

# IO - July 2012

Issue 2012-07  
Eugene Astronomical Society

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

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



Next Meeting: Thursday, July 26th

## Galactic Collisions

by Rick Kang

At our July meeting, Rick Kang will present a talk on galactic collisions, based on a talk he attended in Seattle by Dutch astrophysicist Henny Lamers. This was at the Northwest Astronomy Educators meeting in Seattle a few weeks ago. Henny shared some interesting large-scale simulations that he's made available online, so Rick will show those to us and describe the talk and galactic collisions in general.

The space between planets and stars is so vast compared to their size that planets and stars almost never collide, but the distance between galaxies is typically only 10-20 times the size of the galaxies themselves. Consequently, galaxies collide all the time, often merging into larger and larger galaxies and creating clusters of galaxies that wind up being some of the largest structures in the universe.

Come to our July meeting and learn how these collisions play out, and what will happen to Earth and the Sun when the Andromeda Galaxy collides with our Milky Way a few billion years from now.

**NOTE THAT THIS MEETING IS IN THE TRAINING ROOM NEXT DOOR TO THE ROOM WE USUALLY USE.**

In addition to Rick's galaxy program, 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 July 26th at EWEB's Training Room, 500 E. 4th in Eugene.

## Next First Quarter Friday: July 27

Our June 29 star party was clouded out, and so was our backup star party on June 30. Let's hope our dark sky star party at Dexter State Park fares better. Look for more information on that star party on the next page.

Our next First Quarter Friday will be July 27th, with a backup date of Saturday, July 28th if the 27th 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 for 2012:

July 27 (70% lit)

August 24 (57% lit)

September 21 (43% lit)

October 19 (28% lit)

November 16 (15% lit)

December 21 (69% lit)

# June Meeting Report

At our June 28th meeting, Sam Pitts talked about the history of public outreach at Pine Mountain Observatory, and we watched the PBS video *Seeing in the Dark*, a celebration of amateur astronomy.

Our next meeting will be on Thursday, July 26th, at 7:00 PM in the EWEB north building's Training Room. This is the second room in the semicircular building to the north of the fountain at EWEB's main campus on the east end of 4th Avenue. (Not our usual room.)

Here's our meeting schedule for 2012. Note that we don't get regular Thursdays anymore, nor are we in the same room every time. EWEB has had trouble scheduling its meeting space to meet all the demand, so we've had to take what we can get.

July 26 (Thursday, Training Room)

August 23 (Thursday, Community Room)

September 19 (Wednesday, Community Room)

October 17 (Wednesday, Community Room)

November 21 (Wednesday, Community)

December 20 (Thursday, Training Room)

## Dark-Sky Star Party at Dexter State Park July 14th

Our fourth annual Dark Sky Star Party, sponsored by the State Park Service with scopes and expertise provided by the Eugene Astronomical Society, will be held on Saturday, July 14th at Dexter State Park, about 15 miles southeast of Eugene on Highway 58. The site is right at the lower end of Dexter Reservoir, and just across the highway from the town of Dexter itself. It has wonderful wide-open views in all directions, and sky dark enough to reveal the Milky Way.

The next page is a flyer that you can — and should! — print out and photocopy and post at work and wherever else you can think of that's appropriate. Always ask permission before posting flyers, but do get out there and post them. The farther we spread the word, the more people will come to the party, and the more people who will understand the value of dark sky.

The party will start at dusk, which should be around 9:15 - 9:30. Get there early to set up and learn where everything is. We'll be setting up in the grass to the east of the first parking lot.

To get there, head up Hwy 58 from Goshen. Just as you reach the town of Dexter, you'll see signs for Dexter State Park on the left (north). Park in the first parking lot you come to and set up in the grass toward the reservoir from there.

Last year we had 150-200 people attending. We'll be giving away a brand new telescope this year, so interest should be even higher than usual. We need volunteers to direct parking, run the information table, help put red filter material on flashlights, and so on. We'll coordinate things via the email list, and hopefully between us all we'll anticipate everything we need and have a smooth party.

The main thing is to have lots of club members there with telescopes! Bring yours, and help show people how beautiful the deep, dark sky can be.



# Dark Sky Star Party

July 14, 2012

Dexter State Park

15 miles S.E. of Eugene on HWY 58

Come see the wonders of the  
night sky far from city lights

We bring the telescopes,  
You bring curiosity and enthusiasm!

Free telescope given to one lucky youngster  
(Ages 8-18, no purchase necessary, must be present to win).

**Starts at dusk (9:30) - Admission: FREE**

Dress warmly. Please cover flashlights with red filter material  
to preserve night vision. We will have filters on hand if you need one.

Sponsored by Oregon State Parks and the Eugene Astronomical Society  
For more information, visit [www.eugeneastro.org](http://www.eugeneastro.org)

# EAS Invited to Pine Mountain Observatory

## July 20th-21st

Rick Kang is organizing an EAS trip to Pine Mountain. He writes:

Dear Colleagues,

I've just received acceptance from the people at Pine Mountain of a proposal for EAS to do a group trip over there the weekend of July 20th, 21st, 22nd, which is the Dark Moon weekend in July (new moon on the 19th). We're invited to set up scopes at the "upper deck" area probably either near the 24" telescope dome or back at the 32". There is electrical power available in both locations and you can drive up to the 24" location to unload your telescope if you arrive prior to darkness. This is one of the few remaining really dark sky locations in Oregon. Members from other clubs who lurk on the EAS mail list are also welcome to attend. EAS has our Dexter Star Party the prior weekend, but Jerry didn't see any conflicts for the 20th-21st.

Pine Mountain Observatory is the facility owned and operated by the U of O Physics Department, and is about 34 miles southeast of Bend, in Central Oregon, off of Highway 20 from Millican (26 miles east of Bend). PMO has 32", 24", and 15" telescopes within domes (32" and 15" for research, 24" for public viewing). About a four-hour drive from Eugene, the last 8 miles are up a dusty washboard winding road, but negotiable by any ordinary vehicle.

We'd be showing sky objects to the public visitors from dusk to around midnight, then the crowd generally thins out and we'd have the balance of Friday and Saturday nights to do our own viewing and also to view through the 24" telescope onsite. Dawn starts breaking around 3:00 AM in July.

I understand that during that weekend there will be a group of students from UO on hand, taking some data with Professor Greg Bothun, the Director of PMO. The PMO staff felt that there would be mutual benefit for us to meet the students.

We will need to either camp out or return to Bend for lodging. There's a primitive (no water) free Forest Service campground adjacent to the Observatory, plenty of room for campers/trailers. But, the PMO staff would like a head count ASAP in that often other groups call and ask about camping and even though there aren't formal reservations, the staff needs an inventory for planning. Motel-wise, nearest/best is Sleep Inn on north side of Hwy 20 at far east end of Bend, right on the way to PMO. Rooms go for around \$80. We use Sleep Inn for our teacher workshops so I may be able to get us a discounted rate if we have a number of people selecting that option, but again we need advance notice. You're welcome to come up for just Friday or just Saturday night, or for both (PMO is closed Sunday).

PMO is at 6500 foot elevation, easily below freezing temps even in mid summer. Do plan on bringing a full set of cold-weather gear. Don't forget hats and gloves, plus plenty of batteries for red lights.

I'll serve as the contact with PMO and Sleep Inn, so please let me know if you're interested in the trip. [Contact at rkang@efn.org]\* Families are welcome (very young children may not be comfortable in the outdoor environment, though).

There are webcam views and a virtual tour at links from <http://pmo.uoregon.edu/>.

Hope you can attend!

Rick

\*P.S. Sometimes my efn mailbox gets full and rejects messages, if you get a bounce, or if I don't reply to your message within 48 hours, call me at 541-683-1381 and leave a voice message.

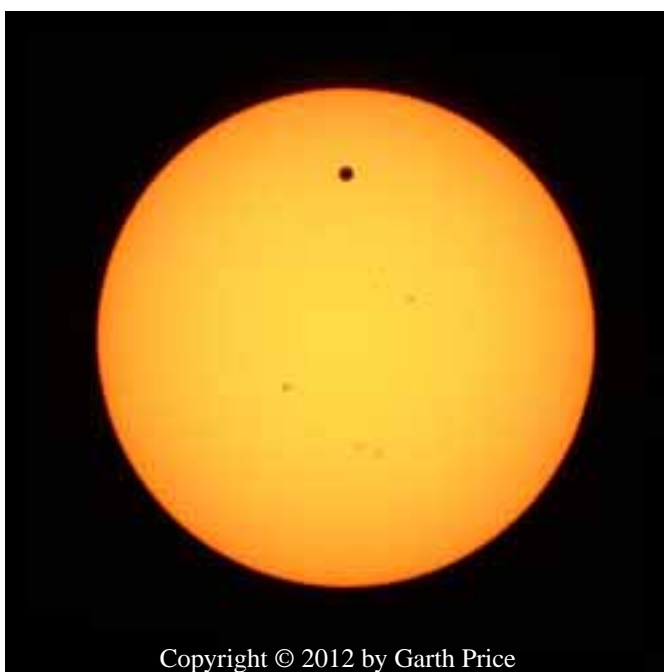
# Venus Transit Party

On June 5th the EAS joined with the Science Factory for another star party, this time for the last-in-our-lifetimes transit of Venus across the face of the Sun. The weather was iffy right up to the last moment, leading several of us to plan trips to northern California, Bend, Burns, even Seattle; but on the morning of the 5th noplacelooked better than Eugene, so we assembled at the Science Factory and watched the transit in comfort with about 250 - 300 others. Northwest Natural Gas hosted a free barbecue to keep everyone going throughout the 5+ hour event.

The show started with a thunderstorm, of course, sending everyone who had already set up scopes scrambling to haul them under cover in the Science Factory's entryway. The storm passed just in time to set up again and watch for first contact, but another big cloud swept through at the crucial moment.

After that our luck changed. Second contact — when Venus slipped completely onto the Sun — was visible to all, even those with just solar shades. In telescopes it was a surreal sight: like a hole knocked out of the Sun with a paper punch. And it moved! Its motion was easy to see over the course of just a few seconds when it was so close to the solar limb.

Several of us took photos of its progress throughout the afternoon. Here are a few, showing



not only the movement of Venus, but some prominent sunspots and also an idea of what the view looked like through different scopes using different filters.

Some of our club members opted for other venues. Rick Kang, John Walley, and Nelson Farrier went to Hamlin Middle School and showed the transit to the kids there, Jeff Phillips observed from his home

near Crow, and Garth Price went to the coast north of Florence. We all got essentially the same view, with variations in cloud cover.

The transit was still in progress at sunset, so none of us got to see third or fourth contact as Venus slipped off the face of the Sun for another 105 years, but one lucky girl got the very last rays visible from the Science Factory. She showed up on her bicycle



just as everyone was packing their gear, and she was sorely disappointed to have missed it, but Frank's scope was still together enough to haul it over to the last remaining spot of sunlight, where he quickly found the Sun and gave her the last 30 seconds or so that were possible. She nearly burst into tears, and Frank earned a big hug.

All in all it was an excellent transit party; one we'll no doubt remember for the rest of our lives. Many thanks to the Science Factory, to Northwest Natural Gas, to the many people who came with telescopes, and to the many, many people who came to share the excitement with us. Let's do it again in 2117!

## 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.



**CASTLE STORAGE**

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

120 S. Danebo • Eugene, OR 97402 • 541.607.3800

## M27 in Detail

During several clear nights in June, Brandt Schram did some narrow-band imaging of M27, the Dumbbell Nebula, to see what sort of detail he could bring out. What he came up with knocked the socks off many of us who saw it on the email list, but he continued to collect data and process the image until he came up with the even more fabulous image below. This shows how the familiar dumbbell is just a brightening in a much more complex structure, one that includes multiple lobes of ejecta, two outlying wings, and jets.

Brandt said of the original image: “I’ve been playing with some narrow band data of M27. Attached is 3 hours of NII, 2 hours each of OIII and Ha mapped NII to red, Ha to green and OIII to blue. I’m still hoping for more OIII and Ha and RGB stars when I get the chance. Each sub is 10 minutes binned 1x1.”

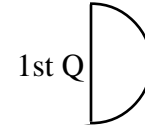
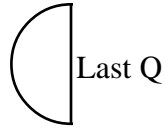
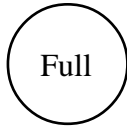
Of this later image he adds: “The narrow band was adjusted so the OIII more closely matches the actual OIII color with Ha mapped to Red and NII mapped to green. I like how the NII shows the details in the central region that way. Total exposure time was about 12 hours with 10 going to the NB.”

For equipment Brandt is using a Planewave CDK 17 on a Paramount ME with SBIG STL11000 and Astrodon filters. His observatory is in central Oregon and remotely controlled from Brandt’s home in Eugene. Image acquisition was with MaxIm, processed using CCDStack, PixInsight and PhotoShop.





# Observing in July



July 3	July 10	July 18	July 26
Mercury Set: 10:19 PM	Mercury Set: 9:54 PM	Mercury Set: 9:12 PM	Mercury Rise: 6:32 AM
Venus Rise: 3:39 AM	Venus Rise: 3:21 AM	Venus Rise: 3:04 AM	Venus Rise: 2:52 AM
Mars Set: 12:30 AM	Mars Set: 12:10 AM	Mars Set: 11:45 PM	Mars Set: 11:22 PM
Jupiter Rise: 3:09 AM	Jupiter Rise: 2:47 AM	Jupiter Rise: 2:20 AM	Jupiter Rise: 1:54 AM
Saturn Set: 1:31 AM	Saturn Set: 1:04 AM	Saturn Set: 12:33 AM	Saturn Set 12:02 AM
Uranus Rise: 12:44 AM	Uranus Rise: 12:17 AM	Uranus Rise: 11:41 PM	Uranus Rise 11:10 PM
Neptune Rise: 11:22 PM	Neptune Rise: 10:54 PM	Neptune Rise: 10:23 PM	Neptune Rise: 9:51 PM
Pluto Set: 5:43 AM	Pluto Set: 5:15 AM	Pluto Set: 4:43 AM	Pluto Set: 4:10 AM

All times: Pacific Standard Time (Nov 4, 2012-March 10, 2013) = UT -8 hours or U.S. Pacific Daylight Time (March 11-November 3, 2012) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
7/1/2012	19:07	03:27	05:34	20:59	03:10	23:22
7/2/2012	20:05	04:27	05:34	20:59	03:11	23:21
7/3/2012	20:55	05:36	05:35	20:59	03:12	23:20
7/4/2012	21:35	06:48	05:35	20:58	03:13	23:20
7/5/2012	22:09	08:00	05:36	20:58	03:15	23:19
7/6/2012	22:39	09:11	05:37	20:58	03:16	23:18
7/7/2012	23:06	10:19	05:37	20:57	03:17	23:17
7/8/2012	23:32	11:24	05:38	20:57	03:19	23:16
7/9/2012	23:57	12:28	05:39	20:56	03:20	23:14
7/10/2012		13:29	05:40	20:56	03:21	23:13
7/11/2012	00:24	14:30	05:41	20:55	03:23	23:12
7/12/2012	00:53	15:29	05:41	20:54	03:24	23:11
7/13/2012	01:25	16:27	05:42	20:54	03:26	23:09
7/14/2012	02:02	17:23	05:43	20:53	03:28	23:08
7/15/2012	02:45	18:14	05:44	20:52	03:29	23:06
7/16/2012	03:34	19:02	05:45	20:52	03:31	23:05
7/17/2012	04:29	19:44	05:46	20:51	03:33	23:03
7/18/2012	05:28	20:21	05:47	20:50	03:34	23:02
7/19/2012	06:32	20:54	05:48	20:49	03:36	23:00
7/20/2012	07:37	21:24	05:49	20:48	03:38	22:58
7/21/2012	08:44	21:53	05:50	20:48	03:40	22:57
7/22/2012	09:52	22:20	05:51	20:47	03:41	22:55
7/23/2012	11:01	22:48	05:52	20:46	03:43	22:53
7/24/2012	12:11	23:19	05:53	20:45	03:45	22:51
7/25/2012	13:23	23:53	05:54	20:44	03:47	22:50
7/26/2012	14:35		05:55	20:43	03:49	22:48
7/27/2012	15:46	00:32	05:56	20:41	03:51	22:46
7/28/2012	16:53	01:19	05:57	20:40	03:52	22:44
7/29/2012	17:53	02:14	05:58	20:39	03:54	22:42
7/30/2012	18:45	03:18	05:59	20:38	03:56	22:40
7/31/2012	19:29	04:27	06:00	20:37	03:58	22:38

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

## Items of Interest This Month

Good month to find asteroid Melpomene

Good month to find Pluto

7/1 and next few days: Pleiades, Jupiter, Venus, & Aldebaran in a straight line before dawn

First week: Last chance for Mercury at dusk

7/15 dawn: Moon between Jupiter and Venus

7/15 Saturn at quadrature. All month should be good for seeing planet's shadow on rings.

Late in month, comet 96P Machholz may become visible in telescopes in Leo Minor

**7/27 First Quarter Friday Star Party**



## 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.