



Snake River Skies

The Monthly Newsletter of the
Magic Valley Astronomical Society
June 2013



www.mvastro.org

The Street Astronomer's Guide to Idaho Astronomy Resources
www.nearsys.com

Membership Meeting

Saturday, June 11th
at the Herrett Center
Join us at 7:00 pm



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The following is a source of information provided by Dr. L. Paul Verhage, PhD

Easy Star Gazing Notes:

An online copy of the Easy Star Gazing class and links is available at nearsys.com/easy

Idaho Skies Radio Program:

Radio Boise (89.9 FM Caldwell/Boise and 93.5 FM Garden City) presents a regularly scheduled astronomy program at the following times:

Tuesday at 3:30 PM
Wednesday at 3:30 PM
Thursday at 7:30 PM
Friday at 10:30 AM and 10:30 PM
Sunday at 8:30 PM

Follow Idaho Skies tweets at www.twitter.com/Idahoskies

The Idaho Skies blog is located at <http://idahoskies.blogspot.com>

Monthly Star Maps

Free stars maps are available online at

<http://www.skymaps.com/downloads.html> Click the Northern Hemisphere PDF file in the left column

Idaho Astronomy Clubs

Boise Astronomical Society (BAS) Boise's astronomy club meets on the second Friday of the month at the Discovery Center of Idaho. Meetings begin at 7:00 PM, except for July, December, and an annual planetarium meeting which are a members only event.
<http://www.boiseastro.org>






Idaho Falls Astronomical Society (IFAS) Idaho Falls' astronomy club meets on the third Tuesday of the month at the Skyline Activity Center, 1575 N. Skyline Dr. Meetings begin at 7:00 PM. <http://www.ifastro.org>

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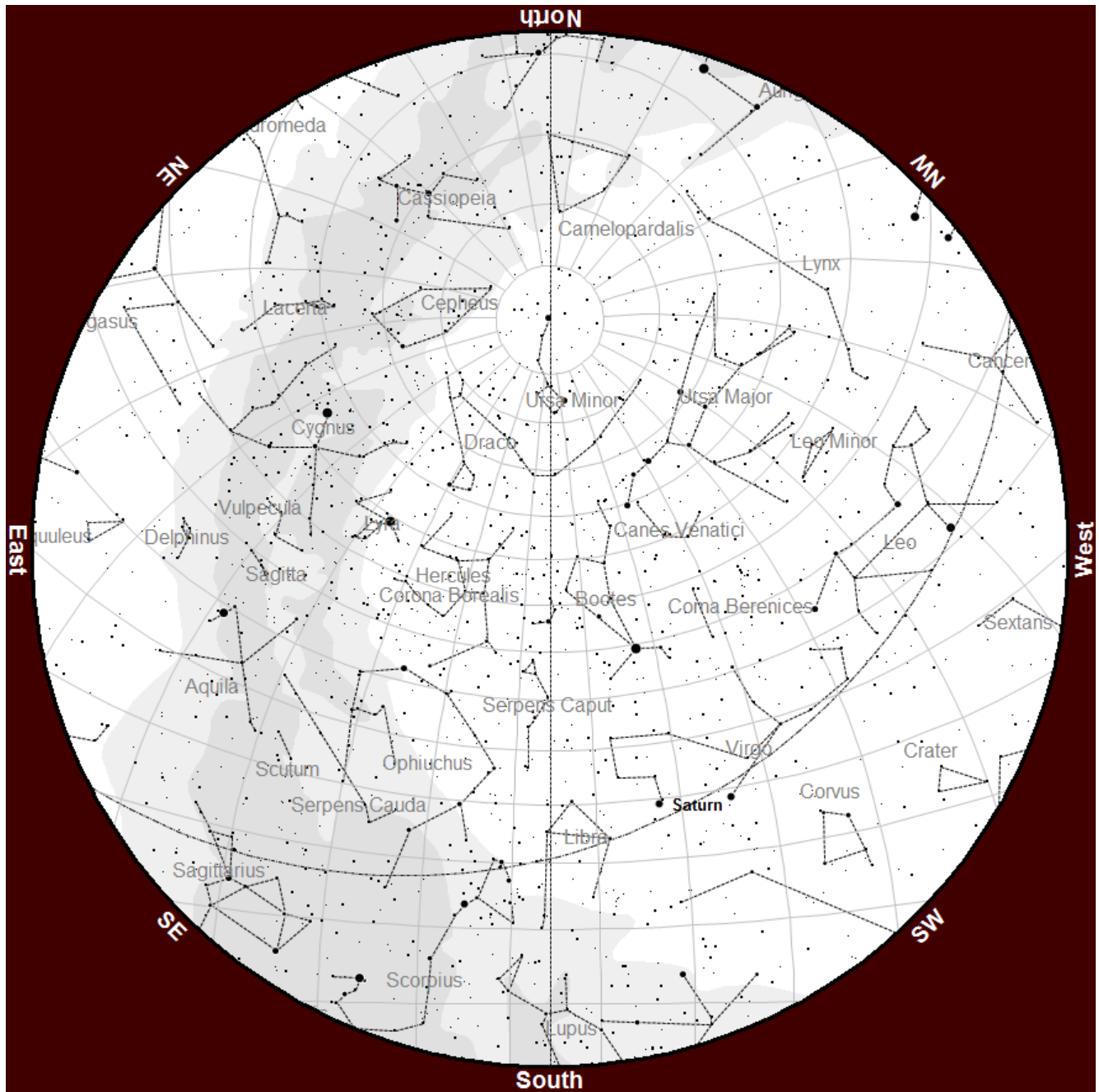
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Calendar for June

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7 	8 Monthly Membership Meeting Herrett Center 7:00pm Public Star Party Centennial Observatory
9	10	11	12	13	14	15
16 Father's Day First Quarter Moon 	17	18	19	20	21 Summer Solstice 	22
23 Full Moon 	24	25	26	27	28	29
30 Last Quarter Moon 						

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Planisphere for June

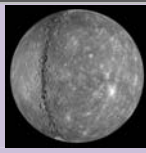


Planisphere should be used as a guide for the month of June, mid-month, end of astronomical twilight (23:30) Planisphere is provided as a courtesy from Chris Anderson, Coordinator, Centennial Observatory, Herrett Center for Arts & Science - College of Southern Idaho, Twin Falls, ID

Trivia Time

Gemini 4's (3–7 June 1965) crew originally intended to call their spacecraft American Eagle, but this was rejected after NASA management issued a memo saying that they did not want a repeat performance of the previous mission, on which Gus Grissom had named his spacecraft Molly Brown. The call sign for the mission became simply Gemini 4. There was no patch flown on the crew's suits. Since McDivitt and White were prohibited from naming their spacecraft, they decided to put the American flag on their suits, the first astronauts to do so, although Soviet crews wore the Cyrillic "CCCP" on their spacesuit helmets. Previous astronauts had only had the NASA insignia and a strip with their name on their suits.


Solar System Highlights



Mercury In the evening twilight as June starts, innermost Mercury can be seen setting in the west. To its lower right Venus glows brighter, and after another small span to the lower right of Venus is the planet Jupiter. This is the tightest three-planet grouping visible with the naked eye until the year 2026! Despite seemingly crossing paths, the planets remain quite a distance from the Earth and each other. Mercury is 96 million miles away, Venus 150 million miles and Jupiter is 567 million miles away.



Venus At the beginning of June, Venus spans 10.3" across and shows a disk 96-percent lit. By late in the month, the disk has grown to 11.2" and the phase has shrunk to 90-percent illumination. The planet shines at a stunning -4 magnitude, about ten times brighter than the brightest star Sirius, and by far the brightest celestial object after the Sun and Moon. Venus is so bright due to a combination of factors.



Mars is very slowly returning to dawn visibility. In late June, skywatchers can use binoculars to look for its magnitude +1.5 speck a mere 5° lower right of Alnath, the star Beta in the constellation Taurus. The planet comes up approximately one hour before the Sun and can be glimpsed briefly very low in the east-northeast during early dawn.



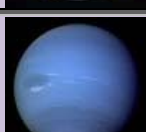
Jupiter Gas giant Jupiter requires your attention as soon as it gets dark, before it gets too low to observe. In the first days of June, look for Jupiter below Mercury and Venus, just a few degrees above the western horizon. After about June 5th, Jupiter will probably be swallowed in the afterglow of sunset and will become impossible to observe. The planet will be in conjunction with the Sun on June 19th.



Saturn Look for Saturn in the south as evening twilight fades, to the lower left of Spica and farther lower right of Arcturus. A small telescope will reveal Saturn's system of rings which span 40", surrounding a disk about 18" in diameter. The rings are tilted 18° to our line of sight, the widest open they have been since the year 2006.



Uranus Currently lies among the dim background stars of Pisces the Fish, near the constellation's southern border. To find it, wait until 3 A.M. local daylight time or later for this region to climb reasonably high. Then, Alpheratz and Algenib in Pegasus. Next, draw an imaginary line between these two bright stars and continue it 15° to Algenib's south. Uranus should now be centered in your eyepiece's field.



Neptune Seek out Neptune just before dawn, in central Aquarius, 1° northwest of the 5th-magnitude star Sigma Aquarii. The distant world lies 2.8 billion miles from Earth and glows dimly at magnitude +7.9. A 4-inch diameter telescope is probably the minimum required to see the planet and resolve its disk, only 2.5" across.



Pluto Throughout June, Pluto can be found in the constellation Sagittarius, close to the 3rd-magnitude star Xi 2 Sagittarii. Search for it well after midnight, under a dark, moonless sky. Pluto glows at magnitude +14, and as a result, it is a challenge to spot. An 8-inch telescope on a perfect night brings Pluto to the edge of visibility. For a direct view, however, you will want to use at least a 10-inch scope.



Asteroid Antares is your signpost to this month's asteroid highlight: **88 Thisbe**. From the star, move your telescope 10° to the northwest and 88 Thisbe should be somewhere in your eyepiece's field.



Comets Comet C/2011 L4 PanSTARRS is circumpolar for observers located at mid-northern latitudes. It never sets and can be viewed all night, in the constellation Ursa Minor the Smaller Bear. PanSTARRS glows at 8th magnitude and appears as a dim, round fuzz ball roughly 5' across, with no hint of a tail. The comet's orbit is bringing it by the Sun for the first time.



Meteors This year the June Bootids reach a peak on June 27th, and can be seen from about June 22nd through until July 2nd. The shower's radiant - the point in the sky from which meteors appear to originate from - is located in northern Bootes, and will be excellently positioned as darkness falls. It will appear nearly overhead and will remain in view through the whole night.

Idaho Skies for June

Idaho Skies is a column for beginning amateur astronomers and those interested in astronomy. Suggestions about the column are gladly accepted by the columnist at streetastro@gmail.com. Check the Idaho Skies Twitter page for notices and images at www.twitter.com/IdahoSkies.

This month look for the star, Arcturus, the Lucida of the constellation of Boötes, the Herdsman. Arcturus is located 37 light years from earth. Therefore, if you were born in 1976, Arcturus is your birthday star this year. The word, Arcturus, means "Bear Guardian" and is a reference to its closeness to the Great Bear, or Ursa Major. As the constellation of the Big Bear wheels around the sky, the bright star Arcturus follows closely behind.

The light of Arcturus opened the 1933 World's Fair in Chicago. At that time, the best measurement of the distance to this star pegged it at 40 light years. Since the previous World's Fair in Chicago occurred forty years earlier, the starlight seen from Arcturus at the opening of the 1933 fair had left the star during the last fair. To open the 1933 World's Fair, a large telescope lens focused the Arcturian starlight on a photocell (a light-sensitive resistor). The electrical signal generated by the star's light shining on the photocell was used to switch on the lights of the fair.

Arcturus is a spectral type K star, meaning its cooler than our sun and produces less light per square foot of surface. Instead of being yellow like our sun (which is a G spectral type), Arcturus is a cooler orange. However, because of its larger diameter, Arcturus shines over 100 times more brightly than our sun. If its infrared radiation is included, then the star is over 200 times brighter than our sun. It would take 26 of our suns to span the diameter of Arcturus. If the star replaced the sun in our sky, it would cover an area of the sky two times larger than the palm of your outstretched hand. The surface of Arcturus would reach one-quarter of the way to the orbit of Mercury. Of course, the larger mass, diameter, and radiation from Arcturus would end all life on Earth with the possible exception of bacteria living far underground.

To find Arcturus, follow the bend of the handle of the Big Dipper. An arc drawn from the end of the Dipper's handle (actually the Large Bear's tail) leads you to Arcturus. In June, Arcturus passes almost directly overhead.

June 1 – 7

The first week of June is made for Mercury, Venus, and Jupiter. The two innermost planets remain close to Jupiter in our evening sky. Check the west-northwestern horizon about 30 minutes after sunset on the 1st. Jupiter, Venus, and Mercury will form a line inclined towards the upper-left. Jupiter will be very low and brighter Venus is above Jupiter. Mercury is located higher than both Jupiter and Venus. Venus continues to climb higher above the horizon this summer. Jupiter on the other hand is passing behind the sun soon and will reappear in the morning skies in another month. Mercury will climb a bit higher before reaching greatest eastern elongation, or its greatest distance from the sun. Then the solar system's smallest planet will begin its trip closer to the sun until it is lost in the sun's glare.

This will be a tough to observe, but on the 4th. Venus will be just above a cluster of stars named M-35. It's difficult because the sun will have recently set and it will still be dawn. You'll need to look close to, but before 10:30 PM as you can, because that's when Venus sets.

Speaking of dawn, there are three types of twilight, civil twilight, nautical twilight, and astronomical twilight. Civil twilight occurs when the center of the sun is 6 degrees below the horizon. At this time, we can only see the brightest stars. However, it is dark enough that we must turn on our car headlights. Nautical twilight occurs when the center of the sun is 12 degrees below the horizon. At this time, sailors cannot make nautical observations that use the horizon. So for example, sailor cannot see the horizon well enough to measure the elevation of the stars above it. The last type of end of twilight is astronomical twilight. That ends when the center of the sun is 18 degrees below the horizon. At the end of astronomical twilight, the sky is as dark as it will get.

June 8 – 14

The moon is new on the 8th. Two days later (the evening of the 10th), the young crescent moon passes very close to Mercury and Venus. Look for this trio of astronomical objects after 10:00 PM, but before 10:30. And use your binoculars. You need a clear west-northwestern horizon to see them as they will be low.

The 10th marks the tenth anniversary of the launch of the Spirit Mars Rover. For six years, this solar-powered rover traversed the Martian surface looking for evidence of water in Mars' past. Over that time, the rover traveled nearly five miles. Spirit's multiple measurements of the Martian rocks near the Columbia Hills indicated that water was present in the past. However, not very much water compared to the amount of water on Earth. Slight chemical alternations in the composition of rocks' outer layers, including the presence sulfates, are telling signs that water interacted with the minerals present at the Columbia Hills. Spirit's mission ended after it became stuck in soft Martian sand for a year.

Unable to extract itself, the rover could not properly position its solar array for the approaching winter. The limited sunlight prevented Spirit from acquiring enough power to survive the brutally cold Martian winter.

On June 12th, Mercury is at its greatest eastern elongation. Elongation is the distance that Mercury or Venus appears from the sun. The year Mercury reaches a distance of 24 degrees away from the sun. That sounds impressive, since 24 degrees is nearly 1/3rd of the way to the zenith. However, from our perspective at 43 degrees north of the equator, Mercury's distance away from the sun forms a slant with the horizon. So the planet will only appear ten degrees above horizon at 10:00 PM.

The earliest sunrise occurs on the 13th. From now on until mid December, the sun will set earlier each night.

June 15 – 21

Fifty years ago on the 16th, the Soviet Union launched Valentina Tereshkova into space onboard of Vostok 6. Until the mid 1960's, Soviet Premier Nikita Khrushchev directed his chief engineer Sergey Korolyov to create space firsts to upstage the United States. One of these firsts was launching the first woman into Earth orbit. Korolyov selected Valentina, a textile worker and amateur parachutist as the cosmonaut. Valentina spent nearly three days orbiting Earth in her spacecraft Vostok 6. Seeing how this was a first generation spacecraft, cosmonaut Valentina wasn't much more than a passenger in her Vostok. Valentina preceded America's first astronaut by 20 years.

The moon is first quarter on the 16th. It's time to dust off your old pair of binoculars and take a gander at the moon. Craters will be noticeable in your binoculars, especially in the southern half of the moon.

On the 18th, the moon sits between the star Spica and the planet Saturn. Spica is closer to the moon while Saturn is farther away. You'll be able to see either the moon and Spica together in binoculars or the moon and Saturn together, but not all three simultaneously. Look at Saturn in binoculars and you'll see that the star Gamma Virginis is 1/2 deg to Saturn's upper right.

Thirty years ago on the 18th, the United States launched the first American woman into Earth orbit aboard the Space Shuttle. She was 32 years old on her first flight into space and remains the youngest American in space. Sally Ride eventually spent two weeks in space during her two Space Shuttle flights, both onboard Challenger. Sally was preceded into space by Soviet cosmonauts Valentina Tereshkova and Svetlana Savitskaya

The planet Venus is rising higher above the horizon and Mercury is approaching the horizon. The two inner planets cross paths once again on the evening of June 20th when Mercury will be to the lower left of brighter Venus. They'll be close enough together that both will be visible together in your binoculars. Begin looking for the pair of planets by 10:00 PM. You also may notice two stars above and to the right of Venus. These are the brightest two stars of Gemini, Pollux (the closest to Venus) and Castor.

Summer in the northern hemisphere begins late on the evening of the 20th. Today the day is it's longest for the year. In Boise, the day will be 15 hours and 23 minutes long.

June 22 – 31

Pluto remained an enigma for the first 48 years of its discovery. In that time, its estimated diameter was reduced, but not much else. Then on June 22, 1978, astronomer Jim Christy discovered that Pluto had a satellite. The satellite only appeared as a bump on the photographic plates of Pluto.

The new satellite was named Charon, after the ferryman of the dead. Charon has a diameter of 750 miles, making it just over 1/3rd the diameter of our moon. It is nearly 12,000 miles away from Pluto, which has a diameter of 1,400 miles. Accordingly, Pluto would extend an angle of 6.5 degrees in Charon's sky.

The moon is covered with ices of nitrogen and methane, both which are gasses on our planet. The density of Charon indicates it is predominately ice, with very little rock. This is unlike Pluto which contains more rocky material. This difference in composition is evidence that Charon formed when an object impacted Pluto early in its history. The collision ejected a large amount of Pluto's icy mantle into orbit and left most of its rocky core behind. The moon is full on the 23rd. The full moon occurs when the moon is located opposite the sun in Earth's sky. This position opposite the sun allows the sun and moon to work together to create more extreme tides than usual. Since the moon is at perigee, or its closest distance to the earth, the tides will be larger still. At a distance of just under 218,000 miles away, this month's full moon will be the largest full moon of the year. Take a picture of the moon with your digital camera tonight and compare the size of this month's full moon with other full moons later this year. Many people call the full moon in June the Rose Moon.

The moon reaches last quarter on the night of the 29th. If you want to go moon watching, be prepared to begin after midnight.

Last February, the Russian town of Chelyabinsk experienced an air blast from a meteor passing miles overhead. One-hundred five years ago on the 30th (1908), it was worse, much worse. At about 7:00 AM, a meteor estimated to be over 300 feet across violently broke apart about five miles above the ground. The resulting explosive release of kinetic energy was equivalent to between 10 and 15 megaton explosion. The result was the destruction of 830 square miles of forest. Had the Tunguska meteor occurred several hours earlier or later, it could well have detonated over a city, destroying it like Hiroshima 37 years later. There are no known deaths from the event, although several people reported being knocked off their feet and burned from the heat of the explosion. The most puzzling characteristic of this event was the complete destruction of the meteor before any fragments could reach the ground. There were many who questioned whether this was the impact of an icy comet or rocky meteor, since no crater was formed or pieces located. We have since come to understand that the hypersonic passage of a rocky body creates a significant pressure difference across it. The pressure differential can be great enough to shatter the meteor explosively.

This Month's Sources

This column is a compilation of other peoples' notes. I would like to acknowledge the following sources this month.

Apollo Telescope mount, http://en.wikipedia.org/wiki/Apollo_Telescope_Mount
 Egg-Shaped Regulus is Spinning Fast, <http://www.universetoday.com/10213/egg-shaped-regulus-is-spinning-fast/>
 Eta Aquarids, http://meteorshowersonline.com/eta_aquarids.html
 Messier 67, http://en.wikipedia.org/wiki/Messier_67
 Observer's Handbook 2013, The Royal Astronomical Society of Canada
 Phoenix Spacecraft, [http://en.wikipedia.org/wiki/Phoenix_\(spacecraft\)](http://en.wikipedia.org/wiki/Phoenix_(spacecraft))
 Phoenix, <http://phoenix.lpl.arizona.edu/mission.php>
 Pioneer Venus Project, http://en.wikipedia.org/wiki/Pioneer_Venus_project
 Skylab, <http://en.wikipedia.org/wiki/Skylab>
 Space Calendar, <http://www.jpl.nasa.gov/calendar/>
 Stellar Rotation, http://en.wikipedia.org/wiki/Stellar_rotation

Dark Skies and Bright Stars, Your Interstellar Guide

Image: Idaho Skies; the Full Moon rises above the Snake River Canyon – Twin Falls, Idaho, USA
 Pillar Falls (foreground) and Shoshone Falls (back) © 2012 by Gary Leavitt, MVAS.



Club Announcement

The Idaho Star Party (ISP) is right around the corner! All of the campsites that BAS purchased in the A loop of the Eagle Cove campground have been reserved. If you are one of the few who have not paid for your campsite yet, we ask that you please have it paid for by the June membership meeting. At last check, there were still a few sites left in the B loop and a few left in the Broken Wheel campground too and you can reserve these on your own by contacting the Idaho State Parks and Recreation on their website at: <http://parksandrecreation.idaho.gov/parks/bruneau-dunes>

Registration:

ISP Registration is NOT included with the campsite reservation. You must be registered to attend the ISP. Each person in your family must have an ISP badge to show you are registered and to attend any event, so please be sure that everyone attending is listed on the form. One Registration is good for all members of your family living at the same address. One door prize number for One registration. If you want more chances at door prizes, you are allowed to register each person individually, if paid separately. Note that there is a separate individual drawing for children's door prizes. **You must be present to win a door prize at either drawing.** The ISP registration forms are available on our club website. <http://isp.boiseastro.org/>

You will get **HALF OFF** of your family registration fee if we have your registration forms with payment in our hands by the July 12th membership meeting. BAS is not a rich club and we can not afford to purchase extra shirts or hats to be sold at the event. Your **ONLY** opportunity to get an ISP shirt or hat will be on your pre-registration form. It is very important that everyone pre-registers for the Idaho Star Party so that we can plan for the amount of Star-B-Que food and get the shirt/hat orders to the printers in time to be made. **No late registration forms will be accepted after 7-12-13.** You can still register late when you are at the actual event in September.

 **Deep Sky Highlight** 

Nebula are enormous clouds of gas ("nebula" is Latin for cloud). Our Milky Way Galaxy is permeated with gas, most of it hydrogen and helium, which is concentrated in its spiral arms. In most cases, this gas can form into dense nebulae. If they are illuminated by nearby stars, nebulae shine brightly and appear as wispy clouds when seen through a telescope; if unilluminated; they appear as blotches of darkness silhouetted against the background stars. There is no difference between a dark nebula and a bright one, except for the lack of illumination.

Dark nebula (or absorption nebulae) can be enjoyed with the unaided eye, with binoculars and rich-field telescopes (RFTs), or with the largest amateur instruments. They range from small black voids a few arcminutes across to the Great Rift of Cygnus, stretching more than 120° from Deneb to Alpha Centauri.

Few dark nebulas are as prominent as the Great Rift, however. Most are subtle contrast features winding through the richest star clouds. A perfect example is the 7° -long Pipe Nebula, a beautiful naked eye object in southern Ophiuchus.

Start your search about 10° east of Antares. Look for a line of three stars of magnitudes +3 and +4, the only prominent stars in that area of sky. The brightest, Theta Ophiuchi, lies at the line's midpoint and the bowl of the Pipe Nebula is centered 3° southeast of Theta. The bowl, designated Barnard 78, appears as a jagged rectangular formation, with an opacity of 5. In a 1 to 6 scale, the most opaque dark nebulae are classed as opacity 6, and the least opaque as opacity 1.

The pipe's stem is formed from Barnard 59, 65, 66, and 67. It extends for over 5° to the west from the base of the bowl. With the unaided eye, the stem looks like a nearly straight dark cloud. The subtle details come to light when viewed through binoculars, only if the skies are especially clear.

The Pipe Nebula forms the hind quarters of the even larger Dark Horse Nebula. Celestial Coordinates for the Pipe Nebula: Right Ascension: $17^h 27^m$ Declination: $-26^\circ 56'$



The Pipe Nebula - in Ophiuchus



Triple Treat

Dr. Ethan Siegel, PhD



The solar system is a busy place, with five wandering planets visible to the naked eye alone. When any two pass close by each other from our point of view, we see an astronomical *conjunction*, but on very rare occasions, three planets will find themselves grouped together: a *triple* conjunction. Towards the end of June, Mercury, Venus and Jupiter will treat us to the best triple conjunction in years.

On June 25th, Mercury will pass within 1.4° of Venus, then two days later Mercury comes within 2.4° of Jupiter, and finally on the 28th, Jupiter and Venus approach within 1° of one another. If it weren't for the slight orbital tilt of our solar system's planetary orbits, these conjunctions would all be *occultations* instead. During the nights of June 26th-27th, all three planets are visible immediately after sunset within the same 3° field of view, with the triple conjunction peaking in a triangular shape on the 26th. (For scale, the full Moon subtends about $1/2^\circ$.) The three planets appear close together for a few days more, making a line in the sky on the 30th/31st.

How does this happen? Mercury and Venus race around the Sun far faster than Earth, with Mercury completing more than four revolutions around the Sun for each one that Earth makes. At the same time, Jupiter is far slower, taking 12 years to orbit just once around the Sun. Jupiter's been high in the sky during the early parts of the night, but steadily lowers throughout June as Earth continues to move away from it, approaching its maximum distance from Earth. Mercury and Venus, meanwhile, begin to move out from behind the Sun during June: Venus at the beginning of the month and Mercury in the middle.

Thus, during this triple conjunction, *all three* planets will be on the far side of the Sun, something that happens just 25% of the time in triple conjunctions involving Mercury and Venus! If you telescopically resolve these planets into disks, you'll see our inner worlds in a nearly-full gibbous phase. Jupiter will appear largest in terms of angular diameter, followed by Venus and lastly by Mercury. Just a year ago, during its now-famous transit, Venus took up more than a full arc-minute in the sky; during this conjunction, it will just *one-sixth* that angular size and less than a third the apparent diameter of Jupiter. Nevertheless, Venus will still be more than six times as bright as Jupiter during this time, outshining all night-sky objects other than the Moon. Closer conjunctions of two naked-eye planets are frequent, but getting three or more like this happens just once or twice per decade, so don't miss your chance to see it.

And speaking of occultations, The Space Place has a great kid-friendly explanation of the Venus transit and solar eclipses of 2012 at spaceplace.nasa.gov/venus-transit.

Dr. Ethan Siegel, a theoretical astrophysicist, is a professor at the University of Portland (OR) and Lewis & Clark College.



Caption: The image shows the configuration of Mercury, Venus, and Jupiter in the western sky just after sunset on June 26, 2013. Insets show the relative size appearance of the planets on that date.


Observatory and Planetarium Events


Schedule for Centennial Observatory – Herrett Center Twin Falls
herrett.csi.edu


Event	Place	Date	Time	Admission
Summer Solar Session #2	Centennial Observatory	Wednesday, June 5 th , 2013	1:30 to 3:30 PM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, June 8 th , 2013	9:15 PM to midnight	FREE
Summer Solar Session #3	Centennial Observatory	Wednesday, June 12 th , 2013	1:30 to 3:30 PM	FREE
Summer Solar Session #4	Centennial Observatory	Wednesday, June 19 th , 2013	1:30 to 3:30 PM	FREE
Summer Solar Session #5	Centennial Observatory	Wednesday, June 26 th , 2013	1:30 to 3:30 PM	FREE

Faulkner Planetarium Schedule – Herrett Center Twin Falls
Early-Summer, June 28th – June 29th, 2013


Day	Time	Show
Tuesdays	2:00	How to Build A Planet
	3:30	Light Years From Andromeda
	7:00	Light Years From Andromeda
	8:15	Led Zeppelin: Maximum Volume 1
Wednesdays	2:00	WSKY: Radio Station of the Stars/live Sky Tour
	3:30	Light Years From Andromeda
Thursdays	2:00	How to Build A Planet
	3:30	Light Years From Andromeda
Fridays	2:00	WSKY: Radio Station of the Stars/live Sky Tour
	3:30	Light Years From Andromeda
	7:00	Light Years From Andromeda
	8:15	Pink Floyd: Dark Side of the Moon
Saturdays	2:00	WSKY: Radio Station of the Stars/live Sky Tour
	4:00	Light Years From Andromeda
	7:00	Light Years From Andromeda
	8:15	U2


Bruneau Dunes Observatory


You're invited to star gaze at the Bruneau Dunes Observatory. See the night sky as you've never seen it before. Visitors watch a short orientation program and then have the chance to survey the heavens through the observatory's collection of telescopes. The observatory is now open on Friday and Saturday nights only, weather permitting. Solar viewing (through a specially adapted telescope) begins one hour before sunset. After the sun sets there is an audio visual orientation presentation followed by sky viewing until 11:30 pm. For presentation times, call 208-366-7919, or check the kiosk when you arrive at the park. The cost for the program is \$3 per person. Children under 6 are admitted free.



The Street Astronomer's Guide to Idaho Astronomy Resources



Magic Valley Astronomical Society (MVAS) Burley, Jerome, and Twin Falls' astronomy club meets on the second Saturday of the month at the Herrett Center, College of southern Idaho. Meetings begin at 7:00 PM and are followed by a public star party upstairs. <http://www.mvastro.org>

Palouse Astronomical Society (PAS) Northern Idaho's astronomy club meets the first Thursday of the month. Locations change, so consult their calendar at, <http://palouseastro.org/>

Idaho Observatories:

Bruneau Dunes Observatory

Idaho's largest public observatory is located at the Bruneau Dunes State Park. The observatory is open from early April to Mid October. Observatory sessions are preceded by a presentation in the Steele Reese Center.

<http://parksandrecreation.idaho.gov/parks/bruneau-dunes>

BYU-Idaho Observatory

The campus generally opens its observatory on Monday, Tuesday, and Thursday from 7:00 PM to 10:00PM (weather and school schedules permitting). <http://www.byui.edu/physics/resources/non-majors/observatory>.

Centennial Observatory

The observatory at the College of Southern Idaho is open for free star parties one hour after sunset (weather permitting) on the second Saturday of the month and on the second and fourth Tuesdays of the month from November through February. <http://herrett.csi.edu/astronomy/observatory/index.asp>

Planetariums

BYU-Idaho Planetarium Weekly planetarium shows are presented on campus in Rexburg every Thursday (school schedule permitting). The door opens at 6:30 PM and the presentation begins at 7:00 PM. The planetarium is located in the Romney Science Building, room 107. <http://www.byui.edu/planetarium>

Faulkner Planetarium

The Faulkner Planetarium is the largest planetarium in Idaho. Shows are presented Tuesday through Saturday in the summer and Tuesday, Friday, and Saturday the rest of the year. In addition, the planetarium hosts astronomy talks on Fridays in odd months. The planetarium is located at the Herrett Center at the College of Southern Idaho, Twin Falls: <http://herrett.csi.edu/astronomy/planetarium/index.asp>

Whittenberger Planetarium

The College of Idaho planetarium is opened to the public the first and third Wednesday of the month, school calendar permitting. The door opens at 6:45 PM and the show begins at 7:00 PM. The college is located in Caldwell. <http://www.collegeofidaho.edu/planetarium>

Star Parties

Craters of the Moon Star Party, the Idaho Falls Astronomical Societies jointly hosts an annual star party at the Craters of the Moon National Monument every summer. Consult their webpages for the schedule.

Pomerelle Mountain Star Party, the Magic Valley Astronomical Society hosts their annual star party on the top of Pomerelle Mountain near Albion, ID. Come ride the chair lift to the top of the mountain at the ski resort and spend an evening enjoying high altitude dark skies. Visit www.mvastro.org for more information. You do not have to register, but there is a fee for the chair lift.

Castle Rocks / City of Rocks Star Party, the Magic Valley Astronomical Society hosts their annual star party at Castle Rocks State Park adjacent to the world famous City of Rocks National Reserve near the town of Almo, ID during the month of August. Visit www.mvastro.org for more information. There is no fee for this Star Party; however State of Idaho Parks and Recreation charges a day use fee. Overnight accommodations are also available.

Idaho Star Party

The Boise Astronomical Society hosts an annual public star party every later summer at Bruneau Dunes State Park. An admission fee is charged for the star party and it is opened to the public. Check the Boise Astronomical Society's webpage for the schedule.

Membership Information

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 or home telephone: 736-1989 or mail directly to the treasurer at his home address. 550 Sparks Twin Falls, ID 83301

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

M-51 viewed in this newsletter was imaged with the Shotwell Camera and the Herrett Telescope at the Centennial Observatory by club members Rick Widmer & Ken Thomason. Unless otherwise stated all photos appear in the public domain and are courtesy of NASA.

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"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.

Membership Benefits

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

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

Receive 10% discounts on other selected Astronomy Publications.

For periodical info. and subscriptions Contact Jim Tubbs, Treasurer

Lending Library: Contact, the current board for information.

Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others. Contact Rick Widmer, Webmaster for more information.