

Eugene Astronomical Society



IO - July 2020

Eugene Astronomical Society
 Annual Club Dues \$25
 President: Andrew Edelen 618-457-3331
 Secretary: Jerry Olton 541-343-4758
 Additional Board members:
 Oggie Golub, Jim Murray, Ken Martin.

PO Box 50395
 Eugene, OR 97405
www.eugeneastro.org

EAS is a proud member of
 The Astronomical League



Next Meeting Thursday, July 16th, 7:00 p.m. (via Zoom) Forgotten Gems of Summer by Andy Edelen

Our June meeting via Zoom (see p.2 for report) was so successful that we're doing it again for July.

Taking full advantage of our new format, on July 16th Andy Edelen will give a presentation on "The Forgotten Gems of Summer." Almost everyone knows the Veil Nebula, the Wild Duck Cluster, and M22, but are you familiar with the Fetus Nebula, the Great Galactic Dark Horse, or the Ink Spot? Join us for an exploration of the overlooked, under-appreciated, and just plain unknown objects lurking among the constellations of summer.

This will actually look better on Zoom than it would have in the planetarium with our projector, which tended to show deep sky objects darker than they really are. This time around you'll be able to clearly see what Andy's talking about, and will be tempted to get out there with your telescope and find these excellent summer objects yourself.

A few days before the meeting you will receive a Zoom invitation via our club email list, so if you want to attend the meeting but haven't joined the mailing list, do so now. Go to our website at www.eugeneastro.org and click on the "Mailing List" link at the top of the page.

Zoom is easy to use with either its dedicated (free) app or your browser. See you there!

Next First Quarter Friday May Be Live...Sort Of

We've been cancelling our First Quarter Friday star parties since March due to the social distancing requirements of the Covid virus precautions, but now that Lane County has reopened to Phase 2, we have the opportunity to host a real star party again. Sharing eyepieces and focusers and standing close to one another in the dark is probably not a good idea, but we're having a lively discussion on our email list about how we might be able to manage a star party with cameras in place of eyepieces and video screens to show people real-time views of Jupiter, Saturn, the Ring Nebula, the Whirlpool galaxy, etc. We wouldn't be sharing telescopes; we would be sharing the view from a safe distance.

If we can pull this off safely, it would be a major coup for everyone. Our club's mandate, stated in black and white in our mission statement, is to share the view of the night sky with the public, and we've been sorely missing that opportunity in recent months. The people who frequent our star parties have likewise been missing the opportunity to view the sky's many wonders through our telescopes, and missing the camaraderie of getting together at night to talk astronomy, cosmology, UFOs, and even astrology with knowledgeable skeptics and other true believers. If we can make this work — safely — this will go a long

way toward returning to normal some of our club activities that have been severely impacted by the quarantine requirements of the Covid crisis.

To be clear: We won't do this if we can't do it safely. We want to make sure that anything we do is within the guidelines in effect at the time. But if the state and/or county guidelines allow us to gather, we should be able to show people real-time images of astronomical objects without the danger of touching equipment that's been touched by others.

Plans will evolve on our email list as we figure this out. It's not a sure thing, but it's a definite possibility, one that has most of us really excited about the chance to share the view of the night sky again. So keep an eye on developments this month, and hopefully if we all work together to make this happen, we can actually have a star party on July 24th. And if that works out, it's possible that we could do a similar star party in Dexter State Park for our annual dark sky star party in August.

Here are our scheduled dates for the rest of the year:

July 24 (24% lit)
September 25 (71% lit)
December 18 (23% lit)

August 15: Dexter Dark Sky Party
October 23 (56% lit)

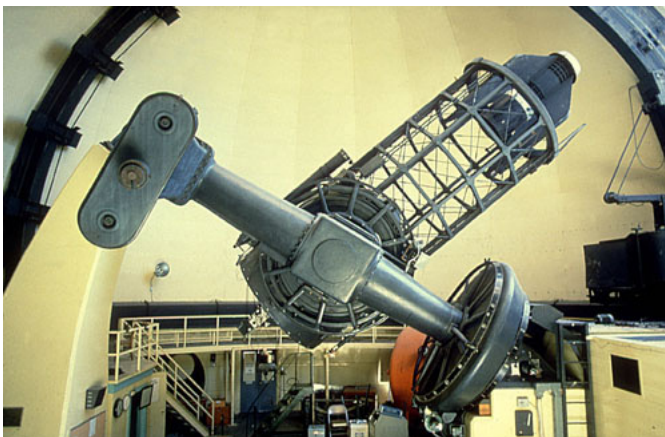
August 28 (84% lit)
November 20 (39% lit)

June Meeting Report

The Last Great Refractors and the First Great Reflectors: the Telescopes of the Warner & Swayse Company by Bernie Bopp

On June 18th, the EAS held its first virtual club meeting. With the capable help of our Zoom Mistress, Amy Baker, Bernie Bopp gave a knock-out presentation on the Warner & Swayse Company, makers of some of the most iconic telescopes in history.

Warner & Swayse were most well known as makers of tools, not telescopes. They were famous for their milling machines and turret lathes. But their machining expertise led them to also build over thirty large astronomical refractors and reflectors, including the 36-inch Lick and 40-inch Yerkes refractors as well as the 82-inch Struve reflector at McDonald



The 82-inch Struve reflector at McDonald Observatory.



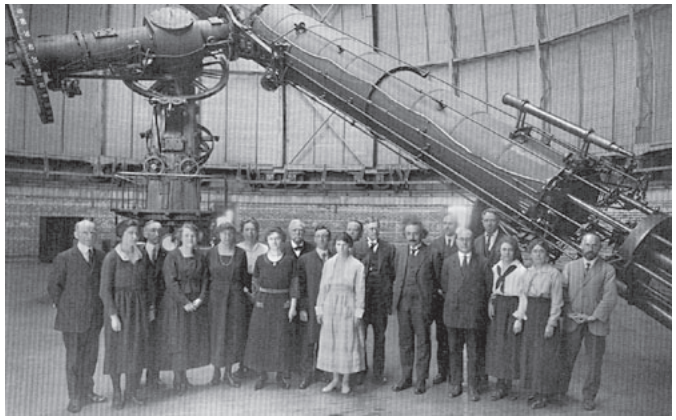
The 40-inch refractor at Yerkes Observatory.

Observatory. They didn't make the optics — the lenses were generally made by Alvan Clark & Sons and the mirrors by various optical firms — but the mounts and optical tube assemblies were Warner & Swayse designed and built. For fifteen years, three out of four of the world's largest reflectors had been built by Warner and Swayse.

Bernie showed us photos of many of these grand old telescopes, many of them still in use today. Alas, many of them have been superceded by larger and more modern designs, and have fallen into disuse and disrepair. Fortunately many of these scopes are being rescued by amateur astronomy and historical groups and now serve as important public outreach and education tools.

It was a wonderfully informative meeting, and Bernie kept us well entertained with stories about these great telescopes and the company that built them. We had about 50 people attending, and the video sharing technology worked well for us.

A big "Thank you" to Bernie for pioneering this new method of doing astronomy club meetings, and to Amy for helping us get it all set up. Join us again on July 16th for our next Zoom meeting.



The 40-inch Yerkes refractor with its support staff and assorted dignitaries, including Albert Einstein.

June Observing Report and Information on New Observing Sites

June was exceptionally cloudy this year, but several of us still managed to get out for a few days at the beginning of the month and again toward the end.

Alas, our Eureka Ridge site is off-limits to us through the summer months, as Roseburg Resources, the owner of the land, doesn't allow any motorized access on their land during fire season. But Loren and Donna Reimers have found a new site just a little bit farther afield, and we have good news about two of our other observing sites.

The new site is just a few bends in the road below Oxbow Summit, 19.5 miles into the Coast Range on Wolf Creek Road. You'll be on South Sister Road by the time you get there, but if you start on Wolf Creek



The Oxbow Bend site, so named because it's on a bend in the road just below Oxbow Summit.

Road where it meets Territorial Highway just south of the town of Crow and stay on the main road whenever there's a choice (going left at the only fork that might be questionable), you'll arrive there in 19.3 miles.

The site is a wide pull-out on the outside bend of a right-hand turn in the road as it climbs toward Oxbow Summit. The summit itself is another possible observing site, but the lower site seems more likely to be shielded from wind, which was the case on the nights that we tried it. The sky is good and dark, with sky quality readings in the 21.5 range, and the Milky Way is easily visible overhead. The Eugene skyglow is visible to the northeast, but isn't bad.

The road is paved the entire way. It's a bit twisty for the last several miles, but easily driveable. It's almost exactly an hour from the center of Eugene, so no worse than driving to Linslaw or Eagle's Ridge. Headlights from cars on the road could be a temporary problem, but while we were observing there, no traffic went by.

On the east side of town, the area known as the Amphitheater, 1.8 miles up Eagle's Rest Road, has been extensively clearcut to the north and west. That has opened up a big swath of sky for observing, making this site much better than before (and it was pretty good before).

The actual observing site is again just a wide spot in the road, with room for about four cars, maybe



The freshly clearcut Amphitheater site 1.8 miles up Eagle's Rest Road

six if we pack tightly. The clearcut extends down to the distant horizon, which means the Eugene/Springfield skyglow is fairly evident to the northwest, but it's not overly objectionable. Given that this site is only 35-40 minutes from downtown Eugene, it makes a great site for a quick night out.

A little farther afield, we're happy to report that Eagle's Ridge is still a viable site. The trees are a little taller this year, but still not much in the way, and both the road junction and the spur road are still in great shape. We cleared the brush from the road going up, and the gravel is in as good a shape as ever, so Eagle's Ridge continues to be a decent observing



The Eugene Skyglow to the northwest of the Amphitheater



Eagle's Ridge spur road June 25th. As Robert Asumendi says, "I will trade our 0.1 hit in SQM for the field of daisies."

site. Sky Quality Meter (SQM) readings on the night of June 25 reached 21.52 at 1:00 (true midnight).

Plus — and this is a big plus — the entire area around the spur road and quite a few other spots on the drive up are covered with daisies. How can you not love that?

On June 25th in order to better practice social distancing we had observers at three different sites: Eagle's Ridge, the Amphitheater, and Linslaw. We took sky quality readings every hour in all three sites, finding that Linslaw was the darkest by about 0.1 magnitudes per square arc-second over Eagle's Ridge, which was darker than the Amphitheater by about another 0.1 magnitude. The Amphitheater was a full 1.2 magnitudes darker than Jerry Olton's driveway at the edge of Eugene half an hour later, so any of these sites is far better than in town.

So despite losing access (at least for now) to Eureka Ridge, we still have four good out-of-town sites to observe from. And July is not usually cloudy. Enjoy!

Gallery

June was mostly cloudy, but despite the poor weather several people did get some good photographs, including one from a new source: Ronald Perez. Welcome, Ronald, to our photo gallery!



Moonrise 6/4/20. Photo © by Alan Gillespie



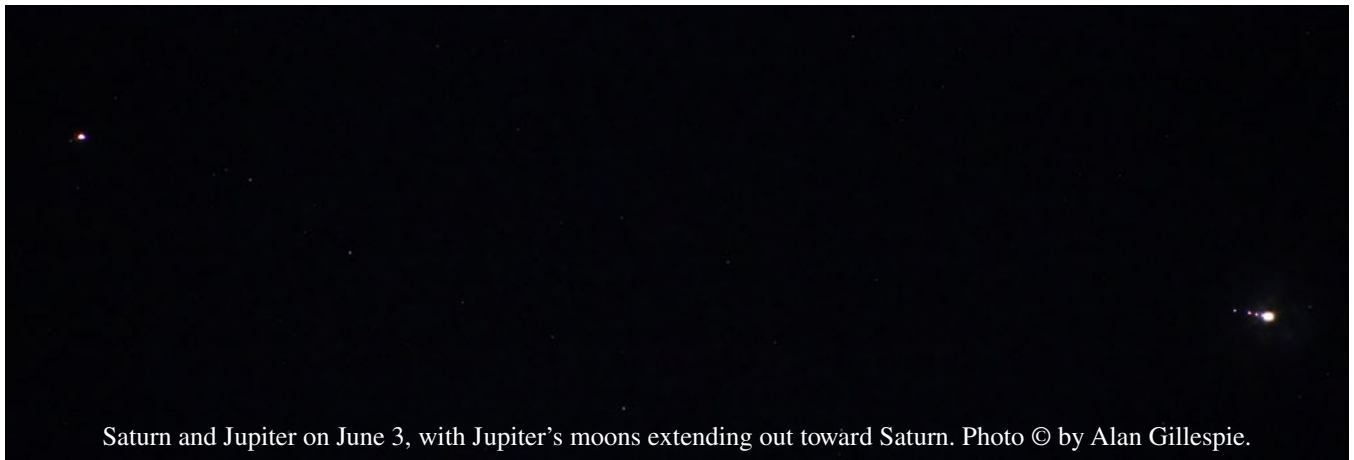
Crescent moon with Earthlight 6/24/20.
Photo © by Alan Gillespie



Noctilucent clouds on the way home from Linslaw on June 22. Photo by Andy Edelen.



The Cygnus Wall portion of the North America Nebula. Photo © by Ronald Perez.



Saturn and Jupiter on June 3, with Jupiter's moons extending out toward Saturn. Photo © by Alan Gillespie.



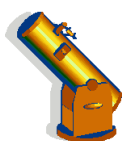
M13 on June 1st. Extremely deep photo © by Mark Wetzel. Zoom in on this one!



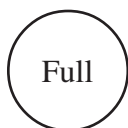
Alan Gillespie captured this image of the Moon-Venus conjunction on the morning of June 19th. The Moon was only 3% illuminated, and it had just occulted Venus about four hours earlier (which unfortunately happened below our horizon.) If you zoom in a little, you can see that Venus is also in a crescent phase, but much farther along due to its angle with respect to the Sun. Photo © by Alan Gillespie



M101 on June 23 & 24. Photo © by James Pelley.



Observing in July



Full



Last Q



New



1st Q

July 4, 9:44 PM	July 12, 4:29 PM	July 20, 10:33 AM	July 27, 5:33 AM
Mercury lost in Sun	Mercury Rise: 4:51 AM	Mercury Rise: 4:26 AM	Mercury Rise: 4:25 AM
Venus Rise: 3:31 AM	Venus Rise: 3:12 AM	Venus Rise: 2:58 AM	Venus Rise: 2:49 AM
Mars Rise: 00:43 AM	Mars Rise: 00:22 AM	Mars Rise: 11:58 PM	Mars Rise: 11:39 PM
Jupiter Rise: 9:26 PM	Jupiter Rise: 8:52 PM	Jupiter Set: 5:22 AM	Jupiter Set: 4:50 AM
Saturn Rise: 9:47 PM	Saturn Rise: 9:13 PM	Saturn Set: 5:59 AM	Saturn Set: 5:29 AM
Uranus Rise: 1:51 AM	Uranus Rise: 1:20 AM	Uranus Rise: 00:49 AM	Uranus Rise: 00:22 AM
Neptune Rise: 00:04 AM	Neptune Rise: 11:29 PM	Neptune Rise: 10:57 PM	Neptune Rise: 10:30 PM
Pluto Rise: 9:32 PM	Pluto Rise: 9:00 PM	Pluto Set: 5:30 AM	Pluto Set: 5:02 AM

All times Pacific Standard Time (November 1, 2020 - March 14, 2021 = UT -8 hours) or Pacific Daylight Time (March 8 - Oct 31, 2020 = UT -7 hours)

Date	Moon Rise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
7/1/2020	17:34	02:50	03:10	05:34	20:59	23:22
7/2/2020	18:48	03:25	03:11	05:34	20:59	23:21
7/3/2020	19:57	04:07	03:12	05:35	20:59	23:20
7/4/2020	20:59	04:56	03:13	05:35	20:58	23:20
7/5/2020	21:51	05:54	03:15	05:36	20:58	23:19
7/6/2020	22:34	06:57	03:16	05:37	20:58	23:18
7/7/2020	23:08	08:03	03:17	05:38	20:57	23:17
7/8/2020	23:37	09:09	03:19	05:38	20:57	23:15
7/9/2020		10:14	03:20	05:39	20:56	23:14
7/10/2020	00:01	11:17	03:22	05:40	20:56	23:13
7/11/2020	00:24	12:18	03:23	05:41	20:55	23:12
7/12/2020	00:45	13:18	03:25	05:41	20:54	23:10
7/13/2020	01:06	14:19	03:26	05:42	20:54	23:09
7/14/2020	01:28	15:21	03:28	05:43	20:53	23:08
7/15/2020	01:53	16:24	03:29	05:44	20:52	23:06
7/16/2020	02:22	17:28	03:31	05:45	20:52	23:05
7/17/2020	02:57	18:32	03:33	05:46	20:51	23:03
7/18/2020	03:39	19:33	03:34	05:47	20:50	23:02
7/19/2020	04:31	20:29	03:36	05:48	20:49	23:00
7/20/2020	05:32	21:17	03:38	05:49	20:48	22:58
7/21/2020	06:41	21:58	03:40	05:50	20:48	22:57
7/22/2020	07:54	22:33	03:42	05:51	20:47	22:55
7/23/2020	09:10	23:03	03:43	05:52	20:46	22:53
7/24/2020	10:25	23:30	03:45	05:53	20:45	22:51
7/25/2020	11:40	23:57	03:47	05:54	20:44	22:50
7/26/2020	12:54		03:49	05:55	20:43	22:48
7/27/2020	14:08	00:23	03:51	05:56	20:41	22:46
7/28/2020	15:23	00:52	03:53	05:57	20:40	22:44
7/29/2020	16:36	01:25	03:54	05:58	20:39	22:42
7/30/2020	17:46	02:03	03:56	05:59	20:38	22:40
7/31/2020	18:49	02:49	03:58	06:00	20:37	22:38

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

Items of Interest This Month

- 7/2 Ganymede shadow transit from Jupiter rise to 10:51 PM.
- 7/4 Earth at aphelion – farthest from Sun. Red Spot transits 10:12 PM.
- 7/5 Moon near Jupiter and Saturn.
- 7/6 Io shadow transit 10:37 PM – 00:54 AM.
- 7/8 Callisto (rare!) shadow transit 11:33 PM – 3:33 AM.
- 7/9 Ganymede shadow transit 11:31 – 2:51.
- 7/10-13 Venus within 2° of Aldebaran.
- 7/10 & 7/11 Star joins moons of Jupiter.
- 7/14 Jupiter at opposition – visible all night.
- 7/15 Pluto at opposition. Io shadow transit from Jupiter rise to 9:17 PM.
- 7/16 Europa shadow transit 7:43 – 10:31 PM. Red Spot transits 10:04 PM.
- 7/22 Mercury at greatest western elongation (visible in morning before sunrise).
- 7/20 Saturn at opposition.
- 7/22 Thin crescent Moon near Regulus at dusk. Io shadow transit 8:55 – 11:12 PM.
- 7/23 Europa shadow transit 10:18 – 1:06.
- 7/24 TENTATIVE - First Quarter Friday star party**
- 7/25 Callisto shadow transit 5:37 – 9:44 PM.
- 7/28-29 Delta Aquariid meteor shower.
- 7/29 Io shadow transit 10:50 PM – 1:07 AM.