

# ASTRONOMICAL PHENOMENA

July 2022 – June 2023

## ORBITAL PHENOMENA OF THE EARTH

### Orbital Phenomena

Aphelion (Earth furthest from Sun)	2022 July 4	19:11
Equinox (Sun moves south of the Equator); equal day, night	2022 September 23	13:04
Solstice (Sun furthest south); Southern hemisphere longest day	2022 December 22	09:48
Perihelion (Earth nearest to Sun)	2023 January 5	04:17
Equinox (Sun moves north of the Equator); equal day, night	2023 March 21	09:24
Solstice (Sun furthest north); Southern hemisphere shortest day	2023 June 22	02:58

## SOLAR AND LUNAR ECLIPSES

Type of Eclipse	Mid-event	Visibility from New Zealand
Partial Eclipse of the Sun	2022 October 25 23:00	Not visible
Total Eclipse of the Moon	2022 November 8 22:59	Entire event visible
Annular-Total Eclipse of the Sun	2023 April 20 15:55	Most of event visible
Penumbral Eclipse of the Moon	2023 May 6 05:23	Entire event visible

## LUNAR PERIGEE AND APOGEE

Perigee (Moon nearest to Earth)			Apogee (Moon furthest from Earth)			
		Distance (km)			Distance (km)	
2022	Jul 13	21:06	357,507	Jul 26	22:22	406,177
	Aug 11	05:09	360,044	Aug 23	09:52	405,291
	Sep 8	06:19	364,652	Sep 20	02:43	404,403
	Oct 5	04:34	369,405	Oct 17	22:20	404,164
	Oct 30	02:36	368,389	Nov 14	18:40	404,768
	Nov 26	13:31	363,005	Dec 12	12:28	405,745
	Dec 24	20:27	358,504			
2023	Jan 22	08:57	356,823	Jan 8	21:19	406,371
	Feb 19	21:06	358,503	Feb 4	20:55	406,391
	Mar 20	03:12	362,881	Mar 4	06:00	405,772
	Apr 16	14:24	368,076	Mar 31	23:17	404,772
	May 11	17:05	369,416	Apr 28	18:43	404,138
	Jun 7	11:06	365,010	May 26	13:39	404,352
				Jun 23	06:30	405,250

## PHASES OF THE MOON

	New Moon		First Quarter		Full Moon		Last Quarter	
2022			Jul 7	14:14	Jul 14	06:38	Jul 21	02:19
	Jul 29	05:55	Aug 5	23:07	Aug 12	13:36	Aug 19	16:36
	Aug 27	20:17	Sep 4	06:08	Sep 10	21:59	Sep 18	09:52
	Sep 26	09:55	Oct 3	12:14	Oct 10	08:55	Oct 18	05:15
	Oct 25	22:49	Nov 1	18:37	Nov 8	23:02	Nov 17	01:27
	Nov 24	10:57	Dec 1	02:37	Dec 8	16:08	Dec 16	20:56
	Dec 23	22:17	Dec 30	13:21				
2023	Jan 22	08:53	Jan 29	03:19	Jan 7	11:08	Jan 15	14:10
	Feb 20	19:06	Feb 27	20:06	Feb 6	06:29	Feb 14	04:01
	Mar 22	05:23	Mar 29	14:32	Mar 8	00:40	Mar 15	14:08
	Apr 20	16:12	Apr 28	09:20	Apr 6	16:34	Apr 13	21:11
	May 20	03:53	May 28	03:22	May 6	05:34	May 13	02:28
	Jun 18	16:37	Jun 26	19:50	Jun 4	15:42	Jun 11	07:31

Times listed are in New Zealand Standard Time (NZST).

Add 1 hour when New Zealand Daylight Time (NZDT) is in force.