NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB

SEPTEMBER 2022

PRESIDENT'S NOTES:

In my head I am singing "Rain, Rain go away, come again another day". I want to be able to use my telescope and view the stars. I am tired of looking down to pull weeds, I want to look up and view the sun and the night sky. I know many of you are facing the same frustrations. But the rains are badly needed and the cooler weather is lovely so I guess I will be patient.

In the meantime, I have enjoyed the Astrophotography book that Richard Pattie, HAC member. Richard like many others in our club take incredible images thru their telescopes and spend countless hours processing their work. Richard was gracious to extend the invitation for us to view his work and forward it to others to enjoy. If you have not done so check out his post to the Astro-group on Aug 8.

Ken Kirchner is another generous member HAC who submitted a photo of past presidents to be etched on a plaque which was launched into space aboard the Falcon 9 rocket Aug 4, 2022. You can watch the launch here: https://www.youtube.com/watch?v=BCo6AO_5IIY

Ted Forte, HAC Outreach Coordinator, is waiting for confirmation on dates and times for nights with Italian students in September. However, I want to give a big thank you to Joe De Paul who spoke with the President of the Italian American Club of Sierra Vista (IASC) following our last member meeting. IASC has offered to provide Italian speaking people to assist at these special HAC outreach programs as well as provide Italian desserts.

If you are ready for an astronomy adventure, see below the upcoming 2-night Star Party in Sept being organized by Gary Grue and Mark Orvek. Or the new HAC new Solar Saturday opportunities.

So, even though we have had a quiet viewing month because of the rain, our members continue to amaze me with their generosity of time and talents expanding our knowledge and our Awe-stronomy connections in the community.

SEPTEMBER MEETING SPEAKER

Dani DellaGiustina is an Assistant Professor at the University of Arizona's Lunar and Planetary Laboratory in Tucson, Arizona. Dani is the Deputy Principal Investigator and Image Processing Lead Scientist for NASA's OSIRIS-REx Asteroid Sample Return mission.

Her research focuses on the remote sensing of asteroid surfaces and planetary seismology, which she accomplishes by designing complex systems with robust engineering development principles.

Sample return poses many technical challenges for spacecraft missions. Only three (3) asteroids have been successfully sampled by spacecraft, including Bennu by NASA's OSIRIS-REx mission. OSIRIS-REx faced many challenges, as the spacecraft and scientific instruments were designed without exact knowledge of asteroid Bennu's surface. When the spacecraft arrived at the asteroid in 2018, the asteroid was highly different than predicted, yet OSIRIS-Rex captured a sample. This talk describes the engineering design principles that enabled the mission to overcome many unexpected challenges.

Welcome our new member

Anne Williams of Sierra Vista joined in August. She is new to the area and to our hobby. Welcome! We are glad you joined.

Public Night's at Patterson

Weather permitting, we will resume our Patterson Public Nights on September 1. Doors open at 7 pm. As of this moment we have more than 40 signed up. We'll probably try to have a rain date of Friday September 2 or Saturday September 3 if Thursday's weather doesn't cooperate. I don't

know about you, but I'm ready to get back to the eyepiece! The next Public Night will also be in September (the 29th at 6:30 pm). All HAC members are invited. While admission is free, space is limited and guests need to register on line at www.universitysouthfoundation/patterson-observatory

Solar Saturday

We are inaugurating a new outreach event, that if popular enough, will be scheduled every second Saturday of the month. Our first "Solar Saturday" at the Patterson Observatory will be on September 10 from 9 am to 11 am (weather permitting). We may adjust the time of future events based on any feedback we get. Come on out! You can set up a solar telescope or view our star through the observatory's h-alpha rig. The sun is getting more active now – let's enjoy it while we can!

Dine Under the Stars

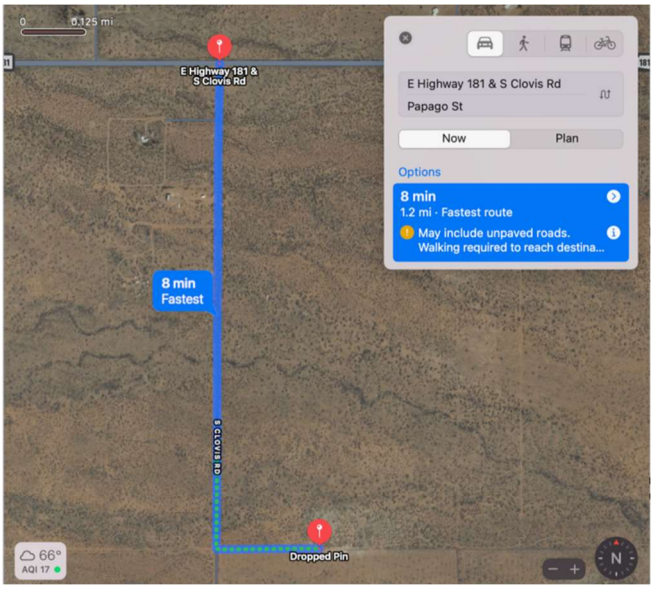
Tickets will be on-sale for Dine Under the Stars at the September meeting. Dine Under the Stars is the annual fundraiser for the University South Foundation, owner of the Patterson Observatory. Please consider supporting the foundation, and HAC's representatives on the foundation's board of directors by purchasing tickets to the event that will be held on Saturday November 5. Adult tickets are $60. There will be dinner (Texas Roadhouse is providing the entrée), a beer and wine bar, live music by Desert Fever, a silent auction, a 50/50 raffle, door prizes and stargazing at the Patterson Observatory. Proceeds from Dine Under the Stars goes to provide scholarships for University of Arizona students residing in Cochise County and attending classes at Sierra Vista or Douglas. See Penny Brondum, Jim Reese, or Ted Forte for tickets. We also need volunteers to operate telescopes and great guests at the observatory during the event.

Special 2-night Star Party

Hosted by Mark Orvek

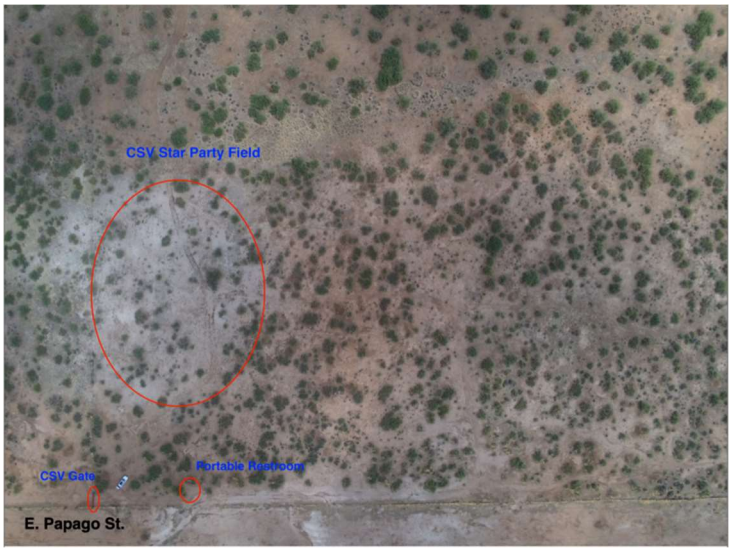
HAC members are invited to attend a special 2-night Star Party at the Chiricahua Sky Village (CSV), located in Pearce, AZ, September 23rd-24th. This is a wonderful opportunity for club members to socialize and enjoy a dark sky experience not too far from home. You can tent camp or bring an RV. There will be a port-a-potty but otherwise it is self-contained dry camping so bring all your supplies (food, water, etc.). You can attend 1 or 2 nights and camp or not as you choose. There is a 20-30 person overnight limit to the event because CSV is currently in development and is operating under a Special Use Permit granted by Cochise County.

If you forget to bring something, the Mustang Mall (http://mustangmall.wixsite.com/) is a local gas station and convenience store located about 10 miles away at the intersection of Hwy 191 and 181. Also, very near the Mustang Mall is Sandy's Restaurant (http://sandysrestaurantandrvpark.com/contact.html) in case you want a to dine out during your stay. Cell phone coverage is good



Directions to CSV:

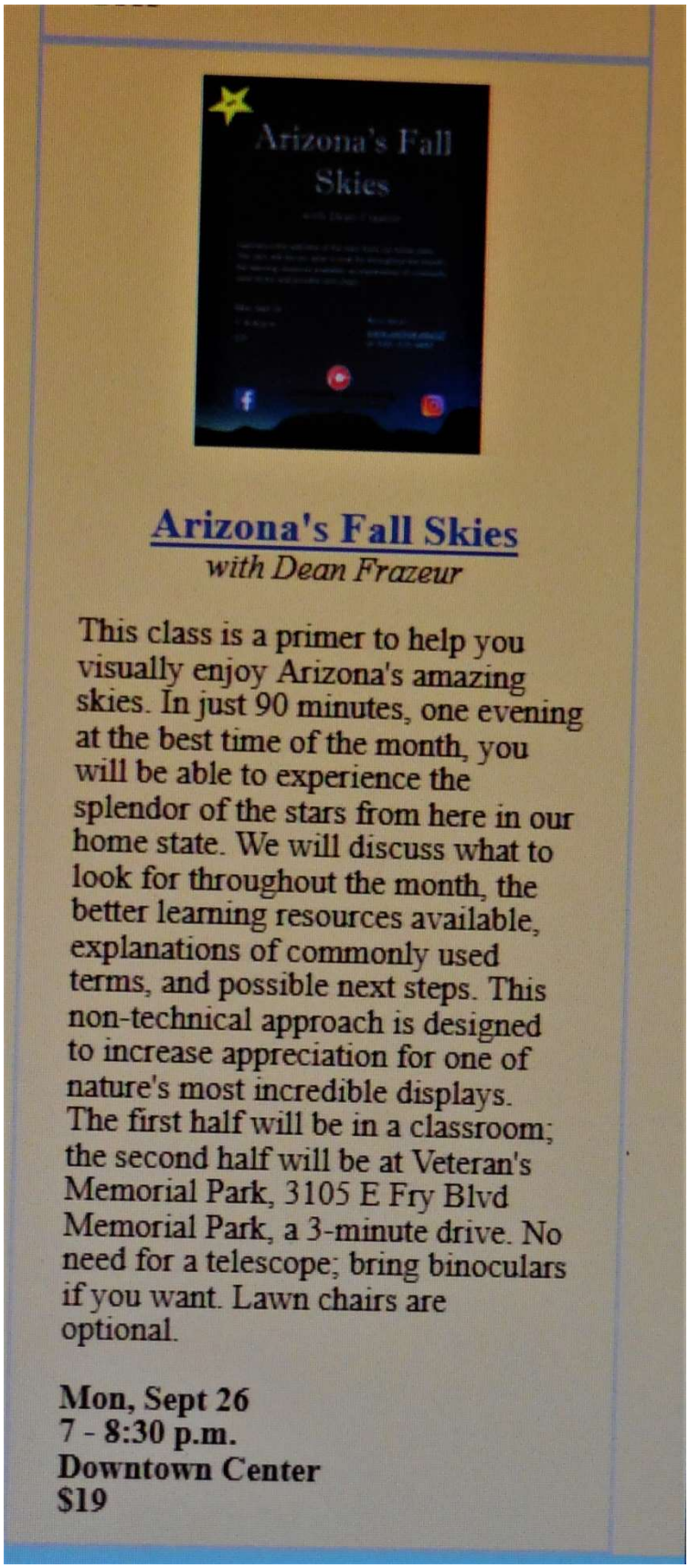
- Go to the intersection of Hwy 181 and S. Clovis Road
- Turn south on S. Clovis Road
- About 1 mile, turn right on E. Papago St (unmarked)
- You cannot go any further on S. Clovis Road as there is a "No Trespassing" sign at the cattle guard.
- The CSV gate is about ¼ mile after turning right on E. Papago St
- GPS Coordinates to the CSV gate: 31°51'42" N 109°32'19" W
- S. Clovis and E. Papago are dirt roads. S. Clovis is well graded, E. Papago is not graded but passable by a typical car (4-wheel drive is not needed).



Aerial View of the star party location

Register to attend with Mark Orvek morvek@yahoo.com. Mark is the CSV host at the star party. He will be there by 4pm on Friday, September 23rd to open the gate and welcome you to the site. For more info and directions see

the flyer on HAC Astrogroup or at the September Member meeting.



An Adventurous Morning

By Karen Madtes August 23

It felt like SO long since I had gotten my scope out that I wasn't sure I would remember how to use it - almost!! Placed it on the platform at 3:45am then took my dogs for a walk. We headed East and about 4am I looked to the North and saw a very bright meteor flash by just above the horizon clouds which was like having dessert before eating :) There were a LOT of constellations visible this morning, so I was very excited to get back and take a closer look. I started observing about 4:15am.

I chose Jupiter to begin with since I didn't trust clouds to stay at the horizon. It looked marvelous!! I could see two belts and the four moons although one seemed to be touching the Southwest side of the planet. I was using a 21mm wide angle Hyperion. SO good to actually see this again and fortunately was so bright that it was easy to find as I had problems with my Telrad fogging up!

At 4:30 the clock was running so I turned the scope to M42. After viewing it with the 21mm, I had to use the Barlow and take a closer look. The four bright stars of the Trapezium glittered so bright that they looked like a radiant jewel on the hilt of Orion's sword. The line of three brighter stars to the Southwest of the Trapezium made it easy to imagine the appearance of a shining dagger/sword blade. The nebulosity was not the best view that I have seen of it but was still awe(stronomy) inspiring! I could see the extremely dark "Fish's Mouth", too. With the 21mm/Barlow combo the view was good but moved much too fast!

At 5am I could see that it would be too light too soon so moved on to Mars. With the foggy Telrad and the position of Mars being in the Dob hole, it took me a little while to find but there's no mistaking that color. I would rate the seeing good, but not excellent due to all the moisture in the air.

It was a bit disconcerting to hear all the water dripping noises (and imagine what that was doing to the scope parts) but the metal and plastic should be able to handle a brief sojourn. When I got back in the house I checked the thermometer to find that it was 60 degrees with 99 % humidity!! There were water droplets on the metal tube, the plastic handles and of course, the Telrad was still fogged up. I left everything uncapped so it could thoroughly dry and wiped down the tube and plastic parts. I've never encountered that kind of humidity previously while observing and am so thankful that it is the exception rather than the norm here!!

NASA Night Sky Notes September 2022

This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more!

The Summer Triangle's Hidden Treasures

David Prosper

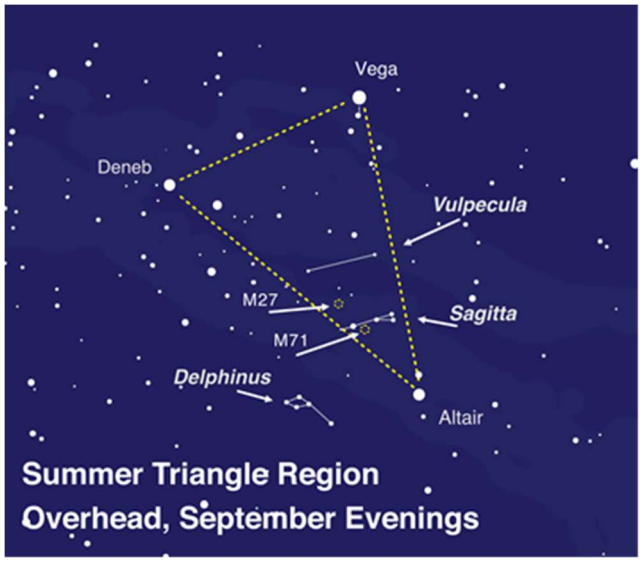
September skies bring the lovely Summer Triangle asterism into prime position after nightfall for observers in the Northern Hemisphere. Its position high in the sky may make it difficult for some to observe its member stars comfortably, since looking straight up while standing can be hard on one's neck! While that isn't much of a problem for those that just want to quickly spot its brightest stars and member constellations, this difficulty can prevent folks from seeing some of the lesser known and dimmer star patterns scattered around its informal borders. The solution? Lie down on the ground with a comfortable blanket or mat, or grab a lawn or gravity chair and sit luxuriously while facing up. You'll quickly spot the major constellations about the Summer Triangle's three corner stars: Lyra with bright star Vega, Cygnus with brilliant star Deneb, and Aquila with its blazing star, Altair. As you get comfortable and your eyes adjust, you'll soon find yourself able to spot a few constellations hidden in plain sight in the region around the Summer Triangle: Vulpecula the Fox, Sagitta the Arrow, and Delphinus the Dolphin! You could call these the Summer Triangle's "hidden treasures" – and they are hidden in plain sight for those that know where to look!

Vulpecula the Fox is located near the middle of the Summer Triangle, and is relatively small, like its namesake. Despite its size, it features the largest planetary nebula in our skies: M27, aka the Dumbbell Nebula! It's visible in binoculars as a fuzzy "star" and when seen through telescopes, its distinctive shape can be observed more readily - especially with larger telescopes. Planetary nebulae, named such because their round fuzzy appearances were initially thought to resemble the disc of a planet by early telescopic observers, form when stars similar to our Sun begin to die. The star will expand into a massive red giant, and its gasses drift off into space, forming a nebula. Eventually the star collapses into a white dwarf – as seen with M27 - and eventually the colorful shell of gasses will dissipate throughout the galaxy, leaving behind a solitary, tiny, dense, white dwarf star. You are getting a peek into our Sun's far-distant future when you observe this object!

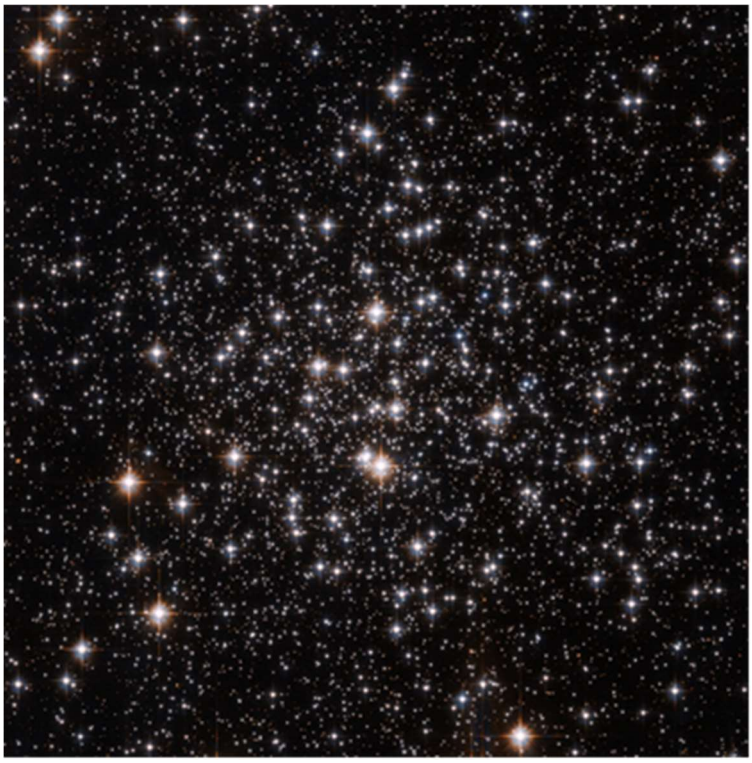
Sagitta the Arrow is even smaller than Vulpecula – it's the third smallest constellation in the sky! Located between the stars of Vulpecula and Aquila the Eagle, Sagitta's stars resemble its namesake arrow. It too contains an interesting deep-sky object: M71, an unusually small and young globular cluster whose lack of a strong central core has long confused and intrigued astronomers. It's visible in binoculars, and a larger telescope will enable you to separate its stars a bit more easily than most globulars; you'll certainly see why it was thought to be an open cluster!

Delicate Delphinus the Dolphin appears to dive in and out of the Milky Way near Aquilla and Sagitta! Many stargazers identify Delphinus as a herald of the fainter water constellations, rising in the east after sunset as fall approaches. The starry dolphin appears to leap out of the great celestial ocean, announcing the arrival of more wonderful sights later in the evening.

Want to hunt for more treasures? You'll need a treasure map, and the Night Sky Network's "Trip Around the Triangle" handout is the perfect guide for your quest! Download one before your observing session at bit.ly/TriangleTrip. And of course, while you wait for the Sun to set - or skies to clear - you can always find out more about the objects and science hidden inside these treasures by checking out NASA's latest at nasa.gov.



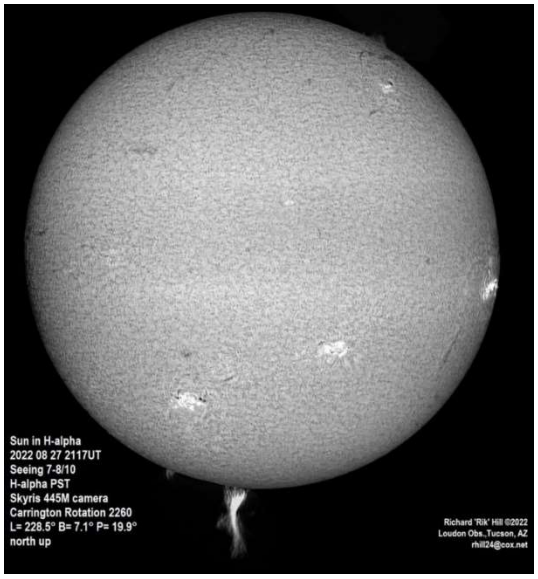
Search around the Summer Triangle to spot some of its hidden treasures! To improve readability, the lines for the constellations of Aquilla, Lyra, and Cygnus have been removed, but you can find a map which includes them in our previous article, Spot the Stars of the Summer Triangle, from August 2019. These aren't the only wonderful celestial sights found around its borders; since the Milky Way passes through this region, it's littered with many incredible deep-sky objects for those using binoculars or a telescope to scan the heavens. Image created with assistance from Stellarium: stellarium.org



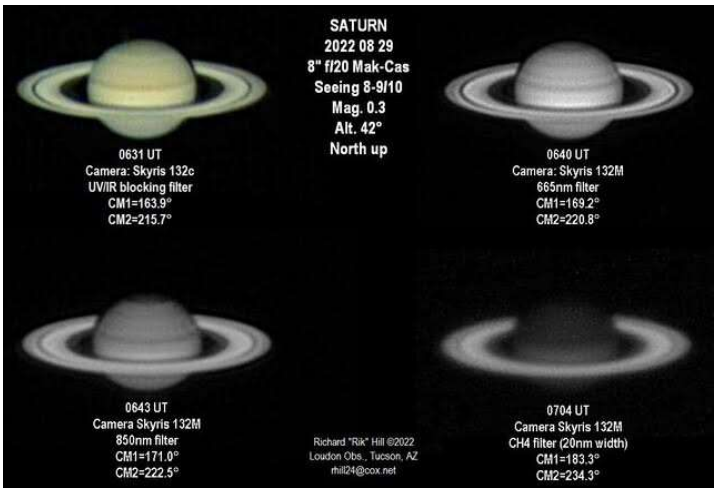
M71 as seen by Hubble. Your own views very likely won't be as sharp or close as this. However, this photo does show the cluster's lack of a bright, concentrated core, which led astronomers until fairly recently to classify this unusual cluster as an "open cluster" rather than as a "globular cluster." Studies in the 1970s proved it to be a globular cluster after all – though an unusually young and small one! Credit ESA/Hubble and NASA. Source: https://www.nasa.gov/feature/goddard/2017/messier-71

Pictures from HACAstro

Sun in H-alpha by Rik Hill



Saturn by Rik Hill



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For more information on products and contact information, their websites are:

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HAC Sept-Oct 2022 Calendar of Events

SU	MO	TU	WE	TH	FR	SA
28	29 Artemis I Launch Party 5:33 AM	30	31	1 Sep Patterson Public Night 7PM	2	3 Outreach @Patterson Italian Students 7-9 PM 11:08 AM
4	5 	6	7	8	9 HAC Meeting 7PM Room A102	10 Solar Saturday @ Patterson 9 Open to Public 2:59AM
11	12	13	14	15 Outreach@ Patterson Az. Arts Academy 7-9 PM	16	17 2:52PM
18	19	20	21	22 Autumnal equinox 6:04Pm	23 2-Night Star Party in Pearce	24 2-Night Star Party in Pearce continues
25 1:54PM	26 Jupiter at Opposition	27 Outreach@ Patterson Veritas Acadamy 9-11am	28	29 Patterson Public Night 6:30PM	30	1 OCT Astronomy Day at the Library 10am
2 5:14PM	3	4	5	6	7 HAC Meeting 7PM Room A102	8 Solar Saturday at Patterson 9am Open to Public
9 1:55PM	10 	11	12	13	14 Outreach@ Patterson Veritas Acadamy 6:30- 9 PM	15
16	17 Outreach@ Patterson Ft. Huachuca Home School 1:30-3:30 PM 10:15AM	18	19	20	21 Orionid meteors	22 Kartchner Star Party Orionid meteors
23	24	25 3:49AM	26 NASA's DART will impact Dimorphos	27 Patterson Public Night 6:30PM	28	

All times local MST
Join HacAstro to keep up to date with all of the Huachuca Astronomy Club events
Send an email to: HACAstro+subscribe@groups.io