

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
497801	1.0	21.0	269283	1.1	19.7	173372	1.1	19.5	56010	1.2	18.8	408232	1.3	20.0	459215	1.3	22.4
263968	1.0	20.6	412637	1.1	21.7	531744	1.1	22.5	322711	1.2	18.8	226055	1.3	20.0	450099	1.3	21.3
125048	1.0	19.8	501255	1.1	20.6	198693	1.1	20.0	179929	1.2	20.7	127074	1.3	19.4	397445	1.3	20.1
231629	1.0	19.6	450351	1.1	20.7	65098	1.1	18.6	219739	1.2	20.3	77890	1.3	18.7	422569	1.3	20.3
534103	1.0	21.7	81782	1.1	17.4	539603	1.1	22.3	460054	1.2	20.1	49324	1.3	18.5	344093	1.3	18.4
543341	1.0	20.1	186176	1.1	20.1	146623	1.1	19.3	303526	1.2	20.3	371048	1.3	19.3	258564	1.3	19.4
364733	1.0	21.3	419699	1.1	21.2	240733	1.1	19.8	406195	1.2	20.3	110164	1.3	19.6	402562	1.3	21.5
133642	1.0	18.6	426785	1.1	20.2	461515	1.1	21.8	229126	1.2	19.5	324573	1.3	20.9	98507	1.3	19.6
402886	1.0	20.3	65071	1.1	18.8	435295	1.1	21.0	359980	1.2	20.4	360797	1.3	18.8	95510	1.3	19.8
525309	1.0	20.8	139870	1.1	18.6	421500	1.1	21.2	51023	1.2	19.4	328987	1.3	21.0	274810	1.3	22.5
372637	1.0	20.6	410052	1.1	21.5	60505	1.1	19.2	83792	1.2	19.2	438390	1.3	21.1	211456	1.3	20.2
325917	1.0	19.8	174921	1.1	19.7	64164	1.1	19.0	274593	1.2	19.4	170688	1.3	19.2	372677	1.3	20.4
449157	1.0	20.8	243716	1.1	19.8	326451	1.2	20.1	536896	1.2	21.3	388718	1.3	21.2	454502	1.3	21.2
272949	1.0	20.3	469019	1.1	19.8	86453	1.2	19.0	543372	1.2	21.2	61207	1.3	17.5	402894	1.3	20.9
533839	1.0	20.8	455426	1.1	25.0	326017	1.2	21.2	180465	1.2	19.4	184975	1.3	20.0	370788	1.3	20.5
125772	1.0	19.5	399919	1.1	19.3	537871	1.2	20.4	39553	1.2	18.3	464135	1.3	21.0	106006	1.3	19.5
385652	1.0	20.2	500680	1.1	21.3	364656	1.2	21.3	322858	1.2	20.7	113721	1.3	18.6	300221	1.3	20.9
122973	1.0	19.8	281789	1.1	20.7	325868	1.2	21.3	204345	1.2	20.0	369690	1.3	20.2	47922	1.3	18.3
209679	1.0	20.7	540302	1.1	21.1	322392	1.2	19.6	80115	1.2	19.1	292652	1.3	19.6	498803	1.4	20.9
21827	1.0	17.9	242404	1.1	19.0	124188	1.2	18.9	433600	1.2	20.4	419061	1.3	20.7	522573	1.4	20.5
103576	1.0	19.0	1291	1.1	14.5	364440	1.2	19.7	476632	1.2	22.4	217068	1.3	20.4	500492	1.4	21.6
228391	1.0	20.1	461286	1.1	21.0	494889	1.2	22.5	29883	1.2	17.7	325069	1.3	19.8	52225	1.4	17.5
60912	1.0	17.7	372418	1.1	21.0	542376	1.2	21.5	298954	1.2	21.2	448304	1.3	20.9	414889	1.4	19.6
153172	1.0	19.5	19020	1.1	17.3	208673	1.2	19.5	294970	1.2	20.1	342959	1.3	20.6	271896	1.4	20.6
478370	1.0	20.8	344005	1.1	20.9	348312	1.2	20.4	90990	1.2	19.4	52337	1.3	18.3	63564	1.4	19.5
409239	1.0	20.1	277188	1.1	19.8	58172	1.2	19.5	411990	1.2	20.2	450987	1.3	20.1	409881	1.4	20.6
527321	1.0	20.2	159182	1.1	20.0	203359	1.2	20.1	20481	1.2	17.4	380084	1.3	20.3	378353	1.4	19.7
245632	1.0	20.9	184040	1.1	20.4	349352	1.2	20.6	366292	1.2	19.3	193090	1.3	18.9	455847	1.4	21.7
37450	1.0	19.3	234937	1.1	19.3	348632	1.2	21.3	48417	1.2	19.0	413893	1.3	21.0	131299	1.4	18.5
155995	1.0	18.9	360765	1.1	19.5	500359	1.2	21.3	394401	1.2	21.3	37132	1.3	18.0	495675	1.4	21.0
542355	1.0	20.5	381562	1.1	21.5	417797	1.2	20.9	124348	1.2	19.4	420726	1.3	21.2	157497	1.4	21.2
528824	1.0	21.6	94582	1.1	19.9	131963	1.2	19.6	387191	1.2	21.9	3177	1.3	16.3	378943	1.4	20.7
455578	1.0	20.8	310957	1.1	21.4	199515	1.2	20.5	215095	1.2	18.9	258288	1.3	19.9	465949	1.4	20.7
118669	1.0	18.6	524273	1.1	21.8	543896	1.2	22.4	274315	1.2	19.8	288590	1.3	19.2	245483	1.4	19.6
268458	1.0	20.8	340744	1.1	20.1	343062	1.2	20.4	429211	1.2	20.7	142414	1.3	20.4	259200	1.4	20.4
181245	1.0	19.5	384917	1.1	19.7	349120	1.2	20.8	200417	1.2	20.4	432146	1.3	20.8	11625	1.4	18.2
64896	1.0	19.0	30955	1.1	18.4	129400	1.2	20.5	448196	1.2	20.9	389695	1.3	21.1	158987	1.4	20.0
95016	1.0	19.7	348835	1.1	20.4	119854	1.2	19.5	206613	1.2	21.8	318239	1.3	20.4	31421	1.4	17.0
348585	1.0	20.3	275245	1.1	21.5	328597	1.2	20.1	196367	1.2	19.0	251499	1.3	21.1	254819	1.4	20.1
534447	1.0	21.7	231786	1.1	20.9	81936	1.2	18.4	471056	1.2	21.3	504452	1.3	21.5	529081	1.4	20.7
226884	1.0	19.3	133766	1.1	19.4	114529	1.2	17.8	446946	1.2	20.2	317495	1.3	19.5	7803	1.4	17.2
304471	1.0	20.2	29749	1.1	18.2	301271	1.2	21.4	382327	1.2	20.6	929	1.3	13.5	30913	1.4	18.9
168040	1.0	20.1	369855	1.1	20.4	498707	1.2	21.7	154796	1.2	19.9	371267	1.3	21.2	33346	1.4	17.7
489265	1.0	20.5	309330	1.1	20.1	414977	1.2	21.6	237644	1.2	19.9	341742	1.3	20.0	281859	1.4	20.6
410633	1.0	20.4	136361	1.1	19.4	135391	1.2	19.4	490184	1.2	19.5	404766	1.3	20.4	86147	1.4	19.3
319710	1.0	20.4	299005	1.1	20.7	105553	1.2	17.6	408327	1.2	20.1	103088	1.3	19.4	498117	1.4	21.8
261123	1.0	20.6	2769	1.1	16.6	17247	1.2	17.3	222259	1.3	20.4	354553	1.3	20.8	390809	1.4	20.7
375049	1.0	20.8	248186	1.1	19.9	298843	1.2	20.0	337045	1.3	20.9	324029	1.3	20.3	300225	1.4	20.2
386150	1.0	21.9	41079	1.1	18.0	330466	1.2	20.6	358671	1.3	19.9	57744	1.3	19.1	531652	1.4	22.4
20744	1.0	17.6	496939	1.1	20.7	85169	1.2	20.2	371693	1.3	20.3	417996	1.3	20.9	337673	1.4	20.5
233556	1.0	18.3	459492	1.1	21.0	513633	1.2	20.9	418376	1.3	20.9	3111	1.3	16.7	340817	1.4	20.6
95118	1.0	19.5	113277	1.1	18.2	265579	1.2	21.0	18072	1.3	21.2	515155	1.3	20.5	320843	1.4	19.5
358625	1.0	19.8	489556	1.1	21.1	96831	1.2	18.3	126058	1.3	19.8	208508	1.3	20.0	54514	1.4	19.6
497850	1.0	21.6	245377	1.1	20.4	372481	1.2	21.1	419558	1.3	18.9	166618	1.3	20.0	246692	1.4	20.3
140515	1.0	19.7	354854	1.1	20.8	465689	1.2	21.2	233196	1.3	19.1	247053	1.3	19.2	76188	1.4	18.8
248857	1.0	19.6	404457	1.1	20.0	451018	1.2	21.1	244100	1.3	20.2	347098	1.3	19.7	256201	1.4	20.5
439772	1.0	19.6	24961	1.1	17.6	543718	1.2	21.5	80537	1.3	19.2	55215	1.3	18.5	251314	1.4	20.1
40798	1.0	18.6	186124	1.1	20.2	237092	1.2	20.7	92479	1.3	18.2	151015	1.3	20.0	337822	1.4	20.0
263299	1.0	19.2	452374	1.1	21.3	519845	1.2	19.8	140922	1.3	19.7	60855	1.3	18.7	535840	1.4	20.9
93992	1.0	19.8	531261	1.1	19.8	419206	1.2	20.4	384126	1.3	20.7	288681	1.3	19.4	253909	1.4	20.1
192536	1.0	20.6	287174	1.1	20.7	62081	1.2	18.9	366242	1.3	20.4	489341	1.3	20.8	339541	1.4	20.2
267486	1.0	19.7	145608	1.1	19.8	371221	1.2	21.7	68044	1.3	18.7	189067	1.3	18.4	2893	1.4	15.6
223211	1.0	20.9	15568	1.1	18.0	343128	1.2	20.4	403837	1.3	20.0	467765	1.3	21.6	387210	1.4	20.6
500670	1.1	20.8	410017	1.1	20.6	338236	1.2	20.5	212619	1.3	19.5	297441	1.3	20.9	347007	1.4	20.6
213465	1.1	19.6	533034	1.1	21.7	338978	1.2	19.7	344827	1.3	18.7	210444	1.3	20.1	56231	1.4	18.0
543894	1.1	21.4	431499	1.1	21.5	433755	1.2	20.7	80083	1.3	18.7	93388	1.3	18.9	176668	1.4	19.8
469987	1.1	21.1	142748	1.1	19.3	61616	1.2	19.4	417234	1.3	22.3	369303	1.3	21.2	453335	1.4	21.6
540038	1.1	20.1	311072	1.1	20.5	67372	1.2	19.3	56354	1.3	18.4	336534	1.3	21.9	512370	1.4	20.8
22627	1.1	16.7	286216	1.1	20.4	491617	1.2	21.5	394804	1.3	20.9	218784	1.3	19.6	52848	1.4	18.2
259318	1.1	20.7	293941	1.1	19.9	183382	1.2	20.5	161769	1.3	19.9	287304	1.3	20.9	378346	1.4	19.6
540610	1.1	21.9	428728	1.1	21.5	453253	1.2	20.5	240483	1.3	19.2	310444	1.3	21.1</			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
93357	1.4	19.7	157482	1.5	19.9	415805	1.6	19.1	321984	1.6	19.4	418599	1.7	19.7	367461	1.8	20.2
41108	1.4	18.2	346185	1.5	20.6	428704	1.6	21.5	109354	1.6	20.3	501948	1.7	20.0	138130	1.8	18.7
473525	1.4	19.6	251275	1.5	19.9	306341	1.6	21.5	522758	1.6	19.9	430816	1.7	20.6	347126	1.8	20.5
266961	1.4	20.3	528905	1.5	22.2	517595	1.6	21.1	232979	1.6	19.9	504435	1.7	21.5	19124	1.8	18.8
471496	1.4	19.5	148741	1.5	19.4	364612	1.6	20.3	140835	1.6	20.2	151091	1.7	19.5	213799	1.8	19.5
395952	1.4	19.4	384194	1.5	20.8	286353	1.6	20.3	34614	1.6	17.4	454043	1.7	19.8	91541	1.8	18.3
497818	1.4	22.3	419238	1.5	21.2	226891	1.6	20.2	277368	1.6	19.6	407699	1.7	21.1	306652	1.8	19.4
506395	1.4	20.7	36925	1.5	18.1	382721	1.6	21.2	525706	1.6	20.4	102433	1.7	19.3	464691	1.8	21.7
142645	1.4	19.6	157343	1.5	19.9	464953	1.6	21.9	492637	1.6	21.5	417293	1.7	20.8	366444	1.8	20.5
144687	1.4	19.0	366835	1.5	19.1	31277	1.6	18.0	206208	1.6	20.9	346856	1.7	21.1	184094	1.8	19.3
366950	1.4	21.3	341023	1.5	20.5	138703	1.6	19.7	337755	1.6	21.1	233083	1.7	20.4	62306	1.8	18.7
415201	1.4	20.8	229981	1.5	20.9	72433	1.6	19.7	505964	1.6	20.2	441827	1.7	21.5	288542	1.8	19.8
425667	1.4	21.1	386951	1.5	19.8	288930	1.6	20.1	182933	1.6	22.3	131783	1.7	18.4	227545	1.8	19.8
524332	1.4	20.3	246794	1.5	19.2	284115	1.6	21.5	94842	1.6	17.5	421306	1.7	19.7	253352	1.8	19.7
59841	1.4	19.4	88144	1.5	19.5	300083	1.6	20.5	33117	1.6	18.9	112480	1.7	19.2	464925	1.8	22.0
151960	1.4	19.6	34746	1.5	16.7	231326	1.6	20.5	481536	1.6	20.7	506030	1.7	20.6	476702	1.8	22.2
543486	1.4	20.9	341634	1.5	20.6	535904	1.6	21.7	337196	1.6	20.0	302521	1.7	19.7	498932	1.8	18.9
368219	1.4	19.5	229186	1.5	20.2	473131	1.6	20.8	258898	1.6	19.3	101856	1.7	18.2	269244	1.8	19.7
320612	1.4	19.7	365864	1.5	21.5	543399	1.6	21.2	322831	1.6	20.3	250955	1.7	20.2	515161	1.8	20.8
453342	1.4	21.3	384180	1.5	19.9	67172	1.6	19.1	529506	1.6	20.9	58792	1.7	18.1	31436	1.8	17.6
505290	1.4	21.7	94969	1.5	19.6	151838	1.6	19.3	171960	1.6	20.9	540154	1.7	20.9	524861	1.8	20.9
498962	1.4	21.0	178187	1.5	19.5	467055	1.6	20.2	364067	1.6	19.8	385946	1.7	21.1	460827	1.8	20.0
348813	1.4	20.2	528877	1.5	21.1	473712	1.6	21.1	122585	1.6	19.7	217082	1.7	20.4	114913	1.8	18.9
310117	1.4	20.3	54786	1.5	17.9	194845	1.6	19.4	2539	1.6	17.8	11096	1.7	18.2	60166	1.8	19.0
30907	1.4	18.7	39053	1.5	19.4	230506	1.6	19.7	126341	1.7	18.9	57838	1.7	19.2	534330	1.8	20.7
332141	1.4	19.4	99323	1.5	19.5	19968	1.6	17.2	170815	1.7	19.6	239742	1.7	18.9	504828	1.8	21.3
370767	1.4	21.0	543608	1.5	21.3	16021	1.6	17.5	207007	1.7	21.4	100452	1.7	19.4	529157	1.8	21.8
302026	1.4	19.0	502622	1.5	21.3	218257	1.6	19.4	118040	1.7	19.1	543703	1.7	21.1	417510	1.8	20.8
87705	1.4	19.5	514542	1.5	20.9	526706	1.6	22.0	102018	1.7	18.6	471185	1.7	18.7	26604	1.8	18.5
243656	1.4	19.1	236735	1.5	20.6	24085	1.6	17.5	348588	1.7	20.3	111680	1.7	18.2	192588	1.8	20.5
19389	1.4	17.6	52450	1.5	19.7	4731	1.6	19.5	31274	1.7	18.4	19339	1.7	17.8	460377	1.8	21.7
535307	1.4	20.2	485072	1.5	19.6	211902	1.6	19.6	253054	1.7	21.7	353315	1.7	19.7	517558	1.8	22.2
138114	1.4	20.5	190820	1.5	20.4	533999	1.6	20.8	237738	1.7	19.0	55431	1.7	18.7	453297	1.8	22.4
416225	1.4	20.6	264671	1.5	20.4	85449	1.6	18.6	290973	1.7	20.7	343056	1.7	20.6	27580	1.8	19.1
30719	1.4	19.4	426890	1.5	19.7	348409	1.6	19.8	310965	1.7	20.4	445292	1.7	21.6	162641	1.8	20.5
127048	1.4	19.5	266386	1.5	20.8	296330	1.6	20.0	333452	1.7	19.9	324527	1.7	21.6	251748	1.8	20.7
305356	1.4	21.8	490042	1.5	21.0	317601	1.6	20.1	341769	1.7	21.0	503665	1.7	20.2	433678	1.8	21.2
489546	1.4	22.1	122853	1.5	19.6	491876	1.6	21.1	491640	1.7	22.8	526207	1.7	21.0	447430	1.8	20.6
403850	1.4	21.2	377823	1.5	20.4	428934	1.6	20.6	76126	1.7	18.3	326428	1.7	20.8	204894	1.8	20.8
62240	1.4	18.2	394365	1.5	20.4	170085	1.6	19.9	413693	1.7	22.0	210942	1.7	20.5	516534	1.8	20.6
339489	1.4	19.8	268469	1.5	19.6	372520	1.6	20.2	262773	1.7	19.7	30540	1.7	18.3	514091	1.8	20.7
161584	1.4	18.0	142878	1.5	20.0	455181	1.6	20.1	315518	1.7	20.7	325092	1.7	20.5	150967	1.8	18.9
254041	1.4	20.7	153655	1.5	20.8	350380	1.6	19.7	368275	1.7	21.2	384146	1.7	20.7	7795	1.8	17.9
192182	1.4	18.4	524639	1.5	22.0	173963	1.6	20.4	267	1.7	13.4	154030	1.7	19.4	526692	1.8	22.0
397817	1.4	21.0	185199	1.5	20.4	371917	1.6	19.0	98305	1.7	18.5	543725	1.7	19.8	349374	1.8	20.6
101665	1.4	19.3	106392	1.5	19.2	87403	1.6	18.4	327913	1.7	21.3	366418	1.7	20.9	326201	1.8	20.2
11620	1.4	16.5	315412	1.5	20.1	445898	1.6	21.2	65592	1.7	18.9	69013	1.7	19.0	317728	1.8	20.3
424982	1.4	20.1	323886	1.5	19.0	501705	1.6	20.9	519576	1.7	21.8	70661	1.7	18.4	159657	1.8	18.2
62159	1.4	19.0	42436	1.5	18.2	87675	1.6	18.5	303149	1.7	20.5	195506	1.7	18.6	93668	1.8	18.0
47733	1.4	18.5	409960	1.5	22.2	375306	1.6	20.5	368751	1.7	19.8	206339	1.8	19.3	23987	1.8	18.6
145980	1.4	18.3	278093	1.5	21.1	61617	1.6	19.2	504233	1.7	22.1	496413	1.8	21.2	427810	1.8	20.9
466839	1.4	20.0	432037	1.5	18.3	376706	1.6	21.3	100380	1.7	19.2	524930	1.8	20.9	421365	1.8	21.2
422456	1.4	21.4	334552	1.5	20.6	211853	1.6	18.8	348670	1.7	21.0	413958	1.8	21.1	388284	1.8	22.6
7325	1.4	17.3	129974	1.5	19.7	500540	1.6	23.1	510567	1.7	20.4	527145	1.8	20.4	221237	1.8	20.0
377440	1.4	20.5	2491	1.5	16.0	544519	1.6	21.6	487576	1.7	21.2	245918	1.8	20.1	245484	1.8	19.7
157734	1.4	18.5	207643	1.5	19.6	444745	1.6	21.0	438623	1.7	20.9	355764	1.8	20.9	297810	1.8	20.1
101827	1.4	18.7	460073	1.5	19.9	527681	1.6	21.1	156250	1.7	21.1	85814	1.8	17.4	242822	1.8	19.2
296165	1.4	19.7	258448	1.5	19.3	269767	1.6	20.5	264693	1.7	19.7	31330	1.8	19.1	6207	1.8	18.1
415749	1.4	18.8	333095	1.5	19.0	88486	1.6	18.3	542513	1.7	20.4	178268	1.8	20.0	110565	1.8	18.9
229626	1.4	19.9	437969	1.5	20.7	450198	1.6	21.2	271181	1.7	19.4	121082	1.8	19.7	218763	1.8	19.1
176500	1.4	20.7	305734	1.5	20.7	456589	1.6	19.7	383804	1.7	22.0	314772	1.8	20.5	253285	1.8	20.7
170113	1.4	19.8	356558	1.5	20.8	422791	1.6	22.7	106356	1.7	20.6	191799	1.8	19.7	531332	1.8	21.6
498601	1.4	21.5	187624	1.5	20.2	544615	1.6	22.3	30490	1.7	17.1	408926	1.8	21.6	506729	1.8	22.2
233103	1.4	20.6	140252	1.5	20.2	92876	1.6	17.6	194469	1.7	20.2	156098	1.8	20.4	205797	1.8	20.5
503353	1.4	19.8	497254	1.5	21.3	204180	1.6	19.9	200578	1.7	20.7	534861	1.8	20.4	529995	1.8	21.0
189611	1.4	20.1	406143	1.5	22.4	542548	1.6	20.2	83877	1.7	20.6	192001	1.8	19.8	185406	1.8	19.4
145367	1.4	20.4	442624	1.5	21.1	206680	1.6	19.9	226768	1.7	20.2	297848	1.8	20.4	208972	1.8	18.8
209479	1.5	17.9	297921	1.5	20.7	459288	1.6	19.7	14439	1.7	18.2	401994	1.8	21.9	297443	1.8	19.8
434001	1.5	20.2	373429	1.5	20.8	400261	1.6	22.0	183336	1.7	20.3	81888	1.8	18.5	155789	1.8	19.1
217087	1.5	19.9	291237	1.5	19.3	497123	1.6	19.4	387285	1.7	20.8	533724	1.8	20.9	540561	1.8	20.8
197686	1.5	19.6	165211	1.5	19.4	102085	1.6	18.4	280871	1.7	19.9	126968	1.8				

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
110061	1.8	19.3	298969	1.9	21.4	306410	1.9	21.0	41937	2.0	18.7	179732	2.1	19.6	258151	2.1	21.8
152059	1.8	19.4	253264	1.9	19.8	162599	1.9	19.4	323860	2.0	20.5	306248	2.1	20.5	495387	2.1	21.0
111417	1.8	19.4	243427	1.9	19.9	337049	1.9	22.3	520965	2.0	21.2	467118	2.1	21.4	355785	2.1	21.3
498812	1.8	21.2	143033	1.9	19.6	445119	1.9	22.1	538521	2.0	21.3	412254	2.1	21.2	66738	2.1	18.8
310384	1.8	20.7	535295	1.9	21.0	181637	1.9	21.0	298777	2.0	19.7	385308	2.1	20.8	469006	2.1	20.8
499274	1.8	21.2	314837	1.9	20.0	320412	1.9	20.9	246363	2.0	20.6	459330	2.1	19.5	224279	2.2	19.4
509925	1.8	19.9	350620	1.9	21.7	355815	1.9	22.0	295129	2.0	19.9	257583	2.1	20.0	92289	2.2	18.0
434146	1.8	20.5	497946	1.9	21.4	327280	1.9	20.2	124812	2.0	20.7	294221	2.1	19.8	92782	2.2	19.1
87987	1.8	18.9	128491	1.9	20.3	110587	1.9	18.4	52473	2.0	19.7	161146	2.1	19.7	33083	2.2	19.3
506641	1.8	21.7	9007	1.9	17.6	83184	1.9	18.8	500583	2.0	22.1	86544	2.1	18.4	153926	2.2	20.0
201981	1.9	19.7	464970	1.9	21.3	538208	1.9	20.1	317584	2.0	21.0	208568	2.1	20.5	182461	2.2	20.2
135263	1.9	19.3	31867	1.9	16.3	102945	1.9	18.0	244185	2.0	20.0	326731	2.1	20.2	135079	2.2	19.5
296401	1.9	19.9	385454	1.9	20.4	86908	1.9	19.1	531476	2.0	21.2	23773	2.1	17.3	150822	2.2	19.0
384518	1.9	20.4	354140	1.9	20.5	486081	1.9	21.5	427743	2.0	20.5	224575	2.1	21.3	141058	2.2	20.2
364706	1.9	21.9	87258	1.9	18.3	208268	1.9	19.7	92987	2.0	19.4	531731	2.1	21.3	498260	2.2	22.3
528741	1.9	21.3	16526	1.9	18.5	417263	1.9	19.2	500143	2.0	18.9	131677	2.1	20.1	360731	2.2	21.2
378654	1.9	19.9	352038	1.9	19.7	201124	1.9	18.3	54488	2.0	18.4	208280	2.1	19.3	237255	2.2	21.7
366430	1.9	19.3	69091	1.9	20.4	525578	1.9	19.9	462322	2.0	19.8	30798	2.1	17.6	373595	2.2	20.9
404288	1.9	20.7	325269	1.9	20.6	531130	1.9	21.6	155319	2.0	19.7	7452	2.1	18.1	510932	2.2	20.3
125266	1.9	20.6	221847	1.9	19.0	292251	1.9	21.5	34780	2.0	18.6	165464	2.1	20.3	140113	2.2	19.9
246939	1.9	19.0	494937	1.9	21.9	399452	1.9	19.4	306751	2.0	19.5	100337	2.1	19.0	445848	2.2	20.9
210423	1.9	19.5	83347	1.9	18.6	529156	1.9	21.1	415121	2.0	20.4	533025	2.1	21.9	50973	2.2	18.1
465929	1.9	21.5	184986	1.9	20.7	498181	1.9	21.2	276981	2.0	20.8	94514	2.1	18.3	224720	2.2	20.2
326992	1.9	20.1	217616	1.9	19.9	89620	1.9	19.3	386191	2.0	21.3	87755	2.1	19.9	79909	2.2	19.1
221065	1.9	20.1	394795	1.9	20.5	325302	1.9	20.5	155661	2.0	17.9	105404	2.1	19.9	477803	2.2	21.6
461975	1.9	21.6	518677	1.9	19.7	261418	1.9	20.3	188052	2.0	19.8	87504	2.1	19.5	372619	2.2	19.0
337588	1.9	21.6	352461	1.9	20.7	217288	1.9	20.0	262823	2.0	20.4	215044	2.1	21.3	444374	2.2	21.0
165547	1.9	20.2	378773	1.9	20.4	300098	1.9	21.0	416577	2.0	19.4	536727	2.1	20.8	309876	2.2	20.7
253047	1.9	21.4	238406	1.9	19.5	264280	1.9	21.4	436350	2.0	19.9	292153	2.1	21.2	87113	2.2	18.1
344819	1.9	18.8	502976	1.9	20.9	135120	1.9	19.4	270560	2.0	20.2	512628	2.1	23.5	193185	2.2	19.7
88744	1.9	19.0	506966	1.9	22.3	475018	1.9	20.3	350348	2.0	20.9	434884	2.1	20.8	342694	2.2	20.6
201074	1.9	19.1	161170	1.9	20.2	461203	1.9	22.5	292185	2.0	20.6	349807	2.1	20.8	105632	2.2	20.5
283035	1.9	20.5	460134	1.9	21.1	466902	1.9	19.8	347	2.0	12.1	535564	2.1	20.1	184171	2.2	18.8
221067	1.9	19.2	320944	1.9	21.2	164335	1.9	20.1	64759	2.0	18.7	419872	2.1	21.3	95732	2.2	18.0
212673	1.9	20.6	159337	1.9	19.9	63283	1.9	19.3	541554	2.0	21.6	443895	2.1	21.8	535897	2.2	21.3
531402	1.9	21.7	166986	1.9	18.9	262311	1.9	20.8	93237	2.0	18.9	337916	2.1	20.6	299866	2.2	20.5
379926	1.9	19.2	483020	1.9	19.5	109308	1.9	17.7	138577	2.0	19.6	224239	2.1	19.0	414796	2.2	19.8
485392	1.9	18.9	61885	1.9	18.7	242141	1.9	20.7	96901	2.1	18.8	232088	2.1	21.7	284378	2.2	21.3
18530	1.9	17.9	508277	1.9	20.9	366852	1.9	18.8	206279	2.1	19.3	368583	2.1	20.8	78980	2.2	18.9
473089	1.9	20.2	469155	1.9	19.9	214891	1.9	20.7	156523	2.1	20.2	233709	2.1	20.3	426955	2.2	20.0
425495	1.9	20.3	542783	1.9	21.0	389716	1.9	20.9	437489	2.1	20.4	149641	2.1	18.4	350746	2.2	21.4
412967	1.9	20.2	6998	1.9	18.1	1255	1.9	15.0	492685	2.1	20.6	58237	2.1	19.4	177841	2.2	19.9
346853	1.9	20.0	288503	1.9	19.5	185906	1.9	19.2	110592	2.1	19.0	143082	2.1	20.3	46747	2.2	18.2
170051	1.9	20.7	543490	1.9	20.9	294056	1.9	20.4	412041	2.1	19.5	327357	2.1	20.1	44810	2.2	17.7
532285	1.9	21.8	416995	1.9	21.2	54293	1.9	17.0	502788	2.1	20.2	265933	2.1	20.9	218000	2.2	21.1
122581	1.9	18.5	319612	1.9	21.3	262917	2.0	19.4	16038	2.1	17.0	75463	2.1	19.5	253209	2.2	22.0
417139	1.9	21.3	247013	1.9	19.3	428978	2.0	20.5	368050	2.1	20.2	244633	2.1	20.1	538493	2.2	21.4
136409	1.9	19.0	392144	1.9	20.5	271906	2.0	20.5	69060	2.1	20.1	286652	2.1	20.7	414855	2.2	22.1
380101	1.9	20.0	168912	1.9	19.0	260044	2.0	19.7	126893	2.1	18.7	132204	2.1	19.3	176221	2.2	18.1
378641	1.9	20.6	361430	1.9	20.1	41389	2.0	18.8	44155	2.1	17.7	481571	2.1	21.6	207126	2.2	20.5
156521	1.9	20.1	271864	1.9	21.1	186586	2.0	19.2	534988	2.1	21.6	36913	2.1	19.0	491276	2.2	21.6
74435	1.9	18.3	402964	1.9	20.6	363762	2.0	20.2	5190	2.1	17.5	435256	2.1	20.6	36979	2.2	18.6
111529	1.9	19.8	299289	1.9	20.0	320233	2.0	20.0	493841	2.1	21.9	274501	2.1	20.5	497478	2.2	21.2
366450	1.9	20.7	273866	1.9	20.1	88989	2.0	19.7	26163	2.1	17.9	132051	2.1	19.3	390102	2.2	21.0
178162	1.9	21.3	392861	1.9	21.9	511548	2.0	19.7	425287	2.1	21.0	81582	2.1	18.6	192793	2.2	19.9
141397	1.9	20.0	341345	1.9	21.0	387090	2.0	21.5	466420	2.1	20.8	49924	2.1	17.2	178064	2.2	20.6
214235	1.9	19.9	527828	1.9	21.6	300193	2.0	20.5	60578	2.1	18.8	135299	2.1	19.2	175982	2.2	19.6
120168	1.9	19.5	96941	1.9	18.7	140235	2.0	19.3	195469	2.1	19.5	178617	2.1	20.7	299309	2.2	19.9
110214	1.9	18.7	373471	1.9	19.8	343052	2.0	21.0	477795	2.1	21.7	192060	2.1	20.3	253187	2.2	19.5
327879	1.9	21.1	402074	1.9	19.2	532952	2.0	20.8	469605	2.1	20.2	242140	2.1	19.8	220327	2.2	18.8
249302	1.9	21.7	298890	1.9	20.1	142557	2.0	19.9	2596	2.1	17.8	476900	2.1	22.1	465952	2.2	20.6
34275	1.9	18.4	138592	1.9	19.2	212002	2.0	20.0	63	2.1	9.9	340812	2.1	21.4	33956	2.2	17.3
528805	1.9	21.7	329868	1.9	18.9	420712	2.0	19.2	142959	2.1	19.7	74195	2.1	18.7	529504	2.2	21.8
410032	1.9	21.9	12375	1.9	15.5	492893	2.0	20.3	373960	2.1	21.2	109672	2.1	20.0	502578	2.2	20.7
18899	1.9	16.8	43914	1.9	18.8	130746	2.0	19.7	81020	2.1	18.3	158192	2.1	20.1	187591	2.2	20.1
155302	1.9	19.1	70400	1.9	18.4	250489	2.0	20.5	151882	2.1	20.0	431522	2.1	20.9	171944	2.2	19.2
285134	1.9	20.9	119960	1.9	19.5	361620	2.0	21.3	22752	2.1	18.6	203807	2.1	19.7	151093	2.2	20.3
425447	1.9	21.7	126325	1.9	19.2	249578	2.0	20.0	274898	2.1	21.0	82830	2.1	19.9	344268	2.2	21.3
466329	1.9	20.8	300147	1.9	21.3	188302	2.0	19.9	511518	2.1	21.1	541522	2.1	21.0	197085	2.2	21.1
347291	1.9	20.8	489084	1.9	22.0	30443	2.0	17.2	184978	2.1	20.3	421969	2.1	20.7	112137	2.2	19.0
473511	1.9	21.4	298724	1.9	20.4	174023	2.0	20.2	45910	2.1	19.2	254710	2.1	20.4			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
131291	2.2	19.3	276663	2.3	20.3	243725	2.3	18.7	42790	2.4	16.8	286574	2.5	20.5	532180	2.5	21.2
204206	2.2	20.4	5205	2.3	16.5	528771	2.3	20.7	85879	2.4	18.9	422171	2.5	20.8	370050	2.5	20.7
386259	2.2	20.7	208276	2.3	19.8	341658	2.3	21.2	327503	2.4	20.2	219735	2.5	20.3	79832	2.5	19.5
299322	2.2	20.5	64749	2.3	18.8	55701	2.3	19.2	160726	2.4	19.1	544440	2.5	20.9	300230	2.5	19.7
422718	2.2	21.6	337740	2.3	20.7	498870	2.3	20.9	501420	2.4	20.9	325520	2.5	19.7	27193	2.5	18.5
378759	2.2	21.1	279420	2.3	20.3	275603	2.3	20.4	246567	2.4	21.1	221388	2.5	20.6	202798	2.5	20.6
406052	2.2	22.3	183443	2.3	19.5	496683	2.3	20.2	453860	2.4	21.0	208500	2.5	18.4	525248	2.5	20.4
527725	2.2	20.9	228781	2.3	19.9	52166	2.3	18.9	238812	2.4	19.6	538269	2.5	20.6	500721	2.5	21.7
95281	2.2	19.9	392212	2.3	20.4	491235	2.4	20.4	55519	2.4	16.4	40623	2.5	18.9	142625	2.5	19.6
337783	2.2	21.3	474190	2.3	19.7	239295	2.4	18.9	9528	2.4	19.0	495214	2.5	20.5	529154	2.5	20.0
526941	2.2	21.0	268956	2.3	21.2	377504	2.4	21.4	534402	2.4	22.3	457497	2.5	22.0	260924	2.5	18.8
474097	2.2	20.4	190234	2.3	19.2	274850	2.4	21.0	116441	2.4	19.6	535507	2.5	21.4	132059	2.5	19.7
350791	2.2	19.5	370794	2.3	22.2	181065	2.4	19.7	265753	2.4	20.5	59290	2.5	18.1	68649	2.5	18.2
190738	2.2	20.1	425090	2.3	22.0	5115	2.4	16.5	540201	2.4	20.5	354018	2.5	20.0	185140	2.5	21.4
391778	2.2	19.6	277724	2.3	20.0	492999	2.4	20.2	55016	2.4	17.2	498823	2.5	21.7	90364	2.5	18.6
58353	2.2	20.7	375821	2.3	21.6	534878	2.4	20.5	536593	2.4	21.7	149899	2.5	18.8	245788	2.5	20.5
273101	2.2	20.3	419169	2.3	21.2	272582	2.4	20.9	387370	2.4	20.1	110114	2.5	20.2	98283	2.5	17.5
7604	2.2	20.0	362621	2.3	20.9	159430	2.4	20.1	207087	2.4	19.8	111659	2.5	19.2	130659	2.5	20.1
133955	2.2	19.2	193279	2.3	19.5	141302	2.4	19.4	87018	2.4	17.8	202500	2.5	21.1	304363	2.5	19.4
182011	2.2	18.2	87320	2.3	19.2	436379	2.4	20.1	518110	2.4	19.5	109454	2.5	19.7	138664	2.5	19.7
301472	2.2	20.5	20882	2.3	17.7	34959	2.4	18.7	498556	2.4	20.0	223701	2.5	19.0	250203	2.5	20.1
395728	2.2	21.6	164502	2.3	19.3	154847	2.4	19.8	251647	2.4	21.1	506094	2.5	21.3	486736	2.5	19.7
356942	2.2	21.4	51439	2.3	17.9	213878	2.4	21.0	320488	2.4	19.0	209098	2.5	19.7	372987	2.5	20.5
130592	2.2	19.8	190077	2.3	19.4	368701	2.4	19.8	292223	2.4	20.0	186550	2.5	20.1	247001	2.5	21.0
529153	2.2	22.0	487045	2.3	20.0	125049	2.4	20.1	87184	2.4	18.6	423144	2.5	20.5	114030	2.5	19.2
502127	2.2	21.3	33982	2.3	16.8	498415	2.4	21.3	423207	2.4	20.5	16866	2.5	17.1	54322	2.5	18.3
66718	2.2	19.4	253110	2.3	21.1	535875	2.4	21.3	60729	2.4	19.3	282836	2.5	19.7	181414	2.5	20.0
451055	2.2	21.6	78719	2.3	19.4	33047	2.4	19.0	284170	2.4	20.1	213089	2.5	20.9	534949	2.5	21.8
295969	2.2	20.8	215331	2.3	19.7	211447	2.4	20.9	379994	2.4	20.9	458947	2.5	20.9	175450	2.6	19.7
339003	2.2	20.4	419203	2.3	19.2	203156	2.4	21.4	141145	2.4	19.6	153164	2.5	20.2	441848	2.6	21.3
447406	2.2	20.1	140647	2.3	18.9	146512	2.4	20.0	52120	2.4	18.7	302038	2.5	19.8	540580	2.6	21.2
221596	2.2	19.2	96374	2.3	19.3	37708	2.4	18.6	501339	2.4	21.0	55713	2.5	17.7	18446	2.6	19.5
374086	2.2	19.6	34081	2.3	16.9	80172	2.4	20.1	340948	2.4	20.3	320867	2.5	19.3	84369	2.6	19.1
32480	2.2	18.4	25836	2.3	18.5	76499	2.4	18.4	317124	2.4	21.1	218993	2.5	19.5	284817	2.6	20.4
402552	2.2	20.0	283519	2.3	20.2	228535	2.4	20.6	239976	2.4	20.9	383891	2.5	21.3	187525	2.6	20.3
10000	2.2	19.4	541084	2.3	20.7	392885	2.4	21.6	161788	2.4	19.6	157235	2.5	19.2	168465	2.6	18.6
438637	2.2	21.2	497826	2.3	22.2	309294	2.4	18.8	534104	2.4	21.6	484268	2.5	20.1	431887	2.6	21.1
164363	2.2	19.3	464939	2.3	21.7	284655	2.4	20.0	379025	2.4	20.9	406241	2.5	22.0	16420	2.6	18.2
259358	2.2	19.6	118801	2.3	19.3	369726	2.4	19.5	383777	2.4	19.8	368797	2.5	20.2	177609	2.6	19.1
426583	2.2	20.6	320665	2.3	19.3	242468	2.4	20.8	153979	2.4	19.8	504204	2.5	20.0	198086	2.6	18.8
458982	2.2	21.6	245017	2.3	20.4	109513	2.4	19.3	532602	2.4	21.5	337519	2.5	22.3	332773	2.6	20.8
417324	2.2	20.7	169263	2.3	19.8	270402	2.4	20.4	173312	2.4	19.8	71657	2.5	18.0	137083	2.6	19.9
256505	2.2	19.4	130830	2.3	19.3	339969	2.4	22.1	518120	2.4	20.4	453354	2.5	21.1	18046	2.6	17.7
288929	2.3	20.8	332540	2.3	20.3	456137	2.4	20.7	296358	2.4	19.3	448172	2.5	21.7	371658	2.6	20.2
156281	2.3	20.3	343100	2.3	20.8	7254	2.4	17.2	221319	2.4	18.8	347308	2.5	20.2	371195	2.6	20.9
424196	2.3	20.2	352465	2.3	21.1	182445	2.4	19.8	464015	2.4	20.9	519965	2.5	20.6	111518	2.6	19.7
82684	2.3	19.2	403885	2.3	21.5	423723	2.4	21.9	240058	2.4	19.9	368161	2.5	20.8	505045	2.6	20.9
114670	2.3	19.0	368723	2.3	21.5	492234	2.4	21.2	284433	2.4	19.5	81667	2.5	18.3	371194	2.6	20.7
8180	2.3	16.7	213650	2.3	18.5	194241	2.4	20.3	65191	2.4	19.0	58931	2.5	18.2	64516	2.6	19.2
310889	2.3	20.3	53768	2.3	18.2	390426	2.4	19.9	174856	2.4	18.4	440407	2.5	20.7	109722	2.6	19.2
387820	2.3	20.0	357034	2.3	19.5	210672	2.4	19.7	92575	2.4	19.3	533067	2.5	21.4	456663	2.6	20.2
362045	2.3	21.6	524546	2.3	20.3	472988	2.4	20.0	210989	2.4	19.4	196240	2.5	19.8	137843	2.6	18.1
194570	2.3	19.5	96423	2.3	19.0	82858	2.4	19.3	47535	2.4	18.8	538434	2.5	21.0	30791	2.6	19.5
537973	2.3	21.3	403254	2.3	19.9	496840	2.4	19.8	162074	2.4	20.3	386948	2.5	21.2	31669	2.6	18.7
158166	2.3	19.8	227493	2.3	20.0	42437	2.4	19.2	417740	2.4	21.3	375430	2.5	21.2	12831	2.6	17.8
351936	2.3	21.2	279518	2.3	19.9	319571	2.4	20.6	471398	2.4	19.8	534790	2.5	21.9	2446	2.6	15.0
308224	2.3	21.2	528785	2.3	21.3	305642	2.4	19.9	172810	2.4	19.5	122267	2.5	18.7	92843	2.6	18.8
206745	2.3	20.6	354224	2.3	20.4	277459	2.4	21.7	237340	2.4	21.1	86610	2.5	17.9	170242	2.6	20.6
235064	2.3	19.6	506446	2.3	21.6	437633	2.4	20.3	64094	2.4	20.6	337945	2.5	20.8	522437	2.6	20.4
331613	2.3	20.9	159867	2.3	19.9	136702	2.4	21.8	281096	2.4	20.5	5682	2.5	16.3	500658	2.6	21.9
456667	2.3	21.7	409891	2.3	20.5	413851	2.4	21.4	534977	2.4	20.2	207042	2.5	20.5	536191	2.6	20.8
158282	2.3	19.8	313893	2.3	19.0	27420	2.4	17.8	172378	2.4	19.8	338260	2.5	20.4	283626	2.6	20.3
68965	2.3	18.9	141070	2.3	19.8	531537	2.4	21.3	172834	2.4	19.2	377896	2.5	20.5	343986	2.6	20.8
55945	2.3	17.9	133849	2.3	19.3	424279	2.4	20.8	343999	2.4	20.9	186685	2.5	19.3	273861	2.6	20.3
183463	2.3	20.1	244982	2.3	19.5	293177	2.4	20.8	306720	2.4	20.2	435264	2.5	21.6	426410	2.6	19.8
112032	2.3	18.3	531083	2.3	20.4	100995	2.4	18.8	154148	2.4	18.9	18860	2.5	17.4	488968	2.6	21.5
257020	2.3	21.1	339816	2.3	20.3	139859	2.4	19.4	125997	2.4	19.4	399657	2.5	20.0	42801	2.6	19.6
193961	2.3	20.1	16061	2.3	18.3	308221	2.4	21.6	453832	2.4	20.5	270678	2.5	18.5	491804	2.6	21.8
90097	2.3	19.0	459234	2.3	21.7	188799	2.4	20.4	487718	2.5	19.6	407744	2.5	21.3	500877	2.6	24.0
495886	2.3	20.7	429547	2.3	20.7	296158	2.4	20.1	526637	2.5	22.1	462384	2.5	19.8	77569	2.6	18.8
503025	2.3	20.1	255988	2.3	20.1	381320	2.4	20.7	50857	2.5	19.1	173954	2.5	20.1			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
21438	2.6	17.6	307434	2.7	20.6	326993	2.7	19.2	194493	2.8	21.0	374580	2.9	20.5	36645	2.9	18.8
348869	2.6	21.1	268537	2.7	20.6	29155	2.7	18.3	401312	2.8	19.9	125822	2.9	17.6	288637	2.9	20.3
202992	2.6	21.7	439764	2.7	19.9	351536	2.7	21.2	149882	2.8	19.5	467228	2.9	21.0	506017	2.9	20.4
142918	2.6	20.3	24974	2.7	17.4	143269	2.7	19.8	183589	2.8	20.0	381643	2.9	20.5	502181	2.9	21.1
536546	2.6	20.6	208115	2.7	22.9	231380	2.7	19.4	297926	2.8	20.2	374066	2.9	20.8	498548	2.9	21.5
175037	2.6	19.5	74895	2.7	19.0	396963	2.7	19.2	285742	2.8	20.6	426639	2.9	20.2	466582	2.9	21.4
149621	2.6	19.2	19634	2.7	16.6	1770	2.7	15.5	525941	2.8	21.3	286272	2.9	20.6	87111	2.9	18.3
30582	2.6	18.1	380456	2.7	21.6	105400	2.7	20.0	339566	2.8	19.3	286764	2.9	19.6	295193	2.9	18.6
437807	2.6	20.7	431942	2.7	21.0	463989	2.7	20.7	349622	2.8	19.1	500883	2.9	23.7	150956	2.9	20.4
51077	2.6	18.7	515448	2.7	20.3	121122	2.7	18.4	242317	2.8	21.0	321727	2.9	21.1	503606	2.9	21.1
397953	2.6	20.4	320304	2.7	20.4	120535	2.7	20.1	37868	2.8	18.0	87814	2.9	19.0	502707	2.9	20.8
113426	2.6	20.4	156719	2.7	21.0	430374	2.7	19.9	456557	2.8	20.0	215542	2.9	19.9	171538	2.9	20.2
317196	2.6	20.5	224901	2.7	18.2	501159	2.7	22.0	454458	2.8	21.2	20087	2.9	17.4	210031	2.9	19.4
31226	2.6	19.0	337993	2.7	21.6	238744	2.7	19.1	322795	2.8	19.9	178033	2.9	20.9	267804	2.9	21.0
464270	2.6	21.1	341759	2.7	20.0	493805	2.7	21.6	334485	2.8	20.5	29682	2.9	16.8	30635	2.9	17.7
224845	2.6	20.2	515727	2.7	21.2	436010	2.7	20.2	38677	2.8	19.2	171190	2.9	20.4	544193	2.9	22.2
382329	2.6	20.7	187407	2.7	20.5	38919	2.7	18.0	349094	2.8	20.3	118524	2.9	20.2	348505	2.9	19.8
464810	2.6	21.1	172788	2.7	19.7	84317	2.7	18.9	259282	2.8	19.1	511797	2.9	20.7	51064	2.9	18.7
296557	2.6	20.9	483225	2.7	20.7	497053	2.7	21.0	225545	2.8	19.7	276521	2.9	19.9	230550	2.9	21.3
55330	2.6	18.8	341714	2.7	20.7	467786	2.7	21.5	451042	2.8	22.2	291841	2.9	20.1	412116	2.9	20.3
459943	2.6	21.3	188020	2.7	19.8	128032	2.7	17.8	494127	2.8	21.6	138093	2.9	20.2	126735	2.9	20.1
469506	2.6	21.6	258578	2.7	20.9	75071	2.7	18.8	284356	2.8	20.9	397469	2.9	20.1	486063	2.9	20.9
266845	2.6	20.4	501295	2.7	22.2	67036	2.7	17.8	535414	2.8	21.9	468210	2.9	20.8	352653	2.9	21.3
58508	2.6	18.9	354376	2.7	19.8	12589	2.7	17.0	543752	2.8	20.6	318610	2.9	20.7	47359	2.9	19.2
357235	2.6	19.5	179270	2.7	21.0	331338	2.7	21.1	194594	2.8	19.7	63150	2.9	18.6	285881	2.9	19.2
39245	2.6	18.7	351475	2.7	20.5	346150	2.7	20.6	232512	2.8	19.5	81974	2.9	18.7	535491	2.9	21.4
102098	2.6	18.6	165424	2.7	20.4	429139	2.7	21.8	349521	2.8	21.7	214993	2.9	19.8	343135	2.9	20.4
109689	2.6	18.8	309897	2.7	19.7	61199	2.7	17.7	30875	2.8	18.4	77669	2.9	19.5	432225	2.9	19.1
11277	2.6	15.0	67377	2.7	18.5	205234	2.7	20.1	501404	2.8	20.8	497073	2.9	22.5	355787	2.9	22.3
343205	2.6	20.9	322306	2.7	20.1	78599	2.7	18.6	290407	2.8	19.0	410609	2.9	19.1	415223	2.9	20.5
19881	2.6	18.4	55559	2.7	18.9	56347	2.7	18.0	82702	2.8	19.1	253302	2.9	20.4	246753	2.9	20.2
500273	2.6	20.8	291095	2.7	19.4	245030	2.7	20.5	525925	2.8	21.6	284871	2.9	21.0	19603	2.9	18.4
178933	2.6	19.6	338156	2.7	20.3	533823	2.7	21.7	387123	2.8	21.3	460636	2.9	20.8	192083	2.9	19.8
397858	2.6	21.1	437245	2.7	20.0	450335	2.7	19.4	200918	2.8	19.7	292556	2.9	21.7	36413	2.9	18.1
298834	2.6	21.1	537310	2.7	21.5	306970	2.7	19.7	504179	2.8	21.6	238471	2.9	19.6	518129	2.9	20.8
88954	2.6	18.1	370783	2.7	20.3	235027	2.7	21.0	237507	2.8	19.2	464311	2.9	18.9	359641	2.9	20.9
423243	2.6	21.4	376653	2.7	20.3	211439	2.7	21.8	493266	2.8	21.6	77083	2.9	18.6	65423	2.9	19.1
71962	2.6	18.1	462080	2.7	20.9	84115	2.7	19.8	133313	2.8	19.6	332375	2.9	20.3	419734	2.9	19.3
291789	2.6	21.1	533627	2.7	20.2	378964	2.7	20.9	489879	2.8	20.9	422130	2.9	22.2	425512	2.9	19.9
37050	2.6	18.2	114810	2.7	19.3	296583	2.7	21.6	457603	2.8	20.9	419165	2.9	20.8	250463	2.9	19.9
247023	2.6	20.1	89990	2.7	19.4	26556	2.8	17.4	120261	2.8	18.9	422943	2.9	21.2	10751	2.9	17.7
535753	2.6	21.5	411731	2.7	20.3	109234	2.8	18.9	403241	2.8	20.9	340350	2.9	20.7	496103	2.9	20.4
124829	2.6	20.2	60861	2.7	18.4	321786	2.8	20.3	133659	2.8	20.0	415807	2.9	20.5	297493	2.9	21.5
268097	2.6	20.6	20371	2.7	17.9	82210	2.8	18.4	495371	2.8	21.0	435006	2.9	21.7	172374	2.9	20.2
453173	2.6	19.7	279192	2.7	20.0	219827	2.8	20.3	51305	2.8	18.8	119224	2.9	19.8	179540	2.9	20.4
416847	2.6	20.1	2011	2.7	16.1	11639	2.8	17.0	188464	2.8	20.2	456852	2.9	22.2	368702	2.9	21.1
118087	2.6	19.3	206477	2.7	20.0	228761	2.8	19.9	27231	2.8	18.3	307008	2.9	21.6	97364	2.9	17.9
295325	2.6	19.3	264655	2.7	19.6	5290	2.8	16.4	258134	2.8	20.4	439109	2.9	20.5	338920	2.9	19.4
138748	2.6	19.4	285820	2.7	20.6	433520	2.8	20.8	391054	2.8	20.6	500407	2.9	20.8	467880	2.9	21.5
309266	2.6	20.9	442277	2.7	20.2	539796	2.8	20.2	295843	2.8	20.2	287483	2.9	20.6	46583	2.9	19.0
526838	2.6	21.8	131976	2.7	19.5	355938	2.8	20.9	451719	2.8	21.0	135170	2.9	18.5	427911	2.9	22.5
229602	2.6	20.7	338049	2.7	22.5	374068	2.8	20.5	518164	2.8	21.1	223689	2.9	21.2	125098	2.9	19.5
221271	2.6	19.7	63475	2.7	18.8	74469	2.8	19.3	214987	2.8	19.9	58424	2.9	19.0	305407	2.9	20.5
513572	2.6	22.1	382284	2.7	20.7	229884	2.8	20.0	289938	2.8	20.9	321936	2.9	21.2	356001	2.9	19.7
377837	2.6	20.5	507308	2.7	21.3	467671	2.8	20.2	267448	2.8	20.8	495513	2.9	20.1	22307	2.9	17.7
21644	2.6	18.7	418372	2.7	20.1	19802	2.8	19.4	43462	2.8	18.3	504431	2.9	21.8	214288	2.9	20.4
291079	2.6	20.5	228698	2.7	20.2	345577	2.8	20.0	283510	2.8	19.7	536994	2.9	21.3	19034	2.9	19.4
175063	2.6	20.0	344320	2.7	21.5	533027	2.8	21.5	389224	2.8	21.0	52349	2.9	18.5	332099	2.9	19.7
239005	2.6	18.7	232411	2.7	20.1	223753	2.8	19.3	259205	2.8	20.4	320723	2.9	22.0	171532	2.9	18.8
403856	2.6	21.8	275616	2.7	19.9	272709	2.8	21.6	427230	2.8	20.2	269727	2.9	20.0	127856	2.9	18.1
471863	2.6	20.3	430574	2.7	20.8	272794	2.8	20.5	28393	2.8	19.0	531825	2.9	22.0	60093	2.9	19.0
262663	2.6	21.1	57204	2.7	20.4	225578	2.8	19.7	250157	2.8	20.7	401934	2.9	20.5	282626	2.9	20.2
292725	2.6	20.3	60010	2.7	17.7	433634	2.8	21.2	388343	2.8	20.8	269312	2.9	20.0	400516	2.9	20.2
260764	2.6	20.0	271496	2.7	19.7	417593	2.8	20.8	496098	2.8	19.5	20562	2.9	16.6	198989	2.9	20.7
289079	2.6	19.5	151572	2.7	20.5	165526	2.8	20.1	486972	2.8	20.2	211555	2.9	20.2	47180	2.9	18.8
357125	2.6	21.4	432031	2.7	21.1	524887	2.8	20.2	423435	2.8	21.8	180673	2.9	19.0	64300	2.9	18.4
384013	2.6	20.7	377967	2.7	20.2	417243	2.8	21.4	353511	2.8	20.4	26463	2.9	17.0	23256	2.9	19.0
304637	2.6	20.9	148855	2.7	19.7	542549	2.8	20.4	192023	2.8	18.7	79902	2.9	20.2	404412	2.9	20.7
530617	2.6	22.1	419054	2.7	21.3	292018	2.8	20.6	444767	2.8	22.0	473168	2.9	20.2	441442	2.9	20.2
418301	2.6	20.2	269376	2.7	19.2	118170	2.8	19.2	501107	2.8	20.0	334319	2.9	20.0	92882	2.9	20.3
194899	2.6	20.8	31340	2.7	17.5	72982	2.8	18.1	441597	2.8	21.1	513960	2.9	21.1			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
465730	2.9	21.0	110791	3.0	19.0	256260	3.1	21.0	143389	3.2	20.1	492487	3.2	20.5	81519	3.3	18.0
273959	2.9	20.0	465205	3.0	20.4	158752	3.1	18.8	396226	3.2	21.1	123331	3.2	20.2	1208	3.3	16.0
48490	2.9	17.6	107300	3.0	19.8	425242	3.1	22.4	502920	3.2	20.4	341719	3.2	20.3	165303	3.3	19.3
324237	2.9	20.6	173306	3.0	20.5	244020	3.1	20.6	530107	3.2	22.1	309783	3.2	19.5	457467	3.3	21.3
311783	2.9	20.0	357135	3.0	20.6	300991	3.1	20.0	304097	3.2	19.5	344500	3.2	21.4	421382	3.3	19.6
449173	2.9	21.6	150823	3.0	20.4	138795	3.1	19.2	116773	3.2	19.1	328292	3.2	20.8	2483	3.3	17.7
430365	2.9	19.9	103325	3.0	20.0	450409	3.1	20.8	16948	3.2	18.2	142024	3.2	19.7	410325	3.3	21.4
14852	2.9	17.8	22656	3.0	16.4	65252	3.1	18.0	30433	3.2	17.3	106057	3.2	19.4	199324	3.3	20.3
115090	2.9	20.6	357595	3.1	21.4	309363	3.1	21.2	490240	3.2	21.0	231529	3.2	20.5	402931	3.3	21.5
90938	2.9	20.3	543715	3.1	21.7	301546	3.1	19.8	74384	3.2	19.3	46343	3.2	18.0	422998	3.3	20.2
168969	2.9	20.2	465970	3.1	20.0	125611	3.1	20.3	534730	3.2	20.4	247298	3.2	20.1	179903	3.3	19.9
240582	2.9	20.2	527740	3.1	22.2	380395	3.1	21.1	27656	3.2	17.0	50598	3.2	18.4	188942	3.3	19.7
273084	2.9	20.9	536416	3.1	21.0	84144	3.1	20.2	383808	3.2	20.6	245564	3.3	20.3	55219	3.3	20.0
208448	2.9	20.5	33887	3.1	18.4	241202	3.1	20.2	439780	3.2	20.0	73142	3.3	18.9	5543	3.3	17.1
520615	2.9	21.0	55325	3.1	18.9	317995	3.1	19.8	332560	3.2	19.9	238390	3.3	20.5	384187	3.3	22.2
291968	2.9	20.3	2447	3.1	16.4	160072	3.1	19.3	75093	3.2	18.4	240585	3.3	19.5	164903	3.3	20.4
256041	2.9	20.2	144403	3.1	20.2	258277	3.1	19.9	165237	3.2	19.2	291495	3.3	20.4	339012	3.3	19.5
196379	2.9	18.5	17052	3.1	17.0	87811	3.1	19.9	12947	3.2	17.5	544547	3.3	21.2	259742	3.3	20.5
163266	2.9	19.4	2105	3.1	15.3	24056	3.1	19.8	428041	3.2	21.7	34739	3.3	19.5	534909	3.3	20.5
22116	2.9	18.3	496731	3.1	20.3	393880	3.1	20.4	246485	3.2	20.9	347742	3.3	20.3	487894	3.3	20.7
52490	2.9	17.5	103993	3.1	18.8	252981	3.1	20.6	222254	3.2	19.2	379991	3.3	20.2	344446	3.3	19.0
350314	2.9	20.3	529966	3.1	22.5	70295	3.1	19.1	341772	3.2	20.2	140435	3.3	19.0	157809	3.3	19.6
56809	2.9	19.2	36846	3.1	19.1	351630	3.1	20.4	109709	3.2	19.5	145541	3.3	20.1	413638	3.3	21.4
127633	2.9	18.9	460642	3.1	20.6	27895	3.1	18.3	506239	3.2	20.9	451874	3.3	19.2	46745	3.3	18.8
266729	2.9	21.2	419842	3.1	20.9	185263	3.1	18.9	180604	3.2	19.8	183408	3.3	19.9	310911	3.3	19.6
172070	2.9	19.5	464450	3.1	22.1	459428	3.1	20.4	140524	3.2	18.4	489646	3.3	19.9	125657	3.3	19.6
222746	2.9	20.3	1991	3.1	15.4	397823	3.1	20.4	15371	3.2	18.2	133716	3.3	19.6	73446	3.3	18.2
173743	2.9	20.0	179231	3.1	18.8	298801	3.1	20.1	357530	3.2	20.9	458786	3.3	21.4	321861	3.3	19.6
138546	2.9	19.5	872	3.1	13.5	2979	3.1	17.1	4832	3.2	17.1	516972	3.3	20.2	286624	3.3	19.1
203129	2.9	19.8	525965	3.1	22.6	327973	3.1	19.7	284047	3.2	19.6	323105	3.3	20.4	345781	3.3	19.3
402545	3.0	19.9	157741	3.1	19.3	29905	3.1	16.4	109772	3.2	18.0	109676	3.3	19.3	503575	3.3	20.9
340832	3.0	20.1	529177	3.1	22.3	523921	3.1	20.7	41567	3.2	18.1	59781	3.3	18.9	105744	3.3	18.5
193449	3.0	20.7	80911	3.1	18.1	437010	3.1	21.3	206245	3.2	20.5	27972	3.3	18.9	56945	3.3	18.1
207102	3.0	20.4	14605	3.1	18.0	488427	3.1	22.1	524516	3.2	23.9	34366	3.3	18.2	146342	3.3	19.8
18278	3.0	18.1	160503	3.1	18.7	331807	3.1	20.1	349930	3.2	20.8	57601	3.3	19.8	128837	3.3	20.1
253235	3.0	20.9	534801	3.1	21.6	26345	3.1	17.5	53367	3.2	17.0	530033	3.3	21.0	147207	3.3	20.6
536713	3.0	22.1	286532	3.1	20.7	534623	3.1	20.4	34395	3.2	18.2	145384	3.3	19.5	114922	3.3	18.9
420015	3.0	20.1	206350	3.1	19.3	427409	3.2	20.9	330922	3.2	20.6	171573	3.3	20.4	534702	3.3	21.8
246391	3.0	19.9	287493	3.1	20.5	458179	3.2	19.4	47022	3.2	17.2	527553	3.3	21.3	437544	3.3	21.7
77729	3.0	18.6	415214	3.1	20.5	1339	3.2	15.4	534055	3.2	21.7	331041	3.3	20.9	15003	3.3	16.8
325165	3.0	20.9	369300	3.1	21.1	435236	3.2	21.5	102987	3.2	19.9	1971	3.3	17.1	27339	3.3	17.5
149661	3.0	19.3	200908	3.1	19.6	393079	3.2	20.7	250153	3.2	20.9	506830	3.3	21.5	73587	3.3	19.1
497022	3.0	20.8	343439	3.1	20.1	64464	3.2	18.1	64414	3.2	19.1	120831	3.3	20.0	190441	3.4	20.7
527577	3.0	20.8	17417	3.1	18.4	211906	3.2	19.7	453817	3.2	22.1	55715	3.3	19.9	381958	3.4	20.8
226931	3.0	19.8	536184	3.1	21.2	302027	3.2	20.7	27402	3.2	17.6	986	3.3	14.0	260808	3.4	19.5
295217	3.0	19.9	14671	3.1	18.2	422733	3.2	20.4	253945	3.2	19.7	504166	3.3	21.2	120403	3.4	19.2
109821	3.0	20.0	138002	3.1	19.2	409491	3.2	19.8	526974	3.2	21.1	4019	3.3	18.3	337902	3.4	20.9
158602	3.0	19.3	375044	3.1	20.7	423221	3.2	21.3	186089	3.2	19.6	249543	3.3	18.8	249108	3.4	20.6
368008	3.0	20.7	310527	3.1	20.1	156751	3.2	20.1	172515	3.2	20.1	342966	3.3	20.8	418389	3.4	20.6
30934	3.0	17.3	510998	3.1	20.6	460119	3.2	21.0	282150	3.2	19.3	136733	3.3	19.7	429945	3.4	20.7
154792	3.0	18.5	166880	3.1	19.6	209365	3.2	19.2	472667	3.2	19.9	286423	3.3	19.9	427770	3.4	21.0
409433	3.0	22.1	388051	3.1	20.3	6841	3.2	16.7	349951	3.2	20.9	530218	3.3	22.6	472553	3.4	20.8
498218	3.0	21.3	38308	3.1	18.0	176007	3.2	20.4	387138	3.2	21.6	50545	3.3	16.4	289285	3.4	19.6
391371	3.0	21.4	44547	3.1	18.6	381982	3.2	20.0	521160	3.2	20.5	453584	3.3	19.4	501413	3.4	21.6
305681	3.0	21.5	217900	3.1	20.7	408856	3.2	21.6	208836	3.2	20.7	293335	3.3	21.2	309273	3.4	22.8
383787	3.0	20.9	167845	3.1	19.8	279731	3.2	19.9	516419	3.2	21.5	211905	3.3	19.1	284726	3.4	21.1
278653	3.0	20.6	512405	3.1	20.3	505930	3.2	19.7	368817	3.2	21.3	500401	3.3	21.3	444230	3.4	21.8
434303	3.0	20.9	371170	3.1	21.6	86764	3.2	18.8	533936	3.2	20.9	140828	3.3	20.3	325492	3.4	19.8
490348	3.0	21.3	247136	3.1	19.2	187453	3.2	19.2	106703	3.2	20.1	423448	3.3	21.5	233524	3.4	18.8
353277	3.0	19.7	331628	3.1	20.5	153596	3.2	20.6	437257	3.2	21.1	52186	3.3	18.4	514077	3.4	20.0
491827	3.0	21.5	493491	3.1	21.6	275247	3.2	19.5	198879	3.2	19.5	414228	3.3	20.0	166137	3.4	18.3
217915	3.0	20.0	226781	3.1	20.9	243480	3.2	20.5	401001	3.2	20.7	14902	3.3	16.8	374173	3.4	21.0
365985	3.0	20.4	203937	3.1	19.9	544896	3.2	21.6	387378	3.2	20.6	124202	3.3	18.1	204615	3.4	19.8
102560	3.0	19.7	33753	3.1	18.8	195289	3.2	19.8	239996	3.2	21.5	394404	3.3	20.2	514583	3.4	20.9
186846	3.0	20.5	510183	3.1	21.7	50418	3.2	18.4	500678	3.2	20.7	245665	3.3	20.3	34734	3.4	19.9
50256	3.0	19.0	372474	3.1	20.7	45862	3.2	20.1	532843	3.2	22.1	39921	3.3	19.5	331094	3.4	20.3
368730	3.0	20.8	95104	3.1	19.7	134077	3.2	18.9	85307	3.2	19.3	255830	3.3	20.9	409299	3.4	20.5
50840	3.0	19.0	380546	3.1	19.9	27194	3.2	18.6	248705	3.2	19.7	304770	3.3	19.8	66933	3.4	19.4
528938	3.0	20.7	470308	3.1	20.6	278785	3.2	19.9	179888	3.2	20.6	206771	3.3	19.3	291167	3.4	18.5
11365	3.0	17.1	147297	3.1	19.5	103045	3.2	20.5	17144	3.2	18.4	111136	3.3	20.2	40498	3.4	18.4
535554	3.0	20.9	284978	3.1	20.2	413839	3.2	21.7	50089	3.2	19.3	533671	3.3	23.5	147637	3.4	1

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
354915	3.4	20.9	214875	3.4	21.2	210923	3.5	20.5	229795	3.6	21.6	495274	3.7	20.5	231440	3.7	19.5
485423	3.4	20.1	310923	3.4	18.9	341713	3.5	20.3	79265	3.6	19.4	371150	3.7	20.9	206737	3.7	20.2
367762	3.4	19.5	285534	3.4	19.3	382763	3.5	20.9	529174	3.6	21.9	50878	3.7	18.5	531723	3.7	22.1
498102	3.4	21.7	84452	3.4	19.9	56800	3.5	18.0	322345	3.6	20.0	140165	3.7	20.1	275187	3.7	20.3
376730	3.4	18.3	369982	3.4	20.7	306101	3.5	19.3	461450	3.6	21.2	280481	3.7	18.9	527034	3.7	21.7
425534	3.4	20.6	504173	3.4	22.0	171381	3.5	19.7	152011	3.6	19.0	276492	3.7	20.4	193354	3.7	20.7
297883	3.4	21.1	402077	3.4	21.1	274542	3.5	20.0	318088	3.6	20.4	255951	3.7	20.0	467441	3.7	21.6
522612	3.4	20.8	155921	3.4	17.7	480296	3.5	19.6	219702	3.6	18.3	279168	3.7	20.9	351472	3.7	20.9
502324	3.4	21.0	503142	3.4	21.4	500681	3.5	21.3	507979	3.6	21.0	217899	3.7	19.9	528628	3.7	21.9
100375	3.4	20.7	56862	3.5	19.0	364618	3.5	21.1	408459	3.6	21.2	340144	3.7	20.3	492477	3.7	19.7
226907	3.4	20.5	471500	3.5	20.7	446472	3.5	20.0	219449	3.6	21.2	130440	3.7	19.9	395282	3.7	20.1
34417	3.4	16.9	382251	3.5	20.9	426624	3.5	21.3	298872	3.6	22.1	268498	3.7	21.1	341401	3.7	19.9
35788	3.4	17.3	384769	3.5	20.5	172348	3.5	20.5	162232	3.6	21.1	473927	3.7	21.9	211868	3.7	20.5
299950	3.4	19.6	345693	3.5	21.9	499733	3.5	20.8	140383	3.6	19.8	522592	3.7	21.5	298777	3.7	16.9
536267	3.4	20.4	96169	3.5	18.0	530094	3.5	22.6	89501	3.6	18.0	310975	3.7	21.5	421709	3.7	21.2
25604	3.4	18.2	150499	3.5	17.8	8697	3.5	17.4	501399	3.6	21.6	285253	3.7	21.0	465130	3.7	20.9
42302	3.4	17.1	451667	3.5	20.5	53373	3.5	18.3	143021	3.6	19.0	135743	3.7	18.2	402944	3.7	20.8
204288	3.4	20.0	400278	3.5	19.8	194481	3.5	19.4	440196	3.6	21.3	52860	3.7	18.7	192513	3.7	18.9
533560	3.4	22.5	126945	3.5	18.8	45261	3.5	18.4	968	3.6	14.4	375308	3.7	20.7	208880	3.7	20.2
444385	3.4	21.3	181239	3.5	19.9	127562	3.5	21.0	22757	3.6	18.6	454885	3.7	22.0	376249	3.7	20.7
82304	3.4	17.9	466571	3.5	22.0	434932	3.5	21.3	284992	3.6	19.9	356388	3.7	20.0	205867	3.7	18.6
100450	3.4	19.7	350771	3.5	19.9	452353	3.5	21.3	535355	3.6	21.2	266931	3.7	20.3	411881	3.7	20.6
242665	3.4	19.3	395557	3.5	20.1	127928	3.5	19.6	65686	3.6	18.4	270558	3.7	20.4	267445	3.7	20.9
284151	3.4	20.4	190091	3.5	18.9	13225	3.5	17.9	125119	3.6	20.1	178663	3.7	20.3	29977	3.7	18.1
301598	3.4	19.8	160117	3.5	19.4	94643	3.5	19.4	231749	3.6	20.7	390420	3.7	21.4	527079	3.7	20.6
174690	3.4	20.3	347307	3.5	19.9	169378	3.5	20.0	362067	3.6	21.8	171963	3.7	19.3	469379	3.7	20.7
113935	3.4	19.3	8828	3.5	17.1	187470	3.5	20.2	105717	3.6	19.6	180633	3.7	20.2	453022	3.7	19.8
336528	3.4	20.8	533101	3.5	23.0	14336	3.5	18.6	184490	3.6	20.3	375252	3.7	20.1	15935	3.7	17.7
530193	3.4	21.8	242816	3.5	19.1	206925	3.5	20.4	205519	3.6	18.8	53267	3.7	17.5	194016	3.7	19.9
536792	3.4	21.7	214184	3.5	19.6	45274	3.5	19.6	155990	3.6	19.0	459120	3.7	20.4	58763	3.7	18.6
533958	3.4	21.1	194102	3.5	20.2	453044	3.5	21.9	76809	3.6	19.8	191163	3.7	19.7	75966	3.7	18.6
233979	3.4	19.6	163111	3.5	19.4	231815	3.5	20.4	155611	3.6	19.5	386213	3.7	21.8	468514	3.7	19.4
106354	3.4	19.5	233412	3.5	20.1	97003	3.5	19.4	296000	3.6	21.6	2411	3.7	14.7	208072	3.7	19.4
125142	3.4	19.1	87497	3.5	18.6	111359	3.5	19.2	206237	3.6	20.8	179217	3.7	20.8	435768	3.7	19.4
29291	3.4	18.0	522364	3.5	22.3	494006	3.5	20.7	153991	3.6	19.6	257148	3.7	20.4	414021	3.7	19.6
351769	3.4	20.0	104348	3.5	18.3	132718	3.5	19.6	527502	3.6	22.4	59161	3.7	19.0	105167	3.7	18.6
115680	3.4	18.7	453087	3.5	22.2	10627	3.5	17.6	182649	3.6	20.1	414222	3.7	20.3	525259	3.7	20.6
236408	3.4	19.7	303742	3.5	20.4	435889	3.5	21.4	319604	3.6	19.8	331545	3.7	20.7	388058	3.7	19.3
221857	3.4	19.9	498005	3.5	19.4	235068	3.5	18.6	307782	3.6	20.6	154554	3.7	19.7	489200	3.7	21.1
283033	3.4	19.4	367279	3.5	21.1	481556	3.5	22.5	441550	3.6	21.5	202706	3.7	19.5	180443	3.7	19.2
430128	3.4	21.0	154650	3.5	19.8	458431	3.5	20.4	293022	3.6	19.7	235604	3.7	19.5	212072	3.7	19.3
466950	3.4	20.7	303435	3.5	21.0	344413	3.5	21.1	378364	3.6	20.7	2341	3.7	16.1	64587	3.7	18.8
300989	3.4	21.1	368584	3.5	20.2	58863	3.6	18.7	29603	3.6	18.2	266445	3.7	19.6	415476	3.7	20.2
322404	3.4	20.9	194210	3.5	20.9	32397	3.6	18.4	207089	3.6	19.8	168318	3.7	21.5	286307	3.7	20.8
5119	3.4	17.2	48475	3.5	17.4	393260	3.6	20.6	166582	3.6	20.4	169986	3.7	19.7	416885	3.8	21.6
247329	3.4	20.1	415105	3.5	19.6	262227	3.6	21.9	462714	3.6	20.3	130774	3.7	20.4	126228	3.8	20.5
403490	3.4	20.6	473115	3.5	20.2	319831	3.6	19.2	429202	3.6	21.0	318978	3.7	18.6	486045	3.8	21.4
415967	3.4	20.9	166984	3.5	20.2	287464	3.6	19.7	423504	3.6	22.2	243307	3.7	19.4	420078	3.8	21.0
292286	3.4	20.8	364707	3.5	21.5	529851	3.6	20.8	205263	3.6	20.1	54631	3.7	18.4	228596	3.8	19.9
406926	3.4	20.7	274595	3.5	20.7	463920	3.6	21.5	473352	3.6	22.1	355879	3.7	21.4	519566	3.8	21.5
373126	3.4	20.1	123024	3.5	18.9	70733	3.6	18.4	483140	3.6	22.2	93617	3.7	19.4	202344	3.8	20.7
124400	3.4	17.8	510732	3.5	21.5	157120	3.6	18.7	131643	3.6	20.6	284104	3.7	20.3	242794	3.8	19.3
506663	3.4	21.9	485003	3.5	21.7	527164	3.6	20.7	74269	3.6	18.8	502425	3.7	20.6	326362	3.8	19.8
432117	3.4	21.7	361563	3.5	20.2	345542	3.6	21.1	497453	3.6	21.5	10372	3.7	16.9	243615	3.8	19.1
241238	3.4	20.7	30738	3.5	17.8	286436	3.6	20.2	432558	3.6	19.9	109871	3.7	17.6	534458	3.8	22.1
292115	3.4	20.8	418988	3.5	20.5	535324	3.6	21.6	171925	3.6	19.8	192115	3.7	20.7	237004	3.8	19.8
104831	3.4	18.5	420228	3.5	20.7	106398	3.6	19.4	540148	3.6	21.2	146184	3.7	20.8	230478	3.8	20.0
459243	3.4	21.6	323929	3.5	19.8	12515	3.6	17.1	81610	3.6	18.5	522282	3.7	20.7	403340	3.8	19.7
8826	3.4	17.3	299017	3.5	21.2	416982	3.6	20.6	187455	3.6	19.8	30713	3.7	19.1	6042	3.8	17.5
291669	3.4	20.2	204424	3.5	20.7	528822	3.6	21.7	275548	3.6	20.0	201060	3.7	20.7	228183	3.8	20.2
497884	3.4	22.1	307700	3.5	19.2	276573	3.6	19.8	16090	3.6	19.1	62389	3.7	17.2	338402	3.8	20.8
36182	3.4	19.3	257449	3.5	21.4	222807	3.6	20.8	168493	3.6	20.1	81371	3.7	18.0	519957	3.8	21.2
301365	3.4	20.1	234276	3.5	20.1	420253	3.6	19.5	528951	3.6	21.7	163167	3.7	19.3	269108	3.8	20.9
498990	3.4	20.9	239461	3.5	20.2	500521	3.6	21.9	160754	3.6	20.2	397474	3.7	21.8	298813	3.8	21.0
417592	3.4	20.0	496827	3.5	23.2	381429	3.6	20.4	245037	3.6	20.8	527248	3.7	22.2	377777	3.8	20.8
543859	3.4	20.3	134805	3.5	20.4	165834	3.6	19.2	26013	3.6	17.8	199452	3.7	19.9	2958	3.8	16.4
368713	3.4	21.3	53826	3.5	17.2	277199	3.6	19.0	95610	3.6	19.5	188836	3.7	20.5	203073	3.8	20.1
146405	3.4	18.6	318954	3.5	19.6	394792	3.6	19.9	31201	3.6	18.4	341800	3.7	21.3	529342	3.8	21.5
256001	3.4	21.1	393540	3.5	21.1	307753	3.6	21.7	463711	3.6	21.5	285259	3.7	19.1	156188	3.8	19.6
468415	3.4	21.2	125569	3.5	19.9	213067	3.6	18.5	452612	3.6	20.8	278603	3.7	18.9	28941	3.8	18.2
171854	3.4	19.1	34480	3.5	17.3	147321	3.6	20.4	539115	3.6	20.6	415843	3.7</				

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
457120	3.8	21.7	456879	3.8	21.7	319953	3.9	21.0	502092	3.9	21.0	387729	4.1	20.2	3959	4.1	17.6
140554	3.8	19.3	54721	3.8	17.6	110631	3.9	19.2	251997	3.9	18.7	492253	4.1	20.6	504656	4.1	20.5
402103	3.8	22.4	260156	3.8	20.4	85517	3.9	19.0	335694	3.9	21.1	192175	4.1	19.5	264768	4.1	19.0
259874	3.8	19.9	406583	3.8	21.5	63462	3.9	19.3	394801	3.9	20.2	181642	4.1	21.0	146827	4.1	19.4
408479	3.8	21.1	219374	3.8	20.1	27896	3.9	18.6	243613	3.9	20.5	229677	4.1	19.2	466777	4.1	20.4
531368	3.8	21.5	526137	3.8	20.4	35415	3.9	17.9	109660	3.9	18.4	414910	4.1	21.9	15443	4.1	19.2
404449	3.8	20.4	534694	3.8	20.6	497459	3.9	21.4	293418	3.9	19.5	389731	4.1	20.4	95460	4.1	19.2
86426	3.8	17.9	13360	3.8	16.7	467372	3.9	23.4	482249	3.9	20.8	476524	4.1	21.1	512965	4.1	21.2
85432	3.8	19.9	521226	3.8	20.9	195036	3.9	20.5	59691	3.9	18.4	81977	4.1	18.1	47223	4.1	16.2
366437	3.8	21.3	505192	3.8	20.3	73244	3.9	19.0	488620	3.9	21.6	145766	4.1	19.1	498486	4.1	22.0
323103	3.8	21.6	247763	3.8	19.6	382302	3.9	20.5	26655	3.9	17.6	137254	4.1	19.0	452565	4.1	22.0
93238	3.8	19.2	106173	3.8	19.2	299572	3.9	19.8	348622	3.9	21.3	338944	4.1	20.0	24059	4.1	18.1
301435	3.8	21.8	40780	3.8	18.2	514586	3.9	21.1	58236	3.9	19.3	277370	4.1	21.7	370785	4.1	22.1
181066	3.8	19.5	501032	3.9	21.7	229963	3.9	21.0	35283	3.9	19.0	532778	4.1	21.0	436675	4.1	21.1
149877	3.8	19.8	78236	3.9	18.3	329790	3.9	20.3	206841	3.9	19.3	447302	4.1	20.3	440907	4.1	21.6
458343	3.8	20.3	203552	3.9	21.0	485403	3.9	19.6	405172	3.9	22.1	192556	4.1	21.0	30442	4.1	18.0
426311	3.8	20.7	110899	3.9	19.4	350395	3.9	20.7	193821	3.9	20.0	2457	4.1	15.9	92681	4.1	19.3
366233	3.8	20.1	350737	3.9	21.9	3903	3.9	15.8	342901	3.9	20.5	277969	4.1	20.1	385085	4.1	20.8
12843	3.8	18.3	104121	3.9	20.0	503595	3.9	21.0	90330	3.9	18.0	26218	4.1	18.1	305903	4.2	20.9
65758	3.8	18.6	240268	3.9	20.0	246279	3.9	20.3	302077	3.9	19.7	163222	4.1	19.8	212075	4.2	19.6
544855	3.8	20.7	471386	3.9	21.9	40615	3.9	18.5	503736	3.9	20.2	532092	4.1	21.4	157856	4.2	20.4
414209	3.8	20.6	84035	3.9	19.5	506768	3.9	21.6	56062	3.9	19.5	466017	4.1	20.5	258125	4.2	20.9
387265	3.8	20.5	320793	3.9	20.7	200094	3.9	20.4	195211	3.9	20.8	98139	4.1	19.6	204136	4.2	18.5
308245	3.8	19.9	248183	3.9	19.7	253185	3.9	20.0	374490	3.9	21.0	318064	4.1	20.8	196342	4.2	18.7
307479	3.8	21.4	501095	3.9	21.1	535227	3.9	21.4	414891	3.9	22.2	407847	4.1	21.3	543391	4.2	21.5
544674	3.8	20.7	338188	3.9	19.6	433258	3.9	20.4	396845	3.9	19.4	92515	4.1	19.2	498632	4.2	21.6
177090	3.8	19.8	176070	3.9	19.9	230457	3.9	19.8	162721	3.9	20.2	92469	4.1	17.9	184977	4.2	19.1
310466	3.8	20.1	11887	3.9	17.8	93191	3.9	18.5	453914	4.0	22.4	167478	4.1	19.9	487548	4.2	20.9
391359	3.8	21.4	425225	3.9	21.6	461395	3.9	21.4	232295	4.0	19.9	99299	4.1	18.0	526271	4.2	22.1
2498	3.8	19.8	66889	3.9	19.3	18939	3.9	17.7	105728	4.0	19.5	393943	4.1	20.7	20475	4.2	19.3
134290	3.8	19.6	470118	3.9	21.0	196610	3.9	20.4	175556	4.0	19.9	217079	4.1	20.7	8748	4.2	16.2
369348	3.8	20.1	310978	3.9	20.4	496092	3.9	20.7	283555	4.0	21.8	407387	4.1	21.7	536870	4.2	20.5
117412	3.8	20.7	341419	3.9	20.6	305657	3.9	21.1	187689	4.0	19.8	321253	4.1	19.4	157557	4.2	20.1
29137	3.8	18.9	400263	3.9	21.7	506714	3.9	20.9	430726	4.0	21.1	143369	4.1	19.9	249128	4.2	20.4
507133	3.8	22.3	55726	3.9	19.4	510300	3.9	19.3	255867	4.0	20.8	271745	4.1	21.0	450806	4.2	21.4
156252	3.8	20.2	277248	3.9	20.7	34096	3.9	18.8	468145	4.0	22.2	311102	4.1	19.7	140912	4.2	20.6
379506	3.8	20.5	12516	3.9	16.9	79523	3.9	19.0	294498	4.0	20.2	235091	4.1	18.6	194390	4.2	18.5
302044	3.8	19.6	7432	3.9	17.1	194656	3.9	19.9	109888	4.0	19.7	460074	4.1	20.6	350049	4.2	19.9
439122	3.8	21.5	99896	3.9	18.3	181869	3.9	19.5	533300	4.0	21.0	346878	4.1	21.0	21424	4.2	18.3
39255	3.8	18.1	77194	3.9	19.1	513414	3.9	22.6	469609	4.0	20.6	20122	4.1	18.6	437425	4.2	20.1
159580	3.8	18.6	11363	3.9	16.8	531725	3.9	23.3	315480	4.0	21.4	59403	4.1	17.6	57566	4.2	18.8
421237	3.8	20.2	183314	3.9	20.1	487392	3.9	20.7	173264	4.0	19.5	65067	4.1	19.7	342792	4.2	21.1
505931	3.8	20.8	188741	3.9	20.3	173754	3.9	20.2	192996	4.0	19.1	36307	4.1	17.5	149441	4.2	19.0
297880	3.8	20.7	176701	3.9	19.5	192750	3.9	20.7	506	4.0	14.1	256098	4.1	21.7	496838	4.2	21.3
44611	3.8	18.6	136387	3.9	19.6	421282	3.9	20.3	243800	4.0	20.0	385522	4.1	19.5	6388	4.2	16.8
248793	3.8	20.5	452196	3.9	21.0	321206	3.9	18.4	210169	4.0	19.6	247506	4.1	20.0	15764	4.2	17.8
387807	3.8	19.3	368673	3.9	19.9	240464	3.9	20.4	196587	4.0	19.2	3367	4.1	16.4	503108	4.2	20.9
19716	3.8	17.2	140785	3.9	19.4	504455	3.9	21.9	230972	4.0	18.8	295341	4.1	19.5	433498	4.2	20.8
340795	3.8	19.9	48049	3.9	17.9	208172	3.9	19.5	235024	4.0	18.9	349055	4.1	19.8	315700	4.2	20.3
117758	3.8	19.2	419749	3.9	21.5	2697	3.9	16.0	147330	4.0	20.0	366854	4.1	21.1	166808	4.2	20.0
348902	3.8	20.9	255987	3.9	21.2	357593	3.9	21.4	66807	4.0	18.5	534137	4.1	20.7	283749	4.2	20.4
187928	3.8	19.2	310407	3.9	21.2	89042	3.9	19.7	504225	4.0	21.8	373184	4.1	19.9	172023	4.2	19.7
401522	3.8	19.8	433795	3.9	20.3	178198	3.9	19.8	417668	4.0	20.1	360772	4.1	20.2	295925	4.2	20.3
161077	3.8	19.1	264613	3.9	21.1	192823	3.9	20.2	166248	4.0	18.6	533818	4.1	21.4	217896	4.2	19.3
162760	3.8	20.4	307747	3.9	20.7	392810	3.9	20.5	503167	4.0	20.7	128819	4.1	19.7	530865	4.2	20.4
433864	3.8	20.5	231678	3.9	20.5	341817	3.9	21.3	178002	4.0	20.2	536400	4.1	21.5	221560	4.2	19.2
147969	3.8	21.3	392761	3.9	20.9	46465	3.9	18.6	206902	4.0	20.1	489183	4.1	21.5	415968	4.2	21.9
52544	3.8	18.8	512327	3.9	20.9	375851	3.9	20.8	503255	4.0	20.0	229960	4.1	20.0	537215	4.2	21.1
322432	3.8	20.6	538650	3.9	19.6	273906	3.9	20.1	514092	4.0	21.5	364646	4.1	21.8	82038	4.2	18.3
140812	3.8	20.0	19221	3.9	17.3	110007	3.9	19.3	129257	4.0	19.2	200181	4.1	20.1	359649	4.2	20.5
431907	3.8	21.2	81991	3.9	19.1	173371	3.9	19.6	414248	4.0	20.5	242021	4.1	20.6	1345	4.2	16.2
415947	3.8	19.1	252485	3.9	20.3	464678	3.9	20.5	131219	4.0	18.0	100161	4.1	19.4	138024	4.2	19.8
167685	3.8	19.4	434801	3.9	21.0	533904	3.9	20.6	306104	4.0	19.7	278170	4.1	19.7	111292	4.2	19.1
435900	3.8	21.5	79465	3.9	19.5	122550	3.9	19.6	176568	4.0	19.3	277512	4.1	20.5	308318	4.2	20.8
57864	3.8	19.0	200920	3.9	21.0	26828	3.9	18.3	52610	4.0	19.2	447187	4.1	21.0	47911	4.2	18.2
287525	3.8	20.8	94170	3.9	19.5	44071	3.9	17.3	377844	4.0	21.1	15333	4.1	18.2	353825	4.2	20.7
70453	3.8	19.0	517628	3.9	20.6	298254	3.9	20.3	430206	4.0	19.6	37840	4.1	19.3	128089	4.2	19.2
386169	3.8	21.2	399223	3.9	20.7	181088	3.9	20.1	29964	4.0	18.1	59210	4.1	18.6	347453	4.2	20.6
236207	3.8	20.3	321528	3.9	19.5	100077	3.9	19.4	282832	4.0	19.4	496983	4.1	20.8	64130	4.2	19.7
166566	3.8	19.7	373012	3.9	22.0	437023	3.9	20.8	294404	4.0	19.8	453176	4.1	20.3	435365	4.2	21.0
31750	3.8	17.5	209592	3.9	20.6	5636	3.9	16.3	330876	4.0	20.6	415473	4.1	19.2	453299	4.2	



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
242362	4.2	19.6	128911	4.3	20.0	417795	4.3	20.3	167956	4.4	19.3	525807	4.5	22.3	470904	4.6	20.7
301744	4.2	20.2	9530	4.3	18.4	489325	4.3	21.8	98219	4.4	19.3	202543	4.5	20.1	66207	4.6	19.0
441134	4.2	21.7	161395	4.3	19.3	366404	4.3	20.5	138236	4.4	19.5	507455	4.5	20.8	21436	4.6	18.0
238312	4.2	20.6	398094	4.3	20.8	154691	4.4	19.0	416637	4.4	19.6	229050	4.5	20.7	369828	4.6	21.0
91856	4.2	19.1	181130	4.3	20.8	138735	4.4	20.0	303226	4.4	20.9	210713	4.5	21.2	130964	4.6	19.5
217072	4.2	19.4	385202	4.3	22.2	530694	4.4	21.0	493536	4.4	21.0	15848	4.5	18.4	105859	4.6	19.7
480924	4.2	19.2	35022	4.3	18.6	501083	4.4	21.4	259170	4.4	19.7	294418	4.5	21.8	126567	4.6	19.7
209463	4.2	21.0	426599	4.3	21.3	149682	4.4	18.3	253135	4.4	21.9	187146	4.5	20.4	525188	4.6	21.3
130813	4.2	19.7	427196	4.3	22.2	469332	4.4	20.1	70486	4.4	18.6	147680	4.5	19.3	380506	4.6	20.0
105767	4.2	18.9	496052	4.3	21.8	186614	4.4	18.8	7892	4.4	18.2	32110	4.5	18.0	236690	4.6	18.9
239900	4.2	18.0	110301	4.3	19.1	181853	4.4	21.2	155812	4.4	19.3	530288	4.5	22.7	299286	4.6	20.1
15531	4.2	18.1	363751	4.3	21.5	20038	4.4	18.4	62745	4.4	19.2	341303	4.5	20.8	463694	4.6	21.0
187926	4.2	19.3	544884	4.3	20.8	344489	4.4	21.1	390543	4.4	20.4	321592	4.5	20.2	54447	4.6	17.4
99302	4.2	20.0	498690	4.3	21.6	440101	4.4	20.3	250127	4.4	20.1	300021	4.5	21.5	529805	4.6	19.6
467876	4.2	21.0	82444	4.3	18.4	252597	4.4	20.1	138668	4.4	20.0	16872	4.5	17.7	345592	4.6	21.9
477476	4.2	22.4	352854	4.3	20.6	510977	4.4	20.9	301914	4.4	18.6	64553	4.5	19.2	222393	4.6	19.8
143605	4.2	19.3	381599	4.3	20.1	470513	4.4	21.1	254021	4.4	20.1	406670	4.5	22.0	214733	4.6	20.0
350783	4.2	19.0	54098	4.3	19.2	198876	4.4	20.1	83848	4.4	19.4	28906	4.5	17.8	534095	4.6	22.1
277815	4.2	20.3	203537	4.3	19.6	433185	4.4	20.8	95352	4.4	19.2	297256	4.5	20.1	332923	4.6	19.8
462038	4.2	20.8	42798	4.3	18.4	167542	4.4	20.2	127863	4.4	18.6	534875	4.5	21.2	468771	4.6	21.0
443254	4.2	21.8	409958	4.3	21.4	13438	4.4	17.9	298763	4.4	19.2	123545	4.5	19.1	136225	4.6	18.9
186200	4.2	20.1	30665	4.3	18.1	354894	4.4	20.8	303996	4.4	19.9	281109	4.5	20.5	106185	4.6	19.4
528827	4.2	22.7	200852	4.3	20.3	456484	4.4	21.4	467974	4.4	19.9	500069	4.5	21.8	290801	4.6	21.4
491917	4.2	21.8	287458	4.3	21.2	538454	4.4	21.3	525496	4.4	21.5	163292	4.5	19.7	395306	4.6	20.4
536195	4.2	21.3	526371	4.3	21.8	453960	4.4	20.1	408861	4.4	21.1	353282	4.5	20.8	37989	4.6	18.4
138086	4.2	19.6	87103	4.3	18.2	211474	4.4	20.3	72262	4.4	18.9	544492	4.5	20.1	448245	4.6	22.2
389629	4.2	19.1	19310	4.3	19.2	388818	4.4	21.3	87390	4.4	19.8	28515	4.5	17.4	153549	4.6	20.8
51984	4.2	19.1	210874	4.3	20.9	394862	4.4	19.9	93345	4.4	18.3	451080	4.5	21.8	29413	4.6	17.9
330514	4.2	21.0	138193	4.3	19.6	417037	4.4	21.4	194919	4.4	20.4	116255	4.5	20.1	503239	4.6	20.1
199592	4.2	20.2	371206	4.3	21.1	471156	4.4	20.0	209438	4.4	19.6	68019	4.5	19.5	536630	4.6	21.8
141828	4.2	20.1	83023	4.3	19.5	92468	4.4	18.7	297393	4.4	20.9	288507	4.5	20.4	208460	4.6	19.9
338222	4.2	20.5	278959	4.3	20.2	327906	4.4	20.2	211598	4.4	19.8	423686	4.5	22.7	286345	4.6	21.3
118919	4.2	18.5	148610	4.3	20.3	340288	4.4	20.8	497823	4.4	21.6	372325	4.5	19.8	56749	4.6	18.2
538684	4.2	20.5	158546	4.3	19.7	317385	4.4	20.5	146628	4.4	19.7	426747	4.5	20.5	502262	4.6	20.0
217047	4.2	19.6	315432	4.3	20.2	221782	4.4	20.9	69998	4.4	20.2	172360	4.5	19.1	508842	4.6	21.8
212558	4.2	19.9	413963	4.3	21.0	123771	4.4	19.7	188027	4.4	19.4	130546	4.5	18.9	234102	4.6	21.6
371095	4.2	20.3	368569	4.3	20.0	55953	4.4	18.8	156452	4.4	20.1	299523	4.5	20.0	206244	4.6	20.6
508279	4.2	20.9	374144	4.3	21.2	538636	4.4	21.2	225441	4.5	19.8	303737	4.5	20.2	137179	4.6	20.0
502681	4.2	21.3	135168	4.3	19.3	193178	4.4	22.0	58360	4.5	19.2	144847	4.5	20.0	496244	4.6	20.3
529368	4.2	21.3	283543	4.3	19.9	299562	4.4	20.0	132244	4.5	18.4	533617	4.5	20.7	449182	4.6	21.7
400297	4.2	21.6	545099	4.3	20.4	181763	4.4	20.9	31051	4.5	17.9	298912	4.5	21.9	219368	4.6	20.3
339710	4.2	20.2	55859	4.3	19.3	488779	4.4	20.5	420037	4.5	20.3	120591	4.5	19.5	153107	4.6	19.6
423700	4.2	21.3	218788	4.3	20.2	297692	4.4	20.2	427957	4.5	22.4	54495	4.5	17.8	303925	4.6	20.0
443329	4.2	19.8	34540	4.3	18.3	278852	4.4	20.5	45806	4.5	18.1	249532	4.5	20.2	32430	4.6	19.0
502782	4.2	20.9	258211	4.3	20.7	286045	4.4	21.5	332530	4.5	20.8	491093	4.5	21.9	56181	4.6	18.1
97431	4.2	20.2	263793	4.3	21.2	357517	4.4	21.0	306278	4.5	20.6	544445	4.5	21.5	181470	4.6	20.4
136349	4.2	19.3	524616	4.3	19.8	369273	4.4	19.7	140396	4.5	20.1	23214	4.5	18.2	280157	4.6	20.3
437748	4.2	21.5	4915	4.3	18.7	166689	4.4	19.8	425212	4.5	20.7	465773	4.5	21.2	269280	4.6	20.0
434541	4.2	20.2	452651	4.3	21.0	27449	4.4	18.6	520958	4.5	20.9	118546	4.5	19.9	102677	4.6	19.5
72474	4.2	19.7	443816	4.3	21.2	156491	4.4	19.9	119112	4.5	17.9	533846	4.5	20.9	302310	4.6	20.6
258520	4.2	20.4	526728	4.3	22.2	454080	4.4	20.8	377855	4.5	20.9	423777	4.5	21.2	91460	4.6	19.0
346215	4.2	20.6	355900	4.3	21.0	369916	4.4	20.2	283482	4.5	20.7	10716	4.5	16.8	468557	4.6	20.1
458539	4.2	20.5	359147	4.3	21.3	265767	4.4	19.3	471374	4.5	20.8	67987	4.5	16.9	119863	4.6	20.0
29860	4.2	18.1	298952	4.3	21.1	240620	4.4	20.8	166785	4.5	19.6	12173	4.5	18.1	234980	4.6	20.8
362148	4.2	19.6	495788	4.3	19.9	341052	4.4	20.9	417666	4.5	21.8	321154	4.5	20.9	51500	4.6	18.1
322992	4.2	20.2	162511	4.3	20.0	131460	4.4	19.8	540075	4.5	21.4	473069	4.5	20.1	50655	4.6	17.0
387361	4.2	20.6	217991	4.3	20.5	129209	4.4	19.4	491844	4.5	20.9	3373	4.5	16.8	47994	4.6	17.9
454212	4.2	22.1	334452	4.3	20.5	216922	4.4	20.3	376664	4.5	19.6	409720	4.5	20.1	517644	4.6	21.4
18311	4.3	18.0	72756	4.3	17.4	214446	4.4	18.6	526650	4.5	22.5	535372	4.5	20.8	117303	4.6	18.6
18194	4.3	18.5	152937	4.3	19.7	50125	4.4	19.4	95171	4.5	18.9	445872	4.5	20.2	152507	4.6	19.0
504189	4.3	21.5	272736	4.3	21.0	94929	4.4	19.5	395928	4.5	21.1	20027	4.5	18.8	403873	4.6	21.8
238358	4.3	20.2	360548	4.3	20.7	378888	4.4	21.8	187607	4.5	19.5	366439	4.5	22.0	55443	4.6	19.8
41507	4.3	19.0	304088	4.3	21.7	143535	4.4	18.6	159279	4.5	20.5	186010	4.5	19.3	544100	4.6	22.0
221114	4.3	20.4	497864	4.3	22.4	314038	4.4	21.4	416994	4.5	20.5	388332	4.5	21.1	362673	4.6	21.7
443208	4.3	21.1	24065	4.3	19.4	174823	4.4	18.8	50895	4.5	18.2	327471	4.5	21.0	36137	4.6	18.4
124483	4.3	20.3	5555	4.3	17.4	129280	4.4	19.2	272793	4.5	20.9	7352	4.5	16.7	129294	4.6	19.4
535067	4.3	21.4	221142	4.3	21.6	204152	4.4	21.0	384131	4.5	19.0	158737	4.5	19.2	533916	4.6	21.2
119396	4.3	18.4	225508	4.3	19.4	466484	4.4	20.1	443258	4.5	20.7	508688	4.5	21.6	7425	4.6	18.2
240267	4.3	21.1	483850	4.3	21.1	60538	4.4	18.0	284368	4.5	21.4	506682	4.5	21.3	100661	4.6	20.8
33253	4.3	18.8	534767	4.3	21.2	448150	4.4	21.6	427082	4.5	20.7	184	4.5	12.8	458898	4.6	21.1
131622	4.3	20.6	87808	4.3	18.8	435315	4.4	20.7	497849	4.5	21.3	438429	4.5	19.2	25		

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
417285	4.6	19.9	130666	4.7	20.2	294070	4.7	21.0	330473	4.8	21.6	76807	4.8	18.8	91670	4.9	20.2
305764	4.6	19.9	85155	4.7	19.4	19673	4.7	17.2	30033	4.8	18.5	151199	4.8	20.8	385093	4.9	21.4
417478	4.6	21.8	364655	4.7	21.3	47692	4.7	17.8	496473	4.8	21.2	299784	4.8	20.5	532344	4.9	21.0
113189	4.6	19.4	322871	4.7	20.9	105012	4.7	19.3	100553	4.8	17.2	284173	4.8	20.3	423572	4.9	21.2
454524	4.6	22.4	128920	4.7	20.7	116486	4.7	19.4	182316	4.8	18.6	25876	4.8	19.4	469400	4.9	22.8
337867	4.6	21.2	242989	4.7	19.2	469739	4.7	21.0	264670	4.8	20.6	94579	4.8	19.9	288609	4.9	18.6
354942	4.6	21.1	269772	4.7	20.2	536866	4.7	20.2	538625	4.8	21.4	391775	4.8	20.9	355999	4.9	19.6
492674	4.6	20.8	78314	4.7	19.1	218720	4.7	20.2	366890	4.8	21.1	317076	4.8	20.2	535762	4.9	22.2
485091	4.6	20.4	133276	4.7	19.1	427894	4.7	22.5	152870	4.8	21.4	504193	4.8	21.4	525641	4.9	20.3
303740	4.6	19.3	269416	4.7	19.9	436712	4.7	20.7	100915	4.8	18.2	528794	4.8	22.2	109023	4.9	18.8
28311	4.6	18.8	461991	4.7	22.1	136074	4.7	18.9	419164	4.8	20.7	230982	4.9	20.2	499808	4.9	21.2
204944	4.6	20.6	335766	4.7	20.5	106208	4.7	19.7	158961	4.8	18.5	340614	4.9	20.2	422755	4.9	21.7
83325	4.6	18.9	229168	4.7	21.1	309112	4.7	20.6	498715	4.8	21.1	519625	4.9	21.0	374606	4.9	21.1
491007	4.6	21.8	86421	4.7	19.1	496354	4.7	20.2	78822	4.8	20.0	228397	4.9	21.1	507335	4.9	21.2
234093	4.6	20.7	224409	4.7	19.2	538440	4.7	21.3	147323	4.8	20.4	81840	4.9	18.7	272899	4.9	20.3
27627	4.6	17.9	231295	4.7	20.3	259866	4.7	19.8	205249	4.8	20.4	159133	4.9	19.6	340939	4.9	20.5
468296	4.6	21.0	452266	4.7	20.1	64086	4.7	19.0	505074	4.8	20.6	57451	4.9	18.1	246054	4.9	20.1
187021	4.6	19.1	345678	4.7	20.6	458884	4.7	20.5	506731	4.8	20.8	127111	4.9	20.2	534403	4.9	22.5
183848	4.6	20.2	8834	4.7	17.9	297875	4.7	19.8	104105	4.8	18.6	180543	4.9	20.2	54983	4.9	18.8
371077	4.6	21.1	312121	4.7	21.9	353508	4.7	19.9	439718	4.8	20.2	36755	4.9	18.0	5770	4.9	16.7
312990	4.6	20.9	3808	4.7	16.5	533721	4.7	20.0	67008	4.8	19.1	345670	4.9	20.9	149478	4.9	18.7
258362	4.6	21.1	449144	4.7	20.5	398813	4.7	18.7	20079	4.8	17.3	80252	4.9	19.8	64344	4.9	19.2
13646	4.6	18.9	1791	4.7	14.9	533738	4.7	20.8	393300	4.8	19.7	61522	4.9	19.1	459364	4.9	20.4
413889	4.6	21.3	451096	4.7	21.6	461090	4.7	20.0	237249	4.8	20.4	208360	4.9	19.8	42297	4.9	19.4
500534	4.6	21.6	456785	4.7	22.6	298938	4.7	21.2	222444	4.8	19.4	117884	4.9	19.8	213020	4.9	20.5
122391	4.6	20.0	297488	4.7	19.9	282044	4.7	20.6	341451	4.8	21.6	407721	4.9	20.3	486678	4.9	21.7
199631	4.6	20.1	174401	4.7	17.9	16796	4.7	18.6	371153	4.8	21.8	313710	4.9	21.4	474033	4.9	19.7
506445	4.6	20.6	116500	4.7	19.4	154539	4.7	18.5	373984	4.8	21.5	226199	4.9	19.2	222850	4.9	20.1
427539	4.6	20.9	229628	4.7	20.0	490326	4.7	20.3	446141	4.8	21.7	456718	4.9	22.2	472779	4.9	20.2
403336	4.6	21.3	233097	4.7	20.2	523839	4.8	20.6	441667	4.8	22.3	508215	4.9	20.5	106913	4.9	19.1
184055	4.6	20.1	25273	4.7	18.3	527611	4.8	22.2	175925	4.8	21.2	348929	4.9	20.7	7512	4.9	17.2
285542	4.6	18.9	530130	4.7	21.6	148621	4.8	20.3	13063	4.8	16.8	72077	4.9	18.5	358479	4.9	20.8
36712	4.6	17.9	417148	4.7	20.8	419306	4.8	21.1	285158	4.8	21.0	87956	4.9	20.8	530722	4.9	21.7
492211	4.6	20.7	2737	4.7	16.6	74022	4.8	19.2	266287	4.8	20.5	115632	4.9	19.1	278706	4.9	20.6
471392	4.6	21.2	533481	4.7	20.0	384138	4.8	21.4	294299	4.8	21.4	319837	4.9	20.6	403029	4.9	21.1
418973	4.6	20.0	205448	4.7	20.1	303351	4.8	21.5	505048	4.8	21.8	188321	4.9	18.8	140631	4.9	18.4
152166	4.6	19.9	498139	4.7	22.4	233920	4.8	20.2	161536	4.8	20.2	427452	4.9	22.3	130876	4.9	19.7
211972	4.6	20.7	270117	4.7	21.1	458894	4.8	20.3	157573	4.8	21.8	297463	4.9	20.2	397901	4.9	20.1
433902	4.6	21.6	196386	4.7	18.5	50849	4.8	19.1	1755	4.8	15.5	417807	4.9	20.4	156105	4.9	19.7
331931	4.6	20.8	396244	4.7	20.2	279423	4.8	19.8	64232	4.8	18.8	124803	4.9	19.4	450826	4.9	21.5
373343	4.6	20.6	251737	4.7	20.4	381987	4.8	20.7	193248	4.8	20.7	284226	4.9	19.8	330094	4.9	20.5
388634	4.6	21.3	436926	4.7	20.8	325435	4.8	19.7	40503	4.8	17.7	477106	4.9	20.5	506703	4.9	21.7
70180	4.6	19.3	422757	4.7	21.1	266076	4.8	19.8	129622	4.8	19.0	95202	4.9	18.4	95667	4.9	19.6
497747	4.6	21.6	230528	4.7	20.6	228153	4.8	19.4	374508	4.8	21.8	148915	4.9	18.7	39791	4.9	18.3
20202	4.6	18.3	58814	4.7	18.3	122860	4.8	19.3	145577	4.8	19.2	465181	4.9	21.5	406028	4.9	22.4
281040	4.6	20.6	138224	4.7	19.7	60893	4.8	18.2	185176	4.8	21.1	293331	4.9	20.2	8994	4.9	17.0
83084	4.6	19.0	527393	4.7	20.9	353926	4.8	21.2	204755	4.8	20.3	527811	4.9	20.8	461986	4.9	20.8
461220	4.6	19.7	217443	4.7	20.8	346747	4.8	19.9	426217	4.8	20.3	64444	4.9	19.1	319642	4.9	19.8
202153	4.6	20.5	530624	4.7	20.4	218690	4.8	20.3	296306	4.8	20.1	225104	4.9	18.8	38644	4.9	18.3
65066	4.6	18.2	204381	4.7	21.2	32354	4.8	18.1	301777	4.8	19.8	431944	4.9	21.5	184985	4.9	20.2
234993	4.6	19.8	141267	4.7	20.0	498200	4.8	21.1	417723	4.8	19.3	295868	4.9	21.1	345582	4.9	20.7
414525	4.7	21.2	34863	4.7	17.5	155786	4.8	19.1	222665	4.8	20.1	314742	4.9	21.2	119113	4.9	19.4
544659	4.7	21.3	127356	4.7	19.2	432135	4.8	21.3	71969	4.8	18.8	120204	4.9	18.5	129690	4.9	19.7
399647	4.7	21.3	451009	4.7	20.9	119675	4.8	19.8	136047	4.8	19.2	79580	4.9	18.3	497155	4.9	20.8
241132	4.7	19.1	151189	4.7	19.6	453781	4.8	18.7	368721	4.8	20.8	84385	4.9	19.6	348833	4.9	21.3
224413	4.7	19.7	404769	4.7	20.1	328221	4.8	19.3	188006	4.8	20.0	450442	4.9	21.2	305366	4.9	20.4
127608	4.7	19.5	453252	4.7	21.2	489599	4.8	21.6	233746	4.8	19.5	57871	4.9	18.3	283913	4.9	20.0
131122	4.7	19.6	409005	4.7	21.5	500567	4.8	21.6	15717	4.8	18.0	257783	4.9	19.8	145628	4.9	19.8
246645	4.7	20.8	366843	4.7	20.0	46875	4.8	18.1	189501	4.8	19.5	456874	4.9	22.0	11562	4.9	17.8
450523	4.7	22.5	341550	4.7	19.6	344404	4.8	21.3	17644	4.8	17.2	385908	4.9	21.2	217075	4.9	20.4
103682	4.7	18.3	465932	4.7	20.9	448119	4.8	21.2	226859	4.8	20.0	214400	4.9	20.2	272744	4.9	21.5
61595	4.7	19.1	508170	4.7	19.9	184030	4.8	19.1	307368	4.8	19.7	228049	4.9	19.9	467957	4.9	20.5
322794	4.7	20.2	227505	4.7	20.0	249450	4.8	20.4	122332	4.8	19.2	238477	4.9	19.6	140372	4.9	19.3
243181	4.7	20.2	69549	4.7	17.0	60150	4.8	19.8	406913	4.8	20.7	420728	4.9	20.6	9170	4.9	17.8
134880	4.7	20.0	291348	4.7	20.1	240070	4.8	20.1	202875	4.8	19.4	492012	4.9	20.4	218022	4.9	20.9
96246	4.7	19.4	301086	4.7	19.7	131487	4.8	20.3	436952	4.8	21.8	263241	4.9	19.5	403888	4.9	21.8
64357	4.7	17.7	541618	4.7	19.9	64453	4.8	18.8	421973	4.8	19.9	125059	4.9	19.8	329367	4.9	21.7
118396	4.7	18.3	254489	4.7	18.6	78664	4.8	19.2	47935	4.8	18.4	328714	4.9	20.3	468097	4.9	21.0
416764	4.7	21.6	173847	4.7	19.9	105465	4.8	19.9	293557	4.8	20.2	113029	4.9	18.0	315553	4.9	20.9
284379	4.7	21.1	288260	4.7	20.4	523610	4.8	23.8	65247	4.8	19.2	214699	4.9	20.7	29068	4.9	18.8
310976	4.7	21.3	501387	4.7	21.3	279159	4.8	20.0	6446	4.8	19.6	519692	4.9	22.0			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
210180	4.9	20.3	27861	5.0	17.8	291892	5.1	19.3	465708	5.2	20.6	459189	5.2	20.5	150224	5.3	18.7
265690	4.9	20.8	121527	5.0	19.4	375353	5.1	20.3	482028	5.2	21.2	309225	5.2	21.0	224539	5.3	19.7
199139	4.9	20.2	160894	5.0	19.9	428719	5.1	21.2	23025	5.2	17.2	106569	5.2	18.6	539913	5.3	19.4
146315	4.9	18.2	387604	5.0	21.4	345982	5.1	20.0	148725	5.2	20.5	534332	5.2	20.6	455606	5.3	19.5
162517	4.9	19.6	316838	5.0	20.3	330708	5.1	19.2	423274	5.2	21.8	383794	5.2	20.7	305691	5.3	20.6
496251	4.9	20.3	219754	5.0	19.3	435902	5.1	21.2	485076	5.2	20.5	234098	5.2	20.2	373381	5.3	19.6
534096	4.9	20.2	485049	5.0	21.0	456784	5.1	22.4	514921	5.2	22.5	538273	5.2	21.2	160074	5.3	19.2
13234	4.9	17.1	312063	5.0	20.9	200901	5.1	20.8	45897	5.2	18.0	200745	5.2	19.2	351619	5.3	20.1
153858	4.9	20.2	304253	5.0	19.4	358088	5.1	19.9	148588	5.2	20.2	463545	5.2	20.6	176556	5.3	21.1
354971	4.9	19.7	247453	5.0	18.7	138564	5.1	20.9	259077	5.2	21.1	444688	5.2	20.4	245511	5.3	19.3
376682	4.9	21.0	286215	5.0	20.6	540576	5.1	22.0	258389	5.2	19.8	536441	5.2	21.2	61663	5.3	18.7
27721	4.9	18.3	58081	5.1	17.9	388736	5.1	21.3	366932	5.2	20.0	181098	5.2	19.7	124751	5.3	18.5
486850	4.9	20.8	174509	5.1	20.5	490987	5.1	20.5	533199	5.2	22.0	264181	5.2	20.1	468234	5.3	20.8
325168	4.9	21.1	351461	5.1	20.5	456747	5.1	20.9	7887	5.2	16.1	506435	5.2	20.9	245073	5.3	18.9
171153	4.9	19.5	495881	5.1	19.7	309855	5.1	21.4	532301	5.2	20.1	542799	5.2	20.4	10194	5.3	17.2
441471	4.9	21.6	390088	5.1	20.7	522598	5.1	20.4	505287	5.2	20.2	323147	5.2	19.8	130413	5.3	18.6
330471	4.9	19.3	530042	5.1	21.2	345664	5.1	20.5	299285	5.2	19.8	492458	5.3	20.6	384209	5.3	21.1
262621	4.9	20.7	369893	5.1	18.9	230812	5.1	18.8	237422	5.2	21.1	325035	5.3	20.4	370057	5.3	20.5
286377	4.9	21.0	522626	5.1	21.3	213092	5.1	19.2	433551	5.2	21.0	114739	5.3	19.5	435856	5.3	21.5
490339	4.9	20.9	366184	5.1	19.4	377370	5.1	20.3	164275	5.2	20.0	303220	5.3	19.5	331947	5.3	19.4
464570	4.9	20.1	78838	5.1	19.2	102483	5.1	19.1	369881	5.2	19.6	501460	5.3	20.6	423672	5.3	21.7
277006	4.9	20.2	329580	5.1	20.2	471181	5.1	20.1	429872	5.2	20.4	171496	5.3	20.2	258907	5.3	19.9
437228	4.9	20.8	158088	5.1	20.0	123795	5.1	19.4	225867	5.2	20.5	284876	5.3	19.9	256040	5.3	19.2
450356	4.9	22.4	423741	5.1	21.3	331319	5.1	20.3	289282	5.2	20.7	141162	5.3	19.3	242869	5.3	18.7
26159	4.9	18.3	269795	5.1	20.0	185097	5.1	20.4	501142	5.2	20.9	346851	5.3	21.5	109498	5.3	19.3
422706	4.9	22.7	153506	5.1	20.9	18268	5.1	18.7	258284	5.2	20.7	540508	5.3	22.3	91121	5.3	17.3
212711	4.9	20.8	283909	5.1	20.5	248948	5.1	19.6	1212	5.2	15.4	513050	5.3	20.5	105649	5.3	19.6
283424	4.9	20.0	123474	5.1	20.1	101002	5.1	20.1	498951	5.2	20.6	200990	5.3	20.8	183976	5.3	20.0
492013	4.9	20.1	238238	5.1	19.0	416410	5.1	20.6	82350	5.2	18.2	307849	5.3	19.4	498712	5.3	21.0
500604	4.9	21.1	279422	5.1	18.8	347864	5.1	18.9	467647	5.2	20.8	500654	5.3	21.1	412311	5.3	19.8
280868	4.9	20.8	256245	5.1	21.0	458951	5.1	21.9	467791	5.2	21.4	246419	5.3	19.6	445910	5.3	21.3
266649	4.9	20.3	502267	5.1	20.6	415899	5.1	21.5	417815	5.2	21.1	298887	5.3	20.8	138691	5.3	19.3
193350	4.9	20.8	54559	5.1	18.4	284459	5.1	20.4	111266	5.2	20.0	361173	5.3	19.0	350646	5.3	20.9
397195	4.9	21.6	273408	5.1	20.6	227958	5.1	20.6	184424	5.2	19.8	221130	5.3	20.0	460549	5.3	21.2
205888	4.9	19.1	96628	5.1	17.3	330405	5.1	20.5	29218	5.2	18.0	234417	5.3	19.3	500250	5.3	20.4
142510	5.0	20.2	180822	5.1	19.5	115509	5.1	17.5	357583	5.2	19.7	404192	5.3	20.1	473123	5.3	19.2
300060	5.0	21.7	543967	5.1	21.3	365365	5.1	20.6	269103	5.2	19.0	76232	5.3	18.6	419772	5.3	19.4
224252	5.0	20.1	536506	5.1	22.3	205558	5.1	20.1	347321	5.2	20.6	498791	5.3	21.2	250129	5.3	20.0
216293	5.0	20.3	14187	5.1	16.2	521976	5.1	20.8	529239	5.2	21.2	529356	5.3	20.5	275189	5.3	20.5
134033	5.0	18.6	529800	5.1	21.5	492319	5.1	21.5	62835	5.2	19.3	192082	5.3	19.8	329302	5.3	19.8
10051	5.0	19.1	489354	5.1	21.2	497858	5.1	22.0	258316	5.2	20.2	412603	5.3	19.7	28312	5.3	17.7
348933	5.0	20.0	403048	5.1	21.7	107615	5.1	17.5	315588	5.2	21.3	240497	5.3	20.5	363381	5.3	20.0
104857	5.0	18.3	87611	5.1	18.2	55980	5.1	17.8	95522	5.2	19.7	521151	5.3	20.5	1303	5.3	13.7
318198	5.0	20.7	467266	5.1	20.2	219707	5.1	19.3	266797	5.2	20.1	46634	5.3	19.0	332930	5.3	20.1
153709	5.0	19.9	483980	5.1	21.1	235320	5.1	21.2	507319	5.2	21.3	94694	5.3	19.4	351928	5.3	20.9
175797	5.0	18.8	381608	5.1	20.4	270751	5.1	19.6	337775	5.2	20.6	228272	5.3	21.8	191207	5.3	20.1
381469	5.0	20.5	335871	5.1	21.5	489564	5.1	20.5	32594	5.2	18.3	119647	5.3	19.2	147611	5.3	19.5
130647	5.0	18.7	185395	5.1	20.3	57295	5.1	19.1	505292	5.2	21.0	213105	5.3	19.3	400578	5.4	20.3
76837	5.0	19.5	382877	5.1	18.4	230562	5.1	20.4	347674	5.2	20.8	199593	5.3	20.0	231076	5.4	19.9
321512	5.0	19.0	386848	5.1	19.8	239664	5.1	19.7	439331	5.2	20.0	195247	5.3	19.8	374064	5.4	20.8
146501	5.0	19.8	112658	5.1	18.3	73553	5.1	17.9	69944	5.2	17.5	388638	5.3	21.1	370799	5.4	20.0
236155	5.0	20.4	187828	5.1	19.7	31723	5.1	18.0	461717	5.2	21.1	402880	5.3	20.7	9041	5.4	16.8
59477	5.0	18.0	503901	5.1	21.6	40563	5.1	18.4	246715	5.2	19.6	69961	5.3	17.7	104000	5.4	19.2
385141	5.0	21.3	84996	5.1	18.5	309719	5.1	20.4	5912	5.2	17.9	51345	5.3	19.4	182631	5.4	18.4
116311	5.0	19.4	500041	5.1	21.9	86007	5.2	17.8	224586	5.2	20.5	92803	5.3	19.3	258358	5.4	20.6
340901	5.0	20.0	499802	5.1	20.4	544093	5.2	20.6	349345	5.2	20.1	533932	5.3	20.3	109336	5.4	19.6
543672	5.0	20.5	476748	5.1	22.1	85122	5.2	19.0	505080	5.2	21.6	246249	5.3	20.3	122293	5.4	18.9
192769	5.0	20.0	204928	5.1	20.7	184072	5.2	19.2	350960	5.2	19.9	194216	5.3	20.4	434048	5.4	21.2
432927	5.0	20.1	388703	5.1	20.8	248373	5.2	19.6	418373	5.2	20.6	406099	5.3	21.6	485012	5.4	21.4
440289	5.0	21.7	93519	5.1	18.9	293933	5.2	20.4	435361	5.2	21.2	32080	5.3	15.7	265598	5.4	20.4
374509	5.0	20.7	64949	5.1	17.1	242190	5.2	18.1	287327	5.2	19.9	282532	5.3	20.6	183240	5.4	18.6
111790	5.0	19.1	529441	5.1	20.5	5824	5.2	16.5	233234	5.2	20.1	158042	5.3	19.9	505302	5.4	20.8
51620	5.0	17.1	417645	5.1	19.8	504244	5.2	20.2	531161	5.2	20.0	169224	5.3	19.2	238671	5.4	20.2
457126	5.0	20.5	357545	5.1	20.6	413132	5.2	19.8	209404	5.2	18.7	399079	5.3	20.3	137185	5.4	18.3
172531	5.0	19.0	417296	5.1	20.8	509301	5.2	20.1	343161	5.2	20.1	337910	5.3	20.7	370730	5.4	19.8
530031	5.0	21.3	288540	5.1	19.5	433188	5.2	20.6	217548	5.2	18.9	221292	5.3	20.1	229740	5.4	19.1
421032	5.0	21.1	162688	5.1	19.4	293416	5.2	20.0	37489	5.2	18.3	6025	5.3	16.0	425032	5.4	20.0
128324	5.0	17.8	239893	5.1	19.2	493552	5.2	19.1	385016	5.2	20.8	200825	5.3	20.0	130572	5.4	18.6
48252	5.0	19.2	543823	5.1	19.5	329387	5.2	21.0	210913	5.2	21.4	35506	5.3	18.8	102154	5.4	19.3
153685	5.0	20.3	158361	5.1	20.8	299294	5.2	21.1	472864	5.2	19.9	47658	5.3	19.3	542453	5.4	19.7
87697	5.0	18.6	542012	5.1	19.8	226585	5.2	20.3	341666	5.2	20.8	491					

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
184371	5.4	20.3	363960	5.4	18.6	495121	5.5	21.3	286703	5.6	19.1	306229	5.7	21.0	538918	5.7	20.3
374098	5.4	20.7	381978	5.4	20.5	430788	5.5	21.0	529082	5.6	21.1	355840	5.7	20.5	283489	5.7	20.7
359994	5.4	20.3	276577	5.4	20.5	532093	5.5	22.0	145238	5.6	19.4	496684	5.7	21.4	125366	5.7	20.5
500881	5.4	24.3	444339	5.4	20.9	208486	5.5	19.8	162772	5.6	19.6	195397	5.7	18.7	201768	5.7	20.2
17533	5.4	17.5	539128	5.4	21.0	465413	5.5	20.4	387164	5.6	20.8	441525	5.7	21.5	410579	5.7	21.5
185570	5.4	20.4	468226	5.5	21.0	96907	5.5	19.4	498264	5.6	21.9	195204	5.7	20.5	331161	5.7	20.7
483014	5.4	20.5	98868	5.5	19.0	241506	5.5	18.8	229961	5.6	19.7	82004	5.7	18.8	54137	5.7	17.5
462883	5.4	21.7	62303	5.5	18.7	342630	5.5	20.0	510340	5.6	20.8	462227	5.7	21.2	163607	5.7	19.9
378877	5.4	20.8	468236	5.5	20.9	200843	5.5	20.9	60629	5.6	18.5	147253	5.7	19.3	375940	5.7	20.4
33063	5.4	18.6	297403	5.5	20.5	59280	5.5	18.0	379173	5.6	20.4	464394	5.7	20.6	211436	5.7	20.9
206128	5.4	20.6	375730	5.5	19.0	419857	5.5	20.9	283985	5.6	20.4	534744	5.7	20.7	225397	5.7	20.3
140227	5.4	20.3	87449	5.5	19.5	98130	5.5	18.3	27872	5.6	17.9	108962	5.7	18.7	46518	5.7	18.6
466740	5.4	20.9	214052	5.5	19.8	231505	5.5	19.9	285755	5.6	20.6	386221	5.7	20.7	30549	5.7	19.1
155766	5.4	20.2	296591	5.5	21.0	238475	5.5	20.0	64599	5.6	17.0	528086	5.7	20.8	253200	5.7	20.9
85234	5.4	18.8	264617	5.5	20.6	8233	5.5	17.1	283570	5.6	19.6	152933	5.7	18.0	417082	5.7	20.6
506449	5.4	19.8	309130	5.5	19.9	132144	5.5	18.2	213245	5.6	20.7	426882	5.7	20.0	232398	5.7	19.4
431170	5.4	20.4	288331	5.5	20.4	54551	5.5	18.0	19009	5.6	18.0	321733	5.7	19.6	330035	5.7	20.5
58219	5.4	17.7	208638	5.5	18.8	272718	5.5	20.7	68437	5.6	20.1	94457	5.7	19.1	473796	5.7	19.3
153879	5.4	20.0	93870	5.5	20.4	495382	5.5	21.0	150071	5.6	18.7	248990	5.7	19.6	491674	5.7	20.9
140868	5.4	19.7	266906	5.5	19.6	432096	5.5	21.4	237751	5.6	19.3	416899	5.7	21.3	312832	5.7	20.6
392804	5.4	20.0	374104	5.5	19.8	527339	5.5	22.2	419815	5.6	21.3	471648	5.7	20.0	173150	5.7	19.9
210123	5.4	20.8	163517	5.5	18.9	212757	5.5	19.9	338349	5.6	19.9	290931	5.7	19.8	22779	5.7	17.3
95476	5.4	20.4	5703	5.5	17.2	286717	5.5	18.9	299940	5.6	20.1	338872	5.7	19.8	51347	5.7	18.9
400360	5.4	20.9	234996	5.5	21.0	430743	5.5	19.3	194770	5.6	20.0	293803	5.7	20.3	467385	5.7	21.1
131145	5.4	18.0	398405	5.5	20.2	138571	5.5	19.1	217972	5.6	19.3	110498	5.7	19.2	283310	5.7	20.4
130971	5.4	19.1	266919	5.5	20.5	423638	5.5	20.8	240595	5.6	19.9	140522	5.7	18.9	312828	5.7	21.7
340045	5.4	20.8	193672	5.5	19.0	49419	5.5	18.5	543879	5.6	21.8	151204	5.7	19.0	138223	5.7	19.8
296349	5.4	18.9	415806	5.5	20.1	264751	5.5	20.4	188902	5.6	20.4	62006	5.7	19.1	241159	5.7	18.9
88692	5.4	19.3	288728	5.5	20.1	341025	5.5	20.6	183412	5.6	19.3	410025	5.7	21.5	271101	5.7	19.4
456838	5.4	21.6	301348	5.5	20.5	449228	5.5	21.0	480051	5.6	21.6	218688	5.7	20.0	222792	5.7	20.6
49503	5.4	18.1	102123	5.5	18.7	132064	5.5	19.4	148743	5.6	19.7	364302	5.7	19.9	214077	5.7	19.5
285899	5.4	20.0	249225	5.5	20.0	83233	5.5	19.4	275351	5.6	20.6	140410	5.7	19.2	119691	5.7	19.2
5978	5.4	14.8	331802	5.5	19.5	310374	5.5	20.5	78675	5.6	18.6	527374	5.7	21.7	540156	5.7	20.9
467096	5.4	19.7	330722	5.5	19.8	507344	5.5	21.3	542738	5.6	20.3	245904	5.7	20.4	167291	5.7	20.2
81717	5.4	17.9	417018	5.5	21.3	320737	5.5	19.8	405369	5.6	21.2	182578	5.7	19.9	517664	5.7	20.9
53286	5.4	18.2	253934	5.5	19.9	58410	5.5	18.4	76067	5.6	19.1	341888	5.7	21.1	462798	5.7	21.6
225577	5.4	19.8	200087	5.5	19.2	29059	5.5	18.0	437100	5.6	20.9	354839	5.7	20.5	250208	5.7	20.7
160442	5.4	19.0	101549	5.5	17.6	495365	5.5	20.5	433068	5.6	20.7	334220	5.7	20.9	353233	5.7	21.0
245981	5.4	19.2	299448	5.5	19.3	54148	5.5	17.2	105482	5.6	18.3	271829	5.7	21.2	536410	5.7	21.6
411411	5.4	20.8	296037	5.5	19.5	251999	5.5	19.6	105982	5.6	19.5	207238	5.7	20.2	110590	5.7	18.4
443944	5.4	20.4	294660	5.5	19.5	473197	5.5	20.8	205912	5.6	18.4	502589	5.7	21.1	536241	5.7	20.2
284987	5.4	20.0	466252	5.5	19.2	522814	5.5	20.4	17760	5.6	18.0	499306	5.7	21.3	498384	5.7	21.6
205761	5.4	19.5	463320	5.5	20.2	527642	5.5	20.6	189619	5.6	19.7	213883	5.7	20.1	42875	5.7	18.0
116127	5.4	19.9	24471	5.5	18.2	403890	5.5	20.4	432067	5.6	21.3	87891	5.7	19.3	348997	5.7	20.4
148630	5.4	21.1	528865	5.5	20.3	199726	5.5	20.2	512389	5.6	20.4	435313	5.7	20.7	529214	5.7	21.2
84335	5.4	19.2	508980	5.5	20.9	323090	5.5	21.6	135449	5.6	19.7	292255	5.7	21.8	353901	5.7	20.2
54235	5.4	18.4	104602	5.5	18.9	425039	5.5	20.5	505586	5.6	20.6	3611	5.7	17.8	375746	5.7	21.9
532103	5.4	20.4	427525	5.5	21.4	310122	5.5	19.9	282195	5.6	18.4	538131	5.7	20.3	60840	5.7	18.8
140390	5.4	19.1	38900	5.5	17.8	167244	5.5	20.1	192325	5.6	19.4	306435	5.7	21.2	204234	5.8	20.2
346947	5.4	19.9	132126	5.5	18.5	167632	5.5	19.9	207133	5.6	19.6	318738	5.7	19.7	16380	5.8	18.9
178222	5.4	20.0	326699	5.5	19.8	37836	5.5	18.3	157227	5.6	19.5	158912	5.7	20.2	405257	5.8	19.7
376495	5.4	20.5	264973	5.5	21.1	231752	5.5	20.6	200221	5.6	19.5	384192	5.7	21.0	453804	5.8	21.1
355970	5.4	19.7	153847	5.5	19.8	269474	5.5	19.6	371083	5.6	20.3	531648	5.7	20.7	366409	5.8	19.2
105993	5.4	18.4	542135	5.5	19.7	410509	5.5	21.1	309140	5.6	18.9	351878	5.7	21.1	173961	5.8	19.7
527789	5.4	21.4	332400	5.5	18.7	309465	5.5	20.8	317167	5.6	19.4	2124	5.7	15.7	14757	5.8	17.7
297864	5.4	21.3	537233	5.5	20.6	279636	5.5	19.7	5812	5.6	16.1	61417	5.7	18.1	432185	5.8	19.8
535852	5.4	20.6	300143	5.5	20.1	498520	5.5	21.7	37722	5.6	19.9	212303	5.7	19.7	415950	5.8	21.0
224956	5.4	19.5	382832	5.5	21.3	288812	5.5	20.2	309839	5.6	19.4	23206	5.7	18.2	253281	5.8	21.0
207383	5.4	19.5	284156	5.5	20.7	129976	5.5	17.8	69082	5.6	17.9	457214	5.7	20.4	1938	5.8	14.0
393887	5.4	20.5	530249	5.5	21.5	23415	5.5	18.6	346191	5.6	18.6	292627	5.7	20.7	470122	5.8	20.7
350649	5.4	20.1	489052	5.5	21.1	142351	5.5	19.9	463452	5.6	20.6	503189	5.7	20.8	500673	5.8	21.3
477965	5.4	21.0	310977	5.5	20.3	498835	5.5	21.4	394370	5.6	19.5	122367	5.7	19.2	496358	5.8	20.8
387417	5.4	20.3	379041	5.5	20.3	100759	5.5	18.9	461413	5.6	21.4	205301	5.7	20.0	486768	5.8	19.9
287390	5.4	20.3	83867	5.5	19.5	348648	5.5	20.6	379031	5.6	20.8	306200	5.7	19.8	281843	5.8	20.6
87044	5.4	18.3	534044	5.5	19.0	177042	5.5	20.0	181330	5.6	21.9	523346	5.7	19.8	131862	5.8	19.8
97417	5.4	18.3	473622	5.5	21.8	491202	5.5	20.8	391839	5.6	18.6	458877	5.7	21.4	277690	5.8	20.0
511064	5.4	21.1	108224	5.5	17.6	437582	5.5	21.2	212811	5.6	20.9	313019	5.7	20.5	217447	5.8	20.1
140789	5.4	20.0	144493	5.5	19.5	533559	5.5	22.2	512942	5.6	21.0	435423	5.7	21.2	491274	5.8	19.7
524675	5.4	21.7	64104	5.5	18.9	217961	5.5	19.8	160571	5.6	19.2	146129	5.7	19.5	91267	5.8	18.3
402898	5.4	21.3	191254	5.5	20.3	408752	5.5	16.2	489208	5.6	19.8	486171	5.7	20.5	210359	5.8	19.2
10557	5.4	17.3	120093	5.5	18.4	536845	5.5	20.9	397334	5.6	20.8	522699	5.				

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
226628	5.8	19.8	496999	5.8	22.0	32946	5.9	19.2	362423	5.9	19.1	182777	6.1	20.1	485421	6.1	20.5
377094	5.8	20.0	423757	5.8	21.0	461062	5.9	19.1	233962	5.9	19.9	466309	6.1	20.6	524633	6.1	21.4
411847	5.8	20.9	429042	5.8	20.8	425906	5.9	20.6	419704	5.9	21.7	303381	6.1	20.2	140420	6.1	19.5
82689	5.8	18.7	164666	5.8	18.7	87704	5.9	20.3	92896	5.9	18.8	497605	6.1	20.1	84264	6.1	19.4
534800	5.8	21.3	425065	5.9	21.4	332791	5.9	19.7	237782	5.9	19.2	387499	6.1	20.9	290802	6.1	21.1
369897	5.8	20.2	315417	5.9	20.6	189263	5.9	21.1	246113	5.9	20.0	109716	6.1	19.3	79270	6.1	19.0
85265	5.8	19.0	423449	5.9	22.2	411939	5.9	20.9	526041	5.9	22.0	239688	6.1	19.6	249460	6.1	19.2
375378	5.8	19.6	334528	5.9	19.1	14328	5.9	17.3	439808	5.9	19.1	430800	6.1	20.3	64725	6.1	19.0
165820	5.8	19.6	5333	5.9	16.1	372000	5.9	19.9	402923	5.9	20.2	452562	6.1	20.3	76770	6.1	17.6
451242	5.8	20.0	40733	5.9	17.8	361193	5.9	19.3	542419	5.9	20.6	298716	6.1	19.6	52204	6.1	18.9
521011	5.8	21.1	371169	5.9	21.4	40704	5.9	18.0	131175	5.9	20.3	364359	6.1	19.9	151288	6.1	17.8
162883	5.8	18.7	243984	5.9	19.3	369326	5.9	21.2	498897	5.9	21.7	405919	6.1	20.6	17158	6.1	16.8
65955	5.8	19.1	458309	5.9	21.9	101763	5.9	18.9	527133	5.9	21.7	30605	6.1	18.9	139883	6.1	19.1
82604	5.8	17.8	207393	5.9	18.6	109294	5.9	18.5	374653	5.9	20.4	458840	6.1	21.4	69279	6.1	18.6
430320	5.8	20.5	232068	5.9	19.9	235758	5.9	19.9	522505	5.9	20.7	463612	6.1	20.3	537070	6.1	21.0
367515	5.8	18.8	105166	5.9	18.2	22043	5.9	17.1	388399	5.9	21.0	134010	6.1	20.4	523603	6.1	20.6
374101	5.8	18.5	70374	5.9	18.9	116209	5.9	19.2	176077	5.9	18.6	423787	6.1	20.3	93172	6.1	19.3
265511	5.8	19.9	476534	5.9	20.9	70961	5.9	18.2	4687	5.9	17.6	19374	6.1	17.4	98392	6.1	19.0
246386	5.8	20.1	474072	5.9	20.4	346188	5.9	20.3	483024	5.9	19.5	310495	6.1	20.9	488776	6.1	21.4
351467	5.8	20.1	91060	5.9	19.0	369063	5.9	19.5	52869	5.9	17.6	417614	6.1	18.9	93562	6.1	19.8
478239	5.8	20.6	4323	5.9	15.8	535499	5.9	21.0	204306	5.9	19.5	33297	6.1	17.5	528281	6.1	19.6
467363	5.8	20.1	302453	5.9	18.7	292707	5.9	19.8	138591	5.9	19.0	292701	6.1	20.9	230294	6.1	20.8
526926	5.8	21.1	496414	5.9	20.9	388382	5.9	21.7	293743	5.9	19.2	404128	6.1	19.3	475914	6.1	20.5
144845	5.8	19.4	123058	5.9	18.5	489108	5.9	20.4	455078	5.9	20.7	543909	6.1	20.4	85684	6.1	18.1
19326	5.8	17.2	212137	5.9	20.8	89915	5.9	18.9	319637	5.9	21.0	146453	6.1	19.8	229163	6.1	18.8
313777	5.8	20.7	423683	5.9	21.0	271098	5.9	19.5	260525	5.9	20.1	380678	6.1	21.3	303870	6.1	20.4
456652	5.8	20.3	345045	5.9	21.0	524207	5.9	22.2	531372	5.9	20.6	159070	6.1	19.3	80293	6.1	18.4
341872	5.8	20.5	253227	5.9	19.9	469644	5.9	22.1	522610	5.9	20.4	244597	6.1	20.4	253325	6.1	21.0
222803	5.8	20.4	47184	5.9	18.3	489634	5.9	21.9	36652	6.0	18.7	251435	6.1	21.2	430490	6.1	20.8
45280	5.8	19.4	6723	5.9	17.8	38678	5.9	18.5	456547	6.0	20.6	161607	6.1	19.4	403263	6.1	20.4
296055	5.8	21.5	33711	5.9	18.9	402487	5.9	19.8	23594	6.0	17.9	340306	6.1	20.8	172039	6.1	19.7
326387	5.8	19.9	194705	5.9	20.9	28679	5.9	18.5	138787	6.0	18.7	293370	6.1	20.1	423519	6.1	21.0
325317	5.8	19.4	497212	5.9	21.1	166205	5.9	19.2	510339	6.0	21.8	502732	6.1	21.0	344613	6.1	20.0
291047	5.8	20.2	135380	5.9	18.5	47107	5.9	18.3	90951	6.0	20.2	30947	6.1	17.7	141782	6.1	19.8
368762	5.8	20.8	135070	5.9	19.2	276349	5.9	19.1	22765	6.0	17.5	349933	6.1	19.8	529490	6.1	21.0
58543	5.8	19.8	302949	5.9	18.8	274060	5.9	21.1	390440	6.0	21.2	176995	6.1	19.2	501407	6.1	21.2
14345	5.8	17.0	28984	5.9	18.4	259107	5.9	21.8	67007	6.0	19.3	517640	6.1	20.8	345645	6.1	20.1
57808	5.8	19.4	42356	5.9	18.8	251755	5.9	20.2	268526	6.0	19.8	423610	6.1	21.8	561175	6.1	19.9
419497	5.8	20.5	141471	5.9	20.3	180881	5.9	18.9	168601	6.0	20.2	309339	6.1	20.3	203384	6.1	19.9
101787	5.8	18.9	186871	5.9	20.3	267439	5.9	20.5	417597	6.0	20.9	243195	6.1	20.6	83724	6.1	19.4
20082	5.8	18.6	386571	5.9	21.4	194141	5.9	19.5	223628	6.0	18.5	159299	6.1	19.3	395757	6.1	19.6
125089	5.8	19.5	535515	5.9	22.1	19720	5.9	16.0	154757	6.0	19.8	44166	6.1	17.2	531515	6.1	21.3
365519	5.8	19.0	83131	5.9	19.0	188029	5.9	19.8	459622	6.0	21.5	500582	6.1	22.0	344408	6.1	20.9
458789	5.8	21.9	67960	5.9	19.4	456394	5.9	20.9	90815	6.0	19.3	491114	6.1	21.0	498182	6.1	22.4
172772	5.8	18.9	148896	5.9	19.6	93376	5.9	19.0	50579	6.0	19.1	34561	6.1	17.8	125562	6.1	18.7
461951	5.8	22.0	442939	5.9	22.0	28017	5.9	17.9	282198	6.0	19.2	273007	6.1	20.2	308534	6.1	19.3
481791	5.8	22.6	172030	5.9	19.7	297636	5.9	20.6	378844	6.0	20.7	98044	6.1	19.3	255999	6.1	19.4
98277	5.8	18.5	534362	5.9	20.6	3679	5.9	16.3	358491	6.0	20.1	287582	6.1	18.4	91789	6.1	18.9
109135	5.8	19.0	11403	5.9	17.3	30734	5.9	18.1	163379	6.0	19.2	350947	6.1	20.0	379395	6.2	21.4
266322	5.8	21.4	536188	5.9	21.2	206755	5.9	19.0	66333	6.0	17.9	259463	6.1	19.5	206889	6.2	19.9
378720	5.8	19.4	300176	5.9	20.1	130912	5.9	18.1	202846	6.0	20.5	329783	6.1	20.1	495111	6.2	21.5
159655	5.8	18.5	527653	5.9	21.8	34701	5.9	18.2	239281	6.0	18.5	163485	6.1	20.4	514587	6.2	21.1
47308	5.8	19.1	486695	5.9	19.7	8363	5.9	17.5	495368	6.0	21.0	253320	6.1	20.2	498950	6.2	21.0
243568	5.8	20.6	367261	5.9	21.6	453899	5.9	21.2	43288	6.0	16.4	209081	6.1	19.1	144374	6.2	19.3
123688	5.8	19.2	218626	5.9	19.9	18878	5.9	16.0	435400	6.0	20.3	388398	6.1	21.6	166577	6.2	19.3
110321	5.8	19.9	186041	5.9	20.4	340846	5.9	20.4	235744	6.0	20.4	373880	6.1	20.6	388728	6.2	20.8
459217	5.8	20.9	541647	5.9	20.1	536409	5.9	20.7	377473	6.0	21.6	527224	6.1	20.8	78513	6.2	17.9
329394	5.8	20.8	542082	5.9	19.6	514289	5.9	22.1	205726	6.0	20.1	376152	6.1	20.6	371145	6.2	21.3
432167	5.8	20.7	409169	5.9	19.3	530478	5.9	20.6	359107	6.0	21.2	197621	6.1	19.9	344373	6.2	19.5
333699	5.8	20.9	534299	5.9	19.8	221346	5.9	20.3	232822	6.0	19.0	308961	6.1	19.0	254018	6.2	19.6
267719	5.8	21.7	362633	5.9	20.8	524434	5.9	21.7	467003	6.0	21.0	135130	6.1	20.0	330704	6.2	18.7
542144	5.8	20.1	340636	5.9	20.4	15273	5.9	17.9	71130	6.0	19.6	230838	6.1	19.8	513647	6.2	20.5
463471	5.8	20.6	173679	5.9	20.0	442191	5.9	20.1	462904	6.0	19.7	348938	6.1	21.0	124800	6.2	19.1
49913	5.8	18.6	81436	5.9	19.7	154990	5.9	19.4	417785	6.0	22.0	157985	6.1	18.7	372933	6.2	21.1
432189	5.8	21.2	341857	5.9	20.4	8757	5.9	16.7	138747	6.0	19.4	126990	6.1	18.9	13954	6.2	18.4
170095	5.8	19.7	207569	5.9	18.9	390192	5.9	20.8	46492	6.0	17.5	249544	6.1	19.7	516696	6.2	20.8
5376	5.8	17.4	451855	5.9	18.9	30403	5.9	17.4	499942	6.0	20.4	159549	6.1	19.9	241362	6.2	20.0
202476	5.8	19.6	376279	5.9	20.8	327249	5.9	20.6	61824	6.0	19.2	432215	6.1	20.2	544824	6.2	19.3
502054	5.8	20.8	259973	5.9	18.0	100521	5.9	19.5	299805	6.0	19.7	72958	6.1	18.0	540029	6.2	21.2
505829	5.8	20.5	256032	5.9	21.2	432935	5.9	19.7	3694	6.0	16.6	158481	6.1	18.2	334238	6.2	21.6
346226	5.8	20.6	472215	5.9	21.2	29446	5.9	19.3	84716	6.0	19.1	188290	6.1	20.1	27211	6.	

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
371128	6.2	20.8	413957	6.2	20.0	487572	6.3	21.1	257812	6.4	18.9	345608	6.5	21.5	205275	6.5	19.4
279534	6.2	20.5	422207	6.2	20.2	368565	6.3	22.4	502015	6.4	21.0	146698	6.5	19.2	449219	6.5	21.2
221125	6.2	20.1	472466	6.2	20.9	334	6.3	13.0	411431	6.4	21.6	177007	6.5	20.6	241487	6.5	20.3
54473	6.2	17.4	27979	6.3	19.0	540460	6.3	20.8	506368	6.4	20.7	294136	6.5	19.1	543302	6.5	20.5
390371	6.2	18.9	141231	6.3	18.8	262479	6.3	20.8	246959	6.4	20.5	454196	6.5	20.6	30506	6.5	18.1
232741	6.2	18.7	456640	6.3	20.8	489088	6.3	20.5	528637	6.4	21.4	159951	6.5	20.4	62128	6.5	17.6
493837	6.2	20.4	516375	6.3	21.3	283565	6.3	21.2	286365	6.4	20.9	144808	6.5	19.2	310519	6.5	19.1
17136	6.2	17.5	213079	6.3	20.6	439475	6.3	20.5	495885	6.4	20.2	13937	6.5	17.5	374176	6.5	20.3
135241	6.2	19.8	419761	6.3	21.7	413654	6.3	20.1	224375	6.4	19.6	374603	6.5	20.2	140717	6.5	19.4
510591	6.2	20.8	228697	6.3	19.3	344574	6.3	20.4	413967	6.4	21.5	243169	6.5	19.0	400538	6.5	19.7
173141	6.2	19.4	371897	6.3	19.3	473763	6.3	21.0	113492	6.4	19.7	166784	6.5	19.2	538667	6.5	21.0
416634	6.2	21.2	215043	6.3	19.6	11345	6.3	18.1	382841	6.4	20.7	447250	6.5	19.3	540572	6.5	20.7
365246	6.2	22.4	172950	6.3	19.3	211457	6.3	20.4	270137	6.4	21.0	172734	6.5	18.4	459432	6.5	21.0
151833	6.2	19.3	57530	6.3	18.8	141404	6.3	19.0	148635	6.4	20.1	543432	6.5	19.7	506710	6.5	20.2
395770	6.2	20.3	246578	6.3	21.4	165286	6.3	18.2	139457	6.4	19.5	144721	6.5	19.3	124697	6.5	19.8
467662	6.2	21.0	378668	6.3	20.9	435374	6.3	21.8	389722	6.4	19.3	498038	6.5	19.8	60982	6.5	19.1
146720	6.2	20.4	36828	6.3	19.4	368724	6.3	20.4	221348	6.4	19.3	535152	6.5	21.2	419880	6.5	25.4
182055	6.2	19.9	289894	6.3	21.0	286369	6.3	21.5	297417	6.4	20.7	210507	6.5	20.6	146575	6.5	19.0
91127	6.2	18.6	156294	6.3	20.3	322184	6.3	20.0	189777	6.4	18.9	460562	6.5	21.4	207018	6.5	20.1
56920	6.2	18.6	303688	6.3	19.8	144307	6.3	19.1	288769	6.4	20.4	374441	6.5	19.7	126217	6.5	20.7
295256	6.2	20.0	533784	6.3	20.1	497141	6.3	21.1	305627	6.4	19.9	276899	6.5	20.3	125460	6.5	20.1
194115	6.2	19.6	112663	6.3	19.3	301297	6.3	20.2	42993	6.4	16.9	3174	6.5	17.1	432940	6.5	19.8
293757	6.2	20.6	416974	6.3	21.5	211430	6.3	21.4	116393	6.4	19.1	172568	6.5	20.8	408456	6.5	21.4
323446	6.2	19.1	463903	6.3	21.2	362105	6.3	20.5	232500	6.4	19.7	213605	6.5	18.7	9015	6.5	17.1
522430	6.2	19.7	208436	6.3	19.6	174512	6.3	19.9	502983	6.4	20.8	83503	6.5	18.7	470162	6.5	20.8
241718	6.2	19.2	457157	6.3	20.1	82583	6.3	19.3	23266	6.4	17.8	328705	6.5	19.2	455598	6.5	20.2
372588	6.2	21.3	86152	6.3	18.2	116563	6.3	18.3	382826	6.4	21.4	4049	6.5	15.4	400260	6.5	21.3
19212	6.2	18.0	83947	6.3	18.9	273036	6.3	20.9	106085	6.4	20.0	14890	6.5	18.0	432472	6.5	19.7
194823	6.2	19.7	207503	6.3	20.2	243958	6.3	19.4	243741	6.4	20.0	64088	6.5	18.9	196356	6.5	19.1
505250	6.2	20.7	43678	6.3	17.2	170865	6.3	19.9	57642	6.4	17.8	126060	6.5	19.7	290231	6.5	19.9
218249	6.2	18.9	126514	6.3	19.2	51557	6.3	16.5	345581	6.4	19.5	310421	6.5	20.8	458735	6.5	20.7
39942	6.2	17.3	503236	6.3	19.9	527314	6.3	23.2	338999	6.4	20.9	199282	6.5	19.8	427836	6.5	20.3
109483	6.2	19.5	432138	6.3	20.5	301155	6.3	20.8	381148	6.4	20.3	541550	6.5	20.8	319109	6.5	20.5
434462	6.2	20.2	273005	6.3	20.0	219784	6.3	19.8	87636	6.4	18.6	465738	6.5	20.5	155427	6.5	20.3
194724	6.2	20.2	150325	6.3	19.4	313650	6.4	20.0	141057	6.4	20.1	123102	6.5	18.5	95306	6.5	19.4
101730	6.2	20.8	245929	6.3	19.1	479317	6.4	20.7	118895	6.4	18.5	498957	6.5	21.3	318071	6.5	20.5
337874	6.2	20.2	138619	6.3	20.1	37792	6.4	19.2	302066	6.4	20.7	497921	6.5	21.9	539000	6.5	21.0
300076	6.2	21.5	58225	6.3	19.8	502278	6.4	20.3	465649	6.4	21.5	503511	6.5	20.1	252221	6.5	19.3
160709	6.2	18.6	459303	6.3	21.5	57446	6.4	20.0	453274	6.4	20.7	36588	6.5	18.9	227628	6.6	19.8
9977	6.2	16.8	504393	6.3	21.5	467104	6.4	21.5	283514	6.4	20.4	57198	6.5	19.4	453370	6.6	21.5
29267	6.2	19.8	502458	6.3	20.4	512778	6.4	22.5	506844	6.4	21.9	173935	6.5	19.9	140558	6.6	19.4
90500	6.2	17.9	63744	6.3	20.0	397236	6.4	19.0	257808	6.4	20.5	107947	6.5	18.5	292461	6.6	20.0
143164	6.2	19.9	2487	6.3	16.5	15567	6.4	18.6	393220	6.4	21.3	459087	6.5	22.1	526116	6.6	21.8
272936	6.2	20.6	129599	6.3	20.1	242843	6.4	19.5	377225	6.4	21.0	62273	6.5	19.2	459298	6.6	19.9
341886	6.2	20.2	402862	6.3	21.3	144616	6.4	19.0	77894	6.4	19.3	146208	6.5	19.5	306298	6.6	20.2
536551	6.2	20.7	458814	6.3	21.3	58323	6.4	19.1	485412	6.4	20.3	423488	6.5	20.4	7230	6.6	17.2
386162	6.2	20.8	493710	6.3	20.8	241910	6.4	20.2	452537	6.4	21.6	495271	6.5	19.7	429319	6.6	20.8
264728	6.2	20.6	410487	6.3	20.1	189522	6.4	18.7	119819	6.4	18.8	184420	6.5	20.3	355811	6.6	20.7
50667	6.2	16.6	204200	6.3	20.3	204245	6.4	20.0	360154	6.4	20.4	269345	6.5	21.4	246670	6.6	20.8
383670	6.2	21.1	87227	6.3	18.0	524376	6.4	19.7	495915	6.4	20.3	179385	6.5	21.0	97201	6.6	18.0
346231	6.2	20.5	336965	6.3	19.5	238433	6.4	20.3	379107	6.4	21.4	18305	6.5	18.7	164604	6.6	18.1
174048	6.2	20.1	1218030	6.3	19.9	184306	6.4	19.4	423746	6.4	21.9	397805	6.5	19.8	451079	6.6	22.1
432242	6.2	22.2	307494	6.3	17.4	100642	6.4	19.1	13037	6.4	16.7	196295	6.5	19.7	273008	6.6	20.1
337055	6.2	20.0	168094	6.3	18.7	381219	6.4	21.1	126595	6.4	19.7	27645	6.5	19.6	212042	6.6	19.0
352716	6.2	20.3	153638	6.3	20.5	206843	6.4	19.8	426522	6.4	20.7	218678	6.5	19.6	334454	6.6	19.6
437142	6.2	19.9	160722	6.3	19.3	211547	6.4	19.2	156499	6.4	19.6	352552	6.5	19.7	17365	6.6	17.4
156656	6.2	18.8	218008	6.3	20.8	64974	6.4	18.0	298333	6.4	20.4	241598	6.5	19.5	229976	6.6	20.1
510378	6.2	21.1	277446	6.3	20.5	421362	6.4	19.9	71903	6.4	18.0	274952	6.5	20.3	434926	6.6	21.1
404898	6.2	20.0	234151	6.3	21.1	361552	6.4	20.4	525666	6.4	20.5	245367	6.5	20.4	139836	6.6	20.2
169026	6.2	20.2	538866	6.3	20.0	147905	6.4	19.5	337451	6.4	20.6	57665	6.5	18.8	198896	6.6	19.6
321096	6.2	20.5	349439	6.3	20.0	370803	6.4	21.4	39631	6.4	19.0	154698	6.5	19.1	303264	6.6	20.0
363017	6.2	20.3	296911	6.3	19.4	142550	6.4	20.2	318055	6.4	19.6	331044	6.5	20.1	503555	6.6	20.7
40469	6.2	18.1	197105	6.3	19.4	506823	6.4	20.7	219760	6.4	19.6	170765	6.5	19.9	56389	6.6	17.6
297514	6.2	21.4	429028	6.3	21.3	10619	6.4	16.6	414268	6.4	20.6	337777	6.5	19.9	528615	6.6	22.1
41407	6.2	18.8	440972	6.3	20.7	535106	6.4	19.4	98093	6.4	19.4	194504	6.5	18.5	450982	6.6	20.8
491764	6.2	22.0	93273	6.3	19.3	70032	6.4	17.4	400519	6.5	21.5	152395	6.5	19.8	389700	6.6	21.3
518160	6.2	20.2	536083	6.3	20.5	126072	6.4	19.3	225603	6.5	21.1	457581	6.5	22.2	343106	6.6	20.5
409630	6.2	20.6	119241	6.3	18.3	259180	6.4	20.2	92407	6.5	18.3	512312	6.5	20.6	149615	6.6	19.5
498603	6.2	20.8	100451	6.3	19.8	42592	6.4	18.7	299898	6.5	20.1	173146	6.5	19.7	492231	6.6	20.8
458887	6.2	21.4	20315	6.3	18.0	58853	6.4	18.2	87380	6.5	18.6	427369	6.5	20.0	500478	6.6	21.1
247976	6.2	20.4	425781	6.3	21.2	331051	6.4	19.5	261193	6.5	20.9	57620	6.5				

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
534382	6.6	20.6	279562	6.7	20.0	435020	6.7	19.9	162524	6.8	18.9	406377	6.9	21.4	272656	6.9	20.0
429165	6.6	21.8	382346	6.7	19.1	15627	6.7	17.0	114920	6.8	20.1	157967	6.9	18.6	334756	6.9	20.1
500058	6.6	20.7	365418	6.7	19.7	264587	6.7	21.0	263572	6.8	20.6	258103	6.9	19.3	107350	6.9	18.4
456905	6.6	21.8	544008	6.7	22.1	527803	6.7	22.2	278824	6.8	19.6	231089	6.9	18.9	20652	6.9	17.6
535516	6.6	21.5	451038	6.7	20.7	401374	6.7	19.4	299860	6.8	20.9	416942	6.9	22.1	388814	6.9	20.9
63549	6.6	20.0	111653	6.7	19.3	461046	6.7	19.9	294327	6.8	20.5	168517	6.9	19.8	528088	6.9	20.7
257305	6.6	20.2	92812	6.7	20.3	498827	6.7	21.0	146562	6.8	19.8	432111	6.9	21.2	294225	6.9	20.6
381865	6.6	19.7	293027	6.7	21.4	106186	6.7	19.1	501371	6.8	19.9	230891	6.9	20.9	240053	6.9	18.8
151074	6.6	20.5	286266	6.7	20.4	437275	6.7	20.4	416556	6.8	19.7	270000	6.9	21.2	158604	6.9	20.1
108680	6.6	18.1	436763	6.7	22.6	532594	6.7	20.8	538248	6.8	20.1	147599	6.9	18.0	503070	6.9	21.3
500372	6.6	21.7	464314	6.7	21.6	341718	6.7	20.2	361728	6.8	19.3	205308	6.9	19.2	192075	6.9	19.6
501383	6.6	20.5	471404	6.7	21.2	288750	6.7	20.1	459351	6.8	19.9	271287	6.9	18.9	279014	6.9	20.4
523660	6.6	20.1	55982	6.7	18.7	351986	6.7	20.1	472108	6.8	19.9	448258	6.9	22.4	34356	6.9	17.5
371029	6.6	20.7	374427	6.7	20.7	502600	6.7	21.5	351588	6.8	18.8	409907	6.9	21.3	206711	6.9	20.0
184984	6.6	19.6	502433	6.7	21.1	356410	6.7	20.8	264705	6.8	21.2	516173	6.9	20.4	224521	6.9	19.3
76054	6.6	19.3	372755	6.7	22.1	148784	6.7	19.4	450975	6.8	20.6	221083	6.9	20.5	91513	6.9	19.7
105016	6.6	21.8	501270	6.7	20.0	22138	6.8	18.9	170254	6.8	19.5	497966	6.9	19.7	42435	6.9	19.5
262794	6.6	20.6	7273	6.7	18.1	65849	6.8	19.2	250478	6.8	21.5	338373	6.9	20.5	165857	6.9	20.2
69471	6.6	18.6	506010	6.7	20.2	251311	6.8	20.0	105361	6.8	20.0	345701	6.9	21.6	29196	6.9	19.0
67148	6.6	18.7	88759	6.7	18.5	505021	6.8	20.3	497960	6.8	20.7	313027	6.9	19.6	101232	6.9	19.4
16581	6.6	15.9	381967	6.7	20.6	62924	6.8	19.1	165507	6.8	18.7	141635	6.9	18.4	378790	6.9	20.6
455661	6.6	21.8	41074	6.7	16.7	421099	6.8	19.8	374472	6.8	20.9	3245	6.9	18.2	492079	6.9	20.0
380102	6.6	20.6	102090	6.7	20.0	213373	6.8	21.3	47129	6.8	18.8	473654	6.9	19.9	409961	6.9	20.8
403256	6.6	19.7	241099	6.7	19.6	147494	6.8	19.8	366454	6.8	20.8	341464	6.9	20.8	238771	6.9	20.2
110961	6.6	19.2	169133	6.7	19.4	155743	6.8	19.9	52375	6.8	18.5	38701	6.9	17.7	302426	6.9	20.1
444216	6.6	21.5	199016	6.7	19.2	95872	6.8	18.4	532803	6.8	22.3	277729	6.9	20.3	150988	6.9	18.7
3966	6.6	16.8	545012	6.7	20.1	3381	6.8	16.8	353413	6.8	19.7	501155	6.9	21.3	89550	6.9	18.5
462903	6.6	21.3	1389	6.7	15.4	271345	6.8	19.3	164777	6.8	19.4	431997	6.9	21.2	159183	6.9	18.9
427156	6.6	20.7	434961	6.7	20.4	29198	6.8	16.1	427320	6.8	19.9	243810	6.9	20.3	88766	6.9	19.2
37785	6.6	21.0	67816	6.7	18.3	156054	6.8	20.3	224275	6.8	19.0	378824	6.9	21.1	356934	6.9	19.8
502281	6.6	20.6	544995	6.7	21.0	429111	6.8	20.4	359133	6.8	20.5	418343	6.9	20.8	273989	6.9	19.7
80014	6.6	18.9	300129	6.7	21.7	528434	6.8	19.9	350414	6.8	19.8	372617	6.9	20.5	52174	6.9	19.0
357354	6.6	19.4	51066	6.7	17.9	468314	6.8	20.5	323430	6.8	19.9	302344	6.9	20.2	179799	6.9	20.6
268033	6.6	19.7	458942	6.7	19.9	353843	6.8	20.4	207813	6.8	19.0	239477	6.9	19.8	7210	6.9	16.6
264212	6.6	20.5	55461	6.7	18.9	277474	6.8	20.5	191112	6.8	19.0	240094	6.9	20.5	463485	6.9	19.8
19010	6.6	18.1	143345	6.7	19.9	298855	6.8	19.0	266539	6.8	20.3	305769	6.9	20.0	9913	6.9	18.3
498050	6.6	21.1	328309	6.7	18.2	226670	6.8	20.4	190837	6.8	20.3	491776	6.9	21.3	141126	6.9	20.3
117036	6.6	19.2	543870	6.7	21.0	29800	6.8	17.5	152784	6.8	18.6	4093	6.9	16.5	307773	6.9	20.4
534876	6.6	20.9	402876	6.7	21.3	223633	6.8	18.5	500029	6.8	21.2	544719	6.9	21.5	268616	6.9	19.4
527760	6.6	21.5	216306	6.7	20.3	253283	6.8	20.4	515449	6.8	20.6	5992	6.9	16.9	473238	6.9	19.9
190395	6.6	19.8	403808	6.7	21.4	458978	6.8	19.1	64848	6.8	19.1	105774	6.9	19.7	29596	6.9	18.9
328451	6.6	20.9	136514	6.7	18.8	16075	6.8	18.6	58474	6.8	18.4	275267	6.9	19.7	496247	6.9	20.0
185270	6.6	19.9	210498	6.7	19.2	325451	6.8	18.6	463317	6.8	20.6	337610	6.9	20.6	436647	6.9	20.6
51274	6.6	18.2	57280	6.7	19.0	368125	6.8	19.5	52108	6.8	20.2	207596	6.9	20.3	69223	6.9	19.6
500635	6.6	21.0	266610	6.7	19.1	420041	6.8	20.0	486945	6.8	18.9	217041	6.9	18.7	113905	6.9	19.0
2455	6.6	15.9	368758	6.7	19.0	259812	6.8	20.4	198891	6.8	19.6	309443	6.9	20.7	22134	6.9	18.2
410003	6.6	21.4	211443	6.7	19.7	385610	6.8	20.1	35603	6.8	18.4	383941	6.9	20.4	286531	6.9	21.2
193749	6.6	17.3	192534	6.7	19.3	211908	6.8	19.3	266552	6.8	19.3	463534	6.9	20.5	432206	6.9	20.1
5382	6.6	16.2	433504	6.7	20.7	337727	6.8	20.7	22758	6.8	17.8	4522	6.9	16.0	422317	6.9	19.3
199761	6.6	20.0	152897	6.7	19.4	59359	6.8	18.3	65853	6.8	18.5	292330	6.9	21.5	422186	6.9	20.8
64739	6.6	20.2	86388	6.7	18.8	188089	6.8	19.6	501166	6.8	20.9	423752	6.9	19.8	288537	6.9	18.5
158251	6.6	20.7	238892	6.7	19.7	399895	6.8	20.6	315073	6.8	19.2	294477	6.9	20.0	410004	6.9	21.2
256355	6.6	19.7	310946	6.7	18.9	124891	6.8	19.0	246210	6.8	19.1	157785	6.9	18.6	432335	6.9	21.9
308372	6.6	20.2	408356	6.7	20.0	99534	6.8	19.6	427671	6.8	20.5	1870	6.9	17.4	181235	6.9	19.6
489343	6.6	22.5	488922	6.7	20.7	205732	6.8	20.2	356110	6.9	19.6	36310	6.9	17.4	16498	6.9	17.7
501036	6.6	21.4	463904	6.7	21.2	203593	6.8	20.3	271616	6.9	20.5	466187	6.9	20.1	9880	6.9	18.0
165713	6.6	19.0	529376	6.7	21.5	471387	6.8	20.6	544078	6.9	20.5	248292	6.9	18.8	361612	6.9	21.1
366438	6.6	21.0	101965	6.7	19.8	378703	6.8	20.0	326472	6.9	20.8	327004	6.9	19.7	51925	6.9	19.1
183357	6.6	21.1	498435	6.7	21.5	63947	6.8	18.8	431502	6.9	19.6	112400	6.9	19.4	472883	6.9	20.5
73114	6.6	18.0	527109	6.7	21.3	224801	6.8	20.3	94642	6.9	19.8	129177	6.9	19.0	55988	6.9	18.6
293393	6.6	19.3	31654	6.7	17.6	219829	6.8	20.5	463210	6.9	20.6	276829	6.9	19.4	247316	6.9	19.4
456750	6.6	21.3	264946	6.7	21.0	351876	6.8	21.4	459210	6.9	20.1	507750	6.9	21.3	374527	6.9	20.0
465122	6.6	22.6	347407	6.7	20.2	73820	6.8	19.5	437639	6.9	21.2	11969	6.9	18.2	421248	6.9	20.4
338990	6.6	20.1	89564	6.7	18.9	429939	6.8	21.1	390469	6.9	20.3	239399	6.9	20.3	371146	6.9	19.7
474031	6.6	19.1	209924	6.7	18.9	184073	6.8	18.3	321629	6.9	20.9	435873	6.9	21.3	51153	6.9	18.9
288632	6.6	19.7	30993	6.7	18.1	378304	6.8	20.9	436656	6.9	20.3	544372	6.9	21.2	436017	6.9	20.6
224406	6.6	20.7	456722	6.7	21.1	110769	6.8	19.5	242643	6.9	21.7	63874	6.9	19.8	274943	6.9	20.5
459065	6.6	20.9	282181	6.7	20.0	454758	6.8	20.5	173862	6.9	20.9	372553	6.9	20.7	423728	6.9	20.5
65161	6.6	17.9	56133	6.7	19.5	305446	6.8	19.9	40261	6.9	17.7	362030	6.9	21.7	444773	6.9	21.4
534147	6.6	21.4	144708	6.7	19.1	185489	6.8	20.4	424995	6.9	21.2	488570	6.9	22.1	399957	6.9	21.0
165227	6.6	19.3	376829	6.7	21.3	526319	6.8	21.5	359171	6.9	20.7	162815	6.9	20.2	354509		

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
69277	6.9	17.9	338889	7.1	20.0	531786	7.1	20.7	181308	7.2	20.7	233226	7.3	19.6	518253	7.3	20.8
31803	6.9	18.7	83366	7.1	19.5	541958	7.1	21.8	91595	7.2	19.8	332939	7.3	20.6	28348	7.3	17.1
416245	6.9	20.9	414502	7.1	20.1	406679	7.1	21.3	416923	7.2	21.0	466664	7.3	21.0	386772	7.3	21.0
266888	7.0	19.6	407793	7.1	20.5	421513	7.1	20.0	425291	7.2	21.8	209453	7.3	19.0	72920	7.3	19.2
355138	7.0	21.4	90270	7.1	19.2	224684	7.1	20.6	34849	7.2	17.6	143675	7.3	19.8	102975	7.3	19.5
141138	7.0	20.2	118781	7.1	18.9	288402	7.1	19.5	409204	7.2	25.2	135150	7.3	20.0	127621	7.3	19.5
5629	7.0	16.6	451713	7.1	22.4	247947	7.1	20.4	151084	7.2	19.6	281509	7.3	20.5	112970	7.3	18.7
241254	7.0	19.9	356335	7.1	19.4	48614	7.1	18.5	105271	7.2	19.4	506351	7.3	20.1	412236	7.3	19.6
270338	7.0	21.3	129750	7.1	19.9	396313	7.1	20.9	403278	7.2	20.2	139719	7.3	19.8	303614	7.3	18.9
135189	7.0	19.5	18217	7.1	16.6	82033	7.1	18.7	417305	7.2	20.5	285582	7.3	20.6	84573	7.3	18.8
530833	7.0	20.9	502875	7.1	20.3	356529	7.1	21.1	456887	7.2	20.9	538461	7.3	20.9	272677	7.3	21.6
514309	7.0	20.8	357404	7.1	20.3	211207	7.1	19.7	212965	7.2	20.0	199538	7.3	19.2	12649	7.3	18.2
118974	7.0	19.0	386961	7.1	19.6	128728	7.1	19.6	508306	7.2	21.6	213434	7.3	20.1	297019	7.3	19.9
430126	7.0	19.7	463557	7.1	21.1	21020	7.1	17.0	369340	7.2	21.3	214758	7.3	19.9	490311	7.3	21.3
67367	7.0	17.1	467450	7.1	20.4	282192	7.1	20.2	233930	7.2	20.9	5099	7.3	16.3	501986	7.3	20.8
97485	7.0	17.7	469054	7.1	19.9	470183	7.1	20.8	517712	7.2	20.9	17748	7.3	19.0	322810	7.3	20.5
41932	7.0	18.7	464273	7.1	21.0	100239	7.1	19.9	477462	7.2	21.4	112684	7.3	19.4	136691	7.3	20.2
31558	7.0	19.0	472382	7.1	20.5	343116	7.1	20.8	17423	7.2	18.5	147790	7.3	19.3	98371	7.3	18.1
65434	7.0	19.3	174026	7.1	20.2	28944	7.1	18.4	467806	7.2	21.3	423717	7.3	20.7	187543	7.3	19.2
297509	7.0	20.5	534900	7.1	22.0	443956	7.1	20.3	295793	7.2	19.1	152356	7.3	19.5	271774	7.3	18.9
51358	7.0	18.1	290135	7.1	20.0	110832	7.1	19.5	96230	7.2	19.1	414280	7.3	20.0	265781	7.3	20.0
197517	7.0	19.3	196264	7.1	18.4	88893	7.1	19.2	41253	7.2	18.6	256354	7.3	20.3	325225	7.3	19.3
525066	7.0	20.4	377969	7.1	20.6	274865	7.1	19.4	437096	7.2	19.5	472848	7.3	19.7	45229	7.3	17.4
283591	7.0	20.3	519914	7.1	21.7	456842	7.1	20.4	387813	7.2	20.6	448213	7.3	21.0	404359	7.3	21.1
48359	7.0	19.9	448175	7.1	21.7	35340	7.1	18.9	461581	7.2	19.1	111590	7.3	20.0	301544	7.3	20.2
82451	7.0	17.6	344592	7.1	20.3	378610	7.1	21.5	299051	7.2	21.2	300062	7.3	19.6	372662	7.3	20.7
297960	7.0	19.7	196801	7.1	19.5	499632	7.1	20.8	251474	7.2	20.7	286116	7.3	20.7	116520	7.3	19.0
390410	7.0	20.9	237965	7.1	20.4	457150	7.1	20.6	349052	7.2	21.2	88298	7.3	17.8	146822	7.3	19.2
419356	7.0	20.1	525760	7.1	20.0	158748	7.1	19.0	307521	7.2	19.1	166621	7.3	19.9	39350	7.3	18.0
515760	7.0	20.1	508960	7.1	19.9	139662	7.1	20.4	167600	7.2	19.5	147759	7.3	20.5	175518	7.3	20.2
26821	7.0	16.6	531748	7.1	21.3	9595	7.1	17.6	435388	7.2	20.9	318343	7.3	20.5	346855	7.3	20.7
294344	7.0	20.0	30006	7.1	17.2	534885	7.1	21.7	536196	7.2	21.1	419071	7.3	21.4	70322	7.3	18.1
416708	7.0	20.1	402915	7.1	21.8	538778	7.1	20.5	125644	7.2	19.6	200827	7.3	18.5	108848	7.3	19.0
124584	7.0	19.6	397404	7.1	21.0	128802	7.2	19.2	63095	7.2	18.6	133192	7.3	18.1	331959	7.3	19.2
59926	7.0	18.7	241900	7.1	20.1	117063	7.2	18.8	371522	7.2	21.2	140397	7.3	20.2	293721	7.3	21.2
158458	7.0	19.1	54187	7.1	18.4	286576	7.2	19.1	138583	7.2	19.5	140024	7.3	19.3	381424	7.4	19.7
260814	7.0	19.0	244507	7.1	19.7	39331	7.2	18.6	50974	7.2	18.2	537954	7.3	20.4	330401	7.4	21.2
109227	7.0	19.6	110747	7.1	18.3	288838	7.2	20.2	379008	7.2	20.9	67384	7.3	18.4	469432	7.4	20.4
537148	7.0	19.9	360763	7.1	19.9	470464	7.2	20.4	434922	7.2	20.2	264454	7.3	19.6	536221	7.4	21.5
540143	7.0	19.1	395365	7.1	18.9	31291	7.2	18.2	392849	7.2	21.4	323773	7.3	20.2	467642	7.4	20.4
279678	7.0	20.4	490249	7.1	20.8	349603	7.2	20.3	103501	7.2	19.6	116534	7.3	19.6	305788	7.4	21.1
500620	7.0	21.2	315379	7.1	21.0	59015	7.2	19.8	527762	7.2	21.3	503775	7.3	20.0	310011	7.4	20.7
42075	7.0	18.9	69123	7.1	17.8	164179	7.2	19.9	226838	7.2	20.3	375315	7.3	18.8	432506	7.4	20.2
198861	7.0	19.0	435317	7.1	21.9	419314	7.2	20.3	495952	7.2	21.5	107325	7.3	19.2	415102	7.4	20.5
168342	7.0	19.1	308267	7.1	21.3	28215	7.2	17.3	133277	7.2	19.0	153915	7.3	19.8	540340	7.4	22.0
54601	7.0	18.7	69918	7.1	18.0	535523	7.2	21.9	436976	7.2	21.6	48437	7.3	19.3	246622	7.4	19.8
323916	7.0	19.5	18233	7.1	18.7	397139	7.2	20.3	30768	7.2	17.4	529905	7.3	21.0	302412	7.4	19.2
162496	7.0	19.4	410500	7.1	22.2	277781	7.2	20.1	543353	7.2	20.9	502200	7.3	20.4	53106	7.4	16.8
142613	7.0	19.3	529324	7.1	21.9	16372	7.2	17.8	36480	7.2	18.4	462236	7.3	21.6	9720	7.4	17.5
445541	7.0	19.3	218020	7.1	19.7	489719	7.2	19.3	70394	7.2	19.0	198804	7.3	20.3	153918	7.4	20.4
386850	7.0	19.9	272473	7.1	21.2	306374	7.2	21.0	532760	7.2	20.4	297395	7.3	20.1	234173	7.4	18.3
202743	7.0	20.1	354537	7.1	20.4	328905	7.2	21.9	343602	7.2	21.0	265721	7.3	20.1	480154	7.4	20.7
348903	7.0	21.3	445596	7.1	19.3	503656	7.2	19.4	18165	7.2	19.2	129335	7.3	18.1	514078	7.4	21.0
166965	7.0	18.9	265713	7.1	20.6	40536	7.2	17.1	90057	7.2	17.9	464232	7.3	19.8	57283	7.4	19.5
419917	7.0	20.9	6173	7.1	16.1	528364	7.2	21.2	108000	7.2	19.3	491744	7.3	21.0	132457	7.4	19.1
538247	7.0	19.7	464951	7.1	21.6	476703	7.2	22.5	170984	7.2	18.3	518975	7.3	20.4	425145	7.4	21.7
271017	7.0	20.5	231087	7.1	20.0	128631	7.2	20.0	225524	7.2	20.5	324168	7.3	19.9	338288	7.4	20.9
106657	7.0	19.6	536257	7.1	21.6	466910	7.2	19.9	240003	7.2	20.2	522506	7.3	20.2	135173	7.4	18.2
388346	7.0	20.0	489572	7.1	20.9	149295	7.2	20.1	438639	7.2	20.5	218001	7.3	20.0	500754	7.4	21.5
530317	7.0	22.2	387109	7.1	21.3	510638	7.2	20.4	230540	7.2	20.5	535834	7.3	20.7	63966	7.4	17.8
221326	7.1	20.6	407369	7.1	20.6	456372	7.2	21.0	503231	7.2	20.3	241499	7.3	19.9	110124	7.4	19.8
284666	7.1	19.6	464993	7.1	20.5	411500	7.2	22.1	109933	7.2	18.9	432476	7.3	19.3	115619	7.4	19.1
125993	7.1	18.5	168842	7.1	18.3	203290	7.2	19.5	10306	7.2	15.9	496159	7.3	22.1	281132	7.4	20.5
140056	7.1	19.9	84890	7.1	16.9	415259	7.2	21.2	341584	7.2	21.4	79818	7.3	19.9	471359	7.4	21.0
535538	7.1	21.2	543140	7.1	19.9	426254	7.2	20.5	224238	7.2	21.3	434491	7.3	20.5	92593	7.4	19.1
491818	7.1	20.7	522153	7.1	20.2	483868	7.2	20.3	110528	7.2	17.7	267488	7.3	18.6	66564	7.4	19.1
312016	7.1	20.7	89090	7.1	18.3	191964	7.2	20.7	229499	7.2	19.9	156394	7.3	19.0	513026	7.4	20.1
57513	7.1	18.5	534376	7.1	21.3	28491	7.2	16.9	534648	7.3	20.7	1011	7.3	16.3	131035	7.4	19.6
63088	7.1	18.0	297506	7.1	20.7	286966	7.2	20.2	491997	7.3	21.1	286457	7.3	20.5	172808	7.4	19.8
458916	7.1	21.0	150749	7.1	19.6	116193	7.2	20.2	330464	7.3	20.2	300048	7.3	20.9	437122	7.4	21.6
535180	7.1	21.0	10653	7.1	17.5	531135	7.2	19.4	529684	7.3	21.0	115766	7.3	19.2			



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
437251	7.4	20.2	123471	7.4	19.6	536244	7.5	22.5	32979	7.6	17.9	11350	7.7	17.9	415891	7.7	21.0
459756	7.4	19.6	62109	7.4	18.4	111967	7.5	18.3	306888	7.6	20.8	286597	7.7	21.0	37410	7.7	17.5
42158	7.4	19.2	50514	7.4	17.6	280408	7.5	20.7	41978	7.6	18.5	219806	7.7	20.7	278361	7.7	20.6
98048	7.4	18.6	126110	7.4	18.2	291390	7.5	20.8	352000	7.6	20.2	483923	7.7	20.5	510736	7.7	20.6
33196	7.4	19.1	319538	7.4	20.6	241376	7.5	22.3	237284	7.6	20.9	105520	7.7	19.6	159462	7.7	17.7
490677	7.4	20.2	313861	7.4	20.1	56760	7.5	18.6	58169	7.6	18.5	388690	7.7	20.8	520626	7.7	20.4
274977	7.4	20.8	221068	7.4	19.2	504121	7.5	21.4	47962	7.6	19.3	338293	7.7	22.1	239465	7.7	19.7
381694	7.4	21.1	276534	7.5	20.5	188531	7.5	19.0	444186	7.6	21.7	42865	7.7	17.9	19159	7.7	17.5
130225	7.4	20.1	240841	7.5	19.6	432560	7.5	19.5	203573	7.6	20.4	262767	7.7	20.3	356616	7.7	19.8
131897	7.4	20.1	343125	7.5	21.1	213603	7.5	19.1	413114	7.6	20.4	249545	7.7	19.3	169268	7.7	19.6
295207	7.4	20.7	126969	7.5	19.7	140885	7.5	19.0	238364	7.6	20.5	221459	7.7	19.6	256434	7.7	20.3
444367	7.4	21.4	274266	7.5	18.8	538532	7.5	20.8	138720	7.6	19.7	125652	7.7	18.8	296058	7.7	19.8
504194	7.4	21.8	225542	7.5	19.5	204222	7.5	19.5	81091	7.6	18.9	22396	7.7	17.8	114778	7.7	18.0
305676	7.4	19.9	378652	7.5	21.1	498012	7.5	20.8	542907	7.6	21.0	232802	7.7	20.2	123039	7.7	19.5
230963	7.4	21.2	57890	7.5	18.5	150696	7.5	20.4	385665	7.6	19.7	288514	7.7	19.8	164091	7.7	19.6
262821	7.4	20.8	179008	7.5	20.0	68519	7.5	18.9	100097	7.6	18.9	230289	7.7	19.1	321223	7.7	20.6
17849	7.4	17.4	301195	7.5	20.6	123756	7.5	20.4	306356	7.6	21.1	153955	7.7	21.0	318044	7.7	20.8
140655	7.4	19.2	30607	7.5	19.1	433580	7.5	20.2	506408	7.6	20.2	66846	7.7	16.7	194239	7.7	19.3
34183	7.4	19.4	34680	7.5	18.3	437016	7.5	20.8	506720	7.6	21.0	253324	7.7	21.2	16337	7.7	17.4
348482	7.4	20.1	35950	7.5	18.0	144513	7.5	19.3	429373	7.6	19.0	374044	7.7	19.7	406542	7.7	21.0
398120	7.4	21.6	202677	7.5	19.7	299987	7.5	20.3	528163	7.6	20.2	330013	7.7	20.5	48250	7.7	18.7
109988	7.4	18.1	154502	7.5	19.5	26567	7.5	16.8	62739	7.6	18.8	425515	7.7	20.2	411297	7.7	21.4
80586	7.4	19.1	171831	7.5	19.5	382293	7.5	20.0	305422	7.6	19.8	534467	7.7	21.0	337852	7.7	21.3
324672	7.4	20.2	126494	7.5	19.0	453320	7.5	21.9	286230	7.6	20.4	386532	7.7	20.7	143115	7.7	19.9
526015	7.4	21.7	331208	7.5	20.1	367987	7.5	20.1	490218	7.6	21.3	507185	7.7	21.0	427945	7.7	21.6
328971	7.4	20.8	471234	7.5	19.5	348882	7.5	20.9	187856	7.6	20.2	87962	7.7	19.1	529469	7.7	21.9
174922	7.4	20.1	180691	7.5	18.4	374546	7.5	20.7	263596	7.6	20.5	5609	7.7	16.3	241276	7.7	20.5
277613	7.4	20.5	170088	7.5	20.6	420757	7.5	19.2	332944	7.6	20.5	536525	7.7	20.2	106603	7.7	19.8
253211	7.4	21.4	338138	7.5	21.1	29361	7.5	18.4	54649	7.6	18.7	347710	7.7	19.9	530196	7.7	21.5
148783	7.4	20.1	179174	7.5	17.8	50820	7.5	17.8	115	7.6	11.4	169342	7.7	20.0	200606	7.7	20.9
437260	7.4	20.7	333844	7.5	21.1	370062	7.5	19.8	192856	7.6	20.1	494653	7.7	18.8	191959	7.7	20.7
473336	7.4	21.2	116795	7.5	18.7	468529	7.5	21.0	3187	7.6	16.2	264640	7.7	21.0	165322	7.7	19.5
386211	7.4	20.8	55513	7.5	18.4	423570	7.5	21.6	55821	7.6	17.5	288603	7.7	19.3	544865	7.7	21.1
138759	7.4	19.8	518162	7.5	20.3	167041	7.5	19.8	236695	7.6	20.5	239476	7.7	20.3	351967	7.7	20.4
56106	7.4	18.3	218012	7.5	20.2	52001	7.5	18.2	215056	7.6	19.6	176583	7.7	20.5	84431	7.7	20.1
362186	7.4	20.1	349768	7.5	19.3	498193	7.5	21.0	437686	7.6	19.9	218697	7.7	21.2	215011	7.7	20.5
257810	7.4	18.7	458896	7.5	21.2	224308	7.5	19.8	342894	7.6	20.3	430761	7.7	21.6	369332	7.7	21.6
472871	7.4	20.2	524120	7.5	21.4	225879	7.5	21.4	348506	7.6	20.8	323110	7.7	20.3	238405	7.7	20.6
108120	7.4	18.7	369875	7.5	20.1	358562	7.6	19.7	499837	7.6	20.9	56985	7.7	20.4	243255	7.7	19.8
496384	7.4	20.4	10933	7.5	18.2	376539	7.6	20.2	534158	7.6	20.7	339006	7.7	21.1	54506	7.7	19.3
384893	7.4	21.2	293333	7.5	20.9	22375	7.6	17.8	29257	7.6	17.8	344724	7.7	20.7	225914	7.7	20.1
360104	7.4	20.1	276699	7.5	18.5	303260	7.6	19.5	267284	7.6	21.4	34298	7.7	19.5	526769	7.7	21.5
248174	7.4	17.8	268486	7.5	21.0	219350	7.6	19.5	364649	7.6	21.0	472860	7.7	20.6	248978	7.7	20.3
433898	7.4	20.5	344426	7.5	20.8	222945	7.6	19.2	93107	7.6	18.0	431973	7.7	20.7	341861	7.7	20.0
191150	7.4	19.8	327221	7.5	20.7	110675	7.6	18.9	57104	7.6	17.1	530064	7.7	21.0	95557	7.7	18.3
52539	7.4	18.9	525982	7.5	22.6	199894	7.6	19.7	427672	7.6	20.2	435033	7.7	19.7	435926	7.7	20.5
143272	7.4	18.5	500882	7.5	24.2	424720	7.6	20.2	242647	7.6	19.4	461945	7.7	21.6	369336	7.7	20.4
352689	7.4	19.6	473030	7.5	20.2	38784	7.6	18.4	538040	7.6	20.9	109677	7.7	20.2	239521	7.7	19.6
470788	7.4	19.5	222781	7.5	20.4	207952	7.6	19.8	526313	7.6	20.3	18038	7.7	17.5	413863	7.7	20.5
389696	7.4	21.0	507439	7.5	22.4	16712	7.6	18.5	247673	7.6	20.6	376734	7.7	19.1	469785	7.7	20.2
346267	7.4	19.9	497391	7.5	20.0	425243	7.6	19.4	241446	7.6	19.8	64616	7.7	18.5	409234	7.7	20.7
348157	7.4	19.4	167587	7.5	19.9	440060	7.6	19.8	37573	7.6	18.9	501096	7.7	20.5	472278	7.7	19.7
241244	7.4	19.2	297268	7.5	19.7	343486	7.6	20.6	160928	7.6	18.1	28495	7.7	17.3	324387	7.8	20.9
534689	7.4	22.1	45722	7.5	17.7	395723	7.6	20.6	289907	7.6	21.2	321320	7.7	20.6	249147	7.8	20.1
341706	7.4	20.5	417657	7.5	21.6	504270	7.6	21.7	417187	7.6	20.3	398970	7.7	20.6	211444	7.8	20.4
497593	7.4	20.7	530561	7.5	20.8	540672	7.6	21.6	461033	7.6	20.6	57529	7.7	19.7	338291	7.8	20.5
538352	7.4	20.9	174059	7.5	19.0	542634	7.6	21.3	225179	7.6	18.9	341277	7.7	20.4	299890	7.8	21.1
327217	7.4	20.4	298986	7.5	19.8	30959	7.6	17.6	249697	7.6	21.1	266395	7.7	19.9	501037	7.8	20.0
205323	7.4	20.6	275096	7.5	21.0	282140	7.6	19.3	205000	7.6	19.9	227470	7.7	20.9	347939	7.8	20.0
465696	7.4	20.6	538550	7.5	20.0	173741	7.6	20.0	535265	7.6	20.5	421196	7.7	20.2	232367	7.8	20.3
164672	7.4	20.2	499379	7.5	22.2	384258	7.6	21.1	69023	7.6	19.9	88393	7.7	19.2	210116	7.8	19.9
164805	7.4	18.2	273944	7.5	19.7	524842	7.6	19.5	65630	7.6	19.5	11206	7.7	17.9	15271	7.8	16.8
19996	7.4	18.2	457113	7.5	20.8	70025	7.6	19.1	122742	7.6	19.1	354892	7.7	21.7	67806	7.8	18.6
111762	7.4	20.3	78771	7.5	18.9	524334	7.6	21.4	279353	7.6	20.7	67078	7.7	18.3	255881	7.8	20.5
61900	7.4	18.9	276072	7.5	20.5	33496	7.6	15.9	57888	7.6	17.9	40423	7.7	19.2	524657	7.8	21.9
235083	7.4	18.9	4280	7.5	16.2	67914	7.6	18.9	348898	7.6	20.1	378883	7.7	21.3	164351	7.8	20.2
404353	7.4	21.0	205230	7.5	20.0	158885	7.6	18.3	419779	7.6	19.8	178338	7.7	19.8	62587	7.8	18.7
544810	7.4	19.2	311014	7.5	19.8	130846	7.6	18.7	453367	7.6	21.3	174534	7.7	19.5	276909	7.8	20.5
281266	7.4	20.7	536837	7.5	20.6	81959	7.6	18.4	411359	7.6	21.8	535313	7.7	20.1	389775	7.8	20.7
257125	7.4	19.9	132093	7.5	20.5	534864	7.6	21.9	99713	7.6	19.1	45334	7.7	18.5	240274	7.8	20.8
15640	7.4	18.6	522746	7.5	21.0	291824	7.6	19.4	153747	7.6	21.1	286335	7.7	20.7			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
181691	7.8	19.9	83344	7.8	19.8	62171	7.9	18.6	538856	7.9	20.8	370986	8.0	20.4	422768	8.1	21.0
534809	7.8	20.8	108960	7.8	18.8	491006	7.9	19.4	348892	7.9	21.2	114470	8.0	19.4	376768	8.1	22.0
495864	7.8	21.2	276498	7.8	20.1	470109	7.9	20.6	379949	7.9	20.3	496706	8.0	21.1	4791	8.1	17.0
488511	7.8	20.5	354057	7.8	21.3	281812	7.9	20.4	12508	7.9	16.9	204759	8.0	19.9	266893	8.1	21.8
57365	7.8	18.2	194723	7.8	20.1	529401	7.9	21.2	413877	7.9	20.6	223478	8.0	20.3	24024	8.1	18.4
296352	7.8	20.6	143163	7.8	20.4	398720	7.9	20.4	168905	7.9	20.6	113333	8.0	19.4	53798	8.1	16.7
46357	7.8	17.9	91440	7.8	18.3	246993	7.9	20.1	522445	7.9	21.4	505318	8.0	20.3	148835	8.1	19.4
457220	7.8	19.6	500403	7.8	21.5	105720	7.9	19.2	30455	7.9	17.7	106934	8.0	19.2	66104	8.1	18.9
500217	7.8	20.1	384222	7.8	21.5	120262	7.9	18.8	95351	7.9	19.5	101045	8.0	18.8	170487	8.1	19.3
524843	7.8	21.4	105504	7.8	19.3	472846	7.9	19.9	16273	7.9	16.6	150554	8.0	19.8	426708	8.1	21.0
378707	7.8	19.9	11292	7.8	17.5	84237	7.9	19.1	535051	7.9	20.1	387394	8.0	20.6	536548	8.1	20.4
396257	7.8	20.6	500661	7.8	22.2	4187	7.9	16.7	408358	7.9	19.1	241221	8.0	19.9	65310	8.1	18.3
105916	7.8	19.8	181670	7.8	19.5	341247	7.9	21.2	525743	7.9	21.9	465990	8.0	22.1	346282	8.1	20.6
378724	7.8	19.0	31586	7.8	16.4	511937	7.9	19.7	310915	7.9	20.9	469324	8.0	21.4	207827	8.1	20.6
506046	7.8	20.8	500447	7.8	20.4	354034	7.9	21.5	239733	7.9	20.1	498336	8.0	21.8	138713	8.1	20.1
330898	7.8	20.5	339544	7.8	19.9	271601	7.9	19.2	8716	7.9	18.2	40597	8.0	18.4	447036	8.1	21.0
419985	7.8	21.0	29955	7.8	20.0	29955	7.9	18.2	477446	7.9	22.3	229495	8.0	19.7	54222	8.1	17.8
526170	7.8	22.3	329307	7.9	20.3	114940	7.9	18.8	125296	7.9	20.1	67151	8.0	19.1	193908	8.1	20.0
208278	7.8	20.4	502319	7.9	21.4	124420	7.9	18.5	248836	7.9	20.0	120436	8.0	20.2	48336	8.1	17.2
444377	7.8	21.9	434869	7.9	20.8	385230	7.9	20.4	115341	7.9	19.4	147286	8.0	20.2	72229	8.1	18.8
51877	7.8	18.4	540571	7.9	21.6	497687	7.9	21.2	183955	7.9	20.4	420611	8.0	20.2	19088	8.1	19.7
131133	7.8	19.9	3845	7.9	17.5	98153	7.9	18.9	66316	7.9	18.3	525879	8.0	21.0	187580	8.1	19.8
189481	7.8	21.0	294540	7.9	20.4	231913	7.9	21.6	523630	7.9	23.3	238058	8.0	19.6	271050	8.1	19.4
64027	7.8	19.3	305911	7.9	20.6	377884	7.9	20.7	141321	7.9	20.7	375251	8.0	18.2	376002	8.1	21.1
50846	7.8	18.6	498708	7.9	20.2	138562	7.9	19.5	529145	7.9	21.4	258715	8.0	19.1	470933	8.1	20.2
295552	7.8	20.7	337506	7.9	20.9	374175	7.9	21.1	331383	7.9	19.3	37195	8.0	18.0	502519	8.1	20.4
130884	7.8	19.4	434973	7.9	20.3	11557	7.9	18.0	351622	7.9	19.6	77714	8.0	18.0	133742	8.1	19.6
226944	7.8	19.6	498593	7.9	20.8	59151	7.9	18.1	240737	7.9	20.2	210167	8.0	20.7	505767	8.1	20.4
136759	7.8	19.4	544718	7.9	21.3	58327	7.9	18.7	195262	7.9	18.2	431461	8.0	20.8	370166	8.1	21.3
162763	7.8	20.0	435405	7.9	20.6	361581	7.9	20.9	138690	7.9	20.1	489300	8.0	22.0	294071	8.1	20.3
531650	7.8	22.3	38417	7.9	18.3	420074	7.9	21.2	417281	7.9	20.8	374319	8.0	20.0	59224	8.1	19.1
471341	7.8	20.1	67703	7.9	17.6	140266	7.9	19.3	175922	7.9	20.1	135295	8.0	19.5	526234	8.1	22.1
219464	7.8	21.3	372704	7.9	20.2	143223	7.9	18.9	528691	7.9	22.3	97284	8.0	18.6	144175	8.1	19.1
83636	7.8	19.0	503761	7.9	20.8	355909	7.9	20.8	86016	7.9	18.2	210368	8.0	19.4	214910	8.1	21.1
223509	7.8	19.9	325928	7.9	19.4	105521	7.9	19.5	533692	7.9	21.5	219561	8.1	19.8	531842	8.1	21.2
256566	7.8	18.8	121947	7.9	18.9	430367	7.9	21.7	230986	7.9	19.0	269787	8.1	20.1	30972	8.1	19.0
246418	7.8	20.5	438363	7.9	21.7	204220	7.9	20.2	183392	7.9	20.7	320988	8.1	19.9	170386	8.1	19.7
334941	7.8	21.1	297057	7.9	18.9	14370	7.9	18.9	543986	7.9	21.2	278668	8.1	21.3	117708	8.1	19.0
210459	7.8	20.7	213801	7.9	19.4	178433	7.9	20.4	293913	7.9	19.2	245058	8.1	20.4	489346	8.1	21.9
95264	7.8	18.8	367399	7.9	20.2	462179	7.9	21.4	222692	7.9	20.3	399573	8.1	20.4	542391	8.1	19.8
503875	7.8	20.7	168142	7.9	18.9	341778	7.9	21.4	241311	7.9	19.8	437616	8.1	20.6	340730	8.1	19.8
41365	7.8	18.5	343741	7.9	20.0	406852	7.9	20.5	85659	7.9	18.9	378723	8.1	20.9	31472	8.1	17.8
503597	7.8	20.0	148693	7.9	20.3	326434	7.9	20.3	187478	7.9	20.0	188364	8.1	19.7	200226	8.1	19.4
498409	7.8	21.6	461796	7.9	19.3	357540	7.9	21.7	146594	7.9	19.8	146879	8.1	19.8	290912	8.1	20.9
309373	7.8	19.0	501527	7.9	21.7	287942	7.9	19.9	386133	7.9	21.1	179563	8.1	19.0	301182	8.1	21.2
106001	7.8	19.6	46905	7.9	17.8	146951	7.9	20.6	159623	7.9	20.6	187838	8.1	17.9	472163	8.1	20.0
200763	7.8	18.9	259995	7.9	20.2	134817	7.9	19.4	435377	7.9	21.7	153790	8.1	19.5	197522	8.1	19.3
303797	7.8	20.7	142454	7.9	20.3	508210	7.9	20.0	415236	7.9	20.9	349026	8.1	20.5	374515	8.1	20.0
541713	7.8	20.0	301918	7.9	20.6	93042	7.9	19.2	507209	7.9	20.2	430114	8.1	20.6	254608	8.1	19.8
175472	7.8	18.3	349427	7.9	21.3	90940	7.9	18.7	15941	7.9	16.8	23376	8.1	19.3	456079	8.1	20.7
83786	7.8	19.3	211819	7.9	19.1	502284	7.9	20.7	272953	7.9	19.9	371013	8.1	21.1	125388	8.1	18.4
217108	7.8	19.6	194455	7.9	19.9	368981	7.9	20.8	447710	7.9	20.0	32589	8.1	19.6	227614	8.1	20.9
346924	7.8	21.0	540381	7.9	20.7	129809	7.9	17.9	459422	7.9	20.0	190408	8.1	19.2	27199	8.1	17.3
496329	7.8	20.4	502321	7.9	21.0	79646	7.9	17.4	470376	8.0	20.6	425880	8.1	20.3	166590	8.1	20.3
179447	7.8	20.9	426223	7.9	20.5	291385	7.9	19.4	8767	8.0	19.0	331894	8.1	19.8	384249	8.1	21.5
200465	7.8	21.1	166658	7.9	19.8	141379	7.9	20.7	356021	8.0	19.1	32485	8.1	18.7	70702	8.1	19.2
210685	7.8	20.7	445894	7.9	20.3	184529	7.9	18.9	83841	8.0	18.4	462083	8.1	21.2	105725	8.1	19.9
462871	7.8	21.3	357629	7.9	20.4	120379	7.9	19.0	466830	8.0	21.2	167217	8.1	20.4	137207	8.1	19.4
537867	7.8	20.5	480072	7.9	20.4	489606	7.9	20.2	419058	8.0	20.7	540875	8.1	20.2	89345	8.1	18.1
87802	7.8	18.1	240858	7.9	19.7	499217	7.9	19.9	500486	8.0	22.3	433650	8.1	20.4	118212	8.1	19.4
160820	7.8	19.5	184276	7.9	20.0	155025	7.9	20.2	383400	8.0	20.8	539388	8.1	21.0	428362	8.1	21.1
18543	7.8	16.5	98638	7.9	18.9	203581	7.9	20.8	527670	8.0	21.3	37403	8.1	18.2	95310	8.1	18.9
146675	7.8	18.4	450790	7.9	22.1	338393	7.9	20.3	397485	8.0	20.7	375311	8.1	19.9	506065	8.1	20.5
87926	7.8	17.9	111648	7.9	19.2	173942	7.9	20.3	298840	8.0	19.1	110552	8.1	18.6	408779	8.1	21.0
302060	7.8	20.0	381739	7.9	20.0	499739	7.9	20.7	187755	8.0	19.3	221209	8.1	20.1	519847	8.1	19.7
423442	7.8	20.5	363237	7.9	20.3	284447	7.9	20.1	303520	8.0	20.7	49308	8.1	17.6	99334	8.1	18.4
90461	7.8	19.5	486679	7.9	20.3	535135	7.9	21.8	168836	8.0	19.5	334924	8.1	19.8	178032	8.1	21.1
330049	7.8	21.4	359125	7.9	20.5	410502	7.9	20.2	2478	8.0	14.9	166876	8.1	19.9	469742	8.1	21.0
504478	7.8	21.4	348980	7.9	22.0	337863	7.9	21.1	425207	8.0	21.4	41158	8.1	19.1	64932	8.1	19.3
435289	7.8	22.2	500646	7.9	21.3	215348	7.9	20.1	499290	8.0	20.6	344863	8.1	19.0	506383	8.1	20.5
417767	7.8	20.9	188910	7.9	20.7	103309	7.9	19.2	386146	8.0	22.2	330031	8.1	2			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
110303	8.2	19.9	200612	8.2	20.9	532801	8.3	21.5	375963	8.4	20.7	456540	8.4	21.0	328881	8.5	21.4
535473	8.2	21.0	390180	8.2	21.9	116046	8.3	18.1	456092	8.4	20.7	244605	8.4	19.9	433589	8.5	20.5
465915	8.2	20.4	192531	8.2	19.3	264654	8.3	21.2	241727	8.4	19.6	20939	8.4	18.7	247885	8.5	18.8
534039	8.2	20.2	377345	8.2	19.2	29162	8.3	17.6	301157	8.4	21.6	218364	8.4	18.9	237132	8.5	20.9
381908	8.2	20.2	205451	8.2	19.7	262717	8.3	20.2	168546	8.4	19.6	172475	8.4	19.6	161830	8.5	19.7
514762	8.2	20.6	352074	8.2	19.6	242767	8.3	19.5	392994	8.4	21.0	287606	8.4	18.9	110842	8.5	18.5
132149	8.2	18.4	81680	8.2	17.3	407576	8.3	21.8	363563	8.4	20.5	299935	8.4	20.9	96417	8.5	19.3
486271	8.2	19.6	510767	8.2	21.9	11360	8.3	17.6	530123	8.4	21.9	58168	8.4	18.6	151107	8.5	19.5
258233	8.2	20.6	372524	8.2	20.6	206797	8.3	20.6	403864	8.4	20.7	91495	8.4	18.8	121178	8.5	18.5
296805	8.2	21.4	492247	8.2	21.2	77253	8.3	18.0	29584	8.4	18.7	127649	8.4	18.4	190541	8.5	18.4
285603	8.2	20.4	240762	8.2	20.1	225513	8.3	19.5	532549	8.4	21.8	123437	8.4	19.2	426744	8.5	20.7
39365	8.2	19.3	63186	8.2	19.5	504432	8.3	21.3	543328	8.4	20.0	299035	8.4	19.9	496237	8.5	19.3
353454	8.2	20.4	489694	8.2	19.9	307711	8.3	20.9	267701	8.4	20.3	341657	8.4	19.9	459016	8.5	22.1
110677	8.2	18.2	82674	8.2	19.1	10700	8.3	17.8	499464	8.4	20.4	105383	8.4	17.8	511887	8.5	20.1
435862	8.2	20.7	495391	8.2	20.5	337186	8.3	20.6	57132	8.4	19.0	524858	8.4	21.6	495236	8.5	21.1
381609	8.2	20.7	340844	8.2	20.2	114725	8.3	18.9	58059	8.4	19.7	501951	8.4	21.3	157978	8.5	19.5
420012	8.2	20.5	378896	8.2	21.0	17955	8.3	18.2	121399	8.4	19.7	465123	8.4	22.5	201133	8.5	19.6
384225	8.2	21.5	369083	8.2	19.5	457013	8.3	22.5	81192	8.4	18.6	406933	8.4	20.0	281303	8.5	20.4
8285	8.2	17.5	375231	8.2	20.6	401935	8.3	20.8	59473	8.4	17.8	384916	8.4	20.2	18724	8.5	16.9
544292	8.2	22.1	534688	8.2	20.7	535263	8.3	20.9	442664	8.4	21.0	463721	8.4	21.2	161920	8.5	20.1
179390	8.2	20.3	179012	8.2	18.7	506267	8.3	20.7	193981	8.4	20.2	112654	8.4	19.1	64035	8.5	17.7
119966	8.2	19.7	536145	8.2	19.8	54227	8.3	19.4	344388	8.4	20.9	100693	8.4	19.0	89274	8.5	18.9
270536	8.2	19.9	111307	8.2	19.8	88695	8.3	20.2	390504	8.4	20.3	193293	8.4	21.2	37919	8.5	17.3
392556	8.2	20.8	62117	8.2	18.9	281064	8.3	19.6	351736	8.4	20.2	526515	8.4	21.0	5257	8.5	18.6
204609	8.2	20.0	124924	8.2	20.3	275206	8.3	19.9	370043	8.4	21.7	330999	8.4	19.6	180583	8.5	19.6
488505	8.2	20.2	176585	8.2	20.8	85949	8.3	19.1	63956	8.4	19.3	297437	8.4	20.7	161119	8.5	20.2
99755	8.2	19.2	362183	8.2	20.4	105922	8.3	18.5	427364	8.4	20.8	461998	8.5	18.8	464089	8.5	21.0
279178	8.2	20.7	515721	8.2	21.5	522041	8.3	21.5	341856	8.4	20.5	417648	8.5	20.0	317914	8.5	20.9
174775	8.2	19.7	283526	8.2	19.9	528435	8.3	20.8	321375	8.4	19.1	202876	8.5	20.9	228672	8.5	18.6
8401	8.2	18.0	2227	8.3	16.9	532526	8.3	21.6	522112	8.4	20.7	253761	8.5	19.8	301712	8.5	20.2
462031	8.2	21.4	201827	8.3	19.8	303477	8.3	20.5	116443	8.4	19.4	264605	8.5	20.5	184829	8.5	19.7
539687	8.2	21.4	457112	8.3	20.5	281561	8.3	20.5	249212	8.4	19.4	489045	8.5	21.4	342834	8.5	19.7
327868	8.2	20.5	136063	8.3	19.0	435411	8.3	20.9	291207	8.4	20.3	502498	8.5	21.0	486789	8.5	20.2
507171	8.2	20.3	401548	8.3	20.8	150759	8.3	17.6	156508	8.4	19.7	76220	8.5	18.3	104877	8.5	18.4
264684	8.2	19.5	309136	8.3	20.6	312423	8.3	20.4	151634	8.4	19.7	425230	8.5	20.4	199103	8.5	19.5
351709	8.2	20.4	521201	8.3	20.3	63742	8.3	19.4	419694	8.4	20.4	5589	8.5	16.9	259243	8.5	21.3
208097	8.2	19.4	44185	8.3	16.7	489997	8.3	20.4	241886	8.4	19.8	464096	8.5	20.4	444794	8.5	22.4
308751	8.2	19.7	417697	8.3	20.9	498966	8.3	21.7	426393	8.4	20.7	366412	8.5	19.9	63007	8.5	18.2
343489	8.2	19.6	274133	8.3	20.0	466555	8.3	21.5	298894	8.4	20.2	50766	8.5	18.5	466829	8.5	20.7
59686	8.2	18.6	40343	8.3	18.1	91351	8.3	18.0	234246	8.4	18.0	415005	8.5	21.5	186114	8.5	19.9
337101	8.2	21.1	186180	8.3	19.0	163267	8.3	19.2	544350	8.4	20.9	458505	8.5	18.9	537801	8.5	20.7
129135	8.2	19.3	379965	8.3	20.1	348604	8.3	20.6	346271	8.4	19.8	531070	8.5	20.6	240902	8.5	18.5
159447	8.2	19.1	305350	8.3	19.8	160302	8.3	19.1	332072	8.4	19.9	396611	8.5	20.4	286269	8.5	20.4
360733	8.2	21.4	170957	8.3	20.0	315282	8.3	20.3	141068	8.4	19.4	491289	8.5	20.6	291461	8.5	19.4
349913	8.2	20.0	345548	8.3	20.3	306465	8.3	20.6	450352	8.4	21.8	376504	8.5	18.3	93310	8.5	19.4
171169	8.2	20.1	95128	8.3	19.0	356935	8.3	21.0	125360	8.4	19.8	283516	8.5	20.7	228362	8.5	19.7
132229	8.2	18.1	143265	8.3	20.0	341897	8.3	20.7	307901	8.4	20.4	423716	8.5	21.3	507017	8.5	21.0
182305	8.2	18.8	328230	8.3	20.5	188423	8.3	19.9	89379	8.4	18.4	231650	8.5	19.9	451028	8.5	21.6
264588	8.2	21.5	241274	8.3	20.3	188014	8.3	20.9	242635	8.4	19.5	244078	8.5	20.6	10965	8.5	17.5
153625	8.2	20.2	138144	8.3	19.9	32279	8.3	18.7	32993	8.4	19.0	413504	8.5	21.6	187756	8.5	20.0
286530	8.2	21.1	233095	8.3	18.9	341670	8.3	21.0	118277	8.4	18.5	221283	8.5	19.1	544326	8.5	20.5
435979	8.2	21.4	453851	8.3	21.9	207057	8.3	20.0	431551	8.4	19.6	444792	8.5	21.5	525262	8.5	21.0
500264	8.2	20.6	504151	8.3	21.5	531267	8.3	20.8	390610	8.4	21.1	454781	8.5	19.4	84432	8.5	19.6
197615	8.2	18.1	299925	8.3	21.0	189833	8.3	19.2	109175	8.4	19.3	60100	8.5	19.0	173832	8.5	20.1
286108	8.2	19.9	456732	8.3	21.1	31186	8.3	19.4	506358	8.4	20.3	162671	8.5	20.2	42429	8.5	20.4
113867	8.2	18.9	423185	8.3	19.1	198492	8.3	18.8	342978	8.4	21.3	89012	8.5	20.3	457712	8.5	20.9
207325	8.2	20.2	103109	8.3	18.4	428747	8.3	20.5	410389	8.4	20.7	151069	8.5	18.9	7108	8.5	18.0
327388	8.2	20.5	285558	8.3	19.7	287518	8.3	20.4	543045	8.4	20.8	72240	8.5	19.1	78596	8.5	19.6
174887	8.2	19.7	391410	8.3	20.0	354029	8.3	19.6	148787	8.4	19.3	122728	8.5	19.0	243749	8.5	19.8
145169	8.2	18.5	286192	8.3	20.6	193661	8.3	19.6	248004	8.4	20.3	150150	8.5	19.5	81479	8.6	17.9
144604	8.2	19.5	487754	8.3	21.2	314749	8.3	20.6	51346	8.4	18.6	123365	8.5	19.3	134269	8.6	19.8
485096	8.2	21.1	221275	8.3	19.9	424691	8.3	20.5	428049	8.4	21.5	456692	8.5	22.1	253954	8.6	19.3
138419	8.2	18.4	39962	8.3	19.5	375318	8.4	20.3	135349	8.4	20.0	127626	8.5	19.0	372460	8.6	21.0
268982	8.2	20.8	539017	8.3	20.0	343878	8.4	19.2	51129	8.4	17.8	496748	8.5	20.8	35253	8.6	19.3
379839	8.2	20.8	368726	8.3	20.6	1269	8.4	14.2	198511	8.4	19.1	54715	8.5	18.3	10094	8.6	16.1
233944	8.2	20.0	329033	8.3	21.2	340905	8.4	20.6	378648	8.4	20.6	305665	8.5	19.7	138414	8.6	19.7
283617	8.2	20.1	200672	8.3	20.0	387574	8.4	20.7	456795	8.4	20.7	172795	8.5	19.4	427905	8.6	21.7
41565	8.2	17.9	224546	8.3	19.4	86338	8.4	19.0	301520	8.4	19.9	429104	8.5	21.5	349944	8.6	20.3
127796	8.2	18.2	372463	8.3	21.1	377382	8.4	19.7	173972	8.4	20.4	366922	8.5	20.2	202920	8.6	20.5
300261	8.2	19.1	398103	8.3	20.9	532322	8.4	21.1	447048	8.4	18.5	383700	8.5	21.3	231056	8.6	19.3
217281	8.2	20.3	508968	8.3	19.6	331292	8.4	20.0	319734	8.4	21.2	380699					

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
376735	8.6	21.0	60868	8.6	18.6	35160	8.7	17.5	51283	8.8	18.9	66659	8.8	17.6	118325	8.9	19.8
533768	8.6	21.0	119371	8.6	19.7	317535	8.7	20.7	330429	8.8	20.3	166186	8.8	19.8	538388	8.9	20.9
105515	8.6	19.1	62959	8.6	20.3	515737	8.7	21.2	243293	8.8	20.0	414235	8.8	19.9	406475	8.9	21.2
303538	8.6	20.0	172462	8.6	19.9	53054	8.7	16.2	317062	8.8	18.7	359003	8.8	21.1	78291	8.9	19.7
533869	8.6	19.6	535642	8.6	20.4	498843	8.7	21.3	408144	8.8	20.1	163698	8.8	18.2	51145	8.9	18.3
140665	8.6	19.9	278081	8.6	20.4	42342	8.7	18.4	433266	8.8	19.8	77730	8.8	18.5	39299	8.9	18.8
157740	8.6	19.9	324402	8.6	21.8	353270	8.7	20.5	427816	8.8	20.1	350619	8.8	21.1	166217	8.9	18.8
372552	8.6	19.8	406085	8.6	20.8	106292	8.7	19.1	490718	8.8	20.9	279580	8.8	20.5	19029	8.9	17.9
502361	8.6	21.1	453280	8.6	21.2	165353	8.7	19.3	5560	8.8	15.6	293939	8.8	20.3	54497	8.9	18.5
258471	8.6	20.6	524954	8.6	20.4	140167	8.7	19.4	37810	8.8	18.3	490900	8.8	22.0	106593	8.9	19.2
269576	8.6	22.0	371261	8.6	21.1	435984	8.7	20.4	180617	8.8	19.6	277768	8.8	20.1	68028	8.9	19.0
459038	8.6	21.1	283405	8.6	20.5	463536	8.7	20.5	52208	8.8	19.7	459014	8.8	22.2	498619	8.9	20.8
166518	8.6	20.6	514591	8.6	21.2	178919	8.7	19.1	170762	8.8	20.2	241681	8.8	19.3	426697	8.9	19.8
445287	8.6	22.2	454113	8.6	20.9	419028	8.7	21.2	100000	8.8	19.6	270377	8.8	21.5	13768	8.9	18.8
337944	8.6	20.1	267093	8.6	19.6	293072	8.7	19.7	254729	8.8	18.0	450991	8.8	20.9	25799	8.9	17.8
128073	8.6	18.3	467454	8.6	21.4	413880	8.7	21.7	96857	8.8	18.8	234833	8.8	19.2	416977	8.9	20.3
318178	8.6	20.2	495798	8.7	20.2	79002	8.7	19.8	304885	8.8	20.9	249060	8.8	20.6	300945	8.9	21.1
538675	8.6	21.5	172573	8.7	20.8	334821	8.7	20.4	269419	8.8	20.2	143264	8.9	19.4	134148	8.9	19.6
508310	8.6	20.9	94103	8.7	19.1	257174	8.7	20.9	350605	8.8	20.6	420	8.9	13.3	142627	8.9	19.6
468051	8.6	20.7	543607	8.7	21.4	29638	8.7	18.0	147963	8.8	18.9	386219	8.9	21.4	121095	8.9	19.1
464963	8.6	21.1	274280	8.7	20.1	309795	8.7	19.8	29605	8.8	18.4	56948	8.9	18.9	210380	8.9	20.3
410448	8.6	20.9	202892	8.7	21.0	496548	8.7	21.2	448303	8.8	20.4	436700	8.9	20.6	491096	8.9	19.2
435935	8.6	19.9	526216	8.7	21.6	384250	8.7	21.3	3897	8.8	16.4	397841	8.9	20.8	347556	8.9	20.0
463938	8.6	21.1	176495	8.7	20.6	93972	8.7	19.3	381686	8.8	21.4	109884	8.9	19.5	114970	8.9	19.7
431972	8.6	22.3	173830	8.7	20.8	472694	8.7	20.2	535741	8.8	21.8	87847	8.9	18.8	470593	8.9	21.0
204600	8.6	20.3	341918	8.7	20.3	132021	8.7	20.0	88636	8.8	18.9	437078	8.9	20.1	454294	8.9	19.3
233878	8.6	21.9	503225	8.7	20.9	495872	8.7	21.0	214750	8.8	20.0	295838	8.9	20.1	243495	8.9	20.2
495967	8.6	20.9	246323	8.7	20.7	8782	8.7	16.7	306399	8.8	20.6	526688	8.9	21.2	188053	8.9	19.9
534807	8.6	20.3	34442	8.7	17.0	64894	8.7	17.6	98429	8.8	19.5	503186	8.9	20.5	490341	8.9	20.3
454360	8.6	19.6	413888	8.7	20.8	342970	8.7	20.4	155192	8.8	19.4	56782	8.9	17.6	448443	8.9	22.1
15993	8.6	17.2	317162	8.7	20.4	101666	8.7	17.7	271880	8.8	19.8	192291	8.9	18.6	16028	8.9	16.0
393906	8.6	20.5	463241	8.7	20.9	297579	8.7	20.7	204379	8.8	19.5	38345	8.9	17.2	531722	8.9	21.9
247696	8.6	19.9	8704	8.7	18.3	308167	8.7	20.9	519190	8.8	20.4	406470	8.9	21.4	369109	8.9	20.0
426824	8.6	19.8	360758	8.7	21.4	454079	8.7	20.9	298904	8.8	20.5	401198	8.9	20.3	94801	8.9	20.3
450461	8.6	20.6	452726	8.7	21.6	368579	8.7	20.8	87057	8.8	18.4	230476	8.9	19.3	214857	8.9	21.0
20630	8.6	20.7	337788	8.7	19.7	24467	8.7	18.5	114947	8.8	18.4	501462	8.9	21.3	373090	8.9	21.5
281024	8.6	19.9	210669	8.7	21.1	228606	8.7	20.3	21691	8.8	17.2	72347	8.9	19.7	413785	8.9	19.7
154052	8.6	20.3	83474	8.7	19.6	527267	8.7	22.2	301564	8.8	19.8	312994	8.9	20.2	140066	8.9	19.9
10454	8.6	17.5	469724	8.7	19.7	467956	8.7	20.4	166634	8.8	19.6	110371	8.9	20.2	465757	8.9	20.6
135231	8.6	19.5	301550	8.7	20.6	147859	8.7	18.6	376701	8.8	21.6	86118	8.9	19.4	69313	8.9	18.9
437793	8.6	21.0	62104	8.7	19.1	83517	8.7	18.6	293808	8.8	19.2	502584	8.9	21.0	470237	8.9	21.2
180007	8.6	19.3	292293	8.7	19.7	49312	8.7	18.6	426663	8.8	19.1	467883	8.9	20.4	94120	8.9	17.1
497914	8.6	21.1	29150	8.7	17.8	89138	8.7	19.6	457192	8.8	21.1	179145	8.9	18.4	536940	8.9	21.5
182178	8.6	19.5	228065	8.7	19.9	148594	8.7	20.8	493701	8.8	20.4	189507	8.9	19.3	453829	8.9	21.9
16540	8.6	16.6	415936	8.7	21.2	432490	8.7	21.4	13494	8.8	17.8	105426	8.9	18.9	372540	8.9	20.7
462084	8.6	20.7	453868	8.7	20.2	106898	8.7	20.1	526455	8.8	21.3	15502	8.9	17.0	469728	8.9	20.2
380563	8.6	20.0	196401	8.7	19.6	120542	8.7	18.9	282840	8.8	20.8	282343	8.9	19.7	207010	8.9	21.4
46782	8.6	17.3	150252	8.7	18.3	410078	8.7	21.7	135274	8.8	19.7	252016	8.9	19.8	90823	8.9	20.7
457123	8.6	20.6	362127	8.7	19.5	382152	8.7	19.8	251750	8.8	20.0	34889	8.9	17.7	271204	8.9	20.3
412547	8.6	19.5	41470	8.7	18.9	204574	8.7	19.2	177819	8.8	19.1	396502	8.9	20.2	118718	8.9	19.6
487573	8.6	20.7	535173	8.7	21.3	173772	8.7	19.6	158374	8.8	20.2	500490	8.9	21.0	420085	8.9	20.7
473476	8.6	19.9	238326	8.7	19.3	323909	8.7	20.3	400762	8.8	19.3	58537	8.9	20.2	508923	8.9	20.5
527759	8.6	20.6	214050	8.7	20.6	173870	8.7	17.3	505336	8.8	21.7	62029	8.9	17.7	308101	8.9	20.0
300211	8.6	20.9	110271	8.7	18.8	513430	8.7	22.4	430506	8.8	20.4	102448	8.9	18.6	153721	8.9	19.3
268485	8.6	20.4	234999	8.7	20.4	504120	8.7	20.9	285513	8.8	20.3	467886	8.9	20.4	39842	8.9	18.6
267465	8.6	20.5	218716	8.7	20.7	380345	8.7	20.3	251007	8.8	19.8	354842	8.9	20.3	532855	8.9	21.3
453382	8.6	21.9	102622	8.7	19.0	375793	8.7	20.9	535410	8.8	21.5	245773	8.9	18.9	264687	8.9	20.6
533396	8.6	22.4	524785	8.7	21.8	173917	8.7	21.4	138984	8.8	19.2	55958	8.9	18.9	46383	8.9	17.4
425245	8.6	20.8	460346	8.7	21.3	105741	8.7	18.0	82985	8.8	18.5	113505	8.9	19.0	238985	8.9	19.4
1838	8.6	15.6	527228	8.7	21.7	113971	8.7	20.0	96806	8.8	19.2	371973	8.9	21.7	334408	8.9	19.5
340771	8.6	20.6	173165	8.7	20.2	204512	8.7	19.6	341407	8.8	20.4	297855	8.9	20.2	247341	8.9	19.5
320837	8.6	19.9	324477	8.7	21.0	341860	8.8	20.2	91506	8.8	19.2	300907	8.9	19.9	409995	8.9	20.8
399576	8.6	21.2	263563	8.7	20.3	149420	8.8	20.3	499853	8.8	20.1	203589	8.9	20.6	331434	8.9	19.5
223771	8.6	19.4	267467	8.7	20.3	506717	8.8	19.7	225129	8.8	19.7	538921	8.9	21.2	32286	8.9	16.6
426577	8.6	20.0	8489	8.7	17.1	366390	8.8	19.5	458937	8.8	20.7	108990	8.9	19.7	955	8.9	12.7
357523	8.6	20.5	273373	8.7	20.6	369969	8.8	20.9	148903	8.8	20.8	200733	8.9	19.2	261064	8.9	20.2
146338	8.6	19.6	537145	8.7	21.1	389257	8.8	19.9	489157	8.8	20.4	51183	8.9	18.3	171997	8.9	19.7
423711	8.6	20.0	30692	8.7	17.8	447136	8.8	21.0	141437	8.8	18.8	121027	8.9	19.7	364397	8.9	20.1
501489	8.6	20.7	372396	8.7	20.7	114910	8.8	19.5	45743	8.8	18.1	326008	8.9	20.0	340289	8.9	20.4
178432	8.6	21.1	467645	8.7	21.0	150509	8.8	19.8	203653	8.8	19.5	258246	8.9	20.4	238098	8.9	19.0
237869	8.6	18.8	130596	8.7	19.8	341351	8.8	20.9	27792	8.8	17.4	134726	8.9	19.0			

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
409966	8.9	19.5	409991	9.1	21.1	166803	9.1	19.8	294648	9.2	19.9	383708	9.2	19.9	164663	9.3	20.5
370981	8.9	20.9	452814	9.1	21.5	421319	9.1	20.6	512939	9.2	20.6	456960	9.2	19.7	126980	9.3	19.5
500153	8.9	20.4	118755	9.1	18.8	210896	9.1	20.2	427744	9.2	21.8	189979	9.2	18.1	224798	9.3	20.1
12210	8.9	18.7	345598	9.1	20.7	529495	9.1	20.2	191853	9.2	20.2	264589	9.2	21.5	27830	9.3	17.9
214770	8.9	20.2	83321	9.1	19.9	501209	9.1	21.0	389223	9.2	20.7	4840	9.2	16.8	241501	9.3	20.3
249465	8.9	19.1	93125	9.1	19.2	190132	9.1	18.8	73366	9.2	18.9	40700	9.2	17.4	355954	9.3	20.8
298729	8.9	19.2	341877	9.1	20.4	44434	9.1	16.1	469123	9.2	20.2	238925	9.2	19.6	455292	9.3	19.8
160768	8.9	18.5	209590	9.1	20.1	20366	9.1	17.7	543591	9.2	20.5	533107	9.2	21.3	105378	9.3	19.4
502185	8.9	20.9	230928	9.1	19.9	108804	9.1	18.7	15431	9.2	17.6	459427	9.2	20.8	64452	9.3	19.5
217048	8.9	18.2	60845	9.1	18.2	400320	9.1	21.4	185809	9.2	21.6	445312	9.2	20.8	164332	9.3	19.5
280467	8.9	19.5	199802	9.1	18.3	309298	9.1	20.6	438720	9.2	20.5	371179	9.2	21.0	58307	9.3	19.5
44113	8.9	17.9	57549	9.1	18.4	323777	9.1	19.5	363401	9.2	22.9	80231	9.2	19.3	325700	9.3	21.3
149251	8.9	19.3	90839	9.1	18.9	1986	9.1	16.6	18488	9.2	17.6	275153	9.2	19.5	42522	9.3	18.5
206913	8.9	20.6	466413	9.1	21.0	18942	9.1	16.9	497262	9.2	20.5	17314	9.2	18.2	211595	9.3	20.5
152346	8.9	19.4	298330	9.1	19.6	498895	9.1	21.1	85614	9.2	18.8	250459	9.3	20.0	30409	9.3	17.8
116693	8.9	19.1	391695	9.1	22.0	528819	9.1	20.9	420528	9.2	20.7	126243	9.3	19.6	237678	9.3	19.7
59974	8.9	17.2	62895	9.1	19.6	138643	9.1	20.3	423394	9.2	20.1	285570	9.3	19.8	355572	9.3	20.9
61800	9.0	19.3	63845	9.1	18.7	98237	9.1	19.2	465948	9.2	21.7	371946	9.3	19.5	165906	9.3	20.5
138667	9.0	19.5	247495	9.1	19.8	419231	9.1	20.9	463751	9.2	21.3	113851	9.3	19.6	184104	9.3	20.4
179573	9.0	20.4	40839	9.1	18.8	500622	9.1	21.6	537823	9.2	19.5	540067	9.3	21.4	531727	9.3	20.7
218307	9.0	18.7	504660	9.1	21.3	368754	9.1	21.2	414191	9.2	18.9	260122	9.3	19.3	33078	9.3	18.3
275401	9.0	19.9	335595	9.1	19.8	256301	9.1	21.2	73542	9.2	19.0	355950	9.3	19.7	500653	9.3	20.6
17940	9.0	18.2	194093	9.1	20.8	341812	9.1	21.7	237690	9.2	20.6	69629	9.3	17.7	519344	9.3	21.0
83522	9.0	19.2	386192	9.1	20.6	526036	9.1	20.0	222331	9.2	19.0	4540	9.3	16.2	318660	9.3	20.0
158333	9.0	20.5	115900	9.1	17.7	46340	9.1	18.8	49896	9.2	18.3	35957	9.3	17.4	417036	9.3	20.4
528474	9.0	21.6	434096	9.1	22.9	141898	9.1	19.7	236349	9.2	20.2	188097	9.3	20.0	436974	9.3	20.4
331797	9.0	19.9	257635	9.1	20.8	523887	9.1	21.2	331936	9.2	19.5	315558	9.3	21.8	126439	9.3	18.8
363302	9.0	19.0	254400	9.1	19.6	526771	9.1	21.0	373099	9.2	21.0	439364	9.3	20.4	170142	9.3	20.2
502275	9.0	20.9	63632	9.1	19.5	155337	9.1	19.4	9391	9.2	16.1	343086	9.3	20.5	294745	9.3	19.1
280449	9.0	19.4	11105	9.1	18.1	529425	9.1	20.3	80998	9.2	17.5	283471	9.3	20.1	473258	9.3	21.0
509409	9.0	20.2	172581	9.1	19.3	463370	9.1	20.1	348936	9.2	21.8	31745	9.3	18.0	182543	9.3	19.3
231042	9.0	20.2	388358	9.1	20.7	11576	9.1	15.9	369102	9.2	19.8	465668	9.3	20.2	111410	9.3	19.8
512334	9.0	20.4	5956	9.1	17.2	298917	9.1	20.1	432905	9.2	20.5	398678	9.3	20.5	430151	9.3	21.6
104678	9.0	19.3	1503	9.1	14.4	179533	9.1	19.0	498104	9.2	21.2	129342	9.3	18.8	464944	9.3	21.1
34300	9.0	19.1	437472	9.1	20.9	138338	9.1	19.6	306884	9.2	21.5	106443	9.3	20.1	150179	9.3	19.1
297047	9.0	20.5	455224	9.1	21.3	441730	9.1	20.4	64201	9.2	18.2	490320	9.3	20.6	203745	9.3	19.6
39069	9.0	18.8	164667	9.1	18.7	462154	9.1	21.9	510307	9.2	20.6	522591	9.3	21.1	56976	9.3	18.5
184561	9.0	18.8	38406	9.1	18.8	520152	9.1	21.0	166731	9.2	20.3	369007	9.3	20.3	297740	9.3	18.8
229233	9.0	20.0	109160	9.1	20.0	366875	9.1	20.7	481807	9.2	22.3	160388	9.3	18.8	468244	9.3	19.9
227435	9.0	18.5	389262	9.1	21.0	17415	9.1	18.9	469015	9.2	20.8	161737	9.3	21.0	301010	9.3	20.3
367797	9.0	20.4	89133	9.1	19.3	466654	9.1	21.4	169953	9.2	19.1	368179	9.3	20.6	395205	9.3	20.7
162519	9.0	19.5	241849	9.1	20.8	3740	9.1	18.3	399897	9.2	20.8	10053	9.3	15.8	420579	9.3	20.2
202982	9.0	20.3	391043	9.1	19.6	283151	9.1	19.4	204975	9.2	19.7	72050	9.3	18.4	40693	9.3	18.1
451037	9.0	21.5	458848	9.1	20.9	525183	9.1	19.7	256938	9.2	20.4	69627	9.3	17.8	498494	9.3	20.8
141250	9.0	20.4	331809	9.1	20.1	480108	9.1	20.0	111882	9.2	19.0	463915	9.3	21.5	4707	9.3	17.7
325299	9.0	20.1	210914	9.1	19.7	141801	9.1	19.7	382359	9.2	20.7	94992	9.3	17.8	534457	9.3	21.2
483285	9.0	22.2	144794	9.1	18.8	372392	9.1	19.8	534318	9.2	21.6	497111	9.3	20.5	385848	9.3	20.7
375257	9.0	19.8	26665	9.1	18.8	272951	9.1	19.8	374136	9.2	19.7	350258	9.3	21.5	291064	9.3	21.1
290853	9.0	19.1	418230	9.1	20.8	296947	9.1	19.4	340856	9.2	20.7	232417	9.3	19.5	292758	9.3	19.7
200119	9.0	20.5	146202	9.1	19.7	125004	9.2	19.4	535449	9.2	22.0	416986	9.3	20.6	465824	9.3	22.6
543371	9.0	19.8	50946	9.1	18.4	444334	9.2	21.9	305421	9.2	20.6	131101	9.3	19.9	394828	9.3	20.1
86698	9.0	17.6	469824	9.1	21.4	158537	9.2	19.1	451008	9.2	22.0	412394	9.3	21.2	88647	9.3	17.9
62597	9.0	19.5	365458	9.1	19.7	109718	9.2	19.5	77961	9.2	18.3	437801	9.3	20.1	187714	9.3	20.4
328839	9.0	21.5	427839	9.1	20.2	536902	9.2	20.6	55416	9.2	18.5	124418	9.3	19.1	535752	9.3	21.2
73013	9.0	19.0	505947	9.1	20.4	162079	9.2	20.0	538404	9.2	20.4	469289	9.3	21.2	169419	9.3	19.4
436375	9.0	20.6	179948	9.1	20.0	499710	9.2	21.7	506386	9.2	20.4	528410	9.3	20.7	354126	9.3	20.9
31328	9.0	19.1	414264	9.1	19.8	377467	9.2	20.0	149878	9.2	18.6	111039	9.3	19.7	158103	9.3	18.3
34145	9.0	18.6	490589	9.1	20.7	341801	9.2	21.2	176691	9.2	19.5	194532	9.3	20.4	396241	9.3	20.6
55685	9.0	19.3	135203	9.1	18.5	534087	9.2	21.1	360590	9.2	20.6	2020	9.3	15.9	147420	9.3	19.3
266594	9.0	19.5	231813	9.1	19.7	152631	9.2	20.1	423646	9.2	21.9	341622	9.3	20.4	17920	9.3	17.5
293966	9.0	19.1	320539	9.1	20.7	326104	9.2	20.8	262836	9.2	20.6	114732	9.3	19.0	252457	9.3	19.6
146162	9.0	19.7	362948	9.1	21.5	38470	9.2	19.1	93187	9.2	18.7	240764	9.3	19.1	237190	9.4	20.1
138662	9.0	19.0	540188	9.1	20.2	3483	9.2	15.7	458990	9.2	21.2	283902	9.3	19.9	292693	9.4	21.4
285326	9.0	19.9	538868	9.1	21.1	461416	9.2	20.6	221902	9.2	20.7	306315	9.3	20.3	530585	9.4	21.2
58955	9.0	19.0	105500	9.1	18.6	495837	9.2	20.5	179329	9.2	17.3	370433	9.3	20.2	344368	9.4	21.3
210711	9.0	20.3	124289	9.1	18.5	494945	9.2	21.2	299762	9.2	21.4	166047	9.3	18.3	289756	9.4	19.8
193445	9.0	19.8	477966	9.1	21.0	96250	9.2	19.4	234150	9.2	20.2	129489	9.3	19.4	465669	9.4	20.6
175376	9.0	18.8	453857	9.1	21.3	110020	9.2	19.6	78280	9.2	20.1	463918	9.3	20.4	449681	9.4	20.9
31521	9.0	17.1	426735	9.1	20.0	110967	9.2	19.5	222308	9.2	20.4	109615	9.3	19.4	525974	9.4	21.3
120391	9.0	19.6	108540	9.1	19.0	399315	9.2	20.7	528816	9.2	20.0	164698	9.3	20.4	456655	9.4	20.5
199238	9.0	19.3	109324	9.1	18.4	497727	9.2	22.3	199988	9.2	19.0	309039	9.3	19.8	192		

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
3717	9.4	16.7	277560	9.4	20.6	167029	9.5	18.8	320704	9.6	19.7	537385	9.6	20.7	179602	9.7	19.9
213390	9.4	20.7	436618	9.4	20.4	108899	9.5	18.2	310185	9.6	22.4	290279	9.6	20.7	155806	9.7	19.8
373074	9.4	21.5	166615	9.4	20.5	436660	9.5	20.3	188028	9.6	19.7	57925	9.6	18.1	93290	9.7	18.9
39964	9.4	18.8	511688	9.4	20.7	158543	9.5	19.2	126649	9.6	19.3	75940	9.6	18.5	60733	9.7	17.2
90213	9.4	18.8	79071	9.4	19.3	413820	9.5	23.0	505252	9.6	21.3	491837	9.6	20.1	199253	9.7	19.9
127320	9.4	19.2	124843	9.4	19.5	208627	9.5	20.1	89804	9.6	18.3	354128	9.6	20.5	280454	9.7	20.2
286399	9.4	21.1	85966	9.4	18.8	139856	9.5	20.2	178869	9.6	19.4	209458	9.6	20.4	4828	9.7	17.6
370806	9.4	21.2	503247	9.4	20.6	450750	9.5	19.7	352523	9.6	20.5	503016	9.6	20.1	232402	9.7	21.4
442655	9.4	21.0	246048	9.4	20.4	195389	9.5	19.2	281925	9.6	20.2	236169	9.6	19.9	274750	9.7	21.1
502320	9.4	21.1	497066	9.4	20.4	281545	9.5	20.9	118322	9.6	19.6	492984	9.6	19.1	295329	9.7	19.7
530131	9.4	22.1	175617	9.4	20.3	89986	9.5	18.3	59749	9.6	18.3	362968	9.6	20.5	299749	9.7	20.7
291506	9.4	19.3	259258	9.4	20.9	123540	9.5	20.3	65502	9.6	18.9	77038	9.6	19.0	457213	9.7	19.2
5659	9.4	18.1	210898	9.4	20.7	213014	9.5	21.1	439172	9.6	20.6	442626	9.6	20.8	182341	9.7	19.8
106807	9.4	18.9	502266	9.4	20.5	13654	9.5	18.1	199338	9.6	20.8	544146	9.6	21.0	373465	9.7	19.3
236222	9.4	20.6	226867	9.4	20.4	110540	9.5	20.1	245705	9.6	20.8	137837	9.6	18.1	510289	9.7	20.4
28785	9.4	17.5	345951	9.4	20.8	26351	9.5	18.0	402992	9.6	21.3	224490	9.6	19.4	110179	9.7	20.0
487555	9.4	20.9	332658	9.4	19.7	58190	9.5	17.8	339444	9.6	20.7	84104	9.6	19.7	154551	9.7	18.5
508522	9.4	19.8	501448	9.4	21.5	380449	9.5	21.7	435909	9.6	22.1	532129	9.6	18.9	310533	9.7	20.7
181769	9.4	21.1	471315	9.4	20.5	538056	9.5	20.2	364725	9.6	20.6	364441	9.7	19.8	366402	9.7	20.3
37154	9.4	16.4	381975	9.4	20.4	304122	9.5	21.2	427229	9.6	20.8	343102	9.7	21.1	288868	9.7	19.4
465935	9.4	21.4	299867	9.4	20.7	3153	9.5	16.3	312981	9.6	20.9	157394	9.7	18.9	234027	9.7	20.9
90214	9.4	19.1	156541	9.5	19.7	198315	9.5	18.7	111315	9.6	19.4	265620	9.7	20.4	266226	9.7	18.4
298989	9.4	20.8	413511	9.5	21.5	45905	9.5	17.7	170741	9.6	19.6	345562	9.7	21.6	64479	9.7	18.2
444406	9.4	21.3	66855	9.5	17.3	134606	9.5	19.3	369967	9.6	21.6	381420	9.7	20.1	26983	9.7	19.3
307251	9.4	21.9	529203	9.5	21.3	467429	9.5	21.8	348179	9.6	20.0	201577	9.7	19.8	392476	9.7	19.5
372632	9.4	19.8	82856	9.5	19.4	232132	9.5	19.3	534365	9.6	21.4	40934	9.7	17.2	161801	9.7	19.9
272910	9.4	20.3	303255	9.5	20.4	538850	9.5	20.6	293710	9.6	19.7	62761	9.7	18.1	377119	9.7	21.3
528618	9.4	20.7	464701	9.5	19.1	519924	9.5	21.0	84998	9.6	19.3	116675	9.7	19.0	199375	9.7	19.4
466371	9.4	20.3	403729	9.5	21.0	253977	9.5	20.3	366025	9.6	20.2	196303	9.7	20.2	194064	9.7	19.5
319878	9.4	21.3	462009	9.5	20.4	100691	9.5	20.6	208926	9.6	20.9	34521	9.7	18.4	215706	9.7	19.8
530827	9.4	20.0	502096	9.5	21.4	23731	9.5	17.5	345565	9.6	21.4	219457	9.7	19.1	92903	9.7	18.3
461499	9.4	20.9	141278	9.5	20.1	387833	9.5	21.1	288549	9.6	19.8	153708	9.7	18.8	299952	9.7	21.2
522796	9.4	20.6	533996	9.5	21.7	520279	9.5	20.7	322399	9.6	19.7	530603	9.7	20.8	172020	9.7	19.8
111718	9.4	19.6	95867	9.5	17.8	224379	9.5	19.4	98401	9.6	18.7	394397	9.7	20.1	340323	9.7	20.7
402887	9.4	20.5	273217	9.5	20.5	528875	9.5	21.1	325537	9.6	19.6	263327	9.7	19.7	13480	9.7	17.1
299578	9.4	19.1	155494	9.5	18.5	93698	9.5	20.0	233687	9.6	19.7	38709	9.7	19.6	388801	9.7	20.4
106157	9.4	19.6	31003	9.5	18.6	111656	9.5	19.1	2038	9.6	14.4	151102	9.7	19.2	48487	9.7	17.8
375839	9.4	19.7	436352	9.5	20.1	216746	9.5	19.7	119109	9.6	19.3	96939	9.7	18.9	67548	9.7	19.7
404324	9.4	20.3	58130	9.5	19.7	278729	9.5	20.4	281187	9.6	19.1	24248	9.7	18.6	447782	9.7	21.7
540656	9.4	21.0	441186	9.5	21.7	378805	9.5	19.8	258869	9.6	18.9	32072	9.7	17.7	104403	9.7	19.0
410324	9.4	19.9	459181	9.5	21.2	54127	9.5	16.7	138782	9.6	19.5	87841	9.7	19.8	238659	9.7	20.6
6467	9.4	17.2	178616	9.5	19.3	282031	9.5	20.3	55739	9.6	18.9	341573	9.7	19.8	191255	9.7	20.5
299780	9.4	20.6	258291	9.5	21.1	218611	9.5	18.8	367532	9.6	21.5	239531	9.7	21.4	297150	9.7	21.2
272804	9.4	20.1	453340	9.5	21.7	435376	9.5	21.2	100938	9.6	18.1	531762	9.7	22.4	54863	9.7	19.0
184695	9.4	19.9	300925	9.5	20.4	344260	9.5	21.0	347432	9.6	20.3	499271	9.7	20.4	429170	9.7	21.2
268978	9.4	20.2	79497	9.5	18.9	112888	9.5	18.7	262650	9.6	18.6	401786	9.7	19.1	487554	9.7	20.7
58654	9.4	20.1	338378	9.5	20.0	271670	9.5	19.8	296079	9.6	20.1	149909	9.7	19.9	496111	9.7	20.8
239756	9.4	19.7	118991	9.5	18.1	401840	9.5	21.0	503116	9.6	20.2	277014	9.7	19.7	253252	9.7	21.1
436890	9.4	21.1	466776	9.5	20.1	433850	9.5	21.1	55528	9.6	18.0	336753	9.7	19.8	103051	9.7	19.3
232405	9.4	19.1	93699	9.5	18.4	105589	9.5	19.3	338182	9.6	19.3	235538	9.7	19.2	433192	9.7	20.6
68164	9.4	18.9	470912	9.5	20.3	148608	9.5	20.2	156566	9.6	18.9	457027	9.7	20.1	461961	9.7	22.1
465917	9.4	21.9	379414	9.5	20.5	345763	9.5	20.2	495014	9.6	20.6	339031	9.7	20.4	245146	9.7	20.1
184053	9.4	20.3	387409	9.5	20.1	194754	9.5	20.1	545039	9.6	21.2	6333	9.7	16.3	238470	9.7	19.4
172130	9.4	18.6	13866	9.5	16.5	526756	9.5	22.1	96261	9.6	19.2	287188	9.7	19.6	411354	9.7	20.9
244567	9.4	20.2	474473	9.5	20.0	6685	9.5	15.7	181625	9.6	20.3	18279	9.7	17.8	416848	9.7	19.2
64377	9.4	18.5	100240	9.5	18.9	544062	9.5	20.9	331176	9.6	21.1	264984	9.7	20.3	339500	9.7	20.1
306982	9.4	21.0	14540	9.5	17.5	226375	9.5	19.3	266425	9.6	20.3	502399	9.7	21.0	465701	9.7	20.0
91462	9.4	19.0	173875	9.5	20.4	321519	9.5	18.9	376766	9.6	21.6	301996	9.7	19.6	146183	9.7	21.1
532995	9.4	20.8	205886	9.5	19.6	356329	9.5	19.9	330969	9.6	20.3	500990	9.7	20.1	436909	9.7	21.5
196913	9.4	20.2	99342	9.5	18.3	125251	9.5	19.1	360113	9.6	20.1	293509	9.7	20.3	130606	9.7	18.7
33917	9.4	18.3	402699	9.5	20.7	125207	9.5	17.8	292007	9.6	19.1	361622	9.7	20.7	109437	9.7	19.0
97973	9.4	19.9	54614	9.5	20.3	377140	9.5	20.0	456899	9.6	21.3	123678	9.7	19.0	64397	9.7	18.2
284143	9.4	19.7	465420	9.5	20.6	313850	9.5	19.5	278579	9.6	19.4	89566	9.7	18.1	390263	9.7	21.2
118298	9.4	19.6	275884	9.5	22.4	175720	9.5	20.9	150844	9.6	20.1	228266	9.7	19.0	58240	9.7	18.6
443632	9.4	20.3	291485	9.5	20.3	366433	9.5	20.8	12821	9.6	17.5	535342	9.7	20.9	352182	9.7	19.7
2241	9.4	15.2	155327	9.5	20.1	378730	9.5	20.6	397156	9.6	20.6	506188	9.7	20.5	340953	9.7	20.7
200573	9.4	20.0	425353	9.5	21.0	48492	9.6	18.7	305336	9.6	20.0	501218	9.7	20.7	104573	9.7	19.3
425280	9.4	20.9	501459	9.5	21.4	311037	9.6	20.7	121632	9.6	19.3	235567	9.7	20.9	522924	9.8	20.7
371075	9.4	20.3	257272	9.5	18.8	411868	9.6	20.4	489583	9.6	20.4	31814	9.7	19.1	173924	9.8	20.9
186593	9.4	20.9	385858	9.5	20.8	33187	9.6	18.9	50163	9.6	18.2	264778	9.7	20.6	463533	9.8	20.6
303396	9.4	21.2	348486	9.5	20.5	34553	9.6	19.4	10182	9.6	15.8	535045	9.7	19.9	61		

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
258428	9.8	20.3	402227	9.8	20.1	338354	9.9	20.1	202265	9.9	19.7	422434	10.0	20.4	142631	10.1	17.9
537707	9.8	21.5	249236	9.8	19.9	431842	9.9	21.2	421350	9.9	20.2	345619	10.0	21.8	208636	10.1	19.2
435971	9.8	20.7	535320	9.8	21.8	285775	9.9	20.1	83283	9.9	18.4	419703	10.0	21.6	466393	10.1	20.2
141485	9.8	19.3	149639	9.8	20.4	187439	9.9	19.6	327255	9.9	20.2	507294	10.0	20.0	470236	10.1	20.9
86652	9.8	16.9	494165	9.8	20.5	69734	9.9	17.9	504218	9.9	21.6	135294	10.0	20.1	469084	10.1	19.7
457085	9.8	21.4	473151	9.8	21.0	371255	9.9	21.9	370737	9.9	22.0	500687	10.0	21.1	521907	10.1	20.3
284667	9.8	20.2	362176	9.8	19.5	106718	9.9	19.2	376186	9.9	20.4	373468	10.0	21.1	107424	10.1	19.1
499014	9.8	21.1	469844	9.8	20.8	131451	9.9	19.6	313950	9.9	20.3	525128	10.0	22.4	495948	10.1	22.7
465203	9.8	20.3	336410	9.8	20.6	206867	9.9	19.9	266379	9.9	20.2	130617	10.0	20.3	120240	10.1	18.1
387202	9.8	21.0	201722	9.8	20.3	200441	9.9	21.8	80119	9.9	18.1	132824	10.0	20.4	182176	10.1	18.8
11493	9.8	18.3	494705	9.8	20.9	168480	9.9	18.8	221750	9.9	20.1	526253	10.0	22.2	230831	10.1	20.9
179873	9.8	19.9	522461	9.8	19.2	200071	9.9	19.0	67822	9.9	19.3	300224	10.0	19.7	74644	10.1	18.9
42791	9.8	19.2	93993	9.8	20.2	330698	9.9	19.6	543675	9.9	20.4	140871	10.0	20.0	383769	10.1	20.8
313182	9.8	18.8	461954	9.8	21.7	135319	9.9	19.7	282296	9.9	20.5	389723	10.0	21.0	110764	10.1	18.9
57750	9.8	20.0	526814	9.8	21.8	360176	9.9	19.7	318353	9.9	19.1	376600	10.0	20.5	501495	10.1	20.9
463328	9.8	21.0	452427	9.8	20.8	208209	9.9	19.3	501386	9.9	20.9	51765	10.0	18.0	286408	10.1	20.5
501147	9.8	21.5	444974	9.8	21.4	444421	9.9	21.3	327011	9.9	19.1	35095	10.0	18.2	301178	10.1	20.9
296317	9.8	19.7	207993	9.8	19.0	90150	9.9	19.9	426982	9.9	19.8	27268	10.0	17.0	258257	10.1	19.7
271727	9.8	20.2	465390	9.8	20.8	263121	9.9	20.3	341403	9.9	20.6	252326	10.0	20.0	414914	10.1	21.6
467026	9.8	21.8	173968	9.8	19.8	368098	9.9	20.0	480931	9.9	19.8	275031	10.0	21.2	354957	10.1	19.3
457030	9.8	22.2	459079	9.8	20.6	405890	9.9	19.6	246504	9.9	19.2	464323	10.0	21.7	208526	10.1	20.0
544394	9.8	20.4	137013	9.8	20.5	240624	9.9	20.8	20524	9.9	17.2	277205	10.0	19.1	369304	10.1	20.5
463750	9.8	21.8	89949	9.8	19.2	317078	9.9	20.4	265707	9.9	20.8	460930	10.0	19.9	286118	10.1	20.7
348972	9.8	21.2	423017	9.8	19.9	441774	9.9	21.3	540245	9.9	21.5	383671	10.0	21.8	39756	10.1	19.6
472165	9.8	20.4	430036	9.9	21.5	128859	9.9	20.3	1628	9.9	15.1	98116	10.0	18.5	533398	10.1	22.2
227013	9.8	19.9	22639	9.9	16.4	459264	9.9	20.0	341017	9.9	20.6	33402	10.0	18.4	50839	10.1	18.6
405170	9.8	21.7	416776	9.9	21.0	391314	9.9	21.0	18645	9.9	17.2	502040	10.0	21.1	138534	10.1	19.1
301603	9.8	19.4	150739	9.9	19.8	3940	9.9	15.7	58552	9.9	19.6	424004	10.0	21.4	57790	10.1	18.0
193081	9.8	19.9	473561	9.9	21.2	227643	9.9	20.1	526149	9.9	21.0	847	10.0	14.3	390502	10.1	21.2
107748	9.8	19.2	191369	9.9	20.0	378640	9.9	20.4	238080	9.9	19.3	393316	10.0	20.4	151977	10.1	17.8
30730	9.8	19.2	253933	9.9	20.1	499289	9.9	20.5	26993	9.9	18.8	513444	10.0	23.1	156519	10.1	19.3
397115	9.8	20.6	192274	9.9	21.3	51202	9.9	18.9	386565	9.9	20.2	320713	10.0	19.7	359144	10.1	20.7
425148	9.8	21.6	265843	9.9	20.3	4779	9.9	17.0	350367	9.9	20.6	231244	10.1	21.0	214279	10.1	19.3
16145	9.8	17.5	500611	9.9	21.4	325184	9.9	20.6	123676	9.9	19.2	7843	10.1	16.4	379976	10.1	20.6
192038	9.8	19.1	524187	9.9	20.2	225800	9.9	21.0	306520	9.9	21.0	239743	10.1	18.7	498853	10.1	21.3
219721	9.8	20.9	168923	9.9	19.9	308141	9.9	20.5	174891	9.9	18.8	341774	10.1	20.7	310907	10.1	20.6
245021	9.8	20.1	1792	9.9	16.5	498414	9.9	21.8	397059	9.9	20.4	172405	10.1	19.9	453333	10.1	21.4
363847	9.8	20.3	165425	9.9	19.2	147239	9.9	18.1	119506	9.9	20.2	106646	10.1	19.7	218007	10.1	20.3
262736	9.8	21.0	208213	9.9	20.3	534309	9.9	20.5	494922	9.9	21.3	489424	10.1	21.0	393661	10.1	19.0
104847	9.8	19.0	42004	9.9	18.6	471390	9.9	21.3	301294	9.9	20.4	278508	10.1	20.2	268411	10.1	20.9
264570	9.8	20.6	65948	9.9	18.8	109170	9.9	19.7	96140	9.9	18.0	141810	10.1	19.4	457327	10.1	20.4
409203	9.8	20.1	419371	9.9	20.7	338252	9.9	20.8	322564	9.9	20.6	87818	10.1	19.1	362961	10.1	19.9
97881	9.8	19.1	419515	9.9	19.8	309870	9.9	19.7	413103	9.9	22.8	82947	10.1	19.4	41595	10.1	19.4
11276	9.8	18.1	276818	9.9	19.7	60770	9.9	17.2	308480	9.9	19.7	240172	10.1	20.5	419735	10.1	22.0
445307	9.8	22.0	230529	9.9	18.7	527467	9.9	20.8	253208	9.9	20.5	65106	10.1	18.9	79584	10.1	18.0
143481	9.8	18.6	2593	9.9	16.4	472115	9.9	20.5	204005	9.9	18.7	431892	10.1	21.3	330516	10.1	20.8
414895	9.8	21.6	400317	9.9	21.5	401937	9.9	20.6	43764	9.9	18.1	344490	10.1	20.8	457303	10.1	20.8
414256	9.8	20.6	305635	9.9	20.3	429469	9.9	21.5	74615	9.9	18.9	420135	10.1	20.9	416285	10.1	20.0
533119	9.8	22.0	30757	9.9	19.8	301521	9.9	18.9	59362	9.9	18.3	328953	10.1	20.7	485406	10.1	19.9
418284	9.8	20.0	96015	9.9	20.3	320638	9.9	20.6	83916	9.9	19.6	143550	10.1	18.9	296041	10.1	20.3
421824	9.8	19.8	156576	9.9	20.1	193237	9.9	20.0	219343	9.9	20.3	153703	10.1	19.5	495198	10.1	20.9
207916	9.8	20.5	170060	9.9	20.2	264591	9.9	21.0	523717	9.9	21.9	520706	10.1	21.0	247351	10.1	19.2
346186	9.8	20.9	522764	9.9	20.9	505039	9.9	21.3	37322	9.9	17.8	457148	10.1	19.8	84380	10.1	19.4
2130	9.8	15.2	474005	9.9	19.7	380146	9.9	20.9	498135	9.9	21.1	459212	10.1	20.3	319050	10.1	19.9
465995	9.8	20.5	449099	9.9	19.8	107250	9.9	20.0	417721	10.0	20.2	532132	10.1	20.4	37702	10.1	20.1
176307	9.8	20.7	512401	9.9	20.2	125646	9.9	18.8	204892	10.0	20.4	196890	10.1	19.8	102204	10.1	19.0
313800	9.8	21.1	174527	9.9	19.3	473049	9.9	20.3	399021	10.0	19.4	484039	10.1	21.1	356370	10.1	20.1
141419	9.8	20.3	435901	9.9	22.1	529216	9.9	21.8	138326	10.0	19.5	188767	10.1	19.5	170209	10.1	19.5
339007	9.8	21.2	483018	9.9	21.5	462672	9.9	20.4	101445	10.0	17.4	50773	10.1	17.4	238767	10.1	20.1
382773	9.8	19.7	130142	9.9	19.9	526345	9.9	21.5	391403	10.0	20.2	414819	10.1	21.2	272695	10.1	20.0
527783	9.8	21.4	44342	9.9	18.3	303372	9.9	20.2	8814	10.0	17.3	534538	10.1	19.5	173529	10.1	18.2
520617	9.8	20.7	164517	9.9	19.8	190427	9.9	19.6	14853	10.0	17.8	347109	10.1	20.6	369647	10.1	20.9
522316	9.8	20.2	423666	9.9	19.8	348994	9.9	19.6	102748	10.0	18.9	428036	10.1	21.4	178729	10.1	19.6
425057	9.8	20.1	310993	9.9	20.8	192262	9.9	20.4	541019	10.0	20.9	125473	10.1	19.4	57383	10.1	18.3
496958	9.8	21.9	153343	9.9	20.9	369837	9.9	20.5	447344	10.0	20.6	538448	10.1	20.9	434850	10.1	20.6
447268	9.8	21.2	402089	9.9	20.9	64024	9.9	19.6	471169	10.0	19.8	245140	10.1	19.4	432208	10.1	20.1
133999	9.8	20.2	229603	9.9	19.6	233508	9.9	19.2	510625	10.0	20.9	212927	10.1	19.8	88995	10.1	19.8
154023	9.8	19.2	281554	9.9	19.5	489617	9.9	21.9	32518	10.0	19.3	399649	10.1	20.7	51990	10.1	17.5
528845	9.8	21.2	534040	9.9	20.2	159877	9.9	18.6	35576	10.0	18.7	228390	10.1	19.6	505043	10.1	21.3
345571	9.8	20.6	313016	9.9	20.7	31863	9.9	17.1	382563	10.0	20.4	503121	10.1	21.3	524079</		

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
476585	10.2	22.7	345753	10.2	20.0	398400	10.3	20.5	474038	10.3	20.5	389681	10.4	20.9	295326	10.5	19.7
277699	10.2	19.8	86921	10.2	17.2	339855	10.3	19.8	340348	10.3	20.4	67869	10.4	19.0	469205	10.5	20.2
538346	10.2	20.8	258101	10.2	20.2	74972	10.3	18.1	108736	10.3	19.2	348581	10.4	20.5	309372	10.5	20.5
239345	10.2	20.6	127605	10.2	18.7	542609	10.3	21.0	134192	10.3	19.2	404787	10.4	19.9	65024	10.5	17.8
417624	10.2	20.8	393227	10.2	20.0	261585	10.3	20.0	464012	10.3	21.1	104439	10.4	18.8	378742	10.5	21.3
444171	10.2	19.6	203559	10.2	20.3	330436	10.3	19.5	245756	10.3	19.3	41920	10.4	17.8	322594	10.5	20.5
104444	10.2	19.6	6555	10.2	15.9	49558	10.3	18.8	105090	10.3	18.2	210320	10.4	21.3	499016	10.5	21.4
452631	10.2	21.0	229982	10.2	20.7	154342	10.3	19.3	291905	10.3	20.6	328716	10.4	20.7	505984	10.5	20.7
249695	10.2	19.9	354914	10.2	19.3	60703	10.3	19.0	122208	10.3	17.6	512284	10.4	20.0	221211	10.5	19.7
209412	10.2	19.2	32608	10.2	19.0	463828	10.3	21.0	41157	10.3	17.3	461912	10.4	23.6	110225	10.5	19.0
337100	10.2	20.6	379978	10.2	20.6	375355	10.3	20.6	28261	10.4	17.6	527162	10.4	21.8	343130	10.5	20.6
500438	10.2	21.4	273647	10.2	21.2	512914	10.3	22.2	505058	10.4	21.3	409808	10.4	20.3	240491	10.5	19.5
406466	10.2	21.4	225995	10.2	20.4	219978	10.3	18.8	12601	10.4	17.7	435397	10.4	21.3	285985	10.5	19.6
519590	10.2	21.1	351493	10.2	21.7	7949	10.3	18.2	373491	10.4	21.2	388327	10.4	20.0	27538	10.5	19.0
511556	10.2	20.1	299978	10.2	20.0	423645	10.3	21.9	504021	10.4	21.5	14358	10.4	18.1	258537	10.5	20.6
87098	10.2	18.1	19965	10.2	16.6	490119	10.3	20.7	74549	10.4	18.0	242414	10.4	20.0	445110	10.5	21.8
83553	10.2	18.1	68784	10.2	18.4	446804	10.3	22.3	207870	10.4	20.1	240565	10.4	20.1	139948	10.5	19.6
32455	10.2	19.1	293439	10.2	19.3	289039	10.3	19.6	401435	10.4	20.1	139877	10.4	19.6	233572	10.5	19.4
304994	10.2	20.4	333280	10.2	19.7	464938	10.3	21.1	497146	10.4	21.3	310601	10.4	18.8	412993	10.5	20.3
124193	10.2	17.8	524234	10.2	21.4	389291	10.3	20.4	452477	10.4	19.8	493653	10.4	21.5	13900	10.5	18.1
526575	10.2	21.9	420749	10.2	20.4	55065	10.3	18.0	341603	10.4	21.0	544809	10.4	20.4	416019	10.5	21.6
465924	10.2	21.4	495912	10.2	21.1	466895	10.3	19.6	193311	10.4	20.4	94883	10.4	19.6	390298	10.5	19.9
6002	10.2	17.6	282473	10.2	18.3	96052	10.3	20.2	330382	10.4	21.1	158544	10.4	18.7	238684	10.5	20.6
544108	10.2	20.6	97356	10.2	19.1	526764	10.3	21.9	182931	10.4	20.2	146854	10.4	19.9	457528	10.5	20.8
435380	10.2	21.5	247731	10.2	19.2	21462	10.3	18.2	502483	10.4	21.3	519619	10.4	20.6	157263	10.5	19.3
351517	10.2	20.5	76037	10.2	19.6	185548	10.3	19.7	292496	10.4	20.2	58425	10.4	19.3	129312	10.5	18.9
291778	10.2	21.1	343628	10.2	19.7	205894	10.3	20.1	95617	10.4	18.4	231691	10.4	19.5	291743	10.5	19.9
230293	10.2	21.0	524244	10.2	21.3	49508	10.3	19.0	415911	10.4	21.2	299291	10.4	21.2	17160	10.5	18.2
1263	10.2	15.3	279332	10.2	20.7	353919	10.3	21.2	119760	10.4	20.4	33020	10.4	20.1	383691	10.5	20.7
144799	10.2	18.5	516931	10.2	19.1	538071	10.3	20.7	543306	10.4	20.3	522751	10.4	20.7	536959	10.5	20.4
370824	10.2	20.7	403825	10.2	20.0	267698	10.3	20.1	404225	10.4	21.2	294541	10.4	20.7	55802	10.5	19.3
194563	10.2	18.8	179483	10.2	20.7	436991	10.3	20.8	395471	10.4	20.4	234437	10.4	18.8	471365	10.5	20.8
341828	10.2	21.6	299147	10.2	19.8	336370	10.3	20.4	332548	10.4	19.4	425798	10.4	20.6	204300	10.5	19.7
168373	10.2	21.1	502404	10.2	20.7	518870	10.3	21.1	449116	10.4	20.7	240874	10.4	19.1	268750	10.5	20.3
63770	10.2	19.7	514322	10.2	21.2	447422	10.3	21.8	293660	10.4	19.0	246443	10.4	20.1	169294	10.5	19.4
544164	10.2	20.9	273852	10.2	20.2	372559	10.3	20.1	503762	10.4	20.5	85497	10.4	19.5	364730	10.5	20.5
264947	10.2	19.8	213381	10.2	21.2	387043	10.3	21.0	450766	10.4	21.5	353989	10.4	21.8	194311	10.5	20.7
400252	10.2	18.8	153929	10.2	19.9	466157	10.3	19.8	165417	10.4	20.7	446584	10.4	21.7	134369	10.5	20.3
469340	10.2	21.4	68119	10.2	19.3	534421	10.3	20.4	246557	10.4	20.6	116749	10.4	19.4	171090	10.5	20.1
55899	10.2	17.8	64272	10.2	18.3	530037	10.3	22.1	76588	10.4	17.0	273352	10.4	20.5	513114	10.5	21.6
268333	10.2	21.3	390483	10.2	21.1	442673	10.3	20.9	22186	10.4	17.9	476725	10.4	22.7	138770	10.5	18.7
421721	10.2	21.5	286525	10.3	21.1	76659	10.3	17.9	490642	10.4	22.0	246471	10.4	20.1	169336	10.5	19.7
295202	10.2	19.9	414789	10.3	21.1	322435	10.3	19.3	310385	10.4	21.0	166678	10.4	20.0	332701	10.5	20.8
131061	10.2	18.8	489746	10.3	20.9	338975	10.3	19.7	347721	10.4	20.7	125673	10.4	20.1	141313	10.5	18.7
59086	10.2	19.8	156458	10.3	21.3	530553	10.3	21.0	389234	10.4	19.5	76607	10.4	19.6	206405	10.5	20.3
166612	10.2	19.8	501436	10.3	20.9	325338	10.3	19.2	174007	10.4	19.3	284633	10.4	20.7	66417	10.5	19.1
465157	10.2	21.8	379836	10.3	19.6	544028	10.3	20.2	373354	10.4	19.9	136457	10.4	17.4	225589	10.5	19.8
231333	10.2	20.2	500354	10.3	20.8	404390	10.3	19.6	532745	10.4	21.1	120578	10.4	20.8	194073	10.5	19.6
519906	10.2	20.8	388856	10.3	20.4	291157	10.3	21.2	357367	10.4	19.3	454506	10.4	20.0	297841	10.5	21.1
168399	10.2	20.4	297485	10.3	21.5	212848	10.3	20.5	200359	10.4	19.7	82584	10.4	18.6	415959	10.5	21.4
207506	10.2	19.1	127255	10.3	19.0	422752	10.3	19.5	525281	10.4	20.7	497785	10.4	21.1	300124	10.5	20.9
289233	10.2	21.0	338994	10.3	19.4	41499	10.3	18.2	70529	10.4	18.7	533116	10.4	20.9	151072	10.5	20.3
239698	10.2	20.6	23312	10.3	17.5	36869	10.3	19.2	178098	10.4	19.6	503422	10.4	19.3	82983	10.5	19.6
190736	10.2	20.5	117582	10.3	18.5	366403	10.3	21.3	178272	10.4	20.3	65479	10.4	20.0	389278	10.5	20.5
330959	10.2	21.0	245673	10.3	20.6	516158	10.3	21.1	156621	10.4	19.9	132027	10.5	19.8	16612	10.5	17.8
362061	10.2	21.7	93211	10.3	19.3	369993	10.3	21.3	57872	10.4	18.0	540630	10.5	21.0	176315	10.5	19.2
338274	10.2	21.2	351797	10.3	20.2	244231	10.3	19.4	439058	10.4	19.6	426377	10.5	21.0	543714	10.5	20.8
256015	10.2	21.4	214833	10.3	19.6	32369	10.3	18.0	68724	10.4	18.3	133419	10.5	19.5	471453	10.5	20.9
131732	10.2	20.6	286325	10.3	20.6	388344	10.3	20.9	326349	10.4	20.7	13344	10.5	17.6	83378	10.5	18.9
390065	10.2	20.4	266255	10.3	20.6	213346	10.3	20.6	161780	10.4	19.6	140150	10.5	20.3	423614	10.5	21.1
284710	10.2	20.1	425130	10.3	21.3	291276	10.3	20.2	249017	10.4	21.0	430234	10.5	20.2	496173	10.5	21.0
246542	10.2	19.6	59908	10.3	18.3	532090	10.3	21.0	370944	10.4	21.1	489500	10.5	20.4	426433	10.5	20.9
364638	10.2	20.9	504208	10.3	22.5	212879	10.3	18.9	186128	10.4	19.7	353477	10.5	21.0	375266	10.5	20.8
534156	10.2	20.9	16456	10.3	18.3	422395	10.3	21.4	283553	10.4	20.9	456551	10.5	20.3	97267	10.5	19.4
170052	10.2	20.7	140840	10.3	19.1	248996	10.3	19.7	309421	10.4	20.7	110259	10.5	19.5	151132	10.5	19.6
242856	10.2	19.7	235014	10.3	19.0	439995	10.3	21.8	437443	10.4	21.0	467780	10.5	20.7	225272	10.5	19.5
54895	10.2	18.6	124730	10.3	19.0	189045	10.3	19.3	241970	10.4	18.3	66313	10.5	16.9	453372	10.5	21.5
44878	10.2	16.8	463698	10.3	21.4	415441	10.3	19.9	112972	10.4	19.7	4026	10.5	17.0	247969	10.5	19.3
52171	10.2	18.4	394544	10.3	21.2	2580											



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
419099	10.6	21.9	204237	10.6	19.8	171187	10.7	20.2	148092	10.7	20.2	539011	10.8	21.2	196561	10.9	20.3
215517	10.6	20.2	372547	10.6	20.6	54139	10.7	17.6	17673	10.7	17.7	211992	10.8	20.4	399212	10.9	19.7
503263	10.6	20.2	319649	10.6	20.6	530166	10.7	20.6	434939	10.7	21.0	286227	10.8	20.1	58020	10.9	19.8
460455	10.6	20.0	212922	10.6	20.1	201290	10.7	19.0	116841	10.7	18.4	479581	10.8	20.8	8069	10.9	17.1
384831	10.6	20.2	169135	10.6	19.9	454045	10.7	20.6	540578	10.7	21.8	391782	10.8	18.2	256126	10.9	19.7
267084	10.6	19.7	82828	10.6	18.9	317514	10.7	18.3	174978	10.7	20.0	182050	10.8	19.3	213364	10.9	21.1
523904	10.6	20.4	477460	10.6	21.9	470922	10.7	21.3	243855	10.7	18.6	145851	10.8	19.9	465705	10.9	20.9
98226	10.6	20.3	252555	10.6	19.6	530741	10.7	20.9	501485	10.7	20.8	428887	10.8	20.6	184114	10.9	19.5
210164	10.6	20.3	347736	10.6	20.3	288175	10.7	20.0	144463	10.8	19.0	4772	10.8	16.7	313848	10.9	20.7
41526	10.6	19.9	154287	10.6	20.4	42492	10.7	17.2	415449	10.8	21.0	29203	10.8	18.9	534860	10.9	20.8
376463	10.6	19.4	346776	10.6	21.7	344367	10.7	21.6	163473	10.8	19.8	165827	10.8	19.5	233906	10.9	20.0
19042	10.6	19.1	148135	10.6	19.1	239738	10.7	19.9	525737	10.8	21.8	29734	10.8	18.1	469151	10.9	20.6
55706	10.6	19.6	300	10.6	14.4	221280	10.7	20.3	206303	10.8	19.6	192152	10.8	19.6	378620	10.9	20.3
376278	10.6	20.7	367356	10.6	20.1	535328	10.7	20.3	278821	10.8	20.9	241332	10.8	20.8	54581	10.9	19.1
528356	10.6	21.3	406699	10.6	21.3	242840	10.7	18.9	524021	10.8	21.0	385146	10.8	21.4	78696	10.9	17.2
361655	10.6	20.3	376867	10.6	20.2	18023	10.7	17.9	245066	10.8	20.8	162789	10.8	19.2	227538	10.9	18.9
473133	10.6	20.7	374100	10.6	20.7	29715	10.7	17.3	405244	10.8	19.4	26456	10.8	16.4	345806	10.9	19.6
434888	10.6	21.1	246924	10.6	20.4	91078	10.7	18.3	343995	10.8	20.5	351665	10.8	20.9	36163	10.9	17.7
469647	10.6	21.7	178204	10.6	21.5	122868	10.7	19.8	517171	10.8	21.1	113626	10.8	19.5	96295	10.9	19.0
199408	10.6	19.7	120325	10.6	19.4	141155	10.7	20.0	537830	10.8	20.5	372412	10.8	20.0	303387	10.9	20.2
338346	10.6	20.9	377908	10.6	20.6	69505	10.7	19.3	128923	10.8	19.2	48289	10.8	19.1	225207	10.9	18.7
238420	10.6	20.7	456755	10.6	21.4	15595	10.7	17.6	173999	10.8	20.4	527834	10.8	21.8	89776	10.9	19.4
495829	10.6	20.9	347816	10.6	19.9	340912	10.7	20.7	118450	10.8	19.3	89805	10.8	19.3	378717	10.9	20.1
422762	10.6	21.0	10400	10.6	16.3	208255	10.7	19.6	340741	10.8	21.3	30158	10.8	18.4	54646	10.9	19.0
435250	10.6	20.8	148766	10.6	18.9	188096	10.7	19.8	79776	10.8	19.7	26089	10.8	17.7	375244	10.9	20.7
355903	10.6	20.6	407874	10.6	20.8	245994	10.7	20.8	188274	10.8	19.9	263505	10.8	19.9	151137	10.9	20.0
326306	10.6	21.7	351661	10.6	20.1	298860	10.7	20.9	433648	10.8	21.1	499297	10.8	20.9	330431	10.9	20.8
341410	10.6	20.5	429331	10.6	19.8	513029	10.7	20.5	21184	10.8	17.6	469708	10.8	21.7	353287	10.9	20.2
485	10.6	13.0	226379	10.6	19.7	531941	10.7	19.4	465720	10.8	20.9	18169	10.8	17.9	380893	10.9	20.7
219345	10.6	19.6	38715	10.6	18.5	204936	10.7	19.2	29867	10.8	17.5	180570	10.8	18.6	459275	10.9	20.0
32597	10.6	20.0	37405	10.6	18.8	354961	10.7	19.2	153160	10.8	18.7	390365	10.8	20.2	404524	10.9	21.5
100604	10.6	19.6	503056	10.6	20.7	518962	10.7	20.1	226039	10.8	20.2	184476	10.8	18.9	283324	10.9	20.7
54596	10.6	19.0	300037	10.6	20.0	496563	10.7	20.4	425294	10.8	20.6	107020	10.8	19.4	508278	10.9	20.2
266366	10.6	20.6	58064	10.6	19.5	532244	10.7	20.8	148723	10.8	20.2	269574	10.8	19.7	54630	10.9	19.2
140928	10.6	18.6	489320	10.6	20.9	171870	10.7	20.7	519943	10.8	21.1	527630	10.8	21.4	507350	10.9	22.0
295315	10.6	20.4	170126	10.6	20.5	71765	10.7	17.8	18784	10.8	17.6	339764	10.8	20.6	510063	10.9	21.0
384698	10.6	20.9	215055	10.6	21.3	131448	10.7	18.6	249476	10.8	19.8	498406	10.8	22.5	350114	10.9	20.3
111422	10.6	19.0	300399	10.7	20.3	186093	10.7	19.3	221216	10.8	18.6	480792	10.8	20.6	346946	10.9	20.3
451007	10.6	22.4	34737	10.7	18.3	7427	10.7	16.9	406346	10.8	21.6	199108	10.8	19.6	500210	10.9	19.7
281063	10.6	20.3	538436	10.7	20.7	500605	10.7	20.9	435401	10.8	21.0	463778	10.8	20.7	257620	10.9	19.5
460367	10.6	21.1	175542	10.7	20.2	290841	10.7	21.2	527731	10.8	22.8	350327	10.8	20.1	268130	10.9	20.0
325347	10.6	20.4	237057	10.7	20.7	54426	10.7	17.5	341675	10.8	20.1	338623	10.8	20.3	105947	10.9	18.1
489765	10.6	21.3	508602	10.7	20.6	448217	10.7	22.3	115517	10.8	18.6	463772	10.8	20.9	34046	10.9	18.4
2762	10.6	16.1	402976	10.7	20.4	409007	10.7	21.7	157890	10.8	19.3	59209	10.8	18.8	2631	10.9	16.4
27836	10.6	18.3	6175	10.7	18.0	200993	10.7	20.2	166611	10.8	20.5	259230	10.8	20.6	152736	10.9	19.5
345300	10.6	19.5	194264	10.7	20.7	134468	10.7	18.6	151820	10.8	19.5	127173	10.8	19.7	465928	10.9	21.7
537113	10.6	21.1	49994	10.7	17.9	230510	10.7	20.3	412099	10.8	20.2	300164	10.8	21.6	321225	10.9	19.6
503852	10.6	21.1	498608	10.7	20.8	126106	10.7	19.7	433190	10.8	20.6	451246	10.8	19.4	433008	10.9	19.7
501042	10.6	20.8	180186	10.7	22.8	508480	10.7	20.0	423597	10.8	21.7	75364	10.8	17.2	376021	10.9	21.2
465172	10.6	21.5	544202	10.7	21.9	154153	10.7	19.4	500477	10.8	21.7	53418	10.8	18.5	204618	10.9	19.8
62271	10.6	17.7	386612	10.7	20.4	532963	10.7	21.4	526193	10.8	22.6	85929	10.8	18.2	434540	10.9	19.5
198621	10.6	19.1	292307	10.7	20.8	270462	10.7	20.8	270380	10.8	20.9	282630	10.8	19.5	466788	10.9	21.4
525741	10.6	20.7	506787	10.7	20.0	333117	10.7	21.1	233641	10.8	18.8	296110	10.9	20.3	100454	10.9	19.6
307903	10.6	19.6	467225	10.7	20.6	388757	10.7	21.3	165701	10.8	19.8	258873	10.9	20.1	235462	10.9	20.4
396143	10.6	19.9	350347	10.7	21.0	373502	10.7	20.9	491908	10.8	19.7	496364	10.9	21.2	426478	10.9	20.8
92565	10.6	17.4	443267	10.7	20.3	100706	10.7	19.1	31515	10.8	18.0	180497	10.9	19.1	225631	10.9	18.7
393343	10.6	20.1	143290	10.7	19.0	61698	10.7	17.8	544811	10.8	19.3	504271	10.9	21.2	210772	10.9	20.9
343464	10.6	20.9	234443	10.7	19.8	421368	10.7	20.0	55441	10.8	19.3	370736	10.9	21.6	400607	10.9	20.6
450464	10.6	20.9	269114	10.7	20.2	109031	10.7	19.5	160443	10.8	20.9	401848	10.9	22.0	141061	10.9	20.3
544679	10.6	21.2	16267	10.7	17.9	73735	10.7	18.3	5379	10.8	15.5	8226	10.9	16.6	240081	10.9	20.0
256435	10.6	21.3	29666	10.7	18.8	40808	10.7	18.9	461074	10.8	19.7	219552	10.9	19.4	251364	10.9	19.9
520104	10.6	20.7	12307	10.7	18.8	293842	10.7	18.8	379964	10.8	19.9	351655	10.9	20.9	226856	10.9	20.4
33098	10.6	17.6	32628	10.7	18.3	430247	10.7	20.6	177901	10.8	19.4	483983	10.9	20.6	411326	10.9	21.8
540105	10.6	20.6	216438	10.7	19.3	465179	10.7	21.8	152325	10.8	19.0	500737	10.9	22.1	132298	10.9	18.3
533785	10.6	20.9	63968	10.7	18.3	175075	10.7	20.2	101890	10.8	18.5	429127	10.9	22.3	429056	10.9	19.5
155641	10.6	19.1	400530	10.7	20.3	109287	10.7	19.3	167592	10.8	19.3	59998	10.9	17.2	350097	10.9	20.9
42079	10.6	17.7	95687	10.7	19.7	187598	10.7	20.1	31023	10.8	18.9	105713	10.9	18.6	388400	10.9	19.6
29169	10.6	17.0	437148	10.7	21.1	126084	10.7	20.2	299271	10.8	19.9	422955	10.9	20.1	457179	10.9	18.5
246772	10.6	19.7	338411	10.7	20.3	270222	10.7	2									

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
390099	10.9	21.3	133013	11.0	18.7	420279	11.1	20.1	435024	11.1	20.2	382830	11.2	20.1	430011	11.3	21.4
502009	10.9	21.3	434185	11.0	21.0	209586	11.1	20.5	350006	11.1	20.2	249575	11.2	21.0	141182	11.3	19.1
122110	10.9	19.0	241146	11.0	18.6	149257	11.1	19.5	183318	11.1	19.8	148517	11.2	19.4	501212	11.3	21.2
352093	10.9	21.1	380452	11.0	21.1	218900	11.1	20.5	45740	11.1	18.3	542492	11.2	19.8	508187	11.3	20.9
214793	10.9	20.7	515366	11.0	20.2	356302	11.1	19.7	341439	11.1	20.9	166110	11.2	19.7	332618	11.3	20.9
30619	10.9	18.7	424044	11.0	20.3	447222	11.1	20.3	449158	11.1	21.7	125599	11.2	19.5	449183	11.3	20.1
266489	10.9	19.9	76560	11.0	18.8	432555	11.1	21.0	52295	11.1	19.1	31334	11.2	18.1	93239	11.3	19.2
106304	10.9	19.4	284217	11.0	19.8	538946	11.1	20.2	370817	11.1	21.1	1899	11.2	15.5	431302	11.3	19.6
417631	10.9	21.2	392247	11.0	21.4	286526	11.1	19.8	417023	11.1	21.4	225981	11.2	19.9	502223	11.3	21.4
165371	10.9	20.0	534372	11.0	20.9	393817	11.1	20.7	179583	11.1	18.6	461944	11.2	21.5	141035	11.3	20.2
132122	10.9	18.4	170639	11.0	19.6	456805	11.1	22.6	29645	11.1	19.5	527585	11.2	22.1	92184	11.3	18.3
193044	10.9	20.0	146191	11.0	17.5	420164	11.1	20.4	241955	11.1	18.1	514906	11.2	22.9	283084	11.3	20.8
138292	10.9	20.1	241147	11.0	19.1	67796	11.1	18.1	254035	11.1	19.3	341664	11.2	20.6	423513	11.3	20.9
538245	10.9	19.8	497743	11.0	21.1	184107	11.1	19.0	467031	11.1	20.7	235448	11.2	20.3	264624	11.3	20.9
258510	10.9	20.5	170276	11.0	19.4	506048	11.1	20.4	435041	11.1	20.8	187863	11.2	16.8	215027	11.3	20.3
383631	10.9	20.6	83805	11.0	18.8	253987	11.1	20.2	248367	11.1	19.4	385883	11.2	19.9	526783	11.3	20.6
204173	10.9	20.4	466011	11.0	22.4	162665	11.1	19.7	167788	11.1	20.5	350231	11.2	21.1	123458	11.3	20.6
525629	10.9	20.6	126354	11.0	19.0	527234	11.1	22.0	272316	11.2	20.8	350154	11.2	20.9	297068	11.3	19.3
501288	10.9	21.0	526741	11.0	21.7	433240	11.1	20.6	39240	11.2	18.2	35907	11.2	17.8	221893	11.3	18.9
214828	10.9	19.8	91389	11.0	18.7	12932	11.1	17.5	306235	11.2	20.2	226647	11.2	19.9	402107	11.3	21.5
14968	10.9	18.0	57354	11.0	19.1	95524	11.1	19.2	110224	11.2	18.7	433926	11.2	21.6	229309	11.3	19.6
57235	10.9	17.7	503233	11.0	20.9	387331	11.1	21.4	68262	11.2	19.3	141100	11.2	20.0	2669	11.3	17.5
29792	10.9	18.4	125626	11.0	19.9	279616	11.1	20.7	272820	11.2	20.1	294911	11.2	20.8	417354	11.3	20.8
54597	10.9	18.7	429191	11.0	21.2	191833	11.1	20.7	210183	11.2	19.8	501362	11.2	21.3	63786	11.3	20.7
294180	10.9	22.3	528210	11.0	20.8	386544	11.1	19.9	160393	11.2	18.8	157311	11.2	19.7	462034	11.3	21.1
153789	10.9	19.9	267038	11.0	22.1	515455	11.1	21.4	393299	11.2	20.1	312011	11.2	20.9	169996	11.3	18.9
504579	10.9	22.4	299717	11.0	20.8	111127	11.1	20.0	532496	11.2	21.6	279006	11.2	19.6	142852	11.3	20.4
253260	10.9	20.6	396393	11.0	19.4	406510	11.1	21.1	127158	11.2	19.7	371220	11.2	21.1	371021	11.3	21.3
436695	10.9	19.9	93047	11.0	18.9	276522	11.1	17.8	214764	11.2	20.4	49502	11.2	17.5	146620	11.3	19.8
503327	10.9	18.9	160310	11.0	18.5	337765	11.1	21.2	434853	11.2	21.2	265268	11.2	21.2	207776	11.3	19.7
535339	10.9	20.3	104090	11.0	18.8	184109	11.1	19.5	451869	11.2	20.4	245464	11.2	19.6	445289	11.3	20.2
76565	10.9	18.5	345681	11.0	21.6	76575	11.1	18.8	497116	11.2	19.7	438436	11.2	20.7	429996	11.3	22.5
339001	10.9	21.0	68990	11.0	19.6	281732	11.1	20.4	125101	11.2	19.6	33733	11.2	17.2	357240	11.3	18.5
36483	10.9	19.6	312218	11.0	20.3	407372	11.1	21.3	150945	11.2	19.8	356550	11.2	19.5	291011	11.3	21.2
216034	10.9	19.5	473453	11.0	19.4	263918	11.1	20.5	140693	11.2	20.0	459107	11.2	21.7	377412	11.3	19.9
150662	10.9	17.1	364613	11.0	21.6	318618	11.1	19.7	245102	11.2	18.8	507299	11.2	19.8	489873	11.3	20.1
13112	10.9	18.1	210921	11.0	19.7	221178	11.1	20.5	96308	11.2	18.3	109802	11.2	19.1	107642	11.3	19.4
459162	10.9	22.3	485402	11.0	18.9	303749	11.1	20.6	279371	11.2	21.4	4400	11.2	17.0	524135	11.3	21.0
331830	10.9	18.6	14304	11.0	17.8	254676	11.1	20.7	283512	11.2	20.1	401164	11.2	20.0	280752	11.3	19.4
337804	10.9	19.9	498333	11.0	22.1	204106	11.1	20.2	451058	11.2	21.2	188843	11.2	20.4	386572	11.3	19.9
140511	10.9	19.7	196631	11.0	19.1	230946	11.1	18.8	532202	11.2	22.9	525882	11.2	21.3	206929	11.3	20.7
460392	10.9	19.9	213184	11.0	20.1	338474	11.1	21.4	483590	11.2	18.7	335789	11.2	20.9	542456	11.3	20.8
284900	10.9	20.1	18639	11.0	18.5	230646	11.1	20.0	296188	11.2	19.8	477912	11.2	18.4	124487	11.3	18.3
513881	10.9	20.1	313565	11.0	19.1	522656	11.1	20.5	149980	11.2	18.8	332380	11.2	21.4	463224	11.3	20.8
198656	10.9	19.8	510819	11.0	20.9	373336	11.1	19.1	410732	11.2	20.4	187436	11.2	19.4	154915	11.3	19.1
525625	10.9	20.2	201011	11.1	20.4	410050	11.1	21.3	527745	11.2	21.3	34051	11.2	18.8	41704	11.3	18.4
403821	10.9	19.5	272802	11.1	20.5	217576	11.1	21.2	502685	11.2	20.2	63811	11.2	18.8	211688	11.3	18.9
210485	10.9	20.5	435424	11.1	20.9	452294	11.1	21.4	317065	11.2	20.5	93719	11.2	18.5	42807	11.3	18.1
386828	10.9	20.8	82632	11.1	18.5	52408	11.1	18.7	148846	11.2	18.7	144823	11.2	19.4	132949	11.3	17.5
324459	10.9	21.3	366400	11.1	20.9	415948	11.1	21.7	307945	11.2	19.7	542179	11.2	20.7	498905	11.3	21.1
123895	10.9	19.4	180125	11.1	19.7	289926	11.1	20.2	126137	11.2	18.1	350159	11.2	20.0	15779	11.3	16.1
35368	10.9	19.2	26917	11.1	18.5	189852	11.1	17.3	302367	11.2	19.0	531082	11.2	20.7	96705	11.3	18.0
497037	10.9	21.4	1993	11.1	17.2	480459	11.1	19.7	367968	11.2	19.6	6004	11.2	16.6	249469	11.3	20.0
387320	10.9	20.3	368247	11.1	20.3	372593	11.1	19.8	484296	11.2	22.6	396872	11.2	19.7	73319	11.3	19.0
122045	10.9	18.8	183679	11.1	21.0	444379	11.1	21.9	229742	11.2	18.9	371254	11.2	20.6	114396	11.3	19.3
452559	10.9	21.7	216267	11.1	20.3	33335	11.1	17.3	386534	11.2	20.7	338047	11.2	20.4	151052	11.3	21.3
492795	10.9	19.8	263603	11.1	19.4	95564	11.1	18.5	501359	11.2	20.8	369299	11.2	20.4	352048	11.3	21.9
285119	10.9	21.3	374187	11.1	21.4	530045	11.1	22.0	56681	11.2	17.9	527708	11.2	21.4	330378	11.3	19.2
33932	10.9	18.6	187067	11.1	20.3	174008	11.1	20.4	412670	11.2	20.3	504263	11.2	20.9	48902	11.3	16.5
181683	10.9	20.4	258365	11.1	20.9	71340	11.1	18.5	345696	11.2	19.8	423179	11.2	18.9	314727	11.3	19.4
508759	10.9	21.1	366428	11.1	19.3	306384	11.1	21.4	34710	11.2	18.4	299497	11.2	21.2	521200	11.3	21.2
231274	10.9	19.2	522736	11.1	20.0	503202	11.1	20.3	132416	11.2	19.3	181447	11.2	20.5	24978	11.3	23.8
121090	10.9	18.7	162731	11.1	18.5	379697	11.1	19.7	75038	11.2	18.7	402938	11.2	21.0	84542	11.3	19.3
92314	10.9	17.8	373350	11.1	20.4	437331	11.1	21.0	325304	11.2	18.9	280591	11.2	21.3	465931	11.3	21.5
227566	10.9	20.4	329322	11.1	19.0	217981	11.1	20.1	49367	11.2	17.0	371257	11.2	21.3	171853	11.3	19.1
293306	10.9	20.2	228568	11.1	20.9	543938	11.1	21.9	15842	11.2	16.5	143849	11.2	18.8	389770	11.3	21.3
9056	10.9	17.3	374155	11.1	20.5	503266	11.1	20.4	199248	11.2	19.3	465156	11.2	22.3	540441	11.3	21.0
241622	10.9	19.8	299967	11.1	20.8	138764	11.1	19.7	21199	11.2	18.7	400283	11.2	20.4	235822	11.3	20.6
120305	10.9	19.1	238967	11.1	19.7	4											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
157994	11.3	17.5	106188	11.4	20.2	498169	11.5	21.4	165306	11.5	21.3	540470	11.6	22.0	49437	11.7	19.3
54389	11.3	18.6	140938	11.4	20.3	102203	11.5	19.6	503510	11.5	20.9	161943	11.6	18.2	498725	11.7	21.1
8045	11.3	15.8	173169	11.4	19.7	500729	11.5	22.2	534324	11.5	20.7	324517	11.6	21.0	125885	11.7	18.2
105399	11.3	18.5	242759	11.4	20.9	283488	11.5	20.6	498503	11.5	23.0	217042	11.6	18.8	410104	11.7	21.5
329312	11.3	19.6	85390	11.4	17.9	185261	11.5	20.6	77295	11.5	20.1	34709	11.6	18.8	322340	11.7	19.8
39383	11.3	19.9	393381	11.4	20.2	175597	11.5	20.4	531753	11.5	22.6	538066	11.6	20.5	534005	11.7	20.6
431976	11.3	21.0	530582	11.4	21.4	45754	11.5	18.9	139589	11.5	19.8	486025	11.6	20.4	12377	11.7	17.6
449122	11.3	20.1	212628	11.4	19.7	239067	11.5	20.0	135755	11.6	20.0	126542	11.6	19.0	498953	11.7	21.2
208190	11.3	19.8	269294	11.4	21.1	94029	11.5	18.9	8518	11.6	17.2	159223	11.6	20.4	245685	11.7	19.7
65152	11.3	17.5	537721	11.4	19.9	347779	11.5	21.4	318630	11.6	20.1	388402	11.6	21.8	464892	11.7	21.2
349007	11.3	20.6	534713	11.4	21.2	160778	11.5	18.7	371987	11.6	20.2	535794	11.6	21.6	428000	11.7	22.1
244102	11.3	20.6	538529	11.4	20.7	224487	11.5	20.9	340751	11.6	21.0	321083	11.6	20.3	293305	11.7	19.8
508180	11.3	19.9	68469	11.4	19.5	253259	11.5	20.2	106956	11.6	20.0	421364	11.6	20.6	148649	11.7	20.2
393029	11.3	21.8	152926	11.4	19.3	210472	11.5	20.8	222315	11.6	20.1	145913	11.6	17.9	313817	11.7	18.3
346084	11.3	20.4	437653	11.4	20.1	200886	11.5	19.2	511563	11.6	19.8	379043	11.6	21.2	374140	11.7	20.9
461541	11.3	21.5	21375	11.4	17.9	435331	11.5	21.0	379988	11.6	20.4	1602	11.6	15.0	403240	11.7	21.2
450456	11.3	21.3	150351	11.4	19.7	138531	11.5	19.1	333692	11.6	20.7	204004	11.6	20.1	436322	11.7	21.1
341478	11.3	20.4	229092	11.4	18.9	387244	11.5	20.4	84880	11.6	18.1	425785	11.6	20.6	182309	11.7	18.9
142439	11.3	19.9	212753	11.4	19.3	328841	11.5	21.8	375325	11.6	21.1	498677	11.6	21.6	52095	11.7	19.3
426348	11.3	19.5	64017	11.4	19.2	542522	11.5	21.7	76627	11.6	19.3	501445	11.6	20.9	344303	11.7	21.1
37060	11.3	19.8	293145	11.4	20.2	269986	11.5	20.5	67926	11.6	17.6	19496	11.6	18.4	130781	11.7	20.2
210910	11.3	20.2	80557	11.4	18.3	72532	11.5	19.7	500884	11.6	24.3	251623	11.6	19.7	181695	11.7	20.0
429372	11.3	19.1	497089	11.4	21.0	20270	11.5	16.5	483914	11.6	20.2	530860	11.6	20.9	110120	11.7	20.2
227559	11.3	20.8	120840	11.4	21.0	34859	11.5	18.2	96654	11.6	17.6	386161	11.6	21.7	87713	11.7	19.5
351593	11.3	20.9	281358	11.4	20.7	490072	11.5	20.8	429163	11.6	21.6	90192	11.6	18.5	365212	11.7	19.8
411953	11.4	19.7	57036	11.4	15.7	521088	11.5	21.0	328725	11.6	19.5	155149	11.6	20.1	153916	11.7	20.1
1613	11.4	16.7	279158	11.4	20.4	200782	11.5	20.4	209072	11.6	19.8	217876	11.6	18.8	530660	11.7	21.4
297812	11.4	21.2	24483	11.4	18.4	518138	11.5	20.0	287454	11.6	19.6	159512	11.6	19.5	146515	11.7	19.3
531735	11.4	23.1	50926	11.4	18.2	287107	11.5	19.9	40459	11.6	19.0	327918	11.6	20.3	34806	11.7	17.6
526755	11.4	22.1	260796	11.4	19.5	56537	11.5	18.5	184783	11.6	19.0	244131	11.6	20.3	459134	11.7	21.6
242400	11.4	19.4	367757	11.4	19.4	407795	11.5	21.5	210245	11.6	20.5	144629	11.6	19.1	341310	11.7	19.5
276339	11.4	20.3	341863	11.4	19.6	458292	11.5	20.0	459055	11.6	20.7	190073	11.6	19.7	214929	11.7	19.7
104176	11.4	18.8	262954	11.4	20.7	465927	11.5	21.5	521231	11.6	21.4	535325	11.6	21.5	329083	11.7	20.8
130391	11.4	23.7	170295	11.4	21.1	526263	11.5	21.6	507348	11.6	21.6	534545	11.6	21.0	331150	11.7	20.7
388739	11.4	20.8	483512	11.4	19.5	498594	11.5	21.3	11485	11.6	17.9	170862	11.6	20.6	340860	11.7	21.0
405360	11.4	21.7	540193	11.4	20.4	62657	11.5	19.6	278539	11.6	19.9	324505	11.6	20.8	527371	11.7	22.9
426334	11.4	20.2	196554	11.4	19.7	536185	11.5	21.8	467905	11.6	20.7	178948	11.6	18.4	242487	11.7	20.0
534448	11.4	21.9	295047	11.4	20.6	456935	11.5	21.4	76611	11.6	18.5	133095	11.6	18.4	313649	11.7	19.8
130457	11.4	19.1	38830	11.4	19.3	338343	11.5	20.0	396831	11.6	19.8	111708	11.6	19.1	386595	11.7	19.9
199080	11.4	20.3	535343	11.4	22.6	205373	11.5	18.6	67575	11.6	18.9	125496	11.6	19.9	194443	11.7	19.2
226099	11.4	20.1	530824	11.4	22.0	83041	11.5	19.1	334882	11.6	20.7	214545	11.6	19.6	410314	11.7	20.5
167509	11.4	19.2	296237	11.4	20.9	370699	11.5	19.0	261157	11.6	19.9	438634	11.6	20.8	473161	11.7	20.3
181751	11.4	19.5	106995	11.4	19.4	173987	11.5	21.3	46354	11.6	17.2	496836	11.6	19.4	205814	11.7	20.3
518229	11.4	21.2	379983	11.4	20.4	489133	11.5	20.8	206722	11.6	20.1	363502	11.6	20.1	224373	11.7	19.9
239341	11.4	21.8	141289	11.4	19.2	440890	11.5	21.3	118806	11.6	19.4	91220	11.7	17.7	270136	11.7	21.1
215147	11.4	20.5	418305	11.4	20.5	288962	11.5	20.2	341238	11.6	20.5	63645	11.7	19.3	6307	11.7	15.9
537733	11.4	20.4	374090	11.4	19.3	393633	11.5	20.3	465126	11.6	21.7	509144	11.7	20.3	519840	11.7	19.9
525194	11.4	22.8	206999	11.4	20.0	138685	11.5	19.1	54817	11.6	17.0	27805	11.7	17.6	171932	11.7	20.2
205070	11.4	20.7	411184	11.4	19.8	396434	11.5	20.7	271058	11.6	20.1	140467	11.7	19.0	24581	11.7	17.0
81990	11.4	18.8	496918	11.4	21.3	507127	11.5	20.0	143062	11.6	19.0	238335	11.7	20.0	417221	11.7	20.6
419940	11.4	21.2	7490	11.4	18.1	350361	11.5	20.6	258600	11.6	21.2	352742	11.7	21.1	266634	11.7	19.3
402512	11.4	20.3	98748	11.4	19.3	95389	11.5	19.0	243844	11.6	20.5	532338	11.7	20.2	379381	11.7	19.3
277954	11.4	19.9	335178	11.4	20.8	272876	11.5	19.9	140110	11.6	19.2	502436	11.7	22.3	178528	11.7	19.9
528790	11.4	21.2	204263	11.4	19.8	354881	11.5	20.8	469753	11.6	21.2	362197	11.7	20.3	58482	11.7	19.3
121097	11.4	18.5	274221	11.5	19.2	35959	11.5	18.9	188848	11.6	20.2	27814	11.7	20.3	277795	11.7	20.6
301586	11.4	19.6	200725	11.5	20.1	32678	11.5	18.0	436673	11.6	20.2	88775	11.7	20.0	181010	11.7	19.0
113119	11.4	18.3	110285	11.5	19.0	541010	11.5	21.3	515685	11.6	22.0	93518	11.7	19.0	303980	11.7	19.3
320816	11.4	18.9	148753	11.5	20.1	79986	11.5	18.0	535940	11.6	21.1	391892	11.7	20.8	226024	11.7	20.4
163944	11.4	20.8	192754	11.5	19.7	258062	11.5	19.5	544578	11.6	21.1	248305	11.7	19.7	72970	11.7	17.6
82115	11.4	18.0	183432	11.5	17.8	300955	11.5	20.8	13398	11.6	16.9	175935	11.7	20.6	183334	11.7	20.5
224320	11.4	20.4	170	11.5	13.2	465654	11.5	20.8	429570	11.6	21.6	534306	11.7	21.9	206371	11.7	19.5
415147	11.4	21.3	60818	11.5	18.6	362669	11.5	21.1	457119	11.6	20.7	468752	11.7	19.8	88124	11.7	18.9
37219	11.4	17.7	43884	11.5	19.0	255609	11.5	19.1	419651	11.6	21.0	215438	11.7	19.1	89261	11.7	18.1
157787	11.4	19.9	289420	11.5	19.5	210040	11.5	18.5	441564	11.6	22.6	99948	11.7	18.4	340677	11.7	21.0
291221	11.4	20.2	418317	11.5	20.6	282847	11.5	20.4	465364	11.6	21.3	242448	11.7	18.9	17171	11.7	17.4
455381	11.4	21.0	6358	11.5	15.3	298965	11.5	21.7	508140	11.6	20.2	520195	11.7	21.5	17391	11.7	18.5
138694	11.4	19.5	270217	11.5	21.1	89310	11.5	19.6	303838	11.6	20.8	195477	11.7	19.8	94119	11.7	19.7
362097	11.4	20.3	472712	11.5	21.1	406471	11.5	21.2	204189	11.6	20.4	231908	11.7	19.4	56686	11.7	17.3
154024	11.4	19.3	377446	11.5	20.6	246065	11.5										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
539039	11.8	20.6	338924	11.8	20.6	157687	11.9	19.0	463285	11.9	19.8	89751	12.0	19.3	160827	12.1	19.3
506728	11.8	21.4	402556	11.8	21.2	293891	11.9	20.6	411465	11.9	20.7	252551	12.0	20.2	5076	12.1	17.4
379749	11.8	20.5	194456	11.8	20.1	363742	11.9	21.9	31083	11.9	19.4	87759	12.0	19.0	268524	12.1	20.0
114633	11.8	19.4	12614	11.8	16.9	124903	11.9	20.7	72231	11.9	19.5	434470	12.0	20.8	5660	12.1	20.4
500499	11.8	22.7	528937	11.8	20.8	240547	11.9	20.4	535521	11.9	21.3	148325	12.0	20.7	64441	12.1	18.7
340872	11.8	20.1	123017	11.8	19.9	137093	11.9	20.1	4715	11.9	16.8	192207	12.0	20.2	271904	12.1	20.9
505297	11.8	21.9	110916	11.8	18.8	502343	11.9	21.0	502577	11.9	21.1	422281	12.0	19.4	205003	12.1	19.7
451991	11.8	21.5	332389	11.8	19.7	131419	11.9	19.2	121540	11.9	18.3	215588	12.0	20.3	297218	12.1	19.6
410088	11.8	23.6	528305	11.8	21.3	157547	11.9	19.7	384990	11.9	20.4	498035	12.0	19.7	504140	12.1	20.6
349932	11.8	20.2	222276	11.8	20.1	130007	11.9	20.3	506301	11.9	19.9	427411	12.0	20.7	88632	12.1	18.3
480033	11.8	19.6	292076	11.8	20.6	53475	11.9	19.3	228600	11.9	20.9	299552	12.0	20.4	459924	12.1	20.1
419836	11.8	22.0	88581	11.8	18.3	299927	11.9	20.8	297913	11.9	19.8	462620	12.0	19.8	124582	12.1	20.2
214772	11.8	20.6	523546	11.8	20.9	242421	11.9	20.8	428821	11.9	21.4	211581	12.0	19.0	436672	12.1	20.7
399408	11.8	20.7	200821	11.8	19.8	532945	11.9	21.7	268439	11.9	22.4	121156	12.0	18.3	76513	12.1	19.0
58176	11.8	18.0	500747	11.8	21.3	99229	11.9	17.1	464694	11.9	21.6	534387	12.0	20.7	460124	12.1	21.1
416798	11.8	19.5	221052	11.8	19.8	276944	11.9	20.9	336445	11.9	19.2	54995	12.0	18.6	203509	12.1	19.0
175546	11.8	19.8	199295	11.8	20.4	528128	11.9	21.5	368771	11.9	20.9	50110	12.0	17.2	174119	12.1	19.2
462010	11.8	20.6	224009	11.8	19.3	359987	11.9	21.5	390969	11.9	20.8	282191	12.0	21.0	87734	12.1	19.9
471419	11.8	20.1	373462	11.8	19.7	194924	11.9	20.3	491669	11.9	21.1	535047	12.0	21.3	431239	12.1	20.3
247998	11.8	19.3	535707	11.8	20.6	95068	11.9	20.3	202269	11.9	21.0	536101	12.0	20.7	452967	12.1	20.6
408466	11.8	20.5	222322	11.8	20.2	205795	11.9	19.9	307597	11.9	19.7	391687	12.0	21.3	523993	12.1	21.0
6646	11.8	17.4	57922	11.8	18.4	333770	11.9	19.5	368791	11.9	21.0	434865	12.0	20.4	83972	12.1	19.3
158102	11.8	19.4	490431	11.8	21.8	529944	11.9	21.0	473021	11.9	21.0	19884	12.0	17.5	381452	12.1	20.8
8817	11.8	15.5	364689	11.8	21.1	501110	11.9	19.9	285614	11.9	20.7	463585	12.0	19.9	236171	12.1	21.4
532634	11.8	21.6	209653	11.8	20.2	73352	11.9	19.5	277345	11.9	20.7	369506	12.0	19.0	192412	12.1	19.0
505183	11.8	21.1	426347	11.8	20.8	90285	11.9	18.7	408117	11.9	19.3	503781	12.0	20.4	66688	12.1	18.5
80927	11.8	18.9	410813	11.8	20.4	255921	11.9	20.7	406400	11.9	19.6	422963	12.0	20.8	304897	12.1	21.6
419429	11.8	21.6	510317	11.8	20.3	415206	11.9	21.0	388383	11.9	21.9	530594	12.0	20.2	461993	12.1	20.7
419346	11.8	21.7	192697	11.8	20.4	5070	11.9	16.1	176520	11.9	20.8	282845	12.0	20.3	303380	12.1	20.4
422471	11.8	20.8	342868	11.8	20.4	522594	11.9	20.7	117609	11.9	19.1	439161	12.0	20.3	466622	12.1	21.5
399587	11.8	21.0	199146	11.8	20.0	309316	11.9	20.8	390489	11.9	20.0	156518	12.0	19.1	399271	12.1	20.8
332881	11.8	20.2	526981	11.8	20.0	63056	11.9	18.1	162602	11.9	19.6	505319	12.0	22.0	393416	12.1	19.2
186026	11.8	20.3	79009	11.8	20.0	389802	11.9	19.8	82646	11.9	19.3	501501	12.0	20.4	227846	12.1	19.7
459024	11.8	21.7	170109	11.8	19.8	39915	11.9	18.1	152173	11.9	20.3	541269	12.0	20.9	357134	12.1	21.5
345969	11.8	20.1	459167	11.8	19.9	320265	11.9	20.9	410002	11.9	21.8	202165	12.0	19.7	499419	12.1	19.5
357600	11.8	21.1	44656	11.8	19.2	7504	11.9	18.4	164713	11.9	19.0	47242	12.0	18.2	354950	12.1	21.4
228666	11.8	20.3	275348	11.8	20.7	71758	11.9	18.4	32549	11.9	18.8	36939	12.0	20.5	169191	12.1	20.4
198808	11.8	19.6	358570	11.8	19.5	155448	11.9	19.7	39616	11.9	19.5	40074	12.0	17.5	106499	12.1	19.3
533913	11.8	20.8	420265	11.8	19.9	459653	11.9	20.6	75628	11.9	19.1	274623	12.0	19.5	93779	12.1	19.6
133190	11.8	18.5	232531	11.8	20.8	184280	11.9	20.6	334377	11.9	20.3	277708	12.0	20.8	182642	12.1	18.9
500042	11.8	21.1	502686	11.8	20.6	374159	11.9	20.9	401781	11.9	20.7	389956	12.0	19.8	354216	12.1	19.9
56213	11.8	18.3	39546	11.8	18.7	1953	11.9	16.9	530715	11.9	21.8	534998	12.0	21.5	536933	12.1	21.2
227425	11.8	19.7	22161	11.8	18.4	19756	11.9	16.9	65875	11.9	18.7	129089	12.0	19.5	167763	12.1	19.8
191763	11.8	19.4	258120	11.8	20.3	183219	11.9	21.3	368023	11.9	19.6	415189	12.1	20.9	415613	12.1	20.4
217917	11.8	20.0	235560	11.8	20.7	375912	11.9	21.3	20878	11.9	17.9	467389	12.1	20.0	95141	12.1	19.4
274776	11.8	19.4	268038	11.8	19.4	230956	11.9	20.5	249062	11.9	19.5	432495	12.1	20.2	484233	12.1	19.8
125005	11.8	19.1	418166	11.8	20.1	129284	11.9	19.2	323149	11.9	18.0	85627	12.1	23.5	524950	12.1	19.1
232389	11.8	20.2	56267	11.8	18.1	307853	11.9	20.3	379996	11.9	19.8	155512	12.1	19.2	300173	12.1	19.2
350222	11.8	20.2	212901	11.8	20.6	238556	11.9	19.9	403836	11.9	20.8	452282	12.1	19.3	47955	12.1	18.6
121304	11.8	18.2	455610	11.8	21.2	209906	11.9	19.9	130693	11.9	19.6	179884	12.1	20.3	468279	12.1	21.0
543384	11.8	20.8	26626	11.8	18.4	147920	11.9	20.6	360574	11.9	20.7	41912	12.1	17.7	344566	12.1	20.7
384268	11.8	20.5	210405	11.8	20.2	535434	11.9	20.3	122470	11.9	19.9	426944	12.1	20.6	31440	12.1	17.9
542871	11.8	20.8	512985	11.8	22.0	296563	11.9	19.8	170805	11.9	19.8	473755	12.1	20.6	59087	12.1	18.9
231875	11.8	20.4	466694	11.8	22.2	387337	11.9	20.0	305629	11.9	21.6	294375	12.1	20.1	382255	12.1	20.2
206829	11.8	20.2	186563	11.8	20.0	528679	11.9	22.2	435249	11.9	22.1	400247	12.1	19.8	252264	12.1	20.1
356833	11.8	20.3	108531	11.8	17.7	318018	11.9	20.0	7010	11.9	17.2	87765	12.1	18.5	516695	12.1	20.5
40552	11.8	18.2	383251	11.8	20.8	60366	11.9	17.9	143087	11.9	19.8	230549	12.1	22.6	233169	12.1	20.5
21121	11.8	18.4	157200	11.9	19.3	293425	11.9	17.8	209398	11.9	20.4	66902	12.1	18.6	288862	12.1	18.3
183049	11.8	20.8	405130	11.9	20.4	224303	11.9	20.5	466667	11.9	19.7	498970	12.1	20.8	121357	12.1	19.6
79929	11.8	18.6	249030	11.9	20.2	43468	11.9	18.2	528114	11.9	21.1	505464	12.1	21.0	291462	12.1	20.6
33282	11.8	18.4	500221	11.9	20.4	91503	11.9	19.4	192912	11.9	20.1	109257	12.1	20.2	65898	12.1	18.5
4174	11.8	15.9	338875	11.9	20.4	152601	11.9	19.0	277775	11.9	20.7	379071	12.1	21.1	423475	12.1	21.2
505063	11.8	22.0	194430	11.9	20.6	187380	11.9	19.5	160155	12.0	19.3	505492	12.1	22.1	39569	12.1	19.5
432155	11.8	21.4	327859	11.9	20.9	427050	11.9	20.7	245154	12.0	20.2	261033	12.1	21.4	2237	12.1	16.8
209405	11.8	19.0	232364	11.9	20.2	104870	11.9	19.2	11190	12.0	17.2	524784	12.1	22.1	303342	12.1	20.8
326360	11.8	19.1	283552	11.9	20.5	530977	11.9	19.9	346719	12.0	20.7	531313	12.1	21.3	459438	12.1	21.1
65493	11.8	18.7	210395	11.9	19.5	163608	11.9	19.9	240809	12.0	20.8	283628	12.1	21.7	276650	12.1	20.0
349601	11.8	20.7	536153	11.9	20.8	111679	11.9	19.3	111455	12.0	18.8	239009	12.1	20.0	451020	12.1	22.3
56665	11.8	17.7	90953	11.9	19.3	414909	11.9										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
254595	12.1	19.9	409836	12.2	22.3	163435	12.3	19.5	463899	12.4	20.2	157798	12.4	20.2	505169	12.5	24.1
251593	12.1	20.3	528635	12.2	21.8	136059	12.3	19.0	147927	12.4	19.5	102094	12.4	18.4	226334	12.5	19.1
207616	12.1	20.3	489563	12.2	20.2	177318	12.3	19.2	37828	12.4	17.2	427367	12.4	21.3	380489	12.5	21.1
117956	12.1	20.0	259226	12.2	19.5	156307	12.3	20.2	252015	12.4	20.2	410474	12.4	21.8	409020	12.5	21.0
427019	12.1	19.2	474584	12.2	19.7	44662	12.3	19.0	361205	12.4	20.7	68168	12.4	19.4	197499	12.5	19.3
525728	12.1	20.8	8633	12.2	18.1	406487	12.3	20.2	416873	12.4	19.5	326016	12.4	20.7	461994	12.5	22.3
486019	12.1	21.3	160736	12.2	19.0	499013	12.3	21.0	104151	12.4	19.2	186053	12.4	19.7	430196	12.5	20.5
478162	12.1	19.5	138784	12.2	20.5	238939	12.3	20.2	470347	12.4	20.6	467788	12.4	21.1	329822	12.5	19.3
341892	12.1	20.6	45224	12.2	18.4	148435	12.3	20.2	171953	12.4	20.8	290139	12.4	19.7	247619	12.5	20.7
251004	12.1	20.5	264600	12.2	21.6	282587	12.3	19.9	369274	12.4	20.9	12346	12.4	18.4	459031	12.5	21.3
265759	12.1	20.6	268497	12.2	20.0	196279	12.3	19.6	275676	12.4	19.7	430315	12.4	20.7	426292	12.5	20.9
372025	12.2	20.6	512390	12.2	21.0	22087	12.3	17.4	429157	12.4	20.4	434804	12.4	20.1	233160	12.5	20.5
344006	12.2	20.6	292387	12.2	20.5	24735	12.3	17.8	208968	12.4	20.3	515726	12.4	20.8	349378	12.5	20.8
232084	12.2	20.1	187474	12.2	20.4	500723	12.3	22.6	435267	12.4	21.0	522818	12.4	21.0	80243	12.5	19.2
338468	12.2	20.9	330985	12.2	19.0	265685	12.3	20.0	3560	12.4	15.6	437590	12.4	20.6	436987	12.5	21.0
275984	12.2	20.5	288023	12.2	20.0	373480	12.3	19.9	493501	12.4	21.4	131265	12.4	19.2	363740	12.5	22.1
295317	12.2	20.1	176496	12.2	20.2	354852	12.3	20.3	386500	12.4	20.4	236153	12.4	21.1	14992	12.5	18.0
201085	12.2	20.5	460163	12.2	21.1	50806	12.3	18.6	435969	12.4	21.4	403869	12.4	21.9	8119	12.5	18.1
504344	12.2	21.4	369370	12.2	20.7	501312	12.3	21.3	461246	12.4	21.1	17692	12.4	18.5	297662	12.5	21.0
187656	12.2	20.4	486677	12.2	21.0	54263	12.3	18.4	7378	12.4	17.9	527526	12.4	21.3	518899	12.5	20.4
462269	12.2	22.1	448137	12.2	20.2	287495	12.3	20.6	261394	12.4	20.7	498930	12.4	21.4	318102	12.5	19.1
525736	12.2	22.1	312877	12.2	20.2	344349	12.3	20.6	154028	12.4	19.4	313798	12.4	20.1	448174	12.5	20.9
518657	12.2	21.5	467657	12.2	20.9	500707	12.3	20.8	156718	12.4	20.6	154298	12.4	19.1	498180	12.5	20.8
73427	12.2	18.3	493755	12.2	21.6	420276	12.3	21.0	428412	12.4	21.4	349119	12.4	20.9	213764	12.5	20.2
388651	12.2	21.1	338885	12.2	20.7	328454	12.3	20.8	345112	12.4	20.4	210384	12.4	20.7	272580	12.5	20.6
131016	12.2	19.9	346867	12.2	20.8	96750	12.3	18.7	344738	12.4	20.9	130898	12.4	19.4	65656	12.5	19.0
289415	12.2	20.3	463258	12.2	19.2	465950	12.3	21.0	331124	12.4	20.6	341867	12.4	20.8	428074	12.5	20.7
371745	12.2	20.9	518908	12.2	20.7	54412	12.3	17.7	221682	12.4	20.7	381896	12.4	20.4	540175	12.5	21.7
181367	12.2	20.4	448249	12.2	21.9	536764	12.3	21.6	246988	12.4	20.1	194375	12.4	18.8	284664	12.5	20.2
129433	12.2	20.3	496205	12.2	21.5	14423	12.3	17.8	490123	12.4	21.9	374182	12.4	21.0	59936	12.5	19.3
246313	12.2	20.0	349252	12.2	21.2	253274	12.3	20.1	27988	12.4	19.8	340687	12.4	19.7	505088	12.5	21.3
15799	12.2	16.0	506721	12.2	21.6	338991	12.3	21.1	536464	12.4	21.8	322119	12.4	21.1	238971	12.5	19.8
355979	12.2	20.9	75944	12.2	18.6	59766	12.3	17.2	495133	12.4	20.5	239814	12.4	20.0	229881	12.5	20.8
134827	12.2	18.3	63472	12.2	19.4	205223	12.3	19.2	370742	12.4	20.8	87969	12.4	19.8	380915	12.5	20.5
298614	12.2	20.1	459209	12.2	20.3	290222	12.3	21.2	6352	12.4	17.1	533060	12.4	22.6	362424	12.5	19.5
484254	12.2	21.2	334895	12.2	18.8	75007	12.3	19.1	524952	12.4	20.0	55711	12.4	19.1	459071	12.5	21.5
367197	12.2	21.4	473012	12.3	19.8	498792	12.3	20.7	68705	12.4	18.1	121667	12.4	18.4	328584	12.5	20.2
37906	12.2	18.2	246463	12.3	19.4	199775	12.3	20.4	38733	12.4	18.7	505232	12.4	20.7	235939	12.5	20.7
177451	12.2	19.8	357112	12.3	21.0	536240	12.3	21.5	194711	12.4	20.0	264668	12.4	20.6	341642	12.5	21.2
93773	12.2	19.0	89229	12.3	19.0	291067	12.3	19.9	437476	12.4	21.2	137761	12.4	18.3	150997	12.5	20.7
467677	12.2	20.0	428785	12.3	21.1	156300	12.3	20.4	507580	12.4	23.3	132458	12.4	18.0	9813	12.5	17.6
381591	12.2	20.5	107201	12.3	19.8	121517	12.3	19.6	331926	12.4	19.9	208394	12.4	20.5	90444	12.5	18.5
370835	12.2	20.8	127646	12.3	19.1	154306	12.3	20.4	486022	12.4	21.2	402546	12.5	19.0	247080	12.5	19.7
372630	12.2	20.9	150166	12.3	20.4	503914	12.3	20.7	19428	12.4	18.2	155378	12.5	20.0	84948	12.5	17.4
286560	12.2	20.1	76997	12.3	19.4	122107	12.3	17.9	83885	12.4	19.0	536642	12.5	20.5	528783	12.5	20.7
508982	12.2	20.9	344420	12.3	22.1	207711	12.3	20.1	243405	12.4	19.3	56282	12.5	17.9	90545	12.5	17.3
512946	12.2	20.3	275320	12.3	19.9	338362	12.3	21.4	173962	12.4	20.0	500417	12.5	20.8	527230	12.5	22.0
513850	12.2	20.4	240765	12.3	19.1	254094	12.3	19.9	70393	12.4	18.0	497838	12.5	21.3	340768	12.5	21.0
194421	12.2	20.7	77970	12.3	18.2	459070	12.3	20.9	302511	12.4	19.8	508722	12.5	20.7	541017	12.5	21.1
78516	12.2	19.2	89247	12.3	18.2	170059	12.3	19.8	492565	12.4	21.1	258123	12.5	21.6	317649	12.5	20.7
543473	12.2	19.4	300985	12.3	20.4	237331	12.3	20.8	387830	12.4	20.3	395820	12.5	19.9	246189	12.5	20.9
348479	12.2	21.0	489277	12.3	22.0	426650	12.3	21.3	63689	12.4	18.7	155606	12.5	17.9	86271	12.5	19.5
160975	12.2	18.2	155605	12.3	20.0	294637	12.3	19.8	86412	12.4	17.1	340674	12.5	21.3	160802	12.5	19.8
171020	12.2	20.1	496087	12.3	20.5	274039	12.3	19.3	303447	12.4	21.1	251749	12.5	20.9	287492	12.5	19.7
299606	12.2	20.7	11219	12.3	16.8	171232	12.3	19.3	518221	12.4	20.5	312013	12.5	20.8	111729	12.5	19.5
498167	12.2	22.1	394405	12.3	19.9	176367	12.3	21.2	532796	12.4	22.3	294907	12.5	20.2	286110	12.5	19.1
239845	12.2	20.9	235627	12.3	19.7	272663	12.3	21.2	170838	12.4	18.6	541026	12.5	20.1	470518	12.5	20.4
274475	12.2	19.9	500068	12.3	20.5	193407	12.3	18.9	37565	12.4	18.2	187479	12.5	19.2	303937	12.5	21.0
66698	12.2	19.9	538398	12.3	21.4	16783	12.3	17.9	17437	12.4	17.9	1246	12.5	13.9	407264	12.5	21.8
467658	12.2	20.5	358079	12.3	19.7	307247	12.3	20.1	11182	12.4	17.0	336232	12.5	20.4	202917	12.5	19.6
473156	12.2	21.4	302021	12.3	20.9	344418	12.3	22.2	487011	12.4	21.5	538479	12.5	20.4	120713	12.5	19.1
151818	12.2	19.6	450366	12.3	22.2	151005	12.3	19.8	180305	12.4	19.8	384155	12.5	20.2	90107	12.5	19.2
292801	12.2	20.1	140759	12.3	20.3	465104	12.3	21.4	426537	12.4	20.7	514616	12.5	20.1	501038	12.5	21.3
423497	12.2	21.2	206993	12.3	21.2	92659	12.3	19.7	522578	12.4	21.1	93382	12.5	19.4	236125	12.5	19.6
329113	12.2	21.7	212293	12.3	19.7	258354	12.3	18.1	178205	12.4	19.9	206804	12.5	20.2	226000	12.5	19.8
83760	12.2	19.3	359999	12.3	22.3	527898	12.3	20.3	343182	12.4	21.2	170213	12.5	20.0	303747	12.5	19.7
126645	12.2	19.4	381687	12.3	21.0	101905	12.3	20.3	114507	12.4	20.2	346922	12.5	19.9	240260	12.5	20.6
315373	12.2	20.9	36030	12.3	17.7	223289	12.3	19.0	451112	12.4	21.5	135206	12.5	19.5	5045	12.5	17.9
82233	12.2	18.2	341808	12.3	20.6	146											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
394356	12.6	21.3	300079	12.6	21.1	529943	12.7	20.6	355885	12.7	21.8	76910	12.8	18.0	348817	12.9	21.5
142830	12.6	17.8	284182	12.6	20.5	484275	12.7	20.2	534914	12.7	21.8	471400	12.8	20.2	152242	12.9	20.2
119525	12.6	17.3	355831	12.6	19.9	538013	12.7	21.4	429584	12.8	25.5	372486	12.8	20.9	353862	12.9	20.0
283746	12.6	20.3	115248	12.6	20.3	387577	12.7	21.2	412807	12.8	19.7	454139	12.8	19.5	17563	12.9	17.1
156398	12.6	20.4	162664	12.6	18.5	540363	12.7	22.0	284641	12.8	19.9	498362	12.8	21.5	327864	12.9	20.2
496392	12.6	20.7	533875	12.6	21.4	274359	12.7	19.8	306361	12.8	20.6	229429	12.8	18.7	358511	12.9	19.5
343998	12.6	20.4	459909	12.6	20.4	354807	12.7	18.5	169028	12.8	20.2	372563	12.8	20.9	167688	12.9	19.8
535033	12.6	20.2	450981	12.6	20.9	29422	12.7	18.1	38720	12.8	18.6	230412	12.8	18.5	55421	12.9	19.5
489042	12.6	21.5	189064	12.6	18.5	40860	12.7	18.5	30797	12.8	18.6	88273	12.8	17.8	278060	12.9	18.4
240026	12.6	20.2	544636	12.6	21.0	465913	12.7	21.7	248725	12.8	19.0	96634	12.8	18.1	172395	12.9	20.5
146193	12.6	18.8	1772	12.6	15.8	52717	12.7	19.0	266396	12.8	19.5	332353	12.8	19.7	23287	12.9	18.0
90459	12.6	19.5	458843	12.6	22.2	508705	12.7	21.1	269980	12.8	20.5	284362	12.8	21.2	174561	12.9	19.6
325295	12.6	21.6	366431	12.6	20.9	332148	12.7	21.1	451865	12.8	20.7	30499	12.8	19.1	496732	12.9	20.5
96623	12.6	18.3	76998	12.6	18.3	497774	12.7	22.0	215520	12.8	20.8	214842	12.8	20.7	21277	12.9	21.3
283564	12.6	20.7	21286	12.6	17.9	88835	12.7	19.3	79763	12.8	19.1	396826	12.8	19.9	17362	12.9	17.0
429204	12.6	21.1	425009	12.6	18.5	192954	12.7	19.9	265638	12.8	20.7	129909	12.8	20.4	202630	12.9	19.9
46209	12.6	18.3	172906	12.6	19.6	261296	12.7	19.9	117969	12.8	18.6	386160	12.8	21.7	323832	12.9	19.7
480114	12.6	20.1	195154	12.6	18.9	92997	12.7	18.8	2632	12.8	15.8	74388	12.8	20.1	65843	12.9	18.2
220912	12.6	19.1	398737	12.6	21.1	153873	12.7	19.7	376869	12.8	20.6	368725	12.8	19.8	315577	12.9	20.5
241852	12.6	20.5	39173	12.6	19.0	305963	12.7	19.8	84158	12.8	19.0	30876	12.8	19.0	151257	12.9	18.5
451053	12.6	21.9	536742	12.6	20.8	393336	12.7	20.6	171985	12.8	19.4	236329	12.8	20.7	354052	12.9	21.0
354200	12.6	21.4	297940	12.6	21.4	129428	12.7	18.6	27324	12.8	17.5	173685	12.8	19.5	51316	12.9	18.5
300939	12.6	20.6	120453	12.6	19.9	362632	12.7	21.2	10945	12.8	17.1	112066	12.8	18.3	176489	12.9	20.0
506015	12.6	20.8	13765	12.6	18.8	427185	12.7	21.8	246601	12.8	19.1	437651	12.8	21.1	340583	12.9	20.4
506272	12.6	20.5	534976	12.6	21.4	230482	12.7	19.6	57678	12.8	20.1	293239	12.8	20.4	194170	12.9	20.6
26938	12.6	17.8	496181	12.6	20.2	329298	12.7	20.5	209015	12.8	18.8	175089	12.8	19.9	108287	12.9	19.1
466900	12.6	20.8	89241	12.6	19.5	385426	12.7	20.4	125392	12.8	20.0	526201	12.8	20.7	237253	12.9	22.0
86003	12.6	18.2	423517	12.6	21.5	350722	12.7	21.4	268848	12.8	19.1	183533	12.8	20.0	275901	12.9	21.6
208417	12.6	21.0	310204	12.6	19.9	265674	12.7	20.2	380062	12.8	20.9	50920	12.8	18.8	468994	12.9	20.7
517026	12.6	20.4	192671	12.6	19.9	228289	12.7	19.8	346230	12.8	21.7	372391	12.8	20.0	442736	12.9	20.9
517670	12.6	21.0	91092	12.6	18.9	28721	12.7	16.8	360533	12.8	19.7	141373	12.8	19.6	293602	12.9	18.9
343149	12.6	20.8	324539	12.6	20.9	377453	12.7	18.8	534679	12.8	22.5	330081	12.8	20.2	236442	12.9	18.9
454205	12.6	21.2	502673	12.6	21.4	432119	12.7	20.5	351671	12.8	21.3	88092	12.8	19.7	455618	12.9	21.4
200432	12.6	18.4	117070	12.7	19.1	543468	12.7	20.6	87644	12.8	18.4	236190	12.8	20.6	167373	12.9	20.0
448201	12.6	20.8	361746	12.7	20.0	27123	12.7	17.3	454257	12.8	20.1	490609	12.8	21.5	526717	12.9	21.2
469154	12.6	20.4	8205	12.7	17.9	407877	12.7	21.5	298859	12.8	20.3	32779	12.8	18.7	148557	12.9	18.5
299995	12.6	21.4	19033	12.7	19.1	354981	12.7	19.7	209666	12.8	19.2	63582	12.8	20.0	465183	12.9	21.1
106371	12.6	19.4	336400	12.7	20.4	212014	12.7	19.7	498971	12.8	21.6	157596	12.8	20.2	500621	12.9	23.0
348998	12.6	21.3	72120	12.7	19.1	303767	12.7	19.5	6275	12.8	16.8	26044	12.9	17.7	428989	12.9	20.1
128600	12.6	18.8	53287	12.7	18.0	341739	12.7	20.0	226962	12.8	20.4	479415	12.9	20.1	318504	12.9	19.5
341170	12.6	21.1	530180	12.7	21.4	102179	12.7	19.6	325170	12.8	19.8	172312	12.9	19.5	55827	12.9	20.0
531584	12.6	22.7	345149	12.7	20.4	133970	12.7	20.4	208438	12.8	19.5	282515	12.9	19.3	341564	12.9	20.2
66396	12.6	17.6	432219	12.7	20.4	230512	12.7	20.5	131	12.8	12.6	544919	12.9	21.2	366906	12.9	21.1
379507	12.6	21.8	140475	12.7	18.7	151521	12.7	19.6	504132	12.8	22.0	290063	12.9	18.5	372686	12.9	20.4
367988	12.6	20.3	538099	12.7	19.7	391390	12.7	21.1	21621	12.8	16.5	176034	12.9	20.2	159940	12.9	19.9
542024	12.6	20.7	246034	12.7	20.4	244681	12.7	19.7	54112	12.8	18.8	177068	12.9	21.2	388356	12.9	21.3
134183	12.6	19.5	319688	12.7	19.8	370712	12.7	20.0	405175	12.8	22.3	326714	12.9	21.1	300191	12.9	21.0
497103	12.6	20.7	237346	12.7	20.5	531478	12.7	22.5	293272	12.8	21.3	50161	12.9	18.1	196139	12.9	20.2
294203	12.6	20.8	300018	12.7	21.2	226797	12.7	19.9	465094	12.8	22.6	229136	12.9	21.1	472687	12.9	19.6
498250	12.6	21.7	303554	12.7	18.1	257490	12.7	20.4	77816	12.8	18.8	202214	12.9	20.7	421771	12.9	21.0
538629	12.6	21.5	4467	12.7	16.5	75527	12.7	18.3	363243	12.8	20.1	525896	12.9	19.9	402879	12.9	21.7
106548	12.6	19.0	437632	12.7	20.6	529198	12.7	22.5	530272	12.8	21.0	439005	12.9	20.3	7784	12.9	15.9
352676	12.6	20.6	529492	12.7	20.3	505090	12.7	20.7	429152	12.8	20.9	82046	12.9	18.4	213871	12.9	20.6
170297	12.6	20.4	465727	12.7	20.9	303924	12.7	19.6	462310	12.8	20.6	296197	12.9	20.8	532207	12.9	21.4
70111	12.6	17.7	205285	12.7	20.0	118077	12.7	18.9	545446	12.8	21.5	405234	12.9	21.5	400321	12.9	21.0
503248	12.6	21.6	222760	12.7	20.8	23509	12.7	18.6	128608	12.8	19.7	105152	12.9	18.8	20052	12.9	17.7
111593	12.6	19.5	56951	12.7	18.7	323488	12.7	19.2	316071	12.8	20.7	125374	12.9	18.5	357607	12.9	20.6
523616	12.6	21.4	58451	12.7	17.5	245043	12.7	19.8	81437	12.8	18.7	102187	12.9	19.6	242425	12.9	18.7
533824	12.6	20.8	15282	12.7	17.7	356316	12.7	19.7	348488	12.8	21.6	318072	12.9	19.9	501111	12.9	21.1
320791	12.6	19.5	51354	12.7	18.0	541118	12.7	18.9	344121	12.8	19.9	171596	12.9	20.7	455198	12.9	21.4
466901	12.6	20.6	465118	12.7	22.0	121072	12.7	19.3	295337	12.8	20.8	463825	12.9	21.0	35512	12.9	19.0
419463	12.6	21.4	91306	12.7	18.5	209456	12.7	20.1	114321	12.8	19.2	105290	12.9	19.1	314657	12.9	19.3
368446	12.6	20.1	249127	12.7	19.2	281090	12.7	19.6	542905	12.8	20.2	403554	12.9	20.7	22067	12.9	16.9
155577	12.6	19.5	138511	12.7	18.9	163682	12.7	19.5	372747	12.8	21.6	367345	12.9	20.4	150346	12.9	19.4
22954	12.6	18.2	430274	12.7	20.4	426664	12.7	20.4	292197	12.8	19.9	502753	12.9	19.9	207137	12.9	20.3
369371	12.6	21.4	61948	12.7	19.4	526790	12.7	22.0	349927	12.8	21.4	506745	12.9	22.2	378322	12.9	20.2
23977	12.6	16.8	80069	12.7	17.7	297056	12.7	21.0	392141	12.8	20.5	462060	12.9	21.0	347419	12.9	20.3
15499	12.6	17.7	232826	12.7	19.4	1873	12.7	17.1	55823	12.8	19.6	533708	12.9	21.5	150968	12.9	19.7
192937	12.6	20.4	34380	12.7	18.9	42682	12.7	17.									

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
431249	12.9	20.2	473112	13.0	19.6	196246	13.1	19.8	47909	13.1	17.8	496184	13.2	20.8	298898	13.3	20.2
450466	12.9	21.3	184452	13.0	19.2	57391	13.1	19.0	340061	13.1	20.7	155247	13.2	19.7	89983	13.3	19.3
2257	12.9	16.5	374170	13.0	21.5	112631	13.1	18.8	534770	13.1	21.5	51361	13.2	18.1	229255	13.3	20.5
368818	12.9	21.3	479	13.0	14.4	114135	13.1	19.7	495364	13.1	20.8	364217	13.2	20.6	302219	13.3	19.5
370949	12.9	20.8	534334	13.0	22.0	196659	13.1	19.6	266809	13.1	20.5	489627	13.2	21.9	464676	13.3	21.7
406560	12.9	20.6	472646	13.0	20.1	117447	13.1	18.8	247902	13.1	21.2	57664	13.2	18.5	204735	13.3	20.3
95017	12.9	19.7	286584	13.0	21.9	379774	13.1	20.1	144775	13.1	19.1	528838	13.2	22.2	439111	13.3	20.8
159624	12.9	20.2	517667	13.0	21.0	505550	13.1	20.9	329592	13.1	21.8	222445	13.2	20.8	428744	13.3	20.6
404243	12.9	19.4	23262	13.0	18.3	500975	13.1	20.2	469138	13.1	20.2	490298	13.2	20.8	182413	13.3	19.1
134877	12.9	19.2	456919	13.0	22.0	184595	13.1	18.9	257671	13.1	20.7	264634	13.2	20.3	292632	13.3	20.9
528220	12.9	20.9	501019	13.0	21.3	105240	13.1	19.0	57054	13.2	19.3	450361	13.2	21.2	397504	13.3	19.8
57852	12.9	16.8	327442	13.0	19.8	221095	13.1	20.1	221062	13.2	20.6	370704	13.2	20.8	341711	13.3	21.0
238069	12.9	18.2	262155	13.0	18.9	267193	13.1	19.6	525538	13.2	21.1	224918	13.2	20.0	143592	13.3	20.3
498732	12.9	21.2	468660	13.0	20.7	161913	13.1	19.3	238781	13.2	19.8	239519	13.2	20.1	69108	13.3	19.3
246301	12.9	20.7	9072	13.0	16.2	411240	13.1	19.5	374322	13.2	19.6	349931	13.2	20.3	246584	13.3	21.1
108595	12.9	19.2	2561	13.0	17.4	503147	13.1	21.7	120676	13.2	20.0	309027	13.2	20.5	425172	13.3	20.5
138789	12.9	18.3	170135	13.0	20.5	52466	13.1	19.5	21416	13.2	17.4	6799	13.2	16.8	358547	13.3	20.5
526188	12.9	22.3	38509	13.0	17.7	221208	13.1	20.0	377341	13.2	20.1	306423	13.2	20.4	82058	13.3	18.6
109411	12.9	19.4	427404	13.0	19.6	83655	13.1	19.6	83408	13.2	16.9	110052	13.2	20.0	454954	13.3	20.3
372592	12.9	20.3	309516	13.0	19.9	489648	13.1	20.3	332377	13.2	20.5	526246	13.2	21.5	455234	13.3	21.0
312996	12.9	21.1	136792	13.0	20.5	173794	13.1	21.0	413597	13.2	20.4	520160	13.2	21.3	285618	13.3	21.3
371165	12.9	21.7	292256	13.0	22.0	122185	13.1	18.3	458919	13.2	22.5	425324	13.2	19.5	111701	13.3	20.4
248868	12.9	19.8	425265	13.0	20.4	79504	13.1	18.8	217924	13.2	21.1	499109	13.2	21.1	404239	13.3	20.3
511625	12.9	21.0	522874	13.0	20.3	54361	13.1	19.6	57331	13.2	20.3	248391	13.2	20.1	159859	13.3	18.3
107179	12.9	20.5	501103	13.0	20.5	473513	13.1	20.6	308895	13.2	20.0	69061	13.2	20.0	417224	13.3	20.9
130775	12.9	20.1	304621	13.0	21.5	431263	13.1	20.2	527570	13.2	20.8	30982	13.2	19.0	137964	13.3	18.1
503089	12.9	20.2	256850	13.0	19.4	352775	13.1	21.3	54696	13.2	17.1	188251	13.2	20.3	29536	13.3	17.3
62432	12.9	19.4	285149	13.0	19.7	219017	13.1	19.5	534528	13.2	20.8	463990	13.2	21.1	335670	13.3	20.6
50569	12.9	18.5	165517	13.0	19.4	466915	13.1	19.6	158060	13.2	20.6	370811	13.2	20.9	299944	13.3	20.3
79576	12.9	17.0	161863	13.0	19.0	188711	13.1	20.4	317757	13.2	19.9	344001	13.2	20.4	166010	13.3	19.2
216576	12.9	20.3	244482	13.0	19.7	303792	13.1	21.0	166683	13.2	18.9	98865	13.2	18.5	79898	13.3	19.1
139981	12.9	19.6	10777	13.0	16.5	89111	13.1	18.9	256202	13.2	20.8	487670	13.2	19.7	106267	13.3	19.6
304040	12.9	20.0	500396	13.0	20.8	4733	13.1	15.9	504402	13.2	21.3	429673	13.2	20.5	439743	13.3	20.3
425812	12.9	20.7	294798	13.0	21.5	413932	13.1	21.2	206611	13.2	20.0	447376	13.2	21.3	295083	13.3	21.6
424780	12.9	20.7	458764	13.0	21.6	398347	13.1	19.4	10505	13.2	16.8	59939	13.2	18.5	148883	13.3	19.8
398328	12.9	20.0	173085	13.0	19.8	431133	13.1	20.7	397820	13.2	20.4	8768	13.2	16.9	299354	13.3	20.8
518907	12.9	20.8	31800	13.0	17.0	163519	13.1	18.7	432554	13.2	20.3	325259	13.2	21.3	33980	13.3	18.3
498653	12.9	21.2	265861	13.0	19.7	461806	13.1	20.1	217845	13.2	19.3	423954	13.2	21.5	4064	13.3	17.1
230522	12.9	20.9	524701	13.0	21.7	50317	13.1	18.1	513868	13.2	20.2	378680	13.2	20.1	85315	13.3	19.7
216153	12.9	20.0	338425	13.0	21.2	356730	13.1	20.5	377413	13.2	22.0	229020	13.2	19.2	400347	13.3	20.5
421172	12.9	20.6	32856	13.0	17.6	378985	13.1	21.1	270437	13.2	19.7	347179	13.2	19.2	225522	13.3	18.7
344315	12.9	20.1	354080	13.0	20.8	5762	13.1	16.8	202254	13.2	20.1	82041	13.2	19.7	501526	13.3	20.9
357374	12.9	19.0	131274	13.0	19.2	360399	13.1	22.3	160297	13.2	20.0	139618	13.2	19.0	358121	13.3	19.3
154322	12.9	20.6	51841	13.0	18.6	167605	13.1	20.3	171934	13.2	20.3	59349	13.2	18.1	497126	13.3	19.2
269403	12.9	20.8	345578	13.0	20.8	155811	13.1	19.5	428264	13.2	21.1	330439	13.2	20.2	528367	13.3	21.7
16111	12.9	16.7	471497	13.0	21.0	475764	13.1	20.8	129598	13.2	19.7	329563	13.2	20.5	434677	13.3	19.6
403811	12.9	21.7	360251	13.0	20.1	284676	13.1	20.6	523877	13.2	19.7	298780	13.2	19.5	58509	13.3	18.9
154316	12.9	18.5	407866	13.1	20.2	388315	13.1	21.6	312143	13.2	20.4	372952	13.2	20.7	138624	13.3	19.0
10899	12.9	18.9	413009	13.1	21.8	534613	13.1	22.5	459870	13.2	21.2	390558	13.2	21.6	525994	13.3	21.1
482945	12.9	20.9	18435	13.1	17.4	34429	13.1	19.3	304094	13.2	19.2	165553	13.2	20.2	38409	13.3	17.6
279565	12.9	21.5	83796	13.1	19.6	466691	13.1	21.1	301272	13.2	21.1	436018	13.2	21.7	491687	13.3	21.1
30297	12.9	16.5	487553	13.1	20.6	534434	13.1	21.1	452820	13.2	21.0	116615	13.2	17.9	346840	13.3	20.9
415026	12.9	20.5	148710	13.1	19.5	213750	13.1	20.5	368978	13.2	20.7	19397	13.2	18.1	416040	13.3	21.1
200946	12.9	20.4	25899	13.1	18.9	434562	13.1	20.6	94967	13.2	19.0	390629	13.3	20.7	61769	13.3	19.4
160701	12.9	19.0	281923	13.1	19.8	83130	13.1	18.1	213408	13.2	21.2	351984	13.3	21.2	332643	13.3	20.3
150251	13.0	18.3	44437	13.1	17.7	123195	13.1	19.4	64540	13.2	19.5	175460	13.3	20.5	525185	13.3	21.5
214645	13.0	20.7	527750	13.1	21.9	492781	13.1	19.6	338473	13.2	21.4	728	13.3	15.8	2670	13.3	15.9
439362	13.0	21.2	127090	13.1	19.4	12735	13.1	16.8	289921	13.2	20.3	309853	13.3	21.4	191870	13.3	19.7
417718	13.0	20.0	123780	13.1	20.2	184468	13.1	19.7	425432	13.2	21.0	59764	13.3	17.2	259265	13.3	19.6
28322	13.0	17.3	151112	13.1	19.7	348896	13.1	21.3	47018	13.2	19.1	241560	13.3	19.0	32339	13.3	19.3
89463	13.0	18.8	124899	13.1	20.2	190037	13.1	20.4	420543	13.2	19.9	350704	13.3	22.0	158975	13.3	20.4
417736	13.0	20.6	497729	13.1	21.1	208981	13.1	20.5	534079	13.2	20.4	159306	13.3	19.2	43376	13.3	18.4
111216	13.0	19.4	148877	13.1	19.4	498787	13.1	21.0	287608	13.2	20.5	69568	13.3	17.8	194326	13.3	19.6
337577	13.0	20.8	31187	13.1	18.5	197023	13.1	20.3	25446	13.2	17.9	149990	13.3	19.3	186106	13.3	20.3
397168	13.0	20.0	491645	13.1	21.9	490179	13.1	21.3	83551	13.2	19.4	39033	13.3	18.4	439595	13.3	20.8
569	13.0	14.6	112773	13.1	20.2	29041	13.1	19.4	147957	13.2	20.4	203329	13.3	20.5	293052	13.3	20.0
284443	13.0	20.7	144755	13.1	19.1	448307	13.1	21.2	124642	13.2	19.6	536664	13.3	20.6	242077	13.3	19.7
400528	13.0	22.1	229624	13.1	20.4	378911	13.1	21.4	450432	13.2	20.8	498287	13.3	21.2	499458	13.3	20.9
379975	13.0	21.1	52062	13.1	19.4	92379	13.1	18.3									

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
100079	13.3	19.9	369652	13.4	20.3	309402	13.5	20.8	529418	13.6	21.8	449238	13.6	21.0	305655	13.7	20.9
457554	13.3	21.1	173912	13.4	21.2	26546	13.5	19.0	424103	13.6	22.2	430043	13.6	20.5	56549	13.7	19.0
98351	13.3	18.8	173966	13.4	20.7	297049	13.5	19.8	203738	13.6	20.7	194641	13.6	20.0	148726	13.7	19.9
491211	13.4	21.0	364234	13.4	20.1	213202	13.5	21.3	292239	13.6	21.4	264447	13.6	18.5	23463	13.7	18.5
87453	13.4	18.8	357952	13.4	21.2	492416	13.5	19.7	87101	13.6	16.9	500735	13.6	21.3	55783	13.7	19.0
110402	13.4	19.4	214667	13.4	20.9	299054	13.5	21.3	334806	13.6	19.5	111704	13.6	19.2	466715	13.7	21.7
59393	13.4	19.1	42025	13.4	18.9	186576	13.5	20.5	402504	13.6	19.3	78921	13.6	18.8	96905	13.7	18.9
380071	13.4	20.5	384156	13.4	21.8	173756	13.5	19.7	121996	13.6	19.4	183575	13.6	19.1	468528	13.7	20.9
470495	13.4	20.6	218676	13.4	18.6	476642	13.5	21.9	320760	13.6	20.3	451654	13.6	21.5	190397	13.7	21.0
374539	13.4	20.6	424993	13.4	20.9	533781	13.5	20.0	501002	13.6	20.9	229595	13.6	19.6	194857	13.7	19.2
79625	13.4	19.9	365090	13.4	20.7	212031	13.5	19.6	491871	13.6	20.5	141244	13.6	19.9	208957	13.7	21.6
240329	13.4	18.8	386515	13.4	20.8	54582	13.5	19.3	488976	13.6	20.5	387885	13.6	19.6	379741	13.7	20.0
387493	13.4	20.6	288561	13.4	19.4	190304	13.5	19.8	215822	13.6	19.6	421629	13.6	20.1	181547	13.7	20.8
264509	13.4	21.1	240617	13.4	20.0	152777	13.5	18.7	399545	13.6	20.8	426326	13.6	21.2	43068	13.7	19.0
251404	13.4	20.7	68739	13.4	18.7	213849	13.5	21.4	385110	13.6	20.9	371057	13.6	20.2	76301	13.7	19.1
459023	13.4	21.9	522673	13.4	20.7	150452	13.5	19.6	437719	13.6	21.5	305639	13.6	20.4	227334	13.7	20.0
288312	13.4	19.1	132078	13.4	18.8	425232	13.5	21.1	281978	13.6	19.3	542785	13.6	19.2	230498	13.7	19.9
311352	13.4	19.8	265658	13.4	20.8	350163	13.5	20.3	417080	13.6	22.0	208924	13.6	19.9	234044	13.7	19.7
344351	13.4	20.8	295395	13.4	20.1	367200	13.5	21.1	340396	13.6	20.6	331202	13.6	20.7	382714	13.7	20.7
104321	13.4	19.3	302512	13.4	19.9	35766	13.5	18.9	37014	13.6	18.7	172022	13.7	20.7	500710	13.7	22.3
268555	13.4	20.2	138612	13.4	19.3	90265	13.5	18.4	469774	13.6	21.9	402885	13.7	21.5	82473	13.7	18.7
508004	13.4	21.1	538569	13.4	21.1	153724	13.5	19.6	89578	13.6	20.6	389656	13.7	20.8	107256	13.7	20.0
407778	13.4	20.8	205789	13.4	19.7	530728	13.5	20.7	460362	13.6	19.6	221248	13.7	19.4	463779	13.7	20.9
406260	13.4	21.0	179984	13.4	20.2	286468	13.5	20.8	256763	13.6	21.1	44821	13.7	17.9	419205	13.7	21.1
301049	13.4	19.3	415107	13.4	21.0	369846	13.5	21.0	354097	13.6	20.7	465672	13.7	21.0	372578	13.7	20.0
150345	13.4	20.0	353821	13.4	20.5	396975	13.5	21.4	288826	13.6	21.1	24771	13.7	17.8	505193	13.7	20.8
374996	13.4	20.0	241512	13.4	19.5	95077	13.5	20.4	518389	13.6	21.1	531348	13.7	20.1	173282	13.7	20.8
519582	13.4	20.1	296084	13.4	19.4	153970	13.5	19.7	156475	13.6	20.1	38961	13.7	19.5	466813	13.7	20.4
216822	13.4	20.2	210688	13.4	20.2	522209	13.5	21.0	325912	13.6	19.8	202655	13.7	19.9	48254	13.7	19.3
172552	13.4	20.5	27466	13.4	18.5	432030	13.5	20.9	497853	13.6	21.4	304641	13.7	20.1	336501	13.7	20.9
523713	13.4	21.9	414911	13.4	21.9	430612	13.5	21.1	295712	13.6	20.4	427424	13.7	20.6	391477	13.7	19.8
232619	13.4	19.1	178008	13.4	21.8	256319	13.5	20.1	30271	13.6	18.4	246374	13.7	20.2	469433	13.7	18.6
527123	13.4	21.8	69850	13.4	18.4	372427	13.5	19.5	285785	13.6	21.6	437027	13.7	20.7	304847	13.7	19.5
470098	13.4	21.1	427211	13.4	21.5	89253	13.5	18.9	57287	13.6	19.9	167876	13.7	19.7	138567	13.7	19.2
422229	13.4	20.0	405356	13.4	21.4	175789	13.5	19.7	459534	13.6	20.2	508449	13.7	20.7	39949	13.7	17.7
240759	13.4	19.2	210680	13.4	19.5	224511	13.5	20.6	65672	13.6	18.3	429998	13.7	21.2	287511	13.7	21.4
389134	13.4	21.6	94229	13.4	19.2	29803	13.5	19.7	486033	13.6	20.7	74315	13.7	18.4	283548	13.7	20.8
534759	13.4	20.3	173279	13.4	20.4	292031	13.5	20.0	35262	13.6	18.0	1963	13.7	15.2	417416	13.7	20.2
369353	13.4	20.5	30557	13.4	19.4	370754	13.5	20.9	11487	13.6	18.2	202894	13.7	22.0	147507	13.7	19.0
320894	13.4	21.3	234716	13.5	19.7	173096	13.5	20.1	248991	13.6	19.6	497787	13.7	21.0	208947	13.7	21.5
513534	13.4	21.1	5742	13.5	16.0	458886	13.5	20.9	302071	13.6	20.6	145088	13.7	19.6	41759	13.7	19.2
52368	13.4	19.4	492632	13.5	20.6	105346	13.5	18.9	488033	13.6	20.8	302489	13.7	19.4	480783	13.7	20.4
535835	13.4	20.5	37842	13.5	18.5	525001	13.5	21.3	277162	13.6	20.0	428781	13.7	20.8	423467	13.7	21.4
512936	13.4	19.9	55213	13.5	17.7	171544	13.5	18.9	423691	13.6	22.2	286191	13.7	20.5	117044	13.7	18.5
428023	13.4	21.8	291327	13.5	19.9	125097	13.5	19.6	299198	13.6	21.1	400266	13.7	20.8	84087	13.7	19.7
185323	13.4	20.2	505296	13.5	21.7	214805	13.5	19.5	451047	13.6	20.5	416143	13.7	21.4	348867	13.7	20.7
103899	13.4	18.7	105065	13.5	18.1	110376	13.5	17.8	328247	13.6	20.9	248382	13.7	20.2	292996	13.7	21.3
217986	13.4	20.0	465140	13.5	22.4	68424	13.5	19.1	535698	13.6	22.1	105803	13.7	19.7	304160	13.7	20.7
298963	13.4	20.0	317163	13.5	20.7	281094	13.5	20.1	399413	13.6	20.9	290058	13.7	20.3	294440	13.7	20.9
166065	13.4	19.0	114758	13.5	18.4	466028	13.5	19.4	261294	13.6	19.8	57424	13.7	18.6	404574	13.7	20.7
505695	13.4	20.8	431866	13.5	21.0	222273	13.5	20.3	322437	13.6	19.4	130747	13.7	19.9	399732	13.7	20.9
376952	13.4	19.7	529254	13.5	21.9	542137	13.5	20.6	303261	13.6	18.6	314860	13.7	20.2	102064	13.7	19.3
278992	13.4	20.4	83053	13.5	18.9	16539	13.5	18.3	171483	13.6	20.9	127677	13.7	20.0	244212	13.7	20.2
109231	13.4	18.3	37590	13.5	18.9	388376	13.5	21.2	539149	13.6	20.7	502293	13.7	20.8	284310	13.7	20.3
470247	13.4	21.8	210978	13.5	19.7	433791	13.5	20.9	382739	13.6	20.5	454380	13.7	20.2	352756	13.7	21.3
238868	13.4	20.7	30608	13.5	17.9	198084	13.5	20.7	264754	13.6	20.3	272545	13.7	21.5	352618	13.7	20.4
206958	13.4	19.6	232495	13.5	19.1	8487	13.5	17.8	313804	13.6	21.6	368241	13.7	20.8	31342	13.7	17.2
2353	13.4	15.2	538711	13.5	20.3	445041	13.5	20.0	385923	13.6	20.1	270659	13.7	19.1	14582	13.7	17.9
350963	13.4	19.8	37921	13.5	18.7	294447	13.5	19.8	221288	13.6	19.0	316032	13.7	20.7	222787	13.7	20.8
300005	13.4	19.5	486846	13.5	19.7	167637	13.5	19.8	468347	13.6	20.4	257180	13.7	20.2	297516	13.7	23.0
131072	13.4	19.5	145112	13.5	18.8	471399	13.5	21.0	92748	13.6	20.1	55709	13.7	17.5	529318	13.7	21.8
347688	13.4	20.6	304707	13.5	19.8	82118	13.5	18.2	377408	13.6	20.4	95714	13.7	18.8	371706	13.7	20.3
38836	13.4	18.7	105094	13.5	18.5	33476	13.5	16.8	503031	13.6	20.7	365161	13.7	19.6	468250	13.7	19.8
455591	13.4	23.3	100141	13.5	19.9	536100	13.5	20.9	62352	13.6	18.9	60191	13.7	18.4	167993	13.7	20.1
375974	13.4	21.2	501127	13.5	20.8	55676	13.5	19.4	209337	13.6	19.9	58014	13.7	18.7	258363	13.7	20.5
293502	13.4	20.5	106496	13.5	19.8	538048	13.5	21.6	166985	13.6	18.5	157515	13.7	19.5	170427	13.8	20.5
502012	13.4	20.6	232556	13.5	20.1	304543	13.5	19.3	226908	13.6	20.1	267386	13.7	20.7	133287	13.8	19.3
191818	13.4	19.2	227778	13.5	19.2	39136	13.5	19.0	215582	13.6	20.0	529814	13.7	20.5	438872	13.8	20.2
239873	13.4	19.3	170075	13.5	20.4	16											



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
483025	13.8	19.9	191001	13.8	19.8	60030	13.9	19.2	542189	13.9	21.2	121520	14.1	20.4	363783	14.1	21.6
441815	13.8	20.4	415895	13.8	21.5	110698	13.9	19.2	303730	13.9	20.7	400840	14.1	19.3	23138	14.1	17.7
390487	13.8	20.5	53992	13.8	18.2	203881	13.9	20.5	371751	13.9	19.6	278192	14.1	20.1	305748	14.1	20.3
117395	13.8	19.4	505541	13.8	20.6	122255	13.9	19.4	435371	13.9	20.6	194269	14.1	19.9	179392	14.1	21.4
171338	13.8	19.7	173446	13.8	19.8	528462	13.9	20.4	236140	13.9	20.4	285116	14.1	19.7	500943	14.1	21.4
389976	13.8	20.9	36708	13.8	18.1	391730	13.9	21.8	483968	13.9	20.3	425152	14.1	20.2	373442	14.1	21.1
422069	13.8	20.1	81591	13.8	18.6	170783	13.9	20.3	528468	13.9	21.8	516152	14.1	20.2	258841	14.1	20.4
283937	13.8	19.1	146885	13.9	19.7	405013	13.9	20.9	241627	13.9	19.1	544874	14.1	21.1	127217	14.1	21.0
242397	13.8	19.8	534757	13.9	21.9	501224	13.9	21.0	412568	13.9	19.3	326444	14.1	20.5	470212	14.1	20.5
204648	13.8	20.6	521162	13.9	21.0	298918	13.9	20.8	498203	13.9	21.6	430024	14.1	21.3	208345	14.1	20.5
376557	13.8	21.1	73535	13.9	18.6	430818	13.9	21.2	341542	13.9	21.3	404500	14.1	21.2	513164	14.1	20.8
157236	13.8	19.2	184440	13.9	19.8	439323	13.9	20.8	331066	13.9	20.5	333957	14.1	20.8	167859	14.1	20.4
415714	13.8	21.0	75062	13.9	18.7	42849	13.9	19.7	115236	13.9	19.9	186161	14.1	20.3	249004	14.1	19.3
438167	13.8	21.4	449098	13.9	21.6	526519	13.9	22.4	46247	13.9	18.5	418204	14.1	20.6	46842	14.1	18.6
179383	13.8	19.7	383702	13.9	19.6	33302	13.9	16.8	87809	13.9	18.9	24137	14.1	19.1	375945	14.1	20.1
192329	13.8	20.2	416079	13.9	20.0	65193	13.9	19.0	417244	13.9	21.1	531689	14.1	20.4	22274	14.1	16.7
372906	13.8	20.5	492766	13.9	20.4	377188	13.9	20.9	6077	13.9	16.4	286625	14.1	19.1	200768	14.1	19.6
90198	13.8	18.3	101923	13.9	19.7	429989	13.9	21.4	235221	13.9	20.3	272981	14.1	20.3	61338	14.1	19.3
325217	13.8	18.6	104059	13.9	18.4	72580	13.9	19.2	141240	13.9	20.8	445914	14.1	20.6	29368	14.1	18.0
300578	13.8	19.7	195026	13.9	20.5	8942	13.9	18.1	72820	13.9	19.5	425149	14.1	21.1	497041	14.1	21.3
295336	13.8	20.1	491945	13.9	20.8	63725	13.9	18.9	404047	13.9	21.4	110862	14.1	19.2	30762	14.1	19.5
270157	13.8	20.0	387045	13.9	21.4	21609	13.9	18.1	461397	13.9	22.7	105000	14.1	18.7	188884	14.1	20.5
300900	13.8	21.6	23211	13.9	18.0	377415	13.9	19.9	390556	13.9	21.2	330526	14.1	20.2	434510	14.1	20.7
145415	13.8	19.0	471478	13.9	20.8	166288	13.9	19.3	506259	13.9	19.6	466179	14.1	20.7	392403	14.1	20.4
437680	13.8	21.2	202161	13.9	20.4	109198	13.9	20.0	29200	14.0	17.0	465105	14.1	22.7	61059	14.1	18.6
136396	13.8	19.0	73155	13.9	19.2	198643	13.9	20.1	98076	14.0	18.9	28278	14.1	17.5	500978	14.1	20.5
224437	13.8	20.4	301688	13.9	19.2	351539	13.9	20.8	331222	14.0	20.3	299509	14.1	20.1	153459	14.1	21.3
324567	13.8	21.4	350263	13.9	20.7	420705	13.9	20.3	464293	14.0	21.3	360034	14.1	21.2	108886	14.1	19.5
230667	13.8	19.4	337914	13.9	21.4	183393	13.9	20.1	297659	14.0	20.2	534883	14.1	22.2	376289	14.1	21.2
194538	13.8	19.6	1438	13.9	16.1	49485	13.9	18.2	102915	14.0	20.1	420678	14.1	20.5	195473	14.1	18.5
28919	13.8	16.4	535286	13.9	20.8	293308	13.9	20.3	214238	14.0	20.8	119951	14.1	20.6	271305	14.1	20.2
286093	13.8	19.4	264618	13.9	20.6	239922	13.9	18.7	354053	14.0	20.8	535190	14.1	20.6	57484	14.1	18.6
181053	13.8	19.2	450192	13.9	21.6	417559	13.9	21.8	325622	14.0	18.9	434301	14.1	21.6	210731	14.1	19.8
354142	13.8	21.3	23371	13.9	18.2	375253	13.9	21.0	210262	14.0	20.1	385897	14.1	20.7	199985	14.1	20.3
312934	13.8	21.0	209482	13.9	20.5	486175	13.9	19.5	142938	14.0	19.9	172732	14.1	18.8	70224	14.2	18.4
277	13.8	14.0	223466	13.9	20.0	336341	13.9	19.2	195215	14.0	20.4	532136	14.1	20.4	20019	14.2	18.1
232731	13.8	19.6	529221	13.9	22.4	316288	13.9	20.2	441849	14.0	21.2	114700	14.1	19.4	182564	14.2	20.2
498536	13.8	21.0	520115	13.9	20.2	502561	13.9	20.9	326456	14.0	21.0	168530	14.1	19.9	29312	14.2	19.7
146713	13.8	18.7	134861	13.9	19.4	405199	13.9	22.0	534115	14.0	21.2	507489	14.1	20.9	524082	14.2	19.8
267505	13.8	19.1	50073	13.9	18.8	188026	13.9	19.7	381443	14.0	20.6	437580	14.1	21.1	431590	14.2	20.7
47862	13.8	18.5	157586	13.9	20.1	268966	13.9	20.2	121096	14.0	17.4	486363	14.1	20.2	57682	14.2	18.0
434014	13.8	19.9	489116	13.9	21.9	70987	13.9	19.1	30396	14.0	18.7	451658	14.1	21.1	406389	14.2	21.5
206834	13.8	19.0	52701	13.9	18.9	252250	13.9	19.4	347735	14.0	21.0	138399	14.1	19.7	325192	14.2	21.1
447229	13.8	21.7	525715	13.9	21.4	267033	13.9	20.2	354143	14.0	20.7	447425	14.1	22.6	344002	14.2	20.0
11421	13.8	17.8	505574	13.9	20.8	507459	13.9	21.7	129220	14.0	19.0	161793	14.1	19.4	470238	14.2	21.7
150742	13.8	21.4	59815	13.9	18.6	127549	13.9	19.2	377366	14.0	20.7	492780	14.1	20.1	182388	14.2	19.1
271875	13.8	19.8	456534	13.9	19.9	4194	13.9	16.0	311998	14.0	18.8	193942	14.1	20.6	184129	14.2	19.2
531784	13.8	21.0	204649	13.9	20.2	66551	13.9	18.8	301993	14.0	20.2	392962	14.1	20.2	392574	14.2	20.0
433264	13.8	20.1	10764	13.9	17.7	500655	13.9	21.6	395926	14.0	21.1	453244	14.1	21.3	468124	14.2	20.9
278693	13.8	20.8	348866	13.9	22.2	162733	13.9	19.0	233503	14.0	19.7	109094	14.1	19.2	540211	14.2	20.2
237686	13.8	19.8	244137	13.9	19.9	1309	13.9	15.7	225267	14.0	19.7	226845	14.1	19.6	148653	14.2	20.6
438404	13.8	20.5	272753	13.9	22.0	347662	13.9	22.0	76215	14.0	18.1	327277	14.1	20.4	80091	14.2	18.6
325219	13.8	20.5	347656	13.9	21.0	382768	13.9	20.4	431880	14.0	21.1	338315	14.1	21.3	417755	14.2	21.0
173113	13.8	19.5	86954	13.9	18.4	262900	13.9	21.0	437462	14.0	20.9	498720	14.1	21.4	106221	14.2	19.8
340951	13.8	20.1	372538	13.9	20.2	28922	13.9	17.9	354977	14.0	19.2	240495	14.1	19.4	32205	14.2	18.4
18988	13.8	17.5	90361	13.9	18.8	290818	13.9	20.4	64240	14.0	19.3	241891	14.1	18.6	266197	14.2	21.1
492949	13.8	20.2	286603	13.9	21.1	526298	13.9	22.1	64422	14.0	19.1	254019	14.1	19.8	209470	14.2	21.3
292599	13.8	20.8	465146	13.9	22.4	97260	13.9	18.3	157353	14.0	19.8	232617	14.1	20.8	100653	14.2	20.3
405353	13.8	20.8	145604	13.9	18.1	407331	13.9	19.4	170129	14.0	20.7	284454	14.1	20.3	508763	14.2	20.8
287824	13.8	20.3	80057	13.9	17.9	203481	13.9	20.3	85227	14.0	19.4	239212	14.1	19.6	88809	14.2	19.4
505893	13.8	20.6	152919	13.9	17.9	218661	13.9	20.9	526711	14.0	22.5	344508	14.1	20.3	214452	14.2	19.5
97153	13.8	19.8	318108	13.9	19.1	354941	13.9	22.0	181216	14.0	20.2	248670	14.1	19.7	384263	14.2	21.1
234006	13.8	20.5	361721	13.9	20.0	532308	13.9	21.8	27818	14.0	18.7	36772	14.1	16.5	538874	14.2	21.3
527782	13.8	22.1	504649	13.9	20.5	256916	13.9	21.5	380871	14.0	20.7	423534	14.1	20.4	346822	14.2	20.7
59316	13.8	19.5	82537	13.9	19.0	498754	13.9	21.3	526054	14.0	22.3	434946	14.1	20.4	378800	14.2	20.8
471440	13.8	21.2	320807	13.9	19.6	202473	13.9	19.4	151287	14.0	19.4	506177	14.1	20.3	33151	14.2	19.0
93654	13.8	18.6	379229	13.9	20.8	523719	13.9	22.6	341740	14.0	20.2	537945	14.1	20.0	52725	14.2	19.1
134251	13.8	19.1	361658	13.9	20.3	223708	13.9	19.3	473493	14.0	21.8	194742	14.1	20.9	253895	14.2	19.2
332135	13.8	20.1	238917	13.9	19.8	386566											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
503545	14.2	20.2	37743	14.3	19.8	172387	14.3	19.2	61744	14.4	18.7	534350	14.5	21.1	299947	14.5	20.2
57564	14.2	19.6	379409	14.3	20.8	110074	14.3	19.6	504178	14.4	22.0	425019	14.5	19.3	123668	14.5	19.9
351223	14.2	18.5	508615	14.3	21.0	90576	14.3	19.9	501372	14.4	21.5	159899	14.5	19.4	462934	14.5	20.5
378849	14.2	20.7	261209	14.3	21.2	300203	14.3	20.1	1684	14.4	14.7	381384	14.5	20.7	310006	14.5	19.5
309249	14.2	20.0	153134	14.3	18.3	298811	14.3	20.1	431827	14.4	22.0	543759	14.5	21.0	341400	14.5	20.4
432182	14.2	20.7	233271	14.3	20.2	120775	14.3	18.8	214721	14.4	20.6	324058	14.5	19.9	356473	14.5	20.7
370717	14.2	21.7	119379	14.3	20.4	305401	14.3	20.5	326478	14.4	20.0	158574	14.5	18.3	344575	14.5	20.4
396957	14.2	20.7	34908	14.3	17.9	344833	14.3	19.2	366436	14.4	21.9	177725	14.5	19.8	11198	14.5	17.9
56056	14.2	17.6	535472	14.3	21.1	120684	14.3	21.1	17469	14.4	16.3	341598	14.5	20.1	527647	14.5	21.0
496561	14.2	19.6	31535	14.3	18.0	243039	14.3	20.2	252494	14.4	20.1	383850	14.5	19.3	221059	14.5	19.5
193728	14.2	20.5	382242	14.3	20.6	108784	14.3	17.6	354043	14.4	21.1	240574	14.5	20.2	275362	14.5	19.6
203796	14.2	19.6	246968	14.3	19.2	368974	14.3	20.9	417833	14.4	19.8	376251	14.5	20.8	310401	14.5	18.4
210974	14.2	21.1	465332	14.3	21.2	435381	14.3	19.8	219518	14.4	18.9	264734	14.5	19.4	86362	14.5	18.5
87915	14.2	19.2	489350	14.3	20.9	156478	14.3	19.8	245461	14.4	19.6	430378	14.5	20.9	111318	14.5	19.8
357521	14.2	19.5	277963	14.3	21.2	423680	14.3	21.8	167107	14.4	20.5	383754	14.5	21.2	192113	14.5	19.9
343111	14.2	21.6	343055	14.3	20.2	241482	14.3	18.9	144271	14.4	19.6	18282	14.5	19.6	320591	14.5	20.6
276629	14.2	20.3	437464	14.3	20.5	30239	14.3	17.6	174003	14.4	20.7	48838	14.5	19.2	192421	14.5	19.5
69484	14.2	18.9	310892	14.3	20.8	109391	14.3	20.7	297201	14.4	20.1	199270	14.5	20.4	196573	14.5	19.8
501074	14.2	20.9	246178	14.3	20.4	82943	14.3	18.9	209209	14.4	20.5	362062	14.5	21.7	235590	14.5	19.6
3363	14.2	16.3	155363	14.3	19.4	38776	14.3	17.8	196209	14.4	19.5	131769	14.5	19.9	122214	14.5	18.9
533909	14.2	20.5	5226	14.3	16.6	313826	14.3	19.3	291278	14.4	19.4	32246	14.5	16.9	347722	14.5	20.2
349409	14.2	21.0	281479	14.3	20.3	391616	14.3	20.9	468749	14.4	20.0	36646	14.5	18.3	125194	14.5	19.6
30301	14.2	17.0	453579	14.3	20.3	39098	14.3	19.6	192973	14.4	20.5	21510	14.5	17.7	116569	14.5	19.1
243049	14.2	19.0	286157	14.3	20.9	203554	14.3	20.5	116971	14.4	18.7	133122	14.5	19.3	36075	14.5	18.5
286375	14.2	20.5	330522	14.3	21.1	437572	14.3	20.6	522824	14.4	21.6	485418	14.5	21.5	106849	14.5	19.5
93674	14.2	20.0	51344	14.3	19.0	246502	14.3	20.2	292691	14.4	20.5	351629	14.5	19.0	318807	14.5	19.7
95625	14.2	23.1	60080	14.3	18.3	429968	14.3	20.0	420503	14.4	19.8	269398	14.5	20.7	106716	14.5	19.5
68663	14.2	18.0	148601	14.3	21.1	14719	14.3	18.0	71205	14.4	19.0	51947	14.5	18.8	191260	14.5	20.2
518983	14.2	20.4	534762	14.3	21.4	19844	14.3	18.2	324016	14.4	19.0	114004	14.5	20.5	542478	14.5	19.8
417606	14.2	19.8	160885	14.3	19.3	122356	14.3	19.8	373488	14.4	20.9	347222	14.5	19.5	146459	14.5	20.7
192687	14.2	19.8	250200	14.3	21.3	302867	14.3	19.3	173881	14.4	20.8	240215	14.5	21.1	159088	14.5	19.6
203885	14.2	20.0	524820	14.3	20.6	154299	14.3	20.0	425267	14.4	21.7	534023	14.5	21.5	460327	14.5	21.1
362643	14.2	20.8	468643	14.3	20.1	450493	14.3	22.3	489763	14.4	21.9	456855	14.5	21.0	303384	14.5	20.7
406351	14.2	20.7	448268	14.3	21.6	7606	14.3	18.5	435017	14.4	20.5	431454	14.5	20.6	281655	14.5	21.2
294431	14.2	21.1	126744	14.3	19.3	538813	14.3	19.3	47177	14.4	18.5	512705	14.5	22.7	393136	14.5	21.6
527703	14.2	22.1	141371	14.3	21.1	342992	14.3	21.7	468187	14.4	19.9	450973	14.5	20.9	313755	14.5	21.4
102118	14.2	20.1	209935	14.3	19.3	528885	14.4	21.6	305519	14.4	21.1	299929	14.5	21.1	266536	14.5	20.7
413849	14.2	21.5	50919	14.3	18.1	418290	14.4	20.2	204624	14.4	19.6	350296	14.5	20.4	329831	14.5	19.6
350431	14.2	21.0	14369	14.3	18.3	324472	14.4	21.0	198514	14.4	20.3	509022	14.5	20.8	36156	14.5	16.9
92894	14.2	20.4	353875	14.3	20.9	71724	14.4	19.4	213933	14.4	21.1	148097	14.5	19.0	171933	14.5	20.2
4334	14.2	18.3	123354	14.3	18.7	420743	14.4	21.0	328442	14.4	21.1	215377	14.5	21.4	153833	14.5	19.4
492338	14.2	20.8	341823	14.3	21.5	498132	14.4	21.6	156498	14.4	19.4	417031	14.5	21.5	525794	14.5	21.4
758	14.2	13.6	89899	14.3	19.0	452341	14.4	20.5	533809	14.4	22.2	501405	14.5	20.4	102487	14.5	20.0
384754	14.2	20.4	319609	14.3	21.3	122003	14.4	18.5	228291	14.4	20.6	237844	14.5	20.0	129140	14.5	19.5
31374	14.2	19.2	129503	14.3	17.8	453245	14.4	20.9	382432	14.4	21.0	251479	14.5	19.7	374518	14.5	20.6
531264	14.2	20.5	140926	14.3	19.5	274913	14.4	20.8	399354	14.4	20.0	276917	14.5	21.7	116410	14.5	18.4
377336	14.2	19.6	392213	14.3	21.3	538520	14.4	21.4	26529	14.4	17.6	426637	14.5	20.6	90973	14.5	19.2
504175	14.2	22.7	529091	14.3	21.4	19304	14.4	18.4	50518	14.4	19.8	300072	14.5	20.8	349085	14.5	19.8
170729	14.2	19.8	223778	14.3	20.1	409805	14.4	19.2	83328	14.4	20.0	528801	14.5	21.6	293947	14.5	20.4
445125	14.2	22.1	25871	14.3	16.2	352448	14.4	19.9	205694	14.4	20.1	139683	14.5	20.2	328252	14.5	20.2
114345	14.2	18.8	104794	14.3	19.4	423206	14.4	19.8	525205	14.4	21.5	503400	14.5	20.3	347348	14.5	20.3
419777	14.2	21.9	210113	14.3	19.9	534650	14.4	20.4	293433	14.4	20.4	63039	14.5	18.5	233650	14.5	18.8
24841	14.2	19.0	540229	14.3	21.2	44807	14.4	17.1	229674	14.4	19.4	534794	14.5	20.0	101839	14.5	18.2
157543	14.2	19.4	141332	14.3	20.1	169960	14.4	19.5	411426	14.4	21.5	265641	14.5	20.9	348857	14.5	20.3
291273	14.2	19.9	170799	14.3	19.5	461399	14.4	20.9	499709	14.4	19.8	384869	14.5	21.3	133511	14.5	19.1
5266	14.2	18.1	525626	14.3	19.8	235647	14.4	20.2	463469	14.4	20.3	533758	14.5	21.8	518799	14.5	20.3
397360	14.2	21.5	202830	14.3	20.0	351505	14.4	20.7	481031	14.4	20.9	500456	14.5	21.1	381409	14.6	20.2
495217	14.2	20.9	310969	14.3	20.7	328299	14.4	21.1	527309	14.4	22.5	328279	14.5	21.0	457533	14.6	21.6
219795	14.2	20.5	497185	14.3	21.6	310921	14.4	20.9	195780	14.4	20.1	366949	14.5	21.4	464946	14.6	21.0
377970	14.2	20.9	172414	14.3	19.5	309322	14.4	19.4	387281	14.4	21.4	424986	14.5	20.5	31373	14.6	17.0
437605	14.2	21.1	469004	14.3	21.2	212592	14.4	20.2	498697	14.4	20.8	213220	14.5	19.1	30806	14.6	19.6
327323	14.2	20.4	70431	14.3	19.3	486852	14.4	20.1	537976	14.4	20.4	439290	14.5	21.4	185053	14.6	20.2
310328	14.2	21.0	528601	14.3	21.8	136062	14.4	20.0	143528	14.4	19.9	428209	14.5	23.6	241465	14.6	20.6
144075	14.2	19.8	367417	14.3	20.7	44114	14.4	18.6	200736	14.4	19.4	466610	14.5	19.7	245298	14.6	19.6
98135	14.2	19.1	41771	14.3	19.0	57129	14.4	18.2	403924	14.4	20.6	153162	14.5	20.1	224615	14.6	20.4
491097	14.2	20.6	194838	14.3	20.1	481240	14.4	21.0	272761	14.4	21.0	188952	14.5	20.0	536219	14.6	20.6
350011	14.2	19.2	181133	14.3	19.9	92801	14.4	19.6	54233	14.4	18.5	502206	14.5	21.7	447811	14.6	22.1
122546	14.2	19.0	9060	14.3	16.8	411687	14.4	21.5	430149	14.4	21.6	432207	14.5	20.1	310052	14.6	19.1
47969	14.2	19.1	446875	14.3	21.7	533948											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
50832	14.6	18.5	469167	14.6	20.5	241353	14.7	19.6	245279	14.8	19.3	142711	14.8	20.3	420735	14.9	21.0
470226	14.6	21.7	428842	14.6	21.3	491812	14.7	20.8	58271	14.8	17.7	403321	14.8	21.4	118967	14.9	19.0
236624	14.6	20.9	496064	14.6	20.7	345728	14.7	19.8	6984	14.8	17.3	83965	14.8	17.5	60050	14.9	18.6
102735	14.6	18.8	4732	14.6	16.2	349870	14.7	21.0	41662	14.8	19.0	85697	14.8	17.6	40710	14.9	19.0
392749	14.6	21.5	514696	14.6	20.6	305888	14.7	20.6	8830	14.8	16.5	62633	14.8	18.4	339004	14.9	21.0
71923	14.6	18.8	95252	14.6	19.2	39018	14.7	19.8	286499	14.8	20.9	280335	14.8	20.1	470134	14.9	21.7
58831	14.6	18.5	537389	14.6	21.2	427396	14.7	21.3	189858	14.8	18.5	180520	14.8	20.6	155091	14.9	19.6
264174	14.6	20.9	535130	14.6	21.6	141306	14.7	20.1	481504	14.8	19.7	141246	14.8	19.9	130495	14.9	19.3
371161	14.6	21.0	297242	14.6	21.4	167046	14.7	19.8	148316	14.8	19.4	36577	14.8	17.3	333947	14.9	20.2
136633	14.6	19.9	69119	14.6	18.7	430725	14.7	20.3	304808	14.8	19.4	51970	14.8	18.7	386193	14.9	21.4
111852	14.6	19.3	256089	14.6	21.0	143276	14.7	19.5	426623	14.8	21.3	498314	14.8	21.4	198546	14.9	19.0
17421	14.6	18.3	15830	14.6	19.5	123524	14.7	18.8	351851	14.8	22.6	53686	14.8	17.8	422766	14.9	21.7
388815	14.6	21.0	326710	14.6	20.6	126092	14.7	20.1	501487	14.8	20.5	94216	14.8	19.8	455464	14.9	21.5
418394	14.6	20.5	523827	14.6	22.2	83015	14.7	19.4	24449	14.8	19.4	467355	14.8	19.9	115118	14.9	18.4
469158	14.6	19.5	170641	14.6	19.6	194059	14.7	19.4	284679	14.8	21.3	533294	14.8	21.1	417199	14.9	20.6
420737	14.6	21.1	248419	14.6	20.3	265409	14.7	19.4	368694	14.8	21.9	531636	14.8	21.5	402079	14.9	22.1
524539	14.6	20.0	132730	14.6	19.3	246943	14.7	19.8	447306	14.8	21.3	26630	14.8	17.7	520906	14.9	21.4
403917	14.6	20.8	371712	14.6	20.4	425654	14.7	20.6	66905	14.8	18.1	135077	14.8	19.0	231585	14.9	20.7
201067	14.6	20.4	501846	14.6	21.3	297656	14.7	20.5	143288	14.8	19.4	164130	14.8	19.9	2245	14.9	15.7
109226	14.6	21.2	436290	14.6	20.8	100349	14.7	18.5	126470	14.8	21.4	317779	14.8	20.2	128389	14.9	19.1
138522	14.6	18.8	524167	14.6	22.4	76777	14.7	17.8	135184	14.8	19.5	401493	14.8	19.7	412936	14.9	19.9
49944	14.6	17.4	245100	14.6	18.7	376749	14.7	21.6	117313	14.8	19.5	271624	14.8	19.3	123701	14.9	18.1
196230	14.6	19.8	345612	14.6	21.0	174025	14.7	20.4	157792	14.8	20.2	353928	14.8	21.1	233122	14.9	20.4
361623	14.6	20.2	505076	14.7	21.5	80029	14.7	18.7	9382	14.8	17.6	360174	14.8	19.5	377149	14.9	20.7
501521	14.6	21.3	93776	14.7	19.1	81391	14.7	18.8	3415	14.8	17.0	404936	14.8	19.9	62040	14.9	19.5
30	14.6	10.9	138714	14.7	19.0	243020	14.7	19.5	123215	14.8	18.8	188656	14.8	20.1	182166	14.9	21.5
363329	14.6	20.5	283525	14.7	20.7	72456	14.7	18.9	7347	14.8	17.0	202432	14.8	18.4	531639	14.9	22.0
46311	14.6	18.5	307488	14.7	19.4	415971	14.7	21.1	411263	14.8	21.5	287542	14.8	19.9	432584	14.9	21.2
346274	14.6	20.5	533139	14.7	21.3	338336	14.7	21.5	150565	14.8	21.0	391786	14.8	19.2	421073	14.9	20.9
310220	14.6	20.2	453819	14.7	21.5	516793	14.7	21.0	504256	14.8	22.3	153071	14.8	20.2	471927	14.9	19.9
52477	14.6	18.3	156453	14.7	20.1	25856	14.7	17.9	374164	14.8	20.2	495207	14.8	21.1	306681	14.9	20.8
464200	14.6	20.9	315710	14.7	20.5	56840	14.7	18.2	151144	14.8	19.6	338595	14.8	18.4	435408	14.9	20.6
392502	14.6	21.2	300282	14.7	20.1	353706	14.7	21.5	132225	14.8	19.5	536578	14.8	19.5	375744	14.9	18.8
219821	14.6	19.9	88267	14.7	23.6	380074	14.7	20.2	64125	14.8	19.4	245172	14.8	20.9	514871	14.9	21.0
176671	14.6	19.6	469090	14.7	20.3	345685	14.7	20.9	500751	14.8	22.1	386599	14.8	21.0	11745	14.9	16.4
253238	14.6	20.8	18971	14.7	18.2	48995	14.7	17.9	533122	14.8	21.7	34822	14.8	17.4	421478	14.9	21.1
513019	14.6	21.3	341798	14.7	21.5	488243	14.7	20.1	539222	14.8	21.1	326725	14.8	18.0	544369	14.9	21.7
490483	14.6	21.4	530141	14.7	22.4	106822	14.7	20.0	211854	14.8	18.9	275690	14.8	18.6	4275	14.9	18.4
286200	14.6	19.9	365484	14.7	19.6	500753	14.7	21.7	150991	14.8	20.1	272506	14.8	20.9	426803	14.9	20.1
349361	14.6	19.2	420313	14.7	19.8	298975	14.7	21.0	6463	14.8	15.4	317025	14.8	19.2	338430	14.9	21.1
369329	14.6	20.4	171064	14.7	19.8	134104	14.7	19.7	499447	14.8	20.7	257899	14.8	20.0	415989	14.9	20.7
217081	14.6	18.1	125826	14.7	18.8	255637	14.7	19.3	345434	14.8	21.1	375313	14.8	20.8	19416	14.9	18.0
391386	14.6	20.0	89955	14.7	19.4	508168	14.7	19.8	232350	14.8	20.0	343204	14.8	20.6	432315	14.9	19.4
401015	14.6	19.6	418374	14.7	21.0	527031	14.7	20.7	279270	14.8	20.0	25344	14.9	18.8	214996	14.9	20.3
134329	14.6	19.2	66015	14.7	18.0	495226	14.7	20.0	303853	14.8	19.7	187019	14.9	20.1	15786	14.9	17.0
86423	14.6	18.1	101579	14.7	19.4	17558	14.7	17.7	11163	14.8	17.7	120889	14.9	18.7	502789	14.9	20.8
528825	14.6	22.3	518530	14.7	20.9	42669	14.7	19.3	1872	14.8	17.8	492889	14.9	19.8	130051	14.9	18.3
339664	14.6	19.5	365808	14.7	20.2	48284	14.7	19.4	422720	14.8	21.3	89763	14.9	19.2	297290	14.9	21.3
283597	14.6	20.4	529831	14.7	21.4	288768	14.7	21.0	111370	14.8	19.9	143218	14.9	20.0	539131	14.9	21.1
345611	14.6	20.7	106831	14.7	21.0	353997	14.7	19.3	168403	14.8	19.3	188837	14.9	19.2	286081	14.9	20.1
147656	14.6	19.3	171929	14.7	20.9	333700	14.7	20.5	283004	14.8	19.8	524662	14.9	21.9	240746	14.9	20.3
248291	14.6	19.7	470223	14.7	21.3	219755	14.7	20.3	419478	14.8	19.9	163591	14.9	19.7	143509	14.9	19.7
64797	14.6	19.4	19378	14.7	17.5	538276	14.7	21.0	125542	14.8	19.4	353493	14.9	20.4	229501	14.9	20.5
234527	14.6	19.6	525954	14.7	22.4	428044	14.7	20.5	90209	14.8	17.6	346073	14.9	18.9	544754	14.9	20.2
122528	14.6	20.0	150883	14.7	20.4	450333	14.7	21.5	387226	14.8	20.3	341391	14.9	21.4	498664	14.9	22.1
374498	14.6	20.4	329319	14.7	19.9	30572	14.7	18.0	127736	14.8	19.0	38687	14.9	19.5	289784	14.9	19.7
262935	14.6	21.6	473768	14.7	21.1	458748	14.7	20.8	221196	14.8	19.7	228386	14.9	20.5	143395	14.9	18.9
428076	14.6	20.5	84734	14.7	19.4	263389	14.7	18.2	390060	14.8	22.2	349056	14.9	21.2	435396	14.9	21.3
248603	14.6	20.4	55390	14.7	19.0	144914	14.7	19.7	103378	14.8	19.4	454146	14.9	20.2	341737	14.9	20.7
384211	14.6	21.2	270290	14.7	22.3	415398	14.7	20.1	33432	14.8	18.6	219672	14.9	20.2	540519	14.9	21.7
211903	14.6	18.3	499867	14.7	20.8	33119	14.7	18.2	238128	14.8	20.1	55566	14.9	18.4	324554	14.9	20.7
300210	14.6	21.1	231	14.7	12.9	535165	14.7	21.2	428830	14.8	21.4	297486	14.9	20.2	455573	14.9	21.4
406743	14.6	20.9	105394	14.7	19.2	220317	14.7	19.7	222367	14.8	19.8	458758	14.9	22.0	264518	14.9	20.6
207416	14.6	19.6	61896	14.7	19.6	52221	14.7	18.8	543679	14.8	21.0	45857	14.9	16.5	543537	14.9	20.0
34886	14.6	15.4	59806	14.7	18.8	146857	14.7	21.0	453077	14.8	21.6	267949	14.9	20.6	31951	14.9	17.1
85289	14.6	19.1	306073	14.7	19.4	30792	14.7	19.2	26617	14.8	17.7	495385	14.9	20.5	375151	14.9	20.0
298944	14.6	21.2	159086	14.7	19.2	423992	14.7	20.5	303301	14.8	21.5	290371	14.9	20.9	188086	14.9	19.1
373409	14.6	20.5	533821	14.7	20.0	83781	14.7	19.5	94385	14.8	19.2	175926	14.9	20.1	203393	14.9	20.1
369849	14.6	20.2	128852	14.7	19.6	285250	14.7	19.8									

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
527694	14.9	20.4	236242	15.0	20.4	496492	15.1	20.5	22576	15.1	17.7	529296	15.2	21.4	356850	15.3	19.2
36320	14.9	18.4	83728	15.0	18.6	303285	15.1	20.8	236046	15.1	19.3	541911	15.2	20.7	435963	15.3	21.2
153159	14.9	19.9	425202	15.0	20.7	200648	15.1	18.8	504206	15.1	21.3	474215	15.2	20.3	437736	15.3	20.1
303428	14.9	20.7	473684	15.0	20.5	376020	15.1	20.9	158617	15.2	20.1	536743	15.2	22.2	504198	15.3	21.2
464147	14.9	21.1	2268	15.0	16.1	172586	15.1	19.6	27358	15.2	16.4	114684	15.2	18.8	228165	15.3	20.2
36410	14.9	17.6	312504	15.0	19.3	441403	15.1	20.6	262518	15.2	19.2	541613	15.2	20.2	148868	15.3	19.3
209572	14.9	21.0	505038	15.0	21.3	425535	15.1	20.3	78906	15.2	19.9	512892	15.2	21.5	331324	15.3	19.7
288976	14.9	19.6	535669	15.0	20.4	309081	15.1	19.3	69155	15.2	19.1	230808	15.2	19.6	536655	15.3	20.9
534157	14.9	21.5	457081	15.0	20.3	200040	15.1	20.7	464964	15.2	21.3	207914	15.2	20.5	413134	15.3	19.4
73697	14.9	18.1	540634	15.0	21.8	522362	15.1	20.5	322472	15.2	19.8	451236	15.2	19.5	497418	15.3	19.8
468512	14.9	20.6	233830	15.0	20.1	449203	15.1	20.4	126790	15.2	19.6	158973	15.2	20.2	432168	15.3	20.5
343247	14.9	20.9	82195	15.0	17.0	318068	15.1	18.8	335530	15.2	19.4	447078	15.2	21.2	303858	15.3	21.0
432329	14.9	22.1	499716	15.0	20.5	56252	15.1	18.3	39341	15.2	19.3	530328	15.2	20.5	112082	15.3	18.4
90043	14.9	20.3	224330	15.0	20.2	376001	15.1	20.8	462876	15.2	21.6	490654	15.2	21.6	50627	15.3	19.3
544160	14.9	20.3	145643	15.0	18.8	264515	15.1	20.5	293085	15.2	19.0	319883	15.2	19.8	395378	15.3	22.2
294385	14.9	20.4	10128	15.0	16.7	144631	15.1	19.9	407286	15.2	18.2	214087	15.2	19.3	205021	15.3	20.4
337787	14.9	21.2	306653	15.0	20.2	268764	15.1	19.9	121007	15.2	19.5	456849	15.2	21.5	372638	15.3	20.2
198716	14.9	20.5	370971	15.0	20.0	244621	15.1	20.4	217868	15.2	19.5	107112	15.2	18.3	156420	15.3	19.9
425888	14.9	20.8	521259	15.0	20.9	374150	15.1	20.8	59698	15.2	17.7	208200	15.2	20.0	44655	15.3	17.4
252003	14.9	20.5	29541	15.0	18.8	419747	15.1	21.4	405215	15.2	20.0	145855	15.2	19.8	378314	15.3	19.9
530635	14.9	19.9	415538	15.0	19.8	212866	15.1	20.7	317040	15.2	20.2	404974	15.2	20.4	447754	15.3	20.1
89145	14.9	19.1	146387	15.0	18.8	46727	15.1	17.1	505331	15.2	22.2	284684	15.2	20.2	428933	15.3	20.7
248492	14.9	20.1	171356	15.0	20.1	504339	15.1	21.6	544432	15.2	20.0	504347	15.2	21.2	54889	15.3	17.8
64271	14.9	18.4	114669	15.0	18.0	385389	15.1	21.6	168528	15.2	19.8	108911	15.2	19.2	42631	15.3	17.3
528309	14.9	21.6	529424	15.0	21.2	135323	15.1	19.1	506552	15.2	20.8	303810	15.2	19.7	100646	15.3	19.4
15346	14.9	17.7	498451	15.0	22.3	341919	15.1	20.2	308161	15.2	19.9	375127	15.2	20.7	260746	15.3	19.4
368772	14.9	21.1	294830	15.0	20.0	262785	15.1	20.1	272935	15.2	19.1	338243	15.2	19.5	509557	15.3	21.0
471381	14.9	20.9	389272	15.0	20.5	275080	15.1	21.5	306275	15.2	20.7	330402	15.2	19.3	48759	15.3	18.3
264462	14.9	19.0	466926	15.0	21.2	530636	15.1	19.9	449150	15.2	20.9	386584	15.2	19.9	532331	15.3	21.0
68412	14.9	20.1	229929	15.1	20.6	356639	15.1	18.8	33210	15.2	18.5	123095	15.2	17.2	502146	15.3	21.4
56067	14.9	17.0	475673	15.1	20.7	60084	15.1	18.5	213929	15.2	20.1	33239	15.2	17.3	58901	15.3	17.5
211458	14.9	19.7	125587	15.1	18.6	106979	15.1	19.3	5288	15.2	16.5	522689	15.2	21.0	156180	15.3	18.5
482064	14.9	20.7	489192	15.1	21.2	379042	15.1	20.3	437325	15.2	21.1	162116	15.2	23.3	199527	15.3	19.9
86140	14.9	18.0	500242	15.1	20.4	417024	15.1	20.7	88463	15.2	18.8	38344	15.2	18.2	466553	15.3	22.1
182074	14.9	19.7	430746	15.1	19.3	148566	15.1	19.4	93612	15.2	19.5	386237	15.2	20.4	164228	15.3	18.8
305723	14.9	19.9	286441	15.1	20.3	215205	15.1	20.4	322488	15.2	19.7	308208	15.2	21.0	284620	15.3	19.9
144630	14.9	19.2	56891	15.1	17.7	489571	15.1	20.9	500374	15.2	20.8	42885	15.2	18.7	544918	15.3	21.0
445870	14.9	21.4	375389	15.1	19.7	153559	15.1	20.3	22263	15.2	18.6	301007	15.2	20.6	298856	15.3	20.4
105232	14.9	19.1	343156	15.1	21.9	471895	15.1	21.5	224400	15.2	20.1	379823	15.2	20.7	450357	15.3	21.1
437247	14.9	20.5	212733	15.1	19.8	69663	15.1	18.5	375118	15.2	20.8	7632	15.2	16.8	306564	15.3	20.0
91254	14.9	19.3	540521	15.1	20.9	343994	15.1	20.2	200099	15.2	20.2	301838	15.2	21.2	386271	15.3	20.2
479524	14.9	20.9	344810	15.1	20.8	425179	15.1	20.1	322786	15.2	19.7	453223	15.2	20.1	181279	15.3	20.2
181550	14.9	20.8	127119	15.1	19.6	375766	15.1	20.9	434525	15.2	18.8	468546	15.3	20.4	495986	15.3	20.3
245144	14.9	20.0	442627	15.1	20.7	437788	15.1	21.9	473162	15.2	20.4	390624	15.3	20.9	524534	15.3	21.5
136877	14.9	19.1	430246	15.1	20.2	119795	15.1	19.5	270578	15.2	20.4	200805	15.3	20.5	521307	15.3	20.8
524190	14.9	20.1	290388	15.1	20.0	20990	15.1	17.0	109726	15.2	18.4	481747	15.3	20.4	467889	15.3	20.7
170429	14.9	20.7	496495	15.1	21.2	64611	15.1	18.9	417290	15.2	20.8	419864	15.3	20.5	328268	15.3	20.2
215359	14.9	19.9	271878	15.1	19.9	498613	15.1	20.7	290348	15.2	20.5	423732	15.3	21.1	51780	15.3	19.0
489400	14.9	20.8	39618	15.1	16.6	347834	15.1	20.5	57647	15.2	18.3	319378	15.3	20.6	148421	15.3	18.9
208414	14.9	21.0	27035	15.1	17.6	162724	15.1	19.9	170068	15.2	20.4	182625	15.3	19.1	459323	15.3	19.5
52292	14.9	19.8	245518	15.1	20.0	352073	15.1	21.3	138804	15.2	19.5	327794	15.3	19.3	174547	15.3	20.2
417680	14.9	21.6	294052	15.1	19.9	380882	15.1	20.7	467646	15.2	20.3	355854	15.3	21.2	185457	15.3	18.7
414455	14.9	20.6	103950	15.1	18.4	289327	15.1	20.7	152498	15.2	19.9	57718	15.3	18.0	140614	15.3	20.2
347314	14.9	21.0	45678	15.1	18.2	337646	15.1	20.2	535213	15.2	20.1	517574	15.3	21.4	206657	15.3	20.4
383826	14.9	19.5	85884	15.1	19.0	500945	15.1	20.0	312108	15.2	21.2	671	15.3	14.9	31479	15.3	17.2
532923	14.9	21.2	150790	15.1	20.1	400330	15.1	20.2	469409	15.2	20.4	460390	15.3	21.3	491860	15.3	20.7
47202	14.9	18.2	28537	15.1	17.7	439617	15.1	20.6	82906	15.2	17.4	490282	15.3	21.2	262706	15.3	20.4
438641	15.0	21.3	416237	15.1	20.2	539118	15.1	20.0	285676	15.2	19.9	519868	15.3	21.2	83646	15.3	18.2
520109	15.0	21.1	434902	15.1	20.3	300023	15.1	20.4	498133	15.2	21.8	467451	15.3	21.4	422490	15.3	19.5
176477	15.0	19.4	392231	15.1	20.5	87487	15.1	17.8	34120	15.2	18.2	436640	15.3	20.9	451536	15.3	21.5
313737	15.0	20.8	189510	15.1	19.9	467793	15.1	20.2	94205	15.2	20.2	291255	15.3	20.0	88458	15.3	19.3
417457	15.0	20.4	190818	15.1	19.7	505259	15.1	21.5	207085	15.2	20.0	498830	15.3	20.7	301536	15.3	19.8
168294	15.0	20.7	325294	15.1	20.4	65818	15.1	19.4	32250	15.2	18.2	170471	15.3	18.1	101648	15.3	18.1
304902	15.0	20.2	376326	15.1	19.9	240757	15.1	20.4	211861	15.2	21.1	149706	15.3	18.6	536139	15.3	22.2
321638	15.0	20.5	300109	15.1	20.7	182783	15.1	18.4	189123	15.2	20.2	213024	15.3	19.2	192880	15.3	19.3
137161	15.0	18.5	362068	15.1	20.6	176947	15.1	19.0	502106	15.2	20.2	507147	15.3	22.2	417621	15.3	21.9
540541	15.0	20.3	77916	15.1	19.2	228888	15.1	19.4	173871	15.2	19.7	326418	15.3	20.6	393375	15.3	20.8
113235	15.0	19.2	310217	15.1	20.5	61845	15.1	19.2	129169	15.2	19.3	177517	15.3	19.7	184060	15.3	19.5
191604	15.0	18.5	94061	15.1	19.4	1733											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
42284	15.4	15.8	526703	15.4	21.5	188604	15.5	20.7	167471	15.6	19.5	58720	15.7	17.7	338972	15.7	20.5
379451	15.4	21.6	375371	15.4	19.9	70303	15.5	18.0	261577	15.6	19.4	73764	15.7	17.4	52475	15.7	18.4
13830	15.4	17.6	217069	15.4	18.7	304433	15.5	20.5	368708	15.6	20.6	480777	15.7	19.9	380421	15.7	20.3
467417	15.4	20.8	78447	15.4	18.6	544540	15.5	20.6	407890	15.6	20.7	453780	15.7	19.6	166116	15.7	19.4
62364	15.4	18.7	390264	15.4	21.1	127139	15.5	19.7	148665	15.6	20.5	32496	15.7	17.1	173859	15.7	20.1
90169	15.4	19.4	235484	15.4	20.3	507578	15.5	21.6	239269	15.6	19.6	465899	15.7	22.1	428050	15.7	20.6
120594	15.4	19.5	376067	15.4	19.5	155622	15.5	19.3	186218	15.6	19.4	415337	15.7	20.1	25335	15.7	16.2
500463	15.4	21.1	333013	15.4	20.2	44988	15.5	18.9	264641	15.6	20.6	191318	15.7	18.6	203484	15.7	20.3
439136	15.4	20.1	111484	15.4	18.6	464036	15.5	20.9	532537	15.6	20.8	1731	15.7	14.9	188358	15.7	19.7
84299	15.4	19.3	49683	15.4	18.6	229554	15.5	20.3	242303	15.6	20.5	312132	15.7	21.0	264430	15.7	18.6
382340	15.4	20.5	466431	15.4	19.9	175525	15.5	19.9	350565	15.6	20.5	174938	15.7	19.5	516578	15.7	20.3
411609	15.4	19.4	222363	15.4	19.9	27135	15.5	16.4	473272	15.6	19.7	306597	15.7	18.7	385921	15.7	20.5
109357	15.4	18.7	416221	15.4	21.0	430792	15.5	20.9	161396	15.6	19.0	278837	15.7	19.1	136269	15.7	18.9
384120	15.4	20.1	526205	15.5	21.0	65313	15.5	19.2	353381	15.6	19.4	341869	15.7	19.5	222340	15.7	20.0
110624	15.4	19.1	397806	15.5	20.9	242401	15.5	19.7	399715	15.6	19.1	538230	15.7	21.6	303762	15.7	20.9
207420	15.4	18.9	520901	15.5	21.5	499005	15.5	21.3	75131	15.6	19.6	44975	15.7	18.5	523594	15.7	22.4
213418	15.4	19.8	192884	15.5	19.4	219689	15.5	20.9	188847	15.6	20.7	366410	15.7	20.5	278007	15.7	19.7
188751	15.4	19.3	491717	15.5	21.2	292228	15.5	20.8	500281	15.6	20.3	402954	15.7	20.9	15566	15.7	18.8
264680	15.4	21.2	362129	15.5	20.1	142109	15.5	18.5	284210	15.6	20.8	415944	15.7	21.6	486058	15.7	21.7
28172	15.4	16.4	18483	15.5	17.5	207022	15.5	19.9	258172	15.6	20.1	451769	15.7	21.1	63322	15.7	17.4
518157	15.4	20.8	160935	15.5	18.7	161625	15.5	20.5	162735	15.6	20.5	34711	15.7	17.1	466897	15.7	20.6
526553	15.4	22.0	185236	15.5	20.1	92685	15.5	19.1	11233	15.6	15.7	450502	15.7	20.4	252680	15.7	20.2
181862	15.4	19.1	406523	15.5	19.4	106081	15.5	19.7	471443	15.6	20.0	343656	15.7	21.0	294009	15.7	20.8
131447	15.4	19.1	131799	15.5	20.4	87305	15.5	18.1	361181	15.6	19.6	356325	15.7	20.4	102450	15.7	19.5
32195	15.4	18.8	157155	15.5	19.3	388389	15.5	20.7	296980	15.6	18.9	170246	15.7	19.1	533812	15.7	21.3
531778	15.4	20.9	263306	15.5	20.7	354122	15.5	21.0	434870	15.6	20.4	196271	15.7	19.9	271809	15.8	20.0
182063	15.4	20.5	20948	15.5	18.6	70601	15.5	18.5	529333	15.6	21.2	500992	15.7	20.6	1107	15.8	14.5
87563	15.4	19.3	270418	15.5	19.1	309014	15.5	21.0	532231	15.6	20.9	412091	15.7	19.6	144765	15.8	19.7
91510	15.4	20.9	194276	15.5	18.8	471482	15.5	20.8	9538	15.6	17.4	381532	15.7	20.5	166833	15.8	19.1
234051	15.4	19.1	495234	15.5	20.2	489396	15.5	21.9	174567	15.6	20.1	30740	15.7	19.4	344193	15.8	19.4
281137	15.4	20.7	427265	15.5	20.2	158882	15.5	18.8	200297	15.6	19.4	347760	15.7	21.0	382151	15.8	19.6
97947	15.4	19.0	155667	15.5	18.5	380418	15.5	21.9	296717	15.6	20.6	134660	15.7	19.8	123316	15.8	18.7
450554	15.4	21.4	20442	15.5	16.4	365824	15.5	22.0	402940	15.6	21.2	188257	15.7	19.6	187994	15.8	19.3
40614	15.4	18.5	166760	15.5	19.3	268142	15.5	20.3	157469	15.6	19.0	57623	15.7	18.6	473103	15.8	20.6
167552	15.4	19.8	65945	15.5	19.1	388635	15.5	22.0	60358	15.6	17.3	317487	15.7	19.0	209646	15.8	20.9
294554	15.4	20.3	411288	15.5	21.0	506652	15.5	21.8	92934	15.6	18.4	505316	15.7	21.0	300105	15.8	19.6
27911	15.4	16.5	398757	15.5	20.8	217932	15.5	20.6	130650	15.6	18.9	230292	15.7	22.1	138751	15.8	19.7
451480	15.4	21.6	363350	15.5	19.8	346883	15.5	19.9	105777	15.6	19.4	207227	15.7	19.6	317678	15.8	20.0
109033	15.4	17.9	234988	15.5	19.3	158300	15.5	19.5	246554	15.6	20.7	202965	15.7	20.2	206299	15.8	19.7
499425	15.4	21.3	37519	15.5	18.2	341369	15.5	20.4	494936	15.6	20.6	277740	15.7	20.2	533541	15.8	20.9
297716	15.4	20.8	238363	15.5	18.7	215113	15.5	22.4	454117	15.6	21.5	498234	15.7	20.8	351219	15.8	19.0
358545	15.4	19.5	130215	15.5	19.3	473053	15.5	20.4	531569	15.6	22.2	337826	15.7	20.1	189614	15.8	19.8
34361	15.4	18.3	382253	15.5	20.7	45956	15.5	16.6	532346	15.6	21.9	129391	15.7	19.7	536749	15.8	19.6
300049	15.4	20.3	543818	15.5	20.6	530901	15.5	21.5	301831	15.6	19.6	522996	15.7	20.4	480450	15.8	20.3
86847	15.4	18.6	45416	15.5	18.4	432069	15.5	19.9	453309	15.6	21.2	126221	15.7	19.5	225747	15.8	20.5
203444	15.4	18.4	54407	15.5	18.5	253205	15.5	19.8	484995	15.6	20.8	414794	15.7	20.1	20540	15.8	17.9
170773	15.4	19.3	506045	15.5	19.9	147954	15.5	19.9	320841	15.6	20.7	61390	15.7	17.2	268518	15.8	21.2
319719	15.4	19.9	22658	15.5	17.3	438682	15.5	20.0	449159	15.6	20.7	524668	15.7	19.8	320001	15.8	20.8
140594	15.4	20.2	363369	15.5	19.4	162628	15.5	18.9	403933	15.6	19.9	236307	15.7	19.8	168649	15.8	19.5
474295	15.4	18.0	470282	15.5	21.4	57272	15.6	20.5	496351	15.6	19.7	409186	15.7	22.1	155841	15.8	19.7
431284	15.4	20.1	105995	15.5	19.2	422307	15.6	19.8	196711	15.6	20.4	463008	15.7	19.4	109546	15.8	18.9
338079	15.4	20.2	31747	15.5	18.0	53408	15.6	19.5	534244	15.6	21.1	83486	15.7	19.9	254675	15.8	19.1
306614	15.4	20.2	141025	15.5	19.2	18322	15.6	17.7	449525	15.6	19.7	378791	15.7	20.2	33080	15.8	18.0
307820	15.4	19.2	386141	15.5	21.6	390450	15.6	21.1	377859	15.6	20.1	281526	15.7	20.1	197554	15.8	19.5
132116	15.4	18.7	212039	15.5	19.1	162749	15.6	20.4	492516	15.6	21.0	490631	15.7	21.1	280151	15.8	19.4
324616	15.4	20.9	537216	15.5	21.4	320569	15.6	20.7	160465	15.6	20.1	134411	15.7	19.9	325118	15.8	20.3
177544	15.4	18.5	535489	15.5	21.1	528633	15.6	22.6	535502	15.6	22.2	335632	15.7	20.1	181794	15.8	20.5
58208	15.4	17.6	271252	15.5	19.5	126279	15.6	19.0	241724	15.6	18.8	491735	15.7	21.6	201409	15.8	19.8
490630	15.4	20.8	127618	15.5	19.6	236884	15.6	20.8	75613	15.6	18.2	190432	15.7	19.8	344593	15.8	20.7
436971	15.4	20.8	341768	15.5	20.8	64390	15.6	21.0	8593	15.6	17.2	341396	15.7	19.0	228191	15.8	19.9
196181	15.4	19.5	222809	15.5	20.8	165465	15.6	19.8	296260	15.6	20.8	106361	15.7	18.3	458930	15.8	21.0
286440	15.4	20.6	400327	15.5	21.3	226783	15.6	20.3	215328	15.6	20.7	341436	15.7	20.0	282447	15.8	19.9
209415	15.4	19.1	253247	15.5	21.5	493683	15.6	20.4	520846	15.6	21.9	406481	15.7	20.3	100491	15.8	18.7
158110	15.4	19.8	54338	15.5	18.0	239495	15.6	19.4	541657	15.6	21.8	497824	15.7	21.4	429882	15.8	20.5
246397	15.4	19.6	318879	15.5	19.8	94609	15.6	18.6	124212	15.6	18.4	463194	15.7	19.8	347455	15.8	20.0
435918	15.4	21.6	516986	15.5	22.1	334901	15.6	20.6	20262	15.6	16.6	5378	15.7	16.0	68072	15.8	19.2
502170	15.4	20.4	386611	15.5	20.6	6190	15.6	17.3	424675	15.6	21.2	410074	15.7	20.9	248296	15.8	19.9
226930	15.4	19.8	8073	15.5	17.0	527096	15.6	22.3	156407	15.6	19.6	271078	15.7	18.8	419828	15.8	19.3
232915	15.4	20.3	667	15.5	15.1	212678											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
421223	15.8	20.9	181773	15.9	19.8	303869	15.9	20.0	28823	16.0	17.5	386134	16.1	20.8	537072	16.1	20.8
420301	15.8	21.7	378891	15.9	19.5	56807	15.9	19.0	88182	16.0	19.6	54935	16.1	17.3	109266	16.1	21.3
362063	15.8	20.3	231852	15.9	20.2	465082	15.9	21.8	335598	16.0	19.9	341751	16.1	20.2	267717	16.1	20.8
43654	15.8	17.6	205851	15.9	19.9	397149	15.9	21.1	198954	16.0	18.4	110055	16.1	18.4	299834	16.1	20.4
272174	15.8	19.1	100081	15.9	19.3	21847	15.9	18.7	542344	16.0	22.1	345087	16.1	20.0	526900	16.1	21.1
377450	15.8	20.3	272872	15.9	20.3	500220	15.9	19.0	402844	16.0	19.2	202603	16.1	19.5	17623	16.1	17.8
101908	15.8	19.0	441862	15.9	21.4	123554	15.9	20.2	459184	16.0	22.0	312102	16.1	19.5	467333	16.1	21.8
533840	15.8	21.3	378332	15.9	20.7	534508	15.9	21.0	284130	16.0	19.9	414234	16.1	20.8	11900	16.1	16.9
543582	15.8	20.1	445990	15.9	21.0	530321	15.9	22.2	247102	16.0	19.2	525975	16.1	21.5	423357	16.1	20.0
294360	15.8	20.2	223300	15.9	20.0	271897	15.9	20.6	331129	16.0	21.7	245440	16.1	20.1	151200	16.1	19.1
56151	15.8	19.3	178216	15.9	19.6	269477	15.9	20.1	334500	16.0	20.5	253232	16.1	21.2	134707	16.1	19.8
11606	15.8	20.1	349777	15.9	18.8	188966	15.9	19.1	153616	16.0	18.8	333568	16.1	19.5	303849	16.1	19.8
461552	15.8	21.3	544233	15.9	21.4	250186	15.9	18.6	158111	16.0	18.9	394384	16.1	19.3	457133	16.1	20.4
300217	15.8	19.8	320669	15.9	20.3	339018	15.9	20.6	170746	16.0	19.5	110872	16.1	18.8	50950	16.1	18.5
206764	15.8	19.8	389245	15.9	21.0	258386	15.9	19.6	357227	16.0	19.1	470460	16.1	19.7	521055	16.1	20.6
176219	15.8	20.6	292300	15.9	20.6	338879	15.9	20.2	109276	16.0	19.5	490579	16.1	20.5	459615	16.1	21.8
100513	15.8	19.1	152602	15.9	19.5	495406	15.9	20.6	245036	16.0	20.7	308341	16.1	20.7	241683	16.1	20.0
88118	15.8	17.9	141428	15.9	19.9	95444	15.9	19.0	387810	16.0	19.3	388777	16.1	21.1	544481	16.1	19.8
500469	15.8	21.8	53320	15.9	17.7	462648	15.9	20.2	348855	16.0	21.2	81078	16.1	18.1	50573	16.1	18.2
105288	15.8	18.6	123048	15.9	20.1	427073	15.9	20.5	431031	16.0	22.2	371988	16.1	19.8	462076	16.1	20.7
296957	15.8	19.4	3294	15.9	16.6	12288	15.9	17.4	64902	16.0	18.5	352774	16.1	21.0	92707	16.2	17.6
477963	15.8	20.6	506447	15.9	20.8	518539	15.9	21.5	139962	16.0	19.3	254069	16.1	20.6	298435	16.2	19.8
169944	15.8	18.7	140282	15.9	19.3	355998	15.9	19.3	108538	16.0	18.1	518193	16.1	20.9	326998	16.2	18.3
302350	15.8	21.0	435009	15.9	20.2	373031	15.9	21.1	518675	16.0	20.6	343594	16.1	20.4	328609	16.2	19.3
291260	15.8	20.2	54913	15.9	19.2	208973	15.9	19.5	18254	16.0	18.2	299267	16.1	20.2	75297	16.2	18.1
501884	15.8	20.8	402963	15.9	19.8	124374	15.9	18.3	283464	16.0	20.3	465983	16.1	21.4	51125	16.2	18.1
543380	15.8	21.3	459915	15.9	21.2	302161	15.9	20.0	138951	16.0	19.3	151576	16.1	18.7	398540	16.2	18.8
78522	15.8	18.7	351488	15.9	21.2	63955	15.9	18.4	348481	16.0	19.2	292748	16.1	20.2	105597	16.2	18.9
446876	15.8	21.8	523582	15.9	20.8	299776	15.9	19.8	186878	16.0	19.6	385422	16.1	20.2	105125	16.2	18.4
487933	15.8	20.9	4337	15.9	16.4	525705	15.9	20.2	481843	16.0	22.7	348908	16.1	20.9	498645	16.2	21.2
144074	15.8	19.5	409246	15.9	20.3	437168	15.9	21.0	434075	16.0	20.7	322645	16.1	19.9	89206	16.2	19.8
109766	15.8	18.0	197326	15.9	19.2	4012	15.9	16.0	449222	16.0	21.2	449125	16.1	20.7	313123	16.2	18.9
32400	15.8	18.8	320815	15.9	22.0	165372	15.9	20.0	44033	16.0	17.1	391368	16.1	21.4	444328	16.2	20.6
253250	15.8	19.9	368731	15.9	20.9	537840	15.9	19.9	376559	16.0	21.0	392844	16.1	21.2	191166	16.2	19.3
419821	15.8	21.6	29334	15.9	16.9	212731	15.9	21.0	56099	16.0	18.6	138656	16.1	20.4	37557	16.2	17.4
236852	15.8	21.3	63600	15.9	17.9	90124	15.9	18.3	298899	16.0	21.6	460389	16.1	21.1	34655	16.2	18.4
195226	15.8	19.5	429342	15.9	21.2	241553	15.9	20.4	392921	16.0	20.8	366225	16.1	20.7	308510	16.2	20.7
52111	15.8	17.5	188083	15.9	19.8	68670	15.9	18.8	18941	16.0	18.3	86024	16.1	17.8	293055	16.2	20.5
379432	15.8	20.9	299864	15.9	20.9	467138	15.9	20.9	406822	16.0	20.2	2126	16.1	16.2	355199	16.2	21.6
239522	15.8	20.5	264267	15.9	19.3	352043	15.9	21.5	24782	16.0	18.8	369081	16.1	19.9	170730	16.2	19.3
427371	15.8	20.7	61347	15.9	17.9	315578	15.9	19.9	277318	16.0	18.6	104492	16.1	19.2	163142	16.2	19.1
16683	15.8	16.7	493566	15.9	20.5	304909	15.9	20.4	170111	16.0	20.0	453371	16.1	22.0	403804	16.2	20.8
315429	15.8	21.8	187018	15.9	20.2	410058	15.9	21.5	125731	16.0	19.8	469500	16.1	19.9	213403	16.2	20.4
293355	15.8	21.5	530406	15.9	21.5	322258	15.9	19.8	284396	16.0	20.2	413136	16.1	20.6	507307	16.2	20.8
180085	15.8	19.9	99502	15.9	19.3	458873	15.9	20.6	338888	16.0	20.6	140691	16.1	20.1	2383	16.2	15.1
95055	15.8	18.9	451033	15.9	20.8	408007	15.9	21.1	132551	16.0	18.0	77752	16.1	18.8	358623	16.2	20.2
310970	15.8	21.0	141282	15.9	18.9	499226	15.9	20.7	500602	16.0	20.5	264562	16.1	21.4	371765	16.2	19.8
516343	15.8	21.0	359643	15.9	21.1	101035	15.9	18.1	154302	16.0	19.5	202262	16.1	20.1	456590	16.2	21.1
451105	15.8	21.5	347715	15.9	21.0	218623	15.9	19.7	448464	16.0	19.7	60540	16.1	19.6	2857	16.2	16.0
183498	15.8	21.4	162754	15.9	19.3	89346	15.9	19.3	185235	16.0	20.7	500713	16.1	20.4	237441	16.2	19.8
383346	15.8	20.8	540376	15.9	21.4	74970	15.9	18.2	208205	16.0	20.3	141448	16.1	19.1	11552	16.2	16.7
33307	15.8	18.1	502979	15.9	21.0	32720	15.9	18.7	427849	16.0	18.7	121284	16.1	19.7	479321	16.2	19.8
155748	15.8	19.8	403881	15.9	21.6	194680	15.9	20.1	102138	16.0	18.5	88891	16.1	20.5	44154	16.2	18.6
288568	15.8	20.6	520008	15.9	21.3	173007	15.9	19.4	221654	16.1	20.2	154708	16.1	18.2	168349	16.2	19.8
9852	15.8	18.3	153117	15.9	20.0	49905	15.9	18.5	456038	16.1	20.1	521234	16.1	20.8	139493	16.2	18.5
431813	15.8	21.5	292288	15.9	19.7	464019	15.9	19.0	355838	16.1	20.6	210055	16.1	18.4	501969	16.2	20.5
267458	15.8	19.6	123310	15.9	20.0	275363	15.9	21.2	370045	16.1	20.4	256243	16.1	18.5	99446	16.2	18.8
224896	15.8	18.9	244692	15.9	18.7	226740	15.9	19.6	385084	16.1	20.8	243252	16.1	19.6	291085	16.2	20.0
201534	15.8	19.1	316693	15.9	20.2	368775	15.9	19.0	87446	16.1	19.1	83350	16.1	18.5	31366	16.2	18.0
460760	15.8	19.7	171284	15.9	18.9	7223	15.9	16.1	477816	16.1	21.6	122733	16.1	19.7	220300	16.2	20.6
54944	15.8	19.2	179284	15.9	18.3	203882	15.9	19.9	266578	16.1	19.5	188373	16.1	20.0	534774	16.2	22.2
459225	15.8	20.4	538243	15.9	20.6	194105	15.9	20.2	110359	16.1	20.0	423431	16.1	21.1	269002	16.2	19.8
430349	15.8	20.6	492393	15.9	19.7	291287	15.9	20.2	432228	16.1	20.0	30985	16.1	18.2	141286	16.2	19.9
461383	15.8	20.1	243954	15.9	20.2	472804	15.9	19.6	532512	16.1	22.1	456478	16.1	21.3	192685	16.2	19.3
181162	15.8	19.3	122867	15.9	20.4	344841	15.9	19.3	58599	16.1	19.4	288823	16.1	20.3	351514	16.2	20.2
307482	15.8	19.3	473606	15.9	19.2	61139	15.9	18.0	411315	16.1	22.4	312113	16.1	21.5	179453	16.2	19.9
67498	15.8	18.0	452513	15.9	21.7	132507	15.9	18.2	458859	16.1	21.2	8132	16.1	15.0	543451	16.2	20.2
74577	15.8	16.8	205565	15.9	20.1	184788	15.9	19.4	471096	16.1	20.3	488534	16.1	22.1	374613	16.2	20.9
461988	15.8	19.8	119228	15.9	18.0	261154	15										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
502565	16.2	21.5	125738	16.2	19.1	473211	16.3	19.6	278086	16.4	19.8	222833	16.4	18.0	539810	16.5	19.6
253136	16.2	20.4	107044	16.2	20.5	497745	16.3	22.7	294520	16.4	20.0	185525	16.5	19.5	497158	16.5	20.8
387201	16.2	20.4	209890	16.2	18.7	127831	16.3	18.0	78473	16.4	19.4	371679	16.5	20.4	71357	16.5	18.2
402045	16.2	21.4	196984	16.2	19.2	518978	16.3	19.9	376472	16.4	19.9	524806	16.5	20.8	508326	16.5	20.2
288703	16.2	20.2	217045	16.2	19.8	99585	16.3	17.9	81860	16.4	18.6	336499	16.5	20.6	32217	16.5	17.1
524835	16.2	21.9	525628	16.2	20.4	311080	16.3	20.1	457191	16.4	19.9	298774	16.5	19.3	494630	16.5	21.5
492011	16.2	20.0	119514	16.2	18.6	528290	16.3	21.7	529498	16.4	22.3	64215	16.5	17.4	302813	16.5	19.0
430336	16.2	20.4	305949	16.2	19.6	92489	16.3	18.8	69483	16.4	20.3	56982	16.5	19.8	123440	16.5	18.8
422522	16.2	21.0	363260	16.2	19.6	117329	16.3	18.9	158618	16.4	19.5	210585	16.5	18.4	51258	16.5	18.3
55876	16.2	18.4	408621	16.2	20.1	97767	16.3	18.5	160365	16.4	18.9	397449	16.5	19.0	169236	16.5	20.2
448189	16.2	21.5	244073	16.2	20.1	386846	16.3	19.2	142062	16.4	18.6	56382	16.5	18.4	138686	16.5	19.3
162284	16.2	20.2	341928	16.2	20.1	382870	16.3	19.7	407472	16.4	22.0	346799	16.5	21.1	271129	16.5	18.6
529185	16.2	22.2	166799	16.2	19.5	263321	16.3	18.0	189488	16.4	18.9	270564	16.5	20.3	240133	16.5	18.4
105807	16.2	18.1	330093	16.2	20.1	463278	16.3	20.4	269771	16.4	20.5	531138	16.5	21.1	200865	16.5	18.8
45850	16.2	18.5	243753	16.3	20.3	351995	16.3	19.6	536213	16.4	21.6	350710	16.5	20.2	419850	16.5	20.1
268510	16.2	20.0	297495	16.3	20.0	506640	16.3	21.4	534027	16.4	21.1	359682	16.5	21.4	33106	16.5	18.7
378272	16.2	19.4	40244	16.3	18.0	533890	16.3	21.7	147732	16.4	19.8	456814	16.5	20.8	36573	16.5	18.8
242490	16.2	20.1	297471	16.3	19.8	341016	16.3	19.6	378277	16.4	19.4	330009	16.5	20.8	105196	16.5	18.4
491939	16.2	22.0	353829	16.3	20.8	376536	16.3	20.6	461355	16.4	22.2	11889	16.5	15.8	332534	16.5	20.7
526683	16.2	21.1	74604	16.3	17.7	371743	16.3	20.5	9554	16.4	16.5	415846	16.5	21.1	7496	16.5	17.3
279203	16.2	20.8	450431	16.3	20.3	333767	16.3	19.2	428990	16.4	20.1	233868	16.5	19.6	162806	16.5	19.0
338903	16.2	20.5	143263	16.3	19.7	521199	16.3	20.5	258343	16.4	20.2	412790	16.5	19.4	409893	16.5	21.0
425174	16.2	21.6	407664	16.3	20.9	145812	16.3	18.2	540545	16.4	21.3	529143	16.5	21.0	159934	16.5	20.3
468269	16.2	20.6	542835	16.3	19.4	134203	16.3	19.5	315351	16.4	20.1	503165	16.5	20.9	147940	16.5	20.4
476731	16.2	22.8	243092	16.3	19.9	185492	16.3	19.8	338440	16.4	21.0	186847	16.5	19.4	271898	16.5	20.0
505283	16.2	21.1	419486	16.3	20.6	498376	16.3	22.1	235016	16.4	17.6	146580	16.5	19.9	500578	16.5	20.7
295340	16.2	19.9	173108	16.3	21.5	529058	16.3	21.1	109211	16.4	18.5	332852	16.5	20.2	473541	16.5	20.9
504217	16.2	21.4	427008	16.3	20.4	263012	16.3	19.3	350290	16.4	20.2	534872	16.5	21.0	398138	16.5	19.9
246599	16.2	18.5	446320	16.3	19.9	6855	16.3	16.2	168614	16.4	19.9	100350	16.5	19.2	100941	16.5	17.9
281930	16.2	20.2	480753	16.3	21.2	498208	16.3	20.6	34187	16.4	18.7	453916	16.5	21.6	48413	16.5	17.4
507506	16.2	20.8	301315	16.3	20.9	502890	16.3	20.0	166112	16.4	18.9	372404	16.5	20.2	18516	16.6	18.3
210259	16.2	20.0	529410	16.3	21.6	247717	16.3	20.2	371648	16.4	19.8	300182	16.5	20.4	397815	16.6	20.5
344324	16.2	20.9	503937	16.3	20.7	496910	16.3	21.4	31219	16.4	17.5	89052	16.5	17.6	69742	16.6	17.3
414874	16.2	21.3	346885	16.3	19.5	100680	16.3	19.2	82935	16.4	18.3	536250	16.5	20.8	527334	16.6	20.2
224395	16.2	20.3	413186	16.3	21.0	277271	16.3	20.3	351002	16.4	19.4	94983	16.5	19.6	86214	16.6	18.8
328973	16.2	21.2	303616	16.3	18.6	437202	16.3	20.7	279362	16.4	19.9	200902	16.5	21.8	273985	16.6	19.8
403304	16.2	20.2	390963	16.3	19.5	19316	16.3	17.8	343000	16.4	19.9	531853	16.5	21.1	267218	16.6	19.8
246936	16.2	18.9	334916	16.3	20.6	496833	16.3	21.1	97314	16.4	19.6	59423	16.5	18.4	275180	16.6	20.2
469757	16.2	20.2	117095	16.3	17.5	404244	16.3	20.7	212835	16.4	19.7	416953	16.5	21.5	52234	16.6	19.1
53086	16.2	17.6	468162	16.3	20.4	158442	16.3	20.1	300850	16.4	19.7	109330	16.5	18.5	103580	16.6	18.8
272151	16.2	20.4	528681	16.3	22.4	423651	16.3	21.7	126351	16.4	18.4	16955	16.5	15.8	286239	16.6	19.2
525947	16.2	21.7	283893	16.3	19.9	513403	16.3	20.7	488894	16.4	21.1	422633	16.5	20.6	432471	16.6	19.8
283402	16.2	19.7	402896	16.3	20.6	98077	16.3	19.2	376520	16.4	20.0	459094	16.5	21.5	412656	16.6	19.5
269592	16.2	20.3	240838	16.3	19.2	206845	16.3	19.7	94647	16.4	19.1	391801	16.5	18.6	184929	16.6	19.8
109536	16.2	19.1	94946	16.3	19.2	354667	16.3	20.4	53616	16.4	18.9	497772	16.5	21.7	427388	16.6	19.7
158237	16.2	18.5	279413	16.3	19.0	222830	16.3	21.3	269450	16.4	19.7	79677	16.5	19.8	138672	16.6	19.4
256309	16.2	20.5	476605	16.3	22.0	140694	16.3	19.3	500466	16.4	21.0	226002	16.5	18.2	405204	16.6	19.3
121428	16.2	19.7	300233	16.3	20.2	155513	16.3	18.9	81905	16.4	18.6	173792	16.5	20.8	310221	16.6	21.6
31093	16.2	18.6	160242	16.3	19.3	163239	16.4	21.1	212716	16.4	19.8	503328	16.5	19.8	425128	16.6	21.4
60748	16.2	17.1	500195	16.3	19.7	502873	16.4	20.9	268513	16.4	19.9	123415	16.5	19.7	144409	16.6	19.5
9770	16.2	16.9	529734	16.3	19.9	14763	16.4	17.0	58177	16.4	18.1	485413	16.5	21.2	109068	16.6	17.3
42120	16.2	18.9	393543	16.3	20.7	217977	16.4	20.5	122460	16.4	18.7	125551	16.5	19.9	249208	16.6	20.1
189386	16.2	19.5	431095	16.3	21.1	366842	16.4	20.7	161282	16.4	20.4	543661	16.5	21.0	494620	16.6	20.7
140909	16.2	18.6	240686	16.3	20.0	158941	16.4	19.4	450567	16.4	20.6	472569	16.5	20.7	301234	16.6	20.3
208237	16.2	19.5	391045	16.3	19.7	264603	16.4	19.8	357202	16.4	20.5	453162	16.5	21.4	109869	16.6	18.8
389820	16.2	23.0	338388	16.3	21.1	619	16.4	13.5	2305	16.4	15.5	531174	16.5	20.3	172580	16.6	19.8
498155	16.2	20.7	196290	16.3	19.5	475642	16.4	21.3	387306	16.4	21.6	92764	16.5	19.4	470131	16.6	20.8
535071	16.2	19.8	58149	16.3	20.3	166740	16.4	19.5	272276	16.4	18.6	338064	16.5	20.3	480789	16.6	20.0
297379	16.2	19.3	377222	16.3	19.9	61984	16.4	19.5	167555	16.4	19.4	528477	16.5	21.9	305989	16.6	19.5
544756	16.2	18.6	354978	16.3	19.7	436811	16.4	19.9	530911	16.4	21.4	426632	16.5	21.7	377906	16.6	20.4
463288	16.2	21.1	138171	16.3	18.5	182744	16.4	19.3	406886	16.4	19.4	387981	16.5	20.3	92652	16.6	18.5
46576	16.2	17.7	194245	16.3	20.0	83171	16.4	18.8	418262	16.4	20.8	422327	16.5	19.3	503218	16.6	20.2
525884	16.2	20.9	131142	16.3	19.2	323101	16.4	20.8	14786	16.4	17.4	89972	16.5	20.0	119528	16.6	18.5
350412	16.2	19.3	494201	16.3	20.0	65020	16.4	18.1	173886	16.4	19.5	90895	16.5	19.2	29420	16.6	17.9
386950	16.2	20.5	397821	16.3	20.3	40895	16.4	18.9	242149	16.4	21.2	371072	16.5	21.9	364877	16.6	18.7
350134	16.2	18.9	329380	16.3	20.8	416103	16.4	20.1	468222	16.4	19.8	468238	16.5	20.8	259150	16.6	20.2
200816	16.2	21.3	341909	16.3	20.8	533154	16.4	21.8	18360	16.4	17.6	118227	16.5	19.3	125408	16.6	19.6
358592	16.2	19.7	471811	16.3	20.1	282180	16.4	19.3	513260	16.4	21.3	258352	16.5	19.9	472484	16.6	21.8
473118	16.2	19.7	386738	16.3	20.7	148											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
513282	16.6	19.6	79846	16.7	18.1	70940	16.7	18.4	278657	16.8	19.7	532521	16.9	22.3	534550	16.9	21.3
423151	16.6	19.2	490188	16.7	22.1	460383	16.7	21.7	219650	16.8	19.9	146971	16.9	18.8	385443	16.9	20.0
326344	16.6	19.7	425111	16.7	20.2	209411	16.7	19.0	433076	16.8	20.5	137572	16.9	19.5	292950	16.9	20.8
343283	16.6	19.6	194121	16.7	19.0	231393	16.7	19.7	437215	16.8	20.3	457203	16.9	20.3	454634	16.9	20.6
428711	16.6	20.7	191827	16.7	18.6	88716	16.7	19.0	543466	16.8	20.2	140374	16.9	20.3	471388	16.9	21.0
462020	16.6	21.4	214492	16.7	19.3	55883	16.7	18.7	380105	16.8	19.6	305585	16.9	20.6	406472	16.9	20.9
55910	16.6	18.6	105921	16.7	19.1	503759	16.7	19.7	536683	16.8	21.9	528694	16.9	22.2	54628	16.9	18.5
95861	16.6	18.2	325120	16.7	20.2	200609	16.7	19.5	305814	16.8	20.8	299339	16.9	19.5	385904	16.9	20.2
87830	16.6	18.4	486707	16.7	19.8	209109	16.7	19.5	203785	16.8	19.6	62840	16.9	19.2	450776	16.9	22.1
140791	16.6	20.2	343010	16.7	21.1	140724	16.7	19.3	519396	16.8	20.4	535522	16.9	22.1	37628	16.9	18.6
418997	16.6	19.3	111096	16.7	18.9	269992	16.7	20.7	341216	16.8	20.9	238532	16.9	19.2	1230	16.9	16.8
447399	16.6	21.5	306900	16.7	19.3	60490	16.7	17.7	158538	16.8	19.8	149375	16.9	19.8	275844	16.9	21.1
488769	16.6	21.0	43529	16.7	18.8	281171	16.7	19.3	379685	16.8	20.2	81966	16.9	18.6	464677	16.9	21.6
538489	16.6	20.9	402344	16.7	20.1	524717	16.7	20.2	325188	16.8	19.8	95036	16.9	19.5	304081	16.9	19.2
362947	16.6	20.0	366364	16.7	19.4	140423	16.7	18.7	432802	16.8	21.6	535052	16.9	21.0	451049	16.9	21.5
386508	16.6	20.5	225078	16.7	19.2	418311	16.7	20.8	523547	16.8	21.3	54141	16.9	19.0	38930	16.9	19.0
445321	16.6	20.8	518890	16.7	20.3	121675	16.7	18.5	532397	16.8	20.6	246891	16.9	19.6	399099	16.9	21.2
359631	16.6	21.3	147267	16.7	18.4	49269	16.7	18.4	306808	16.8	19.5	126374	16.9	18.2	310945	16.9	20.7
426548	16.6	20.7	174045	16.7	20.2	530276	16.7	21.8	157889	16.8	18.3	379626	16.9	19.8	385905	16.9	21.4
505622	16.6	20.1	17946	16.7	17.7	283538	16.7	20.0	18281	16.8	19.2	300110	16.9	20.7	209990	16.9	20.2
360286	16.6	20.0	434907	16.7	20.7	488904	16.7	21.2	360554	16.8	19.5	120286	16.9	17.2	32468	16.9	16.5
285229	16.6	20.2	519553	16.7	20.2	446572	16.7	21.2	467427	16.8	20.5	64714	16.9	19.5	236199	16.9	20.5
458740	16.6	20.2	459985	16.7	21.0	505067	16.7	21.2	498871	16.8	20.8	184112	16.9	18.6	417626	16.9	20.0
21508	16.6	17.6	451086	16.7	21.4	346761	16.7	20.2	534261	16.8	20.5	341764	16.9	21.0	504438	16.9	21.9
470816	16.6	19.4	143201	16.7	19.4	270396	16.8	21.3	106529	16.8	19.5	147650	16.9	18.9	331480	16.9	20.7
313397	16.6	20.1	388388	16.7	21.2	308767	16.8	20.0	179260	16.8	18.2	403269	16.9	19.7	16575	16.9	18.4
299311	16.6	20.6	38829	16.7	17.6	338245	16.8	19.6	213907	16.8	19.6	110166	16.9	19.6	331901	16.9	20.4
540399	16.6	20.7	461792	16.7	20.6	524632	16.8	22.0	194979	16.8	20.8	490309	16.9	20.7	252689	16.9	19.5
168520	16.6	21.1	431809	16.7	20.8	326180	16.8	20.3	428932	16.8	21.3	274560	16.9	19.4	271662	16.9	20.7
396235	16.6	20.5	429188	16.7	21.4	255907	16.8	21.4	33680	16.8	18.2	47042	16.9	18.3	333068	16.9	21.5
512369	16.6	20.6	144571	16.7	20.4	142937	16.8	19.5	140312	16.8	19.7	234171	16.9	18.4	530692	16.9	21.4
369549	16.6	20.6	41602	16.7	19.3	92710	16.8	18.7	111775	16.8	18.6	451493	16.9	21.5	11353	16.9	17.0
527857	16.6	21.6	62319	16.7	17.5	199044	16.8	19.7	28092	16.8	17.6	23528	16.9	18.0	360786	16.9	20.4
357439	16.6	22.1	145412	16.7	20.1	375085	16.8	21.9	286482	16.8	20.5	8964	16.9	18.1	537901	16.9	20.4
174482	16.6	19.6	499165	16.7	21.1	83749	16.8	19.3	421055	16.8	20.6	104727	16.9	19.2	105225	16.9	19.2
530059	16.6	21.3	233265	16.7	17.9	367788	16.8	19.7	376145	16.8	20.8	217950	16.9	20.1	506772	16.9	21.8
497419	16.6	21.4	191120	16.7	19.8	394338	16.8	20.7	463423	16.8	20.3	62125	16.9	18.2	138418	16.9	18.6
71818	16.6	18.5	426928	16.7	20.9	88090	16.8	18.4	49473	16.8	18.5	428915	16.9	21.2	328445	16.9	21.2
301840	16.6	21.1	368744	16.7	20.6	166682	16.8	18.7	109171	16.8	19.7	382161	16.9	19.6	532476	16.9	21.0
530549	16.6	21.9	102062	16.7	17.6	211225	16.8	18.5	290930	16.8	20.9	223622	16.9	18.2	64954	16.9	17.5
492556	16.6	20.0	470144	16.7	21.0	455614	16.8	19.1	396625	16.8	19.8	154301	16.9	20.1	308568	16.9	19.5
179188	16.6	21.7	232738	16.7	20.0	366427	16.8	19.7	199008	16.8	19.7	269272	16.9	19.9	147369	16.9	20.0
408187	16.6	19.9	506642	16.7	21.1	142628	16.8	19.5	6997	16.8	17.2	138316	16.9	18.9	187976	16.9	19.6
87927	16.6	19.8	449101	16.7	20.5	463206	16.8	20.3	392556	16.8	19.3	405221	16.9	19.9	377614	16.9	21.2
140752	16.6	19.9	395808	16.7	20.7	375738	16.8	21.2	309345	16.8	19.8	16680	16.9	17.5	89662	16.9	18.9
281062	16.6	20.2	75006	16.7	19.6	429002	16.8	19.8	30864	16.8	18.0	122840	16.9	18.9	378785	16.9	20.4
102574	16.6	19.7	114617	16.7	18.8	23558	16.8	19.1	140067	16.8	19.5	279399	16.9	20.0	136066	16.9	20.0
29573	16.6	18.8	225609	16.7	20.3	164102	16.8	19.2	390284	16.8	21.1	203464	16.9	20.7	275576	16.9	19.7
503120	16.6	20.6	217774	16.7	19.7	349066	16.8	20.7	277136	16.8	19.2	543711	16.9	20.9	384136	16.9	20.4
372893	16.6	20.6	528499	16.7	21.6	142469	16.8	18.3	36031	16.8	18.7	409905	16.9	22.0	344363	16.9	20.2
484989	16.6	21.2	302312	16.7	19.6	110418	16.8	19.1	425260	16.8	21.2	129535	16.9	19.6	344866	16.9	18.9
240496	16.6	20.7	33734	16.7	18.6	425331	16.8	21.6	204683	16.8	19.9	97513	16.9	18.8	534499	16.9	21.3
337511	16.6	20.4	28652	16.7	19.1	164100	16.8	19.5	523628	16.8	22.7	525146	16.9	21.6	524526	16.9	20.3
87716	16.6	18.8	304929	16.7	20.3	301980	16.8	18.4	199192	16.8	18.8	401300	16.9	20.5	310518	16.9	20.6
204572	16.6	20.2	83750	16.7	18.3	212665	16.8	20.1	457050	16.8	21.1	295226	16.9	19.9	534186	16.9	20.3
164104	16.6	18.7	200877	16.7	19.4	300886	16.8	21.3	371157	16.8	20.9	26913	16.9	18.9	498696	16.9	20.1
415982	16.6	22.2	459686	16.7	20.0	267345	16.8	21.2	276535	16.8	19.6	507587	16.9	21.6	80043	16.9	18.4
40665	16.6	17.5	199021	16.7	18.4	246994	16.8	19.7	515718	16.8	21.8	58286	16.9	20.2	221998	16.9	19.6
540900	16.6	19.9	138529	16.7	18.6	246976	16.8	21.1	358055	16.8	20.6	136229	16.9	18.1	502537	16.9	20.8
307501	16.6	18.9	477185	16.7	20.4	140003	16.8	19.8	300041	16.8	19.4	530758	16.9	20.9	387822	16.9	20.5
186211	16.6	19.9	59284	16.7	19.2	331800	16.8	20.1	511855	16.8	20.3	51257	16.9	17.7	19473	16.9	18.0
391299	16.6	21.9	159320	16.7	18.8	53315	16.8	16.8	417758	16.8	20.1	95421	16.9	19.6	190396	16.9	18.6
242148	16.6	21.4	212030	16.7	21.0	471474	16.8	21.4	61073	16.8	17.6	159071	16.9	19.9	417811	16.9	20.7
535430	16.6	21.7	530681	16.7	21.0	76288	16.8	18.4	582	16.8	14.0	29582	16.9	17.4	432404	16.9	21.3
283013	16.6	20.2	509755	16.7	22.0	188675	16.8	19.6	496028	16.8	20.4	93036	16.9	18.4	219605	16.9	20.2
117016	16.6	18.5	467371	16.7	18.4	207910	16.8	20.8	21825	16.8	16.8	500183	16.9	20.3	380430	16.9	20.3
182605	16.6	19.1	164774	16.7	19.7	341793	16.8	20.9	363754	16.8	21.3	86815	16.9	16.7	89638	16.9	19.5
287490	16.6	20.4	300215	16.7	20.0	296123	16.8	20.8	53304	16.8	17.0	436745	16.9	20.3	93714	16.9	18.2
525162	16.7	21.7	521305	16.7	20.3	34960											



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
473756	16.9	21.2	229241	17.0	20.5	544052	17.1	19.3	66906	17.2	19.0	123034	17.2	18.4	455524	17.3	20.9
523718	16.9	21.8	83064	17.0	18.8	105071	17.1	18.8	235666	17.2	19.2	248399	17.2	19.1	26387	17.3	16.7
89409	16.9	18.8	54319	17.0	18.0	267616	17.1	18.5	139	17.2	11.9	261791	17.2	20.2	518142	17.3	20.1
473088	16.9	20.5	343646	17.0	20.1	459279	17.1	21.0	491745	17.2	21.6	523528	17.2	20.7	180528	17.3	19.6
212442	16.9	18.8	319829	17.0	21.0	437548	17.1	20.1	526316	17.2	21.1	465976	17.2	20.4	3416	17.3	15.0
414887	16.9	20.3	241296	17.1	20.3	543712	17.1	20.7	297481	17.2	21.0	165377	17.2	18.7	39391	17.3	17.4
105536	16.9	18.5	259010	17.1	20.3	409718	17.1	21.3	363906	17.2	19.7	64735	17.2	17.3	527329	17.3	21.7
281121	16.9	20.5	408172	17.1	20.5	244320	17.1	19.8	330946	17.2	21.0	228393	17.2	20.0	267714	17.3	21.1
300880	16.9	20.0	481143	17.1	20.6	417466	17.1	19.5	162562	17.2	20.0	435330	17.3	22.0	89420	17.3	18.7
388663	16.9	21.3	25891	17.1	18.3	126669	17.1	18.9	497596	17.2	20.7	536159	17.3	20.5	351537	17.3	20.3
525270	16.9	20.0	239726	17.1	20.1	68910	17.1	19.0	343054	17.2	20.6	44746	17.3	19.9	353390	17.3	19.4
421409	16.9	19.7	171087	17.1	20.2	332807	17.1	19.6	525278	17.2	21.4	447312	17.3	21.7	337792	17.3	20.1
439108	16.9	21.3	284886	17.1	21.5	465734	17.1	20.5	490272	17.2	19.4	145327	17.3	20.3	449778	17.3	21.1
4497	16.9	16.0	25909	17.1	17.4	248415	17.1	19.2	178425	17.2	20.0	417188	17.3	20.4	389904	17.3	20.0
520128	16.9	21.2	484537	17.1	20.9	379669	17.1	20.1	488740	17.2	19.9	471366	17.3	21.5	271186	17.3	19.2
151798	16.9	20.0	25323	17.1	16.2	290537	17.1	18.7	294903	17.2	20.2	230268	17.3	18.3	386989	17.3	19.4
506335	16.9	19.3	14155	17.1	17.5	52273	17.1	19.6	267469	17.2	21.2	136200	17.3	18.4	500491	17.3	21.6
185455	16.9	21.3	435996	17.1	20.1	490307	17.1	21.4	174199	17.2	18.2	389711	17.3	20.4	39364	17.3	18.5
272763	17.0	21.3	273544	17.1	19.7	289211	17.1	19.2	158225	17.2	19.2	184284	17.3	20.0	353896	17.3	21.3
435304	17.0	21.3	227537	17.1	20.6	167081	17.1	19.7	401842	17.2	20.9	5562	17.3	16.9	417677	17.3	21.1
438240	17.0	20.5	528554	17.1	21.9	499351	17.1	20.6	422774	17.2	19.9	73513	17.3	19.2	384918	17.3	20.9
150241	17.0	19.5	29171	17.1	17.4	126786	17.1	19.1	118822	17.2	19.9	250149	17.3	19.6	188289	17.3	20.7
164525	17.0	19.3	64625	17.1	18.7	341731	17.1	21.0	283921	17.2	20.3	427888	17.3	21.5	185371	17.3	21.1
458767	17.0	21.5	526780	17.1	21.5	1843	17.1	14.3	533843	17.2	21.5	351966	17.3	20.6	318622	17.3	20.3
497945	17.0	21.5	370203	17.1	21.2	208260	17.1	20.8	294813	17.2	21.4	120743	17.3	20.1	59991	17.3	17.9
424774	17.0	21.2	384221	17.1	20.7	76834	17.1	19.2	403834	17.2	21.5	47687	17.3	18.2	62559	17.3	19.3
304925	17.0	20.1	403855	17.1	21.5	183706	17.1	20.5	350838	17.2	20.3	433145	17.3	20.8	82627	17.3	19.2
327446	17.0	21.0	253024	17.1	19.5	164564	17.1	19.9	536640	17.2	19.9	208001	17.3	19.0	460246	17.3	21.5
187741	17.0	20.6	544461	17.1	20.5	212808	17.1	19.2	210792	17.2	19.4	260006	17.3	18.7	299456	17.3	19.6
231553	17.0	20.3	193323	17.1	20.7	467217	17.1	20.6	313028	17.2	20.2	357985	17.3	21.3	472167	17.3	21.1
104928	17.0	19.1	283743	17.1	20.3	76201	17.1	19.3	492008	17.2	20.7	338078	17.3	19.6	293281	17.3	20.7
102332	17.0	20.1	265651	17.1	20.7	140367	17.1	20.2	140754	17.2	20.1	435981	17.3	20.9	294954	17.3	21.3
146839	17.0	19.2	191250	17.1	19.9	209419	17.1	20.2	401026	17.2	19.9	504938	17.3	21.2	489273	17.3	22.1
505156	17.0	21.4	219719	17.1	19.6	365204	17.1	19.4	288134	17.2	20.1	439987	17.3	21.1	65933	17.3	19.2
498413	17.0	21.6	119871	17.1	19.8	287158	17.1	20.1	139744	17.2	19.9	374542	17.3	20.2	241503	17.3	18.8
48891	17.0	16.9	370038	17.1	20.6	30695	17.1	18.1	310901	17.2	20.2	416513	17.3	20.6	277299	17.3	20.1
513253	17.0	20.3	463923	17.1	20.2	42498	17.1	18.6	380919	17.2	19.8	473777	17.3	20.3	171877	17.3	19.3
349057	17.0	21.0	413198	17.1	21.1	354186	17.1	19.8	470554	17.2	21.9	274304	17.3	19.8	400021	17.3	20.9
36420	17.0	18.8	271933	17.1	19.4	403260	17.1	20.1	210146	17.2	19.4	65578	17.3	19.3	374125	17.3	20.7
132081	17.0	18.9	471461	17.1	20.0	348798	17.1	18.6	93749	17.2	19.3	216551	17.3	20.2	489106	17.3	20.8
422564	17.0	18.9	185441	17.1	19.6	90884	17.1	19.1	520267	17.2	20.0	330788	17.3	21.1	230903	17.3	19.7
426131	17.0	19.5	281949	17.1	20.6	154267	17.1	18.8	530652	17.2	20.0	156351	17.3	19.4	526746	17.3	22.6
158524	17.0	17.6	168978	17.1	19.5	6647	17.1	17.1	389594	17.2	20.2	424023	17.3	19.2	432063	17.3	20.7
299257	17.0	20.3	64955	17.1	18.5	437650	17.1	20.0	56214	17.2	19.0	76004	17.3	19.3	206894	17.3	18.8
506783	17.0	21.5	32659	17.1	18.4	416999	17.1	21.7	62422	17.2	18.3	421719	17.3	20.4	385135	17.3	20.3
269596	17.0	20.0	497888	17.1	22.6	496775	17.1	18.6	419012	17.2	21.5	535083	17.3	21.3	74602	17.3	18.5
130732	17.0	20.1	143539	17.1	20.0	379297	17.1	18.6	430029	17.2	20.6	376164	17.3	20.4	73558	17.3	18.4
299551	17.0	20.2	289335	17.1	20.2	525015	17.1	21.4	473218	17.2	19.7	96953	17.3	19.4	31817	17.4	18.0
367985	17.0	20.6	270143	17.1	21.1	420739	17.1	20.5	152313	17.2	19.0	177132	17.3	19.6	294215	17.4	19.9
168782	17.0	19.9	544649	17.1	20.6	492667	17.1	20.0	313831	17.2	20.7	368975	17.3	19.9	338265	17.4	21.4
335490	17.0	20.6	15872	17.1	17.0	502839	17.1	19.9	307375	17.2	19.3	453858	17.3	20.8	63064	17.4	18.4
300891	17.0	19.9	432029	17.1	21.6	203634	17.1	18.9	86772	17.2	17.9	217885	17.3	18.6	338876	17.4	20.2
493486	17.0	21.0	426943	17.1	19.9	286052	17.2	19.2	542510	17.2	18.2	93165	17.3	19.0	332351	17.4	20.6
168728	17.0	19.2	534547	17.1	22.2	189183	17.2	20.7	173967	17.2	20.7	179546	17.3	20.7	225563	17.4	20.5
351633	17.0	20.3	298771	17.1	19.1	353913	17.2	20.4	338121	17.2	20.1	83081	17.3	19.4	51892	17.4	17.5
332722	17.0	20.0	78889	17.1	18.8	483835	17.2	20.4	464977	17.2	20.5	368195	17.3	20.8	413135	17.4	20.8
233686	17.0	19.9	126957	17.1	20.0	183353	17.2	19.2	448456	17.2	20.9	495910	17.3	20.1	442559	17.4	21.6
400759	17.0	20.4	163416	17.1	19.4	13639	17.2	17.2	299298	17.2	19.9	373374	17.3	20.1	209408	17.4	20.7
245128	17.0	20.0	355800	17.1	19.9	113588	17.2	19.8	472030	17.2	20.7	370032	17.3	20.0	123188	17.4	17.6
82629	17.0	18.3	469116	17.1	20.4	140795	17.2	19.5	501491	17.2	21.2	253262	17.3	20.7	495195	17.4	20.4
456928	17.0	21.1	286085	17.1	20.4	150020	17.2	19.5	178679	17.2	21.3	486246	17.3	19.0	510480	17.4	20.7
418400	17.0	20.4	506738	17.1	22.5	88715	17.2	19.3	522773	17.2	20.9	241497	17.3	20.7	285762	17.4	20.5
90067	17.0	18.9	488661	17.1	20.5	525657	17.2	20.5	47502	17.2	18.3	463821	17.3	21.5	313714	17.4	19.8
104691	17.0	19.0	283537	17.1	21.8	6720	17.2	17.3	385078	17.2	21.1	300369	17.3	21.3	272785	17.4	19.6
419871	17.0	22.5	381436	17.1	20.4	348887	17.2	21.5	544150	17.2	20.8	372611	17.3	20.1	451699	17.4	21.6
132069	17.0	18.7	232547	17.1	20.0	99328	17.2	19.6	444389	17.2	22.6	151793	17.3	19.4	290915	17.4	19.2
488750	17.0	20.2	246533	17.1	20.2	415070	17.2	21.7	291429	17.2	20.4	249430	17.3	19.3	118914	17.4	19.4
473210	17.0	20.3	535408	17.1	20.8	329325	17.2	19.9	90185	17.2	19.3	391023	17.3	19.6	385916	17.4	20.8
279382	17.0	20.9	312187	17.1	20.5	423											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
432046	17.4	21.2	264697	17.4	20.2	93738	17.5	18.1	484244	17.6	20.8	518776	17.6	21.6	31836	17.7	16.8
51204	17.4	18.2	79919	17.4	20.3	388009	17.5	21.2	296595	17.6	20.6	233693	17.6	21.2	455489	17.7	21.5
506673	17.4	21.8	439775	17.4	20.6	384533	17.5	19.6	83830	17.6	17.9	205613	17.7	19.6	120930	17.7	17.8
245568	17.4	20.2	524402	17.4	20.2	541913	17.5	20.0	203840	17.6	20.0	37594	17.7	19.0	494927	17.7	19.9
29642	17.4	18.4	105686	17.4	19.5	303770	17.5	19.9	300114	17.6	19.8	211599	17.7	19.4	406415	17.7	21.3
170190	17.4	18.4	220330	17.4	21.0	505211	17.5	21.5	95910	17.6	19.0	391259	17.7	21.4	262709	17.7	20.1
518784	17.4	21.1	120543	17.4	19.8	122427	17.5	18.2	349448	17.6	22.2	166705	17.7	18.9	106464	17.7	19.8
217921	17.4	20.1	422575	17.4	21.3	161522	17.5	19.2	114901	17.6	20.0	496383	17.7	20.6	145362	17.7	19.5
297803	17.4	20.4	307268	17.4	19.5	188295	17.5	19.7	143715	17.6	19.1	376048	17.7	20.2	186272	17.7	19.0
38834	17.4	18.5	352596	17.4	22.7	496733	17.5	19.5	71291	17.6	19.4	326717	17.7	21.7	290319	17.7	19.3
516347	17.4	20.4	114070	17.4	19.2	1967	17.5	15.1	322127	17.6	19.9	147327	17.7	18.5	473250	17.7	20.1
230880	17.4	20.3	538942	17.5	19.1	336864	17.5	19.6	143533	17.6	20.4	225571	17.7	20.2	415900	17.7	20.6
156516	17.4	19.9	501499	17.5	21.3	465945	17.5	20.5	496550	17.6	20.7	307613	17.7	19.7	474326	17.7	21.6
62604	17.4	18.5	134876	17.5	19.7	186532	17.5	20.5	93852	17.6	19.4	76566	17.7	17.4	190062	17.7	19.1
126331	17.4	19.4	286184	17.5	20.8	127545	17.5	19.1	412442	17.6	18.9	399142	17.7	20.4	384585	17.7	19.9
104336	17.4	18.9	63923	17.5	19.1	33689	17.5	17.9	109602	17.6	19.0	480248	17.7	20.0	253997	17.7	19.3
529901	17.4	20.7	537932	17.5	20.4	63450	17.5	18.7	279581	17.6	20.3	3134	17.7	16.7	471467	17.7	21.1
413212	17.4	20.8	526383	17.5	22.1	313670	17.5	20.6	327895	17.6	21.1	187020	17.7	19.8	224442	17.7	19.0
410227	17.4	20.7	420670	17.5	20.3	132271	17.5	17.5	471178	17.6	20.5	112174	17.7	18.5	57520	17.7	18.4
151907	17.4	18.7	502887	17.5	20.5	334789	17.5	19.3	150070	17.6	20.1	112948	17.7	19.9	374993	17.7	20.4
326368	17.4	17.8	108975	17.5	17.3	72218	17.5	19.4	460831	17.6	20.7	345558	17.7	21.1	318074	17.7	19.2
139669	17.4	19.1	424030	17.5	21.2	236138	17.5	19.7	535113	17.6	21.2	297035	17.7	20.3	60385	17.7	17.6
403251	17.4	20.1	318878	17.5	19.8	369284	17.5	19.9	5476	17.6	17.2	300166	17.7	19.4	190418	17.7	20.7
326990	17.4	18.7	524651	17.5	21.6	120383	17.5	18.6	76830	17.6	19.2	158517	17.7	19.2	534059	17.7	20.7
341616	17.4	20.7	162761	17.5	20.0	167079	17.5	19.6	437439	17.6	21.2	285607	17.7	19.0	119575	17.7	19.4
379932	17.4	18.8	103581	17.5	18.8	236862	17.5	20.2	8300	17.6	18.5	534051	17.7	20.3	225598	17.7	20.5
218402	17.4	19.6	138572	17.5	19.4	201940	17.5	20.2	313748	17.6	21.2	179419	17.7	20.7	466771	17.7	20.3
159669	17.4	19.4	505042	17.5	21.4	188694	17.5	19.0	313043	17.6	19.2	149398	17.7	19.7	245072	17.7	19.8
5427	17.4	15.6	107097	17.5	19.9	150058	17.5	19.0	514778	17.6	20.3	344269	17.7	21.0	457741	17.7	20.4
231769	17.4	19.7	378665	17.5	20.6	532492	17.5	21.6	210233	17.6	19.9	148103	17.7	18.3	108625	17.8	17.6
43098	17.4	18.0	336183	17.5	19.9	51791	17.5	17.1	370701	17.6	18.9	33412	17.7	16.9	238096	17.8	20.7
4778	17.4	18.2	414853	17.5	20.4	491794	17.5	20.2	360699	17.6	21.6	136452	17.7	19.3	304507	17.8	20.4
53714	17.4	17.0	183992	17.5	18.8	330964	17.5	21.0	433769	17.6	21.9	409153	17.7	20.2	406508	17.8	20.5
513433	17.4	22.4	417710	17.5	21.4	91118	17.6	19.1	28350	17.6	17.9	264533	17.7	20.2	289874	17.8	19.8
534999	17.4	21.7	502659	17.5	21.7	470934	17.6	20.6	61356	17.6	18.1	121061	17.7	19.2	171909	17.8	19.7
163089	17.4	18.5	494235	17.5	21.1	155404	17.6	19.8	334339	17.6	20.9	406850	17.7	19.8	67012	17.8	17.4
56995	17.4	19.0	57264	17.5	18.5	214748	17.6	19.7	503594	17.6	19.7	20940	17.7	18.0	213733	17.8	20.9
82620	17.4	18.3	504761	17.5	20.6	425258	17.6	20.8	122674	17.6	19.8	243119	17.7	19.8	377376	17.8	20.7
341302	17.4	20.9	276025	17.5	20.0	219592	17.6	19.4	46539	17.6	17.4	474209	17.7	20.6	295366	17.8	19.3
542852	17.4	20.8	27986	17.5	19.0	12681	17.6	18.0	91569	17.6	19.3	97312	17.7	19.9	531163	17.8	21.1
178128	17.4	21.1	258788	17.5	19.2	111614	17.6	19.1	111633	17.6	19.6	213076	17.7	20.3	378338	17.8	19.6
146936	17.4	19.5	192745	17.5	19.9	379511	17.6	20.4	463656	17.6	19.2	133130	17.7	18.9	241299	17.8	20.6
498716	17.4	21.0	445546	17.5	19.6	54917	17.6	19.0	333233	17.6	20.0	296342	17.7	20.7	461784	17.8	21.0
322372	17.4	20.2	480198	17.5	19.5	498934	17.6	21.4	300149	17.6	19.8	275110	17.7	18.9	456246	17.8	19.0
357335	17.4	18.5	402956	17.5	21.8	369105	17.6	20.5	447296	17.6	21.4	5651	17.7	16.4	322215	17.8	21.1
130536	17.4	19.6	182613	17.5	18.9	39100	17.6	19.9	540103	17.6	19.7	160741	17.7	19.6	43322	17.8	17.1
93113	17.4	19.5	10724	17.5	17.2	94005	17.6	18.9	453381	17.6	21.4	156627	17.7	18.2	432233	17.8	20.1
10567	17.4	18.4	491696	17.5	21.2	411750	17.6	20.3	105961	17.6	19.4	21080	17.7	17.1	518970	17.8	20.8
127036	17.4	18.8	98716	17.5	18.9	297490	17.6	20.0	206787	17.6	21.1	231658	17.7	20.0	374612	17.8	20.0
366855	17.4	21.4	133255	17.5	18.6	347452	17.6	20.2	492599	17.6	20.6	118360	17.7	19.1	87536	17.8	19.4
503574	17.4	20.7	18793	17.5	16.6	284670	17.6	20.3	31880	17.6	17.0	536158	17.7	21.3	192355	17.8	19.8
216531	17.4	18.4	32796	17.5	16.6	500664	17.6	21.8	166314	17.6	18.6	300642	17.7	19.7	301848	17.8	19.7
456954	17.4	20.5	164144	17.5	19.4	535249	17.6	20.9	484976	17.6	23.0	188055	17.7	20.0	174043	17.8	19.4
23817	17.4	16.8	389157	17.5	21.1	191256	17.6	20.7	325995	17.6	19.7	53871	17.7	17.5	120967	17.8	19.9
173831	17.4	20.6	31075	17.5	19.0	344655	17.6	20.4	346020	17.6	21.5	213771	17.7	20.4	354882	17.8	21.5
341583	17.4	20.3	434036	17.5	21.5	71192	17.6	19.0	101812	17.6	18.6	372729	17.7	20.7	258283	17.8	19.7
346736	17.4	20.5	210047	17.5	19.7	422776	17.6	20.2	459992	17.6	21.5	124163	17.7	18.0	238478	17.8	19.0
131933	17.4	19.2	434623	17.5	20.4	105229	17.6	19.2	191165	17.6	20.1	83272	17.7	18.6	523519	17.8	19.3
32482	17.4	17.7	438350	17.5	21.0	173139	17.6	19.9	513093	17.6	20.4	167077	17.7	19.5	78342	17.8	18.6
76741	17.4	17.8	29910	17.5	18.1	176064	17.6	20.0	211466	17.6	20.3	195443	17.7	18.8	406407	17.8	19.3
165480	17.4	19.8	408549	17.5	19.7	117053	17.6	18.2	419852	17.6	21.0	417623	17.7	21.4	19482	17.8	17.2
494929	17.4	21.5	388033	17.5	19.5	427009	17.6	20.9	533091	17.6	21.5	296949	17.7	19.8	239689	17.8	19.5
5511	17.4	16.8	120469	17.5	20.3	300988	17.6	21.0	30414	17.6	18.6	119398	17.7	19.6	412553	17.8	20.6
527250	17.4	21.5	152778	17.5	18.7	141295	17.6	20.1	207594	17.6	19.4	173996	17.7	20.0	301475	17.8	19.5
152878	17.4	19.5	85869	17.5	18.4	341891	17.6	20.5	502959	17.6	20.5	435373	17.7	20.6	325243	17.8	20.6
186125	17.4	19.8	165361	17.5	19.1	243373	17.6	19.2	300212	17.6	21.8	400312	17.7	20.3	207003	17.8	20.6
519266	17.4	21.5	248583	17.5	18.3	498484	17.6	22.5	363248	17.6	19.7	26036	17.7	17.5	430107	17.8	21.3
423353	17.4	20.4	45805	17.5	18.6	271419	17.6	19.3	144090	17.6	19.4	533777	17.7	21.3	297946	17.8	19.6
98951	17.4	18.8	345649	17.5	19.4	423191											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
234433	17.8	20.1	49471	17.8	18.7	124204	17.9	18.3	268394	17.9	21.8	203555	18.0	19.6	359060	18.1	20.5
269646	17.8	19.4	28985	17.8	16.5	222823	17.9	20.0	298758	17.9	20.1	123404	18.0	19.9	201523	18.1	19.3
534282	17.8	20.7	452366	17.8	21.2	166776	17.9	20.3	213157	17.9	19.5	430458	18.1	19.4	190149	18.1	20.4
314664	17.8	20.5	245010	17.8	19.3	460111	17.9	19.8	218037	17.9	19.1	50619	18.1	18.4	273281	18.1	20.3
382289	17.8	20.8	269793	17.8	20.2	338267	17.9	20.8	399954	17.9	19.1	2884	18.1	16.9	489339	18.1	21.3
433	17.8	11.9	154630	17.8	19.5	425108	17.9	21.3	469698	17.9	20.2	480759	18.1	19.7	87899	18.1	18.3
102536	17.8	19.2	407751	17.8	21.7	106970	17.9	19.5	423632	17.9	21.9	242363	18.1	20.1	82092	18.1	20.2
179858	17.8	18.5	320066	17.8	19.7	149435	17.9	18.0	227808	17.9	21.0	241716	18.1	19.2	468677	18.1	20.7
402551	17.8	19.5	18503	17.8	16.5	455200	17.9	21.6	192287	17.9	19.6	268069	18.1	19.6	312125	18.1	19.8
153948	17.8	19.4	408243	17.8	20.5	94997	17.9	18.0	529624	17.9	20.6	158408	18.1	18.7	47438	18.1	17.4
284781	17.8	20.2	128147	17.8	17.6	400540	17.9	20.2	162280	17.9	20.0	472124	18.1	20.0	138730	18.1	19.3
502624	17.8	20.6	203825	17.8	20.7	66812	17.9	19.5	67629	17.9	19.0	538488	18.1	20.4	27318	18.1	17.7
93491	17.8	19.2	348464	17.8	20.7	469758	17.9	20.6	244087	17.9	19.8	527569	18.1	20.4	93920	18.1	19.3
434078	17.8	20.6	117950	17.8	19.3	522776	17.9	21.1	541997	17.9	20.9	326729	18.1	19.7	55795	18.1	19.4
18658	17.8	19.0	366423	17.8	20.6	278625	17.9	20.9	294405	17.9	19.4	106334	18.1	18.2	368229	18.1	20.5
456893	17.8	20.8	437592	17.8	21.5	292167	17.9	19.7	492763	17.9	19.6	54571	18.1	19.4	411880	18.1	21.5
65615	17.8	18.5	506672	17.9	21.9	377199	17.9	21.6	47189	17.9	17.9	450475	18.1	20.8	541097	18.1	20.5
300909	17.8	20.6	301000	17.9	20.9	350234	17.9	20.1	427199	17.9	21.1	30432	18.1	16.7	109968	18.1	18.9
105593	17.8	19.0	290302	17.9	20.9	173937	17.9	21.0	202393	17.9	18.7	98976	18.1	19.0	83323	18.1	19.8
369375	17.8	20.6	63832	17.9	19.6	491976	17.9	21.2	399812	17.9	21.0	281038	18.1	20.1	103429	18.1	19.1
522711	17.8	20.8	6586	17.9	17.3	180219	17.9	20.1	117775	17.9	18.1	275136	18.1	20.2	470203	18.1	19.4
348563	17.8	19.7	22927	17.9	17.4	132006	17.9	20.6	312091	17.9	19.4	539884	18.1	19.3	173843	18.1	21.5
268347	17.8	22.2	395794	17.9	19.9	7577	17.9	17.2	77698	17.9	19.0	14163	18.1	18.9	153612	18.1	19.4
122377	17.8	19.2	280757	17.9	19.5	132014	17.9	18.9	12720	17.9	16.9	149658	18.1	19.9	292291	18.1	19.9
511129	17.8	19.7	10769	17.9	16.9	345655	17.9	19.2	456839	17.9	19.3	7728	18.1	16.3	291075	18.1	20.4
444885	17.8	21.6	300195	17.9	19.4	458095	17.9	22.1	297405	17.9	19.2	372536	18.1	21.2	32800	18.2	17.7
245054	17.8	20.7	267451	17.9	18.5	397507	17.9	20.5	57644	17.9	19.0	243722	18.1	19.3	41782	18.2	18.7
354194	17.8	19.9	502394	17.9	21.0	282171	17.9	18.2	180851	17.9	19.5	362288	18.1	20.4	497163	18.2	20.4
407739	17.8	21.3	156185	17.9	19.7	368988	17.9	21.8	338183	17.9	20.1	202996	18.1	19.6	4894	18.2	14.5
147222	17.8	19.6	309799	17.9	21.0	483649	17.9	20.2	136272	17.9	19.4	245069	18.1	21.5	519398	18.2	20.8
395395	17.8	19.1	331915	17.9	20.0	408165	17.9	20.7	161728	17.9	19.1	306369	18.1	21.0	87507	18.2	19.4
498622	17.8	19.5	350604	17.9	19.4	453792	17.9	20.3	441855	17.9	20.9	111066	18.1	19.0	161189	18.2	19.4
429964	17.8	20.7	486728	17.9	20.4	101188	17.9	18.8	197017	17.9	20.3	372006	18.1	19.6	140941	18.2	19.1
467510	17.8	21.2	298852	17.9	21.0	31353	17.9	18.2	16311	18.0	17.1	527610	18.1	21.7	384176	18.2	20.8
172145	17.8	19.0	83815	17.9	19.3	498076	17.9	22.2	58248	18.0	18.3	422810	18.1	21.3	387219	18.2	20.9
304034	17.8	19.4	534870	17.9	21.5	234290	17.9	19.7	153807	18.0	20.1	422763	18.1	20.1	525115	18.2	20.6
543631	17.8	19.9	154978	17.9	17.9	248860	17.9	20.3	155109	18.0	19.7	31783	18.1	17.5	402957	18.2	20.6
308146	17.8	21.3	470189	17.9	20.5	436816	17.9	20.9	369568	18.0	19.7	294972	18.1	21.0	497030	18.2	22.0
339013	17.8	19.4	507023	17.9	21.2	283509	17.9	19.7	234981	18.0	20.1	467021	18.1	20.2	163160	18.2	19.4
512944	17.8	20.4	527458	17.9	20.8	146847	17.9	19.0	485416	18.0	20.7	72233	18.1	17.9	249604	18.2	20.2
213298	17.8	20.5	378962	17.9	20.6	64784	17.9	18.7	285940	18.0	19.9	374178	18.1	20.8	512945	18.2	19.9
121564	17.8	20.1	471923	17.9	19.9	145158	17.9	19.4	196524	18.0	18.3	141181	18.1	20.1	236708	18.2	18.9
194667	17.8	19.6	17308	17.9	18.7	207933	17.9	19.9	297468	18.0	20.6	64971	18.1	20.1	29736	18.2	18.0
510374	17.8	22.1	346841	17.9	20.5	501026	17.9	21.4	315616	18.0	18.3	73641	18.1	19.1	101726	18.2	19.1
467866	17.8	21.3	301745	17.9	19.3	427963	17.9	20.9	42451	18.0	19.2	503501	18.1	20.0	536229	18.2	20.6
350285	17.8	21.0	274904	17.9	20.9	494191	17.9	20.2	117453	18.0	20.0	43154	18.1	18.8	27187	18.2	17.9
151118	17.8	19.8	229773	17.9	19.8	191775	17.9	19.9	231173	18.0	20.7	221206	18.1	20.1	544144	18.2	21.7
491836	17.8	20.4	403237	17.9	21.9	88271	17.9	17.8	197659	18.0	18.2	419868	18.1	21.5	385924	18.2	20.6
141316	17.8	19.5	149803	17.9	19.3	539184	17.9	20.6	233289	18.0	19.9	372442	18.1	20.5	469746	18.2	19.8
529484	17.8	22.1	40625	17.9	18.6	540274	17.9	21.3	94430	18.0	18.2	122173	18.1	19.1	483027	18.2	20.4
380901	17.8	20.4	527032	17.9	21.9	532442	17.9	21.7	402926	18.0	21.2	204128	18.1	20.8	456668	18.2	20.8
423171	17.8	20.3	531797	17.9	22.0	523538	17.9	21.0	472506	18.0	20.7	191037	18.1	19.0	12073	18.2	16.7
469362	17.8	22.0	527808	17.9	21.2	96717	17.9	18.3	463786	18.0	22.0	164844	18.1	20.5	458845	18.2	20.0
82642	17.8	19.5	414017	17.9	20.5	430201	17.9	20.8	492007	18.0	20.6	251073	18.1	20.8	67382	18.2	18.7
5874	17.8	17.6	225389	17.9	20.2	529085	17.9	20.7	528725	18.0	21.2	203482	18.1	20.3	58544	18.2	18.3
371162	17.8	20.8	209150	17.9	19.2	173449	17.9	19.6	89271	18.0	18.5	510281	18.1	20.3	435034	18.2	19.5
105499	17.8	20.6	368578	17.9	20.4	516896	17.9	21.7	227873	18.0	19.1	349396	18.1	20.5	439129	18.2	20.5
263653	17.8	20.8	114599	17.9	19.2	146903	17.9	19.3	32495	18.0	16.3	392894	18.1	21.9	352423	18.2	20.8
192372	17.8	20.0	140710	17.9	18.3	187408	17.9	19.0	366833	18.0	21.5	438376	18.1	21.1	496981	18.2	23.7
244144	17.8	19.9	143578	17.9	18.5	136535	17.9	18.6	190379	18.0	19.2	122284	18.1	19.3	562925	18.2	20.3
523686	17.8	22.1	379985	17.9	20.2	297792	17.9	20.5	104072	18.0	19.7	306562	18.1	20.0	313153	18.2	21.0
2907	17.8	16.1	146177	17.9	19.5	377877	17.9	20.1	219819	18.0	20.6	161524	18.1	17.6	374979	18.2	21.2
471409	17.8	21.3	37923	17.9	17.4	488928	17.9	21.9	374616	18.0	20.4	348912	18.1	21.1	530068	18.2	20.7
290748	17.8	20.3	433659	17.9	20.3	385414	17.9	21.4	502156	18.0	20.1	27569	18.1	18.6	276851	18.2	21.0
435592	17.8	20.6	458801	17.9	22.2	188986	17.9	20.4	90380	18.0	19.4	415615	18.1	20.5	279239	18.2	21.2
423527	17.8	20.8	310158	17.9	20.2	313762	17.9	21.4	457238	18.0	20.4	139509	18.1	20.1	128978	18.2	18.3
78800	17.8	17.4	351634	17.9	21.0	57447	17.9	18.5	289941	18.0	20.2	74310	18.1	18.0	70436	18.2	18.7
127655	17.8	18.6	516135	17.9	22.6	54980	17.9	19.4	316660	18.0	21.1	262342	18.1	19.2	348937	18.2	19.5
223746	17.8	19.6	294201	17.9	19.9	154993											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
376207	18.2	20.2	109913	18.3	18.6	83411	18.4	19.5	231785	18.4	19.9	520081	18.5	20.8	382954	18.5	21.0
140046	18.2	19.4	537094	18.3	21.2	301207	18.4	20.5	432098	18.4	21.2	33744	18.5	18.0	113976	18.5	19.6
417829	18.2	21.3	495281	18.3	20.7	507520	18.4	21.4	347332	18.4	19.6	172069	18.5	19.2	532982	18.5	21.9
190691	18.2	20.7	204408	18.3	20.5	448453	18.4	19.8	264016	18.4	20.2	435319	18.5	21.0	144116	18.5	19.5
203267	18.2	19.0	505280	18.3	21.1	525284	18.4	21.7	187546	18.4	20.7	57443	18.5	18.4	341698	18.5	20.7
381474	18.2	20.2	327820	18.3	21.4	288539	18.4	18.5	195626	18.4	18.9	524110	18.5	20.7	359510	18.6	21.1
341461	18.2	19.7	342960	18.3	20.5	274919	18.4	21.8	54417	18.4	17.9	41682	18.5	18.7	412067	18.6	20.0
235018	18.2	19.8	65797	18.3	19.3	352226	18.4	21.0	538576	18.4	20.7	140219	18.5	19.5	149459	18.6	19.0
138710	18.2	18.8	469779	18.3	20.6	544528	18.4	19.5	143044	18.4	19.7	444196	18.5	21.0	529320	18.6	21.8
155936	18.2	19.2	533977	18.3	20.4	473143	18.4	20.6	532615	18.4	21.0	193522	18.5	19.5	79618	18.6	17.3
157363	18.2	18.2	299465	18.3	21.1	463688	18.4	20.5	53340	18.4	18.4	350389	18.5	20.5	241517	18.6	18.6
499806	18.2	21.2	307673	18.3	19.6	206235	18.4	19.4	463842	18.4	20.8	260991	18.5	21.0	534956	18.6	21.1
43503	18.2	17.3	21339	18.3	19.0	200757	18.4	19.0	66788	18.4	19.1	436345	18.5	20.2	348570	18.6	19.7
501530	18.2	22.1	126111	18.3	18.7	338429	18.4	20.4	346138	18.4	20.6	417115	18.5	21.8	403543	18.6	19.3
344356	18.2	21.7	273661	18.3	20.3	446870	18.4	21.8	352566	18.4	20.7	456525	18.5	21.1	346961	18.6	21.1
53231	18.2	18.9	353533	18.3	20.6	267208	18.4	20.7	195659	18.4	19.7	127128	18.5	18.7	217250	18.6	19.0
109984	18.2	20.2	342960	18.3	21.4	310938	18.4	21.2	337030	18.4	21.3	489467	18.5	21.2	208993	18.6	21.5
311526	18.2	21.4	364252	18.3	22.1	10963	18.4	18.2	230501	18.4	18.3	382848	18.5	19.4	532473	18.6	21.0
143459	18.2	18.4	374053	18.3	20.1	163180	18.4	18.5	128273	18.4	18.4	65435	18.5	18.4	385906	18.6	21.5
41586	18.2	19.5	297271	18.3	20.5	342847	18.4	19.2	184102	18.4	18.6	356655	18.5	18.7	343515	18.6	19.6
54652	18.2	18.8	471869	18.3	21.0	170811	18.4	19.8	298931	18.4	20.1	413192	18.5	19.8	303808	18.6	20.7
8112	18.2	17.9	78327	18.3	19.3	338886	18.4	20.7	515728	18.4	20.6	463606	18.5	20.7	491738	18.6	20.7
525732	18.2	21.6	263661	18.3	20.8	2702	18.4	16.2	30834	18.4	17.8	115653	18.5	20.4	142543	18.6	19.9
208490	18.2	19.6	72352	18.3	17.6	288405	18.4	21.5	350087	18.4	19.0	402921	18.5	20.8	458968	18.6	20.1
392571	18.2	20.3	215068	18.3	19.5	268586	18.4	19.9	538014	18.4	19.4	230158	18.5	18.8	207631	18.6	20.2
198579	18.2	19.8	89287	18.3	18.6	487590	18.4	21.0	94696	18.4	19.6	224494	18.5	20.4	253291	18.6	19.8
330523	18.2	20.7	138865	18.3	20.0	227497	18.4	20.6	106600	18.4	19.2	37879	18.5	18.1	169340	18.6	20.3
250407	18.2	19.7	426916	18.3	20.5	470880	18.4	20.7	183449	18.4	18.4	60437	18.5	18.1	306633	18.6	20.5
338946	18.2	21.3	447342	18.3	20.2	204362	18.4	20.8	6688	18.4	17.9	122856	18.5	19.1	264644	18.6	18.0
165471	18.2	19.8	466873	18.3	19.6	212327	18.4	19.2	277879	18.4	19.1	109096	18.5	18.0	209531	18.6	20.4
435412	18.2	21.5	532859	18.3	21.4	512967	18.4	21.1	56613	18.4	17.0	439994	18.5	21.7	525810	18.6	20.2
338372	18.2	20.1	424037	18.3	19.6	535555	18.4	22.1	303439	18.4	21.2	169111	18.5	19.4	97950	18.6	18.8
91289	18.2	18.7	460781	18.3	20.1	531166	18.4	21.2	182484	18.4	19.5	186544	18.5	19.3	207754	18.6	18.9
530978	18.2	19.6	5426	18.3	15.8	511923	18.4	20.3	464067	18.4	20.8	240063	18.5	19.7	436693	18.6	21.0
539180	18.2	20.2	524350	18.3	22.4	398322	18.4	20.2	120157	18.4	19.6	466154	18.5	20.1	43004	18.6	18.9
293435	18.2	19.8	534582	18.3	20.9	455290	18.4	21.0	96467	18.4	17.8	54989	18.5	19.0	151768	18.6	19.1
107425	18.2	17.5	83191	18.3	19.6	307242	18.4	19.1	413813	18.4	19.5	532724	18.5	21.4	492019	18.6	20.0
372422	18.2	20.4	241968	18.3	19.8	34712	18.4	18.3	244198	18.4	19.9	336829	18.5	19.8	347916	18.6	21.6
396237	18.2	20.6	31272	18.3	18.3	354794	18.4	20.9	538960	18.4	20.8	362050	18.5	21.5	524272	18.6	21.5
346079	18.2	21.8	109769	18.3	18.9	190106	18.4	20.3	4391	18.4	15.9	360757	18.5	20.3	272963	18.6	20.5
363010	18.2	21.7	280355	18.3	20.2	212894	18.4	20.7	413955	18.4	19.9	466743	18.5	21.1	288567	18.6	18.9
345407	18.2	20.3	334899	18.3	21.5	463853	18.4	20.1	422851	18.4	20.5	146332	18.5	19.3	420667	18.6	20.9
37918	18.2	16.9	212447	18.3	20.0	338835	18.4	20.2	495908	18.4	20.2	376514	18.5	19.5	535211	18.6	21.0
492401	18.2	19.3	60670	18.3	17.9	168925	18.4	19.9	21488	18.4	18.0	323130	18.5	20.4	407966	18.6	21.4
58052	18.2	19.0	187125	18.3	19.8	51805	18.4	17.0	106662	18.4	20.0	534455	18.5	22.0	537104	18.6	20.4
88484	18.2	18.8	244725	18.3	18.6	374572	18.4	20.4	157784	18.5	19.6	348731	18.5	21.0	137349	18.6	19.5
267061	18.2	21.5	118536	18.3	18.2	232143	18.4	19.9	304762	18.5	20.5	208987	18.5	19.5	226805	18.6	18.9
372574	18.2	20.3	330139	18.3	20.5	109499	18.4	19.6	313659	18.5	20.2	351464	18.5	20.3	285380	18.6	20.6
446786	18.2	20.4	442652	18.3	20.4	531592	18.4	20.7	23063	18.5	18.3	320417	18.5	20.1	32788	18.6	18.9
496117	18.2	20.9	131885	18.3	19.9	96102	18.4	19.7	95559	18.5	18.9	465108	18.5	22.2	282248	18.6	20.2
292624	18.2	20.0	347006	18.3	20.3	10138	18.4	17.9	450815	18.5	21.5	138349	18.5	19.9	238788	18.6	20.5
80179	18.2	18.2	140278	18.3	19.8	261541	18.4	20.5	110284	18.5	21.1	437906	18.5	20.9	176447	18.6	19.4
382378	18.2	20.5	299007	18.3	21.2	328825	18.4	19.8	119737	18.5	20.1	168966	18.5	19.2	88586	18.6	18.9
240322	18.2	18.2	376629	18.3	21.1	51155	18.4	18.3	101567	18.5	17.7	219738	18.5	20.0	381699	18.6	19.1
354221	18.2	19.2	53027	18.3	17.3	126188	18.4	18.7	233086	18.5	20.0	268067	18.5	19.5	247451	18.6	18.7
512934	18.2	20.6	251644	18.3	19.1	259645	18.4	20.5	241861	18.5	19.8	293605	18.5	20.1	331428	18.6	19.6
404163	18.3	19.7	63682	18.3	17.9	194501	18.4	21.4	457672	18.5	20.9	131774	18.5	19.4	426477	18.6	21.5
15250	18.3	17.6	522426	18.3	20.1	52914	18.4	18.5	52511	18.5	18.8	8956	18.5	18.5	272860	18.6	20.0
491986	18.3	21.0	232349	18.3	18.7	374550	18.4	20.9	537940	18.5	19.5	524136	18.5	20.9	307548	18.6	20.2
379416	18.3	20.3	389156	18.3	20.6	542220	18.4	21.3	304634	18.5	19.7	16083	18.5	17.0	329152	18.6	21.4
171640	18.3	19.9	429218	18.3	22.1	362053	18.4	21.5	345711	18.5	20.2	148108	18.5	19.3	456190	18.6	18.7
169004	18.3	19.6	395747	18.3	21.0	238952	18.4	18.2	207361	18.5	19.7	16738	18.5	17.6	11548	18.6	17.3
291316	18.3	20.1	86500	18.3	18.3	543555	18.4	20.5	303216	18.5	18.5	325110	18.5	19.8	178614	18.6	20.3
204384	18.3	18.8	50898	18.3	18.7	322513	18.4	19.7	436746	18.5	19.1	450785	18.5	21.1	509096	18.6	21.1
303445	18.3	21.0	264701	18.3	20.6	542508	18.4	20.3	300100	18.5	21.1	227267	18.5	20.7	530234	18.6	22.3
332748	18.3	20.2	284712	18.3	19.3	360670	18.4	20.9	303671	18.5	20.6	391334	18.5	22.1	69712	18.6	18.2
141326	18.3	19.4	236173	18.3	20.2	31806	18.4	18.6	15692	18.5	17.9	500608	18.5	20.8	464380	18.6	21.6
492004	18.3	19.5	46375	18.3	17.6	423226	18.4	21.9	451004	18.5	21.0	3649	18.5	16.4	200302	18.6	20.1
348514	18.3	20.2	193306	18.3	20.0	491969											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
524039	18.6	21.2	128048	18.7	17.4	491079	18.7	21.4	64763	18.8	18.5	388694	18.9	21.5	470169	18.9	21.8
246841	18.6	21.6	315674	18.7	19.6	278725	18.7	20.2	32843	18.8	18.3	313699	18.9	20.3	128184	18.9	19.5
526824	18.6	21.6	15004	18.7	17.3	227899	18.7	20.2	459900	18.8	19.8	380591	18.9	19.4	245766	18.9	20.3
82336	18.6	18.1	522599	18.7	21.1	531059	18.7	19.6	157693	18.8	20.5	65835	18.9	18.2	34872	18.9	18.1
264021	18.6	20.2	213875	18.7	20.2	272902	18.7	21.2	200890	18.8	18.7	432200	18.9	21.0	122126	18.9	17.9
507542	18.6	21.7	351659	18.7	19.3	235399	18.7	20.5	362938	18.8	19.0	472997	18.9	20.3	347942	18.9	19.9
343751	18.6	20.0	86428	18.7	19.0	285068	18.7	20.3	432487	18.8	20.2	125539	18.9	19.3	416968	18.9	21.1
40281	18.6	17.0	348831	18.7	21.5	228330	18.7	18.3	522625	18.8	20.0	378789	18.9	20.4	35553	18.9	18.7
135139	18.6	19.7	41220	18.7	17.9	409004	18.7	21.3	249688	18.8	19.5	519554	18.9	22.3	28014	18.9	18.7
256746	18.6	19.0	348650	18.7	21.0	480106	18.7	20.4	116994	18.8	18.9	35464	18.9	17.6	336687	18.9	20.0
488925	18.6	21.5	430643	18.7	20.0	472695	18.7	20.5	333243	18.8	20.3	100169	18.9	20.2	132187	18.9	18.4
533133	18.6	20.5	30822	18.7	18.5	286187	18.7	20.5	171872	18.8	19.9	449103	18.9	21.1	529618	18.9	20.7
156577	18.6	19.5	249057	18.7	20.2	40897	18.7	19.1	433442	18.8	20.4	538767	18.9	21.9	362014	18.9	21.4
197707	18.6	18.3	53808	18.7	19.5	258411	18.7	20.1	118168	18.8	19.5	431863	18.9	20.7	352609	18.9	19.4
332955	18.6	20.8	497201	18.7	20.0	297902	18.7	21.1	80440	18.8	19.1	160502	18.9	20.5	327893	18.9	20.7
136834	18.6	19.4	353412	18.7	19.2	153796	18.8	18.9	218024	18.8	19.8	328316	18.9	19.8	256165	18.9	20.2
70432	18.6	18.0	272798	18.7	20.9	329854	18.8	19.0	230643	18.8	18.7	214461	18.9	19.7	56660	18.9	17.7
220564	18.6	19.2	31759	18.7	18.4	56298	18.8	17.3	427919	18.8	20.6	538640	18.9	20.1	282170	18.9	19.9
241830	18.6	20.1	532155	18.7	20.3	21680	18.8	18.5	498729	18.8	20.3	97925	18.9	17.2	352483	18.9	20.2
498097	18.6	21.5	345823	18.7	18.4	502511	18.8	20.5	533703	18.8	20.6	498021	18.9	20.1	385136	18.9	20.7
123569	18.6	19.1	41096	18.7	18.7	64426	18.8	20.3	308629	18.8	19.0	203474	18.9	20.6	14494	18.9	16.2
374169	18.6	19.9	382815	18.7	21.1	317137	18.8	19.0	207773	18.8	21.7	347658	18.9	21.4	540542	18.9	20.7
306882	18.6	20.6	528491	18.7	21.1	303678	18.8	20.2	1200	18.8	14.6	293307	18.9	20.1	346062	18.9	21.9
139570	18.6	19.4	469124	18.7	20.5	459529	18.8	22.0	533949	18.8	21.0	133541	18.9	18.6	386537	18.9	22.1
527597	18.6	21.9	248473	18.7	20.1	230531	18.8	21.2	457361	18.8	20.3	471423	18.9	20.5	82647	18.9	19.2
276240	18.6	19.3	301319	18.7	19.7	272671	18.8	21.2	343510	18.8	20.3	184937	18.9	19.9	400294	18.9	19.1
107133	18.6	19.4	16565	18.7	17.2	118222	18.8	19.2	375272	18.8	18.2	17413	18.9	18.4	44180	18.9	16.0
502245	18.6	21.2	507305	18.7	20.5	433998	18.8	20.4	305687	18.8	20.8	382091	18.9	20.3	504260	18.9	21.7
93824	18.6	19.4	300865	18.7	20.4	404954	18.8	21.6	422729	18.8	19.2	375956	18.9	20.7	416984	18.9	20.6
386205	18.6	21.0	110086	18.7	19.0	540785	18.8	20.5	81850	18.8	17.6	303412	18.9	21.2	170781	18.9	19.2
103387	18.6	18.9	501089	18.7	20.3	37772	18.8	18.9	503887	18.8	21.1	64007	18.9	19.7	407730	18.9	21.0
211432	18.6	20.8	277711	18.7	20.2	431589	18.8	20.3	127945	18.8	19.7	383784	18.9	20.5	201701	18.9	19.6
372403	18.6	20.3	498836	18.7	20.9	347099	18.8	20.0	543445	18.8	21.0	540348	18.9	22.9	206740	18.9	20.4
538356	18.6	20.6	217883	18.7	20.9	421598	18.8	20.5	257459	18.8	19.8	140357	18.9	20.0	196751	18.9	19.7
150804	18.6	20.0	371138	18.7	21.6	24011	18.8	18.8	475747	18.8	21.3	297647	18.9	20.6	281736	18.9	20.2
44406	18.6	18.8	164463	18.7	18.6	194427	18.8	21.0	134082	18.8	19.9	284085	18.9	19.8	214416	18.9	20.4
345553	18.6	19.9	175325	18.7	20.0	343133	18.8	20.5	415927	18.8	20.7	504681	18.9	21.3	394242	18.9	21.7
141268	18.6	19.6	339126	18.7	20.4	224464	18.8	19.7	520033	18.8	20.0	459439	18.9	20.2	467668	18.9	20.6
83740	18.6	19.3	300242	18.7	20.3	194345	18.8	19.7	381684	18.8	20.4	531370	18.9	20.4	352042	18.9	20.6
154545	18.6	18.9	236129	18.7	20.7	41027	18.8	19.2	177363	18.8	20.3	214923	18.9	19.9	183645	18.9	18.9
249159	18.6	19.7	416066	18.7	20.3	12712	18.8	17.3	470928	18.8	19.7	271440	18.9	20.8	506747	18.9	21.8
120539	18.6	19.4	390149	18.7	20.7	15181	18.8	18.0	22578	18.8	18.3	297416	18.9	20.9	214716	18.9	20.0
230917	18.6	21.2	201043	18.7	20.5	241395	18.8	20.8	163187	18.8	18.7	542269	18.9	19.8	473096	18.9	20.5
36146	18.6	17.6	390680	18.7	22.5	308232	18.8	20.9	14915	18.8	18.2	192905	18.9	20.9	238463	18.9	19.5
236104	18.6	21.3	173948	18.7	20.1	178103	18.8	20.3	128673	18.8	19.7	97991	18.9	19.5	429270	18.9	19.7
131613	18.6	19.6	152770	18.7	22.5	425718	18.8	20.3	203472	18.8	20.4	424640	18.9	20.0	274780	18.9	19.0
439972	18.7	20.6	148087	18.7	20.1	521255	18.8	21.3	506706	18.8	21.7	389712	18.9	21.0	305719	18.9	21.0
156490	18.7	19.1	124632	18.7	19.3	167882	18.8	21.2	88123	18.8	17.9	429219	18.9	20.2	321910	18.9	20.9
451740	18.7	21.2	144591	18.7	18.3	330349	18.8	20.3	471431	18.8	20.5	269998	18.9	20.1	473661	18.9	20.4
93178	18.7	18.6	533131	18.7	21.6	274470	18.8	19.8	15844	18.8	16.2	388298	18.9	20.3	165272	18.9	18.2
239111	18.7	19.4	234146	18.7	19.4	86680	18.8	19.8	249243	18.8	20.2	85308	18.9	19.0	49505	18.9	18.3
387199	18.7	20.4	536978	18.7	21.7	281758	18.8	19.5	503661	18.9	20.6	584	18.9	11.5	530887	18.9	20.9
338416	18.7	21.7	140550	18.7	19.3	57374	18.8	19.3	535074	18.9	22.2	437186	18.9	20.6	387819	18.9	20.7
126832	18.7	19.8	308555	18.7	20.2	476805	18.8	22.4	368221	18.9	21.5	308992	18.9	21.2	22148	18.9	18.2
182751	18.7	18.9	436684	18.7	20.6	345591	18.8	21.5	338081	18.9	20.9	394182	18.9	20.4	226716	18.9	19.3
348957	18.7	20.8	172354	18.7	20.7	220277	18.8	19.4	245060	18.9	20.0	197982	18.9	20.5	40448	18.9	17.8
501305	18.7	21.8	510469	18.7	18.8	432574	18.8	20.7	443950	18.9	22.6	472919	18.9	20.3	308795	18.9	19.9
504925	18.7	20.5	386129	18.7	20.4	431786	18.8	20.4	369382	18.9	21.1	452555	18.9	21.3	311657	18.9	18.5
229726	18.7	19.5	244235	18.7	19.2	422823	18.8	21.4	428051	18.9	21.2	498856	18.9	20.9	456791	18.9	21.7
30505	18.7	19.0	403798	18.7	20.8	6015	18.8	15.7	203602	18.9	20.6	439099	18.9	20.4	70552	18.9	19.3
501122	18.7	20.1	346933	18.7	19.9	279333	18.8	20.5	343087	18.9	20.1	533898	18.9	19.1	540606	18.9	20.3
473057	18.7	20.4	357613	18.7	21.0	57751	18.8	18.7	39720	18.9	18.6	439367	18.9	20.8	510296	18.9	20.7
344280	18.7	19.5	337847	18.7	21.5	53716	18.8	17.2	116992	18.9	19.0	3495	18.9	15.6	519654	18.9	20.2
29722	18.7	16.9	262849	18.7	21.0	82963	18.8	19.3	177495	18.9	19.1	370743	18.9	20.2	348879	18.9	22.1
409208	18.7	20.9	222286	18.7	19.3	31961	18.8	17.0	166987	18.9	18.6	100902	18.9	18.3	323815	18.9	20.0
543822	18.7	20.4	224446	18.7	19.8	215745	18.8	20.1	11890	18.9	17.8	161729	18.9	19.5	277855	18.9	20.7
126129	18.7	19.1	208965	18.7	21.1	85747	18.8	17.8	414437	18.9	20.3	213772	18.9	19.4	507743	18.9	20.7
24022	18.7	18.8	348961	18.7	20.5	229560	18.8	19.7	61782	18.9	18.8	126292	18.9	19.8	437699	18.9	20.3
177088	18.7	20.8	198289	18.7	20.3	341											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
104725	19.0	19.2	272803	19.1	20.1	140316	19.1	20.1	534505	19.2	20.9	213621	19.3	19.6	273710	19.3	19.8
327824	19.0	21.2	310893	19.1	20.6	390473	19.1	21.2	406404	19.2	20.2	122777	19.3	18.6	194989	19.3	20.9
506020	19.0	20.7	530243	19.1	21.0	231097	19.1	20.3	384241	19.2	20.9	392684	19.3	20.5	8739	19.3	15.6
248532	19.0	18.3	398725	19.1	20.1	181157	19.1	19.5	100314	19.2	18.7	498781	19.3	20.9	303401	19.3	21.5
391327	19.0	21.1	306326	19.1	20.3	33911	19.1	18.0	535086	19.2	21.2	145732	19.3	20.2	313735	19.3	20.3
85882	19.0	18.8	391279	19.1	21.7	170870	19.1	19.1	374528	19.2	20.2	190686	19.3	19.9	222640	19.3	19.0
436739	19.0	19.8	186066	19.1	20.2	147990	19.1	21.0	299946	19.2	19.8	295199	19.3	19.6	316805	19.3	20.9
423571	19.0	21.4	434325	19.1	18.3	341549	19.1	19.8	106741	19.2	18.6	9057	19.3	16.3	91781	19.3	18.8
520963	19.0	21.1	150616	19.1	19.2	435000	19.1	22.0	163144	19.2	18.9	506845	19.3	21.5	472711	19.3	20.8
473437	19.0	20.4	109371	19.1	19.8	8623	19.1	18.3	109406	19.2	19.2	40357	19.3	18.1	35171	19.3	17.6
22581	19.0	18.4	41694	19.1	19.0	291819	19.1	19.7	176363	19.2	21.0	390214	19.3	21.5	458144	19.3	20.1
111941	19.0	18.7	466149	19.1	19.7	18866	19.1	16.0	508496	19.2	20.1	2140	19.3	15.6	450193	19.3	21.8
427114	19.0	21.4	427923	19.1	21.6	413201	19.1	20.7	503757	19.2	19.8	64438	19.3	19.2	83237	19.3	18.7
506191	19.0	19.9	439140	19.1	20.6	530539	19.1	21.6	401808	19.2	19.8	55060	19.3	17.8	351998	19.3	20.5
402869	19.0	20.8	333432	19.1	19.9	386209	19.1	20.3	304535	19.2	20.3	205870	19.3	18.2	93591	19.3	17.6
19049	19.0	18.2	317376	19.1	19.9	420744	19.1	20.8	17571	19.2	17.2	55485	19.3	19.2	429107	19.3	21.1
214233	19.0	20.5	173488	19.1	20.8	129142	19.1	20.0	318115	19.2	19.4	444023	19.3	19.0	450984	19.3	21.5
140220	19.0	19.9	414069	19.1	19.7	141341	19.1	20.3	105274	19.2	19.4	501492	19.3	21.3	400800	19.3	19.1
343977	19.0	20.6	75117	19.1	17.6	125280	19.1	20.2	88627	19.2	18.4	207073	19.3	18.9	390271	19.3	19.9
437685	19.0	21.1	95803	19.1	17.5	53601	19.1	18.6	17568	19.2	17.6	503127	19.3	20.9	203466	19.3	19.2
284865	19.0	20.2	504180	19.1	21.3	329789	19.1	19.2	381692	19.2	21.2	518874	19.3	20.5	308108	19.3	18.3
536009	19.0	21.6	128070	19.1	18.1	94479	19.1	18.2	28031	19.2	17.8	372692	19.3	20.0	267073	19.3	20.4
458991	19.0	20.8	375934	19.1	20.5	315686	19.1	20.5	226720	19.2	20.0	62820	19.3	20.1	132288	19.3	19.0
202666	19.0	20.2	390430	19.1	20.3	352085	19.1	20.3	384252	19.2	21.1	295413	19.3	20.2	252635	19.3	18.9
185486	19.0	19.7	469601	19.1	20.0	498952	19.1	21.7	215901	19.2	19.6	249957	19.3	21.1	115584	19.3	19.0
16406	19.0	17.9	342923	19.1	19.9	343132	19.1	20.1	173392	19.2	18.5	179396	19.3	20.8	508455	19.3	19.6
73061	19.0	17.5	489337	19.1	23.0	53535	19.1	17.2	34852	19.2	17.8	518700	19.3	20.4	118110	19.3	19.7
268404	19.0	21.1	245682	19.1	20.0	114429	19.1	18.4	533902	19.2	20.8	500496	19.3	21.1	376866	19.3	20.5
422804	19.0	21.1	396486	19.1	20.6	456474	19.1	21.4	495020	19.2	20.0	70236	19.3	18.7	101073	19.3	19.1
57492	19.0	18.5	52696	19.1	19.2	396572	19.1	20.7	318407	19.2	20.2	210160	19.3	19.7	157899	19.3	19.1
34059	19.0	18.1	374097	19.1	20.7	379018	19.1	20.7	88417	19.2	19.1	423748	19.3	21.7	347189	19.4	19.4
133115	19.0	18.8	544917	19.1	21.1	24907	19.1	19.0	403515	19.2	21.0	213791	19.3	20.1	20341	19.4	17.8
33492	19.0	16.8	224010	19.1	18.8	82507	19.1	17.9	136760	19.2	20.4	16293	19.3	17.4	146350	19.4	18.1
393471	19.0	20.6	128916	19.1	18.8	228039	19.1	18.8	132068	19.2	17.6	153081	19.3	20.2	32358	19.4	18.4
462025	19.0	21.4	297465	19.1	19.5	174468	19.1	19.3	154303	19.2	19.1	148425	19.3	19.8	535327	19.4	21.0
241572	19.0	19.8	536015	19.1	21.4	155217	19.2	19.9	199149	19.2	20.2	30489	19.3	17.7	522827	19.4	21.0
292463	19.0	20.3	363177	19.1	19.7	97178	19.2	18.1	499985	19.2	19.3	255530	19.3	19.0	535094	19.4	22.1
39896	19.0	18.1	380448	19.1	21.1	490323	19.2	21.8	467425	19.2	20.9	299420	19.3	19.4	58554	19.4	19.5
121053	19.0	19.6	205800	19.1	20.9	18250	19.2	18.0	256760	19.2	19.6	106086	19.3	17.9	351975	19.4	20.7
421316	19.0	20.7	367990	19.1	19.5	196335	19.2	19.9	232900	19.2	20.8	537982	19.3	21.2	215010	19.4	20.5
338075	19.0	18.1	138559	19.1	20.3	380702	19.2	20.3	298837	19.2	19.5	406531	19.3	21.2	194365	19.4	19.7
258239	19.0	20.0	522560	19.1	21.2	141390	19.2	19.8	529472	19.2	20.7	106781	19.3	18.4	191852	19.4	20.1
312811	19.0	20.2	435046	19.1	20.6	364654	19.2	21.0	253263	19.2	21.7	454095	19.3	21.4	119067	19.4	22.7
138871	19.0	18.6	187823	19.1	18.6	138788	19.2	19.4	168220	19.2	19.0	504416	19.3	22.5	526293	19.4	21.3
279265	19.0	21.9	158229	19.1	19.4	92542	19.2	19.3	11580	19.2	18.0	166154	19.3	19.8	83635	19.4	18.4
259499	19.0	20.7	53634	19.1	16.3	177531	19.2	20.8	6730	19.2	17.2	417020	19.3	21.9	300866	19.4	19.6
323883	19.0	21.1	509278	19.1	21.5	506674	19.2	20.6	370774	19.2	21.1	99932	19.3	18.2	32316	19.4	18.0
18140	19.0	17.0	528526	19.1	22.5	168451	19.2	18.9	90197	19.2	19.4	64216	19.3	19.0	125159	19.4	18.7
300231	19.0	21.4	270249	19.1	21.4	269454	19.2	20.7	460142	19.2	20.6	33247	19.3	18.5	542556	19.4	19.1
527022	19.0	20.9	187803	19.1	18.3	168879	19.2	19.3	87581	19.2	17.6	226846	19.3	20.6	26766	19.4	17.8
143594	19.0	18.9	312162	19.1	21.3	351939	19.2	21.1	297389	19.2	19.5	544530	19.3	20.9	124578	19.4	19.1
471355	19.0	21.2	156446	19.1	20.0	73565	19.2	18.1	153597	19.2	20.5	288625	19.3	20.1	36941	19.4	19.6
293456	19.0	20.6	180640	19.1	19.6	225582	19.2	20.3	459531	19.2	19.8	28632	19.3	17.5	62955	19.4	18.7
120973	19.0	18.9	525669	19.1	20.6	467030	19.2	21.0	290268	19.2	20.7	134562	19.3	20.4	501891	19.4	20.7
249667	19.0	20.0	241726	19.1	18.7	464981	19.2	20.7	368594	19.2	21.6	438403	19.3	20.7	94150	19.4	19.6
359992	19.0	21.0	519969	19.1	20.4	32320	19.2	18.1	308868	19.2	19.0	432543	19.3	20.1	471360	19.4	20.8
351956	19.0	21.0	313760	19.1	19.9	453800	19.2	19.9	507632	19.2	19.0	363978	19.3	21.1	455369	19.4	21.2
295342	19.0	20.3	496370	19.1	20.0	340828	19.2	20.6	358463	19.2	20.3	231491	19.3	20.5	204795	19.4	20.3
533910	19.1	19.0	392175	19.1	20.3	229054	19.2	19.8	83352	19.2	18.9	57006	19.3	18.9	73651	19.4	17.9
518951	19.1	20.5	425180	19.1	21.1	7592	19.2	16.7	198241	19.2	19.4	134728	19.3	19.8	284407	19.4	19.5
100071	19.1	18.4	276553	19.1	20.0	408363	19.2	19.5	74616	19.2	18.9	362152	19.3	21.3	48608	19.4	18.4
371966	19.1	20.1	204851	19.1	21.1	235006	19.2	20.4	512958	19.2	20.4	83957	19.3	18.8	167475	19.4	18.9
493771	19.1	21.3	114013	19.1	19.4	146486	19.2	20.2	61888	19.2	18.7	491815	19.3	21.5	386487	19.4	21.6
445892	19.1	21.1	464920	19.1	21.3	206322	19.2	20.3	467315	19.2	20.3	291519	19.3	20.1	98167	19.4	17.7
237234	19.1	20.4	331200	19.1	19.6	271775	19.2	19.3	124625	19.2	19.3	325257	19.3	20.1	542271	19.4	19.5
263741	19.1	19.9	448203	19.1	22.1	498631	19.2	21.3	311671	19.2	19.9	338984	19.3	20.2	149835	19.4	19.5
4088	19.1	15.5	425183	19.1	21.4	371671	19.2	20.6	161290	19.2	18.4	334313	19.3	21.0	160096	19.4	19.3
518592	19.1	22.0	209895	19.1	18.7	27851	19.2	18.2	98727	19.2	18.8	402049	19.3	19.5	212142	19.4	18.8
177952	19.1	18.7	312022	19.1	19.9	168990	19.2										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
46315	19.4	17.9	94020	19.5	19.7	229650	19.5	19.5	291471	19.6	20.8	21178	19.7	18.3	159342	19.7	18.1
368710	19.4	20.7	125445	19.5	18.6	21911	19.5	17.5	270889	19.6	18.2	113049	19.7	19.0	508624	19.7	20.3
114748	19.4	19.7	486028	19.5	20.5	223529	19.5	20.2	3317	19.6	15.0	541977	19.7	20.4	444678	19.7	21.2
62902	19.4	18.8	57226	19.5	17.8	198667	19.5	20.0	436384	19.6	19.0	519244	19.7	21.5	269018	19.7	20.1
28323	19.4	19.3	297075	19.5	19.1	499025	19.5	20.9	287684	19.6	18.7	282166	19.7	20.7	157028	19.7	19.4
5965	19.4	16.9	225396	19.5	20.2	371066	19.5	19.3	467691	19.6	20.2	165542	19.7	19.7	83217	19.7	19.3
104239	19.4	19.8	204197	19.5	21.0	210907	19.5	20.7	417844	19.6	21.4	532238	19.7	20.8	118303	19.7	17.9
534390	19.4	20.2	235043	19.5	19.4	381980	19.5	18.5	482299	19.6	20.6	306116	19.7	20.1	470019	19.7	20.9
208427	19.4	19.7	306311	19.5	19.9	514536	19.5	20.7	316842	19.6	19.9	337860	19.7	19.4	466627	19.7	22.6
11427	19.4	17.1	45102	19.5	17.1	54882	19.5	19.2	334965	19.6	19.9	310924	19.7	19.3	341522	19.7	20.6
213774	19.4	20.2	477167	19.5	20.8	416965	19.5	20.0	118598	19.6	20.1	537813	19.7	19.3	525062	19.7	20.1
89449	19.4	18.9	492421	19.5	20.2	343683	19.5	20.8	214650	19.6	21.2	489110	19.7	20.7	458940	19.7	20.5
503216	19.4	21.1	366250	19.5	20.2	369058	19.5	20.5	283614	19.6	20.8	388766	19.7	20.2	437911	19.7	21.2
173823	19.4	19.8	328706	19.5	19.0	330415	19.5	20.8	62561	19.6	18.7	466757	19.7	20.7	171425	19.7	18.4
379696	19.4	20.0	229586	19.5	20.7	341743	19.5	21.2	215134	19.6	20.2	95164	19.7	18.8	496573	19.7	21.4
324398	19.4	21.8	458834	19.5	22.1	267328	19.5	21.8	419158	19.6	21.2	7104	19.7	16.7	341637	19.7	19.7
480712	19.4	22.2	243833	19.5	19.9	514544	19.5	21.1	129511	19.6	20.1	65027	19.7	18.4	329832	19.7	19.6
74791	19.4	18.2	118516	19.5	19.2	432474	19.5	22.7	422383	19.6	21.3	192639	19.7	19.3	338062	19.7	19.3
296081	19.4	21.2	416010	19.5	20.3	29026	19.5	18.1	212601	19.6	20.7	100853	19.7	20.7	265780	19.7	20.7
535072	19.4	21.6	131224	19.5	19.6	233989	19.6	21.4	97195	19.6	18.4	355159	19.7	21.5	12874	19.8	17.1
216195	19.4	20.8	523928	19.5	20.7	203571	19.6	18.4	19617	19.6	18.8	179854	19.7	19.5	74878	19.8	18.2
24223	19.4	18.2	138568	19.5	19.3	109039	19.6	19.3	119521	19.6	17.6	227	19.7	12.7	527726	19.8	20.7
123012	19.4	19.9	411243	19.5	19.2	491940	19.6	20.6	114224	19.6	18.8	13391	19.7	17.5	264545	19.8	20.8
327424	19.4	19.2	57509	19.5	18.0	170028	19.6	19.7	403797	19.6	21.7	23883	19.7	17.5	68731	19.8	18.1
177947	19.4	19.9	105181	19.5	18.0	490666	19.6	21.1	364269	19.6	21.6	244230	19.7	19.6	19683	19.8	15.9
345173	19.4	20.0	534920	19.5	20.9	97702	19.6	17.9	536505	19.6	20.1	122572	19.7	19.2	176462	19.8	20.2
210926	19.4	20.8	214019	19.5	21.0	448740	19.6	18.9	327416	19.6	19.6	435367	19.7	20.5	119066	19.8	23.0
59677	19.4	18.6	7403	19.5	19.0	506037	19.6	20.6	378777	19.6	20.8	326690	19.7	20.9	468947	19.8	20.2
209012	19.4	19.6	182825	19.5	20.8	390622	19.6	21.1	243209	19.6	19.9	19028	19.7	16.6	405376	19.8	21.3
14019	19.4	17.3	106327	19.5	19.7	104894	19.6	19.0	354067	19.6	21.5	365170	19.7	21.4	355201	19.8	21.6
176780	19.4	19.7	427326	19.5	21.1	204418	19.6	20.9	121519	19.6	20.2	368180	19.7	20.3	478054	19.8	20.4
377323	19.4	18.0	54629	19.5	18.4	434785	19.6	20.9	286078	19.6	20.0	15339	19.7	17.7	533299	19.8	21.0
436705	19.4	20.3	372471	19.5	21.1	189022	19.6	16.8	430657	19.6	20.5	9091	19.7	16.3	539110	19.8	20.5
118977	19.4	18.7	292513	19.5	20.6	141247	19.6	19.8	59689	19.6	18.4	525094	19.7	21.3	466841	19.8	21.0
29307	19.4	17.5	134680	19.5	19.0	34420	19.6	17.7	147971	19.6	20.0	94531	19.7	19.9	374564	19.8	20.6
329145	19.4	19.9	461783	19.5	19.9	62489	19.6	20.5	500240	19.6	19.9	460350	19.7	20.3	54047	19.8	18.2
402244	19.4	20.7	474544	19.5	20.5	76840	19.6	19.9	406547	19.6	21.6	264575	19.7	21.0	344308	19.8	20.4
57110	19.4	20.0	95129	19.5	19.7	32713	19.6	19.0	537164	19.6	20.9	408778	19.7	19.7	128886	19.8	19.7
462314	19.4	21.3	284617	19.5	20.1	11607	19.6	17.3	463303	19.6	19.1	492666	19.7	20.1	9774	19.8	17.8
257011	19.4	19.4	515774	19.5	21.2	175988	19.6	20.1	533800	19.6	20.4	470525	19.7	21.5	498168	19.8	22.6
104686	19.4	18.7	397327	19.5	21.5	265611	19.6	21.5	372081	19.6	20.6	352002	19.7	21.4	539224	19.8	20.8
503060	19.4	20.2	532164	19.5	21.4	251021	19.6	19.6	534551	19.6	21.0	151087	19.7	18.4	518722	19.8	21.0
296258	19.4	20.3	83620	19.5	19.1	266695	19.6	20.9	4576	19.6	16.2	258547	19.7	19.7	239202	19.8	19.4
149880	19.4	20.4	419529	19.5	18.5	435353	19.6	21.4	181412	19.6	19.2	413916	19.7	21.7	110722	19.8	18.3
494715	19.4	20.7	500732	19.5	20.9	245082	19.6	18.1	17498	19.6	17.1	375338	19.7	20.7	13581	19.8	16.6
297809	19.4	21.1	155235	19.5	19.3	73254	19.6	18.6	236246	19.6	19.9	462135	19.7	21.1	353557	19.8	20.5
301008	19.4	20.8	486673	19.5	22.0	330939	19.6	20.1	292854	19.6	19.2	435870	19.7	21.3	241090	19.8	19.4
500038	19.4	21.4	437232	19.5	20.0	224979	19.6	19.8	234486	19.6	20.0	311961	19.7	20.0	344325	19.8	20.3
397677	19.4	20.2	111528	19.5	18.9	215340	19.6	19.7	88865	19.6	19.5	497841	19.7	21.9	340963	19.8	20.2
181661	19.4	20.4	345757	19.5	20.7	453351	19.6	20.5	329164	19.6	19.1	374050	19.7	19.7	431171	19.8	19.6
341280	19.4	21.0	534414	19.5	20.5	526173	19.6	22.2	92418	19.6	18.6	135492	19.7	19.8	120118	19.8	19.0
349896	19.4	19.8	148344	19.5	20.1	530638	19.6	19.7	491839	19.6	21.3	535623	19.7	21.8	387913	19.8	20.9
238005	19.4	19.6	200214	19.5	20.0	269210	19.6	20.1	62551	19.6	18.9	253251	19.7	19.8	307689	19.8	20.9
354945	19.4	20.8	533410	19.5	22.2	130099	19.6	20.4	210983	19.6	19.4	130687	19.7	19.2	73593	19.8	20.0
100397	19.4	19.4	163613	19.5	19.4	405908	19.6	20.5	186896	19.6	18.4	49638	19.7	18.4	462954	19.8	19.8
81241	19.4	19.5	165024	19.5	20.5	302057	19.6	20.7	435911	19.6	20.3	373002	19.7	20.7	127589	19.8	19.4
158599	19.4	20.1	489714	19.5	19.3	414854	19.6	19.9	5005	19.6	18.1	466155	19.7	19.6	459237	19.8	21.6
189060	19.4	18.3	132228	19.5	20.6	536370	19.6	20.3	543624	19.6	21.2	73109	19.7	17.9	174160	19.8	20.0
285320	19.4	21.0	178739	19.5	20.8	250074	19.6	20.4	338330	19.6	21.4	464913	19.7	21.1	215784	19.8	19.4
1723	19.4	14.5	214413	19.5	20.0	322843	19.6	20.3	328613	19.6	20.4	345600	19.7	22.2	490544	19.8	21.2
192326	19.4	19.2	308620	19.5	18.8	503716	19.6	20.4	38651	19.6	18.8	538090	19.7	20.9	357064	19.8	19.5
142875	19.5	20.3	108697	19.5	19.5	431913	19.6	21.2	530353	19.7	21.3	35899	19.7	18.0	162743	19.8	19.7
429304	19.5	20.0	116170	19.5	18.5	419895	19.6	21.6	272970	19.7	19.7	434927	19.7	20.2	30467	19.8	17.7
533838	19.5	20.7	90900	19.5	19.2	327281	19.6	20.1	433662	19.7	19.7	498445	19.7	21.1	517621	19.8	21.3
394361	19.5	21.0	351916	19.5	21.2	272701	19.6	20.8	21194	19.7	17.8	198572	19.7	19.3	192935	19.8	20.2
462109	19.5	21.7	304430	19.5	20.5	463553	19.6	20.2	240704	19.7	21.2	99973	19.7	18.8	461496	19.8	22.1
146106	19.5	19.6	275442	19.5	20.0	200932	19.6	19.9	528631	19.7	22.1	320664	19.7	20.5	510984	19.8	19.4
198950	19.5	19.3	296089	19.5	19.6	233637	19.6	19.7	501151	19.7	19.9	334884	19.7	20.4	367855	19.8	21.3
143323	19.5	19.6	536489	19.5	20.6	65972	19.6										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
23598	19.8	17.4	72093	19.9	19.4	93216	19.9	19.5	367516	20.0	18.9	540619	20.1	21.8	134084	20.2	20.9
26738	19.8	17.6	293071	19.9	20.2	39159	19.9	19.0	417258	20.0	20.3	496249	20.1	20.4	537950	20.2	20.9
343194	19.8	21.2	264526	19.9	20.3	97888	19.9	19.4	459677	20.0	20.3	534777	20.1	20.1	354497	20.2	19.6
388146	19.8	21.5	157554	19.9	19.8	89256	19.9	17.7	270356	20.0	21.1	233207	20.1	19.6	544813	20.2	20.6
125748	19.8	19.2	329611	19.9	19.5	83913	19.9	18.7	105899	20.0	18.3	170150	20.1	19.5	26796	20.2	17.2
310513	19.8	20.3	211846	19.9	19.3	423739	19.9	20.6	473696	20.0	20.8	539759	20.1	22.5	525790	20.2	21.3
180759	19.8	18.7	1172	19.9	14.7	88860	19.9	19.8	432173	20.0	19.7	73620	20.1	20.1	525761	20.2	22.1
82966	19.8	17.6	330399	19.9	20.7	389817	19.9	19.5	503902	20.0	21.7	525656	20.1	19.4	233813	20.2	19.8
363454	19.8	20.3	489748	19.9	22.3	109466	19.9	19.3	500002	20.0	21.8	306686	20.1	20.5	353892	20.2	19.2
447640	19.8	21.3	419961	19.9	21.6	504202	19.9	22.1	37629	20.0	19.6	235129	20.1	19.5	272661	20.2	20.4
362163	19.8	20.6	411427	19.9	21.3	200869	19.9	19.5	182669	20.0	19.9	357347	20.1	18.7	44171	20.2	17.1
196586	19.8	18.4	150119	19.9	20.6	328888	19.9	20.3	344612	20.0	20.1	343032	20.1	21.5	459412	20.2	19.1
171250	19.8	19.9	135143	19.9	20.0	110111	19.9	19.4	427697	20.0	19.9	218006	20.1	19.5	213768	20.2	20.9
416277	19.8	20.6	346963	19.9	20.1	345725	19.9	21.0	229187	20.0	20.9	37224	20.1	17.1	143694	20.2	19.0
26221	19.8	17.1	3923	19.9	18.2	232490	19.9	19.6	3757	20.0	22.4	30504	20.1	18.1	221120	20.2	20.2
415567	19.8	21.2	114893	19.9	18.8	534045	19.9	20.6	361573	20.0	21.2	492818	20.1	20.9	502143	20.2	21.4
313870	19.8	18.8	502888	19.9	21.0	492331	19.9	21.8	60565	20.0	18.5	286553	20.1	20.4	523707	20.2	19.5
366470	19.8	21.8	281134	19.9	19.8	29215	19.9	18.6	294508	20.0	20.6	518968	20.1	20.5	520559	20.2	20.2
412577	19.8	20.1	423855	19.9	20.5	280592	19.9	20.3	535898	20.0	20.6	114088	20.1	20.0	465424	20.2	19.6
518896	19.8	20.2	415760	19.9	19.0	84986	19.9	18.3	159678	20.0	19.5	534916	20.1	21.8	378352	20.2	19.0
277986	19.8	20.3	212462	19.9	18.8	129448	19.9	19.2	419224	20.0	21.0	56497	20.1	18.2	433603	20.2	19.3
67693	19.8	18.5	143472	19.9	19.2	39450	19.9	20.1	508697	20.0	21.7	213225	20.1	20.2	241917	20.2	20.2
358105	19.8	20.4	438423	19.9	20.3	210408	19.9	19.9	527324	20.0	21.4	406408	20.1	19.7	166866	20.2	19.8
235395	19.8	20.6	264991	19.9	20.2	376523	19.9	20.5	302139	20.1	20.0	291321	20.1	20.3	157294	20.2	19.6
41880	19.8	18.5	117865	19.9	18.5	52747	19.9	24.2	168395	20.1	17.6	426457	20.1	21.0	425667	20.2	20.0
389634	19.8	20.5	1834	19.9	15.1	31916	19.9	18.6	182210	20.1	19.5	5418	20.1	18.6	343588	20.2	20.3
168392	19.8	20.0	535099	19.9	22.0	46529	19.9	18.6	500948	20.1	21.2	435053	20.1	20.1	136471	20.2	18.7
249417	19.8	19.7	275257	19.9	20.0	379613	19.9	20.9	534882	20.1	20.3	37726	20.1	17.1	182336	20.2	19.4
301519	19.8	19.7	298749	19.9	19.9	290610	19.9	20.5	209397	20.1	20.0	121069	20.1	20.4	496774	20.2	20.1
267708	19.8	21.1	429681	19.9	20.5	305827	19.9	21.8	521107	20.1	20.7	435410	20.1	20.6	386561	20.2	20.8
165339	19.8	19.5	440828	19.9	21.4	27567	19.9	18.6	64852	20.1	19.5	305710	20.1	20.4	528307	20.2	19.8
472947	19.8	20.3	293581	19.9	19.9	77176	19.9	19.2	30245	20.1	18.4	461427	20.1	21.6	372449	20.2	20.3
240872	19.8	20.6	145464	19.9	18.9	427434	19.9	20.3	371046	20.1	19.2	105014	20.1	19.3	501494	20.2	21.7
170069	19.8	19.5	370478	19.9	19.9	130232	19.9	20.2	534313	20.1	21.4	510014	20.1	22.2	156000	20.2	18.8
42027	19.8	18.6	466772	19.9	21.5	447361	19.9	20.6	224796	20.1	19.5	343238	20.1	19.6	137168	20.2	19.2
305391	19.8	20.0	224324	19.9	21.0	71994	19.9	17.0	39549	20.1	19.0	18426	20.1	18.9	506119	20.2	20.8
459153	19.8	20.1	229974	19.9	20.7	341917	19.9	20.6	532853	20.1	21.2	315761	20.1	19.0	473245	20.2	19.8
184082	19.8	20.0	513263	19.9	21.4	433211	19.9	20.5	417728	20.1	21.3	343412	20.1	20.9	387242	20.2	20.3
540084	19.8	20.9	145763	19.9	18.0	201445	19.9	19.3	138395	20.1	20.2	286771	20.1	19.6	163164	20.2	19.6
300854	19.8	20.2	204856	19.9	21.5	72917	19.9	19.8	66302	20.1	18.5	54573	20.1	18.4	162682	20.2	20.4
529335	19.8	20.7	526196	19.9	21.8	368240	19.9	20.3	428845	20.1	21.0	279610	20.1	20.4	522328	20.2	20.7
435036	19.8	20.4	535107	19.9	20.3	279037	19.9	20.1	281904	20.1	20.8	283474	20.1	20.2	442721	20.2	20.9
387739	19.8	21.0	36165	19.9	17.8	442465	19.9	20.4	190422	20.1	19.7	143246	20.1	19.0	488735	20.2	20.6
83581	19.8	19.0	199310	19.9	18.5	201129	19.9	18.3	169132	20.1	19.7	411386	20.1	21.1	5791	20.2	16.9
504236	19.8	22.2	212537	19.9	20.3	19072	19.9	18.7	151861	20.1	19.9	13855	20.1	17.4	429091	20.2	22.0
313606	19.8	21.1	5239	19.9	17.2	410463	19.9	20.7	462052	20.1	20.8	119217	20.1	18.2	374043	20.2	19.0
348868	19.8	21.3	345660	19.9	20.9	100643	19.9	20.1	104834	20.1	19.4	431633	20.1	20.5	8628	20.2	17.7
465190	19.8	21.2	471831	19.9	20.4	466952	19.9	21.0	295720	20.1	22.3	388821	20.1	21.5	528081	20.2	21.1
419758	19.8	21.9	325144	19.9	20.8	40893	19.9	18.4	207040	20.1	19.1	474872	20.1	21.4	55699	20.2	18.3
214911	19.8	21.1	450195	19.9	21.5	443931	19.9	20.6	33754	20.1	18.0	126368	20.1	20.1	502585	20.2	20.2
28288	19.8	18.1	533962	19.9	21.2	530523	19.9	20.4	522306	20.1	19.2	210229	20.1	20.0	522240	20.2	20.3
426276	19.8	20.9	129725	19.9	19.3	528655	19.9	21.2	540012	20.1	19.5	433094	20.1	20.7	396170	20.2	19.9
469136	19.8	20.2	236262	19.9	21.1	285963	20.0	19.3	295798	20.1	20.4	21423	20.1	17.9	167847	20.2	19.6
412138	19.8	18.8	429199	19.9	22.0	504234	20.0	21.9	168920	20.1	20.1	529610	20.1	21.4	281413	20.2	20.9
281364	19.8	19.2	337680	19.9	21.4	61642	20.0	19.2	310972	20.1	20.3	535428	20.1	21.7	542183	20.2	21.6
374413	19.8	20.3	221264	19.9	19.3	179864	20.0	19.9	149408	20.1	19.4	64290	20.1	20.1	473263	20.2	20.1
184274	19.8	19.1	246974	19.9	19.5	446942	20.0	20.3	328315	20.1	21.0	348884	20.1	20.8	51968	20.2	17.9
32763	19.8	19.9	300887	19.9	20.1	189855	20.0	18.5	465906	20.1	22.0	277761	20.2	20.7	323835	20.2	19.5
209631	19.8	19.0	225194	19.9	19.5	249324	20.0	21.8	532710	20.1	21.2	57225	20.2	18.3	460740	20.2	20.5
118205	19.8	19.3	502998	19.9	21.0	35333	20.0	18.7	256332	20.1	20.1	31399	20.2	16.9	518985	20.2	19.6
219734	19.8	20.1	269573	19.9	19.7	305868	20.0	19.9	22763	20.1	18.1	370214	20.2	20.6	375741	20.2	20.8
345130	19.8	20.4	423538	19.9	21.6	242885	20.0	20.3	111525	20.1	17.9	534319	20.2	20.3	217480	20.2	19.2
176037	19.9	20.2	276138	19.9	20.2	405288	20.0	20.6	192836	20.1	20.1	18041	20.2	17.3	81302	20.2	17.3
55076	19.9	18.6	67781	19.9	18.7	153498	20.0	20.7	452849	20.1	19.4	503249	20.2	20.7	291430	20.2	20.6
36083	19.9	18.3	425109	19.9	21.1	470372	20.0	19.6	354060	20.1	22.1	172645	20.2	19.6	517677	20.2	21.4
22860	19.9	17.6	124885	19.9	18.8	465719	20.0	20.6	42049	20.1	18.5	509514	20.2	21.2	10896	20.2	18.1
303923	19.9	19.5	44304	19.9	18.1	241479	20.0	20.1	497488	20.1	21.3	542900	20.2	20.5	427125	20.2	20.3
456746	19.9	21.7	109088	19.9	19.5	433879	20.0	20.3	211878	20.1	19.2	337864	20.2	21.6	354166	20.2	20.8
439191	19.9	19.3	172362	19.9	19.4	436697	20										



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
273784	20.2	19.6	228375	20.3	20.2	500309	20.4	19.8	89958	20.4	16.4	336498	20.5	20.8	212322	20.6	18.9
265676	20.2	21.4	268382	20.3	20.0	350532	20.4	20.2	309982	20.4	18.8	116173	20.5	20.3	374584	20.6	20.9
96121	20.2	17.6	182541	20.3	19.4	36477	20.4	19.2	483471	20.4	18.4	387395	20.5	21.2	200152	20.6	18.8
256934	20.2	20.2	52398	20.3	18.9	345639	20.4	20.4	406129	20.4	21.3	284406	20.5	20.3	398754	20.6	20.1
160719	20.2	18.7	338914	20.3	20.6	338253	20.4	20.8	210490	20.4	20.1	130521	20.5	18.6	379298	20.6	21.3
143551	20.2	18.3	501275	20.3	20.8	368065	20.4	20.7	235615	20.4	20.3	436020	20.5	20.8	61352	20.6	17.8
237930	20.2	20.7	302409	20.3	19.7	265702	20.4	19.9	344518	20.4	20.9	387664	20.5	19.0	125102	20.6	18.4
471834	20.2	20.8	106403	20.3	19.9	215142	20.4	20.1	102696	20.4	18.2	283495	20.5	19.8	245237	20.6	17.6
436730	20.2	19.9	131148	20.3	21.3	108933	20.4	18.6	408118	20.4	20.3	417759	20.5	21.0	383763	20.6	20.5
358573	20.3	19.2	401888	20.3	21.1	519611	20.4	20.8	27066	20.5	16.8	243137	20.5	18.8	527026	20.6	21.0
465996	20.3	21.3	519981	20.3	21.0	227510	20.4	20.8	426661	20.5	20.4	326043	20.5	19.6	338884	20.6	21.1
222838	20.3	20.2	252701	20.3	19.2	68526	20.4	17.3	461601	20.5	20.6	229101	20.5	20.9	116782	20.6	18.9
142691	20.3	20.2	288559	20.3	20.0	488223	20.4	19.7	136919	20.5	19.7	374531	20.5	20.1	105685	20.6	19.9
366414	20.3	20.9	424618	20.3	19.2	259519	20.4	20.6	1376	20.5	14.0	470435	20.5	20.5	15767	20.6	17.6
437747	20.3	21.5	301233	20.3	20.3	27117	20.4	15.9	485422	20.5	20.3	530187	20.5	21.3	189626	20.6	18.7
449409	20.3	21.0	306666	20.3	20.1	262108	20.4	20.7	470458	20.5	21.1	166840	20.5	19.9	293158	20.6	19.7
350735	20.3	21.4	453901	20.3	21.8	121018	20.4	19.7	346237	20.5	19.8	216266	20.5	20.5	199940	20.6	19.8
409834	20.3	20.5	298964	20.3	20.9	184300	20.4	18.9	495739	20.5	19.7	235992	20.5	19.9	468807	20.6	20.4
224365	20.3	19.7	503235	20.3	21.0	498800	20.4	20.9	354114	20.5	20.7	366397	20.5	21.0	384054	20.6	20.2
38257	20.3	18.6	341788	20.3	19.6	230636	20.4	19.7	465926	20.5	21.7	34218	20.5	19.6	391283	20.6	21.5
537283	20.3	20.6	106520	20.3	19.3	80869	20.4	19.2	451691	20.5	21.4	222690	20.5	19.4	276962	20.6	19.3
250613	20.3	19.6	271183	20.3	20.1	175466	20.4	20.9	299293	20.5	19.7	74664	20.5	18.6	536337	20.6	21.9
303274	20.3	19.5	31651	20.3	17.1	535694	20.4	21.3	434305	20.5	21.3	83355	20.5	19.1	173645	20.6	20.3
151819	20.3	18.9	117555	20.3	18.8	272372	20.4	19.8	282138	20.5	20.3	123358	20.5	20.3	196328	20.6	19.2
217071	20.3	18.7	126639	20.3	19.4	66787	20.4	18.7	12085	20.5	18.3	275071	20.5	19.2	237309	20.6	20.3
229695	20.3	19.4	399330	20.3	21.5	21587	20.4	16.3	228022	20.5	19.1	55496	20.5	18.5	497552	20.6	21.2
29583	20.3	18.6	240265	20.3	19.9	544374	20.4	20.6	91367	20.5	19.3	530622	20.5	21.0	7851	20.6	14.9
480348	20.3	20.8	245649	20.3	20.3	222768	20.4	20.3	50723	20.5	18.0	114632	20.5	18.8	508292	20.6	20.7
535201	20.3	21.6	343463	20.3	20.4	217036	20.4	19.3	498635	20.5	20.0	63058	20.5	18.4	122667	20.6	17.6
47814	20.3	18.1	135245	20.3	19.2	357117	20.4	22.7	202814	20.5	20.2	377426	20.5	19.9	525953	20.6	19.7
186522	20.3	20.2	283740	20.3	20.2	306187	20.4	17.9	50395	20.5	18.3	3395	20.5	15.9	286417	20.6	21.4
426482	20.3	20.1	143541	20.3	19.4	203534	20.4	18.9	241224	20.5	20.4	84474	20.5	18.2	277688	20.6	21.2
38787	20.3	18.0	297907	20.3	20.3	503091	20.4	19.9	368066	20.5	21.0	463663	20.5	21.4	544956	20.6	20.7
378733	20.3	19.9	432930	20.3	19.4	309188	20.4	20.2	530345	20.5	21.3	39122	20.5	18.8	297059	20.6	19.6
347313	20.3	20.5	260461	20.3	20.5	417259	20.4	21.8	96833	20.5	17.6	530928	20.5	19.7	2895	20.6	17.4
341220	20.3	19.9	219772	20.3	20.3	543387	20.4	20.7	533917	20.5	21.2	371054	20.5	19.2	473941	20.6	20.7
519958	20.3	20.9	331608	20.3	20.8	99618	20.4	19.1	150999	20.5	20.1	234169	20.5	18.8	151947	20.6	19.4
257795	20.3	20.4	212486	20.3	19.7	125425	20.4	19.2	518765	20.5	20.5	57861	20.5	19.7	423669	20.6	22.7
4247	20.3	18.6	368777	20.3	21.2	28998	20.4	17.6	16901	20.5	18.4	161988	20.5	19.6	354162	20.6	20.5
146304	20.3	18.3	462040	20.3	21.9	235608	20.4	19.1	168952	20.5	20.6	531538	20.5	21.1	155771	20.6	19.6
431945	20.3	21.3	83560	20.3	18.8	176493	20.4	19.2	124389	20.5	19.1	439482	20.5	21.3	514850	20.6	21.3
503599	20.3	20.4	61999	20.3	18.9	326440	20.4	20.8	302492	20.5	20.0	543334	20.5	21.5	261401	20.6	20.0
384101	20.3	21.3	140826	20.3	20.2	329048	20.4	19.8	387240	20.5	21.0	47390	20.5	16.6	360359	20.6	21.3
544787	20.3	19.2	355871	20.3	21.5	302395	20.4	20.2	9096	20.5	16.7	101576	20.5	20.0	116271	20.6	18.7
138849	20.3	19.8	284857	20.3	20.0	373490	20.4	19.9	507595	20.5	21.4	265743	20.5	20.0	433530	20.6	20.9
256222	20.3	20.2	29020	20.4	17.0	335557	20.4	20.7	538457	20.5	21.3	232449	20.5	19.2	359017	20.6	21.2
485417	20.3	20.7	348858	20.4	21.2	79970	20.4	19.4	204346	20.5	20.1	535270	20.5	20.5	242758	20.6	19.8
312051	20.3	21.4	277604	20.4	21.1	215141	20.4	20.2	123873	20.5	19.6	343037	20.5	21.5	526038	20.6	19.5
530691	20.3	20.7	536999	20.4	20.4	200853	20.4	20.0	406336	20.5	19.2	106770	20.5	18.6	295379	20.6	19.7
224439	20.3	20.3	134690	20.4	19.8	63546	20.4	19.4	190052	20.5	19.8	390984	20.5	20.7	312142	20.6	19.8
254899	20.3	19.2	205104	20.4	21.0	463147	20.4	21.2	179893	20.5	20.7	10113	20.5	15.3	151169	20.6	19.3
292156	20.3	22.5	34119	20.4	17.7	423283	20.4	20.1	449177	20.5	22.1	215765	20.5	18.5	64670	20.6	18.7
332757	20.3	19.6	471328	20.4	20.1	467789	20.4	21.1	501514	20.5	20.9	464942	20.5	21.7	311913	20.6	20.8
12196	20.3	17.3	293909	20.4	19.7	463299	20.4	21.2	297039	20.5	20.1	464683	20.5	21.1	217034	20.6	19.0
15553	20.3	16.9	90950	20.4	18.6	97010	20.4	18.9	271213	20.5	19.4	505016	20.5	21.4	481073	20.6	21.2
428723	20.3	20.8	540173	20.4	21.0	402970	20.4	20.6	42365	20.5	18.2	531775	20.5	20.9	126966	20.6	19.6
298329	20.3	18.3	351491	20.4	21.1	454964	20.4	21.3	491140	20.5	20.9	520955	20.5	20.2	529635	20.6	20.4
245342	20.3	19.4	235096	20.4	19.4	158522	20.4	19.1	192105	20.5	19.9	315450	20.5	21.6	60158	20.6	18.1
245108	20.3	20.0	412480	20.4	19.7	137813	20.4	18.6	209706	20.5	20.8	446877	20.5	22.1	533219	20.6	21.9
5	20.3	10.7	26806	20.4	18.4	268563	20.4	19.8	183348	20.5	20.1	16689	20.5	18.2	303999	20.6	20.3
462200	20.3	22.4	101733	20.4	19.8	35306	20.4	18.1	114934	20.5	18.9	497924	20.5	22.0	193669	20.6	19.9
400332	20.3	20.4	102162	20.4	19.1	54294	20.4	17.5	98588	20.5	19.3	504155	20.5	21.1	38629	20.6	16.3
422796	20.3	21.2	263699	20.4	20.3	179312	20.4	21.0	331857	20.5	19.5	505982	20.5	20.6	543346	20.6	21.9
393387	20.3	19.7	354986	20.4	19.9	56984	20.4	18.6	170034	20.5	19.1	237524	20.5	18.6	434038	20.6	20.3
538673	20.3	21.1	544633	20.4	20.6	473435	20.4	20.8	233131	20.5	20.2	299510	20.5	19.0	305643	20.6	20.6
170709	20.3	20.4	521104	20.4	20.1	528708	20.4	19.9	253164	20.5	20.5	81189	20.5	19.1	348512	20.6	20.1
230104	20.3	21.8	65962	20.4	18.5	381702	20.4	20.8	174486	20.5	20.1	544274	20.5	20.1	532411	20.6	22.3
13676	20.3	18.0	132241	20.4	20.4	484278	20.4	21.1	328673	20.5	19.8	539893	20.5	19.4	337833	20.6	21.8
502694	20.3	21.7	343126	20.4	20.9	16621											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
64077	20.6	19.0	541710	20.7	20.2	8276	20.8	16.4	36885	20.8	20.0	402034	20.9	20.8	273074	20.9	20.2
312812	20.6	22.1	535680	20.7	22.5	238210	20.8	20.6	33343	20.8	18.2	423665	20.9	21.0	289946	20.9	19.9
283497	20.6	19.4	115721	20.7	20.5	240716	20.8	19.7	451663	20.8	20.3	323745	20.9	19.0	363971	20.9	21.3
171291	20.6	18.7	124429	20.7	19.8	271278	20.8	19.6	118401	20.8	19.9	19309	20.9	17.3	423443	20.9	22.1
34352	20.6	18.5	208449	20.7	19.9	174037	20.8	19.5	435671	20.8	20.1	27336	20.9	17.4	331889	20.9	19.7
299970	20.6	21.3	58383	20.7	20.1	307233	20.8	20.5	316689	20.8	18.2	318120	20.9	19.4	225634	20.9	19.4
478272	20.6	20.8	232933	20.7	20.4	166197	20.8	19.2	386550	20.8	21.1	408426	20.9	21.0	159716	20.9	20.7
409052	20.6	20.2	249498	20.7	20.6	389996	20.8	19.3	320654	20.8	19.9	313388	20.9	19.1	358029	20.9	21.2
347607	20.6	20.3	8397	20.7	16.5	101340	20.8	19.3	273748	20.8	20.8	470309	20.9	21.1	54934	20.9	17.4
238469	20.6	18.3	75154	20.7	19.7	46069	20.8	17.9	121352	20.8	19.9	138851	20.9	19.4	502158	20.9	21.0
329987	20.6	20.2	508044	20.7	20.3	333194	20.8	19.6	81351	20.8	17.5	281097	20.9	20.1	505064	20.9	21.0
286144	20.6	19.1	450839	20.7	21.9	425084	20.8	20.5	390024	20.8	20.5	409017	20.9	20.2	372470	20.9	21.3
478392	20.6	20.0	498738	20.7	20.0	392852	20.8	19.5	244311	20.8	20.0	397008	20.9	21.1	172332	20.9	20.8
412875	20.6	19.7	530376	20.7	19.5	536374	20.8	21.2	194782	20.8	19.8	475903	20.9	20.7	430194	20.9	22.0
305766	20.6	21.1	161968	20.7	18.8	471415	20.8	20.5	536604	20.8	21.0	368716	20.9	21.5	400593	20.9	19.8
63073	20.6	19.2	99665	20.7	17.8	43908	20.8	17.8	217946	20.8	18.7	267202	20.9	19.6	333271	20.9	19.9
7805	20.6	16.5	8891	20.7	17.5	524115	20.8	22.3	523805	20.9	23.4	456957	20.9	21.8	186866	20.9	18.6
527128	20.6	20.6	378523	20.7	19.9	334239	20.8	21.9	465117	20.9	22.5	436034	20.9	20.4	352807	20.9	21.0
170281	20.6	19.0	427294	20.7	22.3	526781	20.8	21.0	501437	20.9	21.8	172061	20.9	19.8	141120	20.9	19.7
190023	20.6	19.1	421349	20.7	21.2	194865	20.8	19.6	454191	20.9	20.9	182888	20.9	21.5	524348	20.9	22.2
319424	20.6	20.4	15778	20.7	16.3	161499	20.8	19.4	368681	20.9	20.1	116914	20.9	18.6	329473	20.9	20.7
334417	20.6	21.2	150370	20.7	17.9	189368	20.8	19.3	477138	20.9	21.0	519844	20.9	20.1	321744	20.9	20.8
501088	20.6	19.8	200829	20.7	19.5	501522	20.8	21.8	294028	20.9	19.3	438182	20.9	19.5	348807	20.9	20.0
303555	20.6	21.6	168918	20.7	20.0	3147	20.8	18.2	103278	20.9	19.8	179306	20.9	21.3	8480	20.9	18.2
24461	20.6	18.0	544368	20.7	20.0	4827	20.8	17.5	430180	20.9	21.1	288975	20.9	20.9	419990	20.9	21.2
349945	20.6	20.3	458870	20.7	21.1	513028	20.8	20.6	305705	20.9	20.6	349483	20.9	21.1	69043	20.9	19.6
293160	20.6	19.8	96664	20.7	17.6	153636	20.8	21.0	434458	20.9	20.6	42277	20.9	19.0	543202	20.9	20.6
341470	20.6	20.4	171915	20.7	19.8	522747	20.8	20.9	303480	20.9	21.3	542748	20.9	20.7	150925	20.9	19.5
434081	20.6	19.9	22181	20.7	17.8	237389	20.8	19.3	460020	20.9	21.3	210477	20.9	19.1	238858	20.9	20.7
534927	20.6	20.2	424751	20.7	20.0	300220	20.8	19.4	225610	20.9	19.8	185648	20.9	20.3	459155	20.9	21.0
37977	20.6	18.1	302221	20.7	20.3	264541	20.8	20.4	111862	20.9	18.4	256353	20.9	18.9	32936	20.9	19.1
403271	20.6	20.9	14990	20.7	18.4	362083	20.8	21.5	125419	20.9	20.4	510316	20.9	22.3	55287	20.9	19.0
59237	20.6	19.9	245003	20.7	20.3	308740	20.8	19.5	239246	20.9	20.0	486748	20.9	19.8	470474	21.0	21.0
229094	20.6	20.2	473479	20.7	20.9	177368	20.8	18.7	299046	20.9	20.6	171289	20.9	20.0	374514	21.0	19.2
93138	20.6	19.6	264761	20.7	19.6	487990	20.8	19.0	20800	20.9	18.0	229207	20.9	19.0	392728	21.0	20.0
163073	20.6	20.4	20643	20.7	17.6	373294	20.8	21.0	55514	20.9	19.3	452361	20.9	20.6	535695	21.0	21.8
128661	20.6	19.0	433261	20.7	20.4	82489	20.8	18.9	168953	20.9	19.9	9035	20.9	17.6	18326	21.0	18.4
331623	20.7	20.5	457408	20.7	21.9	229557	20.8	19.5	85972	20.9	17.4	453610	20.9	19.1	456594	21.0	20.8
358375	20.7	19.8	182959	20.7	18.5	347050	20.8	19.0	169508	20.9	20.2	54302	20.9	18.1	173910	21.0	19.7
410548	20.7	21.3	377393	20.7	21.0	18105	20.8	17.6	354201	20.9	20.6	121877	20.9	19.4	528064	21.0	21.6
406934	20.7	20.0	353229	20.7	19.5	501573	20.8	20.5	495436	20.9	20.2	378536	20.9	20.5	134263	21.0	19.8
169269	20.7	20.2	351994	20.7	22.2	212526	20.8	20.3	472411	20.9	20.3	304083	20.9	19.6	320806	21.0	19.2
217930	20.7	20.2	538774	20.7	21.4	513535	20.8	20.7	397526	20.9	20.2	263564	20.9	19.7	155514	21.0	18.9
124852	20.7	20.0	387274	20.7	20.3	354108	20.8	21.0	392946	20.9	20.1	327968	20.9	20.4	167991	21.0	19.4
428701	20.7	19.7	75098	20.7	18.1	183851	20.8	20.0	534471	20.9	21.9	349139	20.9	20.2	326415	21.0	20.3
284191	20.7	20.7	189794	20.7	19.3	284163	20.8	20.6	14382	20.9	17.5	459696	20.9	20.0	425254	21.0	22.1
63141	20.7	19.3	540957	20.7	21.6	329804	20.8	19.6	19214	20.9	18.3	11951	20.9	19.1	502226	21.0	20.8
249255	20.7	19.4	461494	20.7	20.4	198991	20.8	19.2	403826	20.9	20.2	288465	20.9	20.7	533954	21.0	19.2
407261	20.7	20.2	371217	20.7	21.2	315791	20.8	20.9	467448	20.9	20.9	226747	20.9	19.5	327944	21.0	19.7
504420	20.7	20.9	235957	20.7	20.2	469122	20.8	20.3	208377	20.9	19.6	165084	20.9	19.4	357987	21.0	20.2
31999	20.7	18.4	146219	20.7	20.6	331239	20.8	19.5	421389	20.9	20.2	412421	20.9	21.0	434977	21.0	20.4
298902	20.7	19.4	540442	20.7	22.4	495424	20.8	19.2	203502	20.9	20.0	180998	20.9	20.5	38789	21.0	17.8
470459	20.7	20.8	198892	20.7	20.1	110353	20.8	19.0	388816	20.9	20.8	187499	20.9	21.3	501481	21.0	21.3
468270	20.7	20.9	105633	20.7	18.2	362636	20.8	21.0	532746	20.9	21.3	249074	20.9	21.0	231417	21.0	19.4
173327	20.7	20.7	76754	20.7	18.1	306645	20.8	20.6	477164	20.9	21.9	55979	20.9	18.7	77281	21.0	17.8
285122	20.7	20.6	234872	20.7	19.5	299719	20.8	20.3	522893	20.9	20.2	471457	20.9	20.7	495478	21.0	21.6
377147	20.7	20.2	8400	20.7	16.7	74046	20.8	17.8	280033	20.9	20.7	266334	20.9	21.2	530577	21.0	21.4
373435	20.7	19.4	224313	20.7	19.8	457397	20.8	21.9	62022	20.9	18.6	447829	20.9	21.0	527173	21.0	21.8
92522	20.7	18.2	349407	20.7	20.6	98736	20.8	19.4	331153	20.9	21.4	210159	20.9	19.8	373467	21.0	19.6
325161	20.7	20.1	449259	20.7	20.9	75001	20.8	17.9	344559	20.9	20.7	530104	20.9	20.7	328773	21.0	20.6
303886	20.7	19.9	519606	20.7	20.8	429744	20.8	20.0	379648	20.9	20.2	77182	20.9	18.0	205247	21.0	19.3
289451	20.7	21.0	492866	20.8	20.2	47959	20.8	18.8	419740	20.9	21.0	7401	20.9	17.4	12623	21.0	17.5
347705	20.7	20.8	47677	20.8	18.8	451056	20.8	21.4	331422	20.9	20.1	190770	20.9	20.1	463752	21.0	21.6
143313	20.7	18.9	212333	20.8	18.9	536876	20.8	20.7	411698	20.9	21.6	471816	20.9	21.2	330467	21.0	19.8
372606	20.7	20.2	534067	20.8	20.7	114853	20.8	19.8	299000	20.9	20.9	964	20.9	15.5	337880	21.0	20.2
396266	20.7	21.2	498822	20.8	20.5	364193	20.8	19.9	199475	20.9	19.8	349449	20.9	21.0	437184	21.0	19.9
397463	20.7	19.6	320282	20.8	20.3	219815	20.8	20.2	117253	20.9	18.6	308470	20.9	19.5	347895	21.0	20.4
116439	20.7	20.5	285375	20.8	20.2	91007	20.8	18.4	348425	20.9	19.3	457653	20.9	21.9	258541	21.0	19.8
305755	20.7	20.0	533295	20.8	20.3	421260</											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
132872	21.0	19.0	207788	21.1	20.3	344800	21.2	20.3	437690	21.2	20.5	105852	21.3	19.1	522787	21.4	21.1
529170	21.1	22.2	300931	21.1	20.2	38743	21.2	19.3	185224	21.2	20.7	285643	21.3	20.5	424022	21.4	21.0
523533	21.1	20.9	451738	21.1	21.4	216630	21.2	19.8	489446	21.2	21.5	495650	21.3	21.2	83641	21.4	19.5
466545	21.1	21.8	403522	21.1	21.7	291004	21.2	20.9	8332	21.2	17.6	211009	21.3	20.2	370972	21.4	19.4
301415	21.1	20.2	203424	21.1	19.9	478083	21.2	20.6	249392	21.2	19.3	372654	21.3	20.6	109016	21.4	18.3
100880	21.1	18.3	376655	21.1	20.0	307476	21.2	19.7	130914	21.2	19.4	1248	21.3	13.6	352435	21.4	20.5
491117	21.1	21.9	336700	21.1	20.2	381141	21.2	19.3	543520	21.2	20.1	301005	21.3	20.2	58390	21.4	20.4
157688	21.1	19.1	244835	21.1	19.4	45037	21.2	19.0	286761	21.3	19.6	508042	21.3	20.4	329965	21.4	21.1
232124	21.1	19.2	264553	21.1	21.7	458882	21.2	21.7	267034	21.3	20.0	199491	21.3	19.8	434189	21.4	20.9
120104	21.1	18.8	18094	21.1	17.6	386832	21.2	20.0	539830	21.3	20.6	314319	21.3	19.8	442635	21.4	21.2
447717	21.1	20.6	456952	21.1	19.9	217028	21.2	19.8	83733	21.3	18.4	530759	21.3	21.8	540723	21.4	20.9
304816	21.1	19.3	371182	21.1	20.8	385927	21.2	20.0	121973	21.3	18.3	534728	21.3	21.4	248711	21.4	18.8
60786	21.1	18.1	455780	21.1	20.5	162256	21.2	20.2	491185	21.3	21.7	253076	21.3	19.9	325750	21.4	19.9
539898	21.1	19.6	322330	21.1	20.2	240914	21.2	19.5	526520	21.3	22.4	59809	21.3	19.2	109386	21.4	17.8
164321	21.1	20.7	140654	21.1	19.5	165374	21.2	20.0	505980	21.3	20.5	11479	21.3	16.2	141423	21.4	19.7
277022	21.1	19.6	368260	21.1	21.3	350328	21.2	20.0	18975	21.3	18.7	417473	21.3	20.3	85579	21.4	19.4
543467	21.1	21.1	146243	21.1	19.5	233658	21.2	19.6	304115	21.3	19.1	134155	21.3	19.8	440904	21.4	18.1
188111	21.1	19.2	539828	21.1	20.4	41885	21.2	19.1	433438	21.3	20.4	449133	21.3	20.9	274550	21.4	19.5
175806	21.1	19.4	468242	21.1	20.5	344233	21.2	21.3	424090	21.3	19.4	526573	21.3	21.1	332194	21.4	19.9
355825	21.1	22.6	524305	21.1	20.4	280039	21.2	21.2	111617	21.3	18.9	87981	21.3	18.6	18159	21.4	16.5
106750	21.1	19.0	299349	21.1	21.3	354152	21.2	21.4	157934	21.3	18.7	115020	21.3	19.3	535999	21.4	21.4
318755	21.1	20.0	312859	21.1	19.9	456251	21.2	22.1	470087	21.3	21.2	244093	21.3	19.1	37028	21.4	18.8
481987	21.1	20.5	500964	21.1	21.0	152437	21.2	18.6	68375	21.3	19.6	352044	21.3	21.2	351991	21.4	20.3
122442	21.1	20.1	515739	21.1	20.5	366395	21.2	18.5	346287	21.3	20.1	541990	21.3	20.0	176788	21.4	20.0
464244	21.1	20.0	246027	21.1	19.9	35220	21.2	17.8	505700	21.3	20.7	141760	21.3	20.0	109310	21.4	17.7
221226	21.1	20.2	208215	21.1	19.9	182865	21.2	21.0	174015	21.3	20.6	507563	21.3	21.3	448469	21.4	20.5
386784	21.1	19.8	3555	21.1	16.1	32119	21.2	18.0	299452	21.3	21.0	11492	21.3	17.5	419517	21.4	20.2
380058	21.1	21.0	502557	21.1	20.8	406983	21.2	22.0	35188	21.3	18.2	425726	21.3	20.7	468209	21.4	20.1
300202	21.1	20.5	297386	21.1	20.3	5612	21.2	17.0	55035	21.3	18.4	114677	21.3	19.1	117389	21.4	19.2
32132	21.1	16.8	282480	21.1	19.5	301012	21.2	20.3	106388	21.3	19.2	530717	21.3	22.0	202945	21.4	19.8
382614	21.1	20.1	521030	21.1	20.7	374060	21.2	18.1	284884	21.3	20.6	473266	21.3	19.6	312513	21.4	20.4
303280	21.1	19.1	395862	21.1	21.3	138792	21.2	20.7	388003	21.3	20.7	47196	21.3	18.4	281953	21.4	21.2
396904	21.1	20.2	282489	21.1	19.1	366967	21.2	21.0	461529	21.3	22.0	287539	21.3	20.5	24452	21.4	19.0
344273	21.1	21.2	176424	21.1	20.2	213328	21.2	20.6	127864	21.3	18.7	287393	21.3	21.2	90972	21.4	19.7
500427	21.1	21.1	420497	21.1	18.0	344385	21.2	20.5	427547	21.3	21.0	31085	21.3	18.7	506370	21.4	19.5
494904	21.1	22.1	456940	21.1	20.6	420381	21.2	20.6	209018	21.3	19.6	198482	21.3	19.5	456588	21.4	20.7
119988	21.1	19.4	154334	21.1	19.9	139994	21.2	20.3	305778	21.3	21.5	489579	21.3	20.2	500158	21.4	18.5
312066	21.1	19.4	428840	21.1	20.7	89656	21.2	18.3	267510	21.3	18.8	162581	21.3	21.7	57191	21.4	18.5
159436	21.1	19.6	102355	21.1	19.7	231220	21.2	21.3	414205	21.3	21.1	391432	21.3	19.1	215815	21.4	18.6
527806	21.1	20.4	205905	21.1	20.1	167846	21.2	20.4	376007	21.3	20.7	3995	21.3	15.8	175304	21.4	19.1
87655	21.1	19.1	415998	21.1	21.4	139984	21.2	20.5	375835	21.3	20.3	244176	21.3	20.7	346210	21.4	20.0
181536	21.1	20.6	33430	21.2	18.5	524140	21.2	21.4	294049	21.3	20.2	204427	21.3	19.5	56540	21.4	19.5
100858	21.1	18.8	329489	21.2	20.8	283527	21.2	19.9	453377	21.3	20.6	434900	21.3	20.7	464681	21.4	20.7
12218	21.1	16.4	450400	21.2	21.2	288579	21.2	19.2	458780	21.3	21.5	213098	21.3	19.4	264161	21.4	19.7
435051	21.1	20.2	55237	21.2	18.3	82641	21.2	18.0	77897	21.3	19.7	111815	21.3	20.8	174876	21.4	20.7
435258	21.1	20.9	30553	21.2	18.6	292092	21.2	20.7	352663	21.3	20.9	383865	21.3	19.8	377444	21.4	20.6
183157	21.1	19.8	532484	21.2	21.2	458885	21.2	21.1	46573	21.3	16.2	246995	21.3	20.0	505026	21.4	20.6
228343	21.1	18.4	438445	21.2	20.6	41928	21.2	19.9	288918	21.3	19.8	325310	21.3	19.5	229162	21.4	19.5
261518	21.1	19.2	293	21.2	14.5	272885	21.2	20.8	41462	21.3	18.4	277463	21.3	20.3	384495	21.4	20.3
21084	21.1	18.7	53407	21.2	18.6	123470	21.2	19.7	365438	21.3	20.1	253202	21.3	20.4	110314	21.4	19.1
231639	21.1	19.9	272904	21.2	20.8	424657	21.2	20.6	473697	21.3	20.4	241888	21.3	19.9	417832	21.4	19.5
253180	21.1	20.8	465754	21.2	21.1	341430	21.2	21.3	491708	21.3	20.4	421392	21.3	20.6	242782	21.4	21.1
67523	21.1	18.6	150511	21.2	20.0	229146	21.2	20.5	530162	21.3	21.8	433439	21.3	21.9	188060	21.4	20.0
192051	21.1	19.5	340342	21.2	20.3	343232	21.2	19.8	196589	21.3	19.5	51899	21.3	18.9	6870	21.4	16.9
411265	21.1	21.2	261297	21.2	19.7	467884	21.2	20.3	433616	21.3	21.1	208962	21.3	19.9	300090	21.4	20.7
131860	21.1	19.3	201934	21.2	21.0	493562	21.2	20.2	178748	21.3	20.8	500910	21.3	22.0	235853	21.4	20.7
172063	21.1	20.5	188846	21.2	20.1	432348	21.2	22.5	149707	21.3	19.9	149634	21.3	19.8	269544	21.4	20.0
283566	21.1	20.6	452502	21.2	21.4	433722	21.2	19.6	252005	21.3	19.7	147462	21.3	19.9	362536	21.4	20.6
529042	21.1	18.6	348314	21.2	18.0	538577	21.2	20.4	312017	21.3	19.3	496642	21.4	19.9	431085	21.4	20.8
295432	21.1	20.5	405281	21.2	20.4	150879	21.2	20.6	396583	21.3	20.2	322370	21.4	19.9	131836	21.4	18.7
500480	21.1	21.7	289181	21.2	19.1	174563	21.2	20.0	4907	21.3	17.2	198266	21.4	19.2	77914	21.4	18.7
387402	21.1	20.7	183993	21.2	20.0	516354	21.2	21.3	243446	21.3	17.7	37870	21.4	18.6	303769	21.4	20.7
172828	21.1	20.4	299458	21.2	18.4	341330	21.2	20.6	472432	21.3	20.7	544302	21.4	20.1	56047	21.4	19.0
233778	21.1	21.6	338154	21.2	21.2	293153	21.2	21.0	58899	21.3	18.3	175529	21.4	21.0	42267	21.4	18.0
201986	21.1	19.4	26466	21.2	17.8	178903	21.2	19.1	428809	21.3	20.7	435296	21.4	20.8	497522	21.4	21.4
193578	21.1	20.4	328505	21.2	20.0	237737	21.2	20.1	399552	21.3	18.9	437008	21.4	21.0	256949	21.4	21.0
34842	21.1	19.5	146093	21.2	20.0	379198	21.2	19.0	5907	21.3	17.5	447562	21.4	19.1	450525	21.4	21.2
379095	21.1	20.9	426972	21.2	20.3	308293	21.2	20.6	432110	21.3	20.1	268516	21.4	20.8	402863	21.4	21.8
85649	21.1	18.5	339382	21.2	20.6												

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
529351	21.4	21.9	333687	21.5	19.1	254020	21.6	20.7	443695	21.6	20.6	111585	21.7	19.1	156401	21.8	20.3
269091	21.4	19.7	308669	21.5	19.2	8576	21.6	17.9	361704	21.6	20.0	176918	21.7	20.2	144778	21.8	18.7
313830	21.4	20.0	208485	21.5	19.8	123669	21.6	19.6	464081	21.6	20.4	514832	21.7	20.7	356950	21.8	20.5
332333	21.4	20.0	239547	21.5	20.2	519371	21.6	20.9	459208	21.6	21.0	496337	21.7	20.9	23766	21.8	16.5
70188	21.4	18.7	247669	21.5	20.1	494262	21.6	20.7	314759	21.6	19.7	544621	21.7	21.4	498949	21.8	20.7
107289	21.4	19.4	130528	21.5	19.5	121896	21.6	18.2	262835	21.6	20.6	515438	21.7	20.4	432220	21.8	21.2
458766	21.4	22.0	379123	21.5	21.8	1175	21.6	14.5	131957	21.6	18.8	539839	21.7	21.0	223646	21.8	19.1
534691	21.4	20.9	10478	21.5	17.2	534817	21.6	21.8	49493	21.6	18.3	143397	21.7	20.1	161639	21.8	19.3
7027	21.4	18.2	96159	21.5	20.1	187337	21.6	20.1	248421	21.6	20.0	332355	21.7	20.8	200668	21.8	19.8
346964	21.4	20.5	490338	21.5	20.1	537278	21.6	21.3	299575	21.6	20.6	15613	21.7	17.4	241851	21.8	19.6
491828	21.4	20.8	139795	21.5	19.0	75328	21.6	19.4	508528	21.6	20.1	56579	21.7	17.9	435226	21.8	20.5
117446	21.4	18.9	276937	21.5	20.9	207979	21.6	20.2	440919	21.6	21.0	166180	21.7	19.3	177702	21.8	19.2
425091	21.4	21.3	73795	21.5	19.3	328997	21.6	20.9	303191	21.6	18.4	59743	21.7	18.0	295299	21.8	19.2
405208	21.4	20.9	393089	21.5	20.9	147431	21.6	19.2	499742	21.6	20.4	56165	21.7	17.5	391744	21.8	21.1
102412	21.5	19.7	282134	21.5	19.1	91349	21.6	18.7	79999	21.6	18.1	28978	21.7	19.5	346192	21.8	21.1
34935	21.5	19.0	351918	21.5	21.4	204738	21.6	19.4	535597	21.6	21.4	93462	21.7	19.4	98413	21.8	18.0
265637	21.5	19.6	361682	21.5	20.1	65242	21.6	17.8	350943	21.6	19.7	239928	21.7	19.1	272452	21.8	20.9
47284	21.5	18.4	363345	21.5	21.0	161492	21.6	19.1	267281	21.6	20.9	128808	21.7	18.7	450521	21.8	20.0
201503	21.5	18.4	503277	21.5	22.4	508331	21.6	21.0	107814	21.6	19.9	16719	21.7	18.2	340696	21.8	21.6
63048	21.5	19.4	249119	21.5	19.7	473167	21.6	21.0	487098	21.6	20.3	164592	21.7	18.7	262063	21.8	21.0
33157	21.5	18.4	245531	21.5	18.1	419403	21.6	19.7	157556	21.6	21.0	534017	21.7	21.3	502393	21.8	21.5
151139	21.5	19.7	543417	21.5	20.6	513401	21.6	20.5	278348	21.6	20.2	432060	21.7	20.1	29837	21.8	18.1
55356	21.5	19.8	17843	21.5	17.7	221132	21.6	18.8	36922	21.6	18.5	507571	21.7	21.3	64524	21.8	18.2
532685	21.5	19.7	62426	21.5	18.9	512304	21.6	20.6	285977	21.6	20.0	225410	21.7	19.3	299849	21.8	20.5
412920	21.5	21.1	433747	21.5	21.8	32501	21.6	17.9	536924	21.6	20.9	278755	21.7	19.9	205816	21.8	19.2
347492	21.5	21.1	301634	21.5	19.8	131985	21.6	18.8	383692	21.6	19.9	529585	21.7	19.4	207247	21.8	19.7
350447	21.5	20.4	125563	21.5	19.5	367160	21.6	20.3	506180	21.6	20.3	218645	21.7	19.4	96896	21.8	19.8
104199	21.5	18.3	231764	21.5	20.3	276105	21.6	22.6	544618	21.6	21.9	16911	21.7	18.2	162959	21.8	21.2
90543	21.5	16.9	545025	21.5	20.4	169193	21.6	20.2	287631	21.6	19.5	226025	21.7	19.7	47462	21.8	18.7
290701	21.5	20.5	363418	21.5	20.4	245946	21.6	20.4	377903	21.6	21.3	276794	21.7	19.4	491719	21.8	21.8
383819	21.5	21.2	513269	21.5	21.5	401338	21.6	20.2	147987	21.6	19.3	80741	21.7	17.6	489649	21.8	21.5
444163	21.5	18.6	450196	21.5	21.6	357141	21.6	21.1	208999	21.6	18.4	297816	21.7	21.0	279522	21.8	21.5
526784	21.5	22.0	221376	21.5	20.5	316863	21.6	19.7	306739	21.7	19.1	348799	21.7	20.8	453863	21.8	21.8
249995	21.5	19.7	530175	21.5	21.1	246421	21.6	20.2	529197	21.7	19.9	308447	21.7	19.5	534553	21.8	20.9
63519	21.5	18.4	182417	21.5	19.0	338176	21.6	23.1	302463	21.7	20.3	171037	21.7	20.0	202308	21.8	20.9
513044	21.5	20.6	117820	21.5	19.3	118826	21.6	20.0	375890	21.7	20.5	315366	21.7	20.5	474990	21.8	20.7
141141	21.5	19.2	438157	21.5	21.1	274146	21.6	19.9	406845	21.7	20.4	137968	21.7	20.1	60552	21.8	18.8
170217	21.5	19.8	85178	21.5	18.5	213635	21.6	18.5	100129	21.7	20.8	165258	21.7	18.7	520913	21.8	21.2
274466	21.5	19.9	313015	21.5	20.9	428345	21.6	18.9	532189	21.7	21.4	302055	21.7	21.2	530560	21.8	20.1
6165	21.5	17.0	504187	21.5	20.9	540269	21.6	20.8	58403	21.7	19.2	207842	21.7	20.0	99433	21.8	19.2
342953	21.5	20.1	521039	21.5	20.8	180607	21.6	19.1	57885	21.7	17.9	219838	21.7	21.3	274167	21.8	20.0
103677	21.5	18.2	188117	21.5	19.3	403361	21.6	21.0	124376	21.7	19.7	236596	21.7	20.4	70544	21.8	18.6
132183	21.5	19.7	126709	21.5	20.4	166800	21.6	19.8	455600	21.7	21.5	224334	21.7	20.6	151346	21.8	20.4
501980	21.5	20.6	79966	21.5	18.2	384239	21.6	20.7	267205	21.7	19.0	41597	21.7	18.5	278270	21.8	20.3
141440	21.5	20.4	469388	21.5	20.9	459182	21.6	21.4	313723	21.7	20.6	422033	21.7	20.5	375024	21.8	19.8
513015	21.5	20.8	241480	21.5	19.7	129607	21.6	20.0	118132	21.7	20.0	377361	21.7	19.4	224458	21.8	19.1
189778	21.5	19.8	309665	21.5	20.9	308735	21.6	19.8	286141	21.7	19.8	424653	21.7	19.2	420933	21.8	20.3
375734	21.5	20.6	89321	21.5	18.9	435042	21.6	20.3	244644	21.7	20.1	239881	21.7	19.1	519004	21.8	20.4
213303	21.5	20.4	28983	21.5	17.3	34066	21.6	18.0	73746	21.7	19.4	264752	21.7	20.6	251845	21.8	20.6
458852	21.5	22.2	21897	21.5	18.4	284398	21.6	20.1	406561	21.7	20.7	248189	21.7	19.7	176547	21.8	20.9
213802	21.5	20.5	380602	21.5	20.6	94918	21.6	19.5	57164	21.7	19.0	13624	21.7	17.9	435030	21.8	19.7
422539	21.5	21.5	341370	21.5	21.5	64421	21.6	19.0	540431	21.7	21.9	459150	21.7	21.9	508316	21.8	20.5
266741	21.5	20.2	206254	21.5	20.1	36321	21.6	17.9	36348	21.7	19.0	164378	21.7	20.0	25155	21.8	18.1
25197	21.5	17.6	152775	21.5	19.0	209670	21.6	20.0	251599	21.7	20.2	6864	21.7	17.4	264666	21.8	21.0
545078	21.5	21.0	139506	21.5	19.2	101591	21.6	19.5	356497	21.7	18.9	450274	21.7	20.2	145404	21.8	19.5
341312	21.5	21.4	98590	21.5	19.2	502381	21.6	20.5	159252	21.7	18.6	196233	21.7	21.4	509342	21.8	22.3
435637	21.5	20.5	93539	21.5	19.1	101962	21.6	18.6	124867	21.7	19.9	68987	21.7	19.3	534084	21.8	20.7
436008	21.5	20.4	369615	21.5	20.4	372479	21.6	21.0	277706	21.7	19.8	321021	21.7	20.6	105799	21.8	19.7
19856	21.5	16.8	393545	21.5	20.3	498349	21.6	21.6	183301	21.7	20.9	83953	21.7	18.4	63768	21.8	19.9
238836	21.5	19.4	392779	21.5	20.3	529846	21.6	21.4	507532	21.7	22.2	235899	21.7	21.1	294880	21.8	20.0
451693	21.5	22.2	104051	21.5	20.4	132083	21.6	19.5	394290	21.7	21.0	181061	21.7	19.8	160800	21.8	19.2
386250	21.5	19.7	376323	21.5	20.7	109224	21.6	19.2	250472	21.7	20.3	135322	21.7	19.5	313633	21.8	20.6
140530	21.5	20.2	194096	21.5	20.4	434007	21.6	24.3	97560	21.7	19.7	17381	21.7	17.7	111071	21.8	19.4
276131	21.5	19.9	38826	21.5	18.7	403102	21.6	21.5	8770	21.7	17.5	155741	21.7	20.6	323863	21.8	19.5
56621	21.5	18.5	145496	21.5	18.7	67938	21.6	19.3	210776	21.7	20.2	543404	21.7	20.7	521275	21.8	21.0
313858	21.5	19.7	268459	21.5	20.4	192278	21.6	20.1	467376	21.7	18.1	506233	21.7	19.6	331923	21.8	20.1
283462	21.5	20.6	188085	21.5	20.2	374520	21.6	20.6	191329	21.7	19.1	466433	21.7	20.0	277500	21.8	21.0
276591	21.5	20.5	125987	21.5	19.0	200797	21.6	20.6	435954	21.7	20.1	386840	21.7	18.6	521189	21.8	20.2
299537	21.5	20.6	144562	21.5	20.7	430210											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
384149	21.8	20.3	110380	21.9	19.7	91485	21.9	19.5	392235	22.1	20.6	532994	22.1	21.9	191085	22.2	19.7
500271	21.8	19.5	299882	21.9	21.2	53140	21.9	19.3	236732	22.1	19.3	225575	22.1	19.8	345622	22.2	20.9
286509	21.8	20.1	498272	21.9	20.7	65025	21.9	18.7	13408	22.1	17.9	383701	22.1	21.4	538822	22.2	21.9
114576	21.8	18.7	170464	21.9	19.7	426691	21.9	20.9	331328	22.1	20.7	290073	22.1	20.3	527615	22.2	21.5
333775	21.8	20.1	105139	21.9	19.1	321068	21.9	20.1	432542	22.1	21.5	353583	22.1	20.7	54626	22.2	19.2
261392	21.8	18.6	23333	21.9	17.8	97828	21.9	18.4	277888	22.1	19.1	472600	22.1	20.1	277783	22.2	20.6
366837	21.8	19.3	396628	21.9	21.1	137897	21.9	19.2	55045	22.1	18.7	291402	22.1	18.9	535278	22.2	21.7
38207	21.8	16.7	192831	21.9	20.5	455616	21.9	21.3	287314	22.1	21.1	300923	22.1	20.3	69528	22.2	20.0
518222	21.8	21.3	83213	21.9	20.1	311054	21.9	19.9	33353	22.1	17.6	122504	22.1	18.8	70655	22.2	18.0
132180	21.8	18.5	52299	21.9	17.5	40818	21.9	17.7	542582	22.1	20.0	246534	22.1	20.3	87660	22.2	17.2
521140	21.8	20.3	155305	21.9	20.0	471422	21.9	21.5	289565	22.1	19.4	264735	22.1	20.1	465417	22.2	20.0
470501	21.9	21.1	92758	21.9	18.4	472833	21.9	20.1	39091	22.1	16.5	89163	22.1	18.2	370477	22.2	21.0
41000	21.9	18.5	458375	21.9	20.3	31429	21.9	16.8	532953	22.1	21.4	29681	22.1	18.8	328867	22.2	19.7
507728	21.9	20.8	55648	21.9	19.4	492470	21.9	20.3	422315	22.1	20.5	522710	22.1	21.4	234450	22.2	20.5
377880	21.9	21.0	301522	21.9	20.2	279864	21.9	20.1	245169	22.1	20.6	264653	22.1	20.4	522820	22.2	20.8
210581	21.9	18.8	304691	21.9	20.1	65084	21.9	19.3	192104	22.1	20.1	531785	22.1	20.9	225323	22.2	19.3
455619	21.9	21.8	331008	21.9	19.7	508515	21.9	20.5	467423	22.1	21.8	122410	22.1	18.7	535049	22.2	21.3
419070	21.9	21.3	30336	21.9	18.1	205946	21.9	19.5	519616	22.1	21.7	134884	22.1	19.3	292946	22.2	20.2
169509	21.9	20.6	182070	21.9	19.0	16707	21.9	18.4	155053	22.1	20.1	80961	22.1	19.4	528924	22.2	21.4
348964	21.9	20.6	156325	21.9	19.6	483341	21.9	19.8	492411	22.1	20.3	271805	22.1	20.5	151279	22.2	19.6
299253	21.9	20.6	491112	21.9	22.5	425080	21.9	21.0	89046	22.1	19.0	24018	22.1	18.5	536894	22.2	21.4
371178	21.9	20.1	407332	21.9	21.6	534716	21.9	21.4	186580	22.1	19.0	443930	22.1	20.4	81047	22.2	19.2
2598	21.9	17.9	406587	21.9	21.8	339436	21.9	20.3	224520	22.1	19.2	141269	22.1	19.5	99667	22.2	19.5
503151	21.9	20.5	407898	21.9	21.0	185241	21.9	19.6	155252	22.1	19.6	268607	22.1	19.1	284706	22.2	20.8
31168	21.9	17.8	429556	21.9	20.2	368255	21.9	21.1	435950	22.1	20.8	32812	22.1	17.8	434191	22.2	21.4
135746	21.9	19.7	64814	21.9	19.2	52754	22.0	18.4	315382	22.1	21.1	209574	22.1	19.0	256368	22.2	21.0
244189	21.9	20.6	253947	21.9	19.2	185684	22.0	19.0	473114	22.1	20.3	526718	22.1	21.0	419811	22.2	21.6
29581	21.9	19.2	29975	21.9	17.3	255918	22.0	21.6	360781	22.1	20.2	186392	22.1	18.9	459965	22.2	19.9
502541	21.9	20.4	470949	21.9	21.2	47091	22.0	17.7	297837	22.1	20.7	246472	22.1	20.6	492601	22.2	20.4
106835	21.9	18.9	285720	21.9	20.2	221149	22.0	20.1	117014	22.1	18.7	106375	22.1	20.2	181031	22.2	20.2
296229	21.9	19.9	293015	21.9	20.1	292055	22.0	19.9	535277	22.1	21.0	241431	22.2	20.7	172559	22.2	19.9
96396	21.9	19.3	110676	21.9	19.6	360759	22.0	20.8	235670	22.1	20.3	174429	22.2	19.7	144351	22.2	20.3
400552	21.9	19.1	505900	21.9	19.5	31620	22.0	17.3	126635	22.1	19.1	429710	22.2	20.5	303781	22.2	20.6
93635	21.9	19.4	499480	21.9	20.5	91787	22.0	18.0	2017	22.1	14.4	371699	22.2	21.2	353531	22.2	20.6
447977	21.9	23.6	56946	21.9	19.7	472181	22.0	19.7	96210	22.1	18.7	292782	22.2	20.6	383623	22.2	20.1
209940	21.9	19.4	384060	21.9	21.3	342962	22.0	20.4	189981	22.1	18.0	18364	22.2	18.4	64802	22.2	19.1
275490	21.9	19.3	536953	21.9	20.8	351510	22.0	20.5	502971	22.1	19.9	153656	22.2	20.7	200784	22.2	20.4
408167	21.9	21.3	121109	21.9	18.7	522728	22.0	20.9	538587	22.1	21.3	32631	22.2	17.6	427890	22.2	20.5
391249	21.9	21.3	362620	21.9	20.9	55135	22.0	18.7	393055	22.1	22.0	148541	22.2	20.0	214424	22.2	19.9
242717	21.9	20.9	475507	21.9	21.6	467001	22.0	20.2	52674	22.1	18.3	394878	22.2	19.3	106622	22.2	17.9
370083	21.9	19.2	473194	21.9	20.3	220711	22.0	19.5	510322	22.1	20.9	505203	22.2	20.9	145378	22.2	20.2
5233	21.9	18.3	113340	21.9	19.1	542421	22.0	19.4	225506	22.1	19.4	118927	22.2	19.4	132285	22.2	18.4
169406	21.9	20.6	455413	21.9	20.1	32791	22.0	18.5	238893	22.1	20.9	503473	22.2	20.6	193801	22.2	19.9
312208	21.9	20.5	58845	21.9	19.0	220348	22.0	19.8	211895	22.1	18.7	158346	22.2	21.4	88441	22.2	18.6
174033	21.9	20.0	414140	21.9	22.1	392498	22.0	18.7	64790	22.1	20.1	273708	22.2	21.5	297197	22.2	21.3
531555	21.9	21.3	226829	21.9	20.5	302207	22.0	19.9	120966	22.1	20.1	172733	22.2	20.4	43073	22.2	17.6
500984	21.9	20.7	292939	21.9	20.7	540235	22.0	21.0	109678	22.1	20.7	402071	22.2	21.4	497470	22.2	20.2
62950	21.9	17.9	57876	21.9	18.0	436302	22.0	20.9	523849	22.1	20.5	5030	22.2	16.2	85646	22.2	17.5
105872	21.9	19.6	437566	21.9	21.5	18598	22.0	16.4	325099	22.1	20.5	439552	22.2	19.4	119069	22.2	22.2
499021	21.9	21.2	83665	21.9	18.2	474160	22.0	20.7	292140	22.1	20.1	327405	22.2	19.4	116647	22.2	18.7
528426	21.9	20.1	188908	21.9	20.4	52579	22.0	19.9	451243	22.1	21.0	228338	22.2	19.6	36221	22.2	18.0
67033	21.9	18.5	126098	21.9	19.8	445068	22.0	22.0	253137	22.1	21.0	498512	22.2	22.1	364724	22.2	21.2
297001	21.9	20.4	535661	21.9	21.5	297630	22.0	20.6	5972	22.1	16.2	520981	22.2	22.3	456865	22.2	20.7
389233	21.9	20.9	520074	21.9	21.1	313716	22.0	21.2	243170	22.1	18.8	104961	22.2	18.4	333203	22.2	19.2
153770	21.9	19.9	456757	21.9	21.1	299473	22.0	20.7	89278	22.1	18.5	325533	22.2	19.7	297442	22.2	19.8
109341	21.9	19.5	80101	21.9	18.3	503215	22.0	20.0	341654	22.1	21.5	312147	22.2	20.5	416208	22.2	20.9
232858	21.9	19.9	430222	21.9	20.9	397588	22.0	20.2	258230	22.1	20.2	144884	22.2	19.9	399581	22.2	20.5
525611	21.9	20.8	329306	21.9	19.9	216432	22.0	20.4	29805	22.1	18.5	279710	22.2	20.3	223644	22.2	18.7
55702	21.9	19.3	56727	21.9	18.9	505237	22.0	21.1	375340	22.1	20.7	206857	22.2	19.9	360769	22.2	19.1
502151	21.9	21.8	64360	21.9	18.8	307725	22.0	20.3	509265	22.1	21.7	348894	22.2	21.1	244573	22.2	20.8
245362	21.9	19.2	98566	21.9	19.1	480129	22.0	20.1	267335	22.1	22.2	459953	22.2	20.4	156019	22.2	18.1
345077	21.9	20.2	170877	21.9	20.4	359981	22.0	20.2	142805	22.1	20.2	39981	22.2	18.2	163752	22.2	19.6
212036	21.9	21.1	316590	21.9	19.4	203535	22.0	20.3	193782	22.1	19.7	350427	22.2	20.4	57313	22.2	19.6
467426	21.9	22.0	375973	21.9	20.5	490545	22.0	20.6	324538	22.1	20.8	349100	22.2	20.9	350304	22.2	19.4
431902	21.9	19.2	59243	21.9	19.5	185234	22.0	20.6	325779	22.1	21.5	170286	22.2	19.1	219671	22.2	20.1
69230	21.9	19.5	241321	21.9	19.7	343567	22.0	20.0	105904	22.1	19.7	90522	22.2	17.9	138593	22.2	20.2
302434	21.9	20.9	530192	21.9	21.5	531612	22.0	21.8	495201	22.1	21.1	379980	22.2	20.0	507011	22.2	21.0
502547	21.9	21.1	209391	21.9	20.4	466681	22.0	21.1	21422	22.1	16.6	190097	22.2	19.7	472317	22.2	20.4
193501	21.9	21.2	531068	21.9	20.7	424046	22.0										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
51121	22.2	18.7	188965	22.3	18.8	391261	22.4	21.1	427376	22.5	21.6	537462	22.5	21.2	352075	22.6	21.8
28007	22.3	17.6	246415	22.3	20.8	371148	22.4	21.9	209070	22.5	19.3	142981	22.5	18.5	53962	22.6	19.1
85351	22.3	19.4	209057	22.3	19.8	158643	22.4	19.2	105986	22.5	20.1	526694	22.5	23.0	264779	22.6	19.5
68263	22.3	18.7	496583	22.3	20.7	433464	22.4	21.5	214746	22.5	20.6	435988	22.5	22.5	512449	22.6	20.1
433431	22.3	21.0	419820	22.3	20.5	8890	22.4	18.1	146232	22.5	20.4	2085	22.5	15.8	459256	22.6	22.2
416778	22.3	19.2	37034	22.3	18.5	157202	22.4	19.8	309392	22.5	20.9	210782	22.5	18.9	16070	22.6	16.0
504026	22.3	21.8	50377	22.3	18.2	534001	22.4	19.4	16373	22.5	18.3	534532	22.5	19.4	357340	22.6	19.5
402498	22.3	20.2	297276	22.3	19.7	108614	22.4	18.1	121855	22.5	17.9	281217	22.5	21.2	333670	22.6	20.0
101024	22.3	18.5	296152	22.3	19.3	388311	22.4	21.1	278332	22.5	19.8	503767	22.5	20.8	248574	22.6	19.3
266553	22.3	19.7	410802	22.3	20.0	21616	22.4	16.9	353642	22.5	21.6	28745	22.5	19.3	147376	22.6	19.5
377839	22.3	20.1	197769	22.3	18.8	110665	22.4	19.1	89031	22.5	18.6	532781	22.5	21.6	379424	22.6	20.7
432129	22.3	21.0	470124	22.3	20.3	91524	22.4	18.4	237548	22.5	21.2	241966	22.5	18.4	513049	22.6	22.1
533170	22.3	22.6	470094	22.3	20.6	111220	22.4	18.3	318043	22.5	21.1	270422	22.5	19.3	141210	22.6	18.4
41946	22.3	18.8	236839	22.3	20.7	206844	22.4	19.5	381867	22.5	20.8	141263	22.5	19.3	241939	22.6	20.8
283554	22.3	19.9	72324	22.3	18.0	367764	22.4	20.5	34648	22.5	17.6	366377	22.5	19.9	251720	22.6	21.2
2009	22.3	16.2	302833	22.3	19.7	166080	22.4	19.8	106196	22.5	18.6	182704	22.6	19.1	165541	22.6	19.3
180852	22.3	18.4	182460	22.3	20.1	2426	22.4	15.2	227589	22.5	19.6	403521	22.6	21.4	308660	22.6	20.4
160715	22.3	18.7	344587	22.3	21.8	255718	22.4	19.6	105667	22.5	19.8	449100	22.6	20.5	92415	22.6	18.6
129572	22.3	19.5	268806	22.3	19.9	120031	22.4	18.4	59333	22.5	18.1	403876	22.6	20.9	190187	22.6	17.8
77351	22.3	19.7	483229	22.3	21.9	182081	22.4	20.6	24048	22.5	18.3	538079	22.6	20.1	341726	22.6	20.3
534719	22.3	21.9	298285	22.3	20.1	236228	22.4	20.2	68077	22.5	18.8	381450	22.6	21.0	273090	22.6	20.1
534664	22.3	21.5	502017	22.3	21.4	131901	22.4	19.0	505872	22.5	20.6	314343	22.6	19.6	520639	22.6	20.9
199252	22.3	20.1	360190	22.3	19.5	208971	22.4	20.0	146668	22.5	18.9	436002	22.6	21.0	391322	22.6	21.5
344198	22.3	19.9	525652	22.3	19.6	177110	22.4	18.9	525208	22.5	20.0	5778	22.6	15.0	270576	22.6	19.6
264707	22.3	19.4	423099	22.3	20.4	457065	22.4	20.6	53150	22.5	17.5	505195	22.6	21.8	130504	22.6	18.7
188221	22.3	21.1	295021	22.3	19.7	353610	22.4	19.9	98421	22.5	19.1	38364	22.6	19.1	404281	22.6	20.8
109698	22.3	20.4	240465	22.3	20.8	958	22.4	16.8	361576	22.5	20.5	38394	22.6	18.0	67139	22.6	19.3
23549	22.3	18.6	17493	22.3	20.2	330780	22.4	21.8	342948	22.5	21.5	447346	22.6	21.7	211484	22.6	19.0
26355	22.3	16.0	141308	22.3	20.0	540523	22.4	20.4	133900	22.5	20.6	155707	22.6	18.8	62000	22.6	19.6
435378	22.3	21.2	459088	22.3	20.9	254092	22.4	19.3	69769	22.5	19.4	445877	22.6	20.8	85846	22.6	18.9
22419	22.3	18.4	358996	22.3	22.1	150798	22.4	20.5	237641	22.5	20.6	315946	22.6	20.2	165504	22.6	19.5
531715	22.3	21.2	263206	22.3	19.8	181861	22.4	17.5	464155	22.5	21.1	298761	22.6	20.5	138244	22.6	19.2
473145	22.3	19.3	377629	22.3	19.8	170342	22.4	18.5	149562	22.5	19.6	435945	22.6	20.1	70428	22.6	19.2
130588	22.3	19.9	332876	22.3	21.4	54634	22.4	19.0	110563	22.5	19.5	472662	22.6	20.5	530219	22.6	20.7
247799	22.3	19.1	79604	22.3	18.2	436021	22.4	20.7	27431	22.5	17.1	53326	22.6	18.9	327025	22.6	19.4
24457	22.3	18.0	470217	22.3	21.4	362165	22.4	20.1	51301	22.5	17.9	491742	22.6	21.1	370055	22.6	20.0
262806	22.3	21.1	173928	22.3	20.6	496844	22.4	21.4	28127	22.5	18.5	150966	22.6	18.8	273272	22.6	20.2
88379	22.3	18.7	371069	22.3	21.2	470504	22.4	20.9	42293	22.5	19.3	454493	22.6	21.4	526111	22.6	18.8
124326	22.3	17.8	231286	22.3	19.4	317446	22.4	21.2	386223	22.5	20.7	1665	22.6	15.8	352051	22.6	19.7
173969	22.3	19.1	30847	22.3	17.6	42288	22.4	18.0	31498	22.5	15.3	491200	22.6	20.5	122592	22.6	19.1
299969	22.3	20.3	113437	22.3	19.7	300309	22.4	19.8	450226	22.5	19.4	355961	22.6	19.5	90056	22.6	19.7
377250	22.3	20.1	504686	22.3	21.7	140411	22.4	20.0	502697	22.5	20.4	531377	22.6	20.4	116239	22.7	19.3
106634	22.3	19.9	505329	22.3	21.3	99311	22.4	19.5	408349	22.5	20.7	403007	22.6	21.3	170803	22.7	19.8
178472	22.3	19.0	324557	22.3	19.9	175129	22.4	19.4	22804	22.5	18.3	111578	22.6	18.8	65876	22.7	18.6
537792	22.3	19.8	12413	22.3	17.3	219644	22.4	19.7	170298	22.5	20.6	17977	22.6	17.1	153103	22.7	19.8
513115	22.3	21.0	456796	22.3	20.1	420715	22.4	20.0	525240	22.5	19.2	260997	22.6	20.1	248184	22.7	19.7
473192	22.3	20.2	368625	22.3	19.9	459188	22.4	20.5	354726	22.5	20.4	117049	22.6	19.0	372618	22.7	20.2
129543	22.3	19.0	375275	22.3	19.8	327872	22.4	21.4	470026	22.5	20.8	389872	22.6	20.3	165326	22.7	19.8
425976	22.3	20.0	327269	22.3	20.7	386579	22.4	19.9	118274	22.5	18.3	55896	22.6	19.2	249254	22.7	21.0
340995	22.3	20.0	353777	22.4	20.3	152884	22.4	19.0	10477	22.5	18.0	499063	22.6	21.7	343005	22.7	20.5
301331	22.3	19.8	76826	22.4	18.9	58627	22.4	18.3	418304	22.5	21.2	527252	22.6	20.2	463835	22.7	21.5
430729	22.3	19.7	251710	22.4	20.4	535716	22.4	20.6	260975	22.5	20.4	189454	22.6	18.1	374516	22.7	20.4
386208	22.3	19.8	359087	22.4	20.3	375414	22.4	20.5	159543	22.5	20.0	345674	22.6	19.8	30347	22.7	17.1
223256	22.3	19.6	512441	22.4	20.7	384169	22.4	20.9	436706	22.5	19.8	297774	22.6	21.1	194363	22.7	18.6
165477	22.3	19.0	190678	22.4	20.2	492675	22.4	19.3	424068	22.5	21.3	531699	22.6	22.1	300799	22.7	19.5
204802	22.3	19.4	84356	22.4	19.5	48876	22.4	16.3	3454	22.5	16.9	199407	22.6	19.5	411390	22.7	21.5
67818	22.3	19.4	497867	22.4	21.2	238824	22.4	20.0	379742	22.5	20.1	39326	22.6	17.6	453938	22.7	18.6
456517	22.3	21.0	136501	22.4	19.1	525131	22.4	21.1	24443	22.5	19.4	322889	22.6	19.9	149713	22.7	18.6
468459	22.3	19.3	369294	22.4	19.2	87102	22.4	17.7	67955	22.5	18.2	404979	22.6	21.0	237853	22.7	20.0
128582	22.3	18.2	368239	22.4	20.7	4851	22.4	16.8	15409	22.5	18.0	44998	22.6	18.1	299994	22.7	22.8
135112	22.3	19.4	58103	22.4	19.1	288487	22.4	21.2	109474	22.5	19.0	299524	22.6	20.4	56726	22.7	18.8
466633	22.3	21.8	87491	22.4	19.4	225834	22.4	21.1	185612	22.5	19.5	493578	22.6	20.8	145845	22.7	20.5
104358	22.3	19.3	419	22.4	10.3	114313	22.4	19.2	366945	22.5	20.3	9045	22.6	17.3	92772	22.7	18.2
222556	22.3	19.6	69372	22.4	19.1	532659	22.4	21.4	216035	22.5	20.9	378960	22.6	21.0	105448	22.7	19.8
430370	22.3	20.7	209647	22.4	20.8	110191	22.4	20.1	471915	22.5	22.5	371755	22.6	20.2	182071	22.7	18.9
27169	22.3	16.7	33289	22.4	18.6	40784	22.4	18.9	466604	22.5	21.4	222284	22.6	19.2	284194	22.7	20.1
279677	22.3	20.0	12225	22.4	15.5	119604	22.4	19.5	375996	22.5	20.6	51339	22.6	18.9	74900	22.7	18.2
67853	22.3	18.4	425854	22.4	21.3	413915	22.4	20.2	488966	22.5	21.9	3774	22.6	15.3	393345	22.7	20.7
145170	22.3	20.0	274763	22.4	21.1	382337	22.4	19.8	11718								

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
27800	22.7	18.3	264692	22.7	20.8	31037	22.8	18.7	36392	22.9	18.6	21463	22.9	17.3	368225	23.0	20.1
534622	22.7	20.8	348988	22.7	20.3	32748	22.8	18.8	87810	22.9	19.3	6922	22.9	16.0	284331	23.0	20.6
277129	22.7	18.7	25289	22.7	17.2	368086	22.8	20.3	143780	22.9	18.4	163735	22.9	18.9	212767	23.0	20.1
533973	22.7	21.2	5163	22.7	17.0	18482	22.8	17.9	118275	22.9	18.3	157269	22.9	19.5	127760	23.0	19.2
496113	22.7	21.4	212307	22.7	19.6	349599	22.8	19.1	34773	22.9	19.3	138737	22.9	20.5	219764	23.0	20.5
107128	22.7	19.3	351502	22.7	20.1	468756	22.8	21.4	366415	22.9	20.9	274364	22.9	20.4	413845	23.0	20.5
285731	22.7	19.9	38369	22.7	19.4	36292	22.8	17.5	426041	22.9	20.1	53012	22.9	18.6	19970	23.0	16.6
464971	22.7	21.5	227440	22.8	20.5	98926	22.8	19.2	225964	22.9	20.3	194014	22.9	20.0	346218	23.0	21.6
507556	22.7	21.9	456824	22.8	21.7	509288	22.8	21.5	429215	22.9	21.4	297475	22.9	20.7	79180	23.0	19.3
504371	22.7	19.7	518698	22.8	21.4	501099	22.8	21.1	331252	22.9	19.9	315245	22.9	20.8	146144	23.0	19.8
238623	22.7	20.3	35945	22.8	18.5	281378	22.8	19.7	473265	22.9	20.8	216022	22.9	20.2	25235	23.0	18.3
417145	22.7	20.0	27300	22.8	16.6	351927	22.8	20.4	472018	22.9	20.9	24456	22.9	18.9	205739	23.0	21.3
491679	22.7	21.8	18485	22.8	18.5	168525	22.8	20.4	429876	22.9	20.0	296843	22.9	18.7	94436	23.0	19.7
323475	22.7	18.7	499222	22.8	20.9	513101	22.8	20.1	544130	22.9	21.1	507921	22.9	20.5	459763	23.0	19.7
221172	22.7	18.9	361179	22.8	19.6	61460	22.8	18.0	232301	22.9	20.4	16792	22.9	17.4	155626	23.0	20.0
74795	22.7	18.8	449188	22.8	21.7	530754	22.8	21.1	469385	22.9	20.4	339454	22.9	20.6	212299	23.0	20.0
4045	22.7	16.6	147274	22.8	18.7	434186	22.8	21.7	83487	22.9	19.3	201232	22.9	20.2	502879	23.0	21.5
381850	22.7	20.6	488268	22.8	20.4	31565	22.8	17.9	327876	22.9	20.0	301408	22.9	19.5	171966	23.0	19.8
146887	22.7	19.4	71370	22.8	19.3	54321	22.8	17.4	72972	22.9	18.2	14510	22.9	16.3	179449	23.0	19.2
307556	22.7	22.1	277780	22.8	20.6	368235	22.8	20.6	405357	22.9	21.4	458971	22.9	21.7	80008	23.0	18.4
103825	22.7	19.7	443657	22.8	19.6	385623	22.8	19.9	202633	22.9	20.3	342943	22.9	20.6	297246	23.0	20.2
461239	22.7	21.6	437129	22.8	20.8	203628	22.8	19.8	437547	22.9	19.7	189464	22.9	19.2	16360	23.0	18.2
196405	22.7	18.7	342955	22.8	20.2	500205	22.8	19.6	170080	22.9	19.3	470145	22.9	21.3	534149	23.0	20.8
192193	22.7	19.7	2290	22.8	17.2	308619	22.8	21.0	505295	22.9	22.3	508253	22.9	21.0	296848	23.0	21.3
520989	22.7	20.8	178615	22.8	18.8	368609	22.8	20.6	153091	22.9	18.4	57999	22.9	19.8	435265	23.0	21.3
527696	22.7	20.8	499437	22.8	21.3	177823	22.8	19.8	415187	22.9	20.3	210747	22.9	19.7	74006	23.0	18.5
79831	22.7	19.9	450971	22.8	21.1	167805	22.8	20.3	52736	22.9	18.4	332189	22.9	20.2	500607	23.0	21.3
251995	22.7	19.2	241558	22.8	19.6	426729	22.8	19.3	85384	22.9	18.1	134303	22.9	19.0	374162	23.0	20.7
299365	22.7	20.8	491255	22.8	20.2	132740	22.8	19.1	30923	22.9	17.4	105854	22.9	19.2	165450	23.0	20.8
445864	22.7	21.1	469259	22.8	19.1	464337	22.8	21.2	287544	22.9	20.5	57616	22.9	18.5	47148	23.0	17.9
345717	22.7	21.2	128033	22.8	18.7	251023	22.8	19.4	347701	22.9	19.5	245467	22.9	19.4	153652	23.0	17.3
182064	22.7	18.9	351625	22.8	20.5	125230	22.8	18.1	172514	22.9	21.0	530791	22.9	21.8	344646	23.0	18.5
143961	22.7	18.2	192694	22.8	20.3	469198	22.8	20.6	401000	22.9	20.2	392580	22.9	20.6	316704	23.0	19.6
105705	22.7	20.0	522909	22.8	20.7	410320	22.8	20.6	423951	22.9	21.0	468649	22.9	21.1	59863	23.0	18.1
503605	22.7	20.1	463273	22.8	19.1	535946	22.8	22.3	424145	22.9	20.5	371140	22.9	20.3	179462	23.0	19.2
4900	22.7	15.8	94062	22.8	18.9	229440	22.8	19.2	87737	22.9	19.6	538204	22.9	20.1	27381	23.0	18.0
158992	22.7	19.2	138475	22.8	19.4	119622	22.8	18.4	529298	22.9	21.5	397832	22.9	21.0	503891	23.0	21.7
6225	22.7	17.7	29255	22.8	19.2	291938	22.8	20.6	534936	22.9	22.0	310306	22.9	20.7	200143	23.0	19.7
541590	22.7	22.2	500564	22.8	21.5	474452	22.8	20.6	428794	22.9	20.6	191059	22.9	19.9	111914	23.0	18.2
468293	22.7	20.1	217912	22.8	19.5	283037	22.8	21.1	12436	22.9	17.0	516705	22.9	21.1	133117	23.0	19.2
294561	22.7	20.1	485391	22.8	19.6	213188	22.8	19.7	458812	22.9	19.5	140976	22.9	19.8	59172	23.0	19.7
520136	22.7	21.0	213459	22.8	21.0	522812	22.8	20.4	234929	22.9	18.9	417792	22.9	20.7	368636	23.0	21.9
147593	22.7	18.0	90153	22.8	19.0	244761	22.8	20.4	268157	22.9	20.1	295343	22.9	19.5	194627	23.1	20.5
132263	22.7	18.4	498995	22.8	21.3	108813	22.8	18.5	514546	22.9	20.6	14255	22.9	17.9	39372	23.1	18.4
388283	22.7	20.6	423028	22.8	21.1	109042	22.8	19.4	67301	22.9	18.9	362019	22.9	21.4	207645	23.1	19.6
70821	22.7	19.1	32032	22.8	17.9	351642	22.8	19.8	186895	22.9	19.2	343073	22.9	20.8	375018	23.1	19.6
10143	22.7	17.2	64544	22.8	20.4	436260	22.8	20.8	459819	22.9	20.1	429158	22.9	21.8	57495	23.1	19.1
1867	22.7	15.0	451655	22.8	20.6	221085	22.8	21.0	151751	22.9	20.8	371687	22.9	21.3	273450	23.1	19.7
125835	22.7	19.6	253244	22.8	19.6	415704	22.8	21.2	320545	22.9	20.7	70492	22.9	18.5	232165	23.1	22.0
428354	22.7	21.1	104638	22.8	19.8	530263	22.8	22.0	168021	22.9	20.9	471462	22.9	20.2	414925	23.1	21.4
536298	22.7	21.0	84254	22.8	19.5	504482	22.8	21.8	55460	22.9	18.9	52414	22.9	17.1	135044	23.1	19.7
84609	22.7	19.3	534521	22.8	20.5	75891	22.8	18.6	364457	22.9	19.4	411329	22.9	21.0	456895	23.1	21.0
374560	22.7	21.5	58694	22.8	18.3	296820	22.9	20.5	325690	22.9	20.6	130906	22.9	19.0	295437	23.1	20.6
543421	22.7	20.7	469734	22.8	20.3	301676	22.9	20.3	358574	22.9	19.9	85548	22.9	19.6	11126	23.1	17.5
347374	22.7	20.7	301481	22.8	20.4	114014	22.9	19.7	216934	22.9	19.5	89905	22.9	19.0	402510	23.1	20.4
463274	22.7	19.0	377389	22.8	19.0	382736	22.9	19.6	283461	22.9	19.9	391675	22.9	21.3	102317	23.1	18.8
315254	22.7	20.5	159254	22.8	19.6	193605	22.9	20.4	374605	22.9	20.7	98331	22.9	20.2	321716	23.1	20.7
275273	22.7	19.9	458943	22.8	21.7	303469	22.9	19.7	17795	22.9	18.4	6554	22.9	16.2	525045	23.1	21.4
123605	22.7	18.5	483652	22.8	20.8	166971	22.9	19.6	301289	22.9	19.9	242670	22.9	19.5	354371	23.1	18.2
448460	22.7	20.1	370961	22.8	20.1	38423	22.9	19.3	275723	22.9	21.3	130678	22.9	18.5	544176	23.1	20.0
25205	22.7	18.0	185561	22.8	20.8	106041	22.9	19.4	241049	22.9	18.9	128312	22.9	19.4	106543	23.1	18.2
84714	22.7	19.6	162778	22.8	20.0	540697	22.9	21.5	24756	22.9	17.8	464214	23.0	20.8	478401	23.1	20.7
21349	22.7	17.5	310344	22.8	21.5	306936	22.9	19.7	81960	22.9	18.4	226610	23.0	19.4	200145	23.1	19.8
123348	22.7	18.9	200884	22.8	19.8	535322	22.9	21.8	337593	22.9	20.9	344872	23.0	20.4	230868	23.1	21.0
140810	22.7	20.2	183548	22.8	19.9	372626	22.9	22.5	273434	22.9	20.3	506677	23.0	22.3	323791	23.1	21.6
152556	22.7	20.0	538130	22.8	19.8	46738	22.9	18.3	520076	22.9	20.6	470234	23.0	20.6	382179	23.1	19.4
32242	22.7	17.7	195051	22.8	19.9	403331	22.9	21.2	196931	22.9	21.4	471351	23.0	21.4	7379	23.1	17.8
268066	22.7	18.8	55857	22.8	19.5	293119	22.9	20.8	349910	22.9	20.3	543632	23.0	20.0	420589	23.1	20.2
60802	22.7	17.6	377866	22.8	21.4	5699	22.9	17.5									

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
198050	23.1	20.1	526379	23.1	22.3	231528	23.2	20.4	119602	23.3	19.5	175238	23.3	18.9	419894	23.4	21.7
326399	23.1	20.5	277608	23.1	21.3	28142	23.2	18.8	350741	23.3	20.2	343902	23.3	19.4	298808	23.4	19.5
422313	23.1	20.8	129999	23.2	20.4	529300	23.2	21.5	529053	23.3	19.8	72997	23.3	18.5	376483	23.4	20.5
221096	23.1	20.9	343634	23.2	19.4	36738	23.2	17.1	118862	23.3	19.4	375428	23.3	20.5	406908	23.4	21.0
381956	23.1	21.0	303242	23.2	19.6	301508	23.2	20.5	15623	23.3	17.4	209668	23.3	20.8	493865	23.4	20.6
458773	23.1	19.4	131610	23.2	20.5	518161	23.2	20.4	34705	23.3	17.7	398702	23.3	20.9	122449	23.4	19.4
372526	23.1	21.7	391451	23.2	19.1	73908	23.2	18.1	372964	23.3	20.7	211974	23.3	20.3	136450	23.4	18.6
33000	23.1	17.9	274586	23.2	19.8	421845	23.2	21.4	543840	23.3	20.8	126921	23.3	19.4	369532	23.4	20.5
473865	23.1	20.5	300131	23.2	19.5	417830	23.2	21.2	139715	23.3	19.5	495423	23.3	20.7	57658	23.4	18.7
248605	23.1	20.8	124173	23.2	18.4	77766	23.2	17.4	167074	23.3	19.7	131635	23.3	19.8	234125	23.4	20.7
213798	23.1	20.1	299245	23.2	20.2	540603	23.2	21.8	527125	23.3	20.5	384968	23.3	22.0	297476	23.4	20.6
41480	23.1	18.2	174735	23.2	20.6	153921	23.2	20.7	152683	23.3	18.3	227306	23.3	20.9	215988	23.4	19.9
356306	23.1	20.0	158307	23.2	19.0	505393	23.2	20.8	354522	23.3	19.1	87493	23.3	18.4	82982	23.4	18.5
506260	23.1	21.2	505459	23.2	20.3	305515	23.2	20.4	88539	23.3	19.6	32726	23.3	19.1	489588	23.4	20.7
83549	23.1	18.8	15498	23.2	17.2	52456	23.2	18.8	433870	23.3	21.7	297762	23.3	19.6	468775	23.4	20.1
538714	23.1	20.3	226057	23.2	20.1	157544	23.2	20.3	432440	23.3	20.5	288067	23.3	20.1	55931	23.4	18.7
468200	23.1	21.0	326649	23.2	20.6	306138	23.2	19.4	526375	23.3	21.6	195294	23.3	19.6	27147	23.4	18.2
424817	23.1	20.7	199111	23.2	19.6	45257	23.2	19.1	530671	23.3	20.7	306355	23.3	19.7	383705	23.4	20.5
163670	23.1	19.6	217060	23.2	20.7	377800	23.2	18.8	388330	23.3	21.1	2428	23.4	16.1	376220	23.4	20.3
289202	23.1	20.6	273081	23.2	20.8	76838	23.2	19.5	429067	23.3	19.3	287589	23.4	20.3	56994	23.4	18.2
451716	23.1	21.8	201947	23.2	19.6	505611	23.2	20.8	58448	23.3	18.6	157500	23.4	20.4	22118	23.4	18.6
361320	23.1	19.3	506675	23.2	21.3	415662	23.2	22.0	32344	23.3	19.2	468408	23.4	20.3	183439	23.4	19.8
345153	23.1	19.8	37067	23.2	16.3	533090	23.2	22.3	203551	23.3	20.0	302079	23.4	19.9	364648	23.4	20.8
320926	23.1	20.6	504390	23.2	21.2	29533	23.2	19.3	421963	23.3	20.7	38526	23.4	18.0	96976	23.4	18.9
278844	23.1	20.3	411992	23.2	20.3	371024	23.2	20.6	478092	23.3	21.5	228371	23.4	20.4	349421	23.4	21.0
504326	23.1	21.2	251992	23.2	20.3	192788	23.2	20.4	151545	23.3	19.8	222694	23.4	20.6	307920	23.4	19.4
138765	23.1	20.2	193239	23.2	19.4	529265	23.2	22.3	298966	23.3	20.5	153495	23.4	20.5	411828	23.4	20.9
490194	23.1	19.9	130432	23.2	19.3	153988	23.2	18.9	356504	23.3	19.5	192370	23.4	20.2	258480	23.4	18.7
369530	23.1	20.9	18200	23.2	19.5	309761	23.2	20.4	369060	23.3	18.9	341925	23.4	20.2	500039	23.4	20.3
341165	23.1	20.8	123559	23.2	19.9	262449	23.2	20.9	346078	23.3	20.5	375882	23.4	21.3	363142	23.4	19.9
54829	23.1	18.7	426576	23.2	20.7	237707	23.2	19.0	347330	23.3	20.4	420736	23.4	20.4	331154	23.4	20.1
105544	23.1	18.9	503028	23.2	21.3	147378	23.2	17.9	222825	23.3	20.5	34440	23.4	18.0	299034	23.4	21.4
30193	23.1	17.7	397831	23.2	20.4	43827	23.2	18.0	375043	23.3	20.0	534019	23.4	21.1	344384	23.4	20.6
504469	23.1	22.8	374488	23.2	20.3	533256	23.2	20.9	103859	23.3	20.8	35868	23.4	18.1	250104	23.4	19.3
471064	23.1	20.3	58217	23.2	18.6	541563	23.2	21.6	307657	23.3	19.1	130803	23.4	18.9	287622	23.4	19.5
461386	23.1	20.0	413986	23.2	20.9	374981	23.2	21.0	267715	23.3	20.8	202703	23.4	18.2	534249	23.4	21.7
440911	23.1	21.1	4398	23.2	16.2	360044	23.2	22.2	379788	23.3	20.5	535163	23.4	20.9	228366	23.4	20.7
264594	23.1	21.4	119273	23.2	19.8	184755	23.2	19.8	324627	23.3	20.7	30709	23.4	18.3	307918	23.4	21.2
57086	23.1	18.6	159888	23.2	19.6	505051	23.2	20.5	370991	23.3	19.8	488774	23.4	20.8	493964	23.4	20.2
527376	23.1	21.2	312845	23.2	20.2	503780	23.2	19.5	208372	23.3	20.9	157097	23.4	19.2	458966	23.4	21.8
125682	23.1	20.1	540327	23.2	20.9	299709	23.2	20.1	203127	23.3	19.2	86002	23.4	18.0	362682	23.4	19.4
281065	23.1	19.7	518723	23.2	20.4	186572	23.2	20.0	450484	23.3	22.1	64270	23.4	19.2	222288	23.4	19.4
400591	23.1	20.9	344554	23.2	20.3	78305	23.2	19.0	457162	23.3	20.4	481839	23.4	22.8	20242	23.4	17.6
513018	23.1	21.4	625004	23.2	19.0	238001	23.2	20.4	435888	23.3	21.3	57089	23.4	18.2	429159	23.4	22.1
159883	23.1	20.1	2934	23.2	16.1	464530	23.2	20.6	424189	23.3	21.1	346754	23.4	21.1	148351	23.4	20.1
176527	23.1	20.4	448450	23.2	19.4	215555	23.2	20.5	540410	23.3	21.6	392157	23.4	20.8	87516	23.4	17.2
318087	23.1	20.4	470470	23.2	21.0	224898	23.2	19.3	16454	23.3	17.5	353294	23.4	19.1	386585	23.4	20.6
524204	23.1	22.7	340778	23.2	20.4	166170	23.3	18.9	222271	23.3	18.7	146158	23.4	19.6	386954	23.4	19.5
48597	23.1	19.3	159008	23.2	18.6	384229	23.3	21.4	459887	23.3	20.0	278560	23.4	20.0	22093	23.4	18.3
292714	23.1	20.1	498829	23.2	20.5	96437	23.3	19.2	308155	23.3	21.0	37324	23.4	19.5	353439	23.4	21.2
198625	23.1	20.1	200124	23.2	19.0	377819	23.3	20.6	125676	23.3	20.5	63872	23.4	20.0	426974	23.4	20.0
260960	23.1	20.0	237596	23.2	19.8	196707	23.3	19.6	236326	23.3	20.4	97192	23.4	19.2	250491	23.4	19.3
250571	23.1	20.4	427377	23.2	20.2	492237	23.3	21.1	117423	23.3	18.7	248698	23.4	19.4	81541	23.4	18.3
298781	23.1	19.3	198887	23.2	20.8	111533	23.3	20.4	269149	23.3	18.9	193784	23.4	18.5	310988	23.4	19.8
132198	23.1	20.5	122861	23.2	19.4	498515	23.3	22.7	406832	23.3	20.1	427747	23.4	20.4	421283	23.4	19.3
470176	23.1	21.4	104047	23.2	17.3	421393	23.3	20.6	166770	23.3	20.8	330077	23.4	20.4	449104	23.4	20.9
200419	23.1	20.1	229455	23.2	20.0	368738	23.3	20.6	67061	23.3	20.3	57847	23.4	19.1	225130	23.4	19.4
248442	23.1	20.0	427378	23.2	20.9	90055	23.3	19.2	159874	23.3	20.5	218650	23.4	18.4	214439	23.4	20.1
536454	23.1	21.3	297388	23.2	19.7	360000	23.3	21.7	61467	23.3	19.5	382291	23.4	20.5	500987	23.4	21.9
325029	23.1	19.7	320842	23.2	20.1	526096	23.3	21.8	307575	23.3	19.6	484231	23.4	20.3	140360	23.4	19.6
272892	23.1	20.3	59512	23.2	19.0	253165	23.3	21.5	333691	23.3	19.6	17938	23.4	17.2	191714	23.4	19.3
465686	23.1	20.3	227052	23.2	19.2	185883	23.3	18.1	68852	23.3	18.1	228395	23.4	20.9	491995	23.4	19.9
105	23.1	11.3	176033	23.2	20.2	125773	23.3	19.2	431843	23.3	22.1	10570	23.4	17.3	324550	23.4	21.0
10903	23.1	18.1	433855	23.2	20.6	454176	23.3	21.2	296695	23.3	19.7	95780	23.4	18.1	469092	23.5	21.3
301711	23.1	20.0	53415	23.2	17.7	486285	23.3	20.0	92440	23.3	18.7	21340	23.4	17.3	411237	23.5	21.0
39615	23.1	19.5	472709	23.2	19.6	212519	23.3	20.1	247417	23.3	20.8	524111	23.4	21.0	122512	23.5	18.4
308431	23.1	19.7	151427	23.2	19.4	39535	23.3	18.8	70823	23.3	19.1	174209	23.4	19.1	292001	23.5	20.8
541383	23.1	20.5	157814	23.2	19.2	61602	23.3	18.6	502409	23.3	20.3	167577	23.4	20.3	471868	23.5	21.4
317140	23.1	20.2	320851	23.2	19.2	269063											



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
275987	23.5	20.3	498292	23.5	22.7	195480	23.6	20.1	217945	23.7	18.2	57719	23.7	19.6	436028	23.8	20.8
132220	23.5	18.8	155833	23.5	19.8	265766	23.6	21.3	67087	23.7	18.3	530546	23.7	21.0	350357	23.8	20.0
236861	23.5	21.1	30744	23.5	19.8	160457	23.6	19.8	272315	23.7	19.2	425089	23.7	21.6	49051	23.8	18.3
299447	23.5	20.5	56967	23.5	18.1	369369	23.6	20.6	218301	23.7	19.6	136120	23.7	23.6	237270	23.8	20.7
311886	23.5	20.9	532969	23.5	20.7	491611	23.6	20.5	147301	23.7	20.0	238977	23.7	20.2	502970	23.8	20.0
46098	23.5	18.9	240894	23.5	18.8	501009	23.6	20.8	290632	23.7	20.0	277774	23.7	20.1	535727	23.8	20.2
380466	23.5	21.6	308725	23.5	19.9	278327	23.6	20.5	93100	23.7	18.7	191124	23.7	19.6	80267	23.8	19.2
52562	23.5	18.4	107239	23.5	19.6	167795	23.6	20.4	447413	23.7	21.3	114880	23.7	19.4	534328	23.8	21.7
369731	23.5	19.4	267255	23.5	20.2	179397	23.6	20.7	51994	23.7	19.6	229904	23.7	18.9	489099	23.8	21.2
472049	23.5	20.1	404852	23.5	19.7	345563	23.6	22.0	299998	23.7	20.0	466993	23.7	21.5	58017	23.8	18.9
219391	23.5	19.8	168114	23.5	18.8	508227	23.6	20.6	338204	23.7	21.6	152944	23.7	18.3	385888	23.8	18.8
538030	23.5	19.5	467093	23.5	21.7	507647	23.6	20.5	31451	23.7	17.1	9206	23.7	17.6	147279	23.8	19.8
305638	23.5	20.2	174508	23.5	21.4	17138	23.6	18.2	32714	23.7	17.6	120964	23.7	19.1	473246	23.8	19.5
125168	23.5	20.1	493508	23.6	20.7	136684	23.6	20.0	52844	23.7	17.8	467682	23.7	19.2	404158	23.8	21.4
95012	23.5	19.9	480463	23.6	20.2	469343	23.6	21.0	187870	23.7	18.7	544029	23.7	20.1	160099	23.8	19.4
214972	23.5	20.5	173976	23.6	19.0	198917	23.6	19.4	110467	23.7	20.9	368089	23.7	21.4	287467	23.8	21.4
169251	23.5	19.9	425405	23.6	20.8	160012	23.6	20.0	128405	23.7	18.0	367192	23.7	20.9	382794	23.8	20.2
41715	23.5	19.9	90040	23.6	19.1	498239	23.6	21.3	430236	23.7	19.6	472941	23.7	19.8	373049	23.8	20.4
381679	23.5	20.9	68281	23.6	18.8	272430	23.6	20.5	482087	23.7	20.3	309260	23.7	21.2	275177	23.8	20.1
464901	23.5	21.3	240482	23.6	20.8	458738	23.6	20.4	289201	23.7	21.4	99957	23.7	19.3	55316	23.8	17.8
115886	23.5	19.4	320452	23.6	21.0	224383	23.6	19.9	215502	23.7	21.2	407823	23.7	20.6	508641	23.8	20.7
17912	23.5	17.4	198592	23.6	19.1	98361	23.6	18.8	462309	23.7	20.7	524264	23.8	21.2	299001	23.8	20.4
68662	23.5	18.6	501124	23.6	20.2	55078	23.6	18.4	64533	23.7	20.5	272160	23.8	19.6	305373	23.8	20.5
128387	23.5	18.4	376633	23.6	20.0	399637	23.6	20.5	109004	23.7	19.9	175564	23.8	19.4	87677	23.8	17.8
215994	23.5	19.9	351913	23.6	21.1	353488	23.6	20.8	55075	23.7	18.1	147262	23.8	20.2	22630	23.8	17.3
122747	23.5	19.9	52769	23.6	18.6	82247	23.6	17.7	70283	23.7	18.7	1361	23.8	15.5	415621	23.8	20.0
86927	23.5	18.2	351678	23.6	21.2	62076	23.6	19.2	171876	23.7	20.0	389779	23.8	20.2	436708	23.8	20.0
503698	23.5	20.8	60137	23.6	17.7	265555	23.6	20.7	468142	23.7	22.3	304938	23.8	21.0	203800	23.8	19.2
13807	23.5	17.7	478302	23.6	20.1	510075	23.6	19.9	164638	23.7	20.5	359986	23.8	20.8	21283	23.8	18.4
460598	23.5	19.9	447355	23.6	22.4	150526	23.6	18.9	193268	23.7	20.8	406903	23.8	20.9	249058	23.8	18.1
465168	23.5	20.1	54147	23.6	18.7	338301	23.6	19.8	310998	23.7	20.4	506553	23.8	21.1	173061	23.8	20.0
283485	23.5	21.1	14910	23.6	17.9	336875	23.6	19.4	400587	23.7	19.7	238600	23.8	20.5	538598	23.8	21.1
168750	23.5	19.1	93790	23.6	18.7	272375	23.6	21.8	237632	23.7	19.0	456723	23.8	21.9	185666	23.8	19.6
410118	23.5	22.3	36089	23.6	18.2	192658	23.6	19.0	138842	23.7	19.9	56996	23.8	19.5	397742	23.8	21.0
151953	23.5	21.2	65522	23.6	19.1	54759	23.6	18.0	92719	23.7	16.9	109440	23.8	18.4	221313	23.8	19.1
9141	23.5	15.9	150689	23.6	18.4	153122	23.6	18.9	322212	23.7	20.4	239110	23.8	19.9	352592	23.8	21.0
40549	23.5	18.0	95724	23.6	16.7	37431	23.6	19.1	435966	23.7	20.3	17416	23.8	19.1	124191	23.8	19.1
535100	23.5	19.8	516163	23.6	21.0	218715	23.6	18.6	417554	23.7	21.2	220455	23.8	20.6	499068	23.8	21.0
351816	23.5	21.9	526126	23.6	21.5	496055	23.6	21.0	186554	23.7	20.7	338114	23.8	20.2	501278	23.8	21.3
193970	23.5	19.8	178083	23.6	21.4	315447	23.6	21.7	310156	23.7	18.7	368223	23.8	21.3	211559	23.8	19.5
413904	23.5	21.0	288362	23.6	20.2	106091	23.6	19.3	30861	23.7	18.9	16778	23.8	18.3	106730	23.8	19.1
117511	23.5	19.9	28255	23.6	16.5	237073	23.6	20.2	381149	23.7	19.9	16392	23.8	18.4	315312	23.8	19.8
435391	23.5	21.2	236755	23.6	19.4	303355	23.6	20.5	525991	23.7	22.0	541752	23.8	20.8	53413	23.8	18.1
468917	23.5	22.6	536222	23.6	21.1	279555	23.6	20.7	127532	23.7	19.6	344563	23.8	20.0	79069	23.8	18.7
104855	23.5	18.5	229204	23.6	19.8	123718	23.6	20.2	466595	23.7	21.4	486014	23.8	20.9	65921	23.8	19.1
346976	23.5	19.8	296733	23.6	20.8	126458	23.6	19.2	457269	23.7	21.4	119927	23.8	19.6	491167	23.8	20.1
37650	23.5	19.8	81161	23.6	18.4	248597	23.6	20.1	150332	23.7	20.8	447348	23.8	22.2	397471	23.8	18.0
397487	23.5	20.1	301800	23.6	19.8	245375	23.6	19.6	417297	23.7	20.0	169698	23.8	18.8	498088	23.8	23.0
382766	23.5	20.7	435972	23.6	20.5	435906	23.6	20.0	175945	23.7	19.3	391382	23.8	21.8	27867	23.8	17.6
329602	23.5	19.8	330765	23.6	17.5	430316	23.6	21.0	379922	23.7	19.3	123184	23.8	19.0	531742	23.8	21.6
534989	23.5	21.2	352035	23.6	20.6	30842	23.6	18.4	28283	23.7	17.5	276242	23.8	19.9	292631	23.8	20.6
310047	23.5	19.6	502494	23.6	21.2	253090	23.6	20.5	496362	23.7	20.6	54019	23.8	18.6	61106	23.8	18.4
435955	23.5	20.5	172172	23.6	19.5	401836	23.6	21.4	472005	23.7	20.4	540520	23.8	22.3	246905	23.8	18.8
394787	23.5	19.8	543305	23.6	21.2	163999	23.7	20.5	181441	23.7	20.8	159050	23.8	20.1	264102	23.8	20.5
514908	23.5	20.8	333104	23.6	19.9	260428	23.7	19.6	52382	23.7	16.6	509271	23.8	22.1	497878	23.8	21.4
22980	23.5	17.9	534682	23.6	21.8	154507	23.7	20.5	336909	23.7	20.5	413822	23.8	19.8	297738	23.8	20.5
126382	23.5	18.9	116027	23.6	20.8	51565	23.7	18.6	259649	23.7	20.5	257711	23.8	20.5	88385	23.8	19.3
28188	23.5	17.2	89375	23.6	19.2	462916	23.7	19.5	385197	23.7	20.4	462016	23.8	21.4	30711	23.8	18.5
273030	23.5	20.4	113875	23.6	19.3	503095	23.7	20.7	438408	23.7	21.0	389197	23.8	20.8	491115	23.8	20.1
224550	23.5	18.7	386216	23.6	20.8	322419	23.7	20.6	533718	23.7	20.5	465718	23.8	20.6	147644	23.8	19.3
404451	23.5	20.4	504248	23.6	21.2	157717	23.7	20.0	151260	23.7	20.3	391883	23.8	19.5	522468	23.8	20.8
431600	23.5	20.8	446796	23.6	20.9	474738	23.7	21.0	349465	23.7	21.8	20692	23.8	17.6	393826	23.8	20.5
106374	23.5	20.0	494649	23.6	20.2	206793	23.7	20.5	466190	23.7	20.7	343503	23.8	20.0	510632	23.8	21.4
330452	23.5	20.2	171221	23.6	19.7	140354	23.7	19.4	203583	23.7	20.1	155095	23.8	20.4	261184	23.8	21.3
382750	23.5	19.1	381500	23.6	19.9	534072	23.7	22.0	162069	23.7	20.2	434332	23.8	20.4	217267	23.8	19.9
327275	23.5	19.9	359698	23.6	20.8	310416	23.7	20.6	303861	23.7	20.3	519528	23.8	21.1	46601	23.8	18.7
384165	23.5	21.2	426136	23.6	19.4	248361	23.7	19.7	426054	23.7	19.5	128704	23.8	19.4	388800	23.8	21.0
383858	23.5	19.8	12382	23.6	18.3	504376	23.7	21.5	392617	23.7	21.4	310983	23.8	20.4	204432	23.8	19.2
526107	23.5	22.0	380035	23.6	20.2	400543											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
538941	23.9	20.9	452327	23.9	22.9	326185	23.9	21.7	492566	24.1	19.7	273414	24.2	19.6	411754	24.2	20.8
376862	23.9	20.4	98319	23.9	17.4	62556	23.9	19.6	172604	24.1	20.0	138586	24.2	19.5	268511	24.2	20.2
109783	23.9	19.3	341578	23.9	20.7	338775	23.9	20.0	394749	24.1	22.0	474945	24.2	21.1	491688	24.2	21.3
29961	23.9	18.8	130737	23.9	19.7	289168	23.9	20.7	19361	24.1	16.8	427620	24.2	20.7	345445	24.2	20.2
401141	23.9	19.7	542115	23.9	21.4	338357	24.0	21.2	95138	24.1	19.3	277997	24.2	20.3	285267	24.2	18.0
69069	23.9	18.6	285016	23.9	19.6	238884	24.0	20.1	542449	24.1	21.2	394032	24.2	20.2	488946	24.2	22.4
15148	23.9	18.0	9379	23.9	17.6	4562	24.0	15.3	66880	24.1	18.2	289931	24.2	19.9	402515	24.2	20.6
323480	23.9	19.6	172045	23.9	20.0	94953	24.0	19.3	473671	24.1	20.8	496751	24.2	20.7	256114	24.2	19.6
131871	23.9	20.4	365214	23.9	20.5	472199	24.0	21.3	457448	24.1	22.1	172499	24.2	20.3	296970	24.2	19.2
396970	23.9	20.5	200708	23.9	21.2	115745	24.0	19.5	463684	24.1	20.8	331275	24.2	22.1	222647	24.2	20.3
183083	23.9	19.7	39449	23.9	20.5	425079	24.0	22.4	209002	24.1	19.4	64434	24.2	19.2	267711	24.2	19.9
173984	23.9	21.1	538867	23.9	21.4	532968	24.0	20.7	463295	24.1	20.6	227488	24.2	19.6	504160	24.2	22.1
495899	23.9	20.4	145835	23.9	19.3	290690	24.0	20.8	362118	24.1	21.5	199099	24.2	21.1	470108	24.2	21.3
65545	23.9	18.9	470195	23.9	21.3	469169	24.0	20.7	49603	24.1	18.2	162777	24.2	20.5	19090	24.2	18.6
117217	23.9	18.5	386506	23.9	21.4	186086	24.0	20.3	539032	24.1	20.8	4168	24.2	18.9	394504	24.2	21.0
35462	23.9	18.9	84831	23.9	19.7	453055	24.0	22.2	228759	24.1	19.1	63168	24.2	19.0	471371	24.2	21.4
536391	23.9	21.8	106261	23.9	18.9	19771	24.0	17.6	402902	24.1	20.8	184669	24.2	19.8	63067	24.2	16.4
497219	23.9	21.8	162736	23.9	19.8	269053	24.0	20.0	517188	24.1	21.3	178702	24.2	19.8	91373	24.2	18.7
462015	23.9	19.2	362665	23.9	21.1	261320	24.0	19.8	247676	24.1	18.8	159792	24.2	19.1	473177	24.2	20.2
233738	23.9	20.5	240888	23.9	20.1	527189	24.0	21.8	297910	24.1	21.1	56023	24.2	18.4	364780	24.2	22.3
349050	23.9	20.5	205760	23.9	20.1	433613	24.0	21.2	161227	24.1	19.4	392760	24.2	21.1	52194	24.2	18.9
415183	23.9	20.3	240822	23.9	20.7	267338	24.0	19.7	359217	24.1	19.8	31820	24.2	18.7	30903	24.3	18.5
255516	23.9	21.0	119585	23.9	20.3	239242	24.0	20.3	3044	24.1	15.2	427650	24.2	19.9	81847	24.3	18.8
378767	23.9	20.9	333098	23.9	20.7	428951	24.0	21.1	85701	24.1	18.4	149432	24.2	19.7	345178	24.3	20.3
394395	23.9	20.8	522637	23.9	20.9	354748	24.0	20.7	7012	24.1	16.5	422783	24.2	21.8	44168	24.3	17.1
350166	23.9	20.7	138676	23.9	20.1	379413	24.0	21.2	297863	24.1	20.9	524278	24.2	21.7	187867	24.3	19.0
203483	23.9	20.2	177638	23.9	19.3	503758	24.0	20.4	207410	24.1	20.2	505945	24.2	20.2	301537	24.3	20.7
105457	23.9	19.5	221176	23.9	21.0	143562	24.0	20.5	432384	24.1	21.1	85871	24.2	19.0	114991	24.3	19.6
96935	23.9	18.5	477052	23.9	20.5	147296	24.0	20.1	60843	24.1	18.8	215228	24.2	20.4	534098	24.3	21.6
173298	23.9	20.9	411590	23.9	20.8	202717	24.0	19.0	435399	24.1	21.2	313789	24.2	20.7	419239	24.3	20.3
20347	23.9	17.7	538775	23.9	21.6	354851	24.0	21.1	208439	24.1	19.0	543345	24.2	20.4	463260	24.3	21.2
6417	23.9	17.1	235217	23.9	19.7	165051	24.0	20.3	98369	24.1	18.5	111682	24.2	18.8	497566	24.3	21.8
424102	23.9	20.3	306724	23.9	20.8	29056	24.0	17.9	535509	24.1	20.3	86770	24.2	18.0	515730	24.3	20.8
32099	23.9	17.1	174040	23.9	19.8	368748	24.0	19.9	148786	24.1	19.9	146550	24.2	19.2	379730	24.3	20.4
109621	23.9	18.1	193349	23.9	19.8	341592	24.0	20.3	157638	24.1	19.0	351476	24.2	19.8	302049	24.3	19.9
413737	23.9	21.0	399880	23.9	20.9	298962	24.0	20.8	140462	24.1	19.7	230075	24.2	20.9	38378	24.3	18.5
425903	23.9	20.0	422731	23.9	19.4	341372	24.0	22.1	136685	24.1	21.0	357115	24.2	20.7	497469	24.3	20.6
450749	23.9	19.8	208939	23.9	20.4	117712	24.0	19.2	416815	24.1	19.7	24442	24.2	17.8	437725	24.3	21.7
218700	23.9	19.3	109139	23.9	19.2	333248	24.0	20.3	505091	24.1	21.3	506561	24.2	22.0	258138	24.3	20.5
3252	23.9	16.5	114267	23.9	19.2	129718	24.0	19.8	186054	24.1	19.7	199478	24.2	19.9	242452	24.3	20.3
526060	23.9	22.4	432994	23.9	20.9	466759	24.0	20.0	297796	24.1	19.9	37136	24.2	18.6	435898	24.3	20.9
509459	23.9	20.1	175578	23.9	19.1	459353	24.0	19.3	533259	24.1	21.5	395123	24.2	21.2	305352	24.3	21.5
416698	23.9	19.6	229589	23.9	20.2	526550	24.0	21.8	417295	24.1	20.3	347919	24.2	21.0	384964	24.3	21.7
181172	23.9	19.7	379725	23.9	20.6	148491	24.0	18.6	518154	24.1	20.1	251691	24.2	20.5	107740	24.3	19.6
106490	23.9	19.4	215061	23.9	20.6	5037	24.0	16.7	299736	24.1	19.9	188842	24.2	20.8	87920	24.3	18.6
377961	23.9	20.6	502041	23.9	20.5	496513	24.0	21.5	184554	24.1	20.5	425451	24.2	21.3	421195	24.3	20.7
22454	23.9	17.6	491230	23.9	20.7	31360	24.0	16.9	540349	24.1	21.5	301108	24.2	19.2	534046	24.3	21.1
27032	23.9	17.8	18151	23.9	19.6	50360	24.0	17.7	229196	24.1	20.5	107723	24.2	18.5	291259	24.3	19.1
488873	23.9	21.8	349478	23.9	20.6	367344	24.0	19.7	420680	24.1	20.5	16514	24.2	18.5	140699	24.3	19.6
156729	23.9	20.5	300972	23.9	20.8	86559	24.0	17.6	469868	24.1	20.8	318105	24.2	19.3	6214	24.3	16.3
306416	23.9	19.8	447313	23.9	20.8	231809	24.0	20.4	503244	24.1	19.6	508511	24.2	20.5	125030	24.3	19.9
307760	23.9	20.2	177054	23.9	20.2	193967	24.0	20.3	138602	24.1	20.2	4279	24.2	18.4	428724	24.3	21.5
391692	23.9	22.0	536339	23.9	21.6	120767	24.0	19.3	37585	24.1	18.9	461547	24.2	22.2	417269	24.3	21.3
494654	23.9	20.6	310386	23.9	22.6	200638	24.0	18.8	499815	24.1	19.2	18812	24.2	16.2	87885	24.3	19.7
90119	23.9	19.0	527830	23.9	22.1	459933	24.0	21.2	429150	24.1	21.1	492439	24.2	20.2	290016	24.3	20.0
502701	23.9	21.1	472102	23.9	20.0	118163	24.0	19.6	121112	24.1	17.9	274950	24.2	20.4	293649	24.3	18.7
167612	23.9	20.4	395352	23.9	20.8	83602	24.0	17.7	211805	24.1	20.0	66651	24.2	18.5	466885	24.3	20.6
240789	23.9	20.2	172798	23.9	20.8	374347	24.0	21.2	63149	24.1	18.6	62069	24.2	19.6	455456	24.3	21.7
358062	23.9	20.3	543373	23.9	21.1	426117	24.0	20.7	461705	24.1	20.3	535621	24.2	20.0	431532	24.3	21.1
379937	23.9	19.4	311127	23.9	20.3	242458	24.0	20.2	209500	24.1	20.2	501181	24.2	21.6	526816	24.3	21.0
216434	23.9	19.3	32600	23.9	18.6	503219	24.0	20.2	224590	24.1	21.0	335236	24.2	21.3	164250	24.3	19.3
16905	23.9	17.6	505204	23.9	22.1	451014	24.0	19.6	454398	24.1	20.9	317113	24.2	19.6	46272	24.3	18.8
522194	23.9	19.9	403335	23.9	21.1	409912	24.1	22.4	505040	24.1	21.6	453954	24.2	20.9	470892	24.3	20.5
5042	23.9	15.5	349058	23.9	21.9	289322	24.1	19.8	372702	24.1	20.9	186653	24.2	20.1	458140	24.3	19.9
339523	23.9	20.1	125941	23.9	19.7	421689	24.1	19.3	203450	24.1	19.7	529134	24.2	21.1	219728	24.3	19.2
160743	23.9	19.6	342916	23.9	20.5	95324	24.1	19.5	521252	24.1	20.9	451696	24.2	21.2	166057	24.3	19.0
87206	23.9	18.6	384096	23.9	20.4	540058	24.1	20.4	56899	24.1	18.4	506009	24.2	21.1	432810	24.3	19.8
337703	23.9	21.2	349410	23.9	21.5	43934	24.1	18.4	141380	24.1	19.2	334749	24.2	20.1	384139	24.3	21.3
297874	23.9	21.5	328552	23.9	19.5	346868	24										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
305341	24.3	19.6	526804	24.4	21.9	135529	24.4	19.6	41590	24.5	19.0	157612	24.6	19.6	160756	24.6	19.4
222352	24.3	20.1	324060	24.4	20.2	24475	24.4	20.1	85559	24.5	18.6	333065	24.6	20.9	57558	24.7	19.7
457241	24.3	18.5	294716	24.4	19.9	369098	24.4	20.9	25646	24.5	18.0	80992	24.6	18.5	334763	24.7	20.2
205612	24.3	21.1	168974	24.4	18.6	172501	24.4	20.8	193518	24.5	19.3	65576	24.6	17.7	272930	24.7	20.0
37261	24.3	18.6	501236	24.4	20.7	538106	24.4	21.9	503629	24.5	20.6	370763	24.6	20.3	84826	24.7	19.2
166242	24.3	18.0	524338	24.4	20.6	150685	24.4	18.2	82130	24.5	18.6	527144	24.6	20.9	466820	24.7	20.7
222474	24.3	18.9	232622	24.4	21.3	138616	24.4	20.0	94550	24.5	17.1	341319	24.6	20.7	468057	24.7	21.2
17393	24.3	19.0	463879	24.4	21.1	168016	24.4	19.5	271211	24.5	19.3	500997	24.6	20.6	10517	24.7	17.2
52513	24.3	18.1	387448	24.4	20.5	80100	24.5	18.5	508598	24.5	21.2	506451	24.6	22.4	227259	24.7	21.6
368970	24.3	21.0	270295	24.4	20.8	280466	24.5	20.0	59228	24.5	17.8	305369	24.6	20.4	141105	24.7	19.5
503442	24.3	19.5	287595	24.4	20.4	398331	24.5	19.5	230649	24.5	20.4	315963	24.6	20.3	201434	24.7	19.8
33311	24.3	17.8	471881	24.4	21.3	183372	24.5	19.2	286323	24.5	19.9	426551	24.6	21.0	530089	24.7	21.0
413285	24.3	20.5	59157	24.4	18.7	291437	24.5	20.3	151088	24.5	19.4	125478	24.6	18.2	272851	24.7	20.3
98637	24.3	19.2	491072	24.4	21.4	501128	24.5	20.4	448446	24.5	20.6	417746	24.6	22.0	48294	24.7	19.2
274477	24.3	19.6	427165	24.4	21.0	471477	24.5	20.8	64295	24.5	19.4	527466	24.6	22.2	176658	24.7	20.1
345896	24.3	21.3	203408	24.4	20.5	494211	24.5	21.1	156470	24.5	19.6	425276	24.6	20.9	195550	24.7	19.1
474587	24.3	20.5	165400	24.4	19.9	331787	24.5	19.5	454131	24.5	20.6	181038	24.6	20.7	299178	24.7	19.7
94390	24.3	18.9	124588	24.4	18.8	313076	24.5	19.9	112453	24.5	19.2	120116	24.6	19.5	414886	24.7	20.0
392812	24.3	22.1	193006	24.4	18.6	168991	24.5	18.6	437113	24.5	20.9	271830	24.6	19.5	308414	24.7	19.8
470173	24.3	21.7	363353	24.4	20.0	125735	24.5	19.2	300188	24.5	21.2	114722	24.6	20.2	347458	24.7	20.8
376459	24.3	19.7	122918	24.4	18.2	486017	24.5	20.3	212837	24.5	20.8	241548	24.6	20.4	131840	24.7	19.6
5428	24.3	16.6	98222	24.4	19.9	436734	24.5	21.4	184588	24.5	19.8	174551	24.6	20.5	68453	24.7	19.5
349038	24.3	21.8	162020	24.4	19.6	182123	24.5	18.2	57475	24.5	19.0	196868	24.6	19.2	500345	24.7	21.1
56643	24.3	17.2	205717	24.4	18.9	133413	24.5	19.4	499269	24.5	21.3	516588	24.6	20.6	525154	24.7	21.2
41498	24.3	19.1	406880	24.4	21.0	98227	24.5	19.9	375893	24.5	20.0	368217	24.6	19.6	499283	24.7	21.3
301999	24.3	19.5	322367	24.4	20.1	420606	24.5	20.1	64823	24.5	21.1	513861	24.6	20.0	136284	24.7	19.1
536157	24.3	20.6	384891	24.4	20.1	255757	24.5	21.1	467678	24.5	19.9	506644	24.6	21.2	276020	24.7	21.7
147290	24.3	19.3	309844	24.4	19.8	16352	24.5	17.0	124921	24.5	20.2	154034	24.6	18.9	131717	24.7	18.5
334782	24.3	19.7	436666	24.4	20.3	10852	24.5	18.0	281052	24.5	20.6	349403	24.6	18.7	202257	24.7	19.9
22906	24.3	17.8	12856	24.4	16.8	534235	24.5	21.7	242062	24.5	18.6	166711	24.6	19.5	543742	24.7	20.7
354035	24.3	21.0	362161	24.4	20.7	108796	24.5	17.6	321172	24.5	21.0	416255	24.6	20.3	294767	24.7	21.1
451778	24.3	21.0	331472	24.4	19.5	352	24.5	13.0	485452	24.5	21.3	435398	24.6	21.1	437193	24.7	20.8
90408	24.3	20.2	327413	24.4	20.5	345388	24.5	20.2	140866	24.5	19.8	90599	24.6	18.4	534003	24.7	20.4
293567	24.3	19.6	323124	24.4	21.1	426807	24.5	20.9	253057	24.5	19.9	451670	24.6	21.1	182796	24.7	20.0
150609	24.3	18.5	425001	24.4	20.3	359197	24.5	21.5	495215	24.5	21.4	32464	24.6	18.8	329999	24.7	20.5
125546	24.3	19.6	387892	24.4	21.2	197348	24.5	20.3	176532	24.5	20.7	138274	24.6	19.6	534391	24.7	22.6
152010	24.3	19.3	128749	24.4	19.1	351679	24.5	21.1	527693	24.5	20.9	289621	24.6	20.4	426838	24.7	20.8
34481	24.3	18.2	93409	24.4	19.9	407779	24.5	21.4	246950	24.5	19.2	286848	24.6	19.4	433457	24.7	19.8
368692	24.3	20.4	322656	24.4	18.7	137017	24.5	19.0	110229	24.5	19.6	301106	24.6	19.1	460870	24.7	20.6
81383	24.3	17.5	237198	24.4	20.6	283560	24.5	20.3	92731	24.5	18.2	400284	24.6	19.3	7426	24.7	17.6
16041	24.3	16.6	273381	24.4	20.9	196591	24.5	19.2	502408	24.6	20.5	386991	24.6	21.3	361599	24.7	19.9
49441	24.3	19.9	41452	24.4	18.2	389635	24.5	19.5	300033	24.6	20.7	504429	24.6	21.2	206163	24.7	19.2
298915	24.3	20.4	388704	24.4	20.4	57170	24.5	19.3	540857	24.6	21.1	346262	24.6	20.4	145219	24.7	19.1
131859	24.3	18.8	6673	24.4	15.9	510327	24.5	21.2	50240	24.6	17.9	310931	24.6	21.1	65128	24.7	19.1
305702	24.3	19.9	207981	24.4	19.3	66481	24.5	17.1	473962	24.6	19.8	221373	24.6	20.3	302430	24.7	20.7
374089	24.3	20.4	293349	24.4	21.4	221855	24.5	19.6	390238	24.6	20.5	138609	24.6	19.3	85996	24.7	18.4
130962	24.3	20.5	68456	24.4	19.1	124379	24.5	19.8	15230	24.6	18.1	2337	24.6	16.6	323106	24.7	19.5
59459	24.3	18.8	225544	24.4	19.8	169395	24.5	20.6	238495	24.6	19.5	402511	24.6	20.5	155646	24.7	19.9
304873	24.4	19.2	506733	24.4	21.7	542485	24.5	20.8	505312	24.6	21.4	88126	24.6	18.9	329200	24.7	21.8
166135	24.4	19.4	118057	24.4	19.2	42663	24.5	19.5	489101	24.6	21.1	533937	24.6	21.5	524404	24.7	22.2
36597	24.4	19.8	544149	24.4	20.2	293105	24.5	20.5	21313	24.6	15.7	245407	24.6	19.9	176319	24.7	19.2
54342	24.4	17.1	450531	24.4	22.6	141463	24.5	20.7	119495	24.6	20.4	273073	24.6	20.3	342925	24.7	20.4
390277	24.4	20.6	399043	24.4	21.1	164843	24.5	20.3	332395	24.6	19.3	101113	24.6	18.5	127186	24.7	19.6
161226	24.4	19.9	129915	24.4	17.0	300207	24.5	19.9	299924	24.6	21.5	365080	24.6	21.0	408120	24.7	19.8
182148	24.4	20.0	309447	24.4	21.3	64595	24.5	19.4	309321	24.6	20.8	70919	24.6	18.7	535650	24.7	21.8
96320	24.4	19.2	123770	24.4	18.7	277003	24.5	18.8	334508	24.6	20.9	69073	24.6	20.0	427634	24.7	20.0
534142	24.4	21.2	31553	24.4	18.7	184343	24.5	21.4	423606	24.6	21.7	93845	24.6	19.0	247653	24.7	19.7
302437	24.4	19.2	155618	24.4	19.7	451736	24.5	21.1	279284	24.6	20.6	447267	24.6	21.6	337814	24.7	22.2
95626	24.4	19.5	366732	24.4	19.7	426269	24.5	20.8	473627	24.6	20.9	82137	24.6	19.8	24001	24.7	18.2
210562	24.4	19.1	148172	24.4	19.0	362025	24.5	21.6	508466	24.6	21.7	461447	24.6	20.9	310487	24.7	20.3
186888	24.4	19.3	51986	24.4	18.6	141139	24.5	20.0	456821	24.6	20.4	348480	24.6	20.6	543698	24.7	21.1
96838	24.4	18.5	307615	24.4	20.8	56128	24.5	18.7	522923	24.6	20.5	467449	24.6	20.3	531212	24.7	21.0
213778	24.4	20.4	449153	24.4	21.3	364687	24.5	21.4	116176	24.6	18.1	215137	24.6	20.2	77896	24.7	18.8
64532	24.4	19.8	212051	24.4	20.7	36710	24.5	18.1	422163	24.6	19.7	435432	24.6	21.0	204090	24.7	20.4
210827	24.4	20.3	166552	24.4	19.4	97118	24.5	19.7	258131	24.6	21.0	30532	24.6	19.1	235945	24.7	19.9
204518	24.4	19.7	54202	24.4	18.5	141171	24.5	20.5	63244	24.6	18.9	83082	24.6	18.2	85175	24.7	18.2
162196	24.4	21.8	391436	24.4	19.7	528350	24.5	20.9	538655	24.6	21.0	205055	24.6	19.2	493881	24.7	20.4
128181	24.4	19.2	51348	24.4	18.6	539996	24.5	21.1	433624	24.6	20.8	56850	24.6	19.0	372394	24.7	19.7
300204	24.4	20.1	435915	24.4	20.5	211986	24.5	20									

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
52733	24.7	20.0	522716	24.8	20.8	43129	24.9	18.2	196229	24.9	20.8	72363	24.9	19.1	183447	25.1	20.2
345100	24.7	20.4	18452	24.8	19.3	324057	24.9	19.1	497176	24.9	22.3	104472	24.9	19.8	284046	25.1	20.5
16290	24.7	18.7	369070	24.8	20.2	459606	24.9	21.4	353550	24.9	20.1	232312	24.9	20.5	244059	25.1	19.9
119671	24.7	19.0	225905	24.8	19.1	486753	24.9	20.6	300073	24.9	20.0	63655	24.9	19.8	405931	25.1	20.3
359109	24.7	21.0	38365	24.8	19.3	212069	24.9	20.6	19321	24.9	17.8	83269	24.9	18.0	52202	25.1	19.2
386172	24.7	21.0	509140	24.8	19.7	507577	24.9	21.1	388827	24.9	21.9	341695	24.9	22.0	300270	25.1	19.2
537725	24.7	20.5	512222	24.8	21.3	66736	24.9	18.8	539120	24.9	21.1	174028	24.9	21.0	91877	25.1	18.3
520026	24.7	20.7	44721	24.8	18.2	92688	24.9	18.5	59922	24.9	19.6	104134	25.0	19.0	535248	25.1	20.5
524912	24.7	21.9	3282	24.8	15.9	18471	24.9	18.2	217503	24.9	20.0	198344	25.0	19.9	23501	25.1	17.9
285891	24.7	19.6	36914	24.8	19.8	375916	24.9	21.2	493395	24.9	20.9	417141	25.0	20.1	148382	25.1	19.0
49619	24.7	19.2	85102	24.8	18.5	57298	24.9	18.4	270580	24.9	19.3	535550	25.0	20.2	504472	25.1	21.3
512499	24.7	20.3	340992	24.8	20.1	472324	24.9	20.6	536473	24.9	20.0	284774	25.0	19.7	216249	25.1	19.6
420740	24.7	21.0	310186	24.8	19.9	386511	24.9	20.2	503815	24.9	20.5	535422	25.0	21.6	17414	25.1	19.0
348838	24.7	20.7	530331	24.8	21.2	111405	24.9	20.2	305576	24.9	20.5	168996	25.0	19.6	350847	25.1	20.1
9125	24.7	17.5	82815	24.8	19.0	458802	24.9	21.3	343663	24.9	20.6	127722	25.0	18.7	4888	25.1	16.5
359095	24.7	20.6	338877	24.8	20.1	174041	24.9	18.1	473852	24.9	20.9	522793	25.0	20.4	503143	25.1	21.3
34329	24.7	18.4	23237	24.8	19.0	487587	24.9	20.9	466159	24.9	19.9	116253	25.0	18.8	532272	25.1	21.3
109302	24.7	18.9	277798	24.8	21.2	299720	24.9	20.2	299963	24.9	20.0	434866	25.0	21.2	473567	25.1	18.8
494934	24.7	21.5	217418	24.8	20.3	89600	24.9	18.6	453230	24.9	20.7	240489	25.0	20.3	384035	25.1	20.9
110312	24.7	19.1	446339	24.8	19.8	419143	24.9	20.4	205749	24.9	19.3	138908	25.0	19.0	330285	25.1	21.7
533851	24.7	20.9	198895	24.8	20.6	382770	24.9	21.4	253027	24.9	20.2	90114	25.0	19.0	313009	25.1	20.5
368047	24.7	20.6	169360	24.8	19.9	283924	24.9	19.1	155948	24.9	19.1	3223	25.0	15.6	229172	25.1	19.2
7888	24.7	19.6	530173	24.8	21.6	179901	24.9	21.5	464099	24.9	21.3	275492	25.0	20.8	402986	25.1	21.1
155754	24.7	20.3	20849	24.8	19.0	374133	24.9	20.3	527736	24.9	21.3	326404	25.0	20.5	351734	25.1	20.8
145438	24.7	19.2	519145	24.8	20.3	129618	24.9	19.4	531724	24.9	21.4	461521	25.0	21.0	250487	25.1	19.5
250001	24.7	19.6	470120	24.8	21.0	200251	24.9	20.4	497305	24.9	20.4	21000	25.0	19.5	210317	25.1	19.9
500507	24.7	21.6	437080	24.8	21.1	541686	24.9	22.0	152071	24.9	19.5	210755	25.0	20.1	12510	25.1	16.9
265027	24.7	18.3	153063	24.8	19.9	534134	24.9	20.7	192993	24.9	20.7	208712	25.0	19.3	474008	25.1	19.4
140882	24.7	19.3	261383	24.8	20.1	10248	24.9	17.9	78038	24.9	18.7	38358	25.0	17.6	47063	25.1	17.0
258104	24.7	20.0	437739	24.8	20.9	233306	24.9	19.5	195246	24.9	18.5	437481	25.0	20.7	46665	25.1	17.8
109315	24.7	19.0	466170	24.8	20.3	69946	24.9	19.0	512997	24.9	20.2	172057	25.0	20.0	325323	25.1	19.5
466160	24.7	21.1	186145	24.8	19.3	9973	24.9	18.1	348423	24.9	21.1	489669	25.0	21.7	58944	25.1	17.9
452798	24.7	19.3	472361	24.8	18.1	384854	24.9	20.7	341362	24.9	20.5	277710	25.0	20.4	131982	25.1	20.3
465513	24.8	18.4	353607	24.8	21.1	309751	24.9	18.6	299479	24.9	20.5	111607	25.0	18.8	330444	25.1	20.8
478575	24.8	20.3	278598	24.8	20.5	11495	24.9	18.4	222782	24.9	20.1	54931	25.0	17.8	383866	25.1	19.4
106038	24.8	20.1	530134	24.8	21.2	497797	24.9	21.8	529395	24.9	22.4	55905	25.0	20.0	75082	25.1	18.5
203648	24.8	20.1	499768	24.8	21.3	399702	24.9	19.9	533645	24.9	20.2	338350	25.0	21.3	28888	25.1	18.3
354687	24.8	20.5	421116	24.8	20.1	505854	24.9	20.6	174064	24.9	19.6	14305	25.0	16.8	498679	25.1	20.9
501634	24.8	20.5	409014	24.8	20.8	378363	24.9	19.3	522231	24.9	20.1	301736	25.0	19.8	245732	25.1	20.2
439825	24.8	20.7	140566	24.8	19.6	310949	24.9	21.2	123041	24.9	19.7	17395	25.0	17.7	48859	25.1	17.4
10862	24.8	18.0	332348	24.8	20.2	38098	24.9	18.4	346013	24.9	21.0	503090	25.0	20.4	374489	25.1	20.8
432479	24.8	20.5	483340	24.8	20.1	533314	24.9	20.8	280488	24.9	18.4	313030	25.0	20.5	10855	25.1	17.3
425073	24.8	21.1	507317	24.8	21.4	3369	24.9	17.1	360532	24.9	20.1	427431	25.0	21.4	399844	25.1	18.3
288427	24.8	20.9	264510	24.8	19.7	41317	24.9	18.2	235736	24.9	20.9	351879	25.0	19.7	158083	25.1	20.8
538188	24.8	20.5	493840	24.8	20.4	152669	24.9	19.1	4762	24.9	17.4	423456	25.0	21.2	83139	25.1	19.3
377471	24.8	19.9	462860	24.8	21.8	63504	24.9	18.9	538710	24.9	20.9	182492	25.0	19.6	544109	25.1	22.2
38656	24.8	17.7	453894	24.8	21.9	498546	24.9	19.2	184605	24.9	20.0	36971	25.0	17.8	326416	25.1	21.4
43524	24.8	17.9	364412	24.8	19.3	259206	24.9	20.0	525771	24.9	20.9	327444	25.0	19.5	81246	25.1	19.0
204454	24.8	19.8	321160	24.8	20.9	398133	24.9	20.8	501483	24.9	20.8	132167	25.0	18.1	351771	25.1	20.0
7410	24.8	18.3	150740	24.8	19.4	6796	24.9	17.2	366399	24.9	20.4	471136	25.0	21.3	338366	25.1	20.9
224317	24.8	19.1	406893	24.8	21.6	176526	24.9	20.0	336209	24.9	19.5	59772	25.0	17.1	173876	25.1	21.0
402213	24.8	21.4	500760	24.8	22.2	450178	24.9	22.4	219646	24.9	21.7	471917	25.0	21.1	142693	25.1	19.8
499785	24.8	21.0	34182	24.8	18.2	54619	24.9	19.0	457842	24.9	19.7	337876	25.0	20.4	417529	25.1	20.3
456741	24.8	21.1	98799	24.8	19.0	354796	24.9	21.8	413171	24.9	20.8	270319	25.0	21.1	453968	25.1	21.3
135752	24.8	19.6	344602	24.8	20.5	453402	24.9	22.3	290716	24.9	21.2	362080	25.0	21.0	23841	25.1	17.9
116965	24.8	18.6	274834	24.8	19.4	123407	24.9	19.1	243627	24.9	18.7	413286	25.0	18.8	248501	25.1	20.0
34815	24.8	19.0	236956	24.8	19.8	305758	24.9	20.6	203158	24.9	19.9	118097	25.0	19.4	427961	25.1	20.9
283738	24.8	20.8	454185	24.8	21.7	110924	24.9	20.0	434571	24.9	20.8	283545	25.0	20.0	353820	25.1	21.5
465712	24.8	21.1	534277	24.8	20.0	379397	24.9	20.6	29060	24.9	17.7	349336	25.0	20.4	100531	25.1	20.1
42016	24.8	17.7	105960	24.8	18.7	533876	24.9	21.4	9741	24.9	17.4	302431	25.0	19.4	103281	25.1	20.2
436009	24.8	20.1	195208	24.8	19.3	416502	24.9	20.3	32360	24.9	19.1	230913	25.0	18.3	36009	25.1	17.8
285723	24.8	20.1	467964	24.8	19.9	534673	24.9	21.4	71767	24.9	18.2	400337	25.0	20.3	8568	25.1	16.6
12929	24.8	17.4	41063	24.8	18.8	124890	24.9	19.1	373847	24.9	19.3	32370	25.0	19.1	98321	25.1	17.6
176377	24.8	21.5	258629	24.8	21.9	355801	24.9	22.1	347415	24.9	20.5	87094	25.0	19.3	536823	25.1	20.5
521131	24.8	21.4	268561	24.8	19.9	31251	24.9	18.6	202540	24.9	19.2	253131	25.0	21.3	498587	25.1	19.4
4914	24.8	15.7	518418	24.8	21.8	335671	24.9	20.6	284337	24.9	20.4	43746	25.0	19.3	314628	25.1	19.7
210700	24.8	21.4	29011	24.8	17.7	170706	24.9	19.9	270500	24.9	21.0	165498	25.0	19.0	528673	25.1	21.5
121580	24.8	18.4	331408	24.8	20.5	297827	24.9	20.2	435923	24.9	20.3	399351	25.0	20.5	458987	25.1	21.6
401845	24.8	21.9	285665	24.8	21.0	415881	24.9	21.1	417								

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
368743	25.1	18.5	95928	25.2	18.1	320413	25.3	21.0	148794	25.3	19.2	135071	25.4	19.4	52972	25.5	16.9
396547	25.1	19.4	423492	25.2	21.0	182861	25.3	20.3	253134	25.3	20.0	184485	25.4	20.6	392708	25.5	20.0
165421	25.1	19.2	198839	25.2	19.0	138693	25.3	19.1	392672	25.3	19.4	310979	25.4	20.6	28081	25.5	17.7
73810	25.1	18.3	213229	25.2	19.3	403889	25.3	21.1	210899	25.3	20.8	235118	25.4	20.5	431523	25.5	20.5
501091	25.1	21.1	163236	25.2	18.3	24470	25.3	17.5	119373	25.3	19.3	199335	25.4	19.9	8955	25.5	17.5
292656	25.1	20.4	319665	25.2	20.3	2357	25.3	15.5	301720	25.3	19.3	47188	25.4	16.8	473958	25.5	21.0
386029	25.1	20.7	97568	25.2	18.7	512339	25.3	21.2	465707	25.3	20.6	508599	25.4	20.3	457028	25.5	20.3
158231	25.1	20.2	172014	25.2	21.3	173805	25.3	21.0	503322	25.3	19.6	110857	25.4	18.5	515757	25.5	20.4
236964	25.1	19.5	114857	25.2	19.0	316814	25.3	20.5	398263	25.3	21.1	402920	25.4	21.4	508623	25.5	20.7
327883	25.1	20.8	420144	25.2	20.0	30412	25.3	18.5	125727	25.3	18.7	39655	25.4	18.5	33075	25.5	18.7
238091	25.1	20.1	94806	25.2	17.7	36791	25.3	18.5	157863	25.3	18.7	474633	25.4	20.8	276519	25.5	19.4
144763	25.1	18.7	429364	25.2	20.9	333100	25.3	21.2	143485	25.3	19.3	119369	25.4	19.3	466084	25.5	22.0
159189	25.1	19.3	206746	25.2	19.8	305563	25.3	20.0	234783	25.3	20.1	214470	25.4	19.3	393074	25.5	20.5
413204	25.1	21.2	265688	25.2	18.3	262487	25.3	20.8	471897	25.3	21.3	201116	25.4	19.0	236079	25.5	19.6
41667	25.1	18.8	33823	25.2	18.7	529329	25.3	21.6	36343	25.3	18.7	121010	25.4	19.8	241703	25.5	19.2
120198	25.1	19.7	17172	25.2	17.9	387319	25.3	21.4	542908	25.3	18.9	501017	25.4	21.3	142891	25.5	19.7
105938	25.1	19.8	162762	25.2	19.4	409938	25.3	22.1	348704	25.3	20.6	334893	25.4	20.6	585996	25.5	20.1
200675	25.1	19.7	10293	25.2	15.9	500968	25.3	19.9	346134	25.3	21.7	202446	25.4	18.6	429166	25.5	21.4
513398	25.1	20.9	355129	25.2	19.6	152657	25.3	20.7	471882	25.3	21.8	20809	25.4	17.7	505332	25.5	22.2
265613	25.1	21.0	359635	25.2	20.5	284910	25.3	20.0	170843	25.4	20.2	498444	25.4	21.7	236925	25.5	20.6
219751	25.1	18.9	199506	25.2	19.9	379254	25.3	19.7	534357	25.4	21.2	151048	25.4	19.7	62866	25.5	19.3
379410	25.1	19.6	289830	25.2	19.8	53542	25.3	19.2	254048	25.4	20.4	134250	25.4	21.3	54638	25.5	19.2
199207	25.1	19.1	242650	25.2	19.2	55502	25.3	18.8	531666	25.4	21.3	427382	25.4	21.4	52867	25.5	16.9
468297	25.1	20.4	294723	25.2	20.6	123761	25.3	19.8	502629	25.4	21.1	225006	25.4	20.5	338417	25.5	20.1
354104	25.1	21.5	41225	25.2	18.4	542196	25.3	20.3	391063	25.4	19.2	134032	25.4	20.2	530710	25.5	20.4
205702	25.1	19.5	118678	25.2	17.8	470114	25.3	20.7	396280	25.4	20.2	470530	25.4	19.9	120210	25.5	18.3
399997	25.1	19.7	174559	25.2	20.3	414225	25.3	21.3	259936	25.4	20.3	526132	25.4	21.8	317412	25.5	20.0
16658	25.2	17.2	85600	25.2	18.9	528063	25.3	22.1	98595	25.4	19.0	526145	25.4	22.0	100406	25.5	19.7
191247	25.2	19.4	63331	25.2	18.5	500979	25.3	20.0	312470	25.4	20.3	238711	25.4	20.3	360521	25.5	18.7
465128	25.2	21.1	41876	25.2	17.9	29157	25.3	17.7	282685	25.4	19.4	51220	25.4	18.5	526698	25.5	21.7
402972	25.2	20.4	122818	25.2	19.7	378343	25.3	19.7	206454	25.4	18.8	501294	25.4	21.6	190048	25.5	18.3
65038	25.2	18.1	85948	25.2	17.5	65044	25.3	19.6	382357	25.4	20.3	508481	25.4	20.0	81086	25.5	16.3
385513	25.2	20.5	514692	25.2	20.8	30408	25.3	17.4	418408	25.4	20.4	329323	25.4	19.7	375983	25.5	20.4
493896	25.2	20.4	28265	25.2	17.2	454941	25.3	22.5	430136	25.4	20.9	309238	25.4	20.6	206880	25.5	20.2
255100	25.2	18.9	346688	25.2	20.6	531211	25.3	19.1	28146	25.4	17.1	144475	25.4	18.8	284700	25.5	19.5
311173	25.2	20.8	52709	25.2	19.2	424728	25.3	19.7	495268	25.4	20.0	234987	25.4	19.7	36475	25.5	17.7
354853	25.2	20.7	200806	25.2	20.8	527582	25.3	19.9	269099	25.4	19.4	98439	25.4	18.7	507619	25.5	21.2
468053	25.2	20.7	372690	25.2	21.3	302388	25.3	19.7	118096	25.4	19.2	500923	25.4	21.6	152666	25.5	19.7
313675	25.2	19.2	392551	25.2	21.8	3634	25.3	15.7	467877	25.4	21.0	314175	25.4	21.2	277792	25.5	20.0
203436	25.2	19.4	225550	25.2	21.3	522494	25.3	19.5	352032	25.4	21.1	116891	25.4	18.0	96172	25.5	18.2
386229	25.2	20.3	204550	25.2	20.0	192290	25.3	19.3	129282	25.4	18.7	296150	25.4	19.7	90782	25.5	19.5
123789	25.2	19.4	300066	25.2	19.7	388725	25.3	21.4	509344	25.4	21.5	417672	25.5	21.0	372546	25.5	19.8
202303	25.2	20.2	455510	25.2	21.1	517204	25.3	21.8	464662	25.4	20.7	294291	25.5	19.7	350680	25.5	21.1
140433	25.2	19.7	344226	25.2	19.9	501496	25.3	21.1	341635	25.4	20.0	326455	25.5	20.4	99465	25.5	18.3
276864	25.2	20.8	190088	25.2	18.3	497794	25.3	21.3	526635	25.4	21.0	254096	25.5	18.9	190365	25.5	19.7
224216	25.2	20.6	288910	25.2	21.3	143678	25.3	18.3	19623	25.4	18.0	232588	25.5	18.2	173375	25.5	19.7
5352	25.2	16.6	590247	25.2	22.1	233384	25.3	19.4	465377	25.4	21.3	427703	25.5	19.7	112968	25.5	19.2
489482	25.2	21.0	129406	25.2	19.9	55879	25.3	18.0	505289	25.4	20.8	143636	25.5	19.5	322654	25.5	18.7
419925	25.2	20.6	158519	25.2	19.5	28018	25.3	17.2	540052	25.4	20.4	540129	25.5	19.7	3867	25.5	16.3
522234	25.2	19.2	377864	25.2	20.6	326279	25.3	19.5	201045	25.4	20.3	314646	25.5	19.6	501029	25.5	21.2
162690	25.2	19.8	416874	25.2	20.1	498571	25.3	19.3	237740	25.4	20.0	100117	25.5	19.4	158183	25.5	19.6
140352	25.2	18.8	123363	25.2	19.9	405535	25.3	21.2	396269	25.4	20.2	186151	25.5	19.7	116943	25.5	17.4
126802	25.2	19.2	82522	25.2	18.1	107211	25.3	20.0	456713	25.4	21.6	352348	25.5	20.7	127288	25.5	18.1
248341	25.2	19.7	236177	25.2	18.7	319095	25.3	20.1	405366	25.4	20.6	290624	25.5	20.8	141084	25.5	19.8
387581	25.2	20.3	67237	25.2	19.1	347835	25.3	19.6	432422	25.4	20.7	503032	25.5	21.3	298869	25.5	19.4
119598	25.2	19.5	243592	25.2	21.2	510412	25.3	21.5	275354	25.4	21.4	239550	25.5	20.0	150036	25.5	18.1
132236	25.2	18.4	325263	25.2	19.1	435032	25.3	20.5	371619	25.4	20.8	366600	25.5	19.6	147409	25.5	18.6
91333	25.2	18.9	379292	25.2	21.2	451090	25.3	21.6	226116	25.4	20.2	531362	25.5	21.0	166199	25.5	19.0
131178	25.2	19.2	374551	25.2	20.1	81232	25.3	19.2	191898	25.4	19.8	255967	25.5	20.6	65272	25.5	19.2
27894	25.2	18.9	533080	25.2	21.7	346176	25.3	20.6	71977	25.4	19.1	404369	25.5	20.2	341749	25.5	20.2
82956	25.2	18.1	187592	25.3	19.7	191908	25.3	20.7	503951	25.4	21.0	209155	25.5	18.6	375964	25.5	20.3
336656	25.2	19.8	501004	25.3	20.1	118875	25.3	18.5	346873	25.4	20.1	278752	25.5	20.1	236574	25.5	20.1
68427	25.2	19.2	439355	25.3	20.6	55083	25.3	18.1	535968	25.4	21.9	470248	25.5	20.7	148897	25.5	19.9
202615	25.2	20.5	534325	25.3	21.4	68209	25.3	17.8	83818	25.4	18.7	341537	25.5	20.6	430144	25.5	21.2
223294	25.2	19.5	501188	25.3	20.7	17658	25.3	16.6	504380	25.4	19.9	437866	25.5	20.1	114642	25.5	18.9
348559	25.2	19.4	522895	25.3	20.8	178352	25.3	18.2	99327	25.4	19.1	336874	25.5	19.2	467871	25.5	20.6
117638	25.2	18.7	201563	25.3	20.0	279778	25.3	20.3	381144	25.4	20.5	316642	25.5	18.5	56789	25.5	18.4
435921	25.2	19.9	175583	25.3	20.0	335563	25.3	19.6	109222	25.4	19.5	506456	25.5	21.3	214045	25.5	19.0
76820	25.2	19.4	241074	25.3	19.0	531											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
212996	25.6	19.0	392948	25.6	21.9	4798	25.7	15.0	259346	25.8	19.0	30464	25.8	17.2	2007	25.9	14.6
399311	25.6	20.0	470076	25.6	20.7	67907	25.7	19.2	129373	25.8	20.4	379461	25.8	21.4	4705	25.9	16.7
21248	25.6	16.9	371262	25.6	21.6	272513	25.7	20.3	503866	25.8	21.2	355188	25.8	21.4	111000	25.9	19.3
518829	25.6	20.0	473747	25.6	19.2	200624	25.7	19.8	328964	25.8	20.7	299869	25.8	19.8	73220	25.9	17.9
59336	25.6	18.0	122723	25.6	18.0	495439	25.7	20.4	427900	25.8	21.0	227776	25.8	19.5	412227	25.9	20.1
423745	25.6	20.6	320869	25.6	19.8	539181	25.7	20.6	139794	25.8	19.3	155933	25.8	20.0	165984	25.9	19.4
169393	25.6	19.5	5618	25.6	17.4	34953	25.7	19.3	164447	25.8	18.9	530357	25.8	20.3	3848	25.9	16.2
536069	25.6	21.7	252954	25.6	18.5	53363	25.7	18.3	884	25.8	14.9	15751	25.8	16.0	154080	25.9	19.7
407766	25.6	20.5	417194	25.6	19.4	310271	25.7	20.8	232879	25.8	19.8	369062	25.8	20.3	90501	25.9	18.9
172947	25.6	19.4	58873	25.6	17.8	124572	25.7	19.7	114681	25.8	18.2	78939	25.8	19.0	300977	25.9	21.4
421661	25.6	21.2	352790	25.6	20.9	319	25.7	15.8	377818	25.8	20.0	166149	25.8	20.0	150329	25.9	18.9
278860	25.6	19.7	426060	25.6	19.5	358027	25.7	20.8	308347	25.8	20.1	522416	25.8	19.3	228211	25.9	20.3
118962	25.6	19.1	185290	25.6	20.1	213803	25.7	20.7	333383	25.8	20.2	510443	25.8	21.2	119538	25.9	18.8
208454	25.6	20.1	510277	25.6	20.4	252594	25.7	20.2	55967	25.8	17.6	187879	25.8	18.5	165483	25.9	20.0
426504	25.6	20.8	438858	25.6	20.5	97239	25.7	19.8	205485	25.8	19.3	283466	25.8	19.2	297790	25.9	20.0
528866	25.6	21.7	253230	25.6	21.5	349034	25.7	20.6	272739	25.8	20.8	209598	25.8	19.7	226926	25.9	20.1
62665	25.6	17.4	388631	25.6	22.1	62227	25.7	19.3	56993	25.8	18.4	274702	25.8	19.0	357968	25.9	21.1
9621	25.6	18.0	42438	25.6	18.2	29782	25.7	18.7	533776	25.8	21.6	177894	25.8	18.8	397522	25.9	19.8
185497	25.6	21.0	488529	25.6	20.1	175377	25.7	18.9	423082	25.8	19.3	139667	25.8	19.3	510356	25.9	21.2
535793	25.6	21.2	515450	25.6	20.7	30000	25.7	16.9	503854	25.8	20.5	176373	25.8	19.9	100233	25.9	19.0
434538	25.6	20.4	118056	25.6	19.1	394843	25.7	20.2	316566	25.8	19.8	83174	25.8	18.6	469851	25.9	20.7
146354	25.6	19.4	167596	25.6	18.9	150775	25.7	19.6	32436	25.8	17.1	504243	25.8	21.5	183710	25.9	19.7
1861	25.6	15.7	473839	25.6	20.0	434069	25.7	20.5	293437	25.8	19.4	210947	25.8	19.5	84482	25.9	19.7
218210	25.6	18.6	300003	25.6	21.2	340966	25.7	20.0	274543	25.8	21.5	286137	25.8	20.7	302040	25.9	19.7
354526	25.6	19.6	196269	25.6	19.1	244092	25.7	20.0	445902	25.8	19.9	147554	25.8	19.7	105963	25.9	18.5
427482	25.6	21.2	527583	25.6	21.0	106166	25.7	19.4	422802	25.8	19.9	211954	25.8	20.9	224424	25.9	19.6
148819	25.6	19.2	397431	25.6	20.1	411251	25.7	20.6	89414	25.8	19.4	463263	25.8	20.8	107118	25.9	19.9
512442	25.6	19.5	217901	25.6	19.4	170072	25.7	19.4	141085	25.8	18.9	465966	25.8	20.4	368739	25.9	20.7
34181	25.6	18.7	426146	25.6	19.5	192320	25.7	19.9	382321	25.8	20.0	229995	25.8	20.2	376741	25.9	18.9
344380	25.6	19.8	172382	25.6	20.5	332127	25.7	19.8	101495	25.8	19.7	428181	25.8	20.1	346225	25.9	21.2
249755	25.6	19.7	397804	25.6	20.2	311468	25.7	18.5	466702	25.8	21.5	536755	25.8	20.3	290157	25.9	19.0
386214	25.6	20.5	523872	25.6	20.5	413984	25.7	21.6	332191	25.8	20.6	81898	25.8	18.9	372581	25.9	21.3
317664	25.6	20.1	343976	25.6	19.7	414777	25.7	19.7	427997	25.8	21.6	425878	25.8	21.1	256356	25.9	20.0
203413	25.6	20.2	240017	25.6	19.9	470534	25.7	21.2	412671	25.8	19.3	413035	25.9	21.6	304747	25.9	18.7
331605	25.6	20.8	145513	25.6	19.6	103207	25.7	18.6	391351	25.8	21.8	115870	25.9	19.7	198443	25.9	19.7
230883	25.6	20.0	52451	25.7	18.4	157592	25.7	20.3	173419	25.8	20.7	379716	25.9	20.5	110451	25.9	17.1
108112	25.6	19.0	296014	25.7	20.6	212986	25.7	19.0	433683	25.8	21.2	29492	25.9	16.8	529689	25.9	20.5
432375	25.6	21.1	176403	25.7	21.1	107266	25.7	19.5	372447	25.8	19.9	310429	25.9	20.6	3553	25.9	18.8
522811	25.6	20.7	205653	25.7	18.6	2134	25.7	18.2	238639	25.8	20.9	116478	25.9	19.0	362027	25.9	21.7
291535	25.6	20.0	219770	25.7	20.7	149728	25.7	18.7	489550	25.8	22.1	225648	25.9	20.1	493695	25.9	20.8
454127	25.6	21.8	397298	25.7	19.9	128365	25.7	17.8	467235	25.8	20.6	371112	25.9	20.3	15242	25.9	18.2
396224	25.6	20.3	313788	25.7	19.8	328054	25.7	20.4	308484	25.8	19.1	247933	25.9	19.2	217043	25.9	18.4
527807	25.6	20.9	450454	25.7	20.6	417685	25.7	21.5	417276	25.8	19.6	520392	25.9	21.0	48731	25.9	17.0
503530	25.6	19.6	93977	25.7	19.7	370056	25.7	19.8	488569	25.8	21.5	215565	25.9	19.3	251534	25.9	20.5
68763	25.6	18.2	208998	25.7	18.6	341446	25.7	20.1	304495	25.8	21.3	240602	25.9	19.2	41410	25.9	17.2
212577	25.6	20.6	495196	25.7	21.5	415977	25.7	19.0	271915	25.8	19.6	351518	25.9	20.6	70575	25.9	18.4
278223	25.6	20.5	374578	25.7	21.7	96160	25.7	19.8	210396	25.8	20.4	431632	25.9	20.3	544123	25.9	19.3
461366	25.6	19.9	193519	25.7	18.5	22829	25.7	17.5	231455	25.8	19.8	188191	25.9	18.2	394810	25.9	19.9
491783	25.6	21.0	500619	25.7	21.7	291041	25.7	20.8	420171	25.8	20.2	212053	25.9	18.3	304710	25.9	19.6
453801	25.6	21.7	245503	25.7	19.4	121216	25.7	18.7	292195	25.8	21.8	352023	25.9	21.7	20634	25.9	17.2
267315	25.6	20.9	286328	25.7	18.6	336756	25.7	23.8	348565	25.8	18.8	218740	25.9	18.8	201614	25.9	19.8
330377	25.6	20.3	57404	25.7	19.5	383995	25.7	21.3	87935	25.8	18.0	111207	25.9	19.4	405313	25.9	19.6
322783	25.6	20.5	246963	25.7	18.8	33668	25.7	17.7	69305	25.8	17.9	309366	25.9	20.0	305450	25.9	20.9
69616	25.6	18.8	48385	25.7	18.8	503296	25.7	18.4	503044	25.8	20.8	73358	25.9	18.8	534094	25.9	20.2
537108	25.6	20.5	203674	25.7	19.5	522761	25.7	21.0	39402	25.8	19.2	532500	25.9	21.2	102271	25.9	20.0
3996	25.6	14.7	90744	25.7	19.7	201726	25.7	19.5	60798	25.8	18.5	435335	25.9	20.4	142202	25.9	19.4
406642	25.6	21.9	346208	25.7	20.0	474890	25.7	20.7	120294	25.8	18.5	35966	25.9	17.7	249219	25.9	19.9
535008	25.6	21.0	9761	25.7	17.3	275047	25.7	20.4	491931	25.8	21.1	339446	25.9	21.3	407770	25.9	21.4
410345	25.6	21.3	64248	25.7	18.6	142037	25.7	19.1	505580	25.8	20.4	259148	25.9	20.4	377383	25.9	19.4
292061	25.6	20.4	14977	25.7	18.2	151308	25.7	18.6	386962	25.8	20.5	415529	25.9	21.1	538342	25.9	20.0
400025	25.6	19.8	538370	25.7	20.3	57206	25.7	19.1	392860	25.8	21.8	435268	25.9	20.6	294619	25.9	19.9
27507	25.6	18.2	308366	25.7	20.3	527437	25.8	20.5	233976	25.8	20.1	14958	25.9	16.9	52626	25.9	18.3
318719	25.6	18.2	419575	25.7	20.4	501194	25.8	20.4	232750	25.8	18.0	303748	25.9	20.3	114803	25.9	17.1
418268	25.6	20.1	434855	25.7	20.7	267472	25.8	21.2	61072	25.8	17.4	303468	25.9	21.2	507178	25.9	20.1
300026	25.6	21.3	376464	25.7	19.5	57714	25.8	18.8	306295	25.8	19.7	64504	25.9	19.2	110859	25.9	19.4
120067	25.6	18.5	192520	25.7	19.5	54653	25.8	19.0	158073	25.8	20.0	351782	25.9	19.1	126841	25.9	19.0
60318	25.6	18.9	354088	25.7	20.7	231582	25.8	19.8	470165	25.8	20.4	322407	25.9	20.3	524354	25.9	22.1
345694	25.6	21.7	441337	25.7	21.4	390990	25.8	20.3	256163	25.8	19.6	436208	25.9	21.1	535563	25.9	20.8
532264	25.6	21.2	270853	25.7	18.6	384587	25.8										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
301117	25.9	20.9	163464	26.0	19.1	504682	26.1	20.4	64084	26.2	17.4	3925	26.2	15.6	30576	26.3	17.4
219876	25.9	19.5	140834	26.0	20.4	346877	26.1	21.4	343292	26.2	19.6	349428	26.2	20.5	276205	26.3	19.9
378873	25.9	20.6	321618	26.0	20.4	313856	26.1	19.7	118475	26.2	18.7	505547	26.2	20.8	303834	26.3	20.5
176564	25.9	20.1	31720	26.0	17.6	200788	26.1	19.9	90817	26.2	19.8	486138	26.2	20.9	244037	26.3	20.9
238295	25.9	20.4	92951	26.0	18.1	30527	26.1	18.4	160904	26.2	21.5	25656	26.2	17.1	315333	26.3	19.0
143445	25.9	19.8	34101	26.0	17.0	6129	26.1	15.8	544499	26.2	20.6	349886	26.2	21.1	214152	26.3	20.2
235136	25.9	19.7	394065	26.0	20.6	296273	26.1	19.8	118696	26.2	18.7	489435	26.2	21.9	469914	26.3	20.9
190966	25.9	20.2	362685	26.0	20.8	94667	26.1	18.8	307206	26.2	18.9	85125	26.2	19.7	438638	26.3	21.4
417595	25.9	21.6	347312	26.0	20.1	8461	26.1	19.0	230334	26.2	21.3	489401	26.2	21.8	285327	26.3	21.1
89308	25.9	17.2	364250	26.0	20.5	152199	26.1	21.1	259274	26.2	19.9	423895	26.2	20.4	423522	26.3	20.0
389924	25.9	21.0	353263	26.0	19.4	50646	26.1	18.4	363743	26.2	20.4	500560	26.2	21.5	492543	26.3	20.2
209437	25.9	19.9	463540	26.0	19.6	528110	26.1	20.5	130589	26.2	19.2	350345	26.2	20.3	245492	26.3	19.1
393241	25.9	21.0	123537	26.0	19.2	18562	26.1	17.2	245061	26.2	19.1	65428	26.2	17.8	351568	26.3	18.9
291466	25.9	19.2	175929	26.0	18.3	320740	26.1	19.2	544145	26.2	19.0	125653	26.2	19.3	61476	26.3	18.7
177904	25.9	19.0	118708	26.0	17.8	48357	26.1	17.2	242418	26.2	19.7	412147	26.2	19.3	244270	26.3	19.0
423509	25.9	21.6	334772	26.0	19.4	443708	26.1	18.4	210474	26.2	20.2	211440	26.2	19.7	370189	26.3	20.7
501519	25.9	20.4	457108	26.0	20.6	29314	26.1	18.3	323902	26.2	20.0	543788	26.2	20.0	238734	26.3	19.5
177360	25.9	19.9	39470	26.0	20.2	447190	26.1	20.9	503622	26.2	20.9	81488	26.2	19.6	309113	26.3	20.1
145525	25.9	20.5	200285	26.0	20.2	435975	26.1	21.2	375845	26.2	20.9	28352	26.2	17.3	49697	26.3	18.4
141894	25.9	18.6	487171	26.0	20.1	535450	26.1	21.2	192646	26.2	19.1	91443	26.2	18.8	330808	26.3	19.5
458967	25.9	20.5	390212	26.0	20.3	500330	26.1	21.2	143583	26.2	19.1	136999	26.2	18.8	14688	26.3	17.1
533099	25.9	20.2	539588	26.0	20.4	524897	26.1	20.8	430767	26.2	21.3	448163	26.2	21.6	15664	26.3	18.4
290606	25.9	19.7	13799	26.0	18.7	217936	26.1	19.8	496076	26.2	20.1	406387	26.2	20.2	89497	26.3	18.7
497369	25.9	21.8	468332	26.0	18.7	527927	26.1	22.3	400359	26.2	21.7	279583	26.2	21.5	450789	26.3	22.0
237658	25.9	20.7	84376	26.0	20.0	373282	26.1	19.3	157516	26.2	19.2	160579	26.2	18.9	392428	26.3	20.1
353556	25.9	21.0	329582	26.0	20.6	451650	26.1	21.3	248196	26.2	20.3	452524	26.2	21.5	519242	26.3	20.7
280404	25.9	19.8	471166	26.0	20.3	436720	26.1	20.3	396858	26.2	18.3	465664	26.2	19.4	325108	26.3	21.1
225971	25.9	19.5	488760	26.0	20.4	263153	26.1	20.0	434483	26.2	19.5	538583	26.2	20.4	424765	26.3	20.6
256175	25.9	18.6	423228	26.0	21.0	397355	26.1	19.9	61200	26.2	17.3	88396	26.2	18.9	36105	26.3	17.5
452315	25.9	21.1	255687	26.0	19.4	176514	26.1	20.1	236236	26.2	20.4	528385	26.2	19.5	535197	26.3	20.6
93706	25.9	19.4	145874	26.0	18.9	288896	26.1	19.9	499220	26.2	19.7	7207	26.2	18.8	470436	26.3	20.3
83412	25.9	19.3	284631	26.0	20.3	89687	26.1	19.2	299313	26.2	20.0	498921	26.2	21.1	501023	26.3	20.0
229048	25.9	19.2	104398	26.0	17.9	212931	26.1	19.6	84738	26.2	19.1	362029	26.2	21.7	22343	26.3	18.8
381579	25.9	20.9	38522	26.0	18.5	364794	26.1	20.5	57069	26.2	18.1	508261	26.2	20.4	259169	26.3	20.8
392134	25.9	21.1	237457	26.0	20.8	470233	26.1	20.6	337964	26.2	21.0	427797	26.2	20.5	106483	26.3	19.2
298342	25.9	19.7	305921	26.1	20.1	384566	26.1	20.2	526267	26.2	21.5	370952	26.2	20.9	96143	26.3	20.3
174057	25.9	20.3	158108	26.1	19.1	360369	26.1	21.1	1493	26.2	14.2	365872	26.2	20.0	157101	26.3	19.0
348545	25.9	20.9	498849	26.1	19.3	88268	26.1	22.5	187735	26.2	19.8	140474	26.2	18.7	152710	26.3	19.2
454639	25.9	20.6	376532	26.1	20.9	45586	26.1	17.6	283225	26.2	18.9	194331	26.3	21.2	103912	26.3	19.1
437743	25.9	20.7	336464	26.1	20.6	259548	26.1	20.2	345620	26.2	20.4	284869	26.3	19.7	508689	26.3	20.9
505189	25.9	21.3	466699	26.1	20.8	443727	26.1	19.9	119660	26.2	18.9	116703	26.3	20.1	175794	26.3	18.4
528386	25.9	20.8	87084	26.1	18.4	152232	26.1	20.4	277765	26.2	20.8	259208	26.3	19.3	377425	26.3	20.5
280158	25.9	20.6	48832	26.1	18.2	107500	26.1	18.2	300875	26.2	20.7	194473	26.3	19.6	539886	26.3	18.8
247927	25.9	19.1	110510	26.1	19.1	140335	26.1	18.3	503252	26.2	20.8	402989	26.3	20.1	374440	26.3	20.2
28264	25.9	18.2	170516	26.1	20.5	244577	26.1	19.2	272884	26.2	20.9	402950	26.3	19.9	87711	26.3	19.7
467318	25.9	18.9	465721	26.1	20.3	506269	26.1	19.4	374046	26.2	19.3	287462	26.3	20.1	450805	26.3	20.8
490279	25.9	21.6	105528	26.1	19.0	2397	26.1	16.3	71544	26.2	19.2	114304	26.3	18.7	461571	26.3	19.6
301680	25.9	20.3	402958	26.1	21.3	426690	26.1	20.2	124533	26.2	19.5	156139	26.3	19.6	299716	26.3	20.7
21174	25.9	16.5	192873	26.1	18.8	508015	26.1	20.0	498766	26.2	20.9	8974	26.3	17.9	303966	26.3	18.8
192872	25.9	19.3	316268	26.1	19.1	326110	26.1	21.0	292803	26.2	20.5	526487	26.3	22.1	497156	26.3	20.7
89490	25.9	18.9	35007	26.1	18.4	50000	26.1	18.7	350849	26.2	19.3	16532	26.3	15.8	120454	26.3	19.5
377364	25.9	18.4	51536	26.1	17.4	336844	26.1	19.2	158868	26.2	19.3	524702	26.3	21.2	30960	26.3	19.0
420493	25.9	18.8	268149	26.1	20.3	423628	26.1	19.8	405980	26.2	21.0	438369	26.3	21.2	311276	26.3	20.6
42873	26.0	18.9	293386	26.1	19.9	153973	26.1	19.8	165716	26.2	19.5	503894	26.3	21.6	67800	26.3	19.6
436298	26.0	20.9	199129	26.1	20.4	2959	26.1	17.2	490632	26.2	21.6	529094	26.3	22.8	495378	26.3	20.5
250614	26.0	20.9	215996	26.1	19.5	489140	26.1	20.7	260897	26.2	19.9	410401	26.3	20.3	140612	26.3	19.4
453321	26.0	19.9	381563	26.1	20.9	526624	26.1	21.7	119237	26.2	19.5	430789	26.3	21.4	3704	26.3	15.2
492927	26.0	19.2	493574	26.1	20.0	90202	26.1	18.6	61651	26.2	20.0	46232	26.3	17.2	294523	26.3	19.6
529836	26.0	20.1	509598	26.1	21.2	239537	26.1	18.7	62277	26.2	18.5	33767	26.3	17.3	259807	26.3	20.0
338249	26.0	19.1	359504	26.1	18.9	379822	26.1	20.0	276497	26.2	20.0	91492	26.3	18.9	125688	26.3	19.0
387572	26.0	21.2	430737	26.1	18.7	298886	26.1	19.2	42363	26.2	17.3	116799	26.3	17.9	362064	26.4	21.2
496287	26.0	22.6	105473	26.1	19.9	456797	26.1	20.0	10837	26.2	16.9	27042	26.3	17.2	354191	26.4	19.8
125576	26.0	19.8	136884	26.1	19.5	177607	26.1	19.6	489620	26.2	21.5	378726	26.3	18.6	496338	26.4	20.2
160763	26.0	19.2	530127	26.1	22.0	166996	26.1	18.6	85865	26.2	19.2	37447	26.3	19.1	467123	26.4	20.6
133921	26.0	19.7	123636	26.1	18.7	544632	26.1	21.9	333428	26.2	19.3	236822	26.3	20.9	303843	26.4	20.0
204423	26.0	19.0	540759	26.1	20.4	495187	26.1	22.4	339380	26.2	21.1	328493	26.3	19.4	470807	26.4	19.8
20477	26.0	16.9	310257	26.1	19.1	4036	26.1	17.3	33605	26.2	18.4	85369	26.3	18.6	135494	26.4	19.7
463208	26.0	20.1	241810	26.1	20.0	522464	26.1	20.6	145446	26.2	18.8	499149	26.3	21.8	132826	26.4	19.7
215675	26.0	20.9	462841	26.1	20.9	30508	26.1										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
323108	26.4	18.8	76861	26.4	17.6	87587	26.5	19.2	192577	26.6	20.6	394379	26.7	19.5	88319	26.7	17.8
167083	26.4	20.7	144728	26.4	19.4	257848	26.5	18.6	519323	26.6	20.8	309355	26.7	20.8	344222	26.7	19.9
117633	26.4	19.7	377899	26.4	20.7	95243	26.5	18.5	74398	26.6	18.1	279316	26.7	19.3	234802	26.7	19.5
159950	26.4	20.6	205895	26.4	19.8	145731	26.5	19.0	370975	26.6	20.1	531521	26.7	21.2	15632	26.7	17.5
281951	26.4	19.8	116224	26.4	19.6	116940	26.5	18.6	355220	26.6	20.6	148573	26.7	19.0	235115	26.7	18.4
447404	26.4	21.7	453353	26.4	21.1	389753	26.5	20.5	2785	26.6	16.4	530558	26.7	20.1	258249	26.7	19.7
533817	26.4	20.0	542502	26.4	19.8	523851	26.5	20.6	101842	26.6	19.1	463447	26.7	19.4	304059	26.7	19.4
131919	26.4	19.6	189214	26.4	20.1	123382	26.5	19.4	502202	26.6	20.8	437146	26.7	20.8	177924	26.7	19.5
371647	26.4	19.8	130700	26.4	19.4	491979	26.5	21.2	30992	26.6	19.3	10156	26.7	17.0	67160	26.7	19.4
502960	26.4	21.4	192874	26.5	19.4	523838	26.5	20.8	380140	26.6	21.0	403281	26.7	20.9	395116	26.7	20.6
211103	26.4	18.9	212088	26.5	19.2	213422	26.5	19.9	299244	26.6	19.7	501167	26.7	20.9	448130	26.7	21.6
222409	26.4	18.9	141343	26.5	20.5	299826	26.5	20.1	531464	26.6	21.1	524335	26.7	21.2	380912	26.7	21.1
206327	26.4	18.6	423721	26.5	21.5	196733	26.5	20.5	402085	26.6	20.8	157470	26.7	20.3	42654	26.7	19.2
6749	26.4	17.1	275502	26.5	21.1	274540	26.5	19.6	439185	26.6	20.1	87420	26.7	18.9	162054	26.7	17.8
76749	26.4	19.0	502100	26.5	21.7	277002	26.5	19.2	214633	26.6	19.4	277714	26.7	20.9	541000	26.7	20.8
161527	26.4	20.6	8321	26.5	16.4	513951	26.5	21.1	500522	26.6	20.8	455277	26.7	21.2	222280	26.7	19.1
8965	26.4	16.6	381451	26.5	20.3	92480	26.5	17.4	480446	26.6	19.3	30949	26.7	19.1	117075	26.7	18.5
55520	26.4	16.9	22766	26.5	16.4	490559	26.5	20.1	153734	26.6	20.1	119934	26.7	19.6	372996	26.7	20.2
312949	26.4	21.0	402858	26.5	20.9	329144	26.5	21.8	149916	26.6	20.1	507309	26.7	21.0	503857	26.7	21.9
227295	26.4	20.5	11093	26.5	18.0	456737	26.5	21.5	43499	26.6	18.5	323440	26.7	19.3	540299	26.7	19.0
303677	26.4	19.7	89234	26.5	18.6	507824	26.5	21.4	474866	26.6	20.5	278966	26.7	20.4	228365	26.7	20.2
117030	26.4	19.4	51234	26.5	18.5	333745	26.5	19.9	390258	26.6	21.1	62714	26.7	19.0	304753	26.7	19.7
37728	26.4	17.2	111673	26.5	19.6	116956	26.5	17.9	391345	26.6	21.6	437135	26.7	18.7	376669	26.7	22.1
524378	26.4	20.8	325984	26.5	20.6	452666	26.5	20.3	392886	26.6	19.9	458902	26.7	21.6	465674	26.7	20.2
106656	26.4	18.6	276986	26.5	19.5	460359	26.5	20.0	507433	26.6	20.1	83512	26.7	18.3	390439	26.7	20.0
417232	26.4	20.1	246299	26.5	20.6	245534	26.5	19.6	248667	26.6	19.4	82962	26.7	18.4	159985	26.7	19.6
330162	26.4	20.8	341836	26.5	20.0	289913	26.5	19.2	361736	26.6	20.6	505229	26.7	21.4	52422	26.7	18.9
292162	26.4	20.0	384257	26.5	20.5	135155	26.5	19.6	71190	26.6	18.9	500266	26.7	20.0	171950	26.7	19.4
259068	26.4	21.5	355301	26.5	19.6	299768	26.5	19.4	9019	26.6	16.7	369059	26.7	20.4	438413	26.7	20.6
146165	26.4	20.0	227621	26.5	21.3	230103	26.5	21.0	425248	26.6	20.7	53113	26.7	18.3	31311	26.8	18.7
535874	26.4	21.2	264514	26.5	20.1	480246	26.5	20.2	457156	26.6	21.7	368286	26.7	19.6	477762	26.8	23.8
202491	26.4	20.9	184049	26.5	18.9	471889	26.5	20.6	221151	26.6	20.0	36733	26.7	18.0	185872	26.8	19.3
274607	26.4	19.8	146045	26.5	18.0	3228	26.5	16.3	120128	26.6	18.4	473623	26.7	20.5	136403	26.8	18.1
230386	26.4	18.7	37388	26.5	19.4	65602	26.5	19.5	164858	26.6	19.9	390618	26.7	21.3	201117	26.8	19.5
401563	26.4	20.4	144856	26.5	18.8	287976	26.5	20.4	313738	26.6	20.8	344507	26.7	20.0	477994	26.8	21.0
53349	26.4	17.7	105369	26.5	19.0	238464	26.5	21.0	401867	26.6	19.9	519685	26.7	20.6	337836	26.8	19.6
438414	26.4	20.7	157079	26.5	17.8	200896	26.5	19.3	469224	26.6	20.2	54252	26.7	17.8	371074	26.8	21.2
228387	26.4	20.7	109708	26.5	19.5	506774	26.5	21.8	29154	26.6	18.3	318765	26.7	19.4	62467	26.8	18.9
300070	26.4	19.7	435415	26.5	19.8	6370	26.5	16.0	246456	26.6	19.2	391387	26.7	21.5	124639	26.8	19.2
180954	26.4	19.2	286384	26.5	19.4	292906	26.5	20.2	326963	26.6	19.5	418273	26.7	19.3	513640	26.8	20.7
173299	26.4	20.2	68638	26.5	18.7	62567	26.6	18.5	344263	26.6	20.2	325325	26.7	19.7	174636	26.8	19.3
249427	26.4	19.0	323846	26.5	20.1	41865	26.6	18.1	327760	26.6	21.4	29569	26.7	17.8	101801	26.8	19.1
524260	26.4	21.1	449168	26.5	19.7	540644	26.6	21.8	4600	26.6	16.0	408784	26.7	20.6	266990	26.8	20.4
51494	26.4	17.2	210955	26.5	20.6	140919	26.6	20.0	253271	26.6	20.1	527108	26.7	20.7	227472	26.8	19.5
285136	26.4	20.3	491253	26.5	21.6	205034	26.6	19.0	65814	26.6	18.8	267378	26.7	20.6	461222	26.8	21.4
434589	26.4	19.8	181717	26.5	19.7	345727	26.6	20.4	458912	26.6	21.7	450243	26.7	19.1	436729	26.8	19.7
272755	26.4	21.0	472962	26.5	19.9	417820	26.6	21.3	245180	26.6	19.7	55877	26.7	17.9	147390	26.8	19.7
73887	26.4	18.7	351706	26.5	20.2	12545	26.6	17.6	425261	26.6	20.1	219858	26.7	20.6	182419	26.8	19.7
106043	26.4	20.1	151018	26.5	20.4	235559	26.6	20.4	66934	26.6	17.3	430896	26.7	21.4	128417	26.8	19.0
134711	26.4	19.7	433379	26.5	21.4	95049	26.6	18.7	58137	26.6	18.6	166704	26.7	19.6	216848	26.8	19.7
457210	26.4	21.2	439721	26.5	20.0	374134	26.6	19.9	72335	26.6	18.7	65294	26.7	19.0	302171	26.8	20.7
367849	26.4	20.9	137182	26.5	18.3	208259	26.6	19.5	453262	26.6	21.3	109043	26.7	18.3	211465	26.8	21.1
236124	26.4	20.5	127136	26.5	20.2	498029	26.6	20.0	3234	26.6	17.3	110959	26.7	18.7	191851	26.8	19.3
200819	26.4	20.1	268450	26.5	20.0	78310	26.6	19.3	34796	26.6	19.4	430321	26.7	20.2	82044	26.8	19.0
390255	26.4	19.2	401188	26.5	19.9	33385	26.6	17.3	161609	26.6	20.1	130459	26.7	18.7	89036	26.8	18.9
196213	26.4	20.0	465134	26.5	20.9	466324	26.6	18.5	281083	26.6	20.8	200876	26.7	20.5	84285	26.8	19.6
402864	26.4	22.2	459004	26.5	20.9	232354	26.6	21.2	30300	26.6	18.1	343063	26.7	20.8	430228	26.8	19.8
413830	26.4	21.0	502197	26.5	19.8	82499	26.6	18.5	185992	26.6	19.9	375652	26.7	20.6	106023	26.8	19.9
526559	26.4	20.7	534213	26.5	21.3	383963	26.6	20.3	211893	26.6	18.9	229069	26.7	19.2	383723	26.8	20.6
502490	26.4	20.2	304729	26.5	20.7	488056	26.6	22.2	456585	26.6	19.1	366425	26.7	21.3	57414	26.8	18.4
437634	26.4	20.4	105566	26.5	19.3	24796	26.6	17.6	122794	26.6	20.2	373209	26.7	20.1	150987	26.8	19.8
89200	26.4	16.8	397853	26.5	20.4	278662	26.6	20.2	477594	26.6	20.6	237342	26.7	21.2	333191	26.8	19.0
464185	26.4	19.7	53147	26.5	16.8	2908	26.6	16.3	222364	26.6	20.1	293585	26.7	19.6	289982	26.8	19.6
105474	26.4	19.5	396265	26.5	21.6	133407	26.6	19.4	167031	26.6	19.9	498098	26.7	21.4	425290	26.8	20.4
158337	26.4	18.6	298877	26.5	20.3	166650	26.6	20.1	217916	26.6	19.6	201712	26.7	19.8	106331	26.8	19.0
133140	26.4	19.3	308204	26.5	20.1	522616	26.6	20.5	299489	26.6	19.7	119670	26.7	19.9	406429	26.8	20.1
315473	26.4	20.4	199025	26.5	19.8	181623	26.6	19.8	159253	26.6	19.3	17390	26.7	18.9	129153	26.8	19.6
162542	26.4	19.3	182036	26.5	18.5	360721	26.6	20.9	532034	26.6	21.4	349021	26.7	20.7	146918	26.8	18.4
407869	26.4	20.8	292769	26.5	20.5	11653	26.6										



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
135347	26.8	20.4	111304	26.8	19.7	44479	26.9	18.3	463704	27.0	20.1	284309	27.1	20.3	106966	27.2	19.8
95637	26.8	19.5	93765	26.8	19.0	142977	26.9	20.4	526842	27.0	22.0	134629	27.1	19.6	119567	27.2	19.7
17419	26.8	18.4	19128	26.8	19.1	276304	26.9	19.9	482088	27.0	20.1	228382	27.1	20.3	285137	27.2	21.5
387329	26.8	20.4	326979	26.8	18.8	540297	26.9	22.3	421929	27.0	20.0	169284	27.1	19.4	148010	27.2	20.4
239666	26.8	20.6	325206	26.8	20.0	21415	26.9	16.2	192716	27.0	19.6	298849	27.1	20.3	9136	27.2	16.2
114724	26.8	19.3	312114	26.8	21.0	305281	26.9	20.4	436722	27.0	20.6	532504	27.1	21.9	304453	27.2	20.0
500701	26.8	21.4	293038	26.8	19.7	505152	26.9	21.0	403200	27.0	21.9	281061	27.1	19.8	533296	27.2	22.2
146818	26.8	19.1	350990	26.8	20.1	7350	26.9	18.6	407329	27.0	20.6	71303	27.1	18.7	419381	27.2	20.2
325100	26.8	19.4	224349	26.8	20.0	10874	26.9	16.7	30745	27.0	18.9	413214	27.1	21.3	497105	27.2	21.8
304522	26.8	20.7	18720	26.8	17.4	310890	26.9	19.7	300899	27.0	21.0	242730	27.1	19.1	378719	27.2	21.4
381517	26.8	20.6	210002	26.8	19.1	529223	26.9	22.5	358497	27.0	18.8	522834	27.1	20.1	133229	27.2	19.5
348824	26.8	20.8	405362	26.9	21.2	537371	26.9	20.7	209629	27.0	19.8	109818	27.1	19.1	302442	27.2	20.2
187924	26.8	20.0	119070	26.9	22.7	501915	26.9	20.1	521155	27.0	20.9	458832	27.1	19.9	278103	27.2	20.2
192573	26.8	18.2	35402	26.9	17.6	374071	26.9	21.4	87532	27.0	19.4	469415	27.1	20.6	530765	27.2	20.8
166697	26.8	17.9	190675	26.9	19.9	522707	26.9	20.5	451000	27.0	20.6	528896	27.1	21.7	96475	27.2	18.7
246549	26.8	20.8	253016	26.9	19.7	226804	26.9	19.8	523044	27.0	21.4	367793	27.1	21.2	430305	27.2	19.4
157871	26.8	17.4	297426	26.9	19.3	297620	26.9	20.1	111329	27.0	19.0	228887	27.1	19.3	330427	27.2	20.1
538792	26.8	20.7	375237	26.9	20.4	385490	26.9	19.8	194471	27.0	20.4	386560	27.1	20.8	177955	27.2	20.3
453864	26.8	20.9	293681	26.9	19.4	242609	26.9	20.0	466731	27.0	20.8	357306	27.1	21.7	499894	27.2	21.1
96928	26.8	19.2	373431	26.9	20.5	193097	26.9	18.8	230922	27.0	20.2	458931	27.1	20.7	98479	27.2	17.2
191158	26.8	18.9	114622	26.9	19.9	212155	26.9	18.7	55832	27.0	19.3	210023	27.1	19.1	233533	27.2	20.0
442717	26.8	19.8	292272	26.9	20.6	419845	26.9	20.4	538757	27.0	21.4	41496	27.1	17.2	188046	27.2	19.3
283505	26.8	19.7	257425	26.9	20.1	514543	26.9	20.3	534097	27.0	20.9	522752	27.1	20.9	456770	27.2	20.8
18236	26.8	17.0	356877	26.9	19.9	429753	26.9	20.8	238101	27.0	20.2	469761	27.1	20.0	119367	27.2	18.7
525658	26.8	20.5	88801	26.9	18.3	345062	26.9	20.3	517187	27.0	21.2	212049	27.1	19.8	458781	27.2	20.6
346559	26.8	20.3	179366	26.9	20.6	72402	26.9	19.2	314166	27.0	20.9	335176	27.1	20.4	350537	27.2	21.0
181069	26.8	19.2	435985	26.9	21.4	93916	26.9	18.5	299189	27.0	20.0	474012	27.1	20.1	29411	27.2	18.1
429851	26.8	20.2	200742	26.9	19.4	473205	26.9	21.1	63685	27.0	19.1	417781	27.1	21.3	101626	27.2	19.0
209560	26.8	20.4	530612	26.9	21.0	452205	26.9	21.6	128962	27.0	19.3	106971	27.1	18.8	326038	27.2	20.2
30872	26.8	16.4	89884	26.9	18.5	228669	26.9	19.4	364597	27.0	20.9	497310	27.1	21.1	252941	27.2	19.7
213906	26.8	19.9	303364	26.9	20.0	463223	26.9	21.1	156293	27.0	19.1	209980	27.1	18.6	356515	27.2	19.8
424606	26.8	20.4	539452	26.9	20.5	372927	26.9	20.5	23925	27.0	17.2	356544	27.1	20.2	364696	27.2	20.4
298812	26.8	19.3	362106	26.9	21.0	9090	26.9	16.9	507586	27.0	21.2	89531	27.1	19.2	272914	27.2	20.8
432941	26.8	19.7	16921	26.9	17.5	198655	26.9	19.6	138854	27.0	20.6	350153	27.1	19.5	320051	27.2	19.8
525673	26.8	20.2	109518	26.9	18.8	176480	26.9	19.6	537290	27.0	20.2	474560	27.1	22.4	490939	27.2	20.6
349496	26.8	20.0	303877	26.9	21.0	352126	26.9	19.4	53600	27.0	17.2	212907	27.1	19.8	463209	27.2	19.4
292859	26.8	20.3	286606	26.9	19.1	156186	26.9	17.6	264607	27.0	21.1	312086	27.1	18.9	519300	27.2	20.3
371147	26.8	21.4	500977	26.9	20.3	472572	26.9	20.5	58764	27.0	19.6	258256	27.1	20.5	529386	27.2	21.1
348883	26.8	21.0	175359	26.9	20.3	378685	26.9	18.7	277725	27.0	20.5	111138	27.1	19.8	170097	27.2	19.4
58706	26.8	19.1	486777	26.9	19.6	423520	26.9	21.1	159063	27.0	19.5	387019	27.1	20.5	204172	27.2	20.4
529232	26.8	21.5	179519	26.9	20.2	127447	26.9	18.8	110423	27.0	18.6	300873	27.1	21.3	392490	27.2	19.4
155406	26.8	19.8	423516	26.9	22.2	412842	26.9	20.1	156332	27.1	19.6	457096	27.1	21.3	221173	27.2	21.2
167644	26.8	19.5	26543	26.9	16.2	103648	26.9	17.7	472732	27.1	20.8	84772	27.1	19.5	465403	27.2	20.3
462926	26.8	21.4	54507	26.9	18.2	212008	26.9	19.6	329669	27.1	17.0	106077	27.1	19.2	267487	27.2	20.5
284846	26.8	20.5	534815	26.9	21.7	146428	26.9	18.5	428306	27.1	21.0	112835	27.1	19.9	289986	27.2	19.8
526705	26.8	21.4	126700	26.9	18.6	107423	26.9	19.9	505613	27.1	20.3	327383	27.1	20.4	166626	27.2	18.9
318054	26.8	20.5	492329	26.9	21.1	433481	26.9	20.2	114208	27.1	19.1	144801	27.1	20.1	514108	27.2	20.6
368238	26.8	20.4	197592	26.9	17.6	480481	26.9	19.3	377858	27.1	20.3	167835	27.1	20.5	308411	27.2	20.8
499790	26.8	20.4	347932	26.9	20.1	162601	26.9	19.1	272918	27.1	19.9	509072	27.1	21.9	499184	27.2	20.7
434193	26.8	21.2	239909	26.9	18.1	435044	26.9	19.7	93510	27.1	19.0	412939	27.1	20.9	265796	27.2	19.9
210739	26.8	20.6	57260	26.9	19.4	35335	26.9	17.9	57914	27.1	19.4	163372	27.1	19.6	132414	27.2	18.2
538163	26.8	20.8	533667	26.9	20.2	123460	26.9	18.7	62929	27.1	19.2	230091	27.1	20.4	148757	27.2	19.2
449181	26.8	21.4	215786	26.9	18.1	517561	26.9	22.0	350046	27.1	19.5	5637	27.1	18.4	237796	27.2	19.2
412911	26.8	20.6	131881	26.9	19.1	504765	26.9	20.7	111423	27.1	18.3	425194	27.1	21.6	315965	27.2	18.5
66779	26.8	17.4	417160	26.9	20.9	380463	26.9	22.0	205689	27.1	18.6	537226	27.1	19.7	236706	27.2	20.5
70231	26.8	18.2	205598	26.9	19.2	283399	26.9	19.4	272805	27.1	19.5	11488	27.1	18.2	542199	27.2	20.9
192268	26.8	20.6	426809	26.9	19.4	496393	26.9	20.3	467519	27.1	20.8	243768	27.1	19.3	541561	27.2	21.1
2978	26.8	16.0	252975	26.9	19.6	425081	26.9	21.7	536286	27.1	21.1	106506	27.1	19.5	464959	27.2	21.1
194798	26.8	18.6	239571	26.9	20.9	501464	26.9	20.5	381315	27.1	20.5	100631	27.1	18.3	310290	27.2	18.9
32635	26.8	18.4	509249	26.9	21.0	159857	26.9	16.7	341008	27.1	20.5	64006	27.1	18.1	406692	27.2	20.3
185403	26.8	19.8	156138	26.9	20.3	294399	26.9	19.7	512246	27.1	20.2	327455	27.1	19.1	469075	27.2	20.6
132314	26.8	18.6	262699	26.9	19.4	170261	26.9	18.6	50378	27.1	17.1	16897	27.1	17.7	418024	27.2	20.8
502027	26.8	20.7	117701	26.9	18.8	35637	26.9	17.8	9022	27.1	17.4	87656	27.1	18.7	422798	27.2	20.0
42265	26.8	17.4	3960	26.9	17.1	231909	26.9	20.9	193993	27.1	19.3	381611	27.1	19.7	289393	27.2	21.1
431076	26.8	21.8	505894	26.9	20.5	453311	26.9	21.4	47967	27.1	18.2	542640	27.1	20.7	140159	27.2	20.1
336990	26.8	20.2	215012	26.9	19.6	439127	26.9	21.0	326106	27.1	20.9	276301	27.1	21.2	260435	27.2	19.5
345973	26.8	20.2	194927	26.9	20.7	151035	26.9	20.7	266932	27.1	19.8	360581	27.2	20.3	20628	27.2	19.0
378798	26.8	20.8	57314	26.9	18.0	391785	26.9	18.8	175636	27.1	19.7	349398	27.2	21.2	90867	27.2	19.2
479313	26.8	20.0	384561	26.9	18.7												

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
468997	27.2	20.9	230648	27.3	19.7	387283	27.4	19.7	200804	27.5	19.7	160712	27.5	19.0	217065	27.6	21.1
96221	27.2	18.3	300107	27.3	19.4	107161	27.4	19.9	473060	27.5	20.5	400455	27.5	20.4	89902	27.6	18.6
10262	27.2	15.4	502183	27.3	20.6	345615	27.4	21.0	149872	27.5	20.3	372633	27.5	21.6	332119	27.6	21.1
471859	27.2	20.6	207853	27.3	21.2	470228	27.4	21.7	45129	27.5	18.1	78379	27.5	19.0	109387	27.6	19.6
169153	27.2	19.4	228354	27.3	19.1	520099	27.4	20.8	534482	27.5	20.2	379765	27.5	20.9	386479	27.6	20.9
44069	27.2	17.4	48633	27.3	18.8	82806	27.4	17.5	13332	27.5	18.2	295203	27.5	19.9	426734	27.6	21.5
105808	27.2	19.2	238076	27.3	19.5	376533	27.4	20.3	25440	27.5	18.2	99959	27.5	17.1	135296	27.6	19.5
223245	27.2	19.9	376276	27.3	20.1	527765	27.4	20.2	222783	27.5	20.1	384234	27.5	21.6	182628	27.6	21.7
347765	27.2	19.8	435349	27.3	21.0	456418	27.4	19.6	146463	27.5	19.9	504542	27.5	20.0	128500	27.6	19.3
534119	27.2	19.8	307459	27.3	20.5	459269	27.4	21.5	215453	27.5	20.2	286757	27.5	19.3	102084	27.6	19.1
394368	27.3	20.2	178063	27.3	19.9	235060	27.4	19.0	83807	27.5	17.7	183144	27.5	19.8	379012	27.6	20.1
245506	27.3	19.1	468772	27.3	20.3	295886	27.4	21.9	303326	27.5	20.3	538697	27.5	21.0	365	27.6	13.7
406532	27.3	21.9	104254	27.3	18.0	134691	27.4	17.9	489966	27.5	20.1	31740	27.5	18.3	108760	27.6	19.1
491915	27.3	19.6	497491	27.3	20.0	117090	27.4	19.0	381544	27.5	20.4	237205	27.5	20.3	199450	27.6	20.1
489469	27.3	19.5	3711	27.3	17.3	73093	27.4	18.6	140653	27.5	19.5	136728	27.5	20.1	500246	27.6	20.3
501211	27.3	20.2	534263	27.3	19.2	533327	27.4	21.1	227606	27.5	20.3	205276	27.5	20.6	140213	27.6	20.4
374114	27.3	20.7	300227	27.3	19.9	466470	27.4	20.2	77789	27.5	19.2	513081	27.5	21.2	148841	27.6	18.9
433371	27.3	20.7	73146	27.3	18.7	382431	27.4	19.8	377684	27.5	20.1	90321	27.5	18.1	139817	27.6	20.0
379419	27.3	20.5	4405	27.3	15.8	286645	27.4	19.3	308196	27.5	20.4	203447	27.6	20.0	67995	27.6	18.4
185919	27.3	20.0	81054	27.3	17.9	219524	27.4	19.1	427031	27.5	20.6	271819	27.6	20.3	454518	27.6	19.8
519475	27.3	20.3	242988	27.3	19.4	10466	27.4	18.1	237058	27.5	20.3	334837	27.6	19.9	73169	27.6	18.3
300250	27.3	19.8	388385	27.3	20.6	402949	27.4	21.8	472982	27.5	20.2	185279	27.6	19.5	332345	27.6	21.1
436031	27.3	20.0	506057	27.3	20.4	209611	27.4	20.3	309058	27.5	21.0	299832	27.6	20.5	56403	27.6	18.8
424930	27.3	20.7	381442	27.3	19.4	390702	27.4	20.2	526543	27.5	22.4	89065	27.6	18.7	530724	27.6	21.9
448242	27.3	21.2	272116	27.3	19.1	206232	27.4	19.1	390605	27.5	21.0	10123	27.6	16.1	365124	27.6	21.4
351649	27.3	20.3	133853	27.3	19.3	62692	27.4	19.0	531048	27.5	19.8	354086	27.6	21.6	119683	27.6	17.2
456645	27.3	19.6	349035	27.3	21.2	168917	27.4	19.6	202256	27.5	20.0	292096	27.6	20.7	437229	27.6	20.3
219655	27.3	19.2	28936	27.3	18.2	513613	27.4	20.3	49322	27.5	18.2	296740	27.6	20.0	51248	27.6	18.6
354077	27.3	21.7	258476	27.3	20.6	522262	27.4	20.9	167165	27.5	19.9	390270	27.6	20.5	116794	27.6	17.3
463102	27.3	20.9	538618	27.3	21.1	167791	27.4	19.3	160720	27.5	18.7	238437	27.6	19.6	322120	27.6	21.2
299902	27.3	20.4	51364	27.3	18.9	422535	27.4	19.9	34220	27.5	18.9	544680	27.6	19.9	261485	27.6	20.2
179457	27.3	20.3	331554	27.3	20.0	39651	27.4	18.8	216105	27.5	20.4	390321	27.6	20.3	543400	27.6	20.8
393011	27.3	20.8	147234	27.3	18.3	524718	27.4	21.3	284149	27.5	20.2	303789	27.6	18.9	119800	27.6	19.7
366230	27.3	21.1	502022	27.3	21.2	457029	27.4	21.9	222668	27.5	20.1	419812	27.6	21.3	306139	27.6	19.8
182038	27.3	19.2	221378	27.3	21.8	225583	27.4	19.8	165275	27.5	17.8	525228	27.6	21.7	486942	27.6	18.3
125671	27.3	20.0	87738	27.3	18.4	293221	27.4	20.3	525177	27.5	20.8	58212	27.6	18.8	388004	27.6	21.1
161083	27.3	18.9	197826	27.3	19.6	503250	27.4	20.6	480262	27.5	20.5	408074	27.6	20.5	291405	27.6	18.6
502823	27.3	21.0	313035	27.3	18.8	455488	27.4	19.9	288593	27.5	20.2	400250	27.6	19.0	159831	27.6	18.8
247529	27.3	19.8	33539	27.3	18.8	383388	27.4	20.5	278758	27.5	20.0	46073	27.6	18.3	71696	27.6	18.8
234623	27.3	18.4	527105	27.3	21.2	317185	27.4	20.0	140151	27.5	18.5	198400	27.6	19.8	496558	27.6	21.3
374087	27.3	18.6	437111	27.3	20.7	176541	27.4	19.5	253940	27.5	20.7	223257	27.6	19.0	340853	27.6	20.0
175991	27.3	20.2	430088	27.3	20.7	457022	27.4	21.5	473199	27.5	20.0	96087	27.6	19.9	103339	27.6	17.8
312178	27.3	18.6	326719	27.3	19.7	390173	27.4	21.1	489450	27.5	21.9	109271	27.6	18.5	138574	27.7	19.2
526843	27.3	22.2	205959	27.3	19.1	60167	27.4	17.6	52649	27.5	18.5	102848	27.6	19.2	505314	27.7	22.2
291301	27.3	19.9	429751	27.3	18.7	508491	27.4	19.6	95107	27.5	18.6	436024	27.6	19.6	231871	27.7	21.0
310342	27.3	18.4	424696	27.3	20.7	210770	27.4	20.6	300974	27.5	21.0	221658	27.6	20.3	224649	27.7	19.9
313859	27.3	20.9	530626	27.4	20.2	293898	27.4	21.1	527812	27.5	21.1	359200	27.6	20.2	388770	27.7	19.7
144155	27.3	20.1	391728	27.4	20.3	318279	27.4	20.8	54051	27.5	17.7	372012	27.6	19.5	531751	27.7	21.9
392918	27.3	21.3	359076	27.4	19.5	424632	27.4	20.1	127954	27.5	19.4	506773	27.6	21.6	18624	27.7	18.5
389739	27.3	20.7	460173	27.4	20.9	505073	27.4	21.0	36822	27.5	18.5	8525	27.6	17.4	33013	27.7	18.0
432101	27.3	20.2	219642	27.4	19.0	285487	27.4	21.0	149530	27.5	19.5	528334	27.6	20.5	169192	27.7	20.1
522789	27.3	20.7	229127	27.4	19.8	56978	27.4	18.2	265605	27.5	20.8	531787	27.6	21.2	348886	27.7	20.7
411246	27.3	21.2	188718	27.4	20.2	391372	27.4	20.4	301467	27.5	20.5	104124	27.6	19.7	168352	27.7	20.4
99368	27.3	19.2	227607	27.4	19.7	125809	27.4	19.0	303313	27.5	19.3	16241	27.6	17.7	38452	27.7	17.7
451722	27.3	20.1	534686	27.4	21.3	208724	27.4	19.7	397381	27.5	19.8	502829	27.6	20.0	298317	27.7	19.3
525214	27.3	18.5	504585	27.4	21.4	138161	27.4	18.8	466441	27.5	20.1	231892	27.6	20.5	171287	27.7	18.7
466334	27.3	19.9	180842	27.4	19.7	341058	27.4	18.8	544994	27.5	19.9	496894	27.6	22.0	508290	27.7	20.6
361148	27.3	19.3	377919	27.4	19.9	190393	27.4	20.2	538383	27.5	21.3	221522	27.6	19.6	522507	27.7	20.9
2269	27.3	16.0	451891	27.4	19.5	392165	27.4	20.1	388765	27.5	21.4	297916	27.6	21.5	528946	27.7	21.2
517629	27.3	20.6	106393	27.4	19.2	49643	27.4	18.5	11566	27.5	18.0	39906	27.6	19.2	238393	27.7	19.9
35857	27.3	17.0	21613	27.4	17.9	462210	27.4	22.0	303430	27.5	20.8	82331	27.6	17.0	508834	27.7	20.0
417702	27.3	19.6	200595	27.4	20.1	143479	27.4	19.0	500722	27.5	21.8	254838	27.6	18.7	90232	27.7	19.9
387871	27.3	23.7	454651	27.4	20.3	325094	27.4	20.8	512984	27.5	21.7	168557	27.6	19.6	320367	27.7	19.7
39461	27.3	18.8	81254	27.4	17.6	417483	27.4	20.5	492472	27.5	19.9	352751	27.6	21.2	210532	27.7	20.8
498160	27.3	21.1	170299	27.4	19.0	526249	27.4	22.1	10792	27.5	16.9	333425	27.6	17.5	216627	27.7	20.2
18844	27.3	18.7	158339	27.4	19.1	70386	27.4	17.7	106924	27.5	20.0	300879	27.6	19.7	225982	27.7	20.0
419763	27.3	20.6	488094	27.4	19.9	539900	27.4	19.6	501452	27.5	21.2	192787	27.6	20.9	185550	27.7	19.2
269490	27.3	20.8	489679	27.4	22.4	341156	27.4	19.5	506709	27.5	20.9	52378	27.6	19.4	374115	27.7	20.7
327850	27.3	21.1	347315	27.4	20.5	30											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
148283	27.7	19.3	305720	27.7	19.6	541708	27.8	21.1	292271	27.9	20.2	307999	27.9	19.5	527208	28.0	21.0
370195	27.7	22.2	454228	27.7	20.1	146946	27.8	19.5	10260	27.9	17.0	519120	27.9	20.2	81701	28.0	18.3
128493	27.7	19.9	8194	27.7	16.1	379320	27.8	21.3	290937	27.9	20.4	200809	27.9	20.6	534874	28.0	21.6
450390	27.7	20.2	368972	27.7	20.8	229922	27.8	19.5	19612	27.9	16.0	402932	27.9	21.6	303463	28.0	20.3
534037	27.7	21.5	502069	27.7	20.6	138470	27.8	18.5	439689	27.9	20.7	525912	27.9	21.4	409217	28.0	21.4
182224	27.7	20.6	345661	27.7	20.5	392464	27.8	20.6	367167	27.9	21.2	99911	27.9	18.8	241600	28.0	18.1
124570	27.7	18.6	239455	27.8	19.7	488116	27.8	19.8	341331	27.9	20.8	18804	27.9	15.9	178738	28.0	19.3
60951	27.7	17.8	539119	27.8	20.8	286594	27.8	19.4	4355	27.9	16.4	125704	27.9	19.1	206351	28.0	18.6
210122	27.7	19.7	261131	27.8	21.0	245062	27.8	19.6	15967	27.9	16.9	375962	27.9	20.5	298990	28.0	20.4
260806	27.7	21.2	346244	27.8	21.5	382734	27.8	20.8	458853	27.9	21.5	228349	27.9	20.4	265029	28.0	17.6
174444	27.7	19.2	542744	27.8	21.3	320733	27.8	20.4	59890	27.9	17.7	171214	27.9	20.1	192948	28.0	20.1
338444	27.7	20.8	325787	27.8	20.4	19541	27.8	16.7	538544	27.9	20.6	138821	27.9	19.6	200167	28.0	20.4
399939	27.7	19.3	212740	27.8	20.1	526686	27.8	21.4	270481	27.9	21.6	332366	27.9	21.0	128873	28.0	19.6
120625	27.7	19.5	54888	27.8	18.6	145476	27.8	19.4	474751	27.9	20.7	125580	27.9	19.1	432346	28.0	21.9
233118	27.7	20.5	372003	27.8	20.3	216446	27.8	20.3	362962	27.9	20.1	359116	27.9	19.7	353300	28.0	18.8
425797	27.7	20.1	19679	27.8	17.0	107278	27.8	19.9	163364	27.9	16.6	463315	27.9	20.9	115031	28.0	18.9
37612	27.7	18.0	128763	27.8	18.6	41473	27.8	19.3	352809	27.9	20.1	69511	27.9	19.1	476709	28.0	21.1
148551	27.7	19.4	359791	27.8	20.0	47898	27.8	18.4	514535	27.9	20.5	43304	27.9	17.7	367364	28.0	19.9
423756	27.7	20.5	416008	27.8	21.0	16750	27.8	17.0	394794	27.9	18.5	242808	27.9	19.1	362679	28.0	19.9
292828	27.7	19.8	375327	27.8	20.3	498542	27.8	20.9	179527	27.9	21.4	315544	27.9	20.6	238748	28.0	19.5
188574	27.7	20.6	165248	27.8	19.3	141357	27.8	19.7	455222	27.9	20.9	170422	27.9	19.6	190368	28.0	20.8
249662	27.7	20.1	163360	27.8	18.8	200718	27.8	20.7	359660	27.9	20.5	57437	27.9	19.6	432051	28.0	20.9
78277	27.7	19.8	544664	27.8	21.3	369889	27.8	20.1	103742	27.9	19.8	436664	27.9	21.4	500609	28.0	22.5
239490	27.7	20.0	313779	27.8	18.8	150930	27.8	19.7	374548	27.9	20.6	181488	27.9	21.2	321130	28.0	20.8
307526	27.7	19.4	66204	27.8	19.5	44082	27.8	17.3	316994	27.9	19.7	214548	27.9	19.0	404385	28.0	21.4
95514	27.7	19.4	371113	27.8	21.1	190040	27.8	19.2	98461	27.9	19.5	142746	27.9	19.7	299824	28.0	20.9
453294	27.7	21.9	538007	27.8	20.6	485451	27.8	20.7	330695	27.9	20.7	108092	27.9	19.9	470014	28.0	20.5
439498	27.7	21.0	140075	27.8	19.4	338433	27.8	20.2	454675	27.9	21.0	224431	27.9	19.8	421562	28.0	20.0
35190	27.7	18.0	499778	27.8	20.4	303857	27.8	20.3	430177	27.9	20.7	299872	27.9	20.2	490475	28.0	21.4
415185	27.7	21.0	522221	27.8	21.3	430015	27.8	21.3	438869	27.9	21.1	439341	27.9	21.4	499091	28.1	20.9
8071	27.7	17.2	260872	27.8	19.4	237554	27.8	19.6	205696	27.9	20.9	93584	27.9	19.0	498944	28.1	21.1
346915	27.7	19.9	56038	27.8	19.4	231855	27.8	20.0	295415	27.9	19.9	18346	27.9	17.4	351930	28.1	19.5
196411	27.7	20.5	455637	27.8	20.8	66694	27.8	19.1	183453	27.9	18.9	130671	27.9	19.1	376444	28.1	20.1
238543	27.7	20.0	153175	27.8	19.3	2223	27.8	16.1	291474	27.9	18.6	86379	27.9	18.8	69269	28.1	19.0
226882	27.7	20.3	301198	27.8	20.7	526504	27.8	20.5	178152	27.9	20.1	496839	27.9	20.7	461979	28.1	21.3
499054	27.7	20.4	491677	27.8	21.0	274572	27.8	19.3	185521	27.9	20.8	65992	27.9	18.5	354105	28.1	20.7
2770	27.7	15.1	335658	27.8	21.3	506377	27.8	19.2	375837	27.9	20.0	429066	27.9	19.9	436013	28.1	20.6
489069	27.7	21.6	488548	27.8	20.4	157702	27.8	17.7	484549	27.9	20.4	17316	27.9	18.4	1719	28.1	15.5
501890	27.7	21.1	241713	27.8	20.9	462657	27.8	20.6	238898	27.9	20.3	117312	27.9	19.6	140824	28.1	19.6
368697	27.7	19.5	416693	27.8	20.1	472044	27.8	21.0	200882	27.9	19.3	15943	27.9	17.3	270073	28.1	19.9
531791	27.7	21.3	114362	27.8	18.9	388292	27.8	21.0	278741	27.9	20.6	139968	27.9	20.2	286151	28.1	19.8
227464	27.7	19.9	172857	27.8	19.4	511705	27.8	20.7	61494	27.9	18.3	265603	27.9	20.6	102736	28.1	19.2
104188	27.7	19.2	62144	27.8	19.2	9198	27.8	17.2	437658	27.9	20.6	538785	27.9	21.0	82134	28.1	16.8
58295	27.7	17.8	453266	27.8	20.0	232581	27.8	20.2	141705	27.9	18.0	354831	27.9	21.1	512487	28.1	21.0
519656	27.7	21.4	332367	27.8	18.7	519374	27.8	21.0	297823	27.9	19.9	70421	27.9	18.0	420393	28.1	20.4
512338	27.7	21.0	500538	27.8	21.5	61742	27.8	18.3	135679	27.9	18.5	168266	27.9	19.0	125837	28.1	20.6
108649	27.7	18.4	177095	27.8	20.0	463596	27.8	18.7	340890	27.9	19.9	475868	27.9	19.4	105396	28.1	19.1
194743	27.7	20.5	357142	27.8	21.4	42681	27.8	17.8	131542	27.9	20.1	273050	27.9	19.9	89104	28.1	19.4
370999	27.7	19.8	103065	27.8	18.6	98284	27.8	18.4	198098	27.9	20.2	382888	27.9	19.8	345338	28.1	19.9
315524	27.7	20.0	499187	27.8	20.8	525231	27.8	22.5	14246	27.9	16.9	100644	27.9	19.5	505327	28.1	20.8
282653	27.7	20.0	462354	27.8	19.7	361580	27.8	20.0	279277	27.9	19.7	469425	27.9	20.8	235301	28.1	19.9
306792	27.7	22.5	69101	27.8	20.0	213595	27.8	18.8	299363	27.9	20.8	291232	27.9	20.9	368742	28.1	21.1
217968	27.7	19.9	460115	27.8	19.6	208705	27.8	18.6	356988	27.9	21.2	101641	27.9	19.1	388804	28.1	20.9
499221	27.7	21.2	350115	27.8	20.1	434798	27.8	20.8	490868	27.9	22.3	6007	27.9	18.2	279655	28.1	20.5
298928	27.7	20.7	497446	27.8	21.3	57333	27.8	19.4	353894	27.9	20.0	513021	28.0	21.2	528148	28.1	21.0
489028	27.7	21.2	81972	27.8	19.1	36962	27.8	18.8	289106	27.9	19.6	276400	28.0	17.8	533127	28.1	20.4
416113	27.7	20.6	345188	27.8	20.6	422780	27.8	21.1	213762	27.9	20.3	81637	28.0	17.9	41024	28.1	17.8
520002	27.7	21.7	106072	27.8	19.1	206023	27.8	20.0	484568	27.9	20.0	521288	28.0	20.9	64566	28.1	18.3
211560	27.7	18.8	145393	27.8	19.6	106297	27.9	18.8	2782	27.9	16.2	402975	28.0	20.2	125556	28.1	19.0
379266	27.7	20.1	205549	27.8	19.9	3999	27.9	16.0	375907	27.9	21.1	439799	28.0	19.7	475800	28.1	20.2
412200	27.7	20.7	265763	27.8	19.8	354850	27.9	21.2	224514	27.9	20.2	139996	28.0	20.3	152273	28.1	17.8
111611	27.7	18.2	139951	27.8	19.4	74423	27.9	18.9	403295	27.9	21.5	86349	28.0	19.3	352615	28.1	20.6
242991	27.7	19.8	207041	27.8	20.2	364580	27.9	21.0	52065	27.9	17.8	456981	28.0	22.2	400794	28.1	20.0
518413	27.7	19.4	162796	27.8	19.5	126884	27.9	19.1	81958	27.9	18.1	283922	28.0	19.0	532174	28.1	21.3
265604	27.7	19.4	222598	27.8	19.1	458744	27.9	20.6	147813	27.9	19.8	523867	28.0	20.6	467961	28.1	19.3
454581	27.7	21.0	345566	27.8	21.5	358760	27.9	20.8	19263	27.9	17.0	371993	28.0	19.2	528553	28.1	21.5
111551	27.7	19.7	54369	27.8	17.1	72137	27.9	18.3	45384	27.9	18.6	375946	28.0	20.2	388762	28.1	21.6
89378	27.7	19.5	150868	27.8	20.5	503011	27.9	20.1	115322	27.9	20.1	490680	28.0	19.5	434067	28.1	20.5
68702	27.7	18.0	263849	27.8	19.3	309396											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
40379	28.1	17.9	448185	28.2	21.6	338423	28.2	20.2	227489	28.3	20.5	402019	28.4	19.1	519199	28.4	20.0
130559	28.1	19.0	272946	28.2	19.7	51843	28.2	18.2	98769	28.3	19.2	424674	28.4	21.2	496071	28.4	20.8
386497	28.1	20.9	241160	28.2	19.4	508029	28.2	20.5	536000	28.3	22.0	153133	28.4	19.1	254533	28.4	18.7
240575	28.1	19.9	528405	28.2	21.4	33583	28.2	18.0	320667	28.3	20.3	122404	28.4	18.0	373226	28.4	20.3
239468	28.1	19.4	134642	28.2	20.0	187504	28.2	21.3	219691	28.3	20.3	208684	28.4	19.2	106053	28.4	17.6
461439	28.1	20.4	374377	28.2	20.4	302435	28.2	20.4	146167	28.3	19.0	420283	28.4	20.3	233343	28.4	20.7
391758	28.1	20.9	176024	28.2	20.1	400790	28.2	19.5	379454	28.3	20.6	346243	28.4	21.0	171552	28.4	18.3
272630	28.1	19.6	162801	28.2	19.6	402104	28.2	20.8	56715	28.3	16.6	12202	28.4	18.2	506708	28.4	21.8
297470	28.1	20.3	503637	28.2	19.7	535345	28.2	22.2	171825	28.3	20.2	222282	28.4	19.6	216163	28.4	20.5
62330	28.1	18.5	393357	28.2	21.0	501319	28.2	20.7	56745	28.3	18.3	361195	28.4	20.6	17441	28.4	17.6
52536	28.1	18.5	210347	28.2	19.3	533735	28.2	21.2	84192	28.3	20.4	346221	28.4	20.8	53858	28.4	18.8
134361	28.1	20.2	247174	28.2	21.0	176512	28.2	19.6	189792	28.3	19.7	8690	28.4	18.9	533889	28.4	21.2
52602	28.1	17.6	75019	28.2	19.0	351454	28.2	19.0	392870	28.3	22.0	245630	28.4	20.3	801	28.4	15.5
336342	28.1	19.8	66823	28.2	18.1	168298	28.2	19.3	514900	28.3	20.6	209914	28.4	18.7	96677	28.4	17.7
359162	28.1	20.2	98160	28.2	20.1	389801	28.2	19.3	138639	28.3	20.5	55396	28.4	18.4	383785	28.5	20.6
431878	28.1	21.3	199543	28.2	19.3	181568	28.2	20.8	10491	28.3	16.9	455339	28.4	18.6	310267	28.5	20.4
69847	28.1	18.9	472225	28.2	20.6	33306	28.2	18.3	497162	28.3	20.6	411998	28.4	21.1	141150	28.5	19.7
95265	28.1	20.2	329649	28.2	21.6	532897	28.2	20.9	531799	28.3	22.7	36681	28.4	18.4	301753	28.5	20.5
498736	28.1	21.1	495119	28.2	20.6	292459	28.2	20.3	377836	28.3	20.0	166868	28.4	19.6	362672	28.5	21.2
343152	28.1	20.2	540367	28.2	21.1	538498	28.2	21.4	540234	28.3	21.3	50745	28.4	17.8	535633	28.5	22.0
276723	28.1	19.3	278762	28.2	19.8	369328	28.2	18.6	56168	28.3	18.0	232530	28.4	19.3	496101	28.5	18.4
179665	28.1	20.2	165329	28.2	19.9	486039	28.3	20.4	119312	28.3	17.9	463722	28.4	20.4	507714	28.5	20.3
222507	28.1	19.6	470917	28.2	20.0	538611	28.3	19.7	447460	28.3	20.4	463638	28.4	19.0	528393	28.5	20.9
316743	28.1	20.3	518682	28.2	20.9	194525	28.3	20.0	72149	28.3	18.8	333435	28.4	18.8	178746	28.5	18.9
167871	28.1	19.8	539150	28.2	21.4	303929	28.3	19.7	12754	28.3	15.8	206252	28.4	20.3	135501	28.5	19.6
297912	28.1	21.4	492596	28.2	20.3	534199	28.3	21.0	401053	28.3	19.5	143622	28.4	19.3	386202	28.5	20.6
390820	28.1	19.2	132278	28.2	17.0	173343	28.3	20.2	525564	28.3	20.2	522853	28.4	20.6	206862	28.5	20.5
523553	28.1	21.1	69467	28.2	17.4	263464	28.3	18.8	374426	28.3	21.1	278698	28.4	20.1	394855	28.5	19.5
100622	28.1	19.6	217840	28.2	18.2	391285	28.3	20.9	232233	28.3	19.8	501152	28.4	20.8	245574	28.5	18.8
376239	28.1	20.4	248331	28.2	19.6	83310	28.3	19.5	378822	28.3	21.3	414218	28.4	19.9	477538	28.5	20.9
501955	28.1	20.9	109208	28.2	18.5	259043	28.3	19.3	4972	28.3	17.4	189790	28.4	19.6	315243	28.5	21.3
311040	28.1	20.0	210095	28.2	20.0	338420	28.3	20.8	98488	28.3	19.4	466564	28.4	21.2	258465	28.5	20.9
73390	28.1	18.2	523942	28.2	19.1	430037	28.3	20.9	4515	28.3	17.3	300104	28.4	21.3	416174	28.5	20.4
379979	28.1	20.4	371731	28.2	20.0	340226	28.3	19.1	472437	28.3	19.7	171378	28.4	18.1	502465	28.5	20.2
521229	28.1	20.4	148123	28.2	18.7	176557	28.3	19.1	357314	28.3	20.0	206135	28.4	18.9	349577	28.5	21.1
529135	28.1	22.2	320554	28.2	20.2	368990	28.3	20.6	177458	28.3	19.4	250606	28.4	19.9	452350	28.5	21.7
39374	28.1	18.8	495976	28.2	21.0	520141	28.3	20.4	120088	28.3	18.4	31108	28.4	18.1	373011	28.5	20.5
424195	28.1	20.3	117890	28.2	19.6	2916	28.3	15.9	437705	28.3	20.7	89120	28.4	18.1	502492	28.5	20.1
195353	28.1	19.2	386602	28.2	21.5	263421	28.3	19.7	298826	28.3	21.2	123799	28.4	18.8	154296	28.5	19.1
467019	28.1	18.9	457640	28.2	21.0	107433	28.3	19.9	502957	28.3	20.5	202915	28.4	18.2	28263	28.5	16.4
429284	28.1	20.9	279191	28.2	19.9	196306	28.3	18.6	198239	28.3	19.5	534987	28.4	21.9	291542	28.5	20.2
519699	28.1	22.4	10439	28.2	18.5	500705	28.3	21.2	346859	28.3	20.8	309448	28.4	19.2	92898	28.5	18.9
383727	28.1	21.0	296045	28.2	20.1	214829	28.3	19.1	175933	28.3	19.3	240556	28.4	19.3	396377	28.5	21.4
150342	28.1	19.2	226889	28.2	19.4	84750	28.3	19.1	89481	28.3	18.7	191923	28.4	19.3	296502	28.5	20.0
202806	28.1	19.0	4142	28.2	16.1	6880	28.3	16.5	201578	28.3	20.1	543745	28.4	21.0	390495	28.5	19.4
61045	28.1	18.4	390521	28.2	20.1	65334	28.3	18.7	365103	28.3	21.8	253270	28.4	20.2	501199	28.5	20.8
150734	28.1	19.9	40542	28.2	18.3	177490	28.3	20.5	284474	28.3	19.8	127534	28.4	19.3	18031	28.5	17.7
244121	28.1	20.1	418409	28.2	20.6	131959	28.3	18.7	480415	28.3	20.5	7315	28.4	17.0	34435	28.5	18.8
246116	28.1	20.0	277736	28.2	19.9	353542	28.3	21.5	506203	28.3	20.3	286332	28.4	21.4	284439	28.5	19.1
305025	28.1	19.6	104568	28.2	18.2	167840	28.3	19.6	102054	28.3	19.1	283956	28.4	19.1	372453	28.5	19.9
301789	28.1	19.3	352719	28.2	20.6	479568	28.3	20.4	91427	28.3	18.4	41017	28.4	18.1	209623	28.5	20.0
527737	28.1	21.2	252333	28.2	20.3	234452	28.3	20.0	122494	28.3	19.0	105933	28.4	20.0	167009	28.5	19.8
429628	28.1	20.7	478024	28.2	20.5	454159	28.3	21.1	474975	28.4	21.3	522715	28.4	20.7	239053	28.5	18.9
235712	28.1	20.3	434924	28.2	21.2	502272	28.3	20.5	465571	28.4	20.8	59108	28.4	18.4	22699	28.5	18.9
57300	28.1	20.4	421102	28.2	19.5	177655	28.3	18.6	154553	28.4	19.5	430156	28.4	21.8	202975	28.5	20.8
532211	28.1	21.8	162722	28.2	20.1	130874	28.3	19.6	530516	28.4	19.8	260968	28.4	20.6	215909	28.5	19.2
504412	28.1	20.7	94733	28.2	19.7	121910	28.3	17.7	235046	28.4	19.5	55508	28.4	18.5	390027	28.5	21.5
213254	28.1	20.2	224638	28.2	19.7	437678	28.3	20.5	153848	28.4	20.2	278735	28.4	20.4	384230	28.5	21.4
94556	28.1	17.0	217872	28.2	19.7	501056	28.3	20.8	316758	28.4	20.0	209372	28.4	20.3	315955	28.5	19.5
81533	28.1	18.7	233688	28.2	19.8	36322	28.3	18.3	508758	28.4	21.3	496885	28.4	20.3	176266	28.5	20.2
65163	28.1	17.7	106864	28.2	19.6	373509	28.3	19.8	287455	28.4	20.8	359103	28.4	19.2	508499	28.5	21.4
525294	28.1	19.5	530815	28.2	21.7	130642	28.3	18.7	359195	28.4	19.8	174523	28.4	19.4	122114	28.5	19.6
369585	28.1	20.0	187463	28.2	19.6	179492	28.3	21.4	107421	28.4	20.4	303914	28.4	20.0	525467	28.5	20.7
431124	28.1	20.5	273913	28.2	20.6	466561	28.3	21.2	56917	28.4	18.8	519588	28.4	21.0	144441	28.5	19.5
229494	28.1	18.4	427699	28.2	20.0	506991	28.3	21.1	264535	28.4	20.7	297894	28.4	20.3	532687	28.5	21.6
389180	28.2	21.6	1224	28.2	14.4	463701	28.3	21.0	240569	28.4	19.8	365150	28.4	20.3	461440	28.5	20.4
12259	28.2	15.8	475757	28.2	20.5	293283	28.3	21.1	99364	28.4	19.8	288902	28.4	19.7	205809	28.5	19.4
370700	28.2	18.8	257101	28.2	19.0	368211	28.3	19.7	283126	28.4	20.4	519678	28.4	20.6	457132	28.5	19.8
481901	28.2	18.3	117942	28.2	20.1	426211											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
494250	28.5	20.6	460496	28.6	19.2	456832	28.6	21.5	491772	28.7	21.7	224569	28.8	19.7	321231	28.8	20.7
510398	28.5	21.8	57585	28.6	19.4	153829	28.6	20.2	90980	28.7	18.7	473130	28.8	20.3	57591	28.8	19.6
463639	28.5	20.2	88881	28.6	19.1	340554	28.6	20.2	500022	28.7	20.2	5913	28.8	15.5	371198	28.8	20.7
383029	28.5	19.7	11588	28.6	18.2	329607	28.6	20.4	537747	28.7	21.4	170826	28.8	19.2	402849	28.8	21.9
372032	28.5	20.4	188353	28.6	20.1	349894	28.6	20.5	94343	28.7	18.8	103524	28.8	18.6	374163	28.8	21.1
118638	28.5	17.5	411766	28.6	20.6	471445	28.6	20.6	524687	28.7	21.5	535961	28.8	20.5	112014	28.8	19.6
473820	28.5	20.8	374156	28.6	19.1	372641	28.6	21.3	424659	28.7	20.8	536725	28.8	21.7	338325	28.8	18.8
502637	28.5	19.8	297502	28.6	19.7	319656	28.6	20.0	95631	28.7	20.0	213861	28.8	20.4	506084	28.8	20.6
347983	28.5	19.8	105160	28.6	17.4	307484	28.6	19.7	409187	28.7	21.0	352012	28.8	21.7	249073	28.8	20.3
526709	28.5	20.7	296383	28.6	18.8	417794	28.6	19.8	347650	28.7	20.7	542107	28.8	20.1	527793	28.8	21.3
328989	28.5	20.5	353582	28.6	20.3	491887	28.6	21.6	288697	28.7	20.2	434799	28.8	20.6	498972	28.8	21.6
71847	28.5	18.0	540364	28.6	20.7	173872	28.6	20.5	101011	28.7	18.2	352056	28.8	20.2	36061	28.8	18.8
164569	28.5	20.6	250114	28.6	18.5	407804	28.6	20.8	303511	28.7	21.1	326715	28.8	21.1	465959	28.8	20.1
174454	28.5	19.6	357077	28.6	20.0	167123	28.6	18.2	55167	28.7	18.7	491980	28.8	21.1	3182	28.8	15.8
140715	28.5	19.0	430021	28.6	21.2	156222	28.6	20.1	52384	28.7	17.6	260125	28.8	18.2	193550	28.8	19.8
526627	28.5	21.4	222767	28.6	19.9	525282	28.6	19.4	464881	28.7	20.3	176441	28.8	20.6	352118	28.8	19.0
434894	28.5	20.7	332552	28.6	18.6	160168	28.6	21.2	56953	28.7	18.7	98861	28.8	19.4	16585	28.8	17.2
65064	28.5	19.2	90731	28.6	17.2	462789	28.7	20.9	207760	28.7	20.0	307714	28.8	19.3	503007	28.8	20.5
275568	28.5	19.0	120427	28.6	19.7	98679	28.7	18.4	461531	28.7	21.6	90096	28.8	19.7	494756	28.8	20.9
405930	28.5	20.4	468704	28.6	21.2	200710	28.7	18.9	497840	28.7	21.3	306469	28.8	18.3	350821	28.9	21.2
328922	28.5	20.8	449516	28.6	20.8	19238	28.7	17.9	290373	28.7	21.5	211851	28.8	19.9	359190	28.9	19.1
309254	28.5	20.8	140872	28.6	19.9	300184	28.7	20.3	122339	28.7	18.0	459970	28.8	20.1	294437	28.9	21.2
303211	28.5	19.6	486021	28.6	20.9	513359	28.7	20.6	537934	28.7	20.5	457531	28.8	21.0	431271	28.9	19.4
99688	28.5	19.0	324519	28.6	20.6	396109	28.7	21.1	3667	28.7	17.7	386598	28.8	20.3	303339	28.9	19.6
283490	28.5	20.2	200892	28.6	20.7	57007	28.7	19.0	508283	28.7	20.6	527060	28.8	21.0	38769	28.9	19.0
305632	28.5	19.9	248939	28.6	20.0	27655	28.7	16.4	176515	28.7	20.1	253013	28.8	18.9	368784	28.9	19.1
453290	28.5	19.9	377452	28.6	20.2	307650	28.7	18.8	495840	28.7	20.1	93121	28.8	19.3	470262	28.9	20.8
524380	28.5	19.7	382618	28.6	20.8	206633	28.7	17.7	29384	28.7	17.8	417163	28.8	20.0	286094	28.9	20.3
134252	28.5	19.7	407882	28.6	21.7	807	28.7	15.2	109097	28.7	18.6	106658	28.8	20.1	141189	28.9	19.7
57281	28.5	17.8	531673	28.6	22.8	405503	28.7	21.0	311472	28.7	20.2	211889	28.8	20.0	81000	28.9	17.8
431007	28.5	20.9	3025	28.6	15.2	398683	28.7	21.5	498795	28.7	21.5	43946	28.8	18.3	443713	28.9	21.2
472629	28.5	20.5	437630	28.6	21.4	279271	28.7	20.7	522399	28.7	20.7	243145	28.8	18.3	8273	28.9	17.9
273729	28.5	21.0	200043	28.6	20.8	4175	28.7	17.0	382767	28.7	19.9	518333	28.8	20.2	470943	28.9	20.6
172805	28.5	20.4	202657	28.6	20.1	530876	28.7	21.0	354802	28.7	20.3	503472	28.8	21.0	435791	28.9	21.1
435970	28.5	21.0	462250	28.6	20.9	172590	28.7	18.9	327880	28.7	19.8	100694	28.8	19.9	153367	28.9	19.4
522799	28.5	20.2	372572	28.6	21.4	307385	28.7	20.5	208437	28.7	19.5	257022	28.8	20.0	286182	28.9	19.8
253257	28.5	20.5	472867	28.6	20.4	145020	28.7	18.5	231706	28.7	19.7	112163	28.8	18.9	477956	28.9	21.7
308519	28.5	20.5	534958	28.6	21.1	27897	28.7	18.1	535287	28.7	22.3	298295	28.8	19.7	266286	28.9	20.2
269800	28.5	19.9	361	28.6	15.0	192822	28.7	20.0	27856	28.7	18.7	169556	28.8	20.1	392253	28.9	20.5
431387	28.5	20.2	313450	28.6	20.1	504153	28.7	22.1	196812	28.7	19.4	28408	28.8	18.0	409951	28.9	20.8
1942	28.5	16.3	267196	28.6	19.3	468646	28.7	20.9	20778	28.7	18.6	338396	28.8	20.6	303803	28.9	20.1
13691	28.5	16.6	259553	28.6	20.1	221148	28.7	20.4	536872	28.7	21.0	15618	28.8	18.5	343256	28.9	21.7
260752	28.5	19.6	83783	28.6	19.2	286048	28.7	20.0	519410	28.7	21.0	131991	28.8	19.6	143546	28.9	19.9
40841	28.5	17.8	409018	28.6	21.2	418029	28.7	20.9	141461	28.7	19.9	533664	28.8	19.5	526569	28.9	21.4
276003	28.5	19.7	110378	28.6	18.4	454537	28.7	18.9	439811	28.7	20.8	86512	28.8	18.4	526872	28.9	21.3
217941	28.5	19.2	87522	28.6	17.8	379580	28.7	20.1	258102	28.7	20.9	402847	28.8	19.6	304758	28.9	20.3
145806	28.5	18.9	426048	28.6	19.4	421325	28.7	19.7	537224	28.7	21.1	349936	28.8	20.2	114804	28.9	19.2
401412	28.5	21.5	379360	28.6	20.1	102665	28.7	19.2	317851	28.7	19.3	372703	28.8	21.2	381502	28.9	21.2
155278	28.5	19.4	383677	28.6	20.6	497081	28.7	21.6	516635	28.7	20.6	489412	28.8	21.6	12355	28.9	17.6
172158	28.5	19.3	435580	28.6	21.1	186158	28.7	19.8	429631	28.7	20.9	503066	28.8	20.5	295576	28.9	20.4
380464	28.5	20.3	95250	28.6	19.5	393028	28.7	21.0	352433	28.7	20.7	384115	28.8	19.9	166660	28.9	20.6
303942	28.5	19.8	376762	28.6	20.9	97107	28.7	19.5	119631	28.8	19.5	202281	28.8	19.4	402816	28.9	20.1
234533	28.5	18.5	59088	28.6	19.9	188368	28.7	19.3	123501	28.8	19.2	434984	28.8	20.4	2674	28.9	15.7
191090	28.5	19.2	297767	28.6	20.4	346127	28.7	19.8	142995	28.8	19.8	341235	28.8	20.5	308118	28.9	20.2
461388	28.5	20.0	458517	28.6	20.5	70691	28.7	17.9	92515	28.8	18.4	182657	28.8	21.9	346256	28.9	20.0
187819	28.5	20.2	540631	28.6	20.7	278253	28.7	22.0	534793	28.8	21.6	427481	28.8	21.7	70251	28.9	18.7
365145	28.5	21.4	97827	28.6	17.9	195570	28.7	18.4	161758	28.8	20.3	165538	28.8	20.7	307885	28.9	19.0
50304	28.6	16.9	540140	28.6	20.7	124476	28.7	19.6	535374	28.8	21.3	106274	28.8	17.9	329357	28.9	20.0
127199	28.6	19.9	23332	28.6	17.6	150187	28.7	19.5	395124	28.8	20.2	459544	28.8	21.0	29958	28.9	18.5
450527	28.6	21.3	421427	28.6	20.0	286501	28.7	20.9	79048	28.8	18.4	5540	28.8	16.5	140212	28.9	19.3
94517	28.6	19.3	302352	28.6	20.8	326696	28.7	19.4	227594	28.8	20.0	156439	28.8	20.9	96385	28.9	18.3
314734	28.6	20.7	292410	28.6	19.8	525245	28.7	21.8	52834	28.8	18.7	94893	28.8	19.8	341524	28.9	19.8
143501	28.6	20.0	346163	28.6	21.0	176009	28.7	20.0	178208	28.8	19.5	131866	28.8	19.9	524339	28.9	22.2
424725	28.6	20.1	177340	28.6	20.3	111309	28.7	19.5	157561	28.8	19.3	461245	28.8	20.0	109060	28.9	20.1
179330	28.6	20.5	433396	28.6	20.4	260787	28.7	20.8	106258	28.8	19.0	141089	28.8	20.2	292391	28.9	20.2
120337	28.6	18.8	371040	28.6	19.5	535760	28.7	20.7	176490	28.8	20.5	119068	28.8	22.5	294379	28.9	19.7
498625	28.6	21.4	146949	28.6	20.3	122210	28.7	17.9	28020	28.8	17.3	513528	28.8	21.3	495695	28.9	20.6
513561	28.6	20.5	501190	28.6	20.7	32756	28.7	17.9	62165	28.8	19.2	258793	28.8	19.7	533110	28.9	22.6
235000	28.6	20.6	470180	28.6	21.7	271706											

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
427363	28.9	20.3	51825	28.9	18.7	369399	29.0	20.5	493157	29.1	21.7	506206	29.2	18.7	353804	29.3	20.8
485138	28.9	19.8	5748	28.9	18.0	195408	29.0	19.6	275445	29.1	19.5	163706	29.2	18.4	364458	29.3	20.0
278788	28.9	19.6	167103	28.9	19.7	540852	29.0	20.6	463108	29.1	21.1	415981	29.2	22.3	510332	29.3	21.6
351627	28.9	19.0	172367	28.9	19.7	199389	29.0	21.4	437192	29.1	20.1	30942	29.2	18.7	339406	29.3	20.3
494230	28.9	20.5	229444	28.9	19.6	279569	29.0	20.8	326242	29.1	20.4	190137	29.2	19.4	102277	29.3	20.6
488717	28.9	21.0	68364	28.9	19.0	291183	29.0	20.2	397326	29.1	21.3	206885	29.2	18.9	438426	29.3	19.9
370099	28.9	20.2	471435	28.9	21.4	127926	29.0	18.6	417561	29.1	21.1	439318	29.2	20.9	165426	29.3	19.9
39441	28.9	19.5	467514	28.9	21.9	228507	29.0	19.9	507539	29.1	21.3	138744	29.2	20.2	540661	29.3	20.7
313871	28.9	20.6	37742	28.9	20.1	353703	29.0	20.1	314265	29.1	19.2	425950	29.2	20.5	537880	29.3	20.1
39327	28.9	19.1	271850	28.9	19.3	503241	29.0	19.7	402848	29.1	20.2	508573	29.2	19.5	402929	29.3	21.2
20956	28.9	17.8	64436	28.9	18.7	303973	29.1	18.9	7407	29.1	18.0	203638	29.2	19.6	300894	29.3	21.3
136805	28.9	19.3	455595	28.9	22.0	190382	29.1	19.4	286410	29.1	20.5	50407	29.2	18.6	422413	29.3	20.5
125434	28.9	19.0	166825	28.9	19.0	221854	29.1	19.2	29534	29.1	18.9	133024	29.2	19.2	69410	29.3	18.4
208383	28.9	20.7	362113	28.9	20.4	87063	29.1	17.0	517549	29.1	20.6	526641	29.2	20.8	534010	29.3	20.0
23207	28.9	18.9	248691	28.9	19.0	138521	29.1	19.4	39724	29.1	18.3	170694	29.2	19.9	359801	29.3	20.2
425120	28.9	20.5	238322	28.9	19.8	392642	29.1	20.6	238357	29.1	19.5	23113	29.2	17.8	90061	29.3	19.8
126949	28.9	19.0	505256	28.9	21.0	519636	29.1	21.0	380161	29.1	16.5	294726	29.2	20.9	397107	29.3	20.4
450440	28.9	21.7	399556	28.9	20.5	232539	29.1	19.5	197013	29.1	19.2	129147	29.2	19.2	424787	29.3	20.6
49575	28.9	18.3	392824	28.9	19.8	508285	29.1	21.0	116711	29.1	19.5	387398	29.2	20.2	377419	29.3	20.3
159376	28.9	19.5	498355	28.9	21.3	195453	29.1	18.5	461721	29.1	20.2	226619	29.2	19.4	376373	29.3	19.8
349108	28.9	20.9	248376	28.9	19.4	472856	29.1	19.7	349493	29.1	22.3	233676	29.2	20.0	23999	29.3	18.0
217090	28.9	19.7	527452	28.9	22.6	519629	29.1	21.3	397879	29.1	20.6	272934	29.2	20.1	39291	29.3	18.3
238811	28.9	18.8	267392	28.9	21.1	199296	29.1	19.8	137312	29.1	20.2	372622	29.2	20.1	170218	29.3	20.4
411301	28.9	20.6	526174	29.0	20.6	403534	29.1	20.0	98818	29.1	19.5	362664	29.2	21.0	178701	29.3	19.9
36779	28.9	16.0	450287	29.0	20.2	521239	29.1	20.9	66592	29.1	18.7	143407	29.2	21.2	376315	29.3	20.9
488962	28.9	21.6	268779	29.0	19.7	129751	29.1	20.3	491695	29.1	21.9	203458	29.2	19.8	437703	29.3	21.0
144280	28.9	20.0	14665	29.0	15.1	27057	29.1	18.5	499156	29.1	21.2	362143	29.2	20.0	289920	29.3	20.8
501512	28.9	21.2	109686	29.0	19.5	50774	29.1	18.2	242912	29.1	19.4	182204	29.2	20.4	497128	29.3	19.6
463145	28.9	21.4	209007	29.0	19.5	198956	29.1	18.7	242796	29.1	20.0	140925	29.2	19.8	538310	29.3	20.4
126101	28.9	18.6	406897	29.0	21.6	402937	29.1	19.7	410765	29.2	19.7	533743	29.2	21.5	419854	29.3	20.7
510608	28.9	20.6	502549	29.0	20.8	61619	29.1	18.7	109997	29.2	19.4	295290	29.2	18.5	202293	29.3	21.2
184509	28.9	20.0	191048	29.0	19.1	341477	29.1	19.4	513814	29.2	21.1	54065	29.2	18.4	458893	29.3	21.0
191098	28.9	18.9	147756	29.0	19.6	296936	29.1	19.4	213882	29.2	19.4	437715	29.2	20.9	242746	29.3	18.9
207116	28.9	20.0	49400	29.0	18.3	299278	29.1	19.3	433831	29.2	20.5	190490	29.2	19.0	416046	29.3	20.4
218723	28.9	20.4	226315	29.0	19.5	174051	29.1	20.2	537817	29.2	21.0	198312	29.2	19.7	154401	29.3	19.5
408282	28.9	21.1	483004	29.0	20.8	60029	29.1	17.8	186616	29.2	20.7	406235	29.2	22.4	472381	29.3	20.8
454128	28.9	21.1	41697	29.0	19.0	312226	29.1	21.0	540713	29.2	21.9	479073	29.2	20.9	377847	29.3	20.4
64803	28.9	18.5	500263	29.0	19.3	534851	29.1	20.6	469431	29.2	21.1	1603	29.2	14.8	37699	29.3	19.3
433234	28.9	20.1	346184	29.0	20.8	187899	29.1	18.6	129946	29.2	19.3	544916	29.2	21.2	541553	29.3	19.4
396610	28.9	20.3	445978	29.0	21.3	543440	29.1	19.8	267219	29.2	19.2	173501	29.2	19.2	222602	29.3	19.7
451431	28.9	21.2	186435	29.0	17.5	459896	29.1	20.1	122257	29.2	18.5	429217	29.2	21.1	519418	29.3	20.0
162734	28.9	17.8	229860	29.0	19.9	484400	29.1	21.6	483564	29.2	21.3	395699	29.2	22.5	530926	29.3	20.9
135034	28.9	19.1	56864	29.0	19.1	390970	29.1	20.1	297710	29.2	20.1	155781	29.2	18.9	522918	29.3	20.4
524407	28.9	19.8	400282	29.0	21.0	28266	29.1	17.3	473718	29.2	20.7	98687	29.2	17.2	321179	29.3	20.8
305586	28.9	20.9	173978	29.0	19.8	381617	29.1	20.6	99681	29.2	18.7	208218	29.2	19.1	483515	29.3	21.0
359041	28.9	21.6	245561	29.0	19.7	190299	29.1	19.8	410751	29.2	19.6	300180	29.2	21.1	231520	29.3	20.0
528599	28.9	20.4	300016	29.0	21.3	274032	29.1	21.8	105855	29.2	19.2	29389	29.2	17.6	363559	29.3	20.3
42870	28.9	18.1	187428	29.0	18.9	344264	29.1	20.9	419837	29.2	21.4	406601	29.2	20.3	243196	29.3	20.3
354530	28.9	19.4	138056	29.0	20.1	544757	29.1	19.5	203522	29.2	20.1	391735	29.2	21.9	469280	29.3	21.1
38187	28.9	18.1	402861	29.0	21.0	129144	29.1	19.1	351585	29.2	20.0	116738	29.2	18.6	527439	29.3	21.1
56119	28.9	18.4	312076	29.0	19.3	277728	29.1	19.8	528463	29.2	20.7	304584	29.2	21.0	388372	29.3	20.9
46477	28.9	18.0	474106	29.0	19.9	424009	29.1	20.7	6794	29.2	16.1	446987	29.2	20.7	55653	29.3	19.5
91866	28.9	18.7	469743	29.0	20.7	228259	29.1	21.1	276160	29.2	18.4	215046	29.2	20.5	348847	29.3	20.1
256180	28.9	20.4	386300	29.0	20.9	350205	29.1	19.4	129601	29.2	20.0	345677	29.2	20.5	518136	29.3	20.6
468054	28.9	21.3	28661	29.0	18.0	419774	29.1	20.8	345647	29.2	21.8	280205	29.2	19.7	530084	29.3	21.0
280384	28.9	20.1	387254	29.0	20.8	503856	29.1	21.6	496993	29.2	20.8	490640	29.2	21.4	146236	29.3	19.4
196622	28.9	19.0	232491	29.0	18.9	189215	29.1	20.3	294795	29.2	19.8	415561	29.2	20.5	54435	29.3	18.1
213196	28.9	19.9	223634	29.0	18.3	286464	29.1	21.3	340723	29.2	21.9	498565	29.2	19.5	163088	29.3	19.0
214248	28.9	19.9	491981	29.0	20.3	404977	29.1	19.9	389713	29.2	20.2	534488	29.2	20.8	521181	29.3	20.7
395132	28.9	20.5	57172	29.0	18.4	136949	29.1	19.2	51939	29.2	18.4	245986	29.3	19.4	353659	29.3	20.3
238902	28.9	20.6	471159	29.0	18.9	89514	29.1	18.0	36108	29.2	17.0	102074	29.3	18.8	347903	29.3	20.3
187982	28.9	19.6	153620	29.0	19.1	51003	29.1	19.1	107427	29.2	19.1	301792	29.3	20.1	182773	29.3	21.3
538580	28.9	21.0	331360	29.0	21.4	423623	29.1	20.5	45267	29.2	19.4	461148	29.3	21.0	524851	29.3	20.1
457621	28.9	21.8	159349	29.0	20.4	242440	29.1	18.8	157808	29.2	19.6	394389	29.3	20.8	186517	29.3	20.6
382208	28.9	19.8	505082	29.0	22.4	46855	29.1	17.2	11554	29.2	17.2	81268	29.3	18.7	420696	29.3	20.3
389816	28.9	20.1	505419	29.0	20.5	423576	29.1	21.0	486071	29.2	20.9	350999	29.3	20.8	309415	29.3	19.0
125811	28.9	19.5	221080	29.0	20.4	502316	29.1	20.8	141405	29.2	20.4	109123	29.3	19.3	538844	29.3	21.2
299062	28.9	20.2	125703	29.0	17.9	466294	29.1	20.8	423785	29.2	21.9	250636	29.3	19.4	532172	29.3	21.1
523890	28.9	20.9	125052	29.0	1												

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
67324	29.4	18.8	537114	29.4	20.9	127880	29.5	19.3	538271	29.6	21.0	530740	29.6	21.3	334770	29.7	19.6
141510	29.4	19.1	369287	29.4	20.8	451234	29.5	21.1	214425	29.6	19.9	303451	29.6	21.0	263921	29.7	19.6
105051	29.4	19.1	480143	29.4	20.1	353463	29.5	19.5	167054	29.6	19.0	14051	29.6	16.4	472893	29.7	20.0
348829	29.4	21.2	53439	29.4	17.8	468747	29.5	21.1	297891	29.6	19.0	235198	29.6	19.3	436019	29.7	20.5
489063	29.4	20.7	91262	29.4	18.5	180554	29.5	20.1	421856	29.6	19.6	332516	29.6	20.1	365874	29.7	21.2
370980	29.4	21.7	500649	29.4	22.4	354834	29.5	20.9	526563	29.6	22.7	520260	29.6	21.6	374131	29.7	20.9
306603	29.4	19.5	485085	29.4	19.1	525866	29.5	22.1	391741	29.6	22.0	437815	29.6	20.6	299992	29.7	20.8
437090	29.4	19.8	259225	29.4	19.4	254060	29.5	19.3	416064	29.6	19.4	62591	29.6	19.2	229676	29.7	20.1
507321	29.4	22.3	240879	29.4	20.5	187049	29.5	19.7	20200	29.6	17.6	283547	29.6	19.8	293457	29.7	21.8
239808	29.4	19.7	291303	29.4	20.8	110609	29.5	20.0	521221	29.6	20.2	325199	29.6	18.5	457596	29.7	20.5
42497	29.4	19.6	506692	29.4	22.7	275953	29.5	20.1	280761	29.6	20.5	420289	29.6	20.8	290995	29.7	19.7
82667	29.4	19.0	34934	29.4	18.4	320313	29.5	20.0	442473	29.6	20.5	249156	29.6	19.6	460803	29.7	20.8
329571	29.4	21.0	505062	29.4	21.9	25318	29.5	17.9	356814	29.6	20.7	506052	29.6	20.3	290052	29.7	20.1
45539	29.4	18.3	323125	29.4	20.3	193294	29.5	18.7	437145	29.6	19.9	531662	29.6	21.3	371035	29.7	21.3
415073	29.4	21.1	112045	29.4	17.3	84629	29.5	19.5	533730	29.6	20.3	171539	29.6	19.4	538423	29.7	20.0
357148	29.4	19.5	395393	29.4	21.1	57195	29.5	19.7	280288	29.6	19.6	18909	29.6	18.7	416130	29.7	19.8
210147	29.4	20.1	162549	29.4	20.2	37349	29.5	18.8	495421	29.6	20.3	472599	29.6	19.2	535217	29.7	21.2
401857	29.4	22.7	108734	29.4	18.5	117888	29.5	19.1	341485	29.6	20.6	203651	29.6	20.4	491067	29.7	20.9
160893	29.4	19.1	484545	29.4	20.9	1549	29.5	15.2	341540	29.6	20.0	492892	29.6	19.7	238460	29.7	19.6
385583	29.4	20.9	402541	29.4	20.1	465112	29.5	22.1	289222	29.6	21.8	348906	29.6	20.7	535077	29.7	21.2
276974	29.4	19.2	36200	29.4	17.8	60986	29.5	17.5	530783	29.6	21.5	422797	29.6	22.4	517692	29.7	21.2
114762	29.4	18.4	398794	29.4	20.9	72946	29.5	17.7	292335	29.6	21.3	534955	29.6	21.2	287566	29.7	20.9
429005	29.4	19.8	384554	29.4	21.0	110572	29.5	19.0	461604	29.6	20.3	24654	29.6	16.3	292353	29.7	20.1
389187	29.4	20.9	346207	29.4	19.8	407809	29.5	20.3	261774	29.6	20.2	49723	29.6	16.7	530065	29.7	21.0
425305	29.4	20.4	266369	29.4	21.2	65949	29.5	18.2	6941	29.6	17.3	144798	29.6	20.0	390628	29.7	20.7
512414	29.4	20.7	380980	29.4	22.0	55521	29.5	17.5	372666	29.6	21.0	318119	29.6	19.0	32828	29.7	18.9
80061	29.4	17.5	538531	29.4	20.9	485047	29.5	21.0	312273	29.6	20.4	17560	29.6	19.2	179409	29.7	20.6
486044	29.4	21.2	208649	29.4	21.6	235629	29.5	18.7	351911	29.6	20.4	104368	29.6	19.3	304566	29.7	21.4
211525	29.4	19.1	102512	29.4	19.7	344357	29.5	20.9	119296	29.6	19.7	531566	29.6	20.9	432254	29.7	21.2
472314	29.4	19.4	412135	29.4	19.6	196609	29.5	18.7	401102	29.6	19.6	529500	29.6	19.6	31292	29.7	19.1
496704	29.4	20.5	387809	29.4	19.2	461980	29.5	19.9	184097	29.6	20.2	351550	29.6	20.1	372629	29.7	21.0
259511	29.4	20.0	421609	29.4	20.8	38757	29.5	18.5	28095	29.6	18.0	141329	29.6	20.1	274396	29.7	20.0
99625	29.4	18.4	352086	29.4	20.6	306225	29.5	20.0	39586	29.6	18.9	185682	29.6	20.9	206956	29.7	19.3
437701	29.4	21.4	140706	29.4	19.5	263700	29.5	19.9	45653	29.6	17.9	235017	29.6	20.4	466284	29.7	20.6
53114	29.4	18.0	391737	29.4	20.7	447849	29.5	21.1	194161	29.6	19.1	34344	29.6	18.1	215049	29.7	18.8
304125	29.4	19.7	297285	29.5	20.7	197330	29.5	20.2	137041	29.6	19.1	209612	29.6	20.2	201885	29.7	19.3
432442	29.4	20.5	433246	29.5	20.2	509001	29.5	20.8	504265	29.6	21.6	220341	29.6	19.3	116367	29.7	18.0
224354	29.4	19.9	365879	29.5	21.5	447198	29.5	21.3	525103	29.6	19.2	336308	29.6	20.4	174149	29.7	19.4
522077	29.4	19.9	24808	29.5	18.5	326681	29.5	21.0	499792	29.6	20.8	307938	29.6	18.9	199679	29.7	19.8
178745	29.4	19.7	259293	29.5	20.6	163042	29.5	18.8	377171	29.6	20.6	33538	29.7	17.8	282492	29.7	19.8
297881	29.4	21.0	460546	29.5	20.5	429692	29.5	20.3	499866	29.6	19.9	213264	29.7	18.9	146229	29.7	20.1
274691	29.4	20.1	129264	29.5	20.0	458762	29.5	20.0	172560	29.6	18.9	457425	29.7	20.3	354096	29.7	21.0
160901	29.4	20.4	260916	29.5	20.4	317485	29.5	20.4	325271	29.6	20.4	450803	29.7	21.3	277362	29.7	19.9
306713	29.4	20.3	239394	29.5	21.0	349607	29.5	20.5	29816	29.6	18.2	203591	29.7	20.6	377354	29.7	21.0
222300	29.4	19.7	412107	29.5	19.3	43330	29.5	17.4	27209	29.6	18.3	166234	29.7	19.0	305297	29.7	19.7
185329	29.4	21.3	465125	29.5	21.5	205319	29.5	19.5	311238	29.6	20.1	94899	29.7	19.5	119772	29.7	19.6
140893	29.4	19.7	144250	29.5	19.7	76177	29.5	17.4	450549	29.6	22.1	94060	29.7	19.6	53041	29.7	16.9
170201	29.4	18.8	16399	29.5	17.7	68749	29.5	17.4	453403	29.6	21.3	439820	29.7	20.2	195511	29.7	20.5
506318	29.4	20.4	203850	29.5	20.0	257291	29.5	19.1	384999	29.6	20.3	138738	29.7	19.6	350592	29.7	20.4
96465	29.4	19.2	19065	29.5	18.1	505210	29.5	20.7	419524	29.6	19.9	508676	29.7	19.7	269049	29.7	19.5
462158	29.4	20.4	171475	29.5	19.4	118204	29.5	20.2	170963	29.6	20.3	501228	29.7	20.2	209661	29.7	19.8
506882	29.4	21.2	341640	29.5	21.1	176475	29.5	19.3	17311	29.6	17.1	47362	29.7	17.8	28212	29.7	19.3
498036	29.4	20.5	498402	29.5	21.0	294743	29.5	21.2	43898	29.6	18.3	489227	29.7	19.9	475634	29.7	19.9
306444	29.4	21.1	196235	29.5	19.2	100844	29.5	19.4	173952	29.6	19.8	206187	29.7	20.8	489988	29.7	19.5
5785	29.4	16.7	377775	29.5	20.7	538042	29.5	20.3	398789	29.6	20.0	107462	29.7	20.2	305914	29.7	19.9
339369	29.4	20.4	350128	29.5	20.5	456890	29.5	22.1	1355	29.6	15.2	388030	29.7	19.5	305046	29.7	20.3
439423	29.4	21.1	501355	29.5	21.2	371096	29.5	19.7	267357	29.6	20.0	541230	29.7	22.6	489751	29.7	22.1
306092	29.4	20.4	164267	29.5	19.8	124460	29.5	18.7	156197	29.6	20.8	64105	29.7	20.0	147273	29.7	19.2
383758	29.4	21.4	315314	29.5	20.6	163605	29.5	20.1	166209	29.6	19.4	20801	29.7	17.0	471416	29.7	20.1
34490	29.4	17.9	368248	29.5	20.3	420099	29.5	20.7	390220	29.6	20.5	179089	29.7	17.7	352605	29.7	20.3
259901	29.4	19.0	342784	29.5	20.3	403812	29.5	20.7	303841	29.6	19.7	469391	29.7	20.4	539874	29.7	18.9
11078	29.4	16.3	341894	29.5	20.0	430047	29.5	21.0	170490	29.6	18.5	285576	29.7	20.4	480749	29.7	20.3
268596	29.4	19.7	472429	29.5	22.2	8619	29.5	17.7	202895	29.6	20.5	297869	29.7	21.0	347652	29.7	20.6
453926	29.4	22.1	368683	29.5	20.4	497258	29.5	21.3	65541	29.6	20.0	480462	29.7	20.1	166074	29.7	17.8
537280	29.4	20.7	439375	29.5	20.2	426665	29.5	20.8	177891	29.6	19.6	530829	29.7	20.3	517601	29.7	20.9
297817	29.4	20.5	517650	29.5	19.7	499071	29.5	20.8	279058	29.6	20.1	32391	29.7	17.8	356292	29.7	19.7
134923	29.4	19.8	253178	29.5	18.4	212189	29.5	19.6	271921	29.6	19.5	530535	29.7	19.5	166545	29.7	19.3
436361	29.4	19.1	278572	29.5	20.4	149505	29.6	20.1	472557	29.6	20.3	428752	29.7	20.4	136777	29.7	20.1
103592	29.4	19.4	533884	29.5	20.5</												

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
133940	29.8	18.4	373365	29.8	20.4	504279	29.9	20.5	525246	29.9	21.9	69373	30.0	19.5	142322	30.1	20.5
232922	29.8	17.6	500431	29.8	22.3	460848	29.9	19.7	243776	29.9	18.1	21641	30.0	18.5	292978	30.1	20.7
227903	29.8	19.5	511635	29.8	20.8	360376	29.9	21.1	230578	29.9	19.9	372417	30.0	21.6	131700	30.1	19.2
344823	29.8	20.8	106113	29.8	19.1	383335	29.9	20.5	512991	29.9	21.2	190043	30.0	18.8	52668	30.1	17.6
465947	29.8	21.9	530395	29.8	21.7	152072	29.9	19.2	33321	29.9	18.0	177631	30.0	19.3	5553	30.1	17.5
251826	29.8	19.9	457371	29.8	19.9	461111	29.9	19.5	9148	29.9	17.4	244697	30.0	19.3	173484	30.1	19.0
423593	29.8	21.8	482888	29.8	22.5	469377	29.9	20.5	142496	29.9	19.5	362043	30.0	21.2	338110	30.1	20.9
472876	29.8	19.5	213775	29.8	20.1	111938	29.9	19.5	22441	29.9	18.0	297752	30.0	19.7	371063	30.1	20.1
81903	29.8	17.0	405196	29.8	21.3	245200	29.9	20.1	95525	29.9	18.9	41552	30.0	18.9	434928	30.1	21.5
436012	29.8	20.3	422195	29.8	19.5	471871	29.9	20.9	274254	29.9	20.5	126851	30.0	19.2	318677	30.1	19.8
372488	29.8	20.9	120487	29.8	20.1	29832	29.9	18.5	505347	29.9	20.6	195330	30.0	19.9	247164	30.1	20.2
244778	29.8	20.3	350612	29.8	19.7	491934	29.9	21.8	101992	29.9	19.6	286956	30.0	19.5	79505	30.1	18.5
349486	29.8	19.9	247609	29.8	20.0	127475	29.9	18.2	480351	29.9	19.8	10978	30.0	18.2	529824	30.1	19.5
186252	29.8	19.0	531823	29.8	20.5	101769	29.9	18.1	426043	29.9	21.0	425116	30.0	21.4	211647	30.1	19.6
32471	29.8	19.0	175018	29.8	19.1	304694	29.9	19.7	219554	29.9	20.4	173940	30.0	20.5	27565	30.1	17.7
171930	29.8	20.3	524984	29.8	19.5	96850	29.9	19.9	39983	29.9	18.6	283120	30.0	19.8	53433	30.1	17.4
5851	29.8	15.1	29598	29.8	18.6	435010	29.9	20.6	525119	29.9	22.0	303369	30.0	19.7	34742	30.1	19.1
112048	29.8	18.7	215318	29.8	19.4	452421	29.9	23.6	22666	29.9	16.8	17470	30.1	18.3	456110	30.1	20.7
144576	29.8	20.1	416913	29.8	20.5	249665	29.9	20.5	196201	29.9	20.3	425467	30.1	21.0	411741	30.1	19.7
72930	29.8	17.9	89770	29.8	18.2	107164	29.9	19.4	118042	29.9	19.2	105901	30.1	19.4	165579	30.1	20.7
89439	29.8	18.3	196478	29.8	20.1	486172	29.9	20.0	120541	29.9	20.7	467972	30.1	19.6	41099	30.1	19.4
67525	29.8	16.8	114587	29.8	19.4	413175	29.9	20.5	125907	29.9	19.4	247978	30.1	20.8	516604	30.1	21.0
109842	29.8	19.0	249133	29.8	20.4	111345	29.9	18.8	348557	29.9	20.6	309813	30.1	20.7	52094	30.1	20.6
38732	29.8	18.4	369279	29.8	20.6	121206	29.9	18.9	181285	29.9	20.6	451674	30.1	20.0	293131	30.1	21.3
351989	29.8	20.8	361613	29.8	20.4	146707	29.9	19.1	184216	29.9	20.7	111654	30.1	20.1	472875	30.1	20.4
502102	29.8	20.8	533000	29.8	21.0	289760	29.9	19.2	192746	29.9	18.6	148102	30.1	19.2	489332	30.1	21.4
455611	29.8	21.3	185415	29.9	20.1	485449	29.9	21.3	211961	29.9	19.9	149002	30.1	20.8	135115	30.1	20.2
80498	29.8	18.1	168648	29.9	19.7	390564	29.9	20.6	525073	29.9	20.1	437157	30.1	20.2	9265	30.1	17.0
429752	29.8	20.3	501171	29.9	22.0	101849	29.9	18.1	419909	29.9	21.9	372015	30.1	20.6	372941	30.1	21.7
289460	29.8	20.7	246425	29.9	20.5	108926	29.9	19.1	327466	29.9	20.0	184803	30.1	20.2	498703	30.1	21.0
361182	29.8	19.0	500730	29.9	20.8	540982	29.9	20.0	298755	29.9	20.0	182289	30.1	17.3	2627	30.1	17.2
544095	29.8	19.0	429019	29.9	20.6	406834	29.9	20.4	386180	29.9	22.0	174706	30.1	20.9	186092	30.1	20.3
353866	29.8	21.5	347726	29.9	20.9	142352	29.9	19.1	503962	29.9	20.3	202449	30.1	20.6	75896	30.1	19.1
150006	29.8	18.3	78412	29.9	19.0	537375	29.9	20.6	361664	29.9	20.3	58384	30.1	20.0	369331	30.1	19.2
216344	29.8	21.0	180080	29.9	18.0	390704	29.9	20.2	168341	29.9	19.2	184825	30.1	20.6	8077	30.1	16.7
162756	29.8	20.6	236996	29.9	20.1	192675	29.9	19.7	529656	29.9	19.9	543819	30.1	19.7	209604	30.1	19.5
3900	29.8	16.6	453275	29.9	20.0	419520	29.9	19.9	87971	29.9	18.9	170324	30.1	20.6	499332	30.1	21.0
212625	29.8	20.3	429135	29.9	20.0	281811	29.9	20.4	419408	29.9	21.9	349082	30.1	19.5	106491	30.1	17.9
297931	29.8	20.0	433849	29.9	20.5	497928	29.9	21.3	489039	29.9	20.1	75959	30.1	17.9	8876	30.1	17.4
53840	29.8	17.5	539123	29.9	21.5	27221	29.9	18.8	486148	30.0	20.1	388362	30.1	21.5	34526	30.1	18.7
291281	29.8	20.5	352718	29.9	20.5	179823	29.9	20.3	174658	30.0	19.5	268064	30.1	19.3	64654	30.1	19.8
203886	29.8	18.5	320399	29.9	20.0	97093	29.9	19.2	104080	30.0	18.8	425875	30.1	20.3	199561	30.1	19.7
528215	29.8	21.0	488696	29.9	21.1	232307	29.9	19.3	386496	30.0	19.0	105263	30.1	19.2	51937	30.1	18.6
63550	29.8	19.5	325062	29.9	19.7	30933	29.9	16.8	480790	30.0	20.4	190687	30.1	20.1	64855	30.1	18.7
473237	29.8	20.1	289797	29.9	19.7	177580	29.9	19.6	381514	30.0	20.1	406433	30.1	20.6	157001	30.1	18.8
90141	29.8	18.7	141352	29.9	20.0	418328	29.9	20.5	377475	30.0	20.5	390158	30.1	20.3	534335	30.1	21.3
351988	29.8	20.4	544487	29.9	19.8	493791	29.9	21.1	391298	30.0	21.4	224387	30.1	20.1	138255	30.1	19.7
494276	29.8	19.3	473278	29.9	20.7	110000	29.9	19.2	235416	30.0	20.5	214484	30.1	19.5	488781	30.1	19.9
341313	29.8	21.0	148284	29.9	19.9	371622	29.9	19.7	413176	30.0	20.8	36087	30.1	17.7	155017	30.1	20.8
327336	29.8	19.1	9824	29.9	17.3	18449	29.9	16.9	430020	30.0	21.6	10258	30.1	17.0	381498	30.1	20.7
213177	29.8	21.3	402011	29.9	19.6	316716	29.9	19.9	288934	30.0	18.7	382873	30.1	20.5	539323	30.1	20.3
240466	29.8	19.6	503251	29.9	20.8	429035	29.9	20.4	458743	30.0	21.1	503200	30.1	19.9	206984	30.1	20.1
199855	29.8	20.0	473175	29.9	20.5	341482	29.9	20.0	193884	30.0	18.6	87530	30.1	18.9	27364	30.1	17.2
35050	29.8	18.1	526839	29.9	21.4	461821	29.9	20.0	201926	30.0	20.3	298983	30.1	20.0	200247	30.1	19.2
166048	29.8	18.5	140502	29.9	19.5	125767	29.9	19.5	2947	30.0	16.1	521280	30.1	20.9	98513	30.1	20.2
173143	29.8	21.6	150866	29.9	20.3	203415	29.9	20.9	472277	30.0	21.4	36453	30.1	18.2	460541	30.1	20.2
303787	29.8	20.3	85597	29.9	18.7	136432	29.9	18.0	216539	30.0	19.6	426038	30.1	19.5	348478	30.1	20.2
172532	29.8	20.7	472773	29.9	19.5	299515	29.9	18.8	488581	30.0	19.8	322449	30.1	19.7	423223	30.1	19.1
287138	29.8	19.5	131746	29.9	19.3	366668	29.9	18.9	212672	30.0	20.0	227581	30.1	20.7	200787	30.2	20.9
1104	29.8	16.4	340748	29.9	21.5	499848	29.9	20.8	458939	30.0	20.3	359207	30.1	19.7	255916	30.2	20.8
349452	29.8	20.0	15648	29.9	18.6	88767	29.9	19.1	5064	30.0	14.8	41873	30.1	19.6	317891	30.2	20.5
106561	29.8	19.6	454579	29.9	20.1	147652	29.9	19.2	276132	30.0	19.7	182877	30.1	20.0	24588	30.2	18.5
435905	29.8	20.5	326394	29.9	20.2	440032	29.9	20.2	426991	30.0	20.0	349985	30.1	20.1	205300	30.2	20.4
530060	29.8	21.5	209346	29.9	20.2	367182	29.9	19.8	171975	30.0	18.7	343234	30.1	20.5	522816	30.2	20.7
11519	29.8	16.5	483342	29.9	19.6	119666	29.9	20.7	344551	30.0	21.6	156232	30.1	19.1	118278	30.2	18.8
75854	29.8	19.1	503766	29.9	20.6	277735	29.9	20.3	313768	30.0	21.2	159422	30.1	18.8	122133	30.2	17.7
471786	29.8	20.0	541528	29.9	20.8	410432	29.9	21.7	310238	30.0	19.7	538537	30.1	21.2	237643	30.2	20.1
89711	29.8	19.0	508516	29.9	20.4	490487	29.9	20.3	208694	30.0	18.9	212732	30.1	20.0	2948	30.2	17.4
339618	29.8	19.8	374597	29.9	20.4	389242	29.9										



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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
426574	30.2	20.3	263754	30.2	19.7	40874	30.3	17.3	368445	30.4	19.5	471801	30.5	19.9	530591	30.5	20.9
512969	30.2	19.4	537953	30.2	20.1	538972	30.3	19.5	448144	30.4	21.2	248351	30.5	20.2	377911	30.5	21.2
434415	30.2	21.8	299756	30.2	20.3	147620	30.3	20.2	96395	30.4	20.1	93066	30.5	19.2	375243	30.5	19.6
382921	30.2	19.5	88898	30.2	18.3	433746	30.3	22.1	201634	30.4	19.5	145836	30.5	17.9	20467	30.5	16.6
372489	30.2	20.7	309841	30.2	21.6	534229	30.3	21.5	471385	30.4	20.4	48839	30.5	19.9	187024	30.5	19.7
146156	30.2	19.7	38650	30.2	18.9	308577	30.3	20.2	148827	30.4	18.8	471791	30.5	20.8	172384	30.5	19.7
175097	30.2	19.3	404523	30.2	21.4	419191	30.3	21.1	473031	30.4	20.6	499327	30.5	21.0	529623	30.5	22.2
491254	30.2	20.8	459982	30.2	21.3	62466	30.3	19.0	526181	30.4	22.0	371686	30.5	19.8	301857	30.5	19.8
130756	30.2	18.1	284643	30.3	20.9	292761	30.3	21.5	296997	30.4	20.9	57128	30.5	18.3	350681	30.5	22.0
427644	30.2	21.1	166069	30.3	19.2	63927	30.3	19.7	268095	30.4	20.4	125511	30.5	18.6	337068	30.5	21.2
172131	30.2	18.2	437579	30.3	20.2	518454	30.3	20.2	247473	30.4	18.4	460900	30.5	20.7	94496	30.5	19.1
333078	30.2	20.1	168347	30.3	20.5	243903	30.3	19.0	205019	30.4	21.0	469952	30.5	20.3	34825	30.5	17.6
454485	30.2	20.2	128085	30.3	19.1	540368	30.3	21.4	119569	30.4	19.3	270012	30.5	19.0	480785	30.5	20.6
89610	30.2	18.8	237459	30.3	20.7	32278	30.3	17.9	39334	30.4	19.9	152418	30.5	19.4	527938	30.5	21.8
498249	30.2	21.3	286283	30.3	20.3	148718	30.3	18.9	518587	30.4	21.2	149532	30.5	19.4	426669	30.5	21.4
2572	30.2	15.5	205265	30.3	19.0	463583	30.3	20.1	509562	30.4	22.1	462049	30.5	19.9	301832	30.5	20.9
2207	30.2	15.8	508308	30.3	20.1	207610	30.3	20.1	459926	30.4	21.1	390359	30.5	19.4	529239	30.5	19.6
507593	30.2	21.8	531640	30.3	21.9	187698	30.3	19.4	55097	30.4	18.0	102721	30.5	18.2	15992	30.5	16.8
34583	30.2	18.9	316831	30.3	20.0	331559	30.3	20.7	15372	30.4	18.2	68892	30.5	18.7	313627	30.5	20.4
17627	30.2	18.3	465111	30.3	21.8	20168	30.3	18.9	417637	30.4	20.9	87876	30.5	18.5	450791	30.5	22.5
39435	30.2	18.9	281530	30.3	20.5	419906	30.3	20.1	280430	30.4	20.9	14880	30.5	17.9	187469	30.5	19.2
470452	30.2	20.8	65169	30.3	18.4	371184	30.3	20.2	500025	30.4	21.2	370935	30.5	19.6	372870	30.5	19.8
292682	30.2	20.2	204171	30.3	20.0	11358	30.3	15.9	388925	30.4	20.2	173105	30.5	20.0	32767	30.5	16.8
209355	30.2	20.4	491977	30.3	20.5	141301	30.3	19.4	63658	30.4	18.3	129460	30.5	18.3	522310	30.5	21.6
374118	30.2	20.7	465425	30.3	20.6	420552	30.3	19.9	166939	30.4	18.4	299897	30.5	20.9	496708	30.5	20.4
535095	30.2	21.1	345680	30.3	20.5	346705	30.3	21.3	379990	30.4	20.5	354181	30.5	20.8	114657	30.6	18.8
200780	30.2	20.8	87973	30.3	19.1	538469	30.3	21.5	406362	30.4	20.8	377925	30.5	20.5	195518	30.6	18.8
540163	30.2	20.3	271642	30.3	19.2	456937	30.3	20.5	126420	30.4	19.8	192239	30.5	18.9	153002	30.6	21.5
319718	30.2	20.3	36504	30.3	17.6	91132	30.3	18.8	506253	30.4	21.2	344256	30.5	21.2	513394	30.6	20.7
207024	30.2	21.1	396246	30.3	20.1	288607	30.3	17.8	374451	30.4	20.9	87005	30.5	17.1	429289	30.6	20.4
273158	30.2	20.1	106367	30.3	20.3	59864	30.3	17.9	425156	30.4	20.3	265668	30.5	20.4	11655	30.6	18.2
33208	30.2	18.8	293036	30.3	20.6	305980	30.3	19.6	371201	30.4	21.6	144967	30.5	18.0	421333	30.6	21.0
299333	30.2	20.7	434074	30.3	21.0	439793	30.4	20.3	134418	30.4	18.0	372968	30.5	21.1	177045	30.6	20.4
104098	30.2	18.6	53334	30.3	19.0	361174	30.4	19.4	157564	30.4	17.9	221518	30.5	20.1	106209	30.6	20.2
184742	30.2	19.5	229395	30.3	19.5	21158	30.4	18.3	304726	30.4	20.6	184269	30.5	20.0	111746	30.6	19.8
221266	30.2	19.8	291549	30.3	20.3	373259	30.4	19.4	70744	30.4	18.2	530304	30.5	21.6	426545	30.6	20.5
95375	30.2	20.0	8200	30.3	17.7	86273	30.4	18.4	323757	30.4	19.5	441307	30.5	20.8	46361	30.6	16.5
368745	30.2	20.4	535488	30.3	22.5	172895	30.4	19.4	183025	30.4	18.3	502449	30.5	20.8	185669	30.6	17.3
22469	30.2	20.0	108490	30.3	18.3	7985	30.4	18.4	86251	30.4	18.4	471505	30.5	20.6	384248	30.6	21.2
170525	30.2	19.4	496156	30.3	20.3	438439	30.4	21.0	502521	30.4	20.9	505061	30.5	21.1	239006	30.6	20.0
333155	30.2	21.5	525114	30.3	20.9	52981	30.4	18.9	172368	30.4	20.0	461833	30.5	20.8	100358	30.6	19.9
228054	30.2	18.6	64756	30.3	19.0	457130	30.4	21.6	351951	30.4	20.7	349375	30.5	21.1	299972	30.6	20.1
468267	30.2	20.2	147625	30.3	19.5	538257	30.4	20.7	426816	30.4	20.2	529523	30.5	21.7	224255	30.6	19.7
370063	30.2	21.7	20268	30.3	17.8	306845	30.4	20.1	471468	30.4	20.8	242158	30.5	18.4	120756	30.6	19.4
295639	30.2	20.9	540685	30.3	19.2	385451	30.4	20.1	517713	30.4	20.9	534212	30.5	21.0	85999	30.6	18.4
117374	30.2	20.3	302062	30.3	21.6	210681	30.4	17.9	436356	30.4	19.9	496574	30.5	20.7	521300	30.6	20.7
173332	30.2	20.0	293237	30.3	21.4	146838	30.4	20.9	436719	30.4	20.2	110755	30.5	19.0	374512	30.6	20.2
430875	30.2	19.4	532576	30.3	21.2	453376	30.4	21.4	303231	30.4	20.0	323121	30.5	19.3	32838	30.6	16.6
7091	30.2	16.3	83721	30.3	19.4	28704	30.4	18.5	191856	30.4	19.7	242915	30.5	18.7	301128	30.6	21.2
303332	30.2	20.0	68555	30.3	18.9	61232	30.4	18.0	150564	30.4	19.6	114790	30.5	18.0	41732	30.6	19.4
62770	30.2	18.3	9812	30.3	17.6	538052	30.4	20.4	63952	30.4	18.8	245676	30.5	19.9	157245	30.6	19.7
98460	30.2	19.9	238688	30.3	20.3	320935	30.4	19.7	468243	30.4	20.6	87736	30.5	18.8	16494	30.6	17.5
148801	30.2	19.9	220930	30.3	20.2	286432	30.4	20.8	129555	30.4	19.1	349468	30.5	21.7	171562	30.6	20.8
4476	30.2	17.8	498383	30.3	22.3	287478	30.4	20.6	343057	30.4	20.3	287408	30.5	19.4	208480	30.6	20.4
82018	30.2	19.8	168467	30.3	19.4	123175	30.4	18.9	391273	30.4	20.4	293642	30.5	19.0	475236	30.6	19.0
264550	30.2	21.5	495220	30.3	21.0	530540	30.4	19.9	35737	30.4	17.3	474824	30.5	21.7	365132	30.6	20.9
35559	30.2	18.3	504613	30.3	21.7	271824	30.4	20.0	100018	30.4	19.7	144841	30.5	19.3	388335	30.6	20.0
277558	30.2	21.2	379731	30.3	19.9	395910	30.4	21.6	411266	30.4	19.5	216597	30.5	19.6	168501	30.6	19.6
382899	30.2	20.1	224235	30.3	19.2	296155	30.4	20.6	382776	30.4	21.1	457622	30.5	21.3	33738	30.6	18.0
295945	30.2	20.1	280925	30.3	20.2	269791	30.4	20.5	368566	30.4	21.1	95646	30.5	18.8	35652	30.6	17.1
266328	30.2	20.4	319788	30.3	20.2	381511	30.4	19.6	163262	30.4	20.1	510749	30.5	21.3	544881	30.6	21.1
234034	30.2	20.1	150829	30.3	21.0	207343	30.4	18.5	282785	30.4	19.6	144839	30.5	18.7	126337	30.6	19.8
18430	30.2	17.7	342800	30.3	19.8	475695	30.4	21.9	140651	30.4	18.8	215378	30.5	20.2	425362	30.6	20.9
51981	30.2	18.5	98175	30.3	19.1	517642	30.4	20.4	502375	30.4	20.5	112581	30.5	18.1	521515	30.6	20.3
231156	30.2	19.8	491757	30.3	20.9	48351	30.4	18.9	461115	30.4	21.0	490017	30.5	21.2	505151	30.6	21.1
290727	30.2	21.3	498408	30.3	21.5	297061	30.4	19.4	181940	30.4	19.8	460048	30.5	21.0	495903	30.6	19.7
130780	30.2	19.4	185183	30.3	20.4	79460	30.4	19.2	267377	30.4	19.6	297825	30.5	19.4	491740	30.6	20.9
491921	30.2	21.3	393599	30.3	21.0	96986	30.4	18.6	55924	30.4	19.3	342663	30.5	20.3	346205	30.6	20.7
173902	30.2	19.1	300156	30.3	21.0	543382	30.4										

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

№	06	V	№	06	V	№	06	V	№	06	V	№	06	V	№	06	V
503008	30.6	20.7	195793	30.7	19.5	383919	30.7	20.8	386194	30.8	21.3	212003	30.9	20.3	269726	30.9	19.0
65965	30.6	16.5	34772	30.7	18.1	28144	30.7	18.1	104035	30.8	19.1	540947	30.9	20.2	477155	30.9	20.5
458526	30.6	20.3	115999	30.7	19.7	412711	30.7	21.1	299360	30.8	20.6	225567	30.9	19.3	269113	30.9	19.3
1637	30.6	14.7	98582	30.7	19.4	224327	30.7	19.4	117206	30.8	19.8	164452	30.9	18.2	431791	30.9	20.9
116555	30.6	19.3	310321	30.7	21.3	86199	30.7	18.5	354974	30.8	20.5	178633	30.9	18.0	255922	30.9	19.4
437189	30.6	19.8	117068	30.7	19.2	170951	30.7	20.2	34611	30.8	18.4	175698	30.9	20.1	507604	30.9	21.0
358529	30.6	18.2	478382	30.7	19.8	291027	30.7	20.9	95900	30.8	18.3	464576	30.9	20.6	462947	30.9	20.5
309263	30.6	19.5	454129	30.7	21.2	128301	30.7	18.7	198278	30.8	20.3	385306	30.9	20.2	499250	30.9	20.7
506712	30.6	22.2	39787	30.7	17.0	209429	30.7	19.6	132034	30.8	19.6	238927	30.9	20.6	505502	30.9	19.9
455523	30.6	22.3	210257	30.7	20.3	435031	30.7	20.3	182105	30.8	17.7	264534	30.9	20.7	438837	30.9	21.5
501324	30.6	21.4	467754	30.7	21.7	128637	30.7	18.6	169328	30.8	20.7	505240	30.9	22.3	16374	30.9	18.4
259017	30.6	21.1	402966	30.7	21.5	305344	30.7	20.2	334883	30.8	21.1	396254	30.9	20.8	532561	30.9	20.9
430551	30.6	19.4	133217	30.7	19.9	151938	30.7	19.6	500056	30.8	20.1	333678	30.9	20.3	301570	30.9	21.2
425365	30.6	21.0	323444	30.7	19.6	179467	30.7	20.7	353600	30.8	20.0	386236	30.9	21.4	163063	30.9	18.8
100675	30.6	19.4	195484	30.7	19.5	351639	30.7	20.8	364431	30.8	20.8	108779	30.9	19.0	464417	30.9	21.5
466754	30.6	20.6	372437	30.7	21.4	450263	30.7	14.4	478228	30.8	20.9	171600	30.9	18.8	486057	30.9	21.6
91488	30.6	21.4	389756	30.7	20.1	430679	30.7	19.9	108976	30.8	19.1	148867	30.9	19.6	457398	30.9	20.7
375997	30.6	21.1	162067	30.7	20.2	178519	30.7	19.2	34839	30.8	17.2	371122	30.9	20.7	83225	30.9	19.4
244650	30.6	19.1	301378	30.7	19.9	196559	30.7	19.0	464053	30.8	20.9	484249	30.9	21.4	399306	30.9	20.1
419946	30.6	19.9	506744	30.7	21.2	476439	30.7	21.3	121371	30.8	19.6	493733	30.9	20.8	500544	30.9	21.6
39343	30.6	19.0	472643	30.7	19.8	116238	30.7	19.6	267404	30.8	20.8	183411	30.9	21.2	272502	30.9	21.2
37329	30.6	21.4	234148	30.7	18.2	334867	30.7	20.3	428713	30.8	20.8	232908	30.9	20.6	281582	30.9	20.5
112369	30.6	18.0	271086	30.7	19.9	498332	30.7	21.5	287480	30.8	19.9	463097	30.9	21.9	538437	30.9	19.9
520942	30.6	20.5	26827	30.7	18.5	423744	30.7	20.9	195595	30.8	18.4	347663	30.9	21.8	150253	30.9	18.3
400316	30.6	19.6	346117	30.7	20.2	189194	30.7	18.2	17662	30.8	18.0	452543	30.9	21.7	179283	30.9	20.3
522135	30.6	19.7	154274	30.7	20.1	81163	30.7	17.1	304722	30.8	19.2	213340	30.9	19.5	157788	30.9	19.9
531721	30.6	21.0	135177	30.7	19.9	363504	30.7	20.8	538455	30.8	20.5	501725	30.9	19.2	36369	30.9	18.5
178079	30.6	20.2	28027	30.7	17.5	34555	30.7	18.9	296208	30.8	20.5	296116	30.9	20.5	507600	30.9	21.3
38370	30.6	18.8	397492	30.7	20.3	465180	30.7	21.0	74516	30.8	18.5	494263	30.9	20.9	376160	30.9	19.5
433665	30.6	20.1	251528	30.7	20.5	219686	30.8	20.3	470042	30.8	21.2	411245	30.9	18.8	103096	30.9	18.8
13158	30.6	17.5	496953	30.7	21.2	10362	30.8	18.6	339036	30.8	21.0	16720	30.9	17.8	465774	30.9	20.4
127577	30.6	20.6	524941	30.7	20.8	452370	30.8	21.4	468114	30.8	19.3	431051	30.9	21.4	216072	30.9	18.6
420609	30.6	20.2	359798	30.7	20.4	415735	30.8	20.6	204926	30.8	19.0	530690	30.9	20.8	415757	30.9	19.0
349349	30.6	19.4	238144	30.7	19.6	471711	30.8	21.4	87433	30.8	17.6	197600	30.9	18.8	19797	30.9	18.5
320508	30.6	20.4	470084	30.7	21.4	175821	30.8	18.8	313734	30.8	19.6	64030	30.9	19.3	62751	30.9	19.7
317084	30.6	19.5	77312	30.7	18.7	406571	30.8	20.2	452508	30.8	20.1	282657	30.9	18.4	107335	30.9	20.0
422808	30.6	20.7	81401	30.7	18.3	305730	30.8	20.9	202896	30.8	20.7	309474	30.9	20.9	184058	30.9	21.3
418013	30.6	20.4	317973	30.7	21.2	127413	30.8	18.8	324455	30.8	21.5	13547	30.9	18.5	26457	30.9	17.5
313001	30.6	20.4	222696	30.7	21.1	66947	30.8	18.1	309311	30.8	20.5	496114	30.9	19.6	351755	30.9	20.6
283511	30.6	20.2	126142	30.7	18.5	60173	30.8	18.7	293381	30.8	18.8	338515	30.9	19.5	264583	30.9	21.5
127650	30.6	20.0	334326	30.7	21.1	169231	30.8	19.6	303814	30.8	20.6	407791	30.9	21.6	182021	30.9	20.6
93503	30.6	18.4	29465	30.7	20.1	70031	30.8	18.5	295417	30.8	18.7	237225	30.9	20.8	411269	30.9	21.5
270471	30.6	21.3	5943	30.7	16.2	495630	30.8	21.5	169597	30.8	19.4	319876	30.9	20.2	344003	30.9	20.2
502338	30.6	20.3	450726	30.7	19.9	458857	30.8	21.0	446805	30.8	20.6	221976	30.9	20.1	318113	30.9	19.7
256582	30.6	18.9	162667	30.7	20.3	212457	30.8	18.2	50055	30.8	17.7	271887	30.9	20.0	370148	30.9	21.3
150944	30.6	17.6	522227	30.7	20.7	4574	30.8	16.5	175379	30.8	18.5	529345	30.9	23.1	110530	30.9	18.9
288698	30.6	19.1	431427	30.7	20.5	65483	30.8	19.5	299284	30.8	19.5	227314	30.9	19.8	87344	30.9	19.1
30188	30.6	17.0	322855	30.7	19.8	491856	30.8	20.6	385439	30.8	20.8	333685	30.9	20.5	182889	30.9	20.5
291294	30.6	19.4	508373	30.7	19.7	522563	30.8	21.2	465943	30.8	21.2	430211	30.9	20.5	269965	30.9	19.3
512287	30.6	20.3	171294	30.7	18.9	71816	30.8	18.6	359044	30.8	21.6	274705	30.9	19.7	295431	30.9	20.5
32030	30.6	18.2	509530	30.7	21.5	154930	30.8	18.7	307340	30.8	18.6	219679	30.9	20.8	300953	30.9	19.9
394785	30.6	20.2	112801	30.7	19.3	540601	30.8	20.6	235114	30.9	18.8	179553	30.9	19.1	292388	30.9	20.9
277451	30.6	20.5	434868	30.7	20.1	469815	30.8	20.8	318472	30.9	21.0	316752	30.9	20.4	320605	30.9	19.7
96096	30.6	18.5	356707	30.7	20.0	205295	30.8	20.0	241847	30.9	20.1	380438	30.9	20.7	414785	30.9	20.2
540902	30.6	20.7	225554	30.7	19.2	125541	30.8	19.5	415964	30.9	21.4	471887	30.9	21.0	83241	30.9	19.4
529141	30.7	22.3	102298	30.7	19.0	140204	30.8	20.3	361606	30.9	19.2	455807	30.9	21.2	38072	30.9	18.4
295719	30.7	22.1	316839	30.7	20.5	140001	30.8	19.4	138290	30.9	19.9	259934	30.9	19.4	104171	30.9	18.8
538046	30.7	20.8	503071	30.7	20.9	242357	30.8	19.6	524933	30.9	20.9	172511	30.9	19.9	393110	30.9	19.6
116524	30.7	19.2	107691	30.7	19.8	337976	30.8	19.8	171027	30.9	20.2	353114	30.9	19.7	530418	30.9	20.4
91002	30.7	19.6	416123	30.7	20.5	355974	30.8	19.1	437768	30.9	20.6	463293	30.9	19.4	210991	30.9	19.4
258652	30.7	19.5	521157	30.7	21.1	231745	30.8	20.8	285663	30.9	20.5	261395	30.9	20.6	424794	30.9	20.5
54866	30.7	17.8	125788	30.7	18.9	354705	30.8	20.7	422400	30.9	19.3	274056	30.9	20.8	359022	30.9	20.1
340851	30.7	20.1	395493	30.7	20.8	320822	30.8	19.8	246890	30.9	20.6	403802	30.9	21.7	224528	30.9	20.2
491705	30.7	22.0	147236	30.7	19.6	293070	30.8	20.5	177135	30.9	20.4	63964	30.9	20.4	369675	30.9	21.0
189230	30.7	17.7	30870	30.7	18.8	345785	30.8	21.0	17812	30.9	17.2	405928	30.9	19.7	11985	30.9	17.2
316794	30.7	21.0	61255	30.7	17.6	51295	30.8	18.4	190036	30.9	20.6	148901	30.9	19.7	115135	30.9	20.1
176779	30.7	20.0	299934	30.7	21.2	235171	30.8	19.6	307640	30.9	21.5	99703	30.9	18.1	81384	30.9	19.3
406511	30.7	20.1	524208	30.7	20.4	521233	30.8	20.1	462960	30.9	20.5	169990	30.9	19.9	386804	30.9	20.3
456599	30.7	19.6	222858	30.7	20.3												