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Amateur
 astronomers
 just get better
 looking . . .




nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

Pay club dues of \$27 by August 31

Volume 19 Number 9

nightwatch

September 1999

President's Address

Usually one sees what one wants. Take for instance the original description of the rings of Saturn. Galileo described the rings as handles or large moons about the disk of planet. He said " I have observed the highest planet (Saturn) to be triple-bodied. This is to say that to my very great amazement Saturn was seen to me to be not a single star, but three together, which almost touch each other". Where in this mortal realm can a poor man see another sight such as presented by this orb? Can you imagine Galileo's perplexion a few years later (1612) when the former sight was completely changed. Where the three bodies were, only one remained. In 1616 Galileo noted that the strange appearance of the planet had returned.....almost. He saw the central globe of Saturn framed by two half ellipses with dark triangles buried inside. It wasn't until 1655 that the Dutch astronomer Christian Huygens proposed that the planet was surrounded by a solid ring, " a thin, flat ring nowhere touching, and inclined to the ecliptic". Variations on this theory were made public by astronomers as more and more observational detail of the ring structure was discovered. By the end of the 18th century the former single ring was now thought to be either two rings (William Herschel) or many smaller rings (Pierre de Laplace). In 1789, Hershel made one of the earliest estimates of the thickness of the rings. By this time the mystery of the rings was being separated into two types of questions. The first set of queries center on a description of the rings; size, mass and constitution. The more tenuous question centers on why there are rings about the planet.

By the 19th century the theory of what the rings of Saturn represented changed to conform more with what a understanding of Newtonian physics stated was possible. A solid ring around the planet would be subjected to large gravitational forces, tending to tear it apart in rather short order. In 1856 James Clerk Maxwell (of the thermodynamical demon

fame) supplied the calculations that demonstrated that the rings of Saturn could not be solid but were made up of many millions of small particles, each in a separate orbit around the planet. This put on firm ground what others had supposed to be the truth.

Today we have a much clearer idea of the birth , evolution and final fate of this most beautiful of planetary sights. Even with the deluge of data on the rings available with a few keystrokes of a PC, it never fails to hold the attention of viewer at the eyepiece of a moderate size telescope.

To return to the beginning.....one see's what one wants to see: planets with ears, with half ellipses, or unearthly beauty. Each of us, with practice can begin to separate the nosensical from the factual for the greenhorn. When we share our experience and judgement at a public star party, we influence those who would take at face value what Hollywood or the tabloids crank out. We, having gone down the same path that Galileo trod down so many years ago, can declare from personal knowledge what the universe of the stars really looks like. At the next star party, go tell it like it was and how it could be.

Observe and enjoy!

Roy Schmidt

PVAA Events Calendar

Month	Star Party	General Meeting	Board Meeting
September	11	27 24	3
October	9	22	1
November	6	19	12
December	4	17	10

PVAA General Meeting 2 July 1999

Announcement.

Party.

The Star Party will be at Kennedy Meadows. Please prepare for a somewhat longer drive and possible cold temperature at night - - in exchange for wonderful dark skies.

General Meeting.

The August meeting will be on August 27. Please note the change to the end of the month. The fault lies in the "Inconstant moon", in Shakespeare's words. We adjust to stay close to the full moon.

Tour.

Our intrepid president, Roy Schmidt has arranged for a tour of the Solar Observatory at Big Bear lake for August 15th, those who wish to go must be registered with Roy in advance. Get your name in early! Roy has worked on this for about a year.

Election.

Our annual election will take place at the August meeting. Westill have no name on the ballot for Secretary. If you are willing to take on this important post, make your desire known, so your name can be written on the ballot. (Since this item was given to me, Claire Stover agreed to be put on the ballot. ed.)

What's Up.

Bob Branch points out that Venus and mercury are both visible at dusk, although Mercury, as usual, hard to spot. Mars is still in Virgo. Saturn and Jupiter are in the dawn sky. There is also a comet in the western twilight.

The summer sky features the Milky Way and our special constellation, Sagittarius. Sagittarius is pictured in one of the Egyptian tombs. so it as recognized as a constellation quite early. There are many M-objects in and around Sagittarius, especially globular clusters. Your use of the Telrad to find objects is easier, if you use geometry. Use locating stars to form a triangle or that describing a line pointing to the desired object. Interesting side-note: One M-object that never got an NGC designation is M25 (IC4725). Use a wide-field eye-piece or binoculars to look at this object, the Sagittarius star-field - -is too big for most telescope fields of view.

Speaker of the Evening.

Chris Clark, a member of the San Bernardino Astronomy Club, is a planetary specialist. Chris works at the college, Cal State San Bernardino. His subject, Mars.

Most people are interested in Mars, because of past speculation about life on the planet, as well as fascinating fictional

accounts. The Italian astronomer, Schiaparelli, made drawings of his views of Mars, showing dark blotches connected with straight lines, which he dubbed "Canali" - - Italian for "Channels". (Note that these events took place before astrophotography was developed). The American amateur astronomer, Percival Lowell, chose to take the word "Canali" to mean "canals", and set out to convince the world that Mars was inhabited by intelligent beings. He built an outstanding observatory on "Mars Hill" in Arizona, and spent the rest of his life observing and writing about Mars.

Mars was also the center of the investigation of planetary motion by Tycho Brahe and Johannes Kepler. One of the reasons for the interest in Mars is that it has a very obvious "retrograde loop"- -an optical phenomenon that occurs because the earth is traveling more rapidly in it's orbit than Mars, on an inside track, so when the Earth passes Mars, Mars appears to be moving backwards. This retrograde phenomenon was at the heart of difficulties with the Ptolemaic astronomy for 1100 years, until finally resolved by the Copernican revolution and Kepler's work.

Are there or were there Martians on Mars? We still don't know. The recent publicity over "microfossils" found in a meteorite of Martian origin indicates that at least a tiny, primitive form of life existed on Mars at the time this mete-

..PVAA 24 HR. Hotline.
Get the latest news on the star party, club meetings, special events and astronomy happenings.call 909/985-1684

Visit or website at:
<http://www.cyberg8t.com/patrick/PVAA.htm>

PVAA Officers and Board

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Vice President.....Joe Hillberg.....909/985-5617
Secretary..... Patrick Nicholson....909/626-1528
Treasurer.....Jack Gardner.....909/626-2665
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orite was blasted into orbit, several million years ago. These fossils, however, are only 1/100 to 1/1000 the size of a typical earthly bacteria. But then who's to say that life forms on Mars couldn't be different from those we know? It's that uncertainty that fuels the interest in continuing exploration of Mars by NASA. Part of the confusion about Mars stems from the fact that shifting sands tend to change the outlines of the dark areas.

Mars is about 4000 miles in diameter, compared with 8000 for Earth. Our moon has 16% of the gravity of Earth, Mars has 40%. The low level of gravity is blamed for the escape of most of the atmosphere of Mars. The axial tilt is 24 degrees, compared to 22 1/2 for Earth. The pole star for Mars is Deneb.

Mariner's probes in the 60's didn't help very much, their imaging equipment was too poor. Recent landings, however, especially, the recent robot explorer, have dispelled most of the fantasy about Mars. None the less, some people still persist in seeing a "happy face" on Mars, or perhaps an image of Christ (whatever he looked like), or perhaps Elvis.

The Viking missions showed the dry, river-like channels, indicating a good possibility that Mars once had significant amounts of water (considered essential for life). With the lack of water and the thin atmosphere, the dryness and the heavy ultraviolet exposure both indicate very little possibility of life there today.

Mars Pathfinder and the associated mapping orbiter have shown that if the ice caps were melted, they would release enough water to cover Mars to a depth of 30 feet. However, the atmosphere is very dry. However, the many dry channels, especially, the Mariner Vallis (3000 miles long and 16 miles deep) indicate there was once ample water there- or some other liquid(?).

Olympus Mons is the largest volcano in the Solar System. It is a great shield volcano, 16 miles high, with a shield that would cover a sizable part of Texas. There is in fact a rich field of volcanos on Mars, the size of several states in the USA.

Seeing from Earth is typically poor. We don't see a great deal of detail, even with the largest telescopes. Sometimes a global dust storm will blot out the entire surface. As an amateur, you never know what you will see, the image quality changes quickly. The Hubbel telescope provides good, clear images, but nothing compared to the close-up clarity of the orbiters and landers. We can expect continuing improvement in the images and information coming from the continuing series of Mars exploration by NASA- - eventually expected to lead to a manned exploration.

Patrick Nicholson

July Star Party

Temperatures at Kennedy Meadows were unusually pleasant, July 9 and 10, for the PVAA star party. Unfortunately, the skies were cloudy.

Late Saturday afternoon, the drizzle convinced Lee Collins and I to head North in search of better skies. Jack Gardner stayed, hoping it might clear.

We joined the Riverside Astronomical Society members and PVAA's Owen Robbins at Grandview Campground in the White Mountain Range. The White Mountains are east of Big Pine in the Inyo National Forest. Grandview Campground is on White Mountain Road. Elevation at Grandview is about 8700 feet.

There are some really grand views at Grandview. It was well worth hiking around to take some of them in. One can see the snow-capped Sierras and dry lakes in the valleys. The mountains that that ring Death Valley are visible in the Southeast.

Grandview is just a few miles from the ancient bristlecone pine forest. Some of the trees are about 5000 years old. There is a visitor center with a gift shop and Park Rangers give regular lectures. On Saturdays only there is a guided tour.

The weather at Grandview wasn't much better. Saturday, Monday and Tuesday it was clouds and rain. Only Sunday night was clear. Fortunately, that one clear night was terrific!

The Veil Nebula in Cygnus was fantastic. It was the best I have ever seen it. Faint parts of the nebula were plainly visible and much structure could be seen, giving it a 3 dimensional appearance.

The other big thrill of the night, for me, was seeing Abell 2151. Abell 2151 is also known as the Hercules Galaxy cluster. It's brightest members are 13th magnitude. The center of the cluster is 500 - 700 million lightyears away depending on which source one quotes. The light left these galaxies before there were dinosaurs on Earth! More than a dozen small faint galaxies were visible in the field of a 16mm Nagler eyepiece in the 22 inch Star Splitter. These are the most distant galaxies I have ever seen.

The RAS members are a great bunch, and with the cloudy weather there was much enjoyment had in conversation. Some of us are going back to Grandview August 7th thru 11th. This period includes the Perseid meteor shower and it stands a good chance of being clearer than July was.

Ron Hoekwater

The September star party is at Cottonwood Springs Campground, at Joshua Tree National Park. Go about 10 miles past Indio and turn left (North) at Cottonwood springs Road.

Once again it's election time in the Pomona Valley Amateur Astronomers. The board asks that you mark your ballot and return it in the prescribed manner so that it might be counted. Your ballot is important as it will help decide the next slate of officers. Select the nominee of your choice by marking an "X" in the appropriate box, and on unopposed nominees mark each office with a YES vote to elect the nominee or a NO vote to reject the nominee. Remember, every ballot carries the same weight in this election.

Rules for voting:

Please follow the rules accordingly so that your ballot is validated and counted in the election. Ballots will be distributed in the July newsletter to the membership eligible to vote (according to paid dues.). Additional ballots can be obtained at the general meeting of August 27. In the event that a member submits more than one ballot, the last ballot received by the treasurer prior to "closing of the polls" will be counted with all previous ballots being destroyed. Any ballots submitted at the August 27 meeting will supercede any mailed ballots with the mailed ballots being destroyed prior to counting.

Each ballot must be returned to the treasurer of the P.V.A.A. either by mail (as described below) or by personal delivery at the August 27 general meeting. Nothing is to be written on the ballot other than the selection markings. Do no sign the ballot or add any additional notes or comments or the ballot will be declared invalid.

Ballots returned by mail must be sent to : P.V.A.A.
Attention: Treasurer
P.O. Box 162
Upland, California 91786

Mailed ballots must be received at the post office by August 26, 1999 in order to be valid. Mailed ballots must be signed on the FACE OF THE ENVELOPE in the lower left hand corner to establish eligibility.

**Official Ballot of the
Pomona Valley Amateur Astronomers
for the term of officers 1999-2000**

	YES	NO
President Shall Roy Schmidt be elected President of the PVAA	<input type="checkbox"/>	<input type="checkbox"/>
Vice President Shall Joe Hillberg be elected Vice President of the PVAA	<input type="checkbox"/>	<input type="checkbox"/>
VP-Materiel Shall Dave Gardner be elected VP-Materiel of the PVAA	<input type="checkbox"/>	<input type="checkbox"/>
Secretary Shall Claire Stover be elected Secretary of the PVAA	<input type="checkbox"/>	<input type="checkbox"/>
Treasurer Shall Jack Gardner be elected Treasurer of the PVAA	<input type="checkbox"/>	<input type="checkbox"/>
Board members at large serving a two year term Shall Bob Branch be elected as a board member at large	<input type="checkbox"/>	<input type="checkbox"/>
Shall Ron Hoekwater be elected as a board member at large	<input type="checkbox"/>	<input type="checkbox"/>