



# ORION Trapezium

January 2017 Volume 44, Issue 2

## Who are we?

ORION was founded in April 1974, by a group of scientists at the United States Department of Energy facilities in Oak Ridge, Tennessee. Our original goal was to perform correlated, instrumented observations of atmospheric and astrophysical phenomena. Since then, we have expanded in many directions, including optical and radio astronomy and instrument design.

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## Future Events

### ORION Meeting

Wednesday, February 15, 2017  
1900 hours (7 pm)  
The Historic Grove Theater  
Randolph Road  
Grove Center, Oak Ridge

### TAO Public Stargazes

Saturday, February 18, 2017  
Saturday, March 4, 2017  
Roane State Community College  
Tamke-Allan Observatory (TAO)  
7:30 pm to 12:00 am  
8:00 pm program

### TAO Notes

ORION people are invited to arrive early (if announced on email) to prepare for evening viewing. Bring a telescope, red flashlight and munchies.

First time visitors – drive out before dark. Map available at [www.roanestate.edu/obs.visit.htm](http://www.roanestate.edu/obs.visit.htm)

## February 2017 Meeting and Program

We'll collect dues and elect board members. We'll accept nominations from the floor, to add to the current slate of nominees: Bob Edwards, David Fields, Roy Morrow, John Mannone, Linda Fippin, Jennifer Hartwig, Roger Lane, Noah Frere and David McCallister.

### Speaker

Professor Ted Stryk

### Presentation Title

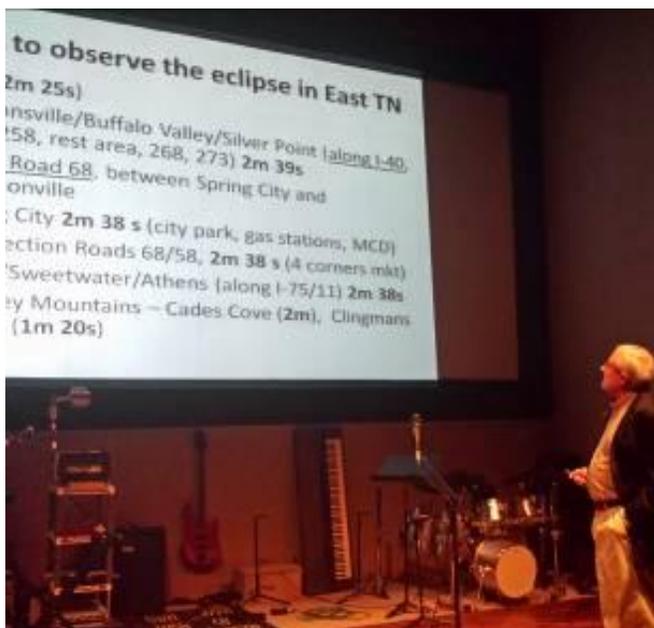
*Searching for a Gem: Exploring Planetary Images Old and New*

Ted Stryk, Associate Professor of philosophy and English at Roane State Community College will be our speaker tomorrow, giving a presentation titled "Searching for a Gem: Exploring Planetary Images Old and New". He is an avid amateur astronomer and is also a member of the New Horizons Mission Encounter team at the Applied Physics Lab at Johns Hopkins University in Baltimore. For more information about Dr. Stryk, please see the article about him posted recently in the Oak Ridge Today newspaper (see link below).

<http://oakridgetoday.com/2017/01/25/roane-state-associate-professor-honored-nasa-work-pluto-flyby/>

## January 2017 Speaker

Dr. Juan Carbajo of the Oak Ridge National Laboratory presented a very interesting talk detailing his experiences as an eclipse chaser. Juan told us how to prepare for the August 21 "Great North American Eclipse." Juan emphasized having some alternate eclipse observing locations in mind in case we are clouded out. There is a 60% chance of clouds in our area based on past years' weather records. Access to sites west of our area is relatively easy due to the proximity of I-40 to the eclipse path. Going south on I-75, the Athens exit will be near the center line. He reminded us that safety is of paramount importance requiring the use of eclipse glasses and solar filters on telescopes and binoculars.



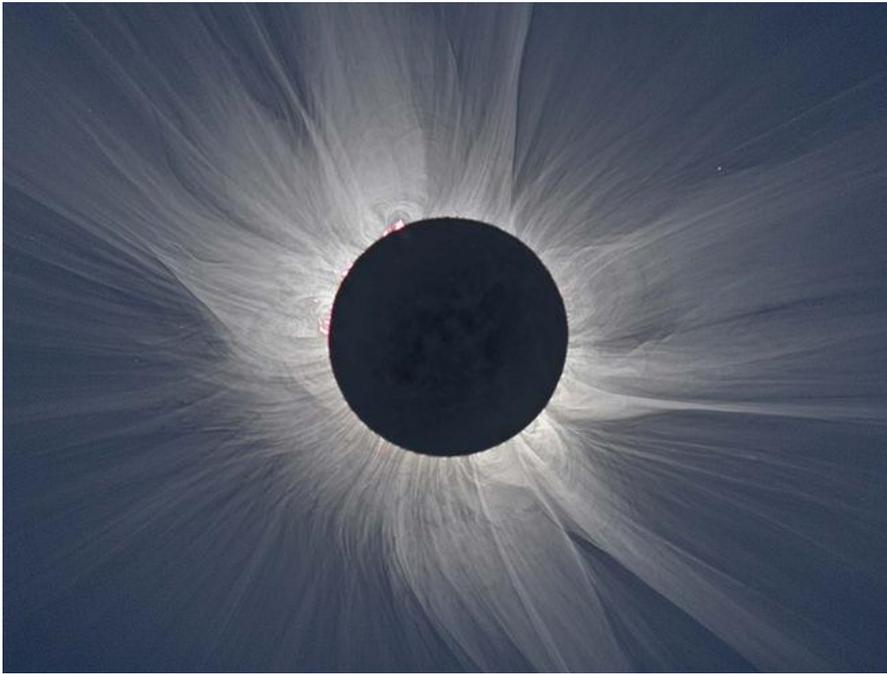


Image of the solar eclipse of March 20, 2015 over Svalbard Island, Norway, which Juan witnessed.

The long exposure reveals the spectacular corona.



Juan Cabajo getting mugged by ORION President David Fields. An ORION coffee mug is presented to each speaker.

## ORION President's Perspective

February 2017 - David Fields

There was a Penumbral Lunar Eclipse on Friday Feb. 10/Saturday Feb. 11. Penumbral Eclipses was not that noticeable, since the lunar illumination changed from magnitude about -1 to about 0. But a lunar eclipse from the NASA DSCOVR satellite orbiting a million miles away looks like this:

NASA's explanation of the moon's appearance is that "The lunar far side lacks the large, dark, basaltic plains, or maria, that are so prominent on the Earth-facing side. The largest far side features are Mare Moscoviense in the upper left and Tsiolkovskiy crater in the lower left. A thin sliver of shadowed area of moon is visible on its right side."



The shadowed area, not so obvious above, is very visible if the moon is more centered, like this (on the right).

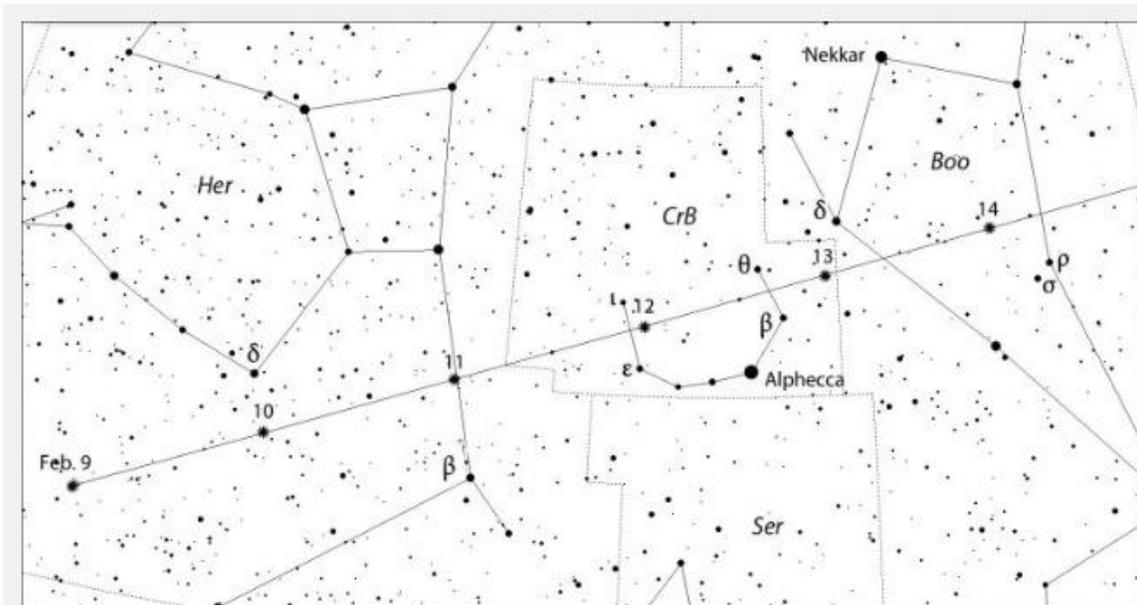
We'll hear more about astrophotography at the February ORION meeting. The February ORION meeting should be very interesting Professor Ted Styrk has done a lot of work interpreting NASA astrophotos. He will show us images of Pluto, and what is happening there.



So as we see, eclipses can be very interesting. Dr. Juan Carbajo's January ORION lecture got us thinking about preparation for August 21:



Not only eclipses – we're also overdue some comet excitement. Green-glowing 45P/Honda-Mrkos-Pajdusakova made an unusually close pass by Earth on Saturday Feb 11 and will be in the skies through February 14. If you captured a photo, send it to Roy, Linda, Jennifer and David for the Trapezium and Internet!



This map shows stars down to magnitude +8 and extends the comet's arc through Feb. 14. Time is 5 a.m. CST but the positions will be close to those shown across U.S. mainland time zones. Click to enlarge and print. North is up.

*Created with Chris Marriott's SkyMap*

Looking ahead, our May ORION meeting will be held on Thursday May 18 (not May 17), and we'll meet at the Oak Ridge Museum of Science and Energy. We'll have a joint meeting with Friends of ORNL and this will be a Smyser Community Lecture. Let's enjoy this wonderful museum while we can, before the Oak Ridge fathers decide to build a shopping mall on top of it. The speaker will be Chap Percival – you can buy a copy of his book on eclipses from Amazon. The lecture is "Go See the Eclipse". Chap Percival is a lifelong educator who lives in Sarasota, Florida. He has a BA in mathematics and physics from Taylor University, an MAT in planetarium education from Michigan State University, and an MEd in instructional technology from the University of Virginia.

This summer, ORICL will have a class on eclipses at the Roane State Oak Ridge Branch Campus by Dr. Juan Carbajo and myself, plus other special lectures by visiting astronomers.

## **TAO Events**

### **TAO Public Stargaze January 21**

Well, once again the clouds won, but a few dedicated astronomers did appear. The group included new members Dave McCallister from UT, who assists Paul Lewis and Robert Fowler, and Magpie (for more information about Magpie, see the photos below. Hint, Magpie's favorite constellation is Canis Minor.) David discussed some crucial points about the August 21, 2017 eclipse for local viewers. The totality band will include TAO, Roane State Campus and most all of the area between Oak Ridge and South to Cleveland. A detailed interactive map is available on line at:

<https://eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2017Aug21Tgoogle.html>

Eclipse observers must keep an eye on the weather since there is a 60+% chance of clouds on eclipse day. Viewing safety cannot be over emphasized since permanent eye damage will result from looking at the sun without the appropriate filter. Eclipse glasses are available from several sources and cost about \$1 each.

**An important note: TAO will be closed on Aug. 21 due to safety concerns posed by the potential for having lots of cars and many accidents on our one lane access road!.**



Everyone is happy at the TAO stargaze after eating lots of carbs, socializing and listening to astro-things!



Magpie, wearing the white fur coat, is ORION's newest member



Paper pterodactyls were “hatched” but proved to be friendly. Miyoko Lemons displayed her origami skills! Diya Nijhawan is launching one of the flying reptiles! Well, actually, the “reptiles” were cranes and symbolize good fortune and longevity in Japanese and other Asian cultures.

## **Outreach and Education**

### **There’s a New Club in Town**

The editor (RWM) is organizing an astronomy club in Tellico Village, and the second club meeting was held on January 26. The organizer did not pay attention to the calendar and scheduled the meeting on the same night as a major concert for which at least 8 members had previously purchased tickets! The name of the club is The Tellico Astronomers and will meet the first Wednesday of each month. Many of the 22 members include people from the two astronomy classes and the star party held in Tellico Village. There seems to be a great deal of interest in astronomy, particularly in learning to navigate with a sky map, how telescopes work and how to buy the most useful telescope. There are at least three members who own astronomical quality telescopes and others wanting to buy one.

We discussed our mission, local areas suitable for observing, telescopes for entry-level use, and advantages of binocular observing. David Little brought his 12in. Meade LX90, and I brought a small refractor and the 4 in. Starblast. Two members own a Celestron 8SE and another has a Starblast. The next meeting will concentrate on how to select the best telescope for individual use. In addition, the Loudon County Library branch in Tellico Village and The Tellico Astronomers will host a public star party this spring.

### **Parting Shots**

This month’s astro images show the November 14, 2016 super moon rising over the Peloncillo mountains at the Arizona Sky village. The images were made with an Orion 80 mm refractor and a Canon DSLR



Super Moon, 11-14 -2016 over Peloncillo Mts. Portal, AZ

**Note:** The editor is soliciting astrophotographs or other astronomy-related images from local club members for inclusion in the *Trapezium*. These images will also be used on the ORION webpage, [www.orioninc.org](http://www.orioninc.org). Readers are encouraged to submit images to Roy Morrow at [morrowb44@gmail.com](mailto:morrowb44@gmail.com).

As always, the editor welcomes contributions to the *Trapezium* from club members. Articles need to be submitted to Roy with a copy to Linda Fippin at [ljfippin@att.net](mailto:ljfippin@att.net) by the second Wednesday of the month, i.e., one week before the monthly ORION meeting, which is on the third Wednesday of the month.

## About ORION

ORION is an amateur science and astronomy club centered in Oak Ridge, TN that was founded in April 1974 by a group of scientists at the United States Department of Energy facility in Oak Ridge, Tennessee. We serve Oak Ridge, Knoxville, and the counties of Anderson, Knox, and Roane.

ORION's mission is to support science research, teaching, and amateur astronomy in East Tennessee, and therefore we are closely associated with and support TAO by volunteering to host their public events, share our knowledge of the skies with a variety of telescopes, and help provide intellectually stimulating programs at the observatory. ORION works to share the wonders of the cosmos and the culture of science to people from all walks of life.

Members are scientists, engineers, technicians, and others with varied talents and expertise. Over half have telescopes, many are amateur radio operators, and some have a technical interest in astrophotography.

ORION has working relationships with several organizations, including museums and amateur astronomy groups.

Membership is open to individuals who will actively contribute their time and ideas. Our annual membership dues are \$20.00 and student discounts are available.

### **Board:**

Bob Edwards

David Fields

Linda Fippin

Noah Frere

Jennifer Hartwig

Roger Lane

John Mannone

Roy Morrow

Joe White

### **Officers:**

President: David Fields

Vice President: John Mannone

Secretaries: Linda Fippin, Bob Edwards

Treasurer: Noah Frere

Editor: Roy Morrow

Publicist: Jennifer Hartwig

AV Coordinator: Bob Williams

Videographer: John Preston