TAAA DESERT SKIES BULLETIN

Observing Our Desert Skies Since 1954

June 2022

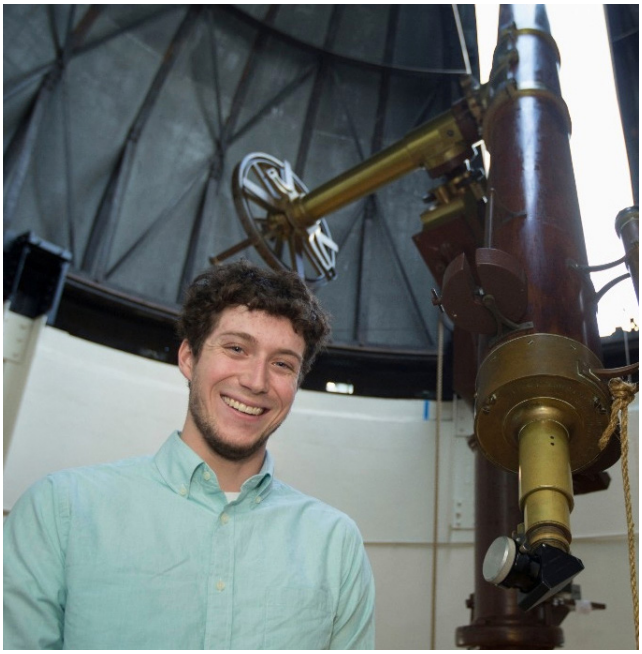
www.tucsonastronomy.org

Membership Meeting

June 3 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held on **Friday, June 3, 2022**. The Main Presentation starts at 6:30 PM (AZT), followed a Members Only meeting.

The June Meeting is hybrid this month! Attend in person at the **Steward Observatory Lecture Hall (Rm N210), 933 N Cherry Ave., Tucson.** Or attend on-line. The Main Presentation is open to the public via Facebook at https://www.facebook.com/TucsonAstronomy/. Members may attend the on-line meeting via Zoom. The Zoom link will be sent to members before the meeting. (This being our first hybrid meeting, please be patient as we work out any technical kinks!)



Main Presentation at 6:30 AZT

Title: **Imaging Giant Planets Forming Around Young Stars**

Presentation: Giant planets form within the first few million years of a system's lifetime. After formation, these massive planets interact with their birth disks and gravitationally sculpt the environment of subsequent planet formation. Recent technical advances have enabled observations of the first few giant planets while they're still forming and interacting with their parent disks. These planets induce large-scale structural changes in the disks alongside their on-going formation. And Dr. Kevin Wagner's talk will highlight the first images of gas giant forming planetary systems. It will cover how these images are produced, what goes into their interpretation, and what they teach us about the formation of systems with giant planets (including our own solar system).

Biography: Dr. Kevin Wagner is a NASA Sagan Postdoctoral Fellow at the University of Arizona's Steward Observatory. After growing up in Kentucky and Ohio, Dr. Wagner studied at the University of Cincinnati before receiving his Ph.D. at the University of Arizona. His research focuses on directly detecting and studying planets around nearby stars, such as Alpha Centauri, with a specific focus on finding and characterizing potentially life-supporting planets and understanding how planetary systems form and evolve.

Members Only Meeting will occur after a break following the main presentation. This will include Zoom breakout rooms discussing various subjects at members' discretion along with in-person discussions.

Notes From The President

by Mae Smith

May 2022

One of our largest and most fun events was the May 15th lunar eclipse star party on the University of Arizona Mall.

Watching the eclipse was incredible, but a special element of joy was all the wonderful people who joined us on the mall, looking through telescopes, talking with our TAAA members, and having a really relaxed, fun, family experience. We had telescopes on the grass, but also participated in the Flandrau Planetarium events with a delightful (and delicious) Oreo moon activity. Reasonable estimates for attendance at this event were at least 700 participants!! We were there for hours and left tired, but very happy for such a relaxing experience that added to our repertoire of delightful, shared TAAA memories.

The TAAA held three board meetings in May. The regular May 11th meeting mostly focused on developing a possible budget for the 2022-2023 year. A tentative budget was approved to be passed to the New Board at the June meeting when the New Board will finalize a budget for the upcoming year. There were some recommended changes from last year, mostly focusing on anticipated increased expenses and anticipated TAAA activities and projects during the next year. Leaders may address any questions regarding their funding requests for next year to Barbara Whitehead, our incoming Treasurer. She will know the amount of funding that will be recommended to the new Board for your TAAA area in 2022-23. If you wish to make suggestions for changes you are welcome to do so.

At the May regular Board meeting:
1) Some discussion was held of possible upcoming projects at CAC.
2) A report was given by David Levy of the new Youth Program he is setting up. If you have any referrals of possible youth participants, please pass them on to David.
3) The need to establish a TAAA Property Donation Manager position description and change from having these duties absorbed into various Board positions was agreed upon.
4) Funding for new software for the Treasurer and for an increase of funding to match current prices for the Grand Canyon Star Party were approved.

In May the TAAA Board held two additional Board meetings in an effort to arrive at a successful new construction contract arrangement with a different company for completion of the interiors of the two new CAC buildings. The Board approved a contract that appears to conform to the requirements with a new contractor. The contract is currently in process of being printed and signed by both parties.

President Mae Smith

TAAA Desert Skies Bulletin
David Rossetter – Editor
Terri Lappin & Jim Knoll - Proofreading
Greg Ruppel -Images;
Ken Bertschy - Graphics

School/Public Star Party Requests

June 2022

by Jim Knoll

Thank you for volunteering your time and talents for our extremely important outreach mission. Below is the list for June and early July, 2022. We are starting to wind down our events before the Monsoon break. If you are new to Star Party outreach, let me know and we'll be sure to help you get started. It is important you sign up for star parties if you plan to attend, whether you bring a scope or help in other ways, so I can manage who from TAAA will be on-site and for you to be included in any reminder or weather emails.

The PUBLIC Astronomy Events are also listed on the TAAA (tucsonastronomy.org) and Night Sky Network (NSN) (nightsky.jpl.nasa.gov) calendars. Also, all PUBLIC star parties will be listed on the TAAA Facebook events page and will be updated based on weather, etc. in real-time. You can follow any of those events and get a notification when I update the event. Again, this is only for PUBLIC star parties listed on Facebook. Contact Jim Knoll

JUNE

Saturday June 4 -- SE TUCSON
Sycamore Canyon HOA
17362 S Rustling Leaf Trail
Age/Grade Level: All Ages
Participants: 75
2 Additional Scopes Needed (Kevin Bays scheduled)
Setup Time: 7:30 pm. Start: 8 pm. End: 10 pm.
Nearest Moon Phase: First Quarter
Directions: Houghton Rd / Sahuarita. West on Sahuarita. Left (south) on Harrison. Harrison becomes Sycamore Leaf. Take 5th right onto Rustling Leaf. Park is 1st & 2nd lefts.
Viewing Location: Sycamore Canyon Park

Friday June 10 -- SOUTH TUCSON (SOLAR)
Pueblo High School
3500 S 12th Ave
Age/Grade Level: All Ages
Participants: 75
2 SOLAR Scopes Needed
Setup Time: 7:00 AM. Start Time: 8 AM. End Time: 12 NOON.
Nearest Moon Phase: N/A
Directions: SW Corner of 12th Ave and 44th St. South on 12th Ave and take first right to enter primary parking lot.
Viewing Location: Courtyard (about 50 yards from Parking Lot)

JULY

Friday July 1 -- NORTH CENTRAL TUCSON
(DAYTIME SOLAR/MOON)
La Paloma Resort Kids Club
3800 E Sunrise Dr, 85718

[continued]
Age/Grade Level: Kids ages 5 - 12
Participants: 15
2 Scopes Needed (1 SOLAR, 1 DAYTIME MOON)
Setup Time: Noon. Start: 1 pm. End: 2 pm.
Nearest Moon Phase: between New and First Quarter
Directions: Sunrise/Swan. West on Sunrise past Hacienda Del Sol. Left on Via Palomita. Right at stop sign into resort.
Viewing Location: TBD

Monday July 18 (ORACLE)
Biosphere 2
2 telescopes for about 15 participants
Setup Time: 7:15 pm. Start: 8 pm. End: 10 pm

METEOR SHOWER

There is a POTENTIAL of a short but intense meteor shower **Monday May 30th from 10 - 10:30 pm** Tucson Time. The Earth may pass through the remnants of comet 73P/Schwassmann-Wachmann3 (SW3). The shower is called the Tau Herculids. This will be an all or nothing event. If the debris from SW3 was traveling more than 220 MPH when it separated from the comet, we might see a nice intense meteor shower. If the debris had slower ejection speeds, then nothing will make it to Earth and there will be no meters from this comet. For more information, check out: https://earthsky.org/astronomy-essentials/tau-herculid-meteors-may-intense-shower/
We will be hosting a couple professional astronomers at CAC (we are one of three sites they will use) for this event as they set up their camera equipment to hopefully image and triangulate some meteors that evening.

Connecting Astronomy with the Public

by Jim Knoll

Programs in **May** are starting to wind down as schools begin their summer break and the resorts enter their off-peak season. We had 9 public/school and 6 Tucson Stargazing Adventures (TSA) events. For both programs, we deployed 46 telescopes for 48 hours with 19 different volunteers providing a total of 162 volunteer hours. We provided astronomy education to about 1315 participants. Our events this month included six schools (Wrightston Ridge, Esperanza Elementary, Safford K-8, Gridley Middle School, Desert Christian High School, and Casas Christian school), the Lunar Eclipse on the UA Mall (had over 500 at this one), Agua Caliente Park, and Catalina State Park. On the TSA side, we supported three resorts, a homeowners association (will be doing this monthly), a private business, and a private group at an Air B&B.

The Proud Astronomers (Esperanza)

Esperanza Elementary School

Total Lunar Eclipse at the University of Arizona Mall

June is pretty quite right now. We have one school, one HOA, one Library, and two TSA events. Many members will be heading to the Grand Canyon for the annual Star Party from June 18 – 25. We expect to have on average around 50-60 telescopes each night with around 1,500 participants nightly. If you haven't volunteered for the GCSP, you should try it. The skies are incredibly dark at 7,000 feet and the participants are extrememly friendly and excited to look through the telescopes. We normally have participants from all over the world attending.

We will be taking a Monsoon break over the summer. I am sure we will have a few events, but will not pick back up in earnest until September. Hopefully everyone has a great summer and our Monsoon is an ACTIVE ONE!!

TAAA Election 2022 Results

The NVRC ran the TAAA Leadership Election before and during the May 7, 2022 General Membership Meeting using OpaVote. Below are the results:

President (1-year):	**Mae Smith**	NVRC - 1 year:	**Peter (Pete) J. Hermes**
Vice President (1-year):	**Doug Smith**	NVRC - 2 year:	**David Pass**
Secretary (2-year):	**Robert Reynolds**		**John Christensen**
Treasurer (2-year):	**Barbara Whitehead**		
MAL - 1 year:	**Gus Gomez**		
MAL - 2 year:	**John Kalas**		
	David Rossetter		

The new board and NVRC members will take their positions on June 1, 2022.
The raw results files from OpaVote were submitted to the TAAA Secretary.

As always, please contact the NVRC if you have any questions.
David Rossetter - Chair, John Christensen, Allen Force

Book Of the Month

The Glass Universe by Dava Sobel

Review by Douglas Smith

This is a wonderful book to read. It documents the little known story of the women of the Harvard Observatory and the landmark discoveries they made that laid the foundations for modern astronomy. The book describes the key women, their careers and personal lives and their struggles in a field that was, up until then, very male dominated. Much of the information comes from letters and other first-hand documentation. These women started out working for Edward Pickering on the mundane job to measure brightness and position of stars from the glass photo plates taken at Harvard Observatory. Some of these women had no formal education. The book documents how they made their discoveries from this basic work. Many of these women would go on to spectacular careers in astronomy and famous universities all around the world. I highly recommend this book as a good read. It is an absolute must read for the student in the history of Astronomy. Dava Sobel is the same author who authored the New York Times bestseller 'Longitude'. She also authored 'Galileo's Daughter'.

Astronomical League Workshop open for enrollment.
Place: Woods Memorial Library, 3455 N First Ave., Tucson
Date: Saturday August 20, 2022
Time: 10 AM until Noon
Synopsis: This workshop is designed for anyone who may be interested in pursuing one of the Astronomical League observing programs for the first time or anyone in interesting in learning about these observing programs. The workshop will cover how the various observing programs work, program requirements, selection of appropriate program, recommended equipment, resources, logging requirements, and much more.

If interested you can contact the TAAA Astronomical League Correspondent (ALCOR) at the information below or sign up using the sign up sheet that will be available at the June, July and August General Member meetings. Please note the workshop is limited to 20 people.

TAAA ALCOR: Douglas Smith; 520-396-3233

Special Interests Groups

Starry Messengers Special Interest Group

Opening Minds to the Universe

The Starry Messengers SIG will take a break over the summer, so our next meeting will be on September 12th. Over the summer, we will continue to have outreach events including some in conjunction with the release of the highly anticipated first science images from the James Webb Space Telescope! We hope to have an event on or about July 23rd, so watch your email.

If you want to become involved in astronomy outreach with the TAAA, send your email address to Terri Lappin so you can be added to the SMSIG email list.

SMSIG on the Web

Astronomy Fundamentals SIG

by Connor Justice

Come join us for a presentation from the fundamentals of amateur astronomy. Learn your way around the night sky to add to your observing enjoyment. Meetings are on the second Thursday of each month.

The next meeting is on Thursday, June 9th at 6:30 pm - 8:00 pm. Topics to be determined. Contact Conner Justice for Zoom link and more information.

AFSIG on the Web

Access videos of previous meetings through the Members Only section of the TAAA web site.

TAAA Ladies' Night Out

by Susan O'Conner

Ladies' Night Out is a social interest group for women members of the club. The group meets once a month at a local restaurant for fellowship and conversation.

If you are interested in Ladies' Night Out, please contact Susan O'Connor

June Ladies Night Out

Thursday, June 16, 6:30pm

Blue Willow
2616 North Campbell Ave
(East side of Campbell between Copper and Glenn)

Preview the menu at bluewillowtucson.com

RSVP Susan

Astro-Imaging SIG

by Gregg Ruppel

The next AISIG meeting is **Monday, June 20 @ 7:00 pm** via ZOOM. Email Gregg Ruppel for the ZOOM link or find it in the TAAA Forum.

Topics:

Stretching for Effect and Other Tips for PixInsight - Casey Good
Image Sharing - Everyone

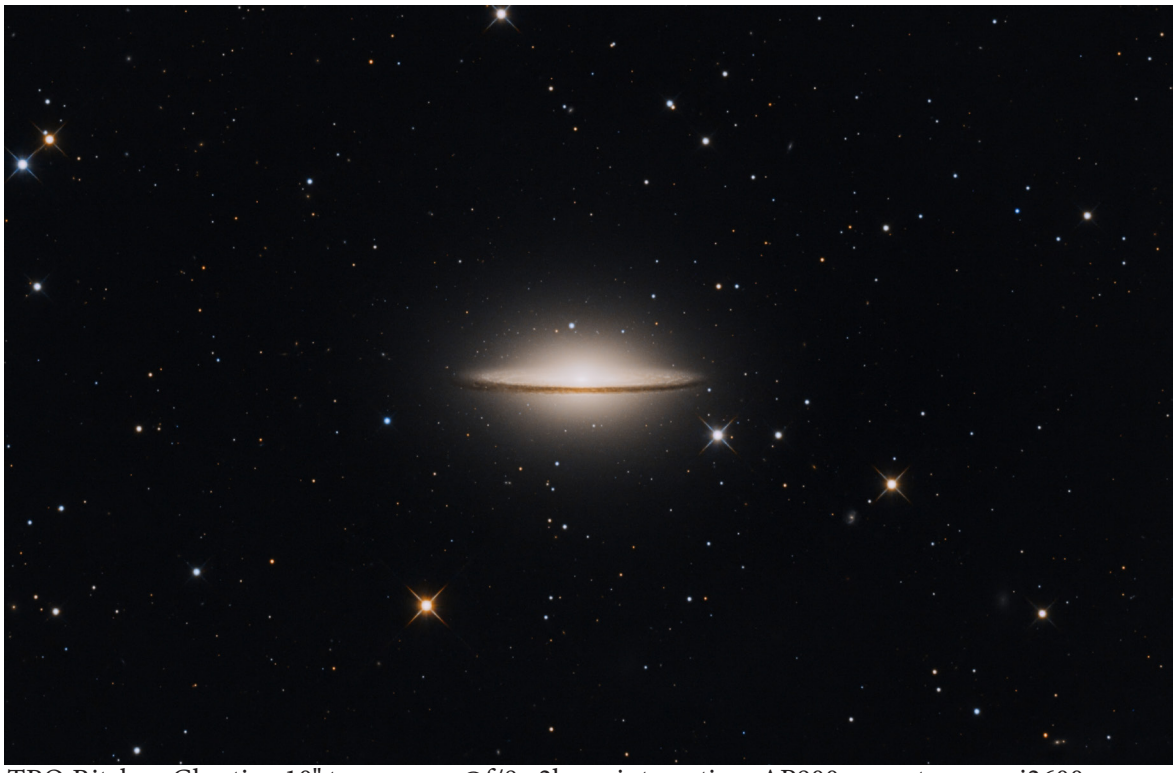
IMPORTANT - July AISIG - Monsoon Challenge

Make your best image of either M13 or M16 before the monsoon rain and clouds start to share at the July AISIG meeting!

Imagers, to help ensure that the TAAA Desert Skies Bulletin has explicit permission to publish your fine work, we need you to submit your images directly to Gregg Ruppel, our Image Editor and Astro-Imaging SIG guru. Or come up with alternative arrangements with Gregg. To keep the bulletin at a reasonable size, we would like you to restrict the size of your images to around 10MB (a little over is okay if needed). That way, I do not have to mess with your files. If you desire, please include a link to the full-size version so our members can see your work in all its glory. Finally, if you do submit an image (or more), I will include you in a pre-publication version of the bulletin for your approval of the quality and layout. Feel free to ask me (David Rossetter – Desert Skies Bulletin Editor) or Gregg if you have any questions.

May Highlights from the Astro-Imaging SIG

From Tom Eby



M104 Sombrero Galaxy in Virgo

Taken 5/5/2022.

TPO Ritchey-Chretien 10" truss scope@f/8. 2hour integration, AP900 mount, zwo asi2600 camera

Celestron 11" Edge HD@f/7, 2.4 hour integration, AP900 mount, zwo asi2600 camera

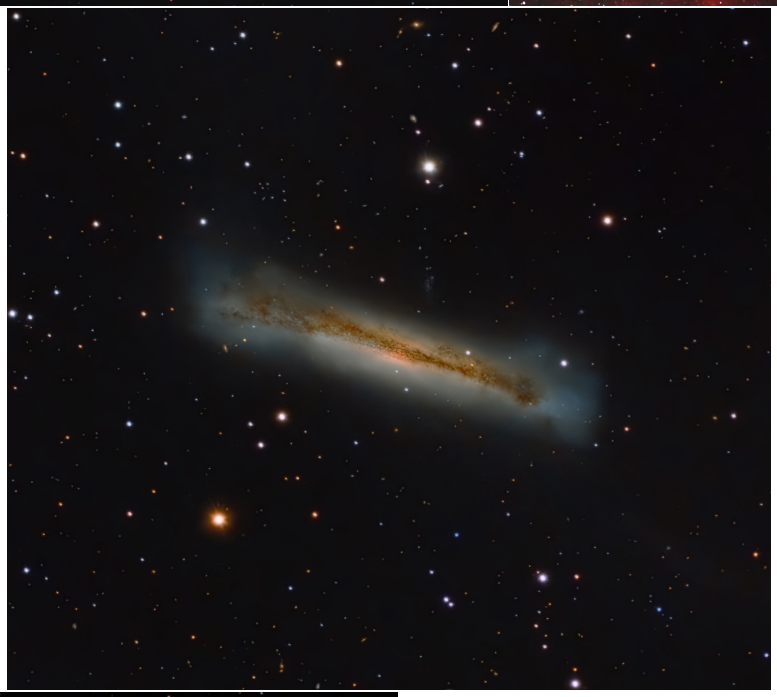
NGC 4216 Galaxy Group in Virgo

Taken 4/25/2022

From Randy Smith

M 106
Taken 3-24-22
C11 HyperStar 183
MC L-Pro 300x45

M 16
Taken 5-14-22
C11 HyperStar 183
Antlia ALP-T195x45



NGC 3628
Hamburger Galaxy
C11 HyperStar 183
L-Pro 273x45

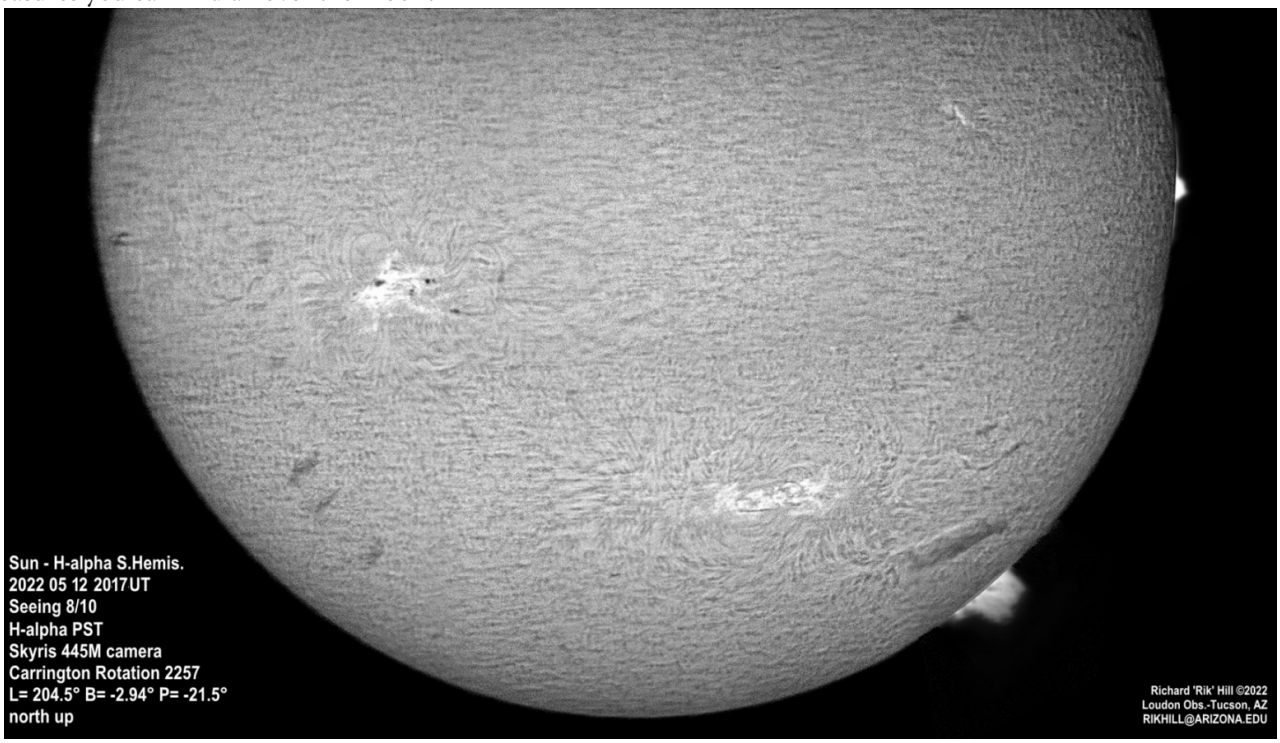
M 63

Taken 4-2-22
C11 HyperStar 183 L-Pro 303x45

From Richard Hill

The monster crater on the left side is the 231km diameter Clavius, one of the larger craters on the nearside of the Moon. It has a fabulous arc of smaller craters on its floor starting with Rutherfurd (56km) on the bottom wall of Clavius up to Clavius-D (28km) above it, then farther on is Clavius-C (21km) and next is Clavius-N (13km) ending with Clavius-J (12km). This distinctive arc of craters makes Clavius very identifiable. Notice the radial streaks of impact ejecta from Rutherfurd across the floor of the great crater. Also notice the small piece of a flat ridge catching the first sunlight just to the right of Rutherfurd and next to it on the Clavius crater wall is an odd little wisp that is a breach in the wall itself as seen on the LROC QuickMap. Below Clavius is the shadow filled Blancanus and further below is the spectacular crater Moretus with its beautifully terraced walls and clear central peak, very like Tycho just north of Clavius.

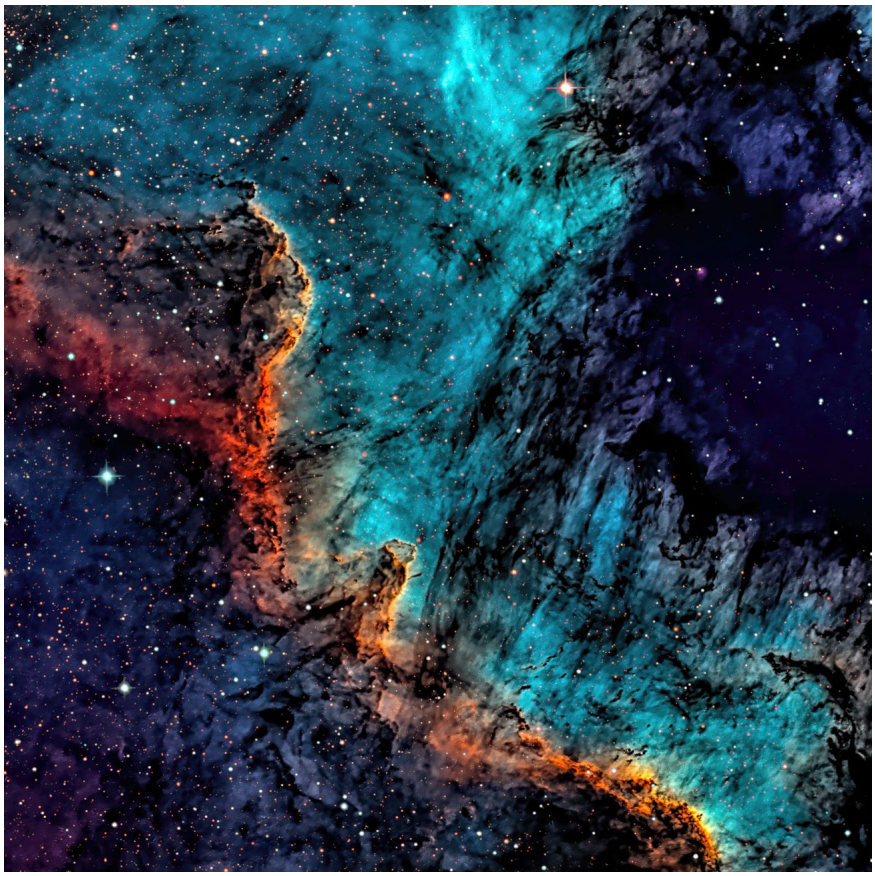
Above left of Moretus is Gruemberger (97km) and to the right of that is Cysatus (51km). Then to the right of Moretus is Curtius (99km). North of Curtius, just above the mid-line of the image, is the flat floored crater Zach (73km). Above right of Zach is a curious gathering of merged and flooded craters. It's not named but is still fascinating and intricate in detail. One of those unnamed treasures you can find all over the Moon!



From Alex Woronow

NGC 6302
Bipolar Nebula

12 hours of LHRGB where the "pure" H emission-line component was estimated from the information contained in the H and R channel images and combined with the broadband data to create a synthetic L for the image. This helped reveal more detail in this small (4') object.



NGC 7000
Cygnus Wall

10 hours of HSO data (provided by Remote Skies Observatory) processed in PixInsight and Topaz Studio2. This is a “True-Color” rendering of the narrow band data where the HSO are mapped to their corresponding colors in the broadband RGB space.

Observing Sites

TIMPA

by Ralph Means

TIMPA (Tucson International Modelplex Park Association), Dark Sky site west of the Tucson Mountains.
TIMPA on the Web

TIMPA Star Party Dates this month: ***June 24 and 25.***

Location: The TIMPA observing site is located a few miles beyond the Desert Museum (3250 N. Reservation Road, Tucson, AZ 85743).

The TIMPA site is only partially improved. There are no inside buildings provided other than restrooms. TAAA does not provide seating (members are welcome to bring folding chairs). Please note that members visiting the TIMPA site may encounter things commonly found in partially improved desert areas such as desert creatures and/or their remnants (such as gopher holes or ant hills), uneven terrain, weeds and desert pollens. Members using the site are encouraged to bring red lights and to move cautiously taking appropriate safety measures. The site does not have potable water, so bring your own non-alcoholic drinks.

Reservation Form Any questions, please contact the TIMPA Director: Ralph Means

Chiricahua Astronomy Complex

by Jim Knoll

CAC Weekend Dates coming up (Friday/Saturday):
June 24-25 (New Moon June 28)
July 29-30 (New Moon July 28)

Chiricahua Astronomy Complex (CAC) is the club's dark observing site, located in Cochise County approximately 100 miles southeast of the center of Tucson. If you would like to attend, you must make a reservation on the CAC Web page at CAC Reservations.

Unless you are qualified to open and close the site, dates will be limited to those around the New Moon and are listed on the CAC web page. Hosted personnel are generally on site a few days before and after these dates.

CAC Director: Jim Knoll CAC on the Web

Observing Sites Star Party Dates 2022

TIMPA
June 24 and 25
July monsoon season no dates set
August monsoon season no dates set
September 23 and 24
October 21 and 22
November 18 and 19
December 16 and 17

CAC
June 24 – 25 (New Moon June 28)
July 29 – 30 (New Moon July 28)
August 26 – 27 (New Moon August 27)
September 23 – 24 (New Moon September 25)
October 21 – 22 (New Moon October 25)
November 25 – 26 (New Moon November 23)
December 22 – 23 (New Moon December 23)

YOUR ASTRONOMY COMPLEX NEEDS YOUR HELP

Would you like to get involved in helping achieve the next level of excellence at our very own Chiricahua Astronomy Complex (CAC)? Learn to use any of several large telescopes?

Several projects are underway or will be soon to include completing the learning center and sleeping room buildings along with the design and installation of furnishings, clearing land for new projects, trenching for internet and other utilities, installation of internet, door locks, design and installation of expanded site internet, working on observatory construction, helping to manage our reservation system, help with overall CAC management and maintenance, and lots more. If you have construction experience, are handy with do-it-yourself projects, Internet Technology (IT) experience, furnishing design, or just want to get more involved in your Association, this is a great time to begin.

How about learning to use any of the several telescopes at CAC? You can be trained to operate the Wally Rogers 14” Celestron or the 18” Obsession to use for your personal observing. Learn the operation of our 40” signature telescope or our unique 9” Folded Refractor for use during CAC weekends and special events. Soon to be installed on the Stinger Telescope Pad we will have a Celestron 9.25 and 11”, a 12” Mead, and the aforementioned 18” Obsession. Members can be checked out to use these telescopes for personal use or to help with outreach events.

These are exciting times at CAC as we build a first-class complex. It is difficult to accomplish with just a few individuals. Please consider helping with this project or other projects within TAAA. To volunteer for CAC, please email me at cac-director@tucsonastronomy.org or for other projects within TAAA, contact any Board Member. Thanks!!

Jim Knoll
Director, Chiricahua Astronomy Complex

by Doug Smith

What's Up list for June 2022 – July 2022

Fellow amateur astronomers, many of the Astronomical League observing programs can be done from our backyards. The following is a list of objects visible during June and July for the more common observing programs.

Constellation Hunter Program – Northern Skies
The following Northern Constellations are well placed for viewing for June and July:
Canes Venatici, Coma Berenices, Corona Borealis, Draco, Hercules, Serpens Caput, Serpens Cauda, Ursa Minor

Messier Observing Program
The following Messier objects are well placed for observation during June and July (listed in ascending RA):
M53, M63, M51, M83, M3, M83, M101, M102, M5

Lunar and Binocular Observing Program
The following is a list of dates for the lunar phase when observations should be made during June and July:

New Moon: June 29, July 28
40 Hours waxing: June 1, July 1
72 hours waxing: June 2, July 2
4 days old: June 3, July 3
7 days old: June 7, July 6
10 days old: June 10, July 9
Full (14 days old): June 14, July 13
Gibbous: June 20, July 20
72 hours waning: June 26, July 25
40 hours waning: June 27, July 26

Solar System Observing Program
The following list describes the various solar system objects and their visibility during June and July:

Mercury is an early morning object for all of June and the first two weeks of July. It reaches greatest elongation on June 16. During the last two weeks of July, Mercury is an early evening object.
Venus is a morning object during June and July rising about 1.5 hours before the Sun.
Mars rises around 2 AM at the start of June. It rises earlier each day during June and July, such that by the end of July it is rising around 11:30 PM.
Jupiter rises around 2 AM at the start of June. It rises earlier each day during June and July, such that by the end of July it is rising around 9:00 PM.
Saturn is now well placed for evening observation. It rises around midnight on June 1, rises earlier each day until by end of July it is rising around 8:00 PM.
Uranus is an early morning object in June and July. On June 1 it rises around 3 AM and at the end of July it's rising a little before midnight.
Neptune is a late evening object in June and July. It rises about 2 hours before Uranus during June and July.

Urban Observing Program
The following deep sky objects are well placed for observing during June and July:

M3, M5

The following Double Star is well placed for observation during June and July:

Zeta Ursa Major

Skyward

By David H. Levy

June 2022

Nothing in the night sky quite beats a total eclipse of the Moon. Other than a shooting star, eclipses prove to all who watch them that the sky is a changing place. During the several hours of a lunar eclipse, we can actually watch as the Moon slowly orbits the Earth, and as it passes through the shadow of the Earth we can enjoy its changing illumination.

Last Sunday evening, May 15, 2022, there was a total eclipse of the Moon. It was perfectly timed for observers throughout most of North America. On the east coast, the eclipse began in mid-evening. For those of us who live in Arizona, in the great American southwest, the eclipse began just as the Moon was rising, and it ended late in the hours of the evening.

As the Moon marched its way eastward, the penumbral shadow manifested itself as a shading, slowly dimming the Moon's light as it spread across. Gradually the eastward facing limb, or edge, of the Moon grew darker and darker. About 90 minutes into the event, the full and profound darkness of the umbra, the central shadow of the Earth, struck the Moon's leading edge. Over the next hour or so the Moon lost much of its light.

Seeing an eclipse of the Moon is not the same as experiencing it. To do that, you need also to notice the sky. At Moonrise the sky was very bright, with moonlight swamping everything except the brighter stars. But as the eclipse progressed that night, the sky began to darken gradually, then more obviously as fainter stars appeared, and finally, from a dark site, the Milky Way could be seen. On a personal note, one of the variable stars I observe, TV Corvi (Clyde Tombaugh's star), cannot be viewed through a telescope when the Moon is near its full phase. But on this night the darkened Moon let the sky get so dark that I easily got a reading of the field of that star. It was yet another aspect of the magic.

The other part of experiencing the eclipse, a completely unexpected part of it, is to learn just how dark the Moon gets during the total phase. There is a scale, the Danjon scale, which ranges from L= 4, where the eclipsed Moon is so bright that you barely notice that there is an eclipse going on at all, all the way down to L=0, during which the Moon is barely visible. If the Earth has suffered a serious volcanic eruption in the months preceding an eclipse, the volcanic dust still remaining high in the Earth's atmosphere can seriously darken the shadow. I saw one such eclipse on the morning of December 30, 1963. Thanks to the eruption in February 1963 of Indonesia's Mount Agung volcano, at mid-totality the Moon simply disappeared. Observing from a rural site, my friend Constantine Papacosmas said that the eclipsed Moon was no brighter than a 5th magnitude star.

A few months ago, Mt Hunga Tonga-Hunga Ha'apai, a gigantic undersea volcano about 60 miles north of Tongatapu, Tonga's main island, erupted and spewed lots of dust into the upper stratosphere. For this reason, I estimated this eclipsed Moon's luminosity as L = 1.5. It was the darkest eclipse I have seen since 1963, and Wendee and I thoroughly enjoyed sitting in our observatory watching the wonderful spectacle.

Wendee took this picture of the start of the lunar eclipse as the Moon was rising over a young saguaro cactus plant in our backyard.
Photograph via iPhone by Wendee Wallach-Levy

We get to do this all over again in November when a second total eclipse of the Moon will be visible from the Americas. (Because the Moon must pass directly through the Earth's shadow to be eclipsed, these events can happen only at full Moon.) May the sky be clear with the Moon as inviting as it always is. Then you will have another chance to watch the sky in motion, and to watch the world move along not with the trivia and rush of the daily news, but with the slow and solemn, long-term march of cosmic time.