

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

Nº	10	V															
317493	1.0	18.9	430839	1.1	20.7	81368	1.2	18.8	301517	1.2	20.8	29454	1.3	18.1	324321	1.4	20.3
340521	1.0	21.1	223012	1.1	20.0	165233	1.2	19.1	51426	1.2	19.3	489686	1.3	19.8	316388	1.4	20.4
263640	1.0	19.4	164133	1.1	17.8	454522	1.2	21.0	402073	1.2	19.1	80929	1.3	19.2	395463	1.4	20.3
244670	1.0	21.5	443458	1.1	20.8	217702	1.2	18.7	25949	1.2	18.3	217169	1.3	19.5	344113	1.4	21.4
235706	1.0	19.7	102934	1.1	18.9	384436	1.2	19.7	258669	1.2	20.4	188412	1.3	19.2	142853	1.4	18.6
311349	1.0	20.2	481957	1.1	20.6	203209	1.2	20.5	100100	1.2	20.4	410983	1.3	20.6	16152	1.4	18.3
181326	1.0	18.1	43732	1.1	18.2	199179	1.2	20.3	352385	1.2	19.6	380749	1.3	19.9	520978	1.4	20.0
250991	1.0	18.9	401625	1.1	20.4	476801	1.2	20.6	325642	1.2	19.7	511106	1.3	20.4	291814	1.4	19.8
108959	1.0	19.7	448104	1.1	20.1	252710	1.2	19.4	269737	1.2	18.6	513877	1.3	21.2	168631	1.4	19.5
408381	1.0	20.9	85036	1.1	19.0	286517	1.2	20.1	132521	1.2	18.7	320552	1.3	20.4	181848	1.4	18.5
33121	1.0	17.7	401265	1.1	19.4	448355	1.2	21.1	279668	1.2	19.6	106766	1.3	18.0	522949	1.4	19.9
21743	1.0	17.7	407058	1.1	19.7	236551	1.2	19.6	523203	1.2	20.2	441942	1.3	19.8	316904	1.4	18.8
389570	1.0	21.0	40206	1.1	18.6	483232	1.2	20.6	507375	1.2	21.9	114393	1.3	18.2	400655	1.4	20.6
260293	1.0	20.8	306145	1.1	20.5	447711	1.2	20.0	449205	1.2	20.8	353554	1.3	19.8	71229	1.4	18.2
369877	1.0	21.1	186988	1.1	19.2	82488	1.2	19.1	99355	1.2	18.5	221891	1.3	21.0	248012	1.4	19.8
403384	1.0	19.8	127220	1.1	20.3	461129	1.2	20.1	287044	1.2	20.5	517040	1.3	21.9	487041	1.4	20.7
280294	1.0	19.6	98564	1.1	19.1	322233	1.2	20.0	63588	1.2	18.1	44153	1.3	18.3	314032	1.4	19.1
5046	1.0	16.3	510210	1.1	20.7	395412	1.2	20.3	513703	1.2	20.7	16950	1.3	16.3	349822	1.4	19.3
205837	1.0	20.6	284	1.1	12.5	383157	1.2	20.9	37177	1.3	18.4	129151	1.3	19.0	471564	1.4	20.2
211748	1.0	19.6	324092	1.1	20.5	133546	1.2	18.2	328710	1.3	19.4	20581	1.3	18.6	423329	1.4	21.7
363668	1.0	20.0	89929	1.1	18.1	277419	1.2	21.0	197619	1.3	19.8	64596	1.3	17.5	243318	1.4	20.1
378628	1.0	21.0	215606	1.1	19.1	131080	1.2	19.6	314651	1.3	20.2	79110	1.3	19.6	411942	1.4	21.3
251742	1.0	20.1	23648	1.1	15.1	509888	1.2	21.0	430946	1.3	19.9	515681	1.3	21.4	513450	1.4	20.5
294454	1.0	19.5	268201	1.1	19.7	261943	1.2	18.6	118369	1.3	20.1	193592	1.3	19.8	316905	1.4	18.9
484122	1.0	20.5	41610	1.1	18.7	425049	1.2	19.6	321594	1.3	20.4	360668	1.3	19.9	52191	1.4	17.9
174263	1.0	20.2	219470	1.1	19.9	482653	1.2	20.9	103670	1.3	19.7	364378	1.3	20.5	223316	1.4	19.0
4038	1.0	15.5	45713	1.1	18.5	208021	1.2	18.1	50496	1.3	18.5	92135	1.3	18.0	222785	1.4	19.9
21572	1.0	18.4	319982	1.1	21.0	257528	1.2	20.0	128952	1.3	19.8	342125	1.3	20.7	233564	1.4	20.0
511382	1.0	21.0	305157	1.1	20.1	323020	1.2	20.9	67581	1.3	18.0	487403	1.3	21.0	344845	1.4	19.0
117946	1.0	18.7	203142	1.1	18.5	394882	1.2	20.3	34629	1.3	18.6	297152	1.3	19.4	352892	1.4	20.4
344157	1.0	19.9	257393	1.1	20.5	399138	1.2	20.6	124049	1.3	19.5	49363	1.3	17.5	24321	1.4	18.3
509118	1.0	20.4	150273	1.1	18.6	404538	1.2	19.5	99046	1.3	19.6	208184	1.3	18.0	190594	1.4	18.7
356493	1.0	19.6	386905	1.1	20.1	364530	1.2	20.1	22687	1.3	20.7	306849	1.3	19.7	269621	1.4	19.8
315311	1.0	20.0	130784	1.1	19.1	261473	1.2	19.7	251511	1.3	20.2	454847	1.4	21.3	196081	1.4	19.1
428398	1.0	20.0	340310	1.1	20.6	57480	1.2	17.5	279585	1.3	20.1	280451	1.4	20.4	259830	1.4	20.0
443277	1.0	21.4	474283	1.1	19.9	303157	1.2	19.7	91586	1.3	19.4	198777	1.4	19.5	1019	1.4	15.0
210110	1.0	19.6	275142	1.1	19.2	59263	1.2	17.6	436097	1.3	20.2	89855	1.4	18.8	349771	1.4	18.2
43041	1.0	16.8	10266	1.1	16.3	340857	1.2	21.3	509587	1.3	21.6	222042	1.4	19.6	396765	1.4	19.3
415305	1.0	19.7	381087	1.1	19.8	2082	1.2	17.3	76390	1.3	19.6	122423	1.4	18.5	314382	1.4	20.7
267112	1.0	20.4	26763	1.1	19.1	422189	1.2	20.4	441343	1.3	20.5	374718	1.4	18.9	357656	1.4	20.1
344110	1.0	18.8	214280	1.1	19.4	105894	1.2	17.3	168084	1.3	18.4	284746	1.4	21.3	131775	1.4	18.2
323679	1.0	20.8	158804	1.1	18.6	172803	1.2	20.1	5884	1.3	16.6	299125	1.4	20.4	69387	1.4	18.7
266697	1.1	19.6	507703	1.1	20.1	289867	1.2	20.5	511170	1.3	21.3	388945	1.4	20.3	509213	1.4	20.3
366072	1.1	20.2	163842	1.1	19.4	217353	1.2	20.2	100839	1.3	20.1	67215	1.4	18.0	186361	1.4	19.1
514539	1.1	20.9	407059	1.1	21.5	93989	1.2	19.0	393039	1.3	20.2	512023	1.4	19.5	433675	1.4	20.3
428333	1.1	20.0	285916	1.1	18.6	257556	1.2	20.6	389355	1.3	20.9	27232	1.4	17.8	328443	1.4	20.0
402002	1.1	19.7	306651	1.1	19.4	12714	1.2	17.2	17432	1.3	16.7	442958	1.4	21.5	266461	1.4	19.7
313320	1.1	20.5	507914	1.1	21.0	421936	1.2	19.9	224721	1.3	20.3	374859	1.4	20.7	134965	1.4	19.2
126876	1.1	19.2	400611	1.1	20.4	45378	1.2	17.7	150661	1.3	19.8	244258	1.4	19.5	427896	1.4	21.3
91647	1.1	17.6	253682	1.1	20.0	305787	1.2	20.0	289165	1.3	21.2	12128	1.4	16.8	304247	1.4	20.1
427863	1.1	20.8	158698	1.1	20.2	14730	1.2	17.0	328056	1.3	20.7	489568	1.4	20.2	57593	1.5	18.3
50179	1.1	18.0	35203	1.1	18.6	163008	1.2	19.6	450468	1.3	20.6	446913	1.4	19.9	361022	1.5	20.6
219292	1.1	19.5	220229	1.1	19.0	497529	1.2	20.4	433656	1.3	20.5	303456	1.4	19.6	38927	1.5	18.5
282455	1.1	19.8	159360	1.1	19.8	398916	1.2	20.6	424379	1.3	18.9	6413	1.4	15.8	19184	1.5	15.9
389825	1.1	21.0	166360	1.1	20.1	96220	1.2	17.9	482652	1.3	20.9	38149	1.4	18.2	395512	1.5	20.1
402204	1.1	19.6	232202	1.1	20.8	379142	1.2	20.9	144840	1.3	19.2	436410	1.4	21.5	327127	1.5	20.1
408583	1.1	20.4	369026	1.1	19.6	70736	1.2	17.7	396599	1.3	19.6	306818	1.4	18.8	368486	1.5	19.4
356658	1.1	19.5	402812	1.1	21.6	149545	1.2	19.5	189339	1.3	19.5	323541	1.4	20.1	202784	1.5	20.0
386760	1.1	20.7	98629	1.1	18.4	404151	1.2	21.9	128269	1.3	18.5	50245	1.4	18.1	4603	1.5	15.9
200022	1.1	19.0	215421	1.1	19.6	446054	1.2	20.4	86599	1.3	19.6	219905	1.4	20.0	317774	1.5	19.8
334432	1.1	20.2	175068	1.1	19.7	421620	1.2	20.0	18243	1.3	16.3	368470	1.4	19.8	195218	1.5	19.4
81513	1.1	18.8	324212	1.1	20.7	355727	1.2	20.4	124213	1.3	17.6	259317	1.4	20.3	474481	1.5	19.1
55904	1.1	18.7	217627	1.1	18.8	195398	1.2	19.9	129								

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

Nº	10	V															
444546	1.5	20.4	35276	1.6	18.2	202198	1.6	20.3	313598	1.7	19.1	343847	1.8	20.3	480340	1.8	20.0
362869	1.5	20.7	416858	1.6	21.1	494536	1.6	20.5	220871	1.7	18.8	137480	1.8	19.9	357183	1.8	20.4
377661	1.5	21.1	410851	1.6	20.5	175247	1.6	20.7	103193	1.7	17.7	8723	1.8	17.2	304260	1.9	21.1
296454	1.5	19.9	476928	1.6	20.7	90643	1.6	18.9	404577	1.7	20.4	334323	1.8	19.4	81282	1.9	17.8
73467	1.5	19.2	249759	1.6	19.3	242559	1.6	20.2	485031	1.7	20.6	479022	1.8	21.0	509991	1.9	20.8
63292	1.5	18.9	42251	1.6	18.1	421537	1.6	21.0	511601	1.7	22.1	517118	1.8	21.7	506840	1.9	19.7
517472	1.5	21.0	424390	1.6	20.7	339338	1.6	18.5	74254	1.7	18.0	410096	1.8	20.4	244798	1.9	19.0
254815	1.5	20.1	484928	1.6	21.0	477770	1.6	21.6	177943	1.7	20.6	188418	1.8	20.1	329052	1.9	20.5
304245	1.5	19.2	131641	1.6	19.1	342339	1.6	20.4	53731	1.7	17.6	115431	1.8	18.3	455467	1.9	19.7
181493	1.5	20.3	425756	1.6	21.1	475153	1.6	20.3	277042	1.7	19.7	516098	1.8	20.9	324291	1.9	20.3
232957	1.5	20.0	319448	1.6	20.8	146019	1.6	20.6	207288	1.7	20.2	68247	1.8	19.1	99785	1.9	19.4
131003	1.5	19.1	293408	1.6	19.9	504034	1.6	25.6	173729	1.7	19.0	444043	1.8	18.6	403690	1.9	20.3
94162	1.5	17.5	461297	1.6	19.6	517126	1.6	22.1	21849	1.7	18.6	507785	1.8	21.6	225213	1.9	19.7
266622	1.5	20.4	380779	1.6	21.0	348016	1.6	20.3	350832	1.7	19.9	52279	1.8	18.4	312458	1.9	20.7
67887	1.5	19.4	26587	1.6	17.7	448669	1.6	20.4	69234	1.7	17.5	472372	1.8	20.9	21202	1.9	18.4
4738	1.5	15.5	303637	1.6	19.6	488804	1.6	20.8	314572	1.7	19.8	164394	1.8	19.1	226323	1.9	19.8
365966	1.5	20.7	95871	1.6	18.5	324343	1.6	19.9	156976	1.7	18.1	22434	1.8	17.8	78248	1.9	19.6
121668	1.5	19.4	356668	1.6	20.2	341840	1.6	20.4	219886	1.7	20.1	324211	1.8	21.7	217839	1.9	18.2
346625	1.5	19.0	193302	1.6	18.3	373995	1.6	21.4	346977	1.7	20.6	195324	1.8	19.5	472642	1.9	20.3
44348	1.5	17.5	149808	1.6	20.5	515333	1.6	21.7	20900	1.7	17.1	77258	1.8	18.9	13224	1.9	17.4
72163	1.5	18.1	485335	1.6	21.3	353101	1.6	20.5	63457	1.7	19.2	32307	1.8	17.9	348787	1.9	20.1
4634	1.5	16.1	195188	1.6	19.5	67670	1.6	17.3	393600	1.7	19.5	433671	1.8	21.0	478549	1.9	20.6
303546	1.5	20.4	129230	1.6	18.8	453776	1.6	20.5	68635	1.7	19.4	221505	1.8	19.9	308859	1.9	19.3
40420	1.5	17.6	356626	1.6	21.1	96067	1.6	18.8	394476	1.7	20.0	5397	1.8	15.0	141566	1.9	20.0
152766	1.5	19.2	452114	1.6	21.3	205044	1.6	18.9	130777	1.7	18.7	510941	1.8	18.9	257647	1.9	20.4
248459	1.5	19.5	125006	1.6	19.7	88178	1.6	18.0	515541	1.7	21.8	444316	1.8	20.4	193319	1.9	19.6
71166	1.5	18.4	89858	1.6	18.8	445838	1.6	20.1	249727	1.7	18.5	509152	1.8	21.3	97667	1.9	18.7
396405	1.5	20.4	53562	1.6	18.1	69230	1.6	17.3	294284	1.7	19.9	181095	1.8	19.3	470235	1.9	20.7
387619	1.5	21.6	174183	1.6	19.4	220964	1.6	18.4	487039	1.7	20.4	121856	1.8	19.2	123525	1.9	19.6
113092	1.5	18.9	129631	1.6	19.1	355781	1.6	20.3	483312	1.7	20.1	424041	1.8	21.5	513402	1.9	21.3
521844	1.5	20.9	463405	1.6	19.8	263803	1.6	19.7	431783	1.7	20.9	59898	1.8	18.1	132497	1.9	19.7
265245	1.5	20.0	118364	1.6	18.6	246831	1.6	20.0	205379	1.7	20.1	72666	1.8	18.7	240892	1.9	19.9
439549	1.5	20.7	309059	1.6	20.2	470485	1.7	21.4	320458	1.7	20.5	501581	1.8	21.5	504937	1.9	21.1
461576	1.5	18.9	224229	1.6	19.4	365005	1.7	21.1	478860	1.7	19.4	313295	1.8	21.0	113964	1.9	19.0
52206	1.5	17.7	223416	1.6	19.4	86119	1.7	18.4	356987	1.7	19.9	211264	1.8	18.0	516628	1.9	20.8
101741	1.5	18.1	266264	1.6	20.0	43942	1.7	17.2	128910	1.7	17.8	337834	1.8	19.2	213754	1.9	18.9
221717	1.5	18.6	15045	1.6	18.2	515671	1.7	20.8	65737	1.7	17.4	163807	1.8	19.4	139303	1.9	20.1
69331	1.5	18.6	323642	1.6	20.5	269444	1.7	19.4	480733	1.7	20.3	3663	1.8	17.1	115056	1.9	18.4
167860	1.5	19.8	100794	1.6	19.9	48376	1.7	17.7	308851	1.7	19.7	263133	1.8	19.3	394559	1.9	20.1
264400	1.5	20.9	485362	1.6	20.9	342852	1.7	20.7	234674	1.7	19.4	369500	1.8	20.0	60130	1.9	18.9
451387	1.5	20.1	430707	1.6	21.3	295339	1.7	21.0	436948	1.7	19.1	250666	1.8	20.1	289277	1.9	20.5
446583	1.5	20.1	392362	1.6	20.4	32951	1.7	18.8	510702	1.7	21.6	391897	1.8	19.9	355997	1.9	20.7
156695	1.5	19.9	47393	1.6	18.5	52348	1.7	19.3	454882	1.7	20.6	252812	1.8	19.5	39140	1.9	18.8
302191	1.5	19.9	482907	1.6	20.8	39231	1.7	18.5	37577	1.7	16.9	355820	1.8	21.0	374945	1.9	19.6
78695	1.5	18.8	155836	1.6	19.7	385284	1.7	20.3	125311	1.7	19.4	25854	1.8	17.8	308198	1.9	20.3
221413	1.5	19.3	416588	1.6	18.2	223462	1.7	18.8	139183	1.7	19.8	287315	1.8	18.5	490286	1.9	19.5
225091	1.5	20.2	53038	1.6	16.9	216727	1.7	19.4	229291	1.7	20.0	101592	1.8	18.3	129024	1.9	19.1
104067	1.5	18.1	300063	1.6	19.8	196517	1.7	19.1	228290	1.7	21.0	237607	1.8	19.9	71137	1.9	19.1
77989	1.5	18.5	213173	1.6	18.2	39347	1.7	19.3	316762	1.7	18.6	67660	1.8	19.2	441441	1.9	20.0
45687	1.5	16.9	504698	1.6	20.8	483650	1.7	20.2	439998	1.7	22.1	433825	1.8	19.8	394172	1.9	20.7
111927	1.5	18.7	472257	1.6	20.2	481663	1.7	19.5	443571	1.7	20.4	379212	1.8	20.3	77406	1.9	19.1
394208	1.5	20.6	2928	1.6	15.9	141494	1.7	18.2	357313	1.7	20.6	516094	1.8	21.4	117991	1.9	18.1
188641	1.5	19.2	192469	1.6	19.2	381077	1.7	20.5	310239	1.7	20.2	34628	1.8	18.1	449738	1.9	20.6
171855	1.5	19.6	27708	1.6	17.6	184534	1.7	18.8	480170	1.7	20.0	315169	1.8	20.3	477469	1.9	21.2
22041	1.5	18.6	96304	1.6	18.7	221497	1.7	20.1	348982	1.7	19.8	326137	1.8	20.5	23326	1.9	18.4
287071	1.5	19.4	233028	1.6	19.8	255433	1.7	20.5	132522	1.7	19.7	441949	1.8	20.3	65240	1.9	20.0
293478	1.5	20.1	412843	1.6	21.0	42903	1.7	17.8	367058	1.7	20.0	495821	1.8	21.5	198435	1.9	17.9
510069	1.5	21.2	188226	1.6	19.2	88373	1.7	18.5	378073	1.7	19.7	203959	1.8	19.2	40752	1.9	16.4
166382	1.5	20.2	442486	1.6	19.2	183251	1.7	18.3	4392	1.7	15.7	205020	1.8	20.3	351377	1.9	19.2
364016	1.5	20.8	139269	1.6	19.9	64277	1.7	20.0	123305	1.7	19.6	146442	1.8	19.9	316537	1.9	20.5
470136	1.5	20.2	355561	1.6	20.9	406294	1.7	21.3	312486	1.7	20.4	438943	1.8	20.3	112733	1.9	18.4
402811	1.5	20.3	166461	1.6	19.4	310108	1.7	20.7	207173	1.7	20.6	493630	1.8	20.5	187747	1.9	20.5
233323	1.5	19.6	389653	1.6	20.7	126936	1.7	19.9	1959								

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

Nº	10	V															
28541	1.9	18.8	319384	1.9	20.3	393165	2.1	21.2	412348	2.2	21.1	332028	2.2	20.0	173086	2.3	19.3
100841	1.9	18.7	493619	1.9	20.2	514374	2.1	20.1	242918	2.2	20.2	211677	2.2	19.3	487114	2.3	20.4
109579	1.9	19.4	20589	1.9	18.6	487249	2.1	20.4	204407	2.2	19.4	172762	2.2	19.5	390349	2.3	20.5
380213	1.9	19.0	265285	1.9	19.8	19658	2.1	18.2	99947	2.2	18.6	384318	2.2	19.4	366675	2.3	19.6
167390	1.9	19.0	294887	1.9	20.7	402428	2.1	20.8	448522	2.2	19.6	87275	2.2	18.0	227119	2.3	18.2
115940	1.9	19.3	162048	2.0	19.3	513747	2.1	20.7	218902	2.2	19.4	50490	2.2	19.1	299193	2.3	19.7
322560	1.9	20.8	496010	2.0	20.1	422870	2.1	20.7	400674	2.2	18.2	315204	2.2	20.6	409750	2.3	20.6
224093	1.9	18.2	363161	2.0	18.9	288725	2.1	19.3	20142	2.2	18.5	98713	2.2	17.3	412768	2.3	20.8
14072	1.9	17.0	164196	2.0	18.9	168683	2.1	18.5	514066	2.2	21.7	159443	2.2	17.3	139170	2.3	18.5
477528	1.9	21.3	288340	2.0	21.0	91921	2.1	18.7	338532	2.2	19.7	361507	2.2	19.5	469848	2.3	20.5
249724	1.9	18.8	96197	2.0	20.1	175084	2.1	20.8	406266	2.2	20.6	256516	2.2	20.2	505716	2.3	21.5
220227	1.9	18.2	263816	2.0	19.4	6289	2.1	17.7	139672	2.2	19.0	123664	2.2	19.0	409714	2.3	21.2
355756	1.9	20.4	220179	2.0	18.8	76286	2.1	18.6	134314	2.2	18.9	114673	2.2	18.9	319069	2.3	20.0
170536	1.9	18.9	476018	2.0	20.0	513869	2.1	20.4	476631	2.2	20.2	214057	2.2	20.3	328789	2.3	20.4
487703	1.9	20.5	226034	2.0	19.7	85608	2.1	19.7	161717	2.2	19.6	354202	2.2	20.3	275438	2.3	21.0
116295	1.9	19.1	481748	2.0	21.1	127828	2.1	19.8	518572	2.2	21.2	106115	2.2	18.6	488038	2.3	21.1
154269	1.9	20.4	236440	2.0	20.9	514290	2.1	20.2	228084	2.2	20.6	131150	2.2	19.1	127105	2.3	20.2
226422	1.9	20.0	407615	2.0	20.6	120513	2.1	18.5	57630	2.2	17.8	286863	2.2	19.5	175021	2.3	19.0
129960	1.9	19.6	264125	2.0	19.6	484427	2.1	21.0	312475	2.2	20.9	325763	2.2	19.8	12163	2.3	17.4
485804	1.9	20.8	428662	2.0	21.0	517128	2.1	21.8	373507	2.2	21.3	188550	2.2	19.1	38164	2.3	19.1
5752	1.9	16.5	28478	2.0	17.4	224689	2.1	21.4	433296	2.2	20.9	121187	2.2	18.0	513987	2.3	20.2
465040	1.9	19.2	186029	2.0	18.6	141600	2.1	19.3	66261	2.2	17.7	174118	2.2	19.1	163521	2.3	19.0
120241	1.9	19.4	484246	2.0	21.0	257505	2.1	19.6	516339	2.2	20.8	218237	2.2	19.5	170622	2.3	19.1
481553	1.9	18.9	382160	2.0	20.7	384297	2.1	19.8	447720	2.2	21.1	353349	2.3	21.0	442254	2.3	21.1
199464	1.9	20.2	261755	2.0	20.3	74039	2.1	19.7	72593	2.2	18.7	449449	2.3	20.8	129975	2.3	19.7
99598	1.9	19.2	394934	2.0	19.8	25869	2.1	18.0	116195	2.2	19.0	387153	2.3	20.7	153510	2.3	19.1
398830	1.9	20.5	333017	2.0	20.0	315316	2.1	20.3	65267	2.2	18.9	430502	2.3	20.0	388221	2.3	20.7
191116	1.9	19.9	227038	2.0	19.6	24933	2.1	18.1	274284	2.2	20.1	321847	2.3	19.4	4007	2.3	17.0
318926	1.9	20.4	328992	2.0	19.8	170166	2.1	18.0	508000	2.2	21.0	202869	2.3	19.5	432606	2.3	20.3
382060	1.9	19.3	449457	2.0	20.6	451996	2.1	20.2	190307	2.2	20.4	79546	2.3	17.8	133094	2.3	17.7
256441	1.9	19.6	187666	2.0	20.7	69056	2.1	19.1	243548	2.2	20.6	117954	2.3	18.0	183662	2.3	20.5
453674	1.9	20.8	312472	2.0	20.9	364111	2.1	19.7	265152	2.2	19.7	438511	2.3	19.2	76855	2.3	18.7
45912	1.9	19.8	185711	2.0	18.3	480122	2.1	20.7	406758	2.2	20.6	511648	2.3	21.0	373174	2.3	20.9
228466	1.9	18.9	394193	2.0	19.8	176621	2.1	19.3	67000	2.2	19.0	277922	2.2	20.9	322157	2.3	21.0
482644	1.9	19.1	19461	2.0	18.1	302100	2.1	20.5	45523	2.2	18.5	441300	2.3	20.4	345448	2.3	20.7
50939	1.9	17.4	439568	2.0	20.8	449308	2.1	20.7	354487	2.2	20.3	215638	2.3	19.0	131087	2.3	19.8
433736	1.9	20.1	266785	2.0	19.9	437310	2.1	21.2	58002	2.2	18.9	95188	2.3	19.4	435647	2.3	21.3
321928	1.9	20.2	299032	2.0	19.9	311581	2.1	20.1	298060	2.2	20.1	325088	2.3	20.9	179820	2.3	19.4
93304	1.9	18.5	511340	2.0	20.5	107573	2.1	19.5	357576	2.2	19.5	85992	2.3	19.6	104995	2.3	19.7
220527	1.9	18.9	193232	2.0	18.2	478800	2.1	20.0	210035	2.2	19.7	230329	2.3	20.5	12737	2.3	15.7
82921	1.9	16.6	94700	2.0	18.8	19746	2.1	17.6	304501	2.2	19.8	47087	2.3	18.1	47615	2.3	19.3
236737	1.9	18.6	422748	2.0	19.9	42905	2.1	18.2	81023	2.2	17.4	227123	2.3	19.5	356235	2.3	21.3
411502	1.9	21.1	159432	2.0	18.6	435846	2.1	19.1	39029	2.2	17.1	183148	2.3	20.4	317918	2.3	19.6
147287	1.9	19.6	305818	2.0	19.8	228112	2.1	19.9	400965	2.2	19.4	107028	2.3	19.2	57461	2.3	18.0
2256	1.9	15.7	288332	2.0	19.3	521202	2.1	20.2	475373	2.2	21.3	139201	2.3	19.0	436100	2.3	19.7
247883	1.9	19.4	322316	2.0	20.0	514912	2.1	20.1	225115	2.2	19.5	255114	2.3	19.4	449755	2.3	20.6
449204	1.9	20.3	65521	2.0	18.9	121234	2.1	18.5	67066	2.2	18.0	520573	2.3	21.1	430911	2.3	19.9
296606	1.9	19.6	486666	2.0	20.0	309606	2.1	21.3	210607	2.2	18.5	367255	2.3	20.1	344395	2.3	20.0
92288	1.9	19.4	382440	2.1	19.8	404053	2.1	20.5	473319	2.2	20.3	330664	2.3	19.2	220442	2.3	19.7
183838	1.9	20.3	68630	2.1	19.0	251300	2.1	19.9	69741	2.2	18.1	321465	2.3	19.5	303605	2.3	20.2
138377	1.9	19.0	155852	2.1	20.3	147298	2.1	19.4	120658	2.2	19.8	253898	2.3	19.6	446364	2.3	21.1
128662	1.9	19.1	441920	2.1	21.0	323031	2.1	20.9	328282	2.2	19.3	407171	2.3	20.7	396076	2.3	20.0
267304	1.9	19.3	377487	2.1	20.3	392039	2.1	20.7	352218	2.2	20.0	56808	2.3	18.7	192052	2.3	18.6
424409	1.9	21.1	5470	2.1	17.7	283318	2.1	20.3	252053	2.2	18.9	477035	2.3	20.0	256706	2.3	19.4
404982	1.9	20.0	424614	2.1	20.9	193301	2.1	19.0	72073	2.2	18.1	19407	2.3	16.1	222402	2.3	19.7
27882	1.9	17.6	232909	2.1	21.3	99885	2.1	19.0	127378	2.2	19.0	515882	2.3	21.3	188590	2.3	20.2
252849	1.9	19.8	258762	2.1	20.2	261385	2.1	20.1	393604	2.2	20.2	349751	2.3	20.1	227718	2.3	20.1
42515	1.9	18.3	115637	2.1	18.2	451607	2.1	21.4	96594	2.2	19.0	515313	2.3	20.9	516726	2.3	21.6
445823	1.9	19.6	256486	2.1	18.7	337972	2.1	20.3	124554	2.2	18.4	349747	2.3	20.8	13732	2.3	16.9
301856	1.9	20.4	284757	2.1	20.4	292320	2.1	19.9	294890	2.2	19.6	295387	2.3	21.1	121651	2.3	19.5
350517	1.9	19.9	209741	2.1	19.7	117911	2.1	19.2	350042	2.2	20.7	157705	2.3	20.4	464050	2.3	20.2
13788	1.9	17.5	312768	2.1	19.6	305303	2.1	20.7	116954	2.2	19.2	442472	2.3	21.0	156076	2.3	18.9
156288	1.9	18.6	119784	2.1	19.5	206404	2										

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
13707	2.4	16.0	191725	2.4	19.6	298234	2.5	19.2	442498	2.6	20.5	106960	2.7	18.5	389064	2.7	20.0
240680	2.4	19.6	115852	2.4	20.1	114022	2.5	19.8	281079	2.6	20.5	449451	2.7	20.0	516039	2.7	20.0
330635	2.4	20.9	378570	2.4	21.0	57364	2.5	18.4	491778	2.6	21.3	150583	2.7	19.2	252110	2.7	19.8
512517	2.4	21.0	521809	2.4	20.4	506829	2.5	20.3	318280	2.6	19.9	384322	2.7	20.6	436107	2.7	21.0
158376	2.4	19.4	114138	2.4	18.6	474080	2.5	20.4	342422	2.6	20.0	423924	2.7	20.2	478582	2.7	20.6
269391	2.4	19.1	180445	2.4	19.6	435012	2.5	19.7	178784	2.6	17.9	452687	2.7	21.0	180091	2.7	20.3
513670	2.4	20.1	148475	2.4	20.1	426173	2.5	21.4	387387	2.6	19.7	401833	2.7	20.1	386127	2.7	19.4
248625	2.4	20.2	425123	2.4	20.9	68835	2.5	17.0	451388	2.6	20.8	263187	2.7	20.7	303151	2.7	20.3
197256	2.4	18.8	289319	2.4	18.5	64907	2.5	18.8	260161	2.6	19.6	496290	2.7	20.2	84014	2.7	19.4
143835	2.4	18.1	291253	2.5	19.8	166030	2.5	18.5	440108	2.6	19.0	15251	2.7	17.9	115836	2.7	18.3
199589	2.4	19.7	516953	2.5	21.1	495374	2.5	20.1	449461	2.6	20.8	328822	2.7	19.7	229435	2.8	20.3
359835	2.4	20.8	273531	2.5	20.8	308923	2.5	20.7	488631	2.6	19.5	487380	2.7	20.7	260701	2.8	20.0
389548	2.4	19.5	289042	2.5	20.5	168172	2.5	20.0	360077	2.6	21.1	349621	2.7	20.8	267716	2.8	19.1
294396	2.4	19.7	389345	2.5	19.6	77559	2.5	18.2	242225	2.6	19.4	299597	2.7	20.8	179696	2.8	18.5
346721	2.4	19.4	127071	2.5	18.6	316431	2.5	20.3	226546	2.6	19.8	290742	2.7	20.6	373642	2.8	20.3
479764	2.4	20.5	340473	2.5	20.6	514457	2.5	20.8	198331	2.6	20.5	39267	2.7	17.8	97304	2.8	19.2
516291	2.4	20.2	317938	2.5	19.8	71406	2.5	17.7	454627	2.6	20.2	123915	2.7	19.3	323598	2.8	20.4
213488	2.4	19.6	287356	2.5	18.3	26601	2.5	18.3	405493	2.6	19.6	75561	2.7	18.1	163846	2.8	18.5
347263	2.4	19.0	381123	2.5	20.2	405119	2.5	22.2	347203	2.6	19.2	485903	2.7	20.5	467849	2.8	19.5
185330	2.4	19.9	86872	2.5	17.6	291904	2.5	18.6	362549	2.6	20.8	237565	2.7	18.5	94558	2.8	18.3
48053	2.4	18.5	264904	2.5	19.6	321516	2.5	20.8	151488	2.6	19.6	436241	2.7	20.9	494742	2.8	20.0
446557	2.4	20.3	492366	2.5	20.4	511779	2.5	21.6	476440	2.6	20.5	445938	2.7	20.9	460222	2.8	20.9
377028	2.4	19.0	247738	2.5	20.1	488540	2.5	20.2	359021	2.6	19.6	62044	2.7	17.8	511749	2.8	20.7
151750	2.4	20.3	381773	2.5	18.8	247494	2.5	20.1	20995	2.6	18.5	220432	2.7	19.3	220531	2.8	20.5
159898	2.4	18.1	349166	2.5	20.2	286958	2.5	20.7	344795	2.6	20.7	488199	2.7	20.8	319108	2.8	19.6
292661	2.4	19.9	215753	2.5	20.3	31631	2.5	16.3	360764	2.6	19.8	15816	2.7	18.1	244356	2.8	18.6
365321	2.4	20.4	450742	2.5	21.1	403156	2.5	21.6	170665	2.6	19.0	147769	2.7	18.6	318263	2.8	18.8
343794	2.4	20.1	243325	2.5	19.5	238204	2.5	20.0	178253	2.6	19.0	429780	2.7	20.7	115658	2.8	19.4
325529	2.4	19.8	323553	2.5	19.7	409072	2.5	20.6	339325	2.6	19.6	285848	2.7	20.1	263828	2.8	20.0
68539	2.4	18.9	451640	2.5	21.4	173569	2.5	19.3	264365	2.6	20.6	56109	2.7	18.0	473516	2.8	20.7
160546	2.4	18.7	363251	2.5	21.8	244304	2.5	20.1	63255	2.6	19.3	482629	2.7	20.5	187967	2.8	19.1
515389	2.4	21.3	267990	2.5	20.1	204780	2.5	20.3	351149	2.6	18.3	121172	2.7	18.8	447077	2.8	20.4
472605	2.4	19.6	405855	2.5	20.1	517749	2.5	20.2	488089	2.6	20.6	22522	2.7	18.5	498691	2.8	20.9
137255	2.4	18.4	80870	2.5	17.3	343435	2.5	20.0	263811	2.6	20.9	161617	2.7	19.6	480692	2.8	20.7
394603	2.4	19.8	253360	2.5	19.6	328724	2.5	19.6	66530	2.6	18.7	237239	2.7	19.4	295904	2.8	19.8
72667	2.4	17.9	404563	2.5	19.7	213002	2.5	19.1	39142	2.6	18.0	50137	2.7	18.8	265719	2.8	20.4
421491	2.4	20.7	488048	2.5	20.9	211744	2.5	19.6	298218	2.6	20.0	170906	2.7	18.9	305397	2.8	20.0
220270	2.4	18.2	265541	2.5	19.6	487905	2.5	20.6	242652	2.6	18.1	510037	2.7	21.7	472289	2.8	21.0
301158	2.4	19.7	302748	2.5	20.2	211368	2.5	19.4	34577	2.6	17.8	437697	2.7	18.4	300432	2.8	19.1
347077	2.4	20.5	172102	2.5	19.5	434592	2.6	21.0	209642	2.6	19.4	364001	2.7	19.9	309558	2.8	20.7
21345	2.4	18.6	371411	2.5	19.6	40009	2.6	18.1	382728	2.6	19.5	494275	2.7	18.7	275070	2.8	20.0
105898	2.4	18.8	316028	2.5	20.1	511128	2.6	20.5	224287	2.6	19.9	511988	2.7	21.2	453724	2.8	21.4
132395	2.4	18.9	219117	2.5	18.2	270075	2.6	19.1	99576	2.6	18.5	298240	2.7	18.6	207304	2.8	19.9
243870	2.4	18.1	504689	2.5	20.7	364489	2.6	21.9	95697	2.6	18.3	212719	2.7	20.3	209318	2.8	20.3
216571	2.4	21.0	485820	2.5	21.3	277360	2.6	20.3	14791	2.6	17.8	483944	2.7	21.8	16705	2.8	17.9
40777	2.4	17.5	304184	2.5	19.6	57780	2.6	18.1	319204	2.6	21.1	51472	2.7	16.7	459698	2.8	21.4
141754	2.4	19.4	114010	2.5	19.3	74965	2.6	18.8	304353	2.6	19.5	236430	2.7	19.4	33847	2.8	18.7
255375	2.4	19.4	99963	2.5	19.2	316146	2.6	20.8	382534	2.6	18.9	470549	2.7	21.9	275400	2.8	20.7
131494	2.4	19.3	279507	2.5	19.1	429461	2.6	20.1	37732	2.6	18.8	472211	2.7	21.2	385333	2.8	21.0
439732	2.4	20.5	258168	2.5	19.6	423177	2.6	20.8	65019	2.6	19.0	114829	2.7	17.9	271156	2.8	19.3
288038	2.4	19.4	257387	2.5	20.7	393202	2.6	20.8	319594	2.6	19.4	16099	2.7	17.3	121797	2.8	18.7
65811	2.4	19.4	112878	2.5	19.4	99976	2.6	18.2	193684	2.6	18.2	9351	2.7	17.1	493580	2.8	20.9
63554	2.4	18.6	461298	2.5	20.9	347967	2.6	19.6	266962	2.6	20.2	107024	2.7	18.7	272441	2.8	19.6
1233900	2.4	18.3	483101	2.5	20.3	324192	2.6	20.3	411931	2.6	21.4	209308	2.7	18.1	116672	2.8	18.6
36072	2.4	18.4	299063	2.5	20.3	234089	2.6	18.9	390951	2.6	20.2	335439	2.7	19.3	295537	2.8	19.6
15720	2.4	18.1	175995	2.5	18.2	81226	2.6	18.9	328749	2.6	20.5	132854	2.7	19.1	99144	2.8	19.3
523311	2.4	21.0	206028	2.5	20.0	421723	2.6	20.2	331745	2.6	20.4	173186	2.7	20.0	308132	2.8	19.0
340010	2.4	21.4	317469	2.5	19.9	38664	2.6	17.4	447352	2.6	20.3	317378	2.7	17.2	391948	2.8	20.2
10758	2.4	17.8	428443	2.5	20.6	64570	2.6	18.4	55178	2.6	18.5	81100	2.7	19.4	287600	2.8	20.8
40933	2.4	18.1	280301	2.5	18.6	511254	2.6	21.4	340107	2.6	20.9	33531	2.7	17.6	383125	2.8	20.1
183719	2.4	19.8	177245	2.5	20.1	225632	2.6	19.3	214612	2.6	19.0	506902	2.7	21.4	211720	2.8	20.3
220181	2.4	18.0	478903	2.5	20.0	181321	2.6	19.0	8666	2.6	16.9	402573	2.7	21.0	45967	2.8	19.3
384400	2.4	20.0	103090	2.5	18.4	1312											

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

Nº	10	V															
511890	2.8	19.9	451831	2.9	20.4	100581	2.9	20.5	236444	3.0	19.8	134126	3.1	19.2	447091	3.2	18.8
291414	2.8	20.7	373197	2.9	20.4	13379	2.9	18.2	72171	3.0	18.6	358971	3.1	20.2	261734	3.2	21.4
41910	2.8	16.7	232892	2.9	18.1	74865	2.9	18.7	392700	3.0	21.2	203191	3.1	19.7	424198	3.2	19.9
477558	2.8	19.9	216779	2.9	19.6	325455	2.9	20.1	335450	3.0	20.6	131587	3.1	19.1	516061	3.2	20.1
92202	2.8	18.2	141693	2.9	18.8	330559	2.9	21.1	325638	3.0	19.9	288705	3.1	19.2	21365	3.2	18.2
169459	2.8	19.8	110044	2.9	19.6	290564	2.9	19.7	487292	3.0	19.9	220498	3.1	19.5	472400	3.2	21.2
295653	2.8	19.8	453517	2.9	19.9	147478	2.9	20.5	66177	3.0	18.2	145205	3.1	19.5	25915	3.2	16.9
205093	2.8	18.7	313411	2.9	21.5	115724	2.9	19.4	25352	3.0	17.8	395612	3.1	19.7	516046	3.2	20.8
510546	2.8	20.9	346560	2.9	21.5	452044	2.9	21.3	336670	3.0	18.6	30079	3.1	18.8	512684	3.2	20.1
284254	2.8	20.4	362981	2.9	19.5	65740	2.9	19.1	191903	3.0	19.0	268832	3.1	20.4	369472	3.2	20.3
393020	2.8	20.9	160256	2.9	22.8	375230	2.9	21.2	516142	3.0	20.9	14565	3.1	16.3	320074	3.2	20.7
291379	2.8	20.3	522928	2.9	20.7	520519	2.9	20.6	257789	3.0	19.3	364531	3.1	20.7	462237	3.2	21.7
14143	2.8	16.6	444269	2.9	20.4	120078	2.9	19.6	459948	3.0	20.8	349319	3.1	20.5	381063	3.2	22.1
101321	2.8	18.3	448488	2.9	20.0	486985	2.9	20.7	9715	3.0	18.0	36513	3.1	18.8	474579	3.2	21.2
282986	2.8	19.3	365335	2.9	20.1	115659	2.9	19.2	373385	3.0	19.7	350391	3.1	19.6	34884	3.2	17.8
262085	2.8	20.4	195257	2.9	19.6	423150	2.9	20.8	280624	3.0	18.1	221494	3.1	20.6	28999	3.2	17.0
254964	2.8	19.3	352340	2.9	20.5	170993	2.9	19.8	475412	3.0	20.4	394590	3.1	20.1	126833	3.2	20.4
62262	2.8	18.7	353546	2.9	20.0	169764	2.9	18.3	318431	3.0	19.2	126897	3.1	19.1	470663	3.2	19.6
385544	2.8	20.3	433444	2.9	19.4	270989	2.9	19.8	265074	3.0	19.4	220749	3.1	19.3	393206	3.2	20.9
205152	2.8	20.4	186470	2.9	19.1	17151	2.9	17.3	212263	3.0	19.3	485797	3.1	21.8	48178	3.2	18.1
92201	2.8	18.8	287720	2.9	19.6	348367	2.9	20.2	398713	3.0	21.2	291577	3.1	20.2	2252	3.2	15.5
254486	2.8	19.0	444482	2.9	20.1	240220	2.9	19.2	312952	3.0	20.3	46005	3.1	18.0	262868	3.2	20.7
41298	2.8	17.2	192128	2.9	19.2	75056	2.9	17.9	18935	3.0	16.8	304361	3.1	19.7	489425	3.2	20.5
67258	2.8	17.7	403462	2.9	20.0	477555	2.9	20.8	384742	3.0	21.4	328503	3.1	19.8	181020	3.2	20.1
192217	2.8	19.3	281506	2.9	20.2	518363	2.9	21.0	271944	3.0	20.1	123944	3.1	18.5	395566	3.2	20.9
99090	2.8	18.3	246342	2.9	18.9	27399	2.9	16.8	291654	3.0	20.4	506075	3.1	19.2	127986	3.2	19.3
228000	2.8	19.5	226450	2.9	19.4	124030	2.9	20.0	391943	3.0	20.5	366186	3.1	18.7	195005	3.2	20.3
136982	2.8	19.5	469803	2.9	19.4	515038	2.9	21.2	63374	3.1	18.7	477596	3.1	21.2	117757	3.2	19.4
383570	2.8	21.1	416632	2.9	19.2	395707	2.9	19.3	2534	3.1	14.7	142923	3.1	19.1	317209	3.2	19.7
320311	2.8	19.9	314564	2.9	20.7	478707	2.9	20.8	420364	3.1	21.0	339270	3.1	18.8	288045	3.2	19.3
42621	2.8	17.5	329279	2.9	20.6	20252	2.9	17.8	2338	3.1	15.5	133654	3.1	18.9	298057	3.2	20.7
25128	2.8	18.1	248797	2.9	20.8	145300	2.9	19.4	485713	3.1	21.7	225688	3.1	20.0	177647	3.2	19.0
185443	2.8	19.4	226459	2.9	19.2	318477	2.9	19.6	388924	3.1	19.6	70456	3.1	18.2	393603	3.2	19.7
92103	2.9	19.5	177140	2.9	18.2	429593	2.9	20.7	342757	3.1	20.2	354348	3.1	21.2	108417	3.2	19.8
428567	2.9	21.1	224764	2.9	20.9	66549	2.9	17.3	120631	3.1	19.6	324838	3.1	20.5	469793	3.2	20.1
142035	2.9	19.1	33250	2.9	18.9	412600	2.9	20.3	271073	3.1	17.6	282680	3.1	19.1	291939	3.2	19.8
130016	2.9	18.2	152723	2.9	18.6	15535	2.9	17.5	4004	3.1	15.1	221865	3.2	20.9	12327	3.2	17.7
219070	2.9	20.3	171048	2.9	19.4	53612	2.9	19.3	85394	3.1	19.2	357369	3.2	20.1	407245	3.2	20.7
2201	2.9	20.1	273501	2.9	21.0	101346	2.9	19.4	73830	3.1	18.4	184261	3.2	19.6	138495	3.2	18.5
181005	2.9	19.1	183785	2.9	20.6	494491	2.9	20.2	210057	3.1	19.2	195429	3.2	20.4	234730	3.2	19.9
131054	2.9	18.6	385840	2.9	21.6	15834	2.9	19.0	200958	3.1	19.0	320332	3.2	18.5	488281	3.2	20.1
358549	2.9	19.8	346448	2.9	20.2	90476	2.9	19.4	259784	3.1	19.9	509990	3.2	20.8	410165	3.2	21.3
327770	2.9	18.8	100792	2.9	19.1	184234	2.9	19.7	23859	3.1	19.0	33444	3.2	18.7	254378	3.2	19.9
210643	2.9	19.8	512589	2.9	21.3	50858	3.0	18.0	324245	3.1	21.1	215144	3.2	18.1	281227	3.2	20.1
352898	2.9	21.4	161818	2.9	18.1	2696	3.0	15.3	220253	3.1	19.4	199599	3.2	20.1	451141	3.2	20.4
392046	2.9	20.7	182424	2.9	18.9	2104	3.0	15.2	229813	3.1	20.0	398044	3.2	21.6	139521	3.2	18.8
212463	2.9	18.4	154213	2.9	20.4	44333	3.0	17.8	208132	3.1	17.3	308487	3.2	19.2	457736	3.2	21.7
259572	2.9	19.0	261676	2.9	20.1	395368	3.0	20.5	171690	3.1	19.1	516115	3.2	20.7	267559	3.2	18.9
508388	2.9	19.3	386856	2.9	20.3	139498	3.0	18.9	61449	3.1	18.6	437884	3.2	19.8	70263	3.2	18.7
185017	2.9	19.2	443250	2.9	21.1	428121	3.0	21.7	152373	3.1	20.5	478905	3.2	19.5	222225	3.2	20.2
174144	2.9	20.7	175485	2.9	18.6	422026	3.0	20.9	318828	3.1	21.1	260450	3.2	18.4	266169	3.2	18.6
488097	2.9	21.0	141586	2.9	18.6	259714	3.0	18.6	296033	3.1	19.2	295000	3.2	20.0	77321	3.2	19.3
237449	2.9	19.1	46409	2.9	18.7	25432	3.0	18.7	95362	3.1	19.6	97782	3.2	18.6	370517	3.2	20.5
101250	2.9	18.0	296235	2.9	20.3	482268	3.0	19.2	119490	3.1	20.0	321473	3.2	19.7	514286	3.2	20.5
426148	2.9	20.7	227840	2.9	20.7	171601	3.0	18.9	67539	3.1	17.8	371370	3.2	19.6	487838	3.2	21.5
220854	2.9	19.0	41164	2.9	18.9	37167	3.0	18.2	407176	3.1	20.6	437003	3.2	19.3	426090	3.2	20.6
392564	2.9	20.0	74597	2.9	16.8	269878	3.0	20.7	458018	3.1	21.5	405733	3.2	20.7	480916	3.2	20.6
222023	2.9	18.3	512118	2.9	18.9	493603	3.0	20.1	208198	3.1	20.2	13342	3.2	17.6	267689	3.2	19.1
376219	2.9	20.5	324570	2.9	20.2	428636	3.0	21.2	260099	3.1	20.0	20526	3.2	18.1	14319	3.3	16.6
391197	2.9	21.6	511291	2.9	21.2	51483	3.0	18.5	457874	3.1	19.2	16544	3.2	17.6	97516	3.3	18.9
507971	2.9	21.2	482092	2.9	21.2	352323	3.0	21.5	127046	3.1	18.8	450367	3.2	20.5	72275	3.3	17.7
452260	2.9	20.1	241581	2.9	20.5	145551	3.0	18.1	481977	3.1	20.5	121728	3.2	19.1	512139	3.3	21.3
191405	2.9	19.4	408246	2.9	21.6	285276	3.0	18.2									

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

Nº	10	V															
301256	3.3	19.5	9920	3.3	17.2	252102	3.4	19.1	93807	3.5	17.6	115611	3.6	19.1	405895	3.6	19.7
467358	3.3	20.1	252139	3.3	19.2	57910	3.4	19.1	260505	3.5	20.2	18652	3.6	17.2	451983	3.7	20.3
251297	3.3	20.1	228706	3.3	20.0	76339	3.4	18.9	3515	3.5	16.5	22293	3.6	16.6	239137	3.7	19.5
260580	3.3	21.3	516761	3.3	19.5	231262	3.4	20.7	402036	3.5	19.5	409116	3.6	20.7	226083	3.7	17.9
404579	3.3	20.6	122738	3.3	18.9	295716	3.4	21.2	47735	3.5	17.1	136769	3.6	19.6	344178	3.7	20.9
320114	3.3	19.9	151401	3.3	19.2	354364	3.4	21.4	382507	3.5	18.9	402212	3.6	18.6	272409	3.7	20.6
10536	3.3	16.9	477884	3.3	21.2	81649	3.4	19.4	199377	3.5	20.3	241002	3.6	20.3	163277	3.7	19.7
153265	3.3	19.8	476864	3.4	20.4	186857	3.4	18.8	140801	3.5	19.5	402392	3.6	20.4	193685	3.7	20.4
489	3.3	13.0	247850	3.4	20.6	377678	3.4	21.6	353946	3.5	20.0	157460	3.6	18.8	211700	3.7	20.2
353104	3.3	19.8	353290	3.4	20.4	506132	3.4	19.9	187774	3.5	19.2	235216	3.6	19.8	39369	3.7	18.1
474668	3.3	18.5	427715	3.4	21.0	322162	3.4	19.9	254115	3.5	19.6	98875	3.6	19.8	128750	3.7	18.6
243746	3.3	18.8	339259	3.4	20.4	108739	3.4	19.2	34652	3.5	18.5	404564	3.6	20.0	97748	3.7	19.4
446466	3.3	20.9	77063	3.4	19.4	398609	3.4	20.5	116371	3.5	18.2	11680	3.6	18.2	45578	3.7	19.1
457012	3.3	20.1	265527	3.4	19.5	317304	3.4	20.5	262667	3.5	21.7	264054	3.6	21.0	408624	3.7	20.3
402004	3.3	19.3	394212	3.4	20.3	101083	3.4	17.7	114671	3.5	19.2	229743	3.6	19.9	44370	3.7	17.7
401736	3.3	19.9	148285	3.4	20.3	340460	3.4	20.9	487311	3.5	20.8	195467	3.6	19.0	98613	3.7	18.1
157413	3.3	19.2	60884	3.4	17.5	514679	3.4	20.3	42776	3.5	18.0	353684	3.6	20.3	403408	3.7	20.3
508137	3.3	20.6	402818	3.4	21.7	193257	3.4	18.7	281205	3.5	19.9	97923	3.6	17.8	142061	3.7	19.2
144906	3.3	19.0	327581	3.4	20.3	523398	3.4	20.9	222231	3.5	20.9	94161	3.6	19.6	370574	3.7	18.7
511309	3.3	20.7	156652	3.4	20.5	155728	3.4	18.1	487117	3.5	20.6	461171	3.6	20.6	18582	3.7	15.7
218612	3.3	17.0	282963	3.4	19.7	212218	3.4	19.9	166256	3.5	18.2	452978	3.6	21.0	26510	3.7	19.0
18738	3.3	17.5	260402	3.4	19.2	288751	3.4	20.2	244933	3.5	20.1	140690	3.6	19.9	201651	3.7	18.8
207364	3.3	19.5	469778	3.4	20.5	185560	3.4	20.2	511273	3.5	21.7	234689	3.6	19.9	94051	3.7	19.7
495344	3.3	20.4	78657	3.4	18.4	1546	3.4	15.2	273587	3.5	19.3	423167	3.6	21.3	450515	3.7	21.0
96154	3.3	18.8	574	3.4	13.7	409170	3.4	19.0	397296	3.5	20.7	452534	3.6	19.0	326107	3.7	21.1
352666	3.3	20.5	159054	3.4	19.2	403905	3.4	20.5	238847	3.5	21.0	192393	3.6	20.3	286684	3.7	21.2
60716	3.3	19.1	132762	3.4	18.8	428732	3.5	20.4	184417	3.5	20.1	448341	3.6	19.2	99305	3.7	18.4
239211	3.3	18.0	26486	3.4	19.3	388568	3.5	19.4	485106	3.5	20.0	330590	3.6	20.5	400486	3.7	21.2
135547	3.3	19.0	461227	3.4	19.8	222925	3.5	18.0	307977	3.5	19.3	245379	3.6	19.5	128650	3.7	19.0
477906	3.3	19.6	173117	3.4	18.9	279836	3.5	18.7	468561	3.5	19.1	9629	3.6	17.0	172234	3.7	19.9
27237	3.3	17.7	463195	3.4	20.2	128188	3.5	19.1	289808	3.5	19.6	229642	3.6	20.4	77880	3.7	19.4
505107	3.3	20.9	45879	3.4	19.0	216404	3.5	20.1	311926	3.5	20.3	66038	3.6	18.5	376197	3.7	20.5
50833	3.3	18.2	514142	3.4	19.2	421526	3.5	20.4	377063	3.5	19.6	126722	3.6	18.9	369044	3.7	19.7
455144	3.3	20.1	90794	3.4	19.0	112500	3.5	19.0	255269	3.5	19.5	222217	3.6	19.6	87332	3.7	19.4
396012	3.3	21.0	408599	3.4	21.2	147118	3.5	18.3	67463	3.5	18.5	222224	3.6	20.1	433982	3.7	18.7
211152	3.3	19.3	43201	3.4	17.5	168491	3.5	19.3	120520	3.5	19.8	95301	3.6	19.2	42512	3.7	17.6
7948	3.3	16.9	228567	3.4	20.1	82510	3.5	18.6	311503	3.5	19.8	173443	3.6	18.6	285043	3.7	20.8
271143	3.3	17.8	299615	3.4	20.3	346481	3.5	20.0	480970	3.5	19.4	473080	3.6	20.3	359940	3.7	20.3
517916	3.3	21.2	95594	3.4	17.7	471076	3.5	19.6	454797	3.5	20.2	261729	3.6	19.1	476493	3.7	21.2
324808	3.3	19.3	517738	3.4	19.8	254291	3.5	19.1	84419	3.5	19.0	495174	3.6	20.4	120630	3.7	19.1
147426	3.3	19.7	435132	3.4	19.4	220808	3.5	19.1	327170	3.5	20.6	270574	3.6	19.8	287364	3.7	19.3
124007	3.3	20.8	54722	3.4	17.8	470569	3.5	21.8	42555	3.5	18.7	265635	3.6	19.8	394159	3.7	19.0
162844	3.3	19.8	451391	3.4	21.3	296983	3.5	21.0	101371	3.5	18.5	451643	3.6	21.2	249486	3.7	19.6
214322	3.3	19.9	139117	3.4	20.0	347546	3.5	20.6	246528	3.5	20.5	198359	3.6	17.9	103872	3.7	19.4
523342	3.3	21.6	312463	3.4	19.5	365626	3.5	19.8	174854	3.6	19.0	469443	3.6	20.6	476770	3.7	21.0
469890	3.3	20.5	356820	3.4	20.2	81276	3.5	19.6	312642	3.6	20.2	517471	3.6	20.8	249381	3.7	19.5
116955	3.3	20.2	271070	3.4	19.5	325547	3.5	20.2	69295	3.6	17.8	310534	3.6	21.8	438704	3.7	20.2
369469	3.3	20.4	332908	3.4	21.3	29461	3.5	18.1	353638	3.6	20.4	331355	3.6	20.0	124613	3.7	18.9
357232	3.3	20.0	103876	3.4	19.9	365695	3.5	21.1	107202	3.6	18.8	402470	3.6	20.0	101065	3.7	18.1
190351	3.3	19.4	221502	3.4	18.7	480602	3.5	19.9	480963	3.6	19.9	4787	3.6	15.6	119956	3.7	22.6
374746	3.3	20.4	167901	3.4	19.5	512488	3.5	19.6	222203	3.6	20.9	12384	3.6	17.0	293994	3.7	19.5
109614	3.3	20.0	92448	3.4	17.8	258730	3.5	19.8	73989	3.6	17.7	295527	3.6	19.7	95622	3.7	18.7
137932	3.3	20.2	168552	3.4	18.6	274176	3.5	20.1	55288	3.6	18.2	44809	3.6	17.8	27127	3.7	17.4
70738	3.3	18.0	429917	3.4	19.9	257688	3.5	19.3	514792	3.6	21.7	395203	3.6	21.4	12270	3.7	17.4
114392	3.3	19.3	327565	3.4	20.5	20498	3.5	15.9	145757	3.6	19.2	397978	3.6	20.6	214663	3.7	19.5
65950	3.3	17.7	46982	3.4	18.8	81536	3.5	16.4	203630	3.6	19.4	397541	3.6	19.3	142314	3.7	18.5
169840	3.3	18.8	340537	3.4	20.0	214033	3.5	19.9	373169	3.6	20.5	116946	3.6	18.9	484931	3.7	20.6
11666	3.3	17.9	184014	3.4	20.0	361520	3.5	19.9	116514	3.6	20.0	131989	3.6	19.9	270964	3.7	19.2
167259	3.3	19.1	398809	3.4	20.7	74682	3.5	18.4	411873	3.6	20.6	481648	3.6	21.5	488169	3.7	20.4
205119	3.3	19.3	439603	3.4	20.6	284050	3.5	20.1	426109	3.6	20.8	292649	3.6	20.7	85619	3.7	18.4
487349	3.3	20.8	347017	3.4	20.6	429776	3.5	20.2	482987	3.6	20.9	92239	3.6	18.0	253380	3.7	20.1
420628	3.3	20.6	485594	3.4	20.6	131108	3.5	19.3	476456	3.6	20.5	189217	3.6	20.6	359607	3.7	20.7
482287	3.3	20.5	319361	3.4	19.0	130030	3.5	19.2	26								

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

Nº	10	V															
245359	3.7	20.5	402021	3.8	19.4	222193	3.9	19.4	237310	3.9	20.2	388177	4.0	20.7	454031	4.1	20.9
328838	3.7	20.4	436203	3.8	20.9	394995	3.9	20.5	490574	3.9	21.9	513905	4.0	21.6	220969	4.1	17.5
451857	3.7	20.6	188335	3.8	19.1	203590	3.9	19.5	119823	3.9	19.3	29035	4.1	17.2	149072	4.1	19.5
403762	3.7	20.5	516425	3.8	19.4	515593	3.9	21.5	22294	3.9	16.5	302727	4.1	20.5	412680	4.1	21.0
439560	3.7	20.3	180292	3.8	19.4	142831	3.9	19.2	204009	3.9	18.2	81360	4.1	19.6	444274	4.1	20.1
111923	3.7	17.5	292860	3.8	18.4	327092	3.9	19.5	216121	3.9	18.0	92955	4.1	18.1	383561	4.1	21.6
136133	3.7	18.3	452095	3.8	20.3	173084	3.9	19.0	167921	3.9	19.6	315987	4.1	21.0	263794	4.1	20.1
170570	3.7	18.2	163313	3.8	19.6	321680	3.9	20.3	337032	3.9	19.7	81278	4.1	18.7	517217	4.1	20.9
494853	3.7	22.1	264770	3.8	20.8	509234	3.9	21.0	515650	3.9	21.4	252868	4.1	20.0	515703	4.1	20.8
401831	3.7	20.0	3060	3.8	15.1	371539	3.9	20.5	265153	3.9	19.4	374741	4.1	19.7	125002	4.1	17.9
179892	3.7	18.9	192078	3.8	20.3	42372	3.9	19.0	119100	3.9	18.9	291751	4.1	20.2	114037	4.1	18.9
186421	3.7	17.1	202850	3.8	20.1	242672	3.9	19.2	296424	3.9	19.3	317334	4.1	20.3	323008	4.1	17.9
151309	3.7	20.0	316134	3.8	20.5	404752	3.9	21.0	301399	3.9	19.6	456622	4.1	21.6	220465	4.1	20.6
91864	3.7	18.0	257742	3.8	20.5	423338	3.9	20.6	448411	3.9	20.7	147090	4.1	17.9	428643	4.1	21.0
68305	3.7	18.2	137539	3.8	19.8	148547	3.9	19.9	119132	3.9	19.7	43845	4.1	18.3	75310	4.1	19.4
412589	3.7	20.2	264141	3.8	18.8	361999	3.9	20.6	25777	3.9	17.4	136584	4.1	19.1	27589	4.1	18.3
123803	3.7	19.6	139682	3.8	18.7	441086	3.9	19.5	267800	3.9	19.0	153254	4.1	19.2	186777	4.1	19.5
312466	3.7	20.8	456244	3.8	19.9	79195	3.9	18.1	239119	3.9	19.1	168739	4.1	19.0	449974	4.1	20.7
235819	3.7	21.0	441715	3.8	20.8	427611	3.9	20.8	127656	3.9	20.0	514809	4.1	19.5	180947	4.1	19.2
186793	3.7	19.5	17939	3.8	16.1	218110	3.9	19.2	419736	3.9	20.8	352393	4.1	20.9	45105	4.1	18.5
157054	3.7	18.4	355598	3.8	20.3	93114	3.9	18.7	269538	3.9	20.3	253466	4.1	18.7	479873	4.1	19.9
317820	3.7	19.8	149698	3.8	19.4	395695	3.9	20.7	355836	3.9	20.0	220182	4.1	18.5	482436	4.1	20.8
84982	3.7	18.3	487220	3.8	20.4	243306	3.9	19.0	16845	3.9	17.2	236522	4.1	20.0	261570	4.1	21.2
437308	3.7	21.6	407580	3.8	20.6	473628	3.9	20.7	249364	3.9	19.9	7955	4.1	17.9	264913	4.1	19.4
412005	3.7	21.2	144816	3.8	19.8	427785	3.9	21.2	186854	3.9	19.2	476807	4.1	18.5	405441	4.1	20.8
49866	3.7	18.5	206539	3.8	18.8	412168	3.9	20.8	442490	3.9	20.6	230332	4.1	19.7	285496	4.1	20.3
358709	3.7	21.3	132652	3.8	19.2	132931	3.9	19.4	303590	3.9	20.3	224134	4.1	20.2	269630	4.1	19.5
474626	3.8	20.4	345489	3.8	19.5	223251	3.9	19.1	46177	3.9	18.1	408290	4.1	21.3	324114	4.1	19.8
9297	3.8	16.3	43052	3.8	18.1	123733	3.9	19.6	190788	3.9	21.2	283861	4.1	19.9	444938	4.2	20.5
437149	3.8	20.0	392841	3.8	18.0	119811	3.9	19.2	407114	3.9	20.4	431664	4.1	21.3	21602	4.2	19.3
487836	3.8	21.0	400687	3.8	19.4	217738	3.9	19.6	220502	3.9	20.3	76525	4.1	19.4	207189	4.2	20.3
101450	3.8	18.5	201167	3.8	19.9	209296	3.9	19.8	261671	3.9	20.2	191538	4.1	19.4	51285	4.2	19.4
466707	3.8	19.4	379569	3.8	21.6	513544	3.9	20.4	477176	3.9	20.1	210138	4.1	19.1	48550	4.2	17.9
286988	3.8	19.7	52205	3.8	18.2	479874	3.9	20.8	296463	3.9	19.9	50444	4.1	18.1	19245	4.2	18.6
120439	3.8	18.4	324866	3.8	20.6	315377	3.9	20.3	22427	3.9	19.3	339266	4.1	19.1	132654	4.2	18.8
126349	3.8	19.3	299651	3.8	20.4	140008	3.9	18.9	267775	3.9	19.2	255478	4.1	20.7	308885	4.2	19.7
40094	3.8	17.2	316893	3.8	18.6	46973	3.9	18.2	204785	3.9	19.9	513825	4.1	22.1	66336	4.2	16.8
243909	3.8	21.2	249226	3.8	19.9	45643	3.9	17.7	383129	4.0	19.9	483406	4.1	19.0	147481	4.2	19.3
13310	3.8	17.3	443698	3.8	19.6	73450	3.9	18.1	316131	4.0	19.6	110952	4.1	19.1	154105	4.2	19.5
228133	3.8	19.8	485349	3.8	20.1	308884	3.9	19.6	325072	4.0	20.7	260412	4.1	20.6	160048	4.2	18.6
228920	3.8	19.6	12667	3.8	17.6	176667	3.9	20.0	327590	4.0	20.0	112035	4.1	18.7	275848	4.2	19.6
300717	3.8	19.9	396791	3.8	20.6	93451	3.9	19.3	71040	4.0	18.7	477010	4.1	20.2	30203	4.2	18.9
57546	3.8	18.5	356905	3.8	20.7	334698	3.9	18.5	224642	4.0	19.9	226452	4.1	18.5	507934	4.2	20.9
13450	3.8	18.1	321887	3.8	19.5	234919	3.9	20.2	511428	4.0	21.1	33274	4.1	18.2	407479	4.2	20.5
362567	3.8	19.9	390919	3.8	20.1	389008	3.9	20.4	161624	4.0	21.2	383173	4.1	18.8	42607	4.2	16.5
403168	3.8	20.9	215076	3.9	20.2	167679	3.9	20.4	25522	4.0	18.0	389826	4.1	20.2	511357	4.2	21.3
515692	3.8	21.0	477039	3.9	20.6	254951	3.9	20.4	509190	4.0	20.5	180262	4.1	19.5	211783	4.2	19.8
444571	3.8	20.1	151322	3.9	19.3	429569	3.9	21.6	46950	4.0	16.9	407649	4.1	20.2	72381	4.2	19.0
434219	3.8	18.9	385792	3.9	21.0	490418	3.9	21.0	41367	4.0	17.8	266993	4.1	19.3	376755	4.2	19.8
270847	3.8	19.4	506751	3.9	20.4	316153	3.9	20.1	72458	4.0	18.8	198166	4.1	20.0	21323	4.2	17.8
251713	3.8	21.4	389480	3.9	21.6	296783	3.9	20.0	352890	4.0	19.9	442047	4.1	20.3	389520	4.2	20.7
358739	3.8	20.1	95209	3.9	19.3	100254	3.9	19.4	15663	4.0	17.2	70531	4.1	17.8	383233	4.2	21.7
407182	3.8	20.1	507834	3.9	20.8	355762	3.9	20.6	136125	4.0	19.0	185117	4.1	18.7	362505	4.2	20.7
58514	3.8	19.4	385756	3.9	20.2	161360	3.9	18.2	249044	4.0	18.8	7255	4.1	16.6	507177	4.2	21.3
324158	3.8	20.0	357309	3.9	21.1	466095	3.9	20.1	430699	4.0	21.8	448606	4.1	18.3	226397	4.2	19.0
408018	3.8	20.7	266902	3.9	19.7	421828	3.9	20.2	389497	4.0	19.9	184805	4.1	19.9	57141	4.2	18.7
189153	3.8	18.8	469801	3.9	20.4	423935	3.9	19.8	143907	4.0	19.0	521505	4.1	20.9	233222	4.2	20.1
454615	3.8	20.6	365908	3.9	22.0	309024	3.9	21.0	31777	4.0	17.8	49239	4.1	16.5	322538	4.2	20.0
19806	3.8	17.2	403744	3.9	20.3	351210	3.9	20.0	256607	4.0	19.4	478855	4.1	19.4	505098	4.2	20.5
398771	3.8	19.3	452000	3.9	21.0	366317	3.9	21.2	261425	4.0	20.1	494196	4.1	20.5	437117	4.2	19.1
496302	3.8	20.8	70864	3.9	17.9	106802	3.9	18.8	295520	4.0	20.4	328599	4.1	20.2	333202	4.2	21.0
381763	3.8	19.0	77534	3.9	18.8	70232	3.9	18.1	95556	4.0	19.2	1827	4.1	15.9	177572	4.2	19.7
326776	3.8	18.5	382607	3.9	20.7	63286	3.9										

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
150445	4.2	19.3	155599	4.3	19.1	286995	4.3	19.8	322401	4.4	19.2	512726	4.5	20.6	437304	4.6	20.9
392517	4.2	19.8	101610	4.3	17.6	340534	4.3	20.4	18201	4.4	17.8	341311	4.5	18.9	99010	4.6	18.4
289053	4.2	20.0	5880	4.3	16.7	268906	4.3	19.7	75466	4.4	18.8	478823	4.5	19.9	77052	4.6	19.0
288129	4.2	19.6	13372	4.3	18.0	229366	4.3	19.1	363058	4.4	20.0	468304	4.5	20.9	13613	4.6	17.6
80959	4.2	18.4	157738	4.3	20.5	317428	4.3	20.0	25570	4.4	17.8	82648	4.5	19.7	433417	4.6	20.4
354008	4.2	20.2	433706	4.3	21.5	352701	4.3	19.1	407825	4.4	21.1	440787	4.5	20.7	185314	4.6	19.5
493782	4.2	21.2	392049	4.3	20.6	25311	4.3	17.7	265431	4.4	18.9	487015	4.5	20.7	109251	4.6	19.6
330309	4.2	20.1	150288	4.3	18.6	299616	4.3	19.4	268162	4.4	19.6	2591	4.5	15.6	467263	4.6	19.4
59355	4.2	20.2	153113	4.3	18.7	293413	4.3	20.4	163208	4.4	20.3	471940	4.5	19.5	59354	4.6	19.3
177155	4.2	18.7	187267	4.3	20.0	482944	4.3	20.9	437488	4.4	20.0	169430	4.5	19.3	154140	4.6	19.5
319200	4.2	20.5	482963	4.3	21.4	493116	4.3	20.5	412695	4.4	20.0	352366	4.5	20.1	506809	4.6	19.5
512200	4.2	20.4	337289	4.3	19.1	489934	4.3	21.1	184194	4.4	19.3	380003	4.5	21.0	344412	4.6	20.7
354482	4.2	19.9	389992	4.3	20.1	299233	4.3	20.9	450324	4.4	20.7	272424	4.5	20.6	362273	4.6	19.4
35332	4.2	19.2	407867	4.3	20.7	447095	4.3	20.8	43769	4.4	18.2	157652	4.5	19.7	374894	4.6	19.4
363283	4.2	20.4	444632	4.3	20.8	406768	4.3	20.1	169746	4.4	19.6	421775	4.5	20.7	472342	4.6	21.0
315184	4.2	20.3	389485	4.3	20.1	304189	4.3	20.1	23890	4.4	18.2	160425	4.5	19.7	180066	4.6	19.6
340398	4.2	18.4	104241	4.3	19.3	404815	4.4	21.6	254669	4.4	19.1	172996	4.5	19.1	187583	4.6	20.0
320624	4.2	20.0	278142	4.3	20.9	143784	4.4	18.9	264067	4.4	20.7	261714	4.5	19.1	281232	4.6	18.4
73442	4.2	17.9	487910	4.3	19.9	200036	4.4	20.3	281740	4.4	17.8	263225	4.5	19.9	407101	4.6	20.3
133158	4.2	18.8	43370	4.3	19.1	195412	4.4	19.1	21731	4.4	17.1	127561	4.5	18.1	142824	4.6	19.2
167494	4.2	20.2	295699	4.3	20.8	453219	4.4	19.5	134568	4.4	24.0	518495	4.5	21.4	313360	4.6	20.2
448682	4.2	19.9	176091	4.3	20.0	474682	4.4	21.3	477486	4.4	20.6	514697	4.5	21.0	88039	4.6	17.9
349805	4.2	20.8	276444	4.3	20.9	99645	4.4	18.3	34244	4.4	17.4	257339	4.5	19.5	242917	4.6	20.4
278987	4.2	17.7	299611	4.3	20.1	352942	4.4	20.2	161078	4.4	18.7	439285	4.5	20.6	213960	4.6	19.1
492282	4.2	21.7	124048	4.3	19.3	156860	4.4	20.0	421705	4.4	20.8	339292	4.5	20.1	412580	4.6	20.5
379997	4.2	20.2	427607	4.3	19.5	423173	4.4	21.8	174234	4.4	18.4	506483	4.5	18.8	316465	4.6	19.4
112492	4.2	19.5	511092	4.3	19.9	362994	4.4	20.7	516624	4.4	20.5	279712	4.5	16.4	363915	4.6	21.0
144519	4.2	19.3	391988	4.3	19.3	136864	4.4	19.3	280939	4.4	19.7	144974	4.5	18.9	294159	4.6	19.8
332015	4.2	18.6	449037	4.3	21.4	310872	4.4	19.5	226549	4.4	19.7	433280	4.5	20.4	372832	4.6	19.2
225221	4.2	20.1	72670	4.3	19.5	392095	4.4	20.4	49875	4.4	19.0	3078	4.5	16.4	48555	4.6	18.3
394997	4.2	21.4	55639	4.3	18.7	15492	4.4	16.6	212660	4.4	20.0	86664	4.5	18.1	423585	4.6	21.1
349845	4.2	19.5	344449	4.3	20.4	360041	4.4	20.8	208091	4.4	19.2	487214	4.5	20.3	516937	4.6	20.0
157316	4.2	18.8	295428	4.3	20.2	103645	4.4	19.1	225160	4.4	18.5	210453	4.5	18.5	91604	4.6	18.9
378690	4.2	21.2	430873	4.3	19.6	18417	4.4	18.2	404057	4.4	20.3	226513	4.5	19.0	66656	4.6	17.4
436505	4.2	21.7	126951	4.3	19.5	360445	4.4	21.0	187268	4.4	19.8	50169	4.5	18.8	266959	4.6	20.2
223350	4.2	19.1	369701	4.3	19.9	182267	4.4	18.6	347118	4.4	21.1	46659	4.5	18.1	436519	4.6	20.9
46694	4.2	18.9	511331	4.3	21.4	435716	4.4	20.0	363461	4.4	20.0	316156	4.5	19.9	75921	4.6	19.5
8630	4.2	17.3	305113	4.3	19.9	161760	4.4	20.1	104543	4.4	20.4	314240	4.5	19.8	237025	4.6	20.3
352326	4.2	20.7	78497	4.3	18.3	291129	4.4	20.6	35140	4.4	17.8	443072	4.5	20.2	65966	4.6	18.6
462235	4.2	22.1	135903	4.3	19.4	303487	4.4	20.6	189306	4.4	19.8	187423	4.5	20.6	316130	4.6	20.0
226322	4.2	21.2	91511	4.3	18.0	308933	4.4	22.5	54273	4.4	19.4	516051	4.5	20.8	256211	4.6	20.3
145195	4.2	19.4	75485	4.3	18.7	415608	4.4	20.0	238186	4.4	20.1	438128	4.5	20.2	298710	4.6	20.4
157704	4.2	20.0	321967	4.3	19.6	296063	4.4	19.8	320131	4.4	20.0	486217	4.5	20.1	457920	4.6	21.5
99055	4.2	19.6	480250	4.3	20.9	91176	4.4	17.8	232884	4.4	19.9	449232	4.5	19.9	506799	4.6	21.1
366068	4.2	20.8	510793	4.3	20.5	489064	4.4	20.5	324358	4.4	19.7	300626	4.5	19.7	250778	4.6	20.0
195388	4.2	19.7	25938	4.3	18.9	479908	4.4	20.1	455131	4.4	20.4	114847	4.5	18.7	48426	4.6	18.5
433451	4.2	20.7	60657	4.3	17.9	295436	4.4	20.0	421990	4.4	19.7	109645	4.5	19.2	117941	4.6	18.5
324298	4.2	20.0	22059	4.3	18.6	407001	4.4	20.7	266735	4.4	20.0	184891	4.5	19.7	487413	4.6	19.5
470462	4.2	21.6	318936	4.3	20.4	434213	4.4	20.0	199136	4.5	20.7	34890	4.5	18.1	241967	4.6	20.6
119444	4.2	19.0	246193	4.3	19.8	42146	4.4	18.8	292374	4.5	20.3	73849	4.5	19.7	313316	4.6	20.6
402413	4.2	19.9	285797	4.3	20.8	381084	4.4	21.7	86364	4.5	18.3	514915	4.5	21.2	854441	4.6	20.2
381738	4.2	20.9	122287	4.3	18.8	8256	4.4	14.9	417689	4.5	21.7	136151	4.5	18.3	396761	4.6	20.1
127471	4.2	18.9	488070	4.3	21.1	375198	4.4	20.5	68521	4.5	19.5	279758	4.5	21.4	488160	4.6	20.6
149711	4.2	19.6	162865	4.3	20.0	113586	4.4	18.8	43611	4.5	19.3	327552	4.5	21.3	515387	4.6	22.2
515364	4.2	20.1	353383	4.3	20.1	160916	4.4	19.3	401765	4.5	19.7	265198	4.5	20.3	181785	4.6	20.8
104749	4.2	19.3	42906	4.3	18.5	441220	4.4	20.2	18042	4.5	17.9	133093	4.5	18.5	405135	4.6	19.5
208123	4.2	21.0	485306	4.3	21.3	517179	4.4	20.3	364956	4.5	20.6	70954	4.5	19.4	146869	4.6	18.1
3070	4.3	17.3	316965	4.3	20.8	355775	4.4	20.8	115348	4.5	18.0	265077	4.5	18.9	355493	4.6	21.3
468778	4.3	20.9	137180	4.3	19.6	230678	4.4	19.7	149196	4.5	19.9	283905	4.5	20.9	182872	4.6	19.8
484012	4.3	21.0	383087	4.3	20.3	516201	4.4	19.5	18020	4.5	18.0	77247	4.5	19.9	342456	4.6	19.8
100002	4.3	18.2	158757	4.3	18.6	223154	4.4	18.7	447332	4.5	19.8	343290	4.5	19.6	157284	4.6	18.8
300533	4.3	20.1	340324	4.3	20.7	401509	4.4	20.8	246560	4.5	19.8	322583	4.5	21.1	37438	4.6	18.3
217557	4.3	18.8	321468	4.3	19.5	507953	4.4</td										

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

Nº	10	V															
401268	4.6	20.8	484255	4.7	22.2	328169	4.8	19.9	381082	4.9	20.7	374913	4.9	20.7	370210	5.0	19.8
300703	4.6	21.0	293973	4.7	19.9	24485	4.8	18.1	37281	4.9	18.7	277153	4.9	19.3	345450	5.0	19.9
480441	4.6	19.5	41166	4.7	17.3	20831	4.8	17.5	211294	4.9	19.8	261332	4.9	20.8	248702	5.0	19.7
8151	4.6	16.6	57518	4.7	16.2	208835	4.8	19.5	238559	4.9	19.8	364135	4.9	19.8	394224	5.0	20.9
325514	4.6	20.4	398891	4.7	20.4	209265	4.8	19.6	11104	4.9	16.7	116029	4.9	19.7	171328	5.0	19.4
201510	4.6	18.9	421968	4.7	20.4	188827	4.8	19.4	446864	4.9	20.8	437760	4.9	21.1	260244	5.0	19.2
365729	4.6	20.2	158851	4.7	18.1	13815	4.8	16.1	227728	4.9	20.1	200459	4.9	19.5	482264	5.0	21.0
92473	4.6	18.3	509697	4.7	21.1	23474	4.8	16.4	458135	4.9	24.9	235835	4.9	19.4	338024	5.0	21.0
112920	4.6	20.0	277390	4.7	21.1	269517	4.8	19.0	25800	4.9	19.2	434543	4.9	21.1	97715	5.0	19.7
437038	4.6	18.6	454547	4.7	20.7	398031	4.8	21.1	402808	4.9	20.3	487012	4.9	20.3	517298	5.0	20.5
189142	4.6	19.9	100509	4.7	19.6	364043	4.8	20.3	494592	4.9	19.8	305821	4.9	20.3	40984	5.0	18.7
451982	4.6	20.1	48741	4.7	18.0	212940	4.8	20.3	401507	4.9	20.7	349978	4.9	19.3	447707	5.0	20.1
318340	4.7	19.8	269415	4.7	20.1	287574	4.8	20.3	74729	4.9	18.4	453443	4.9	20.5	404077	5.0	20.3
421659	4.7	20.4	443542	4.7	20.5	506441	4.8	21.5	228309	4.9	19.3	127488	4.9	19.6	21537	5.0	18.9
219497	4.7	18.4	47569	4.7	19.3	404767	4.8	19.9	2873	4.9	15.7	53275	4.9	17.5	388322	5.0	20.9
396460	4.7	18.6	327922	4.7	21.3	148272	4.8	19.3	395733	4.9	19.6	204446	4.9	19.3	334879	5.0	18.9
290875	4.7	20.0	236842	4.7	20.1	187720	4.8	19.2	68315	4.9	18.5	223302	4.9	17.7	29783	5.0	17.2
78469	4.7	18.6	426370	4.7	21.0	14316	4.8	17.4	401672	4.9	20.8	376642	4.9	19.5	171926	5.0	19.6
396747	4.7	19.8	143981	4.7	19.4	302666	4.8	18.7	80865	4.9	19.0	89919	4.9	18.8	189504	5.0	20.3
389664	4.7	20.3	443187	4.7	21.3	373533	4.8	18.7	292233	4.9	20.0	217830	4.9	20.5	291742	5.0	20.0
317847	4.7	19.9	84009	4.7	17.6	82817	4.8	18.1	253277	4.9	20.1	378243	4.9	20.8	424410	5.0	21.2
433168	4.7	19.3	80431	4.7	18.5	389533	4.8	21.1	136416	4.9	18.8	283093	4.9	20.7	393209	5.0	21.0
339324	4.7	18.4	221345	4.7	20.6	158291	4.8	19.7	469843	4.9	19.4	308019	4.9	17.8	315911	5.0	19.4
265293	4.7	20.4	153270	4.7	19.5	389313	4.8	21.1	452744	4.9	21.0	245214	4.9	19.2	427426	5.0	19.0
275294	4.7	19.9	109021	4.7	19.2	368910	4.8	19.2	90875	4.9	17.6	103530	4.9	20.0	120288	5.0	19.1
401738	4.7	20.4	8061	4.7	16.8	470564	4.8	21.8	455244	4.9	18.7	392219	4.9	20.7	150269	5.0	18.2
283844	4.7	19.0	410897	4.7	20.0	21929	4.8	18.3	452098	4.9	20.3	472053	4.9	20.8	218530	5.0	19.0
393772	4.7	20.8	143282	4.7	19.9	175080	4.8	20.4	372362	4.9	21.7	485744	4.9	21.4	206017	5.0	19.4
228097	4.7	20.1	148235	4.7	20.5	51973	4.8	18.3	228450	4.9	18.7	381115	4.9	21.3	469879	5.0	19.7
364596	4.7	20.5	6362	4.7	16.1	331352	4.8	20.7	417415	4.9	19.6	131011	4.9	19.2	120958	5.0	17.9
160646	4.7	18.3	185316	4.7	20.7	515660	4.8	21.1	264885	4.9	18.8	53026	4.9	16.5	155312	5.0	20.1
1699	4.7	14.2	95353	4.7	18.6	9637	4.8	16.0	118923	4.9	18.5	388613	4.9	20.1	407202	5.0	20.7
178467	4.7	18.4	441893	4.7	21.7	315943	4.8	20.8	509021	4.9	19.5	224928	4.9	19.2	346581	5.0	19.8
322160	4.7	19.8	454224	4.7	21.2	473536	4.8	18.8	151594	4.9	19.5	429450	4.9	18.9	262936	5.0	20.7
40351	4.7	17.6	476880	4.7	20.5	30685	4.8	18.6	356903	4.9	20.4	304093	4.9	19.2	162297	5.0	18.4
308106	4.7	20.4	274486	4.7	19.0	386391	4.8	19.6	437728	4.9	21.0	468969	4.9	20.8	249007	5.0	19.7
71319	4.7	19.0	442852	4.7	21.0	482260	4.8	20.1	516349	4.9	21.0	117033	4.9	19.5	167210	5.0	19.1
209307	4.7	20.0	118407	4.7	17.4	452157	4.8	20.2	379893	4.9	20.5	55257	4.9	19.0	364546	5.0	20.4
305905	4.7	19.8	472375	4.7	21.1	183745	4.8	19.0	144437	4.9	19.0	59150	4.9	18.2	389108	5.0	20.1
362271	4.7	20.1	339197	4.7	20.5	457939	4.8	20.5	213170	4.9	19.2	261689	4.9	18.7	329883	5.0	19.9
442763	4.7	21.4	256665	4.7	19.5	454060	4.8	21.6	329931	4.9	20.1	148069	4.9	19.6	51746	5.0	18.2
5955	4.7	16.9	298222	4.7	19.6	60288	4.8	17.1	97081	4.9	18.4	99025	4.9	19.8	409182	5.0	20.5
200499	4.7	20.9	476760	4.7	20.0	297376	4.8	20.6	62254	4.9	18.6	24477	4.9	17.3	225117	5.0	19.2
384642	4.7	21.5	260343	4.7	20.2	2260	4.8	16.3	441718	4.9	21.1	251357	4.9	19.3	350860	5.0	20.4
294469	4.7	19.5	187110	4.7	18.3	49884	4.8	18.3	412959	4.9	21.0	167334	4.9	18.9	188402	5.0	20.7
389482	4.7	20.1	223110	4.7	19.6	327496	4.8	22.2	130479	4.9	18.0	173519	4.9	18.6	24067	5.0	18.4
191915	4.7	19.1	25919	4.7	18.3	214038	4.8	20.6	167963	4.9	19.4	294397	4.9	20.1	475837	5.1	21.3
13782	4.7	17.9	353115	4.7	21.1	214029	4.8	19.7	261975	4.9	19.5	397273	4.9	20.9	134267	5.1	20.7
487180	4.7	20.0	253398	4.7	19.5	287213	4.8	20.0	515690	4.9	21.4	133431	4.9	20.0	512461	5.1	19.6
446577	4.7	19.9	322519	4.7	20.1	489115	4.8	22.0	91976	4.9	19.4	2906	4.9	14.8	117503	5.1	17.8
99133	4.7	18.1	72740	4.7	18.2	192256	4.8	20.3	77402	4.9	17.9	326835	4.9	19.3	220870	5.1	19.4
388190	4.7	21.2	112921	4.8	19.6	159614	4.8	17.6	24298	4.9	15.6	305811	4.9	21.2	319512	5.1	21.1
377269	4.7	20.9	187007	4.8	19.1	448025	4.8	20.3	441769	4.9	20.5	227320	4.9	20.8	1889	5.1	15.9
49708	4.7	19.0	400479	4.8	21.3	487199	4.8	20.2	220577	4.9	20.3	99567	4.9	20.1	253623	5.1	18.7
258728	4.7	19.9	482426	4.8	21.2	451795	4.8	21.1	435658	4.9	21.0	353753	4.9	20.5	142915	5.1	19.4
352342	4.7	21.0	70662	4.8	18.6	455033	4.8	20.7	326583	4.9	19.0	312639	4.9	19.8	34910	5.1	17.7
308329	4.7	20.5	33296	4.8	16.9	457897	4.8	19.1	314611	4.9	20.7	6028	4.9	16.8	514216	5.1	21.5
201090	4.7	19.8	485794	4.8	20.8	27233	4.8	17.8	305843	4.9	20.5	488436	4.9	20.2	488409	5.1	19.3
353591	4.7	20.1	81788	4.8	19.0	501878	4.8	22.7	156952	4.9	19.0	398095	4.9	20.4	443837	5.1	17.5
359782	4.7	20.1	32997	4.8	18.1	250988	4.8	19.9	209335	4.9	18.4	430437	4.9	20.8	14916	5.1	17.0
320077	4.7	21.0	256621	4.8	18.3	305082	4.8	19.7	267706	4.9	19.9	55820	4.9	19.2	63066	5.1	19.2
213963	4.7	19.0	242509	4.8	19.9	213139	4.8	20.4	258539	4.9	20.3	444531	4.9	20.9	315881	5.1	20.2
195146	4.7	18.5	389439	4.8	20.9	161453	4.8	18.1	11								

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

Nº	10	V															
514001	5.1	21.1	486162	5.2	18.6	411780	5.3	21.6	55490	5.3	18.5	348608	5.4	20.6	255483	5.5	19.7
245276	5.1	19.6	104169	5.2	19.2	441317	5.3	20.5	329722	5.3	19.0	285170	5.4	21.2	479529	5.5	20.7
330600	5.1	20.3	519459	5.2	21.6	23685	5.3	18.7	248187	5.3	20.9	374777	5.4	20.4	316912	5.5	18.6
33843	5.1	17.9	295618	5.2	19.9	236396	5.3	18.3	307979	5.3	19.6	426364	5.4	19.5	37422	5.5	17.1
395082	5.1	20.8	159241	5.2	19.7	84339	5.3	19.0	286950	5.3	19.4	517893	5.4	20.2	311903	5.5	21.5
359594	5.1	20.6	368471	5.2	19.7	228090	5.3	19.9	20474	5.3	18.4	255341	5.4	20.0	518353	5.5	20.4
218331	5.1	19.5	27958	5.2	18.2	172944	5.3	19.2	188267	5.3	18.9	523195	5.4	20.4	224969	5.5	19.7
356273	5.1	20.8	95558	5.2	18.7	154942	5.3	19.6	275544	5.3	18.4	408634	5.4	20.7	54704	5.5	17.5
2066	5.1	16.2	319134	5.2	19.8	27908	5.3	18.0	323990	5.3	20.7	287340	5.4	20.3	131324	5.5	18.7
230249	5.1	19.4	487324	5.2	21.4	73656	5.3	18.6	316460	5.3	19.5	120345	5.4	19.3	378582	5.5	20.4
299221	5.1	19.7	39598	5.2	18.7	177971	5.3	19.0	155972	5.3	18.4	482657	5.4	20.7	365440	5.5	20.1
272	5.1	14.4	374834	5.2	20.8	21593	5.3	18.3	60236	5.3	19.2	509451	5.4	21.8	449399	5.5	20.5
489130	5.1	21.8	171681	5.2	18.6	195402	5.3	20.8	405246	5.3	19.1	366287	5.4	21.3	314300	5.5	20.3
334891	5.1	18.9	128141	5.2	19.0	161512	5.3	19.2	447741	5.3	21.1	111489	5.4	19.1	412565	5.5	20.5
21693	5.1	16.3	46970	5.2	18.7	398858	5.3	20.9	41294	5.3	18.2	18142	5.4	16.9	494428	5.5	20.8
239682	5.1	19.7	38808	5.2	19.8	212286	5.3	19.9	356237	5.3	20.5	208117	5.4	20.0	449462	5.5	21.3
485849	5.1	21.9	205183	5.2	19.8	314900	5.3	19.4	451200	5.3	18.6	91717	5.4	18.5	410145	5.5	21.3
464817	5.1	18.7	112718	5.2	19.0	380781	5.3	21.9	293723	5.3	19.8	117540	5.4	20.1	82531	5.5	17.7
285425	5.1	19.9	19247	5.2	17.3	449274	5.3	21.1	171651	5.3	20.1	514828	5.4	21.4	385767	5.5	18.9
411785	5.1	22.0	472897	5.2	20.8	179652	5.3	20.4	247637	5.3	19.5	300593	5.4	19.3	96177	5.5	23.1
512028	5.1	20.9	360009	5.2	19.9	378608	5.3	20.6	339171	5.3	20.2	474325	5.4	21.0	250575	5.5	19.2
440376	5.1	20.5	478767	5.2	18.6	462931	5.3	20.8	19444	5.3	16.7	155299	5.4	20.4	17454	5.5	18.0
177508	5.1	19.9	515078	5.2	20.1	401588	5.3	20.5	155817	5.3	18.0	475308	5.4	21.2	150278	5.5	19.2
143297	5.1	19.7	158294	5.2	19.3	130529	5.3	18.5	305831	5.3	20.3	125579	5.4	18.7	365510	5.5	20.6
285850	5.1	20.4	183757	5.2	19.7	220757	5.3	20.6	340526	5.3	21.2	356600	5.4	20.1	472912	5.5	20.7
495341	5.1	20.2	27490	5.2	17.4	470288	5.3	20.4	12449	5.3	17.3	414383	5.4	20.2	455036	5.5	20.1
448072	5.1	19.8	8066	5.2	16.9	12938	5.3	18.5	78670	5.3	18.9	366637	5.4	19.6	178259	5.5	19.6
184853	5.1	19.4	289525	5.2	19.8	80838	5.3	17.5	67622	5.3	18.5	25182	5.4	18.2	145430	5.5	17.9
9537	5.1	17.7	133341	5.2	19.1	38435	5.3	17.9	508756	5.3	19.2	151336	5.4	20.4	176107	5.5	18.5
11805	5.1	17.8	13794	5.2	17.6	286699	5.3	20.4	487360	5.3	20.0	264153	5.4	19.9	449039	5.5	20.3
395647	5.1	20.5	388230	5.2	21.8	472503	5.3	21.7	175675	5.3	19.7	195307	5.4	19.7	218155	5.5	19.4
522883	5.1	20.5	77784	5.2	19.1	384849	5.3	20.0	455031	5.3	20.6	219489	5.4	20.2	14802	5.5	16.9
270932	5.1	19.5	225045	5.2	20.4	461144	5.3	21.0	516552	5.3	20.8	396487	5.4	20.3	323015	5.5	20.7
14938	5.1	16.2	85333	5.2	18.5	253522	5.3	19.1	238595	5.3	19.5	404460	5.4	20.9	86316	5.5	18.7
321568	5.1	20.2	332683	5.2	20.9	86783	5.3	19.4	383545	5.4	20.1	44105	5.4	19.1	8130	5.5	18.0
517476	5.1	20.9	449801	5.2	20.1	402472	5.3	21.2	98004	5.4	18.1	299223	5.4	20.5	42876	5.5	18.3
481575	5.1	20.0	351116	5.2	19.9	298248	5.3	19.1	355766	5.4	20.8	297196	5.4	20.2	289378	5.5	20.7
293747	5.1	20.2	261299	5.2	19.3	223910	5.3	19.2	406285	5.4	20.1	432767	5.4	21.3	473686	5.5	20.4
397840	5.1	19.5	427443	5.2	19.4	311121	5.3	19.8	520601	5.4	21.5	428674	5.4	21.7	511456	5.5	20.9
69022	5.1	18.8	320121	5.2	21.2	374829	5.3	19.5	362856	5.4	19.9	167213	5.4	19.8	407019	5.5	21.0
493894	5.1	21.4	268868	5.2	21.0	223174	5.3	20.7	405309	5.4	19.6	82311	5.4	19.1	449149	5.5	20.6
452029	5.1	20.6	127032	5.2	19.0	339155	5.3	19.7	255415	5.4	20.8	327615	5.4	22.3	19616	5.5	16.8
132582	5.1	19.0	316792	5.2	20.4	5197	5.3	16.0	513952	5.4	21.3	408977	5.4	19.8	107130	5.5	18.3
103154	5.1	19.0	298168	5.2	19.5	520470	5.3	21.4	485029	5.4	21.0	185116	5.4	18.7	437608	5.5	19.4
472177	5.1	20.1	78405	5.2	18.0	293455	5.3	19.2	237440	5.4	18.5	136927	5.4	18.5	234631	5.5	20.9
26306	5.1	17.8	252807	5.2	20.2	402842	5.3	20.7	94157	5.4	18.4	428417	5.4	19.6	355384	5.5	20.8
133228	5.1	17.8	222241	5.2	19.8	290692	5.3	20.1	142373	5.4	18.8	84345	5.4	18.9	151644	5.5	18.5
271251	5.1	19.9	495035	5.2	20.5	435794	5.3	19.8	67692	5.4	18.1	508926	5.4	21.7	107208	5.5	19.8
157278	5.1	19.8	287062	5.2	19.0	100281	5.3	20.1	351176	5.4	21.9	241485	5.4	19.6	271023	5.5	19.7
378009	5.1	18.5	233046	5.2	21.0	185801	5.3	19.6	362995	5.4	19.8	109116	5.4	19.3	147643	5.5	20.3
242272	5.1	19.8	146064	5.2	19.6	511041	5.3	19.9	57507	5.4	18.0	353333	5.4	19.9	104529	5.5	19.2
157036	5.1	18.9	355375	5.2	20.4	35810	5.3	16.0	344030	5.4	20.5	111921	5.4	20.1	391529	5.5	21.0
40801	5.1	18.9	128104	5.2	19.7	285408	5.3	19.8	435102	5.4	21.7	436517	5.4	21.0	111379	5.5	19.6
39795	5.1	19.1	70549	5.2	18.9	230787	5.3	19.9	65987	5.4	19.1	320122	5.4	20.9	257995	5.5	20.3
132636	5.1	19.1	5053	5.2	17.0	211319	5.3	19.1	469853	5.4	19.0	513431	5.4	21.1	505652	5.5	20.8
45414	5.1	17.3	343551	5.2	20.0	70505	5.3	18.2	183131	5.4	19.4	129795	5.5	19.2	58022	5.5	18.9
197563	5.1	20.0	470483	5.2	21.5	213729	5.3	19.3	71691	5.4	17.8	286756	5.5	20.8	447287	5.5	20.4
517921	5.1	20.2	170043	5.2	18.9	168656	5.3	19.6	20641	5.4	17.8	302609	5.5	19.7	299181	5.5	20.4
114166	5.1	18.2	232168	5.2	19.3	458032	5.3	20.5	510029	5.4	21.2	513219	5.5	21.3	244623	5.5	20.2
713	5.1	13.1	394526	5.2	20.5	451351	5.3	20.6	121904	5.4	19.7	309015	5.5	20.4	452549	5.5	20.4
436496	5.1	20.8	269060	5.2	19.9	45133	5.3	17.4	393743	5.4	19.9	392344	5.5	20.6	508797	5.5	20.1
336825	5.1	21.0	510170	5.2	20.5	356262	5.3	21.0	221035	5.4	18.6	219928	5.5	19.2	245516	5.5	19.4
2520	5.1	15.7	286519	5.2	19.9	494642	5.3	20.8	38								

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

Nº	10	V															
33298	5.6	18.4	219269	5.6	19.1	214693	5.7	19.8	115625	5.8	18.9	187711	5.9	21.0	441750	5.9	20.7
263758	5.6	19.7	478519	5.6	20.0	518334	5.7	20.8	30552	5.8	17.4	212282	5.9	20.2	471536	5.9	20.5
342306	5.6	20.5	207357	5.6	19.8	52266	5.7	18.4	469649	5.8	20.8	441263	5.9	21.0	459426	5.9	19.9
321624	5.6	19.7	40291	5.6	18.6	441791	5.7	21.4	62809	5.8	18.9	195308	5.9	19.5	296211	5.9	20.0
321486	5.6	20.1	65864	5.6	18.5	295528	5.7	20.7	342594	5.8	21.4	421822	5.9	20.2	383069	5.9	19.5
97584	5.6	18.5	464052	5.6	19.0	512288	5.7	18.6	66413	5.8	18.2	102778	5.9	19.7	390118	5.9	20.0
324785	5.6	20.9	494371	5.6	20.3	90911	5.7	20.2	12827	5.8	17.1	374803	5.9	20.4	286842	5.9	20.9
108067	5.6	19.0	147573	5.6	17.5	330652	5.7	19.0	506546	5.8	21.9	516756	5.9	21.1	45306	5.9	18.8
78685	5.6	18.6	186355	5.7	19.3	307122	5.7	20.3	7914	5.8	16.4	5126	5.9	17.9	114987	5.9	20.0
1590	5.6	14.2	160430	5.7	19.3	476799	5.7	20.8	283352	5.8	19.2	318446	5.9	19.2	260356	5.9	19.4
415677	5.6	20.0	287545	5.7	19.6	104456	5.7	20.1	508295	5.8	20.4	371399	5.9	19.9	374382	5.9	21.0
252677	5.6	19.5	259370	5.7	20.5	167896	5.7	19.1	284630	5.8	19.2	390433	5.9	20.2	343786	5.9	19.7
390357	5.6	20.8	135867	5.7	19.3	350451	5.7	20.5	333959	5.8	21.4	192468	5.9	18.7	158563	5.9	18.7
273723	5.6	21.1	511097	5.7	21.2	468536	5.7	20.5	251280	5.8	19.9	438457	5.9	21.3	375180	5.9	20.7
383553	5.6	20.7	330979	5.7	19.9	129614	5.7	18.4	385786	5.8	20.6	114824	5.9	17.3	132721	5.9	19.4
127663	5.6	19.5	387585	5.7	19.5	181646	5.7	19.7	363003	5.8	20.4	64353	5.9	18.8	390325	5.9	21.2
155837	5.6	19.5	157068	5.7	19.5	211078	5.7	19.4	372347	5.8	19.3	133088	5.9	18.5	274156	5.9	21.1
314460	5.6	20.1	46969	5.7	18.2	316196	5.7	19.9	395140	5.8	20.2	25843	5.9	17.8	521863	5.9	21.6
412622	5.6	21.2	41714	5.7	18.4	348027	5.7	18.5	273702	5.8	21.2	392914	5.9	19.9	260346	5.9	20.2
113647	5.6	18.3	401248	5.7	20.5	225188	5.7	19.4	282722	5.8	20.0	411610	5.9	20.0	101199	5.9	18.8
68827	5.6	19.1	50339	5.7	18.6	97582	5.7	18.6	394473	5.8	19.6	259060	5.9	19.2	324825	5.9	22.1
476530	5.6	21.2	39212	5.7	17.0	305262	5.8	20.2	321379	5.8	20.2	157015	5.9	19.0	145730	5.9	20.2
301211	5.6	20.4	348780	5.7	20.3	103680	5.8	18.9	337952	5.8	19.6	260282	5.9	20.0	349827	5.9	20.2
106588	5.6	19.8	403969	5.7	20.1	246006	5.8	19.7	318460	5.8	19.7	443737	5.9	19.0	218194	5.9	18.5
362878	5.6	20.6	469503	5.7	20.2	315036	5.8	20.5	67402	5.8	17.7	349289	5.9	20.7	137445	5.9	19.2
487247	5.6	20.5	445234	5.7	20.8	209298	5.8	19.9	103258	5.8	17.6	438330	5.9	21.0	262068	5.9	19.3
83759	5.6	18.9	133448	5.7	19.9	123985	5.8	19.9	411542	5.8	21.4	356681	5.9	20.4	177284	5.9	19.0
218591	5.6	18.5	222881	5.7	19.8	316172	5.8	19.4	293924	5.8	19.9	290903	5.9	20.5	283444	5.9	19.1
208792	5.6	19.4	429468	5.7	20.5	150222	5.8	19.3	360075	5.8	20.4	15300	5.9	17.1	51640	5.9	19.0
486453	5.6	20.6	443326	5.7	20.8	13888	5.8	17.9	72912	5.8	17.6	478724	5.9	19.8	385395	5.9	18.8
384276	5.6	19.0	438430	5.7	21.6	305198	5.8	20.4	393034	5.8	20.3	267567	5.9	19.7	75620	5.9	17.0
469370	5.6	19.4	43172	5.7	17.8	469381	5.8	19.9	387760	5.8	19.9	284535	5.9	19.8	432660	5.9	20.3
327147	5.6	20.4	82570	5.7	18.5	408357	5.8	18.9	129065	5.8	18.8	221511	5.9	19.7	123828	5.9	19.2
422853	5.6	20.8	259963	5.7	20.6	244884	5.8	20.1	332154	5.8	19.9	511471	5.9	20.8	358975	5.9	21.1
43415	5.6	18.3	136453	5.7	17.6	253643	5.8	19.5	63303	5.8	19.5	348372	5.9	20.4	305364	5.9	19.7
276550	5.6	20.0	30680	5.7	19.4	26718	5.8	17.0	455142	5.8	20.0	483263	5.9	20.7	428574	5.9	21.3
286820	5.6	19.8	144314	5.7	20.3	431822	5.8	21.0	22877	5.8	17.4	52245	5.9	18.9	328878	5.9	20.3
442282	5.6	20.8	273470	5.7	19.4	186170	5.8	19.3	489333	5.8	19.9	260478	5.9	21.2	374021	5.9	20.7
220318	5.6	19.4	122011	5.7	18.5	485297	5.8	21.3	205068	5.8	18.2	357646	5.9	19.8	192169	5.9	19.6
167417	5.6	18.0	331369	5.7	20.7	399691	5.8	20.2	305267	5.8	19.8	154716	5.9	19.1	94151	5.9	16.7
511276	5.6	20.7	396413	5.7	21.2	360658	5.8	18.3	521959	5.8	20.6	325495	5.9	19.1	98612	5.9	19.3
266759	5.6	19.3	142982	5.7	19.0	485497	5.8	20.0	369497	5.8	19.8	73494	5.9	18.6	381073	5.9	19.5
454026	5.6	21.3	111783	5.7	19.7	23838	5.8	18.3	481869	5.8	20.4	213131	5.9	20.2	266851	5.9	20.2
512436	5.6	20.5	220622	5.7	18.1	128225	5.8	19.1	26818	5.8	15.7	366482	5.9	20.9	38881	5.9	18.0
491802	5.6	20.7	405868	5.7	20.0	80631	5.8	18.7	19946	5.8	17.7	478725	5.9	20.4	293728	5.9	20.2
176244	5.6	19.0	69949	5.7	18.4	480965	5.8	20.0	478986	5.8	19.7	103561	5.9	19.0	306581	5.9	20.0
321628	5.6	21.1	225148	5.7	18.3	397632	5.8	20.3	439572	5.8	20.3	305743	5.9	20.5	518521	5.9	20.3
410909	5.6	20.5	190609	5.7	18.0	380411	5.8	20.8	398557	5.8	20.5	31600	5.9	18.7	516134	5.9	20.0
90407	5.6	18.6	352243	5.7	19.1	474273	5.8	19.6	482207	5.9	21.1	491248	5.9	20.8	365545	5.9	21.2
145340	5.6	19.6	432722	5.7	20.9	451129	5.8	20.2	328676	5.9	20.2	313348	5.9	19.4	27354	5.9	17.9
385458	5.6	23.4	378064	5.7	21.3	335708	5.8	21.2	256620	5.9	20.1	314424	5.9	20.9	239766	5.9	21.1
488008	5.6	20.1	14725	5.7	17.3	127213	5.8	20.1	157066	5.9	19.1	500821	5.9	18.6	74004	5.9	20.0
280928	5.6	20.2	88114	5.7	19.1	6729	5.8	15.4	55258	5.9	19.2	72953	5.9	19.2	449789	5.9	20.3
352946	5.6	20.0	515571	5.7	21.0	515542	5.8	21.1	490502	5.9	20.7	168673	5.9	19.6	38478	5.9	18.3
452117	5.6	20.8	471947	5.7	19.6	477068	5.8	21.1	149211	5.9	19.7	224835	5.9	20.2	128940	5.9	19.4
468011	5.6	20.7	264522	5.7	20.2	382400	5.8	19.6	173406	5.9	19.2	252894	5.9	19.9	119350	5.9	18.9
137386	5.6	18.1	303164	5.7	20.7	382446	5.8	20.3	121202	5.9	17.7	393186	5.9	20.3	473070	5.9	21.4
2470	5.6	15.8	39285	5.7	19.4	520582	5.8	21.6	82512	5.9	18.8	467927	5.9	20.6	273728	6.0	20.4
478934	5.6	20.6	284564	5.7	18.9	261663	5.8	20.4	352979	5.9	20.2	33022	5.9	20.4	20822	6.0	17.7
24473	5.6	16.4	327683	5.7	19.9	269905	5.8	21.6	158671	5.9	20.2	359352	5.9	21.0	78866	6.0	17.0
477145	5.6	20.3	273488	5.7	21.1	203703	5.8	20.2	322051	5.9	20.1	360954	5.9	20.5	101310	6.0	18.5
403458	5.6	19.8	161215	5.7	19.8	241237	5.8	20.2	283825	5.9	19.3	198600	5.9	17.0	44126	6.0	16.6
13915	5.6	16.7	94249	5.7	19.7	373189	5.8										

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

Nº	10	V															
491087	6.0	19.8	206437	6.1	19.0	380234	6.2	19.9	129121	6.3	18.9	422852	6.3	21.2	10887	6.4	17.2
478925	6.0	20.0	436491	6.1	21.2	329886	6.2	20.7	321487	6.3	20.8	188149	6.3	20.0	422052	6.4	20.4
220053	6.0	18.2	261830	6.1	20.0	4193	6.2	15.6	512655	6.3	20.3	410957	6.3	20.7	20021	6.4	17.4
261353	6.0	19.8	481624	6.1	20.9	218225	6.2	18.5	129124	6.3	19.5	511346	6.3	21.8	49490	6.4	18.1
510890	6.0	21.1	386796	6.1	21.0	510175	6.2	19.3	438852	6.3	20.2	66982	6.3	19.0	268133	6.4	19.6
319271	6.0	20.3	237959	6.1	18.5	389101	6.2	21.1	295152	6.3	19.3	92487	6.3	18.1	141699	6.4	20.9
367605	6.0	18.8	18632	6.1	17.8	485945	6.2	21.4	353122	6.3	20.3	436481	6.3	20.8	86197	6.4	18.8
51606	6.0	17.8	64466	6.1	18.2	118336	6.2	19.3	265990	6.3	19.5	211776	6.3	21.2	453612	6.4	20.5
170749	6.0	20.2	100020	6.1	17.4	453048	6.2	19.5	517463	6.3	21.5	18199	6.3	18.2	166299	6.4	20.7
388915	6.0	20.0	218187	6.1	18.7	320751	6.2	21.0	220676	6.3	19.2	137694	6.3	18.9	99570	6.4	19.3
91098	6.0	19.1	19504	6.1	17.6	391264	6.2	20.5	301579	6.3	19.6	508099	6.3	21.5	435120	6.4	21.7
214676	6.0	19.9	137753	6.1	19.4	391848	6.2	19.7	68682	6.3	18.5	40566	6.3	17.6	350038	6.4	20.6
321328	6.0	20.0	165016	6.1	18.9	164395	6.2	20.1	493863	6.3	20.7	258764	6.3	21.0	98970	6.4	19.4
366787	6.0	20.3	469369	6.1	20.7	130864	6.2	17.4	398773	6.3	20.3	185313	6.3	20.1	228107	6.4	20.6
512809	6.0	21.4	211183	6.1	18.7	457934	6.2	19.4	381404	6.3	21.4	53757	6.3	16.8	370538	6.4	20.7
158140	6.0	19.8	57249	6.1	17.7	399097	6.2	20.7	137939	6.3	20.0	509000	6.3	20.9	501105	6.4	23.0
70094	6.0	18.1	109017	6.1	19.5	223204	6.2	20.6	349921	6.3	20.3	51461	6.3	17.3	428620	6.4	21.7
71506	6.0	19.3	193513	6.1	19.0	223961	6.2	20.3	33203	6.3	18.2	127405	6.3	18.6	356692	6.4	20.3
178900	6.0	19.3	304352	6.1	20.6	188535	6.2	19.5	273105	6.3	21.1	99062	6.3	18.7	292600	6.4	20.5
304454	6.0	20.9	402474	6.1	19.9	116279	6.2	19.5	126657	6.3	19.3	203768	6.3	19.3	436953	6.4	20.5
256437	6.0	19.4	447695	6.1	21.5	72632	6.2	19.2	267096	6.3	19.6	233683	6.3	20.3	261567	6.4	20.8
299670	6.1	18.1	53469	6.1	18.9	64350	6.2	19.6	167836	6.3	20.4	24158	6.3	18.0	188332	6.4	19.5
365403	6.1	19.4	107997	6.1	18.6	383138	6.2	20.7	324386	6.3	19.4	22209	6.3	18.7	132299	6.4	19.3
4209	6.1	15.9	185456	6.1	20.5	218215	6.2	19.7	81556	6.3	19.0	78748	6.3	18.5	459444	6.4	20.2
273901	6.1	20.7	170375	6.1	19.0	36081	6.2	17.3	182913	6.3	18.4	9922	6.3	17.0	229349	6.4	19.0
243106	6.1	19.6	332869	6.1	20.9	282400	6.2	19.6	342429	6.3	19.4	431702	6.3	22.2	67210	6.4	17.3
517023	6.1	20.1	46035	6.1	18.7	24878	6.2	17.3	435778	6.3	20.8	12393	6.3	18.2	229811	6.4	20.1
361932	6.1	21.1	36756	6.1	18.1	94091	6.2	18.7	27641	6.3	18.6	315426	6.3	20.7	479864	6.4	20.4
95657	6.1	19.5	515550	6.1	21.0	11960	6.2	17.1	97437	6.3	18.5	212770	6.3	19.9	278368	6.4	20.1
356598	6.1	20.2	377569	6.1	20.9	241898	6.2	19.6	296327	6.3	20.9	490485	6.4	19.6	36316	6.4	17.0
324817	6.1	20.2	25738	6.1	17.0	103012	6.2	18.8	161990	6.3	21.0	288368	6.4	20.9	144715	6.4	19.7
382522	6.1	19.1	312641	6.1	19.8	155431	6.2	18.8	66136	6.3	18.5	226473	6.4	19.7	189870	6.4	18.9
97310	6.1	19.1	353140	6.1	20.5	500239	6.2	20.5	283808	6.3	19.7	118843	6.4	18.7	156939	6.4	18.5
155875	6.1	19.3	381085	6.1	21.6	290747	6.2	20.7	483890	6.3	21.4	371364	6.4	18.8	428572	6.4	21.4
310702	6.1	21.0	107749	6.1	19.0	458503	6.2	21.0	155740	6.3	18.0	75570	6.4	18.9	509629	6.4	22.2
227250	6.1	20.6	476964	6.2	19.5	412674	6.2	20.7	299632	6.3	20.9	315914	6.4	20.8	245351	6.4	21.0
225041	6.1	19.4	437941	6.2	20.8	141876	6.2	19.9	64496	6.3	19.5	101914	6.4	18.1	104102	6.4	19.2
269401	6.1	20.5	275916	6.2	20.1	58614	6.2	17.7	400707	6.3	20.3	420956	6.4	20.2	411921	6.4	21.0
367727	6.1	19.1	451783	6.2	20.8	356254	6.2	20.6	227733	6.3	20.5	115972	6.4	19.6	348392	6.4	20.6
263880	6.1	20.1	294856	6.2	20.7	63204	6.2	18.6	190531	6.3	19.5	206509	6.4	19.1	11918	6.4	16.4
137375	6.1	19.0	179063	6.2	20.3	392763	6.2	19.5	4810	6.3	16.5	426203	6.4	21.1	189815	6.4	19.8
14690	6.1	17.4	164043	6.2	19.4	145981	6.2	20.1	240987	6.3	20.1	406314	6.4	21.4	152468	6.4	20.3
259494	6.1	18.9	27812	6.2	17.7	316175	6.2	19.8	478662	6.3	19.3	485840	6.4	21.3	223464	6.4	19.1
210212	6.1	18.6	481639	6.2	19.6	222433	6.2	19.3	319244	6.3	20.9	353751	6.4	21.0	516352	6.4	20.9
187488	6.1	20.6	121179	6.2	19.4	411472	6.2	20.3	158124	6.3	20.6	515376	6.4	20.7	358876	6.4	21.2
238514	6.1	20.3	381821	6.2	21.0	356253	6.2	21.2	298094	6.3	19.7	80607	6.4	19.5	91109	6.4	17.1
31918	6.1	18.1	94394	6.2	19.5	411926	6.2	21.1	366360	6.3	21.6	279487	6.4	20.4	174187	6.4	18.9
282717	6.1	20.5	392045	6.2	20.8	45255	6.2	19.6	92078	6.3	18.4	315945	6.4	20.8	132587	6.5	19.3
510979	6.1	20.1	438447	6.2	20.0	366153	6.2	20.2	28690	6.3	16.6	512406	6.4	19.0	173356	6.5	20.3
309012	6.1	20.5	387796	6.2	19.9	50208	6.2	19.0	331	6.3	13.4	96086	6.4	18.9	49782	6.5	18.3
180778	6.1	19.2	130894	6.2	18.5	134022	6.2	19.6	516166	6.3	19.9	472548	6.4	20.6	226115	6.5	19.2
473442	6.1	20.3	28503	6.2	17.5	332044	6.2	19.5	452032	6.3	20.6	15540	6.4	18.4	136397	6.5	20.4
141819	6.1	18.8	67858	6.2	18.5	298709	6.2	18.8	173610	6.3	20.1	489605	6.4	21.3	23939	6.5	18.1
358306	6.1	19.6	168869	6.2	19.3	441703	6.2	21.0	142342	6.3	18.7	114414	6.4	18.6	39611	6.5	18.9
483905	6.1	20.9	82610	6.2	19.6	215107	6.2	19.7	225740	6.3	19.1	86789	6.4	17.2	380731	6.5	19.8
477534	6.1	20.9	71534	6.2	18.3	227906	6.2	19.8	61198	6.3	18.0	426235	6.4	20.5	142857	6.5	19.5
392217	6.1	20.7	319316	6.2	20.3	355501	6.2	20.0	21370	6.3	18.6	511919	6.4	20.3	230290	6.5	18.6
513498	6.1	22.1	32702	6.2	19.2	75292	6.2	19.1	370679	6.3	20.4	520954	6.4	20.9	102751	6.5	19.4
129948	6.1	18.9	378105	6.2	20.1	342509	6.2	19.6	298246	6.3	19.0	365974	6.4	20.3	455117	6.5	19.8
260152	6.1	20.1	88179	6.2	17.8	12012	6.2	15.9	8903	6.3	16.3	372993	6.4	19.4	198116	6.5	18.8
111950	6.1	18.0	137605	6.2	17.9	317120	6.2	19.4	365366	6.3	20.5	67083	6.4	17.7	509686	6.5	20.9
182250	6.1	20.5	507982	6.2	21.6	32421	6.2	18.9	224765	6.3	19.6	170575	6.4	19.2	247391	6.5	19.6
113107	6.1	18.3	241204	6.2	20.0	353929	6.2	20.5	225623								

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
289111	6.5	19.1	305115	6.6	20.1	321484	6.6	19.9	73468	6.7	18.4	219476	6.8	20.3	296624	6.9	20.0
448620	6.5	20.1	281837	6.6	20.2	86733	6.6	19.6	67698	6.7	18.4	520416	6.8	20.7	299127	6.9	20.1
396927	6.5	20.5	469641	6.6	20.1	97469	6.6	18.9	164239	6.7	19.5	164233	6.8	19.3	73295	6.9	18.0
242597	6.5	19.9	470589	6.6	21.2	309017	6.6	20.2	50223	6.7	17.8	326261	6.8	20.5	318469	6.9	20.9
100036	6.5	17.7	362546	6.6	19.9	71218	6.6	19.1	298165	6.7	19.7	254568	6.8	20.1	247285	6.9	19.2
81656	6.5	19.1	50597	6.6	17.6	225716	6.6	20.0	291239	6.7	19.2	269598	6.8	19.8	94075	6.9	18.9
43184	6.5	18.7	76173	6.6	19.3	108069	6.6	19.3	59866	6.7	17.8	476844	6.8	19.9	472650	6.9	20.9
133756	6.5	18.6	219125	6.6	19.3	451177	6.6	20.8	460072	6.7	20.1	487467	6.8	20.7	322073	6.9	19.7
14355	6.5	17.0	451830	6.6	20.0	259664	6.6	19.3	263256	6.7	20.1	229474	6.8	21.3	327682	6.9	20.5
225757	6.5	19.8	103849	6.6	18.4	405844	6.6	20.5	265306	6.7	20.0	79608	6.8	18.0	263814	6.9	19.7
321326	6.5	20.8	241428	6.6	19.6	275368	6.6	21.2	461288	6.7	20.2	520458	6.8	21.1	490336	6.9	21.2
520410	6.5	20.5	265151	6.6	20.2	509571	6.6	21.3	479511	6.7	21.2	171889	6.8	19.5	103219	6.9	18.3
437309	6.5	20.8	313262	6.6	20.0	360143	6.6	21.2	469365	6.7	20.6	10666	6.8	16.6	268211	6.9	21.2
396134	6.5	20.9	466263	6.6	19.1	138293	6.6	19.2	129059	6.7	20.1	515694	6.8	21.1	487432	6.9	21.0
261811	6.5	20.7	174462	6.6	19.9	222908	6.6	20.1	205064	6.7	17.3	82286	6.8	18.3	166638	6.9	19.2
254388	6.5	19.6	447986	6.6	20.4	386819	6.6	20.6	390933	6.7	21.0	221947	6.8	20.7	97126	6.9	19.3
315948	6.5	20.5	476000	6.6	21.1	213482	6.6	18.8	80333	6.7	17.6	226568	6.8	19.2	160528	6.9	18.8
437400	6.5	20.0	42700	6.6	17.5	383489	6.6	21.7	436074	6.7	20.0	163238	6.8	19.1	119968	6.9	19.9
435613	6.5	20.2	347535	6.6	19.2	514186	6.6	20.6	393225	6.7	20.6	363484	6.8	19.7	476612	6.9	20.5
328871	6.5	19.3	358652	6.6	20.8	437821	6.6	21.0	279828	6.7	18.9	520579	6.8	21.1	429980	6.9	19.1
207749	6.5	19.4	316810	6.6	19.0	181290	6.6	19.9	178400	6.7	18.6	67106	6.8	18.4	261942	6.9	19.5
344444	6.5	20.7	137654	6.6	20.6	148227	6.6	20.1	50923	6.7	17.6	75171	6.8	19.3	138932	6.9	20.1
229405	6.5	18.7	197904	6.6	20.0	512667	6.6	20.0	352248	6.7	19.8	327522	6.8	20.8	491256	6.9	20.6
437431	6.5	20.5	483781	6.6	21.3	480043	6.6	20.8	96875	6.7	18.8	142341	6.8	18.8	20883	6.9	17.8
201102	6.5	20.9	422223	6.6	19.3	433840	6.6	21.3	291584	6.7	21.5	95555	6.8	18.7	378048	6.9	20.9
428872	6.5	20.2	465386	6.6	21.6	460107	6.6	20.4	306874	6.7	20.1	202185	6.8	20.2	211038	6.9	20.1
390362	6.5	21.0	191505	6.6	19.5	254079	6.6	19.8	384303	6.7	20.6	488276	6.8	20.6	452974	6.9	20.0
515247	6.5	21.5	304148	6.6	18.7	268114	6.6	19.0	97591	6.7	18.3	150878	6.8	19.4	514977	6.9	22.4
328141	6.5	21.1	512673	6.6	20.0	431154	6.6	20.3	521351	6.7	21.5	440397	6.8	21.5	127140	6.9	19.2
207889	6.5	19.3	305916	6.6	19.9	109906	6.6	19.4	70576	6.7	19.0	457989	6.8	20.3	432313	6.9	19.2
117717	6.5	17.9	42545	6.6	18.9	519482	6.6	21.5	481828	6.7	20.7	373430	6.8	20.4	490991	6.9	21.6
5299	6.5	16.3	436432	6.6	20.7	348107	6.7	20.4	315937	6.7	20.7	195098	6.8	19.7	60411	6.9	19.0
268675	6.5	20.7	112569	6.6	18.2	267610	6.7	18.5	510187	6.7	21.7	248662	6.8	18.2	474463	6.9	21.0
291412	6.5	19.9	449025	6.6	19.9	424333	6.7	19.2	436622	6.7	19.0	41170	6.8	17.5	400670	6.9	19.6
426621	6.5	19.5	121750	6.6	19.2	26063	6.7	19.2	444408	6.7	20.5	52355	6.8	19.7	16954	6.9	16.3
264087	6.5	20.9	30836	6.6	19.1	513778	6.7	21.2	91037	6.7	18.2	6448	6.8	16.0	317303	6.9	20.8
515680	6.5	21.9	336784	6.6	20.7	370643	6.7	19.6	497471	6.7	21.4	518317	6.8	21.7	276551	6.9	20.1
480124	6.5	20.6	172238	6.6	19.3	436445	6.7	21.4	29337	6.7	17.9	380794	6.8	21.0	406999	6.9	20.9
450354	6.5	20.1	24479	6.6	19.0	315053	6.7	19.9	388903	6.7	20.8	480077	6.8	21.7	242836	6.9	20.1
262608	6.5	20.3	479122	6.6	19.6	405588	6.7	20.7	395778	6.7	19.9	38604	6.8	18.4	147400	6.9	19.6
229998	6.5	20.5	116591	6.6	19.3	169613	6.7	19.3	517966	6.7	20.8	28526	6.8	18.7	509217	6.9	20.8
294495	6.5	20.2	152707	6.6	18.6	141358	6.7	19.7	299094	6.7	20.1	443319	6.8	21.2	364594	6.9	21.3
439985	6.5	19.8	297526	6.6	20.5	257747	6.7	20.6	409763	6.7	21.0	59289	6.8	18.1	224248	6.9	18.4
119263	6.5	18.7	208867	6.6	19.0	298164	6.7	20.2	46673	6.7	18.1	312612	6.8	20.5	134138	6.9	17.9
282305	6.5	19.4	520574	6.6	20.9	120799	6.7	19.4	440161	6.7	20.6	180911	6.8	19.9	203169	6.9	19.5
349226	6.5	18.6	106305	6.6	19.3	273447	6.7	20.5	509517	6.7	21.1	23732	6.8	17.0	129184	6.9	20.1
224748	6.5	20.5	513495	6.6	21.8	224045	6.7	20.0	52580	6.7	18.7	480611	6.8	21.1	381022	6.9	19.4
108634	6.5	17.8	345385	6.6	18.9	215527	6.7	19.3	397990	6.7	17.6	449990	6.8	20.3	428536	6.9	21.2
225455	6.5	20.6	343920	6.6	19.4	488134	6.7	20.1	823	6.7	13.9	2797	6.8	15.9	346511	6.9	19.1
55046	6.5	18.1	117062	6.6	19.8	75553	6.7	17.9	414371	6.7	20.7	41412	6.8	18.2	440838	6.9	19.3
260617	6.5	20.4	164101	6.6	19.5	479553	6.7	20.3	91810	6.7	19.3	268364	6.8	20.4	2197	6.9	16.1
204003	6.5	18.3	15527	6.6	17.0	365648	6.7	20.8	508786	6.7	26.3	466244	6.8	20.9	476243	6.9	20.8
249481	6.5	19.6	457884	6.6	19.8	76544	6.7	19.2	352384	6.7	19.9	295139	6.8	21.1	12101	6.9	17.5
99859	6.5	19.4	513967	6.6	20.2	76932	6.7	19.7	159483	6.7	18.7	314394	6.8	21.0	296731	6.9	20.8
55463	6.5	19.4	1654	6.6	14.5	476706	6.7	20.6	88459	6.8	19.3	399748	6.8	20.2	63435	6.9	18.4
322601	6.5	20.6	477914	6.6	20.4	81214	6.7	18.4	223227	6.8	20.3	394602	6.8	21.0	334316	6.9	19.7
121262	6.5	18.8	223170	6.6	18.9	475368	6.7	21.2	505114	6.8	21.6	22489	6.8	16.5	263892	6.9	18.4
212902	6.5	20.6	89918	6.6	19.7	99573	6.7	19.4	66497	6.8	18.2	353015	6.8	20.7	393601	6.9	20.1
113265	6.5	18.1	392345	6.6	20.9	265596	6.7	19.5	176166	6.8	19.6	186643	6.8	19.7	450511	6.9	20.2
254243	6.5	18.9	239398	6.6	20.2	435106	6.7	21.9	454629	6.8	21.1	481615	6.8	20.5	77952	6.9	17.9
407098	6.5	20.8	264329	6.6	20.5	182910	6.7	19.5	4675	6.8	16.8	68080	6.9	18.4	249711	6.9	19.4
291645	6.5	20.0	43485	6.6	19.8	238551	6.7	20.3	263365	6.8	19.9	367698	6.9	19.6	35551	6.9	17.6
12651	6.5	17.7	97380	6.6	19.3	106954	6.7	18.8</									

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

Nº	10	V															
223532	6.9	19.0	92033	7.0	18.8	298670	7.1	20.9	406250	7.2	21.4	293499	7.2	19.7	479196	7.3	21.0
396732	6.9	18.7	256538	7.0	19.6	300819	7.1	20.1	265446	7.2	19.2	53153	7.2	18.7	16153	7.3	17.6
184819	6.9	20.1	485863	7.0	21.6	512267	7.1	20.1	485380	7.2	21.6	55276	7.3	18.9	269229	7.3	19.6
161288	6.9	17.9	117605	7.0	18.8	441634	7.1	19.1	451797	7.2	19.8	289977	7.3	19.7	450249	7.3	20.8
351462	6.9	20.3	103684	7.0	19.7	488487	7.1	19.0	258765	7.2	20.9	23993	7.3	17.3	355835	7.3	20.7
430100	6.9	20.1	476661	7.0	20.3	151621	7.1	19.5	300583	7.2	20.6	269979	7.3	18.9	471206	7.3	20.3
385317	6.9	20.8	328678	7.0	20.1	43500	7.1	19.7	216142	7.2	20.8	109069	7.3	17.6	523393	7.3	21.4
121615	6.9	17.7	216408	7.0	20.2	314939	7.1	20.4	385299	7.2	20.0	217128	7.3	20.3	100806	7.3	18.4
184872	6.9	20.7	239160	7.0	19.4	381398	7.1	20.6	269760	7.2	17.8	299124	7.3	21.1	513947	7.3	21.3
53571	6.9	19.2	426047	7.0	20.7	454006	7.1	21.4	166399	7.2	19.8	239857	7.3	18.2	438942	7.3	21.1
76111	6.9	18.5	432992	7.0	20.2	237589	7.1	20.2	171325	7.2	18.9	324232	7.3	21.7	145325	7.3	19.1
17054	6.9	17.2	406712	7.0	21.8	55568	7.1	18.3	303063	7.2	19.5	188330	7.3	17.8	310687	7.3	20.4
119144	6.9	18.4	688	7.0	13.8	340082	7.1	20.7	153957	7.2	24.5	358182	7.3	20.5	51733	7.3	18.3
18843	6.9	18.5	251551	7.0	19.4	376666	7.1	20.8	441260	7.2	20.8	268190	7.3	20.5	401461	7.3	19.8
515374	6.9	21.4	312801	7.0	20.8	480332	7.1	19.3	500815	7.2	19.2	498616	7.3	20.8	209186	7.3	19.7
264232	6.9	20.3	58780	7.0	18.4	309512	7.1	20.6	123584	7.2	16.8	58594	7.3	19.2	476528	7.3	20.4
515200	6.9	20.7	391221	7.0	20.5	58946	7.1	17.8	511667	7.2	21.4	14069	7.3	16.5	116811	7.3	17.7
169812	6.9	19.3	68785	7.0	19.4	378666	7.1	20.5	98454	7.2	17.9	53057	7.3	19.1	242230	7.3	19.6
406256	6.9	20.5	479708	7.0	20.2	509006	7.1	22.4	351094	7.2	19.1	472104	7.3	20.4	518026	7.3	21.1
316709	6.9	21.4	346631	7.0	18.9	321201	7.1	20.8	505367	7.2	20.1	209587	7.3	18.8	139603	7.3	18.7
76153	6.9	19.3	148251	7.0	19.9	149701	7.1	19.9	206483	7.2	18.9	511941	7.3	20.3	324839	7.4	20.1
35870	6.9	18.1	444179	7.0	20.6	443422	7.1	20.8	427867	7.2	20.3	1984	7.3	15.2	229859	7.4	19.1
225850	6.9	19.4	312834	7.0	20.2	518303	7.1	21.1	411111	7.2	21.2	218444	7.3	18.4	52873	7.4	19.3
483619	6.9	20.7	479601	7.0	20.9	99170	7.1	20.5	310645	7.2	20.7	40555	7.3	18.2	512815	7.4	21.3
479633	6.9	20.7	102866	7.0	17.1	106619	7.1	19.3	398102	7.2	19.8	395966	7.3	20.6	467576	7.4	19.1
412621	6.9	20.5	35599	7.0	18.4	485810	7.1	19.9	6419	7.2	15.3	346880	7.3	20.3	100118	7.4	18.5
258836	6.9	20.3	150335	7.0	19.8	156039	7.1	18.5	355818	7.2	21.0	153249	7.3	19.2	60407	7.4	19.0
26699	6.9	17.6	233915	7.0	20.0	210439	7.1	19.0	168147	7.2	19.2	40768	7.3	18.2	480940	7.4	19.6
355491	6.9	19.9	473366	7.0	20.4	485862	7.1	21.8	112592	7.2	19.0	375134	7.3	20.1	250779	7.4	19.9
481000	6.9	21.2	464170	7.0	19.4	7099	7.1	17.8	235314	7.2	19.4	97791	7.3	17.2	172349	7.4	18.5
401552	6.9	19.5	206699	7.0	18.8	335494	7.1	19.2	66515	7.2	18.6	344183	7.3	19.6	241956	7.4	20.3
457988	6.9	20.7	159144	7.1	19.7	31425	7.1	17.8	157448	7.2	20.4	514072	7.3	21.1	166940	7.4	17.9
319279	6.9	21.1	254471	7.1	20.2	124083	7.1	17.7	82916	7.2	18.7	76255	7.3	19.7	99709	7.4	17.8
328224	6.9	19.8	517047	7.1	22.1	346462	7.1	20.1	313377	7.2	20.8	227395	7.3	20.6	458571	7.4	20.2
330175	6.9	20.5	383479	7.1	20.2	449745	7.1	20.4	77521	7.2	18.9	378087	7.3	20.6	24619	7.4	19.1
79815	6.9	18.1	520618	7.1	21.4	319038	7.1	21.4	450497	7.2	21.0	136849	7.3	20.2	189029	7.4	18.6
112688	6.9	18.3	428612	7.1	21.3	521570	7.1	21.2	361901	7.2	19.9	243187	7.3	20.5	439139	7.4	19.6
118008	6.9	19.3	224787	7.1	19.0	481976	7.1	21.5	319217	7.2	21.3	339253	7.3	19.3	431410	7.4	21.6
211644	6.9	19.8	355813	7.1	21.1	442491	7.1	20.6	98904	7.2	18.0	309988	7.3	20.3	211506	7.4	18.5
310697	6.9	19.3	315203	7.1	20.6	323030	7.1	20.6	24124	7.2	18.7	357635	7.3	20.1	517959	7.4	20.5
68300	6.9	18.2	79907	7.1	18.0	474578	7.1	21.7	98766	7.2	18.9	38917	7.3	18.4	24314	7.4	16.9
114753	6.9	19.2	42909	7.1	18.5	431910	7.1	20.4	403763	7.2	19.8	359357	7.3	20.1	120429	7.4	19.3
411474	6.9	20.2	86735	7.1	19.3	488559	7.1	20.2	135604	7.2	18.4	179800	7.3	18.7	282054	7.4	18.8
479952	6.9	21.6	30863	7.1	19.0	259774	7.1	19.9	43510	7.2	17.7	119349	7.3	18.9	199530	7.4	20.0
24505	6.9	17.9	293940	7.1	18.2	259938	7.1	19.9	508176	7.2	20.9	156834	7.3	20.8	410981	7.4	19.5
195056	6.9	19.8	86622	7.1	19.4	230380	7.1	20.3	448092	7.2	20.7	419912	7.3	20.4	320217	7.4	20.9
401269	6.9	20.8	316155	7.1	19.9	151374	7.1	18.7	226443	7.2	19.7	226542	7.3	19.4	66558	7.4	18.8
314638	7.0	20.4	488044	7.1	20.7	373443	7.1	19.2	324153	7.2	19.7	34686	7.3	17.2	264319	7.4	18.8
296849	7.0	20.6	513230	7.1	20.0	25988	7.1	19.6	476727	7.2	20.9	127812	7.3	19.8	452442	7.4	19.9
188179	7.0	19.3	197003	7.1	19.6	13235	7.1	17.0	188145	7.2	20.2	195284	7.3	20.3	63818	7.4	19.1
392054	7.0	20.6	511844	7.1	21.7	295491	7.1	20.8	14612	7.2	17.7	494291	7.3	19.8	452671	7.4	20.6
281196	7.0	21.1	437628	7.1	20.6	217657	7.1	17.9	229429	7.2	20.3	262270	7.3	19.3	154615	7.4	19.8
356916	7.0	20.8	59255	7.1	18.4	45099	7.1	19.2	507949	7.2	21.4	383099	7.3	20.1	119363	7.4	19.0
448301	7.0	20.7	399827	7.1	20.8	39284	7.1	19.1	390681	7.2	21.1	360031	7.3	20.5	265142	7.4	19.2
509592	7.0	21.3	510248	7.1	21.6	417157	7.1	21.1	317287	7.2	20.5	327093	7.3	19.3	43521	7.4	19.0
24226	7.0	19.2	128080	7.1	18.8	476230	7.1	21.3	42222	7.2	18.3	481509	7.3	21.5	66927	7.4	17.7
288352	7.0	19.8	211587	7.1	19.1	144599	7.1	20.2	118589	7.2	19.8	97083	7.3	18.1	39532	7.4	18.4
248368	7.0	20.0	431321	7.1	21.5	473328	7.1	20.4	401347	7.2	20.7	233898	7.3	19.3	390151	7.4	20.2
238882	7.0	20.1	476714	7.1	21.1	322946	7.2	20.6	252103	7.2	19.3	316528	7.3	19.9	37558	7.4	17.0
358992	7.0	21.0	507995	7.1	21.0	397606	7.2	21.1	281780	7.2	19.4	490471	7.3	20.8	213030	7.4	19.8
364607	7.0	19.7	402491	7.1	21.3	412198	7.2	20.2	185410	7.2	20.1	320364	7.3	20.3	344939	7.4	19.9
319116	7.0	21.5	406321	7.1	20.3	104274	7.2	19.8	389930	7.2	19.3	191777	7.3	20.1	366123	7.4	20.5
348001	7.0	20.0	381105	7.1	20.5	209601	7.2	18									

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

Nº	10	V															
75077	7.4	16.9	370611	7.5	19.8	213034	7.6	20.0	108890	7.6	19.2	340543	7.7	20.6	88853	7.8	17.9
312640	7.4	20.0	141865	7.5	18.5	199665	7.6	19.4	489951	7.6	20.8	268890	7.7	21.1	13991	7.8	17.8
92164	7.4	18.7	164062	7.5	18.5	438343	7.6	18.9	487793	7.6	20.2	407156	7.7	20.6	325521	7.8	20.4
320157	7.4	20.8	200268	7.5	19.2	107493	7.6	19.1	234309	7.6	20.1	162115	7.7	17.9	267695	7.8	19.8
174237	7.4	18.7	394305	7.5	19.5	260432	7.6	19.5	481753	7.6	20.9	514196	7.7	21.4	366333	7.8	21.2
351202	7.4	21.6	332441	7.5	20.7	301350	7.6	20.1	321983	7.6	19.6	145492	7.7	19.4	67669	7.8	17.7
282244	7.4	20.0	125023	7.5	19.0	488682	7.6	21.0	27350	7.6	17.8	477858	7.7	20.2	226484	7.8	18.9
307110	7.4	20.2	99166	7.5	20.2	45669	7.6	19.1	300405	7.6	19.7	28767	7.7	17.7	416320	7.8	19.6
331575	7.4	19.4	279661	7.5	21.6	285081	7.6	19.8	415872	7.6	18.8	461279	7.7	20.7	109581	7.8	18.6
187550	7.4	20.7	488063	7.5	21.2	389449	7.6	21.5	132572	7.6	18.6	129602	7.7	19.2	195201	7.8	19.2
518856	7.4	21.1	302764	7.5	17.5	241564	7.6	18.8	282256	7.7	18.5	518014	7.7	20.0	223874	7.8	20.2
269230	7.4	21.0	99487	7.5	17.1	473484	7.6	20.8	44900	7.7	19.7	51142	7.7	18.2	450471	7.8	21.3
470974	7.4	21.2	383247	7.5	20.7	131507	7.6	19.9	415644	7.7	20.6	309037	7.7	20.3	9797	7.8	17.7
299769	7.4	20.3	506108	7.5	19.1	395251	7.6	19.4	449374	7.7	21.2	64485	7.7	18.8	66113	7.8	18.3
44875	7.4	18.4	410113	7.5	21.3	68108	7.6	16.9	435108	7.7	22.0	65302	7.7	18.6	334855	7.8	19.3
147505	7.4	19.2	370577	7.5	18.2	473108	7.6	21.4	477548	7.7	21.0	7941	7.7	17.2	9635	7.8	18.6
70487	7.4	18.8	41872	7.5	18.0	348362	7.6	21.2	483172	7.7	20.7	477264	7.7	20.9	25087	7.8	18.5
221421	7.4	19.4	38077	7.5	19.2	13857	7.6	16.9	181587	7.7	19.4	114816	7.7	18.7	449901	7.8	20.7
107262	7.4	19.3	294256	7.5	20.4	227417	7.6	21.1	356909	7.7	19.9	260666	7.7	21.0	308850	7.8	20.7
50165	7.4	18.8	99455	7.5	20.2	493532	7.6	20.7	79893	7.7	18.7	473481	7.7	20.5	12941	7.8	18.5
153683	7.4	19.8	510192	7.5	21.3	73235	7.6	20.1	447970	7.7	19.4	70842	7.7	18.8	386086	7.8	19.7
219958	7.4	19.9	289825	7.5	20.1	171196	7.6	20.2	317962	7.7	20.4	387752	7.7	19.4	510032	7.8	21.4
476999	7.4	20.9	321540	7.5	20.5	58366	7.6	19.8	195141	7.7	20.3	282695	7.7	20.2	405459	7.8	20.4
507306	7.4	20.3	159297	7.5	19.3	513223	7.6	21.2	265447	7.7	19.4	476549	7.7	21.5	331341	7.8	20.8
238568	7.4	19.7	324908	7.5	19.3	298521	7.6	19.6	93658	7.7	16.8	234126	7.7	20.3	139297	7.8	19.6
1928	7.4	14.7	494246	7.5	19.7	479543	7.6	20.3	256971	7.7	20.7	193	7.7	12.0	182726	7.8	19.7
380254	7.4	20.0	55574	7.5	18.9	378055	7.6	20.7	33050	7.7	21.3	226521	7.7	19.3	511089	7.8	20.1
164853	7.4	19.1	79802	7.5	18.6	390889	7.6	20.2	53524	7.7	18.4	195333	7.7	20.1	37934	7.8	16.9
399540	7.4	18.9	324176	7.5	21.3	174382	7.6	19.1	184264	7.7	19.1	7558	7.7	15.9	157870	7.8	20.6
362890	7.4	20.9	220218	7.5	20.0	123905	7.6	19.8	73835	7.7	19.7	358365	7.7	19.7	153360	7.8	19.2
432893	7.4	20.3	510156	7.5	21.6	176156	7.6	20.5	451984	7.7	20.7	435048	7.7	20.8	331397	7.8	20.4
29700	7.4	19.0	53014	7.5	18.2	144943	7.6	18.5	120760	7.7	19.2	486968	7.7	18.8	339311	7.8	19.9
86522	7.4	19.8	218453	7.5	19.5	257977	7.6	20.7	13889	7.7	18.7	490561	7.7	19.9	416646	7.8	20.2
441754	7.4	19.9	72606	7.5	18.2	260446	7.6	18.8	21483	7.7	18.2	247277	7.7	19.2	461018	7.8	20.6
212074	7.4	19.8	267083	7.5	19.2	444585	7.6	19.5	396991	7.7	20.9	351175	7.7	21.3	285151	7.8	19.5
452107	7.4	21.0	496419	7.5	20.8	516093	7.6	20.5	103990	7.7	18.8	511393	7.7	20.7	133963	7.8	19.6
14644	7.4	17.6	473454	7.5	20.9	433679	7.6	21.5	167918	7.7	19.7	130259	7.7	20.5	511974	7.8	20.9
487243	7.4	21.1	159136	7.5	19.0	320185	7.6	20.5	298565	7.7	20.5	255215	7.7	19.6	100431	7.8	20.2
55892	7.4	18.3	133495	7.5	19.6	225349	7.6	20.1	51198	7.7	18.2	390186	7.7	20.2	523040	7.8	20.2
312444	7.4	20.0	181738	7.5	20.7	200486	7.6	18.6	180065	7.7	19.8	364662	7.7	20.1	46578	7.8	19.8
69491	7.4	17.9	449040	7.5	19.8	14517	7.6	18.0	281659	7.7	18.5	118651	7.7	19.2	448433	7.8	20.8
128565	7.4	18.2	118587	7.5	19.7	26292	7.6	17.5	268205	7.7	20.2	274053	7.7	19.3	366785	7.8	18.9
480257	7.4	20.0	342711	7.5	20.3	382426	7.6	21.4	481596	7.7	20.3	172900	7.7	20.0	21950	7.8	18.2
489941	7.4	20.8	223526	7.5	20.9	486614	7.6	20.2	299154	7.7	20.7	330542	7.7	21.4	365273	7.8	20.3
276558	7.4	20.0	470487	7.5	20.8	135800	7.6	19.0	330311	7.7	20.6	36242	7.7	17.8	521840	7.8	20.1
302747	7.4	20.4	469725	7.5	20.6	25681	7.6	18.5	377065	7.7	21.4	74673	7.7	18.1	11007	7.8	16.0
104207	7.4	18.5	63148	7.5	18.2	342748	7.6	18.5	74214	7.7	18.2	137363	7.7	18.5	45509	7.8	17.6
329101	7.4	21.2	259630	7.5	20.1	515527	7.6	21.7	96262	7.7	17.8	450487	7.7	21.5	24135	7.8	18.3
508996	7.4	21.8	341113	7.5	20.1	1688	7.6	16.0	190256	7.7	19.9	91181	7.7	18.2	15288	7.8	16.3
402075	7.4	19.5	393140	7.5	20.2	447305	7.6	20.2	5839	7.7	15.9	399044	7.7	19.4	425551	7.8	20.1
80686	7.4	17.5	85310	7.5	20.1	302760	7.6	18.9	23135	7.7	17.3	154125	7.7	20.9	10222	7.8	17.2
16690	7.5	18.2	105837	7.5	18.4	472851	7.6	20.4	401668	7.7	20.7	20355	7.7	18.5	381121	7.8	21.4
329419	7.5	20.2	145986	7.5	19.3	263831	7.6	19.6	75272	7.7	17.1	346149	7.7	20.3	40201	7.8	18.5
327099	7.5	21.2	38280	7.5	18.2	89390	7.6	19.4	510219	7.7	21.3	482913	7.7	21.3	358605	7.8	20.1
170483	7.5	18.8	361886	7.5	21.3	254940	7.6	20.8	468870	7.7	19.7	357690	7.8	20.8	97467	7.8	19.7
481334	7.5	21.9	437883	7.5	19.9	260392	7.6	18.6	153292	7.7	19.2	65210	7.8	19.1	118334	7.8	19.9
115416	7.5	17.5	26117	7.5	17.2	443333	7.6	19.5	322265	7.7	19.7	396535	7.8	21.6	37948	7.8	17.9
166597	7.5	17.6	455417	7.5	20.2	273692	7.6	20.8	22823	7.7	16.5	300402	7.8	19.4	517863	7.8	20.9
340128	7.5	20.2	83556	7.5	18.8	133350	7.6	19.1	410977	7.7	20.3	260439	7.8	19.9	236535	7.8	20.6
328854	7.5	20.0	185205	7.5	20.4	180936	7.6	20.5	19346	7.7	16.6	169718	7.8	19.4	421700	7.8	20.7
389907	7.5	20.8	514684	7.5	21.1	90210	7.6	18.1	213823	7.7	18.8	126821	7.8	18.6	152711	7.8	19.0
404420	7.5	20.5	443763	7.5	20.2	393310	7.6	20.5	359361	7.7	20.7	312955	7.8	20.6	396573	7.8	21.4
481552	7.5	19.7	342242	7.5	20.3	221776	7.6	20.5	435085	7.7							

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
260425	7.9	20.0	228096	7.9	20.5	90432	8.0	19.6	319227	8.1	19.9	452725	8.2	21.5	154624	8.2	19.9
432305	7.9	20.8	384358	7.9	19.2	494349	8.0	19.7	127061	8.1	18.3	123346	8.2	19.3	3778	8.2	16.3
442740	7.9	19.3	21536	7.9	17.2	19877	8.0	16.6	251353	8.1	18.5	436755	8.2	21.5	195786	8.2	19.7
517467	7.9	20.4	287183	7.9	19.7	363286	8.0	20.9	374738	8.1	20.0	22055	8.2	18.1	481532	8.2	24.1
306159	7.9	21.1	76098	7.9	17.3	60361	8.0	18.6	355330	8.1	19.6	108887	8.2	19.0	40854	8.2	16.6
521931	7.9	20.8	175509	7.9	19.7	193365	8.0	18.3	6265	8.1	14.9	399380	8.2	19.2	41402	8.2	18.1
209228	7.9	19.4	453498	7.9	19.8	319196	8.0	20.0	330533	8.1	20.3	268457	8.2	20.4	417739	8.2	20.3
220389	7.9	19.9	359600	7.9	20.0	256412	8.0	19.1	517976	8.1	20.6	276027	8.2	20.3	486153	8.2	20.5
404506	7.9	21.2	25295	7.9	18.2	71683	8.0	18.3	90727	8.1	19.3	449776	8.2	20.9	58480	8.2	19.0
520206	7.9	20.7	287958	7.9	19.5	475036	8.0	19.2	362328	8.1	20.2	444587	8.2	20.6	266148	8.2	20.6
68743	7.9	20.0	263138	7.9	19.9	398755	8.0	20.6	25385	8.1	16.5	247343	8.2	17.7	41206	8.2	17.5
286711	7.9	20.6	464191	7.9	19.8	215640	8.0	18.9	133624	8.1	19.2	512943	8.2	20.4	183556	8.2	20.3
53751	7.9	18.6	511366	7.9	21.2	385787	8.0	20.3	442934	8.1	19.8	121772	8.2	18.4	259449	8.2	19.4
50824	7.9	17.8	300791	7.9	19.6	272352	8.0	19.5	82653	8.1	18.6	285524	8.2	19.9	50581	8.2	18.3
371419	7.9	19.8	407069	7.9	20.4	355532	8.0	20.4	404965	8.1	20.2	346687	8.2	20.5	228493	8.2	19.5
322555	7.9	21.1	404285	7.9	21.1	78965	8.0	19.0	398745	8.1	20.6	226487	8.2	19.5	77250	8.2	18.8
391970	7.9	20.6	60214	7.9	18.2	242864	8.0	20.3	143836	8.1	19.5	261661	8.2	20.3	404068	8.2	20.5
313374	7.9	20.5	403976	7.9	21.6	81901	8.0	17.5	148523	8.1	18.9	284948	8.2	20.3	243313	8.2	19.5
408207	7.9	21.8	157050	7.9	18.8	242877	8.0	20.6	54693	8.1	17.1	36117	8.2	16.8	87324	8.2	18.3
113643	7.9	19.1	378587	7.9	21.4	305463	8.0	19.8	446028	8.1	20.4	159823	8.2	19.3	250967	8.2	20.5
66064	7.9	17.5	336764	7.9	21.4	211638	8.0	19.1	333267	8.1	20.9	20253	8.2	18.1	478959	8.2	20.8
356904	7.9	20.1	6920	7.9	16.5	324134	8.0	20.8	358950	8.1	20.5	384368	8.2	20.0	187252	8.2	19.8
448344	7.9	21.6	243667	7.9	20.2	304210	8.0	20.0	312417	8.1	20.2	218227	8.2	18.6	257273	8.2	20.2
163061	7.9	19.3	308882	7.9	19.6	154384	8.0	20.0	228679	8.1	19.8	487363	8.2	21.0	295069	8.3	20.7
231300	7.9	20.5	274911	7.9	20.5	302113	8.0	20.5	8064	8.1	16.5	467583	8.2	19.5	396633	8.3	19.9
234023	7.9	18.8	325577	7.9	19.2	255193	8.0	20.0	349196	8.1	20.1	270057	8.2	18.1	9458	8.3	18.0
339140	7.9	18.9	402518	7.9	20.1	152140	8.0	18.9	260280	8.1	19.9	299231	8.2	19.6	236537	8.3	20.4
28816	7.9	18.8	66377	7.9	18.8	87291	8.0	18.0	478657	8.1	20.4	321112	8.2	19.9	350886	8.3	19.9
404526	7.9	20.4	263078	7.9	19.1	117759	8.0	19.6	237265	8.1	18.4	333549	8.2	20.2	195468	8.3	19.8
359001	7.9	20.3	236518	7.9	19.2	259803	8.0	19.3	61820	8.1	18.5	480455	8.2	20.0	364063	8.3	21.0
121344	7.9	18.3	145507	7.9	20.2	479698	8.0	20.7	250694	8.1	19.5	147712	8.2	19.5	351345	8.3	19.8
215778	7.9	20.1	316110	7.9	20.1	207579	8.0	19.9	320462	8.1	19.6	126778	8.2	20.6	20503	8.3	17.7
454913	7.9	20.7	113840	7.9	18.4	428622	8.0	20.3	482584	8.1	21.4	430627	8.2	18.3	294809	8.3	20.5
206445	7.9	19.5	315374	7.9	20.8	355039	8.0	20.7	297090	8.1	19.8	32109	8.2	19.4	304896	8.3	20.2
343938	7.9	19.6	365741	7.9	19.5	224931	8.0	20.6	396533	8.1	19.4	273246	8.2	20.6	78014	8.3	19.0
316307	7.9	19.8	117693	7.9	19.5	257654	8.0	19.4	239800	8.1	19.7	144048	8.2	18.9	263509	8.3	19.5
225768	7.9	18.3	301697	7.9	21.0	113791	8.0	18.8	519193	8.1	21.4	431655	8.2	21.2	168380	8.3	18.8
95494	7.9	19.2	296916	7.9	20.8	201112	8.0	19.7	312461	8.1	20.1	348746	8.2	21.3	333187	8.3	21.0
101196	7.9	18.7	84537	7.9	18.4	95058	8.0	19.5	173838	8.1	18.2	401733	8.2	19.4	443764	8.3	20.3
269825	7.9	19.9	490522	7.9	20.0	61011	8.0	17.6	168138	8.1	19.2	114961	8.2	18.1	334349	8.3	19.4
31372	7.9	17.6	278101	7.9	19.3	333876	8.0	20.4	262053	8.1	19.1	128625	8.2	19.4	420787	8.3	20.6
406666	7.9	21.1	430408	7.9	18.2	228005	8.0	19.8	443428	8.1	20.2	355494	8.2	20.0	438095	8.3	20.0
339227	7.9	18.8	483952	7.9	21.2	32306	8.0	17.3	288274	8.1	20.0	10876	8.2	16.8	161647	8.3	18.9
409202	7.9	20.3	449942	7.9	20.1	450960	8.0	20.1	284255	8.1	20.6	150628	8.2	18.7	344641	8.3	19.9
220111	7.9	18.8	358837	7.9	20.0	7806	8.0	15.9	317302	8.1	20.8	470493	8.2	21.2	86494	8.3	19.9
476491	7.9	22.0	201512	7.9	20.2	508889	8.0	19.6	454304	8.1	20.1	487169	8.2	20.1	17455	8.3	17.8
203216	7.9	20.2	237559	7.9	19.8	4946	8.0	17.4	212523	8.1	20.0	448652	8.2	20.2	228113	8.3	19.7
188444	7.9	19.5	378626	7.9	20.7	303057	8.1	19.6	91179	8.1	18.5	50505	8.2	18.3	344712	8.3	18.6
403754	7.9	20.9	422102	7.9	20.5	404358	8.1	21.7	469902	8.1	19.8	157694	8.2	19.0	408416	8.3	20.9
358721	7.9	19.3	18895	7.9	16.4	485969	8.1	21.6	377537	8.1	20.6	41197	8.2	19.2	291620	8.3	20.6
37947	7.9	18.5	263028	7.9	20.9	280087	8.1	19.2	217647	8.1	18.3	91064	8.2	18.2	280083	8.3	19.7
171388	7.9	20.0	227356	7.9	21.0	359943	8.1	20.5	428347	8.1	21.2	54504	8.2	18.4	277949	8.3	19.4
17427	7.9	17.6	438932	7.9	20.3	489066	8.1	20.0	261258	8.1	20.9	354479	8.2	20.6	487163	8.3	20.4
361979	7.9	20.1	265991	7.9	21.0	490346	8.1	20.8	521608	8.1	20.4	439971	8.2	19.2	66968	8.3	18.2
432351	7.9	20.0	381032	7.9	20.9	309951	8.1	19.9	382044	8.1	20.1	513757	8.2	21.0	53288	8.3	17.9
121717	7.9	19.1	515422	7.9	20.6	57740	8.1	18.4	184441	8.1	19.8	425650	8.2	20.3	256877	8.3	20.5
470938	7.9	21.2	368147	7.9	20.8	196735	8.1	19.2	77663	8.1	18.9	45759	8.2	18.0	516945	8.3	22.3
400753	7.9	19.4	461158	7.9	20.1	124169	8.1	17.9	357753	8.1	20.6	39865	8.2	19.2	164030	8.3	18.8
70788	7.9	17.5	96603	7.9	19.3	238886	8.1	18.2	37905	8.1	17.6	38269	8.2	18.9	346808	8.3	20.2
225037	7.9	19.9	354279	7.9	19.9	35613	8.1	18.0	178642	8.1	20.0	442421	8.2	20.9	236467	8.3	20.6
118579	7.9	19.2	477086	7.9	20.8	68029	8.1	19.7	292127	8.1	19.9	193417	8.2	19.2	257996	8.3	19.8
165182	7.9	18.9	312464	7.9	20.4	161027	8.1	19.1	454221	8.1	20.3	442462	8.2	19.9	284209	8.3	21.0
134537	7.9	19.1	346672	7.9	20.5	155902	8.1	19.5</									

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
489105	8.3	21.5	513936	8.4	21.2	520768	8.5	21.3	441900	8.5	21.0	16156	8.6	17.5	644	8.7	13.4
451376	8.3	21.0	488292	8.4	18.7	439280	8.5	19.7	397919	8.5	20.3	53986	8.6	18.3	19551	8.7	15.5
511496	8.3	20.6	268828	8.4	19.5	488039	8.5	21.2	340411	8.5	19.8	487849	8.6	20.8	137464	8.7	18.4
379559	8.3	21.3	449792	8.4	19.9	450565	8.5	22.2	79748	8.5	18.1	223980	8.6	19.2	315211	8.7	20.5
229362	8.3	17.8	487070	8.4	21.3	118528	8.5	19.0	465166	8.5	20.2	15659	8.6	17.1	326028	8.7	20.2
421930	8.3	21.0	392983	8.4	19.4	441663	8.5	20.9	385365	8.5	20.9	322965	8.6	20.6	49202	8.7	17.1
382511	8.3	18.6	401538	8.4	20.7	348022	8.5	20.0	164677	8.5	19.5	390350	8.6	21.1	60704	8.7	17.0
312793	8.3	20.6	315887	8.4	20.6	391933	8.5	20.9	391969	8.5	19.3	169907	8.6	19.6	465011	8.7	20.1
13385	8.3	17.7	223394	8.4	19.1	478735	8.5	19.3	412336	8.5	21.4	481973	8.6	21.6	74918	8.7	18.1
41649	8.3	17.4	193641	8.4	19.3	264385	8.5	20.8	100695	8.5	19.3	356922	8.6	20.6	478811	8.7	20.4
316495	8.3	19.9	381117	8.4	21.5	144139	8.5	20.3	442385	8.5	20.4	509433	8.6	21.7	186692	8.7	20.0
146982	8.3	18.5	224731	8.4	19.7	38904	8.5	17.5	111953	8.5	17.2	487160	8.6	20.5	476888	8.7	20.2
181444	8.3	19.1	159922	8.4	19.2	487497	8.5	20.1	449493	8.5	19.8	72597	8.6	18.4	221417	8.7	19.4
45907	8.3	18.4	137421	8.4	18.9	54095	8.5	16.7	345848	8.5	19.4	377295	8.6	20.0	68284	8.7	16.3
487164	8.3	21.1	157286	8.4	18.4	288270	8.5	19.9	293932	8.5	19.4	333056	8.6	20.9	367037	8.7	20.8
325735	8.3	19.4	389484	8.4	21.1	114884	8.5	18.4	392806	8.5	20.1	2759	8.6	17.2	475406	8.7	20.6
126674	8.3	19.7	401232	8.4	20.1	488203	8.5	20.7	320228	8.5	20.8	275384	8.6	20.5	449730	8.7	20.6
85797	8.3	17.3	302786	8.4	20.1	346497	8.5	19.7	30032	8.5	19.8	517498	8.6	21.0	44915	8.7	16.7
180429	8.3	20.5	173778	8.4	20.1	365475	8.5	20.1	481917	8.5	19.8	335721	8.6	21.3	236924	8.7	17.7
437954	8.3	20.0	108854	8.4	17.8	511836	8.5	20.2	170913	8.5	19.0	346545	8.6	20.9	483975	8.7	21.8
130368	8.3	19.0	218081	8.4	19.5	479250	8.5	20.0	12575	8.5	17.1	497227	8.6	20.6	310288	8.7	19.8
516640	8.3	22.1	441224	8.4	20.8	24568	8.5	18.3	231782	8.5	20.3	64761	8.6	18.8	222027	8.7	18.9
378199	8.3	20.3	449362	8.4	20.4	43367	8.5	17.5	344978	8.5	20.6	163096	8.6	17.9	56150	8.7	18.9
516356	8.3	20.8	127010	8.4	19.4	211265	8.5	18.2	12890	8.5	17.3	344063	8.6	19.9	48003	8.7	19.5
78084	8.3	19.0	339211	8.4	19.6	95658	8.5	18.9	101543	8.5	19.0	70974	8.6	16.9	397749	8.7	20.5
501541	8.3	21.3	427952	8.4	21.0	490496	8.5	19.6	386680	8.5	19.9	102908	8.6	17.2	518284	8.7	21.4
79178	8.3	18.7	181464	8.4	18.0	518002	8.5	20.2	380786	8.5	20.6	383181	8.6	20.4	403031	8.7	21.1
519265	8.3	21.3	169856	8.4	19.0	383487	8.5	21.8	243490	8.5	19.3	85994	8.6	19.8	226022	8.7	19.8
246358	8.3	19.4	268718	8.4	20.0	446574	8.5	20.0	399885	8.6	20.7	324832	8.6	19.8	346613	8.7	19.0
445917	8.3	19.8	134812	8.4	20.0	153423	8.5	18.2	31828	8.6	17.8	315907	8.6	19.9	102299	8.7	18.0
137489	8.3	18.5	429821	8.4	21.2	245688	8.5	19.8	131144	8.6	19.2	1564	8.6	14.3	111461	8.7	19.3
384730	8.3	20.4	520715	8.4	20.7	167850	8.5	19.2	231692	8.6	20.1	151447	8.6	20.2	389374	8.7	20.3
227508	8.3	19.9	291130	8.4	20.0	301212	8.5	20.8	478932	8.6	20.1	59590	8.6	17.4	263360	8.7	19.8
213977	8.3	20.6	355791	8.4	21.1	355776	8.5	20.7	50997	8.6	18.4	521905	8.6	20.8	340961	8.7	20.4
43037	8.3	19.0	165012	8.4	19.1	437854	8.5	18.7	204546	8.6	20.7	202904	8.6	19.9	177346	8.7	19.4
435002	8.3	20.8	515338	8.4	20.7	97131	8.5	19.3	489065	8.6	22.1	204631	8.6	19.9	434935	8.7	21.0
103604	8.3	18.9	243384	8.4	20.1	288798	8.5	19.8	46821	8.6	17.9	70504	8.6	18.3	385734	8.7	19.6
510275	8.3	20.7	254592	8.4	20.1	134912	8.5	18.3	521974	8.6	20.1	362855	8.6	20.7	404049	8.7	20.9
287718	8.3	20.3	294846	8.4	20.7	23259	8.5	17.6	351118	8.6	20.0	466079	8.6	20.4	258684	8.7	20.0
228494	8.3	18.1	461269	8.4	20.9	152848	8.5	19.9	425687	8.6	20.6	515933	8.6	20.5	517899	8.7	20.1
287091	8.3	18.8	91605	8.4	17.8	426170	8.5	21.1	349288	8.6	20.8	445202	8.6	21.3	288533	8.7	20.5
121706	8.3	20.0	17762	8.4	17.4	328559	8.5	19.7	100886	8.6	18.8	335773	8.6	20.5	369520	8.7	19.9
219112	8.3	18.4	435151	8.4	20.9	286943	8.5	19.8	312696	8.6	19.9	449071	8.6	19.7	390478	8.7	20.1
219962	8.3	18.9	405245	8.4	19.2	298648	8.5	19.4	481601	8.6	19.9	71285	8.6	17.9	126769	8.7	19.4
129583	8.3	19.1	48269	8.4	19.1	439075	8.5	20.5	187987	8.6	19.7	2850	8.6	15.9	117297	8.7	19.1
518989	8.4	20.6	312462	8.4	20.7	480991	8.5	20.7	33880	8.6	19.0	141214	8.6	19.5	521625	8.7	20.7
257199	8.4	19.9	99770	8.4	18.5	444940	8.5	21.3	329874	8.6	20.3	495297	8.6	22.3	309044	8.7	20.7
152069	8.4	19.8	399589	8.4	19.7	24582	8.5	18.4	488553	8.6	20.6	116115	8.6	18.7	147872	8.7	18.1
356898	8.4	21.2	147686	8.4	19.1	439255	8.5	19.9	88391	8.6	18.2	472001	8.6	20.0	482205	8.7	21.0
180996	8.4	19.4	390654	8.4	21.1	347574	8.5	19.7	253802	8.6	19.4	412720	8.6	20.0	367816	8.7	20.9
309650	8.4	21.2	376554	8.4	20.4	187956	8.5	18.8	315149	8.6	20.5	184325	8.6	19.8	202421	8.7	20.4
221508	8.4	19.7	182339	8.4	21.1	272370	8.5	19.5	322196	8.6	20.0	324788	8.6	19.5	289490	8.7	20.1
46429	8.4	18.1	439731	8.4	21.1	133064	8.5	19.1	160939	8.6	17.9	60623	8.6	18.5	266733	8.7	20.2
65166	8.4	18.2	408014	8.4	21.5	25326	8.5	17.6	226304	8.6	19.0	437311	8.6	20.8	153576	8.7	19.4
53985	8.4	16.9	224041	8.4	19.2	478862	8.5	20.1	118012	8.6	18.5	312633	8.6	20.2	174765	8.7	18.6
14812	8.4	17.4	306318	8.4	19.9	259704	8.5	18.0	366629	8.6	19.8	156924	8.6	19.8	298093	8.7	18.8
223615	8.4	20.1	220960	8.4	19.5	360228	8.5	19.8	280382	8.6	19.1	62767	8.6	18.9	256736	8.7	19.2
230324	8.4	19.7	393149	8.4	20.8	320972	8.5	19.7	338584	8.6	19.0	34662	8.7	18.8	46863	8.7	18.7
520147	8.4	20.6	26191	8.4	19.1	342379	8.5	19.8	132786	8.6	18.4	323594	8.7	20.6	428601	8.7	22.0
299151	8.4	19.4	377026	8.4	19.4	91426	8.5	18.0	175293	8.6	19.8	168323	8.7	19.8	294744	8.7	21.1
206501	8.4	19.7	101407	8.4	19.0	465008	8.5	20.7	102414	8.6	19.1	294784	8.7	20.1	42821	8.7	16.5
436528	8.4	22.0	262013	8.4	19.5	284840	8.5	20.0	373618	8.6	22.0	378236	8.7	20.6	231625	8.7	19.4
513160	8.4	20.4	44087	8.4	18.3	7493	8.5</td										

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
225158	8.7	19.6	165594	8.8	19.5	398700	8.9	20.0	82361	8.9	17.8	78763	9.0	18.9	127076	9.1	18.2
391493	8.7	19.9	253382	8.8	19.8	286637	8.9	19.6	762	8.9	13.1	405140	9.0	19.4	225666	9.1	19.2
60847	8.7	17.9	23915	8.8	17.2	309680	8.9	20.2	449014	8.9	20.3	410603	9.0	21.5	96218	9.1	18.8
234260	8.7	18.9	303598	8.8	20.5	407152	8.9	20.2	49392	8.9	18.3	253769	9.0	19.0	259737	9.1	19.6
164129	8.7	17.5	300851	8.8	19.8	40688	8.9	17.7	31984	8.9	19.2	285079	9.0	20.5	23009	9.1	17.6
410908	8.7	19.7	519132	8.8	20.4	275150	8.9	20.2	416724	8.9	20.4	394296	9.0	19.9	485366	9.1	21.6
512866	8.7	20.5	404756	8.8	20.3	137145	8.9	19.6	299657	8.9	19.6	116905	9.0	19.4	38458	9.1	16.1
460990	8.7	20.5	51931	8.8	18.9	353555	8.9	19.9	509416	8.9	21.5	352280	9.0	20.0	479933	9.1	21.1
278176	8.7	21.5	282707	8.8	19.3	283185	8.9	20.8	130190	8.9	18.9	78300	9.0	18.6	469784	9.1	19.3
109082	8.7	17.5	515431	8.8	21.2	157387	8.9	19.6	23304	8.9	15.7	121831	9.0	20.0	200997	9.1	20.0
345008	8.7	21.3	490808	8.8	22.1	227147	8.9	19.3	326824	8.9	20.5	36609	9.0	18.4	150834	9.1	18.3
278367	8.7	19.9	211246	8.8	19.0	410123	8.9	20.6	359366	8.9	20.6	378547	9.0	21.2	271917	9.1	19.6
297360	8.7	20.7	507642	8.8	20.6	20170	8.9	15.3	174705	8.9	18.5	96799	9.0	18.6	353133	9.1	20.5
28770	8.7	18.4	98668	8.8	20.3	177964	8.9	18.9	24355	8.9	18.3	304156	9.0	18.3	285291	9.1	18.6
483872	8.7	21.7	477112	8.8	20.1	40122	8.9	18.3	261201	8.9	20.9	156687	9.0	19.0	338824	9.1	19.1
102500	8.7	18.7	515463	8.8	20.5	143132	8.9	17.4	426858	8.9	19.7	390930	9.0	21.4	63105	9.1	18.3
288494	8.7	19.9	29239	8.8	18.6	517855	8.9	21.2	139242	8.9	19.7	475081	9.0	20.6	454241	9.1	19.8
443313	8.7	20.3	300661	8.8	20.5	161509	8.9	19.7	426149	8.9	20.7	175041	9.0	20.0	165011	9.1	18.6
289604	8.7	20.3	89169	8.8	18.9	437219	8.9	18.2	212790	8.9	20.5	26443	9.0	17.9	507098	9.1	21.0
448055	8.7	20.7	332458	8.8	20.9	78002	8.9	18.9	451791	8.9	19.9	307608	9.1	19.6	453477	9.1	20.8
519231	8.7	20.7	515547	8.8	20.1	7158	8.9	16.2	352368	8.9	19.3	427698	9.1	21.9	515497	9.1	21.8
355569	8.7	20.9	454582	8.8	19.4	447726	8.9	21.0	282260	8.9	20.5	428579	9.1	21.3	449841	9.1	20.9
327138	8.7	21.1	395391	8.8	20.1	297063	8.9	20.6	217724	8.9	18.2	293961	9.1	20.0	344663	9.1	19.8
481825	8.7	20.6	455122	8.8	20.2	108896	8.9	19.0	113177	8.9	18.8	517413	9.1	20.1	57915	9.1	19.3
129013	8.7	19.2	242838	8.8	20.6	186498	8.9	18.8	267687	8.9	19.0	452767	9.1	21.1	507398	9.1	21.6
30415	8.8	17.9	516049	8.8	20.7	220244	8.9	19.7	355544	8.9	20.2	94963	9.1	18.8	216439	9.1	20.0
421784	8.8	20.4	102117	8.8	18.1	177700	8.9	18.4	409781	8.9	20.3	445949	9.1	21.0	216709	9.1	19.9
272600	8.8	21.5	228085	8.8	19.9	514711	8.9	20.8	359598	8.9	21.6	135896	9.1	19.0	521873	9.1	21.3
512901	8.8	18.5	308908	8.8	20.4	443653	8.9	20.7	481870	8.9	20.6	450076	9.1	20.7	307048	9.1	19.8
21889	8.8	18.6	22187	8.8	18.2	276331	8.9	18.1	280029	8.9	19.5	403387	9.1	19.1	67683	9.1	19.0
9037	8.8	15.8	26034	8.8	17.7	44601	8.9	18.1	246341	8.9	18.8	14961	9.1	16.8	482997	9.1	21.3
12223	8.8	16.9	161041	8.8	18.1	213454	8.9	19.2	162127	8.9	17.9	353080	9.1	21.2	266837	9.1	18.9
356577	8.8	19.7	447307	8.8	19.6	352240	8.9	19.1	20003	8.9	19.7	521808	9.1	21.1	411154	9.1	20.2
312467	8.8	20.4	461183	8.8	20.7	162383	8.9	18.6	51445	8.9	18.5	313140	9.1	20.3	154379	9.1	19.8
196419	8.8	19.2	376976	8.8	19.9	510056	8.9	21.3	440349	8.9	19.4	374774	9.1	18.7	65946	9.1	18.0
487109	8.8	20.0	224066	8.8	19.6	374247	8.9	20.1	44500	8.9	17.5	71386	9.1	19.4	405512	9.1	20.0
385191	8.8	23.5	318937	8.8	20.5	49950	8.9	17.7	346610	8.9	19.2	360162	9.1	19.6	317115	9.1	19.0
54184	8.8	18.7	184666	8.8	19.5	365775	8.9	20.5	42780	8.9	17.6	47264	9.1	18.8	427722	9.1	20.6
21101	8.8	17.4	294392	8.8	20.5	43519	8.9	18.4	221016	8.9	18.8	142765	9.1	18.5	159288	9.1	20.3
135774	8.8	19.0	202838	8.8	18.7	184225	8.9	18.9	149364	8.9	19.2	385341	9.1	20.9	145178	9.1	20.3
387829	8.8	21.3	345226	8.8	21.1	295710	8.9	20.5	358513	8.9	20.7	97571	9.1	18.3	163051	9.1	21.3
89935	8.8	19.3	381841	8.8	20.9	209812	8.9	20.1	109671	8.9	17.6	236926	9.1	20.7	440094	9.1	20.4
148292	8.8	19.7	352292	8.8	19.3	306078	8.9	19.8	188320	8.9	19.7	28993	9.1	19.4	517514	9.1	21.2
380130	8.8	18.1	359692	8.8	20.1	481718	8.9	20.5	510617	8.9	20.4	319365	9.1	21.1	23686	9.1	17.5
267243	8.8	18.8	97695	8.8	18.6	103981	8.9	19.5	73206	8.9	19.1	319055	9.1	20.1	416603	9.2	20.0
184454	8.8	20.1	133410	8.8	19.3	349266	8.9	20.7	134096	8.9	18.3	305278	9.1	20.3	74380	9.2	19.0
518711	8.8	20.8	500355	8.8	20.4	143831	8.9	19.5	349282	8.9	20.8	511423	9.1	21.0	276662	9.2	20.0
72173	8.8	19.0	233288	8.8	18.9	38160	8.9	17.4	32424	8.9	17.5	421970	9.1	19.8	341011	9.2	20.5
520078	8.8	21.4	474145	8.8	19.9	473704	8.9	19.4	178799	9.0	20.3	80774	9.1	18.8	232689	9.2	19.4
302664	8.8	19.8	200032	8.8	19.6	414983	8.9	19.6	356100	9.0	19.9	315192	9.1	19.0	184537	9.2	18.9
183304	8.8	18.8	123910	8.8	19.7	217722	8.9	19.7	5220	9.0	15.2	440869	9.1	20.4	53682	9.2	16.6
507107	8.8	20.6	174576	8.8	18.6	280364	8.9	20.1	49002	9.0	17.2	443440	9.1	20.0	346433	9.2	21.0
399988	8.8	19.8	244963	8.8	19.7	130644	8.9	18.3	69558	9.0	18.6	339294	9.1	18.1	431277	9.2	20.9
407857	8.8	21.1	165414	8.8	20.0	330879	8.9	19.4	3038	9.0	15.0	358827	9.1	19.7	441314	9.2	20.6
24919	8.8	19.0	5486	8.8	16.1	523215	8.9	20.6	488152	9.0	20.2	118950	9.1	18.9	54724	9.2	17.7
294011	8.8	20.5	257516	8.8	21.1	326536	8.9	21.0	516015	9.0	20.5	440383	9.1	20.6	320464	9.2	19.2
521953	8.8	20.6	295331	8.8	20.4	310670	8.9	19.8	489943	9.0	20.3	67274	9.1	18.7	314501	9.2	20.3
240006	8.8	19.1	312482	8.8	20.2	461265	8.9	20.0	220519	9.0	20.7	49775	9.1	17.7	115378	9.2	18.1
369439	8.8	19.9	382067	8.8	21.0	444350	8.9	20.2	516054	9.0	21.2	488176	9.1	19.9	489949	9.2	21.0
294406	8.8	20.4	454898	8.8	19.8	244366	8.9	20.0	342744	9.0	19.3	143790	9.1	19.7	140318	9.2	19.7
378191	8.8	19.1	452733	8.8	20.1	338494	8.9	18.4	95403	9.0	19.4	243066	9.1	20.0	312625	9.2	20.5
158135	8.8	19.6	373825	8.8	20.5	453447	8.9	20.2	79845	9.0	18.4	343526	9.1	20.9	254430	9.2	19.4
140132	8.8	19.6	505936	8.8	19.4	511918	8.9	19.7</td									

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

Nº	10	V															
394854	9.2	21.2	394210	9.3	20.5	228115	9.3	20.1	150760	9.4	18.3	224078	9.5	20.9	521459	9.6	20.8
66804	9.2	18.8	303617	9.3	20.3	511054	9.3	20.3	396287	9.4	21.5	47720	9.5	19.0	10542	9.6	17.2
322571	9.2	21.1	447216	9.3	20.4	498552	9.3	21.6	180464	9.4	18.7	314511	9.5	19.6	217224	9.6	19.7
395563	9.2	20.8	71497	9.3	17.7	482267	9.3	21.3	13404	9.4	17.0	266008	9.5	20.4	173003	9.6	18.9
258569	9.2	21.3	328608	9.3	18.9	102481	9.3	18.2	67165	9.4	19.7	124040	9.5	19.6	49758	9.6	18.1
420826	9.2	19.3	135040	9.3	19.0	38073	9.3	16.6	119404	9.4	18.3	360107	9.5	20.2	363662	9.6	19.8
304346	9.2	20.3	453998	9.3	20.9	288594	9.4	20.5	35596	9.4	17.8	394523	9.5	20.9	154176	9.6	19.3
335540	9.2	19.0	473465	9.3	20.6	387268	9.4	19.9	319150	9.4	20.3	25591	9.5	19.0	294685	9.6	21.1
95947	9.2	18.6	507156	9.3	21.5	239436	9.4	19.4	305392	9.4	19.7	448416	9.5	19.5	9456	9.6	17.1
485228	9.2	19.9	178492	9.3	18.4	279621	9.4	20.2	173093	9.4	19.1	448608	9.5	19.4	488366	9.6	20.8
289717	9.2	21.4	366914	9.3	21.3	251668	9.4	19.7	484035	9.4	21.6	181074	9.5	19.2	442804	9.6	20.2
111375	9.2	19.2	112580	9.3	17.5	105129	9.4	19.0	420287	9.4	20.2	92344	9.5	19.2	485254	9.6	20.7
455049	9.2	20.8	198350	9.3	19.5	224206	9.4	19.5	487241	9.4	19.7	38614	9.5	19.1	85858	9.6	19.1
277202	9.2	19.2	130870	9.3	17.3	22141	9.4	16.0	245963	9.4	19.7	111144	9.5	18.1	195490	9.6	19.6
142424	9.2	16.9	42414	9.3	19.0	92988	9.4	18.2	295037	9.4	20.6	446891	9.5	21.4	332844	9.6	21.1
432611	9.2	20.2	510520	9.3	21.0	237988	9.4	19.3	214700	9.4	19.9	448896	9.5	20.8	36091	9.6	17.8
346620	9.2	19.6	312806	9.3	20.0	95241	9.4	19.4	211400	9.4	19.0	361544	9.5	19.9	466281	9.6	19.4
51897	9.2	18.8	1526	9.3	14.9	518039	9.4	21.0	460338	9.4	20.9	383179	9.5	21.2	225707	9.6	18.1
351806	9.2	19.0	307040	9.3	19.6	265079	9.4	19.4	104234	9.4	19.5	127331	9.5	19.3	227423	9.6	19.3
327736	9.2	19.3	425238	9.3	20.3	323569	9.4	20.4	514491	9.4	20.1	75011	9.5	17.2	180185	9.6	18.3
133358	9.2	18.5	222449	9.3	18.5	54499	9.4	18.5	220892	9.4	19.3	266471	9.5	19.7	435517	9.6	20.8
40142	9.2	18.1	432734	9.3	20.9	149264	9.4	18.8	41883	9.4	18.0	193651	9.5	20.4	358880	9.6	20.5
4293	9.2	15.7	407174	9.3	20.4	141631	9.4	19.1	499177	9.4	19.0	479746	9.5	19.5	5244	9.6	17.2
488107	9.2	20.7	221916	9.3	19.8	401077	9.4	20.1	426049	9.4	20.3	451138	9.5	19.9	245746	9.6	19.7
513516	9.2	20.2	227988	9.3	20.3	228098	9.4	20.3	258781	9.4	20.3	459880	9.5	20.6	281699	9.6	18.9
332005	9.2	21.2	33788	9.3	17.6	326867	9.4	18.1	269014	9.4	20.5	221680	9.5	20.1	69710	9.6	18.6
39793	9.2	19.4	161340	9.3	19.3	14349	9.4	17.0	271607	9.4	19.3	186495	9.5	18.0	119877	9.6	18.8
406978	9.2	20.2	356155	9.3	20.2	473379	9.4	20.0	138062	9.4	19.1	268856	9.5	20.7	4252	9.6	16.9
255213	9.2	19.2	93228	9.3	18.1	406980	9.4	19.7	440103	9.4	20.3	130266	9.5	19.4	441297	9.6	20.8
141663	9.2	19.4	118933	9.3	19.1	148464	9.4	19.5	161884	9.4	19.7	347371	9.5	18.5	260424	9.6	19.4
479402	9.2	21.4	225011	9.3	20.0	503880	9.4	21.9	474653	9.4	19.3	60589	9.5	19.0	356270	9.6	20.7
251955	9.2	19.2	61830	9.3	18.5	515353	9.4	21.6	115814	9.4	18.3	320103	9.5	20.2	461167	9.6	20.8
139156	9.2	18.8	507986	9.3	20.5	28930	9.4	17.7	61191	9.5	18.6	22188	9.5	16.6	13231	9.6	17.5
4380	9.2	15.8	23381	9.3	18.6	385383	9.4	20.1	24380	9.5	17.7	378171	9.5	20.8	261606	9.6	19.2
515325	9.2	19.8	304336	9.3	19.4	377318	9.4	20.0	224971	9.5	20.5	229341	9.5	18.9	347513	9.6	19.0
344913	9.2	20.9	451601	9.3	20.8	345483	9.4	20.6	291368	9.5	19.9	487404	9.5	20.2	299605	9.6	19.8
137575	9.2	19.5	348341	9.3	20.7	451638	9.4	21.5	363448	9.5	20.2	373994	9.5	20.5	114052	9.6	19.3
237462	9.2	19.5	246202	9.3	20.4	243067	9.4	19.9	45681	9.5	18.5	184948	9.5	18.8	96115	9.6	18.8
53979	9.2	19.1	433387	9.3	19.7	225214	9.4	19.8	518287	9.5	21.0	516763	9.5	18.7	515007	9.6	20.7
155567	9.2	19.6	411141	9.3	20.1	480344	9.4	20.5	510068	9.5	21.4	385805	9.5	21.5	77606	9.6	19.3
476660	9.2	18.9	134280	9.3	19.2	337342	9.4	20.6	406254	9.5	20.6	140128	9.5	19.2	19308	9.6	21.6
303580	9.2	20.7	25612	9.3	18.9	287905	9.4	20.7	82446	9.5	17.6	326581	9.5	20.1	401263	9.6	19.6
222200	9.2	20.0	186800	9.3	20.2	348067	9.4	20.1	268406	9.5	20.5	243422	9.5	19.2	513346	9.6	19.8
85630	9.2	19.1	391227	9.3	20.3	4836	9.4	16.7	139966	9.5	19.2	488091	9.5	20.8	278209	9.6	20.2
100663	9.2	18.5	509336	9.3	21.2	448547	9.4	20.1	280614	9.5	18.6	325166	9.5	19.8	391870	9.6	19.6
392373	9.2	20.6	496420	9.3	20.8	483836	9.4	21.4	213527	9.5	20.0	392053	9.5	20.5	51171	9.6	16.3
306684	9.2	18.8	74316	9.3	17.0	288430	9.4	20.9	45626	9.5	18.5	216218	9.5	20.2	291002	9.6	20.4
488333	9.2	19.0	219124	9.3	19.5	308935	9.4	20.2	9857	9.5	17.4	286800	9.5	19.0	6156	9.6	16.7
347974	9.2	18.5	140819	9.3	19.7	124129	9.4	20.3	186493	9.5	18.5	91759	9.5	18.8	381160	9.6	21.3
403438	9.2	19.5	359531	9.3	20.4	16798	9.4	18.4	356797	9.5	19.9	407044	9.5	19.8	245849	9.6	18.9
128199	9.2	19.0	273076	9.3	20.6	115635	9.4	19.4	516333	9.5	21.8	298011	9.5	19.8	483898	9.6	21.7
85146	9.2	20.2	380724	9.3	19.8	53416	9.4	19.2	210427	9.5	19.5	368532	9.5	18.5	49420	9.6	17.4
305873	9.2	19.9	494163	9.3	21.6	2778	9.4	15.0	389740	9.5	19.4	265200	9.5	18.2	97211	9.6	17.8
97042	9.2	20.1	98	9.3	13.1	392458	9.4	21.2	493526	9.5	20.9	203228	9.5	19.5	225225	9.6	19.7
316147	9.2	19.7	136016	9.3	18.6	64590	9.4	19.1	40739	9.5	18.3	241037	9.5	19.7	52195	9.6	18.5
228824	9.2	20.6	49839	9.3	18.3	192936	9.4	18.5	495319	9.5	20.2	326116	9.5	20.0	365326	9.6	19.9
236685	9.2	18.6	177776	9.3	20.7	383285	9.4	20.8	477542	9.5	20.2	208522	9.5	19.6	444537	9.6	20.6
8201	9.2	21.6	271473	9.3	19.6	166453	9.4	19.7	77520	9.5	17.4	480163	9.5	20.1	428555	9.6	20.3
449761	9.2	20.8	139060	9.3	19.6	270412	9.4	19.5	285803	9.5	21.0	441793	9.5	21.5	431370	9.6	21.2
355848	9.2	19.5	242240	9.3	19.2	313357	9.4	20.0	356896	9.5	20.2	10537	9.5	16.7	386396	9.6	20.4
381711	9.2	20.0	327235	9.3	19.8	27387	9.4	17.3	254532	9.5	20.6	128383	9.6	19.7	307129	9.6	19.9
289094	9.2	19.4	474752	9.3	19.4	452004	9.4	20.8	41778	9.5	17.2	248925	9.6	20.1	63259	9.6	20.0
16232	9.2	18.7	482719	9.3	21.5	172380	9.4	19.8	18317								

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

Nº	10	V	Nº	10	V	Nº	10	V									
187767	9.6	18.2	215779	9.7	20.2	308270	9.8	20.1	488793	9.9	20.2	396059	9.9	20.2	235698	10.0	19.8
499227	9.6	20.8	73917	9.8	17.5	508796	9.8	24.7	447377	9.9	20.0	271224	9.9	21.2	507095	10.0	20.3
306202	9.6	21.2	472789	9.8	21.0	520554	9.8	20.9	334373	9.9	18.8	147745	9.9	18.3	206751	10.0	20.5
23705	9.6	16.9	386811	9.8	21.2	307612	9.8	19.5	106523	9.9	17.9	17219	9.9	17.0	265295	10.0	20.4
251848	9.6	19.8	404435	9.8	20.7	107361	9.8	17.6	434051	9.9	21.2	394146	9.9	20.5	329575	10.0	20.0
130324	9.6	20.2	173040	9.8	19.9	35042	9.8	19.4	323327	9.9	18.9	80547	9.9	17.4	111788	10.0	17.3
14878	9.6	16.6	102391	9.8	18.1	345930	9.8	18.9	329925	9.9	21.0	1817	9.9	15.3	47785	10.0	18.3
97794	9.6	18.3	230245	9.8	19.3	20811	9.8	17.8	273542	9.9	20.4	437307	9.9	21.2	79585	10.0	18.6
347514	9.6	19.1	303653	9.8	19.9	355842	9.8	20.5	424627	9.9	20.3	519698	9.9	21.2	90422	10.0	17.2
167376	9.6	18.7	198246	9.8	18.4	107710	9.8	20.4	259698	9.9	19.8	640	9.9	13.9	332305	10.0	20.8
324687	9.6	21.2	182321	9.8	19.0	359369	9.8	23.4	117858	9.9	20.0	381800	9.9	19.7	294186	10.0	18.7
354454	9.6	20.5	215275	9.8	19.0	154432	9.8	20.3	354288	9.9	20.7	444928	9.9	21.0	324374	10.0	19.0
97479	9.6	18.1	40155	9.8	18.0	403412	9.8	19.7	423960	9.9	20.5	449837	9.9	19.9	44122	10.0	17.8
397639	9.6	20.5	442339	9.8	19.5	25438	9.8	16.9	204777	9.9	19.9	472078	9.9	20.5	51770	10.0	17.4
490057	9.6	20.4	210383	9.8	19.6	511445	9.8	21.6	229480	9.9	20.8	17120	9.9	17.0	482731	10.1	19.8
139101	9.6	18.7	136966	9.8	17.9	517485	9.8	19.9	325481	9.9	20.2	2760	9.9	16.0	98935	10.1	18.5
96044	9.7	19.1	4501	9.8	17.1	512456	9.8	20.6	203612	9.9	20.4	332062	9.9	19.0	27320	10.1	18.9
333178	9.7	21.2	181814	9.8	18.5	65211	9.8	19.6	291957	9.9	19.2	361819	9.9	20.1	175481	10.1	19.2
407250	9.7	20.2	274085	9.8	20.0	239169	9.8	20.9	470997	9.9	20.0	477843	9.9	21.2	250010	10.1	19.6
74670	9.7	18.3	437468	9.8	20.1	150080	9.8	19.2	25929	9.9	18.4	223996	9.9	18.9	484853	10.1	21.2
452962	9.7	21.1	329235	9.8	20.9	149498	9.8	19.2	97338	9.9	18.8	63797	9.9	18.2	38617	10.1	18.8
31411	9.7	16.6	490608	9.8	20.4	480646	9.8	20.2	312479	9.9	20.9	5854	9.9	17.3	514296	10.1	20.9
160679	9.7	18.7	101526	9.8	18.5	301471	9.8	20.2	359582	9.9	19.9	446543	9.9	20.5	358553	10.1	19.7
117736	9.7	19.4	379184	9.8	20.5	186792	9.8	19.0	447766	9.9	20.0	59331	9.9	18.6	223188	10.1	19.5
300447	9.7	19.2	401042	9.8	20.4	257347	9.8	19.6	449753	9.9	21.0	63294	9.9	19.6	164208	10.1	19.1
394528	9.7	19.8	92031	9.8	18.4	18050	9.8	17.2	74019	9.9	19.9	211025	9.9	19.7	449050	10.1	20.9
515425	9.7	20.7	186742	9.8	19.8	372797	9.8	19.8	219889	9.9	19.8	225265	9.9	19.2	519408	10.1	20.4
516766	9.7	21.3	404266	9.8	21.6	257222	9.8	20.5	316538	9.9	20.0	510686	9.9	20.7	295917	10.1	21.3
359340	9.7	20.7	406283	9.8	21.7	300612	9.8	19.7	177254	9.9	19.2	141309	9.9	19.3	319060	10.1	19.9
17005	9.7	16.3	405481	9.8	19.7	453548	9.8	20.9	436140	9.9	20.6	71456	9.9	18.8	468507	10.1	18.3
134931	9.7	18.4	121188	9.8	18.3	123653	9.8	18.9	458417	9.9	20.4	135557	9.9	17.0	317656	10.1	21.1
276477	9.7	19.7	470524	9.8	22.0	11520	9.8	16.9	305763	9.9	20.5	188058	9.9	18.9	368854	10.1	21.3
333220	9.7	19.9	99017	9.8	19.1	25157	9.8	17.8	132478	9.9	20.0	100060	9.9	20.2	194168	10.1	18.5
513380	9.7	20.9	180227	9.8	19.7	364138	9.8	20.2	215123	9.9	19.2	382424	9.9	19.4	469383	10.1	18.9
354328	9.7	19.7	407985	9.8	21.1	19231	9.8	18.9	144553	9.9	19.2	75924	9.9	17.9	289711	10.1	19.7
236848	9.7	19.7	128680	9.8	18.7	473121	9.8	21.1	5743	9.9	15.6	490824	9.9	19.8	165985	10.1	19.3
321030	9.7	20.3	46987	9.8	18.1	49264	9.8	17.8	292843	9.9	19.7	430379	9.9	20.1	433422	10.1	19.8
52341	9.7	17.6	264108	9.8	20.1	472487	9.8	20.6	140083	9.9	19.6	93011	9.9	18.3	184301	10.1	19.4
50509	9.7	17.9	63635	9.8	19.5	40673	9.8	18.4	75207	9.9	18.9	99023	10.0	19.0	515466	10.1	21.4
92132	9.7	18.7	199117	9.8	19.9	278484	9.8	19.1	396910	9.9	20.7	294190	10.0	19.6	207333	10.1	20.2
403761	9.7	19.7	101581	9.8	17.9	74395	9.8	18.6	405110	9.9	21.4	242254	10.0	19.7	378051	10.1	19.8
72765	9.7	19.3	515927	9.8	20.9	153272	9.8	20.2	423273	9.9	20.0	225059	10.0	19.8	392744	10.1	19.7
220801	9.7	18.8	506106	9.8	20.1	77976	9.8	19.1	488179	9.9	21.7	47566	10.0	17.9	12440	10.1	16.7
45559	9.7	18.1	314346	9.8	20.6	164328	9.8	19.4	266647	9.9	20.0	399332	10.0	19.5	85535	10.1	18.5
518699	9.7	21.1	369670	9.8	20.9	444517	9.8	21.0	136163	9.9	18.2	225319	10.0	20.4	253546	10.1	18.3
406990	9.7	19.7	356451	9.8	19.9	501789	9.8	19.1	406316	9.9	20.3	85209	10.0	19.1	279012	10.1	19.9
452748	9.7	21.5	55401	9.8	18.8	220501	9.8	20.9	228984	9.9	20.0	454834	10.0	20.6	158100	10.1	17.7
437126	9.7	20.2	226470	9.8	19.4	509188	9.8	21.5	46316	9.9	17.0	482658	10.0	19.8	123496	10.1	19.2
125283	9.7	19.7	355443	9.8	20.2	517149	9.9	21.3	191461	9.9	19.3	514252	10.0	20.8	316169	10.1	21.1
516826	9.7	20.0	442408	9.8	20.2	403131	9.9	21.3	68664	9.9	18.8	411570	10.0	20.8	265937	10.1	19.9
14729	9.7	17.5	364053	9.8	21.1	243466	9.9	19.4	257567	9.9	19.5	423134	10.0	20.7	394914	10.1	21.3
185936	9.7	19.1	489096	9.8	20.1	474644	9.9	20.1	22002	9.9	18.4	266171	10.0	19.9	209768	10.1	20.4
507402	9.7	21.8	53575	9.8	17.2	408275	9.9	20.2	425348	9.9	20.3	487648	10.0	20.1	2147	10.1	16.5
275412	9.7	20.6	511894	9.8	19.9	519523	9.9	20.2	123420	9.9	18.6	158862	10.0	20.0	72331	10.1	18.8
99747	9.7	19.0	328144	9.8	18.7	311776	9.9	20.2	189949	9.9	18.2	438206	10.0	21.1	46460	10.1	18.6
158810	9.7	18.6	79099	9.8	18.5	158772	9.9	19.0	68726	9.9	19.2	405120	10.0	21.4	93648	10.1	18.6
483072	9.7	20.6	223443	9.8	19.3	275332	9.9	20.2	464211	9.9	21.5	40637	10.0	18.4	187407	10.1	19.0
325760	9.7	20.0	45587	9.8	18.6	490450	9.9	20.3	431393	9.9	20.7	306799	10.0	19.4	195153	10.1	19.4
518755	9.7	20.6	325563	9.8	18.5	397638	9.9	19.5	437761	9.9	21.3	213185	10.0	17.5	255740	10.1	20.4
239846	9.7	18.3	259898	9.8	20.6	208287	9.9	20.1	86575	9.9	19.3	107204	10.0	19.2	77183	10.1	19.2
288125	9.7	19.8	408563	9.8	20.7	70774	9.9	18.7	268926	9.9	19.8	1512	10.0	15.5	446102	10.1	21.0
171283	9.7	19.1	328699	9.8	20.8	421597	9.9	20.1	51581	9.9	18.4	407239	10.0	20.2	488093	10.1	21.1
2140																	

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
178698	10.1	18.9	69565	10.2	18.6	440392	10.3	22.2	516365	10.3	19.5	65605	10.4	17.5	73132	10.5	18.0
398522	10.1	20.0	501539	10.2	20.4	39281	10.3	18.5	1498	10.3	15.1	242464	10.4	19.5	2641	10.5	16.2
120698	10.1	19.6	117564	10.2	19.6	321078	10.3	20.0	204666	10.3	19.6	421445	10.4	19.9	469842	10.5	18.9
360354	10.1	19.8	363691	10.2	19.7	355497	10.3	20.5	312480	10.3	19.7	447677	10.4	20.5	387934	10.5	21.5
93835	10.1	18.6	220512	10.2	19.5	309959	10.3	19.6	493539	10.3	21.3	429920	10.4	21.1	523652	10.5	21.8
175524	10.1	19.5	174357	10.2	18.0	14765	10.3	18.1	354652	10.3	20.2	177358	10.4	20.8	487158	10.5	20.5
523617	10.1	21.7	424573	10.2	21.3	449042	10.3	20.4	210082	10.3	19.4	320186	10.4	20.0	437991	10.5	20.7
262906	10.1	19.9	275156	10.2	19.7	316027	10.3	20.8	187057	10.3	19.2	156247	10.4	19.1	509609	10.5	20.9
487830	10.1	19.9	282384	10.2	19.1	129442	10.3	19.9	132337	10.3	19.0	46872	10.4	17.8	92380	10.5	18.6
389431	10.1	20.5	447705	10.2	20.9	3487	10.3	15.2	60293	10.3	19.3	88687	10.4	19.4	507082	10.5	21.6
398889	10.1	20.3	70444	10.2	18.8	516971	10.3	20.9	399032	10.3	20.4	754	10.4	13.5	207431	10.5	19.9
132399	10.1	17.7	165968	10.2	19.2	477520	10.3	20.8	509025	10.3	18.1	432325	10.4	20.5	29141	10.5	18.1
298264	10.1	18.8	190251	10.2	19.7	133958	10.3	19.5	355527	10.3	20.2	435761	10.4	20.3	158266	10.5	19.2
430706	10.1	21.3	325396	10.2	21.0	357707	10.3	20.1	103934	10.3	18.0	41725	10.4	18.6	515950	10.5	20.4
441185	10.1	20.8	333268	10.2	20.8	488796	10.3	20.1	188960	10.3	19.4	345026	10.4	18.4	171525	10.5	20.0
181514	10.1	19.7	112973	10.2	18.5	368024	10.3	19.8	131388	10.4	18.9	103094	10.4	17.8	48462	10.5	18.0
36288	10.1	18.6	77450	10.2	19.0	175123	10.3	18.4	23637	10.4	17.9	178845	10.4	19.8	375186	10.5	20.9
409358	10.1	20.0	293004	10.2	20.8	473515	10.3	19.9	43121	10.4	20.4	97811	10.4	19.0	84261	10.5	17.9
30419	10.1	16.8	235342	10.2	19.2	450319	10.3	19.9	308925	10.4	20.7	233346	10.4	19.5	104382	10.5	19.4
82705	10.1	19.1	428666	10.2	21.6	450717	10.3	20.6	510841	10.4	21.2	143898	10.4	19.2	297174	10.5	20.5
366956	10.1	19.8	21926	10.2	18.7	67192	10.3	18.5	272309	10.4	19.4	422103	10.4	20.2	478782	10.5	20.1
155655	10.1	20.6	482637	10.2	20.2	513890	10.3	20.6	376994	10.4	20.0	421825	10.4	20.0	21514	10.5	16.7
266168	10.1	20.1	454272	10.2	20.4	329124	10.3	20.7	285357	10.4	18.8	114299	10.4	18.4	521437	10.5	20.9
361812	10.1	21.0	407634	10.2	20.8	319268	10.3	20.3	396764	10.4	20.7	124225	10.4	18.0	286547	10.5	20.1
291575	10.1	20.1	408541	10.2	20.7	518708	10.3	20.6	53996	10.4	19.3	347527	10.4	20.3	420636	10.5	21.0
265490	10.1	19.1	437461	10.2	21.0	467783	10.3	20.2	286589	10.4	20.4	115200	10.4	18.2	458465	10.5	20.6
513979	10.1	22.1	521406	10.2	20.0	507024	10.3	20.4	378169	10.4	21.1	480500	10.4	21.1	247115	10.5	18.2
501580	10.1	21.2	130320	10.2	19.9	473462	10.3	20.9	321272	10.4	19.7	300601	10.4	20.5	162338	10.5	18.2
260112	10.1	19.3	163867	10.2	19.2	178795	10.3	20.4	257765	10.4	20.2	137160	10.4	19.4	206519	10.5	18.7
609	10.1	14.5	146182	10.2	19.8	318301	10.3	20.6	382017	10.4	21.2	263681	10.4	20.0	313638	10.5	18.7
31835	10.1	18.3	285021	10.2	20.4	267318	10.3	19.7	275185	10.4	20.5	421644	10.4	20.7	336854	10.5	21.8
486592	10.1	20.3	217165	10.2	18.2	24334	10.3	17.5	153405	10.4	18.6	445933	10.4	20.7	266129	10.5	19.7
23875	10.1	17.4	475251	10.2	19.7	424311	10.3	20.3	454055	10.4	20.5	516359	10.4	19.9	398723	10.5	19.6
322227	10.1	19.7	202170	10.2	19.5	364103	10.3	20.8	509631	10.4	19.5	351779	10.4	18.9	460950	10.5	20.5
259878	10.1	20.2	292543	10.2	19.2	310551	10.3	20.6	97539	10.4	19.6	254682	10.4	19.4	159022	10.5	19.7
408514	10.1	20.4	352925	10.2	20.8	19232	10.3	18.1	182810	10.4	19.8	193531	10.5	18.8	65935	10.5	18.9
326225	10.1	20.2	439384	10.2	19.9	353748	10.3	20.3	825456	10.4	20.4	209874	10.5	20.0	382746	10.5	20.1
371846	10.1	19.9	226858	10.2	18.1	353197	10.3	20.7	244455	10.4	18.5	365743	10.5	19.9	202145	10.5	20.1
71841	10.1	17.8	281255	10.2	19.4	386788	10.3	20.9	313317	10.4	20.1	193262	10.5	18.7	4670	10.5	16.6
460049	10.2	19.7	429434	10.2	20.8	488797	10.3	20.0	76323	10.4	20.2	311833	10.5	20.3	449143	10.5	21.1
355591	10.2	20.3	146552	10.2	20.0	289377	10.3	19.9	75115	10.4	17.4	351889	10.5	19.9	98829	10.5	16.3
110066	10.2	17.5	178572	10.2	19.1	321610	10.3	19.7	453565	10.4	20.2	313275	10.5	20.1	221396	10.5	20.1
471253	10.2	21.4	339077	10.2	19.0	340380	10.3	20.7	171887	10.4	19.9	62980	10.5	18.4	454981	10.5	20.2
521520	10.2	20.8	315778	10.2	20.0	10102	10.3	18.2	235157	10.4	19.0	485745	10.5	21.1	291505	10.5	21.0
186789	10.2	19.7	388213	10.2	21.6	440808	10.3	19.9	309541	10.4	20.7	497244	10.5	21.2	509964	10.5	19.7
128780	10.2	17.2	424455	10.2	19.2	208158	10.3	19.3	436756	10.4	20.9	489403	10.5	20.7	466921	10.5	20.9
101115	10.2	18.6	149412	10.2	19.0	143654	10.3	17.8	472346	10.4	21.8	410120	10.5	20.9	36807	10.5	18.3
485330	10.2	21.1	419791	10.2	20.7	49136	10.3	16.8	232889	10.4	19.9	473472	10.5	20.3	239075	10.5	19.5
440851	10.2	20.5	119193	10.2	18.7	323561	10.3	20.2	49346	10.4	17.1	257612	10.5	18.0	229449	10.5	20.3
183988	10.2	19.8	455623	10.2	18.8	394538	10.3	20.3	283366	10.4	18.1	455638	10.5	20.1	220770	10.5	19.6
431781	10.2	21.5	214056	10.2	19.3	302765	10.3	18.8	374843	10.4	20.5	469854	10.5	20.6	134122	10.5	19.9
284925	10.2	20.3	135999	10.2	18.9	218469	10.3	19.5	358776	10.4	20.9	476644	10.5	19.7	42371	10.5	18.5
231630	10.2	19.1	15147	10.2	17.4	107512	10.3	19.4	47431	10.4	16.2	476013	10.5	20.2	521981	10.5	20.2
326817	10.2	20.4	284126	10.2	20.6	172867	10.3	20.3	326285	10.4	19.4	77220	10.5	19.2	512036	10.5	20.2
440850	10.2	20.4	430958	10.2	20.2	75749	10.3	18.7	220051	10.4	18.7	146111	10.5	17.7	65315	10.5	18.6
214048	10.2	20.0	82498	10.2	18.7	111363	10.3	19.2	464742	10.4	19.4	1024	10.5	13.6	77337	10.5	19.0
248909	10.2	19.6	516144	10.2	20.3	432775	10.3	19.4	510997	10.4	21.5	316878	10.5	19.6	68639	10.5	18.4
192938	10.2	19.7	856	10.2	14.6	339224	10.3	19.4	486308	10.4	20.6	450721	10.5	20.2	218448	10.5	18.7
406991	10.2	20.0	192205	10.2	20.7	394112	10.3	19.6	18861	10.4	18.1	268911	10.5	20.4	293902	10.5	20.3
471931	10.2	21.2	123419	10.2	19.0	321599	10.3	20.8	63375	10.4	17.7	473572	10.5	20.0	104203	10.5	18.3
509893	10.2	22.2	347634	10.2	19.6</												

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
196440	10.6	19.4	516829	10.6	20.8	437233	10.7	18.8	485290	10.8	21.4	470478	10.9	20.4	166233	10.9	20.0
366101	10.6	20.4	476989	10.6	21.4	92207	10.7	18.4	518366	10.8	20.5	452147	10.9	19.7	163068	10.9	18.0
46202	10.6	18.9	278333	10.6	19.4	404123	10.7	20.3	309537	10.8	20.2	411905	10.9	20.4	196661	10.9	19.1
332029	10.6	19.4	273391	10.6	19.4	477062	10.7	21.2	396518	10.8	20.8	508925	10.9	20.8	366670	10.9	19.1
227714	10.6	20.4	388081	10.6	19.7	391203	10.7	20.9	206039	10.8	20.1	96958	10.9	17.5	176884	10.9	19.7
76852	10.6	18.9	98710	10.6	19.3	120905	10.7	20.0	423891	10.8	19.6	253883	10.9	20.3	62097	10.9	17.9
82390	10.6	16.9	374193	10.6	21.0	443710	10.7	19.2	171329	10.8	20.0	297357	10.9	20.2	208128	10.9	20.3
217356	10.6	18.5	463438	10.6	21.8	166306	10.7	20.6	398592	10.8	20.4	305991	10.9	20.5	6346	10.9	16.3
11709	10.6	17.9	480015	10.6	20.8	383160	10.7	20.2	349679	10.8	20.9	207294	10.9	19.7	375991	10.9	20.2
123912	10.6	19.7	483854	10.6	21.7	132361	10.7	17.5	518052	10.8	21.0	517533	10.9	21.1	461165	10.9	21.0
521684	10.6	20.2	212910	10.6	19.6	142618	10.7	18.9	366003	10.8	21.3	154171	10.9	19.4	403410	10.9	20.4
27256	10.6	19.1	67951	10.6	17.8	97317	10.7	19.7	159682	10.8	18.2	522042	10.9	20.6	72567	10.9	19.5
380225	10.6	18.8	517166	10.7	20.6	157733	10.7	19.3	295810	10.8	20.1	477802	10.9	21.0	214983	10.9	19.8
1267	10.6	14.8	172823	10.7	19.7	396781	10.7	20.3	324075	10.8	19.1	485097	10.9	20.3	19953	10.9	16.7
156945	10.6	19.8	452096	10.7	20.8	375184	10.7	20.9	511233	10.8	21.5	148061	10.9	19.7	380796	10.9	19.8
150366	10.6	19.8	228556	10.7	17.7	98692	10.7	19.0	290156	10.8	20.7	361395	10.9	20.1	166335	10.9	19.8
104799	10.6	18.9	404561	10.7	20.5	337282	10.7	18.5	214889	10.8	19.8	467779	10.9	20.2	381154	10.9	20.6
282686	10.6	19.8	317299	10.7	20.7	349648	10.7	19.8	166935	10.8	19.7	294308	10.9	19.7	446655	10.9	19.9
165597	10.6	19.4	452106	10.7	20.7	140543	10.7	19.8	199695	10.8	20.2	174422	10.9	19.4	25989	10.9	17.8
481587	10.6	18.8	99899	10.7	17.6	487845	10.7	21.3	323201	10.8	19.5	99087	10.9	18.9	104620	10.9	18.8
190280	10.6	19.0	96951	10.7	18.9	521885	10.7	21.2	400982	10.8	20.6	37185	10.9	18.0	112706	10.9	19.5
34580	10.6	18.9	391278	10.7	20.7	314587	10.7	20.8	404310	10.8	20.9	496811	10.9	19.5	361834	10.9	19.9
301299	10.6	20.0	515302	10.7	20.2	411522	10.7	20.1	266612	10.8	19.1	63452	10.9	18.1	487759	10.9	20.5
328579	10.6	19.9	398491	10.7	19.3	432319	10.7	19.0	132590	10.8	19.1	406790	10.9	19.8	252828	10.9	19.7
442394	10.6	20.5	512059	10.7	20.0	193746	10.7	19.8	448671	10.8	20.1	283625	10.9	20.6	220221	10.9	19.2
462379	10.6	20.7	125450	10.7	19.2	437919	10.8	20.9	322914	10.8	20.2	349904	10.9	20.4	150673	10.9	19.9
181392	10.6	19.4	301489	10.7	20.7	89258	10.8	19.1	410038	10.8	22.2	382752	10.9	19.8	470991	10.9	20.7
111696	10.6	19.8	258681	10.7	19.7	13405	10.8	16.9	175940	10.8	18.6	263796	10.9	20.5	323237	10.9	19.8
153306	10.6	20.3	521556	10.7	20.9	57320	10.8	17.6	131656	10.8	18.8	349287	10.9	19.3	307951	10.9	20.8
118488	10.6	19.1	315266	10.7	20.1	425008	10.8	21.2	390162	10.8	20.6	313340	10.9	20.4	271444	10.9	20.1
255222	10.6	19.5	385814	10.7	21.1	135557	10.8	18.9	450843	10.8	20.6	34565	10.9	18.3	405439	10.9	19.1
74483	10.6	18.9	380419	10.7	20.8	396591	10.8	21.7	257768	10.8	20.4	198305	10.9	18.9	280574	10.9	20.0
366007	10.6	21.1	96914	10.7	18.4	310660	10.8	21.3	347089	10.8	21.1	334988	10.9	21.0	88331	10.9	18.8
394596	10.6	20.2	377600	10.7	19.6	5180	10.8	16.7	215783	10.8	19.4	454969	10.9	20.1	451959	10.9	20.8
409101	10.6	21.0	250963	10.7	19.8	96548	10.8	17.3	49848	10.8	17.0	118573	10.9	19.6	66721	10.9	17.4
511585	10.6	20.7	300555	10.7	20.9	214678	10.8	19.5	391844	10.8	20.6	141824	10.9	20.3	13442	10.9	17.3
360050	10.6	21.4	139146	10.7	19.1	320172	10.8	21.1	474144	10.8	19.0	196498	10.9	19.2	222223	10.9	19.6
109782	10.6	19.1	310353	10.7	20.2	318552	10.8	21.5	80224	10.8	18.2	296075	10.9	19.6	253406	10.9	18.6
92020	10.6	18.7	264156	10.7	19.9	432709	10.8	20.7	156722	10.8	19.4	30841	10.9	18.1	97384	10.9	18.8
42204	10.6	18.7	157910	10.7	18.2	285600	10.8	19.5	473522	10.8	21.6	91816	10.9	18.9	458410	10.9	20.6
192450	10.6	19.1	5094	10.7	16.5	305683	10.8	20.7	458516	10.8	20.4	22721	10.9	18.7	324101	10.9	20.0
349773	10.6	20.2	332326	10.7	20.2	174485	10.8	18.9	257689	10.8	18.4	21255	10.9	17.4	221942	10.9	19.4
277358	10.6	20.3	6686	10.7	16.2	515305	10.8	20.7	207198	10.8	20.2	165213	10.9	17.7	38290	10.9	17.9
28459	10.6	20.1	345453	10.7	18.7	481604	10.8	19.1	1126	10.8	14.8	131176	10.9	19.1	178304	10.9	18.7
358899	10.6	20.5	347080	10.7	19.7	396070	10.8	21.1	99203	10.8	19.9	245047	10.9	20.8	466789	10.9	21.8
19752	10.6	17.4	121894	10.7	20.1	260028	10.8	20.2	450539	10.8	20.9	237790	10.9	19.5	301276	10.9	20.3
154983	10.6	19.1	468780	10.7	20.8	141393	10.8	19.2	296669	10.8	20.6	245398	10.9	19.6	421516	10.9	19.9
10147	10.6	17.9	149724	10.7	20.2	196762	10.8	19.0	157421	10.8	19.7	209869	10.9	20.8	474705	10.9	21.0
402780	10.6	20.2	443455	10.7	19.8	215485	10.8	19.0	80705	10.8	19.4	178431	10.9	18.6	432356	10.9	20.0
341838	10.6	21.3	264325	10.7	18.5	188858	10.8	19.4	344693	10.8	20.1	218441	10.9	19.0	492264	11.0	21.0
410839	10.6	20.9	511271	10.7	21.7	441122	10.8	20.6	320177	10.8	19.8	7399	10.9	15.3	513983	11.0	20.3
97558	10.6	18.8	385768	10.7	21.0	76121	10.8	17.4	407833	10.8	21.0	379218	10.9	21.4	333458	11.0	19.5
13383	10.6	17.8	260451	10.7	19.8	139337	10.8	19.6	176243	10.8	18.3	385117	10.9	20.7	183321	11.0	19.2
514840	10.6	20.6	162352	10.7	19.4	154768	10.8	19.3	261856	10.8	20.8	182024	10.9	18.2	155796	11.0	18.5
221944	10.6	19.3	396020	10.7	19.9	34287	10.8	16.8	191516	10.8	19.3	228854	10.9	20.8	164254	11.0	19.9
315940	10.6	20.3	216372	10.7	19.1	120371	10.8	18.2	431734	10.8	20.5	175009	10.9	19.9	104448	11.0	16.9
57023	10.6	16.5	382602	10.7	21.3	253362	10.8	19.8	172331	10.8	18.5	304470	10.9	19.5	224048	11.0	19.0
38408	10.6	18.2	360313	10.7	19.7	404558	10.8	20.4	294387	10.8	20.2	513257	10.9	21.0	210592	11.0	19.0
31839	10.6	19.4	128268	10.7	18.3	70584	10.8	18.9	453995	10.8	21.1	221024	10.9	19.7	80389	11.0	17.0
225296	10.6	20.2	491646	10.7	20.8	340845	10.8	20.5	473425	10.8	19.9	430463	10.9	19.5	152489	11.0	19.1
217818	10.6	19.6	290952	10.7	19.9</td												

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

Nº	10	V															
178972	11.0	18.9	236593	11.1	20.7	273776	11.2	20.9	292098	11.3	20.1	217198	11.4	17.7	25303	11.5	17.3
23618	11.0	18.3	292183	11.1	19.7	165466	11.2	19.1	304235	11.3	18.6	159216	11.4	19.5	229434	11.5	19.7
398091	11.0	20.3	517872	11.1	21.3	177714	11.2	20.2	62460	11.3	18.4	157410	11.4	19.2	224159	11.5	18.1
4311	11.0	16.1	309030	11.1	20.0	430971	11.2	21.5	92958	11.3	17.9	483259	11.4	20.9	515669	11.5	21.2
468430	11.0	20.0	13493	11.1	16.3	234010	11.2	19.5	490519	11.3	20.2	133330	11.4	19.2	24853	11.5	18.0
9341	11.0	17.3	85478	11.1	17.9	235302	11.2	18.8	390002	11.3	20.1	444564	11.4	20.9	353332	11.5	20.1
517496	11.0	20.9	45111	11.1	18.3	291285	11.2	20.9	451170	11.3	20.6	434478	11.4	19.5	165497	11.5	19.5
166285	11.0	19.9	67309	11.1	17.7	41289	11.2	17.7	247042	11.3	20.4	107369	11.4	18.5	355124	11.5	20.5
141840	11.0	18.5	245988	11.1	19.6	237293	11.2	20.1	176124	11.3	19.3	449301	11.4	20.1	412113	11.5	20.2
116744	11.0	19.0	354327	11.1	20.3	229680	11.2	20.7	436255	11.3	20.5	475396	11.4	20.5	141200	11.5	18.8
479761	11.0	20.1	352400	11.1	21.0	306718	11.2	19.0	251541	11.3	19.9	1915	11.4	23.2	75791	11.5	19.1
6325	11.0	17.7	363531	11.1	20.5	360861	11.2	20.3	514996	11.3	21.5	187715	11.4	20.0	364059	11.5	20.5
322755	11.0	20.0	7771	11.1	16.9	402217	11.2	20.5	328951	11.3	20.8	505448	11.4	23.0	415019	11.5	20.3
172920	11.0	19.5	515561	11.1	21.4	106559	11.2	18.5	365322	11.3	20.4	303196	11.4	20.0	129752	11.5	19.3
4980	11.0	16.2	95751	11.1	19.2	2579	11.2	16.2	132627	11.3	18.0	188268	11.4	18.5	11689	11.5	17.4
321256	11.0	20.2	426139	11.2	21.4	4315	11.2	15.8	266947	11.3	19.8	512076	11.4	21.3	322668	11.5	20.0
341049	11.0	19.9	21639	11.2	16.4	315104	11.2	20.0	184428	11.3	19.8	186925	11.4	19.2	115569	11.5	19.6
493548	11.1	21.1	267617	11.2	19.1	315817	11.2	20.1	212214	11.3	20.4	331168	11.4	20.6	211958	11.5	20.2
316804	11.1	19.9	183952	11.2	19.8	217694	11.2	19.2	229458	11.3	20.5	320086	11.4	21.1	66265	11.5	18.0
238862	11.1	20.1	4357	11.2	16.0	329008	11.2	20.9	405314	11.3	19.5	324384	11.4	20.4	268017	11.5	19.4
364549	11.1	20.5	323336	11.2	19.9	516328	11.2	20.7	515429	11.3	21.9	240197	11.4	18.4	183702	11.5	20.7
267769	11.1	19.3	380954	11.2	22.1	24396	11.2	18.2	378624	11.3	21.2	154433	11.4	19.9	150610	11.5	20.0
305543	11.1	21.2	436408	11.2	20.8	8396	11.2	16.8	297311	11.3	18.9	120199	11.4	19.7	404586	11.5	20.8
367754	11.1	20.6	398995	11.2	19.8	329954	11.2	19.7	181468	11.3	20.2	487387	11.4	20.4	207300	11.5	20.3
53548	11.1	19.2	355814	11.2	20.8	189426	11.2	18.9	203164	11.3	18.4	409136	11.4	19.9	365680	11.5	20.0
121741	11.1	18.1	352847	11.2	20.0	116532	11.2	19.9	482991	11.3	20.7	50142	11.4	18.2	251655	11.5	19.2
90416	11.1	22.0	317805	11.2	19.7	291162	11.2	19.6	328489	11.3	20.9	340102	11.4	20.2	514174	11.5	21.0
198281	11.1	20.0	319320	11.2	20.3	400650	11.2	21.4	42974	11.3	18.2	200237	11.4	19.0	386996	11.5	18.1
6402	11.1	15.7	223922	11.2	19.7	519782	11.2	21.6	34851	11.3	16.7	66835	11.4	18.4	337002	11.5	19.5
195206	11.1	19.3	56843	11.2	18.9	446208	11.2	20.4	449508	11.3	21.6	395934	11.4	20.1	298687	11.5	19.1
102261	11.1	18.6	304842	11.2	19.2	484983	11.2	20.2	450504	11.3	20.8	37861	11.4	19.2	483139	11.5	20.9
489151	11.1	21.7	356135	11.2	20.9	412560	11.2	19.9	40242	11.3	17.7	339153	11.4	19.7	344629	11.5	20.5
322550	11.1	21.0	315915	11.2	20.6	174985	11.2	19.9	453539	11.3	20.8	464957	11.4	21.0	450494	11.5	19.9
483797	11.1	20.4	437480	11.2	21.3	487336	11.3	20.7	184679	11.3	20.2	325913	11.4	21.3	43615	11.5	18.8
210321	11.1	19.7	308258	11.2	20.5	13896	11.3	17.3	228892	11.3	19.0	169775	11.4	19.3	58874	11.5	19.3
223368	11.1	18.6	80795	11.2	19.0	327525	11.3	21.0	391806	11.3	21.2	156102	11.4	18.9	97038	11.5	18.7
138388	11.1	19.0	476915	11.2	19.6	516527	11.3	21.0	246583	11.3	19.7	186724	11.4	19.9	510588	11.5	20.4
443350	11.1	20.3	509139	11.2	21.5	8078	11.3	15.6	7318	11.3	15.3	80702	11.4	18.5	268705	11.5	20.3
75286	11.1	16.7	388957	11.2	20.6	366796	11.3	20.2	127565	11.3	18.8	476934	11.4	20.0	440091	11.5	20.8
387615	11.1	22.2	63944	11.2	17.7	354440	11.3	19.3	304303	11.3	19.7	33293	11.4	18.1	373201	11.5	20.1
127223	11.1	19.9	509857	11.2	20.9	472524	11.3	20.1	442975	11.3	20.1	53029	11.4	18.2	71810	11.5	19.0
487795	11.1	20.7	196445	11.2	19.1	327668	11.3	19.4	104313	11.3	19.8	5800	11.4	16.3	521352	11.5	21.0
220203	11.1	19.6	81432	11.2	18.5	378208	11.3	20.4	487132	11.3	20.5	157205	11.4	19.2	348711	11.5	20.9
429563	11.1	20.1	266656	11.2	20.3	383219	11.3	20.2	475381	11.3	20.4	292985	11.4	20.0	471524	11.5	22.4
350017	11.1	20.4	513939	11.2	19.6	201489	11.3	19.7	29096	11.3	19.7	494357	11.4	20.2	296425	11.5	19.9
73397	11.1	18.4	368517	11.2	19.9	115353	11.3	18.6	121945	11.3	18.7	257720	11.4	21.2	318576	11.5	20.3
206553	11.1	20.2	60935	11.2	19.0	65639	11.3	17.5	121872	11.3	19.6	475393	11.4	20.7	310176	11.5	20.0
408544	11.1	20.6	171782	11.2	19.3	38401	11.3	18.4	320120	11.3	20.7	76710	11.4	19.4	108483	11.5	18.6
313605	11.1	19.4	142605	11.2	19.0	352911	11.3	19.9	452552	11.3	21.0	411047	11.4	20.4	26012	11.5	17.3
168199	11.1	20.1	260003	11.2	20.0	433294	11.3	21.5	169994	11.3	19.2	12103	11.4	16.1	344686	11.5	19.5
358764	11.1	20.7	374713	11.2	19.6	482270	11.3	21.0	39137	11.3	17.9	261630	11.4	20.7	452018	11.5	20.9
190516	11.1	19.7	20071	11.2	17.3	490610	11.3	19.8	99980	11.3	18.5	494612	11.4	20.9	365759	11.5	20.4
517512	11.1	21.6	405287	11.2	20.8	385822	11.3	20.7	13596	11.3	17.3	265228	11.4	21.2	511610	11.5	19.9
514476	11.1	20.7	234331	11.2	20.8	234111	11.3	20.3	124003	11.3	19.3	38128	11.4	18.3	280194	11.5	17.5
12000	11.1	17.4	359937	11.2	20.2	308835	11.3	19.4	510293	11.3	20.6	226488	11.4	19.2	58229	11.5	19.6
191139	11.1	17.9	241019	11.2	19.3	163699	11.3	19.5	232109	11.3	18.9	201146	11.4	20.0	180747	11.5	19.8
58645	11.1	17.0	424429	11.2	21.2	129546	11.3	17.8	351232	11.3	19.9	128652	11.4	19.9	42185	11.5	18.0
220150	11.1	19.0	89186	11.2	19.0	515392	11.3	21.5	29679	11.3	18.6	185768	11.4	18.5	400985	11.5	19.8
387952	11.1	20.0	233798	11.2	19.1	409703	11.3	20.9	352343	11.3	21.0	78490	11.4	18.7	80678	11.5	18.3
428594	11.1	20.6	200822	11.2	19.4	282365	11.3	19.6	242238	11.3	19.2	322159	11.4	20.2	477407	11.5	21.2
25622	11.1	18.5	144700	11.2	19.9	65183	1										

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

Nº	10	V															
124862	11.5	18.7	333167	11.6	19.9	506497	11.7	20.5	21400	11.8	17.7	223161	11.8	19.1	218074	11.9	17.2
367232	11.5	20.2	407181	11.6	20.7	374815	11.7	19.8	116666	11.8	19.4	118511	11.8	20.6	163359	11.9	19.9
324149	11.5	19.8	197095	11.6	19.4	296718	11.7	19.9	167247	11.8	19.4	54003	11.8	17.3	167360	11.9	19.3
222593	11.5	19.1	511476	11.6	21.6	308693	11.7	19.0	93997	11.8	17.8	204911	11.8	19.5	365367	11.9	19.3
410889	11.5	20.1	71284	11.6	19.1	108198	11.7	19.5	96915	11.8	18.6	305236	11.8	20.0	405746	11.9	20.3
400995	11.5	20.4	285451	11.6	19.2	442825	11.7	21.0	93321	11.8	18.2	209263	11.8	18.8	151371	11.9	19.4
269858	11.5	19.9	41477	11.6	16.3	437988	11.7	19.9	395002	11.8	20.4	227910	11.8	20.7	216112	11.9	20.2
230740	11.5	18.7	167179	11.6	17.9	172085	11.7	18.1	304250	11.8	20.3	365037	11.8	20.5	152178	11.9	18.7
312378	11.5	20.5	2462	11.6	17.1	128194	11.7	19.1	207534	11.8	18.9	144251	11.8	19.7	505383	11.9	20.1
317947	11.5	17.8	352933	11.6	20.5	476789	11.7	20.3	511823	11.8	21.0	220776	11.8	19.1	216307	11.9	19.9
162046	11.5	19.8	402767	11.6	21.0	298078	11.7	20.2	149180	11.8	19.8	187218	11.8	20.7	242639	11.9	20.4
441726	11.5	21.1	135636	11.6	18.5	385802	11.7	20.3	448636	11.8	20.5	480134	11.8	21.7	522843	11.9	20.1
166321	11.5	19.8	344036	11.6	19.2	164682	11.7	18.7	375667	11.8	21.1	521934	11.8	20.7	279683	11.9	21.0
58669	11.5	17.4	191902	11.6	19.4	120779	11.7	19.1	232103	11.8	19.6	168639	11.8	20.0	96071	11.9	17.5
471078	11.5	20.7	232846	11.6	19.0	510777	11.7	20.3	44276	11.8	17.8	187427	11.8	18.6	158115	11.9	19.2
208927	11.5	19.0	454944	11.6	20.1	406763	11.7	21.6	516052	11.8	20.0	481390	11.8	20.2	129651	11.9	19.9
450342	11.5	20.2	230051	11.6	19.0	67024	11.7	17.5	254328	11.8	21.2	247814	11.8	19.0	394561	11.9	20.0
374740	11.5	19.2	446659	11.6	20.3	310329	11.7	19.9	407179	11.8	19.9	398350	11.8	21.1	410115	11.9	20.3
358303	11.5	20.0	186429	11.6	19.1	14129	11.7	16.5	178042	11.8	19.8	66122	11.8	17.6	100587	11.9	18.0
410913	11.5	20.7	436385	11.6	20.3	68181	11.7	17.1	350941	11.8	19.7	492354	11.8	21.3	440852	11.9	20.5
380783	11.6	20.3	68822	11.6	16.7	331435	11.7	19.3	170617	11.8	20.1	45515	11.8	18.2	275170	11.9	20.1
46100	11.6	19.1	33319	11.6	17.4	222167	11.7	20.0	396934	11.8	20.8	257758	11.9	19.1	73470	11.9	19.0
454161	11.6	19.8	284953	11.6	20.1	258787	11.7	19.8	13141	11.8	17.1	86681	11.9	18.8	326791	11.9	20.0
246821	11.6	19.6	396258	11.6	20.7	504492	11.7	21.6	9270	11.8	17.9	203249	11.9	19.5	59719	11.9	18.7
413755	11.6	20.8	55392	11.6	17.7	399038	11.7	20.0	53740	11.8	16.5	148469	11.9	19.7	112143	11.9	19.3
461136	11.6	20.5	515971	11.6	19.7	128205	11.7	19.1	104706	11.8	19.4	389127	11.9	19.2	443465	11.9	20.7
443155	11.6	21.2	78114	11.6	18.9	111814	11.7	19.5	367045	11.8	20.9	226355	11.9	19.4	318681	11.9	20.2
267123	11.6	20.1	24591	11.6	17.4	333554	11.7	20.0	350001	11.8	21.0	133057	11.9	16.5	432663	11.9	21.6
41266	11.6	18.7	360431	11.6	20.3	400724	11.7	19.6	423601	11.8	21.5	290845	11.9	19.9	239660	11.9	19.5
417229	11.6	19.8	131369	11.6	18.9	40464	11.7	16.4	174459	11.8	19.3	482440	11.9	21.0	228521	11.9	19.6
15184	11.6	17.5	345482	11.6	20.1	383549	11.7	20.0	205154	11.8	18.8	229833	11.9	20.3	450724	11.9	21.5
223822	11.6	19.6	48100	11.6	18.5	407584	11.7	19.8	339316	11.8	19.6	515402	11.9	21.0	292005	11.9	18.6
72897	11.6	18.8	8499	11.6	17.0	409825	11.7	20.9	266194	11.8	20.0	74722	11.9	18.9	104397	11.9	19.0
182955	11.6	17.8	453537	11.6	20.6	157391	11.7	19.5	96541	11.8	19.3	387970	11.9	21.1	517826	11.9	21.0
484952	11.6	20.2	398860	11.6	20.1	391920	11.7	19.9	482596	11.8	20.7	298016	11.9	20.4	396750	11.9	19.5
28817	11.6	17.8	514480	11.6	20.1	378552	11.7	20.2	72582	11.8	19.8	314420	11.9	20.8	267665	11.9	19.4
478581	11.6	20.5	300532	11.6	20.3	309975	11.7	20.6	282563	11.8	18.9	240195	11.9	18.9	116035	11.9	19.7
273305	11.6	20.3	448282	11.6	20.5	47064	11.7	17.6	450551	11.8	20.9	69084	11.9	18.7	445833	11.9	19.9
274784	11.6	18.8	314589	11.6	20.8	303206	11.7	19.8	220409	11.8	18.2	393409	11.9	22.1	405228	11.9	20.3
266793	11.6	19.1	282705	11.6	19.6	445188	11.7	20.8	189405	11.8	19.4	188422	11.9	20.1	275866	11.9	19.0
293981	11.6	19.1	107874	11.6	19.2	260603	11.7	20.3	126793	11.8	19.9	496604	11.9	20.8	444359	11.9	19.6
171374	11.6	18.4	252077	11.6	19.8	401249	11.7	20.9	116982	11.8	19.4	266172	11.9	19.3	243213	11.9	19.0
262254	11.6	20.5	283683	11.6	20.0	513065	11.7	21.0	403615	11.8	20.5	298512	11.9	19.7	91650	11.9	18.5
513887	11.6	19.7	225784	11.6	19.6	72889	11.7	19.6	286778	11.8	19.8	243901	11.9	19.8	3323	11.9	15.7
372853	11.6	19.7	89934	11.6	18.8	381068	11.7	21.1	114220	11.8	18.4	355449	11.9	20.1	11459	11.9	18.7
346239	11.6	20.2	171342	11.6	18.7	316500	11.7	19.4	174908	11.8	19.4	498217	11.9	20.2	381394	11.9	21.1
156676	11.6	19.9	280573	11.6	19.3	73080	11.7	19.6	171382	11.8	19.7	177027	11.9	20.1	73190	11.9	18.1
217402	11.6	20.3	10226	11.6	16.5	35906	11.7	18.0	191700	11.8	20.0	259563	11.9	19.0	216322	11.9	20.2
329041	11.6	20.8	58490	11.6	19.0	476788	11.7	20.3	436105	11.8	19.3	26493	11.9	18.6	75593	11.9	18.6
320340	11.6	19.2	450555	11.6	21.1	452299	11.7	18.7	407131	11.8	20.4	460702	11.9	20.5	432716	11.9	21.5
27827	11.6	17.1	178854	11.6	19.2	260603	11.7	20.3	126793	11.8	19.9	218568	11.9	20.1	319557	11.9	20.6
121784	11.6	18.5	101461	11.6	17.9	44560	11.7	17.9	185656	11.8	19.8	327555	11.9	20.0	436414	11.9	21.6
69169	11.6	17.7	426248	11.6	19.7	513481	11.7	21.5	428288	11.8	19.8	359346	11.9	20.6	457816	11.9	19.7
86604	11.6	18.3	304469	11.6	19.6	25030	11.7	19.1	482758	11.8	20.2	454065	11.9	20.9	261500	11.9	19.7
289816	11.6	19.9	415915	11.6	19.7	384857	11.7	20.3	148242	11.8	20.1	305932	11.9	19.7	411503	11.9	20.9
310555	11.6	19.0	432674	11.6	21.7	465250	11.7	19.3	444488	11.8	20.5	432588	11.9	19.8	346487	11.9	19.2
162282	11.6	19.3	285173	11.6	20.6	437410	11.7	20.5	322642	11.8	19.6	306771	11.9	20.5	228024	11.9	18.8
305898	11.6	20.3	470576	11.6	20.6	118550	11.7	19.5	65352	11.8	17.9	395646	11.9	20.0	19549	11.9	15.9
61422	11.6	18.7	219952	11.6	19.0	411314	11.7	19.8	289798	11.8	19.7	98822	11.9	19.7	321482	11.9	20.4
429510	11.6	20.4	424565	11.6	21.0	158557	11.7	19.9	88521	11.8	17.2	521967	11.9	20.9	454032	11.9	20.9
334437	11.6	20.5	382885	11.6													

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

Nº	10	V															
168155	11.9	19.5	223453	12.0	19.5	452083	12.1	20.4	304365	12.2	20.4	469930	12.3	20.2	156797	12.4	20.5
63851	11.9	18.6	513198	12.0	20.6	480468	12.1	19.2	177731	12.2	20.5	508403	12.3	20.2	392452	12.4	20.5
295630	11.9	19.8	517428	12.0	21.1	177671	12.1	19.9	21241	12.2	17.6	259727	12.3	19.8	6116	12.4	16.0
362574	11.9	20.3	301674	12.0	20.5	42999	12.1	19.0	430417	12.2	19.7	472746	12.3	20.6	512413	12.4	20.2
93830	11.9	17.4	511892	12.0	21.3	169077	12.1	19.6	147523	12.2	20.0	294524	12.3	19.8	316551	12.4	20.6
67855	11.9	16.9	209982	12.0	19.9	148112	12.1	23.5	299066	12.2	20.4	485721	12.3	21.4	371802	12.4	20.1
346260	11.9	21.2	486096	12.0	18.1	256710	12.1	18.9	272880	12.2	20.8	224433	12.3	19.2	478859	12.4	19.3
399960	11.9	20.1	480952	12.0	19.9	115349	12.1	18.1	131095	12.2	18.2	352370	12.3	21.0	269689	12.4	18.9
275333	11.9	20.4	67098	12.0	18.7	407006	12.1	20.0	96973	12.2	18.3	205131	12.3	19.1	30057	12.4	18.3
516017	11.9	20.1	287344	12.0	20.6	304459	12.1	20.2	479006	12.2	18.9	55852	12.3	19.1	207296	12.4	20.1
521978	11.9	20.3	60483	12.1	18.6	515021	12.1	19.2	157530	12.2	19.1	315161	12.3	20.6	98733	12.4	18.8
318256	11.9	20.1	224650	12.0	20.7	174463	12.1	17.5	399259	12.2	20.2	303587	12.3	20.4	352793	12.4	20.6
279066	11.9	19.0	73279	12.1	18.4	39303	12.1	18.4	441777	12.2	20.4	397361	12.3	20.4	322441	12.4	19.9
345851	11.9	18.7	169739	12.1	19.1	234029	12.1	19.0	334996	12.2	20.9	147403	12.3	20.3	227960	12.4	19.8
84366	11.9	18.2	452776	12.1	20.8	96733	12.1	18.9	115231	12.2	17.8	117307	12.3	18.2	388601	12.4	20.7
353379	11.9	19.0	432745	12.1	21.5	161635	12.1	19.3	22403	12.2	17.2	481963	12.3	21.1	404656	12.4	20.3
391502	11.9	19.2	465884	12.1	19.4	268001	12.1	20.9	17538	12.2	18.4	184332	12.3	19.6	295445	12.4	19.8
253440	11.9	19.2	223714	12.1	20.2	14465	12.1	15.0	347121	12.2	20.4	154746	12.3	19.6	139290	12.4	20.5
469371	11.9	19.6	327364	12.1	20.2	278442	12.1	19.9	322569	12.2	20.8	118359	12.3	20.5	317289	12.4	20.4
132162	11.9	18.9	16076	12.1	17.2	396149	12.1	19.5	401675	12.2	20.0	387746	12.3	23.7	193377	12.4	18.3
108411	11.9	19.8	48931	12.1	16.6	107888	12.1	20.2	66453	12.2	17.2	143687	12.3	18.4	363667	12.4	19.6
112005	11.9	18.3	154974	12.1	18.1	7155	12.1	17.3	82379	12.2	18.8	84813	12.3	19.0	431739	12.4	20.3
279637	11.9	20.5	91746	12.1	18.4	406759	12.1	20.9	442514	12.2	20.1	221655	12.3	19.9	231246	12.4	18.8
519487	11.9	21.2	295500	12.1	20.5	427600	12.1	19.1	381400	12.2	19.1	365786	12.3	19.9	385449	12.4	19.9
357321	11.9	21.4	74822	12.1	17.2	192137	12.1	19.9	428642	12.2	21.1	224960	12.3	20.3	258751	12.4	19.9
321590	11.9	20.0	342598	12.1	19.5	127241	12.1	19.5	120825	12.2	20.1	512812	12.3	20.6	407109	12.4	19.4
322568	11.9	20.6	412320	12.1	20.3	226309	12.1	19.8	67073	12.2	16.8	469072	12.3	20.1	398819	12.4	20.7
366930	11.9	20.4	210653	12.1	20.1	368461	12.1	19.8	514002	12.2	20.9	141052	12.3	19.2	521510	12.4	20.5
468781	11.9	19.8	293424	12.1	20.4	428204	12.1	19.8	130954	12.2	19.6	7543	12.3	17.1	298065	12.4	20.6
423298	11.9	20.6	275158	12.1	19.4	424456	12.1	20.4	92647	12.2	18.0	483000	12.3	21.1	517901	12.4	20.9
657	11.9	15.1	433611	12.1	21.0	151312	12.1	20.0	218474	12.2	19.1	408035	12.3	21.0	47368	12.4	17.6
50199	11.9	18.5	252714	12.1	19.9	291828	12.1	19.8	266982	12.2	19.7	208794	12.3	20.2	149719	12.4	19.6
189403	11.9	19.4	274929	12.1	19.6	35617	12.1	17.4	316159	12.2	20.9	304573	12.3	20.0	305277	12.4	21.3
331139	11.9	18.9	227018	12.1	19.2	346969	12.1	21.5	72710	12.2	18.2	221387	12.3	19.4	518212	12.4	19.7
135154	11.9	18.1	181062	12.1	20.2	452103	12.1	20.4	407865	12.2	21.7	351186	12.3	19.8	433273	12.4	20.4
117178	11.9	18.7	326270	12.1	20.9	469809	12.2	20.2	94294	12.2	18.8	104968	12.3	19.7	340253	12.4	20.8
270277	11.9	19.7	69302	12.1	19.4	86856	12.2	18.7	308991	12.2	20.5	402418	12.3	20.7	478944	12.4	20.0
515444	11.9	20.7	523167	12.1	20.5	379854	12.2	21.0	446478	12.2	20.5	306323	12.3	20.7	78949	12.4	17.7
362874	11.9	20.6	42230	12.1	19.5	243534	12.2	20.1	484878	12.2	20.4	468118	12.3	20.8	143061	12.4	19.3
15228	12.0	17.7	323660	12.1	21.1	262881	12.2	19.6	189370	12.2	20.4	368946	12.3	19.5	487344	12.4	21.2
317693	12.0	21.2	177530	12.1	20.2	438514	12.2	20.6	181268	12.2	18.9	165645	12.3	18.6	169980	12.4	19.4
435448	12.0	21.6	197145	12.1	18.3	373505	12.2	21.1	139722	12.2	18.2	483303	12.3	20.6	436524	12.4	19.9
74267	12.0	18.6	292489	12.1	19.4	505447	12.2	23.2	517911	12.2	20.2	313968	12.3	19.4	472002	12.4	20.0
488208	12.0	20.6	236208	12.1	19.4	317703	12.2	20.0	316962	12.2	20.0	129811	12.3	19.5	456068	12.4	21.5
475341	12.0	20.6	396926	12.1	20.6	222846	12.2	20.7	73536	12.2	18.5	35470	12.3	18.9	380706	12.4	19.7
518751	12.0	19.0	144815	12.1	20.1	377007	12.2	19.9	486565	12.2	20.5	509593	12.3	21.7	45958	12.4	18.3
155557	12.0	19.4	73827	12.1	20.3	249425	12.2	19.9	165580	12.2	19.4	290763	12.3	20.1	271632	12.4	20.2
35166	12.0	18.4	91771	12.1	19.4	188554	12.2	19.9	327104	12.2	20.7	93366	12.3	19.1	177791	12.4	19.9
404986	12.0	21.5	303103	12.1	20.5	321323	12.2	20.2	151679	12.3	20.2	430189	12.3	20.3	310870	12.4	20.5
428598	12.0	21.1	52962	12.1	19.1	166123	12.2	19.8	72850	12.3	17.9	23932	12.3	18.5	324902	12.4	21.2
93363	12.0	19.1	191467	12.1	19.6	152647	12.2	17.3	436945	12.3	20.1	460396	12.3	20.4	245353	12.4	20.0
278173	12.0	19.7	207277	12.1	19.9	55238	12.2	19.0	176158	12.3	19.8	517994	12.3	21.4	162358	12.4	18.8
13132	12.0	17.5	149066	12.1	19.9	445186	12.2	20.4	75163	12.3	18.5	149188	12.3	20.7	42728	12.4	17.3
256678	12.0	19.5	405883	12.1	21.2	42313	12.2	18.5	124266	12.3	18.4	322029	12.3	21.2	512855	12.4	21.0
259778	12.0	20.8	289502	12.1	19.9	106851	12.2	18.9	139575	12.3	19.2	42738	12.3	17.7	146319	12.4	19.2
456615	12.0	20.4	107630	12.1	19.3	513636	12.2	21.6	330207	12.3	21.4	517108	12.3	21.0	118899	12.4	17.9
185861	12.0	20.3	511464	12.1	20.3	401799	12.2	21.2	444911	12.3	20.4	180110	12.3	19.6	415712	12.4	20.5
228575	12.0	19.5	78279	12.1	18.9	517482	12.2	21.4	138295	12.3	19.5	400092	12.3	20.8	383617	12.4	20.7
294008	12.0	19.2	366104	12.1	20.4	236423	12.2	20.3	326899	12.3	18.6	160512	12.3	18.0	358911	12.4	21.0
339305	12.0	19.5	263496	12.1	19.3	469738	12.2	21.3	108598	12.3	20.0	430438	12.3	21.4	260564	12.4	20.8
342113	12.0	20.0	55486	12.1													

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

Nº	10	V															
451806	12.4	21.7	349721	12.5	19.7	487047	12.6	19.9	189420	12.6	20.5	70186	12.7	17.6	327743	12.8	20.2
100770	12.4	19.4	379858	12.5	20.4	183840	12.6	19.5	306740	12.6	18.9	330610	12.7	20.4	225010	12.8	20.1
259495	12.4	19.4	133573	12.5	19.2	128908	12.6	19.8	492397	12.6	20.9	8918	12.7	17.0	360120	12.8	20.6
256572	12.4	17.7	473394	12.5	20.2	227372	12.6	20.9	73152	12.6	19.2	188379	12.7	20.8	194969	12.8	19.0
226033	12.4	20.0	487368	12.5	20.9	168286	12.6	19.6	124787	12.6	19.5	438479	12.7	21.6	188141	12.8	20.5
471254	12.4	20.6	263331	12.5	19.1	74035	12.6	19.5	355508	12.6	20.7	322632	12.7	19.3	330574	12.8	21.1
476970	12.4	19.9	275023	12.5	20.4	193259	12.6	17.8	321317	12.6	20.7	86640	12.7	19.2	22459	12.8	17.1
15276	12.4	17.2	514905	12.5	21.1	51433	12.6	17.8	447087	12.6	20.3	11691	12.7	17.0	135548	12.8	19.7
401366	12.4	20.7	514451	12.5	21.2	185756	12.6	16.9	117592	12.6	19.1	405851	12.7	19.7	355541	12.8	20.9
484892	12.4	19.3	216421	12.5	19.2	491807	12.6	19.5	158715	12.6	19.2	442382	12.7	20.2	279499	12.8	20.5
63016	12.4	18.1	68868	12.5	19.9	126504	12.6	18.7	98965	12.7	18.8	387063	12.7	20.5	305247	12.8	20.3
453770	12.4	19.5	372341	12.5	20.9	436497	12.6	22.3	275006	12.7	19.7	496611	12.7	21.8	208785	12.8	19.9
352405	12.4	20.4	450566	12.5	21.5	516722	12.6	21.2	453523	12.7	20.9	509460	12.7	21.3	364559	12.8	20.1
7896	12.4	17.6	272832	12.5	19.3	21106	12.6	16.1	400820	12.7	20.6	45964	12.7	18.4	407197	12.8	19.8
521861	12.4	20.8	482521	12.5	19.1	289951	12.6	18.8	186277	12.7	20.0	111755	12.7	20.2	232532	12.8	19.4
204653	12.4	17.6	385709	12.5	19.6	328849	12.6	20.5	450534	12.7	20.4	510092	12.7	21.4	38028	12.8	17.5
114477	12.4	18.2	433554	12.5	20.6	309050	12.6	20.4	374714	12.7	20.5	75566	12.7	18.5	18776	12.8	16.0
464274	12.4	19.0	124055	12.5	19.2	438569	12.6	20.1	454153	12.7	20.7	84298	12.7	18.1	326745	12.8	21.6
119309	12.4	18.7	175250	12.5	19.5	435072	12.6	21.6	264532	12.7	19.7	300501	12.7	19.5	133656	12.8	18.7
54300	12.4	19.2	210271	12.5	20.6	490407	12.6	21.0	397940	12.7	20.8	164081	12.7	19.4	290874	12.8	20.0
210237	12.4	19.3	14468	12.5	17.8	388216	12.6	20.6	118619	12.7	19.9	92343	12.7	19.7	119753	12.8	19.8
382100	12.4	19.5	271029	12.5	19.9	161390	12.6	18.0	26845	12.7	17.1	516555	12.7	20.8	305018	12.8	20.5
314542	12.4	20.8	61018	12.5	18.8	47707	12.6	17.5	144760	12.7	19.5	483193	12.7	20.9	400739	12.8	19.8
323192	12.4	19.8	178522	12.5	19.4	159193	12.6	20.7	160030	12.7	18.8	137632	12.7	18.3	421871	12.8	20.2
60691	12.4	19.4	9122	12.5	18.2	103568	12.6	17.4	120472	12.7	19.9	175736	12.7	20.2	330280	12.8	19.2
175742	12.4	19.7	48302	12.5	18.2	485886	12.6	20.6	521323	12.7	20.3	160684	12.7	19.6	46609	12.8	16.1
402394	12.4	20.4	352386	12.5	20.3	515995	12.6	21.0	410842	12.7	20.3	240134	12.7	19.8	324234	12.8	20.8
320924	12.4	19.8	477371	12.5	20.8	117340	12.6	18.5	494610	12.7	21.0	172811	12.8	20.3	1115	12.8	14.5
192267	12.4	20.0	479514	12.5	20.8	165484	12.6	19.6	305829	12.7	20.4	292	12.8	13.1	187799	12.8	21.3
312826	12.4	20.4	178139	12.5	19.1	516275	12.6	20.8	466924	12.7	20.1	85864	12.8	18.0	515178	12.8	20.1
233378	12.4	20.2	203691	12.5	20.2	145928	12.6	18.0	180831	12.7	19.7	181037	12.8	20.0	496462	12.8	20.2
515023	12.4	20.2	241112	12.5	17.9	401754	12.6	20.1	262082	12.7	20.3	512154	12.8	21.3	348338	12.8	20.9
270504	12.4	20.7	411561	12.5	21.1	282056	12.6	18.8	36198	12.7	17.3	305298	12.8	19.7	483526	12.8	20.8
352872	12.4	20.3	404678	12.5	20.4	350487	12.6	19.4	164455	12.7	20.1	19941	12.8	18.7	159024	12.8	20.0
511596	12.4	21.6	189508	12.5	19.4	66619	12.6	18.8	518017	12.7	19.9	334971	12.8	21.2	511875	12.8	21.3
306110	12.4	20.7	393741	12.5	21.3	411836	12.6	20.0	30691	12.7	19.1	243535	12.8	19.4	66055	12.8	17.9
72844	12.4	19.4	145092	12.5	18.3	22006	12.6	18.8	2635	12.7	15.8	364558	12.8	20.2	121462	12.8	18.3
516706	12.5	21.2	45283	12.5	18.4	162969	12.6	19.7	256303	12.7	20.6	389787	12.8	20.0	184434	12.8	19.9
14622	12.5	18.0	521906	12.5	21.1	500633	12.6	20.2	488218	12.7	20.9	51373	12.8	18.0	324948	12.8	19.1
15890	12.5	18.8	78537	12.5	18.4	189212	12.6	19.6	452329	12.7	20.1	374871	12.8	20.4	202789	12.8	20.7
160636	12.5	19.0	35739	12.5	17.6	442453	12.6	20.6	435060	12.7	19.5	343536	12.8	20.9	366362	12.8	21.1
206052	12.5	20.5	481762	12.5	21.4	321115	12.6	20.1	152068	12.7	19.5	40721	12.8	18.1	474042	12.8	20.4
211663	12.5	20.2	464118	12.5	20.8	514054	12.6	21.2	359945	12.7	21.1	22132	12.8	18.2	208293	12.8	18.4
234025	12.5	18.3	145503	12.5	19.0	395090	12.6	21.1	97733	12.7	18.9	26319	12.8	17.0	482634	12.8	21.3
423168	12.5	21.0	382103	12.5	21.4	215742	12.6	20.2	17089	12.7	17.7	105751	12.8	19.1	521916	12.8	21.2
516513	12.5	21.4	289559	12.5	19.7	98917	12.6	19.0	218739	12.7	19.9	313109	12.8	19.6	335019	12.8	20.0
244354	12.5	19.0	441315	12.5	20.3	288048	12.6	19.8	189148	12.7	18.8	84409	12.8	18.8	390344	12.8	20.9
421844	12.5	20.2	518045	12.5	20.6	510026	12.6	21.7	224729	12.7	19.8	511025	12.8	19.7	481910	12.9	19.0
73755	12.5	19.3	481628	12.5	19.3	220431	12.6	19.5	503475	12.7	20.3	264260	12.8	20.9	25911	12.9	18.6
353783	12.5	20.4	480093	12.5	21.3	480944	12.6	18.2	228099	12.7	20.2	208147	12.8	19.6	295686	12.9	20.0
522011	12.5	20.2	396144	12.5	19.9	246145	12.6	19.6	491445	12.7	20.8	179640	12.8	19.6	436574	12.9	19.3
465152	12.5	21.2	496761	12.5	20.7	267103	12.6	18.0	250721	12.7	19.7	438331	12.8	20.7	147761	12.9	18.7
264142	12.5	20.0	36611	12.5	18.5	97117	12.6	18.4	11819	12.7	18.3	157643	12.8	20.1	315918	12.9	20.8
388977	12.5	20.8	84488	12.5	19.1	280148	12.6	20.3	479828	12.7	20.8	381747	12.8	18.5	9478	12.9	18.4
23591	12.5	16.7	435802	12.5	19.4	140187	12.6	19.3	513265	12.7	20.2	158758	12.8	17.9	342617	12.9	20.5
259592	12.5	19.7	195598	12.5	20.6	327596	12.6	20.4	135082	12.7	18.2	509171	12.8	21.6	387492	12.9	20.0
346741	12.5	18.0	267164	12.5	20.7	479079	12.6	20.7	193324	12.7	18.3	225769	12.8	19.8	156942	12.9	19.3
353106	12.5	20.7	453513	12.5	21.0	334350	12.6	19.3	150750	12.7	19.3	491636	12.8	19.5	24081	12.9	18.4
149566	12.5	19.6	133552	12.5	19.6	327646	12.6	18.7	506685	12.7	21.0	23433	12.8	18.0	39424	12.9	17.0
113888	12.5	17.5	519184	12.5	19.9	130039	12.6	19.8	519303	12.7	20.5	122109	12.8	19.5	177500	12.9	18.1
453737	12.5	21.1	11351	12.5	17.5	6											

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

Nº	10	V															
60326	12.9	18.1	481947	12.9	21.0	190005	13.0	19.8	100336	13.1	19.5	386777	13.2	20.7	322754	13.3	21.1
66161	12.9	17.9	23865	12.9	17.1	209334	13.0	18.4	407577	13.1	20.3	255076	13.2	19.6	373208	13.3	21.1
116575	12.9	19.9	163967	12.9	18.7	10422	13.0	16.4	483733	13.1	21.3	233104	13.2	18.3	93130	13.3	18.3
467453	12.9	20.9	385718	12.9	20.0	264758	13.1	19.7	336775	13.1	20.2	373630	13.2	19.6	484331	13.3	20.7
180311	12.9	18.9	426992	12.9	21.0	489111	13.1	21.0	420654	13.1	20.3	179598	13.2	19.1	514970	13.3	20.6
322525	12.9	20.2	365778	12.9	19.9	50521	13.1	18.8	12704	13.1	16.3	115698	13.2	19.0	404689	13.3	21.5
165990	12.9	19.8	134733	12.9	19.7	453522	13.1	19.4	206038	13.1	19.3	3325	13.2	16.1	418797	13.3	19.4
71106	12.9	18.5	450463	12.9	20.4	365436	13.1	20.6	54859	13.1	19.0	449072	13.2	21.0	221818	13.3	19.1
260265	12.9	19.3	264409	12.9	20.2	64015	13.1	18.4	41824	13.1	18.1	11514	13.2	16.6	47182	13.3	17.8
347517	12.9	20.4	362539	12.9	20.0	203020	13.1	21.2	4543	13.1	16.3	307486	13.2	19.4	210081	13.3	19.2
511837	12.9	21.4	6931	12.9	16.3	14235	13.1	17.8	23820	13.1	18.6	151965	13.2	18.2	262484	13.3	19.8
461255	12.9	21.1	328514	12.9	20.4	239092	13.1	21.0	118198	13.1	20.3	109282	13.2	18.6	319089	13.3	19.9
277211	12.9	20.5	260100	12.9	19.8	1999	13.1	15.7	163870	13.1	18.5	6910	13.2	17.0	126297	13.3	19.3
392957	12.9	20.2	480577	12.9	21.0	463518	13.1	20.7	134347	13.1	17.9	487362	13.2	21.4	85020	13.3	18.4
17163	12.9	17.6	99151	12.9	17.2	517299	13.1	21.8	373877	13.1	18.7	164995	13.2	18.7	217320	13.3	19.3
206392	12.9	19.1	293277	12.9	20.7	447383	13.1	20.7	6734	13.1	15.5	421885	13.2	21.0	260132	13.3	19.6
73538	12.9	18.1	116212	12.9	19.2	428649	13.1	21.3	412915	13.1	21.3	223323	13.2	19.7	515697	13.3	21.5
154810	12.9	20.2	78064	12.9	19.7	327545	13.1	20.3	220201	13.1	19.5	457987	13.2	20.5	117914	13.3	18.6
94273	12.9	18.5	48949	12.9	17.6	149283	13.1	18.3	171285	13.1	19.2	23713	13.2	19.5	301580	13.3	19.9
43972	12.9	18.1	289487	12.9	20.1	172588	13.1	19.2	389476	13.1	19.5	216101	13.2	19.0	503254	13.3	21.6
86744	12.9	18.6	387749	12.9	19.4	118022	13.1	18.1	265225	13.1	19.7	329172	13.2	20.9	6474	13.3	16.7
477516	12.9	20.5	308918	12.9	19.8	226067	13.1	19.9	41939	13.1	17.4	37068	13.2	18.0	329107	13.3	19.9
389693	12.9	20.2	160605	12.9	17.7	517084	13.1	21.4	195621	13.1	19.7	494463	13.2	19.2	17537	13.3	17.0
79569	12.9	18.5	355809	12.9	20.9	502648	13.1	20.0	295059	13.1	20.7	228007	13.2	19.9	69399	13.3	18.4
516331	12.9	20.3	517923	12.9	20.5	479819	13.1	21.1	275366	13.1	20.9	267681	13.2	19.1	210409	13.3	19.7
387595	12.9	20.1	354378	12.9	19.0	62542	13.1	18.3	209216	13.1	19.2	263234	13.2	19.9	279763	13.3	20.3
32871	12.9	17.5	175248	12.9	20.4	82666	13.1	19.3	188375	13.1	20.6	337962	13.2	19.8	72602	13.3	18.8
326521	12.9	21.0	478904	12.9	20.4	103833	13.1	19.1	378613	13.1	20.5	417549	13.2	20.8	448406	13.3	20.6
40431	12.9	18.0	266025	12.9	20.2	242567	13.1	20.3	312373	13.2	20.5	403913	13.2	20.6	336802	13.3	21.0
347150	12.9	19.8	452457	13.0	20.7	290203	13.1	19.4	173109	13.2	18.2	260312	13.2	19.5	487429	13.3	20.9
437414	12.9	20.4	166924	13.0	21.0	373183	13.1	20.9	396745	13.2	20.0	132393	13.2	20.2	326010	13.3	19.9
381862	12.9	20.4	3776	13.0	15.8	471525	13.1	21.8	322505	13.2	19.5	390225	13.2	19.9	202207	13.3	17.2
487901	12.9	20.0	314489	13.0	20.5	305187	13.1	20.0	510057	13.2	21.8	472943	13.2	21.4	195315	13.3	20.4
240936	12.9	20.0	9459	13.0	17.0	479443	13.1	20.5	49016	13.2	18.1	42242	13.2	18.4	333782	13.3	18.3
433763	12.9	20.1	249406	13.0	20.4	130868	13.1	19.2	514988	13.2	21.4	270229	13.2	19.5	133382	13.3	19.2
231631	12.9	19.6	203192	13.0	19.1	265131	13.1	19.4	479371	13.2	20.2	393185	13.2	21.0	438528	13.3	20.5
335467	12.9	19.5	50613	13.0	18.2	60568	13.1	18.8	226483	13.2	19.4	30513	13.2	17.8	54751	13.3	18.7
281236	12.9	21.1	506868	13.0	20.1	402048	13.1	19.5	60351	13.2	17.3	120569	13.2	20.0	378057	13.3	20.8
205137	12.9	18.6	292283	13.0	19.7	74173	13.1	17.9	297014	13.2	20.7	379622	13.2	20.9	482290	13.3	20.3
212522	12.9	19.8	479770	13.0	20.2	439489	13.1	20.7	110206	13.2	19.8	401351	13.2	20.7	222902	13.3	20.6
294081	12.9	20.6	340242	13.0	18.4	78835	13.1	18.5	333279	13.2	18.9	292275	13.2	19.6	403183	13.3	21.4
201205	12.9	20.2	112795	13.0	19.7	46225	13.1	19.3	156167	13.2	19.4	65123	13.2	19.2	237567	13.3	19.6
382072	12.9	20.6	86612	13.0	16.7	316143	13.1	19.6	223966	13.2	20.1	343262	13.2	19.8	397988	13.3	21.3
62340	12.9	18.8	479625	13.0	21.1	346587	13.1	18.5	296639	13.2	19.7	482567	13.2	20.3	517962	13.3	20.8
81913	12.9	18.0	331221	13.0	19.8	89153	13.1	18.9	518065	13.2	21.2	136351	13.2	19.2	408333	13.3	20.8
262894	12.9	21.1	344666	13.0	19.9	165031	13.1	19.8	37236	13.2	18.9	327509	13.2	20.9	6128	13.3	16.6
90342	12.9	19.7	77480	13.0	19.2	86219	13.1	18.1	206577	13.2	19.6	211708	13.2	19.4	260777	13.3	20.0
211717	12.9	18.9	7289	13.0	16.2	273707	13.1	20.7	422078	13.2	20.6	383558	13.2	19.9	300441	13.3	19.4
178101	12.9	20.3	389477	13.0	19.8	487441	13.1	20.5	57568	13.2	19.2	333352	13.2	18.7	84377	13.3	18.7
241003	12.9	20.0	229839	13.0	20.3	354354	13.1	20.1	24341	13.2	18.9	505892	13.2	20.7	180826	13.3	20.6
2079	12.9	16.3	137819	13.0	17.4	204619	13.1	19.4	401769	13.2	20.0	259460	13.2	18.9	11331	13.3	18.5
219477	12.9	20.3	94166	13.0	19.0	321398	13.1	20.2	412864	13.2	20.4	258668	13.2	20.0	139516	13.3	18.5
126695	12.9	18.2	493702	13.0	21.3	387762	13.1	19.0	269518	13.2	19.4	319370	13.2	20.6	469395	13.3	19.6
487790	12.9	20.5	79104	13.0	19.5	12701	13.1	18.2	325469	13.2	19.7	128462	13.2	19.7	29959	13.3	17.6
2791	12.9	16.3	365008	13.0	20.5	169766	13.1	19.1	248396	13.2	19.6	303081	13.2	19.5	507685	13.3	21.2
158132	12.9	18.2	452757	13.0	21.2	67640	13.1	17.7	388202	13.2	19.7	151700	13.2	20.0	353959	13.3	20.1
454927	12.9	20.6	357759	13.0	19.9	227035	13.1	19.4	261513	13.2	19.9	282445	13.2	20.4	383134	13.3	21.1
170424	12.9	19.2	241991	13.0	20.6	120628	13.1	20.4	60077	13.2	18.4	124276	13.2	19.0	258484	13.3	16.9
151734	12.9	19.4	173821	13.0	19.0	311698	13.1	19.6	19672	13.2	18.0	268729	13.2	20.2	26957	13.3	16.4
90495	12.9	18.2	437647	13.0	20.1	124103	13.1	19.9	79354	13.2	18.8	113125	13.2	18.4	220561	13.3	20.2
443646	12.9	20.2	249094	13.0	20.5	84692	13.1	18.									

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

Nº	10	V															
89546	13.4	18.8	17245	13.4	16.5	263863	13.5	21.6	182830	13.6	19.5	52653	13.7	18.0	90223	13.7	18.7
137578	13.4	19.2	263477	13.4	20.7	348353	13.5	20.2	4085	13.6	16.4	409687	13.7	21.3	264097	13.7	20.1
172290	13.4	19.1	460241	13.4	21.0	31355	13.5	17.0	370558	13.6	20.0	483185	13.7	20.4	339277	13.7	19.1
335749	13.4	20.1	159041	13.4	20.0	361958	13.5	20.1	483527	13.6	20.9	72887	13.7	17.7	50120	13.7	18.3
332874	13.4	20.3	27002	13.4	19.4	449763	13.5	21.1	432256	13.6	18.9	117035	13.7	19.2	70753	13.7	17.9
359967	13.4	19.9	333559	13.4	20.2	308909	13.5	18.9	155588	13.6	19.8	518022	13.7	20.6	223158	13.7	19.5
207204	13.4	19.8	492848	13.4	19.9	474475	13.5	19.3	67678	13.6	17.1	476878	13.7	20.1	7514	13.7	17.9
276227	13.4	20.2	55850	13.4	19.5	9736	13.5	17.4	303122	13.6	20.2	429154	13.7	20.8	494232	13.7	18.8
20698	13.4	18.0	27335	13.4	17.9	13951	13.5	18.1	366247	13.6	20.7	13171	13.7	17.5	66065	13.7	18.4
278218	13.4	21.2	482956	13.5	20.2	359075	13.5	20.7	216477	13.6	18.9	3548	13.7	16.3	229396	13.7	19.6
189207	13.4	19.7	352186	13.5	19.4	180960	13.5	19.5	266180	13.6	19.8	120362	13.7	18.2	325704	13.7	20.2
517459	13.4	21.5	73411	13.5	18.5	60683	13.5	19.1	99885	13.6	19.9	407173	13.7	20.4	140299	13.8	19.8
5104	13.4	16.0	482396	13.5	21.5	195309	13.5	19.5	213996	13.6	19.7	310270	13.7	20.1	107777	13.8	19.1
34324	13.4	18.0	331485	13.5	20.0	310004	13.5	21.1	211721	13.6	20.3	328216	13.7	20.6	328837	13.8	19.6
150131	13.4	18.8	196898	13.5	19.2	157449	13.5	18.5	253461	13.6	19.1	13183	13.7	17.4	395592	13.8	20.5
181443	13.4	19.7	325869	13.5	20.0	44395	13.5	18.5	251272	13.6	20.0	303158	13.7	19.8	236331	13.8	21.3
8238	13.4	18.2	23622	13.5	18.3	112606	13.5	18.2	287040	13.6	20.2	442476	13.7	20.3	310154	13.8	19.9
247119	13.4	18.1	150009	13.5	20.3	477505	13.5	21.1	387555	13.6	20.1	505420	13.7	19.6	36119	13.8	18.6
79389	13.4	18.8	32955	13.5	17.9	149095	13.5	20.1	456748	13.6	20.6	442872	13.7	21.4	350008	13.8	20.2
478894	13.4	20.1	469748	13.5	18.9	124996	13.5	19.4	21502	13.6	17.5	390190	13.7	20.3	132474	13.8	19.5
401272	13.4	20.1	435206	13.5	19.1	215679	13.5	18.8	508984	13.6	21.6	164952	13.7	19.0	374762	13.8	18.9
78432	13.4	19.5	443178	13.5	20.9	131086	13.5	19.8	454604	13.6	19.4	509169	13.7	22.4	24574	13.8	18.7
43530	13.4	18.3	95367	13.5	19.2	399083	13.5	21.0	28449	13.6	17.9	514991	13.7	21.7	306189	13.8	19.2
368473	13.4	19.3	458113	13.5	20.0	248496	13.5	20.3	231588	13.6	20.3	315910	13.7	20.4	128854	13.8	18.4
340086	13.4	19.7	126291	13.5	19.2	368111	13.5	21.2	459491	13.6	21.6	425021	13.7	20.8	370544	13.8	18.5
362872	13.4	20.3	297084	13.5	20.5	123598	13.5	19.8	356191	13.6	21.1	169780	13.7	18.7	431718	13.8	21.8
313323	13.4	20.1	259964	13.5	20.3	70105	13.5	19.4	150233	13.6	19.6	130427	13.7	19.4	115187	13.8	18.0
254834	13.4	19.3	88556	13.5	19.7	142222	13.5	19.7	223461	13.6	19.5	472117	13.7	19.5	487174	13.8	20.8
515831	13.4	20.5	381818	13.5	21.5	510106	13.5	19.5	513836	13.6	21.4	382119	13.7	21.1	378645	13.8	21.0
283174	13.4	20.0	224761	13.5	19.9	126974	13.5	17.8	221840	13.6	20.3	408485	13.7	21.2	32545	13.8	16.7
435107	13.4	21.5	436206	13.5	20.1	390360	13.5	20.9	288159	13.6	19.0	409653	13.7	21.3	234728	13.8	19.6
349995	13.4	20.7	407032	13.5	20.4	264596	13.6	19.6	405285	13.6	20.9	54770	13.7	17.0	410138	13.8	21.3
85968	13.4	17.5	30329	13.5	17.7	61726	13.6	18.5	151387	13.6	19.7	514380	13.7	19.6	225705	13.8	19.3
151413	13.4	19.4	383845	13.5	19.8	383310	13.6	21.4	225227	13.6	19.4	91157	13.7	18.7	487057	13.8	20.9
285004	13.4	20.9	473107	13.5	21.5	147567	13.6	19.0	389362	13.6	21.0	288704	13.7	19.4	357720	13.8	20.4
220105	13.4	19.5	257007	13.5	19.2	144786	13.6	20.1	254499	13.6	20.9	454697	13.7	20.3	390941	13.8	19.5
58220	13.4	18.8	427788	13.5	20.7	96743	13.6	17.6	186048	13.6	19.2	96148	13.7	17.5	225080	13.8	20.4
362294	13.4	20.0	332714	13.5	20.1	100027	13.6	17.8	14675	13.6	17.9	339200	13.7	19.9	513906	13.8	20.3
316139	13.4	19.7	271173	13.5	20.8	204485	13.6	19.7	447244	13.6	21.2	208788	13.7	19.3	59642	13.8	17.0
414001	13.4	21.2	115176	13.5	18.6	74097	13.6	17.6	441801	13.6	20.5	450244	13.7	20.5	261511	13.8	19.8
355404	13.4	20.7	59910	13.5	18.0	185575	13.6	20.6	240186	13.6	19.4	443637	13.7	20.0	1171	13.8	13.4
446950	13.4	20.2	400493	13.5	21.4	8338	13.6	17.2	423821	13.6	20.8	392116	13.7	21.2	349145	13.8	19.4
1114	13.4	13.9	25584	13.5	18.4	451980	13.6	20.4	373628	13.6	19.1	57611	13.7	18.7	514644	13.8	21.8
327473	13.4	20.8	39352	13.5	19.2	491523	13.6	19.2	317736	13.6	19.9	41379	13.7	18.5	237602	13.8	18.6
222243	13.4	20.4	365962	13.5	20.0	166254	13.6	19.5	353086	13.6	19.6	256774	13.7	20.7	444172	13.8	21.8
357734	13.4	20.6	316158	13.5	19.1	244970	13.6	18.3	5581	13.6	17.8	2826	13.7	15.8	183671	13.8	19.7
347106	13.4	20.7	321037	13.5	20.6	472544	13.6	20.4	484438	13.6	20.8	205149	13.7	19.1	154402	13.8	20.1
30102	13.4	17.7	304321	13.5	20.1	295181	13.6	20.1	25026	13.6	17.2	521626	13.7	20.8	206395	13.8	18.3
102516	13.4	20.2	111201	13.5	19.6	337285	13.6	19.5	73038	13.6	19.3	395174	13.7	21.3	509206	13.8	19.4
202854	13.4	19.9	284246	13.5	21.4	386090	13.6	19.3	142376	13.6	19.8	167686	13.7	19.4	145794	13.8	17.7
85417	13.4	18.8	290406	13.5	20.3	16417	13.6	17.0	52252	13.6	19.3	396029	13.7	20.4	329519	13.8	18.3
340391	13.4	19.2	477763	13.5	21.1	197064	13.6	19.0	236615	13.6	20.5	359597	13.7	20.9	395559	13.8	20.8
97232	13.4	19.5	103549	13.5	18.3	250730	13.6	20.1	237986	13.6	18.1	272335	13.7	19.0	130430	13.8	17.5
108720	13.4	18.9	331233	13.5	20.7	445637	13.6	20.2	130386	13.6	16.2	495620	13.7	22.0	236426	13.8	19.7
361236	13.4	21.2	54898	13.5	17.3	517694	13.6	20.2	133023	13.6	17.4	112108	13.7	19.6	280980	13.8	19.2
461231	13.4	20.5	245808	13.5	19.7	287148	13.6	19.7	27361	13.6	17.9	350018	13.7	21.0	65606	13.8	18.7
150032	13.4	19.9	81564	13.5	19.6	272231	13.6	19.2	434289	13.6	20.5	343640	13.7	20.6	79011	13.8	17.5
4788	13.4	15.6	64320	13.5	19.5	519149	13.6	21.5	13227	13.6	18.4	355403	13.7	20.6	397944	13.8	20.7
13440	13.4	18.6	260235	13.5	19.6	395890	13.6	19.9	339132	13.6	19.9	243305	13.7	20.1	125161	13.8	19.5
396408	13.4	20.9	242323	13.5	18.9	19292	13.6	18.2	255115	13.7	20.9	316404	13.7	21.2	88074	13.8	18.5
467548	13.4	20.0	81609	13.5	18.1	214752	13.6	2									

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
198143	13.8	19.8	1693	13.9	14.1	95451	13.9	19.8	512130	14.1	20.4	393735	14.2	19.9	171618	14.2	19.7
243605	13.8	20.0	220565	13.9	20.5	108786	13.9	18.2	408512	14.1	20.3	214037	14.2	19.6	305337	14.2	19.8
266996	13.8	19.9	285279	13.9	18.1	482603	13.9	19.9	328852	14.1	20.0	130312	14.2	19.8	80615	14.2	18.6
441902	13.8	21.3	375780	13.9	19.9	349788	13.9	19.4	142384	14.1	19.6	359271	14.2	20.6	304276	14.2	19.9
182153	13.8	19.4	63263	13.9	18.7	400610	13.9	21.3	21627	14.1	18.5	515979	14.2	20.7	257762	14.2	20.1
40722	13.8	17.4	308966	13.9	19.7	465007	13.9	20.1	394808	14.1	21.0	103931	14.2	18.5	184543	14.2	19.8
181198	13.8	19.5	239697	13.9	20.4	450305	13.9	20.0	131091	14.1	18.9	53105	14.2	18.0	470273	14.2	19.9
21758	13.8	16.8	204026	13.9	19.6	388044	14.0	21.0	49047	14.1	18.2	92303	14.2	18.8	466784	14.2	19.9
172651	13.8	19.6	508327	13.9	20.8	403154	14.0	20.5	21369	14.1	17.9	126930	14.2	20.2	319129	14.2	19.8
260300	13.8	19.4	127654	13.9	20.4	23780	14.0	17.3	154220	14.1	19.6	404032	14.2	20.4	509594	14.2	23.3
97517	13.8	17.8	55662	13.9	19.0	507370	14.0	21.2	375681	14.1	20.4	46807	14.2	17.6	517052	14.2	20.6
421853	13.8	20.9	493638	13.9	21.1	435632	14.0	20.5	32963	14.1	18.2	327644	14.2	19.0	58164	14.2	17.3
331050	13.8	19.8	405207	13.9	21.1	249256	14.0	20.6	149326	14.1	18.2	123738	14.2	19.2	355302	14.2	19.5
515493	13.8	21.2	236454	13.9	18.6	208851	14.0	19.4	298063	14.1	20.3	330587	14.2	21.1	367274	14.2	20.7
246689	13.8	20.3	330661	13.9	19.2	400691	14.0	19.7	487457	14.1	21.3	145057	14.2	19.2	1583	14.2	15.3
171122	13.8	19.9	512026	13.9	20.6	76473	14.0	18.8	353679	14.1	20.7	409372	14.2	20.8	379541	14.2	21.0
403758	13.8	19.9	265965	13.9	19.6	240363	14.0	20.3	442425	14.1	20.6	168997	14.2	19.5	29923	14.2	17.4
60555	13.8	18.5	48080	13.9	17.7	66591	14.0	18.6	39279	14.1	18.2	195522	14.2	19.6	146704	14.2	19.2
125074	13.8	18.5	393080	13.9	20.5	167416	14.0	18.5	263448	14.1	20.0	79109	14.2	19.1	149741	14.2	18.6
255312	13.8	18.9	58580	13.9	17.6	443309	14.0	20.6	66577	14.1	18.2	6332	14.2	16.3	435833	14.2	20.2
103890	13.8	17.8	147488	13.9	18.9	223438	14.0	19.8	432862	14.1	19.6	177312	14.2	19.7	401227	14.2	20.3
465863	13.8	20.0	43102	13.9	16.9	483612	14.0	20.8	396323	14.1	20.4	475813	14.2	20.8	391880	14.2	20.8
344705	13.8	18.8	513464	13.9	21.6	348379	14.0	21.2	147697	14.1	18.8	328625	14.2	20.9	475229	14.2	21.0
515390	13.8	21.3	452035	13.9	20.4	366476	14.0	21.4	47904	14.1	17.9	24133	14.2	19.0	364464	14.2	21.7
451363	13.8	20.1	4357733	13.9	21.0	515514	14.0	21.6	429108	14.1	21.1	65224	14.2	19.7	253523	14.2	19.3
389102	13.8	18.6	171182	13.9	20.0	443663	14.0	20.1	126854	14.1	20.2	403950	14.2	20.8	183688	14.2	20.0
510295	13.8	20.4	259849	13.9	20.7	513274	14.0	19.6	115864	14.1	19.6	383509	14.2	20.0	316953	14.2	20.1
69739	13.9	19.2	449741	13.9	20.5	95425	14.0	18.7	381736	14.1	18.8	227170	14.2	19.0	80285	14.2	19.2
324170	13.9	21.7	99851	13.9	18.9	41863	14.0	17.6	378214	14.1	21.5	296821	14.2	20.1	258462	14.2	19.0
118643	13.9	18.9	23714	13.9	18.9	373159	14.0	21.2	309303	14.1	18.8	315117	14.2	20.5	490894	14.2	21.4
223187	13.9	19.5	349316	13.9	19.9	60655	14.0	18.6	159245	14.1	20.7	73177	14.2	18.5	121841	14.2	18.8
147667	13.9	20.1	330215	13.9	19.7	279542	14.0	19.9	455458	14.1	20.7	515399	14.2	20.3	68851	14.2	19.4
24132	13.9	18.4	57940	13.9	19.0	143427	14.0	19.8	446763	14.1	20.2	44261	14.2	17.7	365802	14.2	20.1
399592	13.9	19.1	210767	13.9	18.2	495307	14.0	20.9	10753	14.1	17.4	523238	14.2	21.0	304228	14.2	20.2
447427	13.9	20.8	215403	13.9	19.5	433161	14.0	19.3	212993	14.1	18.6	432730	14.2	22.3	221401	14.2	20.7
95588	13.9	18.1	13322	13.9	16.6	144921	14.0	19.6	432664	14.1	21.3	126887	14.2	19.6	284678	14.2	19.0
50437	13.9	18.8	185368	13.9	18.4	517114	14.0	20.6	209201	14.1	19.4	510051	14.2	22.0	518318	14.2	21.3
92177	13.9	18.4	381858	13.9	20.5	426635	14.0	20.5	156208	14.1	19.2	174665	14.2	19.2	407115	14.2	20.3
78611	13.9	18.7	289646	13.9	20.4	481951	14.0	21.0	404940	14.1	20.2	53534	14.2	18.9	216471	14.2	19.2
506835	13.9	20.1	347997	13.9	18.7	209691	14.0	20.4	472006	14.1	20.4	301396	14.2	20.0	455593	14.3	19.6
517125	13.9	21.6	66709	13.9	17.9	233924	14.0	19.6	391632	14.1	20.2	345014	14.2	19.9	86852	14.3	18.7
358737	13.9	17.8	201153	13.9	21.1	402520	14.0	20.5	43227	14.1	17.9	481049	14.2	21.1	164531	14.3	18.3
17974	13.9	16.6	220666	13.9	18.5	494515	14.0	20.6	133243	14.1	19.0	70705	14.2	19.0	175054	14.3	20.5
408820	13.9	21.1	99551	13.9	19.4	352214	14.0	19.7	259702	14.1	19.1	25270	14.2	17.3	274953	14.3	20.4
512180	13.9	20.7	412898	13.9	20.1	267004	14.0	16.3	298626	14.1	20.1	451303	14.2	20.7	436494	14.3	21.6
376342	13.9	20.3	164106	13.9	18.2	217729	14.0	19.0	324216	14.1	19.8	185396	14.2	20.4	183707	14.3	19.8
405128	13.9	20.2	167162	13.9	19.0	365810	14.0	19.9	158094	14.1	17.9	453526	14.2	20.5	189947	14.3	19.3
400692	13.9	20.7	141553	13.9	19.8	166586	14.0	19.8	473720	14.1	19.9	413759	14.2	20.5	14368	14.3	16.7
151880	13.9	19.0	373506	13.9	20.9	139650	14.0	19.1	350925	14.1	19.5	368940	14.2	18.2	467406	14.3	18.9
244748	13.9	18.1	516515	13.9	21.0	136705	14.0	18.2	403986	14.1	20.0	65848	14.2	20.9	206155	14.3	19.2
52359	13.9	16.2	475922	13.9	21.4	322524	14.0	20.0	342513	14.1	20.4	408383	14.2	20.3	288903	14.3	20.2
222915	13.9	19.3	234320	13.9	20.1	254158	14.0	20.2	179764	14.1	18.8	376094	14.2	20.0	357681	14.3	20.0
236463	13.9	20.7	443430	13.9	20.1	196810	14.0	20.0	120705	14.1	19.9	446266	14.2	20.8	461224	14.3	19.8
230652	13.9	19.4	96270	13.9	19.4	21139	14.0	18.8	266088	14.1	19.1	265282	14.2	20.5	80415	14.3	19.5
223589	13.9	21.0	446082	13.9	20.9	102362	14.0	19.6	236605	14.1	19.8	439814	14.2	19.3	426074	14.3	21.5
507397	13.9	22.0	304423	13.9	20.0	184028	14.0	19.1	153252	14.1	20.3	393717	14.2	19.0	191424	14.3	19.1
225107	13.9	20.5	283642	13.9	20.5	515331	14.0	21.4	440873	14.1	20.6	302780	14.2	19.6	211795	14.3	20.9
302724	13.9	20.3	222173	13.9	20.4	25751	14.0	17.9	405337	14.1	20.2	478987	14.2	17.2	279553	14.3	20.3
451639	13.9	20.1	393156	13.9	21.4	95208	14.0	19.0	145808	14.1	18.5	35873	14.2	19.2	142449	14.3	19.2
115211	13.9	18.4	102037	13.9	19.0	262492	14.1	20.3	274212	14.1	19.6	469197	14.2	20.7	252855	14.3	20.2
403182	13.9	19.6	394625	13.9	20.4</td												

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
515651	14.3	21.8	487858	14.4	21.0	123993	14.4	18.3	364106	14.5	19.5	31491	14.6	17.7	226358	14.7	20.0
121325	14.3	17.5	303050	14.4	19.5	42161	14.4	19.2	42441	14.5	17.1	296788	14.6	20.2	298187	14.7	19.3
136370	14.3	19.7	403446	14.4	20.3	50382	14.4	17.9	277084	14.5	20.7	513490	14.6	21.3	424529	14.7	21.5
196969	14.3	19.2	520159	14.4	20.9	514564	14.4	21.5	406970	14.5	20.5	258508	14.6	20.0	75092	14.7	18.5
485375	14.3	21.4	182094	14.4	20.4	482601	14.4	20.9	516096	14.5	21.1	165609	14.6	19.6	272258	14.7	19.4
261775	14.3	20.3	380748	14.4	20.2	402499	14.4	20.4	35078	14.5	18.1	515492	14.6	21.3	71685	14.7	18.5
100282	14.3	19.4	480829	14.4	19.5	29862	14.4	18.4	431643	14.5	20.8	171581	14.6	19.0	236514	14.7	20.9
1044458	14.3	17.5	97799	14.4	18.5	168382	14.4	19.5	265315	14.5	20.4	351392	14.6	19.5	461181	14.7	20.0
86315	14.3	18.0	242955	14.4	19.4	471904	14.4	21.5	139262	14.5	19.8	304262	14.6	20.6	197974	14.7	20.4
28698	14.3	18.0	485232	14.4	20.7	490287	14.4	20.6	313339	14.5	20.5	517871	14.6	21.4	135857	14.7	18.4
352224	14.3	20.7	240341	14.4	18.3	519509	14.4	22.0	265565	14.5	20.0	117218	14.6	18.3	457142	14.7	19.2
151469	14.3	19.7	232348	14.4	18.5	451198	14.4	20.9	297989	14.5	20.9	276290	14.6	18.3	165569	14.7	19.8
476769	14.3	20.8	252821	14.4	21.0	521256	14.5	21.4	487203	14.5	20.5	135669	14.6	19.5	435174	14.7	20.0
188429	14.3	20.7	436138	14.4	20.1	293421	14.5	20.0	298620	14.5	19.9	222184	14.6	21.0	493783	14.7	20.5
226990	14.3	19.2	311577	14.4	19.8	376497	14.5	20.9	312478	14.5	19.8	370527	14.6	20.4	350937	14.7	20.3
479858	14.3	20.5	249053	14.4	19.2	73294	14.5	18.5	408444	14.5	19.7	199759	14.6	19.6	389719	14.7	19.6
103113	14.3	19.2	8556	14.4	14.7	181517	14.5	20.3	139116	14.5	19.0	303650	14.6	19.7	356284	14.7	21.0
42127	14.3	18.6	142482	14.4	19.5	274204	14.5	21.3	487860	14.5	21.0	450311	14.6	19.0	116355	14.7	18.7
326823	14.3	20.1	361517	14.4	19.7	448579	14.5	20.8	69438	14.5	19.6	172719	14.6	19.5	397305	14.7	20.8
425794	14.3	21.9	325486	14.4	20.0	330553	14.5	20.6	233711	14.5	19.4	73015	14.6	16.8	385313	14.7	19.6
127385	14.3	19.1	385845	14.4	20.5	483972	14.5	21.8	137130	14.5	20.0	136070	14.6	18.1	62669	14.7	18.9
509937	14.3	19.4	444613	14.4	19.8	426098	14.5	20.6	432641	14.5	19.8	350196	14.6	20.1	327711	14.7	19.0
394821	14.3	20.4	381870	14.4	20.1	521999	14.5	21.5	509269	14.5	20.7	44986	14.6	17.8	296723	14.7	21.0
367588	14.3	19.9	292913	14.4	19.8	303593	14.5	20.0	351198	14.5	20.4	328934	14.6	20.9	518036	14.7	20.3
3194	14.3	16.1	445342	14.4	20.0	212290	14.5	19.1	131644	14.5	17.7	516253	14.6	20.7	258022	14.7	20.7
410892	14.3	20.0	355822	14.4	20.5	77400	14.5	19.2	211210	14.5	19.2	164501	14.6	17.7	304290	14.7	20.3
265261	14.3	20.7	291843	14.4	20.6	59285	14.5	17.0	55571	14.5	18.7	86806	14.6	20.1	445709	14.7	21.2
54243	14.3	18.9	271907	14.4	19.6	152094	14.5	18.7	35663	14.5	17.3	49476	14.6	17.5	203000	14.7	18.8
441156	14.3	21.1	507374	14.4	21.8	299029	14.5	20.3	36455	14.5	17.7	407046	14.6	20.4	451833	14.7	20.3
27321	14.3	16.9	365615	14.4	20.2	80502	14.5	19.0	405519	14.5	20.3	240557	14.6	20.1	403734	14.7	19.5
481621	14.3	20.6	197406	14.4	20.3	26280	14.5	17.2	311677	14.6	19.6	296102	14.6	19.9	245844	14.7	19.4
134326	14.3	17.4	407451	14.4	20.3	514971	14.5	21.0	422041	14.6	20.2	217515	14.6	19.9	92273	14.7	17.4
331310	14.3	20.5	161010	14.4	19.8	278095	14.5	20.8	309933	14.6	20.8	373637	14.6	21.2	421909	14.7	20.7
161042	14.3	19.4	102869	14.4	19.0	226036	14.5	19.7	267166	14.6	20.1	244686	14.6	20.1	443413	14.7	20.9
29025	14.3	18.3	48455	14.4	17.5	30763	14.5	19.6	26106	14.6	17.0	315019	14.6	19.6	263638	14.7	19.6
372830	14.3	19.4	160226	14.4	19.5	294058	14.5	19.6	454558	14.6	20.7	310437	14.6	19.9	495079	14.7	23.0
18216	14.3	18.4	159100	14.4	20.0	53771	14.5	18.9	102113	14.6	17.3	181332	14.6	18.7	114786	14.7	17.6
522141	14.3	20.6	76911	14.4	18.9	29842	14.5	18.4	156921	14.6	20.3	267916	14.6	21.0	193380	14.7	18.7
330218	14.3	20.1	202985	14.4	20.1	77539	14.5	19.2	301476	14.6	20.4	2259	14.6	15.3	56349	14.7	16.5
393111	14.3	19.9	177748	14.4	19.6	420759	14.5	20.0	224062	14.6	20.7	173275	14.6	18.7	155346	14.7	20.9
45607	14.3	18.9	113853	14.4	17.3	207745	14.5	18.9	487275	14.6	19.9	440731	14.6	20.5	145096	14.7	19.9
45590	14.3	17.8	19017	14.4	18.9	457926	14.5	20.5	361344	14.6	20.5	239782	14.6	20.4	77931	14.7	18.5
248903	14.3	20.0	432425	14.4	18.8	404985	14.5	20.3	348277	14.6	20.4	487207	14.6	20.3	477771	14.7	21.0
161229	14.3	19.4	63291	14.4	19.5	4695	14.5	15.2	79603	14.6	17.8	447715	14.6	21.5	51537	14.7	20.6
181766	14.3	20.6	104262	14.4	18.6	448595	14.5	20.1	471979	14.6	20.8	130322	14.6	17.7	169553	14.7	19.0
482627	14.3	20.5	363690	14.4	20.0	516500	14.5	21.0	283019	14.6	20.2	395927	14.6	20.6	29538	14.7	16.8
33362	14.3	18.4	520124	14.4	21.1	35860	14.5	18.7	305163	14.6	20.7	374019	14.7	20.4	174616	14.7	19.3
232221	14.3	20.7	266562	14.4	20.4	159061	14.5	20.0	60219	14.6	19.0	477077	14.7	21.2	267710	14.7	19.7
122044	14.3	19.6	169058	14.4	19.2	149381	14.5	19.6	293584	14.6	20.1	15326	14.7	18.3	9548	14.7	17.3
95650	14.3	18.6	476564	14.4	19.2	300394	14.5	20.4	156707	14.6	20.2	286694	14.7	20.4	172942	14.7	19.7
212394	14.3	20.5	511365	14.4	21.4	394543	14.5	19.4	487337	14.6	19.8	292902	14.7	18.0	334826	14.7	20.6
240977	14.3	20.3	521781	14.4	19.9	26482	14.5	17.2	50535	14.6	18.4	388600	14.7	20.6	291610	14.7	20.5
472402	14.3	21.8	77387	14.4	18.7	287960	14.5	19.4	365798	14.6	19.3	305321	14.7	19.8	356063	14.7	21.1
521739	14.3	21.0	452545	14.4	18.4	89954	14.5	18.6	29835	14.6	18.2	225363	14.7	20.0	96457	14.7	18.4
318356	14.3	19.2	171449	14.4	18.3	159304	14.5	19.2	297371	14.6	19.6	357389	14.7	19.1	475350	14.7	20.7
447570	14.3	20.1	324217	14.4	19.8	317314	14.5	20.2	148302	14.6	19.2	234735	14.7	20.4	148535	14.7	19.1
300986	14.3	20.6	225043	14.4	20.0	479815	14.5	21.4	477083	14.6	20.0	79153	14.7	20.0	41134	14.7	19.4
422098	14.3	19.8	23754	14.4	19.0	49990	14.5	18.3	240942	14.6	19.8	369498	14.7	18.9	344451	14.7	20.0
148101	14.3	19.1	297296	14.4	18.4	53107	14.5	19.1	8060	14.6	17.4	184050	14.7	20.7	114723	14.7	19.3
405751	14.3	21.2	311109	14.4	20.1	287358	14.5	19.4	317790	14.6	20.3	91686	14.7	18.7	521637	14.7	21.2
485211	14.3	20.2	298157	14.4	19.2	500											

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

Nº	10	V															
320252	14.8	21.2	159324	14.8	20.7	12044	14.9	15.6	328958	15.0	20.2	148011	15.1	19.5	520452	15.2	21.2
233578	14.8	19.2	136030	14.8	18.7	123571	14.9	18.1	21070	15.0	17.4	96509	15.1	18.9	80201	15.2	18.9
315109	14.8	21.0	167337	14.8	20.4	175406	14.9	19.7	398527	15.0	20.4	59327	15.1	18.5	74030	15.2	18.8
234071	14.8	18.2	361894	14.8	19.9	523735	14.9	21.2	98950	15.0	18.9	448516	15.1	20.5	157822	15.2	20.2
99044	14.8	19.8	476697	14.8	19.9	169771	14.9	18.5	348742	15.0	21.5	396832	15.1	19.8	295657	15.2	19.7
271020	14.8	20.2	105476	14.8	18.7	505478	14.9	23.8	431848	15.0	19.9	479953	15.1	21.0	361039	15.2	20.1
396713	14.8	20.0	212540	14.8	19.8	474212	14.9	20.3	49447	15.0	18.7	255854	15.1	19.9	315864	15.2	20.4
99103	14.8	20.5	228443	14.8	18.8	73544	14.9	18.8	258213	15.0	19.9	483407	15.1	19.2	216755	15.2	19.5
431654	14.8	21.8	460975	14.8	20.4	405864	14.9	20.8	324844	15.0	19.3	480739	15.1	20.1	99552	15.2	18.6
206586	14.8	20.0	465288	14.9	20.4	112579	14.9	18.1	56094	15.0	18.6	83239	15.1	19.0	42518	15.2	16.7
213448	14.8	19.1	436531	14.9	20.4	441792	14.9	20.6	259738	15.0	20.3	276439	15.1	21.0	168430	15.2	19.5
73283	14.8	18.4	213484	14.9	19.6	331482	14.9	18.2	383729	15.0	20.6	339267	15.1	19.9	414974	15.2	21.3
381134	14.8	19.9	513144	14.9	20.3	360844	14.9	19.6	374730	15.0	19.9	270236	15.1	18.9	228980	15.2	19.3
107673	14.8	18.0	484879	14.9	20.4	304434	14.9	19.8	86723	15.0	19.4	454530	15.1	20.8	388828	15.2	20.5
127581	14.8	19.9	469718	14.9	22.6	75697	14.9	19.4	307086	15.0	19.5	25987	15.1	19.1	135603	15.2	19.7
24524	14.8	16.9	405220	14.9	19.7	48215	14.9	18.5	517931	15.0	20.7	259848	15.1	20.0	313024	15.2	20.2
362321	14.8	19.6	141987	14.9	19.1	262828	14.9	20.3	96849	15.0	18.7	416408	15.1	19.3	171059	15.2	19.1
491133	14.8	20.5	168871	14.9	18.5	40494	14.9	18.2	63182	15.0	17.9	129075	15.1	19.5	22709	15.2	17.7
356642	14.8	20.4	516773	14.9	20.3	275928	14.9	19.1	234375	15.0	18.0	249719	15.1	19.6	84234	15.2	18.7
307531	14.8	20.8	321023	14.9	20.3	395051	14.9	20.5	257606	15.0	18.9	315932	15.1	20.5	432600	15.2	19.3
206396	14.8	19.1	166365	14.9	19.4	301515	14.9	20.2	379918	15.0	20.6	319332	15.1	19.8	353592	15.2	20.5
100618	14.8	17.8	75079	14.9	16.1	111438	14.9	19.7	489448	15.0	20.8	519146	15.1	20.0	423490	15.2	21.2
518064	14.8	20.6	72725	14.9	18.8	156688	14.9	20.9	2346	15.0	14.5	510133	15.1	20.1	479985	15.2	20.4
385702	14.8	19.9	372354	14.9	21.3	335703	14.9	20.1	403128	15.0	21.4	428655	15.1	21.3	181033	15.2	19.2
176126	14.8	20.2	517093	14.9	20.5	394598	14.9	19.7	351144	15.0	20.1	167407	15.1	19.3	333099	15.2	20.0
231572	14.8	20.2	175333	14.9	19.9	411907	14.9	21.2	260090	15.0	20.5	342378	15.1	20.2	266768	15.2	19.7
437960	14.8	20.7	120711	14.9	19.7	228004	14.9	19.9	390563	15.0	20.4	98538	15.1	18.1	326540	15.2	20.3
484848	14.8	20.5	304159	14.9	18.8	236853	14.9	18.1	373956	15.0	20.8	344140	15.1	19.5	188838	15.2	19.2
165874	14.8	19.3	187103	14.9	18.3	168676	14.9	20.3	91912	15.0	19.1	403032	15.1	22.0	470079	15.2	20.3
7760	14.8	15.5	102962	14.9	19.4	10007	14.9	16.7	325679	15.0	20.2	515628	15.1	20.8	426110	15.2	20.9
15500	14.8	18.2	432252	14.9	19.3	63176	14.9	19.2	162012	15.0	18.8	513250	15.1	21.2	286700	15.2	19.8
337270	14.8	18.6	513976	14.9	21.5	261254	14.9	20.9	220805	15.0	19.2	480651	15.1	20.0	99275	15.2	18.6
31921	14.8	16.4	38753	14.9	19.0	331714	14.9	20.4	49699	15.0	17.9	149709	15.1	20.2	382616	15.2	21.6
42886	14.8	17.9	140538	14.9	18.8	514497	14.9	19.9	314496	15.0	18.9	395166	15.1	20.1	87136	15.2	18.2
288661	14.8	20.2	96335	14.9	19.3	493908	14.9	20.4	359975	15.0	20.3	455046	15.1	20.8	176238	15.2	19.5
190940	14.8	19.5	277369	14.9	19.9	67264	14.9	19.3	353079	15.0	19.7	50799	15.1	18.2	135597	15.2	19.5
216013	14.8	19.2	510070	14.9	21.1	512736	14.9	19.8	434256	15.0	19.7	281218	15.1	21.4	225077	15.2	19.3
86097	14.8	18.4	224100	14.9	20.1	346344	14.9	20.2	519029	15.0	20.0	32544	15.1	18.2	392222	15.2	21.1
392794	14.8	20.3	340928	14.9	21.9	232126	14.9	19.7	289662	15.0	20.4	511979	15.1	20.7	103798	15.2	18.4
286635	14.8	20.1	366666	14.9	19.1	123973	14.9	19.7	449023	15.1	20.4	322771	15.1	20.7	157024	15.2	19.2
487024	14.8	21.0	509651	14.9	21.6	429573	14.9	20.7	156245	15.1	19.8	244363	15.1	20.4	1059	15.2	14.3
355286	14.8	20.9	285817	14.9	20.3	44445	14.9	17.4	204562	15.1	19.6	268830	15.1	20.2	291619	15.2	20.6
227875	14.8	20.7	76899	14.9	19.4	139540	14.9	19.3	221009	15.1	19.8	208121	15.1	19.4	484257	15.2	20.8
325415	14.8	20.4	398047	14.9	20.8	86704	14.9	19.5	284513	15.1	19.5	332690	15.1	20.3	430173	15.2	20.4
488515	14.8	23.3	514464	14.9	20.8	261595	14.9	20.2	220523	15.1	20.3	89960	15.1	18.9	441658	15.2	20.4
135486	14.8	18.0	450535	14.9	21.5	477267	14.9	19.9	163937	15.1	19.0	53081	15.1	18.5	49706	15.2	17.8
139009	14.8	19.2	291142	14.9	20.1	326276	14.9	20.6	478714	15.1	20.4	44551	15.1	17.5	333974	15.2	20.4
343866	14.8	20.8	342634	14.9	21.0	57153	14.9	18.6	57684	15.1	19.0	162902	15.1	17.8	327152	15.2	19.9
412798	14.8	20.2	410648	14.9	20.9	454647	14.9	21.2	203045	15.1	20.8	202244	15.1	18.7	110106	15.2	19.3
49110	14.8	18.5	59182	14.9	18.7	326578	14.9	20.3	794	15.1	15.2	288411	15.1	20.4	396918	15.2	21.6
404591	14.8	20.7	128922	14.9	18.6	440925	14.9	20.7	268883	15.1	20.3	514981	15.1	21.5	288081	15.2	19.8
446146	14.8	20.5	484024	14.9	20.1	6280	14.9	15.2	212964	15.1	20.4	173687	15.1	19.4	396071	15.2	20.0
60820	14.8	19.5	127072	14.9	18.8	116165	14.9	18.8	307954	15.1	20.4	410958	15.1	21.1	304438	15.2	20.1
490536	14.8	20.5	484918	14.9	20.3	225127	14.9	20.3	484992	15.1	20.5	325569	15.1	19.6	99810	15.2	19.6
515881	14.8	19.4	260590	14.9	20.6	71470	14.9	18.0	492853	15.1	20.2	238567	15.1	19.6	484936	15.2	20.1
31232	14.8	18.8	149419	14.9	20.3	505698	14.9	20.7	390140	15.1	20.1	174273	15.1	19.6	138213	15.2	20.3
345308	14.8	21.1	373445	14.9	20.4	97579	14.9	19.2	208148	15.1	18.8	334308	15.1	20.0	313170	15.2	20.0
480304	14.8	20.0	57250	14.9	18.5	10988	14.9	18.2	476804	15.1	19.9	177232	15.1	18.9	444007	15.2	21.6
36352	14.8	18.5	288544	14.9	19.9	467707	14.9	21.0	392878	15.1	20.5	180360	15.1	18.8	244316	15.2	20.9
177784	14.8	20.1	285824	14.9	20.2	294484	14.9	19.3	441146	15.1	21.2	437754	15.1	20.9	482787	15.2	20.3
47520	14.8	17.8	28004	14.9	17.9	2422											

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

Nº	10	V															
319666	15.2	18.2	321627	15.3	20.7	165631	15.4	19.3	65178	15.4	18.7	381014	15.5	19.0	217166	15.6	20.0
161483	15.2	20.0	381723	15.3	19.3	318234	15.4	19.8	151340	15.4	19.3	261837	15.5	20.4	406289	15.6	21.6
305228	15.2	19.8	388742	15.3	19.8	317067	15.4	19.4	348020	15.4	20.5	156020	15.5	18.3	1156	15.6	14.8
523299	15.2	19.8	298012	15.3	20.3	316789	15.4	19.7	399237	15.4	20.6	104712	15.5	19.2	233025	15.6	20.3
187523	15.2	19.6	29993	15.3	18.0	353744	15.4	20.7	480955	15.4	19.9	258811	15.5	19.6	346955	15.6	21.0
42074	15.2	18.5	403486	15.3	19.1	98431	15.4	18.1	258732	15.4	19.7	28670	15.5	17.6	517111	15.6	21.4
487402	15.2	20.5	412827	15.3	20.2	440380	15.4	21.0	241996	15.4	20.0	174167	15.5	20.4	443487	15.6	21.6
273538	15.2	20.4	327481	15.3	20.4	299204	15.4	19.0	412466	15.5	20.6	257970	15.5	20.5	516338	15.6	20.5
24403	15.2	18.4	405124	15.3	20.5	403473	15.4	19.7	345831	15.5	19.8	384636	15.5	20.6	469270	15.6	20.9
17918	15.2	18.2	281173	15.3	21.2	216681	15.4	19.7	223605	15.5	20.4	192084	15.5	19.7	66129	15.6	18.7
473710	15.2	19.8	481689	15.3	20.9	159571	15.4	18.0	381376	15.5	21.2	517466	15.5	21.2	487270	15.6	20.3
322183	15.2	20.4	367294	15.3	20.1	296451	15.4	19.6	513929	15.5	22.3	465451	15.5	17.8	284888	15.6	19.3
139062	15.2	20.5	350498	15.3	19.0	427710	15.4	20.9	338027	15.5	19.9	99250	15.5	19.4	72647	15.6	19.0
67825	15.2	17.9	247890	15.3	20.0	161015	15.4	16.8	260639	15.5	20.9	139766	15.5	18.9	91786	15.6	18.8
129738	15.2	17.5	54697	15.3	16.9	98134	15.4	17.1	314622	15.5	20.6	31031	15.5	18.6	488099	15.6	20.7
449758	15.2	20.9	184241	15.3	19.2	140440	15.4	18.3	438335	15.5	21.6	396034	15.5	20.4	355849	15.6	20.5
319218	15.2	20.8	398934	15.3	20.6	328615	15.4	19.6	52503	15.5	18.2	291410	15.5	19.9	145738	15.6	19.3
305713	15.2	20.5	131013	15.3	18.5	230214	15.4	18.7	360919	15.5	20.7	92108	15.5	17.6	515210	15.6	20.3
279557	15.2	20.1	19573	15.3	16.3	172946	15.4	19.5	159824	15.5	18.9	183249	15.5	18.7	253512	15.6	19.0
450532	15.2	21.1	257958	15.3	19.9	79934	15.4	19.0	247826	15.5	19.8	473614	15.6	21.0	132440	15.6	19.8
484922	15.2	21.3	441581	15.3	18.9	99589	15.4	19.1	211747	15.5	19.1	316122	15.6	19.5	309577	15.6	20.1
509554	15.2	20.3	511930	15.3	20.3	474539	15.4	20.0	436615	15.5	20.6	473605	15.6	20.0	363028	15.6	20.7
511971	15.2	20.9	83973	15.3	17.3	117977	15.4	20.5	211774	15.5	19.4	195385	15.6	20.3	326801	15.6	20.2
308902	15.2	20.3	484888	15.3	20.1	425827	15.4	21.1	391651	15.5	19.7	355059	15.6	20.5	344582	15.6	19.8
380518	15.2	21.0	265997	15.3	20.1	333805	15.4	18.1	160162	15.5	19.4	460102	15.6	20.5	441897	15.6	21.2
42294	15.2	17.6	412771	15.3	20.0	98487	15.4	18.5	17933	15.5	17.9	75487	15.6	16.9	392090	15.6	20.5
519718	15.2	22.0	452691	15.3	21.9	290008	15.4	21.0	355381	15.5	19.6	448535	15.6	19.9	345307	15.6	19.1
384383	15.2	20.1	80651	15.3	18.0	407215	15.4	19.8	401951	15.5	21.1	67549	15.6	19.2	131826	15.6	17.9
154212	15.2	19.3	117837	15.3	19.3	605	15.4	13.9	129523	15.5	19.9	467459	15.6	20.8	263250	15.6	19.8
476368	15.2	21.7	478493	15.3	19.8	261792	15.4	20.5	353074	15.5	20.3	421675	15.6	20.1	99577	15.7	18.3
520390	15.2	22.1	364496	15.3	20.4	42987	15.4	18.3	349831	15.5	20.8	279794	15.6	17.2	523389	15.7	21.1
70941	15.2	18.5	367034	15.3	21.4	128529	15.4	19.1	352633	15.5	19.4	224142	15.6	19.0	306242	15.7	19.1
296404	15.3	19.1	223795	15.3	19.7	108422	15.4	19.9	42753	15.5	18.3	221995	15.6	20.1	443352	15.7	20.9
124220	15.3	18.7	295676	15.3	20.4	424550	15.4	21.6	396744	15.5	19.2	43439	15.6	18.4	520422	15.7	21.6
88151	15.3	18.4	103523	15.3	18.8	477574	15.4	20.5	411532	15.5	20.6	50007	15.6	18.9	208131	15.7	20.5
192926	15.3	20.3	404433	15.3	21.0	424533	15.4	18.7	361849	15.5	20.9	152054	15.6	19.4	520192	15.7	20.7
135018	15.3	19.0	127956	15.3	20.0	382429	15.4	21.5	364532	15.5	21.2	466287	15.6	20.5	106448	15.7	17.7
514783	15.3	21.1	94483	15.3	18.0	430472	15.4	19.4	149595	15.5	19.7	16171	15.6	17.7	214922	15.7	20.2
90180	15.3	19.9	279154	15.3	19.3	512953	15.4	20.8	381097	15.5	21.4	36255	15.6	17.9	374825	15.7	19.6
48231	15.3	18.3	449635	15.3	19.7	484000	15.4	20.9	324276	15.5	20.8	514936	15.6	21.1	162388	15.7	18.7
326535	15.3	20.0	91916	15.3	18.6	402427	15.4	20.1	35266	15.5	18.5	442933	15.6	20.0	219293	15.7	20.3
172266	15.3	19.4	9020	15.3	16.2	133337	15.4	18.7	467585	15.5	19.3	273721	15.6	20.8	101298	15.7	18.1
357450	15.3	20.9	267298	15.3	20.3	350021	15.4	19.3	212367	15.5	20.5	459687	15.6	21.0	316168	15.7	20.7
178010	15.3	19.7	291550	15.3	20.6	169086	15.4	19.9	398778	15.5	21.1	275619	15.6	20.4	319078	15.7	20.6
468864	15.3	21.5	241761	15.3	19.8	464675	15.4	19.5	394482	15.5	20.3	263829	15.6	20.4	362615	15.7	20.1
430429	15.3	18.7	211490	15.3	19.4	411816	15.4	20.6	8495	15.5	17.4	158456	15.6	19.1	262005	15.7	19.6
6014	15.3	15.1	367059	15.3	20.0	517480	15.4	20.4	3145	15.5	15.7	205405	15.6	20.2	74466	15.7	18.7
48824	15.3	17.7	378644	15.3	20.6	313325	15.4	21.1	483189	15.5	20.9	181093	15.6	19.3	3089	15.7	15.6
518625	15.3	20.9	291945	15.3	19.7	215372	15.4	20.1	345477	15.5	21.1	400751	15.6	20.1	103799	15.7	19.4
441934	15.3	20.4	488153	15.3	20.3	141435	15.4	19.7	175755	15.5	19.0	374836	15.6	20.4	518057	15.7	19.2
121453	15.3	19.0	254820	15.3	19.5	347119	15.4	19.3	481566	15.5	19.8	12236	15.6	18.0	317361	15.7	19.5
451988	15.3	20.1	486540	15.3	20.6	828285	15.4	19.9	304354	15.5	20.7	31263	15.6	16.1	241031	15.7	21.0
152241	15.3	19.3	28496	15.3	19.1	271958	15.4	21.0	44699	15.5	17.2	168644	15.6	20.3	488196	15.7	20.9
520606	15.3	21.3	365297	15.3	20.4	363646	15.4	20.4	487904	15.5	20.8	484333	15.6	19.9	260313	15.7	19.9
184409	15.3	20.3	264221	15.3	19.7	129629	15.4	19.1	144135	15.5	18.6	132561	15.6	19.4	484970	15.7	19.4
181154	15.3	19.3	264987	15.3	19.8	182626	15.4	19.1	207571	15.5	19.8	298459	15.6	21.0	324219	15.7	20.8
218213	15.3	18.0	260609	15.3	21.1	213820	15.4	19.7	314484	15.5	21.0	282237	15.6	20.3	93380	15.7	18.3
411035	15.3	19.7	324225	15.3	19.7	137372	15.4	18.8	198419	15.5	18.9	449166	15.6	20.6	415510	15.7	20.2
126476	15.3	19.3	516353	15.3	20.2	456847	15.4	20.4	160432	15.5	20.6	155873	15.6	20.5	461242	15.7	21.3
21963	15.3	16.4	458434	15.3	21.4	41327	15.4	17.8	159910	15.5	20.4	264155	15.6	20.0	326884	15.7	21.1
134571	15.3	17.7	213452	15.3	19.4												

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

Nº	10	V															
515577	15.7	21.9	490533	15.8	19.5	473660	15.9	20.7	267707	15.9	19.4	185589	16.0	20.5	193416	16.1	18.2
161814	15.7	19.8	96601	15.8	18.5	21794	15.9	16.9	172315	15.9	19.5	224889	16.0	19.8	121688	16.1	19.6
105301	15.7	17.6	445659	15.8	20.7	439885	15.9	20.8	117356	15.9	19.0	287691	16.0	19.1	58417	16.1	18.4
208763	15.7	18.4	483709	15.8	20.7	80832	15.9	18.7	127433	15.9	19.6	388232	16.0	21.1	289270	16.1	19.5
295768	15.7	20.1	251536	15.8	19.8	42139	15.9	18.9	10178	15.9	17.3	441320	16.0	20.3	518199	16.1	20.8
281715	15.7	19.4	315954	15.8	20.7	446691	15.9	19.8	395761	15.9	20.3	85464	16.0	18.5	393627	16.1	20.8
147986	15.7	19.2	228141	15.8	19.6	136266	15.9	19.4	223432	15.9	19.1	259680	16.0	18.9	116939	16.1	19.8
223470	15.7	19.8	42182	15.8	18.9	48745	15.9	18.9	121778	15.9	19.4	190357	16.0	19.2	388976	16.1	20.7
487154	15.7	20.5	359726	15.8	19.8	213660	15.9	19.2	324697	15.9	20.7	411072	16.0	21.1	352336	16.1	20.5
357729	15.7	20.0	328879	15.8	21.0	109659	15.9	19.0	145003	15.9	18.3	362594	16.0	20.0	153454	16.1	18.5
510515	15.7	20.7	473653	15.8	21.0	131166	15.9	19.6	521578	15.9	21.2	304541	16.0	20.9	356599	16.1	20.4
293321	15.7	20.0	319286	15.8	20.3	493971	15.9	20.3	224095	15.9	19.6	372841	16.0	20.4	325605	16.1	19.5
445214	15.7	20.9	237372	15.8	19.7	514863	15.9	21.8	408093	15.9	20.9	329872	16.0	20.1	37525	16.1	17.1
69435	15.7	18.6	288200	15.8	19.0	445181	15.9	21.0	97572	15.9	18.6	327169	16.0	19.4	381823	16.1	18.5
83057	15.7	18.9	212776	15.8	19.9	219223	15.9	19.7	78235	15.9	18.2	292554	16.0	19.9	361059	16.1	21.1
342444	15.7	18.8	324500	15.8	20.3	179344	15.9	19.0	400211	15.9	20.3	398537	16.0	20.4	282956	16.1	19.0
521542	15.7	21.3	104664	15.8	19.2	479836	15.9	19.8	219865	15.9	19.9	506813	16.0	20.1	346512	16.1	20.6
451611	15.7	21.5	444960	15.8	20.4	411955	15.9	21.4	3468	15.9	15.7	13369	16.0	17.9	461236	16.1	21.3
485962	15.7	21.9	180255	15.8	19.3	54824	15.9	19.6	367984	15.9	20.9	190268	16.0	19.1	397662	16.1	20.3
225660	15.7	19.8	236759	15.8	19.4	198449	15.9	19.0	389526	15.9	20.3	271046	16.0	18.9	396185	16.1	19.9
37715	15.7	19.0	132137	15.8	17.9	67786	15.9	18.2	401756	15.9	20.2	191896	16.0	19.3	401446	16.1	20.4
398167	15.7	21.0	220838	15.8	18.9	15188	15.9	17.9	85836	15.9	18.0	236565	16.0	20.3	16194	16.1	17.8
116812	15.7	18.0	446403	15.8	20.9	167709	15.9	20.0	98942	15.9	19.3	143801	16.0	19.1	392323	16.1	21.2
74828	15.7	18.5	122608	15.8	17.7	474697	15.9	20.7	500748	15.9	20.9	408092	16.0	20.1	514311	16.1	19.9
406777	15.7	20.0	111364	15.8	19.3	169041	15.9	20.6	192477	15.9	20.2	236342	16.0	21.4	349431	16.1	20.7
54874	15.7	18.5	265990	15.8	20.3	128985	15.9	19.6	430686	15.9	19.8	155537	16.0	19.4	348321	16.1	20.6
42685	15.7	15.4	35652	15.8	17.1	229498	15.9	20.0	473068	15.9	20.2	250283	16.0	19.2	167239	16.1	19.5
208826	15.7	19.1	397357	15.8	20.7	168646	15.9	19.1	249424	15.9	20.8	219232	16.0	19.5	101612	16.1	19.4
184316	15.7	19.9	469637	15.8	19.5	265834	15.9	20.5	324853	15.9	20.2	172618	16.0	18.8	446012	16.1	20.6
351132	15.7	20.1	141743	15.8	18.9	223449	15.9	19.2	511224	15.9	21.9	107116	16.0	17.5	63287	16.1	18.9
358298	15.7	20.7	308906	15.8	20.1	319501	15.9	20.3	154622	15.9	19.8	191470	16.0	19.6	289237	16.1	18.5
178328	15.7	20.4	381074	15.8	20.9	423132	15.9	21.6	411815	15.9	20.4	435080	16.0	22.1	352922	16.1	20.2
160908	15.7	19.7	285379	15.8	19.5	443701	15.9	20.2	381802	15.9	20.4	444545	16.0	20.6	326537	16.1	20.6
258953	15.7	20.4	483947	15.8	21.2	256799	15.9	20.1	348039	15.9	19.1	104571	16.0	19.2	426132	16.1	21.0
281043	15.7	20.2	450954	15.8	20.7	228252	15.9	19.8	281781	15.9	18.8	516147	16.0	20.7	68761	16.1	18.9
128084	15.7	18.9	394639	15.8	19.7	18291	15.9	18.8	342779	15.9	19.9	408050	16.0	20.4	209224	16.1	18.7
409313	15.7	20.6	187760	15.8	20.8	232598	15.9	19.6	80673	15.9	18.6	297857	16.0	19.4	57188	16.1	16.9
401856	15.7	22.4	515152	15.8	21.7	381386	15.9	21.0	385276	15.9	19.8	118183	16.0	20.5	115078	16.1	19.0
35473	15.7	17.7	272598	15.8	20.7	136656	15.9	20.0	383491	15.9	21.0	285677	16.1	19.5	290730	16.1	20.0
430074	15.7	20.0	473450	15.8	19.9	297248	15.9	20.0	59982	15.9	17.2	218785	16.1	20.1	512824	16.1	20.7
1424	15.7	14.2	454645	15.8	19.8	370217	15.9	20.2	260528	15.9	20.5	219241	16.1	18.6	64327	16.1	18.3
2821	15.7	15.4	96214	15.8	18.3	295681	15.9	20.7	488941	15.9	20.1	237269	16.1	20.3	118900	16.1	19.4
487202	15.7	20.2	243503	15.8	20.3	262980	15.9	21.5	283843	15.9	19.0	511131	16.1	21.0	9518	16.1	17.1
491692	15.7	20.0	107787	15.8	19.3	442362	15.9	20.4	100871	15.9	20.4	492794	16.1	20.6	220207	16.1	18.9
384775	15.7	19.9	276779	15.8	20.8	405114	15.9	22.0	451167	15.9	20.6	236875	16.1	19.4	450958	16.1	21.7
477022	15.7	20.4	12247	15.8	17.3	174323	15.9	18.2	235303	15.9	19.0	436582	16.1	20.5	108917	16.1	19.3
466419	15.7	18.7	70205	15.8	18.2	221736	15.9	20.0	134557	15.9	17.8	93605	16.1	18.1	269530	16.1	19.7
7722	15.7	17.4	48135	15.8	19.3	404033	15.9	20.4	396055	15.9	20.3	397248	16.1	19.4	327570	16.1	20.0
513942	15.7	22.1	476100	15.8	19.7	320057	15.9	20.0	16775	15.9	17.4	247200	16.1	19.5	283786	16.1	19.8
183566	15.7	18.4	94259	15.8	17.8	100051	15.9	18.9	209345	15.9	19.1	147368	16.1	20.1	205424	16.1	19.7
115525	15.8	19.3	204847	15.8	20.3	23926	15.9	18.1	490600	15.9	20.5	22393	16.1	15.6	175386	16.1	19.2
321981	15.8	20.4	2284	15.8	15.6	324315	15.9	20.5	385340	15.9	20.3	71650	16.1	19.2	250574	16.1	19.0
275021	15.8	20.7	518561	15.8	20.6	30997	15.9	20.7	16120	15.9	18.4	3705	16.1	15.9	130953	16.1	19.2
39210	15.8	17.9	280797	15.8	20.2	211091	15.9	20.4	66776	15.9	19.2	450334	16.1	21.0	28701	16.2	18.8
286193	15.8	19.9	85077	15.8	19.0	418908	15.9	20.4	476523	15.9	20.9	308070	16.1	18.5	4086	16.2	15.8
133033	15.8	18.7	331170	15.8	20.6	323597	15.9	19.9	381078	15.9	21.0	433990	16.1	21.4	353360	16.2	20.7
39205	15.8	18.0	522012	15.8	21.1	145520	15.9	20.0	315953	15.9	20.8	226148	16.1	20.5	243878	16.2	19.6
445297	15.8	21.0	251660	15.8	20.4	139461	15.9	17.5	382083	15.9	22.0	320225	16.1	19.9	320431	16.2	20.0
186463	15.8	18.3	422866	15.8	21.0	301552	15.9	19.4	188133	15.9	20.0	328646	16.1	19.6	158243	16.2	19.0
177722	15.8	20.7	163298	15.8	19.4	112571	15.9	17.9	169732	15.9	19.2	121582	16.1	19.5	137149	16.2	18.7
225459	15.8	20.0	520225	15.8	22.0												

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
471283	16.2	19.5	167266	16.2	19.4	226563	16.3	19.4	255449	16.4	19.4	137540	16.5	19.2	288495	16.5	20.5
324796	16.2	20.5	342449	16.2	21.0	312709	16.3	20.1	295158	16.4	20.1	464384	16.5	19.9	351025	16.5	18.6
154456	16.2	20.2	61649	16.2	18.4	434536	16.3	20.6	351048	16.4	20.9	202310	16.5	19.6	488330	16.5	19.5
132552	16.2	19.9	324762	16.2	21.3	237086	16.3	20.2	81034	16.4	17.8	126491	16.5	19.7	340263	16.5	19.2
149048	16.2	19.7	68729	16.2	17.2	53680	16.3	18.7	98933	16.4	17.6	409715	16.5	21.5	468786	16.5	20.5
443365	16.2	21.2	240641	16.2	20.8	229875	16.3	20.5	402788	16.4	21.4	14661	16.5	17.6	225137	16.5	19.8
2190	16.2	16.8	96317	16.2	19.2	323315	16.3	20.6	241070	16.4	19.6	444542	16.5	21.1	346490	16.5	20.4
304916	16.2	19.5	263714	16.2	20.8	517049	16.3	21.2	509243	16.4	20.9	219217	16.5	18.8	451968	16.5	19.8
63011	16.2	18.5	259458	16.2	19.0	297194	16.3	19.9	281810	16.4	20.7	188578	16.5	20.4	472453	16.6	21.6
381102	16.2	19.7	382528	16.2	19.4	314641	16.3	21.0	380725	16.4	20.3	356502	16.5	20.0	448790	16.6	20.1
4119	16.2	16.5	223817	16.2	20.8	248786	16.3	19.6	324854	16.4	20.8	343002	16.5	18.9	72540	16.6	19.7
221779	16.2	19.6	228006	16.3	19.5	367964	16.3	19.7	432809	16.4	19.5	91183	16.5	17.4	187325	16.6	19.8
479451	16.2	20.9	273782	16.3	20.5	395611	16.3	20.2	202616	16.4	19.8	398763	16.5	19.9	259160	16.6	20.0
378571	16.2	21.1	100584	16.3	19.4	516974	16.3	21.7	80180	16.4	17.9	347241	16.5	20.0	491524	16.6	20.4
154485	16.2	20.0	112244	16.3	18.7	81521	16.3	19.0	253554	16.4	19.8	140646	16.5	19.3	481895	16.6	21.8
404008	16.2	20.5	229751	16.3	19.3	119965	16.3	18.3	189509	16.4	19.0	23984	16.5	16.8	399547	16.6	19.1
83285	16.2	19.0	134972	16.3	16.0	487857	16.3	21.0	474649	16.4	20.0	133733	16.5	18.9	204781	16.6	20.0
384370	16.2	19.3	441280	16.3	19.9	382499	16.3	20.6	252811	16.4	19.8	482625	16.5	20.0	159076	16.6	19.5
318228	16.2	19.7	476718	16.3	19.6	508874	16.3	21.0	223415	16.4	19.5	4450	16.5	18.3	315952	16.6	20.5
435631	16.2	20.4	255017	16.3	19.5	411548	16.3	21.1	318522	16.4	21.0	78376	16.5	18.7	28415	16.6	19.1
97623	16.2	18.7	442835	16.3	20.9	223460	16.3	18.9	239935	16.4	18.9	385105	16.5	19.8	149281	16.6	18.2
411168	16.2	20.6	363683	16.3	19.5	222410	16.3	19.9	451612	16.4	21.9	289238	16.5	19.3	518719	16.6	21.0
442908	16.2	20.4	407168	16.3	20.5	244699	16.3	19.1	225735	16.4	19.7	77096	16.5	18.3	308327	16.6	20.5
93854	16.2	18.5	91583	16.3	18.3	452213	16.3	20.6	187379	16.4	20.5	51005	16.5	18.8	482437	16.6	22.0
76814	16.2	17.9	71689	16.3	18.4	171674	16.3	17.6	331573	16.4	18.8	348104	16.5	20.2	397800	16.6	19.9
449233	16.2	20.9	67746	16.3	17.7	421883	16.3	20.7	192630	16.4	18.9	165367	16.5	19.4	142905	16.6	18.3
199791	16.2	19.3	248172	16.3	19.7	9356	16.3	16.2	379662	16.4	20.6	101323	16.5	18.8	145598	16.6	19.8
400958	16.2	20.1	231695	16.3	20.6	78200	16.3	19.5	152434	16.4	18.8	177485	16.5	19.4	325611	16.6	19.3
469850	16.2	20.9	487873	16.3	21.6	360437	16.3	19.5	441109	16.4	19.9	78658	16.5	18.0	514959	16.6	21.4
82419	16.2	19.2	520375	16.3	21.2	361897	16.3	20.7	279241	16.4	19.9	220388	16.5	18.1	207318	16.6	20.2
4704	16.2	17.5	4309	16.3	16.4	23959	16.3	16.9	245078	16.4	21.1	270506	16.5	20.4	268227	16.6	20.8
164482	16.2	20.1	324094	16.3	20.8	148294	16.3	19.4	84471	16.4	18.7	257284	16.5	20.3	405348	16.6	20.0
162787	16.2	19.0	127606	16.3	19.9	479645	16.3	21.3	192479	16.4	20.7	114377	16.5	18.4	274404	16.6	20.8
12753	16.2	17.3	346502	16.3	20.9	263871	16.3	21.6	312127	16.4	18.6	411573	16.5	20.6	319292	16.6	20.4
143370	16.2	20.4	452105	16.3	20.3	220430	16.3	19.6	93754	16.4	18.6	183774	16.5	19.2	202824	16.6	19.4
503373	16.2	20.3	77407	16.3	18.9	418730	16.3	20.9	342040	16.4	19.7	481889	16.5	21.1	144971	16.6	19.5
208540	16.2	18.0	351433	16.3	20.9	467858	16.3	21.2	295128	16.4	21.2	404637	16.5	20.7	219114	16.6	19.0
477028	16.2	20.5	520619	16.3	20.9	458508	16.3	21.2	278331	16.4	20.1	206549	16.5	19.7	158	16.6	13.1
514885	16.2	21.3	399028	16.3	20.1	296924	16.3	20.4	570	16.4	13.1	284816	16.5	20.3	303183	16.6	20.3
393586	16.2	19.6	157409	16.3	19.1	476650	16.3	20.6	178405	16.4	19.1	71660	16.5	18.5	91580	16.6	18.5
441308	16.2	20.9	167189	16.3	17.8	519801	16.3	21.3	143894	16.4	18.7	213966	16.5	20.0	469762	16.6	19.4
374830	16.2	19.8	383218	16.3	21.1	303189	16.3	20.0	11932	16.4	17.6	108571	16.5	20.2	403737	16.6	20.1
282952	16.2	19.7	163319	16.3	19.8	353773	16.3	20.4	154073	16.4	18.8	122787	16.5	18.8	230921	16.6	20.4
282696	16.2	20.6	511862	16.3	20.1	4108	16.3	18.0	227003	16.4	19.7	405335	16.5	20.7	404058	16.6	20.6
514821	16.2	21.2	275849	16.3	19.5	329651	16.3	20.0	342138	16.4	19.6	243322	16.5	19.8	395506	16.6	19.7
228010	16.2	20.3	460094	16.3	20.6	124579	16.3	19.1	310227	16.4	20.9	442407	16.5	20.7	304356	16.6	20.7
108535	16.2	18.4	161846	16.3	19.2	331583	16.3	20.0	319987	16.4	20.4	351153	16.5	19.3	119173	16.6	18.1
349167	16.2	20.5	134421	16.3	19.3	263233	16.3	20.3	413283	16.4	20.3	99094	16.5	19.8	362300	16.6	20.4
21446	16.2	18.1	40861	16.3	17.3	378091	16.4	20.0	247872	16.4	20.0	89829	16.5	19.1	147512	16.6	19.5
358655	16.2	19.8	509394	16.3	21.8	28508	16.4	18.0	6406	16.4	15.1	176316	16.5	19.3	13478	16.6	17.2
37903	16.2	17.4	519679	16.3	19.5	400484	16.4	20.5	241157	16.4	19.6	268921	16.5	20.8	195450	16.6	19.5
142845	16.2	19.5	190175	16.3	20.0	330315	16.4	20.6	7037	16.4	17.0	150825	16.5	18.9	115840	16.6	18.8
519454	16.2	20.7	357002	16.3	20.5	124973	16.4	18.2	72175	16.4	19.4	368544	16.5	19.7	115984	16.6	19.3
24259	16.2	16.7	243788	16.3	19.8	168960	16.4	20.0	16159	16.4	17.9	315935	16.5	20.9	232487	16.6	20.8
490462	16.2	21.0	27145	16.3	18.2	139659	16.4	19.8	96727	16.4	17.9	436573	16.5	20.6	471969	16.6	20.6
268748	16.2	19.5	132231	16.3	19.6	411544	16.4	21.6	273648	16.4	21.1	128496	16.5	19.6	376113	16.6	20.3
117463	16.2	19.2	344992	16.3	20.0	80725	16.4	19.8	268852	16.4	20.2	482695	16.5	20.7	271274	16.6	19.7
303187	16.2	20.8	303503	16.3	20.9	449328	16.4	21.1	3541	16.4	16.7	2077	16.5	16.0	332381	16.6	20.8
184460	16.2	19.7	239681	16.3	19.4	495925	16.4	21.5	140729	16.4	19.2	221627	16.5	20.0	12927	16.6	17.7
387436	16.2	19.4	379578	16.3	21.1	356722	16.4	20.1	68334	16.4	19.0	228101	16.5	19.7	93819	16.6	18.4
493842	16.2	21.0	167359	16.3	19.8	399220</											

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

Nº	10	V															
263749	16.6	20.0	123849	16.7	17.6	5024	16.7	16.5	259689	16.8	18.7	476823	16.9	20.0	101183	16.9	19.3
100562	16.6	19.9	43695	16.7	18.4	255133	16.7	19.3	269162	16.8	21.2	157070	16.9	18.4	144991	16.9	19.1
159316	16.6	20.2	99971	16.7	19.9	147592	16.7	19.9	487290	16.8	20.5	91637	16.9	19.1	356767	16.9	20.0
265594	16.6	21.0	267841	16.7	20.9	492770	16.7	20.8	174158	16.8	20.3	379895	16.9	20.1	459640	16.9	20.4
440882	16.6	20.9	120182	16.7	19.4	409672	16.7	20.4	132676	16.8	19.1	202977	16.9	19.0	441846	16.9	21.2
155318	16.6	19.6	123916	16.7	19.5	202220	16.7	19.5	254469	16.8	19.4	221408	16.9	19.7	212779	16.9	19.1
349480	16.6	20.9	483840	16.7	21.9	353754	16.7	20.8	278350	16.8	18.5	511948	16.9	20.9	480021	16.9	20.9
398655	16.6	20.7	334081	16.7	19.3	6389	16.7	18.6	211380	16.8	19.9	240170	16.9	20.1	307145	16.9	21.1
112158	16.6	20.0	225493	16.7	20.7	481561	16.7	18.6	411928	16.8	19.9	155891	16.9	19.7	237898	16.9	20.0
334832	16.6	20.5	311764	16.7	20.6	392968	16.7	20.5	517524	16.8	20.5	427441	16.9	19.5	485028	16.9	21.0
29021	16.6	17.8	188388	16.7	20.6	125758	16.7	19.4	90483	16.8	19.6	98614	16.9	19.4	44146	16.9	19.2
46958	16.6	18.2	213301	16.7	19.4	187784	16.7	18.4	329073	16.8	20.7	65774	16.9	19.4	438351	16.9	18.3
479353	16.6	20.6	510180	16.7	21.6	145402	16.7	19.8	351109	16.8	20.2	485947	16.9	21.7	7964	16.9	16.6
337272	16.6	19.3	30533	16.7	17.2	145202	16.8	17.1	407092	16.8	20.3	324701	16.9	19.6	114352	16.9	17.7
441737	16.6	21.3	108093	16.7	19.3	266469	16.8	18.9	327531	16.8	21.4	77039	16.9	18.6	146883	16.9	19.4
438590	16.6	21.2	287431	16.7	19.9	158709	16.8	20.5	427847	16.8	21.6	72317	16.9	18.0	321374	16.9	19.2
327729	16.6	19.8	72029	16.7	19.1	178700	16.8	18.9	358830	16.8	20.2	266063	16.9	20.0	358577	16.9	20.7
515360	16.6	21.0	14013	16.7	18.0	513270	16.8	19.2	147416	16.8	19.8	286448	16.9	20.3	358167	16.9	21.2
273585	16.6	20.7	236552	16.7	19.7	23171	16.8	17.1	490517	16.8	21.0	196373	16.9	19.1	56329	16.9	19.5
168429	16.6	18.6	480005	16.7	20.7	452082	16.8	20.5	276387	16.8	19.5	281203	16.9	21.6	131342	16.9	19.3
220462	16.6	20.3	288181	16.7	19.9	153262	16.8	19.6	49978	16.8	16.0	4091	16.9	16.4	340267	16.9	20.7
454695	16.6	20.4	166488	16.7	19.2	230018	16.8	20.2	479334	16.8	19.8	209199	16.9	19.9	75552	16.9	19.3
520714	16.6	21.5	227432	16.7	19.9	366684	16.8	18.8	1421	16.8	15.2	114244	16.9	17.4	443446	16.9	21.1
178618	16.6	19.1	522032	16.7	21.1	269914	16.8	21.2	449622	16.8	21.4	451339	16.9	21.7	116379	16.9	18.8
160640	16.6	18.8	210626	16.7	20.3	507392	16.8	21.2	63137	16.8	18.4	260272	16.9	18.4	129186	16.9	19.0
292511	16.6	20.3	461138	16.7	20.6	126779	16.8	18.7	303049	16.8	20.1	284791	16.9	19.4	101408	16.9	18.0
188430	16.6	20.0	154038	16.7	20.3	291601	16.8	20.3	440913	16.8	19.6	107660	16.9	18.6	111929	16.9	19.4
3739	16.6	15.7	399279	16.7	21.7	517486	16.8	21.2	439668	16.8	20.4	411557	16.9	20.6	523307	16.9	20.3
128769	16.6	18.8	229855	16.7	19.3	512281	16.8	20.8	422329	16.8	20.4	228504	16.9	18.6	263058	16.9	20.2
402799	16.6	20.5	432668	16.7	20.2	359750	16.8	20.5	479635	16.8	20.5	157950	16.9	18.3	84707	16.9	19.1
23093	16.6	16.2	334224	16.7	19.0	509114	16.8	21.3	354271	16.8	19.7	21818	16.9	18.3	494639	16.9	20.3
176206	16.6	19.3	289770	16.7	21.0	395184	16.8	20.3	191401	16.8	19.0	274873	16.9	19.6	412685	16.9	21.0
319122	16.6	19.8	514628	16.7	21.1	393753	16.8	21.4	321499	16.8	19.8	62112	16.9	17.5	27309	16.9	19.5
164887	16.6	19.6	317277	16.7	20.1	117967	16.8	18.2	340381	16.8	20.1	286505	16.9	20.8	46815	16.9	19.1
57497	16.6	18.5	411977	16.7	20.9	471065	16.8	19.8	57325	16.8	18.8	103032	16.9	18.2	318451	16.9	20.0
492376	16.6	21.2	490588	16.7	20.9	40731	16.8	17.1	445189	16.8	21.8	105703	16.9	18.8	472477	16.9	20.9
42575	16.6	18.5	487436	16.7	20.2	173517	16.8	18.7	88974	16.8	19.1	70792	16.9	19.1	514612	16.9	20.6
344060	16.6	19.9	513155	16.7	20.0	321766	16.8	20.6	117728	16.8	19.2	57788	16.9	18.6	410900	16.9	20.2
395574	16.6	19.6	509977	16.7	19.6	187972	16.8	19.3	348049	16.8	19.3	107931	16.9	18.5	486940	16.9	20.2
23619	16.6	19.5	490870	16.7	21.8	323639	16.8	20.2	515602	16.8	20.9	259137	16.9	19.2	404718	16.9	20.2
408204	16.6	21.5	452392	16.7	21.0	495322	16.8	21.0	519255	16.8	21.5	428546	16.9	20.3	221464	16.9	19.0
15099	16.6	17.9	481974	16.7	20.5	175902	16.8	18.8	273356	16.8	20.0	43733	16.9	19.8	364082	16.9	20.2
225264	16.6	19.9	410876	16.7	20.0	318714	16.8	19.8	123328	16.8	18.7	421622	16.9	20.1	268934	17.0	20.2
225704	16.6	19.3	429448	16.7	21.3	289902	16.8	20.4	495025	16.8	19.6	397650	16.9	19.9	170170	17.0	19.4
431711	16.6	21.6	101547	16.7	18.7	289570	16.8	20.1	366585	16.8	18.3	489092	16.9	20.0	358678	17.0	19.6
285325	16.6	20.1	219939	16.7	20.1	79083	16.8	18.8	86373	16.8	17.4	507394	16.9	21.2	135298	17.0	18.8
505476	16.6	23.0	515515	16.7	21.7	402372	16.8	20.6	169435	16.8	20.1	122076	16.9	18.6	274651	17.0	20.0
480701	16.6	20.8	225222	16.7	19.8	443686	16.8	20.1	271975	16.8	20.3	312967	16.9	20.2	1397	17.0	14.9
518321	16.6	20.5	515678	16.7	21.4	516145	16.8	20.7	36291	16.8	17.3	333170	16.9	21.1	443439	17.0	20.9
285519	16.6	20.9	391925	16.7	20.9	97520	16.8	19.8	409090	16.9	21.1	321302	16.9	21.5	347061	17.0	20.6
448715	16.6	19.6	104821	16.7	19.7	67963	16.8	18.5	516194	16.9	19.3	223902	16.9	19.6	318007	17.0	21.3
378035	16.6	20.5	478810	16.7	19.6	406989	16.8	19.6	396913	16.9	21.0	155355	16.9	20.7	408045	17.0	20.5
13327	16.6	17.6	472904	16.7	20.5	242270	16.8	20.3	449747	16.9	20.9	504027	16.9	21.1	73355	17.0	19.2
37161	16.6	18.1	80554	16.7	19.1	434738	16.8	18.7	247741	16.9	19.2	100364	16.9	18.1	411540	17.0	20.9
21380	16.6	16.6	310265	16.7	20.5	101288	16.8	18.5	255084	16.9	19.1	200104	16.9	18.4	300619	17.0	20.1
490432	16.7	20.6	143286	16.7	18.8	480371	16.8	20.9	369685	16.9	21.3	405297	16.9	20.1	12424	17.0	17.3
299085	16.7	19.4	406308	16.7	21.4	332229	16.8	21.5	442496	16.9	20.4	134837	16.9	18.9	300772	17.0	19.8
277813	16.7	20.6	320699	16.7	20.0	449452	16.8	21.4	436917	16.9	20.7	300698	16.9	20.3	513333	17.0	21.4
361489	16.7	20.5	446693	16.7	20.3	395517	16.8	20.6	83017	16.9	19.0	278177	16.9	20.8	41961	17.0	17.9
183697	16.7	19.6	512062	16.7	20.3	158685	16.8	20.5	345255	16.9	19.2	338501	16.9	20.1	6239	17.0	18.9
57911	16.7	18.1	379199	16.7	19												

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
476623	17.0	19.1	446380	17.1	21.8	111502	17.2	18.8	304309	17.3	20.7	482635	17.4	19.8	344455	17.4	20.3
267860	17.0	20.6	374779	17.1	18.8	297066	17.2	20.2	518345	17.3	20.8	102188	17.4	19.5	111284	17.4	18.2
436433	17.0	21.3	227006	17.1	20.5	282263	17.2	19.3	299123	17.3	20.4	400653	17.4	20.7	106542	17.4	18.3
109119	17.0	19.7	141712	17.1	19.2	85703	17.2	18.2	246737	17.3	20.0	327151	17.4	20.9	159843	17.4	19.1
425538	17.0	19.6	246356	17.1	19.8	213056	17.2	18.8	61865	17.3	19.1	324306	17.4	20.7	281443	17.4	17.9
24429	17.0	17.4	141540	17.1	19.4	393591	17.2	21.1	424569	17.3	21.6	163804	17.4	17.6	260410	17.4	20.6
507369	17.0	21.1	124023	17.1	20.8	371385	17.2	20.2	123555	17.3	17.9	26445	17.4	17.6	227005	17.4	20.5
133496	17.0	19.5	9274	17.1	19.0	223985	17.2	19.4	173793	17.3	19.4	258059	17.4	19.6	402530	17.4	20.7
500152	17.0	21.6	111335	17.1	19.3	411121	17.2	20.4	236878	17.3	19.4	207179	17.4	19.1	345443	17.4	21.1
25895	17.0	18.4	400363	17.1	20.3	268031	17.2	19.5	705	17.3	12.7	385129	17.4	20.6	404103	17.4	20.5
482778	17.0	20.4	391198	17.1	20.3	56510	17.2	18.2	243221	17.3	20.4	363673	17.4	18.9	406292	17.4	20.2
13071	17.0	15.9	73733	17.1	18.0	229831	17.2	19.8	79683	17.3	17.8	330297	17.4	18.8	197078	17.4	19.5
245979	17.0	19.8	386686	17.1	20.1	244579	17.2	19.1	482693	17.3	21.1	336813	17.4	19.6	453000	17.4	21.9
74752	17.0	18.1	91365	17.1	17.7	140158	17.2	19.6	354426	17.3	20.1	473468	17.4	20.9	491322	17.4	20.8
409796	17.1	21.1	224184	17.1	19.0	64679	17.2	19.0	397753	17.3	20.8	106345	17.4	18.8	404687	17.4	20.5
11997	17.1	18.2	523278	17.1	21.0	510188	17.2	21.8	84974	17.3	19.4	287438	17.4	20.1	321657	17.4	20.0
314294	17.1	21.1	378174	17.1	20.9	322076	17.2	19.9	44053	17.3	18.1	220251	17.4	19.4	451624	17.4	20.5
254800	17.1	19.9	20350	17.1	15.6	490486	17.2	20.7	515679	17.3	21.9	298178	17.4	19.4	412770	17.4	20.4
365714	17.1	20.2	43247	17.1	18.8	177310	17.2	19.5	74720	17.3	18.4	386720	17.4	23.2	221512	17.4	19.6
473233	17.1	20.9	180984	17.1	19.9	412833	17.2	21.0	98955	17.3	18.9	39642	17.4	18.7	333534	17.4	19.1
9759	17.1	16.9	318264	17.1	19.4	115549	17.2	18.4	222595	17.3	19.6	42770	17.4	17.8	316163	17.4	20.6
193392	17.1	18.5	397486	17.1	19.9	231471	17.2	19.9	130294	17.3	19.7	324266	17.4	21.6	225028	17.4	19.4
465490	17.1	21.1	364062	17.1	20.3	104013	17.2	19.8	453476	17.3	21.0	297168	17.4	20.5	383513	17.4	20.9
29287	17.1	19.3	233972	17.2	18.3	265272	17.2	20.5	388176	17.3	20.6	443318	17.4	20.7	24644	17.4	18.3
430700	17.1	21.7	411879	17.2	21.2	40571	17.2	18.1	356174	17.3	20.3	135593	17.4	19.7	400378	17.4	20.8
444353	17.1	19.6	440113	17.2	19.4	519479	17.2	21.6	440650	17.3	20.7	448533	17.4	20.8	360941	17.4	20.4
345441	17.1	19.6	348011	17.2	18.8	46814	17.2	19.0	96152	17.3	18.5	244275	17.4	20.1	11389	17.4	17.0
406319	17.1	21.1	237338	17.2	19.8	476558	17.2	21.2	100827	17.3	18.0	452750	17.4	21.5	256417	17.4	20.4
262964	17.1	20.5	104732	17.2	20.0	469869	17.2	19.3	155200	17.3	20.5	446394	17.4	21.2	207881	17.4	19.5
45574	17.1	16.9	78777	17.2	18.8	67248	17.2	17.4	454053	17.3	21.4	259457	17.4	19.8	136279	17.4	19.1
291111	17.1	19.5	255080	17.2	20.7	7830	17.2	17.5	309360	17.3	19.4	482569	17.4	20.4	266771	17.4	19.7
59343	17.1	19.4	485557	17.2	20.3	461272	17.2	20.9	258796	17.3	20.6	435074	17.4	21.1	52328	17.4	19.1
258443	17.1	20.4	5603	17.2	16.6	477821	17.2	19.8	243747	17.3	19.1	481043	17.4	20.9	471059	17.4	20.4
13677	17.1	17.8	436191	17.2	20.9	250702	17.2	19.9	219970	17.3	19.7	474236	17.4	19.8	444503	17.5	20.6
154425	17.1	18.8	253159	17.2	19.6	477991	17.2	19.4	136411	17.3	19.1	135175	17.4	19.5	152455	17.5	19.0
174945	17.1	19.7	119364	17.2	19.7	316496	17.2	20.3	438713	17.3	20.0	390094	17.4	19.9	12840	17.5	18.1
515666	17.1	20.6	415168	17.2	21.7	195372	17.2	19.9	120214	17.3	19.5	206447	17.4	20.8	144183	17.5	19.2
415633	17.1	19.9	58979	17.2	17.5	223934	17.2	19.5	300805	17.3	19.9	358687	17.4	20.5	328861	17.5	19.8
30023	17.1	19.4	316531	17.2	21.3	374708	17.2	18.9	408002	17.3	20.6	469771	17.4	19.9	37996	17.5	17.7
33752	17.1	16.4	362895	17.2	20.0	82789	17.2	17.8	516395	17.3	20.6	29442	17.4	18.5	228550	17.5	19.9
148730	17.1	19.5	185987	17.2	20.5	21538	17.2	17.7	324867	17.3	19.4	323638	17.4	19.9	471249	17.5	20.8
154236	17.1	19.9	57637	17.2	18.2	223945	17.2	20.0	251391	17.3	20.7	126617	17.4	19.3	16725	17.5	16.7
360287	17.1	19.4	127770	17.2	20.2	340277	17.2	20.2	413216	17.3	21.0	3653	17.4	16.2	173786	17.5	19.8
132516	17.1	17.8	166574	17.2	19.4	58406	17.2	18.2	375156	17.3	20.6	35353	17.4	17.5	518529	17.5	21.0
367355	17.1	19.7	322974	17.2	21.1	60442	17.2	18.5	46622	17.3	18.8	53583	17.4	18.6	3473	17.5	17.3
206364	17.1	18.5	514812	17.2	20.3	99661	17.2	18.7	162396	17.3	19.6	484235	17.4	21.6	252712	17.5	19.7
474194	17.1	21.3	313913	17.2	18.9	99683	17.2	18.7	379154	17.3	20.0	434783	17.4	19.9	228118	17.5	19.7
508558	17.1	20.8	301433	17.2	19.9	441318	17.2	20.1	441142	17.3	19.6	240000	17.4	19.6	511929	17.5	21.5
454474	17.1	21.3	488175	17.2	21.5	9555	17.2	17.5	102161	17.3	17.2	157061	17.4	19.0	84241	17.5	17.6
123697	17.1	17.8	485868	17.2	21.7	379998	17.2	20.4	187777	17.3	18.4	300964	17.4	19.5	184577	17.5	20.2
484243	17.1	16.0	154256	17.2	19.9	230019	17.2	19.3	26903	17.3	17.1	485326	17.4	21.7	223849	17.5	19.6
486654	17.1	21.4	147014	17.2	17.8	63273	17.2	18.8	384427	17.3	19.5	142120	17.4	18.5	451628	17.5	21.1
298715	17.1	19.9	40724	17.2	17.3	214119	17.2	19.9	364497	17.3	21.3	342485	17.4	20.5	166051	17.5	18.4
15142	17.1	17.2	409167	17.2	20.4	515612	17.2	21.0	521883	17.3	20.8	4132	17.4	13.9	314436	17.5	20.6
223180	17.1	20.6	127392	17.2	19.4	39753	17.2	18.2	69203	17.3	18.1	359954	17.4	19.7	260561	17.5	19.6
390361	17.1	20.4	206465	17.2	19.2	366620	17.2	20.1	457943	17.3	20.9	520718	17.4	20.9	289160	17.5	20.2
273601	17.1	20.7	355816	17.2	20.5	400063	17.2	20.7	113285	17.3	20.5	224906	17.4	19.8	10324	17.5	16.9
328972	17.1	20.9	388245	17.2	20.9	130352	17.2	19.5	412310	17.3	20.5	112800	17.4	20.1	471571	17.5	19.9
406252	17.1	21.5	300810	17.2	19.7	144400	17.3	19.8	377556	17.3	20.4	21196	17.4	18.5	405748	17.5	20.4
471554	17.1	20.3	259496	17.2	18.0	421541	17.3	19.8	383124	17.3	20.9	172227	17.4	18.6	26883	17.5	19.1
124779	17.1	19.6	49428	17.2	18.0	321086</td											

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

Nº	10	V															
296757	17.5	20.3	168732	17.6	18.3	51028	17.6	16.7	49236	17.7	18.8	461196	17.8	20.6	469410	17.9	18.6
81333	17.5	18.8	478853	17.6	20.6	407136	17.6	20.0	8732	17.7	16.2	311777	17.8	20.6	7218	17.9	16.2
431347	17.5	21.1	192485	17.6	19.0	17015	17.6	17.3	364068	17.7	19.7	516228	17.8	20.6	355830	17.9	20.6
484955	17.5	19.3	38606	17.6	18.8	121468	17.6	18.6	127082	17.7	19.1	155489	17.8	19.8	481678	17.9	20.7
123432	17.5	18.4	369252	17.6	20.7	487973	17.6	20.8	451634	17.7	21.4	69859	17.8	18.3	160981	17.9	19.6
298609	17.5	19.3	192221	17.6	19.4	104446	17.6	18.1	262218	17.7	20.1	221073	17.8	18.5	14561	17.9	17.7
295553	17.5	20.6	177941	17.6	20.9	153675	17.6	19.1	480480	17.7	20.8	113009	17.8	19.2	227672	17.9	20.2
460457	17.5	19.5	398559	17.6	20.8	289531	17.6	21.0	285090	17.7	20.0	98652	17.8	19.3	523736	17.9	21.1
21271	17.5	18.7	306233	17.6	20.5	378229	17.6	20.6	241067	17.7	20.4	167995	17.8	19.7	450145	17.9	18.9
407856	17.5	21.4	361044	17.6	19.8	72828	17.6	18.8	407603	17.7	20.9	13541	17.8	17.2	507401	17.9	21.3
299589	17.5	20.9	449735	17.6	20.2	231284	17.6	20.9	209219	17.7	19.9	146040	17.8	20.2	399049	17.9	20.3
176271	17.5	19.3	205107	17.6	19.2	209103	17.6	19.3	515953	17.7	20.6	135285	17.8	18.7	511999	17.9	21.2
107796	17.5	19.8	20125	17.6	17.1	60371	17.6	17.5	400487	17.7	20.1	84578	17.8	19.3	116577	17.9	19.4
451204	17.5	19.9	441682	17.6	20.9	167354	17.6	19.5	65635	17.7	18.6	523185	17.8	20.3	509453	17.9	21.1
228524	17.5	19.4	268929	17.6	21.2	389024	17.6	21.1	71676	17.7	18.0	412741	17.8	20.1	237436	17.9	19.1
182187	17.5	18.9	514035	17.6	21.4	298172	17.6	18.7	76265	17.7	18.9	322658	17.8	18.5	328764	17.9	20.1
481641	17.5	21.1	53033	17.6	18.2	507104	17.6	20.9	408518	17.7	19.8	249713	17.8	19.2	335420	17.9	19.8
430388	17.5	20.8	171304	17.6	20.4	478164	17.6	21.1	343438	17.7	19.9	267975	17.8	20.7	178028	17.9	21.1
440388	17.5	20.9	519407	17.6	20.4	402823	17.6	20.4	255392	17.7	19.1	154252	17.8	20.6	77475	17.9	18.6
436484	17.5	21.3	14928	17.6	16.5	323729	17.6	20.7	479918	17.7	21.1	356690	17.8	20.8	44072	17.9	18.7
297209	17.5	20.2	219034	17.6	21.1	327167	17.6	20.9	146067	17.7	20.3	395798	17.8	20.2	50132	17.9	17.3
25013	17.5	17.6	263965	17.6	20.6	454226	17.6	20.6	83049	17.7	18.7	162823	17.8	19.2	323065	17.9	20.3
404464	17.5	20.7	486515	17.6	19.9	223181	17.6	19.3	304194	17.7	20.6	376929	17.8	20.7	344447	17.9	21.4
12706	17.5	15.5	439933	17.6	19.7	164763	17.6	20.0	451470	17.7	20.5	509322	17.8	21.2	150766	17.9	19.4
412624	17.5	20.4	160924	17.6	18.8	120134	17.6	19.8	374678	17.7	19.9	347045	17.8	20.3	16732	17.9	17.6
366148	17.5	20.0	199219	17.6	19.8	6301	17.6	17.1	126836	17.7	19.7	192481	17.8	20.1	159771	17.9	18.6
170010	17.5	20.4	320200	17.6	19.8	174143	17.6	18.1	454029	17.7	20.8	405329	17.8	18.8	104197	17.9	18.4
350473	17.5	19.5	286722	17.6	19.9	438842	17.7	19.9	432731	17.7	21.7	10287	17.8	15.3	280098	17.9	20.3
295701	17.5	20.3	192332	17.6	20.4	134071	17.7	19.4	402458	17.7	20.1	483089	17.8	20.6	128935	17.9	18.9
334338	17.5	20.1	432970	17.6	21.1	341088	17.7	19.1	483957	17.7	22.1	430343	17.8	19.6	39794	17.9	19.0
67188	17.5	19.8	343846	17.6	20.2	3666	17.7	17.2	345473	17.7	20.4	261855	17.8	20.6	329501	17.9	19.3
233470	17.5	20.2	62441	17.6	19.4	433948	17.7	21.1	398908	17.7	20.2	356080	17.8	19.6	130839	17.9	19.2
480240	17.5	20.3	363016	17.6	20.5	520673	17.7	20.3	104698	17.7	18.1	123623	17.8	19.1	99652	17.9	17.6
172731	17.5	19.7	12251	17.6	16.8	342343	17.7	18.9	14478	17.7	17.7	451179	17.8	20.2	127669	17.9	20.2
296742	17.5	19.3	355310	17.6	20.7	228965	17.7	19.3	38515	17.7	18.3	40918	17.8	19.0	75537	17.9	17.9
517906	17.5	20.3	483056	17.6	20.8	305063	17.7	20.5	384753	17.7	20.6	57735	17.8	19.0	102426	17.9	19.0
370623	17.5	19.0	484993	17.6	20.8	69010	17.7	18.8	356669	17.7	20.4	119527	17.8	19.7	516136	17.9	21.1
443723	17.5	20.1	472787	17.6	20.4	381382	17.7	20.4	433334	17.7	20.4	219043	17.8	20.3	354485	17.9	21.8
485901	17.5	22.1	496919	17.6	19.5	436132	17.7	20.9	492710	17.7	21.2	65722	17.8	17.3	247910	17.9	19.5
343701	17.5	21.2	170554	17.6	19.5	260137	17.7	20.3	487148	17.7	19.9	409106	17.8	21.0	202783	17.9	19.2
330667	17.5	18.9	317430	17.6	19.5	424415	17.7	20.8	350088	17.7	19.8	388901	17.8	20.6	322950	17.9	21.0
151656	17.5	20.6	324709	17.6	21.0	180088	17.7	19.7	206573	17.7	20.3	32352	17.8	18.4	322052	17.9	20.3
261559	17.5	20.2	36123	17.6	18.4	473703	17.7	19.7	5983	17.7	16.8	149243	17.8	19.7	391997	17.9	20.5
445263	17.5	20.7	245255	17.6	18.7	57339	17.7	18.7	129167	17.7	19.5	317920	17.8	19.9	296301	17.9	19.8
219539	17.5	18.9	472450	17.6	20.7	48094	17.7	18.4	423414	17.7	20.7	228944	17.8	19.8	351342	17.9	20.0
127692	17.5	20.4	422705	17.6	19.1	359882	17.7	20.7	396150	17.7	20.1	401280	17.8	20.3	252867	17.9	20.1
2787	17.5	15.6	408087	17.6	20.3	237876	17.7	20.2	23824	17.7	18.2	63359	17.8	19.8	22298	17.9	17.8
513335	17.5	21.5	485909	17.6	21.2	5340	17.7	17.8	91823	17.7	18.9	69600	17.8	18.3	186019	17.9	18.9
435077	17.5	21.4	399179	17.6	21.3	254497	17.7	19.8	221766	17.7	20.1	218062	17.8	20.8	231325	17.9	19.3
185384	17.5	20.5	419257	17.6	20.8	418702	17.7	19.9	72414	17.8	18.7	299122	17.8	21.2	365004	17.9	20.5
263253	17.5	20.5	411960	17.6	21.7	76106	17.7	17.7	359011	17.8	20.8	515604	17.8	21.7	436599	17.9	19.1
392908	17.5	20.4	132467	17.6	19.4	227048	17.7	20.6	476841	17.8	21.0	168280	17.8	19.8	297368	17.9	20.9
237976	17.5	19.7	480182	17.6	21.7	458461	17.7	19.8	382071	17.8	21.1	117819	17.8	19.4	422726	17.9	21.7
514640	17.5	21.3	27604	17.6	19.2	218306	17.7	19.4	25618	17.8	17.2	481493	17.8	22.1	23461	17.9	18.0
305032	17.5	20.7	291728	17.6	20.1	310307	17.7	19.3	303140	17.8	20.6	516707	17.8	20.3	447746	17.9	20.4
141680	17.5	18.7	395696	17.6	20.2	26260	17.7	17.5	298047	17.8	19.8	108066	17.8	19.8	104936	17.9	20.2
449803	17.5	20.9	192606	17.6	20.6	335543	17.7	19.5	131513	17.8	19.2	111185	17.8	19.7	309178	17.9	19.6
350429	17.5	19.1	180809	17.6	19.5	213144	17.7	19.8	67585	17.8	18.2	59187	17.8	19.2	185063	17.9	19.3
270175	17.5	18.9	942026	17.6	19.1	216420	17.7	19.8	343479	17.8	20.4	297366	17.8	20.8	176494	17.9	19.2
76898	17.5	18.4	292171	17.6	19.2	137475	17.7	18.7	191008	17.8	18.9	90515	17.8	20.3	424637	17.9	21.3
133457	17.5	19.6	136853	17.6	20.6												

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

Nº	10	V															
301781	17.9	20.8	19511	18.0	15.7	355064	18.1	20.5	103441	18.1	18.8	366378	18.2	18.3	271586	18.3	18.9
18034	17.9	17.2	268351	18.0	19.8	509168	18.1	21.2	482939	18.2	21.1	481799	18.2	20.2	115128	18.3	18.2
485871	17.9	21.0	398553	18.0	20.1	386779	18.1	21.1	116081	18.2	18.8	159965	18.2	19.8	117583	18.3	19.8
403382	17.9	20.0	132818	18.0	19.7	45768	18.1	16.7	472406	18.2	20.9	114963	18.2	17.5	35323	18.3	19.1
179035	17.9	19.1	163209	18.0	20.5	169096	18.1	19.8	183480	18.2	20.2	252880	18.2	19.8	388264	18.3	20.9
319630	17.9	18.4	477886	18.0	20.1	407951	18.1	20.4	480495	18.2	21.4	113864	18.2	18.7	73787	18.3	19.0
15899	17.9	17.8	73374	18.0	18.8	232237	18.1	20.0	127253	18.2	18.7	67043	18.2	18.2	189	18.3	11.9
144899	17.9	19.5	9882	18.0	18.1	41941	18.1	18.5	282734	18.2	20.4	389508	18.2	20.5	440115	18.3	19.1
139363	17.9	19.5	176688	18.0	19.4	255331	18.1	19.6	326506	18.2	20.8	224185	18.2	20.7	177868	18.3	19.7
191537	17.9	18.9	274937	18.0	20.1	138959	18.1	18.4	7663	18.2	16.9	398564	18.2	20.6	272353	18.3	19.8
473322	17.9	19.6	185524	18.0	19.7	73045	18.1	18.7	430660	18.2	19.7	365378	18.3	19.4	267104	18.3	19.4
173764	17.9	19.6	6695	18.0	16.9	389385	18.1	20.5	155853	18.2	20.2	224782	18.3	19.7	511312	18.3	20.4
236544	17.9	19.3	509439	18.0	21.4	428609	18.1	20.0	97726	18.2	19.3	446305	18.3	21.4	392561	18.3	20.7
303492	17.9	20.2	246457	18.0	19.9	4771	18.1	15.6	378042	18.2	19.5	216528	18.3	18.9	443702	18.3	19.8
442741	17.9	20.2	37663	18.0	18.4	177738	18.1	20.2	261675	18.2	19.9	108843	18.3	19.3	481581	18.3	21.1
155879	17.9	19.7	105169	18.0	17.9	467832	18.1	20.1	445346	18.2	19.7	24488	18.3	17.4	114071	18.3	18.4
318966	17.9	20.1	64921	18.0	18.4	187115	18.1	19.7	486567	18.2	19.9	59311	18.3	18.4	446	18.3	12.2
60396	17.9	18.0	277823	18.0	20.0	156331	18.1	18.1	116216	18.2	19.8	208413	18.3	20.3	404093	18.3	20.1
51680	17.9	18.7	443088	18.0	20.2	227636	18.1	20.5	454516	18.2	19.5	439710	18.3	20.1	410101	18.3	20.5
493925	17.9	21.5	333624	18.0	20.2	494377	18.1	20.3	70459	18.2	18.0	17986	18.3	17.0	295186	18.3	20.3
342223	17.9	20.7	29677	18.0	17.7	363685	18.1	19.4	335511	18.2	19.9	367622	18.3	20.8	211606	18.3	20.1
415462	17.9	20.4	193745	18.0	19.7	77035	18.1	18.7	185015	18.2	20.1	252108	18.3	19.2	109010	18.3	19.0
72353	17.9	18.9	486956	18.0	20.8	201078	18.1	20.5	214689	18.2	19.8	270103	18.3	18.1	69557	18.3	18.5
421997	17.9	20.5	49330	18.0	18.2	34491	18.1	18.4	373947	18.2	19.8	286890	18.3	19.0	147581	18.3	19.2
451136	17.9	19.9	515193	18.0	20.5	99376	18.1	18.3	209872	18.2	20.3	508766	18.3	19.6	364505	18.3	19.9
112227	17.9	18.5	365738	18.0	20.4	61981	18.1	18.5	91742	18.2	19.6	316552	18.3	20.6	122929	18.3	19.0
113748	17.9	19.1	118194	18.0	19.1	67603	18.1	18.5	72464	18.2	17.4	182057	18.3	19.4	395599	18.3	20.5
418138	17.9	20.7	64369	18.0	19.6	226545	18.1	19.2	176333	18.2	19.3	381167	18.3	20.1	516523	18.3	20.8
269017	17.9	18.8	15094	18.0	18.1	124384	18.1	18.9	342486	18.2	18.5	279359	18.3	20.6	171081	18.3	19.9
516698	17.9	21.2	252119	18.0	19.5	189957	18.1	19.0	252774	18.2	19.9	391586	18.3	19.9	308314	18.4	19.6
410943	17.9	20.4	263014	18.0	20.9	323536	18.1	19.1	137338	18.2	19.8	85974	18.3	17.7	410974	18.4	19.1
409301	17.9	20.8	303496	18.0	20.7	19039	18.1	18.8	183968	18.2	19.5	103847	18.3	18.6	425767	18.4	21.8
258670	17.9	20.9	255136	18.0	19.0	266176	18.1	20.7	301196	18.2	20.7	392656	18.3	19.3	263022	18.4	19.0
239959	17.9	20.4	313134	18.0	21.5	57098	18.1	17.4	113583	18.2	19.0	78526	18.3	18.2	217184	18.4	19.4
82834	17.9	19.4	339074	18.0	19.1	47628	18.1	17.0	483886	18.2	21.2	254802	18.3	19.8	177882	18.4	19.9
133601	17.9	19.1	496857	18.0	19.7	308604	18.1	20.4	438518	18.2	19.3	239103	18.3	19.6	487996	18.4	20.4
423164	17.9	20.3	245294	18.1	20.4	366984	18.1	21.8	80384	18.2	19.8	397552	18.3	19.4	431187	18.4	19.6
479735	17.9	21.5	241390	18.1	19.1	384939	18.1	20.7	15080	18.2	17.1	441594	18.3	19.7	436474	18.4	20.8
521069	17.9	20.6	184272	18.1	19.2	136180	18.1	19.5	355346	18.2	20.1	191183	18.3	18.7	104598	18.4	18.9
366152	17.9	19.6	333342	18.1	18.5	185182	18.1	20.4	252123	18.2	19.0	229729	18.3	19.8	177880	18.4	19.6
274122	17.9	20.3	268178	18.1	19.3	35458	18.1	18.6	71720	18.2	18.1	184942	18.3	18.7	164259	18.4	17.8
492856	17.9	20.1	356910	18.1	20.5	473616	18.1	20.0	185505	18.2	19.3	173491	18.3	18.8	5895	18.4	15.6
350488	17.9	18.5	474124	18.1	19.8	192628	18.1	20.4	17366	18.2	17.4	359965	18.3	20.1	213741	18.4	19.7
423001	17.9	19.8	354270	18.1	19.3	308930	18.1	19.2	441917	18.2	20.3	33795	18.3	17.2	137546	18.4	19.5
145530	17.9	20.0	124596	18.1	19.1	451633	18.1	21.0	29986	18.2	18.9	123920	18.3	16.3	424422	18.4	20.7
131469	17.9	18.0	99011	18.1	18.8	97308	18.1	19.3	254919	18.2	19.6	515632	18.3	20.4	106711	18.4	17.6
437063	17.9	20.8	517460	18.1	21.3	38220	18.1	17.5	364085	18.2	20.2	24292	18.3	18.4	449834	18.4	20.9
100242	17.9	17.8	7693	18.1	16.4	297171	18.1	19.3	404330	18.2	21.6	323533	18.3	19.4	403192	18.4	20.4
453519	17.9	20.7	90704	18.1	18.8	209409	18.1	20.2	476933	18.2	20.8	329207	18.3	20.8	450936	18.4	20.3
378588	17.9	20.8	296519	18.1	20.3	441256	18.1	20.4	312483	18.2	20.2	127399	18.3	19.8	112487	18.4	19.5
451839	17.9	21.3	165513	18.1	19.4	448646	18.1	18.7	2068	18.2	14.8	453720	18.3	21.2	471005	18.4	18.5
445715	17.9	20.8	351161	18.1	19.8	145493	18.1	19.5	60604	18.2	17.7	173190	18.3	20.1	168100	18.4	20.7
438505	17.9	19.9	65326	18.1	19.0	244019	18.1	19.6	333359	18.2	19.1	259469	18.3	19.2	478854	18.4	20.7
114782	17.9	20.2	26424	18.1	18.1	239962	18.1	20.3	161018	18.2	19.1	198566	18.3	17.5	323676	18.4	19.1
444200	17.9	20.7	327608	18.1	20.4	249728	18.1	19.5	304165	18.2	20.0	99345	18.3	18.0	15651	18.4	18.0
471031	17.9	19.5	298070	18.1	19.7	327704	18.1	19.6	50103	18.2	18.4	356917	18.3	20.3	407184	18.4	19.2
359223	17.9	20.2	323652	18.1	20.4	326115	18.1	20.6	315061	18.2	19.9	446133	18.3	20.3	185504	18.4	18.8
403498	17.9	19.7	254198	18.1	19.5	352908	18.1	20.1	66578	18.2	17.9	415483	18.3	20.3	154209	18.4	19.4
327730	17.9	19.3	258693	18.1	19.6	91497	18.1	18.5	244592	18.2	19.9	10664	18.3	18.2	97590	18.4	18.7
65026	17.9	19.3	458496	18.1	21.0	166418	18.1	18.3	515702	18.2	21.2	511917	18.3	21.2	255180	18.4	19.8
432607	17.9	20.2	217856	18.1	19.3	390910											

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

Nº	10	V															
31245	18.4	17.9	289587	18.5	20.9	56285	18.6	19.2	76800	18.7	17.0	145124	18.7	19.3	177301	18.8	18.6
285391	18.4	19.0	410924	18.5	20.2	6897	18.6	16.3	14746	18.7	17.0	444518	18.7	20.6	348326	18.8	20.3
321006	18.4	20.5	351070	18.5	19.4	381076	18.6	20.8	108463	18.7	19.2	352623	18.7	19.6	23347	18.8	18.0
22855	18.4	17.3	253982	18.5	19.8	469731	18.6	19.4	420808	18.7	19.7	90750	18.7	19.1	118342	18.8	19.2
92980	18.4	17.3	322502	18.5	19.4	446106	18.6	20.6	378627	18.7	20.9	147069	18.7	18.9	16195	18.8	17.8
356804	18.4	19.3	349638	18.5	18.7	488129	18.6	19.9	70053	18.7	17.9	171739	18.7	18.7	150901	18.8	19.6
35615	18.4	17.9	144325	18.5	18.8	289540	18.6	20.9	157392	18.7	19.7	407135	18.7	20.3	491403	18.8	20.8
164923	18.4	18.0	478953	18.5	19.6	317332	18.6	20.3	37940	18.7	19.1	32394	18.7	18.3	323633	18.8	19.4
288113	18.4	20.1	278471	18.5	18.7	134813	18.6	19.8	228116	18.7	20.2	250997	18.7	18.9	204778	18.8	19.5
346541	18.4	20.2	427835	18.5	21.9	103999	18.6	18.0	493647	18.7	20.2	230199	18.7	18.8	228437	18.8	19.3
316177	18.4	19.8	418922	18.5	20.4	436620	18.6	20.4	346485	18.7	20.1	515894	18.7	20.4	161520	18.8	18.8
441237	18.4	20.6	26585	18.5	17.1	90383	18.6	18.5	479759	18.7	21.5	390650	18.7	21.0	471012	18.8	20.1
177166	18.4	18.9	399696	18.5	20.2	399859	18.6	19.5	356998	18.7	18.5	27087	18.7	17.8	382738	18.8	20.9
40372	18.4	17.5	76345	18.5	18.6	319189	18.6	21.3	358968	18.7	20.4	505477	18.7	23.4	27914	18.8	17.5
254508	18.4	19.9	237562	18.5	18.1	8317	18.6	17.8	127373	18.7	19.0	129037	18.7	19.4	276434	18.8	20.2
9772	18.4	16.5	494790	18.5	19.6	450496	18.6	20.2	380238	18.7	19.3	37912	18.7	17.3	106364	18.8	18.7
205088	18.4	18.3	350515	18.5	21.3	394965	18.6	21.3	367048	18.7	20.8	466300	18.7	20.4	475312	18.8	20.5
421776	18.4	20.2	23869	18.5	17.5	374745	18.6	19.0	152399	18.7	19.7	284575	18.7	18.8	456626	18.8	21.2
345837	18.4	20.5	513262	18.5	19.5	409058	18.6	19.4	172146	18.7	19.8	395007	18.7	20.7	515947	18.8	20.2
107086	18.4	20.0	37214	18.5	17.5	149142	18.6	20.3	516053	18.7	20.4	400314	18.7	21.0	358317	18.8	20.5
24184	18.4	16.5	511300	18.5	22.1	460382	18.6	20.9	481362	18.7	21.9	407034	18.7	20.2	75221	18.8	19.9
229902	18.4	19.6	95678	18.5	19.1	78278	18.6	19.9	448534	18.7	19.6	396349	18.7	19.8	457893	18.8	20.7
319453	18.4	20.8	195073	18.5	19.5	382055	18.6	21.0	455100	18.7	20.1	218236	18.7	18.8	80949	18.8	19.1
218330	18.4	19.6	441743	18.5	20.4	518049	18.6	20.8	184963	18.7	19.7	6948	18.8	17.1	30449	18.8	17.9
465998	18.4	20.0	312752	18.5	20.0	146330	18.6	20.0	238586	18.7	20.1	303775	18.8	20.9	35833	18.8	17.5
183755	18.4	19.7	148518	18.5	19.4	387658	18.6	20.3	295643	18.7	19.8	103729	18.8	18.1	166136	18.8	20.0
317231	18.4	20.9	60035	18.5	17.6	146255	18.6	19.8	192285	18.7	20.1	475891	18.8	20.7	361018	18.8	20.4
165991	18.4	19.6	55636	18.5	19.8	407267	18.6	19.8	487348	18.7	20.9	388987	18.8	19.9	452068	18.8	21.0
265271	18.4	19.7	158863	18.5	19.3	379692	18.6	20.9	460248	18.7	20.5	330229	18.8	20.6	476452	18.8	21.8
74439	18.4	18.5	196567	18.5	19.4	351455	18.6	20.0	40121	18.7	18.6	200516	18.8	19.7	444512	18.8	20.0
323579	18.4	20.4	262516	18.5	21.0	220648	18.6	19.2	393727	18.7	20.8	322737	18.8	18.9	212560	18.8	20.3
237332	18.4	20.0	308852	18.5	20.1	155331	18.6	18.7	3782	18.7	16.0	108085	18.8	18.0	122092	18.8	19.6
54607	18.4	18.0	306353	18.5	20.2	98712	18.6	16.9	380122	18.7	20.4	323220	18.8	19.4	472139	18.8	20.3
353009	18.4	20.1	106512	18.5	18.6	106493	18.6	19.3	109284	18.7	18.6	329259	18.8	20.0	237465	18.8	20.7
16294	18.4	18.4	29104	18.5	19.8	342632	18.6	20.6	221005	18.7	20.3	75676	18.8	18.5	875	18.8	14.0
262604	18.4	20.0	359950	18.5	19.5	203661	18.6	20.1	165593	18.7	19.2	14015	18.8	17.8	514231	18.8	20.5
159578	18.4	20.4	328662	18.5	19.7	407132	18.6	20.4	461193	18.7	21.1	469495	18.8	19.4	75560	18.8	18.2
319212	18.4	20.0	136292	18.5	19.2	217228	18.6	19.6	132471	18.7	17.7	103706	18.8	18.9	452055	18.8	20.2
516336	18.4	20.3	44097	18.5	16.1	512841	18.6	20.6	49150	18.7	18.3	324823	18.8	20.0	139800	18.8	19.0
174340	18.4	19.0	364225	18.5	20.8	370429	18.6	19.7	428671	18.7	21.1	229356	18.8	18.5	429767	18.8	21.2
18068	18.4	18.2	208126	18.5	19.4	152147	18.6	19.4	506283	18.7	21.0	120749	18.8	19.1	289842	18.8	20.8
508876	18.5	20.8	478603	18.5	20.7	390561	18.6	19.2	90309	18.7	19.6	264117	18.8	20.3	36416	18.8	16.8
480978	18.5	19.9	521810	18.5	20.7	268175	18.6	19.4	99792	18.7	19.4	474616	18.8	19.4	188826	18.8	19.1
316217	18.5	20.2	259623	18.5	19.2	12411	18.6	16.5	60436	18.7	18.2	108141	18.8	20.3	412743	18.8	21.0
443443	18.5	20.9	38224	18.5	17.9	304198	18.6	19.6	523297	18.7	20.1	180184	18.8	20.0	168692	18.8	19.3
220524	18.5	19.9	448640	18.5	20.1	352929	18.6	19.6	67214	18.7	17.5	195361	18.8	20.6	220751	18.8	19.7
304421	18.5	19.8	95527	18.5	19.1	105886	18.6	18.4	55214	18.7	19.0	207063	18.8	20.5	288511	18.8	21.0
33189	18.5	18.9	218329	18.5	19.3	345519	18.6	20.7	77413	18.7	18.6	334436	18.8	20.1	305154	18.8	20.1
313990	18.5	19.8	107466	18.5	19.2	516138	18.6	19.6	331885	18.7	20.6	65232	18.8	18.9	219502	18.8	19.3
80779	18.5	18.9	149904	18.5	19.2	431368	18.6	21.1	227041	18.7	20.0	12699	18.8	18.4	89524	18.8	18.1
517859	18.5	20.0	107813	18.5	18.4	57109	18.6	18.4	147073	18.7	19.7	458703	18.8	21.3	222148	18.8	19.6
176665	18.5	18.6	320038	18.5	20.8	495328	18.6	21.0	390675	18.7	18.9	183045	18.8	19.4	127599	18.8	17.8
116002	18.5	18.4	360421	18.5	20.0	412834	18.6	20.2	154473	18.7	20.6	475186	18.8	20.0	407629	18.8	20.7
394084	18.5	19.3	449843	18.5	20.9	353125	18.6	20.8	484280	18.7	21.4	353144	18.8	20.6	364680	18.8	20.5
33543	18.5	19.0	157198	18.5	19.5	113944	18.6	19.4	66557	18.7	18.2	300669	18.8	20.1	18647	18.8	18.7
397954	18.5	20.7	519401	18.5	20.9	117536	18.6	19.3	116687	18.7	19.0	449978	18.8	20.6	410970	18.8	20.7
183744	18.5	20.4	202325	18.6	20.4	476499	18.6	21.6	69430	18.7	19.9	45971	18.8	19.1	484815	18.8	21.1
352971	18.5	19.2	86460	18.6	19.8	242506	18.6	19.8	79952	18.7	19.1	270164	18.8	18.6	431756	18.8	21.2
140593	18.5	19.3	158761	18.6	17.7	135892	18.6	19.1	173711	18.7	18.9	267694	18.8	20.0	402052	18.9	20.5
373240	18.5	20.2	507952	18.6	20.7	21942	18.6	19.3	390121	18.7	18.9	415797	18.8	20.7	386933	18.9	20.0
286796	18.5	20.9	167085	18.6	19.0	23574											

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

Nº	10	V															
402796	18.9	20.8	200112	18.9	20.0	96466	19.0	19.4	227307	19.1	20.4	261562	19.2	19.4	449762	19.2	20.5
189838	18.9	20.4	232838	18.9	19.5	349265	19.0	19.6	185557	19.1	19.9	372864	19.2	20.3	228182	19.2	18.8
82119	18.9	17.2	7969	18.9	16.4	289182	19.0	19.7	2327	19.1	15.5	424484	19.2	21.6	38824	19.2	17.9
262193	18.9	19.6	518343	18.9	21.3	149888	19.0	19.3	450757	19.1	21.1	254466	19.2	20.8	14552	19.2	17.2
267302	18.9	19.9	216433	18.9	20.7	381775	19.0	19.1	208073	19.1	19.6	281841	19.2	19.4	76237	19.2	18.7
83123	18.9	17.7	393008	18.9	19.4	449958	19.0	20.8	17704	19.1	18.0	310680	19.2	20.5	356238	19.2	20.0
39075	18.9	18.9	293150	18.9	19.1	410641	19.0	20.6	473631	19.1	20.3	396315	19.2	20.5	4333	19.2	15.6
513799	18.9	21.3	77405	18.9	19.2	76251	19.0	18.9	296050	19.1	19.8	392117	19.2	20.9	24596	19.2	18.1
518754	18.9	19.9	197856	18.9	20.1	161489	19.0	19.7	74855	19.1	18.4	32120	19.2	18.5	476972	19.3	19.3
454886	18.9	19.6	456130	18.9	21.5	356095	19.0	20.2	451166	19.1	20.7	49853	19.2	17.8	360895	19.3	20.3
402468	18.9	20.4	460566	18.9	20.2	247992	19.0	19.9	394160	19.1	18.6	401415	19.2	21.1	356263	19.3	20.2
243906	18.9	18.9	481919	18.9	19.6	144482	19.0	19.6	3129	19.1	17.2	292783	19.2	19.4	496946	19.3	19.9
333140	18.9	20.0	509173	18.9	21.5	367581	19.0	19.5	136666	19.1	18.1	287001	19.2	20.8	164381	19.3	19.1
417266	18.9	19.6	138297	18.9	19.7	440839	19.0	20.0	127275	19.1	19.6	68866	19.2	18.4	123562	19.3	19.7
25533	18.9	18.3	81009	18.9	20.2	43179	19.0	17.8	381393	19.1	21.2	263602	19.2	20.6	393380	19.3	21.3
436143	18.9	20.5	477529	18.9	19.8	140333	19.0	18.7	257181	19.1	19.5	406263	19.2	21.5	127197	19.3	19.7
479422	18.9	20.5	516143	18.9	20.5	316963	19.0	21.0	311695	19.1	18.6	521689	19.2	20.9	449831	19.3	20.5
358993	18.9	21.0	36036	18.9	19.0	483991	19.0	22.0	319305	19.1	20.0	150459	19.2	18.8	286831	19.3	20.3
78571	18.9	18.7	422101	18.9	21.0	161889	19.0	19.7	262932	19.1	20.2	118339	19.2	18.6	194983	19.3	19.0
100266	18.9	17.9	255288	18.9	19.6	517283	19.0	21.5	367671	19.1	20.4	345840	19.2	18.6	39654	19.3	17.1
97847	18.9	17.3	135868	18.9	18.9	438435	19.0	20.9	397304	19.1	21.0	37580	19.2	17.1	124058	19.3	19.5
44760	18.9	17.7	198381	18.9	19.4	57920	19.0	19.1	193716	19.1	21.2	325429	19.2	19.9	317136	19.3	18.5
457131	18.9	19.6	323689	18.9	20.8	240203	19.0	20.1	408966	19.1	20.5	491174	19.2	20.2	76249	19.3	18.0
446293	18.9	21.3	259800	18.9	19.2	390796	19.0	20.7	489683	19.1	21.0	244303	19.2	19.9	209687	19.3	19.8
322963	18.9	19.7	490461	18.9	20.3	268914	19.0	20.8	514160	19.1	20.0	138330	19.2	19.0	299646	19.3	19.5
323648	18.9	20.5	223417	18.9	19.2	48354	19.0	19.5	430872	19.1	19.6	385693	19.2	19.8	450526	19.3	20.0
72495	18.9	19.3	327603	18.9	21.2	189145	19.1	19.4	32519	19.1	17.1	1195	19.2	16.6	447918	19.3	21.3
28290	18.9	17.4	142705	18.9	18.6	251716	19.1	19.7	34625	19.1	18.6	85114	19.2	18.4	326522	19.3	19.1
45296	18.9	17.9	266825	18.9	19.7	36250	19.1	18.0	484886	19.1	20.6	268536	19.2	19.8	357236	19.3	21.3
480554	18.9	20.6	240673	18.9	19.9	152681	19.1	19.4	515346	19.1	20.8	187969	19.2	19.1	284843	19.3	19.3
178035	18.9	19.0	141697	18.9	19.7	172317	19.1	20.2	122129	19.1	18.9	287017	19.2	19.5	9991	19.3	18.4
28719	18.9	18.5	36286	18.9	18.3	317282	19.1	19.9	375150	19.1	20.7	155864	19.2	19.6	339191	19.3	19.7
352220	18.9	20.4	220497	18.9	20.5	243127	19.1	18.4	279611	19.1	20.4	215404	19.2	19.4	360073	19.3	20.4
478727	18.9	19.3	487584	18.9	20.2	94176	19.1	19.0	335735	19.1	20.1	324606	19.2	19.8	161135	19.3	19.2
268818	18.9	18.8	273598	18.9	20.4	450200	19.1	20.5	250023	19.1	20.2	491933	19.2	20.1	213647	19.3	20.0
305182	18.9	19.8	324106	18.9	20.1	143983	19.1	19.5	149659	19.1	20.3	6328	19.2	17.1	453469	19.3	19.7
429503	18.9	21.1	127328	18.9	18.7	315979	19.1	20.1	398324	19.1	20.0	259681	19.2	20.3	20954	19.3	18.3
172849	18.9	19.9	28522	18.9	17.8	515954	19.1	20.5	520329	19.1	20.2	157635	19.2	20.0	310378	19.3	20.1
25329	18.9	16.8	234705	18.9	20.1	309007	19.1	20.2	304171	19.1	19.9	129630	19.2	19.9	346605	19.3	20.3
177427	18.9	19.5	66980	18.9	18.5	195245	19.1	20.2	208401	19.1	19.5	342413	19.2	19.7	305263	19.3	20.3
296331	18.9	20.8	385087	18.9	20.1	510543	19.1	19.1	98999	19.1	19.3	305560	19.2	19.6	356137	19.3	20.1
272479	18.9	20.3	126796	18.9	19.6	30717	19.1	14.7	312678	19.1	19.9	86576	19.2	19.9	50057	19.3	18.4
57752	18.9	18.1	167942	18.9	19.8	481672	19.1	20.2	66691	19.1	20.1	173037	19.2	19.6	209790	19.3	19.2
182768	18.9	19.7	282553	18.9	19.5	13193	19.1	17.6	80635	19.1	19.5	147493	19.2	20.0	358519	19.3	21.0
517552	18.9	20.4	168081	18.9	20.0	254883	19.1	20.2	312487	19.1	20.1	358845	19.2	20.9	47097	19.3	18.4
41353	18.9	18.6	146317	18.9	19.5	114565	19.1	18.3	143010	19.1	18.8	318526	19.2	20.8	378609	19.3	20.2
145004	18.9	19.7	229254	18.9	20.7	145717	19.1	20.4	485894	19.1	21.5	73486	19.2	18.5	354261	19.3	19.9
311556	18.9	18.9	218554	18.9	19.4	49020	19.1	18.7	446245	19.2	20.2	131571	19.2	17.9	2433	19.3	15.3
25404	18.9	18.5	437305	18.9	21.4	365758	19.1	19.4	366079	19.2	20.6	136689	19.2	19.1	315985	19.3	20.5
195547	18.9	20.1	114561	18.9	18.3	205116	19.1	17.4	349849	19.2	20.3	387629	19.2	20.3	180616	19.3	20.2
216088	18.9	20.2	69977	18.9	19.0	129944	19.1	19.5	154609	19.2	20.3	236508	19.2	19.4	220955	19.3	19.7
304325	18.9	19.5	522007	18.9	21.1	405272	19.1	20.2	451213	19.2	20.4	323274	19.2	20.2	117414	19.3	19.4
475970	18.9	20.0	69746	18.9	19.1	211362	19.1	18.7	195050	19.2	19.5	10060	19.2	18.0	451358	19.3	20.8
151675	18.9	19.2	218497	18.9	18.8	289122	19.1	20.2	255505	19.2	19.5	185959	19.2	19.1	447221	19.3	19.9
346568	18.9	20.9	217695	19.0	18.7	353749	19.1	20.2	124741	19.2	18.8	207281	19.2	19.7	262542	19.3	18.5
376822	18.9	21.1	347265	19.0	20.1	193457	19.1	20.2	113585	19.2	18.5	39858	19.2	17.7	487866	19.3	19.5
521534	18.9	21.4	460460	19.0	20.3	452539	19.1	19.4	114832	19.2	17.7	476519	19.2	21.7	247981	19.3	19.3
302793	18.9	18.9	482880	19.0	19.9	356779	19.1	20.5	160506	19.2	21.1	451641	19.2	21.8	75462	19.3	19.0
118607	18.9	18.4	254223	19.0	19.6	385825	19.1	21.1	404568	19.2	20.6	202386	19.2	19.8	478783	19.3	19.0
485732	18.9	21.2	28190	19.0	16.7	408662	19.1	20.6	168446	19.2	19.6	519774	19.2	21.5	437314	19.3	20.7
268925	18.9	20.2	412313	19.0	19.7	3150											

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

Nº	10	V															
282730	19.3	19.6	132343	19.4	19.7	195341	19.5	19.7	517306	19.5	21.0	287168	19.6	18.6	517437	19.7	20.9
379584	19.3	20.8	480836	19.4	19.9	481637	19.5	21.2	272219	19.5	19.1	240970	19.6	20.6	327613	19.7	20.9
230931	19.3	19.9	514607	19.4	21.6	337281	19.5	17.8	296941	19.5	21.0	104610	19.6	19.0	87892	19.7	18.1
277522	19.3	18.9	115902	19.4	18.7	358718	19.5	21.0	308149	19.5	16.9	315923	19.6	19.7	303144	19.7	19.4
71012	19.3	18.5	113339	19.4	19.3	350195	19.5	19.3	222432	19.5	18.3	313343	19.6	19.0	401826	19.7	19.6
29108	19.3	18.5	45853	19.4	19.1	401788	19.5	20.0	389527	19.5	20.4	59040	19.6	18.7	484917	19.7	20.7
227228	19.3	18.0	96746	19.4	19.1	246825	19.5	20.2	68198	19.5	19.1	78253	19.6	18.9	227260	19.7	20.0
220423	19.3	18.9	484150	19.4	20.5	453753	19.5	21.0	319273	19.5	20.5	172825	19.6	18.8	54682	19.7	19.4
202334	19.3	20.1	97488	19.4	19.8	395113	19.5	19.0	261735	19.5	19.5	76277	19.6	17.6	415675	19.7	20.0
18856	19.3	17.7	377521	19.4	20.7	380714	19.5	19.1	146399	19.5	19.2	145512	19.6	19.9	475400	19.7	20.7
113041	19.3	18.9	267591	19.4	18.2	328626	19.5	20.5	98624	19.6	18.8	253583	19.6	19.9	27600	19.7	18.2
447718	19.3	21.0	518023	19.4	21.3	104293	19.5	18.7	37900	19.6	18.0	95231	19.6	18.9	105969	19.7	18.2
360085	19.3	20.1	80485	19.4	17.5	404661	19.5	20.3	196566	19.6	19.6	308831	19.6	18.7	408562	19.7	20.9
480245	19.3	20.3	95554	19.4	19.0	471221	19.5	20.5	403185	19.6	21.1	303646	19.6	19.2	405840	19.7	21.1
517523	19.3	20.7	933	19.4	15.8	240997	19.5	19.0	170703	19.6	19.7	219216	19.6	19.3	373149	19.7	20.8
174093	19.3	19.8	265109	19.4	19.7	290401	19.5	20.2	479112	19.6	20.8	349993	19.6	21.2	323293	19.7	20.5
22726	19.3	17.6	396158	19.4	20.9	476817	19.5	20.8	271423	19.6	21.0	144846	19.6	20.0	213325	19.7	19.5
487361	19.3	20.8	201073	19.4	19.4	193468	19.5	18.0	74043	19.6	18.4	209275	19.6	18.2	28975	19.7	18.5
421988	19.3	20.7	26449	19.4	16.8	69736	19.5	18.4	494494	19.6	20.9	145221	19.6	19.8	357458	19.7	21.0
293540	19.3	20.5	198737	19.4	19.7	222228	19.5	19.3	110929	19.6	19.8	433276	19.6	20.5	380379	19.7	19.4
141823	19.3	20.0	203693	19.4	20.4	517123	19.5	20.9	319163	19.6	20.6	258683	19.6	20.1	32598	19.7	18.7
226524	19.3	19.0	79924	19.4	18.9	252768	19.5	20.2	161606	19.6	19.3	30386	19.6	18.1	166397	19.7	20.0
155895	19.3	19.4	458445	19.4	20.4	113883	19.5	18.1	475231	19.6	19.5	484948	19.7	21.0	306491	19.7	19.5
452177	19.3	19.1	241757	19.4	20.1	396255	19.5	18.3	443269	19.6	19.6	429416	19.7	18.9	82661	19.7	19.1
396422	19.4	20.0	58398	19.4	19.3	397598	19.5	19.3	452606	19.6	20.2	288032	19.7	19.9	452024	19.7	20.6
228008	19.4	19.8	27969	19.4	17.5	443699	19.5	19.9	256477	19.6	20.1	414985	19.7	20.8	166239	19.7	20.3
108222	19.4	20.1	329496	19.4	19.2	326071	19.5	20.0	439841	19.6	20.7	383511	19.7	21.2	329944	19.7	20.2
139193	19.4	19.4	437077	19.4	19.8	102752	19.5	19.2	115690	19.6	19.5	345518	19.7	19.9	427848	19.7	21.3
112323	19.4	19.0	349960	19.4	19.3	50112	19.5	17.5	504847	19.6	22.2	46321	19.7	17.6	381762	19.7	18.6
446803	19.4	20.5	243500	19.4	19.7	223135	19.5	18.7	55393	19.6	17.7	470284	19.7	19.4	335374	19.7	21.1
348333	19.4	19.7	108865	19.4	18.8	401825	19.5	19.8	97144	19.6	19.1	14989	19.7	15.1	210884	19.7	19.6
485368	19.4	20.9	274112	19.4	20.6	247749	19.5	19.9	288464	19.6	21.0	277290	19.7	18.4	401465	19.7	20.5
149088	19.4	19.7	174271	19.4	19.3	233773	19.5	20.4	387685	19.6	20.8	505339	19.7	20.8	284222	19.7	21.2
454895	19.4	19.8	60013	19.4	18.2	405888	19.5	20.2	287683	19.6	19.5	46121	19.7	18.7	91780	19.7	18.5
441749	19.4	20.3	355270	19.4	20.1	25683	19.5	19.3	397281	19.6	19.1	163309	19.7	19.2	249361	19.7	20.5
242504	19.4	19.7	438788	19.4	19.3	43544	19.5	19.1	324238	19.6	20.6	284727	19.7	20.5	225736	19.7	19.7
408819	19.4	20.6	403426	19.4	20.2	53217	19.5	20.8	404566	19.6	20.5	151255	19.7	19.8	27707	19.7	17.6
294654	19.4	20.4	498485	19.4	20.3	161955	19.5	20.3	51271	19.6	18.9	461312	19.7	20.8	452989	19.7	21.3
181647	19.4	21.2	54256	19.4	17.8	45650	19.5	17.1	374796	19.6	18.4	430030	19.7	21.1	156588	19.7	19.8
127382	19.4	19.8	325419	19.4	20.2	112060	19.5	19.5	22831	19.6	18.1	243501	19.7	19.6	398510	19.7	20.2
328780	19.4	19.7	481939	19.4	20.7	56146	19.5	17.6	131803	19.6	18.3	61082	19.7	17.6	277424	19.7	19.2
51583	19.4	17.2	40209	19.4	18.3	300635	19.5	20.1	320454	19.6	20.8	408557	19.7	21.5	484147	19.7	20.0
480999	19.4	21.1	232517	19.4	19.3	154242	19.5	20.0	75137	19.6	18.9	352894	19.7	20.4	108549	19.7	16.8
171728	19.4	18.8	162465	19.4	18.9	384479	19.5	19.7	249258	19.6	20.1	450294	19.7	19.1	176239	19.8	18.7
44552	19.4	17.7	308815	19.4	19.4	180711	19.5	19.8	313349	19.6	19.9	82844	19.7	18.2	150830	19.8	19.6
125246	19.4	18.8	190266	19.4	19.2	72178	19.5	17.8	208093	19.6	19.8	383619	19.7	19.8	300681	19.8	20.7
20389	19.4	16.9	21008	19.4	16.8	488686	19.5	19.6	273504	19.6	19.5	30400	19.7	17.3	53720	19.8	18.2
480908	19.4	18.6	376098	19.4	20.5	185690	19.5	20.1	487162	19.6	20.7	184348	19.7	20.5	239135	19.8	21.3
367467	19.4	20.8	206443	19.4	19.4	386120	19.5	20.8	298089	19.6	19.8	379560	19.7	20.5	389044	19.8	21.2
233330	19.4	19.1	129410	19.5	18.9	74248	19.5	17.7	407192	19.6	20.7	359365	19.7	20.8	138946	19.8	20.5
389472	19.4	21.6	304215	19.5	19.1	21262	19.5	18.8	446481	19.6	20.9	257047	19.7	20.1	443203	19.8	20.5
304988	19.4	21.4	514212	19.5	20.3	191995	19.5	19.8	326057	19.6	20.0	167823	19.7	20.1	296565	19.8	19.0
108230	19.4	19.5	98720	19.5	18.2	114776	19.5	19.0	25028	19.6	17.5	132936	19.7	19.2	178785	19.8	20.1
317817	19.4	19.3	85977	19.5	19.1	183752	19.5	19.1	220215	19.6	18.5	367691	19.7	19.1	515558	19.8	22.4
386798	19.4	21.3	488621	19.5	20.0	239628	19.5	19.7	274924	19.6	18.8	468732	19.7	20.7	316942	19.8	20.5
483964	19.4	20.7	367242	19.5	20.4	439	19.5	13.9	177668	19.6	19.4	139291	19.7	17.3	134942	19.8	17.4
1721	19.4	15.4	309575	19.5	20.4	122041	19.5	18.9	399086	19.6	19.5	5259	19.7	17.4	322979	19.8	18.4
385077	19.4	19.8	115294	19.5	18.8	138343	19.5	19.4	428596	19.6	21.6	317344	19.7	21.4	14483	19.8	18.4
305231	19.4	19.3	509398	19.5	22.0	26068	19.5	18.6	159945	19.6	20.5	275222	19.7	21.1	218071	19.8	19.8
22416	19.4	15.8	228057	19.5	20.5	267992	19.5	20.5	225788	19.6	18.4	114703	19.7	19.2	270211	19.8	19.3
172625	19.4	20.0	483282	19.5	21.0	444											

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

Nº	10	V															
373881	19.8	19.3	25107	19.9	17.3	28109	19.9	18.4	250000	19.9	19.5	274590	20.1	20.0	408574	20.1	20.0
342374	19.8	20.0	440898	19.9	19.9	205127	19.9	19.7	449509	19.9	20.1	237924	20.1	20.6	514813	20.1	20.0
316124	19.8	19.6	346105	19.9	19.2	440061	19.9	19.4	488040	19.9	20.4	473013	20.1	20.1	186647	20.1	19.1
348111	19.8	20.2	48087	19.9	18.7	92194	19.9	17.2	437172	19.9	20.2	153412	20.1	18.5	487341	20.1	20.8
94494	19.8	18.1	243334	19.9	20.3	102020	19.9	18.0	10639	20.0	17.2	439817	20.1	20.6	92002	20.1	19.0
390334	19.8	20.9	97366	19.9	19.5	223606	19.9	19.9	393009	20.0	19.6	366991	20.1	19.9	181233	20.1	19.7
327801	19.8	19.8	483642	19.9	19.3	481886	19.9	20.9	330948	20.0	19.3	71552	20.1	18.4	48782	20.1	18.7
216945	19.8	18.6	221018	19.9	18.1	163216	19.9	19.3	80632	20.0	19.5	52433	20.1	17.8	148200	20.1	19.1
65720	19.8	18.9	161333	19.9	18.4	393724	19.9	19.6	301250	20.0	20.7	510177	20.1	20.7	65228	20.2	18.8
366490	19.8	20.2	106233	19.9	18.1	142998	19.9	19.0	477288	20.0	19.7	403455	20.1	20.2	381031	20.2	19.1
443670	19.8	20.2	448032	19.9	21.5	199577	19.9	20.6	88840	20.0	18.9	21205	20.1	18.6	60671	20.2	18.2
517344	19.8	21.3	260494	19.9	19.8	4417	19.9	16.3	355291	20.0	20.3	401789	20.1	21.3	47684	20.2	18.7
277001	19.8	18.5	171270	19.9	19.4	392731	19.9	19.4	476983	20.0	21.1	40506	20.1	18.1	226984	20.2	19.9
77269	19.8	19.0	159520	19.9	19.8	447240	19.9	20.0	492764	20.0	20.9	405273	20.1	20.6	447734	20.2	21.1
86809	19.8	19.1	453001	19.9	22.1	119523	19.9	19.0	325608	20.0	19.7	254885	20.1	20.5	210962	20.2	19.6
484030	19.8	22.1	233383	19.9	20.9	118144	19.9	18.9	343718	20.0	21.0	352895	20.1	20.7	245731	20.2	18.9
7215	19.8	16.8	104088	19.9	19.3	489490	19.9	20.8	316671	20.0	20.0	301764	20.1	21.2	93796	20.2	18.8
176151	19.8	20.1	510109	19.9	19.8	312916	19.9	20.0	337288	20.0	18.3	241755	20.1	19.9	441243	20.2	20.8
43105	19.8	17.3	47801	19.9	18.0	391564	19.9	19.0	178024	20.0	19.0	243277	20.1	19.7	183328	20.2	18.6
510882	19.8	21.1	121808	19.9	18.4	80335	19.9	17.6	104075	20.0	19.5	61101	20.1	18.9	346422	20.2	20.2
37876	19.8	17.3	305870	19.9	20.4	472472	19.9	20.9	523296	20.0	20.7	166493	20.1	20.0	154959	20.2	19.0
5787	19.8	16.4	289667	19.9	19.4	225482	19.9	19.1	488685	20.0	21.2	373378	20.1	21.5	513141	20.2	21.8
98826	19.8	19.0	469749	19.9	20.2	514004	19.9	21.3	125273	20.0	19.5	136042	20.1	17.7	460105	20.2	20.1
226318	19.8	20.3	212194	19.9	19.1	351157	19.9	18.6	442538	20.0	20.2	102160	20.1	17.5	20489	20.2	16.8
401506	19.8	20.1	328005	19.9	21.1	337983	19.9	19.4	72616	20.0	18.8	408534	20.1	20.1	286731	20.2	19.4
340159	19.8	20.7	509437	19.9	21.4	325191	19.9	20.1	349853	20.0	20.2	66666	20.1	17.1	366046	20.2	20.2
2200	19.8	16.5	103989	19.9	18.6	103436	19.9	18.6	272552	20.0	21.1	264484	20.1	19.6	273589	20.2	19.6
95335	19.8	18.4	75147	19.9	18.5	223389	19.9	19.6	179797	20.0	19.7	481874	20.1	19.6	488657	20.2	19.9
358672	19.8	18.4	35494	19.9	18.3	35251	19.9	19.1	400877	20.0	20.2	326378	20.1	19.6	198417	20.2	19.0
345280	19.8	20.5	35671	19.9	21.2	217489	19.9	18.5	512051	20.0	21.2	21640	20.1	16.2	506291	20.2	21.1
63476	19.8	18.1	517031	19.9	21.4	412509	19.9	19.9	433486	20.0	19.8	410963	20.1	20.4	153605	20.2	20.4
512075	19.8	20.8	479888	19.9	20.9	93755	19.9	18.1	487354	20.0	21.2	69571	20.1	17.9	336128	20.2	19.4
399164	19.8	20.0	40576	19.9	17.5	193562	19.9	16.9	501596	20.0	19.8	312898	20.1	20.8	260652	20.2	20.5
71107	19.8	19.2	69042	19.9	19.0	353528	19.9	20.3	366057	20.0	20.3	212366	20.1	19.6	332479	20.2	20.1
512644	19.8	19.7	186038	19.9	19.5	395423	19.9	20.0	23148	20.0	18.1	72491	20.1	18.9	33688	20.2	18.8
444011	19.8	21.2	513062	19.9	19.2	894442	19.9	19.4	514990	20.0	20.8	362314	20.1	21.4	425737	20.2	20.1
355414	19.8	20.5	359732	19.9	20.0	128592	19.9	19.4	169095	20.0	19.5	361875	20.1	21.1	370882	20.2	20.5
241034	19.8	19.8	309872	19.9	19.6	22695	19.9	18.5	321325	20.0	20.2	439579	20.1	20.4	430495	20.2	19.4
220394	19.8	19.8	236678	19.9	19.3	435623	19.9	21.0	399664	20.0	19.8	130183	20.1	19.1	324310	20.2	20.6
48191	19.8	18.5	289670	19.9	20.2	22960	19.9	16.4	183306	20.0	19.2	487342	20.1	20.6	266109	20.2	18.5
349271	19.8	19.7	328679	19.9	19.8	436611	19.9	20.2	209328	20.0	19.7	830	20.1	13.3	384351	20.2	19.8
306127	19.8	20.5	333337	19.9	18.8	389437	19.9	20.7	472847	20.0	21.0	365396	20.1	20.1	396140	20.2	21.3
444602	19.8	20.6	226471	19.9	19.0	316173	19.9	19.9	513363	20.0	20.8	399196	20.1	21.2	341844	20.2	20.2
401759	19.8	20.3	57945	19.9	18.3	245326	19.9	18.8	19685	20.0	17.5	293512	20.1	19.8	451636	20.2	21.1
210059	19.8	20.3	514833	19.9	21.9	143800	19.9	18.5	261343	20.0	20.1	167818	20.1	20.0	228114	20.2	19.5
479786	19.8	20.0	218216	19.9	19.8	77935	19.9	18.1	244819	20.0	18.9	476722	20.1	20.1	394581	20.2	20.5
330519	19.8	20.0	220206	19.9	18.6	512730	19.9	19.5	139258	20.0	17.8	132515	20.1	19.1	47151	20.2	17.7
384673	19.8	20.6	124108	19.9	19.3	91537	19.9	18.0	457977	20.0	19.9	254901	20.1	20.3	473566	20.2	20.5
384128	19.8	21.5	263137	19.9	20.2	269521	19.9	20.1	449824	20.0	20.2	144309	20.1	19.6	159155	20.2	19.3
435043	19.8	20.9	52168	19.9	17.5	358150	19.9	19.7	12277	20.0	16.7	316303	20.1	20.2	134015	20.2	19.5
483125	19.8	20.7	404989	19.9	20.5	241648	19.9	20.1	450746	20.0	20.8	445829	20.1	21.2	173707	20.2	18.9
344024	19.8	20.6	363226	19.9	19.4	166558	19.9	18.9	514307	20.0	20.7	115908	20.1	19.2	306963	20.2	18.5
13962	19.8	16.3	356164	19.9	20.2	404475	19.9	20.6	202756	20.0	20.3	490408	20.1	20.2	189034	20.2	19.9
78364	19.8	18.7	150432	19.9	19.7	200046	19.9	19.4	259557	20.0	18.9	22365	20.1	17.2	132629	20.2	19.1
238544	19.8	19.6	85567	19.9	19.4	205389	19.9	18.5	152349	20.0	20.4	48163	20.1	18.0	493700	20.2	20.6
356788	19.8	20.3	485967	19.9	21.2	77132	19.9	18.7	30452	20.0	18.1	128047	20.1	18.9	320176	20.2	20.4
465284	19.8	21.0	39486	19.9	17.8	333771	19.9	20.4	392945	20.0	19.3	359452	20.1	20.4	448022	20.2	20.8
228152	19.8	20.1	315913	19.9	20.9	45579	19.9	18.3	511616	20.0	20.9	345148	20.1	20.0	164901	20.2	19.1
239676	19.8	17.3	281254	19.9	19.9	278550	19.9	18.2	403201	20.0	20.7	261787	20.1	19.2	494659	20.2	20.6
269865	19.8	21.3	279289	19.9	19.8	200144	19.9	20.7	356954	20.0	18.9	365715	20.1	20.1	520616	20.2	20.6
60990	19.8	19.0	330599	19.9	20.9	1											

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

Nº	10	V															
40057	20.2	17.2	408727	20.3	19.7	127505	20.4	18.5	347240	20.5	19.1	40928	20.5	18.1	226312	20.6	19.7
517506	20.2	20.7	515711	20.3	21.6	61868	20.4	18.7	433343	20.5	20.4	20762	20.5	16.0	116154	20.6	17.6
191176	20.2	17.2	411454	20.3	20.4	480648	20.4	19.8	129624	20.5	20.2	172255	20.5	19.3	198486	20.6	20.2
350085	20.2	19.7	409183	20.3	20.2	357481	20.4	21.1	451134	20.5	20.0	482597	20.5	20.1	436054	20.6	20.2
316190	20.2	20.9	101457	20.3	17.4	26324	20.4	18.1	38371	20.5	17.2	296701	20.5	19.6	254510	20.6	19.8
325539	20.2	18.9	246629	20.3	18.8	212418	20.4	20.4	391877	20.5	20.4	285014	20.5	20.3	477786	20.6	21.2
433293	20.2	20.7	206687	20.3	19.4	424056	20.4	21.3	432275	20.5	20.4	308291	20.5	20.9	374261	20.6	21.2
25504	20.2	18.7	407599	20.3	20.8	382076	20.4	20.9	30131	20.5	17.6	386820	20.5	21.7	469798	20.6	19.2
37101	20.2	18.0	274907	20.3	20.5	317241	20.4	20.5	247784	20.5	18.6	285868	20.5	20.1	97248	20.6	17.2
331167	20.2	20.7	127657	20.3	20.1	260270	20.4	19.7	271868	20.5	19.9	515792	20.5	19.1	120069	20.6	17.6
123375	20.2	18.9	521442	20.3	20.4	363357	20.4	19.5	25710	20.5	16.5	48812	20.5	17.7	362772	20.6	20.1
353562	20.2	20.5	406258	20.3	20.8	298691	20.4	20.1	96762	20.5	18.8	367789	20.5	23.5	209244	20.6	18.7
144448	20.2	19.7	47131	20.3	18.0	387375	20.4	19.4	521424	20.5	19.9	361036	20.5	19.8	516124	20.6	20.6
215945	20.2	19.5	275116	20.3	19.8	164566	20.4	17.3	248311	20.5	20.0	150486	20.5	18.3	365398	20.6	20.0
267857	20.2	19.7	485354	20.3	21.5	452256	20.4	20.4	107430	20.5	19.2	436625	20.5	20.6	356760	20.6	19.8
206385	20.2	18.9	157455	20.3	19.6	52903	20.4	18.0	444253	20.5	20.8	241225	20.5	20.1	374198	20.6	20.6
242279	20.2	20.8	327176	20.3	20.8	367316	20.4	19.0	73432	20.5	19.4	357440	20.5	20.3	192167	20.6	19.6
467834	20.2	20.6	512360	20.3	19.1	365557	20.4	20.8	481635	20.5	19.0	432705	20.5	21.3	442244	20.6	21.4
256584	20.2	19.3	473492	20.3	20.1	15129	20.4	15.8	210614	20.5	19.9	514222	20.5	21.1	44012	20.6	17.7
395569	20.2	20.0	349661	20.3	20.7	461274	20.4	19.8	220713	20.5	19.3	314364	20.5	20.6	53746	20.6	19.9
231618	20.2	20.1	340121	20.3	20.5	1496	20.4	14.8	289870	20.5	20.4	478702	20.5	20.4	390926	20.6	21.5
189808	20.2	20.5	523601	20.3	21.7	57433	20.4	18.5	407601	20.5	19.9	514510	20.5	21.1	453472	20.6	20.5
482655	20.2	20.9	480121	20.3	20.8	355424	20.4	20.0	447439	20.5	21.5	445454	20.5	20.9	24015	20.6	17.2
179222	20.2	19.8	140677	20.3	19.1	367993	20.4	21.2	407183	20.5	20.5	353058	20.6	20.0	195395	20.6	20.6
48907	20.2	18.0	417417	20.3	20.4	353045	20.4	21.1	362280	20.5	20.0	389854	20.6	19.4	166408	20.6	20.2
331165	20.2	20.3	392388	20.3	20.5	133409	20.4	19.0	212868	20.5	19.9	168746	20.6	18.5	344789	20.6	18.1
378026	20.3	20.7	449790	20.3	20.2	195212	20.4	19.8	101143	20.5	18.0	359596	20.6	19.3	233350	20.6	20.1
386083	20.3	20.7	120884	20.3	18.8	249492	20.4	19.9	228088	20.5	20.5	151389	20.6	19.9	485793	20.6	21.7
393215	20.3	20.1	406787	20.3	20.0	450640	20.4	20.8	298653	20.5	20.1	514015	20.6	21.3	53817	20.6	18.5
267787	20.3	19.1	328777	20.3	20.1	241009	20.4	19.5	354322	20.5	20.4	116614	20.6	19.4	158284	20.6	18.5
330525	20.3	20.2	318980	20.3	20.0	144643	20.4	18.6	514126	20.5	20.3	322187	20.6	19.6	431752	20.6	20.3
166211	20.3	19.7	225718	20.3	19.1	169591	20.4	20.3	509569	20.5	22.4	244901	20.6	19.7	118568	20.6	19.9
304344	20.3	20.5	228055	20.3	18.8	49077	20.4	18.6	22056	20.5	17.8	316507	20.6	20.3	384292	20.7	19.4
239375	20.3	20.6	171292	20.3	19.6	127678	20.4	19.7	121245	20.5	18.4	17607	20.6	18.0	487384	20.7	20.3
494290	20.3	19.7	246403	20.3	19.7	476998	20.4	20.9	60768	20.5	18.4	487459	20.6	21.4	377265	20.7	20.2
395409	20.3	20.9	198797	20.3	18.7	294317	20.4	19.4	514822	20.5	21.3	192833	20.6	19.1	264372	20.7	19.0
372877	20.3	19.7	153260	20.3	19.7	84780	20.4	18.9	40946	20.5	18.6	288591	20.6	20.8	248728	20.7	20.1
298138	20.3	19.5	278083	20.3	20.0	156615	20.4	20.4	128049	20.5	19.0	378151	20.6	19.6	115073	20.7	18.3
317346	20.3	22.0	155871	20.3	20.1	447983	20.4	20.1	322634	20.5	19.7	445424	20.6	19.8	38970	20.7	18.8
304488	20.3	20.5	485891	20.3	21.3	455605	20.4	20.2	213205	20.5	19.2	102146	20.6	18.4	151671	20.7	19.9
91285	20.3	18.5	156638	20.3	19.3	358354	20.4	20.5	415199	20.5	20.1	345301	20.6	20.8	443643	20.7	20.3
22817	20.3	17.7	383136	20.4	18.8	266269	20.4	20.4	453210	20.5	21.1	381866	20.6	19.7	329140	20.7	20.0
512228	20.3	19.6	516200	20.4	19.7	117855	20.4	19.6	229252	20.5	19.8	410898	20.6	20.6	514903	20.7	21.1
150417	20.3	19.5	103718	20.4	17.7	44770	20.4	19.1	96545	20.5	18.1	205135	20.6	18.9	352316	20.7	20.6
78662	20.3	18.7	415426	20.4	20.2	434317	20.4	20.3	228769	20.5	19.6	429530	20.6	20.4	200493	20.7	18.3
243983	20.3	18.9	484986	20.4	19.5	84684	20.4	17.6	474712	20.5	20.9	147961	20.6	20.2	412815	20.7	21.4
452438	20.3	18.5	452069	20.4	20.1	300581	20.4	21.2	385271	20.5	18.7	344436	20.6	21.0	296747	20.7	20.1
330144	20.3	20.8	119038	20.4	19.3	323813	20.4	19.0	440865	20.5	19.9	311819	20.6	20.0	96179	20.7	20.2
297312	20.3	18.7	134121	20.4	20.2	480151	20.4	21.3	401285	20.5	20.1	99211	20.6	19.1	322951	20.7	20.0
67259	20.3	18.2	229456	20.4	21.0	389420	20.4	21.1	145026	20.5	18.2	86124	20.6	18.7	411853	20.7	21.0
472365	20.3	20.7	181605	20.4	20.1	242024	20.4	19.8	438547	20.5	19.9	123238	20.6	18.5	380155	20.7	19.7
382836	20.3	21.0	299219	20.4	20.4	192226	20.4	20.1	206063	20.5	19.6	511697	20.6	20.8	392670	20.7	20.0
361047	20.3	20.4	63414	20.4	18.5	148182	20.4	18.3	523159	20.5	20.5	99494	20.6	18.5	378185	20.7	20.3
485617	20.3	19.9	328814	20.4	19.9	214641	20.4	19.6	353093	20.5	20.7	74360	20.6	18.4	357448	20.7	18.7
22668	20.3	17.8	77393	20.4	20.4	255273	20.4	19.2	298607	20.5	18.9	150810	20.6	19.7	214603	20.7	19.5
183482	20.3	20.4	518508	20.4	21.7	236986	20.4	19.9	94297	20.5	18.2	183242	20.6	19.5	224147	20.7	20.5
131074	20.3	19.6	170421	20.4	18.8	355543	20.4	20.5	126889	20.5	18.0	45319	20.6	17.5	278217	20.7	21.0
344956	20.3	20.4	224760	20.4	18.6	69432	20.4	19.4	297200	20.5	20.5	402431	20.6	20.1	353828	20.7	20.2
103089	20.3	19.1	68919	20.4	18.5	510239	20.4	20.9	399463	20.5	19.6	488151	20.6	21.1	157819	20.7	20.5
422728	20.3	21.0	523308	20.4	20.2	274922	20.4	20.9	325530	20.5	19.4	266195	20.6	19.5	163782	20.7	18.0
359241	20.3	20.2	3563														

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

Nº	10	V															
510533	20.7	21.6	300689	20.8	19.7	381716	20.9	19.1	401282	20.9	20.1	221015	21.1	19.0	517394	21.1	21.5
371396	20.7	19.3	358179	20.8	20.2	20045	20.9	16.7	384613	20.9	20.5	252796	21.1	19.7	360672	21.1	19.8
83756	20.7	18.8	342588	20.8	20.4	511206	20.9	20.9	264846	20.9	19.9	439645	21.1	20.5	470245	21.1	19.7
154776	20.7	18.7	306850	20.8	20.2	70636	20.9	18.2	173757	20.9	19.3	509962	21.1	19.9	487911	21.1	20.6
442449	20.7	20.4	523166	20.8	20.8	72354	20.9	19.4	296589	20.9	19.0	120847	21.1	18.7	261590	21.1	19.1
490452	20.7	20.1	195553	20.8	19.9	267678	20.9	18.8	523276	20.9	21.2	520472	21.1	21.3	207714	21.1	19.7
134102	20.7	19.5	180967	20.8	19.9	519973	20.9	20.6	226476	20.9	19.4	386988	21.1	20.0	241566	21.1	20.6
342565	20.7	20.7	381026	20.8	19.7	235750	20.9	20.2	75550	20.9	19.5	510294	21.1	21.5	45294	21.1	19.0
58588	20.7	18.4	450485	20.8	20.2	367041	20.9	21.3	220865	20.9	20.3	220399	21.1	19.3	321546	21.1	19.7
408984	20.7	20.5	389798	20.8	20.2	231078	20.9	20.1	425270	20.9	20.9	455504	21.1	20.1	285456	21.1	20.5
381735	20.7	20.1	346423	20.8	20.6	478832	20.9	20.1	209674	20.9	19.9	418197	21.1	20.8	323349	21.1	19.9
222923	20.7	19.5	70079	20.8	18.3	411019	20.9	20.1	490980	20.9	21.1	203218	21.1	20.3	74905	21.1	18.7
161383	20.7	19.0	96965	20.8	17.8	106963	20.9	18.6	429818	20.9	21.4	416640	21.1	19.8	96239	21.1	18.4
447103	20.7	20.6	243774	20.8	18.5	43205	20.9	18.6	188587	20.9	19.8	356176	21.1	20.9	521673	21.1	20.9
480160	20.7	21.3	382740	20.8	20.1	103359	20.9	20.6	21795	20.9	19.6	70682	21.1	17.7	214668	21.1	19.5
362658	20.7	20.4	405755	20.8	21.1	22261	20.9	17.0	496771	20.9	20.1	181365	21.1	19.2	514826	21.1	21.1
520481	20.7	20.7	23524	20.8	17.2	475971	20.9	21.1	250485	20.9	20.2	72264	21.1	17.2	209947	21.1	19.0
220787	20.7	18.0	291360	20.8	19.7	333966	20.9	20.8	394970	20.9	20.4	80717	21.1	19.1	258587	21.1	19.9
150640	20.7	20.0	308321	20.8	20.7	247040	20.9	19.4	147485	20.9	19.7	314615	21.1	20.7	385086	21.1	20.0
57566	20.7	19.0	210106	20.8	19.4	80924	20.9	17.6	378147	20.9	21.0	117431	21.1	19.3	315154	21.1	20.4
103643	20.7	18.3	80484	20.8	18.9	257458	20.9	20.1	473283	20.9	20.3	132476	21.1	19.3	410086	21.1	21.2
188964	20.7	19.4	447721	20.8	21.1	234920	20.9	19.4	164709	20.9	20.5	301310	21.1	20.0	129015	21.1	19.3
516294	20.7	20.5	397394	20.8	19.2	484935	20.9	20.8	52926	20.9	17.7	13987	21.1	16.9	239818	21.1	19.8
388195	20.7	21.3	306829	20.8	19.4	330117	20.9	21.0	13704	20.9	17.5	142019	21.1	19.3	45379	21.1	16.9
91441	20.7	18.1	252854	20.8	20.9	426104	20.9	21.4	231091	20.9	19.4	358194	21.1	20.5	268773	21.1	19.6
483916	20.7	21.8	50122	20.8	17.4	326068	20.9	20.0	487405	20.9	21.0	445232	21.1	18.8	76563	21.1	18.8
348130	20.7	21.0	517886	20.8	20.8	55105	20.9	16.8	512856	20.9	20.1	183656	21.1	19.6	38607	21.2	18.8
333823	20.7	20.4	335718	20.8	20.1	394126	20.9	19.8	334743	20.9	19.3	386791	21.1	20.9	275615	21.2	19.7
282049	20.7	19.0	410921	20.8	19.5	254331	20.9	19.4	64112	20.9	18.3	40029	21.1	18.8	354605	21.2	20.7
126169	20.7	19.1	36060	20.8	18.8	506627	20.9	20.7	403407	20.9	20.6	339255	21.1	19.2	386724	21.2	20.0
73122	20.7	19.2	99002	20.8	19.2	112202	20.9	18.8	207885	21.0	20.4	316968	21.1	21.0	129466	21.2	19.7
15034	20.7	18.1	91667	20.8	18.4	283342	20.9	19.2	215595	21.0	18.5	476818	21.1	20.1	326097	21.2	20.7
394133	20.7	19.8	432841	20.8	20.4	392309	20.9	20.5	51726	21.0	16.9	226311	21.1	19.5	442769	21.2	20.7
269208	20.7	20.4	225294	20.8	19.9	491295	20.9	20.3	424494	21.0	21.3	176501	21.1	19.9	509532	21.2	21.1
156089	20.7	19.2	488885	20.8	20.4	454709	20.9	21.3	291980	21.0	21.1	114939	21.1	18.8	322199	21.2	20.2
285732	20.7	20.5	224166	20.8	19.6	510215	20.9	21.4	499836	21.0	21.0	44890	21.1	18.2	513484	21.2	21.5
326584	20.7	19.9	221042	20.8	18.3	509212	20.9	19.4	286655	21.0	20.8	516092	21.1	20.9	49196	21.2	18.1
322123	20.7	20.1	244788	20.8	17.9	393419	20.9	19.8	142770	21.0	18.5	369563	21.1	21.0	86092	21.2	17.9
348745	20.7	19.8	158151	20.8	18.9	481500	20.9	21.4	182472	21.0	19.1	303165	21.1	20.1	80983	21.2	19.0
98930	20.7	19.3	516592	20.8	21.6	174759	20.9	19.4	180180	21.0	20.0	518780	21.1	20.3	141763	21.2	18.9
21419	20.7	18.7	50861	20.8	17.9	371375	20.9	20.4	436760	21.0	20.8	403755	21.1	20.1	104217	21.2	18.8
191549	20.7	19.1	436508	20.8	21.1	39641	20.9	17.6	283805	21.0	19.4	508428	21.1	21.4	149383	21.2	19.8
222906	20.7	19.1	45631	20.8	18.0	243884	20.9	19.5	209538	21.0	19.8	517435	21.1	21.3	437409	21.2	20.0
23603	20.7	18.4	102142	20.8	17.8	345525	20.9	20.7	126664	21.0	19.2	100913	21.1	19.7	242216	21.2	19.2
313382	20.7	20.3	321467	20.8	20.3	321574	20.9	20.1	63274	21.0	18.7	445847	21.1	20.9	396410	21.2	20.6
396491	20.7	21.5	326757	20.8	20.0	154218	20.9	18.8	354273	21.0	20.4	123392	21.1	19.4	332707	21.2	20.9
171108	20.7	19.8	295239	20.8	21.0	163906	20.9	18.2	257982	21.0	20.1	476526	21.1	21.3	331399	21.2	20.0
314435	20.7	19.8	40728	20.8	16.8	25093	20.9	17.7	522919	21.0	20.8	469382	21.1	20.1	225476	21.2	20.1
44841	20.7	18.6	389022	20.8	18.8	220665	20.9	19.7	141549	21.0	19.9	362516	21.1	20.8	213455	21.2	19.6
247288	20.8	19.2	219047	20.8	20.9	395035	20.9	20.7	75437	21.0	19.0	484994	21.1	19.7	279174	21.2	19.8
64319	20.8	19.1	329899	20.8	21.1	510539	20.9	20.9	514823	21.0	18.9	496590	21.1	21.0	415635	21.2	19.9
509556	20.8	21.2	487717	20.8	20.2	158572	20.9	19.0	373152	21.0	20.8	16961	21.1	17.0	484921	21.2	20.3
452049	20.8	20.5	370551	20.8	18.6	255325	20.9	20.5	310439	21.0	20.2	496284	21.1	20.5	484110	21.2	19.7
74332	20.8	18.0	249905	20.8	19.9	14956	20.9	17.3	363115	21.0	19.7	411571	21.1	19.9	204815	21.2	18.7
196488	20.8	19.7	128023	20.8	19.5	220535	20.9	19.0	70673	21.0	18.1	395614	21.1	20.6	438296	21.2	20.7
31026	20.8	17.6	513583	20.8	20.6	151720	20.9	20.2	303170	21.0	19.5	103014	21.1	17.7	394216	21.2	20.1
312459	20.8	19.5	15000	20.8	18.6	108103	20.9	18.6	394983	21.0	19.8	37469	21.1	19.6	85011	21.2	19.2
320036	20.8	21.1	141683	20.8	18.8	517082	20.9	20.8	180944	21.0	19.7	98968	21.1	19.6	369947	21.2	19.3
471061	20.8	20.0	330863	20.8	19.7	322933	20.9	20.4	71243	21.0	17.4	160431	21.1	19.7	268159	21.2	18.9
34871	20.8	17.9	294483	20.9	18.9	145016	20.9	19.7	116806	21.0	19.6	511371	21.1	21.4	337275	21.2	19.0
72238	20.8	18.7	185993	20.9	19.												

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

Nº	10	V															
259770	21.2	20.4	290273	21.3	20.9	14006	21.3	15.7	76350	21.4	19.5	223818	21.5	19.4	454694	21.6	20.2
57749	21.2	19.0	484816	21.3	21.5	137516	21.3	19.9	456083	21.4	21.0	261836	21.5	21.3	26199	21.6	18.1
56305	21.2	18.7	24962	21.3	18.0	116079	21.3	18.3	20306	21.4	18.3	58575	21.5	17.6	474691	21.6	21.0
240181	21.2	20.7	253411	21.3	19.2	76960	21.3	18.7	77595	21.4	18.6	437905	21.5	24.1	25047	21.6	18.0
401110	21.2	20.0	402365	21.3	20.3	156682	21.3	20.6	229357	21.4	19.1	484008	21.5	21.8	134822	21.6	18.6
324200	21.2	21.0	287112	21.3	19.7	280808	21.4	20.0	188384	21.4	19.8	447146	21.5	19.1	81620	21.6	18.5
389505	21.2	20.2	228971	21.3	18.9	323591	21.4	20.1	136199	21.4	18.7	202571	21.5	19.8	162249	21.6	19.9
74759	21.2	17.2	248015	21.3	19.6	483186	21.4	20.3	54823	21.4	17.0	79596	21.5	17.9	35499	21.6	17.3
262385	21.2	20.5	98809	21.3	17.6	114160	21.4	19.3	431618	21.4	19.3	266532	21.5	21.1	221448	21.6	19.3
306084	21.2	20.0	30284	21.3	19.6	269219	21.4	20.0	214448	21.4	18.6	447500	21.5	20.1	509914	21.6	20.8
200544	21.2	20.3	29250	21.3	17.9	511159	21.4	20.0	103054	21.4	18.9	311838	21.5	20.5	77017	21.6	17.9
288213	21.2	19.1	104066	21.3	19.0	402502	21.4	20.4	515368	21.4	21.1	364876	21.5	20.4	119752	21.6	19.5
93251	21.2	18.4	99758	21.3	18.8	47593	21.4	18.1	122892	21.4	18.3	368003	21.5	21.5	347952	21.6	19.3
124825	21.2	18.6	523640	21.3	21.4	401768	21.4	19.8	263230	21.4	20.9	481902	21.5	19.0	444498	21.6	20.3
220496	21.2	20.4	40011	21.3	18.9	472013	21.4	18.9	473552	21.4	20.4	332856	21.5	20.8	451781	21.6	21.1
268352	21.2	20.1	228949	21.3	19.0	218502	21.4	20.0	408525	21.4	20.5	31721	21.5	19.0	292322	21.6	20.6
471936	21.2	20.9	252667	21.3	19.8	54154	21.4	19.0	330548	21.4	20.5	102166	21.5	18.3	405790	21.6	20.7
406234	21.2	20.8	34236	21.3	17.8	477180	21.4	21.3	434568	21.4	20.8	17180	21.5	16.7	249716	21.6	18.4
485661	21.2	20.8	319238	21.3	21.4	433181	21.4	18.5	202146	21.4	18.7	523574	21.5	21.8	341223	21.6	18.8
99967	21.2	17.2	71444	21.3	18.7	121447	21.4	18.6	170764	21.4	18.8	3545	21.5	15.9	454688	21.6	21.0
428533	21.2	21.1	325681	21.3	20.0	122053	21.4	18.6	110687	21.4	19.4	252210	21.5	20.2	320197	21.6	19.5
152348	21.2	20.5	240404	21.3	18.8	448097	21.4	20.2	142976	21.4	18.7	261833	21.5	19.8	272257	21.6	20.0
102478	21.2	17.6	432740	21.3	20.8	124567	21.4	18.4	309589	21.4	20.0	158788	21.5	19.3	962	21.6	14.9
482617	21.2	21.1	453449	21.3	19.3	283365	21.4	18.0	7521	21.4	16.9	253578	21.5	19.3	357365	21.6	19.0
327562	21.2	21.2	167408	21.3	19.1	19402	21.4	16.1	327584	21.4	20.3	309572	21.5	21.1	257512	21.6	19.0
149294	21.2	17.9	3791	21.3	15.8	438759	21.4	20.4	483262	21.5	20.6	65393	21.5	18.4	172291	21.6	19.1
177615	21.2	19.7	58013	21.3	16.4	324201	21.4	20.2	324243	21.5	21.4	508795	21.5	22.2	516625	21.6	21.3
518040	21.2	20.9	520696	21.3	21.2	261523	21.4	20.8	161701	21.5	19.3	390909	21.5	20.5	108643	21.6	18.6
354375	21.2	18.1	58345	21.3	18.9	133079	21.4	18.8	212542	21.5	19.6	304220	21.5	20.1	118471	21.6	19.6
315942	21.2	20.4	55788	21.3	16.8	349253	21.4	19.1	358758	21.5	20.2	313620	21.5	19.9	220224	21.6	19.1
259904	21.2	21.2	4554	21.3	16.7	36120	21.4	17.9	371488	21.5	18.7	37232	21.5	18.6	63787	21.6	18.3
46667	21.2	17.8	388204	21.3	20.6	78492	21.4	17.7	107537	21.5	18.4	515507	21.5	21.1	66516	21.6	18.6
99628	21.2	19.8	157574	21.3	20.8	472672	21.4	20.6	214381	21.5	19.3	455097	21.5	20.1	276094	21.6	19.6
137366	21.2	18.6	249145	21.3	19.7	11462	21.4	17.5	291558	21.5	21.1	482981	21.5	20.7	326135	21.6	19.8
6825	21.2	16.1	503883	21.3	22.8	21686	21.4	19.0	261903	21.5	20.0	299080	21.5	21.2	321120	21.6	20.3
104772	21.2	18.5	142940	21.3	17.6	75617	21.4	17.4	442967	21.5	21.0	251622	21.5	20.0	107955	21.6	18.9
308716	21.2	20.1	331020	21.3	19.5	516306	21.4	20.3	76937	21.5	18.8	441334	21.5	19.8	257736	21.6	19.8
96175	21.2	18.3	402815	21.3	20.6	231648	21.4	20.2	189917	21.5	19.1	314967	21.5	20.1	286812	21.6	19.7
92058	21.2	18.8	266032	21.3	19.8	224741	21.4	20.7	171098	21.5	20.0	60830	21.5	19.0	482699	21.6	20.6
133596	21.2	19.3	352307	21.3	20.2	972	21.4	17.0	223895	21.5	18.9	448860	21.5	18.8	242646	21.6	20.0
405247	21.2	19.5	396474	21.3	20.7	97404	21.4	19.0	439114	21.5	21.2	373632	21.5	20.5	320917	21.6	19.7
473240	21.2	19.7	228018	21.3	19.1	245310	21.4	20.6	139114	21.5	19.4	85796	21.5	19.3	183891	21.6	20.0
102570	21.2	19.4	92091	21.3	18.5	117533	21.4	19.1	479860	21.5	20.1	26570	21.5	17.2	483993	21.6	20.9
381095	21.2	21.1	8169	21.3	17.3	429793	21.4	20.1	419860	21.5	20.3	404992	21.5	20.8	78846	21.6	18.7
132645	21.2	20.1	101208	21.3	17.7	46804	21.4	18.8	38300	21.5	17.9	140592	21.5	19.6	222052	21.6	18.1
170078	21.3	18.9	517129	21.3	21.7	324930	21.4	20.1	123831	21.5	19.6	316930	21.5	19.6	433801	21.6	20.5
443448	21.3	20.1	296371	21.3	20.0	192208	21.4	19.4	353500	21.5	20.0	5209	21.5	17.0	472454	21.6	20.6
1570	21.3	15.5	353129	21.3	20.9	352284	21.4	19.4	17813	21.5	20.3	475419	21.5	20.6	425028	21.6	21.0
461166	21.3	20.1	308975	21.3	19.9	135059	21.4	17.7	119952	21.5	18.9	258759	21.5	20.6	374703	21.6	19.3
259788	21.3	20.0	257662	21.3	19.6	494588	21.4	20.2	362726	21.5	20.3	224687	21.5	21.0	319233	21.6	20.6
382403	21.3	20.8	142046	21.3	20.1	281838	21.4	20.0	135817	21.5	18.7	263157	21.5	20.1	393785	21.6	20.6
301474	21.3	19.8	376823	21.3	21.3	106883	21.4	17.9	324126	21.5	19.5	121209	21.5	18.8	327161	21.6	21.8
119294	21.3	18.5	387625	21.3	20.9	411935	21.4	20.7	355013	21.5	19.7	85850	21.5	17.4	6938	21.6	16.8
300463	21.3	20.2	75072	21.3	18.2	220380	21.4	19.1	340464	21.5	20.3	124130	21.6	19.6	440840	21.6	19.4
142086	21.3	18.9	149931	21.3	20.1	518053	21.4	20.9	513326	21.5	20.7	248871	21.6	19.6	484902	21.6	20.5
314626	21.3	20.8	352321	21.3	20.0	365785	21.4	20.0	12658	21.5	17.8	71855	21.6	19.3	414614	21.6	19.9
509442	21.3	21.5	122366	21.3	19.3	431168	21.4	20.1	513538	21.5	22.0	198194	21.6	18.8	121472	21.6	20.0
96570	21.3	18.0	106095	21.3	18.9	157855	21.4	19.1	165983	21.5	19.8	392028	21.6	21.0	411536	21.6	20.4
139070	21.3	20.0	169715	21.3	17.6	59785	21.4	18.0	481693	21.5	20.0	255401	21.6	18.8	355420	21.6	20.5
263005	21.3	20.5	105265	21.3	19.2	177209	21.4	18.8	224033	21.5	18.9	102805	21.6	18.8	217814	21.6	18.0
475615	21.3	20.9	459639	21.3	21.0	123908	21.4										

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

Nº	10	V															
179675	21.7	19.4	68809	21.7	19.1	369519	21.8	20.1	361255	21.9	20.2	145062	21.9	19.5	109242	22.1	19.7
310864	21.7	20.7	407228	21.7	19.6	446396	21.8	21.3	8195	21.9	15.2	348036	21.9	18.4	355462	22.1	19.6
121866	21.7	19.5	357605	21.7	21.6	67050	21.8	18.6	324173	21.9	19.8	304177	21.9	20.0	421983	22.1	20.5
134105	21.7	19.7	193670	21.7	20.0	324130	21.8	20.1	259579	21.9	18.0	518346	21.9	20.8	407557	22.1	20.5
158319	21.7	18.4	7931	21.7	18.0	53198	21.8	16.6	53037	21.9	17.5	124105	21.9	20.4	145167	22.1	19.6
241767	21.7	20.0	293529	21.7	20.7	39738	21.8	18.2	183074	21.9	18.2	175539	21.9	20.1	304289	22.1	19.7
398681	21.7	19.8	166366	21.7	19.4	60017	21.8	17.8	401372	21.9	19.0	488396	21.9	20.0	95575	22.1	18.9
303167	21.7	19.8	80646	21.7	17.6	350029	21.8	20.1	265072	21.9	19.6	97339	21.9	18.3	139821	22.1	19.7
443828	21.7	21.6	66715	21.7	17.8	453750	21.8	20.5	223353	21.9	19.3	255221	21.9	20.7	392216	22.1	20.2
217497	21.7	18.6	321385	21.7	21.1	252850	21.8	19.8	110884	21.9	18.5	381090	21.9	20.7	174654	22.1	18.3
274132	21.7	21.0	191548	21.7	19.4	517898	21.8	20.4	18735	21.9	18.5	131384	21.9	19.1	488037	22.1	21.6
5408	21.7	16.9	132463	21.7	18.6	384829	21.8	19.0	96776	21.9	18.1	21878	21.9	16.9	212082	22.1	19.8
395098	21.7	20.3	513368	21.7	22.7	468024	21.8	21.0	327116	21.9	20.6	456031	21.9	20.4	450100	22.1	20.3
380154	21.7	19.7	45136	21.8	19.0	380760	21.8	19.2	417441	21.9	21.4	143189	21.9	18.7	72075	22.1	19.2
104709	21.7	19.1	98571	21.8	17.9	401692	21.8	20.4	217330	21.9	19.7	452764	21.9	21.5	357058	22.1	19.7
461596	21.7	19.0	8125	21.8	17.6	287189	21.8	19.4	195979	21.9	19.6	125003	21.9	19.2	508848	22.1	22.0
219306	21.7	19.5	404576	21.8	21.4	482591	21.8	21.2	297027	21.9	20.2	362932	22.0	19.2	229933	22.1	18.5
482329	21.7	19.9	213884	21.8	19.6	388579	21.8	20.6	99161	21.9	19.3	286798	22.0	20.0	511442	22.1	20.9
447958	21.7	20.8	280848	21.8	20.7	126681	21.8	19.2	123961	21.9	18.4	42786	22.0	17.4	326873	22.1	20.4
292375	21.7	19.7	109486	21.8	17.8	288291	21.8	20.1	99653	21.9	18.6	112118	22.0	19.6	450738	22.1	20.6
57865	21.7	19.2	514872	21.8	21.6	392070	21.8	19.8	434216	21.9	20.1	107420	22.0	19.7	73704	22.1	19.0
317341	21.7	20.3	393407	21.8	21.5	105659	21.8	19.5	9862	21.9	16.7	96336	22.0	18.4	448033	22.1	21.1
136526	21.7	18.7	351361	21.8	20.4	452785	21.8	21.6	43341	21.9	16.8	108895	22.0	18.5	481366	22.1	20.5
44684	21.7	18.3	141649	21.8	18.5	331447	21.8	19.6	90069	21.9	18.7	350516	22.0	19.4	36210	22.1	17.7
383032	21.7	19.8	431659	21.8	21.4	52497	21.8	17.7	344440	21.9	20.6	267624	22.0	20.2	167229	22.1	18.7
329075	21.7	20.1	191093	21.8	18.0	428628	21.8	20.1	104027	21.9	18.4	173378	22.0	19.0	207406	22.1	20.2
200	21.7	11.4	449414	21.8	20.4	211614	21.8	19.3	410146	21.9	20.2	128064	22.0	18.1	224107	22.1	20.1
226143	21.7	20.3	322767	21.8	20.4	522792	21.8	20.0	213661	21.9	19.5	115691	22.0	19.4	433979	22.1	18.6
408677	21.7	20.9	296309	21.8	21.1	401316	21.8	20.1	67721	21.9	18.3	397554	22.0	19.2	224654	22.1	19.9
446770	21.7	21.0	257144	21.8	20.0	302918	21.8	19.5	26646	21.9	17.5	45453	22.0	18.1	454618	22.1	19.6
173509	21.7	17.1	54849	21.8	17.4	161511	21.9	19.5	209214	21.9	19.2	400947	22.0	19.6	476106	22.1	18.8
350331	21.7	19.7	13184	21.8	17.7	131673	21.9	18.6	168091	21.9	19.8	482251	22.0	20.2	310338	22.1	19.6
389504	21.7	20.6	230235	21.8	19.3	471027	21.9	19.4	465866	21.9	20.3	196928	22.0	19.0	439924	22.1	20.1
1300	21.7	15.3	329950	21.8	19.8	351051	21.9	18.9	481920	21.9	21.2	152129	22.0	20.2	187539	22.1	20.8
35936	21.7	17.4	45398	21.8	17.6	402791	21.9	21.0	71566	21.9	18.8	91545	22.0	18.1	405502	22.1	19.3
349373	21.7	19.7	511665	21.8	19.9	170079	21.9	19.5	409682	21.9	20.9	119321	22.0	18.9	267536	22.1	20.2
252872	21.7	19.2	192499	21.8	19.8	176304	21.9	19.4	63559	21.9	17.8	398709	22.0	20.3	398298	22.1	19.1
370568	21.7	19.3	365655	21.8	21.2	449236	21.9	20.6	515050	21.9	21.1	442861	22.0	20.4	255538	22.1	19.4
240446	21.7	17.9	513997	21.8	21.6	175851	21.9	18.2	99723	21.9	18.6	358896	22.0	20.2	434477	22.1	18.6
203234	21.7	20.3	298079	21.8	18.7	111662	21.9	19.3	23299	21.9	18.5	176283	22.0	19.6	160077	22.1	20.9
508132	21.7	20.1	92200	21.8	17.1	106324	21.9	18.5	126840	21.9	19.7	183265	22.0	18.6	155476	22.1	19.0
80186	21.7	18.3	178716	21.8	19.3	104074	21.9	19.1	290970	21.9	19.5	373355	22.0	20.1	421327	22.1	20.3
367790	21.7	20.5	512516	21.8	19.9	391581	21.9	20.1	443942	21.9	19.0	308970	22.0	20.4	317317	22.1	20.4
518019	21.7	20.0	205098	21.8	19.5	113563	21.9	19.4	261687	21.9	19.4	477501	22.0	20.8	120440	22.1	18.3
183673	21.7	20.0	256854	21.8	20.2	185388	21.9	20.3	430630	21.9	19.3	448064	22.0	21.0	159665	22.1	19.1
159757	21.7	20.2	296	21.8	14.0	409709	21.9	20.6	33780	21.9	17.6	31502	22.0	19.2	209744	22.1	19.5
485344	21.7	21.4	40485	21.8	18.7	42584	21.9	18.6	67613	21.9	18.8	436168	22.0	20.0	389088	22.1	19.3
285841	21.7	20.1	71908	21.8	18.3	512037	21.9	21.0	168622	21.9	20.0	175125	22.0	19.7	480307	22.1	20.4
160401	21.7	20.1	306388	21.8	20.1	116326	21.9	18.4	332460	21.9	20.2	135590	22.0	19.6	187674	22.1	20.9
60120	21.7	19.4	195362	21.8	19.2	94113	21.9	18.6	204547	21.9	20.1	372340	22.0	20.3	99529	22.1	19.0
478481	21.7	20.5	218493	21.8	18.9	362276	21.9	20.2	455681	21.9	19.9	308782	22.0	19.0	508913	22.1	21.4
69090	21.7	18.4	181358	21.8	19.8	367256	21.9	19.9	454454	21.9	18.1	407586	22.0	20.4	512069	22.1	20.4
427803	21.7	22.2	389823	21.8	20.6	205550	21.9	18.5	56292	21.9	17.6	294390	22.0	19.3	217459	22.1	20.1
275630	21.7	20.9	262380	21.8	20.0	19192	21.9	17.3	351190	21.9	20.6	91663	22.0	18.3	23074	22.1	18.0
305772	21.7	19.4	308460	21.8	22.5	478777	21.9	18.7	40958	21.9	17.6	517499	22.0	21.6	264903	22.1	18.8
108611	21.7	19.0	475927	21.8	20.4	181745	21.9	19.4	480098	21.9	21.6	18504	22.0	16.4	36084	22.1	18.3
447391	21.7	20.2	206600	21.8	19.4	410915	21.9	21.4	391804	21.9	21.0	121918	22.0	19.6	44473	22.1	17.9
168226	21.7	20.2	78811	21.8	19.3	261852	21.9	19.9	369454	21.9	22.5	396108	22.0	20.5	265194	22.1	20.0
430722	21.7	21.1	77701	21.8	19.2	495369	21.9	20.2	378135	21.9	19.5	59570	22.0	17.5	207054	22.1	19.5
221441	21.7	18.9	186764	21.8	20.5	304357	21.9	20.4	195396	21.9	19.1	96763	22.0	18.6	369707	22.1	22.3
332481	21.7	20.7	198612	21.8	18.2	92284											

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

Nº	10	V															
203063	22.1	20.1	178491	22.2	18.5	44965	22.3	18.3	166452	22.4	19.5	13655	22.4	16.9	452456	22.5	20.5
340359	22.1	19.0	520695	22.2	20.4	172108	22.3	19.4	50430	22.4	18.2	445638	22.4	20.8	509149	22.5	21.5
161752	22.1	19.4	308794	22.2	19.2	485864	22.3	20.9	121400	22.4	19.8	35361	22.4	17.7	334975	22.5	21.7
378110	22.1	20.8	49814	22.2	17.8	327159	22.3	20.8	517845	22.4	20.6	141710	22.4	18.2	399724	22.5	19.3
271539	22.1	21.4	474659	22.2	21.0	266038	22.3	20.9	451205	22.4	20.5	13944	22.4	16.0	515511	22.5	21.7
170551	22.1	19.7	378600	22.2	20.6	381411	22.3	20.2	267978	22.4	20.6	144911	22.4	18.5	285504	22.5	20.9
322468	22.1	19.7	443861	22.2	20.2	211393	22.3	19.6	183569	22.4	19.6	247393	22.5	20.1	321587	22.5	19.5
441161	22.1	20.4	51698	22.2	18.3	506353	22.3	20.6	72640	22.4	18.8	88609	22.5	17.5	301304	22.5	21.0
93935	22.1	17.9	287743	22.2	20.1	412820	22.3	20.0	89114	22.4	19.0	108637	22.5	19.1	86631	22.5	19.6
411986	22.1	20.6	57133	22.2	18.0	75939	22.3	19.5	227720	22.4	20.3	212408	22.5	20.3	487279	22.5	20.8
151647	22.1	19.3	510162	22.2	20.2	478630	22.3	19.5	273808	22.4	21.0	363521	22.5	19.4	405827	22.5	20.4
84086	22.1	18.8	269619	22.2	19.5	483967	22.3	22.2	130910	22.4	18.9	130193	22.5	20.0	510028	22.5	21.8
515443	22.1	19.5	457990	22.2	21.0	329840	22.3	19.9	209958	22.4	19.7	206055	22.5	20.4	23247	22.5	17.8
392931	22.1	20.8	277004	22.2	19.7	369034	22.3	19.9	191893	22.4	19.7	311978	22.5	19.9	235004	22.5	19.6
159281	22.1	19.0	132648	22.2	19.3	321258	22.3	19.7	4503	22.4	17.6	288556	22.5	20.7	228117	22.5	19.8
499934	22.1	20.0	439755	22.2	20.8	229652	22.3	20.8	165615	22.4	19.4	163272	22.5	19.9	115512	22.5	18.8
86123	22.2	18.8	281374	22.2	19.9	490548	22.3	20.6	22098	22.4	18.3	398040	22.5	21.1	259514	22.5	20.0
359961	22.2	20.4	365298	22.2	20.8	388564	22.3	20.7	312634	22.4	20.5	376858	22.5	19.7	219940	22.5	19.5
105205	22.2	18.8	81764	22.2	18.3	470156	22.3	20.4	237282	22.4	20.3	148677	22.5	19.7	300808	22.5	19.5
224990	22.2	18.9	473674	22.2	20.3	461296	22.3	20.0	390262	22.4	19.0	208953	22.5	18.8	127435	22.5	19.3
239986	22.2	19.8	215741	22.2	19.5	362299	22.3	19.6	167950	22.4	19.8	215843	22.5	19.4	38009	22.5	17.7
435117	22.2	20.8	205458	22.2	19.1	93787	22.3	19.1	189512	22.4	19.5	295338	22.5	20.9	3781	22.5	15.9
143742	22.2	18.9	260297	22.2	18.9	301775	22.3	19.7	126827	22.4	19.9	181600	22.5	20.2	124772	22.5	18.9
4611	22.2	14.6	345290	22.2	20.0	32302	22.3	18.2	305854	22.4	20.8	326579	22.5	20.4	322750	22.5	19.8
395100	22.2	20.6	424454	22.2	20.7	41323	22.3	17.8	486229	22.4	20.9	134798	22.5	18.8	33828	22.5	17.9
404092	22.2	20.6	291186	22.2	20.2	378033	22.3	20.5	322580	22.4	21.0	311311	22.5	19.7	509450	22.5	21.6
458446	22.2	20.6	319433	22.2	19.7	100615	22.3	17.7	207190	22.4	19.1	359939	22.5	20.2	405534	22.5	20.4
120502	22.2	18.4	426161	22.2	20.5	404559	22.3	21.5	412992	22.4	20.5	157247	22.5	20.0	12716	22.5	17.7
434741	22.2	20.4	178051	22.2	19.6	398116	22.3	20.6	29901	22.4	17.3	461290	22.5	19.8	198409	22.5	18.9
173157	22.2	20.1	474251	22.2	19.4	102495	22.3	17.2	288406	22.4	19.6	141430	22.5	18.1	447644	22.5	20.6
20723	22.2	17.2	444319	22.2	19.9	458423	22.3	20.1	419234	22.4	20.1	512690	22.5	20.1	354661	22.5	19.9
158228	22.2	18.8	408040	22.2	20.5	74897	22.3	18.3	303645	22.4	20.4	16483	22.5	17.2	397938	22.5	21.2
303582	22.2	20.6	226394	22.2	18.8	111391	22.3	19.2	269682	22.4	19.8	59126	22.5	18.2	34164	22.5	18.1
318371	22.2	20.2	434274	22.2	19.3	318237	22.3	20.9	81522	22.4	18.4	482599	22.5	20.7	416610	22.6	19.9
481632	22.2	18.8	296955	22.2	20.6	265106	22.3	19.9	40215	22.4	18.5	149367	22.5	19.0	272138	22.6	19.8
246265	22.2	19.8	286899	22.3	18.4	422657	22.3	21.8	212645	22.4	20.3	28403	22.5	17.5	285374	22.6	18.8
131393	22.2	18.8	187605	22.3	19.4	349684	22.3	19.1	177800	22.4	20.2	284488	22.5	20.5	20597	22.6	17.9
271503	22.2	20.4	438564	22.3	20.4	484086	22.3	20.3	184645	22.4	19.7	456621	22.5	21.1	450470	22.6	19.8
199581	22.2	19.7	202997	22.3	21.0	265307	22.3	19.9	246592	22.4	19.8	157426	22.5	19.1	409082	22.6	20.5
381372	22.2	21.1	324227	22.3	21.4	185620	22.3	20.3	48588	22.4	17.6	106805	22.5	18.0	100065	22.6	20.3
150468	22.2	20.5	373622	22.3	20.2	205518	22.3	18.4	216493	22.4	19.2	283647	22.5	21.8	440771	22.6	20.8
271404	22.2	20.8	211635	22.3	19.2	435457	22.3	21.3	225001	22.4	19.3	447502	22.5	20.4	474290	22.6	19.8
202968	22.2	19.5	327038	22.3	20.4	30217	22.3	17.4	220368	22.4	19.8	376848	22.5	18.3	437312	22.6	21.0
150572	22.2	19.4	402777	22.3	21.0	32061	22.3	18.2	246829	22.4	19.2	392006	22.5	20.9	237947	22.6	18.5
422002	22.2	20.8	60367	22.3	19.2	263006	22.3	21.0	147725	22.4	18.8	352306	22.5	19.7	481856	22.6	21.3
224923	22.2	19.9	482880	22.3	20.8	4717	22.3	15.4	355470	22.4	19.6	435290	22.5	18.8	267309	22.6	19.7
161969	22.2	17.2	102475	22.3	17.9	378616	22.3	20.6	53853	22.4	18.5	83019	22.5	19.2	509176	22.6	21.9
92783	22.2	18.5	279524	22.3	21.0	74255	22.3	18.7	208740	22.4	20.1	429449	22.5	19.6	69168	22.6	18.1
73170	22.2	18.6	212831	22.3	19.7	279639	22.3	21.0	494310	22.4	20.6	166165	22.5	18.7	366053	22.6	20.2
421760	22.2	20.2	81350	22.3	18.8	513292	22.3	20.8	287741	22.4	19.3	275128	22.5	21.0	105308	22.6	18.3
38354	22.2	18.4	222405	22.3	20.1	326033	22.3	20.2	113220	22.4	18.8	132756	22.5	19.8	171712	22.6	17.7
217502	22.2	20.9	411794	22.3	21.1	400012	22.3	20.6	180	22.4	13.9	174757	22.5	18.7	113362	22.6	19.5
407253	22.2	20.3	141638	22.3	19.0	282247	22.3	19.9	217177	22.4	18.7	240618	22.5	20.2	165963	22.6	19.8
152838	22.2	18.9	45602	22.3	17.9	149961	22.3	19.5	32051	22.4	17.6	108207	22.5	19.6	223579	22.6	19.4
317240	22.2	19.1	107547	22.3	19.3	112021	22.3	16.5	239971	22.4	19.0	481908	22.5	19.8	390112	22.6	18.9
88356	22.2	18.0	203213	22.3	20.1	370565	22.3	18.8	326157	22.4	20.6	224745	22.5	19.3	304199	22.6	19.4
485972	22.2	21.6	516634	22.3	22.0	71204	22.3	18.2	39287	22.4	19.1	154146	22.5	19.5	240654	22.6	19.9
69238	22.2	18.0	143987	22.3	19.6	24953	22.3	19.0	378568	22.4	21.1	521114	22.5	21.5	94042	22.6	18.5
405805	22.2	21.1	326759	22.3	19.7	291486	22.3	20.0	383582	22.4	19.8	436133	22.5	20.5	442355	22.6	19.1
395195	22.2	21.1	309835	22.3	20.0	317030	22.3	19.3	243889	22.4	19.6	218449	22.5	19.4	454222	22.6	21.3
239270	22.2	18.8	322325	22.3	20.												

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

Nº	10	V															
126731	22.6	18.7	267102	22.7	18.4	94685	22.7	17.5	348307	22.8	20.5	484977	22.9	20.4	3638	22.9	16.0
196366	22.6	20.3	168137	22.7	20.3	84834	22.7	18.0	520608	22.8	20.5	482442	22.9	20.9	282068	22.9	19.6
412889	22.6	20.2	279809	22.7	19.7	402778	22.7	21.0	101136	22.8	18.8	186012	22.9	19.2	356694	22.9	19.9
482259	22.6	19.1	346547	22.7	19.3	117878	22.7	18.3	478993	22.8	20.5	427824	22.9	21.5	293620	22.9	20.5
364471	22.6	21.0	238914	22.7	20.2	238009	22.7	18.8	53947	22.8	18.7	22288	22.9	16.2	78334	22.9	18.5
20201	22.6	16.9	70022	22.7	18.0	205032	22.7	18.8	449894	22.8	19.9	178404	22.9	18.7	251315	22.9	18.6
96340	22.6	19.7	54198	22.7	17.9	408026	22.7	20.5	71704	22.8	18.3	511574	22.9	20.4	244374	22.9	20.2
303116	22.6	20.1	485206	22.7	20.3	40514	22.7	18.8	420243	22.8	20.5	395104	22.9	20.0	231134	22.9	21.9
334324	22.6	19.5	492790	22.7	21.1	137534	22.7	18.9	488537	22.8	20.1	32938	22.9	18.2	226555	22.9	20.1
230005	22.6	19.7	17671	22.7	18.2	319240	22.7	21.0	187678	22.8	20.0	407931	22.9	21.0	65073	22.9	18.1
23853	22.6	18.2	485924	22.7	21.3	343160	22.7	20.6	16133	22.8	17.1	521862	22.9	20.8	15601	22.9	17.7
147976	22.6	20.2	449964	22.7	20.5	169970	22.7	18.5	20983	22.8	18.0	46505	22.9	18.9	163017	22.9	18.9
159937	22.6	20.7	5559	22.7	16.1	88244	22.7	19.7	154496	22.8	20.0	381805	22.9	21.3	402414	22.9	20.8
243081	22.6	20.2	435750	22.7	19.7	510071	22.7	20.5	217748	22.8	19.6	286938	22.9	19.6	385168	22.9	19.2
46840	22.6	17.5	411022	22.7	20.1	291261	22.7	20.2	166383	22.8	18.5	20760	22.9	16.3	93739	22.9	18.5
230298	22.6	19.1	335501	22.7	18.6	69913	22.7	17.8	191999	22.8	20.1	135818	22.9	19.0	472413	22.9	21.2
383555	22.6	21.4	315717	22.7	20.4	196909	22.7	20.1	483365	22.8	19.4	339136	22.9	18.8	443539	22.9	20.6
284292	22.6	19.7	332730	22.7	21.0	480665	22.7	21.2	104938	22.8	19.4	59408	22.9	18.3	214592	23.0	18.9
124473	22.6	18.5	423316	22.7	21.4	387663	22.7	20.7	186666	22.8	19.9	388972	22.9	20.8	515536	23.0	21.2
474661	22.6	19.1	261647	22.7	19.6	178534	22.8	20.4	215423	22.8	19.3	232651	22.9	20.0	26167	23.0	17.2
437254	22.6	18.8	291632	22.7	20.2	226458	22.8	19.5	156689	22.8	18.8	121182	22.9	19.6	118328	23.0	19.2
446619	22.6	19.3	318999	22.7	21.1	54821	22.8	17.5	485878	22.8	21.5	270960	22.9	18.3	213143	23.0	19.8
154926	22.6	19.1	362309	22.7	19.4	51862	22.8	17.5	481350	22.8	21.5	17259	22.9	17.0	449737	23.0	20.0
28946	22.6	17.5	228111	22.7	20.2	232228	22.8	21.1	273643	22.8	20.6	292644	22.9	20.6	188901	23.0	20.6
486360	22.6	20.3	218965	22.7	19.4	245239	22.8	19.2	19659	22.8	18.4	128914	22.9	19.2	391191	23.0	22.1
349417	22.6	19.8	401535	22.7	19.5	116574	22.8	19.1	78215	22.8	17.8	239379	22.9	19.6	181656	23.0	19.5
411155	22.6	20.0	431684	22.7	21.2	446324	22.8	21.2	157430	22.8	19.5	93240	22.9	18.5	215829	23.0	19.7
159235	22.6	20.4	413330	22.7	20.2	365355	22.8	20.4	392341	22.8	20.9	346636	22.9	19.8	466966	23.0	18.9
350076	22.6	20.5	286918	22.7	19.1	380775	22.8	20.3	39209	22.8	17.7	398022	22.9	20.0	239564	23.0	19.4
48015	22.6	18.6	75046	22.7	18.2	27936	22.8	19.4	488143	22.8	20.4	449358	22.9	20.3	42147	23.0	18.8
367282	22.6	20.5	255055	22.7	19.8	49341	22.8	19.3	107138	22.8	19.0	265398	22.9	18.7	286723	23.0	20.9
235143	22.6	18.3	121718	22.7	19.0	92085	22.8	18.3	516261	22.8	20.6	247491	22.9	20.0	227301	23.0	19.5
97229	22.6	18.9	513275	22.7	20.5	188421	22.8	20.5	46915	22.8	17.2	478907	22.9	20.9	73485	23.0	18.7
450312	22.6	19.4	151494	22.7	19.5	442261	22.8	20.2	513541	22.8	21.7	258909	22.9	19.6	90795	23.0	19.6
219272	22.6	20.4	260335	22.7	19.5	15433	22.8	16.7	439884	22.8	21.0	294491	22.9	20.1	59852	23.0	18.3
402527	22.6	20.1	491178	22.7	20.6	311873	22.8	20.2	316164	22.9	21.1	224225	22.9	20.6	515401	23.0	22.0
428217	22.6	20.7	193359	22.7	18.0	286707	22.8	21.0	224119	22.9	19.9	451734	22.9	21.1	148286	23.0	19.2
324706	22.6	21.2	51619	22.7	18.8	490862	22.8	21.4	512430	22.9	19.8	359960	22.9	20.2	516318	23.0	20.3
443381	22.6	20.9	112128	22.7	19.6	35848	22.8	18.5	392062	22.9	21.0	216481	22.9	18.3	517152	23.0	20.4
257001	22.6	20.8	281160	22.7	21.0	365376	22.8	19.0	435660	22.9	20.7	2748	22.9	15.7	436610	23.0	20.0
519765	22.6	21.5	215420	22.7	19.4	469720	22.8	20.9	518033	22.9	20.7	315023	22.9	20.6	438613	23.0	19.4
352211	22.6	20.3	67137	22.7	18.7	146783	22.8	19.8	101872	22.9	19.1	381718	22.9	19.9	303096	23.0	19.9
189736	22.6	18.3	143075	22.7	19.4	30688	22.8	18.8	210421	22.9	20.3	233600	22.9	19.9	69869	23.0	18.0
71746	22.6	17.8	246832	22.7	19.5	25633	22.8	18.9	358695	22.9	20.2	193511	22.9	18.6	374735	23.0	20.1
51085	22.6	19.0	99060	22.7	18.8	404550	22.8	19.7	193355	22.9	18.2	431361	22.9	21.1	148656	23.0	19.7
431727	22.6	21.8	254251	22.7	19.5	518350	22.8	20.4	308808	22.9	19.9	132623	22.9	18.1	438000	23.0	19.9
453239	22.6	21.0	433290	22.7	20.5	263946	22.8	20.4	42514	22.9	18.8	69513	22.9	18.5	309896	23.0	20.7
74571	22.6	17.7	334039	22.7	20.7	325321	22.8	19.9	351189	22.9	21.0	369999	22.9	19.1	106892	23.0	18.2
327211	22.6	20.9	39659	22.7	17.0	515174	22.8	20.7	104811	22.9	19.6	261586	22.9	19.5	284296	23.0	20.6
188602	22.6	19.5	198770	22.7	19.5	180003	22.8	20.1	68110	22.9	17.6	70956	22.9	18.0	437248	23.0	19.1
143215	22.6	18.8	223626	22.7	19.9	367705	22.8	20.1	155887	22.9	18.8	47429	22.9	18.8	19225	23.0	18.3
81822	22.6	20.0	394535	22.7	19.9	361523	22.8	20.7	45423	22.9	16.6	329190	22.9	20.0	353545	23.0	20.0
358820	22.6	21.1	190718	22.7	20.4	108437	22.8	19.8	304450	22.9	20.4	178797	22.9	20.0	362821	23.0	19.9
490994	22.6	21.0	244887	22.7	19.4	516149	22.8	20.3	212944	22.9	19.8	227227	22.9	19.3	407003	23.0	19.6
220548	22.6	19.7	242983	22.7	19.8	282735	22.8	20.7	47652	22.9	19.2	70944	22.9	18.1	173159	23.0	18.5
109611	22.6	18.8	435678	22.7	20.6	358501	22.8	20.9	167331	22.9	19.3	232484	22.9	19.3	239420	23.0	19.9
199070	22.6	20.3	118460	22.7	19.2	476898	22.8	20.1	80777	22.9	20.0	121796	22.9	18.0	146287	23.0	19.6
191441	22.6	19.4	487394	22.7	20.7	513272	22.8	20.7	391613	22.9	20.0	410124	22.9	21.7	321129	23.0	20.5
307611	22.6	19.9	191890	22.7	19.2	452087	22.8	20.7	412934	22.9	19.9	219023	22.9	18.8	71941	23.0	18.8
16638	22.6	17.5	291091	22.7	19.7	263533	22.8	20.4	376618	22.9	21.6	254448	22.9	19.7	490521	23.0	20.6
285834	22.6	20.6	73296	22.7	18.7	30358											

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

Nº	10	V															
280178	23.1	18.8	180940	23.1	19.7	169989	23.2	18.0	75488	23.3	19.2	398591	23.4	20.3	408962	23.5	20.2
91525	23.1	18.7	54308	23.1	18.1	383838	23.2	20.9	440796	23.3	19.7	451154	23.4	20.6	314618	23.5	21.2
99542	23.1	19.7	131377	23.1	19.3	411975	23.2	21.1	138397	23.3	19.4	144926	23.4	19.6	493545	23.5	20.7
14556	23.1	17.1	288021	23.1	18.0	396147	23.2	19.7	2788	23.3	16.7	59983	23.4	17.2	71684	23.5	19.0
217338	23.1	19.2	51876	23.1	18.2	395990	23.2	20.8	398636	23.3	20.4	272159	23.4	20.5	15437	23.5	18.6
72441	23.1	19.3	174676	23.1	19.3	66784	23.2	18.8	175251	23.3	19.7	57937	23.4	18.1	2581	23.5	15.3
303059	23.1	20.1	170599	23.1	19.5	207213	23.2	19.9	245289	23.3	20.6	439152	23.4	20.7	392384	23.5	20.5
226207	23.1	19.0	517494	23.1	20.9	30105	23.2	15.4	157695	23.3	19.5	92178	23.4	19.0	334267	23.5	19.2
143795	23.1	18.8	144612	23.1	20.7	42240	23.2	17.8	71071	23.3	18.1	56770	23.4	18.6	172263	23.5	19.0
1878	23.1	15.7	378140	23.1	20.1	213345	23.2	20.4	77575	23.3	19.1	282304	23.4	18.8	458542	23.5	19.8
209105	23.1	19.2	328652	23.1	19.4	116287	23.2	19.8	149686	23.3	19.6	383575	23.4	20.3	328411	23.5	21.0
424571	23.1	20.6	523056	23.1	19.8	11444	23.2	16.3	268692	23.3	19.0	427456	23.4	21.1	368073	23.5	20.9
264128	23.1	19.5	222219	23.1	20.6	173696	23.2	19.5	303110	23.3	20.2	225481	23.4	18.9	27929	23.5	18.2
355475	23.1	20.3	515968	23.1	20.9	245275	23.2	20.5	18261	23.3	18.3	411102	23.4	20.6	440861	23.5	20.6
295416	23.1	20.9	50680	23.1	18.4	515705	23.2	21.0	36258	23.3	18.8	15520	23.4	17.1	183174	23.5	18.6
274195	23.1	21.4	304922	23.1	19.9	22102	23.2	17.8	169045	23.3	19.3	6110	23.4	17.0	523392	23.5	20.0
306772	23.1	16.4	488119	23.1	19.7	354483	23.2	21.1	241527	23.3	19.9	42771	23.4	17.6	63644	23.5	18.3
324800	23.1	21.0	520675	23.1	20.2	394634	23.2	20.5	446231	23.3	20.2	285403	23.4	20.5	217703	23.5	19.4
399046	23.1	20.0	334356	23.1	18.6	158324	23.2	19.5	425036	23.3	20.6	76890	23.4	19.1	287152	23.5	20.0
325522	23.1	20.0	396038	23.1	21.3	520364	23.2	21.3	32873	23.3	18.7	210886	23.4	19.6	3565	23.5	15.9
510276	23.1	20.2	327137	23.1	21.5	94006	23.2	18.4	304176	23.3	19.3	167385	23.4	18.8	363062	23.5	19.3
29330	23.1	17.2	173414	23.1	18.9	390903	23.2	21.4	202979	23.3	19.7	374814	23.4	19.7	490490	23.5	19.1
259407	23.1	19.5	71529	23.1	18.2	154250	23.2	19.7	393161	23.3	20.3	213343	23.4	20.5	491759	23.5	19.5
303505	23.1	19.9	516130	23.1	20.3	221693	23.2	19.8	515414	23.3	20.9	477521	23.4	20.4	225729	23.5	20.0
201113	23.1	19.6	34792	23.2	18.2	510062	23.2	22.3	121729	23.3	19.1	439641	23.4	20.3	65911	23.5	19.7
282386	23.1	19.5	129331	23.2	19.8	27566	23.2	16.6	15817	23.3	18.4	120874	23.4	18.9	139646	23.5	19.4
139058	23.1	19.3	187255	23.2	20.5	489274	23.2	20.2	320266	23.3	20.0	33639	23.4	17.3	443766	23.5	19.5
404553	23.1	20.0	165383	23.2	17.5	97257	23.2	17.9	487105	23.3	21.1	291921	23.4	18.9	115667	23.5	19.2
99500	23.1	19.2	485248	23.2	21.0	399670	23.2	19.3	21757	23.3	15.9	13386	23.4	16.5	384338	23.5	19.2
124651	23.1	18.3	279598	23.2	21.9	410903	23.2	20.1	400716	23.3	19.7	493927	23.4	21.1	164216	23.5	20.9
391255	23.1	20.5	386721	23.2	19.5	322570	23.2	19.9	119207	23.3	18.1	368200	23.4	21.0	451104	23.5	20.1
395088	23.1	20.4	485018	23.2	21.7	402020	23.2	19.5	227296	23.3	19.3	468960	23.4	20.8	22618	23.5	17.8
471533	23.1	20.8	519841	23.2	21.6	459442	23.2	20.4	390808	23.3	21.9	448667	23.4	20.6	145216	23.5	19.7
520171	23.1	21.1	380512	23.2	20.2	189952	23.2	18.9	213674	23.3	19.2	37271	23.4	16.5	198758	23.5	19.6
353669	23.1	20.7	321613	23.2	20.3	67312	23.2	18.7	48142	23.3	19.7	108639	23.4	19.3	235813	23.5	18.4
162134	23.1	20.6	262284	23.2	20.4	89050	23.2	16.5	331372	23.3	21.4	281803	23.4	20.5	383059	23.5	19.1
482718	23.1	20.0	303182	23.2	20.1	523382	23.2	21.3	24302	23.3	15.7	443373	23.4	20.4	38291	23.5	17.8
506859	23.1	22.5	141366	23.2	19.8	269847	23.2	20.9	259720	23.3	18.1	189607	23.4	17.6	213242	23.5	19.2
363495	23.1	20.9	253705	23.2	20.2	488291	23.2	20.7	403991	23.3	20.9	273807	23.4	21.6	25397	23.5	18.0
94108	23.1	18.9	379609	23.2	20.9	496618	23.2	21.2	101396	23.3	18.5	117919	23.4	18.5	9823	23.5	17.3
62647	23.1	18.7	176646	23.2	19.7	223413	23.2	19.5	222425	23.3	19.5	150695	23.4	19.1	53820	23.5	18.3
436458	23.1	20.7	485331	23.2	21.6	436257	23.2	20.0	1825	23.3	14.8	439561	23.4	21.1	188344	23.5	19.7
234717	23.1	20.1	484065	23.2	21.5	473602	23.2	20.7	457922	23.3	20.8	479848	23.4	20.6	374775	23.5	19.8
288100	23.1	19.7	271538	23.2	20.4	458146	23.2	20.4	154970	23.3	20.4	124794	23.4	18.6	426108	23.5	21.2
139712	23.1	19.4	274148	23.2	20.7	521765	23.2	21.2	494708	23.3	21.2	287061	23.4	19.3	363159	23.5	19.8
278338	23.1	21.8	77995	23.2	19.6	78733	23.2	18.7	314540	23.3	19.7	161040	23.4	19.4	363651	23.5	19.4
383835	23.1	21.0	252074	23.2	18.9	127279	23.2	19.5	470547	23.3	21.2	514808	23.4	19.6	466725	23.5	20.7
155903	23.1	18.6	452740	23.2	21.6	512172	23.2	20.8	445940	23.3	20.0	481404	23.4	20.6	395341	23.5	19.6
365003	23.1	21.0	139695	23.2	19.8	224596	23.2	20.4	227039	23.3	20.3	161739	23.4	19.1	517993	23.5	20.6
260621	23.1	21.1	348349	23.2	19.2	270868	23.2	20.4	99474	23.3	19.6	398550	23.4	19.6	60831	23.5	18.1
261853	23.1	19.9	495162	23.2	20.1	407631	23.2	20.8	457890	23.3	20.8	149133	23.4	20.9	383127	23.5	19.9
183208	23.1	18.3	254220	23.2	20.0	207729	23.2	19.8	389761	23.3	20.5	39996	23.4	19.5	392949	23.5	20.0
40769	23.1	17.4	18071	23.2	18.3	265362	23.3	19.4	470516	23.3	21.0	511478	23.4	21.4	91802	23.5	18.7
34312	23.1	18.3	226056	23.2	19.0	253548	23.3	19.2	258678	23.3	20.4	488338	23.4	20.0	461213	23.5	20.5
440754	23.1	21.5	295871	23.2	20.1	51486	23.3	17.5	21831	23.3	16.6	471973	23.4	20.4	145041	23.5	20.3
76200	23.1	18.4	453467	23.2	21.0	5594	23.3	16.6	146318	23.3	19.3	454358	23.4	20.3	319422	23.5	20.5
445198	23.1	21.2	15429	23.2	17.8	175505	23.3	20.4	305349	23.4	19.9	272516	23.4	20.5	470192	23.5	20.0
354660	23.1	19.9	71902	23.2	17.3	486212	23.3	20.5	407558	23.4	20.3	373165	23.4	21.0	288478	23.5	20.9
12347	23.1	17.9	135045	23.2	19.2	154360	23.3	19.8	132732	23.4	19.1	480059	23.4	20.7	283925	23.5	19.4
156965	23.1	20.7	23111	23.2	17.1	6776	23.3	17.2	113924	23.4	18.0	294065	23.4	19.5	100568	23.5	20.3
520670	23.1	21.7	208756	23.2	19.6	353089	23.										

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

Nº	10	V															
162086	23.5	19.5	471046	23.6	19.7	92270	23.7	17.4	154985	23.7	19.1	102983	23.8	18.8	437249	23.9	18.9
68256	23.5	18.9	514963	23.6	19.8	34065	23.7	16.8	56336	23.7	18.7	141076	23.8	17.6	70855	23.9	19.7
297964	23.5	21.6	354478	23.6	22.1	121373	23.7	20.2	225186	23.7	18.4	10462	23.8	18.8	507981	23.9	20.4
108458	23.5	19.5	183492	23.6	20.7	67171	23.7	18.8	353154	23.7	20.7	91782	23.8	19.1	516038	23.9	20.9
404711	23.5	19.6	81263	23.6	19.4	8939	23.7	17.3	70826	23.7	18.5	384966	23.8	19.7	45563	23.9	18.1
241190	23.5	19.8	28291	23.6	16.0	521952	23.7	20.7	11193	23.7	16.9	260776	23.8	20.4	374753	23.9	20.2
289292	23.5	18.8	138502	23.6	19.6	4852	23.7	16.7	476598	23.7	19.3	269572	23.8	20.0	228121	23.9	20.7
108150	23.5	19.7	377693	23.6	19.7	290549	23.7	20.1	460141	23.7	19.9	451185	23.8	20.7	53206	23.9	18.5
443342	23.5	21.5	266706	23.6	19.5	135835	23.7	20.1	290109	23.7	20.0	203237	23.8	19.7	50028	23.9	19.5
455004	23.5	20.5	201927	23.6	20.1	358543	23.7	20.2	361973	23.7	20.9	231705	23.8	19.0	518813	23.9	20.4
477915	23.5	20.3	65241	23.6	17.6	374828	23.7	19.4	229781	23.7	20.3	118149	23.8	18.9	150299	23.9	19.0
316433	23.5	19.1	312322	23.6	20.6	330598	23.7	20.2	273572	23.7	20.9	451591	23.8	20.8	281987	23.9	19.8
326249	23.5	20.0	105489	23.6	18.9	78016	23.7	18.6	436513	23.7	20.5	481868	23.8	20.8	360311	23.9	19.1
208915	23.5	19.9	20549	23.6	17.3	292847	23.7	20.6	147215	23.7	17.1	428109	23.8	20.3	422860	23.9	20.8
195625	23.5	19.1	210314	23.6	19.7	303159	23.7	20.0	515597	23.7	21.5	373147	23.8	21.0	266526	23.9	19.1
382654	23.5	18.4	135907	23.6	19.2	515172	23.7	20.2	72787	23.7	18.6	454711	23.8	20.9	108285	23.9	20.1
288489	23.5	20.5	79241	23.6	18.9	263612	23.7	20.5	358204	23.7	20.6	225662	23.8	19.2	310575	23.9	19.9
446424	23.5	19.9	204409	23.6	19.7	139475	23.7	17.9	432314	23.7	18.7	229822	23.8	20.0	162279	23.9	19.0
284281	23.5	20.9	126627	23.6	18.8	449844	23.7	20.8	447192	23.7	20.9	174885	23.8	20.3	431301	23.9	19.3
217672	23.5	18.2	399921	23.6	19.6	11144	23.7	17.9	274889	23.7	20.1	48388	23.8	19.5	3950	23.9	16.5
333341	23.5	20.0	64356	23.6	18.9	453456	23.7	20.7	145135	23.7	19.1	379332	23.8	19.0	358729	23.9	20.1
487085	23.5	20.4	240899	23.6	20.4	485834	23.7	21.1	97640	23.7	19.7	236825	23.8	21.1	19167	23.9	16.9
132615	23.5	20.4	288053	23.6	20.3	384288	23.7	18.4	179734	23.7	17.7	223870	23.8	19.8	269581	23.9	20.0
109556	23.5	18.6	403139	23.6	20.4	267276	23.7	18.9	509476	23.7	19.0	483532	23.8	19.2	168664	23.9	20.4
25688	23.5	18.4	519521	23.6	22.0	260303	23.7	19.3	244511	23.7	19.1	515782	23.8	20.9	18541	23.9	18.3
455057	23.5	21.0	480548	23.6	21.2	179741	23.7	19.4	18398	23.7	16.3	511039	23.8	20.5	208818	23.9	18.9
397992	23.5	21.1	368512	23.6	20.0	222166	23.7	18.7	172104	23.7	20.0	278282	23.8	19.1	236621	23.9	20.2
285481	23.5	19.7	510297	23.6	20.2	441782	23.7	21.1	128296	23.7	18.9	27564	23.8	18.2	225772	23.9	19.7
189934	23.5	19.3	453714	23.6	20.0	511633	23.7	20.8	179085	23.7	19.0	306314	23.8	20.3	18685	23.9	17.9
374908	23.5	19.9	213905	23.6	18.8	82749	23.7	18.7	32325	23.7	17.4	192901	23.8	20.2	372262	23.9	20.7
275392	23.5	20.7	389459	23.6	21.0	441277	23.7	20.3	280587	23.7	19.2	446445	23.8	20.4	513760	23.9	20.8
475310	23.5	19.6	216162	23.6	20.0	522028	23.7	20.8	5773	23.7	16.7	393199	23.8	20.4	398016	23.9	20.5
175078	23.5	20.2	223865	23.6	19.5	321611	23.7	19.6	262248	23.7	19.2	496452	23.8	20.6	7433	23.9	18.3
1700	23.5	13.9	359000	23.6	20.4	217880	23.7	19.8	455586	23.7	19.8	22624	23.8	18.0	119268	23.9	18.6
46238	23.5	17.3	39827	23.6	17.8	511555	23.7	23.5	189204	23.7	18.9	373659	23.8	20.2	89856	23.9	18.8
361251	23.5	20.2	487312	23.6	21.1	59683	23.7	18.3	175552	23.7	20.0	282265	23.8	19.8	159959	23.9	19.9
6094	23.5	16.1	429378	23.6	19.6	240656	23.7	20.1	383146	23.8	19.4	71681	23.8	17.8	140140	23.9	19.1
349743	23.5	21.2	346739	23.6	19.6	153197	23.7	20.8	509539	23.8	20.6	23520	23.8	17.4	446224	23.9	20.0
512052	23.5	20.8	358518	23.6	20.8	10842	23.7	17.3	301960	23.8	21.2	486603	23.8	20.6	471986	23.9	19.6
381079	23.5	20.9	512525	23.6	20.0	185537	23.7	19.9	358277	23.8	20.6	84596	23.8	18.7	433992	23.9	20.9
288193	23.5	18.9	358878	23.6	20.6	478952	23.7	20.3	263907	23.8	20.2	296729	23.8	19.9	284256	23.9	20.7
55376	23.5	18.6	513794	23.6	21.6	331479	23.7	18.6	469561	23.8	19.1	461264	23.8	20.4	410153	23.9	19.3
239122	23.5	18.9	297305	23.6	20.3	369716	23.7	20.4	388215	23.8	19.7	328845	23.8	20.4	232264	23.9	20.2
399858	23.5	20.5	237193	23.6	19.5	242541	23.7	20.0	210152	23.8	19.5	15164	23.8	17.3	338456	23.9	19.9
8357	23.5	15.7	510244	23.6	22.0	516958	23.7	21.1	326628	23.8	20.4	353621	23.8	19.9	337999	23.9	19.5
1894	23.5	15.6	158134	23.6	20.2	14180	23.7	17.6	245846	23.8	20.3	313977	23.8	19.5	449810	23.9	19.9
509401	23.5	21.2	421815	23.6	19.6	175028	23.7	19.7	488136	23.8	20.1	359952	23.8	20.4	329468	23.9	19.5
1306	23.5	14.0	212306	23.6	20.5	244687	23.7	18.9	488041	23.8	20.5	166610	23.8	19.5	181238	23.9	19.7
99944	23.5	18.7	253557	23.6	19.1	168758	23.7	18.7	484267	23.8	21.1	411597	23.9	20.2	443201	23.9	21.8
112277	23.6	19.3	57676	23.6	19.1	265259	23.7	20.6	213145	23.8	21.1	442819	23.9	20.4	178565	23.9	18.5
392467	23.6	21.2	480050	23.6	21.7	321656	23.7	19.9	65956	23.8	18.7	117343	23.9	18.9	348064	23.9	19.2
250481	23.6	20.2	368788	23.6	20.2	322426	23.7	20.3	60401	23.8	18.7	226253	23.9	19.4	264354	23.9	19.1
368858	23.6	20.4	293141	23.6	19.9	428582	23.7	20.5	184495	23.8	19.0	171152	23.9	19.6	181171	23.9	20.0
86101	23.6	17.9	450080	23.6	19.6	143235	23.7	19.5	451216	23.8	20.5	267153	23.9	20.9	439967	23.9	20.1
473375	23.6	20.4	512843	23.6	20.5	391986	23.7	21.2	371319	23.8	21.7	184818	23.9	20.5	148461	23.9	19.3
361712	23.6	20.0	237914	23.6	19.3	219929	23.7	20.4	358963	23.8	19.5	445320	23.9	21.3	262912	23.9	20.7
151878	23.6	19.8	331989	23.6	20.1	149725	23.7	19.5	214025	23.8	19.8	167366	23.9	19.7	224756	23.9	19.1
317329	23.6	20.0	648483	23.6	19.4	178536	23.7	17.9	324696	23.8	21.4	520439	23.9	21.5	408032	23.9	20.4
330577	23.6	20.9	484940	23.6	20.9	451626	23.7	20.4	512054	23.8	20.4	42915	23.9	17.3	52183	23.9	17.9
128195	23.6	18.1	430106	23.6	20.9	260387	23.7	19.5	119324	23.8	18.9	399650	23.9	20.1	259481	23.9	19.7
103997	23.6	19.9	37040	23.6	18.7												

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

Nº	10	V															
23031	23.9	17.0	469648	24.0	18.8	370852	24.1	21.3	383529	24.2	21.2	154471	24.2	19.9	266019	24.3	20.5
268188	23.9	20.0	519472	24.0	20.8	374809	24.1	20.4	262548	24.2	20.6	308408	24.2	20.8	47594	24.3	17.6
352328	23.9	20.9	315803	24.0	20.8	483284	24.1	20.4	192250	24.2	20.9	398698	24.2	20.6	22725	24.3	16.8
358787	23.9	20.5	119115	24.0	18.3	433260	24.1	20.0	284738	24.2	19.6	46109	24.2	18.5	472392	24.3	21.2
482697	23.9	19.5	45205	24.0	17.3	223894	24.1	18.8	426682	24.2	20.3	509519	24.2	20.9	298122	24.3	19.9
285562	23.9	20.8	20719	24.0	17.0	19505	24.1	17.9	165939	24.2	19.4	143070	24.2	19.0	71662	24.3	19.3
147460	23.9	20.2	116366	24.0	18.5	325651	24.1	19.4	244831	24.2	20.2	107515	24.3	19.7	374238	24.3	20.5
512094	23.9	21.3	450318	24.0	19.8	132708	24.1	19.7	298101	24.2	19.0	2823	24.3	15.7	300598	24.3	20.8
199796	23.9	19.3	71803	24.0	17.9	472671	24.1	21.8	132291	24.2	19.9	67598	24.3	18.7	100202	24.3	18.2
452977	23.9	19.8	62814	24.0	19.0	257608	24.1	19.9	176409	24.2	19.6	320190	24.3	20.8	350859	24.3	19.1
189940	23.9	19.1	222918	24.0	20.8	72031	24.1	18.2	317746	24.2	19.6	144918	24.3	20.2	163851	24.3	19.0
103536	23.9	19.2	325918	24.0	21.3	386701	24.1	19.6	99537	24.2	19.0	124082	24.3	18.8	323285	24.3	19.3
480259	23.9	20.8	3086	24.0	16.1	112945	24.1	18.8	85733	24.2	19.5	67783	24.3	18.0	39806	24.3	18.0
124788	23.9	19.2	236468	24.0	20.0	63965	24.1	18.0	239810	24.2	19.7	325768	24.3	20.1	302755	24.3	19.0
344216	23.9	19.6	485786	24.0	21.1	442023	24.1	21.1	72391	24.2	18.3	90417	24.3	17.6	235209	24.3	19.9
141676	23.9	19.5	171419	24.0	20.1	451613	24.1	21.0	175168	24.2	20.4	300738	24.3	20.2	242244	24.3	19.6
39116	23.9	18.5	220915	24.0	21.4	487182	24.1	20.1	124123	24.2	19.7	510079	24.3	20.9	429452	24.3	20.5
115385	23.9	19.1	28992	24.0	18.7	257059	24.1	19.8	91139	24.2	18.3	457931	24.3	20.3	201506	24.3	20.5
446608	23.9	20.3	378090	24.0	19.6	162739	24.1	18.7	174353	24.2	18.6	428645	24.3	22.0	293112	24.3	19.8
146926	23.9	19.8	62695	24.0	19.6	391939	24.1	18.7	219268	24.2	18.4	404780	24.3	21.8	296832	24.3	20.1
505609	23.9	20.0	264877	24.0	20.7	161939	24.1	21.1	353013	24.2	20.0	460190	24.3	20.4	290491	24.3	19.8
320201	23.9	20.0	155889	24.0	19.1	70425	24.1	17.2	439590	24.2	20.9	411460	24.3	20.1	319575	24.3	19.9
457878	23.9	20.3	100214	24.0	18.8	421154	24.1	19.9	315859	24.2	20.0	396590	24.3	20.9	517969	24.3	21.3
126421	23.9	19.6	34804	24.0	18.1	188366	24.1	19.8	35233	24.2	19.3	361636	24.3	20.0	330176	24.3	20.5
505010	23.9	21.4	517776	24.0	19.8	114539	24.1	17.4	123812	24.2	19.5	38206	24.3	16.8	317328	24.3	19.6
24534	23.9	17.8	476874	24.0	20.4	299203	24.1	19.0	483615	24.2	19.8	484003	24.3	21.6	319214	24.3	19.9
89091	23.9	18.8	121663	24.1	18.9	135008	24.1	19.7	125001	24.2	18.2	203701	24.3	19.7	276475	24.3	20.2
315868	23.9	19.9	375699	24.1	19.7	365352	24.1	20.2	74467	24.2	17.9	327605	24.3	20.1	484010	24.3	20.9
38514	23.9	18.0	95765	24.1	19.7	111038	24.1	18.8	184262	24.2	20.5	458033	24.3	20.7	164965	24.3	19.9
227504	23.9	20.3	324767	24.1	20.7	289407	24.1	20.8	288087	24.2	20.2	270774	24.3	18.8	519399	24.3	20.9
105726	23.9	19.2	457925	24.1	19.8	57278	24.1	18.1	79391	24.2	19.5	521524	24.3	20.9	115714	24.3	19.2
15671	23.9	18.3	144451	24.1	19.3	19218	24.1	17.9	412678	24.2	19.3	225082	24.3	20.2	447842	24.3	20.6
208134	23.9	20.1	460571	24.1	19.7	367001	24.1	21.5	407650	24.2	19.7	269823	24.3	19.4	325383	24.3	20.8
291357	23.9	20.1	17832	24.1	17.9	168346	24.1	19.5	135948	24.2	18.1	173182	24.3	19.7	99093	24.4	18.9
223731	23.9	20.4	74809	24.1	17.7	409350	24.1	20.0	47021	24.2	17.7	76944	24.3	18.9	378540	24.4	20.0
352969	23.9	19.8	422053	24.1	20.9	164748	24.1	19.6	308858	24.2	20.2	76317	24.3	19.3	482767	24.4	20.7
22908	23.9	17.2	162130	24.1	18.7	38338	24.1	17.5	487185	24.2	20.8	380417	24.3	20.3	48545	24.4	18.9
9821	23.9	17.5	78245	24.1	18.5	317538	24.1	20.4	16179	24.2	18.6	68286	24.3	17.5	431309	24.4	20.9
355507	23.9	20.3	293469	24.1	19.9	220139	24.1	19.2	477000	24.2	19.2	373191	24.3	21.3	276957	24.4	19.6
223490	23.9	20.4	298646	24.1	20.0	21405	24.1	19.1	258778	24.2	19.8	300467	24.3	20.7	330988	24.4	20.0
246014	23.9	19.6	458615	24.1	20.6	152038	24.1	19.9	6108	24.2	16.0	293466	24.3	19.5	271623	24.4	20.4
408003	23.9	20.6	171433	24.1	19.6	227668	24.1	20.8	273185	24.2	18.9	127280	24.3	19.3	224780	24.4	19.7
14297	23.9	17.3	75976	24.1	18.8	315378	24.2	19.7	229442	24.2	20.5	294259	24.3	20.6	270154	24.4	19.8
250570	23.9	20.9	153251	24.1	19.3	159112	24.2	19.7	461256	24.2	20.0	262192	24.3	20.4	398535	24.4	20.5
219302	23.9	19.2	308880	24.1	20.2	27163	24.2	16.4	226463	24.2	19.1	261014	24.3	20.5	249973	24.4	19.8
322156	23.9	19.4	195194	24.1	19.5	300393	24.2	20.4	479861	24.2	20.3	350312	24.3	18.6	312936	24.4	18.8
74575	23.9	18.2	359457	24.1	20.0	160154	24.2	19.5	517285	24.2	20.9	354445	24.3	19.6	151334	24.4	20.1
105358	23.9	18.8	300820	24.1	20.6	469582	24.2	20.4	442879	24.2	20.0	307663	24.3	19.7	133726	24.4	19.0
38443	23.9	17.6	460168	24.1	20.4	109642	24.2	18.4	476906	24.2	20.0	405275	24.3	20.3	435192	24.4	21.5
36045	23.9	17.5	298056	24.1	19.9	49496	24.2	17.8	164405	24.2	20.0	368509	24.3	19.0	445331	24.4	21.1
23672	23.9	18.0	328671	24.1	20.2	151415	24.2	19.7	358773	24.2	20.8	222062	24.3	19.1	477909	24.4	20.4
52983	23.9	16.7	393383	24.1	20.6	54603	24.2	18.1	258798	24.2	20.0	457845	24.3	20.8	518929	24.4	21.3
337052	23.9	18.9	174736	24.1	19.2	107641	24.2	19.3	143946	24.2	18.9	226566	24.3	20.0	274220	24.4	20.9
412502	24.0	21.1	300410	24.1	19.9	192170	24.2	20.6	276431	24.2	20.6	298239	24.3	19.2	343685	24.4	19.7
389205	24.0	21.0	334144	24.1	18.4	66409	24.2	17.8	307156	24.2	20.7	450469	24.3	20.8	103698	24.4	19.1
381408	24.0	21.3	220145	24.1	19.8	445982	24.2	20.9	206979	24.2	18.5	220199	24.3	19.4	443263	24.4	22.0
127159	24.0	19.6	289782	24.1	21.6	383482	24.2	21.4	110133	24.2	18.6	481862	24.3	20.3	393104	24.4	21.0
131019	24.0	19.2	382086	24.1	21.4	233585	24.2	19.7	228105	24.2	20.4	435469	24.3	21.2	99339	24.4	17.6
217171	24.0	20.5	438322	24.1	21.1	119235	24.2	18.7	221542	24.2	19.4	262694	24.3	20.6	428520	24.4	21.7
149755	24.0	19.1	186307	24.1	20.3	409769	24.2	20.3	329096	24.2	20.0	209173	24.3	19.4	235327	24.4	19.8
63508	24.0	17.6	357428	24.1	19.8												

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

Nº	10	V															
260638	24.4	20.3	64899	24.5	19.0	68421	24.6	18.7	226994	24.7	20.2	254527	24.8	20.0	471514	24.8	21.0
481670	24.4	20.5	30574	24.5	19.6	43015	24.6	17.9	218544	24.7	18.1	494558	24.8	20.1	482798	24.8	21.8
439070	24.4	20.5	119853	24.5	19.3	158235	24.6	19.9	387612	24.7	22.4	139733	24.8	19.0	185237	24.8	20.0
453093	24.4	19.8	286869	24.5	19.0	46959	24.6	17.3	329727	24.7	20.2	222051	24.8	19.0	327749	24.8	19.1
513925	24.4	21.0	481047	24.5	21.6	56451	24.6	16.8	482583	24.7	19.9	100949	24.8	19.2	476711	24.8	19.6
364903	24.4	21.5	175550	24.5	19.0	457959	24.6	20.8	125342	24.7	18.7	296710	24.8	19.1	298645	24.8	20.3
4978	24.4	15.6	103038	24.5	19.0	91048	24.6	18.4	342781	24.7	20.5	298588	24.8	19.3	523210	24.8	20.7
200535	24.4	18.3	328067	24.5	20.0	522084	24.6	20.8	41440	24.7	21.1	189151	24.8	20.4	353090	24.8	20.7
97305	24.4	19.6	95457	24.5	18.5	135020	24.6	18.4	282736	24.7	20.4	320686	24.8	20.1	69294	24.8	18.4
8241	24.4	18.1	366201	24.5	20.0	376598	24.6	20.0	237597	24.7	20.1	86184	24.8	18.5	220902	24.8	18.3
266968	24.4	20.7	117438	24.5	19.9	72470	24.6	18.9	154960	24.7	19.9	102812	24.8	19.3	377245	24.8	21.3
324750	24.4	21.4	107396	24.5	19.5	65431	24.6	18.5	85903	24.7	19.4	84268	24.8	19.4	293387	24.8	20.9
273534	24.4	20.4	144552	24.5	19.3	432610	24.6	19.2	55119	24.7	19.1	98465	24.8	18.6	386431	24.8	20.4
223123	24.4	18.6	349842	24.5	20.5	47483	24.6	17.8	329465	24.7	19.6	21564	24.8	16.1	514445	24.8	20.0
464743	24.4	21.6	352198	24.5	20.2	20333	24.6	17.3	73710	24.7	20.2	402814	24.8	19.8	458021	24.8	20.5
307959	24.4	20.4	92199	24.5	18.8	206099	24.6	19.5	459941	24.7	19.6	453008	24.8	21.2	36181	24.8	17.0
191224	24.4	20.0	391555	24.5	20.4	212399	24.6	20.1	238192	24.7	20.8	522018	24.8	20.3	173440	24.8	19.8
276438	24.4	20.3	21089	24.5	17.2	435216	24.6	19.8	446773	24.7	20.0	261889	24.8	20.8	219251	24.9	19.6
228675	24.4	19.8	187029	24.5	19.0	86767	24.6	18.9	5864	24.7	16.5	9277	24.8	16.4	300801	24.9	19.9
410990	24.4	18.9	321603	24.5	20.4	7528	24.6	16.9	431693	24.7	19.9	134904	24.8	17.8	415596	24.9	20.6
523597	24.4	22.8	521560	24.5	20.3	180240	24.6	19.0	218464	24.7	20.0	133298	24.8	19.7	454145	24.9	21.2
520289	24.4	20.9	73338	24.5	19.7	518325	24.6	21.7	161028	24.7	19.6	213174	24.8	18.0	472885	24.9	20.4
485934	24.4	21.9	492982	24.5	20.5	187531	24.6	19.4	220486	24.7	18.5	511928	24.8	20.9	132339	24.9	19.4
41427	24.4	19.0	455671	24.5	20.7	69871	24.6	18.6	108428	24.7	18.6	438307	24.8	21.0	229783	24.9	19.7
155589	24.4	19.0	44329	24.5	16.6	466277	24.6	19.7	451206	24.7	20.9	243591	24.8	17.2	109580	24.9	19.3
242293	24.4	19.4	41516	24.5	17.5	93791	24.6	18.7	244883	24.7	21.0	477498	24.8	21.5	195272	24.9	19.4
166351	24.4	19.3	342619	24.5	19.2	158720	24.6	17.5	279627	24.7	20.8	128264	24.8	18.6	175919	24.9	20.2
265284	24.4	20.6	163256	24.5	19.2	33830	24.6	17.1	284234	24.7	20.8	102380	24.8	18.5	484099	24.9	20.2
172829	24.4	18.8	260162	24.5	18.9	115491	24.6	18.5	123931	24.7	19.1	42719	24.8	17.9	267727	24.9	20.2
516455	24.4	20.5	412234	24.5	20.5	212450	24.6	19.5	166581	24.7	19.0	452916	24.8	19.6	356872	24.9	20.2
36853	24.4	17.9	30367	24.5	18.2	492895	24.6	20.7	218573	24.7	18.8	445643	24.8	20.1	24869	24.9	17.8
209856	24.4	20.1	339297	24.5	19.5	156596	24.6	19.5	385254	24.7	20.6	199698	24.8	20.6	449415	24.9	20.2
9046	24.4	17.4	158639	24.5	20.2	22027	24.6	17.5	264838	24.7	20.2	426079	24.8	21.7	511851	24.9	20.9
197316	24.4	19.4	138286	24.5	18.7	178801	24.6	20.3	303176	24.7	20.2	159795	24.8	17.8	487448	24.9	20.3
477328	24.4	21.1	319224	24.5	20.6	414585	24.6	18.3	24092	24.7	17.3	225229	24.8	20.3	480899	24.9	19.7
355466	24.4	20.5	305791	24.5	20.8	189265	24.6	18.6	381375	24.7	19.6	508971	24.8	21.7	443175	24.9	21.0
322690	24.4	19.4	370600	24.5	18.4	161377	24.6	18.3	298217	24.7	18.8	285031	24.8	21.0	25478	24.9	18.9
249084	24.4	20.1	490036	24.5	21.7	516623	24.6	21.5	358817	24.7	21.0	11397	24.8	17.1	59619	24.9	18.6
142672	24.4	19.1	424629	24.5	20.9	217401	24.6	20.0	79364	24.7	19.2	386318	24.8	20.6	429446	24.9	19.9
514686	24.4	21.3	28353	24.5	16.6	397682	24.6	19.8	220473	24.7	20.2	228110	24.8	20.3	119923	24.9	18.4
513342	24.4	20.3	288177	24.5	19.4	487101	24.6	20.6	302751	24.7	19.3	381111	24.8	21.0	13800	24.9	16.1
517840	24.4	19.6	404087	24.5	20.2	213463	24.6	19.7	280569	24.7	20.3	230307	24.8	19.8	429407	24.9	19.8
327139	24.4	20.8	266014	24.5	20.3	375207	24.6	20.4	280137	24.7	19.4	310358	24.8	19.9	319209	24.9	20.2
73230	24.5	19.5	29505	24.5	18.1	272984	24.6	19.7	54084	24.7	17.6	183913	24.8	19.6	210649	24.9	19.4
340108	24.5	21.0	471263	24.5	21.1	175073	24.6	19.6	409656	24.7	20.8	134351	24.8	17.8	73268	24.9	18.6
454302	24.5	20.6	126848	24.5	19.0	453107	24.6	19.7	219104	24.7	19.5	351846	24.8	20.1	45090	24.9	18.4
326042	24.5	20.7	203177	24.5	18.4	389529	24.6	20.9	207310	24.7	20.2	358240	24.8	19.6	178377	24.9	19.4
182358	24.5	18.6	38547	24.5	17.6	229416	24.6	19.0	376965	24.7	20.5	229866	24.8	19.5	185757	24.9	19.6
224759	24.5	19.5	227152	24.5	19.4	438606	24.6	19.5	172424	24.7	20.3	34980	24.8	17.8	516899	24.9	20.9
304161	24.5	20.3	249521	24.5	18.4	299165	24.6	19.6	364125	24.7	19.9	350436	24.8	20.1	25208	24.9	17.0
246896	24.5	20.0	518732	24.5	21.2	353790	24.6	19.4	249744	24.7	18.9	251358	24.8	18.9	128180	24.9	19.3
43842	24.5	18.7	190009	24.5	20.7	251205	24.6	19.8	152357	24.7	20.5	123988	24.8	19.1	273087	24.9	21.4
304381	24.5	20.2	154302	24.5	18.2	402740	24.6	20.7	129724	24.7	19.5	265213	24.8	21.0	428616	24.9	20.2
225437	24.5	20.4	93512	24.5	18.4	25791	24.6	17.5	329865	24.7	19.7	41907	24.8	17.9	411043	24.9	20.2
75284	24.5	18.6	517038	24.5	20.3	481578	24.6	19.6	398118	24.7	20.8	79267	24.8	19.3	247786	24.9	20.4
446032	24.5	21.0	458411	24.5	20.6	26227	24.6	16.3	352259	24.7	20.6	285034	24.8	20.8	480416	24.9	20.0
485268	24.5	19.6	477187	24.5	21.1	153646	24.6	19.1	344938	24.7	20.7	219474	24.8	20.3	176798	24.9	19.1
480089	24.5	20.2	24333	24.5	17.4	453410	24.6	20.7	468696	24.7	19.2	521440	24.8	21.1	449046	24.9	21.5
560689	24.5	19.3	44813	24.5	18.0	30101	24.6	17.7	57201	24.7	17.9	312574	24.8	20.9	117643	24.9	18.8
523464	24.5	20.2	265093	24.5	19.5	515919	24.6	20.5	103738	24.7	19.9	379203	24.8	19.0	240653	24.9	18.9
163300	24.5	19.8	421454	24.5	20.4	1838											

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

Nº	10	V															
472583	24.9	19.8	485956	25.0	21.4	458048	25.1	20.6	435586	25.2	19.8	518281	25.2	20.5	161431	25.3	18.2
239799	24.9	19.1	289078	25.0	20.0	106329	25.1	17.4	485313	25.2	21.3	325804	25.2	21.2	73834	25.3	19.3
404969	24.9	20.2	339162	25.0	20.3	274992	25.1	20.1	363541	25.2	20.7	265920	25.2	20.4	310848	25.3	19.6
508998	24.9	21.9	272927	25.0	21.3	476828	25.1	21.0	177619	25.2	20.5	257184	25.2	20.8	70690	25.3	18.4
228930	24.9	19.4	120559	25.0	18.6	62507	25.1	19.1	334828	25.2	19.6	515393	25.2	21.2	265978	25.3	20.4
217317	24.9	19.0	402037	25.0	20.4	518411	25.1	21.7	297839	25.2	20.9	132460	25.2	19.9	363464	25.3	19.7
134535	24.9	19.2	268311	25.0	19.3	199969	25.1	21.0	232869	25.2	19.5	446769	25.2	20.7	510229	25.3	21.7
117799	24.9	19.3	321573	25.0	19.5	408057	25.1	20.1	451962	25.2	20.0	366346	25.2	20.6	237875	25.3	19.9
514075	24.9	19.9	163227	25.0	19.5	134277	25.1	19.6	222417	25.2	20.5	298675	25.2	20.5	77900	25.3	19.0
362955	24.9	20.3	325923	25.0	20.5	485971	25.1	21.8	366499	25.2	19.1	263545	25.2	19.9	440797	25.3	19.8
91448	24.9	17.6	301908	25.0	18.8	454649	25.1	21.1	345474	25.2	21.3	27599	25.2	17.5	319403	25.3	20.3
164683	24.9	20.1	158785	25.0	19.3	339082	25.1	20.1	267581	25.2	20.3	316424	25.2	20.4	457866	25.3	20.5
518066	24.9	20.0	123889	25.0	19.2	135924	25.1	18.9	380024	25.2	20.3	171714	25.2	18.4	487318	25.3	21.2
384750	24.9	21.4	299779	25.0	19.7	492545	25.1	20.4	245242	25.2	18.8	45934	25.2	18.4	403512	25.3	20.3
28979	24.9	18.3	248812	25.0	20.0	487855	25.1	20.5	102743	25.2	18.9	364113	25.3	19.9	403405	25.3	20.1
473412	24.9	20.4	82425	25.0	17.0	452264	25.1	20.1	47026	25.2	18.1	234711	25.3	19.4	518487	25.3	21.1
336788	24.9	20.9	441254	25.0	20.0	470063	25.1	20.7	264148	25.2	19.9	276660	25.3	16.3	279716	25.3	19.8
86076	24.9	19.4	487446	25.0	19.5	351387	25.1	19.9	480266	25.2	21.5	289635	25.3	20.4	209156	25.3	19.1
490942	24.9	21.2	405787	25.0	20.7	21140	25.1	19.8	224751	25.2	19.7	334466	25.3	20.1	48945	25.3	17.9
425517	24.9	19.5	28438	25.0	19.5	193400	25.1	19.7	293537	25.2	19.8	198269	25.3	19.3	96024	25.3	19.3
400189	24.9	20.5	510223	25.0	20.7	329659	25.1	20.5	287761	25.2	19.1	153997	25.3	20.2	23702	25.3	16.9
340432	24.9	20.0	287317	25.0	17.6	515124	25.1	21.1	189072	25.2	21.1	239634	25.3	20.1	322945	25.3	21.3
18349	24.9	17.0	39890	25.0	19.8	301747	25.1	20.8	424051	25.2	20.7	157016	25.3	19.1	267810	25.3	19.0
407547	24.9	19.3	451603	25.0	21.1	63345	25.1	19.5	250277	25.2	20.5	434515	25.3	19.6	448857	25.3	20.0
292704	24.9	21.1	407033	25.0	19.3	476171	25.1	19.7	143775	25.2	19.7	69740	25.3	19.4	71159	25.3	18.0
45088	24.9	17.9	263047	25.0	19.9	219192	25.1	18.6	18730	25.2	18.1	518060	25.3	21.0	449338	25.3	20.9
96255	24.9	20.0	374795	25.0	19.8	71131	25.1	18.2	339265	25.2	18.7	157189	25.3	20.7	506630	25.3	21.1
327597	24.9	19.9	63884	25.0	18.6	186955	25.1	18.9	378047	25.2	20.3	16471	25.3	17.1	319390	25.3	20.3
238994	24.9	20.2	292708	25.0	20.4	328869	25.1	20.5	444557	25.2	20.5	112924	25.3	19.8	12914	25.3	16.9
304222	24.9	20.7	374900	25.0	19.6	279285	25.1	19.6	518580	25.2	21.5	476754	25.3	19.9	359787	25.3	20.6
51434	24.9	17.9	285895	25.0	19.8	349977	25.1	19.8	415647	25.2	20.6	274347	25.3	20.5	401687	25.3	21.1
328133	24.9	20.3	407537	25.0	20.7	137890	25.1	17.1	405809	25.2	21.0	117860	25.3	19.5	441279	25.3	20.1
402371	24.9	20.3	395058	25.0	20.1	265929	25.1	19.7	178515	25.2	18.2	280978	25.3	20.3	266577	25.3	20.3
269393	24.9	18.9	327072	25.0	20.4	412690	25.1	19.8	515531	25.2	21.1	327154	25.3	19.0	299390	25.3	19.6
285491	24.9	20.9	321082	25.0	20.5	344628	25.1	19.2	486955	25.2	20.9	315321	25.3	20.6	469878	25.4	20.1
112207	24.9	18.5	3004	25.0	19.9	184307	25.1	19.5	509431	25.2	21.6	348343	25.3	20.7	129352	25.4	19.0
288456	24.9	19.8	412350	25.0	20.2	54463	25.1	18.4	10556	25.2	16.2	383848	25.3	20.7	456339	25.4	19.8
345400	24.9	20.9	242005	25.0	18.9	423149	25.1	21.4	101122	25.2	18.4	49091	25.3	18.7	441352	25.4	20.2
464837	24.9	20.2	383063	25.0	19.4	181817	25.1	18.7	257631	25.2	19.3	99501	25.3	18.3	520642	25.4	20.4
221679	24.9	20.9	378618	25.0	20.2	101837	25.1	19.2	308489	25.2	20.7	266677	25.3	20.2	11945	25.4	17.2
435116	24.9	21.4	47329	25.0	17.8	221586	25.1	19.9	225132	25.2	20.9	273678	25.3	21.1	509373	25.4	21.0
275291	24.9	20.6	282951	25.0	17.8	24003	25.1	16.6	263292	25.2	19.7	393754	25.3	21.0	297038	25.4	19.8
177524	24.9	20.8	485777	25.0	21.1	366092	25.1	20.9	108797	25.2	18.0	484563	25.3	20.4	181800	25.4	19.4
11956	24.9	16.6	6588	25.0	16.5	49840	25.1	18.7	25294	25.2	18.4	327751	25.3	19.6	95859	25.4	19.0
518035	24.9	20.8	268896	25.0	20.8	4530	25.1	17.3	107967	25.2	19.4	282014	25.3	19.2	266972	25.4	20.0
82171	24.9	19.8	29735	25.0	17.5	514729	25.1	19.9	25896	25.2	18.9	518300	25.3	21.2	485736	25.4	21.4
24764	24.9	17.1	500618	25.0	20.0	482253	25.1	19.8	369504	25.2	19.6	435082	25.3	21.0	210857	25.4	19.8
88781	24.9	18.7	431575	25.1	18.8	486218	25.1	19.9	488192	25.2	21.3	512608	25.3	20.4	169779	25.4	19.0
392220	24.9	20.4	37979	25.1	17.3	157374	25.1	19.6	9244	25.2	17.0	433132	25.3	20.4	236633	25.4	20.9
426171	24.9	21.4	98836	25.1	18.3	250687	25.1	19.3	19008	25.2	18.0	230647	25.3	19.8	482938	25.4	21.1
191269	24.9	20.1	360021	25.1	20.4	412614	25.1	19.5	274278	25.2	19.4	13354	25.3	16.5	398852	25.4	20.1
275629	24.9	21.3	145000	25.1	20.0	360687	25.1	20.2	352282	25.2	20.0	481863	25.3	21.0	484985	25.4	21.0
255321	24.9	19.0	427473	25.1	20.3	10014	25.1	16.8	286867	25.2	18.1	392246	25.3	20.7	506292	25.4	20.6
159523	24.9	19.7	103447	25.1	19.3	98884	25.1	18.8	99547	25.2	19.3	129111	25.3	19.5	412817	25.4	20.1
208888	24.9	19.8	275447	25.1	20.6	129111	25.1	17.6	201567	25.2	19.4	395008	25.3	21.1	508533	25.4	20.7
387641	24.9	20.8	174442	25.1	20.2	392653	25.1	20.1	273513	25.2	19.5	257775	25.3	20.8	505634	25.4	19.9
138496	24.9	20.2	94323	25.1	18.2	133823	25.1	19.1	308947	25.2	19.3	102943	25.3	19.3	348337	25.4	20.8
409176	24.9	19.6	331939	25.1	18.4	95358	25.1	18.8	512238	25.2	21.6	163035	25.3	18.8	330191	25.4	20.6
169900	24.9	19.0	301686	25.1	19.7	309063	25.1	21.1	514012	25.2	21.7	58697	25.3	19.0	85690	25.4	17.7
283443	24.9	20.4	438494	25.1	18.8	452755	25.1	21.5	509923	25.2	21.7	291470	25.3	20.1	25910	25.4	18.7
353838	24.9	19.6	523337	25.1	21												

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
930	25.4	14.5	187303	25.5	20.8	449845	25.6	20.1	190997	25.6	19.3	474971	25.7	20.9	149223	25.8	16.9
172898	25.4	19.0	348143	25.5	20.5	104461	25.6	19.9	517083	25.6	20.9	372364	25.7	21.3	234663	25.8	19.5
308849	25.4	20.4	308894	25.5	20.8	239823	25.6	18.7	49209	25.6	17.3	228167	25.7	20.2	351022	25.8	19.2
112468	25.4	19.2	481559	25.5	20.7	278794	25.6	19.0	449846	25.6	20.9	412544	25.7	20.0	64998	25.8	19.3
735	25.4	11.3	424516	25.5	21.0	411592	25.6	20.7	426740	25.6	20.3	306522	25.7	17.5	71329	25.8	19.0
511192	25.4	21.4	407128	25.5	20.9	362480	25.6	21.4	322662	25.6	21.1	410094	25.7	21.0	172487	25.8	19.3
326672	25.4	20.9	200481	25.5	18.2	222910	25.6	20.0	308857	25.6	20.5	330869	25.7	19.8	235227	25.8	19.8
129979	25.4	19.7	9627	25.5	16.4	215764	25.6	20.1	292062	25.6	20.2	207792	25.7	19.3	19459	25.8	18.0
18370	25.4	17.2	405286	25.5	20.0	103343	25.6	19.6	367387	25.6	20.6	124124	25.7	19.9	31238	25.8	19.0
260821	25.4	20.0	148071	25.5	17.8	513630	25.6	20.2	209786	25.6	19.5	475147	25.7	20.4	172186	25.8	18.7
398685	25.4	20.7	116822	25.5	19.9	517044	25.6	21.2	360562	25.6	20.5	483838	25.7	21.4	196297	25.8	20.4
308569	25.4	19.0	328045	25.5	20.7	518367	25.6	19.3	249186	25.6	19.7	31198	25.7	18.3	523079	25.8	20.1
491353	25.4	22.3	58341	25.5	17.3	214618	25.6	20.5	70778	25.6	18.0	240622	25.7	19.0	454875	25.8	20.8
230607	25.4	19.7	230276	25.5	18.6	4322	25.6	15.8	443237	25.6	21.9	132438	25.7	20.4	514537	25.8	20.5
510208	25.4	21.3	492221	25.5	20.2	436597	25.6	20.6	357299	25.6	20.2	69876	25.7	17.9	195527	25.8	20.5
319419	25.4	21.2	67064	25.5	18.6	2206	25.6	15.9	515673	25.6	21.3	515476	25.7	21.1	438220	25.8	21.0
440849	25.4	20.0	449382	25.5	20.9	298618	25.6	20.9	408587	25.6	20.1	371	25.7	12.8	279050	25.8	19.0
260690	25.4	19.8	155413	25.5	20.2	341112	25.6	18.3	449793	25.7	20.7	69966	25.7	18.0	159522	25.8	20.3
336556	25.4	19.2	477134	25.5	20.4	148291	25.6	19.9	41811	25.7	19.0	129843	25.7	18.1	494625	25.8	21.2
270144	25.4	19.2	307933	25.5	20.8	13290	25.6	15.2	232898	25.7	19.6	304350	25.7	20.4	327047	25.8	18.8
183885	25.4	19.3	117800	25.5	19.5	95495	25.6	19.1	476572	25.7	20.9	207070	25.7	19.4	317295	25.8	20.5
287674	25.4	18.7	194	25.5	10.6	226286	25.6	19.3	342459	25.7	20.8	291119	25.7	20.1	513543	25.8	20.4
213126	25.4	20.4	79183	25.5	20.0	220504	25.6	20.5	446112	25.7	20.8	157698	25.7	20.4	65486	25.8	19.3
514830	25.4	21.0	408542	25.5	21.2	119269	25.6	18.7	320359	25.7	19.9	241414	25.7	19.7	43383	25.8	19.4
215386	25.4	20.1	380305	25.5	21.1	296287	25.6	20.4	21704	25.7	18.7	291234	25.7	20.0	232568	25.8	19.7
511102	25.4	19.9	117711	25.5	20.4	399805	25.6	20.5	345512	25.7	20.5	435835	25.7	19.2	241760	25.8	20.3
159398	25.4	18.2	97103	25.5	18.9	511807	25.6	21.0	324694	25.7	20.0	496464	25.7	21.7	61908	25.8	19.0
432812	25.4	20.7	510938	25.5	20.4	382052	25.6	21.0	48691	25.7	18.5	349165	25.7	18.5	395084	25.8	21.6
864641	25.4	19.2	518308	25.5	20.6	120636	25.6	18.7	447196	25.7	20.9	448261	25.7	21.7	513931	25.8	20.5
142256	25.4	16.7	79531	25.5	18.2	284279	25.6	18.3	91587	25.7	19.2	289014	25.7	20.2	47300	25.8	16.7
305589	25.4	21.0	476930	25.5	20.0	447228	25.6	20.4	348361	25.7	21.1	147071	25.7	18.5	474642	25.8	20.0
364975	25.4	19.9	438463	25.5	21.5	77697	25.6	19.7	477868	25.7	20.6	216058	25.7	18.4	33480	25.8	18.8
453413	25.4	21.0	14820	25.5	16.2	454467	25.6	20.5	47231	25.7	20.0	56068	25.7	17.0	467361	25.8	20.3
66130	25.4	18.4	516637	25.5	21.9	446589	25.6	20.0	401785	25.7	20.9	485283	25.7	20.7	444583	25.8	20.5
295091	25.4	21.1	515520	25.5	21.5	354477	25.6	20.1	119353	25.7	20.0	42367	25.7	18.2	86644	25.8	17.5
80839	25.4	19.3	33612	25.5	18.1	392712	25.6	19.9	171718	25.7	18.3	372345	25.7	21.3	430877	25.8	20.3
82719	25.4	17.7	248271	25.5	20.9	251361	25.6	20.0	120902	25.7	19.4	446412	25.7	20.5	467830	25.8	19.5
472003	25.4	19.9	178903	25.5	19.3	223341	25.6	18.9	319267	25.7	19.7	257698	25.7	20.7	366035	25.8	20.3
81041	25.4	18.8	300994	25.5	20.4	91917	25.6	19.0	512314	25.7	21.2	84617	25.7	18.3	205187	25.8	19.5
13625	25.4	16.5	374013	25.5	21.2	69390	25.6	18.6	21810	25.7	19.4	272843	25.7	19.5	481892	25.8	21.5
35783	25.4	16.9	7005	25.5	17.3	164992	25.6	18.5	306357	25.7	20.8	217155	25.7	21.2	487510	25.8	21.1
68943	25.4	18.0	108723	25.5	18.9	51076	25.6	17.7	486701	25.7	20.7	53970	25.7	19.5	118609	25.8	19.8
201135	25.4	20.5	44029	25.5	19.4	253383	25.6	20.3	346629	25.7	20.2	63396	25.7	18.4	412845	25.8	21.0
275217	25.4	20.3	324215	25.5	21.0	95543	25.6	18.8	376378	25.7	20.6	180038	25.7	19.1	257297	25.8	19.4
405321	25.4	19.9	191375	25.5	19.1	161612	25.6	20.4	513599	25.7	19.8	223943	25.7	19.9	399052	25.8	19.8
230219	25.4	18.6	176962	25.5	20.0	45544	25.6	18.2	258641	25.7	19.7	176818	25.8	18.9	67251	25.8	19.4
187358	25.4	19.7	381109	25.5	21.3	42862	25.6	18.6	70402	25.7	19.2	383600	25.8	21.3	513593	25.8	21.0
257985	25.4	21.2	215337	25.5	20.0	259933	25.6	20.3	438545	25.7	21.1	171641	25.8	19.8	442481	25.8	20.1
471071	25.4	19.7	102424	25.5	18.3	92183	25.6	17.2	342548	25.7	20.7	86736	25.8	18.3	514671	25.8	20.6
117353	25.4	19.4	377073	25.5	20.1	265289	25.6	20.8	267993	25.7	21.5	323368	25.8	18.8	297120	25.8	20.2
103678	25.4	19.2	268003	25.5	20.3	380381	25.6	19.1	439968	25.7	20.0	34741	25.8	16.6	263452	25.8	19.6
374838	25.4	20.7	354161	25.5	21.6	97439	25.6	17.1	478848	25.7	20.7	53970	25.7	19.5	118609	25.8	19.8
131758	25.4	17.4	174354	25.5	17.7	361967	25.6	20.4	523396	25.7	20.4	747	25.8	10.3	343906	25.8	19.0
164635	25.4	18.2	408502	25.5	20.8	111847	25.6	18.1	396917	25.7	20.6	279812	25.8	21.7	378059	25.8	20.8
458053	25.4	20.0	89883	25.5	20.0	262318	25.6	20.0	27106	25.7	20.2	154620	25.8	19.3	272149	25.8	19.4
39005	25.4	18.8	417584	25.6	21.0	116389	25.6	19.3	476749	25.7	20.5	411543	25.8	20.9	411036	25.8	18.4
509445	25.4	21.9	426403	25.6	20.7	224725	25.6	20.0	78395	25.7	18.6	305368	25.8	19.8	74198	25.8	19.3
308453	25.5	19.2	186941	25.6	19.4	98552	25.6	18.9	173574	25.7	20.8	518695	25.8	21.7	302099	25.8	20.2
423940	25.5	21.2	456623	25.6	20.9	123882	25.6	19.8	444154	25.7	21.3	512587	25.8	20.6	112086	25.8	19.5
374907	25.5	18.3	411038	25.6	19.9	123409	25.6	18.4	181977	25.7	18.9	101417	25.8	18.8	8650	25.8	16.9
522002	25.5	21.2	515617	25.6	21.4	379147	25.6</td										

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

Nº	10	V															
308379	25.9	21.4	480133	25.9	21.6	513973	26.0	21.6	453438	26.1	19.7	328174	26.2	21.1	370545	26.3	19.2
397511	25.9	18.9	332970	25.9	20.9	517947	26.0	20.7	461195	26.1	20.2	162379	26.2	17.8	221468	26.3	21.0
70978	25.9	18.3	272234	25.9	18.7	71431	26.0	18.7	222403	26.1	20.9	829	26.2	14.0	120489	26.3	19.7
328942	25.9	20.3	120135	25.9	19.5	510256	26.0	20.4	119160	26.1	19.2	266010	26.2	19.7	444956	26.3	21.2
315847	25.9	20.8	521344	25.9	22.0	66573	26.0	18.5	422290	26.1	20.2	508823	26.2	23.2	386286	26.3	20.7
486417	25.9	20.4	187052	25.9	19.3	328486	26.0	21.5	24555	26.1	19.5	85770	26.2	20.1	146810	26.3	19.3
488484	25.9	19.9	257427	25.9	19.0	492796	26.0	21.7	227789	26.1	19.0	392239	26.2	20.8	517851	26.3	21.2
236172	25.9	19.7	382708	25.9	19.7	228442	26.0	19.3	41118	26.1	17.7	363455	26.2	19.9	509119	26.3	21.3
68417	25.9	18.2	6158	25.9	16.1	4153	26.0	17.0	322210	26.1	21.1	67833	26.2	18.0	326491	26.3	20.3
20138	25.9	17.6	188365	25.9	20.9	387622	26.0	20.6	486254	26.1	20.7	74583	26.2	16.8	449044	26.3	21.6
212253	25.9	20.1	45818	25.9	18.6	346771	26.0	18.7	384342	26.1	19.7	514998	26.2	21.7	86716	26.3	18.3
151512	25.9	18.7	409161	25.9	19.6	519705	26.0	21.3	135769	26.1	17.9	171686	26.2	18.7	265425	26.3	20.9
188186	25.9	19.1	370860	25.9	19.4	151252	26.0	19.5	265850	26.1	20.8	227647	26.2	20.1	69995	26.3	19.5
266349	25.9	19.6	79204	25.9	19.0	226117	26.0	20.9	137637	26.1	20.8	403871	26.2	21.0	407906	26.3	20.8
184256	25.9	19.1	508532	25.9	20.9	54206	26.0	17.9	331425	26.1	20.0	82911	26.2	18.8	189279	26.3	19.2
66785	25.9	18.2	225771	25.9	20.3	139884	26.0	18.7	1828	26.1	15.1	152109	26.2	19.8	234681	26.3	20.2
86043	25.9	19.5	85162	25.9	19.0	396931	26.0	21.1	267721	26.1	19.1	352315	26.2	20.4	75469	26.3	18.4
20131	25.9	17.4	446069	25.9	20.9	158592	26.0	20.7	129901	26.1	19.2	435645	26.2	20.6	352270	26.3	19.9
287050	25.9	19.5	149716	25.9	20.5	210165	26.0	19.9	148214	26.1	18.9	510136	26.2	19.3	314640	26.3	20.7
193136	25.9	20.0	52982	25.9	17.1	435280	26.0	19.1	232640	26.1	18.2	367829	26.2	20.2	231303	26.3	19.4
84190	25.9	18.9	429477	25.9	21.0	329247	26.0	21.1	388252	26.1	21.1	401776	26.2	20.0	371394	26.3	20.0
130242	25.9	20.0	173160	25.9	20.1	10585	26.0	17.9	127316	26.1	18.7	216957	26.2	18.7	430099	26.3	20.5
252058	25.9	18.7	223238	25.9	18.5	483049	26.0	20.8	159969	26.1	19.6	460202	26.2	20.5	390570	26.3	19.8
355467	25.9	19.8	172716	25.9	19.9	398572	26.0	20.4	116545	26.1	19.2	378084	26.2	20.4	300582	26.3	19.3
317342	25.9	19.9	490858	25.9	21.6	333164	26.0	20.9	434063	26.1	19.0	367252	26.2	19.5	227959	26.3	20.5
367281	25.9	20.7	217357	25.9	18.8	213274	26.0	19.7	467644	26.1	20.3	100614	26.2	16.7	209161	26.3	19.7
451365	25.9	20.6	407167	25.9	20.3	275084	26.0	19.8	442900	26.1	20.5	78459	26.2	18.3	129559	26.3	18.2
515802	25.9	21.2	247046	25.9	20.4	453510	26.0	20.4	204040	26.1	19.6	223893	26.2	18.9	485867	26.3	22.1
475160	25.9	19.9	257959	25.9	20.1	145587	26.0	18.3	224207	26.1	20.1	220695	26.2	19.5	130842	26.3	17.7
521597	25.9	20.5	11	25.9	9.4	421926	26.0	20.9	407209	26.1	19.5	407570	26.2	20.4	210821	26.3	19.6
477567	25.9	20.5	120800	25.9	20.9	240981	26.0	19.9	241561	26.1	19.1	461258	26.2	20.9	162226	26.3	18.4
196514	25.9	18.9	304492	25.9	20.8	440962	26.0	22.2	238194	26.1	20.6	290871	26.2	19.4	379851	26.3	21.2
482996	25.9	20.6	393408	25.9	20.8	189197	26.0	18.3	473668	26.1	20.3	2328	26.2	16.4	485844	26.3	22.1
96589	25.9	18.5	296822	25.9	19.7	100066	26.0	19.9	267900	26.1	20.6	208119	26.2	21.1	80447	26.3	19.7
381809	25.9	19.7	378597	25.9	20.1	204508	26.0	18.9	24487	26.1	18.2	72423	26.2	17.2	99864	26.3	19.3
330623	25.9	21.2	121235	25.9	18.7	108265	26.1	19.1	438747	26.1	21.3	475957	26.2	21.4	40871	26.3	18.3
13490	25.9	17.6	228307	25.9	19.9	11804	26.1	18.5	50147	26.1	17.2	118152	26.2	19.1	26354	26.3	17.7
262405	25.9	20.6	351162	25.9	20.2	294924	26.1	20.4	133667	26.1	18.7	126982	26.2	19.9	314999	26.3	20.5
440811	25.9	20.1	97713	25.9	18.8	197055	26.1	19.4	281909	26.1	19.9	43178	26.2	18.7	412949	26.3	21.5
85885	25.9	18.4	166508	25.9	19.0	441149	26.1	20.5	23296	26.1	16.5	72819	26.2	18.6	331347	26.3	19.9
407262	25.9	20.0	402044	25.9	20.2	24640	26.1	18.1	295467	26.1	19.5	490967	26.2	20.3	296308	26.3	20.3
313330	25.9	20.6	43998	25.9	18.4	517127	26.1	21.3	434707	26.1	21.8	172794	26.2	19.9	221820	26.3	20.9
65932	25.9	19.1	299158	25.9	19.9	1387	26.1	15.1	427643	26.1	20.6	152788	26.2	18.2	264386	26.3	21.5
68774	25.9	18.8	436536	25.9	20.7	287933	26.1	20.8	220843	26.1	19.1	275843	26.2	18.8	384404	26.3	20.7
131110	25.9	17.4	457610	25.9	19.9	328530	26.1	20.9	400733	26.1	19.7	154447	26.2	20.5	207907	26.3	20.5
479421	25.9	20.7	521805	25.9	20.9	280458	26.1	21.1	50457	26.1	18.3	240137	26.2	20.2	448523	26.3	20.4
308926	25.9	20.4	346248	25.9	19.6	155270	26.1	19.2	241633	26.1	19.4	511362	26.2	21.5	220236	26.3	19.3
468872	25.9	20.7	523408	25.9	20.7	197225	26.1	19.7	64634	26.1	19.1	135068	26.2	18.9	441282	26.3	19.7
175255	25.9	20.1	487002	25.9	20.8	488649	26.1	20.1	217728	26.1	19.0	475940	26.2	21.2	248445	26.3	19.2
156666	25.9	19.6	286791	25.9	20.6	275118	26.1	20.5	395585	26.1	20.2	404000	26.2	20.8	399639	26.3	20.0
247189	25.9	20.6	29339	25.9	17.4	511413	26.1	21.2	180609	26.1	19.2	328390	26.2	20.4	453509	26.3	20.2
10122	25.9	17.2	211063	25.9	19.8	213123	26.1	19.5	259732	26.1	20.3	514218	26.2	20.4	61940	26.3	17.9
469364	25.9	20.6	167308	25.9	19.5	291363	26.1	22.0	437196	26.1	20.8	420498	26.2	20.4	404543	26.3	21.3
514141	25.9	21.0	482917	25.9	21.2	134036	26.1	18.8	219957	26.1	20.8	58963	26.2	18.3	483965	26.3	21.7
361906	25.9	20.0	345497	25.9	20.9	400912	26.1	20.7	73578	26.1	19.1	506605	26.2	21.4	513487	26.3	21.5
26064	25.9	18.0	395139	25.9	21.0	51597	26.1	18.6	102706	26.1	17.5	300401	26.2	19.7	272070	26.3	19.8
371398	25.9	19.1	399439	25.9	20.8	132376	26.1	21.0	130248	26.1	19.4	417355	26.2	20.7	442279	26.3	20.8
74432	25.9	17.8	515530	25.9	20.7	222420	26.1	19.6	81317	26.1	18.5	119381	26.2	19.3	213469	26.3	19.4
287870	25.9	20.0	234747	25.9	19.7	5876	26.1	16.9	323511	26.1	19.0	266478	26.2	20.1	374002	26.3	19.6
162060	25.9	20.1	186853	25.9	18.0	270808	26.1	20.0	322971	26.1	20.1	377008	26.2	20.9	184847	26.3	19.8
394453	25.9	20.9	283840	25.9	19.8	471											

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

Nº	10	V															
408564	26.3	20.1	422279	26.4	20.2	242522	26.5	20.0	86616	26.6	19.5	313368	26.6	20.2	226121	26.7	19.6
178620	26.3	18.8	456625	26.4	21.0	512306	26.5	20.9	155906	26.6	19.7	498404	26.6	20.6	267081	26.7	20.0
436462	26.3	21.7	130229	26.4	19.8	351872	26.5	19.1	192206	26.6	21.6	115646	26.6	18.5	264836	26.7	19.6
447292	26.3	20.4	411588	26.4	20.6	411001	26.5	20.4	157127	26.6	19.7	67046	26.6	18.4	494497	26.7	18.7
515706	26.3	21.4	521803	26.4	20.8	85805	26.5	18.2	124322	26.6	18.8	98959	26.6	19.2	143452	26.7	18.3
238189	26.3	20.6	339208	26.4	20.5	488893	26.5	20.4	442887	26.6	20.7	331254	26.6	20.2	284215	26.7	20.8
140562	26.3	19.6	432763	26.4	20.4	331308	26.5	20.1	21057	26.6	18.4	150064	26.6	19.7	474332	26.7	20.3
42948	26.3	17.9	517489	26.4	20.9	161432	26.5	17.6	308826	26.6	19.2	71398	26.6	18.4	171212	26.7	20.7
228120	26.3	20.0	309055	26.4	20.5	236524	26.5	20.7	447393	26.6	20.6	456064	26.6	20.1	289979	26.7	20.3
220187	26.3	19.0	487423	26.4	20.8	412806	26.5	19.7	107804	26.6	19.0	13540	26.6	16.6	260395	26.7	19.2
136036	26.3	17.9	94068	26.4	19.1	28224	26.5	16.4	191478	26.6	19.3	358561	26.6	20.3	347341	26.7	18.2
100658	26.3	20.3	307389	26.4	18.5	53509	26.5	19.8	56066	26.6	17.4	198665	26.6	20.3	108183	26.7	19.3
114756	26.3	19.1	76259	26.4	19.2	12983	26.5	17.8	446532	26.6	21.2	195605	26.6	19.4	44659	26.7	18.7
424440	26.3	20.5	492063	26.4	20.3	401487	26.5	20.5	23537	26.6	18.6	221868	26.6	19.5	314004	26.7	18.5
230236	26.4	19.2	315015	26.4	20.8	511363	26.5	20.8	330337	26.6	20.3	224988	26.6	20.2	272732	26.7	19.9
2700	26.4	15.9	161901	26.4	19.6	151505	26.5	19.1	245709	26.6	19.8	240996	26.6	20.4	263251	26.7	19.4
513912	26.4	21.4	316672	26.4	19.9	378115	26.5	21.1	405749	26.6	20.5	308903	26.6	20.8	323278	26.7	19.5
208298	26.4	19.7	515469	26.4	20.8	352978	26.5	17.8	511649	26.6	21.1	384286	26.6	19.7	223906	26.7	20.4
219020	26.4	19.7	239051	26.4	20.3	175191	26.5	19.8	319264	26.6	20.2	60573	26.6	17.6	449848	26.7	19.9
424584	26.4	21.3	5187	26.4	16.2	295328	26.5	21.0	135374	26.6	17.8	333366	26.6	19.7	97698	26.7	20.1
23456	26.4	17.8	436479	26.4	21.7	315933	26.5	20.2	227046	26.6	19.9	86062	26.6	18.2	50609	26.7	17.7
333565	26.4	19.5	154883	26.4	19.8	250002	26.5	19.7	512556	26.6	20.5	162290	26.6	18.9	86653	26.7	19.4
131370	26.4	17.9	78088	26.4	18.4	407643	26.5	20.8	174464	26.6	19.1	517456	26.6	21.1	302555	26.7	21.2
99847	26.4	19.4	56083	26.4	19.2	166396	26.5	19.7	321584	26.6	20.1	409391	26.6	20.7	163099	26.7	18.2
280817	26.4	20.7	136037	26.4	19.3	353726	26.5	20.1	320009	26.6	19.7	424329	26.6	21.1	513056	26.7	20.3
324330	26.4	20.5	327595	26.4	20.9	494597	26.5	20.4	167127	26.6	18.5	91679	26.6	19.1	490477	26.7	20.6
77003	26.4	18.3	424449	26.4	21.6	34485	26.5	18.2	396357	26.6	20.3	365179	26.6	18.9	448076	26.7	21.2
412510	26.4	20.6	396906	26.5	20.6	263258	26.5	20.2	376377	26.6	20.5	226110	26.6	20.3	382059	26.7	20.1
105284	26.4	18.5	51464	26.5	18.7	315085	26.5	21.1	41593	26.6	19.0	355173	26.6	21.0	338022	26.7	22.0
15168	26.4	17.7	392050	26.5	20.6	410867	26.5	20.0	54174	26.6	17.6	234743	26.7	20.0	404959	26.7	20.2
139210	26.4	20.8	187382	26.5	20.3	163969	26.5	18.5	484079	26.6	21.2	308928	26.7	19.7	435088	26.7	21.4
408029	26.4	20.3	295558	26.5	20.5	426424	26.5	20.1	172139	26.6	19.5	74708	26.7	18.9	392393	26.7	21.5
441264	26.4	20.0	331651	26.5	18.8	9930	26.5	17.5	225146	26.6	20.6	321211	26.7	19.3	81704	26.7	19.0
11150	26.4	17.3	83180	26.5	19.2	205914	26.5	20.0	424448	26.6	20.9	320167	26.7	20.0	365289	26.7	19.8
15125	26.4	17.7	187788	26.5	18.8	398374	26.5	20.2	171008	26.6	20.6	953	26.7	13.8	48959	26.7	18.8
517100	26.4	22.1	22145	26.5	17.7	14861	26.5	17.2	58936	26.6	19.5	43491	26.7	18.2	366719	26.7	19.7
317104	26.4	19.3	480626	26.5	20.4	306584	26.5	18.9	487235	26.6	20.9	517919	26.7	20.6	326836	26.7	21.1
509368	26.4	19.5	164283	26.5	19.1	175134	26.5	20.7	181126	26.6	18.9	229730	26.7	20.8	478608	26.7	19.3
172182	26.4	19.2	92277	26.5	17.9	107548	26.5	19.3	486522	26.6	20.5	321676	26.7	20.3	507631	26.7	21.0
353324	26.4	20.0	487143	26.5	21.2	318131	26.5	20.5	394498	26.6	20.4	24877	26.7	18.2	199983	26.7	18.6
290608	26.4	21.2	488068	26.5	20.4	325542	26.5	20.6	53988	26.6	18.7	155857	26.7	20.8	283816	26.7	19.3
289349	26.4	19.3	424574	26.5	21.0	171363	26.5	19.6	76143	26.6	18.9	140225	26.7	19.6	378029	26.7	20.4
442873	26.4	20.4	279484	26.5	19.8	145558	26.5	19.4	96552	26.6	18.2	388087	26.7	21.0	403088	26.7	21.2
487294	26.4	20.9	320576	26.5	20.3	358843	26.5	20.2	156048	26.6	19.3	248319	26.7	19.1	291155	26.7	20.7
226778	26.4	19.9	166230	26.5	19.5	12812	26.5	18.0	232573	26.6	19.5	154907	26.7	20.7	51716	26.7	17.8
300509	26.4	19.7	343635	26.5	20.1	129840	26.5	18.6	227784	26.6	21.1	265461	26.7	19.9	377541	26.7	21.5
328290	26.4	19.7	454655	26.5	21.3	270981	26.5	19.5	115370	26.6	19.3	421599	26.7	20.4	42847	26.7	17.7
103660	26.4	20.0	352178	26.5	20.7	368072	26.5	21.4	12637	26.6	16.6	24532	26.7	18.4	481414	26.7	21.1
294132	26.4	20.1	165596	26.5	19.4	205983	26.5	19.4	513293	26.6	19.9	221951	26.7	19.5	158774	26.7	19.4
483985	26.4	20.4	51396	26.5	19.0	26704	26.5	18.6	392509	26.6	20.4	224111	26.7	18.7	470155	26.7	19.8
258758	26.4	21.2	37910	26.5	17.4	6338	26.5	16.5	440689	26.6	19.8	509980	26.7	20.4	517410	26.7	21.1
75705	26.4	18.9	448803	26.5	20.1	476868	26.5	20.2	482885	26.6	20.7	267077	26.7	19.6	431518	26.7	20.6
404571	26.4	20.3	480477	26.5	19.8	395860	26.5	20.9	298566	26.6	20.3	468700	26.7	20.8	55116	26.7	18.5
266861	26.4	19.4	253636	26.5	20.0	132694	26.5	19.1	454405	26.6	19.3	514975	26.7	20.7	324205	26.7	20.2
317577	26.4	20.1	73900	26.5	19.7	518324	26.5	20.4	172256	26.6	19.9	55580	26.7	15.8	304333	26.7	19.9
75689	26.4	18.5	33400	26.5	18.0	479004	26.5	20.8	289403	26.6	20.4	57963	26.7	18.9	159927	26.7	16.1
107919	26.4	19.5	115613	26.5	19.6	271209	26.5	20.3	469945	26.6	20.9	513166	26.7	21.6	517866	26.7	21.4
209332	26.4	20.4	315205	26.5	20.6	422848	26.5	21.3	439706	26.6	19.9	14433	26.7	17.9	404199	26.7	20.6
289862	26.4	20.3	212240	26.5	19.7	39112	26.5	18.0	300437	26.6	19.8	112965	26.7	19.1	482332	26.7	20.2
47516	26.4	18.0	345004	26.5	18.3	77808	26.6	19.4	10878	26.6	17.1	114823	26.7	19.4	122067	26.8	19.5
241782	26.4	18.0	395508	26.5	19.6	32											

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

Nº	10	V															
383449	26.8	19.1	101686	26.9	18.6	157038	26.9	19.3	304942	27.0	19.7	203198	27.1	20.4	232118	27.2	19.3
243504	26.8	19.3	431741	26.9	22.0	85443	26.9	19.3	27137	27.0	16.8	148130	27.1	19.7	215702	27.2	21.1
275060	26.8	19.9	167817	26.9	19.8	224874	26.9	20.4	210674	27.0	19.8	514071	27.1	21.5	293679	27.2	19.9
385053	26.8	20.1	70380	26.9	18.6	514672	26.9	21.4	421584	27.0	20.5	273623	27.1	20.9	200023	27.2	18.9
469062	26.8	21.1	225346	26.9	18.9	426169	26.9	20.1	232931	27.0	20.1	236520	27.1	21.4	302739	27.2	18.6
352286	26.8	19.3	295913	26.9	20.6	108166	26.9	19.0	388918	27.0	20.8	23775	27.1	18.2	300507	27.2	20.3
40835	26.8	17.6	424437	26.9	21.5	38219	26.9	18.2	188969	27.0	20.1	267095	27.1	20.3	477563	27.2	21.4
130976	26.8	19.0	52939	26.9	18.0	355018	26.9	20.0	212569	27.0	20.9	277435	27.1	21.0	172324	27.2	19.4
267763	26.8	18.9	486372	26.9	21.1	135060	26.9	19.0	75507	27.0	17.3	512032	27.1	21.3	403853	27.2	20.2
91186	26.8	17.7	399544	26.9	18.6	520663	26.9	19.5	169773	27.0	19.4	130167	27.1	18.8	151359	27.2	19.7
96609	26.8	19.1	353023	26.9	20.4	263358	26.9	20.8	332437	27.0	20.4	515990	27.1	20.0	155283	27.2	19.7
266234	26.8	19.9	152439	26.9	19.3	145985	26.9	19.4	193426	27.0	19.0	294707	27.1	20.4	275825	27.2	19.3
127313	26.8	20.1	411866	26.9	21.5	22834	26.9	18.1	128713	27.0	18.1	46007	27.1	19.0	244391	27.2	20.2
229297	26.8	20.2	482295	26.9	18.8	512570	26.9	20.2	78047	27.0	20.1	486937	27.1	20.1	347948	27.2	18.7
249986	26.8	18.4	300729	26.9	20.3	198938	26.9	19.7	278532	27.0	19.7	662668	27.1	20.5	103451	27.2	19.1
447543	26.8	20.3	442532	26.9	20.8	223572	26.9	19.8	95601	27.0	19.3	158714	27.1	21.1	86995	27.2	19.0
66731	26.8	18.6	90628	26.9	18.9	288283	26.9	19.8	265520	27.0	20.7	249988	27.1	19.9	494255	27.2	20.2
453535	26.8	20.9	478459	26.9	20.1	125205	26.9	19.5	119178	27.0	19.2	208052	27.1	19.2	173385	27.2	19.8
484587	26.8	20.8	407076	26.9	21.1	357331	26.9	19.3	249714	27.0	18.5	486634	27.1	20.8	434322	27.2	21.6
25176	26.8	18.6	115629	26.9	18.1	75952	26.9	19.2	517963	27.0	21.0	223904	27.1	20.0	402465	27.2	20.4
484385	26.8	20.8	228977	26.9	19.8	511755	26.9	20.5	214061	27.0	20.5	132297	27.1	19.9	433681	27.2	20.4
499779	26.8	20.8	90663	26.9	18.8	325416	26.9	21.1	518590	27.0	20.9	190239	27.1	20.7	442272	27.2	21.5
411135	26.8	20.8	169688	26.9	17.6	424517	26.9	21.3	321523	27.0	19.6	405301	27.1	19.3	351451	27.2	20.5
495824	26.8	21.9	107629	26.9	18.9	435122	26.9	20.4	234696	27.0	20.6	520382	27.1	21.1	244966	27.2	21.3
495775	26.8	20.9	474286	26.9	19.4	9257	26.9	16.8	72066	27.0	18.1	321345	27.1	20.8	180332	27.2	20.0
173737	26.8	19.7	7727	26.9	17.5	513766	26.9	19.7	442535	27.0	21.4	374709	27.1	19.6	398312	27.2	19.9
132354	26.8	19.6	306744	26.9	18.1	53615	26.9	18.4	296658	27.0	20.3	60734	27.1	19.3	243940	27.2	20.2
296539	26.8	19.7	345423	26.9	20.0	176104	26.9	19.8	449840	27.0	20.8	329485	27.1	20.2	151398	27.2	19.5
326348	26.8	18.3	229836	26.9	20.4	224876	26.9	19.5	114380	27.0	18.8	36196	27.1	17.6	342130	27.2	20.7
427662	26.8	20.5	2387	26.9	15.4	437158	26.9	20.1	257480	27.0	21.2	220507	27.1	21.2	169475	27.2	19.9
348810	26.8	19.6	10657	26.9	18.5	481964	26.9	20.1	55503	27.0	18.8	50451	27.1	17.2	434223	27.2	20.6
211923	26.8	19.0	487371	26.9	20.5	494976	26.9	20.1	483885	27.0	21.4	327141	27.1	20.3	401574	27.2	20.3
311865	26.8	19.8	44363	26.9	17.3	71171	26.9	18.0	68147	27.0	18.4	359855	27.1	19.8	507272	27.2	21.1
345744	26.8	19.7	291604	26.9	20.4	95881	26.9	19.9	350503	27.0	19.1	343330	27.1	20.4	481651	27.2	21.3
374716	26.8	19.7	97546	26.9	19.4	181034	26.9	20.4	78694	27.0	18.8	21734	27.1	17.2	445341	27.2	20.5
410143	26.8	20.3	61222	26.9	19.0	178040	26.9	20.2	84362	27.0	19.0	303501	27.1	20.2	269495	27.2	20.2
348339	26.8	19.9	205143	26.9	19.5	382287	26.9	18.9	2983	27.0	15.2	511945	27.1	21.1	214009	27.2	21.3
73067	26.8	19.8	143805	26.9	19.4	461150	26.9	20.5	514474	27.0	20.3	81134	27.1	18.8	47756	27.2	18.7
179172	26.8	19.4	355387	26.9	20.2	363444	26.9	19.9	267926	27.0	20.7	223598	27.1	19.6	421740	27.2	20.5
68518	26.8	18.7	77397	26.9	18.7	7214	26.9	18.5	372865	27.0	20.4	224987	27.1	20.6	143781	27.2	19.7
266984	26.8	19.6	163922	26.9	19.3	86747	26.9	18.9	47887	27.0	18.8	381181	27.1	21.9	366989	27.2	20.4
355245	26.8	20.7	327585	26.9	20.8	102589	26.9	17.9	220545	27.0	20.6	226908	27.1	20.0	223987	27.2	18.8
433248	26.8	19.5	510206	26.9	20.1	125696	26.9	19.7	218420	27.0	18.3	164959	27.1	18.7	9800	27.2	17.4
191475	26.8	18.2	91700	26.9	19.4	259864	26.9	20.1	487971	27.0	19.8	63079	27.1	18.0	161013	27.2	19.9
7636	26.8	16.5	202359	26.9	19.9	67898	26.9	17.1	397380	27.0	20.9	309827	27.1	20.7	68803	27.2	20.0
431780	26.8	20.6	45550	26.9	19.2	189102	26.9	19.7	103508	27.0	19.7	166119	27.1	20.3	218521	27.2	20.1
378598	26.8	20.2	452741	26.9	21.2	150454	26.9	20.1	349837	27.0	20.5	344456	27.1	20.9	168126	27.2	19.8
30402	26.8	17.3	257008	26.9	20.2	182012	26.9	18.2	398234	27.0	19.7	86661	27.1	18.7	178059	27.2	19.4
310593	26.8	19.2	77276	26.9	19.2	369018	26.9	19.9	33195	27.0	17.8	234763	27.1	19.6	141110	27.2	18.0
519671	26.8	21.3	320286	26.9	21.1	108396	26.9	18.5	447218	27.1	19.1	33885	27.1	17.0	471534	27.2	21.4
236378	26.8	20.2	13619	26.9	17.7	455505	26.9	20.8	13179	27.1	18.7	62948	27.1	18.1	374232	27.2	21.2
228491	26.8	19.4	60289	26.9	18.9	50388	26.9	19.5	120414	27.1	19.5	409147	27.1	20.0	365753	27.2	19.8
70002	26.8	18.0	364561	26.9	20.1	115657	26.9	18.7	29159	27.1	17.3	458025	27.1	20.0	362804	27.2	20.0
220689	26.8	19.5	212796	26.9	19.7	201121	26.9	20.1	405773	27.1	20.5	19693	27.1	16.5	40851	27.2	18.3
262308	26.8	20.0	475816	26.9	20.6	391074	26.9	19.4	224223	27.1	19.6	218116	27.1	21.5	458449	27.2	20.5
521853	26.8	21.4	450953	26.9	20.3	126873	26.9	19.9	104036	27.1	19.6	513254	27.1	20.0	264321	27.2	19.2
439599	26.8	21.0	107815	26.9	19.9	443473	26.9	21.4	99005	27.1	17.9	407641	27.1	20.1	385774	27.2	19.8
152287	26.8	19.7	290622	26.9	20.1	458356	26.9	19.8	25540	27.1	16.6	233530	27.1	19.2	260811	27.2	20.5
128029	26.8	19.7	514157	26.9	21.1	305174	26.9	20.3	403435	27.1	19.7	21923	27.1	16.6	393489	27.2	20.4
222885	26.8	20.0	283638	26.9	20.3	50405	26.9	18.2	492254	27.1	20.1	274888	27.1	19.2	134109	27.2	20.4
26624	26.8	16.7	205982	26.9	19.6	43567											

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

Nº	10	V															
367233	27.2	21.6	133527	27.3	19.3	183889	27.4	19.5	116870	27.4	19.6	38388	27.5	18.9	38239	27.6	22.6
267817	27.2	19.1	518696	27.3	20.3	384371	27.4	19.8	402514	27.4	19.7	443308	27.5	20.6	209269	27.6	18.6
234686	27.2	20.9	44952	27.3	18.4	209217	27.4	18.1	108274	27.4	19.7	231108	27.5	19.8	78960	27.6	19.0
421942	27.2	20.8	260684	27.3	21.0	91953	27.4	19.5	22837	27.4	17.2	220390	27.5	18.8	119128	27.6	19.4
166296	27.2	20.2	148526	27.3	19.5	397263	27.4	20.0	215073	27.4	19.6	326299	27.5	20.3	489217	27.6	22.3
218176	27.2	18.7	470567	27.3	21.9	464382	27.4	20.2	233111	27.4	18.8	517376	27.5	21.5	183213	27.6	19.3
167379	27.2	18.9	144311	27.3	19.8	232292	27.4	19.9	67848	27.4	18.0	47248	27.5	19.2	72439	27.6	17.7
327591	27.2	20.1	293576	27.3	19.8	36953	27.4	19.0	215626	27.4	19.6	76896	27.5	19.2	48683	27.6	17.8
90601	27.2	19.4	41784	27.3	18.7	112094	27.4	19.3	490460	27.4	19.6	476812	27.5	20.9	92967	27.6	17.2
485803	27.2	21.2	257478	27.3	20.9	327657	27.4	18.2	515380	27.4	21.7	101092	27.5	18.4	398826	27.6	20.1
323253	27.2	19.5	21601	27.3	17.1	113528	27.4	19.7	339329	27.4	19.0	237584	27.5	20.2	454662	27.6	20.5
20372	27.2	18.4	394644	27.3	25.9	25967	27.4	18.1	275521	27.4	20.9	48689	27.5	17.5	427652	27.6	18.6
127425	27.2	19.7	457806	27.3	19.8	395389	27.4	20.3	75187	27.4	19.0	234667	27.5	17.9	153881	27.6	18.3
21109	27.2	17.7	59170	27.3	17.4	452727	27.4	20.8	320227	27.4	20.7	157018	27.5	19.4	23323	27.6	18.9
103422	27.2	19.3	367415	27.3	20.5	450736	27.4	21.0	356116	27.4	20.4	227022	27.5	20.3	344965	27.6	19.4
45997	27.2	19.0	312933	27.3	20.3	260429	27.4	20.9	181	27.5	12.1	288978	27.5	20.5	266021	27.6	20.8
146753	27.2	19.6	147096	27.3	18.5	20042	27.4	18.0	96931	27.5	19.2	308871	27.5	19.5	65281	27.6	19.0
70806	27.2	17.7	467582	27.3	20.9	301710	27.4	21.2	66208	27.5	19.9	523356	27.5	21.3	300630	27.6	20.6
295171	27.2	20.9	38167	27.3	17.2	181347	27.4	19.2	12282	27.5	17.9	319296	27.5	20.7	278258	27.6	21.1
331595	27.2	20.3	446488	27.3	20.2	334270	27.4	19.4	288739	27.5	20.0	214011	27.5	20.2	238921	27.6	19.7
342122	27.2	20.1	261653	27.3	20.8	177785	27.4	20.3	134072	27.5	17.8	429803	27.5	21.2	458424	27.6	20.7
450429	27.2	20.2	234660	27.3	20.0	474128	27.4	20.0	214552	27.5	19.7	261707	27.5	19.8	488303	27.6	20.2
84059	27.2	19.0	453175	27.3	19.8	165622	27.4	18.9	548481	27.5	19.8	62453	27.5	18.4	439060	27.6	21.0
204990	27.2	20.7	393006	27.3	19.9	55346	27.4	19.8	407619	27.5	20.9	364498	27.5	20.0	19098	27.6	17.9
392974	27.2	20.7	159327	27.3	21.0	143257	27.4	18.1	388201	27.5	20.6	452561	27.5	24.0	402389	27.6	20.1
412675	27.2	20.4	401447	27.3	20.2	159331	27.4	20.2	436550	27.5	21.7	411943	27.5	20.7	18225	27.6	17.1
180933	27.2	20.4	480786	27.3	20.2	69081	27.4	16.2	3283	27.5	15.4	98709	27.5	16.5	151685	27.6	20.1
104557	27.2	18.7	279269	27.3	19.8	268198	27.4	19.6	46791	27.5	18.1	441691	27.5	20.9	164619	27.6	19.8
305112	27.2	20.8	41376	27.3	17.8	519489	27.4	20.9	41766	27.5	16.9	431657	27.5	22.1	177790	27.6	19.5
63004	27.2	18.6	237570	27.3	20.6	126888	27.4	20.2	350492	27.5	18.6	297055	27.5	21.3	271595	27.6	19.6
10994	27.3	17.0	298196	27.3	19.5	447724	27.4	21.0	209576	27.5	20.2	242274	27.5	19.0	74599	27.6	17.7
330554	27.3	20.6	151662	27.3	19.1	447154	27.4	21.1	15055	27.5	18.8	278167	27.5	20.9	55248	27.6	18.5
183945	27.3	20.2	233100	27.3	19.5	13286	27.4	17.2	45403	27.5	17.3	155465	27.5	18.6	378054	27.6	19.6
66510	27.3	17.6	475375	27.3	20.9	48414	27.4	18.3	216744	27.5	20.2	403184	27.5	19.7	156936	27.6	19.7
20519	27.3	17.3	140093	27.3	18.3	265031	27.4	19.1	73853	27.5	19.2	359776	27.5	20.5	406786	27.6	19.9
421868	27.3	20.4	175983	27.3	18.3	344438	27.4	21.2	252717	27.5	20.3	307916	27.5	20.8	201694	27.6	19.3
394259	27.3	20.6	153016	27.3	20.9	293560	27.4	20.2	320191	27.5	20.8	21789	27.5	16.1	466616	27.6	19.5
511151	27.3	20.0	162838	27.3	20.3	360680	27.4	20.7	170558	27.5	19.7	322238	27.5	19.9	389705	27.6	20.6
69458	27.3	18.3	229068	27.3	20.4	325884	27.4	19.2	391626	27.5	20.5	278113	27.5	20.8	75255	27.6	18.3
170397	27.3	17.5	364913	27.3	20.8	135917	27.4	19.6	128034	27.5	19.2	80722	27.5	19.8	190014	27.6	18.5
25480	27.3	18.9	440868	27.3	21.2	483295	27.4	20.9	289629	27.5	20.3	363299	27.5	20.3	452235	27.6	19.4
207736	27.3	20.0	295268	27.3	20.3	65668	27.4	16.7	352174	27.5	19.9	341079	27.5	19.8	159697	27.6	20.2
328758	27.3	19.5	422249	27.3	20.3	46228	27.4	19.6	324391	27.5	20.1	189967	27.5	19.7	123820	27.6	19.0
139945	27.3	19.5	522880	27.3	20.8	133475	27.4	19.1	212889	27.5	20.3	513278	27.5	20.0	133549	27.6	18.5
159307	27.3	20.7	329018	27.3	20.4	69789	27.4	17.9	467088	27.5	19.2	184042	27.6	19.7	189000	27.6	20.8
288097	27.3	18.9	35004	27.3	19.3	411575	27.4	20.9	337050	27.5	20.3	44665	27.6	18.0	120340	27.6	19.4
276427	27.3	20.4	409797	27.3	21.7	44104	27.4	17.9	518762	27.5	20.4	294188	27.6	18.7	480017	27.6	22.3
79860	27.3	18.2	125940	27.3	19.4	328754	27.4	19.7	469706	27.5	21.7	210286	27.6	20.0	139455	27.6	18.4
296598	27.3	20.1	27447	27.3	17.6	201497	27.4	19.3	177187	27.5	18.8	513568	27.6	20.7	107709	27.6	18.8
496001	27.3	21.1	75238	27.3	17.8	211787	27.4	20.1	12318	27.5	18.7	117741	27.6	17.8	322263	27.6	20.7
183997	27.3	19.6	339268	27.3	18.4	398556	27.4	20.6	110118	27.5	20.0	73837	27.6	17.9	420480	27.6	21.0
454646	27.3	20.3	81132	27.3	19.5	406317	27.4	21.0	434025	27.5	20.0	327129	27.6	20.8	228478	27.6	18.6
340446	27.3	21.1	168227	27.3	20.0	366291	27.4	20.1	138057	27.5	19.6	2540	27.6	15.5	229285	27.6	20.5
333222	27.3	21.4	208161	27.3	20.5	102365	27.4	19.6	360712	27.5	19.9	46794	27.6	18.3	136687	27.6	20.3
521306	27.3	21.8	408706	27.3	19.9	359828	27.4	21.2	394981	27.5	20.8	54768	27.6	18.6	515699	27.6	21.7
86510	27.3	20.2	23673	27.3	17.7	157375	27.4	19.2	407199	27.5	19.7	258659	27.6	20.5	405284	27.6	21.3
419236	27.3	20.1	409780	27.3	20.7	48333	27.4	18.3	243687	27.5	19.8	217490	27.6	19.0	287187	27.6	19.0
486519	27.3	20.4	365397	27.3	20.8	114061	27.4	18.3	196803	27.5	19.3	46514	27.6	19.4	409074	27.6	19.9
408281	27.3	20.5	266941	27.3	20.6	349693	27.4	19.9	395977	27.5	20.4	512808	27.6	20.5	406785	27.6	20.1
210512	27.3	18.6	493943	27.3	20.2	43006	27.4	18.4	35874	27.5	18.2	521122	27.6	21.4	118247	27.6	18.4
44143	27.3	18.7	70114	27.3	17.4	264131											

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

Nº	10	V															
54247	27.7	18.6	227031	27.7	19.7	484850	27.8	22.4	140990	27.9	19.2	382615	27.9	19.3	510951	28.0	20.7
358713	27.7	20.4	229910	27.7	18.6	432656	27.8	20.2	203964	27.9	19.6	298506	27.9	19.5	364506	28.0	20.6
395055	27.7	20.4	411963	27.7	20.3	72286	27.8	19.7	343725	27.9	19.7	136835	27.9	20.3	432590	28.0	19.9
310017	27.7	21.4	461505	27.7	20.9	239334	27.8	20.5	442468	27.9	20.1	48123	27.9	19.7	224129	28.0	18.5
487420	27.7	21.1	291740	27.7	19.4	335456	27.8	21.6	352403	27.9	21.4	401405	27.9	20.3	161345	28.0	18.7
292679	27.7	19.9	179320	27.7	19.7	515056	27.8	21.6	516153	27.9	20.5	157047	27.9	19.0	2732	28.0	15.5
140181	27.7	19.8	212747	27.7	19.8	267172	27.8	20.9	10296	27.9	18.0	217470	27.9	19.9	71547	28.0	17.2
482459	27.7	20.2	77474	27.7	19.6	151892	27.8	19.7	312757	27.9	20.5	307508	27.9	19.9	517136	28.0	21.4
219583	27.7	18.6	376411	27.7	20.8	320331	27.8	19.8	368456	27.9	20.9	402817	27.9	20.8	271931	28.0	19.8
158240	27.7	19.2	386155	27.7	20.8	325644	27.8	20.9	365953	27.9	21.0	275019	27.9	19.7	6721	28.0	16.0
103157	27.7	18.7	157953	27.7	19.4	346638	27.8	18.5	397968	27.9	20.7	113286	27.9	19.3	183811	28.0	19.9
224768	27.7	19.2	188813	27.7	20.8	487751	27.8	19.7	411137	27.9	20.4	221435	27.9	20.7	355061	28.0	19.9
319058	27.7	20.5	97226	27.7	19.1	388011	27.8	20.2	72581	27.9	19.6	208164	27.9	18.4	351336	28.0	19.8
511398	27.7	19.8	449842	27.7	20.2	293843	27.8	19.4	144838	27.9	19.5	4408	27.9	15.9	304518	28.0	20.0
352229	27.7	20.0	260532	27.7	20.7	366158	27.8	20.0	226567	27.9	18.7	39202	27.9	18.2	301392	28.0	20.3
506623	27.7	21.2	52645	27.7	19.2	257628	27.8	19.7	72539	27.9	18.7	348335	27.9	20.1	237593	28.0	19.7
50002	27.7	18.4	395570	27.7	19.4	425588	27.8	21.4	348092	27.9	20.1	518319	27.9	21.2	70068	28.0	19.2
324852	27.7	20.7	38349	27.7	17.7	22406	27.8	18.9	331103	27.9	20.4	274249	27.9	20.3	157089	28.0	18.9
460097	27.7	20.4	482214	27.7	21.7	419441	27.8	20.4	363694	27.9	19.8	129784	27.9	19.1	401613	28.0	20.2
50031	27.7	18.6	102309	27.7	18.4	17930	27.8	17.2	63344	27.9	18.1	340240	27.9	19.5	474460	28.0	19.9
100427	27.7	19.0	398098	27.7	20.3	471550	27.8	21.1	486176	27.9	20.6	15183	27.9	19.4	243440	28.0	21.0
384001	27.7	20.7	118667	27.7	17.5	310609	27.8	19.7	374785	27.9	20.4	162864	27.9	20.2	227303	28.0	19.4
511356	27.7	22.3	172503	27.7	19.4	154207	27.8	19.4	246407	27.9	19.0	235377	27.9	19.5	356808	28.0	20.2
230441	27.7	20.2	389808	27.7	20.5	364036	27.8	20.0	381413	27.9	18.9	364086	27.9	19.9	79664	28.0	16.8
393736	27.7	20.1	192190	27.7	19.9	88827	27.8	19.1	322693	27.9	20.9	445770	27.9	21.1	39243	28.0	17.9
454382	27.7	20.2	289573	27.8	19.8	319015	27.8	20.1	206492	27.9	18.5	517454	27.9	20.8	126020	28.1	17.8
487263	27.7	20.8	15122	27.8	18.7	218142	27.8	19.1	227709	27.9	19.9	515554	27.9	23.2	85004	28.1	18.6
224851	27.7	19.5	487815	27.8	20.1	55198	27.8	18.5	476833	27.9	20.7	141554	27.9	19.7	259490	28.1	18.3
320113	27.7	21.6	174687	27.8	19.2	256360	27.8	20.0	335005	27.9	20.7	358193	27.9	20.7	195165	28.1	20.7
66032	27.7	18.6	784	27.8	14.6	192934	27.8	19.8	287913	27.9	20.3	93443	27.9	18.7	270760	28.1	18.8
96099	27.7	19.8	207183	27.8	20.1	477598	27.8	19.7	482334	27.9	20.6	43693	27.9	18.1	148014	28.1	18.2
232904	27.7	18.6	76871	27.8	17.6	188239	27.8	18.5	184308	27.9	20.1	99472	27.9	19.6	521488	28.1	21.9
518746	27.7	21.5	131360	27.8	20.0	50074	27.8	18.4	517068	27.9	21.0	437386	27.9	19.6	161498	28.1	19.4
452572	27.7	20.6	480228	27.8	20.4	406313	27.8	20.5	23710	27.9	18.9	334569	27.9	19.5	509718	28.1	20.9
49453	27.7	18.6	324177	27.8	21.7	480688	27.8	20.2	173243	27.9	20.2	132835	27.9	19.3	448685	28.1	21.0
216461	27.7	19.6	42100	27.8	17.5	104183	27.8	20.0	405283	27.9	19.6	220797	27.9	19.2	410127	28.1	20.9
452984	27.7	21.0	85940	27.8	20.0	367832	27.8	20.6	254846	27.9	20.4	325658	27.9	20.3	286682	28.1	20.4
33948	27.7	17.7	53749	27.8	18.7	353099	27.8	21.1	372352	27.9	21.8	448400	27.9	20.6	291527	28.1	21.2
487842	27.7	20.7	485328	27.8	21.5	354272	27.8	18.8	51429	27.9	18.2	188740	27.9	20.4	180142	28.1	19.8
29685	27.7	17.8	198831	27.8	19.7	225764	27.8	20.0	141509	27.9	19.7	405295	27.9	20.3	221034	28.1	18.7
349241	27.7	20.3	522047	27.8	20.5	20552	27.8	17.1	338008	27.9	20.5	113512	27.9	19.1	43211	28.1	18.4
478999	27.7	19.0	45679	27.8	18.7	5724	27.8	16.9	22273	27.9	18.0	284891	27.9	19.1	482676	28.1	21.0
214619	27.7	19.7	400972	27.8	20.2	85857	27.8	19.1	514776	27.9	21.7	391628	27.9	20.1	131064	28.1	19.2
73870	27.7	18.9	45995	27.8	19.1	358771	27.8	21.1	480973	27.9	19.7	150198	27.9	18.5	356757	28.1	20.7
447617	27.7	20.7	429790	27.8	22.0	519402	27.8	20.9	271453	27.9	21.0	13808	27.9	16.3	419335	28.1	20.3
204024	27.7	19.4	439084	27.8	20.5	410638	27.8	20.7	21407	27.9	17.9	71574	27.9	18.5	280634	28.1	20.3
220499	27.7	19.8	156147	27.8	20.4	298643	27.8	19.5	223967	27.9	19.3	214964	27.9	19.2	364504	28.1	21.1
223329	27.7	19.6	49876	27.8	18.4	378094	27.8	20.9	201985	27.9	19.1	315118	27.9	20.6	19760	28.1	18.2
269467	27.7	19.3	288030	27.8	20.2	99843	27.8	18.3	140426	27.9	19.5	442849	27.9	20.3	405279	28.1	20.2
430925	27.7	19.7	419226	27.8	20.2	348784	27.8	20.3	56157	27.9	17.5	517591	27.9	20.2	202998	28.1	18.2
321631	27.7	20.8	372299	27.8	20.9	132851	27.8	18.3	514187	27.9	21.5	347508	27.9	18.7	97843	28.1	17.9
143317	27.7	19.8	146447	27.8	20.4	298643	27.8	19.5	223967	27.9	19.3	214964	27.9	19.2	364504	28.1	21.1
86309	27.7	18.3	148270	27.8	20.1	221541	27.8	20.0	430791	27.9	19.9	474903	27.9	21.1	158770	28.1	19.0
77213	27.7	19.5	514873	27.8	21.9	175582	27.8	20.2	9328	27.9	16.8	215440	27.9	19.3	40065	28.1	18.5
147799	27.7	19.9	227968	27.8	20.4	444505	27.8	20.4	226386	27.9	18.2	487056	27.9	19.9	485963	28.1	21.7
481042	27.7	21.6	115936	27.8	19.2	513797	27.8	21.3	344229	27.9	19.5	368030	27.9	20.6	293946	28.1	18.0
383337	27.7	20.1	421945	27.8	20.1	442983	27.8	20.0	86946	27.9	17.8	436114	27.9	19.5	509447	28.1	21.7
481344	27.7	21.0	352358	27.8	19.6	289275	27.8	19.6	14198	27.9	15.8	421449	27.9	20.0	268888	28.1	20.5
360094	27.7	20.2	7316	27.8	17.5	109907	27.8	18.2	37070	27.9	18.9	226654	27.9	20.7	342507	28.1	20.3
129351	27.7	19.3	86226	27.8	17.9	153014	27.8	20.0	165486	27.9	19.9	155198	28.0	20.7	319198	28.1	20.1
279642	27.7	21.4	394472	27.8	19.4	3											

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
129268	28.1	19.7	224753	28.2	18.8	150065	28.3	19.0	897	28.3	14.0	415585	28.4	20.0	177818	28.5	19.3
228119	28.1	20.0	328511	28.2	19.4	335498	28.3	20.0	518029	28.3	21.2	306016	28.4	21.0	498498	28.5	21.0
344034	28.1	20.1	388573	28.2	20.0	457786	28.3	19.5	231382	28.3	20.7	404492	28.4	19.5	403159	28.5	20.3
191527	28.1	20.2	410932	28.2	19.9	279594	28.3	20.1	77615	28.3	19.1	49909	28.4	17.7	245863	28.5	19.6
109874	28.1	19.9	167147	28.2	18.1	55918	28.3	19.2	319114	28.3	19.5	208244	28.4	19.5	26416	28.5	17.3
183072	28.1	18.5	163233	28.2	19.9	340345	28.3	20.8	510302	28.3	21.3	259174	28.4	19.3	417921	28.5	20.4
76992	28.1	19.3	86655	28.2	19.4	478891	28.3	19.8	436441	28.3	21.1	296891	28.4	20.3	517067	28.5	20.8
344175	28.1	19.7	278256	28.2	20.7	513584	28.3	20.3	411569	28.3	21.0	207473	28.4	19.1	304068	28.5	21.0
214535	28.1	19.7	192183	28.2	19.2	12732	28.3	17.6	246628	28.3	20.2	410901	28.4	20.3	104273	28.5	20.0
408560	28.1	20.6	77560	28.2	20.0	350259	28.3	20.1	401087	28.3	20.3	63165	28.4	18.5	4222475	28.5	19.6
28122	28.1	18.1	189923	28.2	19.0	452459	28.3	21.5	268409	28.3	20.7	396205	28.4	20.6	20126	28.5	18.0
161243	28.1	19.9	396613	28.2	19.9	422119	28.3	20.7	450136	28.3	21.1	33263	28.4	18.8	20360	28.5	17.6
273638	28.1	20.2	399087	28.2	20.5	304273	28.3	21.0	514503	28.3	20.6	451888	28.4	20.2	398021	28.5	20.8
219054	28.1	19.7	146016	28.2	20.1	49191	28.3	18.9	209520	28.3	19.5	457804	28.4	19.3	14473	28.5	18.2
139656	28.1	18.8	412954	28.2	20.7	336935	28.3	19.3	317463	28.3	18.6	478711	28.4	20.3	284490	28.5	20.9
440960	28.1	21.6	97552	28.2	18.9	517528	28.3	21.0	512	28.3	11.9	136511	28.4	19.2	437455	28.5	20.0
187596	28.1	19.8	394222	28.2	20.4	521820	28.3	20.4	228177	28.3	19.2	176696	28.4	20.2	312296	28.5	20.6
194926	28.1	19.5	32619	28.2	17.8	262863	28.3	19.9	160058	28.3	17.9	261839	28.4	20.1	318315	28.5	20.6
1666400	28.1	19.2	207139	28.2	19.5	290503	28.3	19.9	319460	28.3	19.3	29457	28.4	17.3	461194	28.5	20.5
265161	28.1	19.6	397623	28.2	19.9	72994	28.3	19.4	168834	28.3	19.2	288954	28.4	20.4	409701	28.5	20.9
305119	28.1	19.5	469861	28.2	19.3	227300	28.3	20.3	227742	28.3	20.0	471069	28.4	19.0	17703	28.5	18.5
426387	28.1	20.4	511175	28.2	20.8	446055	28.3	21.5	161927	28.3	20.1	205169	28.4	18.9	22088	28.5	16.7
5153	28.1	15.8	32567	28.2	16.6	230967	28.3	19.4	269050	28.3	19.9	361889	28.4	20.7	42406	28.5	18.6
329573	28.1	18.8	358905	28.2	21.0	436422	28.3	21.5	146977	28.3	17.9	358699	28.4	21.1	381080	28.5	18.5
157825	28.1	19.2	372814	28.2	20.6	246839	28.3	20.0	257539	28.3	21.1	371414	28.4	19.2	45106	28.5	17.3
486599	28.1	19.7	139775	28.2	21.9	494075	28.3	20.6	47353	28.3	18.1	485819	28.4	21.4	168164	28.5	19.8
192476	28.1	19.9	453520	28.2	20.4	392939	28.3	19.9	374701	28.3	20.0	23906	28.4	17.9	103746	28.5	18.7
100765	28.1	18.5	256853	28.2	20.7	490922	28.3	21.5	429538	28.4	20.8	412746	28.4	20.4	78914	28.5	17.9
358900	28.1	20.9	408022	28.2	20.4	66471	28.3	19.9	390519	28.4	20.4	92186	28.4	17.8	396604	28.5	19.7
486196	28.1	20.6	46799	28.2	18.0	514259	28.3	20.7	120983	28.4	19.5	253480	28.4	19.2	317311	28.5	19.3
174175	28.1	18.8	117894	28.2	17.6	455076	28.3	20.7	232097	28.4	18.9	223812	28.4	18.6	307550	28.5	20.1
365357	28.1	19.6	177208	28.2	19.9	324807	28.3	20.2	469895	28.4	20.9	317628	28.4	19.3	319169	28.5	20.2
160056	28.1	17.4	274253	28.2	20.6	510255	28.3	19.8	381412	28.4	19.8	213032	28.4	19.9	169904	28.5	19.2
163872	28.1	18.2	269090	28.2	19.8	342419	28.3	18.2	372346	28.4	21.1	43937	28.4	18.7	44992	28.5	18.2
441752	28.1	20.2	218157	28.2	18.8	117207	28.3	18.8	101443	28.4	19.0	356067	28.4	20.4	166038	28.5	19.8
490250	28.1	19.1	259231	28.2	20.3	438286	28.3	19.7	411996	28.4	20.6	454324	28.4	20.1	71726	28.5	17.9
174755	28.1	19.8	31067	28.2	18.5	479973	28.3	20.3	362859	28.4	19.6	182760	28.4	19.4	268819	28.5	18.9
100947	28.1	17.2	362940	28.2	19.3	493895	28.3	21.8	300769	28.4	19.8	130408	28.4	18.1	144641	28.5	19.5
125791	28.1	18.0	328550	28.2	20.0	475302	28.3	19.8	159291	28.4	19.0	445322	28.4	21.5	394986	28.5	20.9
129463	28.1	20.2	220376	28.2	18.3	224667	28.3	20.5	304331	28.4	20.2	323310	28.4	19.2	42142	28.5	19.0
492831	28.1	21.0	442950	28.2	20.6	359799	28.3	20.8	383844	28.4	20.7	517297	28.4	21.0	33320	28.5	19.6
362868	28.1	20.3	404823	28.2	20.3	329208	28.3	21.2	96267	28.4	18.4	72472	28.4	19.2	392548	28.5	19.0
352360	28.1	20.9	517117	28.2	21.0	60433	28.3	19.0	76538	28.4	18.6	435490	28.4	20.8	438302	28.5	21.6
485164	28.1	20.3	51101	28.2	19.1	184888	28.3	19.7	431779	28.4	21.6	228573	28.4	19.7	170939	28.5	19.9
82479	28.1	18.9	328805	28.2	19.7	478347	28.3	20.4	167262	28.4	19.1	186587	28.4	20.3	401418	28.5	19.3
514123	28.1	20.1	333761	28.2	20.4	151230	28.3	19.4	516287	28.4	19.9	189513	28.4	20.3	443297	28.5	20.4
14092	28.1	18.5	347817	28.2	20.8	214675	28.3	20.0	359533	28.4	20.4	365027	28.4	21.1	27266	28.5	18.4
2005	28.1	15.0	259381	28.2	19.7	62621	28.3	18.5	15002	28.4	17.5	519260	28.4	20.6	429460	28.5	20.4
180055	28.1	19.7	160602	28.2	19.4	518490	28.3	20.7	372792	28.4	19.5	166464	28.4	18.7	450943	28.5	20.2
97595	28.1	19.1	382048	28.2	21.3	467713	28.3	20.1	305264	28.4	20.4	237175	28.4	18.8	361745	28.5	19.7
223330	28.1	18.9	207265	28.2	20.0	333455	28.3	20.8	25238	28.4	17.3	76989	28.4	19.4	401295	28.5	20.3
264843	28.1	20.5	45160	28.2	17.1	112315	28.3	19.4	218355	28.4	18.8	354460	28.4	19.5	298080	28.5	20.2
429729	28.1	20.4	22784	28.2	16.9	242922	28.3	19.8	60388	28.4	19.8	118176	28.4	19.2	274666	28.5	20.7
264411	28.1	20.9	250281	28.2	20.0	433601	28.3	19.1	164725	28.4	16.7	378637	28.4	20.2	518298	28.5	21.3
115309	28.1	18.8	222429	28.2	19.5	139131	28.3	19.2	459385	28.4	21.6	474855	28.4	20.0	420496	28.5	20.3
492659	28.2	20.0	263164	28.2	20.1	136221	28.3	18.5	487492	28.4	20.7	276782	28.4	21.0	60833	28.5	18.9
58155	28.2	16.6	453433	28.2	18.8	123929	28.3	19.6	324487	28.4	20.0	333274	28.4	20.3	57321	28.5	18.2
15845	28.2	16.5	508130	28.2	20.4	409692	28.3	20.7	1900	28.4	14.0	357619	28.4	19.5	451297	28.5	22.2
65318	28.2	18.7	188390	28.2	19.6	5066	28.3	17.5	255575	28.4	19.3	289346	28.4	20.1	13775	28.5	18.0
315839	28.2	19.7	310568	28.2	20.3	270903	28.3	20.4	377001	28.4	19.2	247509	28.4	20.6	259420	28.5	18.8
519304	28.2	21.4	147526	28.2	19.3												

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

Nº	10	V															
509180	28.5	21.2	347539	28.6	19.9	12064	28.7	15.7	271611	28.8	19.8	160500	28.8	19.5	172743	28.9	19.3
318687	28.5	19.7	140177	28.6	19.5	351187	28.7	21.2	314342	28.8	19.7	362924	28.8	19.9	187011	28.9	20.2
33742	28.5	17.1	144062	28.6	19.0	140135	28.7	19.1	4103	28.8	13.6	24365	28.8	16.6	380045	28.9	20.1
220109	28.6	18.5	443361	28.6	20.6	407541	28.7	20.7	213492	28.8	19.1	503796	28.8	19.8	403193	28.9	20.6
485765	28.6	20.6	54111	28.6	18.8	2365	28.7	14.6	460417	28.8	20.5	316067	28.9	21.3	269915	28.9	20.4
139684	28.6	18.8	309619	28.6	20.1	317063	28.7	19.8	233640	28.8	20.1	284111	28.9	20.8	490864	28.9	21.5
163264	28.6	19.8	488574	28.6	20.6	72203	28.7	18.3	339088	28.8	20.0	123984	28.9	18.8	53002	28.9	17.9
154891	28.6	19.2	292340	28.6	19.9	408613	28.7	20.1	516080	28.8	20.8	173555	28.9	18.5	22788	28.9	17.5
516905	28.6	20.5	340148	28.6	19.3	317262	28.7	20.1	511716	28.8	20.5	132327	28.9	19.4	412493	28.9	21.4
519832	28.6	21.8	304287	28.6	19.3	174772	28.7	19.4	432960	28.8	21.4	126333	28.9	19.8	239945	28.9	19.7
404976	28.6	19.5	514471	28.6	19.7	184794	28.7	19.8	405239	28.8	20.1	61025	28.9	18.1	332840	28.9	19.7
251696	28.6	18.7	90445	28.6	19.5	421676	28.7	20.0	156932	28.8	19.7	23291	28.9	17.7	228245	28.9	19.8
429860	28.6	20.6	28115	28.6	18.0	112341	28.7	19.1	452751	28.8	21.5	220754	28.9	19.9	405267	28.9	21.5
143965	28.6	19.1	479376	28.6	19.1	485000	28.7	20.5	386671	28.8	19.7	369537	28.9	20.9	102850	28.9	19.1
143214	28.6	18.1	121676	28.6	19.3	50568	28.7	18.0	521860	28.8	20.5	268759	28.9	19.9	104871	28.9	19.2
450714	28.6	20.9	454538	28.6	20.6	340352	28.7	19.7	171505	28.8	20.3	123903	28.9	19.6	129516	28.9	18.7
409173	28.6	19.9	47378	28.6	16.9	262521	28.7	19.7	347698	28.8	19.6	19373	28.9	16.9	123526	28.9	19.2
122032	28.6	19.1	479983	28.6	19.9	63037	28.7	17.7	62276	28.8	17.9	480994	28.9	20.3	54253	28.9	16.6
157653	28.6	19.8	443193	28.6	20.6	176887	28.7	19.1	78828	28.8	19.3	21100	28.9	17.8	518419	28.9	20.6
196670	28.6	18.7	325434	28.6	20.9	205978	28.7	19.8	47287	28.8	18.2	394537	28.9	19.8	123869	28.9	19.3
318303	28.6	21.2	295706	28.6	21.5	343543	28.7	20.5	77162	28.8	19.2	232916	28.9	20.0	72343	28.9	19.2
301983	28.6	19.6	395510	28.6	20.1	471067	28.7	19.8	179095	28.8	19.9	236530	28.9	20.3	210373	28.9	18.6
511321	28.6	20.3	275200	28.6	20.0	397993	28.7	20.9	52354	28.8	17.5	65387	28.9	19.0	57259	28.9	18.1
324229	28.6	20.3	82592	28.6	19.4	207312	28.7	19.7	20283	28.8	16.7	322697	28.9	20.1	479526	28.9	21.4
419993	28.6	20.8	487081	28.6	20.6	195579	28.7	20.0	484720	28.8	19.2	511438	28.9	21.0	242258	28.9	19.5
25078	28.6	17.5	295154	28.6	19.8	124892	28.7	19.1	68629	28.8	19.8	473586	28.9	20.9	390693	28.9	19.8
349728	28.6	19.8	73362	28.6	18.9	230488	28.7	19.0	216855	28.8	20.8	446469	28.9	20.5	247556	28.9	19.8
144572	28.6	20.7	422470	28.6	19.8	248569	28.7	20.6	19181	28.8	18.1	97007	28.9	18.6	286781	28.9	20.5
518268	28.6	20.0	440414	28.6	20.4	482348	28.7	20.6	417782	28.8	20.8	20755	28.9	17.3	55683	28.9	18.5
436147	28.6	19.7	250720	28.6	20.0	348336	28.7	20.3	468779	28.8	20.8	396137	28.9	21.0	482608	28.9	20.5
150853	28.6	17.8	104562	28.6	18.7	58362	28.7	18.9	387122	28.8	19.9	274616	28.9	19.5	488726	28.9	17.5
310001	28.6	21.2	349230	28.6	19.1	265473	28.7	20.3	509493	28.8	19.7	233751	28.9	19.7	489120	28.9	21.0
90557	28.6	17.7	337982	28.6	20.5	395057	28.7	20.8	236351	28.8	21.0	129081	28.9	19.0	317723	28.9	20.9
191523	28.6	18.9	21042	28.6	17.2	485337	28.7	20.6	53013	28.8	17.8	386958	28.9	20.7	61464	28.9	18.7
320118	28.6	19.7	393784	28.6	21.2	454693	28.7	20.7	132394	28.8	19.6	318323	28.9	18.8	269231	28.9	20.2
23219	28.6	17.5	482623	28.6	21.2	296418	28.7	20.4	292206	28.8	19.3	131314	28.9	19.3	345918	28.9	20.2
470542	28.6	21.1	426565	28.6	19.9	99102	28.7	18.2	271077	28.8	19.9	214714	28.9	18.7	481690	28.9	19.9
107046	28.6	20.2	378642	28.6	20.8	51828	28.7	16.9	273506	28.8	19.6	40189	28.9	18.2	298652	28.9	18.5
394254	28.6	19.7	422205	28.6	20.2	396982	28.7	20.2	117874	28.8	17.4	391225	28.9	21.2	351064	28.9	19.9
509412	28.6	21.0	515454	28.6	18.6	10530	28.7	16.9	224046	28.8	20.1	41028	28.9	18.4	363687	28.9	19.1
231483	28.6	19.8	101224	28.6	17.4	462709	28.7	20.5	213473	28.8	19.9	331108	28.9	19.7	253408	28.9	19.1
411077	28.6	20.2	296304	28.7	20.2	77076	28.7	19.3	167170	28.8	18.1	231263	28.9	19.8	260419	28.9	19.5
18587	28.6	17.1	183433	28.7	18.0	28901	28.7	16.8	76083	28.8	19.5	383070	28.9	19.7	209124	28.9	19.6
164743	28.6	18.5	123974	28.7	19.4	278321	28.7	20.4	272882	28.8	19.2	71981	28.9	18.9	121933	28.9	20.0
176100	28.6	18.2	151910	28.7	20.2	388138	28.7	20.0	517915	28.8	20.3	99471	28.9	19.1	159673	28.9	18.6
521851	28.6	21.1	258711	28.7	18.9	398334	28.7	19.8	224003	28.8	18.8	206313	28.9	19.8	404466	28.9	20.7
112301	28.6	19.0	220443	28.7	20.3	469849	28.7	20.2	327088	28.8	19.2	311745	28.9	19.9	137652	28.9	20.1
9962	28.6	17.7	480498	28.7	19.9	365296	28.7	20.2	94141	28.8	17.5	446080	28.9	20.8	216852	28.9	19.2
353525	28.6	19.4	163865	28.7	19.9	178859	28.7	20.3	105222	28.8	19.2	195403	28.9	20.7	130255	28.9	20.2
226324	28.6	20.4	353637	28.7	19.9	39233	28.7	17.6	71129	28.8	17.6	436485	28.9	21.2	172701	28.9	19.7
481898	28.6	20.8	441943	28.7	21.1	450719	28.7	21.3	175287	28.8	19.5	191621	28.9	20.6	449240	28.9	20.8
122329	28.6	19.0	439838	28.7	21.6	76802	28.7	17.4	439628	28.8	20.3	497609	28.9	20.4	252464	28.9	19.8
242039	28.6	19.3	173239	28.7	20.4	100103	28.7	20.7	449828	28.8	20.2	625552	28.9	18.8	448852	28.9	19.9
135877	28.6	19.0	366065	28.7	20.6	350343	28.7	19.2	241167	28.8	18.1	228123	28.9	20.2	475416	28.9	20.8
23807	28.6	17.1	214073	28.7	20.0	487303	28.7	20.8	452027	28.8	20.5	174977	28.9	19.9	233827	28.9	19.7
303571	28.6	20.3	512407	28.7	19.7	96798	28.7	18.7	76107	28.8	18.6	367949	28.9	20.4	24358	28.9	18.3
131090	28.6	18.8	82896	28.7	19.2	270588	28.7	18.7	226418	28.8	19.3	208753	28.9	19.6	53227	28.9	18.3
356257	28.6	20.1	485855	28.7	21.3	202873	28.7	20.1	39705	28.8	17.8	18359	28.9	17.8	382421	28.9	19.5
224777	28.6	19.9	218892	28.7	19.7	511765	28.7	20.9	248060	28.8	20.4	228185	28.9	19.2	182283	28.9	20.2
246288	28.6	19.2	358707	28.7	20.1	270746	28.7	19.1	20748	28.8	17.8	483959	28.9	21.8	521427	28.9	20.9
221775	28.6	19.6	336067	28.7	21.2												

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

Nº	10	V															
268010	28.9	20.4	211367	29.1	19.6	19094	29.2	18.6	516104	29.3	20.2	517090	29.3	21.2	23997	29.4	14.1
191228	28.9	20.2	279512	29.1	19.8	161332	29.2	19.0	271225	29.3	19.8	48911	29.3	17.4	185999	29.4	19.5
516621	28.9	20.7	456104	29.1	20.7	278252	29.2	19.3	227744	29.3	20.2	258868	29.3	20.6	408098	29.4	20.9
512268	28.9	20.6	344632	29.1	19.1	1767	29.2	16.1	273919	29.3	20.1	277160	29.3	20.0	191875	29.4	19.3
278271	28.9	20.6	291800	29.1	20.3	378537	29.2	20.3	18743	29.3	17.5	332013	29.3	20.4	231888	29.4	17.7
209870	28.9	20.0	126633	29.1	19.7	342246	29.2	19.5	350099	29.3	20.0	301742	29.3	20.3	267801	29.4	20.3
367051	28.9	20.8	322684	29.1	19.2	81382	29.2	18.5	275022	29.3	19.8	289880	29.3	19.7	179623	29.4	19.6
377576	29.0	20.9	399312	29.1	21.1	263155	29.2	19.8	324261	29.3	21.3	360683	29.3	20.5	148268	29.4	19.3
43382	29.0	18.8	452209	29.1	21.1	8954	29.2	15.8	109040	29.3	17.5	260371	29.3	19.5	249943	29.4	19.7
112984	29.0	17.6	260403	29.1	19.1	119278	29.2	18.1	115746	29.3	18.6	110397	29.3	18.6	214671	29.4	19.7
216648	29.0	19.4	516723	29.1	21.0	79921	29.2	18.4	91931	29.3	17.9	163318	29.3	19.2	231066	29.4	19.1
208080	29.0	17.8	6060	29.1	16.5	113442	29.2	18.6	55854	29.3	16.0	30630	29.3	18.9	438594	29.4	20.2
9118	29.0	15.7	516295	29.1	19.2	15387	29.2	17.4	69556	29.3	18.2	146275	29.3	18.3	433006	29.4	20.4
472755	29.0	20.4	513435	29.1	20.6	52080	29.2	17.2	365261	29.3	19.9	267904	29.3	19.9	140092	29.4	19.5
54279	29.0	18.8	163191	29.1	23.1	13011	29.2	17.4	254449	29.3	19.5	294589	29.3	20.2	450959	29.4	20.8
174623	29.0	19.8	13769	29.1	18.0	322452	29.2	20.1	211593	29.3	18.7	101502	29.3	19.0	166329	29.4	18.0
231884	29.0	18.6	19200	29.1	17.5	205185	29.2	19.0	324732	29.3	20.7	225400	29.3	20.3	481696	29.4	21.2
388940	29.0	20.5	356838	29.1	19.6	297192	29.2	19.9	52694	29.3	18.3	9540	29.3	16.6	513995	29.4	20.4
206466	29.0	19.9	17515	29.1	16.9	248813	29.2	20.3	265260	29.3	20.0	44077	29.3	18.5	132680	29.4	19.5
186416	29.0	19.1	365567	29.1	20.9	519851	29.2	21.8	45737	29.3	18.0	66405	29.3	17.3	468686	29.4	20.7
306879	29.0	19.0	14430	29.1	16.8	223931	29.2	18.7	399722	29.3	19.5	411040	29.3	20.4	398112	29.4	18.7
393386	29.0	21.5	79528	29.1	19.0	511860	29.2	21.0	304339	29.3	20.8	392698	29.3	20.6	168569	29.4	18.2
261902	29.0	20.2	485336	29.1	21.3	363696	29.2	19.8	323560	29.3	19.6	75708	29.3	18.5	324392	29.4	19.7
124778	29.0	18.9	82255	29.1	18.8	171653	29.2	19.5	370637	29.3	19.4	309545	29.3	20.6	483108	29.4	20.2
378072	29.0	20.3	481415	29.1	20.5	6395	29.2	15.4	283649	29.3	20.5	366779	29.3	19.8	218782	29.4	19.8
508453	29.0	19.1	53471	29.1	18.2	187005	29.2	19.4	404395	29.3	20.8	48345	29.3	17.9	401264	29.4	20.6
320189	29.0	20.9	316171	29.1	19.6	115179	29.2	19.1	331551	29.3	20.6	350541	29.3	19.1	195505	29.4	19.9
439699	29.0	20.2	151397	29.1	19.6	94683	29.2	17.5	453716	29.3	20.7	410158	29.3	21.5	26974	29.4	16.5
287468	29.0	18.6	21901	29.1	17.0	378178	29.2	20.3	324138	29.3	20.3	30195	29.3	18.2	301798	29.4	21.3
352512	29.0	20.1	390785	29.1	19.9	260721	29.2	20.5	484252	29.3	21.3	361840	29.3	20.5	298192	29.4	19.2
99897	29.0	19.4	203175	29.1	19.5	487307	29.2	20.6	10518	29.3	16.1	348288	29.4	18.4	138796	29.4	19.6
335417	29.0	18.5	326351	29.1	18.5	458624	29.2	20.8	324782	29.3	19.7	287016	29.4	20.0	168464	29.5	19.8
512056	29.0	20.0	171627	29.1	19.5	239416	29.2	19.3	43240	29.3	18.4	352355	29.4	20.3	31911	29.5	18.2
299696	29.0	19.4	257511	29.1	20.1	446042	29.2	21.2	78351	29.3	18.5	300781	29.4	19.4	271056	29.5	18.6
384281	29.0	18.8	118245	29.1	16.9	331223	29.2	20.9	476004	29.3	19.8	236751	29.4	19.6	14972	29.5	17.3
263826	29.0	19.7	75372	29.1	18.4	440157	29.2	18.4	46274	29.3	16.5	205305	29.4	18.2	386736	29.5	20.4
447184	29.0	20.2	159845	29.1	19.8	454385	29.2	20.7	79326	29.3	18.1	173798	29.4	19.7	368022	29.5	20.2
414606	29.0	20.5	75014	29.1	18.0	294828	29.2	20.9	17660	29.3	16.1	452736	29.4	21.3	34189	29.5	17.5
325545	29.0	19.3	373895	29.1	20.9	211792	29.2	19.3	439861	29.3	20.0	347824	29.4	20.0	315094	29.5	20.2
68372	29.0	21.5	183033	29.1	19.8	269243	29.2	19.6	481557	29.3	19.9	104866	29.4	18.1	77538	29.5	18.3
215830	29.0	19.9	130237	29.1	19.8	415570	29.2	20.5	90447	29.3	17.9	255489	29.4	20.8	108106	29.5	19.4
82875	29.0	17.5	5086	29.1	16.5	391610	29.2	20.4	66932	29.3	18.0	75667	29.4	18.2	99727	29.5	19.9
349817	29.0	20.2	74675	29.1	17.9	40050	29.2	18.1	249418	29.3	20.6	132400	29.4	19.1	229412	29.5	20.7
396748	29.0	20.0	175649	29.1	18.6	150127	29.2	19.9	226389	29.3	19.0	521982	29.4	20.7	272574	29.5	21.0
324308	29.0	19.5	361824	29.1	20.4	287373	29.2	19.8	122769	29.3	18.6	166381	29.4	19.1	419995	29.5	21.0
15532	29.0	17.2	116918	29.1	19.0	15389	29.2	18.2	327548	29.3	21.1	344625	29.4	20.8	317390	29.5	20.4
75332	29.0	19.3	388251	29.1	21.1	7487	29.2	15.5	287417	29.3	19.0	265515	29.4	19.1	510664	29.5	19.9
185138	29.0	19.3	186002	29.1	20.3	275221	29.2	20.1	25154	29.3	17.9	263401	29.4	20.4	281089	29.5	20.3
150796	29.0	19.1	295736	29.1	20.1	66536	29.2	18.3	247482	29.3	19.2	476487	29.4	21.2	189627	29.5	19.8
436594	29.0	20.6	332024	29.1	20.8	139605	29.2	19.4	117694	29.3	18.7	336132	29.4	19.3	291216	29.5	19.3
508338	29.0	21.7	352204	29.1	20.2	298649	29.2	20.0	449675	29.3	19.7	395404	29.4	20.8	836367	29.5	19.0
420537	29.0	19.8	28852	29.1	19.9	46376	29.2	17.0	271550	29.3	20.3	88427	29.4	17.2	333336	29.5	20.7
432658	29.0	20.0	459454	29.1	20.7	102702	29.2	17.9	509454	29.3	21.4	47206	29.4	19.1	212341	29.5	20.4
491796	29.0	20.3	229954	29.1	19.7	117975	29.2	20.0	37891	29.3	18.4	384349	29.4	19.5	73348	29.5	18.7
479989	29.0	20.9	407238	29.1	19.9	14846	29.2	17.4	518891	29.3	20.6	413269	29.4	20.7	135730	29.5	19.4
396350	29.0	20.7	196721	29.1	19.3	278447	29.2	20.2	411925	29.3	19.8	482280	29.4	21.1	342278	29.5	20.2
275969	29.0	19.5	358726	29.1	20.6	264287	29.2	18.9	487843	29.3	19.6	11283	29.4	16.1	319092	29.5	21.3
247236	29.0	19.6	295482	29.1	19.6	513546	29.2	21.2	471055	29.3	19.6	265304	29.4	19.9	79398	29.5	17.8
112486	29.0	19.5	137552	29.1	19.1	3822	29.2	16.8	319154	29.3	19.9	273004	29.4	20.7	370633	29.5	18.4
514804	29.1	19.5	517479	29.1	20.6	480457	29.2	20.3	71669	29.3	18.5	445516	29.4	19.5	450545	29.5	20.9
196985	29.1	18.6	280518	29.1	21.1	517769											

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

Nº	10	V															
262034	29.5	19.1	365402	29.6	20.0	193338	29.6	17.8	172350	29.7	18.1	147072	29.8	19.8	180710	29.9	19.1
408511	29.5	19.4	265967	29.6	20.7	115480	29.6	18.2	215324	29.7	19.3	488164	29.8	21.1	179822	29.9	19.6
288308	29.5	18.4	264858	29.6	19.8	435572	29.6	20.8	442807	29.7	20.7	234672	29.8	20.4	511891	29.9	21.0
410541	29.5	21.4	425029	29.6	21.0	151681	29.6	18.6	38896	29.7	18.2	361411	29.8	20.5	144758	29.9	19.4
103503	29.5	19.0	237560	29.6	19.3	389350	29.6	20.5	135315	29.7	18.8	175431	29.8	19.8	94337	29.9	17.7
515182	29.5	20.4	129290	29.6	18.5	320022	29.6	20.1	401	29.7	13.7	259556	29.8	18.8	443476	29.9	20.6
482910	29.5	20.9	155644	29.6	20.5	508910	29.6	19.7	19151	29.7	17.7	82644	29.8	18.2	197985	29.9	20.0
408070	29.5	20.9	385676	29.6	20.0	357290	29.6	19.8	71115	29.7	18.3	367020	29.8	21.1	102359	29.9	19.6
143826	29.5	19.3	121774	29.6	18.9	259980	29.6	20.8	277407	29.7	20.9	512002	29.8	21.0	163858	29.9	19.3
220825	29.5	20.3	88399	29.6	17.8	36860	29.6	18.3	210867	29.7	19.7	85853	29.8	19.2	89211	29.9	18.8
139444	29.5	18.4	446182	29.6	20.5	298031	29.6	18.3	215334	29.7	19.1	13095	29.8	16.9	21957	29.9	18.0
487339	29.5	20.0	227021	29.6	20.2	505822	29.6	20.1	441888	29.7	21.4	175646	29.8	19.2	81922	29.9	18.8
220511	29.5	19.7	391982	29.6	19.9	70717	29.6	18.2	323626	29.7	19.2	491454	29.8	21.2	341973	29.9	19.6
335741	29.5	20.6	217325	29.6	19.5	255360	29.6	19.5	304315	29.7	20.2	261822	29.8	20.6	18401	29.9	16.5
452110	29.5	20.5	392270	29.6	20.5	448986	29.6	20.4	219945	29.7	20.1	115765	29.8	19.3	390672	29.9	19.9
396914	29.5	21.1	242832	29.6	20.4	396937	29.6	20.2	39425	29.7	18.2	127421	29.8	20.1	79880	29.9	18.8
8068	29.5	16.0	247091	29.6	18.5	40110	29.6	17.7	342638	29.7	20.8	218987	29.8	19.9	516028	29.9	20.1
292603	29.5	20.0	262886	29.6	19.7	320164	29.6	20.1	28814	29.7	17.4	207955	29.8	20.3	494563	29.9	19.7
163354	29.5	19.3	516033	29.6	20.5	227210	29.6	19.3	299201	29.7	19.8	484942	29.8	20.6	244088	29.9	19.0
147114	29.5	18.5	232634	29.6	19.7	263908	29.6	20.5	30228	29.7	16.8	54807	29.8	17.4	83421	29.9	19.6
178026	29.5	19.4	317286	29.6	20.0	364976	29.6	19.7	119244	29.7	18.6	65037	29.8	19.4	228103	29.9	19.7
198666	29.5	19.6	109721	29.6	18.4	230163	29.7	18.1	71464	29.7	18.2	448360	29.8	21.0	296873	29.9	20.3
137331	29.5	18.7	516720	29.6	21.4	106076	29.7	19.3	90454	29.7	19.2	18987	29.8	17.3	494409	29.9	20.6
191541	29.5	18.8	202719	29.6	20.1	112498	29.7	18.9	407518	29.7	20.8	331013	29.8	20.4	24251	29.9	18.0
315131	29.5	20.8	267144	29.6	20.5	175321	29.7	20.0	482912	29.7	21.1	47601	29.8	19.6	272864	29.9	19.2
3035	29.5	16.9	421767	29.6	19.8	324749	29.7	21.1	515344	29.7	20.7	340152	29.8	20.6	255049	29.9	19.9
342249	29.5	19.7	298132	29.6	19.8	265103	29.7	20.2	435486	29.7	20.7	174099	29.8	19.0	25733	29.9	17.5
72664	29.5	19.0	248000	29.6	20.0	271932	29.7	19.4	437208	29.7	19.9	83341	29.8	19.1	138121	29.9	20.2
520655	29.5	21.4	324228	29.6	20.4	441284	29.7	19.5	159583	29.7	18.6	142816	29.8	19.2	385852	29.9	21.3
319258	29.5	20.6	210597	29.6	18.5	214021	29.7	19.9	330626	29.7	20.6	43703	29.8	18.8	76266	29.9	18.6
259777	29.5	21.1	29009	29.6	18.3	384953	29.7	20.6	98441	29.7	17.6	473463	29.8	20.2	513470	29.9	21.6
474947	29.5	19.8	74149	29.6	17.6	392387	29.7	19.8	107549	29.7	19.2	172916	29.8	19.7	47228	29.9	17.9
102129	29.5	17.4	227069	29.6	20.1	248480	29.7	19.6	22894	29.7	18.9	10017	29.8	15.9	96328	29.9	20.3
141577	29.5	19.3	405845	29.6	19.8	75701	29.7	18.4	116769	29.7	18.8	516020	29.8	20.2	204549	29.9	20.1
245916	29.5	19.6	128119	29.6	19.4	267995	29.7	20.6	516733	29.7	21.2	411039	29.8	20.4	56724	29.9	18.6
30535	29.5	17.6	37285	29.6	17.8	439306	29.7	20.6	299169	29.7	20.5	119188	29.8	17.5	3310	29.9	15.3
381067	29.5	19.5	310686	29.6	21.0	220112	29.7	19.4	469153	29.7	21.3	518914	29.8	21.0	460472	29.9	20.5
6742	29.5	16.8	273777	29.6	20.5	208142	29.7	19.9	516029	29.7	20.7	151075	29.8	19.0	219556	29.9	19.0
322278	29.5	21.0	354642	29.6	19.2	254982	29.7	20.0	125718	29.7	18.1	350069	29.8	19.3	118578	29.9	19.4
228839	29.5	19.1	217040	29.6	19.5	116755	29.7	19.0	327505	29.7	21.4	452753	29.8	21.4	114175	29.9	19.0
25993	29.5	17.5	96225	29.6	18.6	107341	29.7	19.7	300347	29.7	20.3	445315	29.8	21.8	43631	29.9	18.8
186006	29.5	19.4	226295	29.6	17.8	317753	29.7	19.4	286858	29.7	20.9	119117	29.8	18.5	400357	29.9	21.0
116745	29.5	20.0	449853	29.6	20.5	435114	29.7	21.4	390600	29.7	19.0	435481	29.8	20.9	383062	29.9	19.3
92066	29.5	18.0	344212	29.6	19.0	308810	29.7	19.1	170543	29.7	19.1	84037	29.8	17.8	421684	29.9	20.1
321527	29.5	18.7	246739	29.6	19.8	482079	29.7	20.0	291133	29.7	18.4	184375	29.8	20.1	478918	29.9	19.0
52507	29.5	18.9	128133	29.6	18.9	411514	29.7	20.3	254487	29.7	18.9	487077	29.8	20.9	325677	29.9	19.8
223152	29.5	20.1	180956	29.6	19.6	204060	29.7	19.3	484732	29.7	20.9	504942	29.8	20.3	175747	29.9	18.1
7620	29.5	18.0	82351	29.6	18.2	92030	29.7	18.6	44303	29.7	21.0	399685	29.8	19.3	156855	29.9	19.7
479651	29.5	19.5	443799	29.6	20.3	262460	29.7	20.3	435083	29.7	19.9	394213	29.8	20.6	180231	29.9	18.6
24026	29.5	18.0	512158	29.6	21.5	411987	29.7	20.8	97541	29.7	17.9	412645	29.8	20.8	118918	29.9	18.8
247118	29.5	19.1	411944	29.6	20.6	154131	29.7	19.4	11893	29.7	17.8	354467	29.8	18.9	357815	29.9	20.8
47947	29.5	17.5	108548	29.6	19.6	327576	29.7	20.3	336995	29.7	19.6	398947	29.8	20.5	347511	29.9	17.7
406284	29.5	21.4	170595	29.6	19.8	80665	29.7	19.0	383205	29.7	20.3	223952	29.8	18.3	276440	29.9	19.8
56516	29.5	18.2	3714	29.6	14.9	198144	29.7	19.6	344976	29.8	19.1	181913	29.8	19.4	325371	29.9	19.9
7168	29.5	16.1	331760	29.6	19.2	15705	29.7	17.2	304266	29.8	19.8	287656	29.8	20.0	431375	29.9	21.3
363356	29.5	19.4	349099	29.6	18.5	340988	29.7	19.6	412640	29.8	20.7	320420	29.8	19.2	218487	29.9	20.4
269699	29.5	20.4	321554	29.6	20.9	259501	29.7	18.6	370571	29.8	18.8	400491	29.8	20.1	212404	29.9	19.9
409710	29.5	21.4	1893	29.6	15.4	353694	29.7	19.9	335785	29.8	20.0	21215	29.8	17.3	306655	29.9	18.3
411150	29.5	19.9	377042	29.6	19.5	344925	29.7	20.3	240587	29.8	19.5	456037	29.8	19.2	262091	29.9	20.1
66967	29.5	18.7	136322	29.6	19.5	14409	29.7	16.3	223420	29.8	18.9	160454	29.8	20.4	278615	29.9	20.2
433184	29.5	19.9	32881	29.6	17.3	123843											

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

Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V	Nº	10	V
301380	29.9	20.1	294288	30.0	18.6	408530	30.1	21.6	288994	30.2	20.1	437408	30.2	19.6	232181	30.3	20.1
407536	29.9	20.1	472989	30.0	21.4	113439	30.1	19.0	254998	30.2	20.7	127404	30.2	19.8	266027	30.3	19.9
20109	29.9	18.3	320434	30.0	20.4	462533	30.1	20.4	403471	30.2	20.0	178375	30.2	19.5	523253	30.3	21.0
515969	29.9	19.9	487367	30.0	20.2	514493	30.1	19.6	412786	30.2	20.9	154391	30.2	18.7	274836	30.3	19.8
443755	29.9	20.3	515712	30.0	20.5	481373	30.1	19.7	323513	30.2	19.6	167317	30.2	18.9	37963	30.3	17.1
265989	29.9	20.4	385759	30.0	20.8	200545	30.1	20.6	433413	30.2	21.5	364087	30.2	21.0	295353	30.3	20.0
171405	29.9	18.8	83070	30.0	18.9	228245	30.1	18.4	320289	30.2	20.4	345337	30.3	20.6	85728	30.3	18.9
447437	29.9	20.7	78247	30.0	19.3	23143	30.1	15.6	94188	30.2	19.3	58119	30.3	19.3	76444	30.3	18.8
218162	29.9	18.7	392334	30.0	21.4	148258	30.1	20.4	482351	30.2	20.1	402370	30.3	20.6	138078	30.3	19.6
353676	29.9	20.0	103196	30.0	18.0	323207	30.1	19.8	470996	30.2	19.4	173538	30.3	17.5	382050	30.3	20.2
219002	29.9	20.2	296605	30.0	19.8	269228	30.1	20.2	521672	30.2	20.7	344865	30.3	20.0	383531	30.3	20.1
487291	29.9	20.2	411980	30.0	20.0	136776	30.1	19.7	41240	30.2	18.0	435304	30.3	21.0	514133	30.3	20.5
479482	29.9	20.9	343691	30.0	20.7	203971	30.1	19.3	59271	30.2	19.4	348327	30.3	20.8	254825	30.3	19.8
69933	29.9	18.0	356785	30.0	20.1	444983	30.1	20.2	234876	30.2	19.8	472566	30.3	21.7	285275	30.3	18.8
156685	29.9	19.0	85164	30.0	16.7	159705	30.1	20.2	16611	30.2	20.4	355069	30.3	20.5	221399	30.3	19.9
445587	29.9	21.0	385201	30.0	23.3	212280	30.1	20.5	103777	30.2	18.5	226278	30.3	20.6	279545	30.3	20.0
391222	29.9	20.7	492762	30.0	20.6	284947	30.1	19.8	201752	30.2	19.9	444578	30.3	19.8	14551	30.3	17.2
421737	29.9	20.6	211709	30.0	18.7	449639	30.1	20.2	245272	30.2	20.3	476683	30.3	20.0	360508	30.3	21.2
405338	29.9	20.2	382155	30.0	19.7	137237	30.1	17.2	214014	30.2	20.6	98562	30.3	18.9	356158	30.3	20.3
317927	29.9	20.5	359969	30.0	20.3	47588	30.1	16.9	257957	30.2	19.5	92001	30.3	18.4	440162	30.3	20.0
508897	29.9	19.5	53377	30.0	18.1	448526	30.1	20.1	357473	30.2	20.0	70689	30.3	18.3	103317	30.3	18.3
376149	29.9	20.0	130219	30.0	19.1	487308	30.1	20.6	209884	30.2	19.8	242073	30.3	19.3	342398	30.3	19.3
493239	29.9	20.0	348357	30.0	19.9	41643	30.1	18.6	99430	30.2	19.0	504007	30.3	20.1	98640	30.3	18.9
314282	29.9	20.3	196929	30.0	19.1	517095	30.1	20.9	178826	30.2	17.5	112104	30.3	19.4	437270	30.3	17.7
511188	29.9	21.0	268203	30.0	20.0	410672	30.1	20.6	5255	30.2	17.2	456081	30.3	20.6	140466	30.3	18.6
60192	29.9	19.6	173029	30.0	19.6	35420	30.1	16.9	217241	30.2	19.7	13026	30.3	16.9	317351	30.3	20.9
454364	29.9	20.1	323022	30.1	20.7	216160	30.1	19.4	515254	30.2	22.0	360016	30.3	20.7	182531	30.3	19.4
42713	29.9	17.9	78831	30.1	19.5	265087	30.1	19.6	98756	30.2	18.8	229887	30.3	19.9	439164	30.3	19.6
122058	29.9	19.7	99083	30.1	19.7	163276	30.1	18.9	74637	30.2	17.2	335463	30.3	20.6	233877	30.3	19.8
395150	29.9	21.4	374811	30.1	19.6	364529	30.1	20.3	435447	30.2	21.7	27688	30.3	18.6	441929	30.3	21.4
55369	29.9	19.2	429886	30.1	20.6	436204	30.1	20.1	401453	30.2	20.5	486114	30.3	18.7	302761	30.3	18.8
287732	29.9	18.8	211666	30.1	18.9	266812	30.1	19.4	288545	30.2	20.7	225416	30.3	20.1	115626	30.3	18.3
265443	29.9	19.0	20188	30.1	18.0	518750	30.1	19.9	420300	30.2	20.4	259888	30.3	20.1	389433	30.3	21.5
24412	29.9	17.0	395653	30.1	19.5	157931	30.1	19.3	135614	30.2	19.5	230257	30.3	19.5	183044	30.3	19.7
266835	29.9	19.6	107707	30.1	19.6	212277	30.1	20.7	378177	30.2	21.2	51996	30.3	17.8	86057	30.3	18.2
189927	29.9	19.9	392965	30.1	19.4	436146	30.1	21.0	11165	30.2	16.2	220130	30.3	19.1	278216	30.3	20.8
164600	29.9	18.3	156116	30.1	18.2	282434	30.1	17.5	23772	30.2	17.9	450754	30.3	21.3	481930	30.3	20.6
517970	29.9	20.7	250013	30.1	19.2	474503	30.1	19.8	450594	30.2	19.7	363442	30.3	20.0	399551	30.3	20.0
431649	29.9	20.7	443496	30.1	20.0	217667	30.1	17.8	395067	30.2	20.3	398494	30.3	20.0	101940	30.3	17.1
74648	29.9	18.8	484899	30.1	20.3	212847	30.1	20.9	335720	30.2	21.6	51712	30.3	18.8	300932	30.3	18.8
274298	29.9	19.7	376608	30.1	19.7	37203	30.1	16.6	394944	30.2	20.3	277811	30.3	20.5	510769	30.3	21.1
418638	29.9	20.3	65467	30.1	18.4	201194	30.1	19.7	141703	30.2	19.1	43194	30.3	18.6	308272	30.3	20.3
377489	29.9	20.2	430734	30.1	21.5	218841	30.1	19.1	517104	30.2	21.0	80342	30.3	19.1	226072	30.3	19.2
333758	29.9	20.5	47558	30.1	18.2	121496	30.1	18.5	239821	30.2	20.2	48919	30.3	17.8	259574	30.4	19.1
514618	29.9	22.1	182637	30.1	19.3	39244	30.1	18.1	189268	30.2	19.0	1676	30.3	15.7	267866	30.4	19.6
386144	29.9	20.0	293517	30.1	21.4	442927	30.1	21.0	366160	30.2	21.1	356101	30.3	19.9	490582	30.4	20.6
137223	29.9	18.8	288091	30.1	18.8	392631	30.1	20.3	218409	30.2	19.0	376769	30.3	20.7	103055	30.4	18.4
514806	29.9	19.2	321074	30.1	20.1	473562	30.1	20.4	106104	30.2	19.1	260875	30.3	20.0	459378	30.4	21.2
66493	29.9	18.9	353307	30.1	20.0	292093	30.1	18.9	200537	30.2	18.4	265935	30.3	19.5	1642	30.4	14.7
179677	29.9	20.3	179663	30.1	20.2	454034	30.1	21.8	314632	30.2	20.1	395521	30.3	20.0	245285	30.4	20.5
425569	29.9	20.1	422920	30.1	21.4	227167	30.1	18.9	97263	30.2	18.3	68121	30.3	17.7	142922	30.4	19.2
239352	29.9	19.7	33180	30.1	18.5	506810	30.1	19.3	207766	30.2	19.6	405813	30.3	20.7	523213	30.4	20.9
73990	29.9	18.2	406762	30.1	21.1	469894	30.1	19.1	129305	30.2	18.9	210027	30.3	19.8	261863	30.4	20.1
104599	29.9	19.7	353091	30.1	20.5	151897	30.1	19.7	267007	30.2	19.7	146297	30.3	19.2	162459	30.4	17.4
222390	29.9	20.1	402216	30.1	20.5	342396	30.1	20.1	481927	30.2	20.1	521617	30.3	20.7	72261	30.4	17.9
432297	29.9	18.9	63373	30.1	17.8	227974	30.1	20.8	35884	30.2	17.9	390198	30.3	18.9	55051	30.4	16.9
120231	29.9	19.2	509108	30.1	21.3	487134	30.1	20.7	84816	30.2	18.9	409745	30.3	21.0	294462	30.4	19.8
261494	29.9	20.0	408971	30.1	20.8	397936	30.1	19.6	230772	30.2	19.2	298051	30.3	19.9	220505	30.4	19.8
18578	29.9	16.7	52170	30.1	17.9	510076	30.1	21.2	380535	30.2	21.0	209093	30.3	18.5	91543	30.4	18.1
320184	29.9	20.5	81184	30.1	18.8	411993	30.1	20.6	313372	30.2	21.4	381100	30.3	20.9	408978	30.4	20.2
263737	29.9	19.5	230167	30.1	18.7</												

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

Nº	10	V															
515562	30.4	21.2	169842	30.5	19.2	305331	30.6	20.2	10068	30.6	16.7	74134	30.7	18.8	441925	30.8	21.1
330912	30.4	20.1	258783	30.5	19.2	395442	30.6	20.4	518061	30.6	20.8	292179	30.7	19.7	91793	30.8	19.0
478431	30.4	21.8	72494	30.5	18.6	516269	30.6	19.7	254435	30.6	20.3	14017	30.7	17.3	166142	30.8	20.2
155582	30.4	19.5	195062	30.5	19.9	257978	30.6	20.8	143914	30.6	19.4	188831	30.7	19.6	207427	30.8	19.9
471517	30.4	21.7	360003	30.5	18.8	521753	30.6	21.2	255089	30.6	18.9	90548	30.7	19.3	81178	30.8	19.1
46907	30.4	18.1	143758	30.5	19.0	303178	30.6	19.5	509910	30.6	21.5	362231	30.7	21.7	155103	30.8	19.3
10213	30.4	16.2	483392	30.5	19.7	74010	30.6	17.9	493597	30.6	19.9	264844	30.7	20.1	160516	30.8	17.5
204554	30.4	19.2	278094	30.5	20.1	367027	30.6	21.4	347361	30.6	19.3	448008	30.7	20.9	293309	30.8	20.7
226561	30.4	19.8	345412	30.5	20.3	120906	30.6	19.9	298423	30.6	21.1	446037	30.7	21.2	446774	30.8	20.8
130525	30.4	19.0	406311	30.5	20.2	263589	30.6	20.3	309584	30.6	19.8	478780	30.7	19.6	523061	30.8	19.4
6105	30.4	16.9	52958	30.5	17.7	226533	30.6	19.3	452768	30.6	21.7	219082	30.7	17.9	274562	30.8	20.8
454077	30.4	19.3	42168	30.5	18.6	152341	30.6	19.4	392242	30.6	20.6	298175	30.7	19.8	273958	30.8	19.9
28223	30.4	17.3	351795	30.5	19.8	515549	30.6	20.8	210598	30.6	19.3	30004	30.7	19.1	156206	30.8	18.8
90256	30.4	19.0	490601	30.5	20.3	29296	30.6	18.2	316783	30.6	18.7	359448	30.7	20.3	518844	30.8	21.1
227009	30.4	19.5	150306	30.5	19.6	294872	30.6	20.0	393781	30.6	20.3	385875	30.7	18.3	372688	30.8	21.6
26685	30.4	18.4	152856	30.5	18.8	99098	30.6	19.3	15593	30.6	17.5	92429	30.7	18.7	186815	30.8	19.4
217504	30.4	19.3	349649	30.5	19.9	423916	30.6	20.0	116048	30.6	17.4	513644	30.7	21.4	263704	30.8	19.6
178861	30.4	19.7	75771	30.5	18.8	154381	30.6	18.1	27700	30.6	14.9	514441	30.7	19.7	229654	30.8	19.9
474730	30.4	20.2	289691	30.5	19.9	874	30.6	14.9	39071	30.6	17.9	395064	30.7	20.5	177203	30.8	17.8
367728	30.4	19.5	136341	30.5	19.7	485789	30.6	21.9	266113	30.6	19.8	512315	30.7	19.1	276281	30.8	19.1
232984	30.4	19.9	433115	30.5	19.5	25422	30.6	18.5	208107	30.7	19.7	301470	30.7	19.6	300445	30.8	19.8
25468	30.4	16.5	270228	30.5	19.3	518047	30.6	20.9	443406	30.7	20.3	181949	30.7	18.0	22912	30.8	18.1
15819	30.4	16.6	113412	30.5	19.1	267914	30.6	19.7	353036	30.7	20.9	431966	30.7	20.0	334334	30.8	19.0
485936	30.4	21.8	367039	30.5	21.0	365954	30.6	20.5	408475	30.7	22.0	231450	30.7	19.7	127432	30.8	19.7
178860	30.4	19.0	132655	30.5	18.4	122174	30.6	19.4	251554	30.7	21.1	145636	30.7	18.2	204022	30.8	18.9
448592	30.4	20.7	190226	30.5	19.5	436178	30.6	20.9	398664	30.7	20.6	380372	30.7	19.0	511825	30.8	20.9
306674	30.4	18.9	488499	30.5	19.6	269453	30.6	20.2	442945	30.7	19.8	274258	30.7	21.2	23578	30.8	18.6
222022	30.4	19.8	483538	30.5	19.8	485873	30.6	21.4	82571	30.7	19.2	378562	30.7	20.2	470573	30.8	19.8
441896	30.4	21.3	434914	30.5	20.2	201100	30.6	18.6	125237	30.7	19.4	272158	30.7	20.4	515451	30.8	18.3
37908	30.4	18.8	320043	30.5	20.5	293047	30.6	19.5	276796	30.7	18.3	20318	30.7	18.3	392058	30.8	20.7
227756	30.4	20.4	346549	30.5	20.0	21337	30.6	17.4	268657	30.7	19.8	342412	30.7	19.4	218411	30.8	19.4
520389	30.4	20.1	129207	30.5	19.4	376401	30.6	21.6	46992	30.7	16.4	210066	30.7	18.7	85279	30.8	18.7
117875	30.4	18.7	48068	30.5	17.8	233320	30.6	21.6	147991	30.7	20.9	133461	30.7	19.4	288692	30.8	18.8
485897	30.4	21.0	71793	30.5	18.3	403966	30.6	20.7	361870	30.7	20.5	93799	30.7	18.5	167535	30.8	19.3
301901	30.4	20.0	85956	30.5	18.2	3641	30.6	15.3	148113	30.7	19.3	453554	30.7	19.5	396523	30.8	19.6
55655	30.4	18.3	440793	30.5	19.7	225444	30.6	19.4	61431	30.7	18.4	148643	30.7	19.5	1571	30.8	15.7
445626	30.4	19.9	481541	30.5	19.1	44676	30.6	17.4	398752	30.7	20.5	437214	30.7	19.1	351882	30.8	19.9
181709	30.4	19.9	356093	30.5	20.3	185094	30.6	19.8	457034	30.7	20.7	324250	30.7	20.3	193370	30.8	19.0
446642	30.4	20.5	54782	30.5	16.8	516121	30.6	20.9	256758	30.7	20.7	454520	30.7	20.4	122421	30.8	18.8
170492	30.4	18.8	109046	30.5	19.3	225290	30.6	19.4	68753	30.7	18.8	484025	30.7	21.6	246822	30.8	19.8
247753	30.4	18.8	287781	30.5	18.7	50441	30.6	18.8	120522	30.7	19.1	19515	30.7	16.8	216464	30.8	18.4
321138	30.4	20.2	24540	30.5	18.5	113810	30.6	18.5	29822	30.7	18.3	75811	30.7	17.6	369458	30.8	21.1
110562	30.4	19.7	92051	30.5	19.3	411203	30.6	21.1	347181	30.7	19.4	446679	30.7	21.2	424447	30.8	21.2
92345	30.4	17.7	221472	30.5	19.4	443041	30.6	19.3	429797	30.7	21.5	352357	30.7	19.5	60874	30.8	18.9
264347	30.4	19.4	401311	30.5	20.5	168408	30.6	20.3	266599	30.7	21.0	500756	30.7	20.7	268305	30.8	19.4
149853	30.4	19.0	101667	30.5	18.0	428630	30.6	21.9	129225	30.7	18.8	267956	30.7	19.8	230483	30.8	19.0
387637	30.4	19.3	342721	30.5	20.1	217339	30.6	19.0	76514	30.7	18.4	118092	30.7	18.5	113892	30.8	17.7
107839	30.4	20.3	258348	30.5	19.8	215067	30.6	20.1	398026	30.7	20.3	191262	30.7	19.5	356742	30.8	20.7
156642	30.4	19.2	433162	30.5	20.5	119834	30.6	19.4	257486	30.7	20.6	34598	30.8	18.1	239036	30.8	20.8
442705	30.4	19.7	161310	30.5	19.5	418002	30.6	20.6	305904	30.7	20.1	271530	30.8	20.7	30355	30.8	17.7
5237	30.4	16.2	16053	30.5	17.8	364542	30.6	20.5	364963	30.7	19.4	441239	30.8	20.1	115195	30.8	18.0
244763	30.4	19.2	455044	30.5	19.5	139526	30.6	18.6	12096	30.7	17.3	115520	30.8	18.0	128190	30.8	18.4
21859	30.4	17.4	116386	30.5	18.5	329747	30.6	20.3	174351	30.7	18.7	231748	30.8	19.6	2342	30.8	15.6
293847	30.4	20.0	169930	30.5	19.2	333395	30.6	19.3	314631	30.7	20.1	95221	30.8	19.6	432801	30.8	21.0
285836	30.4	20.7	140101	30.5	19.5	405307	30.6	20.2	72318	30.7	19.3	135875	30.8	19.5	332788	30.8	19.9
280281	30.4	20.2	12750	30.5	16.8	98789	30.6	18.4	292953	30.7	19.7	940248	30.8	17.2	46254	30.8	19.0
401689	30.4	19.7	365744	30.5	20.7	102856	30.6	19.2	482812	30.7	19.7	228994	30.8	17.9	174451	30.8	19.3
431792	30.4	20.4	321315	30.5	20.5	174358	30.6	18.6	298683	30.7	19.0	40108	30.8	17.7	511195	30.8	20.7
479020	30.4	20.1	209937	30.5	20.4	137188	30.6	19.7	58352	30.7	19.8	409753	30.8	21.6	3075	30.8	16.4
186769	30.4	19.3	241924	30.5	18.0	55837	30.6	17.4	97321	30.7	17.4	164605	30.8	18.4	22680	30.8	17.3
189336	30.5	19.6	166888	30.5	19.4	491547											

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

Nº	10	V															
225101	30.9	19.3	21802	30.9	17.9	121911	31.0	19.8	207181	31.1	20.3	132403	31.2	19.5	448557	31.2	20.5
229161	30.9	19.5	80798	30.9	18.4	395674	31.0	19.3	510141	31.1	19.8	319396	31.2	20.4	458001	31.2	20.4
292318	30.9	20.0	385344	30.9	20.0	400953	31.0	19.6	411983	31.1	19.4	488167	31.2	20.4	328000	31.2	20.2
480064	30.9	21.3	523309	30.9	21.0	93864	31.0	18.3	276024	31.1	20.0	423350	31.2	21.3	113776	31.2	18.6
119322	30.9	19.8	473690	30.9	20.6	444523	31.0	20.6	307534	31.1	19.1	354585	31.2	19.0	91544	31.2	19.0
391845	30.9	20.0	513907	30.9	20.3	220783	31.0	20.4	76419	31.1	18.4	154156	31.2	18.9	216165	31.2	21.1
282945	30.9	19.4	104255	30.9	19.7	215182	31.0	20.0	236716	31.1	20.2	396754	31.2	18.1	404798	31.3	21.1
201548	30.9	19.8	114483	30.9	18.0	289507	31.0	20.4	252830	31.1	19.8	375685	31.2	21.3	52581	31.3	18.6
477256	30.9	20.9	79415	30.9	19.6	47749	31.0	18.8	216204	31.1	20.4	513268	31.2	20.0	142796	31.3	19.2
435099	30.9	21.0	78847	30.9	19.1	139089	31.0	19.1	178821	31.1	20.0	200001	31.2	19.9	118864	31.3	18.7
261699	30.9	19.8	309173	30.9	19.5	185105	31.0	18.5	360921	31.1	20.5	199878	31.2	20.6	516312	31.3	20.6
20731	30.9	17.4	265230	30.9	20.0	322698	31.0	20.4	398874	31.1	20.6	175498	31.2	19.4	338458	31.3	20.4
69900	30.9	18.2	476616	30.9	19.9	261801	31.0	20.8	133922	31.1	18.9	113012	31.2	19.2	220737	31.3	20.1
451142	30.9	19.3	53815	30.9	18.3	405255	31.0	20.0	484582	31.1	20.6	285479	31.2	19.1	313154	31.3	20.3
392375	30.9	19.0	325503	30.9	19.8	189964	31.0	19.0	372060	31.1	20.6	81111	31.2	19.1	42769	31.3	19.1
475103	30.9	19.6	19269	30.9	17.7	169691	31.0	19.4	519510	31.1	20.1	378032	31.2	19.6	75961	31.3	18.2
523005	30.9	21.1	256752	30.9	20.0	489674	31.0	20.6	485977	31.1	21.9	47157	31.2	18.7	40388	31.3	18.1
139103	30.9	19.6	13694	30.9	17.5	37928	31.0	18.9	513975	31.1	21.8	224144	31.2	19.3	220118	31.3	18.2
410955	30.9	19.8	324015	30.9	20.3	505642	31.0	20.4	188564	31.1	19.0	131056	31.2	19.2	330837	31.3	19.1
90714	30.9	18.2	132594	30.9	20.0	55670	31.0	18.3	273509	31.1	19.9	66555	31.2	17.4	137566	31.3	18.9
365356	30.9	19.5	385746	30.9	20.8	304400	31.0	20.2	265522	31.1	20.5	321703	31.2	20.6	523165	31.3	20.0
263066	30.9	19.7	228976	30.9	19.2	349646	31.0	20.5	266050	31.1	20.5	96198	31.2	20.0	121656	31.3	18.2
410625	30.9	20.3	419446	30.9	20.7	448571	31.0	20.6	151428	31.1	19.9	51067	31.2	17.7	177728	31.3	20.2
53316	30.9	18.4	483465	30.9	21.0	287843	31.0	20.1	65097	31.1	19.0	274189	31.2	21.3	393587	31.3	19.1
398552	30.9	20.2	216324	30.9	20.1	121857	31.0	20.2	6264	31.1	15.6	304511	31.2	19.7	412361	31.3	20.3
496782	30.9	20.1	172422	30.9	19.6	159124	31.0	19.4	298204	31.1	18.8	28398	31.2	18.5	362307	31.3	20.0
414728	30.9	20.2	115684	30.9	18.7	39061	31.0	18.2	173031	31.1	19.6	162257	31.2	19.0	290117	31.3	19.9
17594	30.9	17.8	74188	30.9	18.7	406247	31.0	20.3	421588	31.1	20.6	124770	31.2	19.8	484165	31.3	19.7
228831	30.9	20.7	66839	30.9	18.3	154717	31.0	18.7	323244	31.1	19.9	171184	31.2	19.7	386863	31.3	20.2
479433	30.9	20.8	273543	30.9	19.5	129096	31.0	18.8	143217	31.1	18.6	133283	31.2	19.6	149694	31.3	19.8
521108	30.9	20.8	121307	30.9	18.7	350063	31.0	19.3	411094	31.1	20.3	351184	31.2	20.0	229799	31.3	20.2
176167	30.9	20.1	246351	30.9	19.9	131228	31.0	18.9	169076	31.1	19.4	85784	31.2	19.4	358173	31.3	20.6
39300	30.9	18.6	221842	30.9	19.4	296796	31.0	20.4	386439	31.1	19.7	274996	31.2	19.1	373176	31.3	20.6
350062	30.9	19.9	227029	30.9	19.6	81500	31.0	17.8	306480	31.1	19.4	516037	31.2	20.5	483100	31.3	20.2
117508	30.9	19.4	69419	30.9	19.1	319360	31.0	21.2	396915	31.1	21.1	341729	31.2	20.0	196122	31.3	19.6
442383	30.9	19.5	452109	30.9	20.5	265599	31.0	19.9	452002	31.1	20.8	117840	31.2	20.4	509420	31.3	20.7
505380	30.9	20.8	259432	30.9	18.9	47446	31.0	18.1	36248	31.1	18.0	451320	31.2	19.8	43706	31.3	18.7
244751	30.9	19.4	103513	30.9	18.4	446713	31.0	20.4	396477	31.1	20.1	111911	31.2	18.9	319333	31.3	20.7
15214	30.9	18.5	449318	30.9	20.9	273630	31.0	19.4	328904	31.1	20.8	446067	31.2	20.8	451605	31.3	20.8
276766	30.9	20.8	260672	30.9	20.7	381752	31.0	20.0	228562	31.1	18.2	239960	31.2	20.4	448560	31.3	20.4
318919	30.9	20.0	284500	30.9	21.0	229199	31.0	19.7	32509	31.1	17.7	352372	31.2	20.2	489345	31.3	20.2
374702	30.9	19.1	349820	30.9	20.1	482763	31.0	21.2	187781	31.1	18.1	280860	31.2	21.2	226413	31.3	19.5
332893	30.9	21.5	469394	30.9	19.4	215740	31.0	20.3	178185	31.1	19.6	243165	31.2	20.4	136005	31.3	19.4
364932	30.9	21.2	285930	30.9	20.2	450084	31.0	20.0	109909	31.1	18.6	84785	31.2	18.1	487301	31.3	21.2
191285	30.9	18.8	9789	30.9	17.1	465210	31.0	20.9	103499	31.1	18.4	480449	31.2	20.4	265250	31.3	19.9
283806	30.9	19.5	306010	30.9	19.5	11816	31.0	18.4	259450	31.1	20.1	91862	31.2	19.0	176684	31.3	19.0
47354	30.9	18.1	450495	30.9	20.9	60790	31.0	18.8	214528	31.1	19.8	327177	31.2	20.6	155570	31.3	20.2
48334	30.9	17.9	96993	30.9	18.3	490599	31.0	21.1	480318	31.1	19.7	485994	31.2	22.0	16542	31.3	17.2
294651	30.9	20.5	219955	30.9	19.6	273443	31.1	19.7	224181	31.1	19.2	203050	31.2	20.1	343711	31.3	19.8
407559	30.9	20.4	216223	30.9	19.3	411091	31.1	20.6	449875	31.1	20.5	457282	31.2	20.5	261832	31.3	20.2
383189	30.9	19.4	260775	30.9	20.9	179766	31.1	20.0	226407	31.1	18.3	7850	31.2	18.4	365339	31.3	19.7
329100	30.9	21.5	351096	30.9	18.2	102029	31.1	18.4	258769	31.1	20.2	19709	31.2	17.5	431220	31.3	21.0
161513	30.9	19.3	346266	30.9	21.3	5796	31.1	16.1	15086	31.1	18.1	111717	31.2	17.3	113503	31.3	19.0
320355	30.9	19.4	302726	30.9	20.2	473344	31.1	20.1	514793	31.1	22.3	8997	31.2	18.0	452112	31.3	19.9
71333	30.9	19.0	22688	30.9	18.5	260296	31.1	19.3	177558	31.1	19.6	515458	31.2	20.3	181097	31.3	19.9
515324	30.9	22.0	397655	30.9	20.4	475321	31.1	19.8	409799	31.1	21.9	492987	31.2	20.5	95005	31.3	19.0
307512	30.9	18.4	354461	30.9	20.9	43414	31.1	16.9	43771	31.1	16.9	178518	31.2	18.6	253514	31.3	19.3
490507	30.9	20.2	446108	30.9	20.7	305351	31.1	19.8	186379	31.1	19.3	424589	31.2	20.9	382735	31.3	19.8
13936	30.9	17.0	84206	30.9	17.9	175809	31.1	18.8	196880	31.1	19.8	99082	31.2	18.7	362607	31.3	19.9
96168	30.9	18.9	454602	30.9	20.3	400338	31.1	20.7	82277	31.1	18.2	273802	31.2	20.6	223957	31.3	18.4
453430	30.9	18.7	221526	30.9	20.7												

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

Nº	10	V															
285833	31.3	20.6	291652	31.4	20.3	83375	31.5	18.3	79914	31.6	18.0	168158	31.6	19.5	265459	31.7	20.0
208102	31.3	19.6	347253	31.4	21.2	226053	31.5	19.5	260002	31.6	20.7	364988	31.6	19.8	199255	31.7	21.2
153634	31.3	18.0	139818	31.4	19.3	485203	31.5	21.0	326606	31.6	20.2	353117	31.6	20.6	410952	31.7	20.2
172484	31.3	19.1	34788	31.4	18.6	156644	31.5	19.1	333278	31.6	18.8	522146	31.6	19.9	411058	31.7	20.8
441184	31.3	20.5	305866	31.4	20.4	514698	31.5	22.0	10510	31.6	17.7	81786	31.6	19.8	192434	31.7	19.6
515196	31.3	20.4	166587	31.4	19.9	358127	31.5	19.7	43554	31.6	18.4	132368	31.6	20.0	52334	31.7	17.8
107868	31.3	17.4	473613	31.4	21.2	111414	31.5	19.4	161657	31.6	19.4	193414	31.6	19.0	44197	31.7	17.4
14711	31.3	17.9	222216	31.4	18.5	94386	31.5	17.7	128231	31.6	20.1	139044	31.6	19.1	171842	31.7	20.0
261544	31.3	20.5	320248	31.4	20.5	223098	31.5	19.3	475280	31.6	19.9	509563	31.6	19.2	76917	31.7	18.3
8407	31.3	17.5	339293	31.4	19.3	349151	31.5	20.3	480649	31.6	20.8	366314	31.6	19.6	212183	31.7	19.7
49022	31.3	16.4	311788	31.4	20.4	267850	31.5	19.2	255902	31.6	20.1	25415	31.6	17.3	263207	31.7	20.7
368923	31.3	19.5	454589	31.4	21.2	241751	31.5	19.2	513306	31.6	21.2	420506	31.6	21.0	60456	31.7	18.7
324830	31.3	20.6	490566	31.4	20.1	513224	31.5	20.3	267987	31.6	21.1	291948	31.6	20.1	186658	31.7	19.6
220132	31.3	19.2	278201	31.4	21.3	242245	31.5	19.8	203231	31.6	20.9	325117	31.6	20.3	242228	31.7	18.8
210840	31.3	20.1	521445	31.4	20.8	5464	31.5	14.9	296220	31.6	20.4	217699	31.6	19.8	222401	31.7	19.7
211308	31.3	19.2	348783	31.4	20.6	400561	31.5	20.7	73083	31.6	19.4	100782	31.7	19.4	450404	31.7	20.2
423247	31.3	19.1	181607	31.4	19.8	147728	31.5	20.2	199884	31.6	18.9	164432	31.7	20.1	410832	31.7	23.4
52327	31.3	19.3	335411	31.4	20.7	43876	31.5	17.0	215181	31.6	20.6	197480	31.7	19.7	465858	31.7	20.9
342200	31.3	19.1	395539	31.4	19.4	400463	31.5	20.7	514992	31.6	21.6	439302	31.7	19.9	225348	31.7	18.6
46588	31.3	16.9	75323	31.4	18.2	374692	31.5	19.2	469460	31.6	20.8	88854	31.7	19.3	266801	31.8	19.6
307962	31.3	21.1	315079	31.4	20.4	35563	31.5	18.6	183874	31.6	20.0	452047	31.7	20.5	159808	31.8	19.5
494598	31.3	20.7	510519	31.4	20.8	127414	31.5	18.9	121762	31.6	19.7	180845	31.7	18.6	362330	31.8	20.9
348721	31.3	20.3	270770	31.4	18.7	451155	31.5	20.8	355072	31.6	20.6	326809	31.7	20.1	83329	31.8	19.0
274680	31.3	20.5	262473	31.4	20.5	421695	31.5	20.6	107793	31.6	19.1	128968	31.7	18.6	35863	31.8	17.7
160331	31.3	19.7	181799	31.4	18.9	426085	31.5	21.6	441931	31.6	20.5	229623	31.7	19.8	86181	31.8	18.1
469818	31.3	20.5	510060	31.4	21.9	25641	31.5	16.9	482717	31.6	21.9	152817	31.7	20.1	73179	31.8	19.5
455401	31.3	20.4	147079	31.4	18.5	228009	31.5	19.4	189086	31.6	19.9	116119	31.7	18.0	481714	31.8	20.8
67143	31.3	16.3	218103	31.4	21.1	45629	31.5	17.5	380771	31.6	19.6	239417	31.7	18.1	331470	31.8	19.6
327532	31.3	20.1	398805	31.4	20.6	489962	31.5	21.0	274175	31.6	20.3	443215	31.7	20.5	434314	31.8	21.4
325534	31.3	20.7	12819	31.4	17.3	39497	31.5	19.4	12056	31.6	17.3	244757	31.7	19.2	70550	31.8	18.8
474530	31.3	19.8	324928	31.4	20.0	267967	31.5	19.7	253602	31.6	19.4	503317	31.7	20.5	70939	31.8	18.7
378215	31.3	20.3	20774	31.4	17.3	329333	31.5	19.9	366058	31.6	20.4	16626	31.7	17.6	4853	31.8	16.7
250664	31.3	20.3	106936	31.4	19.3	20104	31.5	18.4	286908	31.6	18.8	97601	31.7	19.0	493873	31.8	20.5
513955	31.3	22.1	412767	31.4	20.3	476981	31.5	19.4	450747	31.6	21.0	449208	31.7	21.3	516724	31.8	20.9
292852	31.3	20.1	408001	31.4	20.8	51513	31.5	17.7	333063	31.6	20.5	149138	31.7	20.5	482882	31.8	20.8
480524	31.3	21.1	487265	31.4	20.0	284779	31.5	20.2	217151	31.6	20.6	49411	31.7	18.5	435762	31.8	20.6
292824	31.3	19.9	227158	31.4	18.8	481658	31.5	20.6	67465	31.6	19.4	407942	31.7	20.5	266722	31.8	19.0
348371	31.3	20.3	90173	31.4	18.6	161948	31.5	20.2	487769	31.6	20.7	463039	31.7	20.8	159359	31.8	19.2
327554	31.3	20.3	67469	31.4	17.9	487427	31.5	19.8	219212	31.6	20.5	515815	31.7	20.4	45677	31.8	18.8
444939	31.3	20.7	471084	31.4	20.0	510150	31.5	20.4	278110	31.6	21.5	323700	31.7	20.6	126690	31.8	19.4
163326	31.3	19.0	100557	31.4	19.6	145622	31.5	19.3	487274	31.6	21.2	320124	31.7	19.5	294386	31.8	20.2
447408	31.3	20.0	548339	31.4	16.8	485308	31.5	21.2	295447	31.6	20.6	234694	31.7	18.7	423288	31.8	20.9
255060	31.3	19.7	308977	31.4	19.7	286102	31.5	19.6	102861	31.6	19.0	225473	31.7	20.3	291534	31.8	20.1
453536	31.4	20.4	238881	31.4	20.2	78988	31.5	18.0	47289	31.6	18.9	225763	31.7	18.7	31873	31.8	19.2
280885	31.4	19.9	210285	31.4	20.2	378596	31.5	20.2	356076	31.6	20.7	301448	31.7	20.3	473358	31.8	20.2
164053	31.4	19.1	350575	31.4	20.2	54541	31.5	18.2	434229	31.6	19.2	72321	31.7	18.3	209757	31.8	19.7
387740	31.4	20.2	266184	31.5	19.2	97464	31.5	19.5	161715	31.6	19.8	5468	31.7	17.4	327062	31.8	19.7
224267	31.4	19.4	9860	31.5	17.8	361420	31.5	20.5	220772	31.6	19.0	139693	31.7	19.2	114863	31.8	18.0
343230	31.4	19.3	101332	31.5	18.7	154142	31.5	20.7	134133	31.6	19.0	509303	31.7	19.7	20646	31.8	18.8
441088	31.4	20.3	69974	31.5	18.8	39238	31.5	19.0	129002	31.6	19.4	432316	31.7	20.7	268804	31.8	20.2
155093	31.4	20.9	160158	31.5	19.3	506083	31.5	20.5	162123	31.6	19.6	422212	31.7	20.9	316833	31.8	20.6
265842	31.4	19.9	378555	31.5	20.1	174697	31.5	19.3	448366	31.6	20.6	236517	31.7	19.8	504501	31.8	19.6
490525	31.4	19.1	100048	31.5	17.9	330223	31.5	20.9	12939	31.6	17.3	451630	31.7	20.1	20938	31.8	18.9
323650	31.4	19.8	388593	31.5	19.4	173125	31.5	20.1	136024	31.6	18.3	156661	31.7	19.9	155558	31.8	19.7
228051	31.4	19.7	151429	31.5	19.2	266167	31.5	19.4	459321	31.6	19.9	219932	31.7	18.9	276208	31.8	20.4
423026	31.4	21.1	369663	31.5	19.9	44208	31.5	18.2	6453	31.6	16.2	516767	31.7	20.6	398206	31.8	19.9
484036	31.4	21.5	108460	31.5	18.7	402190	31.5	20.4	219184	31.6	18.5	203982	31.7	19.2	156851	31.8	20.6
10115	31.4	17.9	93802	31.5	18.4	210288	31.5	19.9	499921	31.6	19.4	398657	31.7	19.8	226261	31.8	19.8
479413	31.4	20.8	344217	31.5	19.3	66098	31.5	18.2	454061	31.6	21.5	471115	31.7	19.2	383076	31.8	20.7
289630	31.4	20.8	226316	31.5	19.6	235148	31.5	19.9	405254	31.6	19.6	281739	31.7	20.2	469835	31.8	19.4
260267	31.4	20.1	22991	31.5	17.2												

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

Nº	10	V															
362318	31.8	20.0	144137	31.8	19.6	77558	31.9	19.1	293256	31.9	20.7	424426	31.9	20.8	184871	31.9	19.7
316360	31.8	19.2	367920	31.8	20.5	378138	31.9	19.8	196947	31.9	19.0	391993	31.9	20.7	100573	31.9	19.6
128022	31.8	18.7	492888	31.8	20.6	402124	31.9	21.0	235180	31.9	19.5	26555	31.9	17.8	446091	31.9	20.7
455646	31.8	20.7	76571	31.8	18.7	144364	31.9	19.1	434879	31.9	20.0	14186	31.9	17.5	469795	31.9	20.1
517074	31.8	20.8	190174	31.9	20.1	358846	31.9	20.8	288960	31.9	19.6	466587	31.9	20.8	319311	31.9	20.9
200551	31.8	19.7	477792	31.9	21.2	379497	31.9	20.6	132874	31.9	18.6	266925	31.9	20.2	75789	31.9	19.0
485870	31.8	21.8	82467	31.9	18.2	97130	31.9	19.6	202210	31.9	18.4	95681	31.9	19.1	405331	31.9	19.1
46086	31.8	19.0	328816	31.9	19.7	20595	31.9	18.2	513338	31.9	21.5	307906	31.9	20.5	224118	31.9	20.6
461283	31.8	20.4	26528	31.9	18.0	441228	31.9	18.7	175035	31.9	19.4	419882	31.9	20.0	442850	31.9	20.6
84210	31.8	17.9	511954	31.9	21.4	430720	31.9	22.0	389966	31.9	19.9	147249	31.9	19.6	339323	31.9	18.9
335786	31.8	20.6	18455	31.9	18.5	40410	31.9	18.5	313010	31.9	19.2	121254	31.9	19.4	450548	31.9	21.4
83685	31.8	19.0	447614	31.9	20.0	46417	31.9	20.0	351152	31.9	18.7	158141	31.9	19.5	321758	31.9	19.0
232054	31.8	19.6	95196	31.9	19.4	515811	31.9	20.0	175072	31.9	20.5	380929	31.9	16.8	177039	31.9	21.0
438558	31.8	20.8	128230	31.9	18.8	164499	31.9	20.3	36231	31.9	17.8	261654	31.9	20.4	446767	31.9	21.1
479557	31.8	20.6	75559	31.9	18.7	302671	31.9	18.9	483566	31.9	22.9	81716	31.9	18.1	144981	31.9	19.7
293862	31.8	20.0	132653	31.9	18.9	518252	31.9	20.5	65940	31.9	19.4	367963	31.9	21.7	424374	31.9	19.0
284243	31.8	21.1	369250	31.9	21.4	115271	31.9	19.2	27811	31.9	17.0	149586	31.9	19.9	383566	31.9	19.4
316864	31.8	18.8	260408	31.9	19.1	287744	31.9	20.3	71272	31.9	19.1	418529	31.9	20.5	50612	31.9	18.4
452033	31.8	19.9	173521	31.9	17.7	222460	31.9	19.0	391955	31.9	19.7	73404	31.9	19.2	385776	31.9	21.4
90133	31.8	19.3	251098	31.9	20.2	370299	31.9	19.7	114382	31.9	18.4	33258	31.9	18.6	77195	31.9	19.9
209233	31.8	19.4	2611	31.9	16.9	75574	31.9	18.8	298590	31.9	19.1	308806	31.9	18.9	358151	31.9	19.8
300364	31.8	21.4	407191	31.9	19.5	143650	31.9	18.1	403468	31.9	19.9	487353	31.9	20.6	63894	31.9	18.2
399627	31.8	19.8	223118	31.9	18.6	126672	31.9	19.8	511012	31.9	20.2	478434	31.9	20.9	325717	31.9	20.0
454910	31.8	20.6	477819	31.9	21.7	163263	31.9	19.3	388046	31.9	20.0	100319	31.9	19.1	118675	31.9	19.0
407229	31.8	19.9	328726	31.9	19.5	316014	31.9	20.7	404587	31.9	20.5	36485	31.9	17.6	356936	31.9	20.1
405882	31.8	20.7	11349	31.9	17.9	138154	31.9	19.9	509921	31.9	22.3	111043	31.9	19.2	229761	31.9	20.2
432340	31.8	19.7	352952	31.9	20.8	392303	31.9	21.2	47534	31.9	18.5	197126	31.9	20.0	476977	31.9	20.6
422179	31.8	19.6	216351	31.9	19.9	458381	31.9	20.1	376562	31.9	21.2	94087	31.9	18.9	42153	31.9	18.2
54996	31.8	17.9	270176	31.9	19.5	264315	31.9	19.0	76397	31.9	18.6	520460	31.9	21.4	440878	31.9	19.7
12445	31.8	17.0	277824	31.9	20.3	224730	31.9	19.4	446766	31.9	20.3	160974	31.9	20.4	241999	31.9	20.4
77377	31.8	18.9	2843	31.9	16.0	138021	31.9	17.3	177159	31.9	18.3	183858	31.9	20.3			
475392	31.8	21.0	178052	31.9	18.4	54363	31.9	19.1	477438	31.9	20.1	296468	31.9	19.6			
271961	31.8	20.6	224710	31.9	20.1	484248	31.9	22.1	108398	31.9	20.3	170601	31.9	19.7			
172091	31.8	19.9	345805	31.9	19.8	185166	31.9	20.1	378120	31.9	20.6	179839	31.9	19.6			
426702	31.8	20.4	511654	31.9	21.4	175721	31.9	20.4	333031	31.9	20.6	511553	31.9	23.3			