P.O. Box 162
Upland, CA 91785
Address correction requested
Return postage guaranteed

nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

Amateur astronomers just get better looking . . .

The April general meeting will be held in Beckman Hall

Volume 24 Number 4 ***nightwatch*** **April 2004**

President's Message

This year NASA's two robotic explorers, Spirit and Opportunity are continuing the task of studying the surface of Mars. At Gusev Crater and at Meridiani Planum, the twin rovers are scrutinizing the rocks and soil for evidence of the essential ingredient of all life on Earth: water. And they are finding it. Mars was probably once a wet world.

The present rovers are not equipped to search for the actual signs of life. But, if some future mission were to find proof of life, present or past, on Mars that would be a discovery of the greatest significance. It would mean that on the two planets of the solar system where life could evolve, it did evolve. Pretty good odds. As more and more stars are found to possess planetary systems, it would mean that in all likelihood the Universe is teeming with life, and some of that life could be intelligent. It would mean that we are almost certainly, not alone in the Cosmos.

Over the next several months, speakers knowledgeable in the area of Mars exploration will be addressing PVAA, bringing us up to date on the latest discoveries from NASA and JPL. At the deadline for the submission of this President's Message, all of the details have yet to be worked out, but we can look forward to some interesting and exciting presentations on our own world's sister in space, the planet having the most Earthlike conditions, Mars.

Ron Hoekwater

Announcements

We had several visitors to our evening meeting, and hope to have them join us again.

Featured Speaker

This month, the main speaker job was shared among several of our members.

First up was Lee Collins who spoke to us on the area around constellations Leo, Gemini, and Ursa Major. Planets Jupiter and Saturn are currently to be found in this area – hopefully

Star Party Sites

(MBC) Mecca Beach Campground (see page 4)
(CS) Cottonwood Springs campgrnd, Josua Tree Ntl. Pk
(CC) Cow Canyon Saddle, Mount Baldy Village
(MS) Mequite Springs campgrnd, Death Valley National Pk
(CWP) Claremont Wilderness Park parking lot
(KD) Kelso Dunes
(WM) White Mountains

PVAA Events Calendar

Month	Star Party	Star Party	General Meeting	Board Meeting
April	KD	17	2	29
May	CC	22	4	27
June	CS	19	4	24
July	CC&WM	17	30	22

you'll see them as part of the end of end of March five-planet lineup. Lots of galaxies can be seen in this area as well, for the ambitious with a telescope.

Bob Branch was our next speaker and covered the interesting history of the Messier Marathon. Opportunities to participate in this event occur annually in late March or early April. The genesis of the Marathon was with Spanish amateur astronomers during the 1960s. It was realized that during the 3 days before and 2 days after the new moon in early Spring it is possible under ideal viewing conditions with clear views of the horizon and no clouds to see all 110 Messier objects during one long night of observing. Thus the Marathon was born. It was first attempted in the United States during 1976 in Pittsburg and spread from there to other amateur groups around the country. An observer north of 35 degrees north latitude will only be able to see 109 of the objects. At 34 degrees north ourselves we are just barely able to see all 110.

There are a couple of good books which will assist you by giving the best sequence to follow when looking for the objects throughout the night. One is by former PVAA member H. C. Pennington ***The Year-Round Messier Marathon Field*** *Guide*, the other ***The Observing Guide to the Messier Marathon*** by Don Machholz. The observing schedule is such that you are even able to get a couple hours of rest around midnight. If this contest sounds challenging to you, we have members who have searched in past years who would be happy to share their experiences to assist you in your own sky observing race.

Spencer Crump then spoke to us to suggest the formation of special interest groups – small sets of members sharing similar interests say in telescope building, lunar observing, CCD photography, or those wanting to attempt a Messier Marathon session. Spencer will gather names of similarly minded club members so these folks can choose to gather as they wish – via phone, email, or in person – to learn from one another and share their special interests in Astronomy. Please contact Spencer if you would like to participate and he will facilitate putting you in contact with others having like interests.

Next up was Bob Akers, with a comet update for the Club. The name for these wandering sky objects comes from the Latin work for hairy and their nuclei range in size from ½ to 6 miles in diameter. While we can't actually see comets move in real time due to their huge distance from us, they race along at speeds ranging from 8 miles per second to over 40 m/ sec when closest to the sun. Two comets visible now are Linear T7 and Neat Q4. The Linear and Neat part of their names refers to the satellites which discovered them while the letter and number are used to define the numerous objects discovered by these comet watchers. While Linear T7 was only magnitude 7-8 at the time of our meeting, it may reach 1-1.5 after swinging around the sun in early May during the morning hours. Neat Q4 should reach a similar naked eye magnitude around May 3rd but it will be found in the evening sky. Keep an eye on Astronomy web sites and magazines for more details on the actual magnitudes and locations for these comets which have the potential to put on a good show for us in the coming months.

In keeping with the excitement over the daily discoveries and photos pouring in from the twin Mars rovers, Spirit and Opportunity, Bob passed around a piece of specular hematite from a local rock shop. This is the mineral recently found to be present on Mars and is thought to indicate a more watery past for that planet as those conditions are needed for it to be created, as far as we know.

Check out the web site ***http://deepimpact.jpl.nasa.gov*** for information on another comet mission. With a planned launch date in December of this year, the 820 pound impactor portion of the Deep Impact spacecraft will crash into Comet Tempel 1 on July 4, 2005. Meanwhile, the flyby portion of the craft will observe the impact and send data back to Earth. It is expected the impactor will form a crater somewhere from that of a house to the size of a football stadium - from two to fourteen stories deep. The collision should be visible from Earth – with any luck from amateur telescopes. An event to

PVAA 24 HR. Hotline.
Get the latest news on the star party, club meetings, special events and astronomy happenings.call **909/596-7274**

Visit our website at
http://pages.pomona.edu/~aka04747/pvaa/

PVAA Officers and Board

Officers

President.....Ron Hoekwater.909/391-1943
Vice President..Joe Hillberg.....909/985-5617
Secretary.....Claire Stover....909/988-9747
Treasurer.....Ludd Trozpek...909/624-3679
VP Facilities.....Bob Akers.....909/946-0228

Board

Lee Collins..... 626/852-9442
Ray Magdziarz.....909/626-8303
Spencer Crump.....909/624-4893
Larry Pall.....909/949-2323

Directors

Nightwatch.....Ray Magdziarz....909/626-8303
Membership...Ludd Trozpek 909/624-3679
Publicity.....Dorene Hopkins..909/983-5584
Programs.....Roy Schmidt.....909/980-1867

look forward to!

Frank Busutil next spoke to us about his Astronomy for the Blind project, being held the night of April 29th at Cottonwood Springs with the assistance of PVAA members. More details are in his recent newsletter article. Please contact Frank if you would like to assist.

Roy Schmidt gave us a book review on ***The Orion Nebula*** by C. Robert O'Dell and our next talk was given by Ron, who told us of his 10 year challenge to see the galaxies located behind M44, the Beehive Cluster. He finally found four of the five brightest galaxies last summer during one of our Club Star Parties. Given Ron's long search for these objects at numerous sites over the years, his experience was especially rewarding. I hope it will lead more of you to follow Ron to our dark sky locations for the possibility of more clear views of other interesting objects in the sky.

Thank you to all who made up our speaker panel this month. Please let Ron know if you have a topic you'd like to present to the group at a future meeting – we'd enjoy hearing from you.

Claire Stover

A March Night on Mount Wilson

For early March the weather was surprisingly mild during PVAA's recent night of observing with 60-inch telescope. Not only was the temperature comfortable, but the seeing was steady and the marine layer knocked down some of the light from Los Angeles. (Even though the city lights prevent it from being as dark as it once was, Mount Wilson is still renown for the excellence of its seeing.) It was the sort of night that we had hoped for.

In addition to a number of regulars, a few were making their first trek up the mountain to be in the dome of the historic telescope. Relatively new member Walter Brown and his daughter were there as well as brand new members Anna Crawford and Mary Kiktavi. Many of our party, which included Spencer Crump, Lee Collins, Jeff Felton, and Peter Campos, were seasoned veterans on the 60-inch. It was Kristina Richardson's second (enthusiastic) visit to Mount Wilson. All together 16 were able to participate in this observing session.

The seeing was steady (although not the best I have witnessed on the mountain) and so we spent a fair amount of time on the planets Saturn and Jupiter. The Great Red Spot does not show the color that it once did. In my telescope the low contrast between the spot and surrounding cloud band make it a difficult feature to pick out, but in the 60-inch it is easy.

One of the high points of the evening was seeing M 82, an irregular galaxy in Ursa Major. The 60-inch telescope revealed more intricate detail in this object, than I had previously been able to see. The dark dust lanes were showing structure that one cannot see in a smaller instrument. Star clouds surrounding the dust lanes were plainly visible. It reminded me of some photographs that I have seen of our own Milky Way galaxy.

As the dawn twilight arrived we were tired, but happy to have made this trip and to have had this opportunity, which only a few members of the lay public will ever have: to observe the heavens through a large and exceptionally finely crafted professional telescope.

Ron Hoekwater

A Hot Star Party At Mecca Beach

It was hot as hell with a whiff of sulfur. On March 20-21 heat hit a daily record of 103 at Thermal just north of Mecca Beach. The hint of sulfur comes from the geo-thermal generating plants that lie atop the San Andreas Fault. But this wasn't hell, in fact it was quite heavenly when the sun went down and the stars came out. Mecca Beach Campground is 10 miles closer and a good deal darker than Cottonwood Springs. Salt loving shore birds fly by and at night the lights of the opposite shore reflect romantically off the Salton Sea as the Milky Way glows above. And the seeing seemed good considering we were at -228 ft. **BELOW** sea level.

Present with their telescopes were Ron Hoekwater, Bob Akers, John Viselli, Mary Kiktavi and her friend Anita, and Walter Brown with his wife and two daughters.
Ron observed galaxies behind the Beehive Cluster, and everyone looked at Jupiter, Saturn, The Pleiades, and the Orion Nebula. Bob Akers amazed me by locating the largest asteroid, Ceres. He says he gets his observing list from the website at
http://www.ne.jp/asahi/stellar/scenes/english/deepsky1.htm
Mary and Anita were interested in clusters so I turned my telescope on the Perseus Double Cluster, and the cute cluster NGC 457 in Cassiopeia, (The Night Owl) which some say looks like ET. Walter Brown was pleased to see his first galaxies, M65 and M66 in Leo, with his new Celestron 8 inch telescope. Later we all looked at the huge Omega Centauri globular cluster, the largest and brightest in the sky and bigger than the full moon. I looked at M13 in Hercules and it was only half as big.

The next day I drove south past the Chocolate Mts. and the Fountain Of Youth hot springs spa. At the south end of the 1904 "accidental"
Salton Sea are the thermal mud volcanoes, & the green reeds of the Sonny Bono Memorial Bird Refuge. Here lies the odd Slab City where R.V. gypsies camp for free on an old

abandoned W.W.II Marine base. However the colorful shock of Slab City is Salvation Mountain.

Here an aging artist has decorated a mountainside with bright waterfalls of paint and wild flower framed Biblical quotations. I stared pop eyed as the very friendly artist welcomed tourists, led them through his new "grottos", and explained why the word LOVE has to be pink and ten feet high. If you like bizarre large scale art, this is really it. It was a very entertaining weekend.

Lee Collins

PVAA April Meeting Program

The April general meeting will begin at 7:30 PM on the 2nd day of the month in Beckman Hall (instead our usual meeting place in Galileo Hall). Enter the building the same as usual and proceed down the long hallway to Beckman. Someone will be there to direct you.

The program for the April general meeting will include a short explanation of the concept of interest groups. There will be a sign-up sheet for anyone wishing to be part of an interest group. Ludd Trozpek will give an explanation of a proposed change to the PVAA by-laws. After the explanation, there will be an opportunity for the membership in attendance to discuss the proposal. Bob Akers will give a presentation on RTMC (Riverside Telescope Makers Conference).

After the break our main speaker, NASA/JPL Ambassador James Butts will deliver a presentation in which he will discuss the current findings of the Mars Rover Missions as well as the recent Stardust Mission to collect dust from the tail of Comet West 2. The program will include NASA/JPL videos and slides illustrating how these scientific programs have impacted our knowledge of the solar system and the universe.

Mr. Butts has been a serious amateur astronomer for the past 40 years. He currently serves as an officer of the San Bernardino Valley Astronomers Association and has been mentioned as a possible advisor to the International Space Station's Amateur Telescope to NASA/Boeing/ISS by the Astronomical League president, Chuck Allen. Mr. Butts is a Micro-Computer Specialist for the San Bernardino City Unified School District in San Bernardino, CA.

Mr. Butts is always looking for ways to include and incorporate NASA and JPL into school curriculum and after-school programs for students K-12. His students have been involved in the "Signatures In Space" program, the "Starshine-2 Satellite Project", the Mars CD Directory, Space Day 2000, and the Mars Millennium Project 2000.

Mr. Butts also writes a column entitled, "Ambassador's Corner," for *The Observer*, the San Bernardino Valley Amateur Astronomers' monthly newsletter.

Membership By laws Change

The PVAA Board would like to add a new membership classification. The bylaws regarding membership are as follows.

Article III- Membership: Fees and Classification

Section 1.0
Membership in the Pomona Valley Astronomical Society..... members in good standing, endowment members, and one year complimentary members .....

Section 2.0
Individual member
Endowment member
Junior member
One Year Complimentary Member

Section 2.1
The board of officers shall set the membership fees.....

Section 2.2
The classificarion of member shall be extended to any person paying the yearly membership fee. Members shall have the right to vote on all matters of Pomona Valley Amateur Astronomers business presented by the board of officers of the pomona valley Amsteur Astronomers at regular meetings and to vote for officers of the Pomona Valley Amateur Astronomers. Members shall have the right to make use of any resources, equipment or facilities of the Pomona Valley Amateur Astronomers, subject to all rules set forth by the Board of Officers. The term of membership commences the first day of the month in which the member is eligible to attend a regular meeting and extends for one calendar year thereafter.

Section 2.3
Endowment member

Section 2.4
Junior member

Section 2.5
One Year Complimentary Member

Proposal:

Amend Section 1.0 to add “Family Membership”.

Add new section 2.6:

The classification of Family Membership shall be extended to any family at a single address paying the yearly membership fee established for such membership. A family membership shall have no more than two votes on matters described in section 2.2. A family membership entitles the members of the family to the resource, equipment
and the facility rightrs described in section 2.2. The term

of membership is as described in section 2.2. Only one copy of tje club mailings will be sent to each address under family membership.

For the change in bylaws to take effect the following steps must be taken.

Section 1.0
the bylaws can only be changed by a vote of the general membership.

Section 1.1
Prposals must come from two board members or petition of 10 general members.

Section 1.2
The board may approve proposals for bylaws changes, if so, the proposed change will be published. If not, the issue may still be presented by a petition of 10% of the general membership.

Section 1.3
If approved per section 1.2, changes will be published in the newsletter and discussed openly at 2 regularly scheduled monthly meetings.

Section1.4
Final vote at the third regularly scheduled meeting requires approval by 2/3 of the members present.

A Foray into CCD Imaging

I have tried astrophtography with film on many occasions, but found it frustrating, because of the long exposore time and the delay in seeing the final result. Then you find that the telescope moved during the exposure, and the image is streaky, or some other defect showed up.I have had some good images, but they were in the minority.

I have been interested in CCD imaging for some time now but the cost was prohibitive. With the coming of computer webcams, the cost is not so much now. If you have the courage to operate on printed circuits with a magnifying glass, you can convert a Vesta webcam into a camera capable of long exposures of celestial objects. At the website listed. "http://home.socal.rr.com/hotweb/vesta/", there are detailed instructions to do it. I did not do it. I bought a camera, SAC8 which has a thermoelectric cooler, a fan, cables and software for less than a high end eyepiece.

Some of the features of this system are control of exposure time. Ordinarily when a long exposure of stars is made the brighter stars are overexposed and appear large. With this CCD system, a 1/2 second exposure of M42 would show the trapezium as a large blob, but the nebulocity would be outstanding. To get around the large blob of overexposed stars, you make many short exposures and stack them. With an exposure of 0.005 seconds, the stars look like a trapezium, but the nebulocity is dim. It may take a hundred exposures stacked to get a decent M42.

The system is very versatile. You can make the exposures one at a time, or program the camera to do them automatcally. I have just scratched the surface of how to use the system, but it is very encouraging. With goto telescopes, it can track the object as it is exposed. It can have logarithemic exposures, so as the exposures progress, they are made longer. If the guiding is not perfect, then you stack the images by placing a small reticle on a star common to all the images.

To run the system you need the camera and cables, a computer, and a 12 volt source of power. If the 12 volts drops below 11.7 volts the camera is in trouble. A fully charged lead /acid storage battery is fine. With the thermoelectric cooler, the system takes about 3 Amperes.

The CCD chip is small, so the field of view is very narrow. On my 10 inch, f10 scope the field is 8.3X2.7 minutes of arc. With a focal reducer, it increases to 13.2X7.7 minutes of arc.You can increase the field further by putting an extesion tube between the camera and the focal reducer.

Focussing the camera is easy. One of the options in the software is to run the camera at a slow video rate, so you see a frame every 1/10 of a second. The problem is to get close enought to the computer screen and still reach the focussing knob to see what you are doing.

When I first got the camera, I had troubles. The camera was intermittant at the video rate and would not work at all on long exposures. I communicated with the SAC8 people and sent it to Kansas for a check-up. They fixed it up and sent it back. Now it worked at the video rate but not long exposure. There was considerable e-mail communication, and fortunately, one of the SAC8 people lived in Stanton California. I took my whole system to him and he worked on it. The problem was the computer. He had to reformat the hard drive, and now it works.

The only problem now is me, to learn how to use the software efficiently . I've been doing all this in Claremont. When I have the system working well for me, I'll be going to dark sites to see the really dim objects. With the camera in the video mode the trapezium in M42 is visible. Things much dimmer than that will require good polar alignment and setting circles to find the dim stuff.

There is a user group on the internet where folks air their problems and those that have overcome such problems will give advice to solve them.

Ray Magdziarz