

# PAStimes

Phoenix Astronomical Society  
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PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

## December Guest Speaker: David Williams

Provided by David, edited by Terri

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

petrologic study of lava samples from Mount St Helens. He was involved with NASA's Magellan Mission to Venus, Galileo Mission to Jupiter, the European Space Agency's Mars Express mission, and he is currently serving as a Participating Scientist on NASA's Dawn Mission to asteroid 4 Vesta. David is the immediate Past Chair of the Planetary Geology Division of the Geological Society of America, has served on several NASA committees including the 2007 Jovian System Observer Science Definition Team, and is currently a steering committee member of the NASA Outer Planets Advisory Group.

Planets Rovers: From Lunokhod to Spirit and Beyond

On or about November 25th, 2011 (Thanksgiving weekend) NASA is scheduled to launch the Mars Science Laboratory containing the Curiosity Mars Rover.

Please join Dr. David Williams of ASU's School of Earth and Space Exploration at the PAS meeting on December 1st, as he reviews past rover missions to the planets, and highlights the objectives and capabilities of the newest planetary rover and mission to Mars. §



## PAS Meeting Review 11/3

By Terri, Event Coordinator

The meeting opened with a few announcements: the December Swap meet, the PAS Social date, the Calendar, the mishap of Awards Ceremony that was to happen that night but due to printer issues got moved to the December 5th MOM's Party. Then Bob Christ announced the 2005 YU55 asteroid and the possibility of viewing it on Tuesday November 8th. Jerry Belcher collected monies and took in orders for the Astronomy Calendar. He also brought many astronomy magazines for the taking.

We then turned over the meeting to Bob Holmes, a returning guest speaker and friend of PAS. Bob did a fantastic presentation about finding meteorites in Arizona. He had a bunch of samples of meteorites to

pass around. It was a very enjoyable meeting. His information was very interesting and had the attention of everyone. Many questions were asked.

Many thanks to everyone who brought snacks. Sam brought popcorn. The Wursts brought cookies, donuts, etc. Bruce, our President, brought the case of water. And Bruce was lucky to also win the 50/50 raffle. He won \$11. The meeting concluded early, so several of the members took off to Village Inn. Others stuck around and chatted with Bob Holmes and Mike Marron about meteorites. We were out of there by 8:45pm, a record. We hope to see everyone at the December PAS meeting and Swap Meet! §



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**December 2011 Upcoming Events!**

By Terri, Event Coordinator

**Dec 1:** PAS Meeting & Swap Meet. Bring those unwanted astronomy-related items to sell off at the swap meet. I suggest you also bring cash to buy the treasures you will find at this year's event! See article "December Swap Meet" in this issue for more details on how we do the PAS swap meet.

**Dec 6:** Private paid event at CTCA. RSVP is with Joe Collins.

**Dec 8:** Telescope Workshop at PVCC Main Campus from 7:30pm to 10pm. RSVP is with Terri for this event.

**Dec 11:** Bookmans Telescope Workshop 3:30 to 5:30pm. RSVP with Terri to attend.

**Dec 15:** AWARDS CEREMONY & Meeting of the Minds PARTY at PVCC Main Campus in G-147 from 7pm to 10pm.

**Dec 20:** Back up date for Dec 6 CTCA.

**Dec 31:** New Year's Eve Party at Mike's with star party and potluck. See article "New Year's Eve at Mike's" in this issue for more details. §

**Asteroid 2005 YU55**

Bob Christ writes: On the evening of November 8th, Tim Jones and I set up the 9.25" scope in my northeast Phoenix backyard to view Asteroid 2005 YU55 as it thankfully makes its way away from Earth, and out of our solar system. Our plan was to view the asteroid at 7PM.

The sky was cloudy as it became dark and I had to use stars, other than the two I would normally use this time of year, to align the scope. Call it elder abuse to be taken out of my "comfort zone." The Moon, almost full at 97+% illumination, did not help either. Once aligned, the action got fast and furious as 7PM fast approached.

The coordinates of the asteroid's location were loaded into the scope's computer, and moments later, at precisely 7PM, they were invoked. We were already in the local area of the sky so the slew was a brief one.

Initially a 36mm eyepiece was used (65x), but was quickly switched to a 25mm ocular (94x) to better capture any movement in the 1/2 degree FOV. There it was, the asteroid was really "booking" across the

sky and required frequent position adjustments to keep it in view! The asteroid was a little dimmer than 11th magnitude so it displayed as a small, stellar-like pinprick of light, but of sufficient brightness to be seen through the wispy cloud cover overhead. At this point it was about 216,000 miles away, and receding. (No, "redshift" was not detected...)

We tracked the asteroid for about a half-hour with child-like excitement, and then slewed to Jupiter. Due to the cloudiness, it was the only other object that was reasonably visible. Even though Jupiter was positioned about 7 degrees away from the nearly full Moon, and the seeing could be characterized as simply OK, a pleasing view was provided. Four moons were displayed, Io on one side, and interestingly on the other side, Europa and Callisto formed a colon (:) character perpendicular to the imaginary line between Jupiter and Ganymede. And of course, about an hour after taking down the scope the sky cleared. We declared the evening's view of the asteroid a resounding success!

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 Dolores Hill writes: Did you catch 2005 YU55? Go to the Catalina Sky Survey News button at <http://www.lpl.arizona.edu/css/> to see Rik's images from the 60" on Mt. Lemmon. It was very exciting to see it move so fast!  
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Sam Insana writes: Joe Collins and I looked for the Asteroid, on and off for two hours from 7 to 9 pm on Nov 8th at the CTCA, but we had no luck. The sky had a lot of high thin clouds, the valley lights made for a lot of light pollution, CTCA had a lot of bright lights on, and the Asteroid was an 11th magnitude object, making it very hard to see. The naked eye only goes up to 6th magnitude, binos get up to 9th magnitude, my 8-inch scope does around 12th magnitude, and Joe's 11-inch is able to see even more, but the light pollution and the nearly full Moon was a factor in not finding the asteroid, I believe. §

**Thanks from Temple Beth Event of Oct 14**

(Review of this event is in November 2011 PAStimes on page 4.)

From Terry Taubman

Well, we loved having you once again. It is always a highlight of the evening.

While the attendance was down, I'm glad to hear that everyone found their way over to see the night sky. I am not certain of what next year's holiday event is going to look

like. There is talk of shaking up the format a bit. Thanks again and I'll have a check sent to you in appreciation of your great addition. §

# Nominations for Night Sky Network Pins

By Terri, Event Coordinator

Some of our PAS members will be receiving Night Sky Network pins again this year for your public outreach volunteering through 2011. Last year, we did the awards in March, I believe. I haven't heard about the pins yet for this year, but I know that Night Sky Network will be asking me to give them a list of names, of who should receive a pin and certificate. This is the Night Sky Network's and PAS's way of thanking you for volunteering at events and helping to do public outreach.

What I'd like you to do is to take a moment to get in your email and send me the names of anyone in PAS you can think of who helped with public outreach through 2011. I don't want to miss anyone! Public outreach includes any public events we have done, that you have assisted at, and any school event. Some private parties can also count as public outreach. So, take a moment to drop me an email and send me your nominations for a pin and certificate. I already have a list of most of the PAS Members who have done Public Outreach,

so you are probably on the list. Name everyone else you can think of. I appreciate the help. I wish to thank everyone who has assisted in 2011. I will be announcing the date of the Awards Ceremony for those pins, as soon as I hear about them through Night Sky Network. The Award Ceremony will be at the Meeting of the Minds following the receiving of the pins from Night Sky Network. Send me your nominations, today!§

## PAS Dues Deadline

By Terri, Event Coordinator

This is a reminder that January 31 is the deadline to update YOUR current membership with PAS. If you do not take care of your annual dues by January 31, I will have to remove your access to the PAS website, you will be removed from the PAS Roster, and if you were a PAStimes Star Tours

member, you will be removed from that list as well. You don't want that to happen, do you? You are a member of PAS by choice, and now that you've experienced PAS, you should stick with us. We have so many fun events, including private ones that are open only to members. And you also receive the PAStimes Newsletter and a free subscrip-

tion to the quarterly magazine of the Astronomical League. Plus, WE WANT YOU! We don't want to have to remove you from our lists! You are not just a member of PAS, you are a friend! Please, get your dues updated with Mike, today! Thanks and have a super December!§

## December Messier Marathon Awards Ceremony

By Terri, Event Coordinator

PAS held its first Messier Marathon earlier this year. In honor of this event, Jerry Belcher created an awesome plaque for the first place winner. Due to weather, and other circumstances, the Messier Marathon was held on several different dates. The main marathon was hosted by SAC at a dark-sky location south of Phoenix. Bob Christ attended that marathon on April 2nd and made it through the wild winds. You can read about his adventure on page 3 of

the May 2011 PAStimes Newsletter. Bob was able to identify 66 Messier objects despite the difficult weather. Then, on April 30th, Mike Marron hosted the PAS Messier Marathon at his home in Carefree. Lou Roberts participated in the marathon on that date and identified 52 Messier objects. We had planned to hold the awards ceremony at the September 2011 PAS Meeting, but neither of these members could attend on that date, so I moved the awards ceremony to December. Therefore our December 1st

meeting will feature an awards ceremony where we will honor Bob Christ as first place winner within PAS, and Lou Roberts in second place. Both of these members will receive a nice certificate, and Bob will also receive the Messier Marathon plaque, designed by Jerry, to display on his wall at home. Congratulations to both of you for braving the wild weather we had this year, and for trying your hand at this competition! All are invited to the December PAS meeting to join us in congratulating them. §

## December Swap Meet

By Terri, Event Coordinator

At the December PAS Meeting we will be holding the annual PAS Swap Meet. This event is open to everyone. You don't have to be a PAS member to buy / sell / trade astronomy items at the Swap Meet. Here's how it works:

Bring your item, and a description of your item on a piece of paper, to the Swap Meet at the December 1st PAS meeting. We will have tables set up around the room for you to display your item. The page you provide will have a brief description of the item, and a place for everyone to put their silent bid. Leave a pencil by your paper on

the table in front of your item for sale. Please put a starting price for the bidding, and please make your starting bid reasonable, so you can get some follow-up bids for your item for sale.

Before, during, and after the meeting, the bidding will commence. You look at the items for sale, you bid on them by putting your amount, after the last amount that may be listed, and put either your first name and last initial or just your initials next to your bid. At the conclusion of the meeting, we try to allow for 15 minutes to wrap up the sale or purchase of items. So, our meeting will close about 9:15 on that night, to allow

for transactions to happen. Be sure to bring enough money to make your purchases. This is CASH ONLY. NO checks. It is a fun way to sell off those astronomy items that you no longer wish to use or keep, and maybe buy something fun for yourself or a gift for someone else. We hope to see you there.

Here are some items you will see at the swap meet this year:

Hyperion 13mm widefield eyepiece 68 degrees, Televue Paracorr visual version with tunable top and 2 inch to 1.25 inch adapter, Televue 8mm plossl, and Orion Moon Filter 2 inch 13%. §

# Halloween & Star Party at Mike's Review Oct 29

By Terri, Event Coordinator

People started arriving around 4pm. Some were there ahead of time but most didn't show up until later. Ed and Bette Wurst, and William and I, arrived at 4:10pm. Bob Senzer and Mike Marron were already there. The food was adding up on the counter with 3 rotisserie chickens, Church's chicken, potato salad, and some desserts. Everyone enjoyed my meatballs last time, so I brought them again with hoagies, and William made his "cream cheese dip from Hell," which went very well with our costumes. William and I came as the Devil's helpers. My horns glowed in the dark. Mike was dressed as an Energy Nerd, and Bob was made up as a wine-o with a big jug of liquor (empty). Kevin Harcey arrived while Bette and I took a walk out to the front of Mike's property to take some photos. It was a lovely day for

photos! Kevin's costume was very BRIGHT. He took a jacket, spray painted it with glow-in-the-dark paint, and then some other bright neon colors over it, and blue paint in his hair. It was a very good look for him. We took some photos of his jacket and my glow-in-the-dark horns with a black light on them. Then Eric and Ora Steinberg showed up. They brought a lamb stew that was very tasty and home made. Delicious! Frank Insana was already there, when we got there, but Sam Insana arrived later. He came as Scotty from Star Trek. And he did a very good accent! Bruce Wurst and Donna Zander (his fiance') arrived late. They were the last to arrive and first to leave. Donna had an awesome Spider Lady costume. Bruce came as a hunter. It was a great party. There was more than enough food for all. As everyone ate to their content, Mike, Bob and I cleaned up the kitchen a bit, and

then we moved to the living room to watch a movie, "Life Pod." Afterwards we watched a second movie, "T-Force." Neither of the movies was that great, but in the meantime, since the event was also planned as a star party, Eric set up his Dob and was looking at a ton of awesome objects, and he would come and invite us to view when he found something interesting. So, the opportunity to get away from the wild movies was really enjoyable. Many thanks to Eric for providing views of an awesomely clear night sky. I helped him find the Orion Nebula and Crab Nebula, and we saw Jupiter and the Andromeda Galaxy as well. We enjoyed the evening. It got a bit chilly by the end but there were good temperatures, great people, and a lot of fun. We went home afterwards, but Bob and Frank spent the night. Many thanks to Mike for hosting the party. §

## Orders for PAS Name Badges

By Terri, Event Coordinator

About once a year, we put in the order for PAS name badges. I haven't figured out what is the best month for having that done. We tend to get new members around the winter months, and then just before or during the summer months. So, I would like to place the next name badge order in January 2012. If you don't already have a PAS name

badge and you'd like to have one, please get your \$\$\$ to Mike by way of a dues sheet. Take a moment to download the dues sheet, give Mike the \$15 for the name badge, and then he will inform me that you need one made. I will submit the order in January and deliver them at the February PAS meeting. I prefer to wait until I have at least three orders before submitting the order, as the

location where I get the badges made isn't in my normal traveling route around Phoenix. So, order your name badges today. The link to the dues sheet is: <http://www.pasaz.org/forums/downloads.php?do=file&id=18>. Thank you for your orders. §

## Thanks from Dan - Corona Ranch Event Oct 15

(Review of this event is in November 2011 PAStimes on page 7)

By Dan Heim, DFAC

Thanks to Terri, Don and Dewell for your assistance tonight. I do believe the Astronomy Night was a smash hit, and

would not be surprised if we were called back for another event in the future. If so, I'll keep PAS as a backup for filling in the needed number of scopes. With the number of people there tonight, I can see why the client insisted on ten scopes. I always rec-

ommend one scope for every ten people, but they had 600 people there tonight. No way we could've fielded 60 scopes, but I didn't think the lines were that long. Longest I saw was about eight people. §

## PAS as a Gift

By Terri, Event Coordinator

For those of you who have been swamped with what to buy your family members or friends for Christmas, let me remind you that PAS is a great gift. A membership to PAS for a year or more is a wonderful way to get your friends and relatives involved in a fun club! The membership gives your friends and relatives the opportunity to enjoy the night sky at private events such as at Mike's home in Carefree. They will also receive the Newsletter, which has great articles and upcoming events, and they will get access to the pri-

vate calendar. They also get a subscription to the magazine of the Astronomical League, which they will receive by mail four times a year. We would love to have them join PAS and support the club you love. Plus, if you download the Membership Drive Form (found in the same section as the Dues Sheet in the PAS Website downloads) your friends or relatives, as new PAS Members, can save \$5 on their membership by attending one of our public events and turning in their membership to Mike, that night. And don't forget, use the

Dues Sheet and be sure your name is at the bottom as the referral. With five referrals in a year, you will get your next year's membership FREE. We hope to see more PAS members working towards a FREE membership by sharing PAS membership with friends and family. (Note: this suggestion refers to family members outside your own household. Family members in your own household are automatically part of your family membership in PAS. You can give them PAS membership simply by renewing your own - what a deal!) §

## PAS-CTCA SkyTour Event Report Oct 18

by Joe Collins, PAS member & CTCA Cancer Fighter

We had a successful mid-October event at Cancer Treatment Centers of America in Goodyear. It was a dark and clear night - PERFECT for sky/star-gazing events like this! Five people showed up for solar viewing through Sam's two solar telescopes. Some of those five stayed for the evening program and an additional eight people came up during the night for a total of thirteen guests, including both caregivers and patients.

Here is an astronomical synopsis of what was seen tonight in the words of our attending PAS members:

Sam Insana: I showed the guests some sunspots with the 8-inch reflector, and solar flares with the Coronado PST. I also showed the Andromeda Galaxy (M31), Gamma Andromedae double star, Jupiter, M13 Globular Cluster, M57 Ring Nebula, and M15 Globular Cluster. As far as questions, the most interesting one I had was about UFOs. Common questions I received were how far away some of the objects were and how far apart the double stars are. Everyone thanked us for being out there with our telescopes and some asked if we would come out again.

Don Boyd: I also viewed and shared with our guests - sunspots, the double cluster (Caldwell 14 or NGC884 and NGC869),

the ET Cluster (Caldwell 13 or NGC457), Almak (Gamma Andromedae) a double star, M6 (the Butterfly Cluster), M7 (NGC6475 or the Ptolemy Cluster) and M45 (the Pleiades). Some of the questions I received: Why were we out that night? Is Phoenix a good place for stargazing and was our location at CTCA a good site for viewing?

Joe Collins : Natalie Badolato of CTCA printed out the astronomy handouts I prepared and distributed during the event. I showed our customers my alignment stars: Deneb, Arcturus and Vega; multiple stars: Polaris, Alcor, Albireo, Cor Caroli, Eta Cassiopeiae, Gamma Andromedae Nu and Psi Draconis, Beta Scorpii (Graffias), Zeta Cancri (Tegmen) and Epsilon Lyrae (the double/double) [All of these binaries/multiple star systems are listed in our handout]; the double cluster in Perseus (Caldwell 14), the Wild Duck Cluster (M11); M2 and M13 globular clusters; Neptune, Uranus, Jupiter and its moons: Io, Europa, Ganymede, Callisto; planetary nebulae: M57 Ring Nebula, and the "Blue Snowball" Nebula (NGC7662). I viewed/showed the waning gibbous Moon from 11:40pm until about 1:30am, the Hyades (Caldwell 41), and finally viewed the stars of Orion and the Orion Nebulae (M42 Trapezium/M43). Like last month, I shared the iPad "StarWalk", "StarMap", and "Gas Giants" apps to show folks how the objects

we were viewing look from the Hubble and Spitzer space telescopes, and to check facts on object size and distance and unique characteristics. I showed an animation of comparative sizes of stars and astronomical objects. I had questions from patients/caregivers about solar X class flares and about the moons of Jupiter.

The attendance for this event was less than expected, but since this date was the "back-up" date (we had to cancel the October 4th primary date due to weather) the event did not show up on the Patient Calendar available at the Concierge's Welcome Desk at the CTCA lobby, so this was not surprising. Also our event was "competing" this time with two other patient events: Newcomer's Dinner and the "Cookies & Cream" social. I was able to speak with Blas who heads the newcomer's dinner and invited them upstairs for stargazing after dinner, but I didn't know who was running or organizing the Cookies & Cream social, so I wasn't able to forward the invitation to them. I am sure we will have better awareness by CTCA patients and guests of future events. Still, we all had a good time with refreshments under the stars.

I want to thank Sam and Don of PAS and Marisa and Natalie and the hospitality workers of CTCA for making this afternoon/evening's event a great success. We are looking forward to more autumn sky viewing when we return in November. §

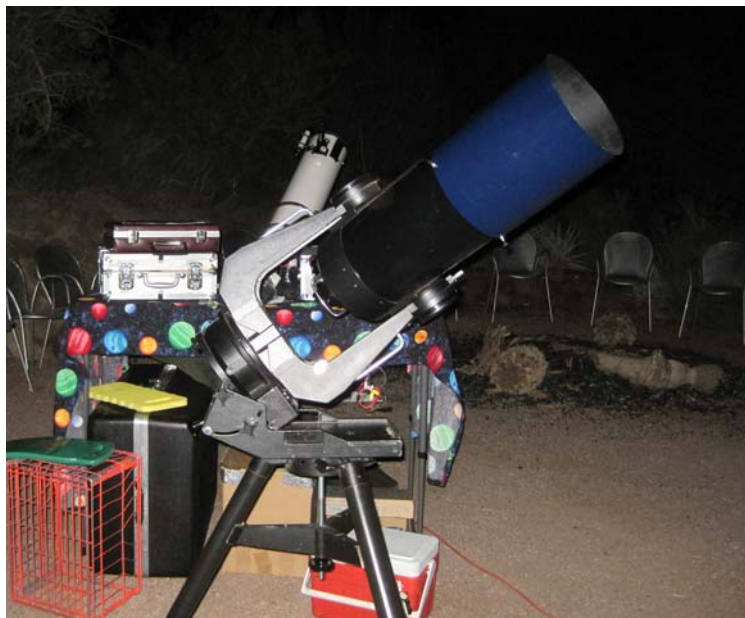
## Desert Botanical Gardens Star Party Review Oct 28

By Terri, Event Coordinator

This was a private party for the paying patrons of DBG. The group included about 20 adults. The event started out with a classroom presentation by Mike about telescope design and introduction to astronomy. After the group enjoyed Mike's intro, Mike and the group worked their way out to the Agave Pit where Sam and I were set up with our telescopes. Mike shared his meteorites and as usual, stole the majority of the crowd. During the evening, from 7:30 to 9pm, Sam and I showed the Andromeda Galaxy, Perseus Double Cluster, Alberio, Ring Nebula, Jupiter and a bunch of other objects. It was a very good evening. The sky was clear most of the time. Except for one bright light to our northeast, the sky was dark and wonderful. It was enjoyable and a decent temperature.

We totally enjoyed this event. A few

photos were taken at this event, which will be posted in the PAS Photo Gallery for your enjoyment. Afterwards, Sam treated us to food at Red Devil Italian Restaurant. Very good food, great friends, and a fun time was had by all. Many thanks to Steen Allard-Lawson (DBG) for asking PAS to do this event, and much thanks to Sam for dinner afterwards. §





# The Strange Case of 55 Cancri e

Forty light years from Earth, a rocky world named “55 Cancri e” circles perilously close to a stellar inferno. Completing one orbit in only 18 hours, the alien planet is 26 times closer to its parent star than Mercury is to the Sun. If Earth were in the same position, the soil beneath our feet would heat up to about 3200 F. Researchers have long thought that 55 Cancri e must be a wasteland of parched rock.

Now they’re thinking again. New observations by NASA’s Spitzer Space Telescope suggest that 55 Cancri e may be wetter and weirder than anyone imagined.

Spitzer recently measured the extraordinarily small amount of light 55 Cancri e blocks when it crosses in front of its star. These transits occur every 18 hours, giving researchers repeated opportunities to gather the data they need to estimate the width, volume and density of the planet.

According to the new observations, 55 Cancri e has a mass 7.8 times and a radius just over twice that of Earth. Those properties place 55 Cancri e in the “super-Earth” class of exoplanets, a few dozen of which have been found. Only a handful of known

super-Earths, however, cross the face of their stars as viewed from our vantage point in the cosmos, so 55 Cancri e is better understood than most.

When 55 Cancri e was discovered in 2004, initial estimates of its size and mass were consistent with a dense planet of solid rock. Spitzer data suggest otherwise: About a fifth of the planet’s mass must be made of light elements and compounds—including water. Given the intense heat and high pressure these materials likely experience, researchers think the compounds likely exist in a “supercritical” fluid state.

A supercritical fluid is a high-pressure, high-temperature state of matter best described as a liquid-like gas, and a marvelous solvent. Water becomes supercritical in some steam turbines—and it tends to dissolve the tips of the turbine blades. Supercritical carbon dioxide is used to remove caffeine from coffee beans, and sometimes to dry-clean clothes. Liquid-fueled rocket propellant is also supercritical when it emerges from the tail of a spaceship.

On 55 Cancri e, this stuff may be literally oozing—or is it steaming?—out of the

rocks.

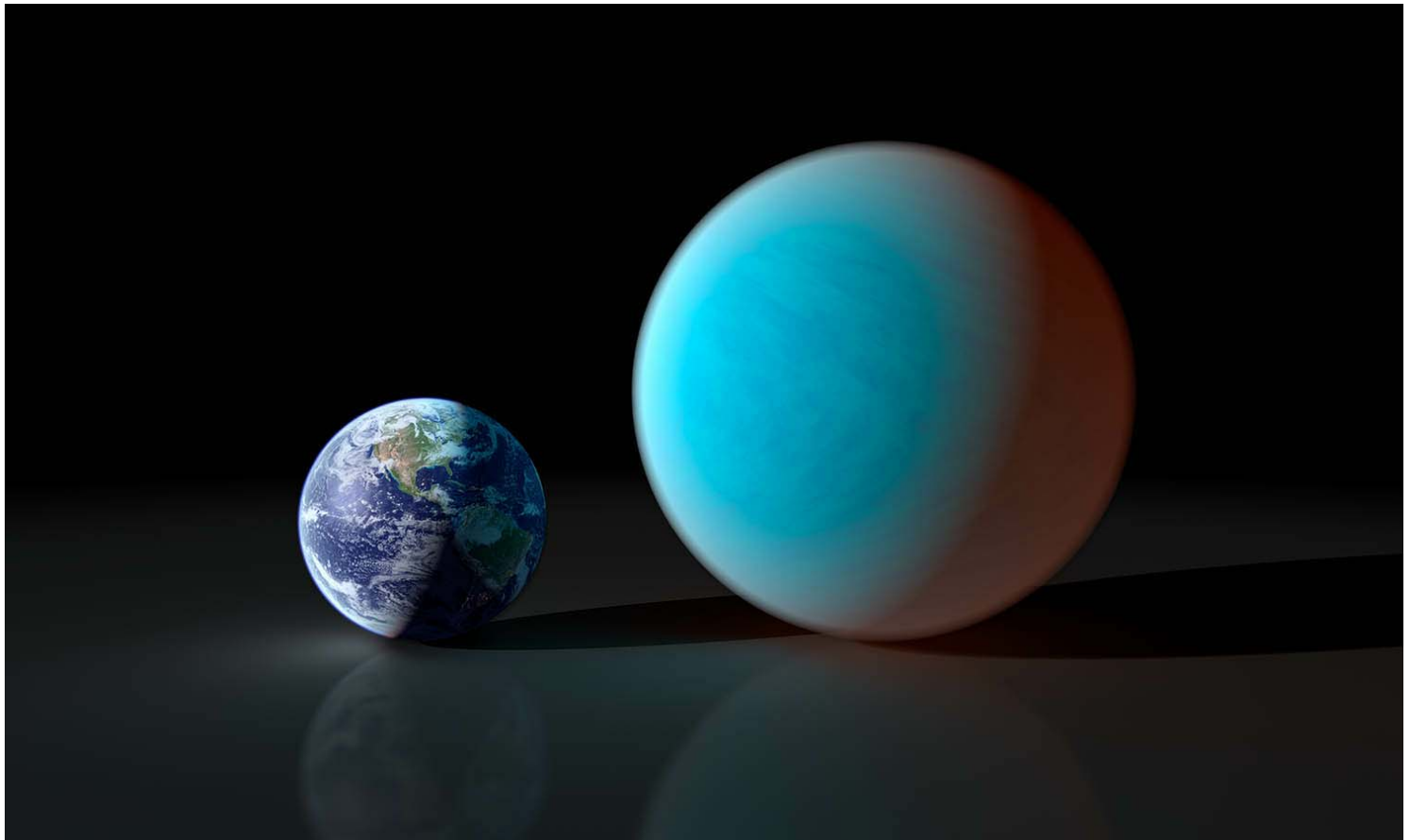
With supercritical solvents rising from the planet’s surface, a star of terrifying proportions filling much of the daytime sky, and whole years rushing past in a matter of hours, 55 Cancri e teaches a valuable lesson: Just because a planet is similar in size to Earth does not mean the planet is like Earth.

It’s something to *re*-think about.

Get a kid thinking about extrasolar planets by pointing him or her to “Lucy’s Planet Hunt,” a story in rhyme about a girl who wanted nothing more than to look for Earth-like planets when she grew up. Go to <http://spaceplace.nasa.gov/story-lucy>.

The original research reported in this story has been accepted for publication in *Astronomy and Astrophysics*. The lead author is Brice-Olivier Demory, a post-doctoral associate in Professor Sara Seager’s group at MIT.

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



Artist’s rendering compares the size Earth with the rocky “super-Earth” 55 Cancri e. Its year is only about 18 hours long!

# PAS-CTCA Sky Tour Event Report Nov 8, 2011

by Joe Collins, PAS member & CTCA Cancer Fighter

Attendance-wise, this was the most successful event to date: We had at least twenty-six (thirty-six by one estimate) guests look through the telescopes this evening at Cancer Treatment Centers of America in Goodyear. Accuweather.com and the NOAA weather websites did not predict the high altitude cirrus clouds that obstructed solar viewing just before sunset and interfered with dark sky object viewing at night, nor the sudden cold drop in temperature, but we were still able to view many of the objects highlighted in our event handout and we were able to do a "mini-sky-survey" for asteroid 2005 YU55 on near-Earth close approach this night.

We had only three people (low turnout) for solar viewing - two through Sam and Frank's two solar telescopes and one through Don's telescope; but there was a large evening/night turnout that kept us busy until 10pm, despite the chilliness. (It was definitely a sweater/jacket evening!)

Here are some notes and quotes for this event from the attending PAS members:

Sam and Frank Insana: Frank showed some solar flares, prominences, and filaments from 4pm until 5pm with the Coronado PST. There were only two customers who showed for the solar viewing. Sam showed 10 large sunspots with his 8-inch Newtonian reflector with a glass filter. Again, only two people showed up. There were some clouds on the horizon, making it difficult to see anything near the end (sunset). From 6 to 9 pm Frank showed the moon, Jupiter, and the Pleiades open star cluster with his small spotting refractor. He was also able to show these objects to two wheel chair customers, because he was able to lower the tripod for them. Sam showed close-ups of the moon and Jupiter and the double star Gamma Andromedae. There were about three dozen customers for the night viewing. The most interesting question came from a gentleman wanting info on astrology (which we do not provide) and his concern on how celestial objects affect us. Sam looked for the near-Earth asteroid from 7 to 9 pm, but because of the 90% full moon, the city lights, the clouds, and the fact that the asteroid was only magnitude 11, he was unable to see it.

Don Boyd: I started out viewing the Sun through a solar filter and was amazed at the number and size of the sunspots visi-

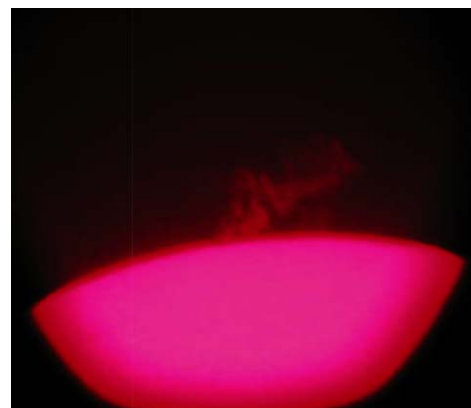
ble (refer to handout). After dinner I had a little trouble with my scope, the RA axis was a little loose and the first time I tried it would not do an accurate GOTO. After using it for a few minutes I figured out that both problems were related to the RA clutch not being tight enough. After I fixed this on my scope, it worked quite well. I viewed my "usual suspects" of open clusters available at this time of year: the Perseus Double Cluster (Caldwell 14 or NGC884 and NGC869), the ET Cluster (Caldwell 13 or NGC457), M6 (the Butterfly Cluster), M7 (NGC6475 or the Ptolemy Cluster) and M45 (The Pleiades); plus Jupiter and Uranus (which was very small). I think I had probably 25 people look through my scope, counting both solar and night time viewing. One question posed to me was "how far is the Double Cluster from us?" The night started out very poorly with high clouds which limited the viewing, but this cleared up towards the end...when it started getting cold...so we packed it in fairly early.

Joe Collins: Marisa Benincasa of CTCA printed out the two-sided color astronomy handouts I prepared and distributed during the event - our largest handout to date, with four pages of content. It was an especially enjoyable night for me since I was able to share the stars with two fellow patients who were treated alongside me at CTCA in 2009. The moon was nearly full so dark sky/nebular objects were less visible than last month. I showed our guests my alignment stars: Deneb, Arcturus and Vega; multiple stars: Polaris, Eta Cassiopeiae, Gamma Andromedae, Zeta Cancri (Tegmen) and Epsilon Lyrae (the double double) [All of these binaries/multiple star systems are listed in our handout]; the Double Cluster in Perseus (Caldwell 14), the Wild Duck Cluster (M11); M13 globular cluster; Neptune, Uranus, Jupiter and its moons: Io, Callisto, Europa, Ganymede; and planetary nebula M57 (the Ring Nebula). I shared images and facts from the iPad "StarWalk", "StarMap", and "Gas Giants" apps to show folks how the objects we were viewing look from the Hubble and Spitzer space telescopes, and to confirm object size and distance and unique characteristics. The most common question I had tonight was "will you be back next month?" I was able to join Sam in looking for asteroid 2005 YU55 (had the best chance of seeing it from my C-11), but even after several hours of survey, I could not see it - it was too dim and the night sky too bright. It was good, how-

ever, to learn that the Celestron GOTO RA/DEC and IDENTIFY features were working after fine-star alignment: I had never used these features before because they were hidden under the maintenance menu on my hand controller.

The high attendance this time was a nice surprise - the last-minute advertising in the cafe and lobby seemed to work. It was too cold for ice water as refreshments, so I will see if we can get hot coffee or cocoa next time.

I want to thank Sam, Frank and Don of PAS and Marisa and the hospitality workers of CTCA for making this afternoon and evening's event a great success. We are looking forward to winter sky viewing when we return in December and in 2012. §



Digital photo taken by Sam Insana on Monday Nov 14, 2011: a giant solar flare, about 100,000 miles high and about 100,000 miles wide. He used the PST and his son Frank's Canon 8-Mgp camera. §



Taken thru a 6 inch reflector with a Baader Solar filter November 8 2011, and shows numerous huge sunspots.

## Astronomy Stuff for Sale

### SCOPE FOR SALE:

Virtually brand new Zhumell 10" Dobsonian. Excellent resolving power, clear images. Easily shows individual stars in M92. Takes 2" eyepieces and includes: 2" - 30mm Plössl, 1.25"-9mm Plössl and the 2" to 1.25" adapter. Lunar filter (1.25"), Laser collimator, Telrad Finder, 8 x 50 Finder. It has a 2", 2-speed vernier Crayford focuser, and a mirror cooling fan. I replaced the included 8 x 50 finder with the Telrad, but it can be easily remounted, if desired. Contact Eric Cell 203-223-0132 or email [home@ytdept.com](mailto:home@ytdept.com).

### SCOPE FOR SALE:

The scope is a Meade ETX 90mm with computer hand pad and tripod. The owner (a lady) is asking \$350, retails for \$600.

Email Dave to view scope and purchase it. First \$350.00 walks away with it. [david.hellmann@pvmail.maricopa.edu](mailto:david.hellmann@pvmail.maricopa.edu).

### SCOPE FOR SALE:

Package or Individual parts - Pick up in Tucson only

Classic C11 OTA. \$850, C11 fork and base that was purchased separately from the OTA Asking \$500, Classic Star Liner German Equatorial Mount. It has a homemade tangent arm Dec. drive and tracks very well. Asking \$600. Prices are negotiable. Photos of this telescope at: <http://www.lpl.arizona.edu/~rhill/instr.html> Asking \$1500 to pick up in Tucson. Email: [Rik.RHILL@LPL.ARIZONA.EDU](mailto:Rik.RHILL@LPL.ARIZONA.EDU)

### SCOPES FOR SALE:

Two telescopes for sale; a Meade ETX-60AT w/ Autostar (new) \$90, and a Meade ETX-80AT w/ Autostar (very slightly used) \$150. 9mm and 25mm lenses for both. Meade stand w/ accessory tray, compass, and Rigel "Quickfinder" for the 80AT. Manuals for both. Contact: Pete [pete.morrissey@gmail.com](mailto:pete.morrissey@gmail.com) or Cell 480-543-0031.

### SCOPE FOR SALE:

8" Meade, tripod, eye pieces, filters etc. Home & auto power cords, travel case, computer and camera interface are included. Asking \$1200 In excellent condition. Contact Bob [rccdelta@cox.net](mailto:rccdelta@cox.net) or 602 617 2366. §

## New Years Eve Party at Mike's!!!

By Terri, Event Coordinator

The past few years, I have been hosting a New Year's Eve party at my home by Metro Center Mall. But this year, Mike wishes to host a party. We will have a potluck, so bring a main dish to share and a drink to share. And of course, bring your telescope. This is a Potluck and Star Party!

It is a private party, only for members of PAS, but if you wish to invite a friend, just be sure to RSVP with Mike, so he has an idea of attendance. There will be a main dish food sign up on line in the calendar so we can avoid having duplicate foods. We will begin eating at 6pm, so try to arrive on time to get the best selection of food. If you

have fireworks and would like to set them off, please ask Mike first. We might have a movie or two to watch while we keep warm and wait for the fireworks to start around the Carefree area. Bring a movie on DVD if you wish to share! We hope to have a great party. Everyone is welcome. Mike's phone is 480-488-3031. RSVP today! §

## ASU West Star Party Review Oct 27

By Terri, Event Coordinator

It was a small bunch of telescopes but the skies were clear, except for a little haze. Dr Paul Schmidtke brought out the ASU West 12" scope. Jeff Hopkins (SAC) brought two scopes he shared with everyone. Don showed up with his 6" and I had my 8". We had a steady crowd all night long. Jupiter was the highlight, but we also viewed other objects, including globular clusters M15 and M13, the Ring Nebula, Alberio, the Andromeda Galaxy, the Perseus Double Cluster, and more. We could see that the public totally enjoyed this

event. There were a few members of the public who stayed the whole evening, and we searched for more objects to share with them. There were several who said they were interested in buying a scope and some who said they were interested in joining the club. The next ASU West Star Party is set for Mar 15, 2012. Plan to attend - we can use the assistance. Many thanks to Paul for hosting the event and for the lovely gift he gave to PAS to thank us for all the hard work we do in helping to make these events a success. We will use his gift as a door prize at the PAS Social.

Paul writes: Hi Terri, Thank you, thank you, thank you! Since I don't have everyone's personal e-mail address, please pass this along to all who helped out last night. Considering the construction that surrounded us, the event was a success! I just plotted out my classes for the spring 2012 semester. March 15th would be a great date for the next ASU event. No Moon (3rd quarter), but we will have Jupiter, Venus, and Mars -- plus the remainder of the winter sky sights. So, let's go with it!§

## Meteor Shower

Received from Laura K. Lincoln, Outreach Coordinator, NASA Space Place

Have you ever wondered how astronomers can predict when there's going to be an abundance of shooting stars in the night

sky? Showers of meteors, the scientific name for "shooting stars," occur predictably several times a year, usually peaking within the same two- or three-day period. So what causes them? Why do they seem to

come from the same part of the sky? What's the best way to see them? Visit <http://spaceplace.nasa.gov/meteor-shower> and get ready to enjoy the next show.§

# Map of PVCC Main Location

18401 N. 32nd Street | Phoenix, AZ 85032

# Map of PVCC Black Mountain

34250 N. 60th Street | Scottsdale, AZ 85266



See page 2 for more information

## December

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 PAS Monthly Meeting	2	3
4	5	6 CTCA	7	8 PVCC Telescope Workshop	9	10
11 Bookmans Telescope Workshop	12	13	14	15 Meeting Of the Minds	16	17
18	19	20 CTCA Backup	21	22	23	24
25 Christmas Day	26 Boxing Day	27	28	29	30	31 Private New Years Eve Party

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

To:

## PAS Meeting of the Minds Awards Ceremony Dec 15, 2011 Agenda

By Terri, Event Coordinator

If you are receiving an award, you need to be at this meeting. Please wear a nice shirt for photos. Here is the agenda for the evening. Meeting opens at 7:30 sharp, to allow time for socializing after everything has been completed.

2011 Messier Marathon Awards Ceremony – with photos, certificates and plaque

2011 International Observe the Moon Ceremony – with photos and certificates

2011 PAS Moon Marathon Awards Ceremony – with photos, certificates, plaque and prizes

MOM's Agenda – topics in order listed on white board

Socializing and PARTY!

Bring a PARTY snack to share. Water will be provided by President Bruce Wurst. The following PAS Members need to attend this

## PAS Guest Speaker Line-up for Fall 2011

By Terri, Event Coordinator, Events@pasaz.org

Jan 5 in G-147: Bryan Penprase: “The Power of Stars” lecture and book signing & sale

Feb 2: Chet Schuler “Stellar Spectrums”

Mar 1 In Q Building Rm 120A/120B: William K. Hartman “Origin of the Moon” lecture and book signing & sale

If you have an idea for a guest speaker, please contact Terri at events@pasaz.org.

PAS is incorporated in the state of Arizona as a non-profit, scientific and educational 501(c)(3) organization. Our newsletter PAStimes is published monthly from September to May and distributed by US PS and the Internet. All Issues are available for download on our website [www.pasaz.org](http://www.pasaz.org) Ads for astronomy equipment are provided as a courtesy to sellers and buyers, and do not constitute any endorsement by PAS. All Photos by Don Boyd unless otherwise credited. All articles and photos are copyright their authors or PAStimes.

## What's Up For December?

By Rod Sutter, PAS Past President

Name	Date	Rise	Set
Mercury	12-15-11	05:45	16:12
Venus	12-15-11	09:33	19:32
Mars	12-15-11	23:33	12:17
Jupiter	12-15-11	14:14	03:09
Saturn	12-15-11	02:52	14:14
Uranus	12-15-11	12:53	00:55
Neptune	12-15-11	11:20	22:17
Pluto	12-15-11	08:05	18:27

All Times Arizona Time

December 15 2011

**Sunrise: 07:19**

**Sunset: 17:18**

**New: November 25**



**Q1: December 2**



**Full: December 10**



**Q3: December 18**

