

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
384260	1.0	19.1	72118	1.1	19.2	501237	1.1	21.1	203445	1.2	20.6	87352	1.3	17.6	438385	1.4	20.2
129130	1.0	19.6	536367	1.1	21.5	359703	1.1	21.6	106124	1.2	19.0	351560	1.3	20.7	94474	1.4	18.1
17616	1.0	18.5	317035	1.1	19.9	309334	1.1	21.2	355180	1.2	20.8	227458	1.3	18.8	409377	1.4	19.9
315241	1.0	21.7	170399	1.1	20.0	207375	1.1	19.6	392768	1.2	20.4	242354	1.3	20.5	4861	1.4	15.9
259219	1.0	19.9	502868	1.1	21.3	433499	1.1	20.5	283372	1.2	20.0	471133	1.3	19.9	11955	1.4	17.8
379375	1.0	20.7	424058	1.1	20.2	34974	1.1	19.1	214717	1.2	20.3	420067	1.3	22.0	462026	1.4	20.9
272497	1.0	20.7	83478	1.1	19.9	463340	1.1	19.9	194250	1.2	20.0	262630	1.3	20.4	507541	1.4	22.0
136391	1.0	19.4	440877	1.1	21.4	170368	1.1	18.8	316707	1.2	21.2	378749	1.3	20.1	49266	1.4	19.3
341824	1.0	21.2	52734	1.1	19.7	177905	1.1	19.5	113031	1.2	19.5	52281	1.3	17.8	62316	1.4	19.4
525697	1.0	20.2	355099	1.1	22.1	468382	1.1	19.9	208990	1.2	20.0	275733	1.3	19.8	402980	1.4	21.1
18824	1.0	17.1	539888	1.1	19.5	213777	1.1	19.7	250467	1.2	20.7	106150	1.3	19.9	449162	1.4	21.3
99307	1.0	19.9	300244	1.1	20.6	538316	1.1	21.3	10591	1.2	17.9	290916	1.3	20.5	36904	1.4	18.6
394770	1.0	21.3	309166	1.1	21.9	64163	1.1	18.3	438616	1.2	21.0	249584	1.3	19.7	352021	1.4	21.3
290673	1.0	21.1	239914	1.1	19.5	154486	1.2	18.6	51225	1.2	18.3	119148	1.3	18.9	499798	1.4	21.2
345710	1.0	21.3	308624	1.1	20.2	299451	1.2	20.3	246754	1.2	20.7	196691	1.3	18.9	370033	1.4	20.4
354564	1.0	20.3	506786	1.1	21.4	389537	1.2	19.4	41933	1.2	18.5	28260	1.3	18.4	505070	1.4	21.0
191834	1.0	18.4	80078	1.1	19.3	469127	1.2	20.8	133234	1.2	18.5	496017	1.3	19.8	435425	1.4	21.3
478062	1.0	21.2	407875	1.1	21.4	282090	1.2	19.9	464144	1.2	20.8	388769	1.3	21.7	440729	1.4	20.8
300275	1.0	20.0	301002	1.1	20.0	301013	1.2	20.0	27653	1.2	17.8	465127	1.3	20.6	299984	1.4	21.8
111640	1.0	19.4	290260	1.1	20.5	129109	1.2	19.7	255859	1.2	20.4	270497	1.3	21.4	166055	1.4	18.7
280272	1.0	19.7	54303	1.1	17.8	238796	1.2	19.1	391300	1.2	21.0	405903	1.3	20.2	101087	1.4	19.2
263124	1.0	19.5	206784	1.1	18.8	10551	1.2	16.5	175650	1.2	20.3	419898	1.3	21.8	452781	1.4	21.3
490511	1.0	21.0	178640	1.1	19.0	374083	1.2	20.0	412280	1.2	20.3	347411	1.3	21.0	335587	1.4	19.3
396218	1.0	20.2	492631	1.1	19.7	303414	1.2	20.9	505943	1.2	20.4	15728	1.3	17.1	148692	1.4	19.7
453928	1.0	21.0	253123	1.1	21.0	354845	1.2	20.6	417824	1.2	19.3	517651	1.3	20.8	540566	1.4	21.0
349911	1.0	20.7	271509	1.1	20.6	383402	1.2	20.2	430000	1.2	19.9	43343	1.3	18.2	309404	1.4	21.1
111450	1.0	18.7	191381	1.1	19.5	323421	1.2	20.6	300842	1.2	20.8	291793	1.3	19.6	478368	1.4	19.6
92904	1.0	19.3	528493	1.1	20.7	173833	1.2	21.0	278738	1.2	20.6	329599	1.3	20.6	361685	1.4	20.1
149934	1.0	20.0	123324	1.1	19.7	405528	1.2	20.8	23769	1.2	17.8	140161	1.3	19.4	291030	1.4	20.2
176184	1.0	17.5	318690	1.1	20.7	276482	1.2	18.9	292457	1.2	21.3	501156	1.3	19.5	351938	1.4	21.1
139901	1.0	19.1	305671	1.1	21.5	242565	1.2	21.0	286486	1.3	20.1	313662	1.3	21.0	484243	1.4	21.2
534064	1.0	21.0	170380	1.1	20.1	257642	1.2	20.3	210461	1.3	20.7	157293	1.3	19.2	451708	1.4	20.2
138731	1.0	20.2	512476	1.1	19.5	269438	1.2	20.6	371764	1.3	20.3	378348	1.3	19.5	539082	1.4	20.0
127486	1.0	20.0	208988	1.1	20.9	46506	1.2	17.1	501385	1.3	20.9	31076	1.3	17.5	54621	1.4	18.4
8804	1.0	16.4	257646	1.1	20.4	260873	1.2	19.9	507524	1.3	21.0	207632	1.3	18.9	328667	1.4	20.4
361627	1.0	19.4	342997	1.1	21.3	470420	1.2	20.1	170956	1.3	19.7	10308	1.3	18.0	312100	1.4	21.0
56888	1.0	19.3	518694	1.1	20.4	431312	1.2	20.5	437777	1.3	20.5	308427	1.3	19.3	167240	1.4	21.2
286445	1.0	21.1	155048	1.1	19.5	536327	1.2	22.3	214980	1.3	20.1	488782	1.3	20.2	183364	1.4	20.7
117296	1.0	20.0	498968	1.1	21.4	542961	1.2	21.2	115704	1.3	18.6	126600	1.3	19.4	298325	1.4	21.1
293407	1.0	21.6	435223	1.1	21.1	345187	1.2	19.6	109340	1.3	18.9	50555	1.3	17.9	353378	1.4	19.2
287484	1.0	19.2	424621	1.1	20.7	48808	1.2	19.6	157310	1.3	19.7	85624	1.3	19.5	54029	1.4	19.8
491126	1.0	19.2	537390	1.1	21.5	36224	1.2	17.9	323429	1.3	20.7	352473	1.3	20.7	210278	1.4	21.3
497671	1.0	21.4	298672	1.1	19.9	525420	1.2	20.1	227547	1.3	20.0	478332	1.3	20.7	385895	1.4	20.1
92915	1.0	18.3	123135	1.1	21.0	258407	1.2	20.6	159340	1.3	20.2	276171	1.3	19.7	521190	1.4	20.8
472142	1.0	20.2	219632	1.1	20.8	208419	1.2	20.3	338969	1.3	20.9	87388	1.3	18.7	474017	1.4	20.1
86761	1.0	20.0	445862	1.1	20.5	499796	1.2	20.7	459348	1.3	21.3	11195	1.3	17.4	109463	1.4	20.3
152499	1.0	18.5	138536	1.1	18.7	33048	1.2	18.8	426658	1.3	20.1	104603	1.3	18.9	231278	1.4	21.0
14929	1.0	18.6	90541	1.1	19.1	288640	1.2	19.8	47856	1.3	18.1	90776	1.3	19.6	540316	1.4	20.9
310925	1.0	20.6	507351	1.1	21.1	38063	1.2	15.8	498596	1.3	21.8	214187	1.3	21.4	19475	1.4	18.0
462996	1.0	20.0	436717	1.1	20.5	304673	1.2	20.9	157400	1.3	18.9	51088	1.3	19.0	264742	1.4	20.8
348976	1.0	19.8	342366	1.1	20.0	55131	1.2	18.7	28776	1.3	17.1	83705	1.3	19.0	235119	1.4	19.3
344389	1.0	21.9	201463	1.1	18.2	297088	1.2	19.9	395118	1.3	21.5	537037	1.3	20.6	434814	1.4	20.8
355146	1.0	21.0	436029	1.1	20.9	72987	1.2	19.3	502994	1.3	21.3	236642	1.3	20.4	352458	1.4	20.8
365828	1.0	21.4	141353	1.1	20.1	192603	1.2	20.6	262782	1.3	20.1	95395	1.4	19.0	248525	1.4	19.4
177047	1.0	19.4	50289	1.1	16.8	8912	1.2	17.3	33271	1.3	17.2	502427	1.4	20.4	149437	1.4	17.8
414856	1.0	20.9	242403	1.1	20.2	391699	1.2	21.3	204593	1.3	19.8	357096	1.4	22.0	38848	1.4	19.4
63958	1.0	18.8	198544	1.1	19.4	386476	1.2	21.9	540151	1.3	19.9	51310	1.4	18.8	456850	1.4	21.2
423668	1.0	21.2	293819	1.1	19.9	101888	1.2	18.3	203259	1.3	19.4	403289	1.4	21.9	178981	1.4	18.5
300209	1.0	18.6	456962	1.1	20.6	351926	1.2	22.0	414805	1.3	20.9	46770	1.4	18.6	380527	1.4	20.5
344670	1.0	20.1	141161	1.1	20.0	206705	1.2	20.4	88364	1.3	18.2	176576	1.4	19.7	299977	1.4	20.6
511682	1.0	21.1	103728	1.1	19.4	54656	1.2	17.5	300196	1.3	22.0	507281	1.4	21.0	533732	1.4	21.6
534416	1.0	20.8	310216	1.1	20.8	266301	1.2	20.1	374102	1.3	19.6	354110	1.4	20.8	288583	1.4	19.3
283011	1.0	20.0	86489	1.1	18.5	224537	1.2	20.1	20224	1.3	18.1	109675	1.4	17.9	244776	1.4	19.0
22964	1.0	18.0	132811	1.1	19.4	304633	1.2	20.7	354130	1.3	21.0	149786	1.4	18.9	337066	1.4	19.3
118711	1.0	19.1	211398	1.1	21.2	516536	1.2	21.3	15077	1.3	17.4	532951	1.4	21.0	389235	1.4	20.8
144359	1.0	19.8	535386	1.1	20.8	385424	1.2	21.1	124878	1.3	19.0	474823	1.4	21.0	221136	1.4	20.9
522500	1.0	20.7	239611	1.1	19.8	196272	1.2	20.3	360374	1.3	21.5	359142	1.4	19.9	384213	1.4	21.8
363542	1.0	20.5	306689	1.1	20.4	466700	1.2	20.2	486074	1.3	20.9	273926	1.4	21.2	540396	1.4	21.0
452360	1.0	20.8	67908	1.1	17.2	462256	1.2	20.9	361669	1.3	20.1	341745	1.4	21.2	26901	1.4	18.1
267358	1.0	19.2	227499	1.1	18.7	33454	1.2	18.0	527159	1.3	21.8	176444	1.4	20.9	273962	1.4	19.6
125197	1.0	19.7	427033	1.1	20.0	489514	1.2	19.5	4867	1.3	16.9	109692	1.4	19.6	473198	1.4	

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
411208	1.4	20.7	217970	1.5	20.6	527161	1.6	21.7	102479	1.7	19.8	264609	1.7	19.6	285671	1.8	20.5
61077	1.4	18.9	333926	1.5	20.0	405125	1.6	19.8	225310	1.7	21.0	531194	1.7	21.5	375819	1.8	21.0
229912	1.4	19.9	525910	1.5	20.8	31409	1.6	16.7	480776	1.7	21.0	532632	1.7	21.6	358049	1.8	20.1
459562	1.4	19.4	105376	1.5	19.3	248050	1.6	18.9	124869	1.7	19.0	419927	1.7	20.5	370719	1.8	19.7
241857	1.4	19.6	508513	1.5	20.0	368803	1.6	20.4	229315	1.7	18.4	140930	1.7	20.4	193859	1.8	19.8
154500	1.4	20.1	124690	1.5	20.1	106925	1.6	19.1	696	1.7	14.5	434918	1.7	20.3	453375	1.8	20.1
154313	1.4	19.1	366447	1.5	19.1	471347	1.6	18.7	437620	1.7	20.0	58068	1.7	19.2	90188	1.8	18.3
90706	1.4	18.9	366727	1.5	19.2	170280	1.6	19.5	210156	1.7	20.2	535627	1.7	21.7	525220	1.8	20.5
472390	1.4	21.2	291227	1.5	19.2	212298	1.6	20.2	249224	1.7	20.2	513096	1.7	20.2	147414	1.8	19.0
469727	1.4	19.8	382749	1.5	19.9	85971	1.6	19.2	151292	1.7	19.1	205866	1.7	20.9	229179	1.8	20.0
93206	1.4	19.5	343154	1.5	21.4	151998	1.6	19.2	169222	1.7	19.1	277126	1.7	18.8	498563	1.8	19.1
122986	1.4	19.8	534659	1.5	21.4	514424	1.6	22.0	502260	1.7	21.1	281442	1.8	20.9	227937	1.8	20.5
470025	1.4	21.7	391611	1.5	20.0	184457	1.6	19.6	350009	1.7	19.3	55358	1.8	17.9	326353	1.8	19.4
328736	1.4	18.8	213807	1.5	20.1	499069	1.6	21.9	213743	1.7	20.3	160545	1.8	18.0	380433	1.8	20.7
141345	1.4	20.2	311597	1.5	20.4	280142	1.6	19.6	101708	1.7	19.1	341582	1.8	20.9	497467	1.8	21.8
495336	1.4	20.3	41692	1.5	18.3	381491	1.6	20.4	440495	1.7	20.9	268584	1.8	20.3	274075	1.8	19.8
16469	1.5	17.0	464982	1.5	21.0	530323	1.6	21.4	138147	1.7	20.4	435895	1.8	22.6	296510	1.8	20.6
347772	1.5	20.8	209667	1.5	20.8	81528	1.6	18.7	438383	1.7	20.5	250263	1.8	21.2	343104	1.8	21.1
413178	1.5	20.9	230941	1.5	19.7	130858	1.6	17.3	341267	1.7	20.6	369816	1.8	19.4	470218	1.8	20.1
333820	1.5	19.0	392639	1.5	20.4	170083	1.6	20.0	351586	1.7	19.9	267454	1.8	20.4	88163	1.8	19.1
342886	1.5	20.8	15460	1.5	17.9	465942	1.6	21.2	191979	1.7	19.0	334829	1.8	19.8	120021	1.8	19.8
385584	1.5	21.4	443750	1.5	19.4	436667	1.6	20.0	347890	1.7	19.9	505293	1.8	22.2	100626	1.8	19.6
4829	1.5	18.0	362684	1.5	20.4	175599	1.6	19.4	224310	1.7	20.4	469427	1.8	20.7	66679	1.8	18.1
291493	1.5	19.7	466074	1.5	21.7	294429	1.6	20.2	158732	1.7	18.5	281230	1.8	19.3	53152	1.8	18.5
343001	1.5	20.2	106083	1.5	19.9	427996	1.6	22.7	261250	1.7	19.9	376791	1.8	21.0	309452	1.8	20.9
390631	1.5	21.6	534110	1.5	20.1	503245	1.6	20.4	371056	1.7	20.7	127925	1.8	19.8	313637	1.8	21.2
377851	1.5	21.2	381457	1.5	20.7	341750	1.6	20.6	298857	1.7	21.4	105789	1.8	19.9	455630	1.8	21.5
274500	1.5	20.2	457727	1.5	20.0	435450	1.6	20.5	330075	1.7	21.1	96368	1.8	19.3	222514	1.8	18.8
366607	1.5	21.3	224304	1.5	21.2	222675	1.6	17.9	301760	1.7	19.4	428749	1.8	21.5	459011	1.8	21.8
34891	1.5	17.3	407297	1.5	19.7	105317	1.6	19.4	140158	1.7	16.1	320341	1.8	20.5	136739	1.8	19.4
168914	1.5	20.5	471420	1.5	20.4	302825	1.6	20.6	534970	1.7	20.3	154	1.8	12.5	135067	1.8	19.2
219726	1.5	19.5	473134	1.5	20.0	341358	1.6	20.0	106174	1.7	18.9	500989	1.8	20.7	425115	1.8	21.0
108534	1.5	18.2	377493	1.5	20.9	39000	1.6	18.5	342981	1.7	21.3	229228	1.8	19.8	205335	1.8	19.3
430450	1.5	21.3	134859	1.5	19.3	170245	1.6	18.6	535073	1.7	21.9	9867	1.8	17.5	534145	1.8	20.6
498581	1.5	18.8	234700	1.5	19.5	56572	1.6	17.2	372700	1.7	20.4	497138	1.8	20.5	228225	1.8	19.5
286481	1.5	20.5	61643	1.5	17.2	480101	1.6	20.4	478253	1.7	22.1	539225	1.8	21.8	242813	1.8	18.9
372550	1.5	19.1	364017	1.5	20.5	535012	1.6	19.4	371714	1.7	20.8	479320	1.8	20.9	57242	1.8	18.8
339518	1.5	20.6	366398	1.5	20.6	423725	1.6	20.1	519034	1.7	19.9	27774	1.8	18.3	138807	1.8	19.5
270566	1.5	19.2	286265	1.5	19.6	513734	1.6	20.8	100929	1.7	19.7	410425	1.8	21.2	338540	1.8	19.8
231847	1.5	19.6	357047	1.5	20.0	514882	1.6	21.2	349422	1.7	21.3	233172	1.8	20.7	318023	1.8	19.7
286776	1.5	19.7	435023	1.5	20.3	106606	1.6	18.0	299958	1.7	19.4	203411	1.8	20.0	224376	1.8	20.3
520022	1.5	20.8	286431	1.5	20.8	502908	1.6	21.1	33760	1.7	17.7	210128	1.8	20.3	222894	1.8	20.0
423701	1.5	21.9	391291	1.5	20.9	17357	1.6	16.7	271935	1.7	20.2	41911	1.8	18.6	406824	1.8	20.6
400301	1.5	20.5	531243	1.5	20.7	297836	1.6	20.0	523649	1.7	23.2	143109	1.8	19.8	368750	1.8	20.2
337475	1.5	21.1	28431	1.5	17.0	39735	1.6	18.6	333431	1.7	20.0	290921	1.8	20.7	388175	1.8	19.1
106214	1.5	19.1	122167	1.5	18.1	341004	1.6	20.2	437265	1.7	21.3	529289	1.8	21.5	271210	1.8	20.3
438378	1.5	20.7	29322	1.5	19.1	423629	1.6	21.8	181636	1.7	20.8	133993	1.8	19.8	530610	1.8	22.1
418264	1.5	20.5	126366	1.6	19.6	468343	1.6	21.7	533069	1.7	21.1	23195	1.8	18.6	96383	1.8	18.6
61935	1.5	18.6	421326	1.6	20.1	221315	1.6	19.0	422352	1.7	21.7	43674	1.8	18.3	279644	1.8	19.8
424662	1.5	20.4	84698	1.6	18.5	368562	1.6	20.1	34339	1.7	19.5	242232	1.8	19.7	507560	1.8	20.8
501930	1.5	21.2	81747	1.6	18.3	210743	1.6	20.8	37835	1.7	18.5	63642	1.8	18.2	265733	1.9	19.7
64214	1.5	17.7	432230	1.6	20.4	201867	1.6	19.4	502162	1.7	21.4	498585	1.8	20.1	69699	1.9	19.1
178927	1.5	18.9	209584	1.6	20.5	74449	1.6	19.3	36540	1.7	18.7	453378	1.8	21.0	60196	1.9	18.4
109448	1.5	19.6	467444	1.6	20.8	524960	1.6	20.2	85908	1.7	18.8	246107	1.8	19.8	378857	1.9	21.4
69473	1.5	18.3	19793	1.6	15.7	67359	1.6	19.5	85116	1.7	19.0	153609	1.8	19.0	310920	1.9	20.3
72060	1.5	19.0	14943	1.6	16.9	43475	1.6	19.7	280644	1.7	20.5	502317	1.8	21.2	259173	1.9	20.6
214189	1.5	20.9	226588	1.6	19.6	413206	1.6	20.5	321235	1.7	20.9	439988	1.8	21.5	258489	1.9	18.9
99127	1.5	19.2	55793	1.6	19.4	389276	1.6	21.4	219748	1.7	21.1	507528	1.8	21.0	190371	1.9	19.5
532073	1.5	21.0	251018	1.6	20.0	24458	1.7	18.3	241679	1.7	18.6	181665	1.8	19.0	139606	1.9	18.4
503458	1.5	19.7	33706	1.6	18.4	149602	1.7	19.8	346168	1.7	21.6	4754	1.8	17.0	73859	1.9	19.2
192889	1.5	19.7	161150	1.6	19.1	265812	1.7	20.0	498570	1.7	20.5	174001	1.8	20.0	19914	1.9	18.3
338382	1.5	20.5	319708	1.6	19.9	350127	1.7	19.5	400302	1.7	19.2	213865	1.8	20.1	181205	1.9	20.3
206194	1.5	19.1	267401	1.6	21.1	376208	1.7	20.7	422760	1.7	22.4	500974	1.8	20.4	98633	1.9	19.1
193950	1.5	18.8	295383	1.6	20.7	467293	1.7	20.0	522248	1.7	20.6	467071	1.8	21.8	148482	1.9	19.0
116777	1.5	19.1	211565	1.6	19.3	395361	1.7	20.7	117519	1.7	19.9	138163	1.8	19.2	467508	1.9	21.4
61250	1.5	18.2	415781	1.6	20.2	424592	1.7	20.7	42687	1.7	17.6	374151	1.8	20.7	126557	1.9	19.7
98494	1.5	19.5	68243	1.6	18.9	260784	1.7	20.7	370470	1.7	20.5	57694	1.8	18.1	179446	1.9	19.8
348624	1.5	20.0	170369	1.6	19.6	294689	1.7	19.5	176601	1.7	20.5	339092	1.8	20.5	64430	1.9	18.9
360339	1.5	21.1	267325	1.6	21.4	214777	1.7	20.9	94999	1.7	19.3	132217	1.8	19.8	521129	1.9	20.5
325278	1.5	19.9	410444	1.6	21.6	126049	1.7	18.5	497102	1.7	21.6	332300	1.8	20.2	6608	1.9	17.3
91375	1.5	18.0	388775	1.6	21.3	290793	1.7	20.9	240793	1.7	20.3	289597	1.8	19.8	277763	1.9	

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
368795	1.9	21.4	67446	1.9	18.1	305299	2.0	20.6	425695	2.1	20.8	330172	2.2	20.2	201114	2.2	19.6
284685	1.9	20.8	165380	1.9	17.5	203750	2.0	19.3	292370	2.1	20.0	410419	2.2	20.6	145844	2.2	20.3
471906	1.9	20.9	165460	1.9	20.7	257307	2.0	19.3	84841	2.1	19.1	306321	2.2	19.5	412752	2.2	20.3
143351	1.9	20.9	213353	1.9	20.8	117804	2.0	19.2	302849	2.1	20.7	176005	2.2	19.3	299960	2.2	20.7
541687	1.9	20.5	529205	1.9	21.3	111891	2.0	19.1	408147	2.1	20.4	209609	2.2	19.6	110591	2.2	17.7
527723	1.9	21.3	193984	1.9	18.5	166777	2.0	19.7	284153	2.1	18.8	156292	2.2	21.1	211994	2.2	21.4
419887	1.9	20.1	118731	1.9	19.3	144045	2.0	20.1	299971	2.1	19.9	206296	2.2	20.8	248863	2.2	20.0
284118	1.9	19.9	522894	1.9	20.1	303743	2.0	19.4	395727	2.1	20.2	226018	2.2	19.5	299725	2.2	20.7
490667	1.9	20.9	210132	1.9	20.5	333444	2.0	19.1	271832	2.1	20.5	304664	2.2	20.8	466163	2.2	20.2
286170	1.9	21.0	37078	1.9	19.0	295713	2.0	20.7	124514	2.1	18.7	138576	2.2	19.7	146408	2.2	18.8
32752	1.9	19.4	524304	1.9	21.6	250118	2.0	19.1	284313	2.1	20.3	542790	2.2	21.2	213021	2.2	20.3
69437	1.9	18.7	531481	1.9	22.9	423290	2.0	21.3	56981	2.1	17.9	281544	2.2	20.4	47956	2.2	18.7
168197	1.9	20.2	17085	1.9	17.8	98675	2.0	19.5	307518	2.1	19.5	453259	2.2	21.2	514547	2.2	20.9
521301	1.9	20.4	326112	1.9	20.6	498458	2.0	22.1	504249	2.1	21.0	406382	2.2	21.8	521192	2.2	21.3
219875	1.9	19.9	345365	1.9	20.2	526960	2.0	20.1	401573	2.1	18.9	360179	2.2	20.4	420052	2.2	21.1
211622	1.9	18.5	21930	1.9	18.7	33452	2.0	17.2	99989	2.1	18.9	264935	2.2	20.0	224250	2.2	19.6
202608	1.9	20.1	280200	1.9	18.9	72517	2.0	18.8	462206	2.1	21.1	280380	2.2	20.1	286555	2.2	21.3
535000	1.9	21.7	108578	1.9	19.7	284365	2.0	19.6	429090	2.1	21.8	403539	2.2	19.9	197576	2.2	19.0
219640	1.9	20.8	157895	1.9	18.6	151939	2.0	18.4	389889	2.1	20.1	469804	2.2	20.0	109126	2.2	19.4
245387	1.9	20.1	534486	1.9	22.6	488189	2.0	20.8	281047	2.1	18.7	185528	2.2	19.4	290011	2.2	20.1
533959	1.9	20.2	228332	1.9	19.7	540534	2.0	21.0	168065	2.1	19.2	320964	2.2	19.8	470481	2.2	20.8
454135	1.9	20.8	390007	1.9	20.6	259582	2.0	20.0	52718	2.1	18.1	211542	2.2	19.8	438859	2.2	21.9
136071	1.9	19.7	532770	1.9	20.9	119507	2.0	19.0	372416	2.1	20.5	3997	2.2	17.0	127362	2.2	20.0
173331	1.9	19.9	224473	1.9	18.6	144551	2.0	19.7	358558	2.1	19.5	397129	2.2	19.2	105162	2.2	19.0
416209	1.9	20.5	413137	1.9	22.6	106531	2.0	18.5	528300	2.1	21.2	524579	2.2	21.4	302273	2.2	18.9
325274	1.9	20.7	375031	1.9	19.3	374465	2.0	20.8	170574	2.1	19.7	435237	2.2	20.6	534974	2.2	22.8
40990	1.9	18.8	191319	1.9	18.8	395422	2.0	20.8	530658	2.1	19.5	438364	2.2	20.9	518624	2.2	22.3
370065	1.9	21.0	368967	1.9	19.9	342899	2.0	20.1	390103	2.1	21.6	335202	2.2	20.8	371080	2.2	20.9
176433	1.9	19.7	206682	1.9	18.2	30622	2.0	18.4	361717	2.1	20.0	526152	2.2	21.9	459290	2.2	20.4
505284	1.9	20.3	524823	1.9	20.9	144785	2.0	19.6	68366	2.1	19.7	412140	2.2	18.9	99332	2.2	18.1
280589	1.9	20.9	264695	1.9	21.0	377944	2.0	20.6	435868	2.1	21.4	495971	2.2	20.5	202121	2.2	19.6
382315	1.9	20.9	303357	1.9	18.8	329856	2.0	18.9	499304	2.1	20.6	455398	2.2	20.0	504364	2.2	22.0
283029	1.9	19.8	123674	1.9	19.3	471760	2.0	21.3	403310	2.1	21.7	389254	2.2	20.9	37227	2.3	17.1
288502	1.9	20.1	324545	1.9	21.2	119559	2.0	20.0	438134	2.1	20.7	398141	2.2	19.4	162776	2.3	19.7
68791	1.9	18.9	106942	1.9	20.1	540741	2.0	20.6	41486	2.1	18.3	107612	2.2	20.4	265797	2.3	19.6
141265	1.9	19.1	499046	1.9	22.0	51779	2.0	18.8	56291	2.1	18.7	138306	2.2	19.2	475773	2.3	21.5
544873	1.9	21.6	56869	1.9	18.3	176464	2.0	20.8	98384	2.1	19.4	471401	2.2	20.6	219657	2.3	19.1
150069	1.9	19.7	146099	1.9	19.1	406394	2.0	21.3	282913	2.1	18.2	240421	2.2	18.4	125351	2.3	18.5
499819	1.9	20.7	521064	1.9	20.9	397453	2.0	21.2	299885	2.1	20.4	498511	2.2	21.6	315463	2.3	21.8
9726	1.9	18.1	453871	1.9	21.4	187984	2.0	20.3	282504	2.1	19.1	166255	2.2	20.2	59286	2.3	19.3
28458	1.9	17.8	530157	1.9	21.1	399133	2.1	22.2	451400	2.1	19.5	277402	2.2	20.6	233148	2.3	18.7
42845	1.9	18.3	6722	1.9	18.1	119658	2.1	19.6	249211	2.1	20.5	348420	2.2	20.1	357201	2.3	20.8
190657	1.9	19.5	216733	1.9	20.2	51331	2.1	18.7	103118	2.1	19.3	225411	2.2	20.2	428819	2.3	20.8
459374	1.9	20.0	225869	1.9	18.8	383812	2.1	21.1	192241	2.1	20.0	215273	2.2	18.0	384166	2.3	20.2
507608	1.9	21.7	59970	1.9	18.2	153188	2.1	19.6	410365	2.1	21.6	506254	2.2	21.0	231660	2.3	20.1
388413	1.9	19.9	450733	1.9	20.5	336277	2.1	19.7	79201	2.1	18.0	148721	2.2	19.9	402076	2.3	21.4
38075	1.9	16.9	434311	1.9	20.2	328324	2.1	20.7	15592	2.1	18.7	380445	2.2	19.1	6617	2.3	16.5
152827	1.9	19.4	6780	1.9	15.6	268403	2.1	21.1	336893	2.1	19.7	435959	2.2	21.0	93878	2.3	19.4
527752	1.9	21.5	388135	1.9	19.9	159372	2.1	19.3	391664	2.1	19.4	372556	2.2	20.3	147123	2.3	19.2
38264	1.9	18.0	2595	1.9	16.8	67379	2.1	18.7	129566	2.1	19.3	208766	2.2	20.2	517657	2.3	21.2
445932	1.9	21.7	540239	1.9	20.2	90825	2.1	19.0	423812	2.1	20.3	330132	2.2	20.1	533985	2.3	21.8
48531	1.9	19.4	174127	1.9	18.0	232592	2.1	20.3	55901	2.1	19.3	373407	2.2	19.4	2083	2.3	15.1
504264	1.9	20.8	537360	1.9	21.0	122296	2.1	18.5	498916	2.1	21.3	369406	2.2	21.9	522801	2.3	21.0
124650	1.9	18.7	91459	1.9	19.1	94388	2.1	19.4	445097	2.1	21.1	535005	2.2	22.4	120172	2.3	19.1
458817	1.9	20.1	81672	1.9	18.1	148049	2.1	17.4	200135	2.1	20.6	293287	2.2	21.0	508569	2.3	20.2
452499	1.9	19.3	109523	1.9	19.7	427914	2.1	18.9	433742	2.1	21.8	352138	2.2	21.0	194954	2.3	19.8
43345	1.9	17.0	280531	1.9	19.6	107016	2.1	19.4	29633	2.1	17.7	267430	2.2	21.0	526204	2.3	21.3
346069	1.9	20.5	231334	1.9	20.2	390807	2.1	19.2	222646	2.1	19.1	304774	2.2	20.7	177935	2.3	19.4
533742	1.9	21.6	474994	1.9	20.8	424465	2.1	19.5	114663	2.1	18.7	24034	2.2	18.4	14537	2.3	17.2
108260	1.9	18.8	436348	1.9	21.0	435953	2.1	21.8	430505	2.1	20.2	326983	2.2	19.0	502601	2.3	21.2
259084	1.9	19.7	219863	1.9	19.7	290751	2.1	19.6	7993	2.1	16.5	90524	2.2	19.9	135270	2.3	19.5
160761	1.9	17.8	476784	1.9	20.0	170775	2.1	20.1	84434	2.1	20.5	167034	2.2	19.8	242658	2.3	20.5
309380	1.9	20.8	134894	1.9	21.3	524296	2.1	21.0	35447	2.1	17.4	114931	2.2	20.0	25883	2.3	18.2
178706	1.9	18.7	55962	1.9	18.7	456918	2.1	21.1	18667	2.1	17.4	472866	2.2	20.1	215200	2.3	19.8
420464	1.9	19.7	192742	1.9	20.2	10453	2.1	16.4	267498	2.1	18.7	162594	2.2	19.4	291112	2.3	19.1
469235	1.9	20.6	466675	1.9	21.3	399530	2.1	19.8	449214	2.1	20.3	462298	2.2	20.0	139429	2.3	20.2
431879	1.9	21.0	403307	1.9	21.2	462645	2.1	20.8	299563	2.1	21.0	30221	2.2	17.3	80096	2.3	18.0
87336	1.9	19.1	435730	1.9	22.7	136980	2.1	20.2	147238	2.1	18.9	86901	2.2	18.0	242341	2.3	20.4
171337	1.9	19.4	79675	1.9	19.9	310521	2.1	20.2	542906	2.2	19.0	351600	2.2	19.1	299658	2.3	20.1
308955	1.9	19.0	300150	1.9	21.4	383719	2.1	20.3	543839	2.2	20.8	225926	2.2	20.5	356576	2.3	21.1
116945	1.9	19.2	288864	1.9	19.9	527220	2.1	21.2	244894	2.2	20.9	374424	2.2	20.9	528531		

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
295412	2.3	19.8	527140	2.4	21.4	500696	2.4	22.2	140406	2.5	19.3	3798	2.6	16.1	489127	2.7	20.6
95277	2.3	18.5	11159	2.4	17.1	391365	2.4	20.9	371960	2.5	20.2	3374	2.6	16.8	263472	2.7	20.4
181960	2.3	19.0	129145	2.4	19.8	64341	2.4	19.4	276961	2.5	20.8	424925	2.6	20.8	454673	2.7	20.8
61959	2.3	19.7	160950	2.4	20.2	55089	2.4	19.0	324504	2.5	20.9	198225	2.6	20.4	40501	2.7	18.4
193790	2.3	18.4	356045	2.4	19.7	357610	2.4	20.1	469941	2.5	20.8	34925	2.6	17.3	371302	2.7	20.7
178689	2.3	19.9	528288	2.4	22.0	111198	2.4	20.0	116963	2.5	18.5	421291	2.6	20.0	59829	2.7	18.2
176017	2.3	19.7	193135	2.4	19.0	336962	2.4	20.3	231756	2.5	19.5	288606	2.6	20.7	528456	2.7	22.1
533347	2.3	22.6	435992	2.4	21.5	341409	2.4	20.5	325211	2.5	20.4	458876	2.6	22.1	304916	2.7	21.7
536503	2.3	19.4	435406	2.4	20.1	141407	2.4	20.4	146199	2.5	19.6	176400	2.6	21.1	481887	2.7	22.8
353827	2.3	20.4	413193	2.4	21.0	310046	2.4	20.4	170168	2.5	20.4	485064	2.6	19.6	203601	2.7	20.3
474886	2.3	20.9	206837	2.4	20.1	413903	2.4	22.3	450543	2.5	21.0	538887	2.6	20.9	108857	2.7	18.1
498692	2.3	21.0	105795	2.4	19.8	310260	2.4	19.8	203627	2.5	19.2	89015	2.6	19.8	220559	2.7	19.8
489090	2.3	21.2	114820	2.4	18.2	158833	2.4	19.7	290132	2.5	20.3	497169	2.6	20.2	34234	2.7	18.2
543077	2.3	19.0	400014	2.4	20.2	101630	2.4	19.1	132017	2.5	19.9	421367	2.6	19.9	264750	2.7	19.8
270544	2.3	20.3	532436	2.4	21.7	404139	2.4	19.7	438744	2.5	20.3	391276	2.6	21.9	7894	2.7	16.7
92671	2.3	18.8	285736	2.4	20.7	498698	2.4	20.1	73652	2.5	19.8	377448	2.6	19.4	369757	2.7	19.8
239837	2.3	20.7	534855	2.4	20.5	417275	2.4	21.4	111196	2.5	18.9	226666	2.6	20.8	15356	2.7	16.7
313733	2.3	21.1	332144	2.4	21.1	63313	2.4	16.9	425938	2.5	20.4	386591	2.6	19.8	195660	2.7	20.0
467637	2.3	20.7	309179	2.4	21.6	313432	2.4	21.0	416253	2.5	20.4	124623	2.6	19.8	39627	2.7	18.6
122962	2.3	19.0	138168	2.4	20.6	221325	2.4	20.6	21127	2.5	17.8	67810	2.6	17.8	526292	2.7	21.9
543475	2.3	20.8	298343	2.4	20.7	239010	2.4	19.7	176499	2.5	20.4	145879	2.6	19.9	170771	2.7	19.5
430159	2.3	20.0	90510	2.4	17.3	296587	2.4	19.8	127718	2.5	19.1	378840	2.6	19.7	326728	2.7	20.2
473262	2.3	19.8	269995	2.4	20.4	3124	2.4	16.7	492462	2.5	19.4	162982	2.6	20.0	470522	2.7	20.8
142704	2.3	18.5	82250	2.4	17.3	535096	2.4	21.5	519990	2.5	20.3	498617	2.6	20.5	367165	2.7	21.3
299412	2.3	19.7	109372	2.4	19.6	174039	2.4	20.0	522285	2.5	20.7	208431	2.6	20.2	128646	2.7	19.4
140569	2.3	19.4	173930	2.4	19.9	459918	2.4	18.9	288996	2.5	19.7	238060	2.6	21.1	162066	2.7	19.7
373493	2.3	20.5	28005	2.4	18.2	138347	2.4	19.2	22785	2.5	17.6	240132	2.6	18.9	91548	2.7	18.8
165357	2.3	20.9	262984	2.4	20.9	30189	2.5	16.2	116999	2.5	18.4	447697	2.6	20.6	534468	2.7	20.5
113866	2.3	20.0	543908	2.4	19.4	205584	2.5	19.9	344010	2.5	20.8	498267	2.6	20.6	511606	2.7	20.6
201895	2.3	19.3	532483	2.4	21.8	431055	2.5	21.3	204154	2.5	19.6	44972	2.6	19.0	424590	2.7	20.3
501889	2.3	21.5	515386	2.4	20.8	298326	2.5	20.4	363362	2.5	20.0	16398	2.6	16.4	339011	2.7	19.7
368773	2.3	19.9	470196	2.4	20.7	238864	2.5	20.8	1932	2.5	17.2	288762	2.6	19.5	524533	2.7	20.2
235200	2.3	19.5	63142	2.4	17.6	538909	2.5	21.4	231312	2.6	20.3	388406	2.6	21.2	98606	2.7	18.4
379595	2.3	19.2	190724	2.4	19.8	457656	2.5	21.3	366416	2.6	19.9	2903	2.6	15.6	190283	2.7	18.6
406489	2.3	19.9	539480	2.4	21.7	406468	2.5	20.8	135260	2.6	20.1	18054	2.6	17.7	539877	2.7	19.6
284079	2.3	20.1	68488	2.4	19.3	246928	2.5	19.8	99353	2.6	18.3	450933	2.6	20.6	488230	2.7	21.1
50267	2.3	18.2	118664	2.4	18.2	467203	2.5	21.3	456120	2.6	21.2	123694	2.6	19.8	421461	2.7	19.0
368805	2.3	18.8	281766	2.4	19.5	434803	2.5	20.2	206856	2.6	19.4	218791	2.6	19.2	290891	2.7	19.7
153777	2.3	18.6	348996	2.4	21.7	113753	2.5	17.9	492256	2.6	22.4	185000	2.6	19.6	474787	2.7	20.4
353675	2.3	20.7	396618	2.4	20.0	188997	2.5	19.3	532872	2.6	21.8	160857	2.6	19.3	266262	2.7	19.3
56025	2.3	18.3	29651	2.4	17.7	12120	2.5	17.3	57565	2.6	19.8	169155	2.6	19.5	502655	2.7	21.1
6397	2.3	16.2	312138	2.4	19.4	277993	2.5	20.6	411300	2.6	20.4	114875	2.6	17.8	526214	2.7	21.1
375026	2.3	19.1	371976	2.4	19.8	230095	2.5	19.1	303817	2.6	20.3	20050	2.6	18.6	171310	2.7	18.4
36384	2.3	18.4	504354	2.4	21.8	362057	2.5	21.2	507583	2.6	21.9	466151	2.6	20.1	3624	2.7	17.4
532417	2.3	21.4	423647	2.4	21.8	537922	2.5	21.3	212626	2.6	19.4	542729	2.6	20.9	317892	2.7	20.9
233235	2.3	20.2	60038	2.4	18.2	106907	2.5	20.2	15049	2.6	18.0	130983	2.6	19.0	424137	2.7	20.8
430569	2.3	20.8	498371	2.4	21.5	88786	2.5	19.3	391399	2.6	19.6	105823	2.6	19.6	39271	2.7	17.0
208433	2.3	19.4	395823	2.4	20.4	368593	2.5	20.0	374057	2.6	19.5	276532	2.6	20.1	439128	2.7	20.3
462201	2.3	20.0	284325	2.4	20.3	501077	2.5	20.9	107789	2.6	17.6	179184	2.6	19.6	341444	2.7	19.2
420716	2.3	20.6	346860	2.4	21.3	434337	2.5	20.5	405823	2.6	20.5	479025	2.6	20.7	376745	2.7	20.3
232297	2.3	20.1	330102	2.4	20.2	469592	2.5	20.3	503450	2.6	20.0	537339	2.6	20.9	127174	2.7	19.8
320650	2.3	21.4	128823	2.4	20.6	61166	2.5	18.1	202800	2.6	19.8	534338	2.6	20.5	323634	2.7	18.8
490653	2.3	19.6	346114	2.4	21.1	36388	2.5	18.5	474815	2.6	21.4	48438	2.6	17.8	167436	2.7	19.9
487133	2.3	19.7	408447	2.4	19.8	368212	2.5	19.8	29017	2.6	19.2	165263	2.6	20.0	464740	2.7	19.0
148375	2.3	20.7	157972	2.4	18.3	246114	2.5	19.8	7915	2.6	17.7	153783	2.6	20.4	100179	2.7	19.1
97425	2.3	18.9	522988	2.4	21.4	436662	2.5	19.8	111739	2.6	19.4	216379	2.6	19.3	534788	2.7	20.5
508281	2.3	21.6	14213	2.4	17.1	329362	2.5	21.2	58927	2.6	17.9	48245	2.6	18.0	109409	2.7	18.8
502447	2.3	19.8	189430	2.4	17.8	536414	2.5	20.7	26450	2.6	19.4	279013	2.6	19.8	361634	2.7	20.0
119611	2.3	18.6	15248	2.4	17.6	396359	2.5	20.0	44227	2.6	17.5	229153	2.6	20.0	491972	2.7	19.9
261367	2.3	20.2	329384	2.4	20.2	305506	2.5	21.6	179477	2.6	20.8	375743	2.6	21.7	99943	2.7	18.4
1194	2.3	14.8	87780	2.4	18.6	281972	2.5	20.5	384934	2.6	20.8	304013	2.6	18.8	502712	2.7	20.8
472302	2.3	20.8	338277	2.4	20.7	527563	2.5	21.5	190381	2.6	19.0	303362	2.6	20.1	408259	2.7	19.4
381325	2.3	20.4	15921	2.4	17.7	87552	2.5	19.2	490914	2.6	22.3	143224	2.6	20.0	354823	2.7	20.7
423726	2.4	20.4	56883	2.4	18.2	346211	2.5	21.8	65065	2.6	19.0	521856	2.6	21.3	33999	2.7	18.8
32637	2.4	18.8	204338	2.4	20.2	465362	2.5	21.5	37812	2.6	16.5	31786	2.6	17.0	354902	2.7	21.8
437967	2.4	20.3	356832	2.4	20.5	323879	2.5	20.7	179202	2.6	20.4	212624	2.6	20.1	353558	2.7	21.2
378867	2.4	20.7	379241	2.4	20.0	58834	2.5	19.1	332363	2.6	20.4	418307	2.6	21.0	495159	2.7	19.1
357955	2.4	21.0	465196	2.4	19.8	294249	2.5	20.4	302034	2.6	19.5	391672	2.6	21.4	404522	2.7	22.0
382356	2.4	20.2	419663	2.4	20.3	96397	2.5	19.7	499776	2.6	20.2	113922	2.6	18.0	346187	2.7	20.3
117298	2.4	19.9	416458	2.4	19.7	302387	2.5	20.6	346034	2.6	21.5	507613	2.6	20.9	498667	2.7	21.8
497475	2.4	20.2	186600	2.4	18.9	163285	2.5	20.7	530752	2.6	21.5	492953	2.6	19.9	390804	2.7	19

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
303809	2.7	20.0	363749	2.8	21.3	5031	2.8	16.6	282676	2.9	20.4	355906	2.9	20.8	429993	3.1	22.3
374400	2.7	18.4	506255	2.8	21.0	526807	2.8	21.7	36050	2.9	17.7	422738	2.9	20.4	140190	3.1	19.8
539005	2.7	20.4	130431	2.8	19.1	61951	2.8	18.8	279530	2.9	21.6	61761	2.9	18.7	487963	3.1	20.1
152421	2.7	19.2	287996	2.8	20.7	420441	2.8	20.6	149471	2.9	18.6	328355	2.9	20.3	300878	3.1	20.5
434954	2.7	20.3	535713	2.8	20.3	288618	2.8	19.1	299491	2.9	19.9	202480	2.9	19.6	67063	3.1	18.8
480534	2.7	20.3	491885	2.8	21.4	61421	2.8	18.5	338295	2.9	21.0	148814	2.9	20.1	544517	3.1	20.4
535417	2.7	21.3	26200	2.8	16.7	92592	2.8	18.5	164781	2.9	20.9	177069	2.9	19.8	329606	3.1	20.1
520052	2.7	21.1	221781	2.8	19.8	468357	2.8	20.9	76518	2.9	19.4	46762	2.9	16.7	541583	3.1	21.3
257621	2.7	20.3	98070	2.8	19.1	544822	2.8	19.2	300857	2.9	19.4	302390	2.9	20.1	196784	3.1	19.7
239980	2.7	20.9	56183	2.8	19.2	489071	2.8	21.1	235824	2.9	20.3	433118	2.9	20.9	62771	3.1	18.9
503177	2.7	20.9	354822	2.8	20.6	125165	2.8	20.5	315704	2.9	19.9	543166	2.9	20.6	407814	3.1	20.0
94215	2.7	19.1	141236	2.8	19.9	257182	2.9	19.6	81768	2.9	19.0	316591	2.9	19.4	243681	3.1	19.7
498648	2.7	20.8	386964	2.8	20.2	374353	2.9	20.5	141369	2.9	20.4	154744	2.9	19.3	176354	3.1	21.9
528662	2.7	21.8	541602	2.8	20.6	244685	2.9	19.1	454337	2.9	20.4	374160	2.9	19.9	53614	3.1	17.7
94819	2.7	19.2	143304	2.8	19.6	539803	2.9	20.9	232016	2.9	19.8	213251	2.9	20.2	260081	3.1	18.5
314432	2.7	20.5	474956	2.8	20.9	273429	2.9	19.8	326427	2.9	21.0	91040	2.9	18.6	262668	3.1	19.3
522676	2.7	20.2	468439	2.8	20.2	374109	2.9	21.3	529231	2.9	21.3	515719	2.9	20.6	313756	3.1	19.9
285247	2.7	19.8	199755	2.8	19.9	196193	2.9	20.0	139732	2.9	19.2	487571	2.9	20.6	106511	3.1	19.7
267373	2.7	19.8	478227	2.8	20.1	196274	2.9	19.5	162785	2.9	18.4	173341	2.9	20.0	304636	3.1	20.4
258318	2.7	21.4	346320	2.8	20.0	162584	2.9	20.1	466978	2.9	21.9	258524	2.9	20.5	525799	3.1	22.1
366021	2.7	19.9	422099	2.8	21.2	106192	2.9	20.9	390798	2.9	21.2	146948	2.9	20.3	333650	3.1	19.7
376317	2.7	21.4	266307	2.8	20.7	472934	2.9	19.5	270220	2.9	21.1	18425	2.9	17.0	188018	3.1	20.4
356733	2.7	21.0	310181	2.8	20.0	538175	2.9	21.3	450986	2.9	21.1	213199	3.0	19.4	131181	3.1	19.7
54633	2.7	18.7	338418	2.8	20.7	296435	2.9	20.2	87408	2.9	18.9	421268	3.0	20.4	341455	3.1	20.1
165479	2.7	19.3	213620	2.8	19.7	328631	2.9	19.5	414008	2.9	22.4	379684	3.0	20.4	524744	3.1	21.4
10924	2.7	17.8	42640	2.8	18.3	303471	2.9	21.0	164620	2.9	19.4	190155	3.0	20.0	243054	3.1	19.2
434400	2.7	22.5	165350	2.8	20.5	89658	2.9	18.4	115085	2.9	19.7	95489	3.0	20.0	162178	3.1	18.3
492216	2.7	21.4	57011	2.8	18.1	283244	2.9	20.5	327829	2.9	20.9	461999	3.0	20.5	129769	3.1	19.1
50587	2.7	17.5	373275	2.8	19.6	471833	2.9	21.3	223241	2.9	20.4	181860	3.0	19.4	101716	3.1	17.4
269449	2.7	20.3	415978	2.8	20.7	159887	2.9	18.2	31234	2.9	20.2	501010	3.0	20.2	16071	3.1	17.5
506678	2.7	22.5	153857	2.8	19.6	489992	2.9	20.3	535125	2.9	21.3	251427	3.0	20.7	374543	3.1	21.3
44102	2.7	19.0	537101	2.8	21.3	105060	2.9	18.2	292472	2.9	20.0	130657	3.0	19.2	303405	3.1	20.9
128325	2.7	19.9	304713	2.8	20.3	365416	2.9	20.1	248905	2.9	20.0	76685	3.0	19.5	95147	3.1	18.5
47954	2.7	19.3	387609	2.8	20.9	417523	2.9	19.9	471336	2.9	19.1	333368	3.0	17.7	128825	3.1	18.3
140832	2.7	19.6	336491	2.8	20.3	399533	2.9	19.3	545112	2.9	20.7	303438	3.0	21.6	430435	3.1	20.4
417214	2.7	20.9	279866	2.8	19.7	308276	2.9	20.9	305447	2.9	20.7	135556	3.0	18.3	506258	3.1	21.2
291092	2.7	20.0	414220	2.8	19.9	29976	2.9	18.1	105342	2.9	19.2	133731	3.0	19.4	526996	3.1	20.4
204889	2.7	20.0	39752	2.8	19.0	40877	2.9	19.0	422900	2.9	19.3	522603	3.0	20.7	252785	3.1	20.8
297845	2.7	21.6	470270	2.8	21.3	403293	2.9	21.8	98665	2.9	18.0	10180	3.0	17.5	285114	3.1	20.6
75244	2.7	18.8	39403	2.8	18.5	138723	2.9	20.5	297705	2.9	20.4	532515	3.0	21.4	530138	3.1	22.3
297709	2.7	19.2	221368	2.8	20.1	153712	2.9	20.6	426099	2.9	18.9	266040	3.0	19.4	166152	3.1	18.5
385161	2.8	21.1	400303	2.8	20.9	56747	2.9	18.1	305776	2.9	20.3	369318	3.0	19.7	428808	3.1	20.8
386552	2.8	20.6	299913	2.8	19.9	479017	2.9	21.3	511656	2.9	20.4	166814	3.0	20.8	470018	3.1	21.1
474051	2.8	19.9	192843	2.8	19.4	300145	2.9	21.6	87673	2.9	18.3	357405	3.0	19.8	157913	3.1	18.1
503093	2.8	21.1	135337	2.8	18.8	93493	2.9	18.0	229979	2.9	19.8	468373	3.0	20.0	122636	3.1	19.2
518935	2.8	21.9	47778	2.8	18.1	144128	2.9	20.1	69683	2.9	19.2	419955	3.0	20.1	498340	3.1	21.4
523589	2.8	24.3	372436	2.8	19.7	512886	2.9	20.6	73666	2.9	19.5	78968	3.0	19.5	215139	3.1	19.1
125805	2.8	20.4	416822	2.8	19.1	376301	2.9	20.2	456858	2.9	21.0	216610	3.0	20.0	79971	3.1	19.3
400304	2.8	21.0	352544	2.8	20.8	16248	2.9	17.3	419671	2.9	20.3	331543	3.0	19.6	256697	3.1	20.0
497995	2.8	19.7	181128	2.8	20.8	446549	2.9	20.3	173869	2.9	19.7	300117	3.0	22.4	273566	3.1	20.5
515439	2.8	20.1	371739	2.8	21.0	460648	2.9	20.4	30807	2.9	18.6	156472	3.0	19.9	452568	3.1	22.4
447381	2.8	22.2	148453	2.8	20.4	109795	2.9	18.8	138367	2.9	19.8	353853	3.0	20.7	26841	3.1	18.7
246664	2.8	20.4	195279	2.8	19.3	355221	2.9	21.0	210448	2.9	20.7	494581	3.0	20.5	184105	3.1	18.7
38455	2.8	19.0	455170	2.8	18.4	316581	2.9	20.7	268053	2.9	20.1	539226	3.0	21.4	406020	3.1	21.4
105819	2.8	19.8	108181	2.8	18.4	125128	2.9	19.7	29057	2.9	19.5	492879	3.0	20.3	26868	3.1	18.1
537373	2.8	20.7	32775	2.8	18.6	20839	2.9	18.0	138766	2.9	19.2	118988	3.0	19.0	442684	3.1	20.9
147387	2.8	19.4	271899	2.8	19.7	7913	2.9	17.1	196595	2.9	19.5	504200	3.0	21.7	470545	3.1	22.1
540357	2.8	20.4	11518	2.8	17.7	455133	2.9	20.8	74450	2.9	19.3	76954	3.0	18.2	500656	3.1	21.5
286382	2.8	21.3	31569	2.8	17.3	304371	2.9	20.5	56998	2.9	17.1	301486	3.0	21.0	169424	3.1	20.2
247370	2.8	19.9	2793	2.8	16.3	359244	2.9	19.4	306300	2.9	20.0	80084	3.0	19.3	294522	3.1	19.7
189482	2.8	19.6	502428	2.8	21.8	412763	2.9	18.7	368727	2.9	19.6	346035	3.0	20.4	522985	3.1	21.3
452737	2.8	21.4	471925	2.8	19.2	16046	2.9	17.7	349307	2.9	20.2	421755	3.0	21.4	232816	3.1	20.1
100251	2.8	19.3	396527	2.8	20.1	165226	2.9	20.6	420653	2.9	20.6	522058	3.0	20.7	2272	3.1	16.6
81321	2.8	18.4	140540	2.8	19.7	341763	2.9	20.2	68997	2.9	18.0	9615	3.0	16.8	270312	3.1	21.6
380940	2.8	20.9	530583	2.8	21.6	369074	2.9	20.3	529264	2.9	21.2	383137	3.0	21.2	412549	3.1	20.4
494174	2.8	21.6	261116	2.8	20.9	245521	2.9	19.2	470499	2.9	20.8	350440	3.0	19.9	163856	3.1	18.7
165153	2.8	18.7	495231	2.8	20.8	253138	2.9	21.2	443678	2.9	20.4	166153	3.0	20.6	124477	3.1	19.5
140663	2.8	19.0	161839	2.8	19.8	376345	2.9	20.3	100396	2.9	19.3	538443	3.0	20.6	309301	3.1	19.4
530874	2.8	21.4	174877	2.8	19.6	379327	2.9	20.9	420582	2.9	20.7	305700	3.0	21.5	153628	3.1	20.4
376058	2.8	20.3	9419	2.8	17.4	53993	2.9	16.5	447704	2.9	19.9	100896	3.0	19.0	317618	3.1	20.3
372678	2.8	20.7	17746	2.8	17.8	321756	2.9	19.5	15459	2.9	18.6	507590	3.0	21.5	420999	3.1	

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
182458	3.1	19.5	72527	3.2	19.3	461739	3.3	21.0	118445	3.3	19.8	495129	3.4	20.7	475771	3.5	22.3
165760	3.1	19.5	64736	3.2	18.3	76142	3.3	18.4	278179	3.3	19.2	386729	3.4	20.7	231339	3.5	19.8
418229	3.1	20.2	447352	3.2	20.6	80158	3.3	18.5	36112	3.3	17.7	339851	3.4	20.0	24118	3.5	19.0
529974	3.1	20.7	426333	3.2	20.2	14594	3.3	18.4	103709	3.4	19.3	492834	3.4	20.2	351582	3.5	19.6
467781	3.1	21.2	142430	3.2	19.0	415887	3.3	21.3	363771	3.4	20.1	146256	3.4	20.5	431833	3.5	21.1
94408	3.1	18.9	530790	3.2	20.8	510315	3.3	20.8	184756	3.4	19.2	296256	3.4	20.1	470461	3.5	20.2
297566	3.1	20.1	196579	3.2	18.5	287002	3.3	20.5	327843	3.4	20.6	522703	3.4	20.6	209421	3.5	20.1
378771	3.1	21.0	388792	3.2	20.4	198087	3.3	20.3	133137	3.4	19.7	122652	3.4	19.5	82750	3.5	17.2
276598	3.1	19.2	168964	3.2	19.3	30704	3.3	18.2	160729	3.4	19.6	59507	3.4	18.4	13963	3.5	17.9
168958	3.1	20.8	538588	3.2	21.6	44660	3.3	18.5	182407	3.4	19.9	240357	3.4	20.0	404175	3.5	21.1
419840	3.1	19.4	150799	3.2	19.7	300940	3.3	21.7	544760	3.4	20.4	100155	3.4	20.3	383363	3.5	20.9
16492	3.1	18.1	409011	3.2	21.5	124936	3.3	18.7	480799	3.4	19.4	253223	3.4	20.3	177108	3.5	20.9
468263	3.1	20.2	527290	3.2	19.5	85827	3.3	18.5	362168	3.4	20.2	539018	3.4	21.2	523641	3.5	22.8
325216	3.1	19.5	330758	3.2	20.2	523909	3.3	22.1	474840	3.4	20.9	417454	3.4	19.6	27	3.5	10.7
144006	3.1	18.1	328926	3.2	20.5	102561	3.3	20.2	419838	3.4	20.8	29658	3.4	16.9	513067	3.5	20.6
127701	3.1	20.1	177046	3.2	20.3	363529	3.3	20.8	94387	3.4	18.6	281087	3.4	20.8	193389	3.5	19.5
195575	3.2	18.1	406589	3.2	21.3	325261	3.3	20.1	469891	3.4	19.8	193977	3.4	18.7	193796	3.5	19.0
10025	3.2	17.0	282911	3.2	19.7	492785	3.3	20.0	266638	3.4	19.5	473915	3.4	20.1	125302	3.5	19.2
104122	3.2	18.5	431029	3.2	20.4	508297	3.3	20.9	253001	3.4	20.9	286453	3.4	20.2	507819	3.5	20.8
535815	3.2	21.6	115303	3.2	19.6	31384	3.3	18.2	202486	3.4	19.5	286296	3.4	20.5	93711	3.5	19.8
253864	3.2	21.1	489137	3.2	20.3	175147	3.3	20.1	287110	3.4	20.3	130502	3.4	18.7	301444	3.5	20.0
519409	3.2	20.7	67275	3.2	18.7	275146	3.3	20.8	199630	3.4	20.1	74647	3.4	19.0	140553	3.5	18.7
540468	3.2	21.2	459124	3.2	21.6	109174	3.3	19.1	509604	3.4	21.7	297889	3.4	21.6	103437	3.5	19.6
161589	3.2	18.4	368690	3.2	22.0	143644	3.3	18.1	86236	3.4	18.2	175616	3.4	19.6	30277	3.5	17.8
188007	3.2	20.0	43962	3.2	21.1	200912	3.3	19.9	543367	3.4	20.3	534969	3.4	20.9	114298	3.5	18.5
138715	3.2	19.7	541819	3.2	20.6	510444	3.3	21.2	439558	3.4	20.7	75139	3.4	18.4	124985	3.5	19.2
258091	3.2	20.1	522576	3.2	20.0	291016	3.3	20.7	332185	3.4	19.7	471853	3.4	20.5	539537	3.5	20.7
82923	3.2	19.3	151225	3.2	20.7	431805	3.3	20.2	182041	3.4	20.6	375790	3.4	20.7	74909	3.5	18.4
281113	3.2	20.3	535663	3.2	21.3	62877	3.3	18.3	297942	3.4	21.0	309425	3.4	20.2	470182	3.5	21.8
328991	3.2	20.6	341376	3.2	20.1	96430	3.3	19.3	242743	3.4	19.6	200770	3.4	19.5	367930	3.5	19.9
98844	3.2	19.6	321834	3.2	20.8	478411	3.3	20.9	166629	3.4	19.2	299364	3.4	20.2	273856	3.5	19.9
222664	3.2	19.9	145570	3.2	18.7	98362	3.3	19.3	460098	3.4	20.3	203360	3.4	20.3	93536	3.5	20.2
340906	3.2	20.4	469892	3.2	21.1	235007	3.3	19.1	136797	3.4	19.8	458938	3.4	22.0	117937	3.5	18.9
470500	3.2	21.6	357991	3.2	22.0	438626	3.3	20.5	540378	3.4	21.6	406451	3.4	21.7	127548	3.5	19.6
492208	3.2	22.8	433779	3.2	21.1	170030	3.3	19.8	132212	3.4	20.1	521075	3.4	19.8	525158	3.5	22.7
500770	3.2	22.4	382443	3.2	20.5	133285	3.3	19.2	506649	3.4	21.7	465692	3.4	20.5	389814	3.5	19.5
439154	3.2	19.8	299306	3.2	19.7	265692	3.3	20.3	391393	3.4	20.8	300947	3.4	20.1	426469	3.5	20.9
297899	3.2	20.8	267483	3.2	19.4	125136	3.3	19.0	516190	3.4	20.2	157886	3.4	19.2	536319	3.5	21.3
422775	3.2	20.8	330393	3.2	21.0	299840	3.3	20.9	351660	3.4	21.7	213233	3.4	20.6	427268	3.5	20.4
221297	3.2	20.7	234785	3.2	20.9	451754	3.3	21.8	83172	3.4	19.6	47938	3.4	18.7	439385	3.5	20.7
348952	3.2	20.9	171369	3.2	19.0	539168	3.3	20.7	297467	3.4	20.5	408958	3.4	19.3	296163	3.5	20.5
298734	3.2	19.6	58551	3.2	19.8	348900	3.3	20.7	506560	3.4	21.7	543132	3.5	21.0	457565	3.5	22.1
508590	3.2	19.7	241100	3.2	19.7	176698	3.3	19.8	289196	3.4	20.0	61143	3.5	18.9	392547	3.5	21.1
161740	3.2	19.5	38944	3.2	18.9	504373	3.3	21.0	136866	3.4	20.3	498261	3.5	21.1	188067	3.5	20.7
401020	3.2	21.1	374600	3.2	21.2	239576	3.3	20.6	140823	3.4	18.9	91507	3.5	19.5	111742	3.5	19.4
214669	3.2	21.1	189494	3.2	19.4	298657	3.3	19.4	346227	3.4	20.3	132030	3.5	20.2	308189	3.5	21.3
532514	3.2	21.5	15439	3.2	18.0	246489	3.3	20.1	353464	3.4	22.2	297941	3.5	20.8	239903	3.5	19.8
63310	3.2	18.4	537873	3.2	20.3	515447	3.3	20.8	537303	3.4	21.3	529280	3.5	21.7	351880	3.5	21.1
532754	3.2	22.2	169993	3.2	19.9	521182	3.3	20.2	522398	3.4	19.7	479129	3.5	21.3	508489	3.5	20.9
101756	3.2	18.6	130951	3.2	18.3	23615	3.3	16.8	125203	3.4	19.6	214626	3.5	19.1	35601	3.5	17.8
371050	3.2	21.6	190143	3.2	18.8	224544	3.3	20.2	104830	3.4	20.1	233663	3.5	20.3	528389	3.5	20.8
524738	3.2	20.1	425910	3.2	21.8	406506	3.3	21.8	174642	3.4	19.2	471131	3.5	20.0	455976	3.5	21.1
353874	3.2	19.6	20805	3.3	17.4	239567	3.3	19.9	64884	3.4	19.6	27961	3.5	18.8	115364	3.5	19.4
11208	3.2	17.8	532193	3.3	20.7	141817	3.3	18.9	434566	3.4	20.3	415963	3.5	21.7	415467	3.5	19.6
247852	3.2	20.3	213016	3.3	20.1	423480	3.3	21.1	372778	3.4	20.8	506011	3.5	20.5	341576	3.5	19.8
113218	3.2	18.6	520264	3.3	21.1	429235	3.3	20.6	374122	3.4	20.2	531788	3.5	22.5	491657	3.5	21.5
299878	3.2	20.2	391508	3.3	24.2	501461	3.3	21.1	110632	3.4	19.0	311271	3.5	21.5	315324	3.5	19.5
416894	3.2	21.8	469926	3.3	21.3	206572	3.3	20.5	478184	3.4	21.9	346278	3.5	20.0	450368	3.5	22.3
336942	3.2	19.8	358311	3.3	20.3	7911	3.3	16.3	438295	3.4	21.0	502931	3.5	21.0	256038	3.5	19.8
430936	3.2	20.4	290946	3.3	20.4	360814	3.3	20.5	138820	3.4	20.2	529575	3.5	20.1	244048	3.5	19.7
298782	3.2	19.1	176021	3.3	20.3	122281	3.3	18.7	286398	3.4	20.7	544736	3.5	20.4	510323	3.5	20.6
414713	3.2	20.3	300052	3.3	21.0	461396	3.3	20.7	140180	3.4	19.7	140774	3.5	19.9	341251	3.5	20.2
540690	3.2	18.8	505577	3.3	20.9	210488	3.3	19.0	471411	3.4	21.0	469143	3.5	21.0	302882	3.5	19.2
93678	3.2	19.0	483364	3.3	20.2	296228	3.3	20.0	533855	3.4	20.6	258467	3.5	19.7	470220	3.5	19.9
537232	3.2	21.1	460206	3.3	19.9	200679	3.3	18.5	106230	3.4	19.4	68512	3.5	17.6	8879	3.5	18.4
169586	3.2	19.0	504723	3.3	21.5	232150	3.3	19.0	304719	3.4	20.2	54368	3.5	17.4	219615	3.5	20.1
64844	3.2	19.6	159767	3.3	19.3	66815	3.3	18.3	98632	3.4	18.3	502201	3.5	20.4	415953	3.5	19.7
110433	3.2	20.2	217952	3.3	19.2	428893	3.3	21.1	330673	3.4	20.5	286271	3.5	18.9	249396	3.5	19.2
49640	3.2	18.3	529330	3.3	21.1	139273	3.3	19.3	277769	3.4	20.2	425347	3.5	20.7	500708	3.6	20.7
303267	3.2	19.9	272863	3.3	21.0	325256	3.3	19.9	10219	3.4	17.2	205560	3.5	20.3	275706	3.6	19.5
98678	3.2	18.9	169422	3.3	18.4	488792	3.3	21.9	295763	3.4	20.6	510739	3.5	20.9	3		

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
219563	3.6	20.9	339035	3.6	20.8	280612	3.7	20.8	395758	3.8	21.0	288836	3.9	18.9	165305	3.9	19.1
524099	3.6	20.0	115146	3.6	20.1	338894	3.7	21.3	243111	3.8	19.1	208979	3.9	21.3	182439	3.9	19.9
308382	3.6	20.3	384158	3.6	21.4	283895	3.7	20.3	55371	3.8	18.7	381466	3.9	21.0	342826	3.9	19.4
390501	3.6	20.6	159760	3.6	18.8	231340	3.7	20.9	61413	3.8	18.1	381422	3.9	19.8	536306	3.9	20.5
472944	3.6	20.5	230071	3.6	20.1	325181	3.7	20.0	54474	3.8	17.8	177109	3.9	18.8	32970	3.9	18.0
204324	3.6	18.4	174063	3.6	20.1	525065	3.7	19.7	463142	3.8	21.8	496070	3.9	19.8	160501	3.9	20.5
523992	3.6	20.5	388819	3.6	20.1	290336	3.7	21.6	224627	3.8	20.1	209531	3.9	19.5	432105	3.9	20.3
305837	3.6	21.2	329343	3.6	21.4	230038	3.7	19.4	537856	3.8	20.2	117052	3.9	19.4	443290	3.9	20.5
238065	3.6	20.2	462046	3.6	20.2	125182	3.7	20.6	244744	3.8	20.8	192377	3.9	20.5	468957	3.9	20.5
372648	3.6	20.2	494269	3.6	20.3	24626	3.7	18.1	471798	3.8	21.4	247710	3.9	19.3	83915	3.9	18.6
131505	3.6	20.2	502647	3.6	20.9	111801	3.7	19.4	411236	3.8	20.0	238838	3.9	20.8	340420	3.9	20.2
268556	3.6	19.6	125451	3.6	20.2	109281	3.7	19.6	395147	3.8	20.4	530207	3.9	21.6	171565	3.9	18.5
80495	3.6	18.9	28450	3.6	18.1	415731	3.7	19.0	54542	3.8	18.1	424821	3.9	21.2	275598	3.9	18.9
300096	3.6	20.2	75927	3.6	19.4	101748	3.7	20.1	192878	3.8	19.2	286281	3.9	19.9	392980	3.9	21.2
192862	3.6	20.4	372580	3.6	22.2	125225	3.7	19.7	506044	3.8	20.3	286983	3.9	19.5	499860	3.9	20.7
171112	3.6	20.5	249647	3.6	19.1	363530	3.7	20.4	350121	3.8	20.7	310963	3.9	21.0	259466	3.9	20.2
543358	3.6	21.2	295641	3.6	20.5	359984	3.7	20.3	290584	3.8	19.2	157536	3.9	19.0	372670	3.9	21.0
506778	3.6	22.8	473041	3.6	20.4	432332	3.7	20.6	129250	3.8	18.9	387797	3.9	20.4	450741	3.9	19.4
470152	3.6	21.2	134727	3.6	18.9	426748	3.7	20.2	362132	3.8	21.4	471469	3.9	20.7	423699	3.9	21.1
506579	3.6	21.3	121006	3.6	19.1	521136	3.7	20.6	425295	3.8	21.2	29039	3.9	17.7	63887	3.9	18.0
42520	3.6	19.7	199629	3.6	20.1	519032	3.7	21.3	186881	3.8	19.2	100458	3.9	19.6	200690	3.9	18.8
527936	3.6	22.0	389109	3.7	21.2	404319	3.7	20.2	478294	3.8	20.2	249245	3.9	20.4	300937	3.9	21.8
110101	3.6	18.8	119186	3.7	19.5	530050	3.7	21.9	434321	3.8	20.4	379687	3.9	20.7	42983	3.9	18.4
163523	3.6	19.4	498676	3.7	21.7	488910	3.7	22.1	249221	3.8	20.3	513111	3.9	21.3	469063	3.9	21.9
339456	3.6	20.1	456445	3.7	21.4	293534	3.7	20.7	160779	3.8	19.7	381449	3.9	21.1	302257	3.9	18.3
94459	3.6	19.4	246709	3.7	19.9	262500	3.7	20.0	52319	3.8	18.8	39473	3.9	18.5	3432	3.9	15.3
102336	3.6	20.2	14569	3.7	18.1	536140	3.7	20.0	96224	3.8	19.5	58530	3.9	18.5	310190	3.9	19.8
55535	3.6	18.5	175430	3.7	18.1	470268	3.7	20.3	176540	3.8	21.3	335210	3.9	21.2	297711	3.9	19.8
527595	3.6	20.6	113936	3.7	19.5	501132	3.7	20.6	336352	3.8	18.9	428734	3.9	20.8	29876	3.9	17.6
467174	3.6	20.4	447298	3.7	21.4	331255	3.7	20.6	468153	3.8	21.8	146485	3.9	20.4	350698	3.9	19.6
170019	3.6	19.1	28731	3.7	17.4	258225	3.7	21.4	99330	3.8	18.5	471135	3.9	20.4	242392	3.9	19.4
243212	3.6	19.9	30658	3.7	17.8	354771	3.7	20.0	18295	3.8	15.6	435209	3.9	21.6	502501	3.9	20.7
165521	3.6	20.1	351485	3.7	20.0	276415	3.7	20.1	188035	3.8	19.4	248047	3.9	19.3	471832	3.9	20.8
106363	3.6	19.6	534302	3.7	21.7	231776	3.7	20.0	540917	3.8	20.0	90253	3.9	18.6	116204	3.9	20.2
196836	3.6	19.6	313724	3.7	20.0	361706	3.7	19.5	264615	3.8	20.2	540895	3.9	21.4	99574	3.9	18.5
458878	3.6	20.2	352520	3.7	21.3	343040	3.7	20.3	426959	3.8	19.6	205586	3.9	19.4	456744	3.9	21.8
62540	3.6	19.7	447727	3.7	20.3	83148	3.7	18.7	144777	3.8	19.9	28211	3.9	16.5	500253	3.9	20.8
306136	3.6	19.6	538206	3.7	20.4	26836	3.7	17.9	107203	3.8	19.7	402904	3.9	21.0	275709	3.9	20.7
319389	3.6	20.1	106486	3.7	19.8	350105	3.7	20.7	498642	3.8	20.8	238092	3.9	20.1	325151	3.9	19.0
32636	3.6	19.5	501408	3.7	19.7	178777	3.7	19.8	370156	3.8	20.9	27047	3.9	17.0	474084	3.9	20.1
34704	3.6	19.7	527419	3.7	21.9	470503	3.7	21.1	91798	3.8	19.6	381973	3.9	20.5	435974	3.9	20.7
535470	3.6	21.1	527326	3.7	20.6	69139	3.7	19.3	265348	3.8	19.1	423733	3.9	20.6	238571	3.9	18.7
188287	3.6	20.9	540076	3.7	21.6	99252	3.7	16.8	94481	3.8	19.8	197572	3.9	18.8	531717	3.9	21.0
534304	3.6	21.0	514869	3.7	20.4	312073	3.8	20.4	299919	3.8	19.9	5438	3.9	15.6	20685	3.9	17.4
312897	3.6	20.1	204971	3.7	19.9	305396	3.8	20.4	419904	3.8	21.1	270590	3.9	19.9	30832	3.9	18.0
454303	3.6	19.4	118139	3.7	21.0	404482	3.8	18.9	110977	3.8	20.3	94902	3.9	20.0	203476	3.9	18.3
327387	3.6	19.5	209067	3.7	20.1	7143	3.8	16.2	473972	3.8	21.3	209591	3.9	21.1	210175	3.9	19.3
425677	3.6	21.1	122412	3.7	19.5	458833	3.8	20.8	407888	3.8	22.2	506676	3.9	22.2	468648	3.9	21.4
415870	3.6	22.0	310961	3.7	21.0	187526	3.8	21.2	545122	3.8	20.5	140166	3.9	19.7	164291	3.9	19.4
377702	3.6	21.6	80204	3.7	18.7	375010	3.8	19.9	102354	3.8	19.2	373297	3.9	19.3	522682	3.9	20.2
204564	3.6	19.1	538742	3.7	21.1	421339	3.8	21.0	274782	3.8	20.1	300234	3.9	20.7	62503	3.9	19.5
331388	3.6	19.8	378757	3.7	20.9	158464	3.8	19.7	293475	3.8	20.4	216008	3.9	19.3	231068	3.9	19.8
102580	3.6	19.6	426453	3.7	20.5	279839	3.8	20.4	219783	3.8	19.8	37009	3.9	19.2	27277	3.9	17.6
473142	3.6	20.4	36026	3.7	17.6	15612	3.8	18.0	470240	3.8	21.0	523792	3.9	20.6	224621	3.9	21.4
478187	3.6	20.3	213238	3.7	20.7	522361	3.8	20.1	412971	3.8	20.6	471417	3.9	20.7	535439	3.9	21.4
512536	3.6	19.1	129368	3.7	19.6	200723	3.8	21.4	264691	3.8	20.3	253990	3.9	21.3	126563	3.9	19.7
369271	3.6	20.3	330996	3.7	21.2	459360	3.8	20.4	64633	3.8	17.8	241372	3.9	19.8	83754	3.9	19.5
312088	3.6	20.1	138753	3.7	19.7	448162	3.8	21.4	83334	3.8	18.4	204640	3.9	18.8	348525	3.9	19.9
470100	3.6	21.2	21250	3.7	18.6	497979	3.8	20.9	349891	3.8	21.4	413003	3.9	20.5	530968	3.9	21.5
520201	3.6	20.6	340949	3.7	20.2	86790	3.8	18.1	88201	3.8	18.3	176542	3.9	19.8	407773	3.9	21.4
422815	3.6	21.4	83242	3.7	19.8	59479	3.8	19.2	503157	3.8	20.8	544943	3.9	20.8	282460	3.9	20.5
197557	3.6	18.0	60600	3.7	17.9	192696	3.8	20.0	128676	3.8	19.3	300084	3.9	21.0	498755	3.9	21.1
508611	3.6	20.2	340327	3.7	20.7	310453	3.8	19.9	306657	3.8	20.1	306719	3.9	19.2	463643	3.9	20.4
499846	3.6	20.7	429190	3.7	20.7	89939	3.8	19.1	377420	3.8	18.9	224507	3.9	18.7	421	3.9	15.3
433704	3.6	20.0	317377	3.7	19.4	162626	3.8	18.5	159396	3.8	18.2	103498	3.9	19.2	18596	3.9	19.3
210769	3.6	20.1	151800	3.7	19.5	322294	3.8	20.1	291244	3.8	19.9	489944	3.9	20.9	319849	3.9	20.1
371759	3.6	20.9	289189	3.7	19.5	192838	3.8	21.0	456988	3.8	20.5	69582	3.9	18.9	454121	3.9	21.1
177816	3.6	20.3	371026	3.7	20.0	94407	3.8	19.2	262845	3.8	21.3	338591	3.9	20.5	372517	3.9	21.1
428529	3.6	19.6	520205	3.7	20.9	386564	3.8	20.6	505194	3.8	21.3	177821	3.9	20.3	443719	3.9	20.5
428779	3.6	20.5	313639	3.7	19.1	497998	3.8	20.6	249555	3.9	19.9	344073	3.9	21.2	259288	4.0	20.1
56661	3.6	17.8	212908	3.7	20.6	474753	3.8	19.3	344405	3.9	19.3	100213	3.9	19.6	195791		

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
151076	4.0	20.0	318039	4.1	19.4	464331	4.2	21.4	353713	4.2	19.9	187681	4.3	19.6	99488	4.4	19.4
385410	4.0	20.7	62248	4.1	19.0	99660	4.2	18.3	237344	4.2	20.3	42278	4.3	18.9	164706	4.4	20.2
434071	4.0	20.7	30524	4.1	18.6	309195	4.2	19.7	511900	4.2	20.0	141193	4.3	20.4	306594	4.4	20.2
507564	4.0	21.2	527142	4.1	20.6	65039	4.2	18.3	501055	4.2	20.4	115842	4.3	19.2	391355	4.4	22.1
261781	4.0	20.5	470085	4.1	20.4	10468	4.2	19.0	532511	4.2	22.0	503697	4.3	20.7	496828	4.4	21.4
148203	4.0	18.9	141863	4.1	19.1	420742	4.2	20.6	142034	4.2	18.8	260750	4.3	20.3	174174	4.4	18.1
177513	4.0	18.7	242444	4.1	19.2	511008	4.2	22.6	543970	4.2	20.1	436643	4.3	20.4	268778	4.4	20.0
285733	4.0	18.3	301421	4.1	19.5	16223	4.2	17.6	73823	4.2	19.4	181594	4.3	19.7	220628	4.4	18.9
153944	4.0	19.7	4751	4.1	15.8	163248	4.2	20.4	544895	4.2	20.7	222975	4.3	20.3	378725	4.4	20.3
192842	4.0	20.3	502030	4.1	19.8	451224	4.2	20.0	540050	4.2	19.8	448220	4.3	20.3	63091	4.4	19.1
267433	4.0	19.9	361766	4.1	20.5	534148	4.2	21.4	466101	4.2	22.0	419905	4.3	20.1	203556	4.4	19.2
156170	4.0	19.3	381744	4.1	21.2	178647	4.2	20.0	191847	4.2	20.4	493278	4.3	22.2	534100	4.4	21.5
248416	4.0	20.0	101069	4.1	19.1	297426	4.2	20.2	336269	4.2	20.4	230485	4.3	20.4	267480	4.4	20.8
388416	4.0	21.1	60163	4.1	18.6	255835	4.2	21.2	500290	4.2	19.9	456902	4.3	20.8	207105	4.4	20.8
294994	4.0	19.8	200195	4.1	19.8	288551	4.2	20.1	262374	4.2	21.6	60020	4.3	18.4	168559	4.4	20.0
184873	4.0	18.8	140700	4.1	19.9	85448	4.2	17.9	273048	4.2	20.3	352499	4.3	21.0	57889	4.4	18.7
313803	4.0	19.0	33624	4.1	18.4	278907	4.2	20.2	362122	4.2	21.6	278748	4.3	20.5	375760	4.4	22.1
276	4.0	13.8	46283	4.1	17.8	303710	4.2	20.6	300978	4.2	21.4	404904	4.3	19.6	195560	4.4	19.7
407688	4.0	21.7	148530	4.1	19.7	25277	4.2	18.4	252018	4.2	19.3	287888	4.3	20.7	298974	4.4	20.5
396352	4.0	20.9	157975	4.1	19.9	359006	4.2	21.0	178734	4.2	19.9	133092	4.3	18.4	345646	4.4	21.5
89102	4.0	19.0	307481	4.1	20.1	410225	4.2	20.7	27813	4.2	18.5	150757	4.3	19.4	81526	4.4	18.0
103085	4.0	19.9	378705	4.1	20.6	433044	4.2	20.3	257542	4.2	20.2	480362	4.3	20.4	167206	4.4	20.7
111063	4.0	19.4	356665	4.1	19.6	488855	4.2	22.2	138875	4.2	19.6	245999	4.3	19.9	150921	4.4	20.1
375884	4.0	20.6	232542	4.1	20.3	15662	4.2	17.4	130029	4.2	20.2	245077	4.3	18.7	110743	4.4	18.8
155407	4.0	18.9	305998	4.1	20.2	170798	4.2	20.0	178096	4.2	21.3	99595	4.3	20.0	34758	4.4	17.3
114475	4.0	19.6	180657	4.1	18.5	206974	4.2	19.6	542586	4.2	20.7	176596	4.3	20.4	234076	4.4	19.7
502530	4.0	21.2	135275	4.1	20.8	431893	4.2	20.5	191969	4.2	20.6	224584	4.3	20.4	540512	4.4	21.2
300960	4.0	20.6	148352	4.1	18.0	326966	4.2	19.3	164503	4.2	19.8	170272	4.3	20.3	301979	4.4	19.9
538931	4.0	20.1	242598	4.1	19.9	206957	4.2	20.7	293189	4.2	20.4	498656	4.3	20.9	387808	4.4	19.5
68454	4.0	18.8	502441	4.1	20.6	467861	4.2	21.9	158059	4.2	19.7	408234	4.3	20.5	386963	4.4	19.8
289474	4.0	20.8	67918	4.1	16.8	10240	4.2	17.9	346759	4.2	20.4	433432	4.3	22.2	201095	4.4	20.8
3566	4.0	16.6	517623	4.1	21.0	191844	4.2	20.0	51903	4.2	19.3	279715	4.3	19.6	312170	4.4	20.5
29741	4.0	17.7	170683	4.1	20.6	5032	4.2	17.2	131409	4.2	17.1	110515	4.3	19.0	277308	4.4	21.8
372558	4.0	21.5	133266	4.1	19.6	343014	4.2	20.3	538381	4.2	20.4	85957	4.3	19.4	227683	4.4	19.7
5207	4.0	16.0	348549	4.1	20.2	510344	4.2	22.0	212693	4.2	19.2	341190	4.3	21.2	40522	4.4	19.0
309825	4.0	20.2	199132	4.1	19.8	343597	4.2	20.8	502315	4.2	20.6	131629	4.3	19.2	360739	4.4	21.3
525769	4.0	21.4	328741	4.1	19.5	462882	4.2	21.8	229937	4.2	19.8	151125	4.3	19.6	531458	4.4	21.5
488451	4.0	21.9	471195	4.1	20.6	110690	4.2	19.1	165408	4.2	20.0	92724	4.3	18.9	249454	4.4	19.8
491681	4.0	20.9	491170	4.1	21.3	138342	4.2	19.5	422360	4.2	19.7	182201	4.3	20.6	80494	4.4	18.1
480209	4.0	19.6	17536	4.1	18.2	170215	4.2	18.1	495130	4.2	21.4	102587	4.3	19.5	98171	4.4	18.0
18380	4.0	18.1	192561	4.1	20.3	224398	4.2	18.7	458782	4.2	21.1	225139	4.3	20.2	401841	4.4	21.7
119007	4.0	18.0	415481	4.1	20.4	306921	4.2	20.9	272633	4.2	20.8	431578	4.3	20.0	214156	4.4	20.8
296446	4.1	19.8	301696	4.1	19.8	31223	4.2	17.8	468953	4.3	21.7	417453	4.3	19.8	475003	4.4	20.3
232641	4.1	20.3	313673	4.1	20.0	145386	4.2	19.4	277801	4.3	20.5	461011	4.3	19.3	215801	4.4	19.2
183514	4.1	19.6	98399	4.1	18.6	269472	4.2	20.4	423708	4.3	20.3	456931	4.3	22.4	232430	4.4	18.5
244710	4.1	19.5	432682	4.1	21.8	93369	4.2	19.5	500953	4.3	21.2	180025	4.3	19.7	256117	4.4	19.4
21908	4.1	17.4	430446	4.1	19.2	13473	4.2	16.7	390505	4.3	22.1	501508	4.3	21.5	26195	4.4	18.2
526596	4.1	22.2	177352	4.1	19.5	19393	4.2	18.8	111527	4.3	18.2	380955	4.3	19.6	358495	4.4	19.6
511344	4.1	20.8	528306	4.1	20.3	486026	4.2	21.0	141260	4.3	20.2	390381	4.3	20.9	506679	4.4	22.4
256099	4.1	19.6	434956	4.1	20.4	156434	4.2	20.3	403559	4.3	19.3	437450	4.3	21.3	394372	4.4	20.2
212309	4.1	19.7	425102	4.1	21.7	53603	4.2	16.9	459113	4.3	20.5	418342	4.3	21.3	215389	4.4	19.8
68039	4.1	18.3	337209	4.1	20.1	4463	4.2	18.1	175642	4.3	21.4	177934	4.3	18.5	423612	4.4	21.0
272599	4.1	21.0	31947	4.1	16.0	126443	4.2	19.0	272518	4.3	21.9	469284	4.3	20.8	391713	4.4	21.3
130736	4.1	18.6	199438	4.1	20.7	368218	4.2	21.0	502366	4.3	21.0	319014	4.3	20.4	143294	4.4	19.7
287481	4.1	20.4	191356	4.1	19.2	519311	4.2	21.1	445873	4.3	21.0	534025	4.3	21.5	34450	4.4	17.0
354928	4.1	18.8	273545	4.1	20.3	357735	4.2	20.0	540828	4.3	20.6	259766	4.3	21.1	112776	4.4	20.1
54739	4.1	17.0	12936	4.1	17.9	462098	4.2	20.1	2228	4.3	16.6	511897	4.3	20.9	308495	4.4	20.0
406411	4.1	20.6	313730	4.1	21.4	122290	4.2	18.7	222708	4.3	20.6	203475	4.3	19.3	214707	4.4	21.3
465360	4.1	21.8	459477	4.1	21.8	130177	4.2	20.6	414781	4.3	19.7	151070	4.3	20.2	429120	4.4	20.9
98312	4.1	19.2	348852	4.1	21.0	471139	4.2	20.7	530753	4.3	21.4	497308	4.3	21.3	106948	4.4	18.2
362058	4.1	20.2	215074	4.1	21.0	213574	4.2	18.7	6150	4.3	17.6	321324	4.3	21.0	241196	4.4	19.5
469810	4.1	20.1	434581	4.1	21.4	182467	4.2	19.6	204698	4.3	20.7	419636	4.3	20.3	384799	4.4	20.4
140999	4.1	19.6	423650	4.1	20.3	115127	4.2	19.5	513356	4.3	21.2	213204	4.3	20.3	196771	4.4	19.8
38925	4.1	18.3	158996	4.1	19.2	143584	4.2	18.7	261386	4.3	20.2	478025	4.3	20.9	4596	4.4	20.2
241247	4.1	20.2	94016	4.1	18.3	518588	4.2	20.5	89107	4.3	19.0	384030	4.3	20.1	300011	4.4	20.9
286310	4.1	20.1	306427	4.1	20.2	88428	4.2	18.3	329858	4.3	19.3	198446	4.3	19.2	196663	4.4	19.3
163176	4.1	19.7	287540	4.1	20.5	382332	4.2	20.7	539148	4.3	21.2	130785	4.3	19.4	315947	4.4	20.5
285946	4.1	20.4	362081	4.1	22.2	502504	4.2	21.4	144878	4.3	18.5	513776	4.3	22.9	299287	4.4	18.9
286319	4.1	19.7	344854	4.1	20.3	252705	4.2	19.5	345621	4.3	21.3	79422	4.4	20.0	133146	4.4	19.2
107317	4.1	19.7	189253	4.1	18.1	198633	4.2	19.2	174079	4.3	19.1	257828	4.4	20.0	497493	4.4	22.0
370026	4.1	20.1	370765	4.1	20.6	237850	4.2	20.1	506769	4.3	21.1	178099	4.4	20.1	136704		

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
524391	4.4	22.3	326438	4.5	19.7	434033	4.6	20.4	203780	4.6	19.9	283611	4.7	19.8	425310	4.8	20.8
531644	4.4	22.2	227245	4.5	20.6	52517	4.6	19.8	264599	4.6	21.5	313746	4.7	20.6	45815	4.8	17.3
105441	4.4	18.8	110293	4.5	18.9	122358	4.6	17.3	213842	4.6	21.2	138558	4.7	18.2	210892	4.8	19.9
216174	4.4	20.3	466479	4.5	19.8	105716	4.6	19.0	322414	4.6	20.2	454124	4.7	20.4	215227	4.8	20.3
389271	4.4	20.1	305739	4.5	21.5	161761	4.6	19.2	88629	4.6	17.5	290452	4.7	20.1	434796	4.8	20.7
262811	4.4	18.8	140439	4.5	19.8	309778	4.6	19.5	424197	4.6	19.9	524953	4.7	20.6	216020	4.8	19.8
178172	4.4	19.1	461061	4.5	19.9	246708	4.6	19.7	279372	4.6	20.1	352471	4.7	21.0	388371	4.8	19.8
36227	4.4	16.9	236154	4.5	20.4	203490	4.6	20.6	32757	4.6	18.3	447387	4.7	21.2	3632	4.8	17.5
213789	4.4	19.8	219651	4.5	19.8	134846	4.6	18.9	323531	4.6	18.7	106518	4.7	18.2	502466	4.8	19.9
114404	4.4	18.7	70594	4.5	19.2	188057	4.6	19.6	165170	4.7	18.6	359996	4.7	21.0	356687	4.8	20.5
522916	4.4	20.6	273634	4.5	21.1	22089	4.6	18.1	63662	4.7	19.2	123552	4.7	19.0	53126	4.8	17.5
359051	4.4	21.5	459029	4.5	21.9	141122	4.6	19.1	73019	4.7	18.1	470449	4.7	21.4	313020	4.8	21.0
202123	4.4	18.9	205928	4.5	18.5	540791	4.6	20.8	101497	4.7	20.3	219529	4.7	19.3	529303	4.8	21.7
366283	4.4	20.3	31790	4.5	16.6	470053	4.6	20.3	532157	4.7	20.8	153512	4.7	20.5	520131	4.8	21.9
101883	4.4	17.6	150935	4.5	19.5	463783	4.6	21.9	364684	4.7	20.7	293790	4.7	20.5	526502	4.8	20.2
402641	4.4	20.6	106664	4.5	19.0	109664	4.6	19.4	533092	4.7	20.9	505078	4.7	20.7	512502	4.8	20.4
533697	4.4	20.3	521284	4.5	21.3	371258	4.6	22.6	143532	4.7	18.8	247718	4.7	20.3	295426	4.8	19.0
31062	4.5	16.2	123318	4.5	19.9	503178	4.6	21.5	33748	4.7	16.8	488556	4.7	21.8	35152	4.8	17.6
505898	4.5	20.3	379724	4.5	20.7	375957	4.6	20.8	372534	4.7	20.9	397826	4.7	20.8	459734	4.8	19.4
277719	4.5	20.4	6562	4.5	17.2	533984	4.6	20.2	159886	4.7	19.1	460030	4.7	21.6	7639	4.8	17.7
537273	4.5	21.6	375033	4.5	20.6	168510	4.6	20.5	91540	4.7	18.6	54813	4.7	19.4	4409	4.8	16.4
522876	4.5	20.2	368272	4.5	20.0	317745	4.6	19.4	437681	4.7	19.9	86438	4.7	18.4	8099	4.8	17.1
136928	4.5	19.6	39444	4.5	20.2	413719	4.6	21.4	273031	4.7	20.0	79221	4.7	19.3	401125	4.8	20.5
181120	4.5	20.5	280897	4.5	19.2	239835	4.6	20.7	127093	4.7	19.2	293029	4.7	20.2	86800	4.8	17.3
259198	4.5	20.5	508257	4.5	20.9	296713	4.6	20.7	485507	4.7	20.6	456714	4.7	22.2	399169	4.8	20.3
346944	4.5	20.6	498482	4.5	22.0	354909	4.6	20.1	5276	4.7	17.4	63672	4.7	18.8	372627	4.8	21.2
211796	4.5	19.9	190068	4.5	18.9	419042	4.6	20.2	331969	4.7	19.4	470473	4.7	21.0	457336	4.8	19.8
541768	4.5	20.7	247683	4.5	20.1	109432	4.6	18.2	246948	4.7	18.9	425841	4.7	21.1	281093	4.8	20.2
22697	4.5	18.0	307261	4.5	20.3	394823	4.6	19.1	93193	4.7	18.5	156405	4.7	20.0	488235	4.8	20.4
524561	4.5	22.2	281957	4.5	20.1	53055	4.6	17.9	203610	4.7	19.9	357992	4.7	21.5	244797	4.8	19.7
111082	4.5	18.9	82757	4.5	17.6	308367	4.6	18.9	130446	4.7	19.0	122237	4.7	18.3	457463	4.8	21.2
346206	4.5	20.6	231368	4.5	19.9	519999	4.6	20.1	525082	4.7	22.0	521036	4.7	21.4	346737	4.8	20.7
526606	4.5	21.6	390805	4.5	21.9	497375	4.6	21.1	399224	4.7	20.2	297680	4.7	19.2	224517	4.8	19.8
388776	4.5	20.8	84403	4.5	19.7	429770	4.6	19.8	352447	4.7	20.1	470723	4.7	20.1	391320	4.8	21.0
380628	4.5	20.4	213001	4.5	20.6	147468	4.6	19.6	158469	4.7	19.6	526387	4.7	21.6	14918	4.8	17.1
186216	4.5	19.7	181729	4.5	19.7	360217	4.6	20.4	182191	4.7	20.1	275599	4.8	20.5	390716	4.8	22.0
360151	4.5	20.6	231788	4.5	20.6	42960	4.6	18.4	540567	4.7	20.9	10715	4.8	17.3	318077	4.8	19.8
498735	4.5	20.8	165550	4.5	20.5	215361	4.6	20.6	143553	4.7	19.4	518598	4.8	20.6	527862	4.8	21.9
88446	4.5	17.5	505935	4.5	20.3	521318	4.6	20.9	450437	4.7	20.5	137838	4.8	20.3	396524	4.8	20.6
319192	4.5	20.4	506032	4.5	20.4	276617	4.6	19.4	468199	4.7	20.4	534963	4.8	21.9	6719	4.8	16.9
402874	4.5	21.3	186634	4.5	19.6	473757	4.6	20.5	74441	4.7	19.1	392552	4.8	21.3	206832	4.8	20.8
458992	4.5	21.4	71339	4.5	17.6	17380	4.6	18.2	293146	4.7	20.6	466352	4.8	20.3	62881	4.8	18.5
374076	4.5	21.2	1711	4.5	15.3	95213	4.6	19.5	500930	4.7	20.8	31295	4.8	19.4	301821	4.8	20.1
37278	4.5	17.5	240863	4.5	19.6	410494	4.6	21.2	129826	4.7	18.3	372539	4.8	18.9	379688	4.8	20.2
434277	4.5	20.7	294947	4.5	19.9	527636	4.6	21.2	15221	4.7	18.3	540881	4.8	20.0	529096	4.8	21.2
100826	4.5	20.4	291698	4.5	21.0	41609	4.6	19.4	22004	4.7	16.7	158601	4.8	19.5	466103	4.8	21.5
536545	4.5	21.8	28183	4.5	18.8	395796	4.6	20.0	480378	4.7	20.4	501143	4.8	19.8	368686	4.8	20.3
527294	4.5	21.5	78896	4.5	19.2	245945	4.6	20.1	367180	4.7	19.5	387336	4.8	20.6	5265	4.8	17.3
375960	4.5	20.3	290738	4.5	18.5	406947	4.6	18.8	40838	4.7	18.2	232809	4.8	20.4	462894	4.8	21.5
202029	4.5	18.6	392108	4.6	20.2	203485	4.6	21.3	519140	4.7	20.8	470940	4.8	20.4	507341	4.8	21.7
52766	4.5	16.8	461709	4.6	20.9	24032	4.6	18.3	48286	4.7	19.4	219841	4.8	20.1	370957	4.8	20.0
406848	4.5	20.7	508123	4.6	20.1	160306	4.6	18.2	16378	4.7	19.2	417818	4.8	21.9	178753	4.8	20.1
139857	4.5	19.4	193767	4.6	17.8	17431	4.6	16.2	306991	4.7	20.6	490351	4.8	22.3	536273	4.8	20.9
283507	4.5	21.3	462292	4.6	20.8	421777	4.6	20.1	151802	4.7	19.8	40002	4.8	18.8	497203	4.8	21.0
508632	4.5	19.2	275064	4.6	20.2	468770	4.6	19.5	360697	4.7	20.9	527554	4.8	21.1	348950	4.8	19.8
64755	4.5	19.5	391583	4.6	21.2	344858	4.6	20.6	158606	4.7	20.4	391554	4.8	21.3	530773	4.8	21.3
224527	4.5	20.1	388697	4.6	21.3	293786	4.6	19.5	28120	4.7	16.7	305377	4.8	19.8	344556	4.8	20.6
303890	4.5	20.5	405198	4.6	21.9	508562	4.6	19.9	499203	4.7	21.3	94977	4.8	19.8	62065	4.8	18.3
532082	4.5	21.4	130936	4.6	20.1	468216	4.6	20.9	239513	4.7	19.7	470204	4.8	21.0	371722	4.8	21.2
353559	4.5	20.2	524637	4.6	21.0	516517	4.6	20.4	338279	4.7	21.1	186551	4.8	20.0	272792	4.8	19.9
21053	4.5	17.6	217954	4.6	20.3	189467	4.6	19.9	135124	4.7	19.5	306919	4.8	21.7	329358	4.8	20.7
331606	4.5	20.3	534714	4.6	20.8	351726	4.6	20.7	192545	4.7	20.0	203586	4.8	20.1	542505	4.8	20.9
491793	4.5	21.4	108096	4.6	20.2	359065	4.6	20.8	111798	4.7	20.1	377905	4.8	20.9	132080	4.9	20.8
41968	4.5	19.0	502326	4.6	20.9	126357	4.6	20.2	280459	4.7	19.7	82093	4.8	18.8	78	4.9	12.6
46604	4.5	19.6	114384	4.6	19.0	538557	4.6	21.8	453918	4.7	21.6	263368	4.8	21.0	79107	4.9	18.9
38536	4.5	18.7	120143	4.6	18.1	404223	4.6	20.0	27213	4.7	18.2	218004	4.8	19.8	36211	4.9	17.4
31079	4.5	18.8	436665	4.6	20.8	362037	4.6	21.8	100332	4.7	19.7	366618	4.8	20.7	143474	4.9	19.1
63869	4.5	19.4	186207	4.6	19.5	168208	4.6	19.9	215674	4.7	19.9	435011	4.8	19.9	177849	4.9	20.3
514771	4.5	20.9	466649	4.6	21.7	343296	4.6	20.8	346816	4.7	21.5	283584	4.8	19.7	258188	4.9	20.9
3328	4.5	15.5	303896	4.6	21.0	40862	4.6	19.4	410076	4.7	21.4	528051	4.8	20.3	39612	4.9	18.1
16426	4.5	16.5	376815	4.6	21.6	67675	4.6	17.6	76223	4.7	19.1	278970	4.8	19.7	520277	4.9	21.4

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
510381	4.9	21.0	147175	4.9	19.7	147862	5.0	19.2	300059	5.1	19.9	218018	5.1	18.2	46785	5.2	17.2
473878	4.9	21.8	247701	4.9	19.5	306705	5.0	18.3	182756	5.1	22.2	210509	5.1	19.0	448183	5.2	21.0
91133	4.9	22.7	278996	4.9	19.5	166637	5.0	18.5	368962	5.1	20.9	386240	5.1	20.0	316751	5.2	18.5
530230	4.9	22.0	414894	4.9	20.0	235986	5.0	19.6	244847	5.1	19.3	135158	5.1	20.2	453043	5.2	21.8
65998	4.9	17.6	29585	4.9	19.2	454703	5.0	19.9	360061	5.1	20.6	230065	5.1	20.2	94048	5.2	19.9
155616	4.9	20.0	315563	4.9	19.7	371168	5.0	20.7	357879	5.1	22.1	489083	5.1	20.8	542255	5.2	20.9
425292	4.9	21.0	380918	4.9	20.3	87239	5.0	18.7	306354	5.1	20.4	313041	5.2	20.5	362179	5.2	20.4
43806	4.9	18.7	350566	4.9	20.1	274658	5.0	21.5	420564	5.1	20.4	504659	5.2	20.0	540707	5.2	21.4
371019	4.9	20.6	31250	4.9	18.9	301093	5.0	19.4	190278	5.1	19.1	82079	5.2	18.6	283061	5.2	18.7
324553	4.9	19.9	378882	4.9	20.6	471171	5.0	19.0	219820	5.1	20.6	365223	5.2	19.6	5544	5.2	17.5
291295	4.9	20.6	490269	4.9	21.4	298978	5.0	20.0	110731	5.1	19.1	521332	5.2	20.2	155227	5.2	19.3
143548	4.9	20.1	312074	4.9	21.4	104191	5.0	19.5	241914	5.1	18.7	222609	5.2	21.0	343022	5.2	21.3
270605	4.9	19.6	202216	4.9	20.1	530912	5.0	21.3	429981	5.1	19.0	95079	5.2	20.1	93301	5.2	19.1
391715	4.9	21.0	306656	4.9	20.0	422031	5.0	20.3	231787	5.1	19.8	413945	5.2	20.2	197575	5.2	19.0
80492	4.9	20.0	37564	4.9	19.1	230346	5.0	20.5	338397	5.1	21.5	241699	5.2	18.3	381415	5.2	20.7
499805	4.9	21.4	106096	4.9	19.4	491190	5.0	20.5	25653	5.1	18.2	458535	5.2	19.2	7259	5.2	17.4
125152	4.9	20.3	238056	4.9	20.0	295032	5.0	20.1	257173	5.1	20.0	508116	5.2	18.9	207068	5.2	19.8
279035	4.9	20.3	395764	4.9	20.4	170690	5.0	19.9	329778	5.1	19.3	344846	5.2	19.4	351587	5.2	20.4
42594	4.9	18.0	399360	4.9	19.8	542659	5.0	19.5	46751	5.1	15.9	429512	5.2	19.5	109400	5.2	18.2
357957	4.9	21.2	435878	4.9	21.0	266394	5.0	19.8	537425	5.1	21.2	54394	5.2	18.4	214743	5.2	19.9
201665	4.9	20.2	54213	4.9	19.3	54832	5.0	17.8	309846	5.1	19.7	313707	5.2	18.9	19259	5.2	16.2
518627	4.9	19.5	508300	4.9	20.0	528731	5.0	20.3	472370	5.1	19.8	8379	5.2	17.7	369976	5.2	21.1
504362	4.9	20.9	420638	4.9	20.5	241228	5.0	20.4	334844	5.1	20.5	211059	5.2	20.0	484635	5.2	20.3
253191	4.9	19.9	113267	4.9	18.5	242369	5.0	20.3	216012	5.1	18.8	346253	5.2	21.8	49379	5.2	18.6
421634	4.9	20.6	457079	4.9	20.4	59975	5.0	18.7	27844	5.1	17.6	219675	5.2	18.6	200670	5.2	17.7
260962	4.9	20.8	229173	4.9	20.8	129425	5.0	19.2	545014	5.1	21.1	8512	5.2	16.7	534952	5.2	20.8
39382	4.9	20.7	176396	4.9	20.1	341638	5.0	21.4	47226	5.1	17.1	264584	5.2	20.8	494887	5.2	20.7
396595	4.9	20.1	236682	4.9	19.8	140599	5.0	18.9	68323	5.1	18.5	505607	5.2	22.3	502932	5.2	20.1
117563	4.9	18.8	489086	4.9	21.4	190044	5.0	17.9	365409	5.1	19.5	453388	5.2	21.1	91130	5.3	18.3
250780	4.9	20.0	181363	4.9	21.5	283030	5.0	19.1	504130	5.1	21.9	63767	5.2	19.2	289644	5.3	20.1
275214	4.9	21.6	498802	4.9	21.2	445269	5.0	18.7	297232	5.1	19.8	142555	5.2	21.9	160718	5.3	18.7
305605	4.9	20.3	526159	4.9	21.8	158967	5.0	19.3	149881	5.1	21.1	325238	5.2	20.1	213404	5.3	20.7
537843	4.9	20.7	424010	4.9	21.4	295454	5.0	19.5	252994	5.1	21.0	323370	5.2	20.8	58655	5.3	19.0
89359	4.9	19.3	184601	4.9	19.8	297252	5.0	20.1	470261	5.1	19.7	388810	5.2	21.4	139706	5.3	19.4
506275	4.9	20.7	114408	4.9	18.4	172974	5.0	21.1	286228	5.1	20.9	468217	5.2	20.2	236179	5.3	20.6
161997	4.9	19.0	245268	4.9	20.2	86452	5.0	17.7	374153	5.1	21.4	439360	5.2	20.5	442417	5.3	20.4
97113	4.9	20.8	234018	4.9	19.4	62500	5.0	17.7	434856	5.1	20.4	223299	5.2	19.6	380552	5.3	19.2
267767	4.9	19.4	305387	4.9	22.0	287880	5.0	19.8	344599	5.1	20.2	19828	5.2	17.6	310545	5.3	20.4
341923	4.9	20.4	355089	4.9	21.9	424007	5.0	19.9	540483	5.1	20.8	27009	5.2	17.6	66857	5.3	17.6
270202	4.9	19.7	451427	4.9	20.5	530237	5.0	19.9	272658	5.1	20.7	7056	5.2	16.4	35703	5.3	17.9
434985	4.9	20.2	195611	4.9	18.6	415876	5.0	21.4	531685	5.1	22.3	125650	5.2	20.3	190277	5.3	18.6
534737	4.9	21.1	297211	4.9	19.7	55067	5.0	17.1	5117	5.1	17.0	185662	5.2	18.6	532523	5.3	22.0
50915	4.9	18.4	55217	4.9	19.4	533844	5.0	21.2	458346	5.1	21.0	435312	5.2	21.2	302069	5.3	19.8
87851	4.9	20.4	492196	4.9	20.7	523542	5.0	21.1	434893	5.1	20.6	128217	5.2	18.0	259440	5.3	20.2
261170	4.9	21.1	358013	4.9	21.9	496453	5.0	21.3	507347	5.1	21.5	351716	5.2	20.0	292316	5.3	20.1
63846	4.9	18.3	274508	4.9	19.8	312824	5.0	20.8	507581	5.1	22.3	151812	5.2	19.4	308492	5.3	21.0
359035	4.9	20.5	526740	4.9	20.9	11753	5.0	18.4	66935	5.1	18.5	490531	5.2	20.9	96455	5.3	19.6
359156	4.9	21.1	78942	4.9	19.5	189456	5.0	18.7	116093	5.1	18.2	191789	5.2	19.2	311278	5.3	20.4
141465	4.9	20.5	350190	4.9	20.6	477104	5.0	20.4	377789	5.1	18.5	434437	5.2	20.2	519937	5.3	20.6
352087	4.9	21.3	29173	4.9	17.8	305302	5.0	20.0	338858	5.1	20.2	315256	5.2	20.7	536986	5.3	20.3
31703	4.9	17.3	544595	4.9	20.9	300963	5.0	21.0	188795	5.1	21.6	347711	5.2	21.2	292587	5.3	20.4
157540	4.9	19.3	434991	4.9	20.7	77997	5.0	18.9	352088	5.1	20.4	426990	5.2	19.7	383272	5.3	20.3
259268	4.9	20.5	380462	4.9	20.8	215381	5.1	19.2	261370	5.1	20.2	238339	5.2	19.5	61262	5.3	17.5
297412	4.9	20.4	143354	4.9	19.3	156435	5.1	19.2	351574	5.1	21.0	437688	5.2	20.4	284338	5.3	20.1
138844	4.9	20.1	321136	4.9	20.2	499877	5.1	20.2	210912	5.1	20.2	215625	5.2	21.3	303443	5.3	21.0
474873	4.9	21.7	88956	4.9	19.1	381556	5.1	20.7	522780	5.1	21.5	532225	5.2	21.2	228860	5.3	18.7
327862	4.9	20.9	80021	4.9	18.5	226826	5.1	19.3	278547	5.1	21.1	21360	5.2	17.4	455673	5.3	22.6
105539	4.9	19.7	145105	4.9	18.8	57257	5.1	18.4	467440	5.1	20.7	64912	5.2	17.9	41659	5.3	18.0
470479	4.9	21.2	374478	4.9	19.8	414200	5.1	20.3	416348	5.1	21.2	94118	5.2	18.9	170991	5.3	19.0
60058	4.9	19.2	499188	4.9	22.1	142269	5.1	19.4	211459	5.1	19.9	458995	5.2	22.0	296361	5.3	20.5
258046	4.9	19.3	432040	4.9	19.6	129820	5.1	18.0	364590	5.1	20.8	116567	5.2	19.8	153528	5.3	20.1
202899	4.9	19.4	6377	4.9	15.5	135427	5.1	19.9	524406	5.1	20.4	138654	5.2	20.5	203462	5.3	18.4
370781	4.9	21.0	326411	4.9	20.2	540527	5.1	19.8	240310	5.1	19.2	281770	5.2	19.1	122678	5.3	18.8
406379	4.9	20.1	524692	4.9	19.6	180009	5.1	18.5	29917	5.1	17.6	20039	5.2	18.3	370141	5.3	21.2
535092	4.9	22.1	209497	4.9	18.7	1472	5.1	14.5	15471	5.1	17.2	143536	5.2	19.5	124518	5.3	19.1
301534	4.9	19.8	249468	4.9	19.7	346060	5.1	21.3	125269	5.1	19.7	456885	5.2	22.1	396263	5.3	20.0
111676	4.9	19.2	507609	4.9	22.2	521273	5.1	20.7	376234	5.1	19.5	147771	5.2	19.3	109775	5.3	19.8
500594	4.9	21.5	267443	4.9	19.6	333369	5.1	19.8	63145	5.1	18.0	276194	5.2	19.6	233604	5.3	20.3
308391	4.9	21.4	61225	4.9	18.1	411242	5.1	20.1	377410	5.1	21.1	82519	5.2	18.7	342890	5.3	19.2
178938	4.9	18.5	477961	4.9	21.7	291781	5.1	18.2	292973	5.1	20.7	33968	5.2	17.1	519414	5.3	20.8
44791	4.9	17.8	45909	4.9	18.1	66795	5.1	19.2	110700	5.1	19.2	203356	5.2	19.2	106047	5.3	20

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
503289	5.3	21.2	199203	5.4	20.2	193665	5.4	19.7	131748	5.5	19.4	352094	5.6	19.9	19487	5.6	17.7
430922	5.3	21.8	528762	5.4	22.3	295782	5.4	21.1	523840	5.5	20.7	410037	5.6	20.1	282029	5.6	18.4
336970	5.3	21.0	67883	5.4	19.0	471184	5.4	19.8	102323	5.5	19.1	273115	5.6	19.1	99423	5.6	19.2
209911	5.3	19.8	501106	5.4	21.0	478107	5.4	20.5	310461	5.5	19.4	170290	5.6	20.5	402039	5.6	20.0
502038	5.3	19.3	308910	5.4	20.9	463100	5.4	21.6	469770	5.5	21.0	351594	5.6	21.4	364969	5.6	20.1
227546	5.3	20.0	138072	5.4	20.0	30700	5.4	18.6	242462	5.5	19.8	372425	5.6	20.1	21525	5.6	18.1
246522	5.3	19.7	153967	5.4	19.2	540871	5.4	21.1	534185	5.5	21.0	196706	5.6	19.4	465037	5.6	20.8
175993	5.3	19.7	535514	5.4	21.5	391752	5.4	21.8	50868	5.5	17.9	173353	5.6	18.9	202668	5.6	20.2
140284	5.3	19.8	74472	5.4	18.3	194189	5.4	19.2	429614	5.5	19.9	46124	5.6	16.8	111689	5.6	19.7
123237	5.3	20.5	30070	5.4	18.3	5343	5.4	16.7	294528	5.5	19.8	147268	5.6	20.2	453361	5.6	21.9
224922	5.3	20.2	203759	5.4	19.6	313747	5.4	20.3	386472	5.5	20.7	437542	5.6	19.2	163839	5.6	19.4
79040	5.3	18.4	67875	5.4	17.0	175911	5.4	20.5	393052	5.5	21.0	198117	5.6	19.4	230665	5.6	20.2
368707	5.3	20.9	503138	5.4	21.1	137751	5.4	19.0	392640	5.5	21.2	413987	5.6	22.1	475677	5.6	21.2
490670	5.3	20.8	102629	5.4	18.3	364716	5.4	21.1	460282	5.5	20.5	190135	5.6	21.5	149405	5.6	20.1
488636	5.3	22.9	499844	5.4	21.0	296461	5.4	20.9	392696	5.5	21.1	69493	5.6	17.8	160962	5.7	18.9
299839	5.3	21.1	81884	5.4	17.6	269599	5.4	20.5	177470	5.5	18.7	398642	5.6	21.6	372423	5.7	21.4
51282	5.3	18.1	268390	5.4	20.6	130002	5.4	19.5	281045	5.5	20.1	37815	5.6	17.8	275996	5.7	20.6
498080	5.3	20.6	463581	5.4	21.0	299308	5.4	20.5	351886	5.5	21.3	75013	5.6	19.3	274840	5.7	19.1
201825	5.3	17.6	199848	5.4	19.2	179365	5.4	20.6	386153	5.5	21.1	222743	5.6	21.0	246204	5.7	18.6
65528	5.3	19.1	543820	5.4	20.9	471858	5.4	20.4	130663	5.5	19.7	192414	5.6	18.7	341754	5.7	20.6
341579	5.3	20.6	447249	5.4	20.6	358101	5.5	21.1	356968	5.5	20.7	505215	5.6	20.9	251513	5.7	20.6
506060	5.3	19.9	41004	5.4	18.4	331403	5.5	21.1	352052	5.5	20.2	346403	5.6	20.5	463676	5.7	20.1
20285	5.3	18.1	531740	5.4	21.9	264648	5.5	20.3	495219	5.5	19.8	168568	5.6	19.9	377763	5.7	19.6
83891	5.3	18.5	407752	5.4	21.5	522053	5.5	19.8	202455	5.5	18.7	338945	5.6	21.0	70144	5.7	17.8
206736	5.3	19.9	215443	5.4	18.5	269218	5.5	19.8	285316	5.5	19.8	436711	5.6	19.9	245101	5.7	19.1
408129	5.3	20.0	425689	5.4	20.2	36647	5.5	18.2	462177	5.5	20.7	509066	5.6	21.4	384911	5.7	21.1
248387	5.3	19.2	299938	5.4	21.5	366724	5.5	19.7	290966	5.5	21.0	235980	5.6	19.5	534677	5.7	21.2
23545	5.3	17.0	524359	5.4	20.6	218608	5.5	19.2	413480	5.5	20.3	64289	5.6	18.5	431250	5.7	20.5
469920	5.3	20.7	35260	5.4	18.8	64517	5.5	19.2	145458	5.5	18.0	538654	5.6	20.6	207151	5.7	20.4
426549	5.3	20.0	371279	5.4	20.5	216303	5.5	20.1	352407	5.5	19.8	74346	5.6	19.3	213005	5.7	19.3
327662	5.3	19.9	104607	5.4	18.7	165422	5.5	19.1	248049	5.5	18.2	375788	5.6	19.4	478201	5.7	20.5
122759	5.3	19.4	143151	5.4	18.7	362743	5.5	21.5	143566	5.5	18.4	434530	5.6	20.5	188466	5.7	19.8
215041	5.3	20.0	67940	5.4	18.1	296183	5.5	20.4	221903	5.5	19.2	136463	5.6	18.7	543860	5.7	21.2
310359	5.3	19.8	93374	5.4	18.0	181722	5.5	20.5	422225	5.5	20.4	40287	5.6	17.5	386164	5.7	22.0
537886	5.3	20.4	36361	5.4	17.7	469791	5.5	21.0	150797	5.5	20.1	119640	5.6	19.4	37693	5.7	17.8
470166	5.3	20.8	449227	5.4	21.0	167703	5.5	19.4	517193	5.5	21.2	409956	5.6	22.3	29784	5.7	17.7
352432	5.3	20.3	175354	5.4	19.3	471518	5.5	20.8	197045	5.5	19.5	235194	5.6	20.2	178113	5.7	20.1
177006	5.3	19.3	404272	5.4	19.6	459507	5.5	19.7	46133	5.5	18.8	198399	5.6	20.4	34280	5.7	18.1
253946	5.3	21.5	234549	5.4	19.8	346157	5.5	21.0	381606	5.5	20.2	31577	5.6	18.0	303840	5.7	21.3
181063	5.3	19.8	388503	5.4	20.0	313603	5.5	19.8	502270	5.5	20.4	209736	5.6	19.3	503783	5.7	20.1
59804	5.3	18.3	387836	5.4	18.1	526604	5.5	22.5	300841	5.5	20.6	462274	5.6	20.0	127261	5.7	18.6
317169	5.3	19.2	109191	5.4	18.7	204901	5.5	19.2	461750	5.5	19.9	391296	5.6	21.0	539122	5.7	20.3
430968	5.3	19.5	342927	5.4	19.9	297833	5.5	21.4	106558	5.5	18.3	346247	5.6	19.1	239613	5.7	19.8
26946	5.3	18.0	40914	5.4	18.2	102801	5.5	19.5	292962	5.5	20.7	420741	5.6	20.5	404968	5.7	21.5
12801	5.3	17.9	113709	5.4	17.4	276954	5.5	20.7	421849	5.5	20.1	19773	5.6	17.5	138823	5.7	19.0
92998	5.3	18.9	344598	5.4	20.4	285417	5.5	18.6	191122	5.5	19.4	269251	5.6	18.6	179094	5.7	18.2
525149	5.3	20.1	192879	5.4	19.6	63212	5.5	18.6	503462	5.5	20.6	39935	5.6	18.4	473150	5.7	20.7
83827	5.3	18.1	295283	5.4	20.9	344842	5.5	20.3	430924	5.5	21.5	172962	5.6	19.3	219324	5.7	18.7
253124	5.3	19.3	216849	5.4	19.9	288423	5.5	20.7	103815	5.5	18.4	245643	5.6	19.9	50475	5.7	18.5
459556	5.3	21.0	136977	5.4	18.1	278626	5.5	19.9	86998	5.5	18.7	157984	5.6	19.2	295847	5.7	20.1
336838	5.3	20.2	272942	5.4	20.1	29012	5.5	19.0	197185	5.5	19.1	525609	5.6	19.8	258271	5.7	20.3
102948	5.3	18.3	293176	5.4	19.9	181160	5.5	19.6	41386	5.5	17.7	375871	5.6	20.5	212448	5.7	20.3
175446	5.3	18.4	1021	5.4	13.1	26640	5.5	17.9	445859	5.5	20.2	431837	5.6	20.8	199265	5.7	19.3
81502	5.3	17.6	270362	5.4	20.3	295715	5.5	20.1	364747	5.5	20.6	312935	5.6	20.7	533950	5.7	21.5
457537	5.3	21.3	463118	5.4	22.0	9786	5.5	17.0	37501	5.5	17.6	399708	5.6	19.5	141188	5.7	20.0
1547	5.3	15.2	417615	5.4	19.6	439771	5.5	20.1	480774	5.5	18.6	53831	5.6	18.4	365549	5.7	20.2
348840	5.3	20.1	423110	5.4	20.1	527638	5.5	21.6	88060	5.5	18.2	407711	5.6	20.0	272842	5.7	20.2
443275	5.3	20.6	424686	5.4	20.8	196115	5.5	19.1	384976	5.5	20.4	362767	5.6	21.0	526280	5.7	22.3
270436	5.3	21.4	133956	5.4	19.5	300920	5.5	20.4	522862	5.5	20.3	98834	5.6	19.4	177861	5.7	19.1
240442	5.3	18.7	447004	5.4	20.0	432397	5.5	20.7	203437	5.5	19.3	468849	5.6	20.7	346802	5.7	21.3
302365	5.3	20.6	205700	5.4	19.8	248161	5.5	21.2	456752	5.5	20.6	357177	5.6	21.2	104578	5.7	19.8
432341	5.3	20.2	472533	5.4	20.3	308688	5.5	19.0	445865	5.5	21.1	364280	5.6	19.8	294497	5.7	21.0
236076	5.3	19.9	504446	5.4	22.7	524540	5.5	20.9	23292	5.5	17.0	53251	5.6	18.5	14116	5.7	17.8
148125	5.3	20.5	107950	5.4	20.1	409949	5.5	20.5	503721	5.5	20.1	473900	5.6	20.2	8406	5.7	16.3
122359	5.3	19.2	28275	5.4	18.1	96758	5.5	18.8	89903	5.5	20.0	38474	5.6	17.6	236004	5.7	19.2
2751	5.3	16.6	32233	5.4	18.4	122515	5.5	18.2	117086	5.5	19.7	195384	5.6	19.7	312033	5.7	20.8
465199	5.3	20.2	230085	5.4	17.6	368236	5.5	19.9	136137	5.6	19.4	537930	5.6	21.3	84074	5.7	19.5
267209	5.3	19.6	400585	5.4	21.3	377848	5.5	19.9	526374	5.6	21.2	217287	5.6	20.5	59949	5.7	17.1
388996	5.3	19.5	288434	5.4	19.4	82752	5.5	18.9	359818	5.6	20.5	388365	5.6	20.6	530814	5.7	21.1
77305	5.3	19.1	287907	5.4	19.7	351697	5.5	21.0	179114	5.6	18.9	106190	5.6	19.2	126999	5.7	18.1
389734	5.3	20.3	275048	5.4	19.1	356592	5.5	20.6	470303	5.6	19.7	426892	5.6	19.3	539608	5.7	

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
205844	5.7	20.5	69496	5.8	19.5	410388	5.9	19.2	308533	5.9	20.3	40500	6.0	19.1	458164	6.1	17.6
370996	5.7	19.4	247384	5.8	19.4	60485	5.9	19.0	41587	5.9	19.4	39034	6.0	18.6	420295	6.1	20.1
141253	5.7	19.6	395522	5.8	20.9	38250	5.9	18.1	424129	5.9	19.2	297754	6.0	20.0	68092	6.1	17.9
161517	5.7	18.6	404167	5.8	18.9	105805	5.9	19.1	259203	5.9	20.5	290160	6.0	19.9	338935	6.1	20.2
194056	5.7	19.4	366396	5.8	19.9	341467	5.9	20.4	90190	5.9	18.9	40705	6.0	18.5	382264	6.1	21.1
165545	5.7	20.0	524576	5.8	21.2	119717	5.9	19.6	16847	5.9	17.0	472173	6.0	21.5	296938	6.1	21.1
246985	5.7	18.3	84731	5.8	19.0	349402	5.9	19.5	385416	5.9	20.9	374181	6.0	20.4	303765	6.1	20.2
210856	5.7	19.2	389608	5.8	19.5	422480	5.9	19.3	64413	5.9	18.2	504172	6.0	21.6	368810	6.1	21.3
248356	5.7	19.5	389774	5.8	21.1	183373	5.9	19.9	489210	5.9	19.7	163301	6.0	19.5	153630	6.1	20.3
146339	5.7	18.6	249244	5.8	19.8	1072	5.9	16.0	156716	5.9	17.8	472611	6.0	21.1	333698	6.1	20.0
13070	5.7	16.4	194673	5.8	19.1	459061	5.9	21.5	254364	5.9	18.2	32794	6.0	19.7	451922	6.1	19.7
423705	5.7	20.3	214455	5.8	19.0	534273	5.9	20.7	196593	5.9	18.3	117485	6.0	19.0	506185	6.1	19.5
222069	5.7	19.1	345599	5.8	21.5	389253	5.9	20.5	354063	5.9	19.5	297852	6.0	20.1	98086	6.1	17.2
157847	5.7	19.8	66622	5.8	18.1	147221	5.9	19.8	413560	5.9	20.9	108836	6.0	18.5	308558	6.1	19.9
448744	5.7	20.0	55266	5.8	18.5	282299	5.9	20.1	123520	5.9	19.8	132179	6.0	20.2	295188	6.1	20.8
52640	5.7	17.8	524525	5.8	22.5	471357	5.9	21.3	299874	5.9	19.6	540608	6.0	20.6	529377	6.1	21.4
243803	5.7	18.9	303215	5.8	19.0	310773	5.9	18.8	248464	5.9	19.9	528241	6.0	22.5	524894	6.1	22.0
20795	5.7	18.0	246684	5.8	20.6	120644	5.9	18.6	21689	5.9	16.8	179464	6.0	20.4	518476	6.1	20.2
222820	5.7	21.6	59445	5.8	19.1	241682	5.9	19.2	425411	5.9	21.2	472243	6.0	19.8	201465	6.1	19.7
475210	5.7	21.0	463788	5.8	20.8	539172	5.9	20.9	52963	5.9	16.8	83613	6.0	17.8	173767	6.1	20.0
149890	5.7	18.0	462068	5.8	19.5	266413	5.9	20.2	211453	5.9	20.6	460034	6.0	21.3	391047	6.1	18.8
198561	5.7	19.7	91317	5.8	17.9	404517	5.9	21.5	19356	5.9	19.8	312705	6.0	20.5	36525	6.1	18.1
225533	5.7	19.5	309817	5.8	21.1	44936	5.9	16.8	254603	5.9	20.1	246119	6.0	20.2	199158	6.1	20.0
30604	5.7	17.5	308516	5.8	21.0	303441	5.9	20.8	313106	5.9	20.4	423769	6.0	20.5	89259	6.1	20.0
57369	5.7	19.6	423656	5.8	21.4	46765	5.9	16.4	538364	5.9	20.5	510389	6.0	21.4	42975	6.1	18.1
118829	5.7	19.9	2750	5.8	16.1	155259	5.9	19.9	69138	5.9	18.5	1379	6.0	14.4	170041	6.1	20.2
91233	5.7	19.5	126767	5.8	19.1	401108	5.9	19.6	493545	5.9	20.5	373296	6.0	20.4	299796	6.1	21.8
214053	5.7	20.9	381695	5.8	20.8	56898	5.9	18.8	32293	5.9	18.6	437670	6.0	20.2	347134	6.1	20.7
145678	5.7	19.4	60586	5.8	19.0	300952	5.9	21.2	124559	5.9	17.8	256224	6.0	20.3	319729	6.1	19.7
322309	5.7	19.9	533153	5.8	22.2	373464	5.9	19.3	42348	5.9	18.6	542266	6.0	19.4	542955	6.1	21.0
160189	5.7	19.4	321811	5.8	20.3	346219	5.9	20.5	327363	5.9	20.2	502550	6.0	20.4	99691	6.1	18.4
406879	5.7	20.8	67126	5.8	18.6	51247	5.9	18.3	490505	5.9	20.3	458316	6.0	20.8	227498	6.1	20.0
202861	5.7	18.5	470555	5.8	21.3	306612	5.9	19.0	212643	5.9	19.9	330051	6.0	20.8	16636	6.1	18.2
195237	5.7	18.2	236139	5.8	20.3	332725	5.9	20.4	40938	5.9	17.8	158959	6.0	19.4	494991	6.1	19.9
452795	5.8	20.5	175401	5.8	18.7	542575	5.9	20.8	52974	5.9	16.7	527774	6.0	21.1	492708	6.1	19.7
12329	5.8	15.8	33288	5.8	18.2	9215	5.9	16.5	405516	5.9	20.0	508507	6.0	19.1	187763	6.1	18.9
493592	5.8	20.5	119405	5.8	18.8	409021	5.9	21.6	501515	5.9	21.1	496445	6.0	21.3	498052	6.1	21.0
73665	5.8	19.7	507331	5.8	22.5	420403	5.9	20.1	333113	5.9	18.8	455145	6.0	20.2	257045	6.1	20.8
50154	5.8	18.1	419714	5.8	21.0	175334	5.9	20.2	524566	5.9	21.6	532137	6.1	20.2	292052	6.1	20.3
426893	5.8	20.4	281032	5.8	19.9	369358	5.9	20.3	211463	5.9	19.3	22616	6.1	17.0	242281	6.1	19.1
533716	5.8	20.2	58702	5.8	19.2	157349	5.9	19.3	305939	5.9	20.9	185218	6.1	19.3	163716	6.1	18.3
326991	5.8	19.5	260768	5.8	19.4	484566	5.9	21.2	291739	5.9	18.9	524794	6.1	19.6	150279	6.1	19.4
344391	5.8	20.4	189122	5.8	18.6	95991	5.9	17.8	384242	5.9	19.8	540846	6.1	21.1	339479	6.1	20.1
289903	5.8	18.5	116834	5.8	18.1	111131	5.9	18.3	269526	5.9	19.7	209486	6.1	18.5	36592	6.1	18.8
535361	5.8	21.0	509551	5.8	19.9	374059	5.9	20.4	12598	5.9	18.1	301341	6.1	20.8	26808	6.1	17.9
149892	5.8	19.5	182203	5.8	20.4	472201	5.9	21.2	58858	5.9	18.8	437771	6.1	20.2	231350	6.1	20.5
359033	5.8	20.2	502876	5.8	21.5	539234	5.9	19.9	404690	5.9	20.3	212590	6.1	20.3	523048	6.1	20.7
150926	5.8	19.4	185067	5.8	21.0	499105	5.9	21.5	525009	5.9	21.4	498446	6.1	21.2	79612	6.1	17.3
141251	5.8	18.6	104411	5.8	17.5	526565	5.9	24.2	40037	5.9	17.8	207894	6.1	19.4	522803	6.1	21.6
213870	5.8	20.3	490343	5.8	22.2	67985	5.9	18.2	152458	5.9	19.8	439283	6.1	20.8	283457	6.1	18.3
34210	5.8	18.6	285058	5.8	20.5	126187	5.9	17.0	247134	5.9	19.7	30224	6.1	15.7	212530	6.1	20.7
31423	5.8	17.6	217982	5.8	20.1	378273	5.9	20.5	379380	5.9	21.0	406335	6.1	20.2	245547	6.1	19.5
507840	5.8	21.1	463898	5.8	20.1	42052	5.9	19.4	468551	5.9	21.3	396219	6.1	20.3	200156	6.1	18.1
471465	5.8	21.0	33200	5.8	17.9	381334	5.9	19.5	480506	5.9	19.9	534852	6.1	21.5	191126	6.1	19.9
539386	5.8	19.5	16659	5.9	16.4	213407	5.9	20.7	121938	5.9	17.2	467958	6.1	19.8	537776	6.1	19.6
143220	5.8	19.3	127837	5.9	19.1	470040	5.9	20.9	74312	5.9	18.8	357935	6.1	19.6	58027	6.1	18.9
396851	5.8	21.1	244754	5.9	19.9	224574	5.9	19.2	270582	5.9	19.5	83710	6.1	19.3	302170	6.1	20.4
530086	5.8	21.6	129499	5.9	19.8	17337	5.9	18.8	306050	5.9	18.6	465154	6.1	21.1	403932	6.1	20.8
54775	5.8	17.9	171996	5.9	19.8	459160	5.9	20.3	58583	5.9	18.0	317762	6.1	19.0	122021	6.1	19.6
169167	5.8	19.0	57560	5.9	19.4	534406	5.9	20.5	315468	5.9	21.2	448471	6.1	20.7	348860	6.1	21.4
376333	5.8	20.0	276007	5.9	18.8	224935	5.9	19.8	239338	5.9	20.4	106119	6.1	18.4	353134	6.1	20.4
175301	5.8	19.3	131962	5.9	20.1	414208	5.9	19.4	87702	6.0	17.8	505245	6.1	21.5	375814	6.1	21.3
222497	5.8	21.3	328583	5.9	19.7	33214	5.9	17.3	4452	6.0	16.4	120681	6.1	19.1	290116	6.1	20.7
534656	5.8	21.8	526142	5.9	21.4	391694	5.9	21.2	522885	6.0	21.1	321497	6.1	19.3	512378	6.1	21.2
388393	5.8	21.5	300028	5.9	20.6	37953	5.9	18.8	268443	6.0	19.4	118762	6.1	16.4	103477	6.1	19.1
505162	5.8	19.8	36012	5.9	17.3	388790	5.9	20.5	363113	6.0	20.9	512950	6.1	19.7	455491	6.1	21.9
498528	5.8	22.3	120138	5.9	18.0	436698	5.9	20.1	462719	6.0	19.6	494821	6.1	19.6	305913	6.1	20.2
61887	5.8	19.2	499892	5.9	21.1	387709	5.9	22.0	118966	6.0	17.9	200756	6.1	20.3	497045	6.1	19.9
395810	5.8	19.3	533166	5.9	21.3	194672	5.9	19.7	431233	6.0	21.0	217046	6.1	19.5	228637	6.1	19.7
23335	5.8	17.7	375987	5.9	20.5	278823	5.9	19.8	544860	6.0	19.8	135080	6.1	18.9	63673	6.1	17.7
173911	5.8	20.6	338395	5.9	19.8	491179	5.9	20.7	77425	6.0	18.6	231321	6.1	20.2	162227	6.1	20.2

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
283499	6.2	19.6	212284	6.2	20.0	219587	6.3	20.2	310283	6.4	18.5	186160	6.5	18.6	48879	6.5	17.7
57828	6.2	18.1	176345	6.2	18.5	131904	6.3	19.0	53322	6.4	17.0	438367	6.5	20.8	231775	6.6	20.8
172418	6.2	19.7	235639	6.2	18.8	308182	6.3	21.0	495200	6.4	21.5	162314	6.5	19.9	157983	6.6	18.9
528894	6.2	20.6	336334	6.2	20.8	6766	6.3	17.6	38268	6.4	19.0	352884	6.5	19.4	87668	6.6	17.7
440884	6.2	21.3	160787	6.2	20.2	405252	6.3	20.0	225546	6.4	18.2	210567	6.5	19.2	459285	6.6	20.5
504436	6.2	21.3	477184	6.2	20.6	245207	6.3	19.9	390141	6.4	21.0	341809	6.5	22.1	33206	6.6	18.9
205955	6.2	18.7	43869	6.2	18.1	293104	6.3	19.9	474980	6.4	20.5	213464	6.5	19.9	20390	6.6	17.9
233248	6.2	21.4	133070	6.2	19.2	290760	6.3	19.3	497278	6.4	19.7	462272	6.5	20.1	15953	6.6	16.5
93970	6.2	18.5	96412	6.2	19.1	478273	6.3	20.0	288737	6.4	19.6	100433	6.5	16.8	512983	6.6	20.2
186020	6.2	19.4	155928	6.2	17.4	337215	6.3	20.7	157613	6.4	18.7	2450	6.5	15.7	69027	6.6	19.7
465940	6.2	20.7	431980	6.2	20.3	172090	6.3	19.7	83772	6.4	18.6	11615	6.5	18.2	262837	6.6	20.1
183526	6.2	19.2	43493	6.2	18.5	189603	6.3	19.4	389113	6.4	20.7	196560	6.5	19.5	148082	6.6	18.5
273345	6.2	20.2	529210	6.2	21.2	28308	6.3	18.3	502799	6.4	20.0	419200	6.5	21.0	145722	6.6	18.7
502132	6.2	20.9	483374	6.2	19.7	275253	6.3	19.2	313026	6.4	21.1	129573	6.5	18.4	305979	6.6	20.1
80198	6.2	18.1	92666	6.2	18.6	506350	6.3	20.9	388333	6.4	20.4	59241	6.5	18.2	58681	6.6	18.6
252601	6.2	20.1	41965	6.2	18.7	300226	6.3	20.9	405328	6.4	20.2	208371	6.5	19.6	535603	6.6	22.3
247939	6.2	18.2	347994	6.2	19.6	22450	6.3	19.0	533699	6.4	20.6	68216	6.5	18.0	379973	6.6	19.9
105386	6.2	19.3	259249	6.2	20.9	74946	6.3	18.6	119380	6.4	19.8	287552	6.5	20.7	330078	6.6	19.9
426728	6.2	20.6	229971	6.2	20.7	208491	6.3	20.6	282849	6.4	20.2	350817	6.5	22.4	499738	6.6	19.7
107287	6.2	19.6	4560	6.2	16.0	351903	6.3	20.2	491517	6.4	21.0	182606	6.5	19.1	540511	6.6	20.3
103855	6.2	19.5	109436	6.2	19.4	315414	6.3	21.1	455587	6.4	19.3	172556	6.5	18.0	111267	6.6	19.0
27332	6.2	17.8	466570	6.3	20.9	231675	6.3	19.8	37941	6.4	18.2	299320	6.5	20.7	44606	6.6	17.5
235714	6.2	19.0	206997	6.3	20.2	200845	6.3	20.9	468286	6.4	20.6	229803	6.5	19.6	397378	6.6	20.0
390077	6.2	21.7	507820	6.3	20.0	14783	6.3	17.1	401400	6.4	20.2	243772	6.5	19.3	371247	6.6	21.3
115718	6.2	19.4	286287	6.3	21.5	58450	6.3	17.9	144666	6.4	19.8	230489	6.5	20.4	498809	6.6	20.9
300116	6.2	20.0	462911	6.3	20.2	381961	6.3	21.1	224353	6.4	20.4	392879	6.5	20.6	378783	6.6	20.1
172864	6.2	20.0	357062	6.3	20.0	110840	6.3	20.0	329964	6.4	20.9	496547	6.5	20.6	349909	6.6	20.3
168795	6.2	19.2	59962	6.3	18.5	75012	6.3	18.0	62635	6.4	20.5	205939	6.5	19.2	430186	6.6	20.9
66901	6.2	18.4	318889	6.3	19.6	25671	6.3	17.8	266312	6.4	18.6	531661	6.5	22.2	25434	6.6	17.6
89329	6.2	18.7	140303	6.3	19.6	272926	6.3	20.7	520028	6.4	21.1	94417	6.5	18.9	218643	6.6	19.2
336323	6.2	19.9	107544	6.3	17.4	278365	6.3	19.0	111302	6.4	19.8	114544	6.5	18.8	215787	6.6	19.6
130648	6.2	19.4	368226	6.3	19.4	395583	6.3	20.8	508307	6.4	20.6	463137	6.5	21.5	468640	6.6	19.3
296100	6.2	19.0	11307	6.3	16.8	286396	6.3	19.4	422698	6.4	19.0	14855	6.5	17.7	170986	6.6	18.5
440902	6.2	20.5	307759	6.3	20.3	236907	6.3	20.1	355105	6.4	21.4	346109	6.5	20.3	333886	6.6	19.5
384088	6.2	21.3	435940	6.3	20.9	100163	6.3	19.6	16010	6.4	17.0	432450	6.5	20.7	317636	6.6	19.6
81095	6.2	17.8	438424	6.3	20.5	219441	6.3	19.9	351871	6.4	21.1	133162	6.5	18.9	283506	6.6	20.0
417694	6.2	21.4	90439	6.3	18.5	44613	6.3	18.5	87097	6.4	19.0	294415	6.5	20.6	412853	6.6	21.1
300980	6.2	20.9	279113	6.3	20.4	37504	6.3	19.9	242660	6.4	19.6	370963	6.5	20.7	323768	6.6	20.1
249585	6.2	20.5	211527	6.3	19.3	309856	6.3	20.6	540280	6.4	20.4	516677	6.5	20.8	55262	6.6	19.0
404726	6.2	22.1	480168	6.3	19.9	209196	6.3	19.7	459537	6.4	20.9	537217	6.5	20.7	114312	6.6	19.7
338871	6.2	19.8	262437	6.3	20.8	245935	6.3	20.0	433875	6.4	20.2	46193	6.5	18.3	81375	6.6	19.2
297929	6.2	20.8	419163	6.3	21.2	497764	6.3	21.9	346066	6.4	20.5	216838	6.5	20.4	442438	6.6	20.5
67864	6.2	17.7	479701	6.3	20.3	104489	6.3	19.2	92930	6.4	18.4	109321	6.5	18.0	502322	6.6	20.4
32602	6.2	17.3	313771	6.3	21.8	221366	6.3	19.3	285205	6.4	20.5	471375	6.5	21.1	129455	6.6	20.5
196671	6.2	19.9	500916	6.3	19.8	159788	6.3	19.5	509043	6.4	22.1	402912	6.5	20.4	24166	6.6	17.5
498985	6.2	21.0	530655	6.3	19.4	433929	6.3	20.6	289192	6.4	21.3	35045	6.5	19.8	181598	6.6	19.4
58503	6.2	19.5	486891	6.3	20.5	303732	6.3	20.7	152686	6.4	17.7	166196	6.5	20.0	78739	6.6	18.8
523865	6.2	22.1	479146	6.3	20.3	106028	6.3	18.4	336178	6.4	20.1	408205	6.5	20.4	171575	6.6	18.6
255464	6.2	20.6	151062	6.3	18.2	306977	6.3	19.1	454042	6.4	20.3	269616	6.5	18.3	273118	6.6	20.1
296922	6.2	19.0	498668	6.3	20.0	286557	6.3	21.1	217908	6.4	18.7	204599	6.5	19.9	89908	6.6	17.1
64458	6.2	17.8	196544	6.3	19.0	369264	6.3	21.4	304865	6.4	20.1	65006	6.5	18.9	435403	6.6	20.3
383324	6.2	20.7	420955	6.3	21.1	186598	6.3	19.6	153087	6.4	18.7	479163	6.5	21.6	90689	6.6	19.3
427983	6.2	21.1	321279	6.3	21.1	456041	6.3	20.7	275390	6.4	20.8	240823	6.5	19.7	120703	6.6	18.7
157389	6.2	18.8	303699	6.3	19.4	38334	6.3	18.4	248923	6.4	20.6	347753	6.5	20.5	59927	6.6	18.1
43430	6.2	17.7	62325	6.3	17.9	283504	6.3	19.9	348497	6.4	20.0	32326	6.5	17.1	292805	6.6	20.5
418278	6.2	20.9	354109	6.3	19.8	536029	6.3	20.0	55117	6.4	18.9	63260	6.5	17.8	534629	6.6	19.7
294361	6.2	18.6	377132	6.3	19.1	470151	6.3	21.0	524899	6.4	21.3	529337	6.5	20.8	59153	6.6	19.0
17782	6.2	17.9	396043	6.3	20.5	302441	6.4	19.7	533966	6.4	20.8	94541	6.5	19.4	529815	6.6	20.9
70350	6.2	18.4	62851	6.3	17.9	431849	6.4	20.6	423415	6.4	20.1	478131	6.5	20.5	246874	6.6	18.9
249490	6.2	20.0	417134	6.3	21.7	535111	6.4	21.4	94824	6.4	18.8	305357	6.5	19.5	227588	6.6	20.1
67694	6.2	18.4	507977	6.3	20.0	400844	6.4	19.3	346921	6.4	20.1	89217	6.5	18.7	174968	6.6	18.5
298323	6.2	20.8	414940	6.3	20.7	216026	6.4	19.3	138786	6.4	19.2	236834	6.5	20.0	540037	6.6	20.2
89196	6.2	20.1	293980	6.3	20.8	74079	6.4	16.3	287777	6.4	20.0	528733	6.5	20.7	502397	6.6	20.8
410327	6.2	19.2	47140	6.3	18.2	455562	6.4	20.3	447248	6.4	21.1	410404	6.5	20.5	364697	6.6	20.4
200681	6.2	18.5	503608	6.3	20.3	527612	6.4	22.3	499315	6.4	21.0	297920	6.5	20.3	122736	6.6	19.5
98780	6.2	19.0	374072	6.3	20.4	427754	6.4	19.3	212775	6.4	20.0	207457	6.5	19.7	86350	6.6	18.8
421483	6.2	20.9	95069	6.3	18.8	53892	6.4	18.5	373444	6.4	20.2	369665	6.5	20.4	396899	6.6	19.6
20118	6.2	18.5	527420	6.3	20.1	20850	6.4	18.1	205718	6.4	20.4	240124	6.5	20.3	64916	6.6	19.5
435962	6.2	20.4	272440	6.3	21.4	508662	6.4	20.6	443293	6.4	20.5	106648	6.5	18.0	396073	6.6	20.5
421354	6.2	20.4	324515	6.3	21.1	92881	6.4	19.2	214595	6.5	18.6	7934	6.5	18.5	382917	6.6	18.7
51326	6.2	17.9	496552	6.3	20.4	12027	6.4	18.6	229970	6.5	19.9	532520	6.5	21.3	463301	6.6	20.4

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
307064	6.6	16.9	14936	6.7	15.8	54578	6.8	19.0	110032	6.8	19.9	458865	6.9	21.8	297884	6.9	19.5
373482	6.6	20.0	15237	6.7	16.7	343589	6.8	19.7	303333	6.8	18.9	518031	6.9	21.3	363232	6.9	19.6
435345	6.6	19.8	533662	6.7	19.4	490128	6.8	21.2	210049	6.8	20.5	297614	6.9	20.3	345708	6.9	20.3
366861	6.6	21.7	5765	6.7	17.1	34595	6.8	16.8	496786	6.8	20.4	232782	6.9	20.0	109074	6.9	18.8
19696	6.6	17.7	21490	6.7	17.7	25874	6.8	18.8	371680	6.8	20.5	179413	6.9	20.2	243573	6.9	19.1
143449	6.6	19.0	140678	6.7	20.2	381819	6.8	20.6	215982	6.8	19.8	384199	6.9	20.6	522393	6.9	20.5
222802	6.6	20.7	283601	6.7	21.6	496059	6.8	21.0	210935	6.8	20.8	217965	6.9	19.5	98364	6.9	18.4
445881	6.6	20.5	416570	6.7	20.3	115678	6.8	18.6	287225	6.8	19.6	46526	6.9	19.3	28818	6.9	16.9
61928	6.6	17.5	106624	6.7	18.8	421532	6.8	19.7	261958	6.8	20.5	368781	6.9	20.4	71735	6.9	16.4
116266	6.6	18.4	535600	6.7	21.4	394815	6.8	19.3	372543	6.8	19.3	484276	6.9	19.9	423620	6.9	19.7
373363	6.6	19.8	493816	6.7	20.1	320929	6.8	20.7	24361	6.8	18.4	243791	6.9	19.0	437805	6.9	21.0
196621	6.6	20.3	17142	6.7	16.4	425274	6.8	21.4	356931	6.8	20.7	120598	6.9	20.3	502193	6.9	21.5
207719	6.6	19.9	62619	6.7	18.8	304391	6.8	19.7	305753	6.8	20.5	125649	6.9	16.9	322850	6.9	20.1
388806	6.6	20.2	426202	6.7	19.8	297017	6.8	19.8	463252	6.8	21.8	66367	6.9	18.3	328301	6.9	20.3
490638	6.6	20.1	470849	6.7	20.7	390101	6.8	20.4	327293	6.8	19.9	47050	6.9	17.1	401158	6.9	20.3
89202	6.6	19.7	406551	6.7	20.8	413666	6.8	23.8	248550	6.8	20.1	423427	6.9	20.6	491157	6.9	20.9
94523	6.6	18.4	195507	6.7	19.7	46485	6.8	18.6	297890	6.8	20.5	221269	6.9	20.2	130704	6.9	19.1
437749	6.6	20.3	240630	6.7	18.3	275480	6.8	19.8	20929	6.8	18.8	464911	6.9	20.8	345095	6.9	18.9
259615	6.6	18.9	121110	6.7	17.4	517647	6.8	21.2	4374	6.8	16.5	105784	6.9	18.9	1599	6.9	15.7
436015	6.6	19.9	234653	6.7	19.9	270069	6.8	19.6	362966	6.8	20.3	417730	6.9	21.1	232768	6.9	17.6
374145	6.6	20.3	502636	6.7	20.7	292733	6.8	20.6	344506	6.8	20.3	374433	6.9	21.6	196619	6.9	19.3
370728	6.6	19.8	307630	6.7	19.7	244578	6.8	20.1	162926	6.8	20.4	465934	6.9	21.6	530165	6.9	22.1
53116	6.6	18.4	102168	6.7	18.3	165558	6.8	19.3	171888	6.8	19.8	398684	6.9	21.5	163374	6.9	19.0
278820	6.6	20.1	475455	6.7	20.9	229633	6.8	19.8	57816	6.8	19.0	187073	6.9	19.6	5068	6.9	16.7
480333	6.6	20.6	346702	6.7	21.2	298322	6.8	20.6	121916	6.8	17.1	451692	6.9	21.3	237648	6.9	20.4
91120	6.6	18.7	206291	6.7	18.5	533736	6.8	19.5	30829	6.8	16.4	173217	6.9	19.7	100203	6.9	20.3
53971	6.6	19.7	155417	6.7	20.1	301969	6.8	18.9	274077	6.8	19.5	237059	6.9	20.1	212914	6.9	20.0
72611	6.6	18.5	451059	6.7	21.0	72418	6.8	18.5	296935	6.8	20.1	198968	6.9	19.3	331785	6.9	21.1
279286	6.6	20.9	284472	6.7	20.7	325270	6.8	19.8	177092	6.8	19.7	244590	6.9	20.1	224609	6.9	19.7
56874	6.6	19.5	236230	6.7	20.2	288016	6.8	19.6	171958	6.8	19.8	293588	6.9	19.0	508247	6.9	19.9
120585	6.6	19.9	56949	6.7	16.5	224833	6.8	19.6	479101	6.8	21.2	131867	6.9	19.6	471403	6.9	20.5
94880	6.6	18.1	320421	6.7	19.4	348792	6.8	19.1	149472	6.8	20.5	348841	6.9	20.3	172676	6.9	18.7
456999	6.6	21.3	237137	6.7	20.5	499335	6.8	21.2	238078	6.8	19.5	439735	6.9	20.7	234798	6.9	19.7
111353	6.6	19.1	411381	6.7	22.2	540279	6.8	21.1	412449	6.8	20.8	38	6.9	12.8	161557	6.9	17.6
418315	6.6	20.9	351964	6.7	22.0	355812	6.8	21.8	53263	6.9	17.8	502389	6.9	21.3	96686	6.9	17.9
312582	6.6	20.0	526058	6.7	18.7	428031	6.8	20.1	386539	6.9	19.8	451720	6.9	21.5	543424	6.9	20.7
306020	6.6	18.8	179130	6.7	18.6	268573	6.8	20.6	269189	6.9	20.4	95151	6.9	18.5	416694	6.9	19.3
285439	6.6	20.3	360052	6.7	20.6	285052	6.8	19.2	162165	6.9	19.5	368259	6.9	19.7	31242	6.9	16.2
349445	6.6	21.5	43124	6.7	18.3	270390	6.8	19.1	57917	6.9	17.0	353242	6.9	19.7	392787	6.9	22.2
11217	6.6	17.1	338132	6.7	20.7	159313	6.8	19.4	468134	6.9	21.2	424644	6.9	19.1	28210	6.9	18.4
150975	6.6	18.5	308163	6.7	21.1	182782	6.8	21.2	165366	6.9	20.6	17453	6.9	16.3	392607	6.9	20.4
535797	6.7	21.0	283748	6.7	20.6	522810	6.8	20.7	99631	6.9	18.4	301076	6.9	20.0	11573	6.9	18.8
87908	6.7	18.8	363546	6.7	19.7	146131	6.8	18.7	305435	6.9	20.4	438107	6.9	22.6	474231	6.9	22.4
335774	6.7	18.9	301514	6.7	20.0	391852	6.8	18.5	180526	6.9	21.1	492300	6.9	20.3	439800	6.9	20.0
55938	6.7	18.5	47640	6.7	18.8	160167	6.8	20.0	259171	6.9	20.1	446944	6.9	21.0	523047	6.9	20.9
473547	6.7	22.1	86959	6.7	17.9	241354	6.8	19.7	475152	6.9	20.3	107207	6.9	18.9	538410	6.9	20.6
215223	6.7	20.0	351849	6.7	21.7	508502	6.8	20.0	528798	6.9	22.0	472702	6.9	20.0	107291	6.9	18.4
263001	6.7	21.3	286543	6.7	20.1	427138	6.8	19.0	527873	6.9	22.1	199623	6.9	20.1	110077	6.9	18.4
214064	6.7	20.3	52711	6.7	18.0	475550	6.8	21.0	354690	6.9	20.0	252389	6.9	20.3	304076	6.9	19.9
422587	6.7	21.7	462650	6.7	19.5	69669	6.8	18.7	134637	6.9	18.7	530676	6.9	21.1	499261	6.9	20.9
543749	6.7	20.8	535366	6.7	20.4	36696	6.8	17.5	354973	6.9	20.3	12925	6.9	17.8	113611	6.9	17.4
176648	6.7	18.8	33728	6.7	17.5	536482	6.8	19.9	226012	6.9	20.0	246455	6.9	20.6	489827	6.9	20.8
188017	6.7	19.6	285060	6.7	20.1	62791	6.8	19.4	434297	6.9	20.0	15972	6.9	18.0	387823	6.9	20.4
221363	6.7	18.4	181673	6.7	19.6	130991	6.8	19.9	123528	6.9	19.1	491306	6.9	21.2	66415	6.9	17.4
376733	6.7	20.5	399148	6.7	20.5	285900	6.8	19.0	230359	6.9	21.0	177002	6.9	19.5	508259	7.0	20.4
227020	6.7	19.1	184823	6.7	19.9	539228	6.8	20.5	327877	6.9	20.8	392743	6.9	20.6	294116	7.0	18.6
110318	6.7	17.6	362442	6.7	19.0	300125	6.8	20.5	107063	6.9	20.4	111692	6.9	16.7	540046	7.0	19.9
44107	6.7	17.7	208652	6.7	20.2	490547	6.8	21.3	106746	6.9	19.8	35532	6.9	17.8	465347	7.0	21.8
467518	6.7	20.2	527281	6.7	19.9	225483	6.8	19.1	173916	6.9	20.6	90112	6.9	19.2	480535	7.0	20.5
68708	6.7	17.6	379312	6.7	19.1	249262	6.8	20.6	384228	6.9	22.2	120755	6.9	19.6	103951	7.0	18.0
524218	6.7	20.5	90730	6.7	19.5	14338	6.8	16.5	176038	6.9	20.1	536495	6.9	20.3	55478	7.0	19.5
280755	6.7	18.9	310183	6.7	19.2	20210	6.8	16.8	467969	6.9	20.1	89074	6.9	18.7	537159	7.0	22.2
106772	6.7	19.2	504366	6.7	21.0	118115	6.8	20.0	30451	6.9	17.6	384253	6.9	20.2	534430	7.0	21.7
303409	6.7	19.6	205757	6.7	20.6	328522	6.8	20.3	187298	6.9	18.5	354737	6.9	20.8	32565	7.0	17.8
191609	6.7	18.6	200857	6.7	18.8	51936	6.8	19.1	527729	6.9	21.5	542181	6.9	19.9	506554	7.0	21.2
119393	6.7	18.5	156246	6.7	20.9	456964	6.8	22.0	538128	6.9	21.1	389590	6.9	19.3	198864	7.0	19.5
508289	6.7	20.6	425913	6.7	20.9	60848	6.8	18.5	352431	6.9	20.8	98449	6.9	18.8	36978	7.0	17.8
316287	6.7	20.0	454179	6.7	21.2	124773	6.8	20.0	128197	6.9	19.1	219798	6.9	20.7	102238	7.0	20.3
445310	6.7	20.1	24547	6.7	17.4	258240	6.8	19.2	358990	6.9	19.7	52366	6.9	18.5	27040	7.0	17.4
512375	6.7	20.7	56412	6.7	18.2	281892	6.8	21.7	218752	6.9	19.7	236014	6.9	20.0	331273	7.0	20.3
395553	6.7	20.5	424619	6.7	20.1	453366	6.8	20.5	124587	6.9	19.7	37745	6.9	18.5	2217	7.0	14.7

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
55305	7.0	18.4	362069	7.1	19.4	370475	7.2	20.5	7590	7.2	17.0	370191	7.3	20.9	192711	7.4	17.9
380556	7.0	19.1	208591	7.1	20.1	318125	7.2	20.1	523006	7.2	21.4	527194	7.3	20.4	298985	7.4	20.7
445318	7.0	21.1	305582	7.1	20.4	423657	7.2	20.4	405358	7.2	20.2	41032	7.3	18.8	209704	7.4	19.5
326124	7.0	21.3	352829	7.1	20.2	269651	7.2	20.8	2881	7.3	16.3	320577	7.3	20.6	198973	7.4	20.9
467098	7.0	20.3	479045	7.1	21.4	103228	7.2	18.4	215390	7.3	20.4	444657	7.3	21.5	391349	7.4	21.7
345731	7.0	19.8	278744	7.1	20.3	59575	7.2	17.5	109289	7.3	19.0	31660	7.3	18.5	502307	7.4	20.7
134688	7.0	20.1	303938	7.1	20.0	132058	7.2	20.0	315635	7.3	21.1	275184	7.3	20.0	197964	7.4	16.7
243723	7.0	19.5	430532	7.1	20.9	288619	7.2	18.3	157806	7.3	20.2	429142	7.3	20.8	494266	7.4	20.1
320471	7.0	21.5	403330	7.1	21.6	166572	7.2	19.9	540539	7.3	18.8	81505	7.3	18.9	55235	7.4	19.1
33262	7.0	17.6	107295	7.1	19.4	373423	7.2	21.3	540568	7.3	21.4	87728	7.3	19.2	480342	7.4	20.8
351483	7.0	20.8	344859	7.1	21.0	315633	7.2	19.0	528987	7.3	20.3	34532	7.3	18.0	372537	7.4	20.4
138600	7.0	19.3	52727	7.1	18.0	464790	7.2	21.8	29559	7.3	18.1	19311	7.3	17.8	287704	7.4	20.1
244647	7.0	19.5	539013	7.1	20.0	80290	7.2	19.2	496246	7.3	20.6	343093	7.3	20.9	174548	7.4	19.5
380135	7.0	20.6	28573	7.1	17.0	161248	7.2	21.1	150838	7.3	19.5	355237	7.3	22.5	353929	7.4	20.0
388764	7.0	20.5	151772	7.1	19.7	132428	7.2	18.7	293999	7.3	19.3	333241	7.3	19.5	25972	7.4	19.7
241507	7.0	19.7	134663	7.1	19.6	289397	7.2	21.1	38871	7.3	18.6	108420	7.3	18.5	536135	7.4	20.4
7113	7.0	16.1	151927	7.1	18.4	140304	7.2	19.3	294285	7.3	20.1	535310	7.3	21.0	129276	7.4	19.9
36086	7.0	17.5	11294	7.1	17.9	154566	7.2	19.6	106386	7.3	19.7	108982	7.3	18.5	88571	7.4	19.1
67691	7.0	17.3	392628	7.1	21.0	210504	7.2	18.9	499158	7.3	21.1	225285	7.3	20.1	89728	7.4	18.6
494225	7.0	19.6	211671	7.1	18.5	262528	7.2	20.6	423604	7.3	19.8	393865	7.3	20.3	137122	7.4	20.1
140848	7.0	19.3	167021	7.1	19.8	158106	7.2	19.4	42516	7.3	17.6	94923	7.3	19.5	11426	7.4	18.3
424130	7.0	19.3	68015	7.1	18.7	152431	7.2	20.1	299997	7.3	20.7	64000	7.3	17.2	139680	7.4	19.3
358514	7.0	19.9	10144	7.1	17.0	526651	7.2	20.3	198026	7.3	20.4	125937	7.3	18.0	217678	7.4	20.4
294455	7.0	19.9	165345	7.1	18.3	462867	7.2	21.2	166247	7.3	19.6	177938	7.3	19.0	265377	7.4	20.0
82088	7.0	18.4	492572	7.1	20.2	189851	7.2	18.7	126002	7.3	19.0	230637	7.3	19.1	360102	7.4	21.0
242495	7.0	19.4	194284	7.1	20.2	467757	7.2	21.3	306901	7.3	19.5	161080	7.3	17.9	525396	7.4	20.7
19774	7.0	15.1	342892	7.1	20.4	236985	7.2	19.2	97266	7.3	19.4	152623	7.3	18.8	285266	7.4	18.8
29629	7.0	17.6	140853	7.1	18.7	389788	7.2	20.2	522489	7.3	21.0	421857	7.3	20.3	31542	7.4	16.2
331796	7.0	18.9	164629	7.1	19.2	122469	7.2	18.5	230942	7.3	20.1	396798	7.3	19.1	240501	7.4	20.8
258763	7.0	19.3	36299	7.1	18.9	390476	7.2	20.1	214703	7.3	20.4	251535	7.3	20.3	211220	7.4	18.7
433304	7.0	20.5	55642	7.1	19.3	366293	7.2	20.8	298907	7.3	20.3	81424	7.3	16.8	180801	7.4	19.5
43602	7.0	18.4	3451	7.1	15.3	463297	7.2	19.8	406860	7.3	20.9	271841	7.3	19.9	222342	7.4	20.8
336459	7.0	19.0	419833	7.1	21.0	468924	7.2	21.0	114115	7.3	19.4	231517	7.3	19.6	498641	7.4	20.1
436452	7.0	21.2	426011	7.1	20.7	478297	7.2	20.0	162614	7.3	19.8	491690	7.3	21.5	31212	7.4	17.8
455574	7.0	19.6	226035	7.1	20.6	447431	7.2	22.0	299468	7.3	19.9	312173	7.3	20.3	353942	7.4	18.8
45337	7.1	18.8	83379	7.1	19.1	139478	7.2	20.0	83921	7.3	17.7	94382	7.3	19.1	246771	7.4	19.9
275145	7.1	21.2	338374	7.1	21.3	431877	7.2	19.7	391311	7.3	20.1	533997	7.3	20.9	357149	7.4	21.0
41150	7.1	19.4	512276	7.1	21.3	115966	7.2	19.3	496878	7.3	20.7	376722	7.3	20.5	169176	7.4	19.5
49326	7.1	18.0	171974	7.1	19.4	524728	7.2	21.4	396397	7.3	21.2	496298	7.3	21.6	220573	7.4	20.1
185864	7.1	19.1	148346	7.1	20.0	120773	7.2	20.3	416100	7.3	19.8	114784	7.3	18.0	394252	7.4	21.2
94050	7.1	18.5	424025	7.1	22.3	16299	7.2	16.3	380575	7.3	17.5	531728	7.3	21.6	12381	7.4	17.8
157823	7.1	19.4	190038	7.1	18.6	500988	7.2	20.8	32467	7.3	19.1	208178	7.4	19.7	310958	7.4	20.9
42506	7.1	18.7	302054	7.1	18.9	502658	7.2	21.7	301284	7.3	19.0	30603	7.4	18.7	144843	7.4	19.8
63609	7.1	19.3	478267	7.1	21.2	495325	7.2	19.8	166291	7.3	19.3	114672	7.4	18.4	297420	7.4	19.4
502566	7.1	20.5	538591	7.1	21.4	435040	7.2	20.2	115244	7.3	19.7	55277	7.4	19.4	352015	7.4	21.2
214708	7.1	19.8	491883	7.1	20.0	489370	7.2	21.5	296238	7.3	19.9	353879	7.4	20.5	453357	7.4	21.9
197179	7.1	19.6	305418	7.1	20.9	371659	7.2	20.4	299557	7.3	20.9	230376	7.4	18.7	66882	7.4	19.0
385192	7.1	20.1	283468	7.1	20.3	141074	7.2	19.1	315961	7.3	20.5	153938	7.4	19.9	403299	7.4	20.2
434917	7.1	19.9	501478	7.1	20.5	299937	7.2	20.8	22480	7.3	17.2	184757	7.4	20.3	385580	7.4	19.8
330920	7.1	20.1	310906	7.1	19.7	370171	7.2	20.8	303265	7.3	19.9	189406	7.4	20.3	501221	7.4	20.3
349458	7.1	22.4	376285	7.1	20.2	126320	7.2	18.3	285605	7.3	19.9	278637	7.4	20.0	422455	7.4	20.1
141144	7.1	19.5	244380	7.1	19.3	389993	7.2	22.0	212403	7.3	18.4	205843	7.4	19.0	106862	7.4	19.5
504422	7.1	20.5	389543	7.1	20.0	403852	7.2	20.9	173357	7.3	19.9	31053	7.4	18.4	305496	7.4	20.7
478258	7.1	21.0	512007	7.1	19.3	469111	7.2	20.8	65383	7.3	19.4	95021	7.4	19.8	203439	7.4	19.1
425683	7.1	20.9	302341	7.1	20.4	196654	7.2	19.5	413205	7.3	21.7	467522	7.4	20.2	534545	7.4	20.5
241434	7.1	20.7	456990	7.1	19.8	505853	7.2	20.4	347547	7.3	19.9	115332	7.4	18.0	355207	7.4	21.5
473275	7.1	19.4	185096	7.1	21.1	98417	7.2	19.0	89047	7.3	19.3	282075	7.4	19.3	535109	7.4	20.6
153610	7.1	21.4	433163	7.1	20.9	35286	7.2	16.7	295295	7.3	20.0	79352	7.4	19.3	269485	7.4	19.3
328336	7.1	20.8	37857	7.1	19.9	524987	7.2	21.5	140942	7.3	19.1	274186	7.4	18.6	39928	7.4	18.8
533134	7.1	20.8	222700	7.1	19.0	528753	7.2	20.7	31107	7.3	18.4	390971	7.4	20.7	111147	7.4	20.5
275011	7.1	21.2	248097	7.1	20.0	501505	7.2	21.3	491041	7.3	19.2	392904	7.4	21.0	371732	7.4	20.7
173479	7.1	19.5	390087	7.1	21.1	39900	7.2	18.7	312753	7.3	19.8	238906	7.4	18.7	138530	7.4	18.0
192717	7.1	20.3	494941	7.1	21.1	502488	7.2	20.5	360528	7.3	19.3	169014	7.4	19.9	459007	7.4	21.6
165509	7.1	19.9	121001	7.1	19.7	25608	7.2	18.9	453291	7.3	21.7	136485	7.4	18.3	418303	7.4	20.7
502775	7.1	21.3	146563	7.1	18.2	153627	7.2	19.9	119062	7.3	17.8	125570	7.4	19.6	140676	7.4	19.9
445931	7.1	21.1	501475	7.1	21.4	304456	7.2	20.2	305775	7.3	19.4	28103	7.4	18.4	142948	7.4	20.0
107954	7.1	16.8	346081	7.1	20.9	233465	7.2	20.1	471499	7.3	20.9	346957	7.4	19.1	412756	7.4	20.1
117482	7.1	19.4	126138	7.2	20.4	299764	7.2	20.9	336395	7.3	20.3	11515	7.4	17.1	239396	7.4	20.2
259162	7.1	20.0	431359	7.2	20.0	292671	7.2	20.4	193013	7.3	19.6	169374	7.4	19.8	110434	7.4	18.8
298878	7.1	18.7	149826	7.2	18.4	232331	7.2	18.2	157646	7.3	19.6	248617	7.4	20.2	199865	7.4	19.7
148646	7.1	19.9	469845	7.2	20.9	406354	7.2	21.5	217983	7.3	18.4	337967	7.4	21.7	387602	7	

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
318104	7.5	18.7	141422	7.5	19.5	169039	7.6	20.3	391654	7.7	21.1	380415	7.7	19.4	433348	7.8	20.5
257440	7.5	19.8	29217	7.5	17.4	186173	7.6	18.9	34488	7.7	18.3	318109	7.7	18.5	362076	7.8	20.4
306710	7.5	21.1	123302	7.5	19.0	507557	7.6	22.4	198454	7.7	18.9	148116	7.7	19.2	189521	7.8	18.5
169348	7.5	20.0	48	7.5	11.8	94942	7.6	18.7	482091	7.7	19.7	526242	7.7	22.0	42626	7.8	19.0
436032	7.5	19.6	538943	7.5	20.1	405194	7.6	20.8	458742	7.7	20.7	137195	7.7	19.1	456829	7.8	21.8
35521	7.5	19.2	100895	7.5	19.0	237939	7.6	20.2	50400	7.7	18.8	462538	7.7	21.4	149492	7.8	19.9
423479	7.5	21.2	24087	7.5	18.3	322225	7.6	21.6	336368	7.7	19.2	341365	7.7	20.2	235067	7.8	19.0
83495	7.5	19.5	43157	7.5	17.3	471052	7.6	20.7	519372	7.7	21.0	167080	7.7	20.0	15378	7.8	18.2
539904	7.5	19.3	403323	7.5	21.1	31804	7.6	18.2	233745	7.7	20.0	105468	7.7	18.9	485456	7.8	21.2
437262	7.5	20.9	529106	7.5	21.5	182502	7.6	18.9	153177	7.7	19.8	479167	7.7	21.3	310361	7.8	19.9
180401	7.5	20.4	422892	7.5	19.3	475580	7.6	20.9	224378	7.7	20.5	76181	7.7	18.5	296388	7.8	20.0
166224	7.5	19.3	12809	7.5	15.9	378769	7.6	19.0	306616	7.7	19.1	61746	7.7	18.6	274162	7.8	20.0
110466	7.5	19.3	107057	7.5	19.8	98715	7.6	19.1	431874	7.7	20.8	524	7.8	13.7	138465	7.8	19.5
88258	7.5	19.1	231098	7.5	19.4	315506	7.6	20.2	11785	7.7	16.8	5138	7.8	17.7	447262	7.8	19.8
381524	7.5	20.9	93846	7.5	19.0	504214	7.6	21.0	300998	7.7	21.0	83133	7.8	18.5	443273	7.8	21.5
457239	7.5	19.4	219533	7.5	19.0	430262	7.6	21.1	272675	7.7	20.5	204805	7.8	20.0	309227	7.8	19.1
322516	7.5	19.0	542648	7.5	21.5	233667	7.6	20.3	213913	7.7	19.5	489327	7.8	21.1	489336	7.8	20.4
120611	7.5	20.1	73916	7.5	20.3	348991	7.6	20.7	35131	7.7	17.4	34209	7.8	18.4	24947	7.8	17.8
118563	7.5	19.1	125014	7.5	18.5	473018	7.6	20.0	153358	7.7	18.9	150919	7.8	20.5	264712	7.8	20.4
462304	7.5	19.6	193393	7.5	19.4	438193	7.6	20.0	509321	7.7	21.0	43402	7.8	18.4	76279	7.8	18.8
216002	7.5	18.7	389293	7.5	20.3	56259	7.6	18.0	213784	7.7	20.3	297715	7.8	20.1	391691	7.8	21.8
461338	7.5	20.6	354976	7.5	19.4	71845	7.6	18.5	492680	7.7	20.7	123700	7.8	18.2	154570	7.8	18.8
7409	7.5	16.7	495353	7.5	20.6	72239	7.6	19.0	222806	7.7	20.3	286650	7.8	20.3	403818	7.8	18.8
357130	7.5	20.7	293716	7.5	19.7	218628	7.6	20.3	42810	7.7	16.8	504017	7.8	20.4	490657	7.8	19.5
513001	7.5	21.5	102692	7.5	20.1	199860	7.6	18.9	527465	7.7	21.2	269025	7.8	19.8	530837	7.8	21.0
297474	7.5	20.5	305815	7.5	19.3	3956	7.6	15.0	397466	7.7	19.3	465178	7.8	20.6	480018	7.8	19.5
94451	7.5	19.3	179418	7.5	19.4	299808	7.6	21.3	500023	7.7	20.6	434430	7.8	19.8	539885	7.8	19.5
153664	7.5	20.7	318111	7.5	19.2	127598	7.6	19.9	192709	7.7	19.7	95782	7.8	18.3	350043	7.8	19.7
304681	7.5	20.5	321682	7.5	20.8	33589	7.6	17.4	150377	7.7	18.0	366393	7.8	19.1	299730	7.8	21.0
255853	7.5	19.2	351658	7.5	21.3	214226	7.6	20.1	403712	7.7	20.4	373583	7.8	19.9	361002	7.8	21.3
180713	7.5	18.6	259983	7.5	20.4	350712	7.6	20.4	537192	7.7	20.6	192013	7.8	18.9	355551	7.8	21.2
182826	7.5	21.1	449154	7.5	20.6	426045	7.6	20.1	471344	7.7	20.9	465975	7.8	19.9	525415	7.8	20.3
415309	7.5	20.5	465176	7.6	21.7	291113	7.6	20.6	373062	7.7	21.8	176485	7.8	19.3	86523	7.8	18.6
230927	7.5	19.7	486051	7.6	20.9	416260	7.6	19.7	33562	7.7	16.8	414921	7.8	21.3	140772	7.8	18.8
310964	7.5	21.3	360020	7.6	20.9	528578	7.6	19.8	426575	7.7	21.7	19964	7.8	18.1	57531	7.8	18.8
425071	7.5	21.1	225973	7.6	20.6	118254	7.6	19.4	81415	7.7	19.0	493777	7.8	21.0	312137	7.8	20.8
203633	7.5	20.8	453385	7.6	21.5	146072	7.6	17.8	144812	7.7	19.6	532283	7.8	21.6	466605	7.8	21.3
499253	7.5	20.1	96693	7.6	19.3	463187	7.6	21.5	472152	7.7	20.7	292344	7.8	20.2	507817	7.8	21.4
272996	7.5	20.5	281092	7.6	19.8	157992	7.6	19.1	216373	7.7	20.4	52014	7.8	17.9	540983	7.8	20.4
124905	7.5	19.5	206767	7.6	21.1	205307	7.6	19.3	166040	7.7	19.5	497988	7.8	20.6	355297	7.8	18.9
349014	7.5	20.4	112063	7.6	19.3	196283	7.6	19.1	143388	7.7	19.3	165402	7.8	20.4	272762	7.8	20.4
431932	7.5	21.1	239995	7.6	19.8	84992	7.6	18.8	406905	7.7	19.5	62794	7.8	18.9	226917	7.8	20.5
243095	7.5	18.8	157264	7.6	18.8	432062	7.6	20.2	146569	7.7	19.4	347125	7.8	20.8	295781	7.8	18.9
491252	7.5	20.2	369850	7.6	20.5	28832	7.6	18.9	22671	7.7	17.3	416239	7.8	20.3	302345	7.8	19.8
331803	7.5	18.5	297461	7.6	20.6	106064	7.6	19.0	505320	7.7	22.1	270554	7.8	18.9	38902	7.8	19.6
149239	7.5	19.9	308190	7.6	20.7	297668	7.6	20.2	299061	7.7	21.0	391044	7.8	21.0	343208	7.8	20.8
456792	7.5	20.9	71346	7.6	17.3	533797	7.6	20.4	292616	7.7	19.7	294670	7.8	19.7	241629	7.9	20.5
384444	7.5	20.0	304850	7.6	18.7	464503	7.6	21.8	368968	7.7	20.3	354106	7.8	20.6	212417	7.9	17.9
387477	7.5	20.7	303901	7.6	21.2	474079	7.6	19.9	195523	7.7	19.2	100382	7.8	17.6	422051	7.9	21.8
500206	7.5	20.6	292663	7.6	20.2	287035	7.6	20.1	113497	7.7	18.2	62178	7.8	18.8	361713	7.9	19.6
473044	7.5	20.3	480928	7.6	19.1	11676	7.6	17.6	476428	7.7	21.0	293613	7.8	20.0	284845	7.9	20.1
96004	7.5	18.5	77809	7.6	18.4	417819	7.6	20.7	187918	7.7	21.0	24885	7.8	17.8	33776	7.9	16.7
278512	7.5	20.4	505539	7.6	21.1	36754	7.6	17.6	246978	7.7	20.1	499241	7.8	20.9	463477	7.9	19.9
17801	7.5	18.0	433649	7.6	20.5	137581	7.6	19.2	388788	7.7	21.3	32827	7.8	18.8	538287	7.9	21.7
165481	7.5	20.1	531469	7.6	21.0	539536	7.6	20.3	106143	7.7	18.8	265585	7.8	20.2	419980	7.9	20.8
63219	7.5	18.9	188945	7.6	20.9	539891	7.6	18.6	132301	7.7	18.8	107364	7.8	19.4	341508	7.9	22.6
123620	7.5	19.5	372579	7.6	21.1	540714	7.6	20.5	377766	7.7	20.8	69521	7.8	18.8	425221	7.9	22.2
11883	7.5	17.4	114421	7.6	20.1	468610	7.6	20.7	337881	7.7	20.0	161831	7.8	20.3	22919	7.9	18.7
390607	7.5	21.4	413952	7.6	21.5	98300	7.6	19.0	298885	7.7	19.8	352069	7.8	20.0	68831	7.9	18.0
401386	7.5	19.6	504272	7.6	21.1	155003	7.7	18.7	470096	7.7	20.5	472210	7.8	20.5	526811	7.9	21.3
248899	7.5	19.2	350864	7.6	19.2	162738	7.7	20.1	399721	7.7	19.8	466212	7.8	19.1	469165	7.9	20.3
42321	7.5	19.6	246618	7.6	20.6	284692	7.7	20.7	415304	7.7	19.8	469796	7.8	20.8	73030	7.9	17.4
90420	7.5	19.1	376308	7.6	19.6	457221	7.7	20.4	438036	7.7	20.5	494948	7.8	18.7	518473	7.9	20.6
540141	7.5	20.7	2883	7.6	15.5	165340	7.7	20.0	434527	7.7	19.4	142157	7.8	19.5	328475	7.9	19.1
206247	7.5	19.8	530778	7.6	19.6	35285	7.7	17.4	353593	7.7	20.5	505338	7.8	21.2	173868	7.9	20.9
390480	7.5	18.4	469751	7.6	20.5	69477	7.7	20.0	406459	7.7	21.7	284600	7.8	20.0	389949	7.9	20.2
32364	7.5	17.6	69637	7.6	18.3	109914	7.7	20.0	433557	7.7	21.2	170921	7.8	19.8	95229	7.9	18.8
454105	7.5	18.7	312071	7.6	19.9	90070	7.7	18.9	262738	7.7	20.7	300146	7.8	20.5	208432	7.9	19.0
19298	7.5	18.0	11729	7.6	16.6	534083	7.7	21.5	296234	7.7	20.3	287482	7.8	20.5	497480	7.9	21.2
138405	7.5	19.9	227438	7.6	20.2	327303	7.7	19.7	92942	7.7	18.3	210657	7.8	18.8	279030	7.9	20.4
494825	7.5	20.3	124516	7.6	18.2	79461	7.7	19.0	486798	7.7	20.3	533310	7.8	21.5	209628	7.9	20.6

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
462427	7.9	19.3	86253	7.9	18.7	235932	8.0	19.6	2119	8.1	14.7	329852	8.1	18.4	37761	8.2	18.5
470097	7.9	20.5	512647	7.9	19.9	416630	8.0	20.6	485070	8.1	21.1	506739	8.1	22.1	376712	8.2	20.0
322501	7.9	19.8	187541	7.9	21.1	153910	8.0	19.5	438384	8.1	20.3	296479	8.1	19.6	150835	8.2	20.0
375972	7.9	20.1	131294	7.9	19.3	231400	8.0	19.7	542431	8.1	22.5	505299	8.1	21.4	68756	8.2	17.5
365544	7.9	19.7	62848	7.9	18.0	382345	8.0	20.3	434933	8.1	20.0	31443	8.2	18.2	350146	8.2	20.9
351890	7.9	21.0	111843	7.9	17.6	170223	8.0	18.9	58320	8.1	17.8	203401	8.2	20.4	90944	8.2	17.6
32462	7.9	19.2	257172	7.9	20.4	371047	8.0	19.8	60221	8.1	18.5	72384	8.2	17.9	381519	8.2	20.1
375337	7.9	20.5	203157	7.9	21.2	165245	8.0	18.9	326982	8.1	18.5	158630	8.2	19.6	479718	8.2	20.8
117469	7.9	19.2	121481	7.9	19.2	42000	8.0	18.3	185130	8.1	21.0	203626	8.2	20.2	134448	8.2	18.7
525686	7.9	20.5	471161	7.9	18.2	371640	8.0	20.8	397890	8.1	19.1	195544	8.2	18.6	193101	8.2	19.2
182805	7.9	20.0	87281	7.9	18.0	219021	8.0	19.4	377462	8.1	19.1	404114	8.2	21.1	495088	8.2	20.3
523514	7.9	20.5	288282	7.9	18.8	437112	8.0	20.1	507481	8.1	20.6	531926	8.2	21.8	22395	8.2	17.0
28294	7.9	17.7	232803	7.9	19.8	264738	8.0	19.6	179564	8.1	20.4	476335	8.2	20.5	470915	8.2	19.8
360713	7.9	19.1	65585	7.9	18.6	292992	8.0	20.4	454116	8.1	21.4	459368	8.2	19.0	39587	8.2	17.9
10345	7.9	18.8	305751	7.9	19.8	498780	8.0	20.2	267344	8.1	20.3	471426	8.2	22.7	455423	8.2	21.0
185520	7.9	20.2	270530	7.9	19.8	83442	8.0	19.1	540783	8.1	19.7	173960	8.2	21.1	232955	8.2	18.8
290470	7.9	20.2	238066	7.9	19.2	368769	8.0	20.4	61448	8.1	18.1	85107	8.2	18.9	419950	8.2	21.0
473098	7.9	20.7	149616	7.9	19.0	530768	8.0	21.4	212017	8.1	21.0	3861	8.2	15.7	180709	8.2	18.5
362119	7.9	21.6	525898	7.9	20.4	284896	8.0	19.8	371133	8.1	22.0	119826	8.2	18.4	229969	8.2	19.7
427767	7.9	21.0	357043	7.9	19.2	474960	8.0	22.0	459068	8.1	21.1	27823	8.2	18.4	542251	8.3	20.1
189249	7.9	18.0	179384	7.9	21.0	243554	8.0	19.1	131882	8.1	19.2	417289	8.2	21.1	192227	8.3	20.0
5062	7.9	16.5	415302	7.9	19.3	140641	8.0	19.3	94488	8.1	19.3	239245	8.2	19.3	258384	8.3	20.9
92622	7.9	18.4	540786	7.9	20.2	217934	8.0	20.7	353035	8.1	20.5	441923	8.2	20.6	270366	8.3	20.4
136189	7.9	19.1	524672	7.9	21.5	88690	8.0	19.2	297292	8.1	20.1	100525	8.2	19.2	391353	8.3	21.4
300962	7.9	19.9	149303	7.9	19.5	428699	8.0	19.8	522805	8.1	20.3	255518	8.2	19.6	504133	8.3	20.7
181909	7.9	20.0	269491	7.9	20.1	176534	8.0	19.8	368011	8.1	19.7	373473	8.2	19.3	89896	8.3	18.3
393152	7.9	21.2	119601	7.9	19.9	491971	8.0	20.8	405914	8.1	19.9	506256	8.2	20.5	265738	8.3	20.2
403239	7.9	20.9	286082	7.9	21.1	399392	8.0	20.5	214220	8.1	19.8	184831	8.2	18.6	68568	8.3	18.9
226011	7.9	20.8	65447	7.9	19.7	298796	8.0	18.8	11757	8.1	19.3	53162	8.2	18.1	134029	8.3	18.5
19850	7.9	18.0	422150	7.9	19.9	298760	8.0	20.5	504128	8.1	21.9	401004	8.2	19.2	370164	8.3	20.7
99398	7.9	18.4	539353	7.9	20.9	508839	8.0	21.8	162463	8.1	17.4	517163	8.2	20.6	336696	8.3	20.7
374149	7.9	21.0	531793	7.9	21.8	247132	8.0	19.0	511615	8.1	21.1	358019	8.2	21.1	259580	8.3	20.2
488555	7.9	22.2	387355	7.9	20.0	90963	8.0	20.0	420202	8.1	21.1	331776	8.2	21.4	232752	8.3	18.4
214855	7.9	19.6	187275	7.9	19.9	4649	8.0	15.3	149120	8.1	17.9	374307	8.2	19.5	129321	8.3	19.2
224294	7.9	20.4	294643	7.9	20.3	173724	8.0	19.5	432385	8.1	20.9	37418	8.2	18.0	499067	8.3	20.2
534393	7.9	22.0	224261	7.9	21.5	325017	8.0	19.8	338574	8.1	19.9	464819	8.2	20.1	15090	8.3	16.7
489139	7.9	20.2	430447	7.9	20.9	472713	8.0	20.6	409098	8.1	17.3	202414	8.2	19.9	498785	8.3	20.0
331187	7.9	21.3	96285	7.9	19.8	329236	8.0	19.5	476501	8.1	21.1	331529	8.2	20.1	362087	8.3	20.4
30621	7.9	19.4	24219	7.9	16.0	380067	8.0	20.0	496458	8.1	20.4	303411	8.2	21.4	467200	8.3	20.6
208265	7.9	20.1	463325	7.9	20.8	126508	8.0	19.5	356351	8.1	20.5	81548	8.2	18.6	341813	8.3	20.3
334759	7.9	18.7	101766	7.9	18.5	297258	8.0	20.5	495826	8.1	20.8	261537	8.2	20.2	170345	8.3	20.2
74977	7.9	18.1	109345	7.9	18.2	335919	8.0	20.7	81863	8.1	18.3	331178	8.2	19.0	131137	8.3	19.9
224290	7.9	20.6	426474	7.9	19.6	349364	8.0	21.0	350732	8.1	20.6	61670	8.2	18.2	425701	8.3	20.6
317955	7.9	20.1	147338	7.9	20.0	298741	8.0	20.4	173563	8.1	20.1	56828	8.2	18.5	409884	8.3	20.7
120699	7.9	19.1	178140	7.9	21.0	74612	8.0	17.9	57610	8.1	19.1	105327	8.2	18.0	244279	8.3	19.1
109414	7.9	18.2	533070	7.9	21.0	422463	8.0	19.4	174120	8.1	17.9	152177	8.2	20.7	110579	8.3	17.3
119325	7.9	18.8	36867	7.9	19.6	62643	8.0	18.8	390242	8.1	21.2	75984	8.2	18.1	348703	8.3	20.1
100556	7.9	20.0	212780	7.9	19.4	379512	8.0	19.0	140944	8.1	20.7	503378	8.2	19.9	221845	8.3	19.8
174361	7.9	19.7	518140	7.9	21.2	495232	8.0	20.4	512341	8.1	20.9	38781	8.2	17.7	494265	8.3	20.2
430860	7.9	18.7	477950	7.9	20.4	397412	8.0	21.0	331236	8.1	19.2	207530	8.2	18.9	117165	8.3	19.4
109624	7.9	19.1	63932	7.9	18.8	279354	8.0	20.5	158980	8.1	19.5	156464	8.2	20.8	244056	8.3	19.7
304945	7.9	19.3	188976	7.9	19.1	82055	8.0	19.1	18209	8.1	18.3	378881	8.2	20.8	81714	8.3	18.7
19800	7.9	19.1	158534	7.9	18.9	396567	8.0	20.0	10458	8.1	16.4	386603	8.2	21.0	39851	8.3	18.9
149406	7.9	20.5	124434	7.9	19.7	467693	8.0	18.5	492430	8.1	19.6	141382	8.2	19.7	125100	8.3	18.4
25541	7.9	19.0	473213	7.9	20.9	138303	8.0	20.5	21684	8.1	18.9	400786	8.2	19.5	7959	8.3	16.6
146514	7.9	18.0	479711	7.9	20.6	503438	8.0	20.5	216006	8.1	20.0	508509	8.2	20.8	246508	8.3	20.2
300155	7.9	20.5	89425	7.9	19.5	329401	8.1	19.9	521304	8.1	20.4	83621	8.2	19.3	197568	8.3	19.1
306097	7.9	20.7	535920	7.9	21.3	166620	8.1	19.7	537915	8.1	21.2	297860	8.2	20.3	437118	8.3	20.5
505625	7.9	21.8	234922	7.9	20.1	179371	8.1	20.4	260841	8.1	19.7	522378	8.2	20.9	525688	8.3	22.3
98108	7.9	19.4	528374	7.9	21.5	314335	8.1	21.9	508500	8.1	20.6	429097	8.2	21.0	18445	8.3	18.1
525275	7.9	20.8	24036	7.9	18.9	249229	8.1	20.6	307764	8.1	19.5	422161	8.2	20.9	57053	8.3	17.4
37381	7.9	16.2	459526	7.9	21.4	433602	8.1	20.6	12797	8.1	18.8	242532	8.2	19.6	235943	8.3	19.4
499245	7.9	20.9	138904	7.9	19.4	486765	8.1	20.1	186171	8.1	18.9	79370	8.2	18.7	503738	8.3	20.7
79851	7.9	19.7	55110	7.9	19.2	198073	8.1	20.6	261479	8.1	19.9	229358	8.2	19.3	211477	8.3	20.0
472276	7.9	19.6	213228	7.9	18.8	241261	8.1	20.1	355956	8.1	18.9	439827	8.2	20.4	307439	8.3	20.5
180615	7.9	20.4	79977	7.9	16.6	207591	8.1	19.4	119873	8.1	18.6	504355	8.2	21.6	396616	8.3	19.5
343038	7.9	20.4	156512	7.9	20.5	462195	8.1	20.7	27159	8.1	17.7	407277	8.2	19.7	367327	8.3	20.2
521113	7.9	20.6	526786	7.9	20.8	239454	8.1	19.9	465357	8.1	22.2	227879	8.2	20.6	214878	8.3	18.0
528524	7.9	21.3	385102	7.9	20.8	190297	8.1	18.6	145462	8.1	18.5	417182	8.2	21.4	153149	8.3	19.1
473212	7.9	21.0	294324	7.9	19.9	423599	8.1	21.4	475108	8.1	21.1	374497	8.2	21.4	151330	8.3	20.2
6952	7.9	15.5	413355	8.0	22.0	265779	8.1	20.1	180748	8.1	18.2	57508	8.2	17.5	380600	8.3	1

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
235023	8.3	20.3	73055	8.4	17.7	501867	8.4	20.1	135366	8.5	19.6	64313	8.6	19.4	540724	8.6	20.9
537781	8.3	22.0	4531	8.4	16.9	480056	8.4	21.0	531134	8.5	20.2	477580	8.6	19.0	353402	8.6	20.6
50265	8.3	18.3	299915	8.4	19.9	125942	8.4	19.7	501509	8.5	20.9	221183	8.6	20.2	429898	8.6	19.8
534873	8.3	21.9	181007	8.4	19.8	193689	8.4	19.6	10052	8.5	17.1	32483	8.6	18.3	245942	8.6	19.5
514379	8.3	20.3	348419	8.4	20.1	463248	8.4	19.5	35155	8.5	19.2	540426	8.6	20.4	377840	8.6	19.1
506187	8.3	20.1	385757	8.4	20.5	109073	8.4	17.1	35648	8.5	16.2	185499	8.6	20.1	83203	8.6	17.9
180576	8.3	19.2	450460	8.4	20.9	385391	8.4	19.1	105590	8.5	19.1	531516	8.6	20.9	34761	8.6	18.4
363786	8.3	20.5	345084	8.4	19.8	354934	8.4	19.7	123566	8.5	18.4	445871	8.6	20.2	333653	8.6	20.2
32842	8.3	19.0	1460	8.4	16.7	375910	8.4	19.7	438622	8.5	20.3	502479	8.6	20.3	14886	8.6	17.5
409192	8.3	20.7	157535	8.4	20.2	272775	8.4	19.5	57548	8.5	18.8	146242	8.6	18.9	538599	8.6	20.6
491101	8.3	18.8	352588	8.4	21.0	118780	8.4	19.2	43808	8.5	17.9	433458	8.6	20.7	254507	8.6	18.7
464627	8.3	22.3	12538	8.4	17.3	193677	8.4	19.4	26797	8.5	18.2	18560	8.6	16.2	521137	8.6	20.3
456694	8.3	21.8	495197	8.4	21.5	456862	8.4	20.1	146231	8.5	20.0	474582	8.6	21.0	330909	8.6	20.2
300798	8.3	20.3	526230	8.4	21.7	175211	8.4	19.1	22924	8.5	18.4	361146	8.6	20.5	384883	8.6	20.9
404176	8.3	20.0	150078	8.4	19.2	374088	8.4	20.2	371085	8.5	21.5	336409	8.6	20.8	121129	8.6	19.7
326708	8.3	20.9	58336	8.4	17.5	211139	8.4	19.9	19223	8.5	17.2	536886	8.6	22.1	192834	8.7	19.6
275667	8.3	18.9	423416	8.4	19.7	352017	8.4	20.8	377441	8.5	19.5	534871	8.6	21.6	52625	8.7	18.5
380937	8.3	20.6	524067	8.4	20.4	45791	8.4	16.3	199022	8.5	19.4	153040	8.6	19.4	294599	8.7	19.8
112779	8.3	19.8	486735	8.4	20.2	225532	8.4	18.4	262628	8.5	20.5	40519	8.6	18.8	535579	8.7	21.9
284683	8.3	18.5	530663	8.4	21.0	106466	8.4	20.1	371091	8.5	20.1	55468	8.6	18.7	379368	8.7	21.2
377790	8.3	19.8	529402	8.4	22.3	500474	8.4	20.3	161785	8.5	19.8	497046	8.6	20.8	129603	8.7	20.0
278672	8.3	20.3	366238	8.4	21.3	339455	8.5	20.3	160766	8.5	19.7	56779	8.6	18.4	453346	8.7	21.2
322346	8.3	19.6	507334	8.4	21.9	96713	8.5	19.6	156505	8.5	19.4	6268	8.6	18.0	120187	8.7	20.0
299282	8.3	19.9	95441	8.4	18.7	338629	8.5	19.9	109828	8.5	20.4	224933	8.6	19.6	308468	8.7	20.1
415041	8.3	20.1	337000	8.4	19.3	196907	8.5	19.6	96083	8.5	19.2	530584	8.6	20.5	93874	8.7	20.1
242544	8.3	20.7	539210	8.4	21.1	214781	8.5	19.6	37613	8.5	19.1	6995	8.6	15.5	87799	8.7	18.5
305832	8.3	21.0	328607	8.4	19.8	386825	8.5	20.2	227701	8.5	19.6	434487	8.6	20.4	214834	8.7	20.0
356538	8.3	22.2	200351	8.4	18.6	153115	8.5	19.0	374511	8.5	20.4	84726	8.6	18.7	41056	8.7	17.4
389191	8.3	20.2	470597	8.4	18.8	127104	8.5	19.5	334762	8.5	20.0	294591	8.6	20.9	352125	8.7	19.6
293441	8.3	20.0	52353	8.4	19.6	297006	8.5	20.4	454877	8.5	21.8	359206	8.6	20.5	196394	8.7	18.3
419928	8.3	21.6	23272	8.4	17.2	265687	8.5	19.4	35976	8.5	16.2	430185	8.6	20.4	133697	8.7	18.6
329102	8.3	19.1	272889	8.4	19.5	27052	8.5	18.0	463087	8.5	21.7	285252	8.6	21.0	118181	8.7	19.4
390044	8.3	20.3	362221	8.4	19.1	504239	8.5	21.4	138901	8.5	19.4	62213	8.6	18.7	12612	8.7	17.2
30883	8.3	17.4	534478	8.4	21.8	200211	8.5	18.9	390374	8.5	20.8	255796	8.6	20.6	530832	8.7	20.9
471913	8.3	22.0	32974	8.4	17.8	275229	8.5	20.2	15932	8.5	17.5	989	8.6	15.9	291049	8.7	19.5
497320	8.3	21.0	195080	8.4	19.7	271690	8.5	19.1	422832	8.5	19.8	438608	8.6	20.0	25106	8.7	18.9
33762	8.3	18.9	141195	8.4	19.9	29299	8.5	17.4	40481	8.5	17.9	353487	8.6	20.5	530881	8.7	19.9
177506	8.3	18.6	540796	8.4	21.3	171513	8.5	19.1	294677	8.5	19.7	84447	8.6	19.0	166701	8.7	20.1
12990	8.3	17.3	298976	8.4	21.2	97018	8.5	17.4	491877	8.5	20.5	357120	8.6	21.6	498816	8.7	21.3
430781	8.3	21.1	182218	8.4	20.0	471473	8.5	21.1	525676	8.5	19.5	297876	8.6	19.6	534584	8.7	19.6
503146	8.3	20.9	138603	8.4	19.2	480103	8.5	19.8	438380	8.5	20.7	499887	8.6	20.7	418252	8.7	21.0
29727	8.3	17.8	209568	8.4	20.2	28025	8.5	19.4	41391	8.5	17.2	127026	8.6	19.0	22647	8.7	18.7
421667	8.3	20.2	330041	8.4	20.7	282318	8.5	19.8	504349	8.5	22.7	39624	8.6	18.9	323858	8.7	19.5
106715	8.3	19.3	360333	8.4	19.4	203530	8.5	19.8	542577	8.5	20.6	468185	8.6	20.4	105022	8.7	18.5
505498	8.3	20.5	498682	8.4	20.6	530158	8.5	22.7	191146	8.5	19.6	34604	8.6	18.2	239832	8.7	19.8
123627	8.3	19.3	201057	8.4	20.6	298792	8.5	18.5	240326	8.5	19.0	162684	8.6	19.6	354951	8.7	20.5
525780	8.3	21.6	99861	8.4	19.2	302340	8.5	20.1	303884	8.5	20.3	309121	8.6	20.5	154567	8.7	20.7
245713	8.3	21.1	432431	8.4	20.2	8344	8.5	18.1	226378	8.6	18.9	160426	8.6	19.0	495127	8.7	20.2
503760	8.3	20.5	23450	8.4	17.9	210967	8.5	20.5	309156	8.6	20.1	113685	8.6	19.2	216501	8.7	18.0
429651	8.3	20.6	262058	8.4	18.7	162819	8.5	19.5	528527	8.6	21.6	111251	8.6	18.4	138152	8.7	19.9
72081	8.3	19.8	211960	8.4	20.6	544337	8.5	21.0	217975	8.6	19.2	431886	8.6	20.8	496830	8.7	22.3
505610	8.3	20.4	163388	8.4	19.2	405354	8.5	20.7	88751	8.6	18.7	259135	8.6	20.5	526685	8.7	21.5
422828	8.3	19.4	166641	8.4	20.1	255572	8.5	18.8	9030	8.6	18.1	144902	8.6	19.1	523917	8.7	21.4
183567	8.3	18.8	201541	8.4	18.4	316575	8.5	20.4	65781	8.6	17.5	420925	8.6	20.9	249180	8.7	19.7
433370	8.3	21.5	331064	8.4	19.6	428062	8.5	21.2	179439	8.6	21.0	201565	8.6	19.2	367748	8.7	19.8
178605	8.3	19.5	74910	8.4	17.8	489713	8.5	22.0	508517	8.6	20.4	20097	8.6	16.7	1589	8.7	14.8
350634	8.3	20.6	265351	8.4	19.0	338887	8.5	20.8	435917	8.6	21.3	123977	8.6	18.9	298948	8.7	20.1
30077	8.3	16.3	204089	8.4	19.4	456656	8.5	19.2	141152	8.6	19.6	212841	8.6	21.2	457163	8.7	20.8
429085	8.3	21.6	308425	8.4	21.3	277787	8.5	19.6	29379	8.6	16.6	15696	8.6	17.1	80072	8.7	18.4
305672	8.3	20.2	296875	8.4	20.5	274429	8.5	20.2	384033	8.6	21.3	175953	8.6	19.8	429236	8.7	21.7
406503	8.3	22.2	147408	8.4	19.4	309774	8.5	19.6	249086	8.6	19.8	93718	8.6	17.9	535131	8.7	20.9
229113	8.3	21.2	81552	8.4	19.4	296218	8.5	20.0	338893	8.6	21.3	207999	8.6	19.7	195546	8.7	18.8
374513	8.3	20.9	299335	8.4	19.5	131135	8.5	19.8	31677	8.6	17.8	543489	8.6	20.2	5789	8.7	18.3
277656	8.3	20.5	42310	8.4	18.6	87880	8.5	18.9	212975	8.6	20.4	373495	8.6	20.5	249442	8.7	19.9
416966	8.3	20.6	430168	8.4	21.2	81551	8.5	19.1	163215	8.6	20.4	231349	8.6	20.1	350674	8.7	21.7
438388	8.3	20.6	92406	8.4	18.6	153648	8.5	19.0	486117	8.6	20.8	83946	8.6	18.6	537368	8.7	19.9
376795	8.3	18.6	67350	8.4	18.5	395431	8.5	21.4	105708	8.6	19.2	130577	8.6	19.1	491	8.7	14.1
417288	8.4	18.9	72182	8.4	19.5	186116	8.5	19.2	410222	8.6	19.6	25036	8.6	17.1	430131	8.7	21.5
30636	8.4	17.2	57348	8.4	15.3	122279	8.5	18.0	500617	8.6	22.0	125994	8.6	19.2	473163	8.7	20.3
377464	8.4	18.6	63622	8.4	18.9	421596	8.5	20.4	150181	8.6	19.7	492571	8.6	20.6	214284	8.7	19.6
326431	8.4	20.2	160088	8.4	17.3	457206	8.5	20.1	530818	8.6	21.4	118420	8.6	19.2	203421	8.7	20.4
69137																	

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
527578	8.7	21.1	104279	8.8	18.3	502353	8.9	21.5	297444	8.9	19.2	308228	9.0	19.8	282144	9.1	19.0
50889	8.7	18.6	417053	8.8	21.4	5985	8.9	14.7	282798	8.9	19.5	240707	9.0	18.4	343978	9.1	20.5
102258	8.7	19.8	521169	8.8	21.1	228154	8.9	20.6	533968	8.9	21.0	110146	9.0	20.5	11972	9.1	19.0
459332	8.7	20.3	210735	8.8	19.5	226714	8.9	19.3	210787	8.9	19.1	532377	9.0	21.3	453343	9.1	20.8
182562	8.7	19.2	40650	8.8	18.9	72708	8.9	18.4	287554	8.9	18.5	140027	9.0	19.0	423542	9.1	21.3
133918	8.7	20.2	486904	8.8	20.4	462094	8.9	20.1	11671	8.9	17.2	534565	9.0	21.8	323869	9.1	20.2
391665	8.7	21.7	169564	8.8	18.9	471168	8.9	19.6	230856	8.9	20.1	193201	9.0	19.2	192902	9.1	20.4
347985	8.7	20.4	464088	8.8	21.7	17876	8.9	16.8	140570	8.9	19.5	428387	9.1	19.5	272824	9.1	20.5
199201	8.7	20.3	339033	8.8	19.7	521149	8.9	21.2	205785	8.9	20.1	101033	9.1	18.6	408876	9.1	21.6
110349	8.7	18.2	168600	8.8	19.9	508335	8.9	20.1	4630	8.9	16.3	136504	9.1	20.0	156538	9.1	19.4
466377	8.7	20.2	352727	8.8	21.5	413969	8.9	21.1	407892	8.9	22.2	270365	9.1	19.4	24765	9.1	16.9
294867	8.7	18.9	276879	8.8	21.4	64013	8.9	19.0	184531	8.9	19.9	524965	9.1	19.7	535090	9.1	21.6
158336	8.7	20.3	272498	8.8	20.9	217881	8.9	18.2	29930	8.9	17.7	143430	9.1	19.7	527663	9.1	21.1
218043	8.7	20.2	501120	8.8	21.8	87719	8.9	18.4	453337	8.9	21.6	182053	9.1	19.5	242799	9.1	20.4
149261	8.7	19.8	532348	8.8	21.6	81978	8.9	17.6	305961	8.9	19.6	266353	9.1	19.2	41465	9.1	16.1
535015	8.7	21.9	474844	8.8	21.6	188248	8.9	19.4	502062	8.9	21.3	367089	9.1	20.0	428771	9.1	20.6
95254	8.7	19.8	478032	8.8	21.0	152330	8.9	19.5	492554	8.9	19.0	344603	9.1	21.5	326683	9.1	19.6
37162	8.7	18.7	497338	8.8	21.1	519963	8.9	20.9	308860	8.9	21.2	422188	9.1	20.6	179444	9.1	21.2
505311	8.7	22.1	101484	8.8	20.2	471926	8.9	22.4	294782	8.9	22.0	402909	9.1	20.1	68897	9.1	17.1
292341	8.7	20.3	109377	8.8	19.6	413835	8.9	19.7	294727	8.9	20.7	499168	9.1	21.5	501953	9.1	21.1
305383	8.7	19.7	426970	8.8	20.1	479774	8.9	20.8	491323	8.9	19.3	182206	9.1	20.6	88670	9.1	19.1
80015	8.7	18.0	21771	8.8	18.2	19446	8.9	18.9	382762	8.9	19.4	297867	9.1	20.8	52773	9.1	17.4
73545	8.7	17.9	123764	8.8	18.9	413931	8.9	21.3	98155	8.9	18.4	47915	9.1	17.9	192578	9.1	20.7
210425	8.7	20.3	409228	8.8	19.6	106983	8.9	19.2	159	8.9	13.1	441939	9.1	20.5	221323	9.1	18.8
110704	8.7	17.7	327325	8.8	19.4	498652	8.9	20.3	434829	8.9	20.5	479619	9.1	20.7	327832	9.1	21.0
499349	8.7	20.5	362005	8.8	20.9	40857	8.9	18.7	534004	8.9	20.8	417734	9.1	20.5	343213	9.1	20.3
185137	8.7	20.5	304905	8.8	20.2	437397	8.9	21.5	471728	8.9	20.8	64731	9.1	18.7	69065	9.1	19.2
498044	8.7	20.9	488997	8.8	21.3	1016	8.9	14.9	351949	8.9	20.4	200126	9.1	19.2	32811	9.1	18.3
203465	8.7	19.9	129417	8.8	19.3	407680	8.9	20.9	434955	8.9	20.1	30828	9.1	18.7	127987	9.1	18.8
304528	8.7	20.9	488217	8.8	19.4	294889	8.9	21.3	533308	8.9	21.8	98193	9.1	18.6	495370	9.1	20.4
269381	8.7	20.7	83163	8.8	19.3	15060	8.9	17.5	89508	8.9	18.5	292349	9.1	19.4	11043	9.1	17.9
32543	8.7	17.8	192086	8.8	19.5	342935	8.9	20.7	16056	8.9	17.1	93553	9.1	19.4	143250	9.1	18.9
396004	8.7	19.9	89062	8.8	19.8	182129	8.9	20.2	351670	8.9	21.3	535825	9.1	20.4	124474	9.1	19.4
300858	8.7	20.8	34782	8.8	16.8	143193	8.9	19.9	150668	8.9	17.8	272780	9.1	20.8	393003	9.1	21.1
65295	8.7	18.8	187456	8.8	19.6	504730	8.9	20.8	2562	8.9	15.7	330459	9.1	20.1	526744	9.1	22.3
373466	8.7	18.6	331834	8.8	18.9	359071	8.9	21.2	459005	8.9	20.8	60354	9.1	19.1	134228	9.1	19.2
131081	8.7	21.0	94906	8.8	17.5	326896	8.9	20.7	1857	8.9	15.2	209382	9.1	18.9	368787	9.1	21.2
209400	8.7	19.9	309426	8.8	20.8	259088	8.9	19.3	446943	8.9	21.0	175138	9.1	18.3	529355	9.1	22.3
371224	8.8	20.6	428047	8.8	20.5	290500	8.9	20.0	138548	8.9	19.7	365512	9.1	20.0	453355	9.1	21.3
125457	8.8	19.7	196518	8.8	19.2	93994	8.9	18.9	87698	8.9	18.5	200165	9.1	20.6	39152	9.1	18.6
30924	8.8	18.6	386143	8.8	20.8	107521	8.9	19.4	210038	8.9	19.2	216059	9.1	19.7	246811	9.1	18.4
120303	8.8	18.1	234216	8.8	19.4	518639	8.9	20.7	26669	9.0	18.3	543096	9.1	20.2	439829	9.2	21.0
242826	8.8	19.2	388415	8.8	20.0	214214	8.9	19.7	185660	9.0	19.6	107508	9.1	19.0	235206	9.2	20.0
277621	8.8	19.9	521159	8.8	20.1	346882	8.9	20.3	516907	9.0	20.0	277443	9.1	19.4	341182	9.2	20.1
75025	8.8	18.4	390985	8.8	19.4	467095	8.9	20.0	289418	9.0	21.1	109548	9.1	18.9	303318	9.2	19.7
364315	8.8	19.6	103432	8.8	19.4	304712	8.9	20.5	132273	9.0	20.3	535117	9.1	21.5	59490	9.2	16.0
128129	8.8	18.4	386336	8.8	20.6	102324	8.9	18.2	128016	9.0	19.3	49620	9.1	18.0	100654	9.2	18.6
194256	8.8	18.0	403870	8.8	20.9	538814	8.9	22.2	288060	9.0	19.7	325652	9.1	18.7	52874	9.2	18.9
334839	8.8	20.4	533271	8.8	21.7	166514	8.9	19.7	73763	9.0	19.5	27325	9.1	17.2	127522	9.2	19.7
294594	8.8	20.3	101791	8.8	18.0	226997	8.9	19.3	150736	9.0	18.0	412294	9.1	20.8	205898	9.2	20.9
193879	8.8	19.4	6114	8.8	15.7	406421	8.9	19.8	378778	9.0	20.9	31758	9.1	18.9	420688	9.2	19.8
303761	8.8	19.4	427951	8.8	22.1	11839	8.9	15.7	405894	9.0	19.7	470936	9.1	20.3	76162	9.2	19.6
465169	8.8	20.0	224536	8.8	19.9	185028	8.9	20.9	353729	9.0	20.0	534203	9.1	21.7	160185	9.2	18.9
385418	8.8	20.9	430103	8.8	20.7	539320	8.9	21.2	109525	9.0	18.5	360444	9.1	19.4	424790	9.2	20.3
539902	8.8	18.2	300981	8.8	22.0	386158	8.9	20.2	246192	9.0	19.5	298977	9.1	20.6	82649	9.2	19.1
491700	8.8	21.8	401138	8.8	19.7	523886	8.9	20.8	126997	9.0	20.2	378880	9.1	21.1	107286	9.2	19.8
22204	8.8	19.2	500241	8.8	19.2	312867	8.9	19.8	41775	9.0	18.5	392602	9.1	21.3	442294	9.2	21.5
499777	8.8	20.6	426995	8.9	21.2	322223	8.9	20.5	334812	9.0	20.3	502677	9.1	20.6	93144	9.2	18.9
55388	8.8	17.6	365143	8.9	21.5	392528	8.9	20.3	313852	9.0	20.5	542286	9.1	20.9	304021	9.2	19.5
368728	8.8	21.3	217948	8.9	19.3	532767	8.9	22.1	466409	9.0	20.6	190434	9.1	18.2	266302	9.2	20.6
6213	8.8	18.4	218003	8.9	20.0	406928	8.9	21.2	300826	9.0	19.7	215087	9.1	19.8	385279	9.2	19.8
524660	8.8	21.3	420618	8.9	21.0	32854	8.9	16.7	280371	9.0	20.1	506904	9.1	22.0	392973	9.2	19.9
348966	8.8	20.6	168810	8.9	18.9	99308	8.9	19.6	398662	9.0	21.9	388817	9.1	20.1	87553	9.2	18.9
315323	8.8	19.8	39169	8.9	18.1	34584	8.9	18.5	60486	9.0	19.6	498016	9.1	21.2	485383	9.2	20.8
64259	8.8	19.4	119848	8.9	19.4	230959	8.9	19.5	320237	9.0	19.9	181736	9.1	19.6	107226	9.2	20.2
391795	8.8	20.1	399632	8.9	19.5	61438	8.9	18.6	374093	9.0	20.5	379693	9.1	20.6	184677	9.2	21.3
303425	8.8	21.1	283883	8.9	19.9	272743	8.9	20.6	65899	9.0	17.9	78875	9.1	18.9	232804	9.2	20.1
98031	8.8	16.9	224340	8.9	19.9	536128	8.9	20.8	53769	9.0	17.7	424071	9.1	20.8	430430	9.2	20.4
345672	8.8	20.6	492433	8.9	19.6	368719	8.9	21.1	531904	9.0	20.2	354668	9.1	19.6	118703	9.2	18.0
406540	8.8	19.9	194496	8.9	20.8	494711	8.9	19.9	358769	9.0	21.5	123753	9.1	18.3	115066	9.2	19.4
263893	8.8	20.9	368679	8.9	20.1	399349	8.9	20.5	166762	9.0	19.6	5759	9.1	16.7	479053	9.2	20.4

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
416258	9.2	18.1	166722	9.3	20.0	66786	9.3	18.7	470638	9.4	21.4	247149	9.5	20.7	189465	9.5	17.9
89176	9.2	18.8	130575	9.3	18.8	492314	9.3	21.6	524388	9.4	21.3	529996	9.5	20.9	544841	9.5	19.4
520910	9.2	20.2	169333	9.3	19.5	236417	9.3	20.4	271177	9.4	19.3	519386	9.5	20.0	362052	9.5	21.5
173192	9.2	19.5	22553	9.3	17.5	470891	9.3	20.8	466394	9.4	20.4	138622	9.5	18.8	188031	9.5	20.1
435919	9.2	21.3	443748	9.3	19.4	407765	9.3	21.2	437803	9.4	20.2	203452	9.5	19.9	151126	9.5	19.5
472632	9.2	20.4	429148	9.3	21.5	284885	9.3	21.3	293885	9.4	20.9	395762	9.5	20.0	368799	9.5	20.7
332610	9.2	20.3	210569	9.3	18.1	22311	9.3	16.8	331941	9.4	19.7	354849	9.5	20.9	518450	9.5	20.9
488970	9.2	21.5	214807	9.3	20.2	508505	9.3	19.6	236052	9.4	19.1	500666	9.5	21.2	506247	9.5	20.7
401120	9.2	20.4	44985	9.3	18.7	499986	9.3	19.3	342913	9.4	19.8	165461	9.5	19.5	532909	9.5	19.6
240304	9.2	19.8	528171	9.3	20.5	490020	9.3	20.9	292657	9.4	20.1	226831	9.5	19.5	281423	9.5	20.6
214861	9.2	20.2	138819	9.3	19.5	530350	9.3	21.6	459335	9.4	20.8	91274	9.5	18.5	194543	9.5	19.0
350332	9.2	21.2	264547	9.3	20.3	102339	9.3	18.9	129880	9.4	19.4	284465	9.5	20.5	363527	9.5	19.2
111987	9.2	19.8	365852	9.3	21.3	538829	9.3	19.8	172661	9.4	19.5	378998	9.5	21.1	463727	9.5	21.3
518884	9.2	20.4	384757	9.3	19.8	455569	9.3	19.5	65013	9.4	19.3	488938	9.5	22.1	224939	9.5	19.6
327714	9.2	19.3	216340	9.3	20.4	437324	9.3	19.8	440893	9.4	21.0	216400	9.5	19.7	176187	9.5	18.5
507861	9.2	21.6	535673	9.3	20.3	212691	9.3	21.0	531729	9.4	21.6	374074	9.5	20.0	238113	9.6	19.5
14196	9.2	14.5	132037	9.3	19.7	430661	9.3	21.6	352080	9.4	19.8	268609	9.5	20.7	42439	9.6	19.0
434940	9.2	20.2	540250	9.3	20.5	102849	9.3	20.0	503670	9.4	19.8	506752	9.5	21.0	390313	9.6	21.3
127089	9.2	18.6	499838	9.3	21.5	8478	9.3	16.9	70204	9.4	19.1	501354	9.5	21.2	303421	9.6	20.3
270479	9.2	22.0	112350	9.3	17.7	371665	9.3	20.3	200308	9.4	21.0	436735	9.5	19.3	458811	9.6	21.4
529411	9.2	21.6	165149	9.3	19.6	150604	9.3	19.1	212654	9.4	20.5	293566	9.5	20.1	429731	9.6	21.2
214258	9.2	18.7	56132	9.3	16.4	402913	9.3	19.5	350980	9.4	20.8	162431	9.5	19.2	368953	9.6	21.0
235337	9.2	20.3	331794	9.3	18.0	394418	9.3	19.9	312880	9.4	20.8	83153	9.5	17.9	68007	9.6	17.9
465363	9.2	20.7	181307	9.3	19.9	115180	9.3	19.1	284169	9.4	19.7	405911	9.5	19.2	543726	9.6	20.5
498869	9.2	21.0	391723	9.3	20.9	353702	9.3	20.6	98700	9.4	18.8	526457	9.5	19.3	432792	9.6	20.6
186297	9.2	21.4	238077	9.3	19.8	244041	9.3	19.7	225992	9.4	20.3	454173	9.5	21.7	135141	9.6	18.9
90606	9.2	18.3	328240	9.3	20.5	350770	9.3	21.8	249038	9.4	19.8	500307	9.5	20.0	353801	9.6	21.0
462553	9.2	21.8	216126	9.3	20.8	29908	9.3	16.5	36625	9.4	20.2	371708	9.5	19.9	244116	9.6	20.1
99658	9.2	19.4	224237	9.3	18.2	40942	9.4	18.8	381501	9.4	20.8	501117	9.5	20.3	331180	9.6	20.2
246812	9.2	19.9	99284	9.3	18.6	370131	9.4	21.5	64471	9.4	18.7	263684	9.5	20.2	206858	9.6	20.4
523517	9.2	19.4	310749	9.3	20.4	469429	9.4	20.7	539282	9.4	20.1	434818	9.5	20.2	417514	9.6	20.8
534189	9.2	21.8	417704	9.3	21.4	334768	9.4	19.9	531708	9.4	21.0	206000	9.5	19.8	502091	9.6	21.6
374078	9.2	20.3	137014	9.3	18.5	366417	9.4	22.1	437436	9.4	21.6	304752	9.5	20.5	235057	9.6	19.5
90115	9.2	18.8	292439	9.3	20.7	278704	9.4	20.9	138774	9.4	19.3	446934	9.5	21.0	519403	9.6	20.8
412868	9.2	19.6	358078	9.3	21.0	140870	9.4	19.5	536096	9.4	20.6	330432	9.5	21.2	125741	9.6	18.6
205854	9.2	19.7	222616	9.3	19.9	100357	9.4	19.6	332368	9.4	19.9	439453	9.5	21.2	529682	9.6	20.0
313900	9.2	17.7	240114	9.3	18.9	503696	9.4	20.6	70483	9.4	19.6	141365	9.5	19.8	67570	9.6	18.1
424610	9.2	19.7	462053	9.3	20.8	91266	9.4	18.7	182851	9.4	21.2	351562	9.5	20.7	383744	9.6	20.6
356167	9.2	20.1	524316	9.3	20.8	505618	9.4	22.1	501006	9.4	20.1	462024	9.5	20.4	4072	9.6	15.9
9622	9.2	18.5	171935	9.3	20.0	536280	9.4	20.7	63101	9.4	17.5	506842	9.5	19.9	11344	9.6	18.1
198405	9.2	19.5	388748	9.3	19.8	122870	9.4	20.0	464960	9.4	20.8	105498	9.5	19.4	1497	9.6	15.1
239683	9.2	20.1	285054	9.3	21.0	533324	9.4	21.9	199549	9.4	20.6	83043	9.5	19.0	436676	9.6	20.0
349069	9.2	21.3	355728	9.3	20.2	112811	9.4	19.5	535569	9.4	21.7	173456	9.5	18.8	133587	9.6	18.6
310096	9.2	20.1	294840	9.3	19.4	368682	9.4	20.0	115409	9.4	19.9	269005	9.5	21.7	303452	9.6	20.7
445267	9.2	17.8	54271	9.3	17.9	368688	9.4	20.4	169162	9.4	19.1	10304	9.5	18.0	374366	9.6	21.2
105979	9.2	19.6	110998	9.3	18.4	354123	9.4	21.1	161929	9.4	20.0	286331	9.5	20.0	463753	9.6	21.1
472134	9.2	20.7	478351	9.3	21.2	85564	9.4	18.2	414778	9.4	18.9	523524	9.5	19.9	14257	9.6	15.8
310992	9.2	20.5	155328	9.3	19.8	322493	9.4	19.9	184658	9.4	20.3	295060	9.5	21.4	179458	9.6	21.2
126048	9.2	20.0	262763	9.3	20.6	67766	9.4	19.0	355884	9.4	20.2	260955	9.5	20.0	66384	9.6	18.4
171252	9.2	19.3	8802	9.3	18.2	426871	9.4	19.7	480022	9.4	19.0	423630	9.5	21.1	135078	9.6	19.2
452553	9.2	21.0	414243	9.3	20.5	282340	9.4	19.8	72529	9.4	18.7	104748	9.5	19.2	105895	9.6	19.5
374304	9.2	21.0	164580	9.3	19.6	245710	9.4	19.6	501273	9.4	21.1	495092	9.5	20.1	535406	9.6	20.4
312050	9.2	20.0	434439	9.3	20.0	79203	9.4	17.4	6906	9.4	17.5	214896	9.5	20.5	3065	9.6	16.2
533707	9.2	19.9	430183	9.3	20.6	320441	9.4	20.7	450977	9.4	20.6	217920	9.5	19.1	534124	9.6	21.6
312135	9.2	20.9	376252	9.3	19.6	366451	9.4	20.9	299973	9.4	20.2	529866	9.5	20.1	188882	9.6	19.2
208677	9.2	20.8	35503	9.3	18.5	428786	9.4	20.2	138261	9.4	19.9	236894	9.5	21.2	469828	9.6	20.7
130105	9.2	19.6	388812	9.3	20.6	381569	9.4	20.0	123765	9.4	18.8	142282	9.5	18.5	37757	9.6	18.2
371666	9.2	20.2	264396	9.3	20.3	527962	9.4	21.1	22337	9.4	18.5	433803	9.5	20.7	61451	9.6	19.1
518792	9.2	20.6	378779	9.3	21.4	63106	9.4	18.8	470221	9.4	21.5	461772	9.5	20.9	393939	9.6	20.5
404786	9.2	18.9	352624	9.3	21.9	384198	9.4	21.4	438405	9.4	20.9	17987	9.5	17.9	179499	9.6	20.2
96367	9.2	19.5	420088	9.3	20.1	410767	9.4	20.2	391378	9.4	21.1	78871	9.5	18.6	240760	9.6	20.1
374184	9.2	20.4	533355	9.3	20.4	237110	9.4	20.5	120616	9.4	19.8	69733	9.5	17.8	92752	9.6	19.4
152336	9.2	19.5	7799	9.3	16.6	500196	9.4	20.4	160176	9.5	21.5	464132	9.5	20.2	258695	9.6	20.6
63518	9.2	17.7	490683	9.3	19.7	351652	9.4	21.0	388785	9.5	20.3	348462	9.5	18.5	463286	9.6	19.5
300961	9.2	20.1	524596	9.3	19.7	305651	9.4	20.1	43441	9.5	19.2	53589	9.5	16.6	259558	9.6	21.0
534731	9.2	20.6	470476	9.3	20.8	90883	9.4	19.8	485116	9.5	18.0	482982	9.5	21.0	170959	9.6	19.0
304659	9.2	20.1	216889	9.3	20.8	293097	9.4	20.0	235158	9.5	20.7	362146	9.5	20.8	94835	9.6	20.0
432768	9.2	20.8	383888	9.3	21.3	544115	9.4	21.2	458928	9.5	21.6	299782	9.5	20.8	148920	9.6	20.7
388846	9.2	20.9	76782	9.3	18.7	303312	9.4	21.4	439180	9.5	19.4	525978	9.5	21.1	425977	9.6	21.3
130807	9.2	18.9	267440	9.3	20.6	138673	9.4	20.3	494932	9.5	20.7	486799	9.5	20.4	177860	9.6	20.0
506697	9.2	21.4	477731	9.3	21.2	526732	9.4	21.0	145868	9.5	18.3	228388	9.5	20.2	29237		

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
469378	9.6	21.3	239213	9.7	19.9	176423	9.8	20.1	446903	9.8	19.4	491859	9.9	21.6	127580	9.9	19.9
224394	9.6	20.7	539098	9.7	20.2	372439	9.8	21.6	226823	9.9	19.8	228350	9.9	19.8	147524	9.9	19.6
284881	9.6	20.0	439358	9.7	20.7	176778	9.8	20.1	534866	9.9	21.4	438349	9.9	21.3	69651	9.9	18.7
534857	9.6	20.8	99670	9.7	20.0	185552	9.8	21.7	55280	9.9	18.8	509302	9.9	21.5	522838	9.9	20.4
162055	9.6	18.8	468425	9.7	21.5	158489	9.8	19.8	264657	9.9	19.0	6519	9.9	15.5	187794	9.9	19.9
491199	9.6	20.2	491600	9.7	20.4	502610	9.8	20.5	470214	9.9	22.1	211963	9.9	20.4	87723	9.9	18.8
109044	9.6	19.4	267764	9.7	19.4	269768	9.8	20.5	158428	9.9	19.3	246306	9.9	18.9	411659	9.9	20.9
168014	9.6	19.0	82936	9.7	18.5	281769	9.8	19.4	283394	9.9	19.8	35659	9.9	17.6	406477	9.9	22.0
95195	9.6	18.4	527627	9.7	19.4	27037	9.8	17.6	111305	9.9	19.0	217907	9.9	19.5	362117	9.9	20.5
544566	9.6	19.4	361666	9.7	20.1	427956	9.8	20.9	102947	9.9	19.9	44160	9.9	16.7	178626	9.9	19.2
182833	9.6	20.3	537138	9.7	21.1	234650	9.8	21.1	334448	9.9	19.4	316845	9.9	21.0	462551	9.9	21.8
523922	9.6	21.3	277267	9.7	20.5	517158	9.8	20.7	253201	9.9	19.5	266303	9.9	21.1	459519	9.9	19.8
322136	9.6	18.9	185111	9.7	20.5	232574	9.8	20.4	192056	9.9	19.9	539070	9.9	21.3	96673	9.9	18.1
530305	9.6	21.8	184804	9.7	20.0	336201	9.8	19.6	406390	9.9	20.6	435338	9.9	21.0	457169	9.9	21.3
121887	9.6	19.6	222613	9.7	20.6	153391	9.8	19.3	353797	9.9	20.3	465916	9.9	21.6	402924	9.9	20.6
193123	9.6	18.6	63206	9.7	19.7	297603	9.8	19.1	209644	9.9	19.9	297227	9.9	19.8	535742	9.9	21.7
304963	9.6	21.4	219594	9.7	20.4	259309	9.8	20.4	108875	9.9	19.2	5280	9.9	16.5	116889	9.9	18.7
534437	9.6	21.3	350596	9.7	19.3	426340	9.8	20.2	303864	9.9	19.9	147664	9.9	18.6	377882	9.9	20.5
96097	9.6	19.5	197258	9.7	19.3	97300	9.8	19.9	63351	9.9	17.6	498955	9.9	21.4	182374	9.9	18.8
288477	9.6	19.1	468183	9.7	20.9	498612	9.8	21.0	267131	9.9	22.4	225372	9.9	18.4	292609	9.9	20.7
525340	9.6	21.5	538336	9.7	21.5	41585	9.8	18.6	247147	9.9	19.8	389748	9.9	20.2	371309	9.9	20.5
245099	9.6	18.6	357953	9.7	19.8	38424	9.8	18.8	110556	9.9	18.2	412893	9.9	20.1	378740	9.9	21.2
381516	9.6	20.2	120586	9.7	19.8	384107	9.8	20.3	538741	9.9	20.2	272983	9.9	20.3	200972	9.9	19.9
410484	9.6	21.3	500940	9.7	19.5	301057	9.8	20.6	457069	9.9	20.6	374545	9.9	21.0	413940	9.9	21.6
60128	9.6	17.9	247946	9.7	19.5	170828	9.8	21.3	208247	9.9	20.6	541008	9.9	21.3	456113	10.0	21.3
87940	9.6	19.0	147285	9.7	20.3	67119	9.8	18.4	265639	9.9	19.8	437667	9.9	20.7	526087	10.0	21.2
245760	9.6	19.1	77018	9.7	18.6	245762	9.8	20.5	249784	9.9	19.0	213209	9.9	19.8	110500	10.0	18.6
403015	9.6	18.6	535006	9.7	20.8	222701	9.8	20.0	244047	9.9	19.4	22495	9.9	18.7	374561	10.0	21.5
425720	9.6	21.4	462312	9.7	21.5	237687	9.8	20.6	259145	9.9	20.1	531711	9.9	21.8	467775	10.0	20.8
175559	9.6	19.4	496254	9.7	19.8	184629	9.8	19.5	532363	9.9	21.5	189367	9.9	21.8	352670	10.0	20.5
352828	9.6	19.9	329299	9.7	20.3	231438	9.8	20.2	132439	9.9	19.4	196640	9.9	19.5	422123	10.0	21.2
540121	9.6	20.5	38527	9.7	19.3	45155	9.8	16.5	33133	9.9	18.7	460132	9.9	19.7	48298	10.0	17.7
2141	9.6	14.8	297734	9.7	21.1	525913	9.8	20.5	251563	9.9	19.2	377924	9.9	20.9	201209	10.0	20.1
109416	9.6	19.5	209393	9.7	19.5	305338	9.8	19.4	524804	9.9	21.3	307544	9.9	17.1	194303	10.0	19.2
374132	9.6	19.9	149971	9.7	19.3	71480	9.8	19.1	341703	9.9	19.9	411254	9.9	20.1	90351	10.0	17.8
307053	9.6	19.4	199725	9.7	20.4	146221	9.8	20.5	501304	9.9	20.7	512993	9.9	21.1	303400	10.0	19.9
351732	9.6	20.5	62095	9.7	18.7	508312	9.8	20.6	499266	9.9	21.5	498199	9.9	20.9	426484	10.0	19.9
4821	9.7	17.9	61228	9.7	17.9	263542	9.8	20.1	55223	9.9	18.8	521204	9.9	20.7	53468	10.0	18.8
302067	9.7	19.4	134410	9.7	20.2	354158	9.8	19.8	4752	9.9	17.6	20810	9.9	17.6	508591	10.0	20.0
489455	9.7	21.2	261226	9.7	20.4	441348	9.8	21.4	138836	9.9	19.4	470466	9.9	20.6	374383	10.0	21.3
30964	9.7	18.1	1965	9.7	15.7	376962	9.8	20.2	528847	9.9	21.4	47984	9.9	17.9	160219	10.0	21.2
468350	9.7	19.8	458828	9.7	20.1	118554	9.8	19.3	470088	9.9	21.4	377902	9.9	20.2	467049	10.0	21.1
293026	9.7	20.2	18852	9.7	16.5	303746	9.8	19.9	354733	9.9	21.2	12414	9.9	16.7	203435	10.0	20.3
274961	9.7	21.1	326403	9.7	20.1	377887	9.8	20.7	540683	9.9	20.8	401135	9.9	20.8	90099	10.0	19.0
306338	9.7	20.6	132	9.7	13.6	527335	9.8	22.1	171223	9.9	19.2	64942	9.9	19.1	54764	10.0	16.9
93839	9.7	19.1	496917	9.7	21.6	312047	9.8	20.6	273070	9.9	20.3	16572	9.9	18.2	322704	10.0	20.1
340770	9.7	20.2	404303	9.7	19.1	272681	9.8	20.4	313635	9.9	21.1	102327	9.9	19.3	296001	10.0	21.3
351711	9.7	20.5	543447	9.7	21.1	29185	9.8	18.8	542200	9.9	20.6	79725	9.9	18.3	179877	10.0	20.7
133113	9.7	17.5	357570	9.7	21.4	348978	9.8	19.1	307543	9.9	21.5	541808	9.9	20.4	537391	10.0	21.1
304677	9.7	20.6	259261	9.7	20.4	229691	9.8	20.2	422472	9.9	20.8	505247	9.9	20.4	423544	10.0	19.8
330097	9.7	18.9	105531	9.7	19.0	299931	9.8	21.7	63686	9.9	19.3	428033	9.9	20.1	225008	10.0	19.3
434447	9.7	19.7	56372	9.7	16.4	245691	9.8	20.4	467931	9.9	21.0	215083	9.9	19.1	219613	10.0	19.4
36433	9.7	18.5	124248	9.7	19.3	58900	9.8	17.9	418266	9.9	20.8	135471	9.9	19.6	342941	10.0	20.3
344358	9.7	20.9	388391	9.7	20.4	190409	9.8	19.3	272664	9.9	21.2	118787	9.9	19.1	137860	10.0	19.1
497380	9.7	20.5	502569	9.7	21.5	173166	9.8	19.2	334700	9.9	21.4	145472	9.9	18.8	457549	10.0	21.8
349389	9.7	20.5	415999	9.7	19.9	417470	9.8	21.4	228331	9.9	18.3	30707	9.9	18.0	126250	10.0	18.8
393139	9.7	20.5	81844	9.7	17.7	129835	9.8	18.1	86686	9.9	17.6	303802	9.9	20.7	535330	10.0	21.6
329386	9.7	20.4	143510	9.7	20.3	455620	9.8	22.2	151535	9.9	19.2	172052	9.9	20.0	231398	10.0	19.8
161691	9.7	18.9	66712	9.7	18.0	210777	9.8	20.7	453397	9.9	21.3	501851	9.9	20.6	65155	10.0	18.8
169119	9.7	19.2	525318	9.7	20.4	54847	9.8	18.0	343068	9.9	19.1	272921	9.9	19.5	37088	10.0	17.1
86254	9.7	18.7	455455	9.7	21.6	166245	9.8	19.1	302078	9.9	20.5	493560	9.9	20.9	26780	10.0	17.3
353553	9.7	20.7	337677	9.7	22.3	253600	9.8	19.3	372335	9.9	20.1	429639	9.9	21.8	388761	10.0	20.8
120432	9.7	18.8	471434	9.8	19.8	274303	9.8	19.3	355619	9.9	20.4	177642	9.9	18.0	437056	10.0	21.1
540555	9.7	20.7	473048	9.8	20.0	388781	9.8	19.7	530211	9.9	21.9	498663	9.9	20.6	223632	10.0	18.9
529667	9.7	20.4	14905	9.8	18.4	172067	9.8	19.2	457509	9.9	20.7	68099	9.9	18.5	18205	10.0	18.4
288114	9.7	19.5	389190	9.8	21.0	10370	9.8	22.6	333449	9.9	20.0	93663	9.9	19.7	383634	10.0	21.2
341294	9.7	20.3	248348	9.8	19.3	449603	9.8	20.4	381448	9.9	20.6	438139	9.9	20.3	274320	10.0	20.3
470505	9.7	20.7	331197	9.8	20.8	79561	9.8	18.8	104158	9.9	19.5	65033	9.9	17.9	524358	10.0	21.8
174049	9.7	20.1	298991	9.8	20.5	192813	9.8	20.4	328328	9.9	20.8	430776	9.9	20.2	168555	10.0	20.7
287328	9.7	20.2	417070	9.8	21.4	203419	9.8	19.8	544071	9.9	21.8	284415	9.9	19.6	367334	10.0	20.2
31394	9.7	19.5	300713	9.8	20.5	436688	9.8	20.3	20907	9.9	18.7						

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
130712	10.0	20.2	101772	10.1	18.1	479194	10.2	20.0	370163	10.3	20.8	30868	10.3	19.3	192403	10.4	19.7
508588	10.0	19.8	174719	10.1	20.5	522997	10.2	21.5	469866	10.3	20.6	338967	10.3	20.6	270453	10.4	19.9
417337	10.0	22.7	10412	10.1	17.3	213370	10.2	20.4	418329	10.3	19.9	4624	10.3	18.1	472223	10.4	21.1
225936	10.0	19.7	536174	10.1	20.4	427037	10.2	19.8	221647	10.3	19.4	303205	10.3	18.2	30436	10.4	18.2
297786	10.0	20.7	463152	10.1	21.3	286456	10.2	20.6	277025	10.3	20.0	58756	10.3	20.0	10055	10.4	17.6
30741	10.0	19.8	471414	10.1	20.4	506821	10.2	20.6	536977	10.3	20.7	259333	10.3	20.1	323744	10.4	19.9
217890	10.1	19.5	299337	10.1	21.0	29758	10.2	17.4	16349	10.3	17.7	476331	10.3	20.4	544850	10.4	19.9
153574	10.1	20.6	540500	10.1	21.0	82933	10.2	18.0	177170	10.3	19.1	34603	10.3	18.4	295816	10.4	19.6
188549	10.1	19.9	203588	10.1	19.9	5805	10.2	16.1	532163	10.3	20.6	122201	10.3	17.9	200751	10.4	19.9
391060	10.1	19.4	528600	10.1	20.4	383622	10.2	20.6	165457	10.3	19.7	277673	10.3	20.6	27296	10.4	17.6
39339	10.1	19.9	243792	10.1	19.2	177632	10.2	19.6	470149	10.3	20.8	292755	10.3	19.3	10810	10.4	18.0
205780	10.1	19.7	176455	10.1	21.0	331533	10.2	19.8	53186	10.3	18.1	236673	10.3	19.8	501341	10.4	20.5
515371	10.1	21.1	69465	10.1	18.7	505431	10.2	21.5	522917	10.3	21.2	399078	10.3	19.1	95533	10.4	19.8
293224	10.1	20.9	266937	10.1	18.8	195473	10.2	18.1	311496	10.3	20.0	388662	10.3	20.6	529229	10.4	22.1
397694	10.1	20.4	202872	10.1	19.7	498672	10.2	21.0	501880	10.3	20.2	163710	10.3	18.7	391683	10.4	21.7
215042	10.1	19.7	269696	10.1	19.9	522974	10.2	20.4	361166	10.3	19.5	7591	10.3	18.7	110226	10.4	19.3
310082	10.1	19.5	192932	10.1	19.1	173280	10.2	20.0	503386	10.3	20.6	331630	10.3	20.6	538647	10.4	20.5
416534	10.1	19.9	111541	10.1	19.3	435882	10.2	21.0	345238	10.3	20.2	222285	10.3	19.4	544710	10.4	21.1
67001	10.1	18.8	109209	10.1	18.4	505343	10.2	22.0	135676	10.3	19.0	394411	10.3	20.7	430001	10.4	22.2
190083	10.1	18.9	144830	10.1	20.0	149354	10.2	18.5	423269	10.3	19.9	273698	10.3	20.7	371082	10.4	20.5
217942	10.1	18.8	535879	10.1	21.6	229176	10.2	18.8	309267	10.3	21.7	186879	10.3	20.0	105352	10.4	18.9
309384	10.1	19.4	22200	10.1	18.8	283484	10.2	20.6	111591	10.3	19.8	58118	10.3	18.5	267308	10.4	20.6
81795	10.1	17.5	242365	10.1	20.9	172211	10.2	20.0	159930	10.3	19.7	133566	10.3	19.0	52916	10.4	18.2
124681	10.1	18.3	388320	10.1	20.6	133288	10.2	19.5	294283	10.3	20.3	47866	10.3	19.1	474092	10.4	19.1
231141	10.1	20.4	174013	10.1	20.7	178712	10.2	19.7	304736	10.3	21.2	54544	10.3	19.1	90221	10.4	18.1
138708	10.1	19.9	149643	10.1	19.9	353602	10.2	19.6	354070	10.3	20.6	216386	10.3	21.1	204388	10.4	18.8
455849	10.1	21.0	39764	10.1	18.7	96968	10.2	19.2	75236	10.3	18.4	2618	10.3	16.4	450514	10.4	22.3
63573	10.1	18.3	101889	10.1	17.9	477182	10.2	21.4	110447	10.3	19.3	529816	10.3	19.9	415912	10.4	20.7
132213	10.1	17.3	223624	10.1	18.8	165960	10.2	20.4	430805	10.3	21.8	306826	10.3	21.0	322451	10.4	18.6
325285	10.1	19.6	374124	10.1	19.4	499399	10.2	21.3	123436	10.3	19.7	241701	10.3	19.5	124517	10.4	19.1
158188	10.1	18.4	298892	10.1	20.0	83824	10.2	18.7	369398	10.3	21.3	133621	10.3	19.5	508282	10.4	20.4
187578	10.1	20.3	63155	10.1	18.6	527538	10.2	22.4	268432	10.3	21.2	32234	10.4	17.9	375095	10.4	21.5
181950	10.1	18.9	304721	10.1	19.6	368210	10.2	20.7	544084	10.3	20.3	406391	10.4	20.6	330400	10.4	20.9
133258	10.1	19.0	18296	10.1	19.5	272772	10.2	20.2	200802	10.3	21.2	320727	10.4	20.2	187669	10.4	21.2
432011	10.1	20.8	522989	10.1	20.6	106893	10.2	19.1	149817	10.3	19.8	436738	10.4	20.4	430152	10.4	20.9
491678	10.1	21.5	419877	10.1	21.8	88272	10.2	18.6	266942	10.3	19.8	79318	10.4	19.2	388409	10.4	20.6
37597	10.1	18.8	188101	10.1	17.5	253241	10.2	19.4	456579	10.3	20.5	304347	10.4	20.0	39430	10.4	18.1
497378	10.1	21.2	215972	10.1	20.3	465682	10.2	20.8	57251	10.3	19.2	498646	10.4	21.1	105689	10.4	19.0
500287	10.1	19.7	105818	10.1	19.1	505171	10.2	20.4	475749	10.3	20.6	459976	10.4	20.3	452212	10.4	20.0
346829	10.1	20.2	259227	10.1	20.6	498687	10.2	21.2	479154	10.3	21.5	302840	10.4	20.1	34975	10.4	18.1
87712	10.1	18.5	260917	10.1	19.5	308093	10.2	20.6	87046	10.3	18.6	107056	10.4	19.3	117260	10.4	19.4
149495	10.1	18.8	286056	10.1	19.6	544498	10.2	21.0	310379	10.3	17.2	200832	10.4	18.9	472823	10.4	20.7
276211	10.1	19.2	258674	10.1	19.4	292764	10.2	21.4	36139	10.3	17.8	421318	10.4	20.2	4295	10.4	16.6
13311	10.1	16.0	501081	10.1	21.1	111113	10.2	19.4	220444	10.3	19.1	375867	10.4	21.4	83018	10.4	19.6
75096	10.1	18.4	504427	10.1	21.1	271111	10.2	19.7	106007	10.3	19.1	304856	10.4	20.7	224622	10.4	19.9
83969	10.1	19.0	153680	10.1	20.8	343477	10.2	20.5	451523	10.3	22.0	312835	10.4	19.4	283472	10.4	19.8
398660	10.1	20.1	388733	10.1	20.6	513098	10.2	21.2	465115	10.3	20.8	162387	10.4	19.1	470052	10.4	21.5
376710	10.1	20.9	290981	10.1	20.5	336229	10.2	21.1	55560	10.3	19.3	87576	10.4	18.6	170277	10.5	19.9
189984	10.1	18.2	504634	10.1	20.8	140917	10.2	19.5	522854	10.3	20.8	408717	10.4	18.8	229167	10.5	20.0
201490	10.1	19.0	265881	10.2	19.5	69404	10.2	20.0	124726	10.3	19.2	356456	10.4	22.0	63696	10.5	19.0
178220	10.1	20.5	526588	10.2	20.7	197392	10.2	19.7	536218	10.3	21.2	506038	10.4	19.6	104299	10.5	18.8
480796	10.1	20.3	375799	10.2	20.2	153631	10.2	20.8	262734	10.3	19.0	544468	10.4	20.5	506580	10.5	18.6
331604	10.1	21.0	25410	10.2	18.8	369851	10.2	20.0	10808	10.3	17.5	501411	10.4	20.9	348539	10.5	19.4
45693	10.1	18.6	541605	10.2	20.0	400160	10.2	20.7	253862	10.3	20.8	412516	10.4	20.4	587	10.5	15.6
353633	10.1	20.3	477092	10.2	20.5	14960	10.2	17.3	274451	10.3	19.8	507361	10.4	23.7	437636	10.5	20.2
131726	10.1	19.8	369798	10.2	20.6	223242	10.2	20.6	303794	10.3	21.1	467221	10.4	21.0	452202	10.5	21.5
322483	10.1	20.7	382781	10.2	20.0	253101	10.2	19.7	503885	10.3	19.7	35896	10.4	18.2	46313	10.5	17.4
62716	10.1	19.2	21955	10.2	17.4	542897	10.2	18.8	357128	10.3	21.3	336721	10.4	21.1	189457	10.5	19.9
229322	10.1	20.5	507823	10.2	20.6	17877	10.2	17.0	505330	10.3	21.1	537318	10.4	20.6	412425	10.5	20.9
471358	10.1	20.8	499255	10.2	21.8	177774	10.2	20.2	97835	10.3	17.4	94695	10.4	18.2	429370	10.5	20.8
33521	10.1	17.0	427790	10.2	21.1	105668	10.2	19.2	497422	10.3	20.4	212978	10.4	20.6	278335	10.5	21.0
135179	10.1	19.0	193925	10.2	19.7	535869	10.2	21.9	154032	10.3	19.9	387025	10.4	20.7	329588	10.5	21.2
425748	10.1	21.1	434641	10.2	19.9	472301	10.2	19.4	111494	10.3	19.7	131727	10.4	20.0	63013	10.5	17.6
200114	10.1	20.4	42166	10.2	18.2	275242	10.2	20.1	78166	10.3	18.4	204183	10.4	21.0	437453	10.5	20.1
132018	10.1	20.0	357591	10.2	19.4	245136	10.2	19.4	188899	10.3	20.4	228725	10.4	20.0	109473	10.5	19.4
502411	10.1	20.7	141080	10.2	19.6	179452	10.2	20.5	194682	10.3	19.3	114766	10.4	19.8	523637	10.5	21.2
155594	10.1	19.6	6437	10.2	16.7	502646	10.2	21.2	346351	10.3	19.9	538334	10.4	21.0	406383	10.5	20.2
105251	10.1	18.4	152910	10.2	18.9	347188	10.2	19.2	502103	10.3	20.9	241719	10.4	20.0	381553	10.5	20.6
336420	10.1	19.6	210704	10.2	19.1	122228	10.2	19.6	181039</								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
274925	10.5	21.0	446442	10.6	19.7	491590	10.6	21.0	17063	10.7	16.9	190366	10.8	18.7	403277	10.9	18.7
483878	10.5	21.6	28243	10.6	18.0	457224	10.6	20.7	53775	10.7	18.6	225560	10.8	19.8	359639	10.9	19.6
360999	10.5	20.8	404215	10.6	20.5	152830	10.6	20.2	360086	10.7	20.4	450753	10.8	20.2	280521	10.9	19.6
124470	10.5	19.3	128450	10.6	19.2	483376	10.6	20.7	175281	10.7	19.7	105362	10.8	19.7	302286	10.9	20.6
48644	10.5	17.0	64601	10.6	17.6	343316	10.6	20.5	386583	10.7	20.8	384534	10.8	19.4	492461	10.9	19.9
497337	10.5	19.1	158366	10.6	19.3	280453	10.6	19.4	131605	10.7	19.8	428873	10.8	20.8	478240	10.9	21.4
504253	10.5	22.4	523816	10.6	24.5	379325	10.6	20.1	198955	10.7	19.8	93319	10.8	19.2	88276	10.9	17.6
18383	10.5	17.7	385867	10.6	20.5	91111	10.6	17.8	500308	10.7	20.3	435771	10.8	21.1	121403	10.9	19.3
264217	10.5	21.0	465457	10.6	19.3	14121	10.6	16.0	402877	10.7	20.3	289048	10.8	19.6	530163	10.9	21.6
214079	10.5	19.5	182035	10.6	19.9	66887	10.6	18.8	470916	10.7	20.7	166980	10.8	18.1	39930	10.9	19.7
177303	10.5	19.3	542984	10.6	21.0	62622	10.6	17.5	491029	10.7	20.7	498039	10.8	20.6	433376	10.9	20.0
205002	10.5	19.0	230045	10.6	18.8	423763	10.6	19.6	18608	10.7	18.4	419953	10.8	21.2	540782	10.9	21.2
228633	10.5	20.2	319682	10.6	20.6	368243	10.6	20.9	61374	10.7	16.5	239016	10.8	19.0	173451	10.9	19.4
190429	10.5	19.9	447173	10.6	19.6	505846	10.6	20.6	182876	10.7	20.8	11902	10.8	17.8	285204	10.9	18.6
126707	10.5	18.7	156408	10.6	20.4	229026	10.6	20.3	186611	10.7	18.9	420929	10.8	20.3	252163	10.9	20.3
1403	10.5	14.2	344581	10.6	21.2	469174	10.6	21.5	94163	10.7	18.3	59635	10.8	16.9	395840	10.9	20.7
522695	10.5	20.6	405943	10.6	20.6	320681	10.6	20.5	167003	10.7	19.2	49756	10.8	17.6	121078	10.9	20.1
36656	10.5	19.0	279054	10.6	19.9	406586	10.7	21.4	5856	10.7	16.7	538304	10.8	20.7	167801	10.9	20.1
423441	10.5	21.7	479926	10.6	20.4	146823	10.7	20.0	299933	10.7	19.9	318372	10.8	20.3	125905	10.9	19.4
155546	10.5	18.9	205622	10.6	18.5	2039	10.7	17.7	297742	10.7	20.6	29853	10.8	17.4	311548	10.9	19.3
389151	10.5	21.0	57275	10.6	16.9	127347	10.7	17.9	437155	10.7	19.4	89498	10.8	17.4	46839	10.9	18.5
89932	10.5	18.5	369019	10.6	21.2	229728	10.7	20.8	412042	10.7	20.3	20043	10.8	17.8	331494	10.9	19.9
320519	10.5	21.4	22891	10.6	16.4	90654	10.7	19.5	106824	10.7	19.2	278639	10.8	19.8	406898	10.9	21.4
362734	10.5	20.7	289205	10.6	19.6	237733	10.7	19.8	535557	10.7	22.2	425222	10.8	20.9	278825	10.9	19.8
338326	10.5	20.2	165438	10.6	20.2	110339	10.7	19.0	117393	10.7	19.7	61689	10.8	18.0	153144	10.9	18.9
65566	10.5	19.3	273194	10.6	20.2	461035	10.7	20.4	33205	10.7	18.5	335177	10.8	20.4	408369	10.9	19.7
303831	10.5	20.9	325508	10.6	19.8	36741	10.7	17.8	5777	10.7	15.5	285915	10.8	19.8	346832	10.9	20.9
255727	10.5	19.7	18396	10.6	18.2	316788	10.7	18.2	57322	10.7	19.6	53233	10.8	17.5	45932	10.9	17.9
296347	10.5	20.9	61700	10.6	18.1	162595	10.7	17.9	168822	10.7	18.7	129298	10.8	18.7	193645	10.9	19.7
268475	10.5	20.1	148976	10.6	18.9	298921	10.7	20.2	390075	10.7	20.6	68917	10.8	18.7	249436	10.9	19.2
131603	10.5	19.8	499758	10.6	21.4	255047	10.7	20.1	29252	10.7	18.4	127706	10.8	18.9	149421	10.9	20.1
73843	10.5	19.9	480424	10.6	20.4	247800	10.7	19.6	504327	10.7	21.2	201009	10.8	20.6	19663	10.9	18.4
530148	10.5	22.1	315267	10.6	20.3	192913	10.7	19.6	208447	10.7	19.2	383971	10.8	20.7	422046	10.9	20.1
58642	10.5	19.0	187980	10.6	19.8	17492	10.7	16.7	346360	10.7	20.0	214476	10.8	19.3	534222	10.9	21.4
382339	10.5	20.2	180500	10.6	18.6	66002	10.7	18.2	357211	10.7	20.4	276848	10.8	20.2	414829	10.9	19.7
225594	10.5	20.3	199212	10.6	20.5	103070	10.7	18.4	456845	10.7	21.3	501201	10.8	20.0	298881	10.9	19.3
306575	10.5	20.8	538702	10.6	21.6	36373	10.7	16.7	120173	10.7	18.5	432537	10.8	21.0	341741	10.9	21.2
215589	10.5	18.8	87542	10.6	18.5	466996	10.7	23.6	412620	10.7	20.6	331420	10.8	20.5	361718	10.9	20.0
89493	10.5	18.0	495498	10.6	19.0	189544	10.7	19.1	430715	10.7	20.3	281036	10.8	20.7	138580	10.9	18.9
18048	10.5	18.2	304078	10.6	18.7	417577	10.7	20.4	454184	10.7	21.3	81872	10.8	17.6	63054	10.9	18.5
238099	10.5	20.0	56483	10.6	18.5	497113	10.7	23.0	210859	10.7	20.2	471470	10.8	20.3	193124	10.9	19.7
101916	10.5	18.9	379757	10.6	19.8	259491	10.7	19.7	39700	10.7	19.0	409226	10.8	21.4	472661	10.9	20.7
50894	10.5	18.1	150994	10.6	19.6	76835	10.7	19.3	205772	10.7	19.4	208203	10.8	20.8	526180	10.9	22.8
162558	10.5	19.6	138721	10.6	18.6	92086	10.7	18.5	498247	10.8	20.7	455567	10.8	20.9	416989	10.9	21.9
67272	10.5	18.3	529642	10.6	20.4	183767	10.7	21.1	422553	10.8	20.3	341158	10.8	20.6	148553	10.9	19.0
285778	10.5	20.3	504277	10.6	20.7	473792	10.7	20.3	351720	10.8	21.0	415619	10.8	21.4	443578	10.9	20.5
128281	10.5	19.1	342875	10.6	20.3	176397	10.7	19.5	370670	10.8	20.6	54577	10.8	19.2	100932	10.9	19.4
89124	10.5	19.8	106368	10.6	19.8	350273	10.7	21.2	70176	10.8	18.0	193663	10.8	19.9	45120	10.9	17.2
216396	10.5	18.4	68672	10.6	18.7	406494	10.7	19.9	350295	10.8	21.2	393830	10.8	20.7	525292	10.9	20.7
346182	10.5	20.5	378712	10.6	18.7	106714	10.7	19.2	295310	10.8	20.2	443243	10.8	21.4	450841	10.9	21.0
276915	10.5	19.3	264722	10.6	19.1	195520	10.7	17.9	209119	10.8	18.9	119864	10.8	19.0	537388	10.9	20.4
528289	10.5	21.0	379330	10.6	20.0	211215	10.7	18.6	212005	10.8	20.8	235851	10.8	22.1	379274	10.9	19.1
140196	10.5	19.6	210765	10.6	19.9	393824	10.7	21.3	293873	10.8	21.1	389288	10.8	22.0	216254	10.9	20.8
262769	10.5	21.5	34667	10.6	17.2	498647	10.7	21.1	375818	10.8	20.2	321812	10.8	20.3	240593	10.9	18.9
436022	10.5	20.7	290501	10.6	20.7	353176	10.7	20.3	157093	10.8	18.6	91054	10.8	18.4	396415	10.9	21.3
87742	10.5	18.8	379554	10.6	19.1	268506	10.7	20.2	229237	10.8	20.2	349887	10.8	20.4	449110	10.9	21.1
48031	10.5	18.6	58638	10.6	19.3	239639	10.7	19.9	199046	10.8	19.6	501267	10.8	20.5	495614	10.9	20.6
148825	10.5	20.3	59341	10.6	18.9	161897	10.7	20.1	540657	10.8	20.0	386608	10.8	19.8	197859	10.9	18.0
458775	10.5	19.1	295172	10.6	20.7	289262	10.7	20.3	110864	10.8	18.6	91446	10.8	18.2	267314	10.9	21.2
85813	10.5	19.5	180495	10.6	19.5	110626	10.7	20.5	277752	10.8	19.5	456909	10.8	21.8	497304	10.9	21.1
81584	10.5	18.2	281584	10.6	20.2	474435	10.7	20.6	297492	10.8	21.3	195394	10.8	18.9	106301	10.9	18.8
81634	10.5	17.2	114279	10.6	19.1	149730	10.7	18.9	146873	10.8	19.6	375354	10.8	21.6	242945	10.9	19.1
138771	10.5	19.9	536320	10.6	20.9	130154	10.7	19.0	514551	10.8	20.2	88237	10.8	18.5	299990	10.9	19.8
68922	10.5	17.8	369590	10.6	20.7	198569	10.7	20.2	253015	10.8	19.6	342643	10.8	20.2	326674	10.9	21.0
334030	10.5	21.0	157908	10.6	19.4	179027	10.7	19.6	20066	10.8	18.7	299681	10.8	20.7	176003	10.9	19.8
364224	10.5	19.3	155992	10.6	18.5	39419	10.7	19.3	204597	10.8	20.6	252932	10.8	19.0	340848	10.9	19.6
389198	10.5	21.0	526160	10.6	21.7	477207	10.7	20.5	236144	10.8	20.3	196605	10.8	19.3	293192	10.9	20.8
95504	10.5	19.2	124724	10.6	19.5	518802	10.7	20.4	434670	10.8	19.6	166422	10.9	18.2	353387	10.9	20.2
16776	10.5	17.6	312126	10.6	21.2	302467	10.7	21.1	423611	10							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
356645	10.9	20.8	304768	11.0	21.3	120124	11.1	19.2	289513	11.1	22.1	87861	11.2	19.0	364204	11.3	19.2
454163	10.9	21.0	130885	11.0	18.5	448193	11.1	20.8	303434	11.1	21.1	505181	11.2	20.4	71971	11.3	19.4
373593	10.9	20.5	287374	11.0	22.0	199289	11.1	19.3	299713	11.1	19.2	149932	11.2	19.8	489366	11.3	20.9
294753	10.9	20.8	259516	11.0	19.3	214541	11.1	19.0	381575	11.1	21.1	494776	11.2	21.6	152483	11.3	19.2
183576	10.9	18.9	526084	11.0	21.9	518965	11.1	20.0	393776	11.1	20.5	350665	11.2	21.6	269797	11.3	20.2
503238	10.9	20.9	190041	11.0	19.3	423751	11.1	20.8	500515	11.1	21.6	236677	11.2	20.0	260060	11.3	19.9
153451	10.9	18.7	475271	11.0	20.8	243575	11.1	20.3	505069	11.1	21.8	343181	11.2	19.4	72506	11.3	19.4
267371	10.9	20.9	34892	11.0	17.0	36996	11.1	19.0	272814	11.1	19.3	456835	11.2	20.5	211984	11.3	19.8
231309	10.9	19.5	451416	11.0	20.1	146234	11.1	18.9	362437	11.1	19.2	11911	11.2	16.5	528244	11.3	20.5
2960	10.9	16.5	544744	11.0	20.2	376746	11.1	19.6	419835	11.1	20.4	301988	11.2	17.9	219729	11.3	19.8
200717	10.9	19.7	497312	11.0	20.5	17680	11.1	18.2	535893	11.1	21.9	254725	11.2	19.6	130098	11.3	20.3
501135	10.9	20.8	158498	11.0	19.8	502406	11.1	20.7	176484	11.2	20.2	532438	11.2	21.3	177965	11.3	19.1
505619	10.9	20.5	433075	11.0	20.6	406447	11.1	21.7	305393	11.2	20.7	433975	11.2	20.6	109537	11.3	19.6
534398	10.9	21.5	301054	11.0	19.3	248465	11.1	19.1	390978	11.2	19.2	374412	11.2	20.2	233195	11.3	20.6
177577	10.9	19.5	69492	11.0	20.5	123997	11.1	18.5	19220	11.2	17.7	47782	11.2	18.7	4346	11.3	16.5
185477	10.9	19.5	108822	11.0	19.4	22119	11.1	17.2	50376	11.2	18.3	100249	11.2	20.8	286438	11.3	20.0
6245	10.9	15.4	297622	11.0	17.7	292569	11.1	20.3	532813	11.2	20.9	239566	11.2	19.7	470584	11.3	21.0
30500	10.9	18.9	302075	11.0	21.7	63920	11.1	19.8	517200	11.2	21.1	14797	11.2	16.9	369055	11.3	20.8
151640	10.9	18.5	302438	11.0	21.3	129304	11.1	17.9	170102	11.2	19.4	282550	11.2	20.5	62815	11.3	17.9
497054	10.9	20.2	427458	11.0	21.9	303606	11.1	19.5	222819	11.2	20.1	430516	11.2	21.4	1653	11.3	15.0
36481	10.9	18.2	103554	11.0	18.2	68507	11.1	19.6	425810	11.2	22.0	379285	11.2	20.5	331510	11.3	20.4
279646	10.9	19.9	138454	11.0	19.3	111756	11.1	19.4	348836	11.2	21.0	209577	11.2	20.8	194548	11.3	20.1
386505	10.9	20.6	231845	11.0	20.8	516446	11.1	20.5	180446	11.2	20.0	116479	11.2	19.8	406463	11.3	20.3
472933	10.9	20.3	304820	11.0	19.7	97271	11.1	19.1	120300	11.2	18.1	292142	11.2	21.7	115957	11.3	19.8
412956	10.9	19.7	80141	11.0	18.9	37992	11.1	17.6	53128	11.2	17.6	200838	11.2	21.2	10728	11.3	15.7
512569	10.9	20.9	394308	11.0	21.2	498846	11.1	20.8	166604	11.2	19.5	151702	11.2	18.6	363748	11.3	21.3
61982	10.9	18.6	205933	11.0	19.2	525304	11.1	20.9	375927	11.2	20.0	341555	11.2	20.6	206683	11.3	20.3
382628	10.9	20.5	329379	11.0	20.4	147950	11.1	19.3	501282	11.2	19.9	209563	11.2	20.0	402979	11.3	20.6
246946	10.9	18.8	166	11.0	13.6	310469	11.1	20.0	387368	11.2	20.7	435982	11.2	21.3	327314	11.3	19.9
530797	10.9	20.5	157188	11.0	18.3	459977	11.1	20.4	246115	11.2	19.6	296863	11.2	19.5	498683	11.3	21.3
327807	10.9	21.3	508470	11.0	20.6	75477	11.1	20.0	70516	11.2	18.1	172035	11.2	19.5	168962	11.3	20.6
286385	10.9	19.9	251822	11.0	18.9	491169	11.1	20.6	460178	11.2	20.9	530135	11.2	20.8	137671	11.3	19.8
152277	10.9	19.8	302420	11.0	19.9	29393	11.1	17.4	299956	11.2	20.2	208230	11.2	18.7	297928	11.3	21.7
68530	10.9	16.7	479055	11.0	21.6	507812	11.1	21.1	391721	11.2	20.4	93948	11.2	19.2	524601	11.3	20.8
375955	10.9	21.2	376696	11.0	20.6	143582	11.1	20.2	161665	11.2	19.0	507521	11.2	21.7	144414	11.3	18.3
474305	10.9	19.6	30538	11.0	17.5	216394	11.1	20.2	472825	11.2	20.2	98758	11.2	19.6	265686	11.3	20.3
505027	10.9	20.7	526494	11.0	21.3	417298	11.1	19.9	460727	11.2	19.5	474064	11.2	20.3	35644	11.3	18.5
219549	10.9	20.6	505497	11.0	19.5	304642	11.1	19.9	297838	11.2	21.6	312772	11.2	19.5	222305	11.3	20.2
530142	10.9	22.2	522224	11.0	20.8	420597	11.1	19.6	451227	11.2	21.5	429141	11.2	21.6	429605	11.3	19.8
143560	10.9	19.8	469586	11.0	20.2	491286	11.1	20.0	297085	11.2	18.8	111190	11.2	19.3	502332	11.3	21.1
115137	10.9	18.9	36036	11.0	18.9	124746	11.1	20.1	284656	11.2	21.3	197839	11.2	16.6	367330	11.3	21.1
218040	10.9	19.6	525018	11.0	21.0	59803	11.1	18.3	471377	11.2	20.5	100599	11.2	19.7	100589	11.3	17.9
151090	10.9	18.0	468289	11.0	19.0	279737	11.1	20.2	33363	11.2	16.6	378727	11.3	19.8	524381	11.3	20.2
496709	10.9	20.1	42665	11.0	18.0	500947	11.1	21.2	17436	11.2	18.9	260864	11.3	21.2	495210	11.3	20.7
430058	10.9	20.7	535042	11.0	19.8	388807	11.1	20.7	203443	11.2	20.4	192518	11.3	18.9	210225	11.3	20.5
478323	10.9	20.2	97976	11.0	17.9	284306	11.1	19.5	393271	11.2	20.4	62015	11.3	18.2	51574	11.3	17.0
286426	10.9	20.4	63576	11.0	18.7	392681	11.1	20.0	501035	11.2	20.7	67606	11.3	18.5	356293	11.3	19.1
50458	10.9	18.8	427838	11.1	19.6	413235	11.1	20.4	274789	11.2	20.0	195280	11.3	18.5	363869	11.3	20.0
180629	10.9	18.2	195545	11.1	19.2	518360	11.1	21.5	222848	11.2	20.9	490018	11.3	20.7	326454	11.3	20.1
142749	10.9	20.8	12468	11.1	16.0	389219	11.1	20.5	221712	11.2	21.5	522783	11.3	20.5	64658	11.3	18.2
215747	10.9	20.0	203911	11.1	19.3	246026	11.1	19.2	262620	11.2	20.4	138858	11.3	19.3	310080	11.3	18.9
64767	10.9	17.8	499832	11.1	21.2	527890	11.1	21.1	358399	11.2	20.8	11963	11.3	18.0	453247	11.3	20.1
34519	10.9	18.7	455613	11.1	21.3	437723	11.1	21.3	412208	11.2	20.8	178155	11.3	19.8	245192	11.3	19.7
234114	10.9	20.8	175959	11.1	19.1	269519	11.1	19.9	61646	11.2	18.6	303839	11.3	19.4	117885	11.3	19.8
328984	10.9	20.7	71626	11.1	18.0	390306	11.1	20.3	119698	11.2	20.2	430129	11.3	21.0	340335	11.3	20.9
396069	10.9	20.0	371199	11.1	21.0	540903	11.1	21.0	209151	11.2	19.7	187307	11.3	18.6	164360	11.3	20.1
345075	10.9	20.3	164115	11.1	19.7	232373	11.1	20.2	57970	11.2	19.0	374311	11.3	19.9	176474	11.3	19.8
279144	10.9	20.2	531518	11.1	21.7	157142	11.1	18.8	527884	11.2	22.2	267370	11.3	20.9	21994	11.3	17.1
138750	10.9	18.9	259232	11.1	21.0	83736	11.1	19.3	160087	11.2	18.2	335611	11.3	19.8	499180	11.3	20.8
470255	10.9	20.9	450988	11.1	21.5	242429	11.1	19.4	542882	11.2	20.3	466349	11.3	21.0	409139	11.3	20.2
447452	10.9	21.1	52705	11.1	18.0	501536	11.1	22.2	327294	11.2	20.5	497043	11.3	20.5	139843	11.3	19.4
96999	10.9	19.6	352549	11.1	20.3	286301	11.1	20.0	93079	11.2	19.0	304630	11.3	21.2	153222	11.3	20.2
336403	10.9	20.5	506890	11.1	21.4	434027	11.1	20.6	202447	11.2	18.4	439142	11.3	20.4	416177	11.3	20.0
404152	10.9	20.4	238768	11.1	19.9	393827	11.1	21.0	470034	11.2	20.9	55546	11.3	16.5	256167	11.3	21.3
355186	10.9	20.7	109235	11.1	18.6	5263	11.1	16.5	329598	11.2	21.1	427659	11.3	20.5	198958	11.3	18.8
353497	10.9	20.4	543800	11.1	19.9	519291	11.1	21.6	466662	11.2	21.3	505166	11.3	20.2	538843	11.3	21.2
506557	10.9	20.9	433480	11.1	20.8	540658	11.1	20.9	450562	11.2	21.1	2107	11.3	15.3	533888	11.3	21.4
347727	10.9	19.2	67891	11.1	18.6	58455	11.1	17.4	37562	11.2	17.4	218759	11.3	18.8	20684	11.3	18.2
6548	10.9	16.1	206955	11.1	19.7	241814	11.1	19.7	248386								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
422272	11.3	19.5	111690	11.4	19.3	246245	11.5	18.6	222722	11.6	20.8	241866	11.7	19.9	285019	11.7	21.9
57405	11.4	20.0	379706	11.4	20.8	302236	11.5	20.3	219761	11.6	20.2	120972	11.7	18.7	174543	11.7	20.4
96094	11.4	19.8	26393	11.4	18.7	16810	11.5	18.5	23196	11.6	18.3	223652	11.7	19.5	103465	11.7	19.1
526452	11.4	19.6	539147	11.4	20.7	505328	11.5	20.4	381534	11.6	20.0	270553	11.7	19.8	391401	11.7	20.1
352550	11.4	20.2	242722	11.4	20.8	24814	11.5	17.6	209387	11.6	20.7	43386	11.7	19.4	527388	11.7	21.1
387594	11.4	20.1	472120	11.4	20.5	61758	11.5	18.1	522833	11.6	21.7	102775	11.7	18.4	359820	11.7	19.6
343020	11.4	20.6	358021	11.4	20.6	526078	11.5	20.6	297770	11.6	18.6	5004	11.7	17.3	199217	11.7	19.9
428015	11.4	20.8	496952	11.4	21.3	303432	11.5	20.1	53648	11.6	17.5	150962	11.7	21.0	296978	11.7	20.0
392478	11.4	20.6	43148	11.4	17.7	2311	11.5	15.4	397204	11.6	19.3	275587	11.7	19.9	265346	11.7	19.6
475718	11.4	21.3	505588	11.4	20.5	103136	11.5	18.8	267364	11.6	20.4	96881	11.7	18.6	271811	11.7	19.4
160312	11.4	20.8	238940	11.4	19.2	502567	11.5	21.2	42541	11.6	18.8	61517	11.7	18.9	168333	11.7	19.7
170302	11.4	18.5	505402	11.4	19.6	371758	11.5	19.8	344289	11.6	19.9	489087	11.7	18.6	431900	11.7	20.6
482273	11.4	19.4	46011	11.4	18.9	180041	11.5	20.2	432826	11.6	21.1	2406	11.7	15.2	474029	11.7	20.1
227217	11.4	20.6	11693	11.4	16.6	352626	11.5	21.5	178780	11.6	19.7	212167	11.7	20.3	162508	11.7	19.3
406341	11.4	20.8	375926	11.4	21.2	238557	11.5	19.9	104096	11.6	18.0	114675	11.7	19.5	184725	11.7	19.3
19632	11.4	17.6	473270	11.4	21.2	54314	11.5	19.0	497394	11.6	20.8	328241	11.7	19.7	101917	11.7	18.7
261375	11.4	20.8	69122	11.4	19.4	319846	11.5	21.2	524245	11.6	19.7	55338	11.7	19.1	489347	11.7	21.9
388381	11.4	21.6	341289	11.4	20.6	530738	11.5	20.4	174723	11.6	20.7	133862	11.7	19.3	31214	11.7	19.2
405494	11.4	21.7	277936	11.4	19.5	377388	11.5	20.6	56875	11.6	18.8	228364	11.7	20.0	177886	11.7	19.4
540557	11.4	21.2	473520	11.4	21.4	303993	11.5	19.1	485220	11.6	20.0	279595	11.7	22.5	505288	11.7	20.9
345259	11.4	19.7	217038	11.4	18.9	185428	11.5	19.7	212686	11.6	19.5	320821	11.7	18.8	227572	11.7	20.7
190444	11.4	19.5	499330	11.4	20.3	219714	11.5	20.8	118257	11.6	20.1	239251	11.7	19.8	352511	11.7	20.3
83725	11.4	19.1	110022	11.4	18.6	173897	11.5	20.9	417783	11.6	21.1	238360	11.7	19.9	138862	11.8	20.4
124749	11.4	18.7	102296	11.4	19.5	106231	11.5	19.9	376375	11.6	19.9	413879	11.7	21.5	256942	11.8	20.4
172681	11.4	19.6	522602	11.4	19.3	266292	11.5	19.7	29348	11.6	18.4	299883	11.7	20.6	371995	11.8	20.5
163356	11.4	18.8	442446	11.5	21.0	188546	11.5	19.4	130742	11.6	18.7	499370	11.7	20.0	7219	11.8	18.3
238916	11.4	20.6	65505	11.5	17.8	82375	11.5	17.9	426466	11.6	18.5	39455	11.7	18.2	442302	11.8	21.0
409634	11.4	21.3	221122	11.5	19.5	313112	11.5	19.3	170237	11.6	18.3	27799	11.7	18.1	239801	11.8	20.6
437469	11.4	20.6	353266	11.5	20.3	524791	11.5	21.1	375891	11.6	18.9	236805	11.7	20.0	500258	11.8	20.8
188063	11.4	18.7	476333	11.5	21.7	383972	11.5	20.5	131863	11.6	19.9	43434	11.7	18.6	278016	11.8	20.6
100665	11.4	19.9	286026	11.5	19.4	176411	11.5	21.7	386607	11.6	20.5	348413	11.7	20.1	198934	11.8	20.5
430394	11.4	21.5	472423	11.5	21.0	316766	11.5	20.2	526979	11.6	20.0	302001	11.7	19.2	289035	11.8	20.7
451044	11.4	20.8	222736	11.5	20.4	63847	11.5	19.8	181583	11.6	18.6	539964	11.7	19.9	91499	11.8	19.4
502748	11.4	20.7	450795	11.5	22.0	32574	11.5	19.2	42282	11.6	17.5	535335	11.7	20.7	200998	11.8	20.8
428885	11.4	21.1	323118	11.5	19.6	131584	11.5	18.8	361158	11.6	19.4	175094	11.7	19.4	408432	11.8	21.4
389274	11.4	21.1	429848	11.5	20.6	284772	11.5	19.6	166203	11.6	18.1	504651	11.7	20.8	465684	11.8	20.3
346146	11.4	20.9	382771	11.5	20.2	486958	11.5	27.5	239540	11.6	20.6	503667	11.7	21.3	34093	11.8	17.7
217073	11.4	19.6	44620	11.5	17.7	122203	11.5	17.3	377404	11.6	21.3	72924	11.7	18.2	244983	11.8	21.2
247967	11.4	19.6	422825	11.5	21.1	20051	11.5	19.6	7398	11.6	16.9	16928	11.7	17.6	18145	11.8	16.9
172459	11.4	18.9	406441	11.5	18.7	120071	11.5	19.7	13213	11.6	17.3	374121	11.7	21.8	105989	11.8	20.2
249493	11.4	19.9	222824	11.5	20.5	540748	11.5	22.3	128519	11.6	18.5	299816	11.7	22.0	475692	11.8	21.3
67311	11.4	18.0	246973	11.5	19.8	506883	11.5	21.7	155147	11.6	19.4	248572	11.7	20.6	88535	11.8	19.4
168936	11.4	19.6	89629	11.5	18.8	69275	11.5	18.1	170965	11.6	20.4	239939	11.7	19.0	186557	11.8	20.6
499899	11.4	20.5	273062	11.5	19.7	217861	11.5	18.5	238090	11.6	19.0	403841	11.7	20.9	53875	11.8	18.1
61332	11.4	17.4	315302	11.5	19.9	372925	11.5	20.8	31006	11.6	17.6	437560	11.7	21.7	111678	11.8	18.5
76661	11.4	18.0	500313	11.5	19.8	69115	11.5	20.6	156134	11.6	21.5	500676	11.7	22.1	530156	11.8	21.4
469175	11.4	21.1	435339	11.5	20.7	304432	11.6	20.2	375957	11.6	21.2	375878	11.7	21.0	387400	11.8	21.2
430162	11.4	20.2	65772	11.5	19.8	124870	11.6	19.8	493848	11.6	20.1	153746	11.7	20.6	313546	11.8	20.2
528658	11.4	20.9	352078	11.5	20.5	474004	11.6	19.0	66886	11.6	18.2	502953	11.7	21.0	200161	11.8	19.9
535085	11.4	20.7	437726	11.5	20.7	428029	11.6	21.6	492344	11.6	18.6	464775	11.7	21.3	465753	11.8	19.7
388711	11.4	20.9	83687	11.5	19.7	221197	11.6	19.1	289501	11.6	19.9	370769	11.7	20.2	289138	11.8	20.9
246790	11.4	20.5	199055	11.5	20.4	35564	11.6	18.3	462857	11.6	21.2	224863	11.7	19.4	98121	11.8	18.1
384056	11.4	20.1	336217	11.5	19.6	141287	11.6	19.4	62789	11.6	17.8	216513	11.7	21.0	295698	11.8	20.2
229251	11.4	18.4	204121	11.5	19.4	243105	11.6	18.5	93956	11.6	19.0	257604	11.7	19.6	389708	11.8	21.0
232960	11.4	19.4	343644	11.5	19.6	522708	11.6	20.6	55274	11.6	19.6	302019	11.7	20.5	205571	11.8	20.0
119728	11.4	18.7	437306	11.5	19.1	382876	11.6	19.7	341494	11.6	19.6	302201	11.7	20.4	522579	11.8	21.0
425501	11.4	19.9	519659	11.5	20.1	469342	11.6	20.0	122468	11.6	18.6	410774	11.7	20.0	85075	11.8	18.6
416772	11.4	21.1	540739	11.5	21.0	364627	11.6	20.3	176268	11.6	20.1	299731	11.7	20.6	172137	11.8	18.3
153567	11.4	20.2	366244	11.5	21.6	248384	11.6	20.1	498037	11.6	20.8	7339	11.7	17.7	499948	11.8	20.5
147951	11.4	19.7	94015	11.5	17.8	316075	11.6	19.4	209487	11.6	19.4	43104	11.7	17.5	403013	11.8	20.7
429234	11.4	20.7	459350	11.5	21.2	377916	11.6	20.7	30590	11.6	18.8	513009	11.7	21.3	518256	11.8	20.2
269196	11.4	18.5	87863	11.5	18.8	267365	11.6	21.3	81886	11.6	18.3	67392	11.7	17.9	346729	11.8	20.9
341527	11.4	19.9	524351	11.5	20.0	101762	11.6	18.8	504721	11.6	20.9	91135	11.7	18.4	368695	11.8	21.5
39397	11.4	18.1	497919	11.5	21.2	34943	11.6	19.0	522768	11.6	20.4	417526	11.7	22.0	286089	11.8	19.6
432564	11.4	20.4	386581	11.5	21.2	235224	11.6	19.8	135505	11.6	19.4	91481	11.7	19.3	219465	11.8	19.4
138107	11.4	19.9	332824	11.5	20.0	311250	11.6	20.7	347316	11.6	21.1	298835	11.7	19.3	221722	11.8	21.2
272707	11.4	19.9	174550	11.5	19.5	396142	11.6	20.1	415517	11.6	21.5	240850	11.7	19.5	455047	11.8	21.4
62693	11.4	19.4	301326	11.5	20.3	530970	11.6	21.0	211953	11.6	20.7	91418	11.7	18.0	153641	11.8	20.2
65822	11.4	19.3	279629	11.5	20.0	289679	11.6	20.9	153504								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
307599	11.8	18.6	16048	11.9	17.6	134659	11.9	18.2	503092	12.0	21.0	146171	12.1	19.2	19174	12.2	18.1
212591	11.8	20.4	2078	11.9	15.3	489636	11.9	20.1	94793	12.0	18.9	526980	12.1	20.6	328759	12.2	19.2
243413	11.8	19.3	310939	11.9	21.4	518172	11.9	20.6	489109	12.0	21.2	105648	12.1	19.6	449118	12.2	21.1
427465	11.8	21.2	223627	11.9	18.7	410289	11.9	20.7	281422	12.0	20.2	533836	12.1	20.5	143042	12.2	19.5
88329	11.8	18.5	501184	11.9	21.2	232497	11.9	18.7	301479	12.0	20.5	301118	12.1	21.1	241097	12.2	25.0
449583	11.8	20.1	83459	11.9	18.6	475076	11.9	20.8	539151	12.0	21.5	428839	12.1	21.0	353598	12.2	20.7
255583	11.8	19.0	396717	11.9	20.8	308570	11.9	20.8	506376	12.0	21.6	368794	12.1	20.5	533293	12.2	21.0
293380	11.8	21.3	248491	11.9	20.2	31424	11.9	17.7	61953	12.0	18.8	396690	12.1	20.8	526946	12.2	20.0
91923	11.8	18.4	504227	11.9	21.5	57221	11.9	18.1	213411	12.0	20.7	106167	12.1	19.6	56911	12.2	18.4
221174	11.8	19.2	292258	11.9	21.1	15806	11.9	17.2	417603	12.0	22.0	297660	12.1	18.4	189007	12.2	19.6
248450	11.8	19.4	300990	11.9	20.9	289813	11.9	20.9	96994	12.1	18.5	207055	12.1	18.4	234518	12.2	19.1
213934	11.8	20.1	141209	11.9	19.5	369565	11.9	20.5	126959	12.1	20.0	16345	12.1	18.7	209392	12.2	20.3
513052	11.8	21.0	76003	11.9	19.3	74027	11.9	17.5	239538	12.1	20.3	540679	12.1	20.8	318648	12.2	20.4
168003	11.8	20.3	458794	11.9	22.0	95677	11.9	20.0	141490	12.1	19.3	174198	12.1	18.9	414270	12.2	20.4
534618	11.8	21.0	388374	11.9	20.3	475789	11.9	20.2	201609	12.1	19.0	34946	12.1	18.0	169104	12.2	19.2
540736	11.8	21.3	99419	11.9	18.9	516925	11.9	20.7	198134	12.1	20.3	126692	12.1	19.3	191838	12.2	19.5
383878	11.8	20.9	317953	11.9	21.0	332704	11.9	20.8	215734	12.1	20.2	191758	12.1	19.8	428777	12.2	21.6
122396	11.8	19.6	19056	11.9	18.5	91298	11.9	18.6	383896	12.1	20.5	275103	12.1	20.4	35018	12.2	18.8
527814	11.8	21.1	466614	11.9	20.2	295162	11.9	20.7	95666	12.1	19.4	413828	12.1	20.4	245940	12.2	20.1
540627	11.8	22.3	151945	11.9	17.7	420139	11.9	20.8	79202	12.1	17.4	272841	12.1	20.6	238815	12.2	19.5
183760	11.8	20.2	521289	11.9	20.8	171988	11.9	19.1	85406	12.1	19.4	363218	12.1	21.1	38252	12.2	19.7
354804	11.8	20.9	197048	11.9	20.0	149624	11.9	19.3	98503	12.1	19.6	472206	12.1	20.4	128470	12.2	18.7
274986	11.8	19.9	274592	11.9	19.9	406862	11.9	20.9	519286	12.1	21.0	279251	12.1	21.3	472387	12.2	20.3
424806	11.8	20.2	91585	11.9	18.9	146941	11.9	20.7	544868	12.1	20.8	294975	12.1	20.4	501266	12.2	21.2
472162	11.8	19.9	131282	11.9	19.7	304113	11.9	19.3	400779	12.1	19.7	431612	12.1	20.4	531796	12.2	20.3
524387	11.8	19.9	111625	11.9	20.2	439336	11.9	20.2	304698	12.1	20.3	144849	12.1	19.1	374407	12.2	20.3
474841	11.8	19.8	466802	11.9	20.2	56999	11.9	19.2	442433	12.1	20.1	270313	12.1	21.8	141050	12.2	20.2
35602	11.8	18.4	37379	11.9	19.0	376966	11.9	20.1	87053	12.1	17.3	382791	12.1	21.2	143154	12.2	19.5
506264	11.8	20.0	146246	11.9	20.2	327271	11.9	19.6	5832	12.1	15.6	54510	12.1	17.7	103867	12.2	19.6
416117	11.8	20.3	212015	11.9	20.8	534295	11.9	19.9	230848	12.1	20.9	394371	12.1	19.8	294208	12.2	20.1
124683	11.8	19.8	303296	11.9	19.2	143417	11.9	19.9	169018	12.1	20.4	430850	12.1	19.6	15644	12.2	18.8
192564	11.8	19.2	20530	11.9	17.9	399181	11.9	19.7	298927	12.1	20.7	176416	12.1	20.7	377782	12.2	20.4
368250	11.8	19.6	143620	11.9	19.2	148550	11.9	19.5	275466	12.1	19.2	217093	12.2	21.2	384188	12.2	20.7
437828	11.8	21.1	313741	11.9	21.2	439168	11.9	20.3	272710	12.1	21.4	182192	12.2	20.4	82420	12.2	18.1
20594	11.8	18.2	209495	11.9	19.6	496664	11.9	20.7	410471	12.1	21.1	480787	12.2	19.7	291224	12.2	19.7
341357	11.8	20.9	182812	11.9	19.1	87726	11.9	18.8	499893	12.1	21.2	203506	12.2	19.7	388468	12.2	18.3
334911	11.8	19.2	48070	11.9	16.8	362475	11.9	19.7	380554	12.1	20.0	212295	12.2	19.3	402927	12.2	21.1
468230	11.8	20.8	362729	11.9	20.5	461843	12.0	21.1	271678	12.1	19.2	117216	12.2	18.9	11560	12.2	17.6
129194	11.8	19.7	501021	11.9	20.8	356712	12.0	20.9	424680	12.1	20.3	232643	12.2	19.3	253290	12.2	20.5
179425	11.8	21.0	434402	11.9	20.6	18901	12.0	17.1	173877	12.1	20.7	10908	12.2	17.6	66383	12.2	17.7
233305	11.8	20.0	545134	11.9	20.7	6999	12.0	17.5	527835	12.1	22.3	522771	12.2	20.3	506221	12.2	19.5
538646	11.8	20.6	285347	11.9	19.6	432367	12.0	21.7	82851	12.1	19.5	528316	12.2	21.1	70743	12.2	19.2
51109	11.8	19.6	521000	11.9	20.8	411877	12.0	20.9	544384	12.1	19.4	404196	12.2	20.6	310492	12.2	19.9
508202	11.8	21.2	12593	11.9	17.1	455152	12.0	21.0	403276	12.1	20.5	65600	12.2	18.7	349464	12.2	20.9
509748	11.8	20.4	132087	11.9	19.7	332335	12.0	21.3	284748	12.1	20.6	336479	12.2	19.9	327885	12.2	20.1
313052	11.8	17.8	6093	11.9	16.0	525080	12.0	19.5	136712	12.1	19.5	10541	12.2	17.3	111903	12.2	18.8
286449	11.8	21.0	19641	11.9	16.9	131916	12.0	19.0	106197	12.1	19.1	208484	12.2	19.5	269111	12.2	19.9
30612	11.9	18.4	109461	11.9	18.5	296157	12.0	20.1	395713	12.1	21.1	250886	12.2	19.9	410237	12.2	19.9
498495	11.9	21.8	542497	11.9	21.3	510357	12.0	21.7	371042	12.1	20.7	309280	12.2	19.5	386228	12.2	20.0
107771	11.9	20.3	500219	11.9	19.1	53896	12.0	19.0	160796	12.1	20.5	63536	12.2	19.6	184305	12.2	19.7
143289	11.9	20.1	531875	11.9	20.6	231007	12.0	18.3	248504	12.1	19.0	220338	12.2	18.7	499240	12.2	21.6
203529	11.9	20.3	117750	11.9	20.7	154654	12.0	19.8	196502	12.1	17.7	493676	12.2	21.9	479155	12.2	22.0
17835	11.9	17.9	342998	11.9	20.6	32762	12.0	19.9	499428	12.1	20.8	210211	12.2	20.0	330978	12.2	19.9
140507	11.9	19.5	539324	11.9	20.5	118814	12.0	19.7	140816	12.1	20.0	515225	12.2	22.4	424062	12.2	20.9
303467	11.9	21.4	506754	11.9	22.6	385163	12.0	20.9	18741	12.1	17.2	100597	12.2	18.5	256520	12.2	19.3
524038	11.9	20.2	385064	11.9	20.4	502283	12.0	21.2	170847	12.1	19.2	45207	12.2	19.6	427950	12.2	21.8
391718	11.9	20.9	87123	11.9	18.6	433135	12.0	21.1	151637	12.1	19.5	224396	12.2	19.2	238094	12.2	19.8
363780	11.9	21.4	82181	11.9	19.5	531900	12.0	21.1	64389	12.1	18.9	480546	12.2	20.7	131993	12.2	19.2
362686	11.9	20.5	15096	11.9	17.0	256189	12.0	20.1	491697	12.1	21.5	522167	12.2	21.8	364681	12.2	20.6
52644	11.9	19.0	523033	11.9	21.3	330380	12.0	20.6	489640	12.1	21.8	373326	12.2	19.9	215047	12.2	19.5
53136	11.9	19.0	156562	11.9	19.0	331429	12.0	19.8	197118	12.1	20.5	500416	12.2	21.0	117072	12.2	19.2
106200	11.9	18.2	413187	11.9	19.2	181228	12.0	19.5	523509	12.1	20.6	27492	12.2	17.7	91996	12.2	19.2
431985	11.9	21.3	169607	11.9	19.8	289801	12.0	20.2	502930	12.1	21.2	148481	12.2	18.0	58529	12.2	18.1
244115	11.9	16.8	333571	11.9	20.1	511608	12.0	20.8	313413	12.1	19.7	404498	12.2	20.0	254051	12.3	20.9
332342	11.9	20.1	396000	11.9	20.7	380446	12.0	20.6	231556	12.1	20.2	289253	12.2	21.1	218362	12.3	19.3
46367	11.9	18.0	399529	11.9	19.9	180028	12.0	18.6	349880	12.1	20.1	87481	12.2	19.1	159541	12.3	20.3
87193	11.9	17.9	472903	11.9	20.6	533970	12.0	19.8	497458	12.1	20.5	297741	12.2	20.5	446917	12.3	19.5
76734	11.9	18.9	231197	11.9	19.8	180545	12.0	19.5	32580	12.1	18.7	341335	12.2	20.6	353094	12.3	20.4
153962	11.9	20.3	405269	11.9	21.7	95737	12.0	18.7	522967</								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
425197	12.3	19.2	454924	12.4	20.4	147349	12.4	20.6	502588	12.5	20.4	527097	12.6	21.4	474140	12.7	20.9
55142	12.3	17.2	502482	12.4	20.4	287557	12.4	18.5	419433	12.5	20.3	531049	12.6	21.4	10515	12.7	18.4
60649	12.3	18.5	338247	12.4	19.8	324989	12.4	22.3	341175	12.5	20.4	325109	12.6	21.8	120524	12.7	19.7
218613	12.3	19.4	537824	12.4	20.0	456769	12.4	19.8	57895	12.5	18.7	238870	12.6	20.5	239910	12.7	18.8
68830	12.3	18.8	542309	12.4	20.8	344606	12.4	21.7	299900	12.5	20.2	349877	12.6	20.3	351870	12.7	19.7
526763	12.3	21.1	112167	12.4	20.6	508497	12.4	21.0	412916	12.5	20.6	496729	12.6	20.8	437887	12.7	21.1
368711	12.3	20.9	235450	12.4	19.8	154385	12.4	18.7	17836	12.5	18.6	131221	12.6	20.1	167432	12.7	20.3
33649	12.3	17.3	410416	12.4	21.6	396247	12.4	20.5	163121	12.5	19.6	98545	12.6	19.8	17367	12.7	18.3
211558	12.3	20.2	351901	12.4	21.8	402837	12.4	19.4	348652	12.5	21.8	333865	12.6	20.2	66793	12.7	19.4
230936	12.3	20.1	286126	12.4	20.6	410420	12.4	22.0	300077	12.5	20.5	424664	12.6	20.9	55824	12.7	19.7
146819	12.3	19.5	520138	12.4	20.7	235745	12.5	20.5	34033	12.5	17.6	429133	12.6	21.3	74256	12.7	19.2
346824	12.3	20.6	522725	12.4	20.6	213369	12.5	19.8	417717	12.5	21.4	275569	12.6	20.7	377456	12.7	20.9
414167	12.3	21.6	347759	12.4	21.4	225597	12.5	19.5	128820	12.5	19.5	366834	12.6	19.0	275251	12.7	19.4
43727	12.3	17.5	29266	12.4	18.0	327844	12.5	21.2	362425	12.5	19.5	537223	12.6	21.0	394393	12.7	20.2
101261	12.3	18.7	264492	12.4	19.5	406912	12.5	20.8	64308	12.5	18.0	521308	12.6	20.9	301097	12.7	19.8
74589	12.3	17.1	496882	12.4	21.2	398817	12.5	20.7	264622	12.5	20.8	246880	12.6	19.7	182672	12.7	21.4
205875	12.3	19.9	54104	12.4	18.9	141107	12.5	19.9	148582	12.5	19.9	498752	12.6	21.1	346427	12.7	20.6
493557	12.3	20.4	153482	12.4	19.6	350626	12.5	20.3	436702	12.5	19.2	53401	12.6	17.9	247552	12.7	18.2
455283	12.3	21.3	331778	12.4	19.2	103057	12.5	18.5	384064	12.5	20.7	473243	12.6	19.7	285724	12.7	19.6
11699	12.3	15.9	141915	12.4	19.6	160115	12.5	17.9	522719	12.5	21.0	448284	12.6	22.0	187214	12.7	20.8
151021	12.3	19.9	210139	12.4	19.2	55452	12.5	18.4	328965	12.5	20.6	317117	12.6	20.4	236948	12.7	19.8
260767	12.3	19.2	529426	12.4	21.4	505603	12.5	20.3	530914	12.5	21.1	95251	12.6	19.5	350811	12.7	22.2
69002	12.3	19.3	19904	12.4	18.5	527409	12.5	19.8	210158	12.5	20.7	176032	12.6	19.3	179389	12.7	20.7
288299	12.3	19.2	297491	12.4	19.5	392897	12.5	20.6	71037	12.5	18.7	94915	12.6	19.2	310746	12.7	20.4
26271	12.3	17.1	300897	12.4	19.5	200642	12.5	19.6	182873	12.5	19.0	137054	12.6	20.2	151748	12.7	20.9
214422	12.3	20.3	342904	12.4	20.3	503645	12.5	20.4	179416	12.5	20.1	41980	12.6	18.2	463251	12.7	20.5
348995	12.3	20.3	65500	12.4	19.1	429659	12.5	19.5	473050	12.5	21.3	300065	12.6	20.7	251343	12.7	19.3
302142	12.3	20.4	195078	12.4	18.7	110660	12.5	18.7	264716	12.5	20.7	380117	12.6	20.7	54100	12.7	18.0
203527	12.3	20.3	211482	12.4	19.5	382788	12.5	21.2	435217	12.5	21.4	483322	12.6	19.4	295931	12.7	20.1
87779	12.3	18.6	524719	12.4	20.1	488552	12.5	20.7	336254	12.5	20.7	390616	12.6	20.8	428039	12.7	20.6
106485	12.3	18.6	313056	12.4	20.3	299815	12.5	20.5	502764	12.5	21.2	330494	12.6	20.4	350785	12.7	19.9
410452	12.3	20.5	376155	12.4	19.8	36082	12.5	18.8	278010	12.5	19.9	140244	12.6	20.2	505236	12.7	21.1
58679	12.3	19.4	287635	12.4	19.8	210684	12.5	19.2	286291	12.5	20.2	329257	12.6	19.4	227633	12.7	20.0
179431	12.3	21.4	128415	12.4	18.0	34318	12.5	19.5	264682	12.5	20.8	178967	12.6	18.6	470200	12.7	20.1
527995	12.3	21.3	390201	12.4	21.1	270405	12.5	21.1	76147	12.5	19.2	406859	12.6	21.4	209491	12.7	19.7
213615	12.3	18.9	442968	12.4	20.5	512431	12.5	21.4	537904	12.5	21.7	270522	12.6	19.7	282805	12.7	19.9
434287	12.3	21.0	462259	12.4	20.4	353575	12.5	20.7	356945	12.5	19.8	536554	12.6	20.6	404654	12.7	21.4
346070	12.3	20.6	349048	12.4	21.4	320810	12.5	20.4	470005	12.5	19.6	471902	12.6	21.7	138755	12.7	19.2
24192	12.3	18.1	219814	12.4	20.9	102553	12.5	20.3	110779	12.5	19.6	215572	12.6	20.7	527313	12.7	20.8
64666	12.3	19.0	508707	12.4	20.1	520105	12.5	21.5	181948	12.6	20.5	90535	12.6	18.9	463096	12.7	21.7
449649	12.3	20.1	200306	12.4	20.1	457068	12.5	20.9	217955	12.6	19.8	231352	12.6	19.8	540047	12.7	20.0
227378	12.3	19.2	133878	12.4	18.7	331805	12.5	19.7	58906	12.6	18.0	459191	12.6	20.6	388029	12.7	20.3
488830	12.3	20.8	187387	12.4	20.3	209427	12.5	19.3	297641	12.6	20.2	64298	12.6	19.2	134341	12.7	17.2
157701	12.3	18.9	127017	12.4	19.3	454090	12.5	20.9	42788	12.6	17.0	490655	12.6	20.2	388829	12.7	19.5
221669	12.3	19.5	19041	12.4	19.1	38467	12.5	17.9	523982	12.6	20.8	539533	12.6	20.6	304769	12.7	21.4
267419	12.3	20.7	24	12.4	12.0	384927	12.5	21.0	286447	12.6	20.0	299939	12.6	20.6	49153	12.7	19.0
156501	12.3	19.3	224344	12.4	20.1	312924	12.5	20.0	111116	12.6	19.2	245973	12.6	20.5	350692	12.7	19.9
419890	12.3	21.4	213792	12.4	18.8	540510	12.5	20.6	274318	12.6	19.5	529432	12.6	21.5	372521	12.7	20.8
543826	12.3	20.4	522829	12.4	20.9	2654	12.5	16.8	439428	12.6	21.2	199446	12.6	20.1	151705	12.7	18.9
381476	12.3	21.1	538739	12.4	21.6	146178	12.5	19.5	73912	12.6	19.2	138263	12.6	19.4	202438	12.7	20.2
144486	12.3	19.7	141284	12.4	19.6	495710	12.5	20.6	500941	12.6	20.0	426752	12.6	20.7	537806	12.7	20.2
165506	12.3	20.3	266299	12.4	21.0	507320	12.5	21.0	22192	12.6	18.3	528340	12.6	22.1	391277	12.7	22.1
495914	12.3	20.6	204075	12.4	19.8	427425	12.5	20.5	365135	12.6	21.2	80093	12.6	18.1	300898	12.7	20.3
240448	12.3	21.2	106785	12.4	18.8	480410	12.5	19.5	469287	12.6	21.4	308166	12.6	20.3	537845	12.7	21.0
195536	12.3	18.9	499708	12.4	21.7	334750	12.5	19.6	368687	12.6	19.8	339034	12.7	20.3	508114	12.7	20.2
394676	12.3	22.1	469893	12.4	21.0	370172	12.5	20.8	460070	12.6	19.9	106366	12.7	20.6	246468	12.7	20.5
90063	12.3	19.8	198688	12.4	20.4	522584	12.5	20.9	161838	12.6	19.6	56501	12.7	18.7	434734	12.7	23.1
37065	12.3	17.7	472200	12.4	21.1	426205	12.5	20.6	164528	12.6	19.0	454281	12.7	19.4	219146	12.7	18.9
525871	12.3	20.4	178644	12.4	18.9	289141	12.5	20.7	372548	12.6	19.0	213243	12.7	20.9	176721	12.7	19.7
166371	12.3	18.8	295220	12.4	19.9	141075	12.5	19.5	72677	12.6	20.1	400785	12.7	19.5	295211	12.7	20.5
77300	12.3	19.4	300025	12.4	21.2	254537	12.5	19.3	528852	12.6	20.9	111763	12.7	18.9	523834	12.7	20.7
382399	12.3	20.4	526656	12.4	22.5	383953	12.5	20.5	305488	12.6	20.8	83259	12.7	18.3	338424	12.7	21.5
457501	12.3	21.5	452780	12.4	21.4	506896	12.5	20.7	31717	12.6	17.3	192143	12.7	20.6	286018	12.7	20.5
241371	12.3	20.8	362038	12.4	20.6	215455	12.5	19.1	463302	12.6	20.2	151206	12.7	19.8	383661	12.7	20.9
52846	12.3	18.3	59664	12.4	17.8	194080	12.5	20.6	278654	12.6	19.9	200625	12.7	19.4	463132	12.7	21.9
172403	12.3	19.7	435987	12.4	20.8	353903	12.5	20.1	276419	12.6	21.3	504343	12.7	21.0	130686	12.7	18.6
468825	12.3	18.6	403001	12.4	20.0	199337	12.5	19.5	332826	12.6	20.6	19785	12.7	18.0	51457	12.7	18.6
435960	12.3	20.9	79494	12.4	19.1	433229	12.5	20.3	36220	12.6	18.1	198430	12.7	19.3	433907	12.7	20.0
426733	12.3	20.3	11587	12.4	17.2	211602	12.5	19.9									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
150933	12.7	19.8	457605	12.8	20.2	474772	12.9	21.4	138028	13.0	18.7	466878	13.1	20.3	494795	13.1	21.3
229221	12.7	20.4	393159	12.8	20.3	524577	12.9	22.4	302361	13.0	20.3	192792	13.1	20.1	417090	13.1	21.5
44764	12.7	17.6	409409	12.8	21.5	158426	12.9	20.0	321793	13.0	19.3	478309	13.1	20.7	502847	13.1	20.2
172769	12.8	20.2	152340	12.8	19.7	164538	12.9	19.9	120034	13.0	18.1	434299	13.1	21.2	380579	13.1	20.2
3189	12.8	16.9	366680	12.8	20.9	224518	12.9	19.4	351719	13.0	20.6	426407	13.1	19.5	240777	13.1	19.6
505046	12.8	21.2	503105	12.8	20.0	98389	12.9	19.6	258324	13.0	21.4	348910	13.1	19.8	470089	13.1	21.8
253538	12.8	19.3	132221	12.8	18.5	352612	12.9	21.2	174014	13.0	20.7	321446	13.1	20.0	126290	13.1	20.9
192785	12.8	20.3	269786	12.8	20.4	286351	12.9	20.3	259593	13.0	20.2	306070	13.1	19.9	433550	13.1	21.4
363247	12.8	19.5	506176	12.8	19.1	406482	12.9	20.2	204299	13.0	19.1	102961	13.1	19.3	378334	13.1	20.0
445893	12.8	21.2	124680	12.9	18.6	435575	12.9	21.0	175577	13.0	19.8	126397	13.1	19.0	535664	13.1	22.0
91454	12.8	17.9	430406	12.9	20.9	410362	12.9	20.3	529560	13.0	22.7	436670	13.1	19.9	541818	13.1	19.6
159674	12.8	19.2	396498	12.9	21.9	460788	12.9	20.3	315300	13.0	21.0	378794	13.1	20.8	221072	13.1	19.1
89786	12.8	19.8	1245	12.9	13.8	350654	12.9	20.9	115418	13.0	19.6	110135	13.1	19.1	236741	13.1	19.7
505926	12.8	19.3	460069	12.9	21.2	39952	12.9	17.9	151742	13.0	21.2	40093	13.1	18.4	491874	13.1	21.2
29575	12.8	19.5	7197	12.9	18.1	17773	12.9	17.2	219703	13.0	18.2	316757	13.1	18.5	192700	13.1	20.2
505503	12.8	19.1	301610	12.9	19.5	387309	12.9	20.2	34350	13.0	17.7	202697	13.1	19.7	58565	13.1	18.7
217904	12.8	19.2	505816	12.9	21.2	296269	12.9	20.0	303407	13.0	20.0	394292	13.1	22.0	174541	13.1	20.1
300205	12.8	21.7	104891	12.9	19.3	150594	12.9	20.3	16674	13.0	17.2	470921	13.1	20.2	177762	13.1	21.0
110123	12.8	19.1	522642	12.9	20.0	276453	12.9	20.8	254040	13.0	21.1	77987	13.1	17.6	297807	13.1	20.2
21214	12.8	18.7	240828	12.9	20.0	466684	12.9	21.5	304761	13.0	21.7	262325	13.1	20.0	233974	13.1	20.1
229573	12.8	19.8	10253	12.9	18.7	246878	12.9	19.4	27703	13.0	17.5	115133	13.1	18.4	237699	13.1	18.5
81393	12.8	18.0	530732	12.9	21.2	122944	12.9	18.4	467863	13.0	21.6	167575	13.1	20.5	205769	13.1	20.5
533728	12.8	20.6	136543	12.9	19.2	264612	12.9	20.4	233750	13.0	20.8	177048	13.1	18.9	519719	13.1	21.5
77356	12.8	19.7	53555	12.9	17.6	369599	12.9	20.0	402554	13.0	20.9	534322	13.1	20.3	155755	13.1	19.1
301637	12.8	19.7	63162	12.9	18.3	251730	12.9	18.9	237527	13.0	19.1	381488	13.1	20.4	360097	13.1	19.0
69297	12.8	18.1	34868	12.9	16.9	470138	12.9	21.5	506917	13.0	20.8	95512	13.1	18.8	415625	13.1	19.7
104304	12.8	18.6	498769	12.9	21.1	97022	12.9	18.3	150531	13.0	19.3	374517	13.1	20.1	516977	13.1	24.9
116507	12.8	19.6	385890	12.9	20.4	99503	12.9	18.3	171006	13.0	21.0	310053	13.1	19.4	236829	13.1	20.4
503033	12.8	21.5	416741	12.9	22.4	11937	12.9	17.6	391006	13.0	20.7	417261	13.1	21.1	410513	13.1	21.9
199972	12.8	20.0	56849	12.9	17.0	338489	12.9	20.9	336218	13.0	20.5	417826	13.1	20.2	282006	13.1	20.1
499376	12.8	21.8	336915	12.9	19.7	392450	12.9	20.1	68462	13.0	17.3	367186	13.1	21.3	12926	13.1	16.5
232164	12.8	19.8	54496	12.9	18.4	305307	12.9	20.7	409235	13.0	20.9	257325	13.1	20.2	300929	13.1	20.3
410077	12.8	21.1	132155	12.9	18.0	6754	12.9	17.2	133894	13.0	20.0	345128	13.1	19.2	138830	13.1	21.1
305444	12.8	21.4	10951	12.9	18.4	264569	12.9	21.4	34062	13.0	17.3	414810	13.1	19.8	250038	13.1	19.7
471765	12.8	20.6	468171	12.9	21.4	344825	12.9	20.1	15809	13.0	23.0	423671	13.1	19.5	141262	13.1	19.5
72308	12.8	19.0	483321	12.9	18.8	457609	12.9	21.1	76672	13.0	17.7	303777	13.1	20.0	126212	13.1	19.2
382231	12.8	20.4	499762	12.9	20.9	518531	12.9	20.9	487072	13.0	19.2	207856	13.1	20.0	110085	13.1	19.7
497317	12.8	21.8	406375	12.9	20.6	331910	12.9	19.0	227446	13.0	20.3	306415	13.1	22.6	338149	13.2	20.6
141153	12.8	20.8	155576	12.9	19.3	458768	12.9	20.7	62384	13.0	18.8	161890	13.1	21.6	384500	13.2	19.7
272557	12.8	20.8	430878	12.9	21.1	261951	12.9	19.9	281403	13.0	20.5	470148	13.1	21.4	171817	13.2	20.2
540448	12.8	19.2	296286	12.9	20.3	472146	12.9	21.0	191751	13.0	18.4	438860	13.1	21.5	290816	13.2	20.0
117455	12.8	19.3	8971	12.9	18.6	304849	12.9	19.1	473153	13.0	20.2	117947	13.1	20.2	68643	13.2	17.0
452371	12.8	21.4	311256	12.9	21.2	251000	12.9	19.9	526909	13.0	21.7	58192	13.1	19.2	210495	13.2	20.4
221896	12.8	20.1	479778	12.9	19.4	464294	12.9	21.2	195100	13.0	19.5	470179	13.1	21.4	399689	13.2	20.1
503979	12.8	20.8	505012	12.9	21.1	61756	12.9	17.2	72378	13.0	18.2	231948	13.1	18.9	424616	13.2	19.4
15041	12.8	16.9	3109	12.9	14.8	474862	12.9	21.0	244384	13.0	18.5	48797	13.1	18.7	308415	13.2	20.5
122548	12.8	20.0	496378	12.9	19.8	162652	12.9	20.0	108738	13.0	18.5	62118	13.1	18.6	3125	13.2	17.1
56381	12.8	19.0	397122	12.9	20.5	470926	12.9	20.2	94949	13.0	19.5	222535	13.1	19.2	459474	13.2	20.3
467421	12.8	20.8	278616	12.9	19.9	94010	12.9	17.9	391009	13.0	19.6	498662	13.1	20.5	397457	13.2	19.9
138458	12.8	19.4	43405	12.9	18.4	135292	12.9	20.3	286549	13.0	20.2	142005	13.1	19.9	492712	13.2	19.4
412659	12.8	20.8	2070	12.9	15.6	498771	12.9	20.8	292980	13.0	20.1	234463	13.1	19.7	433865	13.2	19.2
93917	12.8	19.9	532390	12.9	22.0	133711	12.9	19.4	453784	13.0	19.2	43744	13.1	18.8	437081	13.2	21.5
417129	12.8	21.0	106376	12.9	19.8	265333	12.9	19.6	179427	13.0	20.5	353298	13.1	19.5	34032	13.2	18.3
350143	12.8	19.1	313426	12.9	20.0	439499	12.9	20.7	212945	13.0	19.7	348872	13.1	19.9	260869	13.2	20.1
125426	12.8	19.2	36737	12.9	18.1	499722	12.9	21.2	382116	13.0	20.6	529160	13.1	22.3	204188	13.2	20.3
472901	12.8	20.9	72514	12.9	17.6	506760	12.9	20.9	466748	13.0	20.2	176453	13.1	20.2	51245	13.2	17.9
213932	12.8	20.6	388835	12.9	20.5	374051	12.9	20.0	176588	13.0	19.7	141095	13.1	19.8	55874	13.2	19.5
500925	12.8	21.1	56918	12.9	19.3	157810	12.9	19.9	241443	13.0	20.2	87937	13.1	18.7	205765	13.2	18.6
145597	12.8	20.0	227490	12.9	19.7	297935	12.9	21.5	388843	13.0	19.9	376760	13.1	21.3	83691	13.2	18.2
504465	12.8	21.5	507858	12.9	21.1	389541	12.9	20.1	113515	13.0	19.7	348809	13.1	20.8	410418	13.2	21.3
239460	12.8	20.2	502509	12.9	21.6	16419	12.9	16.9	436644	13.0	20.4	51191	13.1	20.3	330046	13.2	20.2
381571	12.8	21.0	160742	12.9	18.6	90234	12.9	18.7	278376	13.0	20.1	302863	13.1	20.3	326693	13.2	20.2
389210	12.8	20.9	530018	12.9	21.7	117077	12.9	17.1	245191	13.0	19.5	324951	13.1	21.8	377833	13.2	20.6
260895	12.8	19.4	500547	12.9	21.9	503960	12.9	18.1	180188	13.0	19.1	391333	13.1	21.4	362322	13.2	19.5
530154	12.8	22.3	272897	12.9	19.4	165406	12.9	20.8	362939	13.0	19.6	105227	13.1	19.0	266329	13.2	20.6
533769	12.8	19.8	212021	12.9	20.3	398337	12.9	19.8	415656	13.0	21.4	520261	13.1	21.3	150067	13.2	19.2
123692	12.8	19.1	178151	12.9	20.1	301074	12.9	20.7	8526	13.0	16.1	372561	13.1	22.3	162790	13.2	19.4
221055	12.8	18.9	184895	12.9	20.5	70228	12.9	18.9	354830	13.0	21.0	251793	13.1	20.2	347303	13.2	20.0
497987	12.8	21.1	524262	12.9	20.7	228323	12.9	19.9	371673								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
248673	13.2	18.7	206743	13.3	19.6	490669	13.3	20.5	110477	13.4	20.0	36721	13.5	17.0	30720	13.5	17.8
69756	13.2	19.5	399082	13.3	20.7	231485	13.3	20.3	608	13.4	14.9	198440	13.5	20.5	498557	13.5	19.0
531819	13.2	22.3	300877	13.3	19.6	294915	13.3	20.4	371089	13.4	22.4	357575	13.5	20.6	60526	13.5	18.6
543673	13.2	20.9	72968	13.3	17.8	281417	13.3	21.0	499786	13.4	21.0	497496	13.5	21.0	158076	13.5	20.0
480748	13.2	20.5	347883	13.3	20.8	415721	13.3	19.2	419934	13.4	21.6	523548	13.5	21.4	49369	13.5	19.5
162873	13.2	19.9	29061	13.3	19.5	131546	13.3	20.3	57211	13.4	18.4	70530	13.5	19.4	208251	13.6	19.8
132061	13.2	19.3	84690	13.3	19.0	402449	13.3	20.5	36266	13.4	18.4	535503	13.5	21.0	270464	13.6	21.0
328337	13.2	20.1	100760	13.3	20.1	407292	13.3	18.8	297832	13.4	20.5	190115	13.5	18.3	210966	13.6	20.1
184067	13.2	20.4	210988	13.3	20.4	381430	13.3	20.8	215979	13.4	19.2	149410	13.5	20.2	455506	13.6	20.7
33759	13.2	18.2	412876	13.3	20.1	135987	13.3	19.3	142173	13.4	19.5	142528	13.5	20.3	223293	13.6	20.2
502288	13.2	20.7	231635	13.3	19.3	153578	13.3	20.3	352045	13.4	21.9	380905	13.5	20.4	473901	13.6	20.7
292807	13.2	19.9	56615	13.3	18.1	38711	13.3	19.6	534894	13.4	20.2	529323	13.5	21.5	437677	13.6	19.9
86290	13.2	18.9	180937	13.3	19.9	243009	13.3	19.8	115325	13.4	19.2	518224	13.5	20.9	46568	13.6	17.6
157661	13.2	18.3	54430	13.3	17.3	475238	13.3	20.4	11835	13.4	16.9	402179	13.5	19.5	131306	13.6	19.1
348941	13.2	20.5	55345	13.3	19.5	119726	13.3	20.6	466534	13.4	21.8	182892	13.5	20.5	32643	13.6	17.9
311367	13.2	20.4	463141	13.3	20.9	400274	13.3	19.4	59769	13.4	17.9	467227	13.5	20.0	377458	13.6	20.9
94662	13.2	18.4	301511	13.3	20.2	205553	13.3	19.2	101654	13.4	19.6	3149	13.5	17.1	271894	13.6	20.5
18427	13.2	18.6	497211	13.3	20.4	543609	13.3	20.8	38022	13.4	19.0	211138	13.5	18.2	533348	13.6	21.0
276927	13.2	20.3	315420	13.3	20.3	333086	13.3	21.8	381587	13.4	20.1	32745	13.5	18.2	254571	13.6	19.5
451677	13.2	19.9	2271	13.3	14.5	28939	13.3	17.6	26168	13.4	17.1	455622	13.5	20.1	64523	13.6	19.3
114549	13.2	19.6	213430	13.3	19.8	417021	13.3	21.3	186890	13.4	20.3	306680	13.5	19.2	413183	13.6	20.4
41390	13.2	18.4	494763	13.3	22.1	184020	13.3	20.3	246514	13.4	19.9	209362	13.5	19.9	280233	13.6	19.4
128965	13.2	19.2	315443	13.3	21.3	214783	13.3	20.2	47423	13.4	17.1	401166	13.5	19.7	423633	13.6	21.4
489220	13.2	20.9	490676	13.3	21.3	420574	13.3	21.5	242156	13.4	19.9	359995	13.5	21.0	488914	13.6	20.7
232967	13.2	20.3	300982	13.3	20.0	190450	13.3	19.9	428889	13.4	20.9	517698	13.5	20.4	426695	13.6	20.7
435847	13.2	21.1	491975	13.3	19.7	273667	13.3	20.5	304477	13.4	20.4	51303	13.5	17.6	176430	13.6	20.3
391674	13.2	20.3	424027	13.3	20.9	497580	13.4	21.2	84592	13.4	18.8	536966	13.5	21.0	536834	13.6	20.6
10734	13.2	17.1	8764	13.3	17.4	105503	13.4	19.5	67753	13.4	17.9	246087	13.5	20.5	322607	13.6	20.0
435055	13.2	20.6	353111	13.3	20.7	395763	13.4	21.0	165343	13.4	19.5	331531	13.5	20.0	536907	13.6	20.5
72001	13.2	19.6	20656	13.3	17.9	341773	13.4	21.3	134613	13.4	19.2	531813	13.5	22.5	535089	13.6	21.6
292919	13.2	20.4	405213	13.3	19.1	491754	13.4	21.3	368264	13.4	20.5	468466	13.5	20.3	512418	13.6	21.0
435241	13.2	21.8	123366	13.3	17.8	231626	13.4	19.8	130101	13.4	19.2	416865	13.5	19.5	87767	13.6	18.6
362614	13.2	21.6	133952	13.3	19.8	140735	13.4	20.0	270637	13.4	18.9	346821	13.5	20.4	457783	13.6	19.0
454164	13.2	20.7	301574	13.3	20.6	114291	13.4	19.2	89742	13.4	18.9	259218	13.5	20.1	149496	13.6	18.8
70312	13.2	17.0	125375	13.3	20.3	80125	13.4	17.2	167620	13.4	19.4	353917	13.5	19.9	222577	13.6	19.9
67484	13.2	18.2	508825	13.3	23.4	422701	13.4	19.5	59986	13.4	18.4	35882	13.5	17.5	138140	13.6	20.7
329605	13.2	20.7	386156	13.3	20.4	165214	13.4	20.0	416729	13.4	19.7	316682	13.5	20.2	528960	13.6	21.8
179466	13.2	20.2	37510	13.3	18.8	61034	13.4	18.2	20621	13.4	17.2	374180	13.5	21.2	229649	13.6	19.6
391268	13.2	21.8	208929	13.3	20.9	224864	13.4	18.3	463652	13.4	20.2	222737	13.5	20.9	391711	13.6	21.2
142941	13.2	19.9	452770	13.3	22.2	306389	13.4	19.2	89465	13.4	19.0	158914	13.5	19.5	489288	13.6	21.4
526167	13.2	22.0	504549	13.3	20.9	341998	13.4	19.9	501183	13.4	21.0	524382	13.5	21.6	473778	13.6	19.8
288668	13.2	18.7	56519	13.3	17.1	259222	13.4	19.9	376552	13.4	20.6	165561	13.5	20.4	535035	13.6	21.0
232378	13.2	19.8	17375	13.3	18.3	301339	13.4	19.1	485050	13.4	21.2	469125	13.5	20.0	240826	13.6	19.9
346849	13.2	21.7	224475	13.3	20.0	298798	13.4	19.2	152222	13.4	20.6	253144	13.5	20.5	222759	13.6	20.7
302381	13.2	19.8	276114	13.3	20.0	123033	13.4	19.8	96438	13.4	20.5	138510	13.5	18.2	58821	13.6	19.9
18152	13.2	17.5	162814	13.3	19.4	377367	13.4	20.3	93775	13.4	19.6	365138	13.5	21.1	131549	13.6	20.5
344826	13.2	19.6	147640	13.3	18.7	212636	13.4	19.9	200749	13.4	20.2	109661	13.5	18.8	519686	13.6	20.4
436686	13.2	20.0	88601	13.3	19.1	15079	13.4	17.8	150792	13.4	19.8	360780	13.5	19.9	112147	13.6	18.4
32807	13.2	16.8	177574	13.3	19.5	220549	13.4	20.2	425758	13.4	20.4	179421	13.5	20.4	471372	13.6	20.6
340840	13.2	20.1	298810	13.3	19.7	157087	13.4	19.2	365163	13.4	21.1	54981	13.5	18.6	128841	13.6	19.9
18120	13.2	17.2	534530	13.3	22.0	137556	13.4	19.7	386248	13.4	21.0	58929	13.5	17.7	9601	13.6	14.9
111765	13.2	20.0	88312	13.3	17.4	533415	13.4	21.4	501958	13.4	20.9	204318	13.5	18.2	429237	13.6	21.6
405522	13.2	21.3	497489	13.3	21.6	87479	13.4	18.5	6612	13.4	16.0	507672	13.5	20.2	67344	13.6	19.1
29380	13.2	17.7	61246	13.3	17.4	502558	13.4	21.7	301070	13.4	20.1	81296	13.5	17.5	31512	13.6	17.9
33067	13.2	18.3	212490	13.3	20.3	327860	13.4	21.4	371754	13.4	20.8	215576	13.5	20.4	201780	13.6	19.9
503893	13.2	21.5	461748	13.3	20.3	23377	13.4	18.9	80418	13.4	18.2	303365	13.5	20.9	51157	13.6	20.0
212791	13.2	20.9	421295	13.3	20.5	371644	13.4	20.7	153530	13.5	20.1	78873	13.5	18.5	304124	13.6	20.3
93183	13.2	19.6	8676	13.3	17.9	527134	13.4	21.6	369804	13.5	19.8	292430	13.5	20.4	377454	13.6	20.6
204701	13.2	20.1	55344	13.3	19.2	34147	13.4	18.6	284569	13.5	20.4	503613	13.5	21.3	176248	13.6	19.7
351506	13.2	20.2	354782	13.3	20.7	379326	13.4	20.2	481857	13.5	19.6	536848	13.5	21.5	43413	13.6	17.9
345594	13.2	21.0	57807	13.3	18.5	416074	13.4	18.4	318118	13.5	19.3	30326	13.5	19.0	417671	13.6	19.4
436727	13.2	20.5	379752	13.3	20.5	117081	13.4	19.4	365149	13.5	21.0	208233	13.5	20.6	181440	13.6	21.1
29953	13.2	17.2	526252	13.3	22.0	191154	13.4	19.6	542303	13.5	20.1	501070	13.5	20.1	404418	13.6	21.0
510405	13.2	21.2	532076	13.3	21.1	231979	13.4	19.4	81981	13.5	18.2	122271	13.5	18.0	453362	13.6	21.8
489603	13.2	21.2	184153	13.3	20.0	246316	13.4	20.5	302009	13.5	18.6	67957	13.5	19.0	86607	13.6	18.3
537984	13.2	20.4	406888	13.3	20.5	315844	13.4	19.9	408734	13.5	19.9	138219	13.5	20.6	274582	13.6	20.1
162911	13.2	19.5	476410	13.3	19.8	167839	13.4	20.1	471368	13.5	19.4	47430	13.5	18.5	385155	13.6	20.3
131241	13.2	19.2	542604	13.3	20.4	463135	13.4	21.5	57392	13.5	18.6	528357	13.5	21.4	461347	13.6	20.5
107296	13.2	19.5	336306	13.3	19.6	360773	13.4	20.8	295163	13.5	20.3						

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
462307	13.6	20.0	497398	13.7	20.2	176415	13.7	20.2	22583	13.8	18.4	352028	13.9	22.1	111398	13.9	18.5
332407	13.6	19.2	500016	13.7	20.9	119821	13.7	18.6	424671	13.8	20.2	297462	13.9	20.1	36304	13.9	17.0
458922	13.6	21.7	333606	13.7	18.0	300948	13.7	21.1	216383	13.8	20.2	538289	13.9	21.3	303906	13.9	20.2
53800	13.6	18.7	507428	13.7	20.3	306173	13.7	22.6	299435	13.8	19.9	374146	13.9	20.4	239798	13.9	20.2
335552	13.6	19.9	506564	13.7	20.9	286378	13.7	20.4	31273	13.8	19.0	140129	13.9	18.9	371172	13.9	19.8
6770	13.6	17.0	11774	13.7	17.6	346864	13.8	20.7	198368	13.8	20.1	146060	13.9	19.2	492451	13.9	19.3
542393	13.6	20.9	147271	13.7	19.5	64418	13.8	18.1	526046	13.8	22.1	430120	13.9	21.4	471837	13.9	20.4
290255	13.6	20.1	153805	13.7	20.9	367667	13.8	20.0	277371	13.8	18.4	297596	13.9	20.6	225004	13.9	19.0
497287	13.6	21.4	499219	13.7	21.2	167779	13.8	19.9	358984	13.8	21.9	110763	13.9	19.0	494894	13.9	21.7
34446	13.6	17.5	375786	13.7	19.6	388361	13.8	20.6	330462	13.8	20.3	95341	13.9	18.8	181019	13.9	19.2
330666	13.6	21.6	173982	13.7	21.1	225012	13.8	20.6	534913	13.8	20.6	141361	13.9	20.3	206721	13.9	20.4
236352	13.6	19.8	308493	13.7	20.4	393860	13.8	21.3	174498	13.8	20.9	227523	13.9	19.7	505587	13.9	20.5
172628	13.6	18.5	100983	13.7	18.9	348877	13.8	21.0	371058	13.8	20.5	271929	13.9	19.6	272961	13.9	21.1
380895	13.6	20.9	455597	13.7	20.8	232385	13.8	20.3	182565	13.8	19.1	102490	13.9	19.2	89562	13.9	18.9
217070	13.6	20.0	167598	13.7	19.8	142610	13.8	20.2	528978	13.8	20.5	303457	13.9	21.1	472902	13.9	19.8
374320	13.6	20.6	140609	13.7	19.8	303707	13.8	19.7	214769	13.8	18.8	73586	13.9	20.2	121419	13.9	18.6
201508	13.6	18.1	83240	13.7	19.8	501392	13.8	21.0	81992	13.8	19.1	522835	13.9	21.9	423553	13.9	20.8
351515	13.6	21.0	505836	13.7	20.2	372751	13.8	21.2	31819	13.8	18.4	347653	13.9	20.9	157110	13.9	20.3
428733	13.6	19.6	390989	13.7	20.4	260867	13.8	20.6	67468	13.8	19.7	87473	13.9	18.7	224227	13.9	20.8
170367	13.6	18.6	311932	13.7	21.0	156728	13.8	20.2	469135	13.8	19.3	371076	13.9	20.0	176974	13.9	19.6
248385	13.6	19.8	395606	13.7	21.0	390041	13.8	21.0	504547	13.8	19.8	455566	13.9	19.8	402008	13.9	21.3
366278	13.6	19.7	227376	13.7	19.5	149819	13.8	19.6	167001	13.8	18.2	63757	13.9	18.8	465969	13.9	21.8
54402	13.6	17.8	353503	13.7	21.0	267387	13.8	20.3	244944	13.8	19.1	271943	13.9	20.0	328200	13.9	19.6
197281	13.6	19.8	211976	13.7	21.3	154489	13.8	21.0	265794	13.8	19.3	302277	13.9	20.2	43688	13.9	18.8
84635	13.6	19.1	469190	13.7	19.7	389789	13.8	19.6	69601	13.8	19.5	462176	13.9	22.3	121315	13.9	18.1
380038	13.6	20.2	400581	13.7	21.1	229879	13.8	17.9	275107	13.8	20.6	538894	13.9	21.1	247990	13.9	20.6
289026	13.6	19.3	257846	13.7	18.6	502867	13.8	21.2	530222	13.8	20.8	35434	13.9	19.0	413374	13.9	20.7
58132	13.6	18.8	212025	13.7	20.8	140456	13.8	19.6	72349	13.8	18.8	106973	13.9	19.5	187621	13.9	21.6
395667	13.6	20.7	131834	13.7	19.2	428299	13.8	19.9	517674	13.8	19.8	356711	13.9	20.6	131357	13.9	17.8
253984	13.6	20.2	179006	13.7	18.8	171061	13.8	21.6	480662	13.8	21.1	523558	13.9	21.1	401038	13.9	21.5
277745	13.6	20.3	294956	13.7	19.7	345952	13.8	20.1	519020	13.8	19.8	98491	13.9	19.3	286343	13.9	20.5
501170	13.6	20.4	374079	13.7	19.9	114174	13.8	19.3	8838	13.8	16.2	66831	13.9	18.9	286657	13.9	19.8
402192	13.6	20.2	143609	13.7	19.5	350421	13.8	21.2	524170	13.8	21.8	347716	13.9	21.5	242777	13.9	21.4
435866	13.6	21.3	470457	13.7	21.2	150328	13.8	19.5	96512	13.8	17.7	436291	13.9	20.3	346129	13.9	20.1
435931	13.6	21.2	204645	13.7	19.7	207623	13.8	19.5	284674	13.8	20.2	299918	13.9	21.3	539251	13.9	20.8
165359	13.6	19.8	380606	13.7	19.7	528497	13.8	24.5	185886	13.8	18.2	376253	13.9	19.9	109608	13.9	18.4
258451	13.6	19.5	411601	13.7	20.4	70385	13.8	17.7	544536	13.9	20.3	310488	13.9	20.5	291251	13.9	20.3
464084	13.6	19.9	525223	13.7	19.7	38262	13.8	19.2	268435	13.9	20.1	39453	13.9	18.7	76019	13.9	20.0
540652	13.6	22.2	185767	13.7	19.6	422704	13.8	20.4	310474	13.9	20.3	333088	13.9	21.6	529609	13.9	21.7
49986	13.6	18.1	374537	13.7	20.9	394350	13.8	20.6	384425	13.9	20.2	122517	13.9	20.0	290100	13.9	20.1
68614	13.6	19.5	50828	13.7	19.1	6743	13.8	14.7	230448	13.9	20.4	235616	13.9	18.8	435990	13.9	20.6
31742	13.6	17.4	129217	13.7	18.9	439765	13.8	19.3	382202	13.9	20.3	56848	13.9	18.0	27902	13.9	18.7
259707	13.7	20.8	439564	13.7	20.9	383880	13.8	20.2	22472	13.9	17.6	101808	13.9	17.9	385432	14.0	20.8
371724	13.7	20.5	152881	13.7	19.2	346847	13.8	21.6	346240	13.9	21.3	504231	13.9	22.2	351708	14.0	19.9
531957	13.7	22.6	530394	13.7	21.2	323890	13.8	19.6	201605	13.9	19.2	402517	13.9	21.1	263336	14.0	20.4
132186	13.7	19.0	463524	13.7	18.7	121370	13.8	19.1	508280	13.9	20.6	66248	13.9	17.0	475048	14.0	20.7
267416	13.7	21.6	70958	13.7	17.9	268641	13.8	18.9	5074	13.9	16.3	464700	13.9	20.4	388329	14.0	20.4
322708	13.7	21.1	12967	13.7	17.1	448434	13.8	20.4	11342	13.9	17.3	156433	13.9	19.7	182513	14.0	19.8
199468	13.7	19.9	49499	13.7	17.4	351528	13.8	20.9	111672	13.9	20.0	32868	13.9	19.2	292951	14.0	20.1
331786	13.7	19.8	468773	13.7	19.3	470919	13.8	20.6	198451	13.9	19.3	142602	13.9	19.6	277626	14.0	20.7
156783	13.7	19.5	270370	13.7	20.7	200667	13.8	18.0	426811	13.9	20.9	222832	13.9	22.0	377324	14.0	18.8
199463	13.7	19.6	56714	13.7	18.3	311126	13.8	18.8	216834	13.9	20.5	72465	13.9	18.6	199941	14.0	19.5
289898	13.7	20.0	325786	13.7	20.3	257618	13.8	20.5	471187	13.9	19.8	276543	13.9	19.6	141864	14.0	18.9
169521	13.7	18.6	475107	13.7	21.5	433579	13.8	20.1	410439	13.9	21.0	527132	13.9	21.4	10770	14.0	17.5
74503	13.7	19.6	295862	13.7	19.2	529287	13.8	21.3	532629	13.9	22.1	503784	13.9	20.2	60879	14.0	18.0
357741	13.7	20.4	272829	13.7	20.8	411858	13.8	21.0	309174	13.9	21.2	510744	13.9	21.1	460349	14.0	20.3
193464	13.7	19.8	97410	13.7	19.2	58404	13.8	17.8	18077	13.9	15.5	272881	13.9	19.7	54427	14.0	17.4
539221	13.7	20.3	387411	13.7	20.3	395881	13.8	21.4	153653	13.9	20.3	436646	13.9	20.3	145601	14.0	18.3
147632	13.7	19.7	358964	13.7	21.3	213244	13.8	19.6	359773	13.9	20.1	113053	13.9	20.0	529360	14.0	22.3
344281	13.7	21.2	356693	13.7	19.9	256249	13.8	20.2	100752	13.9	19.5	87002	13.9	18.1	110453	14.0	19.6
190401	13.7	19.7	273656	13.7	20.3	452791	13.8	21.7	296201	13.9	20.6	25457	13.9	19.6	20471	14.0	17.5
349874	13.7	21.0	518679	13.7	20.6	287491	13.8	20.5	304448	13.9	20.3	106088	13.9	18.2	383993	14.0	21.1
329589	13.7	21.7	474982	13.7	20.8	534267	13.8	21.3	355861	13.9	21.2	403537	13.9	20.3	513133	14.0	20.8
126698	13.7	19.2	311588	13.7	19.4	499725	13.8	19.4	271863	13.9	21.0	306750	13.9	20.9	234998	14.0	19.8
269076	13.7	19.8	336250	13.7	19.9	275966	13.8	20.8	497347	13.9	21.5	491616	13.9	20.1	326704	14.0	20.9
392649	13.7	21.0	246491	13.7	18.5	425912	13.8	21.6	420542	13.9	21.0	184074	13.9	20.4	539532	14.0	20.3
332094	13.7	20.8	8368	13.7	17.9	85420	13.8	19.7	12885	13.9	17.3	135202	13.9	19.1	431883	14.0	19.6
86246	13.7	19.1	86208	13.7	18.5	123473	13.8	20.1	38906	13.9	18.4	118757	13.9	19.6	208183	14.0	19.2
184008	13.7	19.5	65	13.7	11.1	66276	13.8	17.7	422								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
120151	14.0	19.0	118856	14.1	19.8	49806	14.2	19.2	370721	14.3	20.6	172440	14.3	18.8	51860	14.4	18.1
250337	14.0	20.0	343153	14.1	20.3	354832	14.2	20.5	206583	14.3	18.9	112738	14.3	18.9	472176	14.4	21.5
473779	14.0	20.1	458751	14.1	21.7	327886	14.2	21.4	15189	14.3	17.6	427235	14.3	21.0	19147	14.4	18.9
117615	14.0	18.4	194201	14.1	21.2	308698	14.2	22.1	65466	14.3	19.3	297815	14.3	20.9	376944	14.4	20.7
54815	14.0	18.3	491825	14.1	20.8	281955	14.2	19.8	299795	14.3	20.7	213804	14.3	19.5	140895	14.4	19.6
35809	14.0	17.6	530550	14.1	21.2	312673	14.2	19.4	136364	14.3	19.5	451656	14.3	19.8	166754	14.4	20.0
1045	14.0	16.6	518737	14.1	22.4	20993	14.2	17.0	475672	14.3	20.1	380944	14.3	19.9	353513	14.4	20.4
535183	14.0	21.5	308171	14.1	19.9	523532	14.2	21.2	168973	14.3	20.5	486107	14.3	20.3	286633	14.4	19.7
490649	14.0	21.3	127107	14.1	19.5	389540	14.2	19.5	250859	14.3	20.1	490705	14.3	19.4	392405	14.4	20.4
502861	14.0	20.7	196558	14.1	18.9	415493	14.2	21.1	268490	14.3	20.6	278	14.3	13.1	239023	14.4	20.6
380142	14.0	21.3	169055	14.1	20.3	391743	14.2	22.0	130532	14.3	18.9	111866	14.3	19.1	390767	14.4	19.8
415297	14.0	19.4	319426	14.1	20.6	466328	14.2	21.4	28997	14.3	18.5	381619	14.3	20.7	123070	14.4	20.4
341166	14.0	20.7	472237	14.1	20.9	169689	14.2	19.6	503703	14.3	20.8	312527	14.3	19.8	303801	14.4	20.9
199043	14.0	20.1	519166	14.1	20.2	328346	14.2	20.4	270520	14.3	20.7	459058	14.3	20.3	343448	14.4	20.1
384111	14.1	21.1	343088	14.1	20.3	392473	14.2	20.5	352754	14.3	20.9	374340	14.3	20.5	141896	14.4	18.7
522794	14.1	21.0	475005	14.1	21.8	529547	14.2	21.8	119039	14.3	19.1	275804	14.4	20.0	352466	14.4	20.9
244160	14.1	19.5	100234	14.1	19.0	213845	14.2	19.7	484272	14.3	19.9	495100	14.4	20.5	502077	14.4	21.4
388989	14.1	20.6	288383	14.1	20.1	93492	14.2	20.1	385005	14.3	20.5	266305	14.4	20.5	379017	14.4	21.0
19289	14.1	16.9	376138	14.1	20.5	532818	14.2	20.7	309000	14.3	20.8	81902	14.4	17.1	119650	14.4	18.5
437365	14.1	20.9	146104	14.1	19.5	386178	14.2	20.5	542372	14.3	21.7	162877	14.4	19.0	409342	14.4	22.6
80075	14.1	18.2	36225	14.1	17.8	279391	14.2	20.1	74444	14.3	17.8	299750	14.4	20.9	224319	14.4	20.6
134349	14.1	19.6	390095	14.1	21.2	72594	14.2	17.6	28386	14.3	17.5	540667	14.4	20.5	94472	14.4	19.6
404754	14.1	19.8	355784	14.1	21.2	117129	14.2	18.6	152733	14.3	20.9	247168	14.4	18.7	301523	14.4	20.5
317592	14.1	20.4	473022	14.1	20.1	199521	14.2	19.5	189069	14.3	20.1	136621	14.4	18.9	425249	14.4	19.6
87840	14.1	18.3	59811	14.1	17.5	31129	14.2	17.2	504553	14.3	20.9	386181	14.4	20.2	371018	14.4	21.5
341839	14.1	22.2	117050	14.1	19.1	56825	14.2	18.8	360037	14.3	20.4	394390	14.4	20.2	347351	14.4	19.2
300975	14.1	20.9	30626	14.1	18.6	173827	14.2	19.2	115062	14.3	19.7	541776	14.4	20.5	282523	14.4	18.8
382798	14.1	20.6	326410	14.1	19.7	389709	14.2	19.8	182901	14.3	19.2	199433	14.4	20.3	178682	14.4	19.7
473702	14.1	21.7	456823	14.1	19.5	215096	14.2	20.3	179393	14.3	20.2	97032	14.4	19.4	284621	14.4	20.5
266350	14.1	19.8	320870	14.1	18.5	118882	14.2	19.2	184422	14.3	19.9	218009	14.4	20.2	308469	14.5	20.9
174544	14.1	20.7	238923	14.1	20.0	151967	14.2	20.6	26171	14.3	18.3	329311	14.4	19.3	538671	14.5	20.9
424617	14.1	20.6	434456	14.1	19.3	354717	14.2	21.3	303273	14.3	19.6	231936	14.4	19.6	391767	14.5	20.6
153621	14.1	19.7	356505	14.1	20.7	279853	14.2	21.3	405536	14.3	21.5	207161	14.4	19.8	380095	14.5	20.1
223623	14.1	19.2	387742	14.1	21.0	8923	14.2	17.6	41286	14.3	18.0	426164	14.4	20.7	197040	14.5	19.9
149170	14.1	20.2	111084	14.1	18.6	232929	14.2	20.5	422756	14.3	20.7	63311	14.4	18.2	99904	14.5	19.5
64628	14.1	19.4	141439	14.1	19.6	429262	14.2	21.1	80009	14.3	17.9	182867	14.4	20.2	451232	14.5	20.7
434885	14.1	20.5	201015	14.1	19.6	152435	14.2	20.0	64723	14.3	19.6	425335	14.4	19.1	426756	14.5	20.4
127804	14.1	18.0	406936	14.2	20.5	530801	14.2	21.4	238648	14.3	20.6	454133	14.4	21.8	518397	14.5	20.7
108061	14.1	19.3	196760	14.2	19.6	64321	14.2	20.3	377418	14.3	20.7	473905	14.4	19.9	112059	14.5	18.6
397441	14.1	20.5	216237	14.2	19.7	121522	14.2	18.9	45554	14.3	18.7	425114	14.4	21.8	84	14.5	11.4
361436	14.1	20.5	260056	14.2	21.1	496015	14.2	19.6	303915	14.3	19.4	260035	14.4	19.5	91035	14.5	19.2
357999	14.1	20.7	496314	14.2	20.8	475818	14.2	21.1	16536	14.3	17.3	172230	14.4	19.6	148136	14.5	19.2
354811	14.1	21.5	431889	14.2	20.6	375915	14.2	20.3	197479	14.3	19.3	419554	14.4	21.3	522680	14.5	20.6
449160	14.1	21.0	147325	14.2	20.3	481516	14.2	20.9	90316	14.3	18.2	272639	14.4	20.4	423820	14.5	20.8
538252	14.1	20.4	364233	14.2	20.3	232579	14.2	19.5	292972	14.3	20.5	268544	14.4	20.9	507611	14.5	22.9
416226	14.1	20.4	162605	14.2	19.1	477616	14.2	20.5	415368	14.3	19.4	193674	14.4	20.7	535845	14.5	22.3
469871	14.1	20.5	381868	14.2	20.7	162780	14.2	19.3	172801	14.3	19.1	304754	14.4	21.2	338913	14.5	20.6
503588	14.1	21.5	120782	14.2	19.1	489512	14.2	19.0	105917	14.3	20.1	242683	14.4	20.4	256891	14.5	20.6
426315	14.1	20.7	528743	14.2	21.5	281977	14.2	19.9	347318	14.3	20.9	364620	14.4	20.7	370779	14.5	20.9
527923	14.1	22.2	302449	14.2	20.5	64157	14.2	19.0	354762	14.3	20.3	13420	14.4	16.8	11898	14.5	17.9
468525	14.1	20.2	38876	14.2	18.8	531573	14.2	20.7	305406	14.3	19.9	209122	14.4	19.4	463550	14.5	20.4
264543	14.1	19.3	180175	14.2	20.4	530564	14.2	21.1	213392	14.3	20.0	401133	14.4	19.3	24268	14.5	18.5
534152	14.1	20.2	55030	14.2	18.9	377384	14.2	19.3	531915	14.3	21.5	372949	14.4	21.0	332334	14.5	21.3
140811	14.1	21.2	409395	14.2	21.0	31970	14.2	17.5	206667	14.3	19.6	99418	14.4	18.9	156216	14.5	20.4
73639	14.1	19.3	320540	14.2	19.9	374373	14.2	21.0	85524	14.3	18.8	429272	14.4	20.6	36406	14.5	17.2
297947	14.1	20.2	466665	14.2	21.3	338174	14.2	19.9	93633	14.3	19.0	162540	14.4	19.2	519983	14.5	21.3
156488	14.1	19.5	80070	14.2	18.8	54390	14.2	17.5	20661	14.3	17.6	391370	14.4	20.4	372898	14.5	19.8
406374	14.1	20.3	5241	14.2	17.6	478341	14.2	20.4	277653	14.3	19.7	417543	14.4	21.9	358509	14.5	20.6
421699	14.1	20.1	474989	14.2	20.6	37503	14.2	19.4	408781	14.3	20.8	8063	14.4	17.3	522865	14.5	21.3
174771	14.1	19.7	309986	14.2	19.6	351784	14.2	20.2	20749	14.3	17.2	404301	14.4	20.0	122344	14.5	19.0
312822	14.1	19.6	49628	14.2	16.6	172229	14.2	19.6	312993	14.3	20.9	450408	14.4	20.2	537366	14.5	21.3
20103	14.1	16.3	211190	14.2	18.9	519421	14.2	20.4	382092	14.3	18.4	110379	14.4	19.1	27667	14.5	17.1
526822	14.1	21.5	166096	14.2	19.4	124923	14.2	20.8	181343	14.3	21.3	96066	14.4	19.8	309154	14.5	20.6
270534	14.1	19.9	186565	14.2	20.2	101474	14.2	19.3	109584	14.3	18.6	64073	14.4	18.7	500497	14.5	21.8
519677	14.1	21.7	488036	14.2	19.9	60292	14.2	19.0	430589	14.3	19.9	138582	14.4	18.8	276595	14.5	20.1
21026	14.1	19.4	126393	14.2	19.5	470067	14.2	21.7	208729	14.3	18.7	182380	14.4	19.2	147463	14.5	19.2
382797	14.1	20.8	107927	14.2	19.9	500757	14.2	21.0	522460	14.3	19.6	140287	14.4	18.3	444204	14.5	20.4
37933	14.1	19.4	416025	14.2	20.9	528141	14.2	20.3	165323	14.3	19.9	498806	14.4	20.8	461836	14.5	22.1
14891	14.1	17.9	68581	14.2	18.8	149091	14.2	19.6	241187								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
166227	14.5	19.5	143131	14.6	19.2	182883	14.6	20.2	500238	14.7	20.5	194266	14.8	20.3	225942	14.9	20.7
282033	14.5	20.0	165434	14.6	18.9	378816	14.6	20.9	155716	14.7	19.7	63451	14.8	18.1	527818	14.9	20.1
276990	14.5	20.3	203495	14.6	20.0	526241	14.6	21.4	422011	14.7	20.6	126033	14.8	17.7	462908	14.9	20.2
374496	14.5	20.7	534122	14.6	21.8	93073	14.6	19.9	224273	14.7	20.4	112532	14.8	19.4	488980	14.9	21.5
217898	14.5	19.9	537941	14.6	19.4	437220	14.6	20.0	134042	14.7	19.3	306675	14.8	19.9	534143	14.9	20.4
267502	14.5	19.0	65015	14.6	18.9	465139	14.6	20.2	108908	14.7	18.4	512337	14.8	21.1	124415	14.9	19.8
369684	14.5	20.0	62920	14.6	19.3	304876	14.6	19.7	462639	14.7	19.5	346040	14.8	21.0	469426	14.9	20.9
539427	14.5	20.8	305780	14.6	21.2	407832	14.6	20.8	288636	14.7	18.6	33912	14.8	16.2	150240	14.9	19.5
371022	14.5	21.7	426994	14.6	20.0	123594	14.6	19.9	278866	14.7	20.5	413698	14.8	21.2	281508	14.9	20.8
55339	14.5	19.2	424767	14.6	20.5	115312	14.6	19.1	61017	14.7	19.3	116659	14.8	20.0	328338	14.9	20.0
525092	14.5	20.7	19841	14.6	19.2	346238	14.6	21.7	238699	14.7	19.6	154050	14.8	19.9	99118	14.9	19.9
468906	14.5	19.5	508667	14.6	22.4	169467	14.7	19.8	61720	14.7	18.5	472129	14.8	19.7	502542	14.9	21.3
302331	14.5	21.2	264	14.6	12.3	242183	14.7	20.4	299321	14.7	20.5	543363	14.8	20.6	501189	14.9	21.6
415218	14.5	21.0	540546	14.6	19.3	125683	14.7	18.8	415738	14.7	21.1	311428	14.8	20.7	382732	14.9	20.9
356894	14.5	20.1	68792	14.6	18.9	354781	14.7	20.8	322851	14.7	19.6	234657	14.8	19.1	183558	14.9	19.6
123606	14.5	19.8	376193	14.6	20.5	419162	14.7	20.5	196604	14.7	19.7	58437	14.8	20.1	192770	14.9	20.3
152037	14.5	18.4	235061	14.6	18.2	243365	14.7	20.8	98318	14.7	19.2	64489	14.8	17.9	165464	14.9	18.4
157291	14.5	20.1	438382	14.6	20.7	28640	14.7	18.5	2946	14.7	17.0	475528	14.8	19.4	357341	14.9	18.9
8067	14.5	16.3	419322	14.6	21.0	540254	14.7	20.6	506027	14.7	20.7	294156	14.8	19.6	301089	14.9	21.4
239721	14.5	20.1	300896	14.6	20.1	463322	14.7	21.3	62677	14.7	20.2	506903	14.8	21.7	310916	14.9	21.9
502232	14.5	21.6	1401	14.6	13.9	292583	14.7	20.0	62391	14.7	18.4	467156	14.8	21.5	88771	14.9	18.1
460081	14.5	21.7	113485	14.6	18.4	480111	14.7	20.4	308202	14.7	20.3	318114	14.8	19.6	167811	14.9	20.1
129983	14.5	17.4	225035	14.6	21.8	291411	14.7	20.2	432184	14.7	20.5	286273	14.8	17.7	12271	14.9	17.5
520077	14.5	21.0	530618	14.6	20.5	240810	14.7	18.6	306462	14.7	22.4	506878	14.8	22.3	287556	14.9	20.3
200339	14.5	18.8	111242	14.6	18.7	185179	14.7	21.2	240372	14.7	19.9	272519	14.8	20.7	264616	14.9	21.6
419623	14.5	22.0	104487	14.6	18.6	496082	14.7	20.5	269036	14.7	20.1	127361	14.8	19.1	81645	14.9	18.8
189171	14.5	18.6	429748	14.6	20.1	436218	14.7	22.4	544654	14.7	20.7	54566	14.8	18.3	241186	14.9	20.4
352415	14.5	20.9	391697	14.6	22.0	68096	14.7	17.9	308691	14.7	19.2	15098	14.8	18.6	28036	14.9	17.7
22880	14.5	18.3	94025	14.6	19.0	35017	14.7	18.6	39704	14.7	18.3	489554	14.8	19.2	471402	14.9	20.6
415674	14.5	20.5	429749	14.6	20.6	415972	14.7	22.6	151843	14.7	19.9	55265	14.8	19.7	497468	14.9	21.3
481483	14.5	20.8	138876	14.6	19.9	518869	14.7	21.3	478236	14.7	21.0	280400	14.8	20.7	97001	14.9	19.6
501000	14.5	20.3	523623	14.6	24.4	241484	14.7	19.2	39582	14.7	19.2	19043	14.8	18.8	309716	14.9	20.6
529019	14.5	21.4	375870	14.6	20.5	272268	14.7	20.3	315456	14.7	19.8	148577	14.8	19.5	131782	14.9	20.5
359243	14.5	20.9	502849	14.6	20.4	467241	14.7	21.2	277804	14.7	20.4	517551	14.8	20.9	45776	14.9	18.1
440446	14.5	21.1	233264	14.6	20.4	539912	14.7	20.0	372329	14.7	20.2	77155	14.8	17.5	400239	14.9	19.6
210721	14.5	19.7	273953	14.6	21.0	97941	14.7	17.2	263129	14.7	20.2	111698	14.8	20.4	107235	14.9	19.6
90144	14.5	19.3	538862	14.6	21.4	407916	14.7	21.8	369580	14.8	20.6	38942	14.8	18.5	165344	14.9	19.2
540386	14.5	20.1	506484	14.6	21.3	519903	14.7	20.2	540202	14.8	21.2	101684	14.8	18.6	46364	14.9	18.3
248425	14.5	20.5	12345	14.6	18.1	378760	14.7	20.6	451694	14.8	21.1	349885	14.8	21.1	349362	14.9	21.9
416014	14.5	20.4	36569	14.6	18.8	37991	14.7	17.4	30699	14.8	18.1	247936	14.8	20.3	468232	14.9	21.2
259345	14.5	21.0	526323	14.6	22.1	454174	14.7	21.3	146185	14.8	19.4	289336	14.8	21.3	383902	14.9	20.9
491808	14.5	22.0	181513	14.6	20.4	65902	14.7	18.8	258485	14.8	20.0	52740	14.8	17.6	138635	14.9	19.1
468748	14.5	21.2	400574	14.6	20.6	192768	14.7	18.6	266400	14.8	20.6	393470	14.9	22.0	519249	14.9	21.8
198485	14.5	18.7	255870	14.6	20.9	205860	14.7	19.6	437054	14.8	20.8	15307	14.9	17.6	23697	14.9	19.4
212471	14.5	19.8	256552	14.6	19.3	165467	14.7	19.5	535967	14.8	21.5	372576	14.9	20.2	5198	14.9	17.8
356875	14.5	19.7	300750	14.6	19.9	332354	14.7	21.0	439199	14.8	20.5	162632	14.9	19.9	172411	14.9	19.3
94941	14.5	19.1	145419	14.6	19.9	307750	14.7	20.7	38923	14.8	17.7	53585	14.9	19.1	279350	14.9	19.9
3971	14.5	15.0	391270	14.6	20.1	533448	14.7	21.3	347774	14.8	20.6	475145	14.9	20.1	100812	14.9	20.3
232771	14.5	19.9	522439	14.6	21.1	179691	14.7	19.3	268480	14.8	20.5	387874	14.9	20.1	534526	14.9	21.8
316598	14.6	21.1	457019	14.6	22.1	107672	14.7	19.8	260527	14.8	20.8	205848	14.9	21.6	366386	14.9	20.2
18745	14.6	17.2	416893	14.6	20.5	36192	14.7	17.1	282047	14.8	19.2	534764	14.9	21.6	146250	14.9	19.6
90828	14.6	19.3	145775	14.6	19.7	501057	14.7	21.4	204690	14.8	18.3	470129	14.9	22.1	324541	14.9	21.1
519921	14.6	20.7	474961	14.6	21.4	160221	14.7	18.6	374470	14.8	21.2	456936	14.9	21.8	59891	14.9	18.6
406344	14.6	21.1	217531	14.6	19.6	38694	14.7	19.7	388412	14.8	20.9	191734	14.9	19.9	9102	14.9	19.1
119548	14.6	19.7	425122	14.6	19.6	438374	14.7	20.8	332972	14.8	19.0	126955	14.9	18.6	370108	14.9	20.3
265752	14.6	20.2	502936	14.6	20.8	33691	14.7	18.7	359852	14.8	21.3	458958	14.9	19.4	211227	14.9	18.9
544083	14.6	19.6	210305	14.6	18.9	181783	14.7	17.5	459482	14.8	22.5	313694	14.9	21.2	60373	14.9	18.1
49657	14.6	18.7	371011	14.6	21.5	489113	14.7	20.6	300904	14.8	20.0	293622	14.9	19.2	134046	14.9	20.9
20569	14.6	17.5	194369	14.6	20.9	348861	14.7	19.7	409832	14.8	19.1	208198	14.9	18.8	501131	14.9	20.1
529415	14.6	21.9	21145	14.6	18.6	390539	14.7	19.8	393554	14.8	20.6	120732	14.9	18.7	259122	14.9	19.5
219842	14.6	20.3	89593	14.6	18.1	406525	14.7	21.4	115094	14.8	19.3	35765	14.9	17.0	412649	14.9	20.4
29358	14.6	17.2	454612	14.6	20.8	428042	14.7	21.4	217931	14.8	19.8	140576	14.9	19.4	235022	14.9	19.9
230533	14.6	20.6	14940	14.6	17.4	158577	14.7	18.4	512031	14.8	19.7	20635	14.9	17.1	284880	14.9	19.5
15362	14.6	17.1	491046	14.6	20.3	464338	14.7	19.6	540242	14.8	20.6	62593	14.9	19.1	363331	14.9	19.6
455422	14.6	19.2	122657	14.6	19.4	503115	14.7	21.0	246008	14.8	19.7	351858	14.9	22.5	152626	14.9	20.6
542682	14.6	19.1	216273	14.6	20.4	470514	14.7	21.3	127001	14.8	20.5	193403	14.9	19.9	406517	14.9	21.3
533112	14.6	20.4	371087	14.6	21.0	438990	14.7	21.7	478043	14.8	21.0	388745	14.9	20.6	204203	14.9	20.3
472226	14.6	21.0	240692	14.6	20.2	195573	14.7	19.2	439372	14.8	20.4	49284	14.9	19.1	430095	14.9	20.6
86730	14.6	17.3	505891	14.6	20.4	428870	14.7	20.3	526291								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
143390	14.9	20.4	425000	15.0	19.9	303420	15.1	21.5	190290	15.2	19.4	528749	15.2	21.6	153786	15.3	19.6
417828	14.9	20.4	18917	15.0	17.7	38637	15.1	18.2	470424	15.2	20.8	102197	15.2	19.3	138298	15.3	20.3
33591	14.9	18.4	72074	15.0	18.6	539932	15.1	18.3	467431	15.2	20.2	275228	15.2	19.8	419134	15.3	20.7
52826	14.9	18.4	354682	15.0	19.7	3642	15.1	15.3	450224	15.2	19.4	417731	15.2	21.2	11739	15.3	17.2
122960	14.9	19.4	434490	15.0	19.8	292529	15.1	21.4	522212	15.2	20.0	390143	15.2	20.8	17699	15.3	18.6
340837	14.9	20.9	315287	15.0	21.2	178762	15.1	19.8	436353	15.2	19.8	283024	15.2	20.0	235918	15.3	20.9
8266	14.9	16.7	67616	15.0	18.0	57519	15.1	18.5	173979	15.2	20.0	524760	15.2	21.3	530040	15.3	20.9
97298	14.9	19.6	504310	15.0	20.3	124271	15.1	17.5	99522	15.2	18.2	465318	15.2	21.0	389275	15.3	20.6
501893	14.9	19.9	396721	15.0	19.6	496700	15.1	21.4	477591	15.2	20.0	453915	15.2	20.6	18324	15.3	16.7
403308	14.9	20.0	127820	15.0	19.3	537015	15.1	21.8	209352	15.2	20.1	2129	15.2	16.6	540822	15.3	21.1
70277	14.9	17.6	12717	15.0	17.1	522726	15.1	20.2	472145	15.2	19.4	466843	15.2	20.0	426519	15.3	21.1
238143	14.9	20.6	487958	15.0	20.3	315490	15.1	21.2	117429	15.2	20.0	522542	15.2	20.4	81659	15.3	18.8
526665	14.9	20.7	28006	15.0	17.5	503915	15.1	20.9	527293	15.2	20.2	230039	15.2	18.9	536151	15.3	21.6
534011	14.9	20.8	28917	15.0	18.7	53197	15.1	18.0	45543	15.2	16.8	519941	15.2	20.9	289563	15.3	19.8
284645	14.9	20.7	255814	15.0	21.0	230957	15.1	19.2	23437	15.2	15.7	176454	15.2	20.0	534534	15.3	20.4
333093	14.9	18.8	328654	15.0	20.1	70907	15.1	18.7	171040	15.2	20.0	507773	15.2	20.8	20368	15.3	17.7
341818	14.9	20.5	167585	15.0	20.2	426051	15.1	19.3	119123	15.2	18.3	495806	15.2	18.5	180161	15.3	20.5
171155	14.9	19.7	234363	15.0	18.6	214898	15.1	20.9	285589	15.2	18.7	28686	15.2	17.9	429657	15.3	20.1
408249	14.9	20.7	198290	15.0	19.5	24148	15.1	17.2	126729	15.2	19.5	194249	15.2	20.0	490652	15.3	20.9
431857	14.9	21.0	113234	15.0	18.3	204449	15.1	18.9	350813	15.2	19.5	32967	15.2	18.5	349609	15.3	20.9
376004	14.9	20.5	371163	15.0	21.5	527957	15.1	20.6	473276	15.2	20.2	209615	15.2	19.9	9760	15.3	16.6
436683	14.9	20.4	426984	15.0	20.3	375852	15.1	20.8	454125	15.2	22.3	500911	15.2	19.2	512443	15.3	19.7
25555	14.9	18.6	394244	15.0	21.2	502978	15.1	20.7	543599	15.2	21.4	171465	15.2	19.8	497411	15.3	19.7
40727	14.9	18.2	457087	15.0	21.0	356994	15.1	20.5	331158	15.2	20.7	193768	15.2	18.5	85480	15.3	17.5
522208	14.9	20.8	32802	15.0	16.9	531734	15.1	21.7	95668	15.2	19.6	313704	15.2	21.4	101793	15.3	19.1
539212	14.9	21.2	349060	15.0	19.7	346706	15.1	20.7	226886	15.2	19.0	127739	15.2	19.2	331970	15.3	18.4
520117	14.9	21.4	502770	15.0	21.2	281385	15.1	18.9	393849	15.2	20.7	214488	15.2	19.7	89371	15.3	18.8
414762	14.9	19.1	49386	15.0	17.5	187796	15.1	19.2	336311	15.2	20.1	50326	15.2	17.8	203621	15.3	19.0
528269	14.9	20.3	359874	15.0	20.3	17626	15.1	17.0	466655	15.2	21.6	279307	15.2	19.9	217030	15.3	17.8
332897	14.9	21.1	389179	15.0	21.5	400007	15.1	19.7	477983	15.2	21.8	521213	15.2	19.5	511704	15.3	21.3
424661	14.9	21.0	262332	15.0	19.6	115551	15.1	19.1	402854	15.2	19.2	53887	15.2	18.6	284752	15.3	20.4
48776	14.9	18.0	176478	15.0	19.6	423199	15.1	19.6	543480	15.2	20.5	520051	15.2	20.6	462044	15.3	20.8
297640	14.9	19.8	473231	15.0	19.1	26848	15.1	17.7	287613	15.2	20.2	272976	15.2	19.4	520945	15.3	19.5
478009	14.9	20.8	34898	15.1	19.0	135510	15.1	18.8	381453	15.2	19.5	19491	15.2	17.3	295233	15.3	20.4
32996	14.9	18.5	279244	15.1	19.9	160995	15.1	19.8	184089	15.2	19.6	326727	15.2	19.3	350162	15.3	19.7
474788	14.9	20.4	309830	15.1	19.7	319741	15.1	20.0	504409	15.2	20.9	322011	15.2	20.2	524512	15.3	20.8
127624	14.9	20.6	176052	15.1	20.2	275694	15.1	19.7	501473	15.2	20.9	131931	15.3	20.3	267380	15.3	21.3
507567	14.9	21.6	330950	15.1	20.5	240312	15.1	21.1	273357	15.2	20.7	306621	15.3	19.5	543527	15.3	20.0
534739	14.9	22.2	93925	15.1	20.0	240616	15.1	20.6	542451	15.2	21.0	143315	15.3	18.8	173291	15.3	19.6
136343	14.9	19.5	299953	15.1	19.7	462920	15.1	19.9	309582	15.2	18.9	466554	15.3	20.3	109652	15.3	17.6
235907	14.9	21.6	28662	15.1	17.7	29649	15.1	18.5	387434	15.2	20.7	421803	15.3	20.1	352767	15.3	19.4
529422	14.9	20.6	470194	15.1	20.2	219335	15.1	17.9	535363	15.2	21.2	352520	15.3	20.1	468524	15.3	21.8
130055	14.9	18.6	150717	15.1	18.4	15564	15.1	17.3	360388	15.2	20.5	185593	15.3	20.0	264590	15.3	19.5
285189	14.9	19.4	544504	15.1	20.1	457042	15.1	20.7	123757	15.2	20.1	40599	15.3	19.1	200640	15.3	20.6
187793	14.9	20.5	405364	15.1	20.8	286221	15.1	20.8	31400	15.2	18.1	455540	15.3	20.3	183713	15.3	20.3
281873	14.9	18.7	168939	15.1	20.1	206617	15.1	19.3	506349	15.2	20.7	495414	15.3	19.6	28777	15.3	17.9
498977	14.9	22.2	184833	15.1	19.9	459381	15.1	19.8	534230	15.2	21.1	101813	15.3	18.2	406881	15.3	20.5
42661	14.9	18.7	336657	15.1	19.8	166743	15.1	19.7	464443	15.2	20.7	451024	15.3	20.8	200698	15.3	20.7
266245	14.9	20.1	497483	15.1	19.8	139847	15.1	19.2	39979	15.2	18.3	109679	15.3	18.0	380572	15.3	19.7
544893	14.9	19.3	294074	15.1	20.1	455535	15.1	20.9	106454	15.2	19.7	151657	15.3	20.2	431952	15.3	20.7
147629	14.9	17.4	134245	15.1	20.0	211862	15.1	19.1	542552	15.2	20.1	142263	15.3	18.8	84479	15.3	17.7
272932	14.9	19.7	92	15.1	10.6	388793	15.1	20.6	55733	15.2	18.4	129445	15.3	18.6	201601	15.3	19.3
520167	14.9	21.0	429146	15.1	21.8	281884	15.1	18.6	394306	15.2	20.9	163171	15.3	20.2	267509	15.3	18.3
362623	14.9	20.1	107976	15.1	19.7	290066	15.1	19.8	58662	15.2	18.3	37487	15.3	17.8	31290	15.3	17.8
37153	14.9	17.6	372494	15.1	20.9	226861	15.1	19.2	134224	15.2	19.3	505028	15.3	19.9	15810	15.3	23.2
299806	14.9	20.7	141744	15.1	18.0	350243	15.1	17.7	407920	15.2	20.9	205711	15.3	19.9	457716	15.3	21.8
237174	14.9	20.7	537099	15.1	21.5	134268	15.1	18.8	72626	15.2	18.7	258243	15.3	20.6	54529	15.3	18.4
419531	14.9	19.9	332137	15.1	20.4	4850	15.1	16.7	38263	15.2	18.8	32526	15.3	17.0	497514	15.3	21.4
360163	14.9	20.6	48861	15.1	16.0	29947	15.1	17.4	64642	15.2	19.6	248611	15.3	19.8	99780	15.3	18.3
421919	14.9	21.1	423641	15.1	21.9	470075	15.1	21.4	421296	15.2	20.3	330884	15.3	19.8	538906	15.3	21.2
148324	14.9	18.3	283502	15.1	18.9	116220	15.1	18.3	238926	15.2	19.3	41720	15.3	18.4	303894	15.3	20.3
503611	15.0	20.4	313690	15.1	21.1	15092	15.1	16.5	437687	15.2	20.9	301363	15.3	20.5	205917	15.3	19.4
45810	15.0	17.1	212634	15.1	19.4	134298	15.1	19.3	225791	15.2	20.8	341159	15.3	20.3	489146	15.3	20.9
490643	15.0	21.2	386740	15.1	20.5	15707	15.1	15.9	39897	15.2	19.7	238202	15.3	20.4	301404	15.3	20.1
353166	15.0	20.0	172647	15.1	19.4	234818	15.1	20.1	231790	15.2	20.5	191710	15.3	18.7	355093	15.3	21.6
527871	15.0	20.6	81859	15.1	18.5	401322	15.1	20.0	171173	15.2	19.6	153109	15.3	18.7	93896	15.3	19.4
69592	15.0	18.7	543352	15.1	21.2	153761	15.1	19.3	344848	15.2	19.0	162793	15.3	19.3	526766	15.3	21.1
302878	15.0	19.8	507574	15.1	21.8	4025	15.1	16.2	377881	15.2	21.0	544103	15.3	19.9	49299	15.3	17.9
210846	15.0	19.4	171881	15.1	20.1	247846	15.1	20.1	126819	15.2							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
122465	15.4	19.5	381472	15.4	20.3	264679	15.5	20.5	305750	15.6	20.8	363045	15.6	20.3	457586	15.7	21.8
531588	15.4	20.7	150047	15.4	19.2	296894	15.5	19.5	33657	15.6	16.5	412726	15.6	19.3	66875	15.7	18.9
497180	15.4	20.2	501857	15.4	20.5	72753	15.5	19.8	198695	15.6	19.6	327842	15.6	20.2	273621	15.7	21.5
289422	15.4	20.6	307213	15.4	19.7	388820	15.5	21.0	402457	15.6	19.6	502308	15.6	20.7	170236	15.7	18.3
542161	15.4	21.0	54674	15.4	18.4	243862	15.5	19.4	490039	15.6	21.7	525264	15.6	21.4	111623	15.7	19.5
175358	15.4	19.0	91868	15.4	18.9	12298	15.5	17.0	375032	15.6	19.2	63449	15.6	18.0	455541	15.7	21.3
308745	15.4	19.6	83765	15.4	18.7	88495	15.5	17.9	166004	15.6	18.6	332357	15.6	20.2	186064	15.7	20.7
24146	15.4	19.0	203004	15.4	20.1	167588	15.5	19.8	53674	15.6	17.8	141385	15.6	19.7	264963	15.7	21.5
140224	15.4	19.1	420566	15.4	20.2	143375	15.5	18.8	141148	15.6	20.2	529604	15.6	21.5	281611	15.7	20.8
1553	15.4	15.8	108231	15.4	18.8	525635	15.5	19.7	188286	15.6	19.4	159448	15.6	18.4	107185	15.7	19.8
149912	15.4	19.4	209566	15.4	19.6	101907	15.5	19.2	96779	15.6	18.1	30634	15.7	18.0	350622	15.7	20.1
413959	15.4	21.3	395648	15.4	20.8	282439	15.5	19.2	246651	15.6	19.8	186113	15.7	18.9	402872	15.7	19.7
178326	15.4	20.1	479182	15.4	20.6	274372	15.5	19.1	160750	15.6	20.2	526032	15.7	20.9	394650	15.7	20.3
167195	15.4	20.2	357182	15.4	19.4	530144	15.5	22.2	522867	15.6	20.8	292728	15.7	20.6	271011	15.7	20.0
513638	15.4	20.4	161281	15.4	19.6	300067	15.5	20.6	20694	15.6	19.0	360740	15.7	20.5	470884	15.7	20.8
369073	15.4	19.6	44886	15.4	17.6	207965	15.5	18.8	205664	15.6	20.1	451684	15.7	21.8	508724	15.7	20.6
190328	15.4	19.5	203642	15.4	20.1	203558	15.5	20.6	463728	15.6	21.1	375791	15.7	21.2	21361	15.7	17.5
384024	15.4	20.4	64503	15.4	18.3	238779	15.5	18.5	95752	15.6	17.9	474776	15.7	21.0	538378	15.7	21.2
278851	15.4	19.6	472563	15.4	20.8	339497	15.5	20.8	426483	15.6	21.6	28371	15.7	17.1	176432	15.7	20.8
130043	15.4	19.7	519982	15.4	22.1	417732	15.5	20.9	352011	15.6	21.7	531789	15.7	20.9	434004	15.7	20.4
309868	15.4	21.4	428059	15.4	21.1	302250	15.5	18.7	101788	15.6	17.8	338413	15.7	21.2	495095	15.7	20.3
370096	15.4	20.3	377951	15.4	20.8	286475	15.5	20.6	41504	15.6	18.8	519849	15.7	19.7	345804	15.7	21.7
209893	15.4	19.2	496724	15.4	21.2	382874	15.5	19.6	480260	15.6	20.7	538852	15.7	21.1	467868	15.7	21.0
454501	15.4	21.0	489035	15.4	21.5	140703	15.5	20.1	40701	15.6	18.5	409016	15.7	21.5	534555	15.7	21.7
144281	15.4	19.4	296293	15.4	19.5	433653	15.5	20.1	506276	15.6	19.4	531535	15.7	21.2	531860	15.7	21.5
303354	15.4	18.8	297789	15.4	19.9	65426	15.5	17.6	91314	15.6	18.4	235294	15.7	20.6	168125	15.7	18.7
163158	15.4	19.4	472105	15.4	20.3	37718	15.5	17.5	138149	15.6	19.2	496809	15.7	19.8	538713	15.7	20.7
324471	15.4	21.1	107045	15.4	19.3	542022	15.5	20.3	234134	15.6	20.8	234158	15.7	20.3	502572	15.7	21.2
9190	15.4	16.9	462261	15.4	22.0	492520	15.5	21.1	2529	15.6	15.8	330419	15.7	20.7	297826	15.7	20.2
457177	15.4	21.3	226756	15.4	19.0	358535	15.5	19.0	302948	15.6	19.4	205060	15.7	18.7	321336	15.7	20.8
228869	15.4	20.2	214908	15.4	20.3	92943	15.5	18.6	499876	15.6	20.3	313132	15.7	19.4	390403	15.7	20.3
468174	15.4	21.1	460171	15.4	21.1	378754	15.5	20.4	300868	15.6	20.4	398712	15.7	20.5	433065	15.7	20.1
188876	15.4	19.2	138841	15.5	20.3	185588	15.5	18.7	214498	15.6	18.3	249643	15.7	18.2	28024	15.7	16.4
473180	15.4	20.3	413321	15.5	19.4	380191	15.5	19.9	503343	15.6	20.1	78217	15.7	19.2	237034	15.7	20.3
303363	15.4	19.2	141434	15.5	20.9	203994	15.5	19.3	502261	15.6	21.4	279495	15.7	21.6	216253	15.7	19.2
163483	15.4	19.9	166955	15.5	18.0	1100	15.5	14.3	393142	15.6	19.9	312950	15.7	20.5	309208	15.7	19.3
494759	15.4	20.6	306928	15.5	21.1	505057	15.5	21.7	55175	15.6	17.9	89637	15.7	18.5	401623	15.7	21.2
275574	15.4	20.3	309040	15.5	20.5	398872	15.5	21.6	425288	15.6	21.5	191151	15.7	19.9	47372	15.7	18.4
478033	15.4	20.3	186533	15.5	20.4	139767	15.5	19.6	423995	15.6	20.3	217939	15.7	20.5	257337	15.7	19.3
302955	15.4	18.9	273759	15.5	20.9	279299	15.5	20.6	20803	15.6	17.7	182052	15.7	21.0	215984	15.7	19.5
143434	15.4	19.6	297277	15.5	21.0	305534	15.5	21.0	151101	15.6	19.5	428829	15.7	20.6	127013	15.7	18.9
281628	15.4	20.4	377822	15.5	20.5	226330	15.5	18.3	373601	15.6	20.8	510427	15.7	20.0	220412	15.7	20.0
542450	15.4	20.1	455543	15.5	19.9	140613	15.5	19.5	393837	15.6	19.5	8175	15.7	16.1	122670	15.7	19.0
192735	15.4	19.9	442738	15.5	20.8	304437	15.5	19.8	103168	15.6	19.1	536608	15.7	20.0	12302	15.7	16.6
493571	15.4	20.6	303774	15.5	20.8	203794	15.5	19.0	320	15.6	14.9	153622	15.7	20.2	65884	15.7	18.4
221272	15.4	19.4	195485	15.5	19.0	538228	15.5	20.0	471123	15.6	21.1	170289	15.7	17.9	296159	15.7	19.3
494800	15.4	19.7	300996	15.5	20.9	298984	15.5	19.1	368227	15.6	19.5	207414	15.7	18.5	99406	15.8	19.2
531196	15.4	19.5	399733	15.5	20.6	450394	15.5	20.2	185194	15.6	20.9	138501	15.7	19.6	106492	15.8	19.2
495125	15.4	21.5	213734	15.5	20.0	402865	15.5	20.3	465648	15.6	20.7	159038	15.7	19.7	56705	15.8	17.0
214440	15.4	20.4	351643	15.5	20.0	537045	15.5	20.1	345643	15.6	21.1	3731	15.7	15.9	78859	15.8	18.4
242441	15.4	19.0	184727	15.5	20.2	95323	15.5	19.4	501320	15.6	20.3	538098	15.7	20.6	81335	15.8	18.6
450420	15.4	20.2	15701	15.5	16.2	234133	15.5	19.0	460068	15.6	19.5	525350	15.7	20.2	264763	15.8	20.6
89467	15.4	18.3	192781	15.5	20.7	345723	15.5	19.9	171473	15.6	20.6	543350	15.7	20.1	281376	15.8	19.2
403549	15.4	18.7	356858	15.5	20.5	380306	15.5	19.1	355104	15.6	22.1	151996	15.7	18.6	332795	15.8	19.4
530792	15.4	21.1	157100	15.5	19.3	205930	15.5	19.4	68064	15.6	18.6	94702	15.7	19.6	65086	15.8	18.7
499299	15.4	20.5	287160	15.5	19.9	165478	15.5	20.5	524775	15.6	19.9	140972	15.7	19.5	341571	15.8	21.7
345444	15.4	20.2	57873	15.5	18.8	386542	15.5	21.1	467157	15.6	19.2	308381	15.7	19.9	406537	15.8	21.4
41702	15.4	19.5	213372	15.5	20.6	95672	15.5	18.7	278121	15.6	20.5	8916	15.7	17.6	399995	15.8	20.7
500327	15.4	20.9	504655	15.5	21.5	106843	15.5	19.6	404280	15.6	20.7	346790	15.7	20.6	11491	15.8	17.4
208984	15.4	19.3	169417	15.5	19.0	433817	15.5	19.7	376014	15.6	20.5	137139	15.7	20.2	18015	15.8	17.8
156768	15.4	20.0	334889	15.5	20.8	131509	15.5	19.9	429368	15.6	21.2	16527	15.7	17.3	513147	15.8	20.3
376950	15.4	22.4	196257	15.5	19.9	81577	15.5	17.5	287598	15.6	20.0	472482	15.7	19.4	117776	15.8	20.8
15416	15.4	15.4	66775	15.5	18.8	362090	15.5	16.4	237522	15.6	17.6	403863	15.7	20.5	68117	15.8	18.5
173122	15.4	21.1	77992	15.5	18.0	286466	15.5	20.4	67779	15.6	17.9	194467	15.7	20.1	231707	15.8	20.0
165250	15.4	19.6	117183	15.5	19.3	212567	15.5	20.2	150783	15.6	18.8	87256	15.7	17.3	250783	15.8	19.5
501160	15.4	20.7	86956	15.5	19.3	324089	15.5	18.6	468252	15.6	20.6	330252	15.7	19.4	118255	15.8	19.6
106193	15.4	19.4	291421	15.5	20.9	403912	15.5	20.7	38553	15.6	18.7	369741	15.7	19.6	359405	15.8	20.7
406449	15.4	21.1	497412	15.5	20.8	270519	15.5	20.0	64392	15.6	18.7	348196	15.7	18.1	516930	15.8	19.1
194328	15.4	20.3	306893	15.5	19.1	219530	15.5	20.6	1139								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
397456	15.8	19.7	146389	15.9	17.4	501910	15.9	20.1	32190	16.0	18.3	135691	16.1	18.9	119744	16.2	17.1
209748	15.8	20.2	216222	15.9	20.5	55694	15.9	19.0	533328	16.0	21.7	94714	16.1	18.6	18286	16.2	18.8
192928	15.8	20.4	535856	15.9	21.5	96103	15.9	18.4	387365	16.0	19.2	479015	16.1	21.4	358258	16.2	21.4
419878	15.8	18.5	520236	15.9	21.6	279238	15.9	19.4	100123	16.0	17.9	20055	16.1	18.9	359015	16.2	20.8
55320	15.8	18.0	181086	15.9	20.3	109255	15.9	18.9	279163	16.0	19.9	87911	16.1	17.8	56861	16.2	18.0
400231	15.8	19.8	239544	15.9	19.5	534167	15.9	20.6	57196	16.0	19.0	308667	16.1	19.7	490303	16.2	21.5
150670	15.8	18.2	165407	15.9	19.2	230097	15.9	19.9	272974	16.0	20.7	376012	16.1	20.2	373331	16.2	19.4
473268	15.8	20.6	57704	15.9	19.6	16877	15.9	18.1	329296	16.0	19.3	8087	16.1	15.9	94018	16.2	17.7
269617	15.8	19.9	188582	15.9	19.0	391701	15.9	21.0	466628	16.0	21.1	391049	16.1	19.6	410771	16.2	20.3
336441	15.8	20.0	178983	15.9	19.1	245601	15.9	19.7	308544	16.0	20.5	246563	16.1	20.3	209134	16.2	20.0
10034	15.8	17.5	460902	15.9	20.3	194824	15.9	20.4	294240	16.0	19.4	535318	16.1	20.4	141381	16.2	19.3
260679	15.8	20.5	463910	15.9	20.8	323172	15.9	19.2	173914	16.0	19.0	398846	16.1	17.9	131953	16.2	19.0
423455	15.8	21.3	240024	15.9	19.7	386173	15.9	21.0	303856	16.0	19.1	332120	16.1	19.9	530769	16.2	20.3
277672	15.8	20.4	192508	15.9	18.7	286640	15.9	21.0	42426	16.0	18.3	195584	16.1	20.0	279839	16.2	19.6
37780	15.8	19.2	26923	15.9	18.8	277019	15.9	19.2	6445	16.0	16.7	467273	16.1	20.6	417670	16.2	20.7
79198	15.8	18.2	56272	15.9	17.6	301006	15.9	20.5	366248	16.0	20.3	188294	16.1	18.9	27418	16.2	17.0
503303	15.8	20.6	358030	15.9	19.5	189247	15.9	19.7	456848	16.0	19.7	29920	16.1	17.6	533816	16.2	21.0
117927	15.8	19.0	420532	15.9	19.7	533870	15.9	21.1	426920	16.0	20.6	170189	16.1	18.9	320764	16.2	21.7
443736	15.8	20.3	267421	15.9	21.5	8350	15.9	17.4	167078	16.0	18.7	36041	16.1	19.3	531790	16.2	20.4
286167	15.8	21.4	138813	15.9	19.7	425166	15.9	20.0	522837	16.0	21.0	121137	16.1	18.4	45092	16.2	17.7
270528	15.8	21.1	150267	15.9	19.3	453258	15.9	20.1	85321	16.0	18.9	526195	16.1	21.0	188453	16.2	19.9
63865	15.8	19.2	370984	15.9	20.6	57095	15.9	18.0	402481	16.0	21.1	381351	16.1	19.3	125645	16.2	18.7
418243	15.8	20.7	457661	15.9	21.8	349053	15.9	20.5	297254	16.0	20.6	496852	16.1	20.8	201594	16.2	19.3
173773	15.8	19.5	133896	15.9	20.4	381492	15.9	20.2	77842	16.0	18.2	415906	16.1	20.5	34696	16.2	17.5
57417	15.8	19.2	6	15.9	8.4	528264	15.9	20.8	152161	16.0	19.6	26598	16.1	17.8	58533	16.2	18.7
173168	15.8	20.9	57961	15.9	18.6	189009	15.9	18.5	363520	16.0	20.2	407757	16.1	21.2	87906	16.2	18.5
405219	15.8	18.8	248828	15.9	20.5	527405	15.9	21.4	325128	16.0	19.6	530736	16.1	22.2	437167	16.2	20.8
355171	15.8	19.7	336225	15.9	19.9	259560	15.9	19.9	212320	16.0	19.5	88655	16.1	19.2	171026	16.2	19.8
516985	15.8	20.4	310149	15.9	18.7	261349	15.9	20.6	536674	16.0	20.1	243326	16.1	21.1	75835	16.2	19.3
308419	15.8	19.5	360412	15.9	20.4	504810	15.9	19.8	539126	16.0	20.9	507077	16.1	21.2	318238	16.2	18.9
156727	15.8	20.2	280605	15.9	20.6	363311	15.9	19.6	506025	16.0	20.8	83798	16.1	18.6	325433	16.2	19.6
229425	15.8	20.7	146213	15.9	19.4	519855	15.9	20.1	324018	16.0	18.9	367749	16.1	20.1	98863	16.2	18.2
259238	15.8	21.0	147242	15.9	18.5	134668	15.9	20.0	365152	16.0	21.0	366263	16.1	22.0	216341	16.2	20.7
371152	15.8	19.9	121850	15.9	18.4	105806	15.9	18.9	531893	16.0	19.5	378741	16.1	20.5	373225	16.2	20.2
528249	15.8	20.7	234119	15.9	18.9	497200	15.9	20.6	153894	16.0	20.6	15740	16.1	17.7	437200	16.2	20.5
194338	15.8	19.9	204277	15.9	19.0	90117	15.9	19.4	215009	16.0	19.6	242952	16.1	19.2	462249	16.2	21.5
198214	15.8	19.5	344584	15.9	20.7	374620	15.9	20.6	43408	16.0	18.6	541580	16.1	21.2	532119	16.2	21.0
140460	15.8	20.1	338212	15.9	19.7	489647	15.9	18.8	410479	16.0	21.4	507046	16.1	21.5	284307	16.2	19.0
90181	15.8	18.4	438876	15.9	20.5	214449	15.9	20.2	537827	16.0	20.3	307142	16.1	20.5	158596	16.2	19.1
15467	15.8	17.8	321234	15.9	20.7	148690	15.9	19.2	20790	16.1	22.2	538752	16.1	20.4	18944	16.2	17.7
165216	15.8	19.9	530125	15.9	21.0	368245	15.9	20.9	305469	16.1	20.4	100969	16.1	18.6	54795	16.2	18.5
351477	15.8	19.7	473091	15.9	20.7	277460	15.9	19.6	213836	16.1	20.0	393841	16.1	20.1	338227	16.2	21.0
146639	15.8	19.2	52006	15.9	18.5	251756	15.9	20.0	432232	16.1	19.1	471442	16.1	20.7	503865	16.2	22.6
544502	15.8	20.4	492502	15.9	19.4	497386	15.9	21.7	520006	16.1	21.4	156725	16.1	19.8	342856	16.2	20.8
434815	15.8	21.0	160758	15.9	19.2	17652	15.9	17.1	204702	16.1	19.5	483349	16.1	19.2	295778	16.2	19.5
272875	15.8	20.0	176435	15.9	19.8	470455	15.9	20.5	423594	16.1	21.4	340093	16.1	18.4	106663	16.2	19.6
132452	15.8	18.6	316821	15.9	18.7	316285	15.9	20.9	27046	16.1	17.6	17323	16.1	18.5	334799	16.2	19.8
328760	15.8	18.8	437318	15.9	20.5	478161	15.9	21.4	499265	16.1	19.9	11777	16.1	17.2	81569	16.2	17.8
420550	15.8	19.0	473203	15.9	19.8	280571	15.9	20.4	265660	16.1	20.0	532600	16.1	21.2	539261	16.2	20.7
44201	15.8	16.9	414791	15.9	18.9	505996	15.9	20.2	494916	16.1	21.7	157645	16.1	20.0	130204	16.2	19.5
208388	15.8	19.8	530903	15.9	21.2	359186	15.9	18.8	536123	16.1	20.4	389268	16.1	21.1	503226	16.2	21.3
389213	15.8	20.7	386495	15.9	21.1	212968	15.9	19.1	369354	16.1	20.1	398717	16.1	22.5	147804	16.2	19.2
167101	15.8	19.4	145390	15.9	19.6	498717	15.9	20.3	251636	16.1	18.9	200814	16.1	19.4	432022	16.2	20.4
208140	15.8	19.1	145282	15.9	19.6	16666	15.9	17.1	297862	16.1	21.5	401467	16.1	19.3	181634	16.2	18.8
123430	15.8	19.3	298318	15.9	19.6	533146	15.9	22.4	380576	16.1	20.1	480791	16.1	20.6	531112	16.2	20.2
300036	15.8	21.3	119885	15.9	19.5	457744	15.9	20.0	259002	16.1	20.9	400998	16.1	19.2	266371	16.2	20.3
398595	15.8	20.5	82071	15.9	19.1	207001	15.9	19.3	526110	16.1	22.1	315283	16.1	20.5	362624	16.2	21.2
273001	15.8	19.9	536249	15.9	20.6	203942	15.9	19.0	48290	16.1	16.8	502164	16.1	21.2	452367	16.2	20.8
248034	15.8	20.0	257925	15.9	19.8	201727	15.9	19.8	304435	16.1	20.1	12151	16.1	17.9	470696	16.2	20.7
192669	15.8	19.3	456987	15.9	20.8	136571	15.9	20.2	81322	16.1	18.9	43604	16.2	17.2	467745	16.2	21.3
111495	15.8	19.2	358309	15.9	20.5	507086	15.9	20.9	113846	16.1	17.2	410226	16.2	21.3	264182	16.2	20.1
29400	15.8	18.5	439087	15.9	20.8	127838	15.9	19.3	300919	16.1	21.8	530925	16.2	21.6	502279	16.2	19.7
391776	15.8	19.3	354838	15.9	20.0	67226	15.9	17.3	391340	16.1	21.5	504383	16.2	20.7	502546	16.2	19.5
352464	15.8	19.8	229801	15.9	19.9	302838	15.9	19.7	145469	16.1	19.2	91368	16.2	18.0	117397	16.2	19.8
522732	15.8	21.1	417476	15.9	20.2	498986	15.9	21.8	119989	16.1	18.5	181484	16.2	20.4	424668	16.2	20.1
300966	15.8	21.1	518143	15.9	20.6	221815	15.9	18.0	207958	16.1	18.9	142719	16.2	20.0	439143	16.2	20.2
65906	15.8	18.3	308456	15.9	20.9	287313	16.0	19.7	408217	16.1	19.2	490644	16.2	20.7	89008	16.2	17.3
412822	15.8	21.7	304748	15.9	19.9	315634	16.0	19.9	422091	16.1	21.5	304023	16.2	19.0	525113	16.2	21.1
105834	15.8	19.5	464667	15.9	20.4	414993	16.0	22.7	201								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
70183	16.2	18.7	94854	16.3	19.3	525889	16.4	21.6	377704	16.5	20.7	102220	16.5	19.6	426741	16.6	20.9
519387	16.2	22.2	414162	16.3	19.6	477993	16.4	20.7	536480	16.5	21.5	357716	16.5	20.3	95404	16.6	17.3
415257	16.2	21.1	299207	16.3	19.8	192918	16.4	19.4	113486	16.5	19.4	176046	16.5	19.1	540135	16.6	20.6
384805	16.2	20.4	377466	16.3	20.3	286651	16.4	20.8	305471	16.5	20.1	467742	16.5	20.9	243634	16.6	18.8
425046	16.2	21.3	124609	16.3	19.0	144512	16.4	19.1	423299	16.5	21.0	257488	16.5	20.9	299754	16.6	20.9
406485	16.2	20.9	528672	16.3	20.9	302510	16.4	21.0	10124	16.5	16.1	269057	16.5	19.5	506857	16.6	21.1
198106	16.2	19.9	76841	16.3	18.0	540899	16.4	20.4	31856	16.5	16.3	402222	16.5	21.0	301502	16.6	19.3
431993	16.2	20.4	478090	16.3	21.2	32605	16.4	17.2	173648	16.5	20.1	534190	16.5	20.7	450807	16.6	20.9
300168	16.2	19.9	286989	16.3	19.7	89096	16.4	17.1	160706	16.5	18.7	70466	16.5	19.1	90754	16.6	18.6
9895	16.2	15.9	167454	16.3	20.2	419648	16.4	20.0	176420	16.5	19.7	334732	16.5	19.2	8969	16.6	17.3
292059	16.2	20.1	461121	16.3	21.8	118486	16.4	19.1	213433	16.5	19.9	108967	16.5	18.5	61394	16.6	18.1
106045	16.2	19.1	298953	16.3	18.2	235032	16.4	19.1	536208	16.5	23.2	454531	16.5	19.3	179494	16.6	19.5
129281	16.2	19.4	117944	16.3	20.1	156456	16.4	20.2	425205	16.5	20.5	235019	16.5	20.0	313797	16.6	21.3
31336	16.3	19.3	380608	16.3	18.7	369087	16.4	20.2	175060	16.5	20.1	497390	16.5	21.4	497111	16.6	21.0
195524	16.3	19.2	141333	16.3	19.9	260061	16.4	19.9	298847	16.5	19.2	110539	16.5	18.8	324460	16.6	20.0
533820	16.3	21.1	478256	16.3	20.5	430887	16.4	18.6	108552	16.5	17.9	239045	16.5	18.5	160580	16.6	19.4
301573	16.3	20.7	184152	16.3	20.0	467517	16.4	20.6	180145	16.5	19.8	358324	16.5	20.5	385211	16.6	21.2
359135	16.3	21.0	406889	16.3	20.6	249150	16.4	19.2	523791	16.5	22.8	357829	16.5	20.8	493590	16.6	20.0
98514	16.3	19.0	119547	16.3	18.1	271827	16.4	19.1	69088	16.5	17.4	386576	16.5	20.6	291401	16.6	20.5
131245	16.3	19.1	399346	16.3	20.4	213023	16.4	19.4	384558	16.5	20.0	235056	16.5	18.3	287530	16.6	20.5
26369	16.3	16.6	302975	16.3	19.9	219060	16.4	20.1	475140	16.5	20.0	352746	16.5	20.3	17998	16.6	17.4
227896	16.3	19.6	40018	16.3	17.9	234782	16.4	20.2	472731	16.5	20.8	409869	16.5	21.1	462203	16.6	19.5
75359	16.3	19.9	9243	16.3	17.8	329053	16.4	18.8	242461	16.5	19.0	222685	16.5	18.7	26173	16.6	16.9
58355	16.3	17.6	416125	16.3	20.8	32228	16.4	16.9	179575	16.5	20.3	60060	16.5	18.1	218864	16.6	19.4
298308	16.3	20.7	508387	16.3	19.8	432534	16.4	20.8	18245	16.5	18.9	123002	16.5	20.2	351965	16.6	21.7
207588	16.3	19.7	363569	16.3	19.3	352303	16.4	19.5	531712	16.5	21.9	351941	16.5	20.9	272847	16.6	20.2
497370	16.3	21.8	388349	16.3	20.9	259992	16.4	18.4	538981	16.5	20.9	302866	16.5	20.8	93120	16.6	19.6
182977	16.3	17.2	508299	16.3	20.7	108628	16.4	18.1	427373	16.5	18.0	506898	16.5	21.2	243985	16.6	19.9
400560	16.3	20.5	360544	16.3	19.4	210177	16.4	19.9	189600	16.5	19.2	206331	16.5	18.5	507324	16.6	22.2
299516	16.3	19.9	199000	16.3	19.1	138831	16.4	19.5	411233	16.5	19.2	89937	16.5	18.4	95838	16.6	17.7
268611	16.3	19.6	153934	16.3	19.9	118365	16.4	19.2	53160	16.5	17.8	422800	16.5	20.0	334991	16.6	19.8
101653	16.3	18.0	336291	16.3	20.7	65633	16.4	18.1	491206	16.5	22.0	526262	16.5	21.2	528697	16.6	20.6
111145	16.3	19.4	431434	16.3	19.3	237716	16.4	20.0	185102	16.5	19.9	354897	16.5	21.1	355845	16.6	19.6
364588	16.3	20.2	237094	16.3	19.0	235925	16.4	20.5	70411	16.5	16.9	120519	16.5	18.3	227127	16.6	19.0
439810	16.3	19.8	410218	16.3	19.3	452626	16.4	19.3	512900	16.5	20.6	130159	16.5	19.2	507570	16.6	20.9
508322	16.3	20.2	79211	16.4	18.7	277709	16.4	20.5	27149	16.5	16.7	234863	16.5	20.3	530847	16.6	20.6
131739	16.3	19.4	170728	16.4	19.8	445891	16.4	21.1	42038	16.5	17.4	535899	16.5	22.2	534910	16.6	20.7
410266	16.3	19.8	502527	16.4	21.2	419891	16.4	20.7	267274	16.5	21.3	475266	16.5	20.0	39185	16.6	18.2
391	16.3	13.2	410307	16.4	20.4	301285	16.4	19.8	493727	16.5	19.5	145165	16.5	18.4	120849	16.6	19.8
499816	16.3	21.5	426042	16.4	20.9	145848	16.4	19.5	429528	16.5	21.1	140414	16.5	19.7	239882	16.6	18.2
122132	16.3	19.6	32609	16.4	19.4	276947	16.4	19.9	33613	16.5	18.7	462323	16.5	19.3	100306	16.6	19.7
479207	16.3	19.6	192798	16.4	20.3	350764	16.4	20.4	190025	16.5	19.6	120022	16.5	19.1	69378	16.6	19.4
261247	16.3	19.4	152787	16.4	19.9	152188	16.4	19.8	194410	16.5	20.7	93437	16.5	19.1	436704	16.6	20.4
57165	16.3	19.2	287549	16.4	20.0	239750	16.4	21.0	352022	16.5	20.7	435994	16.5	21.0	102568	16.6	19.2
36622	16.3	17.6	222752	16.4	20.0	505612	16.4	21.1	496710	16.5	20.6	250884	16.5	20.2	268398	16.6	21.0
106168	16.3	18.6	127702	16.4	18.7	225022	16.4	20.8	468657	16.5	18.7	542401	16.5	20.3	492588	16.6	19.1
70363	16.3	18.4	361172	16.4	20.3	199347	16.4	20.2	109789	16.5	19.4	535224	16.5	21.7	222555	16.6	19.3
506265	16.3	20.5	543739	16.4	21.1	247851	16.4	18.7	327857	16.5	19.8	477940	16.5	20.3	243284	16.6	19.9
437239	16.3	20.4	417799	16.4	19.8	354877	16.4	20.3	506763	16.5	21.4	55108	16.5	18.4	333082	16.6	20.8
519592	16.3	21.3	147528	16.4	19.4	350959	16.4	21.0	94710	16.5	19.4	326287	16.5	20.1	120480	16.6	18.7
334783	16.3	18.7	537328	16.4	21.8	377841	16.4	20.6	365422	16.5	19.9	359080	16.5	20.8	449684	16.6	19.9
494931	16.3	20.9	346012	16.4	20.5	172402	16.4	19.7	477998	16.5	20.1	470082	16.5	19.7	544903	16.6	21.5
474848	16.3	20.8	89080	16.4	17.6	523700	16.4	21.6	326407	16.5	20.2	248345	16.5	19.3	58547	16.6	18.4
58558	16.3	17.8	275494	16.4	18.4	492437	16.4	19.2	174020	16.5	20.3	55743	16.5	18.3	136461	16.6	17.6
106860	16.3	19.1	544839	16.4	21.4	64166	16.4	18.2	30024	16.5	17.3	529438	16.5	21.5	522425	16.6	20.3
498526	16.3	20.8	299871	16.4	20.0	305839	16.4	21.6	433645	16.5	20.3	430251	16.5	19.4	245976	16.6	19.5
536134	16.3	20.3	109293	16.4	18.4	405296	16.4	21.0	208726	16.5	19.6	97927	16.5	19.1	263990	16.6	20.2
7419	16.3	16.5	303897	16.4	19.9	415985	16.4	20.2	150292	16.5	19.2	97242	16.5	19.4	528502	16.6	20.9
351532	16.3	19.8	303854	16.4	21.0	527791	16.4	21.3	366388	16.5	19.4	343142	16.5	21.5	262726	16.6	20.2
272657	16.3	20.6	372467	16.4	19.3	355261	16.4	19.0	364665	16.5	20.6	152351	16.5	19.4	13314	16.6	16.9
544402	16.3	20.7	497564	16.4	20.4	311193	16.4	19.2	510867	16.5	20.8	313672	16.5	20.5	146786	16.6	19.1
456907	16.3	22.2	234866	16.4	20.4	262846	16.4	20.9	434258	16.5	20.3	41902	16.5	19.0	90945	16.6	19.2
430310	16.3	20.4	116781	16.4	18.6	297074	16.4	19.2	31004	16.5	18.9	379715	16.5	20.9	264736	16.6	19.3
431089	16.3	20.3	180099	16.4	19.0	290331	16.5	20.8	153888	16.5	19.9	331781	16.5	20.6	123772	16.6	18.7
404811	16.3	20.0	129775	16.4	19.2	238746	16.5	18.5	515734	16.5	20.4	232862	16.5	21.9	388339	16.6	20.9
443706	16.3	20.5	534917	16.4	23.9	254086	16.5	20.1	121355	16.5	20.3	379984	16.5	20.9	433449	16.6	19.8
159610	16.3	20.0	539962	16.4	19.7	414427	16.5	19.4	492626	16.5	19.7	36272	16.5	17.6	246109	16.6	19.6
461287	16.3	21.1	110207	16.4	18.9	82688	16.5	18.8	544604	16.5	21.9	498762	16.5	20.8	95374	16.6	20.0
173898	16.3	20.6	438360	16.4	21.2	473273	16.5	19.8</									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
501482	16.7	20.4	393058	16.8	20.6	43967	16.9	18.7	501450	16.9	19.7	380836	17.0	19.1	115212	17.1	18.7
1191	16.7	14.9	7923	16.8	17.2	64113	16.9	20.1	544755	16.9	19.7	303453	17.0	20.3	122509	17.1	19.4
89182	16.7	18.6	382388	16.8	22.7	38456	16.9	17.9	376258	16.9	20.8	306707	17.0	20.7	200630	17.1	18.0
54570	16.7	18.5	56956	16.8	18.6	363002	16.9	20.0	540209	16.9	20.8	467756	17.0	21.2	382819	17.1	20.6
436764	16.7	22.0	278773	16.8	19.2	503486	16.9	20.6	133303	16.9	19.1	58934	17.0	18.2	260946	17.1	20.4
388278	16.7	20.2	434716	16.8	21.2	498661	16.9	21.2	38427	16.9	18.2	309358	17.0	18.7	248477	17.1	18.9
115241	16.7	19.4	371202	16.8	20.7	250425	16.9	18.0	266308	16.9	20.9	110975	17.0	19.3	165437	17.1	19.8
438635	16.7	20.7	469147	16.8	20.2	500917	16.9	20.1	352397	16.9	20.4	94897	17.0	18.8	84045	17.1	18.2
147278	16.7	18.2	272782	16.8	20.7	502750	16.9	20.1	530802	16.9	21.2	496727	17.0	21.1	394623	17.1	21.2
374095	16.7	20.7	11758	16.8	16.9	8711	16.9	17.6	224299	16.9	20.3	30114	17.0	18.8	175844	17.1	19.9
472986	16.7	20.8	426986	16.8	20.3	110880	16.9	18.9	495211	16.9	21.8	110190	17.0	20.0	249473	17.1	20.9
11343	16.7	17.9	428316	16.8	19.6	217026	16.9	18.8	349854	16.9	20.8	16432	17.0	17.0	415730	17.1	20.8
190715	16.7	17.7	329604	16.8	19.5	392888	16.9	19.2	112976	16.9	19.1	231874	17.0	20.5	191814	17.1	18.4
169271	16.7	19.7	470708	16.8	20.4	304431	16.9	20.5	20841	16.9	18.0	33034	17.0	17.7	297903	17.1	21.3
355098	16.7	21.7	121726	16.8	19.1	177931	16.9	19.4	273025	16.9	20.0	15390	17.0	17.7	527650	17.1	21.3
16940	16.7	16.7	292605	16.8	19.5	524724	16.9	21.0	24526	16.9	18.3	368696	17.0	20.8	391734	17.1	19.3
168961	16.7	19.8	36658	16.8	18.3	151592	16.9	20.4	53182	16.9	18.4	213445	17.0	20.0	294632	17.1	20.9
231783	16.7	20.0	34591	16.8	18.4	303874	16.9	20.5	371004	16.9	20.8	2229	17.0	15.0	515738	17.1	20.9
504365	16.7	21.6	309729	16.8	20.5	450416	16.9	20.7	338237	16.9	20.2	378961	17.0	20.0	251028	17.1	20.0
225293	16.7	19.5	17320	16.8	18.1	230109	16.9	20.5	122679	16.9	19.0	107353	17.0	19.5	277668	17.1	19.1
196422	16.7	20.9	533077	16.8	22.8	501426	16.9	20.2	171263	16.9	19.2	232374	17.0	20.0	529463	17.1	21.5
388408	16.7	20.4	357539	16.8	20.3	169221	16.9	20.4	505357	16.9	22.7	122458	17.0	17.6	299729	17.1	20.2
162692	16.7	18.9	346401	16.8	20.8	427907	16.9	21.4	437910	16.9	20.9	28116	17.0	17.2	78191	17.1	18.2
73588	16.7	19.2	322709	16.8	20.2	210887	16.9	20.1	152019	16.9	18.2	92048	17.0	17.9	20098	17.1	15.6
365877	16.7	21.2	406423	16.8	18.7	129339	16.9	18.6	275519	16.9	20.3	425975	17.0	21.4	501011	17.1	20.0
321196	16.7	19.1	28597	16.8	17.8	206789	16.9	20.6	536569	16.9	20.4	391326	17.0	21.4	61747	17.1	18.8
506936	16.7	22.0	304688	16.8	20.8	310499	16.9	19.6	142149	16.9	18.8	105976	17.0	19.0	387463	17.1	19.7
227943	16.7	19.7	376217	16.8	20.7	29592	16.9	18.3	534498	16.9	21.8	15175	17.0	17.1	36716	17.1	19.3
57252	16.7	17.3	178667	16.8	19.6	53109	16.9	18.0	71257	16.9	19.2	290653	17.0	19.2	222321	17.1	20.5
68769	16.7	18.5	67880	16.8	18.3	130059	16.9	20.1	261245	16.9	20.2	348268	17.0	21.4	64747	17.1	19.4
201500	16.7	19.6	355212	16.8	20.7	392125	16.9	21.4	274374	16.9	19.3	434526	17.0	20.6	529521	17.1	20.5
453260	16.7	19.9	508248	16.8	20.6	192383	16.9	20.5	435005	16.9	20.7	492723	17.0	19.2	305588	17.1	20.1
210290	16.7	20.1	303317	16.8	20.1	381940	16.9	20.3	458836	16.9	20.8	424138	17.0	20.1	204208	17.1	20.4
351900	16.7	20.9	213029	16.8	20.1	413010	16.9	20.0	412570	16.9	18.3	528245	17.0	21.3	226629	17.1	20.8
117042	16.7	19.6	276455	16.8	20.7	374461	16.9	21.4	187153	16.9	19.3	471354	17.0	21.9	87710	17.1	17.9
18986	16.7	18.0	145761	16.8	19.7	482804	16.9	19.2	518678	16.9	19.7	61652	17.0	18.3	70869	17.1	18.4
501161	16.7	20.9	389818	16.8	20.3	191156	16.9	18.2	32493	16.9	17.1	162418	17.0	19.6	39328	17.1	19.0
330084	16.7	20.4	66942	16.8	19.4	465352	16.9	23.2	317099	16.9	20.0	251951	17.0	19.5	310511	17.1	19.6
521116	16.7	21.0	198484	16.8	19.8	410376	16.9	21.3	364577	16.9	20.5	465192	17.0	20.8	63146	17.1	18.7
232632	16.7	20.3	206909	16.8	17.8	460244	16.9	19.9	116453	16.9	20.2	300047	17.0	20.2	525069	17.1	22.1
107236	16.7	19.1	260757	16.8	19.0	176525	16.9	19.1	436030	16.9	19.8	150577	17.0	19.3	412878	17.1	21.4
499275	16.7	21.5	402540	16.8	20.1	541333	16.9	20.7	10105	16.9	17.7	457534	17.0	21.4	51879	17.1	17.9
406369	16.7	19.0	6853	16.8	17.8	31359	16.9	18.8	99624	16.9	18.9	42155	17.0	17.7	66833	17.1	17.5
283492	16.7	19.4	165431	16.8	19.5	105092	16.9	19.0	89778	16.9	17.5	150647	17.0	19.8	539911	17.1	19.7
64183	16.7	19.3	150904	16.8	19.7	470751	16.9	20.0	388288	16.9	21.4	132598	17.1	19.6	119645	17.1	19.6
288099	16.7	20.3	141529	16.8	20.2	499110	16.9	21.9	169420	16.9	19.5	5448	17.1	15.7	297646	17.1	21.0
299859	16.7	20.2	285968	16.8	18.9	308422	16.9	21.3	347755	16.9	21.5	89208	17.1	19.7	501271	17.1	21.0
401336	16.7	19.0	499216	16.8	21.4	222265	16.9	19.2	137071	16.9	19.5	301107	17.1	19.6	66274	17.1	18.7
308180	16.7	20.9	427988	16.8	21.4	304463	16.9	21.4	150947	16.9	18.4	521290	17.1	20.5	75581	17.1	18.2
188697	16.7	19.6	300741	16.8	20.3	329835	16.9	17.8	102216	16.9	18.5	469296	17.1	21.1	229041	17.1	19.7
350756	16.7	21.0	408631	16.8	19.8	232352	16.9	20.2	306367	16.9	20.3	436340	17.1	20.1	172910	17.1	20.3
283463	16.7	18.5	508521	16.8	19.8	407281	16.9	20.4	49417	16.9	17.9	106919	17.1	19.6	168497	17.1	19.3
97170	16.7	17.9	212329	16.8	19.7	503144	16.9	20.9	377360	16.9	19.6	215584	17.1	19.2	406825	17.1	20.3
7405	16.8	15.9	145002	16.8	18.6	505602	16.9	21.4	230460	16.9	19.5	397675	17.1	19.5	77030	17.1	19.2
34461	16.8	18.8	33290	16.8	16.7	278728	16.9	20.1	118035	16.9	18.9	195576	17.1	19.1	513205	17.1	21.4
104889	16.8	19.0	538053	16.8	21.1	131796	16.9	19.9	292561	16.9	19.8	215985	17.1	19.7	502110	17.1	20.3
6883	16.8	17.3	92891	16.8	18.4	302926	16.9	20.4	141104	16.9	18.7	501528	17.1	20.5	308386	17.1	19.8
7505	16.8	14.5	194103	16.8	18.9	540552	16.9	19.4	532472	16.9	21.8	53194	17.1	18.0	34947	17.1	19.4
417106	16.8	21.2	349131	16.8	21.0	155443	16.9	19.6	42298	16.9	18.9	273476	17.1	20.0	470502	17.1	20.4
270463	16.8	20.4	110278	16.8	17.4	256707	16.9	19.7	256282	16.9	20.0	296112	17.1	18.8	126379	17.1	19.4
526363	16.8	22.0	478254	16.8	19.9	88832	16.9	19.0	127990	16.9	18.7	176492	17.1	20.7	52603	17.2	19.4
350095	16.8	19.4	530139	16.8	21.0	121310	16.9	18.9	80153	16.9	18.3	196978	17.1	20.1	153923	17.2	19.8
168872	16.8	20.4	42829	16.8	17.8	319765	16.9	20.5	463673	16.9	20.8	134031	17.1	18.9	149450	17.2	19.3
445967	16.8	21.0	372518	16.8	20.4	339023	16.9	20.9	529691	16.9	20.7	277675	17.1	20.9	55576	17.2	21.3
56872	16.8	18.7	531969	16.8	20.6	236364	16.9	19.9	116560	16.9	18.6	214869	17.1	20.9	292731	17.2	20.1
31670	16.8	18.5	435368	16.8	20.4	279369	16.9	18.9	535222	16.9	21.8	338363	17.1	20.6	217875	17.2	18.1
55417	16.8	18.4	98913	16.8	20.8	388637	16.9	21.9	501950	16.9	20.3	475101	17.1	21.6	294181	17.2	20.2
21298	16.8	17.2	217485	16.8	20.4	379281	16.9	19.5	87700	16.9	19.2	377857	17.1	19.9	393012	17.2	20.5
527758	16.8	22.0	278444	16.8	19.0	129216	16.9	18.4	520990	16.9	21.6						

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
78634	17.2	19.4	470216	17.2	21.0	431815	17.3	20.5	246228	17.4	18.6	222738	17.4	20.8	471183	17.5	19.5
457114	17.2	20.9	427966	17.2	20.4	16933	17.3	17.9	215456	17.4	19.9	61828	17.4	17.7	423482	17.5	22.0
474610	17.2	19.6	400311	17.2	20.1	17237	17.3	18.5	529457	17.4	21.1	211641	17.4	18.5	12390	17.5	17.6
349879	17.2	21.2	360552	17.2	20.5	437366	17.3	21.0	135056	17.4	19.5	34817	17.4	15.1	370110	17.5	21.0
270334	17.2	21.7	426775	17.2	20.3	38966	17.3	19.8	314477	17.4	20.0	290122	17.4	21.0	428848	17.5	21.1
308370	17.2	19.8	388706	17.2	20.4	522822	17.3	20.7	292560	17.4	20.7	459157	17.4	20.8	415991	17.5	21.7
225581	17.2	20.2	254587	17.2	20.2	5865	17.3	16.7	302091	17.4	20.1	503331	17.4	19.9	129865	17.5	17.5
20644	17.2	17.8	329585	17.2	21.4	114945	17.3	19.6	540702	17.4	20.5	258838	17.4	19.3	131612	17.5	19.3
322772	17.2	19.7	427971	17.2	21.6	380115	17.3	20.4	305790	17.4	21.2	170885	17.4	19.1	354798	17.5	20.0
163218	17.2	18.8	143575	17.2	19.7	470515	17.3	21.5	51047	17.4	18.7	31923	17.4	18.1	365857	17.5	20.0
396042	17.2	21.6	14012	17.2	16.4	279795	17.3	19.9	434381	17.4	20.9	519917	17.4	19.9	162746	17.5	19.9
499170	17.2	19.8	403535	17.2	20.3	366389	17.3	18.9	371710	17.4	20.6	68203	17.4	18.5	305679	17.5	20.4
437785	17.2	20.7	307582	17.2	19.9	110499	17.3	19.2	106644	17.4	19.8	495783	17.4	19.9	213781	17.5	19.8
47065	17.2	17.9	187547	17.2	21.9	208035	17.3	18.1	417209	17.4	21.4	56235	17.4	17.2	235910	17.5	20.3
473279	17.2	20.3	362642	17.2	20.3	141573	17.3	19.9	263851	17.4	20.0	151086	17.4	19.9	105471	17.5	19.7
45031	17.2	18.3	474882	17.2	21.1	73394	17.3	19.0	372931	17.4	21.1	303392	17.5	19.4	161255	17.5	20.6
41071	17.2	16.4	60582	17.2	18.0	424921	17.3	19.8	200858	17.4	19.1	7884	17.5	16.3	58548	17.5	19.2
194864	17.2	19.1	376015	17.2	22.1	155794	17.3	19.6	253113	17.4	21.1	81758	17.5	19.4	282649	17.5	19.5
145411	17.2	20.3	148031	17.2	19.2	524881	17.3	20.8	157088	17.4	19.5	475025	17.5	21.7	394420	17.5	19.7
462215	17.2	19.8	119887	17.2	19.6	311530	17.3	19.6	106836	17.4	19.7	224578	17.5	19.6	186568	17.6	20.0
471918	17.2	21.5	102712	17.3	19.8	538050	17.3	20.3	292338	17.4	20.9	380435	17.5	19.6	198977	17.6	19.4
524194	17.2	19.8	192242	17.3	19.5	141040	17.3	19.4	452519	17.4	20.8	524696	17.5	19.6	245038	17.6	20.5
410391	17.2	20.6	31081	17.3	18.0	415339	17.3	19.4	317910	17.4	19.8	213809	17.5	18.6	102772	17.6	18.5
158455	17.2	20.1	380021	17.3	20.0	528294	17.3	21.1	296198	17.4	19.6	23479	17.5	17.7	413947	17.6	21.0
236216	17.2	19.3	174525	17.3	19.6	225388	17.3	18.5	471236	17.4	21.4	382811	17.5	19.8	142782	17.6	20.5
372469	17.2	21.6	469132	17.3	19.5	518178	17.3	20.0	183578	17.4	21.1	150623	17.5	19.5	58725	17.6	17.3
28932	17.2	17.9	360777	17.3	20.6	502021	17.3	21.0	164369	17.4	20.0	164543	17.5	19.9	351999	17.6	20.8
8360	17.2	15.9	248566	17.3	18.8	510346	17.3	20.4	270195	17.4	20.1	386303	17.5	19.6	238701	17.6	20.2
297666	17.2	19.1	471472	17.3	20.3	382951	17.3	19.4	351647	17.4	20.9	354184	17.5	21.3	310894	17.6	20.1
470527	17.2	20.8	154312	17.3	19.3	237764	17.3	19.7	19359	17.4	17.7	390533	17.5	20.4	151071	17.6	19.1
125330	17.2	19.3	183715	17.3	19.7	38008	17.3	18.5	412340	17.4	20.2	165514	17.5	19.6	144713	17.6	20.9
19429	17.2	18.6	349310	17.3	20.8	229630	17.3	19.0	462667	17.4	21.1	355910	17.5	19.6	538376	17.6	21.0
305736	17.2	20.6	248369	17.3	20.5	424895	17.3	20.6	520202	17.4	20.2	435927	17.5	21.8	535041	17.6	20.4
138288	17.2	19.3	395220	17.3	19.8	499298	17.3	19.5	521185	17.4	20.2	68811	17.5	17.5	108526	17.6	17.7
388833	17.2	20.9	507575	17.3	20.9	334819	17.3	20.8	202223	17.4	20.1	250999	17.5	18.0	54194	17.6	18.9
336401	17.2	20.2	463953	17.3	21.1	203365	17.3	19.7	102952	17.4	19.8	23658	17.5	19.4	402878	17.6	20.0
502837	17.2	20.6	48020	17.3	18.8	526179	17.3	21.6	437722	17.4	21.3	461360	17.5	19.3	241310	17.6	20.4
114250	17.2	18.2	427329	17.3	19.3	503627	17.3	20.9	111550	17.4	19.0	304658	17.5	19.4	30995	17.6	18.4
44945	17.2	19.2	149799	17.3	17.8	140256	17.3	20.1	310902	17.4	19.8	359083	17.5	20.5	246015	17.6	19.6
133004	17.2	19.4	352441	17.3	20.6	314979	17.3	20.7	59493	17.4	18.0	230373	17.5	19.5	240820	17.6	19.9
102228	17.2	20.0	245613	17.3	20.8	468923	17.3	20.0	242466	17.4	19.6	260506	17.5	20.2	43448	17.6	19.0
290396	17.2	20.0	299344	17.3	21.2	526608	17.3	21.4	352007	17.4	20.5	133452	17.5	18.6	190727	17.6	17.9
284717	17.2	20.2	497501	17.3	19.9	391354	17.3	21.1	62829	17.4	18.0	149997	17.5	19.3	312947	17.6	20.5
348901	17.2	21.1	17003	17.3	16.5	183060	17.3	20.3	7153	17.4	17.7	248674	17.5	21.0	153049	17.6	18.2
125020	17.2	19.5	26027	17.3	19.1	148109	17.3	18.8	44925	17.4	18.5	196407	17.5	19.9	31969	17.6	18.1
467766	17.2	20.0	506888	17.3	20.8	179066	17.3	20.1	391016	17.4	19.5	293414	17.5	20.2	206774	17.6	20.3
51459	17.2	16.3	433952	17.3	20.7	21792	17.3	18.4	380089	17.4	20.2	393972	17.5	20.6	73668	17.6	19.1
149812	17.2	19.0	67530	17.3	18.3	156546	17.3	19.6	150906	17.4	18.0	357913	17.5	20.1	499119	17.6	21.3
542284	17.2	20.4	410786	17.3	20.5	502410	17.3	20.1	122938	17.4	20.3	185696	17.5	19.4	240837	17.6	18.9
540565	17.2	21.9	417714	17.3	20.3	526581	17.3	22.4	59624	17.4	18.5	377781	17.5	19.7	148578	17.6	18.8
286318	17.2	19.6	170845	17.3	20.2	335564	17.3	19.9	420652	17.4	20.7	269498	17.5	20.7	213385	17.6	20.8
303826	17.2	19.1	530812	17.3	20.9	200005	17.3	18.7	284861	17.4	20.4	102419	17.5	18.8	525219	17.6	20.6
429662	17.2	21.1	414780	17.3	19.0	469094	17.3	20.1	44889	17.4	17.1	51933	17.5	18.7	529898	17.6	21.7
272751	17.2	21.3	176027	17.3	20.0	55996	17.3	18.0	225642	17.4	20.0	308749	17.5	20.6	358633	17.6	18.5
497413	17.2	20.6	6318	17.3	20.8	415997	17.3	21.5	335606	17.4	19.6	30899	17.5	18.8	382427	17.6	21.7
451229	17.2	20.1	32409	17.3	17.9	229169	17.3	18.8	465350	17.4	21.8	464561	17.5	20.5	374174	17.6	20.1
203454	17.2	19.8	524621	17.3	20.3	124848	17.3	19.5	53595	17.4	17.7	184991	17.5	18.3	135998	17.6	19.6
29265	17.2	16.8	364340	17.3	19.4	262682	17.3	19.8	178705	17.4	20.7	543836	17.5	19.7	176672	17.6	19.6
212631	17.2	19.7	96238	17.3	18.7	330364	17.4	20.0	353657	17.4	20.4	474963	17.5	20.5	21868	17.6	16.9
419369	17.2	19.8	225883	17.3	20.1	162056	17.4	19.3	42028	17.4	17.2	63634	17.5	18.7	47432	17.6	17.9
126757	17.2	19.5	354873	17.3	20.4	281778	17.4	20.3	522778	17.4	20.8	91415	17.5	18.2	350731	17.6	20.9
255587	17.2	20.4	184715	17.3	18.9	33366	17.4	16.9	7417	17.4	18.3	113280	17.5	19.2	213043	17.6	19.6
427480	17.2	20.7	538910	17.3	21.9	86029	17.4	17.8	339576	17.4	19.5	369436	17.5	20.2	274151	17.6	18.6
137219	17.2	18.3	58191	17.3	18.1	163368	17.4	18.9	56818	17.4	18.1	12159	17.5	17.4	438356	17.6	20.5
177461	17.2	19.7	212065	17.3	18.9	503581	17.4	20.1	531586	17.4	20.7	38774	17.5	17.6	278913	17.6	20.2
462293	17.2	21.1	410406	17.3	21.4	533352	17.4	21.1	394739	17.4	21.8	412057	17.5	18.9	296989	17.6	18.8
309893	17.2	21.1	224226	17.3	21.3	214154	17.4	20.8	222805	17.4	21.6	292698	17.5	21.2	391325	17.6	21.0
181176	17.2	19.7	84864	17.3	18.7	477967	17.4	21.4	199507	17.4	19.7	235672	17.5	18.5	53166	17.6	17.5
141179	17.2	19.3	447716	17.3	21.2	68906	17.4	18.1	369915</								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
329811	17.6	19.2	388276	17.7	21.2	95285	17.8	19.5	390234	17.9	20.2	537228	17.9	20.5	2887	18.0	14.5
505737	17.6	19.6	465201	17.7	20.7	155604	17.8	19.2	126263	17.9	18.8	363242	17.9	21.9	435933	18.0	20.5
172592	17.6	20.3	161860	17.7	20.0	247708	17.8	21.4	41460	17.9	16.9	222745	17.9	20.1	261036	18.0	20.6
356193	17.6	20.3	508258	17.7	20.4	5705	17.8	15.4	99697	17.9	19.7	457585	17.9	21.6	39847	18.0	19.1
530907	17.6	20.1	457226	17.7	19.2	209423	17.8	19.3	353236	17.9	21.1	498084	17.9	21.2	42568	18.0	18.2
532498	17.6	21.4	512960	17.7	21.0	199518	17.8	19.5	34426	17.9	19.1	182836	17.9	21.0	356810	18.0	20.6
540802	17.6	21.5	165427	17.7	19.1	106928	17.8	18.7	147284	17.9	19.6	449074	17.9	22.9	479247	18.0	21.3
249669	17.6	20.5	188305	17.7	20.3	140375	17.8	19.3	540563	17.9	20.6	303201	17.9	19.7	33223	18.0	18.2
353635	17.6	21.0	250444	17.7	19.4	389688	17.8	20.2	210468	17.9	19.1	521292	17.9	20.5	464371	18.0	19.6
157915	17.6	18.9	227541	17.7	20.4	179454	17.8	20.6	146498	17.9	19.2	425379	17.9	20.3	111780	18.0	19.0
413886	17.6	21.2	510371	17.7	20.9	288604	17.8	17.5	62403	17.9	18.7	132257	17.9	19.1	353103	18.0	21.4
459334	17.6	21.7	143379	17.7	20.2	427442	17.8	19.7	17317	17.9	17.6	55818	17.9	18.9	286488	18.0	19.9
346046	17.6	20.6	531244	17.7	20.7	80107	17.8	18.4	259602	17.9	19.9	442882	17.9	20.6	39932	18.0	18.0
449656	17.6	19.2	368776	17.7	21.1	540654	17.8	20.9	36167	17.9	17.9	414038	17.9	19.8	259597	18.0	20.5
490903	17.6	20.4	98540	17.7	20.0	396640	17.8	20.6	185233	17.9	20.2	460096	17.9	18.3	11766	18.0	17.1
214830	17.6	19.8	183559	17.7	19.9	308410	17.8	19.8	98268	17.9	20.0	96364	17.9	18.7	538645	18.0	20.9
271110	17.6	19.7	429604	17.7	20.9	153643	17.8	20.0	497440	17.9	20.6	277671	17.9	19.0	99777	18.0	18.8
97871	17.6	17.9	37830	17.7	17.1	42340	17.8	18.3	331542	17.9	20.0	141951	17.9	19.0	394765	18.0	21.0
398675	17.6	20.9	498746	17.7	22.0	299896	17.8	20.5	188897	17.9	20.1	456208	17.9	19.4	470111	18.0	21.1
437744	17.6	20.0	311400	17.7	20.6	497415	17.8	21.6	114391	17.9	20.3	156742	17.9	19.3	246877	18.0	19.3
282740	17.6	19.1	347766	17.7	20.0	518225	17.8	20.3	151974	17.9	18.9	473399	17.9	20.0	371929	18.0	19.5
226045	17.6	20.2	133084	17.7	18.2	263957	17.8	20.4	533792	17.9	20.2	176516	17.9	19.3	401116	18.0	20.3
233706	17.6	19.4	451100	17.7	21.7	24088	17.8	18.1	161865	17.9	19.6	57594	17.9	17.9	23205	18.0	17.2
39344	17.6	19.1	462199	17.7	21.9	392795	17.8	21.0	43100	17.9	17.8	527720	17.9	22.1	162670	18.0	18.6
144357	17.6	19.3	207707	17.7	21.2	517603	17.8	22.0	382964	17.9	20.4	536835	17.9	21.9	120465	18.0	18.8
398750	17.6	21.2	286150	17.7	20.9	19499	17.8	18.3	496721	17.9	22.0	59576	17.9	18.7	231413	18.0	19.3
315433	17.6	20.0	175938	17.7	20.4	225941	17.8	18.6	111168	17.9	19.1	120139	17.9	19.1	89973	18.0	19.3
203569	17.6	20.0	285761	17.7	20.5	204139	17.8	19.4	456878	17.9	21.7	117076	17.9	19.4	242163	18.0	19.4
303367	17.6	18.9	504699	17.7	20.8	184027	17.8	20.1	468333	17.9	20.0	322245	17.9	19.4	344585	18.0	20.2
33618	17.6	18.6	387177	17.7	20.9	344474	17.8	17.9	55516	17.9	19.5	84075	17.9	19.4	425877	18.0	20.5
259296	17.6	20.1	498517	17.7	20.5	534869	17.8	21.4	246970	17.9	19.6	40903	17.9	18.2	444786	18.0	21.8
301394	17.6	20.7	261575	17.7	19.9	20891	17.8	17.4	385160	17.9	19.0	297626	17.9	20.9	300238	18.0	21.1
75449	17.6	18.9	32481	17.7	17.7	44953	17.8	18.1	170372	17.9	19.5	302358	17.9	19.6	385504	18.0	20.3
173059	17.6	19.0	197986	17.7	19.5	493866	17.8	19.9	110683	17.9	18.0	58995	17.9	17.8	176661	18.0	19.3
536732	17.6	21.2	274729	17.7	19.4	351691	17.8	20.6	245678	17.9	20.1	247172	17.9	21.0	460228	18.0	19.5
350763	17.6	21.5	204519	17.7	19.6	346197	17.8	20.7	404972	17.9	21.6	251026	17.9	18.8	318441	18.0	20.4
155226	17.7	20.2	175737	17.7	18.9	288613	17.8	18.1	155592	17.9	19.9	210683	17.9	18.6	391297	18.0	20.6
382782	17.7	20.6	198563	17.7	20.5	280386	17.8	19.3	199550	17.9	19.5	293826	17.9	19.0	192857	18.0	19.3
75633	17.7	19.6	35824	17.7	17.5	218275	17.8	20.6	325955	17.9	19.8	248364	17.9	19.7	498675	18.0	20.5
172465	17.7	20.4	281771	17.7	21.1	244171	17.8	19.6	99641	17.9	18.0	67299	17.9	16.1	358045	18.0	21.0
376757	17.7	20.8	107227	17.7	18.2	170968	17.8	19.9	524878	17.9	21.2	123577	17.9	19.5	301565	18.0	21.2
304564	17.7	21.0	86965	17.7	16.9	526713	17.8	20.7	269217	17.9	20.0	383697	17.9	21.3	55652	18.0	18.1
69689	17.7	18.3	297505	17.7	20.3	412981	17.8	19.9	338223	17.9	21.4	265581	17.9	19.4	407821	18.0	20.8
160703	17.7	18.2	479704	17.7	21.3	343033	17.8	20.5	365200	17.9	19.5	409212	17.9	19.9	130122	18.0	17.7
205794	17.7	21.2	158729	17.7	17.4	384094	17.8	20.7	217468	17.9	19.5	285466	17.9	21.4	282479	18.0	19.2
500187	17.7	19.9	243976	17.8	19.3	311007	17.8	19.3	527860	17.9	21.2	94602	17.9	19.2	41974	18.0	18.0
243343	17.7	21.4	501928	17.8	21.4	422405	17.8	18.6	353540	17.9	21.4	225576	17.9	20.7	260038	18.0	20.7
69783	17.7	17.9	107135	17.8	19.7	125755	17.8	19.6	94401	17.9	18.6	393823	17.9	21.1	376434	18.0	19.8
189011	17.7	19.4	341408	17.8	19.9	238972	17.8	19.5	180578	17.9	20.3	356815	17.9	20.8	268414	18.0	20.3
69379	17.7	18.3	522692	17.8	20.3	522600	17.8	19.6	471489	17.9	20.1	131132	17.9	19.3	87514	18.0	18.5
5875	17.7	15.5	534026	17.8	20.9	241377	17.8	20.6	89416	17.9	18.7	425154	17.9	20.7	470060	18.0	20.5
524677	17.7	20.6	47611	17.8	18.8	194395	17.8	19.6	342515	17.9	19.7	97962	17.9	18.8	201109	18.0	20.4
272964	17.7	18.8	89679	17.8	18.3	158547	17.8	18.2	452634	17.9	21.3	451046	17.9	21.1	433752	18.0	19.4
71263	17.7	17.6	31773	17.8	17.7	357111	17.8	20.6	289269	17.9	20.1	263744	17.9	20.2	55112	18.0	17.6
323753	17.7	19.1	444289	17.8	20.8	540623	17.8	20.6	100292	17.9	19.2	55333	17.9	20.0	300020	18.0	20.5
386518	17.7	20.9	214927	17.8	21.3	375008	17.8	19.4	384167	17.9	19.9	356500	17.9	20.8	435727	18.0	21.3
355190	17.7	21.0	178694	17.8	20.8	535226	17.8	20.9	418322	17.9	21.6	427942	17.9	20.9	372971	18.0	20.5
295177	17.7	19.8	96245	17.8	19.2	164329	17.8	19.1	50095	17.9	18.8	468137	17.9	20.7	527929	18.0	21.7
262898	17.7	19.7	251088	17.8	19.4	369758	17.8	20.6	315332	17.9	21.1	480372	17.9	19.1	473144	18.0	20.2
432024	17.7	20.4	96164	17.8	21.2	56276	17.8	17.6	329986	17.9	19.7	470684	17.9	20.1	161741	18.1	19.3
348802	17.7	18.7	310503	17.8	20.1	510437	17.8	21.3	65845	17.9	17.6	388851	17.9	20.6	433754	18.1	22.2
15245	17.7	18.1	6930	17.8	18.1	135532	17.8	18.7	274892	17.9	20.7	520058	17.9	20.5	333816	18.1	20.0
127704	17.7	18.8	488467	17.8	21.1	83875	17.8	19.0	473063	17.9	21.4	395624	17.9	20.4	539847	18.1	19.5
286654	17.7	20.2	112165	17.8	19.6	524368	17.8	21.6	299273	17.9	20.3	125467	17.9	19.0	488002	18.1	20.3
228278	17.7	20.0	267757	17.8	19.3	468944	17.8	20.3	432725	17.9	20.6	437704	17.9	20.3	161762	18.1	19.1
530730	17.7	20.6	287538	17.8	20.1	118717	17.8	19.1	104697	17.9	18.3	29366	17.9	18.1	143113	18.1	19.5
348493	17.7	20.2	22504	17.8	17.6	82535	17.8	18.3	438941	17.9	19.7	519667	17.9	20.8	16336	18.1	17.1
383771	17.7	20.0	468964	17.8	21.4	149210	17.8	20.8	309800	17.9	20.2	132230	17.9	19.9	108084	18.1	19.0
475032	17.7	21.8	76303	17.8	18.7	186224	17.8	18.6	149499</								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
466113	18.1	21.8	230120	18.2	19.8	465145	18.2	21.1	63700	18.3	18.2	403781	18.4	21.7	2052	18.4	15.0
496481	18.1	20.0	161803	18.2	19.9	235644	18.2	19.2	33039	18.3	17.8	365051	18.4	19.4	303436	18.4	21.3
143574	18.1	18.9	27971	18.2	18.0	406553	18.2	20.5	109809	18.3	19.6	138702	18.4	19.2	105620	18.4	17.5
5162	18.1	16.2	94406	18.2	18.7	384714	18.2	19.8	409197	18.3	20.9	217123	18.4	19.4	181043	18.4	19.0
29160	18.1	17.5	215997	18.2	20.0	319706	18.2	21.3	317832	18.3	20.6	303812	18.4	20.8	428249	18.4	21.4
178315	18.1	20.2	541743	18.2	20.8	523150	18.2	20.8	394277	18.3	20.3	315409	18.4	20.6	469787	18.4	20.0
209960	18.1	19.6	19813	18.2	18.3	115907	18.2	19.6	538468	18.3	22.0	384251	18.4	21.0	266637	18.4	21.2
53282	18.1	18.9	286705	18.2	21.6	134340	18.2	14.6	96407	18.3	20.0	290832	18.4	18.6	236983	18.4	21.1
92947	18.1	19.0	212826	18.2	19.4	61958	18.2	17.2	303932	18.3	21.0	510509	18.4	20.8	171245	18.4	20.0
199208	18.1	20.2	528454	18.2	21.2	503543	18.2	20.2	97281	18.3	18.9	458464	18.4	19.7	313129	18.4	19.6
467738	18.1	20.5	504514	18.2	19.7	160369	18.2	19.3	246902	18.3	20.5	212313	18.4	19.0	388822	18.4	20.9
230212	18.1	19.1	136570	18.2	20.4	8056	18.2	17.6	394320	18.3	21.0	224479	18.4	20.1	240611	18.4	19.6
129841	18.1	18.9	500786	18.2	20.9	205686	18.2	19.3	385689	18.3	19.7	191904	18.4	20.0	155292	18.4	18.8
66749	18.1	18.2	86466	18.2	17.5	219656	18.2	21.2	62585	18.3	18.4	288860	18.4	20.6	14969	18.4	16.4
302410	18.1	19.6	106024	18.2	19.6	122659	18.2	17.9	338923	18.3	20.3	15120	18.4	17.4	533745	18.4	21.4
388759	18.1	22.2	15464	18.2	16.4	72273	18.2	18.8	56611	18.3	18.5	437072	18.4	20.9	111713	18.4	19.4
12199	18.1	19.5	285255	18.2	19.8	270004	18.2	19.4	458921	18.3	19.8	202503	18.4	19.8	419859	18.4	20.6
245664	18.1	20.9	146203	18.2	19.0	424722	18.2	20.7	68986	18.3	19.5	500741	18.4	21.4	529260	18.4	22.0
285980	18.1	20.7	143234	18.2	19.9	105853	18.2	19.3	415710	18.3	24.6	178692	18.4	20.2	334847	18.5	20.3
318162	18.1	19.3	295466	18.2	19.1	315416	18.2	20.9	330941	18.3	20.7	394824	18.4	18.7	396292	18.5	20.9
98937	18.1	19.2	372525	18.2	21.4	229570	18.2	19.7	192007	18.3	19.9	219696	18.4	20.4	429210	18.5	21.9
43471	18.1	18.6	522443	18.2	20.6	358333	18.2	21.3	301323	18.3	19.6	148767	18.4	19.9	219536	18.5	18.9
500092	18.1	19.6	229170	18.2	19.9	368790	18.3	21.8	252500	18.3	19.7	457751	18.4	21.4	475810	18.5	21.8
406512	18.1	20.5	167953	18.2	19.2	118351	18.3	18.5	257677	18.3	20.4	540326	18.4	20.3	179440	18.5	21.1
387360	18.1	20.7	533783	18.2	20.1	532471	18.3	21.3	297820	18.3	20.5	98340	18.4	19.3	359150	18.5	19.1
540507	18.1	20.1	209005	18.2	19.6	225801	18.3	21.4	498582	18.3	19.8	50316	18.4	18.6	489985	18.5	21.8
272997	18.1	19.9	276571	18.2	19.4	128320	18.3	19.9	174192	18.3	19.6	148913	18.4	19.3	238511	18.5	20.8
386531	18.1	20.6	149676	18.2	19.5	138444	18.3	19.3	216448	18.3	19.7	368759	18.4	20.4	274673	18.5	19.8
270419	18.1	19.7	107609	18.2	19.8	134145	18.3	19.4	524997	18.3	20.9	372555	18.4	20.4	427757	18.5	20.2
372483	18.1	19.6	373843	18.2	19.7	347732	18.3	21.1	331245	18.3	19.8	62287	18.4	18.7	105294	18.5	18.6
285781	18.1	19.3	44098	18.2	17.4	70876	18.3	19.6	191243	18.3	19.1	530269	18.4	21.9	427538	18.5	20.1
29695	18.1	18.6	179490	18.2	19.8	243082	18.3	20.1	454682	18.3	19.1	308730	18.4	19.1	286567	18.5	20.1
161764	18.1	20.0	359056	18.2	20.7	210483	18.3	21.0	243295	18.3	19.6	39146	18.4	18.7	98010	18.5	19.7
162663	18.1	20.1	505430	18.2	19.6	298726	18.3	20.4	150782	18.3	19.4	303872	18.4	19.7	522643	18.5	20.3
23508	18.1	18.2	410332	18.2	21.0	190748	18.3	19.2	325292	18.3	19.3	465148	18.4	19.7	375986	18.5	20.0
130825	18.1	18.2	375809	18.2	21.0	315381	18.3	20.5	8218	18.3	16.0	51816	18.4	18.5	128258	18.5	19.4
59492	18.1	17.9	301232	18.2	20.8	264696	18.3	19.2	70253	18.3	17.6	122646	18.4	19.6	41836	18.5	17.7
80127	18.1	17.9	471905	18.2	20.7	467029	18.3	19.7	31665	18.3	18.2	261093	18.4	20.4	309168	18.5	19.6
257930	18.1	20.2	250433	18.2	19.7	425208	18.3	20.5	438440	18.3	20.5	429122	18.4	21.3	332608	18.5	20.1
429649	18.1	20.8	357765	18.2	20.9	9620	18.3	17.7	458763	18.3	21.1	235295	18.4	20.4	536945	18.5	21.8
13816	18.1	18.4	90125	18.2	19.3	209755	18.3	18.3	280146	18.3	19.2	376806	18.4	21.1	188815	18.5	19.9
119411	18.1	19.0	371071	18.2	19.9	235975	18.3	19.1	176570	18.3	20.4	494484	18.4	19.9	179408	18.5	20.0
467498	18.1	21.7	292285	18.2	19.7	519716	18.3	20.8	173365	18.3	20.6	172406	18.4	20.2	31130	18.5	17.9
384981	18.1	20.2	295547	18.2	19.9	364191	18.3	19.7	93037	18.3	18.8	141403	18.4	21.1	433775	18.5	21.0
173317	18.1	18.5	418362	18.2	20.8	347567	18.3	21.7	488322	18.3	19.6	322788	18.4	18.8	192846	18.5	19.4
191016	18.1	19.8	61690	18.2	17.4	507607	18.3	22.6	15313	18.3	19.3	512819	18.4	20.8	393836	18.5	20.6
500921	18.1	20.5	37798	18.2	20.1	299907	18.3	20.5	504191	18.3	21.9	87358	18.4	19.2	126159	18.5	18.7
500322	18.1	20.0	414808	18.2	19.7	219765	18.3	19.5	402908	18.3	20.7	349065	18.4	21.2	284661	18.5	19.8
441269	18.1	20.6	54687	18.2	17.5	344831	18.3	20.5	472135	18.3	21.0	486836	18.4	20.6	376750	18.5	20.6
173036	18.1	18.8	346057	18.2	20.5	457620	18.3	21.3	536097	18.3	20.4	131164	18.4	20.2	271151	18.5	19.3
225425	18.1	19.0	30918	18.2	17.9	499732	18.3	20.2	353594	18.3	20.1	26374	18.4	18.3	538103	18.5	20.8
27977	18.1	16.8	65572	18.2	19.5	352614	18.3	20.7	475762	18.3	21.1	373481	18.4	18.9	357997	18.5	21.3
163810	18.1	18.7	377455	18.2	20.2	341735	18.3	19.9	196858	18.3	19.9	107561	18.4	18.8	10026	18.5	16.3
536526	18.1	21.2	381523	18.2	20.1	8528	18.3	16.8	433892	18.3	20.3	207033	18.4	19.9	488618	18.5	20.3
530804	18.1	21.3	25940	18.2	18.2	162045	18.3	18.9	388699	18.3	20.6	466148	18.4	20.2	479308	18.5	20.5
258767	18.1	19.3	179403	18.2	20.1	131858	18.3	18.1	324023	18.3	19.8	467349	18.4	20.0	423547	18.5	21.6
300924	18.1	21.2	178895	18.2	17.9	524158	18.3	21.3	107323	18.3	18.2	534541	18.4	20.8	264549	18.5	19.9
187762	18.1	19.6	64810	18.2	19.1	271604	18.3	18.5	333426	18.3	19.7	409841	18.4	19.8	432360	18.5	21.7
297510	18.1	20.5	456882	18.2	20.9	133954	18.3	20.4	395774	18.3	19.8	128844	18.4	18.8	173990	18.5	20.0
232499	18.1	19.2	466659	18.2	22.2	272787	18.3	20.4	533307	18.3	22.5	212954	18.4	19.4	88509	18.5	19.1
106355	18.1	19.5	320651	18.2	21.4	245138	18.3	20.5	465070	18.3	21.4	167658	18.4	19.6	426710	18.5	20.9
85939	18.1	18.7	250082	18.2	20.2	528622	18.3	21.1	99685	18.3	20.0	469900	18.4	20.8	371053	18.5	20.2
286601	18.1	20.9	409067	18.2	19.3	222811	18.3	20.0	102605	18.3	18.6	521291	18.4	20.7	422925	18.5	19.9
353259	18.1	19.8	457227	18.2	20.4	160730	18.3	18.2	384557	18.3	20.7	312195	18.4	20.9	417812	18.5	21.5
492519	18.1	20.3	360029	18.2	21.1	254120	18.3	19.0	56459	18.3	17.7	145305	18.4	18.0	158057	18.5	20.5
407349	18.1	20.3	129080	18.2	19.8	356883	18.3	20.5	142584	18.3	19.5	342120	18.4	20.3	56804	18.5	18.2
423170	18.1	19.4	187864	18.2	19.5	232899	18.3	20.2	467257	18.4	20.0	386725	18.4	19.4	528402	18.5	20.9
13316	18.2	17.5	207801	18.2	20.8	135916	18.3	17.9	57432	18.4	18.4	33134	18.4	18.8	21305	18.5	19.2
493527	18.2	20.8	38306	18.2	18.0	482802	18.3	22.4	2973								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
153986	18.5	20.7	502097	18.6	20.8	537308	18.7	21.3	33527	18.7	18.1	387302	18.8	20.7	216840	18.9	19.8
25192	18.5	17.9	462160	18.6	20.8	430704	18.7	20.3	433415	18.7	21.5	283481	18.8	19.3	210903	18.9	20.3
427729	18.5	19.7	225968	18.6	19.9	54974	18.7	18.7	63567	18.7	18.7	462549	18.8	21.7	490860	18.9	21.1
221328	18.5	19.3	510097	18.6	18.4	407743	18.7	20.6	290101	18.7	20.3	198263	18.8	18.1	450540	18.9	21.3
524575	18.5	21.0	70800	18.6	18.7	57237	18.7	18.4	132177	18.7	19.0	533926	18.8	21.0	307923	18.9	19.3
349002	18.5	21.4	312517	18.6	19.1	217852	18.7	18.9	39319	18.7	19.0	349023	18.8	21.1	319302	18.9	20.3
118376	18.5	20.2	475608	18.6	20.3	371044	18.7	20.2	422345	18.7	19.3	499375	18.8	19.1	427495	18.9	21.5
87654	18.5	18.9	334718	18.6	19.6	309882	18.7	21.3	334801	18.7	19.9	205925	18.8	19.0	500958	18.9	21.2
375872	18.5	21.3	312508	18.6	21.7	308433	18.7	20.6	299884	18.7	20.4	294144	18.8	20.4	245156	18.9	19.7
435930	18.5	20.8	397582	18.6	19.9	35986	18.7	17.8	269270	18.8	19.1	464140	18.8	20.8	312072	18.9	20.9
99150	18.5	19.5	535548	18.6	22.4	329601	18.7	19.8	153823	18.8	20.6	469402	18.8	21.0	521228	18.9	20.4
389230	18.5	20.2	36545	18.6	17.6	57773	18.7	17.1	347678	18.8	21.6	104632	18.8	18.9	437570	18.9	21.1
518768	18.5	20.6	403894	18.6	19.4	184664	18.7	19.6	272131	18.8	19.2	222868	18.8	20.6	330404	18.9	20.8
168379	18.5	20.3	391680	18.6	20.5	168898	18.7	19.4	497143	18.8	20.0	430740	18.8	20.0	94434	18.9	18.5
527426	18.5	20.8	306408	18.6	19.9	320792	18.7	20.1	526871	18.8	21.0	406605	18.8	20.8	143595	18.9	19.4
256682	18.5	19.9	113664	18.6	18.5	32620	18.7	17.6	380903	18.8	20.3	302466	18.8	21.2	145849	18.9	21.0
34241	18.5	17.5	378860	18.6	20.7	301501	18.7	20.5	412108	18.8	19.8	317611	18.8	20.5	122699	18.9	19.4
36987	18.5	16.6	106880	18.6	19.6	305464	18.7	20.1	111604	18.8	19.0	277794	18.8	20.5	298806	18.9	19.2
281157	18.5	19.6	63597	18.6	18.0	440906	18.7	20.7	259284	18.8	21.1	171570	18.8	20.7	363322	18.9	19.0
386530	18.5	21.3	298785	18.6	19.5	314363	18.7	19.0	336324	18.8	20.4	95713	18.8	18.7	351595	18.9	20.3
356811	18.5	19.7	66829	18.6	18.0	79438	18.7	19.2	519615	18.8	21.0	111182	18.8	19.6	182128	18.9	19.9
247412	18.5	19.7	393941	18.6	21.7	88081	18.7	18.3	428397	18.8	19.6	500841	18.8	20.0	450488	18.9	21.2
309032	18.5	21.1	352696	18.6	20.3	533778	18.7	21.0	231531	18.8	20.1	95882	18.8	19.1	383918	18.9	20.2
538095	18.5	20.8	384783	18.6	20.4	208651	18.7	19.0	323796	18.8	19.8	474812	18.8	20.1	253077	18.9	20.3
319933	18.5	20.7	412991	18.6	19.7	348844	18.7	20.8	309306	18.8	20.9	93801	18.8	19.7	380634	18.9	19.5
513172	18.5	20.8	408195	18.6	20.5	193614	18.7	20.2	37863	18.8	18.8	536430	18.8	21.2	227453	18.9	19.1
112969	18.5	19.1	272472	18.6	20.9	280656	18.7	20.3	431933	18.8	21.2	505180	18.8	20.1	36489	18.9	18.6
819	18.5	13.4	528664	18.6	21.9	352750	18.7	20.9	544209	18.8	21.9	168537	18.8	20.0	156432	18.9	19.2
323144	18.5	19.1	519966	18.6	21.7	470531	18.7	21.3	285048	18.8	19.5	365491	18.8	19.5	11845	18.9	16.8
113373	18.5	19.1	216702	18.6	19.0	522723	18.7	20.3	81460	18.8	19.0	193077	18.9	19.8	387606	18.9	21.1
310327	18.5	19.1	298746	18.6	20.7	286391	18.7	20.4	506050	18.8	20.7	227257	18.9	19.6	105340	18.9	18.3
305434	18.5	20.8	355195	18.6	20.7	39581	18.7	18.0	230069	18.8	20.8	18885	18.9	16.7	38175	18.9	17.6
26911	18.5	18.3	110984	18.6	18.9	332529	18.7	18.1	449095	18.8	20.7	517675	18.9	20.7	134666	18.9	18.1
451870	18.5	19.5	243139	18.6	20.5	289352	18.7	21.1	426779	18.8	20.3	289257	18.9	20.8	392778	18.9	20.4
93623	18.5	18.5	292861	18.6	20.1	540285	18.7	21.1	365812	18.8	20.9	498580	18.9	19.6	229518	18.9	20.3
155189	18.5	18.5	517159	18.6	18.6	393198	18.7	21.2	540820	18.8	21.1	459051	18.9	20.7	199470	18.9	21.4
305835	18.5	20.1	537858	18.6	20.5	100200	18.7	20.2	207369	18.8	19.4	363763	18.9	21.4	280825	18.9	20.9
506066	18.5	20.4	384810	18.6	19.1	352488	18.7	20.7	522898	18.8	21.1	229750	18.9	19.2	177709	18.9	20.5
306310	18.5	20.3	92369	18.6	18.7	379223	18.7	20.0	143577	18.8	19.7	17064	18.9	16.7	21534	18.9	16.9
423523	18.5	21.5	53777	18.6	18.2	205825	18.7	20.3	241555	18.8	20.0	310960	18.9	18.5	504948	18.9	20.7
157232	18.5	18.7	284117	18.6	19.9	658	18.7	14.4	411797	18.8	21.7	226007	18.9	19.4	320487	18.9	20.1
459959	18.5	19.5	142954	18.6	18.3	138334	18.7	19.8	185880	18.8	18.6	374077	18.9	20.6	120428	18.9	18.7
377373	18.5	20.6	391627	18.6	20.9	247430	18.7	19.3	415965	18.8	21.1	23470	18.9	18.8	263993	18.9	19.4
355166	18.5	21.1	473257	18.6	20.0	476324	18.7	21.2	149150	18.8	20.6	370201	18.9	21.4	357224	18.9	19.7
242909	18.5	18.2	293359	18.6	21.3	219670	18.7	20.2	299744	18.8	20.7	51741	18.9	17.4	98303	18.9	18.6
529306	18.5	21.5	380532	18.6	19.2	474853	18.7	21.0	478252	18.8	20.6	11658	18.9	17.4	333252	18.9	20.4
406935	18.5	19.5	510394	18.6	19.4	179517	18.7	19.8	34978	18.8	18.1	165520	18.9	19.3	148350	18.9	19.6
509065	18.5	21.9	293056	18.6	20.9	409166	18.7	19.9	523986	18.8	22.2	535565	18.9	21.1	372512	18.9	22.0
461282	18.5	19.6	414799	18.6	19.4	507517	18.7	20.7	513000	18.8	20.9	118733	18.9	19.5	462117	18.9	21.9
429764	18.5	20.9	158518	18.6	19.0	370818	18.7	20.8	153524	18.8	21.1	156382	18.9	19.7	475607	18.9	21.0
403851	18.6	19.3	55442	18.6	19.4	2240	18.7	16.8	477611	18.8	20.3	500465	18.9	22.1	372011	18.9	19.9
290128	18.6	20.0	518209	18.6	20.4	303755	18.7	21.1	301432	18.8	19.8	306337	18.9	20.5	58670	18.9	18.4
4094	18.6	15.3	341920	18.6	20.2	129395	18.7	19.4	160357	18.8	17.0	200870	18.9	19.6	255459	18.9	19.7
250810	18.6	19.9	125999	18.6	20.0	301048	18.7	20.0	540495	18.8	21.0	497289	18.9	21.8	279335	18.9	19.7
505528	18.6	20.3	502757	18.6	21.5	64428	18.7	17.3	393897	18.8	21.1	215574	18.9	19.1	530335	18.9	22.1
273873	18.6	20.1	79724	18.6	18.1	64779	18.7	19.0	77085	18.8	19.1	203769	18.9	19.5	111658	18.9	18.1
522705	18.6	21.1	535002	18.6	21.7	349564	18.7	19.7	176379	18.8	19.9	141279	18.9	19.7	173617	18.9	19.8
221296	18.6	21.1	472733	18.6	20.1	471334	18.7	19.5	401059	18.8	20.3	491187	18.9	20.7	487923	18.9	19.9
395809	18.6	20.7	526069	18.6	20.3	505967	18.7	20.4	302452	18.8	21.2	304676	18.9	20.9	220435	18.9	19.3
255903	18.6	20.7	169027	18.6	20.7	96330	18.7	19.5	159238	18.8	18.8	147294	18.9	19.6	58531	18.9	19.0
488638	18.6	20.4	437437	18.6	21.1	459317	18.7	19.0	124816	18.8	19.6	498808	18.9	21.0	470168	18.9	21.1
332157	18.6	19.6	438631	18.6	20.9	502722	18.7	20.8	210441	18.8	20.3	384717	18.9	19.4	366748	18.9	19.3
382703	18.6	20.8	519431	18.6	21.6	179821	18.7	19.4	265000	18.8	21.2	528648	18.9	21.7	422806	18.9	20.3
525095	18.6	21.6	298900	18.6	20.3	304695	18.7	20.3	52745	18.8	18.3	141504	18.9	20.1	284754	18.9	20.3
487395	18.6	19.9	303911	18.6	20.0	372013	18.7	19.9	299755	18.8	21.1	86403	18.9	18.3	521333	18.9	19.7
500226	18.6	19.5	191111	18.6	19.4	87950	18.7	18.0	318045	18.8	20.1	115717	18.9	20.1	326958	18.9	20.7
195436	18.6	19.7	354953	18.6	20.1	314442	18.7	19.7	19865	18.8	19.0	305404	18.9	19.9	347922	18.9	21.0
379868	18.6	20.5	525147	18.6	22.1	270491	18.7	20.2	468569	18.8	19.3	238165	18.9	19.9	526910	18.9	20.4
532725	18.6	21.4	273285	18.6	20.1	104063	18.7										

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
247448	18.9	19.6	40624	19.1	17.5	367778	19.1	20.4	196344	19.2	19.1	469735	19.3	20.6	150784	19.4	19.1
122483	18.9	18.8	420508	19.1	19.4	506222	19.1	20.0	296038	19.2	19.8	201734	19.3	19.5	170868	19.4	20.4
465382	18.9	21.2	98071	19.1	17.8	532644	19.1	21.2	19691	19.2	17.1	251915	19.3	20.8	304785	19.4	18.6
357512	18.9	19.8	209618	19.1	19.2	138864	19.1	19.2	506277	19.2	20.4	533203	19.3	22.2	140775	19.4	19.5
147372	18.9	20.8	119930	19.1	18.7	326682	19.1	20.7	456715	19.2	21.6	457645	19.3	22.1	317911	19.4	20.3
532237	18.9	21.7	373185	19.1	19.5	198948	19.1	20.3	71279	19.2	18.7	243769	19.3	19.5	117382	19.4	19.8
331507	18.9	19.3	439600	19.1	20.9	305460	19.1	19.9	39937	19.2	17.9	507438	19.3	20.9	173905	19.4	20.3
92450	18.9	18.3	101753	19.1	20.1	229673	19.1	19.8	498851	19.2	20.9	501794	19.3	20.0	53513	19.4	17.8
134909	18.9	19.5	425834	19.1	21.7	233692	19.1	20.0	280764	19.2	19.4	277601	19.3	21.5	90983	19.4	18.9
259584	18.9	19.8	494992	19.1	21.6	172957	19.1	20.1	478127	19.2	20.9	79601	19.3	19.1	55529	19.4	18.7
500295	18.9	19.3	352747	19.1	21.2	420529	19.1	20.7	201491	19.2	19.3	254981	19.3	20.1	65575	19.4	19.1
29392	18.9	16.8	182904	19.1	19.8	99469	19.1	19.7	330360	19.2	20.9	257670	19.3	20.6	308263	19.4	21.3
376576	18.9	19.6	29044	19.1	18.5	478089	19.1	21.2	7003	19.2	17.1	534848	19.3	22.9	359757	19.4	20.8
158510	18.9	19.6	270279	19.1	20.2	277535	19.1	21.0	507710	19.2	19.6	307151	19.3	20.3	354761	19.4	20.7
426643	18.9	20.0	293442	19.1	20.5	66629	19.1	18.3	174065	19.2	19.7	402875	19.3	20.8	434333	19.4	20.6
179521	18.9	19.7	297844	19.1	20.9	109694	19.1	19.6	492408	19.2	21.2	85282	19.3	18.0	37111	19.4	18.4
308103	18.9	19.6	103139	19.1	19.6	247008	19.1	19.4	264302	19.2	20.6	35732	19.3	18.8	374969	19.4	20.0
430979	18.9	21.3	428787	19.1	21.1	308205	19.2	20.8	4156	19.2	16.7	501172	19.3	20.3	132214	19.4	18.4
211020	18.9	19.8	501258	19.1	19.1	474902	19.2	20.6	11760	19.2	18.2	348854	19.3	20.8	302041	19.4	20.1
242787	18.9	19.7	263711	19.1	20.4	158065	19.2	19.9	364890	19.2	21.0	141436	19.3	19.9	393421	19.4	19.3
284305	18.9	19.9	151320	19.1	19.3	49929	19.2	17.8	86078	19.2	17.9	533179	19.3	20.6	267190	19.4	19.3
406442	18.9	20.0	502250	19.1	20.1	119642	19.2	19.2	101326	19.2	18.6	542339	19.3	20.0	4545	19.4	17.3
459037	18.9	20.5	257029	19.1	20.1	355602	19.2	21.3	430217	19.2	20.9	383801	19.3	21.4	406419	19.4	19.3
172738	18.9	19.1	399355	19.1	19.3	268166	19.2	19.4	416826	19.2	20.6	111902	19.3	17.7	501235	19.4	22.0
269989	18.9	20.4	324450	19.1	21.9	179497	19.2	19.4	320316	19.2	20.5	362756	19.3	20.0	535103	19.4	21.0
468101	18.9	20.2	48155	19.1	17.1	310153	19.2	19.7	253038	19.2	19.2	346220	19.3	19.9	420282	19.4	20.4
141221	18.9	19.8	386226	19.1	21.6	538638	19.2	20.0	42815	19.2	18.6	305805	19.3	21.2	133793	19.4	19.1
93481	19.0	17.9	75185	19.1	18.6	265689	19.2	20.9	232524	19.2	19.8	254701	19.3	19.4	358510	19.4	20.0
426571	19.0	20.6	349907	19.1	21.1	383933	19.2	20.1	407701	19.2	20.4	496426	19.3	20.0	331535	19.4	19.9
471794	19.0	20.0	378303	19.1	19.5	411756	19.2	20.2	259256	19.2	19.3	320401	19.3	20.7	20400	19.4	18.9
473518	19.0	20.2	274214	19.1	20.2	509307	19.2	22.1	522442	19.2	20.3	19201	19.3	17.7	142620	19.4	19.6
31162	19.0	18.4	398732	19.1	20.4	243276	19.2	19.8	545101	19.2	20.7	322839	19.3	19.7	205932	19.4	18.6
479147	19.0	21.2	334920	19.1	21.3	131960	19.2	19.6	233371	19.2	18.9	277385	19.3	21.3	535622	19.4	20.2
250742	19.0	20.4	329782	19.1	19.1	64526	19.2	18.9	192917	19.2	19.5	404136	19.3	20.8	294141	19.4	21.1
497331	19.0	20.1	295284	19.1	20.4	420544	19.2	20.3	395359	19.2	20.8	92925	19.3	19.4	54017	19.4	18.3
150294	19.0	18.8	281512	19.1	20.1	57884	19.2	18.6	35071	19.2	18.0	30211	19.3	17.5	28251	19.4	18.3
148373	19.0	19.6	211610	19.1	19.6	512302	19.2	20.0	372334	19.2	19.4	34766	19.3	18.3	125891	19.4	18.9
53974	19.0	18.8	29921	19.1	18.3	390628	19.2	20.5	41583	19.2	17.8	482799	19.3	20.9	305379	19.4	20.6
206756	19.0	20.1	308520	19.1	20.2	191462	19.2	20.0	200762	19.2	21.0	82471	19.3	17.3	57696	19.4	20.0
349898	19.0	20.5	206818	19.1	19.7	540275	19.2	21.3	146953	19.2	20.4	396340	19.3	21.3	339592	19.4	19.9
153932	19.0	19.0	122817	19.1	20.2	210561	19.2	19.9	475728	19.2	21.6	270393	19.3	21.4	39090	19.4	18.1
392757	19.0	20.3	83268	19.1	19.1	475242	19.2	20.5	187874	19.2	17.8	95045	19.3	18.5	346177	19.4	20.8
475598	19.0	20.1	501629	19.1	21.1	478087	19.2	20.5	59902	19.2	17.9	84551	19.3	19.3	474941	19.4	20.6
519057	19.0	19.6	31766	19.1	18.4	264719	19.2	19.6	388858	19.2	19.5	391337	19.3	21.1	260026	19.4	19.7
299966	19.0	19.9	244164	19.1	19.9	153776	19.2	18.5	492166	19.2	20.6	504259	19.3	22.7	70928	19.4	19.4
144053	19.0	18.7	406576	19.1	21.2	416462	19.2	19.9	501065	19.2	21.5	314269	19.3	21.1	475796	19.4	20.6
173077	19.0	20.6	182823	19.1	21.2	429878	19.2	20.1	358108	19.2	20.2	521270	19.3	20.9	172783	19.4	19.0
231915	19.0	20.4	397859	19.1	19.9	116705	19.2	19.3	257293	19.3	18.7	540092	19.3	20.6	130714	19.4	19.2
529825	19.0	20.5	308882	19.1	16.1	230829	19.2	19.3	486685	19.3	21.1	65170	19.3	18.9	379246	19.4	20.5
355096	19.0	21.6	434852	19.1	20.7	265706	19.2	21.4	61881	19.3	18.3	59732	19.3	18.7	530058	19.4	21.5
534444	19.0	20.9	468776	19.1	20.5	284353	19.2	19.2	101300	19.3	18.2	206240	19.3	20.1	357207	19.4	20.0
26778	19.0	18.2	1034	19.1	12.9	184071	19.2	20.5	372954	19.3	19.8	198976	19.3	20.3	459236	19.4	19.2
296744	19.0	20.9	292406	19.1	19.6	199228	19.2	20.6	391385	19.3	20.5	393910	19.3	19.0	133188	19.4	17.5
13175	19.0	18.4	410361	19.1	20.6	371129	19.2	19.7	275269	19.3	20.7	37221	19.3	18.0	72443	19.4	19.5
346251	19.0	20.7	502614	19.1	21.2	425068	19.2	21.2	436363	19.3	20.5	533798	19.3	20.2	403791	19.4	21.3
478380	19.0	20.1	143544	19.1	19.7	96085	19.2	19.4	528329	19.3	19.8	44648	19.3	17.7	476464	19.4	20.8
63736	19.0	19.2	429499	19.1	21.1	430405	19.2	21.4	111668	19.3	19.0	222735	19.3	20.4	228335	19.4	19.8
373032	19.0	21.4	538020	19.1	21.1	207930	19.2	20.2	470910	19.3	21.3	249628	19.3	19.6	529244	19.4	21.3
182547	19.0	19.4	512792	19.1	20.4	421243	19.2	20.0	536214	19.3	21.1	406524	19.3	21.3	361162	19.4	20.3
474938	19.0	20.7	277146	19.1	18.8	427897	19.2	22.0	73610	19.3	18.6	543622	19.3	21.3	245885	19.4	18.8
430884	19.0	19.3	472322	19.1	20.1	212989	19.2	19.8	222721	19.3	20.8	545029	19.4	20.4	375279	19.4	20.0
543708	19.0	20.7	501858	19.1	21.1	497365	19.2	22.2	354949	19.3	21.4	107661	19.4	19.4	57757	19.4	20.3
187622	19.0	19.6	473116	19.1	20.5	212029	19.2	20.7	259110	19.3	21.0	334388	19.4	20.9	530233	19.4	21.7
374107	19.0	20.4	299295	19.1	19.8	305987	19.2	20.1	334851	19.3	19.2	384812	19.4	19.5	82427	19.4	17.9
232648	19.0	18.5	381518	19.1	21.1	497379	19.2	19.8	317997	19.3	20.8	321161	19.4	20.3	36144	19.4	18.4
129459	19.0	19.8	199740	19.1	20.3	63948	19.2	18.4	64229	19.3	17.9	505956	19.4	20.8	116831	19.4	18.2
378861	19.0	20.1	504554	19.1	20.0	61833	19.2	18.2	463153	19.3	21.0	52994	19.4	18.7	506271	19.4	20.2
45046	19.0	19.2	536245	19.1	22.4	177124	19.2	18.7	523994	19.3	21.0	229577	19.4	19.9	533235	19.4	20.1
455601	19.0	20.5	462268	19.1	21.6	495780	19.2	20.3	530								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
501073	19.4	21.0	406533	19.5	20.2	431268	19.6	19.5	107117	19.7	19.0	96173	19.7	17.4	499314	19.8	20.6
439809	19.4	20.3	65990	19.5	18.4	355565	19.6	20.6	409579	19.7	20.6	253248	19.7	20.9	153808	19.8	19.6
523109	19.4	21.5	284659	19.5	19.8	89793	19.6	18.2	185399	19.7	20.0	528608	19.7	21.3	350773	19.8	19.8
138141	19.5	19.5	190154	19.5	18.4	147365	19.6	20.6	66588	19.7	17.7	12845	19.7	18.0	99370	19.8	18.7
55315	19.5	17.6	425723	19.5	19.7	492026	19.6	19.9	429220	19.7	20.1	502199	19.7	21.1	245509	19.8	18.3
330545	19.5	21.5	182195	19.5	19.6	497136	19.6	20.4	432364	19.7	20.4	152077	19.7	19.3	26158	19.8	16.6
52842	19.5	17.6	410102	19.5	22.4	90761	19.6	19.7	399295	19.7	19.9	169952	19.7	18.1	275132	19.8	20.8
133179	19.5	17.5	50629	19.5	17.9	256451	19.6	20.4	507811	19.7	20.4	434436	19.8	20.6	497206	19.8	20.7
504742	19.5	20.7	537220	19.5	21.1	499339	19.6	20.6	539106	19.7	20.9	326718	19.8	20.8	34977	19.8	17.7
192012	19.5	20.2	540258	19.5	22.4	437903	19.6	21.6	175709	19.7	20.8	41490	19.8	18.9	44690	19.8	16.6
199646	19.5	19.4	208232	19.5	18.5	25792	19.6	18.1	123418	19.7	19.8	453102	19.8	21.2	165269	19.8	17.9
426648	19.5	20.6	218638	19.5	19.0	1326	19.6	14.1	21085	19.7	18.5	458862	19.8	20.4	378329	19.8	19.8
355582	19.5	20.2	382183	19.5	19.0	118422	19.6	18.7	539089	19.7	20.1	353278	19.8	18.8	524504	19.8	19.7
143352	19.5	19.9	147760	19.5	19.8	462232	19.6	22.4	295151	19.7	21.2	211472	19.8	18.8	530344	19.8	21.4
20596	19.5	19.2	131793	19.5	19.8	83679	19.6	18.6	470023	19.7	20.3	312659	19.8	19.6	25528	19.8	18.3
82986	19.5	18.9	345853	19.5	19.3	336432	19.6	19.7	86141	19.7	19.6	270505	19.8	21.7	478084	19.8	20.4
436710	19.5	19.5	339000	19.5	19.1	120471	19.6	20.6	375881	19.7	20.7	91678	19.8	18.6	384919	19.8	19.9
502611	19.5	20.2	81692	19.5	17.6	507529	19.6	21.3	65480	19.7	19.4	528643	19.8	20.8	526061	19.8	20.6
413825	19.5	21.1	433540	19.5	19.9	22995	19.6	18.2	474741	19.7	20.2	105477	19.8	19.0	165289	19.8	19.5
206786	19.5	20.2	325799	19.5	19.6	57576	19.6	18.9	539138	19.7	20.9	419809	19.8	20.9	365817	19.8	19.8
230327	19.5	19.8	138803	19.5	18.9	372002	19.6	20.1	248468	19.7	19.8	389763	19.8	20.1	9680	19.8	17.7
355851	19.5	21.2	161301	19.5	18.4	354170	19.6	20.5	491990	19.7	21.0	4454	19.8	17.4	353530	19.8	20.4
538973	19.5	20.1	302023	19.5	20.3	12564	19.6	17.3	351553	19.7	20.8	192865	19.8	19.1	368785	19.8	20.0
390134	19.5	21.1	123880	19.5	19.1	37784	19.6	18.2	453572	19.7	19.4	504145	19.8	21.5	506041	19.8	20.9
507465	19.5	20.8	306766	19.5	20.8	388301	19.6	21.4	464766	19.7	19.4	529412	19.8	21.2	502264	19.8	20.0
37223	19.5	18.8	406418	19.5	20.1	300934	19.6	20.2	404147	19.7	20.7	423201	19.8	18.6	26961	19.9	17.9
20888	19.5	18.1	93600	19.5	19.1	379412	19.6	20.9	261387	19.7	19.9	379476	19.8	20.4	148948	19.9	17.5
303266	19.5	21.0	478103	19.5	19.5	471373	19.6	21.7	253926	19.7	20.3	62628	19.8	17.1	502728	19.9	21.4
294711	19.5	20.7	38525	19.5	17.9	248433	19.6	20.0	272555	19.7	20.0	182636	19.8	18.6	10803	19.9	17.6
22846	19.5	18.4	530649	19.5	20.0	535245	19.6	21.1	237580	19.7	20.2	363483	19.8	21.1	158499	19.9	19.4
283540	19.5	18.9	407722	19.5	21.3	402914	19.6	20.2	294793	19.7	20.6	355162	19.8	20.6	143443	19.9	19.3
37701	19.5	18.4	201495	19.5	19.3	439555	19.6	21.0	39943	19.7	17.4	374172	19.8	20.9	63022	19.9	18.6
202472	19.5	20.9	161675	19.5	19.3	333888	19.6	22.1	105835	19.7	19.6	146826	19.8	19.3	498591	19.9	20.4
418281	19.5	21.3	308575	19.5	20.1	92381	19.6	18.9	247962	19.7	20.9	505243	19.8	21.5	472826	19.9	19.9
97728	19.5	19.3	386574	19.5	20.4	159975	19.6	19.0	426538	19.7	20.7	506833	19.8	21.1	111467	19.9	17.2
372614	19.5	20.6	105458	19.5	19.7	261066	19.6	20.4	391678	19.7	20.8	413846	19.8	20.7	31419	19.9	19.7
60156	19.5	18.4	540649	19.5	21.5	275717	19.6	20.7	301869	19.7	20.6	131964	19.8	19.7	146175	19.9	19.1
436011	19.5	20.5	534971	19.5	20.4	220433	19.6	20.1	429511	19.7	21.9	319689	19.8	20.9	384243	19.9	20.9
515747	19.5	21.5	395644	19.5	21.1	400393	19.6	20.1	500706	19.7	21.4	462334	19.8	19.8	498820	19.9	20.5
416259	19.5	19.9	342929	19.6	20.8	368958	19.6	20.5	325640	19.7	19.9	470948	19.8	20.6	18019	19.9	18.4
468876	19.5	19.6	473337	19.6	21.1	519330	19.6	20.8	35321	19.7	18.2	411639	19.8	21.3	263889	19.9	19.6
394346	19.5	20.9	349593	19.6	20.4	249563	19.6	19.9	505606	19.7	20.2	209549	19.8	20.5	74306	19.9	19.5
53566	19.5	17.2	241243	19.6	20.4	295296	19.6	20.8	61789	19.7	19.1	501102	19.8	19.3	17047	19.9	17.8
172539	19.5	19.3	499053	19.6	22.4	519176	19.6	20.8	539478	19.7	20.6	72200	19.8	19.0	214074	19.9	20.4
23203	19.5	17.7	10419	19.6	16.4	19187	19.6	17.3	262277	19.7	20.6	505150	19.8	20.5	324619	19.9	19.6
287640	19.5	20.8	295687	19.6	21.2	489390	19.6	20.7	205469	19.7	19.6	528582	19.8	20.9	144227	19.9	19.4
9910	19.5	17.7	271836	19.6	20.0	131488	19.6	19.5	6689	19.7	16.5	51977	19.8	18.9	416107	19.9	20.3
23585	19.5	18.2	417500	19.6	19.8	211130	19.6	19.9	79471	19.7	18.5	229709	19.8	20.8	430341	19.9	21.3
427899	19.5	20.7	127647	19.6	18.5	526308	19.6	23.1	306143	19.7	19.6	341292	19.8	21.6	104497	19.9	18.7
297900	19.5	21.1	333447	19.6	19.5	425133	19.6	19.5	243294	19.7	20.1	20231	19.8	15.8	416730	19.9	19.3
437562	19.5	20.5	341525	19.6	19.8	178119	19.6	20.0	450448	19.7	20.4	313379	19.8	19.9	485381	19.9	19.9
200989	19.5	18.5	304414	19.6	20.2	346854	19.6	20.4	246986	19.7	19.0	72076	19.8	19.6	217754	19.9	19.7
372923	19.5	20.9	370194	19.6	20.8	305630	19.6	19.8	499309	19.7	20.7	371197	19.8	20.1	537992	19.9	19.9
409862	19.5	21.0	143642	19.6	18.0	505163	19.6	21.0	304268	19.7	21.6	34551	19.8	17.4	198291	19.9	20.4
271002	19.5	20.4	30940	19.6	19.0	488568	19.6	21.9	37157	19.7	19.1	103531	19.8	19.5	15936	19.9	15.9
349187	19.5	20.7	491118	19.6	20.8	363005	19.6	20.2	405370	19.7	21.5	506279	19.8	20.0	179463	19.9	19.8
436004	19.5	21.0	429241	19.6	21.2	331599	19.6	19.9	85661	19.7	17.4	399318	19.8	20.0	219664	19.9	21.2
131170	19.5	20.0	474289	19.6	20.5	279669	19.6	21.9	240455	19.7	19.7	285419	19.8	19.7	10992	19.9	17.3
352683	19.5	18.9	283038	19.6	20.4	198698	19.6	20.3	167638	19.7	19.5	510809	19.8	20.2	58539	19.9	18.9
104100	19.5	19.3	124967	19.6	19.5	515407	19.6	20.3	80608	19.7	17.3	397072	19.8	19.9	502840	19.9	21.7
503411	19.5	20.1	409839	19.6	20.3	259631	19.7	20.5	417225	19.7	21.1	542213	19.8	20.7	206876	19.9	20.7
347941	19.5	19.7	173170	19.6	21.6	178713	19.7	18.8	100188	19.7	20.1	338785	19.8	19.9	382343	19.9	20.3
310424	19.5	20.1	125465	19.6	18.8	240573	19.7	19.4	155020	19.7	20.7	104707	19.8	19.5	193290	19.9	19.5
42935	19.5	17.5	369771	19.6	20.2	206399	19.7	19.3	182916	19.7	20.6	96419	19.8	19.0	468164	19.9	21.9
483375	19.5	19.4	498805	19.6	20.9	467643	19.7	20.1	91070	19.7	18.6	324122	19.8	21.4	527581	19.9	21.5
144495	19.5	19.4	264579	19.6	19.2	190436	19.7	19.9	101656	19.7	19.8	501250	19.8	19.9	268021	19.9	18.6
499147	19.5	20.7	236816	19.6	20.7	132256	19.7	18.5	87886	19.7	19.1	97804	19.8	17.5	32944	19.9	17.8
371190	19.5	20.3	221064	19.6	19.1	199576	19.7	20.3	397849	19.7	19.6	151099	19.8	18.9	327243	19.9	20.0
339525	19.5	20.3	291899	19.6	20.8	205239	19.7	18.8	150529								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
468073	19.9	20.1	177910	19.9	20.2	290603	20.0	20.7	323405	20.1	20.9	498555	20.2	19.1	29542	20.3	18.5
53458	19.9	17.3	56204	19.9	18.9	28175	20.0	19.1	506018	20.1	20.2	366307	20.2	20.4	211989	20.3	21.7
198685	19.9	20.2	503388	19.9	20.9	243381	20.0	18.0	454573	20.1	20.3	438802	20.2	20.8	332195	20.3	20.6
522702	19.9	21.4	185378	19.9	20.6	474849	20.0	20.4	390806	20.1	20.2	501145	20.2	19.5	347785	20.3	20.7
87100	19.9	16.8	14539	19.9	18.1	306895	20.0	20.9	4753	20.1	16.2	540923	20.2	19.8	62759	20.3	18.4
143617	19.9	19.7	227449	19.9	20.3	181747	20.0	19.5	166706	20.1	18.8	373154	20.2	20.6	201452	20.3	19.4
354918	19.9	20.3	77119	19.9	18.3	289696	20.0	20.5	178350	20.1	19.5	520012	20.2	21.5	540932	20.3	21.2
157219	19.9	19.7	475808	19.9	20.9	34829	20.0	19.2	116863	20.1	18.3	144941	20.2	19.0	462289	20.3	21.0
336439	19.9	20.0	420227	19.9	19.5	366271	20.1	19.7	428061	20.1	20.7	425056	20.2	20.7	86457	20.3	18.3
477620	19.9	19.7	16322	19.9	17.9	176395	20.1	20.8	376182	20.1	19.7	348697	20.2	20.5	301329	20.3	20.4
369830	19.9	20.3	502990	19.9	21.1	282635	20.1	20.6	230937	20.1	20.7	363523	20.2	20.1	13423	20.3	16.7
330015	19.9	20.2	457582	19.9	21.2	153142	20.1	18.6	132095	20.1	18.6	181351	20.2	19.1	2436	20.3	17.1
96114	19.9	18.0	374530	19.9	20.0	148625	20.1	19.2	124701	20.1	19.8	226745	20.2	19.0	475763	20.3	21.9
56033	19.9	18.6	10484	19.9	17.1	347325	20.1	19.7	282032	20.1	20.0	336248	20.2	19.8	383634	20.3	20.1
256648	19.9	19.9	303310	19.9	19.6	536385	20.1	21.5	436674	20.1	20.9	529702	20.2	19.7	172390	20.3	20.5
96826	19.9	19.2	472303	19.9	20.6	526975	20.1	21.3	358596	20.1	19.8	496053	20.2	21.9	331953	20.3	19.7
297456	19.9	21.4	149746	19.9	18.3	497285	20.1	21.3	532107	20.1	20.3	370178	20.2	21.3	192773	20.3	20.3
513369	19.9	20.4	17755	19.9	16.7	353260	20.1	19.6	480073	20.1	19.4	32261	20.2	18.6	280376	20.3	20.6
86565	19.9	18.3	59861	19.9	17.6	264256	20.1	20.5	29052	20.1	17.9	135038	20.2	19.0	213601	20.3	18.7
520010	19.9	21.7	61453	19.9	17.1	458797	20.1	20.7	44971	20.1	17.9	246806	20.2	19.4	115848	20.3	18.5
295089	19.9	20.6	438344	19.9	20.4	118383	20.1	19.1	323472	20.1	18.9	351602	20.2	19.8	492624	20.3	20.3
425671	19.9	20.6	156399	19.9	19.7	471777	20.1	20.6	303756	20.1	20.3	64620	20.2	18.0	29128	20.3	16.9
238150	19.9	20.3	427491	19.9	22.3	145856	20.1	20.7	305878	20.1	21.4	390315	20.2	20.5	529812	20.3	20.5
303930	19.9	19.9	527542	19.9	21.7	501015	20.1	20.2	452608	20.1	19.2	194515	20.2	18.8	50702	20.3	17.3
510345	19.9	21.4	347386	19.9	20.9	462153	20.1	19.9	148685	20.1	19.6	289029	20.2	20.6	245390	20.3	20.6
363882	19.9	19.6	297413	19.9	19.4	56060	20.1	18.7	40428	20.1	18.3	179429	20.2	19.5	537137	20.3	21.0
410092	19.9	21.6	118410	19.9	18.7	377794	20.1	20.8	99756	20.1	20.2	503917	20.2	20.2	129816	20.3	17.9
472628	19.9	19.3	141115	19.9	20.2	261696	20.1	22.3	458999	20.1	21.5	346107	20.2	20.5	348917	20.3	21.1
334797	19.9	20.3	196021	19.9	18.6	450715	20.1	20.0	183103	20.1	20.7	73626	20.2	18.3	534690	20.3	21.2
320502	19.9	19.2	205514	19.9	20.6	147755	20.1	19.1	539851	20.1	18.4	217029	20.2	19.3	225990	20.3	20.2
177117	19.9	21.0	389764	19.9	20.3	191858	20.1	20.0	309968	20.1	20.0	496139	20.2	19.5	196847	20.3	20.0
198343	19.9	20.0	473973	20.0	21.3	241379	20.1	20.5	497344	20.1	20.2	409935	20.2	19.5	502378	20.3	20.8
83732	19.9	18.7	74112	20.0	18.5	102868	20.1	19.9	408336	20.1	21.0	528443	20.2	20.5	593587	20.3	21.1
208269	19.9	21.2	101757	20.0	19.8	434887	20.1	20.5	32570	20.1	18.0	89459	20.2	17.4	200309	20.3	20.6
524727	19.9	20.6	330042	20.0	19.8	353153	20.1	19.7	373399	20.1	22.1	359720	20.2	19.5	102114	20.3	18.7
70592	19.9	19.1	10246	20.0	18.3	350740	20.1	20.3	371668	20.1	20.1	309194	20.2	21.7	401457	20.3	19.4
538193	19.9	19.5	94753	20.0	19.1	880	20.1	14.4	423950	20.2	21.3	178770	20.2	19.7	66991	20.3	18.3
273088	19.9	19.7	230668	20.0	20.0	146245	20.1	18.9	245251	20.2	19.9	67798	20.2	18.8	503367	20.3	20.5
68628	19.9	18.3	312911	20.0	21.8	375737	20.1	20.4	300082	20.2	20.4	181655	20.2	19.6	160479	20.3	20.6
126410	19.9	17.4	73589	20.0	19.1	507720	20.1	19.8	528312	20.2	21.6	186140	20.2	18.7	32155	20.3	18.5
403819	19.9	20.7	487366	20.0	19.6	523604	20.1	22.3	106415	20.2	19.0	369799	20.2	20.2	540642	20.3	19.9
371037	19.9	20.5	167645	20.0	19.5	295023	20.1	20.9	27819	20.2	18.2	348160	20.2	19.6	157529	20.3	20.1
200096	19.9	20.0	332349	20.0	20.0	306602	20.1	20.5	297257	20.2	20.7	341215	20.2	19.4	539160	20.3	20.9
290851	19.9	19.7	262119	20.0	19.0	121049	20.1	20.1	527623	20.2	21.4	428298	20.2	20.4	55564	20.3	18.4
121526	19.9	20.3	311587	20.0	19.5	140931	20.1	20.2	502791	20.2	21.5	538104	20.2	21.6	63690	20.3	19.6
472862	19.9	20.5	540925	20.0	20.4	338322	20.1	20.1	27976	20.2	17.9	427766	20.2	20.0	430164	20.3	20.0
431032	19.9	20.0	401997	20.0	19.0	433406	20.1	21.4	19863	20.2	20.0	415487	20.2	19.0	24785	20.3	18.4
43263	19.9	18.5	502130	20.0	21.4	107711	20.1	19.8	275420	20.2	20.9	262873	20.2	21.1	281478	20.3	20.7
208934	19.9	19.7	138799	20.0	19.1	495064	20.1	20.4	116017	20.2	19.5	8728	20.2	17.0	54637	20.3	18.9
498684	19.9	20.7	531859	20.0	21.2	368256	20.1	20.7	309948	20.2	18.9	431864	20.3	20.9	342918	20.3	20.8
219359	19.9	19.2	214884	20.0	18.8	308440	20.1	20.6	77738	20.2	18.7	89307	20.3	17.6	408747	20.3	20.5
294649	19.9	20.6	269536	20.0	19.5	371127	20.1	21.2	348467	20.2	21.1	238754	20.3	20.5	301571	20.3	20.0
4390	19.9	15.2	446874	20.0	21.4	405998	20.1	19.8	535178	20.2	21.4	303738	20.3	19.2	499916	20.3	20.7
528315	19.9	20.7	44360	20.0	18.9	134095	20.1	19.6	536307	20.2	21.3	213382	20.3	19.6	140493	20.3	18.7
292028	19.9	19.9	458831	20.0	20.1	204935	20.1	20.8	433666	20.2	20.4	346178	20.3	19.3	330338	20.3	21.6
475104	19.9	21.0	409833	20.0	19.9	432563	20.1	19.8	393805	20.2	19.7	379279	20.3	21.0	242714	20.3	19.8
391732	19.9	21.2	392853	20.0	21.9	343482	20.1	21.0	107411	20.2	18.8	302371	20.3	20.8	294510	20.3	20.0
443759	19.9	19.9	122566	20.0	19.8	302046	20.1	18.5	347289	20.2	19.8	524400	20.3	22.4	388281	20.3	20.8
391107	19.9	20.6	125397	20.0	18.7	114573	20.1	19.2	346698	20.2	19.7	79063	20.3	18.9	347773	20.3	20.6
468158	19.9	21.0	348907	20.0	20.4	637	20.1	16.4	202492	20.2	21.2	478195	20.3	20.3	299743	20.3	20.5
518861	19.9	19.9	145363	20.0	20.0	230908	20.1	19.4	106126	20.2	19.3	215365	20.3	20.1	15658	20.3	19.0
177605	19.9	19.3	260078	20.0	20.3	37749	20.1	19.5	106993	20.2	19.2	392167	20.3	19.6	417705	20.3	20.0
312964	19.9	19.7	224501	20.0	18.8	299341	20.1	20.6	308398	20.2	20.7	524151	20.3	19.8	389531	20.3	18.9
118517	19.9	18.9	275234	20.0	20.6	266291	20.1	20.8	502203	20.2	20.2	169253	20.3	19.6	213172	20.3	19.2
433482	19.9	20.5	302518	20.0	19.7	21443	20.1	17.2	369315	20.2	20.5	155602	20.3	19.6	478180	20.3	21.1
377427	19.9	20.7	5834	20.0	15.6	312124	20.1	21.3	162624	20.2	19.8	308160	20.3	21.0	526865	20.3	21.6
217588	19.9	19.8	503668	20.0	20.7	153662	20.1	19.6	241948	20.2	21.2	306185	20.3	20.5	281822	20.3	21.7
272933	19.9	20.0	141476	20.0	18.8	229445	20.1	20.1	29808	20.2	19.2	120692	20.3	18.9	63252	20.3	21.5
302506	19.9	19.6	126714	20.0	19.3	419731	20.1	20.6	226								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
127579	20.3	18.1	308614	20.4	20.3	432577	20.5	19.9	411732	20.6	21.2	291732	20.6	20.3	524399	20.7	20.5
28806	20.3	18.4	286168	20.4	18.2	537542	20.5	20.7	282344	20.6	19.5	454011	20.6	21.1	284464	20.7	22.0
65731	20.3	18.5	21712	20.4	18.7	264968	20.5	20.5	455435	20.6	19.1	272845	20.6	21.1	43755	20.7	16.4
205567	20.3	19.7	290774	20.4	21.3	540068	20.5	19.8	149715	20.6	18.3	89141	20.6	19.0	213317	20.7	19.6
532716	20.3	20.9	85740	20.4	17.8	103850	20.5	19.0	454104	20.6	20.3	165393	20.6	19.0	374105	20.7	19.3
103021	20.3	19.4	217114	20.4	19.2	132097	20.5	18.8	351896	20.6	20.4	305816	20.6	21.3	349476	20.7	20.0
267500	20.4	20.8	257616	20.4	21.0	534823	20.5	20.9	370965	20.6	21.6	57579	20.6	19.0	107592	20.7	19.8
6009	20.4	15.8	205766	20.4	20.3	253404	20.5	18.5	429926	20.6	20.1	244766	20.6	19.3	522781	20.7	21.0
375933	20.4	20.1	218263	20.4	19.4	126883	20.5	20.5	106284	20.6	18.8	294314	20.6	19.1	273683	20.7	21.3
434320	20.4	21.1	219660	20.4	19.9	206884	20.5	19.9	441922	20.6	20.0	149844	20.6	18.5	87667	20.7	18.9
313711	20.4	19.9	307601	20.4	19.5	292085	20.5	20.1	507584	20.6	22.3	6638	20.6	17.4	540127	20.7	20.6
250708	20.4	20.6	466836	20.4	20.8	120161	20.5	19.0	227265	20.6	20.8	216567	20.6	20.4	532383	20.7	21.4
136398	20.4	19.8	467761	20.4	20.4	459989	20.5	20.3	540811	20.6	21.2	244861	20.6	19.1	467384	20.7	20.2
474957	20.4	21.2	42259	20.4	16.5	536741	20.5	22.2	148361	20.6	20.1	384226	20.6	20.9	197591	20.7	18.4
169180	20.4	19.3	93432	20.4	19.2	98334	20.5	18.3	357099	20.6	20.3	88983	20.6	19.8	503068	20.7	21.5
402967	20.4	20.9	214210	20.4	19.9	82836	20.5	18.6	312852	20.6	20.7	334207	20.6	21.0	375920	20.7	21.4
196242	20.4	20.8	190285	20.4	19.5	420299	20.5	19.8	282659	20.6	20.1	259322	20.6	19.3	313136	20.7	19.8
305822	20.4	21.6	528514	20.4	20.3	206811	20.5	20.0	499338	20.6	20.8	68898	20.6	19.4	487007	20.7	20.5
222377	20.4	19.3	69306	20.4	19.4	59616	20.5	18.7	416028	20.6	21.0	326988	20.6	19.1	99663	20.7	18.7
270514	20.4	20.8	114640	20.4	19.6	504463	20.5	21.0	299951	20.6	19.5	391682	20.6	21.6	431916	20.7	19.9
467435	20.4	20.5	100543	20.4	20.5	375943	20.5	21.4	215360	20.6	20.8	133039	20.6	21.0	208402	20.7	19.9
392539	20.4	20.5	256501	20.4	20.9	519289	20.5	21.5	536295	20.6	20.8	306472	20.6	18.5	211699	20.7	18.5
530822	20.4	21.5	211975	20.4	19.6	42910	20.5	17.2	426753	20.6	20.3	112474	20.7	17.7	191322	20.7	18.0
430444	20.4	19.1	185327	20.4	20.1	496206	20.5	20.5	410411	20.6	20.4	290103	20.7	19.5	360267	20.7	18.5
512239	20.4	21.5	105151	20.4	17.9	438402	20.5	19.8	187861	20.6	18.7	2864	20.7	17.3	30061	20.7	18.0
527156	20.4	21.3	38928	20.4	19.0	121932	20.5	19.3	308592	20.6	18.8	4713	20.7	14.6	138733	20.7	20.1
356283	20.4	21.3	311240	20.4	19.1	410450	20.5	21.9	50493	20.6	18.7	211454	20.7	20.4	306492	20.7	19.5
144932	20.4	19.2	111283	20.4	19.6	277384	20.5	21.0	423697	20.6	20.4	316347	20.7	20.6	346657	20.7	20.6
534617	20.4	22.3	100359	20.4	19.2	273942	20.5	19.2	224478	20.6	20.2	57399	20.7	19.4	300951	20.7	20.9
505249	20.4	22.0	423251	20.4	20.5	422369	20.5	19.5	273865	20.6	22.1	82047	20.7	18.0	531844	20.7	20.9
277492	20.4	19.9	414878	20.4	20.9	199415	20.5	19.8	64969	20.6	18.8	143618	20.7	19.7	367179	20.7	18.9
374567	20.4	20.4	544077	20.4	19.6	502520	20.5	20.7	417753	20.6	21.6	502845	20.7	21.6	286179	20.7	19.3
542418	20.4	21.0	310281	20.4	19.5	346241	20.5	21.2	417130	20.6	21.3	96660	20.7	17.3	143458	20.7	19.2
133811	20.4	17.9	36197	20.5	17.1	3485	20.5	14.9	516379	20.6	19.0	146179	20.7	18.8	530375	20.7	21.5
64495	20.4	20.8	480761	20.5	19.6	371119	20.5	20.2	286096	20.6	19.8	98345	20.7	19.4	316489	20.7	19.6
468214	20.4	18.5	177407	20.5	20.1	327874	20.5	19.9	530273	20.6	21.4	338684	20.7	21.0	62327	20.7	18.7
143328	20.4	20.0	385140	20.5	18.8	151823	20.5	18.4	303695	20.6	19.5	110095	20.7	17.6	508291	20.7	20.5
69301	20.4	18.5	207938	20.5	19.0	541396	20.5	21.1	503836	20.6	19.5	336918	20.7	20.2	198309	20.7	19.6
315397	20.4	19.7	210343	20.5	20.1	110096	20.5	19.2	386545	20.6	19.7	419674	20.7	21.0	523728	20.7	21.8
351511	20.4	19.0	102959	20.5	19.9	397018	20.5	21.2	298841	20.6	19.2	154687	20.7	17.3	87387	20.7	19.1
209014	20.4	19.9	517614	20.5	21.4	178613	20.5	20.3	214819	20.6	19.9	352107	20.7	19.8	201587	20.8	19.2
268430	20.4	19.5	331500	20.5	20.2	406535	20.5	19.3	361662	20.6	19.8	230050	20.7	19.7	292175	20.8	20.2
435965	20.4	20.0	368265	20.5	19.6	377435	20.5	21.6	235029	20.6	19.6	43354	20.7	16.8	325276	20.8	18.8
411807	20.4	21.1	419631	20.5	20.9	476413	20.5	21.1	209600	20.6	19.6	224551	20.7	20.4	332537	20.8	20.1
192184	20.4	19.7	386491	20.5	21.4	471872	20.5	19.1	115131	20.6	17.8	245498	20.7	20.0	512604	20.8	19.7
422788	20.4	20.7	369542	20.5	21.1	173499	20.5	18.3	1384	20.6	15.9	6806	20.7	17.5	405555	20.8	20.0
424121	20.4	21.5	302471	20.5	20.4	241532	20.5	19.4	434465	20.6	20.3	87948	20.7	18.2	61630	20.8	17.9
502310	20.4	21.4	165490	20.5	20.1	422981	20.5	20.3	499050	20.6	21.9	513013	20.7	20.2	275820	20.8	21.7
451316	20.4	19.4	410328	20.5	21.3	82989	20.5	18.6	265320	20.6	19.3	63178	20.7	19.3	244998	20.8	21.1
388813	20.4	20.0	23180	20.5	16.9	251419	20.5	20.0	525861	20.6	20.1	99111	20.7	18.3	200111	20.8	19.5
483721	20.4	20.5	292509	20.5	20.2	22910	20.5	17.6	326688	20.6	20.4	477128	20.7	20.5	352562	20.8	22.4
401139	20.4	19.9	57926	20.5	18.8	157302	20.5	20.0	504544	20.6	20.1	329216	20.7	20.4	265777	20.8	19.9
89361	20.4	18.3	75480	20.5	16.7	168856	20.5	17.8	458977	20.6	22.3	389706	20.7	19.7	303795	20.8	20.4
455852	20.4	19.9	403006	20.5	21.0	462935	20.5	20.5	35414	20.6	18.1	121961	20.7	17.2	82316	20.8	17.2
67961	20.4	18.6	501534	20.5	20.8	33854	20.5	17.0	507181	20.6	19.4	405925	20.7	20.6	437297	20.8	19.9
290612	20.4	20.1	33051	20.5	18.2	117155	20.5	18.9	132289	20.6	18.9	69915	20.7	18.9	402851	20.8	20.4
500443	20.4	21.0	35145	20.5	18.5	154014	20.5	19.5	43865	20.6	17.6	98886	20.7	17.5	195613	20.8	18.8
182842	20.4	20.2	68373	20.5	18.1	97783	20.5	17.9	99800	20.6	19.7	121983	20.7	18.8	205802	20.8	18.9
8712	20.4	16.1	468554	20.5	20.4	346067	20.5	20.2	107305	20.6	18.7	338817	20.7	20.6	461369	20.8	21.6
105069	20.4	18.6	225205	20.5	19.8	507480	20.5	21.3	259785	20.6	19.8	382698	20.7	20.9	470442	20.8	20.6
499254	20.4	21.7	309394	20.5	18.8	63111	20.5	18.7	277273	20.6	20.3	96607	20.7	19.8	480454	20.8	19.4
245500	20.4	19.5	342845	20.5	19.6	338361	20.5	19.9	240356	20.6	19.5	48428	20.7	18.8	540237	20.8	20.8
402228	20.4	20.0	470117	20.5	21.4	519881	20.5	20.6	469885	20.6	20.2	423625	20.7	21.2	544085	20.8	21.3
299868	20.4	19.7	64486	20.5	18.1	319587	20.5	20.3	146877	20.6	19.9	533374	20.7	21.9	152159	20.8	18.8
286521	20.4	19.9	36096	20.5	18.0	106773	20.5	19.6	290558	20.6	20.2	279321	20.7	20.1	378328	20.8	20.3
231547	20.4	19.7	140552	20.5	18.9	89931	20.5	18.4	56474	20.6	17.7	297725	20.7	19.1	401076	20.8	18.7
471817	20.4	20.6	308726	20.5	19.9	523814	20.5	21.7	88389	20.6	18.7	236610	20.7	20.4	408763	20.8	20.7
523679	20.4	20.4	293142	20.5	19.6	368693	20.5	20.7	64136	20.6	19.4	225614	20.7	18.5	139980	20.8	19.5
249673	20.4	18.8	194277	20.5	19.7	493861	20.5	19.3	153903</								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
426156	20.8	19.9	387180	20.9	20.9	401128	20.9	20.5	325115	20.9	19.4	300901	21.1	20.9	199422	21.1	19.6
27709	20.8	17.7	295409	20.9	19.9	425761	20.9	21.6	393899	20.9	21.7	99993	21.1	19.3	214957	21.1	20.4
458975	20.8	22.2	53736	20.9	18.3	243359	20.9	20.0	10790	20.9	17.8	118374	21.1	20.5	429608	21.1	20.3
293096	20.8	19.8	370119	20.9	20.3	433880	20.9	20.8	505286	20.9	20.3	277697	21.1	20.1	528912	21.1	21.1
270386	20.8	19.7	190273	20.9	20.3	37176	20.9	18.9	162588	20.9	19.5	193896	21.1	19.5	433488	21.1	20.8
264525	20.8	20.0	229918	20.9	18.5	421290	20.9	19.9	371697	20.9	19.5	501274	21.1	21.4	34552	21.1	19.4
87650	20.8	19.1	519938	20.9	20.8	36823	20.9	18.3	222583	20.9	18.6	229553	21.1	20.5	470568	21.1	21.5
494206	20.8	21.3	345630	20.9	20.2	228283	20.9	19.6	351598	20.9	18.8	302819	21.1	19.9	394355	21.1	20.3
427713	20.8	20.6	92878	20.9	18.2	522903	20.9	20.1	69228	20.9	19.3	281547	21.1	20.5	327764	21.1	18.7
61615	20.8	17.7	124481	20.9	18.9	356732	20.9	21.1	471345	21.0	20.5	144851	21.1	18.7	144817	21.2	19.6
63086	20.8	18.3	227886	20.9	20.8	402206	20.9	21.0	473008	21.0	20.0	329957	21.1	20.8	439588	21.2	19.8
165352	20.8	21.1	522575	20.9	19.6	150311	20.9	19.1	15825	21.0	18.6	346093	21.1	21.8	98740	21.2	18.9
18320	20.8	18.4	316768	20.9	20.5	386488	20.9	20.9	335839	21.0	20.4	299326	21.1	20.0	183491	21.2	20.3
303824	20.8	19.7	122363	20.9	19.2	439639	20.9	20.8	163219	21.0	20.7	110545	21.1	18.6	69807	21.2	18.9
33549	20.8	17.8	140146	20.9	18.4	430711	20.9	20.5	359991	21.0	20.6	297617	21.1	20.2	47170	21.2	18.6
300967	20.8	22.2	435948	20.9	19.8	276624	20.9	19.4	35120	21.0	16.7	23723	21.1	18.3	326338	21.2	18.4
101745	20.8	19.3	250773	20.9	20.5	391383	20.9	19.8	163066	21.0	19.5	99890	21.1	19.0	459066	21.2	21.3
214981	20.8	18.8	110542	20.9	19.1	198500	20.9	20.5	465144	21.0	21.3	431959	21.1	20.5	321201	21.2	21.2
233793	20.8	20.8	211927	20.9	21.0	354	20.9	10.7	207081	21.0	20.8	9004	21.1	17.0	290817	21.2	20.4
535225	20.8	21.6	284429	20.9	19.2	237153	20.9	20.0	284128	21.0	20.5	222651	21.1	20.2	20396	21.2	17.2
141362	20.8	19.2	333970	20.9	21.7	158488	20.9	19.8	469082	21.0	21.0	238918	21.1	20.3	522733	21.2	20.8
30814	20.8	16.6	415277	20.9	20.0	238871	20.9	19.4	378799	21.0	20.5	526289	21.1	21.9	478050	21.2	20.3
471394	20.8	20.4	336192	20.9	20.3	234838	20.9	19.4	166006	21.0	19.9	27941	21.1	18.7	246286	21.2	19.5
408759	20.8	21.2	219725	20.9	19.7	60791	20.9	18.3	186864	21.0	19.8	339506	21.1	20.9	226767	21.2	20.2
394669	20.8	21.6	502721	20.9	20.9	395645	20.9	20.7	144718	21.0	19.3	304134	21.1	21.2	146200	21.2	20.1
483336	20.8	20.7	160108	20.9	17.5	417525	20.9	20.5	468703	21.0	20.3	448436	21.1	20.2	13021	21.2	16.8
206239	20.8	20.2	295600	20.9	19.5	162597	20.9	19.9	301068	21.0	20.6	102914	21.1	19.0	350118	21.2	20.3
120318	20.8	18.2	119552	20.9	17.7	509354	20.9	22.0	324546	21.0	20.3	73655	21.1	18.9	34948	21.2	17.4
238845	20.8	21.3	540678	20.9	21.6	70143	20.9	17.2	102520	21.0	19.9	393920	21.1	19.7	446609	21.2	19.4
384065	20.8	20.5	504123	20.9	21.2	86682	20.9	18.1	303868	21.0	21.3	16893	21.1	17.3	431941	21.2	21.0
394302	20.8	21.5	120615	20.9	19.4	496837	20.9	21.5	458855	21.0	21.1	522550	21.1	21.0	221146	21.2	20.1
64886	20.8	19.8	262780	20.9	20.3	358369	20.9	20.8	534181	21.0	21.6	426493	21.1	21.0	250908	21.2	19.6
103617	20.8	19.3	484263	20.9	20.4	304878	20.9	20.8	519021	21.0	20.2	354756	21.1	19.9	206641	21.2	19.5
230801	20.8	19.2	193574	20.9	19.5	58135	20.9	19.6	536044	21.0	20.8	1475	21.1	15.8	93305	21.2	18.8
78810	20.8	18.4	401480	20.9	19.4	64151	20.9	17.4	401933	21.0	21.3	401927	21.1	20.8	469816	21.2	21.5
324617	20.8	19.2	527012	20.9	21.5	333491	20.9	19.3	353877	21.0	20.8	506698	21.1	20.7	24631	21.2	19.8
432984	20.8	19.8	62051	20.9	18.8	433882	20.9	21.5	129200	21.0	19.8	160202	21.1	19.8	387438	21.2	21.0
527920	20.8	20.3	118879	20.9	18.9	58188	20.9	19.2	129476	21.0	18.9	311595	21.1	19.5	308044	21.2	19.7
348804	20.8	19.1	535593	20.9	21.0	165201	20.9	20.5	206935	21.0	20.1	292141	21.1	20.1	214685	21.2	20.4
175956	20.8	18.9	34173	20.9	18.7	434557	20.9	20.7	191936	21.0	19.0	209097	21.1	19.0	102350	21.2	19.2
317878	20.8	21.0	190404	20.9	18.5	426199	20.9	20.5	164095	21.0	20.2	440093	21.1	20.7	297779	21.2	20.3
490175	20.8	21.0	455568	20.9	19.8	229472	20.9	19.5	265010	21.0	20.9	261032	21.1	20.3	533856	21.2	20.9
403309	20.8	19.3	170383	20.9	19.9	228270	20.9	18.4	41683	21.0	19.2	91633	21.1	19.1	244284	21.2	19.3
281496	20.8	20.7	151353	20.9	20.5	202426	20.9	19.3	516559	21.0	20.2	390938	21.1	20.9	390021	21.2	20.9
110982	20.8	17.6	370074	20.9	20.0	497300	20.9	21.7	26969	21.0	17.9	520993	21.1	20.5	231226	21.2	20.0
493575	20.8	19.8	190331	20.9	18.1	156489	20.9	19.6	274481	21.0	19.4	182922	21.1	20.9	57906	21.2	18.3
412404	20.8	22.2	470121	20.9	21.1	302486	20.9	20.7	402429	21.0	21.2	415979	21.1	20.7	30968	21.2	17.4
406863	20.8	21.3	32291	20.9	17.9	386942	20.9	20.2	138935	21.0	20.0	526176	21.1	22.1	499190	21.2	20.9
312092	20.8	20.6	264539	20.9	19.8	8857	20.9	16.7	408145	21.0	20.5	211543	21.1	20.2	253170	21.2	21.0
1094	20.8	15.8	503402	20.9	20.5	443704	20.9	20.2	307940	21.0	21.1	399319	21.1	20.1	92009	21.2	19.8
423098	20.8	20.0	247812	20.9	18.4	199689	20.9	20.2	209878	21.0	20.1	451226	21.1	20.4	526797	21.2	22.2
239588	20.8	20.8	200785	20.9	17.7	293377	20.9	19.0	448090	21.0	19.6	323433	21.1	19.7	417663	21.2	22.0
244138	20.8	20.8	101927	20.9	18.2	449113	20.9	20.4	295164	21.0	21.0	45508	21.1	18.6	325297	21.2	19.9
85860	20.8	19.3	469884	20.9	19.6	459490	20.9	21.1	204216	21.0	19.8	22302	21.1	16.5	316755	21.2	19.4
302917	20.8	20.9	359157	20.9	20.4	542238	20.9	21.0	397004	21.0	20.3	229538	21.1	20.6	506228	21.2	20.1
305838	20.8	19.8	32308	20.9	18.7	53459	20.9	17.1	408306	21.0	19.2	268979	21.1	20.3	257070	21.2	20.6
287022	20.8	20.8	222699	20.9	19.8	357544	20.9	19.1	236713	21.0	20.3	290304	21.1	20.4	136597	21.2	20.6
105796	20.8	19.5	343080	20.9	20.8	540278	20.9	21.7	378854	21.0	21.9	268085	21.1	20.0	205053	21.2	19.2
420010	20.8	20.3	43120	20.9	17.1	97043	20.9	18.5	498831	21.0	20.8	529167	21.1	21.3	402943	21.2	20.8
506808	20.8	18.0	257363	20.9	19.2	271122	20.9	19.8	294250	21.0	20.6	270347	21.1	21.8	475884	21.2	19.0
368698	20.8	20.3	477628	20.9	19.9	356606	20.9	20.2	388796	21.0	20.9	441816	21.1	21.0	219147	21.2	19.8
109532	20.8	19.2	534191	20.9	19.6	463607	20.9	20.3	260016	21.0	20.9	348260	21.1	19.8	510857	21.2	21.5
259332	20.8	20.6	154451	20.9	19.7	490886	20.9	21.4	312999	21.0	20.4	64218	21.1	19.2	446595	21.2	20.0
293263	20.8	19.2	533894	20.9	19.9	411634	20.9	20.6	426547	21.0	18.7	502689	21.1	19.1	358821	21.2	21.1
498701	20.8	21.9	372007	20.9	20.6	370964	20.9	19.8	497314	21.0	20.9	209465	21.1	20.6	387330	21.2	20.2
368676	20.8	20.4	184467	20.9	19.5	350422	20.9	21.0	528961	21.1	21.6	244657	21.1	20.9	516791	21.2	21.1
280754	20.8	19.1	504453	20.9	23.1	121144	20.9	18.5	64977	21.1	19.6	533132	21.1	21.5	279858	21.2	21.0
38315	20.8	18.4	232626	20.9	19.6	87389	20.9	18.6	34866	21.1	18.4	374524	21.1	20.7	462173	21.2	21.3
189630	20.8	19.3	87309	20.9	15.8	499288	20.9	21.5									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
240778	21.2	19.7	289434	21.3	19.6	536968	21.4	21.3	390187	21.5	21.4	396301	21.5	21.0	534188	21.6	21.3
473742	21.2	21.4	475223	21.3	20.3	498730	21.4	20.8	433623	21.5	20.5	233967	21.5	19.7	382080	21.6	20.5
394754	21.2	22.1	472682	21.3	19.7	371639	21.4	21.1	90710	21.5	18.9	5210	21.5	17.7	172423	21.6	17.8
11099	21.2	15.4	175415	21.3	18.6	453394	21.4	21.4	476385	21.5	21.0	297760	21.5	19.7	295622	21.6	21.0
93389	21.2	18.4	30192	21.3	17.1	472647	21.4	20.4	544520	21.5	20.3	333652	21.5	19.6	224771	21.6	19.8
193042	21.2	19.8	536852	21.3	20.4	11983	21.4	17.7	262956	21.5	21.3	77912	21.5	18.3	461644	21.6	22.3
375751	21.2	21.3	87745	21.3	18.5	231779	21.4	18.9	379337	21.5	20.5	56524	21.5	17.9	244594	21.6	20.9
53705	21.2	16.9	3370	21.3	16.5	405210	21.4	18.4	468276	21.5	20.3	228334	21.5	20.0	273058	21.6	20.0
456975	21.2	21.0	58917	21.3	18.0	87355	21.4	18.7	186374	21.5	20.0	458961	21.5	20.9	394040	21.6	19.7
535543	21.2	21.4	271812	21.3	20.0	5308	21.4	16.1	528330	21.5	21.7	194271	21.5	19.7	284793	21.6	20.8
229180	21.2	20.0	234995	21.3	19.7	203174	21.4	19.9	304720	21.5	20.1	458825	21.5	21.2	106551	21.6	19.5
500011	21.2	21.8	104907	21.3	20.3	34813	21.4	17.7	8545	21.5	17.8	290906	21.5	20.1	525499	21.6	21.3
519823	21.2	21.3	429173	21.3	21.0	497190	21.4	21.0	350125	21.5	20.5	5960	21.5	15.9	384238	21.6	21.3
531881	21.2	21.5	526148	21.3	20.8	431919	21.4	20.5	347152	21.5	18.9	443692	21.5	20.7	51881	21.6	18.3
389283	21.2	20.1	311279	21.3	21.1	398853	21.4	21.4	86235	21.5	19.2	19845	21.5	17.8	443559	21.6	19.4
528243	21.2	20.4	315424	21.3	20.0	64235	21.4	19.0	181108	21.5	20.0	329780	21.5	19.1	171157	21.6	20.0
202826	21.2	20.4	411752	21.3	21.6	130138	21.4	18.8	54709	21.5	17.0	193983	21.5	19.4	297479	21.6	20.4
365823	21.2	20.0	214725	21.3	20.2	499745	21.4	21.5	381513	21.5	20.9	41500	21.5	17.9	115192	21.6	19.2
389269	21.2	21.0	391084	21.3	21.2	302498	21.4	20.0	532502	21.5	20.7	395551	21.5	20.7	162613	21.6	19.0
281031	21.2	20.6	56725	21.3	18.2	403866	21.4	20.0	425778	21.5	19.0	179574	21.5	19.5	212048	21.6	18.7
476405	21.2	21.5	227473	21.3	21.5	259140	21.4	20.8	354539	21.5	20.8	527082	21.5	20.5	399646	21.6	18.7
492271	21.2	21.4	488702	21.3	22.0	234343	21.4	20.5	324992	21.5	19.6	29924	21.5	17.6	369756	21.6	20.1
32491	21.2	17.2	469772	21.3	20.5	542579	21.4	20.6	333152	21.5	21.2	371964	21.5	20.3	248393	21.6	19.4
191963	21.2	18.7	539272	21.3	21.2	281462	21.4	20.2	305611	21.5	20.3	122240	21.6	18.4	520353	21.6	20.7
154872	21.2	18.3	299296	21.3	19.6	29705	21.4	17.9	214098	21.5	18.9	298750	21.6	20.5	227468	21.6	19.5
198881	21.2	18.4	156467	21.3	19.7	10257	21.4	17.7	146145	21.5	19.2	142079	21.6	18.5	159197	21.6	18.4
208340	21.2	19.3	93472	21.3	17.7	221939	21.4	19.6	416998	21.5	21.4	267379	21.6	19.6	20505	21.6	16.7
476434	21.2	20.8	530756	21.3	21.3	281491	21.4	20.4	204866	21.5	19.9	348733	21.6	20.5	228221	21.6	20.1
363547	21.2	19.4	174516	21.3	20.4	17575	21.4	17.8	163399	21.5	20.0	124238	21.6	18.1	98265	21.6	19.1
44777	21.2	18.2	400267	21.3	19.7	343582	21.4	20.5	374456	21.5	20.8	2939	21.6	15.2	98962	21.6	19.1
59669	21.2	18.9	540240	21.3	20.8	311482	21.4	20.9	180399	21.5	20.5	242543	21.6	18.9	488262	21.6	19.4
81658	21.2	18.0	14930	21.3	18.5	435946	21.4	20.9	113328	21.5	19.6	425439	21.6	19.9	85721	21.6	17.6
368971	21.2	21.3	323810	21.3	20.0	40361	21.4	18.2	66713	21.5	19.0	519793	21.6	19.9	33036	21.6	17.2
459159	21.2	21.8	109313	21.3	18.0	50052	21.4	15.7	333737	21.5	20.2	370741	21.6	20.3	44054	21.6	18.5
349096	21.2	20.5	328578	21.3	20.2	257314	21.4	19.9	57835	21.5	18.8	114444	21.6	18.9	442692	21.6	19.8
282136	21.2	18.2	459612	21.3	20.5	385094	21.4	20.6	483345	21.5	19.6	223505	21.6	19.6	374589	21.6	21.0
156447	21.2	20.1	246212	21.3	19.9	336234	21.4	19.6	504201	21.5	22.2	267310	21.6	21.3	411801	21.6	20.9
313651	21.2	19.8	104334	21.3	18.6	152335	21.4	19.6	353515	21.5	19.6	126942	21.6	18.9	260541	21.6	20.7
21760	21.2	15.8	396378	21.3	20.8	59325	21.4	18.3	238087	21.5	20.3	34363	21.6	18.0	327333	21.6	20.0
424026	21.2	20.7	231421	21.3	18.3	297898	21.4	20.8	480128	21.5	19.8	383936	21.6	20.2	308911	21.6	20.9
124851	21.2	19.7	168977	21.3	20.3	99735	21.4	18.3	455644	21.5	21.9	305628	21.6	21.1	264580	21.6	20.2
273077	21.2	20.5	371654	21.3	19.4	212718	21.4	19.2	261109	21.5	19.5	320710	21.6	20.3	65889	21.6	18.8
500960	21.3	19.8	510727	21.3	21.0	376452	21.4	19.4	381463	21.5	21.2	301994	21.6	19.4	107158	21.6	19.5
7051	21.3	16.9	200198	21.3	20.6	277610	21.4	20.3	62173	21.5	19.1	25636	21.6	18.5	266715	21.6	19.2
497595	21.3	19.4	303314	21.3	20.4	430250	21.4	20.5	111621	21.5	18.9	464403	21.6	20.4	277145	21.6	19.2
203557	21.3	20.4	400324	21.3	20.3	124	21.4	11.3	297604	21.5	20.5	364650	21.6	20.0	173939	21.7	20.2
508604	21.3	20.4	272729	21.3	20.9	516973	21.4	21.0	502169	21.5	21.1	259670	21.6	20.8	457593	21.7	21.6
126910	21.3	20.0	234821	21.3	18.8	227858	21.4	20.8	350340	21.5	20.8	56159	21.6	17.7	429555	21.7	19.0
391321	21.3	20.3	240486	21.3	19.6	97512	21.4	19.2	230507	21.5	19.8	36382	21.6	18.0	505582	21.7	20.2
94666	21.3	18.1	395995	21.3	20.7	332090	21.4	21.2	120320	21.5	18.6	175352	21.6	19.5	356326	21.7	20.5
525786	21.3	20.3	392667	21.3	20.1	320511	21.4	20.8	39162	21.5	18.1	146542	21.6	18.8	297751	21.7	20.2
273038	21.3	20.1	387466	21.3	19.4	360768	21.4	20.2	521355	21.5	20.5	177342	21.6	17.7	388326	21.7	20.2
394340	21.3	20.4	353609	21.3	20.0	266124	21.4	19.9	505969	21.5	20.5	209488	21.6	19.8	308361	21.7	20.1
181641	21.3	20.2	35029	21.3	20.2	374519	21.4	21.4	474322	21.5	21.6	130493	21.6	18.8	498627	21.7	21.1
43116	21.3	18.2	327796	21.4	21.6	503921	21.4	21.0	374448	21.5	21.1	198972	21.6	20.4	313713	21.7	20.2
371669	21.3	20.9	310261	21.4	19.8	132085	21.4	20.1	283458	21.5	19.0	358315	21.6	21.0	303399	21.7	20.2
216247	21.3	20.4	160308	21.4	19.7	469729	21.4	20.2	476342	21.5	20.9	263867	21.6	19.6	404971	21.7	20.2
230657	21.3	19.6	330043	21.4	20.2	512542	21.4	20.0	503260	21.5	20.9	301407	21.6	20.0	17831	21.7	18.0
349489	21.3	21.1	235441	21.4	20.6	543011	21.4	20.1	440922	21.5	20.9	433142	21.6	20.4	284580	21.7	20.2
528890	21.3	19.9	144462	21.4	19.7	475567	21.4	21.0	383973	21.5	20.8	176232	21.6	18.9	395968	21.7	20.8
258591	21.3	19.9	215649	21.4	20.2	357717	21.4	20.7	199768	21.5	20.2	184758	21.6	20.2	2925	21.7	17.6
224405	21.3	20.6	530380	21.4	21.9	136692	21.4	21.3	394012	21.5	20.4	301572	21.6	20.0	126983	21.7	19.8
282892	21.3	20.1	38953	21.4	18.4	184309	21.4	20.9	373401	21.5	20.7	232906	21.6	20.8	184696	21.7	19.2
149849	21.3	20.5	179534	21.4	19.1	70700	21.4	18.1	159420	21.5	19.0	276984	21.6	20.1	61915	21.7	19.1
353223	21.3	18.6	424098	21.4	21.0	151014	21.4	18.6	178632	21.5	19.2	31724	21.6	18.0	394766	21.7	21.9
161592	21.3	21.5	177873	21.4	19.0	351912	21.4	20.6	362258	21.5	18.8	468977	21.6	20.6	523526	21.7	21.4
462308	21.3	20.8	470658	21.4	20.4	497953	21.4	20.9	188663	21.5	19.8	174443	21.6	20.1	260774	21.7	20.1
137015	21.3	18.0	469068	21.4	21.9	74547	21.4	18.3	422784	21.5	21.6	178384	21.6	19.1	504295	21.7	23.2
102874	21.3	19.5	396259	21.4	19.9	509050	21.4	20.8	212534								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
239563	21.7	20.2	29799	21.8	18.5	62111	21.8	18.3	4163	21.9	16.0	390979	21.9	19.0	87669	22.1	18.3
178963	21.7	19.0	319715	21.8	20.4	533945	21.8	20.3	261073	21.9	19.6	476401	21.9	20.7	30935	22.1	16.7
425368	21.7	20.3	393191	21.8	20.7	413815	21.8	19.6	214804	21.9	20.3	463333	21.9	19.7	326790	22.1	19.4
130540	21.7	19.4	540890	21.8	21.1	468932	21.8	20.7	264741	21.9	21.1	532914	21.9	21.4	157813	22.1	19.3
302513	21.7	20.3	171082	21.8	21.3	462276	21.8	21.3	117497	21.9	19.8	523187	21.9	21.3	502911	22.1	20.7
498671	21.7	21.3	435638	21.8	20.2	297849	21.8	20.8	219788	21.9	18.9	6273	21.9	17.9	509287	22.1	21.4
508484	21.7	20.4	303460	21.8	21.7	421574	21.8	18.9	313543	21.9	19.8	156495	21.9	19.6	467891	22.1	19.6
323308	21.7	20.4	262851	21.8	21.0	82102	21.8	18.7	257569	21.9	20.9	83671	21.9	18.7	334446	22.1	18.5
372991	21.7	20.6	351208	21.8	18.9	455790	21.8	20.4	467638	21.9	20.7	495010	21.9	19.8	423433	22.1	21.1
316542	21.7	20.2	315579	21.8	20.6	535141	21.8	21.9	68682	21.9	19.0	377720	21.9	19.5	479825	22.1	20.7
426040	21.7	21.1	140682	21.8	19.6	276525	21.8	19.1	469794	21.9	19.0	85111	21.9	17.9	428422	22.1	20.1
125830	21.7	19.2	300015	21.8	20.5	369570	21.8	21.0	284541	21.9	20.5	517636	21.9	20.4	430139	22.1	21.3
503211	21.7	20.5	416855	21.8	19.3	302877	21.8	19.5	193021	21.9	19.9	507759	21.9	22.0	482630	22.1	20.9
534082	21.7	21.1	65414	21.8	19.4	78858	21.8	19.5	136256	21.9	18.8	185002	21.9	19.6	491226	22.1	19.5
95963	21.7	17.3	168935	21.8	20.5	386482	21.8	20.0	419325	21.9	19.9	537143	22.0	19.1	534197	22.1	22.0
362511	21.7	19.4	309087	21.8	19.9	447266	21.8	20.0	524507	21.9	20.4	386241	22.0	19.1	165148	22.1	19.7
181322	21.7	20.3	355594	21.8	21.1	475141	21.8	21.0	68599	21.9	17.9	501185	22.0	21.0	177919	22.1	19.0
216804	21.7	20.4	174452	21.8	19.6	265802	21.8	20.4	58181	21.9	18.6	433344	22.0	21.4	524698	22.1	22.1
489138	21.7	20.8	372953	21.8	20.8	200081	21.8	20.1	63657	21.9	18.8	377838	22.0	20.9	535613	22.1	21.0
687	21.7	15.2	531890	21.8	21.0	329813	21.8	19.8	6962	21.9	16.5	490476	22.0	20.9	10065	22.1	17.9
365206	21.7	20.5	426685	21.8	20.4	451923	21.8	20.0	386244	21.9	20.7	225534	22.0	18.6	532581	22.1	21.5
214715	21.7	20.1	192645	21.8	18.5	524920	21.8	21.1	498695	21.9	20.7	427985	22.0	21.5	59950	22.1	17.4
286246	21.7	21.1	284435	21.8	18.8	522325	21.9	21.4	105576	21.9	18.9	371067	22.0	21.0	412717	22.1	18.6
492265	21.7	21.5	146557	21.8	19.6	58297	21.9	18.7	229993	21.9	20.3	413323	22.0	19.0	495221	22.1	21.3
317627	21.7	20.5	200291	21.8	20.2	450563	21.9	21.9	282422	21.9	20.6	11948	22.0	17.4	351973	22.1	20.9
481015	21.7	20.1	535198	21.8	20.6	193834	21.9	19.5	536130	21.9	21.3	425299	22.0	21.2	151168	22.1	19.6
78903	21.7	19.2	453356	21.8	21.2	91387	21.9	18.2	282787	21.9	20.3	237087	22.0	20.0	300010	22.1	20.0
107189	21.7	19.1	380790	21.8	19.6	126471	21.9	20.4	107387	21.9	20.5	426828	22.0	20.5	255805	22.1	20.0
333442	21.7	18.7	290323	21.8	20.8	539970	21.9	19.5	452712	21.9	21.6	542701	22.0	20.2	4954	22.1	15.1
127836	21.7	18.4	142427	21.8	19.2	417311	21.9	21.2	462333	21.9	21.2	100328	22.0	18.6	501954	22.1	20.5
344672	21.7	19.6	528287	21.8	21.4	88382	21.9	17.8	211517	21.9	19.6	535144	22.0	21.1	365196	22.1	21.5
415269	21.7	19.8	448129	21.8	21.0	371283	21.9	22.3	513787	21.9	20.9	396214	22.0	20.1	539341	22.1	20.8
173995	21.7	19.5	535844	21.8	21.0	7717	21.9	18.1	67413	21.9	18.4	224460	22.0	19.9	56313	22.1	16.8
450003	21.7	19.8	295775	21.8	19.6	159458	21.9	18.6	65402	21.9	18.6	334118	22.0	19.7	273741	22.1	20.4
395988	21.7	20.9	248709	21.8	17.4	118603	21.9	19.4	305596	21.9	21.0	459988	22.0	20.3	281522	22.1	20.1
55473	21.7	17.9	129540	21.8	17.6	108013	21.9	18.5	167534	21.9	18.0	30486	22.0	18.6	519079	22.1	20.6
499152	21.7	21.4	523105	21.8	20.7	428805	21.9	20.4	539288	21.9	20.9	141336	22.0	20.0	436628	22.1	20.3
9661	21.7	16.1	507617	21.8	21.9	303683	21.9	20.1	154006	21.9	20.5	171949	22.0	19.5	91182	22.1	19.8
312718	21.7	20.1	55531	21.8	17.8	151154	21.9	19.3	81493	21.9	19.8	388693	22.0	20.9	409779	22.1	20.4
5605	21.7	16.2	93300	21.8	19.8	175110	21.9	18.8	310219	21.9	20.1	401371	22.0	20.4	536558	22.1	21.1
3689	21.7	16.4	68894	21.8	19.9	33005	21.9	18.3	129275	21.9	20.1	497508	22.0	21.1	428294	22.1	20.9
196333	21.7	19.6	541473	21.8	21.2	61678	21.9	18.4	377886	21.9	21.1	37514	22.0	19.2	33931	22.1	16.9
433529	21.7	21.3	283072	21.8	18.2	479151	21.9	20.6	144690	21.9	19.4	93745	22.0	19.3	278505	22.1	19.7
507796	21.7	20.7	154781	21.8	19.5	384266	21.9	20.3	446801	21.9	19.8	516403	22.0	21.0	401035	22.1	20.8
536331	21.7	20.2	140131	21.8	19.5	24767	21.9	18.5	236	21.9	11.6	266324	22.0	20.2	52703	22.1	19.5
524710	21.7	19.9	60315	21.8	18.2	334711	21.9	18.6	374485	21.9	20.8	74014	22.0	16.9	8040	22.1	17.4
118250	21.7	20.0	141413	21.8	20.4	204273	21.9	21.0	522358	21.9	19.7	530861	22.0	23.1	288039	22.1	20.3
209588	21.7	20.7	360282	21.8	20.0	185172	21.9	20.2	348830	21.9	20.6	41503	22.0	18.1	330744	22.1	20.1
90079	21.7	19.8	437714	21.8	20.3	398079	21.9	20.0	111677	21.9	18.8	271693	22.0	18.7	316699	22.1	19.7
422056	21.7	21.0	61687	21.8	18.4	36826	21.9	19.4	175673	21.9	20.0	377802	22.0	21.2	228046	22.1	18.6
451483	21.7	21.7	336442	21.8	20.4	82434	21.9	17.4	158043	21.9	18.7	89267	22.0	18.7	130797	22.1	18.8
338347	21.7	23.2	506263	21.8	19.5	310526	21.9	21.3	313082	21.9	19.1	8899	22.0	16.9	430269	22.1	19.9
111556	21.7	19.0	92779	21.8	17.4	225136	21.9	19.2	52393	21.9	18.7	125589	22.0	19.1	375764	22.1	19.6
249554	21.7	20.1	109908	21.8	17.6	438400	21.9	21.0	399293	21.9	20.7	98477	22.0	18.1	109353	22.1	20.0
275227	21.7	20.6	499257	21.8	20.1	107618	21.9	18.7	160497	21.9	20.3	235897	22.0	20.8	71287	22.1	19.1
338549	21.7	20.2	120401	21.8	19.5	180569	21.9	19.4	299436	21.9	20.7	504581	22.0	20.4	437445	22.1	21.1
157811	21.7	18.5	168011	21.8	20.1	141037	21.9	19.6	258525	21.9	19.4	462275	22.0	20.9	522727	22.1	21.6
390036	21.7	19.9	491848	21.8	20.9	417504	21.9	21.5	6161	21.9	17.5	540614	22.0	21.5	79118	22.1	17.7
106918	21.7	19.8	290592	21.8	21.7	463014	21.9	20.6	17855	21.9	18.1	521263	22.0	20.3	367199	22.1	20.9
527474	21.7	21.1	278431	21.8	19.5	179226	21.9	20.2	60160	21.9	17.6	228540	22.1	20.5	42005	22.1	19.0
185997	21.7	18.5	498354	21.8	21.9	517648	21.9	21.1	125687	21.9	19.2	245455	22.1	19.6	23	22.1	11.6
399693	21.7	20.7	381925	21.8	20.4	517655	21.9	21.0	362626	21.9	20.6	65473	22.1	19.5	499721	22.1	21.3
314353	21.7	20.5	388676	21.8	20.5	170222	21.9	17.8	209426	21.9	19.8	23284	22.1	17.1	250566	22.1	19.3
432032	21.7	20.5	532426	21.8	22.2	468112	21.9	20.0	111070	21.9	18.7	161779	22.1	19.9	542831	22.1	21.1
399353	21.7	19.5	463552	21.8	20.2	450232	21.9	19.8	469285	21.9	21.0	502947	22.1	20.2	351955	22.1	20.7
427422	21.7	19.1	543962	21.8	20.3	510795	21.9	22.5	143330	21.9	19.5	506934	22.1	21.6	507786	22.1	20.8
320445	21.7	21.3	461795	21.8	19.4	524155	21.9	21.6	136889	21.9	19.8	235290	22.1	19.9	394348	22.1	20.3
242411	21.7	18.8	93418	21.8	19.2	139740	21.9	19.5	124653	21.9	19.6	541394	22.1	21.1	384210	22.1	20.2
496242	21.7	21.2	299991	21.8	19.9	540671	21.9	20.9	310981	21.9							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
404120	22.1	20.1	504408	22.2	21.8	153972	22.3	19.7	120588	22.4	19.4	179448	22.5	19.7	466147	22.6	20.7
299879	22.1	20.3	161934	22.2	21.0	432344	22.3	21.9	237075	22.4	20.5	130475	22.5	17.7	438223	22.6	19.2
47281	22.1	19.3	524172	22.2	20.4	179753	22.3	20.8	265559	22.4	21.4	423541	22.5	20.7	212096	22.6	19.2
102496	22.1	19.8	178014	22.2	19.0	451889	22.3	19.7	297698	22.4	19.3	31009	22.5	18.2	462251	22.6	20.6
304411	22.1	20.3	519458	22.2	21.9	350684	22.3	19.6	381927	22.4	20.6	249556	22.5	18.3	240029	22.6	20.3
319762	22.1	21.0	199069	22.2	21.3	216721	22.3	19.5	489219	22.4	19.6	115302	22.5	19.8	211605	22.6	19.3
303873	22.1	20.1	162901	22.2	20.3	298707	22.3	20.6	30231	22.4	16.9	308197	22.5	21.4	491239	22.6	20.3
153431	22.1	20.1	329266	22.2	20.9	522690	22.3	20.3	425165	22.4	21.0	263777	22.5	19.9	224565	22.6	20.2
114985	22.2	19.4	106969	22.2	19.5	123198	22.3	20.7	12895	22.4	17.7	534507	22.5	19.6	293714	22.6	19.2
16005	22.2	18.0	332262	22.2	19.9	430070	22.3	20.7	412757	22.4	20.0	65143	22.5	18.8	301541	22.6	20.4
63890	22.2	19.3	211816	22.2	19.6	6590	22.3	16.8	499852	22.4	19.2	114442	22.5	19.8	24002	22.6	17.6
248482	22.2	19.2	436365	22.2	18.7	333204	22.3	20.6	277791	22.4	20.3	354129	22.5	20.7	423436	22.6	20.2
272838	22.2	20.1	429109	22.2	21.1	405900	22.3	19.1	64367	22.4	19.7	292445	22.5	20.1	425343	22.6	19.5
14238	22.2	15.8	279684	22.2	20.5	21632	22.3	15.6	423729	22.4	21.2	380630	22.5	20.9	313648	22.6	18.5
322782	22.2	19.1	196727	22.2	19.1	506396	22.3	20.4	424842	22.4	20.0	33035	22.5	17.5	403314	22.6	20.9
272537	22.2	20.6	87066	22.2	18.8	436359	22.3	19.0	259214	22.4	20.5	501506	22.5	21.1	420039	22.6	19.5
29565	22.2	19.3	474026	22.2	20.1	351656	22.3	21.1	352476	22.4	20.2	289992	22.5	19.7	93276	22.6	19.2
109830	22.2	18.6	280786	22.2	19.2	292574	22.3	20.4	83574	22.4	19.2	155082	22.5	19.0	173855	22.6	19.8
478116	22.2	21.0	292501	22.2	20.2	277389	22.3	20.5	131954	22.4	18.8	140796	22.5	20.3	420328	22.6	20.0
492501	22.2	20.1	419634	22.2	20.1	222793	22.3	20.1	221259	22.4	20.7	29590	22.5	18.8	119541	22.6	18.6
351548	22.2	19.4	310326	22.2	20.1	423694	22.3	20.6	221509	22.4	19.8	94117	22.5	19.6	362121	22.6	20.6
43507	22.2	18.1	136784	22.2	19.3	529261	22.3	21.5	357995	22.4	21.3	213356	22.5	19.7	251640	22.6	19.5
187958	22.2	19.3	194223	22.2	20.1	337229	22.3	20.5	315464	22.4	20.2	522999	22.5	20.5	213752	22.6	20.5
462942	22.2	20.5	158600	22.2	19.9	20523	22.3	16.9	86434	22.4	18.8	124385	22.5	19.0	198285	22.6	19.3
329583	22.2	20.8	530098	22.2	20.3	394267	22.3	21.8	329595	22.4	20.8	291961	22.5	19.7	41119	22.6	17.4
51040	22.2	19.3	232534	22.2	19.0	137660	22.3	19.3	455457	22.4	22.0	173072	22.5	20.8	524754	22.6	21.4
520019	22.2	20.9	214852	22.2	19.7	391394	22.3	20.9	17655	22.4	17.5	104769	22.5	18.7	215697	22.6	20.4
358312	22.2	18.1	272308	22.2	19.8	106535	22.3	18.0	94083	22.4	19.0	303744	22.5	20.0	221161	22.6	19.9
209414	22.2	18.5	417238	22.2	20.5	180655	22.3	19.7	342846	22.4	20.2	46371	22.5	17.3	507544	22.6	22.0
368261	22.2	21.8	47049	22.2	17.3	397810	22.3	20.8	525964	22.4	21.7	225988	22.5	20.1	338980	22.6	21.1
393892	22.2	19.4	159988	22.2	18.8	357982	22.3	21.6	250405	22.4	19.8	212706	22.5	19.7	211887	22.6	19.6
119147	22.2	19.3	532445	22.2	20.7	429627	22.3	20.8	34779	22.4	18.3	147815	22.5	18.4	210582	22.6	19.3
508630	22.2	20.8	188292	22.2	19.6	503168	22.3	20.8	453315	22.4	19.9	370147	22.5	20.3	97264	22.6	17.6
295896	22.2	20.8	533109	22.2	21.3	525176	22.3	20.9	420054	22.4	21.5	281703	22.5	20.8	302380	22.6	21.7
420997	22.2	19.2	369572	22.2	21.7	150902	22.3	18.8	39193	22.4	18.4	200227	22.5	20.3	312507	22.6	19.1
438033	22.2	21.0	158203	22.2	19.7	253500	22.3	19.7	472125	22.4	21.3	499697	22.5	21.1	499906	22.6	21.0
410762	22.2	20.8	299477	22.2	20.8	14093	22.3	18.4	193929	22.4	19.8	84175	22.5	18.3	256807	22.6	20.8
272979	22.2	19.8	502574	22.2	20.4	301695	22.3	18.6	196506	22.4	18.7	542329	22.5	20.7	7369	22.6	15.9
428871	22.2	21.3	445550	22.3	20.8	187367	22.3	20.0	425996	22.4	20.1	461542	22.5	20.3	7117	22.6	17.2
9668	22.2	17.6	88073	22.3	18.5	506784	22.4	21.1	333122	22.4	21.9	528384	22.5	21.0	282264	22.6	19.9
158613	22.2	20.6	173957	22.3	19.6	372490	22.4	18.4	538870	22.4	21.4	114966	22.5	18.7	384017	22.6	21.7
308717	22.2	20.4	489240	22.3	21.5	133926	22.4	20.3	498190	22.4	21.4	171704	22.5	20.4	418355	22.6	20.6
35403	22.2	18.0	16503	22.3	18.5	349376	22.4	20.0	305699	22.4	21.9	214428	22.5	19.7	504444	22.6	21.3
206278	22.2	18.4	471481	22.3	20.0	241148	22.4	19.0	478194	22.4	20.9	213081	22.5	20.2	272801	22.6	19.0
501532	22.2	21.5	297700	22.3	20.3	322329	22.4	20.1	325203	22.4	21.2	27464	22.5	18.5	491026	22.6	19.4
53108	22.2	17.9	469405	22.3	21.2	465340	22.4	21.3	530471	22.4	21.8	423501	22.5	21.6	419553	22.6	19.5
225517	22.2	19.7	137009	22.3	19.3	69178	22.4	18.3	458986	22.4	20.5	128607	22.5	18.5	196494	22.6	20.9
508250	22.2	21.0	208604	22.3	21.2	14844	22.4	17.8	186894	22.4	19.7	181538	22.5	21.4	142321	22.6	19.1
338703	22.2	19.9	430664	22.3	20.7	193944	22.4	18.9	140478	22.4	19.6	114951	22.5	19.1	37064	22.6	19.6
352410	22.2	20.4	173768	22.3	19.6	196922	22.4	19.9	384264	22.4	21.8	32289	22.5	18.5	498764	22.6	20.8
409856	22.2	19.7	51293	22.3	18.0	408291	22.4	20.0	281433	22.4	18.6	282322	22.5	19.7	363246	22.6	21.1
304563	22.2	20.4	326707	22.3	19.7	403348	22.4	21.7	106344	22.4	20.3	290969	22.5	19.0	491081	22.6	20.7
45496	22.2	17.8	469857	22.3	21.1	409206	22.4	20.9	118866	22.4	19.1	346252	22.5	20.7	455953	22.6	20.9
69757	22.2	18.3	235238	22.3	20.0	18819	22.4	17.9	508720	22.4	22.4	236248	22.5	19.1	473202	22.6	20.3
64328	22.2	19.3	15974	22.3	17.7	520924	22.4	20.5	474884	22.5	22.3	379222	22.5	21.0	299961	22.6	19.5
473023	22.2	20.6	157996	22.3	17.8	497996	22.4	20.9	242325	22.5	20.2	471463	22.5	21.3	86709	22.6	17.7
54060	22.2	18.1	211858	22.3	20.0	374346	22.4	21.5	64010	22.5	19.4	409251	22.5	21.0	230092	22.6	20.2
425770	22.2	21.4	54143	22.3	18.8	277723	22.4	19.9	100352	22.5	20.0	354969	22.5	18.4	86318	22.6	18.0
357109	22.2	21.1	521232	22.3	20.4	369291	22.4	19.7	528935	22.5	20.8	215452	22.5	18.9	278777	22.6	20.2
277741	22.2	20.7	536557	22.3	21.2	492573	22.4	19.9	457641	22.5	22.1	84563	22.5	19.2	506261	22.6	20.1
280967	22.2	20.4	18651	22.3	17.0	387399	22.4	19.3	497499	22.5	21.0	436000	22.5	20.5	416860	22.6	19.4
510797	22.2	21.8	88839	22.3	18.4	542888	22.4	20.1	544027	22.5	20.9	20376	22.5	18.1	471885	22.6	21.2
110241	22.2	19.4	46197	22.3	18.7	192752	22.4	20.5	247780	22.5	18.9	171093	22.5	19.6	35326	22.6	18.3
106217	22.2	18.8	466726	22.3	21.5	522922	22.4	20.8	469336	22.5	19.8	355650	22.5	20.1	157503	22.6	20.9
354890	22.2	21.3	226023	22.3	20.0	72223	22.4	19.6	8975	22.5	17.9	55432	22.5	18.0	502365	22.6	19.3
387332	22.2	20.1	25004	22.3	16.9	117010	22.4	18.8	471910	22.5	21.9	374376	22.5	20.4	235042	22.6	20.8
115612	22.2	19.9	117074	22.3	18.7	200597	22.4	18.8	199266	22.5	19.9	270591	22.5	19.0	325054	22.6	20.1
194693	22.2	19.2	13248	22.3	17.6	464652	22.4	22.8	325169	22.5	20.1	468191	22.5	19.6	165435	22.6	20.2
211147	22.2	18.8	510483	22.3	20.2	360355	22.4	21.6									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
93373	22.6	19.9	137467	22.7	19.9	177845	22.8	19.3	188648	22.9	19.9	437964	22.9	20.0	430121	23.0	20.7
140719	22.6	19.4	148420	22.7	20.2	523072	22.8	20.1	512657	22.9	20.8	283155	22.9	20.8	463099	23.0	21.0
159482	22.6	16.7	115790	22.7	19.4	237552	22.8	18.6	396166	22.9	20.1	333090	22.9	18.6	114827	23.0	18.6
144358	22.6	19.6	413831	22.7	21.5	118505	22.8	18.3	454078	22.9	22.0	149103	22.9	19.8	231330	23.0	20.7
334596	22.6	19.6	209441	22.7	19.7	163741	22.8	19.4	144800	22.9	19.4	455295	22.9	22.2	279078	23.0	19.9
269690	22.6	22.5	403252	22.7	20.7	10532	22.8	16.9	439157	22.9	20.6	103575	22.9	19.5	348871	23.0	21.6
330407	22.6	20.4	58644	22.7	20.0	359392	22.8	18.9	309417	22.9	19.4	296897	22.9	20.0	104923	23.0	18.8
177727	22.6	20.5	385514	22.7	21.1	148663	22.8	19.8	383988	22.9	20.4	397700	22.9	21.3	503529	23.0	19.0
262800	22.6	20.6	259339	22.7	19.5	126445	22.8	19.3	424053	22.9	20.8	373043	22.9	20.8	336456	23.0	20.2
6598	22.6	17.8	332097	22.7	20.2	173893	22.8	20.1	62386	22.9	17.8	194070	22.9	19.7	210238	23.0	20.7
269991	22.6	19.4	501234	22.7	21.3	62779	22.8	18.9	29317	22.9	19.2	419823	22.9	20.8	176595	23.0	20.4
491217	22.6	20.7	231550	22.7	20.6	419581	22.8	20.4	374386	22.9	21.5	49865	22.9	19.7	376292	23.0	20.1
477948	22.6	21.3	22675	22.7	17.3	478119	22.8	21.0	110558	22.9	17.8	22221	22.9	18.6	178294	23.0	18.9
298795	22.6	19.7	174299	22.7	19.8	388387	22.8	20.8	312225	22.9	21.4	151832	22.9	20.1	190536	23.0	19.7
121727	22.6	19.2	144865	22.7	18.2	468984	22.8	21.2	150617	22.9	19.8	147208	22.9	20.2	186601	23.0	20.3
421383	22.6	20.1	394013	22.7	19.4	128666	22.8	18.9	358067	22.9	19.1	290975	22.9	19.3	441058	23.0	23.0
408173	22.7	20.7	232140	22.7	20.4	369939	22.8	20.0	455217	22.9	20.8	374471	22.9	21.9	460438	23.0	20.4
405920	22.7	21.0	471441	22.7	21.7	352027	22.8	20.6	494838	22.9	19.4	12086	22.9	18.1	120346	23.0	19.4
311038	22.7	19.4	151103	22.7	19.3	456825	22.8	19.6	81277	22.9	18.3	528579	22.9	20.6	530039	23.0	20.6
167104	22.7	18.9	539121	22.7	21.1	478034	22.8	20.6	153452	22.9	20.6	497204	22.9	21.3	200755	23.0	19.7
202505	22.7	20.0	29370	22.7	17.8	508647	22.8	20.8	250170	22.9	19.5	372542	22.9	21.5	283476	23.0	19.7
322710	22.7	20.7	498657	22.7	20.7	470489	22.8	21.2	354859	22.9	20.8	35115	22.9	18.8	427941	23.0	20.7
462205	22.7	20.4	430736	22.7	20.7	234461	22.8	20.2	26561	22.9	17.9	303328	22.9	19.0	543782	23.0	20.6
15496	22.7	17.2	428833	22.7	21.4	106084	22.8	19.4	443732	22.9	20.3	398478	22.9	21.4	214239	23.0	19.8
287835	22.7	19.8	2839	22.7	15.7	54000	22.8	18.8	106675	22.9	19.5	25361	22.9	18.8	118649	23.0	18.0
426827	22.7	19.1	272986	22.7	20.4	111256	22.8	19.2	540894	22.9	21.3	333676	22.9	19.5	6324	23.0	17.4
312892	22.7	20.7	510370	22.7	20.5	392143	22.8	20.0	305745	22.9	19.9	155440	22.9	21.1	418235	23.0	21.5
457006	22.7	21.3	42792	22.7	18.0	67095	22.8	18.7	13087	22.9	17.5	396428	22.9	20.4	196312	23.0	19.8
359099	22.7	20.5	148791	22.7	19.6	435318	22.8	20.8	140830	22.9	20.2	71015	22.9	18.8	161881	23.1	18.9
245196	22.7	19.7	305318	22.7	20.0	185494	22.8	19.7	499872	22.9	20.6	88969	22.9	19.2	147350	23.1	19.7
348434	22.7	19.5	292514	22.7	19.7	432019	22.8	20.4	294162	22.9	20.7	358011	22.9	18.6	526342	23.1	22.1
490557	22.7	20.9	118210	22.7	18.9	300906	22.8	20.6	452322	22.9	21.6	372621	22.9	20.1	434181	23.1	20.3
533223	22.7	21.0	316563	22.7	20.0	208239	22.8	20.7	430535	22.9	20.0	60272	22.9	18.2	524928	23.1	19.8
284214	22.7	19.5	210033	22.7	19.4	474879	22.8	20.0	292044	22.9	20.3	298764	22.9	19.5	130227	23.1	19.8
309791	22.7	21.6	93640	22.7	18.4	198209	22.8	18.6	356557	22.9	20.1	503209	22.9	20.4	281567	23.1	20.3
99716	22.7	18.8	88598	22.7	19.1	29957	22.8	17.6	131512	22.9	20.2	170329	22.9	19.7	305291	23.1	20.2
328343	22.7	19.8	434475	22.7	20.2	540535	22.8	19.7	497553	22.9	20.5	530910	22.9	21.2	38579	23.1	18.6
527447	22.7	21.6	99019	22.7	19.5	1618	22.8	15.0	352651	22.9	19.1	297871	22.9	21.0	374129	23.1	20.0
471815	22.7	21.6	302444	22.7	21.2	295102	22.8	19.7	436744	22.9	20.2	108938	22.9	18.9	410595	23.1	20.1
29888	22.7	18.4	405544	22.7	21.6	234170	22.8	19.8	62475	22.9	18.4	204140	22.9	19.6	82868	23.1	19.0
255771	22.7	20.5	60817	22.7	18.1	540615	22.8	20.8	517635	22.9	20.4	504629	22.9	21.1	83435	23.1	18.3
129449	22.7	20.3	278229	22.8	20.6	214531	22.8	20.3	168921	22.9	19.8	503998	22.9	19.2	542474	23.1	20.5
329310	22.7	18.7	351492	22.8	20.6	537361	22.8	20.1	395568	22.9	20.3	475759	22.9	20.6	259961	23.1	19.6
395221	22.7	20.6	267398	22.8	21.0	69102	22.8	19.0	231422	22.9	20.1	105788	22.9	19.4	338148	23.1	20.9
505350	22.7	22.1	359121	22.8	20.5	246889	22.8	20.9	377871	22.9	21.0	265693	22.9	21.5	81700	23.1	16.8
173021	22.7	18.1	320658	22.8	20.6	528872	22.8	22.5	269471	22.9	19.1	500632	22.9	20.7	294445	23.1	20.4
398257	22.7	19.0	274915	22.8	19.8	507856	22.8	22.2	518488	22.9	19.0	285196	22.9	21.1	86518	23.1	19.3
519998	22.7	21.7	485833	22.8	21.1	340720	22.9	20.9	280762	22.9	19.4	221321	22.9	19.7	31196	23.1	19.1
57267	22.7	18.9	135453	22.8	18.6	150016	22.9	19.7	93410	22.9	18.9	103948	22.9	20.2	473854	23.1	22.2
250612	22.7	19.4	233696	22.8	20.3	430772	22.9	20.6	356662	22.9	21.2	178399	22.9	19.7	190709	23.1	20.1
369680	22.7	19.1	363503	22.8	19.8	201447	22.9	20.1	286279	22.9	20.2	185346	22.9	20.9	122223	23.1	17.7
336371	22.7	20.6	286109	22.8	19.3	433212	22.9	20.6	285662	22.9	20.9	147300	23.0	19.0	236141	23.1	20.0
77831	22.7	18.6	43622	22.8	19.0	369778	22.9	20.0	205813	22.9	18.9	18339	23.0	18.5	299851	23.1	21.1
97938	22.7	18.1	394353	22.8	19.7	362960	22.9	19.7	396652	22.9	21.3	177869	23.0	19.1	331062	23.1	19.4
343523	22.7	21.0	40952	22.8	18.5	221102	22.9	20.9	106580	22.9	20.0	479865	23.0	21.2	392142	23.1	20.5
71627	22.7	19.7	403886	22.8	19.9	235978	22.9	20.5	67508	22.9	16.6	502033	23.0	21.6	530137	23.1	21.5
304703	22.7	20.0	537985	22.8	20.6	381550	22.9	21.3	30458	22.9	18.1	332630	23.0	19.6	164621	23.1	20.3
87868	22.7	19.0	473232	22.8	20.1	503330	22.9	20.7	420064	22.9	20.5	195276	23.0	19.5	210107	23.1	20.2
431052	22.7	21.6	530805	22.8	21.6	478076	22.9	20.2	302855	22.9	20.2	280208	23.0	19.2	37115	23.1	19.5
96546	22.7	18.9	18030	22.8	17.1	470086	22.9	21.3	337320	22.9	20.3	506063	23.0	20.9	381922	23.1	21.0
354719	22.7	19.1	141292	22.8	19.3	165494	22.9	20.8	268331	22.9	20.8	42030	23.0	19.2	174591	23.1	19.0
379364	22.7	20.3	185576	22.8	21.0	32047	22.9	17.4	226061	22.9	20.2	98539	23.0	19.2	252935	23.1	19.5
216346	22.7	20.0	287616	22.8	19.7	530986	22.9	21.1	507582	22.9	21.8	352843	23.0	20.7	398086	23.1	19.8
508669	22.7	19.7	61388	22.8	18.0	83423	22.9	18.4	351688	22.9	21.3	8882	23.0	17.2	455405	23.1	20.9
56076	22.7	18.6	393294	22.8	19.8	5685	22.9	15.7	106256	22.9	18.9	428770	23.0	20.6	87463	23.1	18.3
149640	22.7	20.1	221089	22.8	20.4	501085	22.9	20.5	537365	22.9	21.0	209655	23.0	20.6	227479	23.1	19.8
12079	22.7	16.2	56691	22.8	18.2	128019	22.9	20.2	499348	22.9	20.5	353833	23.0	20.6	338943	23.1	20.5
539173	22.7	21.5	196592	22.8	19.7	196673	22.9	19.9	372616	22.9	21.0	164430	23.0	18.1	350271	23.1	20.2
22070	22.7	16.7	210004	22.8	20.0	464902	22.9	21.2	30								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
117117	23.1	19.1	502114	23.2	20.8	87800	23.3	18.7	205827	23.3	19.7	332362	23.4	20.0	293157	23.5	20.6
138689	23.1	19.8	471370	23.2	20.2	103852	23.3	19.6	495808	23.3	19.5	6837	23.4	17.4	530680	23.5	20.7
304571	23.1	21.3	160298	23.2	20.5	59880	23.3	17.5	387357	23.3	20.6	246200	23.4	19.8	457121	23.5	21.9
343143	23.1	20.7	15782	23.2	18.0	342842	23.3	21.1	159511	23.3	20.2	37083	23.4	18.6	533167	23.5	22.3
533491	23.1	21.5	98620	23.2	18.8	499723	23.3	21.5	167536	23.3	20.0	428924	23.4	20.2	411228	23.5	19.2
178740	23.1	20.0	72122	23.2	18.9	381596	23.3	21.6	80932	23.3	18.2	136573	23.4	19.2	299904	23.5	19.4
98949	23.1	18.9	276062	23.2	19.5	188729	23.3	20.5	40999	23.3	17.0	190538	23.4	18.6	466158	23.5	21.1
466908	23.1	20.0	537351	23.2	20.9	295811	23.3	20.1	316670	23.3	20.4	307523	23.4	20.7	251637	23.5	19.0
266296	23.1	20.0	351646	23.2	21.3	466509	23.3	21.6	72642	23.4	18.9	544758	23.4	20.5	39589	23.5	19.0
244612	23.1	19.9	499843	23.2	21.3	505552	23.3	21.4	278632	23.4	20.1	286668	23.4	20.7	327348	23.5	20.2
386238	23.1	19.6	403280	23.2	20.1	427403	23.3	20.5	488953	23.4	20.3	304689	23.4	19.4	528373	23.5	21.4
423210	23.1	21.9	318951	23.2	18.7	109426	23.3	17.5	408602	23.4	19.7	414766	23.5	20.2	533402	23.5	22.3
346800	23.1	19.9	260702	23.2	20.9	470918	23.3	20.6	533114	23.4	20.8	412922	23.5	19.9	200154	23.5	18.6
253203	23.1	20.0	397578	23.2	19.9	103915	23.3	19.7	341655	23.4	20.8	369784	23.5	20.7	544069	23.5	20.9
172053	23.1	20.0	289385	23.2	20.9	382221	23.3	20.2	93353	23.4	19.6	146217	23.5	19.0	375930	23.5	20.6
64417	23.1	19.7	26531	23.2	17.9	3646	23.3	17.1	417004	23.4	20.2	376226	23.5	21.7	374526	23.5	21.0
104717	23.1	20.2	143580	23.2	17.5	544701	23.3	21.0	362710	23.4	20.1	525929	23.5	20.8	506916	23.5	22.3
38996	23.1	17.9	457228	23.2	21.1	494282	23.3	21.1	293180	23.4	19.6	124148	23.5	18.3	505094	23.5	21.2
57760	23.1	19.6	30837	23.2	18.8	309941	23.3	21.2	140321	23.4	20.0	87606	23.5	19.3	529249	23.5	22.0
498718	23.1	20.7	502607	23.2	19.7	486887	23.3	19.4	537263	23.4	20.7	168949	23.5	21.7	1761	23.5	17.3
470445	23.1	20.6	217643	23.2	20.2	114772	23.3	18.7	312151	23.4	20.9	217057	23.5	19.0	283588	23.5	21.1
507707	23.1	20.5	321157	23.2	20.7	128485	23.3	19.0	471418	23.4	20.9	152895	23.5	19.3	49276	23.5	19.7
50323	23.1	18.9	390801	23.2	21.3	307956	23.3	19.0	314839	23.4	20.7	286111	23.5	20.1	385471	23.5	18.9
473709	23.1	20.7	236109	23.2	20.3	192977	23.3	18.5	215086	23.4	19.6	339549	23.5	19.9	533228	23.5	20.5
72106	23.1	19.0	312106	23.2	19.5	473179	23.3	20.5	534155	23.4	21.1	270210	23.5	21.3	138589	23.5	18.7
429201	23.1	21.2	323033	23.2	20.9	538171	23.3	20.2	452713	23.4	20.2	88022	23.5	18.2	423575	23.5	21.5
123841	23.1	19.3	528972	23.2	21.3	299246	23.3	20.1	90155	23.4	19.2	114446	23.5	18.3	34010	23.5	17.3
351676	23.1	19.6	508194	23.2	20.5	164353	23.3	19.5	238121	23.4	19.3	510423	23.5	20.1	310051	23.5	19.2
349346	23.1	19.7	125198	23.2	19.7	117940	23.3	18.9	270403	23.4	20.4	456362	23.5	20.4	391260	23.5	21.4
135159	23.1	18.1	525297	23.2	21.9	26183	23.3	18.2	459785	23.4	18.9	198538	23.5	19.6	301560	23.5	19.9
184169	23.1	18.4	111431	23.2	19.6	310996	23.3	20.9	204193	23.4	19.9	451237	23.5	20.7	301509	23.5	20.5
248543	23.1	20.2	377915	23.2	20.5	333199	23.3	20.3	71318	23.4	19.0	18264	23.5	19.0	391686	23.5	22.1
425388	23.1	19.2	291178	23.2	19.5	72212	23.3	19.2	118637	23.4	17.5	266387	23.5	21.0	413816	23.5	19.1
353944	23.1	21.5	403303	23.2	20.6	479040	23.3	20.4	363736	23.4	21.7	113317	23.5	18.6	322457	23.5	20.7
213810	23.1	19.9	24173	23.2	18.8	187911	23.3	19.5	333643	23.4	19.1	403879	23.5	20.5	96126	23.5	19.9
126085	23.1	18.5	516161	23.2	20.8	55411	23.3	19.6	203939	23.4	18.9	217893	23.5	19.3	415848	23.5	20.9
204137	23.1	20.6	304725	23.2	19.0	331462	23.3	20.7	463327	23.4	21.1	457558	23.5	21.9	328253	23.5	21.5
140229	23.1	19.8	264658	23.2	20.5	498796	23.3	21.1	228547	23.4	19.6	151058	23.5	19.1	250852	23.6	20.2
528482	23.1	20.9	459211	23.2	21.2	411869	23.3	20.9	295825	23.4	19.8	457767	23.5	20.3	310315	23.6	20.0
432412	23.1	21.6	453326	23.2	21.4	411468	23.3	20.7	534308	23.4	21.0	20592	23.5	17.6	466357	23.6	20.1
459400	23.1	21.2	439585	23.2	20.7	111524	23.3	20.4	474973	23.4	20.4	116511	23.5	20.0	526529	23.6	21.8
422956	23.1	20.3	32477	23.2	17.7	432388	23.3	20.7	306123	23.4	19.1	310982	23.5	20.8	29810	23.6	18.1
467881	23.1	20.3	167072	23.2	18.6	172598	23.3	19.7	504604	23.4	20.8	468194	23.5	20.3	427777	23.6	20.6
368704	23.1	19.4	92811	23.2	19.0	538447	23.3	21.1	146625	23.4	19.1	359862	23.5	20.4	114581	23.6	18.9
34386	23.1	17.7	223259	23.2	19.2	501013	23.3	20.6	247286	23.4	19.6	501028	23.5	20.5	283245	23.6	20.9
68306	23.1	17.8	418131	23.2	20.7	292872	23.3	19.5	501182	23.4	19.6	518855	23.5	18.9	525959	23.6	21.7
46081	23.1	18.4	373476	23.2	20.0	309318	23.3	19.1	391704	23.4	20.3	122234	23.5	17.7	303419	23.6	21.1
423511	23.1	20.3	322395	23.2	19.5	67470	23.3	19.1	164536	23.4	20.1	179504	23.5	19.4	275387	23.6	20.9
264211	23.1	20.1	474085	23.2	19.9	165493	23.3	19.5	503452	23.4	21.4	140662	23.5	19.7	526185	23.6	21.4
533341	23.1	22.3	536424	23.2	20.7	219680	23.3	20.9	92365	23.4	18.6	38259	23.5	18.6	406499	23.6	20.5
316848	23.1	21.2	300219	23.2	19.2	503395	23.3	20.1	525249	23.4	21.1	518958	23.5	19.9	298909	23.6	20.6
330992	23.1	19.2	73661	23.2	20.2	190237	23.3	18.1	119773	23.4	19.0	55858	23.5	19.8	362059	23.6	20.4
132132	23.1	20.2	436736	23.2	19.8	360993	23.3	21.7	258300	23.4	21.0	525155	23.5	21.1	66334	23.6	17.9
230043	23.1	19.7	369276	23.2	19.0	176035	23.3	20.2	250450	23.4	19.8	176586	23.5	19.8	172148	23.6	18.8
272731	23.1	19.4	16614	23.2	18.0	229863	23.3	19.8	10818	23.4	17.8	64885	23.5	17.8	370103	23.6	20.6
297759	23.1	20.3	397668	23.2	20.6	526749	23.3	22.0	210433	23.4	20.8	115498	23.5	18.1	363326	23.6	19.6
309809	23.2	20.6	530171	23.2	21.0	212856	23.3	20.9	495006	23.4	19.5	94614	23.5	19.0	371137	23.6	21.1
528274	23.2	21.4	299546	23.2	21.4	464750	23.3	19.9	70917	23.4	18.3	178241	23.5	19.6	540867	23.6	20.4
105956	23.2	19.6	406457	23.2	19.8	378755	23.3	20.7	467436	23.4	20.9	133930	23.5	18.7	136056	23.6	20.5
156503	23.2	20.0	423225	23.2	19.7	103222	23.3	18.8	246556	23.4	20.1	465309	23.5	20.3	38945	23.6	17.1
318675	23.2	19.7	341153	23.2	18.5	363867	23.3	20.3	350413	23.4	20.4	32128	23.5	17.1	468440	23.6	20.5
294964	23.2	21.0	354083	23.2	22.0	292666	23.3	20.6	65101	23.4	17.6	240085	23.5	20.1	86250	23.6	19.1
423510	23.2	20.6	519725	23.2	21.2	31068	23.3	17.2	75555	23.4	19.3	162666	23.5	19.7	180163	23.6	20.6
122896	23.2	19.2	119572	23.2	19.8	100639	23.3	18.7	417489	23.4	20.3	526409	23.5	20.0	398892	23.6	21.3
426168	23.2	20.1	435413	23.2	20.0	533278	23.3	21.0	308176	23.4	20.7	70346	23.5	18.3	494242	23.6	20.4
241869	23.2	19.1	182065	23.2	19.4	503021	23.3	19.8	93947	23.4	19.8	115019	23.5	18.8	462273	23.6	22.1
351599	23.2	20.4	494988	23.2	22.0	63710	23.3	18.3	262752	23.4	20.6	395832	23.5	20.8	193688	23.6	20.9
228381	23.2	19.6	111069	23.2	17.8	526849	23.3	22.2	474684	23.4	21.0	59701	23.5	18.9	172545	23.6	19.5
387017	23.2	20.6	283742	23.2	19.2	105610	23.3	17									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
424155	23.6	20.6	439333	23.7	21.2	275904	23.7	19.8	321900	23.8	21.7	359844	23.9	21.2	17754	23.9	16.7
309932	23.6	21.0	368976	23.7	20.1	267333	23.7	21.2	495216	23.8	20.4	136896	23.9	19.5	24432	23.9	17.5
533896	23.6	19.8	238980	23.7	19.3	21475	23.7	16.8	489034	23.8	21.1	503384	23.9	20.7	391740	23.9	21.0
245218	23.6	18.7	362670	23.7	20.7	536417	23.7	21.5	270543	23.8	19.3	463691	23.9	21.0	494826	23.9	20.3
291399	23.6	20.8	55880	23.7	18.2	278826	23.7	19.7	325895	23.8	20.9	74762	23.9	17.4	539161	23.9	20.8
140847	23.6	20.2	354066	23.7	20.8	306700	23.7	20.9	209457	23.8	19.3	270460	23.9	20.0	225595	23.9	20.7
295672	23.6	20.4	49586	23.7	17.2	485601	23.8	18.7	336158	23.8	19.6	117024	23.9	19.9	406869	23.9	21.0
320400	23.6	20.6	303382	23.7	20.5	533773	23.8	19.7	529688	23.8	20.9	475093	23.9	21.2	341855	23.9	19.6
213780	23.6	19.8	465907	23.7	20.7	540776	23.8	20.2	452782	23.8	21.3	502933	23.9	20.4	299235	23.9	20.0
127207	23.6	19.4	153542	23.7	22.1	113514	23.8	19.3	299260	23.8	19.5	179505	23.9	19.5	155613	23.9	19.3
379750	23.6	20.5	111804	23.7	19.1	18948	23.8	18.3	148562	23.8	19.5	313780	23.9	20.7	387121	23.9	20.4
153794	23.6	19.9	146692	23.7	19.4	161936	23.8	20.2	511071	23.8	19.9	529453	23.9	19.5	513100	23.9	20.6
88269	23.6	22.5	136914	23.7	19.9	72961	23.8	18.3	354731	23.8	21.0	357203	23.9	20.3	88471	23.9	19.3
105838	23.6	19.2	289733	23.7	20.9	460140	23.8	20.8	430434	23.8	21.4	374094	23.9	20.5	228188	23.9	19.6
278789	23.6	20.0	198556	23.7	19.1	408786	23.8	21.7	362039	23.8	20.3	241863	23.9	20.0	467120	23.9	21.2
212493	23.6	20.1	229111	23.7	20.1	190230	23.8	20.1	494278	23.8	21.3	268990	23.9	20.4	507764	23.9	19.5
75621	23.6	18.5	94780	23.7	19.3	480184	23.8	19.6	214405	23.8	20.1	28467	23.9	18.3	295252	23.9	20.8
83768	23.6	19.5	38696	23.7	18.8	505629	23.8	21.7	146395	23.8	20.0	268549	23.9	19.1	471493	23.9	19.6
538129	23.6	21.6	523889	23.7	21.6	8869	23.8	17.7	201089	23.8	18.3	200731	23.9	20.0	386151	23.9	22.6
42590	23.6	19.0	64241	23.7	19.3	491311	23.8	21.4	206917	23.8	19.0	184204	23.9	18.9	123788	23.9	20.2
501049	23.6	19.2	274637	23.7	20.0	73117	23.8	18.3	462854	23.8	21.7	133929	23.9	19.9	522408	23.9	21.0
423491	23.6	21.7	502780	23.7	21.2	54344	23.8	17.9	154779	23.8	19.4	477699	23.9	20.4	55335	23.9	18.6
397670	23.6	21.2	494323	23.7	20.6	234971	23.8	20.7	518692	23.8	21.2	246225	23.9	19.3	312677	23.9	17.5
87333	23.6	19.3	540989	23.7	21.0	267473	23.8	20.2	338898	23.8	20.6	221996	23.9	19.9	453328	23.9	21.3
109424	23.6	19.2	163602	23.7	19.7	216897	23.8	19.5	238640	23.8	20.0	410220	23.9	19.9	24641	23.9	15.6
499301	23.6	21.5	110550	23.7	18.8	383946	23.8	18.6	381130	23.8	19.0	150625	23.9	20.8	502372	23.9	21.1
179572	23.6	19.2	373825	23.7	20.0	211255	23.8	18.9	264566	23.8	19.6	110838	23.9	19.5	538218	23.9	21.2
20779	23.6	18.3	209373	23.7	19.8	62689	23.8	19.6	459609	23.8	21.3	118945	23.9	19.5	142195	23.9	18.9
159389	23.6	16.8	38110	23.7	17.1	315361	23.8	21.3	84761	23.8	18.6	508146	23.9	19.8	3899	23.9	16.2
215104	23.6	20.4	284903	23.7	19.1	209060	23.8	19.5	239483	23.8	20.4	184747	23.9	19.6	308409	23.9	20.5
120100	23.6	19.2	140015	23.7	18.5	497983	23.8	20.9	48097	23.8	19.3	458197	23.9	18.8	325699	23.9	18.7
240784	23.6	19.3	377465	23.7	21.1	114020	23.8	18.6	320414	23.8	20.7	445295	23.9	20.0	298779	23.9	20.1
244858	23.6	19.7	532678	23.7	20.8	350130	23.8	21.5	371694	23.8	20.1	32855	23.9	19.1	160496	23.9	20.4
357377	23.6	19.5	545084	23.7	20.0	204766	23.8	20.3	308571	23.8	20.6	140949	23.9	19.8	58162	23.9	19.5
61031	23.6	18.9	196628	23.7	20.2	189389	23.8	20.0	118828	23.8	19.9	168082	23.9	19.5	134249	23.9	20.3
7100	23.6	17.7	119220	23.7	19.3	70383	23.8	19.1	203399	23.8	19.9	246409	23.9	19.3	354022	23.9	19.2
529380	23.6	22.1	65515	23.7	18.9	213436	23.8	20.3	213435	23.8	19.9	162525	23.9	18.7	15510	23.9	18.9
123708	23.6	19.3	417474	23.7	20.8	187097	23.8	20.0	89803	23.8	18.7	126963	23.9	19.4	104702	23.9	19.6
130652	23.6	20.2	354147	23.7	21.1	528625	23.8	21.4	504620	23.8	20.0	172038	23.9	20.4	203488	23.9	19.5
356843	23.6	20.3	156482	23.7	19.2	538701	23.8	21.3	394760	23.8	21.3	17336	23.9	18.1	490285	23.9	22.2
54498	23.6	18.7	359018	23.7	19.1	495447	23.8	20.1	124406	23.8	19.9	183260	23.9	20.4	185188	23.9	19.0
354153	23.6	21.3	369872	23.7	20.7	343514	23.8	20.7	500260	23.8	20.6	325616	23.9	19.1	130769	23.9	17.7
51098	23.6	18.4	222605	23.7	18.1	242542	23.8	20.4	497971	23.8	20.8	330970	23.9	20.0	257653	23.9	21.1
526482	23.6	19.4	42947	23.7	17.3	169266	23.8	20.1	157405	23.8	19.0	321180	23.9	19.5	368269	23.9	19.8
381538	23.6	20.6	347912	23.7	21.9	439132	23.8	20.5	539404	23.8	20.7	502438	23.9	21.1	533928	23.9	19.9
459063	23.6	21.0	176112	23.7	19.9	300237	23.8	20.2	489056	23.8	20.2	539060	23.9	20.2	408183	23.9	20.7
52383	23.6	18.6	391720	23.7	21.1	463245	23.8	21.5	149944	23.8	19.2	32223	23.9	17.4	462216	23.9	19.6
89209	23.6	19.0	331958	23.7	20.2	542116	23.8	22.3	448818	23.8	23.3	9997	23.9	18.0	532762	23.9	21.0
211	23.6	12.7	345285	23.7	20.8	432247	23.8	21.6	268340	23.8	19.4	190247	23.9	19.8	334803	23.9	19.2
110812	23.6	18.8	186172	23.7	18.6	64561	23.8	20.6	111581	23.8	19.2	526182	23.9	22.3	379296	23.9	19.9
529373	23.6	21.6	299528	23.7	20.2	303715	23.8	19.8	150953	23.8	19.0	260521	23.9	20.6	55853	23.9	18.0
520270	23.6	20.5	30216	23.7	16.5	204416	23.8	21.3	539660	23.9	19.8	172524	23.9	19.0	169498	23.9	20.1
122622	23.6	19.5	349952	23.7	20.8	535699	23.8	20.9	270489	23.9	21.0	164232	23.9	19.0	113146	23.9	19.3
300859	23.6	19.7	532556	23.7	21.3	508325	23.8	20.8	306573	23.9	20.7	391754	23.9	20.8	88003	23.9	19.5
62666	23.6	17.6	281650	23.7	20.6	371031	23.8	19.6	17483	23.9	17.1	121347	23.9	19.7	95574	23.9	18.8
534090	23.6	20.7	286016	23.7	20.3	434328	23.8	19.2	501912	23.9	21.9	353162	23.9	20.3	310241	23.9	21.1
6975	23.6	14.4	332904	23.7	19.9	147838	23.8	20.7	381545	23.9	20.8	18473	23.9	18.1	527989	23.9	20.2
112111	23.6	19.0	296387	23.7	20.5	129355	23.8	18.6	248535	23.9	19.0	428048	23.9	20.5	63062	23.9	19.1
32113	23.6	18.0	431027	23.7	21.1	379335	23.8	20.5	86269	23.9	18.4	479078	23.9	20.8	371134	23.9	20.2
426722	23.6	20.3	29527	23.7	18.8	173965	23.8	20.0	443726	23.9	20.1	122754	23.9	20.0	320537	23.9	19.6
240832	23.6	20.1	303006	23.7	20.4	206607	23.8	20.1	334869	23.9	18.4	431796	23.9	20.9	453248	23.9	20.1
139602	23.6	18.8	342985	23.7	20.4	228642	23.8	20.2	121465	23.9	19.3	539482	23.9	20.8	291975	23.9	19.6
63693	23.6	19.1	64365	23.7	18.7	305027	23.8	19.8	113902	23.9	19.8	435026	23.9	20.1	331492	23.9	20.2
388127	23.6	20.8	425958	23.7	19.6	362651	23.8	19.7	392666	23.9	20.2	128504	23.9	18.5	182844	23.9	19.4
538659	23.6	20.5	504404	23.7	21.4	101672	23.8	19.7	69737	23.9	18.6	234422	23.9	20.1	501039	23.9	20.5
428864	23.6	21.1	204185	23.7	20.3	471486	23.8	19.4	66918	23.9	19.2	443953	23.9	19.4	243636	23.9	18.9
373030	23.6	21.3	240687	23.7	21.0	236117	23.8	18.8	115083	23.9	18.7	126304	23.9	19.8	524970	23.9	19.3
5813	23.6	15.8	229488	23.7	19.1	373564	23.8	21.5	385495	23.9	19.7	141315	23.9	18.2	258187	23.9	20.8
103005	23.6	18.2	528147	23.7	21.6	503976	23.8	20.1									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
329593	23.9	20.5	539287	24.1	21.3	146215	24.2	18.9	106937	24.2	19.4	479087	24.3	20.5	77278	24.4	17.8
503185	23.9	20.1	496343	24.1	19.9	127671	24.2	19.1	361139	24.2	21.7	143117	24.3	20.7	140133	24.4	19.1
457147	23.9	22.0	250519	24.1	19.3	524946	24.2	21.3	172510	24.2	18.6	540639	24.3	22.0	53437	24.4	18.2
499793	23.9	21.1	156274	24.1	20.1	395483	24.2	21.2	85250	24.2	18.7	286008	24.3	20.8	358991	24.4	20.9
77342	23.9	19.6	499858	24.1	21.4	285146	24.2	20.1	249644	24.2	20.0	197967	24.3	19.7	351950	24.4	21.5
519628	24.0	20.6	431912	24.1	20.6	340815	24.2	20.5	92706	24.2	17.8	241937	24.3	20.3	428012	24.4	21.8
148975	24.0	23.8	123434	24.1	18.3	33971	24.2	17.2	519039	24.2	19.9	319229	24.3	20.0	350272	24.4	19.7
272584	24.0	21.4	535393	24.1	21.9	476345	24.2	21.1	364249	24.2	20.1	1901	24.3	16.1	382856	24.4	20.1
331632	24.0	19.9	203278	24.1	19.4	152051	24.2	18.8	270368	24.2	21.1	354808	24.3	19.5	311335	24.4	19.9
5270	24.0	16.0	174797	24.1	19.8	204660	24.2	20.3	287445	24.2	20.6	391284	24.3	21.0	387721	24.4	21.6
219532	24.0	20.9	276035	24.1	19.7	145878	24.2	18.2	24941	24.2	18.4	453261	24.3	21.8	272962	24.4	19.9
154659	24.0	18.4	237030	24.1	20.3	18318	24.2	19.8	463106	24.2	22.2	531928	24.3	20.7	478063	24.4	20.7
532089	24.0	21.4	69759	24.1	18.5	200250	24.2	20.8	371670	24.2	19.8	13204	24.3	18.7	488898	24.4	21.0
21327	24.0	17.8	507737	24.1	21.0	367101	24.2	19.9	144506	24.2	19.5	421458	24.3	19.8	181530	24.4	19.4
154276	24.0	21.3	534184	24.1	22.1	429084	24.2	20.8	272747	24.2	19.2	500459	24.3	20.6	121253	24.4	19.8
528258	24.0	21.2	193639	24.1	19.9	34791	24.2	18.9	299836	24.2	21.2	379185	24.3	20.3	415864	24.4	20.3
409997	24.0	21.8	445883	24.1	20.3	98276	24.2	19.0	368715	24.2	20.7	153952	24.3	20.2	200586	24.4	19.4
130860	24.0	18.4	457579	24.1	21.1	31718	24.2	18.1	420581	24.2	20.4	421886	24.3	19.0	504653	24.4	21.4
35256	24.0	18.6	264683	24.1	20.0	535316	24.2	21.8	464812	24.2	19.3	320533	24.3	20.4	300043	24.4	19.4
82934	24.0	18.9	91597	24.1	17.4	492653	24.2	19.8	297959	24.3	20.9	12176	24.3	17.4	437517	24.4	20.7
61930	24.0	17.8	71647	24.1	19.8	235220	24.2	20.0	98768	24.3	19.0	82318	24.3	17.4	538343	24.4	19.5
81147	24.0	18.6	159676	24.1	18.3	489926	24.2	19.9	4911	24.3	15.4	316572	24.3	22.0	104592	24.4	18.6
404375	24.0	20.3	89505	24.1	19.6	341084	24.2	19.1	176592	24.3	19.4	394732	24.3	20.9	156469	24.4	19.3
391791	24.0	19.3	213163	24.1	19.1	474333	24.2	21.2	52712	24.3	18.1	200935	24.3	20.4	434059	24.4	20.6
62910	24.0	18.2	358580	24.1	20.2	212600	24.2	20.5	162033	24.3	19.6	58895	24.3	19.2	486763	24.4	20.0
113531	24.0	19.5	439816	24.1	20.8	109740	24.2	19.8	222559	24.3	20.1	341327	24.3	21.0	100732	24.4	19.6
517162	24.0	20.3	390124	24.1	21.8	414500	24.2	20.4	406376	24.3	20.5	298721	24.3	20.0	504556	24.4	20.8
501500	24.0	21.0	403255	24.1	20.6	64203	24.2	19.6	191279	24.3	19.5	534410	24.3	20.9	483348	24.4	20.5
3227	24.0	16.5	289648	24.1	20.2	161256	24.2	18.3	79507	24.3	19.3	7981	24.3	17.8	372014	24.4	21.0
512447	24.0	20.9	439121	24.1	21.0	500999	24.2	21.4	148708	24.3	19.9	540876	24.3	21.7	499730	24.4	21.3
502535	24.0	20.7	466384	24.1	18.9	258514	24.2	19.0	223609	24.3	19.0	43665	24.3	18.3	395481	24.4	21.0
147979	24.0	21.4	118941	24.1	19.4	249682	24.2	19.5	495334	24.3	21.0	299002	24.3	21.5	221675	24.4	20.3
354116	24.0	21.5	386519	24.1	22.2	156196	24.2	20.4	810	24.3	14.1	384	24.3	13.7	151723	24.4	20.2
32792	24.0	19.2	380423	24.1	20.0	350141	24.2	20.0	67169	24.3	18.6	378362	24.3	20.5	474313	24.4	21.2
70617	24.0	18.7	193774	24.1	18.5	58315	24.2	18.1	405541	24.3	20.6	498111	24.3	21.1	136451	24.4	19.2
315967	24.0	19.2	416244	24.1	21.4	175411	24.2	18.6	400335	24.3	19.6	353645	24.3	20.3	491044	24.4	19.5
93722	24.0	20.0	306717	24.1	20.0	255582	24.2	18.4	300148	24.3	20.1	507605	24.3	21.1	478045	24.4	21.7
235080	24.0	20.7	43853	24.1	18.7	192371	24.2	20.0	270470	24.3	21.4	197535	24.3	19.4	40859	24.4	18.5
15605	24.0	15.9	61035	24.1	19.6	246851	24.2	19.4	125000	24.3	19.8	468358	24.3	20.2	460060	24.4	20.2
439339	24.0	20.3	369108	24.1	20.0	73288	24.2	18.9	477935	24.3	20.9	508735	24.3	20.6	425886	24.4	20.6
158513	24.0	19.5	395532	24.1	20.5	518988	24.2	20.1	94340	24.3	19.4	19284	24.3	18.2	500185	24.4	20.6
18646	24.0	18.3	479159	24.1	20.1	241383	24.2	19.3	306683	24.3	20.8	42566	24.3	17.8	393276	24.4	20.4
178233	24.0	20.9	224358	24.1	18.6	238580	24.2	18.5	370995	24.3	19.9	345051	24.3	19.9	268529	24.4	20.4
15822	24.0	17.0	498422	24.1	20.0	374570	24.2	22.2	523046	24.3	21.0	453250	24.3	19.6	10199	24.4	18.9
526039	24.0	22.4	406359	24.1	21.3	20415	24.2	16.8	357778	24.3	21.8	534964	24.3	20.8	299862	24.4	21.8
473124	24.0	20.6	186850	24.1	20.0	31634	24.2	19.0	365891	24.3	20.9	318026	24.3	19.8	269234	24.4	18.9
192808	24.0	19.7	15661	24.1	16.9	419753	24.2	20.8	502148	24.3	20.0	99505	24.3	19.8	85812	24.4	19.7
146239	24.0	20.7	101805	24.1	18.9	67445	24.2	19.0	471396	24.3	19.8	100775	24.3	19.0	225525	24.4	19.4
370718	24.1	20.8	209403	24.1	20.5	422964	24.2	21.1	367338	24.3	20.6	532607	24.3	20.7	320633	24.4	20.5
292237	24.1	20.2	203599	24.1	20.1	539093	24.2	20.2	272722	24.3	21.4	224418	24.3	21.1	362415	24.4	19.0
264585	24.1	20.8	97250	24.1	19.9	528533	24.2	20.5	200800	24.3	20.8	437655	24.3	20.7	431948	24.4	20.1
407716	24.1	21.0	320987	24.1	18.7	375975	24.2	20.2	308436	24.3	19.5	12558	24.3	17.2	179523	24.4	20.6
394377	24.1	20.3	90514	24.1	19.2	241492	24.2	19.8	474839	24.3	21.6	543858	24.3	21.1	194614	24.4	20.7
413356	24.1	21.4	505549	24.1	20.7	375291	24.2	20.6	300915	24.3	21.6	462300	24.4	19.9	526767	24.4	21.5
153613	24.1	20.2	370124	24.1	21.1	163956	24.2	19.3	534678	24.3	22.9	28159	24.4	18.4	303891	24.4	21.0
24152	24.1	19.6	427414	24.1	21.4	79731	24.2	18.3	231279	24.3	20.2	18728	24.4	18.4	150449	24.4	18.8
252847	24.1	20.9	255244	24.1	18.8	221360	24.2	18.6	181815	24.3	18.6	1121	24.4	15.1	375817	24.4	20.8
251006	24.1	18.7	106171	24.1	19.4	9763	24.2	16.3	381566	24.3	20.2	420182	24.4	20.8	531541	24.4	21.7
135214	24.1	19.7	198137	24.1	20.1	384770	24.2	19.6	376489	24.3	19.7	194413	24.4	19.1	437666	24.4	21.1
186831	24.1	20.3	230887	24.1	19.9	430988	24.2	19.8	383996	24.3	20.5	536224	24.4	20.1	335388	24.4	19.7
264637	24.1	19.6	149657	24.1	20.0	198042	24.2	19.3	468483	24.3	20.9	417342	24.4	21.2	268389	24.4	20.9
386510	24.1	21.0	350718	24.1	20.9	310191	24.2	19.1	391025	24.3	20.4	540388	24.4	20.5	499252	24.4	20.7
197549	24.1	18.2	348965	24.1	20.3	239822	24.2	20.1	309885	24.3	20.1	272712	24.4	19.0	129307	24.4	19.2
72170	24.1	18.1	92643	24.1	19.4	522463	24.2	20.8	354094	24.3	21.0	85434	24.4	19.9	336941	24.4	20.6
110772	24.1	19.7	247712	24.1	19.5	378807	24.2	21.0	394343	24.3	20.9	254059	24.4	20.3	790	24.4	12.5
34054	24.1	18.4	155391	24.1	18.1	457151	24.2	20.9	134240	24.3	19.7	215278	24.4	18.3	457611	24.4	20.9
177305	24.1	19.6	89357	24.1	18.3	373494	24.2	19.8	521253	24.3	20.8	7320	24.4	18.5	303727	24.4	19.8
1690	24.1	15.5	399103	24.1	21.4	174002	24.2	21.0	458918	24.3	20.8	139849	24.4	19.8	402535	24.4	20.8
389259	24.1	20.5	296233	24.1	19.6	267412	24.2	19.8	26682	24.3							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
211541	24.5	20.0	122972	24.5	19.8	34230	24.6	18.2	462282	24.7	22.4	115184	24.7	19.3	365936	24.8	20.2
430779	24.5	21.3	184128	24.5	18.6	502919	24.6	21.1	23254	24.7	18.1	105275	24.7	18.8	219444	24.8	18.8
173118	24.5	19.7	527356	24.5	21.2	161338	24.6	18.5	502693	24.7	20.9	423502	24.7	21.8	135210	24.8	19.3
115567	24.5	17.7	20527	24.5	17.6	187251	24.6	21.2	495779	24.7	20.0	62729	24.7	18.8	502177	24.8	19.5
92408	24.5	17.6	343141	24.5	21.1	232309	24.6	20.0	272573	24.7	20.9	20529	24.7	18.6	348999	24.8	20.9
188314	24.5	21.4	395259	24.5	20.1	495204	24.6	20.8	297747	24.7	21.4	538111	24.7	21.0	79038	24.8	19.2
145352	24.5	19.5	527322	24.5	20.7	538999	24.6	21.1	336955	24.7	20.4	510764	24.7	22.2	215663	24.8	19.7
17615	24.5	18.2	16602	24.5	16.4	199942	24.6	19.7	324502	24.7	21.1	96853	24.7	18.8	200683	24.8	20.3
147595	24.5	20.2	58923	24.5	19.7	537474	24.6	19.1	225523	24.7	19.1	480423	24.7	20.2	348816	24.8	21.4
275715	24.5	19.3	371761	24.5	21.3	224391	24.6	20.8	526812	24.7	22.3	504421	24.7	22.4	335575	24.8	20.4
175228	24.5	19.3	114626	24.5	19.4	502641	24.6	21.6	301609	24.7	19.9	179838	24.7	19.9	53133	24.8	18.9
73520	24.5	17.2	22517	24.5	18.0	238108	24.6	19.6	278366	24.7	19.2	308365	24.7	20.0	190171	24.8	18.4
153657	24.5	20.5	12811	24.5	18.3	268397	24.6	20.9	428877	24.7	21.2	244836	24.7	19.3	523155	24.8	20.0
96298	24.5	18.3	192827	24.5	19.2	191723	24.6	20.3	69049	24.7	18.8	305528	24.7	21.5	516680	24.8	20.4
178005	24.5	19.9	2859	24.5	16.5	54088	24.6	19.7	297407	24.7	19.2	303837	24.7	20.0	492625	24.8	19.8
208689	24.5	19.4	299948	24.5	19.6	98830	24.6	19.5	204110	24.7	20.4	464786	24.7	21.6	205815	24.8	20.4
493256	24.5	19.7	224492	24.5	19.8	85363	24.6	19.0	83483	24.7	19.8	329369	24.7	20.0	241612	24.8	20.3
141929	24.5	19.0	491021	24.5	20.6	282127	24.6	17.9	417628	24.7	21.2	119370	24.7	19.0	9080	24.8	17.5
277806	24.5	19.7	239994	24.5	20.3	520960	24.6	19.2	402538	24.7	20.0	310898	24.7	19.0	108741	24.8	18.4
497962	24.5	20.8	100790	24.5	19.8	111555	24.6	18.6	54028	24.7	19.2	499814	24.7	20.8	351881	24.8	20.3
57891	24.5	18.8	157958	24.5	19.2	532694	24.6	21.4	531950	24.7	21.9	122386	24.7	19.1	331905	24.8	18.8
468389	24.5	22.1	121561	24.5	17.7	517587	24.6	20.2	423550	24.7	21.1	217882	24.7	19.6	125714	24.8	20.0
43060	24.5	17.7	78842	24.5	19.1	10428	24.6	19.9	64301	24.7	19.5	381444	24.7	19.3	244000	24.8	19.0
437545	24.5	20.7	156535	24.5	19.5	350110	24.6	20.3	67002	24.7	17.8	133078	24.7	18.3	283184	24.8	19.8
286656	24.5	19.8	221983	24.5	18.7	172398	24.6	20.6	403313	24.7	21.3	462222	24.8	21.9	353736	24.8	21.1
182863	24.5	21.0	253964	24.5	19.4	275941	24.6	20.2	17850	24.7	18.0	534831	24.8	22.5	28615	24.8	18.1
466307	24.5	20.6	17033	24.5	16.8	338353	24.6	21.3	58519	24.7	19.5	474946	24.8	21.5	61110	24.8	17.4
136569	24.5	20.2	402102	24.5	20.5	529557	24.6	21.5	306103	24.7	20.6	495962	24.8	20.3	518540	24.8	20.8
367352	24.5	20.2	151265	24.5	20.3	393463	24.6	22.1	14217	24.7	17.8	390497	24.8	20.6	83199	24.8	18.5
333499	24.5	20.1	355365	24.5	20.3	255656	24.6	20.1	281112	24.7	20.5	232311	24.8	19.8	134991	24.8	18.8
72395	24.5	18.1	235242	24.5	20.2	179087	24.6	19.0	2872	24.7	16.6	353120	24.8	20.5	352558	24.8	21.3
136026	24.5	18.8	188712	24.6	20.5	501987	24.6	20.6	461614	24.7	20.9	206118	24.8	20.3	134238	24.8	20.2
521277	24.5	20.9	462330	24.6	21.5	409412	24.6	21.6	219616	24.7	19.7	212819	24.8	19.9	81946	24.8	18.1
499726	24.5	21.5	381531	24.6	21.1	17614	24.6	18.2	431824	24.7	21.3	97837	24.8	18.5	404232	24.8	20.7
366671	24.5	20.6	62701	24.6	19.9	173904	24.6	20.1	264282	24.7	19.2	25953	24.8	18.5	522907	24.8	21.2
9471	24.5	17.5	417233	24.6	19.7	398582	24.6	20.6	410394	24.7	21.6	6069	24.8	17.0	415208	24.8	20.7
474120	24.5	19.8	18174	24.6	17.7	33528	24.6	18.2	371982	24.7	19.8	123147	24.8	20.6	88823	24.8	19.4
456204	24.5	19.3	300078	24.6	19.3	526761	24.6	21.6	321832	24.7	20.0	132216	24.8	19.9	17173	24.8	18.2
527848	24.5	21.6	38243	24.6	18.1	123283	24.6	19.5	391750	24.7	20.7	215575	24.8	19.6	390571	24.9	20.1
262564	24.5	20.9	8345	24.6	16.5	293395	24.6	19.8	229898	24.7	19.8	41322	24.8	18.2	214179	24.9	21.4
174532	24.5	19.6	231189	24.6	19.4	37463	24.6	18.8	508619	24.7	20.7	68715	24.8	18.5	350657	24.9	20.9
326687	24.5	20.5	44921	24.6	18.2	371015	24.6	21.4	111076	24.7	18.9	476510	24.8	21.5	457129	24.9	21.4
329973	24.5	20.9	389290	24.6	20.7	38551	24.6	18.2	406437	24.7	20.8	382884	24.8	18.3	288122	24.9	21.0
538539	24.5	20.8	374355	24.6	19.6	475858	24.6	20.7	20916	24.7	19.0	465187	24.8	20.3	528810	24.9	21.3
540020	24.5	20.0	433263	24.6	19.7	17816	24.6	17.4	359902	24.7	21.8	475279	24.8	20.9	466181	24.9	21.4
206769	24.5	20.1	430803	24.6	20.8	475648	24.6	21.5	512840	24.7	20.4	214460	24.8	19.1	51132	24.9	18.1
438854	24.5	21.3	532384	24.6	21.6	19520	24.6	16.6	536421	24.7	21.2	470451	24.8	20.3	190147	24.9	19.1
541351	24.5	20.0	117201	24.6	19.5	72486	24.6	19.0	260827	24.7	20.4	132443	24.8	20.2	303880	24.9	20.1
409921	24.5	20.1	153839	24.6	19.2	366280	24.6	21.3	156410	24.7	20.5	351557	24.8	20.8	282135	24.9	18.6
357098	24.5	19.8	466202	24.6	20.0	145396	24.6	19.1	165193	24.7	19.6	245163	24.8	18.3	109232	24.9	19.4
396106	24.5	20.7	402883	24.6	20.7	187503	24.6	20.0	214757	24.7	19.9	125680	24.8	18.2	392471	24.9	20.3
534420	24.5	21.4	222551	24.6	20.0	90017	24.6	18.5	256716	24.7	21.6	443693	24.8	20.9	479190	24.9	21.5
84735	24.5	19.3	354930	24.6	19.2	510766	24.6	20.7	235182	24.7	20.7	23974	24.8	16.6	165310	24.9	20.5
27926	24.5	17.6	498709	24.6	21.0	161972	24.6	18.2	247424	24.7	20.8	119319	24.8	18.2	57316	24.9	19.5
497969	24.5	21.5	199210	24.6	18.9	98052	24.6	19.0	139793	24.7	19.3	64154	24.8	17.7	93232	24.9	18.6
51999	24.5	18.3	152353	24.6	19.6	480765	24.6	19.9	413902	24.7	21.3	286346	24.8	20.1	6159	24.9	16.6
421952	24.5	19.2	341146	24.6	19.0	94039	24.6	19.6	358081	24.7	19.9	421321	24.8	19.4	414281	24.9	19.4
82410	24.5	18.8	386224	24.6	20.6	260084	24.6	19.5	478059	24.7	20.8	365228	24.8	20.2	53262	24.9	19.5
463218	24.5	21.1	111448	24.6	19.2	454211	24.6	21.5	140984	24.7	20.3	27973	24.8	16.9	502220	24.9	22.4
27460	24.5	18.1	152326	24.6	19.3	22150	24.6	18.1	525189	24.7	22.0	433720	24.8	19.5	518971	24.9	21.5
494819	24.5	19.6	248632	24.6	20.2	430978	24.6	19.5	519959	24.7	20.4	348987	24.8	20.6	290695	24.9	20.8
11140	24.5	16.7	306760	24.6	20.1	527666	24.7	21.5	73533	24.7	17.8	539662	24.8	20.2	497373	24.9	20.2
467504	24.5	21.9	510013	24.6	19.4	264222	24.7	20.4	176053	24.7	19.4	309840	24.8	20.3	289301	24.9	21.0
66398	24.5	15.8	478000	24.6	21.0	531892	24.7	21.3	495208	24.7	21.5	2570	24.8	16.4	395286	24.9	19.7
263862	24.5	19.6	211150	24.6	21.2	69400	24.7	19.1	55754	24.7	17.9	498574	24.8	21.1	194251	24.9	20.2
406528	24.5	21.1	504642	24.6	20.8	301558	24.7	20.5	453570	24.7	21.2	312399	24.8	20.7	16929	24.9	18.6
274243	24.5	19.1	143519	24.6	20.1	270526	24.7	20.5	466139	24.7	21.0	327296	24.8	20.8	431459	24.9	19.6
336144	24.5	20.4	374987	24.6	19.7	501173	24.7	20.5	125402	24.7	19.6	107619	24.8	19.7	500156	24.9	19.8
190683	24.5	19.8	249579	24.6	20.4	419885	24.7	21.8	132514	24.7	1						

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
458827	24.9	19.4	31567	24.9	18.9	181221	25.1	19.4	186174	25.1	19.5	525936	25.2	22.0	282348	25.3	19.0
425266	24.9	21.3	391366	24.9	21.3	545017	25.1	20.9	467770	25.1	19.9	530826	25.2	20.9	26652	25.3	18.2
478312	24.9	21.1	346166	24.9	19.8	23079	25.1	16.6	373235	25.1	19.7	215667	25.2	19.4	527385	25.3	20.7
163392	24.9	19.2	263429	24.9	20.8	331793	25.1	18.6	4037	25.1	17.2	352505	25.2	20.7	116369	25.3	18.9
377391	24.9	19.9	370149	24.9	21.7	352529	25.1	20.7	540199	25.1	20.3	487712	25.2	20.6	266398	25.3	20.7
341575	24.9	20.9	239890	24.9	19.1	149466	25.1	19.7	235665	25.1	18.7	102092	25.2	19.4	32699	25.3	19.2
252290	24.9	20.5	175389	24.9	18.4	536736	25.1	21.7	395684	25.1	20.6	48192	25.2	17.0	212801	25.3	20.8
27119	24.9	17.4	43235	24.9	17.7	36992	25.1	18.5	213246	25.1	21.3	204884	25.2	20.2	141350	25.3	20.3
259522	24.9	18.8	307522	24.9	21.1	273736	25.1	21.0	321042	25.1	18.9	502811	25.2	21.1	123650	25.3	19.4
88729	24.9	18.8	128035	24.9	19.3	106536	25.1	18.3	326388	25.1	20.2	473094	25.2	19.9	205793	25.3	21.4
479732	24.9	20.1	470276	24.9	20.5	188143	25.1	20.5	309696	25.1	20.2	377875	25.2	21.0	272401	25.3	20.1
107321	24.9	19.7	459680	24.9	19.9	434438	25.1	20.1	128972	25.1	19.8	224563	25.2	18.7	386099	25.3	19.0
244783	24.9	19.8	325834	24.9	20.8	533233	25.1	21.3	252982	25.1	20.4	384259	25.2	19.5	406876	25.3	20.3
295708	24.9	20.2	365116	25.0	19.9	525805	25.1	23.2	6148	25.1	18.0	408754	25.2	19.9	239984	25.3	19.8
417799	24.9	20.6	336280	25.0	18.5	179479	25.1	20.4	280375	25.2	19.3	457023	25.2	21.0	471911	25.3	20.6
457185	24.9	21.5	354363	25.0	19.8	537822	25.1	20.4	139615	25.2	18.4	478132	25.2	20.6	244691	25.3	18.1
162611	24.9	19.0	471889	25.0	20.6	128699	25.1	18.1	31106	25.2	18.0	98435	25.2	18.7	250817	25.3	20.0
104441	24.9	18.8	435037	25.0	19.6	532699	25.1	20.4	85149	25.2	18.6	540616	25.2	21.1	435723	25.3	21.6
398115	24.9	21.5	527839	25.0	20.5	302186	25.1	20.5	429892	25.2	20.6	535807	25.2	21.6	142488	25.3	20.1
32497	24.9	15.4	67620	25.0	18.3	476444	25.1	21.9	362000	25.2	21.4	118443	25.2	18.3	140328	25.3	18.9
470028	24.9	20.3	376429	25.0	20.3	213400	25.1	20.6	236794	25.2	19.0	101206	25.2	19.7	302519	25.3	20.0
255816	24.9	20.6	270417	25.0	20.7	150910	25.1	18.6	543586	25.2	20.6	167017	25.2	18.7	75662	25.3	18.6
62612	24.9	18.7	370985	25.0	20.3	307196	25.1	19.0	951	25.2	13.5	155449	25.2	19.2	496317	25.3	20.8
7275	24.9	16.8	498649	25.0	20.5	181611	25.1	19.9	341790	25.2	20.2	385590	25.2	21.5	528959	25.3	20.9
104925	24.9	19.5	281447	25.0	19.9	194376	25.1	20.6	83684	25.2	19.5	502639	25.2	19.4	513123	25.3	21.3
289683	24.9	20.2	164124	25.0	20.1	426719	25.1	20.2	301167	25.2	19.5	422818	25.2	20.9	230906	25.3	20.3
171479	24.9	20.7	469839	25.0	20.2	488683	25.1	20.8	527926	25.2	21.1	242764	25.2	19.1	303805	25.3	21.7
513034	24.9	20.2	395454	25.0	20.6	531425	25.1	21.6	361689	25.2	22.8	539289	25.2	19.8	299277	25.3	19.2
228649	24.9	20.4	111669	25.0	19.1	68583	25.1	19.3	150854	25.2	18.8	290259	25.2	19.9	272470	25.3	20.3
53934	24.9	18.1	300306	25.0	19.7	459306	25.1	20.5	96824	25.2	18.8	57440	25.2	18.6	27013	25.3	18.6
526750	24.9	21.0	424081	25.0	21.6	380910	25.1	19.8	484609	25.2	20.3	428784	25.2	19.7	244292	25.3	19.6
196526	24.9	18.6	228170	25.0	21.1	12619	25.1	17.8	503540	25.2	20.2	476382	25.2	20.7	173078	25.3	20.1
328635	24.9	19.7	381477	25.0	20.1	39456	25.1	18.7	304759	25.2	20.6	10294	25.2	17.4	89331	25.3	18.6
459505	24.9	19.4	211199	25.0	18.0	470480	25.1	21.3	132114	25.2	17.4	375725	25.2	19.8	401132	25.3	19.4
147958	24.9	19.9	24571	25.0	18.8	11002	25.1	17.1	131751	25.2	18.0	388784	25.2	19.6	196547	25.3	19.2
328232	24.9	21.0	251515	25.0	19.6	326272	25.1	20.2	490275	25.2	22.2	51369	25.2	17.9	489461	25.3	21.6
359166	24.9	19.6	84558	25.0	19.3	297886	25.1	20.3	344514	25.2	20.1	520140	25.2	21.6	137861	25.3	19.6
377879	24.9	20.3	456533	25.0	20.6	69303	25.1	18.8	152208	25.2	19.3	380186	25.2	19.2	350184	25.3	20.2
117235	24.9	17.7	389632	25.0	19.5	391389	25.1	20.9	376146	25.2	20.0	163015	25.2	23.8	341380	25.3	20.2
210905	24.9	20.1	902	25.0	14.8	507803	25.1	20.1	37826	25.2	18.8	426439	25.2	20.4	436233	25.3	21.0
435995	24.9	20.5	357092	25.0	21.0	351723	25.1	19.3	101453	25.2	18.3	68232	25.2	17.2	70769	25.3	18.7
392685	24.9	21.2	313393	25.0	19.6	506876	25.1	20.5	286734	25.2	20.5	432407	25.2	21.0	201686	25.3	19.1
34130	24.9	17.2	215583	25.0	18.8	392123	25.1	20.6	315371	25.2	21.3	468220	25.2	20.9	352521	25.3	21.2
147852	24.9	19.5	121508	25.0	18.6	410217	25.1	21.5	335764	25.2	19.7	122682	25.2	18.4	144067	25.3	19.8
175740	24.9	20.5	409104	25.0	22.2	31337	25.1	18.3	329590	25.2	20.4	248428	25.2	19.1	242278	25.3	19.9
291712	24.9	18.6	398235	25.0	20.1	390342	25.1	20.0	371618	25.2	21.4	524973	25.2	19.3	76510	25.3	19.5
507332	24.9	20.5	349022	25.0	20.8	181982	25.1	19.7	166951	25.2	18.4	7613	25.2	18.4	540804	25.3	22.2
362422	24.9	19.2	1805	25.0	16.0	146764	25.1	19.0	157131	25.2	17.8	348610	25.2	20.2	302321	25.3	20.8
65802	24.9	19.0	507511	25.0	21.3	271848	25.1	19.9	296466	25.2	19.8	86287	25.2	18.0	182184	25.3	20.4
40526	24.9	18.6	536048	25.0	20.5	93684	25.1	18.8	173315	25.2	19.7	293785	25.2	19.9	540049	25.3	19.4
118429	24.9	19.7	142913	25.0	19.9	534132	25.1	19.6	107438	25.2	19.6	315460	25.2	20.5	198564	25.3	19.6
272745	24.9	20.2	159978	25.0	19.6	365195	25.1	20.8	206661	25.2	19.7	519675	25.2	20.7	513286	25.3	19.9
212024	24.9	20.3	365932	25.0	19.5	8990	25.1	17.0	102596	25.2	18.8	312838	25.2	20.9	268337	25.3	20.3
379269	24.9	19.9	37598	25.0	16.7	11346	25.1	18.0	536665	25.2	21.4	44537	25.2	18.4	162509	25.3	18.3
175927	24.9	19.6	67336	25.0	18.8	225998	25.1	19.7	352039	25.2	20.7	112767	25.2	18.7	324996	25.3	21.5
138968	24.9	20.2	404835	25.0	20.3	185389	25.1	20.6	260075	25.2	20.0	54239	25.2	17.9	36620	25.3	16.7
321874	24.9	19.4	471424	25.0	19.9	9173	25.1	16.0	51460	25.2	17.3	196529	25.2	18.7	431911	25.3	20.5
535965	24.9	21.0	543865	25.0	20.7	522926	25.1	21.8	38892	25.2	18.9	235883	25.2	20.9	483357	25.3	19.5
469181	24.9	20.5	146497	25.0	19.2	43412	25.1	18.8	178190	25.2	19.2	153750	25.2	19.1	507510	25.3	20.9
416242	24.9	21.3	143372	25.0	19.4	331784	25.1	20.2	510821	25.2	22.0	147320	25.3	20.3	17612	25.3	18.4
36205	24.9	17.7	31672	25.0	18.1	249157	25.1	19.8	456891	25.2	22.0	119982	25.3	19.0	488935	25.3	20.6
240490	24.9	19.7	66658	25.0	18.3	526146	25.1	21.2	505593	25.2	20.6	287487	25.3	19.7	211655	25.3	19.6
20812	24.9	18.6	310273	25.0	18.7	303796	25.1	20.7	331530	25.2	20.3	356763	25.3	21.2	242737	25.3	20.1
156451	24.9	20.1	131761	25.0	18.5	301738	25.1	20.6	115233	25.2	18.3	17922	25.3	17.5	292097	25.3	20.0
499326	24.9	22.3	62046	25.0	16.7	219741	25.1	18.8	491272	25.2	20.8	208423	25.3	18.9	497160	25.3	19.1
127142	24.9	18.9	535419	25.0	22.0	271886	25.1	20.1	286261	25.2	18.9	171567	25.3	19.3	413004	25.3	19.7
240388	24.9	19.2	427874	25.0	20.7	506962	25.1	20.7	153485	25.2	20.0	438029	25.3	21.8	259643	25.3	20.6
398190	24.9	19.8	332891	25.0	21.1	67285	25.1	19.3	470469	25.2	21.6	526759	25.3	20.9	394027	25.3	20.2
346045	24.9	20.3	357205	25.0	19.7	222639	25.1	19.8	533136								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
48109	25.3	17.8	540294	25.4	20.3	53733	25.5	18.8	418288	25.6	20.3	506249	25.6	19.7	243863	25.7	18.9
301583	25.3	17.9	303745	25.4	21.2	167844	25.5	19.9	81998	25.6	17.7	222771	25.6	21.4	389249	25.7	21.2
36663	25.3	20.3	48203	25.4	18.0	536030	25.5	21.4	153897	25.6	19.5	313013	25.6	20.8	6187	25.7	16.7
165324	25.3	20.0	389648	25.4	20.1	462230	25.5	21.4	52868	25.6	17.9	7171	25.6	16.5	497401	25.7	21.7
294898	25.3	20.1	312129	25.4	20.8	119745	25.5	17.1	81503	25.6	19.0	523552	25.6	21.1	406439	25.7	20.0
502137	25.3	20.7	132450	25.4	17.8	318624	25.5	20.9	499210	25.6	20.7	279355	25.6	20.5	150900	25.7	19.1
520234	25.3	21.3	173803	25.4	19.4	86182	25.5	17.8	305508	25.6	20.0	366297	25.6	20.8	107520	25.7	19.4
206212	25.3	19.1	498655	25.4	20.3	522973	25.5	20.6	309980	25.6	19.8	540267	25.6	21.2	376771	25.7	19.1
436316	25.3	20.2	338819	25.4	19.2	24126	25.5	18.1	507576	25.6	21.7	366251	25.6	20.2	2905	25.7	15.7
390285	25.3	20.0	313731	25.4	20.6	488961	25.5	20.8	178465	25.6	18.7	347449	25.6	22.2	228363	25.7	17.8
392129	25.3	21.0	39853	25.4	18.8	474991	25.5	20.5	407897	25.6	20.9	295242	25.6	20.7	300040	25.7	20.1
62141	25.3	17.3	191982	25.4	18.0	303348	25.5	19.2	466194	25.6	18.9	538987	25.6	20.7	189783	25.7	19.4
469943	25.3	19.9	462950	25.4	19.9	191943	25.5	19.3	97421	25.6	20.0	392154	25.6	20.2	497324	25.7	21.0
61399	25.4	17.9	435867	25.4	21.3	330853	25.5	19.8	66710	25.6	18.1	97241	25.6	19.0	156409	25.7	18.4
265341	25.4	19.1	46076	25.4	18.9	210087	25.5	19.9	132276	25.6	18.4	152226	25.6	19.2	52742	25.7	19.2
68669	25.4	18.5	410244	25.4	20.2	522222	25.5	19.8	449582	25.6	19.8	460214	25.7	20.8	245549	25.7	18.8
154488	25.4	19.4	9816	25.4	18.2	191118	25.5	19.7	270385	25.6	19.4	3464	25.7	15.9	450421	25.7	20.7
355095	25.4	21.3	143565	25.4	19.5	121134	25.5	20.5	320253	25.6	18.5	479796	25.7	20.5	168452	25.7	19.5
127345	25.4	19.0	315396	25.4	19.9	302944	25.5	20.5	498611	25.6	20.6	118570	25.7	19.4	89503	25.7	19.5
398854	25.4	21.3	498734	25.4	20.8	302309	25.5	20.5	264010	25.6	18.8	374443	25.7	20.4	106320	25.7	19.5
529352	25.4	22.4	160354	25.4	18.5	359781	25.5	20.4	498727	25.6	20.9	462806	25.7	18.6	160210	25.7	20.1
74024	25.4	18.7	80175	25.4	19.2	104601	25.5	18.7	242916	25.6	18.5	6708	25.7	14.8	262775	25.7	20.2
507512	25.4	19.8	465967	25.4	20.8	439515	25.5	21.1	196535	25.6	18.6	109277	25.7	19.0	406417	25.7	18.7
19687	25.4	15.9	512711	25.4	21.5	39751	25.5	17.8	123362	25.6	19.0	299954	25.7	20.6	2660	25.7	14.8
231329	25.4	20.4	66380	25.4	18.0	112682	25.5	18.5	478257	25.6	21.4	370081	25.7	19.6	355227	25.7	20.3
192803	25.4	19.2	273682	25.4	19.5	173852	25.5	20.0	250515	25.6	18.9	517573	25.7	19.5	425864	25.7	21.7
286115	25.4	20.0	222395	25.4	18.3	526453	25.5	19.3	332069	25.6	20.7	357989	25.7	19.1	160728	25.7	18.4
531767	25.4	21.2	381139	25.4	19.9	93913	25.5	18.3	475142	25.6	19.6	234003	25.7	20.5	410378	25.7	20.6
230684	25.4	19.5	72420	25.4	18.6	195426	25.5	19.3	407399	25.6	21.0	430147	25.7	20.8	377860	25.7	20.6
250905	25.4	20.7	477691	25.4	19.4	384185	25.5	19.7	155603	25.6	18.9	309956	25.7	19.0	525192	25.7	20.8
20743	25.4	16.9	362013	25.5	20.9	506043	25.5	21.2	298742	25.6	20.9	126433	25.7	18.7	232553	25.7	19.5
397067	25.4	19.6	470197	25.5	20.3	355625	25.5	21.1	430056	25.6	20.6	215577	25.7	19.9	276098	25.7	21.4
268426	25.4	20.9	42383	25.5	19.8	54057	25.5	17.8	537063	25.6	21.2	115029	25.7	19.0	131535	25.8	19.8
151404	25.4	20.8	50911	25.5	19.0	522696	25.5	20.2	203543	25.6	20.2	538426	25.7	21.8	496619	25.8	21.4
460055	25.4	20.2	15366	25.5	17.1	402208	25.5	19.8	248961	25.6	18.9	93499	25.7	19.5	180530	25.8	20.6
203470	25.4	19.9	506764	25.5	21.0	531484	25.5	21.0	352408	25.6	19.9	32900	25.7	17.8	119739	25.8	19.2
32640	25.4	17.1	193931	25.5	19.1	148706	25.5	20.3	72058	25.6	19.4	241944	25.7	18.8	14367	25.8	17.2
469161	25.4	20.0	319242	25.5	18.8	466128	25.5	21.0	447687	25.6	20.3	95071	25.7	18.6	31876	25.8	15.9
123784	25.4	18.8	66024	25.5	17.2	216574	25.5	19.1	299983	25.6	18.5	385900	25.7	21.2	307231	25.8	20.0
168272	25.4	18.6	428065	25.5	20.9	21813	25.5	17.2	216301	25.6	20.3	123329	25.7	19.4	401344	25.8	20.5
240317	25.4	20.3	110576	25.5	18.4	472220	25.5	20.5	505173	25.6	19.7	9033	25.7	15.6	287551	25.8	19.8
169985	25.4	19.4	404305	25.5	20.7	90241	25.5	19.0	153552	25.6	19.7	368755	25.7	21.0	507062	25.8	20.6
187338	25.4	20.1	263201	25.5	20.4	257575	25.5	20.8	126477	25.6	18.9	294063	25.7	18.6	64859	25.8	17.6
154520	25.4	18.9	388721	25.5	20.4	361633	25.5	19.6	126426	25.6	18.9	225538	25.7	18.6	251460	25.8	19.8
386748	25.4	21.4	473193	25.5	20.5	276459	25.5	21.3	278670	25.6	20.1	19040	25.7	18.5	475194	25.8	20.6
126025	25.4	18.7	453909	25.5	20.7	291272	25.5	21.0	33771	25.6	17.5	410323	25.7	19.2	200316	25.8	19.3
341887	25.4	19.7	80365	25.5	18.5	216728	25.5	18.7	36178	25.6	18.3	465846	25.7	21.4	351611	25.8	20.4
287571	25.4	20.6	215995	25.5	20.0	195577	25.5	19.3	20689	25.6	18.1	540277	25.7	21.7	533435	25.8	21.3
294233	25.4	20.4	147345	25.5	18.9	63112	25.5	18.3	27954	25.6	17.6	506098	25.7	20.0	364581	25.8	21.0
470147	25.4	21.0	58750	25.5	18.0	82177	25.5	17.6	67916	25.6	18.3	334827	25.7	20.8	334769	25.8	20.0
309909	25.4	21.2	192715	25.5	21.0	945	25.5	14.5	313727	25.6	20.4	102906	25.7	18.4	322489	25.8	20.0
502918	25.4	20.3	37860	25.5	19.0	210145	25.5	19.4	342647	25.6	20.5	303847	25.7	21.1	58388	25.8	17.8
67632	25.4	17.8	300933	25.5	19.9	37392	25.5	18.2	37182	25.6	16.7	376406	25.7	19.0	140242	25.8	20.1
429804	25.4	20.4	249250	25.5	19.3	153509	25.5	19.1	427724	25.6	19.3	384978	25.7	20.7	61901	25.8	18.8
428001	25.4	21.4	504386	25.5	21.3	123367	25.5	20.0	222633	25.6	18.9	425218	25.7	19.8	176463	25.8	19.9
119024	25.4	19.5	471896	25.5	20.3	528313	25.5	21.1	240785	25.6	19.7	141010	25.7	20.5	244193	25.8	19.2
7498	25.4	16.7	41314	25.5	16.5	503166	25.5	20.6	71316	25.6	18.9	494307	25.7	20.4	91079	25.8	19.4
368199	25.4	21.1	30350	25.5	17.5	125638	25.5	19.4	473148	25.6	20.2	334870	25.7	20.5	261268	25.8	20.1
366789	25.4	20.2	104865	25.5	19.3	57256	25.5	18.0	365155	25.6	21.0	140087	25.7	18.8	49488	25.8	17.5
262728	25.4	20.6	406372	25.5	20.4	525321	25.5	21.0	2749	25.6	17.3	402857	25.7	19.5	240015	25.8	19.9
351740	25.4	19.8	321169	25.5	20.8	155100	25.5	20.6	393176	25.6	20.4	368712	25.7	21.2	374096	25.8	20.5
421408	25.4	19.6	406896	25.5	20.6	245894	25.5	19.7	364673	25.6	21.5	282704	25.7	19.6	474920	25.8	22.1
238196	25.4	20.0	245751	25.5	19.9	182879	25.5	20.0	543606	25.6	20.9	155620	25.7	19.2	140997	25.8	19.7
467390	25.4	19.2	224476	25.5	20.8	433517	25.5	20.0	504582	25.6	21.8	333783	25.7	19.7	188069	25.8	19.0
453329	25.4	20.6	530580	25.5	21.4	295314	25.5	21.2	393960	25.6	19.4	3222	25.7	15.6	86878	25.8	18.4
222663	25.4	20.2	298659	25.5	20.3	298829	25.5	20.4	372566	25.6	19.7	169912	25.7	20.6	62901	25.8	18.3
276975	25.4	20.3	39904	25.5	19.2	139918	25.5	19.8	63172	25.6	18.0	150752	25.7	18.8	308268	25.8	19.9
41867	25.4	19.0	354392	25.5	19.3	343050	25.5	20.4	411800	25.6	20.2	320845	25.7	20.1	360756	25.8	20.1
533524	25.4	21.9	109468	25.5	18.9	227513	25.5	20.3	417619	25.6	20						

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
404782	25.8	19.7	538347	25.9	19.9	255750	25.9	19.3	117601	26.0	19.4	528052	26.1	22.7	507020	26.2	21.9
387061	25.8	21.4	470622	25.9	20.2	66005	25.9	17.5	31132	26.0	18.0	394724	26.1	21.9	106623	26.2	18.7
465368	25.8	21.8	467867	25.9	20.7	434425	25.9	19.9	525559	26.0	19.7	503426	26.1	18.8	219811	26.2	19.7
205304	25.8	17.5	185878	25.9	17.7	437745	25.9	20.2	214680	26.0	20.6	192858	26.1	20.8	166238	26.2	19.2
478306	25.8	20.0	52875	25.9	19.1	1714	25.9	14.2	213800	26.0	19.8	329264	26.1	20.2	179291	26.2	19.4
505599	25.8	21.4	39189	25.9	19.3	532468	25.9	20.5	13843	26.0	18.1	386953	26.1	20.8	176487	26.2	21.8
380467	25.8	20.8	98170	25.9	19.7	436913	25.9	21.0	533828	26.0	20.7	452629	26.1	20.1	113057	26.2	19.0
461544	25.8	20.5	508406	25.9	19.9	528517	25.9	21.0	259196	26.0	21.1	509314	26.1	21.9	318499	26.2	21.5
295603	25.8	20.1	351474	25.9	19.7	348930	25.9	21.5	504311	26.0	20.0	396311	26.1	21.2	49767	26.2	17.2
143438	25.8	19.2	282863	25.9	19.1	76889	25.9	18.9	255631	26.0	19.4	215380	26.1	20.5	406474	26.2	19.1
280984	25.8	20.1	121089	25.9	19.3	110463	25.9	19.5	310345	26.0	19.5	540281	26.1	20.1	520955	26.2	19.9
193914	25.8	18.3	371025	25.9	20.3	56991	25.9	18.8	133872	26.0	18.7	145450	26.1	18.8	516984	26.2	21.7
464828	25.8	18.5	389201	25.9	20.5	237050	25.9	20.0	277881	26.0	19.7	16765	26.1	17.2	296243	26.2	19.3
502838	25.8	20.9	272797	25.9	20.5	367831	25.9	19.6	79030	26.0	19.5	227612	26.1	19.7	154284	26.2	18.7
210847	25.8	19.8	230106	25.9	19.5	7621	25.9	17.9	534364	26.0	20.5	473971	26.1	20.4	518576	26.2	20.1
312191	25.8	21.3	358328	25.9	22.1	320644	25.9	20.3	428835	26.0	21.2	462097	26.1	21.3	528925	26.2	20.8
109889	25.8	18.4	119466	25.9	19.4	292571	25.9	19.5	455235	26.0	19.8	397683	26.1	21.4	436716	26.2	20.0
258654	25.8	20.1	223607	25.9	19.1	505820	25.9	20.7	502050	26.0	20.5	334733	26.1	19.2	343085	26.2	20.6
91258	25.8	18.6	77845	25.9	18.5	39913	25.9	17.9	69481	26.0	18.6	297766	26.1	20.0	207857	26.2	20.5
7329	25.8	17.4	33992	25.9	17.0	287435	25.9	20.8	157881	26.0	18.8	382411	26.1	20.4	130496	26.2	17.4
354927	25.8	20.9	107545	25.9	19.9	191772	25.9	19.3	475158	26.0	20.2	347927	26.1	20.6	303835	26.2	21.2
299558	25.8	19.4	222540	25.9	19.1	31449	25.9	17.4	204972	26.0	18.5	163667	26.1	25.4	4371	26.2	15.6
119785	25.8	18.9	120753	25.9	18.7	435859	25.9	19.8	105930	26.0	19.2	532068	26.1	21.0	265782	26.2	20.0
8408	25.8	17.9	82593	25.9	18.2	356761	25.9	21.5	277154	26.0	19.0	283459	26.1	19.1	346039	26.2	21.0
522281	25.8	19.9	95035	25.9	18.9	141931	25.9	18.7	218929	26.0	19.3	211111	26.1	19.4	59854	26.2	17.8
86088	25.8	18.5	126001	25.9	18.9	240100	25.9	19.7	308513	26.0	20.2	7028	26.1	16.3	521321	26.2	20.2
102905	25.8	18.0	383336	25.9	20.6	361487	25.9	21.1	90537	26.0	18.9	377615	26.1	21.0	116843	26.2	17.7
88167	25.8	19.2	131900	25.9	19.6	197493	25.9	20.1	104025	26.0	18.2	303780	26.1	19.2	320941	26.2	19.7
374143	25.8	20.3	60622	25.9	18.9	141191	25.9	20.0	16914	26.0	17.5	377918	26.1	20.7	56819	26.2	18.9
369963	25.8	19.7	286484	25.9	20.1	136168	25.9	19.4	536296	26.1	21.8	366275	26.1	20.8	505306	26.2	19.8
433597	25.8	20.8	371663	25.9	20.3	384040	25.9	20.7	308109	26.1	20.7	370463	26.1	20.4	382814	26.2	20.8
57793	25.8	19.8	138658	25.9	19.0	38419	25.9	18.3	58115	26.1	18.8	346125	26.1	19.4	351524	26.2	20.7
529840	25.8	20.6	539321	25.9	21.1	161240	25.9	18.6	65312	26.1	19.1	118747	26.1	18.9	381939	26.2	21.2
286105	25.8	19.7	249674	25.9	20.3	126727	25.9	19.8	474699	26.1	18.7	463681	26.1	20.1	29988	26.2	16.3
8772	25.8	15.5	76120	25.9	19.4	177073	25.9	21.7	535126	26.1	22.1	512496	26.1	21.6	243003	26.2	20.6
494747	25.8	20.9	297459	25.9	21.1	18697	25.9	17.4	525491	26.1	20.8	499247	26.1	20.8	396735	26.2	18.2
97214	25.8	19.4	407697	25.9	21.3	278172	25.9	19.9	543966	26.1	19.9	24520	26.1	16.2	406455	26.2	21.1
540389	25.8	21.4	32362	25.9	19.0	304766	25.9	21.6	544264	26.1	19.9	96810	26.1	18.7	207059	26.2	19.9
176550	25.8	18.7	312825	25.9	20.5	380617	25.9	19.7	502217	26.1	20.6	467350	26.1	21.0	351843	26.2	19.3
394693	25.8	20.0	381565	25.9	20.3	240873	25.9	20.6	16763	26.1	17.7	346224	26.1	20.9	421836	26.2	19.9
471879	25.8	20.0	198987	25.9	19.9	220326	25.9	20.6	149464	26.1	17.6	277599	26.1	20.1	393401	26.2	21.0
181923	25.8	19.6	242186	25.9	18.7	288656	25.9	18.6	201715	26.1	19.3	347621	26.1	20.3	188720	26.2	20.2
210554	25.8	18.1	276100	25.9	20.8	219779	25.9	19.9	346758	26.1	20.4	506339	26.1	18.7	170099	26.2	19.5
119634	25.8	18.9	166062	25.9	19.2	228370	25.9	19.3	17376	26.1	19.4	357330	26.1	18.2	105496	26.2	18.8
412149	25.8	20.7	308350	25.9	19.0	29806	25.9	18.2	54460	26.1	17.0	473090	26.1	21.0	197545	26.2	19.2
301410	25.8	21.0	28073	25.9	18.1	8737	25.9	16.2	73417	26.1	18.2	33514	26.1	17.1	298874	26.2	19.1
161076	25.8	17.6	352468	25.9	19.2	348825	25.9	21.0	475137	26.1	20.1	162631	26.1	19.6	532748	26.2	21.5
518801	25.8	20.3	317967	25.9	20.0	69704	25.9	18.7	432363	26.1	21.8	468699	26.1	19.9	404437	26.2	20.4
209621	25.8	20.7	87554	25.9	18.5	124217	25.9	17.9	190390	26.1	19.3	313725	26.1	19.4	409403	26.2	20.8
206933	25.8	19.4	179552	25.9	19.4	415029	25.9	17.5	33477	26.1	17.5	192722	26.1	18.7	117179	26.2	18.9
536590	25.8	20.8	55843	25.9	18.1	8249	25.9	17.8	408467	26.1	21.3	430395	26.1	20.0	355880	26.2	18.3
102403	25.8	19.3	203338	25.9	19.3	233137	25.9	19.4	270593	26.1	19.9	418370	26.1	20.1	291458	26.2	19.7
491027	25.8	20.1	382845	25.9	21.6	471864	26.0	20.4	75476	26.1	19.1	90242	26.1	19.0	463191	26.2	20.5
372414	25.8	21.9	357556	25.9	20.7	172522	26.0	18.5	196766	26.1	18.9	169570	26.1	19.8	126166	26.2	19.1
128454	25.8	19.1	325494	25.9	18.9	272911	26.0	19.6	377433	26.1	20.1	342878	26.2	21.0	171031	26.2	20.3
290459	25.8	19.8	66419	25.9	18.0	359998	26.0	20.0	290264	26.1	19.7	261021	26.2	20.0	273844	26.2	18.7
100290	25.8	18.9	323791	25.9	19.8	250456	26.0	20.0	149684	26.1	18.4	379589	26.2	18.9	115173	26.2	20.0
297289	25.8	22.1	66727	25.9	18.0	180643	26.0	19.8	530167	26.1	21.3	379400	26.2	20.1	487846	26.2	20.2
61201	25.8	17.1	315247	25.9	18.7	370132	26.0	21.4	126768	26.1	19.2	398481	26.2	20.3	21507	26.2	17.3
112903	25.8	19.8	215411	25.9	19.9	197639	26.0	19.2	501897	26.1	20.7	268405	26.2	21.0	472471	26.2	20.3
188525	25.8	19.2	153618	25.9	19.1	378956	26.0	21.5	209546	26.1	20.6	238506	26.2	19.0	538607	26.2	21.7
175656	25.8	18.6	365848	25.9	20.4	303698	26.0	20.1	126516	26.1	19.5	141311	26.2	19.9	278715	26.2	19.5
458871	25.9	21.0	381479	25.9	20.3	96233	26.0	19.0	8839	26.1	17.1	294472	26.2	20.0	234671	26.2	19.7
348597	25.9	20.3	40426	25.9	18.3	30255	26.0	19.2	170264	26.1	18.3	299888	26.2	19.7	499186	26.2	20.7
392177	25.9	19.4	161611	25.9	18.4	325891	26.0	19.9	347739	26.1	20.5	28344	26.2	18.2	499321	26.2	20.1
285181	25.9	20.2	302827	25.9	19.4	374479	26.0	19.8	332109	26.1	19.8	479880	26.2	21.4	356835	26.2	20.3
355672	25.9	21.5	330993	25.9	19.8	125125	26.0	18.4	159941	26.1	20.4	484216	26.2	21.0	147807	26.2	19.8
223618	25.9	19.0	344473	25.9	19.1	232032	26.0	17.8	472486	26.1	21.1	122599	26.2	19.4	29134	26.2	17.0
462278	25.9	20.3	196728	25.9	20.3	181102	26.0	19.1	195515</								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
39740	26.2	18.4	54914	26.3	19.0	41701	26.4	19.8	70345	26.5	17.3	272727	26.5	20.2	412036	26.6	20.1
491095	26.2	20.8	59830	26.3	19.5	54079	26.4	18.8	479854	26.5	20.5	533464	26.5	22.5	65093	26.6	17.4
407678	26.2	21.2	43560	26.3	15.9	303682	26.4	19.5	536420	26.5	20.7	325265	26.5	20.7	320615	26.6	21.3
35346	26.2	18.8	147334	26.3	19.2	347744	26.4	20.1	374523	26.5	20.5	244542	26.5	20.1	111028	26.6	19.3
47675	26.2	19.4	31369	26.3	18.3	334835	26.4	19.1	427264	26.5	20.5	179275	26.5	18.4	85409	26.6	20.1
431054	26.2	21.4	277967	26.3	19.2	213211	26.4	19.2	504211	26.5	22.1	34168	26.5	18.0	17937	26.6	16.7
207991	26.2	20.3	166267	26.3	19.9	101317	26.4	18.2	363773	26.5	20.5	343137	26.5	20.1	385174	26.6	19.7
114892	26.2	17.8	380627	26.3	21.0	110720	26.4	19.5	156316	26.5	20.0	472985	26.5	20.8	111097	26.6	16.7
459472	26.3	20.6	497009	26.3	23.7	136718	26.4	19.6	308346	26.5	19.1	97394	26.5	18.5	57801	26.6	19.6
460002	26.3	19.9	190405	26.3	18.3	506379	26.4	19.9	497509	26.5	21.4	496595	26.5	19.5	412121	26.6	19.2
112120	26.3	19.0	536006	26.3	21.2	299540	26.4	20.9	22233	26.5	17.2	536445	26.5	20.6	226028	26.6	20.0
239934	26.3	19.7	127523	26.3	19.2	418380	26.4	21.2	48424	26.5	17.6	471867	26.5	20.9	478265	26.6	21.3
238969	26.3	20.0	455617	26.3	18.3	204885	26.4	19.7	222274	26.5	18.7	33473	26.5	18.1	248176	26.6	20.1
226807	26.3	18.6	170571	26.3	19.9	87539	26.4	17.6	426988	26.5	19.9	490173	26.5	19.1	80262	26.6	18.3
200476	26.3	19.0	294378	26.3	20.6	253431	26.4	18.2	477980	26.5	21.9	141318	26.6	19.6	374559	26.6	22.2
159285	26.3	20.1	143608	26.3	19.6	405222	26.4	19.8	414980	26.5	19.6	190363	26.6	18.4	498784	26.6	20.5
42069	26.3	18.3	277650	26.3	21.0	369720	26.4	20.3	12306	26.5	16.9	281439	26.6	19.4	180585	26.6	19.5
323411	26.3	20.2	174617	26.3	18.8	311498	26.4	20.8	534518	26.5	20.0	89946	26.6	18.3	98164	26.6	18.6
161748	26.3	19.5	374475	26.3	20.4	219523	26.4	20.6	430179	26.5	21.4	386114	26.6	20.5	458994	26.6	21.3
27912	26.3	17.3	525283	26.3	21.0	529964	26.4	22.3	506817	26.5	20.9	45323	26.6	17.8	301553	26.6	19.8
336127	26.3	19.5	380051	26.3	20.2	102566	26.4	19.5	219856	26.5	19.9	86248	26.6	19.2	407658	26.6	20.0
201218	26.3	19.5	237020	26.3	20.0	199017	26.4	20.1	49681	26.5	18.0	96904	26.6	17.9	269669	26.6	20.3
471376	26.3	20.8	346781	26.3	21.0	111129	26.4	16.9	69468	26.5	18.4	314635	26.6	19.6	296455	26.6	19.4
272488	26.3	21.3	175576	26.3	19.4	521132	26.4	20.4	13317	26.5	17.9	292315	26.6	19.6	534201	26.6	21.8
502915	26.3	20.5	300987	26.3	20.0	239264	26.4	17.9	290173	26.5	20.3	298939	26.6	21.0	165922	26.6	18.7
1716	26.3	15.9	454092	26.3	19.9	64106	26.4	18.7	536127	26.5	21.3	123816	26.6	19.1	356697	26.6	21.9
306147	26.3	20.0	227469	26.3	20.8	156385	26.4	19.1	303692	26.5	20.1	125913	26.6	19.1	215114	26.6	20.5
426894	26.3	20.4	231881	26.3	19.7	269128	26.4	19.7	111727	26.5	19.7	231140	26.6	20.8	380079	26.6	19.6
338698	26.3	20.8	431486	26.3	19.7	432448	26.4	21.1	230060	26.5	20.4	512977	26.6	19.2	312024	26.6	18.9
504490	26.3	22.3	384025	26.3	19.3	405515	26.4	20.3	313719	26.5	19.9	427478	26.6	20.2	349859	26.6	19.8
313782	26.3	21.4	121323	26.3	17.8	160821	26.4	18.1	192319	26.5	19.0	505600	26.6	20.9	30292	26.6	18.2
188888	26.3	19.9	503919	26.3	20.1	214234	26.4	18.7	296712	26.5	19.3	37788	26.6	19.7	106078	26.6	17.7
380149	26.3	20.3	96982	26.3	17.4	470170	26.4	20.7	219746	26.5	18.6	317848	26.6	18.8	380013	26.6	19.6
503583	26.3	21.1	85595	26.3	18.6	529100	26.4	21.6	540632	26.5	21.0	245654	26.6	19.8	23785	26.6	17.9
415410	26.3	19.8	535908	26.3	22.0	107456	26.4	19.5	2898	26.5	14.9	106574	26.6	18.6	19188	26.6	17.2
146114	26.3	20.0	383938	26.3	20.6	381597	26.4	19.7	297260	26.5	20.0	468265	26.6	20.4	393305	26.6	20.2
501298	26.3	20.0	391318	26.3	20.8	311296	26.4	20.9	532044	26.5	19.8	54600	26.6	17.3	185509	26.7	19.3
244139	26.3	18.6	111820	26.3	19.0	192277	26.4	19.5	663	26.5	14.2	308150	26.6	19.8	210151	26.7	18.9
136258	26.3	18.8	287543	26.3	21.3	375319	26.4	20.0	409851	26.5	20.9	30431	26.6	18.4	463632	26.7	20.1
535432	26.3	21.1	308158	26.3	20.6	88138	26.4	18.3	531968	26.5	20.9	375862	26.6	19.7	351525	26.7	19.9
90231	26.3	18.7	506746	26.3	22.3	233575	26.4	20.4	354898	26.5	20.1	44759	26.6	17.9	59206	26.7	18.3
10256	26.3	18.2	300995	26.3	19.2	223239	26.4	19.6	531589	26.5	20.6	239024	26.6	19.3	171820	26.7	19.6
321755	26.3	19.7	507777	26.3	21.0	61136	26.4	19.0	18868	26.5	17.1	375869	26.6	20.2	392678	26.7	20.4
413968	26.3	21.2	431033	26.3	21.7	104365	26.4	18.2	281921	26.5	20.8	178725	26.6	19.6	408775	26.7	21.6
388758	26.3	20.9	364653	26.4	20.0	544937	26.4	20.9	231510	26.5	20.4	287516	26.6	21.0	295067	26.7	19.0
470407	26.3	21.0	61886	26.4	18.8	36118	26.4	17.2	265730	26.5	20.9	9049	26.6	15.8	239406	26.7	20.4
229116	26.3	19.7	433305	26.4	20.8	16553	26.4	16.9	17663	26.5	18.1	195564	26.6	19.6	381542	26.7	20.2
54352	26.3	17.3	364231	26.4	20.0	189304	26.4	18.4	228696	26.5	18.6	405344	26.6	21.2	19130	26.7	16.9
33095	26.3	17.6	10697	26.4	17.3	509334	26.4	21.5	263146	26.5	20.2	146410	26.6	19.2	199317	26.7	19.6
467864	26.3	21.9	378829	26.4	20.9	297895	26.4	20.4	192321	26.5	19.9	525354	26.6	21.2	538609	26.7	21.6
83434	26.3	17.6	479921	26.4	20.9	286282	26.4	19.6	529650	26.5	20.7	87280	26.6	16.9	165307	26.7	19.4
62107	26.3	17.8	390045	26.4	20.2	243018	26.4	18.6	204603	26.5	19.8	105663	26.6	19.6	273996	26.7	18.9
780	26.3	13.1	367128	26.4	20.0	251306	26.4	19.4	126043	26.5	17.4	341510	26.6	19.3	532578	26.7	21.0
507478	26.3	22.4	168878	26.4	18.5	226748	26.4	20.1	60661	26.5	18.3	475230	26.6	19.9	493775	26.7	21.6
336385	26.3	20.4	245886	26.4	19.1	197457	26.4	19.5	351597	26.5	19.7	126283	26.6	19.9	213476	26.7	20.5
99320	26.3	18.2	107658	26.4	19.2	136680	26.4	20.2	29165	26.5	18.8	90080	26.6	19.2	480804	26.7	20.8
135198	26.3	18.9	417151	26.4	21.4	459775	26.4	19.6	134600	26.5	18.2	474588	26.6	19.8	6542	26.7	17.4
367127	26.3	20.0	532071	26.4	20.3	55767	26.4	18.9	216003	26.5	19.9	59247	26.6	18.1	503010	26.7	21.1
144824	26.3	19.2	270374	26.4	19.8	375911	26.4	20.7	543736	26.5	20.2	376583	26.6	20.6	312136	26.7	19.3
459312	26.3	20.3	540282	26.4	20.7	460183	26.4	20.9	207306	26.5	20.1	32591	26.6	17.1	85570	26.7	18.4
246009	26.3	20.0	265583	26.4	19.6	107372	26.4	19.8	43423	26.5	18.7	543559	26.6	20.1	170027	26.7	19.9
111537	26.3	17.9	313849	26.4	20.8	367141	26.4	21.1	334792	26.5	20.2	237480	26.6	19.9	17143	26.7	17.7
425640	26.3	20.8	365873	26.4	21.2	155209	26.4	19.1	413929	26.5	20.8	431376	26.6	20.7	424115	26.7	20.2
22485	26.3	18.6	103277	26.4	19.3	489416	26.4	21.6	82491	26.5	19.1	163758	26.6	20.5	505153	26.7	20.7
528723	26.3	20.5	23887	26.4	17.9	159854	26.4	19.0	295004	26.5	21.5	332403	26.6	18.7	477973	26.7	19.9
271871	26.3	20.1	129067	26.4	18.2	149084	26.4	20.5	69087	26.5	18.6	123671	26.6	19.7	137011	26.7	18.1
153028	26.3	18.6	299746	26.4	20.7	67483	26.4	17.9	103141	26.5	19.5	309008	26.6	20.3	396229	26.7	21.5
113612	26.3	19.3	46305	26.4	18.0	389615	26.4	19.3	500028	26.5	22.1	471854	26.6	21.2	523557	26.7	21.6
48350	26.3	18.1	171884	26.4	19.7	16328	26.4	18.4	410312	26.5							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
540350	26.7	20.6	41463	26.8	17.0	318984	26.9	19.8	412030	26.9	20.0	244204	27.0	19.3	478166	27.1	21.2
247707	26.7	19.7	419933	26.8	20.1	61666	26.9	17.9	275962	26.9	20.6	61367	27.0	17.5	238217	27.1	20.9
416058	26.7	20.9	245533	26.8	18.9	377910	26.9	20.8	501963	26.9	20.0	37482	27.0	18.7	494817	27.1	19.4
349901	26.7	20.8	235837	26.8	19.9	88044	26.9	17.7	12891	26.9	16.9	21658	27.0	16.9	488460	27.1	21.5
132171	26.7	19.4	104895	26.8	19.5	193693	26.9	20.2	424109	26.9	21.3	266337	27.0	20.7	179410	27.1	20.9
42925	26.7	17.7	528217	26.8	21.1	368230	26.9	20.2	125890	26.9	19.4	75367	27.0	16.9	434471	27.1	18.5
81763	26.7	18.1	243631	26.8	19.2	44015	26.9	18.8	538940	26.9	21.1	229469	27.0	19.5	273922	27.1	20.0
415225	26.7	21.2	54833	26.8	18.2	475232	26.9	21.0	326721	26.9	20.0	128839	27.0	19.4	372	27.1	12.9
500244	26.7	20.2	424116	26.8	20.6	540705	26.9	21.7	2295	26.9	15.7	106707	27.0	19.3	393224	27.1	19.3
141098	26.7	19.2	330098	26.8	20.2	5384	26.9	17.4	290621	26.9	20.8	64520	27.0	18.0	523712	27.1	21.8
145233	26.7	19.1	122993	26.8	19.4	137762	26.9	19.9	353265	26.9	20.8	248665	27.0	19.9	308652	27.1	17.7
173121	26.7	20.0	2944	26.8	15.9	368234	26.9	21.4	465767	26.9	20.4	509487	27.0	19.9	266397	27.1	21.1
388841	26.7	20.3	296059	26.8	19.0	353321	26.9	19.7	125737	26.9	19.3	497495	27.0	19.4	156954	27.1	18.8
249658	26.7	18.9	534111	26.8	19.7	4388	26.9	17.0	123086	26.9	20.2	534674	27.0	22.6	498731	27.1	20.4
203823	26.7	20.5	107459	26.8	19.4	235637	26.9	18.6	507340	26.9	20.5	466563	27.0	21.0	303388	27.1	19.6
410719	26.7	20.2	184704	26.8	19.0	85695	26.9	20.1	95412	26.9	18.4	105586	27.0	19.5	520265	27.1	20.3
175901	26.7	20.9	310320	26.8	19.8	349940	26.9	19.2	59298	26.9	17.5	60240	27.0	18.4	72500	27.1	19.5
526044	26.7	21.3	299891	26.8	20.8	484245	26.9	20.5	253272	26.9	20.7	305529	27.0	21.6	155630	27.1	18.4
510341	26.7	19.6	382376	26.8	19.7	472149	26.9	19.4	87603	26.9	18.6	299340	27.0	20.7	92808	27.1	18.5
216463	26.7	19.3	484382	26.8	22.1	502415	26.9	20.4	388809	26.9	20.3	153601	27.0	19.2	456619	27.1	20.0
317110	26.7	19.9	464416	26.8	20.7	102554	26.9	20.2	362980	26.9	19.2	465358	27.0	21.0	425790	27.1	20.3
275159	26.7	19.0	37237	26.8	19.0	150244	26.9	19.7	218863	26.9	21.2	8476	27.0	15.8	193787	27.1	18.8
362145	26.7	19.0	352784	26.8	19.9	321988	26.9	20.3	404124	26.9	19.3	426514	27.0	19.5	182890	27.1	19.1
297835	26.7	21.1	171687	26.8	18.5	197991	26.9	19.6	497540	26.9	20.5	532730	27.1	21.1	135415	27.1	18.3
303852	26.7	20.9	213050	26.8	20.7	434082	26.9	20.0	440434	26.9	19.7	312896	27.1	19.5	52751	27.1	17.6
473226	26.7	20.5	12	26.8	8.7	4680	26.9	16.7	131077	26.9	20.2	177907	27.1	18.3	468206	27.1	21.6
525721	26.7	20.7	251685	26.8	20.1	509362	26.9	21.1	507603	26.9	21.5	413000	27.1	19.9	31754	27.1	18.4
372330	26.7	19.4	357170	26.8	20.9	177072	26.9	20.3	109807	26.9	19.2	210890	27.1	19.4	435710	27.1	21.2
63641	26.7	17.5	393115	26.8	19.8	475128	26.9	20.7	117413	26.9	19.5	540355	27.1	21.1	188617	27.1	19.9
357569	26.7	18.7	283636	26.8	19.3	177118	26.9	20.7	467443	26.9	20.0	97710	27.1	19.1	426456	27.1	20.3
165485	26.7	20.6	432359	26.8	21.1	12323	26.9	16.1	439368	26.9	20.4	474040	27.1	20.0	69813	27.1	18.4
507526	26.7	20.1	390730	26.8	20.9	300024	26.9	19.8	283478	26.9	20.0	133540	27.1	18.8	472204	27.1	21.8
502523	26.7	20.1	488616	26.8	19.3	124076	26.9	17.5	192870	26.9	18.9	482226	27.1	20.2	311226	27.1	19.6
245233	26.7	18.6	36208	26.8	17.3	12978	26.9	15.7	336386	26.9	20.2	45302	27.1	17.6	139694	27.1	19.5
355181	26.7	21.0	232399	26.8	19.5	55151	26.9	18.7	148632	26.9	19.6	127768	27.1	17.8	333659	27.1	20.0
345032	26.7	20.5	480019	26.8	21.2	427469	26.9	21.5	54549	26.9	18.8	334877	27.1	20.0	368812	27.1	19.1
336424	26.7	18.6	190104	26.8	18.0	478124	26.9	21.5	394715	26.9	22.1	469185	27.1	21.6	508508	27.1	20.5
32872	26.7	18.5	16188	26.8	16.9	541750	26.9	20.8	293170	26.9	20.4	534269	27.1	20.6	351857	27.1	21.8
252022	26.7	19.9	351609	26.8	21.1	530789	26.9	21.3	260013	26.9	20.6	350170	27.1	19.6	131053	27.1	19.7
470861	26.7	21.0	135964	26.8	18.8	129488	26.9	18.8	473280	26.9	20.4	37272	27.1	18.1	171316	27.1	18.6
453591	26.7	19.2	90160	26.8	19.7	522617	26.9	19.6	154568	26.9	18.3	136699	27.1	19.7	304483	27.1	20.3
188208	26.7	18.2	408213	26.8	20.6	228374	26.9	19.7	366277	26.9	20.1	87605	27.1	18.2	208343	27.1	19.4
414768	26.7	18.6	510082	26.8	20.1	60019	26.9	18.9	267351	26.9	19.8	298740	27.1	20.2	496896	27.1	20.5
107343	26.7	19.8	506667	26.8	21.6	72098	26.9	18.0	45329	26.9	17.0	233833	27.1	20.3	93902	27.1	19.0
140630	26.7	18.1	192050	26.8	18.7	179876	26.9	21.7	72575	26.9	19.9	180765	27.1	18.8	241670	27.1	18.2
236725	26.7	19.7	61400	26.8	19.4	294388	26.9	19.6	289398	26.9	20.0	192906	27.1	20.2	273351	27.1	21.5
163291	26.7	18.4	359656	26.8	20.7	352019	26.9	20.8	217870	26.9	19.1	222648	27.1	20.0	200564	27.1	18.6
527932	26.7	21.8	230822	26.8	18.7	110298	26.9	19.6	377405	26.9	20.1	286019	27.1	20.7	306453	27.1	21.4
311936	26.7	20.0	102141	26.8	18.3	107031	26.9	19.1	470488	26.9	21.3	75090	27.1	18.5	6284	27.1	16.9
362073	26.7	21.0	496403	26.8	20.3	222780	26.9	20.2	494928	26.9	21.0	5235	27.1	14.6	379342	27.1	20.2
89668	26.7	19.0	15756	26.8	16.1	203505	26.9	20.1	203416	26.9	19.2	289873	27.1	19.5	219061	27.1	19.7
136941	26.7	19.7	315511	26.8	20.1	508725	26.9	20.3	349867	26.9	20.1	12392	27.1	17.4	30381	27.1	17.7
349401	26.7	21.2	371034	26.8	19.6	105444	26.9	17.9	225060	26.9	19.2	456836	27.1	20.1	262310	27.1	21.2
147926	26.7	19.5	471812	26.8	21.2	353606	26.9	20.5	138811	26.9	19.5	309883	27.1	21.1	310885	27.1	19.2
346059	26.7	20.5	352063	26.8	20.3	459528	26.9	19.8	429701	26.9	21.1	209613	27.1	20.5	336639	27.1	20.3
155706	26.7	18.3	510848	26.8	21.0	326697	26.9	20.4	80055	26.9	18.7	413819	27.1	20.0	312104	27.1	20.1
480464	26.7	20.1	70892	26.8	18.7	212136	26.9	19.1	95255	26.9	19.0	539057	27.1	20.2	170531	27.1	19.2
464789	26.7	22.2	467862	26.8	21.5	149801	26.9	20.1	534312	26.9	20.3	276404	27.1	18.4	407692	27.1	22.0
37509	26.7	17.8	398558	26.8	21.1	83353	26.9	18.7	328347	26.9	19.1	440459	27.1	20.4	352416	27.1	20.2
269021	26.7	20.5	542408	26.8	21.0	171991	26.9	18.4	135121	26.9	18.7	517625	27.1	19.9	28043	27.2	17.8
499268	26.7	21.0	335163	26.8	19.8	96070	26.9	18.9	492510	26.9	19.4	453369	27.1	21.6	131773	27.2	19.2
510902	26.8	21.9	509246	26.8	20.7	136336	26.9	20.2	479307	27.0	20.4	390710	27.1	20.4	451703	27.2	21.7
80918	26.8	18.4	182095	26.8	19.2	80403	26.9	18.0	61599	27.0	17.3	317950	27.1	20.8	83993	27.2	18.6
95455	26.8	18.5	479742	26.8	20.6	295685	26.9	20.5	181678	27.0	19.5	321087	27.1	19.5	303804	27.2	19.9
422015	26.8	20.5	140176	26.8	19.8	388028	26.9	19.5	352097	27.0	21.0	533747	27.1	21.3	200641	27.2	19.6
536038	26.8	21.9	432569	26.9	20.2	200744	26.9	19.2	131143	27.0	19.6	332346	27.1	20.1	510854	27.2	22.1
174453	26.8	20.2	67935	26.9	17.9	56265	26.9	18.5	65195	27.0	18.2	283469	27.1	20.0	138870	27.2	19.7
281833	26.8	20.4	139724	26.9	18.8	350168	26.9	19.6	202005	27.0	17.3	352712	27.1	20.2	26129	27.2	18.8
474321	26.8	21.4	236936	26.9	19.7	107494	26.9	18.2	214463	27.0</							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
537392	27.2	21.0	110960	27.2	18.3	177375	27.3	20.1	302508	27.4	21.7	463239	27.5	20.8	140879	27.6	19.2
434236	27.2	20.9	414876	27.2	21.4	477201	27.3	21.0	427927	27.4	21.9	235035	27.5	20.0	486795	27.6	21.1
212787	27.2	21.2	56266	27.2	17.7	285615	27.3	20.3	368993	27.4	19.7	216614	27.5	19.6	350669	27.6	20.8
106266	27.2	19.4	227615	27.2	21.5	333234	27.3	20.0	191801	27.4	20.2	112157	27.5	17.7	161506	27.6	20.0
521083	27.2	21.1	207740	27.2	19.4	130411	27.3	17.4	212045	27.4	20.6	23083	27.5	17.7	250854	27.6	19.7
305410	27.2	20.1	175312	27.2	19.3	99888	27.3	19.2	312708	27.4	20.2	119909	27.5	19.3	5242	27.6	16.3
38431	27.2	17.5	64618	27.3	18.0	97849	27.3	18.4	504497	27.4	18.8	230654	27.5	19.9	402202	27.6	20.7
341200	27.2	20.3	179062	27.3	19.5	156341	27.3	20.5	485040	27.4	20.7	303734	27.5	20.7	520059	27.6	20.7
358411	27.2	20.3	519867	27.3	20.4	287872	27.3	19.2	196924	27.4	19.3	287404	27.5	19.3	64900	27.6	19.1
540321	27.2	21.1	527237	27.3	21.0	275357	27.3	21.2	212441	27.4	18.7	269972	27.5	20.0	366012	27.6	20.9
210274	27.2	20.1	165387	27.3	19.4	206822	27.3	19.3	249809	27.4	19.6	171639	27.5	19.8	505242	27.6	21.3
297870	27.2	20.8	499769	27.3	19.7	457521	27.3	20.5	218660	27.4	18.7	65816	27.5	19.0	308406	27.6	21.5
172520	27.2	19.2	526833	27.3	20.9	356796	27.3	19.7	475447	27.4	20.8	374070	27.5	20.4	472250	27.6	20.6
338186	27.2	19.6	349806	27.3	20.2	40114	27.3	17.1	434162	27.4	19.5	96415	27.5	19.7	474243	27.6	20.2
182936	27.2	19.4	425199	27.3	21.1	533956	27.3	21.0	214177	27.4	20.5	395607	27.5	20.9	101583	27.6	18.7
223267	27.2	19.3	316582	27.3	20.1	15694	27.3	16.8	160346	27.4	18.6	302316	27.5	19.9	67734	27.6	17.6
297753	27.2	19.9	93449	27.3	19.0	73415	27.3	19.4	265880	27.4	20.8	352574	27.5	20.4	384853	27.6	21.4
155094	27.2	20.5	6556	27.3	15.7	185994	27.3	19.1	47134	27.4	18.2	95268	27.5	17.9	502300	27.6	20.8
352057	27.2	20.7	130267	27.3	19.8	122251	27.3	17.9	369898	27.4	20.5	3814	27.5	16.6	395765	27.6	20.6
215894	27.2	19.6	477195	27.3	20.0	539394	27.3	20.8	459274	27.4	20.5	416007	27.5	20.0	505938	27.6	20.4
343525	27.2	20.7	130584	27.3	17.6	434008	27.3	19.6	200977	27.4	19.5	474831	27.5	20.4	174586	27.6	18.4
467326	27.2	20.9	365477	27.3	19.0	477702	27.3	19.8	482296	27.4	20.3	350757	27.5	21.1	351576	27.6	20.8
475713	27.2	21.4	503561	27.3	20.7	502744	27.3	20.7	403927	27.4	21.1	222698	27.5	19.7	190746	27.6	18.2
263431	27.2	21.1	512968	27.3	18.6	529926	27.3	21.7	429532	27.4	19.4	79527	27.5	17.4	174562	27.6	20.3
429225	27.2	21.2	111639	27.3	19.1	413007	27.3	21.3	307748	27.4	19.8	454993	27.5	20.2	174819	27.6	19.9
453419	27.2	21.1	136007	27.3	19.3	456666	27.3	20.1	53144	27.4	19.0	173631	27.5	20.7	378136	27.6	20.5
418049	27.2	21.5	404306	27.3	21.5	237285	27.3	20.1	281538	27.4	19.7	425190	27.5	20.7	107496	27.6	19.8
199165	27.2	19.1	518601	27.3	21.9	5847	27.3	15.3	354670	27.4	20.4	314143	27.5	19.7	282124	27.6	20.6
339439	27.2	20.8	475585	27.3	21.3	50447	27.4	18.9	7312	27.4	17.7	38447	27.5	18.1	320676	27.6	19.2
350188	27.2	19.3	406854	27.3	20.8	16461	27.4	16.2	281617	27.4	20.2	508519	27.5	20.4	351603	27.6	19.3
230859	27.2	18.7	97964	27.3	17.8	220839	27.4	20.5	507531	27.4	21.8	285101	27.5	19.5	161843	27.6	20.1
503679	27.2	19.6	34812	27.3	17.6	344008	27.4	20.4	280641	27.4	20.0	298313	27.5	20.2	33100	27.6	18.3
185325	27.2	19.4	135165	27.3	19.1	530761	27.4	20.0	472197	27.4	20.6	381478	27.5	20.1	475505	27.6	21.4
432372	27.2	21.9	510474	27.3	20.9	512738	27.4	21.3	334804	27.4	20.0	388192	27.5	20.6	110604	27.6	18.2
93008	27.2	18.6	288112	27.3	19.8	372407	27.4	19.3	537333	27.4	20.4	225514	27.5	18.2	320602	27.6	20.0
51372	27.2	17.4	279735	27.3	21.2	58289	27.4	19.0	136873	27.4	20.4	76210	27.5	18.1	170996	27.6	19.4
169639	27.2	20.0	384801	27.3	19.7	529109	27.4	21.4	270369	27.4	22.1	138709	27.5	19.8	529657	27.6	20.0
531866	27.2	20.5	373487	27.3	21.1	243555	27.4	19.7	102363	27.4	18.9	69838	27.5	18.3	86396	27.6	18.8
422727	27.2	20.0	529937	27.3	21.6	532871	27.4	21.3	2123	27.4	15.2	391363	27.5	20.7	42645	27.6	18.0
60135	27.2	19.2	267184	27.3	18.9	300917	27.4	20.5	44657	27.4	18.8	479923	27.5	20.4	510874	27.6	20.8
216880	27.2	20.1	474984	27.3	20.9	204900	27.4	19.9	146197	27.4	19.4	503004	27.5	20.1	304376	27.6	20.3
542328	27.2	19.1	258655	27.3	18.9	196228	27.4	20.2	436650	27.4	20.8	191036	27.5	18.4	114285	27.6	18.5
452797	27.2	19.7	386778	27.3	20.8	212648	27.4	19.4	431046	27.4	20.6	33835	27.5	18.5	62519	27.6	17.5
135134	27.2	17.7	272901	27.3	20.9	458785	27.4	21.1	313048	27.5	19.8	63777	27.5	18.7	463271	27.6	21.1
523539	27.2	21.5	167854	27.3	18.9	176504	27.4	20.8	205951	27.5	19.8	193887	27.5	19.2	322475	27.6	19.5
106276	27.2	19.3	315481	27.3	21.0	336283	27.4	20.6	418401	27.5	20.5	203330	27.5	18.2	433160	27.6	20.3
159643	27.2	18.6	215929	27.3	19.7	475130	27.4	19.9	393928	27.5	20.5	35222	27.5	17.5	263583	27.6	19.8
462582	27.2	21.5	173313	27.3	19.8	165428	27.4	18.6	130552	27.5	18.8	24019	27.5	17.6	502834	27.6	20.3
530953	27.2	22.1	96405	27.3	18.5	376341	27.4	20.4	2484	27.5	14.5	379358	27.5	19.3	212756	27.6	20.5
479134	27.2	20.3	349479	27.3	21.4	501259	27.4	21.2	470115	27.5	21.4	106223	27.5	18.2	209868	27.6	19.5
38943	27.2	18.9	306833	27.3	18.4	81846	27.4	17.7	262749	27.5	20.0	534632	27.5	21.9	2345	27.6	15.1
480642	27.2	19.9	370165	27.3	20.8	103569	27.4	19.2	439812	27.5	19.4	533222	27.5	20.4	230098	27.6	19.0
237626	27.2	19.4	61785	27.3	19.4	507854	27.4	21.8	469701	27.5	20.3	151109	27.5	19.9	351495	27.6	20.3
238546	27.2	18.8	513674	27.3	21.0	153975	27.4	19.9	188074	27.5	18.1	381552	27.5	20.8	116850	27.6	20.0
372482	27.2	20.8	211031	27.3	20.4	258399	27.4	20.3	302515	27.5	20.2	404250	27.5	21.1	67845	27.6	17.8
292231	27.2	19.4	3887	27.3	16.6	293431	27.4	20.5	302379	27.5	20.6	478044	27.5	21.7	253920	27.6	21.3
41122	27.2	18.5	101885	27.3	17.6	528986	27.4	21.0	52738	27.5	19.4	285445	27.5	20.6	454412	27.6	19.3
303359	27.2	20.2	276602	27.3	19.6	317148	27.4	19.5	401378	27.5	20.0	103180	27.5	18.0	386315	27.6	20.1
295683	27.2	19.4	95297	27.3	19.7	464726	27.4	19.8	21047	27.5	17.7	24162	27.5	18.4	85316	27.6	17.6
182229	27.2	19.1	472983	27.3	20.3	543687	27.4	20.7	34358	27.5	18.1	502835	27.5	21.0	174513	27.6	19.9
525342	27.2	20.2	501067	27.3	20.8	390458	27.4	21.2	409882	27.5	19.8	414160	27.5	21.9	244515	27.6	19.0
118172	27.2	19.9	94503	27.3	18.0	312207	27.4	21.1	396445	27.5	20.8	466429	27.6	19.5	477142	27.6	20.3
534062	27.2	20.4	473200	27.3	19.8	111157	27.4	18.7	508262	27.5	20.9	518996	27.6	20.1	10738	27.6	17.3
104814	27.2	18.1	111666	27.3	18.7	214474	27.4	19.7	34005	27.5	17.3	129792	27.6	18.4	537810	27.6	21.6
95169	27.2	19.6	221253	27.3	20.3	508309	27.4	21.3	177098	27.5	20.1	162677	27.6	19.7	104226	27.6	18.9
386577	27.2	19.5	109270	27.3	19.0	405906	27.4	19.6	225531	27.5	18.3	534202	27.6	21.2	59405	27.6	18.7
375865	27.2	20.9	346846	27.3	20.3	458934	27.4	21.6	179204	27.5	19.4	233695	27.6	20.2	524355	27.6	19.6
68030	27.2	18.5	370697	27.3	18.1	200627	27.4	18.7	290194	27.5	19.5	510831	27.6	21.3	159590	27.6	18.7
25771	27.2	18.6	165994	27.3	19.6	505322	27.4	20.6	200								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
498793	27.6	19.7	374324	27.7	20.6	391097	27.8	20.2	380648	27.9	20.8	20002	27.9	17.4	533892	28.0	20.9
274570	27.7	19.3	346100	27.7	21.5	304708	27.8	19.7	90746	27.9	17.7	21246	27.9	16.7	428077	28.0	21.3
118999	27.7	19.7	106372	27.7	20.0	501367	27.8	21.1	201710	27.9	19.1	200264	27.9	20.0	352098	28.0	20.2
476366	27.7	20.5	358037	27.7	21.3	241230	27.8	20.0	244743	27.9	19.1	72014	27.9	19.5	418368	28.0	19.9
12040	27.7	18.9	190484	27.7	19.9	331358	27.8	21.0	103247	27.9	17.9	399348	27.9	20.2	406500	28.0	21.3
252205	27.7	20.0	200889	27.7	19.9	517643	27.8	20.0	244536	27.9	18.6	128111	27.9	19.0	247107	28.0	19.5
504586	27.7	20.7	198279	27.7	19.9	106704	27.8	19.2	26823	27.9	17.4	460528	27.9	20.1	110093	28.0	18.7
475489	27.7	21.6	223054	27.7	19.9	312833	27.8	19.5	374928	27.9	19.9	272646	27.9	20.7	13728	28.0	17.2
392633	27.7	20.3	217850	27.7	18.7	2621	27.8	14.7	93509	27.9	19.6	184535	27.9	20.0	490458	28.0	20.7
124599	27.7	19.3	392358	27.7	19.7	512385	27.8	19.8	143627	27.9	20.5	372910	27.9	20.1	312220	28.0	21.5
81833	27.7	18.0	216407	27.7	19.3	268542	27.8	20.8	537955	27.9	21.7	528577	27.9	20.4	501210	28.0	20.6
389760	27.7	20.4	1566	27.7	19.1	37235	27.8	17.3	329829	27.9	18.5	126998	27.9	17.0	254923	28.0	19.5
67217	27.7	18.9	106406	27.7	19.9	107105	27.8	18.6	94539	27.9	19.3	58419	27.9	18.5	303389	28.0	20.9
425997	27.7	20.8	299821	27.7	20.8	508542	27.8	20.6	233447	27.9	20.2	469088	27.9	19.6	375970	28.0	21.1
72523	27.7	18.7	349453	27.7	21.0	50896	27.8	18.5	539542	27.9	20.4	303799	27.9	19.0	191924	28.0	18.9
470099	27.7	21.2	395959	27.7	21.5	268980	27.8	20.3	406483	27.9	21.0	114634	27.9	20.2	526407	28.0	21.7
99509	27.7	19.3	229188	27.7	20.7	46379	27.8	18.9	388334	27.9	20.0	525784	27.9	21.7	338959	28.0	20.6
188000	27.7	20.0	357889	27.7	21.3	247829	27.8	19.5	483378	27.9	20.7	33746	27.9	18.6	496790	28.0	20.7
308467	27.7	20.2	520083	27.7	19.9	231771	27.8	20.3	133317	27.9	19.6	86836	27.9	19.1	466330	28.0	19.8
357107	27.7	20.4	173265	27.7	18.7	969	27.8	15.2	259721	27.9	20.2	471877	27.9	21.1	492195	28.0	19.7
487477	27.7	19.7	496841	27.7	21.2	153041	27.8	18.0	372995	27.9	21.1	12057	27.9	17.4	396322	28.0	20.4
117968	27.7	18.8	476353	27.7	21.3	397041	27.8	20.8	354862	27.9	20.3	302004	27.9	19.1	485563	28.0	19.7
327390	27.7	19.0	453567	27.7	20.9	169649	27.8	19.3	148840	27.9	18.7	365086	27.9	20.6	242160	28.0	19.3
496299	27.7	21.4	130000	27.7	19.7	12896	27.8	16.9	229490	27.9	20.0	470274	27.9	21.2	473196	28.0	20.0
507704	27.7	21.3	240241	27.7	20.1	57912	27.8	18.4	124598	27.9	19.4	110578	27.9	18.6	223280	28.0	19.5
277392	27.7	20.1	433622	27.7	20.3	333874	27.8	21.0	5746	27.9	15.6	198988	27.9	18.6	267347	28.0	20.5
410470	27.7	20.7	423583	27.8	21.8	258742	27.8	19.9	423760	27.9	21.1	384899	27.9	19.9	204162	28.0	20.1
222567	27.7	20.6	222492	27.8	19.1	502935	27.8	20.6	523218	27.9	20.1	334861	27.9	18.8	377457	28.0	19.9
427508	27.7	20.8	335556	27.8	20.1	124980	27.8	18.4	393002	27.9	21.3	203374	27.9	20.5	108138	28.0	19.4
490169	27.7	20.7	286551	27.8	19.8	170300	27.8	19.7	478405	27.9	19.7	471343	27.9	21.0	422836	28.1	19.8
361688	27.7	20.1	5052	27.8	16.2	156445	27.8	19.5	507477	27.9	20.6	352569	27.9	20.5	404612	28.1	20.5
478149	27.7	20.4	355832	27.8	19.9	524520	27.8	20.9	449107	27.9	20.9	286602	27.9	20.7	123487	28.1	18.8
510379	27.7	21.2	64711	27.8	19.1	87368	27.8	17.8	524949	27.9	20.3	507461	27.9	20.9	134098	28.1	19.2
330895	27.7	20.8	91947	27.8	18.8	403547	27.8	19.1	530868	27.9	20.7	131906	27.9	18.5	215947	28.1	20.1
311281	27.7	21.3	34196	27.8	16.4	512548	27.8	20.6	338108	27.9	19.9	474727	27.9	20.4	222314	28.1	19.3
34809	27.7	17.9	499467	27.8	21.1	110521	27.8	19.5	149972	27.9	19.7	373548	27.9	20.5	462152	28.1	21.8
393845	27.7	20.4	190430	27.8	19.4	25169	27.8	17.1	363768	27.9	21.2	393321	27.9	21.5	522788	28.1	20.5
11425	27.7	17.5	48948	27.8	17.3	81697	27.8	18.9	34706	27.9	19.2	429263	27.9	21.6	153546	28.1	19.7
245998	27.7	18.6	79629	27.8	18.9	175470	27.8	19.9	476394	27.9	21.8	111594	27.9	19.8	191032	28.1	18.9
502912	27.7	20.7	468841	27.8	19.8	365097	27.8	21.4	104567	27.9	16.9	273141	27.9	20.0	478407	28.1	20.0
90553	27.7	18.5	318841	27.8	20.2	350826	27.8	21.1	545114	27.9	19.6	299873	27.9	19.9	356310	28.1	20.4
370153	27.7	19.2	308532	27.8	20.5	365100	27.8	21.4	422747	27.9	19.7	346936	27.9	20.1	535237	28.1	20.0
284183	27.7	20.5	336393	27.8	20.8	90924	27.8	20.2	431908	27.9	20.9	251279	27.9	20.7	355398	28.1	19.1
501225	27.7	20.9	233358	27.8	20.1	224364	27.8	20.6	58497	27.9	17.7	357108	27.9	20.5	40252	28.1	19.3
29378	27.7	17.1	222673	27.8	19.9	369810	27.8	19.6	470931	27.9	20.3	539671	27.9	19.8	451653	28.1	20.0
323116	27.7	19.8	188206	27.8	18.7	500982	27.8	20.9	270482	27.9	20.6	494768	27.9	20.7	57018	28.1	18.3
338848	27.7	21.8	498636	27.8	21.2	538518	27.8	20.4	533879	27.9	21.5	249463	27.9	19.1	159330	28.1	19.2
88779	27.7	19.9	269567	27.8	19.2	371061	27.8	19.6	129273	27.9	18.8	411876	27.9	19.7	309854	28.1	20.5
508612	27.7	21.0	24929	27.8	18.2	505616	27.8	20.7	507616	27.9	21.9	134417	27.9	18.3	43241	28.1	18.6
510482	27.7	20.4	391411	27.8	19.7	528489	27.8	21.0	455653	27.9	20.8	531766	27.9	21.8	122292	28.1	17.8
326976	27.7	19.2	400256	27.8	19.1	226761	27.8	19.6	95238	27.9	18.7	474600	27.9	19.3	99923	28.1	19.0
265723	27.7	19.8	376790	27.8	19.0	526123	27.8	20.6	151874	27.9	19.8	479204	27.9	21.3	489015	28.1	20.1
400289	27.7	19.4	47543	27.8	18.7	501523	27.8	20.7	501465	27.9	20.4	738	27.9	14.3	155297	28.1	19.3
10041	27.7	16.9	66754	27.8	19.1	468759	27.8	20.3	106789	27.9	20.1	120224	27.9	19.2	170936	28.1	19.7
354738	27.7	20.9	128889	27.8	19.3	479909	27.8	20.0	153717	27.9	20.6	250563	27.9	20.2	212315	28.1	18.6
534850	27.7	21.4	251790	27.8	19.2	371245	27.8	21.5	524790	27.9	20.2	72424	27.9	18.8	370100	28.1	19.7
368709	27.7	20.1	504397	27.8	21.2	167894	27.9	20.2	406476	27.9	21.2	31283	27.9	19.7	430178	28.1	20.4
433570	27.7	20.5	463089	27.8	22.9	217926	27.9	18.2	180769	27.9	18.6	104108	27.9	18.7	75428	28.1	18.8
359890	27.7	19.9	90914	27.8	18.2	158208	27.9	18.9	492547	27.9	19.7	308046	27.9	19.6	101505	28.1	19.3
418	27.7	13.0	421252	27.8	20.8	29412	27.9	18.5	525196	27.9	21.2	9219	27.9	16.4	432258	28.1	21.0
375919	27.7	20.6	192706	27.8	18.7	503590	27.9	20.1	137591	27.9	18.9	175916	27.9	20.6	344576	28.1	20.5
405311	27.7	19.0	2041	27.8	17.0	106762	27.9	18.5	437222	27.9	19.7	129327	27.9	19.0	495846	28.1	20.0
222748	27.7	20.3	528921	27.8	21.3	419339	27.9	22.0	536474	27.9	21.7	501062	28.0	20.0	470540	28.1	20.4
361479	27.7	21.1	18915	27.8	18.4	305789	27.9	20.7	518174	27.9	20.6	381573	28.0	20.3	29149	28.1	17.3
526576	27.7	20.6	154503	27.8	18.8	87254	27.9	18.6	401772	27.9	20.0	497017	28.0	21.3	336168	28.1	19.6
150833	27.7	20.3	64463	27.8	18.2	350650	27.9	20.5	322854	27.9	19.6	99978	28.0	20.1	293498	28.1	19.7
355606	27.7	19.9	191966	27.8	18.8	264216	27.9	20.3	477090	27.9	20.4	219629	28.0	19.0	213212	28.1	19.9
250084	27.7	19.7	461570	27.8	20.0	438871	27.9	20.1	115500	27.9	19.2	398639	28.0	20.7	367139	28.1	19.8
371728	27.7	21.1	504485	27.8	21.8	540272	27.9	21.4	301004								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
313695	28.1	19.9	53359	28.2	18.5	100280	28.3	19.7	8199	28.3	16.1	465075	28.4	19.8	526357	28.5	23.0
267369	28.1	20.5	502790	28.2	20.4	401499	28.3	19.7	85967	28.3	18.3	426962	28.4	20.2	69183	28.5	17.9
68645	28.1	18.4	29132	28.2	19.3	456762	28.3	21.0	58526	28.3	19.4	403530	28.4	20.8	455585	28.5	20.0
359705	28.1	19.7	316345	28.2	20.8	477581	28.3	19.7	477995	28.3	20.1	20898	28.4	18.8	474878	28.5	20.4
475166	28.1	21.0	467295	28.2	20.6	222702	28.3	20.0	462151	28.3	21.8	118109	28.4	19.0	259114	28.5	20.6
530884	28.1	20.6	162650	28.2	19.6	430295	28.3	20.3	348905	28.3	20.5	538003	28.4	20.7	426182	28.5	19.7
272959	28.1	20.6	396233	28.2	19.6	196729	28.3	19.3	137854	28.3	20.2	115478	28.4	18.7	527897	28.5	22.4
501416	28.1	21.5	15414	28.2	18.0	112689	28.3	18.5	287810	28.3	20.2	436714	28.4	19.5	412286	28.5	20.6
90054	28.1	19.4	457204	28.2	21.1	336373	28.3	20.2	245478	28.3	19.7	500920	28.4	20.5	10472	28.5	16.3
431059	28.1	20.9	123748	28.2	19.4	301865	28.3	20.3	336333	28.3	20.3	193952	28.4	19.7	499292	28.5	21.4
359837	28.1	19.2	229817	28.2	19.6	469408	28.3	21.1	351531	28.3	20.4	232911	28.4	19.8	157782	28.5	18.9
225958	28.1	20.1	398979	28.2	21.3	359047	28.3	20.2	500193	28.3	20.7	429175	28.4	21.2	381555	28.5	20.2
162757	28.1	19.8	192931	28.2	19.8	328334	28.3	18.9	334767	28.3	19.6	62957	28.4	18.5	50551	28.5	16.5
270455	28.1	21.6	251221	28.2	19.3	201156	28.3	19.6	371051	28.3	20.5	183155	28.4	20.1	246285	28.5	20.3
501244	28.1	20.2	480188	28.2	20.0	202418	28.3	20.5	154081	28.3	20.3	32920	28.4	19.0	146897	28.5	20.0
471476	28.1	21.6	165261	28.2	20.3	83165	28.3	19.6	375923	28.3	20.6	149823	28.4	19.7	312923	28.5	20.0
31073	28.1	18.7	317948	28.2	19.6	499898	28.3	19.9	348573	28.3	20.9	525319	28.4	22.8	276686	28.5	19.8
187181	28.1	20.0	428886	28.2	20.6	178577	28.3	20.4	287199	28.3	20.0	214203	28.4	19.9	248284	28.5	19.7
274143	28.1	18.7	293156	28.2	20.3	522671	28.3	20.0	435943	28.3	20.3	394658	28.4	20.7	478883	28.5	20.6
299427	28.1	21.0	530725	28.2	21.0	35497	28.3	18.5	351535	28.3	20.2	92007	28.4	20.1	372595	28.5	20.0
29466	28.1	17.2	355170	28.2	21.7	246672	28.3	19.7	159314	28.3	19.5	137974	28.4	19.4	298301	28.5	19.4
364568	28.1	19.3	165516	28.2	19.7	140692	28.3	18.6	13802	28.3	15.7	52838	28.4	18.3	85818	28.5	19.8
248380	28.1	19.4	237933	28.2	20.0	530522	28.3	19.8	396490	28.3	20.8	472508	28.4	20.1	368722	28.5	20.4
172358	28.1	19.9	212916	28.2	19.8	384147	28.3	20.9	62620	28.3	18.5	102755	28.4	19.6	506879	28.5	20.6
173090	28.1	19.6	539292	28.2	19.9	314288	28.3	20.0	292880	28.3	19.3	371642	28.4	20.5	34091	28.5	17.5
344586	28.1	21.5	251030	28.2	19.1	403908	28.3	21.1	183902	28.3	20.2	284131	28.4	20.0	423255	28.5	19.3
267312	28.1	21.0	268953	28.2	19.5	116864	28.3	18.6	19450	28.4	17.3	287470	28.4	20.6	463664	28.5	22.1
525791	28.1	21.0	8730	28.2	16.3	88068	28.3	19.2	480067	28.4	21.1	238085	28.4	18.4	540767	28.5	20.0
135387	28.1	20.3	76503	28.2	19.2	312123	28.3	21.1	224560	28.4	18.2	530656	28.4	20.4	508038	28.5	20.1
5406	28.1	16.0	248907	28.2	20.6	353436	28.3	20.0	244952	28.4	20.4	505601	28.4	21.5	371971	28.5	20.9
395622	28.1	20.6	269367	28.2	19.7	468578	28.3	20.0	505965	28.4	19.7	379240	28.4	21.3	161845	28.5	19.6
151863	28.1	18.7	27753	28.2	16.7	129934	28.3	19.8	436027	28.4	20.5	419213	28.4	20.5	489418	28.5	21.2
400803	28.1	20.1	493384	28.2	20.7	111702	28.3	19.1	377748	28.4	18.9	490564	28.4	22.2	61754	28.5	19.0
190376	28.1	17.6	531820	28.2	20.2	29913	28.3	17.2	202349	28.4	19.5	259188	28.4	19.5	222706	28.5	20.3
167880	28.1	21.1	458897	28.2	21.8	297619	28.3	19.4	453810	28.4	21.7	302074	28.4	20.0	133662	28.5	19.9
305502	28.1	20.1	277651	28.2	19.6	55407	28.3	19.0	477613	28.4	20.8	443669	28.4	19.8	229533	28.5	20.3
176387	28.1	21.0	70676	28.2	19.6	312505	28.3	19.6	373301	28.4	20.1	474126	28.4	21.1	62862	28.5	19.3
288888	28.1	19.4	357919	28.2	20.3	479314	28.3	21.7	380136	28.4	19.2	500942	28.4	19.9	90275	28.5	18.8
223629	28.1	18.6	139976	28.2	19.4	146248	28.3	20.1	93034	28.4	19.3	492332	28.4	20.8	466010	28.5	20.2
331773	28.1	20.9	523063	28.2	21.0	155651	28.3	18.5	200753	28.4	20.5	131553	28.4	20.2	308603	28.5	21.6
189317	28.1	20.6	10599	28.2	16.8	19874	28.3	19.7	419746	28.4	21.1	224332	28.4	18.7	381176	28.5	20.7
307631	28.1	20.4	277342	28.2	18.8	259281	28.3	21.0	389282	28.4	20.7	385480	28.4	20.8	184730	28.5	20.1
539291	28.1	20.1	395577	28.2	20.5	66790	28.3	17.8	166232	28.4	20.1	409124	28.4	21.1	462327	28.5	20.2
31038	28.1	18.3	92520	28.2	17.4	196904	28.3	18.8	19818	28.4	16.8	20880	28.4	18.1	398449	28.5	21.5
297477	28.1	20.0	376824	28.2	20.2	41753	28.3	17.7	197584	28.4	19.5	493588	28.4	20.5	305388	28.5	19.7
502499	28.1	21.1	62163	28.2	19.1	242126	28.3	20.3	543580	28.4	19.6	313843	28.4	19.6	525287	28.5	20.9
79316	28.1	17.6	253928	28.2	20.8	302502	28.3	20.4	521294	28.4	20.4	270378	28.4	20.8	34995	28.5	19.9
388321	28.1	20.6	6980	28.2	16.0	428860	28.3	20.3	184162	28.4	19.4	180121	28.4	20.0	91479	28.5	18.4
517695	28.1	20.0	88175	28.2	18.5	93574	28.3	18.5	392132	28.4	20.0	53031	28.4	17.3	305599	28.5	19.1
256529	28.2	20.4	311046	28.2	19.8	462301	28.3	21.4	535127	28.4	21.9	38914	28.4	18.3	294490	28.5	21.3
459370	28.2	19.6	334796	28.2	20.1	182832	28.3	21.3	64265	28.4	17.4	175693	28.4	20.9	134202	28.5	19.2
285402	28.2	20.3	330020	28.2	20.7	458761	28.3	21.5	300139	28.4	20.3	396338	28.4	20.1	336906	28.5	19.3
425994	28.2	20.8	65607	28.2	18.4	225881	28.3	21.0	140851	28.4	19.0	22720	28.5	17.9	171688	28.5	19.1
212675	28.2	20.4	14660	28.2	15.1	163148	28.3	20.9	7687	28.4	17.4	522910	28.5	20.4	506723	28.5	21.8
528792	28.2	19.3	63076	28.2	17.9	461618	28.3	20.5	58318	28.4	18.6	46752	28.5	18.4	505307	28.5	20.5
377740	28.2	20.3	30854	28.2	18.6	377854	28.3	20.4	331353	28.4	21.5	103042	28.5	18.2	162008	28.5	19.6
275725	28.2	20.5	451666	28.2	20.3	248551	28.3	19.9	348511	28.4	20.4	472158	28.5	20.8	297139	28.5	21.0
176613	28.2	19.3	410381	28.2	21.2	134731	28.3	19.0	99326	28.4	19.2	526817	28.5	22.0	158168	28.5	19.3
391328	28.2	21.4	528267	28.2	21.4	111275	28.3	19.4	470244	28.4	20.2	153963	28.5	20.1	173311	28.5	20.3
293784	28.2	20.2	186240	28.2	18.5	286413	28.3	19.6	276713	28.4	21.3	393045	28.5	20.7	199999	28.5	19.0
206161	28.2	19.0	210387	28.2	19.8	131160	28.3	19.3	417629	28.4	20.0	147754	28.5	19.1	301346	28.5	20.2
502704	28.2	20.4	206949	28.2	20.1	69860	28.3	18.5	491726	28.4	19.6	281853	28.5	20.1	470450	28.5	20.1
57034	28.2	17.5	456706	28.2	20.8	476374	28.3	21.1	216805	28.4	20.3	538027	28.5	22.0	344804	28.5	20.3
479195	28.2	20.1	185513	28.2	19.1	274241	28.3	18.3	266511	28.4	20.3	360281	28.5	19.6	354778	28.5	21.4
146837	28.2	20.0	515047	28.2	20.6	488844	28.3	21.2	425283	28.4	21.0	253176	28.5	20.3	106897	28.5	19.2
509386	28.2	21.9	181455	28.2	20.4	357858	28.3	20.9	92460	28.4	18.7	195571	28.5	18.9	498604	28.5	20.7
519837	28.2	20.9	118666	28.2	18.0	288261	28.3	20.3	172446	28.4	19.8	534685	28.5	22.0	510417	28.5	20.0
452794	28.2	21.4	311293	28.2	20.8	188455	28.3	18.2	259559	28.4	21.0	509388	28.5	20.8	388710	28.5	21.1
463144	28.2	20.3	146218	28.2	19.9	472178	28.3	20.8									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
209428	28.5	19.1	540089	28.6	21.2	94721	28.7	19.1	214992	28.8	19.9	173901	28.9	20.5	182927	28.9	21.0
176539	28.5	18.7	49747	28.6	17.9	357737	28.7	21.7	501518	28.8	20.9	464400	28.9	20.2	371117	28.9	20.7
371084	28.5	21.2	53300	28.6	19.9	125347	28.7	19.5	413862	28.8	19.4	335621	28.9	20.7	15670	28.9	18.1
201611	28.6	20.1	341692	28.6	20.3	82580	28.7	18.3	249825	28.8	19.4	390957	28.9	19.3	416115	28.9	20.3
456793	28.6	20.1	6195	28.6	17.4	125552	28.7	19.1	412196	28.8	20.0	426212	28.9	19.6	535608	28.9	21.3
184843	28.6	19.3	102725	28.6	20.4	123124	28.7	18.5	534636	28.8	21.3	23372	28.9	19.4	350608	28.9	20.4
502682	28.6	20.9	232590	28.6	20.1	26632	28.7	17.1	160710	28.8	18.3	230061	28.9	19.0	151641	28.9	19.5
523084	28.6	19.6	37159	28.6	17.9	216064	28.7	19.4	42650	28.8	18.0	472398	28.9	20.1	274667	28.9	19.1
235974	28.6	20.3	221290	28.6	19.6	348526	28.7	19.9	496752	28.8	20.1	391751	28.9	20.7	243541	28.9	18.8
539554	28.6	20.7	305900	28.6	19.8	244315	28.7	20.0	321094	28.8	20.5	330115	28.9	21.4	385517	28.9	20.4
15291	28.6	16.9	508304	28.6	19.5	163997	28.7	18.9	263618	28.8	19.7	429865	28.9	20.7	393888	28.9	20.8
355172	28.6	20.2	41479	28.6	18.6	292766	28.7	20.1	519422	28.8	20.9	478223	28.9	20.7	110957	28.9	19.6
437663	28.6	20.7	410546	28.6	21.1	195509	28.7	20.3	25898	28.8	17.7	439179	28.9	20.6	450467	28.9	21.3
413923	28.6	20.0	28952	28.6	18.5	292247	28.7	20.0	473421	28.8	21.3	184926	28.9	19.0	34371	28.9	17.8
93906	28.6	18.3	277679	28.6	20.0	39951	28.7	17.0	491888	28.8	21.1	3640	28.9	15.4	435407	28.9	20.3
145632	28.6	19.8	181224	28.6	18.9	267495	28.7	18.7	251747	28.8	20.6	245465	28.9	19.1	54161	28.9	18.4
128448	28.6	19.6	466619	28.6	21.4	192922	28.7	19.5	148452	28.8	19.5	430953	28.9	21.5	447691	28.9	20.8
387990	28.6	19.3	14607	28.6	16.4	530314	28.7	21.2	253032	28.8	20.7	74942	28.9	18.7	240603	28.9	19.2
303398	28.6	20.7	81854	28.6	17.9	539162	28.7	21.0	88557	28.8	18.8	156353	28.9	20.4	524384	28.9	21.0
321141	28.6	20.6	38248	28.6	18.7	128597	28.7	19.3	426679	28.8	20.8	175555	28.9	20.3	304530	28.9	20.5
306990	28.6	19.3	351482	28.6	19.2	38533	28.7	18.7	172572	28.8	18.6	214862	28.9	19.8	96879	28.9	19.4
250551	28.6	19.4	489472	28.6	21.4	239848	28.7	18.2	381460	28.8	21.2	226609	28.9	19.9	300126	28.9	20.1
175385	28.6	18.8	391703	28.6	20.4	92798	28.7	18.6	5632	28.8	15.5	253177	28.9	20.5	17961	28.9	16.8
517134	28.6	20.7	104402	28.6	19.1	246452	28.7	20.0	163978	28.8	19.4	465177	28.9	20.6	359663	28.9	20.3
240047	28.6	20.0	332065	28.6	20.3	391455	28.7	19.8	124880	28.8	20.7	528412	28.9	21.0	436689	28.9	20.5
297808	28.6	19.9	420308	28.6	20.4	410485	28.7	20.9	250094	28.8	20.7	369282	28.9	18.9	363764	28.9	20.3
493573	28.6	20.1	534646	28.6	21.2	497061	28.7	19.5	455563	28.8	20.1	270496	28.9	20.6	480020	28.9	20.0
288616	28.6	18.3	11218	28.6	17.3	21195	28.7	17.7	64788	28.8	17.0	223276	28.9	20.1	251538	28.9	19.7
115108	28.6	18.7	229733	28.6	20.3	117342	28.7	19.9	59485	28.8	18.2	472174	28.9	20.6	329823	28.9	18.6
24726	28.6	17.5	258254	28.6	19.2	536333	28.7	20.4	496297	28.8	21.4	268478	28.9	20.0	502929	28.9	20.8
352489	28.6	20.8	260646	28.7	20.2	173022	28.7	19.6	504664	28.8	21.8	68094	28.9	17.5	328233	28.9	21.0
407925	28.6	19.9	469416	28.7	22.1	166175	28.7	18.3	266784	28.8	19.3	276627	28.9	19.4	311438	28.9	21.0
475895	28.6	20.5	391330	28.7	20.0	85596	28.7	19.1	59511	28.8	17.0	459598	28.9	20.3	310464	28.9	18.0
529407	28.6	20.6	164182	28.7	20.3	544113	28.7	21.0	177867	28.8	19.2	375240	28.9	19.3	352636	28.9	21.1
508303	28.6	20.5	141180	28.7	19.4	147260	28.7	19.7	291857	28.8	18.6	425200	28.9	21.5	499755	28.9	20.0
463189	28.6	20.9	234193	28.7	19.7	406392	28.7	21.0	240308	28.8	19.8	183636	28.9	19.1	507686	28.9	20.9
477609	28.6	20.3	131159	28.7	20.2	146901	28.7	20.4	116494	28.8	19.5	211829	28.9	19.8	504538	28.9	20.2
523170	28.6	20.9	433701	28.7	20.8	110362	28.7	18.0	64980	28.8	18.2	279208	28.9	18.9	506266	28.9	21.2
498757	28.6	21.3	385859	28.7	20.0	522766	28.7	20.3	303786	28.8	20.8	473201	28.9	20.9	512357	28.9	18.9
122268	28.6	18.1	293155	28.7	20.8	231335	28.7	19.7	437621	28.8	20.7	51484	28.9	18.5	450965	28.9	19.5
314678	28.6	19.2	502359	28.7	19.4	247389	28.7	19.1	244349	28.8	18.8	462910	28.9	20.2	163087	28.9	20.1
246765	28.6	20.1	299529	28.7	19.9	512543	28.7	20.5	68523	28.8	18.7	395625	28.9	19.2	10915	28.9	17.8
294709	28.6	20.2	279370	28.7	20.2	453306	28.7	22.3	131940	28.8	19.1	297653	28.9	20.4	157237	28.9	19.1
131923	28.6	18.9	289553	28.7	20.0	131288	28.7	20.2	205842	28.8	20.5	297259	28.9	20.7	57712	28.9	17.1
103318	28.6	18.9	451010	28.7	21.6	121927	28.7	18.8	517272	28.8	20.5	175619	28.9	20.0	538574	28.9	19.2
44222	28.6	17.4	371726	28.7	20.7	393036	28.7	21.1	138677	28.8	20.0	371090	28.9	19.8	260587	28.9	19.0
505632	28.6	20.6	455425	28.7	20.6	128800	28.7	19.5	111703	28.8	20.1	119632	28.9	18.5	27496	28.9	16.7
465388	28.6	20.5	7145	28.7	16.4	111709	28.7	18.6	475593	28.8	21.4	293591	28.9	20.2	247184	28.9	19.5
539268	28.6	19.8	53758	28.7	16.5	401044	28.7	19.8	475181	28.8	20.0	427455	28.9	21.3	174713	28.9	19.3
357791	28.6	19.3	281622	28.7	19.6	338926	28.7	19.2	116487	28.8	20.0	281897	28.9	19.4	306348	28.9	20.3
282749	28.6	20.8	25905	28.7	18.9	213248	28.7	19.7	457676	28.8	21.5	473074	28.9	20.7	25320	29.0	16.7
371099	28.6	21.1	6616	28.7	17.1	212328	28.7	19.5	261454	28.8	20.6	248324	28.9	19.1	512393	29.0	20.5
19415	28.6	18.8	217518	28.7	19.5	52197	28.7	18.8	536246	28.8	20.7	469265	28.9	20.3	423750	29.0	21.3
520007	28.6	20.5	391705	28.7	20.7	422785	28.7	20.7	542003	28.8	20.1	249487	28.9	20.6	110168	29.0	19.4
89427	28.6	17.8	100916	28.7	18.4	229637	28.8	20.0	141533	28.8	17.9	229134	28.9	19.4	506702	29.0	21.9
422618	28.6	20.7	315187	28.7	18.5	10151	28.8	16.1	182262	28.8	20.7	164288	28.9	19.8	168722	29.0	19.2
372568	28.6	20.0	508518	28.7	20.3	308383	28.8	21.8	93103	28.8	19.6	166536	28.9	19.6	473152	29.0	20.5
522993	28.6	20.6	224005	28.7	19.1	147547	28.8	18.7	73613	28.8	19.0	351203	28.9	18.4	409077	29.0	19.6
22185	28.6	17.2	310896	28.7	17.8	850	28.8	13.2	422702	28.8	19.2	355223	28.9	19.3	62101	29.0	19.2
349008	28.6	20.9	407675	28.7	21.0	207493	28.8	20.3	109423	28.8	17.6	86813	28.9	17.7	473127	29.0	20.3
301213	28.6	20.2	353708	28.7	19.1	20958	28.8	15.0	45363	28.8	18.3	111858	28.9	17.8	470104	29.0	20.7
523954	28.6	20.3	309921	28.7	18.9	200955	28.8	19.7	344261	28.8	19.5	401129	28.9	20.8	97275	29.0	17.8
342971	28.6	20.9	511328	28.7	20.9	67545	28.8	18.9	141042	28.8	19.4	81791	28.9	18.6	332519	29.0	18.2
29076	28.6	16.0	240718	28.7	19.2	190488	28.8	19.6	312601	28.8	19.2	492746	28.9	20.3	420170	29.0	21.0
470064	28.6	21.0	499146	28.7	20.0	335800	28.8	18.8	332902	28.8	20.1	509954	28.9	20.5	382254	29.0	19.5
216875	28.6	19.2	401630	28.7	19.6	97306	28.8	19.0	238074	28.8	20.1	358089	28.9	21.4	134675	29.0	18.4
15855	28.6	17.4	378248	28.7	19.8	506765	28.8	21.4	369973	28.8	20.6	437015	28.9	20.8	471886	29.0	20.7
58597	28.6	19.7	533401	28.7	21.9	26774	28.8	17.7	278036	28.8	19.5	62311	28.9	18.6	141340	29.0	20.7
492251	28.6	19.8	272670	28.7	20.4	467497	28.8	21.3	19173								

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
513068	29.0	20.7	20205	29.1	18.1	189597	29.2	17.9	537895	29.3	20.7	326053	29.3	20.8	69479	29.4	20.5
26360	29.0	16.9	365884	29.1	19.7	228369	29.2	20.6	8681	29.3	16.9	362115	29.3	20.3	18257	29.4	18.4
151181	29.0	19.7	109690	29.1	19.1	426618	29.2	20.4	439126	29.3	20.8	291881	29.3	18.9	497226	29.4	20.6
422793	29.0	20.4	364188	29.1	19.0	201626	29.2	19.4	105172	29.3	18.6	102930	29.3	18.4	185514	29.4	19.7
416700	29.0	20.0	390110	29.1	20.7	161974	29.2	19.4	165559	29.3	20.0	159631	29.3	19.4	198199	29.4	19.8
354189	29.0	20.4	430328	29.1	20.2	415089	29.2	20.5	531713	29.3	21.4	190534	29.3	19.4	35920	29.4	18.8
158084	29.0	20.3	270541	29.1	20.6	408315	29.2	21.2	111637	29.3	20.2	18235	29.3	19.0	20560	29.4	17.3
222808	29.0	19.6	530673	29.1	21.1	477159	29.2	21.1	126179	29.3	19.9	542642	29.3	20.3	413833	29.4	20.6
246646	29.0	19.6	192173	29.1	19.7	539193	29.2	21.2	184266	29.3	23.8	172361	29.3	18.8	292791	29.4	20.1
489462	29.0	21.4	526615	29.1	20.0	379898	29.2	19.8	497007	29.3	21.6	229964	29.3	19.5	305382	29.4	20.1
214201	29.0	19.5	52060	29.1	18.0	493033	29.2	19.2	199812	29.3	18.3	410718	29.3	19.4	280955	29.4	20.4
435311	29.0	21.2	192619	29.1	19.9	538898	29.2	20.6	190160	29.3	18.3	416249	29.3	20.9	354935	29.4	19.8
368757	29.0	21.3	32078	29.1	17.9	464470	29.2	21.8	155202	29.3	18.0	322481	29.3	20.0	117566	29.4	20.0
215313	29.0	20.1	196574	29.1	18.5	211437	29.2	20.8	525837	29.3	22.2	427901	29.3	21.4	90465	29.4	18.0
119624	29.0	19.7	28474	29.1	17.7	392542	29.2	19.3	379422	29.3	20.9	268378	29.3	20.8	297261	29.4	20.9
506499	29.0	21.2	385464	29.1	20.7	343890	29.2	20.0	122790	29.3	19.5	146762	29.3	19.5	469712	29.4	20.5
217217	29.0	18.9	509338	29.1	21.0	265332	29.2	19.5	61987	29.3	18.8	90876	29.3	20.0	20414	29.4	17.7
296469	29.0	19.9	200987	29.1	20.2	447739	29.2	19.5	397836	29.3	19.6	113021	29.3	18.9	28303	29.4	17.1
17908	29.0	18.5	463180	29.1	21.8	141137	29.2	19.9	517685	29.3	21.7	532662	29.3	21.8	10271	29.4	16.7
355573	29.0	20.6	248409	29.1	19.6	18486	29.2	18.6	351001	29.3	19.0	152805	29.3	19.9	185165	29.4	20.2
100515	29.0	19.4	240086	29.1	19.9	540936	29.2	21.3	114781	29.3	17.7	406453	29.3	19.8	295741	29.4	19.1
349423	29.0	21.9	529552	29.1	20.9	151852	29.2	20.0	221220	29.3	20.5	379311	29.3	20.0	491851	29.4	20.4
540638	29.1	21.6	341553	29.1	21.2	377772	29.2	20.7	38819	29.3	16.9	169012	29.3	19.7	527568	29.4	22.0
214241	29.1	20.1	160259	29.1	19.7	111747	29.2	20.0	376648	29.3	19.9	505178	29.3	23.2	121463	29.4	18.0
356844	29.1	20.5	34055	29.1	18.2	526082	29.2	21.0	526889	29.3	22.1	390163	29.3	21.6	148615	29.4	20.0
349895	29.1	20.3	333602	29.1	19.1	258995	29.2	18.8	377929	29.3	20.0	469384	29.3	20.8	417750	29.4	20.5
520020	29.1	21.2	540863	29.1	20.9	405002	29.2	19.7	318067	29.3	20.1	510467	29.3	20.1	230639	29.4	18.7
388279	29.1	21.0	401787	29.1	19.8	536942	29.2	20.1	457313	29.3	20.0	34575	29.3	18.4	390986	29.4	20.1
31303	29.1	18.0	159901	29.1	19.8	522390	29.2	20.0	472334	29.3	20.1	439158	29.3	19.6	355147	29.4	21.5
185613	29.1	19.6	186302	29.1	19.9	365205	29.2	19.7	268881	29.3	18.8	169602	29.3	18.6	90829	29.4	18.4
527872	29.1	21.7	18439	29.1	17.7	216029	29.2	18.1	180790	29.3	18.7	272969	29.3	20.1	322445	29.4	20.8
16613	29.1	18.3	310903	29.1	20.0	208033	29.2	18.7	11419	29.3	17.5	27981	29.3	18.3	50924	29.4	18.1
380468	29.1	20.1	55458	29.1	17.4	143213	29.2	18.9	164660	29.3	20.1	164327	29.4	19.7	173888	29.4	20.0
124968	29.1	18.0	115129	29.1	18.2	415626	29.2	20.9	87819	29.3	18.4	346259	29.4	22.3	158497	29.4	19.6
2056	29.1	14.5	299930	29.1	20.4	68632	29.2	18.7	37991	29.3	17.9	387468	29.4	20.6	425074	29.4	20.3
224408	29.1	19.1	224921	29.1	19.4	121332	29.2	18.6	417641	29.3	21.3	506410	29.4	19.9	300089	29.4	19.4
106583	29.1	19.1	533108	29.1	21.1	156448	29.2	20.2	9146	29.3	16.5	54334	29.4	18.4	505915	29.4	20.4
254973	29.1	20.8	308396	29.1	20.0	257839	29.2	20.5	18641	29.3	16.9	162697	29.4	19.2	475301	29.4	21.0
213880	29.1	19.7	515688	29.1	19.2	474222	29.2	21.1	11151	29.3	16.3	148809	29.4	19.6	332551	29.4	19.4
291731	29.1	19.9	533608	29.1	21.1	533695	29.2	19.4	533871	29.3	21.4	175569	29.4	20.1	154565	29.4	19.1
229515	29.1	19.9	20083	29.1	18.0	463832	29.2	20.4	284968	29.3	19.8	308528	29.4	21.7	356562	29.4	20.1
298340	29.1	21.0	166026	29.1	19.8	276425	29.2	20.3	228542	29.3	20.5	110648	29.4	19.2	534967	29.4	20.1
208697	29.1	17.7	497057	29.1	20.6	106155	29.2	19.1	176058	29.3	19.5	41052	29.4	18.1	221123	29.4	19.5
324427	29.1	20.9	283635	29.1	20.0	230944	29.2	20.3	471892	29.3	20.6	188450	29.4	18.8	376126	29.4	20.9
156354	29.1	20.6	489760	29.1	21.6	312569	29.2	19.7	464773	29.3	21.4	251653	29.4	19.4	359982	29.4	20.3
202466	29.1	20.4	70999	29.1	17.7	311501	29.2	20.3	419606	29.3	20.2	396335	29.4	20.1	23039	29.4	16.7
204368	29.1	19.5	475647	29.1	20.9	59685	29.2	18.9	460296	29.3	19.7	390992	29.4	20.3	208404	29.4	19.6
287459	29.1	20.1	124815	29.1	18.4	88085	29.2	18.9	398894	29.3	21.0	377861	29.4	21.1	304109	29.4	20.5
354689	29.1	20.6	163202	29.1	19.9	175375	29.2	19.7	357103	29.3	20.7	519001	29.4	20.8	365505	29.4	19.6
467503	29.1	21.8	309185	29.1	20.7	491914	29.2	21.0	524993	29.3	20.3	495594	29.4	19.0	229226	29.4	19.5
372456	29.1	20.2	530697	29.1	21.1	31248	29.2	19.4	520075	29.3	20.2	455558	29.4	17.8	140749	29.4	20.7
156297	29.1	20.1	169615	29.1	18.7	432466	29.2	22.1	308130	29.3	20.3	230415	29.4	18.0	124531	29.4	19.3
176577	29.1	19.7	456674	29.1	20.8	173005	29.2	19.0	69673	29.3	18.8	99480	29.4	19.7	281517	29.4	20.3
152826	29.1	20.0	402810	29.1	21.1	182077	29.2	19.3	471862	29.3	21.0	399176	29.4	18.5	116875	29.4	19.2
56189	29.1	18.6	463159	29.1	21.9	465395	29.2	20.3	499232	29.3	21.1	312205	29.4	20.9	288280	29.4	19.6
528928	29.1	21.9	437695	29.1	19.9	87798	29.2	18.4	112383	29.3	17.6	12317	29.4	17.5	417277	29.4	20.9
193287	29.1	20.1	327197	29.1	20.1	457562	29.2	21.2	450560	29.3	21.5	300046	29.4	20.1	57309	29.4	19.5
538232	29.1	22.1	471952	29.1	19.9	507806	29.2	20.5	194676	29.3	18.8	526250	29.4	19.8	67537	29.4	17.1
395629	29.1	20.1	358004	29.2	21.4	495384	29.2	20.0	267363	29.3	20.7	190350	29.4	20.7	505792	29.4	20.6
306317	29.1	20.4	359062	29.2	20.0	140701	29.2	18.7	542818	29.3	20.4	239533	29.4	19.6	511547	29.4	20.7
530336	29.1	22.3	54602	29.2	18.0	369922	29.2	21.4	149870	29.3	20.5	436690	29.4	20.4	38788	29.4	17.6
164433	29.1	18.8	179470	29.2	21.2	530905	29.2	21.1	224277	29.3	20.0	341221	29.4	20.6	429288	29.4	20.6
103348	29.1	18.5	268032	29.2	18.5	505605	29.2	21.3	60076	29.3	18.5	439376	29.4	20.8	203467	29.4	17.2
540596	29.1	20.4	409393	29.2	21.1	224498	29.2	19.6	528486	29.3	21.4	40490	29.4	18.4	377649	29.4	20.1
527886	29.1	22.1	205649	29.2	20.5	419644	29.2	19.6	21531	29.3	18.6	145448	29.4	18.9	309229	29.4	20.4
207886	29.1	19.1	503532	29.2	20.3	354785	29.2	19.8	500775	29.3	21.9	495383	29.4	20.6	433686	29.4	20.8
107824	29.1	19.9	474830	29.2	19.9	456763	29.2	21.0	222516	29.3	20.3	3978	29.4	16.1	64432	29.5	20.0
500267	29.1	20.1	530379	29.2	21.3	31582	29.2	18.7	329597	29.3	20.3	192907	29.4	20.3	212892	29.5	21.1
323906	29.1	19.9	359037	29.2	21.0	273019	29.2	2									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
188469	29.5	18.6	302812	29.6	19.8	288586	29.6	19.8	198805	29.7	19.7	475616	29.8	20.9	302320	29.9	20.1
428755	29.5	20.4	470490	29.6	21.3	86239	29.6	18.5	70932	29.7	19.2	69938	29.8	18.7	528458	29.9	21.6
502735	29.5	21.6	329769	29.6	19.9	352084	29.6	20.5	349413	29.7	20.6	224401	29.8	19.3	54207	29.9	16.7
18727	29.5	17.4	110627	29.6	19.6	357311	29.6	20.3	55873	29.7	18.5	412979	29.8	20.6	335834	29.9	19.7
58807	29.5	18.7	299748	29.6	21.0	238083	29.6	18.6	130853	29.7	19.0	389189	29.8	20.0	86286	29.9	19.4
166181	29.5	19.2	247474	29.6	19.2	161006	29.6	19.7	469889	29.7	20.2	114542	29.8	18.3	511969	29.9	20.3
5571	29.5	16.6	418356	29.6	20.8	384852	29.6	20.6	170472	29.7	20.2	464011	29.8	20.1	527397	29.9	21.0
290638	29.5	20.5	503490	29.6	20.8	268357	29.6	21.1	522629	29.7	20.5	84852	29.8	18.9	466592	29.9	20.8
219743	29.5	18.0	69724	29.6	19.1	498605	29.6	19.7	67263	29.7	18.5	394347	29.8	21.5	404217	29.9	20.8
297798	29.5	20.4	2232	29.6	14.8	470080	29.6	20.5	379683	29.7	20.6	278847	29.8	19.9	36564	29.9	18.3
86222	29.5	18.7	235252	29.6	19.3	19984	29.6	18.0	203038	29.7	19.9	540843	29.8	21.0	329056	29.9	19.0
57445	29.5	20.0	84569	29.6	18.3	216751	29.6	19.3	52530	29.7	18.7	501285	29.8	21.2	380923	29.9	21.4
72021	29.5	19.1	73657	29.6	18.2	128015	29.6	18.7	309985	29.7	21.4	445867	29.8	20.6	155590	29.9	19.5
56932	29.5	19.2	156858	29.6	18.2	31439	29.6	17.3	207781	29.7	19.6	86982	29.8	17.2	241444	29.9	20.6
58781	29.5	18.9	235906	29.6	19.8	36831	29.6	18.2	176426	29.7	19.8	285333	29.8	21.2	261128	29.9	19.7
520242	29.5	21.0	61137	29.6	17.8	462302	29.6	21.3	240817	29.7	20.4	160832	29.8	19.0	214731	29.9	20.4
304644	29.5	20.2	262929	29.6	19.4	410437	29.6	21.2	406569	29.7	19.6	533155	29.8	22.3	289547	29.9	19.8
397116	29.5	21.2	43162	29.6	17.9	431068	29.6	20.7	106909	29.7	19.7	277695	29.8	21.9	134274	29.9	20.8
214292	29.5	20.3	311975	29.6	20.4	385482	29.6	20.3	538149	29.7	21.6	477198	29.8	21.2	138719	29.9	19.5
429717	29.5	20.0	300093	29.6	20.7	496849	29.6	21.8	271757	29.7	19.8	90003	29.8	18.7	156497	29.9	20.2
131744	29.5	19.2	383876	29.6	20.4	99359	29.6	18.8	370111	29.7	19.5	34618	29.8	17.5	428799	29.9	19.3
14042	29.5	16.9	208649	29.6	20.2	406467	29.6	20.9	336286	29.7	20.7	508288	29.8	20.1	93044	29.9	19.1
198860	29.5	18.3	394311	29.6	21.0	125929	29.7	17.7	499344	29.7	20.3	135145	29.8	19.1	151044	29.9	19.0
207642	29.5	19.9	140836	29.6	18.4	264082	29.7	19.0	73382	29.7	18.4	259441	29.8	19.3	57539	29.9	18.0
206724	29.5	20.2	92746	29.6	19.0	328954	29.7	20.8	499300	29.7	21.3	540993	29.8	20.5	379666	29.9	20.1
70614	29.5	19.1	505209	29.6	20.1	467758	29.7	20.0	1435	29.7	17.7	343420	29.8	20.4	7198	29.9	15.1
385455	29.5	20.2	149859	29.6	19.0	505920	29.7	20.8	421010	29.7	19.5	507731	29.8	19.7	147668	29.9	18.3
238314	29.5	20.1	463474	29.6	19.6	303825	29.7	20.6	249564	29.7	19.1	191708	29.8	18.7	409394	29.9	20.4
82555	29.5	18.9	299494	29.6	20.5	244112	29.7	20.3	129799	29.7	18.4	373574	29.8	18.9	115080	29.9	19.3
373146	29.5	19.4	36940	29.6	16.2	285952	29.7	19.9	512600	29.7	20.6	196175	29.8	19.2	477605	29.9	19.2
192816	29.5	19.8	539459	29.6	20.7	524798	29.7	20.9	109594	29.7	19.0	372628	29.8	21.8	233959	29.9	20.5
397276	29.5	20.2	239849	29.6	23.7	340156	29.7	20.3	119502	29.7	20.0	302313	29.8	19.7	255748	29.9	20.4
369393	29.5	18.6	392958	29.6	19.2	200155	29.7	19.1	2025	29.7	14.5	166264	29.8	18.9	351612	29.9	20.7
4396	29.5	15.0	240457	29.6	19.1	38491	29.7	18.8	290292	29.7	20.5	419439	29.8	20.6	213037	29.9	20.9
65839	29.5	18.0	303418	29.6	21.4	240807	29.7	20.5	53265	29.7	18.5	396097	29.8	20.7	501811	29.9	21.7
371028	29.5	20.5	150630	29.6	19.8	476390	29.7	20.8	154523	29.7	19.8	200633	29.8	19.3	207547	29.9	19.3
117287	29.5	18.6	299974	29.6	20.4	354159	29.7	21.2	420585	29.7	21.3	495093	29.8	20.7	541972	29.9	20.5
231798	29.5	19.2	328350	29.6	20.4	393001	29.7	20.6	199063	29.7	19.4	149816	29.8	19.3	7277	29.9	16.0
249172	29.5	19.1	437675	29.6	20.1	379384	29.7	20.5	303198	29.7	18.9	304749	29.8	20.0	280758	29.9	18.9
7893	29.5	16.8	376807	29.6	18.3	104527	29.7	19.2	265735	29.7	20.6	470520	29.8	21.2	248083	29.9	22.5
155564	29.5	17.6	431136	29.6	20.9	1311	29.7	15.7	114754	29.7	18.8	275117	29.8	19.0	209445	29.9	19.0
56427	29.5	18.9	320517	29.6	19.9	267355	29.7	21.4	33398	29.7	18.2	249181	29.8	19.5	109565	29.9	19.6
117626	29.5	18.6	121986	29.6	18.8	169610	29.7	18.5	494452	29.7	21.7	463308	29.8	20.7	392400	29.9	19.4
518917	29.5	21.5	437284	29.6	20.1	435893	29.7	20.9	402981	29.7	19.8	413249	29.8	20.3	412055	29.9	19.9
115065	29.5	19.1	356313	29.6	19.2	24134	29.7	18.7	409401	29.7	21.0	478284	29.8	20.2	495381	29.9	20.0
178213	29.5	19.2	303889	29.6	20.3	370035	29.7	20.7	503024	29.7	21.3	77949	29.8	18.4	57604	29.9	17.6
506273	29.5	20.2	512521	29.6	20.2	72398	29.7	18.6	525675	29.7	20.7	396204	29.8	20.2	148543	29.9	19.4
199290	29.5	20.0	234997	29.6	19.4	301992	29.7	18.8	363626	29.7	22.3	61062	29.8	18.3	426228	29.9	20.7
298386	29.5	20.2	141767	29.6	19.0	544791	29.7	19.6	193791	29.7	17.5	37787	29.8	18.9	242465	29.9	20.2
377764	29.5	20.8	374381	29.6	21.1	130761	29.7	19.3	6745	29.8	17.0	504687	29.8	21.8	334915	29.9	19.9
278629	29.5	20.2	326343	29.6	18.3	441835	29.7	20.4	242174	29.8	19.5	524756	29.8	20.8	309149	29.9	19.3
527089	29.5	21.8	439621	29.6	20.0	397014	29.7	21.4	431610	29.8	19.8	344835	29.8	19.9	334755	29.9	19.3
360971	29.5	20.9	370948	29.6	21.5	374500	29.7	19.8	178724	29.8	19.9	140965	29.8	20.2	190660	29.9	19.8
163330	29.5	19.1	43647	29.6	19.2	269625	29.7	21.0	475646	29.8	21.2	109710	29.8	18.9	122426	29.9	18.9
395086	29.5	20.4	66271	29.6	17.7	506452	29.7	20.3	87761	29.8	17.9	350927	29.8	19.6	415628	29.9	19.7
304316	29.5	20.8	69808	29.6	18.4	500981	29.7	20.8	496659	29.8	20.8	44880	29.8	18.9	416045	29.9	21.4
92517	29.5	17.9	508712	29.6	20.2	313721	29.7	19.3	303464	29.8	20.8	461363	29.8	21.3	540950	29.9	21.4
173080	29.5	18.5	107145	29.6	19.2	457196	29.7	21.8	371006	29.8	19.5	295604	29.8	20.4	418410	29.9	20.5
303442	29.5	20.9	433078	29.6	20.1	151756	29.7	20.2	454469	29.8	19.2	503408	29.8	20.0	167824	29.9	18.9
540045	29.5	20.2	41109	29.6	19.7	406349	29.7	19.8	500275	29.8	20.5	300222	29.8	19.7	158085	29.9	19.6
336219	29.5	19.9	184407	29.6	20.1	30667	29.7	18.5	64003	29.8	20.3	347004	29.8	20.1	139708	29.9	19.4
455727	29.5	21.7	24818	29.6	19.9	492362	29.7	21.5	163434	29.8	19.5	370042	29.8	20.2	209502	29.9	20.4
13705	29.5	16.6	454152	29.6	20.4	20332	29.7	17.3	255716	29.8	19.9	244508	29.8	19.6	6578	29.9	17.0
215222	29.5	17.9	10957	29.6	18.2	499185	29.7	20.6	526617	29.8	19.6	109212	29.8	19.1	31256	29.9	16.5
181174	29.5	20.0	502738	29.6	20.7	502955	29.7	21.8	167456	29.8	18.9	54156	29.9	17.6	78884	29.9	19.4
258418	29.5	20.4	10831	29.6	19.6	7385	29.7	17.3	99381	29.8	17.6	204816	29.9	20.8	432562	29.9	19.5
184999	29.5	20.6	5201	29.6	21.5	311852	29.7	20.0	77948	29.8	17.9	520333	29.9	21.0	156277	29.9	19.8
476425	29.5	20.5	268399	29.6	20.2	78877	29.7	18.4	352487	29.8	20.5	349080	29.9	20.1	249079	29.9	20.0
198483	29.5	20.5	232557	29.6	19.7	237130	29.7	20.3	398037	29.8	21						

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
174491	29.9	19.5	2943	30.0	15.1	474593	30.1	19.9	86408	30.2	19.5	209571	30.2	20.1	239486	30.3	20.2
526631	29.9	20.5	437428	30.0	19.3	519882	30.1	20.1	391304	30.2	20.4	435604	30.2	21.2	182171	30.3	20.0
141969	29.9	19.2	354131	30.0	19.7	262762	30.1	21.1	166275	30.2	18.2	491864	30.3	22.5	117345	30.3	19.1
355895	29.9	21.1	512503	30.0	20.7	335137	30.1	19.4	479200	30.2	20.6	102052	30.3	18.7	58941	30.3	19.3
518028	29.9	20.3	538533	30.0	20.5	256237	30.1	20.2	125495	30.2	19.7	415719	30.3	20.9	128950	30.3	20.0
60945	29.9	17.7	497451	30.0	19.8	421343	30.1	20.5	502926	30.2	20.1	489479	30.3	20.9	506477	30.3	21.0
509924	29.9	19.7	127138	30.0	19.2	395876	30.1	20.6	95915	30.2	19.2	504646	30.3	20.9	474805	30.3	20.5
304577	29.9	21.0	530669	30.0	22.4	145712	30.1	19.9	305438	30.2	19.7	293123	30.3	21.8	477607	30.3	18.5
38831	29.9	17.7	54755	30.0	18.6	439338	30.1	20.8	196205	30.2	19.6	193986	30.3	19.5	135113	30.3	18.0
535885	29.9	21.4	34086	30.0	17.3	204793	30.1	19.9	458900	30.2	21.5	107942	30.3	19.1	334866	30.3	18.5
278814	29.9	19.7	92580	30.0	19.1	109078	30.1	18.4	355651	30.2	19.7	472286	30.3	20.7	135568	30.3	18.2
153235	29.9	21.6	393085	30.0	20.0	330303	30.1	19.3	528945	30.2	21.8	181564	30.3	20.9	216917	30.3	18.9
322290	29.9	19.3	153764	30.0	19.5	491865	30.1	22.5	303818	30.2	20.6	421504	30.3	20.2	360855	30.3	20.1
466310	29.9	19.2	510818	30.0	21.1	408240	30.1	20.5	502787	30.2	21.2	415747	30.3	20.4	449124	30.3	21.4
251627	29.9	18.9	8355	30.0	15.5	355805	30.1	21.2	287441	30.2	20.0	277614	30.3	20.8	386507	30.3	20.9
123311	29.9	19.4	458799	30.0	21.1	356819	30.1	20.1	455414	30.2	20.5	503261	30.3	19.6	101921	30.3	18.6
305851	29.9	20.9	97076	30.0	19.4	297639	30.1	19.5	159720	30.2	20.2	222703	30.3	19.1	269010	30.3	19.8
387354	29.9	20.2	196350	30.0	19.5	67797	30.1	18.7	59734	30.2	19.1	469097	30.3	21.0	248045	30.3	18.9
425965	29.9	20.9	303895	30.1	20.0	285819	30.1	20.6	302012	30.2	20.1	267339	30.3	21.0	471389	30.3	21.2
463179	29.9	22.6	249377	30.1	19.9	498825	30.1	20.9	181730	30.2	20.7	238119	30.3	18.7	336897	30.3	20.0
328296	29.9	19.2	523078	30.1	20.9	334841	30.1	19.4	88434	30.2	17.8	52542	30.3	18.4	519848	30.3	19.9
20155	29.9	17.2	320717	30.1	21.2	357818	30.1	21.6	240825	30.2	19.9	414892	30.3	21.1	479944	30.4	21.3
106710	29.9	17.9	432365	30.1	20.7	35098	30.1	18.7	536596	30.2	20.7	304619	30.3	21.3	374591	30.4	20.8
225498	29.9	18.3	235849	30.1	20.8	347213	30.1	19.3	95547	30.2	19.2	81562	30.3	18.2	453338	30.4	22.3
152185	29.9	18.6	179474	30.1	21.0	505241	30.1	20.5	363310	30.2	18.8	95282	30.3	18.7	341802	30.4	20.8
256819	29.9	20.1	203455	30.1	20.0	208015	30.1	18.8	415139	30.2	21.2	10482	30.3	16.4	184834	30.4	20.1
543511	29.9	19.7	180746	30.1	18.9	531921	30.1	21.4	91299	30.2	19.3	506033	30.3	20.8	430786	30.4	20.8
39588	29.9	18.8	196675	30.1	19.4	355263	30.1	18.4	422850	30.2	21.3	202802	30.3	20.2	475758	30.4	20.5
106170	29.9	19.7	478242	30.1	21.0	452793	30.1	21.2	346118	30.2	22.1	280367	30.3	19.6	215645	30.4	21.2
68631	29.9	19.0	220352	30.1	20.3	483238	30.1	20.5	360017	30.2	20.0	301406	30.3	20.5	204669	30.4	19.3
16873	29.9	17.1	14144	30.1	17.4	525225	30.1	19.7	391312	30.2	21.1	533182	30.3	20.9	398932	30.4	20.8
194635	29.9	18.7	419592	30.1	20.3	377917	30.1	20.7	492213	30.2	20.2	56659	30.3	17.9	194123	30.4	20.4
297650	29.9	19.8	142112	30.1	18.7	94001	30.1	18.7	152080	30.2	20.0	464525	30.3	20.7	462938	30.4	20.8
520230	29.9	21.1	18929	30.1	18.6	425171	30.1	21.2	287501	30.2	20.3	380615	30.3	20.5	447735	30.4	20.8
96428	29.9	19.6	297431	30.1	19.7	55086	30.1	18.3	223295	30.2	20.0	17698	30.3	17.5	501054	30.4	19.1
502373	29.9	20.5	47642	30.1	19.1	17690	30.1	19.2	322512	30.2	19.7	290725	30.3	20.5	159283	30.4	19.2
136466	29.9	18.3	129033	30.1	19.3	363838	30.1	20.2	506887	30.2	21.6	333137	30.3	21.3	314362	30.4	20.6
475768	29.9	21.0	96925	30.1	19.2	136753	30.1	20.4	168853	30.2	20.2	432938	30.3	20.0	202323	30.4	19.9
163260	29.9	19.4	272660	30.1	20.2	386639	30.1	19.0	350676	30.2	21.1	309900	30.3	20.4	505626	30.4	22.1
291140	29.9	19.9	303815	30.1	19.8	308388	30.1	19.9	153994	30.2	21.2	70332	30.3	18.8	129316	30.4	19.5
536581	29.9	19.8	522595	30.1	21.6	360425	30.1	18.7	299388	30.2	20.1	318785	30.3	19.6	154344	30.4	19.2
70342	29.9	17.4	279390	30.1	20.0	91596	30.1	18.7	524331	30.2	21.3	522499	30.3	21.2	241312	30.4	20.7
373485	29.9	20.5	413073	30.1	21.3	298745	30.1	20.7	321247	30.2	20.7	398436	30.3	21.1	540406	30.4	20.3
532807	29.9	22.4	540506	30.1	21.4	74892	30.1	19.3	529391	30.2	21.8	467507	30.3	21.0	272561	30.4	18.7
187725	29.9	19.4	436605	30.1	20.9	411765	30.1	20.1	501941	30.2	21.1	398455	30.3	20.9	131667	30.4	19.3
528469	30.0	21.1	234038	30.1	20.2	500170	30.1	20.3	489695	30.2	19.5	40238	30.3	18.0	102186	30.4	20.7
426579	30.0	21.0	317826	30.1	19.3	502934	30.1	22.1	495338	30.2	19.7	457544	30.3	22.0	265627	30.4	19.9
428348	30.0	18.9	499549	30.1	20.7	18026	30.1	19.1	20063	30.2	17.8	457723	30.3	21.2	308597	30.4	18.8
454136	30.0	22.0	475777	30.1	20.7	501331	30.1	20.9	220124	30.2	22.2	300080	30.3	20.4	308926	30.4	20.9
395073	30.0	21.1	404928	30.1	18.4	540848	30.1	21.6	128543	30.2	18.0	380052	30.3	20.2	128669	30.4	17.9
400504	30.0	22.1	475004	30.1	21.4	258700	30.1	18.7	52468	30.2	19.6	535191	30.3	22.5	13427	30.4	17.6
29850	30.0	17.7	440912	30.1	20.9	274402	30.1	20.2	188263	30.2	19.6	7011	30.3	17.0	380913	30.4	20.8
140143	30.0	18.9	308755	30.1	19.7	528472	30.1	20.6	146351	30.2	17.8	65311	30.3	19.7	139379	30.4	18.8
462306	30.0	20.6	202246	30.1	19.4	63103	30.1	17.8	328255	30.2	18.7	81932	30.3	18.0	431101	30.4	21.5
463254	30.0	20.4	69098	30.1	19.1	356880	30.1	19.9	258622	30.2	20.2	527074	30.3	21.8	100652	30.4	19.2
162155	30.0	19.3	425394	30.1	20.9	157761	30.1	19.0	56256	30.2	17.9	480241	30.3	20.5	38630	30.4	18.4
249455	30.0	19.9	243303	30.1	18.6	93953	30.1	19.2	437555	30.2	21.5	315472	30.3	20.3	308523	30.4	19.1
214832	30.0	20.0	389260	30.1	20.8	504626	30.1	20.9	174620	30.2	18.2	471908	30.3	22.1	478317	30.4	22.1
86671	30.0	18.2	492978	30.1	18.4	14699	30.1	16.7	501144	30.2	19.0	45433	30.3	18.5	496722	30.4	20.2
410371	30.0	19.8	282593	30.1	20.1	125261	30.1	19.6	305559	30.2	19.7	535566	30.3	21.9	224531	30.4	19.8
212544	30.0	19.8	507866	30.1	21.8	540516	30.1	21.1	284423	30.2	19.3	98338	30.3	16.7	329383	30.4	20.1
17997	30.0	17.6	233074	30.1	19.8	161917	30.1	20.2	384114	30.2	22.0	104863	30.3	19.3	170837	30.4	20.3
480453	30.0	19.5	324396	30.1	20.2	407709	30.1	21.5	376419	30.2	18.8	56135	30.3	19.9	532649	30.4	21.4
106272	30.0	19.1	427488	30.1	20.6	68601	30.1	18.1	507538	30.2	21.9	237664	30.3	20.0	162436	30.4	19.1
145548	30.0	19.4	35832	30.1	18.3	99390	30.1	19.1	211107	30.2	20.9	530807	30.3	19.6	423973	30.4	19.1
467731	30.0	20.5	405496	30.1	20.6	374507	30.1	19.7	169001	30.2	19.9	427879	30.3	21.3	138752	30.4	19.4
162700	30.0	18.9	498724	30.1	20.7	307769	30.1	20.4	211478	30.2	19.6	67357	30.3	19.0	308476	30.4	19.8
150924	30.0	18.9	123631	30.1	18.9	197072	30.1	17.9	296829	30.2	19.7	456097	30.3	19.3	323407	30.4	21.4
252995	30.0	20.5	177621	30.1	20.1	121998	30.1	19.									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
271182	30.4	18.7	221204	30.5	21.0	428831	30.6	20.9	176548	30.6	21.0	267388	30.7	19.3	156933	30.8	20.4
219753	30.4	19.2	405520	30.5	21.6	83257	30.6	18.6	48570	30.6	19.8	510776	30.7	21.5	530202	30.8	20.4
376764	30.4	19.9	457077	30.5	20.1	527300	30.6	21.5	300228	30.6	20.0	474269	30.7	21.7	475688	30.8	21.8
291835	30.4	18.6	502414	30.5	21.0	471103	30.6	20.5	196600	30.6	19.2	86313	30.7	18.5	179688	30.8	20.1
508321	30.4	19.9	368237	30.5	20.5	323458	30.6	21.0	193797	30.6	18.0	495043	30.7	20.9	539501	30.8	20.7
272987	30.4	19.5	83976	30.5	18.9	122685	30.6	20.3	358255	30.6	21.6	91800	30.7	19.3	498544	30.8	19.6
102388	30.4	19.7	532604	30.5	21.6	398571	30.6	18.7	294348	30.6	20.1	494329	30.7	20.7	25345	30.8	18.3
431904	30.4	21.1	267704	30.5	20.4	415705	30.6	20.1	454111	30.6	21.3	443765	30.7	19.9	214657	30.8	20.5
166702	30.4	19.9	209286	30.5	20.4	518145	30.6	19.9	279109	30.6	19.0	499352	30.7	20.3	523949	30.8	19.6
212118	30.4	19.6	170216	30.5	19.1	385578	30.6	20.2	93546	30.6	18.7	75052	30.7	18.9	151098	30.8	20.6
136938	30.4	18.1	513683	30.5	18.6	17242	30.6	18.2	219588	30.6	19.5	519749	30.7	21.8	176611	30.8	16.9
55132	30.4	17.2	104082	30.5	19.5	255383	30.6	20.5	429356	30.6	19.7	328826	30.7	19.7	265722	30.8	20.0
341607	30.4	20.4	488390	30.5	20.4	470208	30.6	20.5	505532	30.6	21.4	302086	30.7	20.3	22144	30.8	16.7
300218	30.4	19.6	349420	30.5	20.2	57066	30.6	18.4	109015	30.6	19.1	437449	30.7	21.4	235786	30.8	20.3
469145	30.4	19.7	375856	30.5	20.7	501377	30.6	20.3	346229	30.6	21.7	27944	30.7	16.4	346609	30.8	20.0
528256	30.4	21.1	497367	30.5	20.2	61411	30.6	18.0	33674	30.6	17.6	272830	30.7	19.6	185531	30.8	19.9
35627	30.4	16.0	382145	30.5	20.5	330032	30.6	20.5	111015	30.6	18.8	185204	30.7	21.0	316362	30.8	20.8
424052	30.4	20.8	329350	30.5	20.7	59860	30.6	18.0	523653	30.6	20.6	53254	30.7	18.9	469903	30.8	20.2
111791	30.4	18.1	119931	30.5	19.8	35316	30.6	17.8	534687	30.6	21.2	272846	30.7	20.3	317088	30.8	19.6
393940	30.4	20.0	121060	30.5	20.0	250926	30.6	20.4	180128	30.6	19.9	352054	30.7	19.6	406546	30.8	20.6
222644	30.4	20.4	283734	30.5	19.6	222656	30.6	19.6	308076	30.7	19.1	499752	30.7	21.2	117242	30.8	18.7
59672	30.4	17.7	351996	30.5	19.5	51830	30.6	18.7	370136	30.7	20.1	159309	30.7	20.3	370159	30.8	20.4
473956	30.4	20.8	543925	30.5	20.7	428714	30.6	20.7	472417	30.7	20.5	305433	30.7	20.9	67163	30.8	19.1
370307	30.4	20.9	293184	30.5	20.1	528537	30.6	20.5	537175	30.7	22.2	497476	30.7	20.1	310214	30.8	21.4
392952	30.4	20.7	311531	30.5	20.6	247867	30.6	19.0	63565	30.7	18.8	9972	30.7	16.2	315507	30.8	19.7
338463	30.4	20.3	214997	30.5	19.7	315998	30.6	20.5	152903	30.7	19.5	310032	30.7	19.3	262498	30.8	20.1
434970	30.4	20.5	249819	30.5	19.8	458863	30.6	20.8	231938	30.7	20.8	130871	30.7	19.7	450492	30.8	21.5
140309	30.4	19.9	7370	30.5	16.5	150680	30.6	19.3	84836	30.7	19.0	233729	30.7	19.8	478142	30.8	21.2
460372	30.4	21.0	268509	30.5	19.7	308585	30.6	20.9	537925	30.7	21.1	265724	30.7	21.0	93180	30.8	19.4
52817	30.4	18.3	358059	30.5	21.0	221777	30.6	21.0	423595	30.7	21.6	43279	30.7	18.3	498753	30.8	20.1
322469	30.4	19.3	299323	30.5	20.7	113873	30.6	19.3	300876	30.7	20.2	106234	30.7	19.2	141245	30.8	19.9
351496	30.4	20.0	80363	30.5	19.6	38786	30.6	17.8	512350	30.7	20.1	273954	30.7	20.4	543723	30.8	20.2
333135	30.4	21.8	504186	30.5	21.2	488869	30.6	19.6	399085	30.7	19.4	250338	30.7	19.3	267204	30.8	19.7
184969	30.4	20.0	478212	30.5	20.3	140048	30.6	18.7	142029	30.7	18.2	298786	30.7	19.3	257167	30.8	20.2
499907	30.4	21.1	409108	30.5	19.4	175657	30.6	20.1	140892	30.7	19.3	286370	30.7	19.8	217613	30.8	19.6
225503	30.4	18.3	157602	30.5	19.8	93671	30.6	18.6	174004	30.7	19.8	399141	30.7	20.3	417282	30.8	19.9
494325	30.4	20.5	427344	30.5	21.4	393996	30.6	20.1	247124	30.7	20.5	463272	30.7	19.9	294306	30.8	19.3
105443	30.4	19.7	219550	30.5	20.0	75403	30.6	17.8	272742	30.7	20.2	239464	30.7	20.0	54563	30.8	18.5
368786	30.4	20.3	148593	30.5	19.2	495627	30.6	20.2	501040	30.7	20.8	430812	30.7	21.4	225584	30.8	19.8
111643	30.4	19.2	534828	30.5	21.8	312829	30.6	20.0	213794	30.7	19.8	470538	30.7	20.8	354954	30.8	19.8
502205	30.4	20.9	148083	30.5	18.1	253169	30.6	21.2	526240	30.7	21.3	250898	30.7	19.0	419637	30.8	21.3
282841	30.4	19.9	478260	30.5	20.5	264137	30.6	19.7	296535	30.7	21.2	366300	30.7	20.2	288523	30.8	20.9
269719	30.4	19.6	165492	30.5	19.8	35517	30.6	17.5	457743	30.7	21.4	345072	30.7	20.5	172373	30.8	19.7
506850	30.4	20.7	182848	30.5	20.3	377897	30.6	21.0	373119	30.7	20.3	507849	30.7	21.5	52483	30.8	18.0
466522	30.4	21.5	214912	30.5	21.4	213257	30.6	19.9	227893	30.7	19.5	478377	30.7	19.9	468534	30.8	20.4
361995	30.4	21.1	348593	30.5	21.2	350748	30.6	20.9	529448	30.7	21.3	5439	30.7	16.6	39876	30.8	18.6
10329	30.4	17.8	329587	30.5	20.8	172476	30.6	18.6	146163	30.7	20.0	291148	30.7	20.4	134652	30.8	18.8
167461	30.4	19.8	246696	30.5	20.6	106123	30.6	19.8	394701	30.7	21.4	544620	30.7	20.7	346331	30.8	20.7
243842	30.5	19.2	410379	30.5	20.2	65485	30.6	20.4	236335	30.7	21.1	521028	30.7	20.7	532206	30.8	21.5
334904	30.5	20.4	333663	30.5	19.8	430122	30.6	20.7	436226	30.7	20.1	506911	30.8	22.0	506795	30.8	21.9
127996	30.5	19.3	5423	30.5	17.9	528934	30.6	21.4	141192	30.7	20.1	18525	30.8	17.8	106666	30.8	20.1
512505	30.5	20.8	431016	30.5	21.4	470927	30.6	20.2	268369	30.7	21.6	139081	30.8	19.9	77917	30.8	19.3
177949	30.5	18.8	532691	30.5	21.5	503571	30.6	21.2	477593	30.7	19.2	423784	30.8	21.2	301102	30.8	20.6
535578	30.5	21.1	109298	30.5	18.8	197486	30.6	20.4	318708	30.7	20.2	115335	30.8	18.7	535435	30.8	22.6
241137	30.5	19.4	85287	30.5	18.2	209933	30.6	18.3	169288	30.7	19.4	243783	30.8	19.2	255850	30.8	19.9
371079	30.5	19.9	105691	30.5	19.5	72152	30.6	19.8	167278	30.7	19.1	202888	30.8	19.8	390833	30.8	20.1
248344	30.5	19.5	140808	30.5	19.6	300969	30.6	20.6	391994	30.7	22.3	194937	30.8	19.5	356637	30.8	20.8
114635	30.5	18.7	46528	30.5	18.6	165392	30.6	18.9	157255	30.7	20.0	258377	30.8	19.6	258259	30.8	20.2
110445	30.5	17.9	126970	30.5	18.2	84664	30.6	19.4	95034	30.7	18.5	371204	30.8	20.4	362291	30.8	21.1
52361	30.5	18.8	18670	30.5	17.8	330976	30.6	19.5	104435	30.7	20.4	309147	30.8	19.4	262895	30.8	21.1
324478	30.5	21.1	193635	30.5	19.7	376602	30.6	20.6	505561	30.7	20.2	348814	30.8	21.1	196725	30.8	18.6
505025	30.5	19.7	18129	30.5	15.9	37342	30.6	18.2	274267	30.7	18.9	167623	30.8	20.1	327849	30.8	20.2
241396	30.5	20.7	403561	30.5	19.4	143606	30.6	19.8	222643	30.7	19.3	128380	30.8	18.1	458796	30.8	21.4
119573	30.5	18.3	50880	30.5	19.3	335528	30.6	19.7	92846	30.7	18.5	260936	30.8	21.0	469126	30.8	20.1
302509	30.5	21.0	526473	30.5	21.0	313678	30.6	20.1	475783	30.7	21.1	506691	30.8	22.3	420042	30.9	20.5
64273	30.5	19.3	58711	30.6	17.4	54373	30.6	18.8	170392	30.7	19.0	66300	30.8	17.7	114586	30.9	19.3
188886	30.5	20.2	233223	30.6	19.5	144903	30.6	19.9	174552	30.7	20.0	404691	30.8	20.5	534021	30.9	21.0
392972	30.5	21.7	103107	30.6	18.5	154571	30.6	17.9	407662	30.7	21.1	388743	30.8	20.8	323383	30.9	20.7
79020	30.5	19.9	540430	30.6	21.3	118430	30.6										

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
225521	30.9	18.9	519055	30.9	20.8	369065	31.0	20.2	337003	31.1	20.6	214763	31.2	20.4	125959	31.3	17.3
507816	30.9	20.7	470863	30.9	20.2	470039	31.0	20.3	144255	31.1	19.6	165029	31.2	19.8	147261	31.3	19.8
439095	30.9	21.3	59905	30.9	18.1	335976	31.0	19.4	141347	31.1	19.5	89756	31.2	17.8	538167	31.3	21.1
410299	30.9	21.4	394245	30.9	20.4	119580	31.0	19.2	251901	31.1	19.5	379406	31.2	21.1	36977	31.3	19.4
508418	30.9	19.4	419896	30.9	21.1	394759	31.0	20.6	44571	31.1	19.2	83524	31.2	17.9	39066	31.3	18.6
62012	30.9	18.0	363241	30.9	21.4	66740	31.0	18.8	29587	31.1	19.0	382056	31.2	20.0	474591	31.3	19.4
459511	30.9	21.9	107958	30.9	19.6	45223	31.0	16.8	229546	31.1	19.7	6564	31.2	20.2	264731	31.3	19.5
301652	30.9	19.4	181181	30.9	19.2	140567	31.0	18.8	243274	31.1	19.7	307642	31.2	19.1	526441	31.3	20.6
255369	30.9	19.4	429664	30.9	19.9	161268	31.0	20.6	89978	31.1	19.4	540764	31.2	18.9	536239	31.3	20.9
216196	30.9	20.9	198580	30.9	19.3	383890	31.0	18.7	478094	31.1	20.6	508501	31.2	20.6	529509	31.3	20.5
363776	30.9	20.8	117003	30.9	19.7	176329	31.0	19.6	496951	31.1	21.2	123897	31.2	19.1	100388	31.3	18.4
468697	30.9	20.6	307491	30.9	20.0	203656	31.0	19.8	103691	31.1	20.2	117191	31.2	19.4	526938	31.3	20.6
496491	30.9	20.4	368568	30.9	20.2	140191	31.0	19.7	459902	31.1	20.1	110775	31.2	19.4	532534	31.3	21.6
430477	30.9	19.8	471270	30.9	21.1	427873	31.0	21.4	23391	31.1	18.2	120195	31.2	18.0	310347	31.3	21.2
306601	30.9	19.4	186682	30.9	18.5	254642	31.0	20.4	27265	31.1	17.2	538323	31.2	20.8	418999	31.3	19.7
107912	30.9	19.7	530403	30.9	20.9	297415	31.0	20.0	96326	31.1	19.1	527979	31.2	20.9	499891	31.3	21.3
150893	30.9	17.3	538724	30.9	21.0	239907	31.0	20.0	360723	31.1	21.5	480794	31.2	20.2	61541	31.3	18.7
32346	30.9	17.7	479787	30.9	21.1	494658	31.0	24.3	453574	31.1	19.0	489038	31.2	20.3	497559	31.3	19.9
286257	30.9	19.1	530799	30.9	21.4	104186	31.0	19.5	191663	31.1	19.0	524892	31.2	20.6	310300	31.3	20.9
356331	30.9	18.5	140626	30.9	19.5	295169	31.1	20.0	289321	31.1	20.6	360702	31.2	20.5	268936	31.3	21.3
432007	30.9	19.1	167435	30.9	20.1	140902	31.1	20.0	867	31.1	16.4	287974	31.2	19.8	534514	31.3	19.8
512511	30.9	20.7	133694	30.9	20.3	359822	31.1	20.8	25957	31.1	17.8	254915	31.2	20.1	274445	31.3	20.3
492507	30.9	20.8	505690	30.9	20.3	338216	31.1	20.2	396544	31.1	22.1	499800	31.2	20.4	58484	31.3	17.7
504627	30.9	21.3	293807	30.9	20.8	439370	31.1	20.0	171490	31.1	19.3	24881	31.2	17.1	159046	31.3	19.0
240815	30.9	20.3	327453	30.9	19.7	329997	31.1	19.3	339030	31.1	19.9	399628	31.2	18.8	176590	31.3	19.2
426192	30.9	20.8	272923	30.9	20.1	125133	31.1	19.6	152804	31.1	19.4	281713	31.2	20.3	389843	31.3	20.1
66820	30.9	18.9	495016	30.9	19.2	34992	31.1	17.3	43650	31.1	17.9	477615	31.2	19.4	540908	31.3	20.8
535934	30.9	19.9	425192	30.9	20.6	116825	31.1	19.7	294600	31.1	20.9	288720	31.2	19.7	31377	31.3	17.9
109814	30.9	19.7	369776	30.9	19.6	344851	31.1	20.5	528893	31.1	23.2	106194	31.2	17.4	507412	31.3	19.1
459304	30.9	20.4	302151	30.9	19.6	125523	31.1	19.7	24455	31.1	17.7	477327	31.2	23.4	445305	31.3	20.8
478082	30.9	21.4	307652	30.9	19.3	212056	31.1	20.2	272831	31.1	20.3	43682	31.2	19.9	375917	31.3	20.2
106031	30.9	19.9	306419	30.9	19.7	197143	31.1	20.7	300006	31.1	20.5	137610	31.2	20.8	87692	31.3	19.0
433784	30.9	21.6	522568	30.9	20.7	181191	31.1	19.3	462847	31.1	21.6	29612	31.2	18.3	31069	31.3	19.1
221258	30.9	19.6	341589	30.9	20.8	539468	31.1	20.3	290902	31.1	21.1	526023	31.2	21.3	125821	31.3	18.7
356777	30.9	19.5	373342	30.9	20.8	391676	31.1	21.3	393025	31.1	21.3	17815	31.2	18.1	385860	31.3	20.6
153862	30.9	18.8	254329	30.9	19.7	436680	31.1	20.3	179835	31.1	18.3	272937	31.2	20.4	179422	31.3	19.9
150525	30.9	18.7	36191	30.9	19.1	349351	31.1	21.4	102108	31.1	18.9	298293	31.2	19.8	500283	31.3	19.9
492509	30.9	19.8	310061	30.9	19.0	123361	31.1	18.9	373522	31.1	20.5	344852	31.2	19.8	374387	31.3	20.7
505277	30.9	20.2	204747	30.9	20.4	21494	31.1	17.9	84092	31.1	17.8	165468	31.2	19.9	393843	31.3	20.7
313120	30.9	21.4	327897	30.9	19.3	475115	31.1	21.5	230404	31.1	19.5	434476	31.2	19.1	225283	31.3	19.5
76294	30.9	18.9	210548	30.9	18.2	467525	31.1	20.2	502229	31.1	20.5	512508	31.2	19.9	156314	31.3	19.9
106637	30.9	18.6	502783	30.9	20.0	260935	31.1	21.5	205256	31.1	19.1	451238	31.2	21.0	239575	31.3	20.4
522663	30.9	20.4	306299	30.9	21.1	534720	31.1	20.5	111674	31.1	19.8	502941	31.2	21.5	297679	31.3	20.4
299564	30.9	20.2	111719	30.9	19.6	312087	31.1	21.1	350762	31.1	21.8	377357	31.2	19.6	437571	31.3	20.5
188272	30.9	20.7	229200	30.9	20.3	208214	31.1	18.1	463468	31.1	19.6	302407	31.2	19.2	540612	31.3	20.2
312157	30.9	20.9	56970	30.9	18.6	280996	31.1	20.1	297608	31.2	19.3	387113	31.2	20.8	507615	31.3	21.8
467416	30.9	21.3	357560	30.9	19.4	346137	31.1	21.0	263418	31.2	21.0	366729	31.2	18.8	467357	31.3	19.1
385157	30.9	20.3	426847	30.9	19.3	70674	31.1	18.8	494761	31.2	20.9	331906	31.2	19.4	55646	31.3	18.7
153688	30.9	20.9	125598	31.0	17.0	526485	31.1	22.0	211981	31.2	19.8	169402	31.2	20.4	413914	31.3	20.7
82457	30.9	18.1	502951	31.0	21.4	63211	31.1	18.6	29320	31.2	18.7	286092	31.2	19.8	240783	31.3	19.8
469099	30.9	19.7	231081	31.0	18.3	374152	31.1	22.1	130656	31.2	18.3	271695	31.2	20.6	411715	31.3	21.0
417683	30.9	21.3	122855	31.0	19.1	276584	31.1	19.8	216863	31.2	20.7	298299	31.2	21.2	432394	31.3	21.7
242806	30.9	19.3	291496	31.0	19.2	241495	31.1	19.5	303855	31.2	19.4	8622	31.2	16.8	82973	31.3	17.3
202200	30.9	18.7	176031	31.0	19.2	511278	31.1	20.6	322499	31.2	20.3	531998	31.2	20.7	499191	31.3	20.7
454742	30.9	19.7	174553	31.0	19.5	54686	31.1	19.0	498751	31.2	21.2	539125	31.2	20.6	490910	31.3	21.0
147585	30.9	18.3	32001	31.0	17.6	381887	31.1	20.9	275538	31.2	18.8	427746	31.2	19.8	290580	31.3	19.9
537811	30.9	20.4	18002	31.0	17.8	55680	31.1	19.0	299906	31.2	20.6	466600	31.2	21.1	332394	31.3	19.9
454363	30.9	20.1	114627	31.0	19.7	475802	31.1	21.0	430267	31.2	20.3	343363	31.2	20.3	208732	31.3	19.2
338934	30.9	20.2	102792	31.0	19.7	31528	31.1	16.3	470158	31.2	21.8	183531	31.2	20.2	258581	31.3	20.1
14071	30.9	17.6	302322	31.0	20.6	498750	31.1	19.9	388673	31.2	21.1	90855	31.2	18.8	378342	31.3	20.2
12214	30.9	15.8	532041	31.0	21.0	228412	31.1	18.2	48369	31.2	18.4	429186	31.2	20.5	95877	31.3	19.2
340351	30.9	19.3	15761	31.0	17.2	485104	31.1	19.9	478011	31.2	21.3	536231	31.2	20.9	300979	31.3	21.0
115156	30.9	19.3	504521	31.0	20.1	538108	31.1	21.1	328345	31.2	20.8	229103	31.2	19.4	155180	31.3	19.5
378708	30.9	19.3	530701	31.0	20.3	308508	31.1	20.9	369748	31.2	20.4	409117	31.2	20.1	380507	31.3	22.1
280381	30.9	19.5	238842	31.0	20.8	203547	31.1	20.9	390302	31.2	19.9	58759	31.2	18.6	307973	31.3	18.1
268036	30.9	18.4	70313	31.0	17.4	151470	31.1	20.0	231515	31.2	19.5	139805	31.2	19.0	263367	31.3	19.9
3023	30.9	16.1	373310	31.0	20.1	88194	31.1	18.7	23040	31.2	18.5	30387	31.2	17.3	66751	31.3	19.0
158224	30.9	19.2	52749	31.0	18.6	302275	31.1	20.1	377873	31.2	20.9	186306	31.2	20.4	141216	31.3	19.2
526168	30.9	21.9	475063	31.0	21.4	540498	31.1	21.2									

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
137336	31.3	20.5	462190	31.4	19.5	264508	31.5	20.7	304486	31.6	20.0	263335	31.6	20.5	116768	31.7	18.6
426636	31.3	20.1	538582	31.4	20.6	68498	31.5	18.3	527068	31.6	21.8	193778	31.6	18.8	540624	31.7	21.3
348436	31.3	20.4	156273	31.4	19.1	388295	31.5	20.2	322724	31.6	18.6	65214	31.6	20.1	124659	31.7	20.0
93980	31.3	19.0	264281	31.4	20.2	214468	31.5	19.1	308472	31.6	20.6	289496	31.6	21.0	179402	31.7	21.0
123116	31.3	18.3	494198	31.4	21.0	334037	31.5	20.5	96971	31.6	19.6	109957	31.6	18.8	415474	31.7	19.5
254629	31.3	20.3	375944	31.4	18.7	91875	31.5	18.7	302351	31.6	20.9	336189	31.6	19.6	356821	31.7	20.5
236384	31.3	20.5	529936	31.4	20.5	474986	31.5	20.1	232278	31.6	19.6	32968	31.6	18.1	365208	31.7	21.5
466188	31.3	21.6	298925	31.4	20.1	538272	31.5	21.3	540162	31.6	21.5	37696	31.6	17.1	69650	31.7	18.9
370158	31.3	20.4	465064	31.4	20.8	492865	31.5	19.5	308115	31.6	19.8	293832	31.6	19.8	44602	31.7	18.3
53240	31.3	18.1	63177	31.4	19.0	147337	31.5	20.4	383887	31.6	18.9	303403	31.6	20.2	460274	31.7	19.9
149319	31.3	18.6	134407	31.4	19.4	512966	31.5	19.6	358107	31.6	20.8	424101	31.6	20.7	500423	31.7	21.1
233153	31.3	20.3	20986	31.4	18.1	32583	31.5	17.6	84095	31.6	19.8	341304	31.6	20.2	225946	31.7	19.8
57613	31.3	20.4	479817	31.4	21.5	61480	31.5	18.2	238479	31.6	19.9	25529	31.6	17.3	507679	31.7	19.8
28072	31.3	17.1	274073	31.4	19.9	150308	31.5	19.2	474141	31.6	20.4	374410	31.6	20.4	51948	31.7	18.4
143135	31.3	19.1	417447	31.4	19.7	70989	31.5	20.0	354145	31.6	21.1	216167	31.6	21.0	334836	31.7	19.9
111800	31.3	19.4	474896	31.4	21.0	286219	31.5	21.1	317531	31.6	19.9	114822	31.6	19.2	479104	31.7	20.6
175319	31.3	19.0	219652	31.4	18.9	144528	31.5	18.3	274573	31.6	20.1	501330	31.6	20.7	34302	31.7	18.1
259186	31.3	19.5	373568	31.4	21.3	114324	31.5	19.7	229025	31.6	20.1	224444	31.6	18.7	179756	31.7	19.9
408390	31.3	21.0	332096	31.4	19.9	7157	31.5	15.6	496143	31.6	20.3	11513	31.6	17.2	31413	31.7	18.5
426666	31.3	19.9	380644	31.4	21.2	179358	31.5	19.6	525785	31.6	21.4	127130	31.7	19.3	344419	31.7	19.9
274413	31.3	19.1	519874	31.4	20.6	122911	31.5	20.4	368955	31.6	21.0	504109	31.7	20.9	140148	31.7	18.6
33712	31.3	17.8	147956	31.4	18.3	83112	31.5	17.5	154490	31.6	19.1	350186	31.7	19.3	194246	31.7	19.2
75358	31.3	19.8	213262	31.4	18.9	280332	31.5	19.3	540504	31.6	20.8	429561	31.7	20.9	122349	31.7	18.6
20237	31.4	16.6	479149	31.4	20.4	124947	31.5	19.2	468355	31.6	20.0	376813	31.7	20.4	313761	31.7	20.1
266689	31.4	19.9	176351	31.4	19.9	248440	31.5	19.6	387586	31.6	21.1	249189	31.7	20.2	478053	31.7	20.9
509075	31.4	21.0	245723	31.4	19.5	15453	31.5	18.1	85285	31.6	18.1	311395	31.7	20.7	33011	31.7	17.6
502539	31.4	21.8	386106	31.4	21.1	320578	31.5	20.4	219774	31.6	18.5	241821	31.7	19.9	24142	31.7	18.1
27525	31.4	17.0	163259	31.4	20.1	439134	31.5	19.2	513662	31.6	20.1	233675	31.7	19.3	392676	31.7	20.4
473986	31.4	21.1	159295	31.4	20.0	457384	31.5	21.7	132332	31.6	18.3	364227	31.7	19.6	375726	31.7	20.2
312186	31.4	19.7	87664	31.4	17.9	248929	31.5	20.0	104931	31.6	19.2	7261	31.7	17.2	33715	31.7	17.4
11590	31.4	16.9	313889	31.4	18.7	106571	31.5	19.1	95156	31.6	19.2	155773	31.7	19.3	346307	31.7	20.1
207994	31.4	19.6	297633	31.4	21.1	64838	31.5	18.3	11778	31.6	17.7	474439	31.7	20.5	540289	31.7	20.2
100753	31.4	19.5	143545	31.4	20.4	424624	31.5	20.7	370473	31.6	20.0	184427	31.7	18.9	204622	31.7	19.6
376929	31.4	19.9	170827	31.4	19.8	304755	31.5	20.1	409172	31.6	21.5	531090	31.7	21.8	235900	31.7	20.6
335553	31.4	20.2	410755	31.4	20.4	526760	31.5	19.9	506485	31.6	20.7	313851	31.7	21.1	525291	31.7	20.7
338185	31.4	19.7	519389	31.4	20.6	30911	31.5	17.5	369827	31.6	20.2	64354	31.7	16.9	472425	31.8	19.8
71187	31.4	18.7	137263	31.4	17.7	462819	31.5	21.0	474024	31.6	21.0	475476	31.7	21.1	498756	31.8	20.5
167837	31.4	19.2	403019	31.4	20.3	526097	31.5	21.4	227533	31.6	20.9	16910	31.7	18.3	267723	31.8	20.4
303871	31.4	19.6	370121	31.4	21.5	453364	31.5	20.4	265011	31.6	20.0	213182	31.7	19.9	432566	31.8	19.2
502568	31.4	21.3	293815	31.4	19.6	425710	31.5	20.8	501517	31.6	21.6	180127	31.7	20.7	362066	31.8	21.2
118137	31.4	19.1	64145	31.4	18.3	537297	31.5	20.0	497075	31.6	20.8	262198	31.7	20.4	141774	31.8	18.4
499753	31.4	22.1	55517	31.4	19.3	89038	31.5	18.8	398997	31.6	21.3	224882	31.7	21.2	13351	31.8	16.2
307892	31.4	19.7	526500	31.4	20.0	157962	31.5	19.3	224500	31.6	19.1	160836	31.7	19.3	508721	31.8	20.7
74578	31.4	17.2	432463	31.4	21.8	65525	31.5	18.4	470496	31.6	21.1	146430	31.7	19.3	292274	31.8	19.8
474948	31.4	20.2	141406	31.4	19.9	76905	31.5	17.4	411628	31.6	20.8	83034	31.7	18.1	299531	31.8	19.2
254974	31.4	20.5	168851	31.4	19.6	314956	31.5	20.4	140445	31.6	19.1	354100	31.7	20.4	107571	31.8	17.6
114280	31.4	18.2	528349	31.4	20.7	249409	31.5	18.9	90298	31.6	18.6	118425	31.7	19.1	503967	31.8	20.5
61000	31.4	17.7	65458	31.5	17.8	212642	31.5	20.4	359706	31.6	21.2	68558	31.7	18.3	166091	31.8	18.7
107783	31.4	19.7	98946	31.5	18.7	334785	31.5	19.7	492291	31.6	21.1	404731	31.7	19.9	534953	31.8	21.9
457547	31.4	21.8	134380	31.5	20.7	192839	31.5	20.4	262382	31.6	19.9	160113	31.7	17.8	301066	31.8	18.8
365156	31.4	21.6	526990	31.5	20.9	182091	31.5	19.0	206780	31.6	19.7	227663	31.7	20.2	211206	31.8	19.7
279697	31.4	21.6	138805	31.5	20.1	362951	31.5	20.4	105665	31.6	19.0	392930	31.7	20.6	46882	31.8	18.4
13970	31.4	15.7	56348	31.5	17.9	539443	31.6	20.3	299830	31.6	19.4	475253	31.7	20.4	538322	31.8	20.6
430787	31.4	20.9	459000	31.5	20.1	21430	31.6	17.2	113727	31.6	17.2	506029	31.7	19.9	392422	31.8	19.8
254221	31.4	19.9	353870	31.5	20.3	317867	31.6	21.0	506472	31.6	20.9	179363	31.7	21.0	379736	31.8	20.1
211427	31.4	19.8	21048	31.5	17.4	530228	31.6	22.0	496797	31.6	19.2	22633	31.7	17.5	161253	31.8	18.0
347082	31.4	20.4	504460	31.5	21.3	423778	31.6	20.3	112183	31.6	18.9	239780	31.7	20.3	293244	31.8	20.1
275077	31.4	19.1	419428	31.5	21.3	388035	31.6	19.0	14617	31.6	16.2	371001	31.7	21.0	502046	31.8	20.1
423457	31.4	21.2	145045	31.5	18.3	155368	31.6	20.2	88694	31.6	19.4	370198	31.7	20.3	140033	31.8	19.0
64792	31.4	18.9	435854	31.5	21.5	365889	31.6	20.5	529528	31.6	20.5	272607	31.7	21.3	437234	31.8	20.2
14280	31.4	17.4	398741	31.5	19.9	201031	31.6	20.0	83649	31.6	19.1	509014	31.7	20.1	247909	31.8	20.2
262534	31.4	20.9	499129	31.5	21.0	96754	31.6	19.0	70902	31.6	19.1	539419	31.7	21.1	529275	31.8	21.2
22309	31.4	19.5	138659	31.5	19.3	340858	31.6	20.3	100191	31.6	20.0	471830	31.7	20.9	222804	31.8	20.1
496327	31.4	20.6	92977	31.5	18.2	385101	31.6	20.4	21309	31.6	18.2	510393	31.7	20.5	19400	31.8	19.1
53099	31.4	18.3	497192	31.5	21.3	535484	31.6	20.3	524513	31.6	19.7	122341	31.7	18.4	242088	31.8	18.9
64234	31.4	18.9	4526	31.5	16.0	423731	31.6	20.1	141118	31.6	19.5	353522	31.7	21.4	80010	31.8	19.0
518118	31.4	20.8	222733	31.5	20.5	539698	31.6	21.6	283603	31.6	19.0	27462	31.7	18.1	11543	31.8	17.5
241521	31.4	20.3	540650	31.5	20.8	303913	31.6	19.9	152451	31.6	19.1	40417	31.7	18.8	340551	31.8	19.7
21378	31.4	17.6	539455	31.5	20.1	419989	31.6	20.7	309823	31							

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

№	07	V	№	07	V	№	07	V	№	07	V	№	07	V	№	07	V
420807	31.8	19.9	244128	31.8	20.2	538663	31.9	22.0	68114	31.9	16.7	29396	31.9	18.2	384106	31.9	20.8
501133	31.8	20.4	336476	31.8	19.7	422376	31.9	20.0	412265	31.9	19.6	521211	31.9	21.1	223225	31.9	20.2
101701	31.8	18.3	68167	31.8	18.8	527435	31.9	21.4	119807	31.9	20.3	322830	31.9	20.1	122694	31.9	19.3
330391	31.8	19.9	171824	31.8	21.0	17810	31.9	18.7	370180	31.9	19.9	533418	31.9	21.9	125078	31.9	19.4
94872	31.8	19.1	428040	31.8	21.2	305951	31.9	19.9	120045	31.9	18.6	325289	31.9	19.9	64959	31.9	21.4
87170	31.8	17.8	297787	31.8	19.3	64732	31.9	19.5	222837	31.9	20.4	315537	31.9	20.1	382966	31.9	19.9
91128	31.8	19.2	521257	31.8	21.6	224480	31.9	19.5	323451	31.9	19.8	261168	31.9	19.7	474885	31.9	21.1
499171	31.8	18.8	148623	31.8	19.2	105518	31.9	18.3	485378	31.9	19.4	300133	31.9	21.1	288671	31.9	19.2
501108	31.8	20.2	455829	31.8	20.2	116308	31.9	19.3	217872	31.9	19.7	382428	31.9	21.1	379903	31.9	19.3
417707	31.8	21.6	229580	31.8	19.8	347275	31.9	19.7	182124	31.9	20.7	176459	31.9	18.9	266712	31.9	19.3
123098	31.8	19.4	350949	31.8	20.0	431102	31.9	21.2	429823	31.9	20.5	232866	31.9	20.7	498775	31.9	20.6
352089	31.8	20.9	22112	31.8	17.6	506509	31.9	21.3	442598	31.9	20.2	534118	31.9	20.8	12295	31.9	17.0
246900	31.8	20.7	277625	31.8	20.3	291270	31.9	19.4	63569	31.9	18.8	318512	31.9	20.7	302092	31.9	20.4
357194	31.8	19.6	391263	31.8	21.1	462148	31.9	21.4	411709	31.9	21.3	250379	31.9	19.5	468744	31.9	21.6
7609	31.8	16.9	303735	31.8	20.2	412778	31.9	19.4	542472	31.9	20.8	415098	31.9	21.1	69512	31.9	19.4
72416	31.8	19.2	204916	31.8	20.6	480770	31.9	20.3	58459	31.9	18.6	298804	31.9	19.4	378261	31.9	20.7
303379	31.8	20.4	501901	31.8	20.3	12213	31.9	17.3	308978	31.9	20.7	160433	31.9	21.4	211441	31.9	19.5
478177	31.8	20.2	530762	31.8	21.9	153635	31.9	20.2	297727	31.9	19.8	383358	31.9	20.1	245426	31.9	19.8
143633	31.8	20.2	219631	31.8	17.5	318491	31.9	20.6	141119	31.9	19.7	29794	31.9	17.4	216824	31.9	20.6
303426	31.8	21.1	231751	31.8	19.5	75374	31.9	18.7	451676	31.9	21.2	295241	31.9	20.5	532539	31.9	22.6
536993	31.8	21.0	494234	31.9	20.6	471890	31.9	20.7	378416	31.9	20.0	345945	31.9	20.3	410275	31.9	21.1
80291	31.8	18.6	390958	31.9	18.8	3270	31.9	18.3	353573	31.9	20.1	299241	31.9	19.6	8547	31.9	18.7
473729	31.8	21.6	23763	31.9	16.8	266483	31.9	19.2	20566	31.9	16.7	533951	31.9	20.1	367173	31.9	19.8
430641	31.8	20.4	110661	31.9	18.1	61496	31.9	18.6	504615	31.9	21.3	438407	31.9	20.6	106967	31.9	19.8
261325	31.8	20.5	292102	31.9	20.5	504647	31.9	20.6	49742	31.9	18.5	298936	31.9	21.1			
234831	31.8	19.3	287508	31.9	20.4	472597	31.9	20.1	345413	31.9	20.6	168268	31.9	18.5			
80016	31.8	18.2	81029	31.9	18.5	452693	31.9	21.6	463168	31.9	22.1	518858	31.9	21.3			
19479	31.8	17.1	127989	31.9	19.4	427509	31.9	20.3	147309	31.9	20.3	178737	31.9	20.9			
143517	31.8	19.3	58339	31.9	18.8	387679	31.9	19.4	518925	31.9	21.4	49828	31.9	18.8			
88616	31.8	18.6	208258	31.9	18.1	511380	31.9	21.2	304440	31.9	19.5	215357	31.9	20.5			
175652	31.8	20.1	135696	31.9	19.9	68589	31.9	18.7	528390	31.9	20.5	237305	31.9	20.1			
94293	31.8	18.7	108864	31.9	17.7	105727	31.9	19.8	103877	31.9	19.3	154844	31.9	20.0			
28848	31.8	18.3	182651	31.9	17.6	16511	31.9	17.9	85196	31.9	16.9	135320	31.9	19.8			
478908	31.8	20.8	219716	31.9	20.6	501516	31.9	21.8	472241	31.9	20.9	521269	31.9	20.2			
477490	31.8	21.2	355247	31.9	20.2	436282	31.9	21.7	67737	31.9	18.0	16040	31.9	17.4			
499973	31.8	20.8	244219	31.9	19.8	184639	31.9	19.6	25642	31.9	18.3	421141	31.9	20.0			
301014	31.8	19.7	281937	31.9	20.0	110520	31.9	19.9	424844	31.9	20.4	362958	31.9	19.4			
412838	31.8	20.0	538704	31.9	20.6	179647	31.9	19.6	71736	31.9	18.0	67512	31.9	17.2			
504466	31.8	21.7	506722	31.9	21.8	121054	31.9	20.2	305714	31.9	21.1	29309	31.9	18.6			
128577	31.8	18.6	113389	31.9	19.0	46556	31.9	17.2	167769	31.9	19.1	176528	31.9	19.6			