

# IO – April 2006

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

Eugene Astronomical Society, Annual Club Dues \$25, Board Members: President: Richard Boyd- checkerkit@comcast.net, Stephen Caruana, Fred Domineack, Jacob Stranlien Sam Pitts- IO editor- sampitts@comcast.net 688-7330 Io (*EYE-oh*) is nearest to Jupiter and fastest orbiting of the four Galilean moons

EAS is a Proud Member of:



## Monday- April 3<sup>rd</sup> MEETING EUGENE ASTRONOMICAL SOCIETY At The Science Factory Planetarium

The meeting will begin at **7:00 PM** in the Planetarium. EAS's meeting this month will have a presentation on what is out for April. EAS & its members are dedicated to having fun while pursuing the hobby of Astronomy, so come on out and have some fun visiting with others that share a passion for the night skies.

Come early and help others learn about their scopes. Those of you, who are new or not sure about your equipment, show up early and some of our members will assist you in understanding your equipment better. If you are planning on getting a scope please come out and ask questions, we're glad to assist you in making a good solid choice to maximize your viewing pleasure.

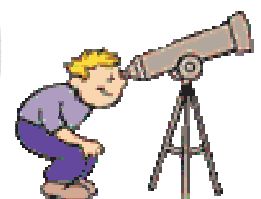
**The Science Factory is at 2300 Leo Harris Parkway, behind Autzen Stadium.**

Check EAS WEB site for up to the minute Information



# Astronomy Day 2006

## May 6th



**Presented by Eugene Astronomical Society in conjunction with The Science Factory**

Will be held at:

**The Science Factory: 2300 Leo Harris Parkway, behind Autzen Stadium.**

**12:00 Noon till 6:00 PM**

**Outside Telescope Observing 8:00 -10:00 PM**

*Depending on Weather*



April 5	April 13	April 20	April 27
First Quarter	Full Moon	Last Quarter	New Moon
Sunset: 7:44 PM	Sunset: 7:54 PM	Sunset: 8:02 PM	Sunset: 8:11 PM
Sunrise 6:46 AM	Sunrise 6:32 AM	Sunrise 6:20 AM	Sunrise 6:09 AM
Moon Set 3:26 AM	Moon Rise 08:22 PM	Moon Rise 02:50 AM	Moon Rise 05:52 AM
Mercury Rise 5:56 AM	Mercury Rise 5:47 AM	Mercury Rise 5:40 AM	Mercury Rise 5:35 AM
Venus Rise 5:03 AM	Venus Rise 4:55 AM	Venus Rise 4:47 AM	Venus Rise 4:39 AM
Mars Set 1:47 AM	Mars Set 1:36 AM	Mars Set 1:26 AM	Mars Set 1:15 AM
Jupiter Rise 10:15 PM	Jupiter Rise 9:40 PM	Jupiter Rise 9:08 PM	Jupiter Rise 8:36 PM
Saturn Set 4:10 AM	Saturn Set 3:39 AM	Saturn Set 3:12 AM	Saturn Set 2:45 AM
Uranus Rise 5:40 AM	Uranus Rise 5:10 AM	Uranus Rise 4:43 AM	Uranus Rise 4:16 AM
Neptune Rise 4:42 AM	Neptune Rise 4:11 AM	Neptune Rise 3:44 PM	Neptune Rise 3:16 AM
Pluto Rise 1:04 AM	Pluto Rise 12:28 AM	Pluto Rise 12:51 AM	Pluto Rise 11:33 PM

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

Events

APRIL

2	<b>Daylight Saving</b> - Set Clock Ahead 1 Hour (North America)
4	Comet P/2005 T4 (SWAN) Closest Approach To Earth (1.915 AU)
5	Asteroid 600 Musa Occults TYC 5734-01360-1 (7.7 Magnitude Star)
5	Asteroid 2006 EY <b>Near-Earth Flyby</b> (0.050 AU) 4.65 Million Miles from Earth
8	Mercury at Greatest Western Elongation (28 Degrees)
10	Asteroid 2434 Bateson Occults HIP 31579 (5.4 Magnitude Star)
11	Asteroid 2004 FG11 <b>Near-Earth Flyby</b> (0.052 AU) 4.84 Million Miles from Earth (19x Distance to the Moon)
12	Asteroid 305 Gordonia Occults HIP 69974 (4.6 Magnitude Star)
12	Asteroid 2005 QY151 Near-Earth Flyby (0.089 AU)
12	25th Anniversary (1981), 1st Space Shuttle Launch (Robert Crippen & John Young)
12	45th Anniversary (1961), 1st Man in Space, Yuri Gagarin
18	<b>Venus</b> Passes 0.3 Degrees from <b>Uranus</b>
22	<b>Lyrids Meteor Shower Peak</b>
24	Asteroid 497 Iva Occults HIP 62605 (7.7 Magnitude Star)
26	Asteroid 2001 SG276 <b>Near-Earth Flyby</b> (0.090 AU)
28	Asteroid 2002 GK1 <b>Near-Earth Flyby</b> (0.088 AU)
30	Cassini, Titan Flyby

All times Universal Time (UT), U.S. Pacific Coast Standard Time = UT - 8 hours.

Daylight Savings Time April 2, 2006 Move clocks Ahead 1 Hour

**Fred Domineck**  
**A Very Dear Member of EAS**  
**Suffered a Stroke & Aneurysm Saturday March 18<sup>th</sup>**

**Fred is in serious condition and had to under go a 2<sup>nd</sup> surgery in an attempt to relieve swelling.**

**Let us all take a moment and think of Fred and Pray for his recovery.**

**Our wishes and prays are with you Fred & Bonnie.**

Obviously, Fred and Bonnie have been off work since Saturday when Fred's stroke occurred. This tragedy will leave them with some immediate financial need, and in this spirit (and with Bennie's approval); close friends Tanja & Steve have established a contributory account to assist them during this time. For those wishing to make a personal financial donation please refer to the information below:

**Visit *any branch* of Oregon Community Credit Union (formerly known as UlaneO)  
ask to donate to the "Fred Domineack and Bonnie Murdock" Benefit Fund"**

**If you're out of town, you can send checks payable to: Fred Domineack and Bonnie Murdock  
Benefit Fund  
mailing address:**

**OCCU  
PO Box 77002  
Eugene, OR 97401-0146**

**Cards & letters can be sent in C/ O Fred & Bonnie to:  
5232 Wales Drive  
Eugene, OR 97402**

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# Imaging The Sky Conference 2006

New Era for Astroimaging,  
Affordable Dedicated Astroimaging CCD Cameras

**Saturday**

**June 3, 2006**

Oregon Museum of Science and Industry (OMSI)  
1945 SE Water Street

Portland, Oregon Registration

Register early because seating is limited. Registration is \$30.00 by April 30, 2006 and in May and June it is \$40.00. To register send your name, address, email address and registration money (check made out to Imaging The Sky) to

Imaging The Sky Conference

Rick Kang,

PO Box 5795

Eugene, Oregon 97405

<http://www.stargazing.net/david/TTS/>

## Opportunity to Participate at Professional Observatory

University of Oregon's Pine Mountain Observatory, east of Bend, will host public visitors again this summer, and needs the assistance of dedicated amateur astronomers to conduct tours on Friday and Saturday evenings, May 26th through September 30th. There are a wide variety of "jobs", from meeter-greeters (minimal astronomical knowledge necessary) to operators of the large telescopes, to lecturers, to gift shop sales staff. Benefits include access to observing through large professional instruments and availability of the astronomers' residence for dormitory facility. This is a great opportunity to learn first hand about observatory operations, learn more about astrophysics, and to share your knowledge and enthusiasm with the general public.

Training/certification sessions occur in late April and May. If you can commit for even just two or three weekends during the summer, that's a huge help, and we're encouraging tour guides to bring their own scopes if they wish. Contact Tour Chair, Greg Hogue, 541-771-6987, [ghogue@bendcable.com](mailto:ghogue@bendcable.com), in Bend, see the FOPMO website, <http://pmo-sun.uoregon.edu/~pmo/>, or contact Rick Kang, [rkang@efn.org](mailto:rkang@efn.org), 541-683-1381, for information. Amateur astronomers from Bend, Eugene, and Portland have been the mainstay of the Tour-Guide team the past decade; we're always looking for new people!

## 2<sup>nd</sup> Red Spot on Jupiter



Photographed by Christopher Go of the Philippines on February 27, 2006 with an 11-inch telescope.

Oval BA first appeared in the year 2000 when three smaller spots collided and merged. Using Hubble and other telescopes, astronomers watched with great interest. A similar merger centuries ago may have created the original Great Red Spot, a storm twice as wide as our planet and at least 300 years old.

At first, Oval BA remained white—the same color as the storms that combined to create it. But in recent months, things began to change:

"The oval was white in November 2005, it slowly turned brown in December 2005, and red a few weeks ago," reports Go. "Now it is the same color as the Great Red Spot!"

"Wow!" says Dr. Glenn Orton, an astronomer at JPL who specializes in studies of storms on Jupiter and other giant planets. "This is convincing. We've been monitoring Jupiter for years to see if Oval BA would turn red—and it finally seems to be happening." (Red Jr? Orton prefers "the not-so-Great Red Spot.")

## Evolution of Andromeda Galaxy Found to be Similar to Milky Way's



For the last decade, astronomers have thought that the Andromeda galaxy, our nearest galactic neighbor, was rather different from the Milky Way. But a group of researchers have determined that the two galaxies are probably quite similar in the way they evolved, at least over their first several billion years.

Scott Chapman of the California Institute of Technology (Cal Tech), Rodrigo Ibata of the Observatoire de Strasbourg, and their colleagues report that their detailed studies of the motions and metals of nearly 10,000 stars in Andromeda show that the galaxy's stellar halo is "metal-poor." In astronomical parlance, this means that the stars lying in the outer bounds of the galaxy are pretty much lacking in all the elements heavier than hydrogen.

This is surprising, says Chapman, because one of the key differences thought to exist between Andromeda and the Milky Way was that the former's stellar halo was metal-rich and the latter's was metal-poor. If both galaxies are metal-poor, then they must have had very similar evolutions.

"Probably, both galaxies got started within a half billion years of the Big Bang, and over the next three to four billion years, both were building up in the same way by protogalactic fragments containing smaller groups of stars falling into the two dark-matter haloes," Chapman explains.

While no one yet knows what dark matter is made of, its existence is well established because of the mass that must exist in galaxies for their stars to orbit the galactic centers the way they do. Current theories of galactic evolution, in fact, assume that dark-matter wells acted as a sort of "seed" for today's galaxies, with the dark matter pulling in smaller groups of stars as they passed nearby. What's more, galaxies like Andromeda and the Milky Way have each probably gobbled up about 200 smaller galaxies and protogalactic fragments over the last 12 billion years.

Chapman and his colleagues arrived at the conclusion about the metal-poor Andromeda halo by obtaining careful measurements of the speed at which individual stars are coming directly toward or moving directly away from Earth. This measure is called the radial velocity, and can be determined very accurately with the spectrographs of major instruments such as the 10-meter Keck-II telescope, which was used in the study.

Of the approximately 10,000 Andromeda stars for which the researchers have obtained radial velocities, about 1,000 turned out to be stars in the giant stellar halo that extends outward by more than 500,000 light-years. These stars, because of their lack of metals, are thought to have formed quite early, at a time when the massive dark-matter halo had captured its first protogalactic fragments. The stars that dominate closer to the center of the galaxy, by contrast, are those that formed and merged later, and contain heavier elements due to stellar evolution processes. In addition to being metal-poor, the stars of the halo follow random orbits and are not in rotation. By contrast, the stars of Andromeda's visible disk are rotating at speeds upwards of 200 kilometers per second.

According to Ibata, the study could lead to new insights on the nature of dark matter. "This is the first time we've been able to obtain a panoramic view of the motions of stars in the halo of a galaxy," says Ibata. "These stars allow us to weigh the dark matter, and determine how it decreases with distance."