



JANUARY, 2026

NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB



JANUARY MEETING SPEAKER

The speaker at our meeting on January 2nd is our Vice President, Mark Orvek. He will discuss the Chiricahua Sky Village dark sky site.



The Chiricahua Sky Village (CSV) is a communally owned dark site located in southeast Arizona, where amateur astronomers come together to pursue the hobby under very dark

skies that make possible breathtaking visual observations and captivating astrophotography images. Membership at CSV provides the opportunity to pursue amateur astronomy to the highest standards of achievement in a sustained environment that fosters interactions and friendships.

Join the speaker for dinner at the Olive Garden in Sierra Vista at 5pm on January 2nd.

WELCOME OUR NEW MEMBERS

Roberta and Rich Hegy of Hereford joined in December. Welcome, we're glad you joined.

2026 DUES

Several HAC memberships expired in December. If you are unsure of your due's status, contact the treasurer, Ted Forte

Annual dues are \$35 family and \$25 regular (\$25 and \$20 for active-duty military). Student memberships are \$10. You can pay your dues in person by cash or check made out to Huachuca Astronomy Club. See the treasurer, Ted Forte, at a meeting or event.

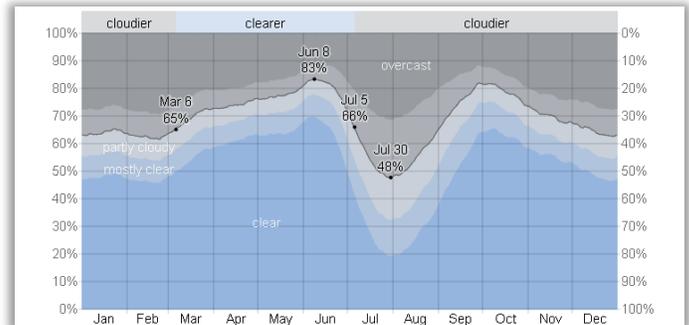
You can mail your dues check to the Huachuca Astronomy Club PO Box 922, Sierra Vista AZ 85636

You can pay online by visiting www.hacastronomy.org and pulling down the membership menu. You'll be directed to Pay Pal where you can use your Pay Pal account OR your credit card. IF YOU ARE PAYING A PRORATED AMOUNT TO EXTEND YOUR MEMBERSHIP FOR A PARTIAL YEAR, YOU'LL NEED TO USE THE DONATE BUTTON – The dues "renew" option will not allow a non-standard amount.

If you have a Pay Pal account, you can use PayPal Direct to send your payment to paypal@hacastronomy.org
If you have a Zelle account with your bank, you can make a dues payment by transferring funds to twforte@powerc.net

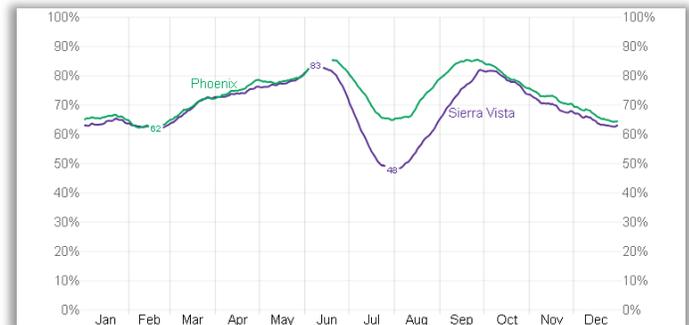
EDITOR'S CORNER

There are highs and lows each year in everyone's life, but those associated with weather are something that affects all of us. This past year "seemed" to have more cloudy days than usual but finding data to support that can be difficult. Let's look at the long-term averages for Sierra Vista. Here is a historic map of cloud cover collected at the Sierra Vista area airports over the past 10 years. Charts courtesy of weatherspark.com.



Each band represents 20% increments of cloud cover. So, clear means the sky was covered no more than 20% by clouds, etc. Overall, 68% of the days are considered more clear than cloudy. By comparison, Phoenix has more clear days overall than we do, but who wants to put up with the hotter days overall. The dip in July and August is why many people choose those months to be absent from the area.

Here is a chart that compares the chances of clear skies between Sierra Vista to Phoenix



For most of the year, both cities have equal chances of clear skies, but Sierra Vista is affected by the monsoon season more than Phoenix. During the monsoons there usually aren't totally clear skies and at the same time the temperature can soar over 110F in Phoenix. Of course, the weather isn't the only factor why people live where they live. Having recently spent part of a weekend in Phoenix and after experiencing the traffic and congestion, I think I'll stay in Sierra Vista

NEW MONTHLY COLUMN

Starting out the new year in this month's newsletter, I'm happy to announce a new monthly column called *Scattered Reflections*. It is penned by our fellow club member and Cochise College Physics and Astronomy professor, Dr. Chad Davies. Dr. Davies will discuss various topics, usually historical in nature.

PRESIDENT'S CONSTELLATION EXPLORATION – TAURUS BY PENNY BRONDUM

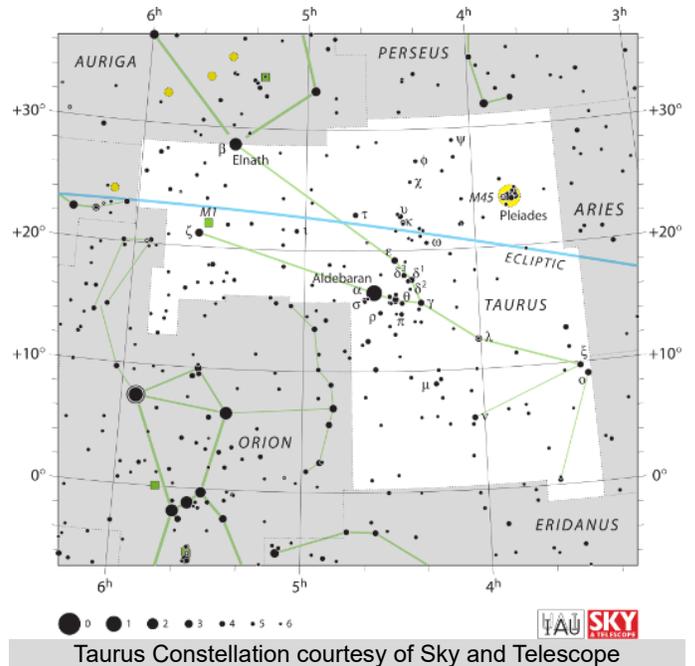
Taurus is a large and prominent constellation in the Northern Hemisphere's winter sky. In late November-early December, Taurus reaches opposition (furthest point from the Sun) and is visible the entire night. By late March, it is setting at sunset and completely disappears behind the Sun's glare from May to July.



Taurus as depicted in the astronomical treatise *Book of Fixed Stars* by the Persian astronomer Abd al-Rahman al-Sufi, c. 964

Taurus is one of the oldest constellations, dating back to the Early Bronze Age at least, when it marked the location of the Sun during the spring equinox. Taurus forms part of

the zodiac and hence is intersected by the ecliptic. The galactic plane of the Milky Way intersects the northeast corner of the constellation and the galactic anticenter is located near the border between Taurus and Auriga. Taurus is the only constellation crossed by the galactic equator, celestial equator, and ecliptic. A ring-like galactic structure known as Gould's Belt also passes through the constellation. In 1990, due to the precession of the equinoxes, the position of the Sun on the first day of summer (June 21) crossed the IAU boundary of Gemini into Taurus. The Sun will slowly move through Taurus at a rate of 1 degree east every 72 years until approximately 2600 AD, at which point it will be in Aries on the first day of summer.



Taurus offers a rich blend of astronomical features and mythological history, making it a favorite among stargazers and astronomers alike. Taurus is important to the agricultural calendar and influenced various bull figures in the mythologies of Ancient Sumer, Akkad, Assyria, Babylon, Egypt, Greece, and Rome. Its traditional astrological symbol resembles a bull's head (♉).

The identification of the constellation of Taurus with a bull is very old, certainly dating to the Copper age, and perhaps even to the Upper Paleolithic. Michael Rappenglück of the University of Munich believes that Taurus is represented in a cave painting at the Hall of the Bulls in the caves at Lascaux (dated to roughly 15,000 BC), which he believes is accompanied by a depiction of the Pleiades. The name "seven sisters" has been used for the Pleiades in the languages of many cultures, including indigenous groups of Australia, North America and Siberia. This suggests that the name may have a common ancient origin.

Taurus marked the point of vernal (spring) equinox in the Copper and the Early Bronze Ages, from about 4000 BC to 1700 BC, after which it moved into the neighboring constellation Aries. The Pleiades were closest to the Sun at vernal equinox around the 23rd century BC. In Babylonian astronomy, the constellation was listed in the MUL.APIN as GU.AN.NA, 'The Bull of Heaven'. In the Old Babylonian Epic of Gilgamesh, the goddess Ishtar sends Taurus, the 'Bull of Heaven', to kill Gilgamesh for spurning her advances. Enkidu tears off the bull's hind part and hurls the quarters into the sky where they become the stars we know as Ursa Major and Ursa Minor. Some locate Gilgamesh as the neighboring constellation of Orion, facing Taurus as if in combat, while others identify him with the sun whose rising on the equinox vanquishes the constellation. In early Mesopotamian art, the 'Bull of Heaven' was closely associated with Inanna, the Sumerian goddess of sexual love, fertility, and warfare. One of the oldest depictions shows the bull standing before the goddess' standard; since it has 3 stars depicted on its back (the cuneiform sign for "star-constellation"), there is good reason to regard this as the constellation later known as Taurus. The same iconic representation of the Heavenly Bull was depicted in the Dendera zodiac, an Egyptian bas-relief carving in a ceiling that depicted the celestial hemisphere using a planisphere. In these ancient cultures, the orientation of the horns was portrayed as upward or backward. This differed from the later Greek depiction where the horns pointed forward.

To the Egyptians, the constellation Taurus was a sacred bull that was associated with the renewal of life in spring. When the spring equinox entered Taurus, the constellation would become covered by the Sun in the western sky as spring began. This "sacrifice" led to the renewal of the land. To the early Hebrews, Taurus was the first constellation in their zodiac and consequently it was represented by the first letter in their alphabet, Aleph.

In Greek mythology, Taurus was identified with Zeus, who assumed the form of a magnificent white bull to abduct Europa, a legendary Phoenician princess. In illustrations of Greek mythology, only the front portion of this constellation is depicted; this was sometimes explained as Taurus being partly submerged as he carried Europa out to sea. A second Greek myth portrays Taurus as Io, a mistress of Zeus. To hide his lover from his wife Hera, Zeus changed Io into the form of a heifer. Greek mythographer Acusilaus marks the bull Taurus as the same that formed the myth of the Cretan Bull, one of The Twelve Labors of Heracles.

Taurus became an important object of worship among the Druids. Their Tauric religious festival was held while the Sun passed through the constellation. Among the arctic people known as the Inuit, the constellation is called Sakiattiat and the Hyades is Nanurjuk, with the latter representing the spirit of the polar bear. Aldebaran represents the bear, with the remainder of the stars in the Hyades being dogs that are holding the beast at bay.

In Buddhism, legends hold that Gautama Buddha was born when the full moon was in Vaisakha, or Taurus. Buddha's birthday is celebrated with the Wesak Festival, or Vesākha, which occurs on the first or second full moon when the Sun is in Taurus.

Taurus contains 17 formally named stars and two of the nearest open star clusters to Earth: the Hyades and the Pleiades (also known as the Seven Sisters). These clusters are easily visible to the naked eye and are popular targets for amateur astronomers. The space probe Pioneer 10 is moving in the direction of this constellation, though it will not be nearing any of the stars in this constellation for many thousands of years, by which time its batteries will be long dead.

The brightest star in Taurus is Aldebaran, a red giant that represents the eye of the bull. To find Taurus in the night sky look for the distinctive V-shape formed by the Hyades star cluster, which represents the bull's head created by prominent members of the Hyades which is the nearest distinct open star cluster after the Ursa Major Moving Group. The Hyades span about 5 degrees of the sky, so that they can only be viewed in their entirety with binoculars or the unaided eye. Several stars in the Hyades star cluster, including Kappa Tauri, were photographed during the total solar eclipse of May 29, 1919, by the expedition of Arthur Eddington in Principe and others in Sobral, Brazil, that confirmed Albert Einstein's prediction of the bending of light around the Sun according to his general theory of relativity which he published in 1915. The Hyades Cluster was named after the Hyades, five daughters of the titan Atlas and half-sisters to the Pleiades. It is said that, when their brother Hyas passed, the sisters were transformed into a star cluster, which was later associated with rain. In England, the cluster was sometimes known as the April Rainers.

The bright star Aldebaran marks the eye of the bull. You can use the three stars of Orion's Belt as a guide, extending a line from these stars will lead you to Aldebaran. Its name derives from the Arabic word for "the follower", probably from the fact that it follows the Pleiades during the nightly motion of the celestial sphere across the sky.

The Pleiades (M45), lie in the northwestern quadrant of the Taurus constellation and are one of the best known open clusters, easily visible to the naked eye. The seven most prominent stars in this cluster are at least visual magnitude six, and so the cluster is also named the "Seven Sisters". However, many more stars are visible with even a modest telescope. Astronomers estimate that the cluster has approximately 500–1,000 stars, all of which are around 100 million years old. However, they vary considerably in type. The Pleiades themselves are represented by large, bright stars; also many small brown dwarfs and white dwarfs exist. The cluster is estimated to dissipate in another 250 million years. The Pleiades cluster is irregularly shaped and loose, though

concentrated at its center and detached from the star-field. Messier 45 stars are physically related and they all share the same proper motion. The cluster is known in many different cultures and the earliest depiction of the cluster dates back to the Bronze Age.

The nine brightest stars in the cluster were named after the Pleiades – the Seven Sisters in Greek mythology – Alcyone, Celaeno, Electra, Maia (mother of the god Hermes), Merope (wife of Sisyphus), Sterope, Taygeta – and their parents, the sea nymph Pleione and the titan Atlas. In Greek mythology, once Atlas was forced to carry the heavens, Orion started to pursue his daughters. To protect them from his advances, Zeus first transformed the seven sisters into doves and then, to comfort their father, into stars. It is said that the constellation Orion still pursues the Pleiades across the sky.



Crab Nebula (M1) by Richard Pattie

In the northeast part of Taurus is Messier 1, more commonly known as the Crab Nebula. It is also a pulsar wind nebula, or plerion, which is to say a nebula that is powered by the wind of a pulsar, usually found within shells of supernova remnants. Messier 1 was discovered by the English doctor and astronomer John Bevis in 1731. It was the first astronomical object to be entered in Messier's catalogue in 1758. Messier 1 was the first deep sky object that was linked to a historical supernova event documented by Chinese, Japanese and Arab astronomers on July 4, 1054. North American peoples also observed the supernova, as evidenced from a painting on a New Mexican canyon and various pieces of pottery that depict the event. However, the remnant itself was not discovered until 1731, when John Bevis found it. The Crab Nebula has an apparent magnitude of 8.4 and is approximately 6,500 light years distant from the Sun. It is about 11 light years in diameter and expanding at the rate of 1,500 km per second. The Crab Pulsar is a young neutron star, a remnant of the supernova SN 1054, first

identified in 1968. It emits pulses of radiation ranging from gamma rays to radio waves that rotate 30.2 times each second. It is one of the closest regions of active star formation.

During November, the Taurid meteor shower appears to radiate from the general direction of this constellation. The Beta Taurid meteor shower occurs during the months of June and July in the daytime and is normally observed using radio techniques. Between 18 and 29 October, both the Northern Taurids and the Southern Taurids are active, though the latter stream is stronger. However, between November 1 and 10, the two streams equalize.

The constellation Taurus has many more interesting objects and stories than we have space to explore, so I challenge you to take the opportunity to get outside, look up and view this age-old gem in our winter night sky.

SCATTERED REFLECTIONS

BY CHAD DAVIES, PHD

A while back, after listening to her excellent talk on ancient Arabic astronomy, I was chatting with the Executive Director of the Flagstaff Dark Skies Coalition, Dr. Danielle Adams. As we were discussing that night's topic, she made a point that I had never really thought about. When we look up at the night sky, what we are seeing is data-points of light on a dark background that have little inherent meaning or symbolism. At least, little inherent meaning until a group of people with a culture give them meaning. Where one culture sees a large bear (with a tail!?!), another sees a plow, still another sees a wagon, and nowadays most of us see a large kitchen utensil. Each culture places among the stars things that have meaning to them-sometimes things from the natural world around them, sometimes tools and instruments, sometimes stories to teach moral lessons. All this from simple data points. We humans are remarkably creative in what we can make of what the cosmos presents us with.

One of the things that has most captivated me in my personal astronomical journey is the diversity of views cultures from around the world have of the night sky and what those things tell us about that culture. That many native North American peoples and the Greeks (or, perhaps more accurately, the Hellenes) both saw the same bear hardly seems to be coincidental. More likely, both people migrated from the northern Eurasian steppe millennia ago, carrying with them an ancient cultural relic

that remains with us to this day. I find that absolutely fascinating.

For those who find such cultural perspectives as interesting as I do, might I recommend the wonderful resource, "Figures in the Sky". Created by astronomer and data visualization expert, Nadieh Bremer and hosted by Visual Cinnamon, Figures in the Sky (<https://figuresinthesky.visualcinnamon.com>) allows the curious to investigate the heavens and see them as up to 28 different cultures have and do. For those who are familiar with the planetarium software platform, Stellarium, the data is taken from there. From the peoples of east Asia to the native tribes of North America, this resource shows the user how to see the sky through the eyes of another human being from a different time and/or place.

To do this, the data and visualizations are organized around two different frameworks.

The first is by examining a series of bright stars associated with the modern-day IAU constellations we are generally familiar with. Since different cultures grouped stars together differently, this stellar-centered approach allows for a better comparison. Thus, instead of using Ursa Major, the visualizer begins with Dubhe, the star at the top end of the Big Dipper. As shown in the Figure 1, the initial picture of the region of the sky associated with Dubhe is shown with asterism lines from all of the represented cultures that have a figure for that part of the sky superimposed upon each other. This is surrounded by a series of roundels for each of these cultures.

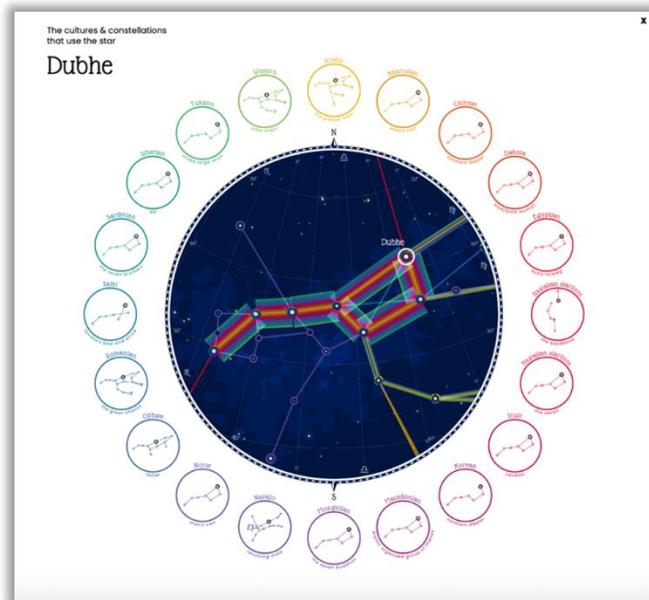


Figure 1

Clicking on one of the roundels will bring up the specific asterism for that culture as shown in Figure 2.

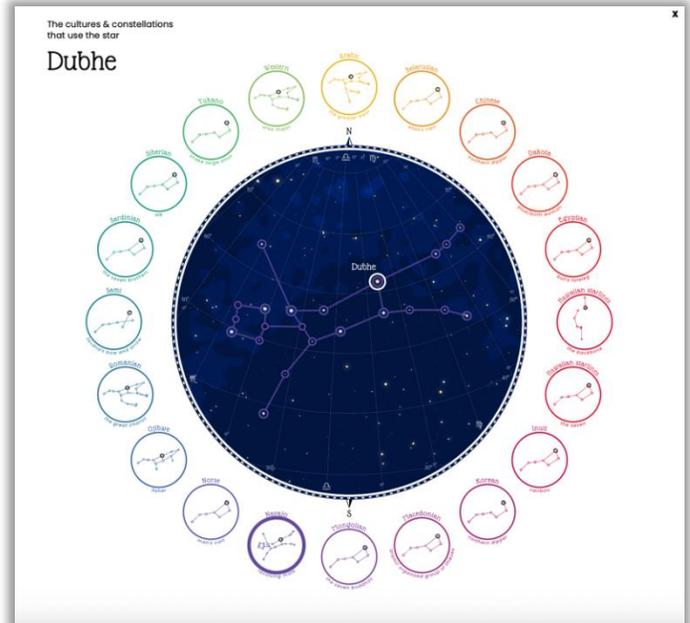


Figure 2

The website allows the user to explore the regions around 18 different bright stars visible from the northern hemisphere. While not every star will have figures for all 28 cultures listed in the on the site, each star will have several and the user can spend hours (not that the author of this missive has done this) comparing what people all over the world might have seen and placed in their night sky.

The second portion of the website shifts from a more sky-centered view to a more culturally centered one. Near the bottom of the site, one will find a scrollable map of the entire night sky with the figures of a specific culture drawn. An example of this is seen in Figure 3 showing the sky as seen through the perspective of Hawaiian culture starlines.

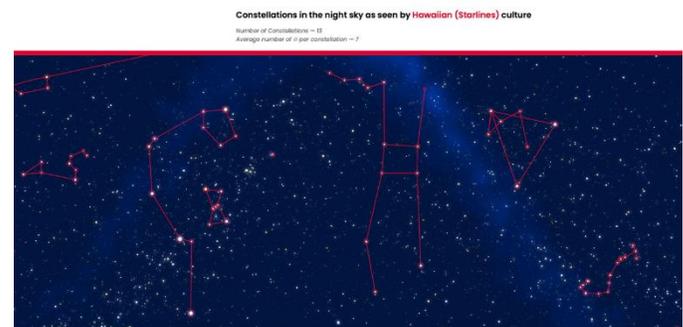


Figure 3: The complete night sky with "starlines" from Hawaiian culture.

Below this map, the user will find a grid of all 28 cultures. Selecting any one of these will place the figures from that culture on the scrollable map for comparison. One will find that some of the figures will have a great deal of commonality across cultures, as can be seen with both

Orion and Scorpius in Figure 3, but it should be noted that said figures might have very different meanings from people to people. For example, while many peoples see a scorpion in the figure on the bottom right of Figure 3, in Hawaiian culture, this is a fishing line and hook. Prior to their introduction by trading vessels from other parts of the world, the Hawaiian Islands didn't have scorpions.

As a final point, for those who are in the vocation of education, either formally or informally, this is a wonderful tool to help students examine their place in the cosmos by considering how others saw their place. An assignment I often have my astronomy students do in each semester is to picture a star/constellation combination and then select three geographically distinct cultures to examine that region of the sky through. While this website isn't enough for them to learn the detailed information to understand what each culture saw in that part of the sky and why it was important to that culture to put that thing there, it is enormously helpful in getting my students started by helping them to see what different cultures saw and in selecting cultures that they might wish to do additional research on. Moreover, I find that my more curious students often find themselves going down rabbit holes of investigation (as I hope you will).

In conclusion, as we begin 2026, let me wish you a Happy New Year and a wonderful year full of clear skies and a sense of wonder enriched by seeing that sky through a new perspective. As I tell my podcast listeners (more on that in a later column),

Full Sails on Your Journey

FOR SALE

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

- Celestron Ultima Flat UFF 24mm 65-degree 1.25" eyepiece - same as APM UFF, a really nice eyepiece but I already have a pair for Binoviewing. \$180 (\$290 retail)
- GSO 9mm Plossl 1.25" eyepiece - Excellent condition. \$20 (\$35 retail)
- 18.75" f/6 primary mirror - decent figure, no astigmatism, would be great for a homemade Dobsonian. 1" thick plate glass. \$500

For sale: Meteorite \$2500

The "Calamine-Smithville" meteorite is an iron-nickel meteorite discovered near the small towns of Calamine and Smithville, Arkansas in the summer of 1972. It was discovered in a remote wooded area, on a rocky hillside in an area of exposed outcropping with a crater about 3 ft deep and 4 ft wide, in the foothills of the Ozark Mountains in Northern Arkansas and has been in the possession of its finder for 53 years.

The meteorite is the heavy nickel-iron type of meteorite (not the more common stony or stony-iron type). It is very compact and heavy. The meteorite weighs approx. 2300 grams and is approximately 4 3/4" long, the width varies from 3 1/4" to 3 1/2" and is about 3 1/4" in height.

If interested contact Larry Mohr 406-550-2188 or write Larry Mohr C/O General Delivery Quartzite, AZ 85346. (Larry is currently near Quartzite for the winter.)

ABOUT THE COVER

This month's cover image is provided by Michael Morrison. He writes:

The Boogeyman Nebula, officially designated LDN 1622, is a dark nebula in the Orion constellation, named for its spooky, shadowy shape that resembles a lurking figure. It's a dense cloud of cold dust and gas, about 500 light-years away.

My first try at a dark nebula except for the Horsehead in Orion.

Capture: Sky X Imaging, 20 Frames at 180 second exposures per frame.

Telescope: TEC 180FL F/7 Focal length 1260mm

Camera: ZWO 2600MC - set at 0C

Guide Scope: SvBony 60mm F4

Guide Camera: ZWO ASI1200

Focuser: Starlight Industry EFS

Resolution: 0.62 x 0.62 arcseconds per pixel

Dawes Limit: 0.64 arcseconds

Image Processing: Siril

Image Editing: Affinity Photo

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<i>Email:</i>	info@hacastronomy.org
<i>Club Meetings:</i> 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.	

HAC Calendar of Events (January - February 2026)

SU	MO	TU	WE	TH	FR	SA
28	29	30	31	Jan 1, 2026 New Year's Day	2 HAC Meeting 7pm (1)	3  3:03pm Quadrantid Meteors
4 Quadrantid Meteors	5	6	7	8	9	10  8:48 AM Solar Saturday 10am to 12pm Jupiter Opposition
11	12	13	14	15	16	17
18  1:52 pm	19	20	21	22 Patterson Public Night 6PM	23 Donor Night at Patterson 6PM	24
25  9:47 pm	26	27	28	29	30	31
Feb 1  3:09 pm	2	3	4	5	6 HAC Meeting 7pm (1)	7
8	9  5:43 am	10	11	12	13	14 Solar Saturday 10am to 12pm Valentine's Day
15 Saturn/Neptune 0.9 ° apart	16 President's Day	17  5:01 am	18	19	20	

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