IO - September 2013

Issue 2013-09

Eugene Astronomical Society

Eugene Astronomical Society
Annual Club Dues $25
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EAS is a proud member of:

The Astronomical League
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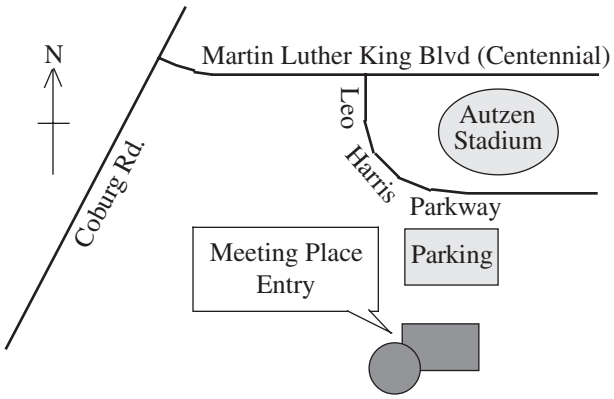
Next Meeting Thursday, September19th
Big Glass, Far and Near
by Scott Fisher

At our September 19th meeting, Scott Fisher will be back at the EAS for a continuation of the presentation he gave at our April meeting. This time, Scott will give a combination talk that has two main components: First, he will show us an insider's look at the Gemini observatory where he was a staff astronomer for over 10 years. He will present many behind-the-scenes photos and data from Gemini. For the second part of the talk, Scott will describe his plans for "astro at UO" and would like to have an open discussion with the club about possible future collaborations. Overall, this will be a fun and informative talk about "life with the big glass" and how to bring that "big glass" here to UO and Eugene.

We also encourage people to bring any new gear or projects they would like to show the rest of the club. **Remember we no longer meet at EWEB. The meeting is at 7:00 on Thursday, September 19th at the Science Factory planetarium**.



Next First Quarter Friday: September 13th

August's First Quarter Friday was a surprise success. The day started out cloudy and the forecast was iffy, but the sky cleared by evening and stayed clear all night. We had four scopes and maybe forty people to look through them, so the lines were a bit long, but people were happy with the views of the Moon, Saturn, and various nebulae and clusters.

Here's hoping for another clear night on September 13th. If Friday is clouded out, we'll try again on Saturday the 14th.

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 for the rest of this year:

September 13 (67% lit) October 11 (53% lit) November 8 (38% lit)
December 6 (24% lit)

August Meeting Report: Remote Imaging

At our August 15th meeting, Brandt Schram gave us a fascinating look at his remote observatory in central Oregon. He showed us how he built it and how he runs it via the Internet from his home in Eugene. The entire operation is computer controlled, and Brandt wrote much of the software himself.

A typical night's observing starts well before dark. Brandt considers what photos he'll be taking and arranges them in the control software in the optimum order so the objects he's shooting will be at their highest in the sky while he's collecting data. He orients the shots, selects his guide stars, selects the filters he'll be using, and determines how many frames of what duration he'll take.

As darkness approaches, if the skycam agrees that the sky is clear, Brandt sends the signal that opens the roll-off roof, exposing his Planewave CDK 17 telescope on its Paramount ME mount to the elements. The obervatory is well insulated, so they start out relatively cool, but they still need to equilibrate.

The observatory and grounds

Telescope and mount. Yes, that's a beer keg full of cement.

From twilight onward it's a steady stream of data collection through an electronically cooled Apogee U16M CCD camera. Brandt choses filters that will enhance the features he's trying to capture, and takes multiple frames through each filter. Typical shots will last ten minutes, and he may take a dozen of each.

Capturing the data is only half the process. The images look surprisingly bland until they're stacked and processed to increase contrast, and the exposures through different filters are mapped to red, green, blue, and luminance channels using programs like CCDStack, PixInsight and Photoshop. The processing can take longer than the data aquisition! But the results, as we have seen, are fabulous. We're fortunate that Brandt likes to share the results of his long labors with us. Thank you, Brandt!

Our next meeting will be on Thursday, September 19th, at 7:00 PM at the Science Factory planetarium, 2300 Leo Harris Parkway, behind Autzen Stadium.

Here's our meeting schedule through the end of 2013. We now meet on the 3rd Thursday of each month: September 19 October 17 November 21 December 19

Thank You Castle Storage

For the last six 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.

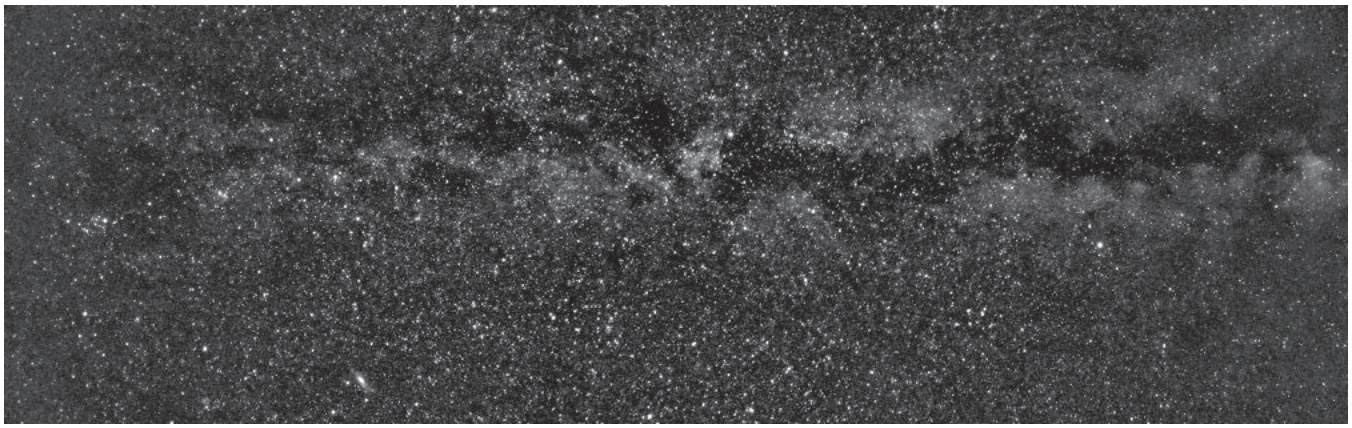
Dark-Sky Star Party Report

Our annual dark-sky star party at Dexter State Park went very well. We held it on August 3rd this year, and after a knuckle-biting stretch of cloudy weather the sky cleared on the day of the party. We had 80-100 guests, and well over a dozen telescopes for them to look through. Saturn was an early hit, with long lines behind most of our scopes as people eagerly looped around for multiple looks. When the Milky Way started to stand out we began showing people deep-sky objects that many had never seen before, much less from a dark site. We had several large-aperture scopes on hand, so there were many gasps of awe from first-time (and maybe even some veteran) observers. We kept people entertained from 9:00 until about midnight, when the party started to wind down.

The telescope giveway was great fun. We had two scopes this year, and 26 youngsters eager to win them. The 6" scope went to Maddie Backer of Springfield, and the 8" scope went to Garret Blazer of Eugene. Maddie is a student at Thurston Elementary school, and Garrett is a student at Kennedy Middle

Maddie Backer, winner of the 6" scope

Garrett Blazer, winner of the 8" scope



Milky Way from Dexter State Park. Photo © 2013 by Alan Gillespie

School. Steve Frankel, Dave Adams, and Mike Curtin helped them learn how to use their new telescopes, and the two youngsters got a good start on what might become lifelong hobbies in astronomy.

Many thanks to all who helped make the star party such a great time! In addition to our telescope mentors, Dave Adams and Wes Reynolds and Rick Kang ran the welcome table, Dave and Wes and Jon Schwartz organized the telescope giveaway, Sam drew the winning tickets, and many more brought telescopes or just came to enjoy the night with us. It was a great night out.

It's hard to believe we've done this for five years in a row. It seems like we just started putting on these dark-sky star parties, but the tradition is already well established and the public loves spending a night with us under a truly dark sky. Giving away telescopes doesn't hurt, either! With luck, we'll keep this tradition going for many more years to come.

The height of the star party. Photo © by Sam Pitts

Oregon Star Party Report

by Jerry Oltion

The Oregon Star Party was held on August 7-11th this year at its usual site in the Ochoco Mountains about 40 miles east of Prineville. Several EAS members were able to attend, and many of us camped together. Ted Touw and Jim Jackson got there early and left early. Kathy and I and Mel Bartels and Barb Bajec and Frank Szczepanski arrived at almost the same time on Thursday. Steve Frankel and Tanja Petal and their son Xander got in on Friday, as did Tom and Charlotte Conlin.

It was an eventful star party this year. The weather was dramatic, to say the least, with thunderstorms moving through every few hours, some of them quite close. One went right overhead, with lightning crackling close enough for us to feel the static charge on our skin at one point. I never set up the 20" scope for fear of the weather, so Kathy and I confined our observations to binoculars and the 12.5" trackball that we could move easily into and out of our vehicle.

A thunderstorm approaching the star party site

We didn't get a whole lot of observing time anyway. The clouds came and went throughout the star party, leaving us with gaps of an hour or two at a time, of which we only took advantage of one per night. Saturday night was the best of the lot, good enough that Frank set up the club's 18" scope and we looked at various things through that.

For me the highlight of the trip was the view of the Andromeda Galaxy in both binoculars and in the 12.5" scope. In binoculars it was as bright and as extensive as I've ever seen it, reaching easily out to engulf M32 and stretching from edge to edge of the binocular's field of view. In the telescope it was far larger than the field of view even at my lowest power, and I could see stars well beyond the two dark lanes of dust that typically define the outer boundary of the visible galaxy. The bright knots of many star-forming regions were also quite visible, and I felt pretty sure that some of the fuzzier "stars" above and below the nucleus were globular clusters. I attribute the high transparency to the rain that cleared out the sky each night.

We also found the supernova in M74, very visible in the dark, high desert sky. (See p.6 for more on that.)

The temperature was milder than most years. The clouds kept the daytime temperatures in the 70s or low 80s, while those same clouds prevented the ground from radiating its heat into space at night. We've had frost on the ground some mornings in previous years, but not even close this year.

The "star dinners" were provided by a new caterer this year, Headwaters Café. They were excellent meals, with roast beef the first night, lasagne the second, and meatloaf the third. The ambience wasn't quite the same as previous years — the dinners were served out of the back of a U-haul truck (albeit one with the Hubble Space Telescope painted on the side) — but the food was wholesome and plentiful.

Steve and his family and some of their friends had an adventure on Friday. They were out for a hike when a person coming up behind them saw that they were being stalked by a cougar! He shouted a warning and they turned around and saw it on the trail only a few dozen feet behind them. Once it realized they knew it was there it slunk away into the brush and nobody was hurt, but the encounter was definitely scary.

Mel's telescope walkabout was a popular event again this year. We had several scopes, including a

beautiful dob integrated into an equatorial platform for tracking, a 20" monster that only weighed 69 pounds because it was built from carbon fiber over a balsa wood frame, my own 12.5" trackball with its ultra-lightweight secondary cage and focuser, Chuck Lott's "cloverball" that he showed to our club a couple months ago, Tom Conlin's "Sudiball" mount that he stayed up late Thursday night finishing so he could display it at the walkabout on Friday, and an ingenious 6" travel scope that uses a subdiameter cylinder to hold the secondary mirror and also provide a light baffle. The travel scope focuses by adjusting the length of the single support that holds the secondary in front of the primary.

For an in-depth look at the walkabout, visit Mel's website at: http://bbastrodesigns.com/osp13/osp13telescopeWalkabout.html

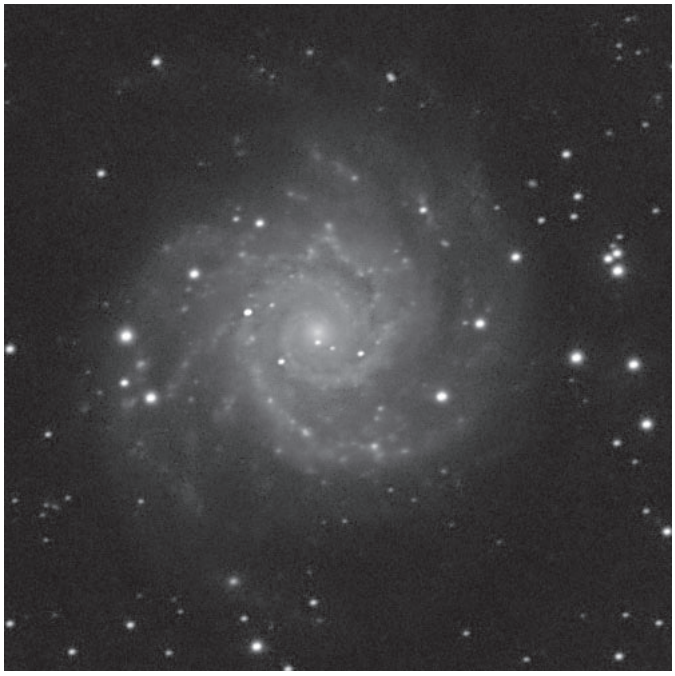
All in all it was a great weekend campout, with good food, good company, an interesting walkabout full of innovative new telescope designs, mixed with the occasional fear of death and some observing time thrown in for spice. What's not to like about the Oregon Star Party? See you there next year!

Tom Conlin with his "Sudiball" mount

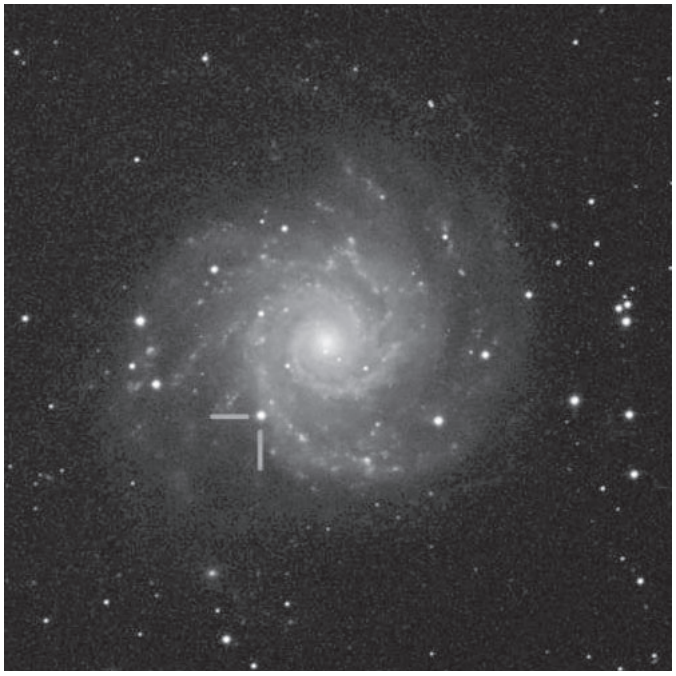
Supernova in M74

On the morning of July 25th, astronomers at the Lick Observatory Supernova Search discovered a supernova in the galaxy M74. By August 1st, Supernova 2013ej brightened to 12th magnitude, then stayed there for nearly a month. Several EAS members have been able to spot it in their telescopes, and Brandt Schram was able to capture this photograph of it on the morning of August 6th.

Messier 74 is a relatively bright (10th magnitude) spiral galaxy about 30 million light-years away. Located in Pisces, it's well up in the eastern sky by midnight in September. The supernova seems to be starting to fade now, but should still be visible in 8-inch or larger telescopes during the first weeks of September.



M74 before the supernova.



Supernova in M74. Photo © 2013 by Brandt Schram

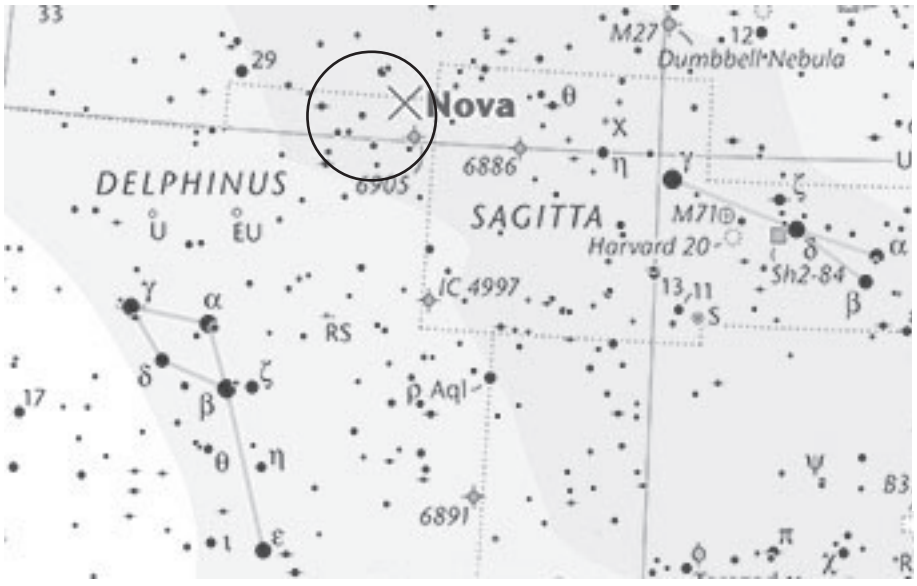
Nova in Delphinus

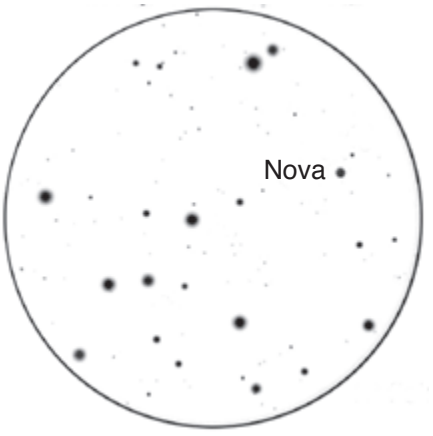
As if the supernova in M74 weren't exciting enough, a nova popped off in Delphinus on the morning of August 14th. This was a much smaller explosion, but much closer, so it peaked at magnitude 4.6 — just visible to the naked eye with the waxing moon in the sky.

The star was apparently 17th magnitude before erupting, so it brightened roughly 100,000-fold to its peak on August 16th. It has been fading slowly ever since, but is still visible in binoculars or a small telescope. It's the brightest nova since 2007, so it's well worth looking at before it fades away.

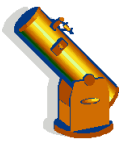
To find the nova, follow the arrow of Sagitta. If you use the top star in the arrow's fletching as your beginning point and go through the point of the arrow, then onward one full arrow length, the nova will be the bright star just beyond and below where you wind up. It will have a prominent companion just above it at about 2 o'clock, and there'll be another double to the upper left of that. The grouping of stars to the lower left of both pairs is also distinctive.

Nova Delphini 2013 before and after





2° field



Observing in September

New 1st Q Full Last Q

September 5	September 12	September 19	September 26
Mercury Set: 8:08 PM	Mercury Set: 8:01 PM	Mercury Set: 7:52 PM	Mercury Set: 7:42 PM
Venus Set: 9:04 PM	Venus Set: 8:53 PM	Venus Set: 8:43 PM	Venus Set: 8:34 PM
Mars Rise: 3:20 AM	Mars Rise: 3:15 AM	Mars Rise: 3:11 AM	Mars Rise: 3:06 AM
Jupiter Rise: 1:40 AM	Jupiter Rise: 1:17 AM	Jupiter Rise: 12:55 AM	Jupiter Rise: 12:32 AM
Saturn Set: 9:51 PM	Saturn Set: 9:25 PM	Saturn Set: 8:59 PM	Saturn Set: 8:33 PM
Uranus Rise: 8:36 PM	Uranus Rise: 8:08 PM	Uranus Rise: 7:40 PM	Uranus Rise: 7:12 PM
Neptune Set: 5:57 AM	Neptune Set: 5:29 AM	Neptune Set: 5:01 AM	Neptune Set: 4:32 AM
Pluto Set: 1:33 AM	Pluto Set: 1:05 AM	Pluto Set: 12:38 AM	Pluto Set: 12:10 AM

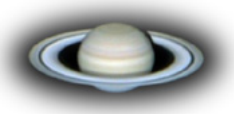
All times: Pacific Standard Time (Nov 3, 2013-March 9, 2014) = UT -8 hours or U.S. Pacific Daylight Time (March 10-November 2, 2013) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
9/1/2013	02:58	17:33	06:36	19:48	04:53	21:30
9/2/2013	03:57	18:05	06:37	19:46	04:54	21:28
9/3/2013	04:57	18:35	06:38	19:44	04:56	21:26
9/4/2013	05:58	19:04	06:39	19:42	04:57	21:24
9/5/2013	07:01	19:32	06:41	19:40	04:59	21:22
9/6/2013	08:05	20:00	06:42	19:39	05:00	21:20
9/7/2013	09:10	20:31	06:43	19:37	05:02	21:17
9/8/2013	10:16	21:04	06:44	19:35	05:03	21:15
9/9/2013	11:23	21:42	06:45	19:33	05:05	21:13
9/10/2013	12:30	22:26	06:46	19:31	05:06	21:11
9/11/2013	13:35	23:16	06:47	19:30	05:08	21:09
9/12/2013	14:35		06:49	19:28	05:09	21:07
9/13/2013	15:30	00:15	06:50	19:26	05:10	21:05
9/14/2013	16:18	01:20	06:51	19:24	05:12	21:03
9/15/2013	17:00	02:29	06:52	19:22	05:13	21:01
9/16/2013	17:37	03:41	06:53	19:20	05:15	20:58
9/17/2013	18:10	04:53	06:54	19:18	05:16	20:56
9/18/2013	18:42	06:05	06:55	19:17	05:17	20:54
9/19/2013	19:13	07:15	06:57	19:15	05:19	20:52
9/20/2013	19:45	08:24	06:58	19:13	05:20	20:50
9/21/2013	20:18	09:31	06:59	19:11	05:21	20:48
9/22/2013	20:54	10:35	07:00	19:09	05:23	20:46
9/23/2013	21:33	11:36	07:01	19:07	05:24	20:44
9/24/2013	22:16	12:33	07:02	19:05	05:25	20:42
9/25/2013	23:04	13:25	07:03	19:04	05:27	20:40
9/26/2013	23:55	14:11	07:05	19:02	05:28	20:38
9/27/2013		14:53	07:06	19:00	05:29	20:36
9/28/2013	00:49	15:30	07:07	18:58	05:30	20:34
9/29/2013	01:46	16:04	07:08	18:56	05:32	20:32
9/30/2013	02:44	16:35	07:09	18:54	05:33	20:30

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

Items of Interest This Month

Pisces, Perseus, Cetus return to night sky
Scorpius, Sagittarius setting early
9/5 Venus within 2° of Spica
9/8 & 9/9 early mornings: Mars in Beehive Cluster
9/8 Daytime: Moon passes just south of Venus Noon – 2:00. This should be visible in any telescope or binoculars, but be careful not to look near the Sun.
9/8 Dusk: Venus very near crescent Moon
9/13 First Quarter Friday Star Party
9/16-20 Saturn and Venus dance
9/22 Autumn equinox 1:44 pm PST
9/24 Mercury within a degree of Spica at dusk
9/25 early morning: Rare Callisto shadow transit on Jupiter 2:10 – 4:24 a.m..



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.