



SNAKE RIVER SKIES



July 2009

Monthly Newsletter

July Monthly Meeting

Our monthly society meeting will be held on July 11th at 7:00 pm in the Rick Allen Room of the Herrett Center, College of Southern Idaho. There is a video this month on LRO/LCROSS and then following the video and information meeting we will hold our monthly public star party with the Centennial Observatory from 9:45 to Midnight. For more information about the Lunar Reconnaissance Orbiter mission please see the back page.

Trivia

The Saturn V rocket used the powerful F1 and J2 engines for propulsion.

The F1 engine is the most powerful single-nozzle liquid fueled engine ever used in service. When tested, these engines shattered the windows of nearby houses. During their two and a half minutes of operation, the five F-1s propelled the Saturn V vehicle to a height of 42 miles and a speed of 6,164 miles per hour. The combined propellant flow rate of the five F-1s in the Saturn V was 3,357 US gallons per second, which would empty a 30,000 US gallons (110,000 l) swimming pool in 8.9 seconds.

The engine was originally developed for the U.S. Air Force who deemed it "not practical." The builder, Rocketdyne, is now a part of Pratt & Whitney Rocketdyne.

Annual City of Rocks Star Party

The Magic Valley Astronomical, Centennial Observatory, Herrett Center, College of Southern Idaho and the Idaho Parks and Recreation Department will once again combine their services and host the annual star party at the Castle Rocks State Park this July 17th 2009. This location is not as high as the Pomerelle star party, but the skies are definitely darker.

Castle Rocks state park is located off of the Almo-Elba highway south of the Albion Range, blocking light pollution within the Magic Valley, therefore making the area one of Idaho's most dramatic dark sky areas. Almo is filled with historical significance, and yet has some very modern amenities. City of Rocks and Castle Rocks are world-renowned rock climbing destinations. There are over 500 climbing routes in City of Rocks alone, and many of the granite pillars are more than forty stories high, yet a wide open vista to the south from the Ranch House located in the Ranch Unit offers some amazing views of the skies. The 1,440-acre Ranch Unit encompasses a portion of the rocks, as well as remnants of its ranching his-

tory, Indian pictographs, and superb recreational opportunities. This unit includes two picnic areas, miles of multiple-use trails, and excellent sport climbing routes. Castle Rocks State Park includes two other park units near Almo: Smoky Mountain (240-acres), and the Administrative Unit (12-acres). Smoky Mountain Unit offers 38 campsites (6 are open to equestrian campers), RV dump station, and equestrian trail head for the historic California Trail. The Administrative Unit includes the visitor center for Castle Rocks and City of Rocks, a picnic area, historic wagons exhibit, and park offices.

Our schedule begins with Solar Observing at the Smoky Mountain Campground from 2:00 pm to 6:00 pm where those who have solar scopes will offer to the visiting public the opportunity to see (hopefully) sun spots and other solar activity.

We will have a dinner break following the solar session. For dinner you may bring and cook your own in a campfire pit, cook stove or camping trailer or you may venture to the Almo Creek Outpost Steakhouse (a really good choice) located along the highway in Almo (3020 Elba Almo highway, phone 208-824-5577.

Hours 9 am – 8 pm M-Th and 9 am – 9 pm F-S) just north and west of the visitor's center.

There is also a general store (oldest in Idaho) where you can shop for basic supplies

Beginning at 10:00 pm to Midnight, we will have the star party. The star party is informal, but there is a mandatory parks department vehicle fee of \$ 4.00. For more information log onto the parks department website <http://parksandrecreation.idaho.gov/>

City of Rocks/Castle Rocks is located at an elevation of 6,000' (1828.8 m) and it can get quite cold at night. Warm clothing is recommended. If you are participating this year please try and set up your telescope before 10:00 pm so you can find everything you need before sundown.

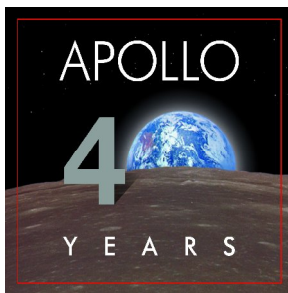
Remember there are checklists and general guidelines for star parties on the club website. Please review them for some very helpful hints. www.mvastro.org and follow the star party link.

Camping is also available. Contact the park service for more information.



We Choose the Moon

The Apollo 11 mission was the first manned mission to land on the Moon. It was the fifth human spaceflight of Project Apollo and the third human voyage to the Moon. It was also the second all-veteran crew in manned spaceflight history. Launched on July 16, 1969, it carried Mission Commander Neil Alden Armstrong, Command Module Pilot Michael Collins and Lunar Module Pilot Edwin Eugene 'Buzz' Aldrin, Jr. On July 20 at 4:17 p.m. Eastern Daylight Time , Astro-



naut Neil Armstrong piloted the Lunar Excursion Module (LEM) "Eagle" to a touchdown on Mare Tranquillitatis (sea of Tranquility)

on the Moon, with less than 30 seconds worth of fuel left in the Lunar Module. Astronaut Neil Armstrong famously announced, "Houston, Tranquility Base here. The *Eagle* has landed." . Six and one half hours later, at 02:56 UTC on July 21 (10:56pm EDT July 20th) Armstrong made his descent to the Moon's surface by climbing down the nine-rung ladder, Armstrong pulled a D-ring to deploy the Modular Equipment Stowage Assembly (MESA) folded against *Eagle's* side and activate the TV camera. The first landing used slow-scan television incompatible with commercial TV, so it was displayed on a special monitor and a conventional TV camera viewed this monitor, significantly losing quality in the process. The signal was received at Goldstone in the USA but with better fidelity by Honeysuckle Creek Tracking Station in Australia. Minutes later the feed was switched to the more sensitive Parkes radio telescope in Australia. Despite some technical and weather difficulties, ghostly black and white images of the first lunar EVA were received and broadcast to at least 600 million people on Earth.

After describing the surface dust ("fine

and almost like a powder"), Armstrong stepped off *Eagle's* footpad and into history as the first human to set foot on another world, famously describing it as "one small step for [a] man, one giant leap for mankind."

Aldrin then joined him, and described the view as "Magnificent desolation." After the astronauts planted a U.S. flag on the lunar surface, they spoke with President Richard Nixon through a telephone-radio transmission which Nixon called "the most historic phone call ever made from the White House." the two then spent two-and-a-half hours drilling core samples, photographing what they saw, and collecting rocks. After more than 21 hours on the lunar surface, they re-entered the LEM and after about seven hours of rest, they were awakened by Houston to prepare for the return flight. Two and a half hours later, at 17:54 UTC, they lifted off in *Eagle's* ascent stage, carrying 48.06 pounds (21.5 kilograms) of lunar samples with them, to rejoin CMP Michael Collins aboard *Columbia*

After more than 2½ hours on the lunar surface, they had left behind scientific instruments which included a retro-reflector array used for the Lunar Laser Ranging Experiment and a Passive Seismic Experiment used to measure moonquakes. They also left an American flag, an Apollo 1 mission patch, and a plaque (mounted on the LM Descent Stage ladder) bearing two drawings of Earth (of the Western and Eastern Hemispheres), an inscription, and signatures of the astronauts and Richard Nixon. The inscription read Here Men From The Planet Earth First Set Foot Upon the Moon, July 1969 A.D. We Came in Peace For All Mankind.

On July 24, the astronauts returned home and splashed down in the Pacific Ocean 2,660 km (1652.85 miles) east of Wake Island, or 380 km (236.12 miles) south of Johnston Atoll, and 24 km (15 miles) from the recovery ship, USS *Hornet*. After arriving on the *Hornet* the astronauts were immediately placed into quarantine over fears of unknown pathogens on the moon surface. President Nixon was onboard to greet the Astronauts.

The Apollo 11 mission completed President John F. Kennedy's goal of putting a man on the moon before the decade was out. During a joint session of congress on May 25th 1961, some three weeks after Alan Shepard became the first American in space, President Kennedy said in a speech. "We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too." The following year on September 12th 1962 President Kennedy gave the same speech to an audience at Rice University in Houston, TX. Both speeches are considered the beginnings of the race to go to the Moon. However, the speech given at Rice University is the most often quoted speech when referring to the beginnings of the Apollo program.

The world usually sees the speech from Rice University as it has the accompanying video that was broadcast on the evening news of the era. Following the speech NASA would complete the Mercury program, launch the Gemini Program and finally the Apollo Program. The



missions to the moon were tested in both the Gemini and early Apollo program flights.

Source: Various NASA news sites

July Skies



Solar Eclipse On July 22 the longest Total Solar Eclipse of the century will take place across India and China but mostly out over the Pacific Ocean. None of it will be visible from the U.S.

Mercury will be nearly impossible to see this month. For the first few days of the month Mercury may be seen very low on the eastern horizon just before dawn. The rest of the month it will be invisible because it will be too close to the sun. On the 13th it will go behind the Sun.

Venus will be stunningly bright in the eastern sky before sunrise. Venus will be shining at magnitude -4.1 which is dimmer than last month but still the brightest "star" in the sky. Only the Sun and the Moon appear brighter.

Mars will be in the eastern predawn this month. It will shine at Magnitude 1.1 but its small size will make it a marginal telescope target this month. It will be easy to spot though because the much brighter Venus is nearby all month.

Jupiter will rise in the southeast as it gets dark so around midnight it will be high in the southern sky around midnight. This will be the best time to observe it. It will be shining brilliant white at magnitude -2.8 which easily makes it the brightest object in this area of the sky. Jupiter is in the constellation Capricornus. With its belts on the surface and four orbiting moons Jupiter is a good target even through a small telescope especially this month. The much dimmer Neptune will be less than 2° from Jupiter all month. They both could be visible through a telescope with a low power eyepiece.

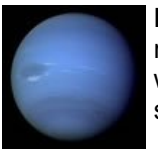


Saturn will be in the southwest at dusk. Aside from the Moon it will be the only planet out before around midnight. It will be around Magnitude 1.1 this month. Through a telescope it will be seen that its beautiful ring system appears very close to edge on. This makes Saturn's other features more noticeable. This will be a good month to observe Saturn. It is well positioned in the sky as it gets dark. It is starting to fade into the west and will be setting earlier every day so target it before it gets any lower. Next month the ring system gets even more edge on and the planet drops down into the sunset glare. On the

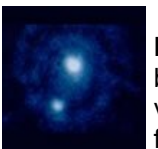
17th around 8:00PM PST Titan's shadow will start across Saturn's face. Shadow transits on Saturn are somewhat rare because they only happen when the rings are near edge on to the Sun.



Uranus should be easy to spot this month. It will rise about an hour after Jupiter does. It will be shining at Magnitude 5.8 in Pisces. This puts it below Jupiter and Neptune but above Venus and Mars. It should be high enough above the horizon to look for it through a telescope just after midnight. Uranus shines with a pale aquamarine color. Under ideal conditions it is bright enough to be a marginal naked eye target and an easy binocular target.



Neptune will be at Magnitude 7.8 this month. This makes it an easy binocular target from dark skies. The much brighter Jupiter will be less than 2° from Neptune all month. On the 1st Neptune will be 0.7° northwest of Jupiter. On the 13th Neptune will be 0.6° to the north. They both could be visible through a telescope with a low power eyepiece. Neptune shines a pale blue in color.



Pluto reached opposition last month. This is the best time this year to try to find it. It will be close its brightest for the year and sit at its highest in the sky straight to the south at midnight. Pluto will still be a very tough target. It shines at only Magnitude 13.9. It sits in northern Sagittarius. You will need a good finder chart, lots of patience and about a 10" telescope to find it.



Moon without a doubt is the easiest target to find and easiest to image. The moon is full on the 7th, Last quarter is on the 15th and should make for some very good stargazing at City of Rocks. The New Moon is on the 21st. The first quarter is on the 28th of July.

Snake River Skies is the monthly publication of the

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

© 2009 MVAS All Rights Reserved, except where
so indicated.

www.mvastro.org

July Skies Continued

3 Earth is at aphelion, its greatest distance from the Sun for the year. Antares is slightly to the left or lower left of the Moon at nightfall, and they move closer together during the night.

14 The bull casts his ruddy eye — the star Aldebaran — on some interesting goings— on in the dawn sky. Venus, the enchanting "morning star," is close to Aldebaran early in the month, with Mars huddling closer to it later on. Mars and Aldebaran show the same orange color, and are almost identically bright this month. The Moon joins the lineup for a few days. Another orange pinpoint, the star Antares, highlights the evening as the center of Scorpius, the scorpion. The summer Milky Way arcs across the sky at an earlier hour each night.

17-19 The Moon, Venus, Mars, and Aldebaran stage a beautiful show. The Moon is above the others on the morning of the 17th, beside Mars on the 18th, and to the left of Venus on the 19th. Aldebaran stays to the right of Venus.

24-25 Golden Saturn stands above the Moon at nightfall on the 24th, and to its upper right on the 25th.

27 Two orange pinpoints line up close together this morning: Mars and Aldebaran. Mars is slightly higher. They are well up in the east at dawn.

30-31 Antares is to the left of the Moon on the evening of the 30th, and to the right of the Moon on the 31st.

The constellation Scorpius is an easily found July constellation in the southern sky. The brightest star α Scorpius (Antares) is at the heart of the constellation. Scorpius is one of the few constellation that actually resembles its name.

For Sun and Moon information visit our club's website and click the images at the top of the page. Our address is in the upper left corner of this page.

Image: © 1997-2005 by Thor Olson. All rights reserved. Image used with the permission of the photographer. www.nightscaapes.net



Lunar Reconnaissance Orbiter (LRO)

NASA's Lunar Reconnaissance Orbiter launched at 5:32 p.m. EDT Thursday aboard an Atlas V rocket from Cape Canaveral Air Force Station in Florida. The satellite will relay more information about the lunar environment than any other previous mission to the moon.

The orbiter, known as LRO, separated from the Atlas V rocket carrying it and a companion mission, the Lunar Crater Observation and Sensing Satellite, or LCROSS, and immediately began powering up the components necessary to control the spacecraft. The flight operations team established communication with LRO and commanded the successful deployment of the solar array at 7:40 p.m. The operations team continues to check out the spacecraft subsystems and prepare for the first mid-course correction maneuver. NASA scientists expect to establish commu-

nications with LCROSS about four hours after launch, at approximately 9:30 p.m.

On July 2 - LRO transmitted its first images since reaching the moon on June 23. The spacecraft's two cameras, collectively known as the Lunar Reconnaissance Orbiter Camera, or LROC, were activated June 30. The cameras are working well and have returned images of a region in the lunar highlands south of Mare Nubium (Sea of Clouds).

As the moon rotates beneath LRO, LROC gradually will build up photographic maps of the lunar surface.

Source: lunar.gsfc.nasa.gov/index.html news link.

I've loved the stars too fondly to be fearful of the night—Galileo Galilei

