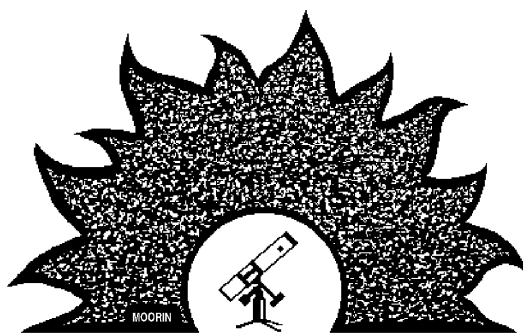




PAStimes

Newsletter of the
Phoenix Astronomical Society
www.pasaz.org

December 2005
Volume 58, Issue 4

PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Next Meeting: 7:30 pm, Thursday, December 1st

Our December lecture features Dawn Mullan, local space artist and media visionary. The title of her presentation is "Spacescapes: Where photography ends, imagination begins." Read more about Ms. Mullan inside.

PVCC's Library is open all day. PAS members with business to conduct, new members with paperwork to complete, or those who simply want to socialize, are asked to arrive early. PAS Officers are generally onsite by 7:00 pm. As a courtesy to our speakers, meetings will start promptly at 7:30 pm. ★

Last Meeting: Thursday, November 3rd

Dr. David Burstein of ASU was scheduled to give a presentation on "The History of Astronomy." For reasons yet unknown, he was unable to attend. By 8:00 pm, half an hour into the planned meeting, we had to assume he would not show, so we pursued Plan B. And with the multimedia technology at our disposal, there's always a Plan B.

PVCC's LCD projection system is interfaced with their broadband network. At Jerry's suggestion, we went to the AHPRA (Arizona High-Power Rocketry Association) website and viewed a launch of their awesome "Gila Monster." You can see what we saw at: <http://www.ahpra.org/gila.htm>. Thanks to the LCD projector, we were able to watch this video on the "big screen," and it was quite a treat. If you've never watched a high power rocket launch, check out the 7Mb mpg available there for download.

Dr. Ed Rosenthal, PVCC Professor of Astronomy & Physics, then suggested we view a DVD from the HBO series "From the Earth to the Moon," produced by Tom Hanks (of Apollo 13 fame). We watched the first DVD of a 12 DVD set, which stood on its own as a retrospective of mankind's long-standing dream to reach the Moon. It was a great video, enjoyed by all. Thanks to Dr. Rosenthal for stepping in and providing us with an alternate program for the evening. ★



The mysteriously absent Dr. David Burstein.



Dr. Ed Rosenthal prepares the link between his PC and the projection system. He is assisted by an IT specialist from the PVCC Library. Their quick setup allowed us to proceed with a backup presentation.

December Events:

- 12/1: PAS Lecture Meeting at PVCC, Dawn Mullan, space artist, is our speaker, 7 pm
- 12/2: PAS Adult Night Out at ASC, 6 pm, volunteers and scopes needed, Rebecca Lilleberg: "The Science of Beauty"
- 12/3: PAS Deep Sky Public Star Party, TBA
- 12/8: PAS School Star Party at PVCC, 6-10 pm setup 5:30, volunteers needed
- 12/9: School Star Party at William T. Machan Elementary, 2140 E. Virginia, 6 pm, volunteers needed
- 12/15: PAS Meeting of the Minds at PVCC, 7 pm
- 12/24: PAS Shallow Sky Public Star Party, TBA
- 12/31: PAS Deep Sky Public Star Party, TBA volunteers needed

Meet Dawn Mullan

As a native of the (North) American Southwest, Dawn appreciates the enormous sky --full of changing landscapes from clear, hot summer days to rich, stormy monsoonal nights with sunrises of golden lapis and sunsets of reddened hues as stars glisten brightly in the evening sky.

Viewing pictures from the Hubble telescope or the planets through a home scope, the universe is alive with inspiration and beauty on an aquamarine canvas. This adoration for astronomy has invoked a different but interesting direction for the artist to embrace.

Recently, Dawn began exhibiting her brand of science fiction themed art work known as Spacescapes. These original and expanding pieces of art have become an ever increasing staple in this artist's archival repertoire.

Though art is a focus, Dawn has many other unique skills and abilities from facilitating panel discussions to presenting lectures, web designing to desktop publishing, from acting in film to stage managing plays, writing articles to creating program books. The breadth of her abilities keeps broadening with every new endeavor she undertakes.

Even with her busy schedule, Dawn finds time to give back to the community. Being a member of several non-profit organizations as well as supporting

her local United Way with contributions of art work for the Silent Auction, Dawn still believes that volunteering her time is an important civic responsibility.

Visit her website at:

<http://www.dlmullan.com/welcome.asp>

[This biography was copied from her website by permission kindly granted therein.] ★

Captain's Log

By Terri Finch

NOVEMBER 1st PAS MEETING OF THE MINDS

If you want to be part of the decision making team for PAS, then come to the next Meeting of the Minds. The next 2 MOM's will be Nov 17 at PVCC, and Dec 15 also at PVCC. These meetings are open to anyone who cares about PAS and wishes to discuss matters of importance with the group. We decide things such as where to hold future star parties, where to hold meetings when we don't have a location chosen, where to have public star parties, what to do about name badges, and a bunch more items that are important to PAS but not something that the general public wants to know about at our general meetings.

We are trying to get our Shallow Sky Star Parties to be at a location that is Public Friendly. That means it should be centrally located and bathroom accessible. A suggestion to check out the park on 40th St and paradise was made. We also voted to try it out for our November 26th star party date. Other possible locations to hold star parties are at Glendale and 22nd St, Spur Cross Ranch which Mike is doing research on, and Cave Creek Buttes on Jomax. We also voted Amanda Sallas in as our new Hostess. Katja moved out of town, went to Seattle, and we miss her.

I have confirmed that Bob Holmes will be our May Speaker. We will have about a 20 minute voting session for the new officers, and then we will turn it over to Bob who will have about an hour to tell us about Meteorites. I haven't confirmed the topic yet but when I do it will show up on the website.

The next topic we discussed was the Beginner Telescope Classes. Where should we hold this class. I'm going to be researching using the Bookmans location. And once we have it all organized, we will turn the advertising for these events over to Dan. We decided we need some heavy advertising for these events to make it worth our time. Rod and I will be mostly the ones in charge of these events. Everyone is welcome to come help and we will def-



initely need your help. We decided that it would be best to hold those classes on a Sunday during the day and then that night offer a brief viewing session at some location to go along with that training session. We'd plan to have handouts of upcoming events and their locations so we can give them all the data they need to learn about their scopes, learn about and be involved in PAS and possibly join. We want to hold 4 per year

So, if you want to know what is going on INSIDE PAS and you want to be part of it, be sure to be at the next MOM so that we can hear from you. These decisions aren't easy but most of them are fun. We really have a blast at these meetings. We are serious during them but we have fun before and after them. Just ask anyone who has been attending. They are worth your while if you care about our club. See you there!

PAS HOLIDAY SOCIAL

Make sure you have your really cool White Dwarf present ready to go, soon. Find that special astronomy item and get the shiniest paper you can, put bows and such on it, make it the most attractive present there is, and bring it, one per person involved in the White Dwarf gift exchange, to the PAS Social. Then, play the GAME OF THE YEAR. Yes, you will want to be involved. We ask that you try your best to purchase some item for this game that is something you'd like to receive as a gift. Keep it related to Rocketry, Astronomy, or Physics. That leaves quite a choice. And make it the most interesting gift it can be. We are trying to limit the cost, so I'd say to stay under \$25.

DUES

Did you pay yours? No? Then pay them at the December meeting. We want to be able to put out, in January, the current PAS Roster. Get your dues in so you will be on the list for PAS members to contact if needed. See the dues sheet on line on our site, or get one from Mike or Terri or Dan.

PAS at PVCC Star Party Nov 10, 2005

Dennis Young lives in Sedona. His passion for astronomy is amazing. He drove down from Sedona just to assist us at this star party. Rod & Sue, and Dave showed up early to the star party, Leah and the Finches were last to get there. Kevin brought his new Astroscan. We also had Andrew helping out with Bubba, the 11" telescope that lives in the dome on the PVCC Campus. I wish to thank everyone who attended this star party, and Amanda for assisting in setting up and taking down

the scopes. We saw Venus, Mars, the Perseus Double Cluster, and the Ring Nebula. The main focus was Mars and the Moon. It was a very successful party with about 100 people in attendance

Dennis's scope had binocular viewers. Wow, what an image. Very impressive. He put his scope on the Ring nebula. In darker skies it is awesome, but even in the glow of the Moon, it was still really good. Visit Dennis's website for some really awesome Astro-Scenic-Photography. We hope to have Dennis Young down with us again soon.

ARROWHEAD ELEMENTARY STAR PARTY

On Nov 14 we had such a great star party at this elementary school. Not only was the viewing awesome but the teamwork was spectacular! We could have probably used a few more scopes but I do want to thank those who attended.

Dave and his daughter Ariel, Mike with his posters and meteorites, Nicholas who picked up his new PAS Sun T-shirt while there, Leah, the Finches, Rod & Sue, Don, and Barbara.

Now, picture this.... we are in a fairly dark location, in a field WITH GRASS (that was an added bonus, softer on the feet), we were able to set up next to our vehicles, and there wasn't a cloud in the sky! The only drawback was that we were next to a church that had some kind of function and the entrance shown the headlights of all the entering vehicles in our direction. Next time we do this star party, Carol asked for us to do it again in the spring, we will park a few cars in the way of the lights shining on us, and we will move further down the field away from that entrance. We were in a line, along the cars which were against the fence.

The school was serving cake (which isn't good for sticky fingers on the telescope, but luckily most of the eaters were being careful) and drinks.

The Moon, Mars, and Venus were the highlights. I didn't get to walk around and find out what everyone was on for the night, but Leah had Alberio at some point and I believe Barbara took Andromeda or the Perseids Double Cluster. I took the Ring Nebula because I knew no one in my group was going to choose that one. I stayed on it all night. The only disadvantage is that the Moon was mostly full, and right by Mars, but far enough away we could still make out the Ring Nebula. The sky was lit too bright. I mentioned that to Carol so that she and I can work out a date that has a less bright Moon for next time.

Many of the teachers of the school were there and

they stopped by the telescopes. I had a ton of handouts for the kids to take. I arrived with 6 boxes, and left with 1/4 of a box. The last of the Beautiful Universe has left, and most of the stuff that is dated for 2005 has also gone. I only have a few items left. Leah is going to make more copies of her handout for me. And I will have to get more of the Who Are We page done up. I had a whole bunch of people sign up on the Email list.

The weather was pleasant, a bit chilly if you are just sitting still, but who gets to do that? Even if I stay on the same object all night, I still have to check to see if it is still in the eyepiece every so often. I enjoyed the chatting with the teachers and sharing the sky with this wonderful group of kids. It was an awesome night and we hope to do it again soon for them. The location was good, not too bright from lights, and the seeing was good in most directions. East had a few buildings but they were far enough away that Venus was awesome.

The star party only lasted till 8pm, at which time we talked with a few last people, packed up and were out by 9pm. Why 9pm instead of right away? Well, Carol went off with Mike to look at meteorites, and while she did that, Don and Barbara got with me to discuss the TREASURE HUNT we are working on. We should have that hunt ready soon. I need a scope count on who wants to be involved in this treasure hunt. If you want to help out, read below.

I want to thank Carol so much for inviting us. And I want to thank my team. Without our team, PAS wouldn't be as effective, fun, exciting as we are. Thank you all!

Here is an email received from Carol at the school:

Terri: Many thanks to you and your group for everything last night. The students and families are still very excited today. The participation and inquisitiveness were awesome. Please extend my sincere thanks for all your group did for us. I will keep in touch.

Sincerely, Mrs. Carol Jessen

THE TEAM

Do you want to be part of the PAS team? It's easy to do. First thing you need to do is let Terri know you want to be involved. Next, every star party you can make it to, you come do your share to make the viewing an awesome experience for those who are looking through your scope.

Now, as a team, each member picks a different object to show. For instance, Rod would pick Andromeda, Barbara might take the Perseids Dou-

ble Cluster, Terri would take the Ring Nebula, Don would take the Moon. We stay on that object throughout the night, or until everyone who visited has seen those objects. Then, if you want to change the object you are on, you announce where you are moving to and as long as no one is currently on it, it becomes your object for a while. This way, no one doubles up on an object, giving the public more objects to see in one night.

The second part of the TEAM effort is the Treasure Hunt. Barbara, Don and I are working on the Treasure Hunt. This is where a visiting family or child can pick up a page from the table that Sue would most likely be sitting at, and go on a Treasure Hunt to find the objects in our scopes that matches what's on the page. When they view that object, say they visit my scope and I'm on the Ring Nebula, they then get the page punched, or marked to prove they have seen it. And when we do show it, it would have to be that they actually saw it. We would want to have them describe what they see so that we know they saw what they are looking for. Then, they take their completed page back to Sue, and Sue awards them a prize for completion.

Do you have a prize, astronomy related toy or trinket to donate to this project? Give it to Barbara or Terri next time you can. This Treasure Hunt would give the kids some goal to reach by viewing through the telescopes. Prior to the star party, as we meet, we would discuss who gets what object so Sue can know where to send them if they didn't get the whole page done. Be part of our TEAM.

Over and out. —Terri ★

Astro Factoids

from Bette Wurst

Venus is often the brightest object (other than the Moon) visible in the morning or evening twilight. Its dominance is due to its total obscuration by highly reflective white clouds and its relatively close proximity to Earth. Perhaps due to this, Venus played a very important role in the lives of the Mayan people, who developed a calendar system based on the return of Venus to a particular location in the sky every 584 days.

The most distant known object in the Solar System is Sedna, first detected by astronomers in November of 2004. The planet-like object, thought to be up to three-fourths the size of Pluto, is 900 times the Earth's distance from the Sun. One orbit around our star takes Sedna about 10,500 years to complete. ★

Images from our November Meeting



Our new (and former) Hostess, Amanda, convinces a PVCC student to sign our guest list. Perhaps this gentleman will be our next new member?



Terri sadly announces we've lost our guest speaker.



Members and guests gather before the meeting. It was a good turnout of around 25-30 curious minds.



Amanda taunts a guest about borrowing her pen.



Dr. Rosenthal finally reaches the AHPRA website and tunes-in a video of a rocket launch. This is the infamous rocket known as "Gila Monster."

Foothills Academy Star Party

By Dan Heim

PAS volunteered to do one final Star Party for our previous host, Foothills Academy. Open to both FA staff and the two physics classes, there were some 25 people in attendance.

The Star Party went well. It started out a bit overcast and I was worried about even seeing Mars, but the sky was clear enough in the south and west to see both Venus and the 1st quarter Moon.

Later it cleared even more and we got some decent looks at Mars. Polar cap and surface markings were clearly visible through Dan's Takahashi 5" at 200x. Rod got a good view of the Ring Nebula through his 8" Newtonian. Roger (8" Meade CAT) and Sue (70 mm refractor) alternated between Venus and the Moon. Venus was showing a nice half-phase. Dave had some great high-mag views of the Moon with his 6" Dob. Mike was there too, with his meteor collection.

We had 5 scopes total. about 20 physics students showed up (and scored 50 pts extra credit), along with Don Senneville (Director), his wife Joan, their daughter Clea (now at ASU), and a family friend from Utah. We shut down around 8 pm when it started clouding up again, but everyone there got some great views. ★

[All photos on this page by Sue Sutter. Thanks Sue!]



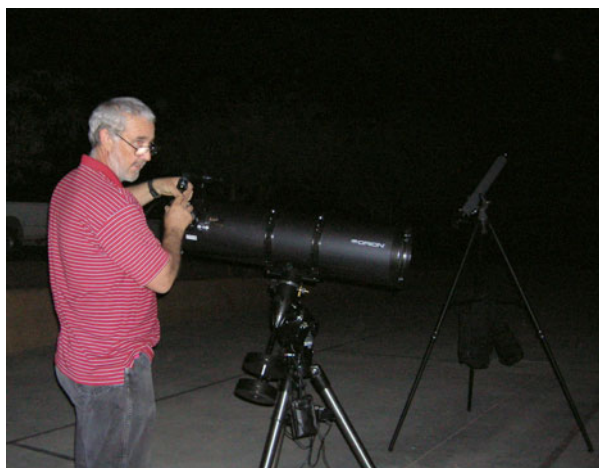
Dan describes the surface features visible on Mars to a curious physics student.



Roger, a frequent helper at our Star Parties, used his 8" CAT to pull in some deep sky objects.

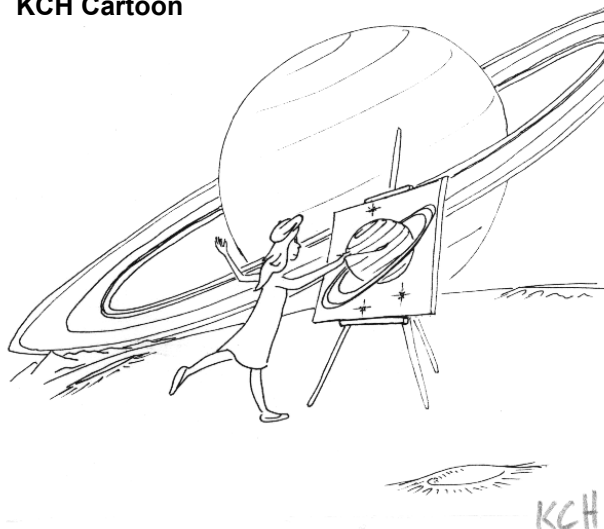


Meteor-Meister Mike was there with his collection of metallic and stony cosmic interlopers.



Rod had his 8" newtonian on the Ring Nebula, and it looked quite nice considering the sky haze.

KCH Cartoon



KCH Cartoon is © by Kevin Harcey, may not be reprinted without the explicit permission of the artist.

Mars Star Party in BCC

By David Owings

The Mars star party at Barbara's house was a lot of fun; thanks for letting us use your place Barbara! The weather finally cooperated this time and we had clear skies all night. Don and Rod helped me to collimate my scope; then we all got something to eat before it became dark enough to view the night sky. We spent the early evening looking at the moon and Venus before they set, then the rest of the evening was spent looking at DSOs, Mars, and meteor showers. The night was beautiful, I love seeing the milky way far from the city lights.

I was able to find quite a few Messier objects; some of which were located with Rod's help. Barbara's trained eye was able to see more detail on Mars than I'm able to see, even in my own scope! I finished the night off by viewing M42 (Orion Nebula) enhanced with Don's Light Pollution Filter. I didn't get out of there until 3:30 in the morning, and didn't get much sleep the next day, but it was worth it, and I can't wait to do it again! ★

Astro Factoids

from Bette Wurst

Mars is a dry place, but what water it has is concentrated in bright polar caps and in permafrost that lies just below the surface at high latitudes. During the martian winter, the polar caps are enlarged by carbon dioxide frost (dry ice) that freezes out of the atmosphere. ★



These are the scopes set up at Barbara's Mars Star Party in BCC. Don, Kevin, and an unidentified but friendly hooded alien chat about astronomy.



Rod checks out Mars with his scope. Jerry looks on and speculates about what combination of Estes engines would fit inside that tube.



David poses with his scope. He was kind enough to provide the photos for this page. Thanks David!

From the NASA Space Place: Voices from the Cacophony

By Trudy E. Bell and Dr. Tony Phillips

Around 2015, NASA and the European Space Agency plan to launch one of the biggest and most exacting space experiments ever flown: LISA, the Laser Interferometer Space Antenna.

LISA will consist of three spacecraft flying in a triangular formation behind Earth. Each spacecraft will beam a laser at the other two, continuously measuring their mutual separation. The spacecraft will be a mind-boggling 5 million kilometers apart (12 times the Earth-Moon distance) yet they will monitor their mutual separation to one billionth of a centimeter, smaller than an atom's diameter.

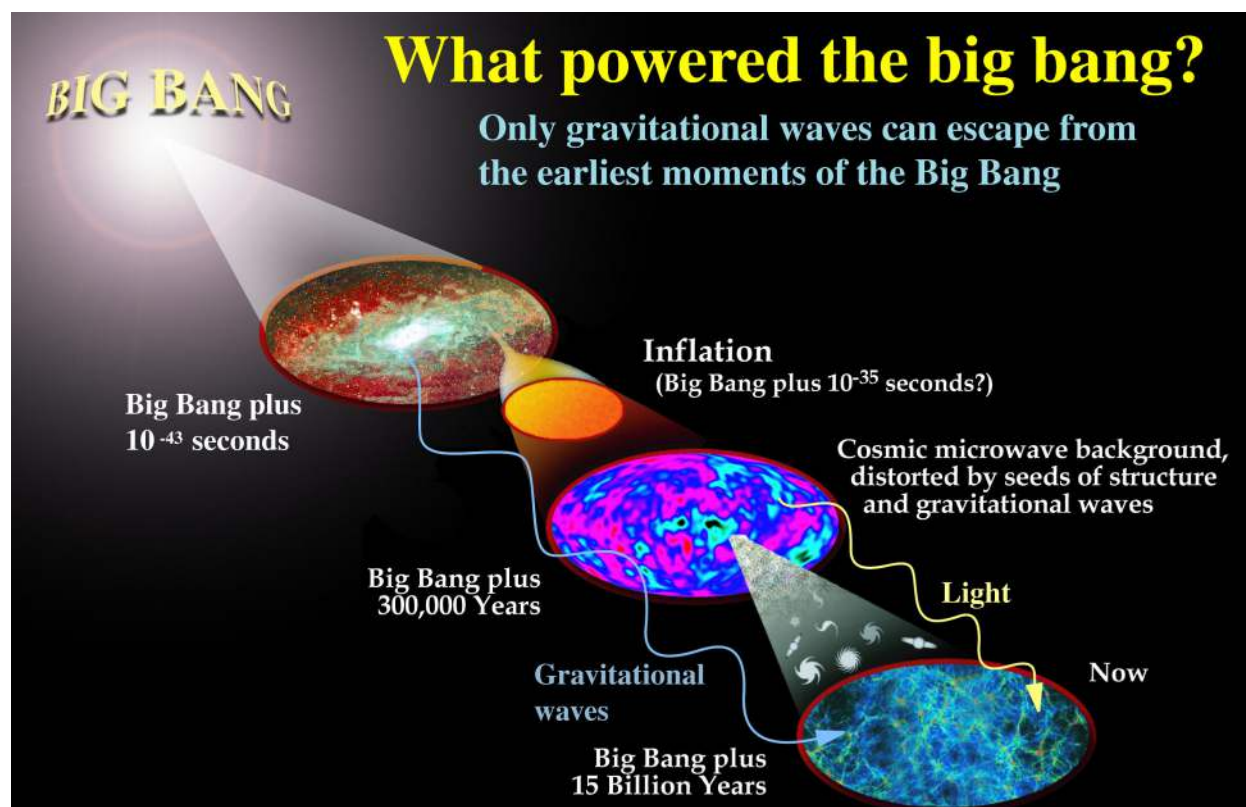
LISA's mission is to detect gravitational waves — ripples in space-time caused by the Universe's most violent events: galaxies colliding with other galaxies, supermassive black holes gobbling each other, and even echoes still ricocheting from the Big Bang that created the Universe. By studying the shape, frequency, and timing of gravitational waves, astronomers believe they can learn what's happening deep inside these acts of celestial violence.

The problem is, no one has ever directly detected gravitational waves: they're still a theoretical prediction. So no one truly knows what they "sound" like. Furthermore, theorists expect the Universe to be booming with thousands of sources of gravitational waves. Unlike a regular telescope that can point to one part of the sky at a time, LISA receives gravitational waves from many directions at once. It's a cacophony. Astronomers must figure how to distinguish one signal from another. An outburst is detected! Was it caused by two neutron stars colliding over here or a pair of supermassive black holes tearing each other apart in colliding galaxies over there?

"It's a profound data-analysis problem that ground-based astronomers don't encounter," says E. Sterl Phinney, professor of theoretical physics at the California Institute of Technology in Pasadena. Profound, but not hopeless: "We have lots of good ideas and plans that work — in theory," he says. "The goal now is to prove that they actually work under real conditions, and to make sure we haven't forgotten something."

To that end, theorists and instrument-designers have been spending time together brainstorming, testing ideas, scrutinizing plans, figuring out how they'll pluck individual voices from the cacophony. And they're making progress on computer codes to do the job. Says Bonny Schumaker, a member of the LISA team at the Jet Propulsion Laboratory: "It's a challenge more than a problem, and in fact, when overcome, a gift of information from the universe."

For more info about LISA, see lisa.nasa.gov. Kids can learn about black holes and play the new "Black Hole Rescue!" game on The Space Place Web site at <http://spaceplace.nasa.gov/en/kids/blackhole/>. ★



Astronomy Quote of the Month

"Occasionally, I get a letter from someone who is in 'contact' with aliens. I am invited to ask them anything. And over the years I've prepared a little list of questions. The aliens are very advanced remember. So I ask things like, 'Please provide a short proof of Fermat's Last Theorem.' I write out the simple theorem equation with the exponents. It's a stimulating exercise to think of questions to which no human today knows the answers, but where a correct answer would be recognized as such. It's even more challenging to formulate such questions in fields other than mathematics. Perhaps we should hold a contest and collect the best responses in '10 Questions to Ask an Alien'."

— Carl Sagan, "The Demon Haunted World"

From your Editor

by Dan Heim

I've had several people ask me when the deadline is for submission of material to this newsletter. That's posted on Newsletter page of our website, but here is the answer: 2 weeks before the next scheduled Lecture Meeting. I like to have the newsletter out to members at least 1 week before the meeting, and that gives me time to finish things up. I can usually accommodate a day or two late, but no guarantees.

We decided at the last MOM to allow the newsletter to be 1-2 megabytes in size, even though I originally intended to keep it under 1M. This was done to permit inclusion of more of those great photos you've all been sending me from our PAS events.

ENTER OUR "ASK AN ALIEN" CONTEST! ➡

Read the Astronomy Quote of the Month above, if you haven't already done so. Then think of the one question you would ask an advanced alien contact if you had the chance. One entry per person only will be accepted. Give it your best shot. I will print the best in the next issue. What's the prize? Seeing your clever entry and name in print!

Questions need not be scientific in nature. For example, I think an interesting question would be "What is music like on your world? Could you please play me an example? So let your imagination run with this one.

Send your clever submission to the Editor by (guess when?) 2 weeks before the next meeting.

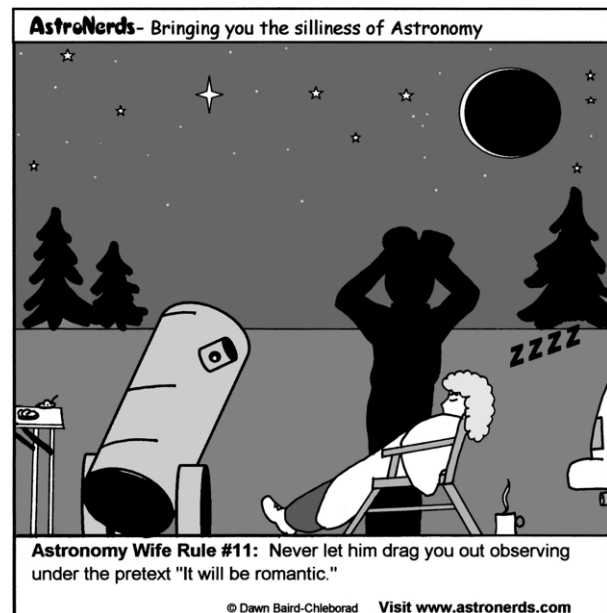
One more thing ... if anyone has read the "little list of questions" Sagan himself prepared, I'd love to hear from you. After about an hour of searching for it online, I was unable to find it anywhere. If you can find it, send me the URL. Thanks! ★

Astro Factoids

from Bette Wurst

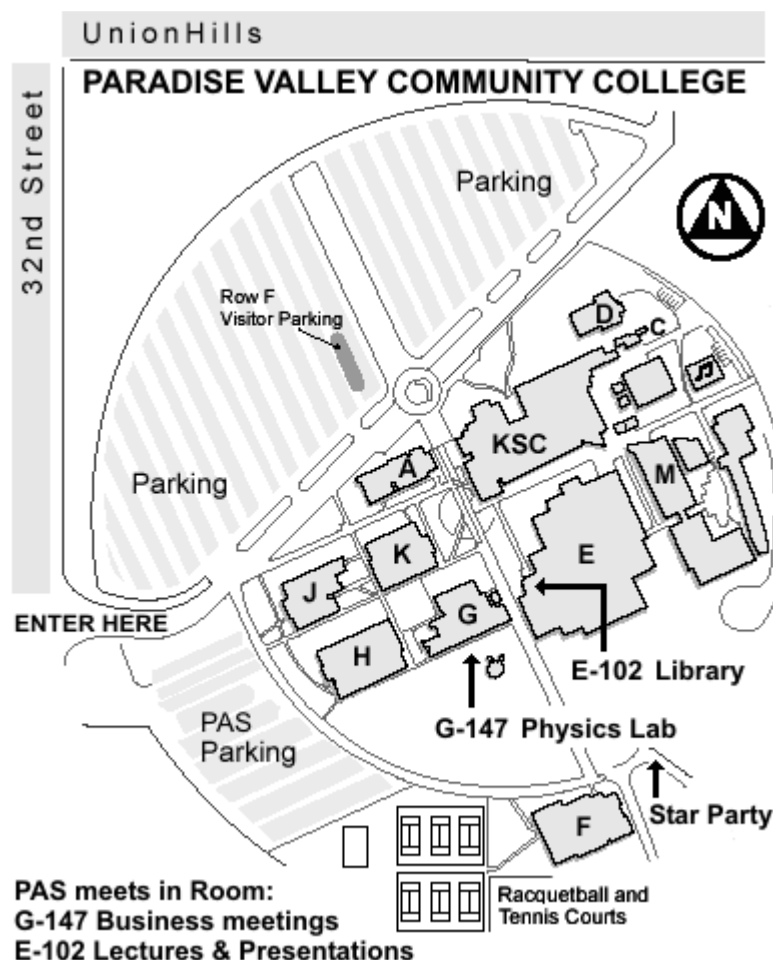
Recent images of the sun have brought our star's surface ever closer to the human eye: images sharp enough to appear in three dimensions. The images reveal bubbles on the surface, some the size of Texas, that rise up to the surface carrying heat. These "granules" rise and fall and actually cause the sun to beat like a drum.

The term meteor is often misused. It is the brief streak of light we see in the sky when a meteoroid (a small, solid object in space) falls through Earth's atmosphere. A meteorite is a meteoroid that has reached the surface of the Earth. ★



Comic provided gratis by www.astronerds.com

MAP TO OUR MEETING LOCATION



December 2005

Sunset: 5:15 pm

Sunrise: 7:30 am



NEW: Dec 1st, 30th



Q1: Dec 8th



FULL: Dec 15th



Q3: Dec 23rd

Astro Events:

Venus is the star this month. Find it during the daytime, 1-2 hours before sunset, 3° above the Moon on the 4th. It reaches greatest brightness at mag -4.6 on the 9th, and greatest eastern elongation on the 23rd.

Mars is still looking good, ending its retrograde on the 10th. Good viewing for another couple of weeks.

Winter Solstice 11:35 am MST, Dec 21.

Peak of Ursid meteors during predawn hours on the 22nd. Should be better than the Geminids, which peak near the Full Moon on the 13th.

Phoenix Astronomical Society Contact Info:

President	Terri Finch	602-547-2420	CosmicStarStuff@yahoo.com
Vice President	Matt Kohl	480-600-5415	pasvpmatt@yahoo.com
Treasurer	Mike Marron	480-488-3031	PrimeFactorY@cs.com
Editor	Dan Heim	623-465-7307	dan@heimhenge.com
Webmaster	Barbara Hartman	623-374-5364	AlyaSerpens@yahoo.com
PAS Liaison	Katja Petersen	602-717-6486	akhena_p@yahoo.com
IDA Liaison	Barbara Hartman	623-374-5364	AlyaSerpens@yahoo.com

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