

Activity 2.2a Phases of the Moon 2014 – 2020

Introduction

The best time to observe the surface of the moon is around the first and last quarter phases when long shadows are present. This allows students to see greater detail of the craters and lunar mountains. During a full moon, the full brightness of the sun is reflected and surface details are more difficult to distinguish.

The following tables list the dates and times for the phases of the moon. All times are listed in Universal Time, which is equivalent to Greenwich Mean Time. The conversion times for standard time in the United States are as follows:

Atlantic Standard Time (AST) = UT - 4 hours

Eastern Standard Time (EST) = UT - 5 hours

Central Standard Time (CST) = UT - 6 hours

Mountain Standard Time (MST) = UT - 7 hours

Pacific Standard Time (PST) = UT - 8 hours

Note: If Daylight Saving Time is in effect in your time zone, you must add one hour to the standard times listed above. Information has been retrieved from NASA's Eclipse Web Site.

The following link may be used to identify moon phases for a specific location: <http://www.timeanddate.com/calendar/moonphases.html>. Specific local information regarding moonrise and moonset times can be found at www.weather.com.

In Part 3 of Activity 2.2 Patterns of the Moon, it is suggested that students take home paper binoculars to observe the moon. When planning the module, teachers should consider the best viewing nights and take into consideration the phases of the moon and other factors such as weather and student schedules. Moon observation may also be combined with the suggested star viewing night included in Activity 2.3 Patterns of the Stars. Ideal viewing dates are around the first and last quarters; however, anytime between the few days before the first quarter and the few days after the last quarter will work well for student observation.



New Moon



First Quarter



Full Moon



Last Quarter

Images courtesy of NASA's Goddard Space Flight Center
Scientific Visualization Studio

Moon Phases 2014 – 2020

2014	New Moon	First Quarter	Full Moon	Last Quarter
	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	Apr 22 07:52
	Apr 29 06:14	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	Oct 15 19:12
	Oct 23 21:57	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		
2015	New Moon	First Quarter	Full Moon	Last Quarter
			Jan 5 04:53	Jan 13 09:47
	Jan 20 13:14	Jan 27 04:48	Feb 3 23:09	Feb 12 03:50
	Feb 18 23:47	Feb 25 17:14	Mar 5 18:06	Mar 13 17:48
	Mar 20 09:36	Mar 27 07:43	Apr 4 12:06	Apr 12 03:44
	Apr 18 18:57	Apr 25 23:55	May 4 03:42	May 11 10:36
	May 18 04:13	May 25 17:19	Jun 2 16:19	Jun 9 15:42
	Jun 16 14:05	Jun 24 11:03	Jul 2 02:20	Jul 8 20:24
	Jul 16 01:24	Jul 24 04:04	Jul 31 10:43	Aug 7 02:03
	Aug 14 14:54	Aug 22 19:31	Aug 29 18:35	Sep 5 09:54
	Sep 13 06:41	Sep 21 08:59	Sep 28 02:50	Oct 4 21:06
	Oct 13 00:06	Oct 20 20:31	Oct 27 12:05	Nov 3 12:24

	Nov 11 17:47	Nov 19 06:27	Nov 25 22:44	Dec 3 07:40
	Dec 11 10:29	Dec 18 15:14	Dec 25 11:11	
2016	New Moon	First Quarter	Full Moon	Last Quarter
				Jan 2 05:30
	Jan 10 01:30	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	Mar 15 17:03	Mar 23 12:01	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	Sep 9 11:49	Sep 16 19:05	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			
2017	New Moon	First Quarter	Full Moon	Last Quarter
		Jan 5 19:47	Jan 12 11:34	Jan 19 22:14
	Jan 28 00:07	Feb 4 04:19	Feb 11 00:33	Feb 18 19:33
	Feb 26 14:58	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	Aug 15 01:15
	Aug 21 18:30	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
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			Jan 2 02:24	Jan 8 22:25
	Jan 17 02:17	Jan 24 22:20	Jan 31 13:27	Feb 7 15:54
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	Mar 17 13:12	Mar 24 15:35	Mar 31 12:37	Apr 8 07:18
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	Jan 6 01:28	Jan 14 06:45	Jan 21 05:16	Jan 27 21:10
	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
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