

Snake River Skies

The Newsletter of the Magic Valley Astronomical Society

www.mvastro.org

Membership Meeting

Saturday, January 10th 2014
7:00pm at the
Herrett Center for Arts & Science
College of Southern Idaho.
Public Star Party Follows at the
Centennial Obs.

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Astronomical Society is a member of
the Astronomical League



M-51 imaged by Rick Widmer &
Ken Tomason

President's Message

Colleagues,

As Christmas clears our radar, the Society's attention turns to its annual telescope clinic, set for Saturday, Jan. 10 at 7 p.m. at the Herrett Center. Tom Gilbertson has been gracious enough to offer his time, and a source close to Tom says that he's got some new things to show.

This is a great opportunity for us to reach out to other members of the community. Please think back to the time you got your first telescope, and remember all of the help you either received or wish you received. That's the opportunity we have that Saturday. The time you put in that day may show up a few months later at a star party at say, the Jerome Gun Club, the City of Rocks, or Pomerelle.

In addition to the clinic, the MVAS Board of Officers will hold its regular meeting at 5:45 p.m. that day, also at the Herrett Center. The general membership is invited to attend as we work on future projects.

Meanwhile, we look forward to hearing more reports from you regarding Comet Lovejoy (C/2014 Q2). Members have already reported being able to spot it in binoculars. Hopefully some great images will from members will pop up over the next couple of months.

In addition, Telescope Tuesdays are back up at the Centennial Observatory. Chris Anderson could always use more volunteer help. Check the Herrett Center website for more details.

Clear Views,

Rob Mayer



Moon Rise over the Snake River Canyon & Shoshone Falls © Gary Leavitt MVAS

January Overview

- 1/2 The Moon is 1.4 degrees north of the first-magnitude star Aldebaran (Alpha Tauri); a double Galilean satellite shadow transit begins at 20:55
- 1/4 The latest sunrise of 2015 at latitude 40 degrees north occurs today; Pluto is in conjunction with the Sun at 0:00; the peak of the Quadrantid meteor shower (40 to 120 or more per hour) occurs at midnight; the Earth is at perihelion (147,096,204 kilometers or 91,401,344 miles distant from the Sun); a double Galilean satellite shadow transit begins at 15:23
- 1/6 A double Galilean satellite shadow transit begins at 9:56
- 1/8 The latest onset of morning twilight of 2015 at latitude 40 degrees north occurs today; Jupiter is 5 degrees north of the Moon.
- 1/9 The Moon is at apogee, subtending 29'29" minutes from a distance of 405,408 kilometers (251,909 miles).
- 1/10 A double Galilean satellite shadow transit begins at 23:15
- 1/11 Asteroid 4 Vesta is in conjunction with the Sun at 6:00; a double Galilean satellite shadow transit begins at 19:16
- 1/14 The Curtiss Cross, an X-shaped illumination effect located between the craters Parry and Gambart, is predicted to begin at 23:36; Mercury is at greatest eastern elongation (19.0 degrees).
- 1/16 Saturn is 1.9 degrees south of the Moon.
- 1/17 Mercury is at the ascending node today; a double Galilean satellite shadow transit begins at 1:51
- 1/18 Venus is at its greatest heliocentric latitude south today.
- 1/19 Mars is 0.2 degree south of Neptune.
- 1/20 A double Galilean satellite shadow transit begins at 15:09
- 1/21 Mercury is at perihelion today; Mercury is stationary at; Mercury is 3 degrees south of the Moon; the Moon is at perigee, subtending 33'14" arc minutes from a distance of 359,645 kilometers (223,473 miles).
- 1/22 Venus is 6 degrees south of the Moon.
- 1/23 Neptune is 4 degrees south of the Moon. Mars is 4 degrees south of the Moon.
- 1/24 A double Galilean satellite shadow transit begins at 2:35; a rare triple Galilean satellite shadow transit begins at 4:28; a rare triple Galilean satellite transit begins at 5:08.
- 1/25 Uranus is 0.6 degree south of the Moon.
- 1/27 The Lunar X (the Purbach or Werner Cross), an X-shaped illumination effect involving various rims and ridges between the craters La Caille, Blanchinus, and Purbach, is predicted to begin at 12:39; a double Galilean satellite shadow transit begins at 17:45
- 1/29 The Hesiodus Lunar Crater Light Ray is predicted to begin at 4:26; the Moon is 1.2 degrees north of Aldebaran. Asteroid 3 Juno (magnitude 7.8) is at opposition.
- 1/30 Mercury is in inferior conjunction.

Johannes Hevelius (1611-1687) was born this month.

Galileo Galilei discovered Io, Europa, and Callisto on January 7, 1610. He discovered Ganymede on January 13, 1610. William Herschel discovered Titania and Oberon, two satellites of Uranus, on January 11, 1787. Giuseppe Piazzi discovered the first asteroid, 1 Ceres, on January 1, 1801.

The Quadrantid meteor shower peaks on the morning of January 4th. Unfortunately, the Full Moon occurs a day after the peak and will strongly interfere with observing the shower. This shower can sometimes reach zenithal hourly rates of more than 100 meteors per hour. The radiant of the Quadrantids lies at the junction of the constellations of Boötes, Hercules, and Draco, in what was once called Quadrans Muralis. The near-Earth asteroid 2003 EH1, which may be an extinct comet, is believed to be the source of these meteors. Browse <http://meteorshowersonline.com/quadrantids.html> for more on the Quadrantids.

The Moon is 9.9-days old, is illuminated 82.5%, and is located in Aries on January 1st at 0:00 UT. The waxing gibbous Moon enters the Hyades late on the night of January 1st-January 2nd and occults Delta 1 and/or Delta 2 Tauri from the southern and western portions of the United States. See <http://www.lunar-occultations.com/iota/bstar/bstar.htm> for information on this event. The two-day-old Moon forms a tight triangle with Mercury and Venus just after sunset on January 21st. Large tides will occur on January 21st through January 24th. The Moon attains its greatest northern declination (+18.6 degrees) for the month on January 3rd and (+18.5 degrees) on January 31st and its greatest southern declination (-18.6 degrees) on January 18th. Longitudinal libration is at a maximum of +5.3 degrees on January 1st and +6.6 degrees on January 27th and a minimum of -7.4 degrees on January 16th. Latitudinal libration is at a maximum of +6.6 degrees on January 5th and a minimum of -6.5 degrees on January 19th. Visit <http://saberdoesthestars.wordpress.com/2011/07/05/saber-does-the-stars/> for tips on spotting extreme crescent Moons and <http://www.curtrenz.com/moon06.html> for Full Moon data. Times and dates for the lunar light rays predicted to occur this month are available at <http://www.lunar-occultations.com/rlo/rays/rays.htm>

The Sun is located in Sagittarius on January 1st.

Data (magnitude, apparent size, illumination, and distance from the Earth in astronomical units) for the planets and Pluto on January 1: Mercury (-0.8, 5.3", 91%, 1.28 a.u., Sagittarius), Venus (-3.9, 10.3", 96%, 1.62 a.u., Sagittarius), Mars (+1.1, 4.8", 94%, 1.97 a.u., Capricornus), Jupiter (-2.4, 43.4", 100%, 4.54 a.u., Leo), Saturn (+0.6, 15.5", 100%, 10.70 a.u., Libra), Uranus (+5.8, 3.5", 100%, 20.20 a.u. on January 16th, Pisces), Neptune (+7.9, 2.2", 100%, 30.71 a.u. on January 16th, Aquarius), Pluto (+14.2, 0.1", 100%, 33.76 a.u. on January 16th, Sagittarius).

During the evening, Mercury, Venus, Mars, and Neptune lie in the southwest and Uranus in the south. At midnight, Jupiter is in the southeast. Jupiter can be seen in the west and Saturn in the southeast in the morning.

At midmonth, Mercury is visible during evening twilight, Venus sets at 17:00, Mars sets at 18:00, and Jupiter rises at 17:00 and transits the meridian at mid-night.

One hour after sunset on January 23rd, Mercury and Venus lie close to the horizon, while Neptune, Mars, and the thin crescent Moon are positioned to their upper left. Uranus is located about as far to the upper left of the Moon as Venus is to the lower right.

Although Mercury never reaches more than seven degrees above the horizon for observers in mid-northern latitudes, it is still the second highest evening apparition of the planet this year. Mercury is less than one degree from Venus from January 8th to January 12th. The speediest planet reaches greatest eastern elongation on January 14th and perihelion on January 21st. It is 3 degrees south of the Moon on January 21st. Mercury dims from magnitude -0.8 on January 1st to magnitude +1.4 on January 23rd. It is in inferior conjunction on January 30th.

Venus shines at magnitude -3.9 throughout January. Venus and Mercury lie within one degree of each other from January 8th through January 12th. A close quasi-conjunction, the first quasi-conjunction of bright planets since 2012 and the closest encounter of Mercury and Venus since 2001, takes place at 7:00 p.m. EST on January 10th, when the two planets are separated by only 39 arc minutes. Venus is about six degrees from Mercury on the evening of January 21st and six degrees from the Moon later that night.

Earth is 0.983 astronomical units distant from the Sun at perihelion on January 4th. On that date, it's about 3% (5.0 million kilometers or 3.1 million miles) closer to the Sun than at aphelion.

Mars departs Capricornus and enters Aquarius on January 9th. The Red Planet is now a miniscule four arc seconds in size. Mars (magnitude +1.1) passes 0.2 degree south of Neptune (magnitude +7.9) on January 19th.

During January, Jupiter's disk increases in size by 1.9 arc seconds. It brightens from magnitude -2.4 to magnitude -2.6. The angular distance between Jupiter and the first-magnitude star Regulus (Alpha Leonis) increases from eight to twelve degrees this month. The waning gibbous Moon passes five degrees south of Jupiter on January 8th. Click on <http://www.skyandtelescope.com/observing/interactive-sky-watching-tools/> or consult page 53 of the January issue of *Sky & Telescope* to determine transit times of the central meridian by the Great Red Spot. Data on Galilean satellite events is available online at <http://www.shallowsky.com/jupiter/> and <http://www.skyandtelescope.com/observing/interactive-sky-watching-tools/> and on page 53 of the January issue of *Sky & Telescope*. A rare triple Galilean satellite shadow transit occurs on the night of January 23rd-January 24th. Callisto's shadow ingresses at 10:11 p.m. EST, Io's at 11:35 p.m. EST, and Europa's at 1:28 a.m. EST. All three shadows are then visible for 25 minutes. The three satellites themselves are in transit simultaneously from 2:08 to 2:12 a.m. EST. Another triple transit won't take place until 2032. Mutual events of the Jovian moons visible from North America take place on January 15th, January 19th, January 23rd, January 26th, January 28th, and January 29th. For further information on these events, consult <http://www.skyandtelescope.com/sky-and-telescope-magazine/beyond-the-printed-page/mutual-events-jupiters-satellites-201515/> and page 52 of the January issue of *Sky & Telescope*.

Saturn rises after 2:00 local time at the start of January. On January 16th, a crescent Moon passes two degrees north of Saturn. Saturn leaves Libra and heads into Scorpius on January 17th. Saturn's rings are inclined some 24 degrees with respect to the Earth this month. During 2015, the northern side of Saturn's rings is visible. The planet's disk subtends 16 arc seconds and its rings span 36 arc seconds. (Saturn's rings are 2.27 times larger in extent than the planet's equatorial diameter.) For information on the satellites of Saturn, browse <http://www.skyandtelescope.com/observing/interactive-sky-watching-tools/>

Uranus can be found 3.2 degrees south of the fourth-magnitude star Delta Piscium in southern Pisces. The first of twelve occultations of Uranus by the Moon occurring this year takes place on January 25th. Neptune is located low in the western sky at sunset. It has close encounters with Mars on the evening of January 19th and Venus on January 31st at twilight.

Finder charts for Uranus and Neptune can be found at http://www.skyandtelescope.com/wp-content/uploads/WEB_Uranus_Neptune_2015.pdf

The dwarf planet Pluto is in conjunction with the Sun on January 4th UT.

For more on the planets and how to locate them, browse <http://www.nakedeyeplanets.com/>

The NEO 2004 BL86 (asteroid 357439) will pass within 1,200,000 kilometers (750,000 miles) of the Earth at 16:00 UT (00:00 a.m. MST) on January 26th. Observers in North and South America, Europe, and Africa will have the best views of 2004 BL86 when it is at its brightest, from 1:00 to 6:00 UT (18:00 to 1:00 MST) on January 27th. During that time, it will be heading northeastward through Cancer and will pass through the eastern boundary of M44 at 5:00 UT (10:00 MST). The asteroid should be visible through a 3 or 4-inch aperture. 2004 BL86 will be traveling at approximately two arc seconds per second or two degrees per hour so its motion will be apparent in real time. For additional information on the event and a finder chart, see pages 50 and 51 of the February issue of *Sky & Telescope*. Asteroid 3 Juno travels northwestward through northern Hydra this month. Juno, which is the smallest of the first four asteroids to be discovered, shines at magnitude +8.1 when it reaches opposition on Jan. 29th. Click https://in-the-sky.org/news.php?id=20150130_14_100 for a finder chart and an ephemeris. Other asteroids coming to opposition this month include 94 Aurora (magnitude 12.1) on January 2nd, 99 Dike (magnitude 14.2) on January 7th, 69 Hesperia (magnitude 10.6) on January 16th, and 42 Isis (magnitude 12.0) on January 31st. Consult <http://www.curtrenz.com/asteroids> to learn more about a number of asteroids. Occultations of eighth-to-tenth-magnitude stars by the faint asteroids 1333 Cevenola, 753 Tiflis, 110 Lydia, and 166 Rhodope are visible from various locations in the United States and Canada this month. Browse http://asteroidoccultation.com/2015_01_si.htm for information on these asteroid occultations.

Comet C/2015 Q2 (Lovejoy) brightens to fourth magnitude and should be readily visible to the naked-eye from a dark site, as it heads northwestward through Lepus, Eridanus, Taurus, Aries, Triangulum, and Andromeda. Browse <https://in-the-sky.org/cometephem.php> for more on Comet Lovejoy. Visit <http://cometchasing.skyhound.com/> for information on comets visible this month and in the near future.

A wealth of information on solar system celestial bodies: <http://www.curtrenz.com/astronomical>

Click on <http://astrocast.tv/> for an informative video on astronomical events taking place this month.

Omicron (Keid or 40) Eridani is a fourth-magnitude triple star system consisting of three dwarf stars: a type K1V yellow-orange dwarf (A), a type DA4 white dwarf (B), and a type M4.5e red dwarf ©. Omicron is located about 16 light years from the Earth at 4h15m16.32s, -7°39'10.34". Ninth-magnitude Omicron B is the most easily visible white dwarf star and can be seen with an aperture of 6 inches.

During January, the Mira-type variable star R Geminorum brightens by about two magnitudes. A finder chart for the spectral type S star can be found on page 51 of the January issue of *Sky & Telescope*.

An eclipse of the fourth-magnitude visual binary star Alpha Comae Berenices may take place around January 25th, with January 23rd and January 24th being likely dates. A central eclipse would mean a drop of about eight-tenths of a magnitude for several hours. See <http://www.aavso.org/observing-campaign-alf-Com> and page 50 of the January issue of *Sky & Telescope* for additional information on this rare event.

The famous eclipsing variable star Algol (Beta Persei) is at a minimum, decreasing in magnitude from 2.1 to 3.4, on January 2nd, 5th, 8th, 10th, 13th, 16th, 19th, 22nd, 25th, 28th and 31st. Consult page 51 of the January issue of *Sky & Telescope* for the times of the minima. For more on Algol, see <http://www.solstation.com/stars2/algol3.htm>


Notable carbon star for January: R Leporis (Hind's Crimson Star)

Top ten binocular deep-sky objects for January: Cr65, Kemble 1, M36, M37, M38, M42, NGC 1528, NGC 1647, NGC 1746, NGC 1981

Top ten deep-sky objects for January: M1, M36, M37, M38, M42, M43, M78, M79, NGC 1501, NGC 2024

Challenge deep-sky object for January: IC 2118 (Eridanus)

Calendar for January

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 New Year's Day 	2	3
4	5 Full Moon Ice Moon 	6	7	8	9	10 General Membership Mtg. and Telescope Workshop 19:00
11	12	13 Last Quarter Moon 	14	15	16	17
18	19 Martin Luther King Day	20 New Moon 	21	22	23	24
25	26	27 First Quarter 	28	29	30	31

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Planisphere for January



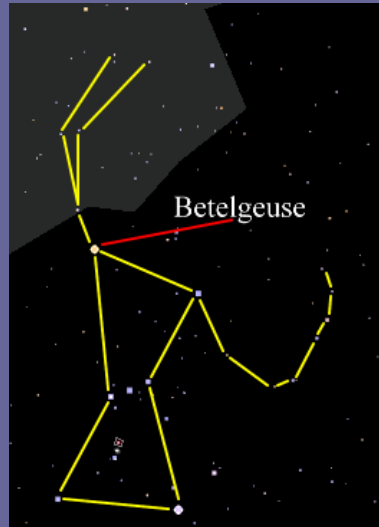
This Planisphere is available in a larger format online using this link:

http://www.telescope.com/assets/images/starcharts/2014-1-starchart_col.jpg

Be Safe – Get Out There – Explore Your Universe

Idaho Skies is a column for beginning amateur astronomers and those interested in astronomy. Suggestions about the column are gladly accepted by the columnist, at nearsys@gmail.com

This month look for the star Betelgeuse or Alpha Orionis in the constellation of Orion the Hunter. Betelgeuse is the second brightest star in Orion, which is one of the most recognizable constellations in the winter sky. Betelgeuse is located in the upper left corner and is orange in color. Betelgeuse and Orion are located high in the southeast on January nights after sunset.



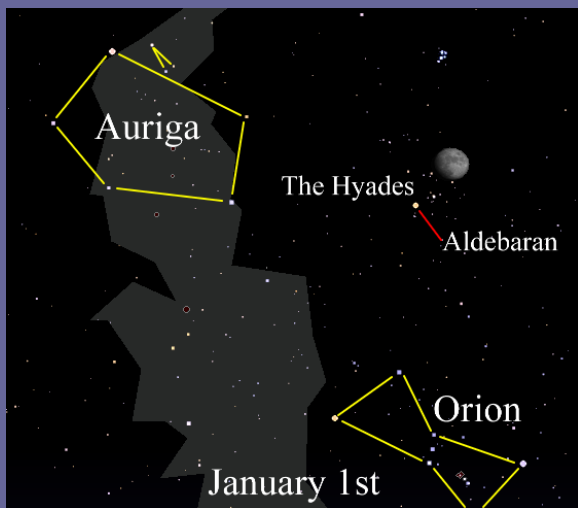
Betelgeuse comes from the Arabic for “hand of the central one”. The central one is a female Arabic character. Feminine names in Orion the hunter are not unusual, one of the constellation’s other bright stars is named Bellatrix, which is also has a female connotation. The light you see from Betelgeuse left the star around the year 1371.

Betelgeuse (the name sounds like beetle juice) is one of the largest stars in our galaxy. If it replaced our sun, its vaporous surface would reach over half way to Jupiter, engulfing the planets Mercury, Venus, Earth, and Mars in the process. That’s 600 times wider than our sun! Betelgeuse is a giant cool red star today; but in its stellar youth was a massive white hot star. Being at least seven times more massive than the sun, Betelgeuse burned through its main supply of hydrogen faster than the sun. Today, deep in its core, nuclei of helium atoms are fusing into carbon and oxygen. Outside that core is a shell of fusing hydrogen. Since that helium is denser than hydrogen, the helium created by the fusion of hydrogen sinks into the star’s core where it is fused into more carbon and oxygen. The increased heat generated by star’s fusion of hydrogen and helium has puffed up its atmosphere. The expanded atmosphere is a cool red-orange color as a result. However, because of its great size, Betelgeuse over 120,000 times brighter than our sun even though its surface is cooler.

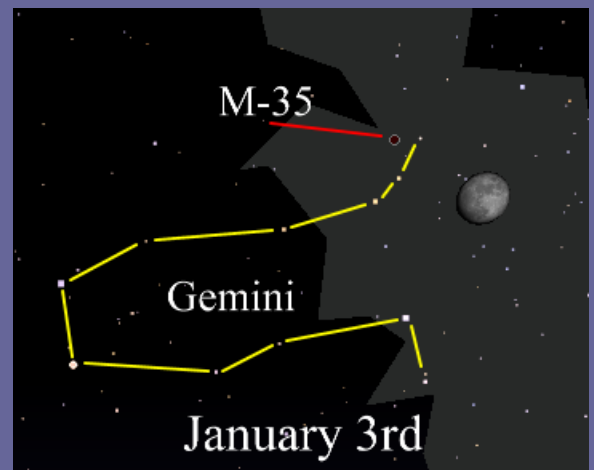
Betelgeuse is so massive that it may eventually fuse the atoms in its core all the way to iron. When it does, the star will face an energy crisis that pales to anything we’ll ever see. That’s because iron is a dead end element and it’s impossible to fuse it into heavier elements to release energy. Since stars need that energy to support their weight, they collapse when their cores contains too much iron. The inward collapse of a massive iron core squeezes subatomic protons and electrons into neutrons and an immense blast of neutrino radiation that will outpace the emission of light from the dense core of the star. Betelgeuse’s blast of neutrino radiation will arrive at earth about 643 years after the core collapses, signalling that the star is beginning to explode as a supernova. When it goes, Betelgeuse will shine as brightly as the crescent moon and be visible in broad daylight.

January 1 – 7

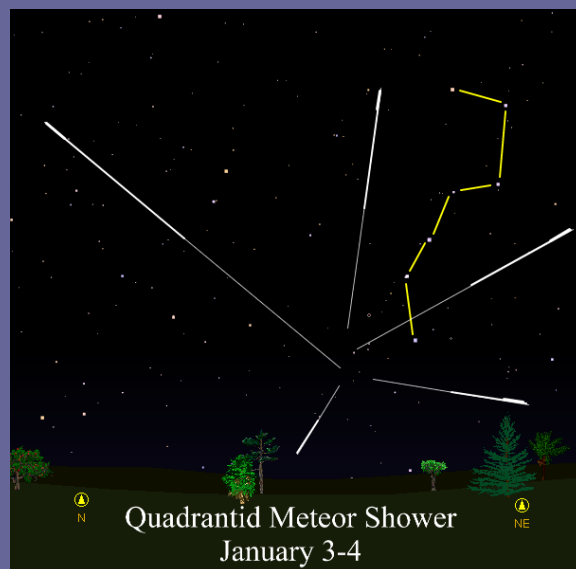
On the evening of the 1st, the moon cozies up to the Hyades star cluster. This is an attractive sight for your new Christmas binoculars or spotting scope. Farther above the moon is the tiny dipper shape of the Pleiades star cluster.



A small star cluster is located five degrees above the moon on the 3rd. The cluster's name is M-35 and five degrees is approximately the field of view of a 10X50 binoculars. The M in the cluster's name comes from Charles Messier, an 18th century French astronomer famous for cataloging (not necessarily discovering) objects with a comet-like appearance in telescopes. Therefore, if you'll place the moon at the bottom of your binocular's field of view, the cluster will appear near the top.



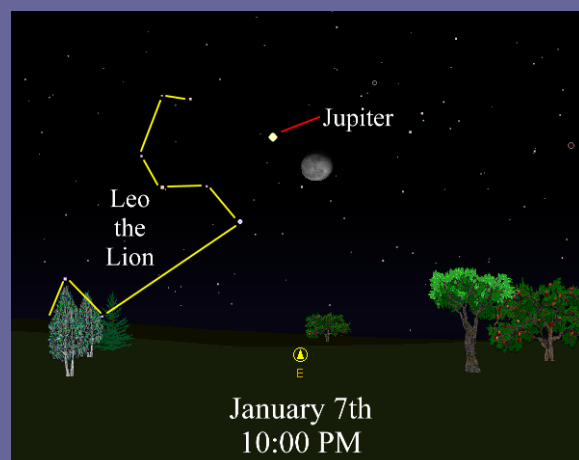
The first major meteor shower of the year reaches its peak on the night of the 3rd and morning of the 4th. The Quadrantid meteor shower is expected to produce 45 bluish meteors per hour and possibly even 100 meteors per hour. It has a sharp peak, so the best shower only occurs over a period of 16 hours. The moon is one day from full, so its light will interfere with the fainter meteors in this shower. However, the average brightness of this shower is pretty high, so there'll still be plenty to see. Be sure to dress warmly and watch for meteors originating from the low north.



Here's a chance to find two star clusters on the same night. Point your binoculars at the moon at 9:00 PM on the 6th. Approximately half a binocular field of view below the moon is a small star cluster named M-67. You will still be able to see it, but you'll want to lower the binoculars enough to get the moon out of the field of view. A much better star cluster is the Beehive star cluster and you will find it to the upper left of the moon. The distance between the Beehive star cluster and the moon is just over a binocular field of view. So when you get a good bead on the Beehive, the moon's light will not interfere with your viewing. The Beehive star cluster is visible to the unaided eye in dark skies as a faint fuzzy spot in the sky. By the way, you're scanning the constellation of Cancer the Crab when you observe the moon, Beehive, and M-67.



If you're not sure where Jupiter is located, then look for the moon after 8:30 PM on the 7th. The bright "star" located to the moon's upper left is Jupiter. You'll notice that Jupiter doesn't twinkle like the other bright stars. That's because its disk appears far larger to our eyes than the much bigger, but far more distant stars. Jupiter's larger apparent diameter lets it average out all the fluctuations in its brightness created by the movement of warm and cool pockets of air in our atmosphere.

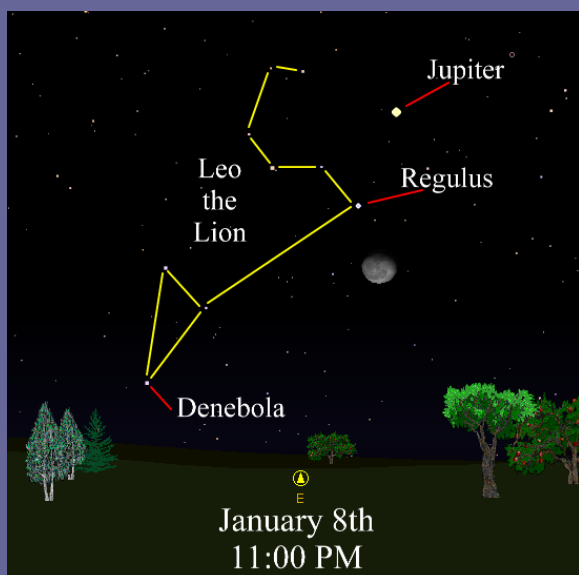


If you have a spotting scope, then take a gander at Jupiter tonight. From bottom to top, you'll observe Io, Jupiter, Europa, Ganymede, and Callisto. They form a compact group that you won't be able to separate easily through a pair of binoculars.

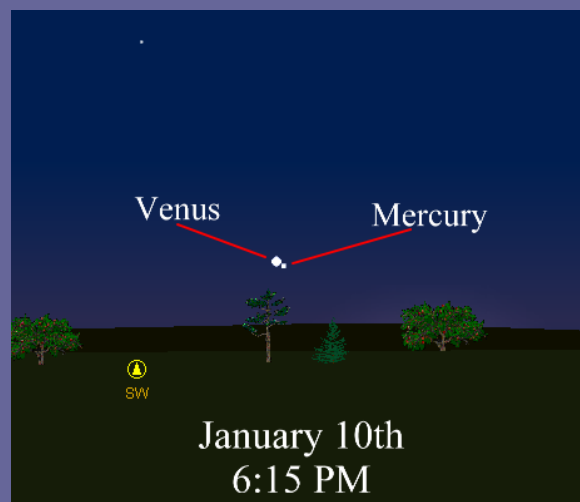


January 8 – 14

The moon appears below Jupiter and Regulus on the 8th. Regulus is the brightest star of Leo the Lion. Compared to our sun, Regulus is a giant, over three times wider than the sun. Astronomers have detected that Regulus spins so fast on its axis that it's squashed significantly flatter than the sun. The light you see from Regulus left 77 years ago.



Venus is making a comeback as the Evening Star this month. On the 10th, you'll see it and tiny Mercury close together in the southwestern evening sky after 6:00 PM. A pair of binoculars is useful for observing this duo. However, don't do so until after the sun sets. Mercury won't be visible for long; it's making a quick jump up into our evening sky before moving too close to the sun for us to see.



A relatively bright star appears just below the moon on the morning of the 13th. The star is Spica, the alpha star of Virgo the Maiden. The distance between the moon and Spica is 2.5 degrees, or about five times the moon's apparent diameter. The pair will fit nicely within the field of view of your binoculars.

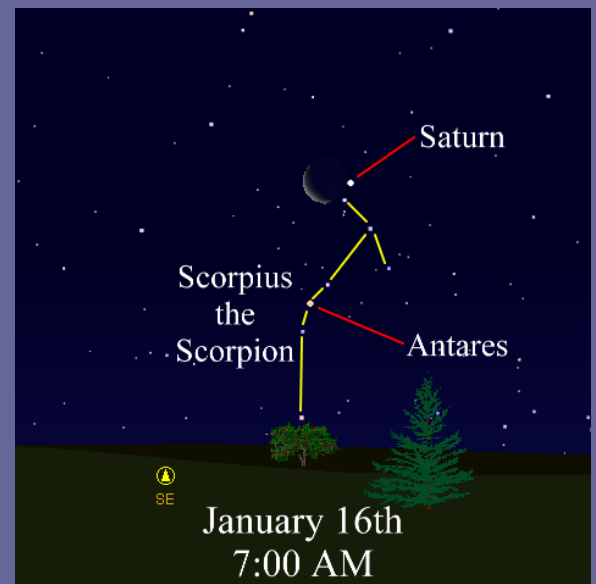


Mercury reaches its greatest apparent distance from the sun on the night of the 14th. This is called its greatest eastern elongation, since Mercury appears as Far East of the sun as it will for this orbit on this day. As it's getting dark at 6:00 PM, look for Mercury just right of brighter Venus. The pair will be 10 degrees above the southwest horizon, which is about two binocular fields of view.

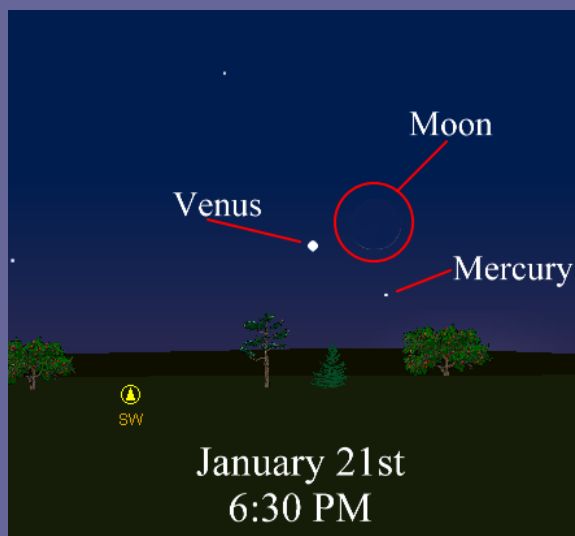


January 15 – 21

Saturn and the moon appear less than two degrees apart on the morning of the 16th. As you drive to work that Friday morning, look for the waning crescent moon in the low southeast. To the moon's right will be Saturn. The orange star below the moon is Antares, the brightest star of Scorpius the Scorpion.



For those who prefer their astronomy in the evening, the thin crescent moon creates a small triangle with Mercury and Venus on the 21st. The grouping is nearly small enough to see together in a pair of binoculars. Therefore, if you have binoculars with lower magnification (like 6X35 binoculars) or a spotting scope, you're likely to see all three together. Look low in the southwest at 6:30 PM for this attractive trio. You'll have about 30 minutes to see them before Mercury sets. You're probably better off looking for them from a higher altitude like Bogus Basin.



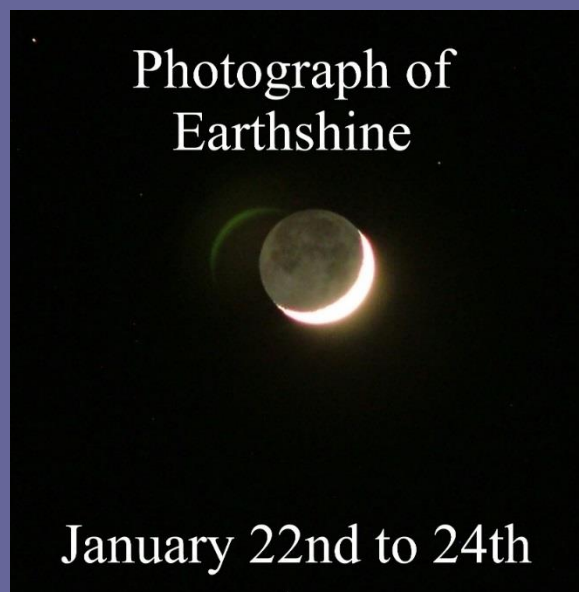
By the way, when you see the moon on the 21st, it's only 36 hours old. That's a pretty young moon. So young in fact that its crescent shape may not even extend half away around the circumference of the moon.

January 22 – 31

Mars is still hanging out in our evening sky. On the 22nd, the moon passes close to the planet. Mars appears as a slightly yellowish star to the moon's left. Look for this pair as soon as it gets dark.



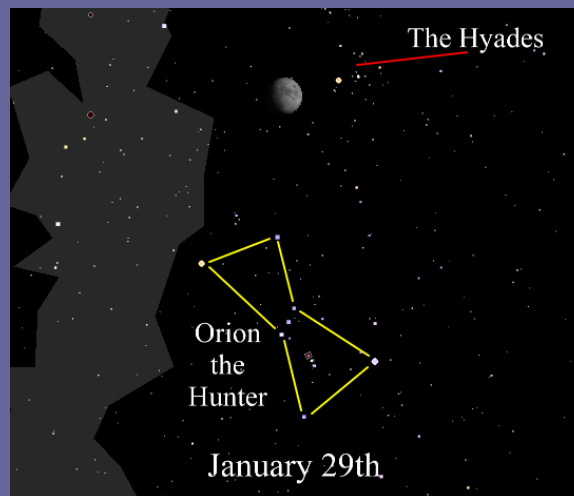
Look for Earthshine on the 22nd through 24th. What's Earthshine you say? Earthshine is the faint illumination of the moon's dark hemisphere by sunlight reflecting off of Earth. Our planet, with its blue oceans and white clouds makes a better mirror than the moon's dark lava surface. As a result, when the moon is a thin crescent, we can often see its dark hemisphere glowing faintly, especially through a pair of binoculars. If you were an astronaut visiting the moon during Earthshine, it would still be night, as the sun will not have risen yet. However, overhead would be a brilliant Earth, four times wider than the moon appears to us and about four times brighter. This light would illuminate the surface so much that you could safely walk about without tripping.



The moon forms a triangle with the Hyades and Pleiades star clusters on the night of the 28th. The 69% full moon and star clusters are perfect objects for your binoculars or spotting scope.



The moon forms a nice grouping with the Hyades star cluster on the 29th. Binoculars will just pull them in together. The bright star to the right of the moon is not really a member of the Hyades star cluster. Its name is Aldebaran and it represents the glowing red eye of Taurus the Bull.



Observatories and Planetariums

Bruneau Dunes Observatory – Bruneau, ID



The Observatory is now closed, the park, however; remains open.

Centennial Observatory at the Herrett Center College of Southern Idaho – Twin Falls, ID www.herrett.csi.edu

Event	Place	Date	Time	Admission
Twin Falls Parks & Rec "Cabin Fever Day" Solar Viewing	Centennial Observatory	Saturday, January 10 th , 2015	11:00 AM to 2:00 PM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, January 10 th , 2015	6:30 PM to midnight	FREE
Telescope Tuesday	Centennial Observatory	Tuesday, January 13 th , 2015	6:30 to 9:00 PM	\$1.50 (Children 6 & under free) Free to all with paid planetarium admission
Bimonthly Astronomy Talk : "Supernovae: When Stars Go Out With a Bang"	Faulkner Planetarium	Thursday, January 22 nd , 2015	6:00 to 7:00 PM	Adults: \$2.50 adults Students (incl. CSI): \$1.50 (Children 6 & under free)
Astronomy Talk Night Telescope Viewing	Centennial Observatory	Thursday, January 22 nd , 2015	7:00 to 9:00 PM	\$1.50 (Children 6 & under free) Free to all with paid astronomy talk admission
Telescope Tuesday	Centennial Observatory	Tuesday, January 27 th , 2015	6:45 to 9:00 PM	\$1.50 (Children 6 & under free) Free to all with paid planetarium admission

About the Magic Valley Astronomical Society

Magic Valley Astronomical Society
P.O. Box 445
Kimberly, ID, USA 83341
www.mvastro.org

The Magic Valley Astronomical Society (MVAS) was founded in 1976. The Society is a non-profit [501(c) 3] educational and scientific organization dedicated to bringing together people with an interest in astronomy. In partnership with the Centennial Observatory, Herrett Center, College of Southern Idaho - Twin Falls; we hold regularly scheduled monthly meetings and observation sessions, at which we share information on current astronomical events, tools and techniques for observation, astrophotography, astronomical computer software, and other topics concerning general astronomy. Members enthusiastically share their telescopes and knowledge of the night sky with all who are interested. In addition to our monthly public star parties we hold members only star parties at various locations throughout the Magic Valley.

MVAS promotes the education of astronomy and the exploration of the night sky along with safe solar observing through our public outreach programs. We provide two types of outreach; public star parties and events open to anyone interested in astronomy, and outreach programs for individual groups and organizations (e.g. schools, churches, scout troops, company events, etc.), setting up at your location. All of our outreach programs are provided by MVAS volunteers at no cost. However, MVAS will gladly accept donations. Donations enable us to continue and improve our public outreach programs.

Membership is not just about personal benefits. Your membership dues support the work that the Magic Valley Astronomical Society does in the community to promote the enjoyment and science of astronomy. Speakers, public star parties, classes and support for astronomy in schoolrooms, and outreach programs just to name a few of the programs that your membership dues support.

Annual Membership dues will be:

\$20.00 for individuals, families,

\$10.00 for students.

Contact Treasurer Jim Tubbs for dues information via e-mail: jtubbs015@msn.com

Donations to our club are always welcome and are even tax deductible. Please contact a board member for details.

Membership Benefits:

Sky and Telescope group rates. Subscriptions to this excellent periodical are available at a reduced price of \$32.95.

Astronomy Magazine group rates. Subscriptions to this excellent periodical are available at a reduced price of \$34.00

Receive 10% discounts on other selected Astronomy Publications.

For periodical info. and subscriptions Contact Jim Tubbs, Treasurer

Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others. Contact President Robert Mayer, for more information.



Telescopes are an individual thing and not practical for public use. However, everyone should have the experience of a good look at the moon for at least 5 minutes in their life time. It is a dimension and feeling that is unexplainable. Pictures or TV can't give this feeling, awareness, or experience of true dimension. A person will not forget seeing our closest neighbor, the moon. Norman Herrett in a letter to Dr. J. L. Taylor, president of the College of Southern Idaho, Twin Falls, ID, USA circa 1980.