

Next PAS Meeting 7:00PM
Thursday, April 1, 2004 (we're not joking)

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ARE YOU AN APRIL FOOL?

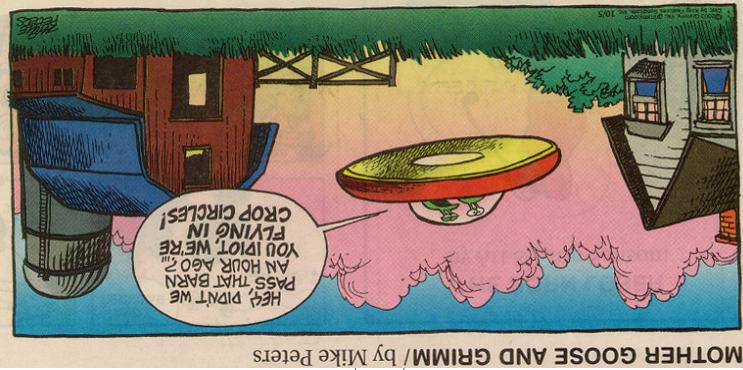


Laugh it up, Fuzzball!

THE GREATEST MYTHS, HOAXES & MYSTERIES IN ASTRONOMY AND SPACE SCIENCE

by Robert Roy Britt
from Space.com

Few scientific disciplines seem to generate as many mysteries and falsehoods as astronomy and, by extension, the supporting space science effort to explore the unknown. From alleged hoaxes and conspiracies to unintentionally inaccurate accounts, there is plenty



reproduction -- which avoids all the complications of monogamy, entirely sidesteps partnering, and enjoys the benefits of cloning, with its sexual reproduction, with its inherent burden of getting hitched, at least for a time. A study in 2001 suggested the stress of repeated asteroid or comet impacts may have fueled the world's first lust, albeit microbial, elevating sex to the level of cosmic mystery (where I suspect many intelligent

astrobiology. For now, astrobiologists are the only scientists I can think of who are more clueless than biologists, because they ask both of the biggest unanswered questions (the two above), whereas biologists mostly realize they have their hands full with the first one.

Other universes
Here's how space author Andrew Chaikin prefaced an article on this topic: "The irresistible, mind-boggling fantasy comes to just about everyone, sooner or later: What if everything we knew, our whole universe, was just a speck of dust on someone's shoulder?" I've long had a similar thought, but I always imagined our universe as a molecule in the thumbnail of a lumbering giant, whose arm has been swinging forward ever since the Big Bang. Whatever, we have no clue whether our universe is the only one, or one of many. I'm just hoping the giant never smashes his thumb with a hammer (or wipes the dust mote from his shoulder).

"We've known that it exists for more than 25 years," says astronomer Virginia Trimble of the University of California Irvine. "But we don't know what the hell it is." Astronomers do know that something is out there, filling up "space" and adding to the gravity budget of the universe. They know this because without this as-yet-unseen dark matter.

Life remains the greatest mystery of science. How did it start? Nobody knows. Does it exist elsewhere? Nobody knows. Now that astronomers have discovered planets orbiting other stars, the second question has taken on some added urgency, helping to spawn an entire new field called **Space Mysteries**
An amazing number of things that befuddle big-brained scientists:
and distant cosmic objects and phenomena. Below are just a few.

enough. A classic example is the erroneous suggestion that meteors burn up due to friction with air molecules. There are countless mysteries, too, things for which we simply don't have answers despite years or decades of investigation. Dark energy, life, and the origin of sex are but three puzzles astronomers contemplate. The universe is a complex place. Because our weekly Science Tuesday presentations are intended to serve as reservoirs of interesting and factual news and information about the universe, I thought it would be useful to devote one installment to reviewing some of the many myths, outlandish claims, incorrect accounts and plain old enigmas related to nearby



MYSTERIES, cont'd. from p. 1
galaxies wouldn't hold together.

Dark energy

This one makes dark matter seem simple. "Frankly, we just don't understand it," says Craig Hogan, an astronomer at the University of Washington at Seattle. "We're completely clueless ... about it." Dark energy's effects are plain as day, however: The universe is accelerating at an ever-increasing pace; something invisible is serving in an anti-gravity capacity over large distances, quite literally pulling the cosmos apart.

Planet X

The purported 10th planet makes an appearance in our Hoax section below, but it belongs here in the Mystery section, too, because there may in fact be another planet-sized object out beyond Pluto. If one exists, searches that are underway or planned will turn likely it up. And you can bet that a great debate will ensue over whether to call the object a planet or not. By one astronomer's definition, there are several additional planets, all round and orbiting the Sun but smaller than Pluto. Other scientists call these either asteroids or Kuiper Belt Objects.

Hypervolcanoes

Now and then, astronomers detect unfathomable discharges of energy from deep space. The bursts are brief, and astronomers are still trying to figure out what causes them. The leading speculation is that when a star explodes as a supernova, a lot of the energy escapes along two narrow beams that shoot out along the axis of the star's rotation. If a beam is aimed at Earth, the chance observation boosts an otherwise "normal" supernova to hypervolcano status.

The scary sounds of meteors

Just ask Chuck Bonner about the loud whistling noise, the buzz, and then the green fireball streaking across the sky. I don't know what it was either, nor do scientists who've looked into Bonner's account and other claims of loud noises associated with meteors.

So why is there no South Star?

There is. Mystery solved.

Space Myths

Stuff that's just not true or that is rooted in cloudy circumstances:

"At the edge of the universe ..."

There's just one problem with this oft-used phrase: The universe has no edge. To fathom how this could be, imagine an expanding balloon. Now put some ants on the balloon and ask them to find the edge. Try as they will, scurrying around, the ants will never reach an edge. Just one frustrating aspect to our mind-boggling universe.

The Sun has a companion, Nemesis

This one nearly belongs in the Hoax category, below, because fringe writers frequently claim the thing has been found. Facts do not bear this out, but there are real scientists looking into the possibility that the Sun has a stellar companion. Importantly, no one has proved there isn't a dim star, possibly a brown dwarf, orbiting the Sun. Brown dwarfs are considered failed stars, but stars nonetheless. They radiate very little energy, and almost no visible light, so they're not easy to find.

The Sun gets fatter as it sets

Nope. It just looks that way. Here's what really happens: When the Sun gets low on the horizon, its light becomes more noticeably refracted by Earth's atmosphere, because the light has to travel through more of it. Light from the bottom of the Sun travels through just a bit more

atmosphere than light from the top of the Sun, and it is refracted slightly upward, making the Sun appear squashed, or rolled up like a window shade. The fact that it looks fatter, instead of shorter, is an illusion, one that works with the Moon, too:

The Moon is bigger when on the horizon

Sorry. It just looks bigger. Scientists aren't sure exactly why, but they think it has to do with our perception as well as our conception of how the sky is shaped. We imagine (without realizing it) the sky to be like an upside-down, not-to-deep bowl. So space objects near the horizon surprise us, because our minds expect them to be farther away.

Meteors burn up due to friction

This falsehood is often reported by mainstream media, which explains why it never goes away. In fact, a meteor vaporizes due to something called ram pressure. Air in front of an incoming space rock or speck of dust is compressed and heated, like the air in a hand-held tire pump.

A comet toppled ancient civilizations

Myths are often rooted in real events, and the dictionary says a myth may or may not be based on fact. That's the case with this one. Nobody knows when the last major comet or asteroid struck Earth, or whether it happened recently enough to have altered human history in a big way. But Biblical stories, apocalyptic visions, ancient art, and some recent scientific data all point to the possibility that a series of calamitous events occurred around 2350 BC, wiping out several advanced societies in Europe, Asia and Africa. Could it have all been caused by a disintegrating comet that struck in stages? Ah, that's the stuff of myth, at least for now.

There is no gravity on the Space Station

It might look that way, but actually there's just a cool trick going on. The station, like any satellite, is in a perpetual state of falling back to Earth. It is also conveniently moving sideways, which keeps it from falling and sets up a state of equilibrium, which feels like zero-g to an astronaut.

The Hubble Space Telescope pictures are totally real

I need to be careful here, so as not to spawn any silly hoaxes. Hubble images are real, but they are not always showing reality, whatever that is. Many of the beautiful "objects" photographed by the orbiting observatory involve mere wisps of gas that cannot actually be seen by the human eye. Astronomers let Hubble gather light for many seconds or minutes to tease out the features of, say, a nebula. Then photo processors use the popular software program Photoshop to apply colors to the three filtered images that Hubble provides (the light is actually captured and beamed to Earth as grayscale, not color). All this is then combined to make a pretty picture that scientists find more useful for its distinct coloring. With infrared images, colors from the visible spectrum have to be applied, otherwise we'd have pictures of nothing, as far as our human eyes could tell.

Space Hoaxes

Things that generate too much e-mail

The Moon landing never happened

This has to be the most ridiculous suggestion ever related to the Space Age. It is a hoax of grand proportions (suggesting that NASA carried out a hoax of even grander proportions). Believers are unlikely to be swayed.

Planet alignments bring gravitational doom

There is a very compelling argument against this claim: It didn't happen. Doomsayers predicted that an alignment of

HOAXES, cont'd. from p. 2
the planets in the year 2000 would rattle Earth and kill bunches of us. It's not often an astronomer calls something "a load of crap," but that was the case regarding the millennium prophecies surrounding the alignment. It wasn't the first time doom had been forecast because planets were lining up, and it probably won't be the last. Here's what was supposed to happen on May 5 of 2000: Severe weather was to rival Noah's tale, earthquakes were to crush cities, the Sun was to act up and Earth's axis was supposed to tilt.

Whatever. Let's move on to something more plausible:

The "Face" on Mars

There are four salient facts related to this hoax: NASA started it; it's patently false; believers will never give up; I will get nasty e-mail for calling them mere "believers." The first suggestions that a hill in the Cydonia region of Mars appeared to have human features came from NASA scientists when they released the Viking photo in 1976. In hindsight, they could be said to have publicly ruminated a bit too much and have caused the agency to pay for their press-release ponderings ("...errors comprise part of one of the 'eyes' and 'nostrils' on the eroded rock that resembles a human face near the center of the image") ever since.

Planet X or a comet will destroy Earth

Hoaxes and doom seem mutually attractive. This one crops up every now and then, and it hasn't happened yet, but let's not let that fact get in the way of a good story. Recently, NASA was purported to have hidden evidence of a comet that was heading our way. If you're reading this, please note that this was published after the predicted time frame for the end of the world.***

THE DARK SUCKER THEORY

For years, it has been believed that electric bulbs emit light, but recent information has proved otherwise. Electric bulbs don't emit light; they suck dark. Thus, we call these bulbs Dark Suckers. The Dark Sucker Theory and the existence of dark suckers prove that dark has mass and is heavier than light. First, the basis of the Dark Sucker Theory is that electric bulbs suck dark.

For example, take the Dark Sucker in the room you are in. There is much less dark right next to it than there is elsewhere. The larger the Dark Sucker, the greater its capacity to suck dark. Dark Suckers in the parking lot have a much greater capacity to suck dark than the ones in this room. So with all things, Dark Suckers don't last forever. Once they are full of dark, they can no longer suck. This is proven by the dark spot on a full Dark Sucker. A candle is a primitive Dark Sucker. A new candle has a white wick. You can see that after the first use, the wick turns black, representing all the dark that has been sucked into it. If you put a pencil next to the wick of an operating candle, it will turn black. This is because it got in the way of the dark flowing into the candle. One of the disadvantages of these primitive Dark Suckers is their limited range. There are also portable Dark Suckers. In these, the bulbs can't handle all the dark by themselves and must be aided by a Dark Storage Unit. When the Dark



Jerry and Mark let it all hang out at the Shangri-La Star Party.

A SNACK AS BIG AS THE MOON

Borrowed from travel Almanac 2004 Cracker Barrel

Wow, what a star party! Did you miss it? Then plan to make it next year. We are discussing with the owner of Shangri-La Nudist Resort to make this an annual star party at their location. It would be clothing optional, of course, because most of us do not run around in the buff. This time, however, Jerry and Mark took on the challenge. I usually make a list of all who attended, but I was so caught up in the excitement that I forgot to do so. I do remember those two were there because the sight was pretty memorable. Mark brought his 12" and Jerry brought his massive 22". WOW! Jerry also brought along his rocket. For the amusement of the guests, he tried to launch it. Unfortunately, it wouldn't go up. The viewing was awesome, cloud free, clear skies, and the site of the Shangri-La Nudist Resort really has dark skies. Being nestled on the north slope of Daisy Mountain they have a little Phoenix sky glow, but for the most part the viewing is excellent. If you wish to volunteer for next year's event, please contact me and RSVP sometime prior to February 2005 so that we can be prepared and have a telescope count ready for them. The group there had so much fun and they even made us dinner: hot dogs & buns with lemonade to drink and Moon Pies for dessert. I wish to send thanks to Jerry and Mark for attending and being brave. I'd like to thank Dan for putting this all together for us. And many thanks to Horst Kraus, owner of the resort, for having us there.***

SHANGRI-LA STAR PARTY REVIEW March 15, 2004

electric bulb, remember that it is a Dark Sucker.***
light slowly enter the closet. But since dark is so fast, you would not be able to see the dark leave the closet. Next time you see an light closet, and slowly opened the closet door, you would see the than light. If you were to stand in a lit room in front of a closed, is why it is called light. Finally, we must prove that dark is faster to the bottom of the lake and the lighter light floats at the top. The would be in total darkness. This is because the heavier dark sinks notice it getting darker and darker. When you get really deep, you light. If you were to slowly swim deeper and deeper, you would surface of the lake, you would see a lot of light. If you were to swim just below the operating candle. Also, dark is heavier than clear glass. This generates a great amount of heat and therefore it's not wise to touch an travel into a solid wick instead of through present a special problem as the mass must touch an operating Dark Sucker. Candles goes into a Dark Sucker, friction from the can operate again. Dark has mass. When dark or replaced before the portable Dark Sucker Storage Unit is full, it must be either emptied



Chattanooga may be well known for its Choo-Choo, but it's also the proud birthplace of the original marshmallow sandwich. Back in 1917, Earl Mitchell, who worked for

See SNACK, p. 4

See MARTIAN, p. 5

and the government is spending our hard earned tax can tell you what's real. The Earthlings are going to invade years or so. The government wants to bury the truth but I to be few and far between but lately they come in every few here over 300 years, most of my adult life-form. Them things used seen it with my own 5 eyes" claimed Rhodo last week. "I've lived lives in the area of the alleged landings, are even more skeptical. "I sparked planet wide panic. Local residents like Driv Rhodo, who story of gigantic oxygen breathing two-eyed invaders from Earth, program of years ago. The program, which featured a sensational War of the Worlds radio

statements as evidence of "an obvious government cover-up," pointing out that Mars has no swamps. They point to the release of secret government memos detailing attempts to discredit reports of the landings by alien space craft. The memos discuss strategies to avoid troubles similar to those caused by the War of the Worlds radio program of years ago. The program, which featured a sensational story of gigantic oxygen breathing two-eyed invaders from Earth, sparked planet wide panic. Local residents like Driv Rhodo, who lives in the area of the alleged landings, are even more skeptical. "I seen it with my own 5 eyes" claimed Rhodo last week. "I've lived here over 300 years, most of my adult life-form. Them things used to be few and far between but lately they come in every few years or so. The government wants to bury the truth but I can tell you what's real. The Earthlings are going to invade and the government is spending our hard earned tax

MARTIAN AIR FORCE DENIES UFO CRASH

by Jack Dunn, Mueller Planetarium - UNL

who concocted this wild circulation-building yarn? A New Yorker by birth. A graduate of Cambridge. A general reporter grinding out copy for \$12 a week. Poe said his forehead was "truly beautiful in its intellectuality. I am acquainted with no person possessing so fine a forehead as Mr. Locke." In 1836 Locke resigned from the *Sun* and started his own penny daily, the *New Era*. He fabricated another hoax, "The Lost Manuscript of Mungo Park," a Robinson Crusoe-style adventure yarn. By this time, however, readers were wise to Locke's chicanery and he could never fool all of the people again.***

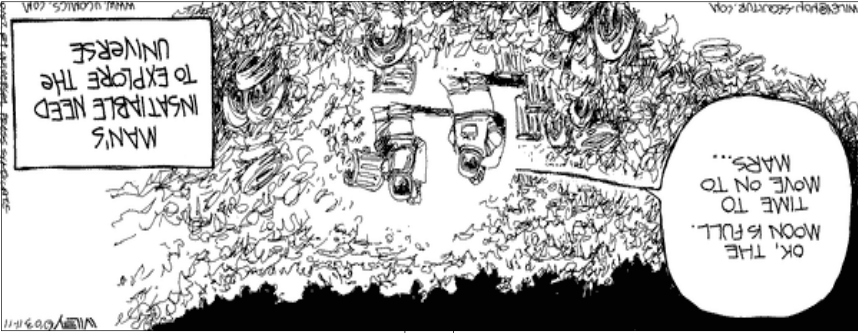


RICHARD ADAMS LOCKE

from Felton & Fowler's Famous Americans You Never Knew Existed (©1979)
by Bruce Felton & Mark Fowler

the Chattanooga Bakery, was on a sales call when he asked some coal miners what they'd like as a snack. Something solid and filling that would fit in their lunch pail, he was told. One of the miners even held up his hands to frame the rising moon and added, "About that big." Earl headed back to the bakery and, as luck would have it, he noticed some workers dipping graham crackers into marshmallow. Following their example, Earl added another graham cracker on top and coated it in chocolate. Earl's "moon pie" was ready for the lunch pails - and has been a hit ever since.***

The headlines trumpeted: "Great Astronomical Discoveries Lately Made by Sir John Herschel at the Cape of Good Hope." And right there in black-and-white it said that England's most respected astronomer had built a seven-ton telescope through which he had plainly observed plants and animals on the moon. No fewer than 14 species of lunar fauna had been identified including goats with a single horn, "a strange amphibious creature of a spherical form," and a race of superior bipeded beavers from whose houses smoke could be seen issuing. The source of these amazing revelations was a series of four exclusive articles in the *New York Sun*, a struggling four-page penny newspaper. They ran in August 1835 under the by-line Richard Adams Locke, but most of the information was quoted directly from the *Edinburgh Journal of Science*. The sober tone and sprinkling of scientific terms gave the reports an air of unquestionable authenticity. A women's club in Springfield, Massachusetts hastily began collecting money to send a team of missionaries to the moon. "Not one person in ten discredited it," according to one skeptic - Edgar Allan Poe. The *New York Times* called the articles "probable and convincing." The *New Yorker* heralded "a new era in astronomy and science generally." In Paris, London, and other world capitals, newspapers reprinted the accounts verbatim. With each issue the lunar news became more and more fantastic. Sir John had discovered pyramid-shaped mountains of solid amethyst. Sir John had counted 18 species of trees on the moon. Ultimately, Sir John had seen four flocks of winged humanoids with faces like orangutans. Overnight the *Sun's* circulation soared from a piddling 2,500 to over 19,000, making it the most popular daily of the time. At this juncture, Yale College sent down a delegation of professors to see the original journal from which Locke quoted. It had mysteriously disappeared. Soon the scientists discovered the *Edinburgh Journal of Science* had ceased publication several years earlier. The hoax was exposed, who was the science fiction writer



debris. Conspiracy theorists have condemned Rgrmny's preferring to speculate on the "other-worldly" nature of the crash, slow to accept the Air Force's explanation of recent events, incidences involving swamp gas. But the general public has been across the Martian desert were blatant fiction, provoked by Lesser stated that hysterical stories of a detachable vehicle roaming telepathically to contradict the earlier report. General Rgrmny The General Rgrmny The Lesser contacted the Daily Record and "deflating in a sudden explosion of alien gases." "Minutes later, nearby desert, "bouncing" several times before coming to a stop, strange, balloon-shaped object which allegedly came down in the contacted the Gusev Crater Daily Record with a story about a when a major stationed at nearby Ares Vallis Air Force Base altitude weather balloon, not an alien spacecraft". The story broke The Lesser stated that "the object was, in fact, a harmless high-Ares Vallis. Appearing at a press conference, General Rgrmny alien space craft crashed in the desert outside of Air Force denounced as false rumors that an Gusev Crater (MPI) - A spokessthing for Mars

WHAT IS ELECTRICITY?

traitorous disservice to the citizens of Mars."***

by Dave Barry
received from William Finch

Here is a simple experiment that will teach you an important electrical lesson: On a cool, dry day, scuff your feet along a carpet, then reach your hand into a friend's mouth and touch one of his dental fillings. Did you notice how your friend twitched violently and cried out in pain? This teaches us that electricity can be a very powerful force, but we must never use it to hurt others unless we need to learn an important electrical lesson. It also teaches us how an electrical circuit works. When you scuffed your feet, you picked up batches of "electrons", which are very small objects that carpet manufacturers weave into carpets so they will attract dirt. The electrons travel through your bloodstream and collect in your finger, where they form a spark that leaps to your friend's filling, then travels down to his feet and back into the carpet, thus completing the circuit. **Amazing Electronic Fact:** If you scuffed your feet long enough without touching anything, you would build up so many electrons that your finger would explode! But this is nothing to worry about unless you have carpeting.***

THE TOURIST'S GUIDE TO THE MOON

from Gorskys.com

US President, George W. Bush has announced plans to invade the moon again by 2020 and to create a permanent human presence there. Information leaked to GORSKYS.COMedy reliably informs us that the first thing the President plans to do when we get there is to build a Club Med Holiday Resort for rich young go-getters to spend their hard earned cash on a holiday that is literally "out of this world." It's a long way off, but if you're going to travel to the moon for a vacation, you're going to need to plan ahead, so this month we decided to share our "Lonely Satellite" tips to taking a break on the lunar landscape.

Soaking up the rays translate to receiving lethal doses of solar radiation – so pack your best space suit.
It's a bit like the beach in that there's a hell of a lot of sand, but unlike the beach there's absolutely no water – so no chance of drowning.
No matter what your mobile phone provider tells you, there is no reception on the moon.
Any weight you lose on your low-gravity holiday you regain upon re-entering the earth's gravitational pull.
If you go to the moon after you get married, then you're on your "honeymoon".
You can't have a romantic stroll in the moonlight.
You're sure to be surrounded by retired astronauts and annoying boy-band members.
Holidaying on the moon is a bit like holidaying in Antarctica with no air.
Some of your friends will believe you never went to the moon but that the whole thing was staged in a Hollywood studio.
Moon-rocks would be worthless on the moon, but Earth-rocks on the other hand would be, well, ah, worthless too.
90% of the population in a lunar base would be composed of Star Wars geeks and Trekkies who're there to "live out their dream."***



ADS IN PASTimes

This is the PAS advertising column & is a FREE service to all PAS members, guests, & VIP. Any Astronomy related items (books, scopes, binoculars, services, etc.) may be listed here that are being SOUGHT or SOLD. The item will only be advertised for ONE MONTH, but may be renewed each month (as needed) by contacting the Editor, by the newsletter deadline (the 1st of the month). It is requested that Non-PAS Members please make a small donation for placing your ad in both the PASTimes newsletter and to my list of 170+ astronomy-loving email contacts. Please make check payable to Phoenix Astronomical Society and send to the return address on this newsletter. We do your advertising in hopes of great returns.

FOR SALE:

MCDONALD OBSERVATORY

Mcdonald Observatory is located in the Davis Mountains, 450 miles west of Austin, Texas. The Observatory is equipped with a wide range of state-of-the-art instrumentation for imaging and spectroscopy in the optical and infrared, and operates one of the first and most productive lunar ranging stations. Unfortunately, we have been refused further funding from the government and we have been forced to sell our magnificent Observatory. Any reasonable offer will not be declined. **Serious inquiries only.**

Features:

9.2m Hobby-Eberly Telescope
The primary mirror of the HET is the largest yet constructed, at 11.1 x 9.8 meters. At any given time during observations, only a portion of the mirror is utilized. The HET's 9.2 meter effective aperture makes it currently the world's third largest optical telescope.
2.7m (107") Harlan J. Smith Telescope
Instruments:
Cassegrain f/8.8 Ritchey-Chretien focus
Cassegrain f/17.7 focus
Coude f/32.5 focus
2.1m (82") Otto Struve Telescope
Instruments:
Prime f/3.9 focus
Cassegrain f/13.7 focus
0.8m (30") Telescope
Telescope Tube diameter: 89.4cm (35.2")
length: 2.29m (90")
For more equipment specification info, visit our website at: <http://www.as.utexas.edu/mcdonald/mcdonald.html>

MARTIAN, cont'd. from p. 4

dollars on press releases and denials instead of preparing for the battle to come." A spokesperson denied any government involvement in the disappearance of Rhodo, who has not been seen since shortly after the interview, claiming "Any sentient being knows that a planet with the concentrations of water and oxygen found on Earth is a deadly and inhospitable environment for the formation of life, much less intelligent life. The fear and consternation caused by the unfounded and wild speculations of citizens like Rhodo are a

SERIOUSLY THOUGH...

DONATIONS FOR PAS PRIZES NEEDED

The Editor and Co-editor have come up with an idea in which YOU could win a prize! Starting in September, we will be giving prizes for a new game we will play. The prizes have to come from donations from YOU. If you have anything astronomy related you'd like to donate to this cause, please send it my way. One prize a month will be given away and we need as many as possible. Bring it to the next PAS Meeting or contact Terri for pick up. We are seeking posters, lithographs, books, star charts, post cards, astronomy games, anything astronomy related that would make a simple, cheap, but cool astronomy prize. I thank you in advance and we will begin collecting at the April meeting. See you there! Did you say you had two copies of a book, donate one to this game. Thanks.***

FEBRUARY MEETING OF THE MINDS IMPORTANT STUFF - PLEASE READ (Next Meeting of the Minds will be March 18th)

* Marks a change of topic

We covered a bunch of topics, so I'm going to give you a brief review of what was discussed. If you have any input to any of these ideas, please either attend the next Meeting of the Minds, or bring the ideas to the next PAS meeting, or contact Terri so your ideas can be shared in your absence. These are the topics in the order we discussed them. * First we talked about the website and the fact that we no longer have a "Before the meeting dinner location." The previous place has changed hands and so the location wasn't confirmed. * We discussed this and we are keeping the location, but I have to get the new business name for the website. We talked about the MDA event. The MDA event with David Levy has been an topic for discussion for quite some time. When I asked Wendee about it, she said it was up in Pinetop, Arizona and she gave me the dates of June 6 to 12th. Now, she wants PAS to go up and be part of that event... however, she and David are unable to attend this year. Thus, we'd be helping out. Anyone wanting to know more about this event and its actual location can contact Terri, and I'll get the info to you. Terri and William will be unable to attend that event due to a business conference in St. George Utah they will be attending. The preferred date that Wendee wanted us to go up is Friday the 11th and Saturday the 12th of June. Now, before you rush off to that event, let me tell you what I found out (after our Meeting of the Minds) about the MDA. I discovered that the Tucson club holds an MDA event, in Tucson, which happens on March 26th. I'd like to put their article in here for those wishing to become part of that event. This is actually the event we were asking about, but for some reason Wendee gave me the Pinetop info instead. Their article reads: "Telescopes for Telethon 2004, by John Kalas - The TAAA will be supporting the Muscular Dystrophy T&T activity again this year on Friday and Saturday, March 26th and 27th. The activity on Friday, March 26th involves two telescope teams at each of the five different Wal-Mart stores around Tucson from 6pm to 9pm. Saturday's activity will have solar viewing taking place from 3pm to 6pm with evening observing running from 6pm to 10pm at the Sabino Canyon Recreational Area. David & Wendee Levy will be hosting this event. It is anticipated that Starizona, Sky Works, Stellar Vision & Coronado Instruments will also be participating. John

Kalas is the TAAA coordinator for the event. There will be signup sheets at the March meeting (which falls on March 5th). Many volunteers will be needed to operate telescopes (solar and evening), staff donation areas and assist in general public support. Please consider supporting this worthwhile event. If you are unable to attend the meeting to sign up, please contact John at 620-6502 or via e-mail at jckalas@cox.net." So, the event actually does exist, but we, PAS, wasn't invited to help at that one. Now, if you wish to help out, please contact John, and NOT Terri. And if we'd like to get a group together to go down there, I'll help coordinate that, but can't promise I can make it. * The next topic we discussed was going on the Kit Peak Field Trip. Jerry suggested that we go to Kitt Peak as well as do a Star Party there, plus a tour of the Steward Mirror Lab all in one day. Anyone interested in going, please send your info my way so I can start figuring out how many we have to transport, and what date would be best. We are thinking of setting it up for the summer, possibly in the end of May, early June (but not during Monsoons). Your input is requested on that one. * Next on the list was supposed to be Mark, the Prez, but he had a headache and didn't attend the meeting, so we discussed the stuff on his list but had no real resolution to it. Then we moved to Jerry and his topics. * We are trying to set up a MAJOR Public Observing event for sometime end of May or early June to be announced in a flyer we create to be handed out at the Arizona Science Center event on May 15th. The problem is the location. We don't want to make it be at Lake Pleasant, as the distance will detour most of our attendees. Jerry suggested Thunderbird Park, but we have to get permission for that. So, what we need is a location. Richard said we could do the Castle, so I have to get together with him on that one and investigate it some evening soon. Think up a location and share the idea with us, please. Thanks. * The Phoenix Children's Hospital Star Party has been postponed. Jerry wants to do a bunch of research and find a good date for this event. What he had in mind was to pick a Monday, and if that day is wiped out with clouds or storms, move to Tuesday, and continue through that week till we find a good night to provide observing. Originally it was set up for the week of May 26 but it doesn't look good at this time, so don't plan on it till further notice. * Prescott Mirror Making Class. Jerry couldn't find the number to reach the dude that would teach us to make a mirror, so Kevin said he had it. He supplied it to me and I'm going to email William Kelley and give the contact info to Jerry for setting it up. We will pin down a date and everyone who wishes to take the class, will need to let me know so we can find out how to do this. William Kelley is up in Cottonwood Arizona, so we may want to make it an over night trip, a weekend trip to do this mirror making class. Let me know if you are interested in this. * We then discussed the progress on getting the Flyer and Brochures out to the resorts so that PASTimes Star Tours could be hired out to parties and events. Mike, Kevin and Richard as well as the Finches didn't have time to get those flyers out, so the goal is to accomplish it by next Meeting of the Minds. * Next we moved on to Richard who updated us on his homemade PAS sign. The idea behind the sign is that: when we do public events, the public doesn't seem to realize that the telescopes are set up for them to observe through. They walk right by, i.e.... ASC ANO (Adult's Night Out). So, Richard designed a red light sign that is really nice and showed us it at the meeting. William has an idea for a back up sign incase Richard can't make it to an event. Kevin is working on a Banner idea so we have something large to catch the eyes of those passing by (this would be more for daytime events such

See MINDS, p. 7



MINDS, cont'd. from p. 6

as Sally Ride). We are trying to make our sign look professional, be small and portable, and lit by a red light for night time. If you have any ideas on signs, let us know and we will see what we can do to incorporate your ideas. * The Junior Ambassador position, by request of the attending members, has been annulled temporarily. We haven't had any reports from the Jr. Ambassador, as is required by the position, so we have temporarily erased it for a while. It may come back at a later date. * In the process of organizing the new 2004 PAS members we have lost several from our collection, they haven't renewed. So, I asked for a volunteer and got Ed Garbero, to contact the folk who have not renewed and find out what we can do to get them back. So, I'm supplying Ed with a list of names to contact while at the March PAS meeting and we hope to hear back from him on this very soon. * Show and Tell. Starting in September we will be offering the option for Members and Guests to Show & Tell their interests. We request to have lots of participants. Here is the new September PAS meeting schedule. We will open the meeting like usual with some brief announcements from different Officers & Mark. Then we will give the meeting to the Speaker. Other clubs do their show

& tell first, but we aren't going to make the speaker or the attendees stay all night to hear the main speaker. Instead, some of our speakers, like Dan Heim, need to get going earlier to because of the distance they have to drive. So, we will have our main speaker and then we will open the meeting up to those who wish to Show & Tell. You can show & tell anything astronomy, rocketry, weather, photographic, etc that you wish, that has to do with astronomy. To sign up for Show & Tell, tell Terri you have a topic to share, give the topic, and try to limit your time to around 20 minutes for your presentation. You can always take longer if no one else has signed up for show & tell that night. We want you to share what you love about astronomy. And the other new event will be the BOOK REVIEW. Jerry will start this new item off in the next month or so. Did you read a new astronomy book or enjoy some photos from a book you may have had in your collection? And you decide you want to share that with the group, please bring along the book, share your ideas, and again, sign up with Terri for having 20 or so minutes to talk about your book. You can do good or bad book reviews (not your presentation --- I mean, the book was good or bad). Share! After show & tell or book review (we will allow up to 9:45 for the added items), Mark will close the meeting for the night. Anyone wanting to be involved, tell Terri, and we will schedule you in. If you don't get to do it that night, plan it for a future meeting. So, in review: We will collect for the 50/50 raffle, Open the meeting, have the speaker, then do the 50/50 raffle winner, then open the floor to Show & Tell and/or Book Reviews, then close the meeting for the night. * We also discussed and would like information and ideas on the following: Each month we try to have something different to do. For instance, the November PAS meeting we have a Halloween Costume Contest. It may be silly but those who participate are appreciated as well as awarded for

being a great costume. It is something to just break up the "sameness" of each meeting. So, for those months that we don't have anything cool planned, maybe someone can come up with a yearly event we do on those months. Think about it. It makes PAS unique. NO one else has those same events! * We are looking for speakers and ideas on speakers for next year. We want to start plugging them into the schedule on the website. If you have someone in mind, please pass the info along or contact them and then get back to Terri to coordinate the months and make sure we don't double book ourselves. Ask around, find some speakers. All of next year is open right now. Let's fill it in. We can help Mark find speakers.... ahead of time. Thanks. * SNACKS - have you wondered where they come from? Well, Terri is known for bringing snacks to the meetings in the form of candy and cookies. She collects all month from different locations and brings them

along. But, we have a change. We have elected Matt to help accumulate snacks. And what we are going to do is... starting at the March meeting, we are going to put out a Snack Tip Jar and collect for snacks. Wouldn't you like to have something FRESH to eat at the meeting? Matt will take the tips collected in the Snack Tip Jar, and buy something for each meeting (assuming there is money to do it with). We do still accept donations of snacks brought by our members, so don't hesitate to supply some if you wish. But the tip jar will work for now.. If you enjoy the snacks, show your appreciation by adding to the tip jar for the following

month's supply of snacks. Terri will still bring her snacks, but at least you will have something new and different to try each month. And if you have a preference of what kind of snacks you'd like to see brought to the meeting, tell Matt at the next meeting. Let's have some variety. We could also invest in drinks, however, the XS is available and there are pop machines too, so drinks would probably be left up to the attendees to purchase or bring with them. One thing the Finches do, is try to remember to bring their water bottles. At least having some water on hand is better than having nothing to drink on top of the dry cookies. Donate today to the snack fund. * The PASTimes Star Tours needs to set a date to get together for a group photo up at Mike Marron's home. He has offered his beautiful background of cactus and mountains to be in our photo. This would be a couple hours out of some weekend day, Saturday or Sunday. The following people are going to be in the photo and HAVE TO bring their Telescope. Adam 10" Dob, Don 4.5" Refractor & Astroscan, Richard 10" Schmidt Cassegrain, Dan 6", Kevin Binocs, Jerry Binocs. What's this photo for? We came up with the idea to make a Postcard with our photo on the front, to send to resorts to advertise us for hire. We just need a clear sky date to do this and the people listed above. If you are involved in the PASTimes Star Tour group and have a unique telescope that does not match the ones listed above with their owners, contact Terri and see if you can't get in the photo as well. For the photo we want to wear our PAS T-shirts and nice pants, nice shoes so we look professional. * Another idea Jerry had for the meetings is that one of the attendees volunteer for the upcoming meeting to bring their scope. This would be something that happens only on nights where there was a special conjunction or event that we would want to view. The month before, Jerry would know what was coming up for that next month's meeting,

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It was only a matter of time. Photo received from Sharon Hansen

April 2004

PASTIMES

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MEETING, cont'd. from p. 7

and then ask for a volunteer to bring their scope the following month. It would be nice NOT to have the same volunteer each time. So, please help out every so often. Thanks. * It was discussed to have a special PAS FOLLOWING. Some events you go to, you get a ticket, this is punched in a special way to show you were at the event. Then after you attend a certain number PAS events in a year, you would be put in a drawing to possibly win a donated telescope from Orion, Celestron or Meade, or who ever may donate that scope to us. This idea is in the works and most of us in attendance liked the idea. So, if you have any input on how to make this work, or what kind of events to have people FOLLOW us to, let Terri know so we can start making something to go along with it. * It was also discussed that we might want to have a special before meeting dinner meeting over at Deer Valley Airport for dinner around 5pm. We don't have a date set for this yet, maybe we can do it for the April meeting, but that is up in the air right now. Those wishing to attend the event (Go Dutch) should let Terri know so they can be contacted when the event happens, if it doesn't make it into the next PAS newsletter in time. This would be a great way to get to know the speaker as well, as we can invite them to join us. * And the last item to talk about is the ASU West open house coming up on March 25. We need volunteers and i have flyers I'm trying to get out to the public, on bulletin boards, etc... so I am passing those out at the March PAS meeting hoping for help getting them out to the public's eyes. This Meeting of the Minds produced a lot of ideas, and went rather smoothly once we decided to be serious about our discussion. I thank everyone who attended this time, and hope to see you at the next one. I also appreciate everyone who followed the "raising of the hands" rule, as that made it easier for me to take notes and know what was said by whom. Let's keep that format for future meetings.***

DR. DAVID LEVY AT ASU

by Leah Sapir

Dr. David and Wendee Levy recently hosted two very interesting events at Arizona State University. On Wednesday night, February 11, they hosted a star party on Hayden Lawn at ASU. Dr. Levy and Wendee brought a bunch of telescopes and assistants from Tucson, and showed the wonders of the sky to the public. The large group of participants included both ASU students and also non-students like myself, who came specially for the star party. As Dr. Levy pointed out, the lighting at ASU is well-shielded - a good example of what outdoor lighting should be! And so, even though the area was well-lit (sufficient for safety and security), it was still possible to see a lot of stars and other sky objects easily. Objects viewed included Mars, Saturn (with the Cassini division seen beautifully), and later Jupiter when it rose; the Perseus double cluster; the "owl cluster" (NGC 457) in Cassiopeia; the Orion nebula; several open clusters (M41, M35, and M44); and Castor (visible as a double star, although the telescopist pointed out that it is actually a 6-star system). There was also an audio-visual presentation using computer astronomy software - a real "galaxy tour" that included zooming in on objects and seeing them from different angles. The presentation also included photos from the recent Mars probes. Dr. Levy and Wendee were available throughout the star party for questions and conversation, and it was a very pleasant evening. On the following week, Wednesday night February 18, Dr. Levy gave a lecture at ASU entitled "Space Policy and America's Future: Firing the

Imagination". Dr. Levy traced his own interest in astronomy, starting in childhood, and reminded all of us of our own experiences in discovering the wonders of the universe. He showed some very interesting slides, including recent comets and the 1999 solar eclipse. He pointed out how important exploration is, both for general knowledge and even for benefits here on Earth. It was a fascinating lecture. Dr. Levy also mentioned that he and Wendee have an on-line "talk radio" program, at the website www.letstalkstars.com. You can tune in anytime, and hear either a current program, or one from the archives. We look forward to future events with Dr. Levy and Wendee!***

OBSERVING

Condensed with permission from The Backyard Stargazer E-Newsletter, by "Tony LaConte - Stargazing For Everyone" tlccl@cyberspeedway.net

*Special event on the nights of April 1st through the 4th. Venus will pass very close to the Pleiades (M45). On the nights of April 2nd and 3rd the Pleiades will look like it has an extra bright star in the cluster. * From March 19th through April 8th all five naked-eye visible planets (Mercury, Venus, Mars, Jupiter, and Saturn) can be seen during the early evening (Mercury is best seen between sunset and 7:30 PM). For good measure the Moon will join the planets in the evening sky from March 22nd through April 4th. * Look for the "Great Red Spot" centered on Jupiter at 9:30 PM on the 7th, 19th and 31st. * There is a nice fairly bright evening ISS passage for the Phoenix area on Tuesday, March 16th from 8:00 PM to 8:04 PM. This passage will be easy to see as it is a -0.4 brightness and will pass high overhead through some easily recognizable constellations. The ISS will rise in the southwest and pass between Mars and Aldebaran, through the constellations of Taurus and Perseus, then finally disappearing in the north-northeast. This will be a nice one to watch. Thank you, Tony, for this observing information.***

MARCH MEETING IN REVIEW

It wasn't the best turnout for the meeting. As some of you recall, the storm had many of us flooded and the roads were very bad for driving. However, the few who made it really enjoyed AJ's talk about Messier and how he found his objects. I didn't know all that stuff and I really enjoyed what he was sharing with us. The audience seemed very involved. In fact, the normal chatting at the back of the room, didn't happen at this meeting. There weren't many of us but the few who came, really had a great time. We opened the meeting with Jerry filling in for Mark who didn't make it (reason unknown). Jerry gave me the floor to announce, but i wasn't in the right frame of mind so I announced everything in about 1 minute. That's a first for me. Anyway, we moved right along to AJ Crayon who presented a historical background to the Messier Marathon, Messier himself and a few other enlightening details. That was very good, very well organized and I really enjoyed it. Yea, I might say that too much but I really did. After AJ's talk, we did the 50/50 raffle which AJ won. It produced \$7 for AJ and \$7 for PAS. Jerry and I announced a few other upcoming things like the Astronomy Book Report each month by different members, and the Show & Tell we would like to begin. We also started a Snack Fund for which we raised \$3.35. That's not a whole bunch, but after collecting and not spending too heavily, we should have some fresh stuff to snack on. And each month we will look for more cash from that Tip Jar to make each month's

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MARCH, cont'd. from p. 8

meeting interesting. I wish to thank Ed Garbero for signing everyone in for me. I'd like to thank Bette and Ed Wurst who brought some more cookies to add to our collection. And I'd like to thank everyone who attended for braving the storm, especially Don Boyd who comes all the way out from Chandler, and still made it. I talked with Adam the following day and found out he was flooded into his location and couldn't come to us. Matt Kohl was stuck babysitting his friend's kid so he didn't make it. Kevin Harcey was too tired, probably do the storm and his new job. We hope for a better turnout in April. We have a great meeting planned and hope to see everyone there.***

WHAT A WEEKEND!

Many thanks to all who helped out. Many thanks goes out to those who were involved. I'll be mentioning them soon. It all started with Friday evening at the Sally Ride Reception down on the Tempe Campus of ASU. Because of the timing of it, William had to drive down alone (to be able to make it in time). My parents picked me up for the trip. In attendance were Bruce, Ed, Bette, William and myself. That isn't much considering this event was offering FREE FOOD. Anyway, the Sally Ride Reception was being held for everyone who was going to be offering their time on Saturday for the Festival. It was their way to thank us for coming and offer us some snacks and a chance to get our Sally Ride books signed and photos to be taken. We arrived around 4:30, and they weren't ready for us. But that didn't matter much. We waited around and then signed in. Then we walked around the Moeur Building looking at the displays which had to do with Mars, Earth and Satellites. After a while the food came, so we helped ourselves to dinner. It was horse de ovaries, as Dan calls them, and we had chicken which was excellent, some kind of pastry, several fruits and some raw veggies. They offered wine, lemonade and water as the refreshments. We ate till we were full and then the event started around 5:45. The Dean of the college came out and did a short speech and then turned it over to Sally who thanked everyone who was going to be involved in the following days events, as well as all her sponsors. This is the third year for this event and PAS was the only Astronomy club invited - we were exclusive. After she finished, she went inside and did some book signing. We waited around after checking out the books for sale, and then left around 6:15pm. When we had first arrived, the sky was dark and threatening, and shortly before Sally gave her speech, the sky looked like rain, but by the time we had watched the book signing and had taken a mini tour of the place, the sky cleared up. We were so surprised. I wish to thank our tour guide, for whom we don't remember his name but he did an awesome job. My parents took off in their vehicle to go home, and William and I took off in ours to go to the Adult's Night Out at the AZ Science Center. Since everyone who normally comes to the ADO event thought it was going to be overcast, they didn't show up. So we had less scopes but those who did show up get a big, huge thank you. Richard Guthrie and Don Boyd and my scope. Only three scopes but we had about 200 people drift by to see through our scopes. One set of people were interesting. Every Friday night this group of Roller Bladers roller blade around the city for exercise, and they had young and old in the group. There must have been about 10 of them. They were funny, and they were so happy to see us there. Anyway, I expect them back the following month with their lighted tubes of color (the plastic tubes you activate by breaking the

chemicals inside, and then they glow for a few hours and die). I earned 2 of them by showing Jupiter and Saturn to the leader of the group. We had a great time with them. We also made a bunch in tips that night and gave out a bunch of handouts. That night ended around 11pm. Richard had left earlier, but we stuck around with Don and showed a few more folks the night sky before packing up. Then it was off to home for some sleep. The next day started with a very early get-up. My parents started Saturday out with garage sales at 5:30 that morning, but William and I started it out by loading up the car and picking up Matt Kohl. By 9am my parents had made it to my home to help load up for the Sally Ride event. Again we trekked down to ASU Tempe and we got there right before 10am. They told us where to set up and we did. We had Adam who brought his scope and his NEW solar filter. He had some awesome views of the Sun. We had Don who brought his normal scope and his Astroscan for demonstrations. Jesse Romero brought his telescope, and I had the Doctor. All of the telescopes except for Adam's were viewing land items to demonstrate how the telescope inverts the image that you see. I had my scope on a bike way down the path from where we were. I wish to thank Bruce for watching my scope keeping the bike in view while the kids were looking through the scope and Mom and I were checking out other displays/vendors. And I'd like to thank Matt Kohl for all the work he did to keep the packet piles organized for handout, and for all the muscle work he did for us, and in helping with the Tarp and everything else we had him doing. He is a great asset to the club. Don chose a sign to focus on. Mike Marron brought posters and meteorites to this event and he had a splendid time. He even argued with one of the Deans about some of the items they were discussing. I wish to thank all my volunteers for coming out there, braving the heat and sun, and bringing the necessary items to make the day a success. Thanks to my parents and brother who also helped tremendously. We were scheduled to have lunch around 12, so we took turns picking up our drinks and subway sandwiches. Then my parents located some free donuts and coffee and orange juice so we made trips over there throughout the day and enjoyed that as well. Each of us took turns taking walks and watching the booth, so no one should have been bored, and when the kids were around, there wasn't time to be bored. One thing we did differently at this event than at past ones is collect names of people wanting to get the newsletter. However, it wasn't their mailing address I wanted, this time I wanted their email address so they could go to the Newsletter Yahoo site and get it themselves for the next two months. We collected 58 email addresses, who will all be invited, as well as one snail mail address because she begged for me to send it to her. I had brought the big basket of candy, that which many of you know from the PAS meetings, and before day's end, we had emptied the entire collection of candy out to the kids who visited our booth. We were one of 2 booths with shade. I had borrowed the shade, the tarp from my friend LaDien, who I wish to thank so much for lending it to us. I wish to also thank Kristen who was a great help in answering all my questions prior to the event, and for stopping by to see us during the day. And David Levy showed up there as well, and stopped by our table, too. After the event ended and everyone had packed up, prior to us leaving, I went over to look through the scope David had set up at his table. It was on the Sun and you could see flares and prominences. Nice view. We chatted for a bit and then went on our way. From there, we invited everyone who was still there, of our group, to join us at

See WEEKEND, p. 10



WEEKEND, cont'd. from p. 9

Bookmans, which is our favorite used book store down there in Mesa, and then from there, around 7pm we went to see my favorite Organist at Organ Stop Pizza, Charlie. Mike Marron followed us to both of those places and we had a great time with him. The night ended very late with a very early start again set up for Sunday. The events of Sunday were not related to astronomy but were just as exhausting as the previous two days. I thank everyone who helped out in all the events. I hope to have more volunteers available at future events. Thanks again.***

A SPECIAL "THANK YOU"

From: Kristen Greenaway

Subject: Sally Ride ASU

Hello Terri, Thanks so much for all your help at Saturday's Festival! We hope you enjoyed it as much as did having you there. Your presence really helped make the event the success it was, and fun for all. Again many thanks for your support, and that of your entire team and family. We hope to see you again next year! And we'll save the same space for you. Cheers, Kristen***

HUBBLE IMAGE SAID TO ECHO VAN GOGH 'STARRY NIGHT'

It's astronomy, but is it art?

Scientists using the Hubble Space Telescope said they see



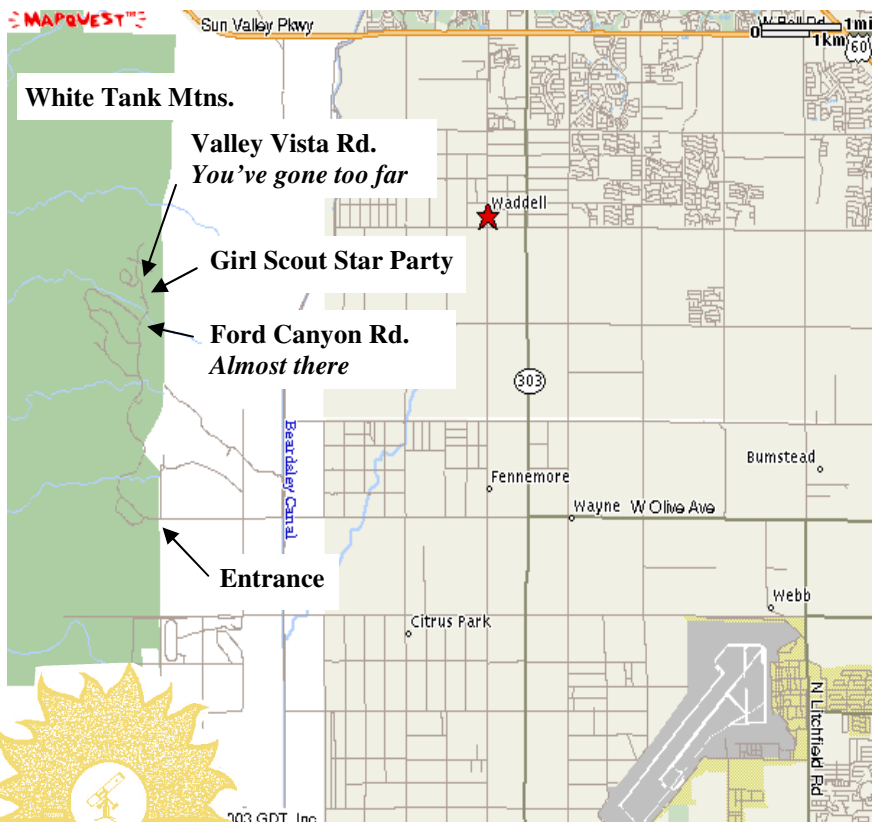
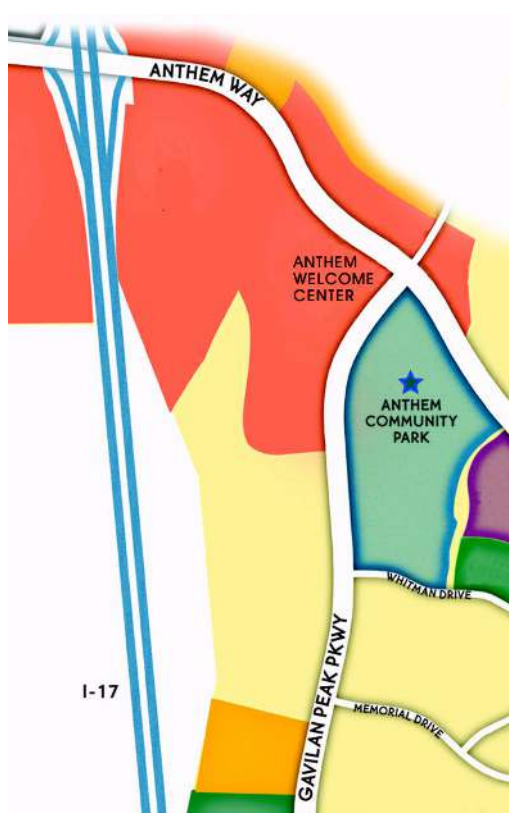
similarities between a newly released image of a distant expanding star and Vincent van Gogh's painting "The Starry Night." Astronomers said the Hubble image released on Thursday "bears remarkable similarities to the van Gogh work, complete with never-before-seen spirals of dust swirling across trillions of miles [kilometers] of interstellar space." Still, there are obvious differences. Van Gogh's 1889 painting of the sky over a sleeping village is predominantly blue, while the Hubble pictures of a supergiant star called V838 Monocerotis show a glowing red center surrounded by wisps of gray interstellar dust. The star gave off a flashbulb-like pulse of light two years ago and Hubble has been keeping track of it ever since, taking a series of images that show the expanding illumination of the dusty cloud around the star. This latest image, made by the Hubble's Advanced Camera for Surveys, is the first to show swirls and eddies in the dust cloud, Hubble scientists said in a statement. The red star is about 20,000 light-years from Earth in the direction of the constellation Monoceros (The Unicorn) at the outer edge of the Milky Way galaxy. A light-year is about 6 trillion miles (10 trillion kilometers), the distance light travels in a year.***

MARS

Mars was named after the Roman god of war because it appears the color spilled blood. The South polar ice cap on Mars is much larger than the north polar ice cap, and the southern winter is considerably

See MARS, p. 11

Join us for the Anthem Star Party at Anthem Community Park in, hmmm, let's see, could it be Anthem? That will be on April 17. Also there is the Girl Scout Star Party at the White Tank Mountains on April 16.



UPCOMING EVENTS

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
MAR. 14	15	16	17 Uranus 4° N of Moon	18 Uranus 4° N of Moon; <i>Meeting of the Minds</i> , 7pm, Denny's, Dunlap + I-17	19 Spring Equinox (11:49pm MST). Sunset straight W (6:39pm, azimuth 270.4°)	20 <i>Lake Pleasant Deep Sky Party</i> - See map; AZ City Messier Marathon; Sedona Messier Marathon - contact Adam for details; sunrise straight E (6:31am. azimuth 89.3°).
21	22 Mercury 4° N of Moon	23	24 Venus 3° to lower right of crescent Moon in W after sunset	25 <i>ASU West Star Party</i> , 7-9pm, setup at 6:30, see notice below - volunteers needed	26	27
28 Mercury greatest elongation (19° E) & Venus greatest elongation (46° E)	29	30	31	APR. 1 <i>PAS Meeting</i> - 7 pm Speaker: Dennis Young Topic: Astro-Scenic Photography, Aurora & more; <i>Submission deadline</i> for May newsletter	2 ASC Adult Night Out & Evening viewing - Volunteers needed, RSVP with Terri Venus in Pleiades star cluster in W after sunset (Mars to upper left).	3

MARS, cont'd. from p. 10

longer. Valles Marineris, largest of the Martian canyons, has a length of about 2,800 miles and a maximum depth of 4 miles. Phobos means "fear," and Deimos means "terror" - suitable companions for the planet named after the god of war. Viewed from the surface of Mars, Phobos crosses the sky three times each day.***

Q: What kind of music do astronauts like?

A: Nep-tunes

Q: Where do Martians go fishing?

A: In the galax-seas

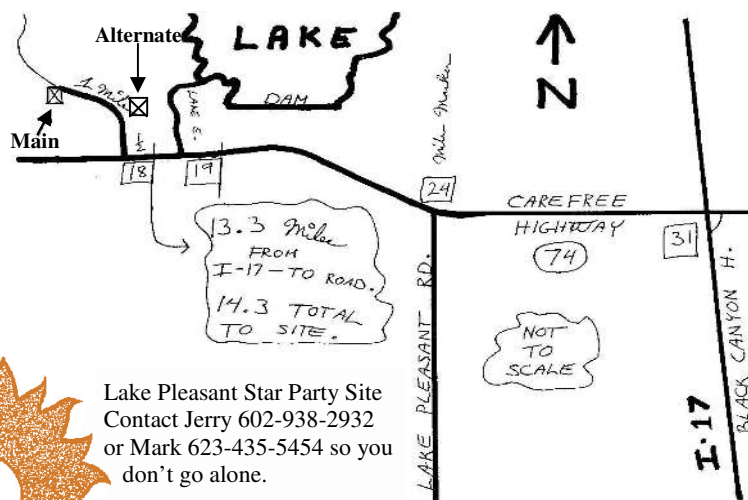
Q: What kind of light goes around the earth?

A: A satel-lite



Planets on Parade!
See All Five Naked Eye Planets!
Thursday, March 25, 7-9PM
Along Bike Path, West of Soccer Field

Department of
Integrative Studies
College of
Arts and Sciences
ASU ARIZONA STATE
UNIVERSITY WEST



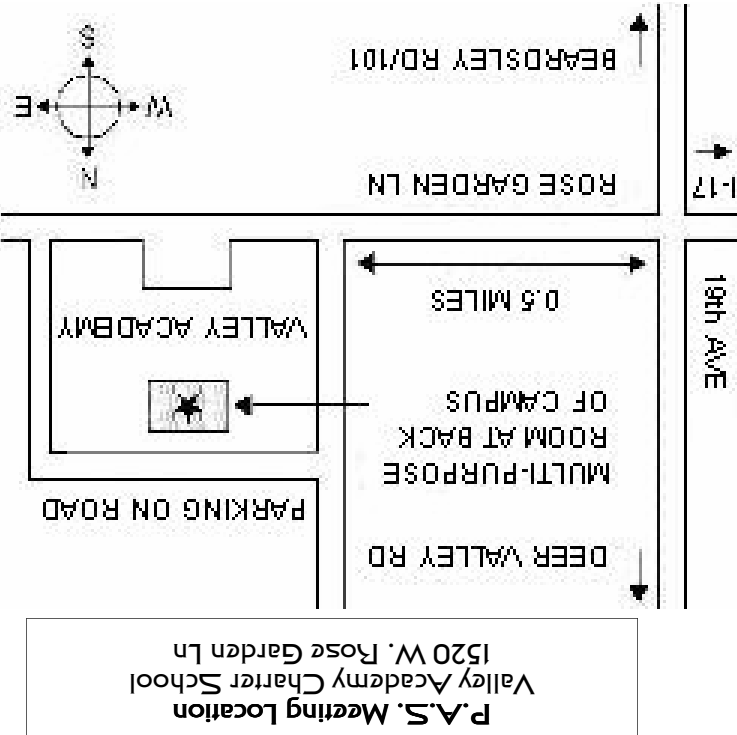
Lake Pleasant Star Party Site
Contact Jerry 602-938-2932
or Mark 623-435-5454 so you
don't go alone.

THIS ISSUE:

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