





TARGET LIST - SEPTEMBER 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 SEPTEMBER	FULL MOON SEPTEMBER	LAST QUARTER SEPTEMBER	NEW MOON SEPTEMBER
2	9	16	24
11:11 UT	01:38 UT	02:05 UT	06:14 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 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

Moon At Apogee (farthest from Earth) on September 20 at 14h UT.

Moon At Perigee (closest to Earth) on September 8 at 4h UT.

The September Equinox Occurs on September 23 at 02:29 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**.

- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> Aquila | <input type="checkbox"/> Sagitta |
| <input type="checkbox"/> Cepheus | <input type="checkbox"/> Ursa Minor |
| <input type="checkbox"/> Cygnus | <input type="checkbox"/> Vulpecula |
| <input type="checkbox"/> Delphinus | |
| <input type="checkbox"/> Draco | |
| <input type="checkbox"/> Lyra | |

South Celestial Hemisphere

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

- | | |
|---|--------------------------------------|
| <input type="checkbox"/> Apus | <input type="checkbox"/> Octus |
| <input type="checkbox"/> Ara | <input type="checkbox"/> Pavo |
| <input type="checkbox"/> Capricornus | <input type="checkbox"/> Sagittarius |
| <input type="checkbox"/> Corona Australis | <input type="checkbox"/> Scutum |
| <input type="checkbox"/> Indus | <input type="checkbox"/> Telescopium |
| <input type="checkbox"/> Microscopium | |

THE CLASSICAL PLANETS

- MERCURY** - Greatest elongation evening sky September 21 at 22h UT. (26°)
- Venus** - Visible around sunrise.
- Mars** - Moving through Scorpius.
- Jupiter** - Rising early morning in Cancer.
- Saturn** - Setting early evening in Libra.
- Uranus** - Rising early evening in Pisces.

- Neptune** - Rising early evening in Aquarius.

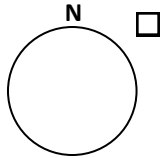
DWARF PLANETS

- Ceres** - Setting early evening in Libra, mag 8.
- Pluto** - Transiting early evening in Sagittarius, mag 14.

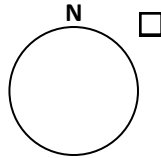
TARGET LIST - SEPTEMBER 2014

LUNAR PHASES

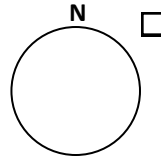
Observe and record lunar phases. Sketch the degree of observed phase by shading in the circles provided. Orient the north lunar limb to top. Record the date and time of observation in UT.



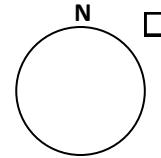
WAXING
CRESCENT
VISIBLE
SEPTEMBER
1, 25-30



WAXING
GIBBOUS
VISIBLE
SEPTEMBER
3-8



WANING
GIBBOUS
VISIBLE
SEPTEMBER
10-15



WANING
CRESCENT
VISIBLE
SEPTEMBER
17-23

COMETS

- C/2013 V5 (Oukaimeden) Mag 7.6 in Monoceros.
- C/2014 E2 (Jacques) Mag 6.8 in Cepheus.
- C/2012 K1 (PANSTARRS) Mag 7.8 in Cancer.

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

ASTEROIDS

- 4 Vesta** - Setting early evening in Libra, mag 7.
- 3 Juno** - Rising early morning. Moving from Gemini into Canis Minor, mag 9.

MESSIER OBJECTS VISIBLE IN THE EVENING SKY

AQUARIUS

- M72 Globular Cluster
- M73 Asterism

CYGNUS

- M29 Open Cluster

HERCULES

- M92 Globular Cluster

LYRA

- M56 Globular Cluster
- M57 The Ring Nebula

OPHIUCHUS

- M9 Globular Cluster
- M10 Globular Cluster
- M12 Globular Cluster
- M14 Globular Cluster
- M19 Globular Cluster
- M62 Globular Cluster

SAGITTA

- M71 Globular Cluster

SAGITTARIUS

- M8 The Lagoon Nebula
- M17 The Swan Nebula
- M18 Open Cluster
- M20 The Trifid Nebula
- M21 Open Cluster

- M22 Globular Cluster
- M23 Open Cluster
- M24 SGR Star Cloud
- M25 Open Cluster
- M28 Globular Cluster
- M54 Globular Cluster
- M55 Globular Cluster
- M69 Globular Cluster
- M70 Globular Cluster
- M75 Globular Cluster

SERPENS CAUDA

- M16 The Eagle Nebula

SCORPIUS

- M6 The Butterfly Cluster
- M7 Ptolmey's Cluster

SCUTUM

- M11 The Wild Duck Cluster
- M26 Open Cluster

VULPECULA

- M27 The Dumbbell Nebula

ADD YOUR OWN TARGET

- _____
- _____
- _____

METEORS AND SATELLITES

Record any meteors or satellites you observe. (ex: | | | |) 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.