

Cache Valley Clear Skies

The Journal of the Cache Valley Astronomical Society



CVAS Executive Committee

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Loaner Scope Coordinator/NSN Coordinator –
Garrett Smith – GarrettGillSmith@gmail.com

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www.cvas-utahskies.org

Meeting Announcement

Our October meeting will be held on **Wednesday, October 25, 2017 at 7pm in room 806/808 of the main BATC campus.** Enter on the east side of the building located at 1301 North 600 West. Our featured speaker will be CVAS Vice President Layne Pedersen. He will be speaking to us about Saturn and the amazing Cassini mission.

Announcement

The Executive Committee is interested in hearing from the membership concerning meeting dates for 2018 meetings. If you like the current meeting date (fourth Wednesday) or if you would like a different meeting date considered please email Dale Hooper at dchooper5@gmail.com.

Elections Results

The following are the CVAS elected officers for 2017 – 2018:

President – Dell Vance
Vice President – Layne Pedersen
Treasurer – Brad Kropp
Secretary – Dale Hooper

Garrett Smith has agreed to serve as the Loaner Scope Coordinator and also the newly created Night Sky Network Coordinator. The other volunteer positions remain unchanged.

The President's Corner By Dell Vance, CVAS President



September was a very busy month. We had several opportunities to provide Star Parties and our Annual CVAS Business Meeting. As a result of the elections, the Executive Committee has another year to serve the club. We have a new Treasurer, Brad Kropp. We are glad to have him serving with us this year. We also want to thank Ned Miller as our

Treasurer for the last 4 years for all the great work he has done. In addition to Brad, Garrett Smith has accepted the assignment to be our Night Sky Network Coordinator and as our temporary Equipment Loaner Coordinator. We are looking forward to serve with these great club members. At the meeting each of us took the opportunity to tell about our experience with the Total Eclipse in August. What a great event that was.

This week I was in the Grand Tetons National Park on vacation. Monday was overcast so I didn't think I would be able to take any night time pictures of the sky. However, Tuesday night was bright and clear. So my wife and I drove out to three different locations to take some pictures of the stars and the Grand Tetons. The moon was very bright (only two days away from full moon), but that really illuminated the Tetons with their fresh coat of snow from the previous day. I took several pictures, but I think this is my favorite, as it shows the Big Dipper resting on the Grand Teton Range. You can also see Arcturus shining bright (just follow the arc of the handle of the Big Dipper). The moon wiped out most of the other stars, but this worked out great for me. It is the first time I have been in a National Park with clear skies, so I was very excited.



Big Dipper over Grand Tetons National Park - courtesy Dell Vance

There are always ways to enjoy astronomy wherever you are or whatever equipment you may have available. I am often reminded of the encouragement that Lyle Johnson gives us to look up and see the skies. We don't have to use a telescope,

sometimes it is just fun to use a camera or even just your eyes.

This month we have several opportunities to provide service to the communities with Star Parties and our monthly meeting. The first is a Star Party for Preston Middle School on Thursday, October 12 at about 7:00 PM for about 60 students and their families. The next event is a potential Star Party at Gary Bracken's place in Petersboro on Friday, October 13. (This is a great place to watch the stars. Don't miss it.) On Wednesday, October 25 at 7:00 PM we have our monthly meeting. The topic will be "Saturn and the Cassini Probe" and will be presented by Layne Pedersen (CVAS Vice President). The last event for the month is a Star Party for River Heights Elementary 6th Graders on Friday, October 27. They plan to have about 90 students attending. So we can certainly use all the help we can get for these activities.

Be sure to come out to our events and to check the website for updates on times and locations. Thanks for all your support.
Clear Skies!

CVAS Loaner Telescope



CVAS provides a 10 inch Dobsonian telescope to club members. Contact Garrett Smith to make arrangements to use this telescope. Garrett can be contacted by email at GarrettGillSmith@gmail.com.

Binocular Supports

The club now has available a number of mostly completed binocular supports. These supports are being sold to club members at cost. These supports just need the binocular attachment – which is tailored to the type of binocular being mounted.

Please contact Ned Miller or Dell Vance if you are interested in purchasing a binocular support. The images below show what they look like with binoculars attached as well as an image showing them folded for storage.



Completed Binocular Support (with binos attached) - Courtesy Ned Miller

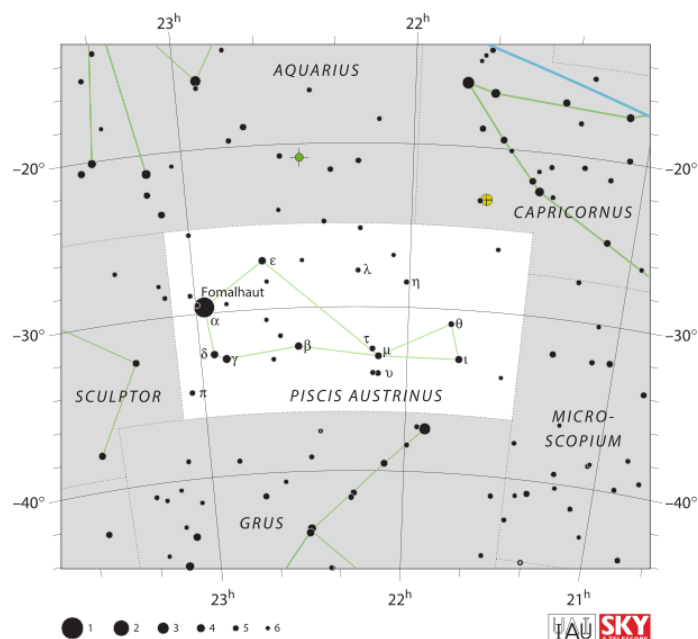


Binocular support (folded for storage) - Courtesy Ned Miller

Spotlight on Piscus Austrinus, the Southern Fish

By Dale Hooper

Piscus Austrinus (pī-səs-ō- 'strī-nəs) is admittedly not a well-known constellation. Probably what we in the northern hemisphere know best about this southern constellation is its brightest star, first magnitude Fomalhaut. This is a constellation that the Greeks inherited from the Babylonians.



IAU and Sky & Tel - Roger Sinnott & Rick Fienberg

Piscus Austrinus is below Aquarius and Capricornus. Because of its distance from the plain of the Milky Way Galaxy the major deep sky objects it contains are galaxies.

Objects which rank at least three stars in *The Night Sky Observer's Guide* (Piscus Austrinus is in Volume 2) have been included. As usual, the table is organized according to increasing Right Ascension values.

Object	R.A.	Dec.
12 Piscis Austrini (Dbl Star)	22h00.8m	-28°27'
NGC 7172 (Galaxy)	22h02.0m	-31°52'
NGC 7173 (Galaxy)	22h02.1m	-31°58'
NGC 7174 / NGC 7176 (Interacting Galaxies)	22h02.1m	-31°59'
IC 5156 (Galaxy)	22h03.3m	-33°50'
NGC 7201 (Galaxy)	22h06.5m	-31°16'
NGC 7203 (Galaxy)	22h06.7m	-31°10'
NGC 7204 (Galaxy)	22h06.9m	-31°03'
NGC 7214 (Galaxy)	22h09.1m	-27°49'
NGC 7221 (Galaxy)	22h11.3m	-30°37'
17 Piscis Austrini (Dbl Star)	22h32.5m	-32°21'
NGC 7314 (Galaxy)	22h35.8m	-26°03'
Dunlop 241 (Double Star)	22h36.6m	-31°40'
h5356 (Double Star)	22h39.7m	-28°20'
NGC 7361 (Galaxy)	22h42.3m	+16°11'

CVAS Minutes – September 2017

The Cache Valley Astronomical Society Annual General Meeting was held September 27th. The elections were discussed. The treasurer position had no nominees. The President (Dell Vance), Vice President (Layne Pedersen) and Secretary (Dale Hooper) were elected by acclamation.

It was announced that a Night Sky Network Coordinator was also needed. Garrett Smith volunteered for this position. Brad Kropp then stated that he was willing to be treasurer if someone was willing to take over the telescope loaner position. Garrett Smith stated that he was also willing to fill the telescope loaner position for now.

Brad Kropp was then elected Treasurer by acclamation.

The club is willing to consider alternative meeting dates in 2018. Send email to Dale Hooper about this.

A proposal was made and passed to purchase ten t-shirts (royal and navy blue, large, XL, small and XXL) which will be available for purchase at public and private club functions.

The club voted to hold off on pursuing 501c3 designation.

The remaining time was devoted to discussing club members solar eclipse experiences. Janice Bradshaw observed totality from Casper, Wyoming. Sharell Eames observed totality from Rexburg, Idaho and her grand kids got to play paper-scissors-rock with the other cars while they were waiting in traffic to come home. Brad Kropp observed totality from Idaho Falls, Idaho. Byron Ray was able to observe the eclipse from Smithfield and saw sunspots, and crescent shadows. Garrett Smith observed totality from just south of Rexburg, Idaho in a farmers field with thirty other people. Layne Pedersen observed totality in Rexburg, Idaho and was able to use one of Sharell's extra parking spaces at BYU-Idaho. Dale Hooper observed totality at Casper, Wyoming and Dell Vance observed totality at Lewisville, Idaho.

It was obvious that club members had a great experience with this eclipse and it will be long remembered.

It was announced that there will be a star party for River Heights Elementary on October 27th and it was decided that October 13th would work out best for the star party at Gary Bracken's home.

Upcoming Star Parties

- | | |
|--------|---|
| 12 Oct | Preston Middle School Star Party (7pm) |
| 13 Oct | Club star party at Gary Bracken's Home:
920 N 6400 W
Mendon, UT 84325 |
| 27 Oct | Star Party for River Heights Elementary |

Upcoming Events

- | | |
|--------|---|
| 03 Oct | Neptune 0.7° north of Moon, occultation |
| 04 Oct | Sputnik 1 launched (1957) |
| 05 Oct | Full Moon
Venus 0.2° north of Mars
Edwin Hubble discovers Cepheid variables in M31 (1923) |
| 07 Oct | Luna 3 photographs far side of the Moon (1959) |
| 08 Oct | Ejnar Hertzsprung born (1873)
Draconid Meteors |
| 09 Oct | Columbus Day
Aldebaran 0.6° south of Moon, occultation
Draconid Meteors |
| 10 Oct | William Lassell discovers Neptune's moon Triton (1846) |
| 12 Oct | Preston Middle School Star Party (7pm)
Last Quarter Moon |
| 13 Oct | Club star party at Gary Bracken's house - Petersboro |
| 15 Oct | Regulus 0.2° south of Moon, occultation |
| 17 Oct | Venus 2° south of Moon
Mars 1.8° south of Moon |

19 Oct	New Moon Uranus at Opposition
20 Oct	Orionid Meteors
21 Oct	Orionid Meteors
22 Oct	First recorded solar eclipse (China 2136 BC) Orionid Meteors
24 Oct	Saturn 3° south of Moon William Lassell discovers Uranus' moons Ariel and Umbriel (1851)
25 Oct	Giovanni Cassini discovers Saturn's moon Iapetus (1671) Henry Norris Russell born (1877)
27 Oct	River Heights Elementary Star Party First Quarter Moon
30 Oct	Neptune 0.9° north of Moon, Occultation
31 Oct	Halloween
01 Nov	Charles Kowal discovers Comet Chiron (1977)
02 Nov	Harlow Shapley born (1885)
04 Nov	Full Moon
05 Nov	Daylight Saving Time ends Aldebaran 0.8° south of Moon, Occultation
07 Nov	Election Day
08 Nov	Edmond Halley born (1656)
10 Nov	Last Quarter Moon

NASA'S OSIRIS-REx Spacecraft Slingshots Past Earth

NASA's asteroid sample return spacecraft successfully used Earth's gravity on Friday to slingshot itself on a path toward the asteroid Bennu, for a rendezvous next August.

At 12:52 p.m. EDT on Sept. 22, the OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, and Security – Regolith Explorer) spacecraft came within 10,711 miles (17,237 km) of Antarctica, just south of Cape Horn, Chile, before following a route north over the Pacific Ocean.

OSIRIS-REx launched from Cape Canaveral Air Force Station in Florida on Sept. 8, 2016, on an Atlas V 411 rocket. Although the rocket provided the spacecraft with the all the momentum required to propel it forward to Bennu, OSIRIS-REx needed an extra boost from the Earth's gravity to change its orbital plane. Bennu's orbit around the Sun is tilted six degrees from Earth's orbit, and this maneuver changed the spacecraft's direction to put it on the path toward Bennu.

As a result of the flyby, the velocity change to the spacecraft was 8,451 miles per hour (3.778 kilometers per second).



This artist's concept shows the OSIRIS-REx spacecraft passing by Earth.
Credits: NASA's Goddard Space Flight Center/University of Arizona.

“The encounter with Earth is fundamental to our rendezvous with Bennu,” said Rich Burns, OSIRIS-REx project manager at NASA's Goddard Space Flight Center in Greenbelt, Maryland. “The total velocity change from Earth's gravity far exceeds the total fuel load of the OSIRIS-REx propulsion system, so we are really leveraging our Earth flyby to make a massive change to the OSIRIS-REx trajectory, specifically changing the tilt of the orbit to match Bennu.”

The mission team also is using OSIRIS-REx's Earth flyby as an opportunity to test and calibrate the spacecraft's instrument suite. Approximately four hours after the point of closest approach, and on three subsequent days over the next two weeks, the spacecraft's instruments will be turned on to scan Earth and the Moon. These data will be used to calibrate the spacecraft's science instruments in preparation for OSIRIS-REx's arrival at Bennu in late 2018.

“The opportunity to collect science data over the next two weeks provides the OSIRIS-REx mission team with an excellent opportunity to practice for operations at Bennu,” said Dante Lauretta, OSIRIS-REx principal investigator at the University of Arizona, Tucson. “During the Earth flyby, the science and operations teams are co-located, performing daily activities together as they will during the asteroid encounter.”

The OSIRIS-REx spacecraft is currently on a seven-year journey to rendezvous with, study, and return a sample of Bennu to Earth. This sample of a primitive asteroid will help scientists understand the formation of our solar system more than 4.5 billion years ago.

NASA’s Goddard Space Flight Center provides overall mission management, systems engineering and the safety and mission assurance for OSIRIS-REx. Dante Lauretta of the University of Arizona, Tucson, is the principal investigator, and the University of Arizona also leads the science team and the mission’s science observation planning and data processing. Lockheed Martin Space Systems in Denver built the spacecraft and is providing flight operations. Goddard and KinetX Aerospace are responsible for navigating the OSIRIS-REx spacecraft. OSIRIS-REx is the third mission in NASA’s New Frontiers Program. NASA’s Marshall Space Flight Center in Huntsville, Alabama, manages the agency’s New Frontiers Program for the Science Mission Directorate in Washington.

Erin Morton
University of Arizona, Tucson

[Nancy Neal Jones](#)
[NASA’s Goddard Space Flight Center, Greenbelt, Maryland](#)

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CACHE VALLEY ASTRONOMICAL SOCIETY MEMBERSHIP APPLICATION FORM

Member # _____

NAME: _____
 First Middle Initial Last

Address: _____
 Street City State Zip Code

Home Phone: _____ **Cell Phone:** _____

Work Phone : _____ **Occupation :** _____

Email Address: _____

How did you learn about CVAS?

_____ Website _____ Star Party _____ CVAS Member _____ Other _____

Membership: \$20 a year

Tell us about yourself: Do you have a special interest in astronomy? Do you have special skills? Are you willing to volunteer on CVAS projects or attend public outreach star parties? Astro equipment owned.

By signing this application, I acknowledge I have access to the CVAS website, cvas-utahskies.org, and the CVAS Constitution. I agree to abide by the constitution.

Signature: _____ **Date:** _____

Bring this form to the meeting or Mail Application to:

Brad Kropp, CVAS Treasurer
1573 E 1425 N
Logan, UT 84341

For any questions contact our Treasurer at brad.kropp@usu.edu or our Secretary Dale Hooper at dchooper5@gmail.com