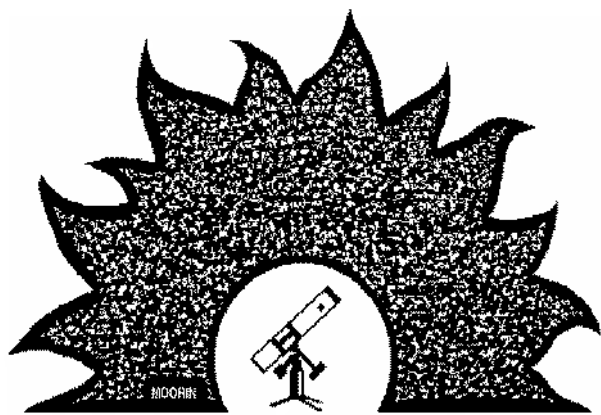




PAStimes

Phoenix Astronomical Society

www.pasaz.org

November 2017

Volume 69 Issue 3

PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Dr. David Williams to Speak at Nov 2 Meeting

Provided by Dr. Williams

“Psyche: Journey to a Metal World” - In January 2017 NASA selected Arizona State University to lead one of the next Discovery missions to explore a new world, the asteroid (16) Psyche. This M-class asteroid is the largest metallic asteroid in the Solar System, and is thought to be a remnant of a protoplanetary core. What will geology be like on a world made of metal? Join Professor David Williams of ASU’s School of Earth and Space Exploration, who is Deputy-PI on Psyche’s Multi-

spectral Imager, to discuss the major goals and objectives of the Psyche Mission, which ASU will be building over the next 5 years.

Dr. David A. Williams is an Associate Research Professor in the School of Earth and Space Exploration at Arizona State University, Tempe, Arizona. Dr. Williams is the Director of the Ronald Greeley Center for Planetary Studies, the NASA Regional Planetary (Continued on [page 3](#))



Photo courtesy David Williams

Special Guest Speaker Meeting Oct 2

By Paul Facuna and Don K. Boyd, Editor

Mike Marron, Ofelia Waters, Paul Facuna and Don Boyd met at Chili’s to welcome Nebil Misconi as a last minute guest speaker. After a leisurely chat and meal, we proceeded to PVCC for the meeting, where we faced room changes and technology problems we had to work around. Since there were only 4 PAS members present we ended up gathered around his laptop to watch and listen to a very interesting lecture on the path that led him to be the first Iraqi astronomer and the first man to launch

a rocket from Mexico.

Misconi was born in Iraq, the son of Iraqi and Italian parents. He was interested in space and astronomy as a young boy but astronomy was not taught in the schools he attended, so when possible he went to US-sponsored libraries to read books and magazines on astronomy. His undergraduate education was at the University of Istanbul in Turkey. He learned enough astronomy that he was consid- (Continued on [page 3](#))



Nebil Misconi at the Special PAS Meeting of Oct 2 as the Guest Speaker. Photo by Don.

“Gravitational Waves” October Meeting Review

By Eric Steinberg

Our October 5th meeting was held at PVCC room KSC1000A in anticipation of greater-than-normal attendance. The meeting featured a fascinating presentation on gravitational wave detection by Embry-Riddle professor Dr. Michele (pronounced Mih-kel) Zanolin and two of his associates, Marek Szczepanczyk, and Kelly Ault. They were also joined via Skype by free-lance

researcher Kai Staats.

After opening remarks by PAS President Mike Marron Professor Zanolin began with a video describing the first confirmed detection of gravitational waves by the LIGO facilities. The video dramatically captured the excitement of the teams as possible sources of false readings were eliminated and it be- (Continued on [page 3](#))



Dr. Michele Zanolin at the Oct 5th PAS Meeting. Photo by Don Boyd.

President	Mike Marron	480 488 3031	President@pasaz.org
Vice President	Paul Facuna	602-246-1554	VicePresident@pasaz.org
Secretary	Pete Turner	480-510-4191	Secretary@pasaz.org
Past President	Sam Insana	602 315 4750	PastPresident@pasaz.org
Event Manager	Terri Finch	602-561-5398	Events@pasaz.org
Treasurer	Eric Steinberg		Treasurer@pasaz.org
Newsletter Editor	Don K. Boyd		Editor@pasaz.org
PAS Host	Rodney Fong		
Librarian	Rod Sutter		Librarian@pasaz.org
Member at Large	Jenny Weitz	602-787-6818	Jennifer.Weitz@paradisevalley.edu
Member at Large/Equipment Manager	Bruce Wurst	602-971-3555	Brulipps@yahoo.com
Webmaster	Chris Johnson		Webmaster@pasaz.org
Phoenix Astronomical Society		3039 W Peoria Ave #102-188, Phoenix AZ 85029	

November PAS Upcoming 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 2: PAS Meeting at PVCC main campus in room LS-203. Come enjoy a presentation by Dr. David Williams. 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=2388&day=2017-11-2&c=1>

There is a Dinner prior to this event. See this link for more details and to RSVP attendance by the day before the dinner: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2476&day=2017-11-2>

Nov 4: Taurids Meteor Shower Peak - A meteor shower can be seen from 5 days before to 5 days after the peak date. Best observing times are after midnight.

Nov 9: 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! More details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2400&day=2017-11-9&c=1>

Nov 13: Conjunction of Jupiter and Venus in the Morning Hours before Dawn.

Nov 15: PVCC Main Campus Public Star Party 5pm to 10pm. Please see this link for more details: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2340&day=2017-11-15&c=1> and see the article about this event on page __ of this newsletter.

Nov 16: School Star Party (Private)

Nov 17: School Star Party (Private)

Nov 17: Leonids Meteor Shower Peak - A meteor shower can be seen from 5 days

before to 5 days after the peak date. Best observing times are after midnight.

Nov 19: 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=2027&day=2017-11-19&c=1>

Nov 20: School Star Party (Private)

Nov 21: School Star Party (Private) backup date

Nov 24: Public Star Party at South Mountain Park 6:30 to 8:30pm. Please see article about this star party on page __ of this newsletter. Here's the link to this event on the PAS Calendar: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2475&day=2017-11-24&c=1>

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

Huge Star Party at South Mountain Nov 24

PAS has been invited to do a star party at South Mountain Park. This event is open to the public- come have a fun session observing through PAS high-precisi-

sion telescopes! The event is from 6:30pm to 8:30pm on Nov 24. Here's the link on our website for more details about this event:

<http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2475&day=2017-11-24&c=1>.

November 2nd PAS Meeting

(Continued from page 1)

Information Facility at ASU. He is also the Director of the NASA Planetary Aeolian Laboratory, which administers wind tunnels at ASU and the Ames Research Center in California. David is currently performing research in volcanology and planetary geology, with a focus on planetary mapping, geochemical, and remote sensing studies. His research has included computer modeling of seismic wave propagation through planetary interiors, visible and near-infrared spectroscopy of the lunar surface, planetary geologic mapping of the satellites of Jupiter and Saturn, the planet Mars, the asteroid Vesta and the dwarf planet Ceres,

computer modeling of the physical and geochemical evolution of lava flows in a variety of planetary environments, and petrologic study of lava samples from Mount St Helens. He was involved with NASA's Magellan Mission to Venus and Galileo Mission to Jupiter. He is a Co-Investigator on the European Space Agency's Mars Express orbiter mission, and he is a Science Team member on NASA's Dawn Mission to asteroid Vesta and dwarf planet Ceres. He is also a Co-Investigator on NASA's newly selected Psyche Mission. In 2014 David was elected a Fellow of the Geological Society of America, and asteroid 10,461

DAWILLIAMS was named in his honor.

Terri, Event Manager adds: Dr. David Williams is a long time friend of PAS. We'd like to welcome him with a large attendance of PAS members and guests.

There will be a dinner prior to this meeting at Chili's at 4:30 to 5pm. RSVP is required to attend dinner and you must RSVP by the day before the dinner so that I have time to put in the reservation. See the online calendar link for more details.

Bring a snack to share and enjoy bottled water provided by Previous President Bruce Wurst. We hope to see you there.

October 2nd Meeting

(Continued from page 1)

ered "The Iraqi Astronomer" and appeared on a weekly TV program answering questions on the topic. During his first TV appearance after Saddam Hussein took control of Iraq, Nebil answered questions while a guard holding an AK47 watched and listened to him, ready to shoot him if he said anything against the new regime.

Eventually Nebil achieved his dream of immigrating to the U. S., completing his graduate studies and receiving his PhD. He worked on NASA missions Pioneer 10 and 11, space shuttle Columbia and the International Space Station's Gas-Grain Simulation Facility. His research projects have included zodiacal light, interplanetary dust

dynamics, the spin of interplanetary dust, laboratory experiments levitating spherical particles using a focused laser beam, the difficulty of doing the same experiments on non-spherical particles, the inner planets' gravitational effects on the symmetry of the interplanetary dust complex, observing comet Kohoutek using the National Radio Telescope in Green Bank, West Virginia, protecting US satellites from laser weapons, developing body armor to protect against laser weapons, and making AIM1 tanks invisible to laser ranging.

At one point Mike commented that we were sorry so few members were there.

Misconi responded that it was a miracle we pulled it off at all on such short notice.



Dinner with the Guest Speaker, Nebil Misconi at Chili's before the Oct 2 Meeting. This was also the attendance at the meeting along with Don Boyd, photographer and not in this photo.

October 5th Meeting

(Continued from page 1)

came clear that this was "the real thing." The team then discussed the LIGO detectors, problems inherent in the process and future solutions. Current detections have been captured from colliding black holes, though the goal of the group is to record the core collapse of a Type II supernova, a phenomenon that if detected may add considerably to our knowledge of the nature of

the universe.

The talk was followed by questions and answers and another video, this time from Kai Staats. Turnout for the meeting was a little over forty. Thanks and kudos to our speakers and thanks as always to those who brought snacks and water. See you all at the November 2nd general meeting.



There were 4 guest speakers for this meeting. In this photo we have (L to R) Merek, Michele and Kelly. Plus, through Skype we had Kai as a speaker. Photo by Terri

3 Scopes for Sale with Accessories:

1) 10 inch Dobsonian 2) Meade ETX-LS8 with hard case and built in dolly 3) Celestron NexStar 5 with high quality hard case. Additional items: empty small hard case, never opened cover, two hard cases with lenses. I have small boxes for all lenses. Spreader-lens holder. Also have two cotton cloth scope covers, not shown. The actual retail prices are to the left of the

items, in the photos of the lists, and the half price selling price is on the right. I have all the original sales slips, software and user manuals. I check email every day. I want to sell my three telescopes and a selection of books. I am asking 1/2 of the purchase price. Equipment is like new. Here's the link to the lists and photos: <https://www.dropbox.com/sh/o8ri3j4ba4x>

[ws0t/AADvvlqlb9jK-0sFT7pc6sska?dl=0](https://www.dropbox.com/sh/o8ri3j4ba4x).

It's a lot of equipment for sale, something for everyone. Contact Mary to purchase these items marylj3@gmail.com. Phone is 602 866-8693.. Land line, please leave message. Email.. much better, as I check it daily. The location to see these scopes will be near PVCC Main Campus.

Bookmans Telescope Workshop June 11

By Terri, Event Manager

On this warm afternoon, PAS members William and Terri Finch, Sam Insana, Alex Vrenios, Mark Johnston, Rodney Fong, Leah Sapir and Bruce Wurst met at Bookmans for the Free Telescope Workshop. There were 5 RSVP's with scopes, and 3 walk-ins, one of whom mistakenly thought the workshop was an astronomy class and left.

We started with Elaine and Kelly who had arrived early with their Celestron 127EQ. Mark helped them out, finishing up around 4:00.

Monica came in with her parents, having won a Meade DS-2000 at the ASC Astronomy Day in April. She didn't know how to work it, so William assisted her with

setup, finder alignment and general use. Matt joined us with his Orion SpaceProbe 13-ST EQ assisted by Alex.

Karla came in about 4:30pm with an interesting situation: She brought her 12.5" scope mirror seeking help to repair a chip in it. She and her friend Deborah were helped with some sound advice from Bruce. Karla stayed around until about 5:00 asking questions, getting to know the group and learning what PAS does. Leah also gave Karla some information on books to purchase to help learn the night sky and what to look for there.

Michael with his daughter Desiree came to find out how to build a scope and Sam worked with them for an hour and a

half. Leah also spent some time assisting Michael.

Kate and three friends join us at the very end as walk-ins with a Celestron 127EQ. They were assisted by Alex.

In total, we had 6 scopes, 15 people from the public and 8 PAS Members making for a very busy afternoon. Many thanks to the team of teachers and helpers for a very smooth-running event. In the future, per Sam's idea we will try to stagger the arrivals of scopes to avoid a flood of people in the limited set up area.

After the event, Rodney joined William and I for a quiet dinner at Carlos O'Brien's.

Astronomy Fun Day Aug 12

By Terri, Event Manager

This was a full day of Astronomy activities, starting with lunch and a

Planetarium show at Ron's at 3pm (with Terri and William Finch, Mike Mar-ron, Don Boyd, Sam and Frank Insana and Joe Aquavella attending). Ron's show covered some of the less-known constellations and included a trip to the Southern Hemisphere, which was very interesting. Thanks, Ron.

After the planetarium show came a Potluck and Meeting of the Minds (MOM's) at Mike's home. Present were

Pete Turner, William and Terri, Mike, Richard Pipkin, Don, Mark Johnston, Paul Facuna, Sam, Frank, Kay Freeman (New Member), and Howard Moneta. It was so good to see everyone.

The plan, if the weather was cooperative, was to enjoy a night under the stars watching the Perseids Meteor Shower. However, it clouded over and drizzled on us with lightning visible towards Phoenix. The meteor shower may have gone on, but we weren't going to see it! Instead, we watched "Phoenix Forgotten." Thanks to

Joe for the run to Redbox.

Many thanks also to the attendees and to everyone who provided food for the potluck

The next couple MOM's dates are Sept 28, 2017 and Feb 8, 2018. We hope to see all PAS members at these meetings. The Meeting of the Minds is our business meeting where we discuss what the club is going to do and how. It affects the future of PAS, so all members should attend. See you there!

Black Mountain Campus Star Party Sept 14

By Past President, Sam Insana & Terri Finch, Event Manager

Sam writes: PAS furnished 10 telescopes for the PVCC BMC star party. We had Pete Turner, George Zuckaukas, Eric Steinberg, Howard Moneta, Sam, Mike Cawley, Ray Adams, Cal Vance, Don Boyd, and Jenny Weitz with the new 14 inch Cassegrain telescope in the observatory dome. The following objects were shown to the delight of over 200 students and members of the public: Saturn, M57 Ring Nebula, Swan Nebula, M81 and M82 galaxies, M31 Andromeda Galaxy, M13 and M15 globular clusters, Mizar double star, Gamma Andromeda binary star, and Perseus Double Cluster. Although several people were worried about the weather because the afternoon was very cloudy, windy and looked like rain, Sam and Alex Vrenios had done weather analyses that determined

the night would be fine. Ron Walker and Paul Facuna helped guide the vehicles on and off the observatory deck to ensure everyone's safety, which was appreciated.

Terri writes: The night began with over 300 public RSVP's. Mike and I set up our tables indoors in the Aquila building where many people stopped to see us. We did Q&A and were able to give out lots of prizes to attendees, 0 to 16 yrs old. Mike had a crowd the whole time and in fact, we stayed indoors until about 7:40 when most of the crowd went outside to look through the telescopes. We followed shortly for the rest of the evening.

It turns out that every BMC star party going forward will have an indoor hour of activities before the actual star party be-

gins. You can read more about this indoor activity plan in the October 2017 issue of PAStimes newsletter on page 4.

Later at the new telescope dome, Jenny introduced me to Liam, who is one of her Honors Class students. Liam and I took a walk / tour of some of the other telescopes including Eric's 22" dobsonian before parting ways as I headed back up to my table.

It was a successful night, if a bit warm but the crowd was enjoyable to be with. Thanks to the telescope team for accommodating all the public attendees. We look forward to the next BMC!

Bookmans Indoor Event July 6

By Terri, Event Manager

This was a good event to do indoors with 116 degree heat outside. The team for the event consisted of Rick Cunningham, Terri Finch, Mike Marron, Alex Vrenios, Rodney Fong and Roger Anzini.

With help from our contact, Katy Spratt, we set up two tables, one with Sun and Moon demos and one with club information and promotional materials for the Aug 21 Solar Eclipse event at the Arizona Science Center. Roger worked with me at the table and helped out with the Star Wars Scavenger Hunt for the kids. Rick set up his scope to demonstrate two types of solar filters and the importance of using a safely filtered telescope to view the Sun; Alex had a similar setup, but for his binoculars. Mike came with his own table and of course, stole the show with his meteorites. Rodney also came to help us a little later.

We all enjoyed taking a break and watching the kids do the scavenger hunt and "Jedi lightsaber training", after which PAS had the floor space again.

At the end Katy and I spoke about possibly having another daytime indoor even with kids similar to this one.

Many thanks to Katy for having PAS at her event and to the telescope team for all their help, particularly Roger who helped me carry items to and from the car. I look forward to the next one!!!



These young Jedi are in a Lightsaber Training class. The Master Jedi is showing them some



This cute R2D2 Girl was a very good sport about learning how to use the Lightsaber in her class. She was also enjoying the attention of everyone taking her photo. Photo by Alex.



Rick, Rodney & Alex are at the PAS Table with Rick's scope set up on display. Photo by Terri.



Roger sits at the PAS Demo table posing for this photo taken by Terri.



This is the Jedi Master trainer of Lightsaber moves. It was very impressive to watch and we had a front row seat for the class. Photo by Roger.

Bookmans FREE Telescope Workshop Sept 10

For this class, we had three RSVP's, all of whom unfortunately either cancelled or didn't make it

We did have five walk-in's however so the event was still successful. Jim and Amy came in and worked with Sam for a while. When Jim identified himself as a physicist,

we immediately recruited him to do a presentation for PAS. Stay tuned: we may have an exciting presentation happening soon. Zach, Levi and Matt also came looking for just what we have... a club where they can talk about their favorite topic - Astronomy. The three of them stayed for about 45 min-

utes chatting with the telescope team.

Attending this event were Sam Insana, Alex Vrenios, Bruce Wurst, Rodney Fong, and William and Terri Finch. Thanks to all for being there. We look forward to the next telescope workshop.

Meeting of the Minds Sept 28

By Terri, Event Manager

PAS Members met for a PAS Business Meeting on Sept 28 at PVCC. It was a productive meeting with a lot of topics discussed. Attending were Sam Insana, Don Boyd, Eric Steinberg, Paul Facuna, Pete Turner, William and Terri Finch, Mike Marron and Bruce Wurst. The discussion included various business, website and upcoming events items. Thank you to all who attended.

What's Up For November?

By Rod Sutter

Planets

Name	Date	Rise	Set
Mercury	11-15-17	08:46	18:27
Venus	11-15-17	05:57	16:46
Mars	11-15-17	03:57	15:34
Jupiter	11-15-17	05:45	16:38
Saturn	11-15-17	09:31	19:29
Uranus	11-15-17	15:55	04:42
Neptune	11-15-17	13:59	01:24
Pluto	11-15-17	11:02	21:04

All Times Arizona Time

Bolded dates and times are nighttime objects

JW Marriott Star Party Sept 15

By Roger Anzini

PAS was asked to supply three scopes and Mike Marron with his always popular table of "rocks from space" for a private event at the JW Marriott on September 15. Our scope operators were Mark Johnston with his custom built refractor, Eric Steinberg with his tracking 22 inch Obsession and me with my home built 16 DOB plus my little 3 inch goto GPS.

I met the easy smile of Karen Reilly, our contact about 4:45 and we walked to the center of the lawn - a beehive of activity with several large trucks unloading chairs, tables and equipment and tons of staff getting set for the evening. Karen pointed out where we might consider setting up our scopes while I squinted at the tall trees to our west and south and a towering double row of 90 foot master palms to our east.

Was there any sky left for us to use? Karen's phone chimed and I pondered the location as she spoke. What? We were on the wrong ballroom lawn! After 5 minutes of brisk walking through concourses and stairways, we reached our two acres of serene, green lawn surrounded by low trees that allowed a perfect sky for gazing.

We set up our scopes on a walkway in the center of the lawn with dining tables to our left and right. Our guests arrived with pleasant smiles, they were 50 wonderful doctors from all across the country. The light-polluted venue limited our options so Saturn was center stage with Eric taking those honors, he also found M13 and M11. Mark showed Albireo, Epsilon Lyra, M57, Neptune and Antares. Early on I also briefly showed Neptune, then Antares and the

Muscleman Cluster in Cassiopeia. My little goto followed Polaris, M13, M11, and Andromeda at times through the evening and I had a nice crowd around me as I pointed out all the great star hopping to be done from the Big Dipper.

After supper our guests left their tables and huddled all around the four of us for the rest of the evening asking questions and enjoying great conversation for everyone. The sky was not wonderful but our guests were all of that and much more. Thanking everyone for a very special evening.

Karen writes: Terri, Roger and I had a great conversation and it was quite interesting. I didn't get a chance to meet the others who were presenting/showing. I did receive great feedback from the guests. They really enjoyed it. Karen

Corona Ranch Sept 25

By Roger Anzini

Monday September 25 brought us a delightfully blue, early fall afternoon with Bruce Wurst and I ready to treat 200 members of Blue Cross and Blue Shield to a special tour of the night sky. I arrived at The Corona Ranch extra early to meet our contact, Diana David and determine the best location to set up.

The event grounds were bordered by an eight foot tall block wall. Inside, mature trees created a peaceful backdrop to an ocean of green grass. Diana and I walked to the end of a furlong of smooth concrete edged on two sides by the fine cut lawn. She flung her arms wide and invited me to

set up our scopes anywhere we wished.

We determined that the concrete was the most secure platform for our equipment and settled near its edge. I assembled the 16" DOB and then the 31mm triplet on its go-to/tracking tripod; Bruce pulled in and brought out his 12" go-to SCT.

The Moon had been up all afternoon so we set the 81mm to tracking the 30 percent Luna for the entire evening, proving quite popular among our guests. Next up was Saturn so both of the larger scopes were set to the ringed planet until darkness allowed us to seek out our favorite deep sky gems. Unfortunately, rising smog and dust made

our Messier objects appear as we were viewing them through a dark amber glass - disappointing, but we were able to show the Moon, Saturn, M11, M22, M57, M13 and M31 among others.

We were, as usual, delighted to share our scopes and knowledge with everyone and enjoyed the many thank-you's and smiles we received. We were also happy to discuss the workings and operation of the telescopes with those who were interested.

I would like to thank our Blue Cross Blue Shield guests, Diana David of Corona Ranch and Bruce for making this a special night.

Free Public Star Party at PVCC on Nov 15

By Terri, Event Manager

PAS and PVCC will be holding a free public star party at PVCC Main Campus (32nd Street & Union Hills Rd in Phoenix) from 5pm to 10pm on Nov 15. Everyone is welcome. Come view some great objects in the night sky through our high powered telescopes. More details can be found at this link, for this event: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2340&day=2017-11-15&c=1>.

November 15 2017

Sunrise: 06:59

Sunset: 17:25



Full: November 3



Q3: November 10



New: November 18

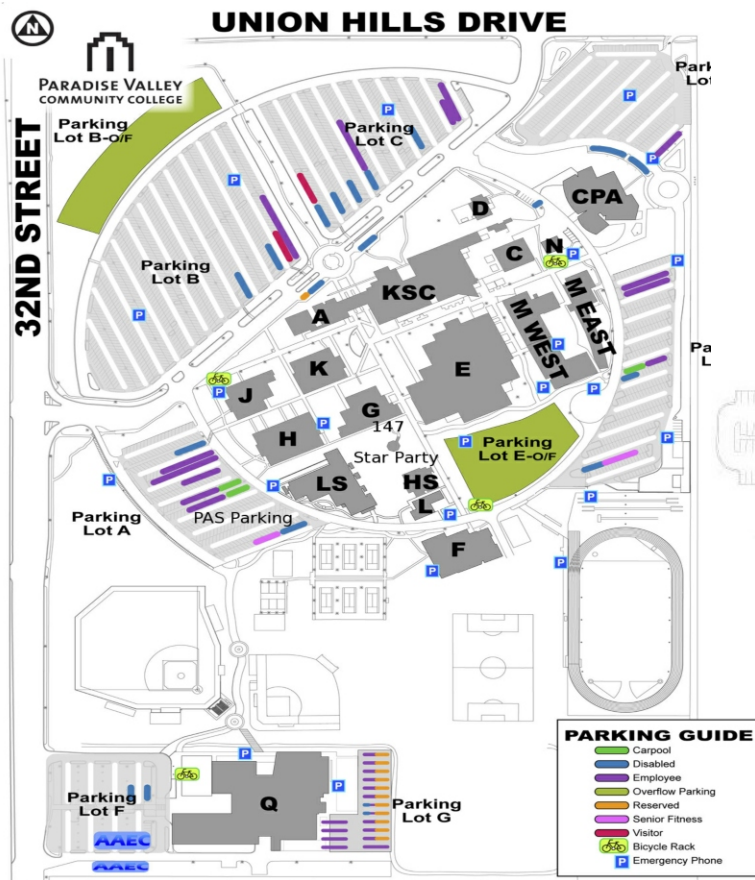


Q1: November 26

PAS is Incorporated in the state of Arizona as a 501(c)3 organization. Our newsletter PAStimes is published monthly from September to May, and is distributed via the Internet. All issues are available on our Website www.pasaz.org. Ads for astronomy equipment are provided as a courtesy to buyers and sellers and do not constitute any endorsement by PAS or PAStimes. All photos by Don Boyd unless otherwise noted. All articles and photos are copyright their respective authors or PAStimes.

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>

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.

Jan 17: Mike Marron "Cosmological Jets: Using Jets to Learn the History of the Universe"

Feb 1: Emilie Dunham "All about Meteorites"

November 2017

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