

IO - May 2011

Issue 2011-05
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, May 26th

Seeing the Unseen: The Discovery of Dark Matter and Dark Energy

Bernard W. Bopp

Bernard was originally scheduled to give this talk in February, but we cancelled that meeting due to a winter storm. Bernard graciously agreed to reschedule for May 26th, giving us another chance at this fascinating topic. Don't miss this meeting!

Astronomers, both amateur and professional, savor the visible splendor of the stars, nebulae and galaxies. The twentieth century extended the observable spectrum toward longer and shorter wavelengths, revealing a universe of even greater marvels and beauty. But this is only the tip of the iceberg. Our twenty-first century understanding of the universe reveals that observable matter is a tiny fraction of the total mass of the universe. Over 90% of all that exists is, quite literally, "unseen," consisting of "dark matter" and "dark energy" whose composition and behavior is not yet understood.

This presentation will summarize our current understanding of dark matter and energy. How can we know such matter exists if it is invisible? What is the observational evidence for dark matter and energy? Finally, what does the existence of dark matter and energy imply for the future evolution of the universe itself?

In addition to Bernard's talk, Jacob Strandlien will present the astronomical news of the month. 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 May 26th at EWEB's Community Room, 500 E. 4th in Eugene.

Next First Quarter Friday: May 13th

Our April star party was much more successful than the last few. The sky was mostly clear, and we had 8-10 telescopes for maybe 40 visitors. Let's hope this starts a new trend for the spring and summer!

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 2011:

May 13
June 10
July 8

August 5
September 2

October 7
November 4

December 2
December 30

April Meeting Report

Our April 28th meeting began with a talk on star-hopping by Jerry Olton. This was once a necessary skill for any amateur astronomer, and it remains a useful talent even in the days of go-to scopes and digital setting circles. Jerry showed us how to find major targets like constellations, then delved into greater and greater detail. He showed how to use your finder's field of view for measuring distances and how to use nested charts to zoom in on a tiny target amid the myriad stars in the field of view. He discussed some of the charts you might want to use, as well as making your own charts and printing charts from planetarium programs.

After Jerry's talk, three different members showed off scopes they'd either build from scratch or rebuilt, plus one neat little commercial refractor.

Tony Dandurand showed the club's 8" Hardin dob that he built a new base for after the original one was water damaged. As always his woodwork is precise and beautiful, turning an average scope into a beautiful, smooth-working delight. This scope is part of our lending program, and it went home with club member Nelson Farrier.

Tony also showed off his William Optics 66mm SD refractor. It has a focal length of 388mm, a 2-speed 1.25" focuser, and weighs only 3.5 lbs. It's the ultimate in small, lightweight grab-and-go scopes.

Mel Bartels has been experimenting with short focal ratios, and he gave us a look at his innovative new 13" f/3 scope. It's a dobsonian in about the same



Tony and Hardin Dob with rebuilt base



Mel with his 13" f/3 scope

way that a cheetah is a cat: it is, but it's so much more. This scope folds up into itself like a tesseract for transport, and it's barely waist high even unfolded. The optics are superb, of course, and with a paracorr in front of the eyepiece there's no hint of the coma you would expect with an f/3 scope. It's truly in a class of its own, and an early look at the wave of the future.



Mel folding up his 13" f/3 scope



Jerry with his big and little Astroscans

Jerry Olton presented his winter project: a 2x scaled-up Astroscan. The original is a 4" reflector in a 10" ball, so Jerry put an 8" mirror of the same f/ratio (4.2) in a 20" ball and built the rest of the scope on top of that. Practically every aspect of the scope is hand-made, including the mirror, the focuser, and even the dust cap. Jerry made one significant improvement over the Astroscan: he built a trackball drive into the base so this scope tracks the stars. He painted the scope bright red like the original, and even duplicated the peep-sight finder. The result looks amazingly like the original, and far larger than simply double scale. Jerry plans to show this scope at star parties to generate interest in the trackball mechanism, and to bring a smile to anyone who remembers the Astroscan.

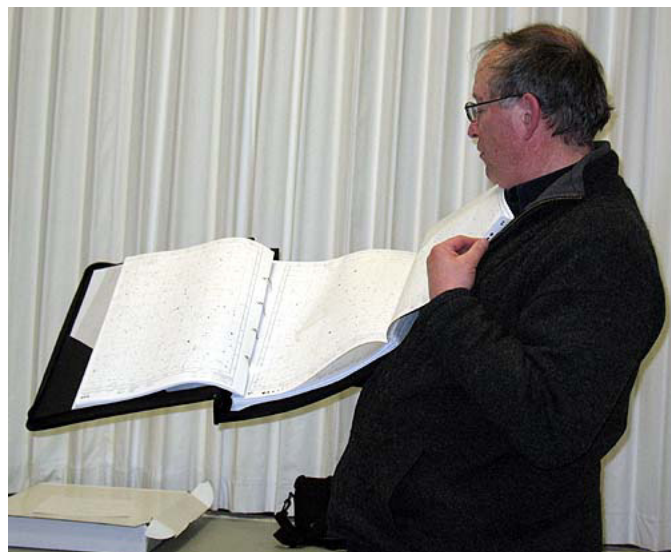
After the telescope discussions, Jacob Strandlien gave us the astronomical news for March and April, then Jim Jackson showed us a new set of charts he just received: Piotr Brych's *The Great Atlas of the Sky*. This is the ultimate in printed star

atlases, charting 2,430,768 stars up to magnitude 12, plus over 70,000 galaxies, clusters and nebulae. It contains 296 maps, each covering 15°x10° of sky, and has plastic covers for the pages so it can be used in the field. This is a star-hopper's dream atlas.

Our next meeting will be on Thursday, May 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 2011: (All meetings are at 7:00 in the Community Room)

May 26	September 22
June 23	October 27
July 28	November 10
August 25	December 22



Jim with *The Great Atlas of the Sky*

Thank You Castle Storage

For the last four 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.



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The All Arizona Messier Marathon

by Jim Jackson

Greg Haider and I attended the All Arizona Messier Marathon over the Thursday-Friday-Saturday weekend of March 30–April 2 ninety miles west of Phoenix just two miles south of Interstate 10. This is a new site for the AAMM at 1400 feet, Latitude 37+ degrees, on an abandoned air strip. The space on BLM land is flat with great 360 degree views. Lots of room for photon starved Oregonians too. Save for a 15 degree sky glow from the east (Phoenix), and a small glow “bump” in the south-west from Yuma, the dark skies are quite good. Transparency, as one would expect in bone dry Arizona, was outstanding; during the day the distant mountain outline was sharp as a razor, and the night I rated the transparency at 5/5 — the highest I have ever seen. It was very warm there, actually warmer than what the Arizona natives expect for this time of year: 100 degrees. Seeing then was 2+-3 max/5 because of the plunge in temperature at night. But viewing in shirt sleeves? We didn’t complain.



The observing site



Greg Haider prepares for the Messier Marathon

horizon at astronomical twilight.)

Here’s a photo of myself by my tent. Amenities, as one would expect for a dark sky site, were “camping primitive.” Even though gusty at times, there was no dust — unlike the Oregon Star Party — as the grey particles were coarser than the red stuff we have. Nice!

Here’s a photo of Greg in shirt sleeves with his 8" Celestron. Greg has been interested in astronomy ever since he obtained his first scope (Tasco refractor) with his paper route money. 38 years! He knows the Messiers literally like the back of his hand. With a small map of the Messier locations, he was able to sweep up the Messiers without Go-To essentially as fast or faster than I could with my 4 degree wide field binoculars. 107 total for Greg, missing only M33 in the evening twilight! (M74 and M77 were not possible this weekend as they were below the



Jim Jackson in camp

I used my Fujinon 16X70 aperture Binoculars on a Universal Astronomics Binocular mount for the marathon attempt. Guided by the great little S&T Pocket Sky Atlas, I managed 108, including just glimpsing (barely) M33. This is the third time I have run the marathon using the large aperture binoculars, and I'm more convinced than ever that it is the way to go. Two eyes gazing at the sky in correct wide field upright orientation — beautiful! I forget how wonderfully natural binoculars present the sky. I would be happy the rest of my life using these “two collimated refractors.”

Greg and I decided to run the marathon on Friday night, because the clear sky projections looked very good indeed. The “official” marathon was scheduled for Saturday, but also gusty winds and mostly cloudy skies. As it turned out, we made a good choice as Saturday night was poor. Actually, Greg and I ended up with the highest Messier marathon total for the weekend. Not bad for a couple of pasty guys from Oregon.



Sunset on Friday

Early in the evening, even before astronomical twilight, it is important to get the early “setters;” in this case M33 and M31/M32/M110 (Didn't have to worry about M74 and M77). This is also a good time to grab M52 and M103 in Cassiopeia. Then it is on to M76 and M34 in Perseus, M45, and M79 in Lepus. Orion should be done early and M43's wisp needs to be distinguished from M42's cloud. M78's nebula is surprisingly easy to see. On to Canis Major, Puppis and Monoceros (M41, M93, M47, M46, M50), and we are on our way. I was picking off Messiers every 2-5 minutes. The clusters in Auriga and Gemini (M35, M36, M37, M38), stopping for M44 and M67 in Cancer, then on to Leo's galaxies (M65, M66, M95, M96, M105). The (mostly) galaxies of Ursa major and Canis venatici (M81, M82, M97 — the “owl” planetary nebula, M108, M109, M40 — star asterism, M106, M94, M63, M51, M102=NGC5866 in Draco) are the next pickings.

Finally the “dreaded” Virgo cluster (M98, M99, M100, M85, M84, M86, M87, M89, M90, M88, M91, M58, M59, M60, M49,). The key to the Virgo is don't get lost! I have a 4 star asterism near Rho in Virgo I key off of; and if I need to, I will return to this and get reoriented. Through with the Virgo at 11:02 P.M. Up to now no rest for the marathoner, but from here on out, the marathon can be run more leisurely, even needing to wait at times for objects to rise in the east. Ran through 15 globular clusters in Hercules, Ophiuchus and Scorpio between 11:30 and 1 A.M.; and then laid down on a mat — no need for a blanket — for 45 minutes waiting for Sagittarius to rise out of the Phoenix skyglow. Ran down the Milky Way picking off the Wild duck Cluster (M11), and on through the incredibly gorgeous steam of the “Teapot” (M26, M16, M17, M18, M24, M25, M23, M21, M20, M8, M28) to the awesome M22 globular cluster in Sagittarius. It is now 3



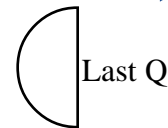
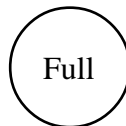
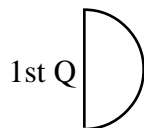
A visitor in camp

a.m., and the remaining Messiers are a waiting game. M69, M70 at 3:03; M54 at 3:06; M55 at 3:23; M75 at 3:32. Now the binoculars are pointing at the horizon fishing out the last of the risers through the skyglow. Ah-ha!, M15 at 3:47, followed closely by M2 at 3:51. Aquarius finally yields M72 at 4:12, while the four star M73 asterism is not confirmed until 4:29. One more-M30 globular cluster in Capricorn to go! Astronomical Twilight is at 5:14 and at 4:55 still no M30. There is 5.5 magnitude 41 Capricorni, M30 should just be north-east of it. Waiting... waiting.. YES M30 at 5:01 A.M. Hi Fives all around!

Was it worth it? Absolutely! Hope more EAS members are interested in going next year!



Observing in May



May 2	May 10	May 17	May 24
Mercury Rise: 5:17 AM	Mercury Rise: 5:04 AM	Mercury Rise: 4:57 AM	Mercury Rise: 4:53 AM
Venus Rise: 5:07 AM	Venus Rise: 4:57 AM	Venus Rise: 4:49 AM	Venus Rise: 4:42 AM
Mars Rise: 5:23 AM	Mars Rise: 5:06 AM	Mars Rise: 4:50 AM	Mars Rise: 4:36 AM
Jupiter Rise: 5:24 AM	Jupiter Rise: 4:57 AM	Jupiter Rise: 4:33 AM	Jupiter Rise: 4:09 AM
Saturn Set: 5:15 AM	Saturn Set: 4:42 AM	Saturn Set: 4:14 AM	Saturn Set: 3:45 AM
Uranus Rise: 4:39 AM	Uranus Rise: 4:08 AM	Uranus Rise: 3:41 AM	Uranus Rise: 3:14 AM
Neptune Rise: 3:27 AM	Neptune Rise: 2:56 AM	Neptune Rise: 2:29 AM	Neptune Rise: 2:01 AM
Pluto Rise: 00:17 AM	Pluto Rise: 11:41 PM	Pluto Rise: 11:13 PM	Pluto Rise: 10:45 PM

All times: Pacific Standard Time (Nov 6, 2011-March 10, 2012) = UT -8 hours or U.S. Pacific Daylight Time (March 13-November 5, 2011) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
5/1/2011	04:58	19:10	06:04	20:16	04:10	22:10
5/2/2011	05:25	20:12	06:03	20:17	04:08	22:12
5/3/2011	05:57	21:14	06:01	20:18	04:06	22:14
5/4/2011	06:34	22:13	06:00	20:19	04:04	22:16
5/5/2011	07:19	23:09	05:59	20:20	04:03	22:18
5/6/2011	08:12	23:58	05:57	20:22	04:00	22:20
5/7/2011	09:12		05:56	20:23	03:58	22:22
5/8/2011	10:18	00:41	05:55	20:24	03:56	22:24
5/9/2011	11:27	01:18	05:53	20:25	03:54	22:25
5/10/2011	12:39	01:50	05:52	20:26	03:52	22:27
5/11/2011	13:52	02:19	05:51	20:27	03:50	22:29
5/12/2011	15:06	02:47	05:50	20:28	03:48	22:31
5/13/2011	16:22	03:14	05:49	20:30	03:46	22:33
5/14/2011	17:39	03:43	05:48	20:31	03:44	22:35
5/15/2011	18:58	04:15	05:46	20:32	03:42	22:37
5/16/2011	20:15	04:53	05:45	20:33	03:40	22:39
5/17/2011	21:26	05:38	05:44	20:34	03:38	22:41
5/18/2011	22:29	06:31	05:43	20:35	03:37	22:43
5/19/2011	23:21	07:32	05:42	20:36	03:35	22:44
5/20/2011		08:38	05:41	20:37	03:33	22:46
5/21/2011	00:03	09:45	05:40	20:38	03:31	22:48
5/22/2011	00:37	10:51	05:40	20:39	03:30	22:50
5/23/2011	01:06	11:56	05:39	20:40	03:28	22:52
5/24/2011	01:31	12:58	05:38	20:41	03:26	22:53
5/25/2011	01:54	13:59	05:37	20:42	03:25	22:55
5/26/2011	02:15	14:59	05:36	20:43	03:23	22:57
5/27/2011	02:37	15:59	05:36	20:44	03:22	22:59
5/28/2011	03:01	17:00	05:35	20:45	03:20	23:00
5/29/2011	03:27	18:02	05:34	20:46	03:19	23:02
5/30/2011	03:57	19:04	05:34	20:47	03:18	23:04
5/31/2011	04:32	20:05	05:33	20:48	03:16	23:05

Items of Interest This Month

5/1 Moon, Venus, Mercury, Jupiter & Mars together at dawn

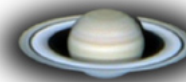
5/7 Mercury at greatest western elongation (visible before sunrise)

5/11 Venus within 0.6° of Jupiter before sunrise

5/13 First Quarter Friday Star Party

5/22 Venus within 1.1° of Mars before sunrise

5/29-5/31 Moon again near Venus, Mercury, Jupiter & Mars at dawn.



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