Issue 2014-10

# IO - October 2014

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.

PO Box 7264
Springfield, OR 97475
**www.eugeneastro.org**

EAS is a proud member of:

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


# Next Meeting Thursday, October 16th

## Chinese Constellations and Star Lore

### by Mel Bartels

At our October 16th meeting, Mel Bartels will take you into the world of Chinese constellations and star lore. Mel's talk will describe the White Tiger and its seven mansions of Autumn skies.

Chinese constellations originated in deep antiquity and are very different from western constellations. The White Tiger of the West is one of the four major symbols of Chinese skylore and is associated with metal. When metal was placed in a grave, a ceremonial connection with the tiger god was made. Three days after the burial of the king, the essence of the element metal assumed the shape of a white tiger and crouched down on the top of the grave. Here the tiger is a protector — a preserver. White jade was used when the Tiger god of the West was worshiped; it is known as "tiger jade." A tiger was depicted on the jade symbol. The tiger was the king of all animals and lord of the mountains, and the tiger-jade ornament was specially reserved for commanders of armies. The male tiger was, among other things, the god of war, and in this capacity it not only assisted the armies of the emperors, but fought the demons that threatened the dead in their graves.

Come hear even more about Chinese constellations and star lore! At our meetings 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 Thursday, October 16th at the Science Factory planetarium. Come early to visit before the program starts.

# Next First Quarter Friday: October 31st

Our September 26th First Quarter Friday was well attended and fun. The Moon set early, so we had relatively dark sky to show people star clusters, nebulae, and even a few galaxies. We had some clouds roll through early in the evening, but we always had plenty of sky to look at and plenty of people eager for a look.

Our next First Quarter Friday will be on Halloween night. Come give people a real treat: a view of the cosmos through your telescope!

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 the rest of 2014.

October 31 (61% lit) November 28 (46% lit) December 26 (31% lit)

# September 18th Meeting Report

At our September 18th meeting, Jerry Oltion talked about eyepieces and filters. He showed a variety of each and described their relative advantages and disadvantages. He put on a slide show that illustrated why and how multi-element eyepieces are made, and talked about the critical factors of field of view, magnification, exit pupil, and eye relief. Basically you get what you pay for, but it's hard to beat a basic plössl eyepiece for value. Many amateurs start with plössls before buying advanced eyepieces, and often continue to use them even afterward.

As for filters, Jerry recommended a variable Moon filter first, then a skyglow or ultrablock filter next, followed by an OIII. And don't forget a solar filter if your scope is a closed-tube variety that will handle it safely.

Jerry collected dues and money for astronomy calendars. Also at the meeting we helped two different people learn how to use their telescopes, and one of them joined the club. (Welcome, Randy!)

# September 3rd Star Party Report

Our September 3rd star party at the Basketball Acadamy at Mckenzie Bridge turned out well despite only three telescopes for over 300 people. John Walley, Wade Richardson, and Rick Kang were able to show people the Moon, several globular clusters, nebulae, and the Andromeda Galaxy.

John reports: "Smoke and a yard light caused some difficulty but we had 300+ people at the scopes and they were invariably impressed with views. Lots of positive comments."

Rick reports: "At my station about 20 students along with several teachers got to do some actual sky imaging, mostly of M31 although several people selected other areas of the sky to image. Their images led to discussion of evidence for the nature of the Milky Way and evidence of Earth's rotation. There were a lot of good questions about how the imaging technology worked so lots of teachable moments about STEM topics. Several of the students actually stated that they'd be interested in becoming astronomers."

Wade summed it up nicely: "Yes, the lines were too long and the viewing wasn't as good as Eagles Ridge or Indian Trail Spring. However, the vast majority of those who looked through the eyepiece were genuinely pleased and had nothing but good things to say. Many had great questions. Who can tell what good this will have done for some quiet, bright youth 5-10 years from now!"

## Dues are Due!

EAS membership runs from October thru September. If you haven't paid already, please do so at our next meeting (October 16th) or mail your dues to the Eugene Astronomical Society, PO Box 7264, Springfield, OR 97475. Dues are still the same low $25 they've been for years. Make your checks payable to Eugene Astronomical Society, or just EAS if your pen is low on ink.

## Sketching Observing Award Goes Live

The Astronomical League has a new oberving program, thanks to Cindy Krach, our member-in-spirit in Hawaii. Cindy has put together a great program to draw out the inner artist in us all. Sharpen your pencils and check it out at:

http://www.astroleague.org/programs/sketching-observing-award

# Sunrise with Sunspots


On the morning of September 8, Alan Gillespie took this photo of the Sun rising through light clouds. It's a beautiful shot just at a glance, but zoom in a little and you can see something else: Sunspots. There were two large spots on the surface of the Sun, and they show up nicely in this photo. They're just below the edge of the cloud layer that crosses the lower third of the Sun.

This was a single shot taken at 6:58am. Shutter speed 1/800sec, f/3.1, iso100, 392mm efl.

# September 8th "Supermoon"

The media have been making a big deal out of perigee full Moons lately, calling them "supermoons" and promoting them as extra big and bright. While that's technically true, 7% over average is a pretty small difference. Still, it gets the public to think about the Moon, which is a good thing, and it offers a chance for EAS members to show people the view through a telescope.

So on the evening of September 8th a few of us went to the College Hill Reservoir. Bruce and Jerry took photos while they were there. Several others took photos from other locations. The equipment ranged from phone cameras to digital point-and-shooters to professional grade cameras. One (Jeff's) is a stack of several frames. All of them capture the beauty of our Moon, which we think is pretty super no matter where in its orbit it may be.

(More photos on next page)

Copyright © 2014 by Bruce Hindrichs

Full Moon with Kite. Copyright © 2014 by Jerry Oltion









## 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.

# Eagle's Ridge September 12th

On the night of September 12th, several EAS members made a pilgrimage to Eagle's Ridge to look for aurorae. The Sun had just blown a big coronal mass ejection toward the Earth, and the Northern Lights were predicted as far south as California. We didn't see any aurorae, and we got chased off the mountain by smoke from forest fires around midnight, but we had a great time observing anyway. Bill Basham and Bill Murray got some great photos, too.

The next day in email, Bill Basham said, "I didn't see an aurora on any of the pictures last night, but I did catch this huge meteor at 10:53 p.m. I guess none of us noticed it. I probably had my eyes glued to Jerry's BinoScope looking at the incredibly clear, 3-D closeup of the Moon."

Bill Murray did some piggyback shots, getting a very nice image of the Milky Way rising up over Mount June, one of the Pleiades just peeking through the trees to the east, and one of Barnard's "E," a dark nebula to the right of Altair.

Bill Basham took photos all night and assembled them into a great time-lapse video that shows the sky movement through the night and the smoke drifting in from the southeast at the end. You can find it on Youtube at this link: https://www.youtube.com/watch?v=zRTvjySwaNY

Meteor at Eagle's Ridge, Copyright © 2014 by Bill Basham

Milky Way over Mt. June, Copyright © 2014 by Bill Murray

Pleiades rising, Copyright © 2014 by Bill Murray

Barnard's E, Copyright © 2014 by Bill Murray

# Bohemia Saddle September 20th

On September 20th, several EAS members took their first trip of the season to Bohemia Saddle, the observing site near Fairview Peak that rises to nearly 5000 feet. Mel Bartels, Bruce Hindrichs, Jerry & Kathy Oltion, and Larry Hill & Cheryl Hunter all made the trek, and were rewarded with clear sky, warm temperatures, and some of the darkest sky left in the nation. Mel measured the sky quality at 21.9 during the darkest part of the night; a better reading than most nights at the Oregon Star Party.


Jerry and Kathy had their new 12.5" binocular scope and were very happy with the 3D view of deep sky objects through it. Bruce, Larry, and Cheryl had fun learning their way around the sky with their refractors, and Mel brought his 6" and 10" short f/ratio scopes to look at more of the incredible wide-field views those scopes give him. They didn't disappoint this time, either: under the supremely dark sky they revealed nebulosity partially surrounding M33, the Triangulum Galaxy. The rest of us confirmed that it was real, and Mel found photographic evidence for it in deep-sky photos the next day.

It was a great night out. With luck we'll have one or two more chances to go up there before snow flies.

# U of O Science Fair September 23rd

## by James Kiely

EAS did a presentation at the annual Science Fair on Sept. 23, 2014. This event gives children and their parents the opportunity to avail themselves of a sampling of a wide range of scientific endeavors. Contributors included University staff in biological, chemistry, physics, oceanographic, renewable energy and many other departments.

Jim Kiely with Sun, Earth, and Moon

Prizes and drawings of all sorts were featured. EAS was a main candy distributor, to which our station's popularity owed much. EAS presented a lecture with a model Earth-Moon system and Sun, illustrating solar and lunar eclipses; backed up by YouTube videos and a powerpoint program. Our table also held a constellation viewer, logo shirts, USS Enterprise model (with phasers/photon torpedoes), flyers containing eclipse and EAS info, 90 mm telescope and much CANDY.

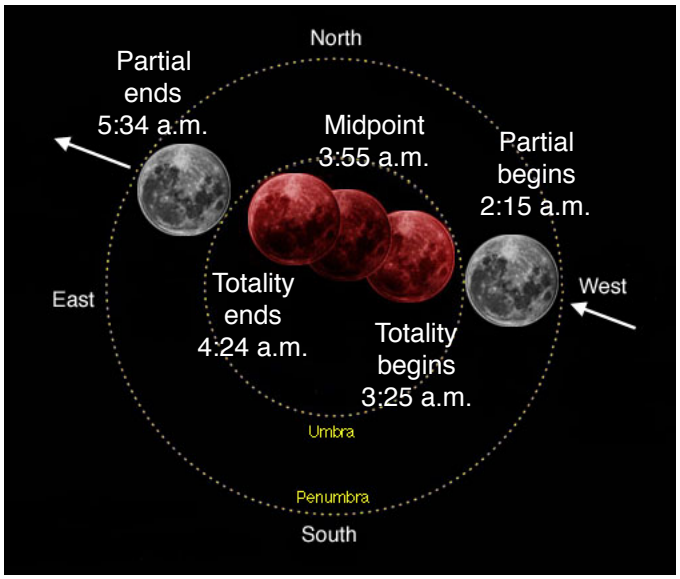
We had about 200 visitors, big and small. Many listening and seeing little ears and eyes were present. The funniest moment of the night was a 9 yr old announcing that her sole aim in life was to be an "astrophyshishist." When querried about her career selection, she replied, "I wanted to be that since I was little."

Another funny moment: I had hand painted a glass float with gray paint in a relief-like application for a crater effect. It dropped to the floor at the show and smashed in an awesome explosion. The kids yelled, "The Moon's exploded!"

A good time for all. Thanks to Dr. Kang for his powerpoint, brochures, ideas and event booking.

# Total Lunar Eclipse October 8th

The western hemisphere will be treated to a total eclipse of the Moon on the morning of October 8th. Unfortunately that's the *early* morning of October 8th, but for those hardy enough to miss some sleep it promises to be a good show.




First contact with the Earth's umbral shadow happens at 2:15 a.m. Totality begins at 3:25 a.m. The moment of deepest eclipse is at 3:55 a.m. Totality ends 4:24 a.m., and last contact is at 5:34 a.m.

Due to the awkwardness of the hour, the EAS will not host a formal star party. (Read: "We don't really want to upset a bunch of neighbors with a big crowd.") However, many of us will undoubtedly gather at the College Hill Reservoir to watch it, and perhaps at other places around town and beyond. The fishing pond between Eugene and Junction City was mentioned as a possibility.

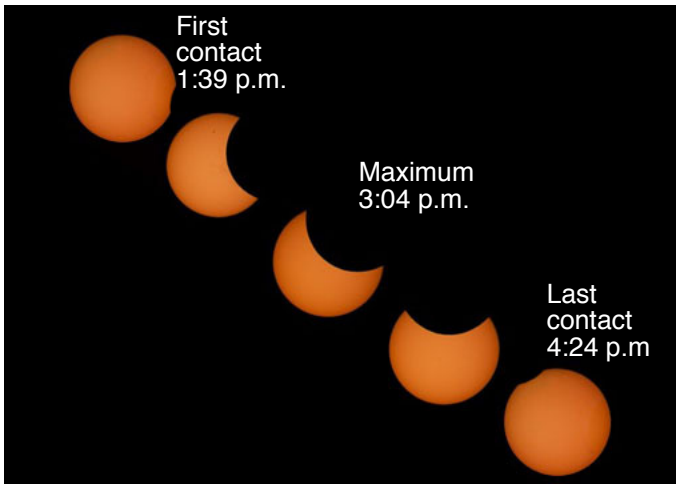
The nice thing about eclipses is that you can observe them from just about anywhere with a view of the Moon. This one will be in the south-south-west, so if your bedroom faces south you can even set an alarm for 3:55, look out the window, say "Huh, lookit that," and go back to sleep.

Wherever you happen to be on the morning of the 8th, have a look at the solar system in action. The coppery red hue of an eclipsed Moon is a rare sight, one you'll be glad you got up for.

# Partial Solar Eclipse October 23rd

Two weeks after the lunar eclipse, the Moon will be halfway around in its orbit...and partially blocking the Sun! And this time it happens at a decent time: between 1:39 and 4:24 in the afternoon.

The EAS will be hosting a star party for this event. It's only a partial eclipse (49% obscuration at our latitude), but it will still be quite a show and we'll have telescopes on hand to show it to the public. We'll be at the Science Factory starting about 1:00 or 1:30. Bring your solar-filtered telescope and join the fun! Or if you don't have a solar-safe telescope, then just come around and have a look through someone else's. We'll also have safe solar shades on hand for directly viewing the eclipse.




The eclipse begins at 1:39 p.m. The Sun will be at 33.5° altitude, 192.4° azimuth. Maximum eclipse happens at 3:04 p.m. with the Sun at 27.2° altitude, 215° azimuth. The eclipse ends at 4:24 p.m. with the Sun at17.2° altitude, 233.6° azimuth. Total duration will be 2 hours, 44 minutes, and 46 seconds.

Eclipses are always fun, high-energy events. Come enjoy it at the Science Factory with a few hundred of your closest friends! It should be quite a party.

# Thank You, Sam!

## by Jerry Oltion

The Eugene Astronomical Society is losing one of its longstanding members to the lure of California's clear skies. Sam Pitts, club member for nearly two decades and president for the last eight years, will soon be moving to Temecula, near Mount Palomar.

Sam setting up his telescope at a club meeting

Sam has been interested in astronomy all his life. He got his first telescope, a 50mm Gilbert refractor with a single push-pull eyepiece, when he was in 3rd grade. The mount was too wobbly to use, so he mounted the scope on a fencepost in his hometown of Hawthorne, California. He still has some of his diagrams of Jupiter's moons that he made during that time.

He eventually graduated to a Tasco scope, then an 8" Cave reflector. He enjoyed that scope for several years before selling it to Hardin Optical.

He moved to Eugene in 1987 and was scopeless for a decade, but he remained active in astronomy by using binoculars and doing visual observations of the night sky. Then in 1997 he bought an 8" Meade LX200 and began getting deeper and deeper into the hobby. He started doing astrophotography in 1998 or so, hypering film and hand-guiding long duration exposures. He went to the Oregon Star Party every year and joined the EAS in '98 or '99. Not long afterward he joined Friends of Pine Mountain Observatory, a group dedicated to opening PMO to the public. Sam got their "Member of the Year" award in 2001 and became president of FOPMO in 2002. He was also on the board of directors for the EAS before our incorporation in 2003.

In the late '90s, Sam tried CCD imaging, but the equipment was still too primitive and expensive to be worth the trouble. He went back to film, but in 2003 he tried his first Digital SLR and never looked back. Exposures that used to take hours could now be taken in minutes. You could tell instantly if you'd gotten your shot, rather than waiting days for slides to be developed. With CCDs, autoguiding replaced hand guiding (often called "the world's most boring video game.") Newer equipment brought better and better results, but required ever more support hardware until Sam eventually became overwhelmed by the complexity of his setup and teardown procedure whenever he would go out imaging. That led to the construction of an observatory in central Oregon, which he just finished this summer, to house his latest telescope: a PlaneWave 12.5" Dall-Kirkham astrograph.

Sam has come a long ways from his Gilbert on a fencepost, but one thing connects all his telescopes: they've all been purchased by the sale of comic books. No kidding! Sam realized early on that comics would become collectible, so he bought extras and bagged them and stored them away. His astronomy hobby has reaped the reward of that wise investment decision ever since.

And the Eugene Astronomical Society has reaped the reward of his practical, level-headed thinking as well. In 2006 Sam became president of the EAS, a position he has held ever since. For several of those years he also edited the *Io*. For eight years he has been a solid foundation for our club, scheduling our

speakers for meetings, running those meetings, often providing the program for those meetings, doing public outreach at retirement homes and colleges, fielding phone calls and emails from the public, providing advice when necessary, and keeping his hands off the tiller when the club doesn't need direction. His low-key approach to leadership has been very popular with club members, who have maintained a steady membership level throughout his tenure.

We will certainly miss Sam's presence at our meetings and in our group. Sam has been a tireless champion of amateur astronomy in our midst, and we owe him a great deal of gratitude for all he has done for us as a group and as individuals.

Thank you, Sam, for all your hard work on our behalf! We wish you the best of luck in California, and we know that the astronomy club in Temecula will soon have a great new member.

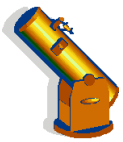
Here are a few of Sam's many stunning astrophotos. Go to www.samsastro.com to see more.

Helix Nebula, copyright © by Sam Pitts

Flame and Horsehead Nebulae, copyright © by Sam Pitts

M101, copyright © by Sam Pitts

Stephan's Quintet, copyright © by Sam Pitts



# Observing in October

Full | Last Q | New | 1st Q

| Oct. 8, 3:51 AM | Oct. 15, 12:2 PM | Oct. 23, 2:57 PM | Oct. 30, 7:48 PM |
|---|---|---|---|
| Mercury Set: 6:57 PM | Mercury lost in Sun | Mercury Rise: 6:30 AM | Mercury Rise: 6:07 AM |
| Venus Rise: 6:55 AM | Venus lost in Sun | Venus lost in Sun | Venus lost in Sun |
| Mars Set: 9:26 PM | Mars Set: 9:19 PM | Mars Set: 9:12 PM | Mars Set: 9:07 PM |
| Jupiter Rise: 2:15 AM | Jupiter Rise: 1:53 AM | Jupiter Rise: 1:28 AM | Jupiter Rise: 1:05 AM |
| Saturn Set:8:18 PM | Saturn Set: 7:52 PM | Saturn Set: 7:23 PM | Saturn Set: 6:58 PM |
| Uranus Set: 7:21 AM | Uranus Set: 6:52 AM | Uranus Set: 6:19 AM | Uranus Set: 5:50 AM |
| Neptune Set: 3:56 AM | Neptune Set: 3:28 AM | Neptune Set: 2:56 AM | Neptune Set: 2:28 AM |
| Pluto Set: 11:27 PM | Pluto Set: 10:59 PM | Pluto Set: 10:28 PM | Pluto Set: 10:01 PM |

All times Pacific Daylight Time (March 9 – November 1, 2014 = UT -7 hours) or Pacific Standard Time (November 2, 2014 – March 7, 2015 = UT -8 hours)

| Date | Moonrise | Moonset | Sunrise | Sunset | Twilight Begin | Twilight End |
|---|---|---|---|---|---|---|
| 10/1/2014 | 14:24 | | 07:10 | 18:53 | 05:34 | 20:29 |
| 10/2/2014 | 15:12 | 00:22 | 07:11 | 18:51 | 05:35 | 20:27 |
| 10/3/2014 | 15:56 | 01:29 | 07:13 | 18:49 | 05:36 | 20:25 |
| 10/4/2014 | 16:35 | 02:39 | 07:14 | 18:48 | 05:38 | 20:23 |
| 10/5/2014 | 17:12 | 03:52 | 07:15 | 18:46 | 05:39 | 20:22 |
| 10/6/2014 | 17:47 | 05:06 | 07:16 | 18:44 | 05:40 | 20:20 |
| 10/7/2014 | 18:22 | 06:20 | 07:17 | 18:42 | 05:41 | 20:18 |
| 10/8/2014 | 18:58 | 07:34 | 07:19 | 18:40 | 05:43 | 20:16 |
| 10/9/2014 | 19:36 | 08:45 | 07:20 | 18:39 | 05:44 | 20:14 |
| 10/10/2014 | 20:17 | 09:54 | 07:21 | 18:37 | 05:45 | 20:13 |
| 10/11/2014 | 21:01 | 10:58 | 07:22 | 18:35 | 05:46 | 20:11 |
| 10/12/2014 | 21:50 | 11:57 | 07:23 | 18:33 | 05:48 | 20:09 |
| 10/13/2014 | 22:41 | 12:50 | 07:25 | 18:32 | 05:49 | 20:08 |
| 10/14/2014 | 23:35 | 13:36 | 07:26 | 18:30 | 05:50 | 20:06 |
| 10/15/2014 | | 14:17 | 07:27 | 18:28 | 05:51 | 20:04 |
| 10/16/2014 | 00:31 | 14:53 | 07:28 | 18:27 | 05:52 | 20:03 |
| 10/17/2014 | 01:27 | 15:25 | 07:30 | 18:25 | 05:54 | 20:01 |
| 10/18/2014 | 02:24 | 15:55 | 07:31 | 18:23 | 05:55 | 19:59 |
| 10/19/2014 | 03:22 | 16:23 | 07:32 | 18:22 | 05:56 | 19:58 |
| 10/20/2014 | 04:20 | 16:51 | 07:34 | 18:20 | 05:57 | 19:56 |
| 10/21/2014 | 05:20 | 17:19 | 07:35 | 18:19 | 05:58 | 19:55 |
| 10/22/2014 | 06:20 | 17:48 | 07:36 | 18:17 | 05:59 | 19:53 |
| 10/23/2014 | 07:22 | 18:20 | 07:37 | 18:15 | 06:01 | 19:52 |
| 10/24/2014 | 08:24 | 18:56 | 07:39 | 18:14 | 06:02 | 19:51 |
| 10/25/2014 | 09:27 | 19:37 | 07:40 | 18:12 | 06:03 | 19:49 |
| 10/26/2014 | 10:29 | 20:23 | 07:41 | 18:11 | 06:04 | 19:48 |
| 10/27/2014 | 11:27 | 21:16 | 07:43 | 18:09 | 06:05 | 19:46 |
| 10/28/2014 | 12:22 | 22:16 | 07:44 | 18:08 | 06:07 | 19:45 |
| 10/29/2014 | 13:11 | 23:20 | 07:45 | 18:06 | 06:08 | 19:44 |
| 10/30/2014 | 13:55 | | 07:47 | 18:05 | 06:09 | 19:43 |
| 10/31/2014 | 14:34 | 00:28 | 07:48 | 18:04 | 06:10 | 19:41 |

## Items of Interest This Month

Good month for Andromeda Galaxy after midnight.

10/7 Uranus at opposition

**10/8 2:15 – 5:34 AM: Total Lunar eclipse**

10/15 6:21:22 a.m. – 6:26:15 a.m. Callisto occults Europa

10/19 Comet Siding Spring near Mars

10/21 Orionid meteor shower peaks early a.m.

**10/23 Partial Solar Eclipse mid-afternoon**

**10/31 First Quarter Friday Star Party.**

11/1 4:49:07 a.m. – 4:54:22 a.m. Callisto partially occults Io

11/2 5:36:06 a.m. – 5:51:45 a.m. Callisto occults Io (Totality lasts 123 seconds.)

11/3 4:51:43 a.m. – 5:06:17 a.m. Callisto partially occults Ganymede

11/5 2:19:04 a.m. – 2:24:21 a.m. Io partially occults Ganymede

For ongoing discussion of astronomical topics and impromptu planning of telescope outings, join the EAS mail list at http://eugeneastro.org/mailman/listinfo/general_eugeneastro.org

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