Issue 2019-08

IO - August 2019

Eugene Astronomical Society
Annual Club Dues $25
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EAS is a proud member of
The Astronomical League

Next Meeting Thursday, August 15th, 7:00 p.m.

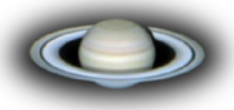
Life in Our Own Back Yard?
An Exploration Through the Solar System

by TJ Jensen

At our August 15th meeting, our very own TJ Jensen, who also volunteers at the planetarium, will give us an overview of what the planetarium does, how it's being renovated, and the type of programs it puts on. Then he'll take us on a trip through our solar system and speculate about the potential for life forms in the past, present and future. There are plenty of places on (and in) the other planets and their moons where life could have started, and may still be quietly going about its business today. In the far future, Earth will become uninhabitable as the Sun expands into a red giant; what might be a possible habitat for humanity — or its successors — then? Come to our August meeting and find out.

We encourage audience participation during our meetings. EAS meetings are traditionally times when we learn about astronomy and share others' experiences and knowledge of astronomy and the night sky. If you have something of astronomical interest to share with the group, please do so.

Club meetings are held at the Eugene Science Center planetarium, 2300 Leo Harris Parkway in Eugene (behind Autzen Stadium). Meetings start at 7:00 sharp. Come early to visit and get a seat.



For ongoing discussion of astronomical topics and impromptu planning of telescope outings, join the EAS mail list at www.eugeneastro.org
(Click on the Mailing List link.)
Also, subscribe to our free newsletter by clicking on the Newsletter link.

EAS Sponsors Clear Sky Charts

The EAS has donated $100 to help support the Clear Sky Charts that we use so often. Our donation helps keep the Eugene, Eagle's Rest, Eureka Ridge, and Linslaw Point Clear Sky Charts going. When you look at any of these charts, you'll see our club listed as their sponsor.

The Eugene Clear Sky Chart is at:
www.cleardarksky.com/c/EugeneORkey.html?1

July 18th Meeting Report

Apollo 11: A Time of Great Courage, by Bernie Bopp

Our June 18th meeting was two days before the 50th anniversary of the Apollo 11 landing on the Moon. Bernie Bopp, who worked on one of the experiments that went along on the mission, took us on a journey back to the 1960s and gave us a great talk about the spirit of the times that led to the United States making such a bold and audacious move.

It was by no means assured that we would succeed at landing anyone on the Moon and returning them home safely, especially within the decade as president Kennedy challenged us to do. We were behind the Russians in just about every significant aspect of the space race and we were struggling to define our values as a nation. But NASA and the engineers at many private aerospace companies poured everything they could into the program and achieved the seemingly impossible. On July 20th, 1969, Neil Armstrong and Buzz Aldrin became the first humans to walk on the surface of another world.

Armstrong and Aldrin also deployed several scientific experiment packages, among them the Lunar Ranging RetroReflector (LR3) that bounces laser beams back to the Earth to allow precise measurements of the distance between the Earth and the Moon. Bernie was on the team that developed that retroreflector, which is still being used today.

One thing that came through with enough force to bring tears to the eyes of most of us in the audience was the amount of dedication and effort and public support that went into the space program, even during a time when the country was fractured politically and struggling with the ethics of the Vietnam war. From our vantage point today it seems almost miraculous that the country could pull together the way it did and achieve what it did in such a short time, with such primitive (by our standards) equipment, in a time of such strife. As Bernie said, it was also a time of great courage. Thanks, Bernie, for such an inspiring talk!

Next First Quarter Friday: August 9th

Our July 12th star party was clouded out, except it cleared up a little after we cancelled so three people took scopes to the reservoir and were there for several people who showed up for a look at the Moon and Jupiter and a few other sights.

Our Saturday backup star party was much more heavily attended. We had 8-10 telescopes and maybe five times that many guests to look through them. Jupiter's moons were in an unusual parallelogram configuration and the Great Red Spot was easily visible, so that proved to be the most popular sight, at least until Saturn rose high enough to dominate everyone's attention.

The club's latest telescope, a classic Dobsonian that harkens back to the 1970s when the Dobsonian scope was first introduced, made its debut appearance on Saturday and proved to be a popular scope. See more on that scope on page 6.

Our next star party will be August 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 for the rest of the year. Star parties start at dusk or 6:00, whichever is later. (8:45 in August.)

August 9, (75% lit)
September 6 (61% lit)
October 4 (44% lit)
November 1 (28% lit)
December 6 (76% lit)

Dark Sky Star Party Report

In a word: WOW! Our annual Dark Sky Star Party at Dexter State park nearly doubled in size this year. We had an estimated 300+ people show up to share the view through about 30 telescopes. The parking lots were full, and the observing field was packed. The weather was perfect, too: clear as a bell and shirt-sleeve warm all night.

Jupiter put on a great show the moment we were able to find it in the twilight, with a shadow transit in progress and the Great Red Spot just swinging into view for a two-hour transit. Early viewers also got a special treat: watching Io slip off the face of Jupiter over the course of about 10-15 mintues. People were really impressed to see the solar system in motion in such an obvious way.

Amy Baker, Annette Brieske, and Cheryl Ernst ran the welcome table, covering flashlights with red filter material, answering questions, and handing out over 150 star maps and star party schedule cards.

Of course Saturn proved equally popular, along with other star party stalwarts like M5, M13, M51, and the Andromeda Galaxy. The sky read 21.10 on the sky quality meter, which is pretty good. The Milky Way was obvious overhead, and the North America Nebula could be seen by naked eye.

Kristin Polson shows Mike Curtin her new 18" telescope

Several new telescopes made their debut at the star party. Kristin Polson just got a new 18" Dob, which attracted many an admirer. Robert Asumendi brought the latest iteration of his “Drifter” binocular scope, this time with bright purple 3D-printed light shields and mounted on the 3D-printed pier mount he showed us at a club meeting a couple months ago. There were a couple of new scopes brought by people

who needed help figuring out how to use them, and several scopes from non- club members who nonetheless enjoyed being part of our star party. And the 1970s classic "tie dye" Dobsonian made another appearance, this time with Bruce Hindrichs running it.

Most of the scopes had lines behind them most of the night. Often people would work their way to the head of the line, admire the view for a minute or two, then go right back to the back of the same line to do it all over again. It was tough to move the scopes from object to object because the lines never ended.

In previous years the party wound down about midnight, but it was still going on strong at 1:00 this year, and many people didn't leave until closer to 2:00.

There were 85 entrants in our telescope giveaway. That, too, was way more than usual. We had three prizes: a 6" Orion Skyquest Dobsonian telescope and a 4.5" Orion Starblast telescope that the EAS bought brand new for the giveaway, and a copy of "Advanced Skywatching" donated by EAS member Al LePage. The telescope winners were also given complimentary membership in the EAS.

Robert Asumendi with the latest iteration of his "Drifter" binocular scope.

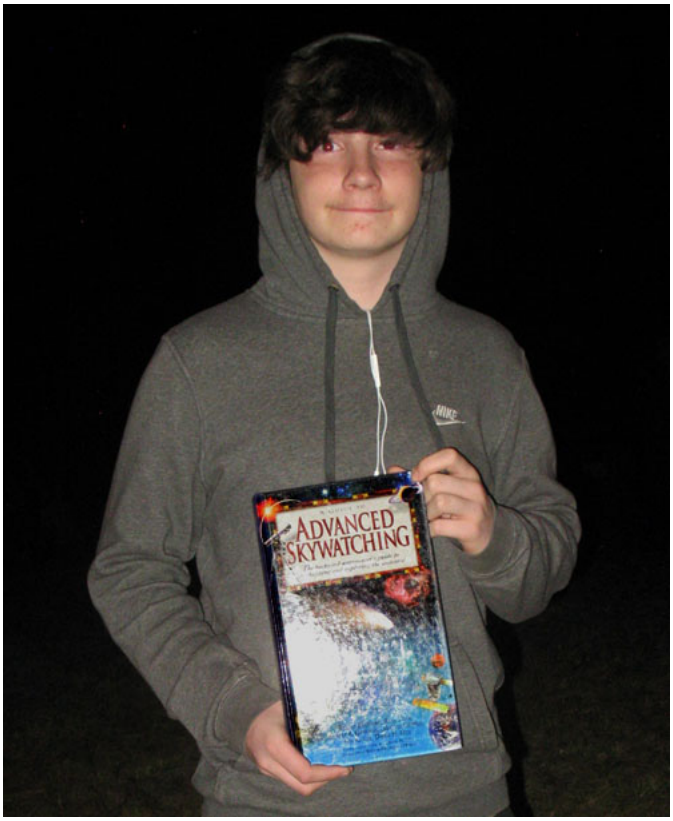
Bowe Johnson won the 6" Dobsonian.

Mike Curtin dressed approriately to admire the club's new classic Dobsonian.

All three winners seemed delighted with their prizes. While receiving instruction on how to use her new scope, Bowe, a 16-year-old Willamette High student, said that she had already been considering astrophysics as a major in college. This may be just the thing to push that interest into a full-time career.

It was an amazing night, one of the best star parties our club has ever hosted. The success is well deserved due to the hard work of everyone who helped promote it (a special thank-you to Robert Asumendi, who designed a beautiful poster and spearheaded its distribution) and everyone who helped put it on. The club really pulled together to make this a special night. Let's do it again next year!

Genevieve Jacobi won the 4.5" Starblast



David Kramer won the *Advanced Skywatching* book.

Bob Andersen with his Trackball scope

Wes Reynolds with a small refractor. In the background, a woman who needed help (and got it, thanks to Dan Beacham) with a small go-to refractor.

Finishing a Classic Dobsonian

by Jerry Oltion

Last October a guy named Kevin approached me at one of our Solar SUN-day star parties to ask if the club would be interested in a classic Dobsonian telescope that he'd begun in one of John Dobson's telescope classes back in the 1990s but had never finished. I was less than enthusiastic at first, wondering how rough the scope was and how difficult it might be to complete. But I said I'd have a look at it and either finish it for the club or find someone who would finish it for themselves.

When I saw the scope, I immediately fell in love with it. Everything about it was true to John Dobson's original design. It had an 8-inch f/6 mirror nestled down in the bottom of a four-foot cardboard Permaform concrete mold. It had roofing shingles holding the secondary mirror in place. It used a phonograph record for an azimuth bearing and sewer pipe caps for altitude bearings. The plywood base was built like a tank, and about as pretty. The mirror mount was a simple slab of plywood with three bolts through it for collimation, and four wooden blocks screwed to the side of the tube to keep the mirror from falling forward. The focuser was just a simple cardboard tube that you pulled and pushed by hand.

The telescope as it was donated.

Roofing shingles hold the secondary mirror in place.

And also true to scopes made in Dobson's six-week classes, the mirror itself had been rushed through the grits, leaving the outer half inch so badly pitted that the original owner had masked it off.

Since my shop isn't heated, I worked on the

The mirror stays screw to the inside of the cardboard tube.

mirror indoors first, taking it back to 30-micron grit and grinding all the pits out, then working my way forward through the grits and re-polishing and parabolizing it. I sent it off to be coated, and got back a nearly perfect mirror (he says modestly).

The mirror was so badly pitted that the outer half inch had to be masked off.

Then it was time to tackle the rest of the scope. The Permaform tube was heavily coated with wax on the outside. This was clearly a tube designed to be fit into a concrete foundation and leave a hole after the concrete was poured. The wax would prevent the concrete from sticking to the cardboard. Unfortunately it also kept paint from sticking, so I had to peel away the outer layer to remove the wax.

The ends of the tube had been pretty badly mushroomed during the decades in storage, so I covered them with 1/4" gas hose that had been split lengthwise.

The rubber end ring is made from a length of gas hose.

The mirror cell is just plywood with a cardboard cutout and some masonite blocks above three bolts for collimation.

Peeling the wax coating off.

With that done, it was time to paint it. Most of the Dobsonians I'd seen that were made in his classes were painted simple primary colors, and Dobson's whole point was to make things simple and cheap and to use materials already lying around if possible. I had some brown house paint and I found some green spray paint on deep discount, so I decided to paint the tube brown and the box green, sort of like an upside-down tree.

Can you say "Uuuugly?" Man, it was worse than a mud fence. I spare you a photo of it because it was so ugly I didn't take any pictures.

I was describing the epic failure to Robert Asumendi, who pointed out that the true original Dobsonians, even John Dobson's own scopes, were

painted in relatively garish, wild, hippie-style colors. So I re-thought the whole equation, re-painted the tube primer white, then using some leftover fluorescent spray paint from a kite project I did a few years ago, I painted it up like a tie-dyed T-shirt.

That left the rocker box. I was loath to waste the green paint, since I'd actually bought that (with EAS money!), so I decided to use it as the background for a field of flowers. Of course they had to be hippie-dippy flowers, straight out of Rowan and Martin's Laugh-in. (Look it up, youngsters.)

The result is the scope you see here, a fitting instrument for a Eugene-based club. I took it to July's First Quarter Friday and it proved to be a real hit, and it also got a lot of favorable attention at our Dark Sky Star Party at Dexter State Park.

The flashy package wouldn't mean much if the view through it wasn't any good, but thanks to the reground and repolished mirror, it's sharp as a tack. The long focal length is very forgiving, even with the eyepiece that I robbed out of an old pair of binoculars (another of Dobson's cost-saving measures). It's a planet killer, offering high-contrast and high-magnfication views, and it's a great double-star splitter. I've split a 1.5 arc-second double with it, and I think the scope will do even better on a night of good seeing.

Best of all, this scope is going into our lending program. Once I turn it loose, you could borrow it and have your own hippie-dippy Eugene-camouflage 8" Dob, at least for a while.

You have to promise to take it to star parties, though. A scope this colorful needs to be seen.

Jerry with the finished scope.

Painting hippie flowers on the rocker box.

One Last Big "Thank You!" to Storage Junction

STORAGE JUNCTION

For the last four years, Storage Junction in Junction City has donated the use of a storage unit for us to hold our loaner telescopes when they're not in use. They finally ran out of space and needed the unit for paying customers, and at the same time we have reduced our storage needs enough to get by with spare room in a few club members' garages, so we've let the unit go. But EAS would like to thank Storage Junction for their generosity and support for our group for so long. 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

Gallery

The weather in July cooperated well for astrophotography and for sketching. Alan Gillespie, Karmin Peterson, Jim Pelley, and Mel Bartels all got some nice images. Zoom in a bit and enjoy!

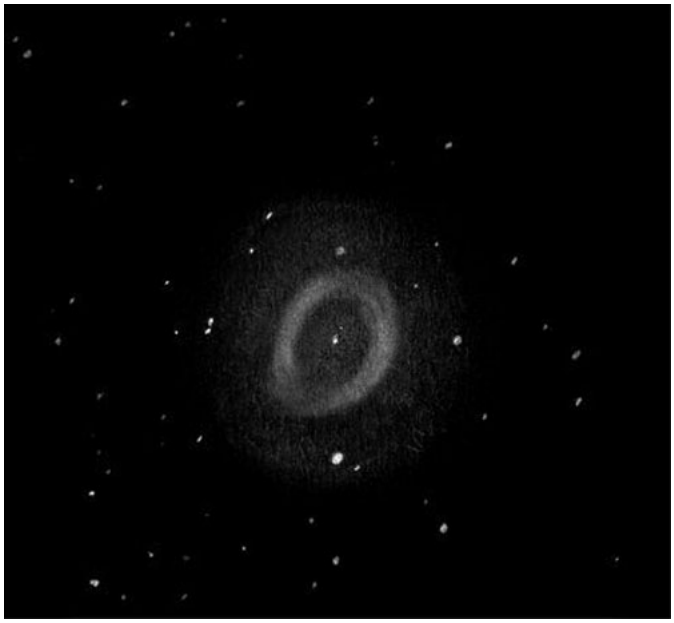
The Earthlit Moon in the crescent Moon's arms on July 5th. Photo © by Alan Gillespie.

M27, the Dumbbell Nebula. Photo © by Karmin Peterson

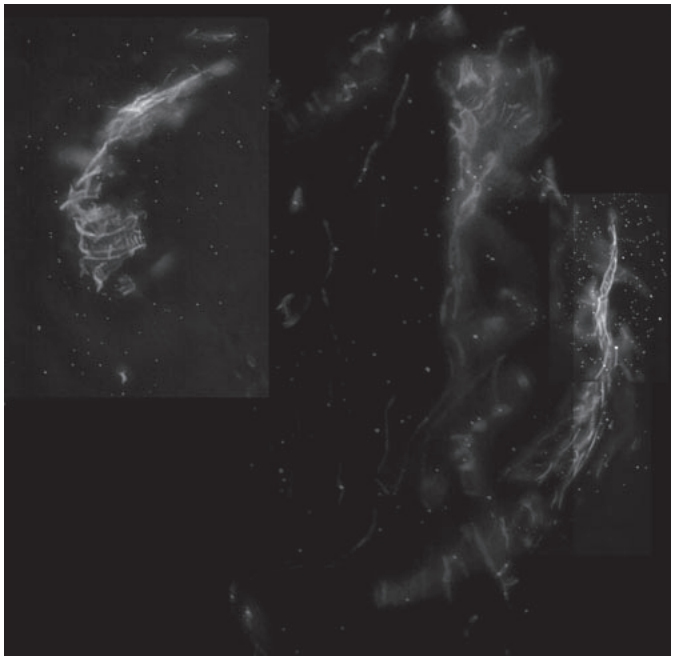
IC 5146 - The Cocoon Nebula. Photo © by James Pelley.

NGC 7635 (the Bubble Nebula) and open cluster M52.. Photo © by James Pelley.

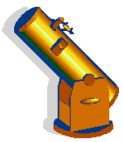
The Trifid Nebula. Photo © by Karmin Peterson.



The Ring Nebula as seen in Mel's 25" scope. showing the extended halo that's usually ony visible in photographs..
Sketch © by Mel Bartels



The Veil Nebula as seen in Mel's 25" scope.
Sketch © by Mel Bartels



Observing in August

1st Q 

Last Q 

Aug 7, 10:31 AM	Aug 15, 5:29 AM	Aug 23, 7:56 AM	Aug 30, 3:37 AM
Mercury Rise: 4:39 AM	Mercury Rise: 4:45 AM	Mercury Rise: 5:22 AM	Mercury Rise: 6:07 AM
Venus Lost in Sun	Venus Lost in Sun	Venus Lost in Sun	Venus Set: 8:08 PM
Mars Set: 8:55 PM	Mars Set: 8:35 PM	Mars Lost in Sun	Mars Lost in Sun
Jupiter Set: 1:34 AM	Jupiter Set: 1:03 AM	Jupiter Set: 00:32 AM	Jupiter Set: 00:05 AM
Saturn Set: 3:46 AM	Saturn Set: 3:12 AM	Saturn Set: 2:39 AM	Saturn Set: 2:10 AM
Uranus Rise: 11:28 PM	Uranus Rise: 10:57 PM	Uranus Rise: 10:25 PM	Uranus Rise: 9:58 PM
Neptune Rise: 9:44 PM	Neptune Rise: 9:12 PM	Neptune Rise: 8:40 PM	Neptune Rise: 8:12 PM
Pluto Set: 4:13 AM	Pluto Set: 3:41 AM	Pluto Set: 3:08 AM	Pluto Set: 2:40 AM

All times Pacific Daylight Time (March 10 - Nov. 2, 2019 = UT -7 hours) or Pacific Standard Time (November 3, 2019 - March 8, 2020 = UT -8 hours)

Date	Moon Rise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
8/1/2019	06:31	21:27	03:58	06:00	20:36	22:38
8/2/2018	07:49	22:04	04:00	06:01	20:35	22:36
8/3/2019	09:07	22:36	04:02	06:03	20:34	22:34
8/4/2019	10:24	23:06	04:04	06:04	20:33	22:32
8/5/2019	11:38	23:34	04:06	06:05	20:31	22:29
8/6/2019	12:51		04:08	06:06	20:30	22:27
8/7/2019	14:01	00:03	04:09	06:07	20:29	22:25
8/8/2019	15:10	00:34	04:11	06:08	20:27	22:23
8/9/2019	16:15	01:09	04:13	06:09	20:26	22:21
8/10/2019	17:16	01:47	04:15	06:10	20:24	22:19
8/11/2019	18:12	02:32	04:17	06:12	20:23	22:17
8/12/2019	19:00	03:21	04:19	06:13	20:21	22:15
8/13/2019	19:42	04:16	04:20	06:14	20:20	22:13
8/14/2019	20:18	05:14	04:22	06:15	20:18	22:11
8/15/2019	20:48	06:14	04:24	06:16	20:17	22:08
8/16/2019	21:15	07:14	04:26	06:17	20:15	22:06
8/17/2019	21:40	08:15	04:27	06:18	20:14	22:04
8/18/2019	22:03	09:14	04:29	06:19	20:12	22:02
8/19/2019	22:26	10:14	04:31	06:21	20:11	22:00
8/20/2019	22:50	11:15	04:33	06:22	20:09	21:58
8/21/2019	23:15	12:16	04:34	06:23	20:07	21:55
8/22/2019	23:45	13:19	04:36	06:24	20:06	21:53
8/23/2019		14:24	04:38	06:25	20:04	21:51
8/24/2019	00:19	15:30	04:39	06:26	20:02	21:49
8/25/2019	01:01	16:34	04:41	06:27	20:01	21:47
8/26/2019	01:52	17:35	04:43	06:29	19:59	21:45
8/27/2019	02:53	18:29	04:44	06:30	19:57	21:42
8/28/2019	04:03	19:17	04:46	06:31	19:56	21:40
8/29/2019	05:20	19:57	04:47	06:32	19:54	21:38
8/30/2019	06:39	20:32	04:49	06:33	19:52	21:36
8/31/2019	07:59	21:04	04:50	06:34	19:50	21:34

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

Items of Interest This Month

Mercury visible before sunrise until about 8/26
8/3 Io shadow transit 9:44 – 11:57 PM. Great Red Spot transits 11:02 PM
8/8 Great Red Spot transits 10:11 PM
8/9 First Quarter Friday star party.
8/10 Great Red Spot transits 11:49 PM
8/12 Peak of Perseid meteor shower early 8/13. (Full Moon will interfere pretty badly.)
8/15 Great Red Spot transits 10:58 PM
8/16 Callisto crosses above Jupiter's N. Pole.
8/19 Io shadow transit 8:03 – 10:15 PM
8/20 Great Red Spot transits 10:07 PM
8/22 Great Red Spot transits 11:46 PM
8/24 Europa shadow transit 8:29 – 11:02 PM
8/26 Io shadow transit 9:58 PM – 00:10 AM
8/28 Moon in Beehive cluster at Moonrise (4:00 AM.)
8/30 Great Red Spot transits 8:14 PM
8/31 Europa shadow transit 23:07 PM – 1:40 AM
9/1 Io shadow transit 11:53 PM – 2:05 AM. Great Red Spot transits 11:32 PM