | 266.97243 | 193.21553 | 138.01658 | 2.57593 | 0.0496280 | 0.16918690 | 3.2376127 | 20 | — | — |
| 170853 | 2004 | FJ ₁₀₉ | 14.9 | X | 4.22382 | 326.03867 | 188.90723 | 12.85150 | 0.0536672 | 0.17738935 | 3.1370229 | 20 | 2 3.8 | 19.2 |
| 170854 | 2004 | FX ₁₁₅ | 15.3 | X | 341.81636 | 133.55006 | 56.28711 | 11.07114 | 0.0358039 | 0.18008473 | 3.1056425 | 20 | 2 26.1 | 19.7 |
| 170855 | 2004 | FK ₁₁₆ | 15.6 | X | 164.89327 | 83.83122 | 30.55352 | 22.92631 | 0.2507116 | 0.20198039 | 2.8769341 | 20 | 7 16.7 | 21.1 |
| 170856 | 2004 | FB ₁₁₈ | 15.8 | X | 189.93385 | 16.32291 | 83.51327 | 3.23847 | 0.0112039 | 0.19985082 | 2.8973353 | 20 | 7 22.9 | 19.7 |
| 170857 | 2004 | FZ ₁₂₀ | 15.1 | X | 300.00969 | 65.75908 | 139.61432 | 7.98253 | 0.0887542 | 0.17366987 | 3.1816548 | 20 | 1 11.5 | 19.7 |
| 170858 | 2004 | FE ₁₂₁ | 14.9 | X | 58.16052 | 44.73879 | 47.76174 | 18.43075 | 0.1045090 | 0.17682698 | 3.1436705 | 20 | 2 17.6 | 19.3 |
| 170859 | 2004 | FP ₁₃₁ | 14.9 | X | 19.19670 | 107.12547 | 27.03759 | 10.18837 | 0.1887600 | 0.17739478 | 3.1369589 | 20 | 2 5.1 | 18.4 |
| 170860 | 2004 | FG ₁₄₀ | 15.4 | X | 345.52224 | 194.40774 | 289.93139 | 9.22644 | 0.1863582 | 0.23507115 | 2.6001785 | 20 | — | — |
| 170861 | 2004 | GU ₁₇ | 15.3 | X | 49.75346 | 278.52810 | 212.92361 | 13.38053 | 0.1821511 | 0.18218475 | 3.0817308 | 20 | 3 21.8 | 19.1 |
| 170862 | 2004 | GZ ₇ | 15.6 | X | 52.85048 | 277.41601 | 205.69820 | 13.25822 | 0.1862418 | 0.18213131 | 3.0823336 | 20 | 3 16.9 | 19.3 |
| 170863 | 2004 | GD ₁₃ | 15.4 | X | 308.65704 | 318.34610 | 261.54119 | 3.05464 | 0.1456872 | 0.17543304 | 3.1603010 | 20 | 1 30.7 | 19.9 |
| 170864 | 2004 | GA ₃₀ | 15.4 | X | 350.32301 | 86.04867 | 46.76948 | 5.75715 | 0.1287451 | 0.17168100 | 3.2061800 | 20 | — | — |
| 170865 | 2004 | GJ ₃₁ | 15.6 | X | 16.77056 | 20.04248 | 140.17171 | 1.33202 | 0.1026598 | 0.17952976 | 3.1120393 | 20 | 3 1.4 | 19.5 |
| 170866 | 2004 | GL ₃₃ | 15.9 | X | 229.24313 | 292.47821 | 224.90505 | 1.02561 | 0.0264780 | 0.21481396 | 2.7611779 | 20 | 11 23.8 | 19.7 |
| 170867 | 2004 | GB ₃₈ | 15.1 | X | 352.21004 | 82.34783 | 78.22124 | 14.11906 | 0.0516237 | 0.17428947 | 3.1741099 | 20 | 1 8.3 | 18.6 |
| 170868 | 2004 | GF ₄₁ | 15.3 | X | 102.86108 | 161.66405 | 312.57822 | 14.60041 | 0.1946784 | 0.18962956 | 3.0005349 | 20 | 5 10.9 | 20.1 |
| 170869 | 2004 | GP ₄₄ | 14.8 | X | 27.92365 | 63.60080 | 9.72695 | 19.39725 | 0.0299769 | 0.16878954 | 3.2426919 | 20 | — | — |
| 170870 | 2004 | HA ₄ | 14.9 | X | 355.48255 | 121.22028 | 75.86299 | 10.42200 | 0.0 | | | | | |

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| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | |
|--------|------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|--------|----------|------|
| 170881 | 2004 PG ₁₀₁ | 16.5 | X | 319.27608 | 332.87453 | 326.91294 | 7.11694 | 0.1594669 | 0.29857381 | 2.2170130 | 20 | 5 20.8 | 18.7 |
| 170882 | 2004 PZ ₁₀₂ | 16.6 | X | 258.01107 | 24.22694 | 320.06326 | 6.18382 | 0.1342770 | 0.29337303 | 2.2431377 | 20 | 4 26.9 | 19.7 |
| 170883 | 2004 QL ₂₂ | 16.5 | X | 322.86688 | 64.16560 | 224.16037 | 19.79315 | 0.0576279 | 0.36022918 | 1.9562159 | 20 | 5 26.3 | 18.1 |
| 170884 | 2004 RP ₆₆ | 14.6 | X | 151.70074 | 140.06333 | 0.59132 | 17.44247 | 0.0540316 | 0.17555820 | 3.1587988 | 20 | 8 2.8 | 19.5 |
| 170885 | 2004 RH ₇₉ | 16.2 | X | 155.80662 | 186.62063 | 209.72748 | 6.10850 | 0.1090443 | 0.28172396 | 2.3045539 | 20 | 3 18.8 | 19.5 |
| 170886 | 2004 RS ₂₄₈ | 16.6 | X | 323.22154 | 50.87092 | 244.84481 | 18.90810 | 0.0609340 | 0.35875720 | 1.9615632 | 20 | 6 7.9 | 18.1 |
| 170887 | 2004 RD ₂₄₉ | 16.6 | X | 266.57792 | 62.74142 | 233.17656 | 20.83929 | 0.0641810 | 0.34905556 | 1.9977433 | 20 | 2 26.5 | 19.6 |
| 170888 | 2004 RK ₂₄₉ | 16.6 | X | 300.67911 | 82.71702 | 292.78295 | 18.72892 | 0.1410975 | 0.36440146 | 1.9412553 | 20 | 8 24.7 | 18.2 |
| 170889 | 2004 RY ₃₂₉ | 17.1 | X | 218.86638 | 72.59587 | 58.40329 | 23.49564 | 0.0235156 | 0.37299936 | 1.9113079 | 20 | 11 13.2 | 18.8 |
| 170890 | 2004 SA ₄₆ | 16.6 | X | 321.19165 | 84.61460 | 205.56925 | 6.39514 | 0.1252911 | 0.29593953 | 2.2301500 | 20 | 5 17.9 | 18.7 |
| 170891 | 2004 TY ₁₆ | 17.0 | X | 140.45417 | 177.42915 | 329.86411 | 8.15105 | 0.4049280 | 0.35285462 | 1.9833781 | 20 | 8 14.4 | 20.7 |
| 170892 | 2004 TS ₅₂ | 18.0 | X | 27.32172 | 343.99503 | 27.37465 | 3.62876 | 0.0394922 | 0.31624790 | 2.1336227 | 20 | — | — |
| 170893 | 2004 TC ₅₄ | 16.9 | X | 40.80592 | 214.88059 | 36.16746 | 5.62666 | 0.0626686 | 0.29743607 | 2.2226630 | 20 | 8 16.1 | 19.3 |
| 170894 | 2004 TH ₂₉₈ | 17.0 | X | 263.02566 | 138.98392 | 182.65877 | 2.64518 | 0.1841002 | 0.28977179 | 2.2616843 | 20 | 3 30.2 | 20.3 |
| 170895 | 2004 TL ₃₄₃ | 16.8 | X | 208.61797 | 147.73405 | 212.86300 | 3.35185 | 0.1191672 | 0.28386327 | 2.2929606 | 20 | 3 29.1 | 20.2 |
| 170896 | 2004 TW ₃₅₆ | 17.1 | X | 108.88908 | 148.31731 | 47.77929 | 22.42320 | 0.0570741 | 0.36540947 | 1.9376835 | 20 | 9 23.6 | 19.8 |
| 170897 | 2004 UX ₇ | 17.0 | X | 197.87234 | 57.30356 | 323.03506 | 1.99238 | 0.1066079 | 0.28466820 | 2.2886361 | 20 | 4 12.7 | 20.2 |
| 170898 | 2004 VC ₂₅ | 17.7 | X | 249.21838 | 189.42715 | 230.00793 | 3.36215 | 0.1679815 | 0.29767556 | 2.2214708 | 20 | 7 29.9 | 20.6 |
| 170899 | 2004 VR ₄₈ | 17.2 | X | 290.64179 | 147.49094 | 131.35386 | 4.38330 | 0.1653289 | 0.28294849 | 2.2979000 | 20 | 3 9.0 | 20.2 |
| 170900 | Jendrassik | 17.4 | X | 254.03633 | 140.91702 | 264.96262 | 4.31676 | 0.1036649 | 0.29589817 | 2.2303577 | 20 | 7 27.1 | 20.1 |
| 170901 | 2004 VP ₈₄ | 16.8 | X | 76.77821 | 30.32864 | 197.68762 | 5.31382 | 0.1241689 | 0.29824471 | 2.2186436 | 20 | 9 9.5 | 19.5 |
| 170902 | 2004 VL ₁₁₂ | 17.3 | X | 36.43629 | 355.81398 | 318.66247 | 4.25276 | 0.1742472 | 0.30984330 | 2.1629243 | 20 | 11 27.7 | 19.9 |
| 170903 | 2004 WS ₂ | 18.1 | X | 327.19097 | 115.34603 | 87.75305 | 8.26282 | 0.6300014 | 0.63788593 | 1.3365156 | 20 | — | — |
| 170904 | 2004 XW ₁₉ | 17.0 | X | 309.21100 | 98.80440 | 269.24642 | 4.75735 | 0.1754047 | 0.30003503 | 2.2098090 | 20 | 8 23.0 | 18.6 |
| 170905 | 2004 XJ ₃₁ | 16.9 | X | 150.30555 | 356.78609 | 103.06224 | 1.86979 | 0.1612762 | 0.28199460 | 2.3030791 | 20 | 6 11.1 | 20.2 |
| 170906 | Coluche | 17.0 | X | 281.68315 | 148.25815 | 274.64680 | 1.55437 | 0.1359874 | 0.29967100 | 2.2115983 | 20 | 10 2.7 | 18.9 |
| 170907 | 2004 XK ₄₈ | 16.2 | X | 14.68350 | 295.44231 | 249.70926 | 5.55692 | 0.0656183 | 0.27349772 | 2.3505360 | 20 | 3 16.6 | 18.8 |
| 170908 | 2004 XK ₆₁ | 16.5 | X | 349.18967 | 30.48448 | 313.93197 | 5.64573 | 0.3106251 | 0.30365588 | 2.1922071 | 20 | 11 17.3 | 17.9 |
| 170909 | Bobmasteryon | 16.8 | X | 239.07662 | 121.52587 | 289.19223 | 5.66069 | 0.0613725 | 0.28843144 | 2.2686856 | 20 | 7 19.9 | 19.7 |
| 170910 | 2004 XE ₆₉ | 16.8 | X | 252.84022 | 35.66647 | 40.94333 | 6.30194 | 0.1591113 | 0.29511441 | 2.2343049 | 20 | 9 3.8 | 19.4 |
| 170911 | 2004 XH ₉₇ | 16.6 | X | 330.81122 | 226.18259 | 71.55432 | 6.42708 | 0.0895635 | 0.28491229 | 2.2873288 | 20 | 6 21.2 | 18.6 |
| 170912 | 2004 XG ₁₀₂ | 16.5 | X | 243.46115 | 324.98168 | 36.27903 | 7.79643 | 0.1487928 | 0.28718622 | 2.2752388 | 20 | 5 4.3 | 19.6 |
| 170913 | 2004 XH ₁₂₁ | 16.7 | X | 271.30162 | 162.53554 | 274.06280 | 7.01792 | 0.0942152 | 0.29981120 | 2.2109087 | 20 | 10 8.5 | 19.0 |
| 170914 | 2004 XN ₁₂₂ | 16.7 | X | 83.45799 | 49.82371 | 248.58190 | 5.53537 | 0.0237133 | 0.30731137 | 2.1747882 | 20 | 12 16.5 | 19.3 |
| 170915 | 2004 XN ₁₄₆ | 16.4 | X | 148.04321 | 41.89740 | 108.73406 | 8.15268 | 0.1997263 | 0.28584975 | 2.2823251 | 20 | 8 18.6 | 20.2 |
| 170916 | 2004 XA ₁₄₇ | 15.3 | X | 196.99210 | 248.86684 | 285.16483 | 11.79367 | 0.2076580 | 0.23141281 | 2.6275105 | 20 | 11 21.6 | 19.7 |
| 170917 | 2004 XD ₁₄₇ | 15.1 | X | 251.05430 | 63.22925 | 110.12059 | 30.25428 | 0.0668934 | 0.23901644 | 2.5714862 | 20 | — | — |
| 170918 | 2004 XM ₁₄₈ | 15.8 | X | 72.69078 | 274.38090 | 252.41371 | 2.40936 | 0.0491008 | 0.21407231 | 2.7675516 | 20 | 5 24.4 | 19.4 |
| 170919 | 2004 XM ₁₆₂ | 16.7 | X | 261.80384 | 323.66120 | 85.69839 | 5.76336 | 0.1882279 | 0.29435502 | 2.2381460 | 20 | 7 31.6 | 19.2 |
| 170920 | 2004 XL ₁₉₁ | 16.7 | X | 295.28654 | 257.69377 | 69.00574 | 4.23524 | 0.0768503 | 0.28495711 | 2.2870889 | 20 | 6 5.9 | 19.2 |
| 170921 | 2004 YF ₅ | 16.7 | X | 15.21757 | 229.18604 | 285.16483 | 2.66947 | 0.0991236 | 0.26571979 | 2.3961837 | 20 | 2 4.3 | 19.0 |
| 170922 | 2004 YC ₆ | 16.1 | X | 166.57168 | 198.26747 | 102.71352 | 15.78278 | 0.1397004 | 0.25604706 | 2.4561573 | 20 | — | — |
| 170923 | 2004 YA ₁₂ | 15.8 | X | 256.77383 | 198.78159 | 107.74423 | 25.21617 | 0.2364358 | 0.27339703 | 2.3511131 | 20 | 3 8.9 | 20.0 |
| 170924 | 2004 YJ ₂₁ | 16.9 | X | 208.68405 | 255.79590 | 115.34420 | 6.06287 | 0.1377968 | 0.27675897 | 2.3320342 | 20 | 4 15.7 | 20.5 |
| 170925 | 2004 YY ₂₂ | 17.0 | X | 204.66141 | 238.82359 | 121.16114 | 1.51341 | 0.1490385 | 0.27340022 | 2.3510948 | 20 | 3 25.9 | 20.5 |
| 170926 | 2004 YM ₂₆ | 17.3 | X | 18.85286 | 75.25662 | 123.18233 | 2.17211 | 0.1306953 | 0.27173374 | 2.3606975 | 20 | 4 18.8 | 19.4 |
| 170927 | Dgebesire | 16.5 | X | 150.91846 | 292.15241 | 130.85509 | 8.11750 | 0.0849350 | 0.27522295 | 2.3407028 | 20 | 4 21.6 | 19.8 |
| 170928 | 2005 AU ₇ | 16.9 | X | 257.33619 | 349.43192 | 90.57641 | 6.55861 | 0.1080859 | 0.29587349 | 2.2304818 | 20 | 9 26.0 | 19.4 |
| 170929 | 2005 AK ₈ | 16.6 | X | 4.22191 | 88.79864 | 92.86184 | 3.71840 | 0.1156310 | 0.26486831 | 2.4013164 | 20 | 2 25.9 | 18.9 |
| 170930 | 2005 AJ ₉ | 15.3 | X | 176.41648 | 254.13252 | 328.43437 | 12.95569 | 0.2106449 | 0.23981080 | 2.5658045 | 20 | 11 30.3 | 19.8 |
| 170931 | 2005 AV ₉ | 16.6 | X | 149.53608 | 225.04186 | 237.52642 | 6.02781 | 0.0600622 | 0.27900934 | 2.3194778 | 20 | 6 8.1 | 19.7 |
| 170932 | 2005 AC ₁₀ | 17.4 | X | 322.93548 | 57.24181 | 337.28500 | 6.21955 | 0.1954620 | 0.30443658 | 2.1884577 | 20 | 11 17.4 | 18.7 |
| 170933 | 2005 AF ₂₀ | 17.0 | X | 129.84950 | 290.11473 | 160.79127 | 2.32384 | 0.1771117 | 0.27674809 | 2.3320953 | 20 | 5 11.1 | 20.3 |
| 170934 | 2005 AK ₂₂ | 16.7 | X | 229.21218 | 343.34478 | 65.15344 | 3.55081 | 0.1505845 | 0.28960776 | 2.2625382 | 20 | 6 22.7 | 19.7 |
| 170935 | 2005 AB ₂₅ | 16.5 | X | 194.29795 | 14.37533 | 93.48352 | 6.25027 | 0.1285712 | 0.28703039 | 2.2760622 | 20 | 8 8.2 | 19.8 |
| 170936 | 2005 AH ₂₆ | 16.3 | X | 2.98118 | 9.01735 | 166.55778 | 2.68165 | 0.1575398 | 0.26426235 | 2.4049858 | 20 | 2 8.1 | 18.5 |
| 170937 | 2005 AD ₂₉ | 16.4 | X | 267.71840 | 316.09318 | 274.27668 | 4.83212 | 0.2272334 | 0.25660714 | 2.4525821 | 20 | — | — |
| 170938 | 2005 AT ₃₅ | 16.7 | X | 175.46248 | 269.65558 | 157.27366 | 4.69839 | 0.1358490 | 0.28060008 | 2.3107033 | 20 | 5 23.8 | 20.1 |
| 170939 | 2005 AV ₃₇ | 16.2 | X | 126.48410 | 212.35879 | 19.30625 | 4.42375 | 0.0778540 | 0.23246940 | 2.6195429 | 20 | 10 28.5 | 19.9 |
| 170940 | 2005 AF ₄₅ | 17.3 | X | 213.55267 | 317.48339 | 100.88560 | 3.52866 | 0.2048814 | 0.28580641 | 2.2825558 | 20 | 6 15.4 | 20.8 |
| 170941 | 2005 AO ₄₈ | 17.4 | X | 194.97814 | 255.45811 | 156.34264 | 2.46495 | 0.1481561 | 0.28195066 | 2.3033184 | 20 | 5 22.7 | 20.8 |
| 170942 | 2005 AN ₅₁ | 16.5 | X | 207.09902 | 241.43622 | 269.12699 | 7.92474 | 0.1019481 | 0.29833574 | 2.2181923 | 20 | 10 20.6 | 19.4 |
| 170943 | 2005 AJ ₅₄ | 16.9 | X | 15.11318 | 236.01122 | 335.28660 | 4.44272 | 0.1679810 | 0.26999264 | 2.3708356 | 20 | 4 29.4 | 18.9 |
| 170944 | 2005 AN ₆₀ | 16.4 | X | 156.16197 | 304.16541 | 60.45389 | 2.05309 | 0.1871415 | 0.26714540 | 2.3876514 | 20 | 2 17.9 | 20.0 |
| 170945 | 2005 AG ₆₈ | 16.8 | X | 10.80086 | 276.25080 | 281.56552 | 5.02693 | 0.1401953 | 0.26802243 | 2.3824399 | 20 | 3 27.4 | 19.0 |
| 170946 | 2005 BP ₂ | 15.3 | X | 332.07048 | 330.59700 | 81.36289 | 29.21146 | 0.0790228 | 0.23723350 | 2.5843542 | 20 | 12 5.4 | 18.4 |
| 170947 | 2005 BA ₄ | 15.1 | X | 153.04318 | 272.66593 | 318.76495 | 3.90487 | 0.1357869 | 0.17235791 | 3.1977800 | 20 | 11 14.0 | 20.3 |
| 170948 | 2005 BE ₄ | 16.1 | X | 176.45205 | 80.38011 | 162.30989 | 3.03249 | 0.0934137 | 0.24401774 | 2.5362289 | 20 | — | — |
| 170949 | 2005 BA ₆ | 17.8 | X | 186.36993 | 118.24910 | 17.17006 | 2.62345 | 0.1178115 | 0.29227639 | 2.2487451 | 20 | 9 6.8 | 21.0 |
| 170950 | 2005 BG ₆ | 16.8 | X | 95.35289 | 103.99619 | 9.09209 | 2.65986 | 0.1773121 | 0.27290838 | 2.3539188 | 20 | 4 29.7 | 19.8 |
| 170951 | 2005 BG ₁₁ | 16.5 | X | 22.86649 | 174.17654 | 325.21073 | 4.92967 | 0.1541917 | 0.26179102 | 2.4200976 | 20 | 1 27.1 | 18.5 |
| 170952 | 2005 BT ₁₃ | 15.3 | X | 192.52293 | 29 | | | | | | | | |

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|------------------------------|----------|----------|-----------|-----------|-----------|----------|------------|------------|-----------|----|---------|----------|
| 170961 2005 CD ₃ | 16.5 | X | 109.88749 | 58.98852 | 85.45803 | 3.27911 | 0.1477693 | 0.27690988 | 2.3311868 | 20 | 6 27.0 | 19.7 |
| 170962 2005 CH ₃ | 16.6 | X | 33.92548 | 174.60368 | 357.98003 | 5.35142 | 0.1672036 | 0.26708782 | 2.3879945 | 20 | 4 9.8 | 18.7 |
| 170963 2005 CE ₄ | 17.1 | X | 5.91617 | 88.18784 | 68.61817 | 2.19215 | 0.1204487 | 0.26002114 | 2.4310671 | 20 | 1 23.1 | 19.4 |
| 170964 2005 CP ₈ | 17.7 | X | 173.52365 | 34.13449 | 67.35351 | 1.80644 | 0.1518097 | 0.28373518 | 2.2936506 | 20 | 7 6.4 | 21.2 |
| 170965 2005 CW ₁₁ | 16.7 | X | 85.15032 | 91.64292 | 6.22478 | 5.80690 | 0.1361389 | 0.26676078 | 2.3899458 | 20 | 3 19.6 | 19.4 |
| 170966 2005 CP ₁₂ | 15.9 | X | 22.32122 | 172.62250 | 143.69621 | 14.95355 | 0.2563110 | 0.23015820 | 2.6370503 | 20 | 11 11.7 | 19.4 |
| 170967 2005 CT ₁₅ | 17.1 | X | 168.35037 | 139.15876 | 296.86375 | 3.87383 | 0.1642946 | 0.27984876 | 2.3148372 | 20 | 5 27.5 | 20.7 |
| 170968 2005 CK ₁₉ | 16.8 | X | 3.13260 | 327.71768 | 206.93275 | 1.35428 | 0.0850344 | 0.26391264 | 2.4071099 | 20 | 2 14.1 | 19.3 |
| 170969 2005 CH ₂₁ | 16.5 | X | 39.40826 | 159.27421 | 32.802746 | 2.62386 | 0.1515330 | 0.27004383 | 2.3705360 | 20 | 5 18.6 | 18.7 |
| 170970 2005 CS ₂₁ | 16.6 | X | 67.51816 | 161.08069 | 27.16690 | 2.92780 | 0.1371630 | 0.27474412 | 2.3434217 | 20 | 7 2.3 | 19.2 |
| 170971 2005 CX ₂₁ | 16.9 | X | 49.94182 | 346.57250 | 211.95151 | 1.72597 | 0.1504014 | 0.27430879 | 2.3459004 | 20 | 6 21.2 | 19.1 |
| 170972 2005 CS ₂₂ | 16.8 | X | 190.13692 | 87.85890 | 20.05195 | 5.44963 | 0.1053005 | 0.28678072 | 2.2773831 | 20 | 8 5.8 | 20.0 |
| 170973 2005 CJ ₂₅ | 16.8 | X | 132.12463 | 39.17173 | 127.75251 | 6.57722 | 0.1009570 | 0.28375543 | 2.2935415 | 20 | 8 19.8 | 19.9 |
| 170974 2005 CN ₂₅ | 16.6 | X | 175.13731 | 104.61695 | 32.10331 | 6.38740 | 0.1139294 | 0.27730352 | 2.3289802 | 20 | 5 16.9 | 20.1 |
| 170975 2005 CW ₂₆ | 16.5 | X | 316.50217 | 210.97165 | 120.32289 | 2.19384 | 0.1572779 | 0.26607296 | 2.4270128 | 20 | 1 31.5 | 19.6 |
| 170976 2005 CP ₃₂ | 16.7 | X | 152.21617 | 274.94723 | 83.06895 | 2.72448 | 0.1967721 | 0.26273917 | 2.4142718 | 20 | 2 7.2 | 20.4 |
| 170977 2005 CT ₃₅ | 16.9 | X | 252.18592 | 0.66969 | 39.90379 | 3.59890 | 0.1666907 | 0.29076793 | 2.2565158 | 20 | 7 14.3 | 19.6 |
| 170978 2005 CX ₃₆ | 16.2 | X | 222.07346 | 154.60717 | 127.66598 | 7.36474 | 0.1178612 | 0.25618466 | 2.4552778 | 20 | 1 7.2 | 19.9 |
| 170979 2005 CS ₄₈ | 17.0 | X | 188.04856 | 291.86347 | 151.12537 | 2.63080 | 0.1379297 | 0.28263882 | 2.2995782 | 20 | 6 26.2 | 20.4 |
| 170980 2005 CB ₄₉ | 16.3 | X | 78.69611 | 315.51397 | 170.74828 | 5.87552 | 0.1656402 | 0.26768590 | 2.3844363 | 20 | 4 25.6 | 19.0 |
| 170981 2005 CH ₅₁ | 16.5 | X | 0.81078 | 259.12961 | 295.34732 | 1.70651 | 0.1288299 | 0.26377018 | 2.4079766 | 20 | 3 5.9 | 18.7 |
| 170982 2005 CN ₅₁ | 17.1 | X | 92.40032 | 268.05446 | 211.68938 | 0.59307 | 0.1408522 | 0.26954754 | 2.3734448 | 20 | 4 30.2 | 20.1 |
| 170983 2005 CS ₅₂ | 17.0 | X | 182.78115 | 50.11194 | 33.74408 | 3.53806 | 0.1222612 | 0.28144167 | 2.3060946 | 20 | 6 22.2 | 20.3 |
| 170984 2005 CO ₅₃ | 15.8 | X | 259.22723 | 156.02090 | 105.25427 | 7.06247 | 0.0928385 | 0.25874768 | 2.4390371 | 20 | 1 20.7 | 19.3 |
| 170985 2005 CH ₅₆ | 17.3 | X | 57.77433 | 263.49182 | 271.89968 | 1.24462 | 0.1722073 | 0.27370548 | 2.3493464 | 20 | 6 2.9 | 19.6 |
| 170986 2005 CF ₅₈ | 16.1 | X | 287.49481 | 330.01068 | 275.73448 | 5.67907 | 0.0901778 | 0.26186815 | 2.4196224 | 20 | 1 31.6 | 19.5 |
| 170987 2005 CG ₅₉ | 16.9 | X | 116.08933 | 273.02350 | 222.98868 | 2.37300 | 0.1144708 | 0.27721763 | 2.3294612 | 20 | 6 18.8 | 20.1 |
| 170988 2005 CZ ₅₉ | 16.4 | X | 319.24574 | 212.99447 | 26.60261 | 3.91165 | 0.1330396 | 0.26563589 | 2.3966883 | 20 | 3 1.9 | 19.3 |
| 170989 2005 CV ₆₂ | 16.3 | X | 188.58749 | 343.05656 | 47.96595 | 4.25254 | 0.2050804 | 0.27437121 | 2.3455446 | 20 | 4 19.6 | 20.2 |
| 170990 2005 CS ₆₃ | 16.4 | X | 341.25582 | 304.54224 | 282.60307 | 4.02493 | 0.1324738 | 0.26654889 | 2.3912122 | 20 | 3 15.9 | 18.9 |
| 170991 2005 CX ₆₆ | 16.4 | X | 303.62411 | 195.18429 | 29.18456 | 2.14913 | 0.1225388 | 0.25873956 | 2.4390881 | 20 | 1 21.7 | 19.7 |
| 170992 2005 CO ₆₈ | 16.4 | X | 204.02068 | 254.45743 | 158.19265 | 6.35203 | 0.1314226 | 0.27963813 | 2.3159995 | 20 | 6 3.3 | 19.9 |
| 170993 2005 CO ₆₉ | 15.8 | X | 138.69344 | 225.67836 | 338.30327 | 9.07523 | 0.0654356 | 0.22564466 | 2.6720998 | 20 | 10 2.9 | 19.8 |
| 170994 2005 CH ₇₉ | 14.8 | X | 320.96298 | 134.61669 | 111.84035 | 15.30964 | 0.1626097 | 0.20051538 | 2.8909301 | 20 | 3 22.6 | 18.7 |
| 170995 Ritajowright | 16.6 | X | 151.37842 | 115.50174 | 323.24448 | 5.82271 | 0.2030646 | 0.27345647 | 2.3507724 | 20 | 5 15.4 | 20.4 |
| 170996 2005 EL ₄ | 15.4 | X | 351.41185 | 347.80025 | 225.39739 | 7.62009 | 0.1477621 | 0.20078416 | 2.8883495 | 20 | 3 20.9 | 18.8 |
| 170997 2005 EF ₇ | 16.8 | X | 88.77396 | 39.21042 | 93.00912 | 3.35872 | 0.1478033 | 0.26860929 | 2.3789682 | 20 | 5 14.8 | 19.6 |
| 170998 2005 ES ₈ | 17.0 | X | 163.39438 | 318.66923 | 122.19476 | 1.15731 | 0.1950509 | 0.27991043 | 2.3144975 | 20 | 5 30.8 | 20.8 |
| 170999 2005 EK ₁₀ | 15.6 | X | 105.41589 | 334.34647 | 193.54205 | 4.37562 | 0.0581839 | 0.21221031 | 2.7837169 | 20 | 7 8.9 | 19.6 |
| 171000 2005 EZ ₁₃ | 16.8 | X | 91.03084 | 98.42233 | 50.70552 | 3.11902 | 0.1543660 | 0.27263362 | 2.3555000 | 20 | 6 10.8 | 19.7 |
| 171001 2005 EZ ₁₆ | 16.5 | X | 339.05386 | 302.55017 | 1.20417 | 1.06833 | 0.0432105 | 0.21316615 | 2.7753891 | 20 | 7 13.4 | 19.9 |
| 171002 2005 EB ₁₉ | 16.1 | X | 60.92267 | 344.37005 | 19.96854 | 2.27570 | 0.2001130 | 0.23906760 | 2.5711193 | 20 | — | — |
| 171003 2005 EQ ₂₀ | 15.1 | X | 25.34687 | 265.92847 | 347.10139 | 11.51165 | 0.1577231 | 0.21152261 | 2.7897472 | 20 | 7 29.6 | 18.4 |
| 171004 2005 EU ₂₃ | 16.5 | X | 90.30930 | 307.19925 | 175.67572 | 2.12706 | 0.1702464 | 0.26941520 | 2.3742220 | 20 | 5 7.0 | 19.4 |
| 171005 2005 EQ ₂₄ | 16.0 | X | 151.25434 | 117.78206 | 125.72172 | 5.40883 | 0.10133928 | 0.23445202 | 2.6047501 | 20 | 12 12.4 | 19.5 |
| 171006 2005 EF ₂₆ | 17.3 | X | 47.88271 | 321.71859 | 168.49580 | 0.77623 | 0.1314354 | 0.26224457 | 2.4173065 | 20 | 3 2.2 | 19.3 |
| 171007 2005 EX ₂₆ | 16.2 | X | 53.35453 | 166.13174 | 349.39183 | 3.83929 | 0.1369986 | 0.26666651 | 2.3905091 | 20 | 4 18.3 | 18.7 |
| 171008 2005 ET ₂₈ | 15.8 | X | 134.68026 | 194.73446 | 26.58923 | 7.94057 | 0.2478076 | 0.22341599 | 2.6898406 | 20 | 10 26.6 | 20.6 |
| 171009 2005 EL ₃₁ | 16.3 | X | 305.85067 | 18.73282 | 196.31656 | 3.86255 | 0.0509296 | 0.25670726 | 2.4519444 | 20 | 1 21.7 | 19.6 |
| 171010 2005 ER ₃₂ | 16.5 | X | 170.88770 | 33.40143 | 13.78154 | 5.10194 | 0.2240568 | 0.27286749 | 2.3541539 | 20 | 4 23.9 | 20.4 |
| 171011 2005 EY ₃₆ | 17.1 | X | 4.56742 | 80.83177 | 104.23867 | 3.29548 | 0.1272168 | 0.26066641 | 2.4270534 | 20 | 3 2.2 | 19.3 |
| 171012 2005 ED ₃₇ | 15.6 | X | 171.79204 | 133.41942 | 85.26410 | 4.72111 | 0.2264177 | 0.22772963 | 2.6557653 | 20 | 11 22.1 | 20.1 |
| 171013 2005 EL ₃₇ | 16.2 | X | 278.09661 | 171.92927 | 356.48455 | 4.35258 | 0.1168558 | 0.24209568 | 2.5496351 | 20 | — | — |
| 171014 2005 EZ ₃₇ | 16.4 | X | 86.78643 | 228.59096 | 279.99244 | 2.29695 | 0.1752685 | 0.27137366 | 2.3627853 | 20 | 6 7.8 | 19.4 |
| 171015 2005 EU ₃₈ | 16.2 | X | 192.25905 | 128.62951 | 103.64505 | 5.39554 | 0.1648954 | 0.23767782 | 2.5811324 | 20 | 12 31.8 | 20.0 |
| 171016 2005 ET ₄₀ | 15.8 | X | 197.92069 | 83.95782 | 5.34195 | 5.49994 | 0.0302194 | 0.21512246 | 2.7585374 | 20 | 7 20.0 | 19.7 |
| 171017 2005 EL ₄₄ | 17.0 | X | 124.52016 | 133.07846 | 346.30636 | 2.58746 | 0.1144985 | 0.27356798 | 2.3501336 | 20 | 6 5.3 | 20.2 |
| 171018 2005 EA ₄₅ | 16.6 | X | 314.38049 | 289.25419 | 306.28661 | 2.20591 | 0.1393942 | 0.26251273 | 2.4156600 | 20 | 2 15.6 | 19.5 |
| 171019 2005 EA ₄₆ | 16.7 | X | 32.71884 | 292.79121 | 239.57019 | 1.39998 | 0.1317438 | 0.26646426 | 2.3917185 | 20 | 4 4.7 | 18.8 |
| 171020 2005 ED ₄₆ | 16.6 | X | 65.81919 | 280.89396 | 174.60122 | 7.32914 | 0.0444687 | 0.25990379 | 2.4317988 | 20 | 2 1.9 | 19.5 |
| 171021 2005 ER ₄₈ | 16.5 | X | 355.37042 | 4.54723 | 199.25320 | 1.10397 | 0.1215340 | 0.26409569 | 2.4059975 | 20 | 3 10.9 | 19.0 |
| 171022 2005 ES ₄₈ | 17.1 | X | 33.31409 | 155.82433 | 309.42685 | 2.02146 | 0.1487019 | 0.25695489 | 2.4503688 | 20 | — | — |
| 171023 2005 EY ₄₈ | 16.8 | X | 32.33762 | 321.63922 | 216.75775 | 2.28366 | 0.0937399 | 0.26709321 | 2.3879624 | 20 | 4 10.7 | 19.3 |
| 171024 2005 EW ₄₉ | 16.5 | X | 249.66752 | 314.13532 | 252.41448 | 3.44676 | 0.0614158 | 0.24348452 | 2.5399304 | 20 | — | — |
| 171025 2005 ER ₅₁ | 15.8 | X | 4.52409 | 119.31270 | 185.61919 | 4.66227 | 0.1122316 | 0.21862094 | 2.7290293 | 20 | 8 26.8 | 19.0 |
| 171026 2005 EU ₅₃ | 16.7 | X | 85.91951 | 313.41836 | 147.46182 | 2.62488 | 0.0443436 | 0.26307070 | 2.4122430 | 20 | 3 10.9 | 19.7 |
| 171027 2005 EN ₅₇ | 16.9 | X | 39.80089 | 165.50851 | 324.64297 | 2.84361 | 0.0750668 | 0.26305263 | 2.4123535 | 20 | 2 12.9 | 19.3 |
| 171028 2005 EY ₅₈ | 15.9 | X | 314.14274 | 269.81048 | 333.96484 | 5.25577 | 0.0833073 | 0.26551674 | 2.3974052 | 20 | 3 5.7 | 18.7 |
| 171029 2005 EZ ₅₈ | 17.3 | X | 80.18687 | 51.70294 | 140.60116 | 2.83460 | 0.1411054 | 0.27833752 | 2.3232087 | 20 | 7 26.4 | 20.2 |
| 171030 2005 EN ₆₀ | 15.8 | X | 58.88954 | 41.49252 | 259.80182 | 2.10154 | 0.0949811 | 0.22679154 | 2.6630837 | 20 | 11 9.6 | 19.3 |
| 171031 2005 EK ₆₁ | 16.7 | X | 38.51121 | 275.39301 | 232.52741 | 4.71047 | 0.1381241 | 0.26313700 | 2.4118378 | 20 | 3 8.6 | 19.0 |
| 171032 2005 ES ₆₁ | 16.4 | X | 248.25928 | 76.71673 | 87.59731 | 2.33244 | 0.0867113 | 0.23979746 | 2.5658996 | 20 | 12 24.9 | 19.6 |
| 171033 2005 EA ₆₂ | 17.1 | X | 114.59862 | 203.88671 | 155.12502 | 7.16431 | 0.1211225 | 0.25233498 | 2.4801869 | 20 | — | — |
| 171034 2005 EK ₆₆ | 15.4 | X | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171041 2005 <i>EH</i> ₈₄ | 16.8 | X | 76.91210 | 166.24175 | 31.69983 | 3.24646 | 0.1465643 | 0.27929441 | 2.3178993 | 20 | 8 1.6 | 19.7 |
| 171042 2005 <i>EG</i> ₈₅ | 16.9 | X | 213.69890 | 202.93604 | 6.94327 | 5.63398 | 0.1239431 | 0.23929437 | 2.5694947 | 20 | — | — |
| 171043 2005 <i>EG</i> ₉₀ | 16.0 | X | 154.40834 | 351.67880 | 310.90519 | 3.68298 | 0.0720534 | 0.24471949 | 2.5313781 | 20 | — | — |
| 171044 2005 <i>EU</i> ₉₃ | 15.6 | X | 193.41628 | 98.08386 | 87.12588 | 15.18524 | 0.0502257 | 0.22891545 | 2.6465858 | 20 | 11 18.6 | 19.4 |
| 171045 2005 <i>ES</i> ₉₆ | 16.0 | X | 91.61626 | 356.08117 | 204.71276 | 9.48998 | 0.1763208 | 0.21625395 | 2.7489068 | 20 | 8 17.2 | 20.3 |
| 171046 2005 <i>ES</i> ₉₇ | 16.6 | X | 26.52968 | 282.04307 | 290.21064 | 4.63616 | 0.1661601 | 0.27062554 | 2.3671378 | 20 | 5 29.3 | 18.7 |
| 171047 2005 <i>EM</i> ₉₉ | 15.0 | X | 268.14271 | 40.34617 | 209.81527 | 5.90855 | 0.0540124 | 0.19200531 | 2.9757326 | 20 | 1 28.4 | 19.4 |
| 171048 2005 <i>EN</i> ₁₀₁ | 15.3 | X | 86.33603 | 119.31488 | 122.83009 | 10.53896 | 0.1057864 | 0.21815125 | 2.7329451 | 20 | 10 2.9 | 19.4 |
| 171049 2005 <i>EK</i> ₁₀₂ | 16.2 | X | 347.68275 | 277.35664 | 192.49961 | 13.18979 | 0.0420364 | 0.24323439 | 2.5416714 | 20 | — | — |
| 171050 2005 <i>EK</i> ₁₀₈ | 15.5 | X | 202.57427 | 291.92071 | 184.06353 | 14.29890 | 0.0590011 | 0.22301718 | 2.6930464 | 20 | 8 24.4 | 19.5 |
| 171051 2005 <i>EJ</i> ₁₀₉ | 16.3 | X | 70.59632 | 268.70227 | 224.61893 | 7.58757 | 0.1291681 | 0.26766618 | 2.3845534 | 20 | 4 13.8 | 18.9 |
| 171052 2005 <i>ES</i> ₁₁₂ | 17.0 | X | 169.12308 | 263.36219 | 1.60770 | 1.93212 | 0.1644504 | 0.23937511 | 2.5689169 | 20 | — | — |
| 171053 2005 <i>ET</i> ₁₁₅ | 16.0 | X | 73.20044 | 174.40078 | 166.43091 | 2.90002 | 0.0864677 | 0.23670747 | 2.5881815 | 20 | — | — |
| 171054 2005 <i>EA</i> ₁₁₇ | 16.5 | X | 290.21625 | 7.89916 | 9.09489 | 6.35742 | 0.0486345 | 0.21744658 | 2.7388463 | 20 | 8 13.0 | 20.0 |
| 171055 2005 <i>EY</i> ₁₁₉ | 17.0 | X | 43.99708 | 342.24582 | 200.99879 | 1.63396 | 0.1416085 | 0.26966564 | 2.3727518 | 20 | 5 16.1 | 19.2 |
| 171056 2005 <i>ED</i> ₁₂₁ | 14.8 | X | 167.98796 | 275.44904 | 322.73223 | 14.89156 | 0.0543850 | 0.17410182 | 3.1763901 | 20 | 12 8.7 | 19.8 |
| 171057 2005 <i>EP</i> ₁₂₁ | 16.7 | X | 141.56846 | 336.32655 | 269.69745 | 0.93133 | 0.1512285 | 0.22991183 | 2.6389338 | 20 | 11 30.9 | 20.9 |
| 171058 2005 <i>EY</i> ₁₂₃ | 16.3 | X | 136.18154 | 87.94601 | 146.33612 | 2.99229 | 0.0769213 | 0.22936156 | 2.6431530 | 20 | 11 12.2 | 20.2 |
| 171059 2005 <i>EC</i> ₁₂₅ | 15.9 | X | 328.94448 | 15.63122 | 7.76713 | 9.11391 | 0.0870091 | 0.22479422 | 2.6788350 | 20 | 10 15.2 | 19.1 |
| 171060 2005 <i>EG</i> ₁₂₆ | 15.4 | X | 67.11599 | 187.80866 | 45.30666 | 26.08276 | 0.0669984 | 0.21407779 | 2.7675043 | 20 | 9 3.2 | 19.8 |
| 171061 2005 <i>ER</i> ₁₂₆ | 17.8 | X | 85.86313 | 64.38404 | 37.04985 | 1.70854 | 0.1441868 | 0.26125224 | 2.4234238 | 20 | 3 27.6 | 20.6 |
| 171062 2005 <i>EV</i> ₁₂₇ | 16.6 | X | 137.33341 | 266.65819 | 163.36092 | 6.54798 | 0.1038718 | 0.27155362 | 2.3617413 | 20 | 4 15.3 | 19.8 |
| 171063 2005 <i>EY</i> ₁₃₃ | 16.7 | X | 188.95549 | 219.85653 | 37.70192 | 3.73621 | 0.0983908 | 0.24293568 | 2.5437544 | 20 | — | — |
| 171064 2005 <i>EX</i> ₁₃₅ | 16.4 | X | 2.47221 | 102.56764 | 51.59530 | 4.95042 | 0.0922262 | 0.25529600 | 2.4609722 | 20 | 1 18.0 | 19.1 |
| 171065 2005 <i>EL</i> ₁₃₈ | 16.7 | X | 48.41302 | 91.91649 | 92.19742 | 7.94236 | 0.1348488 | 0.26877541 | 2.3779882 | 20 | 5 25.8 | 19.1 |
| 171066 2005 <i>ER</i> ₁₄₂ | 15.8 | X | 251.45705 | 128.84410 | 29.40271 | 11.51214 | 0.0971247 | 0.23507851 | 2.6001242 | 20 | 12 17.4 | 19.2 |
| 171067 2005 <i>EZ</i> ₁₄₇ | 16.6 | X | 65.91111 | 35.05707 | 48.75497 | 3.06477 | 0.1515455 | 0.25584737 | 2.4574352 | 20 | 2 1.5 | 18.9 |
| 171068 2005 <i>EQ</i> ₁₅₁ | 15.2 | X | 174.08928 | 285.29218 | 34.97169 | 6.80339 | 0.1451554 | 0.18162617 | 3.0880461 | 20 | 1 19.8 | 20.2 |
| 171069 2005 <i>ES</i> ₁₅₂ | 15.8 | X | 260.24388 | 238.57298 | 95.87991 | 3.31989 | 0.0575202 | 0.20195069 | 2.8772162 | 20 | 5 4.2 | 19.8 |
| 171070 2005 <i>EK</i> ₁₅₆ | 15.4 | X | 5.51133 | 229.08648 | 16.47359 | 9.29505 | 0.1088864 | 0.21012154 | 2.8021346 | 20 | 6 1.9 | 19.7 |
| 171071 2005 <i>EZ</i> ₁₅₆ | 15.4 | X | 182.38553 | 303.68987 | 358.67834 | 3.05891 | 0.0895141 | 0.18324379 | 3.0698456 | 20 | 1 2.8 | 20.0 |
| 171072 2005 <i>ER</i> ₁₆₅ | 17.2 | X | 56.78540 | 285.62541 | 155.37821 | 2.80114 | 0.1689460 | 0.25513759 | 2.4619908 | 20 | 1 11.2 | 19.5 |
| 171073 2005 <i>EQ</i> ₁₆₇ | 15.8 | X | 238.39786 | 71.43643 | 345.43986 | 4.59056 | 0.0391058 | 0.21588240 | 2.7520600 | 20 | 7 27.1 | 19.6 |
| 171074 2005 <i>EL</i> ₁₇₁ | 16.0 | X | 126.84835 | 13.15745 | 267.79515 | 5.33310 | 0.0797616 | 0.23555515 | 2.5966155 | 20 | 12 29.8 | 19.7 |
| 171075 2005 <i>EW</i> ₁₇₆ | 16.0 | X | 20.62884 | 54.17108 | 11.72881 | 10.04112 | 0.0745368 | 0.24128608 | 2.5553352 | 20 | — | — |
| 171076 2005 <i>EA</i> ₁₇₈ | 16.9 | X | 17.96497 | 311.79326 | 241.40183 | 2.18508 | 0.1160574 | 0.26849000 | 2.3796731 | 20 | 4 6.4 | 19.1 |
| 171077 2005 <i>EL</i> ₁₇₈ | 17.2 | X | 148.78759 | 157.03861 | 302.35473 | 4.08145 | 0.0892708 | 0.27780673 | 2.3261669 | 20 | 6 4.1 | 20.4 |
| 171078 2005 <i>EM</i> ₁₈₁ | 17.0 | X | 101.74860 | 126.06666 | 9.39313 | 5.44445 | 0.102463 | 0.27209541 | 2.3586052 | 20 | 5 27.4 | 20.1 |
| 171079 2005 <i>EB</i> ₁₈₂ | 15.7 | X | 285.33364 | 225.93779 | 69.17214 | 3.12332 | 0.0374729 | 0.20476541 | 2.8507884 | 20 | 4 18.1 | 19.6 |
| 171080 2005 <i>EV</i> ₁₈₂ | 16.6 | X | 163.10989 | 136.25757 | 18.09556 | 5.20720 | 0.0535731 | 0.22065229 | 2.7122544 | 20 | 9 1.5 | 20.5 |
| 171081 2005 <i>EG</i> ₁₈₅ | 15.7 | X | 107.42723 | 9.98430 | 228.85562 | 12.75202 | 0.1374923 | 0.22126226 | 2.7072674 | 20 | 10 18.3 | 19.9 |
| 171082 2005 <i>ER</i> ₁₈₈ | 17.5 | X | 53.18481 | 280.98046 | 211.74334 | 1.26202 | 0.1541434 | 0.26053686 | 2.4278579 | 20 | 3 18.6 | 19.8 |
| 171083 2005 <i>EZ</i> ₁₈₈ | 16.0 | X | 245.40176 | 359.08377 | 145.92766 | 3.92357 | 0.0245756 | 0.23167113 | 2.6255569 | 20 | 12 3.5 | 19.5 |
| 171084 2005 <i>EQ</i> ₁₉₃ | 16.8 | X | 302.58320 | 215.29552 | 12.75382 | 1.19991 | 0.1038297 | 0.23187658 | 2.6240058 | 20 | 11 4.7 | 19.8 |
| 171085 2005 <i>EF</i> ₁₉₇ | 16.4 | X | 184.68339 | 244.39692 | 306.61430 | 5.57544 | 0.1029185 | 0.29405621 | 2.2396620 | 20 | 11 18.0 | 19.4 |
| 171086 2005 <i>EL</i> ₁₉₇ | 15.7 | X | 208.71436 | 151.83314 | 274.76019 | 5.14526 | 0.0331105 | 0.21107555 | 2.7936850 | 20 | 7 1.4 | 19.4 |
| 171087 2005 <i>EB</i> ₂₀₄ | 17.0 | X | 148.62784 | 352.09935 | 40.07983 | 1.99138 | 0.1792988 | 0.26950393 | 2.3737008 | 20 | 3 15.3 | 20.5 |
| 171088 2005 <i>EE</i> ₂₀₅ | 16.8 | X | 231.99755 | 343.91895 | 168.96333 | 4.66150 | 0.1334874 | 0.23015407 | 2.6370819 | 20 | 11 10.8 | 20.4 |
| 171089 2005 <i>EB</i> ₂₀₆ | 15.9 | X | 71.02943 | 288.03477 | 347.69579 | 7.75007 | 0.0606372 | 0.22226729 | 2.6991002 | 20 | 10 14.9 | 19.7 |
| 171090 2005 <i>ET</i> ₂₀₇ | 15.6 | X | 126.73326 | 229.70039 | 192.21885 | 1.69190 | 0.1024212 | 0.19864507 | 2.9090478 | 20 | 3 26.1 | 19.8 |
| 171091 2005 <i>EN</i> ₂₁₂ | 15.3 | X | 94.68864 | 145.54115 | 55.75566 | 18.10139 | 0.0586585 | 0.21442447 | 2.7645205 | 20 | 8 18.1 | 19.6 |
| 171092 2005 <i>EO</i> ₂₁₅ | 16.5 | X | 231.34987 | 311.36963 | 223.79317 | 4.48417 | 0.0645634 | 0.23552886 | 2.5968087 | 20 | 12 18.3 | 19.8 |
| 171093 2005 <i>EW</i> ₂₁₉ | 15.8 | X | 101.99682 | 212.44725 | 243.86398 | 10.48196 | 0.1356695 | 0.26603142 | 2.3943121 | 20 | 4 6.2 | 19.0 |
| 171094 2005 <i>ER</i> ₂₂₂ | 15.3 | X | 96.88836 | 127.99987 | 81.72485 | 14.11810 | 0.1060611 | 0.21682354 | 2.7440905 | 20 | 9 4.9 | 19.5 |
| 171095 2005 <i>EL</i> ₂₂₃ | 16.3 | X | 321.18183 | 359.41070 | 123.70704 | 4.79233 | 0.1010776 | 0.24196049 | 2.5505847 | 20 | — | — |
| 171096 2005 <i>EX</i> ₂₂₄ | 15.7 | X | 351.40618 | 292.61624 | 112.88807 | 22.66242 | 0.0512236 | 0.23399587 | 2.6081381 | 20 | 12 22.2 | 19.1 |
| 171097 2005 <i>EF</i> ₂₂₅ | 15.7 | X | 78.69124 | 354.14960 | 39.80026 | 15.07522 | 0.1023515 | 0.24605165 | 2.5222330 | 20 | — | — |
| 171098 2005 <i>EB</i> ₂₄₂ | 16.2 | X | 174.49532 | 155.47592 | 29.40543 | 11.92226 | 0.0851507 | 0.22866959 | 2.6484825 | 20 | 10 21.5 | 20.0 |
| 171099 2005 <i>EH</i> ₂₅₁ | 17.2 | X | 334.61769 | 45.74583 | 116.11990 | 1.27795 | 0.1745228 | 0.25424975 | 2.4677189 | 20 | — | — |
| 171100 2005 <i>EH</i> ₂₆₃ | 16.2 | X | 190.60624 | 338.40623 | 241.51901 | 1.08888 | 0.0439980 | 0.23544228 | 2.5974453 | 20 | 12 27.4 | 19.5 |
| 171101 2005 <i>EL</i> ₂₆₆ | 15.8 | X | 334.69709 | 311.86381 | 116.85449 | 14.64906 | 0.0421224 | 0.23252158 | 2.6191510 | 20 | 12 26.1 | 19.2 |
| 171102 2005 <i>EZ</i> ₂₆₈ | 15.9 | X | 271.93213 | 27.69583 | 64.73932 | 2.91671 | 0.0454565 | 0.22527740 | 2.6750031 | 20 | 10 27.5 | 19.4 |
| 171103 2005 <i>EO</i> ₂₆₉ | 17.0 | X | 269.92609 | 247.69253 | 235.34125 | 3.42904 | 0.2193875 | 0.23444069 | 2.6048381 | 20 | 11 10.3 | 19.8 |
| 171104 2005 <i>ER</i> ₂₇₇ | 16.2 | X | 261.01064 | 118.42764 | 35.62866 | 13.71606 | 0.1215559 | 0.23930280 | 2.5694344 | 20 | 12 24.1 | 19.5 |
| 171105 2005 <i>EG</i> ₂₈₀ | 16.1 | X | 308.85465 | 31.50298 | 90.25296 | 6.45034 | 0.1584939 | 0.24159595 | 2.5531497 | 20 | — | — |
| 171106 2005 <i>EE</i> ₂₈₅ | 16.2 | X | 244.58928 | 185.02934 | 36.21416 | 3.05511 | 0.0174791 | 0.24537887 | 2.5268412 | 20 | — | — |
| 171107 2005 <i>EG</i> ₂₈₇ | 15.2 | X | 263.58789 | 43.21263 | 197.38424 | 8.32740 | 0.0873495 | 0.18516075 | 3.0486210 | 20 | 1 9.9 | 19.9 |
| 171108 2005 <i>EM</i> ₂₈₉ | 15.7 | X | 187.56468 | 70.10213 | 100.33610 | 9.06601 | 0.1090008 | 0.22934220 | 2.6433017 | 20 | 10 20.7 | 19.8 |
| 171109 2005 <i>EA</i> ₂₉₁ | 16.1 | X | 322.74448 | 316.12246 | 153.95883 | 15.53746 | 0.1061637 | 0.24037703 | 2.5617735 | 20 | — | — |
| 171110 2005 <i>EQ</i> ₂₉₂ | 15.1 | X | 238.47503 | 204.52531 | 26.16951 | 17.95546 | 0.0673027 | 0.17826510 | 3.1267404 | 20 | — | — |
| 171111 2005 <i>EN</i> ₂₉₃ | 15.6 | X | 325.95084 | 332.09061 | 28.61334 | 7.14352 | 0.1040677 | 0.22087705 | 2.71041 | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|------------|----------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 171121 | 2005 | <i>GM</i> ₇ | 15.7 | X | 188.76026 | 51.05390 | 83.57804 | 8.80785 | 0.0679991 | 0.21814563 | 2.7329921 | 20 | 9 7.3 | 19.8 |
| 171122 | 2005 | <i>GH</i> ₈ | 15.4 | X | 86.76689 | 13.74928 | 233.39975 | 17.13032 | 0.2159314 | 0.21893804 | 2.7263937 | 20 | 10 13.8 | 19.9 |
| 171123 | 2005 | <i>GU</i> ₁₁ | 15.7 | X | 237.26312 | 299.08981 | 134.20126 | 8.24441 | 0.0643003 | 0.21606015 | 2.7505503 | 20 | 8 12.2 | 19.4 |
| 171124 | 2005 | <i>GV</i> ₂₂ | 15.6 | X | 8.30697 | 193.41420 | 112.64554 | 10.67761 | 0.1077958 | 0.21404820 | 2.7677593 | 20 | 9 8.2 | 19.0 |
| 171125 | 2005 | <i>GR</i> ₂₃ | 16.3 | X | 209.60626 | 34.31370 | 171.26257 | 7.81891 | 0.1451265 | 0.23330973 | 2.6132492 | 20 | 12 18.9 | 20.1 |
| 171126 | 2005 | <i>GT</i> ₂₃ | 15.7 | X | 153.86109 | 174.54388 | 56.61885 | 10.56572 | 0.1381511 | 0.22675299 | 2.6633855 | 20 | 11 23.7 | 19.9 |
| 171127 | 2005 | <i>GT</i> ₂₆ | 15.1 | X | 241.31446 | 41.49376 | 197.16449 | 16.17430 | 0.1311372 | 0.17722771 | 3.1389300 | 20 | — | — |
| 171128 | 2005 | <i>GA</i> ₂₈ | 16.3 | X | 203.88489 | 305.03175 | 246.78755 | 2.39625 | 0.1996190 | 0.23076802 | 2.6324025 | 20 | 11 19.4 | 20.3 |
| 171129 | 2005 | <i>GG</i> ₂₈ | 15.7 | X | 62.28867 | 319.35700 | 298.03970 | 2.42362 | 0.1188461 | 0.21444992 | 2.7643018 | 20 | 9 18.9 | 19.4 |
| 171130 | 2005 | <i>GC</i> ₃₁ | 16.2 | X | 328.29704 | 186.49274 | 137.54739 | 5.90160 | 0.1610950 | 0.27562933 | 2.3384016 | 20 | 7 22.4 | 17.9 |
| 171131 | 2005 | <i>GM</i> ₃₄ | 15.8 | X | 31.59133 | 209.51665 | 64.65676 | 10.08177 | 0.1201328 | 0.21308026 | 2.7761349 | 20 | 9 4.9 | 19.4 |
| 171132 | 2005 | <i>GZ</i> ₃₆ | 15.4 | X | 105.73753 | 152.16613 | 37.91801 | 13.22068 | 0.0532602 | 0.21094908 | 2.7948014 | 20 | 8 14.0 | 19.6 |
| 171133 | 2005 | <i>GP</i> ₃₈ | 16.1 | X | 252.95152 | 206.06902 | 223.55406 | 8.35331 | 0.1087589 | 0.21857396 | 2.7294204 | 20 | 8 17.3 | 20.1 |
| 171134 | 2005 | <i>GC</i> ₄₁ | 15.5 | X | 288.67771 | 107.31074 | 109.09733 | 2.54219 | 0.1113110 | 0.18345217 | 3.0675206 | 20 | 1 7.4 | 19.9 |
| 171135 | 2005 | <i>GR</i> ₄₄ | 16.0 | X | 200.28350 | 351.51714 | 290.29046 | 0.79397 | 0.1421383 | 0.17999636 | 3.1066588 | 20 | — | — |
| 171136 | 2005 | <i>GW</i> ₅₂ | 15.9 | X | 177.36435 | 17.45352 | 204.55429 | 3.67185 | 0.2141960 | 0.22859994 | 2.6490204 | 20 | 12 1.0 | 20.3 |
| 171137 | 2005 | <i>GX</i> ₅₃ | 15.3 | X | 280.64407 | 186.60346 | 21.88826 | 4.63387 | 0.1839941 | 0.18043803 | 3.1015872 | 20 | — | — |
| 171138 | 2005 | <i>GX</i> ₅₄ | 16.3 | X | 155.43486 | 305.80904 | 194.11545 | 8.73753 | 0.0981971 | 0.21526433 | 2.7573253 | 20 | 7 31.8 | 20.6 |
| 171139 | 2005 | <i>GG</i> ₅₅ | 15.8 | X | 208.45600 | 204.18037 | 60.83392 | 2.20317 | 0.1094926 | 0.17670032 | 3.1451726 | 20 | — | — |
| 171140 | 2005 | <i>GX</i> ₅₆ | 16.0 | X | 34.15436 | 187.23703 | 72.79364 | 2.94317 | 0.0834382 | 0.20991882 | 2.8039384 | 20 | 8 10.1 | 19.4 |
| 171141 | 2005 | <i>GK</i> ₅₇ | 16.3 | X | 130.00551 | 136.95894 | 165.83982 | 1.75176 | 0.0599093 | 0.16998967 | 3.2274116 | 20 | — | — |
| 171142 | 2005 | <i>GZ</i> ₅₈ | 16.1 | X | 298.48188 | 350.40663 | 158.45298 | 11.00871 | 0.1849779 | 0.24057665 | 2.5603562 | 20 | — | — |
| 171143 | 2005 | <i>GC</i> ₅₉ | 15.8 | X | 207.16356 | 68.93763 | 132.61618 | 5.21710 | 0.1235216 | 0.23217384 | 2.6217656 | 20 | 12 13.8 | 19.6 |
| 171144 | 2005 | <i>GA</i> ₆₆ | 15.7 | X | 163.31439 | 129.57819 | 194.02982 | 1.36849 | 0.0762050 | 0.18025962 | 3.1036334 | 20 | 1 7.4 | 20.3 |
| 171145 | 2005 | <i>GD</i> ₆₆ | 16.3 | X | 212.71105 | 230.41949 | 199.07130 | 3.97230 | 0.0468483 | 0.21021909 | 2.8012677 | 20 | 7 8.6 | 20.4 |
| 171146 | 2005 | <i>GH</i> ₆₇ | 15.7 | X | 357.50536 | 86.60382 | 202.54399 | 5.01771 | 0.0194673 | 0.20973522 | 2.8055745 | 20 | 7 18.7 | 19.5 |
| 171147 | 2005 | <i>GR</i> ₆₈ | 15.5 | X | 98.97328 | 154.99786 | 110.69660 | 14.31288 | 0.0898319 | 0.22452187 | 2.6810009 | 20 | 11 15.2 | 19.7 |
| 171148 | 2005 | <i>GX</i> ₆₈ | 14.6 | X | 169.77081 | 245.25776 | 60.35305 | 26.86179 | 0.2660926 | 0.17456526 | 3.1707658 | 20 | 1 3.1 | 20.4 |
| 171149 | 2005 | <i>GY</i> ₇₂ | 16.9 | X | 139.27995 | 69.97741 | 107.69460 | 3.59532 | 0.1099115 | 0.28238458 | 2.3009582 | 20 | 9 12.5 | 20.1 |
| 171150 | 2005 | <i>GB</i> ₇₃ | 15.5 | X | 284.61623 | 95.66774 | 32.25232 | 28.64123 | 0.1028604 | 0.23630161 | 2.5911443 | 20 | 12 25.1 | 19.2 |
| 171151 | 2005 | <i>GD</i> ₇₅ | 15.5 | X | 6.44170 | 261.39754 | 21.20778 | 6.95305 | 0.1115927 | 0.20846872 | 2.8169261 | 20 | 7 31.8 | 18.8 |
| 171152 | 2005 | <i>GK</i> ₇₈ | 15.5 | X | 171.26657 | 61.07190 | 123.13627 | 13.12645 | 0.0478563 | 0.22264856 | 2.6960188 | 20 | 10 23.9 | 19.6 |
| 171153 | Allanrahil | | 15.3 | X | 279.58283 | 112.39387 | 150.19770 | 10.06615 | 0.0178509 | 0.19207240 | 2.9750385 | 20 | 3 4.5 | 19.3 |
| 171154 | 2005 | <i>GG</i> ₈₇ | 16.6 | X | 277.11852 | 67.15493 | 53.82643 | 2.89517 | 0.1804176 | 0.23315659 | 2.6143933 | 20 | 11 25.6 | 19.5 |
| 171155 | 2005 | <i>GN</i> ₈₈ | 16.0 | X | 243.31217 | 22.24866 | 313.88529 | 0.96651 | 0.1014789 | 0.19639046 | 2.9312698 | 20 | 4 10.2 | 20.5 |
| 171156 | 2005 | <i>GA</i> ₉₀ | 15.6 | X | 244.77067 | 47.79614 | 39.50875 | 13.68624 | 0.0529163 | 0.21741024 | 2.7391515 | 20 | 9 18.1 | 19.5 |
| 171157 | 2005 | <i>GE</i> ₉₅ | 15.5 | X | 88.91670 | 29.36699 | 96.53811 | 3.13212 | 0.0728571 | 0.19822526 | 2.9131536 | 20 | 4 27.6 | 19.5 |
| 171158 | 2005 | <i>GN</i> ₁₁₀ | 15.5 | X | 196.85824 | 185.76042 | 219.06178 | 7.07537 | 0.0796719 | 0.20064743 | 2.8896615 | 20 | 5 18.2 | 19.9 |
| 171159 | 2005 | <i>GM</i> ₁₁₂ | 15.7 | X | 339.59843 | 157.10471 | 235.43728 | 8.37738 | 0.1316151 | 0.22573107 | 2.6714178 | 20 | 11 18.7 | 18.3 |
| 171160 | 2005 | <i>GN</i> ₁₁₂ | 16.1 | X | 306.80728 | 34.79295 | 345.52406 | 5.64597 | 0.0687133 | 0.21690391 | 2.7434126 | 20 | 9 6.5 | 19.5 |
| 171161 | 2005 | <i>GJ</i> ₁₁₄ | 17.8 | X | 42.42376 | 68.13901 | 62.58158 | 2.26744 | 0.1334593 | 0.25804722 | 2.4434489 | 20 | 2 23.8 | 20.0 |
| 171162 | 2005 | <i>GD</i> ₁₁₈ | 16.0 | X | 211.76797 | 124.70818 | 132.75201 | 2.08311 | 0.1314804 | 0.17659201 | 3.1464586 | 20 | — | — |
| 171163 | 2005 | <i>GF</i> ₁₁₉ | 16.3 | X | 121.60597 | 152.95360 | 93.55785 | 2.66731 | 0.1036709 | 0.22425685 | 2.6831127 | 20 | 11 11.7 | 20.3 |
| 171164 | 2005 | <i>GD</i> ₁₂₂ | 16.9 | X | 30.15285 | 119.58784 | 347.25606 | 3.66172 | 0.1053978 | 0.25413540 | 2.4684591 | 20 | — | — |
| 171165 | 2005 | <i>GF</i> ₁₂₇ | 15.2 | X | 229.87256 | 149.27666 | 108.58870 | 10.35440 | 0.0512331 | 0.17944407 | 3.1130300 | 20 | — | — |
| 171166 | 2005 | <i>GM</i> ₁₂₈ | 16.6 | X | 273.93938 | 80.05876 | 99.85041 | 4.34598 | 0.1505282 | 0.24369120 | 2.5384041 | 20 | — | — |
| 171167 | 2005 | <i>GE</i> ₁₃₄ | 16.3 | X | 240.31503 | 349.46410 | 46.75624 | 6.32223 | 0.0428841 | 0.20789018 | 2.8221499 | 20 | 6 30.1 | 20.2 |
| 171168 | 2005 | <i>GT</i> ₁₃₇ | 16.2 | X | 324.55030 | 111.55568 | 226.52708 | 5.02115 | 0.0597968 | 0.21040420 | 2.7996245 | 20 | 8 4.4 | 19.8 |
| 171169 | 2005 | <i>GL</i> ₁₅₉ | 16.2 | X | 46.74653 | 18.18937 | 84.95043 | 13.05318 | 0.2043157 | 0.25493422 | 2.4632999 | 20 | 1 29.1 | 18.3 |
| 171170 | 2005 | <i>GZ</i> ₁₆₃ | 16.9 | X | 288.58816 | 269.26325 | 223.71666 | 1.93563 | 0.0623350 | 0.23481767 | 2.6020494 | 20 | — | — |
| 171171 | Prior | | 15.7 | X | 339.88779 | 210.07573 | 215.12628 | 11.12277 | 0.2001762 | 0.23261450 | 2.6184535 | 20 | — | — |
| 171172 | 2005 | <i>GS</i> ₁₆₈ | 16.5 | X | 311.04555 | 286.62283 | 201.79499 | 3.22044 | 0.1619798 | 0.24041035 | 2.5615369 | 20 | — | — |
| 171173 | 2005 | <i>GT</i> ₁₆₈ | 16.0 | X | 262.81738 | 269.82441 | 42.19602 | 2.48806 | 0.0724220 | 0.19526319 | 2.9425406 | 20 | 4 6.7 | 20.2 |
| 171174 | 2005 | <i>GM</i> ₁₆₉ | 16.3 | X | 10.52857 | 32.23998 | 27.34960 | 4.98122 | 0.0930945 | 0.23625449 | 2.5914888 | 20 | — | — |
| 171175 | 2005 | <i>GZ</i> ₁₇₀ | 16.3 | X | 316.88273 | 166.54449 | 278.88459 | 1.69392 | 0.0946109 | 0.23199484 | 2.6231140 | 20 | 12 22.7 | 19.2 |
| 171176 | 2005 | <i>GF</i> ₁₇₂ | 15.7 | X | 358.94719 | 167.72144 | 102.22049 | 3.27682 | 0.0454077 | 0.20606549 | 2.8387852 | 20 | 6 26.1 | 19.3 |
| 171177 | 2005 | <i>GY</i> ₁₇₈ | 15.4 | X | 258.73812 | 72.15106 | 207.43415 | 9.68544 | 0.0693170 | 0.18845823 | 3.0129550 | 20 | 2 19.5 | 20.0 |
| 171178 | 2005 | <i>GL</i> ₁₇₉ | 16.1 | X | 344.50997 | 266.18907 | 212.68352 | 12.63181 | 0.1110934 | 0.24419116 | 2.5350280 | 20 | — | — |
| 171179 | 2005 | <i>GX</i> ₂₁₄ | 16.1 | X | 196.23697 | 182.16243 | 120.96899 | 6.00120 | 0.1405242 | 0.24318877 | 2.5419892 | 20 | 1 10.2 | 20.2 |
| 171180 | 2005 | <i>HK</i> | 16.6 | X | 170.44030 | 135.18370 | 349.97292 | 3.90912 | 0.0111347 | 0.21104580 | 2.7939475 | 20 | 8 1.6 | 20.4 |
| 171181 | 2005 | <i>HJ</i> ₁ | 16.3 | X | 170.60997 | 308.35802 | 190.37029 | 2.96877 | 0.0356734 | 0.21363298 | 2.7713445 | 20 | 8 17.7 | 20.3 |
| 171182 | 2005 | <i>HW</i> ₁ | 15.8 | X | 178.78273 | 124.60912 | 49.16494 | 13.70002 | 0.1137398 | 0.22141857 | 2.7059931 | 20 | 10 13.9 | 20.0 |
| 171183 | Haleakala | | 16.1 | X | 323.80071 | 311.02837 | 51.97620 | 4.02335 | 0.1035618 | 0.21321040 | 2.7750052 | 20 | 9 9.0 | 19.2 |
| 171184 | 2005 | <i>JB</i> ₁ | 15.5 | X | 205.87655 | 318.79815 | 217.78686 | 14.93156 | 0.2233888 | 0.22651220 | 2.6652727 | 20 | 10 31.2 | 19.7 |
| 171185 | 2005 | <i>JW</i> ₁₀ | 16.1 | X | 332.55138 | 4.05802 | 45.66337 | 3.30247 | 0.0781010 | 0.22752053 | 2.6573922 | 20 | 11 27.5 | 19.0 |
| 171186 | 2005 | <i>JQ</i> ₁₁ | 15.9 | X | 207.42659 | 279.32427 | 34.93117 | 2.18901 | 0.1237646 | 0.18454402 | 3.0554093 | 20 | 2 10.0 | 20.8 |
| 171187 | 2005 | <i>JV</i> ₁₅ | 16.2 | X | 357.66703 | 18.00540 | 163.61171 | 1.17146 | 0.0849187 | 0.18886530 | 3.0086242 | 20 | 2 27.3 | 20.0 |
| 171188 | 2005 | <i>JR</i> ₂₀ | 15.5 | X | 158.66130 | 185.96676 | 95.50182 | 13.01947 | 0.1445761 | 0.23289255 | 2.6163690 | 20 | — | — |
| 171189 | 2005 | <i>JR</i> ₂₁ </ | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171201 2005 <i>JC</i> ₄₉ | 15.7 | X | 22.35816 | 344.88664 | 33.53257 | 11.22109 | 0.0713908 | 0.23323141 | 2.6138341 | 20 | 12 30.3 | 19.3 |
| 171202 2005 <i>JS</i> ₅₅ | 14.6 | X | 77.73956 | 239.48258 | 50.98379 | 16.84940 | 0.1343969 | 0.15306475 | 3.4611407 | 20 | 11 10.2 | 19.6 |
| 171203 2005 <i>JD</i> ₅₇ | 16.7 | X | 133.85932 | 347.03886 | 338.95245 | 0.97436 | 0.0373928 | 0.23791325 | 2.5794293 | 20 | — | — |
| 171204 2005 <i>JD</i> ₆₀ | 15.2 | X | 279.93560 | 316.96506 | 194.83763 | 9.84076 | 0.0270894 | 0.16788171 | 3.2543715 | 20 | — | — |
| 171205 2005 <i>JD</i> ₆₁ | 15.1 | X | 30.15438 | 19.88357 | 94.65234 | 12.23670 | 0.0781874 | 0.18076401 | 3.0978573 | 20 | 1 24.5 | 19.1 |
| 171206 2005 <i>JE</i> ₆₂ | 15.8 | X | 286.62139 | 327.66187 | 206.80610 | 14.41563 | 0.0620196 | 0.24245231 | 2.5471342 | 20 | — | — |
| 171207 2005 <i>JQ</i> ₆₃ | 14.4 | X | 174.68638 | 164.13066 | 123.24999 | 23.87756 | 0.0924974 | 0.17116651 | 3.2126014 | 20 | — | — |
| 171208 2005 <i>JN</i> ₆₄ | 15.0 | X | 199.86451 | 300.82212 | 323.20660 | 13.02472 | 0.1242184 | 0.17539630 | 3.1607423 | 20 | — | — |
| 171209 2005 <i>JJ</i> ₆₅ | 16.0 | X | 88.98370 | 103.05053 | 111.28161 | 5.00287 | 0.0414031 | 0.21042638 | 2.7994278 | 20 | 8 18.1 | 19.9 |
| 171210 2005 <i>JA</i> ₆₉ | 14.7 | X | 180.51068 | 163.54383 | 128.85904 | 23.79810 | 0.0800376 | 0.17245168 | 3.1966206 | 20 | — | — |
| 171211 2005 <i>JP</i> ₆₉ | 16.2 | X | 268.85078 | 17.10925 | 44.03683 | 9.14873 | 0.1735191 | 0.22087243 | 2.7104519 | 20 | 8 26.1 | 19.9 |
| 171212 2005 <i>JA</i> ₇₀ | 16.4 | X | 102.08893 | 4.14709 | 244.63918 | 2.55526 | 0.1474019 | 0.21800999 | 2.7341256 | 20 | 10 26.7 | 20.7 |
| 171213 2005 <i>JD</i> ₇₂ | 16.1 | X | 233.32132 | 233.27586 | 119.04836 | 1.91432 | 0.0793319 | 0.19907425 | 2.9048652 | 20 | 4 22.6 | 20.3 |
| 171214 2005 <i>JL</i> ₇₃ | 15.6 | X | 106.98727 | 239.86814 | 214.83097 | 10.10802 | 0.0591094 | 0.19231378 | 2.9725496 | 20 | 4 6.5 | 19.8 |
| 171215 2005 <i>JJ</i> ₇₇ | 15.3 | X | 90.74497 | 274.08831 | 299.50206 | 7.56338 | 0.0837929 | 0.21277034 | 2.7788300 | 20 | 8 22.0 | 19.2 |
| 171216 2005 <i>JG</i> ₈₅ | 16.5 | X | 231.09030 | 3.39857 | 199.85153 | 5.10394 | 0.1597196 | 0.23482316 | 2.6200088 | 20 | — | — |
| 171217 2005 <i>JN</i> ₈₇ | 14.6 | X | 148.48210 | 239.11507 | 90.90078 | 23.64270 | 0.2188148 | 0.17407516 | 3.1767145 | 20 | 1 12.7 | 19.9 |
| 171218 2005 <i>JN</i> ₈₉ | 16.5 | X | 278.27466 | 16.91733 | 74.04898 | 2.37235 | 0.0329452 | 0.22781880 | 2.6550722 | 20 | 11 5.2 | 20.0 |
| 171219 2005 <i>JU</i> ₁₀₀ | 16.2 | X | 278.75378 | 295.38079 | 213.18167 | 6.91597 | 0.1422553 | 0.23614644 | 2.5922793 | 20 | — | — |
| 171220 2005 <i>JF</i> ₁₀₅ | 15.8 | X | 335.82992 | 134.30178 | 145.84959 | 2.77791 | 0.0472863 | 0.20541805 | 2.8447470 | 20 | 6 5.7 | 19.4 |
| 171221 2005 <i>JD</i> ₁₁₃ | 15.8 | X | 22.23382 | 233.79729 | 260.49198 | 9.86357 | 0.1968485 | 0.25429027 | 2.4674568 | 20 | 1 14.8 | 17.8 |
| 171222 2005 <i>JK</i> ₁₂₅ | 15.5 | X | 227.10286 | 322.91425 | 159.53834 | 8.69088 | 0.1397564 | 0.22120890 | 2.7077027 | 20 | 9 25.1 | 19.4 |
| 171223 2005 <i>JY</i> ₁₃₂ | 15.3 | X | 245.82376 | 220.95667 | 106.92579 | 9.67152 | 0.0501507 | 0.19132094 | 2.9828245 | 20 | 4 13.7 | 19.7 |
| 171224 2005 <i>JD</i> ₁₃₆ | 15.3 | X | 237.10790 | 206.87006 | 84.05665 | 10.92149 | 0.0704484 | 0.18596014 | 3.0398779 | 20 | 2 16.5 | 20.0 |
| 171225 2005 <i>JR</i> ₁₃₈ | 16.1 | X | 244.38886 | 70.82126 | 221.02396 | 1.54061 | 0.0669303 | 0.18477526 | 3.0528596 | 20 | 2 21.6 | 20.5 |
| 171226 2005 <i>JR</i> ₁₄₂ | 15.9 | X | 250.46846 | 43.96241 | 112.49462 | 8.89704 | 0.0589879 | 0.23219603 | 2.6215986 | 20 | 12 19.9 | 19.2 |
| 171227 2005 <i>JS</i> ₁₅₁ | 16.2 | X | 199.77719 | 139.73947 | 348.98221 | 1.61470 | 0.0310271 | 0.22391770 | 2.6858212 | 20 | 9 12.0 | 19.8 |
| 171228 2005 <i>JO</i> ₁₅₃ | 16.0 | X | 156.38595 | 48.85852 | 52.03264 | 23.90905 | 0.2230820 | 0.27369628 | 2.3493991 | 20 | 6 16.5 | 20.2 |
| 171229 2005 <i>JD</i> ₁₅₄ | 16.7 | X | 211.31438 | 257.35610 | 226.66160 | 5.10550 | 0.0809342 | 0.21811112 | 2.7332804 | 20 | 9 11.8 | 20.7 |
| 171230 2005 <i>JB</i> ₁₆₀ | 16.1 | X | 140.71218 | 145.49373 | 30.11667 | 4.37911 | 0.0363602 | 0.21358990 | 2.7717171 | 20 | 9 1.3 | 20.0 |
| 171231 2005 <i>JC</i> ₁₆₀ | 16.4 | X | 207.12233 | 60.84982 | 27.36891 | 3.29314 | 0.0384669 | 0.20946914 | 2.8079498 | 20 | 7 28.7 | 20.4 |
| 171232 2005 <i>JK</i> ₁₆₀ | 15.8 | X | 313.61500 | 29.71976 | 199.05070 | 1.49041 | 0.1429307 | 0.18759645 | 3.0221752 | 20 | 2 15.8 | 19.8 |
| 171233 2005 <i>JO</i> ₁₆₃ | 15.9 | X | 234.35600 | 140.07111 | 185.48885 | 9.04436 | 0.0351143 | 0.18926208 | 3.0044177 | 20 | 3 25.1 | 20.1 |
| 171234 2005 <i>JO</i> ₁₆₅ | 15.5 | X | 135.83429 | 247.53353 | 177.88814 | 11.94758 | 0.0453732 | 0.19437706 | 2.9514768 | 20 | 4 5.2 | 19.7 |
| 171235 2005 <i>JD</i> ₁₆₅ | 16.2 | X | 160.47828 | 297.26454 | 169.34601 | 2.12133 | 0.0498620 | 0.20498467 | 2.8487551 | 20 | 6 24.8 | 20.3 |
| 171236 2005 <i>JR</i> ₁₇₇ | 15.5 | X | 243.60906 | 81.76370 | 212.01631 | 7.22446 | 0.0690576 | 0.18569100 | 3.0428145 | 20 | 2 20.8 | 20.2 |
| 171237 2005 <i>JD</i> ₁₇₇ | 15.5 | X | 209.26616 | 210.88062 | 63.29775 | 5.96189 | 0.1326587 | 0.17622485 | 3.1508275 | 20 | — | — |
| 171238 2005 <i>KR</i> ₇ | 14.9 | X | 278.86453 | 350.67614 | 235.50807 | 16.41100 | 0.1427983 | 0.17909423 | 3.1170827 | 20 | 1 2.7 | 19.8 |
| 171239 2005 <i>KO</i> ₁₀ | 15.1 | X | 214.13803 | 269.54463 | 62.33278 | 11.71904 | 0.0582580 | 0.18476123 | 3.0530142 | 20 | 3 15.4 | 19.8 |
| 171240 2005 <i>KA</i> ₁₁ | 15.5 | X | 204.55552 | 308.87224 | 263.97384 | 12.27397 | 0.1525962 | 0.23053391 | 2.6341844 | 20 | 12 20.5 | 19.3 |
| 171241 2005 <i>KY</i> ₁₁ | 14.5 | X | 142.68496 | 247.64711 | 91.82507 | 14.71816 | 0.0885262 | 0.17177870 | 3.2049641 | 20 | 1 6.8 | 19.2 |
| 171242 2005 <i>LJ</i> ₅ | 14.4 | X | 181.45548 | 191.82150 | 85.46947 | 20.95541 | 0.0629200 | 0.17046111 | 3.2214583 | 20 | — | — |
| 171243 2005 <i>LP</i> ₈ | 15.1 | X | 293.39744 | 253.52139 | 236.32252 | 20.62536 | 0.1541143 | 0.23219914 | 2.6215752 | 20 | — | — |
| 171244 2005 <i>LT</i> ₈ | 15.6 | X | 138.63173 | 172.15095 | 143.78793 | 2.02306 | 0.1208206 | 0.16785437 | 3.2547248 | 20 | — | — |
| 171245 2005 <i>LF</i> ₉ | 15.7 | X | 34.74187 | 318.71813 | 222.66800 | 8.33260 | 0.0176344 | 0.19226568 | 2.9730454 | 20 | 4 17.9 | 19.8 |
| 171246 2005 <i>LD</i> ₃₆ | 16.5 | X | 143.21123 | 206.05580 | 95.08188 | 2.50543 | 0.0251315 | 0.23451587 | 2.6042813 | 20 | — | — |
| 171247 2005 <i>LJ</i> ₃₈ | 15.1 | X | 205.19435 | 152.15052 | 102.41387 | 10.59759 | 0.0280292 | 0.17009901 | 3.2260284 | 20 | — | — |
| 171248 2005 <i>LC</i> ₄₉ | 14.9 | X | 118.46336 | 305.62195 | 96.28666 | 12.26100 | 0.0447708 | 0.18087493 | 3.0965906 | 20 | 2 19.4 | 19.4 |
| 171249 2005 <i>MV</i> ₁ | 15.3 | X | 181.54606 | 193.40183 | 136.46089 | 30.09035 | 0.1559959 | 0.24021468 | 2.5629277 | 20 | 1 29.9 | 19.5 |
| 171250 2005 <i>MU</i> ₁₄ | 15.3 | X | 95.91442 | 309.66404 | 148.97879 | 10.46192 | 0.0418220 | 0.18821911 | 3.0155063 | 20 | 3 30.7 | 19.6 |
| 171251 2005 <i>MU</i> ₃₅ | 15.6 | X | 295.39749 | 214.65651 | 118.68510 | 11.42252 | 0.1087099 | 0.19095799 | 2.9866029 | 20 | 6 10.9 | 19.6 |
| 171252 2005 <i>MF</i> ₅₃ | 15.3 | X | 271.93902 | 20.20793 | 283.16185 | 9.68178 | 0.0514652 | 0.18147185 | 3.0897964 | 20 | 4 4.9 | 19.9 |
| 171253 2005 <i>NH</i> ₁₂ | 13.3 | X | 1.06429 | 210.49184 | 179.32717 | 2.34502 | 0.0531093 | 0.08139426 | 5.2731912 | 20 | 11 8.3 | 19.9 |
| 171254 2005 <i>NH</i> ₅₆ | 15.5 | X | 279.20210 | 259.46426 | 243.49154 | 15.89555 | 0.1307361 | 0.23200039 | 2.6230721 | 20 | — | — |
| 171255 2005 <i>NX</i> ₈₉ | 15.7 | X | 240.75953 | 274.79005 | 308.52423 | 13.22046 | 0.0755712 | 0.22785278 | 2.6548083 | 20 | — | — |
| 171256 Lucieconstant | 15.6 | X | 308.63748 | 143.11759 | 143.99710 | 1.76273 | 0.0325710 | 0.18427694 | 3.0583608 | 20 | 5 9.6 | 19.8 |
| 171257 2005 <i>QP</i> ₇₇ | 15.2 | X | 219.97063 | 221.51627 | 72.43431 | 2.27298 | 0.1039625 | 0.16794119 | 3.2536031 | 20 | 1 31.3 | 20.4 |
| 171258 2005 <i>QW</i> ₈₄ | 14.3 | X | 333.22294 | 41.19407 | 290.16335 | 2.41032 | 0.1402491 | 0.12418115 | 3.9789235 | 20 | 7 28.1 | 19.2 |
| 171259 2006 <i>BM</i> ₁₀₃ | 16.5 | X | 70.26283 | 350.34286 | 309.26958 | 1.29035 | 0.1456535 | 0.24594501 | 2.5229620 | 20 | 11 30.8 | 20.1 |
| 171260 2006 <i>BN</i> ₁₃₂ | 17.1 | X | 49.10123 | 134.77843 | 177.82430 | 2.80335 | 0.2219516 | 0.31212414 | 2.1523744 | 20 | 12 17.0 | 20.0 |
| 171261 2006 <i>DA</i> ₃₃ | 17.1 | X | 341.01612 | 134.98897 | 171.77599 | 5.02475 | 0.1172762 | 0.29646576 | 2.2275101 | 20 | 7 25.6 | 19.0 |
| 171262 2006 <i>DA</i> ₈₀ | 17.0 | X | 248.05530 | 166.67164 | 172.82449 | 4.83201 | 0.1736905 | 0.28783746 | 2.2718056 | 20 | 4 9.1 | 20.4 |
| 171263 2006 <i>DV</i> ₈₄ | 16.7 | X | 286.20922 | 65.10004 | 184.01005 | 5.89827 | 0.0747512 | 0.27656046 | 2.3331500 | 20 | 2 3.2 | 19.7 |
| 171264 2006 <i>DJ</i> ₉₂ | 17.2 | X | 329.69545 | 145.79967 | 184.23395 | 3.81847 | 0.1983545 | 0.29947036 | 2.2125860 | 20 | 8 5.9 | 18.4 |
| 171265 2006 <i>DQ</i> ₁₀₇ | 17.6 | X | 97.77479 | 106.42160 | 170.76536 | 1.78415 | 0.1068820 | 0.31330330 | 2.1469705 | 20 | 12 11.9 | 20.5 |
| 171266 2006 <i>DU</i> ₁₁₅ | 17.0 | X | 281.57110 | 148.00379 | 145.81600 | 3.89691 | 0.2203244 | 0.27887952 | 2.3201976 | 20 | 3 10.9 | 20.3 |
| 171267 2006 <i>DQ</i> ₁₂₆ | 16.9 | X | 310.36103 | 57.20712 | 196.09505 | 3.09241 | 0.2217430 | 0.28101848 | 2.3084092 | 20 | 2 17.9 | 19.8 |
| 171268 2006 <i>DD</i> ₁₈₅ | 17.1 | X | 315.15107 | 4.30490 | 329.58033 | 4.04171 | 0.1353656 | 0.29694990 | 2.2250884 | 20 | 7 16.3 | 18.9 |
| 171269 2006 <i>DX</i> ₁₈₉ | 17.2 | X | 277.29056 | 40.91721 | 281.94109 | 1.99635 | 0.1820667 | 0.28741750 | 2.2740181 | 20 | 4 16.5 | 20.2 |
| 171270 2006 <i>DP</i> ₁₉₂ | 17.0 | X | 41.28062 | 223.16557 | 153.72595 | 4.20173 | 0.1647957 | 0.30053620 | 2.2073516 | 20 | 10 19.9 | 19.4 |
| 171271 2006 <i>EU</i> ₆ | 16.9 | X | 262.50735 | 342.87182 | 301.89699 | 1.37913 | 0.2194702 | 0.27611397 | 2.3356645 | 20 | 2 9.2 | 20.6 |
| 171272 2006 <i>ED</i> ₄₇ | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171281 2006 <i>FJ</i> ₃₆ | 16.6 | X | 31.74941 | 206.37389 | 47.95204 | 3.91789 | 0.1488980 | 0.29390725 | 2.2404187 | 20 | 8 19.5 | 18.7 |
| 171282 2006 <i>FK</i> ₄₁ | 16.8 | X | 266.20618 | 271.12657 | 69.27867 | 2.60853 | 0.1954670 | 0.28343113 | 2.2952906 | 20 | 4 27.5 | 20.0 |
| 171283 2006 <i>FK</i> ₄₇ | 16.4 | X | 33.88821 | 182.32195 | 93.34187 | 10.59895 | 0.2055146 | 0.29485861 | 2.2355969 | 20 | 10 9.7 | 19.1 |
| 171284 2006 <i>FL</i> ₄₇ | 16.5 | X | 299.32471 | 14.96933 | 194.28540 | 4.80095 | 0.1501695 | 0.26974084 | 2.3723108 | 20 | — | — |
| 171285 2006 <i>FM</i> ₄₉ | 17.2 | X | 178.90421 | 149.69676 | 9.82506 | 20.55733 | 0.0871852 | 0.37964132 | 1.8889497 | 20 | 10 13.1 | 19.2 |
| 171286 2006 <i>FF</i> ₅₁ | 15.5 | X | 51.36858 | 42.82728 | 211.59203 | 15.12399 | 0.2816211 | 0.22480526 | 2.6787472 | 20 | 9 25.1 | 19.3 |
| 171287 2006 <i>GK</i> ₃ | 16.8 | X | 238.14015 | 254.59205 | 45.10774 | 8.05173 | 0.1983119 | 0.27024705 | 2.3693474 | 20 | 2 11.8 | 20.7 |
| 171288 2006 <i>GY</i> ₂₁ | 16.8 | X | 133.67850 | 226.81300 | 98.65071 | 3.34094 | 0.2049406 | 0.25335451 | 2.4735287 | 20 | — | — |
| 171289 2006 <i>GE</i> ₃₁ | 17.5 | X | 219.54219 | 116.18753 | 199.51190 | 6.63302 | 0.1172566 | 0.26810021 | 2.3819791 | 20 | 2 11.7 | 21.1 |
| 171290 2006 <i>GA</i> ₃₂ | 17.2 | X | 2.54925 | 137.84735 | 79.12081 | 2.97230 | 0.1726764 | 0.28046455 | 2.3114477 | 20 | 4 11.5 | 18.7 |
| 171291 2006 <i>GH</i> ₃₅ | 16.4 | X | 262.64258 | 77.15406 | 183.25497 | 7.47854 | 0.1290302 | 0.26991704 | 2.3712782 | 20 | 1 16.9 | 20.0 |
| 171292 2006 <i>GS</i> ₃₈ | 16.7 | X | 81.30056 | 152.02224 | 98.64862 | 3.36247 | 0.1279403 | 0.30076516 | 2.2062312 | 20 | 10 20.3 | 19.6 |
| 171293 2006 <i>GV</i> ₃₈ | 16.2 | X | 89.14604 | 253.73648 | 359.76722 | 8.68819 | 0.0917322 | 0.30247001 | 2.1979332 | 20 | 10 25.4 | 19.2 |
| 171294 2006 <i>GX</i> ₃₈ | 17.0 | X | 279.89722 | 58.72856 | 182.55949 | 2.26339 | 0.1830437 | 0.26851923 | 2.3795004 | 20 | 1 6.8 | 20.5 |
| 171295 2006 <i>HD</i> ₁ | 15.6 | X | 230.99805 | 353.81823 | 209.54567 | 4.44528 | 0.1628377 | 0.18346465 | 3.0673815 | 20 | 12 25.8 | 20.2 |
| 171296 2006 <i>HN</i> ₁ | 16.8 | X | 61.92883 | 169.71159 | 112.86154 | 6.81229 | 0.1873106 | 0.30161995 | 2.2020610 | 20 | 11 17.5 | 19.9 |
| 171297 2006 <i>HX</i> ₂ | 16.0 | X | 304.31626 | 120.25529 | 190.10358 | 9.39968 | 0.0115564 | 0.21765095 | 2.7371315 | 20 | 6 6.1 | 19.8 |
| 171298 2006 <i>HV</i> ₃ | 16.5 | X | 225.42508 | 268.82181 | 65.82425 | 7.58476 | 0.1252061 | 0.27436605 | 2.3455740 | 20 | 3 18.2 | 20.1 |
| 171299 2006 <i>HK</i> ₆ | 16.3 | X | 312.61189 | 291.67405 | 10.36956 | 10.21800 | 0.2251913 | 0.28396379 | 2.2924194 | 20 | 4 28.9 | 18.8 |
| 171300 2006 <i>HV</i> ₇ | 16.9 | X | 198.73583 | 121.36309 | 44.79123 | 22.69363 | 0.0412905 | 0.37969446 | 1.8887735 | 20 | 11 27.5 | 18.8 |
| 171301 2006 <i>HS</i> ₁₃ | 16.5 | X | 274.26921 | 269.42909 | 53.90983 | 4.56506 | 0.1846369 | 0.27918341 | 2.3185136 | 20 | 4 15.9 | 19.6 |
| 171302 2006 <i>HQ</i> ₂₃ | 16.4 | X | 120.65867 | 323.42093 | 50.12708 | 9.64028 | 0.2527211 | 0.26202843 | 2.4186356 | 20 | 2 3.8 | 19.9 |
| 171303 2006 <i>HE</i> ₂₉ | 16.9 | X | 185.53524 | 241.45311 | 96.25347 | 3.50836 | 0.2068099 | 0.26567730 | 2.3964392 | 20 | 2 12.3 | 20.7 |
| 171304 2006 <i>HH</i> ₃₀ | 15.8 | X | 75.65439 | 34.89585 | 220.90151 | 13.45744 | 0.2246079 | 0.22808362 | 2.6530167 | 20 | 10 17.6 | 20.0 |
| 171305 2006 <i>HJ</i> ₃₀ | 15.5 | X | 117.94760 | 87.15821 | 192.00811 | 4.64268 | 0.2411682 | 0.23895003 | 2.5719626 | 20 | 12 23.1 | 20.0 |
| 171306 2006 <i>HP</i> ₃₄ | 16.9 | X | 76.17580 | 207.99418 | 110.45668 | 3.62043 | 0.1450912 | 0.31192284 | 2.1533003 | 20 | — | — |
| 171307 2006 <i>HJ</i> ₃₅ | 16.9 | X | 86.73584 | 218.50727 | 53.97896 | 2.41631 | 0.1569485 | 0.23345639 | 2.6121546 | 20 | 11 13.3 | 20.9 |
| 171308 2006 <i>HE</i> ₃₈ | 16.7 | X | 57.26641 | 223.63092 | 59.67392 | 8.00101 | 0.2605624 | 0.23010039 | 2.6374920 | 20 | 11 8.6 | 20.5 |
| 171309 2006 <i>HG</i> ₄₂ | 16.8 | X | 353.73515 | 22.46490 | 271.11275 | 3.49187 | 0.1735545 | 0.29057887 | 2.2574945 | 20 | 8 2.5 | 18.2 |
| 171310 2006 <i>HN</i> ₄₃ | 16.1 | X | 213.04246 | 271.62039 | 68.31928 | 14.09248 | 0.2100837 | 0.26876328 | 2.3780598 | 20 | 3 15.0 | 20.3 |
| 171311 2006 <i>HM</i> ₄₄ | 17.8 | X | 202.02566 | 98.19570 | 68.90974 | 2.73684 | 0.0969890 | 0.30927725 | 2.1655626 | 20 | 11 12.6 | 20.4 |
| 171312 2006 <i>HS</i> ₄₆ | 16.7 | X | 302.92256 | 113.05578 | 179.25542 | 6.68023 | 0.1393885 | 0.28059422 | 2.3107355 | 20 | 4 18.5 | 19.3 |
| 171313 2006 <i>HB</i> ₄₈ | 16.5 | X | 321.03345 | 237.55499 | 74.68789 | 7.01258 | 0.2044021 | 0.28629919 | 2.2799359 | 20 | 6 9.4 | 18.3 |
| 171314 2006 <i>HL</i> ₅₁ | 17.0 | X | 6.49500 | 325.35244 | 257.51099 | 3.40664 | 0.1227375 | 0.28130160 | 2.3068601 | 20 | 4 29.2 | 19.1 |
| 171315 2006 <i>HD</i> ₅₂ | 16.9 | X | 350.60493 | 146.50348 | 63.71695 | 24.01251 | 0.0350610 | 0.34825955 | 2.0007862 | 20 | 3 29.2 | 19.6 |
| 171316 2006 <i>HK</i> ₅₄ | 16.9 | X | 257.87727 | 69.29470 | 217.77015 | 2.19954 | 0.1679148 | 0.27114664 | 2.3641039 | 20 | 2 11.6 | 20.3 |
| 171317 2006 <i>HQ</i> ₆₃ | 17.7 | X | 83.85977 | 191.17874 | 66.46885 | 3.79697 | 0.1468134 | 0.30141720 | 2.2030484 | 20 | 11 2.6 | 20.7 |
| 171318 2006 <i>HW</i> ₆₇ | 17.1 | X | 266.57123 | 66.01267 | 237.97456 | 1.85874 | 0.1763433 | 0.27348856 | 2.3505885 | 20 | 3 11.9 | 20.7 |
| 171319 2006 <i>HJ</i> ₇₅ | 16.9 | X | 249.62447 | 258.88140 | 125.85582 | 10.30984 | 0.0644705 | 0.28791663 | 2.2713892 | 20 | 6 26.6 | 19.8 |
| 171320 2006 <i>HO</i> ₇₈ | 17.2 | X | 232.50526 | 84.29802 | 206.14800 | 2.95262 | 0.1900585 | 0.26778533 | 2.3838460 | 20 | 1 23.1 | 21.0 |
| 171321 2006 <i>HR</i> ₈₀ | 17.4 | X | 257.66520 | 39.90839 | 257.53774 | 0.66135 | 0.1769530 | 0.27045379 | 2.3681398 | 20 | 2 24.3 | 20.9 |
| 171322 2006 <i>HY</i> ₉₀ | 16.4 | X | 335.27998 | 179.95997 | 85.45910 | 7.21278 | 0.1151695 | 0.28146659 | 2.3059584 | 20 | 5 8.6 | 18.6 |
| 171323 2006 <i>HD</i> ₉₁ | 16.4 | X | 253.37381 | 223.70852 | 128.55118 | 5.16638 | 0.0861117 | 0.21208916 | 2.7847769 | 20 | 5 15.4 | 20.4 |
| 171324 2006 <i>HQ</i> ₉₆ | 17.1 | X | 141.84437 | 305.26107 | 74.77060 | 1.72274 | 0.2268919 | 0.26447527 | 2.4036949 | 20 | 2 27.3 | 20.8 |
| 171325 2006 <i>HD</i> ₁₀₁ | 16.2 | X | 1.17794 | 169.70269 | 160.21633 | 4.09748 | 0.1824130 | 0.22545802 | 2.6735743 | 20 | 10 7.2 | 18.9 |
| 171326 2006 <i>JA</i> ₁ | 16.0 | X | 235.09836 | 28.42739 | 253.03020 | 11.70338 | 0.1818483 | 0.26412229 | 2.4058360 | 20 | 1 13.7 | 20.0 |
| 171327 2006 <i>JF</i> ₁₀ | 17.3 | X | 344.93901 | 10.92753 | 13.05594 | 1.75227 | 0.1320620 | 0.30577557 | 2.1820642 | 20 | 12 12.4 | 19.2 |
| 171328 2006 <i>JS</i> ₁₇ | 17.0 | X | 342.36056 | 213.20475 | 141.39390 | 2.72439 | 0.1820721 | 0.22760234 | 2.6567554 | 20 | 10 5.0 | 19.4 |
| 171329 2006 <i>JM</i> ₂₇ | 16.4 | X | 78.48509 | 207.54108 | 48.07543 | 4.47963 | 0.1152421 | 0.23107761 | 2.6300508 | 20 | 10 10.8 | 20.0 |
| 171330 2006 <i>JQ</i> ₃₇ | 17.1 | X | 97.37515 | 243.07667 | 59.88787 | 8.20014 | 0.1960319 | 0.24045936 | 2.5611888 | 20 | — | — |
| 171331 2006 <i>JU</i> ₃₉ | 16.3 | X | 278.98412 | 275.00621 | 75.60062 | 7.36243 | 0.1525725 | 0.28297642 | 2.2977488 | 20 | 6 3.5 | 18.9 |
| 171332 2006 <i>JR</i> ₄₅ | 15.8 | X | 167.35122 | 123.66769 | 229.20708 | 7.85834 | 0.0841933 | 0.18397974 | 3.0616536 | 20 | 2 11.8 | 20.5 |
| 171333 2006 <i>JE</i> ₄₆ | 16.1 | X | 214.07528 | 19.21981 | 223.43150 | 5.29708 | 0.1276948 | 0.24658273 | 2.5186101 | 20 | — | — |
| 171334 2006 <i>JB</i> ₄₇ | 16.5 | X | 119.55314 | 91.06569 | 176.49977 | 4.95882 | 0.1138479 | 0.24067862 | 2.5596330 | 20 | 12 8.4 | 20.4 |
| 171335 2006 <i>JE</i> ₄₈ | 16.6 | X | 330.22376 | 68.36135 | 241.14874 | 6.39274 | 0.1424380 | 0.28719517 | 2.2751915 | 20 | 7 4.1 | 18.5 |
| 171336 2006 <i>JT</i> ₅₄ | 17.0 | X | 296.20316 | 33.59269 | 219.58662 | 4.34997 | 0.2076327 | 0.26997977 | 2.3709109 | 20 | 2 3.5 | 20.3 |
| 171337 2006 <i>JE</i> ₅₉ | 17.4 | X | 272.42112 | 73.74868 | 180.40342 | 1.14494 | 0.1513399 | 0.26864538 | 2.3787555 | 20 | 1 18.4 | 20.9 |
| 171338 2006 <i>JZ</i> ₆₀ | 16.8 | X | 185.75740 | 175.95642 | 182.24355 | 0.78422 | 0.2025350 | 0.26914994 | 2.3757817 | 20 | 3 6.8 | 20.7 |
| 171339 2006 <i>KM</i> ₂ | 17.0 | X | 251.56388 | 13.78422 | 242.64687 | 2.57699 | 0.1410476 | 0.26393869 | 2.4069515 | 20 | 1 2.1 | 20.5 |
| 171340 2006 <i>KG</i> ₄ | 16.6 | X | 75.89385 | 51.61176 | 237.93235 | 5.77702 | 0.2115552 | 0.23415380 | 2.6069653 | 20 | 11 28.8 | 20.5 |
| 171341 2006 <i>KP</i> ₄ | 16.3 | X | 74.49511 | 113.85095 | 217.70880 | 4.06713 | 0.2104121 | 0.23873123 | 2.5735339 | 20 | — | — |
| 171342 2006 <i>KY</i> ₉ | 16.0 | X | 6.84913 | 142.83952 | 183.62970 | 3.40701 | 0.1773124 | 0.22575084 | 2.6712618 | 20 | 10 11.6 | 18.7 |
| 171343 2006 <i>KN</i> ₁₀ | 16.0 | X | 307.67887 | 99.97608 | 208.17308 | 2.42732 | 0.1832683 | 0.21136466 | 2.7911369 | 20 | 5 13.4 | 19.2 |
| 171344 2006 <i>KA</i> ₁₅ | 16.3 | X | 76.45926 | 233.05431 | 99.23166 | 14.32618 | 0.1763189 | 0.23958245 | 2.5674346 | 20 | — | — |
| 171345 2006 <i>KH</i> ₂₁ | 16.3 | X | 233.02185 | 12.45643 | 247.71743 | 7.37693 | 0.2031873 | 0.25881033 | 2.4386435 | 20 | — | — |
| 171346 2006 <i>KP</i> ₂₃ | 17.0 | X | 358.75073 | 178.20736 | 83.06371 | 2.86558 | 0.1058424 | 0.28399023 | 2.2922771 | 20 | 6 16.5 | 19.0 |
| 171347 2006 <i>KU</i> ₂₃ | 16.7 | X | 47.95256 | 270.86447 | 347.25230 | 8.61610 | 0.1582652 | 0.29382358 | 2.2408440 | 20 | 9 18.9 | 19.1 |
| 171348 2006 <i>KU</i> ₂₇ | 17.0 | X | 167.65012 | 242.73152 | 53.66167 | 3.96862 | 0.1439297 | 0.25296061 | 2.4760959 | 20 | — | — |
| 171349 2006 <i>KT</i> ₄₂ | 16.7 | X | 99.50991 | 240.19939 | 81.71242 | 2.64505 | 0.1454520 | 0.24355535 | 2.5394379 | 20 | — | — |
| 171350 2006 <i>KA</i> ₄₆ | 16.3 | X | 324.63727 | 140.44043 | 167.84613 | 2.71394 | 0.1733013 | 0.21447652 | 2.7640732 | 20 | 6 14.1 | 19.2 |
| 171351 2006 <i>KD</i> ₆₁ | 15.9 | X | 143.53810 | 117.68798 | 187.51458 | 8.04840 | 0.0955286 | 0.17844414 | 3.1246486 | 20 | — | — |
| 171352 2006 <i>KB</i> ₆₅ | 16.2 | X</ | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|--------------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171361 2006 <i>KN</i> ₁₀₈ | 16.5 | X | 309.06188 | 168.20598 | 240.61867 | 3.43171 | 0.1567413 | 0.23706232 | 2.5855981 | 20 | 10 16.2 | 19.1 |
| 171362 2006 <i>KV</i> ₁₁₀ | 17.1 | X | 325.34294 | 279.69360 | 11.30875 | 2.53742 | 0.1613239 | 0.28221416 | 2.3018844 | 20 | 5 20.5 | 19.2 |
| 171363 2006 <i>KT</i> ₁₂₁ | 15.8 | X | 69.23639 | 73.73961 | 200.21693 | 12.68613 | 0.1484586 | 0.22677339 | 2.6632258 | 20 | 10 26.5 | 19.6 |
| 171364 2006 <i>LG</i> ₁ | 15.2 | X | 97.49124 | 174.91537 | 190.13851 | 17.93268 | 0.2514264 | 0.17797956 | 3.1300837 | 20 | 1 4.9 | 19.9 |
| 171365 2006 <i>LS</i> ₁ | 16.9 | X | 12.49657 | 93.10975 | 169.33597 | 3.27380 | 0.1477938 | 0.28537316 | 2.2848654 | 20 | 7 20.6 | 18.7 |
| 171366 2006 <i>LE</i> ₂ | 15.6 | X | 180.09015 | 283.92930 | 297.62997 | 4.46088 | 0.2143960 | 0.24328607 | 2.5413114 | 20 | 12 4.2 | 19.8 |
| 171367 2006 <i>LW</i> ₃ | 16.4 | X | 47.86622 | 75.00109 | 118.60364 | 7.39969 | 0.0371621 | 0.28096513 | 2.3087014 | 20 | 5 25.5 | 19.1 |
| 171368 2006 <i>LV</i> ₄ | 15.3 | X | 23.27034 | 202.04918 | 107.80286 | 13.00510 | 0.0967687 | 0.22074730 | 2.7114761 | 20 | 10 10.2 | 19.0 |
| 171369 2006 <i>LW</i> ₅ | 15.4 | X | 261.13240 | 28.74740 | 278.53747 | 11.78420 | 0.1051946 | 0.19546113 | 2.9405537 | 20 | 3 18.8 | 20.0 |
| 171370 2006 <i>LX</i> ₅ | 15.7 | X | 156.06128 | 66.58724 | 110.14043 | 8.95328 | 0.1036231 | 0.22274687 | 2.6952247 | 20 | 9 24.7 | 19.9 |
| 171371 2006 <i>LE</i> ₇ | 14.8 | X | 170.02842 | 232.69497 | 104.64280 | 17.37477 | 0.1013738 | 0.18150689 | 3.0893988 | 20 | 2 2.2 | 19.6 |
| 171372 2006 <i>MK</i> ₃ | 15.6 | X | 134.74187 | 205.60133 | 120.45975 | 6.35122 | 0.1240824 | 0.17262617 | 3.1944662 | 20 | — | — |
| 171373 2006 <i>MN</i> ₁₄ | 15.5 | X | 168.02351 | 337.95073 | 32.89529 | 24.49509 | 0.2110878 | 0.25691406 | 2.4506284 | 20 | 3 20.8 | 19.9 |
| 171374 2006 <i>NE</i> | 15.2 | X | 11.53020 | 247.70844 | 66.18622 | 15.87561 | 0.1894690 | 0.22083989 | 2.7107182 | 20 | 10 11.6 | 18.4 |
| 171375 2006 <i>OH</i> | 15.5 | X | 117.65176 | 86.20369 | 295.92655 | 8.77095 | 0.1121487 | 0.17861519 | 3.1226535 | 20 | 1 30.5 | 20.1 |
| 171376 2006 <i>OM</i> | 16.0 | X | 205.67785 | 114.13220 | 217.00667 | 10.49745 | 0.0971861 | 0.18789324 | 3.0189919 | 20 | 2 23.5 | 20.8 |
| 171377 2006 <i>OR</i> ₈ | 15.2 | X | 102.88431 | 66.35290 | 303.86028 | 8.29977 | 0.0928554 | 0.17393432 | 3.1784290 | 20 | — | — |
| 171378 2006 <i>OV</i> ₈ | 16.3 | X | 265.40281 | 134.93067 | 130.85091 | 2.09358 | 0.1664593 | 0.25998221 | 2.4313098 | 20 | 1 25.8 | 19.9 |
| 171379 2006 <i>OL</i> ₉ | 15.3 | X | 193.25504 | 260.81117 | 59.15719 | 12.09830 | 0.1494797 | 0.18280702 | 3.0747334 | 20 | 2 7.5 | 20.5 |
| 171380 2006 <i>OM</i> ₁₂ | 15.8 | X | 121.79268 | 220.52438 | 63.47238 | 11.38036 | 0.1279737 | 0.23392116 | 2.6086934 | 20 | 12 28.6 | 19.9 |
| 171381 Taipei | 15.5 | X | 211.29125 | 248.74493 | 92.44321 | 10.97866 | 0.0949301 | 0.19102642 | 2.9858897 | 20 | 3 21.1 | 20.3 |
| 171382 2006 <i>OO</i> ₁₇ | 15.8 | X | 61.32311 | 213.74466 | 59.35271 | 15.08365 | 0.0792726 | 0.22187265 | 2.7022998 | 20 | 10 11.8 | 19.7 |
| 171383 2006 <i>OE</i> ₂₀ | 15.4 | X | 230.58352 | 261.90425 | 33.92011 | 10.78873 | 0.0962656 | 0.18570892 | 3.0426188 | 20 | 2 15.2 | 20.2 |
| 171384 2006 <i>PY</i> ₆ | 15.7 | X | 259.78714 | 220.37761 | 53.19202 | 2.64711 | 0.0730136 | 0.18692358 | 3.0294235 | 20 | 2 17.5 | 20.1 |
| 171385 2006 <i>PW</i> ₇ | 16.2 | X | 186.35254 | 254.63536 | 86.89650 | 7.43594 | 0.1434993 | 0.25466288 | 2.4650494 | 20 | 2 18.1 | 20.1 |
| 171386 2006 <i>PP</i> ₉ | 15.3 | X | 113.11663 | 247.72592 | 149.40456 | 9.77310 | 0.1042011 | 0.17748414 | 3.1359058 | 20 | 2 11.9 | 19.7 |
| 171387 2006 <i>PR</i> ₉ | 16.8 | X | 273.53500 | 206.88128 | 111.91063 | 2.36152 | 0.1982462 | 0.26798768 | 2.3826459 | 20 | 4 7.8 | 20.1 |
| 171388 2006 <i>PL</i> ₁₀ | 16.0 | X | 90.97671 | 305.52723 | 304.71481 | 3.79816 | 0.0701432 | 0.21879203 | 2.7276065 | 20 | 10 7.9 | 20.0 |
| 171389 2006 <i>PV</i> ₁₂ | 15.7 | X | 234.78079 | 11.74738 | 297.24565 | 1.56275 | 0.1030023 | 0.18627717 | 3.0364278 | 20 | 2 29.1 | 20.4 |
| 171390 2006 <i>PK</i> ₁₃ | 14.7 | X | 139.38317 | 14.27247 | 295.47967 | 14.26616 | 0.0994134 | 0.16894062 | 3.2407585 | 20 | — | — |
| 171391 2006 <i>PK</i> ₂₇ | 15.3 | X | 162.82647 | 259.07066 | 43.30680 | 25.74565 | 0.2718821 | 0.17475030 | 3.1685271 | 20 | — | — |
| 171392 2006 <i>PX</i> ₂₉ | 16.1 | X | 248.61935 | 169.35444 | 78.70702 | 6.72511 | 0.0768101 | 0.25197359 | 2.4825578 | 20 | — | — |
| 171393 2006 <i>PH</i> ₃₂ | 15.1 | X | 103.27572 | 1.79685 | 0.77676 | 7.98631 | 0.1140436 | 0.16896018 | 3.2405084 | 20 | — | — |
| 171394 2006 <i>PD</i> ₃₉ | 15.8 | X | 188.26964 | 254.78317 | 9.96245 | 5.26253 | 0.1586712 | 0.17434040 | 3.1734916 | 20 | — | — |
| 171395 2006 <i>QN</i> ₂₇ | 16.7 | X | 52.30115 | 322.83446 | 313.85756 | 5.51084 | 0.1530097 | 0.28633414 | 2.2797504 | 20 | 10 16.9 | 19.7 |
| 171396 Miguel | 16.7 | X | 319.99169 | 231.44763 | 60.80259 | 3.76181 | 0.1489643 | 0.26949845 | 2.3737330 | 20 | 5 15.1 | 18.9 |
| 171397 2006 <i>QT</i> ₄₀ | 15.1 | X | 116.76412 | 305.37396 | 100.33769 | 11.13660 | 0.1028917 | 0.17974484 | 3.1095562 | 20 | 3 1.2 | 19.7 |
| 171398 2006 <i>QH</i> ₄₂ | 15.1 | X | 29.01021 | 253.79485 | 116.77139 | 5.92447 | 0.2082848 | 0.15509032 | 3.4309384 | 20 | 12 27.0 | 19.5 |
| 171399 2006 <i>QL</i> ₆₆ | 15.8 | X | 290.18218 | 173.67731 | 179.54385 | 1.88797 | 0.0598441 | 0.20406365 | 2.8573205 | 20 | 7 6.2 | 19.6 |
| 171400 2006 <i>QZ</i> ₉₈ | 15.7 | X | 129.83282 | 131.02367 | 340.88795 | 6.19907 | 0.0971281 | 0.26323426 | 2.4112437 | 20 | 5 29.5 | 19.2 |
| 171401 2006 <i>QC</i> ₁₂₉ | 14.6 | X | 270.03067 | 106.50194 | 117.90034 | 17.86152 | 0.0819912 | 0.17504038 | 3.1650255 | 20 | 1 1.7 | 19.4 |
| 171402 2006 <i>QL</i> ₁₃₃ | 15.3 | X | 34.13815 | 299.31464 | 97.09328 | 28.15946 | 0.1704897 | 0.23344926 | 2.6122078 | 20 | — | — |
| 171403 2006 <i>QV</i> ₁₃₆ | 15.6 | X | 3.24767 | 0.85218 | 305.04871 | 3.02614 | 0.0594746 | 0.21216090 | 2.7841490 | 20 | 8 21.7 | 19.0 |
| 171404 2006 <i>QR</i> ₁₄₁ | 16.0 | X | 23.32068 | 256.58877 | 35.98000 | 4.87385 | 0.0441155 | 0.21072693 | 2.7967653 | 20 | 9 3.8 | 19.6 |
| 171405 2006 <i>QS</i> ₁₄₄ | 16.0 | X | 12.03752 | 276.55244 | 51.61263 | 3.24625 | 0.2372804 | 0.21505831 | 2.7590860 | 20 | 10 29.9 | 18.8 |
| 171406 2006 <i>QV</i> ₁₄₅ | 15.8 | X | 174.34832 | 211.36325 | 7.42857 | 2.94981 | 0.1235681 | 0.22677990 | 2.6631749 | 20 | 11 28.6 | 19.8 |
| 171407 2006 <i>QV</i> ₁₄₈ | 15.9 | X | 238.85699 | 288.36606 | 100.47819 | 3.32229 | 0.1088950 | 0.19616826 | 2.9334828 | 20 | 6 10.4 | 20.1 |
| 171408 2006 <i>QV</i> ₁₅₀ | 16.6 | X | 139.42488 | 325.24933 | 222.08781 | 1.39977 | 0.0452214 | 0.21394532 | 2.7686466 | 20 | 9 12.9 | 20.5 |
| 171409 2006 <i>QF</i> ₁₆₂ | 16.6 | X | 105.84982 | 264.35281 | 307.79756 | 6.41491 | 0.0735248 | 0.28212128 | 3.2023896 | 20 | 9 13.9 | 19.7 |
| 171410 2006 <i>QZ</i> ₁₆₇ | 15.3 | X | 220.77147 | 175.34554 | 118.22644 | 7.35872 | 0.0576013 | 0.17861407 | 3.1226665 | 20 | 1 31.9 | 20.1 |
| 171411 2006 <i>RO</i> ₃ | 14.9 | X | 186.44835 | 55.70972 | 237.63145 | 15.70585 | 0.1931438 | 0.17495917 | 3.1660049 | 20 | — | — |
| 171412 2006 <i>RS</i> ₃₅ | 15.9 | X | 59.19833 | 148.78204 | 291.44343 | 9.35329 | 0.0788681 | 0.24122637 | 2.5557568 | 20 | 1 10.7 | 18.9 |
| 171413 2006 <i>RK</i> ₅₀ | 15.9 | X | 66.07265 | 291.82167 | 26.15841 | 1.86244 | 0.0249658 | 0.21822960 | 3.2322909 | 20 | 11 28.2 | 19.5 |
| 171414 2006 <i>RJ</i> ₉₁ | 15.8 | X | 49.58346 | 354.20110 | 74.74722 | 0.55344 | 0.1345654 | 0.16260410 | 3.3244137 | 20 | 1 3.4 | 19.7 |
| 171415 2006 <i>RV</i> ₉₉ | 16.3 | X | 57.64041 | 264.77461 | 112.25320 | 9.25864 | 0.1503342 | 0.23239037 | 2.6201368 | 20 | — | — |
| 171416 2006 <i>SL</i> ₁₁ | 15.3 | X | 326.40797 | 271.11573 | 66.72820 | 6.29951 | 0.1094677 | 0.20501337 | 2.8484893 | 20 | 8 7.5 | 18.7 |
| 171417 2006 <i>SS</i> ₁₅₃ | 14.7 | X | 216.80422 | 190.74264 | 89.13755 | 10.39840 | 0.0332137 | 0.17378756 | 3.1802183 | 20 | 1 13.1 | 19.3 |
| 171418 2006 <i>TH</i> ₂ | 15.3 | X | 316.91401 | 272.79077 | 273.09339 | 3.39184 | 0.1130795 | 0.17464724 | 3.1697735 | 20 | 1 18.7 | 19.8 |
| 171419 2006 <i>UH</i> ₁₀₇ | 16.7 | X | 137.78727 | 143.60289 | 66.91620 | 5.99688 | 0.1214116 | 0.27829387 | 2.3234516 | 20 | 10 24.0 | 20.1 |
| 171420 2006 <i>VX</i> ₂₈ | 13.7 | X | 183.60404 | 99.78229 | 49.89345 | 12.38132 | 0.1058178 | 0.12532579 | 3.9546594 | 20 | 9 11.1 | 19.9 |
| 171421 2007 <i>AG</i> ₁₁ | 15.2 | X | 75.88989 | 253.17436 | 272.82769 | 9.30839 | 0.0293318 | 0.17714827 | 3.1398684 | 20 | 5 24.5 | 19.6 |
| 171422 2007 <i>EL</i> ₁₄ | 16.6 | X | 330.88021 | 129.46440 | 190.70698 | 6.01415 | 0.1003465 | 0.24465637 | 2.5318134 | 20 | 7 21.4 | 19.4 |
| 171423 2007 <i>MQ</i> ₁₉ | 16.3 | X | 146.77759 | 26.79181 | 248.26454 | 2.32302 | 0.1820031 | 0.25715823 | 2.4490770 | 20 | — | — |
| 171424 2007 <i>NL</i> ₂ | 12.2 | X | 354.01569 | 100.50371 | 246.99602 | 16.51825 | 0.0183247 | 0.08380886 | 5.1714156 | 20 | 9 5.9 | 19.2 |
| 171425 2007 <i>PC</i> ₁₇ | 16.4 | X | 211.49725 | 260.56607 | 73.90904 | 3.25784 | 0.2356617 | 0.27361528 | 2.3498627 | 20 | 2 29.3 | 20.5 |
| 171426 2007 <i>PP</i> ₁₈ | 15.5 | X | 123.74326 | 99.35003 | 181.66958 | 1.61047 | 0.0879834 | 0.17283371 | 3.1919083 | 20 | 12 14.2 | 20.4 |
| 171427 2007 <i>PB</i> ₂₁ | 16.3 | X | 285.99208 | 144.06654 | 176.43432 | 1.49609 | 0.1828157 | 0.21290141 | 2.7776895 | 20 | 4 29.2 | 20.2 |
| 171428 2007 <i>PA</i> ₂₆ | 16.9 | X | 187.06675 | 116.18941 | 190.75571 | 1.59284 | 0.2107709 | 0.26752067 | 2.3854179 | 20 | 1 6.4 | 20.8 |
| 171429 Hunstead | 15.3 | X | 131.97577 | 294.48094 | 20.39517 | 15.53780 | 0.0901835 | 0.17896914 | 3.1185349 | 20 | — | — |
| 171430 2007 <i>RX</i> ₁₀ | 17.0 | X | 110.42641 | 232.56907 | 174.69984 | 0.61917 | 0.1864708 | 0.26212730 | 2.4180273 | 20 | 2 22.5 | 19.9 |
| 171431 2007 <i>RC</i> ₁₉ | 16.3 | X | 27.14324 | 285.60890 | 350.12746 | 3.81560 | 0.0994136 | 0.22228962 | 2.6989195 | 20 | 8 24.3 | 19.5 |
| 171432 2007 <i>RK</i> ₁₉ | 16.9 | X | 9.27673 | 67.05495 | 358.91037 | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171441 2007 RC ₁₀₆ | 16.1 | X | 354.23036 | 165.08110 | 146.43935 | 1.86405 | 0.0863016 | 0.22103564 | 2.7091175 | 20 | 8 18.3 | 19.3 |
| 171442 2007 RU ₁₁₂ | 17.1 | X | 317.97033 | 131.98767 | 171.41734 | 6.89480 | 0.1452275 | 0.29137689 | 2.2533707 | 20 | 5 30.7 | 19.3 |
| 171443 2007 RQ ₁₄₀ | 16.3 | X | 317.69712 | 141.82201 | 179.74844 | 8.37323 | 0.1663645 | 0.21834662 | 2.7313147 | 20 | 6 21.3 | 19.4 |
| 171444 2007 RL ₁₄₁ | 15.9 | X | 31.81192 | 128.75591 | 184.62973 | 11.60637 | 0.1710566 | 0.23292836 | 2.6161008 | 20 | 11 5.4 | 19.2 |
| 171445 2007 RT ₁₄₁ | 16.7 | X | 141.16543 | 336.37719 | 11.01520 | 2.08768 | 0.2106614 | 0.26045365 | 2.4283750 | 20 | 1 15.6 | 20.0 |
| 171446 2007 RL ₁₄₂ | 16.3 | X | 196.66053 | 343.66682 | 25.02407 | 4.95148 | 0.1654316 | 0.27264874 | 2.3554129 | 20 | 3 29.6 | 20.0 |
| 171447 2007 RO ₁₄₅ | 15.9 | X | 318.67166 | 181.94973 | 203.40340 | 7.67250 | 0.2906544 | 0.22525946 | 2.6751452 | 20 | 9 14.3 | 17.9 |
| 171448 Guchoaho | 17.6 | X | 270.88662 | 201.41107 | 102.07622 | 2.83740 | 0.2394789 | 0.28419183 | 2.2911929 | 20 | 3 10.5 | 21.1 |
| 171449 2007 RE ₂₂₃ | 15.8 | X | 347.28364 | 172.94447 | 179.98593 | 13.93961 | 0.1893949 | 0.22691094 | 2.6621494 | 20 | 10 14.4 | 18.3 |
| 171450 2007 RO ₂₇₆ | 15.6 | X | 240.81350 | 41.03224 | 19.48420 | 25.97348 | 0.2500578 | 0.21553605 | 2.7550074 | 20 | 7 13.3 | 20.5 |
| 171451 2007 SR ₇ | 16.4 | X | 79.48984 | 132.04770 | 154.97043 | 3.91613 | 0.0750537 | 0.23367900 | 2.6104954 | 20 | 11 16.4 | 20.1 |
| 171452 2007 SZ ₁₃ | 16.4 | X | 246.25962 | 58.90557 | 346.05966 | 3.30797 | 0.1395969 | 0.21340254 | 2.7733392 | 20 | 7 6.8 | 20.5 |
| 171453 2007 SH ₁₅ | 16.8 | X | 177.16773 | 310.21073 | 44.08161 | 2.02924 | 0.1916158 | 0.26789170 | 2.3832150 | 20 | 2 24.5 | 20.5 |
| 171454 2007 SM ₁₇ | 16.2 | X | 156.37483 | 300.03866 | 53.45326 | 7.33807 | 0.1679255 | 0.26400575 | 2.4065439 | 20 | 2 4.7 | 19.9 |
| 171455 2007 TR | 15.4 | X | 236.73308 | 220.35972 | 221.50005 | 12.28211 | 0.0583528 | 0.22073336 | 2.7115903 | 20 | 8 18.9 | 19.5 |
| 171456 2007 TU ₁₁ | 17.2 | X | 173.28301 | 141.56702 | 217.17609 | 2.67342 | 0.1891334 | 0.26800342 | 2.3825525 | 20 | 2 24.4 | 21.0 |
| 171457 2007 TS ₁₂ | 15.3 | X | 203.92164 | 185.84155 | 147.81242 | 1.68321 | 0.1464439 | 0.19059599 | 2.9903834 | 20 | 2 27.8 | 20.2 |
| 171458 Ppaprats | 17.0 | X | 206.16374 | 59.04737 | 325.83627 | 1.88847 | 0.2174416 | 0.27651942 | 2.3333808 | 20 | 4 24.9 | 20.8 |
| 171459 2007 TN ₁₇₆ | 15.3 | X | 14.14034 | 190.54808 | 92.87123 | 12.32842 | 0.1072868 | 0.21820040 | 2.7325347 | 20 | 8 17.1 | 18.6 |
| 171460 2170 P-L | 16.7 | X | 254.24548 | 86.90428 | 293.77199 | 2.71245 | 0.2078323 | 0.27626376 | 2.3348202 | 20 | 6 5.6 | 20.0 |
| 171461 2666 P-L | 16.3 | X | 7.80488 | 229.24398 | 168.53186 | 5.02023 | 0.3247222 | 0.23245493 | 2.6196516 | 20 | — | — |
| 171462 4518 P-L | 17.4 | X | 337.05000 | 207.04994 | 118.55946 | 1.82873 | 0.1107595 | 0.29474321 | 2.2361804 | 20 | 8 19.8 | 19.0 |
| 171463 6272 P-L | 15.5 | X | 81.67635 | 73.78623 | 324.64480 | 3.95717 | 0.1960647 | 0.17167434 | 3.2062629 | 20 | 1 20.3 | 19.7 |
| 171464 6731 P-L | 16.6 | X | 2.13670 | 327.21985 | 71.41642 | 2.65246 | 0.2107791 | 0.23256553 | 2.6188210 | 20 | — | — |
| 171465 Evamaria | 14.7 | X | 251.48787 | 213.35196 | 160.02422 | 10.94189 | 0.2199606 | 0.12804823 | 3.8984054 | 20 | 5 25.8 | 20.8 |
| 171466 6862 P-L | 17.5 | X | 341.46930 | 156.71390 | 171.97530 | 4.05560 | 0.1908592 | 0.29533644 | 2.2331850 | 20 | 9 6.9 | 18.8 |
| 171467 2040 T-1 | 15.8 | X | 261.06236 | 2.74018 | 184.72684 | 5.00226 | 0.2227649 | 0.23545486 | 2.5973528 | 20 | — | — |
| 171468 2252 T-1 | 16.4 | X | 243.81457 | 153.86809 | 106.23667 | 3.50152 | 0.1659575 | 0.25757930 | 2.4464072 | 20 | — | — |
| 171469 1103 T-2 | 15.1 | X | 85.75108 | 59.27750 | 3.48883 | 9.32679 | 0.0916607 | 0.17752960 | 3.1353705 | 20 | 2 11.2 | 19.4 |
| 171470 1275 T-2 | 16.1 | X | 119.72377 | 354.53832 | 20.38763 | 3.82250 | 0.3011356 | 0.17795130 | 3.1304151 | 20 | 2 16.9 | 21.1 |
| 171471 2112 T-3 | 16.5 | X | 350.09401 | 196.23482 | 260.30715 | 3.30969 | 0.2038932 | 0.23404919 | 2.6077420 | 20 | — | — |
| 171472 2195 T-3 | 16.2 | X | 12.84411 | 73.83488 | 269.38315 | 2.12665 | 0.1442606 | 0.23039052 | 2.6352772 | 20 | 11 9.6 | 19.1 |
| 171473 3182 T-3 | 16.8 | X | 113.36894 | 52.43620 | 29.72289 | 6.79110 | 0.1890414 | 0.26455684 | 2.4032008 | 20 | 4 12.9 | 20.0 |
| 171474 5064 T-3 | 16.5 | X | 214.69932 | 286.94242 | 90.65323 | 7.24824 | 0.1274702 | 0.26813762 | 2.3817575 | 20 | 4 30.8 | 20.2 |
| 171475 5151 T-3 | 16.4 | X | 158.69946 | 297.74935 | 88.96694 | 7.16307 | 0.1105406 | 0.26491724 | 2.4010207 | 20 | 3 16.4 | 19.9 |
| 171476 1993 RT ₄ | 17.4 | X | 335.31580 | 89.11663 | 235.71124 | 1.26258 | 0.1709064 | 0.29009441 | 2.2600071 | 20 | 8 11.8 | 18.7 |
| 171477 1993 YL ₁ | 15.9 | X | 264.92735 | 322.77584 | 71.04018 | 9.90006 | 0.1612155 | 0.21087164 | 2.7954856 | 20 | 7 11.8 | 19.8 |
| 171478 1994 EG ₅ | 16.4 | X | 154.44072 | 151.83617 | 323.48352 | 7.39989 | 0.1193445 | 0.27474461 | 2.3434189 | 20 | 7 5.3 | 19.9 |
| 171479 1994 GP ₄ | 17.2 | X | 12.50394 | 312.42435 | 215.76571 | 1.40518 | 0.1273870 | 0.26272483 | 2.4143597 | 20 | 2 18.5 | 19.5 |
| 171480 1995 EW ₃ | 17.4 | X | 138.18623 | 252.86075 | 287.22966 | 0.95155 | 0.0906689 | 0.29098121 | 2.2554130 | 20 | 9 12.9 | 20.5 |
| 171481 1995 SN ₁₅ | 15.6 | X | 76.46300 | 225.49151 | 332.73653 | 2.90981 | 0.1007734 | 0.19096648 | 2.9865145 | 20 | 7 18.3 | 19.8 |
| 171482 1995 SN ₃₄ | 15.3 | X | 197.07418 | 312.70192 | 359.29622 | 11.07225 | 0.0528184 | 0.17734408 | 3.1375567 | 20 | 1 31.9 | 20.1 |
| 171483 1995 SO ₄₅ | 17.6 | X | 170.57018 | 138.66387 | 235.80020 | 0.36146 | 0.1901262 | 0.26066209 | 2.4270802 | 20 | 3 13.9 | 21.3 |
| 171484 1995 VZ ₃ | 15.3 | X | 118.12206 | 293.28000 | 58.92965 | 12.77546 | 0.1434807 | 0.17031821 | 3.2232599 | 20 | 1 2.1 | 20.1 |
| 171485 1995 YZ ₂ | 14.5 | X | 284.77228 | 238.28188 | 290.08681 | 24.94190 | 0.2275145 | 0.23809257 | 2.5781340 | 20 | — | — |
| 171486 1996 MO | 18.4 | X | 48.54587 | 4.71220 | 165.12474 | 6.08257 | 0.5117918 | 0.40992939 | 1.7947199 | 20 | 7 18.7 | 20.1 |
| 171487 1996 RA ₁₂ | 15.7 | X | 113.54666 | 258.72754 | 118.75157 | 2.97459 | 0.1735569 | 0.18251622 | 3.0779986 | 20 | 1 28.8 | 20.2 |
| 171488 1996 TO ₁₆ | 16.2 | X | 150.71540 | 149.89564 | 233.71030 | 6.03690 | 0.1544863 | 0.26944974 | 2.3740191 | 20 | 2 29.9 | 19.9 |
| 171489 1996 TB ₂₇ | 16.9 | X | 138.85900 | 86.43585 | 21.54833 | 5.33674 | 0.0971808 | 0.27497732 | 2.3420966 | 20 | 6 4.4 | 20.2 |
| 171490 1996 TX ₃₁ | 16.1 | X | 148.48155 | 356.67906 | 58.56198 | 7.24873 | 0.1154080 | 0.27063997 | 2.3670536 | 20 | 4 10.3 | 19.5 |
| 171491 1996 TT ₄₄ | 17.6 | X | 279.66260 | 57.98186 | 306.72133 | 1.56316 | 0.1832939 | 0.28108185 | 2.3080622 | 20 | 6 20.1 | 20.0 |
| 171492 1996 VK ₁ | 17.0 | X | 199.22717 | 173.33020 | 238.40053 | 2.40701 | 0.2239940 | 0.27452159 | 2.3446879 | 20 | 5 24.1 | 20.8 |
| 171493 1996 VQ ₁₃ | 15.7 | X | 134.57938 | 145.10063 | 225.26889 | 9.39973 | 0.2041646 | 0.18073666 | 3.0981698 | 20 | 2 10.4 | 20.8 |
| 171494 1996 XS ₃ | 15.4 | X | 164.77344 | 93.41372 | 7.06052 | 7.67242 | 0.0192021 | 0.19170313 | 2.9788587 | 20 | 6 20.7 | 19.7 |
| 171495 1996 XD ₂₄ | 16.7 | X | 212.53641 | 298.14891 | 66.62218 | 2.62817 | 0.1486203 | 0.27145532 | 2.3623114 | 20 | 4 9.2 | 20.4 |
| 171496 1996 XY ₂₉ | 17.3 | X | 164.93196 | 300.43194 | 70.72004 | 2.48944 | 0.1867937 | 0.26676340 | 2.3899302 | 20 | 3 5.6 | 21.0 |
| 171497 1997 BY ₂ | 16.3 | X | 174.43638 | 18.46794 | 79.11342 | 3.68721 | 0.1815101 | 0.27028897 | 2.3691024 | 20 | 7 1.4 | 19.9 |
| 171498 1997 CD ₂ | 15.4 | X | 104.93508 | 259.21482 | 115.17781 | 3.03625 | 0.2478802 | 0.17226608 | 3.1989162 | 20 | 1 26.8 | 20.0 |
| 171499 1997 GB ₁₇ | 15.9 | X | 254.51735 | 19.97803 | 208.46205 | 3.81532 | 0.1481442 | 0.24589533 | 2.5233018 | 20 | — | — |
| 171500 1997 GJ ₂₀ | 16.6 | X | 73.46613 | 143.88327 | 12.94079 | 1.66669 | 0.1229338 | 0.26064650 | 2.4271770 | 20 | 5 22.7 | 19.3 |
| 171501 1997 MZ ₅ | 16.1 | X | 268.49983 | 179.21065 | 237.85501 | 10.37172 | 0.0231788 | 0.21703653 | 2.7422949 | 20 | 9 1.8 | 20.0 |
| 171502 1997 ND ₂ | 15.1 | X | 253.27692 | 321.47611 | 256.30936 | 12.18520 | 0.2272015 | 0.23818856 | 2.5774413 | 20 | — | — |
| 171503 1998 DZ ₁₁ | 16.6 | X | 85.86116 | 157.12333 | 24.37186 | 2.98981 | 0.1053427 | 0.27739532 | 2.3284664 | 20 | 7 13.9 | 19.5 |
| 171504 1998 EP ₅ | 16.6 | X | 44.03666 | 79.32632 | 98.61778 | 7.55690 | 0.0613817 | 0.26957475 | 2.3732850 | 20 | 4 30.8 | 19.4 |
| 171505 1998 HV ₃₅ | 17.0 | X | 155.98613 | 103.39535 | 96.97944 | 2.50477 | 0.1524092 | 0.28666661 | 2.2779874 | 20 | 10 28.8 | 20.3 |
| 171506 1998 HC ₄₄ | 16.4 | X | 112.36080 | 130.43205 | 49.58186 | 2.69508 | 0.1646965 | 0.27910516 | 2.3189469 | 20 | 8 20.5 | 19.7 |
| 171507 1998 HC ₁₁₁ | 16.3 | X | 4.13420 | 146.20082 | 79.25038 | 6.60930 | 0.1578419 | 0.26952380 | 2.3735842 | 20 | 5 2.1 | 18.2 |
| 171508 1998 MY ₁₃ | 15.6 | X | 296.22940 | 102.88297 | 264.65499 | 10.59591 | 0.0908796 | 0.22465665 | 2.6799284 | 20 | 7 28.9 | 19.1 |
| 171509 1998 QV ₁₈ | 15.7 | X | 87.67374 | 97.21544 | 223.78524 | 3.73902 | 0.2284584 | 0.23653677 | 2.5894266 | 20 | — | — |
| 171510 1998 QC ₂₃ | 15.2 | X | 107.94713 | 218.59066 | 114.08273 | 5.47522 | 0.2583304 | 0.23990910 | 2.5651036 | 20 | — | — |
| 171511 1998 QY ₈₃ | 15.8 | X | 73.31970 | 71.43077 | 249.86285 | 11.69930 | 0.2768795 | 0.23440453 | 2.6051059 | 20 | — | — |
| 171512 1998 RP ₂₀ | 15.7 | X | 33.06759 | 81.53609 | 249.98092 | 11.07303 | 0.1973559 | 0.22539210 | 2.6740956 | 20 | 11 30.7 | 19.1 |
| 171513 1998 RJ ₆₃ | 14.4 | X | 269.69166 | 257.71707 | 91.27519 | 4.10301 | 0.2430705 | 0.12423365 | 3.9778026 | 20 | 5 11.1 | 20.2 |
| 171514 1998 SG ₂₃ | 15.4 | X | 75.02703 | 151.99987 | 164.01002 | 12.28833 | 0.1899246 | 0.23292122 | 2.6161542 | 20 | 12 27.3 | 19.7 |
| | | | | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171521 1999 CH ₃ | 15.3 | X | 316.05786 | 31.80230 | 66.01625 | 8.51275 | 0.3567376 | 0.22297113 | 2.6934172 | 20 | — | — |
| 171522 1999 CY ₅ | 16.6 | X | 304.64386 | 98.94389 | 121.34372 | 20.40785 | 0.1490720 | 0.41866208 | 1.7696755 | 20 | — | — |
| 171523 1999 CE ₈₃ | 15.8 | X | 334.74373 | 54.51792 | 14.56651 | 8.77251 | 0.3355345 | 0.22495780 | 2.6775361 | 20 | — | — |
| 171524 1999 CP ₁₁₁ | 14.9 | X | 352.01692 | 319.31693 | 167.34784 | 12.38467 | 0.1315656 | 0.18218319 | 3.0817484 | 20 | — | — |
| 171525 1999 CW ₁₁₁ | 15.5 | X | 220.38449 | 210.21145 | 300.13670 | 13.01247 | 0.1639057 | 0.21381137 | 2.7698028 | 20 | 10 10.5 | 20.0 |
| 171526 1999 HO ₇ | 15.2 | X | 133.53271 | 6.65230 | 37.13459 | 11.37259 | 0.1207070 | 0.18229008 | 3.0805436 | 20 | 3 19.4 | 19.9 |
| 171527 1999 HT ₉ | 16.5 | X | 179.18086 | 346.49718 | 219.97874 | 4.50966 | 0.1475133 | 0.30329574 | 2.1939422 | 20 | 12 1.4 | 19.5 |
| 171528 1999 JH ₂₈ | 14.8 | X | 254.80140 | 27.11062 | 218.56841 | 9.88585 | 0.1634504 | 0.17491314 | 3.1665603 | 20 | 1 2.2 | 19.9 |
| 171529 1999 JK ₇₀ | 15.1 | X | 348.99463 | 155.01273 | 65.05733 | 7.84199 | 0.1061340 | 0.18549481 | 3.0449597 | 20 | 4 6.4 | 18.9 |
| 171530 1999 JN ₁₀₂ | 16.9 | X | 152.24561 | 158.85499 | 76.30326 | 6.41903 | 0.1769808 | 0.30167681 | 2.2017843 | 20 | 12 8.6 | 20.1 |
| 171531 1999 JR ₁₁₄ | 17.0 | X | 66.07918 | 341.74868 | 250.58844 | 4.88884 | 0.2120074 | 0.28950000 | 2.2630996 | 20 | 9 11.9 | 20.1 |
| 171532 1999 JB ₁₃₄ | 15.0 | X | 327.04907 | 166.78871 | 41.18427 | 10.92806 | 0.1564421 | 0.18139254 | 3.0906970 | 20 | 2 13.0 | 19.1 |
| 171533 1999 KC ₁₀ | 16.3 | X | 28.72369 | 224.95502 | 46.01105 | 7.35770 | 0.1589376 | 0.28804437 | 2.2707176 | 20 | 9 12.4 | 18.7 |
| 171534 1999 NC ₄₈ | 16.2 | X | 204.14664 | 74.45356 | 256.55280 | 5.93667 | 0.2725553 | 0.26551942 | 2.3973891 | 20 | 2 16.2 | 20.6 |
| 171535 1999 RZ ₁₁ | 16.3 | X | 239.15294 | 338.22943 | 356.66463 | 6.11791 | 0.1655601 | 0.26937545 | 2.3744556 | 20 | 3 25.4 | 19.8 |
| 171536 1999 RH ₆₁ | 16.1 | X | 216.51664 | 88.41047 | 326.85813 | 6.94677 | 0.2163795 | 0.27343804 | 2.3508780 | 20 | 6 12.8 | 19.9 |
| 171537 1999 RB ₆₅ | 16.7 | X | 207.15089 | 73.21521 | 311.89503 | 2.36523 | 0.1998682 | 0.26907560 | 2.3762192 | 20 | 4 26.6 | 20.6 |
| 171538 1999 RY ₆₆ | 16.3 | X | 138.39211 | 34.27290 | 0.81365 | 6.89870 | 0.2027654 | 0.26106555 | 2.4245790 | 20 | 3 11.7 | 20.0 |
| 171539 1999 RJ ₈₆ | 16.3 | X | 166.34736 | 324.34520 | 63.24392 | 4.02966 | 0.1787073 | 0.26319198 | 2.4115019 | 20 | 3 27.7 | 20.1 |
| 171540 1999 RX ₈₆ | 16.6 | X | 201.34713 | 312.42357 | 8.68736 | 3.48709 | 0.1562283 | 0.26131383 | 2.4230430 | 20 | 2 5.1 | 20.4 |
| 171541 1999 RY ₁₀₈ | 16.3 | X | 220.20876 | 23.10801 | 298.95576 | 5.80287 | 0.1309807 | 0.26333738 | 2.4106142 | 20 | 2 20.9 | 20.1 |
| 171542 1999 RH ₁₂₅ | 16.0 | X | 68.83720 | 147.65228 | 178.50929 | 5.14114 | 0.1630507 | 0.24539555 | 2.5267266 | 20 | — | — |
| 171543 1999 RM ₁₃₄ | 16.2 | X | 239.46052 | 67.70806 | 286.26054 | 4.69520 | 0.1165100 | 0.27092141 | 2.3654140 | 20 | 4 22.1 | 19.5 |
| 171544 1999 RJ ₁₄₄ | 15.8 | X | 179.37077 | 76.84632 | 281.01614 | 5.10816 | 0.1240446 | 0.26275292 | 2.4141876 | 20 | 2 25.1 | 19.5 |
| 171545 1999 RR ₁₄₅ | 16.8 | X | 274.15439 | 68.64169 | 299.83873 | 4.12489 | 0.2104419 | 0.27626343 | 2.3348220 | 20 | 6 12.9 | 19.6 |
| 171546 1999 RA ₁₅₄ | 16.0 | X | 195.69717 | 150.99197 | 230.69932 | 3.15688 | 0.1474420 | 0.26752104 | 2.3854158 | 20 | 4 13.1 | 19.6 |
| 171547 1999 RH ₁₅₄ | 16.2 | X | 167.08440 | 37.19342 | 321.16574 | 5.31967 | 0.1669320 | 0.26121143 | 2.4236762 | 20 | 2 18.3 | 20.0 |
| 171548 1999 RS ₁₆₁ | 16.6 | X | 144.75334 | 40.51103 | 345.35547 | 1.92790 | 0.2052636 | 0.26100767 | 2.4249374 | 20 | 3 5.7 | 20.2 |
| 171549 1999 RE ₂₀₉ | 16.4 | X | 222.26926 | 53.98580 | 306.21070 | 5.27422 | 0.1534994 | 0.26693731 | 2.3888920 | 20 | 4 8.9 | 20.2 |
| 171550 1999 SK ₁₅ | 16.4 | X | 178.15803 | 54.57763 | 256.79041 | 11.76390 | 0.2555179 | 0.25808387 | 2.4432175 | 20 | 1 5.2 | 20.5 |
| 171551 1999 TK ₇ | 16.3 | X | 166.93431 | 50.94701 | 11.27624 | 2.74285 | 0.2114464 | 0.26472609 | 2.4021764 | 20 | 5 9.7 | 20.4 |
| 171552 1999 TD ₁₂ | 15.8 | X | 198.12872 | 245.86693 | 111.11823 | 3.30189 | 0.1970785 | 0.26216338 | 2.4178055 | 20 | 3 17.7 | 19.8 |
| 171553 1999 TG ₃₉ | 16.3 | X | 3.43920 | 305.51156 | 107.95424 | 6.14507 | 0.2513002 | 0.24137689 | 2.5546942 | 20 | — | — |
| 171554 1999 TR ₅₇ | 16.6 | X | 234.12562 | 150.69068 | 177.61471 | 1.34795 | 0.1848827 | 0.26443488 | 2.4039396 | 20 | 3 12.0 | 20.1 |
| 171555 1999 TF ₇₄ | 17.1 | X | 126.05550 | 112.51075 | 268.30066 | 0.63289 | 0.2013020 | 0.25691398 | 2.4506289 | 20 | 2 9.2 | 20.6 |
| 171556 1999 TW ₁₂₉ | 16.4 | X | 132.08894 | 85.51350 | 359.80884 | 8.98493 | 0.1879831 | 0.26406194 | 2.4062025 | 20 | 5 3.4 | 20.1 |
| 171557 1999 TO ₁₄₀ | 16.0 | X | 57.30795 | 302.53807 | 10.93615 | 5.38329 | 0.1457463 | 0.23825853 | 2.5769366 | 20 | 12 1.6 | 19.7 |
| 171558 1999 TE ₁₄₇ | 16.4 | X | 343.17154 | 177.95739 | 150.63768 | 3.99705 | 0.2094577 | 0.28007490 | 2.3135910 | 20 | 9 9.7 | 17.5 |
| 171559 1999 TU ₁₄₇ | 16.2 | X | 197.67369 | 136.88903 | 288.05003 | 3.92960 | 0.1010732 | 0.27026589 | 2.3692373 | 20 | 6 13.2 | 19.5 |
| 171560 1999 TX ₁₆₁ | 16.8 | X | 200.69768 | 296.77392 | 85.56642 | 3.27685 | 0.1664848 | 0.26552353 | 2.3973626 | 20 | 4 20.5 | 20.7 |
| 171561 1999 TT ₁₆₉ | 16.9 | X | 139.92014 | 172.58470 | 270.18986 | 1.83576 | 0.1549017 | 0.26362053 | 2.4088878 | 20 | 5 7.9 | 20.5 |
| 171562 1999 TZ ₁₇₇ | 15.2 | X | 225.80505 | 190.51689 | 204.84666 | 2.34447 | 0.2850757 | 0.12534706 | 3.9542121 | 20 | 5 23.3 | 21.7 |
| 171563 1999 TR ₁₇₈ | 16.4 | X | 109.26830 | 24.34328 | 7.11056 | 6.22414 | 0.1395188 | 0.25407999 | 2.4688180 | 20 | 1 27.4 | 19.5 |
| 171564 1999 TX ₂₁₉ | 16.4 | X | 338.86476 | 11.77592 | 299.01316 | 5.79528 | 0.1208580 | 0.27655229 | 2.3331960 | 20 | 7 26.3 | 18.4 |
| 171565 1999 TD ₂₂₇ | 15.5 | X | 185.80505 | 61.01112 | 314.81059 | 10.30567 | 0.2221517 | 0.26280008 | 2.4138988 | 20 | 3 24.4 | 19.7 |
| 171566 1999 TG ₂₇₂ | 15.8 | X | 86.88669 | 97.78760 | 239.68640 | 11.72635 | 0.1818321 | 0.24610111 | 2.5218950 | 20 | — | — |
| 171567 1999 TF ₂₈₄ | 16.1 | X | 154.73054 | 330.38976 | 80.68139 | 7.69945 | 0.1287753 | 0.26135871 | 2.4227656 | 20 | 4 14.1 | 19.7 |
| 171568 1999 TJ ₂₈₆ | 16.6 | X | 307.02486 | 16.96213 | 294.41517 | 4.88137 | 0.1578431 | 0.27291888 | 2.3538584 | 20 | 5 18.1 | 19.2 |
| 171569 1999 UD ₃ | 17.5 | X | 328.82412 | 43.92858 | 21.17444 | 4.81234 | 0.2026276 | 0.23706858 | 2.5855527 | 20 | 12 23.9 | 19.8 |
| 171570 1999 UK ₂₈ | 17.4 | X | 143.04999 | 259.39543 | 160.69971 | 1.43478 | 0.1521812 | 0.26233287 | 2.4167640 | 20 | 4 12.2 | 20.8 |
| 171571 1999 US ₃₈ | 15.8 | X | 169.48839 | 55.64385 | 285.05570 | 3.85001 | 0.1465759 | 0.25703098 | 2.4498852 | 20 | 1 28.7 | 19.5 |
| 171572 1999 UJ ₄₂ | 16.6 | X | 233.04907 | 212.54899 | 216.65872 | 23.63008 | 0.1223991 | 0.37053594 | 1.9197698 | 20 | 7 27.9 | 19.6 |
| 171573 1999 UH ₄₃ | 16.2 | X | 111.27815 | 133.95415 | 282.24455 | 4.93728 | 0.2297736 | 0.25624952 | 2.4548635 | 20 | 3 10.3 | 19.7 |
| 171574 1999 VS ₄ | 16.4 | X | 32.27403 | 344.83254 | 50.71067 | 2.52221 | 0.1589249 | 0.24357778 | 2.5392820 | 20 | — | — |
| 171575 1999 VM ₅ | 15.7 | X | 180.98699 | 48.63760 | 331.98335 | 2.50944 | 0.1969866 | 0.26206007 | 2.4184409 | 20 | 3 29.9 | 19.7 |
| 171576 1999 VP ₁₁ | 18.6 | X | 157.35305 | 61.72513 | 208.10484 | 17.27972 | 0.5835758 | 0.87123864 | 1.0857037 | 20 | — | — |
| 171577 1999 VW ₁₄ | 16.4 | X | 169.95131 | 66.52481 | 352.38419 | 6.77230 | 0.0907716 | 0.26758821 | 2.3850166 | 20 | 5 2.4 | 19.8 |
| 171578 1999 VV ₂₁ | 17.0 | X | 128.41541 | 334.84137 | 66.94217 | 0.82132 | 0.2189914 | 0.25608983 | 2.4558839 | 20 | 3 11.9 | 20.7 |
| 171579 1999 VD ₂₃ | 16.1 | X | 232.86384 | 219.04648 | 119.72732 | 3.06754 | 0.2276425 | 0.26398443 | 2.4066735 | 20 | 3 23.1 | 20.0 |
| 171580 1999 VV ₄₂ | 16.8 | X | 142.19469 | 144.29683 | 324.73976 | 1.75825 | 0.1634614 | 0.26568254 | 2.3964077 | 20 | 6 14.9 | 20.4 |
| 171581 1999 VE ₅₇ | 16.0 | X | 281.85411 | 221.41209 | 221.58492 | 11.22748 | 0.1515689 | 0.23400364 | 2.6080804 | 20 | 10 14.6 | 19.0 |
| 171582 1999 VX ₈₀ | 16.2 | X | 121.40156 | 24.53716 | 100.46055 | 3.16046 | 0.1196252 | 0.26422912 | 2.4051875 | 20 | 6 10.4 | 19.4 |
| 171583 1999 VQ ₈₈ | 16.1 | X | 218.22577 | 134.62775 | 179.15893 | 1.98833 | 0.2233430 | 0.26035031 | 2.4290176 | 20 | 2 8.9 | 20.3 |
| 171584 1999 VF ₉₆ | 16.5 | X | 335.07832 | 233.99706 | 222.88705 | 4.92637 | 0.1592069 | 0.24233647 | 2.5479459 | 20 | — | — |
| 171585 1999 VG ₁₀₄ | 14.2 | X | 267.73324 | 106.51296 | 237.76859 | 8.56837 | 0.1619091 | 0.12449478 | 3.9722381 | 20 | 5 12.1 | 19.8 |
| 171586 1999 VR ₁₆₄ | 16.3 | X | 133.39051 | 247.42559 | 249.29081 | 4.33280 | 0.1657594 | 0.26630808 | 2.3926536 | 20 | 7 12.4 | 19.9 |
| 171587 1999 VU ₁₆₈ | 16.2 | X | 335.42219 | 109.74923 | 253.12958 | 8.58482 | 0.2051269 | 0.23118519 | 2.6292348 | 20 | 9 27.3 | 18.7 |
| 171588 Naprstek | 16.2 | X | 124.50008 | 3.78157 | 15.13521 | 2.42101 | 0.2016957 | 0.25436282 | 2.4669876 | 20 | 2 6.5 | 19.6 |
| 171589 1999 WP ₅ | 17.1 | X | 56.93496 | 3.08409 | 239.70549 | 19.35471 | 0.0396784 | 0.36808421 | 1.9282852 | 20 | 8 19.8 | 19.6 |
| 171590 1999 WH ₇ | 16.2 | X | 334.41143 | 165.51443 | 265.40978 | 1.58292 | 0.1658122 | 0.23744304 | 2.5828335 | 20 | — | — |
| 171591 1999 WT ₁₀ | 16.9 | X | 331.81545 | 28.87323 | 79.25209 | 4.07951 | 0.0891537 | 0.24181191 | 2.5516294 | 20 | — | — |
| 171592 1999 WN ₁₄ | 16.3 | X | 27.89396 | 93.67801 | 67.07066 | 5.78322 | 0.2093438 | 0.25524818 | 2.4612796 | 20 | 3 17.5 | 18.1 |
| 171593 1999 XK ₄₀ | 16.3 | X | 25.14365 | 351.39027 | 32.38857 | 3.66036 | 0.1790197 | 0.24097388 | 2.5575418 | 20 | — | — |
| 171594 1999 XZ ₄₀ | 15.9 | X | 8.70355 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171601 1999 XQ ₁₆₄ | 16.2 | X | 200.99498 | 198.13223 | 300.67521 | 17.81990 | 0.0738638 | 0.36758623 | 1.9300263 | 20 | 10 3.0 | 18.9 |
| 171602 1999 XP ₁₇₂ | 15.0 | X | 90.21283 | 275.17112 | 75.45171 | 13.85392 | 0.1881842 | 0.24084864 | 2.5584283 | 20 | — | — |
| 171603 1999 XA ₁₈₀ | 15.6 | X | 329.48677 | 66.75776 | 78.47919 | 13.35615 | 0.1435491 | 0.24098180 | 2.5574857 | 20 | — | — |
| 171604 1999 XC ₂₁₈ | 16.2 | X | 331.30255 | 191.00725 | 283.02827 | 9.72473 | 0.2176185 | 0.23803324 | 2.5785624 | 20 | — | — |
| 171605 1999 XB ₂₄₆ | 15.9 | X | 332.91750 | 225.28575 | 217.01349 | 12.23475 | 0.1451172 | 0.23753920 | 2.5821365 | 20 | — | — |
| 171606 1999 YT ₁₆ | 16.2 | X | 24.74424 | 121.35807 | 307.97823 | 3.26151 | 0.0373733 | 0.23942320 | 2.5685729 | 20 | — | — |
| 171607 2000 AU ₁₃ | 15.5 | X | 290.60048 | 78.14424 | 81.90687 | 13.07394 | 0.2213022 | 0.23843540 | 2.5756621 | 20 | — | — |
| 171608 2000 AO ₆₂ | 15.7 | X | 277.89232 | 59.95724 | 98.32330 | 4.37063 | 0.1211995 | 0.23397444 | 2.6082976 | 20 | — | — |
| 171609 2000 AS ₈₆ | 16.6 | X | 18.74108 | 298.24099 | 128.19532 | 5.16691 | 0.1909399 | 0.23967281 | 2.5667890 | 20 | — | — |
| 171610 2000 AL ₉₃ | 16.5 | X | 320.38658 | 277.60996 | 117.75302 | 23.80506 | 0.1282944 | 0.37128633 | 1.9171823 | 20 | 12 13.2 | 18.2 |
| 171611 2000 AG ₁₁₃ | 15.9 | X | 313.46981 | 253.58865 | 252.73803 | 7.72886 | 0.0737107 | 0.23956223 | 2.5675790 | 20 | — | — |
| 171612 2000 AS ₂₄₁ | 16.0 | X | 346.03793 | 271.14051 | 187.16042 | 12.35887 | 0.1461542 | 0.23761079 | 2.5816178 | 20 | — | — |
| 171613 2000 AZ ₂₅₇ | 15.6 | X | 234.63720 | 2.27002 | 178.01068 | 14.18633 | 0.1924479 | 0.22980943 | 2.6397177 | 20 | 12 10.0 | 19.5 |
| 171614 2000 BU ₆ | 15.8 | X | 44.67787 | 275.08603 | 103.22871 | 5.45627 | 0.2090444 | 0.23771241 | 2.5808820 | 20 | — | — |
| 171615 2000 BE ₉ | 16.4 | X | 207.41294 | 22.45044 | 144.27336 | 3.33072 | 0.1050658 | 0.22657237 | 2.6648008 | 20 | 11 13.4 | 20.0 |
| 171616 2000 BL ₂₂ | 16.6 | X | 216.48810 | 75.75417 | 114.97959 | 2.03140 | 0.0887556 | 0.22916964 | 2.6446284 | 20 | 12 14.5 | 20.3 |
| 171617 2000 BY ₃₁ | 16.7 | X | 330.68120 | 227.86120 | 240.16677 | 2.09605 | 0.2253536 | 0.23669558 | 2.5882682 | 20 | — | — |
| 171618 2000 BB ₃₇ | 16.5 | X | 349.24197 | 3.33749 | 355.23455 | 0.65276 | 0.0689716 | 0.22347805 | 2.6893426 | 20 | 10 14.2 | 19.7 |
| 171619 2000 CX ₂ | 15.9 | X | 302.21838 | 352.67577 | 101.13923 | 3.59826 | 0.1324967 | 0.23030627 | 2.6359199 | 20 | 12 7.8 | 18.5 |
| 171620 2000 CG ₄₀ | 16.1 | X | 351.96888 | 50.02604 | 338.63158 | 19.19471 | 0.1403476 | 0.37299061 | 1.9113378 | 20 | — | — |
| 171621 2000 CR ₅₈ | 16.5 | X | 287.18671 | 98.04614 | 302.61179 | 17.19379 | 0.1050904 | 0.36669699 | 1.9331452 | 20 | 9 14.6 | 18.4 |
| 171622 2000 CJ ₉₆ | 16.5 | X | 4.07551 | 285.92315 | 128.01667 | 4.11251 | 0.1325687 | 0.23544493 | 2.5974259 | 20 | — | — |
| 171623 2000 CL ₉₈ | 16.7 | X | 259.31515 | 237.17885 | 257.26748 | 0.64863 | 0.1017029 | 0.22858640 | 2.6491251 | 20 | 11 26.8 | 20.1 |
| 171624 Nicolemartin | 15.9 | X | 33.07692 | 32.65196 | 315.02628 | 4.30109 | 0.1606547 | 0.22887635 | 2.6468872 | 20 | 12 16.7 | 19.5 |
| 171625 2000 CW ₁₁₂ | 15.6 | X | 308.41657 | 4.65223 | 122.19951 | 4.29271 | 0.2013034 | 0.23220722 | 2.6215143 | 20 | — | — |
| 171626 2000 CU ₁₁₃ | 16.3 | X | 349.09779 | 334.45329 | 122.78945 | 3.60741 | 0.1349283 | 0.23788231 | 2.5796529 | 20 | — | — |
| 171627 2000 CS ₁₃₅ | 16.1 | X | 281.84241 | 304.55198 | 138.46080 | 5.61769 | 0.0574756 | 0.22487501 | 2.6781933 | 20 | 10 29.1 | 19.5 |
| 171628 2000 DE ₂₅ | 15.3 | X | 114.61242 | 73.01540 | 168.14371 | 5.18413 | 0.1083626 | 0.22111701 | 2.7084528 | 20 | 10 29.6 | 19.4 |
| 171629 2000 DH ₇₃ | 16.1 | X | 190.42393 | 355.06843 | 153.93178 | 2.88726 | 0.0804645 | 0.21823090 | 2.7322801 | 20 | 9 22.9 | 20.1 |
| 171630 2000 DT ₈₁ | 16.4 | X | 328.35097 | 16.58277 | 90.25455 | 5.28650 | 0.1336991 | 0.23489249 | 2.6014968 | 20 | — | — |
| 171631 2000 DT ₉₇ | 16.0 | X | 55.38454 | 43.56015 | 32.73621 | 5.03402 | 0.1697040 | 0.24296514 | 2.5435488 | 20 | 1 6.1 | 18.4 |
| 171632 2000 DJ ₁₀₀ | 16.2 | X | 299.99933 | 58.84300 | 78.79235 | 5.09278 | 0.1853776 | 0.23321830 | 2.6139321 | 20 | — | — |
| 171633 2000 DQ ₁₀₈ | 16.0 | X | 262.63898 | 114.99859 | 352.88691 | 3.15911 | 0.0616194 | 0.22533747 | 2.6745277 | 20 | 10 30.9 | 19.4 |
| 171634 2000 EQ ₁₀ | 15.0 | X | 317.39838 | 311.24803 | 352.87359 | 12.18650 | 0.1457652 | 0.20552177 | 2.8437898 | 20 | 5 25.8 | 18.7 |
| 171635 2000 EA ₄₆ | 16.6 | X | 355.88353 | 132.98356 | 354.01228 | 4.57621 | 0.2511026 | 0.23833811 | 2.5763630 | 20 | — | — |
| 171636 2000 EP ₆₄ | 17.4 | X | 47.68650 | 40.35622 | 210.24246 | 2.02082 | 0.1294777 | 0.30683024 | 2.1770611 | 20 | 9 4.5 | 19.7 |
| 171637 2000 ES ₈₀ | 16.6 | X | 302.01302 | 114.64871 | 13.87265 | 5.58901 | 0.2073841 | 0.23255963 | 2.6188653 | 20 | — | — |
| 171638 2000 ED ₈₈ | 15.4 | X | 291.76578 | 177.36565 | 281.17732 | 12.16810 | 0.1423467 | 0.22771045 | 2.6559144 | 20 | 11 22.1 | 18.5 |
| 171639 2000 EC ₁₁₅ | 15.8 | X | 143.10910 | 198.55508 | 240.48942 | 1.10949 | 0.0391838 | 0.20293520 | 2.8679030 | 20 | 4 28.5 | 19.9 |
| 171640 2000 EZ ₁₂₅ | 15.9 | X | 24.64047 | 342.28885 | 149.71184 | 10.13151 | 0.1825652 | 0.24333217 | 2.5409905 | 20 | 1 21.9 | 18.3 |
| 171641 2000 EE ₁₃₄ | 15.9 | X | 234.36543 | 117.30813 | 30.10681 | 13.54766 | 0.1991935 | 0.22350807 | 2.6891018 | 20 | 10 25.8 | 19.8 |
| 171642 2000 EK ₁₅₇ | 15.4 | X | 245.38996 | 78.73284 | 84.75264 | 13.91402 | 0.2026796 | 0.22608478 | 2.6686308 | 20 | 11 30.2 | 18.9 |
| 171643 2000 EX ₁₇₁ | 15.6 | X | 333.69013 | 54.18587 | 82.80305 | 8.55439 | 0.1691801 | 0.23630881 | 2.5910916 | 20 | — | — |
| 171644 2000 FJ ₇ | 16.8 | X | 94.98157 | 140.31971 | 84.97568 | 0.35934 | 0.1644493 | 0.21275903 | 2.7789285 | 20 | 9 5.2 | 20.6 |
| 171645 2000 FL ₇ | 15.4 | X | 169.33664 | 94.68221 | 190.25779 | 14.27497 | 0.1291930 | 0.17958641 | 3.1113848 | 20 | — | — |
| 171646 2000 FL ₁₄ | 16.2 | X | 268.25145 | 32.54217 | 22.75901 | 3.50973 | 0.0808482 | 0.21405943 | 2.7676626 | 20 | 8 27.7 | 19.9 |
| 171647 2000 FU ₁₄ | 16.0 | X | 250.47087 | 136.43887 | 19.18570 | 14.34052 | 0.2110166 | 0.22632258 | 2.6667612 | 20 | 11 20.1 | 19.6 |
| 171648 2000 FS ₂₇ | 15.5 | X | 82.24606 | 30.29043 | 190.36751 | 14.29048 | 0.0557780 | 0.21029296 | 2.8006117 | 20 | 8 15.2 | 19.6 |
| 171649 2000 FQ ₆₃ | 15.7 | X | 299.92118 | 82.25430 | 25.64222 | 12.35774 | 0.1236284 | 0.22818576 | 2.6522249 | 20 | 12 21.9 | 18.8 |
| 171650 2000 FW ₇₁ | 15.5 | X | 193.61581 | 125.79315 | 76.64729 | 15.80531 | 0.0922808 | 0.22369845 | 2.6875758 | 20 | 12 1.9 | 19.4 |
| 171651 2000 GK ₂₄ | 16.0 | X | 207.01458 | 142.66287 | 5.06159 | 6.56454 | 0.1150229 | 0.21865850 | 2.7287169 | 20 | 10 5.3 | 20.1 |
| 171652 2000 GQ ₃₇ | 16.2 | X | 250.98447 | 297.31014 | 200.08159 | 1.71341 | 0.1506969 | 0.22346319 | 2.6894619 | 20 | 11 10.1 | 19.6 |
| 171653 2000 GV ₆₀ | 16.1 | X | 251.19105 | 60.00769 | 63.29919 | 2.53343 | 0.1093441 | 0.22128432 | 2.7070875 | 20 | 10 29.2 | 19.5 |
| 171654 2000 GO ₁₃₂ | 16.2 | X | 202.11765 | 100.09645 | 33.54750 | 4.58020 | 0.0479377 | 0.21528709 | 2.751309 | 20 | 9 20.2 | 20.0 |
| 171655 2000 GW ₁₄₀ | 16.0 | X | 233.27066 | 115.63720 | 85.29837 | 14.16109 | 0.2054531 | 0.22689642 | 2.6622630 | 20 | 12 30.3 | 19.5 |
| 171656 2000 GW ₁₆₇ | 16.2 | X | 169.18622 | 106.44004 | 134.75889 | 2.89377 | 0.1495637 | 0.22292872 | 2.6937588 | 20 | 12 18.9 | 20.4 |
| 171657 2000 GH ₁₇₆ | 16.0 | X | 339.18329 | 118.32171 | 8.97825 | 5.59959 | 0.2441687 | 0.23503787 | 2.6004240 | 20 | — | — |
| 171658 2000 HK ₈₄ | 15.0 | X | 292.63057 | 99.99994 | 75.18669 | 22.62590 | 0.1870838 | 0.23585030 | 2.5944488 | 20 | — | — |
| 171659 2000 HR ₉₄ | 14.8 | X | 168.30624 | 83.74828 | 231.27553 | 17.67338 | 0.2161484 | 0.17804797 | 3.1292819 | 20 | 1 7.9 | 20.3 |
| 171660 2000 JH ₁₃ | 15.8 | X | 72.45211 | 265.56857 | 24.03979 | 2.06863 | 0.0704369 | 0.21424839 | 2.7660350 | 20 | 11 5.6 | 19.7 |
| 171661 2000 JZ ₁₇ | 15.3 | X | 181.53386 | 77.57756 | 234.92414 | 24.44517 | 0.3366248 | 0.17816632 | 3.1278960 | 20 | 1 15.1 | 21.4 |
| 171662 2000 JF ₃₀ | 15.7 | X | 171.27466 | 289.53887 | 241.92831 | 11.71105 | 0.2294943 | 0.21479857 | 2.7613097 | 20 | 9 20.3 | 20.7 |
| 171663 2000 JS ₄₁ | 15.5 | X | 229.74286 | 237.71172 | 45.99120 | 10.59419 | 0.1312660 | 0.18559338 | 3.0438814 | 20 | 1 27.8 | 20.5 |
| 171664 2000 KW | 15.8 | X | 269.55058 | 270.64991 | 47.35338 | 2.99627 | 0.0725005 | 0.19537487 | 2.9414192 | 20 | 4 22.1 | 19.8 |
| 171665 2000 KK ₂₃ | 17.1 | X | 38.27412 | 230.31918 | 75.47442 | 4.60277 | 0.2653312 | 0.30577395 | 2.1820719 | 20 | 11 30.8 | 19.9 |
| 171666 2000 KD ₅₁ | 17.2 | X | 138.29265 | 63.87783 | 252.96302 | 2.26139 | 0.1297360 | 0.32399277 | 2.0994837 | 20 | — | — |
| 171667 2000 NU ₁₄ | 17.1 | X | 318.63217 | 234.24250 | 119.78286 | 4.86323 | 0.2514112 | 0.29538482 | 2.2329411 | 20 | 8 15.5 | 18.0 |
| 171668 2000 NZ ₁₇ | 16.4 | X | 45.95781 | 323.46113 | 333.57573 | 6.22507 | 0.1797764 | 0.30311663 | 2.1948063 | 20 | 11 13.6 | 19.3 |
| 171669 2000 OM ₅₄ | 14.9 | X | 199.52378 | 54.16118 | 290.62807 | 8.32241 | 0.0925614 | 0.18186991 | 3.0852864 | 20 | 3 5.1 | 19.8 |
| 171670 2000 OX ₅₉ | 16.4 | X | 275.75681 | 26.71197 | 295.54871 | 4.86580 | 0.1545934 | 0.28725796 | 2.2748599 | 20 | 4 16.1 | 19.4 |
| 171671 2000 PF ₃₂ | 17.1 | X | 315.45963 | 231.31496 | 90.29115 | 7.00919 | 0.3107482 | 0.29155279 | 2.2524643 | 20 | 5 23.6 | 18.7 |
| 171672 2000 QL ₁₃ | 17.0 | X | 351.65686 | 61.06395 | 134.72680 | 2.69895 | 0.1372392 | 0.30332166 | 2.1938172 | 20 | 12 11.8 | 19.0 |
| 171673 2000 QB ₃₃ | 16.6 | X | 77.44383 | 216.19673 | 73.06298 | 6.51096 | 0.2395033 | 0.30573268 | 2.1822683 | 20 | 12 13.5 | 20.1 |
| 171674 2000 QA ₃₇ | 16.6 | X | 327.47592 | 180.33845 | 188.69101 | 2.73682 | 0.2162130 | 0.29833643 | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171681 2000 RK ₂₃ | 16.4 | X | 12.79339 | 334.48756 | 332.13370 | 7.97799 | 0.1741072 | 0.29639928 | 2.2278432 | 20 | 10 5.2 | 18.6 |
| 171682 2000 RL ₃₁ | 16.5 | X | 338.03900 | 56.57244 | 290.62308 | 4.09533 | 0.1841275 | 0.29568155 | 2.2314470 | 20 | 9 28.4 | 17.9 |
| 171683 2000 RG ₃₂ | 16.9 | X | 281.94395 | 46.84151 | 318.88036 | 7.24671 | 0.1489071 | 0.28940661 | 2.2635865 | 20 | 7 2.6 | 19.3 |
| 171684 2000 RN ₅₃ | 16.2 | X | 320.26279 | 112.58244 | 240.33131 | 5.07837 | 0.1912761 | 0.29264680 | 2.2468472 | 20 | 8 20.1 | 17.7 |
| 171685 2000 RV ₉₀ | 16.4 | X | 337.96860 | 90.30613 | 246.26866 | 5.21412 | 0.1633520 | 0.29422054 | 2.2388280 | 20 | 9 6.8 | 18.2 |
| 171686 2000 SZ ₁₂ | 16.9 | X | 3.71379 | 137.30238 | 185.01576 | 3.77738 | 0.2179458 | 0.29862116 | 2.2167786 | 20 | 10 26.2 | 18.7 |
| 171687 2000 SO ₁₈ | 14.7 | X | 298.47988 | 332.15074 | 312.43600 | 11.50296 | 0.0970906 | 0.18184971 | 3.0855148 | 20 | 4 7.1 | 19.2 |
| 171688 2000 SP ₁₈ | 15.1 | X | 237.00175 | 41.13927 | 316.60361 | 13.27913 | 0.0842716 | 0.18190559 | 3.0848829 | 20 | 4 26.8 | 20.0 |
| 171689 2000 SQ ₂₈ | 16.9 | X | 295.12246 | 122.27306 | 243.99749 | 4.01045 | 0.1342382 | 0.29159025 | 2.2522714 | 20 | 7 27.2 | 19.1 |
| 171690 2000 SF ₄₁ | 16.8 | X | 28.92964 | 220.88979 | 65.09949 | 4.36079 | 0.1479094 | 0.29566770 | 2.2315166 | 20 | 10 3.1 | 19.1 |
| 171691 2000 SG ₄₉ | 17.2 | X | 17.15348 | 70.82158 | 254.02385 | 3.84712 | 0.1667211 | 0.29962783 | 2.2118107 | 20 | 11 12.1 | 19.4 |
| 171692 2000 SN ₅₅ | 16.6 | X | 309.32067 | 50.36152 | 337.40266 | 3.36878 | 0.1399829 | 0.29614850 | 2.2291007 | 20 | 9 30.9 | 18.2 |
| 171693 2000 SB ₉₈ | 17.2 | X | 243.85155 | 100.91805 | 289.70327 | 2.44210 | 0.1616076 | 0.28684919 | 2.2770206 | 20 | 6 13.4 | 20.2 |
| 171694 2000 SQ ₁₀₂ | 16.8 | X | 300.64756 | 172.56308 | 207.33345 | 3.67045 | 0.1937358 | 0.29330923 | 2.2434629 | 20 | 8 20.4 | 18.4 |
| 171695 2000 SE ₁₁₃ | 16.7 | X | 129.33245 | 135.20795 | 172.57728 | 2.88985 | 0.1913437 | 0.31192174 | 2.1533053 | 20 | — | — |
| 171696 2000 SK ₁₃₇ | 16.4 | X | 310.21703 | 108.12191 | 306.64656 | 4.83919 | 0.1522155 | 0.29839491 | 2.2178990 | 20 | 11 17.3 | 18.0 |
| 171697 2000 SO ₁₃₈ | 16.8 | X | 42.25039 | 74.37407 | 307.37491 | 3.57945 | 0.1875078 | 0.30287000 | 2.1959977 | 20 | 12 29.8 | 19.6 |
| 171698 2000 SA ₁₆₄ | 15.8 | X | 215.73429 | 50.63628 | 197.02025 | 26.53810 | 0.1706185 | 0.26500415 | 2.4004957 | 20 | — | — |
| 171699 2000 SD ₁₆₉ | 16.6 | X | 332.10991 | 116.61354 | 265.60827 | 6.31084 | 0.1170402 | 0.29719700 | 2.2238548 | 20 | 11 9.2 | 18.5 |
| 171700 2000 SA ₂₁₁ | 16.2 | X | 234.79544 | 268.38974 | 70.99340 | 7.28193 | 0.1406738 | 0.27960174 | 2.3162004 | 20 | 4 1.3 | 19.7 |
| 171701 2000 SU ₂₆₂ | 16.6 | X | 228.33275 | 12.83204 | 82.75320 | 4.60231 | 0.1509189 | 0.29150487 | 2.2527111 | 20 | 8 29.4 | 19.5 |
| 171702 2000 SH ₂₈₀ | 16.8 | X | 4.39327 | 98.25151 | 253.48457 | 3.41422 | 0.2115915 | 0.29890988 | 2.2153510 | 20 | 12 9.2 | 18.8 |
| 171703 2000 SC ₂₉₃ | 16.1 | X | 350.14568 | 52.96075 | 306.86516 | 6.73792 | 0.1502317 | 0.29652566 | 2.2272101 | 20 | 11 11.9 | 18.2 |
| 171704 2000 SU ₂₉₄ | 15.6 | X | 90.56487 | 239.08903 | 232.41640 | 22.10200 | 0.2696261 | 0.27030175 | 2.3690277 | 20 | 5 5.7 | 18.7 |
| 171705 2000 SC ₃₀₂ | 16.6 | X | 233.02956 | 100.54187 | 345.34268 | 4.69938 | 0.1080233 | 0.29066233 | 2.2570623 | 20 | 8 25.9 | 19.4 |
| 171706 2000 SE ₃₀₈ | 16.6 | X | 291.95685 | 23.80831 | 3.40416 | 6.06808 | 0.1898961 | 0.29065271 | 2.2571121 | 20 | 8 18.4 | 18.6 |
| 171707 2000 SV ₃₂₇ | 16.6 | X | 244.58485 | 179.42911 | 246.19567 | 7.05082 | 0.0697515 | 0.28943777 | 2.2634240 | 20 | 8 14.3 | 19.5 |
| 171708 2000 TL ₂₄ | 16.6 | X | 351.36257 | 13.80734 | 45.04781 | 6.64487 | 0.0997948 | 0.30525971 | 2.1845219 | 20 | — | — |
| 171709 2000 TC ₄₅ | 17.0 | X | 302.22174 | 275.88998 | 91.56185 | 5.27331 | 0.1735333 | 0.29272944 | 2.2464243 | 20 | 8 9.4 | 18.7 |
| 171710 2000 TD ₅₁ | 16.4 | X | 27.49036 | 222.63403 | 83.89526 | 8.96833 | 0.1572770 | 0.29640265 | 2.2278263 | 20 | 11 2.9 | 18.9 |
| 171711 2000 TR ₆₃ | 16.5 | X | 251.14660 | 186.28313 | 259.87253 | 5.61583 | 0.0710782 | 0.29465945 | 2.2366042 | 20 | 9 24.0 | 19.2 |
| 171712 2000 UO ₈ | 16.3 | X | 331.39420 | 321.74030 | 46.71502 | 6.99438 | 0.1717738 | 0.29435304 | 2.2381561 | 20 | 10 22.6 | 17.7 |
| 171713 2000 UC ₂₀ | 17.0 | X | 273.72290 | 57.38442 | 43.02845 | 3.98757 | 0.1626790 | 0.29692873 | 2.2251941 | 20 | 11 11.8 | 18.8 |
| 171714 2000 UW ₄₂ | 16.8 | X | 350.56137 | 264.89882 | 76.99961 | 3.57641 | 0.1925540 | 0.29453835 | 2.2372172 | 20 | 10 25.2 | 18.4 |
| 171715 2000 UD ₄₃ | 16.7 | X | 259.54570 | 298.19220 | 67.90863 | 4.05891 | 0.2409237 | 0.28477270 | 2.2880762 | 20 | 5 18.9 | 20.0 |
| 171716 2000 UE ₅₇ | 16.6 | X | 284.85315 | 140.10147 | 254.87246 | 2.74016 | 0.1170963 | 0.29124706 | 2.2540403 | 20 | 8 25.9 | 18.9 |
| 171717 2000 UP ₅₉ | 16.5 | X | 327.67967 | 125.16710 | 287.38885 | 5.55742 | 0.0886294 | 0.29974195 | 2.2112492 | 20 | 12 17.3 | 18.4 |
| 171718 2000 UQ ₆₉ | 16.4 | X | 324.97935 | 118.57167 | 263.67727 | 3.29858 | 0.1231739 | 0.29521087 | 2.2338182 | 20 | 10 25.7 | 18.3 |
| 171719 2000 UN ₈₅ | 17.2 | X | 281.67569 | 228.11101 | 119.10920 | 3.16735 | 0.2412192 | 0.28666415 | 2.2780004 | 20 | 5 19.6 | 20.1 |
| 171720 2000 US ₉₂ | 16.8 | X | 327.59380 | 114.78255 | 230.65355 | 5.74266 | 0.1418927 | 0.29244218 | 2.2478951 | 20 | 8 27.8 | 18.8 |
| 171721 2000 UO ₉₃ | 16.4 | X | 17.23852 | 68.66186 | 266.35715 | 6.22634 | 0.1377112 | 0.29765314 | 2.2215823 | 20 | 11 27.7 | 18.7 |
| 171722 2000 UH ₁₀₉ | 16.5 | X | 246.26102 | 325.21277 | 92.22631 | 8.49615 | 0.1157459 | 0.28698727 | 2.2762902 | 20 | 8 2.1 | 19.3 |
| 171723 2000 VG ₁₃ | 16.6 | X | 245.12850 | 18.46692 | 62.49443 | 7.94685 | 0.2025038 | 0.28923269 | 2.2644938 | 20 | 8 24.1 | 19.6 |
| 171724 2000 WG ₁₃ | 17.2 | X | 173.82337 | 289.49457 | 198.65509 | 1.34153 | 0.1054965 | 0.28427821 | 2.2907287 | 20 | 8 12.3 | 20.4 |
| 171725 2000 WV ₁₅ | 16.5 | X | 188.80970 | 49.28703 | 66.92797 | 6.40669 | 0.1078716 | 0.28530263 | 2.2852420 | 20 | 8 16.1 | 19.8 |
| 171726 2000 WO ₂₁ | 17.3 | X | 219.38986 | 254.22667 | 140.26793 | 0.46785 | 0.2338084 | 0.28090433 | 2.3090345 | 20 | 5 18.7 | 21.1 |
| 171727 2000 WT ₂₄ | 16.5 | X | 250.65490 | 111.48070 | 295.08451 | 3.37039 | 0.1229388 | 0.28508584 | 2.2864004 | 20 | 7 20.4 | 19.0 |
| 171728 2000 WX ₂₅ | 16.6 | X | 275.26382 | 267.37840 | 166.56602 | 3.59779 | 0.0634521 | 0.29288287 | 2.2456345 | 20 | 10 19.4 | 18.8 |
| 171729 2000 WE ₃₁ | 16.2 | X | 286.28820 | 274.89356 | 107.71928 | 7.78869 | 0.1142848 | 0.28792343 | 2.2713587 | 20 | 8 12.3 | 18.5 |
| 171730 2000 WX ₅₀ | 17.2 | X | 115.18607 | 137.11871 | 282.66249 | 12.88615 | 0.1942416 | 0.41715104 | 1.7739464 | 20 | 2 20.1 | 18.7 |
| 171731 2000 WD ₅₆ | 15.8 | X | 128.27454 | 17.83260 | 88.97707 | 7.68753 | 0.1568166 | 0.27077284 | 2.3662792 | 20 | 5 28.9 | 19.3 |
| 171732 2000 WR ₆₅ | 17.1 | X | 157.03617 | 37.92990 | 62.65778 | 2.37594 | 0.1156617 | 0.27855844 | 2.3219801 | 20 | 6 16.9 | 20.5 |
| 171733 2000 WD ₇₁ | 16.4 | X | 292.13780 | 87.98227 | 278.62206 | 5.93964 | 0.1352107 | 0.28826965 | 2.2695344 | 20 | 7 22.3 | 18.5 |
| 171734 2000 WY ₇₆ | 16.6 | X | 147.07110 | 200.72950 | 259.25188 | 6.02372 | 0.1049116 | 0.27772101 | 2.3266455 | 20 | 6 4.3 | 19.8 |
| 171735 2000 WT ₉₄ | 17.3 | X | 243.69693 | 43.97262 | 39.20512 | 2.59428 | 0.1463480 | 0.28775305 | 2.2722499 | 20 | 8 30.9 | 19.9 |
| 171736 2000 WQ ₉₇ | 16.3 | X | 258.00237 | 103.84413 | 261.62936 | 3.17278 | 0.1565212 | 0.28067233 | 2.3103068 | 20 | 5 26.8 | 19.4 |
| 171737 2000 WA ₉₈ | 16.2 | X | 216.91895 | 91.82566 | 73.95191 | 6.46557 | 0.0824481 | 0.29356232 | 2.2421733 | 20 | 11 28.9 | 18.7 |
| 171738 2000 WB ₁₁₀ | 16.7 | X | 205.12357 | 125.61587 | 294.42086 | 5.05853 | 0.0898584 | 0.28045521 | 2.3114990 | 20 | 6 15.9 | 19.9 |
| 171739 2000 WG ₁₁₅ | 16.3 | X | 262.16643 | 152.74577 | 302.73813 | 5.58090 | 0.1072010 | 0.29193950 | 2.2504747 | 20 | 10 18.7 | 18.7 |
| 171740 2000 WH ₁₁₅ | 16.1 | X | 313.87841 | 310.67265 | 51.52096 | 7.20115 | 0.1264577 | 0.28830136 | 2.2693680 | 20 | 9 3.5 | 18.2 |
| 171741 2000 WX ₁₁₉ | 16.4 | X | 189.45848 | 58.13892 | 47.61120 | 5.67567 | 0.1173236 | 0.28145596 | 2.3060165 | 20 | 7 31.8 | 19.7 |
| 171742 2000 WF ₁₇₇ | 16.7 | X | 161.29590 | 36.62109 | 90.29098 | 6.72559 | 0.0148290 | 0.28389114 | 2.2928105 | 20 | 7 28.6 | 19.5 |
| 171743 2000 WD ₁₈₄ | 17.3 | X | 228.15732 | 318.61828 | 111.94993 | 1.92491 | 0.1293698 | 0.28533011 | 2.2850953 | 20 | 7 24.9 | 20.3 |
| 171744 2000 WU ₁₉₅ | 16.6 | X | 213.58184 | 65.83119 | 335.89464 | 3.97664 | 0.2569014 | 0.27803319 | 2.3249036 | 20 | 5 20.7 | 20.7 |
| 171745 2000 XU | 15.3 | X | 84.79108 | 105.23411 | 239.19591 | 4.85567 | 0.1332522 | 0.15614452 | 3.4154785 | 20 | — | — |
| 171746 2000 XT ₁₈ | 15.7 | X | 292.56712 | 28.13140 | 340.16339 | 9.13886 | 0.0582607 | 0.28598045 | 2.2816297 | 20 | 8 9.9 | 18.1 |
| 171747 2000 XU ₃₀ | 16.5 | X | 219.50341 | 63.82961 | 357.27333 | 5.96198 | 0.1423866 | 0.28193067 | 2.3034273 | 20 | 6 30.5 | 19.8 |
| 171748 2000 YM ₂ | 16.1 | X | 83.72609 | 190.85488 | 308.77994 | 8.24923 | 0.1478825 | 0.27036367 | 2.3686660 | 20 | 5 14.7 | 19.1 |
| 171749 2000 YG ₅ | 15.8 | X | 345.86327 | 50.34575 | 304.39984 | 4.81691 | 0.2402949 | 0.29173450 | 2.2515289 | 20 | 11 7.9 | 17.3 |
| 171750 2000 YS ₁₀ | 16.5 | X | 225.73089 | 275.31985 | 119.11177 | 6.92288 | 0.1276202 | 0.27958485 | 2.3162937 | 20 | 6 2.7 | 19.8 |
| 171751 2000 YB ₁₇ | 15.9 | X | 131.89620 | 257.49753 | 253.99231 | 21.64984 | 0.2356263 | 0.27813064 | 2.3243605 | 20 | 7 27.1 | 20.2 |
| 171752 2000 YZ ₂₁ | 16.2 | X | 128.88155 | 54.08157 | 73.94895 | 5.95407 | 0.1693116 | 0.27382815 | 2.3486447 | 20 | 6 27.4 | 19.7 |
| 171753 2000 YN ₂₂ | 16.9 | X | 165.24684 | 308.18900 | 140.92910 | 2.81212 | 0.1960891 | 0.27551115 | 2.33 | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> | | |
|--------|----------|-------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----------|---------|------|
| 171761 | 2000 | YR ₉₈ | 16.6 | X | 153.22405 | 225.73102 | 237.21213 | 2.49703 | 0.0854243 | 0.27435603 | 2.3456311 | 20 | 6 14.5 | 19.8 |
| 171762 | 2000 | YT ₁₀₈ | 15.4 | X | 143.21653 | 247.44994 | 295.33666 | 11.48589 | 0.1966171 | 0.23133314 | 2.6281136 | 20 | 9 11.9 | 20.0 |
| 171763 | 2000 | YM ₁₁₀ | 17.1 | X | 196.74363 | 37.40375 | 10.26970 | 2.29370 | 0.2145968 | 0.27597925 | 2.3364246 | 20 | 5 16.4 | 21.0 |
| 171764 | 2000 | YP ₁₁₀ | 16.9 | X | 38.26042 | 110.33427 | 339.53736 | 2.93234 | 0.1665612 | 0.25748743 | 2.4469891 | 20 | — | — |
| 171765 | 2000 | YO ₁₃₁ | 16.6 | X | 182.88377 | 112.24616 | 319.96701 | 5.29974 | 0.2119240 | 0.27633680 | 2.3344087 | 20 | 6 5.1 | 20.5 |
| 171766 | 2000 | YY ₁₄₃ | 16.4 | X | 156.30112 | 355.54019 | 63.53465 | 7.05112 | 0.1293571 | 0.26902098 | 2.3765409 | 20 | 4 24.2 | 19.8 |
| 171767 | 2001 | AW ₈ | 16.5 | X | 57.60350 | 107.00665 | 89.59651 | 5.96553 | 0.0882347 | 0.27371455 | 2.3492945 | 20 | 6 20.4 | 18.8 |
| 171768 | 2001 | AW ₂₂ | 16.8 | X | 186.53040 | 60.86283 | 46.40335 | 3.76490 | 0.1682877 | 0.28023056 | 2.3127342 | 20 | 7 27.4 | 20.4 |
| 171769 | 2001 | AD ₄₀ | 16.4 | X | 106.52974 | 112.68297 | 78.86451 | 7.02057 | 0.1582540 | 0.27758101 | 2.3274278 | 20 | 8 31.4 | 19.9 |
| 171770 | 2001 | AO ₅₁ | 16.8 | X | 181.23411 | 266.53401 | 117.42933 | 2.24028 | 0.1803385 | 0.26982988 | 2.3717889 | 20 | 4 4.6 | 20.5 |
| 171771 | 2001 | AM ₅₃ | 17.1 | X | 146.94878 | 87.61228 | 9.43951 | 2.57355 | 0.1980444 | 0.27280353 | 2.3545219 | 20 | 6 5.4 | 20.8 |
| 171772 | 2001 | BN ₉ | 16.7 | X | 44.31256 | 161.71576 | 13.90136 | 4.32296 | 0.1894784 | 0.26633878 | 2.3924697 | 20 | 5 10.6 | 18.9 |
| 171773 | 2001 | BJ ₁₀ | 16.9 | X | 23.62444 | 153.87628 | 17.85218 | 5.74986 | 0.1772484 | 0.26193047 | 2.4192386 | 20 | 3 19.9 | 18.8 |
| 171774 | 2001 | BW ₁₈ | 16.3 | X | 226.45166 | 304.31961 | 68.58313 | 4.11952 | 0.2653943 | 0.27598322 | 2.3364021 | 20 | 4 26.5 | 20.2 |
| 171775 | 2001 | BC ₂₀ | 16.9 | X | 214.82607 | 10.79617 | 79.61559 | 5.42846 | 0.1818261 | 0.28146001 | 2.3059944 | 20 | 8 1.6 | 20.3 |
| 171776 | 2001 | BU ₂₁ | 15.7 | X | 209.66673 | 14.92894 | 99.51300 | 23.69792 | 0.1816126 | 0.28572039 | 2.2830139 | 20 | 9 4.9 | 19.5 |
| 171777 | 2001 | BP ₂₂ | 16.4 | X | 134.92182 | 339.12824 | 116.36576 | 5.81723 | 0.0934647 | 0.27155876 | 2.3615434 | 20 | 5 15.9 | 19.7 |
| 171778 | 2001 | BG ₂₄ | 16.7 | X | 152.36253 | 284.67989 | 135.28147 | 7.49915 | 0.1453705 | 0.26942194 | 2.3741824 | 20 | 4 23.6 | 20.3 |
| 171779 | 2001 | BF ₄₀ | 17.7 | X | 125.49307 | 75.44825 | 31.57006 | 5.64387 | 0.2165072 | 0.27053519 | 2.3676648 | 20 | 5 30.1 | 21.4 |
| 171780 | 2001 | BN ₄₁ | 16.5 | X | 262.66258 | 223.07518 | 114.81727 | 5.13690 | 0.1686293 | 0.27974656 | 2.3154010 | 20 | 4 25.3 | 19.7 |
| 171781 | 2001 | BG ₅₂ | 16.7 | X | 152.78755 | 15.35382 | 117.40135 | 4.63131 | 0.0611453 | 0.27712064 | 2.3300047 | 20 | 7 24.9 | 19.7 |
| 171782 | 2001 | BK ₅₂ | 16.7 | X | 234.78714 | 355.60140 | 113.30314 | 3.45505 | 0.0448132 | 0.28586847 | 2.2822255 | 20 | 10 11.2 | 19.3 |
| 171783 | 2001 | BL ₆₂ | 16.3 | X | 259.90438 | 179.50108 | 243.24734 | 3.09130 | 0.1163278 | 0.28346065 | 2.2951312 | 20 | 8 25.9 | 19.0 |
| 171784 | 2001 | BV ₆₇ | 16.5 | X | 139.32814 | 186.83715 | 331.28941 | 7.35481 | 0.3406624 | 0.27587872 | 2.3369921 | 20 | 8 21.8 | 20.7 |
| 171785 | 2001 | BK ₇₀ | 17.0 | X | 102.23228 | 280.91065 | 168.50416 | 2.24658 | 0.1457500 | 0.26509685 | 2.3999361 | 20 | 4 2.8 | 19.8 |
| 171786 | 2001 | BF ₈₃ | 16.8 | X | 111.69168 | 203.48711 | 306.19864 | 7.18238 | 0.1176033 | 0.27195047 | 2.3594431 | 20 | 7 3.3 | 20.0 |
| 171787 | 2001 | CG ₂ | 16.3 | X | 186.40563 | 355.00662 | 106.37194 | 6.26464 | 0.1606379 | 0.27688685 | 2.3313161 | 20 | 7 18.6 | 19.9 |
| 171788 | 2001 | CR ₃ | 16.2 | X | 174.89143 | 79.49013 | 358.42441 | 6.14883 | 0.2200431 | 0.27331863 | 2.3515627 | 20 | 6 5.2 | 20.2 |
| 171789 | 2001 | CJ ₈ | 16.4 | X | 52.23003 | 91.69162 | 70.51799 | 3.40314 | 0.1456008 | 0.26420744 | 2.4053190 | 20 | 4 30.4 | 18.9 |
| 171790 | 2001 | CP ₁₄ | 16.6 | X | 207.36387 | 2.63508 | 38.47207 | 3.42412 | 0.2173655 | 0.27471470 | 2.3435890 | 20 | 5 17.2 | 20.5 |
| 171791 | 2001 | CZ ₁₆ | 15.7 | X | 208.71730 | 35.97996 | 334.50988 | 13.79951 | 0.2602381 | 0.27016408 | 2.3698325 | 20 | 4 3.1 | 20.0 |
| 171792 | 2001 | CM ₃₃ | 16.6 | X | 51.76915 | 128.89460 | 25.97735 | 12.07371 | 0.1777352 | 0.26427293 | 2.4049216 | 20 | 4 21.4 | 18.7 |
| 171793 | 2001 | CW ₄₂ | 17.1 | X | 167.90158 | 24.74712 | 140.11793 | 5.78753 | 0.0998474 | 0.28169841 | 2.3046932 | 20 | 9 27.0 | 20.4 |
| 171794 | 2001 | DM ₇ | 16.2 | X | 53.75162 | 101.80824 | 60.31367 | 4.39483 | 0.0919455 | 0.26332743 | 2.4106749 | 20 | 4 25.2 | 18.7 |
| 171795 | 2001 | DX ₁₅ | 16.7 | X | 174.95470 | 10.08417 | 64.34941 | 5.56594 | 0.2109607 | 0.27242051 | 2.3567283 | 20 | 6 1.5 | 20.4 |
| 171796 | 2001 | DX ₁₆ | 16.6 | X | 186.05151 | 14.93324 | 72.74717 | 5.40323 | 0.1138453 | 0.27384898 | 2.3485256 | 20 | 7 1.1 | 19.9 |
| 171797 | 2001 | DL ₁₈ | 16.0 | X | 84.86282 | 113.07507 | 92.80738 | 7.26045 | 0.2333007 | 0.27210374 | 2.3585570 | 20 | 9 3.8 | 19.6 |
| 171798 | 2001 | DW ₂₄ | 16.3 | X | 335.59188 | 65.44528 | 122.87838 | 8.80992 | 0.0808888 | 0.25703568 | 2.4498553 | 20 | 1 23.5 | 19.0 |
| 171799 | 2001 | DO ₃₂ | 16.1 | X | 80.60044 | 54.61326 | 74.14837 | 3.09764 | 0.0643327 | 0.26421027 | 2.4053018 | 20 | 4 15.0 | 18.9 |
| 171800 | 2001 | DJ ₃₈ | 16.2 | X | 87.25855 | 320.70684 | 157.94609 | 6.60968 | 0.0734791 | 0.26585901 | 2.3953472 | 20 | 4 12.7 | 19.1 |
| 171801 | 2001 | DE ₃₉ | 16.9 | X | 297.98392 | 84.88432 | 336.64543 | 2.28799 | 0.1739928 | 0.28958508 | 2.2626563 | 20 | 10 27.2 | 18.6 |
| 171802 | 2001 | DV ₃₉ | 16.4 | X | 121.88220 | 216.77095 | 261.35315 | 2.71936 | 0.1383821 | 0.26963666 | 2.3729218 | 20 | 6 3.4 | 19.6 |
| 171803 | 2001 | DY ₄₂ | 16.5 | X | 104.24430 | 323.39171 | 146.23895 | 1.67047 | 0.1441078 | 0.26587308 | 2.3952626 | 20 | 5 3.1 | 19.5 |
| 171804 | 2001 | DF ₄₉ | 16.3 | X | 159.46732 | 44.86188 | 57.06002 | 7.05299 | 0.0894543 | 0.27324606 | 2.3519790 | 20 | 6 20.2 | 19.6 |
| 171805 | 2001 | DL ₅₂ | 16.0 | X | 123.41539 | 125.12741 | 18.76347 | 3.31528 | 0.1295372 | 0.27446125 | 2.3450315 | 20 | 7 10.4 | 19.3 |
| 171806 | 2001 | DA ₆₃ | 17.3 | X | 169.00945 | 209.72480 | 276.15802 | 0.51620 | 0.1801489 | 0.27717813 | 2.3296826 | 20 | 8 2.6 | 20.9 |
| 171807 | 2001 | DV ₆₄ | 16.6 | X | 120.89822 | 312.78996 | 164.77545 | 5.44011 | 0.1801131 | 0.26937504 | 2.3744579 | 20 | 6 6.7 | 20.2 |
| 171808 | 2001 | DQ ₈₁ | 17.0 | X | 219.59485 | 60.10487 | 334.19930 | 3.50505 | 0.0974949 | 0.27293304 | 2.3537770 | 20 | 5 26.9 | 20.3 |
| 171809 | 2001 | DO ₈₆ | 17.2 | X | 139.38573 | 77.57474 | 106.75189 | 3.32361 | 0.1156310 | 0.27927184 | 2.3180241 | 20 | 9 21.3 | 20.5 |
| 171810 | 2001 | DY ₈₆ | 17.1 | X | 283.46929 | 87.99312 | 279.46925 | 15.58838 | 0.0822302 | 0.37929186 | 1.8901098 | 20 | 7 23.5 | 18.5 |
| 171811 | 2001 | DE ₈₇ | 15.9 | X | 198.88193 | 139.30541 | 336.49022 | 23.74399 | 0.2729377 | 0.27857316 | 2.3218984 | 20 | 8 16.7 | 19.9 |
| 171812 | 2001 | DD ₉₅ | 17.1 | X | 86.70642 | 15.67510 | 107.13077 | 3.43110 | 0.1633513 | 0.26599798 | 2.3945128 | 20 | 5 1.8 | 19.9 |
| 171813 | 2001 | DJ ₁₀₃ | 16.0 | X | 166.02985 | 21.44323 | 135.13977 | 24.22165 | 0.1903797 | 0.27959267 | 2.3162505 | 20 | 9 13.1 | 20.0 |
| 171814 | 2001 | DS ₁₀₃ | 17.1 | X | 104.98868 | 196.04845 | 286.54696 | 1.61506 | 0.1377570 | 0.26801731 | 2.3824703 | 20 | 5 19.9 | 20.3 |
| 171815 | 2001 | EF ₉ | 16.8 | X | 54.46131 | 195.45220 | 2.62625 | 3.62497 | 0.1663899 | 0.26718342 | 2.3874249 | 20 | 7 1.2 | 19.4 |
| 171816 | 2001 | EN ₁₆ | 16.3 | X | 116.77445 | 26.21165 | 75.90320 | 5.71548 | 0.1547111 | 0.26577675 | 2.3958413 | 20 | 5 9.9 | 19.7 |
| 171817 | 2001 | EB ₂₂ | 16.3 | X | 34.07618 | 257.80328 | 243.10788 | 8.33913 | 0.1818375 | 0.25855071 | 2.4402757 | 20 | 2 18.3 | 18.6 |
| 171818 | 2001 | FH ₅ | 16.7 | X | 44.51349 | 171.53410 | 16.42855 | 1.69409 | 0.1155774 | 0.26417538 | 2.4055136 | 20 | 5 19.9 | 19.3 |
| 171819 | 2001 | FZ ₆ | 18.3 | X | 47.56727 | 297.34129 | 17.36597 | 9.95085 | 0.1664416 | 0.53885242 | 1.4956254 | 20 | — | — |
| 171820 | 2001 | FT ₁₂ | 16.0 | X | 60.80875 | 353.24229 | 137.92770 | 3.38123 | 0.1437682 | 0.25938883 | 2.4350163 | 20 | 3 30.9 | 18.5 |
| 171821 | 2001 | FW ₁₄ | 17.5 | X | 43.93247 | 239.51117 | 313.14334 | 0.75586 | 0.1216890 | 0.26412186 | 2.4058386 | 20 | 5 27.2 | 19.9 |
| 171822 | 2001 | FR ₂₀ | 15.9 | X | 99.49893 | 149.26699 | 333.94141 | 6.85511 | 0.0921405 | 0.26333322 | 2.4106396 | 20 | 5 4.2 | 19.1 |
| 171823 | 2001 | FS ₂₅ | 15.9 | X | 199.38847 | 156.76668 | 324.36815 | 6.50818 | 0.1408332 | 0.27828396 | 2.3235067 | 20 | 8 27.9 | 19.4 |
| 171824 | 2001 | FK ₄₉ | 17.3 | X | 47.65077 | 127.60356 | 17.09271 | 1.63237 | 0.1344253 | 0.25975861 | 2.4327048 | 20 | 3 24.4 | 19.5 |
| 171825 | 2001 | FQ ₆₃ | 16.5 | X | 99.45146 | 2.49602 | 78.21785 | 2.43775 | 0.1627754 | 0.25957111 | 2.4338762 | 20 | 3 22.2 | 19.5 |
| 171826 | 2001 | FZ ₈₂ | 17.2 | X | 41.07463 | 84.20606 | 142.36948 | 2.41818 | 0.1283238 | 0.26784973 | 2.3834639 | 20 | 7 14.6 | 19.6 |
| 171827 | 2001 | FE ₉₂ | 16.0 | X | 147.83024 | 296.31796 | 142.42447 | 10.73419 | 0.1742088 | 0.26714565 | 2.3876499 | 20 | 5 15.9 | 19.9 |
| 171828 | 2001 | FD ₁₀₃ | 16.1 | X | 179.20519 | 44.21396 | 1.29957 | 4.96263 | 0.2362624 | 0.26824945 | 2.3810956 | 20 | 4 28.4 | 20.2 |
| 171829 | 2001 | FY ₁₀₅ | 16.3 | X | 219.89826 | 336.32462 | 131.20981 | 5.75885 | 0.1357470 | 0.28121278 | 2.3073458 | 20 | 9 4.8 | 19.4 |
| 171830 | 2001 | FV ₁₀₉ | 16.3 | X | 1 | | | | | | | | | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171841 2001 JK ₁₀ | 16.0 | X | 72.28887 | 208.62776 | 60.50880 | 12.91925 | 0.1557449 | 0.22258679 | 2.6965168 | 20 | 10 26.9 | 20.0 |
| 171842 2001 KD ₁₀ | 15.7 | X | 130.97701 | 2.05443 | 227.73628 | 13.19330 | 0.1475051 | 0.22502240 | 2.6770237 | 20 | 10 31.7 | 20.0 |
| 171843 2001 KW ₂₁ | 15.8 | X | 253.95274 | 143.28089 | 57.53174 | 12.24622 | 0.0798768 | 0.23936319 | 2.5690022 | 20 | — | — |
| 171844 2001 KM ₂₉ | 15.7 | X | 165.73414 | 351.65749 | 238.52742 | 16.91246 | 0.1377395 | 0.23150114 | 2.6268420 | 20 | 12 4.6 | 19.9 |
| 171845 2001 KV ₃₃ | 16.1 | X | 299.42069 | 56.64631 | 111.48467 | 5.13617 | 0.1482044 | 0.24251805 | 2.5466739 | 20 | — | — |
| 171846 2001 KW ₃₆ | 15.7 | X | 228.93401 | 135.04432 | 76.23956 | 14.35510 | 0.2120870 | 0.23730278 | 2.5838512 | 20 | — | — |
| 171847 2001 KK ₄₅ | 15.3 | X | 157.94144 | 105.71110 | 106.43994 | 13.12967 | 0.1214447 | 0.22566541 | 2.6719360 | 20 | 11 10.1 | 19.7 |
| 171848 2001 KV ₅₆ | 15.7 | X | 199.60239 | 58.50157 | 161.95006 | 10.63161 | 0.0944912 | 0.23524782 | 2.5988765 | 20 | — | — |
| 171849 2001 KW ₇₂ | 15.7 | X | 211.95761 | 148.53174 | 82.27634 | 15.98703 | 0.1199262 | 0.23675150 | 2.5878607 | 20 | — | — |
| 171850 2001 LN ₁₅ | 15.2 | X | 331.09951 | 223.89383 | 82.26164 | 14.72979 | 0.2167581 | 0.21121722 | 2.7924356 | 20 | 6 18.2 | 17.9 |
| 171851 2001 MG | 14.9 | X | 191.76389 | 83.90677 | 244.09342 | 8.20459 | 0.1394623 | 0.18784887 | 3.0194672 | 20 | 2 7.6 | 19.9 |
| 171852 2001 MY ₃ | 15.4 | X | 152.00242 | 340.49520 | 265.77920 | 12.06061 | 0.1561486 | 0.22958541 | 2.6414346 | 20 | 12 10.3 | 19.6 |
| 171853 2001 MN ₁₇ | 15.5 | X | 344.16574 | 56.92034 | 118.07510 | 22.54945 | 0.0609454 | 0.24169509 | 2.5524515 | 20 | 1 23.7 | 18.5 |
| 171854 2001 MB ₂₀ | 15.9 | X | 279.58979 | 301.54148 | 301.01368 | 14.90159 | 0.0780117 | 0.24297096 | 2.5435082 | 20 | 1 23.6 | 19.2 |
| 171855 2001 MR ₂₀ | 16.0 | X | 45.82336 | 198.38616 | 80.50992 | 6.02137 | 0.1302353 | 0.21394155 | 2.7686792 | 20 | 10 1.5 | 19.6 |
| 171856 2001 NM ₅ | 16.2 | X | 155.85364 | 170.92846 | 107.96341 | 10.06949 | 0.1081014 | 0.22898293 | 2.6460658 | 20 | — | — |
| 171857 2001 OF ₁₂ | 15.1 | X | 181.83082 | 295.14724 | 56.88648 | 10.05004 | 0.1273748 | 0.18457178 | 3.0551029 | 20 | 3 5.8 | 20.1 |
| 171858 2001 OO ₄₂ | 15.7 | X | 217.57085 | 69.63204 | 250.91831 | 4.86202 | 0.2512438 | 0.18716565 | 3.0268108 | 20 | 2 19.7 | 21.2 |
| 171859 2001 OH ₅₁ | 15.9 | X | 42.09429 | 273.30992 | 7.27819 | 4.69950 | 0.0931401 | 0.21260393 | 2.7802800 | 20 | 9 19.8 | 19.3 |
| 171860 2001 OM ₉₃ | 15.4 | X | 207.20087 | 260.13155 | 57.57938 | 4.83448 | 0.2232623 | 0.18834496 | 3.0141629 | 20 | 2 13.4 | 20.6 |
| 171861 2001 OP ₁₀₂ | 15.4 | X | 157.82456 | 6.17253 | 297.72798 | 11.24206 | 0.1031204 | 0.23005722 | 2.6378219 | 20 | — | — |
| 171862 2001 PG ₄₉ | 15.1 | X | 55.32926 | 190.03522 | 121.60952 | 24.38699 | 0.2124217 | 0.17456542 | 3.1707639 | 20 | — | — |
| 171863 2001 QK ₃ | 15.4 | X | 161.68886 | 259.83388 | 110.61429 | 2.26061 | 0.2139678 | 0.18645893 | 3.0344542 | 20 | 3 8.9 | 20.5 |
| 171864 2001 QU ₅₂ | 15.6 | X | 151.65054 | 197.79123 | 174.61122 | 4.51835 | 0.2144401 | 0.18531845 | 3.0468912 | 20 | 3 1.8 | 20.7 |
| 171865 2001 QJ ₇₂ | 14.8 | X | 113.63502 | 103.22471 | 263.10052 | 13.89636 | 0.2447040 | 0.17766813 | 3.1337405 | 20 | 1 21.8 | 19.7 |
| 171866 2001 QV ₇₂ | 14.2 | X | 154.10473 | 143.37579 | 173.77842 | 23.43802 | 0.2199248 | 0.17279402 | 3.1923971 | 20 | 1 2.8 | 19.8 |
| 171867 2001 QA ₉₇ | 14.8 | X | 163.48168 | 30.03243 | 324.53155 | 9.55942 | 0.2607382 | 0.18285474 | 3.0741985 | 20 | 2 21.9 | 20.0 |
| 171868 2001 QR ₁₁₀ | 16.0 | X | 278.07041 | 302.93636 | 87.22284 | 3.37111 | 0.1002723 | 0.20311942 | 2.8661687 | 20 | 8 2.8 | 19.7 |
| 171869 2001 QD ₁₁₉ | 15.4 | X | 199.36755 | 111.77686 | 309.10723 | 9.59090 | 0.0875864 | 0.19639330 | 2.9312415 | 20 | 6 9.2 | 20.0 |
| 171870 2001 QJ ₁₂₅ | 15.3 | X | 145.41163 | 332.06378 | 87.16764 | 3.78836 | 0.2972937 | 0.18632799 | 3.0358757 | 20 | 4 26.6 | 20.6 |
| 171871 2001 QD ₁₅₇ | 14.7 | X | 148.96011 | 53.95795 | 306.79193 | 9.20331 | 0.1164527 | 0.18276771 | 3.0751743 | 20 | 2 7.4 | 19.4 |
| 171872 2001 QJ ₁₇₁ | 15.2 | X | 172.07993 | 122.84318 | 275.97098 | 12.95654 | 0.1808825 | 0.19121167 | 2.9839608 | 20 | 4 11.8 | 20.4 |
| 171873 2001 QF ₁₉₇ | 14.7 | X | 110.22378 | 120.24313 | 201.87384 | 20.36561 | 0.2378989 | 0.17808827 | 3.1288099 | 20 | 3 14.8 | 19.9 |
| 171874 2001 QR ₂₁₁ | 15.6 | X | 333.98300 | 96.63513 | 219.56833 | 1.25200 | 0.0955126 | 0.20237745 | 2.8731699 | 20 | 7 18.9 | 19.1 |
| 171875 2001 QX ₂₁₉ | 14.4 | X | 197.89273 | 83.28739 | 287.99381 | 14.71503 | 0.1128254 | 0.18538114 | 3.0462042 | 20 | 3 30.5 | 19.6 |
| 171876 2001 QE ₂₂₈ | 15.4 | X | 148.26989 | 137.99012 | 278.59211 | 9.17958 | 0.0910213 | 0.18929690 | 3.0040493 | 20 | 4 7.1 | 20.1 |
| 171877 2001 QR ₂₂₈ | 15.2 | X | 201.40204 | 84.26433 | 282.21830 | 8.83313 | 0.1284309 | 0.19031826 | 2.9932919 | 20 | 3 30.8 | 20.2 |
| 171878 2001 QY ₂₆₁ | 15.3 | X | 143.21486 | 69.90990 | 288.17497 | 8.27297 | 0.2086316 | 0.17855640 | 3.1233388 | 20 | 2 6.1 | 20.4 |
| 171879 2001 QQ ₂₆₃ | 14.6 | X | 116.01158 | 110.19836 | 314.88615 | 9.47051 | 0.1536505 | 0.18094422 | 3.0958001 | 20 | 3 21.4 | 19.4 |
| 171880 2001 QR ₂₇₄ | 15.7 | X | 197.24653 | 218.36254 | 119.34873 | 9.78556 | 0.1700203 | 0.18750197 | 3.0231904 | 20 | 2 29.2 | 20.8 |
| 171881 2001 QV ₂₈₅ | 15.4 | X | 167.10204 | 341.93414 | 85.19697 | 7.71617 | 0.2219333 | 0.19064348 | 2.9898868 | 20 | 5 19.0 | 20.6 |
| 171882 2001 QW ₂₉₀ | 15.5 | X | 99.84678 | 291.24685 | 108.57033 | 2.08728 | 0.1793496 | 0.17843340 | 3.1247740 | 20 | 2 10.5 | 20.0 |
| 171883 2001 QH ₃₂₈ | 14.5 | X | 92.75976 | 297.71385 | 141.76102 | 14.19076 | 0.2884793 | 0.17563342 | 3.1578968 | 20 | 4 9.1 | 19.3 |
| 171884 2001 QC ₃₂₉ | 16.0 | X | 212.99693 | 71.41022 | 308.85284 | 1.42604 | 0.1090890 | 0.1942367 | 2.9510051 | 20 | 5 2.3 | 20.5 |
| 171885 2001 QL ₃₃₃ | 14.9 | X | 129.31916 | 332.37849 | 72.30911 | 17.15874 | 0.1240628 | 0.17940063 | 3.1133525 | 20 | 3 21.6 | 19.9 |
| 171886 2001 RE ₁₂ | 15.4 | X | 170.89037 | 146.53408 | 236.35448 | 9.27210 | 0.1367978 | 0.18700664 | 3.0285264 | 20 | 3 23.6 | 20.3 |
| 171887 2001 RG ₁₅ | 15.4 | X | 141.61462 | 273.42812 | 297.37486 | 11.49219 | 0.0994491 | 0.21068279 | 2.7971559 | 20 | 10 10.4 | 19.9 |
| 171888 2001 RJ ₂₀ | 15.7 | X | 189.73968 | 68.24980 | 321.60918 | 3.67717 | 0.1098825 | 0.19196313 | 2.9761684 | 20 | 4 19.9 | 20.5 |
| 171889 2001 RJ ₃₁ | 15.6 | X | 89.05995 | 256.14273 | 0.13911 | 4.11571 | 0.0161215 | 0.21091635 | 2.7950905 | 20 | 10 6.8 | 19.5 |
| 171890 2001 RL ₄₂ | 15.4 | X | 171.34832 | 250.29758 | 130.34415 | 12.64850 | 0.1405824 | 0.18694912 | 3.0291476 | 20 | 3 29.4 | 20.4 |
| 171891 2001 RW ₄₆ | 14.2 | X | 116.84564 | 311.77408 | 124.31682 | 23.70933 | 0.2635746 | 0.18022905 | 3.1039843 | 20 | 4 30.1 | 19.7 |
| 171892 2001 RT ₄₈ | 14.6 | X | 118.37920 | 267.22438 | 89.50953 | 25.99811 | 0.2453662 | 0.17390568 | 3.1787781 | 20 | 1 19.3 | 19.6 |
| 171893 2001 RS ₆₇ | 15.1 | X | 193.64466 | 326.32374 | 350.75080 | 11.57496 | 0.1359027 | 0.18066519 | 3.0989868 | 20 | 2 3.7 | 20.2 |
| 171894 2001 RP ₈₃ | 15.3 | X | 147.86717 | 87.85761 | 309.98842 | 3.94559 | 0.0810759 | 0.18515154 | 3.0487221 | 20 | 3 17.2 | 19.9 |
| 171895 2001 RG ₈₅ | 15.2 | X | 122.62135 | 89.28353 | 349.61626 | 9.65178 | 0.1097316 | 0.18618870 | 3.0373897 | 20 | 4 10.1 | 19.9 |
| 171896 2001 RG ₈₉ | 15.8 | X | 146.67329 | 243.42769 | 126.23892 | 1.85330 | 0.1851186 | 0.18114222 | 3.0935437 | 20 | 2 22.5 | 20.6 |
| 171897 2001 RQ ₈₉ | 15.4 | X | 188.33008 | 311.92203 | 12.47052 | 10.46602 | 0.1371208 | 0.18214095 | 3.0822249 | 20 | 2 7.9 | 20.5 |
| 171898 2001 RZ ₉₀ | 15.4 | X | 266.73973 | 320.18850 | 23.78061 | 6.04755 | 0.1369432 | 0.19595437 | 2.9356171 | 20 | 5 11.4 | 19.6 |
| 171899 2001 RP ₉₆ | 16.0 | X | 225.60644 | 149.52968 | 224.68064 | 1.37458 | 0.0445708 | 0.19537336 | 2.9414343 | 20 | 5 13.8 | 20.1 |
| 171900 2001 RW ₁₀₂ | 15.8 | X | 74.44797 | 203.57241 | 142.57428 | 7.05396 | 0.1016790 | 0.22134555 | 2.7065882 | 20 | — | — |
| 171901 2001 RK ₁₀₄ | 15.5 | X | 334.77410 | 259.51874 | 132.48256 | 6.86431 | 0.1159097 | 0.21199472 | 2.7856039 | 20 | 11 7.5 | 18.7 |
| 171902 2001 RH ₁₂₉ | 15.3 | X | 224.62827 | 290.43191 | 16.02887 | 6.86231 | 0.1040113 | 0.18531213 | 3.0469604 | 20 | 2 19.2 | 20.1 |
| 171903 2001 RX ₁₃₁ | 15.7 | X | 214.87749 | 40.05275 | 59.17642 | 3.26880 | 0.0179366 | 0.20408912 | 2.8570827 | 20 | 8 24.1 | 19.6 |
| 171904 2001 RG ₁₅₀ | 16.0 | X | 209.78953 | 211.33099 | 82.55228 | 4.00088 | 0.2665354 | 0.18379262 | 3.0637313 | 20 | 1 18.3 | 21.5 |
| 171905 2001 SK ₁₂ | 15.6 | X | 276.64590 | 89.06200 | 225.71603 | 3.40828 | 0.0779484 | 0.19389370 | 2.9563799 | 20 | 4 25.5 | 19.7 |
| 171906 2001 SZ ₂₄ | 15.8 | X | 119.53244 | 204.45049 | 179.95040 | 5.55198 | 0.1431923 | 0.17823047 | 3.1271455 | 20 | 2 7.9 | 20.5 |
| 171907 2001 ST ₃₁ | 15.6 | X | 155.67228 | 238.16249 | 116.53995 | 2.01909 | 0.2536859 | 0.18083397 | 3.0970582 | 20 | 2 17.4 | 20.9 |
| 171908 2001 SW ₃₂ | 15.7 | X | 192.51070 | 154.70815 | 172.27750 | 1.77589 | 0.2521884 | 0.18356867 | 3.0662225 | 20 | 2 11.6 | 21.0 |
| 171909 2001 SK ₄₄ | 15.0 | X | 143.95124 | 353.91034 | 64.85514 | 6.01636 | 0.1218910 | 0.18553525 | 3.0445172 | 20 | 4 14.4 | 19.7 |
| 171910 2001 SZ ₄₅ | 15.3 | X | 129.26523 | 329.24129 | 79.12519 | 5.21122 | 0.1934096 | 0.18142433 | 3.0903359 | 20 | 3 25.8 | 20.2 |
| 171911 2001 SD ₅₁ | 15.1 | X | 193.22862 | 158.09612 | 163.64074 | 11.97948 | 0.1559190 | 0.18231596 | 3.0802520 | 20 | 2 4.2 | 20.2 |
| 171912 2001 SB ₆₂ | 15.3 | X | 97.48570 | 21.22295 | 25.46490 | 7.77426 | 0.1660244 | 0.17563198 | 3.1579142 | 20 | 2 17.2 | 19.8 |
| 171913 2001 SA ₇₄ | 15.1 | X | 163.05571 | 85.23844 | 293.43461 | 6.96687 | 0.1630577 | 0.18288428 | 3.0738674 | 20 | 3 | |

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

| Planet | <i>H</i> | <i>G</i> | <i>M</i> | ω | Ω | <i>i</i> | <i>e</i> | μ | <i>a</i> | TE | Oppos. | <i>V</i> |
|-------------------------------|----------|----------|-----------|-----------|-----------|----------|-----------|------------|-----------|----|---------|----------|
| 171921 2001 SF ₁₂₇ | 15.1 | X | 58.31152 | 136.05660 | 220.33846 | 1.87730 | 0.0361989 | 0.16696108 | 3.2663237 | 20 | 12 25.2 | 19.8 |
| 171922 2001 SM ₁₃₉ | 15.9 | X | 183.85446 | 133.29997 | 218.44549 | 2.53827 | 0.1462146 | 0.18383040 | 3.0633115 | 20 | 3 1.7 | 21.0 |
| 171923 2001 SZ ₁₄₀ | 15.1 | X | 92.61616 | 61.51025 | 6.57021 | 6.53570 | 0.3016374 | 0.17659153 | 3.1464642 | 20 | 3 23.4 | 19.6 |
| 171924 2001 SP ₁₄₂ | 15.3 | X | 127.98640 | 132.13416 | 251.73136 | 4.08176 | 0.1660856 | 0.17997505 | 3.1069041 | 20 | 2 17.8 | 20.1 |
| 171925 2001 ST ₁₄₃ | 15.2 | X | 115.77297 | 88.20514 | 342.17939 | 9.21043 | 0.0365897 | 0.18512343 | 3.0490307 | 20 | 3 15.3 | 19.5 |
| 171926 2001 SW ₁₄₃ | 15.6 | X | 78.67174 | 320.94619 | 300.37631 | 2.92524 | 0.0608611 | 0.20926795 | 2.8097493 | 20 | 10 5.0 | 19.6 |
| 171927 2001 SW ₁₄₅ | 15.5 | X | 133.53628 | 65.86603 | 331.50649 | 4.73248 | 0.1736974 | 0.18181071 | 3.0859561 | 20 | 3 11.5 | 20.4 |
| 171928 2001 SK ₁₅₃ | 15.0 | X | 178.29686 | 348.35149 | 354.44234 | 4.71775 | 0.1638474 | 0.18160916 | 3.0882388 | 20 | 2 18.2 | 20.1 |
| 171929 2001 SQ ₁₅₈ | 15.0 | X | 86.68615 | 102.25600 | 356.52247 | 11.40864 | 0.3023396 | 0.17776275 | 3.1326284 | 20 | 4 19.3 | 19.7 |
| 171930 2001 SJ ₁₇₀ | 15.5 | X | 149.67298 | 131.01504 | 292.49464 | 6.15623 | 0.1374086 | 0.18803879 | 3.0174338 | 20 | 4 22.1 | 20.3 |
| 171931 2001 SP ₁₇₄ | 16.3 | X | 286.07046 | 205.16591 | 129.60408 | 3.46810 | 0.2159539 | 0.19773995 | 2.9179181 | 20 | 5 14.2 | 20.3 |
| 171932 2001 SD ₁₉₈ | 15.2 | X | 120.16931 | 37.50024 | 35.65847 | 1.83840 | 0.1315521 | 0.18502381 | 3.0501250 | 20 | 4 6.4 | 19.7 |
| 171933 2001 SN ₂₀₁ | 15.2 | X | 87.77010 | 286.23162 | 174.49987 | 10.94616 | 0.1180014 | 0.18402317 | 3.0611178 | 20 | 4 1.7 | 19.3 |
| 171934 2001 SL ₂₁₃ | 16.1 | X | 209.48926 | 293.05851 | 62.26936 | 2.67440 | 0.1212802 | 0.18844905 | 3.0130529 | 20 | 3 31.1 | 20.9 |
| 171935 2001 SJ ₂₂₃ | 15.8 | X | 191.31988 | 5.14547 | 19.84171 | 2.05372 | 0.0510261 | 0.18858567 | 3.0115974 | 20 | 4 17.5 | 20.3 |
| 171936 2001 SH ₂₂₆ | 15.4 | X | 183.07700 | 242.25577 | 63.60396 | 2.46307 | 0.1515728 | 0.17771654 | 3.1331714 | 20 | 1 10.7 | 20.5 |
| 171937 2001 SA ₂₃₁ | 15.5 | X | 188.04353 | 248.71987 | 83.711713 | 2.60964 | 0.1197229 | 0.18106710 | 3.0943993 | 20 | 2 13.7 | 20.3 |
| 171938 2001 SS ₂₃₂ | 15.1 | X | 32.13268 | 219.07563 | 30.79029 | 7.54269 | 0.0549580 | 0.19714675 | 2.9237684 | 20 | 7 20.4 | 19.0 |
| 171939 2001 SH ₂₃₅ | 14.8 | X | 173.18877 | 317.81025 | 20.73104 | 9.64020 | 0.1578568 | 0.17967851 | 3.1103215 | 20 | 2 11.7 | 20.0 |
| 171940 2001 SK ₂₄₀ | 16.2 | X | 211.73621 | 239.13361 | 70.19707 | 0.84337 | 0.1667801 | 0.18272296 | 3.0756764 | 20 | 2 7.1 | 21.3 |
| 171941 2001 SM ₂₄₁ | 15.5 | X | 36.45513 | 258.94555 | 191.31320 | 9.88255 | 0.1082276 | 0.17257449 | 3.1951039 | 20 | 1 4.2 | 19.6 |
| 171942 2001 SA ₂₅₆ | 15.5 | X | 114.24257 | 274.11939 | 90.92587 | 3.54886 | 0.1196609 | 0.17331901 | 3.1859473 | 20 | 1 9.4 | 20.1 |
| 171943 2001 SU ₂₅₆ | 15.3 | X | 34.55635 | 85.88090 | 41.07852 | 9.89861 | 0.0394607 | 0.17721939 | 3.1390283 | 20 | 2 17.8 | 19.7 |
| 171944 2001 SM ₂₆₀ | 15.2 | X | 265.35091 | 278.35896 | 5.45928 | 10.91036 | 0.0707717 | 0.18550703 | 3.0448259 | 20 | 3 8.5 | 19.6 |
| 171945 2001 SP ₂₇₀ | 15.2 | X | 65.28710 | 258.13260 | 178.42633 | 9.40259 | 0.0836090 | 0.17493247 | 3.1663270 | 20 | 1 26.3 | 19.5 |
| 171946 2001 SB ₂₈₁ | 15.1 | X | 104.25348 | 52.53587 | 15.97498 | 10.96996 | 0.1364518 | 0.17891448 | 3.1191700 | 20 | 3 17.3 | 19.6 |
| 171947 2001 SK ₂₈₁ | 15.2 | X | 120.85992 | 110.83172 | 259.57081 | 3.75579 | 0.1907716 | 0.17517681 | 3.1633820 | 20 | 1 30.1 | 20.0 |
| 171948 2001 SJ ₂₈₈ | 15.4 | X | 120.67129 | 245.72148 | 97.94307 | 11.06168 | 0.2198824 | 0.17463202 | 3.1699577 | 20 | 1 3.5 | 20.0 |
| 171949 2001 SP ₃₁₃ | 14.9 | X | 160.21397 | 357.46904 | 70.33375 | 10.83217 | 0.0959124 | 0.18888422 | 3.0084232 | 20 | 5 10.0 | 19.6 |
| 171950 2001 SJ ₃₁₇ | 15.6 | X | 255.22030 | 263.45200 | 46.45333 | 2.74903 | 0.0567505 | 0.18753569 | 3.0228279 | 20 | 3 28.9 | 20.0 |
| 171951 2001 SS ₃₂₈ | 15.6 | X | 285.08149 | 301.33796 | 55.74479 | 3.46737 | 0.0678704 | 0.19974436 | 2.8983647 | 20 | 7 3.3 | 19.4 |
| 171952 2001 SD ₃₄₀ | 15.2 | X | 183.24341 | 299.96136 | 301.05279 | 10.22978 | 0.1603413 | 0.22259213 | 2.6964736 | 20 | 12 31.6 | 19.4 |
| 171953 2001 SN ₃₄₅ | 15.5 | X | 145.19245 | 339.40733 | 80.26275 | 16.34267 | 0.2517480 | 0.18391144 | 3.0624115 | 20 | 4 29.3 | 20.9 |
| 171954 2001 SE ₃₄₈ | 15.6 | X | 145.70470 | 142.46633 | 240.64275 | 9.85705 | 0.0675389 | 0.18133787 | 3.0913182 | 20 | 2 22.5 | 20.3 |
| 171955 2001 SH ₃₅₀ | 14.9 | X | 246.59700 | 207.30537 | 29.07147 | 14.24566 | 0.0421881 | 0.17191004 | 3.2033315 | 20 | — | — |
| 171956 2001 TO ₁₀ | 15.8 | X | 73.06457 | 245.54400 | 152.99429 | 2.14388 | 0.1916741 | 0.17115768 | 3.2127119 | 20 | 1 6.8 | 19.7 |
| 171957 2001 TR ₁₁ | 15.5 | X | 112.60078 | 37.71374 | 14.52805 | 1.66665 | 0.1156896 | 0.17936176 | 3.1139823 | 20 | 3 2.4 | 19.8 |
| 171958 2001 TJ ₃₁ | 15.2 | X | 116.97868 | 182.17700 | 274.29704 | 8.98298 | 0.0933497 | 0.18220621 | 3.0814888 | 20 | 4 23.8 | 19.8 |
| 171959 2001 TG ₆₁ | 15.3 | X | 136.34013 | 327.30139 | 52.12574 | 5.80582 | 0.1900779 | 0.17856570 | 3.1232304 | 20 | 2 27.5 | 20.3 |
| 171960 2001 TO ₆₄ | 15.7 | X | 126.07995 | 20.64648 | 41.91239 | 2.18437 | 0.1787933 | 0.18042005 | 3.1017932 | 20 | 4 5.1 | 20.5 |
| 171961 2001 TR ₈₁ | 15.4 | X | 95.78458 | 146.09543 | 293.11795 | 4.61812 | 0.1337839 | 0.18089263 | 3.0963886 | 20 | 3 14.9 | 19.8 |
| 171962 2001 TP ₈₂ | 15.3 | X | 79.30324 | 210.89751 | 233.82750 | 7.26834 | 0.0625399 | 0.17998941 | 3.1067388 | 20 | 2 19.0 | 19.7 |
| 171963 2001 TR ₈₄ | 14.9 | X | 294.72742 | 224.76043 | 27.45538 | 10.46808 | 0.0184166 | 0.18291524 | 3.0735206 | 20 | 3 14.2 | 19.2 |
| 171964 2001 TV ₈₇ | 14.9 | X | 104.77033 | 176.74374 | 236.71785 | 8.90996 | 0.0702287 | 0.17859200 | 3.1229238 | 20 | 2 13.5 | 19.4 |
| 171965 2001 TZ ₈₉ | 15.0 | X | 226.32055 | 44.80348 | 269.30938 | 4.85592 | 0.1132351 | 0.18421608 | 3.0590344 | 20 | 2 24.8 | 19.8 |
| 171966 2001 TH ₉₃ | 15.0 | X | 152.20113 | 171.75447 | 245.37162 | 8.17668 | 0.1320394 | 0.18500487 | 3.0503332 | 20 | 4 17.3 | 19.9 |
| 171967 2001 TY ₁₀₀ | 15.1 | X | 143.50115 | 338.95059 | 56.13748 | 11.61613 | 0.1067429 | 0.17926385 | 3.1151160 | 20 | 3 19.5 | 20.0 |
| 171968 2001 TF ₁₀₈ | 15.1 | X | 116.45760 | 110.05665 | 307.70972 | 5.02766 | 0.0389118 | 0.18205755 | 3.0831660 | 20 | 3 1.2 | 19.6 |
| 171969 2001 TH ₁₀₉ | 14.8 | X | 209.13754 | 72.70364 | 241.02359 | 10.62576 | 0.0521742 | 0.17908281 | 3.1172152 | 20 | 2 7.7 | 19.7 |
| 171970 2001 TJ ₁₁₈ | 14.5 | X | 40.07012 | 207.87108 | 252.74551 | 20.54403 | 0.1822707 | 0.17349962 | 3.1837358 | 20 | 1 21.3 | 18.5 |
| 171971 2001 TN ₁₂₁ | 15.0 | X | 191.92696 | 118.61957 | 293.23213 | 10.03947 | 0.1807706 | 0.18907643 | 3.0063841 | 20 | 5 19.0 | 19.9 |
| 171972 2001 TU ₁₂₁ | 14.6 | X | 224.97238 | 33.58484 | 241.98605 | 21.86176 | 0.0983062 | 0.17801332 | 3.1296881 | 20 | 1 8.4 | 19.8 |
| 171973 2001 TO ₁₂₂ | 14.6 | X | 107.56104 | 166.05308 | 239.18602 | 26.70010 | 0.1650813 | 0.17499189 | 3.1656102 | 20 | 2 12.4 | 19.8 |
| 171974 2001 TM ₁₂₄ | 15.0 | X | 131.00336 | 187.72049 | 254.30374 | 8.49416 | 0.0514055 | 0.18682624 | 3.0304757 | 20 | 4 17.5 | 19.5 |
| 171975 2001 TY ₁₂₇ | 14.9 | X | 296.82106 | 226.66124 | 37.85533 | 12.05455 | 0.1028233 | 0.18774081 | 3.0206258 | 20 | 3 20.8 | 19.2 |
| 171976 2001 TP ₁₂₈ | 15.2 | X | 139.62622 | 107.76066 | 252.06178 | 10.65695 | 0.1558018 | 0.17843632 | 3.1247400 | 20 | 1 29.7 | 20.2 |
| 171977 2001 TO ₁₃₄ | 15.5 | X | 111.35079 | 142.04993 | 279.58215 | 10.34097 | 0.2964043 | 0.18025720 | 3.1036612 | 20 | 3 27.4 | 20.7 |
| 171978 2001 TR ₁₃₅ | 15.2 | X | 79.85804 | 188.95968 | 259.53290 | 9.33652 | 0.2077684 | 0.17769323 | 3.1334454 | 20 | 3 14.7 | 19.6 |
| 171979 2001 TW ₁₃₅ | 14.9 | X | 162.42884 | 107.76513 | 248.78717 | 9.69390 | 0.1533292 | 0.18074022 | 3.0981291 | 20 | 2 14.8 | 20.0 |
| 171980 2001 TO ₁₄₅ | 15.0 | X | 175.23249 | 341.18557 | 43.01751 | 16.59281 | 0.2078054 | 0.18533098 | 3.0467539 | 20 | 4 8.4 | 20.3 |
| 171981 2001 TB ₁₅₀ | 15.2 | X | 57.19438 | 40.24570 | 63.43673 | 9.16126 | 0.1628214 | 0.17566540 | 3.1575136 | 20 | 3 4.2 | 19.2 |
| 171982 2001 TP ₁₅₂ | 15.3 | X | 134.37084 | 294.79797 | 59.57990 | 10.72083 | 0.2341921 | 0.17616020 | 3.1515983 | 20 | 2 1.6 | 20.5 |
| 171983 2001 TX ₁₆₁ | 16.1 | X | 155.85402 | 77.53982 | 305.32819 | 1.68575 | 0.1050130 | 0.18302288 | 3.0723154 | 20 | 3 10.5 | 20.9 |
| 171984 2001 TR ₁₇₅ | 15.8 | X | 84.20792 | 85.30425 | 327.32437 | 4.50259 | 0.1795292 | 0.17564100 | 3.1578061 | 20 | 2 6.8 | 20.0 |
| 171985 2001 TB ₁₈₄ | 15.2 | X | 254.41550 | 90.04558 | 211.74845 | 10.56182 | 0.0704037 | 0.18652820 | 3.0337030 | 20 | 3 12.9 | 19.7 |
| 171986 2001 TX ₁₈₈ | 14.9 | X | 125.69707 | 15.79040 | 7.79064 | 5.26642 | 0.1857933 | 0.17585843 | 3.1552027 | 20 | 2 21.0 | 19.7 |
| 171987 2001 TZ ₂₀₀ | 15.2 | X | 53.79079 | 10.89525 | 77.12147 | 9.99094 | 0.1717020 | 0.17467864 | 3.1693936 | 20 | 2 7.0 | 19.1 |
| 171988 2001 TB ₂₀₂ | 14.9 | X | 209.72250 | 300.74847 | 73.11329 | 13.01120 | 0.1016837 | 0.18935556 | 3.0034288 | 20 | 4 26.7 | 19.6 |
| 171989 2001 TS ₂₀₃ | 14.8 | X | 117.36912 | 273.63245 | 73.52121 | 10.70184 | 0.2264468 | 0.17447594 | 3.1718479 | 20 | 1 5.1 | 19.6 |
| 171990 2001 TY ₂₀₈ | 15.3 | X | 136.10035 | 283.63978 | 98.59688 | 4.21067 | 0.0430912 | 0.17924425 | 3.1153431 | 20 | 2 13.9 | 19.7 |
| 171991 2001 TP ₂₁₀ | 14.8 | X | 291.98657 | 342.01050 | 306.61887 | 9.58171 | 0.0728014 | 0.19195929 | 2.9762081 | 20 | 4 7.7 | 19.1 |
| 171992 2001 TK ₂₁₄ | 15.2 | X | 153.48712 | 29.75033 | 294.48394 | 9.47728 | 0.2198470 | 0.17531965 | 3.1616636 | 20 | 1 10.8 | 20.5 |
| 171993 2001 TS ₂₁₄ | 15.1 | X | 112.05885 | 134.44824 | 264.18284 | | | | | | | |