

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
11107	1.0	16.7	472921	1.1	19.8	447321	1.2	20.7	490754	1.2	21.1	264899	1.3	20.9	39395	1.4	18.4
438774	1.0	20.3	248138	1.1	20.2	357140	1.2	20.2	329703	1.2	21.7	482399	1.3	21.7	523716	1.4	21.9
396969	1.0	20.1	144915	1.1	17.9	73092	1.2	18.6	221010	1.2	18.9	443436	1.3	20.9	214112	1.4	17.7
57846	1.0	18.6	17999	1.1	17.5	446708	1.2	20.2	254323	1.2	20.3	470643	1.3	21.1	317534	1.4	19.9
367900	1.0	20.5	11647	1.1	17.6	448975	1.2	21.0	52688	1.2	17.7	449371	1.3	20.0	490722	1.4	20.1
359492	1.0	19.9	236650	1.1	20.3	428338	1.2	20.4	192015	1.2	19.4	239649	1.3	19.7	280585	1.4	19.9
165117	1.0	17.5	216704	1.1	19.0	442100	1.2	21.2	437179	1.2	20.2	476761	1.3	20.9	474307	1.4	21.5
368365	1.0	19.7	280551	1.1	19.5	297540	1.2	19.8	354768	1.2	19.5	180895	1.3	19.2	186546	1.4	19.1
142064	1.0	19.4	479739	1.1	20.8	384481	1.2	19.6	474555	1.2	21.2	338849	1.3	19.7	280091	1.4	19.8
234301	1.0	20.3	249371	1.1	18.8	445420	1.2	20.5	38303	1.3	17.8	440986	1.3	20.3	153247	1.4	20.1
234104	1.0	19.8	185583	1.1	19.8	478937	1.2	20.9	482405	1.3	20.6	373224	1.3	20.9	48998	1.4	16.4
438828	1.0	20.5	163892	1.1	19.2	294866	1.2	20.1	9660	1.3	17.2	325042	1.3	20.6	24045	1.4	18.6
40482	1.0	19.0	479901	1.1	20.9	477947	1.2	20.5	445218	1.3	20.4	307423	1.3	19.2	65867	1.4	17.9
64881	1.0	20.5	105622	1.1	18.1	447351	1.2	20.6	288987	1.3	20.2	509926	1.3	18.6	98759	1.4	18.9
378307	1.0	21.3	357849	1.1	20.2	248035	1.2	19.8	136979	1.3	19.3	389726	1.3	19.8	449952	1.4	19.7
74683	1.0	18.0	174742	1.1	20.2	417876	1.2	18.6	7014	1.3	15.0	366474	1.3	18.6	127000	1.4	18.4
515070	1.0	20.2	482739	1.1	20.0	391241	1.2	20.4	481149	1.3	20.6	74974	1.3	19.5	256950	1.4	20.2
481750	1.0	20.3	424552	1.1	20.4	389532	1.2	19.8	342569	1.3	20.0	394230	1.3	21.0	254214	1.4	19.8
268303	1.0	20.1	183960	1.1	19.4	311454	1.2	21.1	520339	1.3	20.8	161956	1.3	18.0	382535	1.4	19.8
472753	1.0	20.3	310184	1.1	19.1	371428	1.2	20.9	439429	1.3	20.1	69569	1.3	18.5	450117	1.4	19.4
273980	1.0	20.5	90913	1.1	17.8	126117	1.2	19.3	77423	1.3	18.4	382979	1.3	21.6	271669	1.4	19.1
398090	1.0	18.7	437546	1.1	19.3	330672	1.2	19.9	511338	1.3	20.5	120933	1.3	17.4	255493	1.4	20.4
160948	1.0	19.4	372397	1.1	20.6	439798	1.2	20.5	308973	1.3	20.6	238804	1.3	19.0	519780	1.4	20.9
478708	1.0	19.8	238248	1.1	19.6	507654	1.2	19.9	107440	1.3	19.1	155171	1.3	20.7	253350	1.4	19.6
168767	1.0	19.6	152584	1.1	20.2	133065	1.2	18.3	155416	1.3	20.8	359489	1.3	20.0	374030	1.4	21.2
276366	1.0	19.6	318600	1.1	19.3	434720	1.2	21.4	220254	1.3	20.1	523016	1.3	21.3	389447	1.4	21.3
337117	1.0	20.7	88874	1.1	19.0	449796	1.2	20.7	148411	1.3	19.7	447380	1.3	21.2	295570	1.4	20.2
147681	1.0	18.6	167940	1.1	19.9	62368	1.2	19.2	200070	1.3	21.3	288785	1.3	20.3	474130	1.4	21.4
283829	1.0	20.8	195635	1.1	19.1	234005	1.2	21.0	2057	1.3	16.3	250032	1.3	20.0	24666	1.4	17.3
512834	1.0	20.7	510747	1.1	20.7	512219	1.2	20.0	275718	1.3	20.2	415291	1.3	18.8	388691	1.4	20.0
465024	1.0	20.7	433029	1.1	19.5	240163	1.2	19.5	249379	1.3	20.1	94397	1.3	18.8	91067	1.4	19.0
93128	1.0	19.5	469257	1.1	20.2	84294	1.2	19.4	298238	1.3	19.7	37781	1.3	18.3	11915	1.4	16.8
288832	1.0	19.2	32443	1.1	17.3	51699	1.2	17.6	445255	1.3	20.7	392122	1.3	20.3	294199	1.4	19.8
219909	1.0	19.5	136669	1.1	19.8	478660	1.2	20.4	264340	1.3	19.9	481140	1.3	21.3	253589	1.4	18.2
98958	1.0	18.2	19789	1.1	16.4	462615	1.2	19.8	447099	1.3	19.8	413147	1.3	20.0	216380	1.4	19.2
264330	1.0	20.2	397703	1.1	20.9	44691	1.2	16.8	116463	1.3	20.5	481205	1.4	20.8	402348	1.4	20.5
44424	1.0	18.1	252685	1.1	19.0	210466	1.2	20.5	98328	1.3	19.1	333463	1.4	18.4	508973	1.4	21.3
523572	1.0	21.0	291445	1.1	19.3	379329	1.2	21.5	278119	1.3	20.2	193509	1.4	19.6	523198	1.4	20.7
93707	1.0	18.5	374823	1.1	19.5	472532	1.2	19.6	16396	1.3	17.4	248608	1.4	20.2	58288	1.4	16.7
77619	1.0	18.5	77408	1.1	17.9	18335	1.2	17.2	431415	1.3	20.9	254391	1.4	19.9	342687	1.4	19.1
6039	1.0	16.7	105647	1.1	19.5	511070	1.2	20.8	308658	1.3	21.2	302829	1.4	20.5	327787	1.4	19.9
12688	1.0	16.2	76389	1.1	19.1	25926	1.2	17.4	208510	1.3	19.3	470387	1.4	20.4	400397	1.4	21.5
251684	1.0	20.4	314577	1.1	20.7	332502	1.2	20.0	87740	1.3	18.2	60846	1.4	16.8	209515	1.4	19.0
28063	1.0	18.0	75599	1.1	17.1	67071	1.2	17.8	260388	1.3	20.2	134676	1.4	18.4	396086	1.4	20.5
135628	1.0	19.8	62479	1.1	18.2	248512	1.2	19.1	472878	1.3	20.0	386770	1.4	21.4	195233	1.4	20.6
206646	1.0	20.1	276826	1.1	18.3	319207	1.2	19.5	431732	1.3	21.6	85743	1.4	19.0	518055	1.4	20.7
436547	1.1	21.5	261587	1.1	20.5	314028	1.2	20.8	98994	1.3	19.0	164011	1.4	19.3	399828	1.4	21.0
449376	1.1	20.5	510846	1.1	20.3	152855	1.2	19.3	131182	1.3	18.9	21348	1.4	18.0	462577	1.4	21.2
424016	1.1	19.8	479887	1.1	21.4	242498	1.2	19.9	121764	1.3	20.6	505403	1.4	19.8	364126	1.4	20.2
95609	1.1	18.8	397674	1.1	20.7	87329	1.2	18.3	266758	1.3	19.0	289356	1.4	19.7	106136	1.4	18.8
30062	1.1	16.7	346494	1.1	20.3	478769	1.2	21.3	386383	1.3	19.9	446263	1.4	19.5	307132	1.4	20.7
311347	1.1	20.2	1221	1.1	19.4	248567	1.2	21.6	142239	1.3	18.0	172225	1.4	19.5	387335	1.4	19.8
514502	1.1	20.9	355524	1.1	20.1	480499	1.2	20.4	440999	1.3	20.4	259795	1.4	19.4	18715	1.4	17.0
217718	1.1	18.5	441955	1.1	19.7	445454	1.2	21.1	6990	1.3	17.8	475972	1.4	20.8	52026	1.4	17.8
344017	1.1	20.6	513305	1.1	20.5	339484	1.2	21.3	75904	1.3	18.3	301200	1.4	20.5	211775	1.4	19.7
446806	1.1	20.8	93529	1.1	18.9	37529	1.2	19.7	254122	1.3	19.4	106797	1.4	19.3	56934	1.4	18.2
340216	1.1	19.3	52109	1.1	18.9	121422	1.2	19.8	361562	1.3	18.4	425126	1.4	19.6	81076	1.4	19.0
221043	1.1	19.6	342614	1.1	20.2	173089	1.2	18.2	269759	1.3	17.9	43638	1.4	18.7	261745	1.5	19.2
387647	1.1	19.3	308640	1.1	20.4	193307	1.2	19.4	26511	1.3	16.6	257377	1.4	19.5	286978	1.5	19.5
119725	1.1	18.4	9956	1.2	17.4	4435	1.2	17.2	289702	1.3	19.9	276028	1.4	20.5	470818	1.5	20.7
239062	1.1	20.4	55758	1.2	18.0	231599	1.2	18.9	183734	1.3	20.0	198516	1.4	19.7	168167	1.5	19.0
207970	1.1	22.9	376173	1.2	20.1	512585	1.2	20.4	166185	1.3	18.9	23600	1.4	19.3	434225	1.5	19.4
401160	1.1	20.2	40139	1.2	17.7	96704	1.2	18.9	192955	1.3	18.7	164197	1.4	19.8	94193	1.5	19.9
260260	1.1	19.5	17466	1.2	17.4	450030	1.2	20.0	18122	1.3	17.0	380798	1.4	20.9	117963	1.5	17.8
35702	1.1	17.3	59952	1.2	17.9	195368	1.2	18.8	87230	1.3	18.0	377172	1.4	19.6	153411	1.5	17.0
69256	1.1	18.0	89839	1.2	18.8	447900	1.2	20.5	397026	1.3	20.2	103874	1.4	19.0	176760	1.5	17.7
418134	1.1	21.3	398965	1.2	21.1	90762	1.2	18.6	514272	1.3	19.8	279837	1.4	20.1	260288	1.5	20.2
207846	1.1	20.6	359338	1.2	19.4	175523	1.2	19.0	420778	1.3	18.9	513501	1.4	19.1	126558	1.5	18.4
322579	1.1	19.9	122906	1.2	18.3	448514	1.2	21.3	209164	1.3	19.8	511186	1.4	20.2	267746	1.5	18.3
112874	1.1	18.8	476092	1.2	20.1	478946	1.2	20.2	443024	1.3	20.9	323690	1.4	21.5	129652	1.5	19.1
297556	1.1	19.0	479289	1.2	21.5	404880	1.2	19.6	106099	1.3	19.8	383086	1.4	20.4	468059</		

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
344158	1.5	19.7	441974	1.6	20.5	130708	1.6	18.5	393926	1.7	20.3	258665	1.8	20.1	118884	1.9	19.7
202607	1.5	19.6	481267	1.6	21.0	342710	1.6	20.1	426001	1.7	20.0	344681	1.8	20.5	222428	1.9	18.6
239340	1.5	19.8	494222	1.6	20.7	342142	1.6	20.3	344452	1.7	19.6	523560	1.8	21.2	354722	1.9	20.4
155824	1.5	21.0	108078	1.6	17.6	366241	1.6	20.6	20724	1.7	18.5	361955	1.8	20.1	227662	1.9	20.7
442597	1.5	20.4	236504	1.6	19.7	516192	1.6	21.7	157948	1.7	19.2	432585	1.8	20.4	145100	1.9	19.5
439688	1.5	20.9	87237	1.6	16.4	394489	1.6	20.8	316971	1.7	20.1	4645	1.8	17.0	382531	1.9	19.6
347019	1.5	21.1	211062	1.6	18.9	253587	1.6	19.3	394645	1.7	21.0	311561	1.8	20.4	195283	1.9	18.1
254157	1.5	19.5	446251	1.6	20.2	438332	1.6	20.4	240688	1.7	19.5	212618	1.8	20.2	27391	1.9	16.6
497448	1.5	20.9	289297	1.6	19.9	429660	1.6	20.3	344714	1.7	19.7	328890	1.8	20.3	225324	1.9	20.2
494676	1.5	20.4	102301	1.6	17.5	504486	1.6	20.9	435191	1.7	19.3	136959	1.8	18.3	368432	1.9	19.7
163987	1.5	19.0	330607	1.6	21.2	346447	1.6	20.5	149156	1.7	18.9	70789	1.8	18.6	235861	1.9	20.0
425653	1.5	21.8	137159	1.6	19.5	163814	1.6	17.5	231207	1.7	19.0	501364	1.8	20.0	440338	1.9	20.1
44512	1.5	16.2	389943	1.6	21.0	320623	1.6	20.2	42045	1.7	17.8	416623	1.8	19.8	399137	1.9	20.2
140031	1.5	19.2	472776	1.6	19.6	358460	1.7	21.3	140064	1.7	18.9	275350	1.8	20.5	290878	1.9	21.2
352103	1.5	20.5	26925	1.6	19.1	375141	1.7	19.6	361914	1.7	20.4	103295	1.8	19.6	186689	1.9	21.7
221758	1.5	19.3	31679	1.6	17.6	71296	1.7	18.8	218382	1.7	19.1	2306	1.8	15.6	239856	1.9	20.1
187636	1.5	20.1	185802	1.6	19.3	314652	1.7	18.7	345419	1.7	20.4	58256	1.8	17.9	344711	1.9	19.9
471314	1.5	20.7	386277	1.6	20.2	312965	1.7	21.2	391592	1.7	20.1	480214	1.8	19.5	438310	1.9	20.4
367067	1.5	18.7	504910	1.6	21.9	123345	1.7	19.8	508150	1.7	21.1	513692	1.8	20.2	251739	1.9	20.0
440575	1.5	20.5	20411	1.6	18.0	302289	1.7	20.4	211704	1.7	20.0	54789	1.8	17.4	442000	1.9	19.7
142340	1.5	19.3	380426	1.6	20.5	318331	1.7	19.7	250960	1.7	19.2	125756	1.8	18.9	9039	1.9	16.9
249360	1.5	20.0	183081	1.6	19.2	21274	1.7	19.1	44771	1.7	18.2	454890	1.8	20.7	208225	1.9	18.6
349327	1.5	20.7	483176	1.6	21.2	301827	1.7	19.5	92089	1.7	18.7	187140	1.8	18.9	357163	1.9	21.0
2645	1.5	15.4	280931	1.6	20.4	185819	1.7	20.1	507234	1.7	20.9	14231	1.8	18.0	476267	1.9	20.8
96854	1.5	19.4	254277	1.6	20.4	137494	1.7	19.3	74829	1.7	19.4	125535	1.8	18.7	54103	1.9	18.9
93151	1.5	18.1	328193	1.6	20.7	137622	1.7	18.8	362383	1.7	20.3	295390	1.8	20.5	100721	1.9	19.1
254296	1.5	20.0	33586	1.6	17.8	166608	1.7	19.3	514267	1.7	21.0	433461	1.8	20.6	156187	1.9	19.7
77116	1.5	20.0	198650	1.6	19.8	305389	1.7	19.8	32414	1.7	17.7	154201	1.8	20.0	426067	1.9	19.8
490023	1.5	21.3	35794	1.6	18.7	111907	1.7	18.6	384778	1.8	20.7	295787	1.8	20.0	438924	1.9	20.5
206634	1.5	20.0	124769	1.6	18.5	42122	1.7	16.4	447182	1.8	20.4	140661	1.8	19.4	397746	1.9	20.1
11176	1.5	18.2	477761	1.6	21.3	235196	1.7	18.6	288322	1.8	19.3	333475	1.8	18.2	142194	1.9	18.5
424094	1.5	20.8	231602	1.6	19.5	185071	1.7	20.0	466632	1.8	20.7	397720	1.8	21.5	343703	1.9	19.7
33756	1.5	17.7	516827	1.6	21.8	42338	1.7	18.5	203037	1.8	19.3	316215	1.8	20.4	320338	1.9	21.0
194950	1.5	19.7	454836	1.6	19.8	183544	1.7	19.2	481804	1.8	19.7	84790	1.8	19.0	452541	1.9	20.6
267748	1.5	19.3	22289	1.6	16.4	515103	1.7	20.8	382201	1.8	19.3	339424	1.8	21.0	137419	1.9	17.9
330396	1.5	19.6	171180	1.6	20.4	367480	1.7	19.7	208489	1.8	19.0	389159	1.8	20.4	523074	1.9	20.6
261358	1.5	20.5	62641	1.6	18.1	333456	1.7	19.0	516965	1.8	21.7	420440	1.8	20.5	188742	1.9	19.1
168677	1.5	19.8	508441	1.6	20.4	211788	1.7	19.5	86861	1.8	19.5	237151	1.8	21.1	97453	1.9	19.2
358407	1.5	20.2	87301	1.6	17.9	199659	1.7	20.3	58124	1.8	19.0	479932	1.8	20.2	149955	1.9	19.0
243103	1.5	19.8	171775	1.6	20.3	512366	1.7	20.6	138311	1.8	19.3	445261	1.8	18.8	379941	1.9	19.5
360430	1.5	19.7	66128	1.6	18.2	214206	1.7	18.3	91493	1.8	18.0	282243	1.8	21.1	424553	1.9	21.5
379210	1.5	19.4	440970	1.6	20.5	52051	1.7	18.3	2692	1.8	16.1	121657	1.8	19.5	419803	1.9	20.6
255670	1.5	19.8	24101	1.6	17.1	215981	1.7	19.4	516507	1.8	20.6	352905	1.8	19.3	116516	1.9	18.7
237994	1.5	19.4	148137	1.6	18.9	193308	1.7	19.3	58332	1.8	18.9	346989	1.8	20.6	394209	1.9	21.1
315031	1.5	20.6	66600	1.6	17.4	476078	1.7	20.6	295206	1.8	20.8	436588	1.8	20.5	137080	1.9	18.2
394604	1.5	20.7	226004	1.6	20.0	355488	1.7	20.5	443788	1.8	20.2	239056	1.8	20.3	392465	1.9	19.5
485148	1.5	20.8	86090	1.6	18.9	511369	1.7	22.0	106796	1.8	19.4	66180	1.8	19.1	441946	1.9	19.6
504913	1.5	20.9	465636	1.6	20.4	371532	1.7	20.3	146805	1.8	19.2	134552	1.8	19.1	381968	1.9	21.3
397921	1.5	21.2	81352	1.6	19.0	66062	1.7	18.7	143054	1.8	19.6	442560	1.9	20.8	307361	1.9	20.1
296012	1.5	20.1	510763	1.6	21.0	428203	1.7	22.0	250003	1.8	19.9	467393	1.9	21.2	416888	1.9	19.8
448572	1.5	21.7	517936	1.6	20.2	412952	1.7	20.1	357947	1.8	20.2	370685	1.9	20.8	511126	1.9	20.1
60227	1.5	18.2	307312	1.6	19.6	508012	1.7	19.7	129132	1.8	20.2	521476	1.9	20.2	114593	1.9	19.7
134926	1.5	19.2	141446	1.6	19.1	432630	1.7	20.2	279019	1.8	18.5	254236	1.9	19.7	236940	1.9	19.5
94059	1.5	18.8	54781	1.6	17.7	465231	1.7	19.5	235730	1.8	19.8	20953	1.9	19.0	8252	1.9	17.9
255379	1.5	19.9	423227	1.6	20.0	251886	1.7	20.0	431110	1.8	20.9	2499	1.9	16.2	380208	1.9	20.8
341131	1.5	19.5	186499	1.6	20.5	210617	1.7	20.7	397417	1.8	20.1	237343	1.9	19.4	477859	1.9	21.2
316100	1.5	18.5	169479	1.6	19.7	235814	1.7	20.4	130873	1.8	17.8	429728	1.9	19.8	398959	1.9	20.1
352347	1.5	20.6	505436	1.6	20.8	495081	1.7	19.8	106546	1.8	18.5	281630	1.9	19.3	519919	1.9	20.5
467312	1.5	21.2	47220	1.6	19.2	479479	1.7	19.7	15607	1.8	16.0	106034	1.9	18.6	307572	1.9	20.5
26086	1.5	17.4	521634	1.6	20.5	256289	1.7	20.2	41563	1.8	18.6	324178	1.9	20.6	24802	1.9	17.3
98062	1.5	17.7	488388	1.6	19.6	260592	1.7	20.1	333459	1.8	19.1	148394	1.9	20.1	433945	1.9	20.9
296951	1.5	20.4	361946	1.6	20.4	97085	1.7	19.3	472729	1.8	20.4	523230	1.9	20.0	285883	1.9	18.7
420373	1.5	20.3	273533	1.6	20.1	246094	1.7	19.0	513043	1.8	21.3	177350	1.9	19.5	806	1.9	15.2
438462	1.5	19.8	424029	1.6	20.6	494600	1.7	22.0	444387	1.8	20.1	339527	1.9	20.7	493538	1.9	21.8
309758	1.5	20.2	149147	1.6	20.0	304375	1.7	20.4	95794	1.8	18.5	357848	1.9	19.9	291134	1.9	20.4
478844	1.5	21.1	361481	1.6	21.0	49424	1.7	18.7	243332	1.8	20.4	444174	1.9	20.7	390711	1.9	19.7
266170	1.5	18.6	15736	1.6	17.5	71649	1.7	19.5	157242	1.8	18.7	214110	1.9	19.9	31896	1.9	17.8
25190	1.5	17.9	443583	1.6	20.3	472796	1.7	21.1	105580	1.8	19.4	435738	1.9	20.3	219628	1.9	19.3
246856	1.5	18.9	494372	1.6	21.0	275173	1.7	20.4	349411	1.8	19.9	282417	1.9	19.6	340271	1.9	19.1
481080	1.5	21.0	72834	1.6	19.3	145795	1.7	17.4	422723	1.8	19.5	48230	1.9	18.5	392082	1.9	20.9
479348	1.5	20.8	193477	1.6	19.3	286981	1.7	19.8	41042	1.8	18.3	140632	1.9	19.			

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
247413	1.9	20.9	449950	2.0	20.0	168760	2.1	18.4	441353	2.2	20.1	60066	2.3	17.8	259853	2.4	21.4
253584	1.9	19.1	478248	2.0	21.5	320620	2.1	20.3	269404	2.2	20.8	518186	2.3	20.4	37226	2.4	18.4
439382	1.9	20.7	259	2.0	11.7	87414	2.1	17.7	506555	2.2	19.6	41517	2.3	18.2	263770	2.4	20.7
511141	1.9	20.9	93817	2.0	18.9	8444	2.1	14.7	323236	2.2	19.2	312864	2.3	20.4	46481	2.4	18.3
175668	1.9	19.7	91885	2.0	19.4	366689	2.1	19.7	246991	2.2	21.0	373148	2.3	20.3	479975	2.4	19.0
217021	1.9	18.1	306843	2.0	18.8	123610	2.1	19.7	273646	2.2	21.1	144951	2.3	18.6	499660	2.4	21.6
324226	1.9	21.2	165600	2.0	18.6	260136	2.1	19.5	112782	2.2	19.6	107799	2.3	18.6	500095	2.4	21.1
445415	1.9	20.2	339483	2.0	21.2	243898	2.1	20.4	314671	2.2	20.5	132571	2.3	19.6	100473	2.4	20.0
76482	1.9	18.5	431318	2.1	21.6	93744	2.1	18.7	178844	2.2	19.9	360940	2.3	21.8	448105	2.4	20.8
507204	1.9	19.9	7533	2.1	17.3	387887	2.1	21.4	420309	2.2	20.9	374733	2.3	21.4	186929	2.4	18.9
103564	1.9	18.6	266242	2.1	20.5	361017	2.1	20.9	271074	2.2	19.1	203166	2.3	18.2	79188	2.4	17.5
133720	1.9	18.3	342611	2.1	18.2	198815	2.1	19.5	246023	2.2	18.8	263614	2.3	18.5	506596	2.4	21.7
5431	1.9	15.2	457747	2.1	19.5	192401	2.1	17.8	250345	2.2	19.5	368549	2.3	20.8	234305	2.4	21.5
446415	1.9	21.3	225913	2.1	20.0	86725	2.1	19.1	298635	2.2	20.0	266542	2.3	19.0	473244	2.4	20.3
357767	1.9	20.6	474936	2.1	21.0	332850	2.1	20.4	68219	2.2	17.7	89815	2.3	18.7	236949	2.4	19.2
25678	1.9	17.9	150908	2.1	19.6	32052	2.1	17.7	238599	2.2	20.9	263104	2.3	20.6	164472	2.4	18.2
15145	1.9	17.1	476597	2.1	20.2	230355	2.1	21.4	487181	2.2	20.8	210518	2.3	19.4	320780	2.4	20.2
426491	1.9	19.6	310524	2.1	20.0	521544	2.1	20.0	359494	2.2	18.8	68834	2.3	18.2	147939	2.4	18.7
150607	1.9	19.8	198424	2.1	20.3	477939	2.1	19.7	244251	2.2	19.7	197288	2.3	19.2	152167	2.4	19.4
37766	1.9	18.4	48161	2.1	17.7	497093	2.1	22.2	362778	2.2	21.0	321794	2.3	20.3	244898	2.4	19.6
414436	1.9	20.9	385003	2.1	20.0	352197	2.1	18.2	376329	2.2	20.1	336895	2.3	20.0	432634	2.4	21.9
87319	1.9	17.6	6560	2.1	15.4	80529	2.1	18.6	471601	2.2	20.3	186382	2.3	19.4	208917	2.4	20.5
33449	1.9	17.4	394190	2.1	20.3	154412	2.1	20.5	507655	2.2	20.1	280053	2.3	21.5	491655	2.4	20.5
85098	1.9	18.6	220119	2.1	18.7	172873	2.1	19.9	107880	2.2	18.1	319870	2.3	19.9	113952	2.4	19.3
200105	1.9	20.9	477001	2.1	19.2	204543	2.1	20.0	430455	2.2	20.1	161849	2.3	21.3	182903	2.4	20.2
150612	1.9	19.3	444069	2.1	21.0	23245	2.1	18.5	129330	2.2	19.8	193899	2.3	19.5	226366	2.4	19.2
336887	1.9	19.9	130563	2.1	19.0	261048	2.1	21.5	512113	2.2	19.8	17677	2.3	18.4	470715	2.4	20.2
95535	1.9	19.3	310087	2.1	19.2	386946	2.1	19.7	376729	2.2	23.1	74995	2.3	17.8	202511	2.4	18.0
70054	1.9	17.3	517580	2.1	21.6	181822	2.1	18.1	356142	2.2	19.9	309069	2.3	20.7	360583	2.4	20.8
215712	1.9	20.8	169940	2.1	19.4	130094	2.1	19.1	469702	2.2	21.3	180359	2.3	20.7	285369	2.4	20.8
192980	1.9	21.1	455291	2.1	20.8	378661	2.1	19.3	137699	2.2	19.2	477008	2.3	20.4	491755	2.4	21.6
30128	1.9	19.1	297109	2.1	20.5	171722	2.1	19.3	358921	2.2	19.9	9605	2.3	18.0	379238	2.4	20.5
225972	1.9	20.6	76183	2.1	17.8	15456	2.1	18.7	85328	2.2	17.8	153178	2.3	18.9	156708	2.4	19.5
262631	1.9	19.5	444417	2.1	20.1	198362	2.1	19.6	116932	2.2	18.8	193577	2.3	20.6	151881	2.4	18.9
76197	1.9	18.3	45157	2.1	17.9	277648	2.1	19.2	42784	2.2	17.4	477519	2.3	19.9	218291	2.4	19.5
509193	1.9	17.4	169734	2.1	19.4	203285	2.1	19.3	440684	2.2	20.5	283809	2.3	19.9	483371	2.4	20.0
93086	1.9	19.4	507019	2.1	21.8	20363	2.1	17.0	406796	2.2	21.1	256313	2.3	19.8	314551	2.4	19.5
21038	1.9	17.7	247458	2.1	20.7	287051	2.1	20.3	69922	2.2	18.0	145579	2.3	19.5	80596	2.4	17.8
214559	2.0	18.9	267057	2.1	20.9	392739	2.1	21.7	233760	2.2	21.1	72295	2.3	18.3	345499	2.4	21.0
48724	2.0	18.7	28154	2.1	18.3	264891	2.2	20.0	106481	2.2	18.6	78223	2.3	19.1	333882	2.4	20.7
306853	2.0	19.9	320499	2.1	19.7	208153	2.2	21.1	332723	2.2	19.4	14434	2.3	16.5	217806	2.4	19.0
92993	2.0	18.0	254588	2.1	20.0	510506	2.2	21.2	464143	2.2	20.2	226729	2.3	19.4	348129	2.4	21.1
310703	2.0	20.6	491278	2.1	20.3	41925	2.2	17.9	438287	2.2	20.1	374912	2.3	21.2	260681	2.4	20.2
39575	2.0	17.9	265313	2.1	20.4	3869	2.2	14.8	256981	2.2	20.1	195022	2.3	18.0	264022	2.4	19.0
122913	2.0	19.7	260612	2.1	19.4	142377	2.2	19.5	217405	2.2	19.0	69099	2.3	17.8	89737	2.4	19.0
352504	2.0	20.2	425198	2.1	20.7	209278	2.2	20.4	449481	2.2	20.4	511772	2.3	20.7	142740	2.4	19.3
315895	2.0	20.2	137870	2.1	20.1	324953	2.2	20.3	356407	2.2	20.5	481705	2.3	21.2	286175	2.4	19.1
515964	2.0	20.5	361498	2.1	20.8	21793	2.2	17.7	480675	2.2	19.6	514223	2.3	20.3	513411	2.4	21.1
200122	2.0	18.2	74914	2.1	17.7	328126	2.2	21.4	339251	2.2	19.2	75760	2.3	19.1	43350	2.4	18.1
435184	2.0	19.7	158744	2.1	18.9	118055	2.2	19.3	334012	2.2	21.1	132482	2.3	18.0	519169	2.4	20.5
233284	2.0	20.8	390485	2.1	20.5	185821	2.2	19.6	218298	2.2	19.3	443074	2.3	20.0	264942	2.4	18.5
300618	2.0	20.5	445253	2.1	19.2	288431	2.2	21.0	259409	2.3	18.6	172322	2.3	19.2	179526	2.4	19.6
50956	2.0	19.5	87910	2.1	17.6	107184	2.2	17.9	407656	2.3	22.8	236882	2.3	19.9	184029	2.4	19.7
68605	2.0	17.6	45008	2.1	16.5	338746	2.2	20.2	71073	2.3	19.1	121586	2.3	20.2	512928	2.4	19.7
255105	2.0	19.9	168310	2.1	18.8	481995	2.2	20.3	40400	2.3	18.5	33692	2.3	17.8	111919	2.4	19.0
63041	2.0	19.7	442574	2.1	20.6	112173	2.2	19.7	396209	2.3	21.9	368109	2.3	20.1	382971	2.4	20.2
210240	2.0	19.6	255477	2.1	20.7	513458	2.2	21.1	475955	2.3	20.8	26295	2.3	17.5	443287	2.4	20.4
252862	2.0	20.5	514942	2.1	21.0	247082	2.2	19.6	444281	2.3	20.8	103548	2.3	19.4	429507	2.4	20.9
202932	2.0	20.3	352253	2.1	20.3	50429	2.2	18.5	18564	2.3	18.1	415785	2.3	20.0	301757	2.4	20.4
414394	2.0	20.3	109245	2.1	18.3	329524	2.2	19.6	406814	2.3	20.5	438730	2.3	20.5	260206	2.4	19.4
515345	2.0	20.9	152729	2.1	19.5	467207	2.2	19.5	435239	2.3	19.0	488327	2.3	20.9	149079	2.4	18.5
146925	2.0	18.7	382988	2.1	18.7	38242	2.2	17.8	269835	2.3	20.9	35034	2.3	18.5	4881	2.4	17.3
23356	2.0	18.8	508865	2.1	21.1	314075	2.2	20.9	416393	2.3	20.9	505763	2.3	19.5	161983	2.4	19.7
503443	2.0	20.3	481661	2.1	21.2	226179	2.2	19.2	286678	2.3	19.5	202748	2.4	19.6	476773	2.4	20.3
516332	2.0	20.4	146125	2.1	19.3	306890	2.2	18.9	364466	2.3	21.4	276016	2.4	19.8	304554	2.4	20.8
217733	2.0	19.0	205398	2.1	20.0	149201	2.2	18.5	277640	2.3	19.7	316885	2.4	20.7	335478	2.4	20.7
150655	2.0	19.6	285756	2.1	20.2	4098	2.2	17.9	31635	2.3	18.3	131243	2.4	18.5	217121	2.4	19.0
338568	2.0	19.8	259998	2.1	20.5	51563	2.2	17.9	49684	2.3	19.1	478276	2.4	21.7	117964	2.4	18.5
508166	2.0	21.3	119938	2.1	19.8	349184	2.2	20.1	439635	2.3	19.4	207858	2.4	19.5	1146	2.4	13.2
34167	2.0	17.9	287460	2.1	20.3	305525	2.2	20.4	185800	2.3	18.9	441413	2.4	21.5	135144	2.4	19.2
334058	2.0	19.2	255187	2.1	20.7	36787	2.2	18.8	374786	2.3	22.0	185676	2.4	21.3	304489		

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
274664	2.4	17.4	304549	2.5	20.5	510914	2.6	21.6	469981	2.7	21.5	375713	2.8	20.0	321405	2.9	18.6
103385	2.4	18.4	304419	2.5	20.0	206050	2.6	19.5	36138	2.7	18.0	321739	2.8	19.7	146981	2.9	18.6
519854	2.5	20.1	79114	2.5	19.2	244249	2.6	19.5	325061	2.7	19.9	180141	2.8	19.3	397320	2.9	21.1
496810	2.5	19.6	428856	2.5	19.2	391087	2.6	19.2	36543	2.7	18.3	400917	2.8	19.7	242554	2.9	19.9
330277	2.5	20.3	204868	2.5	20.2	149029	2.6	19.8	254462	2.7	20.2	416608	2.8	19.3	276013	2.9	19.2
371404	2.5	20.8	211160	2.5	19.8	269656	2.6	20.3	131669	2.7	18.3	248142	2.8	20.1	112884	2.9	18.8
24510	2.5	16.9	27178	2.5	17.2	443090	2.6	20.5	347280	2.7	20.2	193245	2.8	20.3	504266	2.9	21.9
510852	2.5	22.3	62366	2.6	18.4	204859	2.6	19.8	232785	2.7	19.6	170884	2.8	19.5	152692	2.9	19.5
457677	2.5	20.8	311949	2.6	21.8	101207	2.6	18.9	101086	2.7	18.6	479800	2.8	21.6	382627	2.9	19.6
41259	2.5	18.7	170431	2.6	18.8	377586	2.6	20.5	437973	2.7	18.8	275450	2.8	20.8	150344	2.9	18.5
406738	2.5	19.2	5806	2.6	14.7	354305	2.6	19.2	476747	2.7	21.4	299894	2.8	19.8	482170	2.9	21.2
6861	2.5	16.2	136803	2.6	19.5	171806	2.6	20.9	97158	2.7	18.5	22803	2.8	17.7	165948	2.9	19.3
94317	2.5	19.4	418275	2.6	21.4	49919	2.6	18.2	255704	2.7	19.9	311510	2.8	21.0	318510	2.9	21.2
304699	2.5	21.2	448373	2.6	20.0	33418	2.6	17.3	50454	2.7	18.8	319245	2.8	20.9	171830	2.9	19.5
170663	2.5	19.4	490828	2.6	20.3	373750	2.6	20.0	349720	2.7	20.5	3824	2.8	16.5	356170	2.9	20.3
98343	2.5	19.2	96783	2.6	18.7	137755	2.6	20.0	234640	2.7	20.4	113365	2.8	19.3	475588	2.9	21.6
188654	2.5	20.2	344715	2.6	19.3	255391	2.6	20.1	25577	2.7	18.1	118341	2.8	19.1	217666	2.9	20.2
514302	2.5	20.2	318387	2.6	21.3	7766	2.6	17.4	511208	2.7	19.9	220367	2.8	18.1	436803	2.9	20.9
321428	2.5	18.9	188949	2.6	19.6	276920	2.6	19.6	188185	2.7	19.3	512196	2.8	19.9	256615	2.9	20.5
270414	2.5	19.7	122663	2.6	18.4	115072	2.6	19.3	213350	2.7	19.7	501818	2.8	21.2	45175	2.9	18.2
176138	2.5	20.5	46806	2.6	17.3	513432	2.6	19.3	235885	2.7	18.9	318554	2.8	20.1	509907	2.9	21.7
152502	2.5	20.0	269952	2.6	19.0	75579	2.6	19.6	17141	2.7	17.1	93083	2.8	19.6	513629	2.9	21.0
279189	2.5	19.2	296525	2.6	20.3	132871	2.6	17.9	19275	2.7	18.3	361451	2.8	21.6	287247	2.9	20.2
339480	2.5	20.1	182199	2.6	19.6	144288	2.6	20.1	502212	2.7	22.1	363057	2.8	21.4	62502	2.9	18.5
290788	2.5	21.1	355066	2.6	21.0	270291	2.6	20.3	236578	2.7	20.5	389463	2.8	19.6	23489	2.9	16.8
100025	2.5	18.6	9960	2.6	15.8	489014	2.6	21.5	428638	2.7	21.1	415865	2.8	19.9	512166	2.9	19.6
164558	2.5	19.5	496144	2.6	19.5	511479	2.6	20.8	360006	2.7	19.5	32027	2.8	17.8	482363	2.9	20.2
11723	2.5	17.1	116903	2.6	19.1	442112	2.6	20.8	391809	2.7	20.9	381859	2.8	20.7	343728	2.9	21.2
176580	2.5	19.6	392337	2.6	21.0	311985	2.6	20.7	129600	2.7	18.6	349801	2.8	21.3	53008	2.9	16.4
502121	2.5	20.9	86794	2.6	19.2	71788	2.6	18.5	121605	2.7	20.4	39099	2.8	17.1	42010	2.9	17.8
482271	2.5	20.3	9684	2.6	17.9	20937	2.7	17.7	405475	2.7	21.2	434006	2.8	20.1	443058	2.9	20.3
381396	2.5	19.4	16184	2.6	16.5	474394	2.7	20.2	66535	2.7	18.3	471239	2.8	19.1	253316	2.9	19.8
73821	2.5	19.6	187923	2.6	19.7	105889	2.7	19.9	106299	2.7	19.2	183754	2.8	19.7	285735	2.9	19.9
403695	2.5	20.4	251670	2.6	20.6	123665	2.7	19.2	90678	2.7	16.8	295670	2.8	21.5	21237	2.9	17.8
104437	2.5	18.3	377613	2.6	20.4	200224	2.7	17.8	60380	2.7	19.3	188230	2.8	19.8	43005	2.9	17.0
83073	2.5	19.0	508728	2.6	20.8	387447	2.7	19.0	266310	2.7	21.0	82368	2.8	17.3	157615	2.9	19.5
242054	2.5	19.7	509490	2.6	19.1	246848	2.7	19.5	255174	2.7	20.3	360935	2.8	21.7	119948	2.9	18.3
465234	2.5	19.5	235845	2.6	19.7	376366	2.7	21.4	260184	2.7	19.7	185837	2.8	20.9	353095	2.9	20.9
298237	2.5	19.5	84925	2.6	19.1	358387	2.7	21.0	126376	2.7	18.4	471082	2.8	20.2	149832	2.9	17.9
514899	2.5	20.9	144324	2.6	19.9	133628	2.7	18.6	203018	2.7	19.6	106105	2.8	19.4	254227	2.9	20.1
520249	2.5	20.4	62870	2.6	18.9	318401	2.7	21.2	357730	2.7	20.2	322479	2.8	20.1	67681	2.9	17.4
218790	2.5	19.1	512883	2.6	19.5	426180	2.7	20.3	337173	2.7	22.4	326534	2.8	19.0	474534	2.9	20.8
507377	2.5	20.0	315702	2.6	19.9	42416	2.7	17.6	425656	2.7	20.9	113730	2.8	18.4	393973	2.9	20.7
96349	2.5	19.1	208846	2.6	19.0	136674	2.7	19.4	486550	2.7	21.1	321292	2.8	19.0	234253	2.9	20.7
95652	2.5	19.5	481331	2.6	21.3	220246	2.7	20.0	472543	2.7	20.2	350398	2.8	21.0	484031	2.9	20.8
22361	2.5	17.3	166029	2.6	19.3	501831	2.7	20.2	76987	2.7	19.4	288156	2.8	19.2	180945	2.9	20.2
75089	2.5	19.3	459679	2.6	19.4	202640	2.7	19.1	105985	2.7	18.5	476826	2.8	22.1	374501	2.9	20.9
440983	2.5	21.3	470895	2.6	20.8	119855	2.7	19.0	494829	2.7	20.1	335492	2.8	19.0	343570	2.9	20.1
343521	2.5	20.2	263395	2.6	20.1	480235	2.7	20.4	1740	2.8	15.6	62074	2.8	16.9	512307	2.9	20.0
253543	2.5	19.3	247123	2.6	18.0	211317	2.7	20.2	171868	2.8	19.7	481086	2.8	21.7	191648	2.9	18.4
264359	2.5	20.5	201143	2.6	19.7	441026	2.7	21.3	287335	2.8	20.3	133055	2.8	18.5	193527	2.9	19.7
357209	2.5	19.7	475775	2.6	20.6	374892	2.7	20.8	505140	2.8	21.5	122619	2.8	18.6	503461	2.9	20.9
294470	2.5	19.9	400923	2.6	19.4	177613	2.7	19.5	471627	2.8	19.1	1189	2.8	13.7	385781	2.9	20.3
444371	2.5	19.4	443144	2.6	19.9	232529	2.7	19.2	514240	2.8	20.2	444078	2.8	20.4	517271	2.9	20.3
481225	2.5	20.6	22644	2.6	19.0	384519	2.7	19.2	189346	2.8	19.7	521410	2.9	19.8	468544	2.9	19.9
152757	2.5	18.6	48363	2.6	18.5	160518	2.7	18.6	144957	2.8	19.2	399947	2.9	20.6	20345	2.9	16.6
367288	2.5	20.9	324262	2.6	21.3	170521	2.7	19.4	123952	2.8	19.0	304505	2.9	20.2	333778	2.9	20.1
479212	2.5	20.2	360966	2.6	21.2	254216	2.7	19.3	393194	2.8	20.1	239608	2.9	20.6	386465	2.9	20.4
477120	2.5	20.8	10897	2.6	16.9	101307	2.7	19.0	403631	2.8	20.0	110338	2.9	18.7	121876	2.9	19.1
227856	2.5	19.7	424500	2.6	20.5	8805	2.7	16.5	164015	2.8	19.5	490357	2.9	20.1	316767	2.9	21.1
386455	2.5	20.6	397536	2.6	20.5	429428	2.7	20.7	128074	2.8	18.5	292900	2.9	21.3	223169	2.9	19.2
66084	2.5	18.8	92113	2.6	18.9	186855	2.7	19.3	17766	2.8	17.1	342437	2.9	20.2	504321	2.9	19.8
294814	2.5	19.6	117654	2.6	19.1	75266	2.7	18.1	67718	2.8	18.0	110208	2.9	19.5	11546	2.9	17.0
472113	2.5	21.0	485267	2.6	20.6	512179	2.7	20.4	440741	2.8	20.5	416753	2.9	20.4	467947	2.9	21.1
70785	2.5	18.8	93234	2.6	19.0	384657	2.7	20.3	211914	2.8	23.1	490301	2.9	21.7	156372	2.9	19.5
263376	2.5	19.5	374801	2.6	19.6	512857	2.7	21.8	251892	2.8	20.5	90359	2.9	19.0	479719	2.9	20.9
37609	2.5	18.5	228045	2.6	17.8	35775	2.7	18.0	167319	2.8	20.0	209959	2.9	19.8	445425	2.9	21.0
65355	2.5	17.9	344728	2.6	20.7	510790	2.7	20.8	510525	2.8	20.5	213745	2.9	18.1	433978	2.9	19.4
146299	2.5	17.9	206152	2.6	18.3	439196	2.7	20.7	230074	2.8	20.2	78918	2.9	18.7	159224	2.9	19.5
390530	2.5	20.3	285103	2.6	21.1	181764	2.7	19.4	305551	2.8	19.8	55245	2.9	18.5	510047	2.9	20.5
374717	2.5	20.4	273982	2.6	18.8	466380	2.7	20.0	32177	2.8	17.4	322670	2.9	18.6			

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
440942	2.9	20.1	365188	3.1	20.0	141623	3.2	18.8	320809	3.3	19.1	6154	3.4	16.1	11928	3.5	17.5
20627	2.9	17.9	183300	3.1	18.8	92102	3.2	18.7	494247	3.3	19.5	183904	3.4	19.9	139517	3.5	18.8
23393	2.9	19.0	342759	3.1	20.5	481408	3.2	20.5	91006	3.3	19.3	195241	3.4	18.8	488324	3.5	20.3
479099	2.9	21.1	80994	3.1	19.0	366156	3.2	20.9	521877	3.3	20.0	381954	3.4	21.8	299767	3.5	19.5
389511	2.9	21.4	383292	3.1	21.9	420391	3.2	20.3	142787	3.3	18.9	434365	3.4	20.4	511164	3.5	21.3
220208	2.9	19.1	165966	3.1	20.2	41605	3.2	19.0	472094	3.3	21.1	100849	3.4	19.3	358455	3.5	21.8
431004	2.9	20.5	483274	3.1	21.6	15454	3.2	16.6	91145	3.3	18.9	13246	3.4	17.1	480815	3.5	20.8
137918	2.9	21.3	342109	3.1	20.6	129004	3.2	18.3	191038	3.3	19.7	130854	3.4	18.9	179375	3.5	20.4
297177	2.9	19.7	99715	3.1	19.3	110462	3.2	18.8	404827	3.3	19.9	59251	3.4	18.7	154112	3.5	19.3
27956	2.9	17.9	226184	3.1	19.0	510950	3.2	20.5	481480	3.3	21.3	516955	3.4	21.4	352362	3.5	21.0
332494	2.9	20.9	386417	3.1	20.6	513582	3.2	20.7	329749	3.3	21.4	86258	3.4	18.8	2526	3.5	17.2
400424	3.0	20.9	318447	3.1	19.5	101987	3.2	18.6	474603	3.3	20.2	34058	3.4	15.5	5316	3.5	16.7
131021	3.0	19.8	442588	3.1	20.0	480586	3.2	21.0	321826	3.3	19.6	296560	3.4	19.8	500076	3.5	20.3
99428	3.0	19.1	117673	3.1	18.2	155475	3.2	19.8	150747	3.3	19.1	163369	3.4	19.5	123478	3.5	19.3
58819	3.0	17.6	156966	3.1	20.5	346803	3.2	20.2	507407	3.3	20.3	96130	3.4	19.3	488364	3.5	21.3
475564	3.0	21.1	489531	3.1	19.2	259297	3.2	20.4	98858	3.3	19.1	106668	3.4	20.0	155463	3.5	19.2
14710	3.0	19.2	99363	3.1	18.1	358906	3.2	19.8	252197	3.3	20.6	9237	3.4	18.0	198284	3.5	20.5
92046	3.0	19.6	418000	3.1	21.1	130729	3.2	20.6	441824	3.3	19.5	352184	3.4	20.2	354353	3.5	20.1
121815	3.0	19.5	95526	3.1	18.5	20301	3.2	16.7	92945	3.3	17.4	399010	3.4	20.2	3255	3.5	16.6
216924	3.0	18.8	292984	3.1	20.3	238245	3.2	19.8	129568	3.3	20.2	474416	3.4	19.5	107621	3.5	18.6
254567	3.0	18.8	176131	3.1	20.4	13995	3.2	16.8	35550	3.3	18.2	325941	3.4	21.1	227693	3.5	21.1
480282	3.0	20.2	238296	3.1	20.1	169458	3.2	20.0	218602	3.3	19.2	387231	3.4	20.3	161869	3.5	20.1
18813	3.0	16.4	50340	3.1	18.5	246907	3.2	19.0	228508	3.3	19.2	272292	3.4	21.4	515937	3.5	20.9
113582	3.0	18.8	148144	3.1	21.0	394744	3.2	20.1	401073	3.3	20.4	361902	3.4	20.8	508191	3.5	21.3
316481	3.0	20.0	358351	3.1	21.3	205118	3.2	18.9	440926	3.3	20.8	141443	3.4	19.7	443838	3.5	20.7
75655	3.0	18.8	255303	3.1	19.6	379869	3.2	18.3	161426	3.3	18.1	159455	3.4	20.1	442048	3.5	20.4
371576	3.0	21.0	70796	3.1	18.3	462593	3.2	19.5	175443	3.3	17.4	94306	3.4	18.7	234688	3.5	20.5
325078	3.0	20.7	199385	3.1	20.0	393573	3.2	20.0	202730	3.3	18.1	50872	3.4	17.1	381770	3.5	20.6
476104	3.0	20.9	388224	3.1	20.0	315983	3.2	20.5	472187	3.3	21.7	17648	3.4	17.8	298128	3.5	20.9
204091	3.0	19.3	504899	3.1	21.5	199420	3.2	19.7	362777	3.3	20.7	508135	3.4	20.8	35786	3.5	17.1
336177	3.0	18.2	237579	3.1	18.7	523169	3.2	20.1	210758	3.3	18.8	507627	3.4	20.5	285909	3.5	20.1
449517	3.0	21.2	523264	3.1	21.3	174337	3.2	17.9	294608	3.3	20.1	242424	3.4	18.8	26887	3.5	16.9
324542	3.0	19.3	31368	3.1	16.8	343347	3.2	20.5	337138	3.3	20.1	312646	3.4	18.3	483202	3.5	20.3
94708	3.0	18.3	28529	3.1	16.6	93560	3.2	18.3	336174	3.3	20.2	60959	3.4	17.0	25925	3.5	17.6
124916	3.0	18.1	145754	3.1	19.8	51217	3.2	19.0	180267	3.3	19.8	65763	3.4	19.7	314406	3.5	19.7
479738	3.0	20.6	262765	3.1	19.8	483629	3.2	20.5	105519	3.3	18.4	255509	3.4	19.1	521819	3.5	20.1
121738	3.0	19.8	330676	3.1	21.3	288763	3.2	19.9	24509	3.3	18.3	425937	3.4	19.8	22095	3.5	17.6
334385	3.0	19.6	397123	3.1	19.5	87607	3.2	17.1	254229	3.3	20.2	231254	3.4	21.0	255223	3.5	19.7
202654	3.0	19.9	271725	3.1	20.6	390666	3.2	20.8	392316	3.3	20.5	392834	3.4	19.2	181286	3.5	19.2
477500	3.0	20.6	125606	3.1	18.4	474101	3.2	19.5	482133	3.3	21.2	123809	3.4	19.5	357724	3.5	20.2
349320	3.0	19.9	240208	3.1	19.8	391896	3.2	20.5	302850	3.3	21.0	106046	3.4	18.8	352269	3.5	20.8
498507	3.0	21.0	393016	3.1	20.8	187825	3.2	19.9	228921	3.3	20.1	257790	3.4	19.6	432661	3.5	21.3
209722	3.0	19.9	112524	3.1	18.1	520351	3.2	21.2	49062	3.3	18.3	516116	3.4	20.5	263752	3.5	19.2
344137	3.0	21.0	217650	3.1	19.9	91964	3.2	19.9	254483	3.3	20.5	509218	3.4	20.0	415116	3.5	21.2
404853	3.0	20.7	258816	3.1	18.6	498081	3.2	21.1	342655	3.3	20.2	166510	3.4	19.7	214995	3.5	19.6
446071	3.0	21.2	262705	3.2	20.5	418239	3.2	21.8	318297	3.3	20.4	25900	3.4	17.8	483217	3.5	20.3
396723	3.0	21.8	145522	3.2	20.6	321453	3.2	19.9	42507	3.3	18.5	318901	3.4	21.3	185173	3.5	20.3
36443	3.0	17.5	150480	3.2	17.5	352533	3.2	21.9	181028	3.3	18.6	154534	3.4	18.8	364572	3.5	19.6
257559	3.0	20.0	63899	3.2	19.5	391942	3.2	21.4	105866	3.3	19.7	137154	3.4	20.9	40344	3.5	17.5
440914	3.1	20.8	190615	3.2	19.4	139916	3.2	18.7	397013	3.3	20.3	203205	3.4	19.4	449971	3.5	20.5
14317	3.1	16.1	136717	3.2	17.8	393078	3.2	20.1	469938	3.3	19.4	342881	3.4	21.0	431377	3.5	20.7
41009	3.1	19.1	60425	3.2	18.5	126920	3.2	19.6	358791	3.3	21.2	324457	3.4	18.5	173599	3.5	20.4
479723	3.1	20.4	257929	3.2	22.3	434697	3.2	21.0	92639	3.3	19.2	397074	3.4	20.5	442985	3.5	21.2
510927	3.1	21.1	318151	3.2	19.6	481292	3.2	21.4	443466	3.3	20.3	257699	3.4	20.8	341495	3.5	20.0
430989	3.1	21.4	183610	3.2	20.1	386365	3.2	20.6	202201	3.3	20.8	23398	3.4	17.8	212183	3.5	15.7
390170	3.1	20.2	105497	3.2	18.9	108284	3.2	18.0	280903	3.3	20.3	350349	3.4	19.1	7814	3.5	15.9
208656	3.1	19.1	296908	3.2	20.6	244408	3.2	20.0	233882	3.3	19.3	260285	3.4	19.6	193296	3.5	19.5
351898	3.1	21.1	163009	3.2	19.2	358445	3.2	19.8	237152	3.3	19.6	338483	3.4	20.3	237192	3.5	19.6
512483	3.1	19.1	442146	3.2	20.4	340275	3.2	20.6	472026	3.3	21.7	411948	3.4	20.1	376195	3.5	20.9
395252	3.1	19.1	503787	3.2	21.0	482398	3.2	20.5	438770	3.3	20.9	60007	3.4	18.2	106577	3.5	18.0
437623	3.1	20.1	175566	3.2	19.8	48460	3.3	17.6	509865	3.3	20.7	347558	3.4	17.0	188513	3.5	19.7
149356	3.1	20.5	432632	3.2	21.5	47367	3.3	17.1	521417	3.3	20.6	516963	3.4	22.3	430200	3.5	20.2
261878	3.1	19.5	439195	3.2	20.2	96147	3.3	19.9	479003	3.3	21.3	449007	3.4	20.6	207950	3.5	20.0
390437	3.1	20.9	165061	3.2	19.0	42740	3.3	18.6	365412	3.3	20.0	6518	3.4	17.5	285533	3.5	21.4
234316	3.1	19.9	512893	3.2	22.6	113137	3.3	17.9	193524	3.3	20.2	477890	3.4	20.8	181187	3.5	19.5
356434	3.1	19.9	446734	3.2	19.7	339185	3.3	19.3	340375	3.3	20.1	107269	3.4	18.9	317096	3.5	19.5
62348	3.1	18.2	269813	3.2	20.3	424278	3.3	19.3	257807	3.3	20.3	511324	3.4	21.9	69443	3.5	18.3
484543	3.1	20.3	325478	3.2	20.0	256370	3.3	20.0	141668	3.3	19.0	134596	3.4	18.6	41151	3.5	17.7
448588	3.1	20.9	411624	3.2	20.2	264983	3.3	19.0	364050	3.3	21.6	8139	3.4	17.5	148437	3.5	20.7
180298	3.1	20.3	511302	3.2	21.2	25068	3.3	15.7	71815	3.3	18.4	140709	3.4	20.2	516120	3.5	20.4
510753	3.1	20.9	353560	3.2	20.4	44247	3.3	17.6	507229	3.3	22.0	200149	3.4	18.1			

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
255560	3.5	19.7	209944	3.6	19.5	404753	3.7	20.3	139126	3.8	19.6	324327	3.9	20.0	509434	3.9	20.8
39023	3.5	17.9	291135	3.6	20.4	91160	3.7	18.8	211164	3.8	18.3	362529	3.9	20.4	228313	3.9	18.6
489091	3.5	21.9	438927	3.6	20.9	370910	3.7	20.8	248493	3.8	19.1	121205	3.9	17.9	155551	3.9	20.3
350897	3.5	18.4	70306	3.6	18.3	19643	3.7	19.0	156906	3.8	18.8	3749	3.9	16.4	146868	3.9	20.0
418982	3.5	20.4	207216	3.6	19.8	360181	3.7	20.0	308962	3.8	20.5	508104	3.9	21.1	215826	3.9	21.0
314368	3.5	20.7	236826	3.6	18.4	269068	3.7	19.8	511764	3.8	20.5	510633	3.9	21.6	260298	3.9	21.2
66480	3.5	19.1	141749	3.6	17.5	174066	3.7	18.5	392727	3.8	20.1	21023	3.9	16.7	499096	3.9	21.6
442142	3.5	20.5	38487	3.6	18.6	342121	3.7	19.9	217731	3.8	19.4	244779	3.9	18.7	110738	3.9	19.7
390184	3.5	20.7	185607	3.6	20.5	444188	3.7	20.9	92189	3.8	19.7	427686	3.9	21.9	505666	3.9	20.3
390968	3.5	21.3	359581	3.6	19.9	309674	3.7	20.8	433863	3.8	21.6	179399	3.9	19.5	129620	3.9	20.2
476855	3.5	21.1	307240	3.6	20.4	59305	3.7	17.5	509051	3.8	21.2	505457	3.9	21.0	1950	3.9	16.0
183068	3.5	18.5	223151	3.6	19.4	408611	3.7	20.4	339287	3.8	19.1	32818	3.9	16.7	474400	3.9	20.9
429464	3.5	21.9	445458	3.6	19.7	423925	3.7	21.8	446181	3.8	21.1	429432	3.9	20.3	91023	3.9	17.1
272883	3.5	18.7	375172	3.6	19.6	215558	3.7	20.5	66474	3.8	17.9	477508	3.9	20.8	479285	3.9	20.6
420426	3.5	22.0	198298	3.6	20.7	318649	3.7	19.2	238610	3.8	20.3	260144	3.9	19.5	485285	3.9	20.6
278834	3.5	18.7	215644	3.6	19.6	383974	3.7	19.7	393190	3.8	20.0	42652	3.9	17.2	395676	3.9	20.8
90038	3.5	18.5	294849	3.6	21.0	106544	3.7	19.1	100178	3.8	18.3	508543	3.9	20.4	481802	3.9	20.8
179654	3.5	19.2	163031	3.6	18.6	128492	3.7	18.9	347848	3.8	20.2	264898	3.9	19.3	121748	3.9	19.4
208630	3.6	18.9	371518	3.6	20.2	106394	3.7	19.8	309613	3.8	20.7	314326	3.9	20.4	342653	3.9	18.7
140898	3.6	19.2	221420	3.6	19.9	164764	3.7	19.4	245189	3.8	20.7	358960	3.9	20.7	316534	3.9	20.5
34103	3.6	18.1	295389	3.6	20.8	77138	3.7	18.7	202213	3.8	20.6	479567	3.9	21.7	149838	3.9	19.1
499040	3.6	20.1	108153	3.6	19.0	512630	3.7	20.4	424365	3.8	21.2	264009	3.9	19.0	431118	3.9	19.5
244927	3.6	20.6	127907	3.6	18.5	233863	3.7	19.9	39297	3.8	17.9	144300	3.9	19.3	90161	3.9	19.7
131017	3.6	19.4	13880	3.6	17.0	505595	3.7	20.8	511140	3.8	23.0	185967	3.9	20.4	120758	3.9	18.6
285368	3.6	19.6	107659	3.6	18.8	41189	3.7	18.2	49668	3.8	17.2	65203	3.9	18.9	305445	3.9	20.8
316641	3.6	20.9	476190	3.6	21.0	423312	3.7	20.1	170411	3.8	19.5	227584	3.9	20.3	337157	3.9	21.6
346704	3.6	20.8	425638	3.6	20.5	53732	3.7	19.6	358833	3.8	19.4	125149	3.9	18.1	408095	3.9	20.8
22440	3.6	18.6	347264	3.6	18.6	361015	3.7	21.0	373418	3.8	21.1	507633	3.9	19.6	373799	3.9	20.2
19012	3.6	17.7	521683	3.6	20.3	395271	3.7	20.2	352356	3.8	20.5	217663	3.9	18.8	99769	3.9	19.0
165077	3.6	19.8	353943	3.6	19.5	113946	3.7	18.3	269095	3.8	20.6	177205	3.9	19.8	479641	3.9	20.9
234668	3.6	20.9	176766	3.6	19.0	213541	3.7	18.8	183687	3.8	21.2	37268	3.9	17.4	115661	3.9	19.8
128371	3.6	18.9	414433	3.6	19.9	481602	3.7	20.6	88785	3.8	16.9	449000	3.9	20.9	40558	3.9	16.7
416803	3.6	22.3	32104	3.6	17.5	70101	3.7	17.9	61763	3.8	19.4	284802	3.9	19.8	263725	3.9	20.0
262408	3.6	20.5	319152	3.6	21.4	321444	3.7	19.8	523614	3.8	25.4	425015	3.9	19.4	215814	3.9	18.5
266123	3.6	19.7	200840	3.6	20.6	127924	3.7	19.7	176553	3.8	19.1	377037	3.9	19.9	34197	3.9	18.3
94508	3.6	19.2	354337	3.6	22.2	367047	3.7	19.6	362285	3.8	19.2	308602	3.9	20.3	222451	3.9	19.2
192871	3.6	18.8	286401	3.6	19.8	310489	3.7	19.7	164691	3.8	20.3	387430	3.9	19.7	17210	3.9	18.0
155330	3.6	19.0	44799	3.6	17.8	285821	3.7	20.1	291759	3.8	19.4	390749	3.9	19.4	447347	3.9	20.6
174245	3.6	19.3	148545	3.7	18.1	221023	3.7	19.9	248140	3.8	19.4	252133	3.9	19.4	510988	3.9	22.1
420422	3.6	20.5	452152	3.7	20.6	161265	3.7	17.7	448649	3.8	21.8	449380	3.9	20.8	488325	3.9	19.7
294393	3.6	20.1	249757	3.7	19.6	320144	3.7	20.9	337254	3.8	18.9	76226	3.9	19.2	188140	3.9	20.9
297162	3.6	18.6	268089	3.7	19.8	240706	3.7	20.4	287034	3.8	20.0	476014	3.9	19.7	234350	3.9	20.0
22515	3.6	17.9	507813	3.7	21.5	368276	3.7	19.3	349961	3.8	21.3	96249	3.9	19.2	23839	3.9	18.1
387645	3.6	19.8	369767	3.7	20.8	82196	3.7	18.1	360900	3.8	21.4	225841	3.9	19.8	91839	3.9	18.4
12080	3.6	16.3	342933	3.7	19.8	10423	3.7	16.1	420357	3.8	19.2	84321	3.9	19.3	392332	3.9	21.2
225947	3.6	20.6	12235	3.7	16.2	510745	3.7	20.5	387461	3.8	20.5	477073	3.9	21.0	191019	3.9	19.7
114207	3.6	19.0	470846	3.7	20.6	289812	3.7	20.1	161121	3.8	18.9	354799	3.9	21.7	473004	3.9	20.0
383221	3.6	21.1	240264	3.7	18.8	388580	3.7	20.6	266580	3.8	19.3	250067	3.9	19.9	243401	3.9	19.7
220260	3.6	19.7	169879	3.7	18.6	256447	3.7	19.4	70706	3.8	19.3	62016	3.9	17.6	200541	3.9	20.0
276467	3.6	20.5	506825	3.7	21.1	349900	3.7	19.8	262410	3.8	21.0	11380	3.9	16.8	478291	3.9	21.1
250819	3.6	19.2	158394	3.7	19.5	213307	3.7	19.5	473992	3.8	20.1	512529	3.9	21.3	445274	4.0	20.7
253826	3.6	20.1	510034	3.7	22.1	247170	3.7	19.6	220212	3.8	19.9	181145	3.9	19.7	343357	4.0	20.8
281513	3.6	20.3	118347	3.7	19.1	436265	3.8	20.9	389699	3.8	19.7	40196	3.9	17.5	483113	4.0	20.3
328078	3.6	21.4	447204	3.7	21.7	106530	3.8	19.2	442884	3.8	19.6	186725	3.9	21.1	66100	4.0	17.7
515213	3.6	21.2	104135	3.7	19.9	440337	3.8	20.2	352275	3.8	19.7	61051	3.9	17.8	144347	4.0	19.8
215433	3.6	18.7	448419	3.7	19.8	523178	3.8	19.6	107653	3.8	18.0	88432	3.9	17.7	478061	4.0	20.6
360419	3.6	20.1	522428	3.7	20.6	201092	3.8	20.9	107924	3.8	17.5	279680	3.9	20.5	488348	4.0	20.6
250781	3.6	19.9	68238	3.7	19.1	30787	3.8	16.8	262220	3.8	20.6	330374	3.9	19.6	438297	4.0	20.5
34911	3.6	18.0	477729	3.7	21.7	294644	3.8	19.7	480414	3.8	21.1	385358	3.9	19.9	11703	4.0	17.5
447063	3.6	20.8	266579	3.7	19.3	463971	3.8	19.8	577	3.8	12.8	286066	3.9	20.1	75276	4.0	18.9
111972	3.6	18.1	357750	3.7	20.9	295011	3.8	20.4	333474	3.8	18.4	260891	3.9	19.5	513707	4.0	21.1
365259	3.6	20.0	46146	3.7	19.3	511817	3.8	21.2	512099	3.8	20.2	376934	3.9	21.2	395961	4.0	20.8
483167	3.6	20.5	509544	3.7	21.2	177416	3.8	20.6	252833	3.8	20.0	339241	3.9	21.1	289820	4.0	20.7
169511	3.6	19.4	184971	3.7	18.9	393977	3.8	19.8	176122	3.8	19.5	479274	3.9	21.8	223630	4.0	20.1
91677	3.6	18.6	90570	3.7	19.0	508318	3.8	21.2	306999	3.8	20.1	453738	3.9	21.2	430749	4.0	19.7
12698	3.6	17.2	315292	3.7	19.0	345839	3.8	19.3	169049	3.8	20.1	221879	3.9	19.5	352018	4.0	20.7
48378	3.6	19.4	446947	3.7	19.8	400544	3.8	20.3	146849	3.8	18.6	446280	3.9	20.6	329163	4.0	21.3
468904	3.6	21.0	179502	3.7	18.7	289252	3.8	21.4	468497	3.8	20.8	249983	3.9	19.5	4208	4.0	15.7
219964	3.6	19.0	510054	3.7	19.5	178242	3.8	19.5	13055	3.8	17.9	77528	3.9	17.2	9324	4.0	17.1
66438	3.6	17.6	207638	3.7	19.8	338666	3.8	20.3	399232	3.8	20.1	39625	3.9	18.7	445363	4.0	20.4
167323	3.6	19.9	258611	3.7	19.5	163977	3.8	19.1	139880	3.8	19.8	348571	3.9				

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
37011	4.0	19.0	78467	4.1	18.7	279351	4.2	19.5	428669	4.3	21.9	328162	4.4	21.3	345835	4.5	19.0
24928	4.0	16.3	19302	4.1	17.5	70323	4.2	18.0	181524	4.3	19.1	506542	4.4	20.4	191900	4.5	18.1
503994	4.0	21.9	399069	4.1	20.4	435775	4.2	20.9	335553	4.3	17.4	497460	4.4	21.1	250600	4.5	20.2
3291	4.0	16.4	445245	4.1	19.5	320320	4.2	21.1	105666	4.3	18.8	482175	4.4	20.6	443901	4.5	20.1
483240	4.0	20.0	414406	4.1	20.5	269142	4.2	20.0	250580	4.3	20.0	475974	4.4	19.1	261271	4.5	19.4
342193	4.1	21.1	348556	4.1	19.5	226881	4.2	20.0	162820	4.3	19.0	127592	4.4	19.5	440634	4.5	20.7
17667	4.1	17.8	417976	4.1	20.1	509961	4.2	20.0	94638	4.3	18.5	335030	4.4	19.3	382990	4.5	20.6
392813	4.1	20.0	444055	4.1	20.0	251800	4.2	20.6	454177	4.3	20.8	72333	4.4	19.1	70438	4.5	18.4
479971	4.1	21.0	235263	4.1	19.7	360903	4.2	21.1	327203	4.3	19.6	378203	4.4	22.0	57896	4.5	16.2
476584	4.1	20.6	298197	4.1	19.7	361916	4.2	20.3	306768	4.3	19.4	349086	4.4	21.1	346658	4.5	20.9
204073	4.1	20.1	346577	4.1	19.5	263878	4.2	19.8	448626	4.3	21.0	338803	4.4	19.9	34408	4.5	17.9
266273	4.1	20.5	228126	4.1	19.0	254226	4.2	19.8	263209	4.3	19.6	491650	4.4	20.6	140149	4.5	18.9
177033	4.1	19.6	484915	4.1	20.7	476609	4.2	21.0	477532	4.3	19.6	343884	4.4	20.7	319356	4.5	21.1
22567	4.1	17.1	111628	4.1	17.7	278205	4.2	18.9	440098	4.3	18.7	477904	4.4	20.5	80771	4.5	18.4
196482	4.1	18.2	114679	4.1	19.0	452031	4.2	20.9	193420	4.3	19.0	129567	4.4	19.4	377097	4.5	23.5
514093	4.1	20.7	480323	4.1	20.5	60349	4.2	18.9	358854	4.3	19.9	393558	4.4	20.5	523114	4.5	20.7
35600	4.1	18.1	348382	4.1	20.6	31181	4.2	16.4	62850	4.3	17.7	224098	4.4	18.8	404856	4.5	19.8
388621	4.1	20.2	348139	4.1	20.4	424042	4.2	21.7	323051	4.3	19.4	128524	4.4	19.5	511889	4.5	20.5
56344	4.1	18.0	185123	4.1	20.8	481456	4.2	21.5	134984	4.3	19.7	90519	4.4	17.6	492339	4.5	20.7
315250	4.1	18.9	149772	4.1	18.9	362897	4.2	20.2	81028	4.3	19.3	66653	4.4	18.9	418253	4.5	21.9
421422	4.1	19.6	206644	4.1	18.8	255238	4.2	20.3	72393	4.3	18.9	159381	4.4	19.3	216066	4.5	18.5
33109	4.1	18.4	216951	4.1	20.2	107382	4.2	18.4	342165	4.3	21.2	103687	4.4	19.0	155866	4.5	20.7
99070	4.1	18.6	476266	4.1	21.1	36930	4.2	18.4	391967	4.3	20.5	403312	4.4	22.0	49793	4.5	18.1
147671	4.1	19.0	21720	4.1	17.2	466581	4.2	20.6	53177	4.3	17.0	396849	4.4	18.6	485246	4.5	21.6
272051	4.1	20.1	360167	4.1	21.4	450087	4.2	19.0	469310	4.3	19.7	171168	4.4	19.8	218492	4.5	19.7
118444	4.1	18.5	23409	4.1	16.9	250293	4.2	19.0	296476	4.3	19.6	113394	4.4	19.3	9310	4.5	16.4
446103	4.1	19.3	245307	4.1	20.2	396773	4.2	21.5	442904	4.3	21.2	167411	4.4	19.3	78110	4.5	18.0
11381	4.1	17.5	312501	4.1	20.0	117668	4.2	19.7	331582	4.3	19.6	136150	4.4	18.9	137679	4.5	17.8
249618	4.1	19.4	276053	4.1	19.9	454215	4.2	20.7	74851	4.3	20.0	248971	4.4	20.2	35037	4.5	18.8
100277	4.1	20.2	277545	4.1	19.1	443782	4.2	20.4	314525	4.3	19.5	515857	4.4	19.9	121267	4.5	19.2
121546	4.1	19.0	253835	4.1	20.6	22626	4.2	18.7	70265	4.3	17.0	182217	4.4	20.6	230360	4.5	20.8
98563	4.1	19.1	216028	4.1	19.8	33178	4.2	17.9	498510	4.3	21.8	289187	4.4	20.4	50357	4.5	19.2
521795	4.1	21.3	478654	4.1	20.6	291556	4.2	19.8	43220	4.3	19.1	323606	4.4	21.6	483257	4.5	21.7
236119	4.1	19.2	478868	4.1	20.4	109868	4.2	17.9	244568	4.3	18.3	95844	4.4	19.2	423330	4.5	20.1
169668	4.1	20.7	298292	4.1	20.0	116720	4.2	19.3	512195	4.3	20.6	69681	4.4	18.6	256386	4.5	21.2
507111	4.1	19.6	7041	4.2	16.4	330572	4.2	21.1	369677	4.3	20.0	236652	4.4	20.0	210302	4.5	19.9
513291	4.1	22.0	316525	4.2	20.2	152833	4.2	20.1	338543	4.3	19.2	255247	4.4	19.0	502120	4.5	20.5
513756	4.1	20.6	441997	4.2	19.8	152781	4.2	19.2	187824	4.3	19.6	56914	4.4	18.6	441381	4.5	19.8
227535	4.1	19.4	254313	4.2	19.7	424537	4.2	21.4	186787	4.3	20.7	165008	4.4	21.1	508992	4.5	20.9
22719	4.1	16.6	336749	4.2	20.7	487729	4.2	21.9	147736	4.3	17.6	220519	4.4	19.1	384387	4.5	20.7
68660	4.1	18.1	438935	4.2	21.3	361924	4.2	20.6	204710	4.3	19.5	413196	4.4	20.0	166569	4.5	18.8
428248	4.1	21.4	303207	4.2	21.0	391623	4.2	20.5	146913	4.3	19.8	172143	4.4	18.1	178372	4.5	19.1
95300	4.1	19.3	327125	4.2	20.8	361045	4.2	20.2	39755	4.3	19.2	15424	4.4	17.5	72192	4.5	18.7
123233	4.1	19.2	501052	4.2	20.4	337214	4.2	20.4	286804	4.3	19.9	478916	4.4	21.3	513244	4.5	20.3
354214	4.1	20.8	446533	4.2	19.4	463392	4.2	19.0	294025	4.3	20.8	331386	4.4	20.0	478475	4.5	20.9
439693	4.1	19.7	138353	4.2	19.3	432353	4.3	19.9	33136	4.3	18.0	454172	4.4	19.8	371573	4.5	20.3
253402	4.1	18.9	475610	4.2	20.4	321902	4.3	20.4	445435	4.3	21.0	400477	4.4	20.9	91307	4.5	18.3
429680	4.1	20.1	512398	4.2	21.1	306206	4.3	19.6	348056	4.3	20.4	209413	4.4	20.0	513675	4.5	21.5
217363	4.1	19.0	239828	4.2	20.0	26278	4.3	19.1	509332	4.3	22.5	144757	4.4	20.2	401581	4.5	19.9
243414	4.1	19.1	471585	4.2	18.5	362376	4.3	19.0	433100	4.3	18.8	71354	4.4	17.9	192228	4.5	19.8
301694	4.1	19.4	112604	4.2	17.2	263650	4.3	19.8	440958	4.3	20.5	295159	4.4	20.2	447235	4.5	21.0
73334	4.1	18.9	91193	4.2	18.6	384885	4.3	19.3	500808	4.3	20.6	172115	4.4	19.6	71960	4.5	18.6
335077	4.1	19.5	185787	4.2	18.9	337231	4.3	21.5	284584	4.3	19.5	353113	4.4	21.9	476069	4.5	20.5
70911	4.1	19.1	512650	4.2	20.8	250862	4.3	19.2	323696	4.3	19.1	218087	4.4	18.8	121362	4.5	19.6
308632	4.1	20.6	211330	4.2	20.1	521074	4.3	20.7	471678	4.4	18.2	312789	4.4	19.7	16178	4.5	18.5
120898	4.1	19.4	442600	4.2	22.1	154552	4.3	19.7	21769	4.4	18.1	378549	4.4	20.2	120415	4.5	18.3
183764	4.1	20.2	331190	4.2	19.7	19237	4.3	17.3	440505	4.4	20.4	111404	4.4	20.0	476525	4.5	20.1
96045	4.1	18.5	61936	4.2	17.0	262602	4.3	20.2	237410	4.4	19.2	14841	4.4	17.0	343258	4.5	20.7
449648	4.1	20.2	93281	4.2	19.8	48847	4.3	18.1	121449	4.4	19.8	61145	4.4	16.8	342442	4.5	19.4
98427	4.1	19.0	476214	4.2	20.6	210880	4.3	19.4	449341	4.4	20.6	274975	4.4	21.1	11384	4.5	17.8
243904	4.1	21.6	173235	4.2	18.4	59931	4.3	18.2	92913	4.4	17.9	445757	4.4	21.2	436535	4.5	20.4
172258	4.1	19.4	506666	4.2	21.7	450083	4.3	20.2	151443	4.4	19.6	308957	4.5	20.1	210712	4.5	19.5
62448	4.1	17.9	180437	4.3	19.1	408614	4.3	19.1	315991	4.4	19.9	509737	4.5	21.5	105888	4.5	20.0
107281	4.1	18.3	519097	4.2	20.3	174786	4.3	18.7	62280	4.4	18.6	315059	4.5	20.8	150232	4.5	20.4
317271	4.1	21.1	169478	4.2	19.9	388633	4.3	20.2	251667	4.4	19.6	478611	4.5	20.5	24450	4.5	17.9
413058	4.1	19.7	323675	4.2	21.2	54408	4.3	19.6	387527	4.4	20.6	180451	4.5	20.6	162104	4.5	20.0
318168	4.1	20.2	435142	4.2	21.6	113364	4.3	19.0	523722	4.4	21.3	143881	4.5	20.0	271665	4.5	19.2
444247	4.1	20.5	222486	4.2	18.3	383518	4.3	19.0	104253	4.4	19.3	349858	4.5	20.6	279856	4.5	20.2
169781	4.1	18.3	244742	4.2	18.6	145669	4.3	19.5	65934	4.4	17.7	351018	4.5	19.8	513819	4.5	23.0
429105	4.1	21.0	136565	4.2	19.5	20022	4.3	19.7	396261	4.4	19.1	134973	4.5	18.5	255245	4.5	20.2
275326	4.1	19.8	183786	4.2	21.0	512473	4.3	21.1	62010	4.4	17.8	261997	4.5	1			

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
106732	4.5	19.5	292146	4.6	20.9	294122	4.7	20.9	457111	4.8	20.7	21575	4.9	17.0	97150	5.0	18.1
504802	4.5	22.0	123548	4.6	19.6	423989	4.7	21.5	210328	4.8	20.4	99599	4.9	19.5	123736	5.0	20.1
304351	4.5	20.6	318549	4.6	21.0	90904	4.7	18.9	395912	4.8	20.4	358777	4.9	19.1	74789	5.0	16.5
268307	4.5	21.0	391825	4.6	21.4	478135	4.7	20.7	275312	4.8	20.1	86213	4.9	18.7	24469	5.0	18.2
233544	4.5	18.7	29211	4.6	16.9	40579	4.7	17.6	506285	4.8	19.6	7980	4.9	17.1	85015	5.0	19.8
319567	4.6	19.3	377133	4.6	20.9	344716	4.7	20.1	247572	4.8	20.4	3251	4.9	16.7	273590	5.0	20.7
35711	4.6	17.8	48666	4.6	18.0	507650	4.7	20.0	474680	4.8	20.7	506748	4.9	21.5	301767	5.0	19.7
440858	4.6	20.8	139179	4.6	19.8	474548	4.7	21.3	154955	4.8	19.4	315982	4.9	20.3	33131	5.0	18.0
152393	4.6	19.3	513646	4.6	20.3	255372	4.7	20.2	76973	4.8	17.7	364491	4.9	19.7	260131	5.0	19.4
220233	4.6	19.8	326004	4.6	20.7	12748	4.7	17.9	183202	4.8	19.6	4436	4.9	16.3	59456	5.0	18.0
366014	4.6	20.0	412098	4.6	19.6	251321	4.7	20.4	499825	4.8	22.0	70600	4.9	19.2	478851	5.0	21.4
273779	4.6	20.3	480156	4.6	20.4	147097	4.7	20.0	511799	4.8	20.5	103199	4.9	18.7	225844	5.0	19.9
394591	4.6	20.2	20919	4.6	17.9	29992	4.7	18.0	472138	4.8	20.6	235348	4.9	19.4	500186	5.0	21.6
343431	4.6	21.2	115530	4.6	19.0	71950	4.7	18.1	330268	4.8	21.4	166088	4.9	19.2	3939	5.0	15.8
118584	4.6	18.2	342774	4.6	19.4	192257	4.7	19.2	14047	4.8	17.6	18992	4.9	17.8	308320	5.0	20.0
322732	4.6	19.7	418188	4.6	21.8	205191	4.7	19.6	384711	4.8	18.9	28401	4.9	18.2	493684	5.0	21.3
172693	4.6	19.6	45017	4.6	17.6	299174	4.7	20.0	404072	4.8	21.4	374882	4.9	19.3	235088	5.0	19.3
58371	4.6	19.5	476326	4.7	21.3	294562	4.7	20.7	15737	4.8	16.7	446722	4.9	19.8	306733	5.0	20.7
398837	4.6	20.9	51659	4.7	17.4	31714	4.7	16.5	428174	4.8	21.3	12487	4.9	18.1	399840	5.0	20.7
489287	4.6	20.6	230320	4.7	20.5	23602	4.7	17.6	307559	4.8	19.2	244415	4.9	19.9	512592	5.0	21.0
457588	4.6	19.8	289850	4.7	20.2	68573	4.7	19.3	319499	4.8	19.0	118833	4.9	18.7	479263	5.0	20.4
28071	4.6	17.4	65030	4.7	18.7	225204	4.7	19.1	398186	4.8	20.2	479677	4.9	20.9	88574	5.0	18.0
208858	4.6	19.3	338846	4.7	18.2	329808	4.7	18.9	251529	4.8	20.3	163961	4.9	19.1	12517	5.0	17.6
362918	4.6	20.0	441369	4.7	20.5	392541	4.7	20.4	199676	4.8	19.6	358949	4.9	20.7	463192	5.0	19.6
211142	4.6	18.3	122841	4.7	19.4	295157	4.7	19.1	380742	4.8	19.5	217027	4.9	18.6	500136	5.0	21.5
336295	4.6	20.4	336304	4.7	20.2	91933	4.7	18.3	67059	4.8	17.0	359471	4.9	20.3	476306	5.0	20.1
104095	4.6	18.5	72457	4.7	18.6	389544	4.8	19.7	202420	4.8	20.1	440492	4.9	20.7	441008	5.0	20.2
73222	4.6	18.1	487810	4.7	22.1	328215	4.8	19.3	414046	4.8	20.6	36151	4.9	17.4	11503	5.0	17.0
280650	4.6	19.7	523025	4.7	20.5	3135	4.8	17.0	68014	4.9	17.3	470886	4.9	20.1	19143	5.0	17.9
218179	4.6	18.8	3979	4.7	16.5	289259	4.8	20.0	187372	4.9	19.6	237246	4.9	20.6	25217	5.0	18.4
516311	4.6	20.8	319598	4.7	19.3	121482	4.8	19.6	146898	4.9	19.6	509351	4.9	22.2	256702	5.0	20.7
254261	4.6	19.3	429888	4.7	20.1	456089	4.8	19.6	262037	4.9	19.9	11556	4.9	18.1	73643	5.0	18.6
190548	4.6	18.7	426448	4.7	20.4	160239	4.8	17.8	242276	4.9	20.1	199675	4.9	19.3	417321	5.0	19.6
230630	4.6	19.1	328228	4.7	19.9	233388	4.8	20.2	107205	4.9	20.1	221930	4.9	19.5	238012	5.0	19.1
3104	4.6	15.1	519916	4.7	20.8	174634	4.8	18.6	507794	4.9	22.0	10545	4.9	17.5	509248	5.0	21.9
128742	4.6	19.1	250101	4.7	20.5	407251	4.8	20.5	99807	4.9	18.1	437313	4.9	24.1	32730	5.0	16.2
481593	4.6	19.1	177944	4.7	19.8	374955	4.8	20.6	476954	4.9	21.0	39332	4.9	18.6	172437	5.0	18.8
480277	4.6	20.4	368653	4.7	20.1	509754	4.8	21.8	433871	4.9	21.3	161379	4.9	19.0	347074	5.0	21.2
385758	4.6	22.6	28894	4.7	17.3	177984	4.8	19.0	417998	4.9	21.4	213520	4.9	21.2	513730	5.0	21.5
170415	4.6	20.3	143166	4.7	19.7	349446	4.8	20.2	153591	4.9	20.9	84936	4.9	19.6	45821	5.0	18.2
92420	4.6	17.8	18203	4.7	18.7	33266	4.8	18.3	423957	4.9	21.0	14646	4.9	17.2	69596	5.0	18.0
244287	4.6	20.5	78044	4.7	18.1	411078	4.8	20.3	366261	4.9	19.2	329171	4.9	20.1	264228	5.0	20.2
292579	4.6	20.3	417651	4.7	21.0	322105	4.8	19.8	480338	4.9	21.1	333842	4.9	20.0	448395	5.1	19.9
298188	4.6	19.0	183941	4.7	19.6	391602	4.8	21.1	469293	4.9	21.4	11610	4.9	16.7	145783	5.1	18.4
98373	4.6	18.6	295767	4.7	20.4	209283	4.8	20.0	6287	4.9	17.9	220382	4.9	18.9	19997	5.1	18.3
268322	4.6	21.2	432489	4.7	20.1	206047	4.8	20.6	216280	4.9	19.3	339332	4.9	19.6	16252	5.1	16.5
436193	4.6	21.1	183956	4.7	20.5	479061	4.8	21.3	125565	4.9	19.7	213736	4.9	20.3	507291	5.1	21.3
115125	4.6	18.4	442974	4.7	21.0	184624	4.8	19.8	361037	4.9	20.8	322182	4.9	19.9	477920	5.1	19.2
348523	4.6	19.0	521704	4.7	21.0	61350	4.8	17.4	81325	4.9	18.7	316045	4.9	20.8	398661	5.1	21.3
16206	4.6	17.0	374938	4.7	21.2	38439	4.8	18.0	105800	4.9	19.3	474359	4.9	20.2	404836	5.1	20.1
232229	4.6	19.7	478963	4.7	22.0	195323	4.8	19.6	446239	4.9	21.5	84994	4.9	17.9	518575	5.1	20.9
48089	4.6	17.5	168406	4.7	19.8	315296	4.8	19.0	305436	4.9	20.2	472696	4.9	21.0	357925	5.1	19.4
218239	4.6	19.5	380246	4.7	19.9	427574	4.8	19.3	230311	4.9	20.8	123808	4.9	18.5	516614	5.1	21.2
120149	4.6	19.3	315162	4.7	21.3	147078	4.8	18.7	10595	4.9	16.9	247186	4.9	19.8	335591	5.1	21.1
315072	4.6	20.0	106920	4.7	18.6	488321	4.8	19.0	266158	4.9	19.6	392518	4.9	20.0	487957	5.1	21.0
385336	4.6	21.1	476098	4.7	21.3	451879	4.8	19.7	521598	4.9	21.5	106254	4.9	19.2	506607	5.1	21.9
516932	4.6	20.7	442531	4.7	20.9	144472	4.8	19.3	164045	4.9	19.0	375651	4.9	20.6	504839	5.1	19.0
207825	4.6	19.0	161051	4.7	19.2	513348	4.8	21.9	506537	4.9	21.2	12865	4.9	17.4	380206	5.1	18.8
199480	4.6	21.0	67749	4.7	18.5	318392	4.8	18.7	155215	4.9	19.7	231996	4.9	19.5	349758	5.1	18.9
44158	4.6	17.5	518415	4.7	21.5	254550	4.8	20.2	263390	4.9	20.8	115847	4.9	18.5	50393	5.1	18.2
247815	4.6	18.5	260240	4.7	20.0	348065	4.8	21.4	472054	4.9	21.0	220243	4.9	20.3	342530	5.1	20.4
151073	4.6	18.2	207305	4.7	20.4	64457	4.8	18.9	238208	4.9	19.9	506583	4.9	21.4	437125	5.1	20.8
520409	4.6	20.1	367950	4.7	20.9	317537	4.8	20.0	215833	4.9	20.0	515986	4.9	20.7	145084	5.1	18.9
512005	4.6	20.2	204492	4.7	20.3	261800	4.8	20.5	512987	4.9	21.7	279634	4.9	20.5	253961	5.1	20.1
440574	4.6	20.9	444293	4.7	22.2	111078	4.8	18.1	37687	4.9	17.8	449695	4.9	20.2	387262	5.1	20.5
170023	4.6	19.0	461878	4.7	20.2	7374	4.8	19.7	311332	4.9	18.8	209310	4.9	20.0	319183	5.1	20.7
126447	4.6	17.9	299170	4.7	19.8	325803	4.8	20.0	242545	4.9	21.4	81494	4.9	18.4	500163	5.1	21.6
52526	4.6	17.6	249405	4.7	20.1	352996	4.8	21.0	388730	4.9	20.6	501974	4.9	20.1	352309	5.1	20.5
238570	4.6	20.2	189150	4.7	20.8	405468	4.8	21.0	107094	4.9	20.2	287085	4.9	20.0	36239	5.1	17.1
149232	4.6	19.0	260209	4.7	18.2	235090	4.8	19.6	152685	4.9	20.3	59914	4.9	17.8	264820	5.1	18.9
132326	4.6	18.5	500175	4.7	19.9	81063	4.8	17.9	473896	4.9	20.1	373769	4.9	19.8	20075	5	



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
254320	5.1	19.4	18682	5.2	17.2	515222	5.2	20.8	101864	5.3	19.2	208847	5.4	20.2	479148	5.5	20.3
481520	5.1	21.3	286554	5.2	19.6	297161	5.2	20.3	180961	5.3	19.2	23592	5.4	17.9	304538	5.5	20.6
255821	5.1	20.3	355747	5.2	20.3	178164	5.2	20.5	127355	5.3	19.5	346501	5.4	19.4	150011	5.5	19.1
338713	5.1	20.4	11401	5.2	15.0	35894	5.2	16.4	147476	5.3	18.5	206506	5.4	19.9	32891	5.5	17.7
426055	5.1	20.3	477874	5.2	20.6	174795	5.2	19.8	12473	5.3	16.7	131236	5.4	19.2	466078	5.5	20.8
285007	5.1	20.8	507972	5.2	19.3	445377	5.2	20.5	312515	5.3	19.6	72272	5.4	19.6	509800	5.5	21.3
511691	5.1	20.3	294330	5.2	20.3	359459	5.2	20.6	106888	5.3	19.5	510939	5.4	19.8	221071	5.5	20.0
278076	5.1	19.9	213690	5.2	18.8	250663	5.2	19.7	359613	5.3	20.2	87477	5.4	16.7	379220	5.5	19.4
509856	5.1	21.7	60281	5.2	19.4	323023	5.3	19.1	215398	5.3	21.5	103588	5.4	19.2	522875	5.5	20.2
178194	5.1	19.6	423861	5.2	21.3	509084	5.3	21.3	25393	5.3	19.1	507649	5.4	19.6	139711	5.5	18.8
143915	5.1	19.9	254406	5.2	19.9	514409	5.3	21.3	244263	5.3	19.9	185782	5.4	19.1	389076	5.5	20.9
173815	5.1	19.9	476672	5.2	21.0	285932	5.3	19.1	514198	5.3	20.8	49026	5.4	17.1	330858	5.5	19.1
387791	5.1	21.3	328125	5.2	21.4	415037	5.3	20.9	504883	5.3	21.3	310657	5.4	21.6	334902	5.5	19.1
190571	5.1	19.2	439153	5.2	20.4	281011	5.3	19.7	205172	5.3	20.0	189545	5.4	19.0	334531	5.5	19.6
332324	5.1	21.3	142387	5.2	19.4	112001	5.3	18.7	311559	5.3	20.3	98732	5.4	18.8	410235	5.5	20.6
472034	5.1	21.1	118464	5.2	19.0	365998	5.3	21.0	328664	5.3	19.7	510599	5.4	20.0	397017	5.5	20.3
49032	5.1	17.4	262842	5.2	19.0	424000	5.3	20.5	299818	5.4	20.5	106768	5.4	19.1	367053	5.5	20.1
12137	5.1	17.6	395725	5.2	19.8	209920	5.3	18.9	390447	5.4	19.4	267185	5.4	18.5	89314	5.5	18.7
227163	5.1	19.6	352619	5.2	21.0	286961	5.3	20.3	188125	5.4	20.4	186869	5.4	20.3	135745	5.5	17.9
233451	5.1	20.5	198360	5.2	18.0	163010	5.3	19.2	312426	5.4	20.1	336683	5.4	20.9	447310	5.5	20.7
443813	5.1	21.1	233811	5.2	20.8	426651	5.3	20.6	289248	5.4	20.7	204117	5.4	19.7	247182	5.5	20.5
100501	5.1	19.6	339189	5.2	20.4	154763	5.3	19.0	305849	5.4	19.5	124192	5.4	17.6	337046	5.5	20.5
58545	5.1	18.9	108970	5.2	18.2	246294	5.3	19.6	129521	5.4	20.5	362518	5.4	20.9	346765	5.5	21.7
514036	5.1	19.9	188374	5.2	21.3	317759	5.3	18.9	424393	5.4	20.6	178603	5.4	17.9	379211	5.5	20.6
212713	5.1	20.4	321403	5.2	20.0	79007	5.3	19.0	80790	5.4	19.2	367477	5.4	19.9	177179	5.5	19.5
294160	5.1	19.7	444366	5.2	20.9	438726	5.3	20.9	430460	5.4	19.8	320061	5.4	20.3	254441	5.5	19.7
479156	5.1	20.9	136231	5.2	18.8	142093	5.3	19.8	383120	5.4	20.9	77556	5.4	18.5	263269	5.5	20.1
256883	5.1	20.7	325970	5.2	21.0	488384	5.3	21.8	187595	5.4	21.1	504821	5.4	22.0	286977	5.5	19.8
231858	5.1	20.4	190542	5.2	19.7	202651	5.3	19.7	74814	5.4	18.3	144880	5.4	18.8	513687	5.5	21.3
4858	5.1	17.0	504430	5.2	19.7	179752	5.3	19.3	117219	5.4	19.4	442494	5.4	20.9	71990	5.5	18.9
327164	5.1	19.8	80154	5.2	18.7	209801	5.3	19.8	132371	5.4	18.6	429600	5.4	19.8	392417	5.5	19.4
205413	5.1	19.4	169634	5.2	20.1	323204	5.3	19.5	174537	5.4	20.1	238605	5.4	20.1	217494	5.5	19.0
204085	5.1	19.2	358926	5.2	20.3	349390	5.3	20.3	476912	5.4	21.8	97829	5.4	17.8	167068	5.5	18.9
322613	5.1	18.7	345484	5.2	20.8	254589	5.3	20.9	136710	5.4	18.3	479540	5.4	21.5	188548	5.5	19.2
73905	5.1	20.3	159014	5.2	21.1	142383	5.3	18.5	278380	5.4	19.3	346250	5.4	20.4	236835	5.5	20.1
60477	5.1	18.4	248973	5.2	19.6	177634	5.3	19.5	178803	5.4	21.1	324937	5.4	20.4	438527	5.5	21.0
66085	5.1	17.9	440519	5.2	21.1	477987	5.3	21.2	368551	5.4	21.0	32750	5.4	19.0	168983	5.5	20.6
402201	5.1	21.8	92006	5.2	20.3	450122	5.3	20.3	397874	5.4	19.4	63123	5.4	19.1	272199	5.5	19.5
370655	5.1	21.5	95262	5.2	19.0	95693	5.3	17.9	352537	5.4	20.9	222437	5.4	18.7	218586	5.5	19.2
34645	5.1	17.6	491769	5.2	19.5	442008	5.3	19.9	465206	5.4	19.2	59966	5.4	18.4	505835	5.5	20.6
190558	5.1	18.9	308032	5.2	19.8	88064	5.3	19.9	22044	5.4	16.7	118956	5.4	19.7	32689	5.5	20.9
135985	5.1	18.7	478408	5.2	21.7	176388	5.3	20.1	45432	5.4	18.4	107407	5.4	19.2	169835	5.5	19.8
73915	5.1	19.8	193493	5.2	20.9	510757	5.3	19.3	289064	5.4	20.5	406780	5.4	20.2	69538	5.5	17.9
297031	5.1	19.8	128053	5.2	18.6	138873	5.3	19.4	414444	5.4	20.8	196666	5.5	19.5	394716	5.5	20.6
272836	5.1	19.1	513143	5.2	20.9	144353	5.3	19.6	72197	5.4	18.2	266198	5.5	20.9	444974	5.5	20.5
444727	5.1	20.4	231848	5.2	20.5	474522	5.3	20.8	326255	5.4	19.7	165595	5.5	19.3	260807	5.5	19.2
474630	5.1	21.4	148076	5.2	20.3	61158	5.3	17.7	41747	5.4	18.7	374619	5.5	21.7	7638	5.5	16.1
251779	5.1	19.5	395295	5.2	20.8	208129	5.3	19.9	133184	5.4	18.3	349748	5.5	20.4	511101	5.5	20.5
369027	5.1	21.2	320698	5.2	17.9	175671	5.3	19.0	175220	5.4	19.7	435789	5.5	20.8	367476	5.5	20.7
353587	5.1	20.6	131835	5.2	19.7	78441	5.3	18.2	479056	5.4	20.5	511488	5.5	21.7	77953	5.5	18.3
177289	5.1	19.5	514876	5.2	21.1	138933	5.3	18.6	461007	5.4	18.9	497225	5.5	21.9	322769	5.5	19.9
117983	5.1	19.0	377580	5.2	20.0	479676	5.3	21.2	72005	5.4	18.4	495312	5.5	20.6	349991	5.5	19.7
92399	5.1	17.4	250929	5.2	19.5	521076	5.3	20.4	309972	5.4	20.4	5969	5.5	15.7	59519	5.5	19.1
314531	5.1	21.1	153119	5.2	18.2	6843	5.3	17.0	182168	5.4	20.0	280878	5.5	21.2	149078	5.5	19.3
466875	5.1	19.2	162405	5.2	19.8	209374	5.3	19.8	153225	5.4	20.4	41087	5.5	19.3	177926	5.5	19.3
221625	5.1	19.0	434043	5.2	19.7	362852	5.3	20.5	293812	5.4	21.0	322232	5.5	20.3	427277	5.5	21.1
511750	5.1	20.3	86899	5.2	18.1	368658	5.3	19.9	79187	5.4	18.9	51672	5.5	17.9	304557	5.5	20.6
160843	5.2	19.0	25224	5.2	17.3	130909	5.3	20.1	160049	5.4	18.3	326685	5.5	19.1	471160	5.5	21.4
476482	5.2	21.8	21674	5.2	17.3	423014	5.3	21.1	477897	5.4	20.8	380280	5.5	20.6	357864	5.5	20.7
256418	5.2	20.5	453964	5.2	20.2	50602	5.3	17.8	444696	5.4	20.2	176429	5.5	19.9	336161	5.5	19.3
317916	5.2	19.4	243781	5.2	21.3	100910	5.3	19.0	485249	5.4	21.0	196426	5.5	19.5	63484	5.5	18.0
434776	5.2	20.1	436996	5.2	20.4	18542	5.3	17.5	175684	5.4	19.9	315157	5.5	20.9	103622	5.5	20.7
296236	5.2	20.9	373828	5.2	20.3	471827	5.3	20.5	499771	5.4	21.2	84129	5.5	19.1	395056	5.5	21.2
521287	5.2	21.4	185322	5.2	20.5	266177	5.3	20.9	42557	5.4	18.9	371568	5.5	20.0	155087	5.5	20.8
355706	5.2	20.7	390335	5.2	19.9	339201	5.3	20.2	198121	5.4	20.4	440506	5.5	21.2	209735	5.5	20.2
309721	5.2	20.8	352244	5.2	20.5	482415	5.3	21.4	518798	5.4	21.2	315107	5.5	22.0	434564	5.5	21.2
201433	5.2	19.4	3446	5.2	17.1	36353	5.3	17.8	172210	5.4	19.9	257710	5.5	20.5	507836	5.6	20.7
471740	5.2	19.4	348271	5.2	20.9	138049	5.3	19.2	180335	5.4	19.6	304377	5.5	20.7	434693	5.6	21.0
482759	5.2	20.9	25017	5.2	18.9	2153	5.3	16.8	245603	5.4	21.2	256983	5.5	20.6	422814	5.6	21.1
133254	5.2	19.4	255402	5.2	19.9	211488	5.3	17.6	260929	5.4	20.3	292524	5.5	19.9	86573	5.6	20.1
67582	5.2	18.1	18816	5.2	16.3	503741	5.3	20.4	354120	5.4	20.5	113129	5.5</				

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
359353	5.6	19.5	178189	5.7	20.4	96549	5.7	18.9	220811	5.8	19.4	72044	5.9	17.4	293906	6.0	20.4
119011	5.6	19.5	371382	5.7	20.2	385475	5.7	20.1	129390	5.8	20.7	314915	5.9	20.7	185823	6.0	20.0
254516	5.6	20.4	487816	5.7	20.6	78471	5.7	18.8	163971	5.8	19.3	445009	5.9	21.0	198222	6.0	17.8
76224	5.6	19.1	355708	5.7	20.1	311562	5.7	19.8	388747	5.8	19.8	66952	5.9	17.8	319288	6.0	20.9
65982	5.6	17.3	75000	5.7	18.6	341029	5.7	19.2	276843	5.8	20.1	374911	5.9	20.7	431743	6.0	21.4
177059	5.6	20.1	311484	5.7	21.1	21336	5.7	18.0	126935	5.8	18.4	355226	5.9	19.4	195028	6.0	18.8
311915	5.6	21.9	243297	5.7	20.3	346627	5.7	19.7	76644	5.8	18.9	16258	5.9	17.2	788	6.0	13.2
389417	5.6	21.0	36562	5.7	18.7	232944	5.7	19.3	395074	5.8	18.7	188850	5.9	21.0	373724	6.0	20.0
11551	5.6	17.6	183829	5.7	21.5	1178	5.7	16.2	211034	5.8	18.7	385315	5.9	19.5	199990	6.0	19.0
266481	5.6	20.2	36829	5.7	19.4	34541	5.7	19.0	42218	5.8	18.7	126131	5.9	18.4	522775	6.0	20.2
157071	5.6	18.9	256670	5.7	21.0	508047	5.7	19.4	200494	5.8	19.9	392534	5.9	20.3	340417	6.0	20.7
65741	5.6	18.5	447069	5.7	20.7	163940	5.7	20.1	34237	5.8	17.9	333929	5.9	19.7	396940	6.0	20.9
224169	5.6	20.5	274795	5.7	18.9	258837	5.7	18.8	43892	5.8	17.7	75138	5.9	18.1	483863	6.0	20.6
432002	5.6	19.5	379621	5.7	21.1	228594	5.7	20.0	509869	5.8	21.6	490880	5.9	21.8	509932	6.0	19.2
181925	5.6	19.5	177372	5.7	18.8	2506	5.7	16.0	481407	5.8	21.5	522956	5.9	20.7	24238	6.0	17.3
38845	5.6	19.5	33542	5.7	16.8	369097	5.7	21.0	219478	5.8	20.0	476627	5.9	21.6	478388	6.0	20.9
515061	5.6	20.6	447094	5.7	20.9	186848	5.7	20.1	273947	5.8	19.2	393670	5.9	19.8	382521	6.0	20.8
483355	5.6	19.6	47929	5.7	18.4	215022	5.7	19.7	33169	5.8	17.8	345585	5.9	20.0	289555	6.0	21.0
299718	5.6	19.5	124206	5.7	19.2	16004	5.7	15.7	39788	5.8	17.7	133908	5.9	19.4	504804	6.0	21.5
506262	5.6	20.0	371842	5.7	21.5	313143	5.7	20.9	508853	5.8	21.7	159515	5.9	20.1	53778	6.0	16.4
319130	5.6	21.1	501899	5.7	21.4	120885	5.8	18.6	294326	5.8	19.8	67035	5.9	17.8	129823	6.0	17.6
489688	5.6	21.3	154228	5.7	18.7	130837	5.8	19.6	507827	5.8	21.4	242526	5.9	20.9	465272	6.0	21.1
345456	5.6	20.3	184692	5.7	19.5	441439	5.8	21.0	22896	5.8	17.2	324878	5.9	20.3	185274	6.0	19.5
340241	5.6	20.6	284581	5.7	20.0	519152	5.8	20.5	184555	5.8	18.3	509157	5.9	21.2	516101	6.0	20.6
134141	5.6	18.2	476543	5.7	21.4	120927	5.8	18.6	126575	5.8	18.8	417945	5.9	19.2	220845	6.0	20.4
61780	5.6	18.6	240407	5.7	20.5	256723	5.8	20.8	350359	5.8	20.5	458181	5.9	21.3	255453	6.0	21.3
476882	5.6	21.1	102549	5.7	19.2	429678	5.8	20.4	508323	5.8	20.1	291605	5.9	19.7	273952	6.0	19.8
241380	5.6	20.8	386413	5.7	21.4	324840	5.8	19.8	144231	5.8	18.6	166281	5.9	19.8	495332	6.0	20.4
362552	5.6	20.3	339360	5.7	19.5	44	5.8	10.6	177333	5.8	21.0	428343	5.9	20.0	159303	6.0	17.8
42539	5.6	19.9	239788	5.7	19.6	40679	5.8	18.6	514432	5.8	19.8	220904	5.9	19.6	384839	6.0	20.2
209331	5.6	20.5	365317	5.7	20.7	285482	5.8	21.5	477583	5.9	20.5	195581	5.9	19.2	461837	6.0	21.1
446667	5.6	19.6	92160	5.7	19.3	306835	5.8	20.3	49762	5.9	18.8	247432	5.9	19.0	426014	6.0	18.8
480030	5.6	19.5	449314	5.7	20.7	140330	5.8	19.7	440965	5.9	20.7	263463	5.9	19.3	494228	6.0	18.9
376955	5.6	22.3	291910	5.7	19.0	445792	5.8	20.7	294332	5.9	20.4	162870	5.9	19.9	507400	6.0	20.3
20393	5.6	18.1	413801	5.7	20.5	345878	5.8	19.4	372888	5.9	20.1	387241	5.9	19.9	173606	6.0	20.4
211310	5.6	19.3	379550	5.7	21.2	228608	5.8	19.9	498761	5.9	19.4	334677	5.9	19.5	37260	6.0	18.2
444244	5.6	20.8	479293	5.7	21.0	97120	5.8	19.8	186749	5.9	21.0	19324	5.9	18.8	476151	6.0	21.5
13142	5.6	17.9	290411	5.7	21.0	161304	5.8	18.9	91950	5.9	19.5	439206	5.9	20.6	323295	6.0	20.8
213918	5.6	19.7	476119	5.7	21.0	511290	5.8	22.2	164326	5.9	19.5	517824	5.9	21.6	476836	6.0	19.9
14286	5.6	17.4	504108	5.7	20.8	475827	5.8	20.8	236499	5.9	21.3	514288	5.9	20.7	263328	6.0	20.0
397450	5.6	20.8	106037	5.7	18.8	19391	5.8	17.3	364074	5.9	19.9	107409	5.9	19.2	435793	6.0	20.5
80340	5.6	19.4	362323	5.7	20.5	403926	5.8	20.7	114418	5.9	18.6	515110	5.9	19.8	13865	6.0	16.3
476693	5.6	21.1	84952	5.7	19.7	342156	5.8	21.0	470634	5.9	20.2	94086	5.9	20.0	385312	6.0	20.1
396114	5.6	20.7	504902	5.7	22.0	334405	5.8	21.1	262055	5.9	19.1	119300	5.9	18.3	56424	6.0	17.2
158915	5.6	20.2	207861	5.7	20.1	121799	5.8	19.7	335087	5.9	19.8	512748	5.9	20.8	211859	6.0	19.1
418940	5.6	21.1	21471	5.7	16.8	474021	5.8	20.9	481279	5.9	20.4	47540	5.9	18.4	471521	6.0	19.6
175124	5.6	19.3	523711	5.7	22.3	261741	5.8	19.7	77378	5.9	18.3	362602	5.9	19.3	35664	6.0	17.9
374901	5.6	20.7	395109	5.7	20.9	249338	5.8	19.5	191083	5.9	20.3	476034	5.9	21.6	521341	6.0	19.6
37547	5.6	18.4	239197	5.7	19.0	170972	5.8	20.0	254267	5.9	20.0	187431	5.9	19.8	482222	6.0	20.9
117338	5.6	18.8	483256	5.7	20.6	345882	5.8	20.6	470842	5.9	20.8	441434	5.9	21.1	510621	6.0	21.3
12181	5.6	17.6	287372	5.7	20.5	189847	5.8	19.7	388719	5.9	20.3	472023	5.9	20.5	217212	6.0	18.4
79614	5.6	18.8	308662	5.7	21.2	21978	5.8	18.5	174507	5.9	20.7	91089	5.9	19.3	389002	6.0	20.8
411638	5.6	20.8	283367	5.7	20.0	172117	5.8	19.1	132619	5.9	18.9	380833	5.9	21.3	251817	6.0	18.9
6724	5.6	16.9	292139	5.7	20.1	309602	5.8	20.3	445496	5.9	21.3	224133	5.9	19.0	510737	6.1	20.0
278519	5.6	20.0	195512	5.7	19.4	25960	5.8	16.9	513372	5.9	21.9	162122	5.9	19.4	25880	6.1	18.1
115740	5.6	20.2	34374	5.7	17.8	86137	5.8	18.3	81038	5.9	19.4	182395	5.9	18.0	181096	6.1	20.1
490789	5.6	20.8	39607	5.7	18.5	357870	5.8	20.3	129988	5.9	19.2	402461	5.9	21.5	255403	6.1	20.3
200650	5.6	19.9	261686	5.7	20.2	391597	5.8	20.2	447210	5.9	20.3	362988	5.9	21.6	15980	6.1	17.1
446237	5.6	21.4	315885	5.7	20.4	283091	5.8	19.3	206031	5.9	19.1	144520	5.9	20.9	386822	6.1	20.8
290427	5.6	20.2	19148	5.7	17.5	137598	5.8	19.5	373635	5.9	19.3	94186	5.9	19.0	107610	6.1	19.5
519784	5.6	21.1	182798	5.7	21.2	347851	5.8	20.6	313289	5.9	21.1	76885	5.9	18.9	448609	6.1	20.6
262955	5.6	20.9	52576	5.7	18.8	167947	5.8	20.1	396223	5.9	21.5	91821	5.9	18.8	155560	6.1	20.8
161266	5.6	17.4	150650	5.7	20.4	436639	5.8	19.6	263679	5.9	20.2	444722	5.9	21.3	11250	6.1	15.4
123806	5.6	18.6	165002	5.7	20.5	469417	5.8	19.8	110441	5.9	19.0	35514	5.9	19.0	353741	6.1	20.3
360942	5.6	19.8	163887	5.7	19.8	386981	5.8	19.9	232559	5.9	18.8	342085	5.9	21.2	93537	6.1	19.1
257280	5.6	19.1	439703	5.7	20.0	104631	5.8	17.8	153541	5.9	19.1	478072	5.9	21.3	246588	6.1	20.1
479593	5.6	20.7	80391	5.7	17.7	72671	5.8	19.9	279713	5.9	20.3	133525	5.9	18.6	42777	6.1	17.8
380315	5.6	20.8	274559	5.7	20.5	416810	5.8	21.1	314539	5.9	20.5	453229	5.9	20.3	10811	6.1	16.6
98156	5.6	19.1	176332	5.7	20.1	157039	5.8	19.2	347278	5.9	19.7	440478	5.9	20.2	478414	6.1	22.3
216632	5.6	19.6	99475	5.7	18.5	378246	5.8	21.7	60430	5.9	18.6	230932	5.9	19.3	371540	6.1	20.8
341151	5.6	19.1	308328	5.7	20.4	238581	5.8	19.6	221037	5.9	18.6	183388	5.9	18.9	344		

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
449282	6.1	20.5	253886	6.2	20.3	478464	6.3	21.0	283133	6.4	19.1	386694	6.5	20.1	316102	6.5	19.8
442599	6.1	20.0	328145	6.2	21.1	142301	6.3	19.2	42835	6.4	17.1	236354	6.5	19.0	266217	6.5	20.0
217458	6.1	19.1	66703	6.2	18.6	39662	6.3	18.8	330952	6.4	19.5	321855	6.5	18.0	20096	6.5	17.7
310704	6.1	20.1	404487	6.2	20.1	145500	6.3	18.1	218423	6.4	19.5	313036	6.5	18.5	243516	6.5	20.2
116677	6.1	19.0	10797	6.2	17.8	123925	6.3	18.5	259781	6.4	19.8	294918	6.5	20.4	516676	6.5	21.2
27089	6.1	16.3	128913	6.2	20.4	304425	6.3	19.9	61210	6.4	16.6	14496	6.5	18.4	442471	6.5	21.0
315133	6.1	21.0	320319	6.2	20.7	139121	6.3	18.6	261499	6.4	20.2	142581	6.5	19.4	25450	6.5	16.7
468613	6.1	20.7	433133	6.2	19.2	252130	6.3	20.6	363042	6.4	20.7	298203	6.5	18.4	337164	6.5	20.7
359892	6.1	21.2	399907	6.2	20.2	215812	6.3	18.9	32573	6.4	17.7	3763	6.5	15.4	275702	6.5	18.3
255502	6.1	20.9	360736	6.2	18.7	443047	6.3	20.0	29369	6.4	18.2	148474	6.5	20.0	260050	6.5	19.9
141766	6.1	18.3	93889	6.2	18.5	187728	6.3	20.9	512058	6.4	20.3	165588	6.5	19.5	169875	6.5	18.8
387504	6.1	21.9	480146	6.2	19.9	196620	6.3	18.7	60301	6.4	18.6	163310	6.5	17.1	330689	6.5	20.6
482172	6.1	20.8	87313	6.2	18.2	186840	6.3	18.8	23352	6.4	16.5	412503	6.5	19.5	113561	6.5	19.1
471667	6.1	20.4	480541	6.2	20.3	513240	6.3	21.3	103466	6.4	19.2	278254	6.5	19.9	14814	6.5	16.8
238286	6.1	19.6	259512	6.2	19.9	251835	6.3	19.7	448677	6.4	20.4	14228	6.5	17.8	241313	6.5	19.9
31297	6.1	18.0	467718	6.2	21.2	387601	6.3	21.2	508083	6.4	21.6	40451	6.5	18.4	363917	6.5	21.8
182779	6.1	19.5	146284	6.2	18.5	373218	6.3	21.2	191069	6.4	20.3	472734	6.5	20.0	306474	6.6	19.3
390114	6.1	20.7	132295	6.2	19.4	337170	6.3	19.9	27429	6.4	17.7	510677	6.5	20.8	54221	6.6	18.1
58832	6.1	18.7	312449	6.2	20.6	74676	6.3	18.2	187652	6.4	20.3	362573	6.5	19.8	396019	6.6	20.0
401479	6.1	19.7	494352	6.2	21.6	50659	6.3	18.0	177465	6.4	18.8	237054	6.5	19.8	75575	6.6	19.6
22399	6.1	18.7	374743	6.2	20.5	6956	6.3	17.5	284577	6.4	20.2	191015	6.5	20.5	307365	6.6	19.7
510462	6.1	20.6	126233	6.2	19.4	508957	6.3	20.9	373643	6.4	19.8	28078	6.5	17.9	178864	6.6	18.4
198565	6.1	20.2	386644	6.2	20.6	336615	6.3	20.0	95092	6.4	19.0	71948	6.5	18.8	99754	6.6	19.7
129609	6.1	19.9	184958	6.2	19.1	321804	6.3	19.9	357230	6.4	21.2	454593	6.5	20.6	107602	6.6	19.4
118565	6.1	19.3	470438	6.2	20.1	222659	6.3	19.9	514951	6.4	21.5	206460	6.5	18.6	515219	6.6	22.4
479269	6.1	21.2	510614	6.2	21.4	319097	6.3	20.3	341073	6.4	19.7	94207	6.5	19.1	335033	6.6	19.0
180105	6.1	20.8	55329	6.2	16.5	311549	6.3	20.6	390136	6.4	20.3	72675	6.5	18.7	261100	6.6	21.0
426780	6.1	18.4	271062	6.2	20.6	303950	6.3	18.4	441989	6.4	19.6	449438	6.5	21.0	105470	6.6	19.2
371554	6.1	20.2	298226	6.2	20.2	273499	6.3	20.9	361907	6.4	20.6	117311	6.5	19.6	132188	6.6	18.9
361968	6.1	20.3	374782	6.2	21.3	3783	6.3	14.7	302255	6.4	20.2	85096	6.5	18.8	517938	6.6	20.6
513422	6.1	21.3	91986	6.2	18.9	37151	6.3	17.4	92362	6.4	18.9	4674	6.5	16.6	312783	6.6	19.6
34262	6.1	17.5	246969	6.2	19.7	34511	6.3	16.5	254292	6.4	20.6	7187	6.5	15.6	357728	6.6	20.8
202905	6.1	18.6	364095	6.2	20.3	444378	6.3	21.6	109542	6.4	18.9	85808	6.5	18.6	343462	6.6	20.7
4502	6.1	16.0	469640	6.2	19.3	311504	6.3	20.6	433137	6.4	19.5	127855	6.5	19.9	266963	6.6	20.8
92004	6.1	18.8	488054	6.2	21.8	84575	6.3	19.9	329943	6.4	20.0	65308	6.5	18.4	442862	6.6	20.5
118930	6.1	19.3	2766	6.2	16.9	80265	6.3	18.4	391603	6.4	21.0	48048	6.5	17.4	28135	6.6	17.1
124974	6.1	19.3	69751	6.2	19.5	149050	6.3	19.0	293388	6.4	21.0	186279	6.5	20.6	74339	6.6	19.7
196375	6.1	18.6	355054	6.2	21.0	446665	6.3	19.6	41078	6.4	18.6	478842	6.5	21.6	262699	6.6	18.2
203714	6.1	19.8	349244	6.2	19.7	218288	6.3	17.2	399007	6.4	19.3	362577	6.5	20.7	111764	6.6	18.4
349160	6.1	19.5	91681	6.2	19.2	30127	6.3	17.5	337315	6.4	19.8	173564	6.5	20.1	178709	6.6	20.1
505775	6.1	21.0	22585	6.2	18.5	290530	6.3	19.6	445753	6.4	21.8	168548	6.5	19.3	340508	6.6	20.5
10195	6.1	15.8	432825	6.2	19.0	329435	6.3	18.8	444248	6.4	20.4	163900	6.5	19.5	253699	6.6	20.5
374890	6.1	21.5	127152	6.2	19.2	389065	6.3	21.0	378830	6.4	20.8	453672	6.5	20.9	139789	6.6	19.1
314474	6.1	20.7	126409	6.2	20.0	294302	6.3	20.0	398218	6.4	20.1	37778	6.5	18.6	37091	6.6	18.0
510020	6.1	20.5	184856	6.2	19.8	108953	6.3	18.5	294003	6.4	19.9	474648	6.5	21.5	145588	6.6	19.1
242547	6.1	22.0	353146	6.2	20.6	116347	6.3	18.9	473353	6.4	20.0	454316	6.5	20.4	495320	6.6	19.7
4841	6.1	16.6	505886	6.2	21.0	239387	6.3	19.5	285693	6.4	20.4	221848	6.5	19.1	476135	6.6	19.9
94228	6.1	17.8	181503	6.2	20.7	112695	6.3	19.3	288190	6.4	20.3	192283	6.5	20.3	370283	6.6	19.4
51653	6.1	18.8	178574	6.2	20.5	289379	6.3	20.7	125914	6.4	18.2	503948	6.5	20.3	132660	6.6	18.3
6126	6.1	16.1	29520	6.2	18.5	237576	6.3	21.0	506502	6.4	20.7	355528	6.5	20.2	103052	6.6	19.7
440622	6.1	20.5	12548	6.2	17.9	4740	6.3	17.7	175480	6.4	19.6	430992	6.5	19.7	359840	6.6	21.4
85593	6.1	18.4	239622	6.2	19.7	511098	6.3	21.9	6343	6.4	16.4	260269	6.5	19.8	25431	6.6	19.2
469455	6.1	19.5	83369	6.2	18.0	79903	6.3	19.8	224161	6.4	18.9	252839	6.5	20.1	385000	6.6	19.6
212727	6.1	20.1	428175	6.2	21.5	505735	6.3	21.1	227743	6.4	20.4	271071	6.5	19.5	448553	6.6	21.3
479158	6.1	21.9	170450	6.2	19.6	146761	6.3	20.7	71514	6.4	19.0	240659	6.5	21.6	190706	6.6	18.6
521691	6.1	20.2	249586	6.2	19.4	288074	6.3	19.5	179673	6.4	19.9	282726	6.5	19.2	285791	6.6	20.8
377736	6.1	20.8	245490	6.2	19.2	200230	6.3	20.5	216478	6.4	19.6	483632	6.5	21.1	264981	6.6	19.3
400900	6.1	21.0	131126	6.2	19.0	85382	6.3	18.6	394021	6.4	19.9	358887	6.5	20.2	38430	6.6	17.3
169922	6.1	20.2	434091	6.2	21.6	254955	6.3	20.2	7790	6.4	18.4	284619	6.5	18.9	469692	6.6	20.7
503950	6.2	20.4	252682	6.3	19.9	301188	6.3	20.2	511187	6.4	20.9	346531	6.5	19.1	479688	6.6	20.1
104605	6.2	18.1	442255	6.3	19.6	93027	6.3	17.8	164488	6.4	18.6	27744	6.5	18.0	26176	6.6	18.2
348411	6.2	21.4	260990	6.3	20.2	339459	6.3	20.9	136912	6.4	18.4	286829	6.5	18.7	63780	6.6	19.1
62321	6.2	16.9	424612	6.3	19.2	259771	6.3	19.3	510593	6.4	21.0	38246	6.5	17.9	481478	6.6	20.9
331243	6.2	19.3	349816	6.3	21.2	482114	6.3	20.5	6359	6.4	16.5	130844	6.5	19.8	221866	6.6	19.7
192341	6.2	20.0	375757	6.3	20.2	185723	6.3	18.6	482182	6.4	21.5	261847	6.5	20.8	375673	6.6	19.0
277556	6.2	19.9	186354	6.3	20.4	112031	6.3	19.0	65254	6.4	18.6	38353	6.5	17.7	315972	6.6	20.8
37346	6.2	18.2	283118	6.3	20.0	438324	6.3	19.6	51485	6.4	17.4	504280	6.5	21.5	509155	6.6	21.1
503946	6.2	21.4	155715	6.3	18.6	316812	6.3	20.7	329211	6.4	20.3	194839	6.5	19.9	215192	6.6	19.2
144081	6.2	19.0	287011	6.3	19.4	142308	6.4	19.9	149346	6.4	18.7	280886	6.5	19.8	181250	6.6	20.0
521592	6.2	20.7	191656	6.3	19.1	433501	6.4	20.8	121369	6.4	20.4	260087	6.5	20.4	232207	6.6	19.6
117151	6.2	18.9	514966	6.3	22.0	298228	6.4	20.4	206567	6.4	19.5	165142	6.5	18.5	306304	6.6	

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
24593	6.6	18.8	330490	6.7	20.1	195222	6.8	19.8	267691	6.8	20.2	249766	6.9	19.5	364502	7.0	21.9
185904	6.6	19.6	141746	6.7	18.6	285245	6.8	20.7	461872	6.8	20.9	112709	6.9	19.7	214629	7.0	19.6
98524	6.6	18.5	433762	6.7	19.5	357819	6.8	21.1	77549	6.8	18.4	50349	6.9	17.3	183746	7.0	20.3
386621	6.6	19.0	320969	6.7	19.8	371546	6.8	19.9	504489	6.8	20.2	281103	6.9	19.5	135631	7.0	18.7
217669	6.6	19.7	207031	6.7	19.4	475511	6.8	20.4	445252	6.8	19.4	106019	6.9	19.3	151295	7.0	19.5
485131	6.6	21.5	131642	6.7	17.5	72002	6.8	18.0	248607	6.8	18.5	520332	6.9	20.7	409668	7.0	20.6
145377	6.6	18.9	380309	6.7	21.1	176147	6.8	20.5	188563	6.8	19.8	54810	6.9	18.0	440203	7.0	21.1
453483	6.6	20.8	6434	6.7	14.9	439247	6.8	21.1	331596	6.9	19.9	523550	6.9	21.7	134403	7.0	17.9
164242	6.6	19.6	253552	6.7	19.8	519620	6.8	21.3	437940	6.9	20.2	402766	6.9	20.6	284614	7.0	19.7
314425	6.6	20.9	90649	6.7	18.3	304407	6.8	20.6	136465	6.9	19.2	318275	6.9	19.0	262591	7.0	20.1
432670	6.6	22.1	141994	6.7	18.9	416657	6.8	19.8	79938	6.9	18.9	7855	6.9	17.4	259779	7.0	19.2
41152	6.6	19.0	400741	6.7	20.6	281759	6.8	19.5	309724	6.9	21.0	51160	6.9	18.4	11847	7.0	17.3
389112	6.6	21.7	511016	6.7	18.3	358851	6.8	20.1	520292	6.9	22.1	431735	6.9	21.8	14059	7.0	18.8
111058	6.6	19.3	24621	6.7	18.1	195526	6.8	20.0	353618	6.9	20.3	141843	6.9	18.9	14628	7.0	17.3
91026	6.6	18.0	2168	6.7	14.7	512171	6.8	20.0	173516	6.9	20.1	210097	6.9	19.8	510729	7.0	20.9
96576	6.6	19.4	235823	6.7	19.2	278557	6.8	19.5	114119	6.9	18.0	339374	6.9	21.0	378660	7.0	20.6
472624	6.6	19.3	130716	6.7	18.5	368282	6.8	18.5	65631	6.9	19.6	485312	6.9	20.8	187816	7.0	19.6
218445	6.6	20.0	141869	6.7	19.6	506069	6.8	20.0	69544	6.9	18.7	50353	6.9	18.2	513452	7.0	21.2
104873	6.6	18.6	309023	6.7	20.3	404495	6.8	20.9	423987	6.9	20.0	106260	6.9	19.5	40505	7.0	18.6
501760	6.6	20.2	222197	6.7	19.9	481106	6.8	21.9	288272	6.9	21.1	261640	6.9	18.2	176571	7.0	20.3
426968	6.6	19.3	444671	6.7	19.7	159621	6.8	18.7	522848	6.9	21.0	19165	6.9	16.9	391858	7.0	19.8
123710	6.6	19.3	298064	6.7	20.9	261067	6.8	20.2	335200	6.9	20.7	39028	6.9	18.8	349176	7.1	20.5
245366	6.6	20.3	362533	6.7	20.5	349884	6.8	21.3	6372	6.9	15.5	203029	6.9	20.5	40318	7.1	17.3
490370	6.6	20.2	479766	6.7	20.7	402697	6.8	21.1	511973	6.9	19.9	132397	6.9	20.1	259632	7.1	20.6
217545	6.6	18.7	195418	6.7	19.8	449325	6.8	21.0	477901	6.9	21.6	188240	6.9	20.4	189782	7.1	20.0
427968	6.6	19.6	380251	6.7	19.0	148266	6.8	20.1	304308	6.9	20.7	467538	6.9	19.4	254201	7.1	19.2
277495	6.6	19.7	450043	6.7	20.7	185392	6.8	20.7	150619	6.9	17.8	361495	6.9	20.9	10721	7.1	16.1
335029	6.6	18.7	114077	6.7	19.7	280094	6.8	20.6	247171	6.9	20.1	442568	6.9	20.4	440534	7.1	20.9
508895	6.6	19.2	245316	6.7	20.8	302422	6.8	21.0	11870	6.9	18.6	291370	6.9	21.4	396074	7.1	20.8
358364	6.6	22.5	318658	6.7	20.5	380312	6.8	21.0	149135	6.9	18.4	467724	6.9	21.3	510147	7.1	20.8
103753	6.6	18.5	342533	6.7	20.5	390038	6.8	20.4	467925	6.9	19.9	370566	6.9	21.0	40190	7.1	17.5
344761	6.6	20.0	39082	6.7	18.5	7947	6.8	18.4	66138	6.9	17.2	302383	6.9	20.9	187120	7.1	18.5
250303	6.6	19.0	367913	6.7	20.6	161060	6.8	18.5	134590	6.9	18.7	95909	6.9	18.7	212810	7.1	20.2
85475	6.6	18.1	25651	6.7	18.9	439766	6.8	20.8	450930	6.9	21.4	72302	6.9	19.9	435853	7.1	20.2
477080	6.6	20.9	103940	6.7	18.5	315392	6.8	20.8	434153	6.9	19.9	138239	6.9	19.9	378671	7.1	20.9
199424	6.6	20.2	99014	6.7	18.6	414440	6.8	20.5	521772	6.9	20.5	117877	6.9	17.6	304311	7.1	20.7
220747	6.6	19.8	357195	6.7	20.6	164266	6.8	18.9	93204	6.9	18.1	514472	6.9	20.9	168107	7.1	19.7
283678	6.6	19.4	446954	6.7	19.5	215394	6.8	19.0	346768	6.9	20.2	379160	6.9	19.2	355577	7.1	20.1
294341	6.6	19.7	66156	6.7	18.0	398277	6.8	20.6	36126	6.9	17.2	77934	6.9	18.4	490113	7.1	21.3
306540	6.6	17.5	238019	6.7	19.6	90680	6.8	18.8	345494	6.9	20.6	168785	6.9	19.8	384764	7.1	18.2
205835	6.6	19.0	49646	6.7	19.1	272386	6.8	19.9	53961	6.9	17.2	398258	6.9	20.6	338863	7.1	19.7
264207	6.6	20.8	463400	6.7	18.8	219534	6.8	19.1	126405	6.9	19.6	288289	6.9	20.9	22217	7.1	18.5
476630	6.6	20.0	60569	6.7	18.0	373199	6.8	21.0	409768	6.9	20.5	338544	6.9	19.9	181451	7.1	20.1
312736	6.6	20.0	256575	6.7	19.9	184884	6.8	18.7	440466	6.9	20.3	386340	6.9	20.6	307030	7.1	20.6
405117	6.6	21.0	476645	6.7	21.4	146030	6.8	20.5	437865	6.9	20.5	288782	6.9	19.9	397697	7.1	20.7
318436	6.6	20.3	28076	6.7	17.8	44954	6.8	17.4	247191	6.9	19.0	476102	6.9	20.5	239516	7.1	18.2
179438	6.6	19.2	83650	6.7	19.4	470806	6.8	19.9	126389	6.9	19.3	332330	6.9	19.8	176165	7.1	19.8
513744	6.6	20.6	15105	6.7	17.4	476081	6.8	20.6	82865	6.9	18.3	250976	6.9	19.1	379171	7.1	21.1
399430	6.7	20.6	481118	6.7	21.2	520517	6.8	21.4	4878	6.9	16.9	315341	6.9	21.0	504491	7.1	21.5
252751	6.7	20.6	156980	6.7	19.4	176306	6.8	19.6	32033	6.9	16.9	41515	6.9	17.7	122564	7.1	18.8
452176	6.7	20.5	423829	6.7	18.6	324957	6.8	20.0	130112	6.9	19.2	224944	6.9	20.2	263167	7.1	20.1
198528	6.7	18.5	256488	6.7	20.3	443697	6.8	20.5	119151	6.9	19.2	211007	6.9	19.9	441032	7.1	20.6
367028	6.7	21.0	343841	6.7	19.9	489589	6.8	21.8	12006	6.9	17.8	398955	6.9	20.4	304261	7.1	20.2
345962	6.7	20.5	298247	6.7	20.0	376920	6.8	21.1	166651	6.9	19.3	506614	6.9	21.5	156153	7.1	19.0
269749	6.7	20.5	488365	6.7	19.9	19166	6.8	17.6	385815	6.9	21.4	38444	6.9	18.0	123062	7.1	20.2
206691	6.7	20.5	454901	6.7	20.1	190056	6.8	19.8	294037	6.9	20.1	393890	6.9	19.8	209235	7.1	19.4
36728	6.7	18.5	77999	6.7	17.6	466289	6.8	20.5	241264	6.9	19.5	187269	6.9	20.9	519694	7.1	20.5
55657	6.7	20.0	191767	6.7	19.2	100413	6.8	19.5	136173	6.9	19.4	391973	6.9	21.5	481469	7.1	21.4
113115	6.7	19.0	172128	6.7	18.4	508824	6.8	19.0	298261	6.9	20.0	41395	6.9	17.3	193559	7.1	20.7
508193	6.7	20.5	443505	6.7	19.6	58397	6.8	19.1	384776	6.9	21.1	13335	6.9	17.0	37927	7.1	18.0
158077	6.7	18.7	193586	6.7	19.2	213770	6.8	19.9	286250	6.9	19.5	511167	6.9	20.5	201951	7.1	18.6
397727	6.7	20.5	472935	6.7	19.7	259020	6.8	19.1	513745	6.9	20.4	89672	6.9	18.7	198019	7.1	19.1
28134	6.7	17.4	180771	6.7	19.5	378687	6.8	19.9	304583	6.9	20.4	338506	6.9	19.1	520112	7.1	20.4
290532	6.7	19.2	509380	6.7	21.0	145342	6.8	19.5	388366	6.9	20.0	434765	6.9	19.5	24029	7.1	17.8
429443	6.7	22.1	73636	6.7	18.6	394893	6.8	21.5	437034	6.9	20.1	387481	6.9	19.0	310653	7.1	20.4
440426	6.7	19.4	469456	6.7	20.7	259895	6.8	19.9	105831	6.9	19.2	169892	6.9	18.5	476424	7.1	21.0
126506	6.7	19.5	320734	6.7	20.6	474516	6.8	20.3	330567	6.9	20.9	515238	6.9	21.3	274149	7.1	20.4
442033	6.7	20.0	149697	6.7	20.3	61465	6.8	18.6	203906	6.9	18.8	474634	6.9	22.0	325422	7.1	18.9
342281	6.7	19.7	137665	6.7	19.7	206090	6.8	18.8	249061	6.9	19.7	188370	6.9	20.8	318276	7.1	21.4
56091	6.7	18.9	102655	6.7	19.0	500847	6.8	20.1	468680	6.9	19.3	437684	6.9	20.0	266761	7.1	20.9
491919	6.7	20.9	476234	6.7	21.9	170721	6.8	20.4	374273	6.9	20.4	426112	6.9				

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
108812	7.1	18.4	212762	7.2	20.2	93676	7.3	19.3	239072	7.4	19.9	475307	7.5	21.0	1417	7.6	14.9
174233	7.1	19.0	521350	7.2	21.6	65459	7.3	19.3	68861	7.4	18.6	433740	7.5	20.2	437629	7.6	19.9
521405	7.1	20.2	88738	7.2	17.9	186804	7.3	19.2	378833	7.4	20.3	337140	7.5	20.3	7267	7.6	18.5
429612	7.1	20.5	333978	7.2	19.1	386333	7.3	20.4	423764	7.4	18.9	48990	7.5	17.8	482740	7.6	21.0
471715	7.1	19.6	11617	7.2	17.4	164052	7.3	18.5	331878	7.4	20.1	97902	7.5	16.9	469960	7.6	20.1
423918	7.1	20.0	259743	7.2	20.3	339435	7.3	20.7	325623	7.4	21.0	395062	7.5	22.2	4219	7.6	16.9
312737	7.1	20.3	123689	7.2	19.1	326293	7.3	19.7	262199	7.4	20.2	513579	7.5	20.9	470605	7.6	19.5
280601	7.1	20.0	252161	7.2	19.8	435714	7.3	21.1	165602	7.4	18.3	412551	7.5	20.6	351193	7.6	20.2
382375	7.1	21.4	96125	7.2	19.1	216768	7.3	20.1	289216	7.4	20.5	316608	7.5	19.7	321111	7.6	20.3
62625	7.1	17.5	323595	7.2	20.3	49931	7.3	18.6	218911	7.4	19.7	511171	7.5	20.9	510972	7.6	22.4
204282	7.1	19.2	276481	7.2	18.5	353532	7.3	20.7	3375	7.4	16.6	143905	7.5	19.7	136300	7.6	19.4
512694	7.1	21.1	289225	7.2	20.4	86074	7.3	18.6	361423	7.4	21.6	171416	7.5	18.7	249771	7.6	19.4
18550	7.1	18.2	432638	7.2	21.6	299903	7.3	19.8	11101	7.4	17.7	129517	7.5	19.3	383976	7.6	21.2
445361	7.1	20.9	263534	7.2	20.5	23322	7.3	19.6	306009	7.4	20.0	93146	7.5	20.1	355743	7.6	20.7
392026	7.1	21.4	418890	7.2	19.8	181259	7.3	19.1	257453	7.4	20.3	212401	7.5	20.0	256470	7.6	20.4
40207	7.1	17.8	236831	7.2	20.1	413414	7.3	20.4	77692	7.4	19.7	135958	7.5	18.9	510891	7.6	20.8
371904	7.1	20.3	7919	7.2	16.9	139636	7.3	18.9	480335	7.4	20.7	516944	7.5	21.3	165619	7.6	19.8
321532	7.1	20.6	51586	7.2	17.7	144685	7.3	19.3	386851	7.4	20.7	52093	7.5	19.1	214167	7.6	18.9
339166	7.1	19.9	509055	7.3	20.9	15048	7.3	17.6	373175	7.4	20.8	506152	7.5	20.2	156348	7.6	19.1
25007	7.1	16.6	468676	7.3	20.3	72826	7.3	19.8	271065	7.4	19.8	517668	7.5	21.1	262071	7.6	19.0
66173	7.1	18.7	211175	7.3	19.7	182799	7.3	19.7	25336	7.4	17.6	176285	7.5	19.8	74358	7.6	19.7
19550	7.1	16.6	61778	7.3	18.8	319312	7.3	20.2	94261	7.4	18.9	2350	7.5	16.1	427147	7.6	20.0
123875	7.1	19.6	254206	7.3	20.9	342361	7.3	20.1	42175	7.4	19.2	295370	7.5	20.8	420436	7.6	21.4
222849	7.2	20.3	224794	7.3	18.9	299190	7.3	18.7	42624	7.4	18.4	294772	7.5	20.5	26396	7.6	19.0
220837	7.2	19.4	479170	7.3	20.5	184863	7.3	19.4	476173	7.4	21.2	387105	7.5	19.2	118066	7.6	17.6
206433	7.2	20.4	195427	7.3	19.2	221046	7.3	19.4	371611	7.4	21.0	381734	7.5	19.7	478732	7.6	21.3
253675	7.2	18.9	384465	7.3	20.5	450949	7.3	21.0	105442	7.4	18.0	283821	7.5	19.9	466272	7.6	20.7
338524	7.2	19.7	383245	7.3	21.7	68317	7.3	18.5	517024	7.4	21.3	314532	7.5	19.8	4650	7.6	15.9
93473	7.2	19.6	11803	7.3	18.7	256649	7.3	20.6	437994	7.4	23.5	93957	7.5	18.6	288948	7.6	19.6
425962	7.2	20.1	352120	7.3	20.0	402403	7.3	21.6	163788	7.4	18.2	448393	7.5	20.2	486312	7.6	20.1
89904	7.2	18.6	14138	7.3	17.2	76547	7.3	19.4	237031	7.4	21.2	305779	7.5	21.2	277851	7.6	19.7
268098	7.2	20.0	50064	7.3	17.2	72258	7.3	19.0	112530	7.4	19.3	395638	7.5	20.7	17994	7.6	16.4
132948	7.2	19.3	43296	7.3	18.0	430537	7.3	19.7	10941	7.4	17.5	248215	7.5	20.3	39676	7.6	18.8
396509	7.2	20.3	59608	7.3	17.8	253506	7.3	19.3	521709	7.4	20.9	425760	7.5	21.3	136260	7.6	19.6
386429	7.2	20.7	395381	7.3	21.0	139305	7.3	18.7	50331	7.4	16.8	395253	7.5	20.0	92467	7.6	19.1
439741	7.2	19.7	23192	7.3	18.0	342031	7.3	19.5	148138	7.4	17.9	5855	7.5	15.1	42193	7.6	17.7
420321	7.2	20.8	294897	7.3	20.2	209394	7.3	20.5	291438	7.4	21.0	345975	7.5	19.9	435724	7.6	19.5
482792	7.2	21.1	248128	7.3	19.5	94291	7.3	19.6	186972	7.4	19.2	122955	7.5	19.1	26508	7.6	19.1
399636	7.2	19.4	504922	7.3	20.6	176229	7.3	19.5	420380	7.4	20.8	220188	7.5	20.4	355677	7.6	20.2
211048	7.2	19.1	40675	7.3	18.4	287012	7.4	19.8	62724	7.4	18.7	60052	7.5	17.6	39845	7.6	16.7
509938	7.2	19.9	485273	7.3	21.5	175229	7.4	19.6	1450	7.4	16.3	451802	7.5	20.7	55925	7.6	18.2
468737	7.2	20.8	400675	7.3	18.6	321131	7.4	19.0	255010	7.4	20.8	498438	7.5	22.0	440657	7.6	20.2
97109	7.2	19.4	342135	7.3	21.8	94260	7.4	18.9	99141	7.4	19.1	165955	7.5	19.6	471558	7.6	19.4
210019	7.2	19.6	410772	7.3	21.3	257806	7.4	21.0	455132	7.4	19.7	124416	7.5	18.6	450313	7.6	19.9
42976	7.2	18.9	475964	7.3	20.4	386786	7.4	21.3	129625	7.4	19.2	508020	7.5	20.2	62324	7.6	19.0
435584	7.2	20.4	426497	7.3	19.0	382543	7.4	19.3	289391	7.4	20.6	70415	7.5	18.2	207285	7.6	19.1
90378	7.2	19.9	339193	7.3	20.6	121979	7.4	19.2	512916	7.4	21.3	337298	7.5	19.9	114965	7.6	18.4
288228	7.2	21.1	360232	7.3	20.5	10003	7.4	16.7	475438	7.4	21.3	513807	7.5	20.8	44707	7.6	18.4
103679	7.2	19.9	183903	7.3	19.8	276323	7.4	17.9	514257	7.4	20.5	397157	7.5	20.6	355210	7.6	20.0
477575	7.2	20.6	13400	7.3	16.5	442035	7.4	20.1	37667	7.5	19.7	278280	7.5	20.2	513231	7.6	20.0
94917	7.2	18.4	348360	7.3	20.7	273479	7.4	20.2	318710	7.5	19.7	342100	7.5	20.8	487917	7.6	19.4
342070	7.2	20.6	444365	7.3	22.2	510337	7.4	20.3	176987	7.5	20.4	438422	7.5	20.2	40046	7.6	17.5
202206	7.2	19.5	66160	7.3	18.4	250020	7.4	20.6	420031	7.5	20.1	9225	7.5	16.4	113421	7.6	19.7
443907	7.2	20.1	473006	7.3	21.3	479141	7.4	20.6	398951	7.5	20.1	368107	7.5	19.5	388702	7.6	20.1
323071	7.2	19.2	443125	7.3	19.7	247309	7.4	19.2	513694	7.5	20.7	436529	7.5	19.7	67711	7.6	18.0
122395	7.2	18.7	131689	7.3	19.8	251903	7.4	20.8	48425	7.5	19.3	402462	7.5	21.3	246775	7.6	20.3
167965	7.2	20.2	4148	7.3	15.6	210281	7.4	19.9	442170	7.5	20.1	207223	7.5	20.2	375711	7.6	20.4
92221	7.2	19.1	149839	7.3	20.8	325980	7.4	21.4	448599	7.5	19.6	507970	7.5	20.8	46571	7.6	18.2
50188	7.2	19.2	186760	7.3	19.9	38045	7.4	18.2	471089	7.5	21.2	123073	7.5	18.6	1566	7.6	18.8
390089	7.2	20.3	380752	7.3	19.1	235728	7.4	21.0	166695	7.5	19.4	342739	7.5	20.1	340328	7.6	20.6
26202	7.2	17.9	308988	7.3	20.8	349267	7.4	20.4	513109	7.5	21.6	321853	7.5	19.8	94911	7.6	19.9
63511	7.2	19.4	37587	7.3	19.8	22082	7.4	18.4	121908	7.5	19.4	355646	7.5	21.0	158058	7.6	19.4
63197	7.2	18.1	121677	7.3	20.1	355656	7.4	20.2	137848	7.5	19.5	340261	7.5	18.4	276429	7.6	21.2
178323	7.2	19.6	351888	7.3	20.9	66347	7.4	17.1	221	7.5	11.4	318501	7.5	19.9	120264	7.6	19.5
391521	7.2	20.1	49902	7.3	18.8	29037	7.4	17.6	382074	7.5	21.1	301248	7.5	20.6	513502	7.6	20.1
85039	7.2	19.6	170660	7.3	20.0	260134	7.4	19.5	479559	7.5	19.5	36889	7.5	18.8	398598	7.6	20.3
513248	7.2	21.9	42715	7.3	17.4	373220	7.4	20.5	15329	7.5	18.6	389169	7.5	19.5	172897	7.6	18.7
204035	7.2	19.3	200218	7.3	20.1	178423	7.4	19.1	304424	7.5	20.5	481759	7.5	20.4	143921	7.6	19.2
84384	7.2	19.0	476713	7.3	19.7	163472	7.4	19.2	342789	7.5	18.4	38837	7.5	18.3	420413	7.6	20.7
5262	7.2	16.1	263511	7.3	20.6	371453	7.4	19.5	82324	7.5	18.6	391501	7.5	18.8	32677	7.6	18.7
344114	7.2	20.3	474358	7.3	20.6	107563	7.4	18.9	284286	7.5	19.8	375826	7.5	19.8	103557	7.6	18.5
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LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
509130	7.7	21.5	88130	7.7	18.1	278983	7.8	19.1	192488	7.9	19.8	284923	8.0	20.9	1014	8.1	16.7
117578	7.7	19.9	78336	7.7	18.6	178493	7.8	19.2	175274	7.9	20.2	80682	8.0	20.6	95669	8.1	18.0
213337	7.7	19.7	10432	7.8	17.9	93126	7.8	19.4	251339	7.9	20.0	470599	8.0	20.6	93289	8.1	19.3
38798	7.7	18.0	255682	7.8	18.9	40743	7.8	19.2	341197	7.9	19.4	259668	8.0	19.9	192201	8.1	20.3
499630	7.7	20.8	443007	7.8	20.3	150581	7.8	19.3	220671	7.9	19.4	512648	8.0	20.4	381730	8.1	20.8
321945	7.7	20.9	349347	7.8	21.2	361527	7.8	21.2	390455	7.9	19.3	311134	8.0	19.7	511343	8.1	20.6
512216	7.7	20.0	475949	7.8	20.6	445025	7.8	22.5	21816	7.9	17.7	480309	8.0	19.4	480220	8.1	20.2
165643	7.7	18.5	310865	7.8	19.8	288416	7.8	20.1	476529	7.9	21.2	441664	8.0	19.9	218570	8.1	19.2
163762	7.7	18.9	338007	7.8	20.0	494257	7.8	20.9	151028	7.9	20.3	345001	8.0	19.7	250315	8.1	17.1
335120	7.7	19.6	275317	7.8	20.1	153185	7.9	18.6	483309	7.9	19.8	274745	8.0	20.1	338033	8.1	20.6
357863	7.7	20.6	144577	7.8	20.4	514938	7.9	21.2	387754	7.9	19.8	88290	8.0	18.0	241386	8.1	21.1
328887	7.7	20.3	507143	7.8	21.2	163903	7.9	19.6	97154	7.9	19.1	321664	8.0	20.3	160695	8.1	18.4
282408	7.7	18.5	273881	7.8	20.8	347200	7.9	18.9	317925	7.9	20.8	155862	8.0	19.6	443705	8.1	20.6
209351	7.7	19.9	249592	7.8	19.5	329251	7.9	21.6	137504	7.9	18.0	24017	8.0	18.6	96566	8.1	19.6
248533	7.7	20.3	164296	7.8	18.5	218343	7.9	19.9	158762	7.9	18.6	390913	8.0	21.2	219286	8.1	19.3
394391	7.7	19.6	345509	7.8	20.3	71996	7.9	17.8	511241	7.9	21.1	36792	8.0	17.9	226351	8.1	19.8
418910	7.7	21.3	512432	7.8	20.4	417987	7.9	20.6	62821	7.9	18.9	438533	8.0	18.6	508486	8.1	20.7
103635	7.7	19.8	99375	7.8	18.1	129041	7.9	19.8	186704	7.9	20.6	77005	8.0	19.4	404712	8.1	20.0
323655	7.7	20.9	69573	7.8	17.9	80696	7.9	18.2	432868	7.9	20.7	375824	8.0	19.7	387143	8.1	20.4
185510	7.7	19.9	501643	7.8	20.6	16970	7.9	17.1	92558	7.9	18.3	142973	8.0	19.1	476285	8.1	20.8
80322	7.7	19.0	77541	7.8	17.2	206582	7.9	18.9	501626	7.9	21.4	20787	8.0	18.2	224122	8.1	19.6
147502	7.7	19.4	505374	7.8	19.6	121420	7.9	19.8	260181	7.9	20.9	109269	8.0	17.9	103901	8.1	20.5
448699	7.7	20.8	89977	7.8	19.0	437577	7.9	20.9	56087	7.9	18.0	390494	8.0	20.3	444357	8.1	20.5
112326	7.7	19.3	117162	7.8	18.6	5238	7.9	16.4	448382	7.9	19.5	250977	8.0	19.0	448011	8.1	21.5
346513	7.7	21.7	263177	7.8	20.6	429697	7.9	19.9	56241	7.9	17.5	241453	8.0	20.1	505680	8.1	21.0
478659	7.7	19.4	167169	7.8	19.7	426414	7.9	20.5	512532	7.9	20.6	348009	8.0	20.0	206127	8.1	19.8
131902	7.7	19.9	68597	7.8	18.7	423434	7.9	20.3	435823	7.9	20.3	128848	8.0	18.5	75863	8.1	19.2
84510	7.7	19.4	246090	7.8	19.6	440669	7.9	21.2	325420	7.9	19.7	256423	8.0	19.6	338487	8.1	19.6
52957	7.7	17.5	349739	7.8	20.2	152040	7.9	19.6	349655	7.9	20.1	418027	8.0	20.6	50879	8.1	18.6
412879	7.7	20.9	509320	7.8	21.5	136738	7.9	19.6	165158	7.9	17.8	87440	8.0	17.5	10203	8.1	17.1
32298	7.7	18.9	94116	7.8	19.3	374813	7.9	18.8	507258	7.9	22.3	43605	8.0	18.8	233896	8.1	20.0
169625	7.7	19.6	76490	7.8	20.0	508175	7.9	21.3	37601	7.9	18.6	479296	8.0	21.7	314583	8.1	21.9
469645	7.7	20.7	217661	7.8	18.1	294851	7.9	20.7	388657	7.9	20.0	35515	8.0	19.1	182736	8.1	20.2
427302	7.7	20.4	54166	7.8	18.2	511169	7.9	21.4	473313	7.9	20.2	243155	8.1	20.1	405668	8.1	20.5
263211	7.7	20.0	216180	7.8	20.4	269388	7.9	19.7	374807	7.9	20.1	444300	8.1	20.5	275419	8.1	20.9
492337	7.7	20.6	360898	7.8	21.1	121781	7.9	19.5	73925	7.9	19.0	248530	8.1	20.2	442922	8.1	20.3
386112	7.7	19.2	318123	7.8	19.1	133825	7.9	18.1	236323	7.9	20.8	442159	8.1	20.2	138110	8.1	20.7
200278	7.7	19.2	477525	7.8	21.2	396188	7.9	20.5	262073	7.9	20.5	364228	8.1	18.9	224369	8.1	18.9
303947	7.7	20.4	388838	7.8	18.4	521174	7.9	21.2	239861	7.9	20.5	279740	8.1	21.0	48399	8.1	18.9
223938	7.7	19.2	387073	7.8	20.8	118165	7.9	20.2	351200	7.9	21.8	349770	8.1	20.7	20158	8.1	18.2
413383	7.7	19.4	62651	7.8	18.7	85603	7.9	18.9	126344	7.9	18.7	476577	8.1	21.8	382982	8.1	21.1
424585	7.7	20.5	376423	7.8	20.1	85810	7.9	18.5	193503	7.9	19.9	288085	8.1	20.9	369769	8.1	20.5
362565	7.7	20.7	53517	7.8	19.0	349290	7.9	20.3	123667	7.9	19.7	420385	8.1	19.5	36676	8.1	18.1
255432	7.7	21.3	184769	7.8	19.8	198226	7.9	21.3	182328	7.9	16.8	107315	8.1	20.6	387662	8.1	20.5
392076	7.7	20.1	482386	7.8	20.6	231943	7.9	19.5	191320	7.9	19.7	211261	8.1	19.4	440599	8.1	20.5
263457	7.7	20.7	183864	7.8	18.8	234564	7.9	20.6	24504	7.9	17.9	155687	8.1	19.4	488297	8.1	19.4
6651	7.7	16.4	243894	7.8	21.8	470706	7.9	21.1	95641	7.9	19.5	113828	8.1	18.1	36110	8.1	17.7
384570	7.7	20.0	505461	7.8	22.4	283693	7.9	19.9	227312	7.9	20.6	442466	8.1	20.8	498425	8.1	21.4
70478	7.7	18.1	121434	7.8	19.6	362387	7.9	20.7	219303	7.9	19.3	30991	8.1	18.8	47669	8.1	18.5
282378	7.7	18.8	302267	7.8	19.9	334029	7.9	18.2	272790	7.9	19.7	268287	8.1	19.0	444220	8.1	20.7
430735	7.7	21.0	514562	7.8	21.1	167816	7.9	19.8	511451	7.9	20.2	50065	8.1	18.9	15864	8.2	17.7
25995	7.7	15.9	145805	7.8	19.4	237530	7.9	19.2	146068	7.9	20.6	141885	8.1	18.9	14997	8.2	16.6
67983	7.7	18.1	470338	7.8	20.3	192958	7.9	19.0	40096	7.9	17.6	246555	8.1	21.6	111988	8.2	17.7
263586	7.7	20.2	196521	7.8	19.3	454953	7.9	20.0	43959	7.9	16.9	217635	8.1	19.8	59985	8.2	16.9
270559	7.7	20.4	260214	7.8	19.7	487747	7.9	20.9	20221	7.9	19.3	209537	8.1	20.3	310876	8.2	20.8
328105	7.7	21.2	513898	7.8	20.8	26494	7.9	17.7	133938	7.9	20.7	282856	8.1	19.9	295305	8.2	19.7
33327	7.7	18.4	158506	7.8	19.0	445433	7.9	21.4	294428	7.9	20.0	234358	8.1	19.5	344750	8.2	21.2
153310	7.7	17.5	8054	7.8	16.6	506150	7.9	20.7	392899	7.9	21.6	25637	8.1	18.1	83001	8.2	18.9
88170	7.7	18.7	224127	7.8	20.0	134844	7.9	19.9	250011	7.9	20.0	325861	8.1	21.9	491680	8.2	21.3
344138	7.7	20.7	273602	7.8	21.2	165121	7.9	19.2	395357	7.9	20.5	333543	8.1	20.1	116077	8.2	19.9
96077	7.7	19.0	157736	7.8	19.5	404094	7.9	21.1	181850	7.9	19.2	473344	8.1	20.7	339262	8.2	20.1
17929	7.7	16.2	479064	7.8	20.9	420358	7.9	21.2	71355	7.9	18.0	476311	8.1	20.9	33389	8.2	16.2
482925	7.7	19.8	389935	7.8	20.7	89590	7.9	19.3	99157	8.0	18.6	352392	8.1	21.4	33378	8.2	18.2
41218	7.7	18.6	94146	7.8	19.0	419615	7.9	19.8	391648	8.0	21.1	23166	8.1	17.8	480543	8.2	19.2
198358	7.7	19.5	521756	7.8	20.6	159577	7.9	18.1	12833	8.0	16.1	435695	8.1	20.5	423085	8.2	21.8
142985	7.7	19.7	155251	7.8	20.0	28293	7.9	17.2	253475	8.0	19.0	48796	8.1	19.2	262614	8.2	21.2
8502	7.7	16.5	322070	7.8	19.9	234737	7.9	19.6	446952	8.0	20.1	195466	8.1	19.7	128475	8.2	18.4
86114	7.7	17.8	433418	7.8	20.5	161504	7.9	18.9	394574	8.0	20.8	202251	8.1	19.4	404600	8.2	20.2
309687	7.7	21.0	399198	7.8	20.1	264906	7.9	19.9	101392	8.0	19.8	517827	8.1	21.3	240634	8.2	19.4
66771	7.7	18.7	122673	7.8	19.6	86867	7.9	18.2	511592	8.0	20.5	120650	8.1	18.9	517519	8.2	21.3
315119	7.7	21.0	246518	7.8	20.7	290702	7.9	20.0	432737	8.0	20.9	450255	8.1	20.7	444702		

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
386430	8.2	21.7	276090	8.3	20.4	63029	8.4	18.6	337150	8.4	21.1	344733	8.5	18.2	94220	8.6	18.7
512423	8.2	20.1	22467	8.3	17.4	200228	8.4	20.2	278239	8.4	21.2	445356	8.5	20.9	298200	8.6	19.1
386739	8.2	20.4	120943	8.3	20.0	70405	8.4	17.8	254384	8.4	19.9	207532	8.5	19.9	184253	8.6	18.2
261493	8.2	20.2	186515	8.3	19.2	52158	8.4	18.4	290925	8.4	21.9	172185	8.5	18.7	401236	8.6	20.4
126082	8.2	20.6	338776	8.3	20.9	178022	8.4	18.2	385113	8.4	19.8	59069	8.5	19.3	39427	8.6	17.3
478969	8.2	21.3	133966	8.3	21.0	391544	8.4	20.1	380005	8.4	20.8	336169	8.5	19.8	80736	8.6	19.3
30570	8.2	17.5	481266	8.3	20.8	274345	8.4	20.4	361883	8.4	20.1	508468	8.5	20.0	17770	8.6	15.3
338661	8.2	20.0	147429	8.3	19.2	215037	8.4	21.1	138835	8.4	20.9	289147	8.5	20.5	144003	8.6	19.7
186833	8.2	20.5	162980	8.3	19.5	277649	8.4	19.9	193269	8.4	18.3	250792	8.5	18.8	299844	8.6	20.3
508958	8.2	22.1	144999	8.3	18.6	345019	8.4	19.5	476184	8.4	19.4	149197	8.5	19.6	134901	8.6	20.9
41543	8.2	17.6	267391	8.3	20.3	342578	8.4	19.5	26130	8.4	17.1	95824	8.5	17.5	137821	8.6	19.2
220704	8.2	18.3	152860	8.3	18.5	75422	8.4	19.7	503786	8.4	20.4	358952	8.5	20.2	204012	8.6	19.0
177436	8.2	20.6	477060	8.3	21.5	370646	8.4	21.0	375708	8.4	19.1	374974	8.5	20.8	57662	8.6	19.0
60717	8.2	18.8	418054	8.3	21.3	480011	8.4	20.9	424185	8.4	20.2	361642	8.5	19.1	347141	8.6	20.4
246000	8.2	20.0	395530	8.3	19.9	305531	8.4	21.3	440985	8.4	20.7	42422	8.5	18.4	447454	8.6	20.7
299144	8.2	20.0	372368	8.3	19.4	446341	8.4	20.9	446144	8.4	20.8	93145	8.5	19.1	321807	8.6	20.3
69937	8.2	17.7	267670	8.3	19.7	487560	8.4	20.6	140322	8.4	20.1	193033	8.5	20.6	513806	8.6	20.4
509039	8.2	21.5	155244	8.3	20.6	82341	8.4	18.5	512645	8.4	19.2	59633	8.5	17.3	442563	8.6	21.1
102140	8.2	18.0	503952	8.3	21.0	69580	8.4	18.5	5975	8.4	16.1	177793	8.5	21.1	445782	8.6	21.5
513720	8.2	21.0	100419	8.3	18.3	446097	8.4	20.9	97151	8.4	18.0	361032	8.5	20.3	186087	8.6	19.2
420370	8.2	21.0	508014	8.3	20.6	176176	8.4	18.2	138000	8.4	19.1	49055	8.5	17.8	479716	8.6	20.0
149919	8.2	20.1	6034	8.3	18.0	244470	8.4	20.5	318560	8.4	19.3	438152	8.5	20.3	342369	8.6	20.4
287446	8.2	21.0	151431	8.3	20.7	287179	8.4	20.4	298229	8.4	21.0	445826	8.5	19.9	393516	8.6	20.1
244969	8.2	20.5	286429	8.3	18.8	166537	8.4	20.2	182849	8.4	20.0	157608	8.5	20.3	461850	8.6	21.0
140385	8.2	19.0	386384	8.3	22.2	163237	8.4	19.5	443474	8.5	20.2	278345	8.5	20.2	319159	8.6	21.5
514281	8.2	20.3	234230	8.3	20.4	22131	8.4	17.8	173597	8.5	20.4	312821	8.5	20.1	282962	8.6	20.4
181032	8.2	19.6	443460	8.3	19.2	519773	8.4	21.1	272222	8.5	20.6	448107	8.5	20.7	474542	8.6	20.9
513768	8.2	21.4	474512	8.3	20.6	449355	8.4	20.0	521414	8.5	20.9	361896	8.5	21.1	449621	8.6	20.3
320424	8.2	20.2	283121	8.3	20.6	271326	8.4	21.2	381842	8.5	21.7	115786	8.5	19.3	450423	8.6	21.0
480264	8.2	20.8	471694	8.3	19.7	125559	8.4	18.2	203005	8.5	19.7	47585	8.5	18.7	107637	8.6	19.1
95602	8.2	18.3	335125	8.3	19.4	115464	8.4	19.4	329189	8.5	20.2	29723	8.5	15.9	292468	8.6	18.0
58408	8.2	18.8	137431	8.3	18.8	344128	8.4	20.4	280586	8.5	19.8	118957	8.5	18.8	187739	8.6	21.6
428131	8.2	19.7	420463	8.3	20.5	501860	8.4	21.2	42782	8.5	18.1	328107	8.6	21.8	347771	8.6	21.0
185468	8.2	19.3	321000	8.3	19.7	469616	8.4	19.0	517235	8.5	21.9	276967	8.6	20.4	284272	8.6	20.5
238191	8.2	19.6	164790	8.3	19.4	22287	8.4	18.7	436295	8.5	20.7	148477	8.6	20.4	380877	8.6	20.9
346767	8.2	20.5	347439	8.3	20.0	480715	8.4	20.9	13148	8.5	18.0	188817	8.6	19.5	437340	8.6	21.4
181813	8.2	19.0	123444	8.3	19.2	213374	8.4	20.5	52251	8.5	18.1	301743	8.6	19.0	505387	8.6	20.3
188961	8.2	20.0	9716	8.3	15.3	75793	8.4	17.7	316688	8.5	20.7	186975	8.6	19.4	223553	8.6	20.2
480992	8.2	20.7	2740	8.3	15.5	493559	8.4	20.2	4290	8.5	15.4	256513	8.6	19.7	313286	8.6	19.9
280045	8.2	20.5	192230	8.3	20.5	328632	8.4	20.8	98512	8.5	19.2	418981	8.6	21.2	259412	8.6	19.5
184536	8.2	19.8	251808	8.3	20.2	13719	8.4	16.7	296161	8.5	20.5	239170	8.6	20.3	507391	8.6	19.5
305061	8.2	20.1	157298	8.3	20.6	398990	8.4	20.2	10749	8.5	18.7	201498	8.6	18.9	150250	8.6	19.3
216695	8.2	19.1	470394	8.3	20.9	305530	8.4	21.4	370594	8.5	20.5	254202	8.6	19.6	72801	8.6	18.5
439088	8.2	20.2	390155	8.3	20.9	433031	8.4	20.2	233862	8.5	20.4	439760	8.6	21.0	60215	8.7	19.1
17738	8.2	16.3	468493	8.3	21.1	322607	8.4	20.0	511105	8.5	19.1	53806	8.6	18.7	378127	8.7	20.1
53673	8.2	17.1	79000	8.3	19.3	344065	8.4	20.1	222227	8.5	20.2	159918	8.6	18.5	523205	8.7	20.8
149006	8.2	19.7	75577	8.3	17.6	508552	8.4	20.5	77984	8.5	18.3	41532	8.6	18.9	259514	8.7	20.0
198508	8.2	19.5	92249	8.3	18.5	442447	8.4	20.7	331518	8.5	19.5	487668	8.6	20.7	311459	8.7	19.7
491665	8.2	20.6	260220	8.3	19.2	137963	8.4	18.5	513706	8.5	21.1	552	8.6	13.9	426678	8.7	20.4
413754	8.2	21.2	253723	8.3	19.8	285424	8.4	20.7	56614	8.5	18.2	304756	8.6	22.1	218317	8.7	19.7
156352	8.2	19.3	264852	8.3	19.0	465207	8.4	19.1	270734	8.5	20.6	111367	8.6	18.9	437589	8.7	20.5
249357	8.2	19.5	444256	8.3	21.2	282291	8.4	19.9	192040	8.5	19.3	494309	8.6	19.4	467557	8.7	20.1
54110	8.2	18.8	445421	8.3	21.7	241490	8.4	19.3	259797	8.5	20.7	250033	8.6	20.2	446260	8.7	22.0
469511	8.2	17.6	214104	8.3	17.8	286471	8.4	20.4	371629	8.5	21.5	195501	8.6	20.6	95638	8.7	19.3
10016	8.2	16.8	300758	8.3	20.9	516834	8.4	22.1	496626	8.5	21.1	167414	8.6	19.7	211806	8.7	20.3
170935	8.2	19.8	453706	8.3	20.9	504917	8.4	21.1	192494	8.5	18.6	427632	8.6	19.6	69263	8.7	19.1
238237	8.2	20.2	67712	8.3	18.5	476553	8.4	21.1	35126	8.5	18.8	344680	8.6	19.4	386753	8.7	20.1
103873	8.2	18.6	368502	8.3	20.2	117925	8.4	18.6	195504	8.5	20.0	40657	8.6	17.3	157262	8.7	20.3
72187	8.2	18.7	429531	8.3	21.1	480265	8.4	21.2	115928	8.5	17.9	376864	8.6	22.8	96722	8.7	17.1
139734	8.2	18.4	37439	8.3	17.6	102164	8.4	18.2	420343	8.5	21.7	384109	8.6	20.2	350092	8.7	19.9
252672	8.2	21.4	342521	8.3	20.0	150704	8.4	17.6	445448	8.5	19.9	337268	8.6	20.1	258459	8.7	20.8
478055	8.2	21.0	218712	8.3	20.2	396962	8.4	20.3	37303	8.5	18.4	56730	8.6	17.5	82235	8.7	18.4
385600	8.2	21.0	237254	8.3	20.1	478763	8.4	20.2	425967	8.5	20.8	474713	8.6	21.2	53713	8.7	19.5
474374	8.2	20.9	250799	8.3	20.3	302051	8.4	20.0	175322	8.5	20.3	295885	8.6	20.3	522937	8.7	20.9
477565	8.2	19.8	154145	8.3	19.6	70798	8.4	18.9	295404	8.5	20.5	184950	8.6	19.8	82993	8.7	17.9
50221	8.2	18.7	226345	8.3	20.4	93897	8.4	18.7	127021	8.5	18.6	78241	8.6	19.2	13859	8.7	16.6
67114	8.2	18.3	312394	8.3	19.1	340330	8.4	19.9	362397	8.5	20.4	320736	8.6	19.8	394490	8.7	20.4
298640	8.2	20.5	58426	8.3	16.7	241425	8.4	20.1	358682	8.5	20.6	390883	8.6	21.3	344734	8.7	19.7
400686	8.2	19.7	510917	8.3	20.4	122521	8.4	18.8	379390	8.5	22.0	60438	8.6	18.0	26491	8.7	17.6
59739	8.2	17.6	23511	8.3	17.4	514011	8.4	20.3	388715	8.5	20.8	432654	8.6	21.9	35736	8.7	16.2
100819	8.3	19.4	386360	8.3	21.6	93398	8.4	18.6	159353	8.5	19.6	22330	8.6	17.5	38		

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
328161	8.7	21.1	169730	8.8	19.0	322563	8.8	20.0	479847	8.9	20.1	234319	8.9	19.4	95883	9.1	19.3
322126	8.7	19.9	35623	8.8	17.2	439673	8.8	20.5	444343	8.9	21.5	206088	8.9	18.5	348091	9.1	20.3
347373	8.7	19.1	259609	8.8	19.1	134580	8.8	19.1	311403	8.9	20.1	300594	8.9	20.9	347284	9.1	19.1
318671	8.7	19.5	509133	8.8	22.2	346451	8.8	19.4	310549	8.9	21.6	483622	8.9	21.2	342056	9.1	20.9
238533	8.7	21.3	395236	8.8	20.1	207656	8.8	19.1	485199	8.9	21.4	123821	8.9	19.2	394652	9.1	21.6
377579	8.7	19.6	289593	8.8	20.7	71207	8.8	18.5	48054	8.9	18.5	470373	8.9	20.5	379236	9.1	19.8
440528	8.7	20.7	469699	8.8	21.4	278277	8.8	21.1	352221	8.9	20.3	448385	9.0	18.7	134573	9.1	18.2
159152	8.7	20.4	435243	8.8	19.7	154889	8.8	20.0	220777	8.9	19.4	17130	9.0	17.0	17175	9.1	17.0
390083	8.7	20.9	287066	8.8	18.8	135980	8.9	18.9	508544	8.9	19.4	186770	9.0	20.1	329185	9.1	20.0
26654	8.7	18.0	60028	8.8	19.5	255494	8.9	20.2	135869	8.9	19.3	512067	9.0	20.3	14620	9.1	18.1
7655	8.7	17.8	343729	8.8	19.7	488867	8.9	20.7	378190	8.9	21.7	110882	9.0	19.7	481749	9.1	21.3
73987	8.7	17.6	217358	8.8	19.0	60566	8.9	18.8	103809	8.9	20.0	151342	9.0	18.6	275313	9.1	20.8
8015	8.7	17.2	400448	8.8	21.0	326156	8.9	20.0	41131	8.9	18.3	508002	9.0	20.7	218805	9.1	19.6
235654	8.7	20.5	442164	8.8	20.2	448616	8.9	20.1	154180	8.9	19.3	170619	9.0	19.6	489975	9.1	20.4
340478	8.7	20.8	76481	8.8	19.4	479654	8.9	20.7	387616	8.9	20.7	73487	9.0	19.0	60994	9.1	18.2
514635	8.7	20.5	374822	8.8	20.7	507946	8.9	21.4	221012	8.9	19.0	315404	9.0	20.1	44427	9.1	16.8
91777	8.7	17.4	284771	8.8	20.0	240182	8.9	20.0	448069	8.9	20.6	396163	9.0	20.1	91961	9.1	19.5
317940	8.7	20.7	63557	8.8	18.4	448065	8.9	21.0	36419	8.9	18.7	244538	9.0	17.9	485748	9.1	20.8
448407	8.7	20.6	24720	8.8	16.6	399233	8.9	19.6	442647	8.9	21.3	71214	9.0	19.3	141992	9.1	19.5
9664	8.7	18.0	177345	8.8	19.8	97057	8.9	18.5	102288	8.9	19.8	311986	9.0	20.5	396736	9.1	19.4
412506	8.7	18.7	284290	8.8	20.3	36047	8.9	18.9	116060	8.9	19.8	139282	9.0	19.0	395387	9.1	20.9
204643	8.7	19.7	322205	8.8	19.9	285313	8.9	20.5	509735	8.9	20.8	427435	9.0	19.1	502023	9.1	21.6
433445	8.7	21.2	511474	8.8	20.6	467310	8.9	19.8	488301	8.9	21.0	245475	9.0	18.8	393283	9.1	20.3
476128	8.7	21.0	242892	8.8	20.3	329146	8.9	20.2	33218	8.9	17.3	64345	9.0	18.7	228563	9.1	19.0
445462	8.7	20.7	446881	8.8	20.3	329502	8.9	18.9	344102	8.9	19.8	508008	9.0	19.8	303657	9.1	19.9
509167	8.7	22.3	251922	8.8	20.2	266150	8.9	18.7	511299	8.9	22.0	365113	9.0	19.4	293182	9.1	19.8
379232	8.7	21.3	254184	8.8	19.4	98466	8.9	18.9	239632	8.9	20.1	431495	9.0	20.6	75821	9.1	19.0
60758	8.7	16.2	266700	8.8	20.5	328488	8.9	19.5	518258	8.9	21.3	41097	9.0	19.2	33869	9.1	16.9
518408	8.7	20.8	513447	8.8	20.6	474164	8.9	20.2	420334	8.9	20.5	358438	9.0	21.2	185558	9.1	19.4
147188	8.7	20.3	444096	8.8	20.8	166117	8.9	19.1	504931	8.9	21.7	217387	9.0	18.5	43429	9.1	18.4
193484	8.7	18.3	66634	8.8	19.1	162356	8.9	18.8	186284	8.9	21.0	66478	9.0	18.0	160492	9.1	20.4
101275	8.7	18.3	420331	8.8	20.6	289184	8.9	21.0	326942	8.9	20.7	521522	9.0	20.6	301400	9.1	19.9
43204	8.7	18.5	253517	8.8	19.9	323009	8.9	18.7	151847	8.9	18.7	140324	9.0	21.0	296277	9.1	20.6
69187	8.7	18.4	470911	8.8	20.7	137894	8.9	19.7	90323	8.9	18.0	101051	9.0	17.5	195207	9.1	18.9
274546	8.7	20.9	437211	8.8	19.7	355121	8.9	21.2	31288	8.9	17.6	448091	9.0	20.7	307001	9.1	20.0
14705	8.7	15.8	468303	8.8	19.3	318306	8.9	20.4	229346	8.9	18.9	311436	9.0	21.3	281489	9.1	19.4
6767	8.7	17.5	168049	8.8	18.4	4117	8.9	15.6	300566	8.9	20.2	232850	9.0	19.9	162687	9.1	23.0
85716	8.7	17.5	92409	8.8	17.3	177356	8.9	18.9	86317	8.9	16.9	170005	9.0	19.3	504892	9.1	20.9
505718	8.7	19.6	5641	8.8	15.8	307432	8.9	20.7	75340	8.9	18.6	278299	9.0	19.5	62041	9.1	18.1
494416	8.7	19.5	46836	8.8	17.4	509745	8.9	20.8	291451	8.9	19.9	376695	9.0	20.5	371575	9.1	20.8
80523	8.7	20.1	380256	8.8	21.1	110400	8.9	18.5	77148	8.9	18.1	201687	9.0	20.4	206412	9.1	19.0
352185	8.7	20.4	132435	8.8	19.8	255399	8.9	21.5	504926	8.9	22.2	395628	9.0	19.4	337203	9.1	19.9
177158	8.7	19.9	203019	8.8	20.7	383464	8.9	19.4	239102	8.9	20.0	72337	9.0	18.1	105983	9.1	19.3
512420	8.7	20.3	378086	8.8	20.6	233308	8.9	20.0	280031	8.9	20.9	358436	9.0	19.8	261341	9.1	21.2
385748	8.7	19.7	400195	8.8	20.4	481382	8.9	19.5	96597	8.9	19.0	280635	9.0	18.4	442828	9.1	20.2
333301	8.7	19.1	393851	8.8	20.3	448054	8.9	20.2	256537	8.9	20.6	509345	9.1	20.9	318972	9.1	20.0
71555	8.7	19.2	446259	8.8	21.7	248562	8.9	21.2	279173	8.9	20.7	107993	9.1	19.4	242033	9.1	18.6
146932	8.7	20.4	276912	8.8	19.9	151388	8.9	20.4	390789	8.9	21.6	521337	9.1	19.8	218164	9.1	19.2
511867	8.7	20.9	485172	8.8	20.6	394531	8.9	21.0	404803	8.9	20.1	381114	9.1	20.4	339337	9.1	20.2
487627	8.7	18.6	296553	8.8	19.2	110901	8.9	19.1	154994	8.9	20.4	257777	9.1	20.7	152440	9.1	20.0
295110	8.7	20.7	391036	8.8	19.8	91690	8.9	18.6	207641	8.9	20.0	36069	9.1	17.3	481497	9.1	21.8
233359	8.7	20.8	475671	8.8	21.5	113710	8.9	18.6	88783	8.9	17.6	116330	9.1	18.0	187010	9.1	18.9
38454	8.8	16.1	334382	8.8	20.9	281391	8.9	20.4	425567	8.9	21.0	434710	9.1	20.0	420612	9.1	20.6
217194	8.8	19.5	223933	8.8	19.1	261619	8.9	20.6	473076	8.9	20.9	65850	9.1	19.7	152527	9.1	19.6
2160	8.8	15.6	92210	8.8	18.1	68392	8.9	18.4	509811	8.9	21.5	441342	9.1	19.1	446288	9.1	20.9
374720	8.8	19.5	480395	8.8	20.3	224036	8.9	19.1	153582	8.9	18.8	100029	9.1	18.7	378184	9.1	20.3
259940	8.8	20.1	114825	8.8	19.2	255507	8.9	20.3	149167	8.9	19.2	253472	9.1	19.2	126144	9.1	19.0
124932	8.8	19.3	505842	8.8	20.3	350356	8.9	20.2	479655	8.9	20.9	54071	9.1	18.9	182747	9.1	20.4
515300	8.8	21.0	113429	8.8	19.4	100861	8.9	19.4	358762	8.9	21.4	46994	9.1	18.3	299173	9.1	20.4
29514	8.8	18.2	343345	8.8	19.8	207292	8.9	20.4	190597	8.9	19.0	507944	9.1	19.5	392711	9.2	20.4
114111	8.8	19.7	91095	8.8	19.5	485338	8.9	20.9	346887	8.9	20.3	137542	9.1	18.8	283158	9.2	19.5
251791	8.8	19.5	21554	8.8	17.5	476987	8.9	19.9	353480	8.9	20.7	431353	9.1	21.5	263680	9.2	19.6
392875	8.8	21.1	477509	8.8	20.3	13176	8.9	17.2	253504	8.9	19.2	170655	9.1	18.9	66323	9.2	16.9
308946	8.8	20.7	71088	8.8	18.5	318360	8.9	21.1	286865	8.9	19.3	85304	9.1	18.7	48690	9.2	18.7
445505	8.8	20.2	335139	8.8	20.5	247450	8.9	19.4	335549	8.9	20.7	398843	9.1	21.4	316928	9.2	21.4
475237	8.8	21.4	74588	8.8	18.3	66009	8.9	17.4	280306	8.9	19.1	318289	9.1	19.8	60247	9.2	19.1
516660	8.8	22.0	316790	8.8	21.0	136632	8.9	19.7	443419	8.9	20.5	19824	9.1	17.9	513863	9.2	21.2
40983	8.8	18.9	334476	8.8	19.5	19439	8.9	17.9	71304	8.9	18.5	128474	9.1	19.1	388737	9.2	20.4
54698	8.8	17.4	450040	8.8	20.1	256525	8.9	20.5	67330	8.9	19.0	518665	9.1	21.3	28565	9.2	15.3
342436	8.8	20.0	470773	8.8	20.9	133126	8.9	19.0	21402	8.9	18.7	298209	9.1	20.8	239091	9.2	20.6
111760	8.8	19.8	116696	8.8	18.6	226399	8.9	19.1	471147	8.9	21.8	515683	9.1	21.2	7488		



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
278066	9.2	20.3	503904	9.3	20.7	286613	9.3	20.8	444192	9.4	20.8	20930	9.5	17.7	307578	9.6	21.2
506756	9.2	21.7	418300	9.3	21.7	376158	9.3	20.3	13109	9.4	18.4	64935	9.5	19.3	89626	9.6	19.0
130315	9.2	19.7	414431	9.3	20.7	429459	9.3	21.3	17214	9.4	16.4	224962	9.5	19.9	359621	9.6	20.0
391624	9.2	19.3	385021	9.3	19.8	513793	9.3	21.5	373730	9.4	19.2	276083	9.5	19.5	515956	9.6	21.6
364940	9.2	21.0	282317	9.3	17.5	289523	9.3	20.6	171709	9.4	18.7	236445	9.5	19.5	78572	9.6	19.4
7635	9.2	16.1	332506	9.3	21.2	425553	9.3	20.0	472688	9.4	20.8	446207	9.5	20.4	297190	9.6	19.8
4825	9.2	15.6	246551	9.3	20.0	147551	9.3	18.7	434690	9.4	21.0	423051	9.5	20.4	175606	9.6	19.4
40581	9.2	17.2	361529	9.3	20.4	263322	9.3	18.8	470875	9.4	20.5	70557	9.5	19.4	342341	9.6	20.4
160842	9.2	19.6	505944	9.3	21.4	509124	9.3	21.8	371430	9.4	19.7	191072	9.5	20.1	509940	9.6	19.3
21455	9.2	18.7	106066	9.3	20.0	84019	9.3	16.9	350147	9.4	19.9	508764	9.5	19.8	93756	9.6	17.4
151306	9.2	18.7	457753	9.3	19.8	13572	9.3	18.5	238628	9.4	19.5	369257	9.5	19.4	184940	9.6	20.1
446429	9.2	19.8	442581	9.3	19.9	521645	9.3	21.6	50781	9.4	18.6	479794	9.5	20.7	75532	9.6	18.6
283704	9.2	20.4	51309	9.3	18.7	234281	9.3	20.0	275716	9.4	17.8	463980	9.5	20.4	428676	9.6	20.5
119913	9.2	19.5	48027	9.3	18.3	505691	9.3	21.4	257211	9.4	19.8	74714	9.5	17.6	95645	9.6	19.4
23106	9.2	17.3	386457	9.3	20.2	493651	9.3	19.4	5127	9.4	17.0	188737	9.5	19.4	438358	9.6	20.4
329759	9.2	19.8	505850	9.3	21.1	391553	9.3	20.8	510707	9.4	21.6	240251	9.5	18.9	355323	9.6	21.1
117166	9.2	18.9	482369	9.3	20.8	296538	9.3	19.6	312837	9.4	20.1	316387	9.5	20.2	264528	9.6	19.5
296190	9.2	19.9	402798	9.3	20.9	280855	9.4	21.6	101344	9.4	19.1	511251	9.5	21.3	251864	9.6	19.4
142930	9.2	19.2	155894	9.3	19.9	223363	9.4	20.8	225932	9.4	19.7	248390	9.5	18.8	187721	9.6	19.8
408986	9.2	20.1	182032	9.3	19.5	355712	9.4	19.7	218540	9.4	19.7	471138	9.5	20.7	103829	9.6	20.1
512976	9.2	19.8	260	9.3	13.2	184771	9.4	19.3	80864	9.4	19.0	93703	9.5	18.7	444405	9.6	20.9
447181	9.2	21.2	263498	9.3	19.4	351137	9.4	19.2	146867	9.4	19.6	435655	9.5	20.3	166943	9.6	18.8
449499	9.2	20.6	387916	9.3	21.1	510965	9.4	21.0	162635	9.4	21.0	113841	9.5	17.7	315056	9.6	20.3
424582	9.2	20.9	347963	9.3	18.3	279468	9.4	20.7	446218	9.4	21.2	369703	9.5	21.4	453130	9.6	19.7
1623	9.2	15.8	158437	9.3	18.6	450036	9.4	19.5	3881	9.4	16.3	479225	9.5	21.5	37031	9.6	17.3
128561	9.2	19.2	32201	9.3	18.2	320485	9.4	20.3	339100	9.4	20.0	418902	9.5	20.2	178504	9.6	18.4
3378	9.2	16.3	436308	9.3	21.3	164055	9.4	18.8	107087	9.5	19.5	183132	9.5	19.1	255529	9.6	21.7
339361	9.2	20.3	254365	9.3	20.5	344725	9.4	20.0	519892	9.5	19.9	452134	9.5	20.1	86601	9.6	17.2
167138	9.2	19.0	186509	9.3	19.2	432273	9.4	20.9	401238	9.5	20.5	437609	9.5	20.0	130927	9.6	20.5
92208	9.2	18.6	166516	9.3	20.2	374909	9.4	20.3	295029	9.5	19.5	294939	9.5	20.8	140306	9.6	19.0
482428	9.2	20.2	131034	9.3	19.5	276106	9.4	19.4	48543	9.5	16.7	284533	9.5	19.8	519684	9.6	21.2
373772	9.2	19.9	349301	9.3	20.7	430793	9.4	18.5	322031	9.5	19.7	253464	9.5	19.0	184066	9.6	19.0
58972	9.2	17.0	395187	9.3	21.1	361399	9.4	21.1	426668	9.5	20.2	37627	9.5	17.5	10637	9.6	17.3
431811	9.2	19.7	128487	9.3	18.8	275397	9.4	20.3	507494	9.5	21.0	256722	9.5	20.2	183759	9.6	20.8
384525	9.2	20.8	218783	9.3	19.2	342406	9.4	19.5	125582	9.5	19.5	322114	9.6	20.2	512021	9.6	21.0
392767	9.2	19.8	313930	9.3	20.5	63092	9.4	16.7	523127	9.5	21.3	413812	9.6	20.3	67501	9.6	18.1
371916	9.2	19.3	42783	9.3	17.2	260722	9.4	20.1	35927	9.5	18.7	137691	9.6	17.7	39833	9.6	17.3
330658	9.2	21.1	81073	9.3	18.4	343788	9.4	19.9	385563	9.5	21.5	472922	9.6	19.9	325130	9.6	19.5
193385	9.2	19.1	397021	9.3	20.2	388878	9.4	21.7	204507	9.5	19.7	287906	9.6	20.0	116654	9.6	17.8
207710	9.2	20.3	25510	9.3	17.1	287324	9.4	18.6	388198	9.5	19.8	452131	9.6	20.3	465329	9.6	20.5
309646	9.2	20.2	309119	9.3	21.4	86278	9.4	17.5	522870	9.5	19.9	373644	9.6	19.3	305340	9.6	20.2
252673	9.2	19.7	339239	9.3	20.2	2636	9.4	15.6	106153	9.5	18.8	294613	9.6	19.8	431262	9.6	21.3
190663	9.2	18.0	318122	9.3	19.8	157616	9.4	20.1	511028	9.5	20.9	439684	9.6	19.9	342560	9.6	19.7
214960	9.2	20.6	4212	9.3	14.9	109599	9.4	18.8	287119	9.5	20.1	130929	9.6	20.2	116038	9.6	19.4
374886	9.2	20.8	426013	9.3	21.3	50513	9.4	19.1	282241	9.5	21.1	355601	9.6	19.9	374761	9.6	19.4
304589	9.2	19.7	268958	9.3	20.3	504461	9.4	21.4	322384	9.5	19.6	318413	9.6	20.6	12076	9.6	17.6
512157	9.2	20.5	294321	9.3	19.9	365746	9.4	20.4	99521	9.5	17.5	434561	9.6	21.1	480213	9.6	19.8
431663	9.2	21.7	477492	9.3	19.8	183198	9.4	18.7	264015	9.5	19.1	191067	9.6	19.5	363059	9.6	21.1
83058	9.2	18.6	488287	9.3	20.5	318335	9.4	20.6	444056	9.5	20.3	169920	9.6	18.2	420322	9.6	21.4
453694	9.2	21.1	271849	9.3	19.9	223418	9.4	19.4	359942	9.5	19.8	505536	9.6	22.2	154127	9.6	18.6
281637	9.2	19.0	418888	9.3	19.7	26281	9.4	16.4	147049	9.5	18.9	286677	9.6	20.6	144337	9.6	19.9
363727	9.2	20.0	39163	9.3	19.0	346954	9.4	20.1	178053	9.5	18.6	38523	9.6	18.7	428545	9.6	21.5
233498	9.2	19.8	121221	9.3	18.1	249365	9.4	19.4	513378	9.5	20.8	230403	9.6	18.3	468416	9.6	20.1
479013	9.2	20.8	9626	9.3	17.5	31496	9.4	17.8	78307	9.5	18.0	358477	9.6	19.2	229606	9.6	21.3
472153	9.2	21.1	256510	9.3	20.8	484671	9.4	20.6	510171	9.5	19.9	200248	9.6	20.1	181214	9.6	19.7
350264	9.2	19.8	17804	9.3	17.0	447331	9.4	19.6	327827	9.5	20.2	337390	9.6	19.0	468075	9.6	19.4
113395	9.2	18.8	24535	9.3	18.6	195497	9.4	19.6	263451	9.5	19.6	157158	9.6	19.0	416809	9.6	20.7
160375	9.2	19.5	277476	9.3	21.0	186326	9.4	19.8	239355	9.5	19.6	186802	9.6	19.4	307992	9.6	19.0
170520	9.2	20.5	232501	9.3	19.5	521963	9.4	19.9	79283	9.5	19.5	326235	9.6	20.2	52254	9.6	17.4
4580	9.2	16.1	275670	9.3	18.2	508886	9.4	20.4	144068	9.5	19.7	313324	9.6	21.5	437625	9.6	21.5
471650	9.2	20.7	384477	9.3	21.4	472459	9.4	19.9	346604	9.5	19.5	315191	9.6	19.2	144170	9.6	19.9
441387	9.2	20.3	84924	9.3	17.7	399817	9.4	19.7	6266	9.5	15.0	21948	9.6	17.2	389090	9.7	19.4
358908	9.2	20.1	198431	9.3	20.7	507622	9.4	21.2	370532	9.5	20.5	347902	9.6	19.9	463410	9.7	20.7
67376	9.2	18.8	235297	9.3	19.3	285219	9.4	19.7	509141	9.5	22.4	401271	9.6	19.8	487781	9.7	21.4
287956	9.2	19.7	479705	9.3	20.8	262889	9.4	20.8	137774	9.5	19.9	504437	9.6	20.5	355008	9.7	20.1
321343	9.2	19.3	479776	9.3	19.9	437838	9.4	20.4	90369	9.5	18.4	138372	9.6	19.1	251583	9.7	19.0
126087	9.2	18.8	199160	9.3	19.1	24719	9.4	17.4	128979	9.5	19.5	35366	9.6	17.5	96739	9.7	17.9
240926	9.3	19.6	384584	9.3	20.0	75636	9.4	17.7	357431	9.5	20.2	513511	9.6	20.4	444111	9.7	20.1
233434	9.3	20.5	311495	9.3	21.1	36100	9.4	17.5	166616	9.5	19.7	237938	9.6	19.5	74998	9.7	18.8
306227	9.3	20.3	274459	9.3	20.3	65636	9.4	17.9	346579	9.5	19.7	390603	9.6	21.3	361528	9.7	20.1
59494	9.3	17.9	332775	9.3	22.1	237575	9.4	20.0	475829	9.5	20.5	284970	9.6	19.6			

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
498128	9.7	20.0	363970	9.7	21.4	380271	9.8	20.9	132638	9.9	19.1	36986	9.9	18.4	316592	10.1	19.9
84958	9.7	18.4	327742	9.8	20.3	336374	9.8	17.9	36311	9.9	17.1	123172	9.9	19.1	276239	10.1	19.0
449728	9.7	20.8	512149	9.8	20.7	472640	9.8	20.1	502669	9.9	20.9	99180	9.9	18.8	301262	10.1	20.3
61498	9.7	18.2	217218	9.8	19.1	240608	9.8	20.5	208531	9.9	19.7	119907	9.9	19.5	515214	10.1	21.0
230319	9.7	20.5	59924	9.8	18.0	481646	9.8	20.6	41040	9.9	17.3	72280	9.9	18.1	204053	10.1	20.9
326191	9.7	21.3	4213	9.8	16.8	69641	9.8	18.1	324974	9.9	19.9	349370	9.9	20.6	302208	10.1	20.1
97793	9.7	17.2	76495	9.8	19.3	349182	9.8	20.6	513400	9.9	20.4	69225	9.9	18.4	225891	10.1	19.9
185147	9.7	20.5	173653	9.8	20.0	398272	9.8	19.2	147482	9.9	20.6	393010	9.9	20.6	394641	10.1	19.4
322017	9.7	19.9	152368	9.8	19.6	253561	9.8	18.6	161554	9.9	19.0	337277	9.9	20.3	293342	10.1	19.6
515072	9.7	20.9	373231	9.8	20.9	91603	9.8	18.9	482350	9.9	21.9	443681	10.0	20.1	363472	10.1	19.5
80354	9.7	19.5	44802	9.8	17.6	320019	9.8	22.2	423792	9.9	20.0	357550	10.0	19.6	25389	10.1	18.0
7711	9.7	17.2	428214	9.8	21.0	17302	9.8	17.9	14606	9.9	16.9	393175	10.0	19.7	453623	10.1	20.7
260194	9.7	20.0	322263	9.8	20.2	472161	9.8	20.5	396299	9.9	21.3	402398	10.0	19.8	257629	10.1	19.9
341977	9.7	20.2	267619	9.8	20.1	111421	9.8	19.6	521746	9.9	21.0	447358	10.0	19.4	476853	10.1	19.9
141562	9.7	19.3	280448	9.8	19.6	482127	9.8	20.5	42882	9.9	17.7	311955	10.0	19.7	131188	10.1	18.5
349834	9.7	20.0	439910	9.8	19.3	343738	9.8	20.5	119881	9.9	19.4	94123	10.0	19.4	20554	10.1	17.5
444447	9.7	20.9	174606	9.8	18.2	404788	9.8	20.2	199501	9.9	19.4	474604	10.0	20.1	93404	10.1	17.9
296498	9.7	19.8	308873	9.8	20.8	234267	9.8	19.6	509027	9.9	19.7	513704	10.0	21.1	386423	10.1	19.3
287754	9.7	19.7	470620	9.8	20.3	358459	9.9	20.9	73207	9.9	17.7	117391	10.0	19.0	512504	10.1	19.6
117325	9.7	18.7	508845	9.8	21.5	505733	9.9	20.8	362267	9.9	19.7	330518	10.0	18.6	264024	10.1	19.6
228028	9.7	19.3	239604	9.8	19.4	193460	9.9	20.0	355517	9.9	20.7	330974	10.0	19.9	401735	10.1	20.5
254286	9.7	19.5	264555	9.8	19.9	298253	9.9	19.8	514744	9.9	21.2	9578	10.0	18.0	258721	10.1	19.5
452362	9.7	20.7	364078	9.8	21.0	475975	9.9	18.0	80935	9.9	18.2	313057	10.0	19.9	249363	10.1	19.8
108453	9.7	18.6	338837	9.8	20.4	137077	9.9	20.0	34376	9.9	17.0	392705	10.0	20.7	97048	10.1	19.3
50563	9.7	18.0	132586	9.8	17.8	466705	9.9	20.3	445827	9.9	20.4	294705	10.0	20.7	16014	10.1	18.0
158824	9.7	19.6	360669	9.8	20.9	388836	9.9	19.4	513449	9.9	21.6	328188	10.0	20.2	495877	10.1	20.5
64717	9.7	18.7	91271	9.8	18.7	193647	9.9	19.6	344662	9.9	19.7	49314	10.0	18.9	346526	10.1	20.0
276888	9.7	17.6	426270	9.8	19.6	62792	9.9	17.8	404886	9.9	20.5	424242	10.0	19.9	313936	10.1	19.0
314354	9.7	21.6	312590	9.8	19.9	443639	9.9	19.8	94164	9.9	18.9	75637	10.0	18.1	434703	10.1	21.2
284825	9.7	20.5	68882	9.8	19.1	339284	9.9	20.3	415049	9.9	20.6	282239	10.0	20.7	227150	10.1	18.8
509970	9.7	21.5	75838	9.8	19.3	219301	9.9	19.8	17872	9.9	16.5	88135	10.0	18.9	259870	10.1	20.5
383145	9.7	20.2	151358	9.8	20.0	314510	9.9	21.3	237162	9.9	19.6	169843	10.0	19.1	57909	10.1	20.1
386400	9.7	21.6	325838	9.8	19.8	449903	9.9	20.0	369501	9.9	20.3	205004	10.0	19.5	111948	10.1	19.2
509802	9.7	20.5	66741	9.8	17.9	256884	9.9	19.9	238649	9.9	19.6	486760	10.0	20.4	168469	10.1	19.3
166662	9.7	19.9	291812	9.8	21.4	371543	9.9	20.7	493756	9.9	20.1	474447	10.0	19.7	401678	10.1	20.5
316924	9.7	21.1	204038	9.8	19.8	447050	9.9	20.7	482410	9.9	21.2	224682	10.0	20.4	360696	10.1	19.8
512533	9.7	20.7	515267	9.8	20.6	505743	9.9	21.4	293473	9.9	19.2	257802	10.0	20.5	451169	10.1	21.4
180408	9.7	20.2	42904	9.8	18.3	342358	9.9	20.4	243392	9.9	19.4	395711	10.0	21.9	510589	10.1	20.6
399806	9.7	20.6	323659	9.8	21.0	72650	9.9	19.7	467706	9.9	20.6	464090	10.0	20.8	224110	10.1	18.4
92297	9.7	18.6	19376	9.8	18.0	97985	9.9	18.9	436199	9.9	21.8	442111	10.0	21.0	339404	10.1	20.5
59559	9.7	19.1	397731	9.8	20.1	221016	9.9	18.3	383280	9.9	20.9	308043	10.0	18.0	494327	10.1	20.4
357494	9.7	18.2	477050	9.8	20.2	478522	9.9	20.3	613	9.9	13.7	269379	10.0	18.2	456202	10.1	20.6
13512	9.7	15.8	272609	9.8	20.7	35501	9.9	18.9	300778	9.9	19.4	400365	10.0	19.2	250769	10.1	20.0
99634	9.7	19.0	447694	9.8	21.0	88190	9.9	17.5	372380	9.9	18.7	442288	10.0	19.5	191044	10.1	18.5
429782	9.7	20.6	178256	9.8	20.0	370620	9.9	20.5	12362	9.9	17.2	27890	10.0	17.8	298181	10.1	19.8
48029	9.7	18.6	167255	9.8	18.7	373822	9.9	20.4	104327	9.9	20.0	395499	10.0	20.8	510740	10.1	21.4
476495	9.7	21.0	504893	9.8	20.4	373829	9.9	21.0	258863	9.9	19.6	149914	10.0	20.5	393614	10.1	21.0
418031	9.7	19.1	41002	9.8	18.8	197912	9.9	19.2	164654	9.9	18.7	3303	10.0	15.5	317961	10.1	19.7
205859	9.7	19.6	358688	9.8	20.5	437267	9.9	20.2	168827	9.9	18.4	92661	10.0	18.7	294987	10.1	21.0
6733	9.7	16.4	155335	9.8	19.8	485839	9.9	20.3	386914	9.9	18.2	213047	10.0	20.5	7290	10.1	16.7
166034	9.7	19.0	387114	9.8	21.2	433235	9.9	20.8	365927	9.9	20.2	360659	10.0	19.4	443295	10.1	19.5
166345	9.7	19.7	213518	9.8	20.1	235877	9.9	19.8	478324	9.9	20.6	392776	10.0	21.5	517131	10.1	22.0
523126	9.7	20.7	335027	9.8	19.3	52063	9.9	18.8	43589	9.9	18.4	283005	10.0	18.8	307124	10.1	19.8
62207	9.7	19.0	95941	9.8	17.7	20514	9.9	17.6	389207	9.9	20.2	358432	10.0	20.5	256995	10.1	20.9
68308	9.7	17.3	193425	9.8	19.0	12780	9.9	19.0	254529	9.9	20.1	455596	10.0	20.6	20582	10.1	18.4
179853	9.7	18.5	443589	9.8	19.3	359534	9.9	19.8	90686	9.9	19.1	158779	10.0	19.3	360890	10.1	21.2
162868	9.7	18.3	84941	9.8	19.6	67738	9.9	18.4	339308	9.9	20.8	477487	10.0	20.5	290804	10.1	20.0
145392	9.7	19.3	289500	9.8	20.3	100964	9.9	18.1	60359	9.9	16.9	104180	10.0	19.4	171140	10.1	19.4
148380	9.7	19.5	312328	9.8	19.5	272439	9.9	19.3	443472	9.9	20.7	366140	10.0	19.9	75605	10.1	18.4
291587	9.7	19.7	439518	9.8	21.2	228661	9.9	20.7	21445	9.9	16.7	64222	10.0	19.5	71591	10.1	18.8
374933	9.7	20.3	445429	9.8	20.2	169672	9.9	19.6	363540	9.9	20.5	279566	10.1	20.7	336761	10.1	18.6
314537	9.7	19.8	5706	9.8	17.2	374798	9.9	21.1	91199	9.9	18.4	183270	10.1	19.6	266701	10.1	19.7
112766	9.7	19.3	76408	9.8	18.6	294691	9.9	20.3	343304	9.9	21.1	513171	10.1	22.1	207731	10.1	20.9
311884	9.7	19.7	9424	9.8	17.3	126573	9.9	18.9	300692	9.9	19.8	243234	10.1	20.1	216057	10.1	18.2
323360	9.7	19.8	476943	9.8	20.3	392075	9.9	21.2	81249	9.9	18.2	504448	10.1	21.0	193233	10.1	17.8
12162	9.7	17.7	3276	9.8	16.6	233375	9.9	19.4	446253	9.9	20.5	232865	10.1	20.1	433808	10.1	19.8
66985	9.7	17.6	345944	9.8	21.7	467179	9.9	20.9	294762	9.9	20.3	257146	10.1	19.4	242563	10.1	20.5
132596	9.7	20.4	445815	9.8	20.3	446128	9.9	20.8	91151	9.9	18.4	302192	10.1	20.8	163914	10.1	18.7
314948	9.7	20.9	433071	9.8	19.9	41629	9.9	19.4	50531	9.9	17.5	478390	10.1	20.2	199607	10.1	20.2
514045	9.7	19.8	344779	9.8	21.1	171746	9.9	18.1	488375	9.9	21.2	482519	10.1	20.0	82280	10.1	18.7
255077	9.7	20.															

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
29225	10.1	18.7	447108	10.2	20.8	372884	10.3	20.5	360873	10.4	19.7	137888	10.5	19.8	221437	10.5	20.5
99227	10.1	18.7	45961	10.2	18.7	36657	10.3	17.5	397105	10.4	20.5	112116	10.5	18.9	399869	10.5	20.3
22732	10.1	16.8	521635	10.2	20.5	243455	10.3	19.5	392369	10.4	20.3	833	10.5	15.1	367767	10.5	18.4
65993	10.1	17.6	245585	10.2	19.5	474402	10.3	20.4	508019	10.4	19.2	293963	10.5	19.5	114490	10.5	19.3
286856	10.1	19.9	478906	10.2	20.9	179728	10.3	19.0	111014	10.4	19.6	290895	10.5	21.0	154881	10.5	19.6
357789	10.1	19.3	318520	10.2	19.9	51516	10.3	16.0	61135	10.4	17.5	232883	10.5	19.8	98245	10.5	18.4
438934	10.1	19.8	417260	10.2	19.8	344729	10.3	19.6	441422	10.4	19.7	253609	10.5	20.9	83391	10.6	18.3
166619	10.1	18.9	384086	10.2	21.5	154241	10.3	18.9	468405	10.4	20.3	89255	10.5	19.6	132505	10.6	19.8
214083	10.1	20.2	309117	10.2	19.7	478761	10.3	20.3	264410	10.4	21.3	95703	10.5	18.8	123120	10.6	18.8
428522	10.1	20.2	215825	10.2	20.4	378606	10.3	20.0	468871	10.4	20.0	355624	10.5	21.5	250823	10.6	19.1
250274	10.1	19.0	431303	10.2	20.7	54439	10.3	17.3	20702	10.4	17.5	451383	10.5	20.2	126871	10.6	19.6
72579	10.1	18.0	516099	10.2	21.0	474123	10.3	21.4	417990	10.4	21.4	245717	10.5	19.1	509659	10.6	20.9
126449	10.1	19.2	521729	10.2	21.0	247400	10.3	19.4	131471	10.4	18.5	202882	10.5	18.8	445248	10.6	20.4
340494	10.1	20.7	128056	10.2	18.3	187992	10.3	18.8	20957	10.4	17.4	104386	10.5	19.4	264262	10.6	18.3
483621	10.1	20.1	307024	10.2	20.1	100026	10.3	17.4	22238	10.4	18.8	397062	10.5	20.0	91695	10.6	19.5
121707	10.1	18.5	480538	10.2	20.6	428780	10.3	19.5	436596	10.4	20.5	220764	10.5	19.8	321341	10.6	20.0
260502	10.1	20.1	137512	10.2	19.4	120796	10.3	20.4	428244	10.4	21.6	363713	10.5	20.2	183284	10.6	19.1
108369	10.1	18.4	66778	10.2	18.4	482775	10.3	20.9	377595	10.4	20.2	231744	10.5	18.0	361945	10.6	19.1
515332	10.1	22.2	144096	10.2	20.5	387894	10.3	21.0	393335	10.4	20.2	50190	10.5	18.2	40891	10.6	18.3
423703	10.1	20.4	429534	10.2	20.7	8706	10.3	17.6	42183	10.4	19.1	253023	10.5	20.1	267321	10.6	19.2
259646	10.1	18.1	213253	10.2	20.4	50121	10.3	18.9	254978	10.4	19.9	513764	10.5	22.0	125039	10.6	19.1
134879	10.2	19.3	256436	10.2	20.7	67899	10.3	18.4	453218	10.4	20.1	366096	10.5	20.9	435603	10.6	20.2
79957	10.2	19.5	225617	10.2	18.4	95955	10.3	17.6	507240	10.4	21.0	237905	10.5	19.8	280100	10.6	19.7
504375	10.2	21.6	238184	10.2	18.4	240212	10.3	20.1	46387	10.4	18.7	254315	10.5	20.0	448641	10.6	19.9
96483	10.2	19.1	432426	10.2	19.0	99191	10.3	19.1	133069	10.4	17.7	339378	10.5	20.0	48004	10.6	18.0
428374	10.2	20.0	454792	10.2	20.3	511811	10.3	19.0	163833	10.4	19.4	53353	10.5	17.8	521418	10.6	20.3
43472	10.2	18.2	108238	10.2	19.5	289444	10.3	20.4	380226	10.4	19.0	325436	10.5	19.5	377599	10.6	20.4
379256	10.2	20.2	79164	10.2	19.2	185269	10.3	19.4	312853	10.4	19.8	22913	10.5	18.0	56560	10.6	16.6
246450	10.2	20.1	478983	10.2	20.5	386326	10.3	20.4	13219	10.4	17.1	60899	10.5	17.4	11792	10.6	18.4
71946	10.2	19.1	493601	10.2	19.9	160477	10.3	19.4	53973	10.4	19.6	355716	10.5	20.2	56722	10.6	17.2
85270	10.2	19.4	415913	10.2	18.6	379914	10.3	20.0	436849	10.4	20.5	243044	10.5	19.9	284624	10.6	18.2
509080	10.2	20.5	285268	10.2	21.4	33137	10.3	18.3	320015	10.4	21.2	92416	10.5	18.4	519220	10.6	21.2
480267	10.2	20.0	71794	10.2	18.0	474383	10.3	20.8	260143	10.4	18.8	246236	10.5	19.9	509974	10.6	20.5
26835	10.2	17.8	246354	10.2	19.5	488398	10.3	20.7	383252	10.4	20.0	357222	10.5	19.9	408684	10.6	20.3
166459	10.2	18.1	202642	10.2	19.8	476696	10.3	21.2	476856	10.4	20.7	279521	10.5	20.1	155847	10.6	20.9
262039	10.2	20.2	184681	10.2	19.7	393626	10.3	20.3	520161	10.4	21.0	358914	10.5	20.0	13632	10.6	15.7
488575	10.2	21.8	242884	10.2	20.5	25729	10.3	16.9	128875	10.4	18.5	278080	10.5	19.7	18891	10.6	17.6
440427	10.2	20.8	514500	10.2	20.3	109810	10.3	19.5	82838	10.4	18.8	158149	10.5	20.1	275399	10.6	20.6
231534	10.2	20.1	396304	10.2	20.0	351034	10.3	18.8	291339	10.4	19.9	161239	10.5	19.5	287137	10.6	19.4
231115	10.2	20.5	16518	10.2	15.7	137406	10.3	18.3	291388	10.4	19.1	56506	10.5	17.7	396364	10.6	20.8
505127	10.2	20.4	463627	10.2	20.0	361643	10.3	19.0	243097	10.4	20.0	180452	10.5	19.5	375268	10.6	20.4
65936	10.2	16.8	37021	10.2	17.3	248652	10.3	19.1	43464	10.4	17.2	200488	10.5	19.5	476309	10.6	20.4
126632	10.2	20.7	290661	10.2	21.6	523714	10.3	21.6	522738	10.4	20.2	516626	10.5	20.4	357874	10.6	21.1
23945	10.2	18.4	137971	10.3	18.6	262324	10.3	20.2	255882	10.4	20.0	163581	10.5	18.3	389167	10.6	21.2
169611	10.2	19.5	100756	10.3	21.1	220961	10.3	18.1	439421	10.4	20.3	280058	10.5	19.8	315870	10.6	18.5
254575	10.2	19.6	129747	10.3	19.7	521627	10.3	21.0	165267	10.4	19.2	316276	10.5	20.5	325488	10.6	20.6
375808	10.2	20.0	95194	10.3	17.8	315155	10.3	20.3	159095	10.4	18.8	12741	10.5	18.1	75549	10.6	19.0
511389	10.2	20.3	12068	10.3	16.6	173292	10.3	18.8	210628	10.4	21.1	268871	10.5	20.7	128685	10.6	18.1
51891	10.2	17.9	433117	10.3	19.4	163809	10.3	19.0	86719	10.4	20.0	294266	10.5	19.6	314461	10.6	21.3
488311	10.2	20.7	472085	10.3	20.7	319467	10.3	18.9	440836	10.4	20.9	106142	10.5	19.4	169948	10.6	19.8
185608	10.2	19.3	324135	10.3	21.1	304294	10.3	21.3	94509	10.4	17.8	261926	10.5	19.5	380268	10.6	20.5
83967	10.2	18.2	48544	10.3	18.1	181055	10.3	18.9	523564	10.4	20.4	362556	10.5	20.7	96181	10.6	18.7
313383	10.2	19.4	329762	10.3	20.1	274958	10.3	20.4	326547	10.4	19.1	119835	10.5	19.7	365825	10.6	20.2
262171	10.2	20.8	384841	10.3	20.0	260175	10.3	19.2	317526	10.4	18.1	282859	10.5	20.2	100384	10.6	18.0
514807	10.2	20.7	98601	10.3	18.7	367084	10.3	18.4	520970	10.4	19.9	316967	10.5	20.4	276858	10.6	19.5
260226	10.2	20.1	117133	10.3	18.7	114726	10.3	19.3	482392	10.4	20.1	376136	10.5	21.1	109177	10.6	18.3
275988	10.2	19.6	377074	10.3	20.2	75800	10.3	18.7	489652	10.4	21.3	50485	10.5	18.0	345470	10.6	19.5
503271	10.2	20.7	86469	10.3	17.2	511176	10.3	22.0	184207	10.4	19.3	177974	10.5	18.8	72534	10.6	18.5
447316	10.2	20.3	98136	10.3	18.0	444666	10.4	20.5	164061	10.4	19.6	324451	10.5	19.1	176119	10.6	19.4
332130	10.2	20.3	132617	10.3	18.3	313942	10.4	19.3	321390	10.4	19.6	454838	10.5	20.5	278241	10.6	20.1
75442	10.2	18.7	23579	10.3	19.9	441794	10.4	20.9	167246	10.4	19.6	344996	10.5	20.0	81376	10.6	18.5
142059	10.2	18.3	401033	10.3	20.5	346534	10.4	19.3	203332	10.4	19.1	355395	10.5	19.8	91165	10.6	17.6
107731	10.2	19.9	320439	10.3	19.5	448619	10.4	20.9	474296	10.4	21.1	244467	10.5	18.5	469933	10.6	20.8
250569	10.2	19.0	449408	10.3	19.7	200505	10.4	19.1	193708	10.4	20.0	294001	10.5	19.5	241457	10.6	20.0
279582	10.2	19.6	388671	10.3	20.2	4500	10.4	17.3	120377	10.4	19.0	377289	10.5	20.3	332865	10.6	20.3
183677	10.2	20.7	474635	10.3	21.7	13140	10.4	16.9	371446	10.4	20.5	252814	10.5	20.0	130869	10.6	18.9
137923	10.2	19.7	247438	10.3	19.5	221461	10.4	19.1	434760	10.4	21.3	235398	10.5	18.7	505734	10.6	20.6
65883	10.2	18.8	140302	10.3	19.9	9529	10.4	18.8	459623	10.5	18.9	510920	10.5	20.0	86405	10.6	17.2
477484	10.2	21.0	221892	10.3	19.8	72124	10.4	1									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
423104	10.6	20.9	95438	10.7	18.7	123424	10.8	20.0	250297	10.9	18.2	216712	10.9	19.5	132916	11.1	19.0
211076	10.6	19.4	12942	10.7	18.1	43111	10.8	19.1	364515	10.9	21.4	512602	10.9	20.1	203956	11.1	19.6
262501	10.6	19.7	107879	10.7	19.7	478818	10.8	20.4	115925	10.9	19.3	254137	10.9	19.3	496391	11.1	20.6
265545	10.6	18.6	223381	10.7	19.5	522713	10.8	21.4	416620	10.9	20.3	512034	10.9	19.6	229834	11.1	19.5
437064	10.6	20.1	440606	10.7	19.8	512467	10.8	20.0	498426	10.9	22.2	146814	10.9	19.1	259811	11.1	19.7
476161	10.6	20.3	269034	10.7	19.9	437794	10.8	19.6	104467	10.9	20.0	475658	10.9	21.5	213891	11.1	20.0
280311	10.6	17.5	277533	10.7	20.2	429713	10.8	20.7	397736	10.9	19.3	12816	10.9	17.3	38142	11.1	16.9
195068	10.6	19.3	324969	10.7	20.4	443100	10.8	21.1	390916	10.9	20.1	83077	10.9	18.0	476235	11.1	20.7
467574	10.6	19.2	451338	10.7	20.5	95931	10.8	18.3	509503	10.9	20.4	444223	10.9	20.5	260114	11.1	19.7
114098	10.6	19.7	289510	10.7	20.0	268309	10.8	20.8	440930	10.9	19.7	473298	10.9	20.0	290635	11.1	19.8
447814	10.6	20.6	288474	10.7	20.5	396506	10.8	19.9	523196	10.9	20.9	95757	10.9	18.4	60352	11.1	19.3
333461	10.6	18.9	180251	10.7	19.6	421431	10.8	21.1	261530	10.9	20.4	246305	10.9	20.2	399878	11.1	20.0
136679	10.6	19.6	193395	10.7	19.0	38484	10.8	17.7	47110	10.9	18.9	230408	10.9	21.1	444452	11.1	21.1
438086	10.6	20.2	508208	10.7	19.5	104168	10.8	18.6	50486	10.9	19.4	465620	10.9	19.9	63208	11.1	19.1
502895	10.6	21.4	52385	10.7	16.2	482223	10.8	21.3	190627	10.9	18.1	504483	10.9	21.4	441362	11.1	20.5
373695	10.6	19.5	292747	10.7	19.8	122323	10.8	18.7	513469	10.9	19.8	23164	10.9	17.7	496424	11.1	20.8
316455	10.7	20.0	139266	10.7	19.0	44124	10.8	18.6	179715	10.9	17.8	432640	10.9	20.9	329236	11.1	20.4
482215	10.7	21.8	257904	10.7	20.0	178721	10.8	19.2	92192	10.9	19.5	478701	10.9	20.2	47531	11.1	17.8
358886	10.7	20.9	489681	10.7	21.7	52156	10.8	18.9	42106	10.9	19.7	440976	10.9	20.6	207644	11.1	20.5
250266	10.7	20.1	257784	10.7	19.7	126343	10.8	20.2	337299	10.9	19.3	92182	10.9	19.3	25418	11.1	19.2
37964	10.7	17.9	435688	10.7	20.9	508566	10.8	20.5	48470	10.9	17.8	70433	10.9	18.6	471261	11.1	20.7
491652	10.7	20.1	199927	10.7	19.5	280359	10.8	18.8	73813	10.9	20.2	392120	10.9	20.2	131027	11.1	19.2
517701	10.7	20.3	49003	10.7	17.8	56551	10.8	18.7	293464	10.9	20.8	173638	10.9	19.8	167923	11.1	19.5
165642	10.7	20.0	255295	10.7	19.9	290877	10.8	20.7	351977	10.9	20.5	12023	10.9	16.9	93335	11.1	19.7
97055	10.7	19.4	105220	10.7	18.3	440935	10.8	21.0	29005	10.9	18.6	268928	10.9	20.5	9423	11.1	15.6
448384	10.7	19.1	352482	10.7	21.0	500785	10.8	20.6	49045	10.9	18.2	412008	10.9	19.0	102385	11.1	18.2
300517	10.7	20.7	236209	10.7	19.4	291247	10.8	21.0	230341	10.9	20.4	440439	10.9	20.4	235247	11.1	20.0
494350	10.7	20.6	361074	10.7	19.8	199328	10.8	20.0	175638	10.9	19.5	505512	10.9	21.6	152464	11.1	20.0
280768	10.7	19.7	19084	10.7	16.6	147104	10.8	19.5	312765	10.9	20.6	298032	10.9	18.7	224178	11.1	19.7
481124	10.7	21.2	514356	10.7	19.6	445831	10.8	20.7	465849	10.9	19.6	203996	10.9	18.7	234262	11.1	19.4
151326	10.7	19.9	302144	10.7	19.2	76057	10.8	18.1	119910	10.9	19.4	485286	11.0	21.5	445828	11.1	19.9
390265	10.7	20.3	1888	10.7	15.9	306620	10.8	19.2	454865	10.9	20.6	522852	11.0	20.0	294818	11.1	20.4
353782	10.7	19.9	285298	10.7	21.1	465590	10.8	19.7	252212	10.9	21.2	193595	11.0	19.3	385570	11.1	20.6
390443	10.7	20.6	91795	10.7	19.0	181835	10.8	18.0	184190	10.9	19.2	451187	11.0	19.5	234328	11.1	20.5
334652	10.7	20.0	262926	10.7	20.4	132341	10.8	18.6	94035	10.9	18.8	423166	11.0	20.9	435152	11.1	20.6
1736	10.7	14.5	405734	10.7	19.2	418925	10.8	20.6	257169	10.9	19.6	507760	11.0	21.8	202320	11.1	20.2
381846	10.7	21.1	509030	10.7	19.0	3522	10.8	15.2	390886	10.9	21.7	494470	11.0	20.4	211937	11.1	19.7
380327	10.7	21.0	323547	10.7	20.1	217341	10.8	19.4	396985	10.9	20.2	12567	11.0	17.9	124113	11.1	17.6
263191	10.7	20.5	340550	10.8	21.3	481256	10.8	21.8	380311	10.9	20.7	80701	11.0	19.5	287350	11.1	19.6
284770	10.7	20.2	420439	10.8	20.8	420424	10.8	21.1	219968	10.9	19.3	425988	11.0	20.0	173010	11.1	18.0
160833	10.7	19.9	397446	10.8	20.4	141445	10.8	20.5	103894	10.9	18.7	121701	11.0	19.9	440063	11.1	19.3
81665	10.7	18.4	394215	10.8	20.6	136697	10.8	19.8	320085	10.9	19.8	289061	11.0	20.5	454157	11.1	19.7
40779	10.7	18.2	265959	10.8	20.6	198052	10.8	19.3	865	10.9	15.7	91767	11.0	19.3	119925	11.1	19.4
447224	10.7	20.0	511944	10.8	20.8	319001	10.8	22.3	471805	10.9	19.7	510704	11.0	19.6	400978	11.1	20.2
474562	10.7	21.6	219311	10.8	19.4	441585	10.9	19.5	62675	10.9	18.9	447360	11.0	19.8	256467	11.1	19.3
201816	10.7	19.7	95482	10.8	18.1	144368	10.9	20.5	476665	10.9	21.2	273739	11.0	21.4	451215	11.1	20.8
478874	10.7	21.3	90400	10.8	18.9	326029	10.9	19.9	200512	10.9	19.8	515326	11.0	20.2	97233	11.1	20.1
509742	10.7	21.2	299157	10.8	20.6	163497	10.9	19.1	91172	10.9	18.9	7304	11.0	16.2	397942	11.1	20.3
101557	10.7	18.3	478973	10.8	20.2	507967	10.9	20.7	274963	10.9	19.5	294458	11.0	19.9	144863	11.1	19.3
323350	10.7	21.0	381817	10.8	21.4	322356	10.9	19.8	329438	10.9	19.3	31331	11.0	18.5	51683	11.1	17.9
198455	10.7	18.9	476820	10.8	20.3	155073	10.9	20.4	316330	10.9	18.8	122559	11.0	18.9	17541	11.1	18.3
309616	10.7	20.2	470729	10.8	19.5	11155	10.9	16.9	380753	10.9	19.1	177051	11.0	19.4	66142	11.1	17.1
9480	10.7	17.5	393758	10.8	22.2	404895	10.9	20.0	52578	10.9	19.8	281540	11.0	20.1	440982	11.1	20.7
44579	10.7	17.7	509819	10.8	21.9	507247	10.9	20.5	329317	10.9	18.6	260255	11.0	19.6	125268	11.1	18.9
57318	10.7	17.8	522884	10.8	21.0	118213	10.9	19.8	314396	10.9	21.1	482354	11.0	21.1	246670	11.1	20.3
179849	10.7	18.9	208577	10.8	18.1	440187	10.9	20.0	191744	10.9	19.0	205355	11.0	18.5	93618	11.1	18.1
342119	10.7	20.0	48676	10.8	18.5	446964	10.9	20.1	496627	10.9	20.7	342136	11.0	19.7	391341	11.1	20.6
300513	10.7	20.3	514383	10.8	20.7	445404	10.9	21.7	430906	10.9	19.6	342079	11.0	19.3	448520	11.1	20.2
182517	10.7	20.7	427663	10.8	18.5	317257	10.9	19.0	504831	10.9	20.0	340965	11.0	19.1	358362	11.1	20.2
173181	10.7	19.2	437673	10.8	20.5	230396	10.9	19.0	103556	10.9	19.4	509142	11.0	21.8	41082	11.1	17.2
132334	10.7	20.0	24338	10.8	19.1	86054	10.9	18.1	147501	10.9	19.0	285429	11.0	19.5	250873	11.1	19.2
510933	10.7	21.7	196054	10.8	19.3	148473	10.9	20.1	391449	10.9	18.6	79522	11.0	17.8	520476	11.1	20.5
509622	10.7	21.3	389130	10.8	20.6	292659	10.9	20.0	329729	10.9	20.6	86701	11.0	20.1	92185	11.1	18.4
450159	10.7	22.6	78048	10.8	17.7	400425	10.9	21.4	397692	10.9	20.6	207850	11.0	20.0	188874	11.1	20.8
375716	10.7	19.1	474490	10.8	20.1	200107	10.9	19.9	98404	10.9	18.3	102308	11.0	18.9	521242	11.1	20.7
211273	10.7	19.6	212317	10.8	19.7	260426	10.9	20.1	47514	10.9	16.9	204092	11.0	19.9	44679	11.1	16.2
63307	10.7	18.6	521183	10.8	20.6	340372	10.9	20.8	378278	10.9	20.5	340382	11.0	20.3	158982	11.1	20.0
520443	10.7	21.3	327783	10.8	18.5	9583	10.9	17.8	474568	10.9	21.5	383516	11.0	19.3	414380	11.1	20.6
459735	10.7	19.5	505838	10.8	21.0	42285	10.9										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
34403	11.1	17.9	239864	11.2	18.8	157415	11.3	18.1	71112	11.4	18.5	387906	11.5	18.7	196545	11.6	18.7
349322	11.1	21.0	469887	11.2	20.1	376891	11.3	21.0	31305	11.4	17.7	248150	11.5	20.0	261434	11.6	19.7
330581	11.2	21.4	10789	11.2	17.3	21095	11.3	16.8	5561	11.4	14.9	314451	11.5	21.4	424432	11.6	20.5
431323	11.2	21.5	127322	11.2	20.1	281296	11.3	17.4	281410	11.4	20.5	18144	11.5	16.6	7106	11.6	15.2
456121	11.2	21.0	65937	11.2	19.0	73	11.3	12.4	156999	11.4	17.3	504865	11.5	20.9	240650	11.6	20.0
153735	11.2	19.8	71753	11.2	18.6	362545	11.3	20.3	433785	11.4	20.7	459867	11.5	20.5	286975	11.6	18.7
375202	11.2	19.8	99357	11.2	18.9	444465	11.3	20.5	507993	11.4	21.1	510465	11.5	21.0	191629	11.6	18.2
316256	11.2	19.8	230330	11.2	21.0	334019	11.3	19.9	30948	11.4	17.2	360917	11.5	20.6	398071	11.6	20.6
102312	11.2	17.8	356371	11.2	20.0	249780	11.3	19.7	122149	11.4	19.9	476636	11.5	20.8	16962	11.6	16.6
389495	11.2	21.3	131218	11.2	19.3	210279	11.3	20.3	344723	11.4	19.0	161294	11.5	18.0	185596	11.6	20.0
336769	11.2	19.3	234308	11.2	19.3	42007	11.3	18.8	162014	11.4	18.2	423091	11.5	20.9	245558	11.6	19.5
465836	11.2	19.2	52861	11.3	18.1	79943	11.3	19.0	384449	11.4	20.7	397138	11.5	19.5	99228	11.6	19.4
384069	11.2	18.8	357144	11.3	21.1	164354	11.3	19.5	21364	11.4	18.6	21119	11.5	17.7	449514	11.6	20.0
249220	11.2	19.2	445021	11.3	20.6	383300	11.3	20.7	181735	11.4	18.8	510446	11.5	21.5	491040	11.6	20.1
255616	11.2	19.6	445836	11.3	21.4	271656	11.3	17.9	218389	11.4	18.1	199993	11.5	20.1	445262	11.6	20.0
101523	11.2	19.1	148426	11.3	19.1	291209	11.3	19.9	262378	11.4	20.4	161441	11.5	18.7	179460	11.6	20.3
389021	11.2	20.6	24795	11.3	17.9	239858	11.3	21.5	176111	11.4	19.6	91344	11.5	19.7	10708	11.6	16.6
185638	11.2	20.9	367526	11.3	19.2	168825	11.3	19.8	110893	11.4	19.1	49356	11.5	18.3	94027	11.6	17.3
192462	11.2	20.3	116530	11.3	19.5	471600	11.3	20.3	49024	11.4	18.3	230313	11.5	19.2	356892	11.6	20.0
293901	11.2	20.4	513978	11.3	21.2	30016	11.3	16.1	86068	11.4	18.2	470777	11.5	20.0	181927	11.6	19.6
251574	11.2	19.7	455310	11.3	20.0	102933	11.3	18.6	214945	11.4	19.6	438293	11.5	20.9	34771	11.6	18.9
91635	11.2	19.4	261581	11.3	21.4	284502	11.3	19.1	9050	11.4	16.3	515922	11.5	21.0	512652	11.6	20.8
99195	11.2	18.6	185766	11.3	19.0	417965	11.3	19.9	167741	11.4	18.9	54853	11.5	17.0	92701	11.6	18.7
121816	11.2	19.7	437059	11.3	20.2	221919	11.3	19.7	444971	11.4	20.3	256606	11.5	18.8	157627	11.6	19.9
467122	11.2	19.6	104759	11.3	18.6	166499	11.3	19.1	388173	11.4	19.8	367492	11.5	20.3	250040	11.6	19.3
208899	11.2	19.8	345042	11.3	20.8	378260	11.3	21.1	448376	11.4	20.4	129953	11.5	19.4	438546	11.6	19.1
430624	11.2	20.8	74162	11.3	17.9	370673	11.3	20.7	60369	11.4	19.5	106847	11.5	19.4	508827	11.6	20.4
450369	11.2	20.2	253199	11.3	19.7	149783	11.4	20.6	66469	11.4	17.8	339304	11.5	20.1	327776	11.6	20.2
341196	11.2	20.2	383243	11.3	20.4	394211	11.4	19.7	396958	11.4	20.4	253635	11.5	20.7	335026	11.6	18.8
445818	11.2	21.1	505136	11.3	20.4	485212	11.4	21.7	212409	11.4	20.3	258625	11.5	20.4	472853	11.6	19.7
422854	11.2	20.4	307807	11.3	20.2	219084	11.4	18.0	283045	11.4	20.8	505669	11.5	19.4	92261	11.6	18.6
363927	11.2	21.6	362277	11.3	19.8	5728	11.4	16.0	508981	11.4	22.1	190532	11.5	18.3	131012	11.6	19.5
509798	11.2	21.6	363489	11.3	20.2	209553	11.4	18.7	279743	11.4	20.4	234255	11.5	19.2	417264	11.6	21.4
210864	11.2	19.4	136001	11.3	18.1	395783	11.4	20.6	56844	11.4	18.2	469267	11.5	20.7	126419	11.6	19.2
205834	11.2	18.8	256164	11.3	19.6	131172	11.4	19.1	220890	11.4	20.1	401739	11.5	20.3	387310	11.6	20.5
423933	11.2	21.1	231260	11.3	19.8	447690	11.4	20.2	374883	11.4	21.5	48007	11.5	16.8	104822	11.6	19.4
342376	11.2	20.8	101456	11.3	19.2	315971	11.4	20.4	471145	11.4	20.6	443063	11.5	20.5	445502	11.6	20.1
154123	11.2	19.1	266487	11.3	20.1	520420	11.4	20.5	451385	11.4	20.8	282066	11.5	20.7	115344	11.6	18.7
221771	11.2	20.3	147189	11.3	20.0	263310	11.4	20.2	320027	11.4	19.9	194925	11.5	19.5	234295	11.6	19.1
436786	11.2	20.3	308437	11.3	19.2	287343	11.4	19.6	100757	11.4	20.6	315237	11.5	19.8	298717	11.6	20.7
175381	11.2	18.9	471608	11.3	19.3	134610	11.4	18.2	513962	11.4	21.4	448444	11.5	20.9	321506	11.6	20.9
91085	11.2	19.3	431436	11.3	19.9	157716	11.4	19.3	170358	11.4	19.5	326364	11.5	20.7	6107	11.6	16.4
269613	11.2	20.0	333593	11.3	18.7	174036	11.4	19.0	30857	11.4	17.7	154248	11.5	18.6	4151	11.6	17.3
256749	11.2	20.6	105617	11.3	18.7	57956	11.4	18.9	68802	11.4	17.8	263033	11.5	20.0	311413	11.6	21.4
214144	11.2	20.6	398645	11.3	20.9	5335	11.4	26.1	344660	11.4	19.3	181816	11.5	18.6	517977	11.6	20.4
36441	11.2	18.5	129148	11.3	19.7	17966	11.4	16.8	276052	11.5	19.8	34394	11.5	18.2	2339	11.6	15.6
1135	11.2	13.4	112051	11.3	18.4	282588	11.4	20.2	444448	11.5	20.5	351148	11.5	19.4	119941	11.6	19.5
325872	11.2	21.2	235777	11.3	19.9	313847	11.4	19.8	184263	11.5	18.5	160658	11.5	18.1	301466	11.6	21.4
154198	11.2	19.3	8864	11.3	16.5	398802	11.4	21.2	313375	11.5	19.0	520039	11.5	19.9	76940	11.6	20.0
379216	11.2	19.6	327665	11.3	19.4	135881	11.4	19.5	103346	11.5	17.7	102926	11.5	19.5	72440	11.6	18.4
186740	11.2	21.1	39077	11.3	19.3	510396	11.4	20.3	153902	11.5	19.5	482385	11.6	21.4	385528	11.6	23.3
242523	11.2	20.9	103458	11.3	19.4	84197	11.4	18.8	130068	11.5	19.3	136459	11.6	18.6	267048	11.6	19.7
373373	11.2	20.0	514278	11.3	19.3	443019	11.4	20.1	316880	11.5	19.9	418323	11.6	20.9	506616	11.6	21.8
20409	11.2	17.9	443475	11.3	20.2	225759	11.4	19.3	107355	11.5	19.6	193551	11.6	19.9	476708	11.6	21.0
119019	11.2	19.5	505443	11.3	21.1	95944	11.4	18.3	50488	11.5	17.0	522791	11.6	19.7	166944	11.6	17.6
248639	11.2	19.1	418116	11.3	20.1	255235	11.4	20.0	207926	11.5	19.2	312351	11.6	20.2	212372	11.6	19.8
85667	11.2	17.5	449048	11.3	21.2	445523	11.4	20.5	191698	11.5	18.6	178235	11.6	19.8	451165	11.6	19.8
359586	11.2	19.7	148264	11.3	19.7	69991	11.4	18.3	389839	11.5	19.7	292831	11.6	20.4	10718	11.6	16.8
394039	11.2	20.2	442152	11.3	19.6	389557	11.4	21.0	505381	11.5	18.7	182687	11.6	19.1	455109	11.6	19.5
310701	11.2	20.5	509836	11.3	21.5	340239	11.4	20.8	123940	11.5	19.1	373460	11.6	20.7	360938	11.7	20.6
494701	11.2	20.1	229046	11.3	19.3	474720	11.4	20.5	304464	11.5	20.6	354999	11.6	19.2	314490	11.7	20.4
443065	11.2	20.1	94705	11.3	18.3	342096	11.4	19.8	112680	11.5	18.3	398650	11.6	21.2	310277	11.7	20.6
436225	11.2	20.8	337295	11.3	20.8	72410	11.4	18.6	202085	11.5	19.2	141718	11.6	17.8	282035	11.7	19.6
424446	11.2	20.3	120098	11.3	18.9	62900	11.4	18.3	72083	11.5	18.5	297683	11.6	20.1	200485	11.7	19.4
266496	11.2	19.0	106560	11.3	18.4	414391	11.4	19.9	337336	11.5	21.2	476815	11.6	20.7	445381	11.7	20.5
452640	11.2	20.3	211761	11.3	20.4	323657	11.4	21.1	107846	11.5	19.0	164185	11.6	18.6	512227	11.7	20.1
151386	11.2	19.7	461	11.3	15.3	19582	11.4	17.9	214738	11.5	20.0	165473	11.6	18.5	326186	11.7	20.9
360914	11.2	20.3	237892	11.3	19.7	18400	11.4	17.0	388998	11.5	21.0	261761	11.6	19.9	262784	11.7	20.2
242583	11.2	20.0	195492	11.3	19.1	270258	11.4										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
39008	11.7	18.5	219094	11.8	18.9	39606	11.8	18.3	352536	11.9	18.9	147051	12.0	19.1	121830	12.1	19.4
343618	11.7	21.2	474679	11.8	20.5	307135	11.8	19.9	440545	11.9	21.2	211361	12.0	18.2	99941	12.1	18.6
146139	11.7	20.1	67193	11.8	17.5	22664	11.8	17.7	170711	11.9	19.3	415274	12.0	20.5	103904	12.1	19.0
443614	11.7	19.9	8102	11.8	17.3	98673	11.8	19.3	20080	11.9	17.9	70635	12.0	19.1	204761	12.1	19.9
330288	11.7	19.6	212797	11.8	19.8	111620	11.8	18.7	142367	11.9	19.1	233728	12.0	21.0	432370	12.1	19.3
322178	11.7	20.6	188396	11.8	20.5	317224	11.8	19.7	278278	11.9	19.9	517669	12.0	20.2	284543	12.1	18.9
349225	11.7	20.7	50471	11.8	18.9	91702	11.8	18.9	67661	11.9	19.0	255445	12.0	20.6	373192	12.1	20.9
507758	11.7	20.3	501540	11.8	18.8	223944	11.8	19.2	210030	11.9	19.5	62164	12.0	18.5	293977	12.1	18.8
95144	11.7	19.5	180466	11.8	20.1	135656	11.8	18.9	30378	11.9	18.6	125253	12.0	19.3	354809	12.1	20.4
286929	11.7	20.1	293266	11.8	20.4	32227	11.8	16.9	150141	11.9	19.6	378698	12.0	20.5	183571	12.1	18.6
170004	11.7	19.4	106215	11.8	19.9	477170	11.8	22.2	323298	11.9	20.1	478361	12.0	21.4	172286	12.1	18.1
442557	11.7	20.4	476084	11.8	21.2	254016	11.8	20.7	91773	11.9	19.0	440367	12.0	19.1	99030	12.1	19.2
445246	11.7	19.4	7765	11.8	15.9	440390	11.8	19.9	472891	11.9	19.4	280581	12.0	19.7	361067	12.1	20.6
168397	11.7	19.9	244323	11.8	20.8	106921	11.8	20.1	94264	11.9	19.0	411534	12.0	21.4	397012	12.1	20.4
185549	11.7	19.0	311600	11.8	19.7	13973	11.8	18.3	107175	11.9	20.2	62071	12.0	17.2	144207	12.1	19.8
511125	11.7	20.0	185859	11.8	18.7	230608	11.8	19.3	473109	11.9	20.4	347029	12.0	21.2	36359	12.1	16.7
185447	11.7	18.4	109411	11.8	20.9	100882	11.8	19.3	134754	11.9	19.0	107349	12.0	18.6	125766	12.1	19.1
488177	11.7	19.6	195038	11.8	20.8	170140	11.8	17.8	94800	11.9	19.3	174164	12.0	19.4	282115	12.1	18.8
478812	11.7	20.6	59034	11.8	18.9	1508	11.8	17.8	128739	11.9	19.7	482145	12.0	21.1	395721	12.1	21.0
447733	11.7	20.0	249720	11.8	18.5	171476	11.8	18.7	44898	11.9	19.8	96123	12.0	19.8	469792	12.1	18.5
318974	11.7	20.9	142198	11.8	18.7	233883	11.8	20.1	239825	11.9	17.9	449092	12.0	20.6	44433	12.1	18.3
416537	11.7	21.4	488132	11.8	19.5	466538	11.8	20.8	288778	11.9	19.4	96069	12.0	17.9	264920	12.1	19.4
205830	11.7	19.1	389357	11.8	20.2	422730	11.9	18.4	198520	11.9	19.4	437826	12.0	21.1	23548	12.1	22.2
4411	11.7	16.5	75322	11.8	19.4	244379	11.9	19.9	343425	11.9	19.9	425769	12.0	20.3	286925	12.1	19.3
522523	11.7	21.1	28518	11.8	17.0	65967	11.9	19.2	297226	11.9	19.4	40112	12.0	17.0	390774	12.1	21.8
92190	11.7	18.7	433584	11.8	20.0	376492	11.9	20.4	184857	11.9	18.8	339273	12.0	20.4	12900	12.1	17.8
414124	11.7	20.7	172747	11.8	19.7	496633	11.9	20.0	432079	11.9	19.8	508071	12.0	20.5	131069	12.1	18.7
242549	11.7	20.7	507492	11.8	21.6	469039	11.9	19.4	102061	11.9	17.5	499030	12.0	21.8	118976	12.1	18.2
424601	11.7	21.1	322664	11.8	20.5	269290	11.9	20.1	6504	11.9	17.0	482373	12.0	20.9	366632	12.1	19.1
498541	11.7	22.9	471803	11.8	20.2	482221	11.9	20.4	432757	11.9	21.8	291084	12.0	20.1	441725	12.1	20.1
483239	11.7	20.0	134013	11.8	18.8	70241	11.9	19.0	353040	11.9	19.5	43735	12.0	18.3	346030	12.1	20.5
429576	11.7	21.5	337151	11.8	20.0	75524	11.9	18.5	404648	11.9	20.5	370019	12.0	20.1	374700	12.1	19.6
22174	11.7	17.8	437618	11.8	20.9	479238	11.9	19.6	144249	11.9	19.1	230884	12.0	19.6	240393	12.1	19.7
271032	11.7	20.4	239394	11.8	18.3	432808	11.9	20.0	444664	11.9	20.1	251976	12.0	20.0	428625	12.1	21.4
248269	11.7	19.8	353802	11.8	19.5	21946	11.9	17.0	264007	11.9	20.3	507288	12.0	21.4	510665	12.1	21.2
477497	11.7	20.7	505888	11.8	20.7	256605	11.9	18.8	293060	11.9	20.5	481023	12.0	21.6	119116	12.1	16.4
355637	11.7	19.9	93582	11.8	18.9	137427	11.9	20.5	66644	11.9	17.7	234322	12.1	20.2	513832	12.1	21.2
183865	11.7	20.1	363731	11.8	21.3	391929	11.9	20.2	245245	11.9	21.1	444290	12.1	20.3	234336	12.1	19.6
389146	11.7	20.3	372852	11.8	19.6	444040	11.9	19.5	211425	11.9	19.9	450330	12.1	21.7	172326	12.1	19.8
24580	11.7	19.5	307174	11.8	19.1	167958	11.9	18.9	91858	11.9	18.9	507636	12.1	19.6	387686	12.1	19.7
445427	11.7	19.7	151369	11.8	19.3	400942	11.9	20.9	388991	11.9	21.3	142045	12.1	18.9	470641	12.1	19.8
223	11.7	14.4	57681	11.8	18.6	97070	11.9	18.5	159510	11.9	19.0	470621	12.1	19.5	149076	12.1	19.7
443795	11.7	20.8	272274	11.8	19.2	169527	11.9	19.4	144055	11.9	20.3	514485	12.1	20.8	262884	12.1	19.3
69593	11.7	18.3	44162	11.8	18.2	47567	11.9	18.5	342680	11.9	19.9	462102	12.1	17.4	220421	12.1	19.5
469655	11.7	20.1	84320	11.8	18.9	415038	11.9	20.5	237777	11.9	19.8	207384	12.1	18.3	443594	12.1	19.5
504407	11.7	20.3	96861	11.8	18.3	262513	11.9	19.9	361041	11.9	20.2	247394	12.1	19.3	230322	12.1	20.0
179267	11.7	20.2	174696	11.8	18.4	178751	11.9	19.6	5312	11.9	16.7	452198	12.1	20.8	387316	12.1	21.1
500218	11.7	20.9	1393	11.8	15.0	289021	11.9	19.8	120013	11.9	19.4	233847	12.1	20.1	399219	12.1	19.8
92084	11.7	18.9	89952	11.8	18.3	9246	11.9	15.4	164090	11.9	19.5	346750	12.1	20.1	167481	12.1	18.4
127371	11.7	19.8	387938	11.8	21.8	57061	11.9	17.6	477089	11.9	20.8	113645	12.1	19.1	789	12.1	14.4
45251	11.7	16.9	126901	11.8	19.1	246320	11.9	18.5	264943	11.9	19.4	215434	12.1	19.7	182007	12.1	20.0
224363	11.7	21.2	52801	11.8	17.5	507089	11.9	20.8	219413	11.9	18.2	510301	12.1	20.1	66402	12.1	16.5
282675	11.7	20.5	509979	11.8	19.5	391968	11.9	20.6	510922	11.9	19.7	105537	12.1	19.0	471196	12.2	21.4
70647	11.7	18.7	92394	11.8	16.8	187429	11.9	19.4	70810	11.9	17.3	446234	12.1	20.3	302791	12.2	21.7
315894	11.7	19.7	31000	11.8	17.6	253750	11.9	20.5	256847	11.9	20.2	179218	12.1	19.7	387539	12.2	18.5
23329	11.7	19.0	400966	11.8	20.5	485727	11.9	20.1	38154	11.9	17.9	218797	12.1	20.7	484896	12.2	20.1
411751	11.7	20.7	28213	11.8	18.0	309659	11.9	20.9	447205	11.9	20.7	172741	12.1	20.6	446173	12.2	20.0
346437	11.7	20.5	274246	11.8	19.9	96510	11.9	18.3	430683	11.9	18.3	393337	12.1	21.6	271842	12.2	19.6
1483	11.7	16.3	179616	11.8	19.4	282411	11.9	19.6	94660	11.9	18.2	48552	12.1	19.2	65723	12.2	18.1
265104	11.7	20.2	236556	11.8	20.5	306387	11.9	20.8	5212	11.9	16.9	133977	12.1	19.4	501944	12.2	20.4
449029	11.7	20.3	339362	11.8	19.6	482122	11.9	21.2	316974	11.9	18.9	29006	12.1	18.1	355032	12.2	20.1
464729	11.7	19.1	359556	11.8	19.6	255517	11.9	20.5	510087	11.9	20.5	247066	12.1	18.1	129469	12.2	19.7
152479	11.7	19.5	161716	11.8	18.4	16124	11.9	18.5	309722	11.9	20.5	380253	12.1	18.9	264835	12.2	18.7
62018	11.7	17.9	481468	11.8	20.7	273892	11.9	20.0	498493	11.9	20.8	186843	12.1	20.7	93306	12.2	19.2
300711	11.7	20.3	107007	11.8	17.8	139578	11.9	19.1	349190	11.9	19.9	286809	12.1	20.2	403452	12.2	20.6
179781	11.7	18.8	61402	11.8	18.3	287287	11.9	19.2	344957	11.9	20.3	329151	12.1	18.9	215669	12.2	18.4
284253	11.7	18.4	12611	11.8	17.8	325174	11.9	19.3	245520	11.9	18.7	149183	12.1	20.2	342289	12.2	20.6
261623	11.7	19.8	68806	11.8	17.7	264035	11.9	20.0	441960	11.9	20.5	181937	12.1	19.3	515740	12.2	21.3
23933	11.7	18.8	141907	11.8	18.8	358948	11.9	21.3	2386								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
93274	12.2	17.4	110145	12.3	18.6	115778	12.4	19.1	257695	12.4	19.8	17936	12.5	17.6	309200	12.6	20.3
99026	12.2	19.1	185476	12.3	20.0	468792	12.4	20.1	476293	12.4	20.8	98298	12.5	18.5	46243	12.6	18.9
308701	12.2	20.7	451139	12.3	20.6	123431	12.4	17.7	511397	12.4	20.3	86276	12.5	18.7	192400	12.6	19.6
213981	12.2	20.1	302198	12.3	18.8	415917	12.4	20.4	307818	12.4	18.6	240945	12.5	21.6	39871	12.6	18.1
103640	12.2	19.6	363108	12.3	20.4	399352	12.4	20.7	376091	12.4	20.0	365726	12.5	20.9	271666	12.6	19.4
59026	12.2	19.3	279708	12.3	19.4	473356	12.4	19.9	325186	12.4	20.2	433991	12.5	20.5	285372	12.6	18.9
264270	12.2	21.2	276008	12.3	20.6	299215	12.4	20.2	347052	12.4	20.9	169801	12.5	19.2	325125	12.6	19.9
91724	12.2	17.7	477136	12.3	20.5	79630	12.4	17.7	202264	12.4	19.5	291122	12.5	21.0	444375	12.6	21.1
435067	12.2	21.0	185769	12.3	18.6	456480	12.4	21.1	494501	12.4	20.8	383196	12.5	21.6	482906	12.6	20.2
312711	12.2	19.9	195024	12.3	19.1	350282	12.4	20.1	294125	12.4	19.6	150266	12.5	18.5	35432	12.6	24.3
170743	12.2	19.4	130514	12.3	19.0	185847	12.4	19.6	253798	12.4	20.5	212009	12.5	19.4	415742	12.6	21.1
98922	12.2	19.0	54242	12.3	17.7	3572	12.4	16.0	514949	12.4	20.7	339206	12.5	20.9	371422	12.6	20.1
469955	12.2	20.4	44716	12.3	16.9	314411	12.4	20.2	436876	12.4	20.7	483875	12.5	21.0	352333	12.7	19.2
235696	12.2	19.8	209886	12.3	20.6	41801	12.4	18.3	485802	12.4	20.8	420420	12.5	20.7	282954	12.7	19.6
476563	12.2	20.6	296566	12.3	19.6	510947	12.4	21.4	378040	12.4	20.1	73790	12.5	19.0	420337	12.7	21.6
40664	12.2	17.4	159794	12.3	18.3	129090	12.4	19.2	101058	12.4	19.9	121769	12.5	19.8	433327	12.7	20.2
511212	12.2	20.3	272320	12.3	20.6	516058	12.4	20.6	16091	12.4	16.8	95464	12.5	19.5	141312	12.7	19.4
69784	12.2	17.7	123286	12.3	17.4	69567	12.4	18.4	394214	12.5	21.2	420963	12.6	19.6	267672	12.7	20.4
224272	12.2	19.5	475888	12.3	21.8	186075	12.4	18.8	258609	12.5	19.6	153537	12.6	20.4	142331	12.7	18.8
438732	12.2	20.3	44344	12.3	18.0	170026	12.4	19.8	67181	12.5	18.7	17696	12.6	17.6	425624	12.7	20.8
10181	12.2	18.8	509619	12.3	21.5	174455	12.4	21.3	320786	12.5	19.9	261042	12.6	20.3	400963	12.7	20.0
117999	12.2	18.2	273830	12.3	18.4	514567	12.4	21.0	170593	12.5	19.6	42433	12.6	18.7	65796	12.7	17.4
293837	12.2	20.2	440449	12.3	20.1	129461	12.4	20.2	478936	12.5	20.3	506759	12.6	22.1	201104	12.7	19.1
204814	12.2	18.6	71615	12.3	18.1	147397	12.4	20.4	425628	12.5	20.6	421086	12.6	20.5	439445	12.7	20.8
509396	12.2	20.8	71631	12.3	17.0	147636	12.4	20.7	214939	12.5	20.0	335073	12.6	18.7	42764	12.7	18.0
198193	12.2	19.4	309064	12.3	19.9	314447	12.4	19.0	37333	12.5	17.6	342326	12.6	19.8	151382	12.7	19.6
475338	12.2	20.0	355067	12.3	20.0	381755	12.4	19.2	253657	12.5	19.5	365673	12.6	21.0	515001	12.7	20.4
283279	12.2	19.6	248686	12.3	19.9	39304	12.4	17.4	216949	12.5	18.8	520889	12.6	21.3	435725	12.7	20.5
53759	12.2	17.0	13548	12.3	17.8	320165	12.4	20.5	32785	12.5	18.3	472630	12.6	20.7	152414	12.7	19.0
489509	12.2	20.1	252149	12.3	20.3	511359	12.4	22.2	44966	12.5	18.7	385812	12.6	21.0	343386	12.7	21.0
22195	12.2	17.8	73547	12.3	18.0	71784	12.4	17.9	414424	12.5	20.4	159825	12.6	19.8	203017	12.7	20.5
522841	12.2	21.5	221793	12.3	19.2	142284	12.4	18.8	305497	12.5	20.3	429907	12.6	19.5	16964	12.7	17.0
516204	12.2	20.3	308702	12.3	20.2	44607	12.4	18.2	133506	12.5	19.6	352300	12.6	19.6	391615	12.7	21.4
72758	12.2	17.4	461928	12.3	20.7	76244	12.4	18.4	351123	12.5	20.8	24892	12.6	18.7	342763	12.7	20.3
448391	12.2	20.1	394638	12.3	20.6	516267	12.4	21.3	147850	12.5	20.5	257485	12.6	20.5	243663	12.7	20.6
210996	12.2	19.2	50018	12.3	17.6	312795	12.4	19.7	167338	12.5	19.1	334354	12.6	19.4	386806	12.7	21.2
224151	12.2	19.0	79005	12.3	18.9	434366	12.4	20.3	274956	12.5	20.3	512177	12.6	20.9	49830	12.7	18.8
74118	12.2	16.6	261491	12.3	21.6	167501	12.4	19.7	505116	12.5	21.1	506790	12.6	21.6	259163	12.7	19.2
386789	12.2	20.8	258945	12.3	19.4	436219	12.4	20.8	183493	12.5	20.4	273794	12.6	20.5	359964	12.7	20.0
100793	12.2	19.3	390454	12.3	21.2	83982	12.4	21.7	129849	12.5	17.3	485688	12.6	19.8	391216	12.7	20.1
485369	12.2	21.8	397678	12.3	20.9	107166	12.4	19.1	472631	12.5	19.7	214739	12.6	20.2	380282	12.7	20.9
432354	12.2	19.9	207286	12.3	18.9	452375	12.4	19.0	513174	12.5	21.0	118518	12.6	19.7	510670	12.7	21.2
520146	12.2	20.7	294410	12.3	21.0	181596	12.4	21.1	64536	12.5	19.0	301443	12.6	20.2	91935	12.7	18.0
483859	12.2	21.1	183892	12.3	20.1	436273	12.4	20.3	77796	12.5	17.8	470604	12.6	20.7	466528	12.7	21.1
391944	12.2	21.1	112960	12.3	19.1	92068	12.4	20.1	476107	12.5	19.5	209996	12.6	19.2	365737	12.7	20.8
429771	12.2	21.4	251931	12.3	18.7	323017	12.4	20.6	219472	12.5	19.6	507808	12.6	21.5	41561	12.7	17.7
413353	12.2	21.5	477132	12.3	20.9	117153	12.4	19.5	35768	12.5	18.0	266162	12.6	21.1	362820	12.7	21.0
88234	12.2	18.4	475854	12.3	21.3	255186	12.4	21.2	501749	12.5	20.3	240743	12.6	19.9	72036	12.7	19.0
400703	12.2	20.5	454631	12.3	21.3	370016	12.4	20.8	174603	12.5	18.8	433222	12.6	19.3	188519	12.7	19.3
5598	12.2	15.8	448707	12.3	22.3	180222	12.4	19.2	24628	12.5	18.3	360678	12.6	21.2	362604	12.7	19.7
11237	12.2	16.7	260347	12.3	20.8	18875	12.4	18.2	294930	12.5	20.1	310634	12.6	19.9	254191	12.7	20.4
37479	12.2	20.0	198543	12.3	20.0	423172	12.4	21.2	323592	12.5	20.2	476740	12.6	19.7	67026	12.7	19.2
333932	12.2	20.0	259577	12.3	20.1	337137	12.4	18.2	287929	12.5	19.7	131116	12.6	20.3	37188	12.7	16.5
202193	12.2	19.5	358415	12.3	20.3	251938	12.4	20.7	48581	12.5	18.5	342563	12.6	21.2	198370	12.7	17.6
171123	12.2	19.4	220893	12.3	20.0	193379	12.4	20.3	281624	12.5	19.1	415751	12.6	19.3	491858	12.7	22.2
396844	12.2	19.3	369028	12.3	20.4	216227	12.4	20.0	71875	12.5	19.1	256455	12.6	20.0	43426	12.7	17.5
254231	12.2	20.1	389123	12.3	20.9	309067	12.4	20.3	170677	12.5	19.5	71074	12.6	18.3	57588	12.7	18.7
444679	12.2	20.9	112723	12.3	19.0	109307	12.4	18.4	70805	12.5	19.1	18457	12.6	17.1	296520	12.7	18.7
13255	12.2	17.3	509657	12.3	21.5	310626	12.4	20.5	255492	12.5	20.8	264849	12.6	18.7	48810	12.7	18.3
356553	12.3	19.8	147024	12.3	18.6	446257	12.4	20.4	397857	12.5	21.3	121752	12.6	19.1	258512	12.7	19.4
442573	12.3	19.7	135657	12.3	19.1	43388	12.4	18.0	187921	12.5	20.2	314527	12.6	19.6	280203	12.7	19.8
517219	12.3	20.8	361943	12.3	20.6	162118	12.4	18.2	273289	12.5	19.5	225682	12.6	19.1	150599	12.7	19.4
121859	12.3	19.1	117604	12.3	18.8	228487	12.4	19.3	355581	12.5	16.5	324292	12.6	20.1	182807	12.7	18.9
171724	12.3	20.4	508155	12.3	20.4	21912	12.4	17.3	321327	12.5	19.8	505452	12.6	19.4	67018	12.7	17.4
220883	12.3	19.4	171729	12.3	18.5	130938	12.4	19.6	362543	12.5	20.5	188540	12.6	19.1	399442	12.7	20.2
505703	12.3	21.5	252693	12.3	19.0	441409	12.4	21.1	429496	12.5	21.4	36243	12.6	17.2	350975	12.7	20.1
440472	12.3	19.7	521514	12.3	21.1	506767	12.4	21.5	295479	12.5	19.9	505911	12.6	21.6	435182	12.7	18.8
357916	12.3	20.5	42446	12.3	18.9	507709	12.4	21.1	79111	12.5	18.7	166094	12.6	19.5	123547	12.7	17.8
473214	12.3	20.8	403470	12.3	19.4	94621	12										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
445844	12.7	21.1	113006	12.8	18.3	187843	12.9	19.2	41194	13.0	18.8	41198	13.1	17.3	79581	13.2	17.6
289217	12.7	19.9	388746	12.8	20.0	96602	12.9	19.8	115006	13.0	17.9	79587	13.1	18.2	399707	13.2	20.8
152099	12.7	19.4	368278	12.8	20.0	402795	12.9	20.2	43161	13.0	18.3	400210	13.1	19.7	507237	13.2	21.9
7488	12.7	16.3	436526	12.8	20.8	511046	12.9	20.3	286815	13.0	18.5	251316	13.1	19.9	212250	13.2	20.4
107143	12.7	19.7	443367	12.8	20.8	349338	12.9	20.5	282720	13.0	20.4	507451	13.1	20.6	98659	13.2	17.5
477547	12.7	21.0	360325	12.8	19.1	128185	12.9	19.2	113526	13.0	18.9	510916	13.1	21.8	224878	13.2	20.7
301245	12.7	21.0	465602	12.8	20.9	105810	12.9	19.1	376362	13.0	20.3	263435	13.1	19.3	335733	13.2	18.8
310693	12.7	21.8	431193	12.8	21.3	69731	12.9	18.6	261971	13.0	19.0	133246	13.1	18.9	128240	13.2	18.8
69261	12.7	19.0	415718	12.8	21.1	473825	12.9	20.0	352571	13.0	20.4	114819	13.1	18.3	365684	13.2	20.6
452154	12.7	20.8	121849	12.8	19.7	346119	12.9	20.1	509762	13.0	21.4	467478	13.1	19.3	512013	13.2	20.6
121619	12.7	18.8	119867	12.8	19.0	120664	12.9	19.6	130201	13.0	19.2	139977	13.1	19.5	441226	13.2	21.2
60303	12.7	18.1	157361	12.8	18.2	204881	12.9	18.6	376786	13.0	19.8	269766	13.1	20.3	154611	13.2	18.3
263442	12.7	20.7	259610	12.8	20.5	103936	12.9	19.0	329155	13.0	20.4	470781	13.1	20.8	97283	13.2	19.8
510885	12.7	22.3	386451	12.8	20.6	280047	12.9	20.4	12192	13.0	19.0	123644	13.1	19.4	208530	13.2	19.1
393847	12.7	19.6	353746	12.8	20.6	440499	12.9	21.0	447685	13.0	20.9	188758	13.1	20.8	136196	13.2	18.5
304460	12.7	20.3	54313	12.8	20.1	193320	12.9	20.0	338641	13.0	19.8	184552	13.1	17.7	254273	13.2	19.5
322599	12.7	20.1	507996	12.8	21.0	346054	12.9	19.3	235720	13.0	20.2	173669	13.1	19.4	108326	13.2	18.7
37618	12.7	17.9	517951	12.8	20.9	370437	12.9	20.5	264864	13.0	20.3	93248	13.1	17.6	470596	13.2	21.1
256956	12.7	19.2	108510	12.8	19.6	371581	12.9	20.0	506460	13.0	21.5	148934	13.1	19.1	417520	13.2	21.1
275496	12.7	19.6	237002	12.8	20.6	79834	12.9	17.2	253549	13.0	19.9	149986	13.1	18.8	481453	13.2	21.3
220404	12.7	18.9	444332	12.8	20.2	206096	12.9	19.5	287053	13.0	20.4	303177	13.1	20.3	72094	13.2	18.0
484912	12.7	19.9	235738	12.8	19.6	512637	12.9	19.8	13667	13.0	17.2	167126	13.1	19.7	123373	13.2	18.6
22438	12.7	18.3	382575	12.9	20.7	132681	12.9	18.5	311502	13.0	20.1	147775	13.1	19.4	108034	13.2	19.5
289130	12.7	19.2	231271	12.9	18.7	366122	12.9	21.1	324395	13.0	20.4	250029	13.1	19.7	144039	13.2	20.0
512160	12.8	20.2	321768	12.9	18.7	156679	12.9	19.0	37545	13.0	19.1	220660	13.1	19.8	347485	13.2	20.7
513442	12.8	20.8	476043	12.9	21.0	53329	12.9	18.0	369502	13.0	20.7	84401	13.1	18.4	295369	13.2	20.0
507257	12.8	22.2	367321	12.9	20.2	452149	12.9	20.3	143691	13.0	19.8	120788	13.1	19.0	483628	13.2	20.7
513661	12.8	21.7	398520	12.9	20.0	365903	12.9	19.1	519230	13.0	20.5	523674	13.1	21.9	188445	13.2	20.4
202589	12.8	20.4	435827	12.9	19.8	330874	12.9	19.4	293120	13.0	19.4	217263	13.1	19.5	209100	13.2	20.5
73885	12.8	19.1	293831	12.9	20.5	6682	12.9	17.0	14159	13.0	17.4	511135	13.1	21.5	242703	13.2	19.0
137538	12.8	20.0	370863	12.9	19.9	236941	12.9	19.2	316808	13.0	19.9	280958	13.1	20.8	96926	13.2	19.3
183831	12.8	20.2	150225	12.9	19.1	314584	12.9	21.2	136224	13.0	19.1	444087	13.1	20.1	153215	13.2	19.5
62182	12.8	18.6	226854	12.9	20.9	509488	12.9	20.1	336946	13.0	19.7	259984	13.1	21.2	390499	13.2	21.9
115235	12.8	18.7	373292	12.9	21.7	434359	12.9	19.1	397362	13.0	20.5	339495	13.1	19.6	71420	13.2	18.6
55703	12.8	18.4	425966	12.9	20.8	306460	12.9	19.8	173854	13.0	19.8	257483	13.1	20.2	179788	13.2	18.6
136186	12.8	18.9	310598	12.9	19.9	447357	12.9	21.4	481572	13.0	19.1	256535	13.1	20.1	503810	13.2	19.4
301011	12.8	20.4	311919	12.9	19.2	513473	12.9	23.3	204977	13.0	19.0	305021	13.1	19.3	362591	13.2	20.2
482926	12.8	20.5	390074	12.9	21.4	68500	12.9	18.7	171054	13.0	20.0	49237	13.1	19.1	337213	13.2	21.0
93295	12.8	19.2	208235	12.9	18.6	266441	12.9	20.4	134953	13.0	19.7	77100	13.1	19.6	43527	13.2	19.1
356362	12.8	19.5	95348	12.9	18.6	113480	12.9	19.4	132980	13.0	17.9	47158	13.1	17.3	192240	13.2	19.8
476020	12.8	20.7	508027	12.9	21.8	326128	12.9	21.0	476498	13.0	21.4	360997	13.1	20.2	47752	13.2	18.4
257455	12.8	20.1	347164	12.9	19.1	375209	12.9	20.6	30121	13.0	17.4	175850	13.1	19.8	5611	13.2	16.8
362559	12.8	20.4	372945	12.9	20.3	342801	12.9	21.2	396290	13.0	20.7	112270	13.1	18.1	308435	13.2	19.9
432974	12.8	20.4	291274	12.9	21.2	293525	12.9	20.6	198243	13.0	18.8	441919	13.1	21.4	284030	13.2	20.7
324294	12.8	20.7	510748	12.9	20.4	377520	12.9	20.4	184732	13.0	20.7	240672	13.1	20.5	378630	13.2	20.4
330289	12.8	19.8	213505	12.9	20.6	187783	12.9	18.6	515948	13.0	21.1	44683	13.1	18.2	33687	13.2	17.3
210263	12.8	19.7	219792	12.9	19.8	344765	12.9	18.6	366029	13.0	21.1	440358	13.1	19.3	402412	13.2	21.9
311445	12.8	19.6	319425	12.9	20.7	510833	12.9	20.9	161796	13.0	19.8	120574	13.1	18.3	207862	13.2	19.6
121438	12.8	18.7	243185	12.9	19.7	189748	12.9	19.2	223210	13.0	19.2	223551	13.1	19.6	478486	13.2	19.6
329565	12.8	19.2	343599	12.9	18.7	498443	12.9	21.3	101879	13.0	17.3	164114	13.1	19.7	240646	13.2	20.8
389566	12.8	20.4	84585	12.9	18.0	334688	12.9	19.5	114146	13.1	18.8	476303	13.1	21.1	281610	13.2	19.3
121917	12.8	19.2	33317	12.9	18.0	275972	12.9	19.8	435680	13.1	21.1	481138	13.1	20.2	144239	13.2	20.6
122378	12.8	18.8	234118	12.9	20.0	364526	12.9	21.2	66460	13.1	19.1	87431	13.1	17.5	511466	13.2	20.4
337975	12.8	20.3	513140	12.9	20.9	108020	12.9	19.0	417534	13.1	21.4	140937	13.1	18.4	351859	13.2	20.0
235340	12.8	19.5	258650	12.9	19.6	114403	12.9	19.6	391081	13.1	19.8	123832	13.1	19.9	296697	13.2	19.6
58843	12.8	19.3	144044	12.9	19.5	323631	12.9	20.1	471109	13.1	21.1	113777	13.1	19.0	104062	13.2	20.0
343275	12.8	18.1	99164	12.9	19.4	425572	12.9	18.7	462536	13.1	20.1	20910	13.1	18.0	160888	13.2	19.0
366384	12.8	20.6	17517	12.9	18.2	13249	12.9	15.6	112482	13.1	19.1	20606	13.1	17.2	508718	13.2	19.8
261546	12.8	20.2	94664	12.9	17.3	11264	12.9	17.7	467493	13.1	19.6	323223	13.1	18.8	441389	13.2	20.5
169761	12.8	18.0	236727	12.9	19.6	153365	12.9	18.9	20211	13.1	18.6	296883	13.1	20.3	302210	13.2	20.4
255237	12.8	21.5	262493	12.9	20.8	19180	12.9	16.5	117474	13.1	19.0	318153	13.2	19.6	122714	13.2	18.8
313155	12.8	19.6	4000	12.9	16.7	149941	12.9	20.0	208747	13.1	19.0	219941	13.2	18.2	97801	13.2	18.6
244423	12.8	19.8	337165	12.9	20.3	210365	12.9	20.1	275308	13.1	20.2	75529	13.2	17.6	67195	13.2	17.8
395355	12.8	20.2	478723	12.9	20.6	43591	12.9	18.3	427212	13.1	19.9	476155	13.2	20.6	266682	13.2	19.7
382123	12.8	20.2	363712	12.9	19.9	511119	12.9	20.1	488742	13.1	20.8	266256	13.2	20.6	219481	13.2	18.4
179554	12.8	19.9	207739	12.9	19.0	46919	12.9	19.1	349459	13.1	20.6	135598	13.2	18.1	348885	13.2	20.5
173570	12.8	20.3	351173	12.9	20.5	427116	12.9	19.6	128992	13.1	20.0	8810	13.2	16.4	55011	13.2	17.6
1884	12.8	16.4	119845	12.9	19.7	137582	12.9	20.0	514061	13.1	20.6	172086	13.2	17.6	244678	13.3	18.8
518288	12.8	20.7	48988	12.9	16.7	28											



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
189242	13.3	19.2	118412	13.3	19.9	437613	13.4	19.7	218440	13.5	18.5	66455	13.6	18.4	507270	13.6	21.3
103845	13.3	18.3	60016	13.4	18.5	342129	13.4	19.9	14837	13.5	18.0	211382	13.6	20.4	60113	13.6	17.7
479507	13.3	20.3	66792	13.4	18.6	68257	13.4	17.8	438810	13.5	20.8	39577	13.6	18.1	281896	13.6	21.1
293179	13.3	20.2	120416	13.4	18.4	319155	13.4	19.6	476680	13.5	20.9	193441	13.6	19.2	65787	13.7	19.4
364554	13.3	21.1	308374	13.4	20.3	476224	13.4	20.7	104231	13.5	19.5	311523	13.6	21.3	72227	13.7	19.2
423489	13.3	19.8	486979	13.4	20.7	407260	13.4	20.9	52731	13.5	19.0	1090	13.6	16.4	381175	13.7	20.4
137655	13.3	18.6	514300	13.4	19.5	453432	13.4	19.0	445485	13.5	19.7	448727	13.6	20.1	365996	13.7	21.5
220897	13.3	19.1	507878	13.4	20.3	85278	13.4	18.2	60108	13.5	18.8	180391	13.6	19.3	175231	13.7	19.0
506705	13.3	20.6	195400	13.4	20.2	75454	13.4	17.8	514508	13.5	20.9	173856	13.6	19.5	290588	13.7	20.0
345865	13.3	18.3	357542	13.4	20.1	117196	13.4	17.7	172546	13.5	18.4	347810	13.6	18.6	123730	13.7	20.0
289681	13.3	19.4	91884	13.4	19.6	126223	13.4	18.7	65005	13.5	19.8	221748	13.6	19.9	94940	13.7	20.6
12368	13.3	16.7	262507	13.4	20.9	88252	13.4	18.9	285234	13.5	20.6	514372	13.6	21.1	60441	13.7	19.5
483253	13.3	21.1	91055	13.4	17.8	224907	13.4	20.0	511065	13.5	20.1	163025	13.6	19.0	440298	13.7	20.1
123428	13.3	19.1	30880	13.4	16.7	134576	13.4	19.4	252777	13.5	19.9	153300	13.6	20.2	282781	13.7	18.4
231385	13.3	19.5	150654	13.4	19.8	258013	13.4	21.1	504819	13.5	22.7	510142	13.6	20.9	329209	13.7	20.6
362560	13.3	19.8	307551	13.4	19.2	264909	13.4	20.4	275435	13.5	20.9	169548	13.6	19.5	126839	13.7	20.0
275710	13.3	18.4	60237	13.4	18.0	182794	13.4	20.1	137783	13.5	19.6	511148	13.6	21.8	357221	13.7	20.4
156558	13.3	19.0	75030	13.4	18.0	146842	13.4	19.2	70604	13.5	17.7	208067	13.6	19.0	278483	13.7	19.6
246761	13.3	19.8	472805	13.4	20.0	34459	13.4	17.1	332339	13.5	21.2	476302	13.6	20.6	307571	13.7	20.4
316055	13.3	20.9	121441	13.4	18.9	523093	13.4	20.2	58948	13.5	17.3	52917	13.6	17.7	294765	13.7	20.9
404293	13.3	20.4	42191	13.4	17.6	76740	13.4	19.5	237574	13.5	19.2	310613	13.6	20.1	482416	13.7	21.5
20422	13.3	18.4	224170	13.4	19.7	7342	13.4	17.3	103369	13.5	19.9	126182	13.6	19.3	189172	13.7	20.2
298107	13.3	18.8	256906	13.4	19.3	425688	13.4	21.5	172309	13.5	19.4	368892	13.6	20.8	39515	13.7	17.2
488765	13.3	20.2	507792	13.4	21.5	253617	13.4	19.3	52667	13.5	18.7	48679	13.6	18.7	483614	13.7	20.7
54157	13.3	18.8	308709	13.4	20.0	296972	13.5	20.4	304338	13.5	20.8	396450	13.6	20.1	98730	13.7	18.9
483276	13.3	21.2	262971	13.4	20.8	243256	13.5	19.3	145281	13.5	18.6	423013	13.6	20.8	519545	13.7	20.3
509019	13.3	20.2	478793	13.4	20.5	200549	13.5	19.8	230402	13.5	20.8	245211	13.6	19.3	487784	13.7	21.6
444342	13.3	20.1	157462	13.4	19.8	292970	13.5	20.8	84597	13.5	19.2	208358	13.6	19.6	519375	13.7	20.6
431311	13.3	20.9	458404	13.4	20.7	476008	13.5	19.8	22881	13.5	19.6	150606	13.6	20.6	84150	13.7	18.3
23448	13.3	16.7	291790	13.4	20.3	148372	13.5	18.7	248547	13.5	20.1	440928	13.6	20.5	228852	13.7	20.1
263338	13.3	20.9	141544	13.4	19.0	137718	13.5	18.9	312858	13.5	20.6	184322	13.6	19.4	209880	13.7	20.2
211014	13.3	19.9	382715	13.4	19.8	42206	13.5	18.2	52854	13.5	17.7	354752	13.6	20.1	60085	13.7	17.7
72620	13.3	19.3	42186	13.4	17.2	346676	13.5	20.5	495909	13.5	21.0	480589	13.6	21.0	521569	13.7	21.0
454824	13.3	19.7	321642	13.4	19.9	106901	13.5	18.4	264363	13.5	20.2	444699	13.6	21.0	202635	13.7	20.3
331112	13.3	20.0	396829	13.4	19.1	400439	13.5	19.7	390772	13.5	20.0	89479	13.6	18.5	439460	13.7	20.1
389069	13.3	20.7	180505	13.4	18.2	123197	13.5	18.9	246436	13.5	19.7	195195	13.6	20.5	424034	13.7	20.8
198238	13.3	20.6	143531	13.4	19.6	333997	13.5	18.7	163972	13.5	20.0	220264	13.6	19.8	355431	13.7	20.4
250579	13.3	20.8	187194	13.4	20.2	482404	13.5	21.7	476641	13.5	21.4	430509	13.6	19.9	2301	13.7	16.1
121704	13.3	19.7	440843	13.4	21.0	98761	13.5	19.9	175405	13.5	18.5	507712	13.6	21.6	260232	13.7	19.6
316007	13.3	20.6	72259	13.4	18.1	467316	13.5	19.4	345046	13.5	20.7	50041	13.6	17.4	488395	13.7	20.3
131155	13.3	19.4	356689	13.4	20.8	312495	13.5	20.2	452148	13.5	19.6	470802	13.6	21.2	397092	13.7	19.6
513708	13.3	21.6	22430	13.4	17.3	97424	13.5	18.8	444392	13.5	21.0	16960	13.6	20.3	403305	13.7	19.6
282573	13.3	18.9	39814	13.4	18.8	322057	13.5	20.4	127073	13.5	20.3	329183	13.6	19.5	30201	13.7	17.9
43557	13.3	17.9	504382	13.4	21.1	286570	13.5	20.0	313373	13.5	19.3	109815	13.6	19.1	509521	13.7	21.1
363656	13.3	19.1	476742	13.4	20.8	140073	13.5	19.5	512594	13.5	19.7	444464	13.6	21.6	494358	13.7	20.5
224053	13.3	18.7	339383	13.4	21.7	511263	13.5	21.1	234251	13.5	19.2	94128	13.6	19.1	49398	13.7	18.7
198065	13.3	19.8	347587	13.4	20.1	371392	13.5	19.9	43488	13.5	17.7	308582	13.6	20.0	473363	13.7	20.5
374906	13.3	20.7	299751	13.4	20.3	70092	13.5	18.0	262212	13.5	21.1	430091	13.6	20.7	166539	13.7	19.6
518405	13.3	20.4	476180	13.4	19.8	217314	13.5	18.7	348738	13.5	20.8	163951	13.6	19.1	520354	13.7	20.1
62180	13.3	19.4	489986	13.4	21.0	213019	13.5	19.9	177201	13.5	19.2	386408	13.6	20.3	516251	13.7	21.8
191014	13.3	19.3	221832	13.4	18.4	361918	13.5	20.7	477796	13.6	21.0	82599	13.6	18.0	242477	13.7	20.0
97491	13.3	19.8	339318	13.4	20.7	264397	13.5	20.1	358376	13.6	19.9	78262	13.6	19.3	128630	13.7	19.9
72190	13.3	18.8	90600	13.4	19.3	327149	13.5	21.3	207471	13.6	19.3	440950	13.6	19.7	70578	13.7	18.7
481333	13.3	21.2	53911	13.4	18.9	28559	13.5	16.9	432679	13.6	21.5	158138	13.6	20.4	46063	13.7	16.7
9611	13.3	17.2	389583	13.4	18.3	1157	13.5	13.7	379224	13.6	21.1	445437	13.6	20.1	512703	13.7	20.2
133343	13.3	19.0	428253	13.4	21.3	54908	13.5	17.0	241762	13.6	20.7	173782	13.6	19.5	207906	13.7	19.8
80530	13.3	20.0	483162	13.4	20.3	62990	13.5	19.2	515349	13.6	21.0	420780	13.6	19.6	171438	13.7	18.7
186286	13.3	20.2	431253	13.4	21.4	42732	13.5	17.4	126490	13.6	18.7	356657	13.6	20.5	75975	13.7	19.7
193427	13.3	19.2	72320	13.4	17.8	94219	13.5	18.8	39564	13.6	17.6	428588	13.6	21.7	323019	13.7	19.6
207199	13.3	19.6	69231	13.4	18.9	353408	13.5	20.3	71389	13.6	18.7	443383	13.6	20.9	176065	13.7	19.9
138065	13.3	20.0	352350	13.4	20.7	473217	13.5	20.7	346811	13.6	20.7	308330	13.6	18.2	108641	13.7	19.2
117992	13.3	19.4	254309	13.4	19.6	239176	13.5	19.7	151267	13.6	18.6	250734	13.6	20.0	213086	13.7	17.9
509981	13.3	18.6	448086	13.4	20.9	199517	13.5	19.1	97080	13.6	18.6	106154	13.6	18.8	346966	13.7	20.4
99079	13.3	19.1	144306	13.4	19.8	464995	13.5	21.3	363399	13.6	19.6	66337	13.6	17.0	371874	13.7	20.7
374017	13.3	20.9	181539	13.4	19.8	163873	13.5	18.2	377650	13.6	21.6	9840	13.6	16.4	318309	13.7	20.1
60826	13.3	19.8	141102	13.4	19.2	46074	13.5	17.7	190523	13.6	18.4	294694	13.6	20.7	93392	13.7	19.2
330865	13.3	19.4	507265	13.4	21.8	118121	13.5	19.0	26712	13.6	18.2	160664	13.6	18.4	513375	13.7	22.1
438812	13.3	20.2	311569	13.4	19.9	177278	13.5	19.3	235684	13.6	20.5	178332	13.6	20.1	364991	13.7	19.8
430556	13.3	19.7	417963	13.4	20.1	108468	13.5	18.2									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
259506	13.7	20.5	108746	13.8	18.8	328206	13.9	20.4	10301	13.9	17.1	324914	14.1	20.9	64316	14.1	18.7
344690	13.7	19.0	23475	13.8	17.0	358935	13.9	19.8	283451	13.9	20.8	307184	14.1	20.3	33229	14.1	16.4
478743	13.7	20.7	377317	13.8	20.6	150905	13.9	19.6	138913	13.9	19.6	83118	14.1	19.2	195187	14.1	19.6
284034	13.7	20.3	475278	13.8	20.7	232197	13.9	20.6	312214	13.9	19.5	59148	14.1	17.7	342163	14.1	18.5
22160	13.7	17.7	356778	13.8	20.5	260294	13.9	20.5	454949	13.9	19.5	35101	14.1	16.1	114456	14.1	19.5
250051	13.7	19.5	355204	13.8	19.6	428080	13.9	20.0	415363	13.9	20.1	185988	14.1	18.3	425773	14.1	20.2
173174	13.7	19.2	245321	13.8	20.4	503691	13.9	21.1	176366	13.9	19.3	282941	14.1	19.1	315066	14.2	21.5
512229	13.7	20.5	256845	13.8	19.5	436239	13.9	20.5	300742	13.9	20.2	77554	14.1	19.4	141067	14.2	19.1
482294	13.7	20.2	199098	13.8	18.9	5546	13.9	16.6	256975	13.9	20.3	430631	14.1	19.0	204641	14.2	19.8
246355	13.7	19.2	280544	13.8	19.5	107303	13.9	19.8	326181	13.9	21.0	433324	14.1	19.9	343268	14.2	19.5
423774	13.7	20.0	82307	13.8	18.0	95090	13.9	18.7	119754	13.9	19.2	84428	14.1	19.3	120043	14.2	19.1
246333	13.7	19.8	13622	13.8	18.7	23897	13.9	17.8	361954	13.9	20.4	44413	14.1	17.3	446151	14.2	21.1
272194	13.7	19.6	364658	13.8	19.1	189762	13.9	19.9	326376	13.9	20.4	211241	14.1	19.0	11156	14.2	17.6
392291	13.7	21.2	217541	13.8	17.9	120627	13.9	20.5	331242	13.9	19.1	447276	14.1	19.8	245901	14.2	18.8
402460	13.7	21.1	156374	13.8	19.9	369095	13.9	20.6	478552	13.9	20.8	521535	14.1	21.0	137772	14.2	18.2
216952	13.7	20.1	392163	13.8	20.9	436293	13.9	20.3	331377	13.9	20.8	157668	14.1	20.1	141528	14.2	19.7
39500	13.8	18.4	435198	13.8	19.6	319201	13.9	21.4	426521	13.9	20.8	55835	14.1	18.1	258716	14.2	19.2
190610	13.8	18.4	504696	13.8	20.3	343328	13.9	20.4	30243	13.9	18.7	506515	14.1	19.6	127395	14.2	19.8
330259	13.8	21.3	339116	13.8	20.5	123216	13.9	20.0	440509	13.9	20.1	469242	14.1	20.3	40226	14.2	17.2
314452	13.8	22.1	240962	13.8	20.3	479628	13.9	21.7	121775	13.9	19.6	389659	14.1	20.0	172142	14.2	19.7
9406	13.8	17.2	480461	13.8	19.5	220160	13.9	18.6	22933	13.9	19.0	239481	14.1	20.3	485189	14.2	21.9
329168	13.8	20.7	370018	13.8	20.1	316526	13.9	20.6	504918	13.9	22.0	329036	14.1	20.1	214838	14.2	20.3
237774	13.8	20.2	152796	13.8	19.0	187028	13.9	19.7	14150	13.9	17.5	207799	14.1	20.4	443135	14.2	20.7
49258	13.8	17.2	34290	13.8	16.9	221621	13.9	18.3	255510	13.9	20.3	134392	14.1	20.0	166103	14.2	18.9
512756	13.8	20.3	199356	13.8	18.4	228610	13.9	20.4	418920	14.0	20.6	328739	14.1	19.9	103747	14.2	19.0
380797	13.8	20.8	507601	13.8	20.4	505379	13.9	19.8	326652	14.0	19.2	38352	14.1	17.3	78520	14.2	17.2
328157	13.8	20.7	37603	13.8	18.8	12723	13.9	16.9	424028	14.0	19.9	11102	14.1	17.2	484300	14.2	19.3
207435	13.8	19.3	417633	13.8	20.4	39493	13.9	19.2	7256	14.0	17.4	106444	14.1	19.7	392988	14.2	20.3
434089	13.8	20.5	162097	13.8	19.2	178009	13.9	20.2	459101	14.0	19.3	67639	14.1	17.9	479843	14.2	20.3
129740	13.8	18.3	267758	13.8	19.9	145581	13.9	19.6	314147	14.0	20.1	288741	14.1	19.6	254333	14.2	20.0
254001	13.8	19.9	80982	13.8	18.1	261437	13.9	20.2	115392	14.0	19.0	94274	14.1	19.8	317268	14.2	20.4
428543	13.8	21.3	176094	13.8	17.5	91723	13.9	18.2	335526	14.0	20.2	188489	14.1	19.2	36438	14.2	17.7
4331	13.8	14.6	449427	13.8	20.9	412409	13.9	21.7	359597	14.0	19.9	43020	14.1	18.5	345935	14.2	20.4
391292	13.8	20.4	57657	13.8	18.8	107550	13.9	17.9	47647	14.0	18.7	442160	14.1	19.7	387943	14.2	20.9
399920	13.8	20.2	467726	13.8	21.5	513693	13.9	21.9	38543	14.0	17.6	123408	14.1	19.8	326872	14.2	20.4
418039	13.8	20.0	383603	13.8	20.6	501814	13.9	19.4	124078	14.0	18.1	252128	14.1	20.1	232746	14.2	18.9
365604	13.8	19.7	339401	13.8	19.9	100852	13.9	17.7	87311	14.0	18.6	444684	14.1	20.1	442318	14.2	20.5
186339	13.8	19.8	390664	13.8	19.6	487184	13.9	20.4	518275	14.0	21.5	28162	14.1	16.7	427214	14.2	19.9
329761	13.8	19.7	180147	13.8	19.1	343818	13.9	19.6	120329	14.0	19.3	501773	14.1	19.8	167915	14.2	19.2
87743	13.8	18.4	371536	13.8	19.5	169886	13.9	20.4	443556	14.0	19.8	311959	14.1	21.9	308803	14.2	18.4
328102	13.8	20.6	178559	13.9	18.7	276423	13.9	19.1	171132	14.0	19.6	477553	14.1	21.4	92111	14.2	19.5
324879	13.8	21.2	69765	13.9	17.0	265262	13.9	20.5	232144	14.0	20.4	157961	14.1	20.3	383620	14.2	20.1
342810	13.8	20.2	34132	13.9	17.2	422986	13.9	20.2	316479	14.0	20.6	133522	14.1	19.5	327728	14.2	20.7
318205	13.8	19.1	50248	13.9	17.7	505130	13.9	19.9	247454	14.0	20.0	399590	14.1	20.3	169809	14.2	19.0
56870	13.8	18.4	128833	13.9	19.2	105541	13.9	18.5	191079	14.0	20.1	408427	14.1	21.2	177759	14.2	19.2
255053	13.8	19.3	485225	13.9	21.0	311547	13.9	20.9	280079	14.0	19.8	387666	14.1	20.0	454339	14.2	19.2
1197	13.8	15.3	100865	13.9	19.6	104016	13.9	18.0	319239	14.0	19.3	483889	14.1	20.8	237915	14.2	19.6
438328	13.8	19.5	184007	13.9	18.5	247429	13.9	17.4	323085	14.0	20.2	349372	14.1	20.0	94252	14.2	18.5
471227	13.8	20.2	469939	13.9	20.0	161066	13.9	18.7	208273	14.0	20.0	43489	14.1	18.1	167476	14.2	19.9
133062	13.8	19.4	114472	13.9	19.4	350032	13.9	20.6	65023	14.0	19.4	521697	14.1	21.1	364114	14.2	21.2
64165	13.8	18.7	306301	13.9	19.4	284889	13.9	20.1	6846	14.0	16.0	33946	14.1	17.7	315171	14.2	21.1
38195	13.8	16.9	476637	13.9	20.6	71963	13.9	17.3	120695	14.0	18.5	449009	14.1	20.4	477082	14.2	21.6
131781	13.8	18.9	254306	13.9	19.9	44846	13.9	18.1	515316	14.0	20.9	219480	14.1	20.0	337152	14.2	20.2
365669	13.8	20.2	477828	13.9	19.8	254584	13.9	20.4	357005	14.0	24.2	480805	14.1	19.2	4584	14.2	17.5
146488	13.8	19.1	213352	13.9	20.0	308888	13.9	21.0	60111	14.0	18.1	513564	14.1	20.1	140803	14.2	19.2
21002	13.8	16.5	19592	13.9	17.2	471721	13.9	19.1	80378	14.0	18.9	467334	14.1	20.4	210919	14.2	19.5
189549	13.8	17.4	1548	13.9	15.6	68888	13.9	18.2	247795	14.0	18.6	26179	14.1	18.5	74915	14.2	19.0
330366	13.8	19.7	340383	13.9	19.5	474165	13.9	18.9	103061	14.0	17.9	475403	14.1	21.1	310462	14.2	20.3
10742	13.8	16.6	109784	13.9	18.9	444127	13.9	20.5	432	14.0	11.3	85811	14.1	18.9	219566	14.2	20.5
152376	13.8	20.2	419625	13.9	20.4	451331	13.9	21.1	76625	14.0	18.7	198585	14.1	19.9	245522	14.2	19.1
261490	13.8	20.6	111303	13.9	18.8	391824	13.9	19.9	6885	14.0	17.7	149989	14.1	19.3	49145	14.2	18.7
221402	13.8	19.8	150282	13.9	19.5	261721	13.9	20.3	202241	14.0	19.1	449433	14.1	20.9	251498	14.2	19.8
314462	13.8	20.2	507297	13.9	21.2	4169	13.9	15.4	291024	14.0	21.0	233211	14.1	19.6	396198	14.2	20.5
313361	13.8	20.6	481745	13.9	20.7	513823	13.9	21.2	440963	14.0	20.9	40211	14.1	17.8	444267	14.2	21.7
482167	13.8	20.9	326945	13.9	20.1	114086	13.9	17.0	335414	14.1	20.2	177067	14.1	20.0	19177	14.2	16.2
130896	13.8	19.0	245257	13.9	21.1	489687	13.9	20.6	5677	14.1	16.5	387927	14.1	21.2	43447	14.2	18.2
294850	13.8	20.0	433474	13.9	20.5	75603	13.9	18.4	8850	14.1	16.5	476786	14.1	19.6	513838	14.2	21.5
399928	13.8	20.8	317750	13.9	19.3	392910	13.9	21.0	210324	14.1	18.7	323238	14.1	19.8	247970	14.2	20.0
188313	13.8	19.3	8386	13.9	17.1	126913	13.9	20.1									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
78534	14.2	19.1	481479	14.3	21.1	348138	14.4	20.9	50644	14.5	19.3	487805	14.6	21.0	466082	14.7	21.1
358938	14.2	20.7	106408	14.3	18.8	329242	14.4	19.2	382515	14.5	20.4	176118	14.6	20.2	518602	14.7	20.2
209536	14.2	21.0	110950	14.3	19.6	399450	14.4	19.7	156971	14.5	20.2	509779	14.6	22.1	474221	14.7	22.0
9384	14.2	17.5	230318	14.3	20.8	393240	14.4	20.6	140222	14.5	19.7	391204	14.6	21.0	344171	14.7	21.4
92223	14.2	19.6	406803	14.3	20.2	349665	14.4	20.1	340390	14.5	20.6	274219	14.6	20.8	435760	14.7	19.7
151316	14.2	19.5	60362	14.3	17.0	517807	14.4	20.8	361123	14.5	18.4	443447	14.6	20.8	8953	14.7	17.9
391941	14.2	21.5	512541	14.3	20.1	10267	14.4	17.9	217815	14.5	19.5	470800	14.6	20.0	470810	14.7	20.8
106384	14.2	19.0	320254	14.3	18.8	327782	14.4	20.0	59938	14.5	18.3	509849	14.6	20.6	262566	14.7	20.4
86274	14.2	19.0	216488	14.3	19.2	170891	14.4	20.7	341268	14.5	20.7	422966	14.6	20.2	217383	14.7	19.1
356547	14.2	19.7	298162	14.3	19.8	40212	14.4	18.3	477942	14.5	20.1	479699	14.6	20.1	304300	14.7	20.6
190524	14.2	19.5	21217	14.3	18.2	23907	14.4	17.0	192005	14.5	19.7	269848	14.6	20.6	418926	14.7	20.4
361472	14.2	20.0	257798	14.3	20.3	305950	14.4	20.4	168498	14.5	18.4	59017	14.6	18.7	255025	14.7	19.7
436220	14.2	21.5	374937	14.3	20.7	314376	14.4	19.5	84219	14.5	19.1	438856	14.6	20.7	104310	14.7	19.5
257714	14.2	20.7	348484	14.3	20.1	9034	14.4	15.7	168815	14.5	17.7	483359	14.6	20.0	1840	14.7	15.7
299691	14.2	20.1	98722	14.3	18.0	364666	14.4	20.3	388650	14.5	20.3	237592	14.6	20.8	392092	14.7	20.1
266604	14.3	20.9	71956	14.3	19.6	260360	14.4	20.0	91247	14.5	18.7	283222	14.6	19.8	308165	14.7	19.9
320153	14.3	19.7	37958	14.3	19.4	320668	14.4	20.8	344760	14.5	20.6	508988	14.6	20.4	267605	14.7	19.6
171707	14.3	19.5	254420	14.3	20.6	441533	14.4	20.8	78850	14.5	17.9	393630	14.6	19.5	102101	14.7	18.9
343397	14.3	20.9	70811	14.3	17.5	21116	14.4	16.3	397669	14.5	21.2	240210	14.6	20.6	117859	14.7	19.5
7976	14.3	16.5	295866	14.3	19.1	2255	14.4	16.0	252934	14.5	19.6	22718	14.6	18.0	328	14.7	13.7
87783	14.3	17.9	167349	14.3	19.5	514763	14.4	21.2	326189	14.5	21.2	453184	14.6	20.0	27737	14.7	18.1
365811	14.3	20.5	175825	14.3	20.2	494348	14.4	20.4	120153	14.5	19.2	207409	14.6	20.7	97412	14.7	18.7
10944	14.3	15.8	314500	14.3	19.5	361917	14.4	19.3	371479	14.5	18.8	205440	14.6	18.0	362834	14.7	20.9
98296	14.3	19.4	366650	14.3	19.8	185658	14.4	21.4	503280	14.5	19.9	274877	14.6	21.6	137470	14.7	18.4
120805	14.3	19.5	188327	14.3	18.6	217546	14.4	19.5	323713	14.5	21.6	47776	14.6	18.1	281467	14.7	19.5
12342	14.3	17.9	90652	14.3	18.9	446426	14.4	20.2	113552	14.5	18.1	516990	14.6	19.7	295978	14.7	19.7
474566	14.3	20.8	166442	14.3	18.9	364481	14.4	20.6	344747	14.5	19.6	287716	14.6	18.7	256532	14.7	21.8
494845	14.3	20.4	61716	14.3	18.6	363049	14.4	19.7	218780	14.5	19.4	72401	14.6	19.9	466304	14.7	20.3
53309	14.3	18.7	77993	14.3	18.7	76160	14.4	18.4	423689	14.5	21.0	87412	14.6	18.4	284673	14.7	18.7
383150	14.3	19.6	305938	14.3	20.8	502496	14.4	21.1	386795	14.5	21.0	43355	14.6	18.9	399774	14.7	22.0
157322	14.3	19.3	243537	14.4	19.5	131560	14.4	19.4	94405	14.5	18.8	392097	14.6	20.9	60422	14.7	18.1
159276	14.3	19.5	87296	14.4	18.1	242886	14.4	19.8	106651	14.5	19.6	119285	14.6	19.4	130975	14.7	19.5
10946	14.3	18.0	92822	14.4	18.7	515359	14.4	21.6	243652	14.5	19.8	259718	14.6	18.7	164762	14.7	19.4
477573	14.3	20.4	499563	14.4	20.5	257491	14.4	20.8	225989	14.5	20.0	144418	14.6	19.8	167067	14.7	19.9
30086	14.3	17.9	476089	14.4	21.3	359977	14.4	20.1	394566	14.5	21.0	255107	14.6	19.8	423064	14.7	20.5
335841	14.3	20.5	362816	14.4	21.3	397400	14.4	20.4	187295	14.5	20.8	254426	14.6	19.3	213489	14.7	19.8
299602	14.3	19.2	284582	14.4	18.9	63113	14.4	18.6	365654	14.5	20.3	223200	14.6	20.7	445511	14.7	20.2
219891	14.3	18.8	169474	14.4	19.9	271036	14.4	20.2	378152	14.5	20.7	384038	14.6	21.8	98948	14.7	19.4
378565	14.3	19.9	285221	14.4	21.9	417951	14.4	19.6	183549	14.5	19.3	63164	14.6	16.1	502691	14.7	20.7
40864	14.3	18.5	383275	14.4	21.0	511447	14.4	21.1	316272	14.5	19.9	127323	14.6	19.2	206070	14.7	19.5
58511	14.3	18.6	354136	14.4	20.3	127869	14.4	19.5	312398	14.5	20.8	111225	14.6	19.4	164017	14.7	19.0
472189	14.3	21.7	121817	14.4	20.2	404539	14.4	21.2	470340	14.5	20.2	243709	14.6	19.0	218185	14.7	19.1
117270	14.3	19.5	401302	14.4	20.1	30990	14.4	18.5	126636	14.5	18.8	257763	14.6	19.6	352576	14.7	21.1
10750	14.3	16.3	509355	14.4	20.7	514398	14.4	21.0	406273	14.5	20.6	510179	14.6	21.0	507230	14.7	21.3
6181	14.3	16.0	237364	14.4	18.9	487978	14.4	20.7	270458	14.5	19.4	510507	14.6	19.8	324260	14.7	20.1
475643	14.3	20.9	305550	14.4	19.0	343424	14.4	19.7	168448	14.5	20.4	178211	14.6	19.2	324861	14.7	21.1
264364	14.3	20.4	21500	14.4	18.9	12430	14.4	16.9	1572	14.5	13.7	107417	14.6	18.3	43657	14.7	19.1
37898	14.3	17.9	103700	14.4	19.1	373821	14.4	20.2	397274	14.5	21.0	342226	14.6	19.3	135247	14.7	19.2
195405	14.3	20.8	337278	14.4	20.8	388965	14.4	20.1	296138	14.5	20.1	256793	14.6	20.5	151684	14.7	19.6
479356	14.3	21.4	56322	14.4	19.6	47338	14.4	17.6	358794	14.5	19.8	235258	14.6	20.2	320609	14.7	20.0
444314	14.3	21.0	34932	14.4	16.8	254121	14.4	19.6	305895	14.5	20.0	181674	14.6	20.3	314495	14.7	20.9
153286	14.3	19.8	241172	14.4	19.8	473122	14.4	20.3	389057	14.5	19.9	243230	14.6	19.6	23150	14.7	18.0
94133	14.3	18.7	478710	14.4	21.0	68003	14.4	18.6	325939	14.5	20.2	97066	14.6	19.6	312548	14.7	19.7
395053	14.3	21.0	71149	14.4	16.8	154922	14.4	19.2	188144	14.5	20.8	485899	14.6	20.4	135895	14.7	18.3
388716	14.3	20.3	355738	14.4	21.3	444697	14.5	21.3	155709	14.6	17.8	505776	14.7	17.6	329984	14.7	20.0
444410	14.3	19.8	159963	14.4	19.3	83307	14.5	19.2	209264	14.6	17.6	180761	14.7	19.3	438752	14.7	20.7
158234	14.3	18.1	7532	14.4	16.8	120727	14.5	19.1	388645	14.6	20.9	296833	14.7	19.3	47648	14.7	17.1
472327	14.3	21.1	306925	14.4	20.7	36222	14.5	16.4	118971	14.6	19.4	35879	14.7	17.9	39821	14.7	17.7
262201	14.3	19.3	159289	14.4	20.6	318349	14.5	19.8	512425	14.6	20.5	96054	14.7	18.7	436600	14.7	19.9
413768	14.3	21.4	95674	14.4	18.1	38940	14.5	18.5	247173	14.6	19.9	146053	14.7	19.4	362504	14.7	21.3
490106	14.3	20.5	139280	14.4	19.4	162788	14.5	19.5	278664	14.6	20.0	368483	14.7	20.0	495363	14.7	20.8
155211	14.3	19.5	64488	14.4	18.9	39950	14.5	16.4	259104	14.6	20.5	230356	14.7	19.1	230539	14.7	20.7
164404	14.3	19.2	68889	14.4	18.5	144614	14.5	19.1	77108	14.6	19.7	436534	14.7	20.3	176308	14.7	18.4
455013	14.3	21.7	175133	14.4	19.4	187376	14.5	20.6	108840	14.6	18.1	436820	14.7	19.1	477875	14.7	20.9
262491	14.3	20.2	423115	14.4	20.9	203967	14.5	18.7	144298	14.6	19.6	516097	14.7	20.4	263339	14.7	20.3
7130	14.3	16.1	393668	14.4	19.3	17368	14.5	17.6	516128	14.6	20.7	296146	14.7	20.4	172991	14.7	18.2
367961	14.3	21.2	68271	14.4	19.0	167290	14.5	19.8	448706	14.6	19.5	381789	14.7	20.2	225321	14.7	18.4
164013	14.3	19.9	389084	14.4	19.3	440757	14.5	21.5	90847	14.6	19.0	511110	14.7	20.6	281945	14.7	19.7
380143	14.3	21.5	461656	14.4	21.1	361056	14.5	20.6	2								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
186347	14.8	20.1	473338	14.9	20.1	131253	14.9	18.4	479876	15.0	20.5	359959	15.1	19.8	256449	15.2	20.8
454429	14.8	20.4	366681	14.9	19.6	504294	14.9	21.3	254996	15.0	19.1	25575	15.1	17.2	122446	15.2	18.7
355542	14.8	20.8	481294	14.9	20.2	287430	14.9	18.2	435841	15.0	19.5	374964	15.1	20.2	65546	15.2	19.1
277832	14.8	19.2	85672	14.9	18.6	176339	14.9	20.2	353577	15.0	21.2	91201	15.1	18.8	433661	15.2	20.1
168892	14.8	20.7	176002	14.9	19.1	477847	14.9	20.7	358231	15.0	21.0	254828	15.1	20.1	137074	15.2	19.9
361097	14.8	20.1	146083	14.9	20.1	361933	14.9	20.0	397732	15.0	19.8	188666	15.1	20.4	434057	15.2	19.6
255142	14.8	19.3	391295	14.9	20.7	79439	14.9	19.1	25448	15.0	18.0	260287	15.1	19.6	171648	15.2	19.6
124958	14.8	18.6	384478	14.9	21.3	459942	14.9	20.2	324341	15.0	19.1	22782	15.1	18.0	189523	15.2	18.5
174767	14.8	20.3	186367	14.9	19.3	352396	14.9	20.2	448398	15.0	20.1	315893	15.1	19.9	72063	15.2	18.4
276460	14.8	19.7	376107	14.9	20.4	144232	14.9	19.3	353832	15.0	20.6	157398	15.1	19.0	74096	15.2	17.2
183958	14.8	21.0	34982	14.9	17.8	184291	14.9	20.2	250039	15.0	20.8	397145	15.1	20.3	35210	15.2	16.8
219056	14.8	20.3	162090	14.9	18.9	513417	14.9	21.8	469188	15.0	19.7	444708	15.1	21.6	253809	15.2	18.2
42747	14.8	17.8	370240	14.9	19.3	68320	14.9	18.3	206671	15.1	20.3	141021	15.2	19.5	74875	15.2	17.9
451816	14.8	21.3	119343	14.9	18.3	196103	14.9	19.1	495012	15.1	20.3	315077	15.2	20.6	216969	15.2	20.2
343591	14.8	20.3	73137	14.9	18.3	93164	14.9	19.4	490619	15.1	21.6	79223	15.2	18.6	389848	15.2	19.7
320352	14.8	20.7	64127	14.9	18.7	176408	14.9	18.8	253721	15.1	19.8	512799	15.2	20.8	92061	15.2	19.0
48301	14.8	17.4	229710	14.9	20.6	339431	14.9	20.6	290308	15.1	21.1	474109	15.2	20.2	394722	15.2	20.1
13796	14.8	17.2	91940	14.9	18.3	504886	14.9	21.4	507935	15.1	21.1	458232	15.2	19.8	430732	15.3	21.6
453679	14.8	20.7	180353	14.9	20.0	92874	14.9	18.8	521120	15.1	20.5	448387	15.2	19.4	235669	15.3	21.1
254175	14.8	19.2	273275	14.9	18.9	200255	14.9	20.3	493553	15.1	20.2	11595	15.2	17.4	169829	15.3	20.0
199708	14.8	20.3	324820	14.9	20.3	244639	14.9	19.8	139986	15.1	19.1	69291	15.2	18.2	510804	15.3	21.3
283452	14.8	20.1	215004	14.9	19.1	490245	14.9	21.1	30015	15.1	17.3	420326	15.2	21.4	453667	15.3	21.6
404086	14.8	21.3	311874	14.9	21.0	405815	14.9	20.0	157420	15.1	19.5	100739	15.2	19.9	183303	15.3	18.5
24241	14.8	17.1	215634	14.9	19.6	92279	14.9	18.0	321363	15.1	20.0	80481	15.2	18.9	205166	15.3	20.4
154234	14.8	19.2	452664	14.9	21.3	263768	14.9	20.0	329929	15.1	19.7	65626	15.2	17.0	250591	15.3	20.5
151432	14.8	19.3	200368	14.9	18.6	342519	14.9	19.3	263469	15.1	20.5	477518	15.2	20.3	25902	15.3	18.2
346876	14.8	22.2	89017	14.9	18.5	67605	14.9	17.9	91149	15.1	19.2	205048	15.2	20.5	514752	15.3	21.0
74189	14.8	18.9	236422	14.9	19.7	357254	14.9	20.3	398253	15.1	20.8	13326	15.2	16.0	444117	15.3	20.8
152494	14.8	19.0	384447	14.9	20.1	44039	14.9	18.4	296268	15.1	20.1	335542	15.2	20.1	116698	15.3	18.4
519178	14.8	20.7	399726	14.9	20.6	382519	14.9	19.5	439767	15.1	19.3	465051	15.2	20.2	435171	15.3	19.0
96178	14.8	17.2	218525	14.9	19.3	169569	14.9	20.1	375168	15.1	21.0	124774	15.2	18.4	518217	15.3	20.4
476603	14.8	20.5	271742	14.9	19.1	18361	14.9	17.4	508850	15.1	21.8	204630	15.2	19.8	513660	15.3	20.7
378227	14.8	21.7	150464	14.9	20.1	427591	14.9	20.1	305345	15.1	20.3	177105	15.2	19.6	232621	15.3	19.6
374925	14.8	19.6	98636	14.9	18.5	35211	14.9	19.6	439723	15.1	18.4	477929	15.2	19.9	753	15.3	12.2
93049	14.8	18.1	392588	14.9	20.3	386100	14.9	19.7	487964	15.1	20.9	69355	15.2	20.0	374962	15.3	20.6
342703	14.8	19.3	386372	14.9	20.4	138914	14.9	18.1	137468	15.1	19.8	325475	15.2	19.5	348032	15.3	20.0
244024	14.8	18.3	272435	14.9	19.6	343401	14.9	19.8	333982	15.1	19.0	138825	15.2	20.6	70187	15.3	16.7
434281	14.8	18.0	490019	14.9	20.3	399273	14.9	19.6	301464	15.1	20.6	187462	15.2	19.6	316976	15.3	20.9
123728	14.8	20.3	46415	14.9	18.7	276894	14.9	19.1	314544	15.1	20.1	297530	15.2	20.4	516088	15.3	20.4
162291	14.8	19.6	337293	14.9	18.9	161885	14.9	19.8	283657	15.1	19.5	337959	15.2	20.0	237395	15.3	19.9
487966	14.8	19.7	187448	14.9	19.1	193462	14.9	19.5	398208	15.1	19.9	514681	15.2	20.6	252107	15.3	20.1
265195	14.8	21.1	18777	14.9	17.2	275633	14.9	21.0	207604	15.1	19.1	1514	15.2	13.8	234812	15.3	19.0
501887	14.8	20.7	157395	14.9	19.9	397005	14.9	20.2	158966	15.1	20.0	273990	15.2	20.2	350199	15.3	19.2
479621	14.8	20.6	237051	14.9	20.6	288325	14.9	19.5	121311	15.1	18.9	332873	15.2	20.7	471761	15.3	19.8
373415	14.8	20.8	49651	14.9	17.5	261784	14.9	20.9	276821	15.1	19.3	53745	15.2	19.3	478704	15.3	19.7
172696	14.8	19.7	374881	14.9	21.4	318281	14.9	20.1	452696	15.1	21.0	418293	15.2	21.0	333936	15.3	20.2
328149	14.8	20.6	31776	14.9	17.0	87456	14.9	16.9	9350	15.1	16.2	170722	15.2	20.0	91219	15.3	19.0
144458	14.8	19.9	123340	14.9	19.4	377636	14.9	20.8	283124	15.1	19.6	247810	15.2	17.9	388950	15.3	20.8
440966	14.8	19.8	207314	14.9	20.8	476639	14.9	21.7	72155	15.1	18.8	238834	15.2	19.6	165	15.3	11.7
253956	14.8	19.7	427584	14.9	18.8	238636	14.9	20.4	206101	15.1	19.7	242518	15.2	19.4	342644	15.3	19.0
175517	14.8	19.4	438861	14.9	21.0	246089	14.9	19.4	147088	15.1	17.6	193197	15.2	19.1	318584	15.3	18.9
253432	14.8	18.9	523207	14.9	21.5	297577	14.9	18.7	453657	15.1	21.2	48082	15.2	18.5	27712	15.3	16.6
257187	14.8	20.4	128909	14.9	19.2	50257	14.9	18.9	468179	15.1	19.9	43976	15.2	17.5	473016	15.3	19.6
511436	14.8	21.2	499542	14.9	19.6	220680	14.9	19.1	44444	15.1	17.7	358788	15.2	20.7	482225	15.3	20.8
318435	14.8	21.6	121836	14.9	19.7	356938	15.0	19.6	223950	15.1	20.1	202532	15.2	19.2	283720	15.3	19.7
450961	14.8	20.2	283818	14.9	20.5	367972	15.0	20.7	397633	15.1	21.2	392536	15.2	21.2	63389	15.3	18.2
131096	14.8	20.0	103639	14.9	17.9	26815	15.0	16.8	315551	15.1	20.2	107075	15.2	20.2	324268	15.3	20.2
181012	14.8	20.3	448029	14.9	21.3	508560	15.0	20.5	368894	15.1	20.0	39266	15.2	16.8	127177	15.3	19.2
511726	14.8	19.7	198379	14.9	20.2	253527	15.0	19.5	439712	15.1	20.0	513575	15.2	20.1	175404	15.3	19.0
494367	14.8	21.1	307948	14.9	20.2	175580	15.0	19.6	244401	15.1	19.6	308536	15.2	20.5	56461	15.3	17.0
263604	14.8	19.9	60005	14.9	17.8	17520	15.0	17.8	294152	15.1	20.1	401642	15.2	20.3	2515	15.3	16.8
342747	14.8	18.5	321871	14.9	21.0	105542	15.0	19.0	238655	15.1	19.5	353429	15.2	19.5	35075	15.3	17.8
60068	14.8	19.1	476360	14.9	21.4	323651	15.0	21.5	22385	15.1	19.2	213326	15.2	19.7	150307	15.3	20.7
4196	14.8	16.3	412721	14.9	20.3	161812	15.0	19.9	81118	15.1	20.2	273642	15.2	21.0	478018	15.3	21.1
378614	14.8	19.9	301469	14.9	21.1	61499	15.0	18.6	281820	15.1	20.6	336460	15.2	19.9	107628	15.3	19.3
169566	14.8	18.8	476251	14.9	20.1	514754	15.0	22.4	261872	15.1	18.5	268252	15.2	19.3	121429	15.3	18.8
438279	14.8	20.1	302088	14.9	20.9	345913	15.0	20.9	453222	15.1	19.6	474449	15.2	19.5	328540	15.3	21.0
398249	14.8	20.0	140041	14.9	19.6	233866	15.0	19.6	323720	15.1	20.9	150391	15.2	20.5	250595	15.3	19.9
491505	14.8	20.2	236540	14.9	19.5	158778	15.										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
266775	15.3	20.1	312389	15.4	19.8	212974	15.5	19.0	511485	15.6	20.6	255589	15.7	18.6	512832	15.7	20.6
256468	15.3	21.2	479669	15.4	21.0	174207	15.5	19.6	79589	15.6	18.2	193458	15.7	19.2	149297	15.7	20.2
387962	15.3	20.3	130779	15.4	19.9	233550	15.5	19.7	294088	15.6	19.7	184920	15.7	19.6	273939	15.7	20.4
511876	15.3	20.0	137319	15.4	20.2	325583	15.5	20.6	85527	15.6	19.6	266155	15.7	19.2	105287	15.7	18.4
288094	15.3	19.5	113315	15.4	17.8	80609	15.5	18.5	314546	15.6	20.3	17863	15.7	17.4	206486	15.7	19.6
6747	15.3	16.7	355083	15.4	21.0	509824	15.5	20.7	374827	15.6	21.5	313917	15.7	20.2	502700	15.7	21.2
131683	15.3	18.3	174326	15.4	20.2	101520	15.5	18.3	511690	15.6	20.6	506404	15.7	20.4	137371	15.7	19.7
310005	15.3	19.1	323663	15.4	20.7	518912	15.5	20.5	239425	15.6	19.6	360213	15.7	19.8	445008	15.7	19.8
37030	15.3	18.1	295145	15.4	20.2	317281	15.5	19.3	140186	15.6	19.9	391959	15.7	20.8	235133	15.7	19.1
397214	15.3	19.4	238827	15.4	19.7	444438	15.5	22.0	307773	15.6	21.2	505687	15.7	21.6	361441	15.8	21.6
221111	15.3	19.5	335078	15.4	20.9	136139	15.5	18.9	288462	15.6	21.1	264044	15.7	19.9	40167	15.8	18.0
424038	15.3	20.6	511821	15.4	21.7	284594	15.5	19.9	217344	15.6	19.3	94326	15.7	19.3	18831	15.8	17.3
233291	15.3	19.6	235866	15.4	18.6	191555	15.5	18.9	285385	15.6	20.7	71706	15.7	19.3	478173	15.8	20.3
20463	15.3	18.5	389051	15.4	20.3	80858	15.5	19.8	64996	15.6	18.6	95439	15.7	18.3	62742	15.8	18.8
436577	15.3	20.0	379213	15.4	20.5	25264	15.5	18.0	508089	15.6	21.3	90123	15.7	19.9	45708	15.8	17.9
86627	15.3	20.2	334386	15.4	20.4	374014	15.5	20.5	137289	15.6	18.8	92211	15.7	18.8	202247	15.8	19.8
168660	15.3	19.2	11378	15.4	17.2	232212	15.5	19.9	30157	15.6	17.5	215370	15.7	19.3	92248	15.8	18.0
514897	15.3	21.0	310187	15.4	20.6	256524	15.5	19.8	166928	15.6	19.4	125192	15.7	19.4	152500	15.8	19.9
171916	15.3	19.6	314448	15.4	19.6	7793	15.5	17.7	132574	15.6	19.7	289746	15.7	20.8	399095	15.8	20.3
213467	15.3	19.6	97015	15.4	18.2	255150	15.5	20.8	88327	15.6	17.8	254301	15.7	19.4	476920	15.8	19.7
114714	15.3	19.2	511417	15.4	20.4	38878	15.5	17.3	508211	15.6	21.2	219249	15.7	19.5	279841	15.8	19.3
235726	15.3	19.5	172336	15.4	19.5	508205	15.5	20.7	416529	15.6	21.4	285454	15.7	21.0	13856	15.8	16.2
174596	15.3	19.3	91808	15.4	18.9	389969	15.5	19.2	97028	15.6	19.3	362548	15.7	19.7	34332	15.8	18.6
276064	15.3	20.4	177224	15.4	19.6	253794	15.5	21.4	103059	15.6	18.6	269746	15.7	21.2	38748	15.8	18.2
123723	15.3	18.3	162858	15.4	19.6	14785	15.5	18.0	402435	15.6	21.1	346016	15.7	20.0	439379	15.8	20.9
374946	15.3	19.8	239351	15.4	19.5	273780	15.5	18.6	302824	15.6	21.1	413095	15.7	19.8	371836	15.8	19.9
220268	15.3	18.8	403418	15.4	20.4	335110	15.5	20.3	130984	15.6	19.7	221039	15.7	19.3	321698	15.8	20.5
358856	15.3	20.6	87560	15.4	18.4	238287	15.5	19.6	475388	15.6	20.3	322203	15.7	20.0	504494	15.8	21.4
236457	15.4	19.8	352383	15.4	21.0	171667	15.5	18.0	160600	15.6	17.8	56466	15.7	18.4	347826	15.8	19.7
225198	15.4	19.3	236388	15.4	21.4	397725	15.5	20.0	162334	15.6	18.6	166543	15.7	19.1	415885	15.8	18.2
325911	15.4	20.8	27590	15.4	18.7	10880	15.5	18.0	332488	15.6	21.0	252745	15.7	20.7	435826	15.8	19.7
186842	15.4	20.2	323760	15.4	18.9	383242	15.5	21.8	339249	15.6	20.3	118530	15.7	19.8	191792	15.8	18.9
396309	15.4	20.6	22909	15.4	18.3	79185	15.5	18.4	469398	15.6	20.5	401403	15.7	20.0	315228	15.8	20.8
304349	15.4	19.8	41804	15.4	19.6	257971	15.5	20.9	358645	15.6	20.8	44334	15.7	18.1	254153	15.8	19.6
145425	15.4	19.2	128097	15.4	18.6	143488	15.5	20.7	119846	15.6	19.5	294153	15.7	20.8	351073	15.8	20.4
59687	15.4	19.1	390203	15.4	20.8	504860	15.5	19.9	481508	15.6	21.4	434092	15.7	20.4	395772	15.8	22.3
485275	15.4	21.9	479901	15.4	20.8	296690	15.5	20.3	193512	15.6	18.5	447354	15.7	21.2	186014	15.8	18.2
235820	15.4	19.3	102497	15.4	19.5	145671	15.5	18.5	316050	15.6	20.8	35856	15.7	17.2	140295	15.8	19.5
413096	15.4	20.5	481614	15.4	20.2	86292	15.5	16.5	263840	15.6	19.8	431246	15.7	20.9	384045	15.8	21.7
294064	15.4	19.8	164051	15.4	19.5	338630	15.5	19.4	445483	15.6	21.0	57960	15.7	18.9	512365	15.8	20.2
512878	15.4	19.6	83247	15.4	19.2	256420	15.5	20.4	72297	15.6	17.4	164037	15.7	19.9	390000	15.8	20.6
513478	15.4	20.9	429735	15.4	19.9	41127	15.5	18.1	72138	15.6	18.9	71584	15.7	19.7	389841	15.8	20.5
49402	15.4	17.9	106771	15.4	19.0	144095	15.5	20.0	42189	15.6	18.2	94965	15.7	18.9	252121	15.8	20.7
388218	15.4	20.0	309838	15.4	21.2	123379	15.5	20.2	78438	15.6	18.7	440443	15.7	21.0	509582	15.8	21.1
236398	15.4	21.0	513691	15.4	21.6	98674	15.5	19.6	49739	15.6	18.2	140207	15.7	19.3	102681	15.8	19.4
305306	15.4	20.3	103614	15.4	20.4	266236	15.5	20.7	424345	15.6	19.2	349251	15.7	19.8	254233	15.8	20.9
218296	15.4	18.1	344336	15.4	20.9	41591	15.5	17.6	158351	15.6	19.6	390126	15.7	20.6	398168	15.8	21.1
431116	15.4	20.6	75136	15.4	18.4	348744	15.5	20.1	326274	15.6	20.2	19194	15.7	17.7	220375	15.8	19.8
253559	15.4	19.2	665	15.4	12.7	434373	15.5	20.6	507078	15.6	20.9	94285	15.7	19.3	137580	15.8	19.2
493741	15.4	20.5	514008	15.4	19.6	417093	15.5	20.3	314517	15.6	19.9	42180	15.7	18.4	68111	15.8	18.5
504318	15.4	20.1	26586	15.4	16.9	246884	15.5	19.5	174380	15.6	19.1	86113	15.7	17.6	311924	15.8	20.2
448525	15.4	20.8	190611	15.4	20.0	216703	15.5	19.4	511508	15.6	20.7	301246	15.7	20.8	157920	15.8	20.6
203021	15.4	19.1	46206	15.4	18.6	281962	15.5	20.6	91753	15.6	18.8	37776	15.7	18.0	92247	15.8	18.7
509603	15.4	22.8	162386	15.4	19.3	369024	15.5	20.2	318378	15.6	20.8	69452	15.7	18.9	97296	15.8	19.2
137570	15.4	19.9	137558	15.4	19.4	381749	15.5	20.3	404933	15.6	19.5	290657	15.7	21.1	288157	15.8	21.2
424607	15.4	21.4	347871	15.4	20.3	506231	15.5	20.6	237899	15.6	19.7	392726	15.7	20.4	295072	15.8	20.4
162458	15.4	19.5	148529	15.4	18.4	386813	15.5	21.7	137460	15.6	20.2	208955	15.7	19.9	479626	15.8	21.0
41945	15.4	18.3	472160	15.5	20.8	435090	15.5	21.9	441578	15.6	20.6	392638	15.7	20.2	343488	15.8	20.2
268882	15.4	20.4	92414	15.5	18.6	362603	15.5	19.8	267064	15.6	20.0	27252	15.7	16.5	161593	15.8	19.8
352241	15.4	19.8	228615	15.5	20.0	205684	15.5	18.9	126287	15.6	19.2	481359	15.7	20.5	391921	15.8	22.3
155574	15.4	19.2	29851	15.5	16.9	351852	15.5	20.3	8552	15.6	18.2	126898	15.7	19.0	476990	15.8	19.7
479624	15.4	20.6	77870	15.5	16.9	512185	15.5	20.1	78863	15.6	18.7	391924	15.7	20.8	218604	15.8	18.1
455096	15.4	19.9	65628	15.5	17.4	290766	15.5	20.7	109344	15.7	18.6	501546	15.7	20.6	123021	15.8	19.7
283363	15.4	18.9	99028	15.5	19.2	185470	15.5	20.2	153232	15.7	20.1	242790	15.7	19.2	308671	15.8	20.3
210414	15.4	19.4	53339	15.5	17.6	256526	15.6	20.0	185590	15.7	19.7	398989	15.7	19.9	328159	15.8	20.6
316247	15.4	19.0	243708	15.5	20.0	64172	15.6	19.5	339203	15.7	19.8	71432	15.7	18.1	36411	15.8	17.1
75355	15.4	18.5	288310	15.5	20.0	445464	15.6	21.4	304269	15.7	20.1	427463	15.7	19.2	377889	15.8	20.8
365791	15.4	20.8	345041	15.5	21.2	103443	15.6	19.1	447090	15.7	19.6	36153	15.7	17.1	482390	15.8	20.6
391912	15.4	21.6	151498	15.5	20.0	210706	15.6	1									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
69589	15.8	19.5	72444	15.9	18.0	398177	15.9	19.2	313292	16.1	20.5	399025	16.2	20.8	28370	16.2	17.8
214030	15.8	20.7	491497	15.9	20.6	79537	15.9	17.2	51532	16.1	18.2	282761	16.2	19.2	470779	16.2	20.1
406800	15.8	21.1	348042	15.9	20.8	220211	15.9	19.3	211383	16.1	20.7	132518	16.2	19.3	137692	16.2	19.6
425814	15.8	21.6	140732	15.9	19.2	23187	15.9	19.2	123075	16.1	18.9	206887	16.2	19.8	206695	16.2	20.1
349207	15.8	20.7	197187	15.9	19.1	171117	15.9	19.8	206496	16.1	20.0	287068	16.2	19.2	321373	16.2	18.3
511201	15.8	20.6	174072	15.9	18.4	249502	15.9	19.3	519807	16.1	21.2	216137	16.2	19.8	230315	16.2	19.6
261931	15.8	18.1	267731	15.9	19.9	259347	15.9	20.6	393628	16.1	21.0	149053	16.2	17.8	149884	16.2	19.7
368114	15.8	20.3	216659	15.9	19.6	354592	16.0	20.5	311962	16.1	21.6	206676	16.2	20.4	367498	16.2	20.1
67232	15.8	18.0	283677	15.9	19.1	432631	16.0	21.3	224952	16.1	20.4	10801	16.2	16.9	318553	16.2	20.4
481332	15.8	20.1	118417	15.9	19.5	174364	16.0	19.3	450537	16.1	21.8	68503	16.2	19.4	375201	16.2	20.7
476574	15.8	20.6	477597	15.9	20.0	453257	16.0	20.9	20189	16.1	19.0	380735	16.2	20.3	288199	16.2	21.3
66060	15.8	18.2	342171	15.9	20.3	476138	16.0	20.3	7718	16.1	15.9	186828	16.2	19.3	340546	16.2	20.1
35162	15.8	17.1	200303	15.9	19.5	114904	16.0	19.2	491779	16.1	20.0	426070	16.2	21.6	446623	16.2	20.8
71081	15.8	18.0	102632	15.9	18.5	506775	16.0	22.0	346641	16.1	21.1	42620	16.2	18.0	163129	16.2	18.9
487696	15.8	20.4	356393	15.9	20.0	444120	16.0	19.7	72528	16.1	19.2	390210	16.2	21.3	207559	16.2	19.0
355991	15.8	21.0	387489	15.9	21.0	164253	16.0	19.8	348110	16.1	19.3	339190	16.2	20.2	254113	16.3	19.0
313676	15.8	19.3	168061	15.9	17.8	261762	16.0	19.9	301978	16.1	19.5	313363	16.2	19.8	262109	16.3	21.0
19120	15.8	16.1	137498	15.9	19.2	254980	16.0	20.1	428551	16.1	21.0	363069	16.2	20.7	173775	16.3	19.4
512561	15.8	19.3	142215	15.9	18.8	155243	16.0	20.1	31028	16.1	17.9	260427	16.2	19.2	26513	16.3	18.3
385212	15.8	20.1	2351	15.9	15.8	374893	16.0	19.8	61897	16.1	18.5	60763	16.2	19.7	509899	16.3	20.5
469976	15.8	21.1	113306	15.9	19.2	512191	16.0	20.0	25267	16.1	17.8	472209	16.2	20.9	92293	16.3	17.9
218519	15.8	18.9	112848	15.9	18.4	443824	16.0	20.8	243717	16.1	19.5	256016	16.2	20.1	446220	16.3	21.2
514284	15.8	19.8	344748	15.9	20.4	498064	16.0	20.1	487988	16.1	20.1	143355	16.2	19.6	25878	16.3	19.4
44957	15.8	18.2	30944	15.9	18.1	507151	16.0	22.0	170893	16.1	19.3	285271	16.2	20.2	77197	16.3	20.0
318347	15.8	19.8	343561	15.9	21.1	267688	16.0	20.2	161353	16.1	18.9	189003	16.2	18.7	311432	16.3	20.9
146871	15.8	19.8	416671	15.9	20.9	116317	16.0	18.8	257801	16.1	20.7	313023	16.2	21.0	13162	16.3	16.2
166428	15.8	19.7	261607	15.9	20.0	323747	16.0	20.2	165976	16.1	19.0	362266	16.2	19.9	325958	16.3	21.3
25439	15.8	19.1	82039	15.9	18.5	186999	16.0	18.5	491926	16.1	21.2	262067	16.2	20.8	479803	16.3	21.1
253544	15.9	19.1	215029	15.9	20.1	513392	16.0	20.5	120838	16.1	19.8	508656	16.2	19.1	211507	16.3	18.2
220866	15.9	19.8	23989	15.9	17.8	355554	16.0	19.7	446142	16.1	20.1	474357	16.2	20.3	485757	16.3	21.8
84084	15.9	19.6	233377	15.9	19.6	445383	16.0	21.2	174818	16.1	19.8	516504	16.2	21.9	374884	16.3	21.2
316109	15.9	19.4	514654	15.9	21.3	348475	16.0	19.8	184019	16.1	20.3	97127	16.2	19.6	385559	16.3	20.7
357514	15.9	19.7	45988	15.9	18.3	93117	16.0	18.2	254272	16.1	20.2	401639	16.2	19.9	439456	16.3	20.8
307119	15.9	20.9	237070	15.9	21.0	431038	16.0	20.1	280040	16.1	20.1	9251	16.2	17.5	340273	16.3	20.4
3456	15.9	16.0	136041	15.9	18.5	28087	16.0	17.8	167778	16.1	19.0	442593	16.2	20.4	482384	16.3	20.3
503984	15.9	19.0	224776	15.9	20.3	516948	16.0	22.1	83402	16.1	18.4	99034	16.2	17.3	221414	16.3	19.8
169065	15.9	19.6	350938	15.9	20.2	443097	16.0	20.6	520467	16.1	21.1	358320	16.2	20.6	325034	16.3	20.5
308963	15.9	20.9	112107	15.9	19.2	216054	16.0	19.1	139125	16.1	19.2	357198	16.2	21.0	418314	16.3	21.3
136143	15.9	18.9	434691	15.9	18.4	234889	16.0	20.1	426118	16.1	20.8	478073	16.2	20.7	476897	16.3	19.6
477951	15.9	20.6	477545	15.9	20.1	180468	16.0	20.5	369683	16.1	20.4	13872	16.2	18.0	338648	16.3	19.8
157885	15.9	18.3	124031	15.9	19.6	257761	16.0	19.4	326163	16.1	21.4	476782	16.2	20.5	38283	16.3	18.3
7694	15.9	15.7	107252	15.9	19.7	107268	16.0	19.1	237373	16.1	21.2	396060	16.2	21.3	517889	16.3	21.4
380132	15.9	18.7	204069	15.9	19.1	154789	16.0	19.3	55544	16.1	18.8	91011	16.2	19.4	440915	16.3	20.8
146300	15.9	18.0	400701	15.9	20.7	217655	16.0	19.3	282039	16.1	18.4	450247	16.2	20.3	37449	16.3	17.7
248524	15.9	20.9	72228	15.9	18.6	382487	16.0	19.2	514355	16.1	20.7	513770	16.2	20.4	511021	16.3	20.7
111321	15.9	19.6	332504	15.9	20.5	26846	16.0	17.0	512137	16.1	19.8	510985	16.2	21.1	362554	16.3	20.9
459813	15.9	19.1	217138	15.9	19.5	116172	16.0	19.8	120677	16.1	18.6	398545	16.2	20.4	363670	16.3	20.7
483277	15.9	20.6	264997	15.9	19.0	478665	16.0	19.7	426585	16.1	19.7	112862	16.2	18.7	126453	16.3	20.7
255166	15.9	21.1	256480	15.9	20.6	222232	16.0	20.0	500848	16.1	21.5	207269	16.2	20.1	65088	16.3	19.7
93563	15.9	19.2	33393	15.9	17.0	209738	16.0	20.3	171725	16.1	19.8	281670	16.2	19.5	155013	16.3	20.0
476565	15.9	20.1	353752	15.9	20.0	321438	16.0	19.5	346554	16.1	20.5	506423	16.2	22.0	435640	16.3	20.4
371395	15.9	19.9	509838	15.9	21.7	136900	16.0	18.2	304714	16.1	20.6	338795	16.2	20.8	160666	16.3	18.7
38425	15.9	17.6	438087	15.9	20.6	151274	16.0	20.3	511297	16.1	20.8	385096	16.2	20.2	247359	16.3	20.3
488014	15.9	20.3	220998	15.9	19.2	268838	16.0	20.4	301549	16.1	19.4	278075	16.2	21.3	408947	16.3	20.6
115087	15.9	20.0	66125	15.9	18.5	34114	16.0	18.0	133599	16.1	18.2	59372	16.2	19.8	99354	16.3	17.9
120706	15.9	19.3	14057	15.9	18.8	478534	16.0	20.7	383309	16.1	18.9	207	16.2	12.6	157665	16.3	20.0
294820	15.9	19.9	90100	15.9	19.5	199733	16.0	19.6	285409	16.1	21.6	39658	16.2	17.8	472203	16.3	20.7
84027	15.9	17.7	252906	15.9	20.1	161011	16.0	20.8	253539	16.1	19.7	358800	16.2	21.6	440437	16.3	20.7
273316	15.9	20.9	97349	15.9	19.1	225142	16.1	19.9	305443	16.1	20.9	38544	16.2	16.6	365748	16.3	20.1
359983	15.9	20.3	38150	15.9	18.7	20227	16.1	16.6	107248	16.1	19.6	129743	16.2	19.7	182803	16.3	19.9
120781	15.9	18.9	229536	15.9	19.7	371913	16.1	21.5	489363	16.1	20.4	316013	16.2	20.0	323961	16.3	20.4
15093	15.9	17.8	184584	15.9	20.0	253686	16.1	20.0	513839	16.1	20.4	442484	16.2	20.7	419767	16.3	19.2
487721	15.9	21.4	201086	15.9	20.0	443076	16.1	20.5	437041	16.1	19.0	201127	16.2	20.2	285431	16.3	20.1
78417	15.9	20.3	449091	15.9	20.3	147113	16.1	18.4	250948	16.1	19.4	236483	16.2	19.7	447385	16.3	20.5
431332	15.9	20.9	123794	15.9	18.4	117127	16.1	19.2	399955	16.1	20.1	334443	16.2	20.3	435212	16.3	19.5
205153	15.9	19.7	281981	15.9	19.0	513351	16.1	21.2	187440	16.1	19.5	359559	16.2	20.2	146118	16.3	19.0
264092	15.9	19.7	342478	15.9	20.7	474608	16.1	20.2	339335	16.1	19.5	168803	16.2	18.4	344635	16.3	19.6
293302	15.9	19.8	418335	15.9	20.4	140696	16.1	19.7	31092	16.1	18.4	130163	16.2	17.8	254351	16.3	19.8
24708	15.9	17.6	109304	15.9	18.3	190570											

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
513408	16.3	22.1	480405	16.4	20.5	480230	16.5	19.2	367266	16.6	20.7	171811	16.7	19.9	70683	16.7	19.3
84288	16.3	18.0	316665	16.4	21.3	43459	16.5	19.1	429691	16.6	20.5	22629	16.7	17.2	448642	16.7	19.3
45214	16.3	18.1	404535	16.4	21.4	57837	16.5	17.5	506154	16.6	20.5	258810	16.7	19.3	249019	16.7	18.2
462698	16.3	19.2	255317	16.4	19.4	515400	16.5	21.4	238663	16.6	19.6	510153	16.7	19.4	286936	16.7	18.8
392807	16.3	20.7	43566	16.4	17.0	6834	16.5	15.8	253684	16.6	20.0	316123	16.7	19.6	101582	16.7	19.2
476269	16.3	19.9	76387	16.4	19.2	279538	16.5	20.3	238278	16.6	19.8	420967	16.7	21.6	520085	16.7	20.8
251733	16.3	18.4	510169	16.4	20.1	359609	16.5	20.4	103774	16.6	19.0	211229	16.7	20.8	322406	16.8	19.0
66465	16.3	17.9	205367	16.4	19.2	263568	16.5	19.7	443111	16.6	20.7	476735	16.7	21.2	97663	16.8	18.5
69723	16.3	19.5	342716	16.4	20.8	5665	16.5	16.7	445812	16.6	20.4	61439	16.7	17.6	206011	16.8	19.0
187615	16.3	20.6	102035	16.4	18.6	482742	16.5	21.7	479967	16.6	21.1	382986	16.7	20.6	135031	16.8	17.8
105488	16.3	18.7	134217	16.4	19.2	278574	16.5	20.6	125792	16.6	19.9	255431	16.7	20.1	51437	16.8	18.6
436549	16.3	20.9	283357	16.4	20.1	383274	16.5	21.4	30888	16.6	18.2	327594	16.7	20.0	436579	16.8	20.4
331966	16.3	20.0	36739	16.4	18.1	330619	16.5	20.5	183803	16.6	20.5	80677	16.7	20.1	159234	16.8	19.4
482130	16.3	21.3	338831	16.4	21.9	59396	16.5	17.3	510036	16.6	21.8	496819	16.7	21.6	173618	16.8	20.1
298001	16.3	20.3	261692	16.4	19.8	316052	16.5	19.9	449193	16.6	20.4	509464	16.7	20.3	42483	16.8	17.3
394197	16.3	20.5	479935	16.4	20.7	504096	16.5	19.8	510093	16.6	20.6	87727	16.7	18.9	150624	16.8	20.1
339312	16.3	18.7	445513	16.4	20.4	445405	16.5	20.3	44339	16.6	18.9	198555	16.7	19.2	441991	16.8	20.5
347465	16.3	18.9	47854	16.4	18.5	298177	16.5	19.2	67542	16.6	17.5	4410	16.7	16.1	391977	16.8	20.5
218190	16.3	18.4	49831	16.4	19.3	89864	16.5	18.7	642	16.6	15.1	263497	16.7	19.8	317416	16.8	20.3
252749	16.3	19.5	358802	16.4	19.7	44422	16.5	17.8	468154	16.6	20.0	41251	16.7	18.4	383081	16.8	20.4
474186	16.3	19.8	389913	16.4	20.3	361098	16.5	19.0	246207	16.6	19.9	20707	16.7	16.9	383168	16.8	21.0
353033	16.3	21.3	429703	16.4	21.0	175066	16.5	20.2	444222	16.6	20.6	310172	16.7	18.9	35504	16.8	16.6
435230	16.3	19.3	187959	16.4	18.9	471142	16.5	21.4	292853	16.6	21.0	362434	16.7	20.3	188155	16.8	20.4
328210	16.3	20.0	261381	16.4	19.9	224189	16.5	19.2	321197	16.6	19.7	2324	16.7	15.2	332269	16.8	20.1
201953	16.3	18.6	159282	16.4	20.2	276866	16.5	19.8	184620	16.6	19.6	58412	16.7	19.5	315644	16.8	19.8
137703	16.3	19.5	200504	16.4	20.5	512539	16.5	19.3	260499	16.6	20.2	482425	16.7	21.1	27016	16.8	16.5
449771	16.3	20.3	13069	16.4	17.5	479062	16.5	21.3	140201	16.6	19.5	437486	16.7	20.1	49151	16.8	19.2
449658	16.4	20.1	306972	16.4	20.3	293748	16.5	19.8	361513	16.6	21.3	172578	16.7	19.7	101957	16.8	19.1
520245	16.4	21.4	420376	16.4	20.1	511262	16.5	21.6	366791	16.6	20.8	437537	16.7	20.7	436211	16.8	20.9
47632	16.4	18.5	380746	16.4	19.8	188867	16.5	20.6	474550	16.6	20.2	446242	16.7	19.9	42413	16.8	18.9
250368	16.4	20.3	438508	16.4	20.4	147904	16.5	19.0	477585	16.6	21.0	395640	16.7	20.5	350193	16.8	20.4
351079	16.4	20.0	191722	16.4	20.2	193265	16.5	20.5	361496	16.6	21.6	260306	16.7	19.6	68145	16.8	17.0
103607	16.4	20.7	320256	16.4	18.6	97507	16.5	18.7	117521	16.6	20.0	215387	16.7	20.3	360884	16.8	20.6
211711	16.4	17.5	447020	16.4	20.1	57830	16.5	19.0	264247	16.6	20.8	7972	16.7	18.5	388571	16.8	19.1
479127	16.4	20.5	138067	16.4	19.6	512176	16.5	20.1	150958	16.6	19.7	334427	16.7	20.6	145070	16.8	18.7
266719	16.4	20.9	5349	16.4	17.9	325477	16.5	18.4	479548	16.6	21.3	511414	16.7	20.6	91751	16.8	19.8
346457	16.4	21.6	13121	16.4	17.2	7676	16.5	16.0	272585	16.6	20.4	86178	16.7	19.2	164561	16.8	20.0
136324	16.4	19.0	39831	16.4	17.5	502828	16.5	21.3	476009	16.6	19.4	259810	16.7	20.2	126428	16.8	19.7
513328	16.4	20.2	157297	16.4	18.9	154896	16.5	19.1	73914	16.6	18.5	346647	16.7	20.3	211890	16.8	19.0
207512	16.4	19.2	371489	16.4	20.0	478495	16.5	20.9	303188	16.6	19.2	210986	16.7	19.9	121312	16.8	19.0
235126	16.4	18.7	338668	16.4	21.1	513573	16.5	20.8	510695	16.6	20.1	201137	16.7	18.7	220385	16.8	19.2
263141	16.4	20.6	397141	16.4	19.7	115695	16.5	19.4	510893	16.6	20.8	385162	16.7	19.2	444890	16.8	20.2
19630	16.4	17.6	261426	16.4	20.6	67140	16.5	18.2	428646	16.6	21.6	398635	16.7	20.0	221838	16.8	18.4
313139	16.4	21.4	62715	16.4	18.5	168253	16.5	19.0	477552	16.6	20.9	518406	16.7	21.7	115958	16.8	19.1
390171	16.4	20.4	259366	16.4	19.6	389143	16.5	19.9	292124	16.6	20.3	105592	16.7	18.9	371485	16.8	20.4
323662	16.4	20.8	472500	16.4	20.9	169753	16.5	19.6	209955	16.6	20.2	364501	16.7	21.8	393568	16.8	20.5
314392	16.4	19.9	371940	16.5	19.7	224104	16.6	19.4	290251	16.6	20.5	340332	16.7	20.5	60345	16.8	17.9
237471	16.4	19.5	289963	16.5	20.9	341341	16.6	20.5	208009	16.6	19.4	454823	16.7	19.9	123049	16.8	19.2
519768	16.4	20.6	474690	16.5	21.4	22961	16.6	18.0	251487	16.6	19.8	210689	16.7	19.3	6838	16.8	16.7
454991	16.4	21.0	409029	16.5	21.5	68291	16.6	19.0	35261	16.6	18.8	328517	16.7	19.4	42511	16.8	18.6
401466	16.4	19.9	357897	16.5	20.6	113063	16.6	19.3	76950	16.6	18.8	253588	16.7	18.5	198560	16.8	20.4
514919	16.4	21.4	38413	16.5	17.9	158724	16.6	18.5	511184	16.6	21.0	98831	16.7	20.3	148621	16.8	19.7
72928	16.4	20.1	60122	16.5	18.2	239847	16.6	19.6	222466	16.6	18.6	291795	16.7	18.7	512373	16.8	20.7
132363	16.4	20.6	12613	16.5	17.2	9263	16.6	16.8	254583	16.6	20.4	49808	16.7	17.9	96813	16.8	16.5
172178	16.4	17.9	373388	16.5	20.3	74506	16.6	18.1	521838	16.6	21.3	487285	16.7	20.9	355132	16.8	20.8
437044	16.4	19.3	70955	16.5	19.7	163859	16.6	18.3	72346	16.6	18.6	183281	16.7	17.9	43095	16.8	18.2
154403	16.4	19.6	452437	16.5	20.1	266159	16.6	21.4	285225	16.6	20.1	427648	16.7	20.4	432177	16.8	21.2
342042	16.4	20.8	343632	16.5	20.2	323379	16.6	19.9	352228	16.6	19.9	523087	16.7	19.0	516357	16.8	20.6
125144	16.4	17.9	316714	16.5	20.3	436555	16.6	20.7	246510	16.6	20.1	233391	16.7	18.4	462562	16.8	20.8
381886	16.4	21.2	310610	16.5	20.8	175790	16.6	18.7	218195	16.6	19.5	263422	16.7	20.5	74940	16.8	18.8
250829	16.4	20.0	345490	16.5	20.7	389160	16.6	20.7	513940	16.6	20.7	49546	16.7	18.0	38111	16.8	16.9
34088	16.4	17.5	47559	16.5	17.2	263722	16.6	19.9	157445	16.6	17.8	395836	16.7	22.1	351169	16.8	21.3
218917	16.4	19.7	361908	16.5	20.8	181929	16.6	19.2	398490	16.6	20.7	137682	16.7	20.1	300765	16.8	20.3
254208	16.4	19.9	512362	16.5	20.4	218394	16.6	18.9	253640	16.7	20.7	271734	16.7	19.0	321567	16.8	20.4
326372	16.4	20.0	191653	16.5	19.2	513993	16.6	21.6	381719	16.7	20.0	265417	16.7	18.6	40069	16.8	18.0
448405	16.4	20.6	376416	16.5	19.6	35097	16.6	17.9	310573	16.7	19.1	512027	16.7	20.7	416036	16.8	21.4
264814	16.4	18.9	377638	16.5	21.1	94773	16.6	18.5	342274	16.7	20.7	468834	16.7	18.5	244664	16.8	19.4
440450	16.4	20.9	454479	16.5	20.6	280959	16.6	19.8	399912	16.7	20.6	518492	16.7	20.3	445401	16.8	20.1
362850	16.4	21.4	314984	16.5	21.0	126518	16.6	19.									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
482202	16.8	20.8	339101	16.9	18.8	392842	16.9	19.8	76651	17.1	18.1	34594	17.1	19.1	94224	17.2	17.7
51449	16.8	17.4	131658	16.9	18.7	255323	16.9	20.3	184908	17.1	19.0	553	17.1	14.9	488386	17.2	21.1
124305	16.8	18.5	319383	16.9	20.5	327809	16.9	20.4	373728	17.1	19.2	507877	17.1	19.8	78624	17.2	18.4
371979	16.8	21.6	508530	16.9	20.5	313999	16.9	19.1	407611	17.1	21.4	479406	17.1	20.9	127370	17.2	17.8
224130	16.8	20.5	514065	16.9	20.7	480314	16.9	19.8	130567	17.1	17.3	157872	17.1	19.2	494333	17.2	19.4
475334	16.8	21.9	509054	16.9	20.7	18168	16.9	18.4	511123	17.1	20.1	508613	17.1	20.2	475426	17.2	19.5
313328	16.8	20.7	83872	16.9	17.2	514611	16.9	20.3	91661	17.1	18.7	370692	17.1	20.3	482784	17.2	21.7
476027	16.8	20.7	79707	16.9	18.1	416676	16.9	18.7	251877	17.1	20.3	126766	17.1	19.1	470853	17.2	19.4
380805	16.8	20.6	166551	16.9	19.6	341199	16.9	20.5	128871	17.1	19.6	199918	17.1	20.0	299666	17.2	19.9
30096	16.8	17.8	209849	16.9	20.5	195043	16.9	20.1	401235	17.1	20.3	518196	17.1	20.2	131718	17.2	19.2
178370	16.8	20.0	109724	16.9	19.0	476032	16.9	20.7	95414	17.1	18.3	369464	17.1	20.8	93000	17.2	19.1
287099	16.8	20.1	243908	16.9	20.9	150818	16.9	18.9	479267	17.1	21.7	171459	17.1	18.6	400943	17.2	21.2
478416	16.8	21.6	425620	16.9	20.9	507080	16.9	21.4	364886	17.1	20.5	150634	17.1	19.8	278862	17.2	19.2
516316	16.8	21.2	78326	16.9	18.1	516023	16.9	20.3	260531	17.1	20.6	158459	17.1	18.1	12987	17.2	16.6
261708	16.8	21.1	259456	16.9	19.9	444709	16.9	21.3	490965	17.1	21.1	389188	17.1	19.8	429462	17.2	21.7
144323	16.8	19.0	291238	16.9	21.4	62189	16.9	18.7	205162	17.1	19.4	388594	17.1	20.1	457550	17.2	20.6
221466	16.8	21.0	51133	16.9	19.9	121251	16.9	19.1	326234	17.1	21.2	220882	17.1	20.2	473221	17.2	20.8
476689	16.8	21.4	477999	16.9	20.6	510889	16.9	20.4	15697	17.1	16.6	151370	17.1	20.2	160037	17.2	19.2
127930	16.8	17.7	224090	16.9	19.7	92003	17.0	19.0	313002	17.1	20.9	319299	17.1	19.6	346763	17.2	20.2
252989	16.8	19.6	247908	16.9	20.3	266405	17.0	19.9	441009	17.1	21.3	265278	17.1	20.9	90071	17.2	19.6
21235	16.8	18.2	434087	16.9	20.8	289012	17.0	20.5	168047	17.1	19.8	479582	17.1	20.1	119840	17.2	19.3
423102	16.8	21.5	471233	16.9	20.3	143645	17.0	19.0	91029	17.1	20.3	117931	17.1	19.8	121878	17.2	19.5
481645	16.9	20.4	454391	16.9	19.5	455038	17.0	20.7	66607	17.1	17.9	150629	17.2	19.4	474456	17.2	19.7
343517	16.9	19.9	433311	16.9	20.5	265379	17.0	19.0	349250	17.1	19.9	44296	17.2	17.5	470856	17.2	20.1
179642	16.9	18.2	22071	16.9	17.8	156001	17.0	19.2	95628	17.1	18.0	328153	17.2	20.9	427668	17.2	21.4
523570	16.9	20.5	128534	16.9	19.0	514685	17.0	22.2	148569	17.1	17.9	131568	17.2	19.3	175343	17.2	20.3
92204	16.9	19.5	347533	16.9	19.4	186707	17.0	20.7	323294	17.1	20.3	73874	17.2	20.5	241515	17.2	19.7
350884	16.9	20.1	223860	16.9	20.5	270260	17.0	19.9	453683	17.1	20.6	305486	17.2	21.0	363105	17.2	20.4
295765	16.9	21.1	233903	16.9	20.6	77589	17.0	17.6	382886	17.1	18.9	437136	17.2	19.6	407193	17.2	20.3
201026	16.9	19.6	4292	16.9	16.1	450921	17.0	20.0	46062	17.1	17.3	2837	17.2	16.0	332476	17.2	21.6
80424	16.9	19.3	317406	16.9	18.4	87651	17.0	17.8	256628	17.1	20.6	443040	17.2	20.0	336685	17.2	20.6
222928	16.9	19.2	513941	16.9	20.8	379646	17.0	21.7	513848	17.1	20.6	314013	17.2	21.1	401586	17.2	20.5
5110	16.9	15.6	186635	16.9	19.5	126850	17.0	19.6	512904	17.1	20.8	236654	17.2	19.7	350394	17.2	20.9
184260	16.9	19.0	252819	16.9	19.6	473585	17.0	20.7	220484	17.1	19.5	446862	17.2	22.3	358380	17.2	20.7
62209	16.9	18.5	182197	16.9	19.4	149693	17.0	18.9	222235	17.1	20.0	28772	17.2	17.9	379636	17.2	21.4
273320	16.9	21.0	216636	16.9	19.3	87359	17.0	18.2	16119	17.1	16.6	294408	17.2	20.6	400937	17.2	20.1
444245	16.9	20.1	106753	16.9	19.6	396514	17.0	20.3	153477	17.1	19.5	487	17.2	11.6	131140	17.2	19.2
504360	16.9	21.6	173734	16.9	19.1	263983	17.0	20.2	456098	17.1	21.3	376886	17.2	20.3	145198	17.2	19.2
4369	16.9	14.4	239612	16.9	21.5	94580	17.0	18.5	344189	17.1	20.3	423994	17.2	21.8	173889	17.2	19.2
373770	16.9	20.7	444227	16.9	20.2	238673	17.0	19.7	523101	17.1	21.1	226409	17.2	19.3	50607	17.2	16.1
251354	16.9	20.0	347940	16.9	20.9	358457	17.0	19.9	288702	17.1	19.0	348103	17.2	19.7	45093	17.2	17.8
180156	16.9	20.1	512201	16.9	20.1	439604	17.0	20.3	344023	17.1	21.2	438926	17.2	20.5	142353	17.2	18.8
163901	16.9	19.2	167522	16.9	19.5	487739	17.0	20.3	77358	17.1	19.6	404088	17.2	21.0	254975	17.2	20.7
358261	16.9	20.8	250028	16.9	20.0	253530	17.0	19.6	514733	17.1	21.3	31842	17.2	18.0	174083	17.2	17.8
6043	16.9	15.4	318314	16.9	20.3	256411	17.0	20.9	223401	17.1	19.6	92275	17.2	17.9	288470	17.2	20.6
181295	16.9	19.0	279400	16.9	20.5	312421	17.0	20.2	316369	17.1	21.4	511853	17.2	20.5	374734	17.2	20.9
345895	16.9	20.6	71714	16.9	18.8	48558	17.0	18.0	262370	17.1	20.8	32489	17.2	18.2	448601	17.2	21.3
136423	16.9	19.6	514816	16.9	21.7	382430	17.0	18.7	81487	17.1	17.9	168759	17.2	18.3	319858	17.2	19.0
365719	16.9	20.8	114855	16.9	18.4	374751	17.0	19.7	70832	17.1	18.4	169661	17.2	19.9	49144	17.2	18.9
250103	16.9	17.7	134895	16.9	19.9	349481	17.0	19.6	229144	17.1	18.4	242548	17.2	20.6	198462	17.2	20.1
387937	16.9	20.6	3286	16.9	16.5	205036	17.0	17.9	22652	17.1	17.3	193678	17.2	20.0	245577	17.2	19.7
403979	16.9	20.8	212962	16.9	20.4	219328	17.0	20.1	511503	17.1	20.9	348113	17.2	20.4	166124	17.2	18.9
445786	16.9	21.2	94335	16.9	18.9	286765	17.0	19.3	248298	17.1	17.5	304678	17.2	21.6	333485	17.2	19.5
290715	16.9	20.5	113091	16.9	19.5	34679	17.0	16.8	469630	17.1	18.4	389030	17.2	21.2	317189	17.2	19.7
31487	16.9	18.0	51374	16.9	19.0	117273	17.0	19.2	285567	17.1	18.8	256548	17.2	21.1	249580	17.2	19.7
15452	16.9	17.8	200044	16.9	19.3	403480	17.0	20.9	364116	17.1	20.6	171045	17.2	20.3	154573	17.2	19.2
374023	16.9	20.9	152753	16.9	20.8	182884	17.0	20.3	340515	17.1	20.8	479670	17.2	20.5	99711	17.2	17.7
26390	16.9	17.9	477586	16.9	21.6	308393	17.0	20.3	84965	17.1	18.0	127019	17.2	19.3	367942	17.2	21.2
400444	16.9	20.7	200267	16.9	19.8	246596	17.0	20.3	137241	17.1	18.6	164111	17.2	18.8	157755	17.2	19.4
105013	16.9	19.2	120785	16.9	20.1	127490	17.0	17.8	80785	17.1	19.0	155482	17.2	19.4	444356	17.2	21.0
80228	16.9	20.3	26532	16.9	17.7	288977	17.0	20.8	283859	17.1	19.7	476840	17.2	21.2	334656	17.2	20.1
424564	16.9	21.4	438627	16.9	19.9	149097	17.0	18.6	391596	17.1	19.5	221885	17.2	19.7	315089	17.2	20.2
32901	16.9	18.4	178183	16.9	20.3	511286	17.0	20.9	513154	17.1	19.4	116648	17.2	18.3	67909	17.2	16.5
512546	16.9	19.6	66690	16.9	18.9	220205	17.0	19.9	347529	17.1	19.5	142113	17.2	18.5	37763	17.2	18.4
294151	16.9	20.3	279210	16.9	21.0	380830	17.0	20.4	193396	17.1	18.9	474406	17.2	20.7	92156	17.3	19.4
320459	16.9	20.0	209267	16.9	20.1	360714	17.0	20.3	365646	17.1	20.9	438314	17.2	19.1	507170	17.3	21.4
348775	16.9	19.4	90206	16.9	17.8	315441	17.0	18.3	358422	17.1	19.5	482418	17.2	20.7	288372	17.3	20.8
350481	16.9	18.1	294258	16.9	19.3	185257	17.0	20.4	142901	17.1	19.1	445907	17.2	19.8	3388	17.3	17.1
121599	16.9	19.9	465311	16.9	20.7	517425	17.0										



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
372837	17.3	19.5	513560	17.4	20.4	300690	17.4	20.2	263773	17.5	20.4	399865	17.6	20.1	385555	17.7	21.2
483821	17.3	20.6	121897	17.4	19.5	362278	17.4	19.5	514663	17.5	21.2	517107	17.6	21.1	276462	17.7	20.3
509185	17.3	20.9	418011	17.4	19.6	491784	17.4	21.8	382536	17.5	19.6	244368	17.6	18.7	109457	17.7	18.5
356389	17.3	20.3	353834	17.4	20.6	180420	17.4	19.5	427886	17.5	19.6	145528	17.6	19.3	257709	17.7	18.4
418246	17.3	21.3	68439	17.4	18.4	16213	17.5	17.4	107607	17.5	19.2	167832	17.6	20.0	47533	17.7	18.1
265607	17.3	20.2	373740	17.4	20.6	112342	17.5	18.3	50359	17.5	18.1	119021	17.6	19.8	453436	17.7	20.1
215596	17.3	18.4	293080	17.4	19.1	31091	17.5	17.7	387888	17.5	21.3	318917	17.6	21.1	469207	17.7	21.1
217346	17.3	20.2	291176	17.4	20.3	142224	17.5	19.1	510002	17.5	19.7	508160	17.6	21.2	420584	17.7	20.9
204034	17.3	19.8	130958	17.4	19.5	84697	17.5	16.6	40528	17.5	18.7	412760	17.6	20.8	465292	17.7	20.5
257364	17.3	18.6	220257	17.4	18.6	71593	17.5	19.3	319506	17.5	18.1	523102	17.6	21.0	191021	17.7	20.0
408635	17.3	19.2	129418	17.4	19.1	137723	17.5	18.9	305738	17.5	20.0	376778	17.6	23.4	467324	17.7	19.4
253738	17.3	19.5	357197	17.4	20.5	496899	17.5	20.9	202881	17.5	20.6	370539	17.6	20.4	200193	17.7	18.4
315078	17.3	20.0	130547	17.4	18.6	46685	17.5	18.3	289749	17.5	20.2	372937	17.6	20.7	262317	17.7	19.3
375245	17.3	20.0	482409	17.4	20.3	503960	17.5	17.5	137430	17.5	19.4	322665	17.6	21.3	430539	17.7	20.5
402420	17.3	21.0	335453	17.4	20.1	190522	17.5	18.8	29214	17.5	17.2	260227	17.6	20.0	523135	17.7	20.5
200295	17.3	19.1	95572	17.4	18.5	501922	17.5	20.9	369473	17.5	19.9	180321	17.6	20.6	190554	17.7	18.6
306467	17.3	18.2	335514	17.4	19.4	472840	17.5	18.7	174655	17.5	18.9	182131	17.6	19.3	516214	17.7	19.9
497993	17.3	21.4	471707	17.4	19.8	140424	17.5	19.0	380224	17.5	19.6	470987	17.6	19.9	374942	17.7	21.3
415555	17.3	20.1	523037	17.4	20.6	114750	17.5	17.4	18224	17.5	18.7	172899	17.6	18.3	328519	17.7	19.7
254332	17.3	20.4	336133	17.4	18.8	418969	17.5	19.7	169450	17.5	19.5	195113	17.6	20.9	425883	17.7	20.5
195565	17.3	20.6	362301	17.4	20.2	294857	17.5	21.7	320443	17.6	20.2	42067	17.6	19.5	509264	17.7	20.4
279349	17.3	20.4	344990	17.4	20.0	523154	17.5	20.3	269241	17.6	19.4	220700	17.6	19.9	339157	17.7	20.9
208024	17.3	19.4	308216	17.4	18.4	50482	17.5	18.1	234209	17.6	19.9	433492	17.6	20.3	190551	17.7	19.6
176930	17.3	19.6	128626	17.4	19.4	287289	17.5	19.0	256497	17.6	20.4	482869	17.6	20.4	263218	17.7	21.3
141451	17.3	19.6	237032	17.4	18.6	288614	17.5	20.1	16885	17.6	17.5	114512	17.6	18.1	117747	17.7	19.8
514690	17.3	21.2	133649	17.4	18.9	310678	17.5	20.9	260397	17.6	19.6	258734	17.6	20.0	268886	17.7	21.1
93448	17.3	18.2	141383	17.4	19.1	36454	17.5	17.6	258875	17.6	19.0	338449	17.6	19.9	267360	17.7	18.4
349692	17.3	19.2	195413	17.4	19.2	445247	17.5	19.6	483246	17.6	21.0	43252	17.6	17.7	440891	17.7	21.3
186342	17.3	19.2	362880	17.4	20.4	49248	17.5	19.5	400695	17.6	19.7	77648	17.6	18.4	235702	17.7	21.1
187465	17.3	19.0	64212	17.4	18.2	208157	17.5	20.7	358961	17.6	20.0	53725	17.6	16.8	91563	17.7	18.9
208283	17.3	19.2	382989	17.4	20.9	238126	17.5	19.4	103892	17.6	19.2	184720	17.6	20.8	204845	17.7	18.7
10435	17.3	18.2	303179	17.4	20.0	151019	17.5	18.2	308864	17.6	19.5	516076	17.6	20.8	250009	17.7	19.6
416721	17.3	21.4	46627	17.4	18.4	300705	17.5	19.6	405852	17.6	21.6	35429	17.6	18.0	322129	17.7	20.2
377043	17.3	19.4	513061	17.4	21.4	20120	17.5	17.2	428160	17.6	19.9	48393	17.6	19.0	105423	17.7	18.9
512854	17.3	21.6	354121	17.4	19.8	275083	17.5	19.5	274129	17.6	19.1	511868	17.6	20.5	509311	17.7	20.9
468795	17.3	20.2	252002	17.4	19.9	329240	17.5	19.8	169866	17.6	19.3	237616	17.6	18.3	259987	17.7	20.7
445461	17.3	20.8	144936	17.4	19.2	440357	17.5	21.0	388720	17.6	20.1	258743	17.6	20.1	322429	17.7	20.5
285822	17.3	18.2	374026	17.4	20.8	77168	17.5	17.7	28067	17.6	18.0	79899	17.6	18.4	322068	17.7	20.3
403995	17.3	19.7	491712	17.4	20.1	112511	17.5	19.7	348093	17.6	21.0	474669	17.6	20.3	428281	17.7	19.9
149113	17.3	19.3	307210	17.4	20.3	234852	17.5	18.7	224177	17.6	19.6	136430	17.6	20.0	331267	17.7	19.5
47001	17.3	18.5	430942	17.4	19.0	438983	17.5	19.6	426630	17.6	20.0	7654	17.6	16.8	328257	17.7	19.6
395938	17.3	20.4	341983	17.4	19.9	445209	17.5	20.5	183806	17.6	19.9	371413	17.6	20.1	217469	17.7	19.6
171133	17.3	20.1	509673	17.4	20.7	31063	17.5	18.2	61344	17.6	18.2	485205	17.7	21.7	47557	17.7	17.6
360974	17.3	21.4	339365	17.4	20.6	57476	17.5	19.2	206601	17.6	19.8	82711	17.7	18.1	399943	17.7	20.5
12969	17.3	19.1	213869	17.4	22.6	382296	17.5	19.1	165155	17.6	18.6	125287	17.7	18.6	418232	17.7	21.5
112209	17.3	19.0	445347	17.4	20.7	161858	17.5	19.5	298210	17.6	19.7	221656	17.7	19.6	173095	17.7	18.8
71496	17.3	18.3	507233	17.4	21.0	150613	17.5	20.2	358799	17.6	20.9	134729	17.7	18.8	262129	17.7	19.6
361597	17.3	19.4	1903	17.4	15.0	509404	17.5	20.8	448726	17.6	20.3	514944	17.7	21.2	231359	17.7	20.0
62367	17.3	18.6	475725	17.4	20.8	22744	17.5	17.7	314516	17.6	20.2	46171	17.7	19.1	246348	17.7	20.0
154842	17.3	20.6	445426	17.4	20.0	364490	17.5	21.4	18674	17.6	16.5	261747	17.7	20.6	288543	17.7	20.7
2602	17.3	15.7	358877	17.4	20.6	319205	17.5	21.1	270427	17.6	20.0	53079	17.7	19.6	439695	17.7	19.5
414751	17.3	19.6	261374	17.4	21.3	433876	17.5	20.4	155157	17.6	20.5	283305	17.7	19.7	434195	17.7	21.2
142095	17.3	19.8	442477	17.4	20.7	315140	17.5	21.5	199952	17.6	20.2	235826	17.7	19.6	307147	17.7	21.3
338538	17.3	19.5	68228	17.4	17.3	420425	17.5	21.0	90779	17.6	19.0	40992	17.7	18.5	95807	17.7	18.8
162192	17.3	18.0	235256	17.4	19.1	289886	17.5	20.2	278267	17.6	19.9	169966	17.7	19.4	61739	17.7	18.1
350240	17.3	20.7	245537	17.4	19.2	223346	17.5	20.2	25932	17.6	19.9	333537	17.7	19.3	28099	17.7	18.3
378280	17.3	21.4	3409	17.4	15.7	516512	17.5	21.9	387267	17.6	20.1	514263	17.7	20.7	35558	17.7	16.5
516119	17.3	21.1	218446	17.4	18.1	181968	17.5	18.2	120404	17.6	20.0	371934	17.7	21.2	301342	17.7	19.7
402386	17.3	20.2	392634	17.4	20.5	437153	17.5	19.0	440617	17.6	21.7	244648	17.7	19.7	217632	17.7	19.6
438687	17.3	20.1	251891	17.4	19.8	316719	17.5	19.8	38103	17.6	16.9	244781	17.7	20.0	402424	17.7	20.5
429395	17.3	19.8	265365	17.4	20.2	220976	17.5	19.3	128556	17.6	18.4	35488	17.7	18.5	381142	17.7	20.6
148756	17.3	19.2	519436	17.4	21.4	348385	17.5	20.8	365478	17.6	21.5	254247	17.7	19.2	224941	17.7	20.5
91967	17.4	18.7	120915	17.4	19.3	398398	17.5	21.1	431348	17.6	21.9	238002	17.7	18.6	512391	17.8	20.2
337987	17.4	21.0	38476	17.4	17.7	403751	17.5	21.1	236631	17.6	19.9	186449	17.7	18.3	481287	17.8	20.5
514029	17.4	20.9	522906	17.4	20.6	441984	17.5	20.4	508472	17.6	20.6	207725	17.7	20.2	71246	17.8	19.5
130382	17.4	19.7	401667	17.4	20.5	365756	17.5	23.4	308319	17.6	20.3	22796	17.7	16.8	22230	17.8	18.7
165181	17.4	19.4	187318	17.4	20.3	329186	17.5	20.8	151166	17.6	20.1	299202	17.7	20.3	387546	17.8	21.2
181651	17.4	19.7	241707	17.4	19.1	298191	17.5	19.6	513104	17.6	19.7	498077	17.7	21.5	422714	17.8	19.5
262089	17.4	20.4	236600	17.4	20.1												

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
444344	17.8	20.8	21128	17.8	17.8	127984	17.9	19.2	88924	18.0	18.9	487079	18.1	20.7	372917	18.2	21.1
188784	17.8	20.4	317797	17.8	19.5	35866	17.9	18.0	342788	18.0	20.5	440510	18.1	20.6	121712	18.2	19.1
65807	17.8	19.1	78872	17.8	19.2	234303	17.9	20.3	206186	18.0	20.1	144923	18.1	19.2	392781	18.2	21.3
387544	17.8	19.2	510145	17.8	21.3	321712	17.9	20.0	474666	18.0	19.6	229849	18.1	21.1	46715	18.2	18.7
371542	17.8	20.5	371434	17.8	21.3	273928	17.9	19.5	472092	18.0	21.4	158923	18.1	19.5	479754	18.2	20.2
479596	17.8	20.5	448074	17.8	20.9	479936	17.9	21.1	512763	18.0	20.6	428736	18.1	20.1	361923	18.2	20.2
316260	17.8	19.7	23137	17.8	17.3	208574	17.9	19.7	173646	18.0	19.5	246281	18.1	20.3	365865	18.2	20.9
121322	17.8	18.3	446226	17.8	21.5	350438	17.9	19.6	117228	18.0	19.0	223191	18.1	20.1	91599	18.2	18.5
440753	17.8	20.3	477042	17.8	20.2	121824	17.9	19.8	85396	18.0	17.5	172356	18.1	20.0	65299	18.2	20.6
393530	17.8	20.2	46963	17.8	18.5	320004	17.9	19.7	189393	18.0	20.6	250060	18.1	19.2	97778	18.2	17.5
163036	17.8	18.6	109606	17.8	19.4	296078	17.9	20.6	333360	18.0	18.9	487953	18.1	20.3	369740	18.2	21.0
319300	17.8	20.3	477023	17.9	20.3	102843	17.9	19.5	463464	18.0	19.6	171209	18.1	19.9	96637	18.2	18.8
521441	17.8	20.2	47828	17.9	17.7	316009	17.9	20.9	254580	18.0	20.6	265305	18.1	20.2	349309	18.2	20.8
282762	17.8	19.3	21254	17.9	17.1	467394	17.9	20.7	33656	18.0	18.1	451957	18.1	19.5	289306	18.2	20.1
260616	17.8	21.1	430917	17.9	19.4	368881	17.9	18.7	129518	18.0	18.5	89210	18.1	19.8	514952	18.2	20.4
315749	17.8	20.3	226738	17.9	19.7	19898	17.9	18.1	424523	18.0	21.0	437329	18.1	20.6	211718	18.2	20.3
506847	17.8	19.9	513241	17.9	22.2	63002	17.9	18.8	484887	18.0	19.9	36507	18.1	18.6	38228	18.2	18.1
438922	17.8	21.4	523727	17.9	20.2	211880	17.9	19.5	509644	18.0	20.8	40585	18.1	18.0	327180	18.2	19.3
290844	17.8	19.9	55228	17.9	18.4	194980	17.9	19.6	281891	18.0	19.4	435798	18.1	21.0	7946	18.2	16.5
376212	17.8	21.3	470690	17.9	20.8	421077	17.9	20.9	518323	18.0	21.4	419525	18.1	19.4	446236	18.2	20.3
277089	17.8	19.3	55990	17.9	18.6	395731	17.9	21.7	86887	18.0	19.5	446157	18.1	19.9	323028	18.2	18.9
488860	17.8	20.2	488114	17.9	20.3	375246	17.9	21.3	195170	18.0	19.9	254222	18.1	19.7	468868	18.2	19.6
396418	17.8	20.8	488482	17.9	20.0	513008	17.9	20.2	193528	18.0	19.2	342475	18.1	18.8	401724	18.2	20.0
432675	17.8	20.8	66781	17.9	18.4	322131	17.9	19.9	226693	18.0	19.3	238539	18.1	20.1	126270	18.2	19.6
189589	17.8	17.7	66990	17.9	19.1	42111	17.9	17.9	325687	18.0	20.0	482219	18.1	20.3	257667	18.2	20.5
15176	17.8	19.3	424035	17.9	21.2	519740	17.9	20.8	96619	18.0	18.7	326253	18.1	20.9	57725	18.2	19.2
446159	17.8	21.5	450744	17.9	21.2	17189	17.9	17.3	343405	18.0	20.6	229749	18.1	19.8	318336	18.2	19.9
199601	17.8	21.0	391803	17.9	20.2	476070	17.9	20.8	325908	18.0	21.5	95211	18.1	17.4	357738	18.2	21.7
511062	17.8	20.7	408023	17.9	20.6	82203	17.9	17.7	478756	18.0	20.1	115708	18.1	18.9	348759	18.2	20.0
88113	17.8	18.8	348008	17.9	19.7	94131	17.9	19.1	374277	18.0	20.4	273902	18.1	20.2	451379	18.2	21.3
91428	17.8	18.3	342996	17.9	21.1	511315	17.9	21.3	483347	18.0	19.6	259877	18.1	20.2	129404	18.2	20.0
173571	17.8	19.9	205467	17.9	19.7	403702	17.9	20.8	182857	18.0	19.1	210494	18.1	18.6	160335	18.2	18.5
136034	17.8	18.3	150238	17.9	19.8	285142	17.9	19.4	280076	18.0	18.3	471611	18.1	19.8	134507	18.2	17.9
243259	17.8	20.1	332515	17.9	18.7	515655	17.9	21.1	130228	18.0	20.6	259685	18.1	18.5	523806	18.2	23.7
291933	17.8	18.9	52499	17.9	18.6	339384	17.9	19.2	214643	18.1	20.0	294336	18.1	19.2	86571	18.2	19.1
472285	17.8	21.1	235111	17.9	18.3	353447	17.9	20.6	465588	18.1	21.7	123677	18.1	19.0	242897	18.2	19.9
192490	17.8	20.0	168850	17.9	20.1	513319	17.9	21.0	507263	18.1	22.1	242581	18.1	20.3	476153	18.2	20.7
202485	17.8	20.4	443554	17.9	20.7	330632	17.9	21.2	510701	18.1	20.7	127818	18.1	18.7	479273	18.2	21.1
504815	17.8	21.7	245699	17.9	19.9	443518	17.9	19.7	35991	18.1	17.5	152073	18.1	19.4	399932	18.2	20.1
10559	17.8	16.0	439661	17.9	20.7	220426	17.9	20.3	63985	18.1	18.5	255435	18.1	20.9	176128	18.2	19.0
240959	17.8	20.7	488015	17.9	21.0	308653	17.9	19.7	326050	18.1	19.7	343610	18.1	20.3	482782	18.2	22.0
430916	17.8	20.7	209282	17.9	20.1	494215	17.9	19.6	169869	18.1	17.7	509138	18.1	20.9	431504	18.2	19.0
504293	17.8	21.7	319075	17.9	20.4	94247	17.9	20.2	342147	18.1	20.8	256740	18.1	20.2	309049	18.2	21.0
215201	17.8	18.7	316918	17.9	20.5	7000	17.9	14.8	276059	18.1	19.9	172269	18.1	19.0	141478	18.2	19.4
340403	17.8	21.3	118888	17.9	18.3	32008	17.9	16.2	353018	18.1	19.6	405830	18.1	20.6	191091	18.2	19.7
384501	17.8	20.6	105421	17.9	18.5	38571	17.9	18.2	430431	18.1	21.5	435292	18.1	18.8	149959	18.2	18.8
479057	17.8	20.2	79968	17.9	19.1	473325	17.9	20.5	25353	18.1	17.2	318493	18.1	20.6	218859	18.2	18.7
61233	17.8	17.6	72305	17.9	18.9	297112	17.9	19.3	154846	18.1	19.8	250578	18.1	20.3	342696	18.2	20.0
247157	17.8	18.4	348194	17.9	19.3	306517	17.9	16.5	153951	18.1	21.6	333136	18.1	19.9	345911	18.2	20.6
79162	17.8	19.6	318589	17.9	20.4	363378	17.9	18.7	126996	18.1	19.9	513482	18.1	22.0	358916	18.2	21.2
507217	17.8	21.7	188425	17.9	19.4	427436	17.9	21.7	351006	18.1	20.3	494320	18.1	20.4	74272	18.2	17.8
86169	17.8	18.5	115049	17.9	18.0	181987	17.9	20.8	91238	18.1	18.1	225029	18.1	19.8	661	18.2	14.0
231360	17.8	18.9	383119	17.9	20.9	400973	17.9	20.1	520569	18.1	21.0	11630	18.1	17.8	505360	18.2	20.1
2323614	17.8	19.0	94066	17.9	19.7	362876	17.9	20.6	3733	18.1	17.1	515942	18.1	20.4	142861	18.2	18.8
199361	17.8	20.4	14714	17.9	16.4	381145	17.9	21.8	388735	18.1	20.6	386290	18.1	20.4	28182	18.2	18.7
267157	17.8	21.3	134518	17.9	18.3	221906	17.9	18.4	171091	18.1	19.6	166750	18.1	20.0	97818	18.2	17.0
255194	17.8	20.8	74191	17.9	18.4	5625	17.9	16.2	251846	18.1	20.3	273548	18.1	20.3	387377	18.3	19.6
19293	17.8	18.4	25287	17.9	17.6	300636	17.9	20.1	142370	18.1	19.8	96195	18.1	18.4	476124	18.3	21.5
148498	17.8	18.1	317957	17.9	20.7	212976	17.9	20.3	209194	18.1	20.2	438231	18.1	18.2	256530	18.3	20.3
337558	17.8	22.0	220249	17.9	20.1	18736	17.9	20.7	193643	18.1	19.4	218431	18.1	19.1	64281	18.3	20.0
123827	17.8	19.1	59488	17.9	17.0	295981	18.0	20.6	350983	18.1	21.9	508353	18.1	19.0	233749	18.3	19.1
70781	17.8	19.2	1853	17.9	15.2	249679	18.0	20.0	202110	18.1	19.4	267023	18.1	21.1	290415	18.3	21.1
468999	17.8	21.0	41213	17.9	16.9	158922	18.0	20.0	95065	18.1	19.1	91328	18.1	18.9	116019	18.3	20.3
241384	17.8	19.6	228658	17.9	19.0	354021	18.0	19.9	360343	18.1	19.0	447411	18.1	20.1	339438	18.3	21.0
49415	17.8	17.5	139190	17.9	18.6	11323	18.0	15.8	125998	18.1	19.4	137747	18.1	19.6	175795	18.3	18.7
63496	17.8	18.6	294624	17.9	21.3	491231	18.0	20.1	450119	18.1	20.8	423412	18.1	20.5	244398	18.3	19.4
24523	17.8	18.4	267636	17.9	20.7	34089	18.0	18.6	17544	18.1	15.6	242096	18.1	19.1	361884	18.3	20.5
19136	17.8	18.7	324465	17.9	19.7	504338	18.0	20.6	299152	18.1	19.9	269072	18.1	20.1	431366	18.3	21.8
232198	17.8	20.6	448536	17.9	20.7	168942	18.0										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
181029	18.3	18.2	114008	18.4	19.3	286921	18.5	19.4	27189	18.6	17.7	481490	18.6	21.3	247155	18.7	20.2
241698	18.3	19.0	179627	18.4	18.0	393732	18.5	21.2	515273	18.6	20.8	266061	18.6	20.1	209349	18.7	20.3
261257	18.3	20.9	13025	18.4	17.9	117961	18.5	18.8	162201	18.6	18.2	340353	18.6	19.6	172891	18.7	19.8
476030	18.3	19.4	354208	18.4	19.4	500067	18.5	21.1	114588	18.6	19.8	389852	18.6	19.7	266628	18.7	20.2
394229	18.3	20.7	213854	18.4	19.3	137325	18.5	18.6	412426	18.6	20.0	304548	18.6	20.6	204052	18.7	19.5
471245	18.3	21.2	235857	18.4	19.6	378200	18.5	20.6	326920	18.6	18.9	253688	18.6	19.9	289109	18.7	19.6
361940	18.3	20.3	19608	18.4	16.3	260479	18.5	20.1	2988	18.6	15.3	451153	18.6	20.6	266277	18.7	20.9
513266	18.3	20.5	98860	18.4	18.7	262123	18.5	18.6	470325	18.6	19.0	444383	18.6	19.0	29511	18.7	18.3
433157	18.3	20.3	75003	18.4	18.7	273530	18.5	20.8	466366	18.6	19.8	507798	18.6	20.2	159132	18.7	20.0
392855	18.3	19.9	371938	18.4	20.2	286537	18.5	20.2	243417	18.6	20.2	330638	18.6	20.3	347957	18.7	19.8
141954	18.3	18.7	365637	18.4	21.2	39007	18.5	18.3	155924	18.6	18.2	343914	18.6	20.1	32902	18.7	18.3
314453	18.3	20.7	298241	18.4	19.3	117456	18.5	19.8	199683	18.6	20.5	355027	18.6	21.4	249367	18.7	19.7
510810	18.3	19.9	391589	18.4	20.8	67674	18.5	18.4	444199	18.6	21.0	13971	18.6	17.6	46273	18.7	18.4
395507	18.3	21.0	420305	18.4	20.2	386726	18.5	20.2	223978	18.6	20.6	157878	18.6	20.7	262016	18.7	19.5
251837	18.3	19.2	115590	18.4	20.1	9777	18.5	15.8	473033	18.6	21.0	316498	18.6	20.1	22645	18.7	16.8
72329	18.3	19.4	296321	18.4	18.8	161677	18.5	18.0	170915	18.6	20.2	60254	18.6	18.3	177126	18.7	19.5
444895	18.3	21.0	485266	18.4	21.2	509896	18.5	21.2	469877	18.6	20.1	35621	18.6	18.7	472319	18.7	19.4
129371	18.3	18.3	200466	18.4	19.1	314602	18.5	20.7	325935	18.6	21.4	277257	18.6	20.7	519580	18.7	21.4
171441	18.3	19.3	213398	18.4	19.4	307670	18.5	19.0	260329	18.6	20.4	342255	18.6	19.2	383156	18.7	19.8
521818	18.3	20.0	472062	18.4	21.3	3764	18.5	16.4	165967	18.6	20.0	439900	18.6	20.2	278136	18.7	20.5
432834	18.3	20.1	424608	18.4	20.2	476745	18.5	20.3	146230	18.6	20.5	65509	18.6	17.9	92336	18.7	18.1
52529	18.3	17.0	250015	18.4	19.5	418909	18.5	20.0	317862	18.6	19.6	93677	18.6	18.7	398075	18.7	22.0
515239	18.3	21.6	278558	18.4	20.5	374895	18.5	19.7	477926	18.6	20.4	451143	18.7	19.3	116513	18.7	19.8
291105	18.3	20.0	36309	18.4	18.8	521218	18.5	20.3	158397	18.6	19.4	477091	18.7	20.6	21219	18.7	18.4
15518	18.3	17.8	473315	18.4	19.5	215654	18.5	18.7	446417	18.6	21.0	35657	18.7	18.3	5753	18.7	15.2
363485	18.3	20.5	135988	18.4	18.4	473	18.5	15.8	315088	18.6	20.0	368105	18.7	20.2	358293	18.7	21.6
445493	18.3	19.7	449056	18.4	21.4	151475	18.5	19.1	94311	18.6	19.7	513864	18.7	21.3	310614	18.7	20.2
241018	18.3	19.0	365251	18.4	18.9	166520	18.5	19.5	318150	18.6	19.6	476036	18.7	20.1	194755	18.7	20.6
224665	18.3	19.3	9638	18.4	17.5	74605	18.5	17.6	505675	18.6	19.8	207065	18.7	19.5	94596	18.7	19.3
362290	18.3	20.9	174116	18.4	19.8	251959	18.5	20.3	28313	18.6	17.2	364132	18.7	20.6	21304	18.7	17.2
129910	18.3	18.7	431273	18.4	21.1	425743	18.5	21.3	516969	18.6	20.7	403727	18.7	21.4	55782	18.7	19.3
488102	18.3	20.8	172242	18.4	19.4	257056	18.5	21.0	335095	18.6	20.2	160229	18.7	21.1	287730	18.7	18.9
96346	18.3	18.9	83383	18.4	19.5	221454	18.5	20.0	7064	18.6	17.3	339256	18.7	20.6	158038	18.7	19.1
438609	18.3	21.0	315849	18.4	19.8	230059	18.5	19.9	179167	18.6	18.9	144085	18.7	20.7	321250	18.7	18.5
424369	18.3	21.0	131009	18.4	18.9	42724	18.5	16.5	322164	18.6	21.4	340924	18.7	18.4	442175	18.7	19.6
359481	18.3	21.0	190583	18.4	18.7	248048	18.5	19.6	242499	18.6	20.1	257679	18.7	20.9	123702	18.7	18.4
243786	18.3	20.0	499077	18.4	20.4	94198	18.5	18.6	327227	18.6	19.2	516314	18.7	21.0	359573	18.7	20.3
505106	18.3	21.5	477990	18.4	20.5	78238	18.5	17.9	6960	18.6	16.4	282733	18.7	19.9	487746	18.8	20.6
100536	18.3	19.4	132670	18.4	19.1	429711	18.5	20.1	262335	18.6	20.1	163332	18.7	19.3	510000	18.8	21.6
97023	18.3	18.5	367719	18.4	19.9	218476	18.5	19.3	46105	18.6	19.2	377098	18.7	20.2	399579	18.8	19.8
358928	18.3	19.9	429169	18.4	20.7	481257	18.5	21.2	330624	18.6	21.7	225732	18.7	20.2	56353	18.8	19.2
326206	18.3	20.1	94251	18.4	18.1	420304	18.5	21.2	111134	18.6	17.7	332470	18.7	21.3	166494	18.8	19.9
252845	18.3	19.2	491880	18.4	20.5	319165	18.5	19.7	145	18.6	12.6	357742	18.7	20.9	96866	18.8	18.0
83453	18.3	18.5	438605	18.4	20.8	397460	18.5	20.9	96792	18.6	18.5	347845	18.7	20.4	359691	18.8	20.5
241183	18.3	19.0	20358	18.4	17.2	189363	18.5	20.0	202959	18.6	17.7	92612	18.7	18.5	434772	18.8	20.2
374331	18.3	20.0	154975	18.4	19.9	121785	18.5	19.6	403315	18.6	19.6	75757	18.7	17.5	484897	18.8	19.7
333457	18.3	18.6	302196	18.4	20.1	321495	18.5	20.2	17750	18.6	17.8	230316	18.7	19.7	447072	18.8	19.9
216356	18.3	20.1	295948	18.4	20.9	278500	18.5	19.0	116613	18.6	19.2	479498	18.7	20.1	514394	18.8	21.0
150824	18.3	18.8	25146	18.4	18.2	513343	18.5	19.0	311927	18.6	22.0	224158	18.7	19.7	148300	18.8	20.2
70488	18.3	18.7	258801	18.4	19.4	35293	18.5	18.4	126353	18.6	20.0	344016	18.7	19.6	67647	18.8	18.4
449708	18.3	20.4	508179	18.4	21.8	481758	18.5	20.5	80726	18.6	20.1	300588	18.7	20.5	390902	18.8	21.6
173607	18.3	19.3	171706	18.4	18.6	185960	18.5	20.0	183813	18.6	20.8	182039	18.7	19.9	442314	18.8	21.0
41951	18.3	18.0	515901	18.4	20.9	294713	18.5	20.9	334284	18.6	18.9	321895	18.7	21.7	27096	18.8	16.6
478412	18.3	21.9	112742	18.4	18.7	514440	18.5	20.6	444240	18.6	21.8	523725	18.7	22.2	70185	18.8	19.5
488591	18.3	20.9	24870	18.4	16.9	26776	18.5	18.6	468498	18.6	20.4	203031	18.7	19.6	508026	18.8	20.8
323613	18.3	19.8	192891	18.4	18.1	99614	18.5	18.5	5918	18.6	16.4	478765	18.7	21.1	481239	18.8	20.6
126109	18.3	19.1	164838	18.4	19.9	178807	18.5	20.3	470689	18.6	19.5	508785	18.7	21.6	383540	18.8	20.7
156957	18.3	19.5	346981	18.4	21.3	485252	18.5	20.7	469688	18.6	19.5	470416	18.7	20.7	50005	18.8	18.1
400971	18.3	19.8	121624	18.4	20.4	42102	18.5	17.3	476830	18.6	19.8	157254	18.7	18.3	520151	18.8	20.6
269686	18.3	20.3	296531	18.4	19.2	27677	18.5	18.0	133619	18.6	18.8	318255	18.7	21.3	517445	18.8	21.2
451119	18.3	20.0	362526	18.4	20.9	255167	18.5	19.6	259924	18.6	20.1	255466	18.7	21.0	297111	18.8	19.6
356865	18.3	19.9	344676	18.4	19.2	507963	18.5	21.3	182000	18.6	19.6	211132	18.7	19.5	43229	18.8	18.5
379782	18.3	21.4	361982	18.4	20.4	95599	18.5	18.6	134523	18.6	18.5	33156	18.7	17.7	515518	18.8	22.1
347223	18.4	19.4	89446	18.4	19.7	515221	18.5	21.2	407126	18.6	21.3	187350	18.7	20.3	435402	18.8	21.4
225991	18.4	20.3	452093	18.4	20.8	418923	18.5	20.4	120533	18.6	18.9	359511	18.7	19.7	474687	18.8	21.3
247733	18.4	19.3	68812	18.5	17.8	323619	18.5	20.2	447326	18.6	20.9	266667	18.7	20.2	44484	18.8	17.7
332741	18.4	19.2	19644	18.5	16.7	302188	18.5	20.6	218501	18.6	20.1	96575	18.7	19.3	101247	18.8	19.2
129267	18.4	20.2	478379	18.5	21.5	234752	18.5	19.8	434044	18.6	20.5	246977	18.7	19.9	256657	18.8	18.7
361957	18.4	19.1	324960	18.5	21.3	241452	18.5	2									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
137915	18.8	19.8	70632	18.9	17.6	433548	18.9	19.9	117769	19.0	19.4	361490	19.1	21.1	44494	19.2	18.2
389019	18.8	20.2	3821	18.9	17.7	125575	18.9	18.7	294300	19.0	19.7	139890	19.1	18.8	499112	19.2	21.7
480843	18.8	19.9	12348	18.9	18.1	314307	18.9	20.9	477913	19.0	21.1	174717	19.1	19.1	167487	19.2	19.2
123464	18.8	19.6	126794	18.9	19.5	199951	18.9	19.2	99394	19.0	18.2	430232	19.1	19.7	285508	19.2	19.7
152187	18.8	18.8	23358	18.9	19.9	252160	18.9	19.8	203720	19.0	19.7	24669	19.1	17.3	322436	19.2	19.5
180404	18.8	20.3	188446	18.9	20.4	256540	18.9	20.4	368870	19.0	19.9	326236	19.1	20.0	20014	19.2	17.4
503971	18.8	19.3	23466	18.9	18.0	103664	18.9	19.9	307980	19.0	19.2	186856	19.1	19.8	495987	19.2	19.2
507269	18.8	22.0	81600	18.9	19.4	398	18.9	14.4	310289	19.0	20.4	33731	19.1	17.7	32415	19.2	18.1
153410	18.8	18.3	22035	18.9	18.8	141733	18.9	18.1	423063	19.0	20.5	292313	19.1	20.6	264937	19.2	19.8
196416	18.8	19.4	342023	18.9	20.5	111477	18.9	17.3	212476	19.1	19.6	349430	19.1	20.7	146944	19.2	18.4
254538	18.8	20.3	490078	18.9	20.3	508738	18.9	21.1	91227	19.1	19.7	261317	19.1	20.8	216820	19.2	20.2
47399	18.8	18.4	347143	18.9	20.3	38812	18.9	17.6	254520	19.1	19.6	167245	19.1	19.6	218801	19.2	19.7
520355	18.8	20.5	112953	18.9	18.0	413398	18.9	19.4	114351	19.1	17.8	448731	19.1	20.0	146844	19.2	19.1
516102	18.8	21.5	207787	18.9	18.0	517116	18.9	21.6	299236	19.1	19.5	471528	19.1	21.1	164038	19.2	19.1
162209	18.8	18.7	386799	18.9	22.3	276074	18.9	19.9	443471	19.1	20.2	376122	19.1	19.8	424424	19.2	21.3
127901	18.8	19.8	319039	18.9	20.3	88915	18.9	19.3	349613	19.1	19.7	344134	19.1	20.3	511457	19.2	21.1
433083	18.8	20.1	251738	18.9	18.1	335729	18.9	19.8	99432	19.1	18.2	325509	19.1	20.2	321779	19.2	20.3
437808	18.8	21.5	323529	18.9	20.1	345454	18.9	20.2	106964	19.1	19.5	480485	19.1	19.6	48699	19.2	18.0
187417	18.8	20.1	247443	18.9	20.0	185833	18.9	18.6	72957	19.1	16.2	512108	19.1	19.6	211842	19.2	19.8
425022	18.8	19.9	448686	18.9	19.8	279536	18.9	19.7	514625	19.1	20.7	262686	19.1	20.5	424169	19.2	21.4
19283	18.8	17.6	190644	18.9	18.3	73147	18.9	19.1	216942	19.1	19.1	10284	19.1	16.9	176161	19.2	20.6
224105	18.8	18.6	36751	18.9	18.5	80553	18.9	19.6	389082	19.1	19.8	260626	19.1	19.9	323640	19.2	20.2
58876	18.8	18.4	40497	18.9	19.0	94201	18.9	19.2	135887	19.1	18.8	476265	19.1	20.5	321533	19.2	20.8
474638	18.8	19.3	126236	18.9	19.9	280102	18.9	20.2	442069	19.1	20.6	179529	19.1	18.4	482381	19.2	21.2
270965	18.8	20.3	122695	18.9	19.5	219256	18.9	19.6	262940	19.1	19.4	154183	19.1	19.6	289083	19.2	19.2
334431	18.8	21.2	351192	18.9	22.1	65427	18.9	18.8	97930	19.1	17.7	21097	19.2	17.2	382581	19.2	21.0
510498	18.8	19.7	509846	18.9	20.7	348144	18.9	21.1	1992	19.1	16.6	237250	19.2	18.8	370004	19.2	18.8
21289	18.8	18.6	194852	18.9	20.2	24052	18.9	18.3	476305	19.1	20.0	217015	19.2	19.3	291014	19.2	19.7
229825	18.8	17.7	26805	18.9	18.7	316447	18.9	20.3	277364	19.1	21.1	68045	19.2	18.1	478830	19.2	19.3
269806	18.8	18.7	241417	18.9	20.2	313268	18.9	19.6	299234	19.1	20.1	381732	19.2	19.0	98626	19.2	18.2
361465	18.8	21.0	392869	18.9	21.4	49836	18.9	18.9	370008	19.1	18.9	374939	19.2	20.7	273914	19.2	20.1
212256	18.8	20.6	303575	18.9	20.5	447364	18.9	19.6	187768	19.1	18.6	312607	19.2	19.9	259682	19.2	18.6
395591	18.8	20.6	505373	18.9	20.4	117808	18.9	19.6	184861	19.1	19.7	475436	19.2	20.3	399727	19.2	21.1
267702	18.8	19.1	118621	18.9	19.5	144211	18.9	20.3	317213	19.1	21.1	300544	19.2	19.4	461161	19.2	18.9
115734	18.8	18.6	327804	18.9	19.8	273872	18.9	18.9	279478	19.1	19.6	128193	19.2	18.4	86120	19.2	18.2
352413	18.8	19.9	399561	18.9	20.0	430984	18.9	19.9	163329	19.1	18.5	349786	19.2	19.7	220158	19.2	18.9
43309	18.8	18.8	481191	18.9	22.0	519272	19.0	21.8	52743	19.1	17.2	477249	19.2	21.6	60468	19.3	18.3
513736	18.8	21.7	514741	18.9	22.1	428544	19.0	21.2	277573	19.1	19.0	260418	19.2	19.8	320299	19.3	20.2
241000	18.8	20.1	443071	18.9	20.4	452233	19.0	20.7	136131	19.1	18.0	137780	19.2	20.1	482419	19.3	20.7
309898	18.8	20.2	515970	18.9	20.1	448680	19.0	20.8	255234	19.1	19.1	36700	19.2	18.6	120656	19.3	20.1
482359	18.8	19.1	26939	18.9	18.9	314497	19.0	19.3	40376	19.1	17.2	204594	19.2	19.6	119977	19.3	19.2
115327	18.8	19.3	8902	18.9	17.3	121907	19.0	19.3	213948	19.1	20.0	469351	19.2	19.8	424164	19.3	20.5
486576	18.8	20.0	348128	18.9	20.1	483221	19.0	20.6	39536	19.1	17.5	164347	19.2	19.7	413014	19.3	20.3
66159	18.8	18.7	177756	18.9	18.1	145975	19.0	17.9	98777	19.1	18.7	290113	19.2	19.9	478775	19.3	19.3
144230	18.8	19.9	144580	18.9	20.8	300693	19.0	20.1	501214	19.1	20.8	468946	19.2	19.8	137713	19.3	19.2
373652	18.8	19.7	519761	18.9	21.2	319138	19.0	20.9	50425	19.1	19.6	424511	19.2	21.2	264001	19.3	20.3
314535	18.8	20.5	237964	18.9	19.2	62541	19.0	18.2	402805	19.1	21.6	25955	19.2	18.0	45052	19.3	17.7
466292	18.8	20.6	315025	18.9	21.2	31905	19.0	18.0	45108	19.1	18.3	324128	19.2	20.9	394506	19.3	20.1
141770	18.8	18.2	378235	18.9	20.7	392880	19.0	20.9	293446	19.1	20.5	296727	19.2	20.0	239843	19.3	19.7
70548	18.8	19.4	218988	18.9	19.3	480016	19.0	21.1	517277	19.1	21.9	383235	19.2	20.2	390001	19.3	19.9
391635	18.8	20.5	15102	18.9	16.6	198234	19.0	20.3	469526	19.1	19.2	176609	19.2	19.8	486947	19.3	20.4
287940	18.8	20.9	193198	18.9	18.4	20297	19.0	17.3	181158	19.1	20.0	396569	19.2	20.6	370229	19.3	18.4
397796	18.8	19.5	514439	18.9	20.4	234918	19.0	19.7	489689	19.1	20.2	515868	19.2	20.1	12788	19.3	15.9
338705	18.8	20.9	291	18.9	14.6	174577	19.0	17.2	228396	19.1	21.2	100829	19.2	19.4	181272	19.3	20.2
202611	18.8	19.9	193234	18.9	18.9	48293	19.0	17.1	480633	19.1	20.6	38785	19.2	18.1	454265	19.3	20.4
513943	18.8	21.9	520407	18.9	19.4	162362	19.0	18.8	513831	19.1	21.1	264889	19.2	19.8	211712	19.3	19.4
389211	18.8	20.2	90467	18.9	19.0	504691	19.0	21.1	381781	19.1	18.6	514411	19.2	20.7	516301	19.3	21.4
514720	18.8	20.8	437291	18.9	21.9	349767	19.0	20.4	229569	19.1	20.1	102606	19.2	19.0	280994	19.3	19.8
436328	18.9	20.8	291545	18.9	20.7	175410	19.0	18.0	38558	19.1	17.6	440117	19.2	20.6	151468	19.3	20.7
281807	18.9	21.0	28102	18.9	16.9	461834	19.0	20.6	86047	19.1	23.1	145443	19.2	18.0	500209	19.3	21.7
282770	18.9	19.6	37120	18.9	19.4	245625	19.0	19.5	342529	19.1	19.8	354205	19.2	19.2	423863	19.3	19.7
313333	18.9	20.0	324182	18.9	20.4	512193	19.0	20.6	299664	19.1	18.6	144277	19.2	19.8	401727	19.3	20.3
334004	18.9	20.5	103977	18.9	18.5	248461	19.0	20.3	384440	19.1	20.6	293851	19.2	19.7	349426	19.3	20.8
45531	18.9	18.2	382606	18.9	22.1	420578	19.0	21.9	510059	19.1	21.7	205207	19.2	20.4	469716	19.3	20.4
139324	18.9	19.3	116446	18.9	19.7	179657	19.0	19.3	362875	19.1	20.2	44576	19.2	18.4	112368	19.3	18.0
488415	18.9	22.4	483844	18.9	21.4	325063	19.0	19.7	106358	19.1	19.4	36879	19.2	18.8	312978	19.3	21.2
21169	18.9	19.5	254651	18.9	20.1	423031	19.0	20.1	251310	19.1	19.7	217631	19.2	19.4	509205	19.3	19.8
359979	18.9	19.7	92069	18.9	18.8	485293	19.0	21.5	189202	19.1	19.8	87834	19.2	16.8	382495	19.3	18.3
171455	18.9	19.5	151311	18.9	19.9	342577											

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
245515	19.3	18.8	53103	19.4	18.3	513199	19.5	20.4	46955	19.5	18.6	91538	19.6	18.4	135592	19.7	18.3
330685	19.3	20.0	366006	19.4	20.0	218538	19.5	19.3	517676	19.5	21.6	457846	19.6	19.8	211077	19.7	20.0
424633	19.3	20.8	5165	19.4	16.6	403955	19.5	20.8	490775	19.5	21.2	336635	19.6	19.4	54774	19.7	17.8
252784	19.3	19.2	335602	19.4	19.8	178131	19.5	19.1	81428	19.5	17.8	296572	19.6	19.6	86162	19.7	17.6
449976	19.3	19.1	191306	19.4	19.6	80663	19.5	18.5	428233	19.5	21.3	283356	19.6	19.6	178343	19.7	19.3
182303	19.3	18.7	365682	19.4	21.2	293702	19.5	19.4	354433	19.5	19.6	343502	19.6	20.3	157313	19.7	18.7
509889	19.3	22.1	37468	19.4	17.7	91082	19.5	19.9	481574	19.5	20.3	371878	19.6	20.8	167797	19.7	19.0
470316	19.3	20.6	160638	19.4	18.8	7645	19.5	17.5	281851	19.6	19.8	398268	19.6	20.6	149179	19.7	18.5
310658	19.3	20.1	25976	19.4	16.8	177192	19.5	20.3	378220	19.6	19.7	359030	19.6	19.5	260055	19.7	20.6
41154	19.3	18.3	477892	19.4	20.1	3030	19.5	15.6	11820	19.6	18.1	122672	19.6	18.4	136202	19.7	18.4
9192	19.3	17.5	376407	19.4	20.3	162528	19.5	18.5	90567	19.6	18.4	505109	19.6	20.9	273818	19.7	20.3
518836	19.3	21.1	449038	19.4	20.3	446490	19.5	19.6	47921	19.6	18.2	133040	19.6	18.8	179990	19.7	18.7
353446	19.3	20.5	63010	19.4	18.9	128891	19.5	17.8	149046	19.6	19.3	357812	19.6	20.2	122408	19.7	18.3
481576	19.3	20.5	47369	19.4	17.1	95386	19.5	19.6	85066	19.6	19.1	513701	19.6	21.4	348647	19.7	20.9
107381	19.3	18.4	512691	19.4	20.5	338670	19.5	20.1	317207	19.6	19.6	476775	19.6	18.6	331128	19.7	20.7
396368	19.3	20.7	476152	19.4	19.8	312198	19.5	20.3	444038	19.6	19.0	281616	19.6	18.7	441321	19.7	20.9
361962	19.3	19.6	402797	19.4	20.3	394883	19.5	21.4	69632	19.6	19.2	195267	19.6	20.1	294403	19.7	19.6
332693	19.3	19.3	38516	19.4	16.4	467946	19.5	20.8	448403	19.6	19.5	361093	19.6	19.9	506462	19.7	21.0
25056	19.3	18.5	456206	19.4	19.4	359571	19.5	19.7	8563	19.6	14.9	435219	19.6	18.3	507275	19.7	21.8
362848	19.3	20.3	195434	19.4	20.9	171281	19.5	18.7	264996	19.6	18.7	253397	19.6	18.1	324888	19.7	20.0
38875	19.3	17.8	263864	19.4	19.6	350033	19.5	20.9	237204	19.6	21.2	268239	19.6	19.8	207084	19.7	18.5
215416	19.3	18.4	261199	19.4	19.9	289617	19.5	19.5	263119	19.6	20.4	114802	19.6	18.6	20175	19.7	17.3
235765	19.3	20.2	136549	19.4	18.3	124088	19.5	19.4	210069	19.6	19.7	384511	19.6	20.9	136242	19.7	18.3
365955	19.3	20.2	444315	19.4	20.9	156169	19.5	19.7	429915	19.6	18.8	155952	19.6	18.2	358810	19.7	19.7
185266	19.3	18.1	137108	19.4	18.1	60067	19.5	18.1	507242	19.6	21.6	400694	19.6	19.6	245565	19.7	20.5
448089	19.3	20.1	24592	19.4	18.0	254270	19.5	18.8	337185	19.6	19.0	338037	19.6	18.6	455066	19.7	19.9
339152	19.3	19.6	223437	19.4	19.9	229646	19.5	19.8	327713	19.6	20.5	110242	19.6	19.5	1289	19.7	14.1
251488	19.3	20.1	52670	19.4	18.8	173345	19.5	18.7	132306	19.6	18.0	429816	19.7	20.4	123015	19.7	19.4
354580	19.3	19.4	220422	19.4	19.9	40477	19.5	17.6	406813	19.6	19.6	428260	19.7	21.2	478781	19.7	20.0
208790	19.3	19.3	404987	19.4	20.2	324783	19.5	20.4	259948	19.6	20.5	188175	19.7	19.0	318597	19.7	20.5
374868	19.3	20.9	166506	19.4	19.3	80761	19.5	18.8	238224	19.6	19.6	3210	19.7	15.5	180334	19.7	20.2
476073	19.3	20.0	219822	19.4	20.3	39491	19.5	18.9	424478	19.6	21.4	185849	19.7	19.4	314385	19.7	21.7
149071	19.3	19.2	107655	19.4	18.8	415273	19.5	19.1	509093	19.6	20.2	453777	19.7	21.0	490156	19.7	20.5
42988	19.3	17.4	321964	19.4	20.1	332499	19.5	20.2	21612	19.6	17.0	347132	19.7	21.4	127228	19.7	18.0
258999	19.3	18.9	445268	19.4	19.4	271004	19.5	19.8	276992	19.6	20.3	498429	19.7	21.3	476657	19.7	19.8
78623	19.3	19.3	404897	19.4	20.7	437373	19.5	20.8	232860	19.6	19.6	49553	19.7	18.9	504396	19.7	21.9
282023	19.3	19.8	241015	19.4	19.3	144132	19.5	20.2	163780	19.6	18.6	376845	19.7	19.4	310677	19.7	20.3
90772	19.3	18.3	111849	19.4	19.7	97199	19.5	20.3	389874	19.6	19.7	419567	19.7	19.4	349875	19.7	20.6
493834	19.3	20.6	39519	19.4	18.6	432715	19.5	20.8	445794	19.6	21.5	391915	19.7	20.3	284284	19.7	20.3
384359	19.3	19.9	138222	19.4	19.6	174128	19.5	19.1	339402	19.6	20.2	306912	19.7	18.6	221697	19.7	19.9
177199	19.3	19.6	88404	19.4	17.5	471741	19.5	21.0	34609	19.6	18.0	392415	19.7	20.7	325821	19.7	20.4
247072	19.3	18.0	226552	19.4	20.7	255465	19.5	20.9	518312	19.6	20.4	250331	19.7	19.9	217182	19.8	17.7
279419	19.3	20.3	301984	19.4	19.1	140337	19.5	19.9	447339	19.6	19.1	426937	19.7	20.1	129513	19.8	18.3
215782	19.3	18.8	94074	19.4	19.1	208842	19.5	18.8	128937	19.6	18.5	374042	19.7	20.0	282741	19.8	19.7
360722	19.3	18.8	510516	19.4	20.4	255228	19.5	20.4	292337	19.6	20.9	437358	19.7	20.9	181841	19.8	19.2
407817	19.3	20.9	517839	19.4	20.0	18590	19.5	16.0	480936	19.6	18.9	444395	19.7	20.2	128746	19.8	18.4
301835	19.3	17.5	367887	19.4	19.6	352365	19.5	20.1	265476	19.6	20.2	250763	19.7	19.9	441382	19.8	19.6
294325	19.3	20.5	312400	19.4	20.1	444273	19.5	21.2	314405	19.6	20.4	142236	19.7	19.4	474336	19.8	21.1
399516	19.3	20.2	137697	19.4	19.2	70562	19.5	18.5	79573	19.6	17.1	328980	19.7	21.0	266734	19.8	18.3
255195	19.3	20.6	225738	19.4	19.2	359019	19.5	19.9	240420	19.6	19.1	289179	19.7	19.4	401734	19.8	20.3
261610	19.3	20.9	256792	19.4	20.7	49740	19.5	18.3	16297	19.6	18.0	474672	19.7	21.3	170592	19.8	19.6
92252	19.3	18.7	476086	19.4	20.7	249085	19.5	19.3	208122	19.6	21.6	507992	19.7	20.3	149850	19.8	17.9
329122	19.3	20.0	332487	19.4	20.0	180330	19.5	19.7	399013	19.6	20.5	67527	19.7	18.9	446170	19.8	19.2
390090	19.3	20.8	56321	19.4	17.3	212725	19.5	18.5	443731	19.6	19.5	517981	19.7	19.7	206138	19.8	18.8
7593	19.3	15.0	102396	19.4	18.8	268907	19.5	20.1	508293	19.6	21.7	357090	19.7	20.2	518834	19.8	21.8
338517	19.3	18.6	263349	19.4	20.2	398647	19.5	20.1	397279	19.6	21.5	228592	19.7	20.5	478643	19.8	20.8
187326	19.3	20.2	254390	19.4	19.4	390921	19.5	21.6	179805	19.6	19.4	289033	19.7	18.7	378212	19.8	20.8
311890	19.4	20.1	99913	19.4	17.0	225249	19.5	19.5	23837	19.6	18.2	166937	19.7	18.9	364617	19.8	19.5
34177	19.4	18.1	312939	19.4	20.7	206942	19.5	18.8	45513	19.6	18.2	16902	19.7	17.0	469419	19.8	19.9
84365	19.4	19.4	424545	19.4	21.8	513157	19.5	20.4	121005	19.6	18.5	276046	19.7	19.9	9040	19.8	17.0
37542	19.4	19.8	123604	19.4	18.7	506651	19.5	19.4	373210	19.6	21.0	252208	19.7	21.1	450046	19.8	19.9
475977	19.4	18.9	69251	19.4	19.6	471300	19.5	20.2	196531	19.6	18.7	179356	19.7	19.9	263371	19.8	20.9
330552	19.4	21.2	476739	19.4	19.5	448087	19.5	21.0	148075	19.6	19.7	108331	19.7	19.3	77157	19.8	18.6
129242	19.4	19.1	91610	19.4	18.2	38479	19.5	17.7	435607	19.6	20.5	358782	19.7	20.6	197823	19.8	18.7
22172	19.4	17.6	522972	19.4	20.7	218452	19.5	19.1	24522	19.6	19.4	141995	19.7	18.8	356984	19.8	21.4
505399	19.4	20.4	157338	19.4	19.2	139535	19.5	18.5	329733	19.6	20.0	45945	19.7	18.6	200509	19.8	18.3
118873	19.4	19.3	121680	19.4	20.0	340365	19.5	19.9	393755	19.6	19.7	485207	19.7	20.5	9440	19.8	17.8
216919	19.4	18.2	5357	19.4	15.8	515097	19.5	20.3	384034	19.6	20.8	260318	19.7	20.9	114342	19.8	19.2
359848	19.4	20.6	258908	19.4	20.0	68239	19.5</										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
2993	19.8	14.7	390428	19.9	20.1	398986	19.9	20.5	153713	20.0	20.4	335066	20.1	19.0	338701	20.2	20.8
484869	19.8	19.0	367057	19.9	19.8	49730	19.9	18.0	257951	20.0	20.0	171684	20.1	17.7	266276	20.2	21.0
183778	19.8	19.4	192810	19.9	19.0	261331	19.9	19.7	86304	20.0	17.6	479171	20.1	22.0	310530	20.2	20.1
370007	19.8	18.9	144925	19.9	19.5	86261	19.9	18.7	473345	20.0	19.6	107129	20.1	19.3	24203	20.2	16.8
62326	19.8	17.7	220675	19.9	19.3	145407	19.9	19.0	231285	20.0	19.5	278687	20.1	19.0	489595	20.2	19.2
249752	19.8	19.1	364992	19.9	20.2	149260	19.9	18.5	134574	20.0	17.8	514448	20.1	20.3	36805	20.2	19.9
217662	19.8	19.2	36011	19.9	17.8	13088	19.9	16.9	343333	20.0	20.5	384543	20.1	20.0	162871	20.2	19.7
121105	19.8	18.1	253489	19.9	20.4	360204	19.9	19.7	67958	20.0	17.4	145991	20.1	19.3	483252	20.2	21.1
255540	19.8	19.4	331636	19.9	20.1	439528	19.9	21.1	387673	20.0	18.0	78271	20.1	19.4	191883	20.2	18.0
507505	19.8	21.8	505963	19.9	21.0	187637	19.9	19.9	59129	20.0	19.2	178426	20.1	18.0	144385	20.2	18.1
107553	19.8	19.8	290085	19.9	18.8	295827	19.9	20.1	281600	20.0	19.6	145960	20.1	20.5	459939	20.2	20.7
209262	19.8	19.3	445000	19.9	20.0	326175	19.9	21.3	371366	20.0	18.7	444668	20.1	21.4	23943	20.2	17.5
512123	19.8	20.1	77656	19.9	16.7	391889	19.9	20.0	429647	20.0	19.9	55845	20.1	18.0	217671	20.2	17.7
483789	19.8	20.7	235374	19.9	18.4	299116	19.9	20.5	327150	20.0	20.8	410844	20.1	20.4	114763	20.2	18.4
440810	19.8	18.4	435600	19.9	20.5	389107	19.9	20.1	342364	20.0	19.5	470588	20.1	20.8	198460	20.2	18.1
255111	19.8	20.0	378043	19.9	20.2	370306	19.9	19.3	288829	20.0	19.4	70970	20.1	17.9	439151	20.2	20.2
147483	19.8	19.9	476909	19.9	20.5	504850	19.9	20.4	505267	20.0	20.2	41992	20.1	19.2	348772	20.2	19.6
24903	19.8	16.8	80915	19.9	18.0	196503	19.9	18.3	50251	20.0	18.6	320436	20.1	20.4	514449	20.2	20.4
78222	19.8	18.6	279409	19.9	20.9	268226	19.9	20.3	480788	20.0	19.4	86828	20.1	18.8	367959	20.2	20.9
325965	19.8	20.4	9409	19.9	17.7	309664	19.9	20.0	45219	20.0	17.7	29212	20.1	17.9	159496	20.2	19.0
382957	19.8	19.9	46877	19.9	18.3	187633	19.9	19.6	479578	20.0	21.4	425579	20.1	19.8	347545	20.2	21.2
287829	19.8	20.5	437390	19.9	19.9	163159	19.9	19.1	265336	20.0	19.3	339358	20.1	19.2	346286	20.2	20.2
93670	19.8	19.6	66205	19.9	17.4	517227	19.9	20.8	269834	20.0	21.0	480522	20.1	20.9	404664	20.2	20.6
251769	19.8	18.1	323704	19.9	21.3	21004	19.9	17.6	513782	20.0	20.1	482190	20.1	20.8	5311	20.2	18.4
240674	19.8	20.8	454928	19.9	20.3	183949	19.9	19.9	251727	20.0	20.7	452019	20.1	20.7	180502	20.2	19.1
296224	19.8	20.4	36078	19.9	17.6	513055	19.9	21.6	91052	20.0	19.2	342143	20.1	19.1	516175	20.2	21.0
286825	19.8	19.8	411098	19.9	20.6	61515	19.9	18.3	254183	20.0	19.8	177932	20.1	18.9	39400	20.2	18.5
90489	19.8	19.9	256979	19.9	20.2	356632	19.9	20.6	313253	20.0	19.6	519670	20.1	20.9	254478	20.2	20.2
299185	19.8	18.4	141625	19.9	19.2	481724	19.9	21.6	35656	20.0	16.3	495171	20.1	20.5	301344	20.2	20.7
199484	19.8	18.8	236553	19.9	20.1	208497	19.9	19.8	192347	20.0	18.4	477880	20.1	20.2	474418	20.2	20.8
70279	19.8	18.5	26366	19.9	16.0	7354	19.9	17.8	232187	20.0	20.7	380393	20.1	18.9	386377	20.2	21.8
163253	19.8	18.2	128140	19.9	18.9	509892	19.9	21.6	193537	20.0	20.2	474262	20.1	20.7	471073	20.2	20.8
115912	19.8	19.1	444143	19.9	20.1	63188	19.9	20.4	374797	20.0	20.0	278347	20.1	20.8	374792	20.2	20.4
348152	19.8	19.9	391539	19.9	20.3	280090	19.9	20.4	49900	20.1	16.3	520478	20.1	20.1	144544	20.2	19.8
154714	19.8	18.5	143861	19.9	19.2	517430	19.9	20.4	513854	20.1	21.8	88328	20.1	17.4	311930	20.2	19.9
357805	19.8	20.2	279481	19.9	19.3	218019	19.9	19.3	445451	20.1	20.1	511236	20.1	21.3	312951	20.2	20.0
421450	19.8	17.4	444275	19.9	21.3	208931	19.9	19.5	119357	20.1	18.4	497135	20.1	19.5	318221	20.2	19.0
255455	19.8	20.1	515241	19.9	21.2	283652	19.9	20.1	423311	20.1	20.3	254282	20.1	18.4	400983	20.2	20.3
451382	19.8	20.3	430219	19.9	19.9	363964	19.9	21.0	52312	20.1	18.2	218481	20.1	19.7	134892	20.2	18.9
185081	19.8	20.4	254361	19.9	20.1	303964	19.9	19.7	213477	20.1	20.5	235888	20.1	20.3	216305	20.2	19.6
255470	19.8	19.9	152396	19.9	19.5	59853	19.9	18.2	382545	20.1	20.3	451194	20.1	20.4	2503	20.2	16.1
108944	19.8	17.3	510518	19.9	21.5	97279	19.9	19.0	260465	20.1	20.2	386353	20.1	19.5	470645	20.2	20.1
295960	19.8	20.1	342395	19.9	20.4	350387	19.9	20.0	158707	20.1	19.2	18545	20.1	17.9	349836	20.2	21.5
170973	19.8	19.9	396650	19.9	20.3	345044	19.9	21.6	519245	20.1	21.2	183507	20.1	19.8	254275	20.2	20.0
382570	19.8	20.5	81233	19.9	17.4	133583	19.9	18.5	366173	20.1	21.0	154174	20.1	19.6	483498	20.2	20.0
375205	19.8	20.0	394283	19.9	20.5	354775	19.9	20.1	472151	20.1	19.5	172707	20.1	19.4	141601	20.2	17.4
290438	19.8	19.8	149291	19.9	19.4	188447	19.9	20.5	188173	20.1	20.2	212697	20.1	19.4	295375	20.2	20.6
251925	19.8	20.0	334097	19.9	19.0	363631	19.9	20.0	504107	20.1	22.8	445666	20.1	21.0	504741	20.2	20.6
490099	19.8	20.9	430595	19.9	19.3	357808	19.9	20.7	580811	20.1	21.1	256533	20.1	20.8	554331	20.2	18.9
486920	19.8	19.4	404883	19.9	18.5	507954	19.9	20.0	334374	20.1	20.1	392970	20.1	20.6	287092	20.2	19.1
288361	19.8	19.1	326369	19.9	20.4	339169	19.9	20.2	506928	20.1	21.2	517064	20.1	23.2	134704	20.2	18.2
262416	19.8	21.6	175536	19.9	19.7	446197	19.9	20.5	453131	20.1	20.0	396160	20.1	20.5	176472	20.2	19.6
261502	19.8	20.4	388199	19.9	20.9	437710	19.9	19.1	22810	20.1	17.4	175612	20.1	19.7	188914	20.2	20.1
174399	19.8	19.6	403750	19.9	21.4	395451	20.0	20.5	184376	20.1	18.8	274082	20.1	20.9	265593	20.2	19.7
171462	19.8	19.0	33280	19.9	18.0	100968	20.0	17.3	142548	20.1	18.7	476159	20.1	18.7	391208	20.2	21.4
296122	19.8	19.9	397406	19.9	20.5	440876	20.0	20.8	228522	20.1	19.0	340556	20.1	19.9	117113	20.2	18.9
183893	19.8	19.9	39294	19.9	18.0	108263	20.0	18.0	441070	20.1	20.0	126705	20.1	19.7	62438	20.2	18.9
293910	19.9	19.8	68587	19.9	18.6	373246	20.0	20.4	17256	20.1	16.5	468596	20.1	21.1	483643	20.2	21.3
313973	19.9	19.3	288174	19.9	18.4	282061	20.0	18.6	450648	20.1	21.4	193280	20.1	18.5	468208	20.2	19.1
169129	19.9	19.1	91051	19.9	18.7	442002	20.0	19.8	154206	20.1	20.5	234009	20.1	20.4	405803	20.2	19.7
93460	19.9	19.2	390885	19.9	19.4	145409	20.0	19.4	134763	20.1	19.2	93587	20.1	18.9	103913	20.2	19.6
122493	19.9	19.0	149154	19.9	20.2	506909	20.0	19.8	58999	20.1	18.6	392514	20.1	20.5	306061	20.2	19.7
139034	19.9	19.0	518075	19.9	21.0	520461	20.0	21.2	115595	20.1	17.7	76085	20.1	18.5	32422	20.2	17.8
383304	19.9	21.1	285211	19.9	20.0	76617	20.0	19.0	347793	20.1	20.9	480222	20.1	18.9	328115	20.2	19.4
51489	19.9	17.9	472081	19.9	21.0	40205	20.0	17.4	71610	20.1	19.0	180784	20.1	19.3	348587	20.2	20.5
387646	19.9	20.1	155735	19.9	18.1	187467	20.0	18.8	472431	20.1	19.1	280052	20.1	20.2	438104	20.2	21.3
390397	19.9	20.6	128165	19.9	18.3	156592	20.0	20.7	96416	20.1	19.0	84983	20.1	19.5	312039	20.2	20.0
437086	19.9	19.6	15170	19.9	18.2	340407	20.0	20.9	484875	20.1	19.3	518206	20.1	20.7	24099	20.2	17.6
471793	19.9	19.4	362286	19.9	19.3	33730											

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
396770	20.2	19.8	22931	20.3	18.5	325052	20.4	20.3	211050	20.5	20.7	107071	20.6	19.6	349330	20.7	19.8
516137	20.2	20.4	117108	20.3	19.1	389079	20.4	19.6	352183	20.5	20.3	25837	20.6	16.4	62869	20.7	19.1
305968	20.3	20.2	42605	20.3	19.4	160672	20.4	18.6	322387	20.5	19.7	247442	20.6	21.6	392065	20.7	20.8
379671	20.3	20.6	38251	20.3	17.6	254381	20.4	20.5	241023	20.5	18.2	444297	20.6	21.0	220276	20.7	20.0
82867	20.3	18.2	211015	20.3	19.9	4714	20.4	15.0	383980	20.5	20.4	129348	20.6	19.4	24175	20.7	18.0
397714	20.3	20.9	186317	20.3	21.0	501960	20.4	20.6	504400	20.5	19.8	469856	20.6	21.3	362500	20.7	21.1
68545	20.3	18.3	363209	20.3	20.0	93976	20.4	18.0	253884	20.5	20.9	188594	20.6	18.2	268294	20.7	19.6
219966	20.3	19.1	429353	20.3	19.2	447786	20.4	20.2	513304	20.5	20.8	492371	20.6	20.6	165014	20.7	19.5
304396	20.3	19.9	60251	20.3	19.8	78990	20.4	18.1	14804	20.5	18.4	255485	20.6	20.1	237464	20.7	19.9
432698	20.3	21.3	481425	20.3	20.7	74170	20.4	19.3	111977	20.5	18.4	380595	20.6	20.2	514305	20.7	19.8
344721	20.3	18.1	68902	20.3	18.2	154608	20.4	18.6	316541	20.5	19.4	159148	20.6	20.0	245582	20.7	19.9
505778	20.3	20.2	396348	20.3	20.0	441440	20.4	19.8	239961	20.5	20.3	321748	20.6	19.4	249070	20.7	18.9
147504	20.3	19.8	476866	20.3	20.2	488212	20.4	20.4	367873	20.5	20.7	239711	20.6	20.1	212538	20.7	20.2
446058	20.3	20.2	168870	20.3	20.1	250706	20.4	21.6	94411	20.5	18.5	395719	20.6	21.9	489590	20.7	18.6
511226	20.3	22.1	42848	20.3	18.7	49361	20.4	18.6	240025	20.5	19.6	48151	20.6	18.5	66291	20.7	17.6
283039	20.3	20.0	274390	20.3	20.0	130130	20.4	17.2	234227	20.5	20.5	114165	20.6	18.4	362937	20.7	19.5
420766	20.3	19.6	251897	20.3	19.3	53643	20.4	17.9	485805	20.5	20.5	382887	20.6	19.5	334379	20.7	19.6
388973	20.3	20.4	514306	20.3	20.7	17907	20.4	17.2	435821	20.5	20.1	385838	20.6	21.1	486880	20.7	20.3
166934	20.3	18.9	82271	20.3	18.3	164097	20.4	19.1	261380	20.5	20.8	19832	20.6	17.9	93986	20.7	18.9
45676	20.3	17.5	452732	20.3	21.2	355612	20.4	20.3	171506	20.5	19.7	496174	20.6	22.5	339160	20.7	20.0
92856	20.3	18.5	282046	20.3	20.0	23695	20.4	16.4	81039	20.5	18.4	339221	20.6	19.3	273483	20.7	20.7
440547	20.3	20.1	108828	20.3	17.5	317180	20.4	20.1	65612	20.5	18.7	375703	20.6	18.6	62354	20.7	19.0
378636	20.3	20.4	155882	20.3	20.6	165986	20.4	19.3	286732	20.5	19.9	505135	20.6	20.4	451377	20.7	21.2
478064	20.3	21.2	298269	20.3	19.1	167405	20.4	18.9	159613	20.5	18.9	311982	20.6	19.7	519009	20.7	21.2
223926	20.3	19.7	46619	20.3	18.8	520535	20.4	19.9	26810	20.5	17.9	175349	20.6	19.1	15379	20.7	17.6
324923	20.3	19.8	372867	20.3	19.9	479409	20.4	20.5	480345	20.5	19.2	220365	20.6	18.6	11003	20.7	15.5
389880	20.3	21.0	67584	20.3	18.6	269602	20.4	19.6	437343	20.5	21.1	73619	20.6	18.4	316430	20.7	20.1
354316	20.3	20.1	366471	20.4	20.7	511504	20.4	20.1	429657	20.5	21.0	41994	20.6	18.0	75165	20.7	19.2
15843	20.3	16.7	129892	20.4	18.7	15024	20.4	17.3	1528	20.5	14.9	494521	20.6	20.1	282501	20.7	19.8
485778	20.3	19.8	171694	20.4	18.4	393128	20.4	19.9	88421	20.5	18.3	482261	20.6	20.4	248619	20.7	19.1
388626	20.3	20.7	47404	20.4	18.8	424165	20.4	20.9	351130	20.5	20.0	18865	20.6	17.2	188209	20.7	20.3
383962	20.3	19.8	68795	20.4	16.9	48539	20.4	18.4	322536	20.5	19.8	58415	20.6	17.7	452680	20.7	20.2
472562	20.3	20.7	508084	20.4	20.4	444206	20.4	21.2	332493	20.5	20.6	479075	20.6	21.0	451782	20.7	20.5
33957	20.3	16.6	132967	20.4	19.5	129219	20.4	20.0	255201	20.5	19.2	517722	20.6	20.9	392087	20.7	20.5
380825	20.3	21.4	442984	20.4	20.1	41144	20.4	18.9	18456	20.5	17.8	243113	20.6	19.0	357854	20.7	20.6
283730	20.3	18.8	392023	20.4	21.0	44955	20.4	18.7	269546	20.5	20.3	316890	20.6	18.9	99798	20.7	18.4
187360	20.3	20.0	4229	20.4	17.3	85569	20.4	19.3	25979	20.5	17.5	220068	20.6	19.3	438765	20.7	21.2
14097	20.3	17.6	30808	20.4	18.1	257183	20.4	19.9	155830	20.5	16.3	338726	20.6	18.8	158730	20.7	19.1
386749	20.3	20.5	441131	20.4	19.8	461885	20.4	19.6	510897	20.5	20.7	315040	20.6	20.7	438844	20.7	20.2
14268	20.3	17.4	249048	20.4	18.0	153256	20.4	20.2	325878	20.5	19.7	147692	20.6	18.8	87754	20.7	18.1
396194	20.3	20.3	444680	20.4	21.3	292178	20.4	19.1	514412	20.5	20.9	154606	20.6	19.0	399868	20.7	20.8
494237	20.3	19.9	279118	20.4	19.5	522987	20.4	20.8	318193	20.5	19.7	473318	20.6	20.0	36900	20.7	18.7
257093	20.3	19.5	495949	20.4	21.7	72956	20.4	18.3	257329	20.5	20.7	104238	20.6	18.7	134275	20.7	19.4
510487	20.3	21.8	15599	20.4	18.0	150271	20.4	18.4	217362	20.5	20.0	254326	20.6	19.8	436569	20.7	20.3
66117	20.3	18.0	118917	20.4	18.0	511270	20.4	21.8	220679	20.5	18.1	169635	20.6	19.8	181554	20.7	19.9
223440	20.3	19.7	76892	20.4	18.8	513461	20.4	21.6	469535	20.5	19.9	21105	20.6	17.8	108091	20.7	19.2
251476	20.3	19.3	375731	20.4	21.1	277542	20.4	19.5	78677	20.5	18.8	217646	20.6	18.9	476848	20.7	20.9
361879	20.3	20.8	13753	20.4	18.2	146329	20.4	19.5	211924	20.5	19.8	132540	20.6	17.8	255390	20.7	20.0
492257	20.3	20.7	129323	20.4	19.8	423398	20.4	19.6	49344	20.5	18.4	152105	20.6	19.8	441948	20.7	19.9
505665	20.3	21.4	83530	20.4	18.3	52541	20.4	18.5	478984	20.5	21.7	429611	20.6	20.7	461798	20.7	21.1
151439	20.3	20.8	49671	20.4	17.2	379791	20.4	20.9	55090	20.5	18.5	102485	20.6	19.8	310647	20.7	19.9
298284	20.3	19.1	50423	20.4	19.0	220884	20.4	20.2	356691	20.5	19.9	67558	20.6	18.5	337866	20.7	22.5
74399	20.3	17.5	317859	20.4	19.5	146276	20.4	18.3	348034	20.5	20.1	298267	20.6	19.9	45222	20.7	17.3
257550	20.3	18.3	262418	20.4	18.6	167483	20.5	19.5	45933	20.5	19.3	198372	20.6	19.3	176144	20.7	20.3
203011	20.3	19.0	446167	20.4	20.1	358796	20.5	19.5	18329	20.5	15.8	299855	20.6	20.1	305598	20.7	20.1
53543	20.3	18.7	57776	20.4	17.7	400744	20.5	20.0	112531	20.5	18.8	511515	20.6	21.3	98841	20.7	19.4
504650	20.3	20.9	136653	20.4	18.4	513643	20.5	20.8	488854	20.5	19.6	504814	20.6	21.5	263571	20.7	20.5
505120	20.3	20.9	16154	20.4	16.6	403141	20.5	21.4	360931	20.5	20.9	6304	20.6	15.6	263053	20.7	21.7
28697	20.3	18.4	95133	20.4	19.5	351837	20.5	20.4	512419	20.5	19.8	164999	20.6	19.9	381984	20.7	19.0
193281	20.3	19.6	495040	20.4	21.2	288858	20.5	18.5	32059	20.5	17.6	476250	20.6	20.5	520212	20.7	20.3
474602	20.3	20.0	470737	20.4	20.0	343449	20.5	20.5	162341	20.5	18.5	506465	20.6	19.4	141592	20.7	19.0
157749	20.3	19.0	253951	20.4	20.4	258666	20.5	18.9	135966	20.5	18.2	206046	20.6	20.0	424381	20.7	20.2
111099	20.3	19.4	371912	20.4	21.1	39838	20.5	17.7	236761	20.5	18.5	255577	20.6	19.6	110075	20.7	18.9
19115	20.3	18.1	259571	20.4	19.5	219113	20.5	19.2	478555	20.5	19.3	472311	20.6	18.9	487776	20.7	21.2
123368	20.3	19.9	508274	20.4	21.7	516970	20.5	21.3	434737	20.5	21.1	75748	20.6	18.0	364031	20.7	21.1
504932	20.3	21.5	483254	20.4	20.6	189812	20.5	18.8	355620	20.5	20.2	98653	20.6	18.7	352404	20.7	20.0
478806	20.3	20.5	258398	20.4	20.0	323699	20.5	20.5	295934	20.5	19.9	105483	20.6	18.9	56829	20.7	18.1
10365	20.3	17.7	518789	20.4	19.5	253425	20.5	18.4	234270	20.5	19.8	75091	20.6	18.6	322237	20.7	20.5
199982	20.3	18.6	186304	20.4	19.8	186978	20.5	19.5	1								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
53700	20.7	18.7	255206	20.8	20.5	324150	20.9	20.3	472132	20.9	19.9	198512	21.0	20.1	261159	21.1	20.2
335507	20.7	19.9	38140	20.8	17.0	510157	20.9	21.1	407990	20.9	21.2	339117	21.0	19.9	221849	21.1	20.3
476969	20.7	20.2	19234	20.8	17.2	102535	20.9	18.3	165030	20.9	19.4	448607	21.0	20.4	342391	21.1	19.6
50401	20.7	18.5	13437	20.8	17.2	445520	20.9	20.3	365628	20.9	20.3	143436	21.0	19.2	283867	21.1	19.2
257397	20.7	20.2	95685	20.8	19.0	126435	20.9	19.9	494308	20.9	19.5	350401	21.1	19.1	387988	21.1	18.7
102003	20.7	18.5	374853	20.8	20.4	335035	20.9	19.2	328669	20.9	20.5	82706	21.1	18.2	361975	21.1	19.9
185369	20.7	20.4	457860	20.8	20.8	145113	20.9	19.3	311195	20.9	19.8	91259	21.1	18.2	137735	21.1	19.3
97309	20.7	18.9	44960	20.8	17.9	443972	20.9	20.5	78827	20.9	19.1	477561	21.1	21.2	16468	21.1	17.0
360404	20.7	21.3	430883	20.8	19.1	177204	20.9	18.7	137469	20.9	19.5	237081	21.1	20.5	76995	21.1	17.3
36391	20.7	18.4	97820	20.8	17.6	388625	20.9	20.1	324860	20.9	19.4	175130	21.1	19.1	11712	21.1	17.4
383241	20.7	21.9	152259	20.8	19.5	514387	20.9	21.1	186775	20.9	19.6	168083	21.1	18.3	47831	21.1	19.0
509031	20.7	19.4	339296	20.8	21.0	242682	20.9	19.7	118940	20.9	19.4	154919	21.1	18.8	457719	21.1	21.1
47215	20.7	17.5	14700	20.8	17.2	479010	20.9	20.6	432891	20.9	19.8	319237	21.1	18.7	212390	21.1	20.2
355506	20.7	20.0	389068	20.8	18.7	295386	20.9	19.5	54794	20.9	17.9	52318	21.1	19.3	349227	21.1	20.5
423795	20.7	19.8	344132	20.8	18.0	343933	20.9	19.5	518315	20.9	20.9	38472	21.1	18.1	423437	21.1	20.0
470999	20.7	20.2	93313	20.8	19.1	428583	20.9	21.9	472111	20.9	20.6	142292	21.1	20.0	68065	21.2	19.1
476876	20.7	20.8	451565	20.8	20.5	122498	20.9	17.8	76230	20.9	18.9	307076	21.1	20.3	448437	21.2	20.9
236573	20.7	19.4	362913	20.8	20.4	98663	20.9	18.6	20619	20.9	17.0	112002	21.1	19.0	389041	21.2	19.4
434655	20.7	21.2	12625	20.8	17.4	145596	20.9	18.1	7472	20.9	17.0	5033	21.1	16.0	480091	21.2	20.5
371941	20.7	20.9	376125	20.8	19.9	126718	20.9	19.2	414553	20.9	20.4	102543	21.1	17.8	3937	21.2	16.1
70311	20.7	17.8	213496	20.8	20.1	472219	20.9	19.6	78929	20.9	19.3	237858	21.1	19.9	358449	21.2	20.2
378228	20.7	20.6	35020	20.8	19.3	5459	20.9	16.4	454973	20.9	20.3	338044	21.1	19.7	253545	21.2	19.4
153246	20.7	20.0	44377	20.8	17.8	106721	20.9	18.1	40550	20.9	18.2	316741	21.1	18.5	259920	21.2	20.8
269070	20.7	20.3	429577	20.8	21.4	381827	20.9	21.0	478915	20.9	19.7	176685	21.1	18.8	425771	21.2	20.0
387176	20.7	19.7	112514	20.8	19.2	336129	20.9	19.6	289038	20.9	19.5	205096	21.1	19.3	255026	21.2	19.4
119013	20.8	18.2	445509	20.8	20.3	123161	20.9	19.5	509997	21.0	20.6	74749	21.1	17.6	84556	21.2	19.1
120327	20.8	18.2	268280	20.8	19.0	25394	20.9	18.2	473370	21.0	20.4	224171	21.1	19.0	373651	21.2	19.7
476729	20.8	19.6	338041	20.8	20.6	501822	20.9	21.3	276071	21.0	20.2	263394	21.1	20.1	481746	21.2	20.1
181563	20.8	20.0	289769	20.8	19.2	292990	20.9	19.4	481319	21.0	20.3	77607	21.1	18.9	520092	21.2	21.2
168714	20.8	17.1	376156	20.8	20.7	96075	20.9	18.8	448977	21.0	21.0	511374	21.1	20.1	260011	21.2	20.0
509971	20.8	21.1	515067	20.8	20.9	259922	20.9	20.5	431065	21.0	20.4	444752	21.1	19.6	374776	21.2	19.3
93651	20.8	19.5	251265	20.8	20.1	79311	20.9	17.8	515278	21.0	20.9	189259	21.1	18.8	47607	21.2	17.4
325083	20.8	19.0	180346	20.8	19.1	268822	20.9	19.2	250692	21.0	19.5	278684	21.1	20.1	63754	21.2	18.7
224153	20.8	19.3	200536	20.8	20.0	335105	20.9	20.8	446171	21.0	20.9	482761	21.1	20.9	259642	21.2	20.2
22049	20.8	18.8	180131	20.8	19.3	3386	20.9	16.1	56350	21.0	18.8	123826	21.1	19.2	53519	21.2	18.5
6347	20.8	16.2	447058	20.8	20.5	193536	20.9	19.8	469600	21.0	20.9	96946	21.1	18.1	390290	21.2	19.4
394530	20.8	19.9	54246	20.8	17.7	220259	20.9	20.0	351142	21.0	19.9	278499	21.1	20.6	221053	21.2	19.6
16460	20.8	18.0	435097	20.8	20.7	393297	20.9	19.9	92166	21.0	17.3	77815	21.1	19.2	467720	21.2	20.6
396965	20.8	20.5	361004	20.8	21.0	461448	20.9	20.8	395917	21.0	19.3	56046	21.1	17.8	286997	21.2	20.1
490167	20.8	19.5	385745	20.8	19.5	196402	20.9	18.9	403709	21.0	20.9	385527	21.1	22.9	439077	21.2	20.8
307223	20.8	20.4	210086	20.8	18.8	504946	20.9	21.2	181423	21.0	19.9	361460	21.1	21.5	471198	21.2	19.8
178913	20.8	18.1	387095	20.8	20.3	67154	20.9	18.1	512050	21.0	21.1	28242	21.1	17.7	155169	21.2	20.9
129658	20.8	18.2	12077	20.8	17.0	254969	20.9	21.1	97079	21.0	17.8	184011	21.1	19.3	193495	21.2	19.7
297175	20.8	20.2	342224	20.8	19.6	346710	20.9	19.5	509797	21.0	21.0	272322	21.1	20.1	491743	21.2	20.4
312700	20.8	20.6	507947	20.8	21.2	225787	20.9	20.2	61921	21.0	17.7	103863	21.1	18.7	381904	21.2	20.6
244902	20.8	19.6	112439	20.8	17.7	298208	20.9	20.5	308462	21.0	19.9	224862	21.1	20.3	127349	21.2	19.6
376150	20.8	19.9	504418	20.8	20.2	233331	20.9	21.0	477702	21.0	20.3	469968	21.1	20.4	311421	21.2	20.1
105906	20.8	19.4	104817	20.8	19.7	509040	20.9	21.0	521485	21.0	20.6	467932	21.1	20.3	360991	21.2	21.0
281846	20.8	19.7	273767	20.8	19.7	420306	20.9	19.9	72562	21.0	18.8	291352	21.1	19.4	285355	21.2	18.2
137120	20.8	19.6	250713	20.9	19.4	293406	20.9	20.1	311383	21.0	20.6	244409	21.1	20.3	82713	21.2	18.3
400742	20.8	19.5	349888	20.9	20.3	78409	20.9	18.8	248329	21.0	19.0	3657	21.1	14.7	181943	21.2	19.4
246215	20.8	20.2	220383	20.9	19.1	434090	20.9	20.1	272242	21.0	19.6	7756	21.1	17.1	478583	21.2	20.7
75862	20.8	18.6	66031	20.9	17.9	401618	20.9	19.3	48267	21.0	18.4	23175	21.1	16.6	144993	21.2	19.4
141997	20.8	19.3	346630	20.9	19.3	10879	20.9	16.8	296985	21.0	20.0	141727	21.1	17.9	297280	21.2	20.0
429441	20.8	20.3	85364	20.9	19.9	115063	20.9	18.8	358434	21.0	20.8	318383	21.1	19.6	394703	21.2	20.6
84702	20.8	18.7	95253	20.9	19.0	372812	20.9	20.5	343982	21.0	18.9	10036	21.1	15.3	256485	21.2	19.6
106782	20.8	19.0	443654	20.9	20.7	15514	20.9	17.0	80454	21.0	19.6	19947	21.1	18.4	116450	21.2	19.6
489675	20.8	21.8	313668	20.9	19.6	294093	20.9	19.5	301384	21.0	21.0	515236	21.1	21.9	410676	21.2	20.6
355645	20.8	21.4	112261	20.9	18.0	342525	20.9	19.7	315069	21.0	21.5	158731	21.1	18.1	371855	21.2	20.5
21108	20.8	16.1	309550	20.9	20.2	298212	20.9	20.4	155878	21.0	19.6	507295	21.1	21.1	385238	21.2	19.1
512481	20.8	20.0	122560	20.9	17.9	416487	20.9	19.7	448978	21.0	21.2	398910	21.1	19.7	110134	21.2	18.6
153606	20.8	19.6	268387	20.9	20.3	511090	20.9	20.4	236616	21.0	20.0	27532	21.1	17.1	313287	21.2	20.4
143152	20.8	19.2	162288	20.9	19.9	260281	20.9	19.1	167356	21.0	19.3	356195	21.1	19.5	518409	21.2	21.2
356586	20.8	20.6	501662	20.9	19.6	324077	20.9	20.8	488414	21.0	21.2	197598	21.1	18.0	392278	21.2	20.8
294305	20.8	20.7	420777	20.9	20.1	39439	20.9	17.8	415383	21.0	20.2	236870	21.1	19.4	40084	21.2	17.6
507748	20.8	21.6	245364	20.9	20.5	427511	20.9	20.7	482771	21.0	21.0	278323	21.1	20.2	505684	21.2	20.8
337333	20.8	20.2	308913	20.9	20.4	14021	20.9	19.0	175570	21.0	19.9	513299	21.1	21.0	102774	21.2	19.6
389790	20.8	20.1	445845	20.9	21.4	280560	20.9	19.6	248157	21.0	20.1	426801	21.1	19.3	396212	21.2	20.0
445465	20.8	20.7	439267	20.9	20.5	318408	20.9	19									



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
278052	21.2	20.0	126522	21.3	19.5	246620	21.4	19.9	483879	21.5	20.7	429487	21.6	21.3	400756	21.7	19.9
138895	21.2	19.5	219308	21.3	20.6	479686	21.4	20.7	355530	21.5	20.3	270159	21.6	19.2	149163	21.7	20.2
65120	21.2	17.5	318617	21.3	20.1	218549	21.4	18.8	295266	21.5	19.8	43551	21.6	17.9	248554	21.7	20.3
353888	21.2	18.6	96786	21.3	17.7	153263	21.4	18.8	202716	21.5	19.5	523064	21.6	20.9	402522	21.7	20.5
267655	21.2	19.9	217826	21.3	20.0	243435	21.4	19.5	288277	21.5	20.2	449302	21.6	20.9	208601	21.7	18.9
210163	21.2	19.4	114354	21.3	19.3	393326	21.4	21.3	379188	21.5	19.3	439452	21.6	21.6	448973	21.7	20.3
91608	21.2	19.6	444660	21.3	20.9	476148	21.4	20.2	315372	21.5	19.5	434666	21.6	20.6	381778	21.7	20.5
329744	21.2	20.7	461308	21.3	20.5	515653	21.4	20.5	218197	21.5	19.2	234335	21.6	18.4	99791	21.7	19.4
139823	21.2	19.5	105658	21.3	19.0	382605	21.4	19.8	121548	21.5	19.3	416756	21.6	21.1	335763	21.7	20.1
508420	21.2	19.4	152818	21.3	19.3	441624	21.4	18.9	128052	21.5	19.6	58152	21.6	17.8	483208	21.7	19.9
415342	21.2	19.4	381178	21.3	20.2	514960	21.4	20.7	358437	21.5	20.2	180117	21.6	20.2	232818	21.7	19.5
389986	21.2	20.0	449627	21.3	20.3	152463	21.4	19.8	25292	21.5	17.6	268912	21.6	20.3	217355	21.7	18.6
234329	21.2	20.1	37811	21.3	16.9	61577	21.4	18.6	200513	21.5	19.5	429501	21.6	21.1	513845	21.7	21.3
266092	21.2	19.8	264395	21.3	20.1	47697	21.4	19.1	106712	21.5	19.9	505115	21.6	20.7	268306	21.7	19.6
319441	21.2	21.0	67123	21.3	17.4	440765	21.4	19.4	519115	21.5	20.6	61732	21.6	18.6	351897	21.7	20.8
349198	21.2	20.0	433141	21.3	20.4	512925	21.4	19.8	477165	21.5	21.1	166487	21.6	18.8	501990	21.7	20.3
438766	21.2	19.7	81059	21.3	18.1	323268	21.4	20.1	341105	21.5	19.4	71353	21.6	17.9	209143	21.7	20.1
427361	21.2	20.3	509230	21.3	19.6	72040	21.4	18.8	448824	21.5	20.5	131059	21.6	18.3	337253	21.7	20.1
17188	21.2	21.0	296125	21.3	20.0	474339	21.4	20.0	121661	21.5	19.3	328507	21.6	20.2	12267	21.7	18.6
291872	21.2	19.3	121666	21.3	19.7	73384	21.4	19.7	41081	21.5	18.2	75314	21.6	18.9	515209	21.7	22.8
488267	21.2	19.4	33190	21.3	18.3	446744	21.4	19.1	515107	21.5	21.2	357772	21.6	20.8	403401	21.7	20.3
270983	21.2	18.8	284261	21.3	20.1	342335	21.4	19.6	18333	21.5	16.5	371549	21.6	17.6	428531	21.7	20.9
481146	21.2	22.2	389927	21.3	19.5	510699	21.4	21.0	255204	21.5	20.3	97939	21.6	17.2	455113	21.7	19.7
357797	21.2	20.4	319210	21.3	19.8	346576	21.4	19.1	508276	21.5	21.0	73311	21.6	18.0	292400	21.7	20.1
521611	21.2	20.2	383082	21.3	20.0	283682	21.4	19.9	53902	21.5	18.4	392690	21.6	21.2	264157	21.7	19.7
301376	21.2	20.2	315989	21.3	19.9	355674	21.4	21.1	42703	21.5	18.2	87432	21.6	18.0	286598	21.7	20.5
504018	21.3	20.1	285215	21.3	19.6	251804	21.4	21.3	387530	21.5	21.5	392613	21.6	20.4	481706	21.7	21.3
137297	21.3	18.6	521392	21.3	20.5	286226	21.4	19.7	262049	21.5	20.7	410827	21.6	20.0	357315	21.7	19.6
19855	21.3	18.2	307565	21.3	20.9	123208	21.4	18.8	389503	21.5	20.3	245226	21.6	19.5	516118	21.7	21.5
38946	21.3	18.3	195156	21.3	19.6	474622	21.4	19.0	313355	21.5	20.1	508814	21.6	21.3	360985	21.7	20.6
184203	21.3	18.9	360735	21.3	20.0	5050	21.4	16.2	256545	21.5	20.2	351183	21.6	20.5	291121	21.7	21.1
183230	21.3	15.0	452037	21.3	21.1	93425	21.4	18.6	431862	21.5	20.2	159056	21.6	20.1	434094	21.7	20.7
479184	21.3	20.7	39460	21.3	19.0	318186	21.4	19.6	376154	21.5	21.3	224927	21.6	19.8	330460	21.7	20.5
92087	21.3	18.6	24852	21.3	17.8	256772	21.4	20.5	129895	21.5	18.3	513463	21.6	21.4	429502	21.7	21.7
402433	21.3	20.8	512479	21.3	20.0	485500	21.4	19.3	420270	21.5	19.9	519203	21.6	19.8	180409	21.7	19.3
239855	21.3	20.2	513858	21.3	21.3	385100	21.4	19.9	218151	21.5	18.3	240982	21.6	20.1	309636	21.7	20.8
156920	21.3	20.8	435214	21.3	18.1	109823	21.4	19.7	348088	21.5	19.6	320474	21.6	20.7	254916	21.7	20.4
12166	21.3	18.3	312546	21.3	20.7	465623	21.4	20.3	427992	21.5	21.0	496400	21.6	19.3	224196	21.7	19.3
413482	21.3	21.3	427	21.3	13.5	240752	21.4	19.8	18619	21.5	16.5	371914	21.6	21.5	171403	21.7	19.0
245573	21.3	20.0	186510	21.3	19.7	373677	21.4	19.0	175243	21.5	19.7	326588	21.6	20.2	309118	21.7	20.7
41606	21.3	18.3	339115	21.3	19.6	299197	21.4	20.7	60895	21.5	17.6	415841	21.6	18.3	223371	21.7	18.9
92266	21.3	18.8	358761	21.3	20.3	390907	21.4	20.4	257816	21.5	20.1	6516	21.6	16.1	320773	21.7	19.9
297356	21.3	19.9	50181	21.3	18.6	186328	21.4	20.6	34607	21.5	17.8	476571	21.6	20.7	449018	21.7	20.5
136601	21.3	19.5	320804	21.3	18.9	243138	21.4	18.9	33868	21.5	17.6	474674	21.6	21.4	166392	21.7	17.9
1092	21.3	14.5	179676	21.3	20.2	254352	21.4	19.6	116065	21.5	19.5	68081	21.6	19.5	369912	21.7	19.8
339151	21.3	19.6	205011	21.4	19.6	444335	21.4	20.2	416649	21.5	18.9	344771	21.6	20.4	391558	21.7	20.2
94286	21.3	18.6	30246	21.4	18.1	7058	21.4	15.7	472207	21.5	19.8	371505	21.6	19.1	163027	21.7	19.3
478880	21.3	20.8	352412	21.4	20.9	377104	21.4	21.4	50160	21.5	18.3	389148	21.6	20.1	103750	21.7	18.3
111864	21.3	19.8	306130	21.4	19.7	35105	21.4	16.9	397652	21.5	20.7	139260	21.6	19.0	516281	21.7	20.9
490763	21.3	21.4	446252	21.4	21.4	92744	21.4	18.6	311981	21.5	20.4	66979	21.6	18.0	265115	21.7	20.4
487782	21.3	21.1	159390	21.4	17.7	440479	21.5	20.3	136158	21.5	19.4	449651	21.6	20.5	184954	21.7	19.1
439493	21.3	20.8	467205	21.4	20.2	97743	21.5	18.8	73723	21.5	19.6	223688	21.6	19.2	64371	21.7	19.9
348054	21.3	19.0	266279	21.4	20.5	123615	21.5	18.4	185839	21.5	20.3	274126	21.6	19.0	179234	21.7	19.4
144276	21.3	19.4	417248	21.4	19.3	221872	21.5	19.1	214108	21.5	19.2	480724	21.6	20.3	350299	21.7	18.9
447083	21.3	19.6	258043	21.4	19.2	73527	21.5	17.1	37228	21.5	18.6	193718	21.6	19.7	180355	21.7	19.3
315042	21.3	19.3	127710	21.4	18.7	151496	21.5	19.8	114	21.5	12.4	500054	21.6	19.2	183683	21.7	20.3
287031	21.3	20.6	309707	21.4	19.3	162214	21.5	22.0	246314	21.5	19.3	511258	21.6	21.2	423038	21.7	19.3
516370	21.3	20.7	92080	21.4	19.5	366118	21.5	20.4	362917	21.5	20.6	487707	21.6	20.2	93540	21.7	19.0
239086	21.3	21.2	37959	21.4	18.3	104476	21.5	19.3	473117	21.5	21.1	402995	21.6	20.2	481227	21.7	20.4
154873	21.3	18.8	312368	21.4	19.8	59124	21.5	18.4	397712	21.5	19.6	256714	21.6	19.7	143926	21.7	18.8
151491	21.3	18.2	362929	21.4	20.0	121443	21.5	19.1	431194	21.5	21.5	285854	21.6	19.7	390117	21.7	20.9
343537	21.3	19.7	316437	21.4	19.8	181978	21.5	18.9	172328	21.5	19.1	268946	21.6	20.2	245576	21.7	18.9
62781	21.3	18.9	246605	21.4	19.6	479775	21.5	20.4	514735	21.5	20.6	278200	21.6	21.0	46854	21.7	17.4
432648	21.3	21.7	339368	21.4	21.2	32045	21.5	16.9	217473	21.5	19.8	119352	21.6	19.4	298214	21.7	20.3
9685	21.3	17.6	66102	21.4	18.0	64964	21.5	19.0	363896	21.5	20.5	256539	21.6	20.0	325466	21.7	19.2
447526	21.3	20.5	293405	21.4	21.1	21072	21.5	17.4	190605	21.5	18.7	29507	21.6	17.8	65709	21.7	17.5
36280	21.3	18.5	97426	21.4	19.3	390293	21.5	20.6	391637	21.5	20.8	479863	21.6	20.7	276868	21.7	19.0
349369	21.3	20.0	451854	21.4	19.2	442859	21.5	21.0	4206	21.6	16.0	79621	21.6	18.4	342353	21.7	20.0
163004	21.3	19.1	382020	21.4	20.5	444263	21.5</										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
188526	21.7	19.3	49693	21.8	18.7	449802	21.9	20.8	20024	22.0	16.6	493589	22.1	20.0	210722	22.2	18.5
351181	21.8	21.3	402054	21.8	20.4	174618	21.9	18.9	370857	22.0	20.3	9924	22.1	17.4	346842	22.2	21.6
50288	21.8	17.3	206300	21.8	19.0	58960	21.9	18.1	171215	22.0	19.2	445814	22.1	20.5	247104	22.2	19.2
315057	21.8	20.4	22167	21.8	18.3	286728	21.9	20.5	447084	22.0	21.1	59605	22.1	17.5	204490	22.2	19.1
322680	21.8	20.4	398673	21.8	20.5	18853	21.9	17.8	373187	22.0	21.3	99148	22.1	18.6	311174	22.2	19.1
510895	21.8	20.3	182716	21.8	19.5	94548	21.9	20.0	514639	22.0	20.3	7119	22.1	16.5	37893	22.2	18.1
444981	21.8	20.8	396053	21.8	20.9	10268	21.9	16.5	480039	22.0	21.0	444292	22.1	21.5	323079	22.2	18.0
280184	21.8	18.7	349681	21.8	18.3	371856	21.9	19.8	72189	22.0	18.8	187353	22.1	19.8	93291	22.2	19.3
147044	21.8	18.3	54520	21.8	25.2	316527	21.9	19.9	257079	22.0	19.3	350124	22.1	19.8	127116	22.2	20.0
508039	21.8	22.1	195213	21.8	19.8	92328	21.9	17.9	382415	22.0	21.0	506617	22.1	21.0	360875	22.2	20.1
515235	21.8	21.1	294353	21.8	19.7	478029	21.9	20.4	260475	22.0	19.7	119906	22.1	19.9	166568	22.2	19.0
67231	21.8	19.2	517813	21.8	21.1	360222	21.9	20.6	207229	22.0	19.6	316428	22.1	20.9	180402	22.2	20.0
523009	21.8	20.6	509397	21.9	20.3	514057	21.9	20.8	218290	22.0	18.5	401299	22.1	21.1	151489	22.2	19.2
249375	21.8	20.0	378225	21.9	21.8	13262	21.9	16.3	80750	22.0	18.5	376964	22.1	22.5	49182	22.2	17.7
198133	21.8	18.9	198501	21.9	18.8	293213	21.9	18.6	473102	22.0	20.8	72659	22.1	18.8	22962	22.2	18.9
270216	21.8	19.6	253396	21.9	20.2	46290	21.9	18.9	477139	22.0	21.2	434891	22.1	20.1	86802	22.2	19.0
285416	21.8	21.3	238555	21.9	20.2	22607	21.9	17.5	400232	22.0	20.5	330308	22.1	20.9	149836	22.2	19.4
186385	21.8	18.7	176380	21.9	19.9	183225	21.9	18.4	198323	22.0	19.4	235661	22.1	19.0	43836	22.2	19.1
291222	21.8	20.7	73383	21.9	19.0	510808	21.9	20.3	463204	22.0	19.9	166509	22.1	18.8	511491	22.2	20.6
54196	21.8	16.8	38849	21.9	18.7	306196	21.9	20.2	386765	22.0	20.2	439395	22.1	21.3	449405	22.2	20.4
345085	21.8	21.5	359949	21.9	20.2	447433	21.9	20.5	313332	22.0	20.4	443680	22.1	20.2	93571	22.2	18.8
337126	21.8	18.4	12544	21.9	17.4	477118	21.9	20.5	178810	22.0	20.5	109534	22.1	18.2	364034	22.2	21.5
347259	21.8	19.9	380792	21.9	20.7	47250	21.9	18.6	204768	22.0	20.3	474523	22.1	20.2	374846	22.2	20.8
145965	21.8	20.8	351413	21.9	20.6	22317	21.9	17.5	321591	22.0	20.2	134882	22.1	17.1	107319	22.2	19.7
128921	21.8	18.2	285831	21.9	21.0	434744	21.9	20.3	256512	22.0	20.4	206126	22.1	19.2	391245	22.2	20.3
104332	21.8	19.4	131827	21.9	19.0	404040	21.9	20.4	212890	22.0	18.7	224163	22.1	19.2	436510	22.2	20.0
72316	21.8	18.9	179875	21.9	20.2	18672	21.9	17.9	389318	22.0	20.5	476252	22.1	21.3	488108	22.2	20.6
17574	21.8	17.4	289663	21.9	19.3	385612	21.9	20.1	435807	22.0	19.3	275303	22.1	21.3	504000	22.2	20.9
511322	21.8	20.5	217191	21.9	18.6	394649	21.9	20.7	300622	22.0	20.4	270449	22.1	19.1	211998	22.2	18.9
72288	21.8	19.2	445790	21.9	19.9	163758	21.9	21.1	191675	22.0	19.5	266991	22.1	19.9	387799	22.2	20.5
298235	21.8	19.7	384314	21.9	20.1	424508	21.9	20.5	168119	22.0	19.1	52978	22.1	18.4	295210	22.2	19.7
96542	21.8	18.1	67701	21.9	19.2	266817	21.9	19.9	192042	22.0	18.3	49203	22.1	17.9	383990	22.2	20.2
4092	21.8	15.2	496266	21.9	19.9	250932	21.9	20.3	254307	22.0	19.8	257733	22.1	19.9	85352	22.2	19.4
262730	21.8	19.7	342267	21.9	20.5	45324	21.9	17.9	401402	22.0	19.3	78368	22.1	18.4	98957	22.2	18.0
217323	21.8	18.6	40296	21.9	16.8	346700	21.9	20.2	478921	22.0	20.1	139304	22.1	19.6	235815	22.2	19.7
514810	21.8	21.2	299886	21.9	19.7	318445	21.9	20.6	516129	22.0	19.6	363330	22.1	22.1	134795	22.2	18.7
47221	21.8	18.0	371500	21.9	20.1	212402	21.9	19.8	488799	22.1	20.6	470893	22.1	20.2	310547	22.2	20.4
321571	21.8	20.0	99797	21.9	19.3	499035	21.9	20.6	292641	22.1	19.8	479071	22.1	21.3	511978	22.2	21.6
516820	21.8	20.6	420469	21.9	21.3	99622	21.9	19.6	385441	22.1	18.4	195129	22.1	19.1	64972	22.2	19.0
70152	21.8	17.8	446229	21.9	20.6	62573	21.9	18.2	385327	22.1	21.7	84179	22.1	19.1	49823	22.2	18.9
347042	21.8	21.2	435565	21.9	20.6	97948	21.9	19.0	513577	22.1	20.2	244494	22.1	20.0	241105	22.2	19.1
220558	21.8	20.1	364555	21.9	21.0	207972	21.9	20.2	15509	22.1	17.8	80852	22.1	18.5	129564	22.2	19.3
477172	21.8	20.1	14055	21.9	17.8	95245	21.9	18.6	67557	22.1	18.3	290983	22.1	19.7	279031	22.2	18.6
93877	21.8	18.7	470778	21.9	20.8	349733	21.9	20.8	436921	22.1	18.8	355725	22.1	20.3	226490	22.2	20.0
171784	21.8	20.7	206651	21.9	20.4	5695	21.9	16.7	207847	22.1	19.8	444659	22.1	21.0	19327	22.2	17.2
112850	21.8	19.1	438831	21.9	20.9	208626	21.9	19.0	332199	22.1	21.3	260048	22.1	20.3	37283	22.2	18.3
165074	21.8	20.2	79544	21.9	18.3	49937	21.9	17.7	284595	22.1	18.9	447068	22.1	19.9	216649	22.2	19.8
519495	21.8	21.8	13543	21.9	17.3	319261	21.9	19.7	85612	22.1	19.4	255081	22.1	20.0	342836	22.2	21.1
482101	21.8	21.0	371578	21.9	20.4	301907	21.9	18.6	135849	22.1	19.3	314372	22.1	21.7	166465	22.2	18.3
95590	21.8	18.3	300638	21.9	21.0	43181	21.9	17.6	241753	22.1	20.6	298279	22.1	19.6	479600	22.2	19.6
340530	21.8	19.8	349850	21.9	20.4	119226	21.9	19.0	482164	22.1	21.5	479227	22.1	21.0	355600	22.2	20.6
31105	21.8	16.7	200192	21.9	17.9	60233	21.9	19.1	380233	22.1	20.0	146667	22.1	19.1	152296	22.2	20.6
271075	21.8	19.6	383224	21.9	20.4	440675	21.9	21.2	78415	22.1	19.5	368279	22.1	20.2	17465	22.2	18.4
370622	21.8	20.3	275979	21.9	19.4	216566	21.9	19.1	348319	22.1	20.6	191876	22.1	19.4	8812	22.2	15.4
79658	21.8	17.4	335047	21.9	19.3	87147	21.9	17.4	164874	22.1	19.7	520431	22.1	21.1	31237	22.2	18.3
435668	21.8	20.6	445364	21.9	19.4	446962	21.9	20.9	91013	22.1	18.4	37523	22.1	17.5	255154	22.2	21.2
445440	21.8	20.2	399016	21.9	19.6	509058	21.9	19.1	392364	22.1	21.6	509255	22.1	18.8	32500	22.2	16.5
365957	21.8	21.7	52362	21.9	17.1	49583	21.9	18.1	360922	22.1	20.0	255574	22.1	18.9	436296	22.2	21.9
228454	21.8	17.9	171269	21.9	17.6	230905	21.9	20.4	325458	22.1	19.9	412689	22.1	19.9	266828	22.2	19.4
19278	21.8	17.5	448621	21.9	20.3	100105	21.9	18.6	480690	22.1	20.3	8907	22.1	16.7	358863	22.2	20.7
278293	21.8	20.5	133264	21.9	19.3	105644	21.9	18.1	311364	22.1	20.3	183546	22.1	20.1	143740	22.2	20.0
92225	21.8	17.8	252195	21.9	20.3	30914	21.9	17.1	181569	22.1	20.0	485204	22.1	20.4	113953	22.2	19.1
59980	21.8	17.4	335504	21.9	19.3	232972	21.9	19.9	187811	22.1	19.0	311131	22.1	19.7	340476	22.2	19.8
45498	21.8	18.5	26289	21.9	18.2	44048	21.9	18.1	380530	22.1	20.4	90308	22.1	18.8	449067	22.2	21.7
137650	21.8	19.2	191291	21.9	19.7	420327	21.9	21.8	103516	22.1	18.3	511361	22.1	20.8	198551	22.2	18.0
473236	21.8	20.0	350406	21.9	20.1	267726	21.9	19.1	357907	22.1	20.8	43618	22.1	18.8	259678	22.2	18.3
104522	21.8	19.7	348122	21.9	19.1	482203	21.9	20.7	157775	22.1	19.5	15516	22.1	16.7	293068	22.2	20.7
229217	21.8	17.1	294891	21.9	20.6	396096	21.9	20.1	523208	22.1	20.3	43862	22.1	17.4	41611	22.2	18.2
34531	21.8	18.5	202862	21.9	19.2	149444	21.9	19.6	51378								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
414407	22.3	19.4	443509	22.4	20.2	344445	22.4	20.3	513859	22.5	20.8	6752	22.6	17.0	333163	22.7	20.8
320382	22.3	19.6	112513	22.4	19.3	350419	22.4	19.9	492285	22.5	20.8	316951	22.6	20.1	234346	22.7	20.0
326239	22.3	20.7	149060	22.4	19.3	383618	22.4	18.8	134920	22.5	19.2	388624	22.6	19.7	130233	22.7	18.4
130471	22.3	18.0	335070	22.4	19.2	71634	22.4	18.8	213438	22.5	19.8	225697	22.6	19.4	478618	22.7	20.6
476189	22.3	21.0	516127	22.4	20.2	360411	22.4	21.3	345039	22.5	20.9	146150	22.6	19.0	346103	22.7	19.7
390086	22.3	21.0	59867	22.4	17.3	188749	22.4	19.9	360385	22.5	21.5	332845	22.6	20.2	7515	22.7	16.5
219088	22.3	18.9	401567	22.4	20.4	8197	22.4	16.8	251912	22.5	20.3	442753	22.6	19.5	277589	22.7	19.8
512839	22.3	21.0	368087	22.4	19.6	16898	22.4	17.8	447115	22.5	19.9	312984	22.6	18.7	152803	22.7	19.0
355321	22.3	21.0	249051	22.4	18.6	231763	22.4	18.5	447860	22.5	20.4	406969	22.6	21.0	3513	22.7	16.2
385817	22.3	21.4	13590	22.4	18.8	218388	22.4	19.3	66623	22.5	18.5	473183	22.6	19.9	220529	22.7	20.7
53671	22.3	16.7	166489	22.4	18.7	312488	22.4	20.4	303213	22.5	20.5	321003	22.6	20.3	523237	22.7	20.7
37795	22.3	17.5	510952	22.4	20.6	185790	22.4	20.6	510044	22.5	21.3	479962	22.6	20.4	45436	22.7	18.7
491163	22.3	20.5	65969	22.4	17.2	141892	22.4	18.6	149570	22.5	19.4	90851	22.6	19.2	391590	22.7	20.3
170685	22.3	20.0	321934	22.4	21.3	60844	22.4	20.0	199259	22.5	20.0	301740	22.6	20.0	186319	22.7	19.0
263717	22.3	20.3	203732	22.4	20.1	477503	22.4	20.2	146752	22.5	19.1	482195	22.6	21.3	375169	22.7	20.2
206543	22.3	19.7	75515	22.4	18.7	12726	22.4	16.4	198346	22.5	18.6	250719	22.6	19.2	26246	22.7	16.9
333160	22.3	20.2	232146	22.4	20.2	385752	22.4	21.3	220937	22.5	19.1	328553	22.6	18.5	445837	22.7	20.4
390098	22.3	21.1	392003	22.4	21.0	169073	22.4	20.2	17208	22.5	17.9	236971	22.6	19.6	333154	22.7	21.1
360173	22.3	20.1	323735	22.4	19.3	384502	22.5	20.9	218520	22.5	18.3	445855	22.6	21.1	517865	22.7	20.2
281237	22.3	19.5	117380	22.4	18.5	216888	22.5	19.8	183199	22.5	19.4	505125	22.6	20.7	57650	22.7	17.3
476596	22.3	20.3	178325	22.4	20.7	322056	22.5	19.9	322150	22.5	20.4	402443	22.6	20.1	180165	22.7	20.0
300668	22.3	20.6	198012	22.4	19.5	72446	22.5	18.6	93259	22.5	18.4	275374	22.6	20.2	45347	22.7	18.6
479832	22.3	21.6	514238	22.4	20.5	448080	22.5	20.7	14590	22.5	17.2	255347	22.6	19.7	218092	22.7	19.6
17783	22.3	17.2	129311	22.4	18.9	219310	22.5	19.7	201543	22.5	19.1	361048	22.6	20.6	95230	22.7	18.2
226198	22.3	21.4	364514	22.4	21.4	251828	22.5	19.8	407949	22.5	20.6	499082	22.6	20.9	512627	22.7	20.9
221036	22.3	19.2	50611	22.4	19.3	72880	22.5	19.4	175669	22.5	19.5	479009	22.6	21.8	504849	22.7	20.7
257129	22.3	20.4	476736	22.4	21.1	44432	22.5	18.6	433790	22.5	21.1	402195	22.6	20.5	103511	22.7	19.6
62436	22.3	18.5	337974	22.4	19.9	373204	22.5	20.2	483293	22.5	21.0	49772	22.6	17.6	390513	22.7	20.8
427667	22.3	21.7	425793	22.4	21.3	155778	22.5	17.2	99664	22.5	18.6	481752	22.6	20.4	162892	22.7	19.1
130366	22.3	20.1	446480	22.4	20.0	224120	22.5	19.2	64853	22.5	17.8	381728	22.6	19.7	290	22.7	16.3
319371	22.3	20.8	483289	22.4	20.5	94209	22.5	18.2	462110	22.5	18.8	372988	22.6	20.7	113618	22.7	19.0
176095	22.3	18.6	204545	22.4	19.7	183869	22.5	19.4	25163	22.5	18.4	107153	22.6	18.9	507216	22.7	19.9
392443	22.3	20.2	220846	22.4	20.6	400950	22.5	20.6	248528	22.5	20.6	374260	22.6	19.8	469254	22.7	19.9
476578	22.3	20.5	164552	22.4	20.4	396	22.5	13.2	202501	22.5	19.3	342480	22.6	21.1	523709	22.7	22.1
75870	22.3	18.3	254253	22.4	20.1	399937	22.5	21.1	408322	22.5	21.2	122617	22.6	17.1	204662	22.7	20.0
136239	22.3	18.1	364566	22.4	18.9	418100	22.5	20.7	231761	22.5	19.8	451151	22.6	19.8	188900	22.7	18.6
75798	22.3	18.4	105811	22.4	18.3	351844	22.5	19.7	74845	22.6	18.1	221486	22.6	19.3	492330	22.7	19.7
247002	22.3	20.4	356990	22.4	20.5	121327	22.5	19.1	172129	22.6	20.3	385194	22.6	23.0	69523	22.7	18.8
48923	22.3	16.7	508779	22.4	19.0	363047	22.5	20.5	50572	22.6	17.7	362972	22.6	20.2	358892	22.7	19.9
470371	22.3	20.6	123934	22.4	19.2	283053	22.5	20.4	318592	22.6	20.6	26897	22.6	17.8	335506	22.7	20.2
225918	22.3	19.7	521173	22.4	20.5	371875	22.5	20.9	319175	22.6	21.0	455045	22.6	20.7	270948	22.7	20.6
267286	22.3	19.5	501446	22.4	21.8	464808	22.5	19.0	151490	22.6	20.0	453681	22.6	21.3	53618	22.7	18.9
369965	22.3	20.5	504330	22.4	20.1	324347	22.5	18.8	476640	22.6	20.2	86410	22.6	18.3	281543	22.7	19.5
227400	22.3	20.3	236485	22.4	19.8	43230	22.5	18.3	355161	22.6	20.6	138019	22.6	20.0	521082	22.7	21.7
425303	22.3	20.4	107453	22.4	19.6	272649	22.5	20.0	15212	22.6	17.1	377935	22.6	21.1	109974	22.7	19.1
33002	22.3	18.7	191237	22.4	19.1	48605	22.5	18.4	93182	22.6	18.0	319328	22.6	20.4	387488	22.7	20.7
17591	22.3	17.0	75657	22.4	19.3	361564	22.5	19.9	408612	22.6	21.0	330357	22.6	19.9	311988	22.7	21.8
130570	22.3	18.5	150859	22.4	18.7	113967	22.5	19.3	20169	22.6	18.1	261933	22.6	20.1	128888	22.7	19.7
342045	22.3	20.9	387169	22.4	20.2	358829	22.5	20.1	358912	22.6	20.2	148147	22.6	20.1	201039	22.7	19.9
306386	22.3	20.4	333009	22.4	19.8	28950	22.5	18.5	307015	22.6	20.0	8448	22.6	16.7	28171	22.7	18.0
94031	22.3	18.6	50767	22.4	19.3	334692	22.5	17.5	213547	22.6	19.1	322236	22.6	20.4	434598	22.7	19.8
9710	22.3	16.9	317810	22.4	19.7	199605	22.5	19.4	202903	22.6	20.0	360002	22.6	19.0	232968	22.7	20.4
313302	22.3	19.9	470668	22.4	19.7	405808	22.5	20.3	253710	22.6	21.0	202301	22.6	19.8	281890	22.7	20.5
67067	22.3	17.7	121803	22.4	19.5	468046	22.5	18.9	480923	22.6	21.0	448372	22.6	20.4	35796	22.7	18.6
263625	22.3	21.1	249749	22.4	19.5	150120	22.5	18.5	10863	22.6	17.6	319385	22.6	20.6	24317	22.7	17.2
228176	22.3	19.4	362863	22.4	20.8	305825	22.5	20.0	41505	22.6	17.5	391620	22.6	20.6	328177	22.7	20.1
468685	22.3	20.0	279387	22.4	19.8	223862	22.5	19.7	267265	22.6	18.9	504493	22.6	21.0	168867	22.7	19.7
105891	22.3	19.7	255404	22.4	19.9	360390	22.5	19.6	392002	22.6	21.2	288102	22.6	19.6	315672	22.7	19.6
258910	22.3	20.3	277563	22.4	19.9	236118	22.5	19.0	335495	22.6	20.3	419713	22.6	21.7	20058	22.7	17.2
437914	22.3	21.5	260454	22.4	20.8	373205	22.5	19.8	315970	22.6	18.3	150897	22.6	19.1	33265	22.7	17.2
255474	22.3	19.7	206692	22.4	19.7	187331	22.5	20.5	493794	22.6	21.3	77390	22.6	18.6	392073	22.7	21.0
293243	22.3	19.6	39282	22.4	17.2	1586	22.5	15.6	454962	22.6	20.6	158928	22.6	19.1	162866	22.7	18.7
332042	22.3	19.1	291494	22.4	20.0	258795	22.5	20.5	395748	22.6	20.4	240361	22.6	19.1	484924	22.7	19.1
851	22.3	14.5	438663	22.4	20.1	466920	22.5	20.0	80513	22.6	18.1	522622	22.7	20.8	163115	22.7	18.2
427692	22.3	21.4	25582	22.4	18.8	167701	22.5	17.4	238658	22.6	19.6	326056	22.7	19.7	451763	22.7	20.5
74277	22.3	18.7	470624	22.4	20.6	392995	22.5	20.7	199572	22.6	20.1	60344	22.7	19.1	126312	22.7	18.8
444998	22.3	20.7	195493	22.4	20.1	326136	22.5	19.9	155240	22.6	20.0	141986	22.7	18.5	96964	22.7	18.7
478554	22.3	20.7	514797	22.4	20.9	505755	22.5	20.6	286545	22.6	20.4	470631	22.7	19.8	485393	22.7	20.3
380273	22.3	20.1	382595	22.4	21.1	465870	22.5										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
287297	22.7	19.4	217370	22.8	19.2	130941	22.9	19.3	429476	22.9	21.0	2022	23.1	14.9	239637	23.2	20.1
13032	22.7	18.0	267277	22.8	19.5	76392	22.9	19.3	204475	22.9	19.9	324335	23.1	19.2	14698	23.2	18.0
402015	22.7	20.0	43312	22.8	18.2	45080	22.9	17.9	335846	22.9	19.1	339460	23.1	21.4	255531	23.2	18.4
263018	22.7	21.6	202194	22.8	19.9	24531	22.9	18.7	358945	22.9	19.9	509941	23.1	19.7	498254	23.2	20.1
246506	22.7	20.0	100879	22.8	19.5	40197	22.9	17.1	16266	22.9	18.3	36212	23.1	17.8	390147	23.2	20.4
368490	22.8	20.6	58776	22.8	18.6	116113	22.9	19.2	233963	22.9	21.0	311	23.1	13.9	513966	23.2	20.5
177134	22.8	19.7	200383	22.8	18.3	67587	22.9	18.5	48116	22.9	17.6	53043	23.1	19.6	152801	23.2	18.9
217827	22.8	18.5	137863	22.8	19.7	515915	22.9	20.8	177406	22.9	19.4	369931	23.1	20.2	212482	23.2	18.8
438088	22.8	20.2	470719	22.8	20.9	380428	22.9	19.6	515620	22.9	20.1	451367	23.1	20.0	330683	23.2	20.2
235671	22.8	19.9	429430	22.8	21.6	355719	22.9	19.5	448658	22.9	20.3	444690	23.1	21.2	260882	23.2	20.4
75892	22.8	17.7	448695	22.8	20.7	486983	22.9	20.5	42130	22.9	18.4	288926	23.1	20.4	339274	23.2	20.0
16249	22.8	18.0	448687	22.8	19.6	428133	22.9	20.8	281219	22.9	19.1	480013	23.1	21.3	254276	23.2	19.4
20736	22.8	17.2	247732	22.8	19.2	294351	22.9	19.2	373161	22.9	20.7	23094	23.1	15.8	305580	23.2	20.3
476608	22.8	21.4	47236	22.8	17.1	251320	22.9	19.9	157350	22.9	19.1	408739	23.1	19.8	299088	23.2	19.4
22117	22.8	18.5	220826	22.8	18.8	366180	22.9	20.2	420315	23.0	20.8	220739	23.1	19.6	340397	23.2	20.2
291299	22.8	19.8	21663	22.8	17.4	430891	22.9	20.1	447536	23.0	20.7	37211	23.1	17.8	330286	23.2	20.5
59481	22.8	18.7	298112	22.8	17.8	298112	22.9	19.9	417367	23.0	19.7	380298	23.1	21.7	285350	23.2	18.3
387548	22.8	20.7	157325	22.8	18.5	10403	22.9	17.2	156256	23.0	19.5	335570	23.1	20.0	255705	23.2	19.1
6750	22.8	16.8	314464	22.8	19.9	494426	22.9	20.8	112164	23.0	17.4	434097	23.1	20.9	491831	23.2	21.0
491841	22.8	21.6	360980	22.8	19.9	316690	22.9	20.2	92038	23.0	19.3	294525	23.1	20.1	471749	23.2	20.3
401527	22.8	19.9	507928	22.8	21.2	11142	22.9	17.7	345023	23.0	20.6	272415	23.1	21.4	279429	23.2	19.5
451181	22.8	21.0	154253	22.8	19.2	482254	22.9	19.7	16799	23.0	17.2	206584	23.1	20.5	76984	23.2	18.7
257138	22.8	20.8	209725	22.8	19.9	439830	22.9	19.9	317484	23.0	19.8	278937	23.1	20.3	439352	23.2	20.2
513524	22.8	21.1	86109	22.8	17.8	521184	22.9	20.4	29884	23.0	16.5	445423	23.1	20.0	129027	23.2	18.0
501825	22.8	20.0	415975	22.8	21.5	147897	22.9	17.9	72955	23.0	19.2	273687	23.1	19.9	90491	23.2	19.5
65053	22.8	18.2	93517	22.8	18.5	480568	22.9	20.3	332709	23.0	18.5	311474	23.1	20.0	472550	23.2	21.6
95835	22.8	19.1	396442	22.9	20.1	390016	22.9	20.4	92045	23.0	19.0	434911	23.1	21.0	204125	23.2	20.2
91945	22.8	19.3	473952	22.9	19.4	1735	22.9	14.0	20563	23.0	17.6	354196	23.1	19.6	36402	23.2	17.0
520200	22.8	21.2	154684	22.9	18.3	114038	22.9	18.8	243571	23.0	19.9	109447	23.1	19.1	1558	23.2	14.8
475475	22.8	20.8	276081	22.9	19.9	439605	22.9	20.0	315139	23.0	19.9	340450	23.1	20.0	312450	23.2	20.3
425714	22.8	21.1	80967	22.9	19.7	6928	22.9	16.7	152081	23.0	19.5	349735	23.1	20.8	291203	23.2	19.8
255096	22.8	19.8	98197	22.9	17.3	202874	22.9	20.9	508102	23.0	22.3	277619	23.1	19.5	246643	23.2	20.6
19150	22.8	16.7	235305	22.9	19.3	376707	22.9	17.2	226306	23.0	19.4	331321	23.1	20.2	168359	23.2	19.7
206387	22.8	19.6	260216	22.9	19.6	190529	22.9	18.6	262166	23.0	20.9	255129	23.1	19.7	106953	23.2	19.2
354664	22.8	19.7	396453	22.9	21.3	25776	22.9	19.3	179485	23.0	18.1	195349	23.1	19.0	371565	23.2	20.2
355640	22.8	20.1	178707	22.9	19.3	256719	22.9	21.2	60381	23.0	17.4	494525	23.1	20.6	432593	23.2	20.3
250747	22.8	20.4	335051	22.9	19.8	477954	22.9	20.8	362436	23.0	19.7	514632	23.1	19.8	224270	23.2	19.1
38997	22.8	18.2	354171	22.9	20.3	92039	22.9	19.4	126641	23.0	19.7	188790	23.1	19.9	428581	23.2	22.2
398952	22.8	20.4	91175	22.9	17.6	349408	22.9	20.0	233395	23.0	20.7	389027	23.1	20.5	38151	23.2	17.2
56301	22.8	18.4	221030	22.9	19.1	2942	22.9	14.9	209302	23.0	19.5	104211	23.1	19.6	318268	23.2	20.6
19291	22.8	18.2	436530	22.9	21.7	339228	22.9	20.0	170904	23.0	18.6	325000	23.1	20.7	326917	23.2	18.7
514338	22.8	20.6	127950	22.9	19.4	157883	22.9	18.8	376973	23.0	18.6	12875	23.1	17.8	166163	23.2	19.9
178118	22.8	18.0	382592	22.9	20.6	473441	22.9	20.3	116493	23.0	19.6	250989	23.1	20.1	297984	23.2	18.8
226591	22.8	19.4	141291	22.9	20.2	513954	22.9	21.1	301782	23.0	19.9	199598	23.1	19.7	347091	23.2	20.8
469947	22.8	20.2	517589	22.9	21.0	390901	22.9	21.4	21969	23.0	18.1	291212	23.2	19.1	261436	23.2	20.8
137323	22.8	18.8	348045	22.9	19.4	167557	22.9	19.7	510209	23.0	21.8	401648	23.2	20.5	227316	23.2	18.9
476776	22.8	20.9	86981	22.9	17.8	499038	22.9	21.4	86984	23.0	19.2	209090	23.2	19.5	280160	23.2	19.8
342208	22.8	20.8	430373	22.9	21.0	46717	22.9	17.5	446180	23.0	20.6	469129	23.2	18.6	250682	23.2	19.8
444308	22.8	21.5	175620	22.9	19.4	103865	22.9	18.5	108454	23.0	18.6	255207	23.2	19.9	319373	23.2	20.4
378692	22.8	20.5	362350	22.9	19.9	458493	22.9	20.2	66217	23.0	18.2	316089	23.2	19.6	180501	23.2	20.0
500214	22.8	21.1	257088	22.9	19.9	362569	22.9	20.8	22075	23.1	17.5	508628	23.2	19.8	164889	23.2	20.2
290167	22.8	19.9	425845	22.9	20.4	223357	22.9	19.0	242564	23.1	20.0	42060	23.2	17.7	244457	23.2	19.1
425536	22.8	20.7	49412	22.9	18.3	104475	22.9	19.9	361949	23.1	20.5	421004	23.2	20.7	70220	23.2	18.6
513875	22.8	20.7	44742	22.9	18.6	25545	22.9	17.9	64681	23.1	19.6	519651	23.2	21.3	128086	23.2	18.8
69665	22.8	16.7	469318	22.9	20.5	253467	22.9	20.0	287677	23.1	18.6	512434	23.2	20.3	136851	23.2	19.6
264958	22.8	20.4	363292	22.9	18.7	336315	22.9	19.6	348018	23.1	20.4	66734	23.2	18.5	494626	23.2	21.0
86173	22.8	19.0	1448	22.9	16.5	68283	22.9	18.9	362860	23.1	20.9	392031	23.2	20.2	231298	23.3	19.5
420452	22.8	20.4	172162	22.9	18.4	477917	22.9	18.1	520246	23.1	20.4	138939	23.2	19.2	217369	23.3	19.6
264979	22.8	19.0	199406	22.9	20.5	361880	22.9	21.4	8193	23.1	18.8	399720	23.2	21.1	332427	23.3	20.1
85109	22.8	18.7	337920	22.9	19.5	278072	22.9	19.7	215780	23.1	20.5	224162	23.2	20.1	6650	23.3	16.4
346902	22.8	19.8	170687	22.9	19.4	132504	22.9	19.4	364520	23.1	20.4	98598	23.2	19.9	202650	23.3	19.7
94253	22.8	19.4	117267	22.9	19.6	421928	22.9	20.6	5148	23.1	18.4	126023	23.2	19.8	480428	23.3	19.0
481269	22.8	21.7	273936	22.9	18.8	420467	22.9	20.8	259952	23.1	20.8	178691	23.2	19.0	16062	23.3	17.1
258011	22.8	20.8	228871	22.9	19.5	374789	22.9	19.8	246729	23.1	20.5	283227	23.2	19.7	134248	23.3	19.7
223335	22.8	18.8	494636	22.9	20.3	300648	22.9	20.4	220887	23.1	20.4	214146	23.2	19.9	8615	23.3	16.9
130957	22.8	19.3	383175	22.9	21.7	452560	22.9	20.3	364121	23.1	21.2	184175	23.2	19.0	479773	23.3	20.0
199182	22.8	20.6	43974	22.9	17.8	218220	22.9	19.3	177258	23.1	20.6	438787	23.2	20.7	401685	23.3	19.9
273399	22.8	20.1	120131	22.9	20.2	20840	22.9	18.4	84349	23.1	18.7	513377	23.2	21.0	431197	23.3	21.7
280310	22.8	18.0	235284	22.9	19.8	242684	22.9	19.9	50								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
103446	23.3	18.1	60174	23.4	18.0	412410	23.5	20.7	151467	23.5	20.2	397401	23.6	20.7	127235	23.7	20.2
230358	23.3	21.0	152103	23.4	19.0	136013	23.5	18.3	45802	23.6	24.4	361070	23.6	20.5	160675	23.7	19.2
20006	23.3	19.1	360939	23.4	20.7	371571	23.5	19.7	137601	23.6	20.5	65561	23.6	18.2	367488	23.7	19.1
100572	23.3	19.2	455146	23.4	22.9	67496	23.5	17.6	271762	23.6	18.9	155579	23.6	19.2	5904	23.7	17.4
367176	23.3	20.2	480653	23.4	20.3	455581	23.5	19.1	312545	23.6	21.0	203677	23.6	19.8	184807	23.7	21.1
20495	23.3	18.0	37837	23.4	18.8	253633	23.5	18.6	451570	23.6	20.1	239783	23.6	19.6	311937	23.7	19.1
33685	23.3	18.5	129985	23.4	19.0	400714	23.5	20.6	452159	23.6	20.0	472391	23.6	20.8	20511	23.7	16.5
477556	23.3	20.0	151735	23.4	19.7	11840	23.5	15.4	28963	23.6	18.2	126742	23.7	19.6	34423	23.7	18.9
446156	23.3	20.4	145078	23.4	18.5	299194	23.5	20.8	408716	23.6	20.8	236950	23.7	19.1	146094	23.7	19.7
265279	23.3	21.1	38162	23.4	17.2	254317	23.5	19.7	341110	23.6	20.8	495050	23.7	21.8	293297	23.7	21.5
106220	23.3	19.3	59733	23.4	17.9	172751	23.5	19.8	381717	23.6	19.6	223617	23.7	19.6	34738	23.7	17.4
18161	23.3	15.9	46701	23.4	18.3	296098	23.5	19.0	273298	23.6	20.6	428193	23.7	21.2	401329	23.7	21.3
22086	23.3	17.5	363701	23.4	20.6	179733	23.5	18.6	364670	23.6	19.1	323570	23.7	20.4	51010	23.7	19.3
119942	23.3	19.1	420468	23.4	20.9	42459	23.5	18.8	339303	23.6	19.2	497555	23.7	21.5	104175	23.7	19.7
364685	23.3	19.0	63727	23.4	18.5	195296	23.5	20.5	480909	23.6	20.1	386346	23.7	20.4	339275	23.7	20.5
390219	23.3	20.4	223975	23.4	20.3	511484	23.5	20.3	510053	23.6	22.1	253683	23.7	19.4	513298	23.7	20.3
428673	23.3	21.3	169025	23.4	20.0	91765	23.5	19.2	445797	23.6	19.9	510723	23.7	21.0	515994	23.7	20.8
44384	23.3	18.2	298097	23.4	19.0	445012	23.5	20.7	218153	23.6	18.9	28877	23.7	17.8	507372	23.7	20.3
504351	23.3	21.3	260076	23.4	20.9	393572	23.5	19.3	259123	23.6	19.5	478752	23.7	19.6	261520	23.7	20.0
298219	23.3	19.7	6534	23.4	17.9	175734	23.5	20.7	143725	23.6	19.4	125072	23.7	20.0	127075	23.7	20.1
269161	23.3	19.4	509381	23.4	21.3	159450	23.5	19.7	165281	23.6	20.0	313905	23.7	18.9	238175	23.7	19.3
288506	23.3	19.6	399537	23.4	18.9	168078	23.5	18.5	394171	23.6	20.4	260188	23.7	19.2	34436	23.7	18.2
154775	23.3	19.2	36254	23.4	17.7	37944	23.5	17.5	104114	23.6	19.7	354294	23.7	18.2	246526	23.7	20.9
243814	23.3	19.4	339350	23.4	20.0	396009	23.5	20.8	269402	23.6	20.6	88988	23.7	18.9	507987	23.7	20.8
479768	23.3	20.8	308639	23.4	20.6	331612	23.5	19.0	476604	23.6	20.7	288003	23.7	19.3	259759	23.7	20.7
216157	23.3	20.6	310604	23.4	19.9	438299	23.5	21.5	325888	23.6	19.4	476321	23.7	19.9	507902	23.7	20.0
91863	23.3	18.3	480458	23.4	19.4	509641	23.5	20.6	250732	23.6	19.2	290282	23.7	19.6	51033	23.7	18.4
402441	23.3	20.5	93222	23.4	18.5	386475	23.5	20.6	446233	23.6	20.5	323321	23.7	18.6	342179	23.7	17.8
476733	23.3	20.9	127811	23.4	18.5	451267	23.5	20.9	251924	23.6	19.7	513810	23.7	20.6	350192	23.8	20.6
186730	23.3	20.2	5794	23.4	16.8	200304	23.5	19.6	253474	23.6	18.9	35618	23.7	16.9	355531	23.8	20.2
510001	23.3	20.7	59684	23.4	18.0	445430	23.5	20.1	129465	23.6	19.5	473303	23.7	20.6	361778	23.8	21.6
133808	23.3	18.6	349159	23.4	19.6	34462	23.5	18.0	449417	23.6	20.9	46130	23.7	18.4	347305	23.8	20.4
512665	23.3	20.9	393385	23.4	22.4	291935	23.5	18.2	2040	23.6	16.8	441982	23.7	20.5	448425	23.8	20.9
23298	23.3	16.6	74107	23.4	17.5	402329	23.5	19.6	500802	23.6	20.0	279847	23.7	17.9	185617	23.8	18.2
275318	23.3	19.8	137472	23.4	19.3	400666	23.5	19.8	218066	23.6	19.9	486994	23.7	20.5	353873	23.8	20.5
67990	23.3	17.7	391769	23.4	19.9	355017	23.5	19.8	220653	23.6	20.0	485635	23.7	18.7	103300	23.8	19.1
152151	23.3	17.9	339209	23.4	18.9	131239	23.5	19.3	37619	23.6	18.3	295330	23.7	19.6	358834	23.8	20.0
308	23.3	11.7	183883	23.4	20.0	266576	23.5	19.5	23389	23.6	18.7	284350	23.7	19.0	360650	23.8	19.2
66008	23.3	18.2	50389	23.4	17.7	476758	23.5	19.3	475356	23.6	20.7	405415	23.7	20.3	266721	23.8	18.5
228543	23.3	18.3	75958	23.4	19.4	372360	23.5	20.1	123709	23.6	19.8	483278	23.7	20.7	105817	23.8	18.7
170657	23.3	18.8	5608	23.4	16.3	367591	23.5	20.3	440659	23.6	21.3	262503	23.7	20.7	64070	23.8	16.9
265536	23.3	19.5	507249	23.4	21.5	402214	23.5	20.9	519738	23.6	20.9	289674	23.7	19.6	392735	23.8	19.7
70747	23.3	17.6	55575	23.4	18.4	25149	23.5	18.3	312428	23.6	20.5	510305	23.7	19.4	490470	23.8	21.2
27028	23.3	15.7	139315	23.4	18.8	27602	23.5	18.6	505473	23.6	21.6	176624	23.7	19.2	254454	23.8	19.3
482357	23.3	22.2	491670	23.4	20.4	281552	23.5	18.7	243100	23.6	18.8	512117	23.7	20.2	256641	23.8	19.7
195158	23.3	20.3	484871	23.4	18.4	182950	23.5	19.3	523807	23.6	23.1	94873	23.7	19.4	225742	23.8	19.0
306742	23.3	20.5	214392	23.4	20.0	98791	23.5	18.8	19811	23.6	18.2	292878	23.7	20.3	21817	23.8	18.7
511462	23.3	20.5	22155	23.4	16.5	127226	23.5	19.4	144054	23.6	18.5	280554	23.7	20.5	355529	23.8	20.6
101104	23.3	19.0	171550	23.4	18.7	217833	23.5	19.4	463432	23.6	19.7	212605	23.7	19.4	424412	23.8	20.7
58733	23.3	17.9	168246	23.4	19.8	186534	23.5	17.9	352283	23.6	20.1	326783	23.7	20.6	383143	23.8	19.9
449395	23.3	20.8	209952	23.4	19.2	479691	23.5	20.5	76235	23.6	17.2	298158	23.7	18.9	288870	23.8	20.1
265939	23.3	19.4	250933	23.4	20.2	196296	23.5	19.4	366119	23.6	20.0	398049	23.7	20.4	102640	23.8	20.0
317775	23.3	18.7	358801	23.4	20.2	239692	23.5	19.7	33499	23.6	18.6	338011	23.7	20.3	330165	23.8	20.3
353779	23.3	19.8	485208	23.4	19.8	257674	23.5	20.0	505110	23.6	21.2	300759	23.7	20.7	360969	23.8	21.7
223406	23.3	19.6	245304	23.5	20.2	382102	23.5	20.7	514194	23.6	20.5	346591	23.7	18.7	236550	23.8	19.0
303214	23.3	20.5	347970	23.5	18.9	6851	23.5	16.9	156388	23.6	19.3	87263	23.7	18.5	14585	23.8	18.4
443604	23.3	19.9	346484	23.5	20.2	298236	23.5	20.0	406309	23.6	21.1	348323	23.7	19.6	236295	23.8	20.4
44468	23.3	17.6	111355	23.5	18.9	12557	23.5	17.3	41016	23.6	18.0	401551	23.7	20.1	127839	23.8	19.7
259747	23.3	19.3	351179	23.5	21.1	134622	23.5	19.2	191692	23.6	19.3	395060	23.7	20.8	482370	23.8	20.7
30395	23.4	18.3	32399	23.5	18.5	444318	23.5	20.4	424581	23.6	21.5	391607	23.7	20.4	71010	23.8	17.8
249344	23.4	18.9	283058	23.5	19.9	442039	23.5	19.8	210360	23.6	20.6	13356	23.7	17.9	271008	23.8	21.1
193508	23.4	20.1	256797	23.5	20.6	253528	23.5	19.9	214780	23.6	19.2	194131	23.7	20.4	253442	23.8	18.5
192478	23.4	19.8	304415	23.5	19.7	309689	23.5	21.2	476179	23.6	20.9	274976	23.7	20.2	332118	23.8	19.7
59808	23.4	18.1	370639	23.5	20.5	112276	23.5	17.1	324891	23.6	20.2	58317	23.7	18.0	392086	23.8	20.5
311922	23.4	19.8	193272	23.5	19.9	148274	23.5	20.8	368518	23.6	19.7	126570	23.7	20.0	322671	23.8	18.6
113652	23.4	18.9	218503	23.5	19.6	256604	23.5	20.5	508022	23.6	20.8	85633	23.7	23.1	99526	23.8	19.0
214909	23.4	19.4	480913	23.5	20.0	152798	23.5	20.1	42167	23.6	18.9	145337	23.7	20.1	64940	23.8	16.8
469622	23.4	19.9	430768	23.5	19.0	264229	23.5	19.8	78851	23.6	18.1	170789	23.7	20.2	442409	23.8	20.1
26553	23.4	17.6	367062	23.5	21.5	405437	23.5	2									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
210335	23.8	20.3	228124	23.9	19.5	386977	23.9	20.0	141460	24.1	19.8	171192	24.1	19.8	340429	24.2	20.1
180238	23.8	20.0	121353	23.9	19.3	240644	23.9	20.4	480249	24.1	20.5	421521	24.1	20.4	390760	24.2	20.9
351722	23.8	20.0	401730	23.9	21.1	205200	23.9	19.2	357179	24.1	20.5	172318	24.1	20.2	236502	24.2	19.7
134190	23.8	19.5	452287	23.9	20.7	20130	23.9	17.1	405835	24.1	19.8	326312	24.1	19.6	434754	24.2	19.9
505692	23.8	21.3	365677	23.9	20.7	309115	23.9	19.8	123847	24.1	20.0	444110	24.1	19.3	111985	24.2	19.3
356435	23.8	21.5	447330	23.9	20.6	478016	23.9	20.4	514051	24.1	20.2	83623	24.1	18.6	513460	24.2	21.0
432849	23.8	20.2	482434	23.9	21.7	273410	23.9	20.7	388664	24.1	20.0	94586	24.1	18.4	514760	24.2	21.8
517874	23.8	21.3	319935	23.9	19.4	329945	23.9	18.9	380729	24.1	18.4	48743	24.1	19.4	327948	24.2	20.4
145972	23.8	18.6	218802	23.9	20.7	448432	23.9	21.2	308051	24.1	20.1	472419	24.1	21.0	383298	24.2	21.3
249025	23.8	18.3	267851	23.9	20.4	475386	23.9	20.5	432831	24.1	19.7	22034	24.1	17.3	185645	24.2	18.1
130038	23.8	19.4	214114	23.9	19.8	319135	23.9	20.1	348355	24.1	20.8	266070	24.1	19.3	228257	24.2	19.1
140728	23.8	19.6	339328	23.9	17.9	327821	23.9	19.2	87882	24.1	18.6	246321	24.1	18.9	28222	24.2	17.0
279097	23.8	18.2	67157	23.9	16.6	137600	23.9	20.3	168808	24.1	18.6	426086	24.1	20.9	316035	24.2	20.9
68130	23.8	15.2	92722	23.9	18.9	154535	23.9	19.1	318344	24.1	20.1	215430	24.1	20.3	335020	24.2	19.3
295082	23.8	21.1	509478	23.9	19.7	430684	23.9	21.3	347885	24.1	17.5	223386	24.1	18.7	55031	24.2	19.0
125499	23.8	19.0	40237	23.9	19.0	452657	23.9	20.4	198280	24.1	19.0	150518	24.1	18.1	142964	24.2	17.4
244462	23.8	19.3	265222	23.9	20.1	469667	23.9	20.0	480613	24.1	20.4	44521	24.1	17.6	191642	24.2	18.6
394525	23.8	20.5	435141	23.9	21.2	198077	24.0	19.7	444109	24.1	20.8	395946	24.1	21.3	513427	24.2	21.1
195017	23.8	20.4	435177	23.9	19.4	70014	24.0	18.9	82622	24.1	18.4	233032	24.1	19.4	46021	24.2	18.6
304750	23.8	20.1	204700	23.9	19.4	482200	24.0	20.5	425020	24.1	20.8	37513	24.1	17.1	73057	24.2	18.3
517706	23.8	20.4	41765	23.9	18.1	266750	24.0	20.7	395964	24.1	20.7	232856	24.1	20.7	380721	24.2	19.4
17226	23.8	16.9	513428	23.9	21.2	204007	24.0	19.9	113080	24.1	18.9	180361	24.1	19.7	444711	24.2	20.2
515987	23.8	21.4	343861	23.9	20.1	470278	24.0	20.5	213943	24.1	20.5	294879	24.1	20.3	322411	24.2	19.6
448631	23.8	19.8	146891	23.9	18.9	389106	24.0	19.8	170155	24.1	18.8	315090	24.1	20.5	451318	24.2	19.9
204463	23.8	19.9	104305	23.9	18.4	148515	24.0	18.6	266585	24.1	19.7	494494	24.1	20.7	91968	24.2	19.3
105914	23.8	19.0	107475	23.9	18.4	476635	24.0	20.7	183367	24.1	18.3	261235	24.1	21.0	247540	24.2	19.0
102225	23.8	18.0	349883	23.9	20.2	444662	24.0	19.9	32965	24.1	18.3	137394	24.1	19.2	40989	24.2	18.8
248020	23.8	19.3	511431	23.9	19.7	164766	24.0	19.5	261991	24.1	18.7	219120	24.1	18.9	262577	24.2	20.1
221858	23.8	18.8	184311	23.9	20.1	46407	24.0	19.0	21834	24.1	17.1	92263	24.1	18.9	314617	24.2	20.3
198046	23.8	20.0	436179	23.9	21.1	173533	24.0	19.5	11482	24.1	17.7	461825	24.1	19.2	471612	24.2	21.6
90051	23.8	19.3	510517	23.9	20.4	445367	24.0	19.6	479702	24.1	20.8	84263	24.2	18.3	427782	24.2	20.8
123638	23.8	19.3	384510	23.9	20.4	333977	24.0	18.8	50621	24.1	19.0	86472	24.2	19.3	324986	24.2	20.1
452738	23.8	20.2	481270	23.9	20.9	286507	24.0	20.7	48651	24.1	19.3	415787	24.2	19.9	220325	24.2	21.1
506503	23.8	20.9	444459	23.9	20.6	31257	24.0	17.0	478949	24.1	21.0	136812	24.2	19.8	513440	24.2	19.6
221453	23.8	19.4	299727	23.9	20.3	233408	24.0	19.4	253409	24.1	19.4	24439	24.2	17.9	146266	24.2	18.6
186829	23.8	19.4	520328	23.9	21.5	41149	24.0	18.9	332907	24.1	20.4	80556	24.2	18.7	31610	24.2	16.4
284629	23.8	19.7	58461	23.9	19.3	391248	24.0	19.8	167717	24.1	19.5	151313	24.2	19.8	276973	24.3	19.4
391972	23.8	19.4	123105	23.9	18.5	84225	24.0	19.9	424505	24.1	21.8	65147	24.2	18.8	42892	24.3	18.0
240399	23.8	19.9	298141	23.9	19.4	342797	24.0	20.6	389181	24.1	20.4	36777	24.2	18.2	479575	24.3	21.2
50292	23.8	18.4	216696	23.9	19.1	40848	24.0	18.4	444397	24.1	20.6	15025	24.2	18.6	339317	24.3	20.6
312433	23.8	19.8	67176	23.9	18.6	73750	24.0	20.0	513455	24.1	21.5	116476	24.2	19.4	58010	24.3	20.1
386123	23.8	19.2	480512	23.9	20.3	254485	24.0	20.4	188974	24.1	20.5	188892	24.2	19.6	279667	24.3	20.8
9167	23.8	16.1	418085	23.9	21.6	476835	24.0	19.5	333173	24.1	19.0	316798	24.2	20.3	268745	24.3	19.1
254373	23.8	20.5	134089	23.9	18.8	224034	24.0	18.3	42077	24.1	17.5	337984	24.2	20.8	61434	24.3	17.9
294029	23.8	20.1	91776	23.9	17.8	356899	24.0	20.5	350052	24.1	20.2	395006	24.2	20.2	287965	24.3	19.4
263081	23.8	17.8	106460	23.9	18.3	655	24.0	14.0	262475	24.1	19.8	63371	24.2	18.3	347853	24.3	20.4
236231	23.8	20.5	240270	23.9	18.1	184273	24.0	19.8	171723	24.1	19.6	326608	24.2	18.5	317425	24.3	19.5
338012	23.8	20.3	167468	23.9	18.7	442436	24.0	21.0	447126	24.1	20.8	28828	24.2	18.1	86145	24.3	18.5
210349	23.8	20.0	53863	23.9	18.7	252877	24.0	20.8	218828	24.1	19.5	390908	24.2	21.3	253337	24.3	19.2
65112	23.8	19.9	509583	23.9	21.2	83168	24.0	18.8	473374	24.1	20.2	99317	24.2	18.8	97699	24.3	18.0
289001	23.8	20.6	59609	23.9	18.5	176130	24.0	19.2	318342	24.1	20.4	2238	24.2	15.7	317771	24.3	19.4
327213	23.9	19.2	490212	23.9	19.2	316466	24.0	20.3	289175	24.1	21.0	399652	24.2	18.6	477887	24.3	20.2
148005	23.9	20.1	350287	23.9	19.4	252089	24.0	20.4	103221	24.1	18.6	290786	24.2	20.4	65871	24.3	16.3
55704	23.9	18.2	403403	23.9	20.2	272596	24.0	19.8	445530	24.1	20.6	215417	24.2	19.8	8821	24.3	17.4
485226	23.9	20.9	123597	23.9	18.9	207168	24.0	20.8	446563	24.1	20.0	445805	24.2	21.0	516514	24.3	21.9
289682	23.9	19.8	246404	23.9	19.8	270225	24.0	20.3	487378	24.1	20.8	23290	24.2	17.2	257424	24.3	19.9
136727	23.9	19.5	215818	23.9	19.6	342713	24.0	21.5	59954	24.1	18.8	126396	24.2	19.0	67608	24.3	17.7
180269	23.9	19.4	347059	23.9	19.1	144375	24.0	19.0	204478	24.1	19.5	73086	24.2	19.0	64883	24.3	19.4
127269	23.9	19.7	206606	23.9	21.2	19770	24.0	16.3	171903	24.1	19.6	293051	24.2	19.6	514277	24.3	20.0
478753	23.9	19.6	246480	23.9	19.7	374857	24.0	21.3	258896	24.1	19.6	164694	24.2	19.4	155201	24.3	21.0
438921	23.9	20.6	71054	23.9	19.1	365054	24.0	21.2	169455	24.1	19.6	358774	24.2	21.1	390511	24.3	20.0
367285	23.9	19.7	37209	23.9	18.8	514217	24.0	20.5	481611	24.1	20.6	511486	24.2	21.3	167339	24.3	18.9
129700	23.9	19.3	434117	23.9	17.7	45025	24.0	18.6	24861	24.1	18.4	189955	24.2	19.2	430006	24.3	20.6
185796	23.9	19.2	298194	23.9	20.7	506858	24.0	22.0	213558	24.1	19.6	390766	24.2	20.7	474489	24.3	21.1
62566	23.9	18.7	505112	23.9	21.8	244863	24.0	19.8	71425	24.1	18.2	448043	24.2	21.2	243473	24.3	20.3
175687	23.9	19.8	84227	23.9	18.7	418236	24.0	21.7	469978	24.1	19.6	10906	24.2	18.0	189270	24.3	19.1
328106	23.9	19.8	163350	23.9	17.2	428519	24.0	20.5	150041	24.1	19.0	347269	24.2	18.4	277234	24.3	20.4
407633	23.9	20.0	391608	23.9	20.5	125312	24.0	19.6	511189	24.1	21.0	354701	24.2	20.1	216130	24.3	20.0
101283	23.9	19.6	285206	23.9	20.8	447682	24.0										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
292907	24.3	19.8	508380	24.4	20.4	402380	24.5	20.7	157783	24.5	20.0	128655	24.6	20.0	49190	24.7	19.1
348538	24.3	21.6	264175	24.4	19.2	254186	24.5	19.5	383068	24.5	18.6	19186	24.6	16.1	472079	24.7	20.8
171431	24.3	19.5	21489	24.4	18.8	342083	24.5	20.4	469016	24.5	20.7	382525	24.6	19.8	507918	24.7	21.4
178602	24.3	20.1	283323	24.4	20.4	260503	24.5	19.7	281701	24.5	18.6	345007	24.6	20.3	504388	24.7	20.4
310020	24.3	20.2	483461	24.4	19.9	238591	24.5	19.7	404422	24.5	20.1	273593	24.6	21.0	127600	24.7	17.4
444280	24.3	21.4	126330	24.4	19.6	106962	24.5	17.8	225243	24.5	19.7	405476	24.6	21.3	324241	24.7	19.6
266253	24.3	20.3	481675	24.4	19.5	435164	24.5	18.4	511385	24.5	20.9	183082	24.6	19.1	347893	24.7	18.9
435598	24.3	19.5	404102	24.4	20.1	121809	24.5	19.5	71463	24.5	18.5	479484	24.6	20.9	505123	24.7	21.1
360664	24.3	20.5	517773	24.4	20.5	4541	24.5	15.9	316266	24.5	20.1	225746	24.6	18.7	180364	24.7	19.8
178509	24.3	19.5	261816	24.4	20.4	315123	24.5	20.0	397433	24.5	20.7	395374	24.6	20.1	267264	24.7	19.4
431794	24.3	19.4	90362	24.4	19.0	118244	24.5	18.5	394972	24.5	21.0	156056	24.6	18.8	160395	24.7	20.0
320306	24.3	19.0	39072	24.4	16.9	441892	24.5	21.0	145436	24.5	19.7	376062	24.6	20.2	280096	24.7	19.9
339271	24.3	20.2	213839	24.4	18.9	336726	24.5	20.2	511588	24.6	21.2	523137	24.6	20.1	263013	24.7	20.7
169958	24.3	19.5	211733	24.4	20.2	94327	24.5	18.8	514293	24.6	20.7	337269	24.6	19.1	104532	24.7	20.4
27741	24.3	16.6	196160	24.4	19.6	476832	24.5	21.1	219316	24.6	19.9	315039	24.6	20.4	122702	24.7	18.5
84583	24.3	19.1	487386	24.4	20.5	186928	24.5	19.6	517857	24.6	21.0	13178	24.6	18.8	134952	24.7	19.1
27875	24.3	18.6	285692	24.4	18.5	31398	24.5	17.5	3064	24.6	17.2	72304	24.6	18.6	105634	24.7	18.1
263186	24.3	20.0	364511	24.4	21.4	339295	24.5	19.5	510212	24.6	21.7	355718	24.6	20.0	7137	24.7	16.9
209761	24.3	20.5	210484	24.4	20.2	447293	24.5	21.0	58521	24.6	18.3	294796	24.6	19.9	481189	24.7	20.2
291916	24.3	18.8	507805	24.4	20.5	92926	24.5	19.2	278341	24.6	19.8	101233	24.6	18.8	69963	24.7	18.1
290359	24.3	20.3	447125	24.4	21.2	12888	24.5	17.9	164730	24.6	18.3	260523	24.6	20.0	485200	24.7	20.4
187461	24.3	19.5	256600	24.4	19.5	79744	24.5	17.8	28542	24.6	17.8	216878	24.6	18.4	23457	24.7	18.4
92133	24.3	18.7	353925	24.4	18.6	121023	24.5	17.8	435274	24.6	19.0	306880	24.6	21.6	390326	24.7	21.4
43271	24.3	17.4	77555	24.4	19.2	506496	24.5	21.2	388760	24.6	17.8	355224	24.6	19.7	40048	24.7	18.1
95616	24.3	19.8	371881	24.4	19.7	423364	24.5	20.0	86886	24.6	18.1	239952	24.6	20.1	111963	24.7	18.3
320551	24.3	20.3	3492	24.4	15.0	266266	24.5	20.8	505111	24.6	21.1	432711	24.6	21.6	10380	24.7	17.5
137820	24.3	20.3	394226	24.4	20.2	134937	24.5	18.1	221493	24.6	20.2	254166	24.7	19.0	170888	24.7	18.2
142766	24.3	19.8	62903	24.4	18.7	350145	24.5	20.2	254194	24.6	19.3	433380	24.7	21.1	440003	24.7	20.5
343959	24.3	20.7	61965	24.4	18.3	272556	24.5	19.9	108717	24.6	18.3	293428	24.7	19.9	278232	24.7	21.5
401599	24.3	19.4	473169	24.4	21.1	115386	24.5	19.6	252809	24.6	19.5	124563	24.7	18.8	70435	24.7	17.3
151698	24.3	18.7	176762	24.4	19.6	41153	24.5	19.1	384485	24.6	20.8	108107	24.7	19.1	188511	24.7	19.4
478976	24.3	20.1	218430	24.4	19.7	436274	24.5	21.5	20417	24.6	17.8	446230	24.7	20.3	136994	24.7	17.9
374264	24.3	20.4	139930	24.4	19.1	474455	24.5	19.3	131222	24.6	20.0	181915	24.7	19.4	3192	24.7	17.4
136907	24.3	18.2	73087	24.4	17.4	511494	24.5	20.6	520273	24.6	19.7	2796	24.7	15.8	34560	24.8	17.2
16139	24.3	17.8	394620	24.4	20.2	342037	24.5	19.5	207039	24.6	19.0	432642	24.7	22.0	61193	24.8	19.0
445393	24.3	20.8	124557	24.4	19.5	14973	24.5	17.6	478985	24.6	21.4	31126	24.7	16.4	285407	24.8	21.2
98012	24.3	18.5	80775	24.4	19.0	94094	24.5	19.0	453191	24.6	20.0	300520	24.7	20.5	356404	24.8	20.8
432288	24.3	20.5	452236	24.4	20.0	193667	24.5	19.8	337155	24.6	20.9	57045	24.7	18.1	471607	24.8	20.4
509244	24.3	20.2	138	24.4	10.8	349234	24.5	19.7	510021	24.6	21.6	476614	24.7	20.6	46852	24.8	16.9
518636	24.3	19.9	521372	24.4	20.6	250845	24.5	20.7	516178	24.6	21.5	186549	24.7	19.6	447807	24.8	21.5
154601	24.3	18.8	210117	24.4	19.4	48756	24.5	17.1	46520	24.6	18.5	355213	24.7	20.3	433411	24.8	21.0
504928	24.3	22.3	225858	24.4	20.0	58915	24.5	17.0	209858	24.6	18.9	477205	24.7	21.4	93297	24.8	18.2
37459	24.3	16.9	295201	24.4	20.7	467723	24.5	21.3	200401	24.6	18.4	33102	24.7	17.8	355682	24.8	20.0
509618	24.3	21.5	353456	24.4	19.8	117810	24.5	18.9	278946	24.6	19.2	64952	24.7	18.0	268273	24.8	19.0
123297	24.3	19.2	337994	24.4	20.7	349821	24.5	20.4	450516	24.6	20.8	275877	24.7	20.3	509782	24.8	21.3
102578	24.3	18.8	115462	24.4	20.5	335101	24.5	20.7	40345	24.6	17.3	91210	24.7	18.7	476127	24.8	21.5
220867	24.3	20.7	79766	24.4	17.4	500108	24.5	20.7	13456	24.6	18.2	213511	24.7	19.3	221921	24.8	19.9
332020	24.3	19.7	384324	24.4	20.6	480503	24.5	20.2	93292	24.6	18.7	407244	24.7	20.5	52342	24.8	17.9
348133	24.3	20.6	250582	24.4	20.2	193616	24.5	19.3	81316	24.6	19.3	324111	24.7	20.8	280046	24.8	20.2
25477	24.3	19.2	421008	24.4	20.3	401297	24.5	20.3	510886	24.6	20.1	322323	24.7	18.9	382139	24.8	20.6
55449	24.3	17.6	283163	24.4	20.1	515441	24.5	19.6	489398	24.6	21.1	273957	24.7	20.3	101242	24.8	18.1
14952	24.3	16.9	192003	24.4	19.5	288415	24.5	19.3	483296	24.6	20.9	220401	24.7	17.8	499514	24.8	21.2
250059	24.3	19.7	55010	24.4	18.6	475323	24.5	21.1	95200	24.6	19.1	313969	24.7	20.6	520531	24.8	20.2
185201	24.3	20.3	183486	24.4	19.3	28177	24.5	17.8	167814	24.6	19.6	511480	24.7	20.4	237557	24.8	20.1
431425	24.3	18.7	40055	24.4	16.7	127468	24.5	19.0	449323	24.6	20.0	203104	24.7	18.7	250063	24.8	20.7
20496	24.3	17.9	146263	24.4	19.1	480040	24.5	21.4	299845	24.6	20.4	204506	24.7	19.8	511500	24.8	20.8
188415	24.3	20.7	304567	24.4	20.2	452535	24.5	20.4	20834	24.6	18.2	509406	24.7	21.3	388911	24.8	21.7
433201	24.3	20.3	419847	24.4	20.1	260385	24.5	19.9	278395	24.6	18.7	370680	24.7	21.0	339395	24.8	20.6
24307	24.3	18.3	486155	24.4	20.7	519280	24.5	20.8	201311	24.6	19.4	265028	24.7	18.5	134597	24.8	18.0
95480	24.4	19.5	42479	24.4	16.5	337294	24.5	19.6	458588	24.6	20.5	68426	24.7	19.0	226506	24.8	20.0
513386	24.4	21.4	511180	24.4	21.4	114400	24.5	17.3	307199	24.6	20.7	306291	24.7	19.8	224246	24.8	18.4
171050	24.4	19.5	438620	24.4	20.1	101336	24.5	18.7	136353	24.6	19.3	195299	24.7	20.3	392037	24.8	20.7
287388	24.4	18.4	509063	24.4	20.2	268483	24.5	20.1	261079	24.6	20.1	204931	24.7	19.4	187929	24.8	19.1
57971	24.4	17.5	508021	24.4	21.0	263547	24.5	21.0	398961	24.6	19.0	485796	24.7	21.7	374790	24.8	19.7
52403	24.4	18.5	561	24.4	16.1	444235	24.5	21.5	24297	24.6	17.7	12569	24.7	16.5	213483	24.8	19.7
413715	24.4	21.1	23580	24.4	19.4	10638	24.5	17.2	323739	24.6	19.3	68934	24.7	19.2	266228	24.8	21.1
168980	24.4	20.2	210309	24.4	19.3	193565	24.5	19.7	43251	24.6	17.5	423531	24.7	19.8	109147	24.8	18.3
400868	24.4	19.6	300653	24.4	20.8	315890	24.5	20.1	256899	24.6	19.8	98047	24.7	17.9	193602	24.8	19.6
51819	24.4	19.0	353092	24.4	20.3	478238	24.5	20.5	4								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
296069	24.8	20.5	53423	24.9	17.3	263783	24.9	20.8	169656	25.1	19.6	164504	25.2	19.3	59988	25.2	17.0
33123	24.8	16.0	130317	24.9	19.2	157431	24.9	20.0	295991	25.1	20.0	185586	25.2	20.8	36057	25.2	16.9
522619	24.8	20.6	132490	24.9	20.1	367720	24.9	19.4	424567	25.1	21.4	373458	25.2	21.7	62278	25.2	19.3
296368	24.8	20.1	195585	24.9	19.2	89866	24.9	19.6	420877	25.1	19.2	12917	25.2	18.4	465634	25.2	20.9
318573	24.8	21.1	120554	24.9	18.7	483867	24.9	21.0	60056	25.1	18.2	515252	25.2	21.0	518742	25.2	20.4
517890	24.8	21.2	292886	24.9	20.8	91341	24.9	18.3	195431	25.1	20.8	438847	25.2	20.3	34117	25.2	18.4
153700	24.8	19.0	513685	24.9	20.5	424936	24.9	20.2	478026	25.1	19.8	389301	25.2	20.8	60859	25.2	16.7
24734	24.8	18.5	77180	24.9	17.0	142088	24.9	20.4	45191	25.1	18.6	389725	25.2	19.7	271432	25.2	20.0
293987	24.8	21.1	25996	24.9	16.9	344105	24.9	19.3	39196	25.1	17.8	513145	25.2	22.3	288687	25.2	18.9
316473	24.8	20.8	358425	24.9	21.3	135908	24.9	19.2	146719	25.1	19.7	25263	25.2	18.3	344736	25.2	19.3
91075	24.8	18.9	361505	24.9	21.1	107531	24.9	19.6	26320	25.1	18.2	255992	25.2	20.2	111584	25.2	19.5
313592	24.8	18.8	443070	24.9	21.1	441908	24.9	20.9	509147	25.1	22.2	435735	25.2	20.1	510754	25.2	21.8
97907	24.8	18.0	518272	24.9	21.1	352273	24.9	19.7	298723	25.1	21.1	304436	25.2	21.6	151286	25.2	19.5
330251	24.8	19.9	1001	24.9	14.1	358932	24.9	19.7	514930	25.1	20.4	14744	25.2	16.8	291996	25.2	19.3
265288	24.8	21.1	1626	24.9	14.4	434699	24.9	20.7	252169	25.1	20.3	135611	25.2	19.3	407471	25.2	19.9
214679	24.8	20.6	260691	24.9	19.7	284626	24.9	20.1	87978	25.1	18.3	54891	25.2	16.8	332313	25.2	20.6
521475	24.8	20.5	90216	24.9	18.1	523568	24.9	21.4	202590	25.1	19.9	494546	25.2	21.1	311989	25.2	20.6
465293	24.8	21.5	68210	24.9	18.9	154197	24.9	19.1	113444	25.1	19.1	61903	25.2	18.7	174259	25.2	18.8
17756	24.8	16.9	343349	24.9	20.5	523090	24.9	20.7	34053	25.1	17.9	214647	25.2	19.9	186273	25.2	19.6
275547	24.8	18.5	449026	24.9	20.7	342348	24.9	19.6	479372	25.1	20.6	72312	25.2	18.9	428584	25.2	21.2
261782	24.8	20.4	514566	24.9	21.9	342233	24.9	19.6	399160	25.1	21.5	257976	25.2	20.8	209867	25.2	19.8
224080	24.8	19.3	181227	24.9	19.9	35334	24.9	18.4	178218	25.1	19.8	516393	25.2	19.9	53803	25.2	18.6
206407	24.8	19.8	17935	24.9	17.0	152055	24.9	19.2	301199	25.1	19.4	424594	25.2	20.7	435672	25.3	20.0
93763	24.8	18.7	199378	24.9	19.5	26079	24.9	18.6	122545	25.1	19.0	444265	25.2	20.4	344973	25.3	20.7
71124	24.8	17.5	38613	24.9	17.6	485780	25.0	19.9	808617	25.1	19.9	160550	25.2	18.2	236114	25.3	19.2
252178	24.8	20.4	290872	24.9	20.7	38905	25.0	18.4	389519	25.1	20.7	209406	25.2	19.4	143182	25.3	19.6
60664	24.8	18.3	511255	24.9	20.9	210647	25.0	20.5	368648	25.1	20.3	390131	25.2	20.2	202143	25.3	20.8
300580	24.8	20.0	330060	24.9	18.3	90890	25.0	18.1	7767	25.1	16.3	104266	25.2	19.0	90705	25.3	19.5
112009	24.8	18.4	412538	24.9	19.7	337168	25.0	19.3	200517	25.1	20.3	283208	25.2	20.2	396712	25.3	20.4
28725	24.8	18.3	95918	24.9	19.2	184459	25.0	18.7	121899	25.1	19.4	368110	25.2	20.3	172739	25.3	19.2
172180	24.8	18.9	33124	24.9	16.1	247158	25.0	18.5	311456	25.1	20.1	12119	25.2	17.3	118398	25.3	18.6
299699	24.8	19.6	68134	24.9	16.7	114422	25.0	19.3	451609	25.1	21.1	73872	25.2	19.9	295983	25.3	20.1
148062	24.8	19.7	285838	24.9	21.6	512931	25.0	20.1	143891	25.1	20.0	435781	25.2	19.0	266247	25.3	19.2
418183	24.8	20.4	101347	24.9	18.6	261969	25.0	18.8	296942	25.1	20.9	42197	25.2	18.2	91748	25.3	19.0
93407	24.8	17.9	352889	24.9	19.8	149288	25.0	20.2	174975	25.1	20.3	221957	25.2	20.8	344107	25.3	19.4
445017	24.8	20.2	316960	24.9	19.1	97237	25.0	19.4	490094	25.1	20.9	398433	25.2	20.6	331705	25.3	19.3
135961	24.8	19.4	522929	24.9	20.7	490785	25.0	21.3	63802	25.1	19.0	294876	25.2	21.3	378155	25.3	20.0
428252	24.8	22.0	81420	24.9	19.5	107197	25.0	20.0	137330	25.1	19.5	218128	25.2	19.6	306270	25.3	20.4
481233	24.8	21.4	330601	24.9	20.7	218977	25.0	20.6	510944	25.1	21.4	260565	25.2	19.9	346660	25.3	19.4
136207	24.8	17.8	381564	24.9	21.5	267292	25.0	19.5	16624	25.1	16.9	337977	25.2	19.3	436130	25.3	21.9
96053	24.8	18.6	145624	24.9	19.7	63232	25.0	19.1	34688	25.1	17.2	245909	25.2	19.6	188514	25.3	19.4
479309	24.8	21.8	116413	24.9	19.5	239200	25.0	19.4	22999	25.1	18.1	361533	25.2	19.7	67836	25.3	17.5
114749	24.8	18.6	480707	24.9	20.4	266274	25.0	20.1	512940	25.1	20.4	32875	25.2	19.5	144237	25.3	17.5
485227	24.8	20.3	467471	24.9	19.1	319071	25.0	20.6	29375	25.1	19.1	513180	25.2	20.5	342854	25.3	20.1
398783	24.8	21.3	148510	24.9	17.7	506827	25.0	21.3	92055	25.1	19.3	508877	25.2	22.2	266655	25.3	20.0
449898	24.8	20.3	266221	24.9	18.8	450150	25.0	20.0	374820	25.1	21.0	318556	25.2	20.6	33199	25.3	18.6
392935	24.8	21.5	45448	24.9	16.8	231408	25.0	19.8	507254	25.1	21.1	280565	25.2	19.9	309061	25.3	19.8
184249	24.8	19.0	143838	24.9	19.3	22412	25.0	15.6	69653	25.1	18.0	186711	25.2	20.4	348755	25.3	18.9
420369	24.8	21.3	244435	24.9	20.1	44287	25.0	17.1	153585	25.1	20.2	220175	25.2	20.7	263668	25.3	21.2
7773	24.8	16.1	320249	24.9	20.5	123607	25.0	20.2	6774	25.1	17.5	193549	25.2	19.3	170304	25.3	19.8
512316	24.8	20.6	98221	24.9	19.6	151504	25.0	18.8	444396	25.1	20.0	197860	25.2	18.8	40043	25.3	18.7
271021	24.8	20.5	128996	24.9	19.2	172833	25.0	20.1	257193	25.1	20.6	347998	25.2	18.2	482293	25.3	20.0
434116	24.8	18.4	483948	24.9	21.5	161856	25.0	20.2	63030	25.1	18.3	106810	25.2	17.0	476762	25.3	20.7
42712	24.8	18.4	145702	24.9	19.3	344099	25.0	19.9	43202	25.1	17.7	511249	25.2	21.6	387948	25.3	21.0
69624	24.8	19.0	451372	24.9	20.7	262267	25.0	20.4	507279	25.1	21.7	365285	25.2	19.5	188347	25.3	19.1
443517	24.8	20.6	480157	24.9	19.7	63230	25.0	19.4	116141	25.1	19.2	137450	25.2	18.3	299143	25.3	20.6
304342	24.9	20.9	427995	24.9	20.0	373172	25.0	20.9	287477	25.1	20.5	167155	25.2	19.2	140602	25.3	20.2
185623	24.9	20.6	280054	24.9	20.1	164554	25.0	20.1	277468	25.1	20.5	316018	25.2	20.6	132553	25.3	20.0
510270	24.9	21.5	141464	24.9	19.7	4631	25.0	16.1	481386	25.1	20.3	469623	25.2	19.9	513344	25.3	21.1
439729	24.9	21.0	431974	24.9	20.3	451966	25.0	20.2	381112	25.1	20.7	455019	25.2	19.9	381124	25.3	21.8
237821	24.9	20.8	92105	24.9	18.7	240960	25.0	21.1	365619	25.1	21.2	389018	25.2	20.0	186945	25.3	18.8
322140	24.9	18.9	207104	24.9	19.7	62473	25.0	18.6	347021	25.1	21.1	92749	25.2	19.0	8731	25.3	17.1
339263	24.9	19.3	472172	24.9	20.6	442731	25.0	20.4	32147	25.1	16.8	243302	25.2	19.4	73049	25.3	18.6
140241	24.9	19.0	242555	24.9	20.6	215109	25.0	19.8	326218	25.1	20.2	477512	25.2	21.0	78582	25.3	19.6
114147	24.9	19.3	483992	24.9	20.8	512822	25.0	20.5	158078	25.1	18.5	166037	25.2	19.6	250767	25.3	19.7
106240	24.9	19.4	128330	24.9	17.6	151297	25.0	19.8	121418	25.1	19.4	46562	25.2	16.6	387966	25.3	20.8
169457	24.9	19.5	244312	24.9	21.3	255396	25.0	21.4	514385	25.1	19.9	329737	25.2	19.7	137799	25.3	17.8
476315	24.9	20.2	88246	24.9	19.1	373702	25.0	19.8	320045	25.1	19.7	71719	25.2	18.8	357305	25.3	20.3
255548	24.9	19.6	86289	24.9	18.3	296527	25.0	18.9									



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
444941	25.3	20.3	244389	25.4	18.1	206943	25.5	18.5	27559	25.6	18.3	255082	25.6	20.2	442527	25.7	20.5
364508	25.3	21.7	132424	25.4	17.3	93995	25.5	17.9	258827	25.6	19.4	313933	25.6	19.6	252726	25.7	20.8
211773	25.3	20.0	451178	25.4	21.7	184841	25.5	19.0	69732	25.6	16.7	424108	25.6	21.5	182780	25.7	19.7
427522	25.3	20.5	272220	25.4	19.9	474637	25.5	20.6	519713	25.6	20.4	431326	25.6	21.5	413788	25.7	20.5
391514	25.3	20.5	348080	25.4	21.0	56142	25.5	18.2	185251	25.6	20.9	353526	25.6	19.9	468788	25.7	20.7
479136	25.3	21.3	131067	25.4	19.7	158021	25.5	19.3	50762	25.6	18.6	246408	25.6	20.5	268207	25.7	20.3
205054	25.3	19.1	131721	25.4	17.2	148471	25.5	20.6	290574	25.6	21.0	397020	25.6	20.0	168754	25.7	18.1
50700	25.3	19.4	481495	25.4	20.6	243471	25.5	19.9	471264	25.6	19.4	393588	25.6	20.6	202752	25.7	18.4
346716	25.3	21.5	95630	25.4	19.0	37813	25.5	18.1	381785	25.6	20.6	172310	25.7	19.7	13301	25.7	17.7
446235	25.3	19.8	143245	25.4	19.4	128794	25.5	19.8	280607	25.6	19.1	219099	25.7	19.9	147194	25.7	18.8
355538	25.3	20.3	503717	25.4	21.0	255048	25.5	20.2	454940	25.6	21.4	91213	25.7	18.2	453451	25.7	20.6
478523	25.3	20.8	305385	25.4	20.1	257992	25.5	20.8	215409	25.6	20.1	6415	25.7	17.2	266239	25.7	20.6
131229	25.3	19.5	1398	25.4	14.3	511023	25.5	20.7	314438	25.6	19.9	304617	25.7	19.5	261828	25.7	21.0
99125	25.3	20.3	65058	25.4	18.7	342726	25.5	19.9	135563	25.6	19.1	518204	25.7	20.1	162833	25.7	19.2
299703	25.3	19.7	300816	25.4	20.2	235328	25.5	19.2	404430	25.6	20.6	97489	25.7	19.3	261765	25.7	20.4
79842	25.3	18.7	406986	25.4	20.5	373142	25.5	20.9	356417	25.6	21.1	76238	25.7	18.7	316624	25.7	19.9
339163	25.3	18.6	455149	25.4	23.7	470691	25.5	21.9	260373	25.6	19.5	306207	25.7	19.0	9433	25.7	17.2
215354	25.3	19.6	107301	25.4	18.0	93792	25.5	19.8	237756	25.6	19.7	344769	25.7	19.7	68250	25.7	17.6
56863	25.3	18.2	69618	25.4	18.6	489977	25.5	20.1	36401	25.6	16.5	365286	25.7	20.1	314581	25.7	20.9
386812	25.3	20.6	446217	25.4	20.5	63785	25.5	18.8	252165	25.6	20.6	135624	25.7	19.0	65043	25.7	19.5
91589	25.3	19.0	349918	25.4	20.7	230679	25.5	20.8	453664	25.6	20.9	475962	25.7	21.3	78325	25.7	17.8
353401	25.3	20.0	128982	25.4	20.3	126242	25.5	20.0	249764	25.6	18.8	399027	25.7	20.8	437052	25.7	19.6
515271	25.3	20.4	193544	25.4	20.2	330565	25.5	21.3	149775	25.6	19.7	32318	25.7	18.4	219911	25.7	18.9
321999	25.3	20.0	8924	25.4	17.5	361845	25.5	21.1	339225	25.6	19.3	16067	25.7	17.9	169818	25.7	19.3
423158	25.3	21.6	350132	25.4	20.8	365482	25.5	20.6	61827	25.6	18.4	516477	25.7	21.2	448078	25.8	21.1
99736	25.3	19.2	481383	25.4	19.2	68245	25.5	19.3	144574	25.6	20.3	24282	25.7	17.2	260289	25.8	20.2
376102	25.3	20.6	156989	25.4	17.1	371450	25.5	20.5	359520	25.6	19.5	204187	25.7	20.5	204580	25.8	20.0
218792	25.3	19.6	51404	25.4	18.8	348051	25.5	18.5	376408	25.6	20.4	225273	25.7	18.7	128835	25.8	19.3
165972	25.3	19.0	144331	25.4	19.4	114843	25.5	18.7	504895	25.6	21.3	512708	25.7	20.2	310537	25.8	20.4
323316	25.3	19.6	206585	25.4	20.1	513232	25.5	22.5	241843	25.6	19.7	479851	25.7	21.5	42048	25.8	19.2
231883	25.3	20.4	9858	25.4	16.8	315126	25.5	19.6	364517	25.6	21.6	187706	25.7	20.7	127065	25.8	18.7
481484	25.3	21.7	220547	25.4	18.7	405300	25.5	18.0	433815	25.6	19.7	255363	25.7	20.1	435004	25.8	21.2
403677	25.3	21.3	156643	25.4	18.8	129114	25.5	19.4	245519	25.6	19.2	440194	25.7	20.6	141177	25.8	20.0
390891	25.3	20.6	198045	25.4	20.5	54766	25.5	17.4	474652	25.6	21.0	435622	25.7	20.8	264905	25.8	19.0
76641	25.3	19.4	342140	25.4	20.7	346556	25.5	18.6	79647	25.6	19.3	194995	25.7	20.3	513103	25.8	20.5
96049	25.3	18.5	491731	25.4	19.5	16994	25.5	17.7	178480	25.6	18.8	313119	25.7	20.7	224038	25.8	19.6
310574	25.3	20.0	23650	25.4	19.2	304537	25.5	20.0	15776	25.6	16.7	480169	25.7	20.5	332057	25.8	19.0
392126	25.3	19.8	361951	25.4	20.1	13841	25.5	18.2	74734	25.6	17.7	298173	25.7	20.5	283870	25.8	20.1
476308	25.3	20.5	428720	25.4	20.9	123252	25.5	19.0	427677	25.6	20.5	450091	25.7	19.9	397084	25.8	20.8
183923	25.3	20.7	255308	25.4	21.4	439626	25.5	20.0	95456	25.6	18.6	276908	25.7	19.3	301413	25.8	20.4
175140	25.3	18.9	211412	25.4	19.1	317444	25.5	19.6	439495	25.6	21.2	481474	25.7	20.7	326811	25.8	20.6
157611	25.3	20.2	228632	25.4	19.8	216466	25.5	19.5	96260	25.6	19.3	295805	25.7	21.1	350433	25.8	19.4
238541	25.4	20.5	10001	25.4	16.6	17789	25.5	17.5	189410	25.6	18.1	391176	25.7	20.5	233396	25.8	20.5
368865	25.4	19.1	5113	25.4	17.2	123593	25.5	19.7	369749	25.6	18.8	209645	25.7	18.0	183783	25.8	20.4
92067	25.4	19.7	60152	25.5	17.9	127094	25.5	18.2	297024	25.6	20.0	348320	25.7	19.9	57916	25.8	18.3
55671	25.4	18.5	355084	25.5	21.0	394470	25.5	20.5	92941	25.6	18.9	262934	25.7	20.8	390811	25.8	20.5
257755	25.4	20.4	449954	25.5	20.0	498106	25.5	20.8	275809	25.6	21.8	147955	25.7	17.3	403417	25.8	20.4
241416	25.4	20.3	261643	25.5	21.3	478052	25.5	19.5	314550	25.6	20.9	446250	25.7	21.2	367742	25.8	18.5
288856	25.4	19.4	387010	25.5	18.9	257066	25.5	19.7	41249	25.6	18.0	471664	25.7	20.9	5738	25.8	20.4
350439	25.4	20.2	258777	25.5	20.0	327629	25.5	20.2	448598	25.6	21.9	166930	25.7	18.3	132682	25.8	17.5
119537	25.4	19.1	506234	25.5	19.9	378210	25.5	20.5	328089	25.6	20.9	512183	25.7	20.6	136852	25.8	19.6
38585	25.4	19.4	47051	25.5	18.7	271710	25.5	19.2	344998	25.6	20.7	241404	25.7	21.3	294267	25.8	19.9
289059	25.4	20.6	250964	25.5	19.7	13258	25.5	17.1	109567	25.6	17.6	120587	25.7	18.8	295135	25.8	19.8
208363	25.4	19.3	75127	25.5	18.0	389564	25.5	20.4	312791	25.6	20.9	352481	25.7	19.9	21776	25.8	18.1
385832	25.4	20.8	187627	25.5	20.1	35082	25.5	17.1	369041	25.6	20.6	318572	25.7	19.9	313025	25.8	20.7
449333	25.4	20.2	209968	25.5	20.3	435143	25.5	21.1	507191	25.6	20.2	132531	25.7	18.7	281111	25.8	20.7
159701	25.4	19.0	199241	25.5	19.5	195316	25.5	20.0	488061	25.6	20.0	363695	25.7	21.1	15539	25.8	17.7
153268	25.4	20.4	479660	25.5	20.9	346996	25.5	19.7	383197	25.6	20.8	44040	25.7	18.3	403953	25.8	20.4
223965	25.4	18.7	2184	25.5	15.8	343609	25.5	20.9	353189	25.6	19.9	387834	25.7	19.7	261998	25.8	19.5
105791	25.4	18.6	28086	25.5	17.0	332122	25.5	19.5	254355	25.6	20.4	311422	25.7	18.9	325357	25.8	20.0
95704	25.4	19.2	511030	25.5	19.9	36882	25.5	18.1	464991	25.6	21.1	452188	25.7	20.3	92193	25.8	18.6
178061	25.4	18.2	264114	25.5	20.3	238609	25.5	19.9	210536	25.6	19.7	246133	25.7	19.2	219142	25.8	19.8
507839	25.4	19.8	373223	25.5	20.8	58891	25.5	19.3	120843	25.6	19.2	482785	25.7	21.1	7853	25.8	18.4
274841	25.4	18.2	40233	25.5	17.7	9093	25.5	16.4	146878	25.6	19.7	431431	25.7	19.6	281225	25.8	21.2
439093	25.4	20.5	479853	25.5	21.8	329979	25.5	21.1	369522	25.6	19.9	223337	25.7	19.2	369296	25.8	23.5
197588	25.4	20.9	485291	25.5	21.2	320342	25.5	20.5	400871	25.6	19.0	76721	25.7	18.0	198335	25.8	18.0
457208	25.4	19.2	427494	25.5	18.4	139351	25.5	17.6	105966	25.6	18.8	308643	25.7	20.7	505717	25.8	21.3
481455	25.4	20.0	254410	25.5	19.5	472770	25.5	20.2	449625	25.6	20.1	164406	25.7	18.7	44191	25.8	17.6
58918	25.4	18.8	262141	25.5	20.0	149083	25.5										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
48798	25.8	17.1	145466	25.9	19.9	29387	25.9	18.3	212485	26.1	19.2	206686	26.1	19.7	402148	26.2	19.9
432667	25.8	21.5	55664	25.9	19.4	523810	25.9	22.5	137965	26.1	20.1	448648	26.1	20.3	104344	26.2	20.1
13407	25.8	18.1	482989	25.9	20.1	472170	25.9	20.9	271571	26.1	18.7	327222	26.1	19.2	310106	26.2	20.2
250808	25.8	20.2	514881	25.9	20.7	97436	25.9	18.8	108692	26.1	17.9	334438	26.1	20.8	169473	26.2	19.2
70490	25.8	18.6	149177	25.9	19.1	350012	25.9	20.1	80011	26.1	18.9	69381	26.2	19.9	386109	26.2	20.5
103620	25.8	19.9	264704	25.9	19.4	394630	25.9	20.4	225741	26.1	19.3	142822	26.2	20.0	510065	26.2	20.4
260179	25.8	18.7	171716	25.9	18.9	175224	25.9	20.3	365229	26.1	20.7	401850	26.2	20.3	476995	26.2	20.0
177464	25.8	20.3	485230	25.9	20.2	175380	25.9	18.1	63251	26.1	19.6	177992	26.2	19.3	507214	26.2	20.4
115121	25.8	19.0	72327	25.9	18.5	259121	25.9	20.5	177447	26.1	19.9	368886	26.2	18.6	165171	26.2	18.2
67302	25.8	18.1	251843	25.9	20.4	476916	25.9	21.2	331722	26.1	19.8	91761	26.2	18.8	510954	26.2	21.8
260308	25.8	19.7	283142	25.9	19.7	171705	25.9	19.4	217372	26.1	18.8	182846	26.2	19.3	485699	26.2	20.8
137942	25.8	18.7	364101	25.9	19.8	184790	25.9	21.1	218515	26.1	19.6	220225	26.2	19.2	380750	26.3	20.4
34544	25.8	18.3	15306	25.9	18.4	478655	25.9	21.3	27938	26.1	19.0	212825	26.2	20.5	515260	26.3	20.4
386188	25.8	20.7	223380	25.9	19.3	263670	25.9	20.7	98592	26.1	19.1	4553	26.2	15.3	73762	26.3	18.1
154893	25.8	19.3	112483	25.9	19.4	506444	25.9	21.9	400932	26.1	20.3	519790	26.2	20.8	253560	26.3	19.2
37548	25.8	18.0	381760	25.9	19.8	393060	25.9	21.3	9376	26.1	16.8	68279	26.2	18.0	13197	26.3	17.0
437867	25.8	20.1	367571	25.9	20.3	434747	25.9	19.5	266708	26.1	18.9	159619	26.2	19.8	424603	26.3	22.0
280173	25.8	19.2	472254	25.9	20.8	202723	25.9	20.1	488872	26.1	19.9	515652	26.2	20.7	267122	26.3	19.1
469256	25.8	19.6	212761	25.9	20.2	487779	25.9	21.7	280069	26.1	19.4	445450	26.2	20.4	129904	26.3	19.1
415776	25.8	21.7	35566	25.9	16.5	513792	25.9	20.6	76152	26.1	19.0	390888	26.2	20.9	271598	26.3	19.4
302112	25.8	18.2	288520	25.9	19.9	183859	25.9	20.0	322048	26.1	20.4	71931	26.2	18.8	393737	26.3	19.3
477171	25.8	20.8	246511	25.9	19.4	355492	25.9	19.0	127264	26.1	19.7	139861	26.2	19.3	210253	26.3	19.6
506800	25.8	22.2	342439	25.9	20.5	206603	25.9	19.5	298213	26.1	20.5	391582	26.2	20.4	399917	26.3	20.4
468443	25.8	19.2	106312	25.9	19.0	394684	25.9	19.6	184229	26.1	18.7	507646	26.2	20.8	291418	26.3	20.5
264964	25.8	19.8	425699	25.9	20.7	126812	25.9	20.4	285168	26.1	19.9	101145	26.2	19.2	60211	26.3	18.3
88469	25.8	17.9	474169	25.9	21.4	27652	25.9	17.9	106689	26.1	19.5	36148	26.2	17.4	321126	26.3	20.3
260375	25.8	19.8	389470	25.9	21.3	475639	25.9	21.4	62249	26.1	18.4	358962	26.2	20.5	176654	26.3	19.7
514213	25.8	20.4	213203	25.9	20.0	212738	25.9	20.0	508101	26.1	21.0	68330	26.2	17.4	27333	26.3	17.9
337345	25.8	20.9	77101	25.9	19.5	275765	25.9	19.3	438948	26.1	21.1	212971	26.2	21.3	509948	26.3	18.2
383061	25.8	19.3	397011	25.9	20.4	319018	25.9	20.5	510714	26.1	20.8	23761	26.2	18.4	104264	26.3	18.8
265672	25.8	20.5	111588	25.9	19.7	239331	25.9	20.1	291591	26.1	21.3	344762	26.2	19.7	342473	26.3	21.7
100925	25.8	16.7	162900	25.9	19.9	433804	25.9	21.7	41823	26.1	19.1	279502	26.2	21.2	131052	26.3	18.5
151673	25.8	19.7	319236	25.9	20.7	511686	25.9	21.6	71954	26.1	18.5	225497	26.2	18.6	91224	26.3	19.3
106003	25.8	18.8	429470	25.9	20.5	103615	25.9	19.9	27353	26.1	17.6	224172	26.2	19.7	186957	26.3	18.9
13217	25.8	17.9	71501	25.9	19.0	268193	26.0	19.9	279453	26.1	20.4	50362	26.2	18.6	215707	26.3	19.6
316765	25.8	20.6	282964	25.9	19.3	185292	26.0	19.9	340531	26.1	20.5	218482	26.2	19.2	293496	26.3	20.6
73564	25.8	17.9	362481	25.9	20.6	276930	26.0	19.9	520229	26.1	22.0	349180	26.2	18.7	168160	26.3	18.9
454903	25.8	20.2	475322	25.9	20.8	152131	26.0	18.7	51382	26.1	18.0	184525	26.2	19.0	482231	26.3	21.1
315891	25.8	20.1	202588	25.9	19.3	382510	26.0	19.3	469110	26.1	20.6	488275	26.2	19.8	156389	26.3	19.4
195558	25.8	20.0	229934	25.9	20.7	184956	26.0	19.1	387922	26.1	20.7	116483	26.2	19.3	43798	26.3	19.1
111247	25.8	18.3	131048	25.9	19.6	496805	26.0	19.8	388250	26.1	19.6	482902	26.2	21.2	55965	26.3	19.0
60143	25.8	19.4	365692	25.9	21.2	333591	26.0	19.9	117059	26.1	19.8	343312	26.2	19.0	207421	26.3	19.8
20217	25.8	17.5	317352	25.9	20.0	472274	26.0	20.9	218297	26.1	19.4	495177	26.2	20.5	451190	26.3	21.1
328131	25.8	20.4	72107	25.9	20.1	322588	26.0	20.4	187036	26.1	19.9	407036	26.2	20.8	157723	26.3	18.9
426015	25.8	20.2	318528	25.9	19.2	508506	26.0	20.0	313279	26.1	20.3	205146	26.2	19.6	496711	26.3	20.3
211749	25.8	21.0	512448	25.9	20.4	234070	26.0	17.6	123435	26.1	20.6	139090	26.2	19.6	136093	26.3	19.1
20942	25.8	18.7	306211	25.9	19.8	176467	26.0	20.3	515430	26.1	21.5	191045	26.2	19.6	172509	26.3	19.8
130492	25.8	18.5	443642	25.9	19.8	174957	26.0	20.2	181556	26.1	20.3	298280	26.2	19.9	476771	26.3	20.9
134035	25.8	19.1	33801	25.9	17.2	479035	26.0	21.4	207012	26.1	20.2	16219	26.2	18.8	513236	26.3	20.6
260166	25.8	18.7	346472	25.9	21.1	47473	26.0	17.6	75201	26.1	19.3	437513	26.2	19.9	158962	26.3	18.5
449368	25.9	20.2	480997	25.9	19.8	210449	26.0	19.4	331864	26.1	21.0	335513	26.2	19.4	469594	26.3	21.1
370237	25.9	19.6	60648	25.9	18.6	84183	26.0	17.6	298007	26.1	19.2	371438	26.2	20.1	23003	26.3	17.8
321429	25.9	20.5	142783	25.9	18.2	375216	26.0	20.9	363647	26.1	20.6	360121	26.2	21.0	386587	26.3	19.7
300710	25.9	20.1	103364	25.9	18.6	506913	26.0	21.9	127134	26.1	19.1	194984	26.2	19.0	445803	26.3	19.8
244428	25.9	20.0	21086	25.9	17.6	174814	26.0	20.0	198789	26.1	19.7	236474	26.2	19.1	289777	26.3	20.0
150218	25.9	17.9	91613	25.9	18.4	508031	26.0	21.4	75580	26.1	19.4	257073	26.2	19.6	16329	26.3	18.7
168092	25.9	19.0	54783	25.9	18.9	312787	26.0	20.1	47975	26.1	18.9	483124	26.2	20.7	119786	26.3	19.5
312767	25.9	21.5	60581	25.9	18.1	321836	26.0	20.7	416059	26.1	21.4	519370	26.2	20.6	155420	26.3	18.7
239114	25.9	18.7	448632	25.9	20.2	520243	26.0	21.0	168098	26.1	19.3	212562	26.2	20.0	3738	26.3	14.8
259913	25.9	21.2	1199	25.9	14.9	476111	26.0	19.0	195285	26.1	20.1	476716	26.2	19.8	41336	26.3	19.4
483638	25.9	20.4	250875	25.9	19.5	477936	26.0	20.7	198233	26.1	20.6	385171	26.2	20.4	364081	26.3	21.0
171783	25.9	19.0	83222	25.9	18.3	182499	26.0	18.6	156424	26.1	20.1	45888	26.2	18.5	294236	26.3	20.0
112036	25.9	18.6	478994	25.9	21.8	25429	26.0	18.5	472664	26.1	21.5	256379	26.2	20.4	447373	26.3	20.2
9123	25.9	17.8	41680	25.9	16.5	203260	26.0	20.2	497427	26.1	21.1	431248	26.2	20.3	67085	26.3	19.9
155203	25.9	19.6	137643	25.9	18.6	144373	26.0	19.7	95591	26.1	19.8	378674	26.2	20.6	428569	26.3	21.8
121459	25.9	19.5	175232	25.9	20.1	418193	26.0	20.7	471327	26.1	20.7	479605	26.2	20.4	180457	26.3	19.9
134110	25.9	18.6	514353	25.9	21.2	367960	26.0	20.8	221428	26.1	19.7	24157	26.2	18.6	167153	26.3	19.8
311486	25.9	20.2	159944	25.9	20.2	16675	26.0	16.9	147532	26.1	18.9	479586	26.2	21.4	225244	26.3	19.1
20934	25.9	16.5	85681	25.9	18.5	510993	26.										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
476220	26.3	20.3	34334	26.4	18.9	436885	26.5	19.8	36581	26.6	18.6	108509	26.7	18.7	21426	26.7	17.9
507201	26.3	21.2	342493	26.4	20.1	189532	26.5	18.3	38501	26.6	19.1	166387	26.7	19.3	207235	26.7	19.7
244392	26.3	18.7	7163	26.4	18.2	298255	26.5	19.7	352627	26.6	21.1	23911	26.7	18.4	35455	26.7	17.7
45156	26.3	17.3	203303	26.4	20.3	325851	26.5	20.8	399829	26.6	20.0	361038	26.7	20.4	34624	26.7	18.4
333012	26.3	20.9	456711	26.4	19.4	454857	26.5	20.5	444232	26.6	21.1	379992	26.7	18.6	337317	26.7	19.7
483249	26.3	20.2	481502	26.4	21.5	444214	26.5	21.2	350895	26.6	20.0	49421	26.7	18.0	164001	26.7	18.9
19646	26.3	17.1	193384	26.4	18.5	93656	26.5	19.2	386823	26.6	21.0	293511	26.7	21.2	345826	26.7	18.2
435699	26.3	20.9	449305	26.4	21.3	321992	26.5	19.3	186294	26.6	20.4	316464	26.7	19.2	216961	26.7	20.2
466693	26.3	20.7	312707	26.4	19.7	170717	26.5	19.5	445442	26.6	20.4	86435	26.7	18.2	355160	26.7	20.5
80177	26.3	18.6	399918	26.4	20.2	371894	26.5	21.6	137424	26.6	18.6	190275	26.7	18.7	70727	26.7	19.0
480407	26.3	20.2	478786	26.4	20.9	504879	26.5	20.9	374737	26.6	21.4	384350	26.7	20.1	437083	26.7	20.4
333589	26.3	19.8	482160	26.4	20.8	90300	26.5	17.9	380427	26.6	20.1	516091	26.7	20.5	342319	26.7	20.8
346542	26.3	21.6	400500	26.4	21.0	429523	26.5	21.4	78955	26.6	18.3	59958	26.7	17.8	155524	26.7	20.5
512631	26.3	20.5	426167	26.4	20.6	243847	26.5	18.3	478622	26.6	20.6	340347	26.7	19.8	95579	26.7	20.1
15852	26.3	16.7	210319	26.4	21.1	94454	26.5	18.3	268377	26.6	18.9	84565	26.7	18.3	130593	26.8	19.0
257792	26.3	20.6	289005	26.4	19.7	506939	26.5	21.5	311834	26.6	20.9	302810	26.7	19.6	89859	26.8	18.0
78430	26.3	19.6	13562	26.4	19.0	86357	26.5	17.2	478494	26.6	20.7	377988	26.7	19.9	188866	26.8	18.6
438600	26.3	20.9	291103	26.4	19.9	437622	26.5	20.2	251878	26.6	19.5	309302	26.7	17.7	130823	26.8	19.5
509999	26.3	21.3	443908	26.4	19.6	22014	26.5	17.7	494	26.6	13.1	505184	26.7	20.9	482212	26.8	21.8
379913	26.3	20.6	451772	26.4	21.0	293967	26.5	20.2	370861	26.6	20.2	445408	26.7	20.8	149178	26.8	19.7
435061	26.4	21.5	104563	26.4	20.3	476041	26.5	19.8	21892	26.6	17.4	467730	26.7	20.6	157718	26.8	19.3
21974	26.4	16.8	234723	26.4	19.5	237918	26.5	19.1	232227	26.6	20.3	205204	26.7	21.4	204772	26.8	20.3
511161	26.4	21.2	35091	26.4	19.0	22661	26.5	17.6	421616	26.6	20.8	384520	26.7	20.4	318449	26.8	19.8
259715	26.4	19.1	2930	26.4	16.8	392809	26.5	21.0	347136	26.6	20.3	74370	26.7	20.3	447054	26.8	20.1
280078	26.4	20.0	191674	26.4	19.5	169787	26.5	19.1	264952	26.6	20.0	79701	26.7	20.1	230731	26.8	20.3
99222	26.4	18.4	240670	26.4	20.9	514348	26.5	21.2	67554	26.6	19.5	224125	26.7	19.6	295769	26.8	20.3
463441	26.4	20.9	165066	26.4	19.8	385445	26.5	23.2	175723	26.6	19.9	13483	26.7	16.6	399832	26.8	20.2
157417	26.4	20.7	509653	26.4	20.8	277280	26.5	20.4	468682	26.6	19.2	32560	26.7	17.0	185573	26.8	20.7
154752	26.4	19.4	440411	26.4	19.9	200730	26.5	19.2	51269	26.6	19.1	267680	26.7	19.8	475886	26.8	21.5
161996	26.4	17.5	45041	26.4	18.2	400729	26.5	19.3	423012	26.6	21.3	92246	26.7	17.9	184438	26.8	19.4
144430	26.4	19.2	255270	26.4	21.3	517989	26.5	21.8	87943	26.6	17.8	254192	26.7	19.6	404056	26.8	20.9
360937	26.4	21.0	82254	26.4	19.2	428221	26.5	21.5	384556	26.6	21.2	339087	26.7	19.6	515228	26.8	21.4
387256	26.4	20.3	311997	26.4	20.6	870	26.5	12.5	141645	26.6	18.4	117417	26.7	19.1	154449	26.8	20.4
242295	26.4	20.1	62743	26.4	17.8	45406	26.5	18.3	433749	26.6	20.9	326851	26.7	19.4	156026	26.8	20.0
96307	26.4	18.0	415416	26.4	20.2	233775	26.5	19.6	404620	26.6	19.9	390067	26.7	20.4	111928	26.8	19.1
442797	26.4	20.9	62423	26.4	18.7	504458	26.5	20.8	523088	26.6	21.0	378130	26.7	21.2	30389	26.8	18.6
131639	26.4	19.8	223815	26.5	20.8	317239	26.5	20.9	474075	26.6	20.0	282776	26.7	18.4	382936	26.8	20.9
365369	26.4	19.5	343150	26.5	20.9	355583	26.5	20.8	477933	26.6	21.0	304665	26.7	20.7	485708	26.8	21.5
362592	26.4	20.3	252844	26.5	20.5	453997	26.5	21.0	121941	26.6	19.9	25064	26.7	17.8	147005	26.8	18.1
235191	26.4	19.6	105200	26.5	18.0	295094	26.5	21.5	287202	26.6	19.3	496639	26.7	20.5	395936	26.8	20.8
212961	26.4	19.8	149583	26.5	20.2	374793	26.5	20.2	80527	26.6	19.8	95953	26.7	18.9	445449	26.8	20.6
393230	26.4	20.0	479128	26.5	20.7	59566	26.5	19.2	515245	26.6	20.3	488019	26.7	20.7	477550	26.8	20.3
339261	26.4	20.3	142717	26.5	19.4	501619	26.5	21.2	150602	26.6	19.6	346968	26.7	21.4	434777	26.8	20.0
389047	26.4	21.4	49082	26.5	18.4	177720	26.5	20.3	512707	26.6	20.5	428103	26.7	19.8	478674	26.8	19.7
141474	26.4	20.6	399831	26.5	20.0	20259	26.5	17.3	67037	26.6	18.1	35723	26.7	16.0	92506	26.8	18.3
186796	26.4	19.8	22400	26.5	18.2	256456	26.5	20.1	504385	26.6	19.8	392110	26.7	20.6	13846	26.8	16.3
71772	26.4	18.7	365128	26.5	19.1	44119	26.5	17.5	384445	26.6	20.7	96658	26.7	18.3	364557	26.8	21.7
121820	26.4	20.3	453233	26.5	20.2	2193	26.5	14.8	263587	26.6	19.8	514817	26.7	21.2	130148	26.8	19.5
277262	26.4	19.7	278581	26.5	20.3	512721	26.5	21.4	235452	26.6	20.0	479658	26.7	21.3	371850	26.8	20.2
370881	26.4	21.4	433838	26.5	20.8	199739	26.5	20.4	339173	26.6	20.5	235831	26.7	19.6	260667	26.8	20.5
358894	26.4	20.6	128060	26.5	18.9	191308	26.5	19.5	195190	26.6	18.8	347981	26.7	18.6	45953	26.8	18.9
484007	26.4	21.8	215678	26.5	18.6	305409	26.5	20.6	358416	26.6	20.2	511307	26.7	21.1	101517	26.8	18.8
354684	26.4	19.7	485503	26.5	20.4	366780	26.5	19.8	352249	26.6	19.4	228639	26.7	20.2	425597	26.8	20.7
22600	26.4	16.9	318452	26.5	21.0	295824	26.5	19.9	476647	26.6	21.5	504434	26.7	20.8	76497	26.8	19.2
400704	26.4	20.0	317576	26.5	20.1	218403	26.5	18.6	177162	26.6	18.6	479831	26.7	21.1	344780	26.8	20.7
348366	26.4	19.9	510685	26.5	20.1	6731	26.6	17.9	521776	26.6	21.0	474367	26.7	19.3	442120	26.8	19.6
189570	26.4	18.7	164078	26.5	19.7	246182	26.6	18.4	512466	26.6	20.5	245221	26.7	20.1	4692	26.8	15.6
365301	26.4	21.2	218201	26.5	19.5	216427	26.6	19.5	476887	26.6	19.1	194067	26.7	19.1	171025	26.8	19.0
168636	26.4	20.2	307567	26.5	20.1	516487	26.6	21.6	154246	26.6	18.9	482572	26.7	20.2	123422	26.8	18.3
510041	26.4	21.5	104985	26.5	19.5	88196	26.6	18.9	255276	26.6	19.9	174680	26.7	18.6	389758	26.8	20.5
70005	26.4	16.8	76209	26.5	17.8	283865	26.6	19.5	238574	26.6	20.1	313264	26.7	19.6	508882	26.8	20.2
321908	26.4	20.2	223359	26.5	19.1	49477	26.6	18.2	213516	26.6	19.8	116438	26.7	19.5	470678	26.8	19.6
135042	26.4	18.1	349118	26.5	19.0	106383	26.6	19.6	102968	26.6	19.3	347027	26.7	19.8	283824	26.8	19.8
378238	26.4	21.4	166908	26.5	19.8	255161	26.6	19.7	60044	26.6	17.7	297367	26.7	20.5	28226	26.8	18.7
374805	26.4	19.7	414392	26.5	20.8	415588	26.6	20.6	318391	26.6	19.5	52525	26.7	17.5	124027	26.8	20.1
12916	26.4	18.6	178123	26.5	20.7	270984	26.6	21.3	42399	26.6	18.3	445411	26.7	20.8	497521	26.8	21.5
365978	26.4	20.2	26070	26.5	19.5	168875	26.6	19.7	366049	26.6	20.9	396179	26.7	19.9	325587	26.8	19.3
80756	26.4	19.5	140733	26.5	20.0	289174	26.6	19.5	342331	26.6	19.8	20766	26.7	16.7	103504	26.8	19.4
165172	26.4	18.7	521364	26.5	20.9	391591	26.6	20.									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
384492	26.8	20.9	449770	26.9	20.2	420367	26.9	20.3	322586	27.1	20.0	425816	27.2	20.9	227324	27.2	20.6
320573	26.8	20.2	214008	26.9	20.4	280965	26.9	20.0	42953	27.1	18.1	59357	27.2	18.3	175299	27.2	20.6
103240	26.8	19.8	271012	26.9	19.3	78564	26.9	18.8	111861	27.1	19.5	151627	27.2	19.7	346995	27.3	21.7
104463	26.8	18.5	513774	26.9	20.6	18629	26.9	18.4	311477	27.1	21.4	50585	27.2	19.4	13787	27.3	17.9
103606	26.8	19.5	217508	26.9	20.1	301709	26.9	19.7	63094	27.1	18.4	235159	27.2	19.1	473308	27.3	20.6
289077	26.8	20.7	514456	26.9	21.3	92082	26.9	18.0	365723	27.1	20.1	220213	27.2	20.2	511069	27.3	20.5
374826	26.8	18.9	48415	26.9	16.7	459561	26.9	19.3	158722	27.1	19.9	261701	27.2	19.8	66943	27.3	18.2
476222	26.8	21.5	295410	26.9	19.9	122522	26.9	18.3	468435	27.1	19.4	343519	27.2	21.0	503196	27.3	22.0
316505	26.8	20.3	353336	26.9	21.2	425543	26.9	19.8	182860	27.1	19.4	357803	27.2	20.2	209252	27.3	20.1
521738	26.9	21.5	467477	26.9	20.3	114612	26.9	19.1	301975	27.1	20.3	77146	27.2	19.4	62428	27.3	18.6
510631	26.9	21.3	424338	26.9	19.8	432858	27.0	19.4	428550	27.1	21.8	269838	27.2	20.9	339218	27.3	20.4
50088	26.9	19.0	373433	26.9	19.1	326882	27.0	20.7	461446	27.1	20.7	72694	27.2	18.6	51463	27.3	18.4
41636	26.9	17.7	478675	26.9	20.0	273695	27.0	19.9	248309	27.1	18.8	115230	27.2	19.3	380826	27.3	20.9
42412	26.9	18.8	178535	26.9	18.0	156704	27.0	18.8	444713	27.1	20.2	505719	27.2	20.8	6211	27.3	17.0
362638	26.9	20.5	515226	26.9	22.4	391507	27.0	19.4	26864	27.1	18.9	50699	27.2	18.7	480585	27.3	20.9
392998	26.9	20.2	306889	26.9	19.2	515611	27.0	21.1	346588	27.1	21.5	364543	27.2	20.5	521502	27.3	20.7
438303	26.9	19.5	312741	26.9	21.5	510974	27.0	21.2	250965	27.1	19.7	431191	27.2	21.6	382136	27.3	20.0
121529	26.9	20.2	445020	26.9	20.2	237322	27.0	20.4	348047	27.1	19.6	379846	27.2	21.5	131792	27.3	20.4
466259	26.9	19.9	323610	26.9	20.5	371954	27.0	20.7	450301	27.1	18.9	257548	27.2	19.7	5452	27.3	15.1
202987	26.9	19.7	180373	26.9	19.2	182273	27.0	19.4	169575	27.1	19.7	482208	27.2	22.0	421614	27.3	20.0
314528	26.9	20.0	316816	26.9	20.3	451220	27.0	20.9	103658	27.1	19.8	446219	27.2	21.3	19896	27.3	18.6
261667	26.9	19.8	402752	26.9	21.8	58988	27.0	17.7	482124	27.1	20.4	51582	27.2	17.7	221917	27.3	19.6
237029	26.9	20.3	163793	26.9	17.5	122006	27.0	18.8	360704	27.1	19.4	70703	27.2	17.3	442885	27.3	21.4
507222	26.9	20.3	256996	26.9	19.6	228609	27.0	20.1	476633	27.1	20.6	407083	27.2	19.8	329349	27.3	20.1
193209	26.9	18.4	427601	26.9	20.6	223911	27.0	19.4	192342	27.1	19.4	288412	27.2	20.4	390949	27.3	20.2
346645	26.9	21.4	442396	26.9	20.5	358871	27.0	20.1	354446	27.1	19.5	184279	27.2	19.1	346643	27.3	19.2
513985	26.9	21.8	401275	26.9	21.3	47238	27.0	17.3	370535	27.1	21.6	338801	27.2	20.6	41619	27.3	18.8
158776	26.9	19.3	328217	26.9	19.9	263634	27.0	21.1	63296	27.1	19.0	24004	27.2	16.3	169822	27.3	19.7
142160	26.9	19.4	521786	26.9	20.4	163958	27.0	19.0	100712	27.1	18.6	315834	27.2	20.2	280935	27.3	20.2
315788	26.9	19.8	50364	26.9	17.3	236526	27.0	20.8	42526	27.1	17.7	212784	27.2	19.9	121645	27.3	20.1
393548	26.9	19.8	483360	26.9	20.1	346557	27.0	20.7	106876	27.1	19.8	453473	27.2	21.3	43463	27.3	18.5
481588	26.9	20.7	259417	26.9	19.2	42679	27.0	18.7	18615	27.1	15.8	246428	27.2	19.6	66498	27.3	18.9
128179	26.9	18.9	441379	26.9	21.1	385592	27.0	21.3	307073	27.1	20.1	219967	27.2	18.7	38037	27.3	18.4
451361	26.9	21.3	494732	26.9	20.5	66584	27.0	17.8	97737	27.1	19.0	297054	27.2	19.9	186766	27.3	19.9
145394	26.9	20.4	299068	26.9	20.4	318230	27.0	18.0	317199	27.1	20.4	219285	27.2	20.9	38050	27.3	17.1
237927	26.9	20.0	384494	26.9	20.1	488125	27.0	19.9	221482	27.1	20.4	125951	27.2	19.3	316274	27.3	20.8
211043	26.9	19.7	231522	26.9	19.8	349794	27.0	20.4	498525	27.1	21.5	358715	27.2	20.6	119919	27.3	20.1
404041	26.9	20.9	205609	26.9	19.0	315819	27.0	19.6	480529	27.1	20.0	317236	27.2	21.6	483223	27.3	21.0
114390	26.9	17.9	66729	26.9	19.0	286745	27.0	20.7	443022	27.1	20.4	139086	27.2	19.1	447384	27.3	19.9
446066	26.9	20.6	371409	26.9	20.5	364005	27.0	20.8	100671	27.1	16.8	178284	27.2	19.0	314502	27.3	21.4
463428	26.9	19.9	67453	26.9	17.6	380845	27.0	21.2	185555	27.1	20.9	99174	27.2	19.1	19562	27.3	15.9
91713	26.9	19.8	108068	26.9	19.5	91715	27.0	19.1	523720	27.1	20.5	137681	27.2	19.5	232178	27.3	21.4
244546	26.9	19.9	438937	26.9	21.2	208861	27.0	19.1	431330	27.1	20.4	292180	27.2	21.3	513857	27.3	21.2
388956	26.9	21.2	257376	26.9	20.8	362854	27.0	19.5	198339	27.1	20.1	17892	27.2	18.6	189120	27.3	19.7
341035	26.9	19.6	491078	26.9	21.7	504352	27.0	21.9	388647	27.1	19.9	238181	27.2	19.3	394617	27.3	20.0
245283	26.9	19.5	394491	26.9	20.9	347011	27.0	19.7	134752	27.1	18.9	69167	27.2	17.8	304166	27.3	19.8
244820	26.9	20.0	191712	26.9	18.7	127181	27.0	18.0	54811	27.1	17.5	429484	27.2	21.8	306695	27.3	21.3
164900	26.9	20.3	30014	26.9	17.4	429472	27.0	20.3	104364	27.1	18.2	226812	27.2	20.1	274845	27.3	19.8
10686	26.9	17.6	277282	26.9	20.7	514362	27.0	19.1	418238	27.1	21.7	131598	27.2	19.1	485238	27.3	20.2
519827	26.9	21.5	348761	26.9	19.1	91533	27.0	18.0	251397	27.1	19.5	273652	27.2	20.0	75834	27.3	19.6
380762	26.9	19.2	85798	26.9	19.0	174080	27.0	19.0	347966	27.1	19.9	403938	27.2	20.2	139252	27.3	19.9
489560	26.9	20.8	251230	26.9	20.0	380817	27.0	21.6	358809	27.1	19.8	454970	27.2	19.6	114149	27.3	18.6
198277	26.9	20.4	299069	26.9	20.9	294838	27.1	20.1	167270	27.1	20.7	83096	27.2	19.0	319372	27.3	21.0
510946	26.9	21.3	24466	26.9	17.1	443043	27.1	20.0	44823	27.1	18.4	315102	27.2	19.9	247160	27.3	20.3
210951	26.9	20.0	481391	26.9	20.9	243867	27.1	19.7	483255	27.1	20.2	476051	27.2	20.4	260251	27.3	20.0
457800	26.9	19.0	183057	26.9	19.9	81116	27.1	19.4	164854	27.1	19.3	142083	27.2	17.9	500121	27.3	21.4
312424	26.9	20.6	394608	26.9	20.4	75867	27.1	20.0	100749	27.1	19.4	5374	27.2	16.4	475083	27.3	22.0
284271	26.9	19.5	296574	26.9	21.1	394584	27.1	20.7	478235	27.1	19.7	387941	27.2	20.6	215777	27.3	20.1
508085	26.9	22.0	328092	26.9	20.9	288237	27.1	20.1	274908	27.1	19.6	255183	27.2	18.8	101780	27.3	19.3
4126	26.9	17.2	112194	26.9	20.1	74473	27.1	18.5	52872	27.1	21.1	350383	27.2	20.8	23387	27.3	17.3
74203	26.9	17.9	39058	26.9	17.1	266710	27.1	21.2	206551	27.1	18.9	261651	27.2	19.7	21282	27.3	17.2
71016	26.9	19.4	289449	26.9	20.1	514615	27.1	18.4	352966	27.1	19.8	14536	27.2	17.7	50942	27.3	17.7
39452	26.9	18.0	214975	26.9	20.6	207483	27.1	19.4	252737	27.2	20.1	408752	27.2	20.9	154927	27.3	19.1
183041	26.9	20.2	162218	26.9	20.0	476705	27.1	21.5	449080	27.2	21.1	107096	27.2	19.0	60881	27.3	19.5
494298	26.9	18.7	177353	26.9	19.4	212891	27.1	20.3	221471	27.2	20.6	169877	27.2	18.5	448056	27.3	20.8
47884	26.9	18.2	342865	26.9	20.3	307148	27.1	20.8	445519	27.2	19.4	282708	27.2	20.5	267272	27.3	19.0
521371	26.9	20.5	349846	26.9	20.5	273816	27.1	19.7	397964	27.2	20.7	313934	27.2	19.7	371403	27.3	19.4
390396	26.9	20.9	508904	26.9	20.6	375665	27.1	21.8	246958	27.2	20.4	374755	27.2	20.9	253670	27.3	19.4
397661	26.9	21.0	264040	26.9	19.6	20212											

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
494251	27.3	21.2	38222	27.4	17.5	369688	27.5	20.7	274900	27.6	21.2	303152	27.6	20.0	58857	27.7	18.1
400981	27.3	20.6	469847	27.4	21.0	380921	27.5	21.1	79869	27.6	19.2	358408	27.6	19.6	344056	27.7	20.0
59978	27.3	17.8	474192	27.4	21.3	224146	27.5	19.6	12439	27.6	17.3	347992	27.7	18.8	429113	27.7	20.3
261135	27.3	20.0	137549	27.4	18.9	10040	27.5	15.9	242480	27.6	20.3	124011	27.7	19.1	476072	27.7	20.3
236497	27.3	20.8	10245	27.4	17.6	84000	27.5	17.7	512619	27.6	21.3	293241	27.7	20.0	225088	27.7	21.3
106307	27.3	19.4	220194	27.4	19.6	155770	27.5	18.3	218095	27.6	19.5	187297	27.7	20.2	305601	27.7	18.3
342600	27.3	19.8	2384	27.4	15.7	219309	27.5	20.9	353498	27.6	20.4	115879	27.7	20.2	174031	27.7	19.1
181610	27.3	19.9	62974	27.4	19.2	267606	27.5	19.1	75452	27.6	17.7	171646	27.7	19.9	187831	27.7	19.6
158098	27.3	18.6	181486	27.4	20.1	36517	27.5	18.6	117725	27.6	19.9	147918	27.7	20.6	285448	27.7	20.3
53570	27.3	19.1	316034	27.4	20.5	348090	27.5	19.5	248001	27.6	20.5	45829	27.7	17.8	195475	27.7	20.9
99315	27.3	19.3	342556	27.4	19.5	142316	27.5	19.4	71607	27.6	18.3	362411	27.7	20.7	21083	27.7	17.1
343287	27.3	20.1	3237	27.4	14.8	48113	27.5	18.3	250007	27.6	20.1	160905	27.7	20.0	299921	27.7	20.3
302148	27.3	19.7	477932	27.4	20.7	137674	27.5	20.8	27120	27.6	17.1	15022	27.7	18.9	44280	27.7	16.8
449540	27.3	19.6	432830	27.4	19.0	280086	27.5	21.0	434232	27.6	19.8	167759	27.7	19.4	387944	27.7	21.3
66041	27.3	18.1	340384	27.4	19.9	519223	27.5	20.3	24599	27.6	18.8	148074	27.7	19.4	141629	27.7	18.8
285434	27.3	21.1	19392	27.4	18.0	476157	27.5	19.1	290949	27.6	20.2	286578	27.7	19.8	487286	27.7	21.0
477013	27.3	21.4	172709	27.4	19.9	339131	27.5	19.6	160208	27.6	20.5	254501	27.7	20.6	221447	27.7	20.2
516258	27.3	20.2	343747	27.4	20.2	151693	27.5	19.9	118361	27.6	20.3	480155	27.7	19.0	25539	27.7	18.6
336096	27.3	21.3	404458	27.4	20.8	468041	27.5	19.6	160063	27.6	21.4	448057	27.7	20.4	128182	27.7	19.2
144005	27.3	20.1	270567	27.4	20.3	71321	27.5	19.6	168943	27.6	19.2	22969	27.7	18.2	218080	27.7	19.9
240401	27.3	19.2	322033	27.4	20.5	453673	27.5	21.3	516822	27.6	20.5	310649	27.7	22.1	445784	27.7	21.0
22404	27.3	19.1	268887	27.4	20.8	285174	27.5	19.5	513874	27.6	21.2	474632	27.7	20.1	224266	27.7	19.5
167443	27.3	19.2	478978	27.4	20.6	514279	27.5	19.6	505122	27.6	21.3	76586	27.7	18.6	391504	27.7	18.9
86545	27.3	19.5	381551	27.4	19.9	68880	27.5	19.0	389565	27.6	21.3	391899	27.7	20.5	475901	27.7	22.2
192491	27.3	19.5	444225	27.4	20.6	388641	27.5	19.9	386667	27.6	20.5	276931	27.7	19.2	119286	27.7	19.4
334716	27.3	21.2	255168	27.4	21.1	121914	27.5	19.3	518216	27.6	21.2	396078	27.7	20.4	117099	27.7	18.9
510207	27.3	20.6	440595	27.4	20.8	517875	27.5	21.3	514524	27.6	20.8	83320	27.7	19.4	522831	27.7	19.7
357297	27.3	21.1	142032	27.4	18.8	108793	27.5	19.0	462111	27.6	20.3	188522	27.7	19.5	162112	27.7	19.5
334480	27.3	20.4	396232	27.4	21.7	62778	27.5	18.6	12136	27.6	15.8	468342	27.7	20.7	42050	27.8	18.9
17611	27.3	17.8	268967	27.4	19.8	523650	27.5	20.8	178378	27.6	19.1	220980	27.7	18.6	195087	27.8	18.9
119341	27.3	18.3	96479	27.4	19.3	296491	27.5	20.1	319354	27.6	19.4	364035	27.7	20.9	353541	27.8	19.9
129240	27.3	18.8	390897	27.4	20.8	254244	27.5	19.5	328199	27.6	20.0	93141	27.7	19.3	300861	27.8	20.4
397646	27.3	20.6	452243	27.4	21.1	447124	27.5	20.0	519913	27.6	20.0	51727	27.7	17.5	37163	27.8	17.3
25783	27.3	16.8	371367	27.4	18.5	401572	27.5	21.4	216651	27.6	19.5	187527	27.7	20.4	145748	27.8	20.2
304200	27.4	20.4	509067	27.4	21.7	385803	27.5	20.8	289815	27.6	21.4	61444	27.7	16.9	56470	27.8	18.8
75125	27.4	19.1	271130	27.4	19.8	315869	27.5	20.0	96972	27.6	19.2	11162	27.7	16.4	454552	27.8	20.6
387933	27.4	20.5	222162	27.4	20.5	22296	27.5	17.9	118437	27.6	20.0	187309	27.7	20.5	245399	27.8	20.1
392147	27.4	20.2	47467	27.4	17.9	370275	27.5	19.4	18719	27.6	18.0	511306	27.7	21.0	206057	27.8	20.3
476231	27.4	20.2	264999	27.4	19.5	100050	27.5	19.0	212360	27.6	18.4	10822	27.7	16.0	137803	27.8	19.2
511277	27.4	20.5	399266	27.4	21.6	479928	27.5	21.3	86266	27.6	19.3	20349	27.7	17.0	130626	27.8	19.0
249715	27.4	19.1	334363	27.4	21.4	261608	27.5	21.3	289220	27.6	19.4	41039	27.7	19.9	298282	27.8	19.8
254552	27.4	20.7	29589	27.4	18.0	366940	27.5	20.2	98083	27.6	18.0	361974	27.7	19.9	71473	27.8	18.9
511629	27.4	21.7	167584	27.4	19.8	348099	27.5	20.5	360928	27.6	21.1	509601	27.7	20.6	12311	27.8	17.7
271781	27.4	19.8	519775	27.4	19.7	211510	27.5	18.6	296206	27.6	19.5	398117	27.7	19.5	181490	27.8	19.9
479261	27.4	21.5	111848	27.5	17.4	48766	27.5	18.6	142179	27.6	19.1	227518	27.7	20.0	27414	27.8	17.3
424502	27.4	21.1	401452	27.5	20.3	137567	27.5	20.5	40158	27.6	17.7	405846	27.7	20.0	6298	27.8	18.0
91001	27.4	18.6	25941	27.5	17.4	50686	27.5	16.6	86038	27.6	17.5	479211	27.7	20.9	379257	27.8	20.0
5986	27.4	15.4	180665	27.5	20.2	446968	27.5	20.7	76631	27.6	18.7	485509	27.7	20.2	104431	27.8	19.5
225048	27.4	20.0	266754	27.5	20.7	112926	27.5	20.0	390544	27.6	21.7	35362	27.7	17.1	338478	27.8	20.3
136585	27.4	19.0	8951	27.5	16.7	221449	27.5	19.8	71613	27.6	19.3	521779	27.7	21.2	140773	27.8	18.9
163834	27.4	18.6	496204	27.5	21.1	395780	27.5	20.9	132517	27.6	18.9	248983	27.7	20.3	365036	27.8	18.9
385795	27.4	21.7	237079	27.5	19.6	136651	27.5	19.5	141908	27.6	18.8	91547	27.7	17.9	284593	27.8	19.8
139025	27.4	19.3	342302	27.5	20.8	93685	27.5	18.1	126395	27.6	19.1	4508	27.7	16.1	180690	27.8	20.5
319062	27.4	20.6	325014	27.5	19.4	314440	27.5	20.5	198349	27.6	19.3	65331	27.7	18.8	33653	27.8	17.9
203698	27.4	19.6	34616	27.5	18.1	135990	27.5	18.2	468012	27.6	21.7	435673	27.7	19.6	444701	27.8	21.1
212869	27.4	19.6	37402	27.5	17.9	95405	27.5	19.5	186296	27.6	20.8	11257	27.7	17.1	445527	27.8	20.9
380763	27.4	20.9	217326	27.5	19.2	438116	27.5	23.5	103448	27.6	19.9	431337	27.7	21.3	387902	27.8	21.5
186805	27.4	20.6	392947	27.5	21.3	324919	27.5	21.3	80695	27.6	19.1	13451	27.7	19.0	6246	27.8	17.7
79217	27.4	17.5	353342	27.5	20.6	364123	27.5	20.5	330873	27.6	18.8	479763	27.7	21.0	382516	27.8	19.0
478778	27.4	19.7	429095	27.5	21.3	207985	27.5	18.9	332672	27.6	19.6	512795	27.7	20.5	510921	27.8	21.3
18307	27.4	16.5	372760	27.5	21.0	346473	27.5	19.3	181844	27.6	19.5	93362	27.7	19.8	314526	27.8	21.0
212795	27.4	19.1	165046	27.5	19.9	183916	27.6	19.5	479281	27.6	21.1	295411	27.7	20.1	340549	27.8	22.0
516074	27.4	21.0	469392	27.5	19.9	261467	27.6	20.5	95108	27.6	19.2	326171	27.7	20.9	105560	27.8	19.1
191075	27.4	19.1	422840	27.5	19.5	51189	27.6	18.4	399924	27.6	21.0	241267	27.7	19.7	426397	27.8	20.5
243253	27.4	19.5	63305	27.5	18.5	283852	27.6	19.1	433765	27.6	21.0	53547	27.7	18.3	401611	27.8	19.8
117713	27.4	20.1	23828	27.5	17.0	466067	27.6	20.4	423917	27.6	20.6	470995	27.7	20.1	508846	27.8	20.5
475461	27.4	20.6	298085	27.5	20.6	479123	27.6	21.1	385457	27.6	20.7	200501	27.7	19.7	298220	27.8	19.4
452639	27.4	23.5	104636	27.5	19.2	412420	27.6	21.8	486952	27.6	20.1	383237	27.7	20.7	270138	27.8	20.3
243330	27.4	20.3	211494	27.5	19.8	273871	27.6	19.5	3								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
41481	27.8	17.6	355634	27.9	19.6	319386	27.9	20.1	357911	28.1	19.9	520430	28.1	20.8	226314	28.2	21.0
362831	27.8	20.1	115368	27.9	19.3	328185	27.9	20.0	60634	28.1	19.1	27294	28.1	17.9	36541	28.2	18.8
34390	27.8	17.3	188600	27.9	18.4	359569	27.9	20.9	386755	28.1	20.4	194946	28.1	19.8	12572	28.2	17.6
510615	27.8	21.4	261795	27.9	19.5	380534	27.9	21.0	273520	28.1	20.8	373457	28.1	20.5	293948	28.2	19.5
12216	27.8	16.8	431769	27.9	20.3	478520	27.9	19.7	363983	28.1	21.4	307982	28.1	20.8	185862	28.2	19.3
445488	27.8	20.6	474500	27.9	20.3	112193	27.9	19.3	357890	28.1	21.3	284922	28.1	19.9	62253	28.2	19.3
139085	27.8	18.6	327999	27.9	20.1	185985	27.9	18.1	201739	28.1	19.4	81297	28.1	17.6	327630	28.2	20.4
340355	27.8	21.0	96845	27.9	19.0	362584	27.9	19.9	433423	28.1	20.5	122922	28.1	19.1	376480	28.2	18.6
349356	27.8	21.1	448099	27.9	21.1	515012	27.9	20.6	454821	28.1	20.3	400892	28.1	20.1	385830	28.2	22.1
376148	27.8	20.3	204953	27.9	19.9	326147	27.9	21.2	180672	28.1	19.3	332082	28.2	20.2	481754	28.2	19.6
432692	27.8	21.3	265809	27.9	20.7	263639	27.9	21.6	207302	28.1	19.6	45884	28.2	18.9	468132	28.2	20.4
133998	27.8	19.0	266537	27.9	18.9	201902	27.9	20.0	296215	28.1	19.8	164072	28.2	19.2	11240	28.2	18.4
153250	27.8	19.2	144378	27.9	19.9	517870	27.9	21.6	271082	28.1	19.1	520054	28.2	20.5	28584	28.2	19.1
319042	27.8	20.2	121068	27.9	19.0	185914	27.9	19.9	264453	28.1	20.3	44527	28.2	17.5	126745	28.2	20.0
24768	27.8	18.4	469615	27.9	21.7	388953	27.9	21.0	485281	28.1	21.2	98546	28.2	17.0	149104	28.2	19.3
337313	27.8	20.2	498961	27.9	19.8	27870	27.9	18.0	218490	28.1	19.8	240638	28.2	20.6	479904	28.2	21.2
206308	27.8	19.7	285489	27.9	20.2	200376	27.9	18.5	266998	28.1	20.2	103966	28.2	19.4	390091	28.2	20.5
353549	27.8	20.2	50654	27.9	19.2	474527	27.9	20.5	326818	28.1	20.2	265726	28.2	20.2	392784	28.2	20.7
365472	27.8	19.2	272261	27.9	20.0	427709	27.9	21.8	123201	28.1	18.8	516838	28.2	21.0	94613	28.2	18.7
68423	27.8	19.8	4882	27.9	16.3	100138	27.9	18.3	468488	28.1	19.1	14320	28.2	17.3	166919	28.2	20.0
171720	27.8	18.8	482780	27.9	22.4	26581	27.9	17.2	231549	28.1	19.6	4492	28.2	16.2	212196	28.2	19.9
514769	27.8	21.7	224283	27.9	18.7	473154	27.9	20.5	5026	28.1	15.3	144833	28.2	19.5	429970	28.2	21.1
170753	27.8	19.8	507380	27.9	21.3	487147	27.9	20.4	480903	28.1	18.7	5574	28.2	16.4	450482	28.2	20.3
477108	27.8	19.8	37652	27.9	18.8	3691	27.9	16.0	38081	28.1	17.7	33040	28.2	18.8	96341	28.2	17.0
444115	27.8	20.4	316511	27.9	20.2	297237	28.0	21.4	278793	28.1	19.1	455621	28.2	20.6	220781	28.2	19.2
394654	27.8	20.9	390042	27.9	20.2	46168	28.0	19.7	350851	28.1	20.2	65336	28.2	19.1	356248	28.2	21.5
51474	27.8	18.5	171823	27.9	19.4	310707	28.0	21.0	148405	28.1	19.9	428614	28.2	21.1	443613	28.2	19.8
337223	27.8	21.9	447683	27.9	21.4	245835	28.0	20.0	9954	28.1	17.0	507940	28.2	20.9	110810	28.2	19.5
312383	27.8	20.0	137784	27.9	19.7	19926	28.0	16.1	474528	28.1	20.5	108590	28.2	19.0	288296	28.2	19.9
209399	27.8	20.0	354225	27.9	18.7	166753	28.0	19.9	186021	28.1	19.9	521513	28.2	21.3	39371	28.2	18.8
295757	27.8	20.5	252118	27.9	20.5	252798	28.0	20.0	90105	28.1	19.1	233766	28.2	19.4	92159	28.2	18.9
263151	27.8	19.4	9835	27.9	16.7	517441	28.0	21.2	152578	28.1	19.2	367736	28.2	18.8	158782	28.2	19.6
510500	27.8	20.5	329278	27.9	20.3	306943	28.0	18.9	283333	28.1	19.0	466301	28.2	20.4	504112	28.2	20.3
324872	27.8	20.8	296689	27.9	19.4	469631	28.0	20.0	192895	28.1	19.2	402404	28.2	21.2	513562	28.3	20.5
374033	27.8	20.8	88106	27.9	19.1	283327	28.0	19.8	430181	28.1	19.5	246298	28.2	18.2	433496	28.3	20.5
252907	27.8	20.7	9639	27.9	16.7	253542	28.0	18.2	402764	28.1	21.0	207577	28.2	19.8	237287	28.3	19.8
470560	27.8	21.3	4496	27.9	17.2	8370	28.0	17.4	443683	28.1	20.7	435157	28.2	19.1	446074	28.3	21.0
291145	27.8	21.2	174071	27.9	19.4	348137	28.0	21.0	354178	28.1	21.0	511160	28.2	21.9	122735	28.3	19.2
429689	27.8	20.4	477560	27.9	20.6	311960	28.0	20.2	501722	28.1	20.5	382518	28.2	20.0	208160	28.3	20.7
259699	27.8	19.7	253378	27.9	20.1	141820	28.0	18.7	72609	28.1	19.0	403980	28.2	21.3	450428	28.3	21.0
341117	27.8	20.1	13761	27.9	18.0	511499	28.0	20.4	444106	28.1	20.7	382625	28.2	18.6	117283	28.3	18.9
373737	27.8	19.5	513754	27.9	21.3	240685	28.0	19.6	380767	28.1	20.5	368864	28.2	19.7	328596	28.3	20.6
160693	27.8	18.0	510679	27.9	20.8	128110	28.0	19.4	383236	28.1	20.4	285356	28.2	19.0	342538	28.3	20.3
429456	27.8	19.9	511282	27.9	21.8	38258	28.0	18.7	512207	28.1	21.4	345526	28.2	19.6	63864	28.3	19.8
434088	27.8	20.2	411623	27.9	20.6	144119	28.0	19.6	120769	28.1	18.4	79708	28.2	18.1	516082	28.3	20.3
71013	27.8	18.5	344685	27.9	19.6	437521	28.0	20.5	132387	28.1	19.8	510182	28.2	21.8	240923	28.3	21.0
275002	27.9	19.8	521302	27.9	20.4	510973	28.0	20.3	286409	28.1	20.0	420788	28.2	19.6	336363	28.3	19.6
138268	27.9	19.9	478836	27.9	19.9	49954	28.0	19.1	425842	28.1	19.9	129110	28.2	17.9	22907	28.3	18.3
514248	27.9	20.5	386966	27.9	21.2	204750	28.0	18.9	8914	28.1	16.7	244900	28.2	19.9	390105	28.3	20.4
441305	27.9	21.1	52504	27.9	20.0	404514	28.0	20.2	261790	28.1	20.8	327650	28.2	19.1	348010	28.3	18.9
103811	27.9	20.3	358339	27.9	20.3	121638	28.0	19.9	283977	28.1	20.8	387961	28.2	21.0	510671	28.3	20.7
296006	27.9	20.1	315789	27.9	20.5	401554	28.0	19.4	429559	28.1	21.4	120052	28.2	20.0	337971	28.3	19.7
442327	27.9	20.9	55807	27.9	18.2	4863	28.0	16.1	444157	28.1	22.4	64333	28.2	19.6	279115	28.3	19.9
470838	27.9	19.3	1344	27.9	15.8	365722	28.0	20.6	480640	28.1	19.7	254002	28.2	18.9	424396	28.3	21.6
46901	27.9	18.2	436627	27.9	19.1	51955	28.0	18.0	63898	28.1	18.8	242572	28.2	19.8	451078	28.3	20.3
348777	27.9	20.3	362828	27.9	20.0	251810	28.0	20.9	255397	28.1	19.9	252147	28.2	20.1	231903	28.3	20.0
96128	27.9	19.3	124118	27.9	19.1	282421	28.0	19.2	254197	28.1	20.0	487062	28.2	20.1	312540	28.3	19.6
129069	27.9	19.3	11884	27.9	16.3	344755	28.0	19.3	410785	28.1	20.1	296607	28.2	19.7	98393	28.3	17.8
380255	27.9	20.1	5504	27.9	16.6	23383	28.0	18.9	523229	28.1	20.7	216953	28.2	19.1	2681	28.3	16.9
38499	27.9	18.7	350191	27.9	20.7	52967	28.0	18.1	70276	28.1	17.9	516303	28.2	21.1	88561	28.3	19.0
193570	27.9	19.5	476968	27.9	20.2	387707	28.0	19.7	399933	28.1	19.8	121631	28.2	19.3	62911	28.3	18.3
425914	27.9	20.5	99426	27.9	19.3	370276	28.0	19.9	153608	28.1	20.1	204116	28.2	19.5	513934	28.3	21.1
92000	27.9	19.9	180160	27.9	19.6	320350	28.0	18.7	164750	28.1	19.1	223183	28.2	20.3	387547	28.3	22.1
384698	27.9	20.6	53312	27.9	18.8	279287	28.0	20.6	166602	28.1	18.9	89785	28.2	18.3	245373	28.3	20.7
378295	27.9	20.5	79713	27.9	18.4	62198	28.0	18.2	318623	28.1	20.8	430693	28.2	21.0	336541	28.3	20.5
90481	27.9	20.5	407960	27.9	20.3	367692	28.0	21.0	138040	28.1	19.9	449726	28.2	20.9	149085	28.3	19.2
75866	27.9	19.2	221058	27.9	18.2	222478	28.0	19.8	60771	28.1	18.7	7576	28.2	17.0	507937	28.3	21.3
420771	27.9	19.4	340162	27.9	20.3	101107	28.0	18.8	512733	28.1	20.5	324256	28.2	20.8	61894	28.3	17.8
304379	27.9	21.3	409214	27.9	21.8	326119	28.0	20.4	48								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
333883	28.3	20.8	412474	28.4	19.7	463398	28.5	20.8	360976	28.5	21.1	517955	28.6	21.6	398974	28.7	21.0
436867	28.3	19.9	65021	28.4	19.4	129878	28.5	18.6	252905	28.5	20.6	195439	28.6	18.8	94349	28.7	17.5
311372	28.3	19.9	301427	28.4	19.6	824	28.5	13.7	379634	28.5	21.0	438838	28.6	20.0	303470	28.7	20.1
74481	28.3	18.2	254545	28.4	19.1	261785	28.5	20.7	72340	28.5	18.5	353465	28.6	20.8	116323	28.7	19.3
24161	28.3	18.2	202797	28.4	19.6	288263	28.5	19.8	28200	28.5	17.4	513349	28.7	21.8	511911	28.7	22.0
477496	28.3	21.1	469638	28.4	19.5	290785	28.5	20.6	85635	28.6	19.1	55665	28.7	18.5	365060	28.7	20.8
1093	28.3	12.4	407551	28.4	19.5	407007	28.5	20.7	126252	28.6	18.4	416717	28.7	21.2	204100	28.7	20.0
36896	28.3	18.7	70476	28.4	18.4	199392	28.5	18.6	472280	28.6	20.6	123132	28.7	18.7	280604	28.7	19.5
345929	28.3	19.4	202415	28.4	20.1	347578	28.5	20.7	59710	28.6	19.2	369702	28.7	20.9	257675	28.7	21.2
111293	28.3	19.4	215603	28.4	19.5	7247	28.5	16.3	209975	28.6	18.8	86419	28.7	18.3	353178	28.7	21.1
474676	28.3	21.5	13263	28.4	18.0	203962	28.5	20.0	104617	28.6	18.9	86695	28.7	19.7	331994	28.7	20.7
477048	28.3	21.0	211763	28.4	19.9	474167	28.5	19.4	2794	28.6	15.6	394483	28.7	20.7	317989	28.7	21.0
478815	28.3	21.0	374875	28.4	21.8	8861	28.5	17.6	253456	28.6	18.9	475956	28.7	21.0	480487	28.7	20.6
218424	28.3	19.7	259908	28.4	20.8	386898	28.5	18.8	519575	28.6	21.8	419596	28.7	20.9	272531	28.7	20.7
434368	28.3	20.3	209092	28.4	19.0	41736	28.5	17.6	371402	28.6	20.5	97016	28.7	16.9	218536	28.7	19.3
81245	28.3	18.3	444700	28.4	20.7	171357	28.5	20.1	213536	28.6	18.9	58846	28.7	19.7	177196	28.7	19.0
402062	28.3	20.1	328091	28.4	20.7	99187	28.5	20.3	446166	28.6	20.8	383185	28.7	20.7	514121	28.7	19.9
500849	28.3	20.0	1956	28.4	17.2	511250	28.5	21.8	20668	28.6	17.8	219320	28.7	20.3	512930	28.7	19.1
434222	28.3	18.9	287186	28.4	20.4	263135	28.5	19.7	443052	28.6	20.7	480614	28.7	21.2	399098	28.7	20.7
191088	28.3	19.6	288928	28.4	19.9	443377	28.5	19.7	512810	28.6	21.1	365670	28.7	21.0	34451	28.7	18.9
149542	28.3	20.1	289300	28.4	20.3	371373	28.5	19.4	313987	28.6	19.7	25712	28.7	19.0	364987	28.7	19.2
195414	28.3	20.1	448409	28.4	20.3	37275	28.5	16.8	238545	28.6	18.9	291914	28.7	19.2	128998	28.7	18.9
301425	28.3	19.8	156152	28.4	19.0	147921	28.5	20.3	260958	28.6	20.9	44052	28.7	17.5	238168	28.7	19.7
272756	28.3	19.9	194901	28.4	19.8	343453	28.5	20.6	263585	28.6	20.0	252756	28.7	19.7	342463	28.8	18.9
126644	28.3	20.0	151411	28.4	19.1	387974	28.5	20.8	445490	28.6	21.4	376903	28.7	20.6	510454	28.8	22.8
260405	28.3	19.6	252825	28.4	19.8	474081	28.5	19.3	42156	28.6	17.8	509364	28.7	22.0	175181	28.8	18.9
247745	28.3	17.8	483401	28.4	19.8	216145	28.5	20.2	10300	28.6	17.7	118964	28.7	18.4	295987	28.8	21.0
289678	28.3	20.4	511122	28.4	21.2	742	28.5	13.3	134612	28.6	19.5	357451	28.7	21.0	315010	28.8	20.0
174126	28.3	19.2	6536	28.4	15.4	284917	28.5	20.1	20	28.6	9.9	390419	28.7	20.0	481353	28.8	21.0
106021	28.3	17.8	471683	28.4	18.3	218467	28.5	19.8	320255	28.6	18.7	180816	28.7	19.5	328274	28.8	19.9
154963	28.3	19.1	165056	28.4	19.8	377998	28.5	21.1	156692	28.6	19.0	33710	28.7	17.8	391909	28.8	21.8
399257	28.3	19.5	433766	28.4	20.8	149096	28.5	19.9	108766	28.6	18.3	218086	28.7	19.2	324954	28.8	20.3
241143	28.3	20.1	475371	28.4	20.2	31326	28.5	18.0	43025	28.6	17.7	230033	28.7	19.1	280610	28.8	19.0
260588	28.3	19.4	358816	28.4	20.3	182630	28.5	20.5	479496	28.6	21.4	476567	28.7	20.9	387284	28.8	20.3
339430	28.3	20.4	266261	28.4	20.9	401401	28.5	20.4	204401	28.6	19.0	314567	28.7	20.5	255561	28.8	18.7
130812	28.3	19.2	186708	28.4	20.9	327816	28.5	19.6	356816	28.6	20.6	310578	28.7	19.0	519464	28.8	21.2
252852	28.3	20.5	298633	28.4	20.9	512865	28.5	20.4	478635	28.6	20.1	360684	28.7	19.5	205155	28.8	20.7
476871	28.3	20.6	167486	28.4	20.1	289799	28.5	21.1	121494	28.6	18.7	370601	28.7	19.9	253562	28.8	19.9
20289	28.3	16.3	128307	28.4	19.4	25412	28.5	17.0	198136	28.6	19.0	469596	28.7	21.8	95781	28.8	18.3
267663	28.3	19.1	457619	28.4	20.2	481424	28.5	21.0	321955	28.6	20.2	395036	28.7	20.4	443948	28.8	20.4
327803	28.3	20.5	511247	28.4	22.0	155184	28.5	19.7	55261	28.6	18.6	206026	28.7	20.5	231743	28.8	18.8
316006	28.3	20.6	254102	28.4	19.8	379189	28.5	20.1	330596	28.6	20.9	444945	28.7	21.6	267179	28.8	19.8
153151	28.3	19.0	206595	28.4	19.7	412451	28.5	20.8	219029	28.6	19.5	19744	28.7	16.8	182793	28.8	20.5
13566	28.3	17.2	485915	28.4	21.4	419680	28.5	21.2	509654	28.6	20.6	221870	28.7	19.8	192180	28.8	19.2
351164	28.3	21.1	509828	28.4	21.5	115642	28.5	18.3	361030	28.6	21.1	351853	28.7	20.9	121513	28.8	19.0
342351	28.3	19.6	447093	28.4	21.5	391188	28.5	19.3	308877	28.6	20.4	313229	28.7	19.9	126938	28.8	19.3
349191	28.3	20.4	418938	28.4	20.3	383240	28.5	20.7	317643	28.6	20.3	478689	28.7	19.9	195300	28.8	20.1
317919	28.3	20.0	41132	28.4	18.2	358903	28.5	20.0	511136	28.6	21.5	340284	28.7	20.1	105928	28.8	19.9
478694	28.3	21.2	389588	28.4	20.5	289699	28.5	20.6	41142	28.6	19.8	120496	28.7	18.9	206587	28.8	20.0
307081	28.3	20.6	493747	28.4	20.8	299828	28.5	19.8	185475	28.6	20.4	377283	28.7	21.1	255074	28.8	21.1
261780	28.3	20.2	184038	28.4	20.2	266680	28.5	19.3	443631	28.6	20.5	21708	28.7	18.0	178749	28.8	19.4
172941	28.3	20.9	267692	28.4	20.0	328142	28.5	19.9	396637	28.6	19.7	57732	28.7	19.4	253687	28.8	20.0
93694	28.3	18.6	381713	28.4	20.3	478900	28.5	20.6	230364	28.6	19.8	358132	28.7	18.9	511386	28.8	21.6
332321	28.3	20.4	223165	28.4	20.5	114986	28.5	18.1	52121	28.6	18.1	315358	28.7	19.9	174404	28.8	19.8
383297	28.3	20.9	90616	28.4	19.1	167914	28.5	19.5	332474	28.6	21.9	256487	28.7	20.1	401710	28.8	21.0
201995	28.3	19.3	263059	28.4	20.4	6852	28.5	17.2	137793	28.6	19.9	31986	28.7	19.1	164293	28.8	19.7
309111	28.3	20.4	471002	28.4	20.5	314692	28.5	20.2	511593	28.6	20.5	402181	28.7	19.9	113017	28.8	19.1
506877	28.3	21.8	342078	28.4	19.8	238015	28.5	20.1	428542	28.6	20.1	60330	28.7	19.5	268855	28.8	20.1
134006	28.3	19.9	287039	28.4	20.4	16493	28.5	17.9	507210	28.6	20.7	437347	28.7	20.6	248623	28.8	19.3
146302	28.4	19.4	3889	28.4	15.4	335050	28.5	20.1	339475	28.6	21.1	176113	28.7	20.2	304620	28.8	20.8
210397	28.4	19.6	299090	28.4	19.6	257697	28.5	21.3	94277	28.6	20.1	71945	28.7	19.1	209320	28.8	21.2
312042	28.4	18.6	96963	28.4	18.7	132891	28.5	19.1	221932	28.6	19.5	206078	28.7	18.3	269802	28.8	19.6
187561	28.4	20.7	476237	28.4	21.4	95784	28.5	18.7	23567	28.6	18.8	338614	28.7	18.9	235282	28.8	18.4
215567	28.4	19.6	244552	28.4	18.9	446512	28.5	20.1	316549	28.6	20.1	195228	28.7	20.4	385562	28.8	20.8
161328	28.4	18.0	145031	28.4	19.3	168647	28.5	18.9	106159	28.6	18.3	349903	28.7	21.3	144456	28.8	19.5
185265	28.4	20.3	514610	28.4	20.0	67827	28.5	17.6	387560	28.6	19.2	99367	28.7	19.3	7847	28.8	17.4
516956	28.4	22.1	66903	28.4	19.2	452445	28.5	20.2	365270	28.6	19.2	392198	28.7	20.6	461126	28.8	19.4
398080	28.4	20.7	34502	28.4	16.9	276470	28.5	21.0	74685	28.6	18.6	190665	28.7	20.1	132294	28.8	20.7
433191	28.4	19.7	219299	28.4	20.7	445230	28.										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
33901	28.8	16.9	239162	28.9	20.0	476215	28.9	20.7	399037	29.0	20.7	282915	29.1	19.4	453434	29.2	20.0
448730	28.8	20.0	14677	28.9	18.0	110375	28.9	19.5	42403	29.0	19.3	488053	29.1	20.9	289115	29.2	19.3
511248	28.8	20.0	364044	28.9	20.1	437169	28.9	19.0	399679	29.1	20.1	17178	29.1	18.0	107178	29.2	18.9
57265	28.8	18.4	437105	28.9	20.5	482941	28.9	20.9	7918	29.1	16.5	477989	29.1	20.7	264348	29.2	19.5
294668	28.8	20.9	62357	28.9	19.1	503285	28.9	20.3	361965	29.1	20.3	5701	29.1	15.4	520123	29.2	21.0
145662	28.8	18.8	514492	28.9	21.3	266157	28.9	20.0	339231	29.1	21.7	479644	29.1	21.2	34141	29.2	18.2
338015	28.8	20.4	13127	28.9	18.1	351107	28.9	20.1	210187	29.1	19.9	217652	29.1	16.9	195525	29.2	19.6
334447	28.8	18.8	312409	28.9	20.1	469411	28.9	21.2	248360	29.1	19.4	115140	29.1	18.7	444277	29.2	20.0
182047	28.8	19.5	507166	28.9	21.6	449163	28.9	19.3	511373	29.1	21.2	32347	29.1	18.3	14733	29.2	17.5
105878	28.8	17.0	439123	28.9	20.4	15367	28.9	17.6	403398	29.1	19.8	239163	29.1	20.9	468052	29.2	19.5
255457	28.8	20.4	287288	28.9	19.9	223317	28.9	18.9	35754	29.1	17.5	7569	29.1	15.6	2388	29.2	16.1
263995	28.8	19.4	70118	28.9	18.0	75039	28.9	19.5	337029	29.1	19.5	303690	29.1	20.0	364550	29.2	21.4
224141	28.8	18.6	282701	28.9	20.5	337274	28.9	19.3	437144	29.1	19.3	24801	29.1	15.6	47459	29.2	18.4
20836	28.8	19.0	521775	28.9	22.0	112148	28.9	18.7	488288	29.1	20.3	165042	29.1	18.9	74945	29.2	19.6
218097	28.8	19.9	140401	28.9	19.8	364133	28.9	20.3	265033	29.1	18.6	248108	29.1	20.5	518424	29.2	24.0
235847	28.8	18.7	4824	28.9	16.5	155705	28.9	18.4	92154	29.1	19.2	89734	29.1	18.1	437664	29.2	19.7
365869	28.8	20.2	346785	28.9	20.4	338734	28.9	19.7	93692	29.1	18.4	50036	29.1	18.9	347495	29.2	19.6
445385	28.8	20.9	424187	28.9	20.3	25885	28.9	18.0	288548	29.1	20.9	199973	29.1	18.5	328719	29.2	20.0
400931	28.8	20.7	172763	28.9	20.9	438918	28.9	19.5	174502	29.1	18.8	67723	29.1	18.8	492224	29.2	20.6
34637	28.8	18.5	69329	28.9	19.0	63245	28.9	20.2	418214	29.1	19.1	402287	29.1	20.2	474465	29.2	20.3
47033	28.8	18.4	218455	28.9	19.9	438015	28.9	19.8	68139	29.1	18.1	327206	29.1	19.4	512926	29.2	19.8
72515	28.8	19.2	479477	28.9	21.4	474444	28.9	19.3	286999	29.1	19.8	342384	29.2	19.4	138209	29.2	20.4
163885	28.8	19.5	112238	28.9	19.1	13636	28.9	19.3	132096	29.1	19.1	65665	29.2	17.4	512861	29.2	20.3
203055	28.8	20.7	123966	28.9	19.6	522927	28.9	21.1	220831	29.1	19.6	285343	29.2	19.1	13221	29.2	17.4
136790	28.8	20.0	163034	28.9	19.4	265442	28.9	19.2	316152	29.1	19.7	517846	29.2	21.3	111776	29.3	17.4
298054	28.8	19.9	516227	28.9	21.5	15704	28.9	16.5	238547	29.1	20.9	61242	29.2	17.0	260261	29.3	19.9
380756	28.8	19.4	288988	28.9	20.4	150317	28.9	19.5	76198	29.1	18.7	139168	29.2	18.9	149988	29.3	19.3
356496	28.8	19.3	106011	28.9	18.9	298265	28.9	19.5	339286	29.1	20.5	479377	29.2	20.8	396463	29.3	20.5
404038	28.8	22.0	70874	28.9	18.5	257493	29.0	19.6	179077	29.1	19.8	188163	29.2	19.7	195494	29.3	19.4
22108	28.8	16.3	24566	28.9	19.1	399597	29.0	19.9	236840	29.1	19.7	417610	29.2	20.8	504441	29.3	20.4
48011	28.8	19.3	360072	28.9	20.5	313954	29.0	19.6	254165	29.1	19.1	383182	29.2	21.1	346654	29.3	20.1
512039	28.8	20.4	462803	28.9	19.8	523010	29.0	19.9	220693	29.1	19.6	312742	29.2	21.0	313138	29.3	19.9
268909	28.8	21.3	392856	28.9	21.0	389158	29.0	20.0	390309	29.1	19.9	86597	29.2	20.1	485754	29.3	21.2
67976	28.8	16.4	82337	28.9	18.3	18092	29.0	17.1	39809	29.1	17.4	367280	29.2	19.2	507847	29.3	22.1
144455	28.8	19.7	187413	28.9	19.9	431324	29.0	20.7	181106	29.1	19.0	266891	29.2	20.4	362579	29.3	20.5
327115	28.8	21.0	477557	28.9	20.6	352014	29.0	19.9	99109	29.1	19.0	510512	29.2	19.9	379781	29.3	19.6
64191	28.8	19.5	72986	28.9	17.3	10192	29.0	17.3	17820	29.1	19.9	77275	29.2	19.1	284039	29.3	19.3
81423	28.8	18.8	379604	28.9	20.9	246499	29.0	20.4	14359	29.1	18.0	195559	29.2	19.9	220230	29.3	18.6
476985	28.8	19.9	255373	28.9	21.5	234864	29.0	19.1	431128	29.1	19.8	379195	29.2	20.0	311983	29.3	20.2
349460	28.8	20.5	255443	28.9	19.9	357573	29.0	19.2	521785	29.1	20.7	193624	29.2	19.9	298662	29.3	20.5
167495	28.8	19.4	97216	28.9	20.4	249733	29.0	18.6	272767	29.1	19.9	195083	29.2	19.3	327780	29.3	19.3
152387	28.9	19.7	181046	28.9	19.1	337319	29.0	20.2	98198	29.1	18.1	318644	29.2	19.0	257368	29.3	20.1
475969	28.9	20.2	127834	28.9	19.4	41539	29.0	18.7	146746	29.1	20.0	126736	29.2	18.9	363957	29.3	21.1
267303	28.9	19.0	214185	28.9	19.7	400905	29.0	19.9	218072	29.1	19.8	223198	29.2	19.8	116701	29.3	19.6
136413	28.9	19.7	485287	28.9	20.9	523162	29.0	19.7	299654	29.1	19.8	480436	29.2	20.0	365469	29.3	20.1
11604	28.9	17.8	317882	28.9	18.7	21669	29.0	18.9	233990	29.1	21.2	360681	29.2	20.3	515529	29.3	21.8
106855	28.9	19.4	346674	28.9	20.7	280325	29.0	18.9	40272	29.1	19.1	114881	29.2	19.2	191288	29.3	19.6
304517	28.9	20.6	25179	28.9	18.6	379159	29.0	19.4	289622	29.1	20.5	269747	29.2	20.6	261736	29.3	19.5
391922	28.9	21.6	39725	28.9	19.1	12104	29.0	17.0	452455	29.1	20.2	341086	29.2	19.9	284790	29.3	19.2
103229	28.9	20.2	358708	28.9	20.5	442773	29.0	20.9	387558	29.1	20.0	516063	29.2	20.2	183900	29.3	19.6
304461	28.9	21.1	114254	28.9	18.8	511281	29.0	20.9	487743	29.1	20.0	170444	29.2	19.9	159499	29.3	18.1
24105	28.9	17.2	511256	28.9	20.7	136933	29.0	18.0	400468	29.1	19.9	91762	29.2	19.2	106125	29.3	19.5
118887	28.9	19.7	168684	28.9	19.0	521740	29.0	20.6	445345	29.1	19.7	77950	29.2	18.3	240456	29.3	19.6
223436	28.9	19.1	292634	28.9	20.4	59707	29.0	16.8	186531	29.1	19.4	257503	29.2	20.5	280572	29.3	19.2
240426	28.9	20.1	152501	28.9	20.4	322507	29.0	20.2	300294	29.1	18.0	228077	29.2	19.7	308664	29.3	20.3
480409	28.9	19.8	479465	28.9	20.8	472822	29.0	20.9	172623	29.1	19.3	159364	29.2	18.5	105761	29.3	19.6
443224	28.9	20.4	67332	28.9	17.2	367291	29.0	20.6	8438	29.1	16.3	35526	29.2	18.4	141917	29.3	18.4
49072	28.9	17.9	479394	28.9	20.8	1854	29.0	16.1	162354	29.1	18.0	477037	29.2	20.6	147655	29.3	19.7
288941	28.9	20.2	221981	28.9	18.6	142744	29.0	18.7	478795	29.1	20.2	322418	29.2	19.1	200528	29.3	19.9
91973	28.9	18.8	47332	28.9	18.0	122505	29.0	18.1	476185	29.1	21.4	22126	29.2	17.2	427881	29.3	20.3
287804	28.9	19.4	276788	28.9	19.0	223444	29.0	18.8	144419	29.1	19.4	440429	29.2	20.6	60179	29.3	17.8
328565	28.9	19.5	103861	28.9	19.7	209808	29.0	19.5	341109	29.1	19.9	210378	29.2	19.7	40195	29.3	17.1
48235	28.9	17.9	23638	28.9	19.0	255272	29.0	19.1	404857	29.1	20.5	518963	29.2	18.9	258867	29.3	19.0
479812	28.9	20.9	501748	28.9	18.9	304581	29.0	20.1	99173	29.1	19.3	322744	29.2	19.0	371454	29.3	20.3
62409	28.9	17.7	424442	28.9	20.9	309656	29.0	20.7	387591	29.1	19.4	119200	29.2	18.7	132206	29.3	17.9
376626	28.9	18.7	289140	28.9	19.8	349388	29.0	19.9	17073	29.1	17.7	440173	29.2	20.7	356211	29.3	20.9
476021	28.9	20.5	27782	28.9	16.7	400088	29.0	20.1	231466	29.1	18.7	384577	29.2	21.1	106778	29.3	19.2
167521	28.9	20.2	510221	28.9	22.1	485747	29.0	20.5	428169	29.1	21.2	451357	29.2	22.2	387643	29.3	20.4
261834	28.9	21.0	48391	28.9	18.7	60243	29.0	18.4									



LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
126857	29.3	20.9	93581	29.4	18.0	36938	29.5	18.6	44686	29.6	17.9	225005	29.7	20.0	108385	29.8	18.5
434095	29.3	20.9	45169	29.4	17.7	204756	29.5	19.7	203030	29.6	20.3	259910	29.7	21.0	185124	29.8	19.5
396576	29.3	19.5	337171	29.4	19.7	237000	29.5	19.3	342205	29.6	20.2	338039	29.7	20.5	480193	29.8	20.4
174188	29.3	19.6	173635	29.4	20.2	484868	29.5	19.7	153691	29.6	19.3	245838	29.7	19.9	120845	29.8	19.5
334831	29.3	20.7	232801	29.4	18.3	392320	29.5	21.8	60346	29.6	17.7	321913	29.7	20.2	481528	29.8	21.4
260704	29.3	20.8	200489	29.4	19.2	45978	29.5	16.4	48328	29.6	18.6	8259	29.7	15.5	150715	29.8	18.1
329746	29.3	20.1	400710	29.4	20.5	226296	29.5	19.4	350237	29.6	21.3	291290	29.7	20.5	155314	29.8	19.6
478022	29.3	20.0	91566	29.4	18.3	476202	29.5	21.6	105926	29.6	18.1	183751	29.7	19.0	319190	29.8	20.0
256634	29.3	19.6	366273	29.4	19.6	83030	29.5	17.1	95945	29.6	17.9	220956	29.7	18.0	404396	29.8	21.1
118949	29.3	19.5	348393	29.4	20.0	170073	29.5	19.3	444962	29.6	20.0	131075	29.7	19.3	68288	29.8	19.1
145788	29.3	18.4	205198	29.4	20.0	513680	29.5	19.9	237572	29.6	19.9	134112	29.7	19.5	209276	29.8	19.6
296106	29.3	19.1	62898	29.4	18.5	311917	29.5	19.8	343374	29.6	20.5	328179	29.7	21.1	22599	29.8	17.6
20515	29.3	17.4	5870	29.4	15.8	136362	29.5	19.1	48141	29.6	17.4	23201	29.7	17.2	266318	29.8	20.6
13644	29.3	16.7	173884	29.4	19.3	46635	29.5	18.4	152812	29.6	18.6	306754	29.7	18.3	79650	29.8	19.6
306747	29.3	19.9	323954	29.4	21.7	385548	29.5	19.5	390800	29.6	21.3	481526	29.7	20.4	513715	29.8	21.1
81057	29.3	18.4	90910	29.4	18.6	84138	29.5	19.1	416839	29.6	20.5	46719	29.7	17.9	288793	29.8	19.6
462583	29.3	20.6	435679	29.4	20.5	240931	29.5	20.4	386550	29.6	19.9	72419	29.7	18.6	430424	29.8	21.2
56440	29.3	18.0	36085	29.4	17.8	115165	29.5	19.6	352917	29.6	19.9	389145	29.7	20.1	321340	29.8	20.0
351032	29.3	19.2	1877	29.4	15.5	474025	29.5	20.0	144221	29.6	20.2	218468	29.7	19.5	907	29.8	14.7
204435	29.3	19.6	342181	29.4	21.2	158913	29.5	19.0	91112	29.6	17.9	446631	29.7	20.2	65995	29.8	18.7
277017	29.3	20.9	162878	29.4	19.2	391689	29.5	19.3	279604	29.6	19.0	481188	29.7	21.5	487215	29.8	20.2
169796	29.3	19.8	428428	29.4	20.7	100148	29.5	19.0	399578	29.6	20.5	224547	29.7	20.3	36098	29.8	17.7
246682	29.3	19.5	261421	29.4	19.9	523673	29.5	20.8	447407	29.6	21.3	520414	29.7	20.2	261618	29.8	20.0
342111	29.3	20.7	77565	29.4	19.8	391542	29.5	20.5	443787	29.6	19.5	383212	29.7	21.5	449450	29.8	20.7
146917	29.3	19.8	396362	29.4	19.5	45908	29.5	18.7	46688	29.6	17.1	468423	29.7	19.8	35940	29.8	18.5
483452	29.3	23.3	109150	29.4	17.6	314074	29.5	20.3	402061	29.6	20.0	157195	29.7	18.9	58395	29.8	20.0
134560	29.3	18.1	134231	29.4	19.4	204921	29.5	20.9	346615	29.6	20.1	196320	29.7	19.2	88230	29.8	17.8
295586	29.3	20.4	46412	29.4	18.5	36998	29.5	18.5	328252	29.6	20.5	372827	29.7	20.7	25265	29.8	16.3
379651	29.3	21.0	53454	29.4	17.7	162062	29.5	19.1	512712	29.6	20.2	112389	29.7	18.3	237328	29.8	19.4
436856	29.3	20.2	511672	29.4	19.0	290121	29.5	19.9	213128	29.6	19.8	71223	29.7	20.0	159572	29.8	17.9
513763	29.3	21.9	509967	29.4	21.2	71572	29.5	16.8	233402	29.6	19.5	255301	29.7	18.4	157797	29.8	19.2
232155	29.3	18.7	71176	29.4	17.8	487927	29.5	21.2	284049	29.6	19.2	344803	29.7	20.7	46303	29.8	17.8
510814	29.3	19.1	482347	29.4	21.3	114552	29.5	19.1	406993	29.6	20.1	509182	29.7	21.8	95273	29.8	19.4
189975	29.3	20.1	301259	29.4	20.3	85581	29.5	15.8	200495	29.6	17.8	86175	29.7	18.3	79691	29.8	16.9
13996	29.3	17.5	111536	29.4	18.8	77065	29.5	17.4	268350	29.6	19.1	260399	29.7	19.6	399451	29.8	20.7
279155	29.3	19.8	69504	29.4	19.0	189493	29.5	19.2	353205	29.6	21.1	291447	29.7	20.4	49342	29.8	18.1
189537	29.3	18.2	204992	29.4	19.4	52990	29.5	17.5	22429	29.6	18.7	318229	29.7	19.3	197871	29.8	19.5
128259	29.3	18.5	119475	29.4	19.0	92823	29.5	19.2	390020	29.6	20.8	112420	29.7	19.1	147617	29.8	20.1
97653	29.3	18.5	92083	29.4	19.0	218415	29.5	19.5	242588	29.6	19.5	73074	29.7	18.0	251463	29.8	19.1
450364	29.4	19.4	102437	29.4	18.7	178476	29.5	17.9	427721	29.6	20.6	404342	29.7	20.8	6735	29.8	16.3
232225	29.4	19.7	322044	29.4	19.8	166484	29.5	17.7	71592	29.6	19.1	514820	29.7	21.0	199312	29.8	20.4
304416	29.4	20.5	224040	29.4	18.5	204590	29.5	20.3	254535	29.6	19.1	404343	29.7	20.9	318328	29.8	19.7
443910	29.4	20.6	260170	29.4	19.5	425522	29.5	19.2	65060	29.6	18.7	408052	29.7	19.9	26571	29.8	16.8
240664	29.4	19.6	515395	29.4	20.8	375224	29.5	20.5	106630	29.6	20.1	36201	29.7	17.5	452052	29.8	20.6
67175	29.4	17.1	255394	29.4	20.1	219620	29.5	18.4	436129	29.6	20.7	188235	29.7	18.4	157042	29.8	18.6
163962	29.4	18.6	171701	29.4	19.5	257757	29.5	19.3	262070	29.6	19.9	290947	29.7	20.7	454075	29.8	21.9
281902	29.4	19.2	33155	29.4	16.8	372883	29.5	20.5	166598	29.6	18.5	428623	29.7	21.0	392703	29.8	20.9
75902	29.4	18.5	155744	29.5	18.6	522840	29.6	20.5	444987	29.6	21.2	249760	29.7	19.3	217564	29.8	19.0
478737	29.4	20.6	352893	29.5	19.9	392327	29.6	20.5	200088	29.6	19.4	519613	29.7	20.7	494378	29.8	20.8
249811	29.4	19.5	348135	29.5	20.1	137102	29.6	19.2	182837	29.6	20.3	164585	29.7	19.7	491415	29.8	20.0
391568	29.4	20.2	24230	29.5	17.1	18931	29.6	17.4	142232	29.6	18.5	260707	29.7	20.9	390029	29.8	20.7
254353	29.4	20.7	443376	29.5	21.5	240955	29.6	20.4	348082	29.6	19.6	506289	29.7	20.8	452573	29.8	20.1
369693	29.4	19.5	72462	29.5	18.5	361892	29.6	20.5	509776	29.7	20.7	27140	29.7	17.8	255519	29.8	20.0
445355	29.4	20.0	294481	29.5	19.6	212853	29.6	20.0	94302	29.7	18.7	46143	29.7	18.4	264967	29.8	19.1
83477	29.4	19.4	389559	29.5	21.3	77674	29.6	19.0	94314	29.7	19.7	389199	29.7	21.4	55092	29.8	18.5
337331	29.4	20.6	331413	29.5	20.8	39046	29.6	17.6	47562	29.7	17.5	374016	29.7	20.5	403042	29.8	20.6
112046	29.4	19.4	329916	29.5	19.1	137840	29.6	18.3	398106	29.7	19.5	5433	29.7	15.6	319380	29.8	20.2
323289	29.4	19.0	147842	29.5	19.9	91074	29.6	19.0	421429	29.7	20.4	50129	29.7	18.1	326764	29.8	20.0
271733	29.4	20.1	311425	29.5	21.5	78603	29.6	19.4	20377	29.7	18.0	48577	29.7	17.5	253460	29.8	19.9
176172	29.4	19.2	368869	29.5	18.9	516423	29.6	25.1	363638	29.7	19.2	216725	29.7	19.0	514770	29.8	21.8
367751	29.4	20.4	242614	29.5	19.6	443299	29.6	19.9	379607	29.7	21.0	95582	29.7	19.0	388184	29.8	19.6
478898	29.4	19.4	385554	29.5	20.3	478790	29.6	20.1	342424	29.7	20.0	14005	29.7	16.7	454983	29.8	20.4
7831	29.4	17.4	469719	29.5	19.7	80849	29.6	18.1	6315	29.7	16.2	461152	29.7	21.4	40140	29.8	17.5
282354	29.4	19.2	390142	29.5	20.8	480667	29.6	20.6	454394	29.7	20.7	71216	29.7	18.7	469940	29.8	20.9
433652	29.4	20.4	49562	29.5	17.8	73617	29.6	19.5	177419	29.7	19.7	225711	29.8	19.5	207924	29.8	19.0
339207	29.4	20.9	472509	29.5	20.6	446808	29.6	21.2	78908	29.7	17.6	101440	29.8	19.3	228886	29.8	18.8
96812	29.4	18.0	250036	29.5	18.9	161805	29.6	18.9	200110	29.7	20.4	207217	29.8	19.8	316187	29.8	19.7
428648	29.4	20.8	78591	29.5	19.0	295607	29.6	19.9	163333	29.7	18.0	511004	29.8	18.5	186839	29.8	18.3
515996	29.4	21.1	100804	29.5	19.3	183122	29.6	18.6	324895								

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
11538	29.8	16.0	428603	29.9	21.0	351199	29.9	20.6	224068	30.1	18.8	477546	30.2	20.9	223344	30.2	18.8
20650	29.9	17.7	260317	29.9	20.6	313958	30.0	18.7	520145	30.1	21.3	457937	30.2	19.9	257823	30.2	19.7
17790	29.9	16.7	318468	29.9	20.4	401395	30.0	20.2	322638	30.1	18.8	374897	30.2	19.5	96966	30.2	16.6
342720	29.9	19.2	358360	29.9	20.7	401508	30.0	21.1	210222	30.1	19.7	39688	30.2	16.3	508001	30.2	21.7
107989	29.9	18.5	415532	29.9	20.6	184572	30.0	19.5	352470	30.1	20.4	21664	30.2	18.4	387028	30.2	20.2
408703	29.9	19.8	515198	29.9	20.1	76078	30.0	18.9	515924	30.1	20.0	188783	30.2	20.2	195077	30.2	20.1
344796	29.9	21.5	264841	29.9	20.4	514530	30.0	19.9	303149	30.1	20.5	139175	30.2	19.6	397247	30.2	19.2
387618	29.9	21.6	116341	29.9	19.0	394568	30.0	21.2	420577	30.1	21.8	146009	30.2	19.7	298052	30.2	19.4
18548	29.9	17.7	512919	29.9	20.6	96868	30.0	18.9	444302	30.1	20.5	284804	30.2	20.1	63889	30.2	18.2
62982	29.9	17.2	178840	29.9	18.1	268321	30.0	19.8	424563	30.1	19.2	257188	30.2	19.7	253639	30.2	18.4
177272	29.9	19.0	62589	29.9	18.7	137528	30.0	17.9	324955	30.1	20.4	429699	30.2	20.1	98126	30.2	18.2
113757	29.9	18.4	91102	29.9	19.2	107418	30.0	19.5	373733	30.1	19.1	2323	30.2	15.7	42533	30.2	18.9
392762	29.9	20.5	514030	29.9	20.9	402393	30.0	20.8	35318	30.1	17.7	252113	30.2	19.6	288490	30.2	20.2
250709	29.9	18.8	418905	29.9	20.6	264243	30.0	19.4	132108	30.1	20.5	378643	30.2	20.1	50606	30.2	18.4
388574	29.9	20.3	515574	29.9	21.3	396138	30.0	20.5	331592	30.1	20.3	34924	30.2	17.5	268944	30.2	21.5
448735	29.9	22.0	424541	29.9	20.7	80178	30.0	19.0	506545	30.1	21.3	177778	30.2	18.6	184672	30.2	20.5
338025	29.9	20.9	310105	29.9	21.0	257411	30.0	19.6	308607	30.1	23.5	126108	30.2	19.0	239093	30.3	21.5
504665	29.9	20.5	374854	29.9	19.8	92912	30.0	17.7	469677	30.1	21.0	200451	30.2	18.7	213154	30.3	18.9
300658	29.9	19.5	425786	29.9	20.9	252909	30.0	19.4	79759	30.1	18.8	273354	30.2	20.5	316726	30.3	20.4
95154	29.9	19.3	346395	29.9	19.7	507381	30.0	21.9	352106	30.1	20.1	122593	30.2	18.3	506461	30.3	21.2
321298	29.9	21.1	490005	29.9	17.8	468736	30.0	19.9	156438	30.1	18.8	128206	30.2	19.0	479102	30.3	21.7
358867	29.9	19.8	514285	29.9	20.4	74796	30.0	17.2	310350	30.1	20.5	26442	30.2	17.8	505839	30.3	19.8
186990	29.9	18.5	322628	29.9	20.0	320101	30.0	19.8	339342	30.1	18.2	386373	30.2	20.5	317214	30.3	20.4
319133	29.9	20.8	355082	29.9	20.5	478685	30.0	20.4	45331	30.1	18.4	363508	30.2	19.5	476039	30.3	19.9
13684	29.9	17.6	110478	29.9	19.2	211836	30.0	20.8	239087	30.1	19.9	38861	30.2	18.7	47985	30.3	19.5
361433	29.9	20.5	156202	29.9	20.3	283817	30.0	20.0	365987	30.1	20.7	22799	30.2	17.1	137823	30.3	19.7
137943	29.9	20.5	354211	29.9	20.1	237279	30.0	19.1	172948	30.1	20.5	488016	30.2	20.9	216675	30.3	20.0
244770	29.9	19.6	449839	29.9	21.1	216693	30.0	18.8	353690	30.1	20.3	401209	30.2	20.9	172279	30.3	19.2
35380	29.9	18.7	212	29.9	12.4	58593	30.0	19.8	139218	30.1	18.8	516750	30.2	20.9	34373	30.3	15.4
69930	29.9	17.7	93764	29.9	19.3	381799	30.0	18.8	478922	30.1	21.1	384480	30.2	21.1	316851	30.3	20.5
320326	29.9	18.8	194892	29.9	20.1	342071	30.0	19.6	467492	30.1	19.6	482132	30.2	21.7	366599	30.3	17.8
521752	29.9	21.4	399934	29.9	20.0	19931	30.0	18.8	88120	30.1	18.6	274753	30.2	20.5	429402	30.3	18.8
275684	29.9	18.9	287615	29.9	20.0	316754	30.0	18.0	264043	30.1	18.8	180820	30.2	18.7	48036	30.3	19.0
90410	29.9	18.8	24813	29.9	16.8	258005	30.0	20.1	335043	30.1	18.5	215611	30.2	18.3	89194	30.3	18.2
256783	29.9	19.5	48008	29.9	18.5	523781	30.0	21.9	445264	30.1	19.9	21842	30.2	16.5	238233	30.3	19.4
94587	29.9	18.5	227204	29.9	20.3	254324	30.0	19.1	510681	30.1	21.8	69348	30.2	18.9	64465	30.3	18.2
36937	29.9	19.5	277940	29.9	19.4	364096	30.0	21.1	481525	30.1	21.6	515495	30.2	21.5	97922	30.3	17.9
477130	29.9	21.1	476031	29.9	21.2	477421	30.0	19.6	38915	30.1	19.4	61796	30.2	18.5	435787	30.3	19.4
433972	29.9	18.9	79905	29.9	17.8	479011	30.0	20.5	75815	30.1	16.6	79689	30.2	16.8	423747	30.3	21.8
152480	29.9	19.5	33920	29.9	19.5	92602	30.0	18.3	398335	30.1	20.3	253447	30.2	19.5	424489	30.3	21.3
70137	29.9	17.4	357223	29.9	20.7	130948	30.0	19.9	91197	30.1	18.9	323623	30.2	19.7	52133	30.3	19.3
155790	29.9	18.8	236458	29.9	18.3	73234	30.1	18.9	280081	30.1	20.0	131147	30.2	18.7	164000	30.3	19.1
289442	29.9	20.2	479630	29.9	20.7	251937	30.1	18.6	352948	30.1	20.2	97208	30.2	19.0	405487	30.3	21.1
256430	29.9	21.0	293864	29.9	19.2	285022	30.1	19.3	377587	30.1	19.4	245584	30.2	19.0	508782	30.3	20.4
299081	29.9	20.3	202859	29.9	20.4	329738	30.1	19.8	213654	30.1	20.3	514205	30.2	20.5	97105	30.3	19.7
235754	29.9	18.5	256523	29.9	20.1	252917	30.1	20.0	221646	30.1	20.7	345452	30.2	20.1	111750	30.3	17.5
393150	29.9	19.8	178835	29.9	19.7	10524	30.1	17.0	125515	30.1	19.7	130913	30.2	19.6	482281	30.3	20.7
402446	29.9	20.5	390457	29.9	20.9	481494	30.1	21.2	38178	30.1	18.3	51590	30.2	19.1	193492	30.3	20.1
290962	29.9	20.3	431808	29.9	19.8	275918	30.1	19.4	91844	30.1	18.6	316772	30.2	21.0	145750	30.3	18.9
411831	29.9	20.5	155344	29.9	19.3	118264	30.1	19.0	165205	30.1	18.3	399149	30.2	20.7	154938	30.3	19.4
519646	29.9	20.2	471259	29.9	21.3	260266	30.1	19.1	481316	30.1	20.4	309502	30.2	20.2	103909	30.3	18.8
257682	29.9	19.8	78970	29.9	19.5	385195	30.1	20.9	308146	30.1	20.7	301807	30.2	19.2	293013	30.3	20.5
905	29.9	13.4	92311	29.9	18.5	335040	30.1	19.6	348330	30.1	19.6	378689	30.2	20.2	397848	30.3	21.4
370280	29.9	20.0	69392	29.9	18.6	405887	30.1	20.9	459527	30.1	20.3	301530	30.2	19.9	185848	30.3	20.2
511295	29.9	20.6	43508	29.9	19.1	141675	30.1	18.9	80917	30.1	18.9	55933	30.2	19.3	459449	30.3	19.3
146087	29.9	19.8	335562	29.9	20.5	346987	30.1	20.6	241543	30.1	21.0	22734	30.2	18.4	39621	30.3	18.9
381807	29.9	21.0	359890	29.9	19.8	362599	30.1	20.7	488952	30.1	19.9	403960	30.2	20.8	337988	30.3	20.7
395804	29.9	21.0	424397	29.9	21.3	509165	30.1	21.7	23494	30.1	15.6	518262	30.2	21.5	364184	30.3	19.1
445798	29.9	21.0	375256	29.9	20.9	230277	30.1	18.6	380286	30.1	20.3	198382	30.2	19.3	215569	30.3	19.7
91803	29.9	18.6	395025	29.9	21.2	246446	30.1	19.8	26661	30.1	18.3	50822	30.2	17.9	264057	30.3	20.6
505849	29.9	20.5	74885	29.9	17.6	484991	30.1	19.8	269427	30.1	20.4	355127	30.2	20.4	315130	30.3	21.4
443494	29.9	21.0	476867	29.9	20.0	485251	30.1	21.0	447713	30.1	21.6	246703	30.2	19.7	445835	30.3	20.2
116609	29.9	19.9	116573	29.9	18.8	76622	30.1	18.8	299661	30.1	19.8	126985	30.2	19.4	512698	30.3	20.7
369815	29.9	20.0	52949	29.9	17.1	213539	30.1	19.2	396722	30.1	20.9	24106	30.2	16.3	72558	30.3	19.1
428668	29.9	21.0	493572	29.9	20.1	439133	30.1	20.7	52809	30.1	15.9	148173	30.2	18.0	186727	30.3	20.3
402384	29.9	20.5	23827	29.9	17.6	358783	30.1	20.0	388575	30.1	19.7	121813	30.2	20.1	186797	30.3	20.5
259677	29.9	18.6	44259	29.9	17.0	257731	30.1	20.5	18033	30.1	16.9	238266	30.2	19.8	443183	30.3	19.6
327173	29.9	19.2	90048	29.9	19.2	379150	30.1	18.6	256638	30.1	19.9	12832	30.2	15.3	365995	30.3	20.0
240185	29.9	19.9	388150	29.9	20.6	404016	30.1	20.4</									

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
97253	30.3	17.9	199403	30.4	17.9	358462	30.5	20.5	83912	30.6	18.1	511647	30.7	20.1	448729	30.7	20.7
190267	30.3	20.1	70571	30.4	18.9	242150	30.5	20.6	287365	30.6	20.4	126598	30.7	16.6	375722	30.7	19.9
489542	30.3	20.6	448657	30.4	20.3	385844	30.5	20.4	188925	30.6	19.8	285527	30.7	21.2	437599	30.8	19.7
523027	30.3	20.9	25358	30.4	18.8	469921	30.5	19.7	33309	30.6	17.6	23059	30.7	16.7	105873	30.8	18.5
53395	30.3	18.9	246621	30.4	20.2	178149	30.5	19.8	355683	30.6	19.6	476298	30.7	20.7	141933	30.8	18.8
513459	30.3	20.6	480382	30.4	20.7	378247	30.5	20.8	186751	30.6	19.8	444358	30.7	20.6	295563	30.8	19.0
20613	30.3	17.3	146676	30.4	19.8	482730	30.5	20.3	68100	30.6	17.7	42445	30.7	18.6	374905	30.8	20.7
184911	30.3	19.1	188137	30.4	20.5	436184	30.5	20.2	342187	30.6	21.1	378207	30.7	20.9	342199	30.8	19.7
446214	30.3	21.4	511006	30.4	18.9	94125	30.5	17.9	43285	30.6	19.0	295635	30.7	20.5	385809	30.8	21.4
69542	30.3	18.7	106998	30.4	17.6	401803	30.5	20.4	468029	30.6	20.3	71437	30.7	19.6	112222	30.8	18.6
96448	30.3	19.2	374015	30.4	21.0	242310	30.5	20.2	343922	30.6	20.0	254402	30.7	20.4	271102	30.8	18.5
97293	30.3	19.3	82453	30.4	18.6	101565	30.5	17.9	205148	30.6	18.9	261881	30.7	18.8	271590	30.8	19.0
332104	30.3	20.0	305893	30.4	19.6	330295	30.5	19.8	454451	30.6	20.6	304241	30.7	20.9	322092	30.8	20.7
507164	30.3	22.1	394064	30.4	19.4	272180	30.5	19.4	227043	30.6	18.8	393719	30.7	20.1	302823	30.8	19.7
211311	30.3	19.1	71091	30.4	17.8	428170	30.5	21.7	461221	30.6	21.3	112826	30.7	17.6	403704	30.8	20.4
428640	30.3	20.3	254920	30.4	20.5	133199	30.5	18.5	188668	30.6	19.8	488354	30.7	21.1	443468	30.8	21.1
212966	30.3	20.2	145821	30.4	19.7	509956	30.5	19.3	225925	30.6	20.0	295503	30.7	20.8	180510	30.8	19.5
401775	30.3	20.6	62383	30.4	18.7	106665	30.5	18.4	325892	30.6	18.9	390423	30.7	20.0	204054	30.8	19.8
193597	30.3	19.9	102919	30.4	18.0	123945	30.5	19.6	298556	30.6	20.2	321538	30.7	19.8	163453	30.8	18.8
145389	30.3	20.4	251715	30.4	19.9	239791	30.5	20.5	131480	30.6	18.7	80359	30.7	19.4	121759	30.8	19.0
356864	30.3	21.2	396276	30.4	20.8	477149	30.5	20.9	428644	30.6	20.0	349810	30.7	21.0	262976	30.8	20.3
145714	30.3	19.6	447395	30.4	21.3	96891	30.5	18.3	266971	30.6	19.8	214013	30.7	20.9	155881	30.8	20.0
84504	30.3	17.8	387967	30.4	20.7	202297	30.5	19.7	117908	30.6	18.1	240658	30.7	19.7	445463	30.8	20.0
201444	30.3	20.3	135549	30.4	19.1	334400	30.5	21.0	476757	30.6	21.4	133982	30.7	20.5	21671	30.8	17.5
364624	30.3	19.1	42201	30.4	19.4	310639	30.5	20.8	344136	30.6	21.9	74113	30.7	17.6	448045	30.8	20.9
285828	30.3	20.9	424625	30.4	20.4	20426	30.5	17.8	258007	30.6	20.7	398230	30.7	19.0	451850	30.8	20.0
162064	30.3	18.9	447584	30.4	20.1	45012	30.5	18.5	359445	30.6	20.6	433328	30.7	20.2	484930	30.8	20.7
435611	30.3	20.1	127520	30.4	19.5	296506	30.5	19.4	130933	30.6	18.9	158345	30.7	18.7	96222	30.8	20.2
468015	30.3	21.3	403666	30.4	21.2	328155	30.5	20.7	237399	30.6	20.0	259886	30.7	20.2	71482	30.8	18.7
14400	30.4	18.9	220682	30.4	19.2	4800	30.5	15.4	217376	30.6	19.4	187300	30.7	20.0	53093	30.8	17.5
152821	30.4	20.0	430009	30.4	20.0	468045	30.5	18.6	211729	30.6	18.8	387940	30.7	19.9	61319	30.8	16.6
145841	30.4	20.5	85804	30.4	18.7	398097	30.5	19.6	444301	30.6	21.8	523675	30.7	21.7	465050	30.8	19.4
335827	30.4	20.0	515958	30.4	20.9	494455	30.5	20.2	379573	30.6	20.7	364474	30.7	21.9	288326	30.8	20.2
222927	30.4	19.2	301480	30.4	20.2	402800	30.5	21.9	322590	30.6	20.7	511019	30.7	18.5	428610	30.8	21.5
319618	30.4	18.2	80511	30.4	20.4	329217	30.5	19.5	504341	30.6	19.7	402826	30.7	21.3	191316	30.8	19.6
384721	30.4	20.1	390191	30.4	20.0	220982	30.5	18.2	97808	30.6	18.2	392934	30.7	21.1	383955	30.8	19.9
448634	30.4	20.4	353742	30.4	20.6	473234	30.5	18.8	58810	30.6	18.4	368166	30.7	20.5	521699	30.8	19.8
450253	30.4	21.1	487137	30.4	20.9	76268	30.5	18.8	76211	30.6	18.7	220128	30.7	19.7	159948	30.8	18.2
130673	30.4	19.8	447129	30.4	20.9	261389	30.5	21.5	261554	30.6	21.2	180199	30.7	19.5	51564	30.8	18.3
220551	30.4	19.7	215017	30.4	19.9	185462	30.5	19.8	379571	30.6	21.0	293021	30.7	20.6	442948	30.8	20.2
119781	30.4	19.5	69339	30.4	18.5	43950	30.5	19.2	300541	30.6	20.2	287512	30.7	19.3	133701	30.8	19.0
301355	30.4	20.3	178850	30.4	20.1	328172	30.5	20.5	93604	30.6	19.4	179434	30.7	20.4	444067	30.8	20.0
301761	30.4	19.1	330387	30.4	19.4	39482	30.5	19.5	170796	30.6	20.2	314607	30.7	19.8	434085	30.8	20.3
395661	30.4	20.2	283109	30.4	19.3	451597	30.5	21.1	89092	30.6	17.6	36143	30.7	16.7	479284	30.8	20.7
253793	30.4	19.3	257739	30.4	20.0	157365	30.5	20.1	12494	30.6	16.3	418939	30.7	21.3	257595	30.8	19.4
339389	30.4	20.5	316548	30.4	19.1	364601	30.5	19.5	59925	30.6	18.2	267291	30.7	18.6	142158	30.8	18.3
512923	30.4	20.4	30405	30.4	18.3	374773	30.5	19.2	161842	30.6	19.7	12560	30.7	17.2	236370	30.8	19.8
401458	30.4	19.4	66178	30.4	17.8	480734	30.5	19.3	380272	30.6	20.2	514570	30.7	21.1	398020	30.8	20.5
382601	30.4	21.2	263719	30.4	19.9	173415	30.5	20.0	111260	30.6	19.1	456933	30.7	20.7	155261	30.8	19.7
259587	30.4	19.8	511115	30.4	19.6	254114	30.5	19.5	359728	30.6	20.1	355557	30.7	19.4	22394	30.8	16.3
146151	30.4	19.1	130053	30.4	19.1	491845	30.5	19.3	436084	30.6	21.1	508067	30.7	20.8	282333	30.8	19.7
179115	30.4	20.1	385833	30.4	21.3	319409	30.5	20.5	112365	30.6	18.1	282069	30.7	18.4	57608	30.8	17.2
328903	30.4	20.6	238903	30.5	19.3	402524	30.5	20.1	316273	30.6	19.7	81291	30.7	18.8	90882	30.8	17.4
414390	30.4	20.4	80618	30.5	19.0	505108	30.5	20.1	205147	30.6	18.9	478653	30.7	20.7	515677	30.8	20.7
212886	30.4	19.7	353149	30.5	20.1	286572	30.5	19.8	510970	30.6	21.7	364094	30.7	18.7	79167	30.8	17.2
11812	30.4	17.5	147866	30.5	19.5	314505	30.5	21.2	280938	30.6	19.5	310111	30.7	20.1	44882	30.8	18.1
373678	30.4	19.9	21384	30.5	16.3	336289	30.5	19.2	134761	30.6	18.9	325355	30.7	19.2	393699	30.8	20.2
305095	30.4	19.8	166436	30.5	18.6	478631	30.5	20.8	135589	30.6	17.8	50030	30.7	18.2	91162	30.8	18.0
329331	30.4	20.4	3345	30.5	16.2	41966	30.5	18.0	119918	30.6	19.0	371524	30.7	20.4	361448	30.8	20.7
31927	30.4	19.0	441746	30.5	21.1	291013	30.5	20.7	505104	30.6	21.5	126566	30.7	18.8	274793	30.8	18.2
484893	30.4	19.7	9758	30.5	18.7	366037	30.5	20.1	314530	30.6	20.5	483645	30.7	21.4	174433	30.8	17.5
403195	30.4	20.3	107765	30.5	18.7	135905	30.5	18.6	34378	30.6	16.9	111736	30.7	19.7	71877	30.8	18.4
233433	30.4	19.5	273478	30.5	20.9	149361	30.5	19.0	231899	30.6	19.4	348470	30.7	20.7	424039	30.8	20.7
371906	30.4	20.8	148381	30.5	18.6	39829	30.5	17.7	504325	30.6	20.5	101605	30.7	17.0	355111	30.8	20.6
469604	30.4	20.3	510971	30.5	21.5	144084	30.5	19.9	397595	30.6	21.1	423324	30.7	20.7	16578	30.8	17.0
497231	30.4	20.6	465029	30.5	20.9	188982	30.6	19.7	214998	30.6	19.9	167532	30.7	17.9	346671	30.8	19.3
184580	30.4	18.7	262527	30.5	20.4	272385	30.6	19.1	261744	30.6	19.1	444661	30.7	20.9	471878	30.8	21.5
193224	30.4	19.2	514282	30.5	20.7	5152	30.6	15.4	198110	30.6	19.0	102421	30.7	20.2	512012	30.8	19.8
512889	30.4	20.3	163826	30.5	18.6	295619</											

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
112284	30.8	19.0	2181	30.9	16.1	343418	30.9	20.7	181257	31.1	19.2	72055	31.1	18.6	123047	31.2	17.6
185351	30.8	19.8	347512	30.9	18.9	437786	30.9	20.8	515415	31.1	21.0	282774	31.1	20.1	253729	31.2	20.8
106585	30.8	19.5	518354	30.9	21.0	88970	30.9	19.0	478817	31.1	21.2	265544	31.1	19.9	379649	31.2	20.4
231925	30.8	20.1	184903	30.9	20.2	89714	30.9	19.0	521624	31.1	20.9	448412	31.1	19.9	31831	31.2	18.0
319016	30.8	19.3	83843	30.9	17.5	42233	30.9	18.7	510616	31.1	19.9	389616	31.1	19.3	295111	31.2	20.0
405058	30.8	20.5	474393	30.9	18.9	367890	30.9	20.9	67913	31.1	18.1	343944	31.1	19.6	183897	31.2	18.9
350197	30.8	20.4	366145	30.9	20.2	66157	30.9	18.7	342210	31.1	20.1	395293	31.1	18.8	380574	31.2	20.5
26728	30.8	18.2	49118	30.9	19.1	38511	30.9	17.6	6012	31.1	15.0	129704	31.2	19.2	405849	31.2	19.1
321686	30.8	20.2	376541	30.9	19.4	26893	30.9	17.6	164024	31.1	19.5	358439	31.2	19.2	442373	31.2	20.4
366211	30.8	19.9	210018	30.9	19.0	97852	30.9	17.5	133976	31.1	21.0	242330	31.2	19.5	392297	31.2	21.9
493790	30.8	20.7	227272	30.9	20.3	38155	30.9	16.4	215062	31.1	19.5	127337	31.2	18.7	371455	31.2	18.8
323734	30.8	20.1	256445	30.9	19.7	514042	30.9	20.4	485460	31.1	21.3	321291	31.2	19.8	353847	31.2	20.1
140798	30.8	19.3	307998	30.9	19.7	480519	31.0	20.6	512435	31.1	20.6	319241	31.2	19.8	496421	31.2	20.9
354757	30.8	19.9	387345	30.9	20.6	142036	31.0	19.4	480373	31.1	19.6	159090	31.2	19.5	252791	31.2	20.2
255386	30.9	18.8	343166	30.9	21.8	43213	31.0	18.2	120330	31.1	19.1	270483	31.2	20.3	352162	31.2	18.4
249238	30.9	20.1	67216	30.9	17.5	521742	31.0	21.3	71585	31.1	18.5	429489	31.2	21.2	511093	31.2	20.8
465251	30.9	19.5	224595	30.9	20.9	445840	31.0	21.4	148295	31.1	19.8	159137	31.2	17.1	255229	31.2	20.3
118078	30.9	17.7	515087	30.9	20.6	507283	31.0	21.3	438611	31.1	20.4	208711	31.2	19.0	249043	31.2	19.9
80323	30.9	19.8	446536	30.9	19.7	103800	31.0	19.2	361463	31.1	21.1	186662	31.2	20.1	398869	31.2	20.9
259757	30.9	21.1	79757	30.9	18.4	513654	31.0	20.4	455020	31.1	20.1	485822	31.2	20.4	101018	31.2	18.6
391774	30.9	19.8	396347	30.9	20.6	242881	31.0	21.7	73123	31.1	17.6	352964	31.2	20.7	261826	31.2	19.3
223540	30.9	19.4	478865	30.9	19.9	54257	31.0	17.6	306402	31.1	20.5	133012	31.2	19.7	59118	31.3	19.0
479039	30.9	21.0	416572	30.9	20.5	328213	31.0	19.9	79213	31.1	18.3	73260	31.2	18.5	96613	31.3	18.2
44065	30.9	18.4	402018	30.9	20.1	141937	31.0	17.9	339177	31.1	20.2	515977	31.2	20.8	43258	31.3	17.8
337071	30.9	20.0	170391	30.9	19.6	41877	31.0	18.4	523724	31.1	21.3	14840	31.2	16.8	302131	31.3	19.7
182351	30.9	19.2	399063	30.9	21.2	172567	31.0	19.2	519508	31.1	22.0	167288	31.2	19.0	95201	31.3	19.0
270740	30.9	18.2	509988	30.9	21.2	241456	31.0	19.7	15542	31.1	18.1	444251	31.2	20.7	198337	31.3	20.1
71612	30.9	17.0	99021	30.9	18.5	109613	31.0	19.2	257042	31.1	21.0	263298	31.2	19.9	286768	31.3	18.3
257402	30.9	19.5	131624	30.9	18.6	151437	31.0	18.8	183552	31.1	20.4	115027	31.2	18.8	215729	31.3	19.2
59577	30.9	17.6	272349	30.9	20.5	212692	31.0	19.8	314534	31.1	19.8	363462	31.2	19.5	353759	31.3	19.6
146899	30.9	20.0	188441	30.9	19.5	329527	31.0	19.3	55989	31.1	17.1	133036	31.2	18.3	51021	31.3	19.1
148229	30.9	20.0	426175	30.9	20.7	263268	31.0	19.8	245330	31.1	18.9	321737	31.2	19.2	143936	31.3	19.6
329949	30.9	19.9	207712	30.9	19.6	41783	31.0	17.8	378254	31.1	21.2	357838	31.2	20.3	499661	31.3	21.0
515202	30.9	20.6	339278	30.9	18.5	403414	31.0	19.8	380994	31.1	20.9	404545	31.2	20.7	452308	31.3	19.3
429520	30.9	20.4	338484	30.9	19.8	71582	31.0	18.1	167445	31.1	19.7	20008	31.2	16.0	78912	31.3	18.3
41185	30.9	18.1	142870	30.9	19.6	147038	31.0	18.6	162845	31.1	19.3	239661	31.2	19.8	501866	31.3	20.3
286801	30.9	19.2	178422	30.9	18.7	195230	31.0	19.5	515803	31.1	20.3	504852	31.2	20.8	42216	31.3	18.1
280049	30.9	20.2	127216	30.9	19.3	257044	31.0	20.4	439420	31.1	19.2	91581	31.2	18.6	202168	31.3	18.7
287184	30.9	19.5	191027	30.9	19.7	254154	31.0	19.5	99075	31.1	18.3	153281	31.2	18.9	339349	31.3	20.8
117981	30.9	19.0	29732	30.9	17.0	331886	31.0	20.2	324721	31.1	20.6	431009	31.2	21.2	367853	31.3	20.3
120806	30.9	19.5	293304	30.9	20.5	191884	31.0	19.0	199186	31.1	19.3	520541	31.2	20.4	262258	31.3	21.2
28566	30.9	18.1	67074	30.9	18.8	351147	31.0	20.6	24108	31.1	17.4	16130	31.2	16.5	120178	31.3	20.2
115115	30.9	19.0	68694	30.9	18.1	444203	31.0	20.7	315091	31.1	19.5	404109	31.2	20.5	121523	31.3	19.1
384509	30.9	20.3	171735	30.9	19.9	224212	31.0	18.7	477009	31.1	21.1	207321	31.2	20.3	112999	31.3	18.6
107442	30.9	18.3	471718	30.9	20.2	92757	31.0	17.8	201509	31.1	18.3	317752	31.2	19.0	438340	31.3	19.4
237582	30.9	19.9	306987	30.9	19.9	481732	31.0	21.3	193680	31.1	19.7	234081	31.2	18.3	25889	31.3	16.4
198265	30.9	19.4	80837	30.9	19.5	154806	31.0	19.5	476669	31.1	21.1	79660	31.2	19.2	44474	31.3	18.7
440917	30.9	21.0	127027	30.9	19.6	449448	31.0	20.3	11167	31.1	17.1	244376	31.2	19.8	252201	31.3	20.8
316058	30.9	20.8	426460	30.9	19.8	199531	31.0	19.6	44701	31.1	17.1	449064	31.2	20.8	132420	31.3	20.6
316037	30.9	19.5	340197	30.9	20.8	523191	31.0	20.8	137929	31.1	19.8	450028	31.2	19.6	288321	31.3	20.4
312998	30.9	18.8	428621	30.9	21.5	386917	31.0	20.0	299191	31.1	20.2	107651	31.2	19.3	191017	31.3	19.4
354500	30.9	19.3	275650	30.9	20.8	86843	31.0	19.0	210413	31.1	19.1	450506	31.2	20.7	321015	31.3	19.9
138975	30.9	20.2	16467	30.9	16.6	510945	31.0	21.1	237849	31.1	19.6	221686	31.2	19.2	374726	31.3	19.5
207481	30.9	19.9	200189	30.9	19.0	390947	31.0	20.0	310302	31.1	19.8	6781	31.2	16.6	183572	31.3	19.0
214866	30.9	19.1	336003	30.9	20.2	87245	31.0	16.9	291408	31.1	19.9	67580	31.2	19.0	257975	31.3	20.4
137238	30.9	18.2	366098	30.9	19.4	17459	31.0	16.8	284421	31.1	20.7	284841	31.2	19.5	402451	31.3	20.9
487153	30.9	21.0	484914	30.9	19.5	243407	31.0	20.0	66579	31.1	17.7	6353	31.2	17.1	427638	31.3	20.9
444999	30.9	20.8	144133	30.9	20.4	477078	31.0	19.8	265551	31.1	19.0	402421	31.2	20.5	389172	31.3	20.5
40890	30.9	19.1	400218	30.9	20.8	363711	31.0	19.7	349240	31.1	20.5	140780	31.2	19.4	436554	31.3	19.9
511230	30.9	21.8	360423	30.9	20.9	437350	31.0	20.3	417886	31.1	19.0	80895	31.2	19.2	350329	31.3	20.6
373398	30.9	19.6	49404	30.9	17.5	472240	31.0	20.1	15152	31.1	18.5	8121	31.2	17.8	30084	31.3	18.9
100761	30.9	17.9	168894	30.9	19.7	224614	31.1	20.5	491282	31.1	21.0	143909	31.2	19.7	159264	31.3	20.5
100095	30.9	18.3	7912	30.9	16.4	3233	31.1	15.2	108651	31.1	18.0	59431	31.2	18.9	405235	31.3	19.9
316001	30.9	20.0	443078	30.9	19.6	46167	31.1	18.9	147626	31.1	18.8	481734	31.2	19.9	166098	31.3	18.4
44350	30.9	17.9	313338	30.9	20.6	210284	31.1	20.1	429676	31.1	20.0	41540	31.2	18.0	119017	31.3	19.0
197149	30.9	19.5	382488	30.9	21.2	105825	31.1	19.3	187355	31.1	20.3	344961	31.2	21.4	483783	31.3	21.8
516064	30.9	19.9	329750	30.9	20.2	202591	31.1	19.3	79704	31.1	18.0	490319	31.2	21.6	126526	31.3	18.6
387022	30.9	18.3	274123	30.9	19.9	414061	31.1	19.7	148131	31.1	18.7	132738	31.2	18.6	212344	31.3	20.6
314299	30.9	20.6	245093	30.9	19.5	193681	31.1										

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
327634	31.3	18.1	487758	31.4	21.7	103347	31.5	19.6	34246	31.6	17.4	506901	31.7	21.6	34409	31.7	18.4
278896	31.3	19.5	401284	31.4	20.6	224295	31.5	20.3	269710	31.6	19.5	49186	31.7	18.9	388988	31.7	18.4
116373	31.3	19.4	13313	31.4	18.1	177239	31.5	19.7	5072	31.6	16.2	164985	31.7	20.0	114815	31.8	18.9
283713	31.3	18.6	349731	31.4	21.4	237458	31.5	18.8	145223	31.6	18.8	22046	31.7	17.2	223399	31.8	19.6
282681	31.3	19.9	408669	31.4	20.4	213815	31.5	17.7	330261	31.6	19.6	212949	31.7	19.4	438793	31.8	20.3
363250	31.3	20.1	83808	31.4	19.3	513879	31.5	21.4	485787	31.6	20.2	271053	31.7	19.4	436601	31.8	20.9
62797	31.3	18.4	407157	31.4	20.4	243182	31.5	18.9	352411	31.6	20.3	352237	31.7	19.8	399914	31.8	21.6
332489	31.3	21.0	470673	31.4	20.8	146803	31.5	19.0	344813	31.6	20.2	75573	31.7	18.4	122864	31.8	19.2
366050	31.3	20.6	2391	31.4	15.6	208022	31.5	19.5	287721	31.6	20.1	220864	31.7	19.9	473532	31.8	20.9
367494	31.3	20.4	171769	31.4	19.9	102770	31.5	18.0	131591	31.6	19.1	149118	31.7	20.0	243470	31.8	19.7
157314	31.3	20.3	268353	31.4	21.0	223171	31.5	20.0	266284	31.6	20.4	374889	31.7	20.5	344640	31.8	19.3
514517	31.3	20.8	157897	31.4	21.1	479497	31.5	20.4	164737	31.6	18.9	129071	31.7	19.1	15428	31.8	17.7
386345	31.3	20.0	401261	31.4	20.3	506662	31.5	20.3	328901	31.6	20.7	387008	31.7	18.9	59019	31.8	18.6
473380	31.3	20.0	513883	31.4	21.0	221780	31.5	20.2	399040	31.6	20.7	63201	31.7	19.1	250675	31.8	19.8
129653	31.3	16.9	434820	31.4	21.1	288226	31.5	19.9	289245	31.6	20.1	478547	31.7	19.5	222220	31.8	18.8
16220	31.3	17.7	131994	31.4	18.6	185834	31.5	20.4	66586	31.6	18.1	444729	31.7	22.0	195563	31.8	20.0
124938	31.3	19.7	427127	31.4	20.8	344717	31.5	19.7	225364	31.6	19.1	487038	31.7	21.0	91962	31.8	18.6
136911	31.3	19.6	296672	31.4	19.8	326199	31.5	21.2	384041	31.6	21.5	228880	31.7	18.9	513410	31.8	20.8
381765	31.3	20.3	392753	31.4	21.1	511216	31.5	21.5	378180	31.6	20.8	164676	31.7	19.9	164224	31.8	18.4
52008	31.3	17.9	176083	31.4	20.1	364587	31.5	18.4	72654	31.6	19.6	373448	31.7	20.9	262222	31.8	19.0
383266	31.3	22.2	5996	31.4	15.3	516273	31.5	20.4	117046	31.6	17.9	47547	31.7	19.0	365266	31.8	19.3
55983	31.3	18.1	225694	31.4	18.8	312655	31.5	19.0	322021	31.6	19.8	265524	31.7	19.6	283176	31.8	19.7
172721	31.3	19.7	74677	31.4	17.1	270976	31.5	19.2	505019	31.6	20.6	442298	31.7	20.2	354099	31.8	20.0
1945	31.3	14.7	373416	31.4	19.3	135922	31.5	18.8	401241	31.6	20.8	393027	31.7	20.3	480329	31.8	20.3
307005	31.3	24.5	103949	31.4	19.9	129354	31.5	19.2	491332	31.6	19.8	38261	31.7	18.0	15293	31.8	17.8
227302	31.3	19.6	67222	31.4	19.4	148048	31.5	18.7	469681	31.6	20.7	273580	31.7	20.9	361404	31.8	20.3
150449	31.3	20.5	324754	31.4	20.6	24306	31.5	17.6	394751	31.6	19.4	298674	31.7	19.7	451144	31.8	19.4
129131	31.3	19.8	282984	31.4	19.1	518872	31.5	21.6	6655	31.6	15.8	252137	31.7	20.4	507236	31.8	22.4
86818	31.3	18.1	129541	31.4	16.8	58377	31.5	19.3	165073	31.6	20.0	44112	31.7	17.5	217641	31.8	19.9
449787	31.3	20.7	91920	31.4	19.2	99742	31.5	18.9	362283	31.6	18.6	267150	31.7	19.6	369953	31.8	19.8
268878	31.3	19.7	490314	31.4	21.6	401217	31.5	20.6	264915	31.6	19.5	128260	31.7	18.4	473389	31.8	19.5
49044	31.3	18.8	265718	31.4	19.1	372349	31.5	20.1	120558	31.6	19.4	43283	31.7	16.9	184540	31.8	19.9
252070	31.3	19.7	167235	31.4	18.5	40562	31.5	18.0	256478	31.6	19.7	349724	31.7	20.4	316101	31.8	20.2
306836	31.3	19.2	360727	31.4	20.2	385253	31.5	21.4	318990	31.6	20.5	30305	31.7	17.3	276130	31.8	19.7
505583	31.3	21.3	514389	31.4	20.5	280106	31.5	20.2	308912	31.6	20.3	214103	31.7	18.7	278518	31.8	19.9
241461	31.3	19.2	284984	31.4	20.0	452077	31.5	19.9	159335	31.6	19.7	235780	31.7	20.9	523116	31.8	20.5
509597	31.3	21.5	517884	31.4	20.2	18300	31.5	16.6	71150	31.6	17.8	368872	31.7	19.9	516073	31.8	20.8
217736	31.4	19.6	145629	31.4	18.7	153259	31.5	20.0	211156	31.6	19.4	178391	31.7	19.8	339339	31.8	18.5
215598	31.4	18.2	193517	31.4	19.5	20553	31.5	17.7	321654	31.6	20.3	215393	31.7	20.3	145034	31.8	19.3
14535	31.4	18.5	388831	31.4	20.2	224910	31.5	21.2	33781	31.6	17.8	398667	31.7	20.8	312614	31.8	20.4
326173	31.4	20.5	443425	31.4	20.5	443112	31.5	20.0	412753	31.6	19.8	186445	31.7	18.7	356231	31.8	20.7
251741	31.4	20.2	213478	31.4	20.2	351059	31.5	19.5	43968	31.6	19.3	43887	31.7	19.0	382994	31.8	20.6
261770	31.4	20.0	439836	31.4	18.8	289953	31.6	18.9	82574	31.6	18.9	315806	31.7	19.8	479650	31.8	20.4
121751	31.4	20.1	103708	31.4	19.0	353849	31.6	20.5	46941	31.6	18.4	42225	31.7	18.1	255799	31.8	19.7
295248	31.4	20.1	146075	31.4	20.2	424576	31.6	20.3	90621	31.6	17.9	15140	31.7	17.2	173810	31.8	19.3
297187	31.4	19.7	160345	31.4	19.4	266107	31.6	19.0	474564	31.6	21.6	341087	31.7	19.8	41721	31.8	17.6
299697	31.4	19.8	516268	31.4	22.0	403392	31.6	19.7	509973	31.6	20.9	344131	31.7	20.6	518310	31.8	21.0
254859	31.4	20.2	280397	31.4	18.6	406985	31.6	20.2	418251	31.6	20.6	516232	31.7	20.1	47020	31.8	17.8
333813	31.4	21.3	420870	31.4	19.9	25994	31.6	18.0	169037	31.6	19.8	131042	31.7	19.4	225257	31.8	19.4
163829	31.4	18.7	273496	31.4	21.0	442044	31.6	21.3	365010	31.6	20.5	154079	31.7	21.0	376728	31.8	21.1
472185	31.4	20.2	287237	31.4	19.5	323556	31.6	20.5	138430	31.6	19.5	41853	31.7	16.4	49309	31.8	17.9
475329	31.4	21.2	479503	31.4	20.0	487785	31.6	21.3	487916	31.6	19.8	485832	31.7	21.7	119274	31.8	19.3
301842	31.4	18.4	157285	31.4	19.3	362270	31.6	20.0	246188	31.6	19.8	509197	31.7	18.9	147989	31.8	19.5
513466	31.4	21.6	392598	31.4	20.1	267709	31.6	20.3	152087	31.6	19.3	432260	31.7	20.6	10514	31.8	16.0
68611	31.4	18.8	218450	31.4	18.4	98330	31.6	19.1	147138	31.6	18.3	443467	31.7	20.7	405261	31.8	21.2
93687	31.4	17.7	241758	31.4	20.5	137947	31.6	20.2	342672	31.6	21.0	128869	31.7	19.2	365781	31.8	20.4
490778	31.4	20.7	149967	31.5	20.0	184450	31.6	18.2	342723	31.6	19.9	416016	31.7	20.2	439262	31.8	19.1
442403	31.4	20.6	285501	31.5	20.3	251350	31.6	18.5	325992	31.6	21.5	7700	31.7	17.4	257198	31.8	20.8
447328	31.4	20.7	123790	31.5	19.8	505795	31.6	21.6	144296	31.6	19.7	405014	31.7	19.9	337309	31.8	18.7
121435	31.4	19.7	523140	31.5	20.8	75809	31.6	19.7	284293	31.6	20.4	307181	31.7	19.7	131006	31.8	20.3
239606	31.4	19.3	312541	31.5	20.6	235783	31.6	20.8	113637	31.6	18.0	42773	31.7	17.4	510710	31.8	21.3
101171	31.4	18.5	200539	31.5	19.9	479640	31.6	20.4	496653	31.6	19.7	182462	31.7	19.4	342738	31.8	19.8
470571	31.4	20.2	399132	31.5	20.0	291680	31.6	20.3	69501	31.6	19.2	120935	31.7	19.4	426153	31.8	21.2
53472	31.4	18.3	395408	31.5	19.9	199640	31.6	20.1	264629	31.6	18.5	510193	31.7	21.2	318032	31.8	20.2
430534	31.4	19.8	378213	31.5	20.6	219913	31.6	20.1	279	31.6	14.5	377115	31.7	19.3	512161	31.8	19.8
215616	31.4	18.6	126634	31.5	20.7	258612	31.6	20.1	255488	31.6	19.6	520544	31.7	21.2	45923	31.8	18.7
448709	31.4	19.6	324707	31.5	20.9	88892	31.6	18.9	395042	31.6	20.1	426094	31.7	20.5	280603	31.8	19.5
293172	31.4	21.1	148127	31.5	18.5	250851	31.6	19.9	306822	31.6	18.7	125602	31.7	17.8	418037	31.8	21.0
26146	31.4	16.7	286580	31.5	20.2	346960</											

LIST OF ALL MINOR PLANETS IN ORDER OF OPPOSITION DATES IN 2020

№	08	V	№	08	V	№	08	V	№	08	V	№	08	V	№	08	V
291502	31.8	21.3	401243	31.9	20.5	173471	31.9	19.4	315399	31.9	20.8	181585	31.9	20.3	257726	31.9	20.0
117210	31.8	19.3	143648	31.9	18.6	200345	31.9	21.4	225649	31.9	19.5	506758	31.9	21.9	330864	31.9	19.8
330563	31.9	21.2	349916	31.9	20.2	520216	31.9	21.9	100034	31.9	16.8	399631	31.9	19.0	230918	31.9	19.0
123074	31.9	17.2	298154	31.9	19.5	298135	31.9	20.3	477473	31.9	19.9	515224	31.9	20.5	74955	31.9	17.5
263439	31.9	20.0	66628	31.9	17.5	17050	31.9	16.3	129508	31.9	20.4	81200	31.9	19.0	419014	31.9	20.2
97270	31.9	19.7	284061	31.9	19.3	184299	31.9	18.8	206490	31.9	19.8	479622	31.9	21.4	479577	31.9	20.9
219505	31.9	18.4	323670	31.9	21.0	334392	31.9	19.8	22743	31.9	17.0	98354	31.9	19.4	249188	31.9	19.2
100624	31.9	19.1	404554	31.9	20.7	306512	31.9	19.3	119387	31.9	19.7	510298	31.9	20.2	39020	31.9	17.8
36619	31.9	16.6	494425	31.9	20.4	435188	31.9	18.8	288386	31.9	19.6	346606	31.9	18.4	419798	31.9	19.4
237911	31.9	18.3	219140	31.9	20.0	367466	31.9	20.5	139575	31.9	19.1	283453	31.9	19.8	342010	31.9	20.1
262292	31.9	20.1	179282	31.9	20.3	321435	31.9	20.0	410683	31.9	20.9	220898	31.9	19.9	98442	31.9	19.1
180476	31.9	18.8	319388	31.9	20.9	470486	31.9	21.7	331117	31.9	20.7	79729	31.9	18.3	121646	31.9	18.9
179679	31.9	20.1	79090	31.9	17.4	315177	31.9	20.8	111273	31.9	19.3	93399	31.9	18.3	162264	31.9	18.7
79613	31.9	17.3	273437	31.9	20.7	175600	31.9	19.8	446961	31.9	20.5	75790	31.9	19.0	135989	31.9	18.8
401763	31.9	20.0	365345	31.9	20.1	454832	31.9	19.7	52855	31.9	17.7	503985	31.9	19.0	294547	31.9	20.8
467456	31.9	21.8	473413	31.9	21.0	40251	31.9	18.0	362957	31.9	19.7	137648	31.9	19.4	317990	31.9	19.7
499073	31.9	21.0	162153	31.9	19.3	398250	31.9	20.1	483123	31.9	20.1	133556	31.9	19.0	315124	31.9	20.5
364142	31.9	20.0	149922	31.9	18.6	168177	31.9	18.6	382599	31.9	20.5	209294	31.9	19.9			
208940	31.9	19.4	311906	31.9	21.0	43421	31.9	18.5	337321	31.9	20.0	342292	31.9	20.7			
371608	31.9	18.4	262459	31.9	20.8	469840	31.9	19.9	445384	31.9	20.1	487975	31.9	20.6			
252762	31.9	19.3	55644	31.9	18.5	66683	31.9	17.8	154101	31.9	19.2	389444	31.9	20.1			
342624	31.9	20.4	283234	31.9	20.2	174238	31.9	18.8	476700	31.9	19.7	53225	31.9	16.5			
162189	31.9	18.6	335123	31.9	19.7	41644	31.9	18.7	161230	31.9	17.4	282739	31.9	20.5			
19889	31.9	18.5	514056	31.9	20.7	249533	31.9	19.7	67086	31.9	18.0	213675	31.9	19.7			
496429	31.9	20.7	59297	31.9	18.0	397764	31.9	20.4	107416	31.9	18.5	221473	31.9	19.1			
287347	31.9	20.0	39127	31.9	18.8	282509	31.9	17.9	479882	31.9	21.7	442572	31.9	19.0			
518943	31.9	19.8	287443	31.9	19.5	475387	31.9	21.2	50126	31.9	18.1	16980	31.9	17.1			
45087	31.9	18.2	483849	31.9	21.6	60328	31.9	19.2	376204	31.9	20.8	413117	31.9	20.0			
356218	31.9	21.6	30179	31.9	18.7	188509	31.9	19.3	220284	31.9	19.6	202088	31.9	19.5			
229604	31.9	20.0	146022	31.9	19.6	195232	31.9	19.8	1921	31.9	16.9	117657	31.9	18.0			