# PASTimes

**Newsletter of the Phoenix Astronomical Society**
**www.pasaz.org**

**January 2006**
**Volume 58, Issue 5**

PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948


**Next Meeting: PAS Holiday Social, January 7th**

In keeping with our 5-year tradition, our next "meeting" is actually the annual Holiday Social, held as always at Heimhenge, the residence of Dan & Sandi Heim.

Festivities will begin at 6 pm and run as late as we need to complete the usual circuit of activities. That includes a dart game, the White Dwarf Gift Swap, a special big-screen video presentation, and lots of good food. This is a potluck, so bring a dish, appetizers, snacks, or desert. The drinks are on Heimhenge.

This year's big-screen video feature is a 30 minute movie you probably saw if you ever took a physics class. It's a B/W masterpiece from the 50's, still a classic, and a film you're sure to remember.

Don't forget your $10-20 gift if you want to be in the White Dwarf event. Choose a gift related to science or astronomy, and wrap it up nicely. We will have new rules this year, specified by Heimhenge (see page 9), to ensure the game ends in a reasonable amount of time.

If you're a new PAS member and don't know how to get to Heimhenge, contact any of our Officers and they will promptly email you a map. Cheers! Hope to see you all there. ✶


Dawn Mullen opens her presentation with a great title that describes exactly what she does.

**Last Meeting: Thursday, December 1st**

Dawn Mullen, local space artist, spoke to us about her special brand of art — spacescapes. With a background and training in art, a preference for the expressionist style, and a love of astronomy, she gravitated toward spacescapes about 8 years ago. Since then, she has become an award-winning member of this exclusive genre.

After talking briefly about the history of art and the processes of creativity, she launched into a demo of her personal techniques. Using Adobe Photoshop®, she started with a blank canvas and called out for two colors from the audience. From there, along with some more audience input, a fantastic spacescape evolved before our eyes.

She created a beautiful colored planet with clouds, a "red ice" polar cap, and a textured surface. Using

Dawn is here engaged in the creative process, using a laptop PC running Adobe Photoshop® connected to a big-screen video projection system.

the layering feature, she then added a background galaxy, stars, and moons. For her grand finale, she created a light source that realistically illuminated the planet and cast a moon shadow on its surface. We were honored that she named the planet “PAS” (or was it “SAP”?). She had previously shared with us how she came up with names for her hypothetical planets ... “I just take a name I already know and reverse it.” That would explain why the complimentary bookmarks she so graciously distributed had a mini version of her work titled “N’wad” (which of course is “Dawn” spelled backwards).

After she concluded her presentation, members and guests had an opportunity to review and purchase autographed limited editions of her works, many of which were there on display.

Dawn is an extremely talented space artist. We have not had a presentation like this since Kim Poor back in the early 90’s. Thanks Dawn for an amazing and inspirational lecture!

You can visit Dawn’s website at:

http://www.dlmullan.com/welcome.asp ✶

**January Events:**

1/6: PAS Adults Night Out at the Arizona Science Center, also Shallow Sky Star Party, setup 5 pm, viewing 6-9 pm.
1/7: PAS Holiday Social at Heimhenge, 6 pm
1/8: PAS Telescope Instructional Workshop at Bookman’s Backroom, 8034 N. 19th Ave., 3-5 pm. This is our first quarterly workshop for any telescope owner who needs help with the setup, operation, or maintenance of their equipment. An observing session will be held after the workshop.
1/26: PAS Meeting of the Minds at PVCC Room G-147, 7:30 pm. No children please, as this is our business meeting. Dinner prior to the meeting at the Paradise Bistro Restaurant, 3227 E. Bell Road, 6-7 pm.
1/28: PAS Deep Sky Star Party at the High Desert Park in BCC. All are welcome! Setup 4 pm.

**Astro Factoids:**

If you are planning to attend the PAS Holiday Social at Heimhenge, and you don’t know why Heimhenge is called Heimhenge, check out the science behind the name at:

www.heimhenge.com/hengelore.html

By the way ... we’re not really serious about that Druid thing, but it does make you wonder. ✶

**Captain’s Log**

*By Terri Finch*

THE 2006 PAS MEETING LOCATIONS

PAS tries to accommodate those who do not like to drive far to get to a meeting by having their general meetings at a central location. However, sometimes the Speakers can not make it on the Thursday we would ask that they present. The February and April PAS meetings of 2006 (see map in the corresponding issue) will be held at Foothills Academy Charter School. That is our previous meeting location. We needed a location that could accommodate a Friday meeting and Dan did a fantastic job setting up that location for those two months. In January, PAS does not have a meeting... instead we have the PAS Social at Heimhenge. And the March and May PAS meetings will be at PVCC in the Library. We will have speakers for all those meetings. Come join in the FUN!

NEW PAS MEMBERS

I wish to welcome Dick and Chester into our club. They joined us recently and we hope to show them an awesome time with our great line up of club events. Thank you for renewing your dues and sticking with PAS for another year of Fun!*

DECEMBER 15TH MEETING OF THE MINDS

The December meeting of the Minds was going to be short due to only a few topics. But, after we finished the main topics, we moved on to finding star party dates and picking the locations together. We have an awesome year lined up for events with PAS. Here is a review of the meeting and some things that were mentioned.

The Deep Sky star parties, which are preferred not to be major public events, will be held up in Black Canyon City at the park. Barbara is researching getting those dates. Keep in mind that if we cancel one of them or move a location it is due to being bumped from that site due to someone else renting the park.

The Shallow Sky star parties will be held in various locations, but this year works out well with the coinciding dates of Adult Night Out at ASC. So, most of our Shallow parties will be at ASU for First Friday. The rest will be at various locations around the valley to accommodate everyone.

We voted to move our discussion groups from YahooGroups over to The New Radiant site that Don's friend set up for us. We will be making that change over the next month and opening up differ-

ent discussion groups. Join them, please. They are a way to keep everyone in the loop.

Barbara showed us a brief presentation on the Night Sky Network site, and then we opened it up to anyone who wanted to show an astronomy related site to the group. Next MOM we will do that again as Barbara has a little more to share with the group. So, bring your favorite astro site with you for that meeting. Here are a few cool sites to visit: Novis.hq.nasa.gov to find the space station, Heavensabove.com, Heavensscope.com, strawberrystargate.com, and skymaps.com.

We also voted that we should not put maps to private homes on the website, even if it is behind a password. Barbara and several others felt it was better to have the inviter get the map from them to send to the invited.

We also talked about the SIG groups. Chester, a new PAS member as of that night, wants to start a SIG on CCD Imaging. He seems very knowledgeable about the topic and is interested in helping others to accomplish this. If you are interested in this SIG, see Chester at the next PAS event.

It was a small turnout of people, but we accomplished a lot. Thanks to everyone who attended.

2 STAR PARTIES CANCELED

Due to the holidays being so rushed, we decided at the Dec. MOM we would cancel the Dec 24 and Dec 31 star parties because there are too many parties and other things happening. Sorry for this change, but do attend the next star party we have lined up in 2006.

SPECIAL ANNOUNCEMENT

Attend the Heimhenge PAS Social on Jan 7th in New River. During the festivities, Matt Kohl has a brief announcement he'd like to make and a donation of a large sum. You won't want to miss seeing the check turned over to PAS to put towards new T-shirts, advertising, other items PAS needs. See you there!

THE STARS OF PAS

Each month we have a really cool collection of PAS members who go out of their way, to all extremes, to really try to enhance the life of children and adults with views of the night sky or information about it, such that there is major enjoyment for all involved. Here's a few examples of how the Telescope Team really makes a difference.

November 22 there was an awesome star party at ASU West. The awesome part was the team work. Even though we were cloudy most of the night, we had Jeff Hopkins, Dennis Young, Amanda Sallas, Andrew Lewton, Leah Sapir, Rod & Sue and a few others. Dennis was amazing and could find anything. The rest of us focused on Mars and Venus for the night.

December 3rd we had two star parties on one night. Disa, Jeff Hopkins, Don, Barbara and a few others went up to Mike's place and did an awesome star party for the kids from Thunderbird H.S. Rod, Terri, Amanda, and Bruce did a private star party for nurses from Mayo Clinic. Both star parties were a huge success and lasted well into the night, to midnight & beyond.

December 8th we held another star party at PVCC. Again Dennis came down from Sedona again, and we had a better viewing session. We had Dennis, Kevin, Rod, Don, Andrew, and many guests.

And then there was the star party at Machan Elementary. This one was cold, really cold. Don, Rod, Andrew, Jeff Hopkins, attended and really helped. We had an awesome viewing night.

Each star party has its own cool thing that makes it unique. And each one needs everyone involved as volunteers. And I appreciate my Telescope Team and those who assist as much as they can. Thank you all! Over and out. —Terri ✶

**Astro Factoids**

*from Bette Wurst*

Several different systems are used to name stars. Greek letters are assigned alphabetically to stars according to their order of brightness within a given constellation. Some stars also have names derived from Arabic, Greek or Latin. The brightest star in the constellation Cygnus, the Swan, is known as α-Cygni (Alpha Cygni). “Cygni” is the genitive form of the proper noun “Cygnus.” Yet another name for α-Cygni is “Deneb,” Arabic for “tail” as it marks the tail of the swan.

The star Albireo, in the constellation Cygnus, is actually a double star. Through a small telescope or powerful binoculars, the two stars present a striking contrast — the larger is orange and the smaller blue-green, though observers seldom agree on the perceived hues of these two stars. What makes things so difficult is our vision system, which perceives colors only poorly at low light levels. Of course, this can be partly remedied by using more aperture which, in a sense, increases the effective size of your eyes. ✶

**Treasuring What's Outside of Our Planet by Visual Means: A Blessing**

*By Laurice Dee, Ph.D.*

[Dr. Dee is an Arizona Representative for the JPL Solar System Ambassadors Program, Jet Propulsion Laboratory (JPL) is in Pasadena, CA]

6 July 1997, I was having lunch at Einstein's Bagels. After picking up my delicious food, I went to the newspaper bin. I was going to select a paper at random so that I could have something to read while eating. A good way to stimulate my mind at the same time as my taste buds. Something from "outer space" caught my eye. A large photo of some odd-looking terrain was on the front page of the Arizona Republic. The entire rusty-colored surface was littered with varying-shaped rocks that almost matched the color of the surface. There were a couple of little hills in the distance. The sky was salmon-colored. I figured that it had to be Mars, since I was aware of it being red. A box-like machine (with wheels, of course) was sitting in front of the scenery with a rectangular solar panel on its top. I pulled that section out of the bin and anxiously read the story. I learned that if we would like to know what outer space looks like, we'd have to send some kind of robotic machine to photograph and bring the images back to our planet electronically. I understood that some spacecraft just arrived at Mars and took its first color photo of the terrain which appeared in the Arizona Republic. The article included a website address for those that wanted to know more about the photo, as well as the spacecraft's mission at Mars. I was so intrigued with the rock-scattered landscape and the story behind it that I nearly forgot my vegetarian bagel sandwich!

I took advantage of my developing Internet research skills to learn more about the mission, and as a result, I followed its progress during the following several months. The images brought back from Mars were quite awesome. I'd look at them and then read the information that explained about them. Not only did I learn about what Mars was like, but I was able to discover a few other missions from doing some research on the Internet. One spacecraft was exploring Jupiter while another awaited launch during the fall of 1997. Two spacecraft were already in space studying our star, the Sun. I must admit that I would not have followed these missions if it had not been for the incredible images that were brought back to Earth by these robotic explorers. Hey, wait a minute, didn't I mention that I am profoundly deaf? Because of my congenital deafness, I rely on my vision heavily to assimilate information on everything. This includes learning about outer space.

My getting to know "what is out there" was one of my most rewarding experiences, since I never knew anything about outer space when I was in school. Nor did I have an exposure to astronomy or space exploration during my growing-up years. All I knew was the nine planets in our solar system that I had to memorize in grade school science class. I'd look at the illustration of our solar system and try to remember the number of planets, as well as their names. Even though I was able to watch Neil Armstrong take his first steps on our Moon that was televised internationally, my knowledge of outer space was still extremely limited.

Thanks to the plethora of images that were taken by spacecraft that explored our Sun, as well as Mars and Jupiter, I was able to maintain interest in the Mars mission and develop my enthusiasm for the other missions that explored our solar system. After learning about one new mission after another via the Internet, I decided to do some public outreach by joining the Solar System Ambassadors program that is currently sponsored by Jet Propulsion Laboratory in Pasadena, California. One of the things I love to do as a Solar System Ambassador is share photos that were taken of our celestial neighborhood, including planets, asteroids, and comets, by various spacecraft. I am sure I'd bore the hell out of the public if I did not have anything visual to show them!

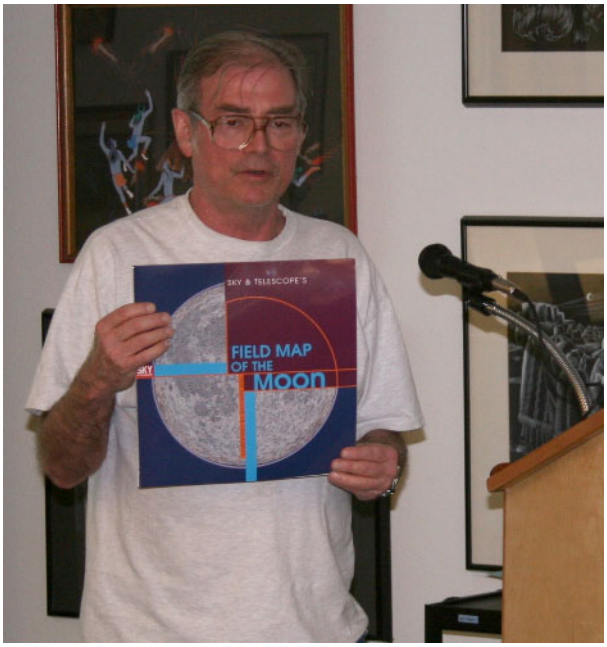
If it weren't for the remote sensing instruments that are affixed to various spacecraft, we would not be able to obtain images, as well as data, of space objects that are being explored. Simple as it is. Not only I am the one to appreciate outer space by not having to "listen" to learn new things, but so many of you, space- and astronomy-enthusiasts, develop your love for the outer space, and the beautiful photos make it even more so! Textual information, as well as illustrations, enhances your understanding of what is outside of our planet. Imagine what it would have been like for us to learn about outer space without looking at photos? It is almost like trying to type information into the computer or obtain it when the computer is off! ✶

[Due to space limitations, the rest of this article has been posted on our website. Read more at: www.pasaz.org/downloads.html.]

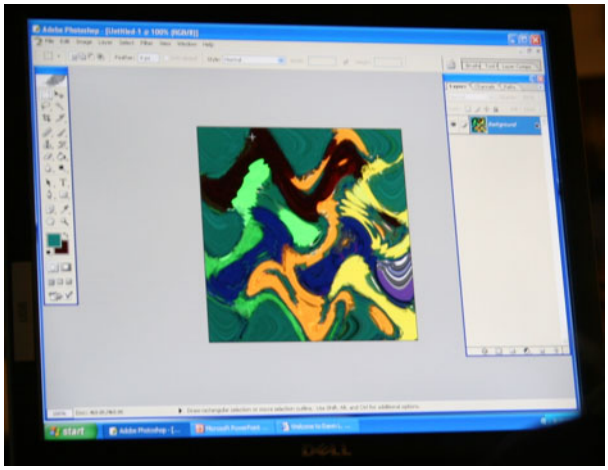
**Images from our December Meeting**

The crowd gathers before the meeting.  We had about 30 people in attendance.

Above:  Dawn poses with some of her work.
Right:  Planet PAS, created by Dawn with audience participation and suggestions for color, surface features, and background.  Her "real" works are a bit more polished, but she had fun with this one.




Jerry enthusiastically describes a new observer's guide to surface features on the Moon.



This is how planet PAS started out ... as a swirled pallet of colors that were later digitally mapped onto the surface of a blank sphere. Dawn breezed through these steps, using a repetoire of artistic techniques to realize her spacescape.

Members and guests shop for space art at Dawn's display after the meeting. Several works were sold.

As always, great snacks were available courtesy of our gracious PVCC hosts Ed and Dave.

**Cool Thoughts to Share at Star Parties**

by Leah Sapir

While you are showing people the Pleiades, ask them "Who knows where you can see the Pleiades in the daytime?" Nobody will know, of course. Then ask "What is the name of the Pleiades in japanese?" Again, nobody will know. Finally, you tell them "Here's the answer ... in japanese, the Pleiades are called 'Subaru' [which means *gathering*]. So now you know the answer to my first question — you can see the Pleiades in the daytime in the logo on every Subaru car."

**KCH Cartoon**




### Illinois Man Applies for Planetary Status

*From the WWW*

An Illinois man has added fuel to the astronomical debate by officially applying to the International Astronomical Union for status as a planet. "I've been sort of between jobs for a few years, so I really don't have a lot to do other than surf the internet at my brother's house," said Gerald Finkelschmidt, 34. "When I saw the announcement last week about a tenth planet, it inspired me to do a little research, and I realized there was an opportunity here to change my life for the better."

Recently, astronomers announced the discovery of a new planet larger than Pluto in orbit around the sun. At 97 times the distance between the Sun and the Earth, the new object, informally designated "Xena," is the farthest known object in the solar system. However, the discovery has raised the question of whether or not Pluto itself should be classified as a planet, or whether it is really just the nearest of potentially hundreds of similar bodies in the Kuiper belt, circling the solar system.

"The problem with Xena is that there isn't a good definition of what constitutes a planet," said Finkelschmidt. "And then I realized that the working definition for planets could actually apply to me. So I sent in an application." The IAU definition states in part that planets are "objects with true masses below the limiting mass for thermonuclear fusion of deuterium (currently calculated to be 13 Jupiter masses for objects of solar metallicity) that orbit stars or stellar remnants are "planets" (no matter how they formed)". "I've put on a few pounds these past couple of years, but I'm clearly below the limiting mass for thermonuclear fusion," said Finkelschmidt, while patting his belly. "And I orbit the Sun, obviously. So technically, I qualify."

It is unclear what, if any, benefits Finkelschmidt might obtain by garnering planetary status. "If the IAU decides to designate this guy a planet, I think there could be serious consequences for astronomy as we know it," grimaced Horace Feldman, a senior astronomer at Palomar. "On the other hand, clarifying the standards to exclude him could very well eliminate Pluto from our official list of planets. That could be culturally unacceptable; we're already getting angry letters from schoolkids who've heard we might "demote" it. Gentlemen, we're between a rock and a hard place."

Finkelschmidt has noted a variety of planetary features in his application, including a mysterious "great red spot" in his nether regions and an atmosphere high in methane, "especially after I make a Taco Bell run." His two cats, Artemis and Vampira, are listed on the application as "moons." "You know, if this works out, NASA might send a $500 million mission to learn more about me," he said. "And if they do, I hope they bring beer." ✶

### 2006 Texas Star Party

The great tradition of dark sky observing continues with the 28th Annual Texas Star Party, April 23 - 30, 2006! You should submit a Registration/Reservation Request Form to enter the TSP drawing before January 14, 2006. This will provide you the highest possible chance of being selected as one of the 700 people who will be able to attend TSP this year. You can fill out the Request Form online at: www.alphadata.net/cgi-bin/forms/forms.cgi?form=3

Participants at the TSP can select from a variety of accommodations on the Prude Ranch, including bunkhouses, private cabins, trailer hookups, and campsites with convenient bathhouses. All accommodations include access to a TV lounge, a western-style dining room, and an indoor swimming pool. And of course the convenience of the observing fields! For rates and more information on ranch and nearby accommodations please visit: www.texasstarparty.org/travel.html

The TSP Registration Fee does not include your accommodations, and is $50/person if you preregister before March 25, 2006. Each additional family member is just $30 more.

Questions? Visit our website for the latest and complete details at: www.texasstarparty.org/

## From the NASA Space Place: A New View of the Andromeda Galaxy

*By Dr. Tony Phillips and Patrick L. Barry*

This is a good time of year to see the Andromeda galaxy. When the sun sets and the sky fades to black, Andromeda materializes high in the eastern sky. You can find it with your unaided eye. At first glance, it looks like a very dim, fuzzy comet, wider than the full moon. Upon closer inspection through a backyard telescope-wow! It's a beautiful spiral galaxy.

At a distance of "only" 2 million light-years, Andromeda is the nearest big galaxy to the Milky Way, and astronomers know it better than any other. The swirling shape of Andromeda is utterly familiar.

Not anymore. A space telescope named GALEX has captured a new and different view of Andromeda. According to GALEX, Andromeda is not a spiral but a ring. GALEX is the "Galaxy Evolution Explorer," an ultraviolet telescope launched by NASA in 2003. Its mission is to learn how galaxies are born and how they change with age. GALEX's ability to see ultraviolet (UV) light is crucial; UV radiation comes from newborn stars, so UV images of galaxies reveal star birth-the central process of galaxy evolution.

GALEX's sensitivity to UV is why Andromeda looks different. To the human eye (or to an ordinary visible-light telescope), Andromeda remains its usual self: a vast whirlpool of stars, all ages and all sizes. To GALEX, Andromeda is defined by its youngest, hottest stars. They are concentrated in the galaxy's core and scattered around a vast ring some 150,000 light years in diameter. It's utterly unfamiliar. "Looking at familiar galaxies with a new wavelength, UV, allows us to get a better understanding of the processes affecting their evolution," says Samuel Boissier, a member of the GALEX team at the Observatories of the Carnegie Institution of Washington.

Beyond Andromeda lies a whole universe of galaxies-spirals, ellipticals and irregulars, giants and dwarfs, each with its own surprising patterns of star formation. To discover those patterns, GALEX has imaged hundreds of nearby galaxies. Only a few, such as Andromeda, have been analyzed in complete detail. "We still have a lot of work to do," says Boissier.

GALEX has photographed an even greater number of distant galaxies-"some as far away as 10 billion light-years," Boissier adds-to measure how the rate of new star formation has changed over the universe's long history. Contained in those terabytes of data is our universe's "life story." Unraveling it will keep scientists busy for years to come.

For more about GALEX, visit www.galex.caltech.edu. Kids can see how to make a galactic art project at spaceplace.nasa.gov/en/kids/galex/art.shtml.

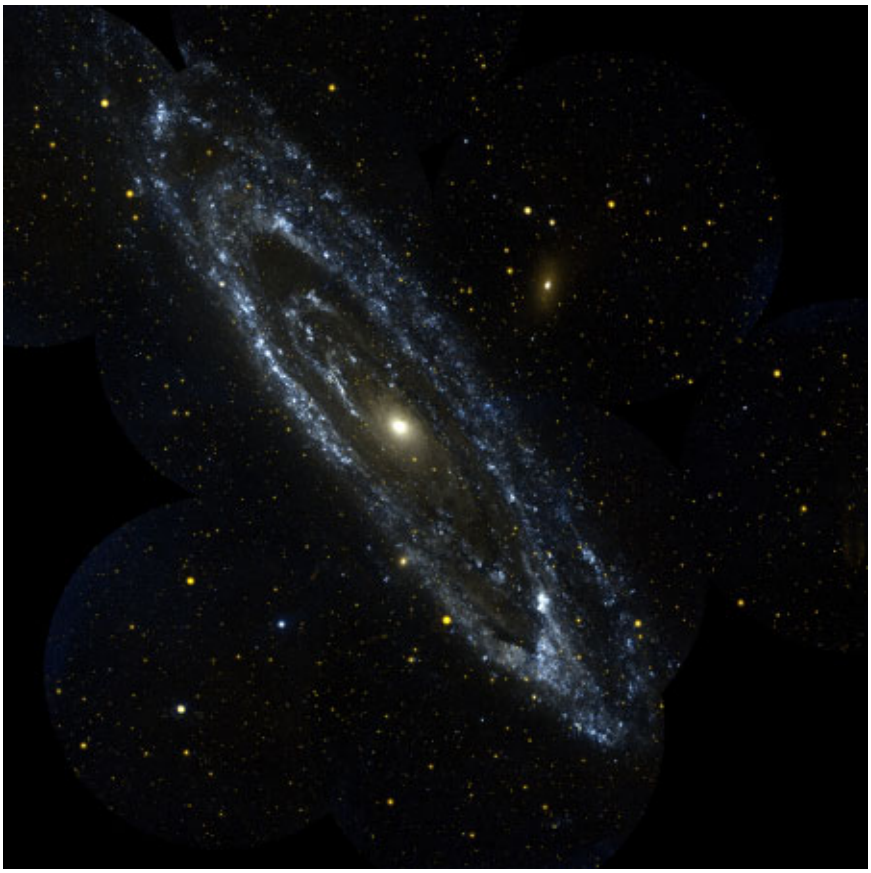


**Photo Caption:**

The GALEX telescope took this UV image of the Andromeda galaxy (M31), revealing a surprising shape not apparent in visible light.

**Astro Factoids:**

The Andromeda Galaxy, aka M31, is some 2 million light years distant. But every second brings us 21 miles closer. Gravity pulls our Milky Way galaxy and Andromeda toward each other at 78,000 miles per hour. In a few billion years the great spiral galaxy will nearly fill the night sky as seen from Earth. If you thought that our planet's demise was a function of the lifetime of our Sun, you were wrong. Mutual tidal disruption of our galaxies will be our likely end. ✶

## Astronomy Quote of the Month

*"With every passing hour our solar system comes forty-three thousand miles closer to globular cluster 13 in the constellation Hercules, and still there are some misfits who continue to insist that there is no such thing as progress."*

— Ransom K. Ferm

### From your Editor

*by Dan Heim*

Well, I was so underwhelmed by the response to my proposal for an "Ask the Alien" contest, that I'm here forced to provide you with my own thoughts.

If you don't know what the "Ask the Alien" contest is, see the last newsletter.

If I had the privilege of asking some advanced alien being questions about anything, and assuming I'm communicating remotely (a.o.t. face-to-face), and also assuming we have some kind of universal translator to eliminate language difficulties (say, a Babel Fish), here's the top 5 list of what I would ask:

1. What sources of energy have you tapped into to power your civilization?

2. Is there a unified field theory, and if so, what is it?

3. How many other intelligent civilizations have you found so far, and where are they?

4. On a scale of 1 to 10, if 10 is the most advanced civilization you encountered, where do we rate?

5. So what do you think of our art?

If this gets anyone thinking, and you want to see the best of your responses in print, I'll take additional entries for one more month. Send them to me at:

dan@heimhenge.com

Again, 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!

Heimhenge White Dwarf Gift Exchange Rules:

There was some confusion about the rules last year, some people waited forever to play, and the event lasted way too long. Since I am the host for this event, it's my prerogative to set the rules:

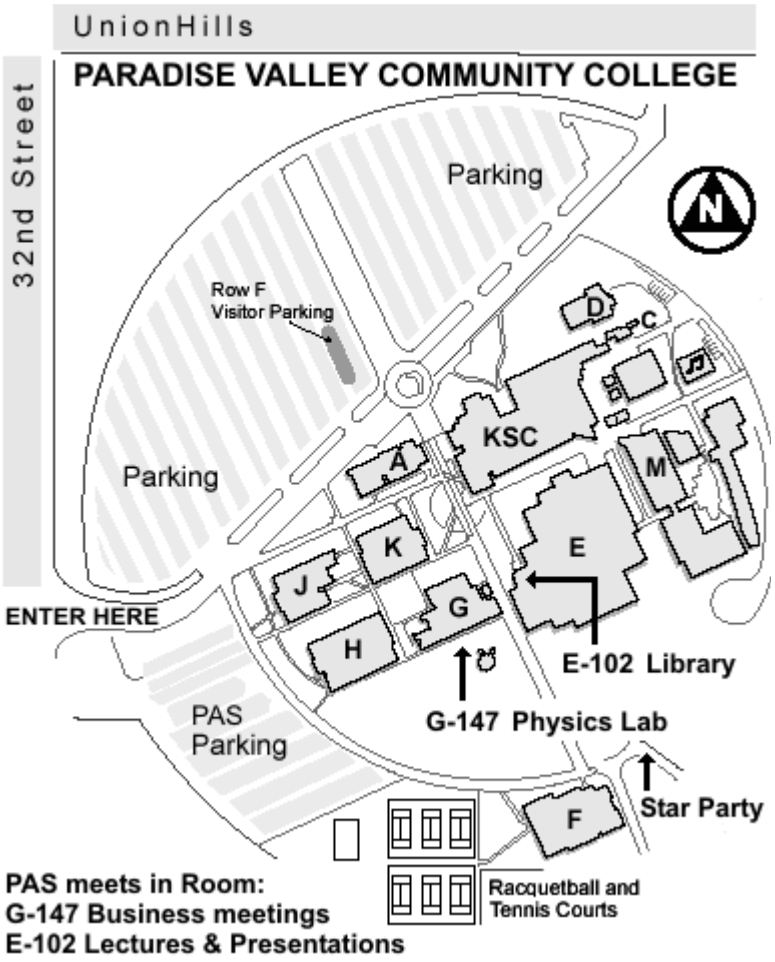
- Gifts will be collected on a table, with each participant getting a random pick number in exchange.
- Gifts will be selected in the order of pick numbers.
- You can pick a gift from the table, or steal one from another player.
- If your gift is stolen, you may pick a new one from the table or steal a different gift. You cannot steal back your original gift immediately.
- No gift can be stolen more than 3 times. We will keep track with removable tags.
- When the game comes to an end (and it will) gifts will be opened one at a time, for all to enjoy, by order of pick number.

Heimhenge will be provide the tags and the pick number tokens, all you need to do to participate is bring a nicely wrapped astronomy/science-related gift in the $10-20 price range.

Seeya all there! ✶


**Comic provided gratis by www.astronerds.com**

## MAP TO OUR MEETING LOCATION




## January 2006

**Sunset: 5:40pm**
**Sunrise: 7:40 am**

**Q1: Jan 6th**

**FULL: Jan 14th**

**Q3: Jan 22nd**

**NEW: Jan 29th**

**Astro Events:**

**Earth reaches perihelion on Jan 4th, not like you'd notice unless you were continuously monitoring the angular diameter of the Sun.**

**The Quadrantid meteor shower peaks on Jan 3rd-4th. You can expect about 40/hour in a great moonless sky.**

**Saturn is the star this month, reaching opposition on Jan 27th. The ring tilt is about 15° (27° is max), with edge-on returning in 2009, so the view should still be excellent. Can you spot the Cassini division? Sure you can.**

**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 | Amanda Sallas | 602-547-2420 | alienash@yahoo.com |
| Dark Sky Advocate | Barbara Hartman | 623-374-5364 | AlyaSerpens@yahoo.com |

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 through May and distributed to PAS members via USPS and internet. All issues from the current season are available for download on our website at: www.pasaz.org. While you're there, browse the rest of the site and learn more about PAS. All photos by Dan Heim unless otherwise noted.