

IO – August 2017

The Newsletter of the Eugene Astronomical Society

PO Box 7264
Springfield, OR 97475

Next Meeting: *Thursday, August 17*

Eclipse Clearinghouse

At our August 17th meeting, we will be having a final discussion of issues related to the August 21st eclipse. Bring your questions and comments for an informal discussion!

EAS

President

Diane Martin (541-554-8570)

Secretary

Jerry Oltion (541-343-4758)

Additional Board members

Jim Murray

John Loper

Andy Edelen

Annual Club Dues \$25

Meetings at 7:00 at the
Science Factory, Eugene



EAS is a proud member of the
Astronomical League

First Quarter Friday Report

Our First Quarter Friday on July 28th was quite a success, with a clear, transparent sky and a faint Milky Way visible. A half-dozen scopes were there, pointed at the Moon, Jupiter, and Saturn; Albireo and Mizar; M13, M5, M57, M27, M17, M16, M22, M8, M20, and a host of other objects. About 25 members of the public joined EAS at the reservoir. Jerry again sold a number of eclipse glasses at FQF.

The remainder of our First Quarter Fridays for 2017 are:

September 1 (83% lit)	September 29 (69% lit)	October 27 (52% lit)	November 24 (34% lit)
December 29 (87% lit)			

September has two FQFs while August has none; this is due to the timing of the Moon cycle.



July Meeting Report

At our July 20th meeting, club members Al LePage and Jerry Oltion each gave a talk about the upcoming eclipse.

Al, dressed entirely in black except for a white bow tie to symbolize the diamond ring moment of the eclipse, went first with a two-part program, talking first about the history of science regarding eclipses and then moving on to a dramatic reading of British Physicist John Tyndall's journey to Algeria to watch the eclipse of 1870.

The science section was very informative, discussing the geometry of eclipses, early attempts at eclipse prediction, and the use of an eclipse in 1919 to validate Albert Einstein's theory of relativity.

The journey of John Tyndall was an adventure. Al read it in its original British, delivering excerpts directly from Tyndall's journal as he boarded a ship in England and traveled around Spain and through the straight of Gibraltar to the northern African port of Oran, Algeria. Al accompanied the journal reading with historical images that showed us the ship, the stormy passage, the encampment at Oran, the solar viewing equipment of the day, and much more. It was a delightful program. Alas, after enduring a tempestuous sea voyage, Tyndall and his companions were clouded out at the crucial moment.

From there, Jerry led a discussion of our current prospects for travel, lodging, and weather. Travel by car on the day of the eclipse could very well be as adventurous as travel by sea was in 1870, and the weather is just as unforgiving now as then. Hotels are booked, yet many rooms will open up in the last days before the event as people with multiple reservations release some when the early weather predictions come in. Club members discussed their plans and exchanged advice, including perhaps the most important thing to consider: plan to enjoy it!



British Physicist and eclipse chaser John Tyndall

EAS in the Community

Our ninth annual dark sky star party at Dexter State Park went off without a hitch on Saturday, July 22nd. Attendance was a little low this year, possibly because of the county fair going the same weekend, but people had a good time nonetheless. We had at least 20 telescopes and maybe 50-75 guests.

We had 14 entrants to our telescope giveaway. The 4" dob went to a 7-year-old girl named Allyssa Wilson from Junction City, and the 8" dob went to a 13-year-old girl named Leah Butler from Eugene. Both seemed very excited to have won a telescope.

Al LePage donated a copy of H.A. Rey's constellation atlas, "Find the Constellations." We gave that away as a third prize, and that went to a young girl named Elsie or Elise or something similar (your reporter couldn't catch up with her afterward to get her full name).

Jupiter and Saturn were big crowd pleasers again this year. As the sky grew darker we looked at various other objects, including of course M13, the Lagoon Nebula, the Wild Duck cluster, M5, M51, and even Pluto. Pluto was surprisingly easy to spot in the 20" scope, and even though it was just a speck of light, several people said it was the coolest thing they'd seen that night.

The star party lasted until midnight or so, and it seemed like everyone went home happy.

Many thanks to everyone who helped make it come together. Bruce Hindrichs coordinated things with the park service this year, John Roberts helped haul swag to the event, Rick Kang, Annette Brieske, Nikki Frank, and Bob Andersen ran the welcome table, Ken Martin MC'd the telescope giveaway, Steve Frankel and Mike Curtin helped the winners learn how to use their scopes, and many more people, club members and otherwise, brought scopes and binoculars and lawn chairs and curiosity. It was a great night.

--Jerry Olton

Also upcoming for EAS: a solar eclipse presentation at the Eugene Hotel (August 17). Volunteers are always needed and appreciated! Contact Bruce Hindrichs (EAS Outreach Coordinator; <bhighlander123@yahoo.com>) to volunteer.



Scenes from the Dexter Star Party.
Clockwise from top: One: Alyssa Wilson won the 4" telescope. Two: Leah Butler won the 8" telescope. Three: Rick Kang, Nikki Frank, and Annette Brieske at the welcome table. *Photos by Jerry Oltion.*



Right: Randy Beiderwell prepares Orion, EAS' 14.7" Dobsonian, for the evening's observing. Below: Frank Szczepanski sets up his 12" home-built Dob before darkness falls. *Photos by Ken and Diane Martin.*



Dexter Star Party



Left: the EAS welcome table at DSP. Above: Wade Richardson shares a view through his 17.5" Dobsonian. *Photos by Ken and Diane Martin.*

In addition to the Dexter Star Party, EAS had a number of other events in July.

On July 13th, members of EAS held an astronomy presentation and viewing at Camp Lutherwood for 30 young campers. Bruce Hindrichs gave a PowerPoint presentation indoors, and then the campers ventured out into the evening to join Jerry and Kathy Oltion, Andy Edelen, Wade Richardson, Bob Andersen, and Bruce for some telescopic views of Jupiter and a number of deep-sky objects. As Bruce writes, "As usual the kids were great, asked lots of thoughtful questions, and were genuinely impressed. Unfortunately, one little boy came up to me about an hour after my presentation and said that he was really scared because I said that the Sun would some day end like other planetary nebulae. *So, I traumatized a little boy - good job Bruce.*"

About 40 members of the public joined EAS members Jerry Oltion, Wade Richardson, Frank Szczepanski, Robert Asumendi, Bob Andersen, and Bruce Hindrichs for the annual Dorris Ranch Star Walk on July 23rd. Bruce notes that "This year we viewed from a meadow, up a gravel road. Very nice horizons, about 600' elevation, but it seemed brighter than it should have."

On Friday, July 28, Mike Smith gave a Solar Eclipse presentation to about 80 people at the Willamalane Adult Activity Center. Mike says, *"There was thirty minutes of talking, thirty minutes of rapid fire questions. Show over, except for another 30 minutes with those who still had questions!"*

Congratulations Mike, on delivering another successful Community Outreach event!

--Bruce

The Poles of the Sun

by Jerry Olton

Jim Murray asked me an interesting question the other day: What direction does the Sun's rotational axis point when we're looking at it from Eugene?

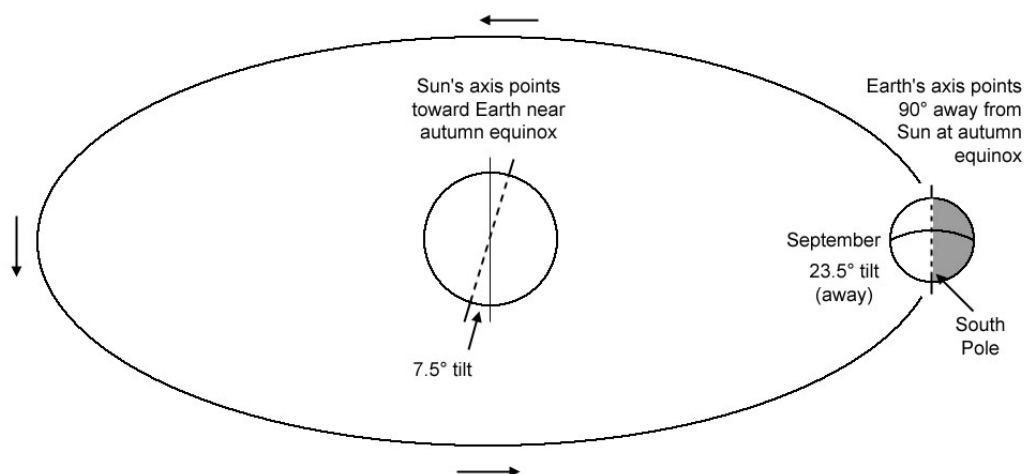
From experience watching sunspots move across the face of the Sun, I can say with some confidence that the north pole is generally upward when you're looking at the Sun at noon. That means it would be tilted to the left (our north) when it's rising, and to the right (our north again) when it's setting.

But of course it's more complicated than that. Earth's 23.5-degree tilt means that in the spring and fall, when we're tilted sideways with respect to the Sun, the Sun's axis looks tilted from our perspective. At noon in the spring, the Sun's axis would tilt 23.5 degrees to the right of straight north, and at noon in the autumn it would tilt 23.5 degrees to the left of north.

But wait, there's more! The Sun's axis is tilted with respect to the Earth's orbit, by 7.5 degrees. It points toward Earth in early September and away from Earth in early March. In early June it tips 7.5 degrees to the right, and in early December it tips 7.5 degrees to the left.

So for determining where the Sun's axis points, Earth's axial tilt is most significant in spring and fall, while the Sun's axial tilt is most significant in the summer and winter.

Or you can figure it's more or less "up" at noon.



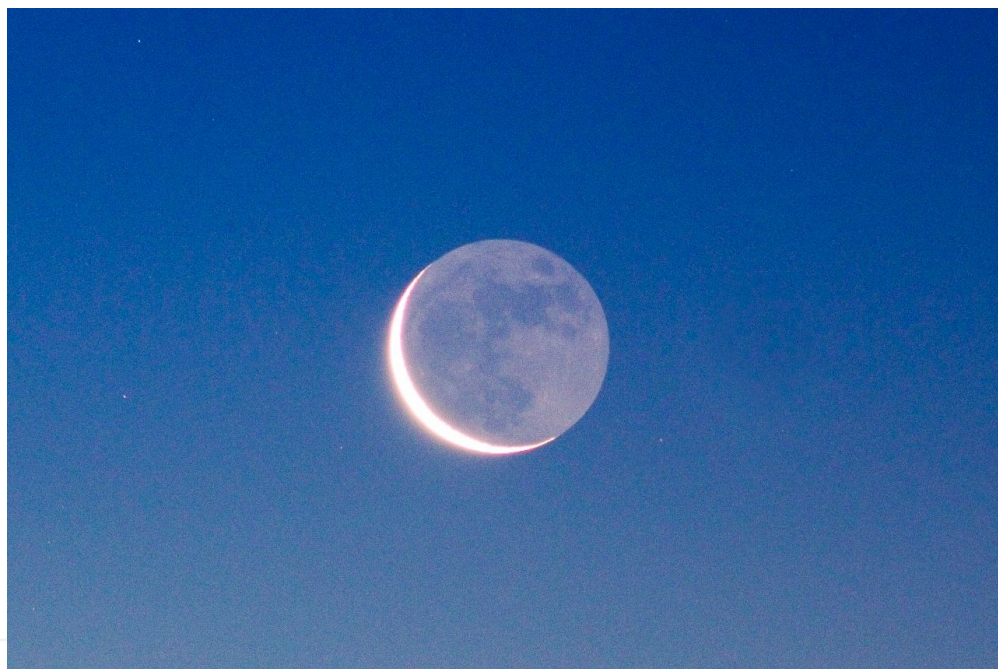


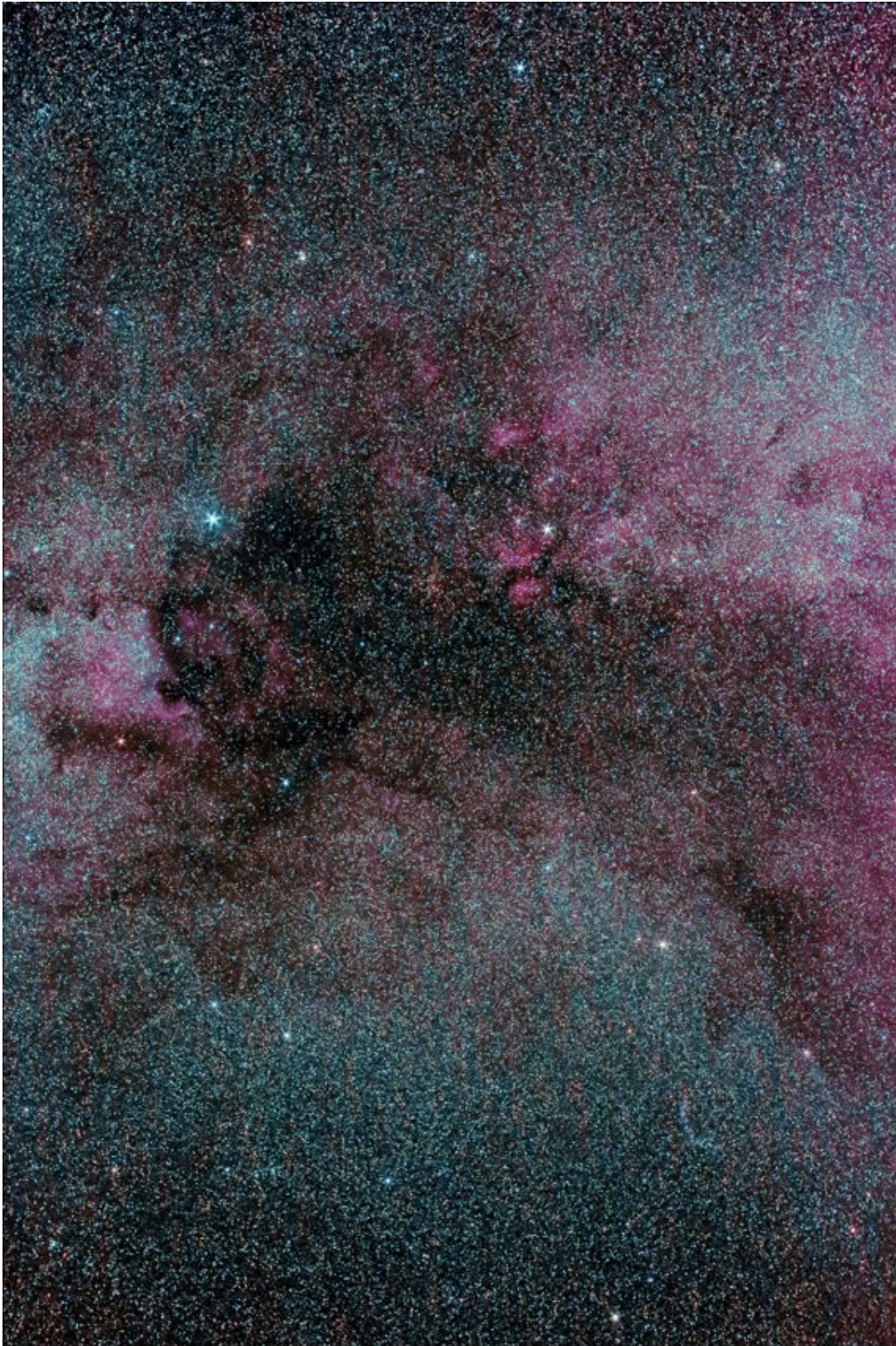
Two views of sunspot group AL 2665. Above: on July 9th. *Photo by Gary Lech*. Below: on July 14th. *Photo by Alan Gillespie*.





Top: The Moon and Saturn, July 6th. Below: Crescent Moon with earthshine. Photos by Alan Gillespie.





Deneb, Sadr (Gamma Cygni), the North America and Pelican Nebulae, the Gamma Cygni nebulae, and the Veil Nebula from the Dexter Star Party. *Photo by Alan Gillespie.*



Spencer's Butte sunset, August 9th. *Photos by Bill Basham.*



The Steam of the Sagittarius Teapot, including M16, M17, M8, M20, M23, M25, and M22. *Photo by Alan Gillespie.*

Sun & Moon rise and set for August

Date	Moon Rise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
8/1/2017	15:53	01:21	03:59	06:01	20:36	22:37
8/2/2017	16:48	01:57	04:01	06:02	20:35	22:35
8/3/2017	17:41	02:36	04:03	06:03	20:33	22:33
8/4/2017	18:30	03:20	04:05	06:04	20:32	22:31
8/5/2017	19:15	04:10	04:07	06:05	20:31	22:28
8/6/2017	19:56	05:04	04:09	06:06	20:29	22:26
8/7/2017	20:34	06:02	04:10	06:08	20:28	22:24
8/8/2017	21:07	07:03	04:12	06:09	20:27	22:22
8/9/2017	21:39	08:07	04:14	06:10	20:25	22:20
8/10/2017	22:09	09:12	04:16	06:11	20:24	22:18
8/11/2017	22:39	10:18	04:18	06:12	20:22	22:16
8/12/2017	23:10	11:25	04:19	06:13	20:21	22:14
8/13/2017	23:44	12:33	04:21	06:14	20:19	22:12
8/14/2017		13:43	04:23	06:15	20:18	22:10
8/15/2017	00:21	14:52	04:25	06:17	20:16	22:07
8/16/2017	01:04	16:00	04:26	06:18	20:15	22:05
8/17/2017	01:54	17:05	04:28	06:19	20:13	22:03
8/18/2017	02:51	18:03	04:30	06:20	20:11	22:01
8/19/2017	03:55	18:54	04:32	06:21	20:10	21:59
8/20/2017	05:03	19:39	04:33	06:22	20:08	21:57
8/21/2017	06:14	20:17	04:35	06:23	20:07	21:54
8/22/2017	07:23	20:51	04:37	06:25	20:05	21:52
8/23/2017	08:32	21:22	04:38	06:26	20:03	21:50
8/24/2017	09:38	21:51	04:40	06:27	20:02	21:48
8/25/2017	10:42	22:20	04:42	06:28	20:00	21:46
8/26/2017	11:44	22:49	04:43	06:29	19:58	21:44
8/27/2017	12:44	23:20	04:45	06:30	19:56	21:41
8/28/2017	13:42	23:54	04:47	06:31	19:55	21:39
8/29/2017	14:39		04:48	06:33	19:53	21:37
8/30/2017	15:32	00:32	04:50	06:34	19:51	21:35
8/31/2017	16:23	01:14	04:51	06:35	19:49	21:33

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



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



Observing In June



Full



Last Q



New

1st Q

August 7, 11:11 PM	August 14, 6:15 PM	August 21, 11:30 PM	August 29, 1:13 AM
Mercury Set: 9:10 PM	Mercury Set: 8:39 PM	Mercury lost in Sun	Mercury lost in Sun
Venus Rise: 3:06 AM	Venus Rise: 3:16 AM	Venus Rise: 3:28 AM	Venus Rise: 3:43 AM
Mars Rise: 5:46 AM	Mars Rise: 5:43 AM	Mars Rise: 5:39 AM	Mars Rise: 5:34 AM
Jupiter Set: 10:53 PM	Jupiter Set: 10:28 PM	Jupiter Set: 10:03 PM	Jupiter Set: 9:34 PM
Saturn Set: 2:03 AM	Saturn Set: 1:35 AM	Saturn Set: 1:07 AM	Saturn Set: 00:35 AM
Uranus Rise: 11:07 PM	Uranus Rise: 10:40 PM	Uranus Rise: 10:12 PM	Uranus Rise: 9:40 PM
Neptune Rise: 9:31 PM	Neptune Rise: 9:03 PM	Neptune Rise: 8:35 PM	Neptune Rise: 8:03 PM
Pluto Set: 3:57 AM	Pluto Set: 3:24 AM	Pluto Set: 3:00 AM	Pluto Set: 2:28 AM

Items of Interest This Month

AUGUST

No First Quarter Friday this month

Last shot at Jupiter for the season

8/10 Many interesting Jupiter moon events in one evening: Ganymede goes into eclipse 9:31, Io goes into occultation behind planet 9:33, and Callisto and Europa march in lockstep away from the planet, one above the other, until Jupiter sets.

8/11 Io shadow transit 7:48 – 9:59 PM

8/11 -8/12 Perseid meteor shower

8/17 Ganymede occultation 9:05 PM

8/18 Io transit 8:42 – Jupiter set. Io shadow transit 9:43 – Jupiter set

8/21 Total solar eclipse

8/25 - 9/5 Asteroid 3122 Florence passes by Earth (and at 9th-magnitude, will be easy to watch as it moves against the background stars)

8/26 Callisto directly over Jupiter's north pole 8:00

9/1 First Quarter Friday star party

