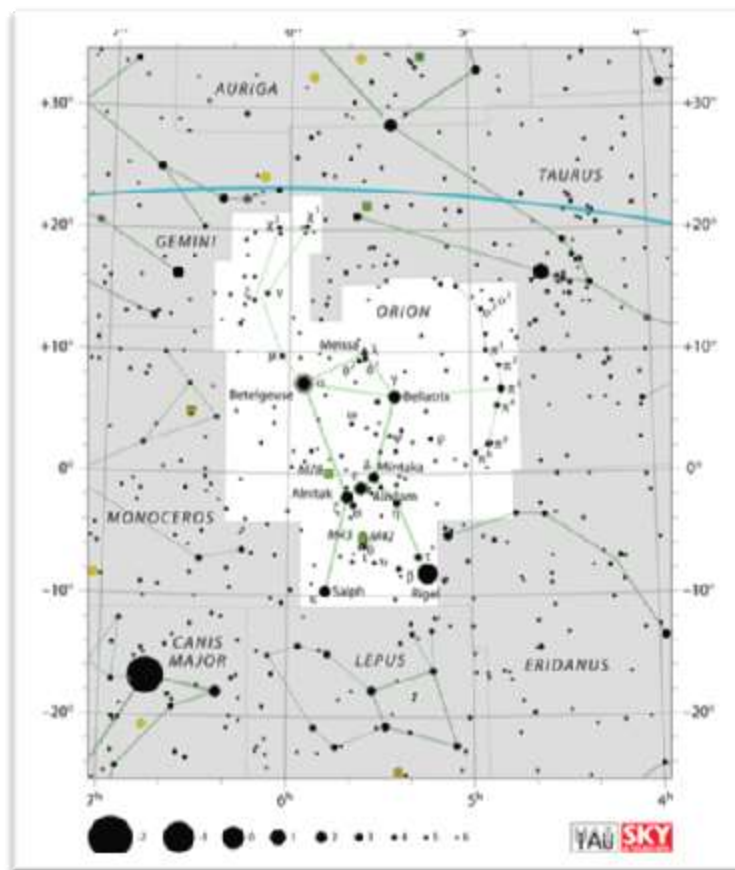


Charlie Elliott Astronomy: February 2019

Constellation: Orion the Hunter



Notes:

The next Charlie Elliott Astronomy Meeting is Saturday March 9, 2019 at 4:30 p.m. at the Charlie Elliott Conference Center Room B.

The Evening Sky Map

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

NORTHERN HEMISPHERE
FEBRUARY 2019

Sky Calendar – February 2019

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

- 1 Moon near Venus (morning sky). Mag. -4.3. Spectacular!
- 2 Moon near Saturn (28° from Sun, morning sky) at 8h UT. Mag. 0.6.
- 4 New Moon at 21:04 UT. Start of lunation 1189.
- 5 Moon at apogee (farthest from Earth) at 9h UT (distance 406,555 km; angular size 29.4").
- 10 Moon near Mars (evening sky) at 22h UT. Mag. 1.0.
- 12 First Quarter Moon at 22:26 UT.
- 13 Mars 1.0° NNW of Uranus (65° from Sun, evening sky) at 6h UT. Mags. 1.0 and 5.8.
- 13 Moon near the Pleiades (96° from Sun, evening sky) at 11h UT. The Hyades nearby.
- 14 Moon near Aldebaran (evening sky) at 4h UT.
- 17 Moon near Pollux (evening sky) at 6h UT.
- 18 Venus 1.1° N of Saturn (43° from Sun, morning sky) at 13h UT. Mags. -4.1 and 0.6.
- 19 Moon at perigee (closest to Earth) at 8:51 UT (356,761 km; angular size 33.5").
- 19 Moon near Regulus (midnight sky) at 15h UT.
- 19 Full Moon at 15:54 UT. Perigee 7 hours earlier.
- 23 Moon near Spica (morning sky) at 6h UT.
- 26 Last Quarter Moon at 11:28 UT.
- 26 Moon near Antares (morning sky) at 17h UT.
- 27 Mercury at greatest elongation east (18° from Sun, evening sky) at 1h UT. Mag. -0.3.
- 27 Moon near Jupiter (morning sky) at 16h UT. Mag. -2.0.

The Zodiacal Light is caused by sunlight reflected off meteoric dust in the plane of the solar system. Choose a clear, moonless night, about 1–2 hours after sunset, and look west for a large triangular-shaped glow extending up from the horizon (along the ecliptic). The best months to view the Zodiacal Light is when the ecliptic is almost vertical at the horizon: March and April (evening) and October–November (morning); times reversed for the southern hemisphere.

More sky events and links at <http://Skymaps.com/skycalendar/>
All times in Universal Time (UT). (USA Eastern Standard Time = UT - 5 hours.)

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS
EARLY FEB 8 PM
LATE FEB 7 PM

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 ○
Globular Star Cluster ⊕

Star Magnitudes
● ● ● ● ● ● ● ● ● ●
-1 0 1 2 3 4

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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
FEBRUARY 2019

CELESTIAL OBJECTS

Sky maps.com

Easily Seen with the Naked Eye

- Capella Aur • The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
- Sirius CMa • The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 ly.
- Procyon CMi • Greek name meaning "before the dog" - rises before Sirius (northern latitudes). Dist=11.4 ly.
- α 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=3,000 ly.
- Castor Gem • Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly.
- Pollux Gem • With Castor, the twin sons of Leda in classical mythology. Dist=34 ly.
- Regulus Leo • Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly.
- Rigel Ori • The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.
- Betelgeuse Ori • One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
- Algol Per • Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
- Pleiades Tau • The Seven Sisters. Spectacular cluster. Many more stars visible in binoculars. Dist=380 ly.
- Hyades Tau • Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.
- Aldebaran Tau • Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=65 ly.
- Polaris UMi • The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly.

Easily Seen with Binoculars

- M31 And • The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.
- M38 Aur • Stars appear arranged in "pi" or cross shape. Dist=4,300 ly.
- M36 Aur • About half size of M38. Located in rich Milky Way star field. Dist=4,100 ly.
- M37 Aur • Very fine star cluster. Discovered by Messier in 1764. Dist=4,400 ly.
- M44 Cnc • Praesepe or Beehive Cluster. Visible to the naked eye. Dist=590±20 ly.
- M41 CMa • First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.
- α Cephei Cep • Hirsch's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 days.
- Mira Cet • Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 days.
- M39 Cyg • May be visible to the naked eye under good conditions. Dist=900 ly.
- M35 Gem • Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.
- M48 Hya • 12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly.
- γ Leporis Lep • Visible with binoculars. Gold & white stars. Mags 3.6 & 6.2. Dist=30 ly. Sep=96.3".
- 2232 Mon • A large scattered star cluster of 20 stars. Dist=1,300 ly.
- 2244 Mon • Surrounded by the rather faint Rosette Nebula. Dist=5,540 ly.
- M50 Mon • Visible with binoculars. Telescope reveals individual stars. Dist=3,000 ly.
- Cr 69 Ori • Lambda Orionis Cluster. Dist=1,630 ly.
- M42 Ori • The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years.
- Double Cluster Per • Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
- M47 Pup • Bright star cluster. 15+ stars in 7x binoculars. Dist=1,500 ly.
- M46 Pup • Dist=5,400 ly. Contains planetary NGC 2438 (Mag 11, d=65") - not associated.
- Mizar & Alcor UMa • Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.

Telescopic Objects

- γ Andromedae And • Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
- γ Arietis Ari • Impressive looking double blue-white star. Visible in a small telescope. Sep=7.8".
- M67 Cnc • Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly.
- 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.
- η Cassiopeiae Cas • Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orbit=480 years. Sep=12".
- 61 Cygni Cyg • Attractive double star. Mags 5.2 & 6.1 orange dwarfs. Dist=11.4 ly. Sep=28.4".
- θ Eridani Eri • Striking blue-white double star. Mags 3.2 & 4.3. Visible in a small telescope. Sep=8.2".
- γ Leonis Leo • Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4".
- β Monocerotis Mon • Triple star. Mags 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3".
- 2264 Mon • Christmas Tree Cluster. Associated with the Cone Nebula. Dist=2,450 ly.
- α Orionis Ori • Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.
- k Puppis Pup • Telescope easily shows two blue-white stars of almost equal brightness. Sep=9.9".
- M1 Tau • Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
- M33 Tri • Fine face-on spiral galaxy. Requires a large aperture telescope. Dist=2.3 million 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.

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Target List

Designation	Type	Common Name	RA	DEC	Notes
Zeta Orionis	Blue Supergiant	Alnitak	05h03m18s	+43*50'51"	Variable Double Star, 100,000 times brighter than our sun, 20 times the diameter of our sun
Alpha Orionis	Red Superiant	Betelgeuse	06h56m11s	+07*24'28"	Variable Double, Companion Mag 18.5...good luck! Changes in brightness caused by changes in size. 550 to 920 times the size of the sun!
Messier 42	Diffuse Emission Nebula	Orion Nebula	05h36m19s	-05*26'24"	Visible to the naked eye, structure visible in binoculars, spectacular object in a large telescope!
Sharpless 2-261	Emission nebula	Lower's Nebula	06h09m47s	+15*48'40"	Challenging object for observation, lots of interesting detail for imagers.

Notes:

The next Charlie Elliott Astronomy Meeting is Saturday March 9, 2019 at 4:30 p.m. at the Charlie Elliott Conference Center Room B.



Atlanta Astronomy Club
Membership Form
(Please PRINT Clearly in BLOCK Letters)

Name: _____
Address: _____
Address: _____
City: _____ State: _____ ZIP _____
Home Phone: _____ Day Phone: _____
E-mail: _____
Additional Family Members: _____

Name As to appear on Badge: _____

Name As to appear on Badge: _____

Name As to appear on Badge: _____

Name As to appear on Badge: _____

Family/Single Membership	(\$30)	_____
Student Membership	(\$15)	_____
Online Newsletter	(\$ 0)	_____
Sky & Telescope Magazine	(\$33)	_____
Astronomy Magazine	(\$34)	_____
<i>(Please note magazine prices are subject to change, please check website or contact Treasurer if in doubt.)</i>		
Badges	(Number x \$1)	_____ <i>(One Badge is included membership. Additional badges are One dollar each)</i>
Total		_____

Remember to download our monthly newsletter, The Focal Point, from the club's website.

NEW ! We accept PayPal payments. Pay online by check or credit card.

Check made payable to "The Atlanta Astronomy Club"; mail along with form to address below
 PayPal: go to www.PayPal.com and post payment to AACDues@AtlantaAstronomy.org (Note, this is case sensitive - please type exactly as written.), Then e-mail membership form to Treasurer@AtlantaAstronomy.org

Or mail it to:
Atlanta Astronomy Club, Inc.
PO BOX 76155
ATLANTA GA 30358-1155

(WEB DOC - 02.24.2014 - CEA)

CHARLIE ELLIOTT CHAPTER

August 2018

Charlie Elliott Astronomy

Please tell us something about yourself and your interest in astronomy. This will assist us in planning programs and activities which you will find the most beneficial.

1. How would you classify yourself as an amateur astronomer? Beginner ___ Intermediate ___ Advanced ___
2. Do you own a telescope? No ___ Yes ___ Type/Size _____
3. Are you looking for assistance in choosing a telescope? _____
4. If you do own a telescope, would you like assistance with using it? _____
5. Which aspects of the Atlanta Astronomy Club and astronomy are you most interested in: (Check as many as you wish.)
 - social
 - meetings
 - observing
 - astrophotography/imaging
 - computing
 - speaker program
 - having access to professional quality equipment
 - Amateur Telescoping Making (ATM)
 - Sidewalk Astronomy
 - other _____
6. Do you have any special skills/job/occupation that might benefit the club: _____

7. Would you volunteer for committee work? _____
8. Questions or Comments: _____

New member packages with badges will be mailed by the Treasurer within 2-3 weeks of receiving your membership application. The electronic *FocalPoint* is available on the Club's web site: <http://www.atlantiaastronomy.org> (usually within the first week of the month.)

(WEB DOC - 02.24.2014 - CEA)

The next Charlie Elliott Astronomy Meeting...

Saturday, March 3, 2019 at 4:30 p.m.

Charlie Elliott Conference Center, Room B