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nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

Amateur
astronomers
just get better
looking . . .

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nightwatch

December 2003

President's Message

At our last general meeting, I asked Bob Branch if he would take on the task of being the PVAA Chief Observer. I first heard of this, as a club office, in the Riverside Astronomical Society. It seemed a useful position and I could think of no one better qualified to fill it than Bob. To my great pleasure he accepted the assignment.

The job of Chief Observer is to keep PVAA members (including the president) up to date on important and unusual goings on in the sky. This will be largely accomplished with short presentations at the general meetings. On average there will be (perhaps) one presentation every two months. When we know about eclipses, occultations, more than unusual solar activity, etc. (with enough time to prepare) we can make plans for individual, group, and public observing sessions.

Bob is a long time (longer than me anyway) member of PVAA. He is also a past president and board member. In addition he belongs to the Astronomical Society of the Pacific and the American Association of Variable Star Observers (Solar Division). (He is an active and dedicated observer of the Sun and has frequently given reports on solar activity at our general meetings.) He is a former member of the Los Angeles Astronomical Society. He has been involved in amateur astronomy for more than half a century.

Bob's earliest astronomical memory is of seeing a falling star. He was less than 5-years-old and asked, "Does it go back up?" He credits two events in particular with sparking his intense interest in astronomy. One was a report assignment in grammar school. In preparation he read a science book which contained a chapter on astronomy. His family's move out of Los Angeles and into the suburbs was the second. This move took place as the conclusion of World War II was nearing. But coastal areas were still under light

restriction. For the first time he was able to see the summer Milky Way in all its grandeur. He was hooked on astronomy for life.

Other highlights from his decades of observing are having seen the Draconid meteor storm of 1946. It went on for about 90 minutes and even from the city and with a full moon it was a stunning sight. Bob says that it was more spectacular than the 2001 Leonids. Many of us watched the Leonids that year from Joshua Tree National Park and it was great. The 1946 Draconids must have been incredible. He witnessed the 1947 sunspot group (a photograph of which is still on display in the 150 foot solar observatory on Mount Wilson. This is the largest sunspot group ever recorded.

While it wasn't up to the standards of previous apparitions, the return of Halley's Comet in 1985 / 1986 was something that Bob (and the rest of us) eagerly anticipated for many years. For most of us it was our once-in-a-lifetime opportunity to see the most famous of all comets. I observed from Idywyld and from the Palm Springs area. The pale visitor from beyond Saturn, ghostly and seemingly suspended above the mountains, is for me a haunting and unforgettable memory. Observing the 1994 collision of Comet Shoemaker/Levy 9 was also mentioned as one of those thrilling

PVAA Events Calendar

Month	Star Party	General Meeting	Board Meeting
December	27	12	4
January	24	9	15
February	21	6	26
March	20	5	25

encounters with the universe beyond Earth that make our avocation so exciting.

Although he has done some imaging, Bob is predominantly a visual observer. Over the years, he has accumulated several of the tools of astronomy. A Home Dome on the patio, next to Bob's condo in Upland, houses his primary instrument, a 4-inch Zeiss refractor. He also is in possession of an 8-inch F7 Cave Astrola, a 60mm Unitron refractor on an equatorial mount, a 6-inch F8 Newtonian, an Orion short tube 80mm scope, and a 40mm Solar Max H á filtered telescope. He has an extensive library of books on astronomy and a collection of *Sky and Telescope* dating back to July 1945 when he purchased his first issue. (It was 25 cents.)

Bob Branch is extremely knowledgeable on a number of different topics. And on astronomy he is the most knowledgeable person that I know. I am excited to have him back in an official position with PVAA. It promises to make this a better, more interesting club for all of us

Ron Hoekwater

November General Meeting

Lee Collins, during What's Up, discussed the sky around the well-known Queen Cassiopeia. The sky near her is filled with her family members – husband King Cephus, daughter Andromeda, and Andromeda's rescuer Perseus. Again our look at the sky this month was away from the center of our galaxy off towards deep and, with amateur telescopes, largely empty space. In this direction are some open clusters and nebula along with one of our close neighbors – the Andromeda galaxy. It is a member of our local group of galaxies but still the most distant naked eye object visible to us as it is "only" two million light years distant. Lee also spoke to us of his visit to the University of California's Lick Observatory. Lick originally planned to build the Observatory in San Francisco in the late 1800s but was fortunately convinced by colleagues to build in the mountains above what was to become San Jose. Cooperation with San Jose and other cities in the Santa Clara Valley has resulted in policies requiring that the majority of city streets are lit with low pressure sodium lamps so impact on observing at Mt Hamilton is minimized.

Bob Branch spoke to us about the extraordinary solar activity of the last 2 weeks. The sun passed the peak of its eleven-year cycle three years ago and both the number of sunspot groups and group size was decreasing as expected. Two weeks ago, some huge spot groups formed, large enough that several people reported seeing them with the naked eye through the very unreliable filter of the smoke from the southern

California fires during the last week in October. On October 28th, 29th, and November 4th three of the largest observed solar flares occurred, with the one in November the largest ever recorded, an X28. Fortunately we just managed to see that flare as the spot group it emanated from rotated away from us near the sun's limb so the Earth missed the full impact and its effects. The sun's rotational period is 27 days and only time (and some clues from the SOHO satellite that the spots are still active) will tell if they have persisted and if we are in for a follow-up show during their return, starting around November 14th.

Featured Speaker

Our speaker for the evening was Tim Hogle, Spacecraft Systems Engineer and member of the Voyager Flight Team for over 25 years. The Voyager 1 and Voyager 2 spacecraft were launched from Cape Canaveral in 1977 with a budgeted plan to visit Jupiter and Saturn by taking advantage of a rare planetary alignment which occurs only every 175 years or so. The alignment allowed the Voyagers to take advantage of gravitational assists from the planets to fling them out into space, eliminating the need for them to carry prohibitive amounts of propellant and reduced flight time to Neptune from 30 years to only 12.

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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The plan for Voyager 1 was to swing by and observe Jupiter (1979), then Saturn (1980) - with a close look at its moon, Titan. The trajectory it took to swing past that moon shot it up and above the plane of the ecliptic at an angle of 35 degrees, thus ending its ability to observe other large members of our solar system. Voyager 2, however, was cleverly designed with a bit more robustness, instrumentation, and propellant within its originally budgeted price to leave the door open to a longer voyage. Sure enough, it completed the first two stops on its tour with flying colors and with all instruments operating so NASA approved an extension of the mission first to Uranus (1986) and then on to Neptune (1989). Its last planetary encounter sent that spacecraft out of the ecliptic plane as well – below it at an angle of 48 degrees. The current speed of the crafts hurtles them towards interstellar space at a rate of about 300 million miles per year. This is about 3.5 AU per year or 37,000 miles per hour – relative to the Sun. Voyager 1 is now the farthest human-made object from our sun and from Earth at a round trip light time of 24.5 hours away.

The spacecraft are nuclear powered and their original power output of 480 watts is now down to about 300. The minimum wattage required for Voyager signals to reach Earth is about 225 watts, which should be reached around 2020. So, what lies in store for the Voyagers, aside from holding the records as our farthest flung creations? On November 5th, a news release announced evidence was accumulating that Voyager 1 was measuring conditions not before seen on its long journey and it may be starting to approach another milestone. The point where the wind and particles from

our sun meet the thin gas of interstellar space is called the termination shock. The area around the termination shock lives up to its name, a turbulent zone where the solar wind slows suddenly from an average speed of 700,000 mph to only 100,000 mph and which is the source of high energy particle beams. This will be the first time we will have direct measurement of the properties of this area, as the Voyagers reach this region at the outer limits of our solar system.

The current budget to maintain the Voyager missions and their current staff of 10 scientists is only 4 million dollars per year. By the end of Tim's presentation, I don't think any in the room felt this was not a good use of our tax money. There is both for the potential to discover still more new science as the Voyagers reach unexplored regions as well as the long range accumulation of routine data, used to measure the accuracy of our modeling of long term trends in the solar cycle, for example. If a mechanism were in place I know several of us would have pitched in our monetary support to ensure these venerable craft could be supported as long as they had the power to communicate with us. Insurance against the whims of the political budget process by the President, Congress, and by NASA itself. Thank you, Tim, for a fascinating presentation about the discoveries of the past and intriguing ideas about the potential for the future.

Claire Stover

Those wishing to attend the Holiday Dinner Party, please call Ludd Trozpek to make your reservation if you have not done so already. (909) 624-3679

7th ANNUAL PVAA HOLIDAY DINNER PARTY

The 7th Annual PVAA Holiday Dinner Party will be held on **December 12, 2002**, at 7:00 P.M. The location is **Jouni's Cafe**, 922 N. Central Avenue, Upland.

Again, this year our financial situation will not permit us to subsidize the dinner cost of \$20.00.

The deadline for payment, along with your choice of dinner, **MUST** arrive at the PVAA mailbox by December 5th, or be given to Ludd Trozpek before that date.

Please fill out your name on the reverse side of this page with your choice of dinner and mail it or give it to Ludd Trozpek with your payment of \$20:00 per person.

This year there will be door prizes. Six prizes in all. Binoculars, a video and four more items

California's Oldest Observatory

Recently I visited the 115 year old Lick observatory, founded in 1888. James Lick didn't join the California Gold Rush but bought up other people's real estate when they left for the gold fields. Then he became a millionaire by later reselling it at enormous profit.

Convinced there was life on the Moon, Mars and maybe Venus, he financed what was at the time the world's largest refractor telescope (36 inch) and the only one permanently staffed. He wanted to put it in downtown San Francisco where it could be admired, but the University of California astronomers talked him into Mt. Hamilton East of San Jose. Today he is buried beneath his beloved telescope.

Devotedly, I climbed the steep, narrow (but scenic) road that winds endless miles to a settlement of some eight telescopes. In addition to the famous 36 inch refractor that discovered Jupiter's fifth moon in 1892, there is the 120 inch Shane reflector (1959) famous for its quasar and adaptive optics studies.

Administered by U.C. Santa Cruz, Mt Hamilton is crowned by a University Sized public hall that houses a giftshop and a museum, and a powerful laser that measured the exact distance to the moon's surface. For more information check the website. www.ucolicck.org/public/visitors.html Going down the hill was more fun than going up, I stopped to chat with a hungry coyote.

Lee Collins

November Star Party

For November we decided that the star party should be close to home. It was originally planned for Cow Canyon Saddle, but because of concerns over access to the site (after the fires) it was moved to the south parking lot at the Claremont Wilderness Park. This time of year it may have been pretty cold up in the mountains anyway.

The stargazing event was well attended considering that it was held only a few days before the

Thanksgiving holiday. In addition to myself, Walter Brown, Mitch Wisner, Barbara and Frank Busutil, Rick Ault, Mike and Cindy Walker, Claire, Lucy, and John Stover, Bob Akers, Lee Collins, and (I am told that) after I left Bill Vaskis arrived with two more guests.

Except for the occasional sweep of headlights, the site is about as dark as one could hope for under the circumstances. (It is at the north edge of Claremont.) The seeing however was not good. The stars were so big that they looked like planets. Really, in my scope all the brighter stars appeared to be showing disks. Others were also commenting on the poor seeing. Early in the evening I did see the "Cat eye" nebula and a few other objects, but over the last couple of hours I failed to see a single object for which I searched. (I take it back. I did see the Pleiades, but nothing else.) And most of them were bright enough that I should have been able to find them.

Most of us (including myself) left early. (One good thing about choosing a site so close by is you get to sleep in your accustomed bed.) But it was fun be out and converse with other amateur astronomers and we did get to see *some* things.

When I left, Bob Akers (always the dedicated one) was continuing to look for one of the LINEAR comets. I don't know if he found it.

At our next star party, *it will be dark!* (And quite possibly cold so bring warm clothing.) December 27th we will be at **Mesquite Spring in Death Valley**. This is one of my favorite sites. It is one of the two darkest sites from which I have observed. In fact, I am going up a day early and I will probably stay a day or two past the 27th. If you have never been to the north end of Death Valley let me tell you, there is plenty to see during the day too. Perhaps the biggest attraction is Scotty's Castle, which is only a hand full of miles away. But, there is also a volcanic crater nearby. And there are other historical and geological sights to behold. I hope some other PVAA members will be joining me under the pristine skies of Mesquite Spring.

Ron Hoekwater

Dinner Menu

The choices are:

1) **New York Pepper Steak topped with Mushrooms**

MEMBER

GUEST

2) **Broiled Chicken Breast with Lemon & Mushroom Herbs**

3) **Baked Salmon with Dill Hollandaise Sauce**

The dinners will be served with salad, bread and butter, with cheesecake for desert.

The table will have Vegetables with dip and Sauteed Mushrooms.

Member name
