

Eugene Astronomical Society



www.eugeneastro.org

## IO - January 2019

Eugene Astronomical Society  
 Annual Club Dues \$25  
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 Additional Board members:  
 Oggie Golub, Jim Murray, Ken Martin.

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[www.eugeneastro.org](http://www.eugeneastro.org)

EAS is a proud member of  
 The Astronomical League



Next Meeting Thursday, January 17th, 7:00 p.m.

## Telescope Workshop

Our January 17th meeting will be our annual telescope workshop, where we invite anyone with a telescope they'd like to tune up or just learn how to use to bring it to us for assistance. This invitation is open to club members as well as the general public, so if you've got a scope that needs help or you need help learning your scope, bring it to the meeting!

Since we didn't have a swap meet in December, this would be a good time to bring any gear you want to offer for sale or trade.

This is also a good opportunity to just hang out and visit with fellow club members in a warm and comfortable environment. Come join the fun!

The meeting is at 7:00 on Thursday, January 17th at the Science Center planetarium. People with scopes are encouraged to bring them a little early. We'll be happy to help carry them in from the parking lot.

### 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, Springfield, OR 97475. Dues are still the same low \$25 they've been for years. Make your checks payable to Eugene Astronomical Society.

## Next First Quarter Friday: January 11th

Our December 14th star party was clouded out, as was our backup star party on the 15th. Not surprising for this time of year.

Our next attempt will be January 11th. 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 2018 and on into 2019. Star parties start at dusk or 6:00, whichever is later. (6:00 in January.)

January 11 (29% lit)  
 April 12 (54% lit)  
 July 5 (19% lit)  
 October 4 (44% lit)

February 8 (15% lit)  
 May 15 (68% lit)  
 August 9, (75% lit)  
 November 1 (28% lit)

March 15 (68% lit)  
 June 7 (27% lit)  
 September 6 (61% lit)  
 December 6 (76% lit)

# December 20th Meeting Report

## The Winter Solstice and Demo of Revolution 2 Imager

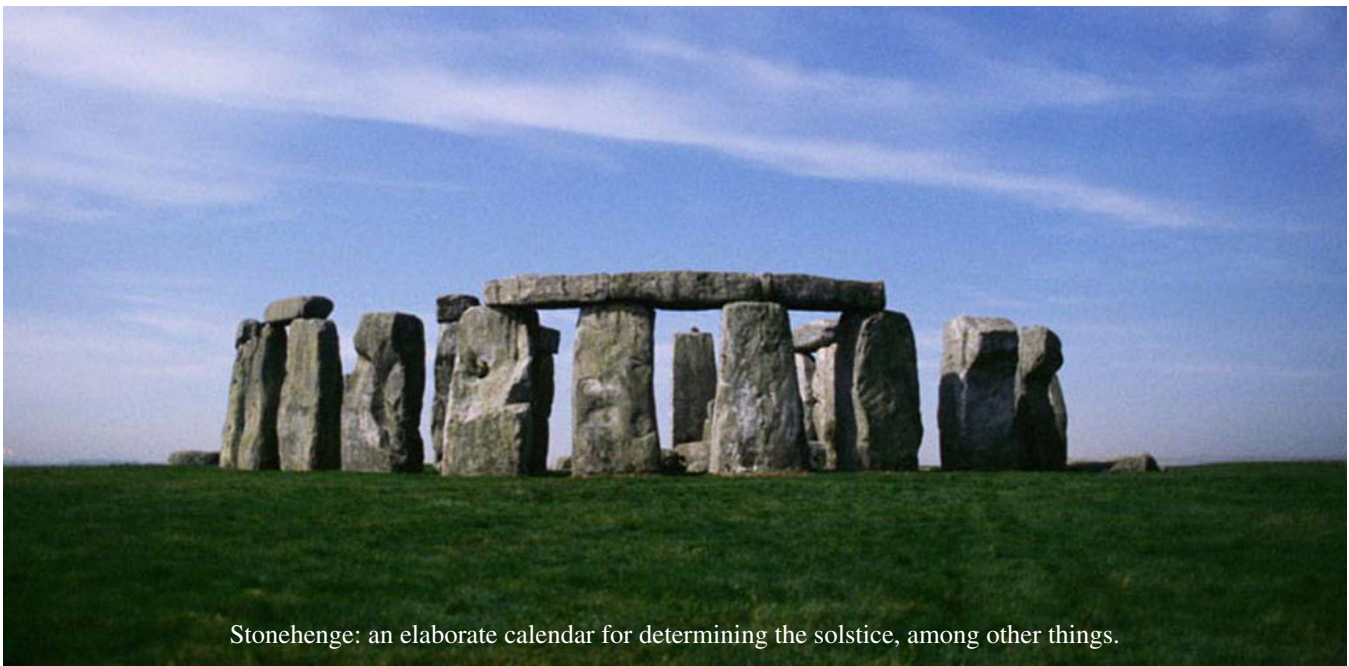
by Jerry Oltion

At our December 20th meeting, Jerry Oltion gave a demonstration of the club's new Revolution 2 imager, which replaces the eyepiece in any telescope and displays what the telescope is aimed at on a 7" video screen. The plan is to use this at star parties to provide a better view of nebulae and galaxies that can no longer be seen through the city's light pollution. The imager worked flawlessly inside the planetarium, and has done well outside at night, too. There are quite a few controllable parameters, such as shutter speed, gain, and stacking to adjust, so there's a bit of a learning curve, but it certainly seems learnable.

After the camera demonstration, Jerry gave a slide show about the winter solstice. He talked about what the solstice is, how the orbital geometry works, how people have built elaborate structures (such as Stonehenge) to determine the time of the solstice, and how societies worldwide celebrate the turning point of the Sun.

Jerry then took us on a tour of the solar system, showing which planets have axial tilt, and thus solstices, and which don't. It turns out that Mars, Saturn, and Pluto are most like Earth in their obvious seasons, while Venus, Mercury, Jupiter, and Neptune have nothing like seasons. Uranus is an outlier with way more axial tilt (98°!) than the other planets, giving it extreme seasons that last 21 years each.

The winter solstice is a turning point in the grand cycle of the seasons, the point where the Sun stops dropping in the sky (that's what "solstice" means) and starts rising again toward warmer weather. Small wonder it's celebrated all over the world. Happy winter solstice festival to all!



Stonehenge: an elaborate calendar for determining the solstice, among other things.



### Thank You Storage Junction

Storage Junction has donated the use of a storage unit for us to hold our loaner telescopes when they're not in use. EAS would like to thank Storage Junction for their generosity and support for our group. Please give them a call if you need a storage space, and tell your friends. Storage Junction is located at 93257 Prairie Road (at the intersection of Hwy 99 and Hwy 36, 3 miles south of Junction City) Phone: 541-998-5177

# Total Lunar Eclipse January 20th

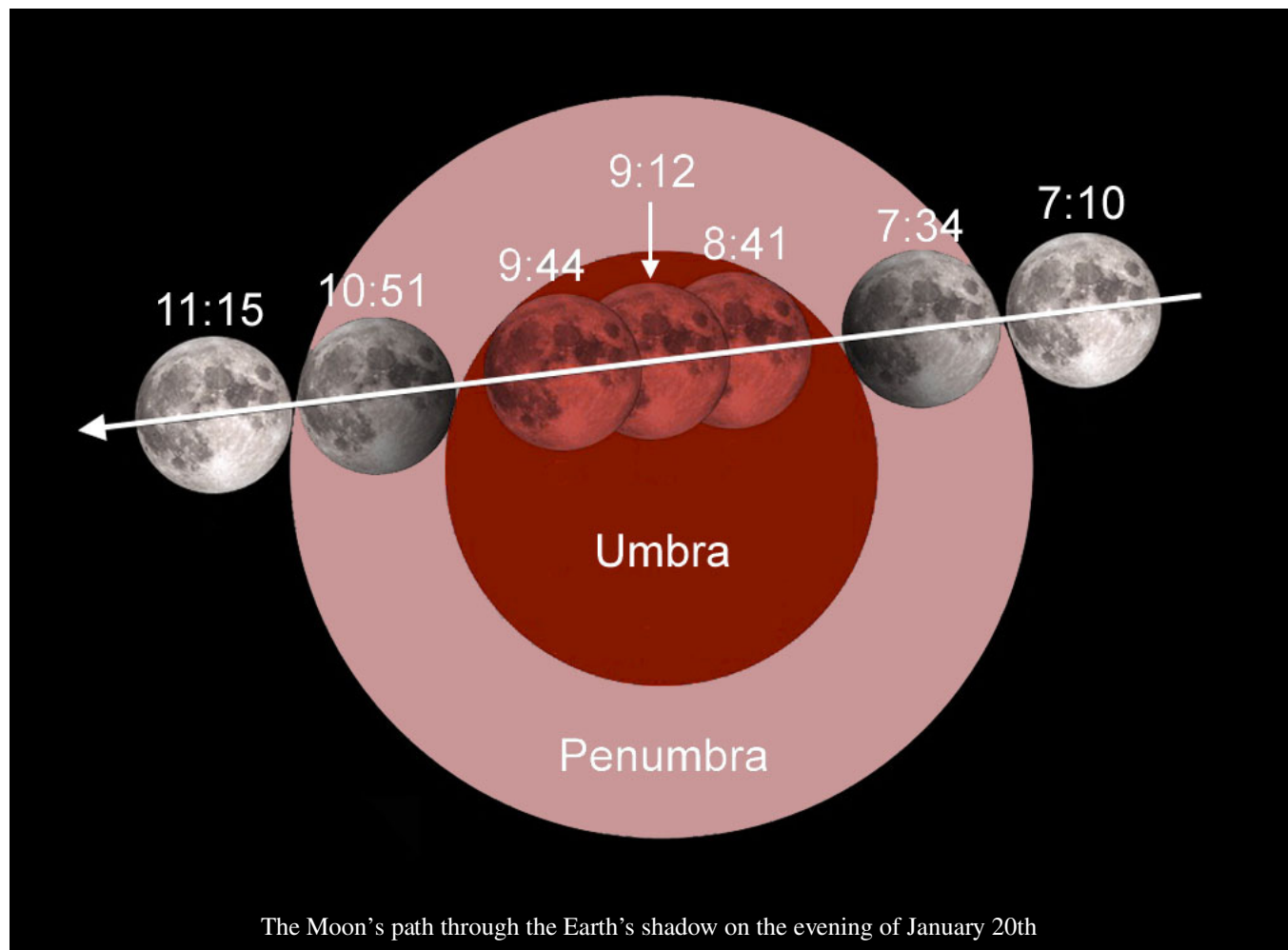
The Moon is typically eclipsed by Earth's shadow a couple times a year, but those eclipses often happen at awkward times. Last January's eclipse was in the wee hours of the morning, and last July's was only visible on the other side of the planet. But this year, the January eclipse is perfectly timed for the western United States.

Here in Eugene we'll see the Moon first touch the penumbra of Earth's shadow at 7:10 p.m. That part won't be very apparent to the eye, but the partial phase starts at 7:34 p.m. and that will be dramatic as the shadow takes a solid bite out of the Moon's eastern edge. That shadow will cover more and more of the Moon's face until totality, which will begin at 8:41. The Moon doesn't dip deeply into Earth's shadow this time, but totality does last just over an hour, peaking at 9:12 and ending at 9:44. The exiting partial phase will last until 10:51. The penumbral eclipse will last until 11:15, but won't be apparent to the eye.

We're planning to host an eclipse party at the College Hill Reservoir. Depending on the Science Center's plans, we may deploy telescopes there, too. Come join us for the fun! Bring your telescope, a pair of binoculars, or just a lawn chair to sit in and enjoy the spectacle. The party will probably start about 7:00ish and last until 11:00 if we don't dew up first. The eclipse will be visible from anywhere, though, so if you can't make the party, still make a point to get out and have a look wherever you are.

The Moon will only be 5-6° away from the Beehive cluster during the eclipse, which will provide us with an excellent view of a big open cluster when the sky darkens enough to reveal it.

Don't miss this eclipse! If it's cloudy in Eugene, it's worth driving a ways to find a clear spot.



The Moon's path through the Earth's shadow on the evening of January 20th

# Photo and Sketch Gallery

Mel Bartels and Alan Gillespie continued to sketch and photograph their observations in December.

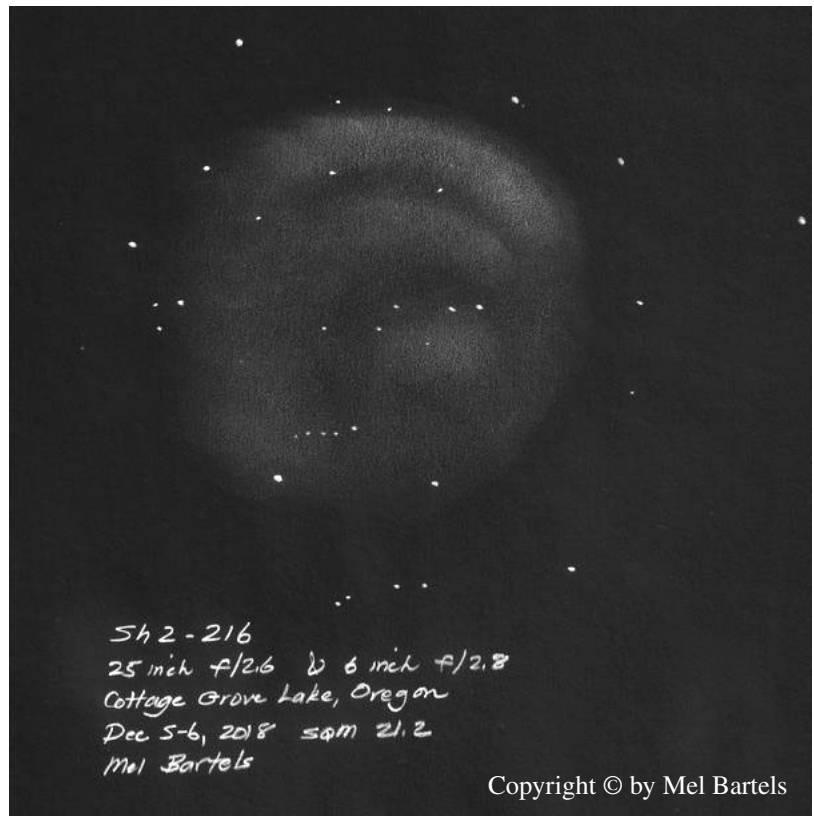
Mel made a great sketch of Sharpless 2-216, an extremely large but dim planetary nebula in Perseus that he was able to tease out with both his 25" scope and his 6" scope. Considering that this nebula is often considered unobservable without photography, that's quite an accomplishment!

Mel also caught the Andromeda Parachute, a quadruply lensed quasar that's marginally easier. (Maybe a dozen other people have also seen this one!)

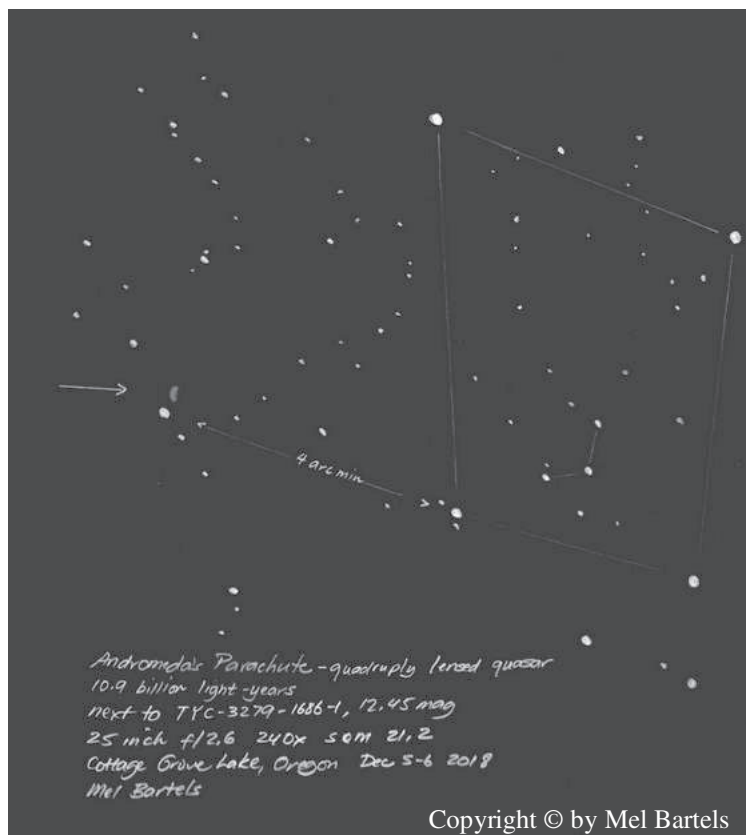
And not surprisingly, he also found more Integrated Flux Nebula around M33 in Triangulum.

Alan Gillespie caught the nearly full Moon rising and higher in the sky on December 21st.

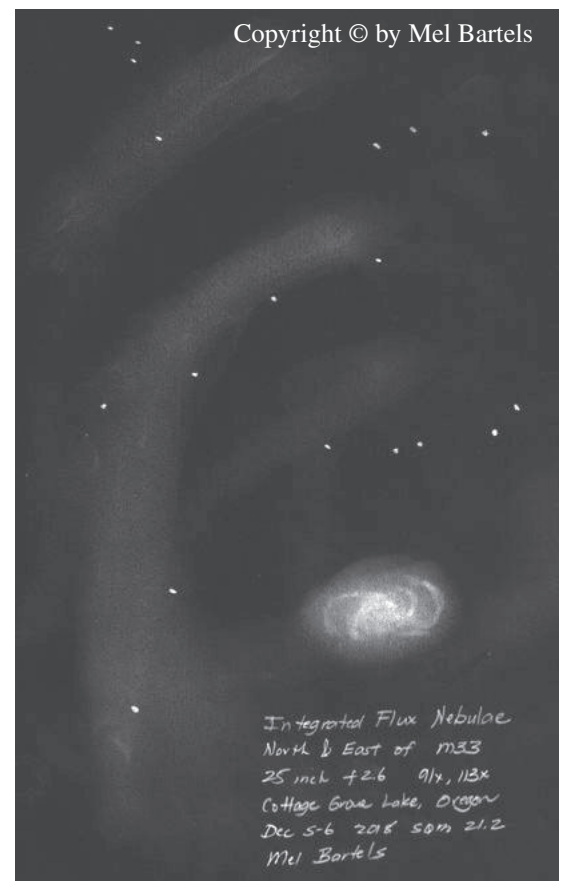
Good work, guys! Keep 'em coming.



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Copyright © by Alan Gillespie

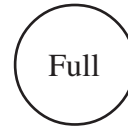


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# Observing in January



Jan 5, 5:28 PM	Jan 13, 10:46 PM	Jan 20, 9:16 PM	Jan 27, 1:10 PM
Mercury Rise: 6:53 AM	Mercury Rise: 7:17 AM	Mercury lost in Sun	Mercury lost in Sun
Venus Rise: 4:02 AM	Venus Rise: 4:12 AM	Venus Rise: 4:22 AM	Venus Rise: 4:31 AM
Mars Set: 11:31 PM	Mars Set: 11:28 PM	Mars Set: 11:26 PM	Mars Set: 11:23 PM
Jupiter Rise: 5:25 AM	Jupiter Rise: 5:02 AM	Jupiter Rise: 4:41 AM	Jupiter Rise: 4:19 AM
Saturn lost in Sun	Saturn lost in Sun	Saturn Rise: 6:43 AM	Saturn Rise: 6:18 AM
Uranus Set: 1:45 AM	Uranus Set: 1:14 AM	Uranus Set: 00:47 AM	Uranus Set: 00:20 AM
Neptune Set: 9:49 PM	Neptune Set: 9:19 PM	Neptune Set: 8:52 PM	Neptune Set: 8:26 PM
Pluto lost in Sun	Pluto lost in Sun	Pluto lost in Sun	Pluto lost in Sun

All times Pacific Standard Time (November 4, 2018 - March 9, 2019 =UT -8 hours) or Pacific Daylight Time (March 10 - Nov. 2, 2019 = UT -7 hours)

Date	Moon Rise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
1/1/2018	03:30	14:02	06:03	07:47	16:45	18:29
1/2/2018	04:34	14:36	06:03	07:47	16:46	18:30
1/3/2018	05:36	15:14	06:03	07:47	16:47	18:31
1/4/2018	06:34	15:57	06:03	07:47	16:48	18:32
1/5/2018	07:28	16:46	06:03	07:47	16:49	18:33
1/6/2018	08:15	17:39	06:03	07:47	16:50	18:34
1/7/2018	08:57	18:35	06:03	07:47	16:51	18:34
1/8/2018	09:33	19:33	06:03	07:47	16:52	18:35
1/9/2018	10:04	20:33	06:03	07:46	16:53	18:36
1/10/2018	10:32	21:32	06:03	07:46	16:54	18:37
1/11/2018	10:58	22:32	06:03	07:46	16:55	18:38
1/12/2018	11:22	23:33	06:03	07:45	16:56	18:39
1/13/2018	11:47		06:02	07:45	16:58	18:40
1/14/2018	12:13	00:35	06:02	07:45	16:59	18:41
1/15/2018	12:42	01:40	06:02	07:44	17:00	18:42
1/16/2018	13:15	02:47	06:01	07:44	17:01	18:43
1/17/2018	13:54	03:56	06:01	07:43	17:02	18:45
1/18/2018	14:42	05:06	06:01	07:42	17:04	18:46
1/19/2018	15:40	06:14	06:00	07:42	17:05	18:47
1/20/2018	16:48	07:15	06:00	07:41	17:06	18:48
1/21/2018	18:03	08:09	05:59	07:40	17:08	18:49
1/22/2018	19:21	08:55	05:58	07:40	17:09	18:50
1/23/2018	20:38	09:33	05:58	07:39	17:10	18:51
1/24/2018	21:53	10:07	05:57	07:38	17:12	18:52
1/25/2018	23:05	10:37	05:57	07:37	17:13	18:53
1/26/2018		11:06	05:56	07:36	17:14	18:55
1/27/2018	00:14	11:35	05:55	07:35	17:16	18:56
1/28/2018	01:22	12:05	05:54	07:34	17:17	18:57
1/29/2018	02:27	12:38	05:53	07:33	17:18	18:58
1/30/2018	03:30	13:14	05:53	07:32	17:20	18:59
1/31/2018	04:29	13:55	05:52	07:31	17:21	19:01

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

## Items of Interest This Month

- Mars is the only bright planet left in the evening sky this month. Note how its set time above hardly changes as it moves eastward in the sky at almost the same pace as the sky advances westward.
- This is a good month for the Orion Nebula. Try to see the extra stars in the Trapezium (there are two relatively easy ones.)
- The Horsehead Nebula is another good challenge this month. You'll need good dark sky. A hydrogen-beta filter helps immensely.
- 1/3 Earth at perihelion, 91,403,378 miles. Peak of Quadrantid meteors in early evening (very short peak of only 4 hours or so).
- 1/5 Venus at greatest western elongation, 47° from Sun, visible for several hours before sunrise.
- 1/11 First Quarter Friday star party.**
- 1/20 Total Eclipse of the Moon.** See p.3 for details.
- 1/22 Venus rises 2° north of Jupiter in morning. Good chance to see both in daylight later on in the day.
- 1/31 Venus 0.5° north of Moon 9:30 AM. 45° east of Sun. Good chance to see both by day.