

# Snake River Skies

The Newsletter of the Magic Valley Astronomical Society

July 2020

## Membership Meeting

See President's Message for July  
**Centennial Observatory**

Due to the impossibility of maintaining proper social distance within the confined space of the observatory dome, the observatory is currently closed until further notice.

## Faulkner Planetarium

See page 11 for Details

[www.mvastro.org](http://www.mvastro.org)

## Club Officers

Robert Mayer, President  
mayerrbrt@gmail.com

Gary Leavitt, Vice President  
leavittg@cableone.net

Dr. Jay Hartwell, Secretary

Jim Tubbs, Treasurer / ALCOR  
jtubbs015@msn.com  
208-404-2999

David Olsen, Newsletter Editor  
editor@mvastro.org

Rick Widmer, Webmaster  
rick@developersdesk.com

Magic Valley Astronomical Society is a  
member of the Astronomical League



M-51 imaged by  
Rick Widmer &  
Ken Thomason  
Herrett Telescope - Shotwell Camera

## MVAS President's Message

Colleagues,

While COVID-19 is attempting a kickback, we are still trying to find a way to cope. Some of us are still trying to image, and we hope all of you are finding some way to get out and look, even if it is from the safety of your backyard or your driveway. Unfortunately, we have had to cancel this year's City of Rocks/Castle Rocks Star Party. However, there is good news on the horizon.

I am excited to report that we are working on meeting again on July 11<sup>th</sup>. There are no details regarding the presentation yet, other than it would be following social distancing protocol. I am hoping to set up some sort of video feed as well for those who do not feel comfortable coming in. Please check your E-mail soon.


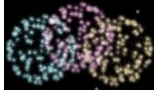




The more exciting news comes from the Centennial Observatory and Chris Anderson. Later on July 11<sup>th</sup>, the Herrett Center will open the planetarium and pipe in a feed from the Observatory telescope. Chris will MC the event in the planetarium, and trained volunteers will man the scope upstairs. Ordinarily, the start time is around 10 p.m., but the lack of planets suggests a later starting and closing time. We'll have more details later about those times, but otherwise, we're back, as long as we observe CDC protocols such as masks and social distancing. Again, it'll be great to be back on this limited scale. I look forward to hearing from you!

Clear Views,

Rob Mayer

# Calendar

July 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Canada Day 	2	3	4 Fourth of July 
5 Thunder Moon 10:44 pm  Visible 100% Age: 15.09 Days	6	7	8	9	10	11 MVAS Meeting See the President's Message
12 Last Quarter Moon  Visible: 55% ↓ Age: 21.72 Days	13	14	15	16	17	18
19	20 New Moon  Visible 0% Age: 29.30 Days	21	22	23	24	25
26	27 First Quarter Moon  Visible 50% ↑ Age: 7.35 Days	28	29	30 Launch of Mars Perseverance 9:15 am EDT (7:15 am MDT)	31	

Snake River Skies is the Newsletter of the Magic Valley Astronomical Society and is published electronically once a month. Snake River Skies © 2020 by David Olsen for the Magic Valley Astronomical Society, All Rights Reserved. Images used in this newsletter, unless otherwise noted, are in the public domain and are courtesy of NASA, Wikimedia, or from MVAS File Photos. Full Moon names follow the traditional various First Nations history.

Be Careful – Be Safe – Get Out There – Explore Your Universe

## July Celestial Calendar by Dave Mitsky

All times, unless otherwise noted, are UT (subtract four hours and, when appropriate, one calendar day for MDT)

- 7/1 Mercury is in inferior conjunction with the Sun (0.563 astronomical units from the Earth; latitude -5.5 degrees) at 3:00
- 7/2 The Moon is 6.3 degrees north-northeast of the first-magnitude star Antares (Alpha Scorpii) at 2:00; asteroid 532 Herculina (magnitude +9.5) is at opposition in Sagittarius at 14:00
- 7/4 The Moon is at the descending node (longitude 269.1 degrees) at 3:00; Earth is at aphelion (152,095,295 kilometers or 94,507,635 miles from the Sun) at 12:00
- 7/5 A shallow penumbral eclipse of the Moon begins at 3:07; Full Moon, known as the Hay or Thunder Moon, occurs at 4:44; 4 Vesta is in conjunction with the sun at 6:00; the Moon is 1.9 degrees southeast of Jupiter at 22:00
- 7/6 The Moon is 2.5 degrees south of Saturn at 10:00
- 7/8 Mars is at its greatest heliocentric latitude south at 1:00 (-1.8 degrees); Venus is at its brightest (magnitude -4.7) at 12:00
- 7/10 Venus is at greatest illuminated extent (47.4 square arc seconds) at 8:00; the Moon is 4.1 degrees southeast of Neptune at 12:00; Venus is at aphelion (0.7282 astronomical units) at 14:00
- 7/11 Mars passes north of the celestial equator at 12:00; the Moon is 1.8 degrees southeast of Mars at 22:00
- 7/12 Venus is 1.0 degree north of the first-magnitude star Aldebaran (Alpha Tauri) at 2:00; Mercury is stationary, with prograde or direct (eastward) motion to resume at 7:00; the Moon is at apogee, subtending 29' 34" from a distance of 404,199 kilometers (251,158 miles) at 19:27; Last Quarter Moon occurs at 23:29
- 7/13 Asteroid/dwarf planet 1 Ceres is stationary at 2:00; asteroid 2 Pallas (magnitude +9.6) is at opposition in Vulpecula at 2:00; Mercury is at its greatest heliocentric latitude south (-7.0 degrees) at 10:00
- 7/14 The Curtiss Cross, an X-shaped clair-obscure illumination effect located between the craters Parry and Gambart, is predicted to be visible at 1:55; Jupiter is at opposition (apparent size 47.6", magnitude -2.8) at 8:00; the Moon is 3.5 degrees southeast of Uranus at 15:00
- 7/15 Mercury (magnitude +1.6) is 6.0 degrees southeast of the bright open cluster M35 in Gemini at 3:00; Pluto is at opposition (apparent size 0.1", magnitude +14.3) at 12:00
- 7/16 The Moon is 6.6 degrees southeast of the bright open cluster M45 (the Pleiades or Subaru) in Taurus at 8:00
- 7/17 The Moon is 3.7 degrees north of Aldebaran at 1:00; the Moon, Venus, and Aldebaran lie within a circle with a diameter of 4.1 degrees at 2:00; the Moon is 3.1 degrees north of Venus at 7:00
- 7/18 The Moon is at the ascending node (longitude 89.0 degrees) at 13:00; the Moon is 0.6 degrees southeast of the bright open cluster M35 in Gemini at 19:00
- 7/19 The Moon is 3.9 degrees north of Mercury at 5:00
- 7/20 The Moon is 8.2 degrees south of the first-magnitude star Castor (Alpha Geminorum) at 6:00; the Moon is 4.5 degrees south of the first-magnitude star Pollux (Beta Geminorum) at 10:00; the Sun enters Cancer (ecliptic longitude 118.3 degrees) at 13:00; New Moon (lunation 1207) occurs at 17:33; Saturn is at opposition (apparent size 18.5", magnitude +0.1) at 22:00
- 7/21 The Moon is 2.0 degrees north-northeast of M44 (the Beehive Cluster or Praesepe) at 10:00
- 7/22 The Sun's ecliptic longitude is 120 degrees at 9:00; Mercury is at greatest western elongation (20.1 degrees from Sun) at 15:00
- 7/23 The Moon is 4.1 degrees north-northeast of the first-magnitude star Regulus (Alpha Leonis) at 0:00
- 7/25 The Moon is at perigee, subtending 32' 26" at a distance of 368,361 kilometers (228,889 miles) at 5:02; the equation of time, which yields the difference between mean solar time and apparent solar time, is at a minimum of -6.55 minutes at 18:00
- 7/26 The Moon is 6.7 degrees north-northeast of the first-magnitude star Spica (Alpha Virginis) at 19:00
- 7/27 The First Quarter Moon occurs at 12:33; the Lunar X, also known as the Werner or Purbach Cross, an X-shaped illumination effect involving various rims and ridges between the craters La Caille, Blanchinus, and Purbach, is predicted to be fully formed at 13:25
- 7/29 The peak of the Southern Delta Aquarid meteor shower (a zenithal hourly rate of 20 per hour) is predicted to occur at 22:00
- 7/30 The Moon is 6.2 degrees north-northeast of Antares at 3:00
- 7/31 The Moon is at the descending node (longitude 268.6 degrees) at 10:00

## The Sun, the Moon, & the Planets



The Moon is 9.6 days old, is illuminated 77.4%, subtends 32.6 arc minutes, and is located in Libra on July 1st at 0:00 UT. The Moon is at its greatest northern declination of +23.9 degrees on July 19th and its greatest southern declination of -24.1 degrees on July 5th. Longitudinal libration is at a maximum of +5.0 degrees on July 6th and a minimum of -5.4 degrees on July 19th. Latitudinal libration is at a maximum of +6.8 degrees on July 11th and a minimum of -6.7 degrees on July 25th. Favorable librations for the following lunar features occur on the indicated dates: Mare Australe on July 2nd, Mare Smythii on July 4th, Crater Mouchez on July 13th, and Crater Pascal on July 14th. New Moon takes place on July 20th. The Moon is at apogee (a distance of 63.37 Earth-radii) on July 12th and at perigee (a distance of 57.75 Earth-radii) on July 25th. A penumbral lunar eclipse visible from Antarctica, Africa, western Europe, North and South America, and the eastern Pacific Ocean takes place on July 5th. Greatest eclipse occurs at 4:30:02 UT1. Browse <http://www.eclipsewise.com/oh/oh-figures/ec2020-Fig04.pdf> for more on the third lunar eclipse of 71 in Saros series 149 and the third of the year. Click on for See <http://www.lunar-occultations.com/iota/iotandx.htm> for information on lunar occultations taking place in July. Visit <https://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. Consult <http://time.unitarium.com/moon/where.html> or download <http://www.ap-i.net/avl/en/start> for current information on the Moon. See <https://svs.gsfc.nasa.gov/4768> for a lunar phase and libration calculator and <https://svs.gsfc.nasa.gov/4768> for the Lunar Reconnaissance Orbiter Camera (LROC) Quickmap. Click on [https://www.calendar-12.com/moon\\_calendar/2020/july](https://www.calendar-12.com/moon_calendar/2020/july) for a lunar phase calendar for this month. Times and dates for the lunar crater light rays predicted to occur this month are available at <http://www.lunar-occultations.com/rlo/rays/rays.htm>

The Sun is located in Gemini on July 1st. The Earth is farthest from the Sun, a distance of 1.0167 astronomical units, on July 4th, when it is 3.3% more distant than it was at perihelion and 1.7% farther than its average distance. The Sun enters Cancer on July 20th.

Brightness, apparent size, illumination, distance from the Earth in astronomical units, and location data for the planets and Pluto on July 1st: Mercury (not visible, 12.0", 1% illuminated, 0.56 a.u., Gemini), Venus (-4.7 magnitude, 43.1", 19% illuminated, 0.39 a.u., Taurus), Mars (-0.5 magnitude, 11.4", 84% illuminated, 0.82 a.u., Pisces), Jupiter (-2.7 magnitude, 47.3", 100% illuminated, 4.17 a.u., Sagittarius), Saturn (+0.2 magnitude, 18.4", 100% illuminated, 9.05 a.u., Capricornus), Uranus (+5.8 magnitude, 3.5", 100% illuminated, 20.06 a.u. on July 16th, Aries), Neptune (+7.8 magnitude, 2.3", 100% illuminated, 29.36 a.u. on July 16th, Aquarius), and Pluto (+14.3 magnitude, 0.1", 100% illuminated, 33.08 a.u. on July 16th, Sagittarius).

Jupiter and Saturn are in the southeast during the evening. At midnight, Mars is in the east, Jupiter and Saturn are in the south, and Neptune is in the southeast. In the morning, Mercury can be found in the northeast, Venus and Uranus in the east, Mars and Neptune in the south, and Jupiter and Saturn in the southwest.

Jupiter, Saturn, Pluto, and asteroid 2 Pallas all achieve opposition this month. The Moon forms a compact equilateral triangle with Jupiter and Saturn on the night of July 5th. The Moon, Venus, and Aldebaran lie within a circle with a diameter of 4.1 degrees on July 17th. All seven major planets can be seen in the morning in late July.

**Mercury** is in inferior conjunction on July 1st and is at its most southerly latitude from the ecliptic plane on July 13th. Mercury reappears in the morning sky around July 17th. A waning crescent Moon passes four degrees north of the planet on the morning of July 19th. Greatest western elongation occurs on July 20th. On that date, Mercury shines at magnitude +0.3. It brightens to magnitude -0.1 by July 25 and magnitude -0.7 by July 31st.

**Venus** shrinks in apparent size from 43.1 to 27.5 arc seconds as it increases in illumination from 19 to 42%. During July, the planet's altitude at sunrise increases steeply from 21 to 35%. Venus travels through Melotte 25 (the Hyades) during the first part of the month. Venus is at greatest brilliancy on July 10th. It attains greatest illuminated extent and is also at aphelion on July 11th and passes one degree north of Aldebaran on the night of July 12th. A waning crescent Moon passes three degrees north of the brightest planet on the morning of July 17th. Venus lies 2.3 degrees southeast of the third-magnitude star Zeta Tauri by the end of the month.

**Mars** brightens from magnitude -0.5 to magnitude -1.1 and grows in apparent size from 11.4 to 14.5 arc seconds this month. The Red Planet rises around 11:15 p.m. local time by the end of July. It moves north of the celestial equator for the first time since last October on July 11th. The waning gibbous Moon passes two degrees south of the Mars on July 11th. Mars enters northwestern Cetus on July 8th but returns to Pisces near the end of the month.



During July, **Jupiter** travels four degrees to the west relative to the fixed stars of Sagittarius. The Full Moon passes less than two degrees to the south of the gas giant planet on the night of July 5th. Jupiter is at opposition on July 14th and is at its peak elevation of about 30 degrees for observers at 40 degrees north at local midnight. Jupiter subtends 47.6 arc seconds and shines brightly at magnitude -2.8 on that date. Information on Great Red Spot transit times and Galilean satellite events is available on pages 50 and 51 of the July 2020 issue of Sky & Telescope and online at <http://www.skyandtelescope.com/observing/interactive-sky-watching-tools/> and <https://www.projectpluto.com/jevent.htm>

**Saturn's** disk subtends over 18 arc seconds and its rings, which are inclined almost 22 degrees, span 42 arc seconds. Saturn is located six degrees to the east of Jupiter on July 1st. On July 6th, a nearly Full Moon passes two degrees south of the Ringed Planet. Saturn is at opposition on July 20th. Eighth-magnitude Titan is due north of Saturn on July 15th and July 31st and due south of the planet on July 7th and July 23rd. The faint Saturnian satellite Iapetus is positioned one arc minute due north of Saturn on the nights of July 27th and July 28th. For further data on Saturn's satellites, browse <http://www.skyandtelescope.com/observing/interactive-sky-watching-tools/>

**Uranus** can be found in southwestern Aries about half-way between the second-magnitude star Hamal (Alpha Arietis) and the third-magnitude star Menkar (Alpha Ceti). A waning crescent Moon passes less than four degrees southeast of Uranus on July 14th. Visit <http://www.nakedeyeplanets.com/uranus.htm> for a finder chart.

**Neptune** is located in eastern Aquarius about four degrees east-northeast of the fourth-magnitude star Phi Aquarii. A gibbous Moon passes four degrees southeast of Neptune on July 10th. The asteroid/dwarf planet 1 Ceres lies 13.5 degrees south of Neptune on July 1st. That distance increases to 16 degrees by the end of the month. Browse <http://www.nakedeyeplanets.com/neptune.htm> for a finder chart.

The dwarf planet **Pluto** is 41 arc minutes south of Jupiter on July 1st. It reaches opposition on July 15th. Finder charts can be found on pages 48 and 49 of the July 2020 issue of Sky & Telescope and on page 243 of the RASC Observer's Handbook 2020.

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

---

### Asteroids



Asteroid 56 Melete, which was at opposition on June 28th, travels southwestward through the region of Scutum, Serpens Cauda, and Ophiuchus, skimming through the dark nebulae LDN 453 and LDN 431. Asteroid 532 Herculina (magnitude +9.5) is at opposition on July 2, asteroid 2 Pallas (magnitude +9.6) is at opposition on July 13th, and asteroid 129 Antigone (magnitude +10.4) is at opposition on July 15th. On July 31st, 1 Ceres lies 0.8 degrees northwest of the third magnitude star 88 Aquarii. Information on asteroid occultations taking place this month is available at [http://www.asteroidoccultation.com/2018\\_07\\_si.htm](http://www.asteroidoccultation.com/2018_07_si.htm)

---

### Comets



Comet C/2017 T2 (PanSTARRS) heads southeastward through Canes Venatici and Coma Berenices this month. The fading comet passes less than two degrees to the west of Beta Comae Berenices on July 19th and less than five degrees to northeast of the globular clusters M53 and NGC 5053 on July 30th. The faint periodic comet 88P/Howell passes less than two degrees from Spica around the time of the New Moon. See <http://cometchasing.skyhound.com/> and <http://www.aerith.net/comet/future-n.html> for additional information on comets visible this month.

## Meteor Showers



The peak of the Southern Delta Aquarid meteor shower on the morning of July 29th is not compromised by moonlight. The radiant is located northwest of the first-magnitude star Fomalhaut (Alpha Piscis Austrini). Southern hemisphere observers are favored. Click on <http://earthsky.org/astronomy-essentials/everything-you-need-to-know-delta-aquarid-meteor-shower> for further information. The Alpha Capricornids, the Piscis Austrinids, and the Northern Delta Aquarids are the other minor meteor showers with southern radiants occurring this month. A list of the year's meteor showers appears on page 254 of the RASC's Observer's Handbook 2020.

---

## Orbiting Earth & Miscellaneous



Information on passes of the ISS, the USAF's X-37B, the HST, Starlink, and other satellites can be found at <http://www.heavens-above.com/>

A wealth of current information on solar system celestial bodies is posted at <http://nineplanets.org/> and <http://www.curtrenz.com/astronomy.html>

Information on the celestial events transpiring each week can be found at <https://stardate.org/nightsky> and <http://astronomy.com/skythisweek> and <http://www.skyandtelescope.com/observing/sky-at-a-glance/>

Free star maps for July can be downloaded at <http://www.skymaps.com/downloads.html> and <https://www.telescope.com/content.jsp?pageName=Monthly-Star-Chart>

Data on current supernovae can be found at <http://www.rochesterastronomy.org/snimages/>

Finder charts for the Messier objects and other deep-sky objects are posted at <https://freestarcharts.com/messier> and <https://freestarcharts.com/ngc-ic> and [https://www.cambridge.org/turnleft/seasonal\\_skies\\_july-september](https://www.cambridge.org/turnleft/seasonal_skies_july-september)

Telrad finder charts for the Messier Catalog and the SAC's 110 Best of the NGC are posted at <http://www.custerobservatory.org/docs/messier2.pdf> and <http://www.saguaroastro.org/content/db/Book110BestNGC.pdf> respectively.

Information pertaining to observing some of the more prominent Messier galaxies can be found at <http://www.cloudynights.com/topic/358295-how-to-locate-some-of-the-major-messier-galaxies-and-helpful-advice-for-novice-amateur-astronomers/>

Stellarium and Cartes du Ciel are two excellent freeware planetarium programs that are available at <http://stellarium.org/> and <https://www.ap-i.net/skychart/en/start>

Deep-sky object list generators can be found at <http://www.virtualcolony.com/sac/> and <http://tonightssky.com/MainPage.php> and <https://dso-browser.com/>

Freeware sky atlases can be downloaded at <http://www.deepskywatch.com/files/deepsky-atlas/Deep-Sky-Hunter-atlas-full.pdf> and <http://astro.mxd120.com/free-star-atlases>

The multiple star 36 Ophiuchi consists of three orange dwarf stars. For more on this interesting system, see <https://stardate.org/radio/program/orange-triplets> and <http://www.solstation.com/stars/36ophiu3.htm>

## Deep Sky



The light from Supernova SN 1054 was first noted by Chinese astronomers on July 4, 1054. The first lunar map was drawn by Thomas Harriot on July 26, 1609. Charles Messier discovered the globular cluster M28 in Sagittarius on July 27, 1764. Comet D/1770 L1 (Lexell) passed closer to the Earth than any comet in recorded history on July 1, 1770. Charles Messier discovered the globular cluster M54 in Sagittarius on July 24, 1778. Caroline Herschel discovered the open cluster NGC 6866 in Cygnus on July 23, 1783. The globular cluster NGC 6569 in Sagittarius was discovered by William Herschel on July 13, 1784. Karl Ludwig Hencke discovered asteroid 6 Hebe on July 1, 1847. The first photograph of a star, namely Vega, was taken on July 17, 1850. The first photograph of a total solar eclipse was taken on July 28, 1851. Hendri Deslandres invented the spectroheliograph on July 24, 1853. Sinope, one of Jupiter's many satellites was discovered by Seth Nicholson on July 21, 1914. Karl Jansky announced the detection of radio radiation from the center of the Milky Way on July 8, 1933. Seth Nicholson discovered Neptune's satellite Lysithea on July 6, 1938. The Mariner 4 probe took the first close-up image of another planet, namely Mars, on July 14, 1965. The Apollo 11 lunar module landed on the Moon on July 20, 1969. Neptune's satellites Despina and Galatea are discovered using images from the Voyager 2 probe on July 27, 1989. Fragments of Comet D/1993 F2 (Shoemaker-Levy) impacted Jupiter on July 16, 1994. Prospero, one of the satellites of Uranus, is discovered by Matthew Holman on July 18, 1999. Pluto's satellite Styx is discovered using images from the New Horizon probe on July 11, 2012.

Forty binary and multiple stars for July: Eta Draconis, 17 & 16 Draconis, Mu Draconis, Struve 2273, Nu-1 & Nu-2 Draconis, Psi Draconis (Draco); Kappa Herculis, Gamma Herculis, Struve 2063, 56 Herculis, Struve 2120, Alpha Herculis (Ras Algethi), Delta Herculis, Rho Herculis, Mu Herculis (Hercules); Rho Ophiuchi, Lambda Ophiuchi, 36 Ophiuchi, Omicron Ophiuchi, Burnham 126 (ADS 10405), Struve 2166, 53 Ophiuchi, 61 Ophiuchi (Ophiuchus); h5003 (Sagittarius); Xi Scorpii, Struve 1999, Beta Scorpii, Nu Scorpii, 12 Scorpii, Sigma Scorpii, Alpha Scorpii (Antares), h4926 (Scorpius); Struve 2007, 49 Serpentis, Struve 2031 (Serpens Caput); 53 Serpentis, Struve 2204, h4995, h2814 (Serpens Cauda); Epsilon Ursae Minoris (Ursa Minor)

Sixty-five deep-sky objects for July: NGC 6140, NGC 6236, NGC 6340, NGC 6395, NGC 6412, NGC 6503, NGC 6543 (Draco); IC 4593, M13, M92, NGC 6106, NGC 6166, NGC 6173, NGC 6181, NGC 6207, NGC 6210, NGC 6229, NGC 6482 (Hercules); B61, B62, B63, B64, B72, IC 4634, IC 4665, LDN 42, LDN 1773, M9, M10, M12, M14, M19, M62, M107, NGC 6284, NGC 6287, NGC 6293, NGC 6304, NGC 6309, NGC 6356, NGC 6366, NGC 6369, NGC 6384, NGC 6401, Tr 26 (Ophiuchus); NGC 6440, NGC 6445 (Sagittarius); B50, B55, B56, Cr 316, M4, M6, M7, M80, NGC 6144, NGC 6153, NGC 6192, NGC 6231, NGC 6242, NGC 6302, NGC 6337, NGC 6451 (Scorpius); NGC 6217, NGC 6324 (Ursa Minor)

Top ten binocular deep-sky objects for July: IC 4665, LDN 1773, M4, M6, M7, M10, M12, M13, M92, NGC 6231

Top ten deep-sky objects for July: M4, M6, M7, M10, M12, M13, M92, NGC 6210, NGC 6231, NGC 6543

Challenge deep-sky object for July: NGC 6380 (Scorpius)

The objects listed above are located between 16:00 and 18:00 hours of right ascension.

---

Guide to Observing Saturn in July: <https://cosmicpursuits.com/2560/guide-to-observing-saturn/>

Guide to Observing Jupiter in July: <https://cosmicpursuits.com/2126/guide-to-observing-planet-jupiter/>

Guide to Observing Comet F3 Neowise: <https://www.universetoday.com/146455/comet-f3-neowise-may-perform-in-july/>

## On this Date in History

- July 1, 1770: Comet D/1770 L1 (Lexell) passed closer to the Earth than any comet in recorded history.
- July 1, 1847: Karl Ludwig Hencke discovered asteroid 6 Hebe.
- July 4, 1054: The light from Supernova SN 1054 was first noted by Chinese astronomers.
- July 6, 1938: Seth Nicholson discovered Neptune's satellite Lysithea.
- July 8, 1933: Karl Jansky announced the detection of radio radiation from the center of the Milky Way.
- July 11, 2012: Pluto's satellite Styx is discovered using images from the New Horizon probe.
- July 13, 1784: The globular cluster NGC 6569 in Sagittarius was discovered by William Herschel.
- July 14, 1965: The Mariner 4 probe took the first close-up image of another planet, namely Mars.
- July 16, 1994: Fragments of Comet D/1993 F2 (Shoemaker-Levy) impacted Jupiter.
- July 17, 1850: The first photograph of a star, namely Vega, was taken.
- July 18, 1999: Prospero, one of the satellites of Uranus, is discovered by Matthew Holman.
- July 20, 1969: The Apollo 11 lunar module landed on the Moon.
- July 21, 1914: Sinope, one of Jupiter's many satellites was discovered by Seth Nicholson.
- July 23, 1783: Caroline Herschel discovered the open cluster NGC 6866 in Cygnus.
- July 24, 1778: Charles Messier discovered the globular cluster M54 in Sagittarius.
- July 24, 1853: Hendri Deslandres invented the spectroheliograph.
- July 26, 1609: The first lunar map was drawn by Thomas Harriot.
- July 27, 1764: Charles Messier discovered the globular cluster M28 in Sagittarius.
- July 27, 1989: Neptune's satellites Despinea and Galatea are discovered using images from *Voyager 2*.
- July 28, 1851: The first photograph of a total solar eclipse was taken.



Mars and a waning gibbous Moon after midnight on July 11, 2020.





Jupiter in mid-July 2020 lies opposite the Sun in the constellation Sagittarius. The planet stays in Sagittarius through much of 2020. It is the brightest object in this part of the sky, and the brightest object in the entire night sky except for the Moon and Venus.



The Moon, Jupiter, and Saturn after midnight on July 31, 2020.

## NASA Night Sky Notes



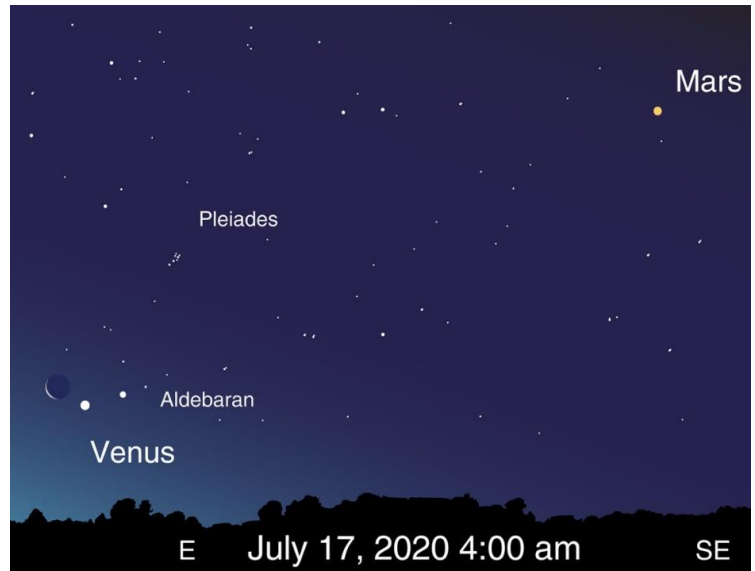
This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

By David Prosper

NASA's latest Mars rover, *Perseverance*, is launching later this month! This amazing robot explorer will scout the surface of Mars for possible signs of ancient life and collect soil samples for return to Earth by future missions. It will even carry the first off-planet helicopter: *Ingenuity*. Not coincidentally, *Perseverance* will be on its way to the red planet just as Mars dramatically increases in brightness and visibility to eager stargazers as the two planets race towards their closest approach in October of this year.

Observe Mars yourself over the next few months! Mars can be found in early morning skies throughout July, and by the end of the month will rise before midnight. Mars gradually brightens every night until the close approach of Mars in October. The pre-dawn skies of July 17 present an especially nice view (see image at right), as the waning crescent Moon will appear near Venus and Aldebaran.



*Perseverance*'s engineers built upon the success of its engineering cousin, *Curiosity*, and its design features many unique upgrades for a new science mission. In February of 2021, *Perseverance* will land at the site of an ancient river delta inside Jezero Crater and ready its suite of seven primary scientific instruments. The rover will search for traces of past life, including possible Martian fossils, with WATSON and SHERLOC, two advanced cameras capable of seeing tiny details. The rover also carries an amazing instrument, SuperCam, to blast rocks and soil outside of the rover's reach with lasers to determine their chemical makeup with an onboard suite of cameras and spectrometers. *Perseverance* will also take core samples of some of the most promising rocks and soil, storing them for later study with a unique caching system. Future round-trip missions will retrieve these samples from the rover and return them for detailed study by scientists back on Earth. *Perseverance* also carries two microphones so we can hear both the sounds of Mars and the noises of its instruments at work. It will launch the helicopter *Ingenuity* into the Martian atmosphere as a trial for future aerial exploration.



Would you like to contribute to Mars mission science? You can help NASA's rover drivers safely navigate the Martian surface by contributing to the AI4Mars project! Use this tool to label terrain features on photos taken of the Martian surface by NASA missions to help train an artificial intelligence algorithm to better read their surrounding landscape: [bit.ly/AI4Mars](https://bit.ly/AI4Mars)

The launch of Mars *Perseverance* is, as of this writing, scheduled for July 20, 2020 at 9:15 am EDT. More details, updates, and livestreams of the event are available on NASA's official launch page: [bit.ly/Mars2020Launch](https://bit.ly/Mars2020Launch). Dig deep into the science of the Mars 2020 mission and the *Perseverance* rover at:

[mars.nasa.gov/mars2020/](https://mars.nasa.gov/mars2020/). Find out even more about past, present, and future Mars missions at [nasa.gov](https://nasa.gov).

Perseverance photo: Artist rendering of Perseverance inspecting a cluster of interesting Martian rocks with its instruments. (NASA JPL/Caltech)

## Observatory and Planetarium



**Due to the impossibility of maintaining proper social distance within the confined space of the observatory dome, the observatory is currently closed until further notice.**



The Herrett Center has re-opened, with [COVID-19 safety protocols](#) for your protection. Check out our [reopening video message](#) and we hope to see you soon! [Now Showing!](#)



**Visit the Herrett Center Video Vault**  
[https://herrett.csi.edu/video\\_vault.asp](https://herrett.csi.edu/video_vault.asp)



## About the Magic Valley Astronomical Society

Magic Valley Astronomical Society  
550 Sparks St.  
Twin Falls, ID

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, and \$10.00 for students.

Contact Treasurer Jim Tubbs for dues information via e-mail: [jtubbs015@msn.com](mailto:jtubbs015@msn.com)

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

### **Membership Benefits:**

Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others please contact President Robert Mayer, for more information on these and other benefits.



*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.