

IO - January 2010

Issue 2010-01
Eugene Astronomical Society

Eugene Astronomical Society
Annual Club Dues \$25
President: Sam Pitts - 688-7330
Secretary: Jerry Oltion - 343-4758
Additional Board members:
Jacob Strandlien, Tony Dandurand,
John Loper.

www.eugeneastro.org

EAS is a proud member of:

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



Next Meeting: Thursday, January 28th

Telescope Workshop, What We Can See Once the Clouds Go Away, Observing Resources, and a Discussion of the Cross-Quarters

Our January meeting will be our annual telescope workshop where we help each other figure out how to use all that fancy gadgetry Santa brought us for Christmas. This is a great opportunity to bring that scope you need help with or just want to show off. We'll advertise our services to the public, so if you don't need help on a scope, bring your expertise. You might be able to help someone else.

In addition to the workshop, Rick Kang will give a presentation on "What's in the Sky to See and Observing Resources," and Eric Gross will give a presentation on the "cross-quarters," the midpoints of each official season. Cross-quarters are rich with tradition, leading directly to many modern holidays such as Groundhog's Day. Eric will discuss the cross-quarters and the history of Imbolc/Candlemas/Groundhog Day, especially as it relates to the Earth's seasonal cycle, weather, and life cycles.

Jacob Strandlein will also present the astronomy news of the month. The meeting is at 7:00 in EWEB's Community Room, 500 E. 4th in Eugene.

Next First Quarter Friday: January 22nd

Our Christmas night star party was cancelled for lack of coal. Coal-black sky, that is. Instead we were given a soft, fuzzy blanket of cloud right down to ground level. A white Christmas to be sure, but not much use for astronomy. Here's to better luck in January.

First Quarter Fridays are laid-back opportunities to do some observing and promote astronomy at the same time. Mark your calendar and bring your scope to the College Hill Reservoir (24th and Lawrence in Eugene) and share the view with whoever shows up.

Here are the dates for First Quarter Fridays through December of 2010.

January 22
February 19
March 19
April 23

May 21
June 18
July 16
August 13

September 17
October 15
November 12
December 10

December Observing Report

Ha, ha, ha! Ho, ho, ho. What a laugh. The clear weather early in the month was biting cold, and that was it for clear sky. Better luck in January.

December Meeting Report

Our December 17th meeting was a potluck get-together and swap meet. Members brought all manner of goodies, including a chocolate cake in celebration of Tony Dandurand’s birthday. (Yes, we all sang “Happy Birthday.”) Quite a lot of gear swapped hands, especially from the “free” table of items donated to the EAS over the past year. We figured it wasn’t doing anybody any good in our storage unit, so we put it out for people to take home and use.

The EAS T-shirts were finished in time for the meeting, so Jerry Oltion passed those out to the people who pre-ordered them, and also sold a few of the extras to new members. There are a few left, so contact Jerry if you’d like to buy one.

Call for Articles and Other Input

You’ll notice that this issue is shorter than usual. Nobody submitted any local news or member-written articles for the *Io* this month, and I’m running out of ideas. If you’ve got anything you’d like to see in the *Io*, let me know. I found a couple neat things off the Internet, but in general I’m trying not to just copy stuff from the internet and reprint it here. I’d rather the *Io* were filled with local club news and articles written by local amateur astronomers. So sharpen your pencils and use these long cloudy nights to write something for the *Io*. If you don’t want to write an article but have an interesting news item or topic to suggest, let me know and I’ll see about writing it up myself.

Send your submissions to Jerry Oltion at j.oltion@sff.net.

Thanks!

Our next meeting will be on Thursday, January 28th, at 7:00 PM in the north building’s Community Room. This is the first room in the semicircular building to the north of the fountain at EWEB’s main campus on the east end of 4th Avenue.

Meeting dates for 2010: (All meetings are at 7:00 in the Community Room)

January 28

April 22

July 22

October 28

February 25

May 27

August 26

November 24

March 25

June 24

September 23

December 23

CASTLE STORAGE

Unit _____
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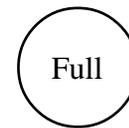
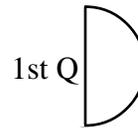
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Thank You Castle Storage

For nearly two years now, Castle Storage has generously provided EAS a place to store its telescopes and equipment. EAS would like to thank Castle Storage for their generosity and support for our group. Please give them a call if you need a storage space, and tell your friends. They are great people and offer secure and quality storage units.



Observing in January



January 7	January 14	January 23	January 29
Mercury Rise: 7:07 AM	Mercury Rise: 6:21 AM	Mercury Rise 6:06 AM	Mercury Rise 6:10 AM
Venus lost in Sun glare	Venus lost in Sun glare	Venus Set 5:20 PM	Venus Set: 5:36 PM
Mars Rise: 7:03 PM	Mars Rise: 6:24 PM	Mars Rise: 5:30 PM	Mars Rise: 4:53 PM
Jupiter Set: 8:15 PM	Jupiter Set: 7:55 PM	Jupiter Set: 7:30 PM	Jupiter Set: 7:14PM
Saturn Rise: 11:18 PM	Saturn Rise:10:50 PM	Saturn Rise: 10:14 PM	Saturn Rise: 9:50 PM
Uranus Set: 10:28PM	Uranus Set: 10:02PM	Uranus Set: 9:28PM	Uranus Set: 9:06PM
Neptune Set: 8:00 PM	Neptune Set: 7:34 PM	Neptune Set: 7:00 PM	Neptune Set: 6:37 PM
Pluto Rise: 6:30 AM	Pluto Rise: 6:04 AM	Pluto Rise: 5:30 AM	Pluto Rise: 5:07 AM

All times: Pacific Standard Time (Nov 1, 2009-March 13, 2010) = UT -8 hours or U.S. Pacific Daylight Time (March 14-November 7, 2010) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
1/1/2010	18:14	08:36	07:47	16:45	06:03	18:29
1/2/2010	19:36	09:13	07:47	16:46	06:03	18:30
1/3/2010	20:56	09:43	07:47	16:47	06:03	18:31
1/4/2010	22:13	10:09	07:47	16:48	06:03	18:32
1/5/2010	23:27	10:33	07:47	16:49	06:03	18:33
1/6/2010		10:57	07:47	16:50	06:03	18:34
1/7/2010	00:40	11:22	07:47	16:51	06:03	18:35
1/8/2010	01:51	11:50	07:47	16:52	06:03	18:36
1/9/2010	03:01	12:22	07:46	16:53	06:03	18:37
1/10/2010	04:08	13:00	07:46	16:54	06:03	18:37
1/11/2010	05:09	13:46	07:46	16:55	06:03	18:38
1/12/2010	06:03	14:38	07:45	16:57	06:03	18:39
1/13/2010	06:49	15:37	07:45	16:58	06:02	18:41
1/14/2010	07:27	16:38	07:45	16:59	06:02	18:42
1/15/2010	07:59	17:41	07:44	17:00	06:02	18:43
1/16/2010	08:25	18:44	07:43	17:01	06:01	18:44
1/17/2010	08:47	19:46	07:43	17:03	06:01	18:45
1/18/2010	09:08	20:48	07:42	17:04	06:00	18:46
1/19/2010	09:27	21:50	07:42	17:05	06:00	18:47
1/20/2010	09:47	22:52	07:41	17:07	05:59	18:48
1/21/2010	10:07	23:57	07:40	17:08	05:59	18:49
1/22/2010	10:31		07:39	17:09	05:58	18:50
1/23/2010	10:58	01:04	07:39	17:10	05:58	18:51
1/24/2010	11:33	02:13	07:38	17:12	05:57	18:53
1/25/2010	12:17	03:24	07:37	17:13	05:56	18:54
1/26/2010	13:13	04:31	07:36	17:15	05:56	18:55
1/27/2010	14:21	05:32	07:35	17:16	05:55	18:56
1/28/2010	15:40	06:24	07:34	17:17	05:54	18:57
1/29/2010	17:03	07:05	07:33	17:19	05:53	18:58
1/30/2010	18:26	07:39	07:32	17:20	05:52	19:00
1/31/2010	19:48	08:08	07:31	17:21	05:52	19:01

All times are for Eugene, Oregon, Latitude 44° 3' Longitude 123° 06' for listed date

Other Items of Interest This Month

- Mars grows high enough and close enough to observe easily this month
- 1/2 Earth at perihelion (91,402,485 miles)
- 1/7 400th anniversary of Galileo's discovery of Jupiter's moons. Mask your scope down to 1-inch aperture and go have a look!
- 1/11 Moon near Antares at dawn
- 1/22 First Quarter Friday Star Party**
- 1/26 Mercury at greatest western elongation (visible in early morning)
- 1/27 Mars closest to Earth (61,700,000 miles)
- 1/29 Mars at opposition
- End of month: Venus visible in evening

For Current Occultation Information

Visit Derek C. Breit's web site

"BREIT IDEAS Observatory"

<http://www.poyntsource.com/New/Regions/EAS.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.

Observing Highlight: The Ghost in M46

M46 is a beautiful open cluster about 13 degrees east of Sirius in Puppis. It's close to M47, an even brighter cluster that can be spotted by naked eye under dark skies. M46 has an additional treat, though: a planetary nebula tucked in among its dusting of stars.

NGC 2438 was discovered by William Herschel in 1786. It appears to lie within the cluster M46, but it is actually unrelated since it does not share the cluster's distance or radial velocity. M46 is about 5,400 light years away, while NGC 2438 is 2,500 light-years closer.

The central star of this planetary nebula has a magnitude of 17.7, so you're unlikely to see that without a long exposure photograph, but the nebula itself is quite visible under dark sky with an 8" or larger scope.

M46 is about a degree east of M47 in the sky, so the two fit well in a binocular or wide-angle telescope field.



M46. Image courtesy Ole Nielsen, Creative Commons



NGC 2438. Image courtesy NASA

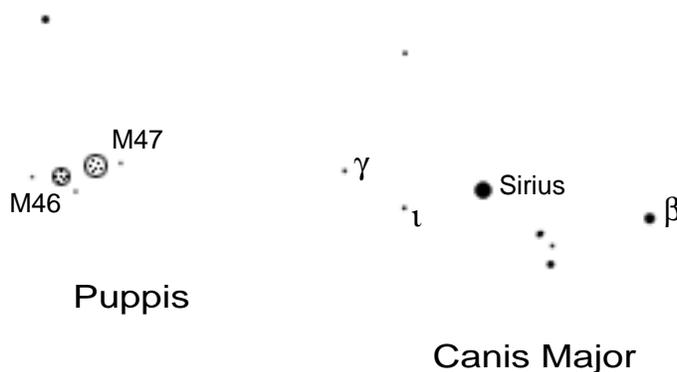
To find M46, first look for Sirius, the bright star to the southeast of Orion, then move 13 degrees straight east from there. (That's just a little over twice the distance from Beta Canis Majoris to Sirius.) Watch for M47, which is slightly to the northwest of M46 and considerably brighter.

Once you've found M46, look in the northern edge of it for the planetary nebula. A nebula filter or narrowband filter will help draw it out from the background, but it's usually quite visible without filters.

NGC 2438 glows at 11th magnitude and is 1 arc-minute across.

R.A.: 7:41.8

Dec: -14:44



How the Moon Turned Blue

Adapted from Science@NASA.gov

Most months have only one full Moon. The 29.5-day cadence of the lunar cycle matches up almost perfectly with the 28- to 31-day length of calendar months. Indeed, the word “month” comes from “Moon.” Occasionally, however, the one-to-one correspondence breaks down when two full Moons squeeze into a single month. Dec. 2009 was such a month. The first full Moon appeared on Dec. 2nd; the second, a “Blue Moon,” on Dec. 31st.

This definition of Blue Moon is relatively new. If you told a person in Shakespeare's day that something happens “once in a Blue Moon” they would attach no astronomical meaning to the statement. Blue moon simply meant rare or absurd, like making a date for the Twelfth of Never. “But meaning is a slippery substance,” says professor Philip Hiscock of the Dept. of Folklore at the Memorial University of Newfoundland. “The phrase ‘Blue Moon’ has been around for more than 400 years, and during that time its meaning has shifted.”

The modern definition sprang up in the 1940s. In those days, the *Farmer's Almanac* of Maine offered a definition of Blue Moon so convoluted that even professional astronomers struggled to understand it. It involved factors such as the ecclesiastical dates of Easter and Lent, and the timing of seasons according to the dynamical mean sun. Aiming to explain blue moons to the layman, *Sky & Telescope* published an article in 1946 entitled “Once in a Blue Moon.” The author James Hugh Pruett cited the 1937 Maine almanac and opined that the “second [full moon] in a month, so I interpret it, is called Blue Moon.”

That was not correct, but at least it could be understood. And thus the modern Blue Moon was born.



Photo © by Jerry Olton

A Flash of Light from Titan

from Science@NASA.gov

NASA's Cassini spacecraft has photographed a flash of sunlight reflecting from a lake on Saturn's moon Titan, confirming the presence of liquid hydrocarbons on a part of the moon dotted with many lake-shaped basins.

Cassini scientists had been looking for the glint, also known as a specular reflection, since the spacecraft began orbiting Saturn in 2004. But until recently Titan's northern hemisphere, where most of the lakes are located, had been veiled in winter darkness. Now, however, the seasons are changing and sunlight has returned to the north, allowing Cassini to capture this serendipitous image.

This image, obtained using Cassini's Visual and Infrared Mapping Spectrometer (VIMS), shows the first observed flash of sunlight reflected off a lake on Saturn's moon Titan.

"This one image communicates so much about Titan — a thick atmosphere, surface lakes and an otherworldliness," says Bob Pappalardo, Cassini project scientist, based at NASA's Jet Propulsion Laboratory. "It's an unsettling combination of strangeness yet similarity to Earth. This picture is one of Cassini's iconic images."

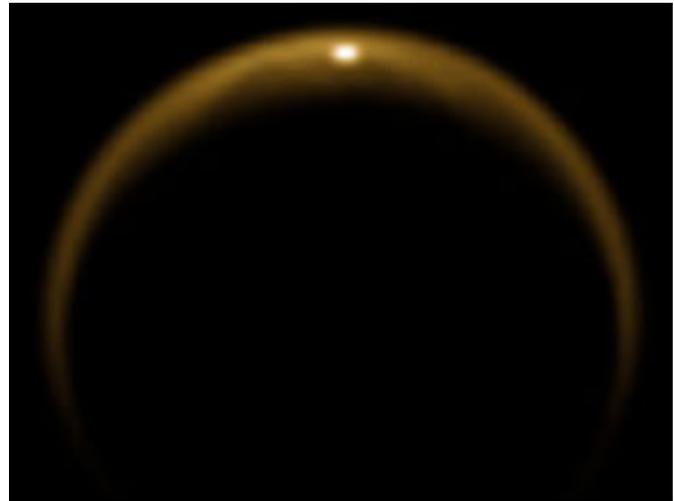
Titan, Saturn's largest moon, has captivated scientists because of its many similarities to Earth. Scientists have theorized for 20 years that Titan's cold surface hosts seas or lakes of liquid hydrocarbons, making it the only other planetary body besides Earth believed to have liquid on its surface. While data from Cassini have not indicated any vast seas, they have revealed what appeared to be large lakes near Titan's north and south poles.

In 2008, Cassini scientists using infrared data confirmed the presence of liquid in Ontario Lacus, the largest lake in Titan's southern hemisphere. But they were still looking for the smoking gun to confirm liquid in the northern hemisphere, where the basins are larger and more numerous.

Katrin Stephan, of the German Aerospace Center (DLR) in Berlin, an associate member of the Cassini visual and infrared mapping spectrometer team, was processing the initial image and was the first to see the glint on July 10, 2009. "I was instantly excited because the glint reminded me of an image of our own planet taken from orbit around Earth, showing a reflection of sunlight on an ocean," Stephan said. "But we also had to do more work to make sure the glint we were seeing wasn't lightning or an erupting volcano."

Team members at the University of Arizona in Tucson processed the image further. They were able to pinpoint the reflection at the southern shoreline of a lake called Kraken Mare. The sprawling Kraken Mare covers about 400,000 square kilometers (150,000 square miles), an area larger than the Caspian Sea, the largest lake on Earth.

By comparing this new image to radar and near-infrared images acquired since 2006, scientists were able to show that the shoreline of Kraken Mare has been stable over the last three years and that Titan has an ongoing hydrological cycle that brings liquids to the surface. Of course, in this case, the liquid in the hydrological cycle is methane rather than water, as it is on Earth.



Credit: NASA/JPL/University of Arizona/DLR

