Huachuca Astronomy Club
Sierra Vista Arizona

Nightfall

A Publication of the Huachuca Astronomy Club

March 2017

President's Notes

Welcome to March Everybody

This month we have the annual Messier Marathon, and a dim little comet (getting about as bright as it ever gets) coming to our skies, so let's get out there.

Comet 2P Encke February 21, 2017

Image: David Roemer

Let's start by covering the comet, shall we? Comet 2P Encke is the second comet to have a predicted orbit, the first being Comet 1P Halley. A short period comet, Encke orbits the sun every 3.3 years, but never gets very showy. Comet Encke's orbit only gives Earth a favorable pass about every 33 years. As well, Encke has been warmed by the Sun many times and has lost much of its ice and volatiles. However, Encke isn't dead yet. This time around, we get a good look at the little comet. It is already visible in the evening sky with 8 x 40 binoculars, and at its brightest (around March 15), it may reach naked-eye visibility. However, be careful to protect your vision, as it will be close to the Sun. After its close encounter with the Sun, Encke will become a morning comet. And after a few mornings, it will start fading as it moves south in the pre-dawn sky. Try to see Encke this time around, as it doesn't get this close or bright again until 2036.

On Saturday, March 25, and continuing into Sunday morning, Keith and Teresa Mullen will host this year's Messier Marathon at their RepoGazer Observatory. What is that you ask? Why, it is that one time of the year when it is possible to observe all the Messier "M" objects in one long night. And, it is a marathon (at least in the terms of finesse, stamina, and a long timeframe), as it begins just after sundown and ends just as the Sun returns to wipe out the night sky. My plan is to cheat, well not really but I am going to use big binoculars with a nice wide field. So get out your charts, your scope and start training now.

You will be getting more information as the date nears, but if the night is anything like the night, we had when the Mullens hosted the HAC member's star party last month, this will be an event not to be missed. Keith informs me that the more the merrier, and those who tough it out all the way through will get a hearty breakfast as well as a certificate of participation. We have some great and knowledgeable (dare I say, expert) observers in this club who will really help on an outing like this. If you have never tried a Messier Marathon, or have but it's been a while, this is a great time to get yourself out there and do it.

At the March Meeting

Guest speaker **Tim Hunter** will deliver a talk on the Barnard Objects.

Tim obtained a B.A. degree from DePaul University in 1966 and the M.D. degree from Northwestern University in 1968. He also received a Bachelor of Science degree in mathematics from the University

of Arizona in 1980. Currently, he is a Professor in the Department of Radiology in the College of Medicine at the University of Arizona. Tim Hunter has been an amateur astronomer since 1950. With James McGaha, he operates Grasslands Observatory in Sonoita, Arizona. He recently completed a Master's degree (MSc) in Astronomy from Swinburne University.

Since 1986, he has been interested in the growing problem of light pollution. In 1987, Tim Hunter and Dr. David Crawford founded the International Dark-Sky Association, Inc., to promote quality outdoor lighting and combat the effects of light pollution. Since 1986, Tim has studied the problem of increasing light pollution. In 1987, together with David Crawford, he founded the International Dark-Sky Association, which has grown to more than 10,000 members in 75 countries (as of 2007). His effort in this field brought him the Presidential Award of the Astronomical League in 2004 and the Amateur Achievement Award of the Astronomical Society of the Pacific in 2005. The asteroid 6398 Timhunter was named in his honor. He is also a member of the Planetary Science Institute Board of Trustees and a past chairman of the Western Region of the Astronomical League.

The meeting will be held in the community room, Student Union building at Cochise College at 7 pm on Friday March 10. HAC members will treat Tim and his wife Carol to dinner at the Outback Steakhouse before the meeting. If you would like to join the group for dinner, please RSVP to Ted Forte (tedforte511@gmail.com) Dinner participants should plan to be seated by 5 pm.

Membership Corner

We have no new members to report this month. Do you know someone you think would benefit from HAC membership? Why not encourage them to join? Better yet, why not consider giving them a gift membership?

Huachuca Astronomy Club 2017 Messier Marathon Star Party Corner

By Keith Mullen, HAC Star Party Coordinator and Marathon host

It's time again for your annual shot at bagging all the Messier objects in one night. New Moon in late March or early April affords us the opportunity to catch all 108 Messier objects, if sequential observed and under optimum conditions at a location with unfettered views of both the West and East horizons. This year our chance will fall on Saturday March 25th and will be held at Repogazer Observatory (RGO) in the Three Canyons area of Palominas.

We've had several Marathons here with varying levels of success. There have been two with nights yielding over 100 objects and then nights that washed out by midnight. Sorry, no guarantees, but always a fun night if not weathered out. At RGO, we have always had the added bonus of "The Breakfast Club" meaning anyone still at the eyepiece at sun-up, whether taped, glued or still trying to catch M-30 climbing out of the Naco border lights get fed breakfast by Teresa and some of the HAC wives who brave getting up at 4:30 to come help. Also, did I mention that anyone who tries, no matter how many M's are caught gets a Certificate providing they last past midnight.We don't put rules on what aids you use to find the objects. GO-TO's, Star Hopping or just a generally good knowledge of the sky, it's all in fun but there are a few "Musts" involved. For starters, you **must** be here long before sunset, which occurs that night at 18:41 hours (6:41 pm) for you nonmilitary folks. I'd recommend arriving no later than 17:30hrs (5:30 pm) to get your gear set up. Please, if you want to attempt to complete the marathon, you need to let me know in advance and you'll be given an special spot affording you the unrestricted horizons needed. So if you are coming just for the Members Star Party, be prepared to be guided to a less exclusive spot. Those members who want to watch but not participate, we ask that you park in front of the house or out along the driveway outside the gate so you won't blind those trying to stay. Now if the weather holds you can expect lows dipping into the high to mid 30's and with some luck maybe the low 40's, but you still need to dress like it's a freezing night. As the night proceeds there is a lull in the M objects from midnight until around 02:00 affording you a rest and warm period. We have an outside heated restroom at RGO and the house is always open at any time with several varieties of snacks and warm beverages at the ready. Over the years, many have grabbed a nap during the night to come back out and finish. Sunrise on Sunday morning is at 06:10 with breakfast to follow for those still standing. You can't nap all night and expect breakfast and sorry Ted no Steaks this year.

To recap: Those wishing to participate, come early, have a good meal beforehand. Be here no later than 5:30 pm, dress warmly and please call Keith at 266-4230 in advance so that we can get some indication on how many breakfast's we might need to serve. Spectators or early leavers please park out front, be considerate to those who are going for it. There's really no better feeling than to watch M-30 separate itself from one of the Naco Border lights ending a long but exciting night.

Hope to see many of you here. Directions will be posted on the HAC-LIST later in the month, but most of you already know the way.

JBO Update

By Tom Kaye

Since the subject of JBO has come up, I thought I should give everyone an update.

The entire electronic control system was replaced a little over a year ago.

Many additions have been made to the observatory to facilitate remote controlled observations. Video cameras, IP controlled relays etc.

JBO has participated recently in a couple very successful pro/am collaborations with researchers from MIT, Kepler and NASA.

The white dwarf WD1145 observations generated two peer reviewed research publications and one already has been cited 20 times by other papers.

A third paper is currently being drafted on the white dwarf WD1202. This is a recently discovered binary found in the Kepler field that goes completely dark every 70 minutes for 5 minutes. The white dwarf is eclipsed by an invisible brown dwarf in a close orbit.

JBO has played a major part in all these papers, as the time required to get the proper data was not available on larger scopes. In the forthcoming paper, JBO is the largest telescope currently providing data.

Thanks to Cheryl Healy for keeping the observatory going!

YES Fair Report

By Bob Gent

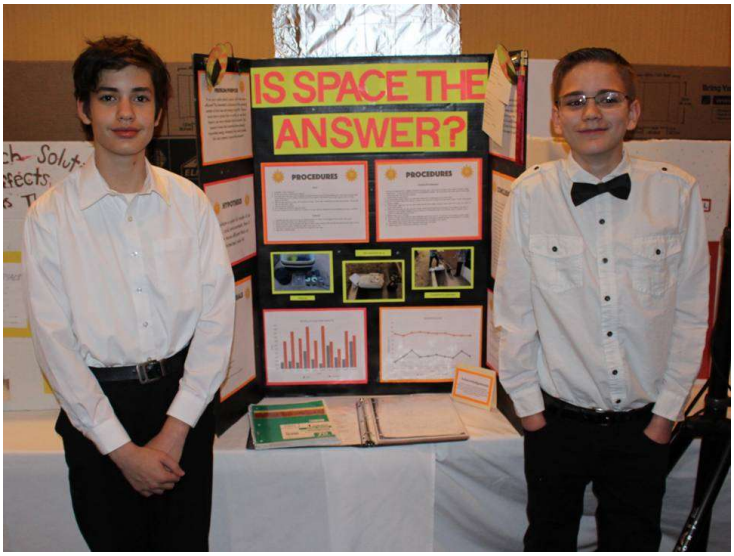
Yes Fair Judge, Board Member and Past President, Huachuca Astronomy Club

Along with many other dedicated volunteers, I have served as a judge and special awards representative for our regional Youth Engineering and Science (YES) Fair. Last night (Feb 23) was the 2017 awards ceremony. I wish everyone could have seen the outstanding work done by so many talented students. The award winning students and their teachers deserve a special commendation for their amazing achievements.

This regional science and engineering fair would not be possible without the great work all the officers and staff of SSVEC. The amount of time and resources they put into this fair is nothing short of amazing. I think they deserve a standing ovation for their truly outstanding support of our area youth and schools.

Last night, thanks to the generosity of many organizations, there were a lot of special awards. For example, the Celestron Corporation gave an astronomical telescope to two students, and these kids were really excited to win this telescope. The Celestron NexStar 60 SLT telescope was presented to Henry Haley and August Lieb at Colonel Smith Middle School at Fort Huachuca, Arizona. A number of other special prizes, including astronomy awards, are available at every YES fair for our outstanding students.

August Lieb and Henry Haley with their Celestron telescope at YES Fair Awards Ceremony, February 23, 2017.



August Lieb and Henry Haley with their project at YES Fair Awards Ceremony, February 23, 2017

2017 Dues

If you joined HAC in 2016, your 2017 dues are prorated to adjust your membership to expire in December. You will owe an amount equal to 1/12th of your annual dues times the number of months between your join anniversary and December. You should receive email reminders but you can always check with the club treasurer, Ted Forte, to check on what you owe. Paying your dues on time is a big help and is greatly appreciated. There are at least a couple of members who have their memberships expire each month, so please watch your email for reminders.

This article is provided by NASA Space Place.

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Space Place Article February 2016

Solar Eclipse Provides Coronal Glimpse

By Marcus Woo

On August 21, 2017, North Americans will enjoy a rare treat: The first total solar eclipse visible from the continent since 1979. The sky will darken and the temperature will drop, in one of the most dramatic cosmic events on Earth. It could be a once-in-a-lifetime show indeed. But it will also be an opportunity to do some science.

Only during an eclipse, when the moon blocks the light from the sun's surface, does the sun's corona fully reveal itself. The corona is the hot and wispy atmosphere of the sun, extending far beyond the solar disk. But it's relatively dim, merely as bright as the full moon at night. The glaring sun, about a million times brighter, renders the corona invisible.

"The beauty of eclipse observations is that they are, at present, the only opportunity where one can observe the corona [in visible light] starting from the solar surface out to several solar radii," says Shadia Habbal, an astronomer at the University of Hawaii. To study the corona, she's traveled the world having experienced 14 total eclipses (she missed only five due to weather). This summer, she and her team will set up identical imaging systems and spectrometers at five locations along the path of totality, collecting data that's normally impossible to get.

Ground-based coronagraphs, instruments designed to study the corona by blocking the sun, can't view the full extent of the corona. Solar space-based telescopes don't have the spectrographs needed to measure how the temperatures vary throughout the corona. These temperature variations show how the sun's chemical composition is distributed—crucial information for solving one of long-standing mysteries about the corona: how it gets so hot.

While the sun's surface is ~9980 Farenheit (~5800 Kelvin), the corona can reach several millions of degrees Fahrenheit. Researchers have proposed many explanations involving magneto-acoustic waves and the dissipation of magnetic fields, but none can account for the wide-ranging temperature distribution in the corona, Habbal says.

You too can contribute to science through one of several citizen science projects. For example, you can also help study the corona through the Citizen CATE experiment; help produce a high definition, time-expanded video of the eclipse; use your ham radio to probe how an eclipse affects the propagation of radio waves in the ionosphere; or even observe how wildlife responds to such a unique event.

Otherwise, Habbal still encourages everyone to experience the eclipse. Never look directly at the sun, of course (find more safety guidelines here: https://eclipse2017.nasa.gov/safety). But during the approximately 2.5 minutes of totality, you may remove your safety glasses and watch the eclipse directly—only then can you see the glorious corona. So enjoy the show. The next one visible from North America won't be until 2024.

For more information about the upcoming eclipse, please see:

NASA Eclipse citizen science page

https://eclipse2017.nasa.gov/citizen-science

NASA Eclipse safety guidelines

https://eclipse2017.nasa.gov/safety

Want to teach kids about eclipses? Go to the NASA Space Place and see our article on solar and lunar eclipses! http://spaceplace.nasa.gov/eclipses/

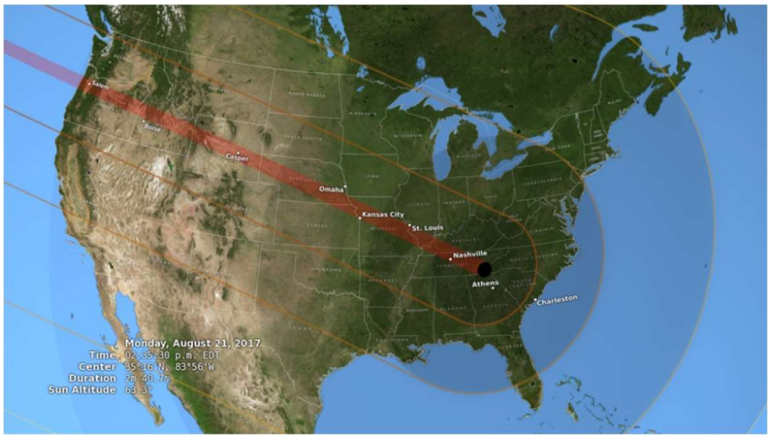


Illustration showing the United States during the total solar eclipse of August 21, 2017, with the umbra (black oval), penumbra (concentric shaded ovals), and path of totality (red) through or very near several major cities. Credit: Goddard Science Visualization Studio, NASA

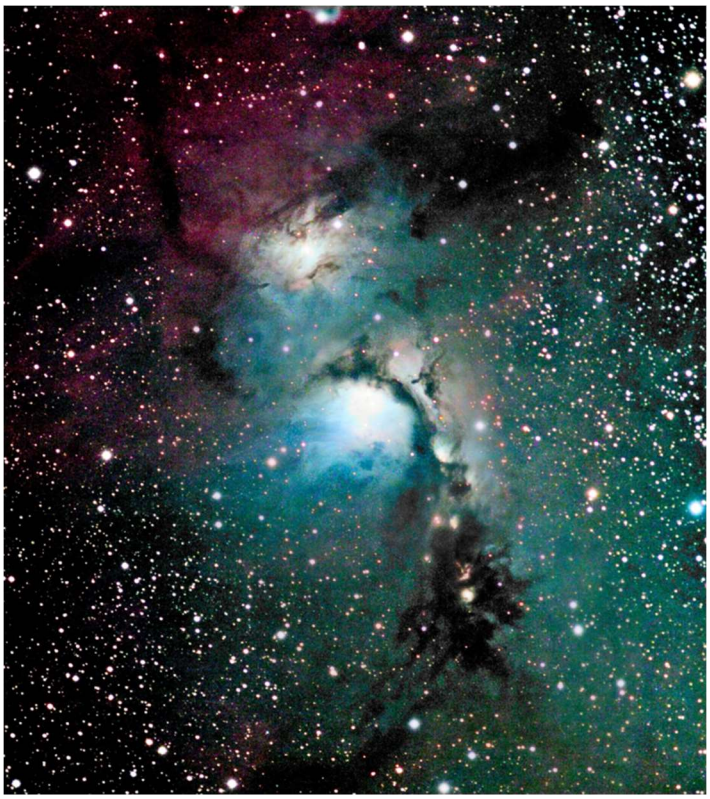
Pictures from HAC Members

Comet 41 P Tuttle by David Roemer

NGC 2903 by Craig Anderson

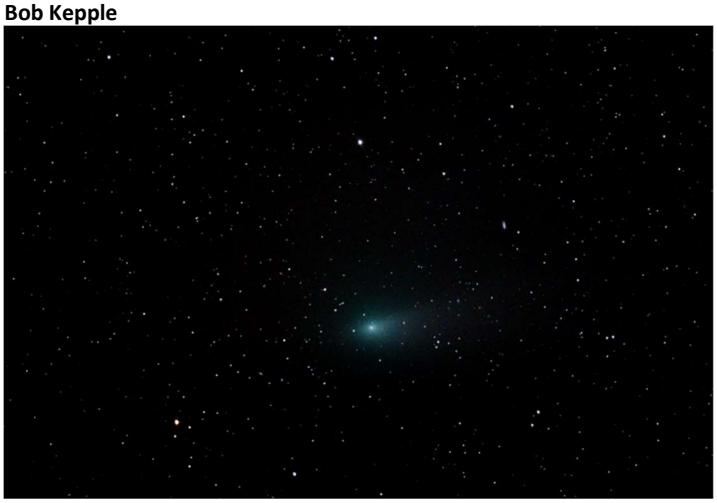
Orion Wide Field Jay LeBlanc

M78 Rick Burke



Lynds' Dark Nebula Catalog 1622 Catalog
Constellation Orion Max Mirot

Comet 45P with the HyperStar on the C11
Bob Kepple



want Ads

For sale: Meade EXT60AT never used before, includes tri-pod.

Asking $200.00 B/O
Contact Keith Mullen at 266-4230

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: Planewave CDK14 corrected Dall-Kirkham telescope.

Includes the OTA, new November 2014, optional truss rod shroud and optional upper dovetail and the accessories that were included with the telescope (primary to secondary spacing tool). There is NO FOCUSER (they do not come with one, you need to add one) but the adapter for an Optec TCFS3i (which is the focuser I used) is included. I also have the factory wooden shipping crate. The telescope has been in use every clear night in the observatory in Sonoita. This is an outstanding instrument and a great imaging scope.

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

FOR SALE: 8" Celestron Nex Star

Good condition with all original accessories.
Contact Mae Childs at maechilds2014@aol.com

Club Officers and Contacts

President: David Roemer
Vice President: Chris Ubing
Secretary: Rick Burke
Treasurer: Ted Forte
Past President: Bob Gent

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

Farpoint Astronomy	http://www.farpointastro.com/
Starizona	http://starizona.com/

HAC Mar/Apr Calendar of Events

SU	MO	TU	WE	TH	FR	SA
5 March 6:32 AM	**6**	**7**	**8**	**9**	**10** HAC Meeting Student Union Tim Hunter Barnard Obj.	**11**
12 10:54 AM Daylight Savings Time Begins	**13**	**14** Jupiter/Moon 2° apart	**15**	**16**	**17** 	**18**
19	**20** 6:29 AM Saturn/Moon 3° apart	**21**	**22**	**23**	**24** Girl Scouts at Patterson	**25** Member Star Party/ Repogazer Coronado Star Party
26	**27** 10:57 PM	**28** Caring Connection Students Patterson	**29**	**30** Patterson Public Night 7PM	**31**	**1 April** Kartchner Star Party 10A-10P John Barentine speaker
2	**3** 2:39 PM Faras Elem Pirtlville Pie in the Sky	**4**	**5**	**6**	**7** Jupiter at Opposition	**8**
9	**10**	**11** 2:08 AM Caring Con. Students Patterson	**12** Yuri's Day 	**13**	**14** HAC Meeting Library Commons	**15** Family Day Open House at Patterson 9A to Noon
16 Easter 	**17**	**18**	**19** 5:57 AM Phoenix Bot Gardens Group at Patterson	**20** Earth Day Vet Park 10A-2P	**21** Lyrid Meteors	**22** Lyrid Meteors
23 Lyrid Meteors	**24**	**25**	**26** 8:16 AM	**27**	**28**	**29** Member Star Party Kepple's Desert Starlight Observatory
30	**1 May**	**2** 10:47 PM	**3**	**4** Patterson Public Night 7:30 PM	**5**	Huachuca Astronomy Club

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