IO - February 2012

Issue 2012-02
Eugene Astronomical Society

www.eugeneastro.org

Eugene Astronomical Society
Annual Club Dues $25
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Jacob Strandlien, Tony Dandurand,
John Loper.

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EAS is a proud member of:
The Astronomical League
The World's Largest Federation of Amateur Astronomers

Next Meeting: Wednesday, February 15th

Sun Position Fun

Observing and understanding the Sun's position and movement, indoors and outdoors, day and night
by John Hartman

Daytime astronomy is fun, convenient, and can inform nighttime astronomy. At our February 15th meeting John Hartman will discuss observing the Sun's daily and seasonal position and movement, outdoors and indoors, day and night, directly and indirectly. Topics include solar time, rise/set, daily movement, finding direction/time/position, moonlight, the annalemma, earliest sunset, sundials, and sun art. For example, understanding how the Sun's azimuth and altitude change during the day is useful for orientation, and for knowing how the stars and ecliptic move at night. Methods and instruments to be discussed include sights, projection/reflection devices, planisphere, astrolabe, noon mark, shadow traces, Sun compass, photography, imagination, and various kinds of sundials. Throughout, John will suggest simple projects which will entertain, engage and educate family, friends and the public.

John has given us a homework assignment:

1. When is the Sun highest in the sky and due south today? On February 15? Observe and/or compute.

2. Observe the Sun and Moon together in the sky, e.g. around first quarter. Should the illumination on the Moon point to the Sun? Does it? Why or why not?

In addition to John's talk, Jacob Strandlien will present the astronomy news for the last several months. 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 February 15th at EWEB's Community Room, 500 E. 4th in Eugene.

NOTE THAT THIS IS A WEDNESDAY.

Next First Quarter Friday: February 24

Our January 27th star party was a freezing success. The sky was as clear as you can ask for in January: a little haze to the north but clear as a bell overhead and to the east, south, and west. It was the temperature that limited attendance this time. The clear sky let all our heat escape into space, leading first to dew, then to ice as the dew froze on our scopes. We had eight icy scopes and about as many icy visitors, all of whom apparently enjoyed the view enough to stick around for looks at Venus, the Moon, Jupiter, the Orion Nebula, and several other objects.

It was round-scope night at the reservoir. We had half the world's supply of trackball telescopes on hand, plus Bob Moser's non-tracking but hemispherically mounted scope he and Frank Szczepanski built

a couple years ago and just recently modified to make more sturdy.

We also had a nice fireball that dropped from near the zenith down into the east. It was a bright, long, slow burner that lasted long enough for people who didn't see the initial flash to look up and spot it and follow it the rest of the way down.

There were also some newcomers with a small equatorially mounted Newtonian scope that was giving them fits. Tony and Jerry helped them figure out how to aim the mount and acquire a target and they were very happy to finally get a look at the Moon and Jupiter with their new scope. We hope to see them again at future star parties, maybe even helping out others even newer to astronomy than they are.

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:

February 24 (10% lit)	March 30 (54% lit)	April 27 (38% lit)
May 25 (24% lit)	June 29 (82% lit)	July 27 (70% lit)
August 24 (57% lit)	September 21 (43% lit)	October 19 (28% lit)
November 16 (15% lit)	December 21 (69% lit)	

January Meeting Report

Our January meeting was our annual telescope workshop. This year we had four or five non-members bring telescopes they needed help with, and a couple of members brought scopes to show off and/or get help with, too. Bill helped an old grade-school buddy with a Maksutov that he found at a garage sale. Jerry drilled holes in one of the club's loaner scopes so Nelson could mount a laser pointer on it to use as a finder. (You know it's a workshop when you hear a drill going.) Due to missing parts we weren't able to get every scope running, but we did help everyone understand what they needed and we gave them contact information for more assistance when they're ready. Plus we had ample opportunity to talk shop with old friends and new acquaintances. It was a fun, pleasant evening spent doing astronomy on a cloudy day.

Our next meeting will be on Wednesday, February 15th, 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.

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.

February 15 (Wednesday, Community Room)

March 22 (Thursday, Community Room)	April 26 (Thursday, Training Room)
May 24 (Thursday, Community Room)	June 28 (Thursday, Training Room)
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)

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.

A Conference and a Pilgrimage

Mel Bartels

The air at the top of Mauna Kea at 14,000 feet is exhilaratingly thin. Dark blue, almost violet skies surround us with clouds floating in the distance far below our height. A few steps climbing a ladder leaves us strangely out of breath moments later.

The CFHT 3.6 meter and the 8 meter Gemini North dominate the view to the left. To the right, Mel and Barb in front of one of the 10 meter Keck telescopes – gigantic.

We're here for an insider's tour of the giant telescopes at Mauna Kea, Hawaii. First, the 10 meter Keck, then the 3.6 meter CFHT, ending with the impressive 8 meter Gemini North telescope, occupy our afternoon.

The lasting impression is one of overwhelming size. It's impossible to describe how big the domes and telescopes really are up close. We walk slowly beneath the giant telescopes, sit in the control room's chair and shiver

The twin Keck telescopes; the Gemini telescope.

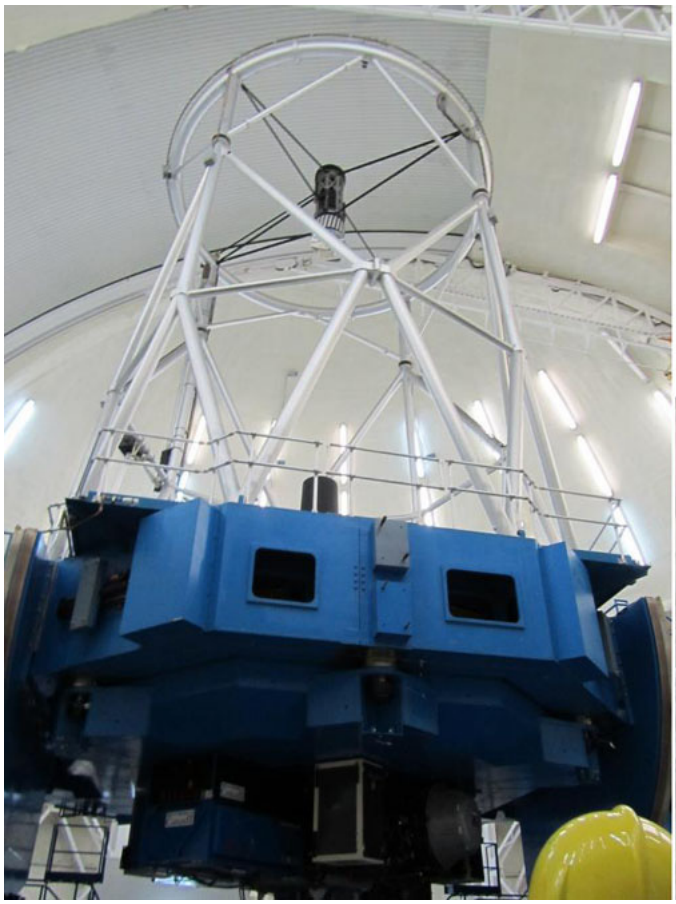
in the dome's cold air despite our coats and hats, kept air conditioned for night time temperatures.

We see the coating chamber for the 8 meter Gemini telescope mirror. We're told that it is a secret weapon of the observatory, keeping the mirror in top condition.

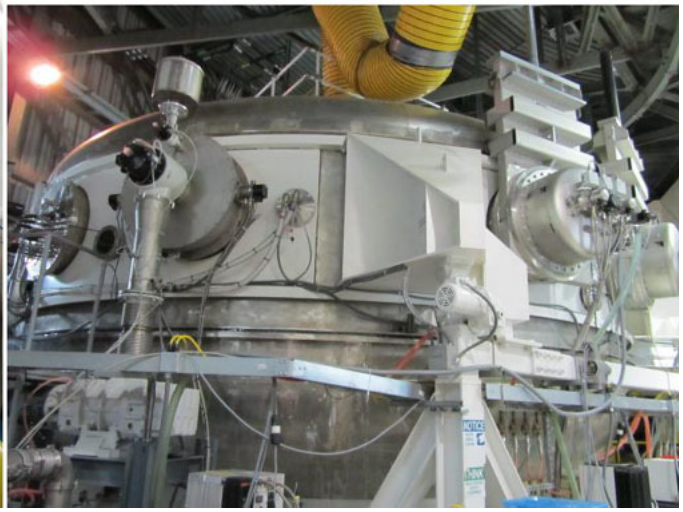
The views from high up the observatory catwalk took what breath we have remaining away. We could see Maui across the ocean and the smoke from the Kilauea volcano on the south side of the island maybe 70 miles away.

We travelled from CFHT headquarters where the conference was held, to the VIS – the Visitor Information Center of the Onizuka

In the control room and high on the catwalk.



Center for International Astronomy at Hale Pohaku at 9,000 feet. We noted the beauty of travelling through several climate zones. We relaxed while we were provided a buffet styled lunch. The climb up from the 9,000 visitor center to the 14,000 foot summit is quite something. Deeply wash-boarded with many steeply cut switch backs, the not very wide road climbs upward at an impressive angle. In only a couple of minutes, the VIS re-appears far below us at a steep angle. We grind and rattle up the hill in 4 wheel drive,



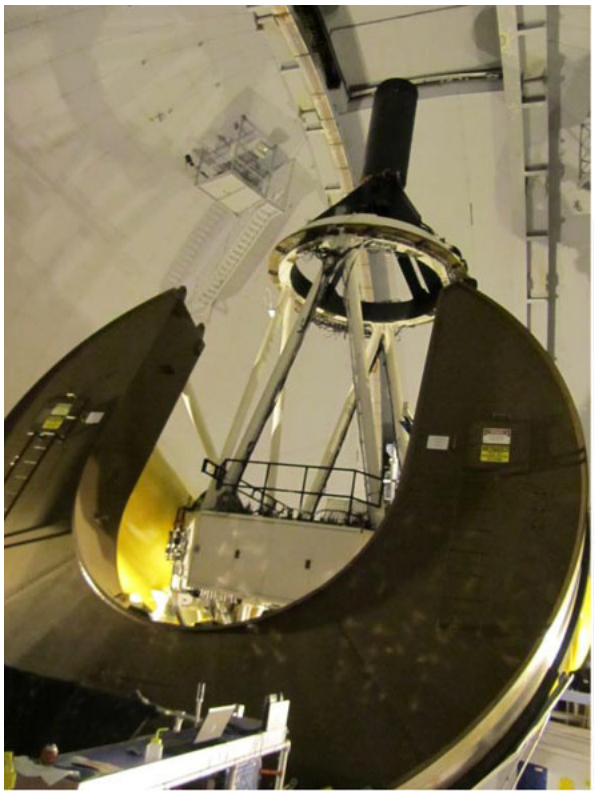
The Gemini scope from the floor of the dome and the coating chamber, five floors down.

climbing through a desolate landscape that reminds us more of Mars than the Moon. As with many observatories, a turn around the final bend suddenly brings the observatories into view. They are lined up and they are huge. Overall, it's close to a four hour trip including lunch from the Waimea headquarters to the Mauna Kea summit.

It was the closest thing to the starry firmament and a pilgrimage that will stay with us for the rest of our lives.

Some of us on the floor of the Gemini

The three day conference, held Jan 20-22, was about 1-3 meter class telescopes. I gave two talks, "The Nature of Telescope Design" and "A New Way to See Things." About 25 scientists, engineers and several amateurs attended the conference. Howard Banich and Dan Gray (both from Portland) also gave presentations, Howard on visual drawing and Dan on retrofitting old observatory telescopes. Many of the scientists and engineers fondly recalled their homebuilt scopes when younger. Besides the interesting, even inspiring presentations, many lively discussions ensued. The conference was organized by the AltAzInitiative group (see http://www.altazinitiative.org/). The group is looking for ways to make 1-3 meter telescopes at an order of magnitude less cost.



The 3.6 meter CFHT (note the observer's area at the top of the scope where early astronomers guided their plates from, sitting in the cold and accessed only by the perilous stairs high up on the dome).

The server room for the telescope at the remote controlled Waimeo headquarters building.

Bill Murray has offered several links to cool stuff online:

- Astronomy apps: http://www.universetoday.com/92194/want-astronomy-apps-theres-a-catalog-for-that/
- More astronomy apps: http://www.appadvice.com/appguides/show/astronomy-apps
- A cool Moon phase calendar for 2012: http://garyhonis.com/2012MoonPhaseCalendar.html
- 12 must-see skywatching events in 2012: http://www.msnbc.msn.com/id/45828528/ns/technology_and_science-space/

John Walley Builds 4" Refractor

John Walley has finished the 4" refractor he's been working on this winter. John writes that "It features liberal use of available materials. Edmund 4" f/15 objective. David Davis contributed an old GEM mount that is very heavy but works well. 110 volt drive. Lens cell made by Tom Conlin. 4" PVC tubing, a salvaged focuser, and a little used Wollensack 10X40 finder that fell under the bed in my spare room from the time the Unitron donation was stored there. Notice that the pedestal was extended 2 feet making the declination shaft 5 feet high. So heavy that I decided to attach wheels so I can easily move the instrument to my driveway for use. Truly a club effort.

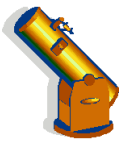
"I took the scope out Saturday night [the 28th] to see the Moon and Jupiter. Optics are good. This is an example of how large the donated Unitron refractors are when mounted for use. Pointed to the zenith the eyepiece is just the right height for my 4 yr old G-son. Note that the scope is taller than my 7-foot garage door.

"I'll probably tweak this scope soon, adding a dew shield and possibly another internal light baffle. But that's part of the process. Despite its height the new scope still won't reach above the fog!"

John Walley's 4" scope built from available materials

Zoom In On the Moon

In case you think that beautiful astrophotos require thousands of dollars worth of equipment, here's proof that it needn't be so. Dave Cole took this composite of something like 20 images stitched into a single frame. He used a webcam, an ED80, and *no tracking*. Dave says "Go ahead, zoom in on it."



Observing in February

Full | Last Q | New | 1st Q

February 7	February 14	February 21	February 29
Mercury Behind Sun	Mercury Set: 6:07 PM	Mercury Set: 6:49 PM	Mercury Set: 7:30 PM
Venus Set: 9:03 PM	Venus Set: 9:19 PM	Venus Set: 9:35 PM	Venus Set: 9:53 PM
Mars Rise: 8:07 PM	Mars Rise: 7:30 PM	Mars Rise: 6:51 PM	Mars Rise: 6:04 PM
Jupiter Set: 11:57 PM	Jupiter Set: 11:35 PM	Jupiter Set: 11:14 PM	Jupiter Set: 10:50 PM
Saturn Rise: 11:26 PM	Saturn Rise: 10:58 PM	Saturn Rise: 10:30 PM	Saturn Rise: 9:57 PM
Uranus Set: 9:14 PM	Uranus Set: 8:48 PM	Uranus Set: 8:23 PM	Uranus Set: 7:53 PM
Neptune Set: 6:28 PM	Neptune Set: 6:02 PM	Neptune Behind Sun	Neptune Rise: 6:33 AM
Pluto Rise: 4:56 AM	Pluto Rise: 4:29 AM	Pluto Rise: 4:02 AM	Pluto Rise: 3:32 AM

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

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

Items of Interest This Month

Early part of month: Asteroid Eros visible
2/5 Io shadow transit sunset to 7:02 pm
2/9 Venus 0.3° N of Uranus
2/12 Io shadow transit 6:46 - 8:58 pm
2/15 Ganymede skims Jupiter's south pole 5:06 - 7:14 pm
Mid-month: zodiacal light visible 1.5 - 2 hrs after sunset
Last half of month: Mercury visible after sunset
2/22 Thin crescent Moon near Mercury
2/22 Europa shadow transit 4:38 - 7:06 pm
2/24 First Quarter Friday Star Party
2/25 Moon 3° N of Venus
2/26 Moon near Jupiter
2/28 Moon near Pleiades
2/28 Io shadow transit 5:06 - 7:20 pm
2/29 Europa shadow transit 7:14 - 9:42 pm

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. 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.