

IO – March 2005

Issue # 2005-03

www.eugeneastro.org

Eugene Astronomical Society, Annual Club Dues \$25, President: AC Illig, Treasurer: Roscco Wright, Secretary Alicia McGraw
Guy Prouty (guyprouty@msn.com 463-7641, Richard Boyd (BOD Members); IO editor, Sam Pitts, 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:

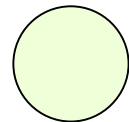
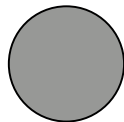
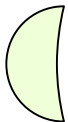
The Astronomical League
The World's Largest Federation of Amateur Astronomers

Monday- March 7th 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. 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



March 3	March 10	March 17	March 25
Last Quarter	New Moon	First Quarter	Full Moon
Sunset: 6:06 PM	Sunset: 6:12 PM	Sunset: 6:21 PM	Sunset: 6:31 PM
Sunrise 6:46 AM	Sunrise 6:34 AM	Sunrise 6:21 AM	Sunrise 6:07 AM
Jupiter Rise 8:55 PM	Jupiter Rise 8:21 PM	Jupiter Rise 7:50 PM	Jupiter Rise 7:13 PM
Mars Rise 4:16 AM	Mars Rise 4:07 AM	Mars Rise 3:57 AM	Mars Rise 3:45 AM

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

Magazine subscriptions go to Richard Boyd: 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

Straight over head are the two bright Stars Caster (west) & Pollux, forming the head of Gemini. The solid non-twinkling star nearby is Saturn. Castor & Pollux are twins who hatched from an egg from Ledia. Zeus, who had taken the appearance of a Swan, seduced Ledia. Their sister was Helen of Troy. The twins were raised by Centaurus & Sagittarius and later by Jason who gave them to Chiron to raise while he (Jason) set out on the Argo in search of the Golden Fleece.

In reality Castor is a magnitude 1.6 star that is really a sextuple. Through a telescope it looks like two magnitude 3 stars 2" apart with a 3rd star of the 9th magnitude 73" away. In fact each of these stars are doubles, forming a 6 star group only 46 light years from earth. They are close neighbors; radio & television signals have reached this system 20-30 years ago.

Pollux is the brighter at 1.1 magnitude and 36 light years distant. Going south towards Betelgeuse in Orion are two additional stars Gemini γ & μ , which along with Castor & Pollux form a rectangle shape of Gemini. To the West of Gemini μ (towards Taurus) is M35 (NGC2168) a very nice bright open cluster 40' across at magnitude 5. This is an easy cluster to see naked eye from a dark sky location and readily visible with binoculars in the city. The cluster has approximately 120 stars 2800 lights years away. Several fainter and smaller clusters are nearby. Sam

Jupiter's Red Spot Centered PST

03/01	04:12	00:00		03/16	01:33	21:25
03/02	00:04	19:55		03/17	07:20	00:00
03/03	05:50	00:00		03/18	03:11	23:02
03/04	01:42	21:33		03/19	18:54	00:00
03/05	07:28	00:00		03/20	04:49	00:00
03/06	03:19	23:11		03/21	00:40	20:32
03/07	19:02	00:00		03/22	06:27	23:12
03/08	04:57	23:49		03/23	02:18	22:09
03/09	20:40	00:00		03/24	18:01	00:00
03/10	06:35	00:00		03/25	03:56	23:47
03/11	02:26	22:18		03/26	00:00	19:38
03/12	18:09	00:00		03/27	05:34	00:00
03/13	04:04	23:55		03/28	01:25	21:16
03/14	19:47	00:00		03/29	07:12	00:00
03/15	05:42	00:00		03/30	03:03	22:54
				03-31	08:50	00:00

Transits of Jupiter's Moons



03/01	00:24	Io	Shadow Begins
	01:09	Io	Transit Begins
	03:18	Io	Transit Ends
03/05	22:08	Europa	Shadow Begins
	23:28	Europa	Transit Begins
03/06	00:50	Europa	Shadow Ends
	02:04	Europa	Transit Ends
	22:51	Ganymede	Shadow Begins
03/07	01:32	Ganymede	Shadow Ends
	01:35	Ganymede	Transit Begins
	03:48	Ganymede	Transit Ends
03/08	02:54	Io	Transit Begins
	05:04	Io	Transit Ends
03/09	21:20	Io	Transit Begins
	23:30	Io	Transit Ends
03/13	00:43	Europa	Shadow Begins
	01:45	Europa	Transit Begins
	03:25	Europa	Shadow Ends
	04:21	Europa	Transit Ends
03/14	02:49	Ganymede	Shadow Begins
	04:55	Ganymede	Transit Begins
03/15	04:38	Io	Transit Begins
	06:48	Io	Transit Ends
03/16	23:04	Io	Transit Begins
03/17	01:14	Io	Transit Ends
03/20	03:18	Europa	Shadow Begins
	04:01	Europa	Transit Begins
	06:38	Europa	Transit Ends
03/24	00:48	Io	Transit Begins
	02:58	Io	Transit Ends
03/25	21:24	Io	Transit Ends
03/27	05:54	Europa	Shadow Begins
03/30	19:11	Europa	Shadow Begins
	21:53	Europa	Shadow Ends
	22:01	Europa	Transit Ends
032/31	02:26	Io	Shadow Begins
	02:32	Io	Transit Begins
	04:38	Io	Shadow Ends
	04:42	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.

Astronomers Discover Beginnings of 'Mini' Solar System



Moons circle planets, and planets circle stars. Now, astronomers have learned that planets may also circle celestial bodies almost as small as planets.

NASA's Spitzer Space Telescope has spotted a dusty disc of planet-building material around an extraordinarily low-mass brown dwarf, or "failed star." The brown dwarf, called OTS 44, is only 15 times the mass of Jupiter. Previously, the smallest brown dwarf known to host a planet-forming disc was 25 to 30 times more massive than Jupiter.

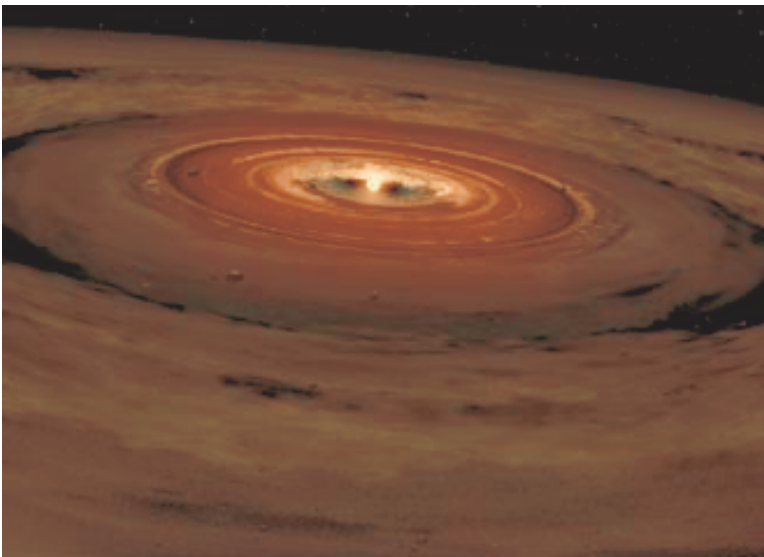


Image Left: This artist's concept shows a brown dwarf surrounded by a swirling disc of planet-building dust. NASA's Spitzer Space Telescope spotted such a disc around a surprisingly low-mass brown dwarf, or "failed star." The brown dwarf is only 15 times the size of Jupiter, making it the smallest brown dwarf known to host a planet-forming, or protoplanetary disc. Astronomers believe that this unusual system will eventually spawn planets. Image credit: NASA/JPL-Caltech.

The finding will ultimately help astronomers better understand how and where planets – including rocky ones resembling our own – form.

"There may be a host of miniature solar systems out there, in which planets orbit brown dwarfs," said Dr. Kevin Luhman, lead author of the new study from the Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass. "This leads to all sorts of new questions, like 'Could life exist on such planets?' or 'What do you call a planet circling a planet-sized body? A moon or a planet?'"

Brown dwarfs are something of misfits in the astronomy world. These cool orbs of gas have been called both failed stars and super planets. Like planets, they lack the mass to ignite and produce starlight. Like stars, they are often found alone in space, with no parent body to orbit.

"In this case, we are seeing the ingredients for planets around a brown dwarf near the dividing line between planets and stars. This raises the tantalizing possibility of planet formation around objects that themselves have planetary masses," said Dr. Giovanni Fazio, an astronomer at the Harvard Smithsonian Center for Astrophysics and a co-author of the new study.

The results were presented today at the Planet Formation and Detection meeting at the Aspen Center for Physics, Aspen, Colo., and will be published in the Feb. 10th issue of *The Astrophysical Journal Letters*.

Planet-forming, or protoplanetary, discs are the precursors to planets. Astronomers speculate that the disc circling OTS 44 has enough mass to make a small gas giant planet and a few Earth-sized, rocky ones. This begs the question: Could a habitable planet like Earth sustain life around a brown dwarf?

"If life did exist in this system, it would have to constantly adjust to the dwindling temperatures of a brown dwarf," said Luhman. "For liquid water to be present, the planet would have to be much closer to the brown dwarf than Earth is to our Sun." *Continued: Page 4*

Continued from Page #3

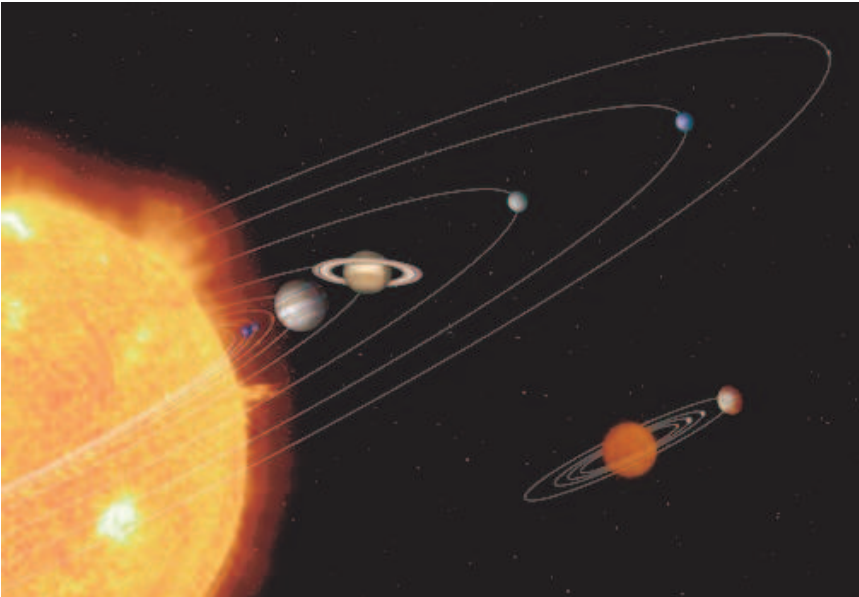


Image Left: This artist's conception shows the relative size of a hypothetical brown dwarf-planetary system (below) compared to our own solar system. Image credit: NASA/JPL-Caltech.

"It's exciting to speculate about the possibilities for life in such a system, of course at this point we are only beginning to understand the unusual circumstances under which planets arise," he added.

Brown dwarfs are rare and difficult to study due to their dim light. Though astronomers recently reported what may be the first-ever image of a planet around a brown dwarf called 2M1207, not much is understood about the planet-formation process around these odd balls of gas. Less is understood about low-mass brown dwarfs, of which only a handful are known.

OTS 44 was first discovered about six months ago by Luhman and his colleagues using the Gemini Observatory in Chile. The object is located 500 light-years away in the Chamaeleon constellation. Later, the team used Spitzer's highly sensitive infrared eyes to see the dim glow of OTS 44's dusty disc. These observations took only 20 seconds. Longer searches with Spitzer could reveal discs around brown dwarfs below 10 Jupiter masses.

Other authors of this study include Dr. Paola D'Alessia of the Universidad Nacional Autonoma de Mexico; and Drs. Nuria Calvet, Lori Allen, Lee Hartmann, Thomas Megeath and Philip Myers of the Harvard-Smithsonian Center for Astrophysics.

Artist's conceptions and additional information about the Spitzer Space Telescope are available at <http://www.spitzer.caltech.edu>.

Whitney Clavin (818) 354-4673

Jet Propulsion Laboratory, Pasadena, Calif.
2005-022

\$9000 Student Fellow Available

The NASA Institute for Advanced Concepts (NIAC) seeks to identify creative and innovative students who possess an extraordinary potential for developing advanced concepts in the fields of aeronautics, space and the sciences. Each Student Fellow will receive a total of \$9,000 for the Academic year 2005-2006. NIAC intends for these awards to benefit talented individuals who have shown extraordinary originality and dedication in their academic pursuits and a marked capacity for self-direction. The Fellowship seeks exceptional creativity, and the promise for important future advances based on a track record of significant accomplishment, and potential for the fellowship to facilitate subsequent creative work.

Applicant must be in a U.S. institution of higher education

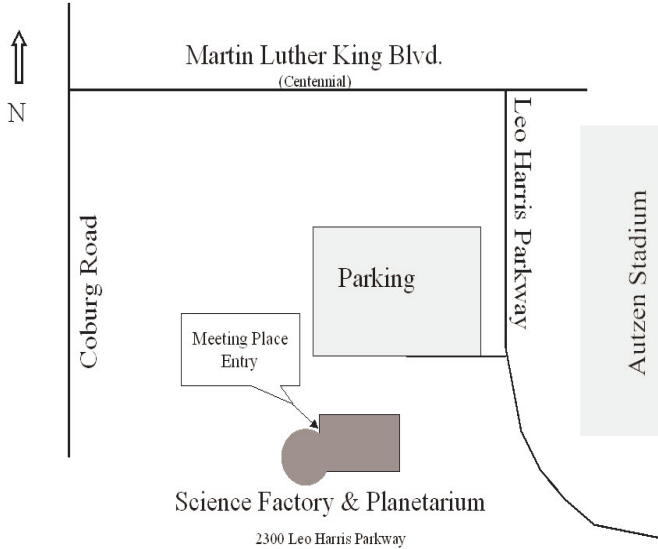
Applicant must be a U.S. Person

Applicant must apply no later than their junior year of college

Please visit <http://niac.usra.edu/students/call.html> for more information.

Proposals are due April 15, 2005.

IO – March 2005
www.eugeneastro.org



Astronomy Day Meeting

The Board of Directors will host an organizational meeting for everyone who can help with Astronomy Day. Please attend on Thursday, March 3 at Rossco's shop, at 7:30PM. Request directions by emailing me at the above email address. This will be the Thursday before our Monday night general meeting. It will be very good if we are organized so we can present our ideas to the membership at the General Meeting.

So please come and help.
Thanks, see you then,

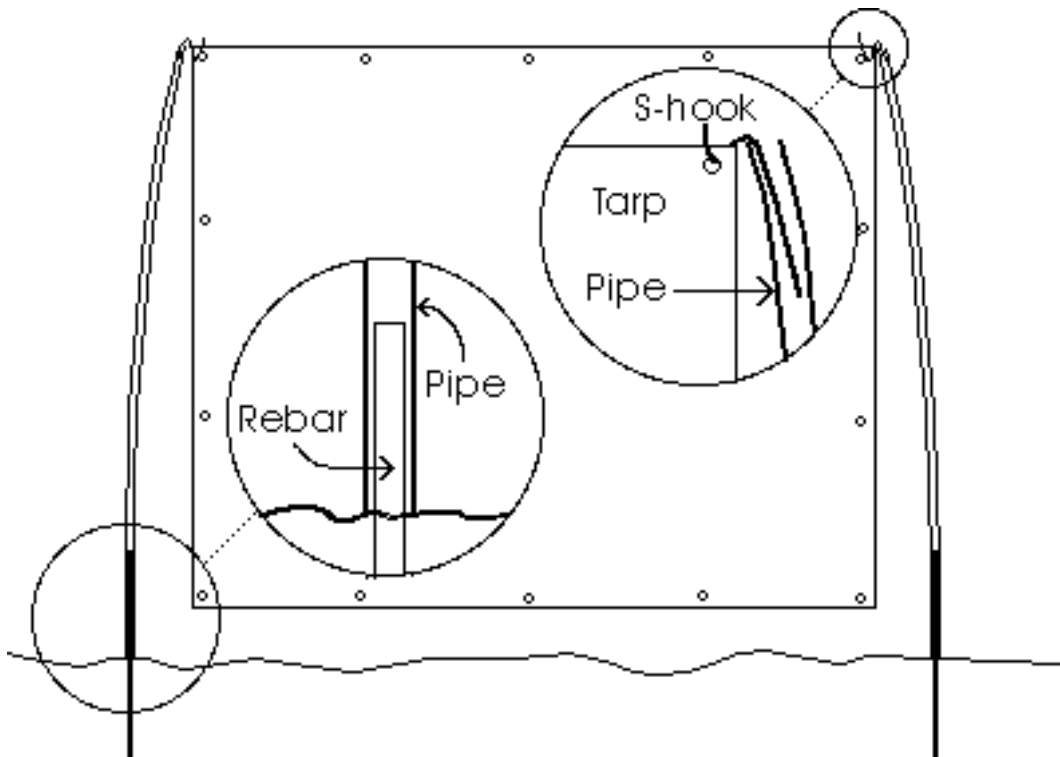
Rossco Wright

EAS Meeting Location

Meetings 1st Monday of the Month 7:00PM Come Early & Visit

Blinded by Neighbors Lights?

Jerry Olton has plans for building a light shield to help block out un-wanted light.



Canon Supports Astrophotography

Canon has been listening to Amateur Astronomers and has released two new Cameras:
DLSR 20Da (a :for Astrophotography?) & DLSR Digital Rebel XT

On the Japanese Canon website a new version of the Canon EOS 20D appeared. The new Canon EOS 20Da seems to be almost identical to the Canon 20D, except for features like 'Live View' mode which enables the user to manually control the focus by using the LCD display. This is very handy when using the Canon 20Da for Astrophotography. The subject can be viewed enlarged on the LCD display (5x or 10x magnification). Furthermore a special filter that normally is used to block infrared information is removed. The Canon EOS 20Da is equipped with a more transmissive mirror, which makes the new Canon 20Da 2.5x times more transmissive compared to the Canon EOS 20D. This new camera would require the use of IR filters on your lenses for regular daytime exposures. This Camera seems to be for Infrared and Astrophotography work only. Not yet available in USA

Canon has announced the successor to the EOS 300D / Digital Rebel, the new smaller, lighter, eight megapixel EOS 350D / Digital Rebel XT. This new camera incorporates many new features introduced with the EOS 20D and also enables control of settings as requested by EOS 300D owners. The default body color is now black, although a silver body will be available. Key points: 8mp CMOS, 3fps 14 frames, DIGIC II, smaller, lighter, custom functions, selectable metering & AF mode, USB 2.0 Hi-speed, lower introductory list price (US: \$899 body only). This model now has mirror lock-up and can do auto-Dark frames to keep noise levels down. ISO setting from 100-1600 are available. This will make a nice everyday camera that can double for Astrophotography at a reasonable price. Over 50 Canon EF lenses are available. Now if we could only reuse the dark frames instead of taking them with each exposure! Thanks CANON *By: Sam Pitts*



Above is a single 4-minute shot of M42 taken with a Canon 20D & 600mm f/3.5 Lens
For a better Image go to: <http://home.comcast.net/~samppitts/wsb/html/view.cgi-image.html--SiteID-1998585.html>