

# IO - January 2011

Issue 2011-01  
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](http://www.eugeneastro.org)

EAS is a proud member of:

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



## Next Meeting: Thursday, January 27th

### Telescope Workshop

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.

We also encourage people to bring any new gear or projects they would like to show the rest of the club. The meeting is at 7:00 on December 23rd at EWEB's Community Room, 500 E. 4th in Eugene.

## Next First Quarter Friday: January 14th

Our December 10th star party was clouded out. Let's hope for better luck this month.

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 2011:

January 14	February 11	March 11	April 8
May 13	June 10	July 8	August 5
September 2	October 7	November 4	December 2
December 30			

## Not Skunked! December Finally Gives Us a Night.

The month of December has been a bleak, dark, wet, miserable, cloudy, thesaurus of a month. It was looking like we might need to trade in our telescopes for scuba gear, or at least canoes. The eclipse party was nip and tuck all night, with tarps over the scopes at one point while the H<sub>2</sub>Otons fell heavy around us. (See complete story on p.4.) And that was a clear night compared to the rest.

Just as it looked like that might be the best night of the month, December 30th (*continued on p.5...*)

# December Meeting Report

Our December 23rd meeting was our annual potluck get-together and swap meet. We didn't have a whole lot of gear this year, but we had great food and conversation, and Sam Pitts raffled off several of his fabulous astrophotos. These were mounted and framed and raffled off for a dollar a ticket — an incredible deal. Sam donated all proceeds from the raffle and from direct sales of his photos to the club: a total of \$96. Thanks, Sam!

The club also sold a vintage 6" Celestron scope on a Polaris go-to mount, another small equatorial mount, and a set of wooden legs from our excess inventory, bringing in another \$175.

It was a fun evening, and well attended despite the proximity to Christmas.

Our next meeting will be on Thursday, January 27th, at 7:00 PM in the EWEB 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 2011:** (All meetings are at 7:00 in the Community Room)

January 27  
February 24  
March 24

April 28  
May 26  
June 23

July 28  
August 25  
September 22

October 27  
November 10  
December 22

## Dues are Past Due!

EAS membership runs from October thru September. If you haven't renewed already, please mail your dues to the Eugene Astronomical Society, PO Box 7264, Eugene, OR 97401. Dues are \$25. Make your checks payable to Eugene Astronomical Society, or just EAS if your pen is low on ink.



## Telescope Lending Library

The EAS has several telescopes available for members to borrow. Check out the telescope lending page on our website to see the many scopes in our lending program, and contact Tony Dandurand, our lending coordinator, to arrange to check out one of these excellent scopes.

Tony can be reached via email at tdandurand at comcast.net or by phone at 541-726-8147.



**CASTLE STORAGE**

Unit \_\_\_\_\_  
Code \_\_\_\_\_

120 S. Danebo • Eugene, OR 97402 • 541.607.3800

## Thank You Castle Storage

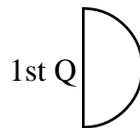
For the last three years, Castle Storage has generously provided EAS a place to store its telescopes and equipment. EAS would like to thank Castle Storage for their generosity and support for our group. Please give them a call if you need a storage space, and tell your friends. They are great people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



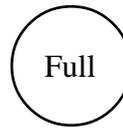
# Observing in January



New



1st Q



Full



Last Q

January 4	January 12	January 19	January 26
Mercury Rise: 6:03 AM	Mercury Rise: 6:10 AM	Mercury Rise 6:25 AM	Mercury Rise: 6:40 AM
Venus Rise: 4:01 AM	Venus Rise: 4:10 AM	Venus Rise: 4:19 AM	Venus Rise: 4:28 AM
Mars Set: 5:17 PM	Mars Set: 5:17 PM	Mars Set: 5:18 PM	Mars Behind Sun
Jupiter Set: 11:00 PM	Jupiter Set: 10:35 PM	Jupiter Set: 10:14 PM	Jupiter Set: 9:53 PM
Saturn Rise: 12:37 AM	Saturn Rise: 12:07 AM	Saturn Rise: 11:36 PM	Saturn Rise: 11:09 PM
Uranus Set: 11:01 PM	Uranus Set: 10:30 PM	Uranus Set: 10:04 PM	Uranus Set: 9:38 PM
Neptune Set: 8:23 PM	Neptune Set: 7:53 PM	Neptune Set: 7:27 PM	Neptune Set: 7:01 PM
Pluto Behind Sun	Pluto Rise: 6:23 AM	Pluto Rise: 5:57 AM	Pluto Rise: 5:30 AM

All times: Pacific Standard Time (Nov 7, 2010-March 12, 2011) = UT -8 hours or U.S. Pacific Daylight Time (March 14-November 6, 2010) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
1/1/2011	05:29	14:24	07:47	16:45	06:03	18:29
1/2/2011	06:28	15:21	07:47	16:46	06:03	18:30
1/3/2011	07:18	16:23	07:47	16:47	06:03	18:31
1/4/2011	07:59	17:28	07:47	16:48	06:03	18:32
1/5/2011	08:33	18:34	07:47	16:49	06:03	18:33
1/6/2011	09:01	19:38	07:47	16:50	06:03	18:33
1/7/2011	09:25	20:40	07:47	16:51	06:03	18:34
1/8/2011	09:47	21:42	07:47	16:52	06:03	18:35
1/9/2011	10:08	22:42	07:47	16:53	06:03	18:36
1/10/2011	10:29	23:43	07:46	16:54	06:03	18:37
1/11/2011	10:51		07:46	16:55	06:03	18:38
1/12/2011	11:16	00:44	07:46	16:56	06:03	18:39
1/13/2011	11:44	01:47	07:45	16:57	06:02	18:40
1/14/2011	12:18	02:51	07:45	16:59	06:02	18:41
1/15/2011	13:01	03:55	07:44	17:00	06:02	18:42
1/16/2011	13:52	04:56	07:44	17:01	06:01	18:43
1/17/2011	14:54	05:53	07:43	17:02	06:01	18:44
1/18/2011	16:05	06:42	07:42	17:04	06:01	18:46
1/19/2011	17:21	07:24	07:42	17:05	06:00	18:47
1/20/2011	18:39	08:00	07:41	17:06	06:00	18:48
1/21/2011	19:58	08:31	07:40	17:08	05:59	18:49
1/22/2011	21:15	08:59	07:40	17:09	05:58	18:50
1/23/2011	22:31	09:26	07:39	17:10	05:58	18:51
1/24/2011	23:47	09:53	07:38	17:11	05:57	18:52
1/25/2011		10:23	07:37	17:13	05:57	18:53
1/26/2011	01:01	10:56	07:36	17:14	05:56	18:55
1/27/2011	02:13	11:35	07:35	17:16	05:55	18:56
1/28/2011	03:21	12:21	07:34	17:17	05:54	18:57
1/29/2011	04:22	13:14	07:33	17:18	05:54	18:58
1/30/2011	05:14	14:13	07:32	17:20	05:53	18:59
1/31/2011	05:57	15:17	07:31	17:21	05:52	19:00

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

## Items of Interest This Month

First half of month: Mercury visible before dawn

1/2 - 1/5: Uranus within 1/2° of Jupiter

1/3: Earth at Perihelion

1/3 : Quadrantid Meteors peak ~5:00 PM

1/3 Europa shadow transit 7:43 - 10:22 PM

1/8: Venus at greatest western elongation

1/9: Mercury at greatest western elongation

**1/14 First Quarter Friday Star Party**

1/15 Io shadow transit 8:33 - 10:46 PM

1/27 Europa shadow transit 4:52 - 7:31 PM



## For Current Occultation Information

Visit Derek C. Breit's web site

**"BREIT IDEAS Observatory"**

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

[EAS.htm](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.

# Total Lunar Eclipse Visible After All!

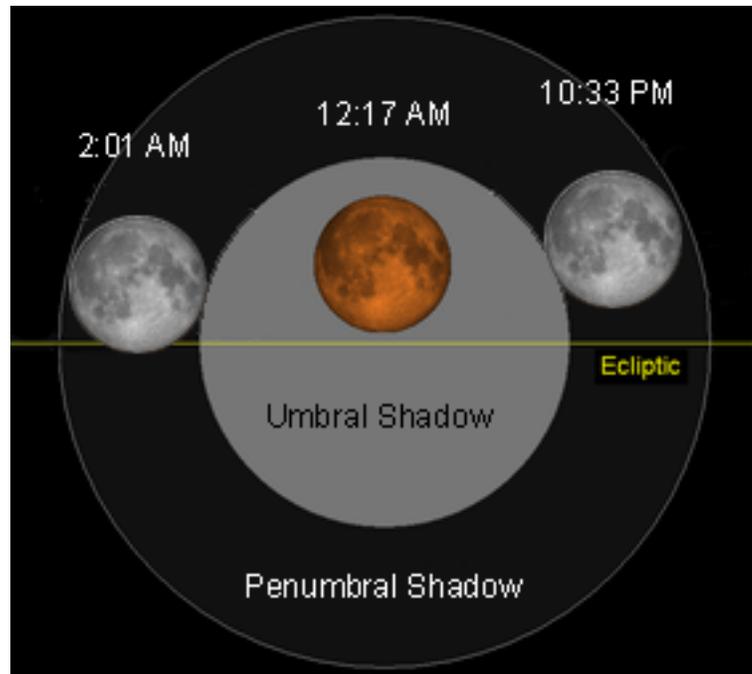
Our December 20th eclipse party almost didn't happen. The weather looked so bad that most EAS members stayed home. Jerry and Kathy went to the College Hill Reservoir to put up "Eclipse Party Cancelled" signs, only to find a couple dozen people there, stubbornly peering at the bright spot in the clouds where the Moon would occasionally peek out enough to show a distinct disk.

They couldn't very well cancel a party in progress, so they set up their telescopes and showed people what view they could. And the sky cooperated! The Moon made more and more appearances, allowing people to see every major step of the eclipse. During totality it cleared enough to let us see the coppery red Moon standing above Orion, with Gemini off to the side. The stars seemed extra bright and sparkly in the freshly washed air. That was a sight to remember.

Several more EAS members showed up, too. Rick Kang handed out flyers with eclipse information, and others helped answer questions, of which the public had plenty.

Jerry took photos, which John Taylor emailed to a group in Germany who were putting on a live eclipse broadcast despite it being daytime there. The Germans called Jerry and interviewed him by phone during totality. The phone conversation is available on streaming download at [www.eclipse-live.com](http://www.eclipse-live.com). It's at the beginning of segment 8 of the program.

Jerry assembled three of his photos into a montage (below) that illustrate the Moon's passage through the Earth's shadow. It looks pretty much as predicted at right. You can see the Earth's shadow defined by the outer two images. Cool! (The montage below can be zoomed into for more detail.)



Jeff Phillips got a good view from his place out near Crow, too. About this image, he says: “The picture was taken with a Celestron Ultima 65 spotting scope and a Canon Powershot A540 camera. The exposure time was about 0.5 seconds at ISO800, and I stacked five frames with Registax 5. The Ultima 65 is an inexpensive scope but it comes with a T-thread adapter for the eyepiece. Using a T-adapter for the camera allows me to mount the camera on top of the eyepiece and take very nice eyepiece projection photos.”

(This image, too, can be zoomed into for more detail.)



Photo © 2010 by Jeff Phillips

## Not Skunked! (continued from p.1)

finally gave up a clear night. EAS members Dan Rinnan, Jerry Oltion, and Bill Murray braved the cold and headed for Eagle’s Rest. They intended to stop at the Amphitheater site 1.8 miles up the road, but that was too muddy so they drove on up to the Rest, encountering about 4" of snow on the road, packed to ice by preceding cars. The observing site was snow-covered, too, which was much better than mud.

The temperature was nippy but tolerable, hovering just below freezing all night. And the sky was great! The seeing was rock steady, and the transparency fair to good. There were occasional clouds, but it was mostly clear. Orion was glorious, as always. Cetus gave up tons of galaxies. The Andromeda Galaxy revealed two easily visible dark lanes. The entire circle of the Rosette Nebula was visible. The Eskimo Nebula showed two distinct shells around its central star. It went on and on like that for hours.

At last their cold fingers and toes sent the happy observers home. The drive down (after they scraped the ice off their windshields) was exciting in places, especially when Bill and Jerry’s cars swapped positions unexpectedly, but no fenders were bent in the making of this extraordinary evening. December observing sessions may be few and far between, but they’re definitely worth the trouble!



Dan and Jerry observing at Eagle’s Rest on December 30. Photo © 2010 by Bill Murray.

# Did Life Fall from the Skies? Lessons from Titan

from Science@NASA.gov

In science fiction movies, the first stirrings of life happen in a gooey pool of primordial ooze. But new research suggests the action started instead in the stormy skies above. The idea sprang from research led by University of Arizona's Sarah Hörst. Her team recreated, in the lab, chemical reactions transpiring above Saturn's largest moon, Titan. "We're finding that the kind of chemistry an atmosphere can do has intriguing implications for life on Earth and elsewhere in the solar system," says Hörst. "Titan's skies might do some interesting chemistry – manufacture the building blocks of life."

Hörst and her colleagues mixed up a brew of molecules (carbon monoxide, molecular nitrogen and methane) found in Titan's atmosphere. Then they zapped the concoction with radio waves – a proxy for the sun's radiation. What happened next didn't make the scientists shout "it's alive!" but it was intriguing. A rich array of complex molecules emerged, including amino acids and nucleotides.

"Our experiment is the first proof that you can make the precursors for life up in an atmosphere, without any liquid water. This means life's building blocks could form in the air and then rain down from the skies!"

Titan is unique in our solar system. Dotted with lakes and dunes and shrouded in a thick atmosphere of nitrogen and methane, it's a frozen time capsule of early Earth. While the liquid on Titan's surface is methane instead of water, it's the only body in the solar system other than Earth with liquid on its surface.

"We didn't start out to prove we could make 'life' in Titan's skies," explains Hörst. "We were trying to solve a mystery. The Cassini spacecraft detected large molecules in Titan's atmosphere, and we wanted to find out what they could be." In hopes of obtaining clues to the mystery molecules, Hörst used computer codes to search the lab results for matches to known molecular formulas. She decided, on a whim, to look for nucleotides and amino acids.

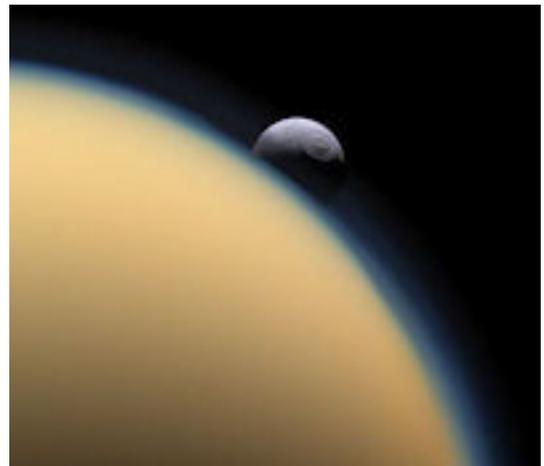
"When I pressed the enter key, I expected a big 'nope, not there.'" She left for a break, and got a big surprise upon returning.

"The computer was printing out such long lists I thought I must have made a mistake!" But there was no mistake.

"We had about 5000 molecules containing the right stuff: carbon, nitrogen, hydrogen, and oxygen. We knew we had the elements for organic molecules, but we couldn't tell how they were arranged. It's kind of like legos – the more there are, the more possible structures can be made. And they can be put together in many different ways." Among the structures identified in the lab experiment so far are five nucleotides found in DNA and RNA, and two amino acids. But she says there could be more amino acids in the mix.

How could Titan's atmosphere generate them? The answer lies in another Cassini discovery: plumes of water blasting from Titan's sister moon Enceladus. The researchers have good proof that these geysers are the source of oxygen required to kick off the first chain reactions required for life. "Water spewing across from the plumes gets broken up, releasing hydrogen and oxygen. And the amount of oxygen entering Titan's atmosphere from outside is precisely the quantity needed to make the amount of carbon monoxide detected in that atmosphere."

Then, other chemical reactions occur, producing the heavier molecules Cassini detected. If the lab results are correct, amino acids and nucleotides are in the mix. "We still don't know for sure what the actual molecules are in Titan's atmosphere," says Hörst, "but there's a distinct possibility that life's precursors are raining down on the surface of Titan."



A Cassini photograph of Saturn's moons Titan (foreground) and Tethys (background).

