

IO - November 2013

Issue 2013-11
Eugene Astronomical Society

Eugene Astronomical Society
Annual Club Dues \$25
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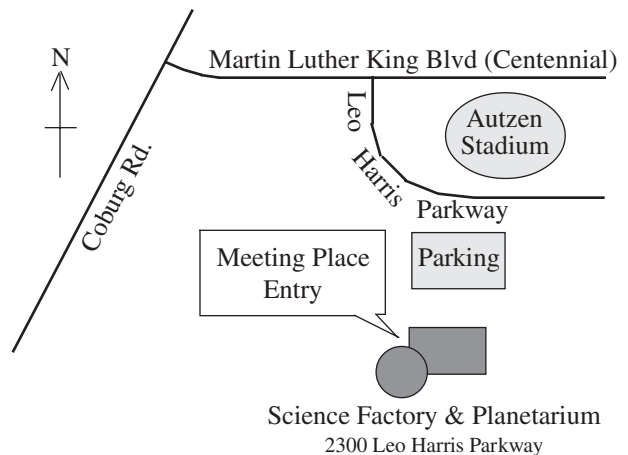
The Astronomical League
The World's Largest Federation of Amateur Astronomers



Next Meeting Thursday, November 21st Einstein's Telescopes by Mel Bartels

Albert Einstein published a paper in 1936 showing that gravity bends space, allowing massive objects to distort the images of objects behind them. He dismissed the possibility of any practical application. He greatly underestimated the technological prowess of modern day telescopes and digital imagers that tease out the highly arced images of galaxies. Contemporary astronomers use gravitational lenses to trace mysterious dark matter regions of gravitational pull where no light is found, taking us a step further in understanding our Universe. Mel Bartels takes us on a whirlwind journey from the invention of the telescope to Einstein's relativity to the unmasking of dark matter. Experiments will be conducted!

We also encourage people to bring any new gear or projects they would like to show the rest of the club. Remember we no longer meet at EWEB. The meeting is at 7:00 on Thursday, November 21st at the Science Factory planetarium. **Please arrive on time**; we can't leave the door open unattended, so someone would have to miss the meeting to stand around waiting for late arrivals.



Dues are Past Due!

EAS membership runs from October thru September. If you haven't renewed already, please do so at the November 21st meeting or mail your dues to the Eugene Astronomical Society, PO Box 7264, Springfield, OR 97475. Dues are \$25. Make your checks payable to Eugene Astronomical Society, or just EAS if your pen is low on ink.

Jerry will also be happy to accept dues at our November 8th First Quarter Friday star party.

October Meeting Report: Kathy Kornei on Gas Outflow from Active Galaxies, and Outreach

At our October 17th meeting, Dr. Katherine Kornei, a professional astronomer and member of the Rose City Astronomers, gave a talk on her research and her outreach efforts. Her research has been on the outflow of gas from active galaxies. She studied galaxies with lookback times dating to half the age of the universe, looking for evidence of large-scale outflow of gas. She learned that galaxies with active star forming regions have the highest outflow rates, and these outflows act as a brake on further star formation by removing that material from the galaxy. So the outflows serve as a regulating mechanism to moderate star formation rates, giving rise to the types of galaxies we see today.

Kathy also talked about her experience in developing an intensive “masters” course in astronomy for kids, in which students spend an entire day each month for several months studying astronomy and doing astronomy-related projects. They each build an 8" dobsonian telescope during their course of study, which they are allowed to keep. The cost to students is kept low with a grant from the Rose City Astronomers, who sponsor the program. It’s an ambitious but highly successful program, one that could serve as a great template for other clubs to use in their own outreach efforts.

Next First Quarter Friday: November 8

Our October First Quarter Friday was a squeaker, but it happened! We had a huge sucker hole about a half hour before sunset, so we got our hopes up only to have them dashed as a deck of thick clouds moved in right at dusk. Quite a few of Scott Fisher’s students showed up, so we hung out and talked for a bit...and pretty soon we got a break in the clouds. We were able to show people the Moon, Albireo, Polaris, the Ring Nebula, and M13 through various gaps. Saw the space station go right overhead. Everyone got a chance to take pictures of the Moon with their cell phones, and Scott even had a phone-to-eyepiece mount that helped immensely with that. I haven’t seen that level of enthusiasm from so many people since the Venus transit.

The Lunar Guitarist put in an appearance. He was a little past his prime, but there.

We only had two scopes set up, but that was just right. Everyone got a chance to see everything we looked at, some several times. Shade ran the welcome table in fine style. That’s definitely a good addition to our star parties, one we should do every time.

So it was a successful night despite the clouds. Here’s hoping for another clear night on November 8th. If Friday is clouded out, we’ll try again on Saturday the 9th.

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 thru 2014. Note that we’ve scheduled four of the star parties (January 3, May 2, August 29, and September 26) a week earlier than the calendar would normally dictate in order to have less moon in the sky.

November 8 (38% lit)	December 6 (24% lit)	January 3 (10% lit)*
February 7 (63% lit)	March 7 (46% lit)	April 4 (29% lit)
May 2 (15% lit)*	June 6 (63% lit)	July 4 (47% lit)
August 1 (32% lit)	August 29 (18% lit)*	September 26 (8% lit)*
October 31 (61% lit)	November 28 (46% lit)	December 26 (31% lit)

*These star parties are a week earlier than normal to provide less moon glare.

Alan Gillespie's Full Moon Setting

On the morning of October 19, Alan Gillespie captured this beautiful image of the full Moon setting into the trees near his house. He writes: "This is an example of HDR photography that I frequently use with my non-astronomical photography. HDR stands for High Dynamic Range. In this case the range in luminosity between the bright moon and the darker shadows.

"This shot is a composite from frames 1433 thru 1437. Exposure values were bracketed from 1/45 second thru 0.3 seconds. The other settings were F/6.1, ISO 100, 400 mm effective focal length. Images were shot in my back yard looking thru the rhodies.

"I commonly use Picturenaut freeware to combine HDR images. Then I use Windows Live Photo Gallery & Photoshop to set Black & White points, adjust contrast, levels, highlight & shadow recovery, and finally re-size the image for Emailing." The results show the effort is clearly worth it. Thanks, Alan!



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Thank You Castle Storage

For the last six 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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One Last Shot at Bohemia Mountain

by Jerry Oltion

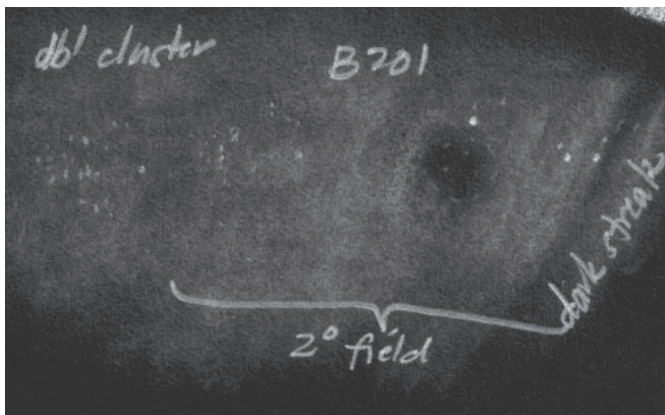
On Saturday, October 5th, several EAS members made what’s probably the last run of the season up to our new Bohemia Mountain observing site. There was snow alongside the road on the north-facing embankments, so it doesn’t seem likely that the road has remained open after the subsequent storms.

We had a great last night, though! The temperature was in the high 40s all night, and the air was still and transparent. There was just enough of a breeze to keep dew from forming. There were seven of us: Mel Bartels, Barb Bajec, Casey and Colin Miller, Shade Rose, Jon Schwartz, and myself. Between us we had six telescopes and a pair of big binoculars, and we enjoyed trading views throughout the night.

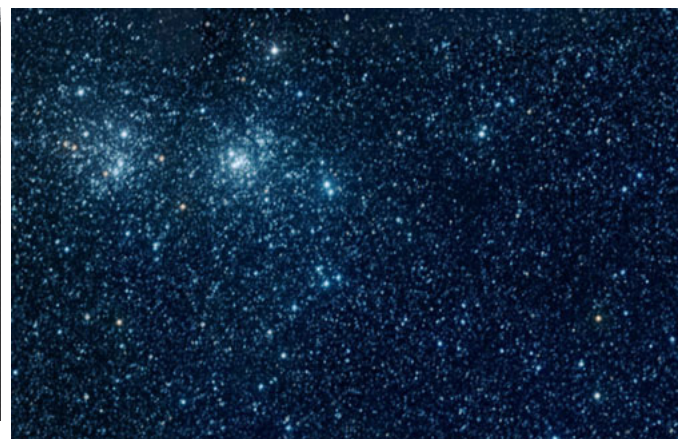


Setting up at Bohemia Mountain, photo © by Mel Bartels

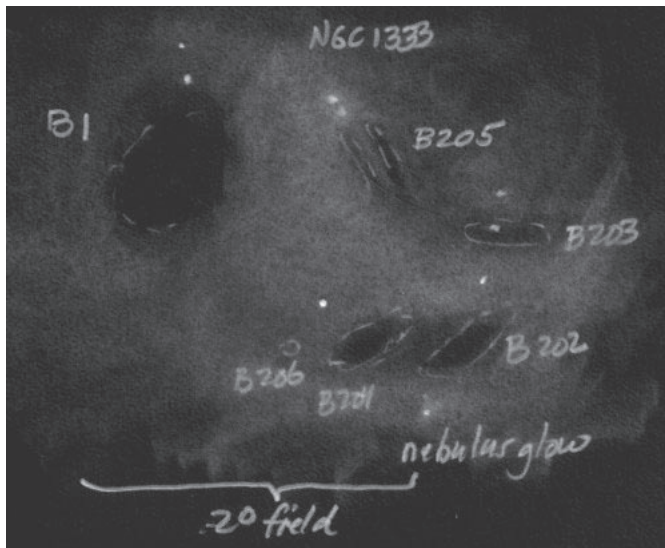
Mel continued his dark-nebula observing program, bagging several on his list including one near the double cluster in Perseus and the elusive dark spot in the middle of the California Nebula (itself a difficult object under all but the darkest skies). In Mel’s own words: “Barnard 201 is a completely overlooked dark nebula to the side of the double star cluster in Perseus. I was surprised to find faint stars shining through the nebula. I was very surprised to find a dark streak further out to the side. It can be faintly seen on long exposure images. Included is a screen shot from Microsoft’s World Wide Telescope program. Also visible



Sketch copyright © 2013 by Mel Bartels



on the screen shot is a dark dagger pointing away from Barnard 201 to underneath the double cluster. I did not notice it and will try for it next night out! Also included are drawings of a subtle and somewhat underwhelming area involving a couple of emission nebulae and several dark nebulae. Finally, I went after the dark spot in the California Nebula. I got an impression of a dark oval using an H-Beta filter.”

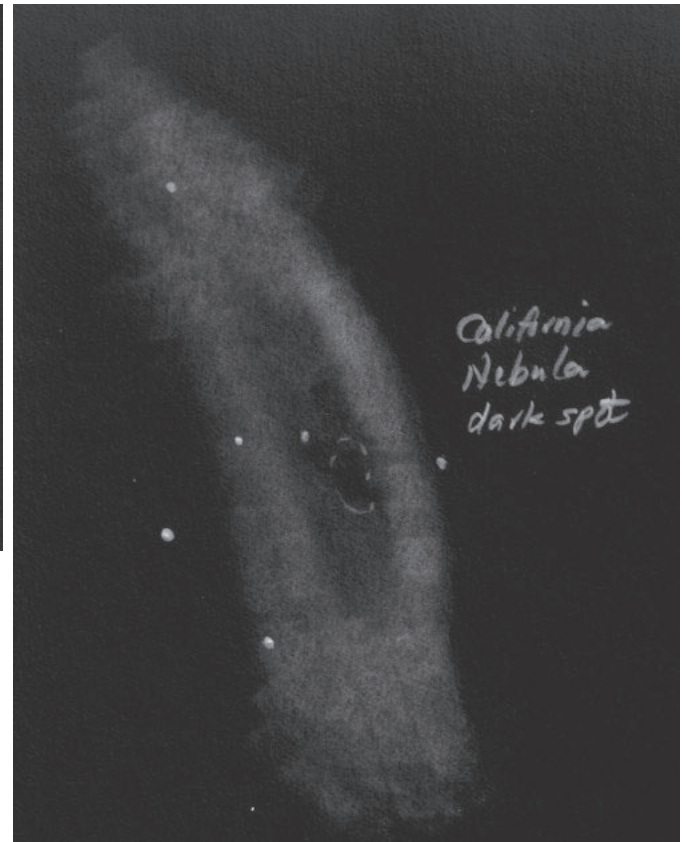


Sketch copyright © 2013 by Mel Bartels

At Casey’s suggestion we looked for the first and last objects in the NGC catalog. We found NGC 1, a 13th-magnitude galaxy in Pegasus, fairly easily, but NGC 7840 was a bit tougher. NGC 3 in the same field of view was obvious, but 7840 only made a brief appearance with averted vision. At 15th magnitude and only 1 arc-minute across, that’s not too supprising.

We were once again serenaded by eagles throughout the night. There’s something sublime about hearing eagles while you’re at 5000 feet on a mountain ridge with the sky full of bright diamonds overhead. We joked about the noisy “pests,” but I think we were all just a little in awe of the experience.

People drifted off toward home one at a time, but Jon and I stayed long enough to get our first look at Jupiter for the season, rising above the ridge to the east at 2:00. Just for spice, the Universe threw in the Orion Nebula, a gorgeous sight in a 4" refractor under extraordinarily clear skies. I was home and in bed by 4:00, but I hardly slept for thinking about all the cool stuff we saw that night.



Sketch copyright © 2013 by Mel Bartels

World Wide Star Count Oct 25 – Nov 8

Every autumn, an organization called “Windows to the Universe” holds its World Wide Star Count. The purpose is to record how dark the sky is from as many different locations as possible, building up a database that will help document light pollution and the effects of efforts to combat it. Everyone is encouraged to join in. It’s a simple process: go to their website and determine which constellation to observe, find that constellation an hour after sunset, match your view of that constellation with one of their magnitude charts, and report your observations online.

This is one of the easiest citizen science projects you can do. Here’s the URL:

http://www.windows2universe.org/citizen_science/starcount/

EAS Members Show Fall Sky to Students

by Rick Kang

The evening of Tuesday, October 22nd, Doug Demorest, Rick Kang, and John Walley brought observing gear to the Sky Camp facility near Fall Creek Reservoir above Lowell to show the sky to 52 fifth grade students plus 12 of their parents, and their teachers. Sky Camp is a facility composed of a large lodge building plus surrounding cabins at the lake side established in the 1970s by the Springfield Kiwanis as a facility for youths to enjoy the outdoors. Springfield School District makes extensive use of the facility.

Teachers from Dos Rios Elementary (the new Elementary school in Springfield converted from the old Springfield Middle School), plus Page Elementary, organized the STEMfest outing, a two day event featuring a variety of guest speakers about various Science, Technology, Engineering, and Math topics with hands on activities for the students. Teacher Connie Opsal from Dos Rios spearheaded the event, doing a great job of organizing and coordinating.

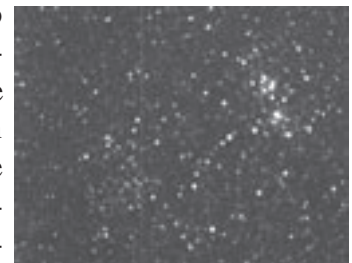
The moonless night sky was very dark; the Milky Way was readily visible. The observing downsides of this site are the high horizons as the fir trees occupy three sides around the lodge, and the light dome of the Eugene-Springfield metro area does loom toward the northwest, across the lake. Doug and John set up their dobs at a paved area within the large lawn between the lodge and the lake, and Rick set up a portable CCD camera at a table up on the lodge deck toward the east side of the building. We were able to turn out most of the lights within the building. The road from Lowell to Sky Camp is paved except for only about a mile of well packed gravel; it took me about 45 minutes from NE Eugene to get there. Currently you can drive right up to the lodge and out onto the field, so unloading scopes is no problem. (Prior years this wasn't so.)

Doug reports: "The objects I pointed out were the stars Mizar and Alcor in Ursa Major. The constellations Ursa Major and Minor, with the pointers and Polaris. The Milky Way with explanations of our galaxy and the Pleiades (no scope on that one). I also demonstrated observational apps on my iPad, which allowed two sightings of the ISS in one night."

John reports: "Kids arrived in several groups so I showed the same four or five objects to each group. We were limited by buildings, trees etc. I was able to show M31,32, double cluster [in Perseus], M13 and Pleiades to each. Kids and adults were very appreciative and a good time was had by all. I used my 54 year old 6" F/5 dob and it worked out well. Would love to do it again."

Rick reports: "I pointed out Pegasus/Andromeda/Cassiopeia to each group of students as they came up to the imaging table. We had a good dark view of this area of the sky high to the south side of the lodge. Most of the students could pick out M31 with unaided eyes; we noted how long the photons from there have been traveling. The Pleiades rose above the trees midway through our groups. Each student had an opportunity to view through the Rigel finder on the CCD bracket so see how the camera is aimed, and a pair of students from each group of 13 had the opportunity to image an object. Unfortunately only three of the groups got to the camera station as most students elected to spend a lot of their time at the campfire at the other end of the facility, where 'Smores were being offered (can't blame the students for their choice ☺!). The students who imaged captured M31, the Double Cluster, and the Pleiades. Their images will be sent to them to keep on their computers. These students were very enthusiastic about getting to actually image the sky, and the groups were amazed at how many stars the camera would detect."

This was a pleasant short time outing to a convenient location, I hope we can do more sky events there.



Owen's double cluster



Tanner's M31

Burnout: Pitfalls, Prevention, and Recovery

by Jerry Oltion

We've all heard of burnout: the loss of enthusiasm for something we once pursued with passion. I've been passionate about amateur astronomy for 10 years now, with no end in sight. I can't imagine burning out. But you seldom see burnout coming. One day you just notice that you're not as excited about your true love as you used to be. Burnout has already hit by the time you notice it.

I've watched others fall prey to burnout and have discussed it with Jon Schwartz, who goes observing with me quite a bit. He in turn found a discussion of it online, and a particularly cogent post by a Texas amateur named Michael Rapp. Rapp came up with a list of behaviors or modes of thinking that lead to burnout in amateur astronomy. Reprinted here with his permission, they are:

- Obsessing over the perfect eyepiece set for one's scope
- Getting trapped by aperture fever; that is, feeling that astronomy isn't worth doing unless one has a larger/different scope
- Rushing through the Astronomical League lists; that is, checking off boxes rather than observing the objects
- Not including variety in an observing program; perhaps observing the twenty-third open cluster in a row is not ideal
- Repeatedly not matching targets to observing conditions: a hazy summer night might not be the best for Stephan's Quintet
- Believing that "real" amateur astronomy is observing PGCs with at least an 18" Dob and that everything else is somehow "novice level"
- And finally, paradoxically, observing every clear night. Out here [Texas] during the height of the summer we get long strings of clear, albeit hazy and hot, nights. It is not necessary to observe every night.



That last one may not seem like much of a danger in the Pacific Northwest, but I maintain that it's one of the most insidious of the lot. We see clear sky so seldom through the winter that it's tempting to go out every clear night we get. When a high pressure ridge moves through and we get four or five nice days in a row, that can get exhausting.

To the above list I would add "Observing the same things over and over." If all you know how to find are M13 and the Andromeda Galaxy, you're going to get bored with them. That's where an Astronomical League list could help rekindle the fire. Learn some new objects, both how to find them and something about them.

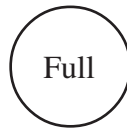
As Rapp says, "The principal solution to burnout, of course, is to take a break." That's certainly true, but how do you know when to start in again? One real danger with burnout is that you'll find some other activity to fill the time you used to spend doing astronomy, and you won't go back to astronomy until you burn out from its replacement. Or you'll just move on to something else, leaving astronomy behind forever.

While that strategy provides the rest of us with lots of cheap used gear, I suggest instead that those of you who don't go out observing much anymore consider rekindling the love affair the same way married people rekindle theirs: by considering what you appreciated about astronomy when you were enjoying it, and what it would take to get that enjoyment back.

This winter would be a good time to do that. I miss a lot of you people! I'd like to see you again under a starry sky.



Observing in November



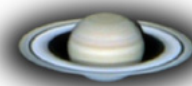
November 3	November 9	November 17	November 25
Mercury Rise: 6:32 AM	Mercury Rise: 5:40 AM	Mercury Rise: 5:25 AM	Mercury Rise: 5:45 AM
Venus Set: 7:18 PM	Venus Set: 7:20 PM	Venus Set: 7:24 PM	Venus Set: 7:26 PM
Mars Rise: 1:36 AM	Mars Rise: 1:30 AM	Mars Rise: 1:22 AM	Mars Rise: 1:13 AM
Jupiter Rise: 9:11 PM	Jupiter Rise: 8:48 PM	Jupiter Rise: 8:15 PM	Jupiter Rise: 7:42 PM
Saturn Set: 5:15 PM	Saturn Behind Sun	Saturn Rise: 6:15 AM	Saturn Rise: 5:48 AM
Uranus Set: 4:11 AM	Uranus Set: 3:47 AM	Uranus Set: 3:14 AM	Uranus Set: 2:42 AM
Neptune Set: 1:00 AM	Neptune Set: 12:36 AM	Neptune Set: 12:05 AM	Neptune Set: 11:29 PM
Pluto Set: 8:39 PM	Pluto Set: 8:15 PM	Pluto Set: 7:45 PM	Pluto Set: 7:14 PM

All times: Pacific Standard Time (Nov 3, 2013-March 9, 2014) = UT -8 hours or U.S. Pacific Daylight Time (March 10-November 2, 2013) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight	
					Begin	End
11/1/2013	05:44	17:00	07:49	18:02	06:12	19:40
11/2/2013	06:53	17:36	07:51	18:01	06:13	19:39
11/3/2013	07:03	17:17	06:52	16:59	05:14	18:37
11/4/2013	08:13	18:05	06:53	16:58	05:15	18:36
11/5/2013	09:19	19:01	06:55	16:57	05:16	18:35
11/6/2013	10:20	20:04	06:56	16:56	05:17	18:34
11/7/2013	11:13	21:11	06:57	16:54	05:19	18:33
11/8/2013	11:58	22:21	06:59	16:53	05:20	18:32
11/9/2013	12:38	23:32	07:00	16:52	05:21	18:31
11/10/2013	13:13		07:01	16:51	05:22	18:30
11/11/2013	13:44	00:41	07:03	16:50	05:23	18:29
11/12/2013	14:15	01:49	07:04	16:49	05:24	18:28
11/13/2013	14:45	02:56	07:05	16:48	05:25	18:28
11/14/2013	15:16	04:02	07:07	16:47	05:27	18:27
11/15/2013	15:49	05:07	07:08	16:46	05:28	18:26
11/16/2013	16:25	06:09	07:09	16:45	05:29	18:25
11/17/2013	17:05	07:09	07:11	16:44	05:30	18:25
11/18/2013	17:49	08:06	07:12	16:43	05:31	18:24
11/19/2013	18:37	08:57	07:13	16:42	05:32	18:23
11/20/2013	19:29	09:44	07:14	16:41	05:33	18:23
11/21/2013	20:24	10:25	07:16	16:41	05:34	18:22
11/22/2013	21:21	11:01	07:17	16:40	05:35	18:22
11/23/2013	22:18	11:34	07:18	16:39	05:36	18:21
11/24/2013	23:17	12:03	07:19	16:39	05:37	18:21
11/25/2013		12:31	07:21	16:38	05:38	18:20
11/26/2013	00:18	12:59	07:22	16:38	05:39	18:20
11/27/2013	01:19	13:27	07:23	16:37	05:40	18:20
11/28/2013	02:23	13:57	07:24	16:37	05:41	18:19
11/29/2013	03:30	14:29	07:25	16:36	05:42	18:19
11/30/2013	04:39	15:07	07:26	16:36	05:43	18:19

Items of Interest This Month

- 11/1 Venus at greatest eastern elongation.
- Mercury in conjunction with Sun
- 11/3 Daylight Savings Time ends 2:00 a.m. Set clocks back one hour.
- 11/3 Total solar eclipse, not visible here
- 11/6 Saturn in conjunction with Sun
- 11/8 First Quarter Friday Star Party**
- 11/17 Peak of Leonid meteors early a.m. Alas, full Moon will wash out all but the brightest.
- 11/17-18 Comet ISON near Spica
- 11/22 Comet ISON level with Mercury in morning sky
- 11/28 Comet ISON passes perihelion



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.

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