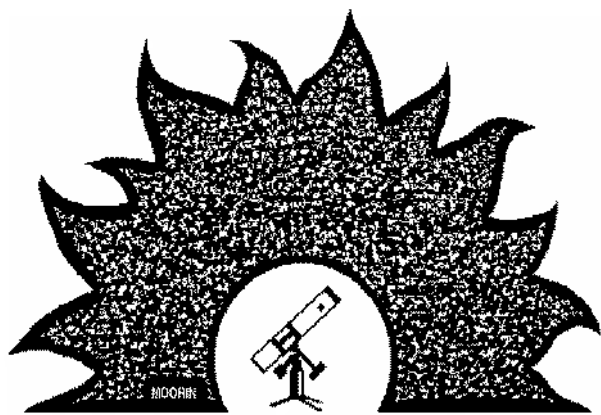




PAStimes

Phoenix Astronomical Society

www.pasaz.org

February 2017

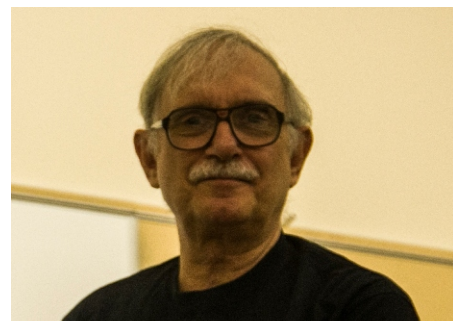
Volume 68 Issue 6

PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Amateur Radio Astronomy: Five Projects

By Alex Vrenios, Guest Speaker

Alex will present five radio astronomy projects that can be done by amateurs on a small budget. These projects correspond to the Astronomical League's requirements for the Radio Astronomy Observing Program and if completed, can result in a bronze level certificate, a silver level certificate and pin, or even a gold level certificate and pin. The talk concludes with a detailed look at radio astronomical imaging.



PAS Meeting of January 19

By Terri, Event Manager

This was a fantastic meeting. We had 44 in attendance! Several of us arrived prior to 7pm to find out LS-205 was occupied by a class still in progress. Luckily, Jenny (our contact at PVCC) was in her office and came over, checked out the situation and then got us into room LS-203. Just as a side note, we like room 203, as it is bigger, and for this meeting, it was enough seating for everyone who attended.

President Sam Insana opened the meeting with some brief announcements, intros of those who were new visiting the meeting and the Officers of the club. This took about 10 minutes and then we turned the floor over to our Fantastic Guest Speaker Dr. Lauren Edgar. And Lauren was absolutely a wonderful, full of energy, informative, entertaining speaker. She shared with us great info about the Rovers on Mars and what they (her team) found out, what they have been studying for the past 4 years and what is happening with the Rover in the future. Lauren came down to us from the USGS in Flagstaff. She entertained many fun questions during her presentation and after she concluded the presentation. She

also brought some great lithographs for everyone to take home. Thank you so much, Lauren, for coming to PAS and giving a most awesome presentation!

After Lauren's presentation, Sam offered a 10 minute break around 9:15pm. During this time, Lauren packed up and left, and Jenny, who had stayed for the presentation, also left around this time. Then Sam went offered some time for various announcements. It started with Bill Powell talking about his Spectroscopy SIG and the meeting they are having the following week. Leah Sapir then shared some info about an astronomy package that she and Sam felt the club should purchase, and it was voted that the club purchase the package. So, she will be ordering it and then it will be decided who will manage the sharing of that program on DVD as a Library format, borrow one DVD at a time and return it before getting the next one. Rod Sutter, the current PAS Librarian, wasn't present but was discussed as one option for lending out the DVD's. Then Chet Schuler gave a quick recap about the passing of Gene Lucas (who was a member of SAC,

EVAC and PAS at various times in his life). An interesting fact that was shared was that Gene passed on Dec 2 but it took until Dec 8 for anyone to discover the body, because Gene lived alone. Terri Finch then did the upcoming events for the rest of January and all through February. And Sam closed the meeting after talking about the orders of T-shirts and other fun stuff through Dirk at Infini-tees.

This was a great meeting with a super



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February 2017 Upcoming PAS 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.

Feb 2: PAS Meeting at PVCC in Room LS 205. Come enjoy a presentation by Alex Vrenios, PhD. Bring a snack to share. Bottled water provided by PAS snack fund. 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=2007&day=2017-2&c=1>

Feb 9: Free Telescope Workshop at PVCC main campus, 32nd Street and Union Hills Rd - 7pm to 10pm. 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=2014&day=2017-2&c=1>

Feb 11: Free Solar Viewing event at Burton Barr Library from 10am to 1pm. Come view through our safely filtered telescopes - sun spots, solar flares, and solar prominences. RSVP is requested in case weather cancels this event. More details can be found here: <http://www.pasaz.org/forums/calendar.php?do=getinfo&e=2217&day=2017-2&c=1>

Feb 12: 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 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:

Feb 16: School Star Party (Private)

Feb 22: School Star Party (Private)

Feb 23: Huge public star party at PVCC Black Mountain Campus, 60th Street and Carefree Hwy from 7pm to 10pm. 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. We usually provide 10-14 scopes for your viewing pleasure. Please do not touch the telescopes. More details:

Feb 24: School Star Party (Private)

Feb 28: School Star Party (Private) ***

PRESIDENT'S CORNER

By President Sam Insana



PAS President Sam Insana. Photo by Terri

“Ask not what your club can do for you, ask what you can do for your club.”

JFK may not have used those exact words, but the idea is still there. PAS can do a lot for you in the form of fun astronomy activities: private and public star parties; informative general meetings with guest speakers; telescope workshops; night sky training sessions; socials; field trips to planetariums and observatories; a first class newsletter; citizen science projects like meteor studies, occultations, spectroscopy and astrophotography. We have a listserv and website that let us communicate fun and

important astronomy information. But what can you do for your club? Being an officer of PAS and on the Board of Directors is a very important thing members can do. Elections will be coming up in May and the new officers will take over at the first meeting in September. This gives plenty of time to think about how you would like to serve. Some of us serve for many years, some of us for just a short time, but serving is something everyone should at least try once. Please call or email me if you have any interest in any of our elected positions so I can help answer your questions.

PAS Meeting of the Minds Jan 5

By Terri, Event Manager

Many PAS Members attended the PAS Meeting of the Minds (business meeting) on January 5 at IHOP. In attendance were: Ora, Eric, William, Terri, Pete, Alex, Sam, Vera, Diane, Christine, Kevin, Don, Mark, Mike, Roger, Ed, Bette, Bruce, Bill, plus

Chris Johnson and his son. We had discussions about several topics which included a PAS Treasury Report from Eric, reducing the number of emails sent through the PAS listserv, PAS funds and where they should be spent or invested, the Star Tours point

system, the upcoming events at Arcosanti, Comicon, and Leprecon and appointing Terri Finch to continue as Events Manager. The meeting was about 2.5 hours long and had some great ideas shared. Thank you all for attending.

PAS PR-AM OPPORTUNITIES TO PARTICIPATE IN ASTEROID SCIENCE IN MARCH

By paul d. maley (pdmaley@yahoo.com)

PAS members have three valuable opportunities to help video-record any of three asteroid occultations of stars in the month of March. It will require you to drive to the path and spend as long as 2 hours at your site before returning home. I will supply all the equipment and all you have to do is to let me know of your availability and I will show you what needs to be done prior to the occultation. The objective is to map the shape and size of the asteroid by using the combined times of disappearance and reappearance of the occulted star from different locations. To make this happen we need to establish multiple sites 5 to 20km apart (separation is dependent on the number of observers). The graphic below shows an example of the results of a similar expedition. The line at the upper left is from an observer who saw no occultation. If you staff the station, then your name is put on the reduced profile and you are given credit for the observation! The video process allows zero human errors to be introduced into the timing process and provides a professional grade timing accuracy of .03 seconds.

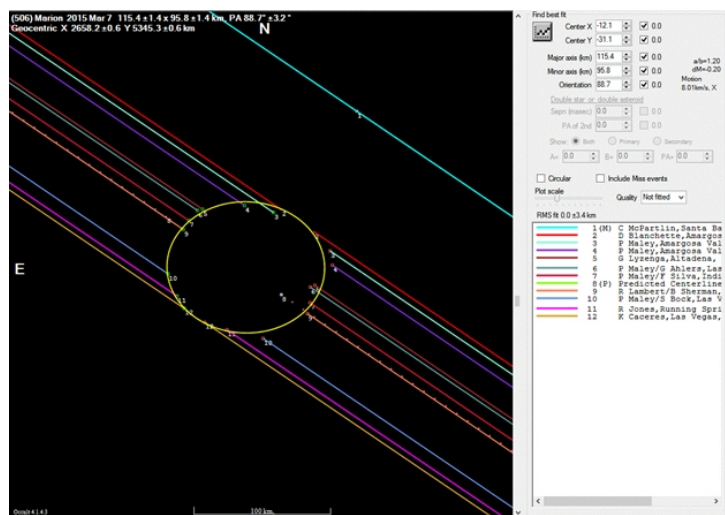


Figure 1. Example of the results of an asteroid occultation group effort.

Here are the overall details.

March 2 (Thursday) morning at 1:05am. The middle of the night is the best time for reduced traffic and lessened likelihood of interference from human activity. The eclipse is of a 10.4 magnitude star by the asteroid Turnera. The path crosses downtown Phoenix but the sites will have to be located along Sun Valley Parkway in order to get enough dark sky in the direction of the star. It is the closest of the three events and gives us the most time to lay out the stations to get each person prepared.

March 7 (Tuesday) night at 11:52pm. It occurs fairly late at night and though it is a good distance away from town, the path has the least predicted error. The eclipse is of a 9.0 magnitude star by the asteroid Carolina. This is the farthest of the three events from phoenix and will entail driving either north on I-17 or northwest on 93.

March 13 (Monday) night at 9:00pm. This is the best time of night and not all that far from town. The path error margin is also quite favorable. The eclipse is of a 10.0 magnitude star by the asteroid Amalthea. This path is the next closest to town and crosses

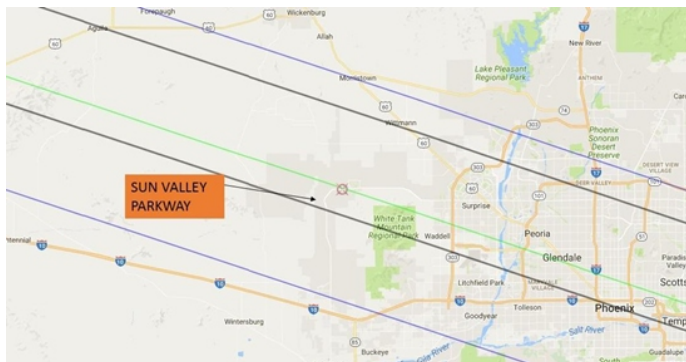


Figure 2. Map of March 2 occultation zone.

highway 85 as well as passing south of Phoenix. Highway 85 has a lot of good places to set up.

What makes these three events important? They involve stars brighter than magnitude 11 which can be detected by the telescope/camera system in a dark sky. For example, in the months

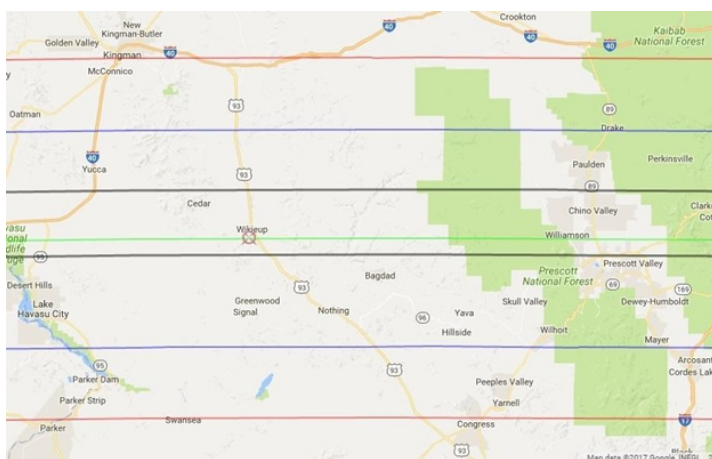


Figure 3. Map of March 7 occultation zone.

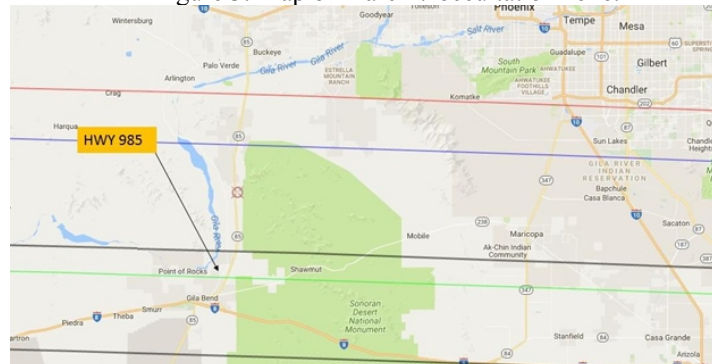


Figure 4. Map of March 13 occultation zone.

of January and February there were no such events within relatively easy proximity to Phoenix.

Seriously, we do need your help to staff these portable stations without which the amount of data collected will be deficient. Each site will be equipped with an 80mm refractor, camera and camcorder and with luck you may be able to see the occultation on the camcorder flip screen. **If you think you would want to help, kindly contact me at pdmaley@yahoo.com**

turnout. There were snacks and handouts at the back of the room. Chet won the first raffle and Bruce won the 2nd one which was a wonderful item donated by Sam. Thanks to all the wonderful attendees!

Bill Powell adds: Quite a turnout for the meeting last night. Great presentation on the Mars exploration projects. A good night!



What's Up For January?

By Rod Sutter

Planets

Name	Date	Rise	Set
Mercury	01-15-17	05:54	15:57
Venus	01-15-17	09:59	21:26
Mars	01-15-17	10:22	22:03
Jupiter	01-15-17	12:30	11:54
Saturn	01-15-17	05:16	15:17
Uranus	01-15-17	11:41	12:28
Neptune	01-15-17	09:55	21:13
Pluto	01-15-17	06:59	17:05

All Times Arizona Time

Bolded dates and times are nighttime objects

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It's all about telescopes at this Workshop. It was a great event. Photo by Terri Finch.

January 15 2017

Sunrise: 07:32

Sunset: 17:44



Q1: January 5



Full: January 12



Q3: January 19

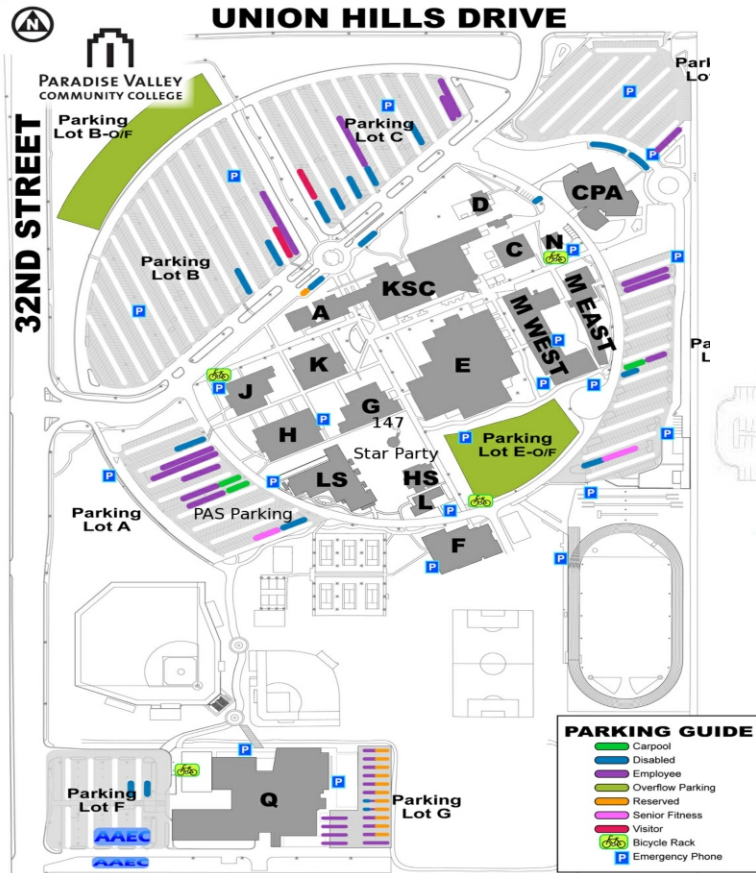


New: January 27



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 on Thursdays in Room LS-205 unless otherwise noted. Do you have an idea for a guest speaker? Email Terri the details. Here are the scheduled guest speakers at PAS:

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

Feb 2: Alex Vrenios "Radio Astronomy"

Mar 2: Andy Odell "Stellar Evolution"

Apr 6: Harrison Smith "Potential Life on Exoplanets"

January 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 New Year's Day	2	3	4	5 Meeting of the Minds (Private)	6	7
8	9	10	11	12	13	14
15 Telescope Workshop	16 Martin Luther King Day	17	18	19 PAS Meeting	20 School (Private)	21 PAS Social (Private)
22	23	24	25	26 Public Star Party	27	28
29	30	31				