

IO - December 2009

Issue 2009-12
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.

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

Swap Meet & Potluck Get-Together

Our December meeting will be a chance to visit and share a potluck dinner with fellow amateur astronomers, plus swap extra gear for new and exciting equipment from somebody else's stash. Bring some food to share, and any astronomy gear you'd like to sell, trade, or give away.

During the meeting Sam Pitts will raffle off a 16" x 20" print of one of his amazing astrophotos. Don't miss your chance to win that!

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 December 17th at EWEB's Community Room, 500 E. 4th in Eugene.

Next First Quarter Friday: December 25th

Yes, our next First Quarter Friday star party will be on Christmas night. That's the way the lunar phase lands, and we decided to go with it and see if Santa brings anyone a new scope or new eyepiece to share on such a special night. Or maybe he'll bring us all a shiny new comet or supernova. Come see!

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.

December 25, 2009	May 21	September 17
January 22	June 18	October 15
February 19	July 16	November 12
March 19	August 13	December 10
April 23		

November Meeting Report

At our November 19th meeting, Rick Kang gave a fascinating talk on the concept and the practice of measuring magnitudes of celestial objects. He explained why and how our current system was developed, and he talked about the many factors that go into measuring the brightness of an astronomical object.

Also at the November meeting, Jerry Oltion showed the new trackball telescope he recently finished for his wife, Kathy, and Jacob Strandlien presented the astronomy news for the month.

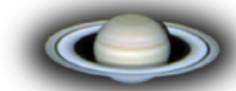
November Star Party Report

November was a wet, cloudy, miserable month for astronomy. In other words, pretty much normal for this time of year. We did get two breaks in the clouds, however: on Tuesday the 24th we got enough of a clearing for several of us to make a run to the College Hill Reservoir and check out the autumn sky. Many of us got our first good look at the Orion Nebula for the season.

Friday the 27th also cleared up unexpectedly, catching all of us but Bill Murray by surprise. He alerted Jerry Oltion that the First Quarter Friday star party was a “go,” Jerry sent a hasty notice to the email list, and they rushed down to the reservoir to set up. There were already about 10 people waiting when Jerry arrived at 6:00, and their number swelled to about 20 by the time Bill got there a few minutes later. Tony and Louise Dandurand showed up a little after, and the four of them managed to show everyone a wide selection of celestial wonders.

Things wound down around 9:00, so Jerry and Bill packed up, but Tony and Louise still had a couple observers so they stayed, only to have 7 or 8 more lively, interested people show up a few minutes later. They got in lots of lively conversation and stargazing, and people were wowed at the concept of astronomical distances. The sky grew more clear and steady, and the Orion Nebula got very good for a bright moonlit night. The night’s sights included the double cluster, dragonfly, M35, M45, Alberio, and Jupiter. Tony and Louise finished up with high power on the moon. They ended up staying until 10:00.

An excellent end to a wet month!



The Eugene Astronomical Society meets at EWEB

500 E. 4th Avenue in Eugene.

Our next meeting will be on Thursday, December 17th, at 7:00 PM in the 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 have not been confirmed yet. Check next month’s *Io* for 2010 meeting information.



**CASTLE
STORAGE**

Unit _____
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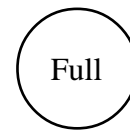
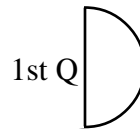
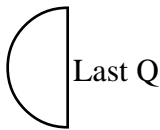
120 S. Danebo • Eugene, OR 97402 • 541.607.3800

Thank You Castle Storage

For nearly two years now, 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 December



December 9	December 16	December 24	December 2 & 31
Mercury Set: 5:38 PM	Mercury Set: 5:56 PM	Mercury Set: 6:02 PM	Mercury Set: 5:30 PM
Venus Rise: 6:57 AM	Venus Rise: 7:13 AM	Venus Rise: 7:29 AM	Venus Rise: 7:41 AM
Mars Rise: 9:10 PM	Mars Rise: 8:45 PM	Mars Rise: 8:12 PM	Mars Rise: 7:39 PM
Jupiter Set: 9:40 PM	Jupiter Set: 9:18 PM	Jupiter Set: 8:55 PM	Jupiter Set: 8:35 PM
Saturn Rise: 1:10 AM	Saturn Rise: 00:45 AM	Saturn Rise: 00:15 AM	Saturn Rise: 11:45 PM
Uranus Set: 00:23 AM	Uranus Set: 11:52 PM	Uranus Set: 11:22 PM	Uranus Set: 10:55 PM
Neptune Set: 9:50 PM	Neptune Set: 9:23 PM	Neptune Set: 8:53 PM	Neptune Set: 8:26 PM
Pluto Set: 5:56 PM	Pluto Set: 5:30 PM	Pluto Set: 4:59 PM	Pluto Set: 4:33 PM

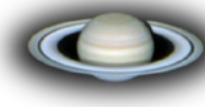
Times in Full Moon column are for 12/31

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
12/1/2009	15:55	07:01	07:28	16:35	05:44	18:19
12/2/2009	16:53	08:11	07:29	16:35	05:45	18:18
12/3/2009	18:03	09:13	07:30	16:35	05:46	18:18
12/4/2009	19:20	10:03	07:31	16:35	05:47	18:18
12/5/2009	20:39	10:43	07:32	16:34	05:48	18:18
12/6/2009	21:58	11:15	07:33	16:34	05:49	18:18
12/7/2009	23:13	11:42	07:34	16:34	05:50	18:18
12/8/2009		12:06	07:35	16:34	05:51	18:18
12/9/2009	00:27	12:29	07:36	16:34	05:51	18:18
12/10/2009	01:38	12:53	07:37	16:34	05:52	18:18
12/11/2009	02:49	13:18	07:37	16:34	05:53	18:19
12/12/2009	04:00	13:47	07:38	16:34	05:54	18:19
12/13/2009	05:09	14:21	07:39	16:34	05:54	18:19
12/14/2009	06:15	15:02	07:40	16:35	05:55	18:19
12/15/2009	07:15	15:50	07:41	16:35	05:56	18:20
12/16/2009	08:07	16:45	07:41	16:35	05:56	18:20
12/17/2009	08:51	17:45	07:42	16:35	05:57	18:20
12/18/2009	09:27	18:48	07:43	16:36	05:58	18:21
12/19/2009	09:56	19:51	07:43	16:36	05:58	18:21
12/20/2009	10:21	20:54	07:44	16:37	05:59	18:22
12/21/2009	10:42	21:55	07:44	16:37	05:59	18:22
12/22/2009	11:02	22:57	07:45	16:38	0600	18:23
12/23/2009	11:22		07:45	16:38	0600	18:23
12/24/2009	11:42	00:00	07:46	16:39	0601	18:24
12/25/2009	12:04	01:04	07:46	16:40	0601	18:24
12/26/2009	12:29	02:11	07:46	16:40	0601	18:25
12/27/2009	13:01	03:22	07:47	16:41	0602	18:26
12/28/2009	13:41	04:35	07:47	16:42	0602	18:26
12/29/2009	14:32	05:47	07:47	16:42	0602	18:27
12/30/2009	15:37	06:53	07:47	16:43	0603	18:28
12/31/2009	16:53	07:50	07:47	16:44	0603	18:29

Other Items of Interest This Month

- 12/2 6:08 PM Io occults Europa
- 12/13 Peak of Geminid meteor shower. Radiant is up before midnight with a favorable moon. Peak expected about 9:00 pm.
- 12/18 - 22 Neptune less than 3/4° N. of Jupiter
- 12/18 Mercury highest in evening sky
- 12/21 Winter solstice
- 12/25 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.

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

Jim Jackson Receives Herschel II Certificate

At our November 19th meeting, Jim Jackson received his Herschel II pin and certificate from the Astronomical League acknowledging that he has observed all 400 objects in the Herschel II list. This is a huge accomplishment, taking two and a half years to complete. The Herschel objects are notoriously difficult to view, requiring dark sky and a lot of patience.

“I’ve become a much better and systematic observer due to this program,” Jim said. “Of course there is always room for improvement.... I found the more I prepared for a night’s program, the more successful it would turn out to be. So I copy the relevant *Uranometria 2000 Deep Sky Atlas* pages to have at the eyepiece. This made star hopping easy, and more importantly accurate.

“I love star hopping through a wide-view eyepiece because I can be very accurate maneuvering to the object even if it is a bit slower than using a Telrad (for instance) to get into the general area and then fishing for the object. And there are discoveries to be made along the way! The hunt is truly as much fun as the find.”

Jim’s scope of choice was his Starmaster 11" Dobsonian reflector. 333 of the 400 observations were done with it. The 11" was clearly up to the demands of the Herschel II program.

When did he observe? “Just about anytime there was a clear moonless night. Especially in Oregon, where we can have lots of late fall, winter and early spring clouds, one has to observe when a clear night ‘gift’ is given. Also one has to plan ahead for the seasons. That means October viewing early in the morning fishing out winter objects. That means April viewing picking out all the galaxies around Leo and leaving the Virgos for June. It also means scooping up the low lying stuff when you can and saving the higher-declination objects which stay in the sky longer for another time.”



Jim Jackson with the 11" Dob he used to complete most of the program

Number of Objects Observed in Each Month

74-May	42-April	19-Nov
59-Sept	35-Jan	19-Feb
43-Oct	35-June	10-July
42-March	22-Aug	0-Dec

Jim says “I knew December was bad and this proves it! May’s figure no doubt reflects all the galaxies in Virgo etc. on the Herschel II list. September’s and October’s relatively high numbers reflect trying to scoop up the late Fall and Winter Herschel II objects, as well as often the good viewing nights during these months.”

384 objects were logged in Oregon. 250 of those were logged at Eagle’s Rest, Eagle’s Ridge, or the Amphitheater site on Eagle’s Rest Road. The rest were at Jim’s dark sky site in central Oregon, at a cabin on the coast near Waldport, at the Malheur wildlife area, and at the Oregon Star Party. Jim did go to Arizona during March, 2007 and made 16 observations down in Puppis and Hydra.

Jim’s pursuit of this observing milestone has been an inspiration to many of us in the EAS. Jim would often show his evening’s targets to those of us who went observing with him, and it has been a great joy to share in his amazing achievement. Congratulations, Jim, and thank you for sharing this with us!

Mirror Class Takes a Break

The mirror-making class taught by Mel Bartels held its last official session on Wednesday, November 18th. The class ended with a spectacular parting of ways when Ted Touw's 14.7" quartz mirror cracked in half while Ted was using it as a mold to cast a tile tool for fine grinding. Fortunately for Ted, this was his second mirror in the class, so he didn't leave empty-handed. Even so, everyone present agreed that Ted got a rough break.

Other members of the class were more fortunate. Nearly everyone is in the final stages of polishing and parabolization, and several mirrors are awaiting clear skies so they can be star tested. Frank Szczepanski and Bob Moser have finished their first collaborative mirror and have already coated it and built a telescope for it. Each of them has started another mirror.

The last stage of mirror-making involves a lot of testing, polishing for just a few minutes, more testing, more polishing, etc. Jerry Oltion has offered up his house as a workshop where people can do this process until everyone has a chance to finish their mirrors. Then it'll be time for an EAS road trip to the coating lab, where their babies will be aluminized.

After that comes the telescope building. Some people in the class have already begun that process. In addition to Frank and Bob's finished scope, John Taylor is well on the way toward building a trackball. (Frank and Bob's uses a spherical base as well.) Jerry Queirolo is thinking Dobsonian, and who knows what the others will come up with? Next summer should see lots of new scopes out under the night sky.

A hearty thanks to Mel Bartels for teaching us how to do it!



Ted Touw's 14.7" mirror ends with a bang



Some of the graduating members of the class with their mirrors and their instructor:
Ted Touw, Jerry Oltion, Steve Frankel, John Taylor, Del Smith, Jerry Queirolo, Mel Bartels

Telescope Librarian Notes

by Tony Dandurand

The Black Orion 8"

Just this last month I finally got ahold of the Orion 8" dob. It's been checked out most of the summer and fall, showing new club members why the 8" F6 dob is such a recommended scope. They're big enough to really show things, but small enough to be convenient to use. "Biggest of little scopes" a noted reviewer has said.

Viewing through it a few nights showed it to be quite competent optically and easy to use. It is perhaps our most "basic" dob. It has no 2" focuser, no folding truses, no springs holding the tube to the base, no optical finder. Just a coated black particle board base, a black (nicely finished) tube, a red dot finder, and 3 eyepieces. (I like a black scope. You can hardly see it in the dark, it's like it's not there, but find your eye to the eyepiece, and suddenly "it's full of stars!" Seems to accentuate the 'magic' scopes perform.)

No major fixes were needed, just a few tweaks to optimize it. To use a scope, you need to move it. The handle Orion put on the rocker box must have been the cheapest available that year; too small and quite sharp edged. It made carrying the rocker box uncomfortable compared to the feel of a large, smooth handle. Jerry's sells such handles for less than four bucks.

Putting a matching one on the tube was the next step. Now, if you can carry 25 pounds in one hand, and 15 in the other, you can put the eyepieces in a pocket, pick up both halves of the scope, walk out the door, and be observing in about a minute. If you choose to make two trips, you'll still appreciate the comfortable handles.

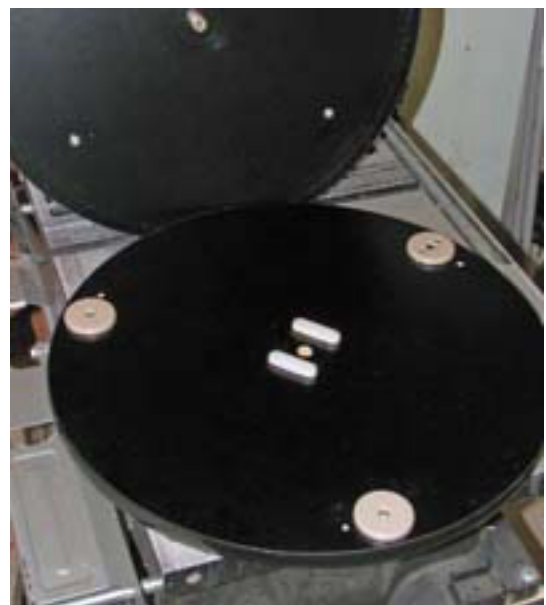
There's no real "assembly" to this scope; you just set the tube on the base. The 3 eyepieces are fairly light, and the balance is good. The scope moves quite smoothly and easily in altitude. The movement in azimuth was not so smooth or easy, but required considerably more effort.

Disassembly showed the ground board bearings were little rough 1/2" squares of (recycled?) teflon. Teflon is often a fine bearing material, but this small amount wasn't working well here. I had three "magic sliders" about 1.5" across in the shop, and have found them to work well against the smooth surface of these coated particle board scopes. Reassembly showed much improvement, but it was still a bit stiffer than the altitude motion. So I added a couple of drawer glides (slippery plastic things you tack on – Jerry's, 74 cents) near the azimuth pivot bolt, where friction is lowest. Now the motion is near perfect, light, easy, closely matched on the 2 axes.

Easier to carry, easier to track the stars. Check it out – our basic, optimized, big, little, black 8" dob.



The club's Orion 8" Dob



Magic sliders and drawer glides on the base

The White Hardin 8"

Upon returning the black Orion 8" dob to the storage unit, I checked out the motions of the white Hardin 8" dob. This scope also had motions that seemed rougher and quite a bit stiffer than ideal, so in the truck it went.

Separating the ground board from the rocker box showed the azimuth bearings (like on the Orion 8") were undersize little squares of teflon. Jerry's hardware store no longer had the screw-on "magic sliders" I'd used on the black Orion, so I just bought several drawer slides, fitted one over each foot of the ground board, and 2 near the pivot bolt. Once reassembled (the pivot bolt had also been too tight), the motion was improved – smoother and easier to move by tiny amounts.

Several years ago, Orion pioneered the method of using springs on the altitude axis to increase friction so heavy eyepieces wouldn't cause the tube to dive to the horizon. Indeed, this scope will hold a 26 ounce 35mm Panoptic horizontal without diving. However, if you're using a 3 ounce plossl the altitude motion is way too stiff and sticky.

Fortunately the solution to this problem costs pennies and takes only a few minutes to fix. Simply add a small split ring (or 2) to the bottom of each spring. Now one can attach each spring with light, heavy (or no) tension. I found that with this scope's lighter eyepieces, the tension/friction is best with one spring in the looser position and the other unattached. Several other "settings" are available for different eyepiece weights or user preferences.

If you have one of these common style dobbs, and are not completely satisfied with its motions, consider trying similar modifications. With a little effort and a few dollars, you can have a smoother, easier to track (especially at higher powers) dob.

I think that carrying a dob tube by the bearings, focuser, grabbing the ends, or wrapping an arm around the middle are all less the ideal. A nice smooth handle at the balance point allows for safe, one-handed carrying. I also added a handle to the base, which had lacked one. Now, like with the black Orion 8", this scope can be carried outside in one trip. Attach and align the finder, insert eyepiece, and you're observing in two minutes.

"Aperture Rules." Yep, everyone's heard that. But...lots of aperture doesn't get used much, especially in winter. "It's kinda cold out", or "That's beautiful, but I bet that clearing closes up within half an hour." There's a lot of cool stuff to see in the winter. Impressive aperture, steady tracking, the finest optics; none of these will show Orion's Nebula like a simple 8" dob that actually gets carried out on a moment's whim, set up in a minute, and looked though. "Aperture (with ease of use) Rules."

If you haven't done much observing this winter, consider checking out one of [your](#) EAS 8" dobbs. See how fast they set up; store it in the garage or back bedroom, ready to go in a moment's notice; and see if you don't get in more quick looks at the skies' Winter highlights.



The club's Hardin 8" Dob



The Rebuilding of the Big 18"

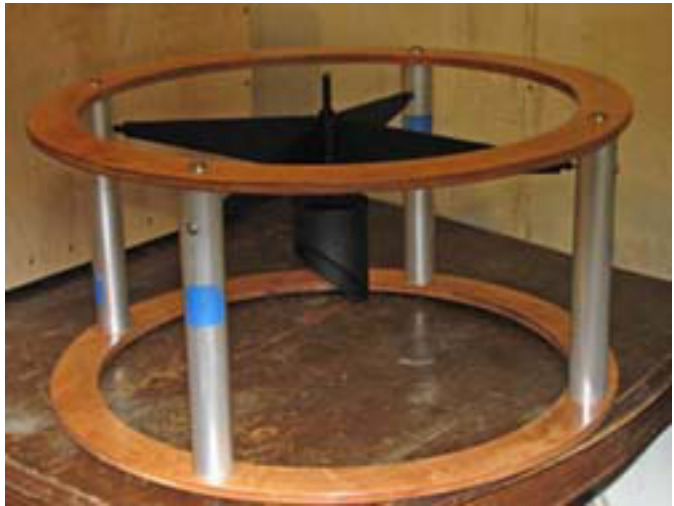
Rejoining the workforce has slowed progress on the 18" project a bit. I'm now hoping for 1st light sometime in December, and to finish it all up within a month or so after that. Here's a few pictures to show progress to date.



Mirror box



Rocker box (will be shortened and lightened once balance point of scope is known.)



Upper tube assembly

Telescope Lending Library

The EAS has several telescopes available for members to borrow. Check out the two described on the previous pages, and have a look at the telescope lending page on our website to see the many more scopes in our lending program. Contact Tony Dandurand, our lending coordinator, to arrange to check out one of these excellent scopes.

Tony can be reached via email at <tdandurand@comcast.net> or by phone at 726-8147.

Dues are Past Due!

EAS membership runs from October thru September. If you haven't paid already, please mail your dues to the Eugene Astronomical Society, PO Box 7264, Eugene, OR 97401. Dues are \$25. Make your checks payable to Eugene Astronomical Society, or just EAS if your pen is low on ink.

