

# PAStimes

Phoenix Astronomical Society  
[www.pasaz.org](http://www.pasaz.org)

December 2012  
Volume 64 Issue 4

PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

## Galactic Jets & Cosmic Evolution PAS meeting December 6

At the December PAS meeting, we will have Mike Marron as the guest speaker. Mike has been a member of PAS for quite a while. Most of you know him as Meteorite Man. He does some really awesome Cosmology Lectures during the summer months. Mike provided the below info about himself and his upcoming presentation.

Mike writes: When I was young my father did lectures at the Grand Rapids Museum, planetarium, and astronomy club.

They discovered that he had a hill where it was dark. With the museum, The Rodger B. Chaffee Planetarium, the Grand Rapids Astronomical Association, we built the James C. Veen Observatory in Lowell Michigan. I grew up building my parents home with an observatory in the back at which twice a month we opened to the public. By the time I started high school, I saw the inadequacies of Big Bang theory. I wanted to stay within the laws of physics, without an exploding black hole, without inflation exceeding the speed of light, without an impossibly rapid



See "Galactic Jets" on page 7

## November PAS Meeting Review

By Terri, Event Coordinator

Many, many thanks to David Williams for a presentation well done! Very impressive, very good information, wonderful questions were created, and I believe the 59 people in attendance (not counting the Guest Speaker) were very thrilled with the subject and presentation! Many thanks also to everyone who brought snacks: Sam Inzana provided many Halloween Candies, Darlene Ahlefeld brought grapes, which I ate a bunch of, many types of cakes and a pumpkin pie were brought by Ed Wurst. Bruce Wurst brought the case of water, which was totally appreciated. And many thanks to those who donated to the PAS Snack Fund.

I arrived at the meeting room about 6:30pm. Several of us were early. David Williams got there around 7pm and set up his A/V. Jenny Weitz showed up a short while later to make sure the speaker was all set to go. Dave Hellman was also in attendance this night (we don't get to see much of him lately). When we attempted to open

the meeting at 7:30, a crowd joined us, so we delayed about 8 minutes to get everyone seats. Jenny had gone to other rooms and snagged seats for our meeting. It was a full house!

At the meeting, I collected for the Year in Space Calendars. There are currently 7 calendars on order. If we bring it up to 10 calendars ordered, I can return a \$1 to each of you who ordered early.

When everyone was settled in, we held the vote & then announcements were made. Please see article "Results of Nov 1 Voting Meeting" in this issue for more details of the vote. The first announcement was to congratulate our youngest PAS Member, Rachael Hervieux for making Honor Roll at Echo Mountain Elementary School, 5th Grade! Also, I announced the possibility of having a Music Jam at Mike's house on Dec 22. We are looking for musicians who would be interested in joining in. We need

audience members as well. This is being planned, tentatively. If we have enough musicians to make it worthwhile, this event will happen. We might even have a few telescopes set up for viewing, although the large Moon will be in the way all night long.

Then we turned the floor to David Williams from ASU. David has spoken to our club many times. Each time, he prepares an



See "Nov Meeting Review on page 3

## Phoenix Astronomical Society Contact Info

<u>President</u>	Bruce Wurst	480-269-3355	<a href="mailto:President@pasaz.org">President@pasaz.org</a>
<u>Past President / Librarian</u>	Rod Sutter	602-971-9129	<a href="mailto:PastPresident@pasaz.org">PastPresident@pasaz.org</a>
<u>Vice President / Events Coordinator</u>	Terri Finch	602-561-5398	<a href="mailto:VicePresident@pasaz.org">VicePresident@pasaz.org</a>
<u>Treasurer</u>	Mike Marron	480-488-3031	<a href="mailto:Treasurer@pasaz.org">Treasurer@pasaz.org</a>
<u>Newsletter Editor</u>	Don Boyd	480-963-7189	<a href="mailto:Editor@pasaz.org">Editor@pasaz.org</a>
<u>PAS Host</u>	John Pulis	623-570-5308	
<u>Webmaster</u>	Chris Johnson	602-456-2456	<a href="mailto:Webmaster@pasaz.org">Webmaster@pasaz.org</a>
<u>Rocketry Liaison</u>	Jerry Belcher	623-328-9290	<a href="http://ahpra.org/launches.html">http://ahpra.org/launches.html</a>

## December Upcoming Events

By Terri, Event Coordinator

Upcoming events list:  
<http://www.pasaz.org/forums/downloads.php?do=file&id=49>

If you can assist at any of these events, Please be sure to RSVP. Your telescope & help is greatly appreciated!

**Dec 4:** CTCA (Private) 7pm to 9pm. RSVP with Joe. PAStimes Star Tour Members only.

**Dec 6:** PAS Meeting 7pm to 10pm PVCC Main Campus LS-205. Bring a snack to share. Bring a friend! Everyone welcome!

~~**Dec 7:** Back up Date - Private School Event over by Metro Center Mall area from 6:30 to 8:30pm. RSVP is with Terri Events@pasaz.org. Pizza being provided.~~

**Dec 8:** Dark Sky Antenna's Star Party for PAS Members only. Event begins at sundown and goes to dawn. RSVP is with Eric for this event. Bring you own everything.

**Dec 8:** Private Star Party / Birthday Party in N. Scottsdale. RSVP's are closed for this event.

**Dec 9:** Free Telescope Workshop at Bookmans 3:30 to 5:30pm. Bookmans is at 19th Ave & Northern, N.W. Corner. We meet in the musical instrument section.

RSVP is required with Terri Events@pasaz.org. When you RSVP, mention the type of scope you are seeking assistance with so that we may match you up to a teacher who can help you. This is also a good class to attend to get ideas on what type of scope you should purchase.

**Dec 13:** PVCC Black Mountain Campus Public Star Party & Geminids Meteor Shower. Black Mountain campus is located at 60th Street and Carefree Hwy. RSVP is requested Events@pasaz.org. Event is from 7pm to 10pm. Awesome dark sky location! Bring everyone you know!

**Dec 14:** Estrella Observatory Dark Sky Star Party 5pm potluck, 7pm observing, PAS Members only. RSVP is with Yves for this event yves@livingsculpture.com. Location is near 40th Street & Shea.

**Dec 15:** Dark Sky Antenna's Star Party for PAS Members only. Event begins at sundown and goes to dawn. RSVP is with Eric for this event. Bring you own everything.

**Dec 18:** CTCA Back up date for Dec 4.

**Dec 20:** Free Telescope Workshop at PVCC main Campus - 32nd Street & Union Hills- 7pm to 10pm. RSVP is required with Terri Events@pasaz.org. When you RSVP - leave number in your party and type of

scope you are seeking help with. This is also a good class to attend to get ideas on what type of scope you should purchase. And this is a public Star Party!

**Dec 22:** Private PAS Members Music Jam at Mike's home in Carefree. Potluck at 5pm. Music begins at 7pm. If you are playing an instrument at this Jam, you must RSVP with Terri and mention the instrument you are playing so we can provide music for you. Deadline to RSVP to play an instrument is at the December PAS Meeting 12/6. Singers welcome.

**Dec 25:** Happy Holidays to everyone!

**Dec 30:** Free Telescope Workshop at Bookmans 3:30 to 5:30pm. Bookmans is at 19th Ave & Northern, N.W. Corner. We meet in the musical instrument section. RSVP is required with Terri Events@pasaz.org. When you RSVP, mention the type of scope you are seeking assistance with so that we may match you up to a teacher who can help you. This is also a good class to attend to get ideas on what type of scope you should purchase.

**Jan 1:** HAPPY NEW YEAR 2013!

**Jan 3:** PAS Meeting 7pm to 10pm PVCC Main Campus LS-205. Bring a snack to share. Bring a friend! Everyone welcome!§

## Revision to "Congrats from NSN"

By Terri, Event Coordinator

In the October 2012 issue of PAStimes Newsletter on page 6 is an article named "Congrats from NSN." I printed what I had received via email. PAS won a tool kit with Meteorites in it called the "Asteroid Action Pack.". Mike saw that PAS won, on line, but noticed that it was listed as PAS in Mass. There is no PAS in Mass. So, I contacted my favorite people at NSN and they sent us an apology about the situation. Here's what Vivian wrote: Hi Terri, That was my mistake! It is actually the Phoenix Astronomy Club that won the prize, which is indeed in Massachusetts. I was also confused to begin with. I've switched it now. I even looked back in my notes and it was their event that was chosen. I'm so sorry for the confusion! The prizes have already been sent but I will send you all a pack of meteorites and goodies as well. You all are always winners in our eyes! Vivian White

The package from NSN has been received and does indeed have meteorites in it which can be seen at upcoming school events.§

# November PAS Meeting Review

*Continued From page 1*

awesome presentation with plenty of info about upcoming and past space exploration missions. This presentation was about the mission to Vesta and Ceres (asteroids). David included many interesting animations in his presentation. He had a captive audience & many questions were asked at the end of his talk. Many thanks to David for this presentation as it was very informative. Also, I'd like to thank David for providing several posters of Vesta for the attendees to take home, and a special Dawn Mission pin. For the pin, we did a raffle. NO charge for

the tickets. PAS members got one ticket free. The drawing was held and Mike Maron won the pin. I suggested to him that he donate the pin to our youngest PAS member, Rachael Hervieux, and he did. Congratulations to Mike for winning the pin, and many thanks to Mike for passing it on to Rachael, who really, really wanted to win it. And many thanks to David for providing it for the raffle. David said that only the people working on the Dawn mission got one of those special pins. Now Rachael "Rockie" can feel like one of the mission people.

After the presentation, David had provided posters for which we offered that the PAS Members may take one per family. I did hear a few people say they took two. The remaining posters will be donated to schools over the next school season. I was thinking of giving them to the Teachers who ask us to do star parties at their schools.

The attendance at this meeting was awesome. I'd like to say "welcome" to all the new PAS members who joined PAS at this meeting. §

## Results of Nov 1 Voting Meeting

By Terri, Event Coordinator

Here's the result of the voting at this meeting. All proxy votes received by me were "yes" for all three items. Below is the review of the three items and the results of the voting during the Nov 1 PAS meeting.

1) Sky and Telescope Magazine used to be offered through the club. Over the years, we stopped this because it is cheaper for a single person to buy the magazine straight from S&T for 3 years, rather than 1 year renewal through PAS. Unanimous votes were "Yes" to remove Sky & Telescope from the PAS Bylaws.

2) Originally, when it was more convenient, years ago, it was required that all

checks written by the PAS Treasurer, were to be signed by the Treasurer and President to keep an eye on the spending. Since PAS members are more scattered around Phoenix, Chandler, New River, Surprise, it is more difficult to have the Treasurer and either President or Vice President sign all the checks, plus there isn't room to have a second signature on the checks at this time. So, it was voted Unanimously to cancel this provision in the By-Laws. And a stipulation will be added that states that an officer can not write and sign a check for themselves (not in those words).

3) In the past, checks were the preferred way to disburse funds. Now, credit

cards, cash and other legal means of making payments should be allowed. The original Bylaws said ONLY checks can be used for disbursement of funds. We voted, unanimously to make it that disbursement of funds for any reason, can be paid for by any legal means.

There were just some technicalities within the PAS Bylaws that were outdated with the current way PAS is functioning. It is good to update the Bylaws from time to time. Thank you all for attending and voting on these issues. And thanks to all who put in their Proxy votes so that PAS has everyone's input. §

## Planetary Nebula (PNe) program completed

By Terri, Event Coordinator

Congratulations to Bob Christ, PAS Member for completing the Planetary Nebula Club!

<http://www.astroleague.org/observing.html>

Bob writes: Hi Kiddo, I have completed another Astronomical League award program (Planetary Nebula Club). It has taken me almost 2.5 years to complete this program.. This one was far more difficult than the Herschel 400 .... nasty!

Ted Forte, of the Astronomical League, writes: Bob will be advanced award number 54 dated October 31, 2012

Bob writes a review of his 2.5 year adventures completing this goal:

I have a new "Heidelberg Scar." Beginning around 1825, upper-class Austrian and German students attending university proudly sported facial scars that resulted

from duels received during fencing classes. Each scar was a manifestation of their manliness: their macho.

In April of 2010 I received the Herschel 400 award administered by the Astronomical League (AL), an organization in which PAS is a member. That program, or "Club," as the AL designates it, was difficult and I claimed it was my Heidelberg Scar, my badge of accomplishment, my macho, to complete the intensive visual viewing program.

Enter the AL's Planetary Nebula Club that I have just completed, wherein I logging 110 planetary nebula identified by the AL to be viewed visually (imaging club also available). Planetary nebulae are the result of stars whose fusion reactions no longer occur and matter is cast off that becomes ionized, much like a fluorescent bulb. The resulting nebulosity can take

many forms and can really interesting to view through the telescope ... "IF" you can see it.

And that's the rub, a small portion of the 110 program targets are "cake walks," easy to find and see targets. The Dumbbell Nebula, M57, is a prime example. At the opposite end of the spectrum there is Pease 1, a planetary nebula of low single-digit arcsecond angular size that resides within the confine of M15, the globular cluster in Pegasus. The program allows for DNF's (Did Not Find), but only when multiple attempts have been made and sketches of the FOV's contents are submitted. Pease 1 was 1 of 2 objects that I had to DNF, and, not to be deterred, I am committed to bag Pease 1 in the future by borrowing time on someone's larger glass when seeing conditions are conducive.

See P(PNe) program completed page 4

## (PNe) program completed

*Continued from page 3*

I actually started and suspended the program early on. I was working on the program at Chris Johnson's observatory and was having trouble with a particular target. Chris imaged that target and the resulting image barely showed the object. I was disheartening and I put the program aside for a bit. Damn, if a camera has a hard time catching it, how can an eye?

The OIII and UHC narrowband filters are a must to identify planetary nebula. A

technique called "blinking" is essential to use in the quest – by moving the filter, positioned between the eye and eyepiece, in and out of the FOV to unveil a faint planetary presence by looking for a small change in the target area. This I knew.

I also enjoyed the confidence of knowing I was viewing the correct location in the sky because my scope supports Precise Go-To, but that was not enough. I typically view in the 65X – 157X range, and, after

doing homework about how to view planetaries, I learned I needed to go up in power, significantly up: 300x was more the norm than not. I needed to re-train my "viewing brain," but this was the magic I needed. Re-energized I was able to complete the program.

Like Heidelberg Scar aficionados, if one scar was good, they figured two would be really good. I now sport two scars, and I'm feeling good about it. §

## PAS Music Jam Dec 22

By Terri, Event Coordinator & Private Music Instructor

Private Party, potluck is at 5pm. Sign up on [PerfectPotluck.com](http://PerfectPotluck.com) with coordinators name "Finch" and password of "20121222." PAS Members who play musical instruments are invited to Mike's home in Carefree for a Music Jam. If you plan to attend and you are playing music with us, please RSVP your attendance with Terri and mention the instrument(s) you plan to play that night. It is suggested you

RSVP prior to the Dec PAS Meeting so that the music can be copied and provided to you at that meeting for review before the Jam. Singers are welcome and a few audience members will be nice to have. We are making a list of songs we would like to enjoy playing. Christmas songs, maybe a Jewish song, some sing-alongs, help us create a list. If you wish to attend to listen, please remember it is for PAS Members

only, so no additional guests are allowed to this event. Maybe next time we do it, we can include others. Ed, Bruce & Terri may invite a more advanced music student or two. And Sam is in charge of this event. RSVP's go to Terri Events@pasaz.org so that the music can be provided to you. Many thanks to Mike for hosting this event! See you there! §

## PAS Annual Swap Meet

By Terri, Event Coordinator

Every December PAS Meeting, PAS hosts a Swap Meet. Bring your Astronomy items to the swap meet with a piece of paper for the Silent Auction. On it, describe the item for sale, and put your opening bid. Please, one item per piece of paper. Place paper and item on a table around the room. Prior to the meeting & after the meeting closes, silent bidding will happen. The bidder places their bid on the page, with initials or first name and last initial. Highest bid

wins the item. Cash is preferred for these transactions. Everyone is welcome to buy, sell and trade at the PAS Swap Meet. You don't have to be a PAS Member to be involved. Good luck with the sales!

Here's a taste of some of the items you might see at the PAS Swap Meet this year: Seller R: All Celestron accessories for sale, 30 days old, all mint condition, all 1.25, I switched to 2" system: 1 - 40mm Plossi -

\$30 Used Twice, 2 - Model 93425 X-CEel LX 18mm multicoated - \$60 each Never Used, 1 - Stereo Bino Model 93691, eyepieces above - \$175 Never Used, 1 - Star Diagonal 1.25 - \$30 Used Twice 1 - 5 X 70 finder scope and mount for Celestron CPC 1100 \$40. Meade Series 5000 Enhanced Diagonal 2" w/1.25 adapter. As new \$99.00 sells for \$149 at B&H. Will listen to offers for all or part. §

## PAS Photo Gallery

By Terri, Event Coordinator

<http://www.pasaz.org/forums/gallery.php>

Over the last few weeks, I have been trying to get the photos of past events into the PAS Photo Gallery. You will see some new albums in there. Please, enjoy. I will attempt to get more photos posted over the next months, and get caught up, eventually. Thank you for your patience. §

## John Pulis's 90th Birthday Party Sept 15

by Bob Senzer

Mike was very generous, as usual, in letting us use his house for the event. Interesting conversations, good food, socializing, etc. Birthday celebrations for John [90 years -WOW] and Mike. Well, Mike's getting close to 90 as well, but who am I to speak about that :). Another day at Cowtrack Ranch in the heart of the Virgo Supercluster. §

# Lone Mountain School Star Party Oct 5

By Terri, Event Coordinator

Throughout the day, several PAS members talked about, and checked the weather that didn't look very promising for this event. Eventually, it was time to pack and go. Driving over to the school, the clouds began to get thicker, but we drove over. In attendance was Mike Marron with his Meteorites, William & Terri Finch, Don Boyd, Tim Jones, Bob Christ, Eric Steinberg and Earl DeLong (new PAS member).

We set up and then walked to the office of the school to enjoy pizza, cookies, a veggie tray. It was delicious and needed. Bob & Tim had gotten there much earlier than the rest of us, and were done eating by the time we arrived in the office. They went back out to the site and set up their scopes. Eric, William and I walked over to the office to eat dinner while Don watched the scopes. The distance from the scopes to the office was quite a walk, but no one was there, that early. I brought my pizza and cookies back to my table to eat and set up.

The star party was scheduled to start, according to what Colleen Neiman (my contact at the school) and I set up, at 6:30, however, I was informed no one was due until 6:45. When they were due, a crowd came all at once. It wasn't dark enough to show much at that time, so most of the scopes worked on alignment and we talked with the crowd. Then, it got darker, and the evening began to flourish. I'd say we had at least 250 in attendance. They seemed to love it. We did have to fight with the clouds. At first it cleared up, and I had my scope on Albireo because it was the easiest to find at

that moment. I heard Tim talking about the Andromeda Galaxy, and Bob had the Ring Nebula. Eric had, for a while, M52. The clouds came around 8pm and stuck around for awhile, so I did a bunch of Q & A with the kids. I didn't give away that many prizes. The kids didn't figure out what I was doing until later in the evening. If they had, I would have had a crowd at my table. There was a scope setting up next to us, recently bought, and he didn't know what he was doing. When the crowd died down, William offered help. They didn't resolve it, so we expect to see that couple with their telescope at one of our telescope workshops. Don tried to help them as well. There was another scope set up a little further from us, but it was a simple set up, so they didn't need our help. The evening went very well. Even with the clouds, we made it work. We considered shutting down about 8:30 when the clouds had taken over and the crowd had left, but I asked one of the teachers and she said that they were expecting a few more to show up at 8:45, so we hung around. It cleared a bit, so we could show stuff. I put my scope on the Ring Nebula, and discovered how terrible it looked due to the clouds reflecting city lights. So then I moved to the Perseus Double cluster, where my scope stayed until we ended the evening. We packed up and were headed home about 45 minutes after ending the viewing session. Temperature wise, it was good. The clouds weren't so great, but we worked around them. I wish to thank Dreamma Emmett & Colleen Neiman for having us. Many

thanks to the Telescope Team. I also wish to thank Earl for attending. He didn't have a scope but he walked around, for me, asking what each scope was on, and delivered handouts and did a little Q & A with the kids. The teachers and parents of the students who were given the prizes seemed to really enjoy the fact that we were giving little prizes for correct answers. We are setting up another event with them possibly for the Spring of 2014. Bob writes: The star show held at Lone Mountain Elementary School was a rousing success. For most of the evening I had a line of 20-25 people comprised of students, parents, and family members most patiently waiting to look through the scope. The sky was marginally cooperative and occasionally cleared beautifully to better reveal the targets we were presenting. One family that attended early had to leave, and actually came back and stayed until breakdown. One of the teachers was so impressed with the event that she was making plans to set up the event for next year and was questioning how best to promote the event with pictures. It was a rewarding evening.

I received from my contact at this school, Colleen Neiman, the following collection of survey answers from the attendees, or maybe the teachers at this school. Take a moment to read them, as some suggestions are totally silly, but others are very interesting ideas we might want to incorporate. Here's the link: <http://www.pasaz.org/forums/downloads.php?do=file&id=197>

# PVCC Black Mountain Oct 18

By Terri, Event Coordinator and Copy Editor

The evening began with several PAS Members gathering at Bad Donkey Cafe right there on the PVCC Black Mountain Campus. Dinner was delicious! After dinner, we all moved to the star party location to set up our telescopes.

In attendance, and with many thanks for their help, we had: Darlene Ahlefeld, William & Terri Finch, Eric & Ora Steinberg, Sam Insana, Bob Ewings with a PVCC scope, Mike Marron, Don Boyd, Rocky & Mandy Hervieux, and Jenny Weitz with a PVCC scope. Attendance from

the public was sparse. I'd guess about 40. Weather wise, the event went well with the clouds getting in the way, here and there, but leaving holes to find cool objects in.

At my scope, Doctor Who, several new objects were viewed. I did show Jupiter, once it was up, but also saw the Ring Nebula, a couple unidentified double stars, Gamma Andromeda (thanks to Sam for sharing the location of this object), Andromeda Galaxy, which for the past 2 star parties, I wasn't able to locate, Albireo, and the Moon was awesome and a perfect crescent

size for a public event. Darlene was awesome. She found different unidentified objects to view and entertained all of us with her funny comments about the objects.

Set up next to me, as it seemed we were spread farther apart than usual, I had Don, Darlene and Rockie. Further down the parking lot was Sam, Bob, Jenny, and Eric. Mike was on the other side of our vehicle which was set up to block the light of cars coming from the East parking lot.

*See PVCC Black Mountain on Page 6*

# All Arizona Star Party (ASSP) Oct 13

By Bob Christ, Eric Steinberg

**Bob Christ** writes: The AASP is a yearly event hosted by the East Valley Astronomy Club (EVAC) wherein amateur astronomers from around the state, and beyond, gather to enjoy fellowship and view from a dark sky site located approximately 100 miles west of Phoenix. Typically the event is held a sufficient amount of time following monsoon season to deliver a great sky condition, but this year was a challenge because untypical rains prior to the event threatened to make access to the site difficult or even "wash out" the event.

Fortunately the rains abated early enough to allow access to the site and even clean out the air a bit. In fact, when traveling on the access road to the site, the rear of the van usually becomes covered in a layer of very fine dirt, looking very much like a forensic fingerprint dusting. Not so this year - my prospects for a great night of viewing were buoyed.

Upon approaching the Hovatter airstrip site where the event is held, I noticed that EVAC's large hospitality canopy was conspicuously not visible. Turns-out, high winds had carried it airborne and rendered it unusable. EVAV hosts a \$5 dinner on Saturday evening typically comprised of chile (sometimes spaghetti), a salad, roll, dessert, and soft beverage. Yum. I try to observe the night before also (Friday), but was unable to do so this year so I did not bring my normal supply of victuals. When I parked at my final destination it was hinted that EVAC might not be serving dinner because of the wind damage. An excellent sky would not ameliorate the hunger pangs

I'd be sure to experience and thankfully the dinner was served in fine fashion. EVAC also hosts a raffle and the range of astronomy-related prizes included: books, anti-vibration pads, binoculars, and even a scope this year.

My focus that evening was to log Pease 1, a planetary nebula located within the confines of the globular cluster M15, a target in my Planetary Nebula Club observing award program hosted by the Astronomical League. It's a difficult object to nail down so I entreated my fellow SAC member, AJ Crayon, to view through his 14.5" scope and he was most eager to help. AJ was cooperative: the sky was not. The expected transparency never developed and the day-long wind never fully quieted so the seeing was soft. I have tried to "bag" this object over the last couple of years so I may have to DNF (did not find) it. I was able to log several other remaining program targets, so from that perspective the night overall was a success.

Televue's western region sales representative was outfitted with a wide variety of oculars for testing, and the price was right: leave your driver's license with him and retrieve it when the loaned item was returned.

The AASP is a grand event that can draw hundreds of folks of common ilk together, and I believe Eric Steinberg and I were the sole PAS members in attendance? Perhaps next year PAS will be better represented.

**Eric Steinberg** writes: I arrived at the Hovatter airstrip around 5 pm on October 13th, and though it was windy, it was not kicking up any dust. As long as the cars stayed under 10 mph, they weren't too bad either though it was noisy overnight with at least 50 vehicles there for the AASP. I set up right along the center of the airstrip not far from Steve Dodder and his extraordinary Binocular Chair. For those unfamiliar, you sit inside it and view through twin 8" reflectors, slewing the scope with a hand controller. Very cool.

The wind continued, gradually lessening through the evening and night. Transparency was decent though not perfect and seeing was surprisingly good. There was no cloud cover and temperatures only dipped to the low 60's.

Sunday was hot during the day, with a moderate breeze developing in the afternoon. Sunday night was clear with light breeze and decent transparency and seeing. About eight of us stayed, mostly from SAC; My wife joined me for Sunday and we actually spent some time just using recliners to watch the stunning sky the old-fashioned way. Through the two nights we observed a bunch of new objects including the Cat Eye Nebula (NGC6543), NGC40, 103, 129, 188, 225, 381, 404, 405, 436, 7000, 7009 and more I didn't record very well. Lots of familiar items too, including spectacular views of M31. In fact, I brought my wide-field 20mm eyepiece over to Steve Dodder's 20" home-built Dob and had people lining up for M31 and a few other objects. Overall a pretty good couple of days. §

## PVCC Black Mountain Oct 18

*Continued From page 5*

The temperature was comfortable until about 9pm when it dropped and I had to find a jacket. We were there until 9:40, then we packed up. Even with no public there, we were hanging out because several folk mentioned they were going to go to dinner and then return, but I never saw them return.

The event was a great success. Many thanks to Kevin, the PVCC Security for turning off the lights in the parking lot for the event. Many thanks to Loretta Mondragon for assisting in setting up this event, and to Jenny Weitz for being the Liaison between PAS and PVCC. We hope to have a super turnout of scopes and public at the

next event at this location, which will be on Nov 15. See you there!

**Darlene** writes: WOW! Great star party, in spite of candy canes coming in from 60th street (ask me, I'm not really nuts) and ding-a-lings with headlights trying to blind us.

The crescent moon got sharper as the sky got darker till the whole disc was visible and brilliant, I'm still moon-struck. Trying to find Andromeda, I stumbled over the Pleiades (averted vision still a new sensation). How do I figure out the seven brightest stars??? I still can't stop with 11 or 13....

There came Jupiter, low but got higher, all four moons in a line. I'm in love with Capella, in spite of someone trying to burst my bubble with technology. She was still sparkling the higher she got. Then there was the double star in the big dipper handle and Cassiopeia, so easy to find now. Seems Andromeda is off restriction, Terri found her. Almost got cool enough for a jacket by the time we started shutting down. I met several people that were interested, and amazed, at what I was seeing through my 4.5 Dobsonian, Yvaine. See y'all next time, Darlene and Yvaine. p.s. really gotta get a rigel! §

# ASU West Star Party Oct 17

By Terri, Event Coordinator

Even though Tim & Bob didn't know this, I was in competition to beat them to the ASU West location on this evening. I did. It was fun to race them there, without them knowing. So, the evening started with William & Terri Finch and Bob Christ and Tim Jones arriving before anyone else. We were there just before sundown. Then Jeremy Dietrich showed up with his scope and a friend. While I was setting up, Tim and Bob went over to Jeremy and helped him set up. Earl DeLong was next to show up, without a scope but a very helpful volunteer. Through the night, he offered copies of the Who Are We page with the October star chart on the back to everyone who would take one. Thank you, Earl, for your assistance with that. Then Eric Steinberg showed up with his huge scope. Don Boyd was there and Gary Schremser was there with his new 10" dob. During the evening, Don assisted Gary in finding objects. Paul Schmidtke of ASU West brought out a 6" dob. We had 8 scopes in attendance.

The night progressed. At first, before dark, the sky had a lot of cloud cover to the West and South West. I was able to capture

the Moon, which was setting as a crescent over one of the ASU West buildings. Tim had Mars for a while, also over that same building. Once those objects set, it was a "find a hole in the clouds and pick an "object to show" night. We didn't have a huge turnout at first. I showed the Moon until it left the sky, then moved to Perseus Double Cluster. When finding the Double Cluster, I estimated where it was in the cloudy mess of a sky, and I just got lucky. Later in the evening I tried to find Hercules Globular Cluster, but couldn't. Don looked for it, as well, and said it wasn't worth showing. My 2nd to last object of the night was the Ring Nebula, which wasn't spectacular but nice. And then after the public left, I put the scope on Jupiter for a while, to close out the night. Viewing of Jupiter was mushy, as were most objects this night.

Eric was saying that the star clusters in his scope were very clear. He chose objects that were higher in the sky and he did have some great views of the ET Cluster. Don found Neptune during the night. He is getting quick at finding Neptune. I would

guess we had an attendance of about 100 people from the public.

A very interesting person showed up about 1/2 way through the event. "The" Thomas Bopp was in attendance and stayed to view through the scopes until well after the event had ended. We had a wonderful visit with him. Meeting him definitely made my night! I've asked him to do a presentation for PAS. It will be more than a year before he does, but I can't wait until we do. The evening went well, considering the clouds and the public seemed to enjoy the night. Many thanks to everyone from PAS who attended with or without a scope. Your assistance was greatly appreciated. The next ASU West event is currently scheduled for April 18th. Watch the calendar incase we move it to the 17th, like we did for this event. There will be a 1st Quarter Moon that night, which will give some of us, who can't find objects easily or who are new to attending public events - like Jeremy & Gary at this event, something to show. Many thanks to Paul for inviting us to this event. There were no other members of other clubs in attendance this time. See you there!§

## Galactic Jets & Cosmic Evolution

*Continued From Page 1*

expansion of the space time volume. The entire universe cannot have been made by an explosion at a single point in space and time. These jury rigged concepts are patently false. When I figured out how jets are made by galaxies, I realized these particle beams write the histories that happened at their galactic cores. In my lecture Galactic Jets and Cosmic Evolution I teach how these jets are made and how to interpret them. A long and detailed history of the universe awaits those who learn the language of these magnetotails.§

## Desert Botanical Gardens - Adults Oct 19

By Terri, Event Coordinator

William & Terri Finch drove to Bruce Wurst's house to carpool, or in this case, Van pool down to DBG to do this event. It was a muggy, warm evening. We arrived and the 2 electric carts came to pick us up to take us to the location we were to set up our telescopes by the Boojum Tree. We got our scopes set up and William went off to the presentation room and did his introduction to telescopes power point presentation. Since we were there so early, we enjoyed a little sit-down and chat with the lady working the Wine stand for this event. I had re-arranged the chairs, so the people attending wouldn't feel so crowded. Then the group came out to see us about 7:15pm. I began affect their night vision, but that

didn't stop them from having some. I gave them about 10 minutes to adjust their eyes, and then, while they were seated, I gave them a tour of the night sky. That took about 10 minutes, with short introductions about ourselves, too, and then they came over to see my red filtered Moon. Bruce was also on the Moon, until the sky became a little darker. Then we went through a bunch of different objects. We found Andromeda. In Bruce's scope he could only get M31, but I also got the companion galaxy in my scope. We showed Hercules Globular Cluster, Alberio, Gamma Andromeda, Ring Nebula, and a few others. It became 9pm and time to pack up, but some of the folk hung around, so I had turned off

my scope to save the battery, while William and Bruce found Jupiter. It was becoming 9:30 when we became concerned the electric cart drivers forgot about us so I called, and they showed up about 10 minutes later, and took us back to our cars. The night was fun. Lots of great questions about Astronomy and about 24 really nice people in the group. 2 helpers were there to keep the group in hand and keep those who didn't belong in the group, out of our area. Except for the city sky glow, the night was very nice. Good observing, good conversation and a great time for all. I look forward to the next event in the Spring. §

# It Takes More Than Warm Porridge to Make a Goldilocks Zone

By Diane K. Fisher



The “Goldilocks Zone” describes the region of a solar system that is just the right distance from the star to make a cozy, comfy home for a life-supporting planet. It is a region that keeps the planet warm enough to have a liquid ocean, but not so warm that the ocean boils off into space. Obviously, Earth orbits the Sun in our solar system’s “Goldilocks Zone.”

But there are other conditions besides temperature that make our part of the solar system comfortable for life. Using infrared data from the Spitzer Space Telescope, along with theoretical models and archival observations, Rebecca Martin, a NASA Sagan Fellow from the University of Colorado in Boulder, and astronomer Mario Livio of the Space Telescope Science Institute in Baltimore, Maryland, have published a new study suggesting that our solar system and our place in it is special in at least one other way.

This fortunate “just right” condition involves Jupiter and its effect on the asteroid belt.

Many other solar systems discovered in the past decade have giant gas planets in very tight orbits around their stars. Only 19 out of 520 solar systems studied have Jupiter-like planets in orbits beyond what is known as the “snow line”—the distance from the star at which it is cool enough for water (and ammonia and methane) to condense into ice. Scientists believe our Jupiter formed a bit farther away from the Sun than it is now. Although the giant planet has moved a little closer to the Sun, it is still beyond the snow line.

So why do we care where Jupiter hangs out? Well, the gravity of Jupiter, with its mass of 318 Earths, has a profound effect on everything in its region, including the asteroid belt. The asteroid belt is a region between Mars and Jupiter where millions of mostly rocky objects (some water-bearing) orbit. They range in size from dwarf planet Ceres at more than 600 miles in diameter to grains of dust. In the early solar system, asteroids (along with comets) could have been partly responsible for delivering water to fill the ocean of a young Earth. They could have also brought organic molecules to Earth, from which life eventually evolved.

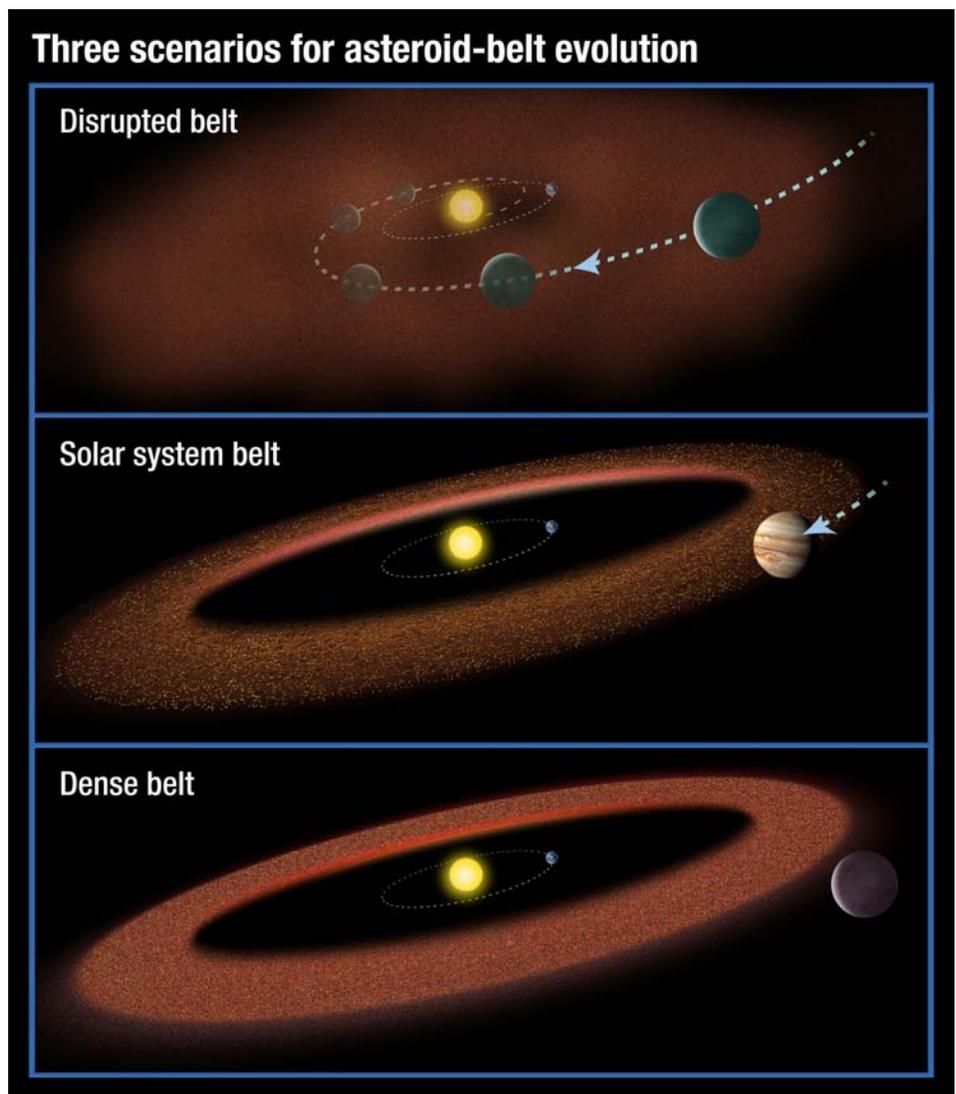
Jupiter’s gravity keeps the asteroids pretty much in their place in the asteroid belt, and doesn’t let them accrete to form another planet. If Jupiter had moved inward through the asteroid belt toward the Sun, it would have scattered the asteroids in all directions before Earth had time to form. And no asteroid belt means no impacts on Earth, no water delivery, and maybe no life-starting molecules either. Asteroids may have also delivered such useful metals as gold, platinum, and iron to Earth’s crust.

But, if Jupiter had not migrated inward at all since it formed far away from the Sun, the asteroid belt would be totally undisturbed and would be a lot more dense with asteroids than it is now. In that case,

Earth would have been blasted with a lot more asteroid impacts, and life may have never had a chance to take root.

The infrared data from the Spitzer Space Telescope contributes in unexpected ways in revealing and supporting new ideas and theories about our universe. Read more about this study and other Spitzer contributions at [spitzer.caltech.edu](http://spitzer.caltech.edu). Kids can learn about infrared light and enjoy solving Spitzer image puzzles at [spaceplace.nasa.gov/spitzer-slyder](http://spaceplace.nasa.gov/spitzer-slyder).

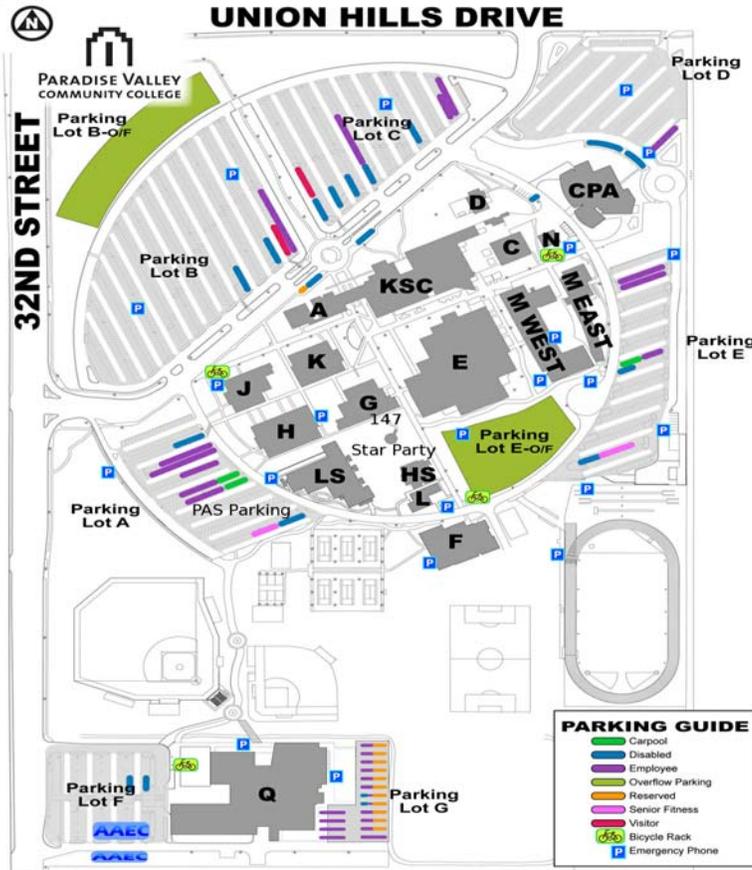
This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration. §



Our solar system is represented by the middle scenario, where the gas giant planet has migrated inward, but still remains beyond the asteroid belt.

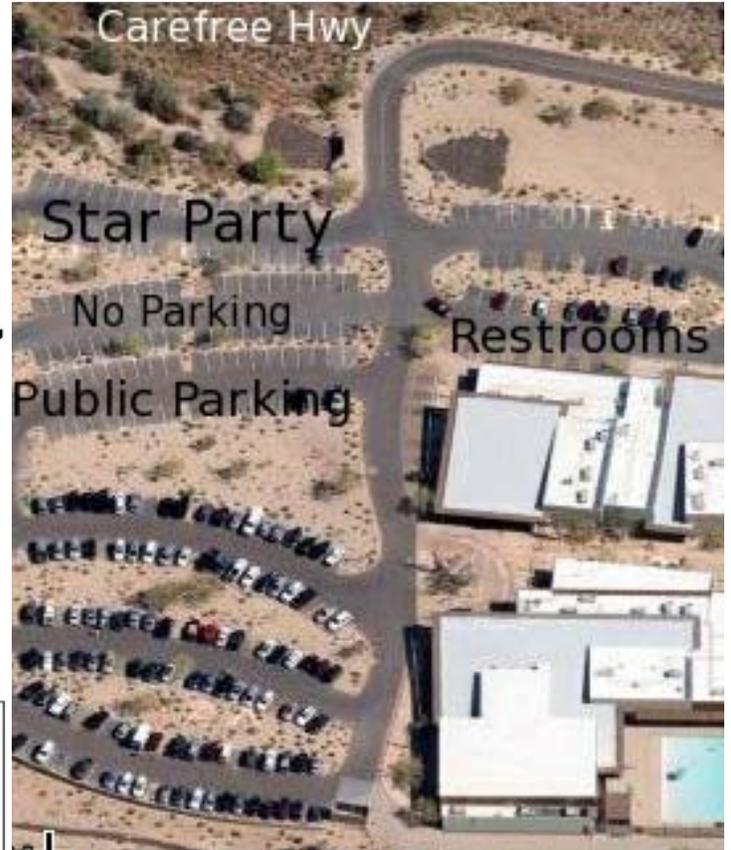
## Map of PVCC Main Location

18401 N. 32nd Street | Phoenix, AZ 85032



## Map of PVCC Black Mountain

34250 N. 60th Street | Scottsdale, AZ 85266



See page 2 for more details

## December 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 CTCA 6:30pm (Private)	5	6 PAS Meeting 7pm	7	8 Antenna's & Private Scottsdale Party
9 Bookman's Tele- scope Workshop 3:30pm	10	11	12	13 PVCC Black Mountain Star Party 7pm	14 Estrella Star Party 5pm (Private)	15 Antenna's Dark Sky Star Party (Private)
16	17	18 CTCA Back up (Private)	19	20 PVCC Telescope Workshop 7pm	21	22 PAS Music Jam at Mike's 5pm (Private)
23	24	25 Christmas Day	26 Boxing Day	27	28	29
30 Bookman's Tele- scope Workshop 3:30pm	31					

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

To:

## Meeting of the Minds Nov 29

7pm to 10pm PVCC Main Rm LS-205

By Terri, Event Coordinator

We are having this meeting. So, RSVP with Terri any topics you would like to present at this meeting. We will be doing Show and Tell of your experiences at the Solar Eclipse of May 20 and the Venus Transit of June 5. We will also be having other topics. It's a party so bring a snack to share. Let me know you need time for your presentation and how long [Events@pasaz.org](mailto:Events@pasaz.org). Thanks, and see you there!§

## 2013 PAS GUEST SPEAKER LINE-UP

By Terri, Event Coordinator [Events@pasaz.org](mailto:Events@pasaz.org)

Jan 3: James Ashley "Meteorites on Mars"

Feb 7: Thomas McCarthy "Things that go bump into the Earth"

Mar 7: Melissa Morris "Which came first? The Chondrule or the Planet?" §

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](http://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 December

By Rod Sutter, PAS Past President

Name	Date	Rise	Set
Mercury	12-15-12	06:48	14:23
Venus	12-15-12	06:03	14:32
Mars	12-15-12	09:53	17:55
<b>Jupiter</b>	<b>12-15-12</b>	<b>14:32</b>	<b>06:33</b>
Saturn	12-15-12	03:31	13:31
<b>Uranus</b>	<b>12-15-12</b>	<b>11:12</b>	<b>00:32</b>
<b>Neptune</b>	<b>12-15-12</b>	<b>11:12</b>	<b>21:17</b>
Pluto	12-15-12	08:24	16:57

All Times Arizona Time

Planets in bold are visible during evening hours.

December 15 2012

**Sunrise: 07:21**

**Sunset: 17:26**

**Full: November 28**

**Q3: December 6**

**New: December 13**

**Q1: December 20**

