



**Composite image illustrates various phases of the Moon over the synodic month.**

## PHASES OF THE MOON: 2001 TO 2100 UNIVERSAL TIME

### Introduction

The following table gives the date and time ([Universal Time](#)) of the Moon's phases for 100 years. This data is of particular use to historical research projects.

The length of the mean synodic month (New Moon to New Moon) as calculated for the year 2000 is 29.530588 days (= 29d 12h 44m 03s). However, the length of any one [synodic month](#) can vary from 29.26 to 29.80 days due to perturbing effects of the Sun on the Moon's eccentric orbit. For example, see [Length of the Synodic Month: 2001 to 2100](#).

For conversion to time zones other than *Universal Time*, see [Time Zones](#). If [Daylight Saving Time](#) is in effect, add one hour to the times listed.

Historians should note that the astronomical dating system used in these tables includes the year "0" while the traditional [BCE - CE dating convention](#) does not. Thus, the year "0" here corresponds to "1 BCE", the year "-100" is "101 BCE", and so on. The old style Julian calendar is used for dates prior to 1582 Oct 15, while the modern Gregorian calendar is used after that date. For more information, see [calendar dates](#).

If an eclipse of the Sun or Moon takes place on a given date, it is indicated to the right of the date by a single character representing the type of eclipse. Abbreviations for the different types of eclipses appear below.

## Eclipse Types

### Solar Eclipse

T - Total  
A - Annular  
H - Hybrid (Annular/Total)  
P - Partial

### Lunar Eclipse

t - Total (Umbral)  
p - Partial (Umbral)  
n - Penumbral

An eclipse of the Sun can occur only at New Moon (see: [Solar Eclipses for Beginners](#)), while an eclipse of the Moon can occur only at Full Moon (see: [Lunar Eclipses for Beginners](#)). In any calendar year there are a minimum of two solar and two lunar eclipses. The maximum number of eclipses in one year is 7 (4 solar and 3 lunar, or 5 solar and 2 lunar). Information about upcoming eclipses can be found at [Solar Eclipse Preview](#) and [Lunar Eclipse Preview](#).

The values of  $\Delta T$  used to convert Dynamical Time to [Universal Time](#) in this 100-year table range from 64 to 128 seconds. The [uncertainty in the value of  \$\Delta T\$](#)  grows large for dates in the distant past or future.

## PHASES OF THE MOON: 2001 TO 2010 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2001		Jan 2 22:31	Jan 9 20:24 t	Jan 16 12:35
	Jan 24 13:07	Feb 1 14:02	Feb 8 07:12	Feb 15 03:24
	Feb 23 08:21	Mar 3 02:03	Mar 9 17:23	Mar 16 20:45
	Mar 25 01:21	Apr 1 10:49	Apr 8 03:22	Apr 15 15:31
	Apr 23 15:26	Apr 30 17:08	May 7 13:53	May 15 10:11
	May 23 02:46	May 29 22:09	Jun 6 01:39	Jun 14 03:28
	Jun 21 11:58 T	Jun 28 03:20	Jul 5 15:04 p	Jul 13 18:45
	Jul 20 19:44	Jul 27 10:08	Aug 4 05:56	Aug 12 07:53
	Aug 19 02:55	Aug 25 19:55	Sep 2 21:43	Sep 10 19:00
	Sep 17 10:27	Sep 24 09:31	Oct 2 13:49	Oct 10 04:20
	Oct 16 19:23	Oct 24 02:58	Nov 1 05:41	Nov 8 12:21
	Nov 15 06:40	Nov 22 23:21	Nov 30 20:49	Dec 7 19:52
	Dec 14 20:48 A	Dec 22 20:56	Dec 30 10:41 n	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2002				Jan 6 03:55
	Jan 13 13:29	Jan 21 17:47	Jan 28 22:50	Feb 4 13:33
	Feb 12 07:41	Feb 20 12:02	Feb 27 09:17	Mar 6 01:25
	Mar 14 02:03	Mar 22 02:28	Mar 28 18:25	Apr 4 15:29
	Apr 12 19:21	Apr 20 12:48	Apr 27 03:00	May 4 07:16
	May 12 10:45	May 19 19:42	May 26 11:51 n	Jun 3 00:05
	Jun 10 23:47 A	Jun 18 00:29	Jun 24 21:42 n	Jul 2 17:19
	Jul 10 10:26	Jul 17 04:47	Jul 24 09:07	Aug 1 10:22
Aug 8 19:15	Aug 15 10:12	Aug 22 22:29	Aug 31 02:31	

Sep 7	03:10	Sep 13	18:08	Sep 21	13:59	Sep 29	17:03
Oct 6	11:17	Oct 13	05:33	Oct 21	07:20	Oct 29	05:28
Nov 4	20:34	Nov 11	20:52	Nov 20	01:34 n	Nov 27	15:46
Dec 4	07:34 T	Dec 11	15:49	Dec 19	19:10	Dec 27	00:31

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2003	Jan 2	20:23	Jan 10	13:15	Jan 18	10:48	Jan 25	08:33
	Feb 1	10:48	Feb 9	11:11	Feb 16	23:51	Feb 23	16:46
	Mar 3	02:35	Mar 11	07:15	Mar 18	10:34	Mar 25	01:51
	Apr 1	19:19	Apr 9	23:40	Apr 16	19:36	Apr 23	12:18
	May 1	12:15	May 9	11:53	May 16	03:36 t	May 23	00:31
	May 31	04:20 A	Jun 7	20:28	Jun 14	11:16	Jun 21	14:45
	Jun 29	18:39	Jul 7	02:32	Jul 13	19:21	Jul 21	07:01
	Jul 29	06:53	Aug 5	07:28	Aug 12	04:48	Aug 20	00:48
	Aug 27	17:26	Sep 3	12:34	Sep 10	16:36	Sep 18	19:03
	Sep 26	03:09	Oct 2	19:09	Oct 10	07:27	Oct 18	12:31
	Oct 25	12:50	Nov 1	04:25	Nov 9	01:14 t	Nov 17	04:15
	Nov 23	22:59 T	Nov 30	17:16	Dec 8	20:37	Dec 16	17:42
	Dec 23	09:43	Dec 30	10:03				

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2004					Jan 7	15:40	Jan 15	04:46
	Jan 21	21:05	Jan 29	06:03	Feb 6	08:47	Feb 13	13:40
	Feb 20	09:18	Feb 28	03:24	Mar 6	23:14	Mar 13	21:01
	Mar 20	22:41	Mar 28	23:48	Apr 5	11:03	Apr 12	03:46
	Apr 19	13:21 P	Apr 27	17:32	May 4	20:33 t	May 11	11:04
	May 19	04:52	May 27	07:57	Jun 3	04:20	Jun 9	20:02
	Jun 17	20:27	Jun 25	19:08	Jul 2	11:09	Jul 9	07:34
	Jul 17	11:24	Jul 25	03:37	Jul 31	18:05	Aug 7	22:01
	Aug 16	01:24	Aug 23	10:12	Aug 30	02:22	Sep 6	15:11
	Sep 14	14:29	Sep 21	15:54	Sep 28	13:09	Oct 6	10:12
	Oct 14	02:48 P	Oct 20	21:59	Oct 28	03:07 t	Nov 5	05:53
	Nov 12	14:27	Nov 19	05:50	Nov 26	20:07	Dec 5	00:53
	Dec 12	01:29	Dec 18	16:40	Dec 26	15:06		

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2005							Jan 3	17:46
	Jan 10	12:03	Jan 17	06:58	Jan 25	10:32	Feb 2	07:27
	Feb 8	22:28	Feb 16	00:16	Feb 24	04:54	Mar 3	17:36
	Mar 10	09:10	Mar 17	19:19	Mar 25	20:58	Apr 2	00:50
	Apr 8	20:32 H	Apr 16	14:37	Apr 24	10:06 n	May 1	06:24
	May 8	08:45	May 16	08:56	May 23	20:18	May 30	11:47
	Jun 6	21:55	Jun 15	01:22	Jun 22	04:14	Jun 28	18:23
	Jul 6	12:03	Jul 14	15:20	Jul 21	11:00	Jul 28	03:19
	Aug 5	03:05	Aug 13	02:39	Aug 19	17:53	Aug 26	15:18
	Sep 3	18:45	Sep 11	11:37	Sep 18	02:01	Sep 25	06:41
	Oct 3	10:28 A	Oct 10	19:01	Oct 17	12:14 p	Oct 25	01:17
	Nov 2	01:25	Nov 9	01:57	Nov 16	00:58	Nov 23	22:11
	Dec 1	15:01	Dec 8	09:36	Dec 15	16:16	Dec 23	19:36
Dec 31	03:12							

Year	New Moon		First Quarter		Full Moon		Last Quarter	
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2006		Jan 6 18:57	Jan 14 09:48	Jan 22 15:14
	Jan 29 14:15	Feb 5 06:29	Feb 13 04:44	Feb 21 07:17
	Feb 28 00:31	Mar 6 20:16	Mar 14 23:35 n	Mar 22 19:10
	Mar 29 10:15 T	Apr 5 12:01	Apr 13 16:40	Apr 21 03:28
	Apr 27 19:44	May 5 05:13	May 13 06:51	May 20 09:21
	May 27 05:26	Jun 3 23:06	Jun 11 18:03	Jun 18 14:08
	Jun 25 16:05	Jul 3 16:37	Jul 11 03:02	Jul 17 19:13
	Jul 25 04:31	Aug 2 08:46	Aug 9 10:54	Aug 16 01:51
	Aug 23 19:10	Aug 31 22:56	Sep 7 18:42 p	Sep 14 11:15
	Sep 22 11:45 A	Sep 30 11:04	Oct 7 03:13	Oct 14 00:25
	Oct 22 05:14	Oct 29 21:25	Nov 5 12:58	Nov 12 17:45
	Nov 20 22:18	Nov 28 06:29	Dec 5 00:25	Dec 12 14:32
	Dec 20 14:01	Dec 27 14:48		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2007			Jan 3 13:57	Jan 11 12:45
	Jan 19 04:01	Jan 25 23:02	Feb 2 05:45	Feb 10 09:51
	Feb 17 16:14	Feb 24 07:56	Mar 3 23:17 t	Mar 12 03:54
	Mar 19 02:43 P	Mar 25 18:16	Apr 2 17:15	Apr 10 18:04
	Apr 17 11:36	Apr 24 06:36	May 2 10:09	May 10 04:27
	May 16 19:27	May 23 21:03	Jun 1 01:04	Jun 8 11:43
	Jun 15 03:13	Jun 22 13:15	Jun 30 13:49	Jul 7 16:54
	Jul 14 12:04	Jul 22 06:29	Jul 30 00:48	Aug 5 21:20
	Aug 12 23:03	Aug 20 23:54	Aug 28 10:35 t	Sep 4 02:33
	Sep 11 12:44 P	Sep 19 16:48	Sep 26 19:45	Oct 3 10:06
	Oct 11 05:01	Oct 19 08:33	Oct 26 04:52	Nov 1 21:18
	Nov 9 23:03	Nov 17 22:33	Nov 24 14:30	Dec 1 12:44
	Dec 9 17:40	Dec 17 10:17	Dec 24 01:16	Dec 31 07:51

Year	New Moon	First Quarter	Full Moon	Last Quarter
2008				
	Jan 8 11:37	Jan 15 19:46	Jan 22 13:35	Jan 30 05:03
	Feb 7 03:44 A	Feb 14 03:34	Feb 21 03:31 t	Feb 29 02:18
	Mar 7 17:14	Mar 14 10:46	Mar 21 18:40	Mar 29 21:47
	Apr 6 03:55	Apr 12 18:32	Apr 20 10:25	Apr 28 14:12
	May 5 12:18	May 12 03:47	May 20 02:11	May 28 02:57
	Jun 3 19:23	Jun 10 15:04	Jun 18 17:30	Jun 26 12:10
	Jul 3 02:19	Jul 10 04:35	Jul 18 07:59	Jul 25 18:42
	Aug 1 10:13 T	Aug 8 20:20	Aug 16 21:16 p	Aug 23 23:50
	Aug 30 19:58	Sep 7 14:04	Sep 15 09:13	Sep 22 05:04
	Sep 29 08:12	Oct 7 09:04	Oct 14 20:03	Oct 21 11:55
	Oct 28 23:14	Nov 6 04:04	Nov 13 06:17	Nov 19 21:31
	Nov 27 16:55	Dec 5 21:26	Dec 12 16:37	Dec 19 10:29
	Dec 27 12:23			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2009				
	Jan 26 07:55 A	Jan 4 11:56	Jan 11 03:27	Jan 18 02:46
	Feb 25 01:35	Feb 2 23:13	Feb 9 14:49 n	Feb 16 21:37
	Mar 26 16:06	Mar 4 07:46	Mar 11 02:38	Mar 18 17:47
	Apr 25 03:23	Apr 2 14:34	Apr 9 14:56	Apr 17 13:36
	May 24 12:11	May 1 20:44	May 9 04:01	May 17 07:26
	Jun 22 19:35	May 31 03:22	Jun 7 18:12	Jun 15 22:15
	Jul 22 02:35 T	Jun 29 11:28	Jul 7 09:21 n	Jul 15 09:53
	Aug 20 10:02	Jul 28 22:00	Aug 6 00:55 n	Aug 13 18:55
		Aug 27 11:42	Sep 4 16:03	Sep 12 02:16

Sep 18 18:44	Sep 26 04:50	Oct 4 06:10	Oct 11 08:56
Oct 18 05:33	Oct 26 00:42	Nov 2 19:14	Nov 9 15:56
Nov 16 19:14	Nov 24 21:39	Dec 2 07:30	Dec 9 00:13
Dec 16 12:02	Dec 24 17:36	Dec 31 19:13 p	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2010				Jan 7 10:40
	Jan 15 07:11 A	Jan 23 10:53	Jan 30 06:18	Feb 5 23:49
	Feb 14 02:51	Feb 22 00:42	Feb 28 16:38	Mar 7 15:42
	Mar 15 21:01	Mar 23 11:00	Mar 30 02:25	Apr 6 09:37
	Apr 14 12:29	Apr 21 18:20	Apr 28 12:18	May 6 04:15
	May 14 01:04	May 20 23:43	May 27 23:07	Jun 4 22:13
	Jun 12 11:15	Jun 19 04:30	Jun 26 11:30 p	Jul 4 14:35
	Jul 11 19:40 T	Jul 18 10:11	Jul 26 01:37	Aug 3 04:59
	Aug 10 03:08	Aug 16 18:14	Aug 24 17:05	Sep 1 17:22
	Sep 8 10:30	Sep 15 05:50	Sep 23 09:17	Oct 1 03:52
	Oct 7 18:44	Oct 14 21:27	Oct 23 01:36	Oct 30 12:46
	Nov 6 04:52	Nov 13 16:39	Nov 21 17:27	Nov 28 20:36
	Dec 5 17:36	Dec 13 13:59	Dec 21 08:13 t	Dec 28 04:18

## PHASES OF THE MOON: 2011 TO 2020 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2011				
	Jan 4 09:03 P	Jan 12 11:31	Jan 19 21:21	Jan 26 12:57
	Feb 3 02:31	Feb 11 07:18	Feb 18 08:36	Feb 24 23:26
	Mar 4 20:46	Mar 12 23:45	Mar 19 18:10	Mar 26 12:07
	Apr 3 14:32	Apr 11 12:05	Apr 18 02:44	Apr 25 02:47
	May 3 06:51	May 10 20:33	May 17 11:09	May 24 18:52
	Jun 1 21:03 P	Jun 9 02:11	Jun 15 20:13 t	Jun 23 11:48
	Jul 1 08:54 P	Jul 8 06:29	Jul 15 06:40	Jul 23 05:02
	Jul 30 18:40	Aug 6 11:08	Aug 13 18:58	Aug 21 21:55
	Aug 29 03:04	Sep 4 17:39	Sep 12 09:27	Sep 20 13:39
	Sep 27 11:09	Oct 4 03:15	Oct 12 02:06	Oct 20 03:30
	Oct 26 19:56	Nov 2 16:38	Nov 10 20:16	Nov 18 15:09
	Nov 25 06:10 P	Dec 2 09:52	Dec 10 14:36 t	Dec 18 00:48
	Dec 24 18:06			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2012				
		Jan 1 06:15	Jan 9 07:30	Jan 16 09:08
	Jan 23 07:39	Jan 31 04:10	Feb 7 21:54	Feb 14 17:04
	Feb 21 22:35	Mar 1 01:22	Mar 8 09:40	Mar 15 01:25
	Mar 22 14:37	Mar 30 19:41	Apr 6 19:19	Apr 13 10:50
	Apr 21 07:18	Apr 29 09:58	May 6 03:35	May 12 21:47
	May 20 23:47 A	May 28 20:16	Jun 4 11:12 p	Jun 11 10:41
	Jun 19 15:02	Jun 27 03:30	Jul 3 18:52	Jul 11 01:48
	Jul 19 04:24	Jul 26 08:56	Aug 2 03:27	Aug 9 18:55
	Aug 17 15:55	Aug 24 13:54	Aug 31 13:58	Sep 8 13:15

Sep 16	02:11	Sep 22	19:41	Sep 30	03:19	Oct 8	07:33
Oct 15	12:03	Oct 22	03:32	Oct 29	19:50	Nov 7	00:36
Nov 13	22:08 T	Nov 20	14:31	Nov 28	14:46 n	Dec 6	15:32
Dec 13	08:42	Dec 20	05:19	Dec 28	10:21		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2013				Jan 5 03:58
	Jan 11 19:44	Jan 18 23:45	Jan 27 04:39	Feb 3 13:56
	Feb 10 07:20	Feb 17 20:31	Feb 25 20:26	Mar 4 21:53
	Mar 11 19:51	Mar 19 17:27	Mar 27 09:27	Apr 3 04:37
	Apr 10 09:35	Apr 18 12:31	Apr 25 19:57 p	May 2 11:14
	May 10 00:29 A	May 18 04:35	May 25 04:25 n	May 31 18:58
	Jun 8 15:57	Jun 16 17:24	Jun 23 11:32	Jun 30 04:54
	Jul 8 07:14	Jul 16 03:18	Jul 22 18:15	Jul 29 17:43
	Aug 6 21:51	Aug 14 10:56	Aug 21 01:45	Aug 28 09:35
	Sep 5 11:36	Sep 12 17:08	Sep 19 11:13	Sep 27 03:56
	Oct 5 00:35	Oct 11 23:02	Oct 18 23:38 n	Oct 26 23:41
	Nov 3 12:50 H	Nov 10 05:57	Nov 17 15:16	Nov 25 19:28
	Dec 3 00:22	Dec 9 15:12	Dec 17 09:28	Dec 25 13:48

Year	New Moon	First Quarter	Full Moon	Last Quarter
2014				
	Jan 1 11:14	Jan 8 03:39	Jan 16 04:52	Jan 24 05:19
	Jan 30 21:39	Feb 6 19:22	Feb 14 23:53	Feb 22 17:15
	Mar 1 08:00	Mar 8 13:27	Mar 16 17:09	Mar 24 01:46
	Mar 30 18:45	Apr 7 08:31	Apr 15 07:42 t	Apr 22 07:52
	Apr 29 06:14 A	May 7 03:15	May 14 19:16	May 21 12:59
	May 28 18:40	Jun 5 20:39	Jun 13 04:11	Jun 19 18:39
	Jun 27 08:09	Jul 5 11:59	Jul 12 11:25	Jul 19 02:08
	Jul 26 22:42	Aug 4 00:50	Aug 10 18:09	Aug 17 12:26
	Aug 25 14:13	Sep 2 11:11	Sep 9 01:38	Sep 16 02:05
	Sep 24 06:14	Oct 1 19:33	Oct 8 10:51 t	Oct 15 19:12
	Oct 23 21:57 P	Oct 31 02:48	Nov 6 22:23	Nov 14 15:16
	Nov 22 12:32	Nov 29 10:06	Dec 6 12:27	Dec 14 12:51
	Dec 22 01:36	Dec 28 18:31		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2015				
	Jan 20 13:14	Jan 27 04:48	Jan 5 04:53	Jan 13 09:47
	Feb 18 23:47	Feb 25 17:14	Feb 3 23:09	Feb 12 03:50
	Mar 20 09:36 T	Mar 27 07:43	Mar 5 18:06	Mar 13 17:48
	Apr 18 18:57	Apr 25 23:55	Apr 4 12:06 t	Apr 12 03:45
	May 18 04:13	May 25 17:19	May 4 03:42	May 11 10:36
	Jun 16 14:05	Jun 24 11:03	Jun 2 16:19	Jun 9 15:42
	Jul 16 01:24	Jul 24 04:04	Jul 2 02:20	Jul 8 20:24
	Aug 14 14:54	Aug 22 19:31	Jul 31 10:43	Aug 7 02:03
	Sep 13 06:41 P	Sep 21 08:59	Aug 29 18:35	Sep 5 09:54
	Oct 13 00:06	Oct 20 20:31	Sep 28 02:50 t	Oct 4 21:06
	Nov 11 17:47	Nov 19 06:27	Oct 27 12:05	Nov 3 12:24
	Dec 11 10:29	Dec 18 15:14	Nov 25 22:44	Dec 3 07:40
			Dec 25 11:11	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2016				Jan 2 05:30

Jan 10	01:31	Jan 16	23:26	Jan 24	01:46	Feb 1	03:28
Feb 8	14:39	Feb 15	07:46	Feb 22	18:20	Mar 1	23:11
Mar 9	01:54 T	Mar 15	17:03	Mar 23	12:01 n	Mar 31	15:17
Apr 7	11:24	Apr 14	03:59	Apr 22	05:24	Apr 30	03:29
May 6	19:30	May 13	17:02	May 21	21:15	May 29	12:12
Jun 5	03:00	Jun 12	08:10	Jun 20	11:02	Jun 27	18:19
Jul 4	11:01	Jul 12	00:52	Jul 19	22:57	Jul 26	23:00
Aug 2	20:45	Aug 10	18:21	Aug 18	09:27	Aug 25	03:41
Sep 1	09:03 A	Sep 9	11:49	Sep 16	19:05 n	Sep 23	09:56
Oct 1	00:12	Oct 9	04:33	Oct 16	04:23	Oct 22	19:14
Oct 30	17:38	Nov 7	19:51	Nov 14	13:52	Nov 21	08:33
Nov 29	12:18	Dec 7	09:03	Dec 14	00:06	Dec 21	01:56
Dec 29	06:53						

Year	New Moon	First Quarter	Full Moon	Last Quarter
2017		Jan 5 19:47	Jan 12 11:34	Jan 19 22:14
	Jan 28 00:07	Feb 4 04:19	Feb 11 00:33 n	Feb 18 19:33
	Feb 26 14:58 A	Mar 5 11:32	Mar 12 14:54	Mar 20 15:58
	Mar 28 02:57	Apr 3 18:39	Apr 11 06:08	Apr 19 09:57
	Apr 26 12:16	May 3 02:47	May 10 21:43	May 19 00:33
	May 25 19:44	Jun 1 12:42	Jun 9 13:10	Jun 17 11:33
	Jun 24 02:31	Jul 1 00:51	Jul 9 04:07	Jul 16 19:26
	Jul 23 09:46	Jul 30 15:23	Aug 7 18:11 p	Aug 15 01:15
	Aug 21 18:30 T	Aug 29 08:13	Sep 6 07:03	Sep 13 06:25
	Sep 20 05:30	Sep 28 02:54	Oct 5 18:40	Oct 12 12:25
	Oct 19 19:12	Oct 27 22:22	Nov 4 05:23	Nov 10 20:37
	Nov 18 11:42	Nov 26 17:03	Dec 3 15:47	Dec 10 07:51
	Dec 18 06:31	Dec 26 09:20		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2018			Jan 2 02:24	Jan 8 22:25
	Jan 17 02:17	Jan 24 22:20	Jan 31 13:27 t	Feb 7 15:54
	Feb 15 21:05 P	Feb 23 08:09	Mar 2 00:51	Mar 9 11:20
	Mar 17 13:12	Mar 24 15:35	Mar 31 12:37	Apr 8 07:18
	Apr 16 01:57	Apr 22 21:46	Apr 30 00:58	May 8 02:09
	May 15 11:48	May 22 03:49	May 29 14:20	Jun 6 18:32
	Jun 13 19:43	Jun 20 10:51	Jun 28 04:53	Jul 6 07:51
	Jul 13 02:48 P	Jul 19 19:52	Jul 27 20:21 t	Aug 4 18:18
	Aug 11 09:58 P	Aug 18 07:49	Aug 26 11:56	Sep 3 02:37
	Sep 9 18:01	Sep 16 23:15	Sep 25 02:53	Oct 2 09:45
	Oct 9 03:47	Oct 16 18:02	Oct 24 16:45	Oct 31 16:40
	Nov 7 16:02	Nov 15 14:54	Nov 23 05:39	Nov 30 00:19
	Dec 7 07:20	Dec 15 11:49	Dec 22 17:49	Dec 29 09:34

Year	New Moon	First Quarter	Full Moon	Last Quarter
2019				
	Jan 6 01:28 P	Jan 14 06:45	Jan 21 05:16 t	Jan 27 21:11
	Feb 4 21:04	Feb 12 22:26	Feb 19 15:53	Feb 26 11:28
	Mar 6 16:04	Mar 14 10:27	Mar 21 01:43	Mar 28 04:10
	Apr 5 08:50	Apr 12 19:06	Apr 19 11:12	Apr 26 22:18
	May 4 22:45	May 12 01:12	May 18 21:11	May 26 16:33
	Jun 3 10:02	Jun 10 05:59	Jun 17 08:31	Jun 25 09:46
	Jul 2 19:16 T	Jul 9 10:55	Jul 16 21:38 p	Jul 25 01:18
	Aug 1 03:12	Aug 7 17:31	Aug 15 12:29	Aug 23 14:56
	Aug 30 10:37	Sep 6 03:10	Sep 14 04:33	Sep 22 02:41

Sep 28	18:26	Oct 5	16:47	Oct 13	21:08	Oct 21	12:39
Oct 28	03:38	Nov 4	10:23	Nov 12	13:34	Nov 19	21:11
Nov 26	15:06	Dec 4	06:58	Dec 12	05:12	Dec 19	04:57
Dec 26	05:13 A						

Year	New Moon	First Quarter	Full Moon	Last Quarter
2020		Jan 3 04:45	Jan 10 19:21 n	Jan 17 12:58
	Jan 24 21:42	Feb 2 01:42	Feb 9 07:33	Feb 15 22:17
	Feb 23 15:32	Mar 2 19:57	Mar 9 17:48	Mar 16 09:34
	Mar 24 09:28	Apr 1 10:21	Apr 8 02:35	Apr 14 22:56
	Apr 23 02:26	Apr 30 20:38	May 7 10:45	May 14 14:03
	May 22 17:39	May 30 03:30	Jun 5 19:12 n	Jun 13 06:24
	Jun 21 06:41 A	Jun 28 08:16	Jul 5 04:44 n	Jul 12 23:29
	Jul 20 17:33	Jul 27 12:32	Aug 3 15:59	Aug 11 16:45
	Aug 19 02:42	Aug 25 17:58	Sep 2 05:22	Sep 10 09:26
	Sep 17 11:00	Sep 24 01:55	Oct 1 21:05	Oct 10 00:40
	Oct 16 19:31	Oct 23 13:23	Oct 31 14:49	Nov 8 13:46
	Nov 15 05:07	Nov 22 04:45	Nov 30 09:30 n	Dec 8 00:37
	Dec 14 16:17 T	Dec 21 23:41	Dec 30 03:28	

## PHASES OF THE MOON: 2021 TO 2030 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2021				Jan 6 09:37
	Jan 13 05:00	Jan 20 21:02	Jan 28 19:16	Feb 4 17:37
	Feb 11 19:06	Feb 19 18:47	Feb 27 08:17	Mar 6 01:30
	Mar 13 10:21	Mar 21 14:40	Mar 28 18:48	Apr 4 10:02
	Apr 12 02:31	Apr 20 06:59	Apr 27 03:31	May 3 19:50
	May 11 19:00	May 19 19:13	May 26 11:14 t	Jun 2 07:24
	Jun 10 10:53 A	Jun 18 03:54	Jun 24 18:40	Jul 1 21:11
	Jul 10 01:17	Jul 17 10:11	Jul 24 02:37	Jul 31 13:16
	Aug 8 13:50	Aug 15 15:20	Aug 22 12:02	Aug 30 07:13
	Sep 7 00:52	Sep 13 20:39	Sep 20 23:55	Sep 29 01:57
	Oct 6 11:05	Oct 13 03:25	Oct 20 14:57	Oct 28 20:05
	Nov 4 21:15	Nov 11 12:46	Nov 19 08:58 p	Nov 27 12:28
	Dec 4 07:43 T	Dec 11 01:36	Dec 19 04:36	Dec 27 02:24

Year	New Moon	First Quarter	Full Moon	Last Quarter
2022	Jan 2 18:34	Jan 9 18:11	Jan 17 23:49	Jan 25 13:41
	Feb 1 05:46	Feb 8 13:50	Feb 16 16:57	Feb 23 22:32
	Mar 2 17:35	Mar 10 10:45	Mar 18 07:18	Mar 25 05:37
	Apr 1 06:24	Apr 9 06:48	Apr 16 18:55	Apr 23 11:56
	Apr 30 20:28 P	May 9 00:21	May 16 04:14 t	May 22 18:43
	May 30 11:30	Jun 7 14:48	Jun 14 11:52	Jun 21 03:11
	Jun 29 02:52	Jul 7 02:14	Jul 13 18:37	Jul 20 14:18
	Jul 28 17:55	Aug 5 11:07	Aug 12 01:36	Aug 19 04:36
	Aug 27 08:17	Sep 3 18:08	Sep 10 09:59	Sep 17 21:52



Sep 25 21:54	Oct 3 00:14	Oct 9 20:55	Oct 17 17:15
Oct 25 10:49 P	Nov 1 06:37	Nov 8 11:02 t	Nov 16 13:27
Nov 23 22:57	Nov 30 14:36	Dec 8 04:08	Dec 16 08:56
Dec 23 10:17	Dec 30 01:21		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2023			Jan 6 23:08	Jan 15 02:10
	Jan 21 20:53	Jan 28 15:19	Feb 5 18:29	Feb 13 16:01
	Feb 20 07:06	Feb 27 08:06	Mar 7 12:40	Mar 15 02:08
	Mar 21 17:23	Mar 29 02:32	Apr 6 04:35	Apr 13 09:11
	Apr 20 04:12 H	Apr 27 21:20	May 5 17:34 n	May 12 14:28
	May 19 15:53	May 27 15:22	Jun 4 03:42	Jun 10 19:31
	Jun 18 04:37	Jun 26 07:50	Jul 3 11:39	Jul 10 01:48
	Jul 17 18:32	Jul 25 22:07	Aug 1 18:32	Aug 8 10:28
	Aug 16 09:38	Aug 24 09:57	Aug 31 01:35	Sep 6 22:21
	Sep 15 01:40	Sep 22 19:32	Sep 29 09:58	Oct 6 13:48
	Oct 14 17:55 A	Oct 22 03:29	Oct 28 20:24 p	Nov 5 08:37
	Nov 13 09:27	Nov 20 10:50	Nov 27 09:16	Dec 5 05:49
	Dec 12 23:32	Dec 19 18:39	Dec 27 00:33	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2024				Jan 4 03:30
	Jan 11 11:57	Jan 18 03:53	Jan 25 17:54	Feb 2 23:18
	Feb 9 22:59	Feb 16 15:01	Feb 24 12:30	Mar 3 15:24
	Mar 10 09:00	Mar 17 04:11	Mar 25 07:00 n	Apr 2 03:15
	Apr 8 18:21 T	Apr 15 19:13	Apr 23 23:49	May 1 11:27
	May 8 03:22	May 15 11:48	May 23 13:53	May 30 17:13
	Jun 6 12:38	Jun 14 05:18	Jun 22 01:08	Jun 28 21:53
	Jul 5 22:57	Jul 13 22:49	Jul 21 10:17	Jul 28 02:51
	Aug 4 11:13	Aug 12 15:19	Aug 19 18:26	Aug 26 09:26
	Sep 3 01:56	Sep 11 06:06	Sep 18 02:34 p	Sep 24 18:50
	Oct 2 18:49 A	Oct 10 18:55	Oct 17 11:26	Oct 24 08:03
	Nov 1 12:47	Nov 9 05:56	Nov 15 21:29	Nov 23 01:28
	Dec 1 06:22	Dec 8 15:27	Dec 15 09:02	Dec 22 22:18
	Dec 30 22:27			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2025		Jan 6 23:56	Jan 13 22:27	Jan 21 20:31
	Jan 29 12:36	Feb 5 08:02	Feb 12 13:53	Feb 20 17:33
	Feb 28 00:45	Mar 6 16:32	Mar 14 06:55 t	Mar 22 11:30
	Mar 29 10:58 P	Apr 5 02:15	Apr 13 00:22	Apr 21 01:36
	Apr 27 19:31	May 4 13:52	May 12 16:56	May 20 11:59
	May 27 03:02	Jun 3 03:41	Jun 11 07:44	Jun 18 19:19
	Jun 25 10:31	Jul 2 19:30	Jul 10 20:37	Jul 18 00:38
	Jul 24 19:11	Aug 1 12:41	Aug 9 07:55	Aug 16 05:12
	Aug 23 06:06	Aug 31 06:25	Sep 7 18:09 t	Sep 14 10:33
	Sep 21 19:54 P	Sep 29 23:54	Oct 7 03:48	Oct 13 18:13
	Oct 21 12:25	Oct 29 16:21	Nov 5 13:19	Nov 12 05:28
	Nov 20 06:47	Nov 28 06:59	Dec 4 23:14	Dec 11 20:52
	Dec 20 01:43	Dec 27 19:10		

Year	New Moon	First Quarter	Full Moon	Last Quarter
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Year	New Moon	First Quarter	Full Moon	Last Quarter
2026	Jan 18 19:52	Jan 26 04:48	Jan 3 10:03	Jan 10 15:48
	Feb 17 12:01 A	Feb 24 12:28	Feb 1 22:09	Feb 9 12:43
	Mar 19 01:23	Mar 25 19:18	Mar 3 11:38 t	Mar 11 09:39
	Apr 17 11:52	Apr 24 02:32	Apr 2 02:12	Apr 10 04:52
	May 16 20:01	May 23 11:11	May 1 17:23	May 9 21:11
	Jun 15 02:54	Jun 21 21:55	May 31 08:45	Jun 8 10:01
	Jul 14 09:44	Jul 21 11:06	Jun 29 23:57	Jul 7 19:29
	Aug 12 17:37 T	Aug 20 02:46	Jul 29 14:36	Aug 6 02:22
	Sep 11 03:27	Sep 18 20:44	Aug 28 04:18 p	Sep 4 07:51
	Oct 10 15:50	Oct 18 16:13	Sep 26 16:49	Oct 3 13:25
	Nov 9 07:02	Nov 17 11:48	Oct 26 04:12	Nov 1 20:28
	Dec 9 00:52	Dec 17 05:43	Nov 24 14:53	Dec 1 06:09
			Dec 24 01:28	Dec 30 19:00

Year	New Moon	First Quarter	Full Moon	Last Quarter
2027	Jan 7 20:24	Jan 15 20:34	Jan 22 12:17	Jan 29 10:56
	Feb 6 15:56 A	Feb 14 07:58	Feb 20 23:24 n	Feb 28 05:16
	Mar 8 09:29	Mar 15 16:25	Mar 22 10:44	Mar 30 00:54
	Apr 6 23:51	Apr 13 22:57	Apr 20 22:27	Apr 28 20:18
	May 6 10:59	May 13 04:44	May 20 10:59	May 28 13:58
	Jun 4 19:40	Jun 11 10:56	Jun 19 00:44	Jun 27 04:54
	Jul 4 03:02	Jul 10 18:39	Jul 18 15:45	Jul 26 16:55
	Aug 2 10:05 T	Aug 9 04:54	Aug 17 07:29 n	Aug 25 02:27
	Aug 31 17:41	Sep 7 18:31	Sep 15 23:04	Sep 23 10:20
	Sep 30 02:36	Oct 7 11:47	Oct 15 13:47	Oct 22 17:29
	Oct 29 13:36	Nov 6 08:00	Nov 14 03:26	Nov 21 00:48
	Nov 28 03:24	Dec 6 05:22	Dec 13 16:09	Dec 20 09:11
	Dec 27 20:12			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2028	Jan 26 15:13 A	Jan 5 01:40	Jan 12 04:03 p	Jan 18 19:26
	Feb 25 10:37	Feb 3 19:11	Feb 10 15:04	Feb 17 08:08
	Mar 26 04:31	Mar 4 09:02	Mar 11 01:06	Mar 17 23:23
	Apr 24 19:47	Apr 2 19:15	Apr 9 10:27	Apr 16 16:37
	May 24 08:16	May 2 02:26	May 8 19:49	May 16 10:43
	Jun 22 18:28	May 31 07:37	Jun 7 06:09	Jun 15 04:27
	Jul 22 03:02 T	Jun 29 12:11	Jul 6 18:11 p	Jul 14 20:57
	Aug 20 10:44	Jul 28 17:40	Aug 5 08:10	Aug 13 11:45
	Sep 18 18:24	Aug 27 01:36	Sep 3 23:48	Sep 12 00:46
	Oct 18 02:57	Sep 25 13:10	Oct 3 16:25	Oct 11 11:57
	Nov 16 13:18	Oct 25 04:53	Nov 2 09:17	Nov 9 21:26
	Dec 16 02:06	Nov 24 00:15	Dec 2 01:40	Dec 9 05:39
		Dec 23 21:45	Dec 31 16:48 t	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2029	Jan 14 17:24 P	Jan 22 19:23	Jan 30 06:04	Jan 7 13:26
	Feb 13 10:31	Feb 21 15:10	Feb 28 17:10	Feb 5 21:52
	Mar 15 04:19	Mar 23 07:33	Mar 30 02:26	Mar 7 07:52
	Apr 13 21:40	Apr 21 19:50	Apr 28 10:37	Apr 5 19:52
	May 13 13:42	May 21 04:16	May 27 18:37	May 5 09:48
	Jun 12 03:51 P	Jun 19 09:54	Jun 26 03:22 t	Jun 4 01:19
	Jul 11 15:51 P	Jul 18 14:14	Jul 25 13:36	Jul 3 17:58
	Aug 10 01:56	Aug 16 18:55	Aug 24 01:51	Aug 2 11:16
				Sep 1 04:33

Sep 8 10:44	Sep 15 01:29	Sep 22 16:29	Sep 30 20:57
Oct 7 19:14	Oct 14 11:09	Oct 22 09:28	Oct 30 11:32
Nov 6 04:24	Nov 13 00:35	Nov 21 04:03	Nov 28 23:48
Dec 5 14:52 P	Dec 12 17:49	Dec 20 22:46 t	Dec 28 09:49

Year	New Moon	First Quarter	Full Moon	Last Quarter
2030	Jan 4 02:49	Jan 11 14:06	Jan 19 15:54	Jan 26 18:15
	Feb 2 16:08	Feb 10 11:49	Feb 18 06:20	Feb 25 01:58
	Mar 4 06:35	Mar 12 08:48	Mar 19 17:56	Mar 26 09:51
	Apr 2 22:02	Apr 11 02:57	Apr 18 03:20	Apr 24 18:39
	May 2 14:12	May 10 17:12	May 17 11:19	May 24 04:57
	Jun 1 06:21 A	Jun 9 03:36	Jun 15 18:41 p	Jun 22 17:20
	Jun 30 21:34	Jul 8 11:02	Jul 15 02:12	Jul 22 08:08
	Jul 30 11:11	Aug 6 16:43	Aug 13 10:44	Aug 21 01:15
	Aug 28 23:07	Sep 4 21:56	Sep 11 21:18	Sep 19 19:57
	Sep 27 09:55	Oct 4 03:56	Oct 11 10:47	Oct 19 14:50
	Oct 26 20:17	Nov 2 11:56	Nov 10 03:30	Nov 18 08:32
	Nov 25 06:46 T	Dec 1 22:57	Dec 9 22:40 n	Dec 18 00:01
	Dec 24 17:32	Dec 31 13:36		

## PHASES OF THE MOON: 2031 TO 2040 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2031			Jan 8 18:26	Jan 16 12:47
	Jan 23 04:31	Jan 30 07:43	Feb 7 12:46	Feb 14 22:50
	Feb 21 15:49	Mar 1 04:02	Mar 9 04:30	Mar 16 06:36
	Mar 23 03:49	Mar 31 00:32	Apr 7 17:21	Apr 14 12:58
	Apr 21 16:57	Apr 29 19:20	May 7 03:40 n	May 13 19:07
	May 21 07:17 A	May 29 11:20	Jun 5 11:58 n	Jun 12 02:21
	Jun 19 22:25	Jun 28 00:19	Jul 4 19:01	Jul 11 11:50
	Jul 19 13:40	Jul 27 10:35	Aug 3 01:46	Aug 10 00:24
	Aug 18 04:32	Aug 25 18:40	Sep 1 09:20	Sep 8 16:14
	Sep 16 18:47	Sep 24 01:20	Sep 30 18:58	Oct 8 10:50
	Oct 16 08:21	Oct 23 07:36	Oct 30 07:33 n	Nov 7 07:02
	Nov 14 21:10 H	Nov 21 14:45	Nov 28 23:18	Dec 7 03:20
	Dec 14 09:06	Dec 21 00:01	Dec 28 17:33	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2032				Jan 5 22:04
	Jan 12 20:07	Jan 19 12:14	Jan 27 12:52	Feb 4 13:49
	Feb 11 06:24	Feb 18 03:29	Feb 26 07:43	Mar 5 01:47
	Mar 11 16:25	Mar 18 20:57	Mar 27 00:46	Apr 3 10:10
	Apr 10 02:39	Apr 17 15:24	Apr 25 15:10 t	May 2 16:02
	May 9 13:36 A	May 17 09:43	May 25 02:37	May 31 20:51
	Jun 8 01:32	Jun 16 03:00	Jun 23 11:33	Jun 30 02:12
	Jul 7 14:42	Jul 15 18:32	Jul 22 18:51	Jul 29 09:25
Aug 6 05:12	Aug 14 07:51	Aug 21 01:47	Aug 27 19:33	

Sep 4	20:57	Sep 12	18:49	Sep 19	09:30	Sep 26	09:12
Oct 4	13:27	Oct 12	03:48	Oct 18	18:58 t	Oct 26	02:29
Nov 3	05:45 P	Nov 10	11:33	Nov 17	06:42	Nov 24	22:48
Dec 2	20:53	Dec 9	19:09	Dec 16	20:49	Dec 24	20:39

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2033	Jan 1	10:17	Jan 8	03:34	Jan 15	13:07	Jan 23	17:46
	Jan 30	22:00	Feb 6	13:34	Feb 14	07:04	Feb 22	11:53
	Mar 1	08:23	Mar 8	01:27	Mar 16	01:37	Mar 24	01:50
	Mar 30	17:52 T	Apr 6	15:14	Apr 14	19:17 t	Apr 22	11:42
	Apr 29	02:46	May 6	06:45	May 14	10:43	May 21	18:29
	May 28	11:36	Jun 4	23:39	Jun 12	23:19	Jun 19	23:30
	Jun 26	21:07	Jul 4	17:12	Jul 12	09:29	Jul 19	04:07
	Jul 26	08:13	Aug 3	10:26	Aug 10	18:08	Aug 17	09:43
	Aug 24	21:40	Sep 2	02:24	Sep 9	02:20	Sep 15	17:34
	Sep 23	13:40 P	Oct 1	16:33	Oct 8	10:58 t	Oct 15	04:47
	Oct 23	07:29	Oct 31	04:46	Nov 6	20:32	Nov 13	20:09
	Nov 22	01:39	Nov 29	15:15	Dec 6	07:22	Dec 13	15:28
	Dec 21	18:47	Dec 29	00:20				

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2034					Jan 4	19:47	Jan 12	13:17
	Jan 20	10:02	Jan 27	08:32	Feb 3	10:05	Feb 11	11:09
	Feb 18	23:10	Feb 25	16:34	Mar 5	02:10	Mar 13	06:45
	Mar 20	10:14 T	Mar 27	01:18	Apr 3	19:19 n	Apr 11	22:45
	Apr 18	19:26	Apr 25	11:35	May 3	12:16	May 11	10:56
	May 18	03:13	May 24	23:58	Jun 2	03:54	Jun 9	19:44
	Jun 16	10:26	Jun 23	14:35	Jul 1	17:45	Jul 9	01:59
	Jul 15	18:15	Jul 23	07:05	Jul 31	05:55	Aug 7	06:50
	Aug 14	03:53	Aug 22	00:43	Aug 29	16:49	Sep 5	11:41
	Sep 12	16:14 A	Sep 20	18:39	Sep 28	02:57 p	Oct 4	18:05
	Oct 12	07:33	Oct 20	12:03	Oct 27	12:42	Nov 3	03:27
	Nov 11	01:16	Nov 19	04:01	Nov 25	22:32	Dec 2	16:46
	Dec 10	20:14	Dec 18	17:45	Dec 25	08:54		

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2035							Jan 1	10:01
	Jan 9	15:03	Jan 17	04:45	Jan 23	20:17	Jan 31	06:03
	Feb 8	08:22	Feb 15	13:17	Feb 22	08:54 n	Mar 2	03:01
	Mar 9	23:09 A	Mar 16	20:15	Mar 23	22:42	Mar 31	23:07
	Apr 8	10:58	Apr 15	02:55	Apr 22	13:21	Apr 30	16:54
	May 7	20:04	May 14	10:28	May 22	04:26	May 30	07:31
	Jun 6	03:21	Jun 12	19:50	Jun 20	19:37	Jun 28	18:43
	Jul 5	09:59	Jul 12	07:33	Jul 20	10:37	Jul 28	02:56
	Aug 3	17:12	Aug 10	21:52	Aug 19	01:00 p	Aug 26	09:08
	Sep 2	01:59 T	Sep 9	14:47	Sep 17	14:23	Sep 24	14:40
	Oct 1	13:07	Oct 9	09:49	Oct 17	02:35	Oct 23	20:57
	Oct 31	02:59	Nov 8	05:51	Nov 15	13:49	Nov 22	05:16
	Nov 29	19:38	Dec 8	01:05	Dec 15	00:33	Dec 21	16:29
Dec 29	14:31							

Year	New Moon		First Quarter		Full Moon		Last Quarter	
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2036		Jan 6 17:48	Jan 13 11:16	Jan 20 06:46
	Jan 28 10:17	Feb 5 07:01	Feb 11 22:09 t	Feb 18 23:47
	Feb 27 04:59 P	Mar 5 16:49	Mar 12 09:09	Mar 19 18:39
	Mar 27 20:57	Apr 4 00:03	Apr 10 20:23	Apr 18 14:06
	Apr 26 09:33	May 3 05:54	May 10 08:10	May 18 08:39
	May 25 19:17	Jun 1 11:34	Jun 8 21:02	Jun 17 01:03
	Jun 24 03:10	Jun 30 18:13	Jul 8 11:19	Jul 16 14:40
	Jul 23 10:17 P	Jul 30 02:56	Aug 7 02:49 t	Aug 15 01:36
	Aug 21 17:35 P	Aug 28 14:43	Sep 5 18:45	Sep 13 10:29
	Sep 20 01:51	Sep 27 06:12	Oct 5 10:15	Oct 12 18:09
	Oct 19 11:50	Oct 27 01:14	Nov 4 00:44	Nov 11 01:29
	Nov 18 00:14	Nov 25 22:28	Dec 3 14:08	Dec 10 09:18
	Dec 17 15:34	Dec 25 19:44		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2037			Jan 2 02:35	Jan 8 18:29
	Jan 16 09:34 P	Jan 24 14:55	Jan 31 14:04 t	Feb 7 05:44
	Feb 15 04:54	Feb 23 06:41	Mar 2 00:28	Mar 8 19:25
	Mar 16 23:36	Mar 24 18:39	Mar 31 09:53	Apr 7 11:25
	Apr 15 16:08	Apr 23 03:11	Apr 29 18:54	May 7 04:56
	May 15 05:54	May 22 09:08	May 29 04:24	Jun 5 22:49
	Jun 13 17:10	Jun 20 13:45	Jun 27 15:20	Jul 5 16:00
	Jul 13 02:32 T	Jul 19 18:31	Jul 27 04:15 p	Aug 4 07:51
	Aug 11 10:41	Aug 18 01:00	Aug 25 19:09	Sep 2 22:03
	Sep 9 18:25	Sep 16 10:36	Sep 24 11:32	Oct 2 10:29
	Oct 9 02:34	Oct 16 00:15	Oct 24 04:36	Oct 31 21:06
	Nov 7 12:03	Nov 14 17:59	Nov 22 21:35	Nov 30 06:06
	Dec 6 23:38	Dec 14 14:42	Dec 22 13:39	Dec 29 14:05

Year	New Moon	First Quarter	Full Moon	Last Quarter
2038				
	Jan 5 13:41 A	Jan 13 12:34	Jan 21 04:00 n	Jan 27 22:00
	Feb 4 05:52	Feb 12 09:30	Feb 19 16:09	Feb 26 06:56
	Mar 5 23:15	Mar 14 03:42	Mar 21 02:09	Mar 27 17:36
	Apr 4 16:43	Apr 12 18:02	Apr 19 10:36	Apr 26 06:15
	May 4 09:20	May 12 04:18	May 18 18:23	May 25 20:43
	Jun 3 00:24	Jun 10 11:11	Jun 17 02:30 n	Jun 24 12:40
	Jul 2 13:32 A	Jul 9 16:01	Jul 16 11:48 n	Jul 24 05:40
	Aug 1 00:40	Aug 7 20:21	Aug 14 22:57	Aug 22 23:12
	Aug 30 10:13	Sep 6 01:51	Sep 13 12:24	Sep 21 16:27
	Sep 28 18:57	Oct 5 09:52	Oct 13 04:22	Oct 21 08:23
	Oct 28 03:53	Nov 3 21:24	Nov 11 22:27	Nov 19 22:10
	Nov 26 13:47	Dec 3 12:46	Dec 11 17:30 n	Dec 19 09:29
	Dec 26 01:02 T			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2039				
	Jan 24 13:36	Jan 2 07:37	Jan 10 11:45	Jan 17 18:42
	Feb 23 03:18	Feb 1 04:45	Feb 9 03:39	Feb 16 02:36
	Mar 24 18:00	Mar 3 02:15	Mar 10 16:35	Mar 17 10:08
	Apr 23 09:35	Apr 1 21:55	Apr 9 02:53	Apr 15 18:07
	May 23 01:38	May 1 14:07	May 8 11:20	May 15 03:17
	Jun 21 17:21 A	May 31 02:24	Jun 6 18:48 p	Jun 13 14:16
	Jul 21 07:54	Jun 29 11:17	Jul 6 02:03	Jul 13 03:38
	Aug 19 20:50	Jul 28 17:50	Aug 4 09:57	Aug 11 19:36
		Aug 26 23:16	Sep 2 19:24	Sep 10 13:46

Sep 18 08:23	Sep 25 04:53	Oct 2 07:23	Oct 10 08:59
Oct 17 19:09	Oct 24 11:51	Oct 31 22:36	Nov 9 03:46
Nov 16 05:46	Nov 22 21:17	Nov 30 16:49 p	Dec 8 20:44
Dec 15 16:32 T	Dec 22 10:02	Dec 30 12:38	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2040				Jan 7 11:05
	Jan 14 03:25	Jan 21 02:21	Jan 29 07:55	Feb 5 22:32
	Feb 12 14:24	Feb 19 21:34	Feb 28 00:59	Mar 6 07:19
	Mar 13 01:46	Mar 20 17:59	Mar 28 15:12	Apr 4 14:06
	Apr 11 14:00	Apr 19 13:37	Apr 27 02:38	May 3 20:00
	May 11 03:28 P	May 19 07:00	May 26 11:47 t	Jun 2 02:17
	Jun 9 18:03	Jun 17 21:32	Jun 24 19:19	Jul 1 10:18
	Jul 9 09:15	Jul 17 09:16	Jul 24 02:05	Jul 30 21:06
	Aug 8 00:26	Aug 15 18:36	Aug 22 09:10	Aug 29 11:17
	Sep 6 15:14	Sep 14 02:08	Sep 20 17:43	Sep 28 04:41
	Oct 6 05:26	Oct 13 08:41	Oct 20 04:50	Oct 28 00:27
	Nov 4 18:56 P	Nov 11 15:23	Nov 18 19:06 t	Nov 26 21:07
	Dec 4 07:33	Dec 10 23:30	Dec 18 12:16	Dec 26 17:02

## PHASES OF THE MOON: 2041 TO 2050 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2041				
	Jan 2 19:08	Jan 9 10:06	Jan 17 07:11	Jan 25 10:33
	Feb 1 05:43	Feb 7 23:40	Feb 16 02:21	Feb 24 00:29
	Mar 2 15:39	Mar 9 15:51	Mar 17 20:19	Mar 25 10:32
	Apr 1 01:29	Apr 8 09:38	Apr 16 12:01	Apr 23 17:24
	Apr 30 11:46 T	May 8 03:54	May 16 00:52 p	May 22 22:26
	May 29 22:56	Jun 6 21:40	Jun 14 10:59	Jun 21 03:12
	Jun 28 11:17	Jul 6 14:12	Jul 13 19:01	Jul 20 09:13
	Jul 28 01:02	Aug 5 04:53	Aug 12 02:04	Aug 18 17:43
	Aug 26 16:16	Sep 3 17:19	Sep 10 09:24	Sep 17 05:33
	Sep 25 08:41	Oct 3 03:33	Oct 9 18:03	Oct 16 21:05
	Oct 25 01:30 A	Nov 1 12:05	Nov 8 04:43 p	Nov 15 16:06
	Nov 23 17:37	Nov 30 19:49	Dec 7 17:42	Dec 15 13:33
	Dec 23 08:06	Dec 30 03:46		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2042				
	Jan 21 20:42	Jan 28 12:49	Jan 6 08:54	Jan 14 11:24
	Feb 20 07:39	Feb 26 23:29	Feb 5 01:58	Feb 13 07:16
	Mar 21 17:23	Mar 28 12:00	Mar 6 20:10	Mar 14 23:21
	Apr 20 02:19 T	Apr 27 02:19	Apr 5 14:16 n	Apr 13 11:09
	May 19 10:55	May 26 18:18	May 5 06:48	May 12 19:18
	Jun 17 19:48	Jun 25 11:29	Jun 3 20:48	Jun 11 01:00
	Jul 17 05:52	Jul 25 05:01	Jul 3 08:09	Jul 10 05:38
	Aug 15 18:01	Aug 23 21:55	Aug 1 17:33	Aug 8 10:35
			Aug 31 02:02	Sep 6 17:09

Sep 14 08:50	Sep 22 13:21	Sep 29 10:34 n	Oct 6 02:35
Oct 14 02:03 A	Oct 22 02:53	Oct 28 19:48	Nov 4 15:51
Nov 12 20:28	Nov 20 14:31	Nov 27 06:06	Dec 4 09:19
Dec 12 14:30	Dec 20 00:28	Dec 26 17:43	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2043				Jan 3 06:08
	Jan 11 06:53	Jan 18 09:05	Jan 25 06:56	Feb 2 04:14
	Feb 9 21:08	Feb 16 17:00	Feb 23 21:58	Mar 4 01:07
	Mar 11 09:09	Mar 18 01:03	Mar 25 14:26 t	Apr 2 18:56
	Apr 9 19:06 T	Apr 16 10:09	Apr 24 07:23	May 2 08:59
	May 9 03:21	May 15 21:05	May 23 23:37	May 31 19:25
	Jun 7 10:35	Jun 14 10:19	Jun 22 14:20	Jun 30 02:53
	Jul 6 17:51	Jul 14 01:47	Jul 22 03:24	Jul 29 08:23
	Aug 5 02:23	Aug 12 18:57	Aug 20 15:04	Aug 27 13:09
	Sep 3 13:17	Sep 11 13:01	Sep 19 01:47 t	Sep 25 18:40
	Oct 3 03:12 A	Oct 11 07:05	Oct 18 11:56	Oct 25 02:28
	Nov 1 19:57	Nov 10 00:13	Nov 16 21:52	Nov 23 13:46
	Dec 1 14:37	Dec 9 15:27	Dec 16 08:02	Dec 23 05:04
	Dec 31 09:48			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2044		Jan 8 04:02	Jan 14 18:51	Jan 21 23:47
	Jan 30 04:04	Feb 6 13:46	Feb 13 06:42	Feb 20 20:20
	Feb 28 20:12 A	Mar 6 21:17	Mar 13 19:41 t	Mar 21 16:52
	Mar 29 09:26	Apr 5 03:45	Apr 12 09:39	Apr 20 11:48
	Apr 27 19:42	May 4 10:28	May 12 00:17	May 20 04:02
	May 27 03:40	Jun 2 18:33	Jun 10 15:16	Jun 18 17:00
	Jun 25 10:24	Jul 2 04:48	Jul 10 06:22	Jul 18 02:47
	Jul 24 17:10	Jul 31 17:40	Aug 8 21:14	Aug 16 10:03
	Aug 23 01:06 T	Aug 30 09:19	Sep 7 11:24 t	Sep 14 15:58
	Sep 21 11:03	Sep 29 03:30	Oct 7 00:30	Oct 13 21:52
	Oct 20 23:36	Oct 28 23:28	Nov 5 12:27	Nov 12 05:09
	Nov 19 14:58	Nov 27 19:36	Dec 4 23:34	Dec 11 14:52
	Dec 19 08:53	Dec 27 14:00		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2045			Jan 3 10:20	Jan 10 03:32
	Jan 18 04:25	Jan 26 05:09	Feb 1 21:05	Feb 8 19:03
	Feb 16 23:51 A	Feb 24 16:37	Mar 3 07:52 n	Mar 10 12:50
	Mar 18 17:15	Mar 26 00:56	Apr 1 18:43	Apr 9 07:52
	Apr 17 07:27	Apr 24 07:12	May 1 05:52	May 9 02:51
	May 16 18:26	May 23 12:38	May 30 17:52	Jun 7 20:23
	Jun 15 03:05	Jun 21 18:28	Jun 29 07:16	Jul 7 11:31
	Jul 14 10:28	Jul 21 01:52	Jul 28 22:11	Aug 5 23:57
	Aug 12 17:39 T	Aug 19 11:55	Aug 27 14:08 n	Sep 4 10:03
	Sep 11 01:28	Sep 18 01:30	Sep 26 06:12	Oct 3 18:32
	Oct 10 10:37	Oct 17 18:55	Oct 25 21:31	Nov 2 02:10
	Nov 8 21:49	Nov 16 15:26	Nov 24 11:43	Dec 1 09:46
	Dec 8 11:41	Dec 16 13:08	Dec 24 00:49	Dec 30 18:11

Year	New Moon	First Quarter	Full Moon	Last Quarter
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2046	Jan 7 04:24	Jan 15 09:43	Jan 22 12:51 p	Jan 29 04:11
	Feb 5 23:10 A	Feb 14 03:20	Feb 20 23:44	Feb 27 16:23
	Mar 7 18:15	Mar 15 17:13	Mar 22 09:27	Mar 29 06:57
	Apr 6 11:52	Apr 14 03:21	Apr 20 18:21	Apr 27 23:30
	May 6 02:56	May 13 10:25	May 20 03:15	May 27 17:06
	Jun 4 15:22	Jun 11 15:28	Jun 18 13:10	Jun 26 10:40
	Jul 4 01:39	Jul 10 19:53	Jul 18 00:55 p	Jul 26 03:19
	Aug 2 10:25 T	Aug 9 01:16	Aug 16 14:50	Aug 24 18:36
	Aug 31 18:25	Sep 7 09:07	Sep 15 06:39	Sep 23 08:16
	Sep 30 02:25	Oct 6 20:41	Oct 14 23:41	Oct 22 20:08
	Oct 29 11:17	Nov 5 12:28	Nov 13 17:04	Nov 21 06:10
	Nov 27 21:50	Dec 5 07:56	Dec 13 09:55	Dec 20 14:43
	Dec 27 10:39			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2047		Jan 4 05:31	Jan 12 01:21 t	Jan 18 22:32
	Jan 26 01:44 P	Feb 3 03:09	Feb 10 14:40	Feb 17 06:42
	Feb 24 18:26	Mar 4 22:52	Mar 12 01:37	Mar 18 16:11
	Mar 26 11:44	Apr 3 15:11	Apr 10 10:35	Apr 17 03:30
	Apr 25 04:40	May 3 03:26	May 9 18:24	May 16 16:46
	May 24 20:27	Jun 1 11:54	Jun 8 02:05	Jun 15 07:45
	Jun 23 10:36 P	Jun 30 17:37	Jul 7 10:34 t	Jul 15 00:09
	Jul 22 22:49 P	Jul 29 22:03	Aug 5 20:38	Aug 13 17:34
	Aug 21 09:16	Aug 28 02:49	Sep 4 08:54	Sep 12 11:18
	Sep 19 18:31	Sep 26 09:29	Oct 3 23:42	Oct 12 04:22
	Oct 19 03:28	Oct 25 19:13	Nov 2 16:58	Nov 10 19:39
	Nov 17 12:59	Nov 24 08:41	Dec 2 11:55	Dec 10 08:29
	Dec 16 23:38 P	Dec 24 01:51		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2048			Jan 1 06:57 t	Jan 8 18:49
	Jan 15 11:32	Jan 22 21:56	Jan 31 00:14	Feb 7 03:17
	Feb 14 00:31	Feb 21 19:22	Feb 29 14:38	Mar 7 10:45
	Mar 14 14:28	Mar 22 16:03	Mar 30 02:04	Apr 5 18:10
	Apr 13 05:20	Apr 21 10:02	Apr 28 11:13	May 5 02:22
	May 12 20:58	May 21 00:16	May 27 18:57	Jun 3 12:05
	Jun 11 12:50 A	Jun 19 10:50	Jun 26 02:08 p	Jul 2 23:58
	Jul 11 04:04	Jul 18 18:32	Jul 25 09:34	Aug 1 14:31
	Aug 9 17:59	Aug 17 00:32	Aug 23 18:07	Aug 31 07:42
	Sep 8 06:25	Sep 15 06:04	Sep 22 04:47	Sep 30 02:46
	Oct 7 17:45	Oct 14 12:20	Oct 21 18:25	Oct 29 22:15
	Nov 6 04:38	Nov 12 20:29	Nov 20 11:20	Nov 28 16:34
	Dec 5 15:30 T	Dec 12 07:29	Dec 20 06:39 n	Dec 28 08:32

Year	New Moon	First Quarter	Full Moon	Last Quarter
2049	Jan 4 02:24	Jan 10 21:56	Jan 19 02:29	Jan 26 21:33
	Feb 2 13:16	Feb 9 15:38	Feb 17 20:47	Feb 25 07:36
	Mar 4 00:11	Mar 11 11:26	Mar 19 12:23	Mar 26 15:10
	Apr 2 11:39	Apr 10 07:27	Apr 18 01:05	Apr 24 21:11
	May 2 00:11	May 10 01:57	May 17 11:14 n	May 24 02:54
	May 31 14:00 A	Jun 8 17:56	Jun 15 19:27 n	Jun 22 09:41
	Jun 30 04:50	Jul 8 07:10	Jul 15 02:29	Jul 21 18:48
	Jul 29 20:07	Aug 6 17:52	Aug 13 09:19	Aug 20 07:11
	Aug 28 11:19	Sep 5 02:28	Sep 11 17:04	Sep 18 23:04



Sep 27 02:05	Oct 4 09:39	Oct 11 02:53	Oct 18 17:55
Oct 26 16:15	Nov 2 16:19	Nov 9 15:38 n	Nov 17 14:32
Nov 25 05:36 H	Dec 1 23:40	Dec 9 07:28	Dec 17 11:15
Dec 24 17:52	Dec 31 08:53		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2050			Jan 8 01:39	Jan 16 06:18
	Jan 23 04:57	Jan 29 20:48	Feb 6 20:47	Feb 14 22:11
	Feb 21 15:03	Feb 28 11:29	Mar 8 15:23	Mar 16 10:08
	Mar 23 00:41	Mar 30 04:17	Apr 7 08:12	Apr 14 18:24
	Apr 21 10:26	Apr 28 22:08	May 6 22:26 t	May 14 00:04
	May 20 20:51 H	May 28 16:04	Jun 5 09:51	Jun 12 04:39
	Jun 19 08:22	Jun 27 09:17	Jul 4 18:51	Jul 11 09:46
	Jul 18 21:17	Jul 27 01:05	Aug 3 02:20	Aug 9 16:48
	Aug 17 11:47	Aug 25 14:56	Sep 1 09:31	Sep 8 02:51
	Sep 16 03:49	Sep 24 02:34	Sep 30 17:32	Oct 7 16:32
	Oct 15 20:49	Oct 23 12:11	Oct 30 03:16 t	Nov 6 09:57
	Nov 14 13:41 P	Nov 21 20:25	Nov 28 15:10	Dec 6 06:28
	Dec 14 05:18	Dec 21 04:15	Dec 28 05:15	

## PHASES OF THE MOON: 2051 TO 2060 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2051				Jan 5 04:29
	Jan 12 18:58	Jan 19 12:38	Jan 26 21:20	Feb 4 01:40
	Feb 11 06:41	Feb 17 22:17	Feb 25 14:53	Mar 5 19:47
	Mar 12 16:52	Mar 19 09:34	Mar 27 09:00	Apr 4 09:41
	Apr 11 01:59 P	Apr 17 22:38	Apr 26 02:19 t	May 3 19:31
	May 10 10:29	May 17 13:30	May 25 17:35	Jun 2 02:15
	Jun 8 18:56	Jun 16 05:55	Jun 24 06:14	Jul 1 07:15
	Jul 8 04:09	Jul 15 23:21	Jul 23 16:36	Jul 30 11:52
	Aug 6 15:05	Aug 14 16:49	Aug 22 01:35	Aug 28 17:29
	Sep 5 04:33	Sep 13 09:21	Sep 20 10:11	Sep 27 01:22
	Oct 4 20:47 P	Oct 13 00:12	Oct 19 19:13 t	Oct 26 12:39
	Nov 3 14:59	Nov 11 13:07	Nov 18 05:06	Nov 25 04:03
	Dec 3 09:37	Dec 11 00:07	Dec 17 16:05	Dec 24 23:21

Year	New Moon	First Quarter	Full Moon	Last Quarter
2052	Jan 2 03:05	Jan 9 09:27	Jan 16 04:24	Jan 23 21:04
	Jan 31 18:30	Feb 7 17:36	Feb 14 18:21	Feb 22 18:45
	Mar 1 07:36	Mar 8 01:17	Mar 15 09:55	Mar 23 14:09
	Mar 30 18:27 T	Apr 6 09:28	Apr 14 02:29 n	Apr 22 06:03
	Apr 29 03:21	May 5 19:05	May 13 19:00	May 21 18:15
	May 28 10:50	Jun 4 06:49	Jun 12 10:27	Jun 20 03:10
	Jun 26 17:50	Jul 3 20:59	Jul 12 00:23	Jul 19 09:37
	Jul 26 01:31	Aug 2 13:20	Aug 10 12:52	Aug 17 14:43
	Aug 24 11:07	Sep 1 07:10	Sep 9 00:15	Sep 15 19:48

Sep 22 23:33 A	Oct 1 01:36	Oct 8 10:55 p	Oct 15 02:22
Oct 22 15:03	Oct 30 19:39	Nov 6 21:09	Nov 13 11:50
Nov 21 09:02	Nov 29 12:16	Dec 6 07:18	Dec 13 01:07
Dec 21 04:15	Dec 29 02:28		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2053			Jan 4 17:46	Jan 11 18:09
	Jan 19 23:12	Jan 27 13:41	Feb 3 04:58	Feb 10 13:49
	Feb 18 16:31	Feb 25 22:09	Mar 4 17:10 n	Mar 12 10:21
	Mar 20 07:11 A	Mar 27 04:50	Apr 3 06:23	Apr 11 06:04
	Apr 18 18:48	Apr 25 11:03	May 2 20:25	May 10 23:40
	May 18 03:43	May 24 18:04	Jun 1 11:02	Jun 9 14:20
	Jun 16 10:51	Jun 23 02:55	Jul 1 02:01	Jul 9 01:48
	Jul 15 17:26	Jul 22 14:16	Jul 30 17:06	Aug 7 10:25
	Aug 14 00:41	Aug 21 04:27	Aug 29 07:53 n	Sep 5 17:05
	Sep 12 09:36 T	Sep 19 21:29	Sep 27 21:50	Oct 4 23:01
	Oct 11 20:54	Oct 19 16:54	Oct 27 10:38	Nov 3 05:37
	Nov 10 10:55	Nov 18 13:26	Nov 25 22:21	Dec 2 14:04
	Dec 10 03:40	Dec 18 09:11	Dec 25 09:23	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2054				Jan 1 01:11
	Jan 8 22:34	Jan 17 02:15	Jan 23 20:08	Jan 30 15:08
	Feb 7 18:14	Feb 15 15:36	Feb 22 06:47 t	Mar 1 07:36
	Mar 9 12:46 P	Mar 17 01:21	Mar 23 17:21	Mar 31 01:51
	Apr 8 04:32	Apr 15 08:24	Apr 22 04:02	Apr 29 20:46
	May 7 17:01	May 14 13:57	May 21 15:16	May 29 15:03
	Jun 6 02:40	Jun 12 19:17	Jun 20 03:43	Jun 28 07:30
	Jul 5 10:34	Jul 12 01:37	Jul 19 17:47	Jul 27 21:28
	Aug 3 17:48 P	Aug 10 10:06	Aug 18 09:22 t	Aug 26 08:56
	Sep 2 01:18 P	Sep 8 21:47	Sep 17 01:41	Sep 24 18:26
	Oct 1 09:49	Oct 8 13:20	Oct 16 17:45	Oct 24 02:40
	Oct 30 20:01	Nov 7 08:34	Nov 15 08:49	Nov 22 10:23
	Nov 29 08:34	Dec 7 06:07	Dec 14 22:41	Dec 21 18:22
	Dec 28 23:52			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2055		Jan 6 03:40	Jan 13 11:21	Jan 20 03:25
	Jan 27 17:39 P	Feb 4 23:00	Feb 11 22:48 t	Feb 18 14:14
	Feb 26 12:39	Mar 6 14:48	Mar 13 08:57	Mar 20 03:18
	Mar 28 07:01	Apr 5 02:44	Apr 11 17:59	Apr 18 18:36
	Apr 26 23:17	May 4 11:10	May 11 02:32	May 18 11:30
	May 26 12:57	Jun 2 17:01	Jun 9 11:36	Jun 17 05:03
	Jun 25 00:16	Jul 1 21:31	Jul 8 22:12	Jul 16 22:15
	Jul 24 09:48 T	Jul 31 02:11	Aug 7 10:57 p	Aug 15 14:27
	Aug 22 18:15	Aug 29 08:36	Sep 6 01:57	Sep 14 05:15
	Sep 21 02:20	Sep 27 18:11	Oct 5 18:38	Oct 13 18:23
	Oct 20 10:50	Oct 27 07:53	Nov 4 12:12	Nov 12 05:38
	Nov 18 20:34	Nov 26 01:42	Dec 4 05:40	Dec 11 15:05
	Dec 18 08:15	Dec 25 22:29		

Year	New Moon	First Quarter	Full Moon	Last Quarter
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2056				Jan 2 22:06	Jan 9 23:14
	Jan 16 22:11 A	Jan 24 20:21	Feb 1 12:36 n	Feb 8 07:01	
	Feb 15 14:00	Feb 23 17:12	Mar 2 00:40	Mar 8 15:31	
	Mar 16 06:52	Mar 24 11:17	Mar 31 10:25	Apr 7 01:34	
	Apr 14 23:51	Apr 23 01:34	Apr 29 18:31	May 6 13:30	
	May 14 16:06	May 22 11:50	May 29 01:58	Jun 5 03:22	
	Jun 13 07:04	Jun 20 18:49	Jun 27 09:48 n	Jul 4 18:55	
	Jul 12 20:20 A	Jul 19 23:45	Jul 26 18:55 n	Aug 3 11:53	
	Aug 11 07:48	Aug 18 04:14	Aug 25 06:01	Sep 2 05:43	
	Sep 9 17:47	Sep 16 09:51	Sep 23 19:35	Oct 1 23:33	
	Oct 9 03:01	Oct 15 17:58	Oct 23 11:47	Oct 31 16:12	
	Nov 7 12:21	Nov 14 05:33	Nov 22 06:12	Nov 30 06:37	
	Dec 6 22:31	Dec 13 20:54	Dec 22 01:34 n	Dec 29 18:22	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2057	Jan 5 09:49 T	Jan 12 15:35	Jan 20 20:01	Jan 28 03:44
	Feb 3 22:11	Feb 11 12:25	Feb 19 11:57	Feb 26 11:30
	Mar 5 11:25	Mar 13 09:35	Mar 21 00:45	Mar 27 18:39
	Apr 4 01:31	Apr 12 04:59	Apr 19 10:49	Apr 26 02:06
	May 3 16:32	May 11 21:07	May 18 19:02	May 25 10:41
	Jun 2 08:11	Jun 10 09:30	Jun 17 02:19 p	Jun 23 21:08
	Jul 1 23:47 A	Jul 9 18:38	Jul 16 09:28	Jul 23 10:09
	Jul 31 14:32	Aug 8 01:30	Aug 14 17:21	Aug 22 02:02
	Aug 30 03:55	Sep 6 07:19	Sep 13 02:53	Sep 20 20:26
	Sep 28 16:00	Oct 5 13:14	Oct 12 15:02	Oct 20 16:09
	Oct 28 03:19	Nov 3 20:24	Nov 11 06:24	Nov 19 11:32
	Nov 26 14:23	Dec 3 05:54	Dec 11 00:46 p	Dec 19 05:02
	Dec 26 01:23 T			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2058		Jan 1 18:31	Jan 9 20:39	Jan 17 19:43
	Jan 24 12:14	Jan 31 10:29	Feb 8 15:55	Feb 16 07:17
	Feb 22 22:57	Mar 2 05:10	Mar 10 08:53	Mar 17 15:56
	Mar 24 09:50	Apr 1 01:03	Apr 8 22:55	Apr 15 22:27
	Apr 22 21:29	Apr 30 20:18	May 8 10:12	May 15 03:58
	May 22 10:23 P	May 30 13:33	Jun 6 19:15 t	Jun 13 09:51
	Jun 21 00:35 P	Jun 29 04:13	Jul 6 02:47	Jul 12 17:28
	Jul 20 15:40	Jul 28 16:19	Aug 4 09:38	Aug 11 04:01
	Aug 19 07:03	Aug 27 02:10	Sep 2 16:51	Sep 9 18:07
	Sep 17 22:18	Sep 25 10:15	Oct 2 01:36	Oct 9 11:42
	Oct 17 13:05	Oct 24 17:16	Oct 31 12:54	Nov 8 07:47
	Nov 16 03:09 P	Nov 23 00:16	Nov 30 03:17 t	Dec 8 04:52
	Dec 15 16:12	Dec 22 08:27	Dec 29 20:26	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2059				Jan 7 01:07
	Jan 14 03:57	Jan 20 18:51	Jan 28 15:11	Feb 5 18:49
	Feb 12 14:27	Feb 19 07:58	Feb 27 10:06	Mar 7 08:47
	Mar 14 00:06	Mar 20 23:30	Mar 29 03:48	Apr 5 18:46
	Apr 12 09:29	Apr 19 16:38	Apr 27 19:17	May 5 01:30
	May 11 19:15 T	May 19 10:22	May 27 08:04 p	Jun 3 06:20
	Jun 10 05:57	Jun 18 03:56	Jun 25 18:13	Jul 2 10:54
	Jul 9 17:59	Jul 17 20:35	Jul 25 02:24	Jul 31 16:43
	Aug 8 07:38	Aug 16 11:41	Aug 23 09:42	Aug 30 01:06

Sep 6	23:01	Sep 15	00:45	Sep 21	17:19	Sep 28	12:54
Oct 6	15:50	Oct 14	11:39	Oct 21	02:15	Oct 28	04:32
Nov 5	09:12 A	Nov 12	20:45	Nov 19	13:10 p	Nov 26	23:42
Dec 5	01:49	Dec 12	04:51	Dec 19	02:12	Dec 26	21:18

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2060	Jan 3	16:40	Jan 10	12:52	Jan 17	17:14	Jan 25	19:14
	Feb 2	05:23	Feb 8	21:42	Feb 16	09:57	Feb 24	15:06
	Mar 2	16:12	Mar 9	07:53	Mar 17	03:41	Mar 25	07:08
	Apr 1	01:38	Apr 7	19:42	Apr 15	21:22 n	Apr 23	18:54
	Apr 30	10:11 T	May 7	09:20	May 15	13:39	May 23	03:01
	May 29	18:24	Jun 6	00:44	Jun 14	03:37	Jun 21	08:44
	Jun 28	02:58	Jul 5	17:38	Jul 13	15:09	Jul 20	13:24
	Jul 27	12:50	Aug 4	11:16	Aug 12	00:51	Aug 18	18:23
	Aug 26	00:56	Sep 3	04:36	Sep 10	09:44	Sep 17	01:01
	Sep 24	15:54	Oct 2	20:41	Oct 9	18:41 n	Oct 16	10:30
	Oct 24	09:26 A	Nov 1	10:57	Nov 8	04:18 n	Nov 14	23:49
	Nov 23	04:16	Nov 30	23:11	Dec 7	14:49	Dec 14	17:15
	Dec 22	22:40	Dec 30	09:29				

## PHASES OF THE MOON: 2061 TO 2070 UNIVERSAL TIME (UT)

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2061					Jan 6	02:25	Jan 13	13:58
	Jan 21	15:16	Jan 28	18:10	Feb 4	15:23	Feb 12	11:52
	Feb 20	05:32	Feb 27	01:52	Mar 6	05:55	Mar 14	08:31
	Mar 21	17:23	Mar 28	09:26	Apr 4	21:47 t	Apr 13	02:10
	Apr 20	03:05 T	Apr 26	17:55	May 4	14:13	May 12	16:10
	May 19	11:03	May 26	04:12	Jun 3	06:09	Jun 11	02:42
	Jun 17	18:03	Jun 24	16:54	Jul 2	20:53	Jul 10	10:24
	Jul 17	01:11	Jul 24	08:05	Aug 1	10:11	Aug 8	16:10
	Aug 15	09:40	Aug 23	01:19	Aug 30	22:18	Sep 6	21:13
	Sep 13	20:38	Sep 21	19:45	Sep 29	09:33 t	Oct 6	02:57
	Oct 13	10:42 A	Oct 21	14:24	Oct 28	20:12	Nov 4	10:53
	Nov 12	03:40	Nov 20	08:12	Nov 27	06:33	Dec 3	22:12
	Dec 11	22:33	Dec 19	23:58	Dec 26	16:53		

Year	New Moon		First Quarter		Full Moon		Last Quarter	
2062							Jan 2	13:21
	Jan 10	17:53	Jan 18	12:51	Jan 25	03:38	Feb 1	07:43
	Feb 9	12:11	Feb 16	22:38	Feb 23	15:08	Mar 3	03:49
	Mar 11	04:13 P	Mar 18	05:58	Mar 25	03:36 t	Apr 1	23:55
	Apr 9	17:17	Apr 16	12:04	Apr 23	16:57	May 1	18:34
	May 9	03:23	May 15	18:18	May 23	07:03	May 31	10:44
	Jun 7	11:12	Jun 14	01:53	Jun 21	21:43	Jun 29	23:54
	Jul 6	17:53	Jul 13	11:43	Jul 21	12:48	Jul 29	10:04
	Aug 5	00:41	Aug 12	00:21	Aug 20	03:56	Aug 27	17:49

Sep 3 08:43 P	Sep 10 16:00	Sep 18 18:37 t	Sep 26 00:11
Oct 2 18:50	Oct 10 10:27	Oct 18 08:19	Oct 25 06:28
Nov 1 07:33	Nov 9 06:51	Nov 16 20:48	Nov 23 13:58
Nov 30 23:01	Dec 9 03:29	Dec 16 08:18	Dec 22 23:41
Dec 30 16:57			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2063		Jan 7 22:16	Jan 14 19:12	Jan 21 12:05
	Jan 29 12:23	Feb 6 13:37	Feb 13 05:49	Feb 20 03:07
	Feb 28 07:38 A	Mar 8 01:07	Mar 14 16:14 p	Mar 21 20:16
	Mar 30 00:50	Apr 6 09:18	Apr 13 02:35	Apr 20 14:42
	Apr 28 14:52	May 5 15:20	May 12 13:11	May 20 09:16
	May 28 01:47	Jun 3 20:29	Jun 11 00:43	Jun 19 02:43
	Jun 26 10:26	Jul 3 02:01	Jul 10 13:48	Jul 18 18:05
	Jul 25 17:55	Aug 1 09:10	Aug 9 04:40	Aug 17 07:01
	Aug 24 01:18 T	Aug 30 19:04	Sep 7 20:53 n	Sep 15 17:44
	Sep 22 09:22	Sep 29 08:39	Oct 7 13:27	Oct 15 02:49
	Oct 21 18:47	Oct 29 02:14	Nov 6 05:23	Nov 13 10:57
	Nov 20 06:10	Nov 27 23:00	Dec 5 20:06	Dec 12 18:50
	Dec 19 20:04	Dec 27 20:58		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2064			Jan 4 09:31	Jan 11 03:14
	Jan 18 12:37	Jan 26 17:42	Feb 2 21:37 p	Feb 9 12:56
	Feb 17 07:03 A	Feb 25 11:23	Mar 3 08:19	Mar 10 00:34
	Mar 18 01:45	Mar 26 01:13	Apr 1 17:40	Apr 8 14:25
	Apr 16 19:02	Apr 24 11:18	May 1 02:08	May 8 06:17
	May 16 09:55	May 23 18:16	May 30 10:36	Jun 6 23:24
	Jun 14 22:21	Jun 21 23:14	Jun 28 20:09	Jul 6 16:49
	Jul 14 08:46	Jul 21 03:36	Jul 28 07:41 p	Aug 5 09:41
	Aug 12 17:49 T	Aug 19 08:55	Aug 26 21:35	Sep 4 01:30
	Sep 11 02:11	Sep 17 16:46	Sep 25 13:39	Oct 3 15:51
	Oct 10 10:34	Oct 17 04:22	Oct 25 07:06	Nov 2 04:25
	Nov 8 19:45	Nov 15 20:14	Nov 24 00:59	Dec 1 15:00
	Dec 8 06:29	Dec 15 15:45	Dec 23 18:14	Dec 30 23:50

Year	New Moon	First Quarter	Full Moon	Last Quarter
2065	Jan 6 19:15	Jan 14 13:19	Jan 22 09:54 t	Jan 29 07:38
	Feb 5 10:02 P	Feb 13 10:51	Feb 20 23:11	Feb 27 15:30
	Mar 7 02:15	Mar 15 06:25	Mar 22 09:56	Mar 29 00:25
	Apr 5 19:01	Apr 13 22:38	Apr 20 18:36	Apr 27 11:03
	May 5 11:31	May 13 10:53	May 20 02:06	May 26 23:39
	Jun 4 03:05	Jun 11 19:26	Jun 18 09:29	Jun 25 14:09
	Jul 3 17:16 P	Jul 11 01:17	Jul 17 17:46 t	Jul 25 06:22
	Aug 2 05:46 P	Aug 9 05:53	Aug 16 03:46	Aug 23 23:56
	Aug 31 16:40	Sep 7 10:50	Sep 14 16:05	Sep 22 18:10
	Sep 30 02:25	Oct 6 17:38	Oct 14 07:05	Oct 22 11:54
	Oct 29 11:49	Nov 5 03:27	Nov 13 00:38	Nov 21 03:52
	Nov 27 21:40	Dec 4 16:55	Dec 12 19:53	Dec 20 17:12
	Dec 27 08:28 P			

Year	New Moon	First Quarter	Full Moon	Last Quarter
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2066		Jan 3 09:57	Jan 11 15:08 t	Jan 19 03:48
	Jan 25 20:14	Feb 2 05:45	Feb 10 08:29	Feb 17 12:14
	Feb 24 08:51	Mar 4 02:49	Mar 11 22:48	Mar 18 19:26
	Mar 25 22:14	Apr 2 23:10	Apr 10 10:03	Apr 17 02:23
	Apr 24 12:30	May 2 16:58	May 9 18:59	May 16 10:01
	May 24 03:39	Jun 1 07:14	Jun 8 02:31	Jun 14 19:11
	Jun 22 19:16 A	Jun 30 18:00	Jul 7 09:35 p	Jul 14 06:39
	Jul 22 10:34	Jul 30 02:02	Aug 5 17:00	Aug 12 21:00
	Aug 21 00:50	Aug 28 08:25	Sep 4 01:38	Sep 11 14:17
	Sep 19 13:48	Sep 26 14:20	Oct 3 12:25	Oct 11 09:43
	Oct 19 01:43	Oct 25 20:53	Nov 2 02:13	Nov 10 05:46
	Nov 17 13:06	Nov 24 05:10	Dec 1 19:17	Dec 10 00:39
	Dec 17 00:18 T	Dec 23 16:07	Dec 31 14:41 n	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2067				Jan 8 17:01
	Jan 15 11:17	Jan 22 06:17	Jan 30 10:30	Feb 7 06:14
	Feb 13 21:58	Feb 20 23:31	Mar 1 04:42	Mar 8 16:16
	Mar 15 08:29	Mar 22 18:44	Mar 30 20:09	Apr 6 23:38
	Apr 13 19:24	Apr 21 14:16	Apr 29 08:40	May 6 05:19
	May 13 07:21	May 21 08:29	May 28 18:42 n	Jun 4 10:39
	Jun 11 20:41 A	Jun 20 00:29	Jun 27 02:53 n	Jul 3 17:03
	Jul 11 11:17	Jul 19 14:00	Jul 26 09:59	Aug 2 01:52
	Aug 10 02:37	Aug 18 01:10	Aug 24 16:57	Aug 31 14:05
	Sep 8 18:09	Sep 16 10:20	Sep 23 00:55	Sep 30 06:01
	Oct 8 09:28	Oct 15 18:03	Oct 22 10:56	Oct 30 01:08
	Nov 7 00:14	Nov 14 01:07	Nov 20 23:50 n	Nov 28 22:07
	Dec 6 14:05 A	Dec 13 08:39	Dec 20 15:42	Dec 28 19:11

Year	New Moon	First Quarter	Full Moon	Last Quarter
2068				
	Jan 5 02:38	Jan 11 17:47	Jan 19 09:45	Jan 27 14:28
	Feb 3 13:45	Feb 10 05:21	Feb 18 04:38	Feb 26 06:26
	Mar 3 23:38	Mar 10 19:27	Mar 18 22:56	Mar 26 18:21
	Apr 2 08:52	Apr 9 11:33	Apr 17 15:30	Apr 25 02:30
	May 1 18:07	May 9 04:48	May 17 05:35 p	May 24 08:01
	May 31 04:04 H	Jun 7 22:21	Jun 15 17:00	Jun 22 12:26
	Jun 29 15:12	Jul 7 15:32	Jul 15 02:08	Jul 21 17:22
	Jul 29 03:55	Aug 6 07:39	Aug 13 09:51	Aug 20 00:17
	Aug 27 18:29	Sep 4 22:04	Sep 11 17:19	Sep 18 10:17
	Sep 26 10:49	Oct 4 10:23	Oct 11 01:40	Oct 18 00:01
	Oct 26 04:17	Nov 2 20:38	Nov 9 11:41 t	Nov 16 17:33
	Nov 24 21:43 P	Dec 2 05:21	Dec 8 23:42	Dec 16 14:11
	Dec 24 13:45	Dec 31 13:23		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2069				
	Jan 23 03:37	Jan 29 21:40	Jan 7 13:44	Jan 15 12:17
	Feb 21 15:17	Feb 28 06:55	Feb 6 05:30	Feb 14 09:28
	Mar 23 01:14	Mar 29 17:35	Mar 7 22:35	Mar 16 03:31
	Apr 21 09:59 P	Apr 28 05:57	Apr 6 16:13	Apr 14 17:22
	May 20 18:06 P	May 27 20:09	May 6 09:12 t	May 14 03:10
	Jun 19 02:14	Jun 26 12:10	Jun 5 00:20	Jun 12 09:57
	Jul 18 11:13	Jul 26 05:31	Jul 4 13:06	Jul 11 14:59
	Aug 16 22:03	Aug 24 23:17	Aug 2 23:45	Aug 9 19:41
			Sep 1 09:07	Sep 8 01:23

Sep 15 11:36	Sep 23 16:24	Sep 30 18:09	Oct 7 09:20
Oct 15 04:04 P	Oct 23 07:58	Oct 30 03:36 t	Nov 5 20:40
Nov 13 22:38	Nov 21 21:32	Nov 28 13:46	Dec 5 12:04
Dec 13 17:38	Dec 21 09:00	Dec 28 00:50	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2070				Jan 4 07:16
	Jan 12 11:23	Jan 19 18:32	Jan 26 13:00	Feb 3 04:46
	Feb 11 02:53	Feb 18 02:34	Feb 25 02:32	Mar 5 02:12
	Mar 12 15:53	Mar 19 09:54	Mar 26 17:31	Apr 3 21:23
	Apr 11 02:31 T	Apr 17 17:32	Apr 25 09:31 n	May 3 13:12
	May 10 11:09	May 17 02:31	May 25 01:38	Jun 2 01:27
	Jun 8 18:25	Jun 15 13:41	Jun 23 16:57	Jul 1 10:34
	Jul 8 01:15	Jul 15 03:27	Jul 23 07:02	Jul 30 17:18
	Aug 6 08:52	Aug 13 19:41	Aug 21 19:54	Aug 28 22:42
	Sep 4 18:29	Sep 12 13:45	Sep 20 07:48	Sep 27 04:03
	Oct 4 07:02 A	Oct 12 08:40	Oct 19 18:59 p	Oct 26 10:48
	Nov 2 22:43	Nov 11 03:21	Nov 18 05:41	Nov 24 20:20
	Dec 2 16:54	Dec 10 20:33	Dec 17 16:06	Dec 24 09:32

## PHASES OF THE MOON: 2071 TO 2080 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2071	Jan 1 12:16	Jan 9 11:09	Jan 16 02:36	Jan 23 02:17
	Jan 31 07:16	Feb 7 22:31	Feb 14 13:34	Feb 21 21:30
	Mar 2 00:32	Mar 9 06:54	Mar 16 01:18 n	Mar 23 17:33
	Mar 31 15:04 A	Apr 7 13:18	Apr 14 13:56	Apr 22 12:53
	Apr 30 02:31	May 6 19:05	May 14 03:25	May 22 06:19
	May 29 11:17	Jun 5 01:39	Jun 12 17:37	Jun 20 21:05
	Jun 27 18:21	Jul 4 10:03	Jul 12 08:26	Jul 20 08:53
	Jul 27 00:57	Aug 2 21:05	Aug 10 23:40	Aug 18 17:58
	Aug 25 08:17	Sep 1 11:10	Sep 9 14:52 n	Sep 17 01:08
	Sep 23 17:22 T	Oct 1 04:21	Oct 9 05:24	Oct 16 07:31
	Oct 23 04:50	Oct 31 00:07	Nov 7 18:48	Nov 14 14:24
	Nov 21 19:00	Nov 29 21:07	Dec 7 06:58	Dec 13 22:58
	Dec 21 11:47	Dec 29 17:17		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2072			Jan 5 18:13	Jan 12 09:55
	Jan 20 06:35	Jan 28 10:36	Feb 4 04:56	Feb 10 23:27
	Feb 19 02:04	Feb 27 00:02	Mar 4 15:18 t	Mar 11 15:19
	Mar 19 20:22 P	Mar 27 09:43	Apr 3 01:25	Apr 10 08:54
	Apr 18 11:57	Apr 25 16:35	May 2 11:34	May 10 03:18
	May 18 00:19	May 24 21:54	May 31 22:18	Jun 8 21:21
	Jun 16 09:58	Jun 23 02:57	Jun 30 10:22	Jul 8 13:54
	Jul 15 17:56	Jul 22 09:02	Jul 30 00:17	Aug 7 04:16
	Aug 14 01:21	Aug 20 17:21	Aug 28 16:00 t	Sep 5 16:20

Sep 12 09:07 T	Sep 19 04:59	Sep 27 08:44	Oct 5 02:29
Oct 11 17:56	Oct 18 20:37	Oct 27 01:22	Nov 3 11:17
Nov 10 04:22	Nov 17 16:04	Nov 25 17:00	Dec 2 19:22
Dec 9 16:59	Dec 17 13:51	Dec 25 07:16	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2073				Jan 1 03:28
	Jan 8 08:11	Jan 16 11:33	Jan 23 20:06	Jan 30 12:19
	Feb 7 01:41 P	Feb 15 06:57	Feb 22 07:27 t	Feb 28 22:40
	Mar 8 20:16	Mar 16 22:44	Mar 23 17:18	Mar 30 11:04
	Apr 7 14:14	Apr 15 10:36	Apr 22 01:55	Apr 29 01:38
	May 7 06:16	May 14 19:00	May 21 10:03	May 28 17:58
	Jun 5 19:52	Jun 13 00:48	Jun 19 18:45	Jun 27 11:12
	Jul 5 07:17	Jul 12 05:16	Jul 19 05:05	Jul 27 04:29
	Aug 3 17:04 T	Aug 10 09:55	Aug 17 17:46 t	Aug 25 21:06
	Sep 2 01:53	Sep 8 16:20	Sep 16 08:53	Sep 24 12:32
	Oct 1 10:22	Oct 8 01:57	Oct 16 01:55	Oct 24 02:23
	Oct 30 19:13	Nov 6 15:42	Nov 14 19:55	Nov 22 14:16
	Nov 29 05:12	Dec 6 09:33	Dec 14 13:49	Dec 22 00:06
	Dec 28 16:56			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2074		Jan 5 06:19	Jan 13 06:32	Jan 20 08:21
	Jan 27 06:38 A	Feb 4 04:03	Feb 11 21:06 n	Feb 18 15:56
	Feb 25 22:01	Mar 6 00:44	Mar 13 09:02	Mar 19 23:59
	Mar 27 14:20	Apr 4 18:41	Apr 11 18:31	Apr 18 09:23
	Apr 26 06:48	May 4 08:54	May 11 02:18	May 17 20:40
	May 25 22:45	Jun 2 19:15	Jun 9 09:28	Jun 16 09:57
	Jun 24 13:39	Jul 2 02:23	Jul 8 17:05 n	Jul 16 01:12
	Jul 24 03:07 A	Jul 31 07:31	Aug 7 02:06 n	Aug 14 18:10
	Aug 22 15:00	Aug 29 12:12	Sep 5 13:14	Sep 13 12:22
	Sep 21 01:29	Sep 27 18:00	Oct 5 02:56	Oct 13 06:48
	Oct 20 11:12	Oct 27 02:15	Nov 3 19:22	Nov 12 00:08
	Nov 18 20:56	Nov 25 13:53	Dec 3 14:04	Dec 11 15:08
	Dec 18 07:20	Dec 25 05:07		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2075			Jan 2 09:40 n	Jan 10 03:15
	Jan 16 18:37 T	Jan 23 23:33	Feb 1 04:13	Feb 8 12:42
	Feb 15 06:41	Feb 22 20:00	Mar 2 20:07	Mar 9 20:18
	Mar 16 19:26	Mar 24 16:46	Apr 1 08:46	Apr 8 03:04
	Apr 15 08:56	Apr 23 11:54	Apr 30 18:38	May 7 10:00
	May 14 23:23	May 23 03:57	May 30 02:39	Jun 5 18:01
	Jun 13 14:40	Jun 21 16:29	Jun 28 09:47 p	Jul 5 04:00
	Jul 13 06:12 A	Jul 21 01:56	Jul 27 16:54	Aug 3 16:44
	Aug 11 21:11	Aug 19 09:13	Aug 26 00:51	Sep 2 08:35
	Sep 10 11:03	Sep 17 15:26	Sep 24 10:31	Oct 2 03:14
	Oct 9 23:44	Oct 16 21:42	Oct 23 22:49	Oct 31 23:26
	Nov 8 11:36	Nov 15 05:06	Nov 22 14:21	Nov 30 19:22
	Dec 7 23:04	Dec 14 14:38	Dec 22 08:48 p	Dec 30 13:21

Year	New Moon	First Quarter	Full Moon	Last Quarter
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2076	Jan 6	10:15	T	Jan 13	03:03	Jan 21	04:40	Jan 29	04:18
	Feb 4	21:02		Feb 11	18:35	Feb 19	23:49	Feb 27	15:55
	Mar 5	07:25		Mar 12	12:42	Mar 20	16:38	Mar 28	00:26
	Apr 3	17:48		Apr 11	08:00	Apr 19	06:30	Apr 26	06:41
	May 3	04:52		May 11	02:51	May 18	17:39	May 25	11:51
	Jun 1	17:15	P	Jun 9	19:58	Jun 17	02:39	Jun 23	17:22
	Jul 1	07:05	P	Jul 9	10:50	Jul 16	10:12	Jul 23	00:41
	Jul 30	22:06		Aug 7	23:22	Aug 14	17:12	Aug 21	11:01
	Aug 29	13:44		Sep 6	09:47	Sep 13	00:39	Sep 20	01:06
	Sep 28	05:28		Oct 5	18:27	Oct 12	09:38	Oct 19	18:51
	Oct 27	20:51		Nov 4	01:58	Nov 10	21:08	Nov 18	15:15
	Nov 26	11:29	P	Dec 3	09:16	Dec 10	11:36	Dec 18	12:40
	Dec 26	00:54							

Year	New Moon		First Quarter		Full Moon		Last Quarter			
2077			Jan 1	17:28	Jan 9	04:38	Jan 17	09:10		
	Jan 24	12:46	Jan 31	03:36	Feb 7	23:09	Feb 16	02:59		
	Feb 22	23:07	Mar 1	16:11	Mar 9	17:43	Mar 17	16:57		
	Mar 24	08:25	Mar 31	07:02	Apr 8	11:06	Apr 16	02:51		
	Apr 22	17:21	Apr 29	23:29	May 8	02:24	May 15	09:27		
	May 22	02:38	T	May 29	16:44	Jun 6	15:07	p	Jun 13	14:09
	Jun 20	12:55		Jun 28	10:06	Jul 6	01:22	Jul 12	18:34	
	Jul 20	00:42		Jul 28	02:56	Aug 4	09:47	Aug 11	00:17	
	Aug 18	14:18		Aug 26	18:31	Sep 2	17:24	Sep 9	08:36	
	Sep 17	05:53		Sep 25	08:16	Oct 2	01:21	Oct 8	20:26	
	Oct 16	23:08		Oct 24	19:52	Oct 31	10:37	Nov 7	12:09	
	Nov 15	17:01	A	Nov 23	05:32	Nov 29	21:43	p	Dec 7	07:26
	Dec 15	10:07		Dec 22	13:57	Dec 29	10:46			

Year	New Moon		First Quarter		Full Moon		Last Quarter			
2078							Jan 6	05:05		
	Jan 14	01:15	Jan 20	22:00	Jan 28	01:34	Feb 5	03:01		
	Feb 12	13:59	Feb 19	06:32	Feb 26	17:51	Mar 6	22:48		
	Mar 14	00:38	Mar 20	16:11	Mar 28	11:05	Apr 5	14:46		
	Apr 12	09:45	Apr 19	03:20	Apr 27	04:20	n	May 5	02:29	
	May 11	17:57	T	May 18	16:16	May 26	20:23	Jun 3	10:39	
	Jun 10	01:50		Jun 17	07:09	Jun 25	10:22	Jul 2	16:26	
	Jul 9	10:09		Jul 16	23:48	Jul 24	22:08	Jul 31	21:12	
	Aug 7	19:53		Aug 15	17:34	Aug 23	08:12	Aug 30	02:17	
	Sep 6	07:59		Sep 14	11:23	Sep 21	17:31	Sep 28	09:01	
	Oct 5	23:06		Oct 14	04:08	Oct 21	02:55	n	Oct 27	18:35
	Nov 4	16:57	A	Nov 12	19:05	Nov 19	12:53	n	Nov 26	07:55
	Dec 4	12:09		Dec 12	07:53	Dec 18	23:35	Dec 26	01:17	

Year	New Moon		First Quarter		Full Moon		Last Quarter		
2079									
	Jan 3	06:51	Jan 10	18:30	Jan 17	11:07	Jan 24	21:47	
	Feb 1	23:36	Feb 9	03:12	Feb 15	23:46	Feb 23	19:24	
	Mar 3	13:49	Mar 10	10:38	Mar 17	13:46	Mar 25	15:47	
	Apr 2	01:31	Apr 8	17:45	Apr 16	05:03	p	Apr 24	09:16
	May 1	10:58	T	May 8	01:38	May 15	20:59	May 23	23:16
	May 30	18:42		Jun 6	11:19	Jun 14	12:39	Jun 22	09:57
	Jun 29	01:32		Jul 5	23:32	Jul 14	03:24	Jul 21	17:54
	Jul 28	08:34		Aug 4	14:28	Aug 12	17:01	Aug 20	00:00
	Aug 26	17:03		Sep 3	07:47	Sep 11	05:36	Sep 18	05:22

Sep 25 04:07	Oct 3 02:36	Oct 10 17:24 t	Oct 17 11:22
Oct 24 18:20 A	Nov 1 21:50	Nov 9 04:35	Nov 15 19:26
Nov 23 11:30	Dec 1 16:14	Dec 8 15:17	Dec 15 06:44
Dec 23 06:32	Dec 31 08:29		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2080			Jan 7 01:45	Jan 13 21:40
	Jan 22 01:56	Jan 29 21:37	Feb 5 12:22	Feb 12 15:38
	Feb 20 20:12	Feb 28 07:25	Mar 5 23:30	Mar 13 11:13
	Mar 21 12:07 P	Mar 28 14:32	Apr 4 11:25 t	Apr 12 06:50
	Apr 20 01:00	Apr 26 20:17	May 4 00:11	May 12 01:12
	May 19 10:57	May 26 02:04	Jun 2 13:46	Jun 10 17:21
	Jun 17 18:41	Jun 24 09:13	Jul 2 04:10	Jul 10 06:46
	Jul 17 01:22	Jul 23 18:41	Jul 31 19:14	Aug 8 17:22
	Aug 15 08:14	Aug 22 07:08	Aug 30 10:42	Sep 7 01:38
	Sep 13 16:26 P	Sep 20 22:49	Sep 29 01:55 t	Oct 6 08:31
	Oct 13 02:45	Oct 20 17:32	Oct 28 16:13	Nov 4 15:11
	Nov 11 15:38	Nov 19 14:21	Nov 27 05:15	Dec 3 22:53
	Dec 11 07:10	Dec 19 11:24	Dec 26 17:04	

## PHASES OF THE MOON: 2081 TO 2090 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2081				Jan 2 08:33
	Jan 10 01:03	Jan 18 06:30	Jan 25 04:02	Jan 31 20:38
	Feb 8 20:18	Feb 16 22:00	Feb 23 14:28	Mar 2 11:07
	Mar 10 15:17 A	Mar 18 09:28	Mar 25 00:30 p	Apr 1 03:36
	Apr 9 08:16	Apr 16 17:32	Apr 23 10:20	Apr 30 21:25
	May 8 22:09	May 15 23:22	May 22 20:27	May 30 15:36
	Jun 7 09:02	Jun 14 04:17	Jun 21 07:33	Jun 29 09:00
	Jul 6 17:45	Jul 13 09:35	Jul 20 20:23	Jul 29 00:40
	Aug 5 01:25	Aug 11 16:33	Aug 19 11:16	Aug 27 14:09
	Sep 3 09:02 T	Sep 10 02:22	Sep 18 03:46 n	Sep 26 01:31
	Oct 2 17:24	Oct 9 15:59	Oct 17 20:51	Oct 25 11:14
	Nov 1 03:05	Nov 8 09:41	Nov 16 13:20	Nov 23 19:49
	Nov 30 14:37	Dec 8 06:39	Dec 16 04:32	Dec 23 03:56
	Dec 30 04:29			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2082		Jan 7 04:46	Jan 14 18:12	Jan 21 12:16
	Jan 28 20:47	Feb 6 01:35	Feb 13 06:17 p	Feb 19 21:36
	Feb 27 14:49 A	Mar 7 19:16	Mar 14 16:46	Mar 21 08:38
	Mar 29 09:06	Apr 6 09:03	Apr 13 01:46	Apr 19 21:47
	Apr 28 02:03	May 5 19:05	May 12 09:50	May 19 12:59
	May 27 16:48	Jun 4 02:02	Jun 10 17:56	Jun 18 05:40
	Jun 26 05:17	Jul 3 07:00	Jul 10 03:11	Jul 17 22:59
	Jul 25 15:55	Aug 1 11:22	Aug 8 14:33 n	Aug 16 16:08

Aug 24 01:19 T	Aug 30 16:43	Sep 7 04:30	Sep 15 08:30
Sep 22 10:04	Sep 29 00:35	Oct 6 20:48	Oct 14 23:33
Oct 21 18:51	Oct 28 12:14	Nov 5 14:39	Nov 13 12:47
Nov 20 04:20	Nov 27 04:08	Dec 5 08:57	Dec 12 23:52
Dec 19 15:11	Dec 26 23:38		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2083			Jan 4 02:33	Jan 11 08:56
	Jan 18 03:51	Jan 25 21:04	Feb 2 18:21 t	Feb 9 16:40
	Feb 16 18:16 P	Feb 24 18:25	Mar 4 07:35	Mar 11 00:10
	Mar 18 09:57	Mar 26 13:48	Apr 2 18:08	Apr 9 08:32
	Apr 17 02:10	Apr 25 05:55	May 2 02:30	May 8 18:31
	May 16 18:15	May 24 18:12	May 31 09:43	Jun 7 06:30
	Jun 15 09:38	Jun 23 02:53	Jun 29 16:52	Jul 6 20:34
	Jul 14 23:55 P	Jul 22 08:57	Jul 29 01:01 t	Aug 5 12:39
	Aug 13 12:46 P	Aug 20 13:47	Aug 27 11:00	Sep 4 06:25
	Sep 12 00:08	Sep 18 18:57	Sep 25 23:26	Oct 4 01:08
	Oct 11 10:24	Oct 18 01:55	Oct 25 14:36	Nov 2 19:31
	Nov 9 20:16	Nov 16 11:49	Nov 24 08:24	Dec 2 12:07
	Dec 9 06:25	Dec 16 01:14	Dec 24 03:52	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2084				Jan 1 01:55
	Jan 7 17:18 P	Jan 14 18:03	Jan 22 23:16 t	Jan 30 12:43
	Feb 6 04:53	Feb 13 13:29	Feb 21 16:37	Feb 28 21:05
	Mar 6 17:04	Mar 14 10:07	Mar 22 06:49	Mar 29 03:59
	Apr 5 05:53	Apr 13 06:06	Apr 20 17:53	Apr 27 10:30
	May 4 19:33	May 12 23:44	May 20 02:37	May 26 17:36
	Jun 3 10:14	Jun 11 14:04	Jun 18 10:01	Jun 25 02:16
	Jul 3 01:39 A	Jul 11 01:07	Jul 17 17:02 p	Jul 24 13:23
	Aug 1 17:05	Aug 9 09:33	Aug 16 00:30	Aug 23 03:35
	Aug 31 07:46	Sep 7 16:24	Sep 14 09:16	Sep 21 21:00
	Sep 29 21:17	Oct 6 22:43	Oct 13 20:13	Oct 21 16:50
	Oct 29 09:48	Nov 5 05:34	Nov 12 10:11	Nov 20 13:23
	Nov 27 21:40	Dec 4 13:58	Dec 12 03:19	Dec 20 08:45
	Dec 27 09:08 T			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2085		Jan 3 00:48	Jan 10 22:43 n	Jan 19 01:27
	Jan 25 20:07	Feb 1 14:37	Feb 9 18:25	Feb 17 14:48
	Feb 24 06:33	Mar 3 07:17	Mar 11 12:27	Mar 19 00:45
	Mar 25 16:38	Apr 2 01:52	Apr 10 03:42	Apr 17 07:55
	Apr 24 03:00	May 1 20:53	May 9 16:05	May 16 13:19
	May 23 14:24	May 31 14:52	Jun 8 02:03 n	Jun 14 18:20
	Jun 22 03:19 A	Jun 30 06:56	Jul 7 10:15 n	Jul 14 00:25
	Jul 21 17:44	Jul 29 20:48	Aug 5 17:30	Aug 12 09:01
	Aug 20 09:11	Aug 28 08:31	Sep 4 00:42	Sep 10 21:08
	Sep 19 01:08	Sep 26 18:19	Oct 3 08:54	Oct 10 13:10
	Oct 18 17:00	Oct 26 02:35	Nov 1 19:09	Nov 9 08:32
	Nov 17 08:21	Nov 24 10:03	Dec 1 08:11 n	Dec 9 05:48
	Dec 16 22:39 A	Dec 23 17:43	Dec 31 00:00	

Year	New Moon	First Quarter	Full Moon	Last Quarter
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2086	Jan 15 11:25	Jan 22 02:42	Jan 29 17:49	Jan 8 03:06
	Feb 13 22:28	Feb 20 13:49	Feb 28 12:22	Feb 6 22:31
	Mar 15 08:05	Mar 22 03:17	Mar 30 06:18	Mar 8 14:31
	Apr 13 16:54	Apr 20 18:41	Apr 28 22:36	Apr 7 02:23
	May 13 01:42	May 20 11:20	May 28 12:36 p	May 6 10:27
	Jun 11 11:13 T	Jun 19 04:34	Jun 27 00:05	Jun 4 15:52
	Jul 10 22:03	Jul 18 21:46	Jul 26 09:25	Jul 3 20:11
	Aug 9 10:39	Aug 17 14:15	Aug 24 17:26	Aug 2 01:02
	Sep 8 01:18	Sep 16 05:18	Sep 23 01:16	Aug 31 07:53
	Oct 7 17:57	Oct 15 18:19	Sep 23 01:16	Sep 29 17:53
	Nov 6 11:54	Nov 14 05:12	Oct 22 09:57	Oct 29 07:41
	Dec 6 05:49 P	Dec 13 14:21	Nov 20 20:13 p	Oct 29 07:41
			Dec 20 08:20	Nov 28 01:18
				Dec 27 21:59

Year	New Moon	First Quarter	Full Moon	Last Quarter
2087	Jan 4 22:12	Jan 11 22:31	Jan 18 22:12	Jan 26 20:02
	Feb 3 12:11	Feb 10 06:39	Feb 17 13:35	Feb 25 17:07
	Mar 4 23:46	Mar 11 15:27	Mar 19 06:10	Mar 27 11:05
	Apr 3 09:27	Apr 10 01:30	Apr 17 23:18	Apr 26 00:52
	May 2 17:52 P	May 9 13:10	May 17 15:56 t	May 25 10:42
	Jun 1 01:39 P	Jun 8 02:46	Jun 16 06:59	May 25 10:42
	Jun 30 09:32	Jun 8 02:46	Jun 16 06:59	Jun 23 17:34
	Jul 29 18:21	Jul 7 18:25	Jul 15 19:55	Jun 23 17:34
	Aug 28 05:09	Jul 7 18:25	Jul 15 19:55	Jul 22 22:44
	Sep 26 18:48	Aug 6 11:44	Aug 14 06:55	Jul 22 22:44
	Oct 26 11:30 P	Sep 5 05:50	Sep 12 16:44	Aug 21 03:35
	Nov 25 06:24	Sep 5 05:50	Sep 12 16:44	Aug 21 03:35
	Dec 25 01:43	Oct 4 23:33	Sep 12 16:44	Sep 19 09:24
		Nov 3 15:49	Oct 12 02:15	Sep 19 09:24
		Dec 3 06:02	Nov 10 12:06 t	Oct 18 17:28
			Dec 9 22:32	Oct 18 17:28
				Nov 17 04:52
				Dec 16 20:12

Year	New Moon	First Quarter	Full Moon	Last Quarter
2088		Jan 1 17:55	Jan 8 09:38	Jan 15 15:14
	Jan 23 19:39	Jan 31 03:34	Jan 8 09:38	Jan 15 15:14
	Feb 22 11:10	Feb 29 11:27	Feb 6 21:34	Feb 14 12:25
	Mar 23 00:01	Mar 29 18:24	Mar 7 10:37	Mar 15 09:30
	Apr 21 10:26 T	Apr 28 01:30	Apr 6 01:00	Apr 14 04:27
	May 20 18:50	May 27 09:52	May 5 16:26 p	May 13 20:10
	Jun 19 01:55	Jun 25 20:30	Jun 4 08:09	May 13 20:10
	Jul 18 08:39	Jul 25 09:55	Jul 3 23:23	Jun 12 08:31
	Aug 16 16:16	Aug 24 02:06	Aug 2 13:40	Jul 11 17:53
	Sep 15 01:59	Sep 22 20:26	Sep 1 02:58	Aug 10 00:58
	Oct 14 14:40 A	Sep 22 20:26	Sep 30 15:26	Sep 8 06:44
	Nov 13 06:33	Oct 22 15:52	Oct 30 03:11 p	Sep 8 06:44
	Dec 13 00:53	Nov 21 11:09	Nov 28 14:19	Oct 7 12:25
		Dec 21 04:53	Dec 28 00:58	Nov 5 19:23
				Dec 5 04:59

Year	New Moon	First Quarter	Full Moon	Last Quarter
2089				Jan 3 18:01
	Jan 11 20:18	Jan 19 19:48	Jan 26 11:26	Jan 3 18:01
	Feb 10 15:17	Feb 18 07:16	Feb 24 22:06	Feb 2 10:24
	Mar 12 08:25	Mar 19 15:31	Mar 26 09:21 n	Mar 4 05:06
	Apr 10 22:46 A	Apr 17 21:38	Apr 24 21:23	Apr 3 00:37
	May 10 10:04	May 17 03:02	May 24 10:19	May 2 19:32
	Jun 8 18:45	Jun 15 09:10	Jun 23 00:08	Jun 1 12:50
	Jul 8 01:48	Jul 14 17:12	Jul 22 14:51	Jul 1 03:44
				Jul 30 15:56

Aug 6 08:29	Aug 13 03:59	Aug 21 06:17	Aug 29 01:33
Sep 4 15:59	Sep 11 18:02	Sep 19 21:56 n	Sep 27 09:16
Oct 4 01:16 T	Oct 11 11:23	Oct 19 13:05	Oct 26 16:08
Nov 2 12:56	Nov 10 07:29	Nov 18 03:03	Nov 24 23:19
Dec 2 03:12	Dec 10 04:53	Dec 17 15:38	Dec 24 07:56
Dec 31 19:58			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2090		Jan 9 01:22	Jan 16 03:04	Jan 22 18:39
	Jan 30 14:35	Feb 7 18:53	Feb 14 13:40	Feb 21 07:43
	Mar 1 09:47	Mar 9 08:21	Mar 15 23:43 t	Mar 22 22:56
	Mar 31 03:49 P	Apr 7 17:57	Apr 14 09:23	Apr 21 15:51
	Apr 29 19:13	May 7 00:39	May 13 19:02	May 21 09:44
	May 29 07:30	Jun 5 05:46	Jun 12 05:19	Jun 20 03:34
	Jun 27 17:12	Jul 4 10:38	Jul 11 17:03	Jul 19 20:17
	Jul 27 01:20	Aug 2 16:32	Aug 10 06:52	Aug 18 11:06
	Aug 25 09:00	Sep 1 00:45	Sep 8 22:46 t	Sep 16 23:49
	Sep 23 17:04 T	Sep 30 12:22	Oct 8 15:55	Oct 16 10:38
	Oct 23 02:10	Oct 30 04:05	Nov 7 09:06	Nov 14 19:59
	Nov 21 12:49	Nov 28 23:41	Dec 7 01:15	Dec 14 04:26
	Dec 21 01:30	Dec 28 21:37		

## PHASES OF THE MOON: 2091 TO 2100 UNIVERSAL TIME (UT)

Year	New Moon	First Quarter	Full Moon	Last Quarter
2091			Jan 5 15:51	Jan 12 12:35
	Jan 19 16:32	Jan 27 19:24	Feb 4 04:47	Feb 10 21:12
	Feb 18 09:39 P	Feb 26 14:48	Mar 5 16:00 t	Mar 12 07:03
	Mar 20 03:47	Mar 28 06:32	Apr 4 01:32	Apr 10 18:46
	Apr 18 21:21	Apr 26 18:21	May 3 09:47	May 10 08:37
	May 18 13:08	May 26 02:43	Jun 1 17:32	Jun 9 00:23
	Jun 17 02:42	Jun 24 08:32	Jul 1 01:55	Jul 8 17:22
	Jul 16 14:16	Jul 23 13:03	Jul 30 12:02	Aug 7 10:46
	Aug 15 00:23 T	Aug 21 17:44	Aug 29 00:40 t	Sep 6 03:48
	Sep 13 09:35	Sep 20 00:11	Sep 27 15:57	Oct 5 19:54
	Oct 12 18:30	Oct 19 09:51	Oct 27 09:19	Nov 4 10:28
	Nov 11 03:43	Nov 17 23:40	Nov 26 03:44	Dec 3 22:56
	Dec 10 13:55	Dec 17 17:30	Dec 25 22:00	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2092				Jan 2 09:08
	Jan 9 01:38	Jan 16 14:09	Jan 24 14:56	Jan 31 17:26
	Feb 7 15:04 A	Feb 15 11:41	Feb 23 05:30 n	Mar 1 00:47
	Mar 8 05:57	Mar 16 08:08	Mar 23 17:16	Mar 30 08:22
	Apr 6 21:42	Apr 15 01:55	Apr 22 02:30	Apr 28 17:09
	May 6 13:40	May 14 16:07	May 21 10:01	May 28 03:47
	Jun 5 05:18	Jun 13 02:34	Jun 19 16:57	Jun 26 16:33

Jul 4 20:12	Jul 12 09:55	Jul 19 00:25 n	Jul 26 07:32
Aug 3 09:55 A	Aug 10 15:19	Aug 17 09:23 n	Aug 25 00:33
Sep 1 22:15	Sep 8 20:16	Sep 15 20:34	Sep 23 19:06
Oct 1 09:16	Oct 8 02:17	Oct 15 10:26	Oct 23 14:08
Oct 30 19:30	Nov 6 10:41	Nov 14 03:06	Nov 22 08:08
Nov 29 05:37	Dec 5 22:19	Dec 13 22:00	Dec 21 23:40
Dec 28 16:11			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2093		Jan 4 13:24	Jan 12 17:44 n	Jan 20 12:04
	Jan 27 03:23 T	Feb 3 07:28	Feb 11 12:20	Feb 18 21:34
	Feb 25 15:07	Mar 5 03:28	Mar 13 04:07	Mar 20 04:58
	Mar 27 03:19	Apr 3 23:47	Apr 11 16:37	Apr 18 11:21
	Apr 25 16:13	May 3 18:38	May 11 02:18	May 17 17:48
	May 25 06:08	Jun 2 10:40	Jun 9 10:10	Jun 16 01:20
	Jun 23 21:06	Jul 1 23:25	Jul 8 17:15 p	Jul 15 10:55
	Jul 23 12:37 A	Jul 31 09:14	Aug 7 00:24	Aug 13 23:24
	Aug 22 03:54	Aug 29 16:59	Sep 5 08:29	Sep 12 15:16
	Sep 20 18:17	Sep 27 23:40	Oct 4 18:19	Oct 12 10:11
	Oct 20 07:34	Oct 27 06:19	Nov 3 06:47	Nov 11 06:51
	Nov 18 19:59	Nov 25 13:55	Dec 2 22:25	Dec 11 03:16
	Dec 18 07:49	Dec 24 23:26		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2094			Jan 1 16:52 p	Jan 9 21:37
	Jan 16 19:06 T	Jan 23 11:35	Jan 31 12:38	Feb 8 12:46
	Feb 15 05:44	Feb 22 02:37	Mar 2 07:36	Mar 10 00:23
	Mar 16 15:45	Mar 23 20:06	Apr 1 00:12	Apr 8 08:47
	Apr 15 01:38	Apr 22 14:49	Apr 30 13:55	May 7 14:49
	May 14 12:10	May 22 09:17	May 30 00:59	Jun 5 19:42
	Jun 13 00:04 P	Jun 21 02:20	Jun 28 10:00 t	Jul 5 00:55
	Jul 12 13:38 P	Jul 20 17:26	Jul 27 17:40	Aug 3 07:59
	Aug 11 04:38	Aug 19 06:28	Aug 26 00:53	Sep 1 18:10
	Sep 9 20:32	Sep 17 17:29	Sep 24 08:34	Oct 1 08:16
	Oct 9 12:45	Oct 17 02:46	Oct 23 17:49	Oct 31 02:10
	Nov 8 04:43	Nov 15 10:46	Nov 22 05:28	Nov 29 22:50
	Dec 7 19:51 P	Dec 14 18:18	Dec 21 19:57 t	Dec 29 20:28

Year	New Moon	First Quarter	Full Moon	Last Quarter
2095	Jan 6 09:34	Jan 13 02:29	Jan 20 12:49	Jan 28 17:08
	Feb 4 21:30	Feb 11 12:18	Feb 19 07:00	Feb 27 11:00
	Mar 6 07:40	Mar 13 00:19	Mar 21 01:11	Mar 29 00:56
	Apr 4 16:37	Apr 11 14:28	Apr 19 18:15	Apr 27 10:46
	May 4 01:07	May 11 06:15	May 19 09:22	May 26 17:18
	Jun 2 09:59 T	Jun 9 23:03	Jun 17 22:07 p	Jun 24 21:56
	Jul 1 19:55	Jul 9 16:17	Jul 17 08:32	Jul 24 02:18
	Jul 31 07:30	Aug 8 09:20	Aug 15 17:14	Aug 22 07:58
	Aug 29 21:06	Sep 7 01:27	Sep 14 01:12	Sep 20 16:17
	Sep 28 12:55	Oct 6 15:53	Oct 13 09:31	Oct 20 04:09
	Oct 28 06:33	Nov 5 04:10	Nov 11 19:06	Nov 18 19:56
	Nov 27 00:55 A	Dec 4 14:22	Dec 11 06:22 p	Dec 18 15:15
	Dec 26 18:25			

Year	New Moon	First Quarter	Full Moon	Last Quarter
2096		Jan 2 23:03	Jan 9 19:21	Jan 17 12:52
	Jan 25 09:46	Feb 1 07:04	Feb 8 09:51	Feb 16 10:40
	Feb 23 22:29	Mar 1 15:17	Mar 9 01:38	Mar 17 06:19
	Mar 24 08:56	Mar 31 00:22	Apr 7 18:19	Apr 15 22:12
	Apr 22 17:44	Apr 29 10:51	May 7 11:08 n	May 15 09:55
	May 22 01:36 T	May 28 23:08	Jun 6 03:00	Jun 13 18:10
	Jun 20 09:13	Jun 27 13:32	Jul 5 17:03	Jul 13 00:06
	Jul 19 17:22	Jul 27 06:00	Aug 4 05:06	Aug 11 05:02
	Aug 18 03:01	Aug 25 23:57	Sep 2 15:37	Sep 9 10:18
	Sep 16 15:11	Sep 24 18:15	Oct 2 01:26	Oct 8 17:10
	Oct 16 06:29	Oct 24 11:42	Oct 31 11:17 n	Nov 7 02:49
	Nov 15 00:37 A	Nov 23 03:19	Nov 29 21:35 n	Dec 6 16:09
	Dec 14 20:07	Dec 22 16:37	Dec 29 08:24	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2097				Jan 5 09:21
	Jan 13 15:01	Jan 21 03:28	Jan 27 19:48	Feb 4 05:33
	Feb 12 07:50	Feb 19 12:08	Feb 26 08:03	Mar 6 02:48
	Mar 13 21:58	Mar 20 19:17	Mar 27 21:29	Apr 4 22:51
	Apr 12 09:27	Apr 19 01:55	Apr 26 12:10 p	May 4 16:10
	May 11 18:41 T	May 18 09:15	May 26 03:37	Jun 3 06:12
	Jun 10 02:15	Jun 16 18:23	Jun 24 19:05	Jul 2 17:06
	Jul 9 08:59	Jul 16 06:11	Jul 24 09:55	Aug 1 01:25
	Aug 7 16:01	Aug 14 20:57	Aug 22 23:54	Aug 30 07:55
	Sep 6 00:35	Sep 13 14:23	Sep 21 13:01	Sep 28 13:40
	Oct 5 11:46	Oct 13 09:36	Oct 21 01:24 t	Oct 27 19:57
	Nov 4 02:10 A	Nov 12 05:24	Nov 19 13:04	Nov 26 04:08
	Dec 3 19:28	Dec 12 00:20	Dec 19 00:05	Dec 25 15:22

Year	New Moon	First Quarter	Full Moon	Last Quarter
2098				
	Jan 2 14:33	Jan 10 16:59	Jan 17 10:37	Jan 24 05:59
	Feb 1 09:55	Feb 9 06:17	Feb 15 21:01	Feb 22 23:27
	Mar 3 04:04	Mar 10 16:02	Mar 17 07:44	Mar 24 18:27
	Apr 1 19:48 P	Apr 8 22:57	Apr 15 19:05 t	Apr 23 13:35
	May 1 08:33	May 8 04:22	May 15 07:17	May 23 07:40
	May 30 18:24	Jun 6 09:47	Jun 13 20:26	Jun 21 23:52
	Jun 29 02:07	Jul 5 16:33	Jul 13 10:36	Jul 21 13:35
	Jul 28 08:52	Aug 4 01:44	Aug 12 01:45	Aug 20 00:42
	Aug 26 15:54	Sep 2 14:04	Sep 10 17:34	Sep 18 09:34
	Sep 25 00:18 P	Oct 2 05:50	Oct 10 09:21 t	Oct 17 16:58
	Oct 24 10:50 P	Nov 1 00:48	Nov 9 00:16	Nov 16 00:02
	Nov 22 23:52	Nov 30 21:57	Dec 8 13:47	Dec 15 07:54
	Dec 22 15:25	Dec 30 19:21		

Year	New Moon	First Quarter	Full Moon	Last Quarter
2099				
	Jan 21 09:08	Jan 29 14:40	Jan 7 01:51	Jan 13 17:27
	Feb 20 04:07	Feb 28 06:14	Feb 5 12:50	Feb 12 05:09
	Mar 21 22:48 A	Mar 29 17:40	Mar 6 23:01	Mar 13 19:01
	Apr 20 15:31	Apr 28 01:37	Apr 5 08:38 p	Apr 12 10:49
	May 20 05:18	May 27 07:17	May 4 18:00	May 12 04:01
	Jun 18 16:11	Jun 25 12:02	Jun 3 03:38	Jun 10 21:50
			Jul 2 14:22	Jul 10 15:15

Jul 18 01:02	Jul 24 17:11	Aug 1 03:01	Aug 9 07:15
Aug 16 08:56	Aug 23 00:02	Aug 30 17:57	Sep 7 21:19
Sep 14 16:52 T	Sep 21 09:49	Sep 29 10:47 n	Oct 7 09:23
Oct 14 01:33	Oct 20 23:28	Oct 29 04:22	Nov 5 19:43
Nov 12 11:31	Nov 19 17:18	Nov 27 21:23	Dec 5 04:47
Dec 11 23:10	Dec 19 14:23	Dec 27 13:00	

Year	New Moon	First Quarter	Full Moon	Last Quarter
2100				Jan 3 13:04
	Jan 10 12:57	Jan 18 12:35	Jan 26 02:51	Feb 1 21:17
	Feb 9 04:56	Feb 17 09:23	Feb 24 14:53 n	Mar 3 06:12
	Mar 10 22:30 A	Mar 19 03:00	Mar 26 01:06	Apr 1 16:37
	Apr 9 16:18	Apr 17 16:43	Apr 24 09:45	May 1 05:02
	May 9 08:55	May 17 02:43	May 23 17:26	May 30 19:36
	Jun 7 23:33	Jun 15 09:42	Jun 22 01:12	Jun 29 11:53
	Jul 7 12:08	Jul 14 14:44	Jul 21 10:14	Jul 29 05:10
	Aug 5 23:03	Aug 12 19:11	Aug 19 21:31 n	Aug 27 22:38
	Sep 4 08:51 T	Sep 11 00:37	Sep 18 11:33	Sep 26 15:35
	Oct 3 18:04	Oct 10 08:34	Oct 18 04:07	Oct 26 07:20
	Nov 2 03:15	Nov 8 20:16	Nov 16 22:20	Nov 24 21:14
	Dec 1 13:02	Dec 8 12:10	Dec 16 17:01	Dec 24 08:47
	Dec 30 23:58			

## Acknowledgement

All calculations presented here are by Fred Espenak, and he assumes full responsibility for their accuracy. The computer software for predicting the phases of the Moon and eclipses is written in THINK Pascal and run on a PowerMac G4. It is based on procedures described in [Astronomical Algorithms](#) by *Jean Meeus* (Willmann-Bell, Inc., Richmond, 1998).

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[Various phases of the Moon during the synodic month.](#)



## Additional Links About the Moon

For historical research, 6,000 years of the Moon's phases from -1999 to +4000 (2000 BCE to 4000 CE) are available in AstroPixel's [Six Millennium Catalog of Phases of the Moon](#).

Links to tables of dates for lunar perigees, apogees, super moons, lunar nodes and standstills, and length of the synodic month throughout the 21st Century appear below.

- [Perigee and Apogee: 2001 to 2100](#)
- [Full Moon at Perigee \(Super Moon\): 2001 to 2100](#)
- [Ascending and Descending Node: 2001 to 2100](#)
- [Monthly Lunar Standstills: 2001 to 2100](#)
- [Greatest Annual Lunar Standstills: 2001 to 2100](#)
- [Length of Synodic Month: 2001 to 2100](#)

The following links offer several galleries of Moon photographs.

- [Moon Photo Gallery](#)
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Last Updated: 2014 Dec 22