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nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

Amateur
astronomers
just get better
looking . . .

**Pay club dues at the General Meeting,
or by mail. \$30 individual, \$40 family.**

Volume 26 Number 9

nightwatch

October 2006

President's Address

On Wednesday, Nov 08, 2006 the planet Mercury will transit (pass in front of) the Sun. The transit will begin at a little after 11:00 AM PST and end at about 4:00 PM PST. Transits of Mercury occur on average about every seven and a half years. Transits of Venus are much rarer, less than 2 per century. Many of us observed the 2004 transit of Venus at various websites.

The transit of Mercury presents us with an excellent opportunity to do some public outreach activities. We plan to have solar telescopes at three locations for the transit. We will have a daytime public star party at Barnes and Noble Booksellers in the Montclair Plaza. The event, which we held there on August 4th, was very well received.

We will also be offering the students at two elementary schools a chance to observe this interesting phenomenon. We will have telescopes at Sycamore Elementary School in Upland and at Condit Elementary School in Claremont. While we are there we can also educate the students in safe solar observing techniques.

A few PVAA members have already offered to help with these observing sessions, but we could use more volunteers. If you have a solar filter for your telescope and can help out with one of these events call me, talk to me at the October meeting, or send me an e-mail message at astro.ron@juno.com.

Also, for those of you who are interested, on October 6, 7, and 8 Coronado will be sponsoring a workshop and symposium for amateur Solar Observers. The "HOTS Conference" is now in its 6th year. This year's program reflects the interests expressed in the survey taken following the 2005 HOTS conference. The conference will be held this year at Irvine Valley College 5500 Irvine Center Drive, Irvine California 92618. For more information visit: <http://www.coronadofilters.com/hots.html>.

Ron Hoekwater

October Program

Richard Olson Ph.D. Professor of History at Harvey Mudd College and Claremont Graduate School will speak Friday, October 6th. Professor Olson has received degrees in physics and history of science from Harvey Mudd College and Harvard. He is also the recipient of numerous honors and awards including two John Randolph and Dora Haynes Faculty Fellowships and a National Endowment For The Humanities Fellowship.

Star Party Sites

- (MBC) Mecca Beach Campground
- (CS) Cottonwood Springs campground, Joshua Tree Natl. Pk
- (CC) Cow Canyon Saddle, near Mount Baldy Village
- (MS) Mesquite Springs campground, Death Valley National Pk
- (CWP) Claremont Wilderness Park parking lot
- (KD) Kelso Dunes
- (WM) White Mountains (Grandview)
- (CGT) Calico Ghost Town Campground
- (LNDRS) Riverside Astronomical Soc. Landers site

PVAA Events Calendar

Month	Star	Star	General	Board
October	10/21 (CS)		10/6	10/26
November	11/18 (MBC)		11/3	11/30
December	12/16		12/8	12/28
January	1/13		1/5	12/28

Professor Olson will speak on "The Gould Affair at the Dudley Observatory." "The Dudley Observatory at Albany New York was established as a result of the urging of O.M. Mitchell, who was also the moving spirit behind the Cincinnati Observatory, the Allegheny Observatory, and several others. Mitchell, a close friend of P.T. Barnum, promoted a popular, spectacular, and democratic science accessible to all. But the leadership of the observatory soon passed to Benjamin Apthorp Gould, who had been trained in Germany as a student of Karl Friedrich Gauss. The conflict between Gould and his supporters on one side and the trustees of the observatory, who had been recruited under Mitchell's plans, eventually led to Gould's eviction by a group of club wielding toughs recruited by the trustees at a local bar, but it raises a number of general issues regarding the conflict between professional and democratic values in the growth of American science."

Of his topic Professor Olson stated, "As a physics graduate student at Harvard, back in 1962, I had a hobbyist's interest in the history of science and insisted on taking a course on the history of American astronomy from Owen Gingerich. It was in that course that I developed a special interest in the early professionalization of American science and more generally in the broad cultural context in which the exact sciences developed and to which they contributed, a topic which I have been exploring for 40 plus years."

Star Party

We were able to get the Dos Palmas Nature Preserve site (Gate is 3 miles from Park). We will be miles from anywhere in our own private site. The area is behind gates so it will be necessary for all to meet at the gate at the same time I told ranger Steve that we should meet at the gate 2 hrs before sunset, This will give us plenty of time to leisurely set up.

The area is miles away from any lights. We will have Running water, bathrooms and picnic tables....all to ourselves. **The gates will be locked after we enter** except for an emergency (I will have keys). **Tent camping is not allowed there but sleeping in vehicles or sleeping bags on the ground is OK.** Access is on a 2 wheel drivable dirt road. Anyone can contact me at 909-524-5024 cell or fbusutil2002@yahoo.com

Frank Busutil

10th Annual Holiday Dinner

Fall is just around the corner and the PVAA Holiday Dinner is coming soon. Your Astronomy Club would like to invite one and all to our annual Holiday Dinner at 7:00 p.m. on Friday, December 8th at Jouni's Cafe on Central Ave. in Upland, near Foothill Blvd. Please feel free to bring along a spouse, family member, or guest. There will be a raffle again this year and everyone will win a prize. We plan a pleasant evening of getting to know one another and sharing some holiday cheer. The menu choices and prices are in this newsletter so please reserve the date now for your calendars and get your meal choice and check in the mail or to Ludd at our next meeting. Let's have a big party for our 10th - I hope to see many of you there.

Claire Stover

PVAA e-mail

The club would like to have the e-mail addresses of those members interested in being informed of events which occur at times which are not able to be put into the newsletter. Those interested in getting this information, send your e-mail address to Ron Hoekwater at astro.ron@juno.com

PVAA 24 HR. Hotline.

Get the latest news on the star party, club meetings, special events and astronomy happenings.call **909/596-7274**

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Kelso Dunes Star Party

Weather conditions at the Kelso Dunes star party were very good. The wind died down after sunset leaving it calm until the breeze came back up about 9:00 AM Sunday morning. It was clear except right along the western horizon where there was a little smoke from the fires. The temperature was cool, but comfortable. There was some light in the northeast sky from Las Vegas and also a little to the west, perhaps from Barstow and the Victor Valley.

When I arrived at the Dunes parking area Anita Crawford and Mary Kiktavi were already there, waiting. We picked out a place and set up our telescopes. Anita brought her Celestron SCT. I had my Starsplitter.

Soon Bill Connelly and Ken Crowder drove in. Bill only recently joined PVAA but is rapidly becoming a regular at the star parties. Ken is a physicist, a useful person to have around at a star party. We had several questions for him on black holes and other topics. Ken brought an 8-inch Meade SCT. Just as it was getting dark Jon Zander from Boulder City arrived. Jon had a 12-inch Meade Dobsonian, to which he has made extensive improving modifications. Apparently news of PVAA star parties circulates widely.

Between all of the telescopes, we looked at Jupiter, Uranus, Neptune, and a number of deep sky objects. Perhaps the most interesting object that I observed was NGC 7635, the Bubble Nebula. The Bubble Nebula is located in Cassiopeia. It is believed to be a rapidly expanding shell of ionized gas that is created by the stellar wind of a massive star. On several websites that I checked, the diameter of the shell is stated to be about 10 light-years. The distance estimates ranged from 7,100 to 11,000 light-years.

The Bubble Nebula is a low surface brightness object and quite faint. First I tried viewing it with an OIII filter. When that didn't help much I tried a UHC filter. That wasn't much better. All that I could see was a faint haze around two stars. After thinking about it a little, maybe a H-alpha filter would help. Except, I don't have one. Although it shouldn't work, next time I will try a H-beta filter too.

About 2:30 AM I went to bed. In the morning, Mary, Anita, and I went into Kelso to see the new Visitor Center at the Depot. The Depot has been restored to its past glory. Some parts of the depot have been made to look the way that they

would have been when Kelso was a thriving city of 2,000 souls. Other areas contain exhibits on the Mojave Desert. The Visitor Center is certainly worth a visit, especially as we were already so close.

The next club star party is October 21st at Cottonwood Spring in Joshua Tree National Park. Several groups besides PVAA are going to be there so there should be a very good turnout of telescopes for this one. I hope to see you there.

Ron Hoekwater

First Woman Space Tourist

MOSCOW, Russia (CNN) -- It was a first in the annals of space history. A Russian-built rocket carrying the world's first female space tourist blasted off Monday in Kazakhstan on a flight to the international space station.

Anousheh Ansari, a telecommunications entrepreneur, was accompanied by a U.S.-Russian crew on the Soyuz TMA-9 capsule. The Iranian-born American will go down in the record books in a couple of ways. She's the first woman to pay her way into space and the first person of Iranian descent to get there. Ansari is the fourth space tourist.

Her colleagues on the flight, American Michael Lopez-Alegria and Russian Mikhail Tyurin, are starting a six-month stint in space. Ansari will return to Earth in 10 days.

Ansari's left Iran at the age of 16 to pursue her passion for the sciences to the fullest extent possible.

When she arrived, she knew next to no English except for a few verses from the song "My Favorite Things," from the film "The Sound of Music."

But within the next several years, Ansari had taught herself English, earned a university degree and landed a job at MCI earning a little more than \$26,000.

She and her husband soon quit their jobs at MCI, cashed in their retirement savings, and ran up their credit cards to finance a telecommunications company they opened.

Ansari is contractually barred from saying how much she's paying for her seat, but indicated that it's similar to the estimated \$20 million dollars the three space tourists before her reportedly paid. Ansari trained for the voyage for six months in Russia.

She learned Russian and about the Soyuz module taking her to and from the international space station and its life support systems.

Ansari has invested heavily into her fascination with space. She and another relative put up a significant portion of the \$10 million reward for the winner of the Ansari X Prize. The X Prize was awarded to the first private company to build a rocket capable of two manned suborbital flights.

Ansari also plans to use her experience to help with a project to develop suborbital spacecraft. She hopes the project will make space travel more affordable and accessible to more people.

From CNN's Ryan Chilcote.

General Meeting

Ron announced that the Club would be holding two public star parties to observe the upcoming transit of the sun by Mercury. As long as we have enough volunteers, we will have members and scopes at both the Sycamore Elementary School in Upland and the Barnes and Noble bookstore at the Montclair Plaza. Please contact Ron if you can help out with one of these events. The transit takes place on Wednesday, November 8th from about 11am – 4pm.

Several attendees said they would be interested in purchasing clothing with the PVAA logo on it – we were thinking of t-shirts and/or caps. The Board will pursue having clothing made for you to purchase. If you have contact with someone who could help us make these items, please pass along their contact information to the Board so we can ask them for details.

Lee's What's Up covered both some seldom and some very frequently discussed objects in the area of the sky near the constellations Scorpius and Sagittarius. First were star patterns located very close to our southern horizon which are only visible from locations with the lowest clear view of the southern horizon – or better still from slightly lower latitudes. They would be good objects to look for on your next trip to Hawaii in part due to its 20 degree latitude and also since viewing from a secluded beach or volcanic mountaintop might give you a sky dark enough to see these dim star patterns. In 1603 a fan of bird life, Johann Bayer of Germany, named the constellations Grus, the crane, Pavo, the peacock, and Tucana, the toucan. In the mid-eighteenth century, the few remaining unnamed areas of the southern sky were christened by Nicolas Louis de Lacaille in honor of the scientific instead of the animal world - Norma, the level, Telescopium, the telescope, and Microscopium – another whose meaning is obvious. Then we went on to a few other items which have received a lot more press lately – even bringing astronomy to the front page of the newspaper during the last month. Objects Ceres, Pluto, Charon, and nearby Neptune, are located in this part of the sky right now. While Ceres' life as a planet was both more brief and longer ago than Pluto's – I suspect that at least for all of those in the Club who grew up with nine planets and an asteroid belt which contained Ceres that the names we used for them will linger on, whatever attempts at clarity and re-naming are done in an effort to impose rules on our ever further reaching discoveries.

Our speaker explained to us the reason that the Pluto/Charon system is rather unusual. For all the other planet/moon systems in our solar system, the barycenter (the point around which the objects revolve – their center of rotation) lies somewhere within the much larger planet. For Jupiter and the smaller of its moons, this point is almost at the center of the huge planet. Even the Earth, with its relatively large moon which has a large greater influence on our planet - has its barycenter about 1/3 of the way out from the center of the Earth but still within our planet. Since the masses of Pluto and Charon are so close, the system's barycenter is located above the surface of Pluto in the space between the two objects.

Dave Gardner passed on the news that Lockheed Martin recently received a contract from NASA to build the next Crew Exploration Vehicle, now called the Orion Spacecraft – replacement for the Space Shuttles after their retirement around 2010. The Mars Reconnaissance orbiter completed its aerobraking maneuvers at the end of August. Its scientific mission will begin this November.

Member Eldridge Tubbs, former teacher at Harvey Mudd College shared with us a homemade optical illusion – made from two old projection television lenses each with circular holes in their centers placed one atop the other. In the center of the lower one were placed some coins on a felt circle. The optics of the lenses made the coins appear to float in the air above the upper lens. A lucky member went home with the device and it appeared to have a continued future as an educational device to teach new generations about the properties of light. Thank you, Eldridge, for your kind donation and for a fun activity during our coffee break!

September Speaker

We enjoyed a lecture this evening from Tim Thompson, a physicist, who works for JPL at the Center for Long Wavelength Astrophysics. He spoke to us about observing through one of the telescopes atop Mauna Kea, Hawaii.

I think we are all fascinated by the discoveries which come from the telescopes located around and above our planet. We hear so much about the efforts behind new computer power and technologies enabling us to see farther out in space and back in time – the journeys taken to gather this knowledge are seldom revealed. Tim showed us the more human adventures and hardships on the way to the new knowledge we have gained.

Tim's observations were at Caltech's Sub-millimeter Observatory at Mauna Kea. This telescope is able to view these wavelengths, longer than visible light, at all times of the day and even through light cloud cover. It is actually only used in darkness as the mirrors would be disfigured by the intense heat of the sun. Observations made here contribute to our understanding of the formation and

composition of the universe as it examines interstellar chemistry and the over 130 types of molecules found so far to exist in the spaces between the stars. Exotic molecules such as deuterated ammonia (ND^3) can be detected even at very low concentrations. Another object of study in recent years has been the debris discs around nearby stars as we try to gain an understanding of the planet and solar system processes taking place around these other suns. During this observing session, a Bolometer was used which measures temperatures – detecting distant galaxies in “empty” areas of space. The focal plane needs to be cooled to 250 milli-Kelvins to operate correctly. Controlling all this complex science is a computer running Linux which telnets into a Dec 3000 computer to run the telescope.

Tim’s journey to observing began with a trip from the airport located near the coast at sea level on the big island of Hawaii. Despite signing forms at the rental counter stating you promise not to take their vehicle on the Saddle Road which cuts across the island from Hilo towards the west and leads to the access road up Mauna Kea, it is apparently common for the rental vehicles to end up there. A small turnoff from the Saddle Road leads to another track which is dirt at first and then paved to the top. And the top is quite a sight for an astronomer – a rough circle of premier instruments located around 13,000 feet. The collection includes Subaru, Gemini, and Keck telescopes. The pair of Keck telescopes, brought on line in 1992 and 1996, still have the largest effective apertures in the world at 10 meters each.

On the way up the mountain, Tim stopped at the Visitor Center, located at 9,500 feet. It is recommended that those planning to stay for awhile at the top of Mauna Kea remain at least 24 hours at this altitude before proceeding to help the body get used to the lower oxygen levels. Rushing too quickly to high altitudes can lead to severe headaches and fuzzy thinking even in healthy people. Once on the peak, other signs exist of how fragile our bodies can be – each telescope facility contains oxygen bottles and an emergency vehicle is available to take anyone seriously ill off the mountain to the Visitor Center where another ambulance takes the patient on to hospital facilities in the lowlands.

Besides the shortage of oxygen there is quite a lack of both heat and moisture at that altitude. A nice June day will top off at 40 degrees Fahrenheit – it just gets colder from there as the sun goes down and the seasons change. The only heated room at the Caltech facility was the control room. The lunchroom, machine shop, and areas around the scope were all quite chilly. Some rooms also had humidifiers to put some moisture back into the dry air. Another thing in short supply on the mountain was security. There are no guards or fences up there – and fortunately not many unsavory characters wandering around either – and locked doors are the only way to restrain the astronomically curious.

In addition to his “day” job studying starlight and interstellar space using huge telescopes and computer analysis of their data, Tim is an avid amateur astronomer who often shared his telescope and knowledge of the universe with people at Griffith Park public star parties before it closed for renovations. He was also President of that Club from 1990-1992 and from 1997 to 2002. He shared stories similar to those we can relate from holding public events in well lit areas. While the club members grouse about the limited viewing from within our Southern California cities, the public is thrilled at the magnificent details they have never seen before on the planets and the moon through our modest observing devices. I think the joy of sharing these common objects and of seeing their eyes light up when they better understand some basic knowledge of the motions and formation of our solar system make it worth our wait until the next desert star party for darker skies and views of more exotic objects.

Thank you, Tim, for a very enjoyable evening.

Claire Stover

CALIFORNIA OBSERVATORIES

LICK OBSERVATORY ON MT HAMILTON



The University of California's Lick Observatory, located in the Diablo Range east of San Jose, California, has a long and fascinating history. The legacy of the eccentric California millionaire James Lick, the Observatory was founded in 1888 and has been part of the University of California ever since. Lick Observatory has grown to keep pace with the changing demands of astronomy, and, after more than a century of operation, remains among the most productive research observatories in the world.

10th ANNUAL PVAA HOLIDAY DINNER PARTY

The 10th Annual PVAA Holiday Dinner Party will be held on **Friday, December 8, 2006**, at 7:00 pm.

Party location is **Jouni's Cafe**, 922 N. Central Avenue, Upland.

The dinner cost is \$20.00 per person, member or guest.

Payment, along with your choice of dinner, **MUST** arrive at the PVAA mailbox by Friday, November 24th (the day after Thanksgiving) or be given to Ludd Trozpek before that date.

Please fill out [this form](#) then return it with your payment, payable to PVAA, to Ludd Trozpek or mail it to:

PVAA
PO Box 162
Upland , Ca 91785

Dinner Menu

		Member	Guest
The Choices Are:			
1)	French Shish Kabob (Bacon wrapped Filet)	<input type="text"/>	<input type="text"/>
2)	Chicken Breast with Lemon & Mushroom Herbs	<input type="text"/>	<input type="text"/>
3)	Stuffed Shrimp	<input type="text"/>	<input type="text"/>

Dinner will be served with salad, bread and butter, beverage soda, tea, or coffee, with cheesecake for desert. The table will have vegetables with dip and sautéed mushrooms.

Member Name _____