



PAStimes

Phoenix Astronomical Society

www.pasaz.org

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PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Ted Blank to Speak at November 1st Meeting

Data provided by Ted Blank

Our speaker tonight, Ted Blank, was born in upstate New York and has lived all over the country, including several years in Japan. He graduated from the State University of New York in 1974 with a Bachelor of Science in Computer Science, and in 1979 received a Masters degree in Aquatic Ecology from UC Berkeley. Before moving to Arizona in 2014 in search of clearer skies, he spent fifteen years in New Hampshire, including a year as president of the New Hampshire Astronomical Society. As a passionate "sidewalk astronomer" he can often be found outside sharing views through his telescope with the public. His

amateur research interests include using occultations to measure the sizes and shapes of asteroids and discover new binary star systems. When not enjoying Astronomy or singing in a Barbershop Quartet, Ted works as a performance engineer for a large software company.

In August 1992, JPL scientist Robert Staehle called Pluto discoverer Clyde Tombaugh, requesting permission to visit his planet. "I told him he was welcome to it," Tombaugh later remembered. Fast-forward just 14 years when the New Horizons



Ted Blank to speak at November 1st PAS Meeting. Photo provided by Ted Blank.

See "November 1 Meeting" on Page 3

Dinner at Chili's Before the Meeting

Meet and greet our wonderful guest speaker for tonight's meeting. RSVP for your attendance to join PAS at Chili's for dinner is required by the Day Before this

meeting. You can email your RSVP to Terri at Events@pasaz.org with the number in your party, or you can go to this link: [http://www.pasaz.org/forums/calendar.php](http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2721&day=2018-11-1)

[?do=getinfo&e=2721&day=2018-11-1](http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2721&day=2018-11-1) and put in your RSVP to attend. We hope you can make it to Chili's to share dinner and chat with the Guest Speaker.

PAS Meeting Oct 4

By Terri, Event Manager

It was a very nice meeting. Twenty-five PAS members and guests of PAS arrived about 7pm in LS-203 at PVCC Main Campus and socialized while waiting for the meeting to begin.

President Mike Marron opened the meeting and very quickly, by 7:33pm, turned the meeting over to the Guest Speaker Tom Mozdzen. Tom was fantastic! It was a very informative, super interesting talk. Tom concluded around 8:30pm but Q&A went on until 9pm.

Mike then turned the meeting to business items and announcements. The first order of business for this meeting was pos-

sibly finding a Treasurer for the club. Eric wishes to step down from the position and Secretary Rick Cunningham offered to take the position of Treasurer. Everyone present voted and Rick is now the Treasurer and Secretary of PAS. Sam Insana announced the upcoming 70th Anniversary Celebration event at BMC on Oct 11th. Since the topic was upcoming events, Event Manager Terri Finch talked about upcoming events in October. Vice President shared the upcoming ASU Earth & Space Day on Oct 13. Paul won the PAS Raffle. The meeting concluded about 9:45pm.

See "October 4 Meeting" on Page 3



Tom Mozdzen was the October 4 Guest Speaker. Photo taken by Don Boyd.

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PAS Upcoming November Events

By Terri Finch, Event Manager

Check out these and other fun events on the PAS Calendar: <http://www.pasaz.org/forums/calendar.php>. RSVP where requested to Events@pasaz.org. On the PAS Calendar, "Private" means the event is for PAS members only. If you wish to become a PAS member and attend the private events, please download a membership form here: <http://www.pasaz.org/forums/downloads.php?do=file&id=129>

Nov 1: PAS Meeting at PVCC Main Campus in LS-203 at 7pm. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2530&day=2018-11-1&c=1>

Nov 1: Dinner before PAS Meeting - Guest Speaker Meet & Greet. Dinner is from 4:30 to 6:30pm at Chili's on 7th Street & Bell Rd in Phoenix. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2721&day=2018-11-1&c=1> RSVP is Required to attend.

Nov 3: Public Star Party at Tonto National Monument. Star Party is open to everyone. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2728&day=2018-11-3&c=1>

[3&c=1](http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2544&day=2018-11-8&c=1)

Nov 8: Huge Public Star Party at Black Mountain Campus of PVCC from 6:30 to 9:45pm. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2544&day=2018-11-8&c=1>

Nov 15: FREE Telescope Workshop at PVCC Main Campus 7pm to 10pm in G-147. Bring your telescope and accessories. This is an indoor/outdoor event (weather permitting) and RSVP is required with Terri. No public RSVP's could cancel this event. More details are here: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2537&day=2018-11-15&c=1>

Nov 18: Free Telescope Workshop at Bookmans from 3:30 to 5:30pm. Bookmans is at 19th Ave & Northern in Phoenix. RSVP required with Terri. More details at this link: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2526&day=2018-11-18&c=1>

Nov 24: Public Star Party at South Mountain from 6:30 to 8:30pm. More de-

tails:

<http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2724&day=2018-11-24&c=1>

And here is a brief look at the upcoming events of December 2018:

Dec 1 - 23 & 26 - 31: PAS will be at the 2018 Las Noches de las Luminarias at Desert Botanical Gardens for all 29 nights of the event. The plan is to have 4 telescopes & PAS's Meteorite Men providing entertainment, education, and views of the night sky through our high powered telescopes. You can find PAS in the Wildflower Garden on all nights of this event (weather permitting).

Dec 6: PAS Meeting at PVCC Main Campus in LS-203 at 7pm. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2531&day=2018-12-6&c=1>

At the time of completion of this issue, several more events were in the planning stages and could not be listed as "Scheduled" until they are definitely happening. Please see our online calendar for the events that didn't make it into this list.

Special Raffle at Nov 8 BMC Star Party

By Terri, Event Manager

Phoenix Astronomical Society (PAS) held a Free Raffle at the 70th Anniversary Astronomy Celebration at Black Mountain Campus (BMC) on October 11, 2018. Due to clouds canceling the attendance of many who had RSVP'd to attend, about half of the 60 available items were successfully raffled off. The remaining items will be offered at an additional Free Raffle to be held at the November 8, 2018 PAS BMC Star Party, open to everyone attending.

We'd love to have a great attendance for this event to enjoy the winning of the raffle items, once again. Information about this raffle and the event can be found at this link:

<http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2544&day=2018-11-8&c=1> Details and a list of the remaining items to be raffled will be in the PUBLIC Forums along with additional info about the indoor activities for this event. The link to

the public forums is here: <http://www.pasaz.org/forums/showthread.php?p=3248#post3248> Please check out this link. Your RSVP is highly suggested for this event by sending number in your party to Events@pasaz.org (please mention date and name of the event you wish RSVP to attend). We hope to see you for another great BMC astronomy event night!!!

November 1 Meeting

Continued from Page 1

interplanetary space probe began its nine-year journey to Pluto at the fastest speed of any spacecraft in history, passing the orbit of the Moon in only 9 hours, and carrying some of the ashes of discoverer Tombaugh aboard. In July of 2015, it flew past Pluto at a distance of just 8,000 miles, taking photos and gathering scientific data as

quickly as possible, then slowly sending the data back to Earth over the next year. In the best tradition of scientific exploration, Pluto turned out to be full of surprises, with an active surface, an atmosphere with multiple layers, and a giant heart-shaped "iceberg" made of frozen Nitrogen. Join Solar System Ambassador and Fountain Hills resi-

dent Ted Blank as he takes you on an exciting journey to the farthest reaches of the solar system, with an epilogue describing his trips to Africa and South America to help NASA pinpoint the location of the next target of New Horizons, an even more distant object well beyond Pluto's orbit.

October 4 Meeting

Continued from Page 1

Many thanks to the PAS Members who provided popcorn for this meeting. And thanks to Bruce Wurst (not at the meeting)

for providing the case of bottled water. And a super thank you to our wonderful guest speaker Tom Mozdzen. See you at the No-

vember PAS Meeting on Thursday, Nov 1, 2018.

PAS Annual Swap Meet - December 6

By Terri, Event Manager

At the December meeting the PAS Annual Swap Meet will be held. Come early to set up your items along the walls of this room for sale as either a Swap Meet or a Garage Sale set up.

The left side of the room, when you enter, will be the Garage Sale side. Put an asking price on your item for sale and let the attendees enjoy purchasing from you.

The right side of the room, when you walk in, will be the Swap Meet side. For this, prepare a page with the following info on it: 1) List Item for Sale (one item per page, please), 2) Include all accessories that

go with this item, 3) List a starting price, 4) allow attendees to bid on your item from 7pm to 7:30pm and then again after the meeting closes up to 10pm. All sales must conclude by 10pm.

I will need help setting up the room for this. If you can come by early to help out, that would be appreciated. The moment we have the room, probably at 7pm, I would like to move the tables, long ways, from the front of the room to the back of the room, against the walls, and leaving the middle of the room for seating for the presentation. Thank you so much for assisting me in

setting up this room for the Swap Meet and also for putting the room back the way it was before we depart that night. All help is appreciated.

If you want the maximum exposure of what you have for sale, please provide a short list of items for inclusion in the December Newsletter. Your deadline for the December Newsletter submission is Nov 10th. Provide the items for sale in a paragraph or list. I will format it for the Newsletter and we will put it in the December newsletter with the info about the upcoming meeting. Send it to me today!

What's Up For November?

By Don K. Boyd, PAStimes Editor

Name	Date	Rise	Set
Mercury	11-15-18	08:43	18:27
Venus	11-15-18	04:48	15:52
Mars	11-15-18	13:31	23:29
Jupiter	11-15-18	07:40	15:54
Saturn	11-15-18	10:17	20:13
Uranus	11-15-18	18:13	07:20
Neptune	11-15-18	14:07	01:35
Pluto	11-15-18	11:12	21:12

All Times Arizona Time

Bold means the object is "visible" in the evening

November 15 2018

Sunrise: 06:59

Sunset: 17:25



New: November 07



Q1: November 15



Full: November 22



Q3: November 29

PAS is incorporated in the state of Arizona as a non-profit, scientific and educational 501(c)(3) organization. Our newsletter PAStimes is published monthly from September to May and distributed via Internet. All Issues are available for download on our website www.pasaz.org. Ads for astronomy equipment are provided as a courtesy to sellers and buyers, and do not constitute any endorsement by PAS. All Photos by Don Boyd unless otherwise credited. All articles and photos are copyright their authors or PAStimes.

For Sale:

Meade Series 5000 80mm ED APO Refractor with star diagonal (1.25/2" compatible) with these accessories: Meade Series 4000 1.25" Ploessl eyepieces: 6.4mm, 9.7, 12.4mm, 15mm, 32mm & 40mm, Separate metal carrying cases for filters and the scope, Filters: #12 Yellow, #23a Light Red, 80a Blue, #58 Green & Neutral Density, Celestron #51548 polarizer, Meade 1.25" ND (0.9) filter, #07531, Celestron WiFi Sky-Link, 2x Barlow, 3x Klee Barlow, Meade Series 4000 F/6.3 Focal Reducer/Field Flattenner (#07049, Celestron

CG-5 German Equatorial mount including: - latest firmware loaded - two counterweights - polar alignment scope - 12-volt power cord - AC power supply - GPS unit - original instruction manual - Celestron AZ Adapter #18778 - Rigel Systems Quick Finder with extra scope mount, Green laser pointer, Two headlamps with red light (one without a strap), Meade LXPS7 12-volt rechargeable power supply, ZWO ASI-120MM CCD Camera

ZWP Filter Wheel with filters (L, R, G,

B & room for 1 more), Many sorts of applicable cables for programming and connections, Two extension tubes, Canon EOS T-mount camera adapter, Star Analyzer 100 Diffraction grating for spectroscopy, Bag on wheels with a handle to store all accessories.

This is an excellent starting scope or one for taking on trips. Good for Messier Objects, planets, and spectroscopy. Pictures available on request. Email Bill at wrpowell2002@yahoo.com \$850.00. ***

Welcome New Newsletter Proofer!!!

By Terri, Event Manager

At the last Meeting of the Minds on Sept 27, the attendees of that meeting congratulated Cheryl White for volunteering to be the newest addition to the Newsletter Proofing Team. Congrats Cheryl!

The current Newsletter Team consists of the following: Don Boyd as Editor; Eric

Steinberg, Ora Kurland, Matt Kohl, and now Cheryl White as copy editors; Terri Finch proofs the Newsletter Layout before the newsletter is uploaded to the pasaz.org site for your reading enjoyment. We hope you like the PAStimes Newsletter and that you continue to read it as it becomes avail-

able for your download.

I wish to thank the Newsletter Team tremendously as it is a challenge to make the deadline each month to get the next issue out on time. And Thank you, Cheryl, for joining the Team.

Santa Maria Middle School May 18

Rick Cunningham, Roger Anzini and Sam Insana did a star party at Santa Maria Middle School in Tolleson. At 7:30 pm we each showed the crescent moon which was a hit with the 11 to 13-year-old students, who numbered about 150. Several teachers also joined in and had a good time. We then showed Venus, which was less well received - most students said it just looked like a star. Jupiter came up behind a building so Sam carried his entire assembled scope 30 feet to show the king of the

By Sam Insana, PAS Rsvp for the evening event planets. Jupiter with its 4 Galilean moons was a big hit. Our school contact, Radha, covered up the 2 closest lights with black paper. However, there were still about half a dozen other bright lights making it a Bortle 7.5. This made it impossible to see M13 or M57. Roger did show M104 galaxy and an open cluster looking like a star wars spacecraft. He also showed Venus and the Moon for a while with his 16-inch homemade dob. Rick showed the double star Mizar in the big dipper. He also

showed Venus and the Moon using his 8-inch dob. Sam showed Venus and Jupiter and the Moon with his 8-inch Newtonian reflector. It was a nice night with no wind, rain or clouds. The general location, 75th Ave and Lower Buckeye Rd, is in a reasonably dark area, though if the school could have turned off the lights it would have been much better. Rick showed the dark side of the moon near the end of the star party. We all saw a bright spot which we could not explain.

Mars Viewing in Cave Creek July 31

By Ron Walker

I would like to thank Mark Johnston and Sam Insana of PAS who brought out their telescopes for viewing after the star show about Mars. They went beyond the

call of duty to provide views of Venus, Jupiter, Saturn, and Mars, as well as some deep sky wonders. Thanks to Don Boyd and Frank Insana as well for keeping ques-

tions answered. Without them, this double outreach would not have gone over as good as it did. Many thanks to all.

Ice Cream & Star Party in Carefree July 3

By Terri Finch, Event Manager

It was a fantastically clear evening for viewing! The evening began with many fine foods enjoyed at the potluck. Many thanks to everyone who contributed to the potluck and made it that much more yummy for all. Eric brought the super large

meatballs everyone loves, William brought pizza and salad, and there was enough food for all plus leftovers.

Also attending this wonderful event hosted by Mike Marron, at his home in Carefree, was his girlfriend Ofelia Waters.

Many thanks to Ofelia for being there and really making the party that much more fun. She is such a wonderful gal to know and chat with. We also had Eric Steinberg and his wife Ora Kurland. Ted Blank attended and so did Ron Walker. I was there along

See "Carefree July 3rd" on Page 7

South Mountain Star Party Sept 14

By PAS Members Don Boyd & Sam Insana



The Milky Way over South Mountain. Photo by Ashley Kasarjian.

A brand new 11-inch Celestron Edge telescope was also there for first light. It will be owned and run by the South Mountain Park Environmental Center and the new South Mountain Astronomy Club.

It had an imaging system with a screen so that many people could see an object all at the same time. Some of the object images were stacked and had color.

Even though that new telescope and imaging system was fantastic, Don and Sam had long lines of people who wanted to actually look through the eyepiece of a telescope. For many guests, it was their first view through a telescope eyepiece. Another amateur astronomer, from SAC, was also there with his telescope and some binos showing the night sky.

There was usually a bright light in the area for security purposes. They finally



Moon photo by Ashley Kasarjian taken through Don's 8" scope at the South Mountain

The night of Friday, September 14th was beautiful with no wind or clouds or rain. There were over 100 people at the South Mountain Environmental Center at South Mountain for a public star party from 7 to 9pm. Don Boyd and Sam Insana brought 8-inch telescopes and showed the Moon, Jupiter, Saturn, Mars (with the polar ice cap since the dust storm was vanishing), and M57 ring nebula. Cal Vance from PAS also showed up with his 6-inch Dobsonian telescope, but he forgot the base at home so he couldn't show any objects. He stuck around, however, talking to the guests about astronomy and telescopes and pointing out objects with his laser.

turned it off so that the night sky was much better to behold.

Cal noticed Ashley trying to get a picture of Saturn through a scope and he approached her and suggested that it might be easier to get a good picture of the Moon, so they went over to Don, when he didn't have a crowd around his scope, and asked if she could try a photo through his scope. They spent about a half hour and got some very good pictures.

The next South Mountain Star Party is scheduled for Nov 24. Plan to attend and bring a friend!

Public Lecture in Carefree June 30

By Terri Finch, Event Manager

This was a wonderful, laid back event. It was open to the public but no public attended, so the evening had a schedule change. The potluck was good with meatloaf, BBQ pulled chicken, and some great food Sam brought. Attendees included Mike, the host of the party, Sam Insana, who brought Don Boyd with him, William and Terri Finch, who brought Kevin Harcey with them. It was a small party but it was fun.

The evening began with dinner about 6:20pm. We ate until about 7:45pm, and the

extended length of the dinner was due to discussion between PAS members about the 70th Anniversary Astronomy Celebration at BMC on October 11 and the upcoming Lumi events at the Desert Botanical Garden the entire month of December. The discussion was very productive.

Once done with chatting and eating, the group of six PAS members moved from Mike's kitchen to his living room where Mike had set up his projector. Mike presented "Upcoming Astronomical Disasters" for about one and a half hours, and then we

enjoyed a movie, dessert and ice cream. The movie was "Coco". William, Mike and Terri had seen it previously but enjoyed watching it once again. The party broke up about 11:15pm.

Many thanks to Mike for doing his presentation with the small audience. Also, thank you to Don, Kevin, Sam, and Mike for the food at the potluck. And a big thank you to Ofelia, not present, who helped clean Mike's house for the party.



November's Dance of the Planets

By Jane Houston Jones and David Prosper

November's crisp autumn skies bring great views of our planetary neighbors. The Moon pairs up with Saturn and Mars in the evenings, and mornings feature eye-catching arrangements with dazzling Venus. Stargazers wanting a challenge can observe a notable opposition by asteroid 3 Juno on the 17th and watch for a few bright Leonid meteors.

Red **Mars** gleams high in the southern sky after sunset. **Saturn** sits westward in the constellation Sagittarius. A young crescent Moon passes near Saturn on the 10th and 11th. On the 15th a first quarter Moon skims by Mars, coming within 1 degree of the planet. The red planet receives a new visitor on November 26th, when NASA's InSight mission lands and begins its investigation of the planet's interior. News briefings and commentary will be streamed live at: bit.ly/landsafe

Two bright planets hang low over the western horizon after sunset as November begins: **Jupiter** and **Mercury**. They may be hard to see, but binoculars and an unobstructed western horizon will help determined observers spot them right after sunset. Both disappear into the Sun's glare

by mid-month.

Early risers are treated to brilliant **Venus** sparkling in the eastern sky before dawn, easily outshining everything except the Sun and Moon. On November 6th, find a location with clear view of the eastern horizon to spot Venus next to a thin crescent Moon, making a triangle with the bright star Spica. The following mornings watch Venus move up towards Spica, coming within two degrees of the star by the second full week of November. Venus will be up three hours before sunrise by month's end – a huge change in just weeks! Telescopic observers are treated to a large, 61" wide, yet razor-thin crescent at November's beginning, shrinking to 41" across by the end of the month as its crescent waxes.

Observers looking for a challenge can hunt asteroid **3 Juno**, so named because it was the third asteroid discovered. Juno travels through the constellation Eridanus and rises in the east after sunset. On November 17th, Juno is at opposition and shines at magnitude 7.4, its brightest showing since 1983! Look for Juno near the 4.7 magnitude double star 32 Eridani in the nights leading up to opposition. It is bright enough to spot through binoculars, but still

appears as a star-like point of light. If you aren't sure if you have identified Juno, try sketching or photographing its star field, then return to the same area over the next several days to spot its movement.

The **Leonids** are expected to peak on the night of the 17th through the morning of the 18th. This meteor shower has brought "meteor storms" as recently as 2002, but a storm is not expected this year. All but the brightest meteors will be drowned out by a waxing gibbous Moon.

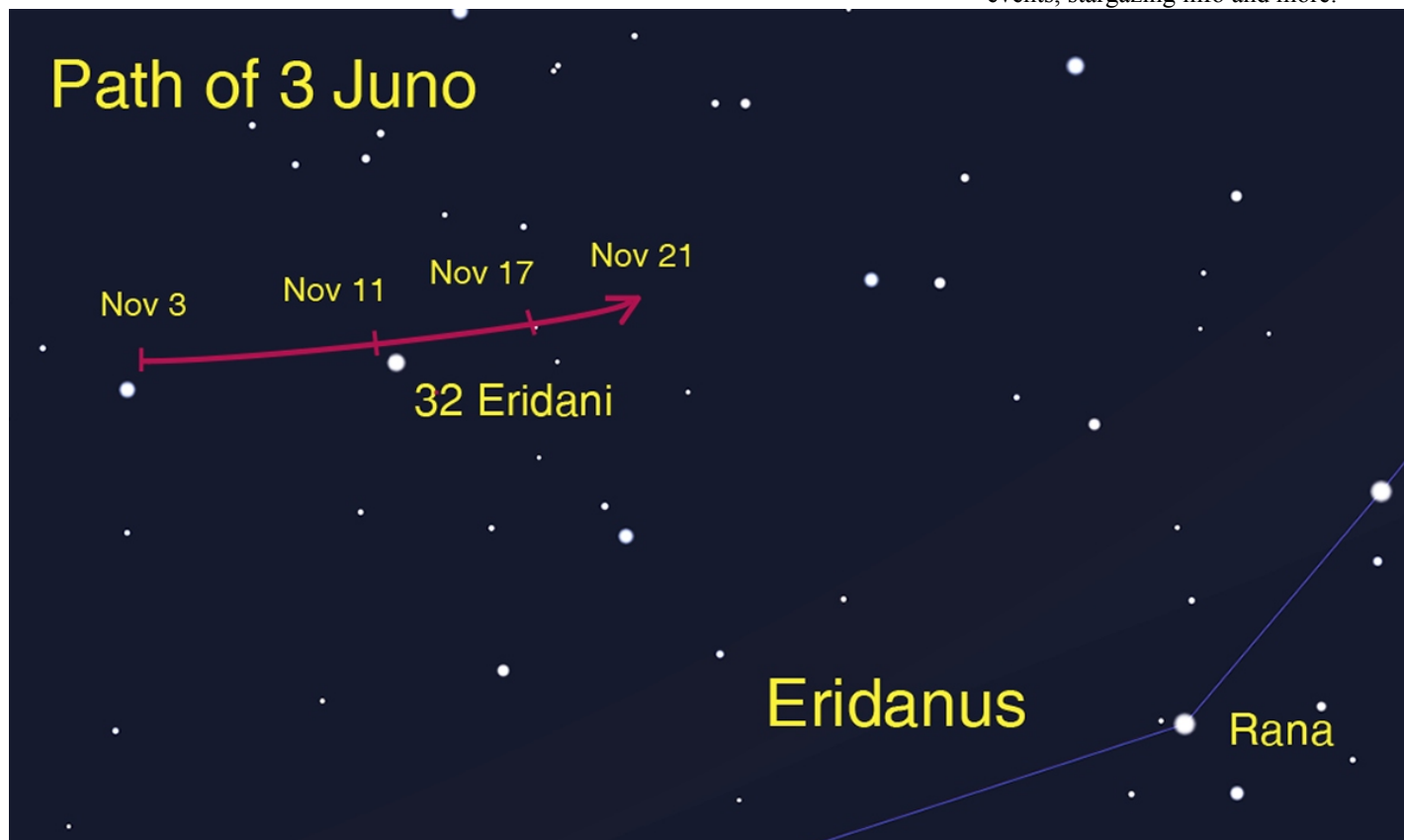
Stay warm and enjoy this month's dance of the planets!

You can catch up on all of NASA's current and future missions at nasa.gov

With articles, activities and games **NASA Space Place** encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!

Attribution text for this article:

This article is distributed by the NASA Night Sky Network, a coalition of hundreds of astronomy clubs across the US dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, stargazing info and more.



Meeting of the Minds Sept 27

By Terri Finch, Event Manager

Eleven PAS Members attended this meeting. Each attendee was given a free raffle ticket for the October meeting main raffle. Attending were: William and Terri Finch, Rick Cunningham, the New Secretary of PAS, Sam Insana, President Mike Marron, Editor Don Boyd, Vice President Paul Facuna, Cheryl White, Pete Turner, meeting host Rodney Fong, and Howard Moneta. Thank you all for attending.

The meeting opened about 7:30pm. The minutes from the previous Meeting of the Minds (MOM) on February 8, 2018 were reviewed and approved at about 7:55pm. A 15 minute break was taken.

At 8:05pm the agenda for September 27 began with Mike leading the discussion. This part of the meeting concluded about 9:45pm.

- Treasurer Eric Steinberg had requested to give his position to another PAS Member, but then sent out an email stating he would continue another year. So, at this meeting, there was a unanimous vote to have Eric be our Treasurer for another PAS year. Congrats Eric! [Editor's note: Subsequent to this meeting it was learned that Eric did not want to continue as Treasurer and at the September

meeting Rick Cunningham was elected Treasurer.]

- Sam Insana mentioned some paperwork that needed to be signed by all the Officers. He will provide the paperwork at the October meeting and collect signatures.
- Chris Johnson, the PAS Webmaster requested to upgrade the PAS website program and be reimbursed for that purchase by PAS. This was approved.
- Don Boyd requested the purchase of Grammarly to assist him in doing the newsletter. This was approved.
- At the September PAS meeting, Bruce Kosaveach gave a presentation about the expansion of Lowell Observatory. PAS has approved the donation to Lowell for a plaque. More details about this can be found in this issue of the newsletter.
- Vice President Paul Facuna proposed storage of MOM Minutes with access to PAS members. This was approved.
- Paul also proposed that the MOM Minutes be sent out within 2 weeks of the meeting to those who

attended the meeting, so that the minutes of the meeting can be approved. It was agreed that 51% of the attendees approving the minutes of the meeting would constitute acceptance.

- Pete has purchased a Media Resource List and requested reimbursement from PAS. This was approved.
- Mike discussed the January 20 Lunar Eclipse and having an event at Coyote Park. Pete mentioned he'd find out if PAS can do it.
- Mike Marron also said the October 6 Night Sky Training Session was happening!
- Sam reminded everyone about the availability of PAS baseball caps with a red light on one side and a white light on the other side, at a cost of \$30 each. Sam took orders and will also take orders at the October meeting.

It was a wonderful meeting. It was very productive and quick. Thanks to those who brought snacks to share. Our next PAS Business Meeting will be February 14, 2019, and then a short meeting may be held on April 18, 2019, after the Awards Ceremony.

Continued from page 4.

with Don Boyd, Paul Facuna, and Sam Insana. It was a great party!

After enjoying dinner, several of us had brought telescopes and so we set them up while it was still light outdoors. Don had his scope, I brought my new scope - which seems to have three names at the moment and got a new name on this night - Evo, Eve, Sarah Jane Smith, and last night she was wearing a string of red lights, and so she was Roxanne. I had put a string of red lights on her so that after we watched the fireworks, we could see her upon returning back to the observing area. Eric had brought his 22" and it was a dream to see Saturn, Mars, Jupiter (I didn't get to see this one when he was showing it), and some other great objects. Eric packed up earlier than the rest of us and left. Don brought his scope with all its new adjustments and upgrades, and it performed well. I had

brought my scope to do a more accurate alignment of the main scope, to the Star Sense, and to the Finderscope and had some great views on this evening.

After scope setup, we all gathered on the side of Mike's house to look toward the Carefree Inn, as it had been announced on tv that they would be putting on a drone fireworks show. The announcement said 8:30pm to start, but by 8:45, we figured it wasn't going to happen. At this time, William called the Carefree Inn and they said no Drone show that night, but they were doing it on the 4th of July. I couldn't believe they would announce it on tv and other sources and not have it, so I hung out until 9:10pm before I gave up watching for the drone fireworks. After I gave up everyone had ice cream. William and I had brought Drumsticks and popsicles. When looking in Mike's freezer for something

cold to enjoy, I found some yummy orange and vanilla popsicles (creamsicles) and had one of those. The temperatures were rather high, still above 100 degrees, and so the popsicles were melting fast.

About 9:20pm we all took our chairs back to the observing area and enjoyed a great star party from about 9:30pm to 2:30am, when I packed up my scope, and Don packed up his scope. The rest of the people and scopes left earlier that night. Don who rode with Paul, and William and I left about 3am.

The sky was super clear with fantastic views of Saturn, Jupiter, Mars, even though it was just a large orange disk. No clouds. We did have a breeze which was welcome. It was a super night. Many thanks to Mike and Ofelia for hosting this event. And thanks to everyone who brought ice cream treats to this event to cool everyone off.

Carefree July 3rd

Arcosanti Star Party May 11, 12, 13

By Star Tours Members

Terri Writes the intro as: PAS was invited to host a star party at Arcosanti by FORM for May 11, 12 and 13 from 8pm to midnight on all three nights. PAS was able to accommodate this request. We were to arrive by 6:30pm for set up and then as a team, haul our equipment up the 1.5 flights of stairs to the rooftop. The Runners helped with moving equipment up and down the stairs as well as with bathroom breaks throughout the evening. It took over an hour to drive to Arcosanti from Phoenix and then an additional slow, half hour drive over a washboard road to the building where we were to set up the telescopes, as we didn't want to misalign our telescopes by driving too fast. Roger had a rough time collimating his scope on both nights due to the road.

The highlights of all three evenings were Venus setting in the West, Jupiter and Saturn rising in the East. There was no Moon on these three nights. This event has a weekend attendance of over 2,000 patrons, Thursday night to Monday morning. This is a music festival and so there were several stages, all lit up, that had bands playing all through the night. The music seemed to begin around 6pm and continue until about 1am with a change of bands at the stages after each of their performances. So, as we packed up at midnight each night, we enjoyed the music of the bands.

May 11, Friday

Terri writes: The Telescope Team for this evening consisted of three scopes and two Runners. Sam Insana brought his 8" scope, Storm Moon had her 8" scope and Terri Finch had her 8" scope. Jake Von Ruhr and William Finch were the Runners for the night.

The evening started with high winds with gusts of 40 mph and the Telescope Team arrived about 6pm for set up. There was a fire nearby that created a lot of smoke in the air, plus the winds kicked up the dirt and dust at Arcosanti, and there were high thin clouds. But, with all that disturbance in the air, the objects were there, visible, but slightly blurry at times.

For the evening, Storm stayed on Jupiter and its four moons all night, as this was the highlight of the evening and available through the whole event. Terri was able to show Jupiter for part of the night, Saturn when it first showed up on the horizon, Venus until she set for the night, the Ring

Nebula, Sombrero Galaxy, and Castor, a triple binary (6 stars) star system.

For the whole evening, there were bright lights to the West washing out the night sky. These lights were at a fork in the road and were placed there to help the arriving cars find their way in. Jake asked the FORM organizers (who were in a room below the roof we were on) if they could turn off the lights or point them in another direction. Nothing happened and all night we had this bright light in our eyes, and once in a while, additional lights were turned on where the food trucks were, and those lights were also pointing in our direction messing up the views of the night sky to the West.

The temperature up on the roof was kept warm by the concrete we were on, but as the night went on, the temperatures dropped. By 10pm it was chilly enough to need a jacket. Pack up for this night was 64 degrees. I would estimate we saw about 1,000 people on the roof at various times during the night with many people returning to see Saturn, once it was above the horizon at about 11pm each night. Due to this crowd arriving close to set up, we stayed set up on this night until 12:15am and then packed up.

Sam writes: At 8pm I showed dancing Venus (a lot of wind). At 8:30pm, I tried to find M81 and M82 galaxies but Arcosanti turned on two large, bright floodlights and the beautiful bortle 2 sky went to bortle 5. I then showed Jupiter for 10 minutes but stopped since Storm was showing it all night. I then showed M13 globular cluster for two hours. The last 30 minutes I showed Saturn and stayed 10 minutes past midnight so everyone in line could see it. A favorite of the huge crowd.

Attached is a photo I took last year and the same girl, Allison, showed up this year in the same outfit. I want to



Sam provided this photo he took on May 11th 2017, of the lady he saw 2 years in a row, same outfit, at the Arcosanti Star Party.

thank Jake, William, and Storm for helping me carry equipment up and down the stairs, watching my scope during a long bathroom break and helping me get in and out of tight parking.

May 12, Saturday

Terri writes: On this night the Telescope Team consisted of four Telescopes, Mike with Meteorites, two Runners, Terri with an 8" scope, Ted Blank brought his 14", Roger Anzini, with his wife Michelle as his Runner, brought his 16" scope, Mike Marron came with Meteorites, and William Finch had an 8" scope. Jake Von Ruhr and Storm Moon were the Runners for the night. Everyone helped each other by dragging our equipment up the staircase to set up, and then to pack up at the end of the evening.

The winds during the day blew away the smoke in the air, but the winds continued to have gusts of more than 30 mph, as well as almost constant blowing wind through the whole event. The sky was totally clear.

Prior to the start of the event, Jake offered his glasses cleaning service and went to each Telescope Team member and cleaned their glasses for the night. Thank you, Jake. That was well needed and appreciated.



Mike Marron sharing his meteorites with the many attendees of the Arcosanti event on May 12th. Photo by Ted Blank.

ciated.

Jake also assisted by asking to have the annoying lights of the night before, turned off or pointed away from the telescopes, and about halfway through the night, the lights were turned away and we could see the Western sky a lot better.

For the evening, Storm stayed on Jupiter and its four moons all night, and on this night, we viewed the Great Red Spot. Terri showed Saturn, Venus, Castor, and Albe-rio, but for some reason, she couldn't find the Sombrero Galaxy on this night al-though, when no one was near, she searched for it for about 20 minutes. On this night, Terri did a bunch of sky tours, and noted that the Summer Triangle, around 11pm, was available to share.

When we arrived, it was windy at first with gusts of 30 mph. Then the wind died down and it was breezy. We had a pack up temperature on this night of 59 degrees. Due to the crowd wanting to see Saturn, we stayed set up until 12:20am on this night.

Roger writes: Objects viewed were Jupiter and four moons, with Io emerging from behind the planet. Then M13 to an almost constant stream of approximately 300 guests for two and a half hours. Then back to Jupiter due to popular request. Then back to M13. Saturn at approximately 11pm. Then briefly M57. Also, repeated constellation laser tours for gathering crowds: Gemini, Hercules, Scorpius, Lyra, Corvus, Ursa Major and Ursa Minor with star-hop extensions to Polaris, Thuban, Arcturus, and Spica.

I'm beginning to understand that the laser tours are perhaps more important than simply showing someone an eyepiece ob-ject for 20 seconds. Seems that very few people can grasp the idea that we are all connected to the vastness of the cosmos. Thank you for two wonderful nights of stargazing, Saturday and Sunday, and shar-ing with the public.

Saturday night Michelle was feeling quite poorly and more so as the evening progressed. Her hands and feet were freez-ing and made her condition worse. So, I got her home as soon after tear down as I could, and that is probably why we forgot a few things. The last night, Sunday, she recov-ered and felt much better. Please thank everyone for all the help and Jake for the helping hand and cookies. What I viewed and showed on Sunday was similar to Sat-urday.

May 13, Sunday

Terri writes: For this evening we had

four telescopes, two Runners and had a Telescope Team of Terri with her 8", Roger re-turned with Mi-chelle and his 16", Rick Cunningham joined us with his 8", and William had an 8" scope. Jake and Storm were again the main Runners.

For this eve-ning, the winds died down about 8pm to just a slight breeze. The bad part of this was that the vehicles moving around down below in the dust of Arcosanti, were raising the dust and it was hovering to the NE direction and it was rough to see Jupiter and Saturn through it. But the winds were calm, and the tempera-ture dropped dras-tically and everyone was quite cold. Rick had forgotten his jacket, so Jake lent him one for the night.

On this night, Jake again went to the FORM room below where we were set up and asked if an additional light could be turned away from the observing area. This light was on the East side of the sky and it was lighting up all the dust in the air, due to the lack of winds blowing, so we had dust and light working against us when showing anything rising in the East, such as Jupiter and Saturn.

For the evening, Storm stayed on Jupi-ter all night. She attempted to get Saturn, but the trees were in the way. Terri showed the Ring Nebula, the Sombrero Galaxy, Jupiter for just a little while during an align-ment that Storm was doing, the Stargate Cluster, and Alberio.

On this night, a 1.5" bark scorpion was captured after it was found crawling around under Terri's table. One of the gals who lives there caught the scorpion in a plastic bag and took it off the roof to release it below. The scorpion managed to grab ev-eryone's attention for about 20 minutes.



Roger and his wife, Michelle, setting up his white telescope at the May 12th Arcosanti Star Party. Photo provided by Ted Blank.



On the Roof at Arcosanti Star Party, William Finch, Storm Moon, Jake Von Ruhr, and Terri Finch set up of the telescopes on the roof. Then we wait for it to get dark to begin viewing some great stuff at this super dark location. Photo taken on May 12th by Ted Blank.Blank.

Then the crowd went back to viewing through our telescopes.

We started to pack up at midnight but a crowd came up the stairs wanting to see Saturn, so we stayed set up until 12:15am on this night. But as we were packing up, a ton more people came up the stairs. We had already turned off the telescopes, and were putting things away, but I did a sky tour for them and asked them to make sure they let someone know they want us to return next year. Rick and Roger were already packed up and off the roof by about 12:30am. It took Jake, Storm, William and me a lot longer to get done with the crowd we had around us. We were off the roof around 1am. The Pack up temperature on this night was 50 degrees.

I want to thank my fantastic Telescope Team. I wish to also thank Kira McCabe who took good care of the Telescope Team and let the Telescope Team park near the building we were setting up on. We hope to do this event again next year. I wish to thank Jake for the many snacks that kept the telescope team working together like a well-oiled machine .

Cokocon Star Party August 31

It was a very interesting start to Labor Day weekend.

Friday, August 31st about 4pm, Rick Cunningham, Don Boyd, Paul Facuna, William and Terri Finch met at Cokocon. We set up a PAS table indoors, in the Fan Table area of this event. While promoting PAS at the table indoors, we were waiting for word from DoubleTree by Hilton Hotel to let us know that the sprinklers would be off for the night so we could do a star party in the grassy area by the pool in the courtyard.

Around 7:30pm, we moved outdoors to the courtyard with William and Terri at the PAS table, Rick had brought his 8" Dobsonian and set it up, and Don had brought his 8" scope and with the help of Paul, set it up. We immediately had a great observing event as Venus was just setting. Jupiter and Saturn were next to be seen, and then Mars peeked out from behind the tree over the roof of the buildings. We were told to vacate the grassy area by 11pm, as the sprinklers would be turning on. We successfully did that on this night.

For Friday and Saturday evenings, the humidity was extreme and the temperature was right around 100 degrees at the start of the star party - about 7:30pm and only dropped a few degrees by pack up, around 10:30pm. We had a great crowd who looked through our scopes and chatted with us about a variety things during the event.

Saturday started at 8am for William, Terri, Paul, and Don. We were again at the PAS table indoors to begin, and I manned the table all day and the rest of the team enjoyed various panels and fun events, coming back to give me a break from the table, now and then. Indoors, we had my Astroscan telescope on display.

We packed up our equipment in our vehicles and came back to find food, as we hadn't eaten the whole time we were doing the event.

Saturday evening, we had a similar set up outdoors, except that Don didn't bring his telescope because he had seen clouds taking over the evening viewing, and so he left his scope at home. So, this night we had Rick with his 8" scope and William showed Saturn and Jupiter through the Astroscan. Again, we had to vacate the grassy area by 11:00pm, so we packed up about 10:00pm due to cloud cover. We put our equipment in our vehicles and wandered around the event enjoying food, people, and fun. We



PAS was set up indoors during the hot summer day, and then moved outdoors about the time of sundown. Red lights were used to draw the attendees over to our table and telescopes. This is the Aug 31st telescope set up. Photo by Terri Finch.

left the event about 1:30am.

Sunday, yes, we were back there again...This time, Don drove himself to Cokocon and arrived there about 9:30am, while William and I got there about 10:00am. The event began at 8:00am, like the day before, but by this time, William and I were exhausted. So, indoors during the day, we had William, Don, and Terri at the PAS table. William and Don went to several panels during the day.

That evening, the set up was canceled outdoors due to a wind storm with dust and clouds that produced a slight rain around 7:00pm. So, we canceled, and asked Rick to drive up to do the star party. Don, William and I enjoyed some of the panels together, as well as food at the Star Trek room run by Dr. David Williams (a most appreciated regular Guest Speaker of PAS). We left the event at about 1:00am.

Monday, Labor Day, there was no star party planned but we had passes to attend the event and Don had spent the night at our house rather than drive home the night before. We attended more events and enjoyed the company of the many friends we made at this event. Don stayed with us until about noon and then he drove home. William and I stayed to the end of the event at 5:00pm, and then went to dinner with

friends we had made while at the convention. We got home that evening about 8:30pm.

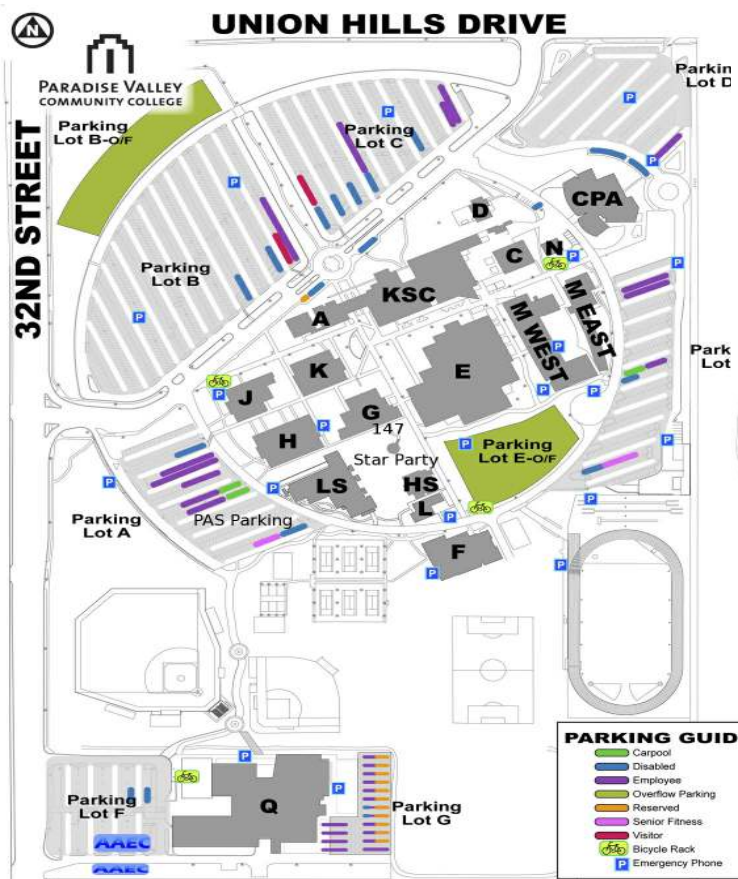
I wish to thank many people involved in helping PAS and having PAS at Cokocon. First, I wish to thank Rick, Don, and Paul for being at this event with William and me. Without their assistance and a scope to show the night sky, the event would not have been as fun for us as it was. Many thanks to the three of you!

The next thanks I'd like to give is to Dee Astell, my contact at the convention for the set up of the outdoor activities. Andrea Rittschof was the contact for the indoor portion of this event, and many thanks for her help in giving us a perfect location to have our PAS table. I'd also like to thank Hal Astell for all his help at this event finding out if the sprinklers would be turned off until 11:00pm so we could do the star party. Hal was awesome!

PAS is planning to attend the event next year, again on Labor Day Weekend at the same location - the DoubleTree by Hilton at Metro Center Mall. We hope to see you there and I hope to have my telescope team attend this event with William and me.

Map of PVCC Main Location

18401 N. 32nd Street | Phoenix, AZ 85032



Map of PVCC Black Mountain

34250 N. 60th Street | Scottsdale, AZ 85266



2018-2019 PAS GUEST SPEAKER LINE-UP

By Terri Finch, Event Manager Events@pasaz.org

PAS Meetings are held at PVCC Main Campus on the first Thursday of the month in **Room: LS-203** unless otherwise noted. Do you have an idea for a guest speaker? Email Terri Finch, Paul Facuna, or Mike Marron the details (their email addresses are at the top of page 2 in this newsletter).

Here are the next scheduled guest speakers at PAS:

Dec 6: Vincenzo Cataldo: Topic: Planetary Volcanism

Jan 17: Mark Johnston: Topic: Exoplanets

Feb 7: Richard Hawshaw: Topic: Double Star Speckle Interferometry

More information at:

<http://www.pasaz.org/index.php?pageid=meetings>

November 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 <i>PAS Meeting</i>	2 <i>School Star Party (Private)</i>	3 <i>Public Star Party</i>
4	5	6	7	8 <i>Public Star Party</i>	9 <i>School Star Party (Private)</i>	10
11	12	13	14 <i>School Star Party (Private)</i>	15 <i>Telescope Workshop</i>	16	17
18 <i>Telescope Workshop</i>	19	20	21	22	23	24 <i>Public Star Party</i>
25	26	27	28	29	30	

Tonto

National Park Service
U.S. Department of the Interior
National Monument
Arizona



PARK AFTER DARK

Saturday, November 3, 2018
Space Frontier – 7:00-9:00 p.m.

Saturday, January 26, 2019
Meteor Marvels – 7:00-9:00 p.m.

Saturday, February 16, 2019
Solar System Stroll – 7:00-9:00 p.m.
Lower Cliff Dwelling Night Hike

Saturday, April 27, 2019
Black Holes and Beyond – 7:00-9:00 p.m.

Please contact Tonto National Monument
for additional information.

www.nps.gov/tont
Visitor Center: (928) 467-2241
26260 N. AZ HWY 188
Roosevelt, AZ 85545

Explore the wonders of the night at Tonto National Monument. Night sky events will include star gazing, astronomy programs, telescope viewing with astronomers from the Phoenix Astronomical Society, and Junior Ranger Night Explorer activities.

These events are free and open to the public. Bring water and snacks, a red flashlight or headlamp, warm clothing, and closed toed shoes. Join us at the Visitor Center parking lot!

