IO - February 2013

Issue 2013-02
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.

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EAS is a proud member of:

Next Meeting: Thursday, February 28th

The Australian Eclipse

by Ken & Diane Martin

In early November, Ken and Diane Martin visited Australia to view the total solar eclipse. At our February meeting they will be sharing a slide show of their trip including the solar eclipse viewed from a hot air balloon, their tour of the Parkes radio dish, Siding Spring Observatory, and highlights from Sydney, Cairns and the Great Barrier Reef.

We didn't get to see this eclipse on our side of the planet, so come to our February meeting and live it vicariously through Ken and Diane's slide show.

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 Thursday, February 28th at EWEB's Community meeting room, 500 E. 4th in Eugene.

Next First Quarter Friday: February15th

Our January 18th star party and our backup Saturday were both fogged out. Our next First Quarter Friday will be February 15th, with a backup date of Saturday, February 16th if the 15th is cloudy.

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 thru 2013:

February 15 (34% lit)	March 15 (19% lit)	April 19 (66% lit)
May 17 (50% lit)	June 14 (35% lit)	July 12 (21% lit)
August 16 (80% lit)	September 13 (67% lit)	October 11 (53% lit)
November 8 (38% lit)	December 6 (24% lit)	

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.

January Meeting Report

Our January telescope workshop was a popular event. We had five people and/or families bring telescopes for assistance, and several newcomers showed up with questions and budding interest. One person joined the club on the spot (welcome, Jon Sanchez!).

We opened with a lively discussion of various astronomy-related topics. For show and tell Jerry Oltion showed off a set of cheap but decent laser pointers he got from Amazon.com, then he gave a demonstration of how to clean a telescope mirror. Sam and Brandt were visibly wincing at his cavalier treatment of eighth-wave optics, but the mirror escaped unscathed and now looks as pristine as the day it was coated.

The last half of the meeting was opened up for telescope assistance, and it seemed that everyone who needed help went home happy with the mentoring they received.

Our next meeting will be on Thursday, February 28th, at 7:00 PM at EWEB's community meeting 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.

Here's our meeting schedule thru the end of 2013. We meet on the 4th Thursday of each month except November. EWEB has given us the same room (the Community room) every time this year.

February 28	March 28
April 25	May 23
June 27	July 25
August 22	September 26
October 24	November 21
December 26	

Jerry Oltion cleans his 10" Trackball Mirror, with Kathy's help

Eagle's Rest in January

Eagle's Rest observing site on January 18th. Photo © by Bill Murray

EAS members had three good observing nights at Eagle's Rest this month. On January 2nd, Jerry Oltion, Bill Murray, Nelson Farrier, and Brandt Schram went up for this year's first real night of winter sky, and Jerry and Dan Jarvis went up again on the 16th. Despite heavy fog in the valley, it was clear and beautiful on top.

Jerry and Kathy and Bill Murray drove up above the fog again on the 18th, when Bill took this photo of Orion above the trees to the south. Note the snow on the ground. Cold! But well worth the trip.

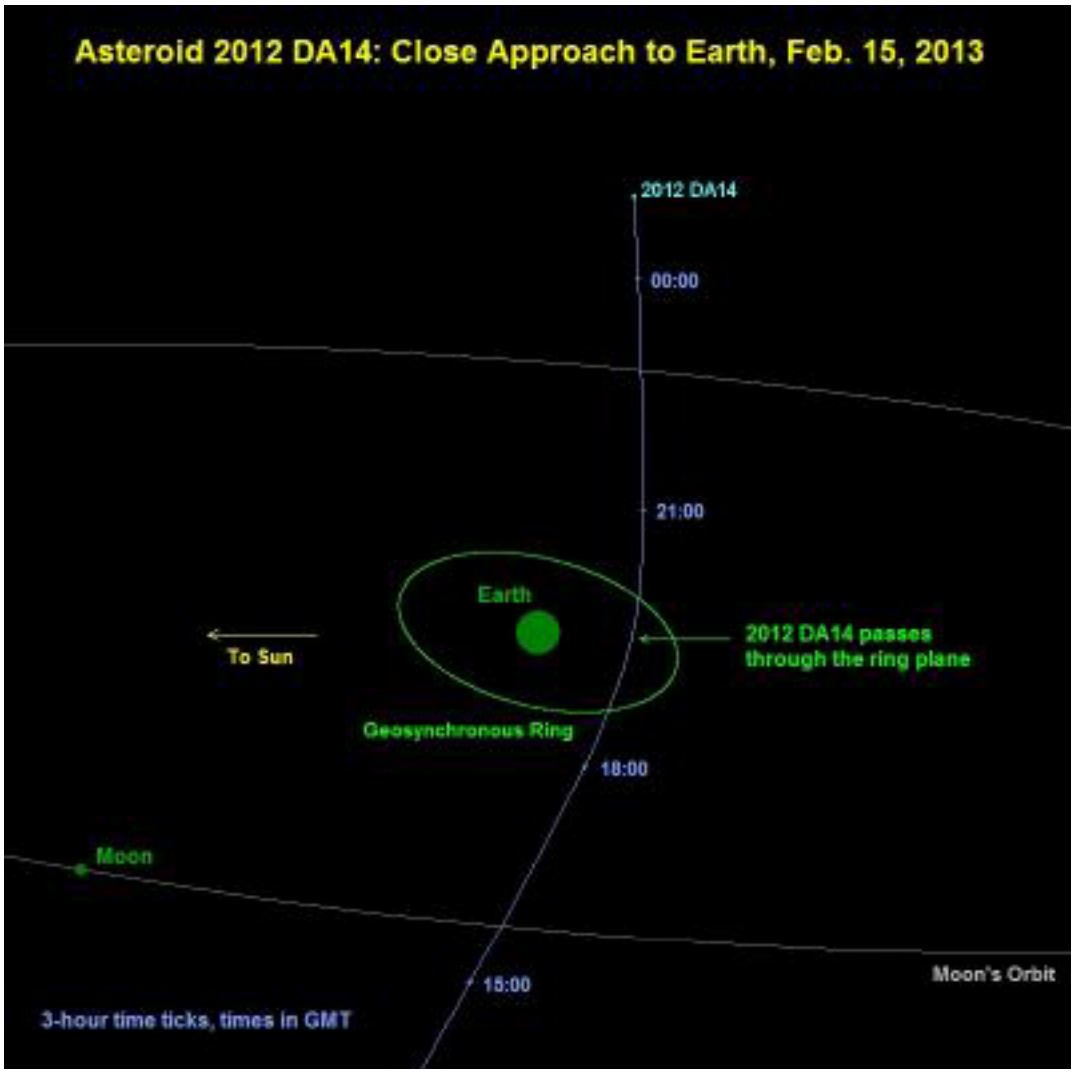
Another Asteroid Flyby This Month

Last December the asteroid 4179 Toutatis made a close pass by Earth: only 4 million miles away. That's nothing compared to the upcoming pass by Asteroid 2012 DA14. On February 15th, this 50-meter-wide rock will sweep past less than three Earth radii away. That's about 21,000 miles, well within the ring of geosynchronous satellites around Earth. That's *close.*

At that distance, its motion should be readily apparent even in binoculars. According to NASA, "The asteroid will travel rapidly from the southern evening sky into the northern morning sky with its closest Earth approach occurring about 19:26 UTC [11:26 a.m. PST] when it will achieve a magnitude of less than seven, which is somewhat fainter than naked eye visibility. About 4 minutes after its Earth close approach, there is a good chance it will pass into the Earth's shadow for about 18 minutes or so before reappearing from the eclipse. When traveling rapidly into the northern morning sky, 2012 DA14 will quickly fade in brightness."

We'll be on the wrong side of the planet to see anything during its closest approach, but it will rise above our eastern horizon at 10:00 pm and move rapidly into Boötes. By midnight it will be directly east of Izar (Epsilon Boötis) at 26° altitude. By 4:00 am on the 16th, it will have crossed Boötes to pass within a degree of Seginus (Gamma Boötis), nearly overhead.

By then its magnitude will have dropped to 12th or so, which will make it a tough find, but it should be within the reach of an 8" scope. This will be the night of our First Quarter Friday star party, so if the weather cooperates, those of us with large telescopes should take them to the star party and see if we can show people the asteroid. Maybe we can pull out the club's 18" scope for this event, too.



Even if we don't have good weather, there will be several places online offering live views of the flyby earlier in the day, so don't miss this near-miss solar system spectacle.

Observing Highlight: The Intergalactic Wanderer

The winter sky doesn't have as many globular clusters as the summer sky. That's because most globular clusters hang out in a halo around the center of the galaxy, and that's visible in summer. "Most" is not all, however, and of our galaxy's 200+ globular clusters, some range pretty far afield. So it might not be surprising to find the one that ranges farthest in the winter sky rather than the summer sky. NGC 2419, also known as the Intergalactic Wanderer because of its extreme distance (300,000 light-years) from the core of the Milky Way, is straight overhead at prime observing time in February.

It's in Lynx, a little-appreciated constellation to the northeast of Gemini. Castor and Pollux make great stepping stones to find it. Start at Pollux, cross to Castor, then turn straight north and go seven degrees (a little more than the distance from Pollux to Castor). It's a 10th magnitude target, so it will appear somewhat dim, but it has a pair of 7th and 8th magnitude stars to the northwest (lower left in an inverted telescope view as seen here) that help it stand right out in the eyepiece.

You might catch a glimpse of individual stars at high magnification, but if not, console yourself with the knowledge that this little ball of stars is nearly three times the diameter of our galaxy away from us. It's farther than the Magellanic Clouds, and 1/7 the distance to the Andromeda Galaxy. Intergalactic indeed!

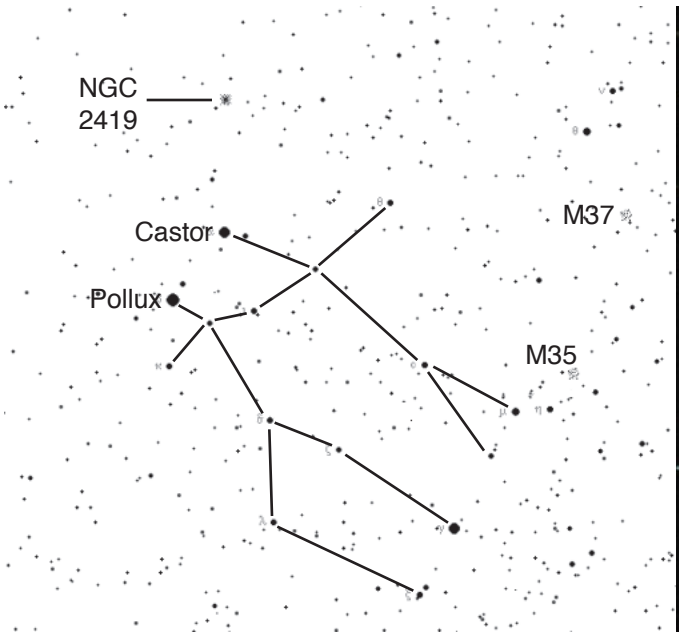


Photo copyright © 2013 by Brandt Schram

Thank You Castle Storage

For the last five 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.

Orion and Taurus from Eagle's Rest

Orion, Taurus, and environs from Eagle's Rest. Photo © by Bill Murray

On January 2nd, Bill Murray took this shot of Orion and Taurus and surroundings with his camera piggybacked on his telescope. This was a wide angle shot (10mm focal length) with a Canon EOS Rebel T4i. It's a 50 second exposure at f/4.5 and iso 1600.

Zoom in a little and you can clearly see Orion and Taurus and the Pleiades, plus Jupiter shining brightly above Aldebaran and the band of Milky Way running vertically to the left of Orion. Lots of dynamic range in this shot!

The Crab Nebula in 8-Channel

January was a cloudy month. Partway into it, Brandt Shram sent this image to the group email list with the following explanation:

"I mostly blame this on cabin fever but I've been wanting to try blending four channels of 3nm narrow band (Ha, OIII, SII and NII) with LRGB stars and M1 seemed a likely target. I tried a new (to me) technique using PixInsight to combine the 4 narrow band images into the three color channels. After a little trial and a bunch of error I ended up with the following:

"H alpha mapped to magenta.

"NII mapped to green.

"OIII mapped to cyan.

"SII mapped to yellow.

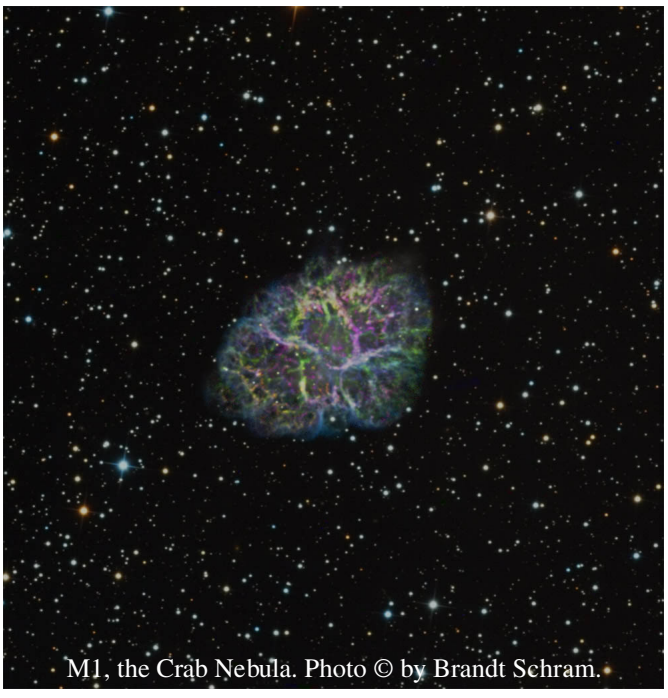
"Levels were normalized to the background.

"With Ha, SII and NII all so close my goal was to separate the different wavelengths and show some of the structure not seen in RGB images."

Brandt used a Planewave CDK 17 on a Paramount ME with an Apogee U16M camera. Guiding was done off-axis with an SBIG STi.

Exposure times were 30 minutes each RGB with 60 minutes Luminosity. The narrow band was 4 hours each for Ha, SII, OIII and NII all with 3nm Astrodon filters. 18.5 hours total, nearly all taken in December. The LRGB was only used for the star color.

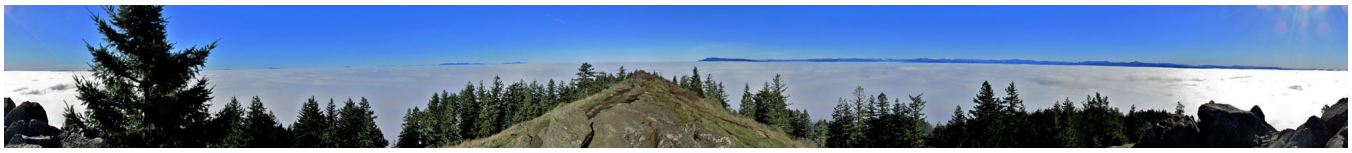
Judging from the incredible amount of detail visible here (zoom in on it for even more), it looks like this experiment was a resounding success!



M1, the Crab Nebula. Photo © by Brandt Schram.

Meanwhile, Just Overhead

While we were enjoying our second straight week of fog in the valley, Alan Gillespie climbed Spencer's Butte to get above it. From that vantage, he took this great panorama of the full 360° view. He took it on January 17th with a Canon sx230 and stiched together the individual frames with Hugin. This is reproduced here at fairly high resolution so you can zoom in a ways.



The view from Spencer's Butte. Photo © by Alan Gillespie

And Somewhat Higher Overhead

Brandt Scram was able to get above the fog by the simple expedient of running a remote observatory on the other side of the Cascades. He took this two-panel mosaic over the course of a couple of weeks this month, saying "I know this has been done to death but I wanted to try another mosaic." We're glad he did, because this is one of the most beautiful images of this galaxy pair we've ever seen.

The original is a 25 megapixel image taken in LRGB. Brandt says "I was hoping to capture more of the Intergalactic Flux Nebula [the tracery of interstellar dust and gas that's not lit by any one star, but by the glow of the entire galaxy] but my sub exposures (L:15 minute and RGB :10 minute) apparently weren't long enough. There are a total of 33 hours (>5GB of data!) LRGB. I have 9 hours of H-alpha but even with those shot at 20 minutes each they didn't have enough signal to really use."

For equipment Brandt used aPlanewave CDK 17 on a Paramount ME with an Apogee U16M camera. Guiding was done off-axis with an SBIG STi. Processing was done with PixInsight and PS6.

M81 and M82. Photo © by Brandt Schram

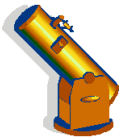
M33 in December

December and January were pretty cloudy, but Brandt Schram kept giving us hope that the sky was still up there. On December 13th, was able to get a few hours of LRGB data of M33. He ran out of sky before getting all of the color data, but what he got was enough to generate this beautiful image.

M33 is the next-closest large galaxy to our own after the Andromeda Galaxy. Its spiral arms and several of the bright knots of nebulosity that you see here can be seen in a medium-sized telescope.

Photo data: 120 minutes L, 40 minutes R, 50 minutes G and 80 minutes Blue. All shot 1x1 with the CDK 17 and the Apogee U16M. Very little processing, just the basics in PixInsight and PS. The temp in the observatory was -15°C!

M33. Photo © by Brandt Schram



Observing in February

Last Q | New | 1st Q | Full

February 3	February 9	February 17	February 25
Mercury Set: 6:24 PM	Mercury Set: 6:56 PM	Mercury Set: 7:21 PM	Mercury Set: 7:02 PM
Venus Rise: 6:55 AM	Venus Rise: 6:54 AM	Venus Rise: 6:51 AM	Venus Rise: 6:46 AM
Mars Set: 6:47 PM	Mars Set: 6:49 PM	Mars Set: 6:50 PM	Mars Set: 6:52 PM
Jupiter Set: 3:05 AM	Jupiter Set: 2:43 AM	Jupiter Set: 2:13 AM	Jupiter Set: 1:45 AM
Saturn Rise: 12:44 AM	Saturn Rise: 12:21 AM	Saturn Rise: 11:46 PM	Saturn Rise: 11:14 PM
Uranus Set: 9:46 PM	Uranus Set: 9:24 PM	Uranus Set: 8:54 PM	Uranus Set: 8:25 PM
Neptune Set: 6:51 PM	Neptune Set: 6:29 PM	Neptune Behind Sun	Neptune Rise: 6:51 AM
Pluto Rise: 5:19 AM	Pluto Rise: 4:56 AM	Pluto Rise: 4:25 AM	Pluto Rise: 3:55 AM

All times: Pacific Standard Time (Nov 4, 2012-March 9, 2013) = UT -8 hours or U.S. Pacific Daylight Time (March 10-November 2, 2013) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
2/2/2013	23:52	09:52	07:29	17:23	05:50	19:02
2/2/2013		10:26	07:28	17:25	05:49	19:03
2/3/2013	01:01	11:05	07:27	17:26	05:48	19:05
2/4/2013	02:10	11:52	07:26	17:27	05:47	19:06
2/5/2013	03:16	12:47	07:25	17:29	05:46	19:07
2/6/2013	04:17	13:50	07:23	17:30	05:45	19:08
2/7/2013	05:10	14:59	07:22	17:31	05:44	19:10
2/8/2013	05:55	16:11	07:21	17:33	05:43	19:11
2/9/2013	06:35	17:25	07:20	17:34	05:42	19:12
2/10/2013	07:09	18:37	07:18	17:36	05:41	19:13
2/11/2013	07:40	19:47	07:17	17:37	05:39	19:14
2/12/2013	08:09	20:54	07:15	17:38	05:38	19:16
2/13/2013	08:37	22:00	07:14	17:40	05:37	19:17
2/14/2013	09:06	23:03	07:13	17:41	05:36	19:18
2/15/2013	09:37		07:11	17:43	05:34	19:19
2/16/2013	10:11	00:04	07:10	17:44	05:33	19:21
2/17/2013	10:49	01:02	07:08	17:45	05:32	19:22
2/18/2013	11:31	01:57	07:07	17:47	05:30	19:23
2/19/2013	12:18	02:48	07:05	17:48	05:29	19:24
2/20/2013	13:10	03:35	07:03	17:49	05:27	19:26
2/21/2013	14:06	04:16	07:02	17:51	05:26	19:27
2/22/2013	15:05	04:54	07:00	17:52	05:24	19:28
2/23/2013	16:08	05:27	06:59	17:53	05:23	19:30
2/24/2013	17:12	05:58	06:57	17:55	05:21	19:31
2/25/2013	18:17	06:27	06:55	17:56	05:19	19:32
2/26/2013	19:25	06:56	06:54	17:57	05:18	19:33
2/27/2013	20:33	07:25	06:52	17:59	05:16	19:35
2/28/2013	21:42	07:55	06:50	18:00	05:15	19:36

Items of Interest This Month

2/2 Red Spot transits 6:46
2/4 Red Spot transits 8:25
2/7 Io shadow transit 8:06 – 10:18
2/9 Red spot transits 7:35
2/10 – 2/20 Mercury high in evening twilight
2/11 Very thin crescent Moon near Mercury and Mars at sunset
2/14 Io shadow transit 10:02 – 12:14
2/15 Asteroid 2012 DA14 flyby
2/15 First Quarter Friday Star Party
2/16 Red Spot transits 8:23
2/17 Moon near Jupiter
2/17 Jupiter's moons form triangle
2/18 Callisto crosses Jupiter's pole in early evening
2/22 Europa shadow transit 7:03 – 9:29
2/23 Io shadow transit 6:27 – 8:39
2/28 Moon near Spica
2/28 Ganymede and Europa pass at 8:25 pm.
3/1 Ganymede shadow transit 6:45 – 9:06

For Current Occultation Information

Visit Derek C. Breit's web site: 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.

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