





TARGET LIST - JUNE 2014

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			
FIRST QUARTER JUNE	FULL MOON JUNE	LAST QUARTER JUNE	NEW MOON JUNE
5	13	19	27
20:39 UT	04:11 UT	18:39 UT	08:08 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 astronomical 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). Use your local time to add to or subtract from the UT times listed to get your local time for an event. **Do not forget to account for time changes due to local observance of Daylight Savings Time. (ex: Eastern Standard Time (EST) = UT-5 becomes Eastern Daylight Time (EDT) = UT-4)**

ASTRONOMICAL EVENTS

JUNE SOLSTICE occurs on June 21 at 10:51 UT.

Moon At Apogee (farthest from Earth) on June 3 at 4h UT and June 30 at 19h UT.

Moon At Perigee (closest to Earth) on June 15 at 3h 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.

North Celestial Hemisphere

These constellations appear at or north of the **celestial equator**.

- Bootes
- Canes Venatici
- Coma Berenices
- Draco
- Ursa Major
- Ursa Minor

South Celestial Hemisphere

These constellations appear at or south of the **celestial equator**.

- Apus
- Centaurus
- Chamaeleon
- Circinus
- Corvus
- Crux
- Lupus
- Musca
- Octans
- Virgo

THE CLASSICAL PLANETS

- Venus** - Visible just before sunrise.
- Mars** - Transits early evening in Virgo.
- Jupiter** - Setting early evening in Gemini.
- Saturn** - Transits late evening in Libra.
- Neptune** - Rises early morning hours in Aquarius.
- Uranus** - Rising before dawn in Pisces.

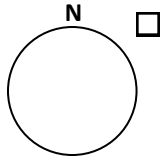
DWARF PLANETS

- Ceres** - Transits early evening in Virgo, mag 8.
- Pluto** - Transits early morning hours in Sagittarius, mag 14.

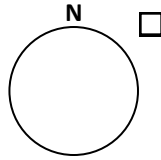
TARGET LIST - JUNE 2014

LUNAR PHASES

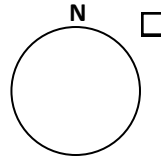
Observe and record lunar phases. Sketch the degree of observed phase by shading in the circles provided. Orient the north lunar limb to top. Record the date and time of observation in UT.



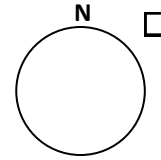
WAXING
CRESCENT
VISIBLE
JUNE
1-4



WAXING
GIBBOUS
VISIBLE
JUNE
6-12



WANING
GIBBOUS
VISIBLE
JUNE
14-18



WANING
CRESCENT
VISIBLE
JUNE
20-26

COMETS

- C/2012 X1 (LINEAR) Mag 8 in Capricornus.
- C/2012 K1 (PANSTARRS) Mag 8.5 in Ursa Major.
- C/2014 E2 (Jacques) Mag 7.5 in Monoceros.

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

ASTEROIDS

- 4 Vesta** - Transits early evening in Virgo. Mag 6.
- 2 Pallas** - Setting early evening in Leo. Mag 9.

MESSIER OBJECTS VISIBLE IN THE EVENING SKY

CANES VENATICI

- M3 Globular Cluster
- M51 Whirlpool Galaxy
- M63 Sunflower Galaxy
- M94 Galaxy
- M106 Galaxy

COMA BERENICES

- M53 Globular Cluster
- M64 Black Eye Galaxy
- M85 Galaxy
- M88 Galaxy
- M91 Galaxy
- M98 Galaxy
- M99 Virgo Cluster Pinwheel
- M100 Galaxy

VIRGO

- M49 Galaxy
- M58 Galaxy
- M59 Galaxy
- M60 Galaxy
- M61 Galaxy
- M84 Galaxy
- M86 Galaxy
- M87 Virgo A
- M89 Galaxy

- M90 Galaxy
- M104 Sombrero Galaxy

HYDRA

- M68 Globular Cluster
- M83 Southern Pinwheel Galaxy

URSA MAJOR

- M40 Winnecke 4
- M97 Owl Nebula
- M101 Pinwheel Galaxy
- M108 Galaxy
- M109 Galaxy

LEO

- M65 Galaxy
- M66 Galaxy

ADD YOUR OWN TARGET

- _____
- _____
- _____
- _____
- _____
- _____
- _____

METEORS AND SATELLITES

Record any meteors or satellites you observe. (ex: $\uparrow\uparrow\uparrow$) If there are multiple observers be sure that each observer keeps record of only the meteors and satellites they observe and not what other observers report. Record date and observation start/stop time in UT.

METEORS

SATELLITES

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