

IO - August 2010

Issue 2010-08
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, August 26th

Globular Clusters

by Rick Kang

For our August meeting, Rick Kang will present a program about Globular Star Clusters. Nobody really knows how these clusters originate, but Rick will talk about what the objects are and theories of their origins. He'd like to include as many of members' images of these somewhat enigmatic objects as he can. (M13, M3, M4, M5, M22, M2, M30, M92, M15, etc., plus the biggies like Omega Centauri and 47 Tuc from Southern Hemisphere). Please email him images you'd like to include, plus any other info of interest you might have. Please email your images to Rick at epoguy@gmail.com.

In addition to Rick's talk, Jacob Strandlien will present the astronomy news of the month, and as always there will also be time for any of us to bring items for show & tell. If you've got a new scope or piece of equipment you'd like to show off, bring it! The meeting is at 7:00 in EWEB's Community Room, 500 E. 4th in Eugene.



Next First Quarter Friday: August 13th

Our July First Quarter Friday was heavily attended by astronomers and the public alike. We had nearly as many telescopes (about 15) and visitors (75-100) as our Dexter State Park dark-sky star party the previous Saturday. The sky cooperated beautifully and temperatures were moderate, providing a wonderful experience for all who participated.

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:

August 13
September 17

October 15
November 12

December 10

July Meeting Report

At our July 22nd meeting, Sam Pitts talked about what's up in the summer sky. He used a planetarium program to display the current sky and showed how a person can use the program to prepare for a night's outing. He also showed how the program can simulate the field of view in a finder scope or a telescope with various eyepieces, letting a person see what to expect when they're out in the field. This can be a great aid when star-hopping to a particular destination. Sam showed various summer objects and then used the program to provide more detail on each, pointing out how useful a planetarium program can be as an educational tool.

Also at the meeting, Bill Murray shared a copy of the Mars hoax email that goes around every summer, but this one had the sender's name and address and phone number. Bill suggested we all write to let this person know how big Mars will really be this August.

Tony brought a new (to him) 6" reflector.

Del showed off his new (to him) \$10 garage-sale 4" reflector.

George Lund showed a camera mount that allows mounting a camera to a telescope and photographing through the eyepiece.

Sam issued a call for volunteers to put on programs for subsequent meetings. We need more members to participate in our meetings. Talk about your favorite constellation, favorite object, or some other topic related to astronomy. You don't have to fill an entire hour; several people can share the meeting for a few minutes each. It's volunteers who keep our club going, so think of something you'd like to talk about and volunteer!

The evening ended with Tony and Del setting up their scopes outside and offering views of the Moon.



Our next meeting will be on Thursday, August 26th, 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 2010: (All meetings are at 7:00 in the Community Room)

August 26

October 28

December 23

September 23

November 24 (Wednesday)

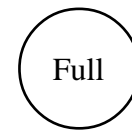
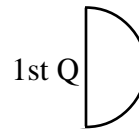
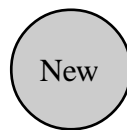
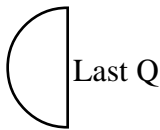


Thank You Castle Storage

For the last two 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 August



August 2	August 9	August 16	August 24
Mercury Set: 9:36 PM	Mercury Set: 9:17 PM	Mercury Set: 8:51 PM	Mercury Set: 8:14 PM
Venus Set: 10:20 PM	Venus Set: 10:04 PM	Venus Set 9:48 PM	Venus Set: 9:29 PM
Mars Set: 10:37 PM	Mars Set: 10:18 PM	Mars Set: 9:59 PM	Mars Set: 9:38 PM
Jupiter Rise: 10:37 PM	Jupiter Rise: 10:09 PM	Jupiter Rise: 9:40 PM	Jupiter Rise: 9:07 PM
Saturn Set: 10:43 PM	Saturn Set: 10:16 PM	Saturn Set: 9:50 PM	Saturn Set: 9:21 PM
Uranus Rise: 10:27 PM	Uranus Rise: 9:59 PM	Uranus Rise: 9:31 PM	Uranus Rise: 8:59 PM
Neptune Rise: 9:13 PM	Neptune Rise: 8:45 PM	Neptune Set: 6:45 AM	Neptune Set: 6:12 AM
Pluto Set: 3:31 AM	Pluto Set: 3:03 AM	Pluto Set: 2:35 AM	Pluto Set: 2:03 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
8/1/2010	23:07	12:46	06:01	20:36	03:59	22:37
8/2/2010	23:36	13:51	06:02	20:35	04:01	22:35
8/3/2010		14:57	06:03	20:34	04:02	22:33
8/4/2010	00:12	16:03	06:04	20:32	04:04	22:31
8/5/2010	00:58	17:05	06:05	20:31	04:06	22:29
8/6/2010	01:54	18:01	06:06	20:30	04:08	22:27
8/8/2010	03:01	18:50	06:07	20:28	04:10	22:25
8/8/2010	04:17	19:30	06:08	20:27	04:12	22:23
8/9/2010	05:38	20:03	06:09	20:26	04:13	22:21
8/10/2010	07:00	20:33	06:11	20:24	04:15	22:19
8/11/2010	08:20	21:00	06:12	20:23	04:17	22:17
8/12/2010	09:39	21:27	06:13	20:21	04:19	22:14
8/13/2010	10:57	21:54	06:14	20:20	04:21	22:12
8/14/2010	12:14	22:25	06:15	20:18	04:22	22:10
8/15/2010	13:28	22:59	06:16	20:17	04:24	22:08
8/16/2010	14:38	23:40	06:17	20:15	04:26	22:06
8/17/2010	15:42		06:19	20:13	04:28	22:04
8/18/2010	16:37	00:28	06:20	20:12	04:29	22:02
8/19/2010	17:24	01:22	06:21	20:10	04:31	21:59
8/20/2010	18:03	02:22	06:22	20:09	04:33	21:57
8/21/2010	18:35	03:24	06:23	20:07	04:35	21:55
8/22/2010	19:02	04:27	06:24	20:05	04:36	21:53
8/23/2010	19:25	05:30	06:25	20:04	04:38	21:51
8/24/2010	19:46	06:32	06:27	20:02	04:40	21:49
8/25/2010	20:06	07:33	06:28	20:00	04:41	21:46
8/26/2010	20:27	08:33	06:29	19:59	04:43	21:44
8/27/2010	20:48	09:35	06:30	19:57	04:44	21:42
8/28/2010	21:12	10:37	06:31	19:55	04:46	21:40
8/29/2010	21:39	11:40	06:32	19:53	04:48	21:38
8/30/2010	22:12	12:45	06:33	19:52	04:49	21:35
8/31/2010	22:52	13:50	06:35	19:50	04:51	21:33

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

Items of Interest This Month

All month: Comet 10P Tempel visible in Cetus
 First half of month: Venus, Mars, and Saturn near each other in western sky at sunset.
 8/6 Mercury at greatest eastern elongation (27°)
 8/11 & 12: Perseid Meteor shower both nights.
8/13 First Quarter Friday Star Party
 8/19 Venus at greatest eastern elongation (46°)
 8/20 Neptune at opposition



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.

EAS Campout August 6-8

The second annual EAS Dark Sky Campout will be held this year on August 6-8 at Sacandaga Campground, 26 miles southeast of Oakridge on the Middle Fork of the Willamette River. This was an excellent campout last year, missing only one thing: you! Join us in making this year's campout even better. There are plenty of campsites, a great open meadow for telescopes, and some of the darkest sky you're likely to see anywhere. Tony Dandurand, the campout's organizer, writes:

At just over 2,500' along the Middle Fork of the Willamette, Sacandaga is a fine, quiet campground under tall firs. Next to the campground is Rigdon Meadows, a large (30 - 60 acres?) meadow maintained since Pioneer days. In front of this meadow are 2 Large "dispersed" campsites, easily able to accommodate dozens of people, multiple trailers/RVs, many tents — and many telescopes. The opening to the sky, though not the equal of Eagle's Ridge, well exceeds that of Eagle's Rest. Good southern exposure, Polaris easy to the north, not bad east and west. A beautiful view by day.

Amenities: If you don't have an RV, the (better than most) restrooms of the campground are a couple of blocks stroll away. The campground has pump water. (Really good spring water is available a couple of miles away.) The cold Middle Fork is down a short trail from the campground. (My nephew caught a 13" Rainbow out of it Memorial Day — on his 1st cast.) The Middle Fork has a trail along it from Timpanogas Lake (where it begins) to Hills Creek Reservoir — the whole 35+ miles. All of it is a really nice hiking/mtn biking trail; some sections are quite spectacular. Up the road to the summit (~15 miles, 40 minutes) are many lakes and ponds for swimming, fishing, scenery. Summit Lake and Timpanogas Lake are great for canoeing. Oakridge is only 45 minutes away if you run out of beer.

Negatives: The section of road to (and in front of) these campsites is part of the trail. A handful of people are likely to walk or mountain bike by. Depending on the weather between now and then and your sensitivity/tastiness to mosquitoes, going to the high mountain lakes may or may not require deet. (At camp, at 2,500', they should not be a problem.) Campfire smoke (even if we don't have any) from the campground could thinly drift by.

Think of it as a camping, stargazing, hiking, canoeing, swimming, mountain air, and more stargazing, high summer vacation. In dark skies. Tony and Louise will be there from the 3rd onward to hold the campsites. Contact Tony at <tdandurand@comcast.net> to let him know you're going, or for more information.

Here's the directions:

From the intersection of I-5 and I-105 (or Hwy126), travel South on I-5 4.7 miles. Take the exit (188A?) marked for Hwy 58 and Oakridge. Travel approx 37 miles to Oakridge. (Obey the speed limit in Oakridge). One mile past Oakridge, turn right on Kitson Springs Rd (the turn is also marked "Hills Creek Reservoir"). In 1/2 mile, turn right on road marked "Diamond Drive" (This road is also Forest Rd 21). This turn has a sign with distances to several campgrounds, including Sacandaga. Drive approx 25 miles to Sacandaga, turn right toward campground. *Before* entering the campground proper, turn right (downhill) toward meadow.

So - from all points of Eugene west of I-5 freeway, it's a series of right turns:

1. Turn right (South) onto I-5
2. Turn right on Hwy 58
3. (1 mile past Oakridge) Turn right on Kitson Springs Rd.
4. (in 1/2 mile) Turn right onto Forest Rd 21
5. 25 miles later, turn right toward Sacandaga Campground
6. Turn right (downhill) to camping spot

Come to the campout! Bring your scopes! Bring food! Bring fishing gear! Have fun!

Dexter Star Party Report

The second annual EAS Dark Sky Star Party was held at Dexter State Park on July 10th. The event drew at least 15 telescopes and 100-150 guests. The sky was nearly perfect all night, offering a clear view of the Milky Way and dozens of deep-sky objects not normally visible from town. We had many repeat visitors from our First Quarter Friday star parties who came to see if the view from darker skies was truly as spectacular as we had promised, and they came away not only impressed but in many cases convinced to kill their porch lights.

Tony Dandurand brought the club's 18" flagship scope, and there was a line behind it all night. Jacob Strandlien brought "Tree Scraper," his 16" homebuilt scope, and he also brought the club's new 10" trackball, which got a lot of attention and provided surprisingly crisp views of M51 and several globular clusters. Jerry and Kathy Oltion brought their 20" scope and another trackball, and there were at least a dozen more scopes of all shapes and sizes, all of which were busy all night.

Dinah Landers ran the welcome table, giving newcomers a quick rundown on star party etiquette and providing red filters for flashlights. Thanks to her diligence we had no white flashlights spoiling people's night vision, and people were both courteous in line and curious at the eyepiece.



The Dexter State Park dark sky star party. Photo by Eric Gross

We set up in the grass this year rather than in the parking lot, and that seems to have been a good choice. We had a little trouble with headlights from the boat ramp to the south, but not as much as we had from the other parking lots last year. The ground was much more pleasant underfoot, too. The only drawback was carrying our gear farther, but people helped each other out and we got everyone in and out without mishap.

As the night grew later and the public drifted away to bed, EAS members began to go from scope to scope themselves, comparing the views and learning about new objects to look at in their own scopes. We could have stayed all night, but the excitement of the day started to catch up with everyone and we were packed up and gone by 2:00 a.m.

The Park Service was very pleased with our event and is eager to do it again next year. So were the EAS members who spoke up afterward. It was not only a good night for promoting astronomy, but a good night for getting a little observing done from a comfortable and nearby dark-sky site. We'll definitely do this again next year, and hope to make it a tradition for years to come.



A Short Discussion of Diffraction

by Jerry Oltion

I love photos taken through telescopes with four spider vanes. The bright diffraction spikes on the stars make the image seem somehow more dynamic to me, as if the stars were caught in mid-twinkle. I love the live view through a standard Newtonian telescope for the same reason. The sight of Arcturus twinkling away with four big diffraction spikes sticking out of it makes me feel like I'm really seeing something astronomical.



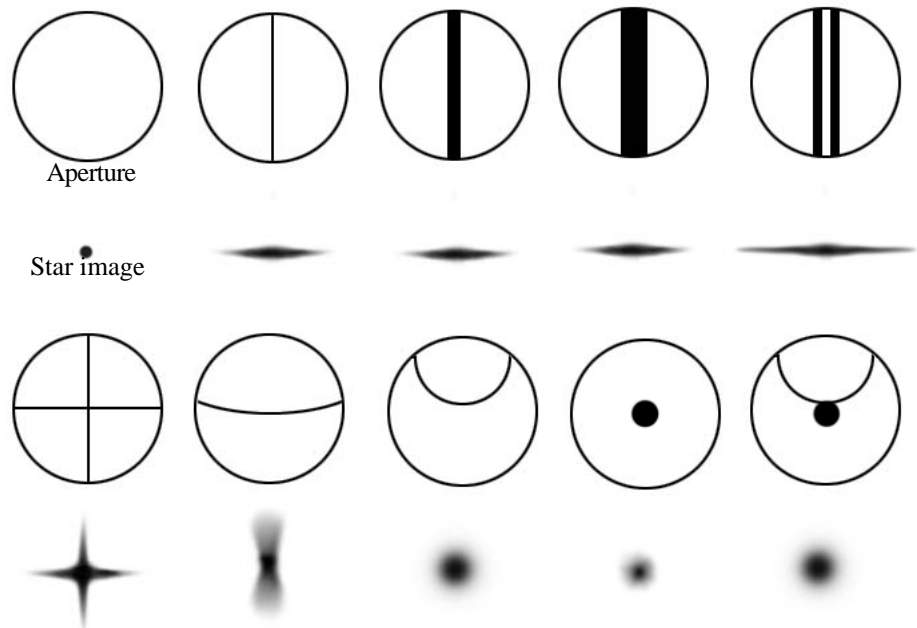
Most people aren't quite so excited by diffraction spikes. Spikes, after all, are just a byproduct of telescope design. Stars don't really look like that. And more to the point, diffraction spikes can block the view of real details. If you've ever tried to split a tight double star when its companion is hidden in the spike, you know what I'm talking about.

What causes diffraction spikes? The wave nature of light. When light passes the edge of any surface, it scatters a little. Any edge in the light path of a telescope will scatter light. The scattering is mostly perpendicular to that surface, so a vertical spider vane in your telescope will create a horizontal diffraction spike, and vice-versa.

Surprisingly, the width of the spider vane doesn't seem to matter, although some sources say it should. My own experiments with various width vanes show no difference. The diffraction spike is the same intensity with them all. The only advantage to having a thin spider vane is that it blocks less light than a thick one.

Two vanes running the same direction will cause twice the diffraction, however, because they have twice the edges.

Curving a spider vane causes an interesting phenomenon: the diffraction pattern curves with it. A slight curve



Various obstructions and the resulting star images below them

merely spreads the spike out a bit, but a 180° bend creates a 360° "spike" (because diffraction is spreading from both sides of the curved obstruction). The diffraction halo doesn't extend as far as spikes from straight spider vanes would, but the diffraction is still there, just spread out in a circle.

The secondary mirror also causes a diffraction halo, but only half the intensity of the halo caused by a curved spider vane. Why? Because it has only one edge. The spider vane has two edges, each generating diffraction.

Combine the curved spider and secondary and what do you get? A diffraction halo almost indistinguishable from the one created by the spider alone. The halo created by the secondary is drowned out in the halo created by the spider. But add another 180° spider vane and you double the size of the diffraction halo.

So what's the best design? It's largely a matter of personal choice. What do you like to see when you look into a telescope? Me? Give me that ol' time religion...er, diffraction.