

Snake River Skies

The Newsletter of the Magic Valley Astronomical Society

www.mvastro.org

Membership Meeting

Saturday, June 11th 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,

When summer comes around, opportunities come around. For example, the Hagerman Star Party and the Craters of the Moon Star Party were on the first weekend of the month, and later this summer, we'll be at the City of Rocks.

Yet another opportunity arises; as one of our members has pointed out, the Astronomical League has one for those of you who do astronomical outreach. We as a group reviewed the site

(<https://www.astroleague.org/al/obsclubs/outreach/outreach.html>) last month, and believe it is an easy, worthwhile achievement to undertake.

At this time, I would like to invite all members to examine this website, and then find a little bit of time to apply for the award. For a group as small as ours, we put in a significant amount of time volunteering, and this is a chance to let others know what can be done.











In the meantime, please enjoy the summer weather. June your views be clear.

Clear Views,

Robert Mayer

Calendars for March

Event Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3 Hagerman Fossil Bed Star Party 	4 Craters Star Party 
5 New Moon Lunation 1156 	6 Moon at greatest N Declination (+18.5°) 	7	8	9	10	11 General Membership mtg. at the Herrett Center 7:00p Public Star Party at the Observatory
12 First Quarter 52% Visible 	13	14 Flag Day 	15	16	17	18
19 Father's Day 	20 Full Moon Strawberry Moon 	21 Summer Solstice 	22	23	24	25
26	27 Last Quarter 53% Visible 	28	29	30		

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

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Celestial Events

Event Calendar

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

- 6/1 Venus is 5.2° north of the first-magnitude star Aldebaran (Alpha Tauri) at 10:00; Uranus is 2.3° north-northwest of the Moon at 15:00
- 6/2 Neptune is at western quadrature at 3:00
- 6/3 Saturn (angular size 18.4", magnitude 0.0) is at opposition at 7:00; Mercury is 0.73° north of the Moon, the Moon is at perigee, subtending 33' 5" from a distance of 361,140 kilometers (224,402 miles), at 10:56
- 6/4 The Moon is 8.8° south of the bright open cluster M45 (the Pleiades) at 3:00; Jupiter is at eastern quadrature (90 degrees east of the Sun) at 11:00
- 6/5 Venus is 4.9° north of the Moon at 2:00; Mercury is at greatest western elongation (24.2°) at 9:00
- 6/6 The Moon is 5.7° south of the bright open cluster M35 in Gemini at 8:00; Venus is in superior conjunction.
- 6/7 Venus is at the ascending node at 1:00
- 6/8 The Moon is 4.5 degrees south of the bright open cluster M44 (the Beehive Cluster or Praesepe) at 21:00; Mercury is at its greatest latitude south of the plane of the ecliptic at 23:00
- 6/10 The Moon is 1.9° south-southwest of the first-magnitude star Regulus (Alpha Leonis) at 14:00
- 6/11 Jupiter is 1.4 degrees north-northeast of the Moon at 19:00; the Moon is at the ascending node at 22:22
- 6/12 The Purbach Cross or Lunar X, an X-shaped illumination effect involving various rims and ridges between the craters La Caille, Blanchinus, and Purbach, is predicted to occur at 12:07; the equation of time - the difference between apparent time and mean time - is zero at 17:00
- 6/13 Mars is at heliocentric conjunction with Saturn at 7:00; Mercury is 6.7° south-southeast of M45 at 16:00
- 6/14 The earliest sunrise of the year at latitude 40° north occurs today; Neptune is stationary in right ascension.
- 6/15 The Moon is 5.1° north-northeast of the first-magnitude star Spica (Alpha Virginis) at 1:00; the Moon is at apogee, subtending 29' 30" from a distance of 405,024 kilometers (251,670 miles), at 12:00
- 6/17 The earliest morning twilight of the year at latitude 40 degrees north occurs today; Mars is 6.9° south-southwest of the Moon at 13:00
- 6/18 Asteroid 2 Pallas (magnitude +9.1) is stationary at 15:00
- 6/19 Saturn is 3.2° south of the Moon at 1:00; Mercury (magnitude -0.5) is 3.8° north-northwest of the first-magnitude star Aldebaran (Alpha Tauri) at 7:00; Venus is 0.41 degree south of M35 at 15:00
- 6/21 Venus is at its greatest declination north (23.9°) at 1:00; the Sun enters the constellation of Gemini at 8:00; comet C/2013 X1 (PanSTARRS) passes closest to the Earth at 11:00; Pluto is 2.9° south of the Moon at 20:00
- 6/22 Mercury (magnitude -0.8) is 1.9° north-northwest of the asteroid 4 Vesta (magnitude +8.4) at 18:00
- 6/24 The latest evening twilight of the year at latitude 40° north occurs today
- 6/25 Asteroid 3 Juno (magnitude +10.2) is stationary at 17:00
- 6/26 Neptune is 1.2° south of the Moon, with an occultation occurring in the western portion of Russia and northern and central Europe, at 1:00; the moon is at the descending node at 5:30
- 6/27 The latest sunset of the year at latitude 40° north occurs today;
- 6/28 Mercury is at the ascending node at 0:00; Uranus is 3° north of the Moon at 23:00; the Curtiss Cross, an X-shaped illumination effect located between the craters Parry and Gambart, is predicted to occur at 15:11
- 6/30 Mars is stationary in right ascension at 8:00

Giovanni Cassini (1625-1712), Charles Messier (1730-1817), and George Ellery Hale (1868-1938) were born this month.

The Moon is 25.2 days old, is illuminated 22.9%, subtends 32.3 arc minutes, and is located in Pisces on June 1st at 0:00 UT. The Moon is at its greatest northern declination of +18.5 degrees on June 6th and at its greatest southern declination of -18.6 degrees on June 21st. Longitudinal libration is at a maximum of +6.9 degrees on June 9th and a minimum of -5.2 degrees on June 24th. Latitudinal libration is at a maximum of +6.5 degrees on June 5th and a minimum of -6.6 degrees on June 19th. New Moon occurs on June 5th. The Hesiodus Sunrise Lunar Ray is predicted to begin at 3:16 UT on June 14th. See <http://www.lunar-occultations.com/iota/iotandx.htm> for information on lunar occultations taking place this month. Visit <http://saberdoesthestars.wordpress.com/2011/07/05/saber-does-the-stars/> for tips on spotting extreme crescent Moons. 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, the Moon, & the Planets



The Sun is located in Taurus on June 1st. It enters Gemini on June 21st. The Sun reaches its farthest position north for the year on June 21st. There are 15 hours of daylight at latitude 40 degrees north on the day of the summer solstice. At latitude 40 degrees north, the earliest sunrise occurs on June 14th and the latest sunset on June 27th.

Mars is in the south, Jupiter is in the southwest, and Saturn is in the southeast in the evening sky. At midnight, Mars and Saturn lie in the south and Jupiter in the west. Mercury and Uranus can be found in the east, Saturn in the southwest, and Neptune in the southeast at dawn.

At midmonth, Mercury is visible in morning twilight, Mars transits the meridian at 11:00 p.m. local daylight time and sets at 4:00 a.m. local daylight time, Jupiter sets at 1:00 a.m. local daylight time, and Saturn is visible for the entire night, for observers at latitude 40 degrees north. Mercury is in close conjunction with the Moon on June 3rd. The speediest planet is at greatest western elongation on June 5th and is at greatest heliocentric latitude south on June 8th. Mercury reaches its highest point in the sky, about seven degrees above the horizon, for observers at latitude 40 degrees north on June 12th and is at the ascending node on June 28th.

Venus is in superior conjunction with the Sun on June 5th and is consequently not visible this month.

Mars fades rapidly this month, dropping in brightness from magnitude -2.0 to magnitude -1.4 and shrinking in apparent size from 18.6 to 16.4 arc seconds during June. The Martian axis is tilted approximately 15 degrees towards the Earth in June. The Red Planet lies 12 degrees west-northwest of the first-magnitude star Antares (Alpha Scorpii) and 15 degrees west of Saturn as June begins. Mars is at heliocentric conjunction with Saturn on June 13th. During the last week of June, Syrtis Major and Hellas are near the central meridian at midnight local daylight time. Mars resumes prograde (eastward) motion on June 30th. On that date, it is situated 20 arc minutes from the globular cluster NGC 5897 (magnitude +8.4). Martian surface features can be identified using the map posted at http://www.bluewaterastronomy.info/resources/MapsCharts/Mars-map-ALPO_color.jpg

During June, Jupiter decreases in angular diameter from 37.3 to 34.4 arc seconds and dims from magnitude -2.1 to magnitude -1.9. The largest planet sets around midnight by the end of the month. It reaches eastern quadrature on June 4th. The fifth-magnitude star Chi Leonis passes 5.5 arc minutes north of Jupiter on June 10th. Browse <http://www.skyandtelescope.com/observing/interactive-sky-watching-tools/> or http://www.projectpluto.com/jeve_grs.htm in order to determine transit times of Jupiter's central meridian by the Great Red Spot. GRS transit times are also available on page 51 of the June issue of Sky & Telescope.

Saturn shines at magnitude 0.0 when it reaches opposition on June 3rd. Information on the planet at opposition appears on pages 49 and 50 of the June issue of Sky & Telescope. At midmonth, Saturn shines at magnitude +0.1 and spans 18.4 arc seconds as it retrogrades in Libra. Its rings subtend 42 arc seconds and are inclined by 26 degrees. Titan is due north of Saturn on June 5th and June 21st and due south of the planet on June 13th and June 29th. Saturn's peculiar satellite Iapetus shines at eleventh magnitude when it passes 2.1 arc minutes south of the planet on June 1st/June 2nd. It brightens to tenth magnitude when it reaches greatest western elongation nine arc minutes from Saturn on June 21st/June 22nd. The sixth-magnitude star SAO 184541 is situated between Iapetus and Saturn at the time.

During June, Uranus lies about four degrees west of the fourth-magnitude star Omicron Piscium. Uranus passes 2.6 degrees north-northwest of the Moon on June 28th.

Neptune rises around midnight by month's end. The eighth planet is located one half of a degree southeast of the fourth-magnitude star Lambda Aquarii. Neptune is at western quadrature on June 2nd, begins retrograde motion on June 14th, and passes 1.2 degrees north of the Moon on the night of June 26th.

Finder charts for Uranus and Neptune, both of which are poorly placed for northern latitude observers this month, can be found at <http://www.nakedeyeplanets.com/uranus.htm> and <http://www.nakedeyeplanets.com/neptune.htm>

Pluto lies 2.7 arc minutes southwest of the third-magnitude star Pi Sagittarii in northeastern Sagittarius on June 26th (see page 43 of the June issue of Astronomy). A finder chart appears on page 243 of the RASC Observer's Handbook 2016.

Asteroids



Asteroid 10 Hygeia shines at eleventh magnitude as it heads southeastward through Leo and into Virgo this month. The fourth largest main-belt asteroid passes one degree south of Upsilon Virginis on June 21st and June 22nd. Some of the brighter asteroids reaching opposition this month include 8 Flora (magnitude +9.4) on June 11th, 704 Interamnia (magnitude +10.4) on June 18th, and 354 Eleonora (magnitude +10.7) on June 26th. Information on asteroid occultations taking place this month is available at http://www.asteroidoccultation.com/2016_06_si.htm

Comets



Comet C/2013 X1 (PanSTARRS) may shine at sixth or seventh magnitude as it passes southwestward through Aquarius in June. The comet passes south of the planetary nebula NGC 7293 (magnitude +7.3) on June 4th. Visit <http://cometchasing.skyhound.com/> and <http://www.aerith.net/comet/future-n.html> for additional information on this and other comets visible during June.

Meteors



The usually minor June Boötids meteor shower, which peaks on the morning of June 27th, is adversely affected by moonlight this year. June Boötids are the slowest of all meteors, travelling at 18 kilometers (11 miles) per second. Browse <http://imo.net/files/data/calendar/cal2016.pdf> for additional information.

Carbon Star



Notable carbon star for June: V Coronae Borealis is a Mira-type long period variable star and carbon star in the constellation Corona Borealis. Its apparent magnitude varies between 6.9 and 12.6 over a period of 357 days. Right ascension: 15^h 49^m 31.31093^s / Declination: +39° 34' 17.9111"



Aurora and Moonlight over Godfjorden Mountains Kveøya, Northern Norway Image: Stian Klo

The Deep Sky



Fifty deep-sky objects for June: NGC 5466, NGC 5676, NGC 5689 (Bootes); M102 (NGC 5866), NGC 5678, NGC 5879, NGC 5905, NGC 5907, NGC 5908, NGC 5949, NGC 5963, NGC 5965, NGC 5982, NGC 5985, NGC 6015 (Draco); NGC 5694 (Hydra); NGC 5728, NGC 5791, NGC 5796, NGC 5812, NGC 5861, NGC 5878, NGC 5897 (Libra); M5, NGC 5921, NGC 5957, NGC 5962, NGC 5970, NGC 5984 (Serpens Caput); M101, NGC 5473, NGC 5474, NGC 5485, NGC 5585, NGC 5631 (Ursa Major); NGC 5566, NGC 5634, NGC 5701, NGC 5713, NGC 5746, NGC 5750, NGC 5775, NGC 5806, NGC 5813, NGC 5831, NGC 5838, NGC 5846, NGC 5850, NGC 5854, NGC 5864 (Virgo)

Top ten deep-sky objects for June: M5, M101, M102, NGC 5566, NGC 5585, NGC 5689, NGC 5746, NGC 5813, NGC 5838, NGC 5907

Top five deep-sky binocular objects for June: M5, M101, M102, NGC 5466, NGC 5907

Challenge deep-sky object for June: Abell 2065 is a highly concentrated galaxy cluster in the constellation of Corona Borealis containing over 400 member galaxies, the brightest of which are 16th magnitude.



Abell 2065

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

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

ISS

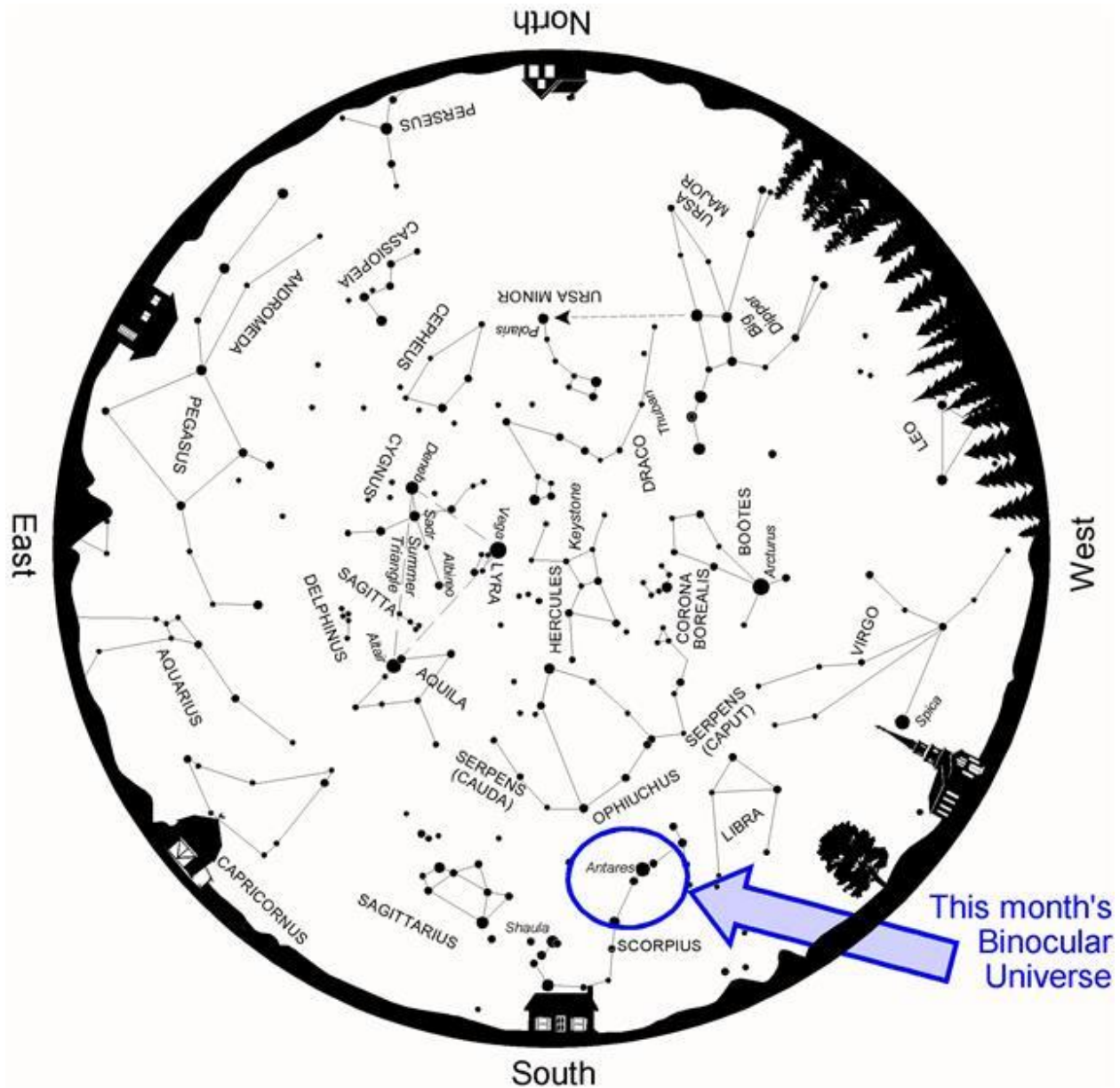


Information on Iridium flares and passes of the ISS, the Tiangong-1, the X-37B, the HST, and other satellites can be found at <http://www.heavens-above.com/> Receive ISS Pass alerts via e-mail <http://www.calsky.com/> or receive texts and e-mails direct from NASA <http://spotthestation.nasa.gov/>

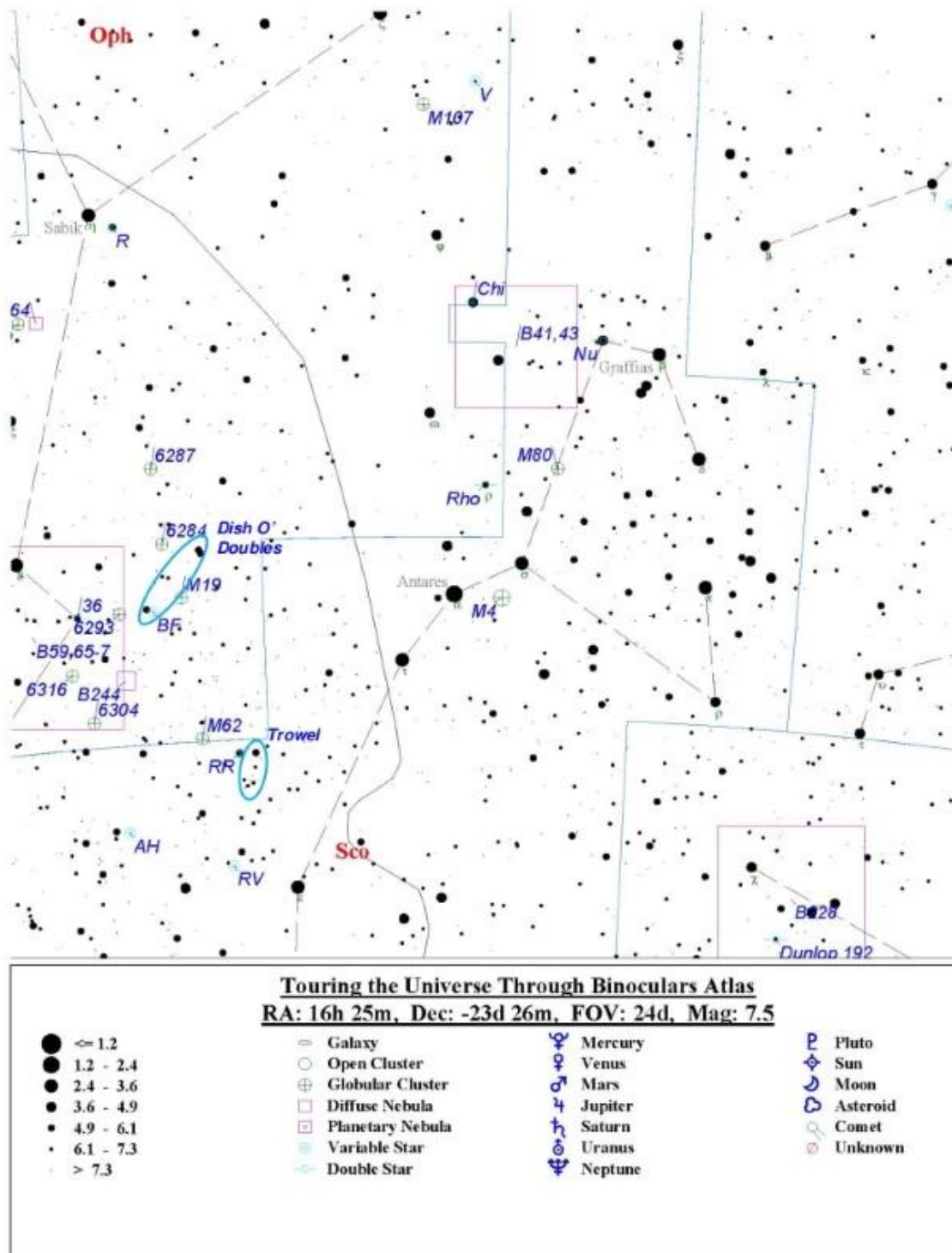
Be Safe - Go Outside - Explore Your Universe

Looking through the Eyepiece – Binocular Universe

First its claws rise above our southeastern horizon. Then comes its brilliant red heart. Finally the hook-shaped tail makes an appearance. **Scorpius, the Scorpion**, is one of the most recognizable constellations in the entire sky. Within its borders is a bountiful selection of beautiful deep-sky objects strewn across some of the finest heavenly star fields. One of my favorite ways to spend a warm, clear summer evening is to simply sit back and casually scan the Scorpion's crooked body from head to toe. Along the way are many elegant asterisms, clusters and nebulae which provide hours of fascinating sky watching.



Above: Summer star map from [Star Watch](#) by Phil Harrington.
Click the chart to open a printable PDF version in a new window.



Above: Finder chart for this month's *Binocular Universe*. Chart adapted from [Touring the Universe Through Binoculars Atlas \(TUBA\)](#) by Phil Harrington and Dean Williams. Click on the chart to open a printable PDF version in a new window.

Brilliant **Antares** is dazzling in our southern summer sky, like a lighthouse beacon peering out from among an ocean of fainter stars. Even though it is more than 600 light years away, Antares is one of the sky's brightest stars because of its immense size. We were discussing the B-V Index system for rating a star's color in last month's column. Recall that a positive number indicates an orange or red star, while a negative value is toward the blue end of things. Antares has an index value of +1.8. A positive value is not unexpected for a red supergiant nearing the end of its life. The hydrogen-to-helium fusion process powering Antares since birth has run its course, causing the star to swell to enormous proportions.

Antares is so large that if it were placed where our Sun is, its outer edge would extend nearly to the orbit of its namesake, Mars. (I say namesake because Ant-Ares literally translates as "rival of Mars," owing to the star's similar appearance to the Red Planet as well as its proximity to the ecliptic. You can judge for yourself this month, since Mars is truly Antares' rival this month as it lies just west across the border in Libra).

Antares is always a fun object to enjoy through binoculars. Its deep reddish color, rivaling that of Betelgeuse in winter's Orion, is readily apparent. Often, however, Antares appears to flash through many other colors because of interference from our atmosphere. The fact that Antares rides so low in most of our skies only accentuates this sparkling effect.

With Antares immersed in the glow of the Milky Way, it makes a wonderful jumping off point for many hidden treasures that lie in wait. Let's begin with the globular cluster **M4**. You don't need to move a muscle to see it once you're staring at Antares; just look half a degree to its west. Look for a dim, round glow that resembles a distant ball of cotton.

At 7,200 light years away, M4 is relatively close to us as globular clusters go. This makes it appear bigger than most, and easy to identify through even 6x binoculars. But because M4 is quite loosely structured, its lack of a condensed center can confound observers who must battle light pollution.

Scorpius is also home to a second Messier globular cluster that proves more challenging through binoculars. **M80's** small, dim disk rests halfway between Antares and Beta (β) Scorpii. Although its star-like core makes it more typical of the breed, M80 is tiny compared to M4, so identifying it from among all the surrounding stars can be a challenge.

Two degrees southeast of M80 and 3° northwest of Antares, we find **Rho (ρ) Ophiuchi**, a striking triple star for binoculars. Here, we find a 5th-magnitude primary star set in a tight triangle with 6th and 8th magnitude companions. All three are spectral class B. While the same class, they are not the same size. The primary is a subgiant, while the others are dwarf stars. All appear the slightest bit blue through binoculars. Two other members of the system remain unseen in binoculars, but raise Rho Ophiuchi to a quintuple star.

The family Rho is also surrounded by very colorful but extremely faint clouds of reflection and dark nebulosity. The bright clouds are collectively catalogued as **IC 4604**, while the dark nebula is listed as **Barnard 42**. Although they record vividly in photographs, I do not know of any visual sightings of either. We can certainly see their influence, however. The opaque dust dims Rho by two magnitudes. Lousy pollution!

Now, place Antares at the western edge of the field and look on the opposite side for a close-set pair of 5th-magnitude stars, lying across the invisible border in Ophiuchus. The globular cluster **M19** lies just a degree to their south. Looking a little larger and a little brighter than M80, M19 should reveal itself as a slightly fuzzy "star" through 7x binoculars. While viewing M19 through his 10x50 binoculars, amateur Jim Elliott from Lee County, NC, once pointed out that there is an unusual arc of three optical double stars curving around M19 to the northeast. I call this curious assembly of stars, which include 24, 26 and 36 Ophiuchi, the **Dish O' Doubles**, since they remind me of a satellite dish, with M19 at the focus. On paper, **M62** sounds as though it should be a twin of M19. But when you look for it, about half a field to M19's south, it proves more difficult to see.

Observing from the Naylor Observatory outside of Harrisburg, PA, several summers ago, CN'er Dave Mitsky described M62 as "a small, featureless fuzzy through my 8x42 binoculars. However, my 15x70 binoculars revealed a brighter, stellar core." One of my favorite summertime asterisms lies just 1.5° southwest of M62. If you're a gardener, you'll recognize it right away as a celestial **garden trowel**. Give John Davis from Amherst, MA, credit for digging up this one. Davis draws the trowel from three 7th-magnitude stars set in a southward-pointing triangle and a trail of three additional 6th- and 7th-magnitude stars meandering off to the north. While most of the Trowel's stars are white, two or three shine with a subtle golden glint.

Looking for more to look at this month? The list below will keep you busy for many a night!

Object	Con	Type	R.A.	Dec	Mag	Size/Sep/ Period	Notes
			(2000)				
RU	Lib	Vr	15 33.3	-15 20	7.2-14.2	316.56 days	Long Period Variable
B228	Lup	Dk	15 45.5	-34 24		240'x20'	*TUB page 171*
Dunlop 192	Lup	**	15 47.1	-35 31	7.2,7.5	35"	143° (1938)
Rho	Oph	**	16 25.6	-23 27	5,8,7	151",156"	*TUB page 186-187* 0°,253°;10049
V	Oph	Vr	16 26.7	-12 26	7.3-11.6	297.99 days	Long Period Variable
Chi	Oph	Vr	16 27	-18 27	4.2-5.0		Irregular Gamma Cas type
M107	Oph	GC	16 32.5	-13 3	8.1	10'	*TUB page 187* NGC 6171
M62	Oph	GC	17 1.2	-30 7	6.6	14'	*TUB page 187* NGC 6266
M19	Oph	GC	17 2.6	-26 16	7.1	14'	*TUB page 188* NGC 6273
6284	Oph	GC	17 4.5	-24 46	9.0	6'	
6287	Oph	GC	17 5.2	-22 42	9.2	5'	
BF	Oph	Vr	17 6.1	-26 35	6.9-7.6	4.068 days	Cepheid
R	Oph	Vr	17 7.8	-16 6	7.0-13.8	302.57 days	Long Period Variable
B244	Oph	Dk	17 10.1	-28 24		30'x20'	
6293	Oph	GC	17 10.2	-26 35	8.2	8'	
6304	Oph	GC	17 14.5	-29 28	8.4	6'	
36	Oph	**	17 15.3	-26 36	5,6,8	732",208"	*TUB page 188* 10417
6316	Oph	GC	17 16.6	-28 8	9.0	5'	
B64	Oph	Dk	17 17.2	-18 32		20'	*TUB page 188*
M9	Oph	GC	17 19.2	-18 31	7.9	9'	*TUB page 188* NGC 6333
B59,65-7	Oph	Dk	17 21	-27 0		300'x160'	*TUB page 188* Stem of Pipe Neb
Nu	Sco	**	16 12	-19 28	4.3,6.4	41"	337° (1955);9951
M80	Sco	GC	16 17	-22 59	7.2	9'	*TUB page 224* NGC 6093
B41,43	Sco	Dk	16 22	-19 40		200'x80'	
M4	Sco	GC	16 23.6	-26 32	6.0	26'	*TUB page 224-225* NGC 6121
RR	Sco	Vr	16 56.6	-30 35	5.0-12.4	279.42 days	Long Period Variable
RV	Sco	Vr	16 58.3	-33 37	6.6-7.5	6.061 days	Cepheid
AH	Sco	Vr	17 11.3	-32 30	8.1-12.0p	713.6 days	Semi-Regular

Let me close with some good news, some bad news, and then some more good news. First, the good news. As subscribers to *Astronomy* magazine may have already discovered, the July issue contains the first installment of my resurrected *Binocular Universe* monthly column. I say resurrected because the column ran there every month from June 2005 until May 2009. Beginning the following month, *Binocular Universe* migrated to CN, which brings us to this day. So, what's the bad news? Rather than try to produce two quality features every month, I have told the Cloudynights team that this will be my final BU column here on CN. It's been a wonderful run. Along the way, I have communicated with many fellow binocularists who share my passion for the two-eyed sky. Thank you all so much for your support. And the second good news? I am not disappearing from Cloudynights! Au contraire, I will be right back here next month, starting a new monthly feature based on the concept of my book [Cosmic Challenge](#). Each month, we will search for objects that are purposely difficult to find. After all, half the thrill is in the hunt, isn't it? Some columns will feature challenging targets for large telescopes, other months will hunt for prey suitable for smaller instruments, and still others will be geared for binoculars or the eye alone. I hope you will join me here to test your observational skills. That's it. So, until we meet back here again, remember that two eyes are better than one.

About the Author: Phil Harrington is a contributing editor to *Astronomy* magazine and author of 9 books on astronomy, including *Touring the Universe Through Binoculars*. Visit his web site at www.philharrington.net to learn more. **Phil Harrington's Binocular Universe** is copyright 2016 by Philip S. Harrington. Reprinted in this newsletter with the written permission of the copyright holder.



Centennial Observatory and Faulkner Planetarium



Herrett Telescope CSI Centennial Observatory

Event	Place	Date	Time	Admission
Summer Solar Session #1	Centennial Observatory	Wednesday, June 1 st , 2016	1:30 to 3:30 PM	FREE
<u>Hagerman Star Party</u>	Hagerman Fossil Beds National Monument	Saturday, June 4 th , 2016	1:00 PM to 12:00 AM	FREE
Summer Solar Session #2	Centennial Observatory	Wednesday, June 8 th , 2016	1:30 to 3:30 PM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, June 11 th , 2016	9:30 PM to 12:00 AM	FREE
Summer Solar Session #3	Centennial Observatory	Wednesday, June 15 th , 2016	1:30 to 3:30 PM	FREE
Summer Solar Session #4	Centennial Observatory	Wednesday, June 22 nd , 2016	1:30 to 3:30 PM	FREE
Summer Solar Session #5	Centennial Observatory	Wednesday, June 29 th , 2016	1:30 to 3:30 PM	FREE

Faulkner Planetarium Show Times

The schedule has changed for the summer months and may be viewed here.

<http://herrett.csi.edu/astronomy/planetarium/showtimes.asp>

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 Juneer, 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.