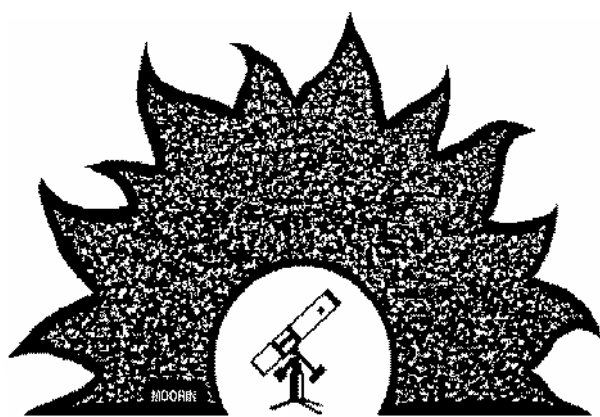




PAStimes

Phoenix Astronomical Society
www.pasaz.org

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PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Next PAS Meeting October Fourth

This Month's speaker is Melissa Morris of ASU. The title of her talk is "Indirect Detection of Water in Forming Planetary Systems". We asked for a summary of what her talk is about and this was her response.

Phyllosilicates are minerals commonly found in meteorites. A product of aqueous alteration (modification by water), phyllosilicates have unique emission features in the mid-infrared. In order to determine if these features can be detected in extrasolar protoplanetary disks with instruments such as the Spitzer Space Telescope, disk emission was modeled using simple radiative transfer. In so doing, it was found that the

most prominent phyllosilicate features can be detected. Comparisons of the disk emission model with and without the inclusion of 3% phyllosilicates in the dust mixture are presented. The zodiacal dust in our Solar System has been modeled by including 20% montmorillonite, a phyllosilicate. Detection of phyllosilicates in extrasolar protoplanetary disks, indicates the presence of liquid water, and would demonstrate a similarity of those disks to our Solar System.

About me (Melissa Morris):

I am a PhD student in the School of Earth and Space Exploration at Arizona State University. In addition to research on

detection of phyllosilicates in extrasolar protoplanetary disks, I study the formation of chondrules. Chondrules are small, spherical "rocks" found inside a certain type of meteorite and are some of the oldest material in the Solar System. Understanding the formation process of chondrules gives insight into the conditions present in the early solar nebula from which the Solar System formed.

As has been written elsewhere PVCC is no longer providing snacks so please bring food or water if you are able.

We look forward to seeing everybody at the meeting.

September Meeting review

By Terri, V.P.

We had a fantastic turnout for the September meeting. I didn't expect so many people to show up, it was really awesome. I'd have to say that we had more people at this meeting than we ever had at past September meetings. Thank you all for attending.

The Sub sandwiches arrived. Thank you DAVE for the lovely snacks. Thanks goes to Sam Insana for bringing the popcorn. Please see article about Snacks at PAS Meetings for more info on this subject.

We opened the meeting with a few brief announcements. The Year in Space Calendars are getting ready to be ordered. I have 6 of the needed 10 to get the reduced rate of \$10/calendar. Otherwise, it is \$11/calendar. Reserve yours today! Tony, our speaker had brought some awesome handouts that will be available at the Oct meeting for those of you who missed out. The 50/50 raffle was awesome. One of

Tony's team members won the raffle. And the snacks and such were fantastic.

We turned the meeting over to Tony La Conte. Tony did a very wonderful job of talking about the objects in the night sky around the Summer Triangle. He showed us where each object was, and then what it looks like, and gave us details about how we should present it to the public. I really appreciated that info. He made it not only interesting to us, but also, interesting to the public. I took 12 pages of notes because the info was that good, and that interesting. Awesome! Tony, thank you so very much for your wonderful presentation. We hope to meet up with you again, soon.

When the Q & A session began, people were asking Tony how many scopes he takes to a location. This was an interesting topic to discuss and Tony had brought his whole team that night. We got to meet everyone and the whole night was fantastic. If you missed this meeting, you can pick up

the handouts at the October meeting, however, you can't get the info we got that night unless you were there. And you missed an awesome meeting.***



Meeting of the Minds Review 8/30

By Terri, V.P.

At the MOM this month, we had a good time. We had a bunch of really good topics to talk about and the meeting flowed rather smoothly. Rod ran the meeting. We did something different this time. Because the topics were several per person, we decided to do the topics by person rather than by importance, which is how we usually do it.

So, Sonny did his topic first. He proposed we consider purchasing a club telescope. To make it worth while, he suggests a 14 -16 inch scope. He is going to check into getting donations for this project. We shall hear back from him at the next MOM, Sept 27, with an update. Everyone attending thought this was a good idea. The goal of the larger scope is to provide those who do not have a scope and those who do, with a scope that they wouldn't already be able to afford. It would be loaned out to ONLY PAS Members. And could be used for star parties for public or private. When PAS is about to purchase it, a PAS member will have to be the keeper of the scope. I believe Chet and Sonny offered to do this. During the discussion, Barbara and a few others were mentioning that Oceanside Telescope and some other places give club discounts and deals.

Next we turned it over to Chris Johnson. Chris became a PAS member not too long ago, so he is new to PAS. He was telling us about the new addition to Google Earth where you can now go out into deep space and investigate the sky. He also showed us a Sky program that he uses on his laptop. The tour of Google Earth Sky was very interesting. His program is called Starry Night Pro Plus. And to get to Google Earth astronomy version, you click on SWITCH TO SKY.

Mike then did a Treasury Report. The purpose of this report was a requirement in order to send in the corporation papers. So, we found out that last year we had \$2419 in Expenses, \$1992 in income and we have a current balance of \$11914 in the bank. This is a good amount and we want to maintain it as long as we can.

Don did the next topic. Omni Project. Omni is a program that allows one to scan a PDF, and then make it OCR, which means that it can be searched for a topic. So, let's say you are looking at this newsletter on line and you wanted to find out about Google Earth, mentioned above. You could

then search this document for those words, and find it faster than going through all the newsletters currently on line. The group voted to have Don purchase this program so that he can OCR/scan the rest of the newsletters into files to be posted and archived on line for the public to view. The purchase price will be about \$40 and can be passed on to the next editor to use with their newsletters, when and if Don resigns. At this time, we do not want Don resigning!

Dave was next. Dave wanted to let us know that Ed Rosenthal is no longer with PVCC. He had some interactions with the staff of PVCC that caused him to be released from his job. This may be temporary or permanent. No one knows at this time. Dave also told us of the Solar System project is on hold as it was Ed's project. The committee that was appointed to help with this project is evaluating the situation and will let Dave know the plans in a while. So, if you have something you need to tell our contact at PVCC, go through Dave Hellman now.

Then Barbara shared her ideas on advertising and promoting the club. we were talking about getting little pre printed PAS bags for handouts. She is doing a bit more research and getting a final cost on this, but the idea is to have something small and useful, like a red flashlight printed with PAS on it, as well as a Bag to put it in, and some flyers about PAS as prizes to give out at our star parties where we give prizes to the kids for various things. The bags would be purchased in a bunch of 1000 to keep the cost down, then get the red lights in packs of 1000. Barbara thought we could sell the red lights at star parties where the public attends and didn't bring a flash light. Then she showed a 3 minute video of an upcoming movie on Sept 19th. Details for this movie went out in a digest earlier last month. The other item she brought along with her was the Astronomy Magazines. At the PAS meeting for September, she will need to collect and send for those magazines. If you wanted one, you had to have paid her by Sept 6. They are selling at \$6.50 each.

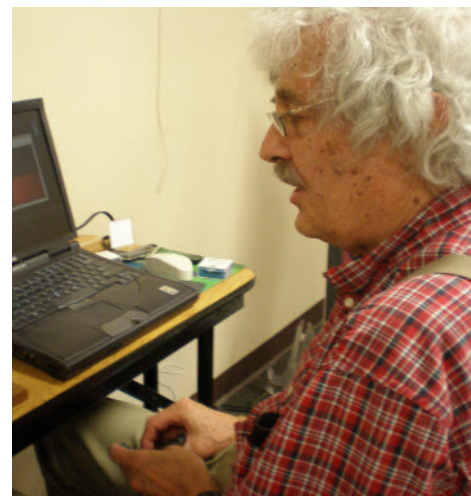
Another one of Barbara's topics was sponsoring the Clear Sky clock. We discussed this and reviewed it and researched it right there. William found that the site wants \$1 per week to sponsor the clock. So, the group was deciding if we want to spend

\$52 a year to advertise PAS on the Clear Sky Clock. This is still in the discussion stage. If you have any input, send it to Barbara so she can share it with us at the next MOM's.

Then we discussed Mars Parties. We chose a few dates for these star parties and Terri is making the flyer which will be available to download from the website by the time you get this issue. The tentative dates chosen for the Mars Parties (subject to change) are Nov 17, Dec 15, Jan 12. And the PAS Social date was chosen for Jan 19, but later was discussed and may be Jan 26th. It depends on how available a location is.

Then Terri did a few topics. We all agreed to cancel Adult Night Out at the Arizona Science Center because of issues with the proper personnel not getting in touch with Terri about the changes to our viewing sessions. We also discussed the Advertising SIG It was agreed that everyone would send Terri their resources of places to advertise PAS events on. Terri would compile an ongoing updated as needed list and post it on the website. Then, those who wanted to help out could pick who they want to send to, and that would be their contacts. Terri would write the ads, send it to the Advertising TEAM, and it would be dispersed that way.

After the topics were done, we did some chatting and talking about the topics a bit more and then we all departed for the night. It was a good meeting, very productive, and I appreciate everyone who attended. I'd like to mention that Steve P. didn't make it to the meeting, so his topic (PAS Packet of info) will be in next month's list of topics. We hope he is doing alright. ***



Chet at one of the Telescope classes

Arizona Sky

By Leah Sapir

A word of introduction for the new "Arizona Sky" column - in choosing a focus for this column, I decided to write about objects that can be seen with the naked eye or found easily with binoculars or a small telescope, even in slightly light-polluted skies. Those readers who are new to astronomy, often ask where to begin, and I felt that this column could be of most use for them. On the other hand, those of us who have been amateur astronomers for a while, generally have a collection of books and other resources for helping us find "advanced" objects. I hope that the column will be enjoyed by both beginners and advanced observers.

Welcome to our new column, "Arizona Sky"! I'll be describing what we can see in the Arizona sky in each month of the year.

But if you're not in Arizona, don't despair! The view will be pretty similar throughout the southern US and other similar latitudes of the northern hemisphere; and if you're north of that, e.g. the northern half of the US, or in Canada, the main difference will be that southern objects will be a little lower for you, and northern objects will be higher. (Of course if you're not in Arizona, the sky won't be as beautiful, but the only solution for that is to come to Arizona and see for yourself. ☺)

This month - October - we can still see the "summer triangle" gracing our western sky. The three brightest stars in the west will be Deneb, almost overhead; Vega, directly below it; and Altair, off to the left (towards the southwest). The three stars make an interesting contrast - although they seem to be of similar brightness, with Vega a little brighter than the other two, in reality Deneb is much brighter, but just much farther away. Altair is about 17 light years away, and is actually about 15 times as bright as the sun; Vega is about 25 light years away, and about 70 times as bright as the sun; and Deneb is about three thousand light years away, and about two hundred thousand times as bright as the sun. If Deneb were as close as Vega and Altair (but we're lucky it's not...) it would be much brighter than Venus. Deneb is estimated to be about 200 times as large as the sun - if placed in the solar system, its radius would reach Earth's orbit.

Deneb represents the tail of Cygnus, the swan. A little below Deneb is a horizontal

row of 3 or 4 stars representing the swan's wings; and about halfway between Vega and Altair (slightly above a line joining these two stars) we can see Alberio, the swan's head, as the swan flies down towards the western horizon with its long neck outstretched.

Through a telescope we can see that Alberio is a very beautiful two-color double star, consisting of a 3rd-magnitude orange giant, and a 5th-magnitude blue companion. The pair is about 400 light years away.

Vega is the brightest star in Lyra, the harp, which consists of a triangle pointing down (with Vega at the point) and a parallelogram attached to the upper left corner of the triangle. The top right corner of the triangle is Epsilon Lyrae, also known as the "double double". It is a quadruple star consisting of a horizontal pair and a vertical pair. It's easy to split Epsilon into its two main parts (the two pairs) with binoculars or a small telescope, but you need a much larger telescope and high magnification to see all four components. Epsilon is about 160 light years away.

At the top right corner of the parallelogram is Delta Lyrae, a two-color double star (orange and blue-white) that is easily separated with binoculars or a small telescope. Cascading between the two components of Delta is a very pretty open star cluster, Stephenson 1; the two Delta stars are apparently its brightest members. The group is about 1000 light years away.

The two stars at the end of the parallelogram are Beta Lyrae (about 900 light years away) and Gamma Lyrae (about 600 light years away). Between them, a telescope will show us the Ring Nebula, also known as M57.

Looking sort of like a tiny smoke ring, the Ring Nebula is actually one of the last stages in a star's lifetime. After a star has fused most of its hydrogen into helium, it expands as a red giant, and gradually a strong solar wind expands much of the star's material even further, to a distance about 1/2 light year from the star. The core of the star is exposed, and lights up the shell formed by the star's expanding atmosphere. The Ring Nebula is about 2000 light years away.

Below Lyra is the constellation Hercules. Four stars at the center of the constellation form a "keystone" shape, but if your skies aren't dark enough, you might see

only three of them. (You can usually see the fourth if you know where to look.) The keystone will be in a somewhat diagonal position, with the wider part at the top right. The fainter star (Epsilon Herculis) will be at the top left corner.

Pi

Eta

Epsilon

X

M13

Zeta

With binoculars or a small telescope, we can see the Hercules Star Cluster along the bottom edge of the keystone, about 2/3 of the way from Zeta to Eta. The Hercules Cluster, also known as M13, is a globular cluster - a dense collection of stars revolving together as a group around the halo of our galaxy. The cluster contains about half a million stars in an area with a diameter of only 120 light years. It is about 25,000 light years away from us. Its stars are about 12 billion year old - about as old as the rest of our galaxy - and have stayed together as a cluster for all of that time.

Low in the southwest, we can see the "teapot" shape of Sagittarius, just before it sets. The center of our galaxy is in the direction of Sagittarius, so that constellation is full of nebulae and star clusters, many of which can be seen with binoculars or a small telescope. The brightest of these are the Lagoon Nebula, slightly above the teapot's triangular "spout", and the open cluster M7, slightly below the "spout". It will be easiest to find these objects if you look early in the evening, as soon as it is dark enough to see the stars, and before Sagittarius gets too low in the sky.

M7 is actually in Scorpius, above the scorpion's tail, but Scorpius will be close to the horizon in October, and we won't be able to see it too well; so it will be easier to look for M7 starting from Sagittarius.

The planet Jupiter will also be nearby - a little to the right of Sagittarius, the brightest object in the southwestern sky. You'll need to look for it early, though; it sets around 9:30 at the beginning of October, 9:00 in mid month, and by the end of the month it will be setting before 8! So, catch it while you can. (But the sun will also be setting earlier from day to day - 5:50 pm at the beginning of the month, 5:20 towards

the end of the month – so you'll still have some viewing time.) With binoculars or a small telescope, you can follow the motions of Jupiter's four largest moons from day to day – just as Galileo did when he realized that the Earth wasn't the only planet that had a moon!

Later in the evening, Mars will be visible as a bright orange "star" in the east – resembling (and not far from) the reddish

star Betelgeuse in Orion. Mars will be a little brighter than Betelgeuse though.

Venus and Saturn are for early risers this month: Venus rises at around 2:45 am throughout the month, and Saturn rises at 3:30 am at the beginning of the month, 2:30 at mid month, and 1:30 towards the end of the month. A small telescope will show the phases of Venus (currently it's a nice crescent) and the rings of Saturn, and some-

times you can also see Saturn's largest moon, Titan. Titan is about 50% larger than Earth's moon; in fact, it's even larger than the planet Mercury!

Join us next month when we continue to explore the autumn constellations, currently rising in the east and southeast skies. And till then – wishing you clear skies, and happy observing!***

Adult's Night Out at Arizona Science Center

Due to situations beyond PAS's control, the viewing sessions / star parties at Adult Night Out at the Arizona Science Center on the First Friday of each month, will now be canceled until further notice. PAS was informed that their involvement in

this event will be put on hold until they have been contacted by the 2 people at ASC who need to discuss the new situation with me (Terri), and I haven't been contacted, and by the time you get this newsletter, it will have been 3 months since I was told this. So, until

this is resolved between PAS and ASC, there are no more viewing sessions at ASC for Adult Night Out. If and when this situation changes, you will be notified so that you can then attend or help at these star parties. ***

Pas Free Telescope Workshops

The Phoenix Astronomical Society invites you to drop by at Bookman's with your telescope, sky charts, questions and learn anything you wish to know about astronomy and telescopes at our FREE Telescope Workshop. RSVP is required with Terri 602-561-5398 or Events@pasaz.org Please see our other

FREE Public events online at www.pasaz.org Bookman's is located at 8034 N. 19th Ave. Phoenix, AZ 85021. You can find the dates of these events online at PASAZ.org EVENTS. We hope to see you there with your telescope as a student, or with your knowledge to assist those who need the help. If your bringing

kids 0-12, RSVP their attendance. The newest thing at the Telescope Workshops is the KIDS CORNER. Kids can enjoy coloring, puzzles, etc, while parents are learning how to use a telescope. Next Telescope Workshops will be Oct 28 3pm - 6pm, Nov 11 4:30 to 6:30, & Dec 2 3pm to 6pm.***

Did You Know? The Sun

Submitted by Terri V.P.

It would take over a hundred Earths side-by-side to reach across the face of

an average star like the Sun. The width of a super giant star, like Betelgeuse, is greater than a thousand Earths. In fact,

this star is much wider than the diameter of Earth's orbit around the Sun. ***

New Column Joins PAStimes

By Terri, V.P.

Have you wanted to write a special column for the newsletter and just haven't gotten around to it? Well, we have a new column joining our wonderful newsletter.

With the help of Don's editing expertise, Leah will be putting together a new column, starting in October called ARIZONA SKY. It will talk about what we can see in the sky each month and share the highlights of that

month's celestial views. We welcome Leah and ARIZONA SKY to PAStimes. This will be an awesome addition to all the wonderful submissions we receive from our readers. Thank you Leah! ***

Try to See the Morning Star in Mid Afternoon.

By Rod Sutter

This is in reply to space weather.com's last update talking about "The Morning Star" Venus. If you watch Venus in the morning you will notice that it's about 20-30 degrees from the Sun. And yes it is

visible all day long if you know where to look. I spotted it at 2:12pm on Saturday the 22nd, even with all the clouds. If you look directly to the West use your fist to make a 10 degree separation. Go to the West horizon and go 3 fist up from due

West, Venus will be visible, you can see it just look really hard, if I can do it so can you.

Good Luck Viewing
Rod Sutter
President
Phoenix Astronomical Society

Meteorite Hunt & Purchase

Text and photos by Terri, V.P.

A while ago, William, Matt and I made a trip up to Flagstaff / Sedona for the week-end. In the process, we caught up with Dennis for a day. We had lunch and a good time and that's when I took the photos of his Couch Potato Chair, and later wrote an article for the September issue of PAStimes about it. While there we met his brother Dale, and saw the meteorites and magnets he had for sale. I took those photos home with me, showed them to Mike. Mike said, "I have to go see those meteorites!"

Well, for Labor Day weekend, William and I made another trip to Flagstaff. We enjoyed all three gorgeous, non hot, non humid days. One of the days we went to Sedona. It wasn't as cool, but it was better than being in Phoenix in this humidity.

While in Sedona, we met up with Dennis Young again. Dennis had picked up the Meteorites and Magnets we were looking to purchase from his brother. Mike Marron wanted meteorites. So, in the pictures included in this issue, you will see Mike purchasing his 2 new meteorites from Dennis. Dale wasn't available that day so Dennis filled in for him. Dale deals in Magnets, fun toys, and Meteorites. If you are interested in his products, please see his website <http://www.rattlesnakemagnets.com>.

So, Mike purchased 2 new meteorites from Dale through Dennis. And William purchased a few neodymium magnets. While there, Bruce and I also purchased some new astronomy toys for doing star parties. You'll have to wait to see what we picked up. If you like it, you can always give Dale or Dennis a call and get one for yourself. They weren't that expensive.

After the purchasing was done, we then went to dinner at our favorite Sedona restaurant The Hideaway. This place has awe-

some pizza, salads, and other fun stuff. The pricing is decent and the food is fabulous.

Then Dennis took us on a mini tour of Sedona to walk off lunch. We enjoyed our fun trip and after a while, Dennis had to go do a show. You can see some of Dennis' awesome astro-scenic-photography on his website at

www.sedonastarlight.com.

Dennis does star tours for a living. He is always booked for an evening of viewing through his 28" telescope.

After Dennis left, Mike and Joe headed back to Phoenix and Ed, Bette, Bruce, William and I headed back to Flagstaff for the night. It was a great day in Sedona. We had lots of fun and we wish to send our thanks to Dennis for the fun time, and to Dale for providing us with the items we wished to purchase from him. ***



Most Recent Survey Results as of Aug 2007

By Terri, V.P.

As many of you know, PAS puts out a survey page for the visitors to our events. While there, we ask that they fill in a survey and in exchange receive some cool items. For the kids we have lithographs, and other fun things. For the adults, I have Night Sky magazines, Beautiful Universe and the Messier objects in photos. Well, we've had quite a collection of surveys over the last while and it is time to review them, once again. This collection comes to us from these sources: 8/12 Bookman's Telescope Workshop (1), 6/21 PVCC star party (1), 3/16 Cross of Christ School star party (13), 6/10 Bookman's Telescope Workshop (1), 4/12 PVCC Indoor Astro Event (3), 5/13 Bookman's Telescope Workshop (2), 8/3 PVCC star party (1), 5/2 Arrowhead Elementary school star party (4), 5/17 Sunset Ridge Elementary School star party (5).

The questions on the survey will be written in brief with the answers to follow.

1.

How were the activities at today's event? Perfect, kids enjoyed it. It gave us

the opportunity to get a close up view of things in space. We liked them because they were interactive.

2.

Favorite activity? The star hunt. Seeing the Sun. Moon. Looking at Saturn (7). Black hole program. The Astronomy of the stars. Looking at all the Meteors & Meteorites (6). Using tape & folding for planet positions. Meteor Demonstration. Looking at the Sun and it's bare surface. Space Probe & Meteorite Man. Driving here. Looking at Venus.

3.

How can we improve? Have games about Planets. Have the weather cooperate. Get a model of the Solar System. Get an X Box. More Shade.

4.

When there was a Treasure Hunt, did you like prizes you received & what would you like to receive in future for prizes? Candy. Money. Squishy balls that look like planets. Bracelets that say you won. More computer programs. Anything Astronomical. Planet inflatable & facts & info. Pic-

tures. Play Station. Tickets to Science Center, books, plush animals.

One adult or teacher said we were very organized and efficient.

I'd like to thank everyone who attended these events and thank them for their input. If they provided me with an email address, they will be added to the PAS Digest list. If not, but I have a mailing address, Don will send them a complementary issue of the newsletter. Thanks again and I do hope everyone had fun.

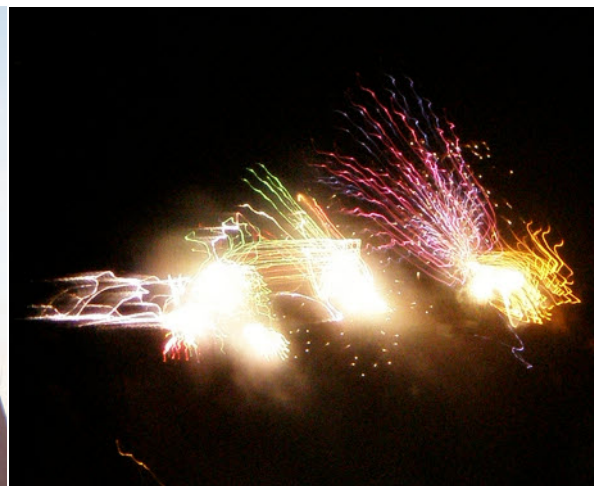
As far as the suggestions, I believe that we can use this info to help the club be more effective and efficient and fun. So, read them over and at the next Meeting of the Minds, bring your ideas with you for discussion.

Thanks goes to: Paul S, Ashley V, Cassie J, Claudia C, Candace, Michael W, Sara H, Nikki L, Keith F, Erik F, Ayemia P, Gerald M, Alexandra G, Milkaela L, Linda P, Chris J, Linda L, Casey L, Taylor, Moses Family, Mike B, Lauren P, Baradic, Anthony E, Linn K, Mary J, Robert S, Jeff D. ***

July 4 Fireworks in Carefree

Text and photos by Terri, V.P.

You missed it! PAS was invited to join Mike up at his home this past July 4th for a party. It started out at Bad Donkey which is a really awesome place to eat dinner. Then we took a tour of Carefree downtown with Mike. We saw an awesome, the largest in the world, Sundial, and a few other really cool things. Then we went to Mike's before dark. We gathered our drinks, chairs, cameras, binoculars and sat out at the end of Mike's driveway and enjoyed the fireworks. It was a fantastic time for all. We then headed indoors and enjoyed a movie - Dukes of Hazard, and a lot of talking and fun was had by the Finches, Mike, Don, and Kevin. We didn't leave there till 4 am, but we sure had a fantastic time. We hope to do this again next year. PAS members will be invited. Plan to attend. The fireworks were a great view, and some really awesome photos were taken at this event. ***



Did You Know? Jupiter

Submitted by Terri, V.P.

The giant planet Jupiter is over 10 times wider than Earth. The Earth could fit inside its Great Red Spot storm. ***

SIGS - Special Interest Groups

By Terri, V.P.

Have you wanted to get together with folks who have your same interest? Let's say, maybe observing Galaxies, mostly, or wanting to do Astronomy Computer stuff. Well, PAS is working on putting together some SIGS so that if you have an interest, such as in Mirror Making, you can get together with other folk from PAS who have that same interest. Barbara has an observing SIG. They, the group that she is in charge of, go observing with a goal of getting their Messier Pin or their Caldwell Pin. So far, I believe Rod and Dave are the two members of that group. If you are interested in starting one or mentioning a SIG, bring your ideas to the next Meeting of the Minds, or let an officer know and we will have a discussion about it.

There is a SIG I've been trying to get going. Advertising. We had a P.R. Director. He was doing an excellent job and then

he took on another hobby in his life and wasn't getting the advertising for PAS done as good as we'd like him to. So, we dissolved his position and we are now having meetings at the Bookman's telescope workshops. When there is no activity going on at Bookman's, as far as the public being involved in what we are doing at the telescope workshop, we are using the time to discuss other things. This past Bookman's event 8/12 we talked about and planned out our Meteor Shower/Solar and Lunar events. The next one, next month, will be to work on Advertising. So, if you have an idea on how to advertise PAS and would like to add your ideas to our ideas, please meet up with us at a Meeting of the Minds (MOM), or at Bookman's and give us your 2 cents. It is very welcome and needed. What I had in mind was to have one person be in charge, probably me, and then delegate to several folk some of the needed activities. So, let's say we meet at the MOM this month, and we

brain storm, using the computers that are there, all the possible places to advertise PAS events. Then, we divide it up so that maybe Mike takes 5, I take 5, Barbara might take 5, etc, and what we do is ... I write the ad, you guys disperse it to the proper places as often as needed. This way, several of us are accomplishing it and one person doesn't have to feel overwhelmed with all the work. See, I know what it is like to have all the work. I was Editor for quite a long time. I know exactly what Don goes through each month as he rushes to make the deadline. That's why I really appreciate him doing the newsletter. And he is doing a spectacular job of it. So, at the next MOM or the next Bookman's event, plan to bring your ideas for advertising PAS. We need to get a system that works so that we don't have PAS show up and no public is there. We've done that before. Advertising is very important if we want our events to be a success. See you there! ***

Snacks at Pas Meetings

I was informed by Dave that PVCC wishes to not contribute to snacks at the PAS meetings any more, so I'm requesting that if anyone wishes to share in the snack fund, for Oct 4, please bring a box of cookies, crackers, popcorn, and other snackish items to share with the group. If several

people contribute snacks there will be enough for all. We will start collecting again for the snack fund, as we did in the past, and William, Matt or I will pick them up prior to each meeting, but for Oct 4, we'd like your help providing until we get orga-

nized and back in the routine we had established prior to PVCC as our meeting location. Thanks for your help.

Many thanks goes to SAM INSANA who always supplies popcorn for us to enjoy!

September Third Quarter Moon Star Party

Well all of you that did not make the High Desert Park Star Party, you really missed a beautiful sight. The evening started out quite warm, but as the sun set it started to cool off real fast. Sue and I were there a little early, but that's OK, Barb showed up shortly afterwards, then our newest member Chris Johnson showed up. While Chris was shooting some astro photos, Barb was finding objects in her scope, and I was setting up my laptop to do some photos. Come to find out that Meade has not yet released an update to their DSI or LPI cameras so you can't use them with Windows Vista. I called Meade on Monday morning after waiting for 12 minutes on the phone, their tech department finally answered and I told them what was going on and they advised me that their Techs are working on a patch to get the cameras to work on Vista, but since it's a very unstable platform their having a hard time to get

it to work. The Tech told me they should be releasing the Update by the end of September. Any way back to the Star Party. Chris and his buddy James were doing astrophotography, Barb was looking at "The Blinking Nebula", and I was talking to Barb when Sue, (leaning back looking at the sky), said there's a shooting star. A few minutes I saw one, then Barb saw one, this went on for about an hour, I made the comment that there are sure a lot of meteors in the sky tonight, then I remembered that this was the date for Leonids meteor shower. Then we all understood why we were seeing about 2 to 3 every 5 to 10 minutes. Then around 8:30pm Sue was leaning back looking straight up and exclaimed, "Hey Look At That One", we all turned to look about 10 degrees South of Zenith to see a real bright Meteor, as we were all watching it, it went from a bright

meteor directly overhead, then about mid-way between Zenith and Polaris, this thing turned into a fireball, it turned almost yellowish orange and you could actually see flames coming from the tail, we watched the fireball all the way to the north and lost it about 5 to 10 degrees from the Northern Horizon. Then next morning on the news we heard that some of the news stations had reports of a UFO that caught fire heading North of Phoenix. Lots of reports came from Prescott that they saw the object North of them, I would not be surprised if the object landed between Flagstaff and The Grand Canyon. So far I have not heard of any reports of where it might have hit, but one thing for sure it had to hit ground as big as it was, and in all my years looking up, this is the first time that I actually saw a great fireball from space. Only wish I could have seen it hit.



by Patrick L. Barry

Satellite technology designed to catch ballistic missile launches may soon help doctors monitor the health of people's eyes. For the last 15 years, Greg Bearman and his colleagues at JPL have been working on a novel design for a spectrometer, a special kind of camera often used on satellites and spacecraft. Rather than snapping a simple picture, spectrometers measure the spectrum of wavelengths in the light coming from a scene. From that information, scientists can learn things about the physical properties of objects in the photo, be they stars or distant planets or vegetation on Earth's surface. In this case, however, the challenge was to capture snapshots of short-lived events—like missile launches! The team of JPL scientists designed the new spectrometer, called a computed tomographic imaging spectrometer (CTIS), in collaboration with the Ballistic Missile Defense Organization as a way to detect missiles by the spectral signatures of their exhaust.

A Missile in Your Eye

But now the scientists are pointing CTIS at another fast-moving scene: the retina of an eye. Blood flowing through the retina has a different spectral signature when it is rich in oxygen than when it is oxygen deprived. So eye doctors can use a spectrometer to look for low oxygen in the retina—an indicator of disease. However, because the eye is constantly moving, images produced by conventional spectrometers would have motion blurring that is difficult to correct. The spectrometer that Bearman helped to develop is different: It can capture the whole retina and its spectral information in a single snapshot as quick as 3 milliseconds. "We needed something fast," says Bearman, and this spectrometer is "missile-quick."

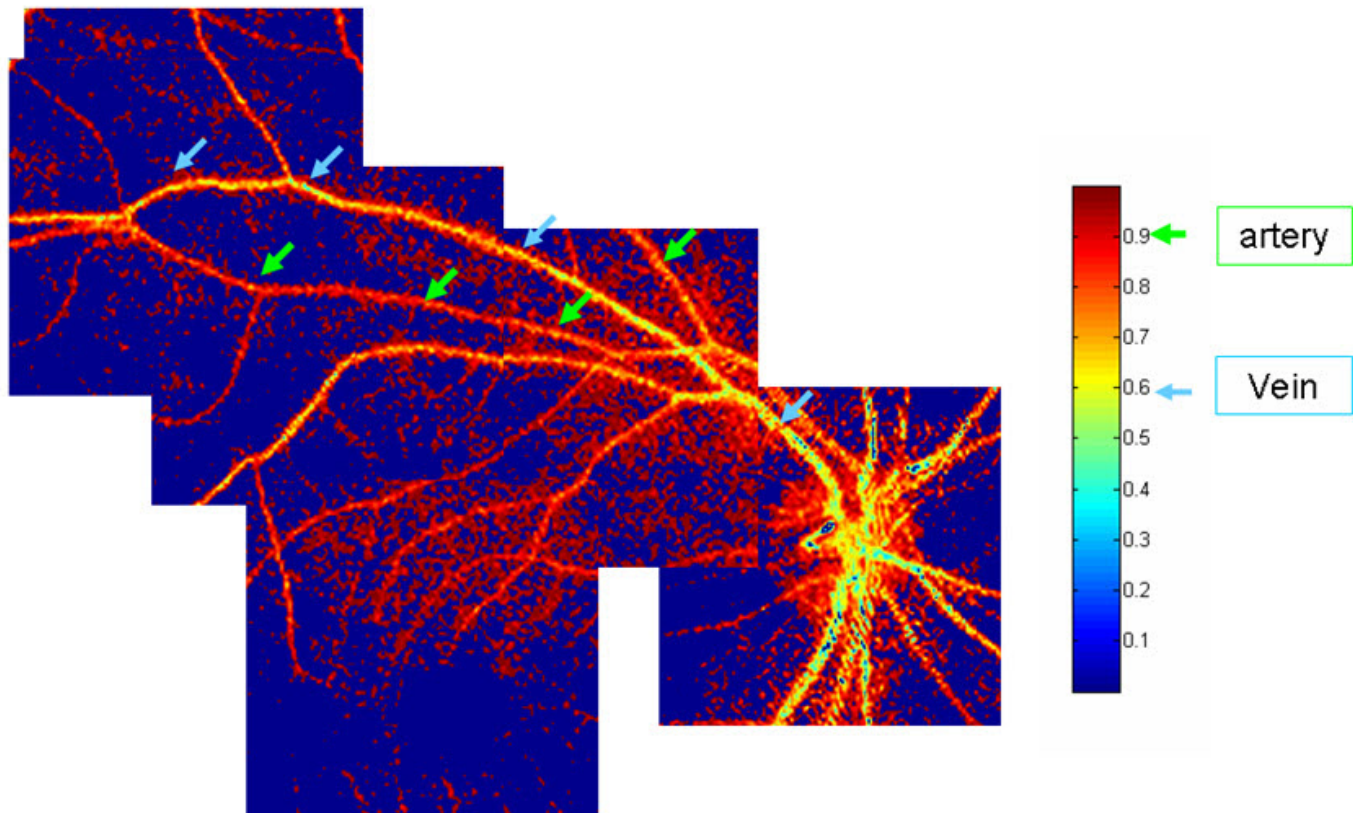
CTIS is even relatively cheap to build, consisting of standard camera lenses and a custom, etched, transparent sheet called a grating. "With the exception of the grating, we bought everything on Amazon," he says. The grating was custom-designed at JPL. It has a pattern of microscopic steps on its surface that split incoming light into 25

separate images arranged in a 5 by 5 grid. The center image in the grid shows the scene undistorted, but colors in the surrounding images are slightly "smeared" apart, as if the light had passed through a prism. This separation of colors reveals the light's spectrum for each pixel in the image.

"We're conducting clinical trials now," says Bearman. If all goes well, anti-missile technology may soon be catching eye problems before they have a chance to get off the ground.

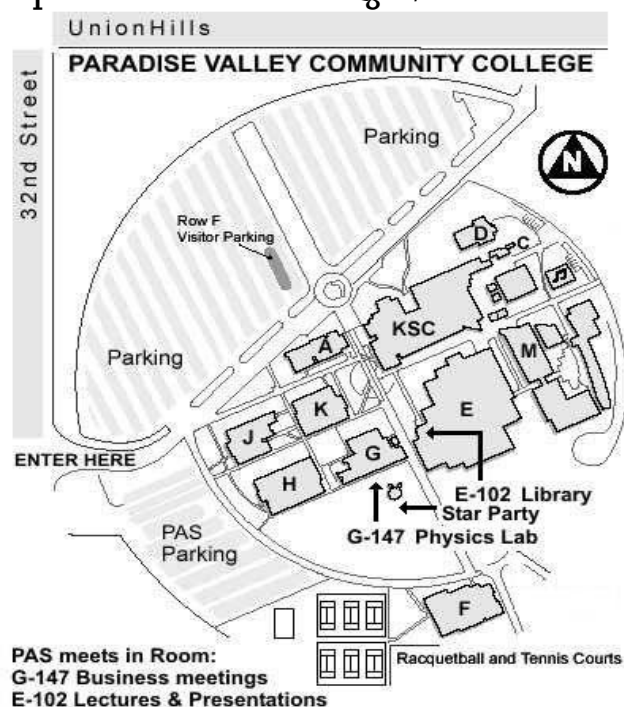
Information about other NASA-developed technologies with spin-off applications can be found at <http://www.sti.nasa.gov/tto>.

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

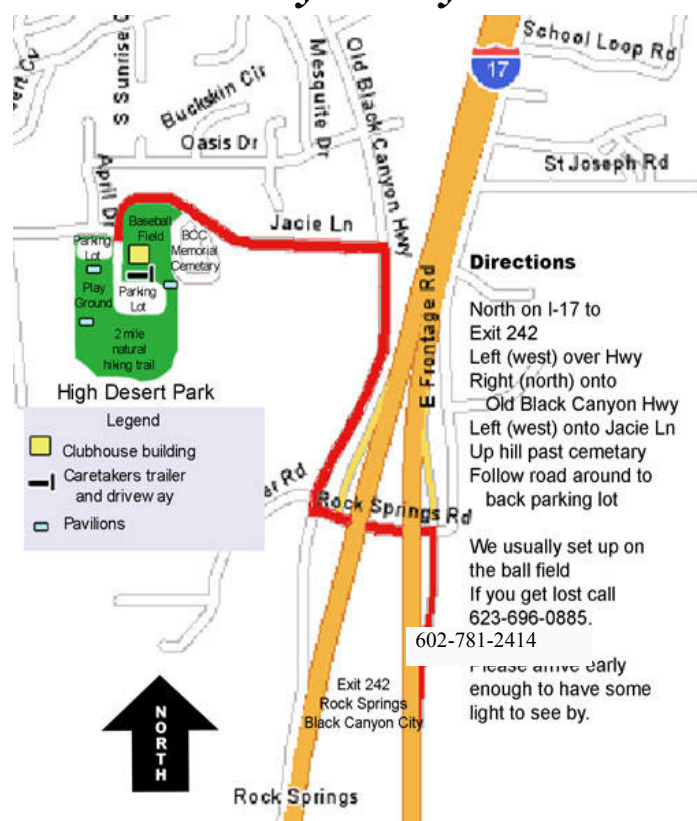


This three-color composite image from the computed tomographic imaging spectrometer shows the oxygenation of the blood in the arteries and veins of a human retina. (Arteries appear red, veins appear yellow.)

Map to PAS Meeting Location



Black Canyon City Site



OUTDOOR EVENTS ARE WEATHER PERMITTING, RSVP'S REQUIRED

Oct. 4 Thursday	7 pm to 9:30 pm	Paradise Valley Comm. College 18401 N. 32nd St Phoenix, AZ 85032 Library	PAS General Meeting Melissa Morris, Arizona State University "Indirect Detection of Water in Forming Planetary Systems"
Oct. 6 Saturday	Sundown to Moonrise	High Desert Park Jacie Lane Black Canyon City, AZ 85324	PAS 3rd Quarter Moon Star Party All are Welcome! \$2 per car donation request. RSVP with Barbara Hartman to attend. * Weather Permitting *
Oct. 13 Saturday	Sundown till ?	Two Trees Observing Site Call Barbara Hartman for map and directions	PAS Deep Sky Star Party RSVP with Barbara Hartman to attend. We are guests at this site so no white light of any kind. You need a Red Rock Pass to use the site (\$5.00 per day, remember midnight becomes the next day, so you will need one for Saturday and Sunday, or \$20.00 for the whole year)*Weather permitting** Weather Permitting *
Oct. 18 Thursday	6pm to 10pm	Paradise Valley Comm. College 18401 N. 32nd St Phoenix, AZ 85032 By G-147 Telescope Dome	PAS/PVCC Public Star Party *** Volunteers Needed *** RSVP with Rod Sutter to attend or to help out. * Weather Permitting *
Oct. 24 Wednesday		ASU West 47th Ave and Thunderbird Rd	U WEST OPEN HOUSE Star Party, Volunteers needed. RSVP with Paul at Paul.Schmidtke@asu.edu Special Guest Speaker from JPL, an expert on astrobiology, the icy moons of Jupiter and Saturn. PAS is invited to attend the presentation and help in the star party. Email Paul for more details. See flyer for this event at: http://tinyurl.com/2layo7
Oct. 25 Thursday	7 pm to 10 pm	Paradise Valley Comm. College 18401 N. 32nd St Phoenix, AZ 85032 in room G-147	PAS Meeting of the Minds No children please (business meeting)
Oct. 26 Friday		Paradise Valley Park 40th and Union Hills Rd Phoenix, AZ 85032	PAS Full Moon Public Star Party*** Volunteers Needed ***Moon Treasure Hunt (see craters, mountains and valleys on Earth's only natural satellite - the Moon). RSVP with Terri Finch to attend or to help out.
Oct. 28 Sunday	3:00 pm to 6:00 pm	Bookman's Back room 8034 North 19th Avenue Phoenix, AZ 85021-5101	PAS Astronomy Accessories SIG Meet at Bookman's in the back room. Handouts & Catalogs will be provided to those who RSVP. RSVP. is required by email to Terri Finch or by phone at 602-561-5398 (by Noon day before) to attend

Ads in PAStimes

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Upcoming PAS Meetings

November 1st: Ross Tucker JPL SSA "Planetary Exploration"
December 6th Bobby McGehee Retired Physicist "New Universe Theory"
February 7th Loretta McKibben AZ SED "Mars"

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What's Up For October?

By Rod Sutter, PAS President

Planets

Name	Date	Rise	Set
Mercury	10-1-07	8:30	19:10
Venus	10-1-07	3:04	16:30
Mars	10-1-07	22:43	13:03
Jupiter	10-1-07	11:40	21:39
Saturn	10-1-07	3:40	16:45
Uranus	10-1-07	17:10	4:44
Neptune	10-1-07	15:54	2:39
Pluto	10-1-07	12:16	22:48

All Times Arizona Time

Meteor Showers

10-13-07 Piscids
10-02-07 Orionids

October 15 2007

Sunrise: 6:31

Sunset: 5:55



Q3: October 4



New: October 10



Q1: October 19



Full: October 21

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