




LUNAR PHASES


How many objects and events can you observe this month? Check each of the boxes provided next to the objects and events you observe!


NEW MOON
JANUARY
1
11:14 UT

YOUR LOCAL TIME ZONE: _____ (ex: EST = UT -5)
It is important to distinguish your local time from the astronomical standard of **Universal Time (UT)**. Universal Time is the standard by which all observers agree to measure an event. It is also known as Greenwich Meantime (GMT) or Universal Time Coordinated (UTC). Use a time zone chart (<http://www.worldtimezone.com/>) to find your local time zone and record how many hours + or - from UT 0 (GMT). Add to or subtract from UT times to get the local time for an event.


FIRST QUARTER
JANUARY
8
03:39 UT


ASTRONOMICAL EVENTS
Moon At Perigee (closest to Earth) on January 1 at 21h UT and on January 30 at 10h UT.
Moon At Apogee (farthest from Earth) on January 16 at 2h UT.
Earth At Perihelion (closest to Sun) on the January 4 at 12h UT.


FULL MOON
JANUARY
16
04:52 UT

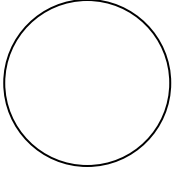
CONSTELLATIONS
The following constellations appear at or near the **zenith meridian** (the line running directly north/south in the sky) at 22:00 (10:00pm) **local time** on the first night of the month.

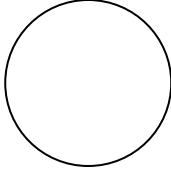
- Northern Hemisphere**
These constellations appear at or north of the **celestial equator**.
- Auriga
 - Camelopardalis
 - Orion
 - Perseus
 - Taurus


- Southern Hemisphere**
These constellations appear at or south of the **celestial equator**.
- Caelum
 - Columba
 - Dorado
 - Eridanus
 - Fornax
 - Horologium
 - Hydra
 - Lepus
 - Mensa
 - Pictor
 - Reticulum

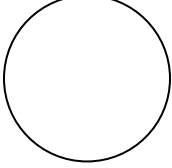

LAST QUARTER
JANUARY
24
05:19 UT

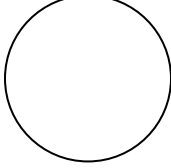
LUNAR PHASES
Observe and record lunar phases. Sketch the degree of observed phase by shading in the circles provided. Orient the north **lunar limb** to top. Record the date and time of observation in UT.

Waxing Crescent
Visible Jan 2-7
Date and Time:  N

Waning Gibbous
Visible Jan 17-23
Date and Time:  N


NEW MOON
JANUARY
30
21:39 UT

Waxing Gibbous
Visible Jan 9-15
Date and Time:  N

Waning Crescent
Visible Jan 25-29
Date and Time:  N

ASTRONOMER'S WORKBOOK
TARGET LIST
JANUARY 2014



LUNAR PHASES

How many objects and events can you observe this month? Check each of the boxes provided next to the objects and events you observe!



NEW MOON
JANUARY
1
11:14 UT

THE CLASSICAL PLANETS

- Mercury** - Greatest elongation (18°) evening sky Jan 31 at 10h UT.
- Mars** - Rising early morning in Virgo.
- Jupiter** - At opposition Jan 5 at 21h UT.
- Saturn** - Rising early morning in Libra.
- Uranus** - Sets early evening in Pisces.

COMETS

- C/2013 R1 (Lovejoy)**
- C/2012 X1 (LINEAR)**
- C/2013 V3 (Nevski)**

Visit <http://cometchasing.skyhound.com/> for finder charts and more information on these and other visible comets.



FIRST QUARTER
JANUARY
8
03:39 UT

DWARF PLANETS

- Ceres** - Rising early morning in Virgo, magnitude 8.

ASTEROIDS

- 4 Vesta** - Rising early morning in Virgo, magnitude 7.
- 2 Pallas** - Transits early morning hours in Hydra, magnitude 8.
- 3 Juno** - Sets early evening in Aquarius, magnitude 10.

MESSIER OBJECTS VISIBLE IN THE EVENING SKY

PERSEUS

- M76 Little Dumbbell
- M34 Open Cluster

CETUS

- M77 Galaxy

TAURUS

- M45 Pleiades Cluster

LEPUS

- M79 Globular Cluster

AURIGA

- M38 Star Cluster

TAURUS

- M1 Crab Nebula

ORION

- M42 Great Orion Nebula
- M43 Mairan's Nebula

AURIGA

- M36 Open Cluster

ORION

- M78 Reflection Nebula

AURIGA

- M37 Open Cluster

QUADRANTID METEORS

Record each meteor sighting you observe while observing the Quadrantid meteor shower. (ex: ||||) If there are multiple observers be sure that each observer keeps record of only the meteors they observe and not what other observers report. Record date and observation start/stop time in UT.

Visit <http://www.amsmeteors.org/meteor-showers/meteor-shower-calendar/> for more information on the Quadrantid and other meteor showers.

ADD YOUR OWN TARGET

- _____
- _____
- _____

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JANUARY
16
04:52 UT



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NEW MOON
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