

7000 Year Canon of Total Lunar Eclipse Tetrads

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This 7000 Year Canon of Lunar Eclipse Tetrads covers a time span which starts on May 6, 3980 B.C.E. on the proleptic (retro-calculated) Julian Calendar, and ends on March 6, 3021 C.E. on the Gregorian Calendar covering a period of 7000 Hebrew Years. Additional details, including eclipse visibility maps for each of these lunar eclipses are made available on the Creation Calendar at www.torahcalendar.com. Also available there are details and visibility maps for all solar eclipses during this same period of time. A total of 86,578 lunar Hebrew Months covering this particular span of 7000 years may be viewed at this theoretical stage of restoration on the Creation Calendar. For particular lunar months where an eclipse occurs, one or more clickable icons are displayed indicating a solar eclipse, a lunar eclipse or both. Clicking on an eclipse icon activates an Eclipse Viewer pop-up window which presents additional details and a visibility map for the requested eclipse. The Creation Calendar Restoration Project is a theoretical work in progress. The goal of the project is to truthfully restore the epoch of creation based on the Scriptures and the historical record.

A "tetrad" is a series of four of the same type of eclipse. In particular, this canon documents only the total lunar eclipse tetrads. This particular type of tetrad is relatively rare as there are only 202 total lunar eclipse tetrads within the 7000 Year Canon of Lunar Eclipses.

Column	Heading:	Definition / Description										
1	Lunar Eclipse Tetrad	This column is the numerical catalog number for each total lunar eclipse tetrad within the 7000 Year Canon of Lunar Eclipses. There are a total of 202 total lunar eclipse tetrads in this 7000 year canon.										
2	Tetrad Sequence Number	The number of the eclipse within the tetrad (range is 1 to 4)										
3	Lunar Eclipse Number	Sequential catalog number for each eclipse within the 7000 Year Canon of Lunar Eclipses A total of 16,874 lunar eclipses have been identified and documented within this canon.										
4	Calendar Date and Time (UT)	Calendar Date and Time at instant of Maximum Eclipse (Greatest Eclipse) in Universal Time (UT) Gregorian Calendar is used for dates after October 4, 1582 C.E. Julian Calendar is used for dates before October 5, 1582 C.E.										
5	Astronomical Julian Date (UT)	Instant of Maximum Eclipse in Universal Time (UT) using the Astronomical Julian Date format.										
6	(TD) and Time of Maximum Eclipse	Calendar Date and Time at instant of Maximum Eclipse expressed in Dynamical Time (TD) where dates prior to 1 B.C.E. are expressed as negative years with no year zero whereby Year 1 is preceded by -1 instead of the number 0.										
7	Delta T (seconds)	Difference in time at the moment of eclipse defined as: $\Delta T = (TD - UT)$ in units of seconds										
8	Lunar Eclipse Type	Type of Lunar Eclipse where: <table border="0" style="margin-left: 40px;"> <tr> <td>LNN = Lunar Penumbral</td> <td>Moon only intersects with the penumbra (Penumbral)</td> </tr> <tr> <td>LPN = Lunar Partial Penumbral</td> <td>Moon intersects umbra (Partial) but is not fully within penumbra (Penumbral)</td> </tr> <tr> <td>LNT = Lunar Penumbral total</td> <td>Moon is total in the penumbra (Penumbral) but never intersects with the umbra</td> </tr> <tr> <td>LPU = Lunar Partial Umbral</td> <td>Moon is partially within the umbra (Partial) and total within the penumbra</td> </tr> <tr> <td>LTU = Lunar Total Umbral</td> <td>Moon is totally within the umbra (Total) By definition, this canon only contains Lunar Total Umbral eclipses.</td> </tr> </table>	LNN = Lunar Penumbral	Moon only intersects with the penumbra (Penumbral)	LPN = Lunar Partial Penumbral	Moon intersects umbra (Partial) but is not fully within penumbra (Penumbral)	LNT = Lunar Penumbral total	Moon is total in the penumbra (Penumbral) but never intersects with the umbra	LPU = Lunar Partial Umbral	Moon is partially within the umbra (Partial) and total within the penumbra	LTU = Lunar Total Umbral	Moon is totally within the umbra (Total) By definition, this canon only contains Lunar Total Umbral eclipses.
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9	Gamma	This parameter represents the distance from the center of the Earth's shadow cone axis to the center of the Moon in units of Earth's equatorial radii at the instant of Maximum Eclipse. Positive values indicate eclipses where the Moon passes north of the shadow axis. Negative values indicate eclipses where the Moon passes south of the shadow axis.										
10	Umb. Mag.	Umbral Magnitude is the fraction of the Moon's diameter immersed in the umbra at the instant of Maximum Eclipse. (equal to the distance measured from the edge of the umbral shadow to the edge of the Moon deepest in the umbra). Negative values can only occur if the moon never touches the umbra during the eclipse.										
11	Greatest in Zenith Lat.	Latitude on the Earth where the Moon appears in the zenith at instant of Maximum Eclipse										
12	Greatest in Zenith Lon.	Longitude on the Earth where the Moon appears in the zenith at instant of Maximum Eclipse										
13	Hebrew Date on the Creation Calendar	This is the Hebrew Calendar Day, Hebrew Calendar Month and Gregorian/Julian Year for the instant of Maximum Eclipse based upon its occurrence with respect to the time of sunset at Jerusalem, Israel. If the Maximum Eclipse occurs after sunset at Jerusalem, it is displayed on the following Hebrew Day on the Creation Calendar at www.torahcalendar.com .										

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Lunar Eclipse Tetrad	Tetrad Sequence Number	7000 Year Canon of Lunar Eclipses Eclipse Number	Calendar Date and Time (UT) of Maximum Eclipse		Astronomical Julian Date (UT)		Date and Time (TDT) of Maximum Eclipse		Delta T (seconds)	Lunar Eclipse Type	Gamma	Umb. Mag.	Greatest in Zenith Lon.		Hebrew Date on the Creation Calendar				
			Month	Day	Time (UT)	Month	Day	Month					Day	Time (TDT)	Lon.	Lat.	Day	Month	Year
85	1 . . .	07277	Apr 04	964	B. C. E.	13:47:48	1369416.0748631	-0964	Apr 04	20:35:41	024471	LTU	-0.3854	1.1616	2.4S	154.2E	13 01	964	B. C. E.
	2 . . .	07278	Sep 29	964	B. C. E.	01:47:28	1369593.5746325	-0964	Sep 29	08:35:18	024471	LTU	0.3223	1.2058	1.0S	28.1W	14 07	964	B. C. E.
	3 . . .	07279	Mar 25	963	B. C. E.	05:24:40	1369970.7254580	-0963	Mar 25	12:12:14	024454	LTU	0.3550	1.2323	2.5N	78.7W	14 13	963	B. C. E.
	. . . 4	07280	Sep 18	963	B. C. E.	01:21:10	1369947.5563640	-0963	Sep 18	08:08:45	024454	LTU	-0.3673	1.1378	1.6S	20.7W	14 06	963	B. C. E.
105	1 . . .	08862	Mar 07	302	B. C. E.	13:32:57	1611183.0645475	-0302	Mar 07	17:26:42	014023	LTU	0.3710	1.1615	7.4N	160.5E	13 12	302	B. C. E.

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190	1 . . .	15807	Apr 09 2582 C.E.	07:43:18	2664214.8217330	2582 Apr 09 08:13:52	001834	LTU	0.3337	1.2017	7.5S 115.3W	14 01 2582 C.E.
	2 . . .	15808	Oct 03 2582 C.E.	06:58:18	2664391.7904860	2582 Oct 03 07:28:54	001837	LTU	-0.3243	1.2840	3.9N 107.1W	14 07 2582 C.E.
	3 . . .	15809	Mar 29 2583 C.E.	08:06:53	2664568.8381132	2583 Mar 29 08:37:33	001839	LTU	-0.3849	1.1269	3.7S 120.8W	15 01 2583 C.E.
	4 . . .	15810	Sep 22 2583 C.E.	21:27:17	2664456.3939516	2583 Sep 22 21:57:57	001841	LTU	0.4136	1.1017	0.4N 36.2E	15 07 2583 C.E.
191	1 . . .	15823	May 21 2589 C.E.	07:14:45	26666813.8019070	2589 May 21 07:45:52	001869	LTU	-0.4097	1.1156	20.7S 109.3W	14 03 2589 C.E.
	2 . . .	15824	Nov 13 2589 C.E.	10:34:41	26666989.9407529	2589 Nov 13 11:05:55	001872	LTU	0.4545	1.0118	18.5N 162.8W	12 09 2589 C.E.
	3 . . .	15825	May 10 2590 C.E.	17:05:34	2667168.2122001	2590 May 10 17:36:46	001874	LTU	0.3540	1.1893	17.5S 102.9E	15 02 2590 C.E.
	4 . . .	15826	Nov 02 2590 C.E.	23:08:47	2667344.4644306	2590 Nov 02 23:40:05	001877	LTU	-0.2685	1.3787	14.8N 8.7E	13 08 2590 C.E.
192	1 . . .	15847	Apr 20 2600 C.E.	14:53:30	2670800.1204883	2600 Apr 20 15:25:33	001923	LTU	0.3845	1.1102	11.3S 136.6E	13 02 2600 C.E.
	2 . . .	15848	Oct 14 2600 C.E.	14:59:45	2670977.1248277	2600 Oct 14 15:31:50	001926	LTU	-0.3691	1.1999	7.9N 131.8E	13 08 2600 C.E.
	3 . . .	15849	Apr 09 2601 C.E.	15:38:23	2671154.1516503	2601 Apr 09 16:10:32	001928	LTU	-0.3444	1.1939	7.9S 125.7E	13 01 2601 C.E.
	4 . . .	15850	Oct 04 2601 C.E.	05:03:55	2671331.7110538	2601 Oct 04 05:36:04	001931	LTU	0.3614	1.1944	4.6N 78.9W	14 07 2601 C.E.
193	1 . . .	15871	Mar 20 2611 C.E.	20:41:28	2674786.3621242	2611 Mar 20 21:14:26	001977	LTU	-0.3503	1.2156	0.1S 51.3E	13 01 2611 C.E.
	2 . . .	15872	Sep 14 2611 C.E.	09:04:28	2674963.8781021	2611 Sep 14 09:37:27	001980	LTU	0.3043	1.2686	3.2S 137.1W	14 07 2611 C.E.
	3 . . .	15873	Mar 09 2612 C.E.	11:12:42	2675140.9671521	2612 Mar 09 11:45:44	001982	LTU	0.3508	1.2310	4.8N 165.6W	13 13 2612 C.E.
	4 . . .	15874	Sep 02 2612 C.E.	09:39:23	2675317.9023525	2612 Sep 02 10:12:29	001985	LTU	-0.4446	1.0054	8.1S 144.6W	13 06 2612 C.E.
194	1 . . .	15887	May 01 2618 C.E.	21:54:23	2677385.4127667	2618 May 01 22:27:57	002014	LTU	0.4427	1.0050	14.8S 31.0E	14 02 2618 C.E.
	2 . . .	15888	Oct 25 2618 C.E.	23:08:42	2677562.4643727	2618 Oct 25 23:42:17	002016	LTU	-0.4073	1.1277	11.8N 9.0E	14 08 2618 C.E.
	3 . . .	15889	Apr 20 2619 C.E.	22:59:56	2677739.4582827	2619 Apr 20 23:33:35	002018	LTU	-0.2952	1.2872	11.8S 14.7E	13 02 2619 C.E.
	4 . . .	15890	Oct 15 2619 C.E.	12:48:40	2677917.0337919	2619 Oct 15 13:22:19	002021	LTU	0.3168	1.2733	8.7N 164.2E	14 08 2619 C.E.
195	1 . . .	15911	Mar 31 2629 C.E.	04:49:59	2681371.7013747	2629 Mar 31 05:24:30	002069	LTU	-0.3783	1.1668	4.5S 71.6W	13 01 2629 C.E.
	2 . . .	15912	Sep 24 2629 C.E.	16:02:04	2681549.1681046	2629 Sep 24 16:36:35	002072	LTU	0.3690	1.1473	1.0N 117.5E	15 07 2629 C.E.
	3 . . .	15913	Mar 20 2630 C.E.	19:40:33	2681726.3198259	2630 Mar 20 20:15:08	002075	LTU	0.3278	1.2747	0.4N 66.7E	14 01 2630 C.E.
	4 . . .	15914	Sep 13 2630 C.E.	16:22:32	2681903.1823180	2630 Sep 13 16:57:10	002077	LTU	-0.3717	1.1383	3.9S 113.6E	14 07 2630 C.E.
196	1 . . .	15936	Feb 29 2640 C.E.	10:32:13	2685358.9390402	2640 Feb 29 11:07:38	002126	LTU	0.3353	1.2478	8.1N 155.0W	14 12 2640 C.E.
	2 . . .	15937	Aug 23 2640 C.E.	16:33:41	2685535.1900529	2640 Aug 23 17:09:12	002129	LTU	-0.3138	1.2727	11.3S 112.6E	13 06 2640 C.E.
	3 . . .	15938	Feb 17 2641 C.E.	21:10:23	2685713.3822097	2641 Feb 17 21:45:53	002132	LTU	-0.3786	1.1403	11.5N 45.5E	15 12 2641 C.E.
	4 . . .	15939	Aug 13 2641 C.E.	04:22:59	2685889.6826247	2641 Aug 13 04:58:34	002134	LTU	0.4544	1.0414	14.1S 64.4W	13 05 2641 C.E.
197	1 . . .	15952	Apr 11 2647 C.E.	12:52:16	2687957.0362909	2647 Apr 11 13:28:21	002164	LTU	-0.4124	1.1071	8.7S 167.1E	13 01 2647 C.E.
	2 . . .	15953	Oct 05 2647 C.E.	23:06:17	2688134.4626965	2647 Oct 05 23:42:23	002167	LTU	0.4277	1.0371	5.3N 10.5E	14 07 2647 C.E.
	3 . . .	15954	Mar 31 2648 C.E.	04:02:14	2688311.6682167	2648 Mar 31 04:38:23	002169	LTU	0.2995	1.3282	4.0S 59.5W	14 01 2648 C.E.
	4 . . .	15955	Sep 23 2648 C.E.	23:13:47	2688488.4679066	2648 Sep 23 23:50:00	002172	LTU	-0.3051	1.2597	0.3N 9.8E	14 07 2648 C.E.
198	1 . . .	15977	Mar 11 2658 C.E.	19:00:29	2691944.2920057	2658 Mar 11 19:37:30	002222	LTU	0.3540	1.2136	3.9N 77.4E	15 13 2658 C.E.
	2 . . .	15978	Sep 03 2658 C.E.	23:40:17	2692120.4863093	2658 Sep 04 00:17:24	002225	LTU	-0.3839	1.1447	7.5S 5.1E	13 06 2658 C.E.
	3 . . .	15979	Mar 01 2659 C.E.	05:23:50	2692298.7248801	2659 Mar 01 06:00:56	002228	LTU	-0.3649	1.1650	7.4N 78.2W	15 12 2659 C.E.
	4 . . .	15980	Aug 24 2659 C.E.	11:48:33	2692474.9920524	2659 Aug 24 12:25:45	002230	LTU	0.3831	1.1728	10.6S 176.4W	13 06 2659 C.E.
199	1 . . .	16020	Mar 22 2676 C.E.	03:20:17	2698529.6390909	2676 Mar 22 03:58:55	002319	LTU	0.3794	1.1670	0.5S 48.3W	15 01 2676 C.E.
	2 . . .	16021	Sep 14 2676 C.E.	06:55:14	2698705.7883585	2676 Sep 14 07:33:58	002322	LTU	-0.4478	1.0280	3.4S 104.6W	13 07 2676 C.E.
	3 . . .	16022	Mar 11 2677 C.E.	13:29:12	2698884.0619445	2677 Mar 11 14:07:54	002324	LTU	-0.3450	1.2012	3.2N 159.8E	14 13 2677 C.E.
	4 . . .	16023	Sep 03 2677 C.E.	19:20:02	2699060.3055744	2677 Sep 03 19:58:50	002327	LTU	0.3160	1.2962	6.8S 69.9E	13 06 2677 C.E.
200	1 . . .	16795	Jul 02 2987 C.E.	14:31:43	2812222.1053592	2987 Jul 02 15:43:50	004328	LTU	0.3858	1.1771	22.4S 143.7E	14 04 2987 C.E.
	2 . . .	16796	Dec 26 2987 C.E.	04:54:02	2812398.7041864	2987 Dec 26 06:06:15	004331	LTU	-0.2485	1.3623	23.0N 73.9W	13 10 2987 C.E.
	3 . . .	16797	Jun 21 2988 C.E.	05:40:15	2812576.7362839	2988 Jun 21 06:52:28	004335	LTU	-0.3690	1.1885	23.7S 84.0W	15 04 2988 C.E.
	4 . . .	16798	Dec 14 2988 C.E.	11:06:31	2812752.9628565	2988 Dec 14 12:18:52	004339	LTU	0.4583	1.0059	23.6N 168.4W	13 10 2988 C.E.
201	1 . . .	16838	Jul 13 3005 C.E.	21:58:38	2818807.4157132	3005 Jul 13 23:13:01	004464	LTU	0.4591	1.0423	21.0S 32.4E	14 04 3005 C.E.
	2 . . .	16839	Jan 06 3006 C.E.	13:01:28	2818984.0426860	3006 Jan 06 14:15:57	004467	LTU	-0.2585	1.3446	22.2N 165.5E	13 10 3006 C.E.
	3 . . .	16840	Jul 03 3006 C.E.	12:53:46	2819162.0373365	3006 Jul 03 14:08:15	004471	LTU	-0.2966	1.3202	23.1S 168.2E	14 04 3006 C.E.
	4 . . .	16841	Dec 26 3006 C.E.	19:32:53	2819338.3145078	3006 Dec 26 20:47:29	004474	LTU	0.4462	1.0288	23.7N 66.3E	13 10 3006 C.E.
202	1 . . .	16865	Jun 12 3016 C.E.	18:03:08	2822794.2521798	3016 Jun 12 19:18:53	004546	LTU	-0.3286	1.2270	23.4S 89.8E	15 03 3016 C.E.
	2 . . .	16866	Dec 06 3016 C.E.	07:57:30	2822970.8315959	3016 Dec 06 09:13:20	004550	LTU	0.2390	1.4355	22.6N 122.0W	13 09 3016 C.E.
	3 . . .	16867	Jun 01 3017 C.E.	18:50:20	2823148.2849486	3017 Jun 01 20:06:14	004554	LTU	0.4252	1.0406	21.7S 77.4E	14 03 3017 C.E.
	4 . . .	16868	Nov 25 3017 C.E.	23:50:28	2823325.4933822	3017 Nov 26 01:06:24	004557	LTU	-0.4440	1.0554	20.3N 1.1W	14 09 3017 C.E.