The Sonora Astronomical Society's
SONORAN STARRY NIGHTS

MAY 2023

MayMeeting Details

DATE: Tuesday, May 9th, 2023
MEETING TIME: 7:00 PM
PLACE: La Posada Rec Center & Zoom
MEETING SCHEDULE:
(6:30 ZOOM Waiting Room Available)
7:00 Meeting Intro and Welcome
7:10 Featured Presentation Followed by Club Activities/Business
We will not have the usual club dinner

Next Member Star Parties

DATE: Thursday, May 18th, 2023
TIME: 7:00 PM
PLACE: Canoa Preserve Park

LOOKING AHEAD -
THE FOLLOWING STAR PARTY WILL BE:

DATE: Thursday, June 15th, 2023
TIME: 7:15 PM
PLACE: Canoa Preserve Park

NOTE: If you have a telescope that you don't know how to use, or are looking to buy a telescope and want to compare different telescopes, join us at a star party and we can give you some help.

UPCOMING EVENTS

NEXT CLUB MEETING
DATE: September 12th, 2023
LOCATION: La Posada Rec. Center
TIME: 7:00 P.M. (in person + Zoom)
Speaker: T B A
Subject : T B A

May Presentation

Speaker: Dr. Moses Milazzo
Subject: Catastrophic Geology of the Solar System

Abstract: His talk introduces the audience to how the planets have been significantly impacted by short duration events.
Biography: NASA's First Chief Scientist for the Planetary Data Ecosystem NASA - National Aeronautics and Space Administration, The University of Arizona. Moses completed his dissertation, Remote Sensing of Thermally Induced Activity on Io and Mars, with advisor Alfred McEwen in 2005. He is a planetary scientist and educator specializing in visible and near-infrared remote sensing, as well as planetary data processing. Moses has been involved with eight NASA spacecraft missions and has contributed significantly to the development of planetary remote sensing, image processing, cartographic mapping and calibration techniques for a variety of missions and data types.
Dr. Moses Milazzo's passion is conveying the wonders of the natural world through science, education, and inclusiveness. I am a remote sensing data scientist with a history of successful project management from ideation to grant acquisition to project completion. I have been an active participant on seven of NASA's spacecraft missions, from the Galileo mission to Jupiter in the late 1990s to Juno currently in orbit at Jupiter to JPL's Europa Clipper mission currently in development. I am an educator with decades of experience presenting to learners of all ages, teaching, and curriculum development. I try to champion inclusivity and diversity, especially through anti-harassment education and have developed a bystander intervention workshop aimed at improving the culture in professional workplaces. I am on the board of directors of a local non-profit dedicated to solving the problem of homelessness in my local area, and am on the board of our local public housing authority.

SONORAN STARRY NIGHTS

PRESIDENTS NOTES

Greetings everyone,

We had our second live/ZOOM hybrid meeting last month. We had most of the glitches ironed out and we were not locked out of the building this time. The room was still set up more for a dinner than a meeting. Other than that, things went pretty well.

We had a good attendance at our club star party last month. That is encouraging. There was a great public star party at Canoa Ranch last month with a good crowd attending. There are no public star parties scheduled until Fall.

The Tucson astronomy club is picking up most of the public star parties we used to do, but they can have difficulty getting people this far south. Canoa Ranch will be holding numerous star parties. I would like to know if anyone would like to volunteer to assist TAAA. Please contact me if you think you could contribute.

We are still looking for someone to step into the president's position. I won't live forever. To keep this club viable, we need people to step up and help out. Otherwise, it will not last.

Canoa Preserve Park is open for business, so our club star parties are back on. There has been sparse attendance at our star parties lately. This location is a great club asset. Place make use of it. Remember we will be limited to no more than 10 people unless we have an occasion where we want to have more. In which case we need to apply for a permit with a larger number.

Finally be sure to check out our website. Joe has done a great job to keep it relevant.

Stay safe,

John Dwyer

EQUIPMENT FOR SALE

For Sale:

12.5" Hyperion OTA (Starizona: Flat-field, Harmer-Wynne optical design), new condition, never used. Purchased in 2011. I built a remote observatory for it and installed it, kept it covered with two layers of commercial telescope covers, and there it sat for a few years…. The dome never functioned adequately, so I never got to use the scope—not even First Light! I rescued it from the dome a couple of years ago, but I have nowhere to install it. The OTA is the solid-tube model from before Starizona went to the money-saving truss design. I have the original invoice, manual, and computer interface. Asking $7,500 (originally $13,000, which is also the current price). Pick-up only, Tucson. Contact Alex Woronow (awkml@awkml.com).

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Have a telescope or other astronomy equipment for sale? Contact John Dwyer with your item(s) to get them listed here.

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Questions about selecting your first telescope?

The SAS website has a good one-page article from Sky & Telescope that can help get you started. Copy and paste this link:

https://sonoraastronomicalsociety.org/newsletters/

Also, basic monthly star charts are now available on the website Home page yellow banner.

THE MAY SKY

SKY HIGHLIGHTS FOR MAY

Venus is still the primary planet in the evening sky. It will reach -4.3 magnitude by the end of the month. Its diameter reaches 20" while its percentage of illumination is about 60%. It continues to get higher in the evening sky, reaching 44° east of the Sun. On the 23rd it passes within about 1° of the Moon. **Mercury** returns to the morning sky and reaches greatest western elongation from the Sun of 25° on the 29th. **Jupiter** is rising low in the eastern morning sky. It will be occulted by the Moon on the morning of the 17th (starting about 4:20am) but will be extremely low in the sky. There will be several double shadow transits of its moons this month, but the low position of Jupiter and the approach of sunrise makes viewing them difficult. **Mars** is still fairly well placed for viewing in the southwest evening sky although its size is now about 5". It is about 18° east of Venus. **Saturn** is becoming more visible in the southeast morning sky in the constellation Aquarius. **Uranus** is too close to the Sun for viewing and will reach conjunction with the Sun on the 9th. **Neptune** is now low in the southeastern morning sky just east of Saturn.

There are still no comets under magnitude 10 visible this month.

MAY MOON/SUN TIMES

DATE	M-Rise	M-Set	M-Phase	Sun-set	Star Party
Mon 05/01	15:25	3:34		19:04	
Tue 05/02	16:22	4:00		19:05	
Wed 05/03	17:21	4:26		19:06	
Thu 05/04	18:22	4:55		19:06	
Fri 05/05	19:28	5:27	Full	19:07	
Sat 05/06	20:36	6:03		19:08	
Sun 05/07	21:45	6:47		19:08	
Mon 05/08	22:51	7:40		19:09	
Tue 05/09	23:51	8:40		19:10	SAS Meeting
Wed 05/10	-----	9:48		19:11	
Thu 05/11	0:43	10:58		19:11	
Fri 05/12	1:27	12:08	3rd Qtr	19:12	
Sat 05/13	2:04	13:17		19:13	
Sun 05/14	2:37	14:22		19:13	
Mon 05/15	3:07	15:27		19:14	
Tue 05/16	3:37	16:30		19:15	
Wed 05/17	4:07	17:35		19:15	
Thu 05/18	4:39	18:39		19:16	S.A.S. SP
Fri 05/19	5:15	19:43	New	19:17	
Sat 05/20	5:56	20:45		19:18	
Sun 05/21	6:42	21:44		19:18	
Mon 05/22	7:34	22:37		19:19	
Tue 05/23	8:29	23:23		19:19	
Wed 05/24	9:27	-----		19:20	
Thu 05/25	10:24	0:03		19:21	
Fri 05/26	11:22	0:37		19:21	
Sat 05/27	12:18	1:07	1st Qtr	19:22	
Sun 05/28	13:14	1:35		19:23	
Mon 05/29	14:09	2:01		19:23	
Tue 05/30	15:06	2:26		19:24	
Wed 05/31	16:06	2:54		19:24	

(S)=Solar

THE STARGAZER'S CORNER:

Solstice Shadows by David Prosper, Night Sky Network/NASA

Summer is coming. Solstices mark the changing of seasons, occur twice a year, and feature the year's shortest and longest daylight hours - depending on your hemisphere. These extremes in the length of day and night make solstice days more noticeable to many observers than the subtle equality of day and night experienced during equinoxes. Solstices were some of our earliest astronomical observations, celebrated throughout history via many summer and winter celebrations.

Solstices occur twice yearly, and in 2023 they arrive on June 21 at 10:58 am EDT (7:58 am MST), and December 21 at 10:27 pm EST (8:27 pm MST). The June solstice marks the moment when the Sun is at its northernmost position in relation to Earth's equator, and the December solstice marks its southernmost position. The summer solstice occurs on the day when the Sun reaches its highest point at solar noon for regions outside of the tropics, and those observers experience the longest amount of daylight for the year. Conversely, during the winter solstice, the Sun is at its lowest point at solar noon for the year and observers outside of the tropics experience the least amount of daylight- and the longest night – of the year. The June solstice marks the beginning of summer for folks in the Northern Hemisphere and winter for Southern Hemisphere folks, and in December the opposite is true, as a result of the tilt of Earth's axis of rotation. For example, this means that the Northern Hemisphere receives more direct light from the Sun than the Southern Hemisphere during the June solstice. Earth's tilt is enough that northern polar regions experience 24-hour sunlight during the June solstice, while southern polar regions experience 24-hour night, deep in Earth's shadow. That same tilt means that the Earth's polar regions also experience a reversal of light and shadow half a year later in December, with 24 hours of night in the north and 24 hours of daylight in the south. Depending on how close you are to the poles, these extreme lighting conditions can last for many months, their duration deepening the closer you are to the poles.

While solstice days are very noticeable to observers in mid to high latitudes, that's not the case for observers in the tropics - areas of Earth found between the Tropic of Cancer and the Tropic of Capricorn. Instead, individuals experience two "zero shadow" days per year. On these days, with the sun directly overhead at solar noon, objects cast a minimal shadow compared to the rest of the year. If you want to see your own shadow at that moment, you have to jump! The exact date for zero shadow days depends on latitude; observers on the Tropic of Cancer (23.5° north of the equator) experience a zero shadow day on the June solstice, and observers on the Tropic of Capricorn (23.5° south of the equator) get their zero shadow day on December's solstice. Observers on the equator experience two zero shadow days, being exactly in between these two lines of latitude; equatorial zero shadow days fall on the March and September equinoxes.

There is some serious science that can be done by carefully observing solstice shadows. In approximately 200 BC, Eratosthenes is said to have observed sunlight shining straight down the shaft of a well during high noon on the solstice, near the modern-day Egyptian city of Aswan. Inspired, he compared measurements of solstice shadows between that location and measurements taken north, in the city of Alexandria. By calculating the difference in the lengths of these shadows, along with the distance between the two cities, Eratosthenes calculated a rough early estimate for the circumference of Earth – and also provided further evidence that the Earth is a sphere!

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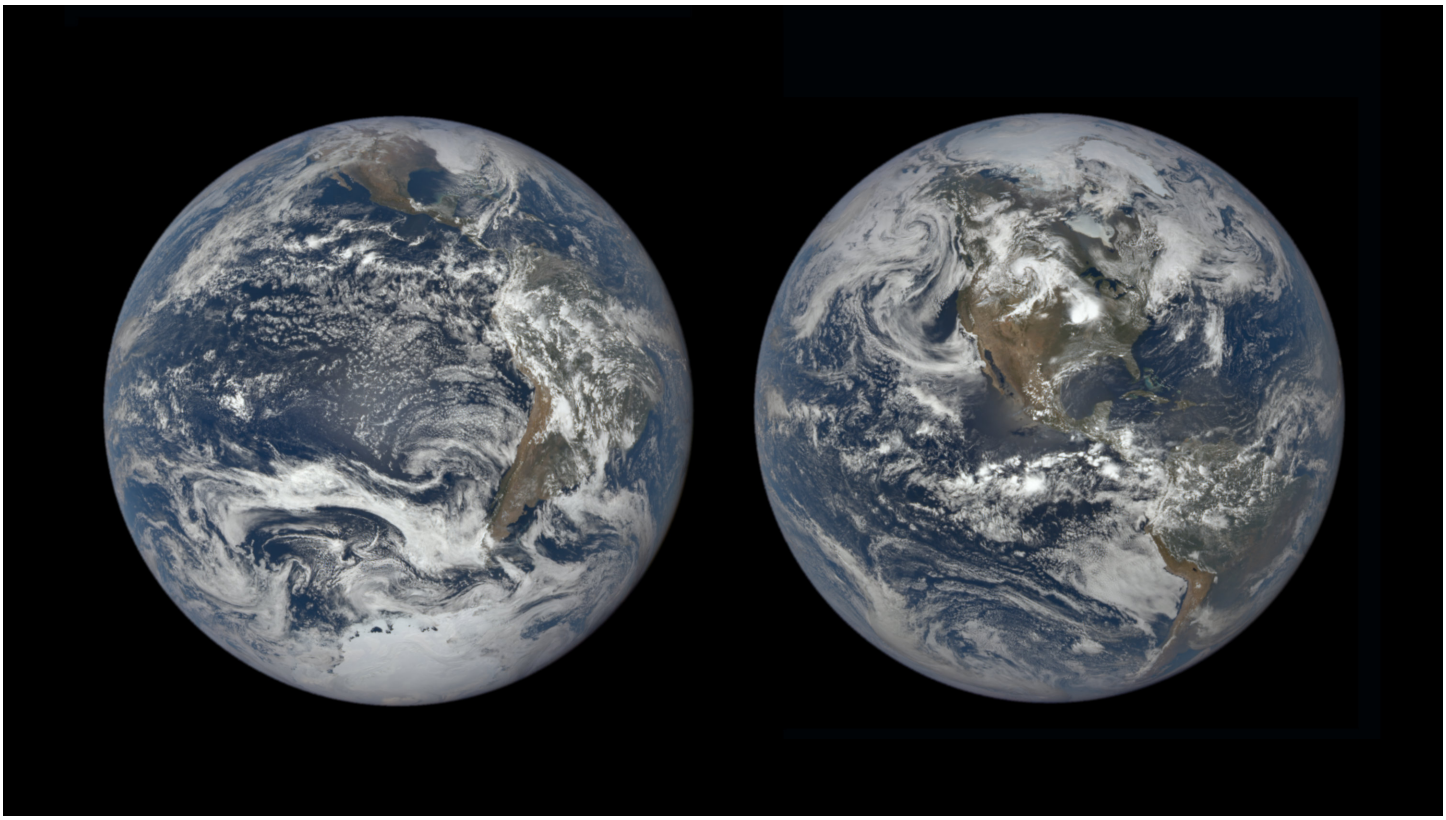
Are you having difficulty visualizing solstice lighting and geometry? You can build a "Suntrack" model that helps demonstrate the path the Sun takes through the sky during the seasons; find instructions at stanford.io/3FY4mBm. You can find more fun activities and resources like this model on NASA Wavelength: science.nasa.gov/learners/wavelength. And of course, discover the latest NASA science at nasa.gov.



These images from NASA's DSCOVR mission shows the Sun-facing side of Earth during the December 2018 solstice (left) and June 2019 solstice (right). Notice how much of each hemisphere is visible in each photo; December's solstice heavily favors the Southern Hemisphere and shows all of South America and much of Antarctica and the South Pole, but only some of North America. June's solstice, in contrast, heavily favors the Northern Hemisphere and shows the North Pole and the entirety of North America, but only some of South America.

Credit: NASA/DSCOVR EPIC Source: https://www.nasa.gov/image-feature/goddard/2021/summer-solstice-in-the-northern-hemisphere

SONORAN STARRY NIGHTS

S.A.S. CLUB OFFICERS

OFFICE/POSITION	NAME	PHONE NO.
Chairman of the Board	Open	
President	John Dwyer	(520) 393-3680
Secretary	Michael Moraghan	(520) 399-3352
Treasurer	John McGee	(520) 207-6188
Star party Coordinator	Duane Johnson	(520) 303-6920
Newsletter Editor	Joe Castor	(**6**20) 584-4454
Webmaster	Joe Castor	(**6**20) 584-4454
ALCOR* (Currently Inactive)	Burley Packwood	(520) 396-3576
NSN** Representative	Duane Johnson	(520) 303-6920
Past President Emeritus	Open	
*Astronomical League		
**Night Sky Network		

WHY JOIN SAS

1. SAS Family Membership Fee is only $15.00 per year.
2. SAS monthly newsletter "The Sonoran Starry Nights."
3. Top-quality astronomy lectures by local astronomers!
4. SAS Discount for Astronomy Magazine $34.00 for 1yr or $60.00 for 2 yr renewed through our treasurer.
5. SAS Discount subscription rate for Sky & Telescope Magazine — self-renewed.
6. RASC Observer's Handbook at a discount, $30.00.
7. SAS T-Shirts for sale for $10.00—M, L, XL.
8. Member of International Dark-sky Association (IDA).
9. SAS Discount for Astronomy 2020 Calendar $10.00
10. SAS monthly Member Star Parties.
11. SAS Telescope and astronomy book loan programs.
12. SAS outreach to astronomy education in schools.
13. SAS fellowship with other amateur astronomers!

CLUB DUES

Dues (family or individual) are $15 annually, payable each year in the month you initially joined the club. You will receive a reminder in the monthly newsletter e-mail of your due date. You can either pay at the club meeting or mail it to the club's address (S.A.S., P.O. Box 1081, Green Valley, AZ, 85622).

SAS WEBSITE

If you want to keep up-to-date with club activities, such as star parties, etc., check out our website (and Calendar) at:
HTTPS://sonoraastronomicalsociety.org

SAS STATISTICS & FINANCES

Lifetime Members: 1
Individual & Family Members: 156
Total Membership: 157

Bank Balance as of March 31: $2,031.99
Deposits / (D/Ws): $45.00 / ($100.00)
Bank Balance as of April 30: $**1,976.99**

SONORAN STARRY NIGHTS

LOCAL ASTRO-IMAGING GROUP: Sonoran Desert Astro Imagers (SDAI) (Larry Phillips, Coordinator)

Are you interested in Astrophotography or are you currently involved in imaging the skies? Please plan to join our monthly meeting of the Sonoran Desert Astro Imagers group. Our meetings focus on improving our skills, helping each other, workshops, and field trips. Please send your Name and E-mail address to my address below and we'll include you in the emailing notices of monthly meetings; "the when and where meeting notice." Do you have any questions? If so, call me (Larry Phillips) at (520) 777-8027 or email to llp41astro@cox.net. Clear Skies! Larry Phillips

ABOUT THE ASTRONOMICAL LEAGUE

While SAS is no longer an active member of the Astronomical League, a SAS member may join the Astronomical League as an at-large member. What are the advantages to joining the AL?
1. You can receive various observing awards by joining an "observing club" and observing the required number of objects. There are all levels of clubs from beginner to advanced, viewing constellations to deep-sky objects and using either your naked eyes, binoculars, or a telescope. Contact our ALCOR rep Burley Packwood for details.
2. You can get a 10% discount on books purchased through the AL Book Service.
3. You will receive the AL's quarterly "Reflector" magazine which keeps you up to date on all the AL activities.
More info at www.astroleague.org

SAS IS A MEMBER OF IDA

SAS is proud to be a member of the International Dark-Sky Association, supporting the reduction in light pollution around the U.S. and the world.
More info at www.darksky.org

SAS NON-PROFIT STATUS

The Sonora Astronomical Society is a 501 (c) (3) nonprofit charitable organization! SAS has a CERTIFICATE OF GOOD STANDING from the State of Arizona Corporation Commission!

MAGAZINE SUBSCRIPTIONS

To renew your Sky and Telescope Magazine at the Club Rate, you can go directly to their website, or to order it new, or to order or renew Astronomy Magazine, contact the Club Treasurer.

OUR SPONSORS