Snake River Skies

The Newsletter of the Magic Valley Astronomical Society

www.mvastro.org

Membership Meeting

Saturday, January 11th 2019
7:00pm at the
Herrett Center for Arts & Science
College of Southern Idaho.

Public Star Party follows at the Centennial Observatory

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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

January 2019

Colleagues,

Welcome to 2020! As you read this, hopefully the skies will be clearing up for you to prepare yourself for the Quadrantids, that oddball meteor shower the first weekend of the year that can either be fantastic, or a dud. Its mere name is a reminder of how we used to see the sky. Perhaps this year can be something special.

Speaking of 2020, it's Leap Year, and while cloudy skies and cold temperatures are getting in the way, I do hope you're getting ready for a busy year. A look at the calendar reveals that the full moon will miss the monthly star parties, so come on down and take advantage of the conditions. In the summer, we'll likely also set-up scopes on the grass as a nod to star parties of the past.

Another tradition will continue in January: The Telescope Clinic. We'll be setting up scopes, equipment, and other resources for those who just received scopes for Christmas or those who want to get back into the field. Please take the time to invite a friend, and be ready to help. Please remember what it was like the first time you were left alone with a telescope.

That clinic will be Saturday, Jan. 11th, at 7 p.m. in the Rick Allen Room of the Herrett Center.

Clear views,

Rob Mayer

Calendar

January 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 New Year's Day	2	3 First Quarter Moon Visible 53% ↑ Age: 7.65 Days 	4
5	6	7	8	9	10 Full Moon 100% Visible  Wolf Moon	11 MVAS Meeting at 7:00pm at the Herrett Center Public Star Party Centennial Obs. 6:15p - 12:00a
12	13	14 Telescope Tuesday 6:15p – 9:00p Centennial Observatory	15	16	17 Last Quarter Moon  Visible: 51% ↓ Age: 22.09 Days	18
19	20 Martin Luther King Day 	21	22	23	24 New Moon Lunation 1201  Visible 1% ↑ Age: 29.16 Days	25
26	27	28 Telescope Tuesday 6:30p – 9:00p Centennial Observatory	29	30	31	

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

January Celestial Calendar

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

1/1 Asteroid 4 Vesta is stationary at 21:00
1/2 The Moon is at apogee, subtending 29' 32" from a distance of 404,580 kilometers (251,394 miles), at 1:30; Mercury is at its southernmost declination (-24.7 degrees) at 12:00; Mercury (magnitude -0.9) is 1.5 degrees south of Jupiter (magnitude -1.8) at 16:00; the Lunar X (the Purbach or Werner Cross), an X-shaped clair-obscure illumination effect involving various rims and ridges between the craters La Caille, Blanchinus, and Purbach, is predicted to be fully formed at approximately 20:39
1/3 First Quarter Moon occurs at 4:45; Mars and Uranus are at heliocentric opposition (longitudes 215.3 degrees and 35.3 degrees) at 12:00
1/4 The peak of the Quadrantid meteor shower (40 to 120 or more per hour) is predicted to occur at 9:00; the Moon is 4.3 degrees southeast of Uranus at 23:00
1/5 The latest sunrise of the year at latitude 40 degrees north occurs today; the Earth is at perihelion (147,091,144 kilometers or 91,398,199 miles distant from the Sun) at 7:48
1/7 The Moon is 7.3 degrees southeast of the bright open cluster M45 (the Pleiades or Subaru) in Taurus at 4:00; the Moon is 3.0 degrees north of the first-magnitude star Aldebaran (Alpha Tauri) at 21:00
1/8 The latest onset of morning twilight of the year at latitude 40 degrees north occurs today
1/9 The Moon is 1.5 degrees southeast of the bright open cluster M35 in Gemini at 14:00; the Moon is at the ascending node (longitude 98.4 degrees) at 23:00
1/10 Mercury (1.43 astronomical units from the Earth at a latitude of -6.15 degrees) is in superior conjunction with the Sun at 15:00; a deep penumbral lunar eclipse visible from western Australia, Asia, Europe, Africa, extreme eastern South America, and extreme northern North America begins at 17:07; Full Moon (known as the Ice Moon, the Moon after Yule, the Old Moon, and the Wolf Moon) occurs at 19:21; the penumbral eclipse ends at 21:12; the Moon is 9.0 degrees south of the first-magnitude star Castor (Alpha Gemini) at 22:00
1/11 Uranus is stationary in longitude and resumes direct (i.e., eastward) motion at 0:00; the Moon is 5.3 degrees south of the first-magnitude star Pollux (Beta Gemini) at 3:00; Uranus is stationary in right ascension and resumes direct (i.e., eastward) motion at 6:00
1/12 The Moon is 1.0 degree north of the bright open cluster M44 (the Beehive Cluster or Praesepe) in Cancer at 0:00; Mercury (magnitude -1.2) is 2.0 degrees south of Saturn (magnitude +0.5) at 10:00
1/13 Pluto (at a distance of 34.94 astronomical units from the Earth at a latitude of -0.69 degree) is in conjunction with the Sun at 7:00; Saturn (at a distance of 11.02 astronomical units from the Earth at a latitude of 0.04 degree) is in conjunction with the Sun at 15:00; asteroid 1 Ceres in in conjunction at 18:00; the Moon is at perigee, subtending 32’ 39" from a distance of 365,958 kilometers (227,396 miles), at 20:21
1/16 Asteroid 5 Astraea (magnitude +8.9) is at opposition in Cancer at 7:00
1/17 The Moon is 7.1 degrees north-northeast of the first-magnitude star Spica (Alpha Virginis) at 9:00; Last Quarter Moon occurs at 12:58
1/18 The Curtiss Cross, an X-shaped clair-obscure illumination effect located between the craters Parry and Gambart, is predicted to be begin at 20:32
1/19 Mercury is at its southernmost latitude (-7.0 degrees) from the ecliptic plane at 12:00
1/20 The Sun enters Capricornus (longitude 299.7 degrees on the ecliptic) at 9:00; the Moon is 7.0 degrees north-northeast of the first-magnitude star Antares (Alpha Scorpii) at 18:00; the Moon is 2.2 degrees north-northeast of Mars at 21:00
1/22 The Moon is at the descending node (longitude 278.4 degrees) at 21:00
1/23 The Moon is 0.4 degree south of Jupiter, with an occultation occurring in southwestern Polynesia, southern and eastern Melanesia, New Zealand, southern and eastern Australia, Kerguelen Island, and Madagascar at 3:00; the Moon is 0.4 degree southeast of Jupiter at 3:00; Uranus is at eastern quadrature (90 degrees from the Sun) at 7:00
1/24 New Moon (lunation 1201) occurs at 21:42
1/27 Venus (magnitude -4.1) is 0.08 degrees south of Neptune (magnitude +7.9) at 19:00
1/28 The Moon, Venus, and Neptune lie within a circle with a diameter of 3.9 degrees at 10:00; the Moon is 3.8 degrees southeast of Neptune at 10:00; the Moon is 3.8 degrees southeast of Venus at 10:00
1/29 The Moon is at apogee, subtending 29' 29" from a distance of 405,393 kilometers (251,899 miles), at 21:27

Johannes Hevelius (1611-1687), Ernst Abbe (1840-1905), George Van Biesbroeck (1880-1974), Luboš Kohoutek (1935), and Stephen Hawking (1942) were born this month.

The Sun, the Moon, & the Planets

The **Moon** is 5.6 days old, is illuminated 28.1%, subtends 29.8 arc minutes, and is located in Aquarius on January 1st at 0:00 UT. The Moon attains its greatest northern declination (+23.2 degrees) for the month on December 10th and greatest southern declination (-23.2 degrees) on December 23rd. Longitudinal libration is at a maximum of +5.4 degrees on December 21st. It's at a minimum of -5.7 degrees on December 8th. Latitudinal libration is at a maximum of +6.9 degrees on December 3rd and +6.8 degrees on December 30th and a minimum of -6.8 degrees on December 16th. New Moon occurs on December 26th. The Moon is at perigee (distance 57.38 Earth-radii) on January 13th and at apogee (distance 63.43 Earth-radii) on January 2nd and again (distance 63.56 Earth-radii) on January 29th. A deep penumbral lunar eclipse, the 16th of Saros 144, reaches deepest eclipse in northwest India at 19:10:02 UT1 on January 10th. At maximum, 92% of the Moon will lie within the Earth's penumbra. All four of the lunar eclipses that will occur in 2020 are penumbral. See http://www.eclipsewi...ml#LE2020Jan10N for further information. The Moon occults Jupiter on January 23rd from parts of the southern hemisphere. New Moon occurs on January 24th. Browse http://www.lunar-occ...ota/iotandx.htm for information on lunar occultation events. Visit https://saberdoesthe...does-the-stars/ for tips on spotting extreme crescent Moons and http://www.curtrenz.com/moon06.html for Full Moon data. Consult http://time.unitariu...oon/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...ar/2020/january 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-occ...o/rays/rays.htm

The **Sun** is located in Sagittarius on January 1st. It enters Capricornus on January 20th

Data (magnitude, apparent size, illumination, and distance from the Earth in astronomical units) for the planets and Pluto on January 1st: Mercury (-0.9, 4.7", 99%, 1.43 a.u., Sagittarius), Venus (-4.0, 13.1", 82%, 1.28 a.u., Capricornus), Mars (+1.6, 4.3", 96%, 2.18 a.u., Libra), Jupiter (-1.8, 31.8", 100%, 6.21 a.u., Sagittarius), Saturn (+0.5, 15.1", 100%, 11.00 a.u., Sagittarius), Uranus (+5.8, 3.6", 100%, 19.67 a.u. on January 16th, Aries), Neptune (+7.9, 2.2", 100%, 30.54 a.u. on January 1 6th, Aquarius), Pluto (+14.4, 0.1", 100%, 34.94 a.u. on January 16th, Sagittarius).

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

Mercury is at its greatest heliocentric latitude south on January 19th. The speediest planet returns to the evening sky at twilight late in the month. Mercury shines at magnitude -1.0 and sets approximately 70 minutes after sunset as January draws to a close.

Venus lies in the southwest at an altitude of approximately 25 degrees at sunset on January 1st. Venus and Neptune undergo a very close conjunction on January 27th. By January 31st, Venus has climbed to about 34 degrees above the horizon and sets about 3.5 hours after the Sun. During January, Venus increases in apparent diameter from 13.2 arc seconds to 15.1 arc seconds but decreases in illumination from 82% to 74%.

Earth is 0.9832 a.u. distant from the Sun at perihelion on January 5th. On that date, it's about 3% (5.0 million kilometers or 3.1 million miles) closer to the Sun than at aphelion on July 4th and about 2.7% closer to the Sun than on average.

Mars exits eastern Libra and enters Ophiuchus, Scorpius, and finally Sagittarius this month. Mars passes less than five degrees northwest of Antares, the Rival of Mars, on the mornings of January 17th and January 18th. Antares outshines Mars by about a half magnitude. A waning crescent Moon passes two degrees north of Mars on January 20th.

Jupiter appears low in the southeast during morning twilight after the second week of January. It rises more than 90 minutes before sunrise by the end of the month.

Saturn is in conjunction with the Sun on January 13th and is not potentially visible again until the end of the month.

Uranus is located 12 degrees south of the second-magnitude star Hamal (Alpha Arietis). The First Quarter Moon passes five degrees south-southeast of Uranus on January 14th. Uranus is at eastern quadrature on January 23rd. The seventh planet sets around midnight as January comes to a close. Visit http://www.nakedeyep....com/uranus.htm for a finder chart.

Neptune is located just five arc minutes north of Venus, the closest conjunction of the two planets since January 1984, on January 27th. It lies 12 arc minutes west of Venus a few hours later. Browse and http://www.nakedeyep...com/neptune.htm for a finder chart.

Finder charts for Uranus and Neptune are also available online at https://s22380.pcdn....20_updated.pdf

See http://www.curtrenz.com/uranep.html for additional information on the two outer planets.

Click on http://www.skyandtel...watching-tools/ for JavaScript utilities that will illustrate the positions of the five brightest satellites of Uranus and the position of Triton, Neptune's brightest satellite.

The dwarf planet Pluto is in conjunction with the Sun on January 13th.

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

Asteroids

Asteroid 4 Vesta shines at magnitude +7.5 as it heads northeastward through Cetus and Aries this month. It is stationary on January 1st and passes less than one degree to the east of the fourth-magnitude Mu Ceti on January 12th. Asteroids brighter than magnitude +11.0 that reach opposition this month include 192 Nausikaa (magnitude +10.0) on January 9th, 511 Davida (magnitude +9.6) on January 15th, 5 Astraea (magnitude +9.0) on January 21st, and 230 Athamantis (magnitude +10.7). Finder charts for 5 Astraea and 511 Davida can be found on page 49 of the January 2020 issue of Sky & Telescope. See http://asteroidoccul.../2020_01_si.htm for information on asteroid occultation events taking place this month. Consult http://www.curtrenz.com/asteroids.html to learn more about a number of asteroids.

Carbon Star

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

Comets

During January, Comet C/2017 T2 (PanSTARRS) heads northwestward along the border of Cassiopeia and Perseus. It lies less than one degree north of the fourth-magnitude star Eta Cassiopeia on January 13th and less than one degree north of NGC 869 and NGC 884 (the Double Cluster) on January 26th and January 27th. Visit http://cometchasing.skyhound.com/ and http://www.aerith.ne...t/future-n.html for information on these and other comets visible this month.

Meteors

The Quadrantid meteor shower is predicted to peak around 4:00 a.m. EST on January 4th. The radiant lies at the junction of the constellations of Boötes, Hercules, and Draco, in what was once called Quadrans Muralis, and is highest just prior to dawn. A waxing gibbous Moon will not compromise the peak of this year's Quadrantids. The Quadrantid shower can sometimes reach zenithal hourly rates of more than 100 meteors per hour for a relatively short period of time. The near-Earth asteroid 2003 EH1, which may be an extinct comet, is believed to be the source of these meteors. See pages 48 and 49 of the January 2020 issue of Sky & Telescope or https://amsmeteors.o...-meteor-shower/ for more on the Quadrantids.

Orbiting Earth

Information on Iridium flares and passes of the ISS, the X-37B, the HST, and other satellites can be found at http://www.heavens-above.com/

Solar System Info

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

Various events taking place within our solar system are discussed at http://www.bluewaterastronomy.info/styled-4/index.html

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

The major meteor showers that will occur this year are discussed at https://www.skyandte...howers-in-2020/

Free star maps for January can be downloaded at http://www.skymaps.com/downloads.html and http://www.telescope...thly-Star-Chart

Data on current supernovae can be found at http://www.rochester...y.org/snimages/

Information on observing some of the more prominent Messier galaxies is available at http://www.cloudynig...ur-astronomers/

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.cambridg...s_january-march

Telrad finder charts for the Messier Catalog and the SAC's 110 Best of the NGC are posted at http://www.astro-tom...essier_maps.htm and http://sao64.free.fr...taloguesac.pdf

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

Free sky atlases can be downloaded at http://www.deepskywa...-atlas-full.pdf and https://www.cloudyni...ar-charts-r1021 and https://allans-stuff.com/triatlas/

The Deep Sky

Omicron2 (40) Eridani is a fourth-magnitude triple star system consisting of three dwarf stars: a type K1V yellow-orange dwarf (A) known as Keid, 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 six inches.

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, 11th, 14th, 17th, 20th, 22nd, 25th, 28th, and 31st. The Demon Star is at minimum brightness for approximately two hours and is well-placed for observers in North America on the night of January 14th, centered at 1:46 a.m. EST. Minima can also be observed on the night of January 16th, centered at 10:36 p.m. EST, and on the evening of

January 19th, centered at 7:25 p.m. EST. Consult page 50 of the January 2020 issue of Sky & Telescope for the times of the minima. For more on Algol, see http://stars.astro.i.../sow/Algol.html and http://www.solstatio...rs2/algol3.htm

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

Seventy deep-sky objects for January: B26-28, B29, M36, M37, M38, NGC 1664, NGC 1778, NGC 1857, NGC 1893, NGC 1907, NGC 1931 (Auriga); IC 361, Kemble 1 (Kemble's Cascade asterism), NGC 1501, NGC 1502, NGC 1530, NGC 1569 (Camelopardalis); NGC 1507, NGC 1518, NGC 1531, NGC 1532, NGC 1535, NGC 1537, NGC 1600, NGC 1637, NGC 1659, NGC 1700 (Eridanus); IC 418, M79, NGC 1832, NGC 1888, NGC 1964 (Lepus); B33, Cr65, Cr69, Cr70, IC 434, M42, M43, M78, NGC 1662, NGC 1973-75-77, NGC 1981, NGC 1999, NGC 2022, NGC 2023, NGC 2024, NGC 2112 (Orion); Be11, NGC 1491, NGC 1496, NGC 1499, NGC 1513, NGC 1528, NGC 1545, NGC 1548, NGC 1579, NGC 1582, NGC 1605, NGC 1624 (Perseus); DoDz3, DoDz4, M1, Mel 25, NGC 1514, NGC 1587, NGC 1647, NGC 1746, NGC 1807, NGC 1817 (Taurus)

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)

The objects listed above are located between 4:00 and 6:00 hours of right ascension.

The Moon, Mars, and Antares in the southeastern sky before dawn on Jan. 20, 2020.

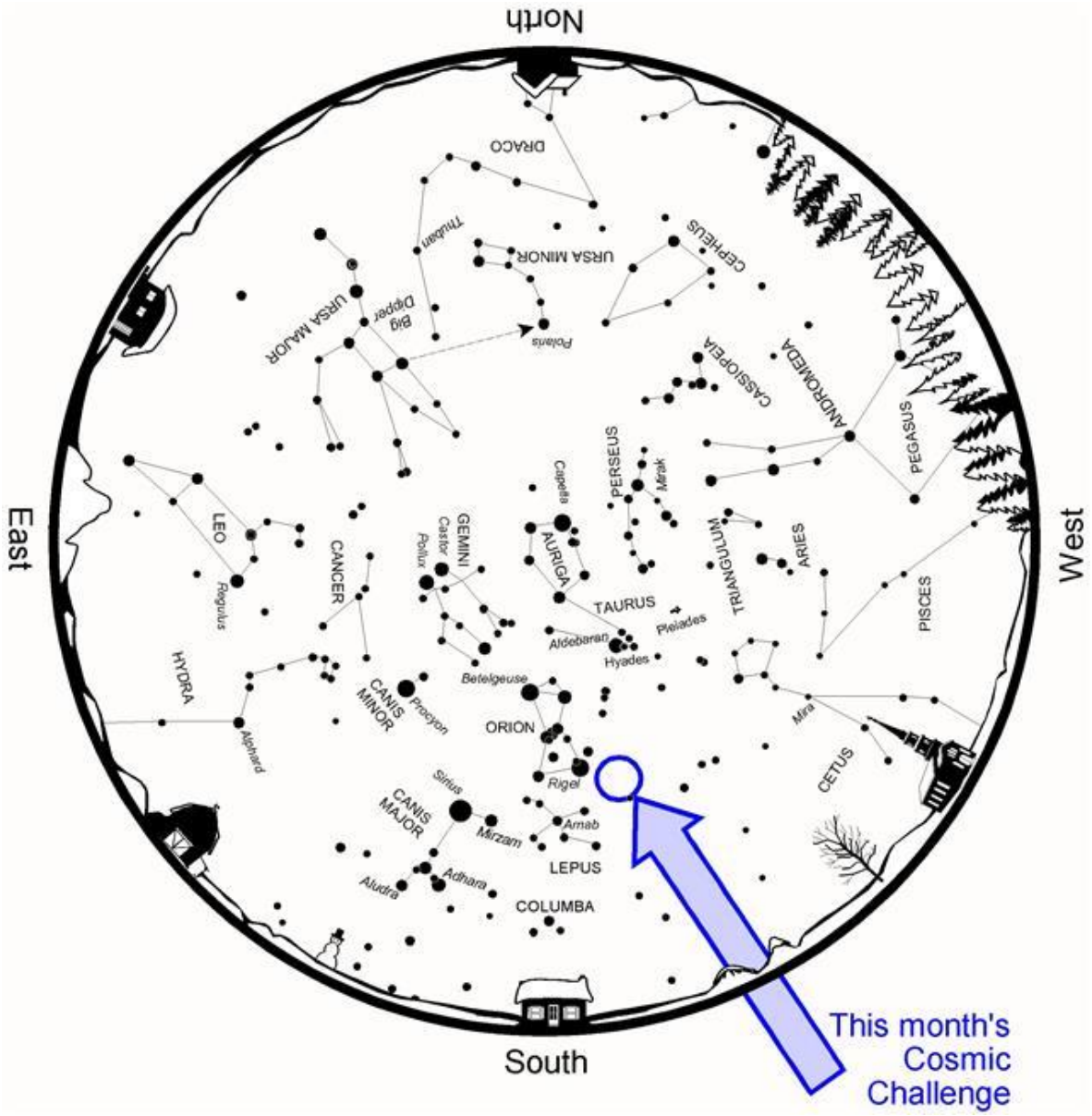
Phil Harrington's Cosmic Challenge

Cosmic Challenge: NGC 1535

	Giant binoculars (70mm and larger) 2- to 5-inch (50-127mm) telescopes

Target	Type	RA	DEC	Constellation	Mag	Size
NGC 1535	Planetary nebula	04h 14.3m	-12° 44.4'	Eridanus	10.5	60"

Planetary nebula **NGC 1535** is a victim of circumstance. Take a look at its facts. Its bluish disk spans about a minute of arc, which is quite large as planetaries go, and shines brightly enough to be visible through giant binoculars. Its central star glows at magnitude 11.6, creating a surreal scene resembling a disembodied human eye, which led to the nickname "Cleopatra's Eye." Those in the know rate NGC 1535 as one of the sky's finest planetary nebulae. Yet this enticing target remains unknown to many backyard stargazers.



Above: Evening star map. Credit: Map adapted from Star Watch by Phil Harrington

NGC 1535's anonymity is due in large part to its empty surroundings within the vague constellation Eridanus the River. Eridanus, one of the sky's longest constellations, flows from the western edge of Orion southward below most of our horizons. Only if you are south of approximately 30° north latitude, you be able to see the River's lone bright star, Achernar [Alpha (α) Eridani], at the mouth. For the rest of us, Eridanus is a meandering group of faint stars in the otherwise empty abyss directly west of mighty Orion.

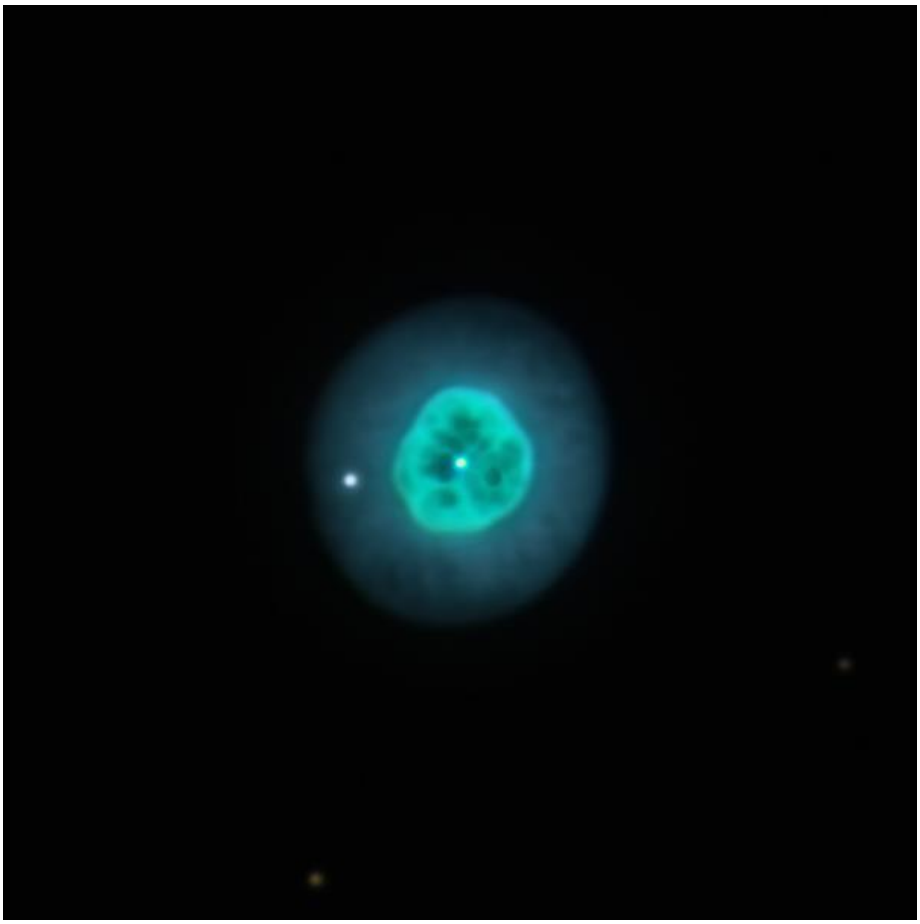
I suspect that most amateurs, at least those who prefer to starhop, feel that taking the extra time to zero in on NGC 1535 is just too much effort. The closest bright star, Rigel (Beta [β] Orionis), lies a distant 20° to the east-northeast. None of the nearby stars shine brighter than 4th magnitude. This makes NGC 1535 a challenge to find, but not impossible.

For you starhopping purists, scan about 1½° to Rigel's west-southwest to a short arc of three stars aligned east-west. The arc's brightest star shines at 4th magnitude and is labeled Lambda (λ) Eridani. Continue westward past the arc for 6°, or about a finderscope field, to the stars 55 and 56 Eridani, and another half-field further west to reddish 47 Eridani. Are we there yet? No, but we're getting close. Keep moving westward for another finder field to Omicron^2 (o^2) Eridani and stop. From Omicron^2, shift 2½° due south to 5th-magnitude 39 Eridani, then finally, another 2½° to NGC 1535. *phew*

If it's in your telescope's field of view, NGC 1535 should be immediately obvious -- no hunting required. Even at only 38x, my 4-inch refractor easily displays the planetary's pale steel-blue disk nestled in a sparsely populated field, as shown in the sketch below. Compare its appearance to that of Uranus or Neptune, and apart from the disparity in color, it's easy to see why early observers mistook these vaporous disks for distant, undiscovered planets.

NGC 1535 as seen through the author's 4-inch (102mm) refractor.

William Herschel was first to bump into NGC 1535 on February 1, 1785. Modern views shown that NGC 1535 is very similar structurally to NGC 2392, the Eskimo Nebula in Gemini. Like the oft-observed Eskimo, NGC 1535 exhibits a brighter central core surrounded by a fainter outer halo. The inner core comes alive in the image below taken by Adam Block.



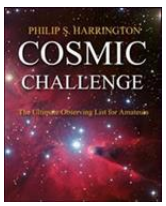
Credit: Adam Block/Mount Lemmon SkyCenter/University of Arizona [CC BY-SA 3.0 us (https://creativecommons.org/licenses/by-sa/3.0/us/deed.en

Many people mistakenly think they are seeing the central star at low magnification, when in fact, they are seeing the nebula's bright inner core. To see the progenitor star itself, we need more power! Thankfully, NGC 1535 takes magnification well. My experience is that it takes 200x or more to isolate the star from the bright annulus that immediately surrounds it. In his book Hidden Treasures, author Stephen O'Meara notes his success through a 4-inch refractor operating at 504x, an incredible magnification for any telescope, but especially that aperture. My local seeing conditions never let me get anywhere near those crazy high numbers, but I have had success seeing the central star through my own 4-inch at 248x. To increase the odds of seeing the star, try looking with direct vision to better suppress the nebula's glow.

Speaking of hidden treasures, if you're viewing through a BIG scope, then after you drink in the beauty of NGC 1535, shift your attention 28' to its south-southeast to a slender diamond of four 10th- and 11th-magnitude stars. Near the eastern facet of the diamond is the distant galaxy NGC 1538. Lying 463 million light years away and shining at only 15th magnitude, NGC 1538 is classified as an S0 lenticular galaxy. Lenticular galaxies display large-scale disks, but do not have large-scale spiral arms. For this reason, many were initially classified as elliptical galaxies until more detailed studies revealed their unique nature.

Good luck with this month's Cosmic Challenge!

Until next month, remember that half of the fun is the thrill of the chase. Game on!



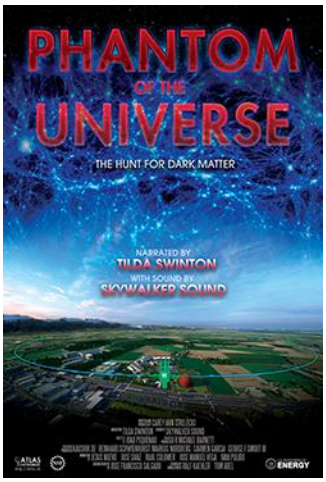
About the Author: Phil Harrington writes the monthly *Binocular Universe* column in Astronomy magazine and is the author of 9 books on astronomy. Visit his web site at www.philharrington.net to learn more.

Observatory and Planetarium

CSI Centennial Observatory / Faulkner Planetarium Herrett Center

Event	Place	Date	Time	Admission
Twin Falls Parks & Recreation "Cabin Fever Day" Solar Viewing	Centennial Observatory	Saturday, January 11th, 2020	11:00 AM to 2:00 PM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, January 11th, 2020	6:15 PM to midnight	FREE
Telescope Tuesday	Centennial Observatory	Tuesday, January 14th, 2020	6:15 to 9:00 PM	$1.50 or free with Faulkner Planetarium admission
Telescope Tuesday	Centennial Observatory	Tuesday, January 28th, 2020	6:30 to 9:00 PM	$1.50 or free with Faulkner Planetarium admission

College of Southern Idaho Campus Twin Falls, ID
Faulkner Planetarium / Show Times



Now Showing

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

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.