

PAStimes

Phoenix Astronomical Society
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PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Members' Night at September PAS Meeting

By Terri, Event Coordinator

The September PAS meeting will feature several PAS members who wish to share an astronomy-related topic in a short 10-15 minute presentation. The deadline to

sign up will be August 31 at noon. The topics, and the members who are presenting them, will be announced at the meeting, and possibly through email prior to the meeting. We shall see you in the library of Paradise

Valley Community College for this awesome night. Meet at 7pm, and we will begin the meeting at 7:30. Bring a snack to share; water will be provided by PAS. Bring a friend!§

Special PAS Meeting of May 19 in Review

By Terri, Event Coordinator

We had a fantastic guest speaker at this meeting! Robert Piccioni came to us with his wife Joan and he did a presentation entitled "Einstein for Everyone." It was humorous, informative, entertaining, and just awesome! At the meeting, Robert also sold his books and DVD's of his presentations. The attending PAS members mentioned they would like to see Robert come back and do another presentation for us in the near future. For those who missed the presentation, podcasts are available at Robert's site www.GuideToTheCosmos.com. Many, many thanks to Robert, both for the great presentation and also for how wonderful it was to work with him and Joan in getting this meeting set up. Thank you both!

The meeting opened with a few brief announcements. There were 25 attendees, including a few new faces. G-147 was crowded. Many thanks to those who brought snacks. The bottled water was do-

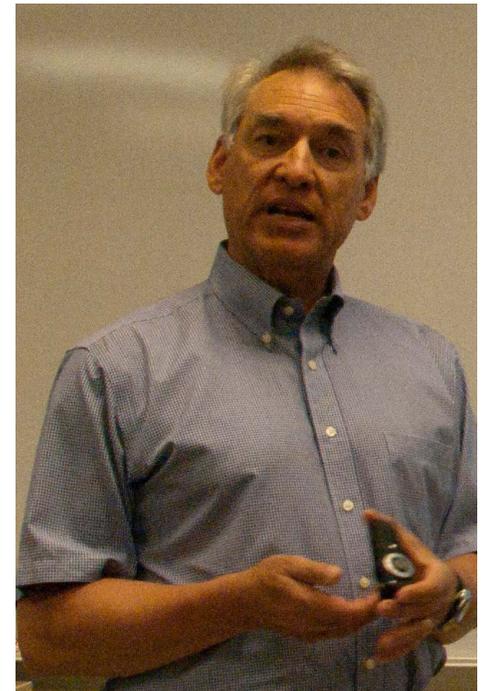
minated to PAS by Ed Wurst. The 50/50 raffle was won by Renee Collins with a total of \$31 being divided between PAS and Renee. I ran out of tickets, so that was all we could sell that night. You can view the photos from this event on line in the PAS Photo Gallery. We hope to have Robert back for another great presentation, soon. This was the last meeting of the PAS Season. We hope everyone has a super summer and we will see you all in September, when the PAS Guest Speaker line-up continues.

THANKS FROM OUR WONDERFUL GUEST SPEAKER

By Robert Piccioni

Thank you for inviting Joan and me to visit the Phoenix Astronomy Society and speak about Einstein. We had a great time, thanks to your warm hospitality.

Best Wishes and Clear Skies, Robert §



Robert Piccioni

Meet the New President of PAS

By Terri, Event Coordinator

I'd like to take a moment to congratulate Bruce Wurst for taking on the position of President of PAS. I asked Bruce to write a brief intro about himself for the webpage and newsletter.

Bruce writes: I have been interested in

astronomy for about 15 years and have been a member of PAS since 1995. I enjoy fixing things, so when I found a treasure of a telescope - a 20" Obsession - I fixed it up, and now I can bring it to the PAS star parties. I enjoy showing PAS members and guests all the different craters on the moon's

surface, as well as some exciting deep sky objects that require a larger telescope to be seen well. I also enjoy helping Terri to make the club fun and interesting. I hope to be able to provide PAS with some new and exciting guest speakers, while I am President. §

<u>President</u>	Bruce Wurst	480-269-3355	President@pasaz.org
<u>Past President / Librarian</u>	Rod Sutter	602-971-9129	PastPresident@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>	John Pulis	623-570-5308	
<u>Webmaster</u>	Chris Johnson	602-456-2456	Webmaster@pasaz.org
<u>Rocketry Liaison</u>	Jerry Belcher	623-328-9290	http://ahpra.org/launches.html

PAS Upcoming September Events

By Terri, Event Coordinator

September starts our new PAS year. We have a few cool events you may wish to attend to help out, or just to attend because they will be fun. Remember, May 15 - Sept 15 is still the monsoon season, and some of these events could be canceled due to WEATHER. Please be sure to RSVP where requested.

Sep 1: PAS Meeting in the Library at PVCC at 7pm. The meeting runs from 7:30 - 9:30. For this meeting, we are doing MEMBERS' NIGHT. Sign up today to do a 10-15 minutes presentation. Deadline to sign up will be Aug 31 at noon.

Sep 2: Private Star Party 7pm to 9pm. PAStimes Star Tour Members only.

Sep 6: CTCA star party. PAStimes Star Tour Members only.

Sep 11: Free Telescope Workshop at Bookmans at 19th Ave and Northern from 3:30 - 5:30pm. RSVP is required with Terri Events@pasaz.org. This is an indoor only event.

Sep 15: Free Telescope Workshop at PVCC from 7:30 to 10pm. This is an indoor / outdoor event. Also, public star party. RSVP is requested.

Sep 20: CTCA star party Backup date for Sep 6.

Sep 22: PVCC Public Star Party at Black Mountain (NEW LOCATION: 34250 N 60th St Scottsdale, AZ 85266)

Weather permitting. RSVP is requested.

Sep 23 - Oct 2: Flagstaff Festival of Science <http://www.scifest.org/>

Sep 29: PAS Meeting of the Minds. This is the business meeting for PAS. No children please. We always make it a party, so bring a snack to share. BYO Drinks. PVCC G-147 7pm to 10pm. No RSVP needed.

Sep 30: School Star Party in Scottsdale

Oct 4: CTCA star party. PAStimes Star Tour Members only.

Oct 6: PAS Meeting in PVCC Library 7pm to 10pm. Guest speaker's topic will be "Meteorites". Everyone welcome! §

2011 Messier Marathon Winners

By Terri, Event Coordinator

It was planned to hold a ceremony to award the 2011 Messier Marathon Awards to those winners who are PAS members. However, due to scheduling, it appears that we won't be able to get these two fine gentlemen together at a PAS Meeting for quite a while. So instead, I will congratulate them here in our newsletter, and we will plan to give them their awards later in the year.

Two PAS members competed for the Messier Marathon. Here are the results of this year's event:

2nd place winner is Lou Roberts, who did the Messier Marathon at Mike's home in Carefree on April 30 and was able to view 52 objects that night.

1st place winner is Bob Christ, who attended the Main Messier Marathon down by

Tucson with many SAC members, and was able to view 66 objects that night. Bob wins the PAS 2011 Messier Marathon Plaque which PAS will award to him at a future PAS meeting.

Thank you both for sending me your data and for participating in this year's Messier Marathon. We hope for a great turnout for next year's event. Congratulations to the both of you! §

Bookmans Telescope Workshop for Aug 14

By Terri, Event Coordinator

It was a wonderful, hot, muggy afternoon. Don met William and me at the event. Attendees were Peg and Nancy. Peg brought her awesome 8" telescope. Don and I gave her a bunch of advice and we had

some great conversation, and Peg said she learned so much from us. I wish to thank Peg and Nancy for attending, and to also welcome them as new PAS members. We hope to see them at our events and help

them further their enjoyment of their scope. Next Bookmans Telescope Workshop is September 11. We hope to have a great turnout. Many thanks to Don for helping us do this event. §

Tornados

NASA's Space Place

Received from Laura K. Lincoln, Outreach Coordinator, Jet Propulsion Laboratory

Do tornados just appear out of nowhere with no warning? From all the lives they have taken and destruction they have caused this

year, you might think so. But, no. Weather forecasters see them shaping up in weather satellite images and try to warn people as early as possible. Find out more about tornados and how NASA and NOAA plan to even

further extend the time people will have to take shelter. Visit <http://scijinks.gov/tornado>.

Check out our great sites for kids:

<http://climate.nasa.gov/kids>

<http://scijinks.gov>

<http://spaceplace.nasa.gov> §

PAS-CTCA SkyTour Event Report June 7

by Joe Collins, PAS Member & CTCA Cancer Fighter

We had another successful PAS SkyTour Event last night at Cancer Treatment Centers of America in Goodyear, for 24 attendees: 20 adults and 4 children. PAS members working the event were: Sam Insana, Frank Insana, and myself (Joe Collins). Renee Collins volunteered for an hour prior to event start.

Weather: The AccuWeather.com forecast was accurate. It was a clear night, however some degradation due to smoke particles was evident in the eastern sky. Wind was not an issue until the event was over, about 11:30 pm. Like last month, it was a 10 out of 10 for this urban venue. The temperatures were comfortable throughout the event, from high eighties during solar viewing to high seventies by event end.

Early Solar Viewing: Frank manned a Coronado PST with H α filter for viewing prominences, and Sam operated an 8" Newtonian with solar filter for viewing sunspots. Local sunset meant that we ended the solar viewing at 7:40 pm and started the SkyTour at about 8:30. The solar viewing was not well attended though it was advertised.

Night Time SkyTour: We (Sam, Frank and I) started the evening program at around 8:30pm and ended officially at 10:30pm, though I stayed until around 12:30am so the night shift security guards would have an opportunity to do some quality star gazing and lunar viewing during their rounds/breaks. Sam brought his 8" Newtonian. Frank brought his small reflector, spotting telescope, and his trusty binoc-

ulars. Besides the stars, there was some aerial wildlife dancing (or dive-bombing) in the skies tonight: sky hawks, bats, owls, and at least one falcon (peregrine?). I brought my Celestron C-11 SCT, iPad and binoculars (though I didn't use the binoculars).

We viewed the Moon, Saturn and seven Saturnian moons, several open clusters, three globular clusters, one planetary nebula, 15 binary stars, two triple star, and two quad stars - 37 objects in all. We couldn't really see galaxies tonight due to urban background light and the scattering effect due to smoke from wildfires, we suspect. We had good views of the Moon at almost first quarter phase. Saturn's visible moons included Titan, Enceladus, Rhea, Tethys, Mimas, Dione, and Hyperion. The Ring Nebula was visible but faint. We could not image the Eskimo or Cat's Eye Nebulae. Globular clusters M3, M5, and M13 were faint, but looked spectacular after 10pm.

We tried looking at the Sombrero Galaxy Edge, M82, and the Black-Eye Galaxy, but these were too faint to share with folks. We had views of Stargate, Praesepe (the Beehive), M23, M35, and the spiral open cluster (M34).

It was a great night for resolving Binaries. We looked at : 54 Leonis, Iota Cancri, Castor, 19 Lyncis, Polaris, 17 Cygni, Albireo, Zeta Lyrae, 95 Herculis, Nu Draconis, Porrima, Cor Caroli, Xi Bootis, Mizar, and Kappa Bootis. We also looked at the following multiple star systems-Triple stars: Graffias and 35 Comae Berenices; and Quadruple stars (double-doubles): Tegman (Zeta Cancri) and Epsilon Lyrae.

Even though the moon was bright (so

not the best conditions for deep sky objects), the air did not get turbulent until the end of the event, so it was great for resolving binaries. The smoke/particles seemed to prevent us from viewing galaxies and other faint deep sky objects tonight. Patients, caregivers, and four children this time, enjoyed the views. Even though we had a slow start (low solar viewing attendance) several people came back a few times to view different stellar objects. A great time was had by all!

Odds and Ends: I showed customers what many of the fainter objects would look like from Hubble and identified Saturnian moons by using the iPad Gas Giants app. I also used StarWalk, StarMap HD, and Twilight iPad apps. The moon was first quarter phase. Sam had a general field lunar map which he used to identify the major craters and maria. I produced a three page color handout. The first two pages were basically updated information from last month's event, but M42 was replaced with info on the "Stargate" Cluster/Asterism. One additional page prepared originally for April's event was included because it had information on the Sun (for solar viewing customers). Sam relied on the manual setting-circle method for alignment. I must admit it is faster than my GoTo scope. I relied on the Celestron CGEM/ hand controller to provide targets of opportunity for viewing tonight. Tracking/GoTo accuracy for my scope seemed a little problematic - I had to redo star-alignment several times - but finally I got accurate results after doing a two-star alignment and adding TWO more alignment stars from opposing sections of the sky.§

A Quick Reminder That Your Dues Are Due

By Terri, Event Coordinator

The PAS year runs from January to December, but we start asking our members to renew their membership in September, to make it easier for Mike, our Treasurer, to get the files updated.

The PAS Roster is always available for members to view on our website in the Member's Download section. If you are a current member of PAS, your membership officially ends December 31, but we extend one month to allow for those who can't get a check to Mike earlier.

But at the end of January, those who have not renewed, will be removed from the

PAS website and the PAS Roster. So, be sure to update your membership with Mike. If you are unsure of your status, pop into the Roster at this link:

<http://www.pasaz.org/forums/downloads.php?do=file&id=48> to see if your membership shows you are current through 2012 (right side of document). If not, please consider renewing your membership, and soon. We don't want to have to remove you from our list of Awesome PAS Members. PAS-times Star Tour Members must be current, before December 31 to receive compensation for helping at a paid event. Convenient ways to pay include: bring cash to a meeting

to give to Mike, and be sure to get a receipt for your membership dues, or send Mike a check with your membership form. Be sure your membership form shows 2012 at the top of the page, as no other dated membership forms will be accepted. The PAS Dues Sheet / Membership Form is at this link: <http://www.pasaz.org/forums/downloads.php?do=file&id=129>. The updated version (2012) is available now.§

CTCA Review of Aug 2

By Joe Collins

PAS held a Star Tours event at Cancer Treatment Centers of America in Goodyear on the afternoon and evening of August 2nd. Don Boyd, Steve Palmer and I worked the event. The participants included eight caregivers and patients - a lower number than usual, possibly due to less advertising. But the inclement weather also played a part: it was hot, muggy, windy and cloudy. The winds increased through the evening, which likely deterred customers. This time AccuWeather let us down: the evening sky was of poor quality. In the parts of the sky that seemed cloud-free, the presence of high altitude clouds prevented us from viewing any Messier objects or other objects requiring a dark sky.

Before sunset, Don provided solar viewing of the humongous new cycle 24 sunspots.

After sunset, we were unable to present the usual "sky tour". Clouds occluded most of the western sky, so we only had intermittent good viewing of Saturn and the Moon. During the evening program I viewed and shared the Moon, Saturn and its moons, and Polaris. I showed several patients some videos of star and celestial object size comparisons on the iPad while we waited for clouds to pass by the Moon and Saturn. In addition to the above-mentioned objects, Don viewed and shared views of Alcor/Mizar and Merak.

The winds were too high for Steve to

set up his large refractor, so he helped us as porter and was the photographer for the evening. He took pictures of lightning in an approaching "monsoon" cell and showed us some of the pictures via the digital back of his camera.

We had to quit and break down our scopes a little early, just after 9pm, because of high wind. There were gusts of approximately 35mph due to a cluster of thunderstorm clouds rapidly approaching from the southwest (from the direction of Buckeye/Palo Verde).

We all enjoyed the lightning show going on before our eyes, and Steve took some

awesome lightning photographs that he said he would share on Facebook later.

It was a hot night, still about 100 degrees by the time we left, but we enjoyed the refreshments provided by CTCA: ice water to keep us cool and an assortment of cookies for sugar energy. Marisa was not on-site this week, but in addition to meal tickets for dinner and refreshments, her marketing department provided beautiful two-sided color handouts (three pages total this time). Since some copies of the handouts were left over after the event, I left the "extras" at the Concierge desk for future advertising. §



Three sets of massive sunspot are visible on the Sun. These photos were taken August 2 thru a 6 inch scope with a Solar filter. Photos taken by Don Boyd.

Rancho Gabriela Star Party Review of May 6

By Terri, Event Coordinator

This was an awesome event. I hope to do more like this. Dewell Howell was there with his 10" dob. I came with my 8" SCT, Don Boyd had his scope, Mike Marron was there with meteorites, Chris Johnson brought a scope and so did Steve Palmer.

We were a bit early, and so we had to wait a bit for the gate to be unlocked. Steph opened the gate for us and we started setting up and then moving our cars from the setup location on the basketball courts, to the parking lot, right near where we were. After I set up, the pizza and drinks arrived. Steph had given us a table which had two large ice-filled buckets with pop in one side and bottled waters in the other. The pizza came and we all took a break from setting up, to enjoy some pizza. I was first to arrive with Don and his scope tightly packed in my vehicle with my stuff. Then Dewell arrived. Steve was next and then Chris. As we set up and ate, it looked like it would be an awesome viewing evening.

When the evening began, we noticed three floodlights on the house by the school grounds that were annoyingly bright, and a bother throughout the night. We mentioned to Steph that for the next event, we can do it in the same place, but to send out a notice to the HOA where that house is located, to please turn down the porch lights for the night of the event, from half an hour prior to the start of the event, till 10pm. So, next time, we may have darker skies.

We had a crowd all night. And the kids soon figured out that if they visited my scope, they could win prizes for answering questions. I wasn't being as generous as I was at their daytime event on April 26th, though. This time, I made sure the answers I got were not duplicated, one after the other, and that they were accurate. Along with the Q&A, it isn't just that the kid tells me an answer, it is also that they have to listen to the explanation I give them after the answer they gave. For example: If I ask them to tell me something about the Moon, and they say it has dents in it, I would come

back with "The Moon is covered in craters." And then I might ask them how the craters got there. And after their answer, I would elaborate some more, before handing over the prize. The only exception is that the younger kids, I'd say 2nd grade and under, who didn't seem to want to answer questions, got stickers. So, everyone got something for putting up with my Q&A. And they really seemed to enjoy it.

The night progressed. We were limited, due to the floodlights, to Saturn and the Moon, and I think Don grabbed a cluster. I didn't hear what Chris and Steve were viewing but I did hear that most of us were showing Saturn and the Moon, and that was due to the lighting issue.

I forgot to bring my camera, so I wish to thank Dewell for lending me his camera. Prior to the start of the event, I went around and got pictures of everyone with their scope, and then Dewell took a few extras and sent them all to me via email. Thank you so much Dewell.

I estimated that we saw close to 400 people at this event. They all seemed to love it and we had some great conversation with the adults who were attending. Lots of fun questions, friendly faces, and a very interested crowd. That's exactly the reason we like doing events like this.... the enthusiasm of sharing the night sky and talking about a topic we love to share.

The event closed down about 10pm, even though we were scheduled to stop at 9:30, but the crowd just kept coming, and then the wonderful people holding the event, came over and chatted while we were packing up. At about 10pm, the sprinklers came on and Steve and Don were by the field, and had to shift their scopes away from the spray. For the next event, I hope to remember that we had sprinklers on that side of the courts, and avoid setting up in that area. Nothing was harmed by the sprinklers, luckily.

We didn't get out of there until about 11pm. It was a fun, very exhausting event.

I wish to express my thanks for all the help I had from Stephanie Wojtovich, Dewell, Don, Chris, Steve, William, and our two helpers who were Jared and Ricardo. We will be setting up to do another event like this one in the near future, as well as the Daytime Career Day event we did for them on April 26th. Hope you can assist at the next fun event. One thing I must say that is very nice about working with this school is that you don't have to worry about being hungry. They definitely provide plenty to eat, tasty stuff to eat, and it is very enjoyable. Thank you Steph! Photos from this event will be in the PAS Photo Gallery for your enjoyment. §



Terri Finch, taken by Dewell Howell

PAS Moon Marathon New Date

By Terri, Event Coordinator

At the Meeting of the Minds, while reviewing the upcoming events at Mike's home in Carefree, Mike suggested that we set another possible date for our PAS Moon Marathon, which weather has prevented so

far.

The last date possible is set to be Dec 10, but he would like to have the Moon Marathon, as well as the International Observe the Moon Night, with a star party and

potluck, all on one night at his place. So, the website now reflects this change. Oct 8 is the new date set for the PAS Moon Marathon. If you plan to attend, sign up today in the Public Calendar. See you there!§

Mike's July 3 Fireworks Party in Carefree

By Terri, Event Coordinator

The party started around 4pm when several members arrived. Bob Senzer and Don Boyd were already in attendance when William Finch, Kevin Harcey and I arrived about 4:30. We set up the food and began eating. Judy Wolff showed up a little later and began making more refreshments. She made a salad that was really good, and spaghetti. Don had helped William and me in purchasing the meatballs, Masterpiece BBQ sauce, sub sandwich bread, and watermelon. Kevin brought a rotisserie chicken. There were chips and salsa, potato salad brought by Bob Senzer, and doughnuts, brownies and a few other goodies. There was plenty to choose from.

We all ate; then after chatting for an hour or so, we moved to the living room where we watched a movie: "Faster." It was pretty good. Near the end, Chris E arrived along with a friend of hers and her kids and

his kids. They all arrived for the fireworks, but first we watched the movie to the end.

Just before Chris showed up, there was a half-hour downpour. Rain! Lots of rain! It let up, Chris and her group arrived, and then we all went to the end of Mike's driveway to enjoy some fireworks, courtesy of the town of Carefree. However, instead of a full show, Carefree did a massive "finale". So, for about 15 minutes, we watched tons of fireworks being shot off, as if it was the end of the show. But.... the lightning show was even better! Photos were taken, and can be found in the PAS Photo Gallery. None of the fireworks photos came out great enough to share. However, Kevin and William had brought their own items to pop in the road, and Kevin had also brought sparklers. The wind was not still enough to light the sparklers, so we took them back to the house and lit them there, where the walls of the house could stop the breeze from blowing

out the wand lighter. The kids enjoyed the sparklers.

While we were watching the fireworks, Judy went home. When Chris and her group all left for the night, we moved back into Mike's house and enjoyed the movie "Avatar." It was long but we all enjoyed seeing it. Then William, Kevin and I departed. I believe Don left around that same time, which was about 3:30am. Bob stayed behind with Mike.

I wish to thank Mike for an awesome party. The food and friends were all wonderful, and even the rain and the lack of fireworks made a memorable occasion! It was nice to get out and do something fun for the 4th. We hope Mike can host another party next year! The 4th falls on a Wednesday next year, so we will have to find out when the fireworks are going to happen, and plan the party for then. Thanks to everyone who brought food and joined in the fun to make this party great! §

PVCC 2 Campus Locations

By Terri, Event Coordinator

PAS will now be hosting events at both campus locations of Paradise Valley Community College. To distinguish between the two, we will continue to refer to the PVCC location in Phoenix at 18401 N. 32nd Street, Phoenix, AZ 85032, which is 32nd Street and Union Hills Rd, as PVCC Phoe-

nix or just PVCC. The other location will be referred to as PVCC at Black Mountain and its address is 34250 N 60th Street, Scottsdale AZ 85266, which is Carefree Highway and 60th Street. Our first event at this new location will be on Sept 22, 2011 for a Public Star Party. RSVP your attendance

today. This location, I am told, is much darker than the Phoenix location. The PAS on-line Calendar, by the time you read this, will reflect the change of venue. We hope to see a lot of the public and PAS Members at the new location, as more and more of our events will be scheduled there. §

PAS-CTCA SkyTour Event Report July 12

by Joe Collins, PAS member & CTCA Cancer-Fighter

We had another successful PAS Sky Tour Event last night at CTCA (Cancer Treatment Centers of America) in Good-year for twelve attendees: eleven adults and one child. PAS members working the event were Don Boyd, Dewell Howell, and myself (Joe Collins). Steve Palmer participated as a volunteer.

The AccuWeather.com forecast was accurate. There was no "monsoon" activity or high winds as there had been the evening before. It was hot until about 9:30pm, but there was a cooling breeze from then onward to the end of the event, so it was still a pleasant evening for the customers/patients. The moon was bright at about 80% full.

Due to seasonably high temperatures, we skipped the early solar viewing this time.

Dewell brought his XT10 Dobsonian telescope and viewed M13 (Hercules Globular Cluster), Saturn, the Moon and Mizar/Alcor. Don brought his 6" Celestron Reflector on an Orion Atlas GoTo Mount and viewed Saturn, Open Clusters M6 (the "Butterfly Cluster") and M7, and Alcor/Mizar. I brought my Celestron C-11 SCT and iPad and viewed Saturn and five Saturnian moons, the Moon, and Polaris.

However, I forgot my counterweights and had an electronics problem with the CGEM mount which prevented me from using my telescope about half of the event time. Therefore, I pulled out my iPad and showed several patients a few planetarium programs and answered astronomy questions while Dewell and Don continued to show different objects from their telescopes. The patients and caregivers seemed to like what I was showing them on the

iPad, and being able to switch between different types of telescopes.

In the meantime, Steve Palmer was the hero for the night – he went to Chris Johnson's to pick up counterweights for my telescope, and was a big general help during the event!

For Dewell, this was his first time participating in the CTCA event. He sent me an email afterwards saying he had a good time. We look forward to his participation in the future.

Thanks to Marisa Benincasa for the dinner passes and for making two-sided color handouts, and thanks to the security guards for helping us get some bottled water after the Cafe was closed. Thanks also to Steve Palmer for volunteering and for all his help during the event. And of course thanks to Chris Johnson for lending the counter weights! §



Solar System Size Surprise

by Dr. Tony Phillips

News flash: You may be closer to interstellar space than you previously thought.

A team of researchers led by Tom Krimigis of the Johns Hopkins University Applied Physics Laboratory announced the finding in the June 2011 issue of *Nature*. The complicated title of their article, “Zero outward flow velocity for plasma in a heliosheath transition layer,” belies a simple conclusion: The solar system appears to be a billion or more kilometers smaller than earlier estimates.

The recalculation is prompted by data from NASA’s Voyager 1 probe, now 18 billion kilometers from Earth. Voyagers 1 and 2 were designed and built and are managed by NASA’s Jet Propulsion Laboratory. Aging but active, the spacecraft have been traveling toward the stars since 1977 on a heroic mission to leave the solar system and find out what lies beyond.

To accomplish their task, the Voyagers must penetrate the outer walls of the heliosphere, a great bubble of plasma and magnetism blown in space by the solar wind.

The heliosphere is so big, it contains all the planets, comets, and asteroids that orbit the sun. Indeed many astronomers hold that the heliosphere defines the boundaries of the solar system. Inside it is “home.” Outside lies the Milky Way. For 30+ years, the spacecraft have been hurtling toward the transition zone. Voyager 1 is closing in.

Much of Voyager 1’s long journey has been uneventful. Last year, however, things began to change. In June 2010, Voyager 1 beamed back a startling number: zero. That’s the outward velocity of the solar wind where the probe is now.

“This is the first sign that the frontier is upon us,” says Krimigis.

Previously, researchers thought the crossing was still years and billions of kilometers away, but a new analysis gave them second thoughts. Krimigis and colleagues combined Voyager data with previously unpublished measurements from the Cassini spacecraft. Cassini, on a mission to study Saturn, is nowhere near the edge of the solar system, but one of its instruments can detect

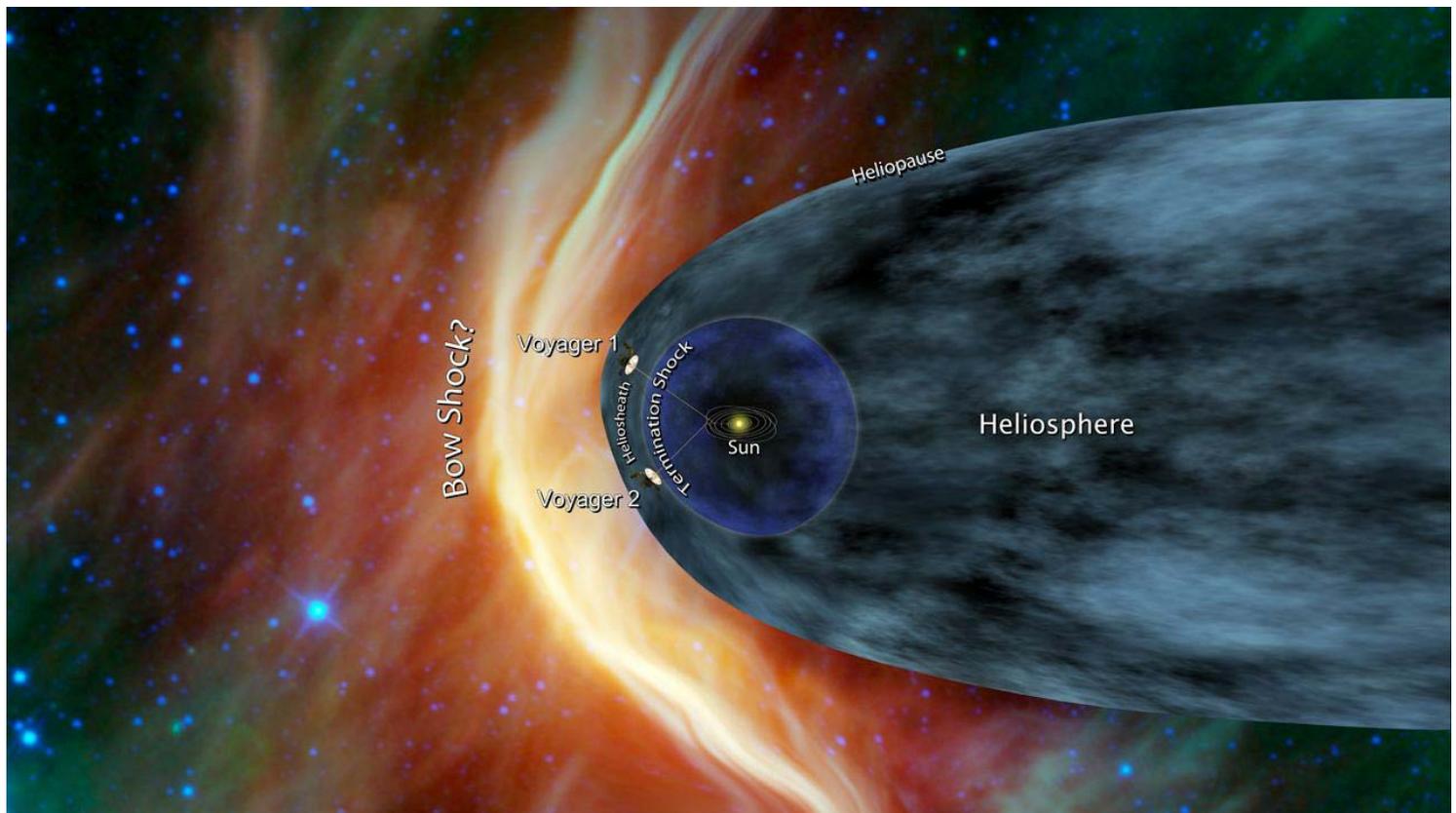
atoms streaming into our solar system from the outside. Comparing data from the two locations, the team concluded that the edge of the heliosphere lies somewhere between 16 to 23 billion kilometers from the sun, with a best estimate of approximately 18 billion kilometers.

Because Voyager 1 is already nearly 18 billion kilometers out, it could cross into interstellar space at any time—maybe even as you are reading this article.

“How close are we?” wonders Ed Stone, Caltech professor and principal investigator of the Voyager project since the beginning. “We don’t know, but Voyager 1 speeds outward a billion miles every three years, so we may not have long to wait.”

Stay tuned for the crossing.

For more about the missions of Voyager 1 and 2, see <http://voyager.jpl.nasa.gov/>. Another Voyager project scientist, Merav Opher, is the guest on the newest Space Place Live cartoon interview show for kids at <http://spaceplace.nasa.gov/space-place-live.§>



This artist's concept shows NASA's two Voyager spacecraft exploring a turbulent region of space known as the heliosheath, the outer shell of the bubble of charged particles around our sun. Image credit: NASA/JPL-Caltech.

Meeting of the Minds Review Aug 25

By Terri, Event Coordinator

Attending this simple, quick meeting, was a brand new PAS member as of this night, Albert Tucker, as well as Jenny Neureuther, the new full time Astronomy Professor at PVCC, Dave Hellman - the PVCC Adjunct, and these PAS Members: Steve Palmer, Joe & Renee Collins, Chet Schuler, Sam Insana, Mike Marron, Don Boyd, William and Terri (me) Finch.

It was a short, but productive meeting. Here's the review of what we discussed.

Dave gave us an update of what they are doing on the PVCC Campus. There will be building being build to house the nursing classes. This building will be placed between the telescope dome and the building to the S. of the dome. I don't know how they will fit it, but they are going to try. There's another location that PVCC has up on Carefree Hwy and 60th Street. PAS will most likely moving its star parties up there. The school is building a 32' square concrete pad for telescopes to set up. Our first star party to test this location will be on Sept 22 at this new location. The new building on PVCC Phoenix Campus is scheduled to be built by January 2012.

The Telescopes at PVCC Phoenix will be moved up to the new location at Black Mountain. Dave said that the 11" scope will move up there as well as they are putting up a tough shed to store other telescopes, and the concrete pad will be fenced in. The location at Black Mountain is behind a Super Wal-mart, next to a High School which is S.E. of PVCC. They hope to put a Radio Telescope up there as well. Recent acquisitions by PVCC: 8" C CGE Mount and 6 - 6" Orion Dobs. These are for use by the students of PVCC, to borrow. Dave also wants to house a Radio Telescope at the Black Mountain campus.

Jenny then took the floor and what Jenny would like to do is help PAS get advertised for events at PVCC, both campus's. Jenny talked about the agreement between PAS and PVCC, which is ... for the use of PVCC rooms, we trade them star parties. Since more and more of our events are star party related at PVCC, this works out in their favor. Jenny wrote up a nice proposal about it to submit to the Prez of PVCC and get approved.

Then we turned the meeting over to Joe. Joe wants to know what PAS is going to do with the scope he donated to PAS over a year ago. It is currently being stored at Rod Sutter's home. Rod Sutter is our Past

President and keeps that honor for 1 year, or more if he wants to have it longer. Joe's idea is to donate the scope to PVCC and have it mounted on a pier for use at the Black Mountain site. Joe is writing up a proposal to put into the newsletter, and then after everyone has read the proposal, we will have a MOM's to vote on this idea. Watch for an announcement about proposal and the voting date if you wish to vote.

We then turned the discussion to a few odds and ends that weren't on the agenda. Rod is the storage location for the PAS Library. Joe was asking how people receive items from the PAS Library. I explained about our check out system and the list of Library items PAS currently has.

Joe thought it might be a good idea to move the library to PVCC, but Dave quickly informed Joe that there is no room at PVCC for the Library items. So, the Library remains at Rod's home.

How do you check out items from the PAS Library. You can either email or phone Rod Sutter and request an item be brought to a PAS meeting. Rod keeps track of who borrows what item. Then, the following month, return the item to Rod, or give it to Terri in Rod's absence, as I can drop it off at his place on my way to my students. We ask that an item is only borrowed for a month at a time, to allow other members to borrow the items, as well.

Joe also mentioned that PAS should invest in a Light Detector and each location we have an event, we should monitor the light situation and report it, to keep track. And he also mentioned that we should have at least one person with a collimator at each Telescope event, in case someone needs to culminated their scopes before using them for the evening. I mentioned that Don always has his calumniator with him.

Joe also mentioned that the Object of the Month on the PAS website is outdated and needs to be updated or the section holding the Object of the month, should be removed from the site due to people visiting the site, and not seeing the object change, may think we don't keep our site up to date. I will let Chris know he should update that.

Chet proposed a presentation he'd like to do at a future PAS meeting. He is not scheduled at this time but watch for an announcement about his upcoming presentation. He might be at a Meeting of the Minds, if we don't have enough topics for a meeting, but feel we want to hold one. Chet

gave us a brief idea what the topic will be like. It was very interesting information.

During the meeting, Sam reminded me to contact Dan Heim about the upcoming Joint PAS / DFAC star party at Heimhenge. I sent Dan a reminder email about it. Sam also mentioned the Seven Springs star party, for which we hadn't heard anything from our contact for that event that usually happens the first Saturday of October. So, I sent an email to that contact, too.

Dave announced a star party at his site in Portal. Sept 5th is Labor Day, so for the weekend, Friday around Noon to Sunday around noon, Dave has opened up his site for a star party. Please RSVP with Dave for this event david.hellmann@pymail.maricopa.edu.

See the calendar for details. Remember, there are no amenities, only a slab of concrete and a port-a-potty. This is a BYO everything event. The event is listed on the PAS calendar from Friday noon to Sunday noon.

Mike & Sam announced a new, fun place to enjoy an afternoon. The admission is only about \$2 to see the American Pop Culture Museum. It covers things like Star Wars and Dr. Who and other really cool movie stuff. Here's the website: <http://www.azpopculturemuseum.com/>. Check it out! Mike was wearing a Dr. Who t-shirt. This is at Desert Ridge Mall which is up the top of Tatum and the 101. The place gives a guided tour.

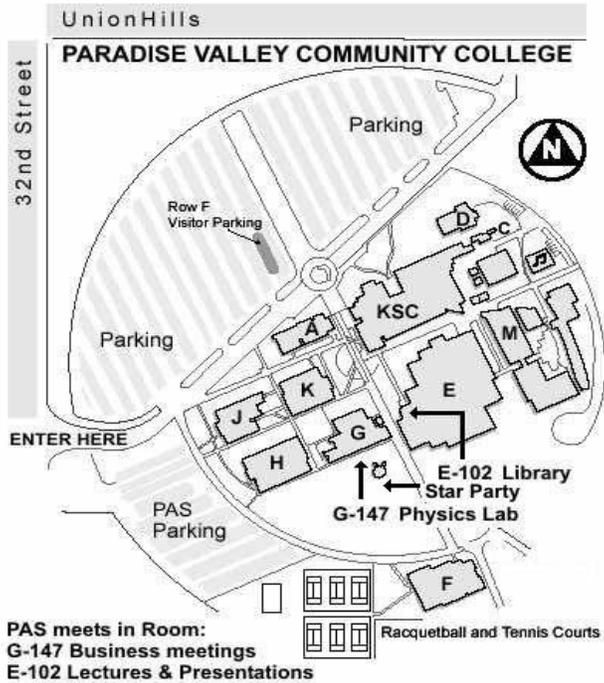
As the meeting closed, we all munched till we had enough, and Mike & I reviewed his many, upcoming events at his home, and Jenny chatted with me some more about plans for PAS and PVCC at both campus's. It was a very good meeting, not rushed like some of the meetings when we have too many topics to cover in one night. And we were done by 8:30pm. Some of the members left to Village Inn, and some stayed behind to chat a little longer. We hope to see you at the next Meeting of the Minds. §

WHAT TO DO WITH JOE'S DONATED SCOPE

By Terri Finch and Joe Collins

Joe Collins donated a 12" telescope to PAS last year. He would like to see it being used, instead of being in storage. We have started a discussion about this topic in the forums: <http://www.pasaz.org/forums/showthread.php?p=1506#post1506>. Please help us decide what to do with it. Your input is welcome. §

Map to PAS Meeting Location



Thanks from Chaparral High School May 10

By Rob Mattisinko

Thanks for another great night! Mike and Chet were amazing, as usual.

A Quick Look at 3 Events in September

By Terri, Event Coordinator

On **September 1**, PAS is holding a meeting and the Guest Speaker is you. As of August 29, there is no one signed up to do a presentation. Should that be the case by the deadline of August 31, Mike has offered to do a presentation for us. We look forward to seeing you at the first meeting of the PAS season.

On **September 3 - 4** from Friday afternoon to Sunday afternoon, Dave will be in Portal and has invited PAS Members to join him for a star party. Please RSVP with Dave for this event. More details can be found in the PAS Calendar on line, including maps, directions, and RSVP email.

On **September 30**, PAS has been asked to do a star party for a school in Scottsdale. Details are still being updated on line, but go to the calendar listing for this event, to find maps, directions, and plans for this event.

See you there!

See page 2 for more information

September

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 PAS Meeting	2 Private Star party	3 Portal Star Party See MOM Rev page 8 for details
4	5 Labor Day	6 CTCA star party	7	8	9	10
11 Free Telescope Workshop at Book- mans	12	13	14	15 Free Telescope Workshop at PVCC	16	17
18	19	20 CTCA Backup	21	22 PVCC Public Star Party at Black Mountain	23	24
25	26	27	28	29 PAS MOM	30 School Star Party	

Ads in PAStimes

Ads in PAStimes run for a month and may be renewed on a month by month basis, if submitted by deadline, space permitting. Ads in PAStimes are placed for FREE for members. If you are not a member, please make a small donation to PAS to run your ad. Donations are to be sent to the Vice-President who will forward them to the Treasurer.

Don Boyd
 PASTimes Editor
 701 W. Del Rio St.
 Chandler AZ 85225

To:

PAS Guest Speaker Line-up for Fall 2011

By Terri, Event Coordinator, Events@pasaz.org

Sep 1: MEMBERS NIGHT - Sign up to give a 10-15 min. presentation (deadline Aug 31 noon)

Oct 6: Dolores Hill: "Meteorites: Keys to Understanding the Solar System"

Nov 3: Bob Holmes: "Holding a Piece of the Stars and Planets in Your Hand"

Dec 1: David Williams (ASU): "Roving on the Planets: From Lunokhod to Spirit and Beyond"

If you have an idea for a Guest Speaker, please contact Terri at Events@pasaz.org. §

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What's Up For September

By Rod Sutter, PAS Past President

Name	Date	Rise	Set
Mercury	09-15-11	04:36	17:53
Venus	09-15-11	06:22	19:05
Mars	09-15-11	02:01	16:07
Jupiter	09-15-11	21:32	10:45
Saturn	09-15-11	08:46	20:30
Uranus	09-15-11	19:49	07:57
Neptune	09-15-11	18:10	05:09
Pluto	09-15-11	14:46	01:09

All Times Arizona Time

September 15 2011

Sunrise: 0:07

Sunset: 18:30



New: August 29



Q1: September 4



Full: September 12



Q3: September 27