

21ST CENTURY CANON OF LUNAR ECLIPSES

Cat Num	Calendar Date	TD of Greatest Eclipse	ΔT s	Luna Num	Saros Num	Ecl Type	QSE	Gamma	Pen Mag	Um Mag	Phase ----- Durations -----			Greatest in Zenith	
											Pen m	Par m	Total m	Lat	Long
001	2001 Jan 09	20:21:40	64	12	134	T	p-	0.3720	2.1631	1.1902	311.9	197.1	61.7	22N	57E
002	2001 Jul 05	14:56:23	64	18	139	P	t-	-0.7287	1.5489	0.4961	326.0	160.0	-	23S	137E
003	2001 Dec 30	10:30:22	64	24	144	N	a-	1.0732	0.8948	-0.1141	244.3	-	-	24N	157W
004	2002 May 26	12:04:27	64	29	111	N	-a	1.1759	0.6910	-0.2871	217.3	-	-	20S	179E
005	2002 Jun 24	21:28:13	64	30	149	N	a-	-1.4440	0.2110	-0.7910	129.8	-	-	25S	39E
006	2002 Nov 20	01:47:41	64	35	116	N	-t	-1.1127	0.8618	-0.2246	265.1	-	-	19N	30W
007	2003 May 16	03:41:13	64	41	121	T	-a	0.4123	2.0765	1.1294	307.3	194.6	52.1	19S	56W
008	2003 Nov 09	01:19:38	64	47	126	T	-t	-0.4319	2.1157	1.0197	364.0	212.2	23.2	16N	24W
009	2004 May 04	20:31:17	65	53	131	T	p-	-0.3132	2.2645	1.3054	316.5	203.9	76.1	17S	51E
010	2004 Oct 28	03:05:11	65	59	136	T	p-	0.2846	2.3656	1.3100	354.6	219.4	81.1	13N	50W
011	2005 Apr 24	09:55:54	65	65	141	N	h-	-1.0885	0.8669	-0.1417	246.4	-	-	14S	150W
012	2005 Oct 17	12:04:27	65	71	146	P	a-	0.9796	1.0605	0.0645	260.5	57.0	-	10N	175E
013	2006 Mar 14	23:48:35	65	76	113	Nx	-t	1.0211	1.0320	-0.0583	288.2	-	-	3N	6E
014	2006 Sep 07	18:52:25	65	82	118	P	-a	-0.9262	1.1349	0.1857	255.0	91.8	-	7S	77E
015	2007 Mar 03	23:21:59	65	88	123	T	-p	0.3175	2.3208	1.2347	366.2	221.8	74.0	7N	13E
016	2007 Aug 28	10:38:27	65	94	128	T-	-p	-0.2146	2.4545	1.4777	328.0	212.8	90.6	10S	159W
017	2008 Feb 21	03:27:09	66	100	133	T	a-	-0.3992	2.1470	1.1081	339.7	206.1	50.5	10N	48W
018	2008 Aug 16	21:11:12	66	106	138	P	t-	0.5646	1.8385	0.8095	331.3	188.8	-	13S	43E
019	2009 Feb 09	14:39:21	66	112	143	N	a-	-1.0640	0.9013	-0.0863	239.5	-	-	14N	144E
020	2009 Jul 07	09:39:44	66	117	110	N	-t	-1.4916	0.1578	-0.9116	122.4	-	-	24S	143W
021	2009 Aug 06	00:40:16	66	118	148	N	t-	1.3572	0.4038	-0.6642	190.6	-	-	16S	9W
022	2009 Dec 31	19:23:46	66	123	115	P	-a	0.9766	1.0572	0.0779	251.8	60.8	-	24N	70E
023	2010 Jun 26	11:39:34	66	129	120	P	-t	-0.7091	1.5789	0.5383	323.0	163.6	-	24S	174W
024	2010 Dec 21	08:18:04	66	135	125	T	-p	0.3214	2.2821	1.2576	336.0	209.5	73.0	24N	125W
025	2011 Jun 15	20:13:43	67	141	130	T+	pp	0.0897	2.6883	1.7014	337.0	220.1	101.0	23S	57E
026	2011 Dec 10	14:32:57	67	147	135	T	p-	-0.3882	2.1875	1.1076	357.3	213.1	51.8	23N	140E
027	2012 Jun 04	11:04:20	67	153	140	P	a-	0.8248	1.3198	0.3718	270.8	127.2	-	22S	166W
028	2012 Nov 28	14:34:07	67	159	145	N	t-	-1.0869	0.9168	-0.1859	276.8	-	-	20N	139E
029	2013 Apr 25	20:08:37	67	164	112	P	-a	-1.0121	0.9878	0.0160	248.4	28.1	-	14S	57E
030	2013 May 25	04:11:07	67	165	150	Nb	a-	1.5351	0.0170	-0.9322	35.1	-	-	19S	63W
031	2013 Oct 18	23:51:25	67	170	117	N	-h	1.1508	0.7660	-0.2706	239.8	-	-	11N	2W
032	2014 Apr 15	07:46:48	67	176	122	T	-a	-0.3017	2.3193	1.2918	344.8	215.5	78.5	10S	116W
033	2014 Oct 08	10:55:44	67	182	127	T	-p	0.3827	2.1467	1.1670	318.9	200.2	59.4	6N	167W
034	2015 Apr 04	12:01:24	68	188	132	T	t-	0.4460	2.0802	1.0019	358.4	209.8	7.3	5S	179W
035	2015 Sep 28	02:48:17	68	194	137	T	p-	-0.3296	2.2307	1.2774	311.5	200.6	72.5	2N	44W
036	2016 Mar 23	11:48:22	68	200	142	N	t-	1.1592	0.7758	-0.3107	256.1	-	-	0S	175W
037	2016 Sep 16	18:55:27	68	206	147	N	a-	-1.0549	0.9091	-0.0624	239.9	-	-	3S	75E
038	2017 Feb 11	00:45:03	68	211	114	N	-a	-1.0255	0.9896	-0.0342	259.9	-	-	13N	8W
039	2017 Aug 07	18:21:38	69	217	119	P	-t	0.8669	1.2898	0.2477	301.7	115.9	-	15S	86E
040	2018 Jan 31	13:31:00	69	223	124	T	-p	-0.3014	2.2954	1.3167	318.0	203.5	76.7	17N	161E
041	2018 Jul 27	20:22:54	69	229	129	T+	pp	0.1168	2.6805	1.6100	374.8	235.4	103.8	19S	56E
042	2019 Jan 21	05:13:27	69	235	134	T	p-	0.3684	2.1697	1.1966	312.3	197.5	62.6	20N	75W
043	2019 Jul 16	21:31:55	69	241	139	P	t-	-0.6430	1.7050	0.6544	334.6	178.7	-	22S	39E
044	2020 Jan 10	19:11:11	69	247	144	N	a-	1.0727	0.8969	-0.1146	245.3	-	-	23N	74E
045	2020 Jun 05	19:26:14	70	252	111	N	-a	1.2406	0.5699	-0.4036	198.9	-	-	21S	69E
046	2020 Jul 05	04:31:12	70	253	149	N	a-	-1.3639	0.3560	-0.6422	165.7	-	-	24S	66W
047	2020 Nov 30	09:44:02	70	258	116	N	-t	-1.1309	0.8302	-0.2602	261.8	-	-	21N	148W
048	2021 May 26	11:19:53	70	264	121	T	-a	0.4774	1.9558	1.0112	302.8	188.1	15.9	21S	170W
049	2021 Nov 19	09:04:06	70	270	126	P	-t	-0.4552	2.0738	0.9760	362.4	209.2	-	19N	139W
050	2022 May 16	04:12:42	70	276	131	T-	p-	-0.2532	2.3743	1.4154	319.5	207.9	85.5	19S	64W
051	2022 Nov 08	11:00:22	71	282	136	T+	p-	0.2570	2.4161	1.3607	354.7	220.6	85.7	17N	169W
052	2023 May 05	17:24:04	71	288	141	N	h-	-1.0350	0.9655	-0.0438	258.3	-	-	17S	98E
053	2023 Oct 28	20:15:17	71	294	146	P	a-	0.9472	1.1200	0.1239	265.3	78.1	-	14N	52E
054	2024 Mar 25	07:14:00	71	299	113	N	-t	1.0610	0.9577	-0.1304	279.9	-	-	1S	106W
055	2024 Sep 18	02:45:26	71	305	118	P	-a	-0.9792	1.0392	0.0869	246.9	63.7	-	3S	42W
056	2025 Mar 14	06:59:56	72	311	123	T	-p	0.3485	2.2615	1.1804	363.4	218.9	66.1	3N	102W
057	2025 Sep 07	18:12:58	72	317	128	T	-p	-0.2752	2.3459	1.3638	327.4	210.0	82.7	6S	87E
058	2026 Mar 03	11:34:52	72	323	133	T	a-	-0.3765	2.1858	1.1526	339.4	207.8	59.0	6N	171W
059	2026 Aug 28	04:14:04	72	329	138	P	t-	0.4964	1.9664	0.9319	338.5	198.8	-	9S	63W
060	2027 Feb 20	23:14:05	73	335	143	N	a-	-1.0480	0.9286	-0.0549	241.7	-	-	10N	15E