

The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

Sky Calendar – June 2017

Get Sky Calendar on Twitter
<http://twitter.com/skymaps>

- 1 **First Quarter Moon** at 12:42 UT.
- 3 **Venus 1.7° SSE of Uranus** at 5h UT. Mags. -4.3 and 5.9.
- 3 **Venus at greatest elongation** west (46° from Sun, morning sky) at 12h UT. Mag -4.3.
- 4 **Moon near Jupiter** (evening sky) at 1h UT. Mag. -2.2.
- 4 **Moon near Spica** (evening sky) at 22h UT.
- 8 **Moon near Antares** (midnight sky) at 20h UT.
- 8 **Moon at apogee** (farthest from Earth) at 22h UT (distance 406,401 km; angular size 29.4').
- 9 **Full Moon** at 13:10 UT.
- 10 **Moon near Saturn** (midnight sky) at 2h UT. Mag. 0.0.
- 15 **Saturn at opposition** (opposite the Sun) at 10h UT. The ringed planet is at its closest and brightest at Mag. +0.0. Saturn's rings are spectacular even in a small telescope.
- 16 **Moon near Neptune** (101° from Sun, morning sky) at 13h UT. Occultation visible from southern South Pacific Ocean. Mag. 7.9.
- 17 **Last Quarter Moon** at 11:34 UT.
- 20 **Moon near Venus** (morning sky) at 22h UT. Mag. -4.2.
- 21 **June solstice** at 4:24 UT. The time when the Sun reaches the point farthest north of the celestial equator marking the start of summer in the Northern Hemisphere and winter in the Southern Hemisphere.
- 21 **Mercury at superior conjunction** with the Sun at 14h UT. The elusive planet passes into the evening sky.
- 21 **Moon near the Pleiades** (morning sky) at 23h UT.
- 22 **Moon near Aldebaran** (22° from Sun, morning sky) at 15h UT.
- 23 **Moon at perigee** (closest to Earth) at 10:52 UT (357,937 km; angular size 33.4').
- 24 **New Moon** at 2:32 UT. Start of lunation 1169.
- 26 **Moon near Beehive cluster** (evening sky) at 11h UT.
- 28 **Moon near Regulus** (evening sky) at 1h UT. Occultation visible from west South America.

More sky events and links at <http://Skymaps.com/skycalendar/>
 All times in Universal Time (UT). (USA Eastern Summer Time = UT - 4 hours.)



SAVE ON RECOMMENDED PRODUCTS • <http://Skymaps.com/store>

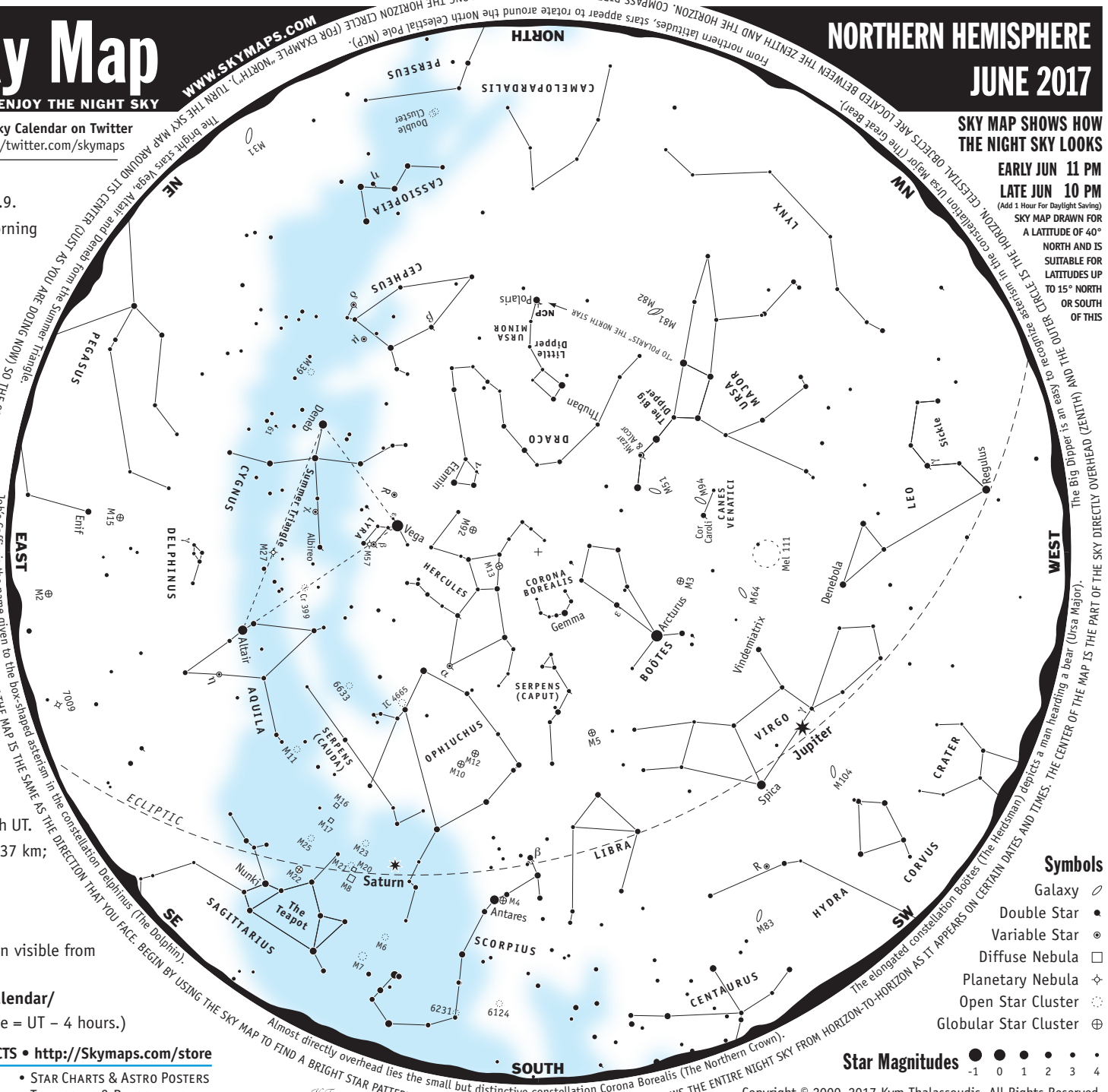
- STAR ATLASES & PLANISPHERES
- STAR CHARTS & ASTRO POSTERS
- BOOKS FOR SKY WATCHERS
- TELESCOPES & BINOCULARS

All sales support the production and free distribution of The Evening Sky Map. Thank you!

NORTHERN HEMISPHERE JUNE 2017

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY JUN 11 PM
 LATE JUN 10 PM
 (Add 1 Hour For Daylight Saving)
 SKY MAP DRAWN FOR A LATITUDE OF 40° NORTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS



- Symbols**
- Galaxy ☾
 - Double Star ●●
 - Variable Star ⊙
 - Diffuse Nebula □
 - Planetary Nebula ☆
 - Open Star Cluster ○
 - Global Star Cluster ⊕

Star Magnitudes ●●●●●
 -1 0 1 2 3 4

Copyright © 2000–2017 Kym Thalassoudis. All Rights Reserved.

* **TERMS OF USE:** FREE FOR NON-COMMERCIAL EDUCATIONAL USE. ASTRONOMY EDUCATION GROUPS MAY FREELY DISTRIBUTE PRINTED HANDOUTS. FULL DETAILS AT <http://Skymaps.com/terms.html>

INSTRUCTIONS: THE SKY MAP SHOWS THE ENTIRE NIGHT SKY FROM HORIZON-TO-HORIZON AS IT APPEARS ON CERTAIN DATES AND TIMES. THE CENTER OF THE MAP IS THE PART OF THE SKY DIRECTLY OVERHEAD (ZENITH) AND THE OUTER CIRCLE IS THE HORIZON. CELESTIAL OBJECTS ARE LOCATED BETWEEN THE ZENITH AND THE HORIZON. COMPASS DIRECTIONS ARE INDICATED ALONG THE HORIZON CIRCLE (FOR EXAMPLE, NORTH). FROM NORTHERN LATITUDES, STARS APPEAR TO ROTATE AROUND THE NORTH CELESTIAL POLE (NCP). THE NIGHT STARS NEAR AND BEYOND THE SUMMER TRIANGLE. THE NIGHT SKY MAP AROUND ITS CENTER (JUST AS YOU ARE DOING NOW) SO THE COMPASS DIRECTION THAT APPEARS ALONG THE BOTTOM OF THE MAP IS THE SAME AS THE DIRECTION THAT YOU FACE. BEGIN BY USING THE SKY MAP TO FIND A BRIGHT STAR PATTERN IN THE SKY.

About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.

Variable Star – A star that changes brightness over a period of time.

NORTHERN HEMISPHERE JUNE 2017 CELESTIAL OBJECTS Sky maps.com

Easily Seen with the Naked Eye

| | | |
|------------|-----|--|
| Altair | Aql | • Brightest star in Aquila. Name means "the flying eagle". Dist=16.8 ly. |
| Arcturus | Boo | • Orange, giant K star. Name means "bear watcher". Dist=36.7 ly. |
| δ Cephei | Cep | • Cepheid prototype. Mag varies between 3.5 & 4.4 over 5.366 days. Mag 6 companion. |
| Deneb | Cyg | • Brightest star in Cygnus. One of the greatest known supergiants. Dist=1,400±200 ly. |
| α Herculis | Her | • Semi-regular variable. Magnitude varies between 3.1 & 3.9 over 90 days. Mag 5.4 companion. |
| Regulus | Leo | • Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly. |
| Vega | Lyr | • The 5th brightest star in the sky. A blue-white star. Dist=25.0 ly. |
| Antares | Sco | • Red, supergiant star. Name means "rival of Mars". Dist=135.9 ly. |
| Polaris | UMi | • The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433ly. |
| Spica | Vir | • Latin name means "ear of wheat" and shown held in Virgo's left hand. Dist=250 ly. |

Easily Seen with Binoculars

| | | |
|---------------|-----|--|
| η Aquilae | Aql | • Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 ly. |
| M3 | CVn | • Easy to find in binoculars. Might be glimpsed with the naked eye. |
| μ Cephei | Cep | • Herschel's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 days. |
| Mel 111 | Com | • Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=283 ly. Age=400 million years. |
| χ Cygni | Cyg | • Long period pulsating red giant. Magnitude varies between 3.3 & 14.2 over 407 days. |
| M39 | Cyg | • May be visible to the naked eye under good conditions. Dist=900 ly. |
| ν Draconis | Dra | • Wide pair of white stars. One of the finest binocular pairs in the sky. Dist=100 ly. |
| M13 | Her | • Best globular in northern skies. Discovered by Halley in 1714. Dist=23,000 ly. |
| M92 | Her | • Fainter and smaller than M13. Use a telescope to resolve its stars. |
| ε Lyrae | Lyr | • Famous Double Double. Binoculars show a double star. High power reveals each a double. |
| R Lyrae | Lyr | • Semi-regular variable. Magnitude varies between 3.9 & 5.0 over 46.0 days. |
| M12 | Oph | • Close to the brighter M10. Dist=18,000 ly. |
| M10 | Oph | • 3 degrees from the fainter M12. Both may be glimpsed in binoculars. Dist=14,000 ly. |
| IC 4665 | Oph | • Large, scattered open cluster. Visible with binoculars. |
| 6633 | Oph | • Scattered open cluster. Visible with binoculars. |
| M8 | Sgr | □ Lagoon Nebula. Bright nebula bisected by a dark lane. Dist=5,200 ly. |
| M25 | Sgr | • Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 ly. |
| M22 | Sgr | • A spectacular globular star cluster. Telescope will show stars. Dist=10,000 ly. |
| M4 | Sco | • A close globular. May just be visible without optical aid. Dist=7,000 ly. |
| M6 | Sco | • Butterfly Cluster. 30+ stars in 7x binoculars. Dist=1,960 ly. |
| M7 | Sco | • Superb open cluster. Visible to the naked eye. Age=260 million years. Dist=780 ly. |
| M5 | Ser | • Fine globular star cluster. Telescope will reveal individual stars. Dist=25,000 ly. |
| Mizar & Alcor | UMa | • Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion. |
| Cr 399 | Vul | • Coathanger asterism or "Brocchi's Cluster". Not a true star cluster. Dist=218 to 1,140 ly. |

Telescopic Objects

| | | |
|------------|-----|---|
| ε Boötis | Boo | • Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8". Difficult to split. |
| M94 | CVn | • Compact nearly face-on spiral galaxy. Dist=15 million ly. |
| M51 | CVn | • Whirlpool Galaxy. First recognised to have spiral structure. Dist=25 million ly. |
| M64 | Com | • Black-Eye Galaxy. Discovered by J.E. Bode in 1775 - "a small, nebulous star". |
| Albireo | Cyg | • Beautiful double star. Contrasting colours of orange and blue-green. Sep=34.4". |
| 61 Cygni | Cyg | • Attractive double star. Mags 5.2 & 6.1 orange dwarfs. Dist=11.4 ly. Sep=28.4". |
| γ Delphini | Del | • Appear yellow & white. Mags 4.3 & 5.2. Dist=100 ly. Struve 2725 double in same field. |
| β Lyrae | Lyr | • Eclipsing binary. Mag varies between 3.3 & 4.3 over 12.940 days. Fainter mag 7.2 blue star. |
| M57 | Lyr | • Ring Nebula. Magnificent object. Smoke-ring shape. Dist=4,100 ly. |
| M23 | Sgr | • Elongated star cluster. Telescope required to show stars. Dist=2,100 ly. |
| M20 | Sgr | □ Trifid Nebula. A telescope shows 3 dust lanes trisecting nebula. Dist=5,200 ly. |
| M21 | Sgr | • A fine and impressive cluster. Dist=4,200 ly. |
| M17 | Sgr | □ Omega Nebula. Contains the star cluster NGC 6618. Dist=4,900 ly. |
| M11 | Sct | • Wild Duck Cluster. Resembles a globular through binoculars. V-shaped. Dist=5,600 ly. |
| M16 | Ser | □ Eagle Nebula. Requires a telescope of large aperture. Dist=8,150 ly. |
| M81 | UMa | • Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope. |
| M82 | UMa | • Close to M81 but much fainter and smaller. |
| γ Virginis | Vir | • Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005. |
| M27 | Vul | • Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly. |

Calendario estelar - Junio 2017

- 1 Luna en cuarto creciente a las 12:42 TU.
- 3 Venus 1.7 ° SSE de Urano a las 5h TU. Mags. -4,3 y 5,9.
Venus en la mayor elongación al oeste (46 ° desde el Sol, cielo matutino) a las 12h TU. Mag -4.3.
- 4 Luna cerca de Júpiter (cielo nocturno) a 1h TU. Mag. -2,2.
Luna cerca de Spica (cielo nocturno) a las 22h TU.
- 8 Luna cerca de Antares (cielo de medianoche) a las 20h TU.
Luna en el apogeo (más alejado de la Tierra) a las 22h TU (distancia 406,401 km, tamaño angular 29,4 ').
- 9 Luna Llena a las 13:10 TU.
- 10 Luna cerca de Saturno (cielo de medianoche) a las 2h TU. Mag. 0.0.
- 15 Saturno en oposición (frente al Sol) a las 10h TU. El planeta anillado está en su punto más cercano y brillante en Mag. +0,0. Los anillos de Saturno son espectaculares incluso en un pequeño telescopio.
- 16 Luna cerca de Neptuno (101 ° del Sol, cielo matutino) a las 13h TU. Ocultación visible desde el sur del Océano Pacífico Sur. Mag. 7.9.
- 17 Luna en cuarto menguante a las 11:34 TU.
- 20 Luna cerca de Venus (cielo matutino) a las 22h TU. Mag. -4.2.
- 21 Solsticio de verano a las 4:24 TU. Es el momento en que el Sol alcanza el punto más al norte del ecuador celeste, marcando el inicio del verano en el hemisferio norte y el invierno en el hemisferio sur.
- 21 Mercurio en conjunción superior con el Sol a las 14h TU. El esquivo planeta pasa al cielo nocturno.
Luna cerca de las Pléyades (cielo matutino) a las 23h TU.
- 22 Luna cerca de Aldebarán (22 ° desde el Sol, cielo matutino) a las 15h TU.
- 23 Luna en el perigeo (más cercano a la Tierra) a las 10:52 TU (357.937 km, tamaño angular 33.4 ').
- 24 Luna Nueva a las 2:32 TU. Inicio de la lunación 1169.
- 26 Luna cerca del clúster Beehive (cielo vespertino) en 11h TU.
- 28 Luna cerca de Regulus (cielo vespertino) a la 1h TU. Ocultación visible desde el oeste de América del Sur.

Todas las horas Tiempo Universal (TU). ¡Cielos despejados hasta el próximo mes!