



SNAKE RIVER SKIES



August 2009

Monthly Newsletter

August Meeting

There is no meeting this month as we will be having the annual picnic and potluck on the Kinney Court of the Herrett Center on the 8th of August beginning at 7:00 pm. See the accompanying article on this page.



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Pomerelle Mountain Star Party

Dark skies are good, high altitude dark skies are even better! The Board of Directors once again cordially invites you, your family, friends and others you may wish to invite, to our annual Pomerelle Mountain Ski Resort Star Party on Saturday, the 15th of August 2009. On top of the mountain you may experience some of southern Idaho's most pristine skies; an area where objects will seemingly jump right out at you. This year promises to be an even bigger event than last year. The events will begin with a solar observing session and concurrently a pop bottle rocket construction and launching. There will be some smaller activities as well, which are similar to the events at the Herrett Center for Astronomy

Day. Chris Anderson has agreed to do another talk. Then we will traverse the mountain via the chair lifts for mountain top night viewing. Schedule of events for Pomerelle:

- Water bottle rockets and safe solar observing from 3pm-6pm. At the lodge.
- Open for dinner 6pm-7pm
- Chris's talk: 7:30-8:30pm Idaho Summer Skies
- 8:30pm-12 am Chair lift rides to the telescopes at the top of the mountain.

This year Chris Anderson is also going to present an open air observatory for guests who attend. For those who are participating you will need to bring a chair of some description.



Chris will be setting up away from the telescopes and using a laser pointer he will point out various constellations and stars describing them and their associated lore and legends. This will mean more telescopes will be needed on the mountain. Please join us for a truly unique experience.

Cost: \$8 for ages 12 and up. \$5 for ages 7-12. Free for ages 6 and under (must be accompanied by an adult). \$1 off advanced tickets on sale now.

Annual Astronomy Club Picnic and Potluck

The fourth annual society members picnic and potluck will be held once again on the Kinney court of the Herrett Center. We will provide the BBQ's, hamburgers, hotdogs and the drinks. You bring whatever side dish, or a dessert you would like. We begin at 7:00pm. The

grills will be going by then and food served around 7:30. The picnic takes the place of our regular meeting and has been one of the best attended events during the year for club members. Following the event is our monthly star party with the Centennial Observatory at 9:45 pm.



Hubble Readies for Full Operation by Kelly Beatty—Sky & Telescope

It's hard to believe that 2½ months have passed since the crew of *Atlantis* wrapped up their extensive repairs and refurbishment of the Hubble Space Telescope.

So when will Hubble get back to work? In a sense, it already has. When Australian amateur Anthony Wesley spotted the "powder burn" in Jupiter's atmosphere from an apparent impact on July 19th, Hubble managers hustled to turn its 94-inch (2.4-meter) eye on the new feature so that the just-installed Wide Field Camera 3 could take some snapshots.

But HST isn't yet fully ready to return to duty. Engineers are still stepping their way through the long "to do" list known as the Servicing Mission Observation Verification (SMOV), and a few glitches have come up.

For one thing, the Science Instrument Command and Data Handler — think of it as the router for Hubble's science data — acted up not long after the servicing mission concluded. (Remember: NASA delayed STS 125, the fifth and final Space Shuttle servicing mission, by some six months so that this last-minute replacement could be recalled from storage, checked out, added to the payload, and installed by spacewalking astronauts.) Fortunately, this anomaly resolved itself after engineers shut down the SI-C&DH and powered it back up.

A few days later two Hubble instruments, the patched-up Advanced Camera for Surveys (ACS) and the brand-new Cosmic Origins Spectrograph, hiccupped. Both have since resumed operation.

Then on July 6th the Space Telescope

Imaging Spectrograph shut itself down and didn't return to operation on July 28th. STIS still has a problem with its near-ultraviolet channel: a mysterious fluorescence on its optical window is creating detector



Astronauts Andrew Feustel (at left) and John Grunsfeld attend to repairs of the Hubble Space Telescope during the fifth and final spacewalk of the STS-125 mission in May 2009.

noise (dark current) that degrades the instrument's performance.

All this might seem ominous for Hubble's prospects for long-term success. But according to Preston Burch, program manager for HST at NASA's Goddard Space Flight Center, the team is just being cautious. "We want to be careful that we don't break something," he says. In fact, Burch seems quite upbeat because the post-repair checkout is actually quite far along.

Even NICMOS, the Near Infrared Camera and Multi-Object Spectrometer, will soon be back in operation after a year-long hiatus. On August 1st the instrument's finicky

cryogenic cooling system finally responded to coaxing from ground controllers after many months of failed restart attempts. NICMOS must operate at very cold temperatures — at or below -321°F (77 K) — to ensure that its sensitive detectors are recording feeble infrared light from space instead of heat from its own electronics.

"If all goes well," comments Glenn Schneider, instrument scientist at the University of Arizona, "it will take about a month for NICMOS to cool down so that we can begin the re-enabling and recalibrating the instrument."

"We're over the hump," Burch told me this afternoon, "and starting to do routine science operations." Within two weeks, he estimates, HST will be observing a third of the time, and that should rise to nearly full-time by early September.

Astronomers have already been zeroing in on deep-space targets with ACS and WFC3 that will showcase the orbiting observatory's enhanced capabilities. Circle September 9th on your calendars — that's when NASA managers plan to release some eye-popping new views from the re-habbed, restored, refurbished, and remarkable Hubble Space Telescope.



Image Credits: NASA

Tool Bag Lost In Space Meets Fiery End

A tool bag lost by a spacewalking astronaut last year met its fiery demise in Earth's atmosphere Monday after months circling ever closer to the planet.

The \$100,000 tool bag plunged toward Earth and burned up as it re-entered the atmosphere, according to the U.S. Air Force's Joint Space Operations Center tracking it and more than 19,000 other pieces of space junk in orbit today from Vandenberg Air Force Base in California.

"Based on its size and composition, we expect the object to completely burn up before hitting the Earth," center officials said in a statement.

The tool bag was lost during a Nov. 18 spacewalk at the International Space Station. In addition to the Joint Operations Space Center, amateur sky-watchers also tracked the bag as it silently circled the Earth.

Center officials did not immediately have a specific time and location for the tool bag's ultimate demise, but a Sunday report by the Web site *Universe Today* predicted the wayward space satchel would hit the Earth's atmosphere at about 9:16 a.m. EDT (1316 GMT) over the Pacific Ocean, just west of Mexico.

Tool bag drifts away
source: NASA



August Calendar

Jupiter is the big story this month. It will be at its biggest and brightest at midmonth. This month will be the prime time to observe it. The dependable Perseid Meteor Shower peaks August 11th and 12th but the Moon will interfere.



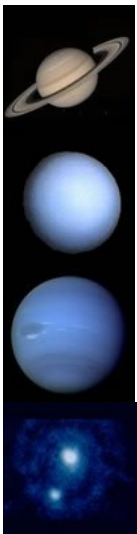
Mercury will sit very low in the sunset twilight in the west. It should be marginally visible the second week of August. On the 17th Saturn will be 3° of Mercury low on the western horizon.

Venus will be stunningly bright in the eastern sky before sunrise all month. Venus will be shining at magnitude -4.0 which is dimmer than last month but still the brightest "star" in the sky. Only the Sun and the Moon appear brighter. This month, through a telescope, Venus will appear about 75% "full".

Mars will be in the eastern predawn this month. It will shine at magnitude 1.0 but its small size will make it only a fair telescope target this month. The best time to observe it would be just before the predawn twilight starts when Mars will be highest in the sky. Mars shines red orange in color

Jupiter will reach opposition this month on the 14th. This means it will be its closest to Earth and thus will be as big and bright as it gets. This is the best time to observe it. It will rise at sunset and set at sunrise, although the best time of night to observe it would be around midnight when it is highest in the sky and you be looking through less turbulent atmosphere. It will be shining brilliant white at magnitude -2.9 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. Two of Jupiter's moons will cast their shadows on Jupiter's surface on the night of the 26th between 7:20PDT and 10:12PDT. This is an interesting target within a target. Through a telescope,

two very black round shadows will slowly make their way across Jupiter's surface of cloud belts. This can be seen through a small telescope. Jupiter will be better placed for this on the Eastern U.S. The black spot that was observed late last month may still be visible as it measures about 10,000 km across making it roughly the size of the Earth. It's composed of dust, basically vaporized whatever-it-was-that-smacked-into-Jupiter.



Saturn will be officially magnitude 1.1 this month but it fades into the sunset by the end of the month. Saturn will be too low to be a good telescope target this month. You may be able to spot it low on the horizon early in the month after the sunset. On the 17th it will be 3° above Mercury very low on the horizon. Saturn will appear yellow-orange in color. It is too bad Saturn will be invisible late in the month. Saturn's rings have been close to edge on for some months now. On the 10th the rings will be exactly edge on and seem to disappear. After the 10th, for 25 days or so earth actually sees the backside/unlit side of the rings.

Uranus should be easy to spot this month. It will rise about an hour after Jupiter does. It will be shining at magnitude 5.7 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 around 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 reach opposition this month on the 17th. This means it will be its closest to Earth and thus will be as big and bright as it gets. This is the best time to observe it. It will rise at sunset and set at sunrise, although the best time of night to observe it would be around midnight when it is highest in the sky and you

will be looking through less turbulent atmosphere. It 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 5° from Neptune all month. Neptune shines a pale blue in color.

Pluto This month Pluto will be pretty high in the sky around the time it gets dark. This would be the best time to look for it. Pluto is always a very tough target. It shines at only magnitude 14.0. It sits in northern Sagittarius. You will need a good finder chart, lots of patience and about a 10" telescope to find it. Even if you are looking at it would be tough.

Astronomical Twilight Astronomical twilight begins in the morning when the sun comes to within 18° below the geometric horizon and ends in the evening when the sun sets 18° below the horizon. This is the traditional transition to and from the darkest sky conditions at a location; barring light pollution or the moon.

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Trivia



Perseid Meteor Shower 2009

The dependable Perseid Meteor shower peaks on the nights of the 11th/12th and 12th/13th. The shower will however be going on days before and after. The exact predicted peak time favors the Far East. The Moon will be up and interfere with dark skies during the peak observing time from midnight to dawn. In general, midnight until dawn is always the best time for meteor showers as the Earth will be turning in the direction the Earth is moving around the sun (and picking up debris faster).

The sight of a bright fireball is a memorable and awe-inspiring scene. It is often the first contact that people have with the wonders of astronomy. Quite often it has also led to a life-long fascination with the heavens above. Meteor observing is a simple and inexpensive way to gain knowledge of astronomy and to

make scientifically useful observations. The best strategy for viewing Perseid activity this year would be to observe during the last few dark hours before dawn on the morning of August 12. If August 12 is cloudy, decent counts may still be seen on the 11th and 13th. You may try to view during the early evening hours, when the moon is still below the horizon. Unfortunately at this time the Perseid radiant lies low in the north and only a fraction of the overall activity can be seen.

The Perseid meteors that are visible this time of night are often spectacular as they streak long distances across the sky and last for several seconds. It's unfortunate that they are so few and far between. During the morning hours the Perseid radiant rises higher into the sky, allowing more activity to be seen. This year it will be important to make sure to keep the bright moon

out of your line of sight. This will allow you to see the most activity. It is also advisable to look approximately half way up into the sky and not straight up. This angle will also allow you to see more activity since the column of air you are viewing through will be thicker at 45 degrees altitude compared to straight up.

While the 2009 Perseid shower is compromised, meteor observers can look forward to 2010 when the moon will be just past its new phase and completely out of the way by the time the Perseid radiant is high in the sky.

Source for the photo above: Howard Edin. He captured this bright fireball from the Okie-Tex Star Party on September 30, 2008. Permission granted via public domain.