NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB

JULY 2018

PRESIDENT'S NOTES

It's July, everybody! I'm ready for rain and hoping for clear nights. Before I forget: Mars, Saturn, Jupiter, summer Milky Way, globulars, planetaries, dark nebulae, catch them as you can. Make your observing plans (or at least a list of objects), even if you won't able to use it for a while.

I've always been a bit haphazard in my astronomy endeavors; don't you be. Ok, a comet or a close asteroid gets my attention, and who doesn't' like a good planet visitation or a globular cluster. But, these are really catch-as-catch-can or short-term viewing programs -- if you can call them programs at all. So, it is with no small bit of envy that I hear or read about some programs -- real programs – that some of our HAC members have embarked on.

In an entry on HACList, our esteemed treasurer, NASA Ambassador, *Sky and Telescope*/local newspaper writer: Ted Forte, outlined his simple astronomical goal: see [basically] everything. All of the Herschel catalog, all of the New General Catalog (NGC) within the limitations of his telescopes, his eyes, and his location on Earth. This goes beyond merely hunting down a bright Messier object or just happening on a faint fuzzy, this is study and planning and execution. This is awesome.

Moreover, Ted isn't the only one of our members with a premediated plan. Bruce Gary and Tom Kay are out there most nights collecting photons for science. Their aim is to crunch photometric data down from target stars 'til they scream "UNCLE" and give up their concealed planets. This is science.

Bob Kepple and Glen Sanner, two of my heroes, are more than fanatical observers. They have written a series of books over the years to teach and taunt observers to go a little or a lot further in their observing routines. These books took years of effort and focus, not to mention observing. Their books, *The Night Sky Observer's Guide*, form the backbone of my astronomy library. This is education.

Excellent observers are not a new phenomenon for HAC. Club members have always been rabid astronomers, bitten early in life and transformed forever by the hobby [obsession]. David Healy was an asteroid hunter credited with over 500 discoveries. Yes, he found five hundred asteroids. He also contributed to my other favorite set of astronomy books, *Burnham's Celestial Handbooks*. This is incredible.

Doug Snyder, a past club president, is an avid comet hunter. That designation alone means Doug is dogged, determined, and insanely dedicated to the obsession. In the predawn skies of March 11, 2002, Doug swept up a faint 10.4 magnitude fuzzball in Aquila with his 20-inch f/5 telescope at his backyard observatory in Palominas. There are a lot of fuzzballs in Aquila (just look in Bob K's latest book) but this one looked different, it seemed to move. Designated as Comet Snyder-Murakami, C/2002 E2, the comet shown on for months as it left the inner solar system. That discovery was made after Doug had spent countless hours (Doug knows how many) scanning the sky, weeding out galaxies and faint globulars to find a cold, dark ball of ice and dust. This is historic.

This is by no means the total list of prodigious plotters and planners in this tiny club. We have imagers and supernova searchers; we have moon watchers and astro-sketchers. We have binocular observers, couch astronomers, and just plain lazy astronomers like me. This gets me back to my start, take a clue from these folks, and plan to view. This is over. Now get out there and stare.

AT THE JULY MEETING

The July meeting will be held in the Student Union building at Cochise College, Sierra Vista on July 13, 2018 at 7 PM. Our speaker will be Dr. Kaitlin Kratter, Assistant Professor of Astronomy at the University of Arizona.

Dr. Kratter's research focuses on the formation and evolution of stellar and planetary systems. Kratter employs analytic and computational techniques to tackle topics including accretion disk dynamics, binary formation, few body dynamics, and planet-disk interactions. Her current work is focused on the intersection of binary and planet formation, especially in circumbinary systems. She is also collaborating closely with observers to discover extreme mass ratio binaries, and very young multiple star systems.

Welcome our new members

Richard (Woody) and Ja-Nel Wood of Sierra Vista joined the club in June. They own a C-90 telescope. Welcome to the club, we are glad you joined!

Patterson Observatory Update

Construction has begun on an addition to the Patterson Observatory. B-R Constructors began work on July 5 and completion is scheduled for mid-September, but if the weather cooperates we anticipate completion earlier than that.

The addition will include two restrooms, a kitchenette and a storage room. An archway through the existing wall in the classroom will open into the kitchenette. Public night patrons will access the restrooms from an external door on the south side. A cement walkway will connect to the existing patio.

The addition is funded by an endowment from the David Patterson estate made to the University South Foundation.

A Herschel List Project

By Ted Forte

Sir William Herschel is generally credited with discovering 2,500 deep sky objects. Given that a number of his objects have more than one possible identity, the nominal list of Herschel-credited NGC objects is actually 2,515.

Herschel's logs contain very poor object positions in some of his "sweeps" and a number of his discoveries have been lost. Some of Herschel's' discoveries were duplicated. There are objects that have more than one NGC number assigned because of those duplications, or because another observer mistook it for a new object and it got a second (or in some cases a third or even fourth) ID in the NGC catalog. A few objects he "discovered" had already been seen by Messier, Mechain or others and should be discarded. Additionally, poor seeing and, in some cases, inferior optics, resulted in mistaking some multiple star systems as nebulae.

Each modern observer that hopes to observe the "Herschel 2500" must decide on what objects to include. Duplicates must be ferreted out and the 25 or so objects that simply do not exist (or at least can't be found) should be eliminated. At least 68 of his objects are just stars that Herschel saw as nebulous or are clusters (or asterisms) whose identity is somewhat uncertain.

Starting with a list from the SEDS database and examining all 2,515 entries line by line, I was able to trim the list to 2,454 objects that I think can be attributed to Sir William. I relied heavily on work done by Harold Corwin as well as Wolfgang Steinicke and Steve Gottlieb to resolve discrepancies.

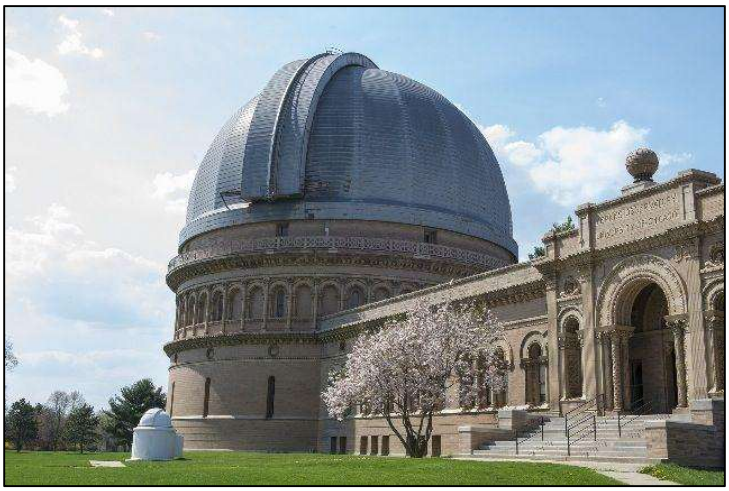
William Herschel's discoveries were re-observed by his son, John Herschel, and added to John's own (mostly southern hemisphere) discoveries to comprise the "General Catalog". The General Catalog of around 5,000 objects formed the backbone of the "New General Catalog (NGC)" compiled by John Dryer.

I am striving to observe all of the NGC/IC reachable by my 30-inch telescope from here. I've been slowly making progress on that. Just under 9,200 objects meet my criteria as reachable NGC/IC targets and to date I am more than halfway through the observable list. Last year I started concentrating on the Herschel objects and am nearly done with that part of the list. It has been a long project if you consider that I logged my first Herschel object for the Herschel 400 program 21 years ago!

The entire NGC and IC are rife with problems similar to those that plague the Herschel list and a plethora of devoted investigators are still working to try and unravel the discrepancies. It is a never-ending process, it seems. For me, that just adds interest to the project even if more time is spent researching objects than is spent observing them!

Last Call for Yerkes, and the 40-inch Refracting Telescope

March 7, 2018: The University of Chicago has announced plans to wind down its activities at Yerkes Observatory in Williams Bay, Wis., over the next six [four] months and to formally cease on-site operations by Oct. 1, 2018.



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Space Place Article June 2018

A Close-Up View of Mars

By Jane Houston Jones and Jessica Stoller-Conrad

In July 2018, skywatchers can get an up close view of Mars—even without a telescope! In fact, on July 31, Mars will be closer to Earth than it has been in 15 years.

Why is that?

Like all the planets in our solar system, Earth and Mars orbit the Sun. Earth is closer to the Sun, and therefore it races along its orbit more quickly. Earth makes two trips around the Sun in about the same amount of time that Mars takes to make one trip.

Sometimes the two planets are on opposite sides of the Sun and are very far apart. Other times, Earth catches up with its neighbor and passes relatively close to it. This is called Mars's closest approach to Earth, and it's happening this year on July 31. The Moon will be near Mars on that night, too!

Keep in mind that even during its closest approach, Mars is still more than 35 million miles away from Earth. That's really far. So, Mars won't appear as big as the Moon in the sky, but it will appear bigger than it usually does.

July and August will be a great time to check out Mars. Through a telescope, you should normally be able to make out some of the light and dark features of the Red Planet—and sometimes even polar ice. However, a huge Martian dust storm is obscuring these features right now, so less planetary detail is visible.

There is another important Mars date in July: Mars opposition. Mars opposition is when Mars, Earth and the Sun all line up, with Earth directly in the middle. This event is happening on July 27 this year.

Although you may see news focusing on one of these two dates, Mars will be visible for many months. For about three weeks before and three weeks after opposition and closest approach, the planet will appear the same size to a skywatcher.

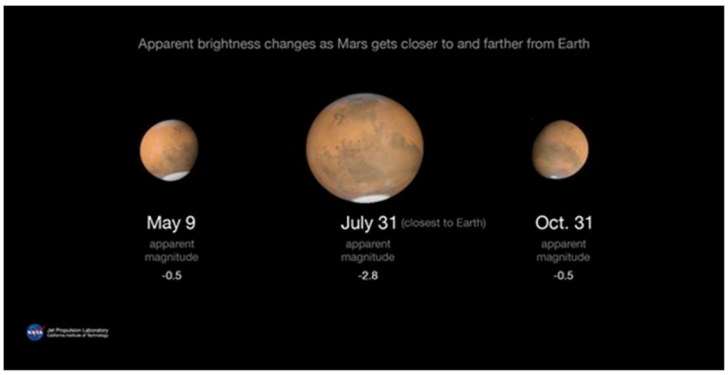
From July 7 through September 7 Mars will be the third brightest object in the sky (after the Moon and Venus), shining even brighter than Jupiter. The best time to view Mars during this time is several hours after sunset, when Mars will appear higher in the sky.

Mars will still be visible after July and August, but each month it will shrink in size as it travels farther from Earth in its orbit around the Sun.

In other sky news, there will be a partial solar eclipse on July 13, but it will only be visible from Northern Antarctica and southern Australia. On July 27 (beginning at 20:21 UTC), a total lunar eclipse will be visible in Australia, Asia, Africa, Europe and South America. For those viewers, Mars will be right next to the eclipsing Moon!

If you're wanting to look ahead to next month, prepare for August's summer Perseid meteor shower. It's not too early to plan a dark sky getaway for the most popular meteor shower of the year!

You can catch up on NASA's missions to Mars and all of NASA's missions at www.nasa.gov

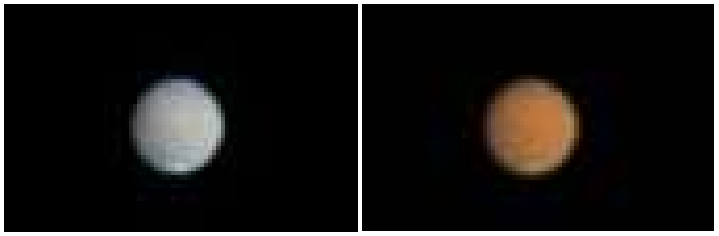


Caption: In 2018, Mars will appear brightest from July 27 to July 30. Its closest approach to Earth is July 31. That is the point in Mars' orbit when it comes closest to Earth. Mars will be at a distance of 35.8 million miles (57.6 million kilometers). Credit: NASA/JPL-Caltech

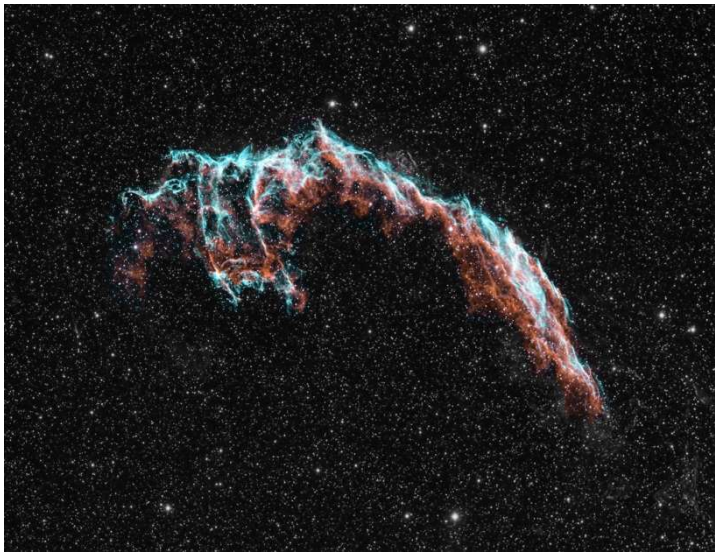
Pictures from HAC Members

Jupiter by David Roemer

Mars by David Roemer



NGC 6992 Eastern Veil Nebula by Richard Pattie



NGC 1333 By Glan Sanner

Want Ads

For Sale: 8" Meade SCT in excellent condition.
It has excellent optics and the secondary mirror has been professionally cleaned by Starizona.
Seller thinks a fair price would be $400.
Contact Carl Swanson at (480) 600-7353 or cswanson@gotsky.com

For Sale: Meade 10" 2120 OTA with HTMC
I bought it on Cloudy Nights from a guy in Wickenburg, had the secondary professionally cleaned at Starizona in Tucson. The OTA comes with either a Celestron 1.25 visual back or a 2" rotating visual back, an adjustable focus finder as shown in the picture, and a Vixen style dovetail bracket. Of course, there is also a front cover.
Asking $500
Contact Carl Swanson at (480 600-7353 or cswanson@gotsky.com

For Sale: Meade 10" LX200 classic telescope
In very good condition, with tripod, 120v AC and 12v DC power converters with 25' power cords, dew shield, 8x50 finder scope, electric focuser, piggy back bracket, and soft sided carrying case. Also includes a set of Meade CCD color filters, Meade CCD 3.3 focal reducer and CCD variable T-adapter. Plus some other equipment.
Asking $ 1,800.
Contact Bob Stroxtile at strox@ssvecnet.com or call 520-249-0875.

For Sale: Pier Tech electric telescoping pier with Lati-wedge made for the latitude of Sierra Vista
All the hardware, bolts, nuts, washers and plates are with the pier. Pier Tech can make new legs for it to make it correct for anywhere in the world. The pier and wedge have never been used and the only time the pier was out of the box was to take the photos. New today, the pier and wedge are $3,400. Asking $2,800.
Contact Bob Stroxtile at strox@ssvecnet.com or call 520-249-0875.

For Sale: Meade Starfinder 8" Reflector Telescope
Will sell at a very reasonable price. Included are a Telrad Finder, Filters, and additional Lenses.
Contact Mr. Jim Moses at (520) 803-0913 or by email jjmoses2@gmail.com

For Sale: Celestron Celestar 8 inch S/C Deluxe - $1200.
Will also sell pieces individually
Contact Rhonda and Terry Taylor at (520) 366-2378 or by email at twrl2@yahoo.com. Or See Craigslist at http://sierravista.craigslist.org/bar/4523742100.html

Club Officers and Contacts

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HAC July – Aug Calendar of Events

SU	MO	TU	WE	TH	FR	SA
1 Jul	**2**	**3**	**4** 	**5**	**6** 12:51 AM	**7**
8	**9**	**10**	**11**	**12** 7:48PM Pluto opposition	**13** Hac Meeting Student Union	**14** Mercury 2° soth of moon
15 Venus 1.6° south of moon	**16**	**17**	**18**	**19** 12:52PM	**20**	**21**
22	**23**	**24**	**25** Saturn 2° S of Moon Mercury Stationary	**26**	**27** 1:20PM **Mars opposition**	**28**
29 Delta Aquarid Meteors	**30** Delta Aquarid Meteors	**31** Mars closest approach Delta Aquarid Meteors	**1 Aug**	**2**	**3**	**4** 10:18 AM
5	**6**	**7**	**8**	**9**	**10** Hac Meeting Student Union	**11** 2:58AM Perseid meteors
12 Perseid meteors	**13** Perseid meteors peak	**14** Perseid meteors	**15**	**16**	**17** Venus eastern elongation	**18** 12:49AM
19	**20**	**21** Saturn 2° south of moon	**22**	**23**	**24**	**25**
26 4:56AM Mercury western elongation	**27**	**28** Mars Stationary	**29**	**30**	**31**	

All event times MST. Join Haclist to keep up to date with all of the Huachuca Astronomy Club events
Send an email to: haclist-subscribe@yahoogroups.com