



# Snake River Skies

The Monthly Newsletter of the Magic Valley  
Astronomical Society  
May 2012



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

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## Membership Meeting

Saturday, May 12<sup>th</sup> 2012  
7:00 p.m. at the  
Herrett Center for Arts and  
Science CSI Main Campus



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## Membership Message

We at the MVAS have a unique opportunity to observe a partial Solar Eclipse before sunset on Sunday May 20th. It will also be a nice night for a star party, so we figured why not combine the events.

The event will be held at the Centennial Observatory. Plan to be there around 6pm at the latest so that you will have time to set up your equipment. The eclipse should begin at 6:28pm local time, with the Maximum about an hour later. Sunset is at 9:08pm. The article on page 5 tells the details of the eclipse. Please bring the appropriate equipment for safe and effective solar viewing. The Centennial Observatory will have the white light filtered scopes available, but we can always use more scopes as well as volunteers at this type of event. Available at the Herrett Center Store are inexpensive eclipse glasses for purchase. Contact the Herrett Center Store for more information.

After the general viewing we could have a club star party at the observatory events and details will be provided at the general meeting on the 12<sup>th</sup>.

We realize that many of you work on Monday and may not be able to stay late, but if you can work it into your schedule this should be a fun observing experience for everyone.

Let's discuss these events at our next meeting on the 12<sup>th</sup>.

Terry Wofford, President

Welcome to the society and hello. We hope you have a good time, enjoy the hobby and bring good skies with you.

We hold indoor meetings each month at the Herrett Center for Arts & Science College of Southern Idaho campus in Twin Falls, ID, USA. Our meetings start at 7:00 pm on the second Saturday of the month. There will always be a very interesting program, class or presentation at these meetings, as well as good fellowship. There is always something new to learn.

Following our meetings we have a star party (weather permitting) at the Centennial Observatory, also at the Herrett Center.

Our star parties are free and you don't have to bring your own telescope. Telescopes are also set up outside on the stargazer's deck. Star Parties are held year round, so please dress accordingly as the Observatory is not heated, nor air conditioned.

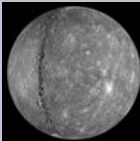
Wishing you dark skies and clear nights! MVAS Board



Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6  Full Moon Largest in 2012 (Flower Moon, Algonquin) Moon at Perigee (Large Tides)	7	8  Moon at Greatest S. Declination - 21.7°	9	10	11  Last Quarter Moon Actual on the 12th	12 Membership Meeting at the Herrett Center 7:00 pm Monthly free star party at 8:45p at the Centennial Observatory
13 Mother's Day	14	15	16	17	18	19  Moon at Apogee
20  New Moon Partial Solar Eclipse 80% 	21	22  Moon at Greatest N. Declination + 21.7°	23	24	25	26
27	28  First Quarter Moon  Memorial Day	29	30	31		



## Solar System



**Mercury** This month Mercury is lost in the solar glare until early June, when it re-emerges in the evening sky.



**Venus** is in good view in the west as darkness begins to fall. It starts the month only 2 degrees below the second-magnitude star Beta Tauri and slowly comes closer during the next several days, passing within 0.8 degree of the star on May 6. By the end of the month, Venus becomes increasingly hard to see in the bright twilight and sets only 40 minutes after the Sun.



**Mars** By mid-evening, as Venus sets in the west, Mars stands two-thirds of the way from the southern horizon to the zenith. It spends the month floating 10 degrees or less from Regulus (Alpha Leonis), a slightly dimmer star with which it contrasts beautifully. Through a telescope, the Red Planet's disk will appear no bigger than 10" across, still rather small even at high magnifications.



**Jupiter** is too deep in the solar glare and cannot be observed until mid-June, when it will reappear in the morning sky.



**Saturn** shines high in the southeast, among the stars of Virgo and close to brilliant Spica, about one hour after sundown. At the beginning of May, Saturn is magnitude +0.3 and its globe is 19"-wide. By late in the month, the disk has shrunk to 18.5" and the planet also glows slightly dimmer, at magnitude +0.5. The rings span 43", more than double the planet's disk, and tilt 14 degrees to our line of sight.



**Uranus** lies on the border between Cetus and Pisces and is low in the morning sky, just 10 degrees above the eastern horizon by the onset of twilight. Some observers may be able to spot the planet with binoculars, although at magnitude +5.9 it will be a difficult object and will require very transparent skies.



**Neptune** Distant Neptune can be found among the background stars of Aquarius, low in the east before dawn's first light. The planet glows dimly at magnitude +7.9, much too faint to be viewed with the unaided eye, lying at a mean distance from the Sun of 2.8 billion miles.



**Pluto** The dwarf planet Pluto lies in northern Sagittarius and is highest above the southern horizon just before dawn. Search for it 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.



**6 Hebe** lies within one degree of Algieba (Gamma Leonis), and tracks eastwards with each passing night. Glowing at about 11th-magnitude, Hebe looks like an ordinary field star and is highest above the southern horizon around 10 P.M. local daylight time.



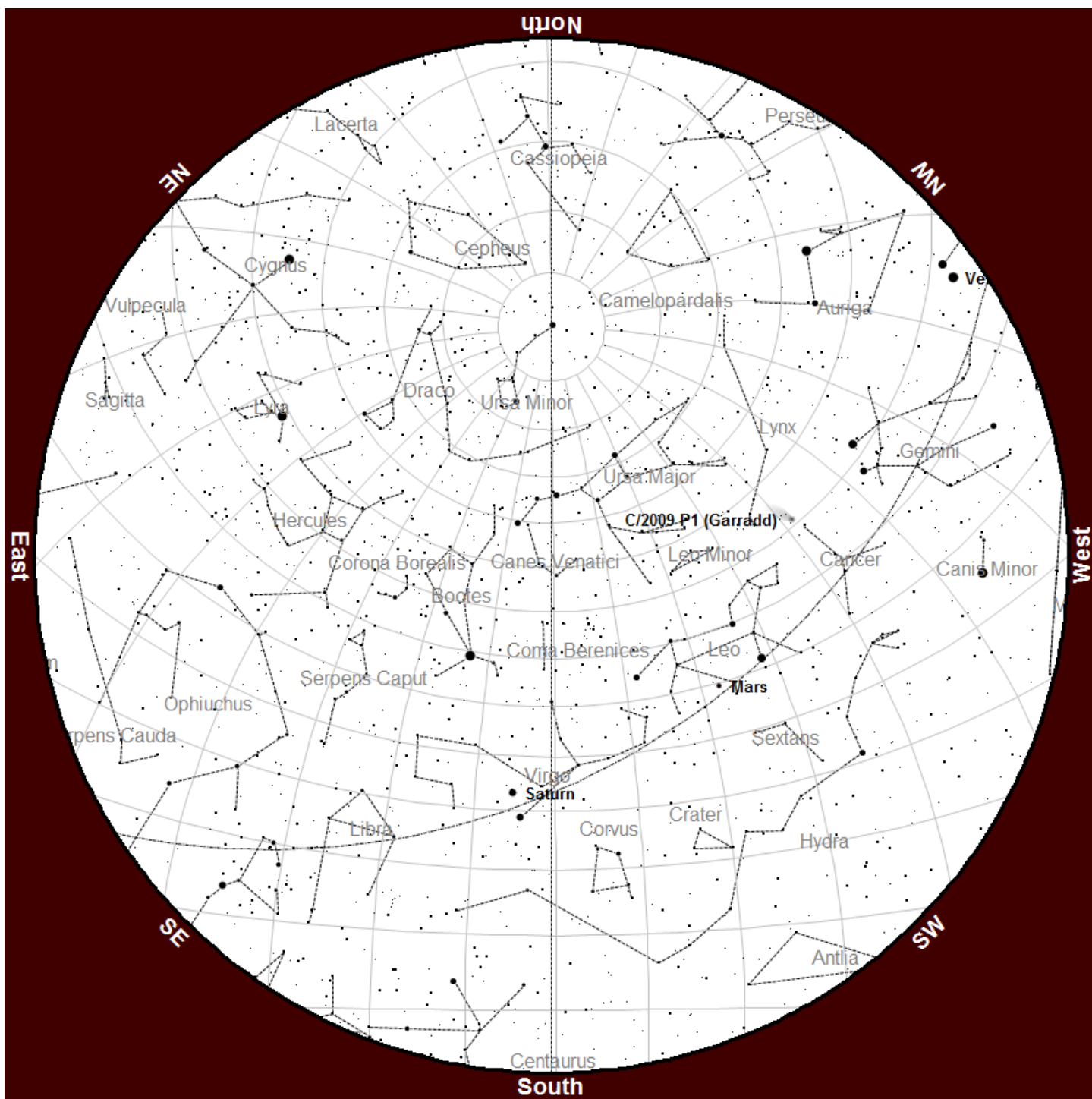
**Comets** has been observable in northern skies for over a year now. Despite the fact that it is currently receding from both the Sun and Earth, it still glows around 8th-magnitude and remains a nice sight throughout binoculars and small telescopes. In early May, Garradd slides through the background stars of the constellation Lynx, but by mid-month it passes the border into neighboring Cancer.



**Meteors** Eta Aquarids first appear around April 19, and some can be seen until May 28. The shower's peak occurs around May 5, when up to 20 or 30 meteors can be seen each hour from a dark-sky site. Throughout May, the shower's radiant is found in northern Aquarius - close to Eta Aquarii - and moves daily a little to the northeast. The radiant never gets very high in the sky before dawn, so your observing time is limited.



## Planisphere for May



This Planisphere should be used as a guide for the month of May. May, mid-month, end of evening twilight (10:00 PM)

Planisphere is provided as a courtesy from  
 Chris Anderson, Coordinator  
 Centennial Observatory  
 Herrett Center for Arts & Science  
 College of Southern Idaho



## Club Announcements

### Annular Solar Eclipse of May 20

The first solar eclipse of 2012 occurs at the Moon's descending node in central Taurus. An annular eclipse will be visible from a 240 to 300 kilometre-wide track that traverses eastern Asia, the northern Pacific Ocean and the western United States. A partial eclipse is seen within the much broader path of the Moon's penumbral shadow, that includes much of Asia, the Pacific and the western 2/3 of North America ([Figure 1](#)).

The annular path begins in southern China at 22:06 UT. Because the Moon passed through apogee one day earlier (May 19 at 16:14 UT), its large distance from Earth produces a wide path of annularity. Traveling eastward, the shadow quickly sweeps along the southern coast of Japan as the central line duration of annularity grows from 4.4 to 5.0 minutes. Tokyo lies 10 kilometres north of the central line. For the over 10 million residents within the metropolitan area, the annular phase will last 5 minutes beginning at 22:32 UT (on May 21<sup>st</sup> local time). The annular ring is quite thick because the Moon's apparent diameter is only 94% that of the Sun. Traveling with a velocity of 1.1 kilometres/second, the antumbral shadow leaves Japan and heads northeast across the Northern Pacific. The instant of greatest eclipse<sup>1</sup> occurs at 23:52:47 UT when the eclipse magnitude<sup>2</sup> reaches 0.9439. At that instant, the duration of annularity is 5 minutes 46 seconds, the path width is 237 kilometres and the Sun is 61° above the flat horizon formed by the open ocean.

The shadow passes just south of Alaska's Aleutian Islands as the central track slowly curves to the southeast. After a 7000 kilometre-long ocean voyage lasting nearly 2 hours, the antumbra finally reaches land again along the rugged coastlines of southern Oregon and northern California ([Figure 2](#)) at 01:23 UT (May 20 local time).

Redding, CA lies 30 kilometres south of the central line. Nevertheless, it still experiences an annular phase lasting 4 1/2 minutes beginning at 01:26 UT. It is already late afternoon along this section of the eclipse path. The Sun's altitude is 20° during the annular phase and decreasing as the track heads southeast. Central Nevada, southern Utah, and northern Arizona are all within the annular path. By the time the antumbra reaches Albuquerque, NM (01:34 UT), the central duration is still 4 1/2 minutes, but the Sun's altitude has dropped to 5°. As its leading edge reaches the Texas Panhandle, the shadow is now an elongated ellipse extending all the way to Nevada. Seconds later, the antumbra begins its rise back into space above western Texas as the track and the annular eclipse end.

During the course of its 3.5-hour trajectory, the antumbra's track is approximately 13,600 kilometres long and covers 0.74% of Earth's surface area. Path coordinates and central line circumstances are presented in [Table 1](#).

Partial phases of the eclipse are visible primarily from the USA, Canada, the Pacific and East Asia. Local circumstances for a number of cities are found in [Table 2](#) (Canada, Mexico and Asia) and [Table 3](#) (USA). All times are given in Universal Time. The Sun's altitude and azimuth, the eclipse magnitude and obscuration are all given at the instant of maximum eclipse.

The NASA *JavaScript Solar Eclipse Explorer* is an interactive web page that can quickly calculate the local circumstances of the eclipse from any geographic location not included in [Table 1](#): [eclipse.gsfc.nasa.gov/JSEX/JSEX-index.html](http://eclipse.gsfc.nasa.gov/JSEX/JSEX-index.html)

This is the 33rd eclipse of [Saros 128](#) (Esenak and Meeus, 2006). The family began with a series of 24 partial eclipses starting on 0984 Aug 29. The first central eclipse was total and took place on 1417 May 16. After three more totals and four hybrid eclipses, the series changed to annular on 1561 Aug 11. Subsequent members of Saros 128 were all annular eclipses with increasing durations, the maximum of which was reached on 1832 Feb 01 and lasted 08 minutes 35 seconds. The duration of annularity of each succeeding eclipse is now dropping and will reach 4 minutes with the last annular eclipse of the series on 2120 Jul 25. Saros 128 terminates on 2282 Nov 01 after a string of 9 partial eclipses. Complete details for the 73 eclipses in the series (in the sequence of 24 partial, 4 total, 4 hybrid, 32 annular, and 9 partial) may be found at: [eclipse.gsfc.nasa.gov/SEsaros/SEsaros128.html](http://eclipse.gsfc.nasa.gov/SEsaros/SEsaros128.html)

Additional details for the 2012 annular solar eclipse (including tables, maps and weather prospects) can be found at: [eclipse.gsfc.nasa.gov/SEmono/ASE2012/ASE2012.html](http://eclipse.gsfc.nasa.gov/SEmono/ASE2012/ASE2012.html)

Europe's Rosetta spacecraft is on its way to intercept comet 67P/Churyumov-Gerasimenko. Comets have been intercepted before, but this mission is different. Rosetta aims to make history by landing a probe on the comet's surface while the mother ship orbits overhead.

"Rosetta is the European equivalent of a NASA flagship mission," explains Claudia Alexander, project scientist for the U.S. Rosetta Project at NASA's Jet Propulsion Laboratory. "It will conduct the most comprehensive study of a comet ever performed."

Rosetta's payload contains 21 instruments (11 on the orbiter, 10 on the lander) designed to study almost every aspect of the comet's chemistry, structure, and dynamics. Three of the sensors were contributed by the U.S.: Alice (an ultraviolet spectrometer), IES (an ion and electron sensor), and MIRO (a microwave sounder).

The main event of the mission will likely be the landing. The 100-kg lander, which looks a bit like a cross between NASA's old Viking Mars landers and a modern microsatellite, will spend two weeks fastened to the comet's icy surface. The European-built probe will collect samples for analysis by onboard microscopes and take stunning panoramic images from ground level.

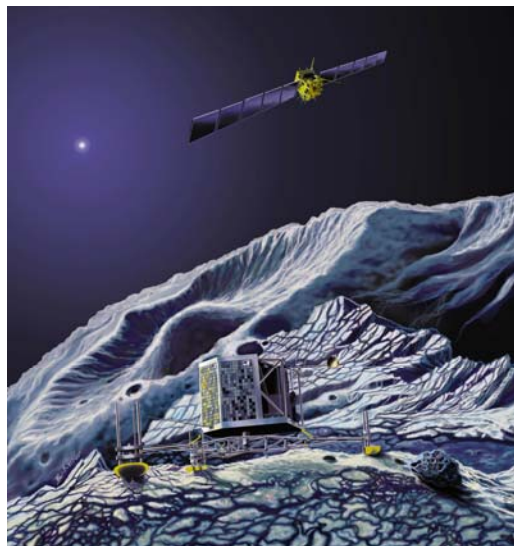
"First the lander will study the surface from close range to establish a baseline before the comet becomes active," explains Alexander. "Then the orbiter will investigate the flow of gas and dust around the comet's active, venting nucleus."

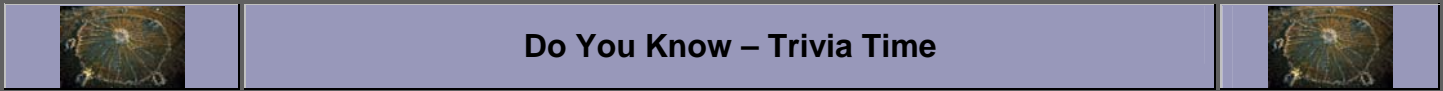
Rosetta's sensors will perform the experiments that reveal how the chemicals present interact with one another and with the solar wind. Alice and MIRO detect uncharged atoms and molecules, while IES detects the ions and electrons as the solar wind buffets the nucleus. One problem that often vexes astronomers when they try to study comets is visibility. It's hard to see through the dusty veil of gas billowing away from the heated nucleus. The microwaves MIRO detects can penetrate the dust, so MIRO can see and measure its target molecules even when other instruments can't.

MIRO is one of several experiments focused on the comet's structural properties. It will determine the comet's dielectric constant, emissivity, and thermal conductivity to determine whether it is made of a powdery loose material, has a detectable layer of loose material, or is hard as rock. "We want to find out whether comets have retained material from when the solar system formed," says Alexander. "If the ancient materials are still there, we can get an idea of what conditions were like at the dawn of the solar system."

Rosetta enters orbit in 2014. Stay tuned for updates!

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration. *Rosetta's lander Philae will eject from the spacecraft, touch down on the comet's nucleus, and immediately fire a harpoon into the surface to anchor itself so it won't drift off in the weak gravity*





## Do You Know – Trivia Time

This month's trivia; can you name the Elements named for Astronomical objects?

Named for	Element	Object
Dwarf Planet		Pluto
Moon		Greek for Moon
Asteroid		Pallas
Planet		Mercury
Planet in Latin		Latin for 'Earth'
Jupiter's Moon		goddess Europa
Planet		Uranus
Sun		Helios-Sun God
Asteroid		Ceres
Planet		Neptune

**Knowledge time:** In this picture below the Space Shuttle – Enterprise (NASA OV-101) arrives in New York City. Enterprise was stored at the Smithsonian's hangar at Washington Dulles International Airport before it was restored and moved to the newly built Smithsonian's National Air and Space Museum's Steven F. Udvar-Hazy Center at Dulles International Airport, where it was the centerpiece of the space collection. Ownership of the *Enterprise* was officially transferred to the Intrepid Sea, Air & Space Museum in New York City. In preparation for the anticipated relocation, engineers evaluated the vehicle in early 2010 and determined that it was safe to fly on the Shuttle Carrier Aircraft once again. At approximately 9:40 AM Eastern Daylight Time on April 27, 2012 *Enterprise* took off from Dulles International Airport en-route to a fly-by over the Hudson River, New York's JFK International Airport the Statue of Liberty, the George Washington and Verrazano-Narrows Bridges, and several other landmarks in the city; in an approximately 45-minute "final tour". At 11:23 AM Eastern Daylight Time *Enterprise* touched down at JFK International Airport. From there it will be moved by barge to the Intrepid Museum.

Many have felt that the Space Shuttle Enterprise should have been transferred to Fort Baker, Sausalito, California – Do you know why?



Answers will be found on page 11

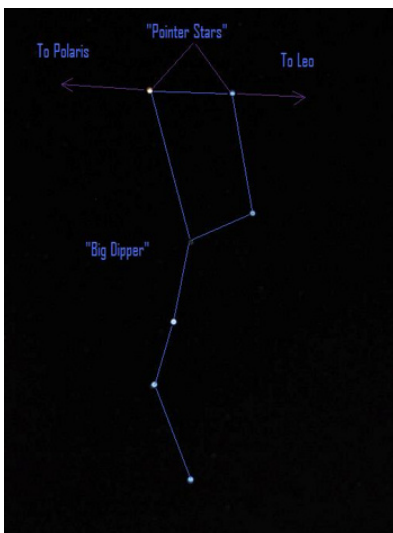
## Looking through the Eyepiece – Leo, the Lion

Of the 13 constellations of the Zodiac, Leo the Lion ranks as one of easiest to identify in the night sky. From a Northern Hemisphere perspective, the Lion is a fair-weather friend, springing into the early evening sky around the March 20 equinox. Late March, April and May are superb months for identifying Leo the Lion, as this constellation becomes visible as soon as darkness falls and stays out until the wee hours of the morning.



You will find Leo east to overhead in the evening in May, the planet Mars is in front of Leo.

Most people find Leo by looking first for a distinctive pattern on the sky's dome: the pattern of a *backwards question mark*. That star pattern – or *asterism* – is called *the Sickle in Leo*. Leo's brightest star, Regulus (see last month), marks the bottom of the backwards question mark pattern. Regulus is a sparkling blue-white beauty of a star, and it depicts *the Lion's heart*. Meanwhile, the curve of *the Sickle* outlines the Lion's mane. The triangle of stars in eastern Leo represents the Lion's hindquarters and tail. The brightest star of the triangle is named Denebola, which stems from an Arabic term meaning *the Lion's Tail*. Like all stars, Leo's stars return to the same place in the sky some four minutes earlier daily or two hours earlier monthly. In early April, the constellation Leo reaches its high point for the night around 10 p.m. local time (11 p.m. local daylight saving time), and starts to sink below the western horizon around 4 a.m. local time (5 a.m. local daylight saving time). By around May 1, Leo reaches his high point for the night around 8 p.m. local time (9 p.m. local daylight saving time). Also, in early May, the mighty Lion begins to set in the west around 2 a.m. local time (3 a.m. daylight saving time). By June, you'll find Leo descending in the west in the evening.



An imaginary line drawn between the pointer stars in the Big Dipper - the two outer stars in the Dipper's bowl - points in one direction toward Polaris, the North Star, and in the opposite direction toward Leo.



Though Leo drifts progressively westward in the early evening sky as the months go by, the Lion can be viewed in the evening till July. By late July or early August, the Lion begins to fade into the sunset, not to return to the eastern predawn sky until late September or October.

The sun passes in front of the constellation Leo the Lion from about August 10 to September 16 each year.

### Find Leo by star-hopping from the Big Dipper

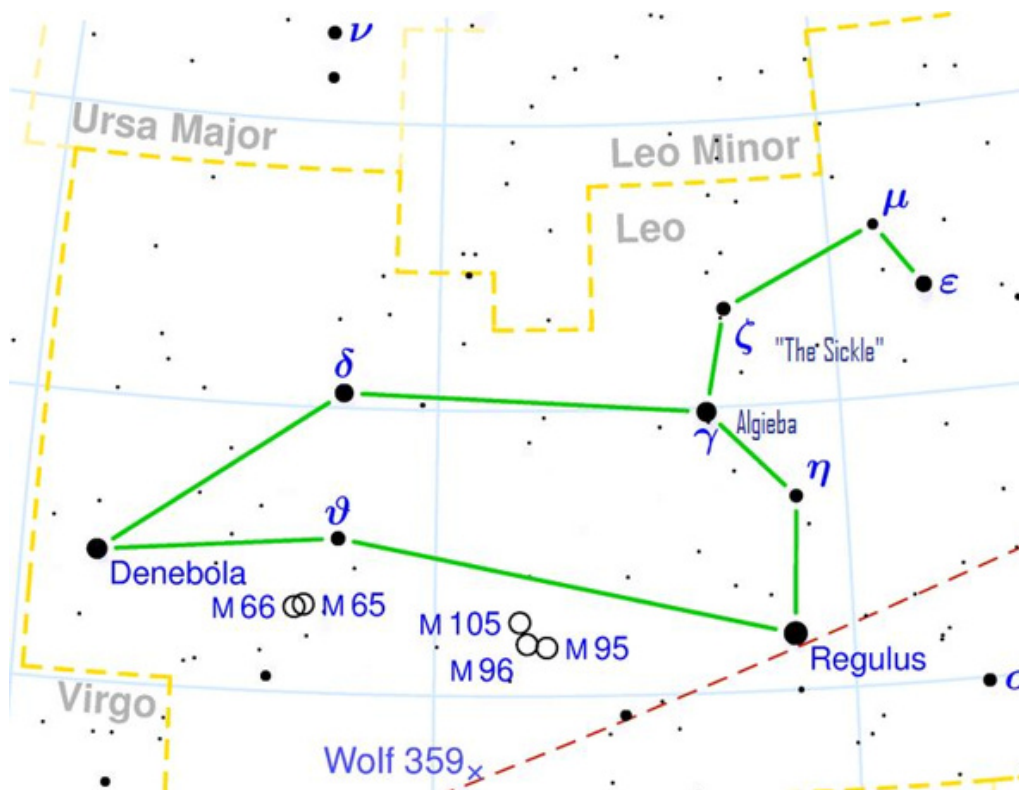
If you're familiar with the Big Dipper asterism, you can star-hop to Leo the Lion every time. To find Leo, first find the Big Dipper. In March, the Big Dipper stands pretty much on its handle in the northeast sky at nightfall. At nightfall in April, look for the Big Dipper higher in the northeast sky, and at nightfall in May, look for the upside-down Big Dipper high in the north, above Polaris, the North Star. Then identify the two pointer stars of the Big Dipper – that is, the two outer stars in the Big Dipper's bowl. An imaginary line drawn between these stars points in one direction toward [Polaris](#), the North Star. And it points in the opposite direction toward Leo.

### Constellation Leo in history and myth

Leo the Lion has long been associated with the sun. The ancient Egyptians held Leo in the highest esteem, because the sun shone in front of this constellation at the time of the annual flooding of the Nile River, the lifeblood of this agricultural nation. It's thought that the various lion-headed fountains designed by Greek and Roman architects symbolize the life-giving waters being released by the sun's presence in Leo. In astrology, Leo – one of the three fire signs of the Zodiac – is ruled by the sun.

Many stories are associated with Leo the Lion. Perhaps the two better-known tales feature Hercules' first labor with the notorious Nemean Lion, and the Roman author Ovid's rendering of the tragic love affair of Pyramus and Thisbe.

Sky chart of the constellation Leo the Lion



What can you see with a telescope and binoculars in Leo?

**Stars:**

Leo contains many bright stars, such as Regulus ( $\alpha$  Leonis); the lion's tail, Denebola ( $\beta$  Leonis); and Algieba ( $\gamma^1$  Leonis). Many other fainter stars have been named as well, such as Zosma ( $\delta$  Leo), Chort ( $\theta$  Leo), Al Minliar al Asad ( $\kappa$  Leo), Alterf ( $\lambda$  Leo), and Subra ( $\omicron$  Leo). Regulus, Al Jabbar, and Algieba, together with the fainter stars Adhafera ( $\zeta$  Leo), Ras Elased Borealis ( $\mu$  Leo), and Ras Elased Australis ( $\epsilon$  Leo), make up the asterism known as the Sickle. These stars represent the head and the mane of the lion. The star Wolf 359, one of the nearest stars to Earth (7.78 light-years), is in Leo. Gliese 436, a faint star in Leo about 33 light years away from the Sun, is orbited by a transiting Neptune-mass extrasolar planet.

The carbon star CW Leo (IRC +10216) is the brightest star in the night sky at the infrared N-band (10  $\mu$ m wavelength). The star Algieba is a double star, visible in a small telescope when the atmosphere is steady. If the stars are twinkling wildly, that indicates a turbulent – not steady – atmosphere. On the other hand, if the stars are twinkling very little or not at all, try your luck at splitting Algieba – which looks like a single star to the eye – into its two colorful component stars with your telescope.

**Deep-sky objects:**

Leo contains many bright galaxies; Messier 65, Messier 66, NGC 3628, Messier 95, Messier 96, and Messier 105. The first three make up the Leo Triplet. The Leo Ring, a cloud of hydrogen and helium gas, is found in orbit of two galaxies found within this constellation.

**M65:** (also known as NGC 3623) is an intermediate spiral galaxy about 35 million light-years away. It was discovered by Charles Messier in 1780. M65, M66, and NGC 3628 comprise the famous Leo Triplet. Coordinates: Right Ascension  $11^{\text{h}} 18^{\text{m}} 55.9^{\text{s}}$  Declination  $+13^{\circ} 05' 32''$

**M66:** (also known as NGC 3627) is an intermediate spiral galaxy about 36 million light-years away in the constellation Leo. It was discovered by Charles Messier in 1780. M66 is about 95 thousand light-years across with striking dust lanes and bright star clusters along sweeping spiral arms. Coordinates: Right ascension  $11^{\text{h}} 20^{\text{m}} 15.0^{\text{s}}$  Declination  $+12^{\circ} 59' 30''$

**NGC-3628:** is an unbarred spiral galaxy about 35 million light-years away in the constellation Leo. It was discovered by William Herschel in 1784. It has an approximately 300,000 light-years long tidal tail. Its most conspicuous feature is the broad and obscuring band of dust located along the outer edge of its spiral arms, effectively transecting the galaxy to our view. Coordinates: Right ascension  $11^{\text{h}} 20^{\text{m}} 17.0^{\text{s}}$  Declination  $+13^{\circ} 35' 23''$

**Messier 95** (also known as M95 or NGC 3351) is a barred spiral galaxy about 38 million light-years away. M95 was discovered by Pierre Méchain in 1781, and catalogued by Charles Messier four days later. On 16 March 2012, a supernova (SN 2012aw) was discovered in M95. Coordinates: Right ascension  $10^{\text{h}} 43^{\text{m}} 57.7^{\text{s}}$  Declination  $+11^{\circ} 42' 14''$   
[http://en.wikipedia.org/wiki/Messier\\_95\\_-\\_cite\\_note-ned-0](http://en.wikipedia.org/wiki/Messier_95_-_cite_note-ned-0)

**Messier 96** (also known as NGC 3368) is an intermediate spiral galaxy about 31 million light-years away in the constellation Leo. It was discovered by Pierre Méchain in 1781. M96 is the brightest galaxy within the **M96 Group** also includes the Messier objects M95 and M105, as well as at least nine other galaxies. The M96 galaxy has asymmetric arms and a displaced core, probably caused by the gravitational pull by the other nearby galaxies. Coordinates: Right ascension  $10^{\text{h}} 46^{\text{m}} 45.7^{\text{s}}$  Declination  $+11^{\circ} 49' 12''$

**M96 Group** (also known as the *Leo I Group*) is a group of galaxies in the constellation Leo. This group contains between 8 and 24 galaxies, the group is one of many groups that lies within the Virgo Supercluster (i.e. the Local Supercluster).

**Messier 105** was discovered by Pierre Méchain on 24 March 1781, just a few days after he discovered the nearby galaxies Messier 95 and Messier 96. This galaxy is one of several that were not originally included in the original Messier Catalogue compiled by Charles Messier. Messier 105 was included in the catalog only when Helen S. Hogg found a letter by Méchain describing Messier 105 and when the object described by Méchain was identified as a galaxy previously named NGC 3379.

**NGC 2903** is a barred spiral galaxy about 30 million light-years away. It was discovered by William Herschel who cataloged it on November 16, 1784. NGC 2905 is a bright star cloud within this galaxy. NGC 2903 is easily found by tracing along the "sickle" Epsilon Leonis at the "tip." Just 4 degrees to its southwest you should easily find it. Binoculars and small telescopes display it as a nebulous patch highlighted by a brighter central core. Long exposure photographs better than double the galaxy's extent, as well as reveal the jumbled texture of its spiral arms.

Images Below (left side) M96 and M95 with Super Nova SN 2012aw (faint arrow in the lower right) and on the right image of M65, M66, and NGC 3628, which make-up the Leo Triplet as imaged by amateur astronomers and made available through Wikimedia Commons.



### Galaxies of the Leo I Group:

1	2	3	4	5	6	7	8	9
Name	Equatorial Coordinates		Blue Mag	Type	Size (')	Size kly	RV km/s	Other Names
	RA	Dec						
NGC 3239	10 25.1	+17 10	11.7	Irr	4.5	45	1078	
NGC 3299	10 36.4	+12 42	14.1	SBd	1.9	20	977	
PGC 31877	10 42.0	+12 20	16.8	S0	0.6	5	1116	
M95	10 44.0	+11 42	10.5	SBb	7.6	75	1117	NGC 3351
M96	10 46.8	+11 49	10.1	SBa	7.8	80	1237	NGC 3368
PGC 83339	10 46.9	+13 00	17.3	Irr	1.2	10	1171	
NGC 3377A	10 47.4	+14 04	14.3	SBm	1.8	20	905	UGC 5889
PGC 83341	10 47.5	+13 53	17.5	Sc	0.5	5	909	
NGC 3377	10 47.7	+13 59	11.1	E	4.4	45	1026	
M105	10 47.8	+12 35	10.2	E	5.1	50	1217	NGC 3379
NGC 3384	10 48.3	+12 38	10.8	E	5.4	55	1066	
PGC 32348	10 48.9	+14 07	16.1	E?	0.8	10	973	
UGC 5923	10 49.1	+06 55	14.1	Sa	0.9	10	1061	
NGC 3412	10 50.9	+13 25	11.4	S0	3.7	40	1191	
NGC 3489	11 00.3	+13 54	11.1	S0	3.5	35	1031	
NGC 3593	11 14.6	+12 49	11.8	S0	5.2	55	969	
M65	11 18.9	+13 06	10.2	SBa	9.1	95	1146	NGC 3623
M66	11 20.2	+13 00	9.6	SBb	8.7	90	1066	NGC 3627
NGC 3628	11 20.3	+13 35	10.3	Sb	12.9	130	1184	
IC 2787	11 23.3	+13 38	16.0	Sc	0.8	10	1081	

Column 1: The usual name of the galaxy.

Column 2: The Right Ascension for epoch 2000.

Column 3: The Declination for epoch 2000.

Column 4: The blue apparent magnitude of the galaxy.

Column 5: The galaxy type: E=Elliptical, S0 = Lenticular, Sa,Sb,Sc,Sd = Spiral, SBa,SBb,SBc,SBd = Barred Spiral, Sm,SBm, Irr = Irregular.

Column 6: The angular diameter of the galaxy (arcminutes).

Column 7: The diameter of the galaxy (thousands of light years).

Column 8: The recessional velocity (km/s) of the galaxy relative to the cosmic microwave background.

Column 9: Other names of the galaxy.

**Knowledge Answer:** Knowledge Answer: Fort Baker, Sausalito, CA near the Golden Gate Bridge and a component of the Golden Gate National Recreation area is the site notable for being the location of Starfleet Headquarters (Command) in the Star Trek Universe. The Starfleet Academy is located across the bay at The Presidio of San Francisco. Many of the Army-built buildings still stand, and current institutions in the area include an active United States Coast Guard station, the Travis Marina (an Air Force rest and recreation facility), and the Bay Area Discovery Museum.

**Trivia Answers:** Plutonium, Selenium, Palladium, Mercury, Tellurium, Europium, Uranium, Helium, Cerium, Neptunium.



## Centennial Observatory and Faulkner Planetarium Events



Event	Place	Date	Time	Admission
Monthly Free Star Party	Centennial Observatory	Saturday, May 12th, 2012	9:15 PM to midnight	FREE
Bimonthly Astronomy Talk: "James Cook's Venus Transit Voyage"	Rick Allen Room	Friday, May 18th, 2012	8:15 to 9:15 PM	\$2.50 adults \$1.50 students (incl. CSI) Children 6 and under free
Astronomy Talk Night Telescope Viewing	Centennial Observatory	Friday, May 18th, 2012	9:15 to 11:15 PM	\$1.50 per person Children 6 and under free or FREE with paid astronomy talk or planetarium admission
Partial Solar Eclipse	Centennial Observatory	Sunday, May 20th, 2012	6:00 to 9:00 PM	FREE

Planetarium Show Schedule May 1<sup>st</sup> – 28<sup>th</sup>, 2012

Day	Time	Show
Tuesday	7:00	When Venus Transits the Sun
Friday	7:00	When Venus Transits the Sun
	8:15	Altrageous Rock!
Saturday	2:00	When Venus Transits the Sun
	3:00	When Venus Transits the Sun
	4:00	Lifestyles of the Stars/Live Sky Tour
	7:00	When Venus Transits the Sun
	8:15	Space Jammin'

Tuesday, May 29 <sup>th</sup>	2:00	When Venus Transits the Sun
	3:30	When Venus Transits the Sun
	7:00	When Venus Transits the Sun
	8:15	Space Jammin'
Wednesday, May 30 <sup>th</sup>	2:00	When Venus Transits the Sun
	3:30	When Venus Transits the Sun
Thursday, May 31 <sup>st</sup>	2:00	When Venus Transits the Sun
	3:30	When Venus Transits the Sun
Friday, June 1 <sup>st</sup>	2:00	When Venus Transits the Sun
	3:30	When Venus Transits the Sun
	7:00	When Venus Transits the Sun
	8:15	Altrageous Rock!
Saturday, June 2 <sup>nd</sup>	2:00	When Venus Transits the Sun
	3:00	When Venus Transits the Sun
	4:00	When Venus Transits the Sun
	7:00	When Venus Transits the Sun
	8:15	Pink Floyd: The Wall
Tuesday, June 5 <sup>th</sup>	2:00	When Venus Transits the Sun
	3:30	When Venus Transits the Sun
	7:00	When Venus Transits the Sun
	8:15	Space Jammin'



## 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](mailto: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 two telescopes for loan and would gladly accept others. Contact Rick Widmer, Secretary for more information.