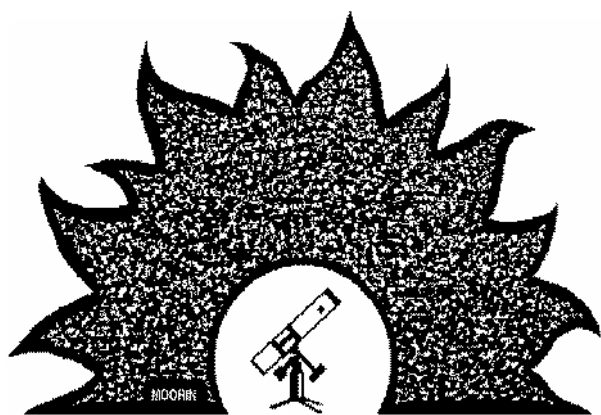




PAStimes

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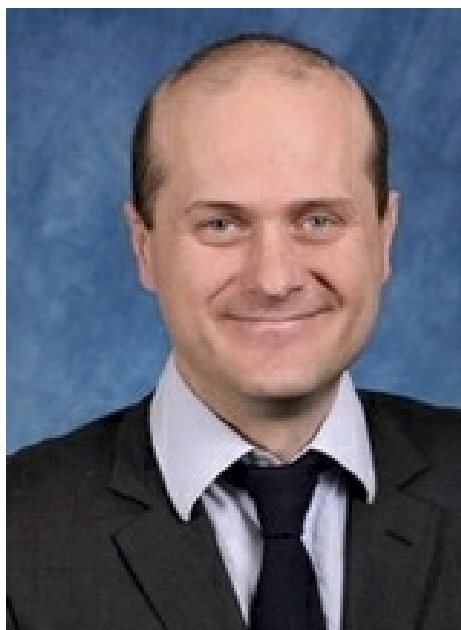
PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Seeking Supernovae in Gravitational Waves

Provided by Kai Staats

On September 14, 2015, the Laser Interferometer Gravitational-wave Observatory received a most auspicious signal which was later confirmed to be from a pair of merging black holes over 1 billion light years from Earth. On the 100th anniversary of the publication of Einstein's theory of general relativity, this event marked the first direct detection of black holes and the culmination of nearly 40 years of work by a team of physicists world-wide. Now, LIGO has concluded its second official observation run "O2", with more detections and an exciting future unfolding.

Few Arizonans realize that a leading LIGO research team is in our own backyard. Michele (mee-khel-lay) and his researchers, including Kai, are looking at ways to isolate the signal of a supernovae in gravitational-wave data, a challenging task given the signal- (Continued on page 3)



Michele Zanolini



Kai Staats

PAS Meeting of Sept 7

By Terri, Event Manager

Sam Insana opened the meeting at about 7:35pm with the installation of the new officers of the club. Mike Marron took over as President and Sam became Past President. On page 3, there is an article about the new officers of PAS for the 2017/2018 year.

Mike then turned the meeting over to our presenters on the Solar Eclipse of Aug 21. In order, they were:

Sam who told us about his trip to Oregon with his son Frank, Mike and Ofelia and shared a few photos.

Peter Turner who went to Salem Oregon with 30,000 other people.

Jeremy, a visitor to the meeting who shared his experience which involved 2,500 pairs of solar glasses and 6,000 people.

Chet Schuler who did a fantastic job of putting together a movie of the eclipse that he had taken including corona and the Diamond Ring.

Paul Maley who was in Nebraska and had some fascinating photos to share, a great story and good humor.

Paul Facuna, who was at that same location as Paul Maley.

Ron Walker who provided some great photos of his experience.

Don Boyd who shared what William

(Continued on 3)



At the September PAS Meeting, Howard asked William to take a photo with his phone. Howard wanted to have the three shirts as one awesome photo of Howard wearing the Curiosity Rover, Sam has the Total Solar Eclipse, and Terri is wearing (all black) Totality. Photo provided by Howard Moneta.

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PAS Upcoming October Events

By Terri, 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.

Oct 5: PAS Meeting at PVCC in Room KSC 1000A. Come enjoy a presentation by Kai Staats. Bring a snack to share. Bottled water provided by Bruce Wurst. Everyone welcome. Doors open 7pm. Meeting begins 7:30pm. Here's the link for more details about this event: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2386&day=2017-10-5&c=1>

Oct 6: Japanese Friendship Garden Moon Viewing and Star Party. PAS will be providing telescopes for your viewing pleasure. Here is the link for more details about this event: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2448&day=2017-10-6&c=1>

Oct 7: Japanese Friendship Garden Moon Viewing and Star Party. PAS will be providing telescopes for your viewing pleasure. Here is the link for more details about this event: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2447&day=2017-10-7&c=1>

Oct 8: Free Telescope Workshop at Bookmans, 19th Ave and Northern in Phoenix - 3:30pm to 5:30pm. RSVP is required with Terri - events@pasaz.org. When you RSVP, email the make and model number of the telescope you need assistance with.

We also assist with suggestions and advice on what telescope to purchase to match your needs. We have no telescopes for sale at this event. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2026&day=2017-10-8&c=1>

Oct 12: ASU West Public Star Party. Please see link for details about parking and where to find the star party on campus. PAS will be providing views through professional telescopes from 7pm to 9pm with the highlight being Saturn on this night. Here's the link for more info: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2438&day=2017-10-12>

Oct 15: The first of its kind.... Bookmans Solar/Lunar viewing event. This is a daytime event from 11am to 1pm. You will find PAS telescopes under the blue canopy in the Bookmans parking lot, and in front of the store. Come enjoy a view of both the Sun and the Moon at the same time! Read about this event in this issue of PAStimes on page 4. More details and to RSVP in case bad weather cancels this event: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2439&day=2017-10-15&c=1>

Oct 19: Huge public star party at PVCC Black Mountain Campus, 60th Street and Carefree Hwy from 7pm to 9:30pm. Follow the signs to the star party at the observing deck next to the Aquila building. Set up is 6pm for telescopes. Everyone welcome. RSVP is requested with Terri - events@pasaz.org. This event is weather permitting. When you RSVP by email, please include the number in your party. An auto-reply will be provided from

the above email address on the date of the event with a Weather Update. PAS usually provides 10-14 scopes for your viewing pleasure. Please do not touch the telescopes. Highlight on this night is Saturn. Prior to the Star Party, PVCC is will have STEAM activities indoors at the Aquila building from 6pm to 7pm with child and adult-friendly activities. Everyone welcome! Read about this event in this newsletter on page 4. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2399&day=2017-10-19&c=1>

Oct 21: PAS Members Only are invited to the Spring Binocular Star Party. Location to be announced in the Private Calendar.

Oct 26: Free Telescope Workshop at PVCC main campus, 32nd Street and Union Hills Rd - 7pm to 9:45pm. RSVP is required with Terri Events@pasaz.org. Seating is limited. When you RSVP, please leave your first name and the make and model number of your telescope. Bring your telescope and accessories to this event. We meet in both G-147 and by the telescope dome on campus. We have no telescopes for sale at this event. This event is weather permitting. More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2407&day=2017-10-26&c=1>

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

Gravitational Waves

(Continued from page 1)

to-noise ratio of such an event.

We will start our presentation for PAS with a brief introduction to LIGO and gravitational wave astronomy, watch the 20 minute film "LIGO Detection" followed by a brief Q&A, and then move into a presentation by Michele about his team's work and the future of supernovae detection.

Michele Zanolin, PhD. is an Associate Professor in the Department of Physics, Embry-Riddle Aeronautical University, Prescott, Arizona. He leads the supernovae detection team at LIGO. Michele started his PhD at the University of Parma, Italy and in 1999 moved to MIT. He has been based in Prescott, Arizona since 2007 where he and his team conduct research in experimental general relativity, focusing primarily on gravitational wave detection through the LIGO Scientific Collaboration. Michele is principally interested in the search for gravitational wave bursts from optical supernovae and the estimation of parameters from gravitational wave transients and other high

precision measurements. More at mercury.pr.erau.edu/~zanolinm/ and www.ligo.org.

Kai Staats, MSc, is a filmmaker, lecturer, visiting scientist, and traveler. A former president of the Phoenix Astronomical Society (1988-90), Kai now engages his passion for science, astronomy, and storytelling through film. "LIGO Detection" marks his third National Science Foundation funded film for the gravitational wave observatory that detected two merging black holes in 2015. As a freelance researcher, Kai has worked at both LIGO and the Square Kilometre Array, South Africa (where Kai is currently located) in the application of machine learning to data analysis. When not at his computer, Kai can be found exploring those places far off-grid, surfing, rock climbing, and trail running. More at www.kaistaats.com/research/ and www.kaistaats.com/film/.

Terri, Event Manager adds: Come join PAS for this exciting presentation. Bring a snack to share and please note the change in Room at PVCC Main Campus - KSC 1000A. Bottled water will be provided by Bruce Wurst. Grab a snack and enjoy the evening with PAS! Everyone welcome - bring a friend!



Gravitational Waves

PAS Meeting of Sept 7

(Continued from 1)

Finch, Terri Finch, Steve Palmer, Roger Anzini, and Jame DeSantes experienced at the Arizona Science Center. William and Terri shared a little about the event as well.

Alex Vrenios who talked about how he stayed at his home and did a light and temperature graph and how he might improve this experience for the next Solar Eclipse, plus do a wind change graph as well. This was very interesting to hear about.

Howard Moneta who provided a great review of his experiences.

New member Calvin Vance who talked about his experiences.

Mike Marron who shared his experiences and finally, Alex who provided information on the next 10 years of total and annular eclipses.

After a short break, Mike lead discussions of what he wants to accomplish as President this year as well as his desire to begin summer meetings. He then turned the discussion over to Sam, who talked about the change in schedule of the spectroscopy meetings and gave an update about occultations. Terri Finch then went over the up-

coming events schedule and did the raffle drawing (won by Jen). We closed the meeting at 9:40pm.

Thanks to everyone who attended the meeting - we had over 40 there, and thanks also to those who brought snacks and donated to the Snack Fund. Bruce Wurst donated the water to the meeting this month and will continue to do so for the rest of this PAS season. We will see you at the next meeting. Note that the October meeting will be in KSC 1000A, not the usual location. Please join us and bring a friend!

Welcome New Officers of PAS

By Terri, Event Manager

PAS begins its year each September with installation of new officers at our first meeting, this year on September 7th. Here are the new 2017-2018 PAS Officers and Directors:

Mike Marron, replaced Sam Insana who stepped down as President after two years of strong, effective leadership

Paul Facuna replaced Alex Vrenios as Vice President.

Pete Turner accepted the Secretary's job following Kevin Witts' highly compe-

tent tenure

Sam Insana is now Past President, replacing Bruce Wurst.

Jenny Weitz and Bruce Wurst will both continue as Members-at-Large. Bruce also acts as our equipment manager.

Eric Steinberg agreed to take the Treasury position one more year. We appreciate his cleanup and computerization of PAS's books.

Terri Finch will remain as Event Man-

ager for another year.

Our fantastic Newsletter Editor, Don Boyd, has agreed to tackle the monthly newsletter for another year.

Rod Sutter stays as the club Librarian.

Chris Johnson is the PAS Webmaster.

Saving the best for last, Rodney Fong will continue as PAS Host for another year.

Congratulations to all the new and continuing officers and thanks to the past officers for their dedication to PAS.

Solar / Lunar Observing Events

By Terri Finch, Event Manager

These are a new type of PAS-hosted events. On three days each month, it is possible to see both the Moon and the Sun in the daytime sky at a safe viewing distance from each other. PAS has set up public events at Bookmans at 19th Ave and Northern in Phoenix with telescopes to view both. Here are the dates of the next several Solar / Lunar Observing Events: Oct 15, 2017 from 11am to 1pm, Feb 11,

2018 from 10am to noon and Nov 3, 2018 from 11am to 1pm. See the PAS calendar for more details.

At the event, PAS will provide safely filtered telescopes for you to enjoy a view of the Sun which often includes sunspots, solar flares and solar prominences. Other telescopes will be set up under the blue canopy in the parking lot to view the Moon, while the PAS table with club info, hand-

outs, Q&A with prizes for the kids and Meteorite Man will be nearby. Mention you read this article and get a free PAS Bookmark from Terri. Mike with his meteorites will share stories and facts about where they landed and let you handle "rocks from space." We hope to see you at these events. Events are weather permitting so always check the website calendar www.pasaz.org to make sure the event is on.

Black Mountain Campus (BMC) Star Parties

By Terri, Events Manager

Newly added to the BMC star parties are indoor STEAM activities in the hour prior to the start of the star party. This link <https://www.carefreecavecreek.org/wp-content/uploads/2017/08/PVCC-Star-Party-STEAM-night-1.jpg> takes you to the list of Fall 2017 and Spring 2018 star parties each preceded from 6pm to 7pm with indoor activities for all ages. Star parties begin at the times shown. The STEAM programs are free to all and involve thought-provoking activities, often includ-

ing a "take home" item made by you or your child. PAS will be set up there to begin with Q&A for the attending youngsters ages 0-16. Answer an astronomy-related question, win a prize.

At dark, telescopes will be available for viewing- please enjoy a view through all the scopes and go back later for another view! As the telescopes will be changing objects throughout the night.

The dates of the next few Star Party and STEAM Nights are: (2017) Oct 19 at

7pm, Nov 9 at 7pm, (2018) Feb 15 at 7pm, Mar 8 at 7:30pm, Apr 12 at 7:30pm and May 3 at 8pm. We hope you can join us at all these events. As always, the outdoor portions of these events are weather permitting. If the weather cancels the star party portion of this event, check the PAS website calendar to see if the indoor portion of the event will still happen. Here is a flier with more details about the event: <https://www.carefreecavecreek.org/event/45113-2017-12-14/> See you there!

Rancho Gabriela Career Day May 2

By Terri, Event Manager

We had great plans for this warm day in Surprise, but PAS attendance dropped from two scopes, two helpers and Meteorite Man to only one scope and one helper.

After an early morning arrival and some wait time, we did our simple setup. William had a table with our PST on it viewing the Sun and I had a table set up with Matt helping to make sure the kids took the handouts while I did Q&A and showed the solar demo I had brought. The prizes this year for Q&A were solar viewing glasses. By the time the event ended, I had given out over 50 pairs.

After doughnuts and coffee, the event started at 9:00 am as a flood of school kids started their flow through the various indoor tables. Inside, our contact Kisha had invited various companies located in the Valley, such as Waste Management, Southwest Gas, the Fire Department, the Surprise Police Department, ASU Tempe Earth & Space department, Surprise Water department, and several other entities supporting "Career Day."

Each group of children had 20 minutes to walk around the school auditorium in-

side, then visit the telescope outside and go to the big rigs (fire, police and an APS truck) before returning to their classroom with their hands full of handout materials.

During the Q&A about how the Sun does things like create our food, one little boy insisted that the cheese falls from the sky.

After lunch, we hosted the 5th, 6th, 7th and 8th grades, finishing up around 2:00 pm.

It was an exhausting day with so many students and so much activity, but it was fun and we will most likely do it again next year. Hopefully then we will have Mike attend and Don with his solar scope, both missed at this event. Many thanks to Kisha for having PAS at this event and to Night Sky Network for providing me with a wonderful demo to share with the kids. The visual of the prominences and flares, sunspots and other features of the Sun was very well created and user friendly.

As the kids start coming through the door, the day becomes that much more interesting. They read the cards, they try to answer the questions, they get a prize for correct answers, then I ask them to go look through the scope. Photo by Terri.



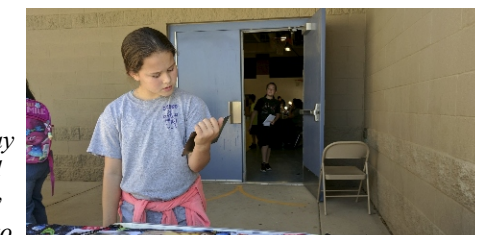
Matt Kohl sitting at the PAS Table assisting Terri with Q&A. We were doing the Solar Cards & Sun Demo at this event.

Photo by Terri



William sitting near the PAS Table, taking a break from the Sun, while he waits for the next flood of kids to come look through the scope.

Photo by Terri.



Bookmans Free Telescope Workshop May 7

By Terri, Event Manager

We had a decent turnout for this month's "Free Telescope Workshop at Bookmans".

We had four public RSVP's, three of whom braved windy and cool conditions to join us. Attending from PAS were William and Terri Finch, Sam Insana, Don Boyd, Alex Vrenios and Rodney Fong.

Fred Witte brought his family: Sara, Michelle and Richard, along with their Meade DS 2000+. Sam and Don took care of Fred who became a new member of PAS

at this event. Congrats Fred!

We also had Janet and Mark Bradbury who brought their Celestron Nextar 130 SLT. Alex assisted them with some help from William. Janet also became a new member of PAS. Congratulations Janet!

About half way through the event Eric and Adanna Houston came in to find out what telescope to purchase. They were advised by Sam and me.

We also had 2 walk-ins who came by

the PAS Table, I gave them fliers and told them about a few of our upcoming events before they went on with their shopping.

It was a quick, easy event and pleasant except for the winds outside, with attendees who were very enjoyable to talk with. We look forward to the next events in the series on: June 11, July 9, Aug 6, and Sept 10th.

Many thanks to the telescope team at this event for being helpful and welcoming to the attendees of this class.

Bookmans Sidewalk Astronomy June 3

By Terri Finch and Sam Insana

Terri writes: Attending this event which ran from 7:30 pm to 10 pm were Alex Vrenios with his 8" scope, Sam Insana with his 8" Scope, William and Terri Finch at the PAS Table and Rodney Fong diligently helping out as runner. Bookmans staff was quite helpful also, periodically announcing to customers the PAS had telescopes set up outside for viewing.

Alex and Sam set up in the parking lot and lined up on the Moon and Jupiter as soon as it got dark enough. At the PAS Table, we had visitors ask us when Saturn would be visible and at one point, William humorously announced that "Saturn is inside Walgreen's."

We estimate we had at least 100 people stop by to talk to us, visit the PAS table and view through the scopes. It was a warm evening that didn't cool down until about 9pm.

Before departing, Sam assisted me in figuring out from our location, what the minimum viewing angle was over the Bookmans building (we estimated 30 degrees). This will help in planning successful future events. Many thanks to Sam, Alex, and Rodney for coming to the event and helping to make it a success and to Bookmans for lending us space outside the store to have this event.

Sam writes: For the first 2 hours starting at 7:30 pm I showed Jupiter to about 60 people. It was only 2 degrees from the Moon, which Alex was showing in his scope. 3 of the Galilean moons were in a unique triangular formation. I also showed the (not so) Great Red Spot, and a moon shadow on the atmosphere of Jupiter. We told customers to return at 9:30 pm to see

Saturn. The problem was that Saturn still hadn't cleared a building by then. One customer Cody Gill said this was his 4th time at the Bookmans sidewalk star party, that he really wanted to see Saturn and wasn't going to leave without seeing it. I asked if he would help Rodney and me move my telescope over 100 yards so we could catch Saturn. He was most agreeable and was very excited to finally see the sixth planet and its ring system. A dozen more people also got to see it before we closed up about 10:10 pm. One gentleman couldn't find Saturn in my eyepiece. It turned out he had lost one of his eyeglass lenses which Rodney found for him finally enabling him to see it. The light pollution was horrible, but with the Moon, Jupiter and Saturn being so bright, it was a good night for the PAS sidewalk star party.



William is seen at the PAS Table in front of Bookmans for the June 3 Bookmans Sidewalk Astronomy Event in which we had Sam and Alex with scopes in the parking lot and we showed Jupiter, the Moon and Saturn on this evening. Photo by Terri.



Alex is at his scope to the back left in this photo. Three people are lined up to see through Sam's scope at Bookmans on June 3. Photo provided by Sam.

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Bookmans Sidewalk Astronomy! Katy created fliers for our 2 main type of events at Bookmans. They are in the doorway as you walk into Bookmans. Thank you Katy.

Photo taken by William.



Cassini Says Goodbye

By Teagan Wall

On September 15th, the Cassini spacecraft will have its final mission. It will dive into the planet Saturn, gathering information and sending it back to Earth for as long as possible. As it dives, it will burn up in the atmosphere, much like a meteor. Cassini's original mission was supposed to last four years, but it has now been orbiting Saturn for more than 13 years!

The spacecraft has seen and discovered so many things in that time. In 2010, Cassini saw a massive storm in Saturn's northern hemisphere. During this storm, scientists learned that Saturn's atmosphere has water vapor, which rose to the surface. Cassini also looked at the giant storm at Saturn's north pole. This storm is shaped like a hexagon. NASA used pictures and other data from Cassini to learn how the storm got its six-sided shape.

Cassini also looked at some of Saturn's moons, such as Titan and Enceladus. Titan is Saturn's largest moon. Cassini car-

ried a lander to Titan. The lander, called Huygens, parachuted from Cassini down to the surface of the moon. It turns out, Titan is quite an exciting place! It has seas, rivers, lakes and rain. This means that in some ways, Titan's landscape looks a bit like Earth. However, its seas and rivers aren't made of water—they're made of a chemical called methane.

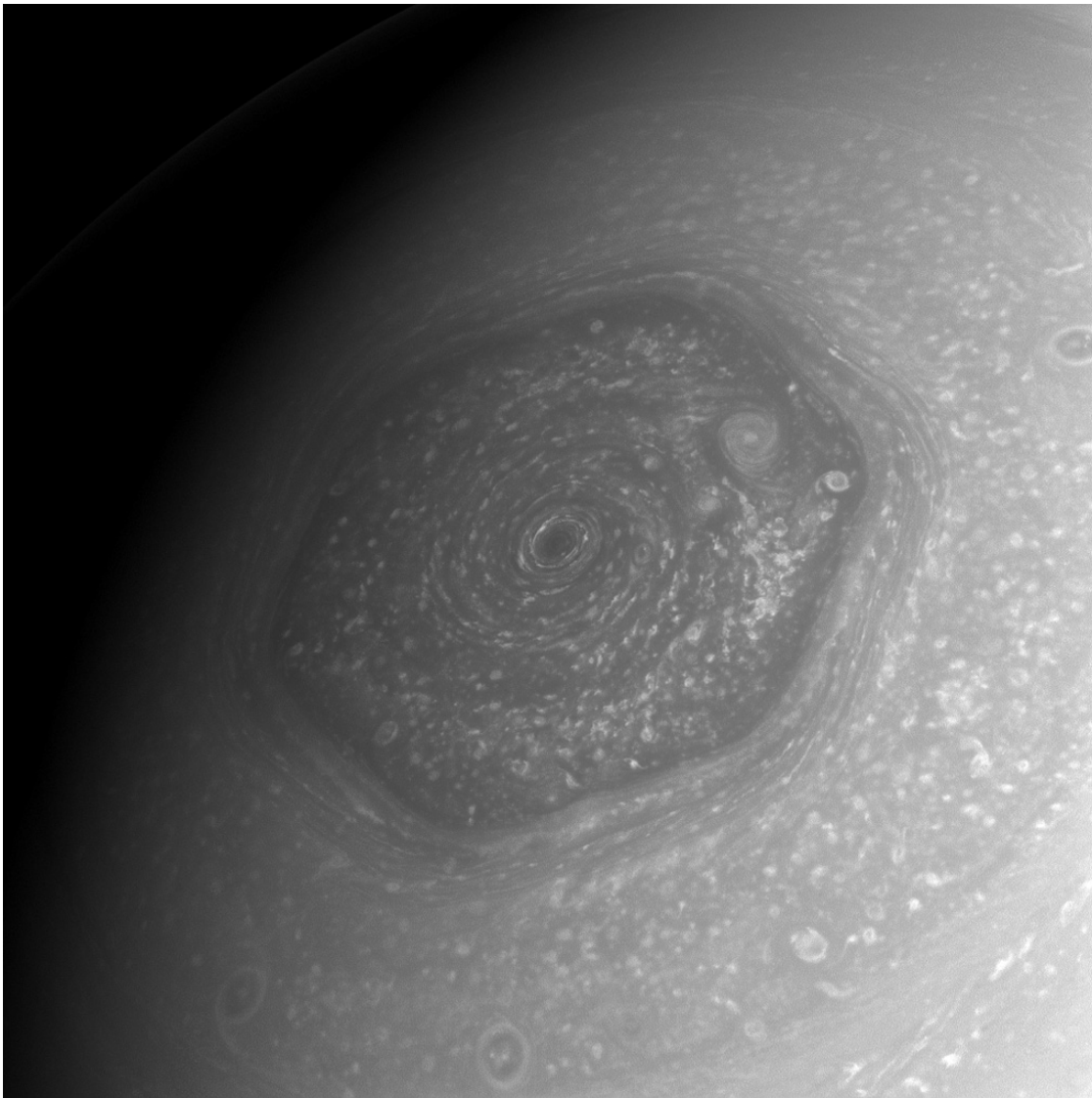
Cassini also helped us learn that Saturn's moon Enceladus is covered in ice. Underneath the ice is a giant liquid ocean that covers the whole moon. Tall geysers from this ocean spray out of cracks in the ice and into space, like a giant sneeze. Cassini flew through one of these geysers. We learned that the ocean is made of very salty water, along with some of the chemicals that living things need.

If there is life on Enceladus, NASA scientists don't want life from Earth getting mixed in. Tiny living things may have hitched a ride on Cassini when it left Earth.

If these germs are still alive, and they land on Enceladus, they could grow and spread. We want to protect Enceladus, so that if we find life, we can be sure it didn't come from Earth. This idea is called planetary protection.

Scientists worry that when Cassini runs out of fuel, it could crash into Titan or Enceladus. So years ago, they came up with a plan to prevent that from happening. Cassini will complete its exploration by diving into Saturn—on purpose. The spacecraft will burn up and become part of the planet it explored. During its final plunge, Cassini will tell us more about Saturn's atmosphere, and protect the moons at the same time. What an exciting way to say goodbye!

To learn more about Saturn, check out NASA Space Place: <https://spaceplace.nasa.gov/all-about-saturn>



This image of the hexagonal storm on Saturn's north pole was taken by Cassini in 2013. Image credit: NASA/JPL-Caltech/Space Science Institute

DBG Garden Party June 9

By Mark Johnston, Roger Anzini and Terri Finch

Mark writes: On June 9th PAS was invited to provide an observing program for an event honoring high-value donors to the Desert Botanical Gardens. About 112 guests were treated to an astronomy-themed dinner with star and moon-shaped sandwiches, "rocket dogs", "space meatballs", and planet-like cake pops.

Via PowerPoint, I presented "Looking Back in Time in Astronomy", where I correlated when light left distant objects to events on Earth. For example when you gaze at Spica, 261 LY away, you see light that left when Mozart was born. There were some good questions during and after the talk including some great questions from kids.

The presentation ended about 7:40 and the guests filed out to look through the scopes, provided by Terri, William, Storm, Roger, Bruce and me. My refractor had excellent views of Jupiter, Saturn, Izar, and Epsilon Lyra. The larger scopes were showing the full Moon, M13, M57 and other objects. There were long lines at the scopes and the guests had a good time. The evening was capped off with a nice flyover of the ISS at 9:13PM. It was a good event!

Roger writes: Friday dawned with the promise of a hot afternoon yet to come and when I arrived at the gardens around 4:50 PM, it was still hot and clear and bright. "Quiet Mike", our cart driver helped us with the time consuming process of shuttling each of the five scopes into our courtyard viewing, while the the blazing afternoon Sun dazzled our concrete courtyard with photons. Marcos, our thoughtful host produced tables for our handouts and equipment and in the cool of the dining hall offered our team whatever food and cool drink we desired. Meanwhile, as Mark prepared for his 30 minute presentation he was mistaken for a waiter by one of the guests. I guess our formal looking black uniforms give the impression that we are ready to serve?



Roger is seen here at his telescope assisting a Patron with the focus.

Terri and I had worked out an orderly plan for the evening after Mark's presentation (see above)... Well, a few moments after Mark completed his talk, the dining hall doors swing open to a flood of all 112 guests converging on our telescopes creating instant long lines with eager guests all asking "what are we looking at ?" Stunned, we scrambled to position our scopes on the only object available on the still blue sky, Jupiter!

I like to show people what Galileo might have seen when he discovered the four big moons of Jupiter or what Messier probably saw when observing M13 and then show the snowflake of crushed diamonds in the 16" that Messier never knew existed. Unfortunately my little scope was just out of my reach and the line for the big one, relentless

Later in the evening the goto on the 81mm nailed and tracked M13 for me, but the DOB could never find it in that blanket of grey static Phoenix calls a sky - no Great Square or even any guide stars to hop from.

Because of the gray haze of the Phoenix light dome, we were able to find very few objects other than Jupiter, Saturn, some double stars and the Moon. We pointed out the Big Dipper leading to the north star, Arcturus, Vega, Antares and the ISS.

Terri adds: We thank Marcos, with help from his son Noah and the DBG staff and Caterers of this event, along with a smiling group of 112 DBG Patrons who help support the Desert Botanical Gardens, keeping it open and available for the public to enjoy.

All photos seen here, for this article were provided to PAStimes Newsletter by Marcos Voss and were taken by Tim Trumble: www.timtrumblephoto.com Photography Thank you Tim for the use of 8 of the 109 photos you took for this event.



Bruce must have had some GREAT view in his telescope, as this Patron has the excitement on her face that is the whole goal of doing an event like this... for the OOOOOhs and AAAAAHs!



Mark had his scope set up before dark outside in the Boppart Courtyard. In this photo, behind Mark's scope is Roger's scope. Mark was set up on the North side of the courtyard.



Indoors, Mark gave a super presentation to the attending Patrons. The Patrons enjoyed the Space Themed Food while Mark took them on a tour through time.



Storm was set up with her telescope. There weren't that many children in attendance, but those who were there seemed to be very thrilled to see what we had to show them.



Terri's scope was set up near Storm's scope. In this photos, Terri's scope is in the foreground and we see Storm's scope in the background. From the time Mark's presentation concluded, the Patrons lined up to look through the telescopes at anything we had available to show. These Patrons were viewing Jupiter.

Star Party at Leprecon July 1 and 2

By Terri, Event Manager

In attendance for these two very hot days and evenings were: Mike Marron, his sister Aubrey Marron, William and Terri Finch, Sam Insana, Don Boyd, Paul Facuna and Rick Cunningham.

July 1: Between 8:15 and 9 am, William and Terri set up the PAS Table while Mike and Aubrey set up the meteorites. Sam, Don and Paul all arrived a little later. Around noon, Sam, Don and Paul took off to see some of the numerous presentations available, while the rest of us stayed at the PAS table. Sam checked in with us periodically to tell us all about the presentations he was able to attend. It definitely made the day go by quicker. About 5pm, we packed up the PAS table and went to the Ice Cream Social. and then dinner at a place called Rula Bula.

After dinner, we met up with Rick Cunningham and set up our telescopes up by the pool on the 2nd floor. It was breezy all night until we packed up and left around 10 pm.

Two of the props people working this convention came up to the roof at the beginning of the star party and tried to set up a StarGate. It lasted about 10 minutes before a gust of wind knocked it down and the young ladies decided to give up.

July 2: Proceeded similarly, also with a number of great presentations to attend. After a pleasant dinner with Rick joining us, we walked back to the Tempe Mission Palms Hotel and set up the telescopes up again on the roof by the pool. This evening was busier than the previous evening with lots of people enjoying the views of Saturn in Rick's scope, Jupiter through Sam's scope and Don's showing the Moon. It was an exhausting evening that included helping Mike fix a flat tire; some of us did not leave until well after 11:00.

Thanks to everyone who attended this event. Looking forward to the next Leprecon event.

Sam writes: The panels at the convention were a lot of fun and included: Moral Issues in Sci Fi; the difference between old sci fi and new sci fi; Dr. Who Villains; Dr.

David Williams discussing the Dawn and New Horizon missions; trailers for new sci fi movies and many others. The 50th Anniversary Star Trek Party hosted by Dr. David Williams had "Warp Core Breach" mixed drinks and great appetizers. Many PAS members also enjoyed the Big Fat Greek Restaurant and an Irish Pub during our evening dinner hours (5pm to 6:30pm). More photos can be seen at this link in the PAS Photo Gallery:

http://www.pasaz.org/forums/gallery.php?g2_itemId=15729



Paul, Don & Mike were at dinner at My Big Fat Greek Restaurant on the night of July 2.



Rick & Sam were also at the Greek restaurant on July 2. Photo by Terri.



Sam provided this photo of Sam and Don at the PAS Table at Leprecon on July 2.



For Leprecon 2017 at the Tempe Mission Palms Hotel, PAS was set up in the hallway in the area called Fan Tables. Mike is doing his usual, capturing an audience & talking. Photo by Terri Finch on July 1.



At the table next to the PAS table, an organization was set up with Doctor Who, puppets, and a few other interesting things. They lent me their crochet Tardis for this photo. Photo taken by William Finch on July 1.



Don was setting up his telescope for on display while people gathered around Mike to hear about meteorites. Aubrey, Mike's sister, was also at this event – seen in this photo looking at a map of Arizona. Photo by Terri on July 2.

Planetarium Shows

By Terri, Event Manager

PAS Members are invited to the Star Barn for planetarium shows each month. We ask that you make a small donation to

Ron for hosting these shows. These events are open to PAS Members only. The dates & times of the shows vary each month.

Please see Private Calendar at www.pasaz.org to attend and RSVP is directly with Ron for these events. Enjoy!

Bookmans Telescope Workshop & Birthday Dinner July 9

By Terri, Event Manager

It was a hot, muggy day for this Free Telescope Workshop at Bookmans, covered by William and Terri Finch, Rodney Fong, Sam Insana and Roger Anzini, joined later by Bruce Wurst and Alex Vrenios. Our first class member from the public was Mohamed Shafeeq who brought his Celestron Powerseeker 127EQ. He was assisted by Sam for about an hour. Ken was a walk-in who wanted to know what telescope to purchase - Roger Anzini assisted him, after which Roger showed his Solar and "go-to" demo.

The next class member was Michael along with his dad James who came to "talk telescopes" and meet the members of PAS. James and Shafeeq were still with us at 5:30, so we invited them to dinner at Carlos O'Briens. Though the restaurant's air conditioning was not working 11 of us went to a "warm" but enjoyable dinner: Terri, William, Bruce, Donna and Helen Zander, Don, Sam, Rodney, Mike and attendees, Michael and James. Many thanks to the telescope team for helping with the class members. Also, there that day to pick up their Infini-tees T-shirts from Sam were Mark and Michelle Peterson. Welcome new PAS member Mohamed Shafeeq! Looking forward to the next Telescope Workshop. See you there!



William was given his birthday ice cream from the restaurant. Photo taken by Terri.



Here's the delicious Carrot Cake made by Daniel and especially for Don & William's birthdays. Photo taken by Terri.



Mike, Don, Sam and William all giggle about something they shared a joke about at Carlos O'Briens. Photo taken by Terri Finch.



Don was given a birthday ice cream as well, from the restaurant. Photo taken by Terri.

Bookmans Telescope Workshop Aug 6

By Terri, Event Manager

This was a very busy afternoon at Bookmans. William and Terri Finch joined Rodney Fong to start the even, joined later on by Alex, Sam and Leah. Our first Class member, Carlos Hernandez, arrived a little early with his Celestron PowerSeeker 127EQ. He set up by the front door of Bookmans, while I finished setting up the PAS table. Carlos was assisted by Sam.

Leah Sapir arrived about 3:30 and worked with Michael and Ernest Harper for

over an hour, helping them decide what telescope to purchase and talking about how books can help them learn to find things in the night sky.

About 3:45 Kay Freeman came in and worked with William and I for the rest of the event. Kay also joined the club! Welcome New Member Kay Freeman! Kay was interested in buying a telescope and attending events.

The day went smoothly and by 5pm all

the class members had left. We stayed until 5:30pm and then packed up and went to dinner at Carlos O'Briens. Attending dinner were William, Terri and Rodney.

I wish to thank my telescope team. I really appreciate their assistance with this event and the help and advice they give to the class attendees. Looking forward to the next several Telescope Workshops like this one on: Sept 10, Oct 15 and Nov 19, 2017.

Special PAS Meeting with Guest Speaker Oct 2

By Terri, Event Manager

On October 2nd, PAS will be holding a Special Meeting at PVCC in room LS-203 from 7pm to 10pm. Please join PAS for this meeting and bring a snack to share.

This link gives you all the details you need to know about this meeting: [http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2467&day=2017-10-](http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2467&day=2017-10-2&c=1)

[2&c=1](http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2467&day=2017-10-2&c=1). We hope to see you there! Everyone Welcome!

Rosson House Star Party July 27

By Sam Insana, President of PAS

Jennifer Hance, Director of Education writes: "Dear Sam, Thank you so much for a wonderful evening. Everyone enjoyed your talk on meteorites and learning about your telescope. Your enthusiasm for the topic is infectious, and I think we are all now planning to look for the eclipse. I'm sorry that the weather did not cooperate, but no one seemed to mind. I really appreciate your hauling all your equipment up to the balcony and the care you took of our wall-paper. I will be sure to look for another opportunity to bring in your group. Please stop by the next time you are at the Science Center. I'm rooting for good weather for you on 8/21. Best, Jennifer."

Sam writes: July 27th, the Rosson House at Heritage Square had an arts and crafts night, for which the education director, Jennifer asked StarTours to provide two telescopes. As RSVP, I sent in nine weather forecasts for that evening. They all showed cloud cover from 40 to 98 %. I recommended them to cancel our telescopes, but they insisted on having one scope. Knowing that the moon, Jupiter and Saturn are bright objects, I went along with her request hoping that maybe one of them would appear through the clouds.

The director wanted my 8-inch newtonian to be set up on the balcony, requiring me to make five trips up and down a very narrow, winding staircase. Unfortunately the clouds were too thick. After I explained how the scope works, the seven guests wanted to look through the windows of the

neighboring skyscrapers so we had fun doing that. As a backup, I brought my meteorite collection, so we spent about 30 minutes inside going through those. I also gave a short lecture on the upcoming solar eclipse of August 21st and handed out solar glasses for the guests to keep. During the evening we made s'mores and worked on arts and crafts. I made a crescent moon with stars out of wood, nails and different colored string. Then I had to make the five trips again down the stairs carrying my scope equipment. It was an exhausting but worthwhile evening in spite of the clouds. Everyone wanted my PAS card so they could check our calendar for future star parties. Some said they would come to our next big one at PVCC BMC September 14th when we should have several scopes for them to look through. Jennifer was very happy with the PAS portion of the evening and hopes to have us back on a better weather night in the future.



Sam had his scope at this event and for the little time that objects were visible through the storm clouds, Sam shared what he could on this cloudy night. Photo by Sam.



It was a cloudy evening at the Rosson House Star Party. Sam Insana decided to do the event anyway. He provided his telescope and a meteorite display. The event was a success! Photo by Sam.



Due to so many clouds, Sam also brought his Meteorite Display to show the patrons of the Rosson House event. This went over very well with everyone attending. Photo by Sam.

What's Up For October?

By Rod Sutter

Planets

Name	Date	Rise	Set
Mercury	10-15-17	06:58	18:07
Venus	10-15-17	04:55	17:02
Mars	10-15-17	04:27	16:45
Jupiter	10-15-17	07:15	18:20
Saturn	10-15-17	11:20	21:20
Uranus	10-15-17	18:00	06:59
Neptune	10-15-17	16:02	03:27
Pluto	10-15-17	13:02	11:04

All Times Arizona Time

Bolded dates and times are nighttime objects

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October 15 2017

Sunrise: 06:32

Sunset: 17:54

Full: October 5

Q3: October 12

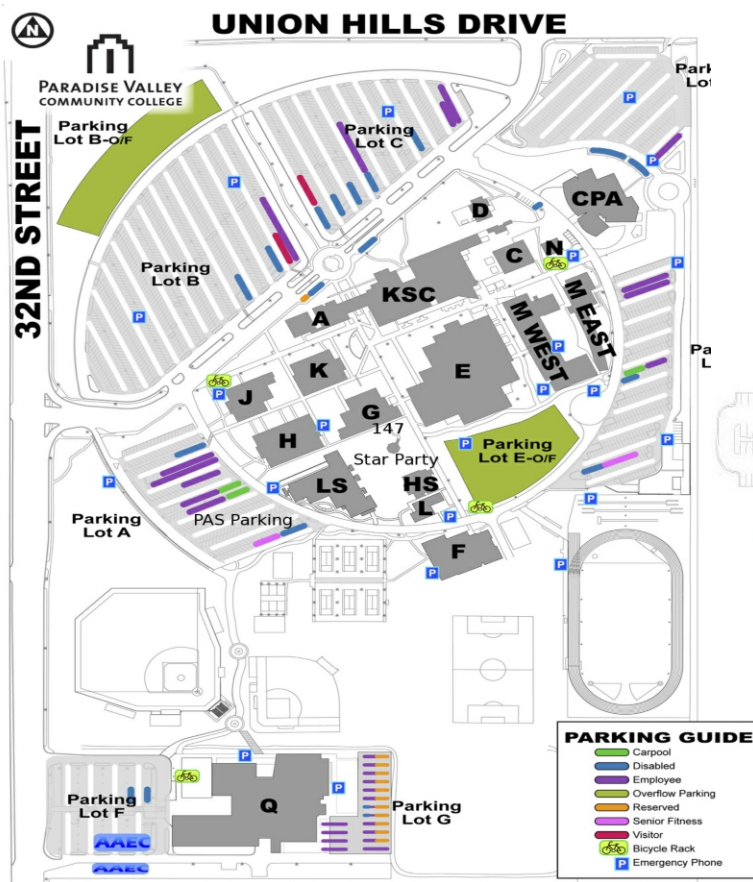
New: October 19

Q1: October 27



Map of PVCC Main Location

18401 N. 32nd Street | Phoenix, AZ 85032



Map of PVCC Black Mountain

34250 N. 60th Street | Scottsdale, AZ 85266



2017 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 the details. Here are the next scheduled guest speakers at PAS:

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

Nov 2: Dr. David Williams "The Psyche Mission"

Dec 7: Steven Desch "Meteorites and Jupiter's Cleaving of the Solar System" + PAS Astronomical Equipment Yearly Swap Meet - Bring your astronomy items to sell at the swap meet.

October 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5 <i>PAS Meeting</i>	6 <i>Moon Viewing Party</i>	7 <i>Moon Viewing Party</i>
8 <i>Telescope Workshop</i>	9	10	11	12 <i>ASU West Star Party</i>	13	14
15 <i>Solar/Lunar Day Event</i>	16	17	18	19 <i>Black Mountain Star Party</i>	20	21 <i>Bino Class (Private)</i>
22	23	24	25	26 <i>Telescope Workshop</i>	27	28
29	30	31				