Snake River Skies

The Newsletter of the Magic Valley Astronomical Society

www.mvastro.org

Membership Meeting

Saturday, October 8th 2016
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

President's Message

Colleagues,

In October, we held elections. The results were as follows:

Robert Mayer, President

Tim Frazier, Vice-President

Gary Leavitt, Secretary

Jim Tubbs, Treasurer

Tim takes the place of Paul McClain, who has stepped down. We'd like to thank Paul for all of his efforts working with the board, and know that he'll still be a big support for us, especially when it comes to member-only star parties. We are grateful for Tim to step into this position and look forward to working with him.

Now that the weather is slow us down a little, it's time to hunker down and look forward to next year. November is always our annual yearly planning session, so instead of a presentation, we would rather have your voice. For the 7 p.m. meeting on Saturday, Nov. 12th, please bring ideas for speakers and subjects you would like to hear. Calendaring for the future star parties is also on the agenda, so if you would like have more club-only parties closer to home, or if you would like to try new places, let us know.

There will be a Board Meeting prior to the general meeting at Wok-N-Grill at 5:15 p.m. There we will be work on additional ideas to bring in new members and develop new projects. That meeting is also open to general membership, so we would love to hear your ideas as well. As this is my last year as president, I would love to go out seeing what new things you would like to try.

Until then, Clear Views,
Rob Mayer

Event Calendar

November 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2 Astronomy Talk Night Telescope Viewing	3	4	5 MVAS Star Party Site TBD 
6 DST Ends 	7 First Quarter 47% Visible Age: 8-days 	8 Telescope Tuesday Centennial Observatory 7:30p – 9:30p	9	10	11 Veterans Day 	12 General Membership mtg. at the Herrett Center 7:00p Public Star Party at the Observatory
13	14 Full Moon 100% Visible Age: 15-days  Frost Moon	15	16	17	18	19
20	21 Last Quarter 49% Visible 	22 Telescope Tuesday Centennial Observatory 6:30p – 9:00p	23	24 Thanksgiving Day 	25	26
27	28	29 New Moon Lunation 1162 1% Visible 	30			

Snake River Skies is the Newsletter of the Magic Valley Astronomical Society and is published electronically once a month.

Celestial Calendar

The Sky This Month – November 2016

11/1 Mercury is at the descending node today
11/2 Saturn is 4 degrees south of the Moon at 19:00
11/3 Venus is 7 degrees south of the Moon at 4:00; asteroid Eurynome (magnitude +9.6) is at opposition at 18:00
11/5 The peak of the Southern Taurid meteor shower (5 to 10 per hour) occurs at 5:00
11/6 Daylight Saving Time (DST) ends; Jupiter is 2 degrees north of the Moon at 16:00
11/7 The Lunar X (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 occur at 2:17: 11/9 Neptune is 1 degree south of the Moon at 15:00
11/11 Mercury is at aphelion today
11/12 Uranus is 3 degrees south of the Moon at 11:00; the peak of the Northern Taurid meteor shower (5 to 10 per hour) occurs at 23:00
11/14 The Moon is at perigee, subtending 33'31" from a distance of 356,509 kilometers (221,524 miles), at 11:00;
11/17 The peak of the Leonid meteor shower (15 to 20 per hour) occurs at 11:00
11/20 Neptune is stationary at 10:00
11/23 The Curtiss Cross, an X-shaped illumination effect located between the craters Parry and Gambart, is predicted to occur at 3:57
11/25 Jupiter is 1.9 degrees south of the Moon at 2:00
11/27 Asteroid 60 Echo (magnitude +10.1) is at opposition at 10:00; the Moon is at apogee, subtending 29'23" from a distance of 406,554 kilometers (252,621 miles) at 20:08
11/29 Asteroid 3 Juno is in conjunction with the Sun at 20:00

Edmund Halley, William Herschel, Harlow Shapley, and Edwin Hubble were born this month.

The first photograph of a meteor was taken on November 26, 1885. The minor planet/comet 2060 Chiron or 95P/Chiron was discovered by Charles Kowal on November 1, 1977.

The peaks of the minor Southern and Northern Taurid meteor showers take place on November 5th and November 12th respectively. These streams form part of the complex associated with Comet 2P/Encke. Moonlight compromises the peak of the Northern Taurids. The Leonid meteor shower occurs on the morning of November 17th. A waning gibbous Moon interferes with viewing this shower. Leonid meteors are debris from the periodic comet 55P/Tempel-Tuttle. Due to their high speed (71 kilometers or 44 miles per second), the Leonids produce a greater percentage of fireballs than most meteor showers.

The Moon is 1.3 days old, is 1.5% illuminated, subtends 29.30 arc minutes, and resides in Libra on November 1st at 0:00 UT. The longest synodic or lunar month of 2016 (29 days, 18 hours, and 40 minutes) takes place this month. The largest Full Moon of the year, a so-called Super Moon that will be 7% larger than average, occurs on November 14th. Large tides will take place on November 14th through November 17th. The Moon reaches its greatest northern declination on November 17th (+18.7 degrees) and its greatest southern declination on November 5th (-18.6 degrees). Longitudinal libration is at a maximum of +8.1 degrees on November 20th and a minimum of -7.5 degrees on November 9th. Latitudinal libration is at a maximum of +6.5 degrees on November 16th and a minimum of -6.6 degrees on November 2nd and -6.5 degrees on November 30th. Consult http://www.lunar-occ...ota/iotandx.htm for information on lunar occultations taking place this month. Times and dates for the lunar light rays predicted to occur this month are available at http://www.lunar-occ...o/rays/rays.htm

The Sun, the Moon, & the Planets

The Sun is located in Libra on November 1 at 0:00 UT.

Brightness, apparent size, illumination, distance from the Earth in astronomical units, and location data for the planets and Pluto on November 1: Mercury (-1.3, 4.7", 100% illuminated, 1.44 a.u., Libra), Venus (magnitude -4.0, 14.0", 78% illuminated, 1.19 a.u., Ophiuchus), Mars (magnitude +0.4, 7.5", 86% illuminated, 1.25 a.u., Sagittarius), Jupiter (magnitude -1.7, 31.2", 100% illuminated, 6.31 a.u., Virgo), Saturn (magnitude +0.5, 15.3", 100% illuminated, 10.84 a.u., Ophiuchus), Uranus (magnitude +5.7, 3.7", 100% illuminated, 19.11 a.u. on November 16th, Pisces), Neptune (magnitude +7.9, 2.3", 100% illuminated, 29.68 a.u. on November 16th, Aquarius), and Pluto (magnitude +14.3, 0.1", 100% illuminated, 33.82 a.u. on November 16th, Sagittarius).

During the evening, Mercury, Venus, and Saturn are in the southwest, Mars is in the south, Uranus is in the east, and Neptune is in the southeast. Uranus lies in the southwest and Neptune in the west at midnight. Jupiter is located in the southeast in the morning sky.

At midmonth, **Mercury** is visible during evening twilight, Venus sets at 7:00 p.m. local time, Mars sets at 10:00 p.m. local time, Jupiter rises at 3:00 a.m. local time, and Saturn sets at 6:00 p.m. for observers at latitude 40 degrees north.

Mercury is best seen during the second half of November. The smallest planet is at aphelion on November 11th.

Venus (magnitude -4.0) and Saturn (magnitude +0.5) are approximately five degrees apart shortly after sunset on November 1st. The brilliant planet passes 1.2 degrees south of the bright emission nebula and open cluster M8 (the Lagoon Nebula) on November 12th, 0.7 degree south of the bright globular cluster M28 on November 16th, and 1.6 degrees south of the bright globular cluster M22 on November 18th. Venus is at greatest heliocentric latitude south on November 22nd. It lies about one degree from the binary star 52 Sagittarii (magnitude +4.6) at the end of the month.

As November begins, **Mars** is positioned three degrees northeast of 52 Sagittarii. The Red Planet moves from Sagittarius to Capricornus on November 8th. The Martian northern hemisphere winter starts on November 28th. By month's end, Mars subtends a mere 6.5 arc seconds.

Jupiter rises by 2:30 a.m. EST and is situated approximately 30 degrees above the horizon by the end of November. Its apparent diameter increases from 31.2 to 32.8 arc seconds this month. Jupiter lies 1.9 degrees south of the Moon on November 25th. On the morning of November 24th, Jupiter's second largest satellite Callisto passes due north of the planet. Click on http://www.skyandtel...watching-tools/ to determine transit times of the central meridian by the Great Red Spot. Data on Galilean satellite events is available at http://www.skyandtel...watching-tools/

Saturn is four degrees south of the three-day-old Moon on November 2nd. The Ringed Planet passes 3.5 degrees north of Mercury on November 23rd. Saturn sets about 30 minutes after the Sun at month's end.

Uranus continues to retrograde through Pisces this month. It lies three degrees south of the Moon on November 12th. Uranus can be found 1.7 degrees east of the fifth-magnitude star Zeta Piscium on November 1st and 0.9 degree east of that star on November 30th.

Neptune lies one degree south of the Moon on November 9th. It resumes prograde or direct motion on November 20th. The distant planet lies about 2.5 degrees southwest of the fourth-magnitude star Lambda Aquarii this month.

Finder charts for Uranus and Neptune online finder charts for the two planets can be found at http://www.nakedeyep....com/uranus.htm and http://www.nakedeyep...com/neptune.htm and also at http://www.skyandtel...p16_Finders.pdf

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.

Pluto lies too close to the horizon to be observed this month.

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

Asteroids

Asteroid/dwarf planet 1 Ceres travels northwestward through northern Cetus this month. The eighth-magnitude object passes about two degrees north of the fifth-magnitude star SAO 129465 on November 12th and November 13th. For information on this year's bright asteroids and upcoming asteroid occultation events respectively, consult http://www.curtrenz.com/asteroids and http://asteroidoccultation.com/

Comets

A rather dim Oort Cloud comet C/2015 V2 (Johnson) glides southeastward through Canes Venatici during November mornings. For additional information on comets visible this month, browse http://cometchasing.skyhound.com/ and http://www.aerith.ne...t/future-n.html

Meteors

The peaks of the minor Southern and Northern Taurid meteor showers take place on November 5th and November 12th respectively. These streams form part of the complex associated with Comet 2P/Encke. Moonlight compromises the peak of the Northern Taurids. The Leonid meteor shower occurs on the morning of November 17th. A waning gibbous Moon interferes with viewing this shower. Leonid meteors are debris from the periodic comet 55P/Tempel-Tuttle. Due to their high speed (71 kilometers or 44 miles per second), the Leonids produce a greater percentage of fireballs than most meteor showers.

Carbon Star

Zeta Piscium (**Zeta Psc**, **ζ Piscium**, **ζ Psc**) is an optical and spectroscopic binary system, with three components — Zeta Piscium A, Zeta Piscium B and Zeta Piscium C. Zeta Piscium B and C are spectroscopic binaries with each other, and both are optical binaries with Zeta Piscium A. The separation between Zeta Piscium A, and B, and C system is 23 arc-seconds. Z Psc. A Right Ascension: $1^h\ 13^m\ 43.886^s$ | Declination: +7° 34' 31.13 Z Psc. B Right Ascension: $1^h\ 13^m\ 45.311^s$ | Declination: +7° 34' 41.99"

The Deep Sky

Two stars with exoplanetary systems, Upsilon Andromedae (magnitude +4.1) and 51 Andromedae (magnitude +5.5), can be seen this month without optical aid.

The famous eclipsing variable star Algol (Beta Persei) is at a minimum, decreasing in brightness from magnitude +2.1 to magnitude +3.4, on November 3rd, 6th, 9th, 11th, 14th, 17th, 20th, 23rd, 26th, and 29th. Algol is at minimum brightness for about two hours early in the night for observers in North America on November 8th and November 28th. For more on Algol, see http://stars.astro.i.../sow/Algol.html and http://www.solstatio...ars2/algol3.htm

Seventy deep-sky objects for November: M31, M32, M110, NGC 252, NGC 404, NGC 752 (Andromeda); NGC 680, NGC 691, NGC 697, NGC 772 (Aries); Cr 463, IC 1747, K14, M103, NGC 129, NGC 133, NGC 146, NGC 185, NGC 225, NGC 281, NGC 278, NGC 381, NGC 436, NGC 457, NGC 559, NGC 637, NGC 654, NGC 659, NGC 663, Tr 1 (Cassiopeia); NGC 40, NGC 188 (Cepheus); NGC 151, NGC 175, NGC 178, NGC 210, NGC 227, NGC 245, NGC 246, NGC 247, NGC 274, NGC 337, NGC 578, NGC 584, NGC 596, NGC 615, NGC 636, NGC 681, NGC 720, NGC 779 (Cetus); NGC 7814 (Pegasus); M76, St 4 (Perseus); M74, NGC 128, NGC 194, NGC 488, NGC 524 (Pisces); NGC 24, NGC 55, NGC 134, NGC 150, NGC 253, NGC 254, NGC 288, NGC 289, NGC 439, NGC 613 (Sculptor); M33, NGC 672 (Triangulum)

Top ten binocular deep-sky objects for November: M31, M33, M103, NGC 225, NGC 288, NGC 253, NGC 457, NGC 654, NGC 663, NGC 752

Top ten deep-sky objects for November: M31, M32, M33, M76, M103, M110, NGC 40, NGC 253, NGC 457, NGC 752

Challenge deep-sky object for November: IC 59 IC 63 (Cassiopeia) RA: 00h57m30.0s | Dec: +61°09'00" Near the Star Gamma Cass. Photo below of IC59 / 63 © Kent V. Wood

ISS

Information on Iridium flares and passes of the ISS, the Tiangong-1, the USAF's X-37B, the HST, and other satellites can be found at http://www.heavens-above.com/

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

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

November Sky Chart

For a larger star chart for November visit: http://www.telescope.com/assets/images/starcharts/2016-11-starchart_col.png

Club Announcements

Friday, Nov. 4th is an MVAS only star party, with site dependent on the weather.

Saturday, Nov. 12th will feature a board meeting at Wok-N-Grill at 5:30 pm, followed by the annual calendaring and planning meeting at the Herrett Center at 7. Both meetings are open to the public.

Rob Mayer told the group that this upcoming year will be his last as president.

There will be efforts to conduct officer voting next year online.

Three Creek Star Party:

We had a fairly solid night at the Three Creek School last night (not at the airfield). There was a bit of moisture in the air, but we were still able to offer the kids views of several objects:

I nabbed Saturn for a couple of people before it set, and then the whole group came out and got to see Mars, M22, Alcor/Mizar, and M31/M32 before the temperature scared off most of the kids in (we also learned that that this was actually pretty late for them). After that, a few stayed behind to see M13 and M57 in the scope, and M45 in binoculars.

I must have also programmed my location incorrectly, for I thought I had an iridium flare down for 19:29, but sometime after 2000 hours, I saw a flare halfway up the western sky moving south to north, and it was clearly brighter than -1. I had nothing brighter than -0.1 scheduled after 1931 hours.

I also caught M8 (barely any nebulosity. ugh -- low on the horizon, next to clouds, and I think my small scope needed collimating), M11, Gamma Arietis, and Beta Lyrae in my scope. With 7x35 binoculars, I showed a small family M13, M22, and M31. On my own, I caught M33, M34, M36, and M38.

Jim Tubbs also showed Gamma Cas through spectroscopy and helped the school set up its scope, a small 4" f 8/9 Bushnell Newtonian donated by someone.

The teacher, Dena Pollock, has done some work. The kids know some of their constellations, and I quizzed them on planetary data while they were waiting, and they got that right as well.

Cosmic Challenge:
IC 5146 and B168

Phil Harrington

<u>This month's suggested aperture range</u>:

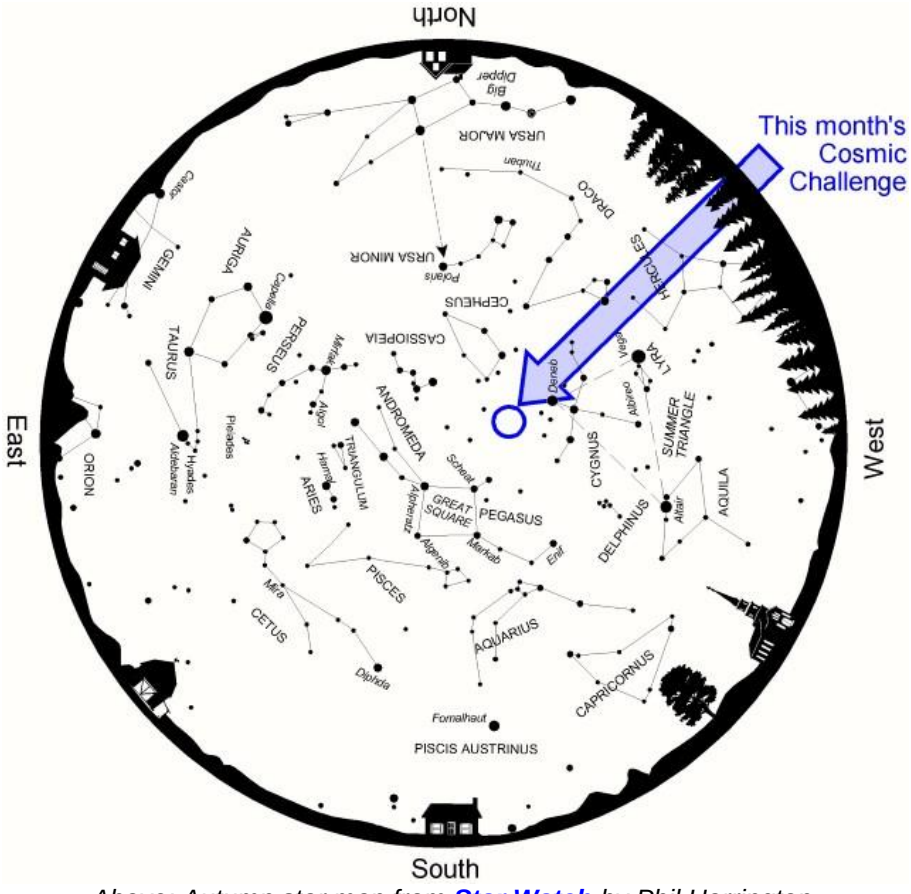
Giant (≥70mm) binoculars

3- to 5-inch (75cm to 127cm) telescopes

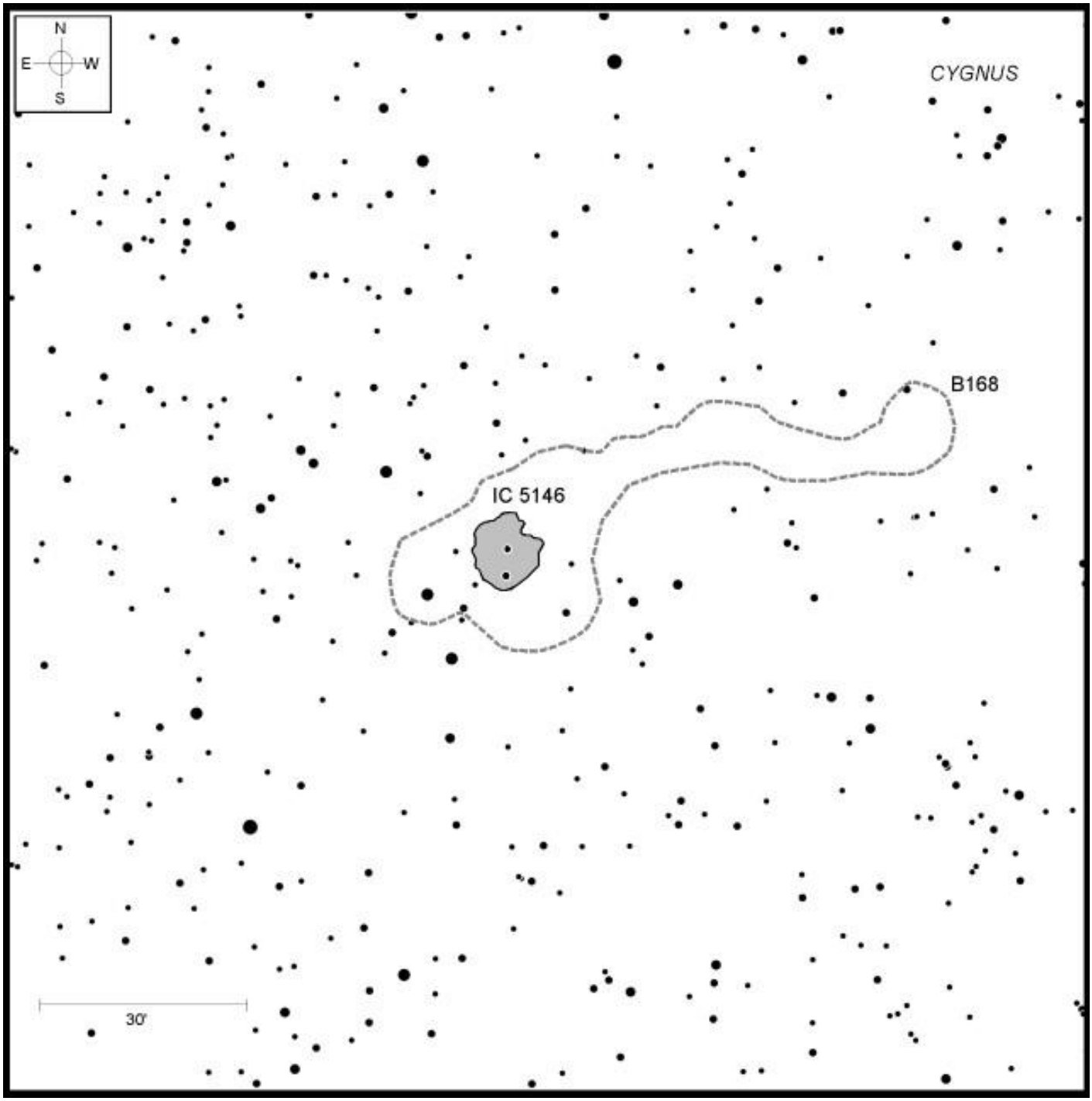
As a group, emission nebulae, or Hydrogen-II regions, are the most difficult deep-sky objects to see visually. The problem is that they radiate light in very narrow segments of the visible spectrum, with their brightest emissions in the red wavelengths. As luck would have it, the human eye is all but color blind to red light under dim light conditions.

Arguably, the only objects more difficult to spot than emission nebulae are the opaque profiles of dark nebulae. These cosmic dust clouds are themselves invisible; we only see their silhouettes against the starry backdrop. No starry backdrop, no dark nebula; it's that simple.

And that brings us to this month's double challenge in Cygnus. **IC 5146**, known to many by its nickname, the Cocoon Nebula, is a taxing patch of glowing gas, while **Barnard 168** is a thin, sinuous lane of darkness that seems to start at the nebula and extend far to its northwest.



*Above: Autumn star map from **Star Watch** by Phil Harrington.*



*Above: Finder chart for this month's Cosmic Challenge. Chart adapted from **Cosmic Challenge** by Phil Harrington. Click on the chart to open a printable PDF version in a new window.*

To spot this celestial odd couple for yourself, begin at the bright open cluster M39 to the northeast of Deneb [Alpha (α) Cygni]. Famous as a bright, loose congregation of stars and covering an area of sky as large as the Full Moon, M39 is best appreciated at very low powers. Be sure to take a moment to enjoy the view.

From M39, steer your telescope 2½° east-northeast to 4th-magnitude Pi2 (π2) Cygni, and then slowly scan southward, watching for the starry background to drop off abruptly. That will be Barnard 168. Because of its length -- more than a degree tip-to-tip -- Barnard 168 is best appreciated with binoculars. My 16x70s reveal a winding stream of black ink flowing through a valley in the stars, as I've tried to recreate in the sketch below.

Above: Sketch of IC 5148 and B168 as viewed through the author's 16x70 binoculars.

By following the dark cloud to its eastern end, you will come to a pair of 9.5-magnitude stars. Both are engulfed in the subtle clouds of the Cocoon. Armed with a 22-mm Tele Vue Panoptic eyepiece (46x), my 4-inch refractor can only muster the slightest hint of the nebula itself, looking like an oval glow surrounding those stars.

So-called nebula filters prove only moderately successful with the Cocoon. The biggest boost, modest as it is, through my 4-inch refractor is with a narrowband filter. A hydrogen-beta line filter also has a positive effect on the Cocoon, but only in larger apertures. A hydrogen-beta filter on my 4-inch scope renders the nebula invisible. Surprisingly, an oxygen-III filter, considered by experienced observers to be the most useful filter of all on emission nebulae, proves worthless with IC 5146 regardless of telescope aperture.

The question of who discovered IC 5146 is the subject of some debate. Most references state Thomas E. Espin was first to spot it on August 13, 1899. Espin was a British clergyman and astronomer who specialized in the study of binary stars using his observatory in Tow Law, a small town in the Wear Valley district of County Durham, England. Some dispute Espin's role as discoverer, however. While his is likely the first visual observation of the Cocoon, it was actually discovered photographically by Edward Emerson Barnard on October 11, 1893, using the 6-inch Willard lens at Lick Observatory.

Some sources claim that IC 5146 is a star cluster, not a nebula. In fact, a cluster of more than 100 young stars is embedded within the Cocoon Nebula. Espin's original notes, however, refer to his discovery as a "faint glow about 8 arc-minutes [across], well seen each night." The entry in Dreyer's Index Catalogue echoes Espin's words, referring to IC 5146 as "pretty bright, very large, irregularly faint, magnitude 9.5 star in the middle."

Credit for the first separate mention of the Cocoon's cluster actually belongs to the Swedish astronomer Per Collinder. Collinder's 1931 listing of open star clusters includes it as Collinder 470. According to Brent Archinal and Steven Hynes in their book Star Clusters (Willmann-Bell, 2003), Collinder himself apparently caused the confusion when he incorrectly cross-labeled the cluster as IC 5146. This error has since been carried over to many other references, including the first edition of the popular Uranometria 2000.0 star atlas. Modern studies show that 110 stars belong to Collinder 470, including the two 9.5-magnitude stars embedded within the Cocoon's clouds. Unfortunately, most of the other cluster stars are far too faint to be visible through amateur telescopes.

Have a favorite challenge object of your own? I'd love to hear about it, as well as how you did with this month's test. Contact me through my web site or post to this month's discussion forum.

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

Is Proxima Centauri's 'Earth-like' planet actually like Earth at all?

By Ethan Siegel

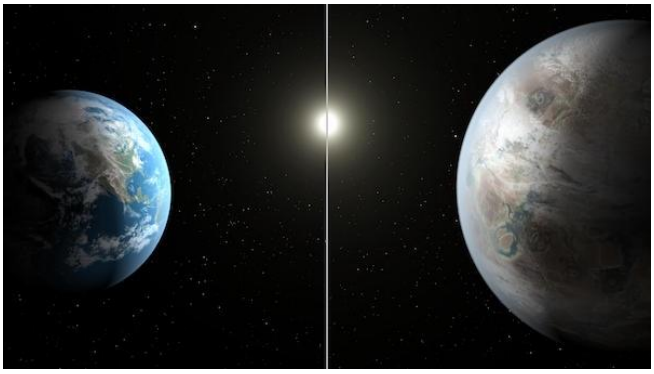
Just 25 years ago, scientists didn't know if any stars—other than our own sun, of course—had planets orbiting around them. Yet they knew with certainty that gravity from massive planets caused the sun to move around our solar system's center of mass. Therefore, they reasoned that other stars would have periodic changes to their motions if they, too, had planets.

This change in motion first led to the detection of planets around pulsars in 1991, thanks to the change in pulsar timing it caused. Then, finally, in 1995 the first exoplanet around a normal star, 51 Pegasi b, was discovered via the "stellar wobble" of its parent star. Since that time, over 3000 exoplanets have been confirmed, most of which were first discovered by NASA's Kepler mission using the transit method. These transits only work if a solar system is fortuitously aligned to our perspective; nevertheless, we now know that planets—even rocky planets at the right distance for liquid water on their surface—are quite common in the Milky Way.

On August 24, 2016, scientists announced that the stellar wobble of Proxima Centauri, the closest star to our sun, indicated the existence of an exoplanet. At just 4.24 light years away, this planet orbits its red dwarf star in just 11 days, with a lower limit to its mass of just 1.3 Earths. If verified, this would bring the number of Earth-like planets found in their star's habitable zones up to 22, with 'Proxima b' being the closest one. Just based on what we've seen so far, if this planet is real and has 130 percent the mass of Earth, we can already infer the following:

- It receives 70 percent of the sunlight incident on Earth, giving it the right temperature for liquid water on its surface, assuming an Earth-like atmosphere.
- It should have a radius approximately 10 percent larger than our own planet's, assuming it is made of similar elements.
- It is plausible that the planet would be tidally locked to its star, implying a permanent 'light side' and a permanent 'dark side'.
- And if so, then seasons on this world are determined by the orbit's ellipticity, not by axial tilt.

Yet the unknowns are tremendous. Proxima Centauri emits considerably less ultraviolet light than a star like the sun; can life begin without that? Solar flares and winds are much greater around this world; have they stripped away the atmosphere entirely? Is the far side permanently frozen, or do winds allow possible life there? Is the near side baked and barren, leaving only the 'ring' at the edge potentially habitable? Proxima b is a vastly different world from Earth, and could range anywhere from actually inhabited to completely unsuitable for any form of life. As 30m-class telescopes and the next generation of space observatories come online, we just may find out!



An artist's conception of the exoplanet Kepler-452b (R), a possible candidate for Earth 2.0, as compared with Earth (L). Image credit: NASA/Ames/JPL-Caltech/T. Pyle.

Centennial Observatory and Faulkner Planetarium

Herrett Telescope CSI Centennial Observatory

Event	Place	Date	Time	Admission
Monthly Free Star Party International Observe the Moon Night	Centennial Observatory	Saturday, October 8th, 2016	7:30 PM to midnight	FREE
Astronomy Talk: "Introducing Capricornus, the Sea Goat"	Faulkner Planetarium	Wednesday, November 2nd, 2016	6:30 to 7:30 PM	Adults: $2.50 Children (7-17) & CSI students: $1.50 Ages 0-6: FREE
Astronomy Talk Night Telescope Viewing	Centennial Observatory	Wednesday, November 2nd, 2016	7:30 to 9:30 PM	Free with Astronomy Talk admission
Telescope Tuesday	Centennial Observatory	Tuesday, November 8th, 2016	6:30 to 9:00 PM	$1.50 or free with Faulkner Planetarium admission

Faulkner Planetarium Show Times

To find out what shows are available, and to view trailers click this link:
Now Showing

About the Magic Valley Astronomical Society

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

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:
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 circa 1980.