November 2020

November Meeting Details

DATE: Tuesday, November 10th
MEETING TIME: 7:00
PLACE: ZOOM
MEETING SCHEDULE:
6:30 ZOOM Waiting Room Available
7:00 Meeting Intro and Welcome
7:10 Featured Presentation Followed by Club Activities/Business

November Presentation

WHO: Samuel Myers
TITLE: How to Find a Hidden Planet
ABSTRACT: When it comes to finding distant planets, far outside of our solar system, we have very little data to work with. These planets are so faint, and so far away, that even when we do find them, it is difficult to actually learn anything about the planet itself.

A large percentage of the planets we have found so far were discovered with the Kepler space telescope, but Kepler was retired in 2018, so the easiest to work with planets in the Kepler catalog have already been picked over. As a result, we have had to develop new ways to work with the Kepler data that will allow us to study these planets.

This talk will walk you through why we care about these planets in the first place, what we can learn from them, and the innovative new techniques we are using to push the envelope of the types of planets we can study.

ABOUT THE SPEAKER: Sam Myers is a first-year graduate student at the Lunar and Planetary Laboratory at the University of Arizona. Last fall he graduated from the University of Idaho with degrees in Physics and Mathematical Modeling. Although at LPL he will begin working with asteroids, at the University of Idaho he spent four years in the lab of Dr. Jason Barnes studying exoplanets and what they can tell us about how planets form and change over time.

Next Member Star Parties

DATE: Thursday, November 12th
TIME: 5:15 PM Setup
PLACE: Canoa Preserve Park
DATE: Thursday, December 17th
TIME: 5:15 PM Setup
PLACE: Canoa Preserve Park

To get directions and up-to-date information on the status of a star party in case a weather issue develops.

UPCOMING EVENTS

NEXT MEETING
DATE: December 8th (ZOOM)
TIME: 7:00 P.M.
SPEAKER: Father Paul Gabor, S.J.

PUBLIC STAR PARTIES
CANCELLED
Greetings everyone,

I hope everyone is still well and staying safe. Unfortunately infections are beginning to climb dramatically as the weather gets colder so live meetings and outreach activities are still on hold. We are still holding are meetings via ZOOM, and so far that is working out pretty well. Again on Monday I will send out login information so you can join the meeting Tuesday. Hopefully we will not run into any bad snags so bear with us. Hope to see you Tuesday.

Although all public star parties for the foreseeable future will be cancelled, we can still have our club star party at Canoa Preserve Park. But the appropriate precautions must be observed. We again had a few people attend the October club star party and it was a much better night than September’s star party. The smoke from the wildfires had disappeared making it a great night for viewing. Make use of our club star parties, especially now. You never know what you might see.

Lowell Observatory has a number of programs available including livestreaming of virtual star parties. Check out their site (lowell.edu) for more information.

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

Stay safe!!
John Dwyer, President

CLUB EQUIPMENT FOR LOAN OUT

TELESCOPES:

- 1 - 8” Celestron Schmidt Cassegrain telescopes

*Note: Instruction may be required for some telescopes. Contact one of the club officers for information and availability.*

EQUIPMENT FOR SALE

1. **Celestron CPC 1100 Telescope.**
   - Starbright XLT optical coating, GPS with SkyAlign for quick & easy alignment, 9x50 finder scope, Telrad finder, and microfocuser.
   - 2” star diagonal with Virtual View swivel adapter, 40 mm x 1.25” Celestron Plossl eyepiece, 13 mm x 1.25” TeleVue, Nagler IV eyepiece, 17 mm x 2” TeleVue, Nagler IV eyepiece, and 2” 2x Barlow magnifier
   - Hand control with 2 line LCD screen
   - 12 V cable & 120 V adapter
   - Compatible with StarSense technology & WiFi
   - Sturdy tripod with 2” diameter steel legs, ergonomic carrying handles, metal carrying case for accessories, manual, and original packaging

In excellent condition was $4400 new, asking $2850 obo
Please contact Murray Croot, at (520) 372-2383 or mcroot@gmail.com for photos.

2. **Orion Skyquest xt10i For Sale.**

The telescope is an Orion Skyquest xt10i which has a computer that can locate 14000 items in the sky. It is assembled and the mirror and scope have been checked. It comes with a carrying case. It’s never been used. I decided that another telescope would be better suited for me. Original price was $900. Asking $850 which includes the carrying case, a $120 value. I live in Green Valley.

Contact Ed Matte at EdMatte@msn.com

PROPERTY FOR SALE

**Property w/Observatory and Pad**

I may have to sell a five-acre property which contains a small observatory and a second ‘pad’ with a triad of bolt heads for a telescope pedestal. Property also contains a 1668 sq ft house and a garage. The property is located halfway between Amado and Arivaca.

For more information contact:

Harold L. Mansfield
1275 W. Calle Serrano
Green Valley, AZ 85622
(520) 954-0480
gvpuns@gmail.com
Mars reached opposition the middle of last month and now is beginning to fade. By the end of November it will have dropped a full magnitude from its brightest last month as well as losing about 6" in size. We were blessed with no dust storms this apparition and it is still a great object to view. Jupiter and Saturn are low in the southwest at sunset and are still located in Sagittarius and are closing in on each other. By the end of the month they will be within 2° of one another and next month will be even closer. Mercury has returned to the morning sky, reaching greatest elongation of 19° from the Sun on the 10th, but will be fairly low in the eastern morning sky. Venus, still in the morning sky, is beginning to dim a little, now under mag -4. It is slightly higher than Mercury. Uranus, located in Aries not too far behind Mars, reached opposition at the end of last month. Neptune, located in Aquarius, is the final planet in the evening sky, located about ¾ of the way between Jupiter/Saturn and Mars.

There are three comets brighter than 10th magnitude visible now: (1) C/2020 M3 (ATLAS) is the brightest and will be moving through Orion and Taurus this month; (2) 88/P Howell still very low in the southwest evening sky is moving through Sagittarius; and (3) C/2020 S3 (Erasmus) will be fairly low in the southeastern morning sky as it moves toward the Sun.

There will be a penumbral eclipse of the Moon on the morning of November 30th between about 12:30am and 4:50am. Penumbral eclipses are not very spectacular as the Moon does not pass through the darker shadow of the Earth. There is a possibility that I might participate in broadcasting this as part of the timeanddate.com live stream programming.

**WANT CURRENT COMET INFORMATION?**

Did you know that humans have been living in the International Space Station, uninterrupted, for twenty years? Ever since the first crew members docked with the International Space Station (ISS) in November 2000, more than 240 people have visited this outpost, representing 19 countries working together. They have been busy building, upgrading, and maintaining the space station - while simultaneously engaging in cutting-edge scientific research.

The first modules that would later make up the ISS were launched into orbit in 1998: the Russian Zarya launched via a Proton-K rocket, and the US-built Unity module launched about a week and a half later by the Space Shuttle Endeavour. Subsequent missions added vital elements and modules to the Space Station before it was ready to be inhabited. And at last, on November 2, 2000, Expedition-1 brought the first three permanent crew members to the station in a Russian Soyuz capsule: NASA astronaut William M. Shepherd and Russian cosmonauts Sergei Krikalev and Yuri Gidzenk. Since then, an entire generation has been born into a world where humans continually live and work in space! The pressurized space inside this modern engineering marvel is roughly equal to the volume of a Boeing 747, and is sometimes briefly shared by up to 13 individuals, though the average number of crew members is 6. The unique microgravity environment of the ISS means that long-term studies can be performed on the space station that can’t be performed anywhere on Earth in many fields including space medicine, fluid dynamics, biology, meteorology and environmental monitoring, particle physics, and astrophysics. Of course, one of the biggest and longest experiments on board is research into the effects of microgravity on the human body itself, absolutely vital knowledge for future crewed exploration into deep space.

Stargazers have also enjoyed the presence of the ISS as it graces our skies with bright passes overhead. This space station is the largest object humans have yet put into orbit at 357 feet long, almost the length of an American football field (if end zones are included). The large solar arrays – 240 feet wide - reflect quite a bit of sunlight, at times making the ISS brighter than Venus to observers on the ground! Its morning and evening passes can be a treat for stargazers and can even be observed from brightly-lit cities. People all over the world can spot the ISS, and with an orbit only 90 minutes long, sometimes you can spot the station multiple times a night. You can find the next ISS pass near you and receive alerts at sites like NASA’s Spot the Station website (spotthestation.nasa.gov) and stargazing and satellite tracking apps.

Hundreds of astronauts from all over the world have crewed the International Space Station over the last two decades, and their work has inspired countless people to look up and ponder humanity’s presence and future in space. You can find out more about the International Space Station and how living and working on board this amazing outpost has helped prepare us to return to the Moon - and beyond! - at nasa.gov.
### S.A.S CLUB OFFICERS

<table>
<thead>
<tr>
<th>OFFICE/POSITION</th>
<th>NAME</th>
<th>PHONE NO.</th>
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<tbody>
<tr>
<td>Chairman of the Board</td>
<td>Open</td>
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<tr>
<td>President</td>
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</tr>
<tr>
<td>Secretary</td>
<td>Michael Moraghan</td>
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</tr>
<tr>
<td>Treasurer</td>
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</tr>
<tr>
<td>Star party Coordinator</td>
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</tr>
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<td>Newsletter Editor</td>
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</tr>
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<tr>
<td>Past President Emeritus</td>
<td>Dan F. Case</td>
<td>(520) 207-6833</td>
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* Astronomical League Coordinator
** 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 $32.95 for 1-year self-renewed.
7. SAS T-Shirts for sale for $10.00—M, L, XL.
8. Member of International Dark-sky Association (IDA) and The Astronomical League.
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 WEB SITE

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

### SAS STATISTICS & FINANCES

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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

SAS IS A MEMBER OF THE ASTRONOMICAL LEAGUE

Since SAS is a member of the Astronomical League, any SAS member may join the Astronomical League for a nominal fee of $7.50. What are the advantages to you of 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 for 2009-2011!

MAGAZINE SUBSCRIPTIONS

To order or renew your Sky and Telescope Magazine at the Club Rate, you can go directly to www.skyandtelescope.com/clubspecial

To order or renew Astronomy Magazine, see the Treasurer.

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