

Eugene Astronomical Society,  
Annual Club Dues \$25, Board Members:  
President: Sam Pitts - 688-7330  
Secretary: Jerry Olton - 343-4758  
Jacob Strandlien, Tony Dandurand,  
Tommy Lightning Bolt

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

EAS is a Proud Member of:

**The Astronomical League**  
The World's Largest Federation of Amateur Astronomers



## Wednesday- November 7<sup>th</sup> MEETING EUGENE ASTRONOMICAL SOCIETY

Held at:

Science Factory Children's Museum & Planetarium  
2300 Leo Harris Parkway, Eugene  
SW of Autzen Stadium

### Celestial Wonders

By: Sam Pitts

This month's program will take you on a tour of the night skies as imaged from dark sky sites throughout Oregon. You will see wide field views of constellations, comets and the night sky. Then we will progress to close-encounters with the moon, planets, galaxies, star clusters, gaseous clouds (nebulae) etc., all from the warmth and comfort of your seats in the planetarium. Witness the color and details that visual observations just can't discern. The ability of long exposures on film & CCD to capture exquisite detail and color is truly amazing. Come out and enjoy some pretty pictures of Celestial Wonders that make up the night sky.

Jacob Strandlien will keep you up to date with his monthly presentation on current events and news in Space & Astronomy. Jacob always has some interesting news and great images to share with the group.

We always encourage audience participation during our meetings. EAS meetings are traditionally times when we learn about astronomy and share others' experiences and knowledge of astronomy and the night sky.

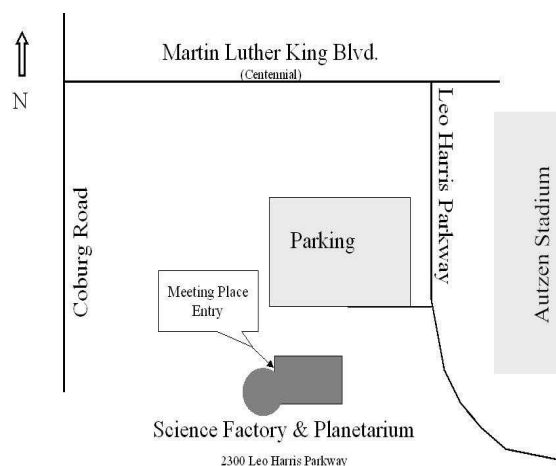
Come and enjoy the wonders of the night sky with the Eugene Astronomical Society at The Science Factory's comfortable Planetarium.

**The presentation & meeting will begin at 7:00 PM in the Planetarium on Wednesday, November 7th, 2007.**

## Meeting Day to Change starting in November 2007

EAS general meetings will now be on the 1st Wednesday of each month at 7:00 PM except for holidays, at The Science Factory Children's Museum & Planetarium. Guests are welcome to visit; we ask for a \$1 guest contribution. Meetings feature speakers with presentations on topics of interest to club members, current viewing opportunities, telescope help, and star party planning.

EAS thanks the Science Factory Children's Museum & Planetarium for providing the Planetarium for our monthly meetings.



Join the EAS mail list → <http://eugeneastro.org/mailman/listinfo/org.eugeneastro.general>



# Observing in November

November 1	November 9	November 17	November 24
Mercury Rise 5:26 AM	Mercury Rise 5:16 AM	Mercury Rise 5:40 AM	Mercury Rise 6:10 AM
Venus Rise 2:46 AM	Venus Rise 2:57 AM	Venus Rise 3:10 AM	Venus Rise 3:22 AM
Mars Rise 8:31 PM	Mars Rise 8:03 PM	Mars Rise 7:30 PM	Mars Rise 6:58 PM
Jupiter Set 7:11 PM	Jupiter Set 6:46 PM	Jupiter Set 6:21 PM	Jupiter Set 6:00 PM
Saturn Rise 1:22 AM	Saturn Rise 12:53 AM	Saturn Rise 12:24 AM	Saturn Rise 11:55 PM
Uranus Set 2:14 AM	Uranus Set 1:42 AM	Uranus Set 1:10 AM	Uranus Set 12:42 AM
Neptune Set 12:00 AM	Neptune Set 11:25 PM	Neptune Set 10:53 PM	Neptune Set 10:56 PM
Pluto Set 8:10 PM	Pluto Set 7:39 PM	Pluto Set 7:09 PM	Pluto Set 6:42 PM

All times: U.S. Pacific Daylight Time (March 11-November 4, 2007) = UT - 7 hours. Pacific Standard Time (Nov.-March) = UT-8

Date	Moonrise	Moonsset	Sunrise	Sunset	Twilight Begin	Twilight End
11/1/2007	23:25	13:41	06:49	17:03	05:11	18:40
11/2/2007	-----	14:05	06:50	17:01	05:12	18:39
11/3/2007	00:34	14:25	06:51	17:00	05:13	18:38
11/4/2007	01:41	14:44	06:53	16:59	05:15	18:37
11/5/2007	02:45	15:01	06:54	16:57	05:16	18:35
11/6/2007	03:48	15:18	06:55	16:56	05:17	18:34
11/7/2007	04:51	15:36	06:57	16:55	05:18	18:33
11/8/2007	05:55	15:57	06:58	16:54	05:19	18:32
11/9/2007	07:00	16:21	06:59	16:52	05:20	18:31
11/10/2007	08:05	16:51	07:01	16:51	05:22	18:30
11/11/2007	09:09	17:29	07:02	16:50	05:23	18:29
11/12/2007	10:08	18:16	07:03	16:49	05:24	18:29
11/13/2007	10:59	19:12	07:05	16:48	05:25	18:28
11/14/2007	11:43	20:15	07:06	16:47	05:26	18:27
11/15/2007	12:18	21:24	07:07	16:46	05:27	18:26
11/16/2007	12:47	22:35	07:09	16:45	05:28	18:25
11/17/2007	13:11	23:48	07:10	16:44	05:29	18:25
11/18/2007	13:33	-----	07:11	16:43	05:31	18:24
11/19/2007	13:54	01:01	07:13	16:42	05:32	18:23
11/20/2007	14:14	02:16	07:14	16:42	05:33	18:23
11/21/2007	14:37	03:35	07:15	16:41	05:34	18:22
11/22/2007	15:05	04:57	07:16	16:40	05:35	18:22
11/23/2007	15:40	06:22	07:18	16:39	05:36	18:21
11/24/2007	16:25	07:47	07:19	16:39	05:37	18:21
11/25/2007	17:24	09:06	07:20	16:38	05:38	18:20
11/26/2007	18:34	10:11	07:21	16:38	05:39	18:20
11/27/2007	19:51	11:01	07:23	16:37	05:40	18:19
11/28/2007	21:08	11:39	07:24	16:36	05:41	18:19
11/29/2007	22:21	12:07	07:25	16:36	05:42	18:19
11/30/2007	23:31	12:29	07:26	16:36	05:43	18:19

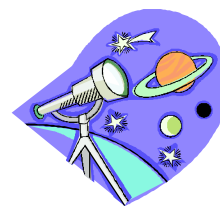
## Current Occultations & Other Events

Visit Derek C Breit's web site

**"BREIT IDEAS Observatory"**

<http://www.poyntsource.com/New/Regions/EAS.htm>

Go to Regional Events and click on the Eugene, Oregon section. This will take you to a current list of Lunar & asteroid events for the Eugene area. Breit continues to update and add to his site weekly if not daily. This is a site to place in your favorites list and visit often.



All times are for Eugene, Oregon Latitude 44° 3' 8" Longitude 123° 5' 8" for listed date

## Events

### NOVEMBER 2007

1	<b>Pay your EAS dues</b> ; SAR-Lupe 3 Cosmos 3M Launch; Lecture: A Rogue Asteroid and the Dinosaurs' Extinction, Houston, Texas; Workshop To Develop a National Plan for Preserving Astronomical Photographic Data, Rosman, North Carolina; World Space Expo, Kennedy Space Center, Florida
2	90th Anniversary (1917), Mount Wilson 100-inch Telescope First Light
3	<b>Taurids Meteor Shower Peak</b> ; DSP-23 Delta 4 Heavy Launch; 50th Anniversary (1957), Sputnik 2 Launch (Laika Dog); World Space Expo, Orlando, Florida
4	<b>Daylight Saving</b> - Set Clock Back 1 Hour (United States); Asteroid 2007 RR9 Near-Earth Flyby (0.073 AU); Occultation (192) Nausikaa / TYC 6891-02482-1 event on 2007 Nov 04, 02:04 UT, Visible from NW USA, SW Canada
5	Asteroid 2007 TG1 Near-Earth Flyby (0.081 AU); 1st International Conference on the Exploration of Phobos and Deimos, Moffett Field, California; Anniversary (2002), Galileo, Amalthea 34 Flyby
7	40th Anniversary (1967), Surveyor 6 Launch (Moon Lander); Asteroid PLS6344 Near-Earth Flyby (0.072 AU) <b>Please Pay your EAS Dues" at our November 7th meeting (see Jerry)</b>
8	Mercury At Its Greatest Western Elongation; Asteroid 2005 GL Near-Earth Flyby (0.020 AU) 1.8 million miles
9	Star One C-1/ Skynet 5B Ariane 5 Launch; 40th Anniversary (1967), 1st Saturn V Launch (Apollo 4)
13	Rosetta, 2nd Earth Flyby
15	Lecture: The Hidden Ocean of Europa - Beneath the Frozen Surface, Pasadena, California
17	<b>Leonids Meteor Shower Peak</b> ; Moon Occults Neptune
19	Cassini, Titan Flyby
23	30th Anniversary (1977), Meteosat 1 Launch (ESA's 1st Satellite)
24	Asteroid 11500 (1989 UR) Near-Earth Flyby (0.071 AU)
26	RapidEye 1-5 Dnepr 1 Launch
28	5th Anniversary (2002), Alsat 1 Launch (1st Algerian Satellite); Workshop: Astrophysics Enabled By the Return to the Moon, Baltimore, Maryland; Conference: Galaxy and Black Hole Evolution - Towards a Unified View, Tucson, Arizona
29	40th Anniversary (1967), Wresat 1 Launch (Australia's 1st Satellite)
30	Ulysses, Start of Third North Polar Pass

AU=Astronomical Unit (92,955,800 miles)

<sup>1</sup> <http://space.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=space&zu=http%3A%2F%2Fwww2.jpl.nasa.gov%2Fcalendar%2F>

### Star Parties:

- None Scheduled



### Thank You Castle Storage

Board member Tommy Lightning Bolt was instrumental in getting a storage unit from the owners of Castle Storage for EAS to store its telescopes and equipment. EAS would like to thank Castle Storage for their generosity and support for our group. Please give them a call if you need a storage space and tell your friends. They are great people and offer secure and quality units.

November 4, 2007, 2:00 AM -Daylight Savings Time ends. Turn clocks back 1 hour.

## NASA Spacecraft Heads for Polar Region on Mars



CAPE CANAVERAL, Fla. - NASA's Phoenix Mars Mission blasted off Saturday, aiming for a May 25, 2008, arrival at the Red Planet and a close-up examination of the surface of the northern polar region.

Perched atop a Delta II rocket, the spacecraft left Cape Canaveral Air Force Base at 5:26 a.m. Eastern Time into the predawn sky above Florida's Atlantic coast.

"Today's launch is the first step in the long journey to the surface of Mars. We certainly are excited about launching, but we still are concerned about our actual landing, the most difficult step of this mission," said Phoenix Principal Investigator Peter Smith of the University of Arizona's Lunar and Planetary Laboratory, Tucson.

The spacecraft established communications with its ground team via the Goldstone, Calif., antenna station of NASA's Deep Space Network at 7:02 a.m. Eastern Time, after separating from the third stage of the launch vehicle.

"The launch team did a spectacular job getting us on the way," said Barry Goldstein, Phoenix project manager at NASA's Jet Propulsion Laboratory, Pasadena, Calif. "Our trajectory is still being evaluated in detail; however we are well within expected limits for a successful journey to the red planet. We are all thrilled!"

Phoenix will be the first mission to touch water-ice on Mars. Its robotic arm will dig to an icy layer believed to lie just beneath the surface. The mission will study the history of the water in the ice, monitor weather of the polar region, and investigate whether the subsurface environment in the far-northern plains of Mars has ever been favorable for sustaining microbial life.

"Water is central to every type of study we will conduct on Mars," Smith said.

The Phoenix Mars Mission is the first of NASA's competitively proposed and selected Mars Scout missions, supplementing the agency's core Mars Exploration Program, whose theme is "follow the water." The University of Arizona was selected to lead the mission in August 2003 and is the first public university to lead a Mars exploration mission.

Phoenix uses the main body of a lander originally made for a 2001 mission that was cancelled before launch. "During the past year we have run Phoenix through a rigorous testing regimen," said Ed Sedivy, Phoenix spacecraft program manager for Lockheed Martin Space Systems, Denver, which built the spacecraft. "The testing approach runs the spacecraft and integrated instruments through actual mission sequences, allowing us to assess the entire system through the life of the mission while here on Earth."

Samples of soil and ice collected by the lander's robotic arm will be analyzed by instruments mounted on the deck. One key instrument will check for water and carbon-containing compounds by heating soil samples in tiny ovens and examining the vapors that are given off. Another will test soil samples by adding water and analyzing the dissolution products. Cameras and microscopes will provide information on scales spanning 10 powers of 10, from features that could fit by the hundreds into a period at the end of a sentence to an aerial view taken during descent. A weather station will provide information about atmospheric processes in the arctic region.

The Phoenix mission is led by Smith, with project management at JPL and development partnership at Lockheed Martin, Denver. The NASA Launch Services Program at Kennedy Space Center and the United Launch Alliance are responsible for the Delta II launch service. International contributions are provided by the Canadian Space Agency, the University of Neuchatel (Switzerland), the University of Copenhagen (Denmark), the Max Planck Institute (Germany) and the Finnish Meteorological Institute. JPL is a division of the California Institute of Technology in Pasadena.

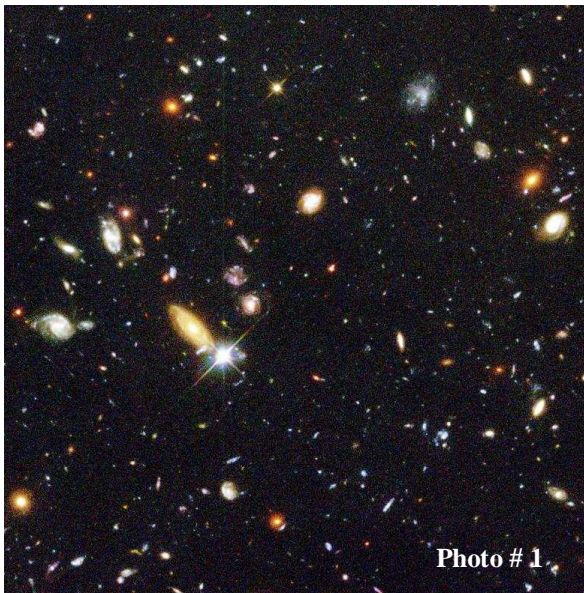
Additional information on Phoenix is available online at: <http://www.nasa.gov/phoenix> .

Additional information on NASA's Mars program is available online at: <http://www.nasa.gov/mars>.

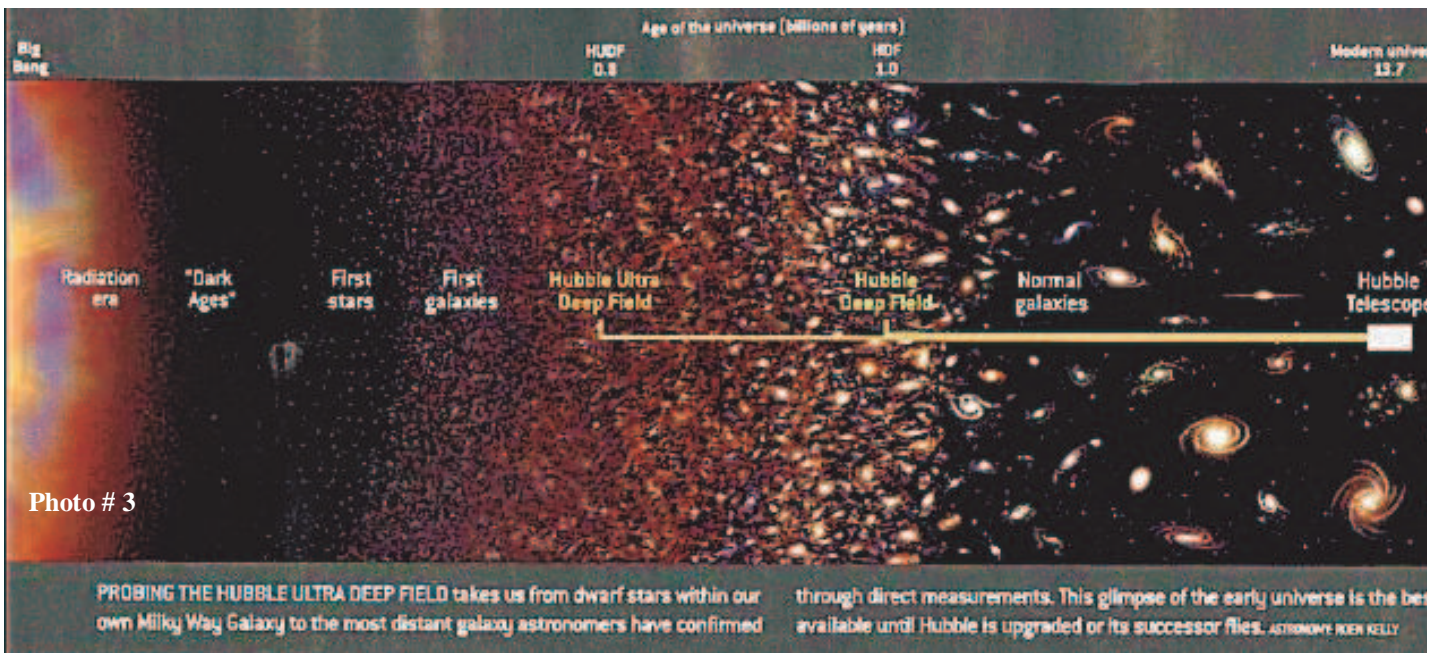
Thanks to NASA for this Article

# The True Value of the Hubble Deep Field

Hubble's Deep Field Survey Photo # 1. The Hubble Space Telescope (HST) was launched on April 24, 1990. Since then it has collected photographs of various celestial objects in astonishing details. One of the photos called Hubble Deep Fields has captured astronomical objects from nearby stars to some immature galaxies near the beginning of the Big Bang.



We are able to sample different epochs in the photo because light from the nearer objects reaches us sooner than from those further out (because light propagates with a finite speed of  $3 \times 10^{10}$  cm/sec). The objects in the photo can be separated by redshift into a series of images corresponding to different epochs. It unveils a universe that is steadily changing over time, just as the Big Bang predicts. Photo # 3 shows the scope of the survey including the Hubble Ultra Deep Field (Photo #2).



The Hubble Ultra Deep Field (HUDF) has provided the deepest image of the universe ever taken in visible light. It shows a sampling of the oldest galaxies ever seen, galaxies that formed just after the dark ages, when the universe was about 700 million years old (5 percent of its present age). The field is studded with a wide range of galaxies of various sizes, shapes, and colors. In vibrant contrast to the image's rich harvest of classic spiral and elliptical galaxies, there is a zoo of oddball galaxies littering the field. Some look like toothpicks, others like links on a bracelet. A few galaxies appear to be interacting. This new view is actually two separate images taken by Hubble's Advanced Camera for Surveys (ACS) and the Near Infrared Camera and Multi-object Spectrometer (NICMOS). They took the image during 3 months (from 9/24/ 2003, to 1/16/2004 at the same spot, the HUDF is four times more sensitive, in some colors, than the original Hubble Deep Field (HDF) taken in 1995 and 1998.

**100 Years Ago** October 26, 1907: In France, aviation pioneer Henri Farman was awarded the Archdeacon Cup for flying a record-setting distance of 2,350 feet.

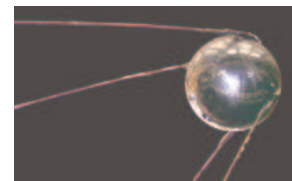
**75 Years Ago** October 15, 1932: The Institute of Aeronautical Sciences was incorporated in New York “to advance the art and science of aeronautics; to publish works of literature, science and art ...” In 1963, this organization joined the American Rocket Society to form the American Institute of Aeronautics and Astronautics.

**60 Years Ago** October 14, 1947: The Bell X-1 became the first aircraft to travel faster than the speed of sound. Piloted by Charles Yeager, the X-1 reached a maximum speed of 700 miles per hour. Yeager named the airplane "Glamorous Glennis" in honor of his wife.



**50 Years Ago** October 4, 1957: The Soviet Union launched Sputnik I, the world’s first artificial satellite. Sputnik weighed 183 pounds and orbited Earth in 98 minutes emitting a series of radio signal beeps.

The launch of Sputnik triggered the beginning of the space race between the United States and the Soviet Union. Sputnik led Americans to fear the Soviet Union’s potential power to launch ballistic missiles. In response, Congress passed the Space Act in July 1958, which resulted in the creation of NASA.



**45 Years Ago** October 3, 1962: NASA launched the third U.S. orbital space flight, Mercury mission Sigma 7, on an Atlas rocket. Onboard, astronaut Walter (“Wally”) Schirra completed six orbits around Earth in nine hours.

**30 Years Ago** October 22, 1977: NASA launched two of three International Sun-Earth Explorer (ISEE) satellites, which were developed through a partnership between NASA and the European Space Agency. NASA launched ISEE 1 and 2 from Cape Canaveral, Fla., via a Delta 2000 rocket. Researchers used them to study and explore Earth's magnetosphere with instruments that measured energetic particles, plasma, waves and fields. The third satellite, ISEE-3, was launched into a different orbit on August 12, 1978.

**25 Years Ago** October 30, 1982: NASA first used the Titan 34D rocket with a new Inertial Upper Stage (IUS) booster to launch Defense Satellite Communications System (DSCS) II and III.

**15 Years Ago** October 22, 1992: NASA launched Space Shuttle Columbia to begin STS-52, the 51st shuttle mission. Columbia traveled 4.1 million miles carrying six crewmembers. Its launch weight was more than 250,000 pounds.

**10 Years Ago** October 15, 1997: NASA launched Cassini, beginning the spacecraft's long journey to Saturn. Cassini reached Saturn’s orbit in July 2004 and has been used to collect data on the planet’s composition, rings, moons and atmosphere. The launch vehicle used was a Titan IVB with a Centaur upper stage.

**5 Years Ago** October 7, 2002: NASA launched Space Shuttle Atlantis to deliver the 28,000 pound Starboard 1 truss segment and the Crew Equipment Translation Aid (CETA) Cart to the International Space Station. CETA was one of two human-powered carts used to help astronauts perform spacewalks.

**Present Day** October 1, 2007: NASA begins celebrating its 50th year. The agency began operations on October 1, 1958 and started to conduct space missions within months of its creation.

October 20, 2007: NASA will begin STS-120, the 23rd shuttle mission to the space station. During this mission, the shuttle will deliver Harmony, the multi-port Node 2 module, made by Alcatel-Alenia Space in Italy. Harmony is a pressurized passageway that will connect the U.S. segment of the station to the European and Japanese modules.