



NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB

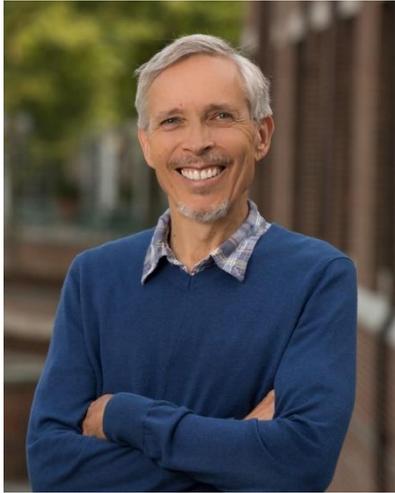
NOVEMBER, 2025



Comet Lemmon C/2025 A6

CLUB MEETING SPEAKER

The speaker at our club meeting on the 7th of November is Dr. Chris Impey. He will speak on the topic of Black Holes.



Black holes occupy a singular place in modern science and in the public mind. The idea of an object with gravity so strong that even light can't escape begins with general relativity, yet even Einstein couldn't accept the implications of his theory. Several dozen black holes in binary star systems have been firmly identified, and astronomers

have learned that every galaxy hosts a massive black hole, ranging up to billions of times the mass of the Sun. Black holes seem deceptively simple, described by mass and spin, but Stephen Hawking showed they have temperature and slowly evaporate. Theorists struggle to understand the singularity, and what happens to information that falls into the event horizon. We recently entered an exciting era with the detection of gravitational waves from merging black holes. Astronomers plan to use black holes, large and small, to test general relativity in new ways. Black holes have still not given up all their secrets.

Chris Impey is a University Distinguished Professor of Astronomy at the University of Arizona. He has over 450 publications on education, observational cosmology, galaxies, and quasars, and his research has been supported by \$20 million in NASA and NSF grants. He has won eleven teaching awards and has taught four online classes with over 420,000 enrolled and 8 million minutes of video lectures watched. Chris Impey is a past Vice President of the American Astronomical Society, and he has won its career Education Prize. He's also been NSF Distinguished Teaching Scholar, Carnegie Council's Arizona Professor of the Year, and a Howard Hughes Medical Institute Professor. He has written 120 popular articles on cosmology, astrobiology and education, two textbooks, a novel called Shadow World, and ten popular science books: The Living Cosmos, How It Ends, Talking About Life, How It Began, Dreams of Other Worlds, Humble Before the Void, Beyond: The Future of Space Travel, Einstein's Monsters: The Life and Times of Black Holes, Worlds Without End: Exoplanets, Habitability and the Future of Humanity, and the upcoming Recipe for a Universe: Cosmic Chemistry from the Big Bang to You.

WELCOME OUR NEW MEMBERS

Daniel Gordon of Sierra Vista joined at the October meeting. Daniel is the son of Del Gordon. Adam, Debora and Audrey Hall of Huachuca City joined as a family at the October public night. Chad Davies of Sierra Vista also joined in October. Chad is the astronomy instructor at Cochise. Welcome, we're glad you joined.

2026 DUES

Most HAC memberships come due in December (but there is no December meeting). The treasurer will be collecting dues at the November meeting. Annual dues are \$25 regular and \$35 family. Active-duty military pay \$20 and \$25. Full time students: \$10. Make checks payable to Huachuca Astronomy Club (not "HAC"). Correct change for those paying cash is greatly appreciated. If you are unsure of your due's status, please contact the treasurer at tedforte511@gmail.com. You can pay your dues [online](#).

2026 BOARD CANDIDATES AND GENERAL ELECTION BY MARK ORVEK

The election for our 2026 Board of Directors will occur at the November 7th general member meeting. The election process is spelled out in the club [bylaws](#). I refer to key sections regarding the election process. The Nominating Committee (consisting of Karen Peitsmeyer, Katherine Zellerbach and myself) has solicited candidates for the 2026 HAC Board. Below are the nominees for the Board of Director positions to be filled (8 members in total)

Officer Candidates

- President: Penny Brondum (nominee)
- Vice President: Mark Orvek (nominee)
- Secretary: Katherine Zellerbach (nominee)
- Treasurer: Ted Forte (nominee)

Members-at-Large Candidates (4 total)

- Vince Sempronio (nominee)
- Mike Morrison (nominee)
- Gary Grue (nominee)
- Richard Lighthill (nominee)

Past President: David Roemer (

Nominations for write-in candidates from the floor will be accepted at the November 7th general meeting. If there are additional nominees for any of the Officer positions or more than 4 nominees for Member-at-large positions, we will follow the procedure stated in the Constitution (as noted above). The official vote for the 2026 Board of Directors will take place at the November 7th general member meeting.

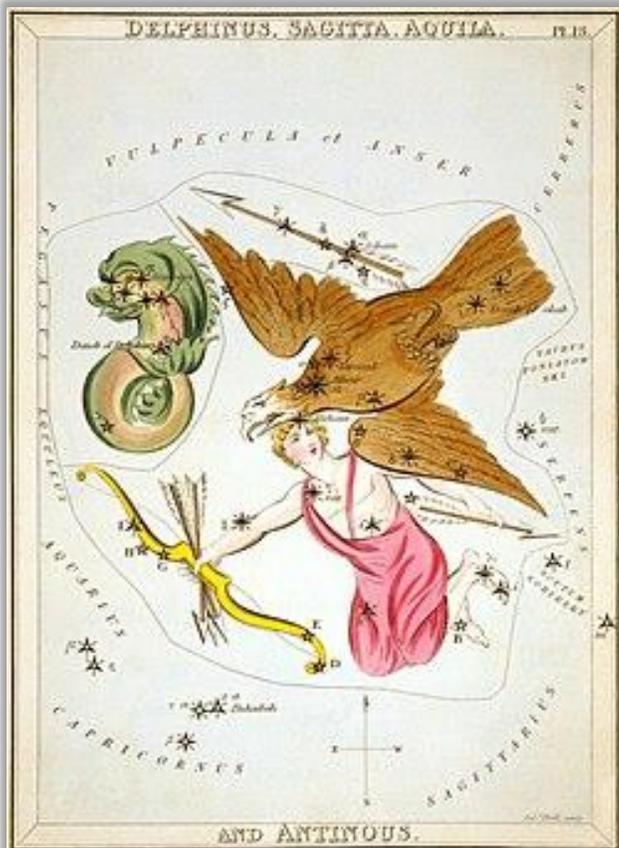
CLUB HOLIDAY PARTY

Once again, in lieu of a December meeting, we will have a club holiday party. Our gracious club president Penny and Thomas will host the event at their home.

A flyer with more details will be sent out closer to the date of the event, but here are a few early details. The party is on the evening of December 5th, the cost for club members is \$15 each and free to children under 10. Bring your favorite libation and a folding chair. Feel free to bring a dessert if you like

„You can pay for the party at our club meeting on November 7th, or by using the “Donate” button on the [HAC website](#).

PRESIDENT’S CONSTELLATION EXPLORATION – DELPHINUS BY PENNY BRONDUM



Delphinus is depicted on the left of this card from [Urania's Mirror](#) (1825)

[Delphinus](#) is a small constellation in the Northern Celestial Hemisphere, close to the celestial equator. Its name is the Latin version for the Greek word for dolphin. It is one of the 48 constellations listed by the 2nd-century astronomer Ptolemy and remains one of the 88 modern constellations recognized by the International Astronomical Union. It is one of the smaller constellations, ranked 69th in size. Delphinus is bordered (clockwise from north) by Vulpecula, Sagitta, Aquila, Aquarius, Equuleus and Pegasus. The official constellation boundaries, as set by Eugène Delporte in 1930, are defined by a polygon of 14 segments.



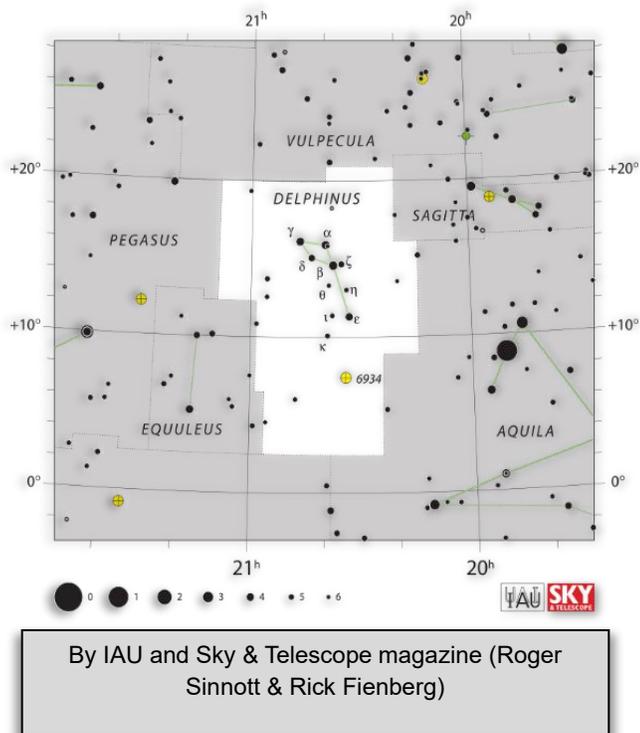
Contrast and color enhanced photograph of Delphinus
From Wikipedia.com

Delphinus' five brightest stars form a distinctive asterism symbolizing a dolphin with four stars representing the body and one, the tail. A second version of the asterism for Delphinus utilizes the diamond-shaped pattern formed by its brightest stars and is known as Job's Coffin (which also outlines the body of the celestial Dolphin).

A good way to find Delphinus is to first locate the Summer Triangle and then look northeast. Delphinus is a member of the Heavenly Waters family of constellations, together with Carina, Columba, Equuleus, Eridanus, Piscis Austrinus, Puppis, Pyxis, and Vela.

Delphinus is associated with two stories from Greek mythology. The first, Greek god Poseidon wanted to marry Amphitrite, a beautiful nereid. However, wanting to protect her virginity, she fled to the Atlas Mountains. Her suitor then sent out several searchers, among them a certain Delphinus. Delphinus accidentally stumbled upon Amphitrite and persuaded her to accept Poseidon's

woing. Out of gratitude, the god placed the image of a dolphin among the stars.



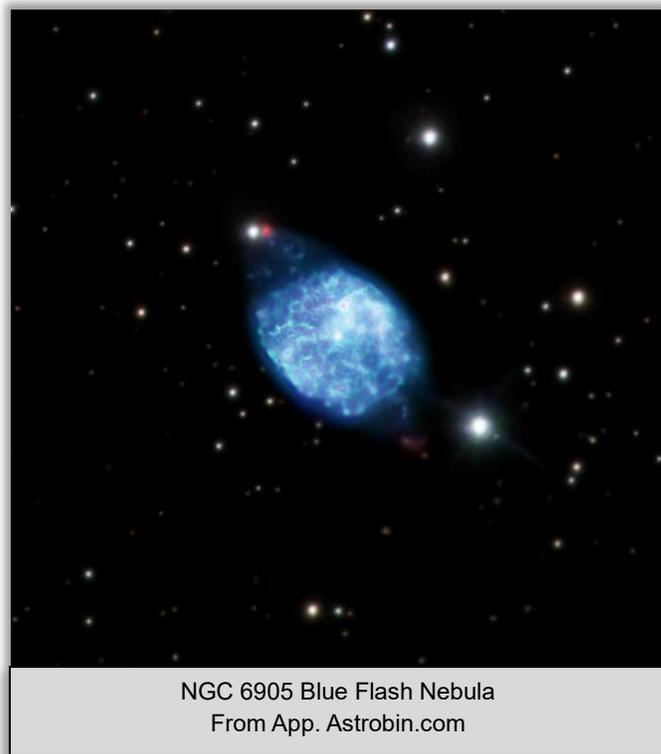
The second story tells of the Greek poet Arion of Lesbos (7th century BC), who a dolphin saved. Arion was a court musician at the palace of Periander, ruler of Corinth who had amassed a fortune during his travels to Sicily and Italy. On his way home from Tarentum, his wealth caused the crew of his ship to conspire against him. Threatened with death, Arion asked to be granted a last wish, which the crew granted: he wanted to sing a dirge. This he did, and while doing so, flung himself into the sea. There, he was rescued by a dolphin which had been charmed by Arion's music. The dolphin carried Arion to the coast of Greece and left. In this version of the myth, Apollo placed the dolphin next to the constellation Lyra in the sky, with Lyra representing Arion's lyre.

In Chinese astronomy, the stars of Delphinus are located within the Black Tortoise of the North (Běi Fāng Xuán Wǔ). In Polynesia, two cultures recognized Delphinus as a constellation. In Pukapuka, it was called Te Toloa and in the Tuamotus, it was called Te Uru-o-tiki. In Hindu astrology, the Delphinus corresponds to the Nakshatra, or lunar mansion, of Dhanishta.

Delphinus has five stars with known planets and contains no Messier objects. There aren't any meteor showers associated with the constellation Delphinus. In 2024 the planet [TOI-6883 b](#) was discovered in the constellation Delphinus. It has a 16.249-day orbital period around its host star, a radius of 1.08 times Jupiter's, and a mass 4.34 times Jupiter's. It was discovered from a single transit in

TESS data, and it was confirmed by a network of citizen scientists. Also in 2024, the planet [TOI-6883 c](#) was discovered in the constellation Delphinus. It has an orbital period of 7.8458 days, a radius of 0.7 times Jupiter's, and a third of Jupiter's mass. The Neptunian-size planet was discovered from an abnormality in data retrieved from [TOI-6883 c](#).

Delphinus is home to several interesting deep sky objects including:



NGC 6905 is also known as the Blue Flash Nebula, a nickname coined in an article by John H. Mallas in 1963. It has a Wolf-Rayet central star characterized by broad emission lines and is rich in Helium and Carbon.

Globular cluster NGC 6934 about 52,000 light-years away from the Solar System. NGC 6934 is in the Shapley-Sawyer Concentration Class VIII and is thought to share a common origin with another globular cluster in Boötes.

The constellation Delphinus can be seen by the naked eye so it should be relatively easy to find with its 4 brightest stars forming a distinct asterism that represents the celestial dolphin, so I challenge you to look up and discover one of our Heavenly Waters constellations showing off in our Autumn skies.

Astronomy, as nothing else can do, teaches men humility."

Arthur C. Clarke.

THE BUCKET LIST

BY VINCE SEMPRONIO

It's all about Saturn!

This month offers some interesting Saturnian phenomena visible from here on Earth

On the evening of November 6th, Saturn's brightest moon Titan transits with the event already in progress during evening twilight from our SE Arizona skies. The moon will continue to transit until around 7:30pm. The dimmer moon Rhea is also in transit, appearing very close to the razor thin ring system. At 9:20pm, Titan and Rhea will be very close together, appearing perpendicular to the ring system.



Viewing Titan on the face of Saturn can be difficult, but an interesting exercise will be how soon you can find Titan as it exits transit around 7:30pm. If you wish to try to see Titan in transit, AI recommends trying a Blue #80A filter to help with the contrast. Higher power (200x) is recommended along with using the biggest aperture scope available.

Between November 17th and December 1st, Saturn's rings once again will be almost edge on as they were back in March. Even though the rings almost appear edge-on, the rings are still casting a thin shadow of the disc of Saturn. Back in March, Saturn was too close to the Sun to see this phenomenon, so don't miss the chance to see the rings edge on till the next opportunity in 2039.

FOR SALE

Zane Landers has several scopes and equipment for sale. If you are interested in any of the items, please contact him via email (zdlanders@gmail.com).

- Coulter Odyssey 1 13.1" f/4.5 blue tube Dobsonian: This was one of the first units ever made for Coulter, for the president of SAC up in Phoenix I was told. I

bought this for my roommate, but he is upgrading to a 16.5". Mirror is about 1/8 wave and is stored in a separate case for transport - to use you just pop the back tailgate with 2 thumbscrews and slot in the mirror. I have never had to adjust collimation with this design, and I have built a lot of Dobsonians. Focuser has been upgraded to a dual-speed 2" JMI, and finder is a Telrad. Interior of OTA is flocked. It comes with 1.25" adapter and collimation cap. Asking \$650, cash preferred. I can bolt on some wheels to the front so you can just roll the whole thing around for an additional \$50, or make full wheelbarrow handles for \$100.

- Intes MK63 6" f/10 Maksutov-Cassegrain: Obtained from Stellar Vision, made in Russia 1992 just after the Soviet Union collapsed. It has a very compact EQ fork mount/tripod with DC drive corrector; I can fit the whole scope/tripod in my Mazda Miata. Attaches to the included Celestron C8 tripod and I have an adapter to use it on a surveyor tripod as well. No image shift focusing, interior is flocked, finder is a 6x30 right angle and I installed a bracket. Drive is a bit finicky but works. Optics are incredibly sharp, equivalent to a Questar/Quantum. Asking \$850 - what I spent on it. Fabulous first telescope if you're looking for one for the holidays; Russian design is well thought out and virtually indestructible. If this is your/someone else's first scope I can include a pair of Plossl eyepieces for an extra \$30. Cash preferred.
- Lumicon 1.25" comet/OIII filter: Brand new, works well for contrast boost on comets and as an OIII. Asking \$60, cash preferred.

Eric Alen, a former member of HAC, currently living in Benson has two large Dobsonians for sale. For further information, call him at 520-720-6177 (land line). Visit the HAC online forum to see photos of these two scopes.

- 17.5" f/4.5 big box Dob for sale. Has 1/13 wave PVW custom refigured Coulter primary with 9-pt. aluminum flotation designed with PLOP software. Tube assy. breaks down into 3 sections. Tube assy. can be locked to rocker so scope can be rolled as a unit on wheels attached to rocker. Has 3.75" f/6.5 reflector finder. Has custom made cover. Not used recently but in good shape. Undriven. Can be Ronchi tested with tester or on a star, weather permitting. In Benson. Asking \$5000.
- 24" f/4 homemade big box/Truss Dob for sale. 24" f/4. Custom primary 1/20 wave PVW. Aluminum 18-point flotation was designed with PLOP software. Undriven. Custom made scissor-jack style focuser. Tube assy. breaks down into four sections. Tube assy. can be locked to rocker so scope can be moved as a unit on wheels attached to the rocker. Will fit (barely) in my Toyota Tacoma with camper shell.

Comes with loading ramps. Not used for several years and mount has suffered some water damage to 1/4" oak plywood. Optics are in good shape. Can be Ronchi tested with Ronchi tester or on star, weather permitting. Asking \$7000

CLUB MEMBER IMAGES

Image by Zane Landers

ABOUT THE COVER

This month's cover image is provided by Dave Roemer.

This image of Comet Lemmon C/2025 A6, was taken about an hour after sunset using a 11" Celestron RASA, ZWO ASI294MC Pro camera, on an iOptron 120 mount. The image is a composite of three 4 minute exposures. Each exposure is itself a composite of 20 shorter images each 15 seconds long. Composing and exposing was simplified by acquiring the image data using SharpCap Pro's, Live Stack feature where all the times, and exposures are set. The three selected sub exposures were then aligned, combined, and contrast corrected in MSB AstroArt 8.0 image processing software.

It all sounds complicated, but the software makes it easy-peasy. For me it seems easier than dragging out the DSLR!

CLUB OFFICERS & CONTACTS	
President: Penny Brondum	Vice President: Mark Orvek
Secretary: Del Gordon	Treasurer: Ted Forte
Past President: David Roemer	
Board Members-at-Large	
Gary Grue, Richard Lighthill, Mike Morrison, Vince Sempronio	
Nightfall Editor: Vince Sempronio	nightfall@hacastronomy.org
Webmaster: Ken Kirchner	
Facebook Editor: Richard Lighthill	
Website:	http://www.hacastronomy.org
Facebook:	http://www.facebook.com/HuachucaAstronomyClub
Email:	info@hacastronomy.org
Club Meetings: Monthly at 7pm at the Cochise College Downtown Center at 2600 E Wilcox Drive, Sierra Vista, AZ in Room A102. Refer to the calendar for specific dates.	



The Witch Head Nebula is a large, faint reflection nebula located approximately 900 light-years away in the constellation Eridanus

EDITOR'S CORNER

A reminder that there will be another round of astronomy trivia at the upcoming club party in December.

The calendar has a new feature; dates with club activities are highlighted in light blue.

HAC Calendar of Events (November & December 2025)

SU	MO	TU	WE	TH	FR	SA
Oct 26	27	28	29 ☾ 9:21am	30 Patterson Public Night 6pm	31	Nov 1 Moon near Saturn
2 Daylight Savings Time Ends	3	4	5 ☽ 6:19am	6 Titan transits Saturn	7 HAC Meeting 7pm (1)	8 Solar Saturday 10am to 12pm
9	10	11 ☾ 10:28pm Veteran's Day	12	13 Patterson Public Night 6pm	14	15
16 Leonid Meteors	17 Leonid Meteors	18 Leonid Meteors	19 ☽ 11:47pm	20	21 Uranus Opposition (+5.6m)	22
23	24 Saturn's rings edge-on	25	26	27 ☾ 11:59pm Thanksgiving Day	28	29 Moon near Saturn
30	Dec 1	2 Moon Occults M45	3	4 ☽ 4:14pm	5 HAC Holiday Party at the Brondum's	6
7 Mercury (GWE) Moon near Jupiter	8	9	10	11 ☾ 1:52pm Patterson Public Night 6pm	12	13 Solar Saturday 10am to 12pm Geminid Meteors
14 Geminid Meteors	15 Geminid Meteors	16	17	18	19 ☽ 6:43pm	

All dates and times are local MST
Astronomy events listed are those visible in the Southwestern, USA

(1) HAC meeting location: Cochise College Downtown Center at 2600 E Wilcox Drive, Sierra Vista, AZ in Room A102
(GWE) – Greatest Western Elongation. A morning event

Join the [HAC Astro](#) forum to keep up to date with all the Huachuca Astronomy Club events
To join, send an email to: HACAstro+subscribe@groups.io