

IO - December 2015

Issue 2015-12
Eugene Astronomical Society



Eugene Astronomical Society
Annual Club Dues \$25
President: Diane Martin 541-554-8570
Secretary: Jerry Oltion 541-343-4758
Additional Board members:
Jacob Strandlien, John Loper, Mel Bartels.

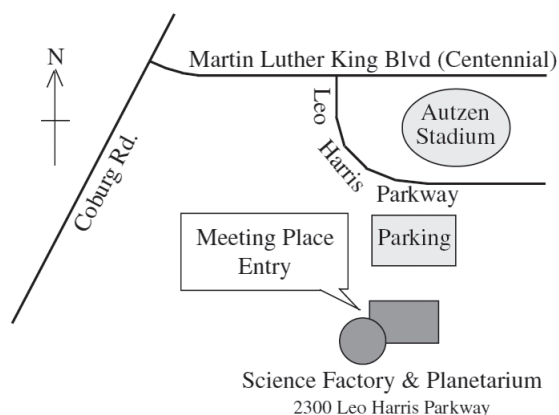
PO Box 7264
Springfield, OR 97475
www.eugeneastro.org
EAS is a proud member of:

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

Next Meeting Thursday, December 17th Potluck Dinner and Swap Meet

Our December 17th meeting will be our annual potluck dinner and swap meet. Bring some food to share and some gear to swap and spend the evening exchanging tall tales as well as equipment with your fellow amateur astronomers. This is a great opportunity to get to know other club members and learn about the various types of telescope, eyepieces, and other accessories that help make our hobby fun and rewarding.

The meeting is at 7:00 on Thursday, December 17th at the Science Factory. We'll be meeting in the conference room behind the planetarium this time, where we'll have tables to set things on.



Next First Quarter Friday: December 18th

Our November 20th First Quarter Star Party was clouded out, but our backup star party on Saturday the 21st went much better. The sky was nice and clear, and despite the cold we had 5 telescopes and about 20 people looking through them. The Moon was waxing gibbous and pretty bright, but it was a beautiful sight in every scope, even Jerry's scope with a freshly polished but not yet coated mirror. Bill Basham took some great photos of the Moon; see a couple of them on p.3.

Our next First Quarter Friday is on December 18th. 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's the schedule through 2016. Star parties start at dusk or 6:00, whichever is later.

December 18 (55% lit)	January 15 (40% lit)	February 12 (25% lit)
March 11th (12.8% lit)	April 15 (70% lit)	May 13 (54% lit)
June 10 (38% lit)	July 8 (23% lit)	August 12 (72% lit)
September 9 (56% lit)	October 7 (39% lit)	November 4 (24% lit)
December 9 (79% lit)		

November 19th Meeting Report

Bill Basham has become infamous for his amazing time lapse videos, and more recently his astrophotography. At our November 19th meeting he gave a presentation on how he does them. He started with a brief history of photography, showing how the single-lens-reflex camera came about and how digital imaging technology has improved upon that to the point where a person can take thousands of images and assemble them into a movie.

One of the big problems with a time lapse movie is keeping the exposure constant while the light levels change. Sunsets are particularly difficult. Once the Sun goes down, if you leave the camera at the same exposure settings you'll get images that are way too dark, but if you adjust for the current light level for each shot, the video won't look realistic. Bill solved that by writing a program that evaluates the histogram of each image and adjusts the next exposure based on the previous one, but also controls how quickly the camera changes its exposure, only letting it adjust by a fraction of an f-stop at a time. That lets the sky go dark when the Sun sets, but allows the foreground details to slowly come out...much like a person's eyes adapting to the dark. The result is a very realistic view of sunsets, cloud motion, stars moving across the sky, and even the last few total lunar eclipses.

Bill has done hundreds of time lapse videos, and they're all available on YouTube under the name "DrLapser." Check them out! The ones of fog flowing over the landscape like water in a stream are particularly amazing. (Try <http://youtu.be/W2u3fhj6iII> for an especially beautiful one with bonus planets and a comet.)

Bill has also gotten into still astrophotography, shooting single frames through a telescope. He does mostly prime focus work, where he mounts the camera directly to the telescope, using the telescope like an enormous telephoto lens. Astrophotography is well known to be a pursuit with no upper limit, and Bill's experience is no exception. He described how the hobby becomes a quest for ever-better equipment, and how each new item (an autoguider, an apochromatic refractor, etc.) helps improve the final result. He showed several of his images of galaxies and nebulae and so forth, and they're spectacular. One of the nice things about doing time lapses at night is that you get lots of meteor trails, and Bill showed a great one of a fireball roaring right down the handle of the Big Dipper.



M33, the Triangulum Galaxy. © 2015 by Bill Basham

It was a great talk, with much humor and many great illustrations. Many thanks to Bill for sharing his experience with all of us.



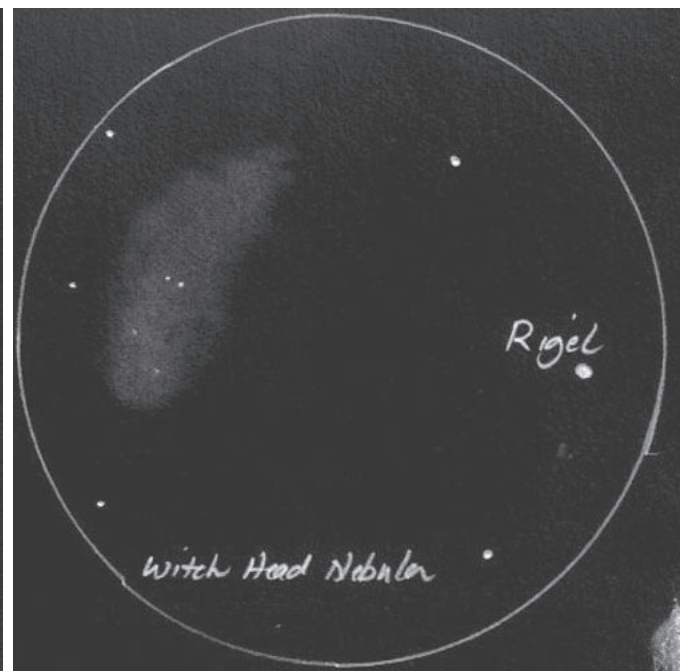
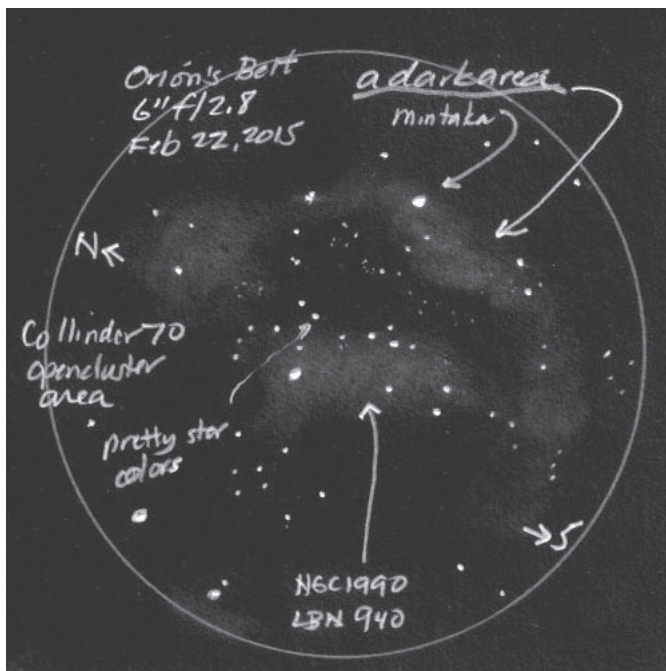
Thank You Storage Junction

Storage Junction has donated the use of a storage unit for us to hold our loaner telescopes when they're not in use. EAS would like to thank Storage Junction for their generosity and support for our group. Please give them a call if you need a storage space, and tell your friends. Storage Junction is located at 93257 Prairie Road (at the intersection of Hwy 99 and Hwy 36, 3 miles south of Junction City) Phone: 541-998-5177

Mel Bartels Guest Speaker for the Spokane Astronomical Society

Mel traveled to Spokane to speak at their Nov 6th general meeting. The planetarium was jam packed; extra chairs had to be placed in the aisle. Mel's presentation, "Into Thin Glass" described his innovations including working with meniscus shaped mirrors. A lively discussion ensued near the end as a young woman and older man riffed off of Mel's ideas on improving eyepiece swapping, filters and focusers.

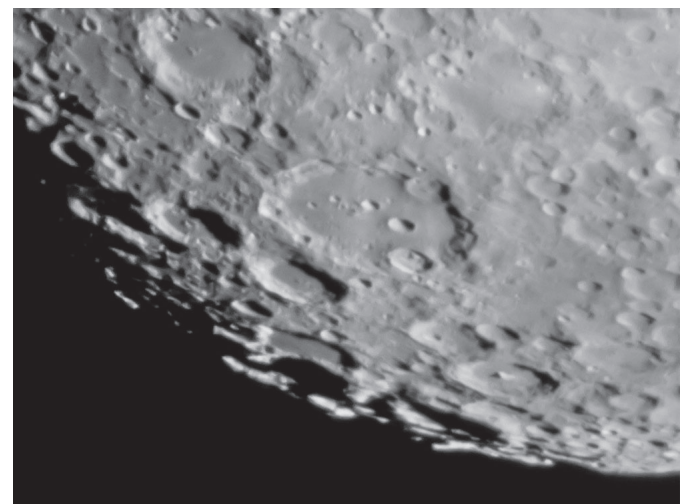
Time under the stars is incredibly valuable. It's all about the 'wow': more aperture and field for a size and weight of scope. There are better ideas, new thinking and better materials. That beautiful old scope is a classic now, not so current. Mel's first look through the 13.2 inch F3.0 blew him away. First look with the 6 inch F2.8 revealed the Pleiades Bubble; later views showed the Andromeda Galaxy's twist. Taken together, 100 degree eyepieces at F3 and faster, slumped mirrors, and folding designs results in a novel experience. In the works are ideas for a mechanical equatorial to altazimuth transformer and a 3-axis mount to avoid Dobson's hole.



Sketches of large faint nebulae that many think cannot be seen in a 6 inch scope. © by Mel Bartels

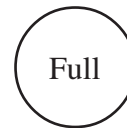


The Moon during our November 21 backup star party.
Photos © by Bill Basham





Observing in December



Dec. 2, 11:40 PM	Dec. 11, 2:29 AM	Dec. 18, 7:14 AM	Dec. 25, 3:11 AM
Mercury Set: 4:56 PM	Mercury Set: 5:17 PM	Mercury Set: 5:40 PM	Mercury Set: 6:03 PM
Venus Rise: 3:41 AM	Venus Rise: 4:00 AM	Venus Rise: 4:15 AM	Venus Rise: 4:31 AM
Mars Rise: 2:23 AM	Mars Rise: 2:15 AM	Mars Rise: 2:08 AM	Mars Rise: 2:01 AM
Jupiter Rise: 00:37 AM	Jupiter Rise: 00:06 AM	Jupiter Rise: 11:38 PM	Jupiter Rise: 11:12 PM
Saturn lost in Sun	Saturn Rise: 6:42 AM	Saturn Rise: 6:18 AM	Saturn Rise: 5:54 AM
Uranus Set: 2:58 AM	Uranus Set: 2:22 AM	Uranus Set: 1:54 AM	Uranus Set: 1:26 AM
Neptune Set: 11:27 PM	Neptune Set: 10:52 PM	Neptune Set: 10:25 PM	Neptune Set: 9:58 PM
Pluto Set: 7:03 PM	Pluto Set: 6:28 PM	Pluto Set: 6:02 PM	Pluto Set: 5:35 PM

All times Pacific Daylight Time (March 13 – Nov. 5, 2016 = UT -7 hours) or **Pacific Standard Time (November 1, 2015 – March 12, 2016 = UT -8 hours)**

Date	Moonrise	Moonset	Twilight Begin	Sunrise	Sunset	Twilight End
12/1/2015	22:50	11:51	05:44	07:27	16:36	18:19
12/2/2015	23:49	12:22	05:45	07:28	16:35	18:19
12/3/2015		12:50	05:46	07:29	16:35	18:18
12/4/2015	00:47	13:18	05:47	07:30	16:35	18:18
12/5/2015	01:45	13:45	05:48	07:31	16:34	18:18
12/6/2015	02:42	14:13	05:48	07:32	16:34	18:18
12/7/2015	03:40	14:43	05:49	07:33	16:34	18:18
12/8/2015	04:39	15:15	05:50	07:34	16:34	18:18
12/9/2015	05:38	15:52	05:51	07:35	16:34	18:18
12/10/2015	06:36	16:35	05:52	07:36	16:34	18:18
12/11/2015	07:33	17:23	05:53	07:37	16:34	18:19
12/12/2015	08:26	18:17	05:53	07:38	16:34	18:19
12/13/2015	09:15	19:16	05:54	07:39	16:34	18:19
12/14/2015	10:00	20:20	05:55	07:40	16:35	18:19
12/15/2015	10:40	21:27	05:55	07:40	16:35	18:20
12/16/2015	11:17	22:35	05:56	07:41	16:35	18:20
12/17/2015	11:52	23:44	05:57	07:42	16:35	18:20
12/18/2015	12:25		05:57	07:42	16:36	18:21
12/19/2015	12:58	00:54	05:58	07:43	16:36	18:21
12/20/2015	13:33	02:05	05:59	07:44	16:37	18:21
12/21/2015	14:11	03:16	05:59	07:44	16:37	18:22
12/22/2015	14:53	04:26	06:00	07:45	16:38	18:22
12/23/2015	15:41	05:34	06:00	07:45	16:38	18:23
12/24/2015	16:33	06:38	06:00	07:45	16:39	18:24
12/25/2015	17:31	07:36	06:01	07:46	16:39	18:24
12/26/2015	18:31	08:27	06:01	07:46	16:40	18:25
12/27/2015	19:33	09:10	06:02	07:46	16:41	18:25
12/28/2015	20:35	09:48	06:02	07:47	16:41	18:26
12/29/2015	21:35	10:22	06:02	07:47	16:42	18:27
12/30/2015	22:34	10:52	06:02	07:47	16:43	18:28
12/31/2015	23:33	11:20	06:03	07:47	16:44	18:28

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

Items of Interest This Month

- Comet Catalina visible in early mornings this month.
- Mercury visible in evenings during last half of month.
- 12/7 + 12/8 early mornings: Comet Catalina close to Venus.
- 12/7 Moon occults Venus during daytime. Disappearance 7:50 AM, Reappearance 9:30 AM.
- 12/9-10 Asteroid 39 Laetitia passes M77.
- 12/13-14 Geminid meteor shower (good both nights).
- 12/18 First Quarter Friday Star Party.**
- 12/21 Winter solstice 8:48 PM.
- 12/28 Mercury at greatest eastern elongation (20° from Sun). 11° above horizon at sunset, 8° 1/2 hour after sunset.
- 12/31 - 1/1 Comet Catalina very near Arcturus.

For ongoing discussion of astronomical topics and impromptu planning of telescope outings, join the EAS mail list at http://eugeneastro.org/mailman/listinfo/general_eugeneastro.org