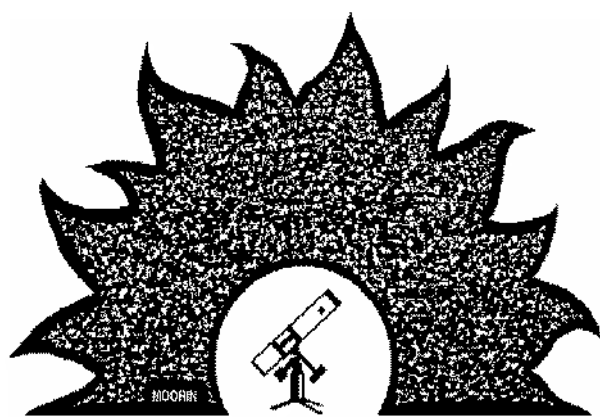




PAStimes

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Meeting of the Minds May 15

By Terri, Event Coordinator

At the Meeting of the Minds (MOM's) on May 15, 2014, we had 2 guest speakers lined up and bunch of topics to discuss. This was a great meeting with a wonderful turnout. We gathered in room K-115 as the Main Campus was in lockdown. Many thanks to all who brought snacks. Bruce provided the case of bottled water. Prior to beginning, and upon congratulating Rodney Fong for taking the position of Meeting Host, Bob Senzer presented the PAS Sign In Board with a new pen. This is a special Space Pen. That means it can write in any position, including upside down. Many thanks to Bob for donating this pen to PAS for the Meeting Sign In Board. Rodney, as new PAS Meeting Host, gets to enjoy use of the Pen while he has his position. Here's what the pen says on the packing... "Writes at any angle, in extreme temperatures (-30 Deg to +250 deg F), upside down, over grease and has a lifetime guarantee. Fisher Space Pen, Proudly made in the USA." It also says it will write underwater, & in zero gravity."

The Agenda opened up with a discussion about how we should upgrade the PAS website. Eric lead the discussion. We wished that Chris Johnson (PAS Webmaster) could have attended, so he could hear the concerns of the user-ness of the site, and maybe, if it were possible, help to make changes to accommodate the requests. From what I know about the software we are using, it is a set form and changes are not easily made. But, Chris might know some way to get around some of the items. It was a good discussion.

We then turned to talking about adding a database or some way to populate a table with 5 years of Sun Rise and set times,

Moon Rise and set Times, times of Twilight and other important factors about knowing when to start a star party, etc. The topic turned to maybe having a sub domain that can hook to the PAS website and have a separate way to do the calendar that is easier on me adding events as well as on the visitor to the page to find out what events we have. And maybe color coding the events, such as public events would be one color and private events would be another color, and then there are Paid events.

Then we talked about a topic that Darlene wanted to discuss, but was absent for. She saw on Apr 3 after a PAS meeting at 9:45pm heading west on Grovers, a bright light in the sky that lasted 15-20 minutes. She wanted to discuss this and find out if anyone else witnessed this event. I asked around, but no one had seen it, so the discussion ended there. I did ask the membership to research it on line and send it through the listserv, if they found anything about it, so Darlene would have the answer. I haven't seen anything go through the list serv, as of writing this article.

Bob Senzer took the next topic, which was How to get younger people interested in PAS. Many thoughts were shared. We could use the Student union and libraries, and ask if we can host meetings there, for free, to draw in more public, was one of the ideas. This topic needs to be researched more, and discussed again at a future MOM's after everyone has had a chance to consider ways to accomplish this goal, and then come share those ideas with the group.

We then turned it over to Alfred who introduced the NEW PAS Asteroid SEarch Group (SFA SIG). Alfred and I set up 2 meetings for this group: June 12 & July 10.

This is a SIG that would meet once a month to discuss findings and help in the search for NEO's by use of their computer. Alfred wants to get this SIG going, so if you are interested in such a SIG to help out with, contact Alfred. See the website calendar listing for the dates listed above to get Alfred's contact info.

Mike then announced a Holistic Dispensary that was giving away a bunch of monies. We had a discussion about this and decided we didn't want to be part of that kind of group. Even for free monies.

We then took a 10 minute bathroom break.

We then turned it over to Bob Senzer who did a presentation on "Alvan Clark & Sons." This presentation was very good, funny, and informative. I am looking forward to the next presentation by Bob, in which he is doing another historical account of someone famous. Possibly at the September 2014 PAS meeting. Bob's talk was great info and caused a lot of discussion.

We then hooked up Leah Sapir to Skype, with William's help and she began her presentation around 9:40pm. About 9:50pm a notice popped up on the screen that says at 10pm the computer is going to shut down. We let Leah continue and then the computer shut down, cutting off her presentation. That was somehow taken as a Que for everyone to leave for the night. It took us over 20 minutes to get reconnected, so we apologized to Leah and asked her to do this presentation again at the September 2014 meeting. She will be first on the list to do a presentation about "Williamina Fleming." It is about 30 minutes long and if we had hung out just a little longer, we would have gotten the whole presentation after the

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<u>President / Librarian</u>	Bruce Wurst	602-971-3555	President@pasaz.org
<u>Vice President / Events Coordinator</u>	Terri Finch	602-561-5398	VicePresident@pasaz.org
<u>Treasurer</u>	Mike Marron	480-488-3031	Treasurer@pasaz.org
<u>Newsletter Editor</u>	Don Boyd	480-963-7189	Editor@pasaz.org
<u>PAS Host</u>	Mikey Webb	602-432-4318	mike.webb50@gmail.com
<u>Member-At-Large</u>	Dave Hellman		david.hellmann@paradisevalley.edu
<u>Member-At-Large</u>	Jenny Weitz	602-787-6818	jennifer.weitz@paradisevalley.edu
<u>Webmaster</u>	Chris Johnson		Webmaster@pasaz.org
<u>Rocketry Liaison</u>	Jerry Belcher	623-328-9290	http://ahpra.org/launches.html

Upcoming PAS Events for July & August

By Terri, Event Coordinator

July 3: Public Fireworks party at Mike's home in Carefree. Potluck is at 6:30pm. Sunset is 7:42, Dark is 8:45, with a Star Party after all the 4th of July excitement is done. RSVP is with Mike at Primefactory@q.com. Everyone welcome! Bring snacks to share, like ice cream or popsicles, for during the fireworks.

July 10: SFA SIG Meeting. PAS Members only. RSVP is with Alfred. Location: TBA, Time: 7pm to 9pm.

July 12: Lecture #2 of Mike's Summer Lecture Series. RSVP required with Mike. Topic: "Earth Shattering Evolution." Potluck at 5:30, Lecture at 7pm.

July 13: Bookmans FREE Telescope Workshop. Everyone Welcome. Meet in the front window of Bookmans at 19h Ave & Northern Ave in Phoenix from 3:30 to 5:30. Bring your telescope, accessories, something to write on and questions. RSVP is required with Terri at Events@pasaz.org. When you RSVP, include the make & model of your telescope.

July 26: Lecture #3 of Mike's Summer Lecture Series. RSVP required with Mike. Topic: "Planetary and Stellar Jets" with a Star Party after the lecture. Potluck at 5:30, Lecture at 7pm.

Aug 9: Lecture #4 of Mike's Summer Lecture Series. RSVP required with Mike.

Topic: "Galactic Jets and Cosmic Evolution" Potluck at 5:30, Lecture at 7pm.

Aug 10: Bookmans FREE Telescope Workshop. Everyone Welcome. Meet in the front window of Bookmans at 19th Ave & Northern Ave in Phoenix from 3:30 to 5:30. Bring your telescope, accessories, something to write on and questions. RSVP is required with Terri at Events@pasaz.org. When you RSVP, include the make & model of your telescope.

Aug 23: Lecture #5 of Mike's Summer Lecture Series. RSVP required with Mike. Topic: "Upcoming Astronomical Disasters" with a Star Party after the lecture. Potluck at 5:30, Lecture at 7pm. ***

Mike Makes Front Page

By Terri, Event Coordinator

Mike, PAS's very own Meteorite Man, has been seen at tons of events over the years. He is the highlight of most events, stealing away groups of people who would be looking through our telescopes during a star party, but instead are mesmerized by Mike & his story of the meteorites he brings to those events. Schools have requested "Just Mike" to be at their events! He is a hot, in demand, item that only PAS has!

Well, he made it on the front page of the Puma Press, dated Apr 2014. Those of us in Astronomy are not pleased with the title on this page, but the fact that Mike got an article written up about him, is awesome! The title of this page is "STEAM event

features night of astrology, mythology". For those of you who don't know... Astrology is not a science. The American Astronomical Society has this paragraph as the difference between Astronomy & Astrology, found on this page: <https://aas.org/faq/whats-difference-between-astronomy-and-astrology>. "Astronomy is a science that studies everything outside of the earth's atmosphere, such as planets, stars, asteroids, galaxies; and the properties and relationships of those celestial bodies. Astronomers base their studies on research and observation. Astrology on the other hand, is the belief that the positioning of the stars and planets affect the

way events occur on earth. If you're interested in the solar system and the planets, other celestial objects like asteroids and comets, other galaxies and the rest of the universe, what makes up space, and the possibility of alien life or space travel, Astronomy is the field you're considering."

It was very nice of the Puma Press to put Mike on the front page of their newspaper. The article, except for it's title, is very good and all about the Black Mountain Campus star parties PAS hosts. I hope, in the future, we can stick to the Science of Astronomy, rather than telling the public that what PAS does is Astrology. ***

PAS Is Better Than Cosmos!

By Stuart Samberg

I watch "Cosmos" and learn some things. When you, Mike, spent time with me at BMC explaining lots of things about Earth, it made me think how lucky we are to

have you. It was better than "Cosmos!"

An idea I had is to have your lecture series, excerpts from it, or other topics on your website. You could have a page and

call it "Meteorite Mike" Seriously, I think it would be awesome to have that kind of information on there. ***

Phoenix Monsoon Season

By Terri, Event Coordinator

A quick reminder about the Phoenix Monsoon Season: I wish to remind everyone that the Monsoon Season is happening now. Officially, it is from June 15 to September 30, this year.

What does this mean for you? It means that, if an RSVP is requested or required to attend a PAS event, it is very much to your advantage in saving driving time, and gas to get to an event, that may be canceled due to

the Monsoons, to be sure to RSVP your attendance so that I can get the word to you before you make the trip. The Monsoons can hit Phoenix at a moments' notice. We could have a great event planned (for example, at Mike's home in Carefree) and because a storm comes to Phoenix, whether it is a Haboob (major dust storm) or a drastic, overly windy rain storm, the event then becomes canceled. So, be sure you take the time to RSVP where requested. A simple

Email saying you are attending, could save you time and gas, if we have to cancel. Everyone attending should RSVP every time, when requested to do so, but not everyone does. This is my request, to you, to save you the hassles of getting to a canceled event, RSVP, every time, especially during the Summer months. Thank you for considering this request. Let's all have a great, clear night, starry star party & other events this Summer! ***

New PAS SIG!

By Alfred Fantegrossi

(Note from Terri: What is a SIG? A SIG is a Special Interest Group. Within the topic of Astronomy. There are so many subtopics that PAS Members can branch out as smaller groups under PAS. Ideas would be a Field Trip SIG, where by the members of this group would set up & arrange Field Trips for PAS Members to attend, or a Meteorite SIG, where by Mike might run this SIG & have meetings and field trips to different places that have Meteorites, or chase Meteorites when a large Meteor streaks across the sky & then falls to the ground. To start a new SIG, email Terri with the idea. With this in mind... Alfred writes the following for his new SIG.)

An article appeared in the June 2014 issue of "Sky & Telescope" (pg. 27) concerning an outreach program for high school & colleges as part of the International Astronomical Search Collaboration

(IASC). It is a group of professional astronomers, amateurs & teachers who established this free, web-based asteroid discovery program out of Abilene, Texas. Mostly conducted in schools and colleges, it is also available to Astronomy Society's such as ours.

I have contacted the director of this group, a Patrick Miller, from Hardin-Simmons Univ., and he has invited our participation in analyzing several sets of Astrophotographs from various large telescope surveys of Kuiper Belt/ It may also involve NEO's to identify or confirm tracking measurements for.

Prime-focus telescopes involved in this effort are as follows: 1) University of Hawaii's Pan-STARRS 1.8M PSI (spring & fall campaigns), 2) ARI (Astronomical research Institute, from Westfield Illinois 50" reflector prime focus

telescope- year-round photos contributed. 3) 0.8meter Schulman Telescope at Mt.Lemmon SkyCenter

Currently, our group will be entered into this Aug and October's distribution of survey photos to scan. Using a special computer analysis program, we will participate by scanning the photos, for asteroids and comparing them with known object databases.

We are looking for any members who would be interested in such a project. Our analysis will be time dependant, as these photos will be available to us within a short period of time (? hours-days) after having been taken by the various survey telescopes. Please Let me know your thoughts ,questions, ideas about participating in this Special Interest Group. Thanks you. Al Fantegrossi ***

September PAS Meeting Planning

By Terri, Event Coordinator

At the September PAS Meeting, as we have done for several years now, we will be having Members' night. What this means is that the PAS Members will do presentations. But this is also open to anyone wanting to present something to the PAS Members, without being a PAS member. So, if you have something you'd like to present to the club, anything about Astronomy (or related topics), you need to get in touch with me by Aug 15 to be scheduled to do your presentation. I will need to know the title of your presentation, the length of the presentation and you need to submit, for the September newsletter, a brief teaser paragraph about your presentation. If you miss the deadline for the newsletter, you

can still sign up to do a presentation, but you won't be announced in the newsletter.

At the moment, our first presenter of the evening will be Leah who will have 2 mini presentations for us via Skype. At the Meeting of the Minds this past May, we had her doing a presentation and 10pm came and the computer shut down. Everyone took that to mean the meeting was over, so we didn't get to see the end of the presentation. So, Leah will be repeating that presentation, as many PAS members who were in attendance, mentioned they'd like to hear the "rest of the story." Then, she will present another really good presentation. Both of these will be short but well worth your attendance.

After Leah, nothing is planned, at this time. Now, if I get too many presentations for the Sept 4 PAS meeting, we have a Meeting of the Minds for Sept 11th, the following Thursday, for which we can fill with presentations as well. Let's make September a great month to hear some awesome presentations. Get your data to me sooner than later, so we can discuss the details and put you on the schedule. Thanks so much for preparing such awesome presentations for the club! We open both the PAS meeting and the Meeting of the Minds up to Documentaries, Movies, Show & Tell and anything else anyone wants to share. See you there! ***

Meeting of the Minds May 15

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computer shut down, 10 more minutes. So, plan to see this fine presentation at the

September PAS meeting and a secondary one, also about the same length, and Leah is

scheduled to be the first to present at that meeting, so she can get it all in.

Social Media SIG

By Terri, Event Coordinator

PAS is considering starting a Social Media Sig. What this would entail is having designated people, who belong to the Sig, receive emails from me, with updates to whatever Social Media they are maintaining for PAS.

So, you'd have to have a computer to do this, or computer access on a daily basis (although, you wouldn't be doing things for the SIG, daily. You'd be doing them as needed). You'd have to have a little spare time, and you'd have to be interested in tweeting or facebook or other forms of social media to announce upcoming events, update people on what's going on with PAS, send out cancel notices, etc. What started this conversation at Bookmans, June 8, was the idea that PAS should be part of Meet Up, which has a monthly fee. We would have to approve the monthly fee (through a PAS discussion at a Meeting of the Minds), but one person could post events to Meet up. They'd work through me, i'd send them the meet up info, they'd review it to make sure everything important is listed, such as

date, time, location of event, what we are doing, and then they'd post it to meet up and if a cancel notice was needed, they'd be in charge of getting that posted as well.

If you are interested in doing something like this, such as Tweeting for PAS, or other forms of Social Media, consider joining the new PAS SIG: "Social Media." We can use the help. The term of office would be 1 year at a time, as a Directorship (appointed, not voted in), so if you can do it this year, let's say, from Sept to May, but not next year, you could let someone else take the position, if needed, or if you really like what you are doing, you could continue as the Social Media Director. And we would have several Directorships to fill.

I would guess that when we have a social event coming up, it would be busy for a few days before the event, up to the event. And the rest of the time, there wouldn't be much to do. However, to start out, we would be posting all the upcoming events, as I get them.... such as Black Mountain

Campus, or the telescope workshops... all could have meet up possibilities.

Are you interested in helping PAS through the use of your computer? Then consider being part of this TEAM. Signing up doesn't mean you will have the position, right now. It means we will consider you for the position, and one person per Social Media venue will be chosen. Hopefully enough people want to help with this so we can cover many media venues.

The first goal of this SIG is to make a list of all the venues for Social Media, out there, besides Facebook, Twitter & Meet up. Then, we'd figure out how many we have, and how many Social Media Directors we have, and divide them up. The PAS Facebook page is currently maintained by William and me. We don't have a Twitter following, yet. And we don't have Meet Up.

This is an easy, at your computer, way to help promote PAS. Thanks for considering helping with this new SIG. Come be part of the Social Media TEAM. ***

For Sale: Telescope: 5" Celestron C5 Schmidt-Cassegrain

Focal Length FL = 1250mm at f/10, 5x24 spotting scope and bracket, 1.25" star diagonal and erecting prism, 1.25" Celestron 32mm plossl eyepiece, Piggyback platform (camera attachment rail), Thousand Oaks Glass Type 2 full aperture solar filter, Orion padded travel case for C5,

Original manuals

Mount: Celestron CG-4 GEM tripod, mount and weights (new), Dual Axis CG-4 Motor Drives (R.A. and DEC), Hand control (for guiding, not slewing) 2X, 4X and 8X, Power Pack holds 4 D-cell batteries (up to 20 hours), Original R.A. and DEC hand

control knobs, Polar axis finder scope for CG-4 equatorial mount, Tools: screw driver, and regular and hex wrenches, Original factory shipping box, Original manuals.

All for \$599 (see photo), local area only... Contact Alex at (602) 789-6556 or see me at a PASAZ meeting.***

PVCC/PAS Meeting Room

By Terri, Event Coordinator

Many thanks to Jenny Weitz, our Liaison at PVCC, for getting us another fine year of trading the PVCC rooms for star parties for our events & meetings. For the

Telescope Workshops, we are in G-147, which is the room by the Telescope Dome. And for our General Meetings (1st Thursday of the month - in most cases) and our

Meeting of the Minds (Business Meetings) we are in LS-205 for the 2014-2015 school season. We will see you there! ***

Telescope Help Session at Mike's Apr 19

By Terri, Event Coordinator

This short notice event turned out well. The idea was that because I needed to set up some things on my telescope, we would ask Mike to lend us the use of his home to do this, and William & I didn't feel we needed the whole place to ourselves, so we opened it to anyone wanting to attend. And the secondary idea that came to me at the Bookmans Telescope Workshop of Apr 13, was that we had some new members who might want some telescope assistance. So, I created this event. Mike requested Ham and Pineapple Pizza, and so William and I brought 3 large pizzas. There were sides provided by Howard and Tuna and rolls provided by Bob. Rodney provided dessert, as always, and Angie brought Chorizo dip and chips. It wasn't a large dinner, but it fed everyone nicely. This was a PAS Members help session. So, with exception of Mike's Joe (who is currently not a member), there was no public in attendance.

So, in attendance from PAS was: Mike

Marron, the host of the party, Howard Moneta, Angie Lee, Rodney Fong, William & Terri Finch, Eric Steinberg, and Bob Senzer.

The evening began with the potluck. And they were so nice. William and I were running late by about an hour. So, when we arrived, Rodney rescued me from under the pile of pizza. We all went in and ate. Then, Howard and Rodney set up their scopes. Because I was suffering from a massive migraine in which I was not only in pain from, but also very drowsy and clumsy, I didn't want to take out my scope to do anything with it for fear I'd drop it. I had done dishes earlier that day and nearly broke a few, banging them in the sink unintended. Nothing broke, but I didn't want to chance that with my scope, so I was outside for a short time, visiting, then I went in and spent the rest of the night indoors to get away from the allergies, or whatever is causing all these migraine.

So, after dinner and a little viewing outside, we turned to movies. For a while there, several people watched some movie, then Eric had brought "Primer" of which I watched. Very interesting, hard to follow, especially with a migraine, and I will have to watch it again, sometime. I wish to apologize to everyone at this event for me not being able to be more involved, especially outdoors.

And I'd like to thank those who provided food for the potluck, and who attended with their scopes and for Mike, hosting the party. Thank you Mike!

Rodney writes: There were some thin clouds early on, but it became clearer as the night progressed. Saw Jupiter, Mars and later Saturn, as well as Orion's Nebula and Big Dipper's Double Stars. Howard's more capable scope caught various clusters, nebulae & globulars. It was a nice star-filled night. ***

Desert Botanical Gardens Apr 26

Six scopes were asked to attend this event. PAS Provided Kevin Witts, Sam Insana, Rick Cunningham, Earl DeLong, Alex Vrenios and Howard Moneta. Amanda Ellis was our contact at DBG.

Earl writes: Sam, Alex, Kevin, Rick, Howard and I had a wonderful night at the Desert Botanical Gardens on April 26, 2014. We provided a star party for the guests of the major fundraising event. It ended up being a beautiful spring evening despite the storm passing through during the day. Only during the end of the event were scattered clouds a problem.

We arrived between 7:30pm and 7:45 pm. The carts arrived and we began transporting our equipment to the wildflower garden. We then moved our vehicles to the parking lot and began setting up our equipment. The guests were done with dinner around 9:30pm and began strolling the grounds and looking through our telescopes.

I started with M44 the Beehive cluster and then moved to the beautiful double star Iota Cancri. Howard stayed on Mars and I let him borrow my 9mm Nagler eyepiece which gave a nice view. Alex stayed on Jupiter. Kevin showed several objects with Saturn getting the most ohhhhs. Sam showed the galaxies M81/M82 and Rick

was on the double star Castor in Gemini at one time.

We had a large crowd throughout the event. Everyone was appreciative and interested in what they were observing. It was nice that the DBG staff had a slide presentation of astronomical pictures playing on a large screen near our set up area. This did not hamper our observing at all.

I would definitely return to the DBG for another event. The staff were very helpful and the public were pleasant. Everyone enjoyed the evening.

Alex writes: The Desert Botanical Gardens held a fundraiser Saturday evening and we were an extra treat for the attendees. After the dinner and all the speeches, some of the Garden's most important benefactors came out to find a half dozen scopes trained on Mars, Jupiter and (later) Saturn. Some of us tried to show M13 but there was too much ambient light for it to show up as anything but a faint patch. We had better success with the star Castor in Gemini, a blue/red double, but we mainly focused on the three bright planets in our night sky this month. About two hundred people stopped by our setup area and at least half of them took a look through my telescope. Some were well versed in the planets and their

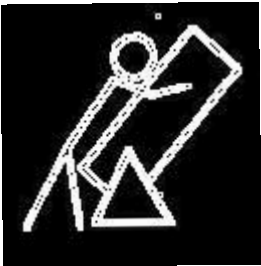
moons, but most were eager to learn about them and their historical relevance. Many saw the moons of Jupiter and rings of Saturn for the very first time.

Sam writes: On Saturday night, April 26th, 6 members of the PAS Star Tours group attended a star party at Desert Botanical Gardens. Kevin, Howard, Alex, Rick, Earl and Sam participated. From 9:15 pm until 11:15 pm we showed Jupiter, Mars, Saturn, M 44 beehive cluster, Cancer iota double star, and Mizar double star. There was too much ambient light from the Chihuly exhibit and other lights to show any galaxies, globular clusters, nebulae or other of the usual deep sky objects. Over 200 people looked through our 6 telescopes and they were very excited, especially to see the rings of Saturn. The wind was less than 5 mph and not noticeable, but we had about 20-25 % cloud cover. Luckily the clouds were like cotton balls with space in between so we could still show the objects. Much better than a thin cloudy sky covering everything. Our DBG contact Amanda was quite helpful getting the motorized carts for us to load and unload our equipment. She also showed us where exactly to set up, and was either there in person or in constant contact by cell phone for any questions we had. The fundraising event by DBG was

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Arizona Sky

By Leah Sapir



Arizona Sky

Black Mountain Campus Apr 21

By Various Attendees

In attendance at this event from PAS was: Sam Insana with his scope, Kevin Witts with his scope, Alex & Diane Vrenios with his scope, Eric Steinberg with his scope, Howard Moneta with his scope, Mike Marron with his meteorites, Roger Anzini with his scope and Michelle, Earl DeLong with his scope, William & Terri Finch with Handouts, Rodney Fong with his scope, Darlene Ahlefeld (with her uncle who visiting from Florida), Bob Ewing with the PVCC scope (12" Light Bridge), & Dick Newell.

Sam writes: I showed several objects with my 8 inch Newtonian reflector on Monday night at PVCC Blk Mtn: Jupiter, Orion Nebula, Saturn, M13, M81 and M82.

I tried to find Comet C2012 K1 Pans-tarrs and had no luck. About 30 people looked through my scope, including 5 people from my golf group. There were several college students who needed a lot of information for their astronomy class and they took notes of the telescope specifications and detailed information on the celestial objects they were observing. I noticed over 100 people in attendance at the star party and everyone seemed to enjoy themselves. The 8 weather forecasters accurately predicted cloud cover of less than 20%, making for a good night of observing. Although the International Space Station made a dramatic appearance at 10 minutes before 9 pm, I did not see any of the Lyrid meteor shower. Mike made up for this by showing his excellent meteorite collection to the crowd.

Alex writes: PAS held a public star party at PVCC's Black Mountain Campus Monday night, April 21st. I brought my 5" SCT and had a much better time of it, not having to deal with the unusual GoTo requirements of my new 6". There were about 60 people in attendance, students and locals, in PVCC's partially darkened parking lot. I gave laser pointer tours again, as needed, and showed off the Orion Nebula, the Pleiades, Jupiter and its moons, and brought attention to Ceres, an asteroid that was visible naked-eye at this very good, if not truly "dark" site. The atmosphere seemed quite steady, allowing us to see detail on the surface of Jupiter, and the glowing gas and dust cloud in M42, making for some interesting discussion among those seeing it for the first time.

Terri writes: William & I attended with only handouts at this event. William didn't have the next day off from work, so we wanted to be able to get home at a decent time to get him up for work the next morning at 4am. So, when 10pm came, we packed up and left, almost that fast.

I estimate over 100 people attended this event, not counting PAS Members. Jodi Sullens joined us. She attended a previous BMC event (Feb 27) with her scope. This time, she came as an observer. I enjoyed her company and our discussions about her telescope and astronomy.

The skies were amazingly clear. The public seemed to totally enjoy this event. The temperature was perfect, no jacket needed. At 6pm when William & I arrived,

it was 96 degrees and hot. Rodney was already there and so the three of us made a trip to the bathroom, and on the way back, we stopped in at the Security office so that I could meet the new Security person. Loretta Mondragon introduced me to Mike (I will miss Kevin, our previous Security dude). Mike and I chatted for a bit, and then William, Rodney and I went outside to set up the Handout table. Many thanks to Rodney for his help through the night and for offering me his chair when my back started hurting.

Many PAS "Who are we" pages were handed out. 5 people signed up to receive notices about upcoming public events. Many students were there from SCC and PVCC (both campuses).

A Guest that I invited, Brenda Hamblin & her daughter, Dione, attended. They were very amazed. They stayed until ISS went over at 8:50pm. We watched ISS. That was very nice. I haven't seen ISS flyover in a few years.

I walked around, at one point, when the public wasn't by the Handout table, and talked with all my Team members to find out what they were showing (for this review). Through Eric's scope, I saw Saturn. Eric and I counted 7 moons. Roger also counted 7 moons in his scope. Bob Ewing and students from his class were trying to photograph Jupiter and find out why we couldn't see all 4 of the Galilean Moons. They were using their phones. As they got involved in trying to capture Jupiter in their

PAS Social Jan 18

By Terri, Event Coordinator

A very big Thank you to Chris & Tiffany Johnson for hosting this year's PAS Social. And many thanks to those who competed in the newest event at the Social, which was the Social Cook Off. And thank you goes to all the attendees of this party, who made this party a very fun event to attend.

So, the event started with the set up of the tables for enjoying dinner. Ed, Bette and Bruce Wurst showed up just in time to set up 2 long tables and a few chairs for dinner. The main dining table was already there and Frank & Sam Insana brought a card table for added eating space. While everyone was arriving and adding their food to the collection in the kitchen, I was handing out White Dwarf Gift Exchange Pink Tickets and Door Prize Blue Tickets.

In attendance and bringing the following foods for the potluck were: Rick Cunningham with scalloped potatoes, William Finch had his Queso Dip and chips. Along with Terri Finch they provided Chocolate Peanut Butter Stuff, a Rotisserie Chicken and a tub of Potato Salad, Ed Wurst ordered 2 pizzas to be delivered to the Social around the same time he was arriving. Ora & Eric Steinberg brought Oatmeal Raisin Cookies. Mike Marron attended, but I didn't see what he brought for food. Sam & Frank Insana brought the Meatballs & Pasta in Marinara Sauce, Darlene Ahlefeld brought Sugar Cookies, Matt Kohl and his nephew Cole brought White Chili & Green Stuff, Darren Johnson brought 2 large pans of lasagna and several tubs of parfait, Jerry Belcher brought Hot Wings & Pizza, Chris & Tiffany made Redneck Sushi and Rodney Fong brought dessert. Terry Dancer and fiancée Laura came after the food. Steve Palmer showed up with pizza to share and stayed for only about 1.5 hours.

During dinner, there was a white board with the list of foods we were judging. Many thanks to Matt Kohl for helping me hang and set up the signs by the foods that were in the Cook Off. The rules for this competition were 1) Don't vote for the food you brought, 2) Don't vote for anything you didn't eat, and 3) Circle one winner from each category. The categories were: Main Dish, Side Dish and Desserts. Originally the Main & Side dishes were to be combined into one category, but one of the PAS members said she was bringing a prize for the Side Dish category, then due to her daughter

becoming ill that morning, she didn't make it to the event. Thus, the Side Dish competition didn't have a designated prize when it came time to award the prizes. And 2 of the dishes in the competition were also hers, and were not able to be voted on. So, as dinner concluded, we did the voting. In the Cook Off but not winning this year was Terri's Chocolate Peanut Butter Stuff, Cole's Green Stuff, Chris's Redneck Sushi and Darlene's Sugar Cookies. The winners of this year's Cook Off were: Main dish winner with 7 votes was the Pasta & Meatballs in Marinara Sauce made by Sam Insana. Sam was awarded the Astronaut Cookbook provided by PAS. The Side dish was the Queso Dip from Hell with 5 votes, made by William Finch who chose a door prize of Year in Space Desk Calendar. And the Dessert category had 7 votes for Ora Steinberg's Oatmeal Raisin Cookies and she was awarded the prize of a box of astronomy related snacks (of which I asked her to provide me a list of what was in her prize box: Here's the contents of my prize bag: Sun Chips, Star Wars mugs and cocoa mix, Cocoa Collection, Orbit gum, Starburst, Starlight mints, Angry Bird space fruit snacks, Space toothpaste, Milky Way bar) provided by Matt Kohl. The food, in general was all good, delicious! Thank you all for participating in the potluck!

Then we had the yearly Dart game. Many, many thanks to Ed and Bruce Wurst who set up and ran the dart game, and provided the darts and dart boards (the easels were brought by me). We did the darts on 4 boards this year for about 1.5 hours and Jerry Belcher provided 4 trophies. During the Dart game, there was a movie & lots of socializing indoors. The weather for this year's Dart game was so nice. We had a mini propane heater to huddle next to, but didn't need it as much as past year. Many thanks to all those who participated in the game. Participants were: Bruce Wurst, Ed Wurst, Sam Insana, Cole (nephew to Matt Kohl), Jacob Johnson (Chris's son), Jerry Belcher, Don Boyd, Bette Wurst, Rodney Fong, Ora Steinberg, Mike Marron, Frank Insana, Terri Finch, William Finch and Eric Steinberg. Part way through the game Jacob and Eric dropped from the game. There was a tie for 2nd place with a score of 6. So, we had a play off and the results were: Taking 4th place was Don Boyd with a score of 7 who got the 4th place trophy and, from the Door prize table, got the World Space Mu-

seum Cards. Taking 3rd Place was Rodney Fong with a score of 15, receiving the 3rd place trophy and a door prize of a Constellation puzzle. Taking 2nd place was Jerry Belcher with a score of 17 and a door prize of Hobbit Pez. First place was won by Bruce Wurst, who got a trophy and a dart related calendar provided by Jerry Belcher.

We then had the White Dwarf Gift Exchange game. It was really good this year, with 2 really great gift stealing, laughing, fun times during the game. Here is what everyone won during the game: Darlene won a Meteorite Dig Kit & a book "Backyard Night Sky," Jerry won the movie "Riddick" and a Saturn Puzzle, Terry Dancer won "Night Sky" observational tool kit, Terri won a book "50 ideas you really need to know - Universe" and a 2014 Year in Space Calendar, William won a gift certificate for Orion (which we will put to great use), Sam won a Constellation Mug which everyone was fighting over. Darren won a Laptop bag, a Calendar and an observing book, Tiffany won a 2014 Calendar and Dawn Mullan's Art, Cole won the "Dictionary of Astronomy" and an eyepiece case, Matt won a "Walking Dead" board game, Mike won a 2014 Calendar and the "Handy Space Astronomy Book," Jacob won "Mysteries of Space," Bette won an astronomy (means it has the ability to be Red as well as white) Flashlight and an eyepiece case. Bruce won an astronomy floor Mat with the Earth and words that say "You are here," and a singing / tweeting bird, and this is the other gift everyone fought over, Ed won an Einstein shirt and a book "Seeing Further."

Before we gave out the Door prizes and other awards for the evening, Bruce presented to Chris and Tiffany, a thank you card signed by all who attended this event. Then for the Main Door prizes, Mike Marron won a book "Utah Star Watch," Don Boyd won Star Trek Pez and Terri won Space Fact Cards. While clean up happened, Chris put on and provided 3D glasses to view "Star Trek - Into Darkness." Many thanks to everyone who provided door prizes. We had enough to go around and 2 extras this year. Many, many thanks. 2 door prizes were provided by Mike, and 3 were provided by President Bruce, and 2 were provided by Matt. We look forward to next year's event and your participation at it. ***

Antennas Review Apr 28

By Eric Steinberg

Our trip this month to Antennas had a bit of a different twist – we were accompanied by two delightful and knowledgeable international guests: Mike Brightmore who is chairman of the astronomy society in Cleethorpes, England and his son-in-law Pierre-Alain of Montreal. They brought their 80mm refractor, tracking mount, binoculars and camera and followed me out to the site. It was something of a gamble since the winds were really strong when we arrived, too strong to set up the 22". Thankfully, the winds decreased after sunset sufficiently to allow observing and stayed

that way until around 11pm when they came back redoubled ending my observing for the night. The skies themselves were some of the best I've seen with transparency a sparkling 10 and seeing (surprisingly) 7-8. Our guests, had never seen skies like that and were astounded. I don't know that I've ever seen two happier astronomers (other than perhaps me the first time I went there), and was really gratified to be able to share the experience with them.

As far as observation I was able to get 27 more Herschel 400 objects (73 to go) before the wind shut things down. We also

looked at Jupiter, Mars and Saturn – lots of clear detail in the wind lulls. Other objects were M51 (probably the best view of it I've seen in my scope), M104 and topping the evening, NGC 5139 – Omega Centauri, looking its usual spectacular self. Quote of the evening from Mike: "It's just wonderful to go to sleep with a head full of stars." I know just what he means.

Terri adds: Photos for this event are in the PAS Photo Gallery at this link: http://www.pasaz.org/forums/gallery.php?g2_itemId=14256. ***

Dynamite Montessori School May 2

By Terri, Event Coordinator

In attendance at this event was Eric Steinberg. Our contact at this school was Paula Fabian Leach.

Eric writes: On May 2, 2014, PAS member Eric Steinberg provided a single-scope star party for the Dynamite Montessori school in North Phoenix. Setup began about 6:15, during which the school provided a delicious home-cooked dinner; observ-

ing began with the moon around 7:30. As usual, attendees were amazed at the views through the 22" and expressed their appreciation. Other objects shown through the evening were Jupiter, Mars, M37, M3 and Saturn. There were a number of other activities for the group of perhaps 40 adults and children, from which they broke away through the evening to enjoy the views of the sky. The Montessori kids are a spirited

bunch, but overall very pleasant - other than a bit of an ongoing battle with lots of white LED flashlights, the evening was an enjoyable success, with Paula and Gene who run the school being extremely gracious throughout.

Paula writes: The event went very well! Eric and his scope are amazing! Thank you for connecting us. ***

Ward Traditional Academy May 2

Written by Terri, Event Coordinator

In attendance at this event was a fantastic Telescope Team of Sam Insana, Rick Cunningham, and Don Boyd. The contact at the school was Jason Blackstock, and this school is located in Tempe.

Sam writes: On May 2nd, PAS gave a star party at Ward middle school in Tempe. Don, Rick, and Sam attended. We showed sunspots and solar flares from 6 pm until 6:45 pm. A flock of about 100 Ibis's flew over near sunset, an unexpected treat. Jason, our school contact, is a 5th and 7th grade science teacher. He provided us with pizza and drinks and had a large popcorn machine to feed the crowd. At 7 pm we started showing the moon. Then at 7:30 pm we showed Jupiter. At 8 pm we were show-

ing Mars. At 8:30 pm there were a lot of oooh's and aaaah's when we showed Saturn. There was too much sky glow from the valley to show galaxies or nebulae or globular clusters, but we did show some double stars and open star clusters. Don showed us an Iridium flare. There were about 100 teachers, parents, and school kids in attendance. Several of the students were very sharp in their astronomy knowledge and one 7th grade student wanted info on our telescope workshops, PAS lectures and future star parties. I gave him our PAS website info. It was a nice evening with no wind and about 10% cloud cover.

Jason writes: Thank you for your email. The event was perfect. All three astrono-

mers were great and worked very well with the kids. We ended up having 80% of 5th grade attend the night, most with their parents who were all very impressed. Overall, I would estimate the total around 80 - 100 people. The night was a huge success! Thank you so much for your help with all the details and the organization. As soon as we have a check cut, I will make sure it gets to you. Please let me know if there are any other details that we need to work out as well.

I want to plan another event for next year, perhaps in early April, which we may expand to some more grades. Thank you for the great night! ***



A Glorious Gravitational Lens

By Dr. Ethan Siegel

As we look at the universe on larger and larger scales, from stars to galaxies to groups to the largest galaxy clusters, we become able to perceive objects that are significantly farther away. But as we consider these larger classes of objects, they don't merely emit increased amounts of light, but they *also* contain increased amounts of **mass**. Under the best of circumstances, these gravitational clumps can open up a window to the distant universe well beyond what any astronomer could hope to see otherwise.

The oldest style of telescope is the refractor, where light from an arbitrarily distant source is passed through a converging lens. The incoming light rays—initially spread over a large area—are brought together at a point on the opposite side of the lens, with light rays from significantly closer sources bent in characteristic ways as well. While the universe doesn't consist of large optical lenses, **mass itself** is capable of bending light in accord with Einstein's

theory of General Relativity, and acts as a *gravitational lens*!

The first prediction that real-life galaxy clusters would behave as such lenses came from Fritz Zwicky in 1937. These foreground masses would lead to multiple images and distorted arcs of the same lensed background object, all of which would be magnified as well. It wasn't until 1979, however, that this process was confirmed with the observation of the Twin Quasar: QSO 0957+561. Gravitational lensing requires a serendipitous alignment of a massive foreground galaxy cluster with a background galaxy (or cluster) in the right location to be seen by an observer at our location, but the universe is kind enough to provide us with many such examples of this good fortune, including one accessible to astrophotographers with 11" scopes and larger: Abell 2218.

Located in the Constellation of Draco at position (J2000): R.A. 16h 35m 54s, Dec. +66° 13' 00" (about 2° North of the star 18

Draconis), Abell 2218 is an extremely massive cluster of about 10,000 galaxies located 2 billion light years away, but it's *also* located quite close to the zenith for northern hemisphere observers, making it a great target for deep-sky astrophotography. Multiple images and sweeping arcs abound between magnitudes 17 and 20, and include galaxies at a variety of redshifts ranging from $z=0.7$ all the way up to $z=2.5$, with farther ones at even fainter magnitudes unveiled by Hubble. For those looking for an astronomical challenge this summer, take a shot at Abell 2218, a cluster responsible for perhaps the most glorious gravitational lens visible from Earth!

Learn about current efforts to study gravitational lensing using NASA facilities: <http://www.nasa.gov/press/2014/january/nasas-fermi-makes-first-gamma-ray-study-of-a-gravitational-lens/>

Kids can learn about gravity at NASA's Space Place: <http://spaceplace.nasa.gov/what-is-gravity/>

Black Mountain Campus Apr 21

(Continued from page 5)

apparently very successful, having over 600 people attending. Apparently our Star Tours star party was a big success. I know that the 6 of us who worked the DBG star party would like to do more DBG star parties in the future. Thank you Terri for letting the 6 of us, Alex, Kevin, Earl, Howard, Rick and Me do the job this year. Sam Insana PAS Star Tours Member

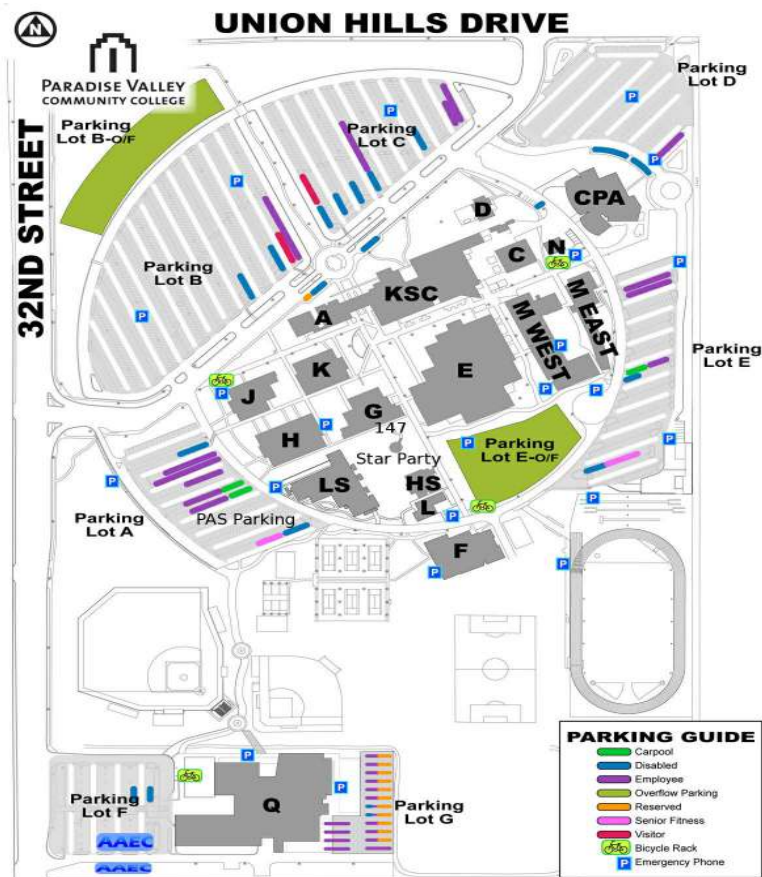
Amanda Ellis writes: Sam, Good morning! I hope the rest of your weekend went well. I wanted to thank you for a great job at Dinner on the Desert. There has been nothing but positive feedback about the telescope experience! I appreciate you taking time out of your busy schedule to come and be a part of the event. It has been a pleasure working with you and hope to work with you again in the future. Thank you! Amanda ***



Abell 2218. Image credit: NASA, ESA, and Johan Richard (Caltech). Acknowledgement: Davide de Martin & James Long (ESA/Hubble)

Map of PVCC Main Location

18401 N. 32nd Street | Phoenix, AZ 85032



Map of PVCC Black Mountain

34250 N. 60th Street | Scottsdale, AZ 85266



phone cameras, I had seen Jupiter and moved on to other scopes.

One of his students had a camera, and I spent some time chatting with her about what she was doing and suggesting other ways to do it, based on my past photo experience. She was photographing the night sky. I didn't get to see the photos but Bob and his class were chatting with the girl about it for quite some time.

Rodney's scope had a nice image of Jupiter and then Saturn. Jodi & I talked about her views of Jupiter through her scope. When I got to Howard's scope, I was amazed at the line up of the Moons. So, we had Jupiter and all 4 moons were to one side. But what was really cool was that the three moons closest to Jupiter were in a line, just like Orion's Belt stars. Then the 4th moon was further away from the planet. That was really awesome to see. I have never seen that configuration of the moons. Very awesome.

Some really cool objects that I was told were viewed but that I didn't see on this night, were: the Ghost of Jupiter, the Stargate Cluster, & Sombrero Galaxy.

Around 9pm, I wandered over to Mike to see what he was doing and Bob Senzer & Mike were keeping the attention of a group. They were talking about a bunch of different things having to do with meteorites, science, cosmology and more. Many thanks to Bob for joining the TEAM tonight.

Many thanks to my Telescope Team! They all did a fantastic job of the night and I really appreciate having them there. We look forward to the next several Black Mountain Campus Star Parties. Here are the dates in 2014: May 29, Sept 18, Oct 23, Nov 20, and Dec 11. We hope to see everyone at all these upcoming fun, public events!

Loretta writes: Yes I was so glad to see the turnout. Thanks so much for organizing this for us.

Kevin writes: Weather was great for the star party as the skies were extremely clear, there was minimal wind and the atmosphere appeared to be very stable. I had approximately 40 people look through my scope including a large group of Astronomy students. The students were required to view 10 objects and list the type of telescope, the magnification, and the sky coordinates of each object. I introduced a small group to nighttime viewing through Binoculars and they returned several times to reuse them, looking at the Pleiades, Orion's Nebula and other celestial objects.

Through my scope I was able to view Jupiter, Saturn and Mars, The Perseus Double Cluster, the Stargate, Arrow Cluster, #3 Cluster and some Messier objects including the Cigar galaxy and the Ghost of Jupiter. A personal highlight included seeing a moon transit across Jupiter through Eric's scope and also watching the ISS cross the sky. At one point, a student was looking at Mars and had the added treat of seeing a meteor pass in front of it through the scope. Jupiter was particularly good tonight and Eric's view of Mars was pretty spectacular as well.***

Don Boyd
PAStimes Editor
3039 W. Peoria Ave 102-188
Phoenix AZ 85029

To:

{MM:First Name} {MM:Last Name}
{MM:Address Line 1}
{MM:City} {MM:State} {MM:ZIP
Code}

2014 PAS GUEST SPEAKER LINE-UP

By Terri, Event Coordinator Events@pasaz.org

Do you have an idea for a Guest Speaker? Email me the details. Here's the scheduled Guest Speakers at PAS:

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

Sept 4: Members Night - Anyone Sign up to do a mini presentation.

Oct 2: Mark Murison: Topic: TBA

Nov 6: David Williams: Topic "Mars: From Mariner to Curiosity & Beyond: A History of Mars Exploration."

PAS is incorporated in the state of Arizona as a non-profit, scientific and educational organization. Our newsletter PAStimes is published monthly from September to May and distributed by US PS and the 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.

What's Up For July

By Rod Sutter, PAS Past President

Name	Date	Rise	Set
Mercury	07-15-14	04:04	18:57
Venus	07-15-14	03:34	17:45
Mars	07-15-14	12:49	00:02
Jupiter	07-15-14	06:03	20:01
Saturn	07-15-14	14:29	00:18
Uranus	07-15-14	23:35	12:14
Neptune	07-15-14	21:52	09:09
Pluto	07-15-14	18:38	04:53

All Times Arizona Time

July 15 2014

Sunrise: 05:29

Sunset: 19:38



New: June 27



Q1: July 5



Full: July 12



Q3: July 18