

# IO – March 2007

Issue 2007-03  
Eugene Astronomical Society



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

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

EAS is a Proud Member of:

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

IO editor- sampitts@comcast.net 688-7330

*Io (EYE-oh) is nearest to Jupiter and fastest orbiting of the four Galilean moons*

## Monday- March 5th MEETING

EUGENE ASTRONOMICAL SOCIETY

Held at:

**"Science Factory Children's Museum & Planetarium"**

**2300 Leo Harris Parkway, Eugene  
SW of Autzen Stadium**

## Telescope at 40,000 Feet

By: Alfred Mikesell  
Astronomer

Alfred Mikesell will present a very interesting talk about his experiences and observations aboard a gondola attached to a balloon at 40,000 feet. Mikesell made observations with a telescope from this altitude, braving severe cold and extreme conditions in Earth's stratosphere. This should be a very enriching view into some interesting observation and shared experiences. Mr. Mikesell spent 34 years with The United States Naval Observatory and has a vast knowledge of the skies and some great personal insights into the history of astronomy.

## Comets:

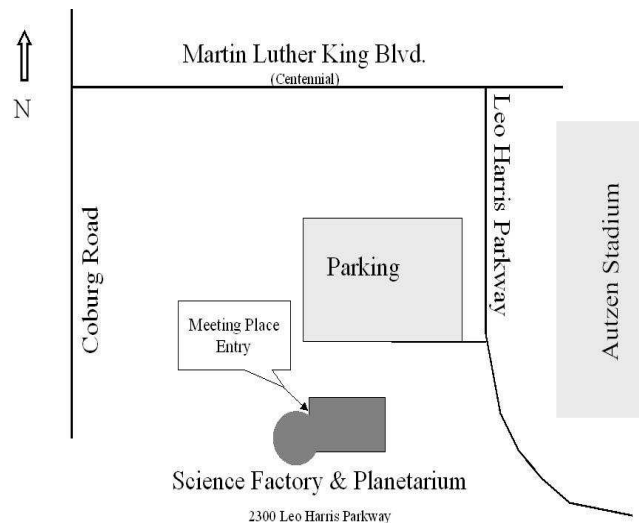
### Hairy Stars, Harbingers of Doom, or Just Dirty Snowballs

By: Jerry Olton  
Amateur Astronomer

Jerry Olton, published Science Fiction writer and avid amateur astronomer & telescope maker, will share some details about comets. Comets are amazing solar system objects that may appear from the depths of space unexpectedly. From time to time one may be bright enough to grace our skies with a dazzling display. This will be a fun and informative program about comets with some interesting facts and beautiful images.

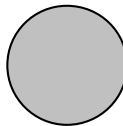
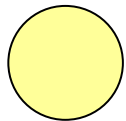
Come and enjoy the wonders of the night sky with Alfred Mikesell, Jerry Olton & the Eugene Astronomical Society at The Science Factory's comfortable Planetarium. The meeting will begin at **7:00 PM** in the Planetarium.

The Eugene Astronomical Society is a group of amateur astronomers dedicated to observing the sky, learning about the Universe, and sharing that understanding and appreciation of astronomy with students and the general public. EAS has been doing astronomy education and public outreach for many years. The EAS holds club meetings on the first Monday of each month at 7 PM at 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.





# Observing in January



March 3	March 11	March 18	March 25
Mercury Set 6:47 PM	Mercury Set 7:08 PM	Mercury Set 6:41 PM	Mercury Set 5:40 PM
Venus Set 7:20 PM	Venus Set 7:43 PM	Venus Set 8:16 PM	Venus Set 8:06 PM
Mars Rise 5:53 AM	Mars Rise 5:44 AM	Mars Rise 5:35 AM	Mars Rise 5:25 AM
Jupiter Rise 3:46 AM	Jupiter Rise 3:17 AM	Jupiter Rise 2:54 AM	Jupiter Rise 2:31 AM
Saturn Rise 6:00 PM	Saturn Rise 5:21 PM	Saturn Rise 4:50 PM	Saturn Rise 4:20 PM
Uranus Set 7:56 PM	Uranus Set 7:24 PM	Uranus Set 6:58 PM	Uranus Set 6:33 PM
Neptune Set 5:53 PM	Neptune Set 5:20 PM	Neptune Set 4:54 PM	Neptune Set 4:27 PM
Pluto Rise 4:22 AM	Pluto Rise 3:47 AM	Pluto Rise 3:20 AM	Pluto Rise 2:53 AM

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

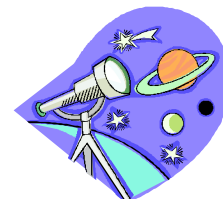
Date	Moonrise	Moonset	Sunrise	Sunset	Twilight	
3/1/2007	15:53	06:04	06:49	18:00	05:14	19:37
3/2/2007	17:01	06:26	06:48	18:02	05:12	19:38
3/3/2007	18:05	06:45	06:46	18:03	05:11	19:39
3/4/2007	19:09	07:02	06:44	18:04	05:09	19:41
3/5/2007	20:11	07:18	06:43	18:06	05:07	19:42
3/6/2007	21:15	07:35	06:41	18:07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

**Time Change Daylight Savings Time**  
**2:00 AM March 11, 2007**  
**Set Clocks Forward 1 Hour**

**Current Occultations  
& Other Events**

Visit Derek C Breit's web site  
**"BREIT IDEAS Observatory"**  
[www.poyntsource.com/New/Paths.htm](http://www.poyntsource.com/New/Paths.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. Thanks, Derek for such a fine site and becoming an EAS member.



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

## Events

### March 2007

3	Total Lunar Eclipse (Not Visible from West Coast); Climate Change Educator Conference, Pasadena, California
4	19th Annual General Meeting of the International Dark-Sky Association, Tucson, Arizona
5	EAS Meeting; 2007 Planetary Defense Conference, Washington DC
6	Gordon Cooper's 80th Birthday (1927), Colonel Cooper logged 222 hours in space. ( <i>Deceased</i> )
7	John Herschel's 215th Birthday (1792); Henry Draper's 170th Birthday (1837) <i>An American pioneer of astronomical spectroscopy</i>
8	30th Anniversary (1977), Discovery of Uranus's Rings
10	OMSI Astrophotography Conference, Portland, OR; Cassini, Titan Flyby
<b>11</b>	<b>Daylight Saving - Set Clock Ahead 1 Hour (United States); Asteroid 2005 ES70 Near-Earth Flyby (0.072 AU)</b>
12	Asteroid 2004 RE84 Near-Earth Flyby (0.082 AU)
13	Comet C/2006 K3 (McNaught) Perihelion <sup>1</sup> (2.501 AU)
15	STS-117 Launch, Space Shuttle Atlantis, S3/S4 Truss PV Arrays, (International Space Station 13A)
16	45th Anniversary (1962), 1st Titan 2 Rocket Launch
17	2007 All Arizona Messier Marathon, Arizona City, Arizona
18	Asteroid 2004 FA5 Near-Earth Flyby (0.082 AU)
19	Partial Solar Eclipse (Visible From Eastern Asia & Northern Alaska)
22	Mercury At Its Greatest Western Elongation <sup>2</sup> (28 Degrees); Conference: Space Access '07, Phoenix, Arizona; Lecture: Mars Reconnaissance Orbiter - New Details of Young and Old Mars, Pasadena, California; Workshop: Astrophysical Probes of the Nature of Dark Matter, Irvine, California
23	Asteroid 2006 GB Near-Earth Flyby (0.039 AU); Asteroid 2006 JY26 Near-Earth Flyby (0.090 AU); Wernher von Braun's 95th Birthday (1912); Asteroid 2001 FE7 Near-Earth Flyby (0.078 AU)
25	Daylight Saving - Set Clock Ahead 1 Hour ( <b>Europe</b> )
26	Cassini, Titan Flyby; Space Exploration 2007: 2nd International Conference and Exposition on Science, Engineering, and Habitation in Space, Albuquerque, New Mexico
27	35th Anniversary (1972), Venera 8 Launch (USSR Venus Lander/Orbiter Mission);
31	Asteroid 2006 VV2 Near-Earth Flyby (0.023 AU) " <i>Only 2.1 Million Miles</i> "; Asteroid 2004 FU162 Near-Earth Flyby (0.036 AU)

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

<sup>1</sup> The point nearest the Sun in a Planet or Comet's orbit.

<sup>2</sup> **Elongation** is an astronomical term that refers to the angle between the Sun and a planet, as viewed from Earth. When an inferior planet is visible after sunset, it is near its **greatest eastern elongation**. When an inferior planet is visible before sunrise, it is near its **greatest western elongation**. The value of the greatest elongation (west or east), for Mercury, is between 18° and 28°; and for Venus between 45° and 47°.

## North American Archaeoastronomy

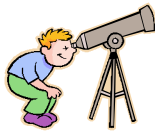
Guy Prouty will present an outstanding talk about Archaeoastronomy at our April 2, 2007 meeting. Don't miss it.

IO –March 2007  
www.eugeneastro.org

## Prineville Reservoir Star Party

Dates are June 14-16.

This is a FREE event sponsored by Oregon Parks and Recreation and includes all sorts of family activities including Nature Hikes, free Kayaking, Omsi High Desert Museum, John Day Fossil Beds, speakers (mostly SRNC speakers and one from NASA) as well as door prizes. Camping is free in the parking lot by your set up---priority is given for paid camping to attendees. Location for Star party (this is the 7th annual one) is on the side of the Prineville Reservoir at about 3500 feet and 14 miles out of Prineville all on paved roads and NO dust... Skies are just about as dark as OSP with NO light dome at all from Prineville. We have had several Eugene astronomers come in the past and they have been enthusiastic about this star party.



## Get Up Close and Personal with the UNIVERSE This Month

### The Science Factory Planetarium

EUGENE, Ore. — Thanks to the Hubble Space Telescope, visitors of the Science Factory Planetarium will travel through the solar system and view stunning images and discoveries from space during **Hubble's Universe** every Saturday and Sunday at 2:00 p.m. beginning January 27. The opening of the new planetarium show coincides with the January 27 Grand Opening of a new exhibit at the museum, **Bone up on Bones**.

"After 16 years of studying the universe, the telescope's discoveries and stunning photographs continue to amaze and delight us," said Planetarium Director Susan Peterson. "The universe continually proves to be more complex, more mysterious and much more beautiful than we ever thought."

The new show, appropriate for ages 10 and up, highlights scientific discoveries that were made since the Hubble began its orbit in 1990 such as Pluto's two small moons, Nix and Hydra. We have seen for the first time the disks of dust and gas surrounding the super massive black holes in the hearts of galaxies containing the mass of hundreds of millions of stars and the light from galaxies that has taken about 13 billion years to reach us.

Continuing at the Planetarium every Saturday and Sunday at 1:00 p.m. is **Up in the Sky**, an introductory show for younger audiences to learn about the planet, constellations and solar system at a primary level.

Admission for each show is \$4, \$7 with combined entrance to the Science Factory Exhibit Hall, or free for members and children under 3.

For more information about **Hubble's Universe** or the Science Factory Planetarium, contact the planetarium at 682-7888 or visit [www.sciencefactory.org](http://www.sciencefactory.org). For more information about the NASA Hubble Space Telescope, visit its official site at [www.hubblesite.org](http://www.hubblesite.org).

##

*The Science Factory Children's Museum & Planetarium is an Oregon non-profit whose mission is to "engage, excite and inspire children to explore science, technology and humanity." The Science Factory is open Wednesday - Sunday, noon - 4 PM and on the first Friday of each month for Tot Discovery Days from 10 am- 12 Noon. Call 682-7888 or visit <http://www.sciencefactory.org> for more information.*

Join the Science Factory Children's Museum & Planetarium Today

# It's Messier Season



**This is the time to start your Messier Trek and join several other EAS Members who have earned various Messier Certificates from The Astronomy League's Observing Clubs:**

<http://www.astroleague.org/index.html>



Regular Messier Certificates for observing 70 Objects or Honorary Certificate for all 110 objects.

Observe 50 or more Messier objects using only binoculars.



## Even Solar Sails Need a Mast

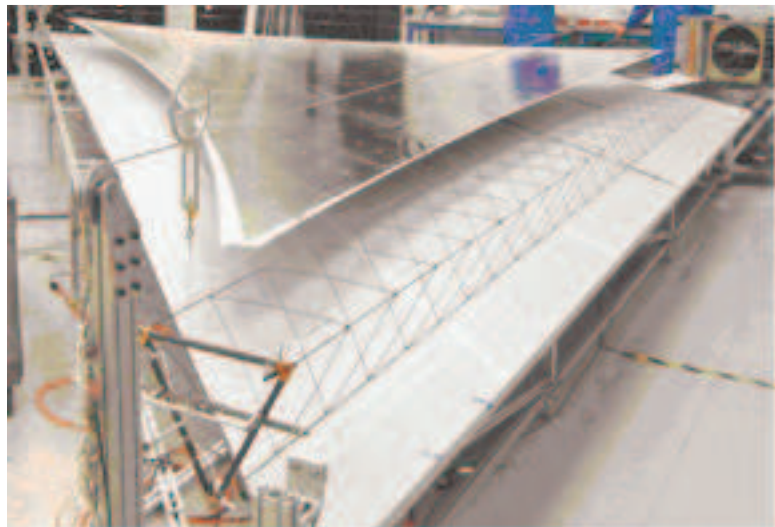
by Patrick L. Barry

Like the explorers of centuries past who set sail for new lands, humans may someday sail across deep space to visit other stars. Only it won't be wind pushing their sails, but the slight pressure of sunlight.

Solar sails, as they're called, hold great promise for providing propulsion in space without the need for heavy propellant. But building a solar sail will be hard; to make the most of sunlight's tiny push, the sail must be as large as several football fields, yet weigh next to nothing. Creating a super-lightweight material for the sail itself is tricky enough, but how do you build a "mast" for that sail that's equally light and strong?

Enter SAILMAST, a program to build and test-fly a mast light enough for future solar sails. With support from NASA's In-Space Propulsion Program to mature the technology and perform ground demonstrator tests, SAILMAST's engineers were

*-Continued page 6-*



*SAILMAST is the thin triangular truss in front of the picture. It is attached to a section of a silver foil solar sail section shown here in a laboratory test. The mast in the picture is 2m (6 ft) long. The Space Technology 8 mission will test the SAILMAST, which is 20 times longer.*

ready to produce a truss suitable for validation in space that's 40 meters (about 130 feet) long, yet weighs only 1.4 kilograms (about 3 pounds)!

In spite of its light weight, this truss is surprisingly rigid. "It's a revelation when people come in and actually play with one of the demo versions—it's like, whoa, this is really strong!" says Michael McEachen, principal investigator for SAILMAST at ATK Space Systems in Goleta, California.

SAILMAST will fly aboard NASA's Space Technology 8 (ST8) mission, scheduled to launch in February 2009. The mission is part of NASA's New Millennium Program, which flight tests cutting-edge technologies so that they can be used reliably for future space exploration. While actually flying to nearby stars is probably decades away, solar sails may come in handy close to home. Engineers are eyeing this technology for "solar sentinels," spacecraft that orbit the Sun to provide early warning of solar flares.

Once in space, ST8 will slowly deploy SAILMAST by uncoiling it. The truss consists of three very thin, 40-meter-long rods connected by short cross-members. The engineers used high-strength graphite for these structural members so that they could make them very thin and light.

The key question is how straight SAILMAST will be after it deploys in space. The smaller the curve of the mast the more load it can support. "That's really why we need to fly it in space, to see how straight it is when it's floating weightlessly," McEachen says.

It's an important step toward building a sail for the space-mariners of the future.

Find out more about SAILMAST at [nmp.nasa.gov/st8](http://nmp.nasa.gov/st8). Kids can visit [spaceplace.nasa.gov/en/kids/st8/sailmast](http://spaceplace.nasa.gov/en/kids/st8/sailmast) to see how SAILMAST is like a Slinky® toy in space.

## The Legend of Bear Lodge

(Devils Tower)

This is how I heard it, and I pass it to you...

One day, an Indian Tribe was camped beside the river and seven small girls were playing at a distance. The region had a large bear population and one of these bears began to chase after the seven girls. So the girls started to run back to their village, but the bear was closing in on them and about to catch them. The girls jumped up on a rock about three feet high and started praying to the rock, "Rock take pity on us; Rock save us!" The rock heard the pleas of the young girls and started to thrust upwards, pushing them higher and higher out of the reach of the bear.

The bear clawed and jumped at the side of the rock, and broke its claws and fell down. The bear continued to jump and jump at the rock until the girls were pushed up into the sky, where they are to this day in a group of seven little stars (the Pleiades). The mark of the bear claws are still there (Devils Tower-Wyoming).



*The Pleiades is where we come from...  
And when we die that is where we go.*  
-Chief Frank Fools Crow-

Submitted by Tommy Lightning Bolt