

# IO – June 2005

Issue # 2005-06

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

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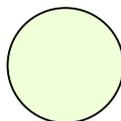
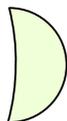
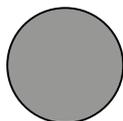


## Monday- June 6<sup>th</sup> MEETING EUGENE ASTRONOMICAL SOCIETY At The Science Factory Planetarium

The meeting will begin at **7:00 PM** in the Planetarium. Come early and help others learn about their scopes. Eas Member Jeff Phillips will talk about imaging with web-cameras. Bob Grossfeld will discuss Sunriver Nature Center. 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



June 6	June 14	June 21	June 28
New Moon	First Quarter	Full Moon	Last Quarter
Sunset: 8:52 PM	Sunset: 8:56 PM	Sunset: 8:59 PM	Sunset: 8:59 PM
Sunrise 5:30 AM	Sunrise 5:28 AM	Sunrise 5:29 AM	Sunrise 5:31 AM
Mercury Set 9:19 PM	Mercury Set 10:04 PM	Mercury Set 10:25 PM	Mercury Set 10:30 PM
Mars Rise 2:10 AM	Mars Rise 1:53 AM	Mars Rise 1:36 AM	Mars Rise 1:19 AM
Jupiter Set 2:42 AM	Jupiter Set 2:10 AM	Jupiter Set 1:43 AM	Jupiter Set 1:17 AM
Saturn Set 11:30 PM	Saturn Set 11:01 PM	Saturn Set 10:37 PM	Saturn Set 10:12 PM
Uranus Rise 1:28 AM	Uranus Rise 12:56 AM	Uranus Rise 12:29 AM	Uranus Rise 12:01 AM
Neptune Rise 12:28 AM	Neptune Rise 11:57 PM	Neptune Rise 11:29 PM	Neptune Rise 11:01 PM

All times are for Eugene, Oregon Latitude 44° 3' 8" Longitude 123° 5' 8" \* Info for 4/30/05

Magazine subscriptions go to Richard Boyd: [checkerkit@comcast.net](mailto:checkerkit@comcast.net)



Join the user List!

Keep in-touch with Members and Events!



<http://lists.cmc.net/cgi-bin/mailman/listinfo/eugeneastro>

## What's Out This Month

June begins on the 1<sup>st</sup> with a transit on Jupiter of IO & Ganymede. The Shadow of Ganymede ends at 2:03 AM, the shadow of Io starts just 3 minutes later. Be sure to review the Transit of Jupiter's moons chart. There will be some great viewing and imaging opportunities on the evening of June 7<sup>th</sup>. Be sure to setup on the evening of June 16<sup>th</sup> for the double shadow of Io & Europa just after midnight. Io casts a shadow at 00:23 Am & Europa follows right behind at 00:57 AM on June 17<sup>th</sup>. This is an excellent opportunity to capture some images of a double shadow on Jupiter.

Saturn continues to set earlier while Venus and Mercury continues to climb in the evening sky. On June 27, 2005 be sure to watch Venus and Mercury, when they will be only 1/10<sup>th</sup> of a degree apart with Spiral Galaxy NGC 2545 (Mag. 13.4 2'x 1.1') directly between them. Mars continues to get brighter and larger reaching Magnitude 0.0 and reveals a 9.3" disc on the 30<sup>th</sup>.

If you haven't tried it yet, be sure you attend the June 6<sup>th</sup> meeting and hear from Jeff Phillips about web-cameras. It is time to purchase these inexpensive cameras that take stellar images of the planets. Check out Sky & Telescopes Page 61 and see what an 8" scope can do with a ToUcam Pro webcam.

Sam



## Transits of Jupiter's Moons



06/01	01:00	Io	Transit Begins
	02:03	Ganymede	Shadow Ends
06/02	17:24	Europa	Transit Begins
	19:27	Io	Transit Begins
06/07	22:42	Ganymede	Transit Begins
06/08	01:22	Io	Transit Begins
06/09	19:54	Europa	Transit Begins
	21:18	Io	Transit Begins
06/10	00:39	Io	Shadow Ends
	00:59	Europa	Shadow Ends
06/15	02:29	Ganymede	Transit Begins
06/16	22:26	Europa	Transit Begins
	23:10	Io	Transit Begins
06/17	00:23	Io	Shadow Begins
	00:57	Europa	Shadow Begins
	22:19	Ganymede	Shadow Ends
06/24	01:00	Europa	Transit Begins
	01:04	Io	Transit Begins
	02:18	Io	Shadow Begins
	03:35	Europa	Shadow Begins
	03:42	Europa	Shadow Ends
06/25	19:32	Io	Transit Begins
	21:43	Io	Transit Ends

Shadows cast on Jupiter's disk by Transit of its moons may Begin up to an hour or more before Transit Begins. The shadow usually ends before Transit Ends. Begin observing before Times listed. Actual times of events will vary depending on your precise location within time zones. Shadows start before transits and usually end before transits are over. Use your web cams and digital cameras to capture these inspiring events. If you have never witnessed a transit you are missing a special event.

## Jupiter's Red Spot Centered PST

06/01	01:01	20:52		06/16	00:00	18:19
06/02	00:00	16:43		06/17	04:14	00:00
06/03	02:39	22:31		06/18	00:06	19:57
06/04	00:00	18:22		06/19	00:00	00:00
06/05	04:18	00:00		06/20	01:45	21:36
06/06	00:09	20:01		06/21	00:00	00:00
06/07	00:00	00:00		06/22	03:23	23:15
06/08	01:48	21:39		06/23	00:00	19:06
06/09	00:00	17:31		06/24	00:00	00:00
06/10	03:27	23:18		06/25	00:54	20:45
06/11	00:00	19:10		06/26	00:00	00:00
06/12	00:00	00:00		06/27	02:33	22:24
06/13	00:57	20:48		06/28	00:00	18:16
06/14	00:00	00:00		06/29	03:12	00:00
06/15	02:36	22:27		06/30	00:03	00:00

## Seeing in the Dark with Spitzer

by Patrick Barry and Tony Phillips

Have you ever gotten up in the middle of the night, walked to the bathroom and, in the darkness, tripped over your dog? A tip from the world of high-tech espionage: next time use night-vision goggles.

Night vision goggles detect heat in the form of infrared radiation—a “color” normally invisible to the human eye. Wearing a pair you can see sleeping dogs, or anything that’s warm, in complete darkness.

This same trick works in the darkness of space. Much of the exciting action in the cosmos is too dark for ordinary telescopes to see. For example, stars are born in the heart of dark interstellar clouds. While the stars themselves are bright, their birth-clouds are dense, practically impenetrable. The workings of star birth are thus hidden.

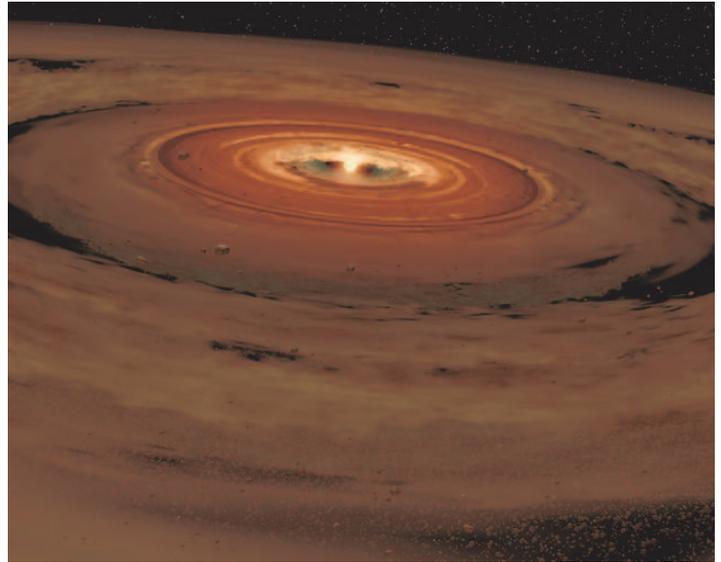
That's why NASA launched the Spitzer Space Telescope into orbit in 2003. Like a giant set of infrared goggles, Spitzer allows scientists to peer into the darkness of space and see, for example, stars and planets being born. Dogs or dog *stars*: infrared radiation reveals both.

There is one problem, though, for astronomers.

“Infrared telescopes on the ground can't see very well,” explains Michelle Thaller, an astronomer at the California Institute of Technology. “Earth's atmosphere blocks most infrared light from above. It was important to put Spitzer into space where it can get a clear view of the cosmos.”

The clear view provided by Spitzer recently allowed scientists to make a remarkable discovery: They found planets coalescing out of a disk of gas and dust that was circling—not a star—but a “failed star” not much bigger than a planet! Planets orbiting a giant planet?

The celestial body at the center of this planetary system, called OTS 44, is only about 15 times the mass of Jupiter. Technically, it's considered a “brown dwarf,” a kind of star that doesn't have enough mass to trigger nuclear fusion and shine. Scientists had seen planetary systems forming around brown dwarfs before, but never around one so small and planet-like.



*Artist's rendering of brown dwarf OTS44 with its rotating planetary disk.*

Spitzer promises to continue making extraordinary discoveries like this one. Think of it as being like a Hubble Space Telescope for looking at invisible, infrared light. Like Hubble, Spitzer offers a view of the cosmos that's leaps and bounds beyond anything that came before. Spitzer was designed to operate for at least two and a half years, but probably will last for five years or more.

*For more about Spitzer and to see the latest images, go to <http://www.spitzer.caltech.edu/spitzer>. Kids and grown-ups will enjoy browsing*

*common sights in infrared and visible light at the interactive infrared photo album on The Space Place,*

[http://spaceplace.nasa.gov/en/kids/sirtf1/sirtf\\_action.shtml](http://spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml).

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration

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# Oregon Star Party 2005

<http://www.oregonstarparty.org/>

The Oregon Star Party is an astronomy adventure featuring quality deep sky viewing. It attracts intellectually curious outdoor lovers who enjoy the romance of a renaissance gathering. All ages enjoy camping among ponderosa, juniper, mountain mahogany, and sage. Past attendees have told us emphatically how much they have enjoyed the camaraderie and dark skies of Indian Trail Spring, and that they will return again!

In the evening, a forest of telescopes and bustling observers grows on the high prairie. Beauty and quality are apparent in personally engineered and constructed instruments. Large

telescopes, personal computers, and sophisticated tracking systems promise power and ability. But high technology does not overshadow the great personal satisfaction of using small telescopes, binoculars, and naked eye viewing. Many who attend are astro-imagers, others are logging Messier, Herschel I & II objects, or the objects found in their OSP Observers' packet. Still others may just enjoy the clear dark skies from the comfort of a lawn chair.

Almost everyone welcomes a polite request to share a telescopic view; this is the spirit of our star party. All of us thrill at the glitter and soft glows of starlight mixed with friendly whispers punctuated by the shouts of success. It's emotionally unforgettable. We invite you to join us in 2005!

## **Location**

The Oregon Star Party operates under a Special Use Permit on the Ochoco National Forest. This institution is an equal opportunity provider. The site is located on primitive and undeveloped Forest Service land, approximately one hour's traveling time east of Prineville, Oregon, which is the nearest location for medical facilities, supplies, and gas.

Indian Trail Spring prairie has a panoramic horizon. Its 5000-foot altitude location has good air drainage, excellent sky transparency, steady air, and almost zero light glow from Bend (60 miles) and Prineville (35 miles.) Portland is 190 miles away. The roads are paved to within four miles. The graveled section is in excellent condition.

For more information about this area, visit the USFS web page at:  
<http://www.fs.fed.us/r6/centraloregon>

Come on out and have a great time under really dark skies. This is a great commentary and a chance to look at all kinds of great telescopes and astronomical equipment. This affords a great opportunity to talk to user of scopes or equipment you may want to purchase in the future. There are some great purchasing opportunities at this event.

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# Imaging the Sky 2005 Conference

**Saturday JULY 23, 2005**

Astroimaging with dedicated CCD cameras & digital SLR cameras What's right for you?

Large aperture telescopes extend an astronomer's ability to observe fainter objects and fainter details. And like wise, digital astroimaging provides the same benefit to the amateur astronomer. Digital astroimaging provides an excellent way to observe new objects and fainter details with smaller optics. Astroimaging extends an astronomer's ability to enjoy observing the universe.

There are many types of cameras, lens, telescopes, mounts, filters and software programs that are used in astroimaging. This year's conference focuses on astroimaging and image processing techniques using digital SLR cameras and cooled CCD cameras. Both of these cameras extend an astronomer's observing capabilities. You will learn how to obtain the best imaging performance using these cameras and how they are similar and different. Image processing examples will be shown using Photoshop, AIP4WIN V2 and ImagesPlus.

Weather permitting there will be evening imaging demonstrations. A conference CD-ROM with presentations, reference materials and software is provided to each attendee. The conference is sponsored by Mt. Hood Community College Science Club and Planetarium Sky Theater.

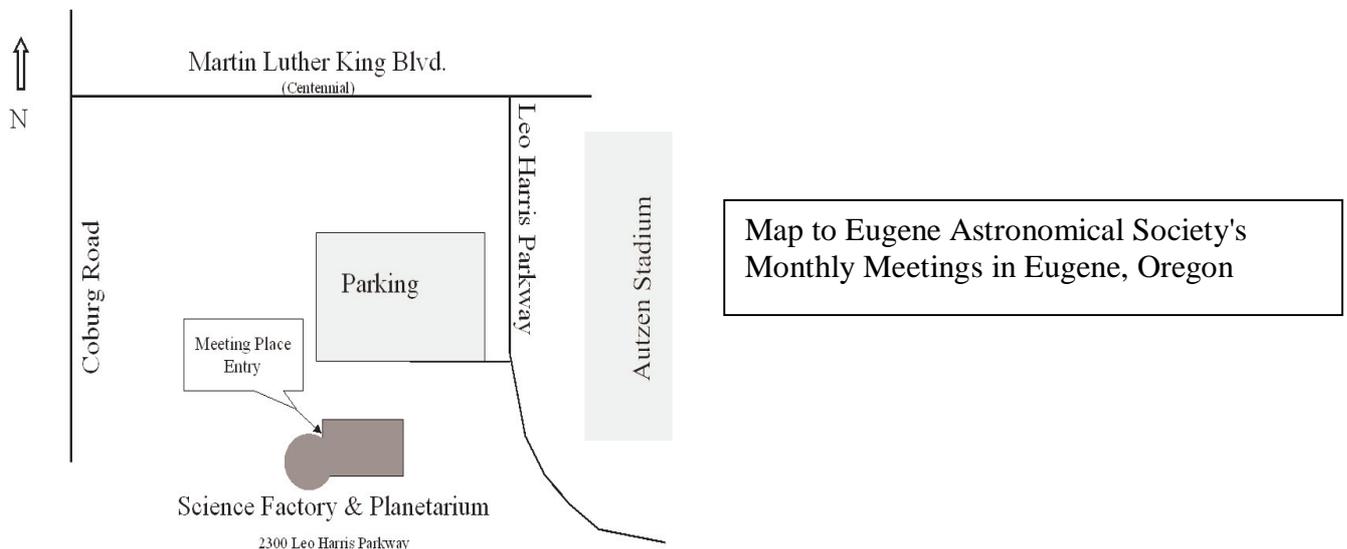
Date: Saturday, July 23, 2005, 8:00 am to Midnight

Location: Visual Arts Theater, Mt. Hood Community College (MHCC), 26000 SE Stark Street, Gresham, Or.

Registration: Register early because seating is limited. Registration is \$30.00 by June 31, 2004 and in July 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, OR 97405

Current Imaging the Sky conference information is at <http://www.stargazing.net/david/ITS>

**These are great conferences to attend, don't miss it.**



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