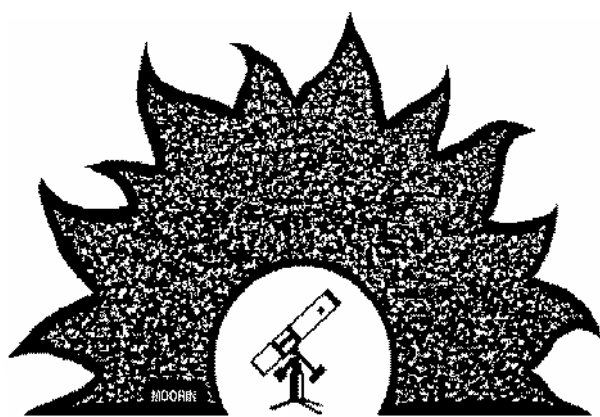




PAStimes

Phoenix Astronomical Society

www.pasaz.org

December 2008

Volume 61 Issue 4

PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Finally, Dr. Williams To Speak at December 4 Meeting

Dr. Williams topic will be "Latest Insights into the Geology of Mars from Recent Planetary Missions".

Dr. David A. Williams is currently serving as a Faculty Research Associate in the School of Earth and Space Exploration at Arizona State University. He served as a Visiting Assistant Professor at ASU in 2001-2002, in which he co taught Physical Geology and a graduate seminar in Planetary Volcanology. David is currently performing research in volcanology and planetary geology, with a focus on planetary mapping, geochemical, and remote sensing studies. His research has included computer modeling of seismic wave propagation through planetary interiors, visible and near-infrared spectroscopy of the lunar surface, planetary geologic mapping of the satellites of Jupiter, computer modeling of the physical and geochemical evolution of lava flows in

a variety of planetary environments, and petrologic study of lava samples from Mount St Helens. He was involved with NASA's *Magellan* Mission to Venus and *Galileo* Mission to Jupiter, and he is currently serving as an Associate US Investigator on the European Space Agency's *Mars Express* mission. David is currently the Secretary-Treasurer of the Planetary Geology Division of the Geological Society of America, has served on several NASA committees including the 2007 *Jovian System Observer* Science Definition Team, and is currently a steering committee member of the NASA Outer Planets Advisory Group.

This is not a misprint...Williams was scheduled for the September meeting, but for reasons beyond our control that meeting had to be cancelled. We were lucky to get Williams rescheduled for the

December meeting. We hope there is a good turnout for Williams' talk.



PAS Swap Meet at December 4 PAS Meeting

List compiled by Terri, Event Coordinator, various sellers represented in this list of Treasures.

I have trimmed down the info on them to make them fit in a this article, plus removed the person selling the item because we want you to attend the meeting to be involved in the PAS Swap Meet. Bring cash... I expect everything will be sold by the end of the meeting!

This is how the Swap Meet works. Bring a piece of paper and marker or get some from Terri. Write on it a description of your item and the starting bid. Then, through the meeting, we have a SILENT AUCTION. Those checking out your item can put their

bid in plus their first name or initials. At the end of the meeting, buyer meets seller and exchanges. Good luck with your sales!!!

Here are a few items you might see at this year's PAS Swap Meet.

1) A pair of 8mm Televue plossls available that could be purchased as a single or a pair for binocular viewing. & A single Orion Explorer II 7-21mm zoom eye piece. All eyepieces are virtually new with original boxes. Reasonable offers accepted.

2) An Orion EQ-1 Equatorial Mount with 1/4-20 adapter plus oversize Konus stepper motor drives on both the RA and DEC axes operated by a hand control that

runs on 12 volts. This is not a GOTO mount, It will readily handle either an Orion Short Tube 80, a 3" refractor, or up to a 102mm Maksutov. Starting Bid \$50.00.

3. PAS T-shirt FIRE SALE. Buy 1 T-shirt at \$10 and get the second one FREE. Shirt Sizes are L and XL, and images available are Earth, Sun, & Symbol. See Terri for Sales. We may also raffle one or more off at the meeting, so plan to get in on the raffle for a PAS T.-shirt. See images of these shirts in this newsletter.

4. Orion f/5 6" Reflector 8x50 Finder Scope on Vixen Mount with Case, polarscope and a laser collimator asking \$300. ***

Phoenix Astronomical Society Contact Information

President / Librarian	Rod Sutter	602-971-9129	President@pasaz.org
Vice President / Events Coordinator	Terri Finch	602-561-5398	Vicepresident@pasaz.org
Treasurer	Mike Marron	480-488-3031	Treasurer@pasaz.org
Newsletter Editor	Don Boyd	480-963-7189	Editor@pasaz.org
PAS Host	John Pulis	623-570-5308	
Webmaster	Chris Johnson		Webmaster@pasaz.org
Wow Contact	Chet Schuler	480-272-4545	Chetsch@cox.net
Rocketry Liaison	Jerry Belcher	623-628-9290	http://ahpra.org/launches.html

November PAS Meeting Review 11/6

By Terri, Event Coordinator

It was an awesome meeting. We had tons of snacks.. Thanks so everyone who brought snacks. Thanks to the Wurst's for bringing the water.

The meeting opened with a bunch of announcements for which I will review here:

1) Name badges: Get your name badge ordered today by the December PAS meeting at \$11/badge. Pay PAS for name badge. The first of the year, the badges go up to \$15 each. Many folk ordered their name badges this night.

2) Year in Space Calendars - orders were due this night. We got our 10 calendars on order at \$10/copy. The order will be placed around Nov 17 (delay due to checks received instead of cash), and hopefully will be delivered to the December PAS meeting.

3) Dues for PAS are due by Dec 31, but prefer to have them all in by December PAS meeting if possible. Plan to give your dues to Mike so the Roster and PAS Website can be updated as to who is and is not a current PAS member.

4) Handouts - we had many!

5) Nov 15th Prescott 100 Girl Scout Star Party - Rod needs volunteers.

6) Meeting of the Minds normally scheduled on last Thursday of month, was moved from 27th to 20th. Thus a star party at Amberlea School came in on Nov 20 so the MOM was then scheduled for the 13th.

7) Meeting of the Minds topics: Post Card project.

8) January Meeting. YES WE ARE HAVING ONE THIS PAS SEASON. Be there!

9) December is Swap Meet. Get items to me for submission in newsletter by 11/19.

10) PAS Social at Chris's home in

Goodyear - 1/10/09. Read about it in December Newsletter and in forums for details. Big changes at this year's event.

Then we turned it over to our guest speaker. Klaus Brasch of the Coconino Astronomical Society entertained us through the evening in which he took us from the past... when he first became interested in astronomy and astrophotography to the present time... He shared with us his current observatory and

info on it and his astrophotography with wonderful photos. He talked of the programs he uses to enhance the photos and sandwich them. Good thing there isn't more "sand" than "wich" in the photos. :) Then he progressed on to a future trip he is taking. We were all very entertained and the presentation generated many really awesome questions.

Thanks, again, goes to Bruce, Bette & Ed for finding this treasure of a speaker for us through the Flagstaff Festival of Science.

Bruce won the 50/50 raffle of which \$22 total were collected,

each got \$11. I'd like to thank Steve Palmer for taking over as Host for the night. We missed several of our regular attendees: John Pulis, Kevin Harcey, Sam Insana (had another engagement), Don Boyd (car trouble) and some others were missed. We hope to see them at the next PAS meeting in Dec. And MANY MANY THANKS TO KLAUS for his awesome presentation!!! To see more photos of this event, visit this link <http://tinyurl.com/6lmcr> ***



Klaus Brasch

Meeting of the Minds Review 11/13

By Terri, Events Coordinator

We opened the Meeting of the Minds (MOM) this month with a quick review of upcoming events. The Saturday after the meeting we had 2 star parties planned. So, Rod helped me show everyone where to drive to to help him do the 11/15 Prescott 100 GS star party. We found out that Mike might be able to assist with that star party. Then we talked about the other star party planned for that same night 11/15 Meteor Shower Party. Bob and Don volunteered to help me do that one. We then moved on to 11/16 Bookman's last class – Speaker: Mike – Can we live on the Moon or Mars? And we touched on the upcoming 11/29 Venus – Jupiter Star Party. And then we discussed and showed on the overhead projector the location of the 11/20 Amberlea Elementary School Star Party. Those attending this star party will RSVP with Rod. I believe Rod, Chet, Sam and Mike are on the list currently as volunteers.

The topics then moved to the other items we needed to discuss, for which the whole purpose of this meeting was being held. The last topic of the night was the Post Card project, but while we discussed the rest of the topics prior to that one, we handed around a printed proof of the NEW PAS POST CARDS for review and editing.

So the topic moved to PAS Membership – Website access per household. The idea that was being discussed in a forum on our website is that some households might want to have more than one website access. For instance, I'll use myself as an example.... I have access to the site and I post on the forums and share my ideas. William might want to do the same with his own access so what the group decided is for the few PAS members who have this situation, such as Rod & Sue, or Frank & Sam, or William & Terri, and a few others, it will be allowed that those who are PAS members under the main member who signed up, who would want to access the website to use the forums, could be assigned their own access. So, if you are one of those who want access but do not currently have it, please email Terri for instructions on how to do that.

Definition of PAS Membership: One address, for one year, Jan – Dec. However, everyone living at that address, immediate family, is a PAS member under the main member. Example: Bruce Wurst has the

membership in his name, but Bette & Ed live in same household, are same family, and they may wish to have access to the site. Remember, we are talking about those who want to post and share ideas on the forums. If that does not interest you, please use your main PAS members' access to get into the site. So, Frank Insana & Sam may wish to have their own access.

PAS T-shirt sales – Fire Sale at December PAS Meeting? It was decided to have a Fire Sale on the existing PAS T-shirts at the December PAS meeting. See Terri for those shirts at Buy one for \$10 and get one FREE, while supplies last.

An additional topic came to us from William. He mentioned that on the site in the History portion of the site, one sees that Terri is the last President listed and to keep up the history that was started by Dan Heim, it is suggested that we get that updated as soon as possible before people forget who was Prez, etc. So, Rod and Terri will work on an addition and Don will post it when it is done.

Mike also brought up the topic of having Summer meetings again. So, Terri may need your help in finding guest speakers for the Summer months. If you have any suggestions, please let me know, thanks.

And then we got to the last, longest topic of the night. Post Card progress: It was decided to mail all of them at one time. It was also mentioned by Sam that it is possible that we may have to do another mailing, maybe 6 months from now, to remind them we exist. It was also mentioned by Leah (not present) and someone at the meeting that we might want to do a follow up phone call. Sam suggested that those who are seriously part of the Star Tours group do the phone calls by breaking it up equally among those involved. So, if you are part of the Star Tours group, you may be assigned in about 2 weeks for the date we mail the Post Cards, to call the resorts as a follow up to the Post Cards. We will work out what we want to say to them when the time comes. It will be brief, but hopefully effective. The Sample Post Card went around the room and I wish to thank everyone for participating in the editing of the cards. Don took it home with him to change it to the suggestions and ideas that everyone had. His hope is to make it to the Sat PV Park star party and deliver the cards

to Terri then, and she will address and mail them as quickly as she can.

Just before closing the meeting, we got in a discussion of looking professional at these PAID star parties and how we need polo shirts or something that makes us stand out, so people know who we are. So, Rod, Terri, Don and Bob gathered around a computer and helped design a PAS patch. We decided that it would be best if everyone had a matching patch rather than investing in shirts that have it attached already. Here is the logic behind that. If you notice, you buy a shirt, wash it maybe 10 times, and already it is frayed and worn looking. So, the PAStimes Star Tour team members will go out and buy Polo shirts, in a color they like, preferably darker but not a requirement, as long as they have a collar like a polo shirt and are SOLID COLORS. Then, we will invest, with PAS money in two new things.

1. PAS Patches for sale to the public – 3 Inch round. We buy them at low cost and sell them to the public at events.

2. PAS Patches with PASTIMES STAR TOURS that can be added to the top of the patch for the public to say we are part of the star tours group.

Rod and Terri are working on this item. The other idea that was discussed is to contact companies and get Meade, Orion, JPL, etc to send us patches for our Star Tours group to have on our shirts when we do these paid star parties. It would be nice if we could have several other patches for décor. The other reason we are having it done as a patch is that you can move a non-permanent patch someplace else, such as off a Polo shirt and onto the solid colored jacket you might be wearing that night, thus it is still visible saying you are part of the TEAM.

If you missed this meeting, you missed a lot of good conversation. We talked about other things as well, after we closed the meeting, that were very interesting. Mike has rodent and snake problems he is trying to solve. Everyone gave him suggestions on doing that. Other topics were just as interesting. We concluded the meeting about 9pm and then chatted for another ½ hour before calling it a night. See you at the next MOM on Dec 18th. ***

Arizona Sky



By Leah Sapir

The Summer Triangle is fading in the west, and the Winter Circle is just beginning to rise; but the autumn constellations are high overhead.

Last month we located the Great Square of Pegasus and identified the flying horse's head and forelegs on the western side of the square. But at the northeast corner of the Great Square, the star Alpheratz is actually part of the constellation Andromeda. Two lines of stars extend eastward from Alpheratz, tracing the princess's gown. (We can think of Alpheratz as her head.) The brighter stars are in the southern line: Alpheratz (Alpha Andromedae), Mirach (Beta And) and Almach (Gamma And) are all second magnitude. Delta Andromedae, between Alpheratz and Mirach, is third mag. The stars in the northern line are fourth magnitude, harder to see but visible if we know where to look for them.

Alpheratz and Almach are an interesting contrast: Alpheratz is a blue giant only 100 light years away, while Almach is over three times as far. Almach is a two-color double star composed of a second-mag orange giant with a fifth-mag blue companion. The two main components of Almach are about 1000 a.u. apart (100 billion miles), and take about 1000 years to orbit each other. The blue star itself is actually a close double star, but its components are currently too close to distinguish.

Mirach is a red giant, 200 light years away, with another kind of "companion" – a faint background galaxy, NGC 404, also known as "Mirach's ghost". NGC 404 is about 30,000 light years across and about 10 million light years away, just outside our "Local Group".

About 7 degrees north of Mirach is a much larger galaxy – our nearest neighbor, the Andromeda Galaxy, M31, filling around 5 degrees of a low-power telescope or binocular field. The Andromeda Galaxy is about 3 million light years away and about 150,000 light years across, slightly larger than our Milky Way Galaxy. Near

M31 are two smaller and fainter dwarf elliptical galaxies, M32 and M110, each about 8000 light years across. M32 is sometimes lost in

the glare south of M31, while M110 is a faint smudge about half a degree north of the main galaxy.

Parallel to Andromeda but further north, like a big "M" or "W" in the sky, is the constellation Cassiopeia. Cassiopeia is along the Milky Way, so it is full of beautiful open clusters and nebulae. It's not difficult to see the clusters, but it's quite a challenge to distinguish them from the rich background of Milky Way stars. Even if your skies are not dark enough for a good view of the Milky Way, when you look through binoculars or a telescope you'll see enormous numbers of stars there.

First let's identify the stars of Cassiopeia, which will be our guideposts to the other objects. Starting at the top right of the "W" (or bottom left of the "M") is Caph (Beta Cassiopeiae); then Schedar (Alpha Cas), Gamma Cas, Ruchbah (Delta Cas) and Epsilon Cas. All are second mag except for Epsilon which is a little fainter. Their distances vary from 50 light years for Caph to 700 light years for Gamma. Gamma is actually a "shell star" – an unstable blue giant that is rapidly rotating. Occasionally, unpredictably, it varies in magnitude when it throws off shells of gas from its equator. In 1937 Gamma Cas brightened suddenly to mag 1.6, then faded over the next few years to third mag, and then gradually brightened back to its usual magnitude of 2.2.

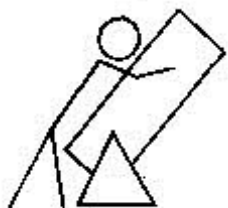
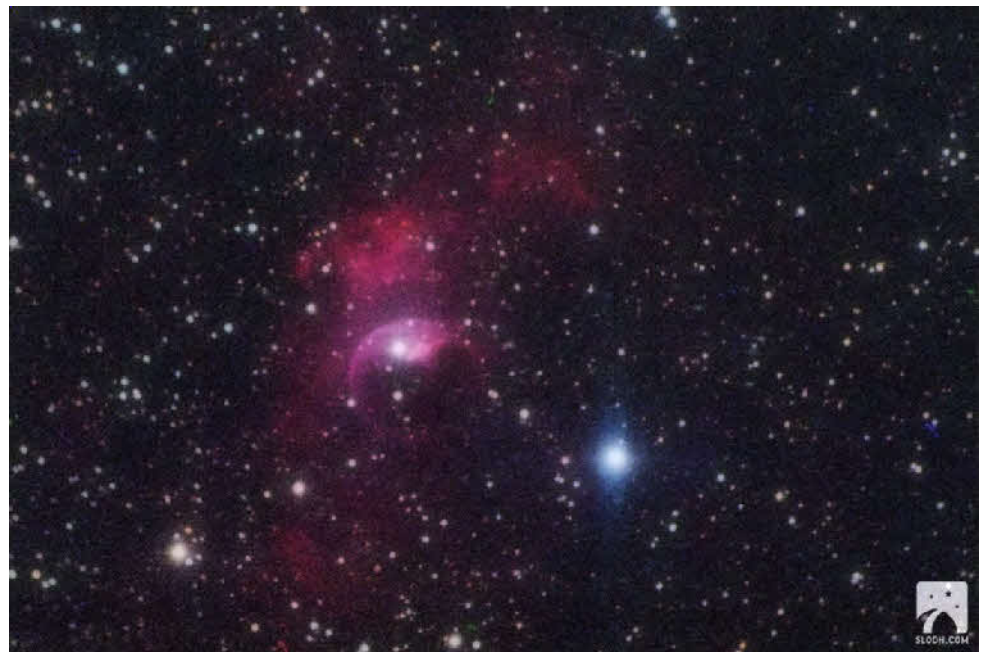
Between Ruchbah and Epsilon are a group of open clusters. M103 is the closest to Ruchbah, and NGC 654, 659, and 663

are about one or two degrees closer to Epsilon, a little east of a line joining the two stars. M103 is about 9000 light years away, and the other clusters are slightly closer. On the other side of Ruchbah is NGC 457, the Owl Cluster, that we talked about last year. We can locate NGC 457 by drawing a line from Epsilon to Ruchbah and then continuing on about two degrees more.

On the other side of Cassiopeia is M52. We can locate M52 by drawing a line from Schedar to Caph and continuing for another six degrees – a little farther than the distance from Schedar to Caph. M52 is about 5000 light years away.

In that same part of the sky, less than a degree away from M52, is a fascinating object that is difficult to see in a small telescope, even in dark skies, but shows up nicely in photographs: NGC 7635, the "Bubble Nebula". This is a bubble of gas formed by a fast stellar wind around a young, hot star. The Bubble Nebula is about 12,000 light years away. It is actually part of a much larger cloud of gas, but we only see the part that is lit up by the central star. The red color seen in the picture is ionized hydrogen. The blue star at the right is not the one responsible for the nebula; it's just an unrelated blue giant around 1400 light years away.

Cassiopeia also has some other interesting objects that we can't see in a telescope: two former supernovas in our own galaxy. Tycho's supernova was observed by the Danish astronomer Tycho Brahe in 1572. He didn't know what it was



Arizona Sky

– he thought it was a new star – but today we know that it is just the opposite: a star that exploded at the end of its lifetime. Today all we can detect from Tycho's supernova is strong radio emissions. It is estimated to be about 7500 light years away. The other supernova, Cassiopeia A, is the strongest radio source in our sky, but the exploding star was not observed on Earth. This is surprising, because it should have been visible around 1660. It is estimated to be around 10,000 light years away.

Closer to home, several planets will be

visible in our sky this month. Jupiter and Venus begin the month with a lovely conjunction in the west after sunset on November 30. The two planets will be only two degrees apart. The crescent moon joins them on December 1, when it will be about four degrees from the two planets. And on December 28, we'll have a repeat performance, this time with Jupiter and Mercury visiting the crescent moon, but somewhat lower in the sky.

At the beginning of December, Venus and Jupiter will be up till around 8 pm. At the end of the month, Venus will set at

around 9 pm and Jupiter at around 7. Mercury will set at around 5:30 at the beginning of the month (very close to sunset), and even at its highest at the end of the month it will set around 7 pm, only a little more than an hour after sunset.

Saturn is moving back into easy visibility this month, rising around 1 am at the beginning of the month, and around 11 pm at the end of the month. Mars is too close to the sun to be visible.

Join us next month when we continue to explore the fall and winter constellations. And till then – wishing you clear skies, and happy observing!

Bookman's Telescope Workshop & Lecture Review 11/16

By Terri, Events Coordinator

We had an exciting time at the Bookman's Telescope Workshop this month. It started with Don and the Finches arriving and starting to set up tables. Bob Senger arrived and helped as well, and then Mike, our Guest Speaker came in. We got our tables all set up and waited. Gloria, a public RSVP, popped in, brought her telescope and got some assistance on it from Don and Mike. We let them finish showing Gloria her scope functions and talking about the club before starting the lecture. Mike began at 4:10pm. His talk lasted to 5:40pm. In the middle of his presentation, a picture that WAS hanging on the wall, decided to jump off and startle all of us!!! That was some shock! When Mike concluded, we packed up and left for Carlos O'Briens.

Mike's talk was presented as "Can we live on the Moon or Mars," but turned into "Exploiting Space." This brought up a lot of different ideas to be shared. Mike did an awesome presentation with props and the white board. While things were being set up, Terri addressed 28 of the PAStimes Star Tour Post Cards for mailing. There were

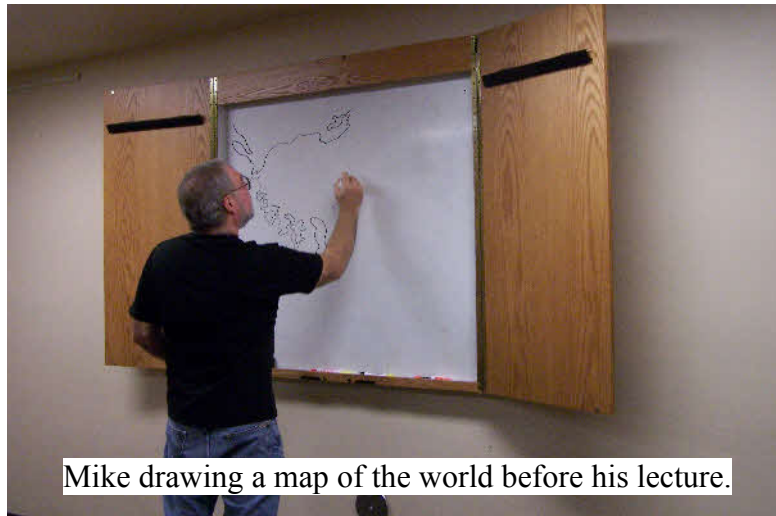
many handouts to choose from, but no stragglers this time. Usually, we have one or two who wander in to find out what we are doing in the backroom of Bookman's but this time, we didn't get anyone extra. People looked in the doors, didn't see anything that interested them, didn't even read the nice sign I made and put on the door that welcomed them in... and went on their way. It was an interesting with some

picture falling excitement event.

I'd like to thank Gloria for attending and asking questions. Very nice lady. We hope to see more of her at the club. I'd like to thank Ed Wurst for bringing cookies, and Bob for helping set up. Chet and Bob asked tons of questions! It was a good discussion lecture.

Dinner attendance was Don, Terri, William, Ed, Bette, Bruce, Bob & Mike.

Daniel, our favorite waiter at Carlos O'Briens took very good care of us. Afterwards, like we usually do, we went over to the 99 cents store to walk off dinner. Thanks so all who attended! Please see some photos of this event at this link: <http://tinyurl.com/5c6uh5> ***



Mike drawing a map of the world before his lecture.

Ask An Amateur Astronomer

I was out walking with my girlfriend on Thursday, Nov 20 about 6:30 pm. We believe that we saw a meteor shooting across the Phoenix sky from east to west. It looked like it was burning bright blue. I think we saw a smoke trail behind it.

Were we imagining things, or was it real?

Michael

Hi Michael,

It's quite possible that you saw a meteor.

"sporadic" meteors (not connected to any specific meteor shower) are frequently seen, especially in dark-sky areas. Most are just bits of dust that were "wandering" through space till they happened to fall through earth's atmosphere. The "flash" is much larger than the actual object, and is a result of friction with the atmosphere.

A few of the meteors are larger than bits of dust, and create a brighter flash. On a clear night, in a dark-sky site, several meteors can be

seen per hour (if you happen to be looking in the right direction at the right time, because usually by the time your friend says, "wow! look at that meteor in the sky behind you!" it's already gone before you can turn around. :))

There are usually more meteors after midnight, but sometimes you can see them earlier in the evening.

Best regards,
Leah Sapir

What Happened to Comet Holmes?

by Dr. Tony Phillips

One year after Comet 17P/Holmes shocked onlookers by exploding in the night sky, researchers are beginning to understand what happened.

"We believe that a cavern full of ice, located as much as 100 meters beneath the crust of the comet's nucleus, underwent a change of phase," says Bill Reach of NASA's Spitzer Science Center at the California Institute of Technology. "Amorphous ice turned into crystalline ice" and, in the transition, released enough heat to cause Holmes to blow its top.

Anyone watching the sky in October 2007 will remember how the comet brightened a million-fold to naked-eye visibility. It looked more like a planet than a comet—strangely spherical and utterly lacking a tail. By November 2007, the expanding dust cloud was larger than Jupiter itself, and people were noticing it from brightly-lit cities.

Knowing that infrared telescopes are particularly sensitive to the warm glow of comet dust, Reach and colleague Jeremie Vaubaillon, also of Caltech, applied for observing time on the Spitzer Space Telescope—and they got it. "We used

Spitzer to observe Comet Holmes in November and again in February and March 2008," says Reach.

The infrared glow of the expanding dust cloud told the investigators how much mass was involved and how fast the material was moving. "The energy of the blast was about 10^{14} joules and the total mass was of order 10^{10} kg." In other words, Holmes exploded like 24 kilotons of TNT and ejected 10 million metric tons of dust and gas into space.

These astonishing numbers are best explained by a subterranean cavern of phase-changing ice, Reach believes. "The mass and energy are in the right ballpark," he says, and it also explains why Comet Holmes is a "repeat exploder."

Another explosion was observed in 1892. It was a lesser blast than the 2007 event, but enough to attract the attention of American astronomer Edwin Holmes, who discovered the comet when it suddenly brightened. Two explosions (1892, 2007) would require two caverns. That's no problem because comets are notoriously porous and lumpy. In fact, there are probably more than two caverns, which

would mean Comet Holmes is poised to explode again.

When?

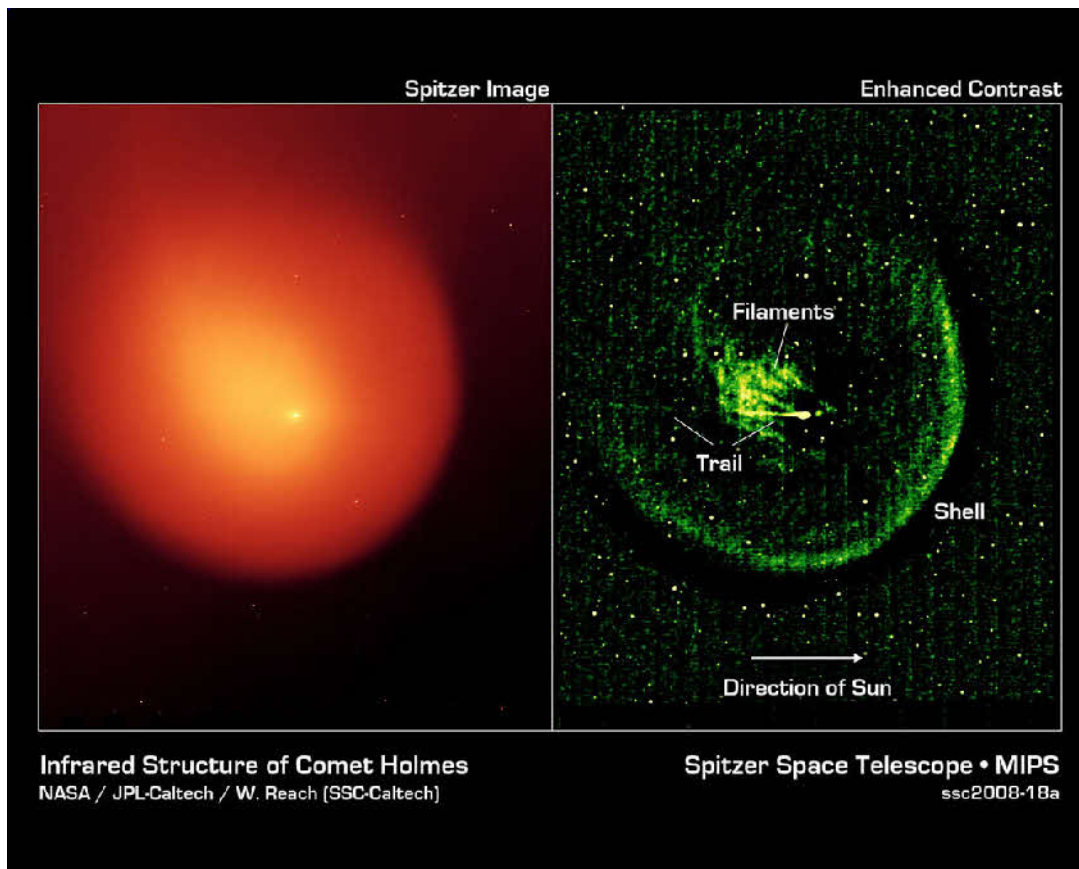
"The astronomer who can answer that question will be famous!" laughs Vaubaillon.

"No one knows what triggered the phase change," says Reach. He speculates that maybe a comet-quake sent seismic waves echoing through the comet's caverns, compressing the ice and changing its form. Or a meteoroid might have penetrated the comet's crust and set events in motion that way. "It's still a mystery."

But not as much as it used to be.

See more Spitzer images of comets and other heavenly objects at www.spitzer.caltech.edu. Kids and grownups can challenge their spatial reasoning powers by solving Spitzer infrared "Slider" puzzles at <http://spaceplace.nasa.gov/en/kids/spitzer/slider>.

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



Comet Holmes as imaged by the multiband imaging photometer (MIPS) on the Spitzer Space Telescope. The enhanced contrast image at the right shows the comet's outer shell and mysterious filaments of dust.

Year In Space Calendar Update

By Terri, Events coordinator

I have ordered the Year in Space Calendars on 11/18. The order should take 10 -14 days, which will put it arriving, at the latest the day prior to the Dec PAS meeting, Dec 3. We were successful in getting all 10 calendars on order again this year. Thank you all for helping with that goal. I will drop you an email when the calendars arrive, especially if they come in right before the meeting. Thus, you would know where to go to pick them up. Thanks again and have a super day! ***

December Upcoming PAS Events

By Terri, Events Coordinator

RSVP: Terri Events@pasaz.org or 602-561-5398 or on website calendar (preferred), Rod President@pasaz.org or Chris Webmaster@pasaz.org.

12/4 PAS Meeting with yearly Swap Meet. Bring your item for Trade, Sale, or money to purchase. PAS Is having a T-shirt Fire Sale, see article named "PAS SWAP MEET AT DECEMBER PAS MEETING 12/4" for more details.

12/4 Deadline to order PAS Name Badges at \$11 each, see article named "LAST CHANCE TO ORDER YOUR PAS NAME BADGES FOR \$11" for more info & see photo included in newsletter of sample name badge.

12/12 Full Moon Star Party 6pm to 9pm PV Park – Volunteers Needed – RSVP with Rod – No public RSVP's cancels this event.

12/13 Geminid Meteor Shower Party 6pm to 10pm PV Park – Volunteers Needed – RSVP with Rod – No public RSVP's cancels this event.

12/18 PAS Meeting of the Minds. See topics on upcoming meeting in the "Meeting of the Minds Agenda" found on line in the download section, PVCC G-147 7pm to 10pm.

12/20 3rd Quarter Moon star party in Black Canyon City – Sundown to ? - RSVP required with Rod, \$2/car fee to attend with

or without a scope. Stuff your car full of people & scopes.

12/27 Cuttin' Edge Observatory Star Party – RSVP is with Chris by day before. Noon to Noon next day – dress warmly. PAS Members Only.

And 1 event for January:

1/3 Quadrantid Meteor Shower Party at PV Park 5pm to 10pm - – Volunteers Needed – RSVP with Rod – No public RSVP's cancels this event. ***

Sometimes I think we're alone in the universe, and sometimes I think we're not. In either case the idea is quite staggering.
Arthur C. Clarke

PAS Patches

By Terri, Event Coordinator, and lately, order processor

At the last Meeting of the Minds, we had a discussion about ordering some PAS Patches. Don, Rod, Bob and I designed an initial patch. I will be doing research on this patch as far a pricing and possibilities. The plans for this patch: Order the minimum number of 100 patches. Then, order a separate item, might cost more but says PASTIMES STAR TOURS, and only get about 25 of those, depending on how many PAS members are Star Tour members as well. Maybe order 50 of them, not decided yet, depends on pricing. The main patch will be 3" round, colorful. The secondary patch will have room to be adhered to the initial patch. Now why do this? Well, the

patch will be seen better than the PAS Name Badges when the Star Tours group goes out to do star tours. Thus, the Star Tours group, with their solid color polo shirts and this Patch as well as their Name Badge, will make our group look professional and uniform. The extra patches we purchase can be sold to the public. Think about it, wouldn't you want a patch from PAS, JPL, etc on your hat, jacket, shirt, etc? Now the ones we want to get will probably be pinned on to the shirt. We originally, for the Star Tours Group wanted to get them sewn on but if you think about it, any shirt that is washed on a regular bases will soon look raggedy. So, the star tours group will purchase their own single color polo shirts in a color they

like, for doing the star tours, and use the patch as a way to make us all look uniform like we are a team. So, be watching for updates and i'll take photos of the planned patches, and post results in the forums and in the newsetter as we get this organized. The goal is to order the patches through the same company I get the PAS name badges from... thus, getting it all from one place. If my name badge company can't do this, then Rod found a great site that can and will have our order soon. If you have any input on this subject, feel free to post in the forum about it. Forum topic has been started at <http://www.pasaz.org/forums/showthread.php?p=342#post342> ***

Bookman's 9/21 Review

By Rod, Prez

We're doing ok, Steve and Chris is here with Don, Sue and Me. Chris is showing Sal how to use his celestron c6. Steve is showing Sean how to use his 5" orion reflector

Don helped Dot with her bowling ball scope and she has already gone home to look at the moon.

Chris said the only reason he came was to go to Carlos O'Briens afterwards, I can't really blame him, I think that is a great reason to stop by. Sal was happy with what Chris had covered about his scope, and learned. I think that everyone was happy. End of Meeting. See ya next time.



Chris (on left) helping Sal



Steve (on left) Helping Sean

Last Chance to Order Your PAS Name Badges for \$11

RSVP yours today by talking to Terri at the December PAS Meeting.

The price will go up at the first of the year. We are putting in a massive order for PAS name badges right after the December PAS meeting. Get your \$11 turned in to Mike and tell Terri to add you to the list. One massive order going in. I wish we got

a discount for more than 10 badges ordered like Year in Space does for us, but it is a flat \$11 per badge.

The price will be increase to \$15 in 2009. Get your PAS Name Badge ordered today. An example of this badge can be seen in a photo included in this issue. Your

order HAS TO BE received by Dec 4th to be placed with the rest of the order. Thank you for your order. ***



Post Card Project Update

The Post Cards have been beautifully printed by Don, Terri, while waiting for the Bookman's Lecture to begin on 11/16, addressed 28 post cards. Then, after Bookman's and Carlos O'Briens, they were mailed on the way home that evening. We hope to hear from a few resorts for this

holiday season. Keep a watch on the "Post Card Resort Contacts" list in the Members Only Downloads section of the website. And feel free to send Terri more resorts you feel might want PAS to do a Paid Star Party for. Don originally printed 40 post cards

and we have used 28, with two more having been added that night. Thanks to everyone who has helped with this project, and who is part of the Star Tours TEAM. Let's work together to make money enjoying our favorite hobby! ***

Meteor Shower Party 11/15

By Terri, Event Coordinator

It started with a day of phone calls. 17 public RSVP's and 3 telescopes of PAS Members. William and I arrived at PV Park right around 5pm. The sun wasn't down so we could see that there were a ton of cars in the parking area in which we wanted to setup. We set up by 5:30 over to the South side. We won't do that again, there was a huge light in our eyes once it got dark. The best location to set up in this parking lot is the center, however, there was a big party going on in the ramada in that area. They had most of the parking lot filled with cars for their party. As the night went on, 5:45 came and Don arrived. Shortly after we had Sean W. wander in and wonder why we were set up over here when he had a bunch of scopes set up on the other side of the

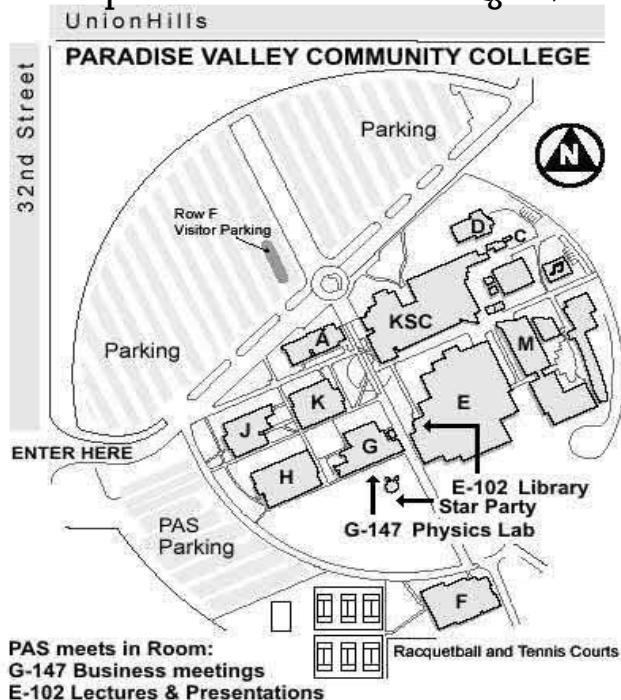
park. So, he went back and got them to move over to where we were set up. That was very nice of him. Sal G. showed up with his scope, Sean has his and that made 4 scopes with Don's and mine. Sal and Sean were there to learn how to use their telescopes so Don and I showed various items. We found Venus, Jupiter, the Ring Nebula, Andromeda and Perseus Double Cluster. Around 8pm the temperatures dropped and the public started to leave. so by 8:30 we were packed up and out of there. That was quick. I'd like to thank Ann, her son and her Mom for attending. Ann comes up to us from Mesa. I put her in my phone so that when she RSVP's in the future, I will know she's calling and can answer right away. Bob Senser came to help out. He was entertaining to talk to.

Thanks goes to Don who helped Sean and Sal with their telescopes. Sal has a go-to, very nice, compact Celestron. I suggested to him to ask Rod to give him a little help with his scope in the near future. We helped balance Sean's scope so he can enjoy it on his own. Many thanks to those who attended and RSVP'd. The number of RSVP's made this event happen. No photos were taken, Don & I were so busy with the set up that we both forgot to shoot any. But the event was a success and I do hope the attendees enjoyed it as much as we did. One boy saw 2 meteors in an hour, and Ann's son saw 2 in a different hour. Don and I didn't see any that night. I think it was because we were busy with our telescopes. We look forward to the next event and a nice size attendance. See you there! ***



PAS T-Shirt Fire Sale! Buy one at \$10, get one FREE at December PAS Meeting, Only!

Map to PAS Meeting Location



Black Canyon City Site



For More Information on events See Page 7

December 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 PAS General Monthly Meeting with Guest Speaker DEADLINE - Order your PAS Name Badges by today!	4	5	6
7	8	9	10	11	12 Full Moon Star Party at PV Park	13 Geminid Meteor Shower Party at PV Park
14	15	16	17	18 PAS MEETING OF THE MINDS (Business Meeting)	19	20 3rd Quarter Moon Star Party at High Desert Park in BCC
21	22	23	24	25	26	27 Cuttin' Edge Observatory Dark Sky Site (Private)
28	29	30	31			

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

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

PAS is incorporated in the state of Arizona as a non-profit, scientific and educational 501(c)(3) organization. Our newsletter PASTimes is published monthly from September to May and distributed by US PS and the Internet. All Issues are available for download on our website www.pasaz.org. Ads for astronomy equipment are provided as a courtesy to sellers and buyers, and do not constitute any endorsement by PAS. Many thanks goes to Leah Sapir for her monthly article of Arizona Sky. And thanks goes to Matt Kohl for his proofreading & editing skills each month for PASTimes. Thanks also to Kevin C. Harcey for his submission of cartoons. 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 President

Planets

Name	Date	Rise	Set
Mercury	12-1-08	07:35	17:28
Venus	12-1-08	10:30	20:48
Mars	12-1-08	07:23	17:21
Jupiter	12-1-08	10:58	20:21
Saturn	12-1-08	00:55	13:27
Uranus	12-1-08	13:18	00:55
Neptune	12-1-08	11:56	22:40
Pluto	12-1-08	08:31	18:58

All Times Arizona Time

December 15 2008

Sunrise: 07:21
Sunset: 17:25

New: November 27



Q1: December 5

Full: December 12

Q3: December 19