



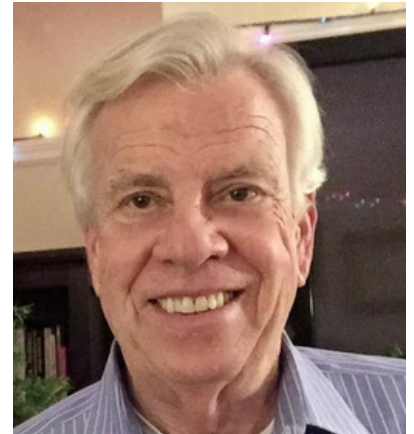
# PAStimes

A Publication of the Phoenix Astronomical Society

## Stu's Views • Stu Brackney, President PAS

Hi everyone. Did you know that you can attend our monthly lecture series in person or online? Well, my friends you can.

Through the cooperative efforts of the Paradise Valley Community College and our board, we have a contract to make the lecture presentations available to you in one of their classrooms. But if you cannot make it to 32nd Street and Union Hills, fear not, you can join us online with your computer, laptop, iPad or even your cell phone. Our guest speakers have over the years provided us with fabulous lectures. Our website has scores of videos from these presentations.



To learn more about our upcoming lectures and other PAS events, visit our website [pasaz.org](http://pasaz.org) and click on this link: [PAS Event Calendar and Registration Site](#). All our events require registration as we want to ensure we can contact you if the event is cancelled or relocated.

I have not heard from anyone about where to have a potluck social! Darn. Put your thinking caps on everyone, before the holiday schedule gets filled. Reach out to me with ideas where 30 – 40 of us might gather for some food and of course discussions about our favorite topic, astronomy. If you are a “Party Animal” reach out to me as we are looking for a “Social Committee Manager”.

One last item that may interest some of you who own a telescope. If you do and have a good working knowledge of how to demonstrate it to others, we will have paid work for you! Yep, our Star Tours outreach program receives requests for telescope operators. If you are interested in joining the group, contact our Star Tours Manager, Andrew Stone: [startours@pasa.org](mailto:startours@pasa.org).

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## November Upcoming Events

November 2nd – Speaker Meet & Greet Dinner

November 2nd – Monthly Lecture Series

November 11th – Public Star Party

November 16th – Telescope Workshop 101 – What to Buy

November 16th – Telescope Workshop 201 – How to Operate

For more information and to register for these events, go to the [PAS Event Calendar and Registration Site](#). It is important to register for all events. In case of event change or cancellation you will be notified via email.

### November Lecture

The November 2, 2023 speaker is Kai Staats. The title of his presentation is: ***So you think you want to live on Mars?***

Kai and his team at the University of Arizona, Biosphere 2, have constructed a world class facility that received its first two missions in April and May of 2023. Kai will share the challenges in construction, the unique qualities of this facility, and the real challenges of living on Mars.

Kai Staats is a former president of PAS and is an entrepreneur, researcher, and veteran developer of platforms for research and science education.

For more details and to register for the meeting and presentation go to the PAS Event Calendar and Registration Site:

[PAS Event Calendar and Registration Site](#)

It is important to register for events. In case of changes you will be notified.



### October 5, 2023, Presentation by Dr. Stroud

The title of Dr. Rhonda Stroud's presentation was "Diamond Dust and Other Relicts of the Dawn of the Solar System." Dr. Stroud is a professor in the School of Earth and Space Exploration and the Director of the Buseck Center for Meteorite Studies.

Individual grains of dust formed in ancient stars prior to the formation of our Solar System are preserved in primitive meteorites and are available for laboratory study. With Secondary Ion Mass Spectrometry (SIMS), Focused Ion Beam Microscopy (FIB), and Transmission Electron

## Presentation by Dr. Stroud (continued)

Microscopy (TEM) the dust composition and structure can be investigated in detail, sometimes even resolving the individual atoms as was shown in a video during the presentation and the identification of traces of diamond dust in meteorites.

The study of the composition of meteorites combined with the spectroscopic study of the composition of different types of stars and understanding nucleosynthesis allows the identification of the source of different minerals found in meteorites and some asteroids and comet dust.

Some of the research also involves determining the isotopic composition of and isotopic ratios within meteorites that provides information to the source of the minerals. Pristine samples from asteroids, such as Ryugu and Bennu when available, will also provide information on the sources of dust that formed our solar system. The presentation also included a short video of the ASU meteorite collection.

## October Outreach Events

The PAS outreach program had another busy month in October with five successful events:

### Annular Solar Eclipse

Approximately 30 early risers visited the Apache Wash Trailhead Park to observe the Moon pass almost directly in between the earth and the Sun blocking a significant amount of sunlight. While only classified as a partial eclipse, the group was able to observe what appeared to be the Moon eating the Sun (like Pacman). PAS distributed special solar observing glasses to those without eye protection, and also provided viewing through Stu's and Richard's telescopes equipped with solar filters.

Several PAS members are already making plans for next year's eclipse in April 2024.



### Telescope Workshop 101 – What to Buy

October's 101 workshop at PVCC was taught by Terri and William Finch and attracted a couple who had attended one of our star parties and were now looking for assistance with buying their first telescope.

### Telescope Workshop 201 – How to Operate My Telescope

October's 201 workshop at the Apache Wash Trailhead was taught by Stu Brackney, Damon Finnel, and Richard Sauerbrun and was attended by 5 students with their telescopes. The evening had spectacular views of the Moon, Jupiter, Saturn, and the Andromeda Galaxy.

### Star Tours – Cub Scout Pack 340

The Star Tours outreach program held its first event for Pack 340 of the Cub Scouts based in North Phoenix. Mason Klenklen served as PAS's visual telescope operator and Pete Turner served as PAS's meteorite presenter for the event.

## International Observe the Moon Night

A good-sized group of people visited our Apache Wash Trailhead star party site on Saturday the 21st for the International Observe the Moon night. Nine PAS members attended with their telescopes and provided a wide variety of views of our nearest celestial neighbor to their fellow members and the visiting public.

During the event, Mark Johnston and Stu Brackney participated in ASU's online event and provided commentary on our organization as well as views of the moon through Mark's telescope. This turned out to be excellent exposure for PAS to ASU's much wider audience. If you wish to watch a recording of the ASU event, here is the link:

<https://youtu.be/FSadX38RSPi>



## PAS Is Searching for an Editor

Stu Brackney, President

Hi everyone. Well, we have all our board and manager positions now filled except Editor of our fabulous PAsTimes. So, I am reaching out to all of you, hoping someone will step up and fill the spot. By the way, our membership continues to grow, approaching 120!

As you all know this newsletter is one of our major means of communicating with you and the public. We take pride in the contributions many of you make with your submittals.

Our editor needs to have some basic computer skills, time, and of course creative ability when it comes to finalizing the content of the publication. The Editor is a voting member of the Board of Directors. You board recently passed a Policy & Procedures document that the new Editor will find very helpful.

So, everyone, if you are interested in contributing your skills and time, please contact me:  
[President@pasaz.org](mailto:President@pasaz.org)

## Member Astro Images

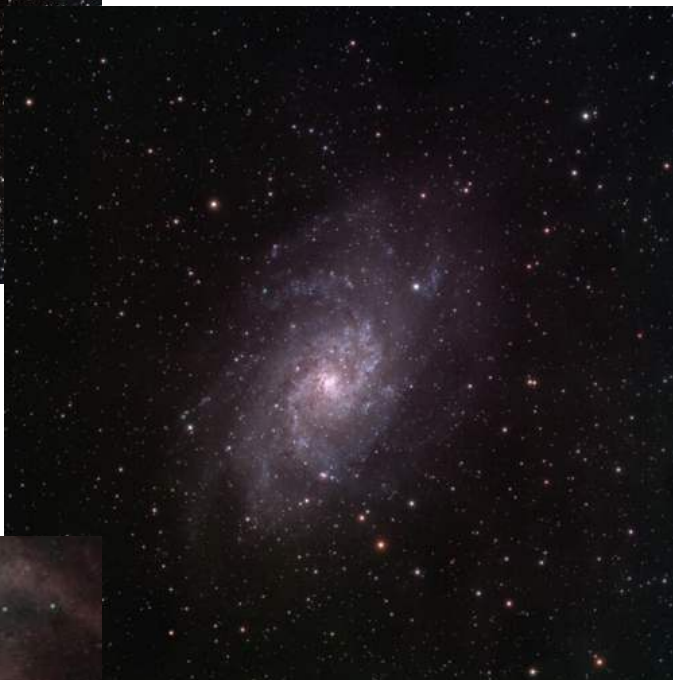


*andromeda  
galaxy*

Richard Sauerbrun

*M33*

Kris Mlak



*north american  
nebula*

Mark Savan

*io transit of jupiter*

Mark Johnston



## Small Telescope Targets for November

Each month we feature 7 good targets for small telescopes that should be visible in the evening.

**NGC7662 Blue snowball nebula.** Surprisingly bright compact blue ball, like a large Neptune

**M31/32/110 Andromeda Galaxy.** The largest galaxy near us. Look for its two faint companion galaxies M32 and M100

**NGC7009 Saturn nebula.** Another small but bright planetary nebula with 'handles' on each side looks like Saturn!

**Almach** Beautiful blue/yellow double star in Andromeda

**NGC253 Sculptor galaxy** – Easiest galaxy to spot in a telescope after Andromeda

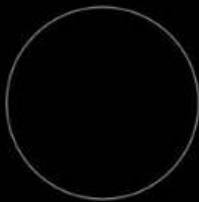
**NGC7318B Stephan's Quintet.** This is a challenge but this compact galaxy group in Pegasus is 200-340 million light years away so it's fun to look for under a dark sky

**M15** Bright globular cluster in Pegasus

## Moon in October



3rd quarter  
November 5



New Moon  
November 13



1st quarter  
November 20



Full Moon  
November 27

# Helpful Astronomy Websites

by Mark Johnston

The following websites are great free resources to help you plan and enjoy your astronomy adventures

Astromart [astromart.com/](http://astromart.com/) This is one of the top two sites for buying and selling used astronomy gear, product reviews, and forums where you can discuss any aspect of astronomy with other enthusiasts. A small fee is required.

Astrometry.net <https://nova.astrometry.net/> This site will take any astronomy image you send it (galaxy, starfield, nebula, etc) and then tell you what it is and where it is in the sky.

Astronomy Tools [astronomy.tools/calculators/field\\_of\\_view/](http://astronomy.tools/calculators/field_of_view/) This site has a lot of capabilities but I use it primarily to figure out how a target (e.g. the Helix nebula) will look in my eyepiece or astronomy camera. You pick your scope, camera, eyepiece and target and the site does the rest.

Astrospheric [www.astrospheric.com/](http://www.astrospheric.com/) Probably the best short term astronomy weather forecasting tool, providing predictions of clouds, transparency and seeing.

Clear Sky Charts [www.cleardarksky.com/](http://www.cleardarksky.com/) Excellent source of astronomy seeing conditions forecast. Also a great tool for finding observing sites with lower light pollution.

Cloudynights [www.cloudynights.com/](http://www.cloudynights.com/) This is one of the top two sites for buying and selling used astronomy gear, product reviews, and forums where you can discuss any aspect of astronomy with other enthusiasts. Free.

Dark site finder [darksitefinder.com/map/](http://darksitefinder.com/map/) Great website for finding a dark observing location.

Heavens above [heavens-above.com/](http://heavens-above.com/) Top site for predicting naked eye observations of satellites. See when the ISS is visible in your neighborhood!

Jupiter transits [shallowsky.com/jupiter/](http://shallowsky.com/jupiter/) For anyone with a small telescope, this is a great site. You can find out when the Great Red Spot and Jupiter's satellite transits are visible.

Solar Dynamic Observatory (SDO) <https://sdo.gsfc.nasa.gov/data/> Find out how the Sun looks right now, at various wavelengths. If you own a solar telescope, this site coupled with Astrospheric is all you need to plan fabulous solar observing!

Telescopius [telescopius.com/](http://telescopius.com/) This site is very helpful in planning an observing evening. It will tell you when any particular target is rising and setting and when is the best time to observe it. This allows you to sequence your observing in a planned manner.

# Why You Should Join PAS

By Stu Brackney, President PAS

Besides the fun of meeting so many different people who enjoy learning about the cosmos, your annual fee of \$30.00 goes toward:

- helping to fund student scholarships at Paradise Valley Community College
- providing materials that we distribute at our school events, public star parties and monthly meetings
- acquiring insurance for conducting all these events
- upgrading software that allows us to have efficient website management

AND our members have an abundance of resources and expertise that we can share and explore together. If you are not already a member, we invite you to join us in this exciting journey to enhance our knowledge of the skies!

As your journey in astronomy continues, as a member, you will have the opportunity to contribute to outreach activities with your telescope and help us educate and entertain the public. Once you become proficient, you can apply to join our Star Tours program where participants are compensated for doing paid events for corporations, government agencies and schools.

We hope, as a member or future member, that you are aware of all the above information that allows us to make a difference in the lives of others as they learn and discover more about our universe!