Issue 2017-07

IO – July 2017

The Newsletter of the Eugene Astronomical Society

PO Box 7264
Springfield, OR 97475

Next Meeting: *Thursday, July 20*

Al LePage and Jerry Oltion: ECLIPSE!

At our July 20th meeting, Al LePage and Jerry Oltion will discuss eclipses, both those throughout history and the Great American Eclipse of 2017. Al will begin with a history of eclipse observations from Hipparchus to Eddington (detailing the latter's use of a solar eclipse to prove Einstein's Theory of Relativity), and to the present, then will follow with a dramatic reading of John Tyndall's eclipse testimony from the 1870 Solar Expedition. Jerry will follow with information about observing and recording the 2017 eclipse and a question-and-answer session in advance of one of the biggest astronomy events of our lifetimes.

Be sure to be early to the meeting to get a seat!

(A flyer for the meeting's talks follows; please print it out and distribute or display it!)

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

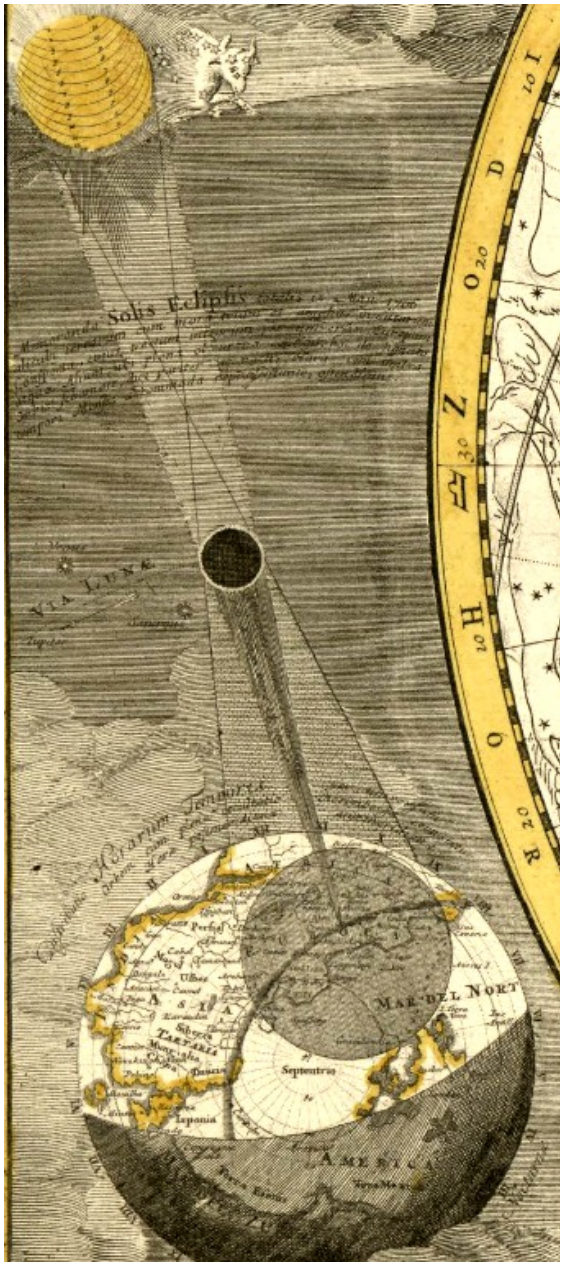
ECLIPSE!

- **Scientific History**
- **A Dramatic Reading!**
- **Great American 2017**

NASA.gov Video Image

A Eugene Astronomical Society Special Presentation

Join Jerry Oltion and Al LePage for an informative and enthusiastic evening about science and eclipses from the past and the upcoming 2017 eclipse!



Allard, Carel, Approx. 1709, and Cóvens Et Mortier

Retrieved from Library of Congress digital images

LePage begins by presenting the Scientific History of Solar Eclipses . . . from the Greek astronomer, geographer, and mathematician Hipparchus who used a solar eclipse to calculate the distance to the Moon from the Earth . . . to Eddington's observations providing the first experimental evidence to support Einstein's Theory of Relativity . . . and beyond!

He continues with A Dramatic Reading of the 19th-century Solar Expedition of 1870 . . . in the very words of the British physicist John Tyndall. Highlights of what it was like to travel and observe the solar eclipse scientifically near Oran, Algeria will also be illustrated with historic images to tell the story visually, too!

Oltion ends with information and advice for viewing the "Great American Eclipse" of 2017 . . . he will discuss how to observe and record – or not record – the upcoming event . . . and answer audience questions so you will be both informed and better prepared to see one of the best opportunities in modern times to experience a total eclipse of the sun!

July 20 / 7-9 PM, Science Factory, Eugene, OR

June Meeting Report

At our June 15th meeting, Scott Fisher of the U of O physics and astronomy department gave an excellent talk on his involvement with the Gemini telescope in Hawaii and his move to Eugene afterward. He is now director of Pine Mountain Observatory, and is busy building it up into a high-class research facility as well as a public outreach facility. For the former, he and his students are making the telescopes remotely operable so they can be run from Eugene, much like the telescopes on Mauna Kea are run from a control room at the base of the mountain. That not only allows more time to be spent on astronomy and less on driving, but it also prepares students for the type of work professional astronomers do.

Scott and his students also got a taste of professional level data crunching when they were offered the chance to reduce the data from hundreds of hours of Gemini telescope time observing distant galaxies. They used extremely high resolution spectroscopic data to discover that elliptical galaxies have evolved significantly over time in ways that were not predicted by models. In particular, they discovered that the elemental composition of elliptical galaxies has changed significantly over time, apparently independent of star formation (which is rare in elliptical galaxies). They have written a paper on their research, which is under peer review at the moment. One of the most unusual aspects of this paper is that its primary author, listed ahead of Scott and the director of the Gemini telescope, is an undergraduate student right here at the University of Oregon. Scott says this may be the first time an undergrad has ever been the primary author on a significant academic paper.

For public outreach, Scott is continuing the practice of opening the observatory to the public on Friday and Saturday nights during the summer. He has invited the EAS to join him in putting on these weekly star parties. We're welcome to bring our own telescopes and set them up outside the observatory domes, and continue observing the entire night well after the public has gone home. While there's not enough bunk space for us to stay in the dorm, we can use the restrooms and there is a campground right next to the observatory where we can pitch tents.

Scott's talk was well attended and enthusiastically received. Thank you, Scott, for an excellent talk.

At the meeting we also gained one new member: Welcome Alan Reinoehl!

Also, Jerry Oltion demonstrated the club's latest donation to our lending library, an 8" orange Celestron SCT of the 1970s vintage in mint condition. Bob White took the scope home to use for the summer, and Annette Briseke checked out the nearly identical scope from our storage unit. It's great to see both of these excellent scopes in use again.

First Quarter Friday Report

Our (second) First Quarter Friday for June was a success; the sky was clear, and the public was interested in seeing what was in the sky. About thirty people joined EAS at the north reservoir on College Hill (our usual spot, the south reservoir, being closed off for the July 4th holiday). Observed objects included the Moon, Jupiter, Saturn, and M13; Jerry also brought the Orion scope slated to be given away at the Dexter Star Party, so that people could see it in action before the giveaway.

The remainder of our First Quarter Fridays for 2017 are:

July 28 (35% lit)	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.

EAS in the Community

The EAS summer outreach schedule hurtles onward, with several events scheduled for July. Camp Lutherwood (in Cheshire) has requested an astronomy presentation for July 13th, involving 12-20 5th and 6th graders. Camp Lutherwood has a 44-acre property with a new stargazing platform and a telescope of unknown condition and type.

Our ninth annual Dark Sky Star Party, sponsored by the State Park Service with scopes and expertise provided by the Eugene Astronomical Society, will be held on Saturday, July 22nd at Dexter State Park, about 15 miles southeast of Eugene on Highway 58. The site is right at the lower end of Dexter Reservoir, and just across the highway from the town of Dexter itself. It has wonderful wide-open views in all directions, and sky dark enough to reveal the Milky Way.

The next page is a flyer that you can — and should! — print out and photocopy and post at work and wherever else you can think of that's appropriate. Always ask permission before posting flyers, but do get out there and post them. The farther we spread the word, the more people will come to the party, and the more people who will understand the value of dark sky.

The party will start at dusk, which should be around 9:00. Get there early to set up and learn where everything is. We'll be setting up in the grass to the east of the first parking lot.

To get there, head up Hwy 58 from Goshen. Just as you approach the town of Dexter, you'll see signs for Dexter State Park on the left (north). Park in the first parking lot you come to and set up in the grass toward the reservoir from there.

We'll be giving away two telescopes this year, so interest should be high. We need volunteers to direct parking, run the information table, help put red filter material on flashlights, and so on. We'll coordinate things via the email list, and hopefully between us all we'll anticipate everything we need and have a smooth party.

The main thing is to have lots of club members there with telescopes! Bring yours, and help show people how beautiful the deep, dark sky can be. We have the park all night if we want it, so we can stay and observe on our own after the public has gone home.

Dark Sky Star Party

July 22, 2017

Dexter State Park

15 miles S.E. of Eugene on HWY 58

Come see the wonders of the night sky far from city lights

We bring the telescopes,
You bring curiosity and enthusiasm!

Free telescope given to a lucky youngster
(Ages 8-18, no purchase necessary, must be present to win).

Starts at dusk (9:00) – Admission: FREE

Dress warmly. Please cover flashlights with red filter material to preserve night vision. We will have filters on hand if you need one.

Sponsored by Oregon State Parks and the Eugene Astronomical Society
For more information, visit www.eugeneastro.org

Above: Map of Dexter State Park, indicating areas in use for DSP. *Dexter write-up, map, and flyer by Jerry Oltion.*

Other upcoming events for EAS include the Star Walk at Dorris Ranch (July 23rd), the Camp Wilani star party (on Bolton Hill Road in Veneta) on July 27th, and solar eclipse presentations at Willamalane (July 28th) and the Eugene Hotel (August 17th). Volunteers are always needed and appreciated! Contact Bruce Hindrichs (EAS Outreach Coordinator; <bhighlander123@yahoo.com>) to volunteer.

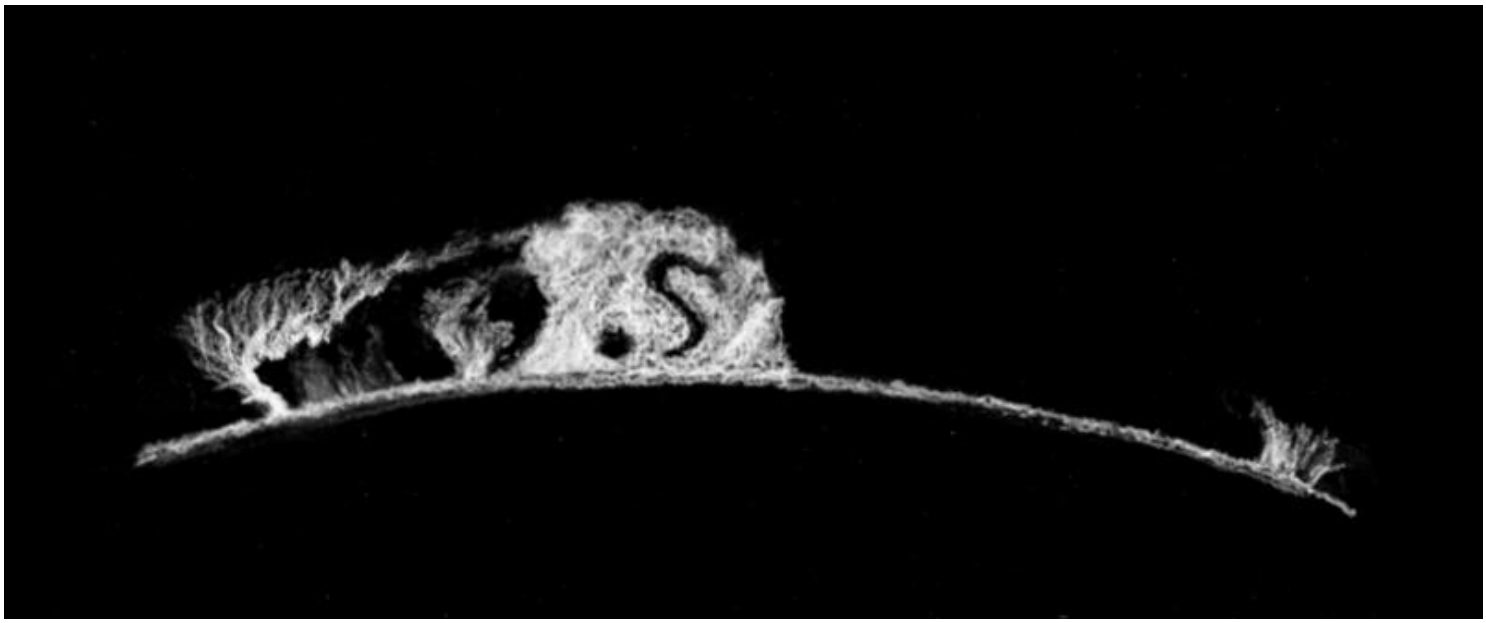
Observing with EAS

EAS members Ken and Diane Martin and Jerry Oltion attended the Golden State Star Party near Adin, CA from June 21-25. GSSP is one of the major western-state star parties, with an attendance cap at 400 and a history spanning several decades. Ken noted that the seeing was a bit soft at times, but that his views of the Veil Nebula and the Whirlpool Galaxy (M51) were the best he'd ever seen. Jerry got measurements of 21.65 on his Sky Quality Meter—slightly better than at Eagle's Ridge "but not an order of magnitude so." Both Ken and Jerry observed that the temperatures at GSSP were quite hot—around 95˚ during the day, but cooling quickly into the 60s after sunset.

Top: Ken and Diane's scope at GSSP, with Mt. Shasta in the background. *Middle*: the telescope field at GSSP. *Bottom*: Jerry Oltion at the helm of his kite. *Photos by Ken and Diane Martin.*

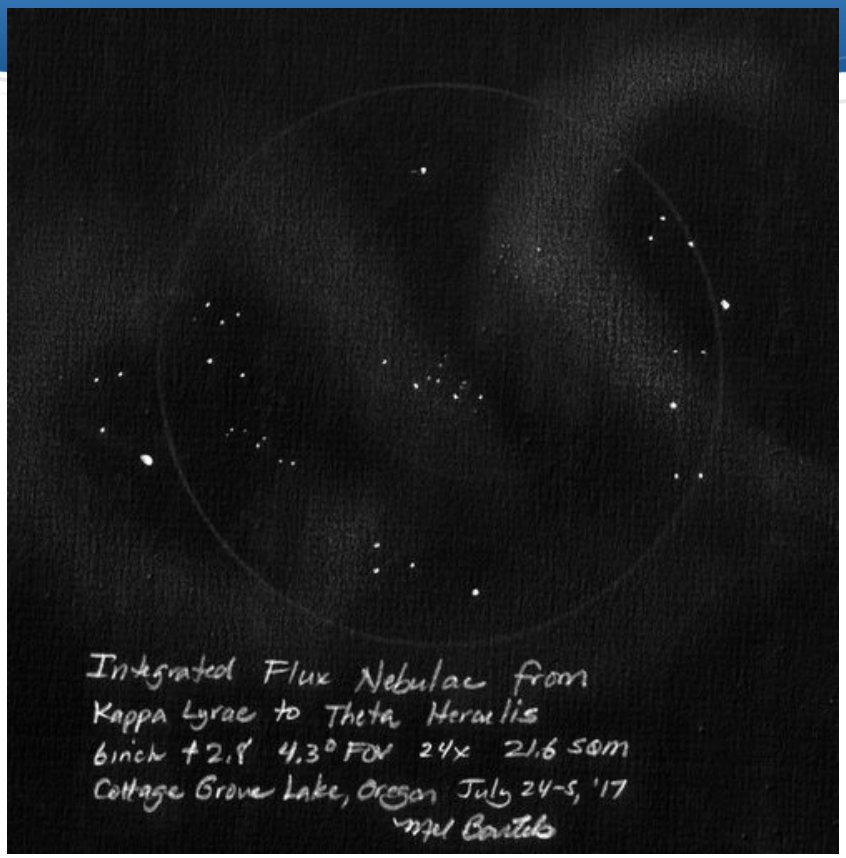
On Sunday, June 25th, solar observers got a special treat: a fantastic prominence stood off the western limb of the Sun. It was an intensely active prominence, too, changing visibly in real time. Hawaii amateur Cindy Krach alerted Jerry Oltion, who passed the alert on via the EAS email list, so many of us got to see it. Cindy also sketched the prominence, capturing it at perhaps its most beautiful moment.

To put it in perspective, that black dot to the left of the "S" is probably about the size of Earth.



The prominence of 6/25/17 at about 12:10 PDT. *Sketch copyright © 2017 by Cindy Krach.*

EAS Members' Gallery



Above: Integrated Flux Nebula, from Kappa Lyrae to Theta Herculis. *Sketch by Mel Bartels.* Below: The Moon, July 1. *Photo by Bill Basham*.

Top: The Moon and Venus from McKenzie Pass, June 20. *Below:* The nearly-full Moon, July 8th. *Photos by Alan Gillespie.*

Above: Central M31. *Below:* M17, the Swan or Omega Nebula. *Photos by Bill Basham.*

Two views of the Milky Way. *Above*: Galactic Center and the Galactic Dark Horse. *Photo by Bill Basham.* *Below:* The Milky Way from M11 (upper left) to M23 (lower right edge). *Photo by Alan Gillespie.*

Self-portrait with Three Sisters and Milky Way. *Photo by Alan Gillespie*.

Sun & Moon rise and set for July

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

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

Observing In July

Full | Last Q | New | 1st Q

July 8, 9:07 PM	July 16, 12:26 PM	July 23, 2:46 AM	July 30, 8:23 AM
Mercury Set: 10:05 PM	Mercury Set: 10:05 PM	Mercury Set: 9:55 PM	Mercury Set: 9:38 PM
Venus Rise: 2:56 AM	Venus Rise: 2:54 AM	Venus Rise: 2:55 AM	Venus Rise: 2:59 AM
Mars Set: 9:20 PM	Mars lost in Sun	Mars lost in Sun	Mars lost in Sun
Jupiter Set: 00:47 AM	Jupiter Set: 00:17 AM	Jupiter Set: 11:48 PM	Jupiter Set: 11:22 PM
Saturn Set: 4:07 AM	Saturn Set: 3:34 AM	Saturn Set: 3:05 AM	Saturn Set: 2:36 AM
Uranus Rise: 1:09 AM	Uranus Rise: 00:37 AM	Uranus Rise: 00:10 AM	Uranus Rise: 11:39 PM
Neptune Rise: 11:30 PM	Neptune Rise: 10:59 PM	Neptune Rise: 10:31 PM	Neptune Rise: 10:03 PM
Pluto Set: 5:58 AM	Pluto Set: 5:26 AM	Pluto Set: 4:57 AM	Pluto Set: 4:29 AM

Items of Interest This Month

JULY

Last good month for Jupiter.

7/19 Io shadow transit from sunset to 9:47 PM

7/22 Dexter Star Party

7/24 three of Jupiter's moons form right triangle just after sunset

7/25 Mercury and Regulus within 1° at dusk

7/26 Io shadow transit 9:30-11:41 PM

7/28 First Quarter Friday star party

Europa shadow transit 9:30 - Jupiter set

Europa ends transit 9:31 PM

7/30 Peak of Southern Delta Aquariid meteor shower