

IO – October 2006

Issue 2006-10

Eugene Astronomical Society,
Annual Club Dues \$25, Board Members:
President: Richard Boyd- checkerkit@comcast.net,
Stephen Caruana, Fred Domineack,
Jacob Stranlien Sam Pitts

www.eugeneastro.org

EAS is a Proud Member of:



IO editor- sampitts@comcast.net 688-7330
Io (EYE-oh) is nearest to Jupiter and fastest
orbiting of the four Galilean moons

Monday- October 2nd MEETING EUGENE ASTRONOMICAL SOCIETY At The Science Factory Planetarium

The meeting will begin at **7:00 PM** in the Planetarium. Nominations & Elections are scheduled to take place. It is time to pay your Membership Dues. Special raffle for EAS Members for an 8" telescope, raffle will continue until 100 tickets are sold to EAS members. Tickets are \$ 5.00 each or 5 tickets for \$20.00 for a chance for club members to win and Orion 8" Dobsonian Telescope. Come on out and visit with fellow astronomers and discuss and plan future events and star parties.

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
www.eugeneastro.org

Fred Domineack Fund Raiser Thanks to all that participated

The results from last Monday's Fundraiser for Fred are as follows:

\$358.95 from Papa's Pizza
\$49 from the donation jar
\$135 from Sam's picture sales
That totals to \$542.95

At one point I counted about 30 heads in our group.

Thank you to all who helped by organizing and/or participating!!!

Clear Skies
Alan

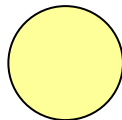
p.s.: Papa's Pizza has invited us back any time that we want to do another fundraiser for any purpose.

Thanks Alan for your hard work & devotion to making this work.

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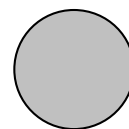
Harvest Moon



Observing in October



New Moon



October 6	October 13	October 21	October 29
Mercury Set 7:25 PM	Mercury Set 7:15 PM	Mercury Set 7:02 PM	Mercury Set 5:40 PM
Venus Rise 6:46 AM	Venus Rise 7:04 AM	Venus Rise 7:25 AM	Venus Rise 6:46 AM
Mars Set 6:56 PM	Mars Set 6:39 PM	Mars Set 6:20 PM	Mars Set 5:01 PM
Jupiter Set 8:14 PM	Jupiter Set 7:50 PM	Jupiter Set 7:24 PM	Jupiter Set 5:57 PM
Saturn Rise 2:47 AM	Saturn Rise 2:23 AM	Saturn Rise 1:55 AM	Saturn Rise 1:26 AM
Uranus Set 4:37 AM	Uranus Set 4:09 AM	Uranus Set 3:36 AM	Uranus Set 2:04 AM
Neptune Set 2:30 AM	Neptune Set 2:02 AM	Neptune Set 1:31 AM	Neptune Set 11:55 AM
Pluto Set 10:48 PM	Pluto Set 10:16 PM	Pluto Set 9:45 PM	Pluto Set 8:14 PM

All times Universal Time (UT), U.S. Pacific Daylight Time = UT - 7 hours (May-October) UT-8 (Nov.-April).

Date	Moonrise	Moonsset	Sunrise	Sunset	Twilight	Twilight
10/1/2006	16:21	-----	07:10	18:53	05:34	20:29
10/2/2006	16:55	01:12	07:11	18:51	05:35	20:27
10/3/2006	17:23	02:33	07:13	18:49	05:37	20:25
10/4/2006	17:46	03:55	07:14	18:48	05:38	20:23
10/5/2006	18:08	05:18	07:15	18:46	05:39	20:21
10/6/2006	18:30	06:40	07:16	18:44	05:40	20:20
10/7/2006	18:53	08:03	07:17	18:42	05:42	20:18
10/8/2006	19:21	09:27	07:19	18:40	05:43	20:16
10/9/2006	19:54	10:50	07:20	18:39	05:44	20:14
10/10/2006	20:36	12:10	07:21	18:37	05:45	20:13
10/11/2006	21:29	13:21	07:22	18:35	05:46	20:11
10/12/2006	22:30	14:20	07:24	18:33	05:48	20:09
10/13/2006	23:37	15:06	07:25	18:32	05:49	20:08
10/14/2006	-----	15:41	07:26	18:30	05:50	20:06
10/15/2006	00:45	16:07	07:27	18:28	05:51	20:04
10/16/2006	01:53	16:29	07:29	18:26	05:52	20:03
10/17/2006	02:58	16:48	07:30	18:25	05:54	20:01
10/18/2006	04:01	17:04	07:31	18:23	05:55	20:00
10/19/2006	05:03	17:20	07:32	18:22	05:56	19:58
10/20/2006	06:06	17:37	07:34	18:20	05:57	19:57
10/21/2006	07:09	17:54	07:35	18:18	05:58	19:55
10/22/2006	08:14	18:14	07:36	18:17	05:59	19:54
10/23/2006	09:22	18:39	07:38	18:15	06:01	19:52
10/24/2006	10:30	19:11	07:39	18:14	06:02	19:51
10/25/2006	11:38	19:51	07:40	18:12	06:03	19:49
10/26/2006	12:40	20:42	07:41	18:11	06:04	19:48
10/27/2006	13:35	21:45	07:43	18:09	06:05	19:47
10/28/2006	14:19	22:57	07:44	18:08	06:06	19:45
10/29/2006	14:55	-----	07:45	18:06	06:08	19:44
10/30/2006	15:23	00:14	07:47	18:05	06:09	19:43
10/31/2006	15:48	01:33	07:48	18:04	06:10	19:42

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

Events

October 2006

1	Asteroid 4766 Malin Occults HIP 18993 (5.4 Magnitude Star)
2	Asteroid 2001 CB21 Near-Earth Flyby (0.048 AU)
3	Asteroid 28918 (2000 QF21) Occults HIP 89609 (5.8 Magnitude Star)
4	World Space Week
6	Asteroid 2006 RZ Near-Earth Flyby (0.012 AU); CCD Workshop: Making Every Pixel Count, Cincinnati, Ohio
7	Asteroid 341 California Occults HIP 104423 (7.1 Magnitude Star)
8	Asteroid 2006 SG7 Near-Earth Flyby (0.064 AU)
9	Cassini, Titan Flyby; Draconids Meteor Shower Peak ; Asteroid 29957 (1999 JR91) Occults HIP 117541 (5.9 Magnitude Star)
11	Asteroid 1060 Magnolia Occults HIP 28716 (4.6 Magnitude Star)
13	Asteroid 2006 SV5 Near-Earth Flyby (0.039 AU) ; Starry Nights Festival, Yucca Valley, California
16	Asteroid 2005 TC51 Near-Earth Flyby (0.067 AU)
17	Mercury At Its Greatest Eastern Elongation (25 Degrees)
19	Asteroid 2005 TF49 Near-Earth Flyby (0.056 AU); Nightfall Star Party, Borrego Springs, California
21	Orionids Meteor Shower Peak
22	Asteroid 2001 UP Near-Earth Flyby (0.031 AU); 40th Anniversary (1966), Luna 12 Launch (USSR Moon Orbiter)
24	MESSENGER, 1st Venus Flyby
25	Cassini, Titan Flyby; Asteroid 2000 UR16 Near-Earth Flyby (0.064 AU); Asteroid 2002 JV15 Near-Earth Flyby (0.082 AU)
29	Daylight Saving - Set Clock Back 1 Hour (Europe, North America); Galactic Gala Event, Los Angeles, California
30	Comet Faye Closest Approach To Earth (0.685 AU)

Set your clocks back 1 hour at 2:00 AM on October 29, 2006

In 2006, daylight time begins on April 2 and ends on October 29.

In 2007, daylight time begins on March 11 and ends on November 4. [New law goes into effect.]

Major Activity:

Recommended experience level: Beginning and up

Radiant	Duration	Maximum
<u>Orionids (ORI)</u>	October 15-29	2005 Oct. 21 @ 08:13 <u>UT</u> 2006 Oct. 21 @ 14:05 <u>UT</u>

Minor Activity

Recommended experience level: Expert

Radiant	Duration	Maximum
<u>Arietids (Autumn)</u>	September 7-October 27	Oct. 8/9
<u>Delta Aurigids (DAU)</u>	September 22-October 23	Oct. 6-15
<u>Eta Cetids</u>	September 20-November 2	Oct. 1-5
<u>October Cetids</u>	September 8?-October 30?	Oct. 5/6
<u>October Cygnids</u>	September 22-October 11	Oct. 4-9
<u>Draconids (GIA)</u>	October 6-10	Oct. 9/10
<u>Epsilon Geminids (EGE)</u>	October 10-27	Oct. 18/19
<u>Northern Piscids</u>	October 5-16	Oct. 12/13

Spitzer Digs Up Treasures of Possible Solar Systems in Orion

This infrared image from NASA's Spitzer Space Telescope shows the Orion nebula, our closest massive star-making factory, 1,450 light-years from Earth. The nebula is close enough to appear to the naked eye as a fuzzy star in the sword of the popular hunter constellation

The nebula itself is located on the lower half of the image, surrounded by a ring of dust. It formed in a cold cloud of gas and dust and contains about 1,000 young stars. These stars illuminate the cloud, creating the beautiful nebulosity, or swirls of material, seen here in infrared.

This image shows infrared light captured by Spitzer's infrared array camera. Light with wavelengths of 8 and 5.8 microns (red and orange) comes mainly from dust that has been heated by starlight. Light of 4.5 microns (green) shows gas and dust; and light of 3.6 microns (blue) is from starlight.

Astronomers have long scrutinized the vast and layered clouds of the Orion nebula, an industrious star-making factory visible to the naked eye in the sword of the famous hunter constellation. Yet, Orion is still full of secrets.

A new image from NASA's Spitzer Space Telescope probes deep into the clouds of dust that permeate the nebula and its surrounding regions. The striking false-color picture shows pinkish swirls of dust speckled with stars, some of which are orbited by disks of planet-forming dust.

Spitzer, with its powerful infrared vision, was able to unearth nearly 2,300 such planet-forming disks in the Orion cloud complex, a collection of turbulent star-forming clouds that includes the well-known Orion nebula.

The disks - made of gas and dust that whirl around young suns - are too small and distant to be seen by visible-light telescopes; however, the infrared glow of their warm dust is easily spotted by Spitzer's infrared detectors. Each disk has the potential to form planets and its own solar system.

"This is the most complete census of young stars with disks in the Orion cloud complex," said Dr. Thomas Megeath of the University of Toledo, Ohio, who led the research. "Basically, we have a census of potential solar systems, and we want to know how many are born in the cities, how many in small towns, and how many out in the countryside."

A look at Orion's demographics reveals that the potential solar systems populate a variety of environments. Megeath and his colleagues found that about 60 percent of the disk-sporting stars in the Orion cloud complex inhabit its bustling "cities," or clusters, containing hundreds of young stars. About 15 percent reside in small outer communities, and a surprising 25 percent prefer to go it alone, living in isolation.

Prior to the Spitzer observations, scientists thought that up to 90 percent of young stars, both with and without disks, dwelled in cities like those of Orion.

"The Orion image shows that many stars also appear to form in isolation or in groups of just a few stars," said team member Dr. John Stauffer of NASA's Spitzer Science Center at the California Institute of Technology in Pasadena. "These new data may help us to determine the type of environment in which our sun formed."

Astronomers do not know whether our middle-aged sun grew up in the stellar equivalent of the city or countryside, though most favor a large city scenario. Newborn stars like the ones in Orion tend to drift away from their siblings over time, so it is hard to trace an adult star's origins.

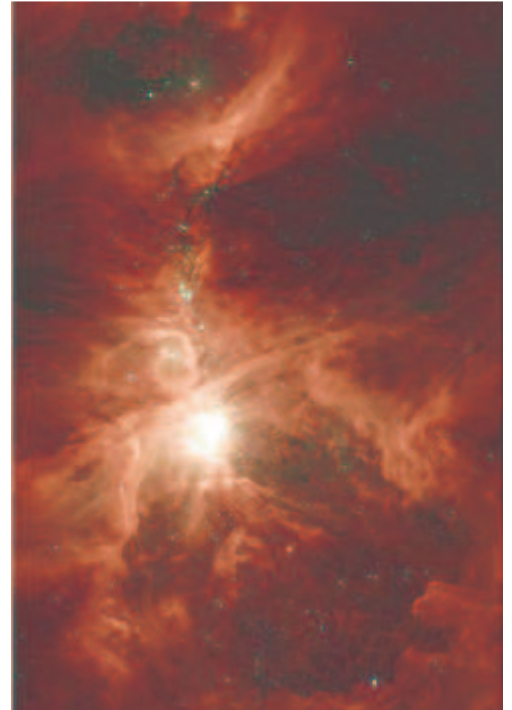
Megeath and his colleagues estimate that about 60 to 70 percent of the stars in the Orion cloud complex have disks. "It is an interesting question why this number isn't 100 percent. Eventually, we may be able to understand why some stars don't have disks," said Megeath.

Spitzer's infrared vision also dug up 200 stellar embryos in the Orion cloud complex, most of which had never been seen before. Stellar embryos are still too young to have developed disks.

The Orion cloud complex is about 1,450 light-years from Earth and spans about 240 light-years of space. Spitzer's wide field of view allowed it to survey most of the complex, an area of the sky equivalent to 28 full moons. The featured image shows a slice of this survey, the equivalent of four full moons-worth of sky, and includes the Orion nebula itself.

NASA's Jet Propulsion Laboratory, Pasadena, Calif., manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate, Washington. Science operations are conducted at the Spitzer Science Center. Caltech manages JPL for NASA. Spitzer's infrared array camera, which made the observations, was built by NASA's Goddard Space Flight Center, Greenbelt, Md. The instrument's principal investigator is Dr. Giovanni Fazio of the Harvard-Smithsonian Center for Astrophysics.

For more Orion graphics and information, visit: www.spitzer.caltech.edu/spitzer.



Credit: NASA/JPL-Caltech/ T. Megeath (University of Toledo)

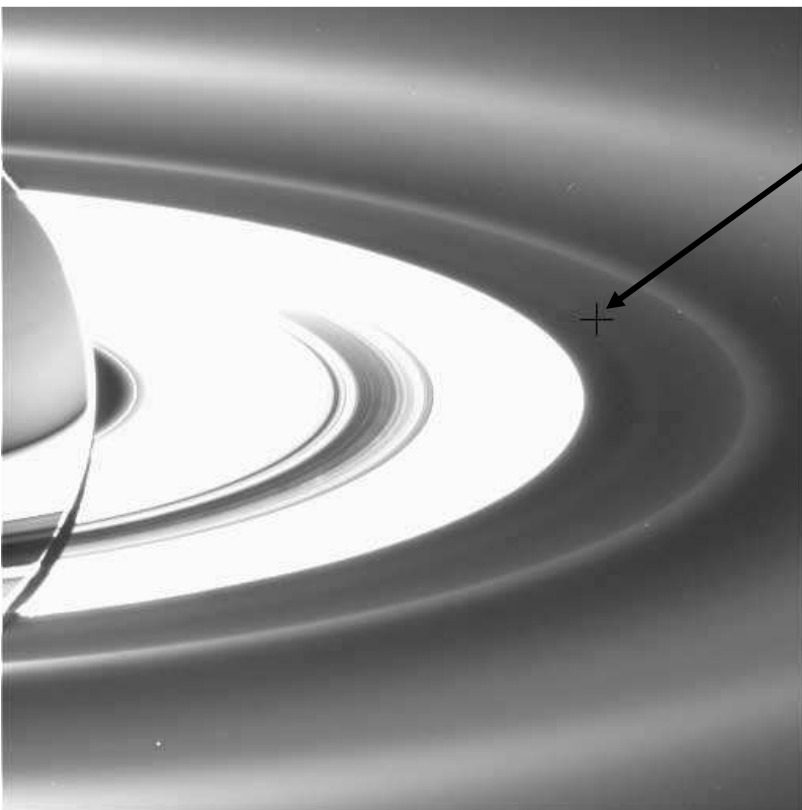
Scientists Discover New Ring and Other Features at Saturn

Saturn sports a new ring in an image taken by NASA's Cassini spacecraft on Sunday, Sept. 17, during a one-of-a-kind observation.

Other spectacular sights captured by Cassini's cameras include wispy fingers of icy material stretching out tens of thousands of kilometers from the active moon, Enceladus, and a cameo color appearance by planet Earth.

The images were obtained during the longest solar occultation of Cassini's four-year mission. During a solar occultation, the sun passes directly behind Saturn, and Cassini lies in the shadow of Saturn while the rings are brilliantly backlit. Usually, an occultation lasts only about an hour, but this time it was a 12-hour marathon.

Sunday's occultation allowed Cassini to map the presence of microscopic particles that are not normally visible across the ring system. As a result, Cassini saw the entire inner Saturnian system in a new light.



A new diffuse ring, coincident with the orbits of Saturn's moon's Janus and Epimetheus, has been revealed in ultra-high phase angle views from Cassini. Ultra-high phase angle indicates the sun is behind the target.



Not since NASA's Voyager 1 spacecraft saw our home as a pale blue dot from beyond the orbit of Neptune has Earth been imaged in color from the outer solar system. Now, Cassini casts powerful eyes on our home planet, and captures Earth, a pale blue orb -- and a faint suggestion of our moon -- among the glories of the Saturn system.

The new ring is a tenuous feature, visible outside the brighter main rings of Saturn and inside the G and E rings, and coincides with the orbits of Saturn's moons Janus and Epimetheus. Scientists expected that meteoroid impacts on Janus and Epimetheus might kick particles off the moons' surfaces and inject them into Saturn orbit, but they were surprised that a well-defined ring structure exists at this location.

Saturn's extensive, diffuse E ring, the outermost ring, had previously been imaged one small section at a time. The 12-hour marathon enabled scientists to see the entire structure in one view. The moon Enceladus is seen sweeping through the E ring, extending wispy, fingerlike projections into the ring. These very likely consist of tiny ice particles being ejected from Enceladus' south polar geysers, and entering the E-ring.

"Both the new ring and the unexpected structures in the E ring should provide us with important insights into how moons can both release small particles and sculpt their local environments," said Matt Hedman, a research associate working with team member Joseph Burns, an expert in diffuse rings, at Cornell University in Ithaca, N.Y.

In the latest observations, scientists once again see the bright ghost-like spokes -- transient, dusty, radial structures -- streaking across the middle of Saturn's main rings.

Capping off the new batch of observations, Cassini cast its powerful eyes in our direction and captured Earth, a pale blue orb, and a faint suggestion of our moon. Not since NASA's Voyager 1 spacecraft saw Earth as a pale blue dot from beyond the orbit of Neptune has Earth been imaged in color from the outer solar system.

"Nothing has greater power to alter our perspective of ourselves and our place in the cosmos than these images of Earth we collect from faraway places like Saturn," said Carolyn Porco, Cassini imaging team leader at the Space Science Institute, Boulder, Colo. Porco was one of the Voyager imaging scientists involved in taking the Voyager 'Pale Blue Dot' image. "In the end, the ever-widening view of our own little planet against the immensity of space is perhaps the greatest legacy of all our interplanetary travels."

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In the coming weeks, several science teams will analyze data collected by Cassini's other instruments during this rare occultation event. The data will help scientists better understand the relationship between the rings and moons, and will give mission planners a clearer picture of ring hazards to avoid during future ring crossings.

Images of the new ring, the E-ring, Enceladus and Earth are available at: <http://www.nasa.gov/cassini> , <http://saturn.jpl.nasa.gov> and <http://ciclops.org> .

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the Cassini-Huygens mission for NASA's Science Mission Directorate, Washington. The Cassini orbiter and its two onboard cameras were designed, developed and assembled at JPL. The imaging team is based at the Space Science Institute, Boulder, Colo.

Star Party Mt. Pisgah

September 29th

Contact Richard or Roscoe (342-1900) for further details
I have no information as to fees, set-up time, start time, etc.

Spinfield High School

October 13th

Contact Richard (342-1900) for further details
I have no information as to fees, set-up time, start time, etc.

It's Time for Viewing Saturn

