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nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

Amateur
astronomers
just get better
looking . . .

Volume 22 Number 6

nightwatch

June 2002

Presidents Message

Few club activities attracted nonmember guests in the past few years. The planetarium presentation in May was definitely one of them. Many thanks to Pomona College officials Dean Kates, Dr. Zook and Dr. Penprase who generously allowed us to use college's resources. With their constant support, our activities are becoming more sophisticated and attractive.

Right after the presentation in Milliken Planetarium Bob Branch told me about the old days when he was a boy. It was not just astronomy he learned in Griffith Planetarium, he also got his first taste of classical music there. He enjoyed both of them so much that, every week he took two buses from Torrance and walked all the way uphill from Greek theatre to the observatory to watch the show. It is not hard to imagine the power of scientific inspiration and excitement a young person can get from such an atmosphere.

In a late night show I watched jaw dropping answers from the college graduates to questions like "How many natural satellites does Earth have?" or "How long does it take to Earth complete one revolution around the Sun?" In these days many students graduate from colleges with a science degree without having any idea why a week is 7 days instead of 10 or 3 or why a year is 12

months instead of 10. Many have never thought that the names of the days like Monday, Sunday comes from astronomical objects. For some Euclid is just a street name and Newton was a nerd that died long ago.

Planetariums are lighthouses in such an atmosphere. They are educational and entertaining. There is no test stress and what you learn is not limited to astronomy. Probably there is no place like a planetarium. Sea World officials say their park is but I am not sure how it can be. I think the only thing you learn from Shamu is to hide your cameras when he is around.

Our next meeting will be in Galileo Hall at Harvey Mudd College. We are having an expert meteorite collector James Tobin. He will tell us about his

PVAA Events Calendar

Month	Star Party	General Meeting	Board Meeting
June	8	21	14
July	6	26	12
August	10	23	16
September	7	20	13

voyages to the desert in search of meteorites. He will also show us how to tell a meteorite from a terrestrial rock.

See you all on June 21st

Alper Ates

Report on the May Meeting

Club Announcements

The Club will be holding a Public Star Party on June 10th at the First Baptist Church of Upland to observe the annular solar eclipse. Our locale will see the sun covered up to about 77% at most – come to our next meeting to share your observations with others. Please contact Roy Schmidt if you plan to attend the Club trip to the 200” telescope at Palomar on July 20,2002 at 2pm.

Ludd had a reminder to us that members can get discount subscriptions to Astronomy for \$29.00 or to Sky and Telescope at \$29.95 - or to both, to those of you who just can't get enough! Ask Ludd if you would like to take advantage of this club benefit. If you know anyone who would like to join the Club, please ask them to contact Ludd as well for a discount price on membership until our next renewal period.

May Meeting

Our May meeting was a wonderful experience at the Miliken Observatory, located at 6th and College Ave in Claremont. Our Club President presided over a very interesting presentation using the College's new Go To II projector, which is capable of viewing over 3000 stars as well as planets out to Saturn, constellation drawings, the ecliptic, along with slides and other multi-media displays. The new projector has been in place for

several months, and much work has been done installing it and getting up to speed on its operation. This was one of the first few shows given to the public. I believe we had many visitors as well as PVAA members in attendance. We had the planetarium chock full with all 44 seats taken plus a few folks standing. Alper put the projector through its paces, giving a very clear view using the projectors ability to speed up time to give us a very clear view of how the sky rotates about the North Star and how the planets move along the path of the ecliptic.

..PVAA 24 HR. Hotline.

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

Visit or website at

<http://www.cyberg8t.com/patrick/PVAA.htm>

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PVAA members especially enjoyed the trip Alper took us on to the Southern Hemisphere. Few of us have ever seen the actual skies from the “bottom half” of our Earth’s sphere. I think we all went away with an appreciation for the North Star we take so much for granted. Individuals who share our hobby down South have only a hard to see star close the axis of the Southern Star’s rotation – not our bright and easy to locate star which both helps us align our telescopes and has helped mariners and hikers alike from losing their way at night.

Constellation names were an adjustment to us also as we are used to the mythological figures from the past gracing our Northern skies. The reach of organized civilizations and written records long into the past for those in the temperate north gave a variety of ancient civilizations the opportunity to name the star patterns they observed after gods and other figures important to their cultures. The South is actually no different, except their sky namers were seafarers and other explorers of much more recent times, so many of their share of the 88 recognized constellations have a decidedly modern twist. One interesting series of 14 constellations were charted and named by Abbe Nicolas Lacaille during a trip to the Southern Hemisphere in 1751-1752. Three were named in honor of the Arts – Caelum, the Chisel, Pictor, the Painter’s Easel, and Sculptor, the Sculptor. New inventions of the time received most of the other names:

Antlia, the Air Pump, Circinus, the compass, Fornax, the Furnace, Horologium, the clock, Norma, the Level, Octans, the Octant, Pyxis, another Compass used by seafarers, Reticulum, the Net - a grid used in telescope eyepieces, and my favorites – Telescopium and Microscopium, whose origins are obvious. To round out his 14 constellations is one called Mensa, which is not the high IQ Society but the name of the mountain in Cape Town where Lacaille did his work.

Thank you for a wonderful opportunity for a close up and personal view of a planetarium, Alper.

Claire Stover

Rendezvous with the King of Planets

In the late 1960’s NASA started planning for a “Grand Tour” of the outer planets. Up until 1973 spacecraft from Earth had visited only Mercury, Venus, and Mars. The asteroid belt and gas giants were largely still a mystery. During the 1970’s and 1980’s two Pioneer and two Voyager spacecraft opened up the outer solar system to exploration. But while these early explorers added greatly to our knowledge of the solar system beyond Mars, they were light on scientific instruments and of necessity conducted flyby missions, gathering data for a few days or weeks and then they were off to the next destination. They were incapable of doing long term, in depth investigations with a large number of

different instruments working in conjunction.

The closest of the gas giants, Jupiter, with its own mini solar system of moons and captured asteroids, is by far the largest of our Sun's planets. Its interior could contain more than 1300 earths and it is the most massive of the planets, with more mass than the rest of the major and minor planets combined. In 1974 NASA began to study the possibility of placing a spacecraft in orbit around this "King of the Planets." Thus the Galileo Mission to Jupiter was born.

Galileo would carry not only cameras and filters for visible, infrared and ultraviolet light, but instruments for detecting and measuring magnetic fields, dust and other particle sensors, spectrometers and even a probe which would plunge into Jupiter's atmosphere gathering data. It is also possible to use Galileo's radio signal, detected on Earth, to do further experiments. During its mission Galileo made a search for life on Earth, as a test of our ability to detect life. On the way to Jupiter and its satellites, Galileo would collect data on Venus, would be the first to observe asteroids from close up, visiting Gaspra and Ida, would study gravity waves, and be the only observatory in a position to see the Comet Shoemaker-Levy 9 collision directly. Once in orbit Galileo was able to study Jupiter's clouds and upper atmosphere glean information, which may be helpful in understanding Earth's weather. It taught us much, not only about the parent planet, but also about its four principal moons. Io is the most geologically active body in the

solar system and Callisto, Ganymede, and Europa all contain water and could conceivably harbor life. Europa may have a liquid water ocean under its ice.

There were problems with the mission, most notably the main antenna of Galileo failed to deploy properly, but the engineers and scientists at NASA were able to come up with workable solutions to every problem. Due to their ingenuity and hard work the mission was a phenomenal success and Galileo became known as the "little spacecraft that could."

The fascinating story of the first and so far only orbiter mission to Jupiter is told

in *Mission Jupiter: The Spectacular Journey of the Galileo Spacecraft* by Daniel Fischer. It was published by Copernicus Books of Springer-Verlag New York. The book was originally published in German in 1998 and translated into English and updated in 2001. I checked out a copy at the Ontario Public Library.

I found the book to be enjoyable and informative, written at a level comprehensible to a layperson. Most people, I believe, when they think of spacecraft visiting distant worlds, want to see photographs. It contains more than 30 pages of stunning images, mostly of Jupiter and its four largest moons. I would recommend the book to anyone interested in planetary science.

Ron Hoekwater