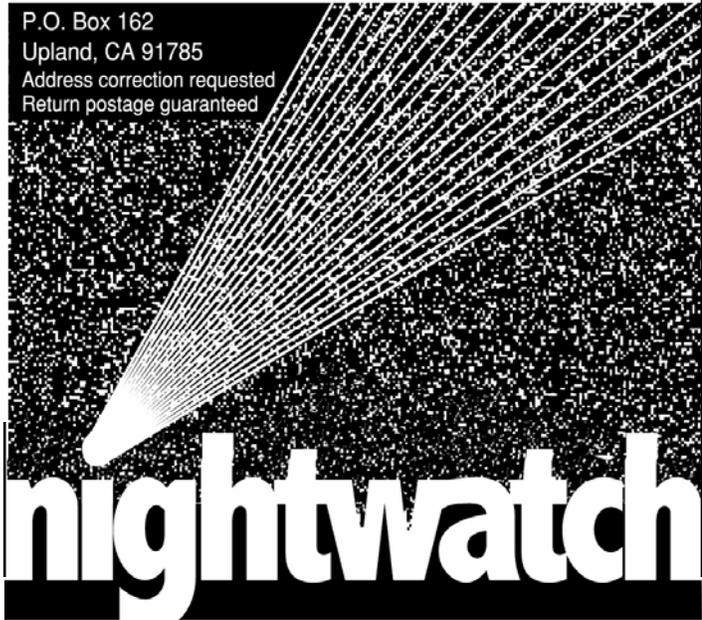


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Newsletter of the Pomona Valley Amateur Astronomers

Amateur
astronomers
just get better
looking . . .

Volume 22 Number 7

nightwatch

July 2002

President's Message

A new challenge for amateur astronomers came out a couple of years ago. During the great Leonid meteor storm some observers looked at the unlit side of the Moon to spot probable impacts. To the surprise of the physicists they spotted several flashes. According to the latest estimates a basketball-sized iron-nickel object traveling with a speed of 20km/s can create a third magnitude flash.

This year the position of the Moon will be favorable for such observations during the Perseid shower in August. I strongly recommend observing Moon early evening hours of August 12th. Using binoculars will enhance your chance of seeing one or more of these flashes. Another approach might be trying to use video cameras like Chris Hoekwater. During the last meeting he had shown us his video of occultation of Saturn. There are several variables in this equation including field of view, the sensitivity of the camera and frame capture rate but still it is worth to try.

After this important message let me come to the main topic. Recently I read a very interesting article on Roman sundials. As we know, during the ages prior to foundation of Casio company people used public sundials to tell the time (this was a joke). Mechanical clocks followed that tradition during Renaissance and today we have digital clocks in

public places.

Roman sundials were an integral part of life and some had scripts advising people on various things. Some sundials had the script "**Ultima forsan**" meaning "This might be the last one". The by passers were reminded that this might be the last moment of their joy or troubled times or whatever they are experiencing. Another script reads "**Vulnerant omnes, ultima necat**", "Each passing minute wounds but the last one kills". Today public digital clocks switch back and forth with temperature and "God Bless America" messages.

I think it is my ultima forsan now. New elections are upon us and the meeting on August will be my last as the president of the PVAA. My vote goes to Ron Hoekwater as the new

PVAA Events Calendar

Month	Star Party	General Meeting	Board Meeting
July	6	26	12
August	10	23	16
September	7	20	6
October	5	18	4

president. He is among the most dedicated members of our club. When I was looking for a club to join in this part of the country, I have found Jack Gardner's phone number and he had suggested I should come to the star party with Ron Hoekwater. I have called him on May 1998 and asked if I could go with him. He had picked me up and gave me a ride to the Owl canyon north of Barstow. I haven't noticed what he had in the back of the van but as he started putting together his monster 22" reflector I was amazed. A man takes 22" reflector to wherever he goes is my type of an astronomer.

See you all in our July meeting. We will have Jeff Schroeder as our guest speaker. He is one of the founders of our club. He will talk about near earth asteroids. I think we can ask him how they started the club and how the early days were like as well.
Alper Ates

Alper Ates

Club Announcements

Our trip to Palomar is coming up fast, please contact Roy Schmidt if you plan to attend the Club trip to the 200" telescope on July 20,2002 at 2 pm.

Ludd reminded us that members can get discount subscriptions to Astronomy for \$29.00 or to Sky and Telescope at \$29.95 – I think several members took advantage of this offer at the meeting. We had many visitors at our June meeting, some we met at our recent eclipse watching party, and others who found us via our Web site. Several joined our Club. Welcome to the following new members who have joined since our meeting at the Planetarium: Tony King, Vicki Johnson, Doug Leo, Peter Campos, Bruce Nicholes, Les Marcum, and Paul and Leah Benadum. We look forward to getting to know you and to sharing our interest in Astronomy and the night sky with you.

Alper gave us a preview of the new PVAA

Web site and we look forward to seeing it on-line. Contact names, the Nightwatch newsletter, and maps to our star parties will be available. Our thanks to Patrick for his current support of our Web site – as usual it continues inform the amateur astronomer and to bring visitors to our Club meetings.

Upcoming Star Party locations are Cottonwood Springs at Joshua Trees on July 6th then the nearby Cow Canyon Saddle on August 10th.

June Featured Speakers

Bob Branch gave us a solar update, speaking on our recent solar eclipse. This annular eclipse on June 10th is the last visible from the West Coast of the United States until 2012. An annular eclipse means the moon is too far from the Earth in it's

..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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orbit to completely cover the disc of the sun so we don't experience totality but instead see a ring of fire around the moon. Less than one arc-minute of the sun was still visible to give this effect. About 75% of the sun was obscured from our viewpoint in Upland. I found it surprising that despite this drastic reduction in light from the sun it wasn't really apparent we were having an eclipse unless you viewed the sun through filters and saw the huge bite taken from its side. The only effect you might notice was that it seemed a bit darker than usual, and it seemed a bit later in the evening during the eclipse. Sol serves us fairly well even at only 30%! Bob and Alper plan a show on the eclipse for our next meeting. Alper will also see if he can track down some footage of the 1940 annular eclipse, taken by Pomona College travelers who went to the waters off Baja California in a Naval Destroyer to view this annular eclipse. It looks like traveling to see the solar sights isn't just a modern pastime!

Chris Hoekwater then treated us to his amateur videotape of the recent occultation of Saturn by the moon. It was taken through his 13" telescope using a handheld camcorder. In spite of some jerkiness when the non-motor driven scope was moved to follow the planet, quite a good view of the sight was obtained by this low-tech method. Thank you for sharing your observing with us, Chris.

Our speaker for the evening was Jim Tobin, amateur astronomer and expert meteorite hunter. He gave us a fascinating talk on some of the techniques he employs while hunting for these rare objects. Most important for the hopeful hunter is to search in a place where you have a chance of sighting a likely candidate rock – a dark brown or black irregular object. As meteorites are found "in the wild" for only a relatively short time after their fall to earth through our atmosphere it is important to spend one's time in a likely locale. Right off the bat, 70% of meteorites are lost to us as they fall onto the water-covered areas of the Earth's surface. Many of those lucky enough to make land fall will survive only months or years if they fall in wet climates; until the moisture in the jungles and forests causes their mostly iron composition to rust away. Those that survive best fall on the driest areas of the Earth and even then last only for thousands of years at most. The oldest found has been dated at around 15 thousand years. For those of us in Southern California, we don't have to look far to locate a likely spot – in the deserts to the east of us. Due to the difficulty of finding likely rock specimens even in sparsely vegetated deserts, dry lakebeds are the best places to find these rare objects. The other likely location to hunt is the other large desert on our planet (as measured by low yearly rainfall) - the poles. Antarctica is becoming a popular spot for meteorite hunting and the researchers who inhabit this cold

climate have recently gathered up quite a collection both from ice fields and from glacial moraine.

One characteristic of a meteorite from the Oort cloud is that it has a fusion crust from its journey at 20-30,000 miles per hour through our atmosphere. It is also likely to be rather heavy for its size due to having a greater density than one would expect from a terrestrial rock. Most meteorites we find on Earth are metallic due to the presence of iron. While there are also stony meteorites, they are much less common as few survive the trip through the atmosphere, so Jim uses a magnet on a stick to establish if a suspect rock is magnetic without having to bend over to test each one. The next step is to rule out that the specimen is one of Earth's metallic rocks – magnetite or hematite. This is determined by scraping off a small corner of the rock to see if it looks metallic. The metallic iron of a meteorite will have the look of chrome while the rocks from the Earth do not look metallic. Sometimes weathered pieces of man-made iron are found which look like meteorites but on further analysis will be found not to contain nickel – another characteristic element found in meteorites.

Meteoritic metal is often found at archaeological sites where it's iron was used for metal before man was able to make his own by smelting it from ore. King Tut's tomb was found to contain such metal. Oddly enough, Native Americans didn't seem to use this resource although they often lived in arid areas where it may have been found and though they could have used it's sharp edge in arrowheads and for tools to scrape the hides they used for clothing and for housing. Tribes located near Meteor Crater in Arizona gave a wide berth to the area around the impact and seemed to feel it was bad luck. It is estimated that the original object, which formed this crater, was 88,000 tons. Of this amount, only 20-30 tons survived the burn through the atmosphere to land on earth, mostly in rather small pieces, although there may be a large mass located underground beneath the crater.

We even learned how to collect our own micrometeorites by placing a magnet in a plastic bag into the water gutters running from our roofs. Assuming our area again experiences some rain, the rainwater washes off the small bits from space, which have collected on our roof since the last precipitation fell. The magnetic bits will cling to the outside of the bag for easy collection after a year or so, though I would certainly be tempted to check after our next downpour to see if any of the accumulated space dust had washed off and been collected.

You can visit the Web site for Jim Tobin's meteorite magazine at www.meteoritetimes.com to learn more. The third issue, June 2002, is now on-line and contains lots of information for both the experienced and the

newly interested meteorite aficionado. Thank you, Jim for a fascinating talk on some of the rarest items which can be found on our planet.

Claire Stover

July Star Part

A few minutes after 6:00 on Saturday evening my brother Chris and I deserted the confines of Ontario. Destination: the wide-open skies of Cottonwood Springs and the July PVAA Star Party. Many of our regular star party participants were unable to attend this month due to work schedules or other pressing business so I was glad that Chris could go. It is always nice to have company for the long drive and for the too short night. After a nourishment stop at the Green Burrito in Banning we arrived safely at the campground a little before 8:32 PM, just as it was getting dark. How do I know the time so precisely? We arrived just in time to see a magnitude -3 Iridium flare, which had been predicted to appear at that exact time. (Chris found the information on times and locations of satellite passages at a web site called "heavens-above.com.") Albert (who was at last month's star party with Bob Akers) and another gentleman who's name I did not catch were already there and set up. Chris quickly set up his 13-inch Coulter Odyssey and I took a bit longer to get the 22-inch Starsplitter operational. Albert was manning his 10-inch SCT with recently acquired computer control system.

One of the first objects that I decided to look for was the quasar 3C273 in Virgo. 3C273 is the brightest quasar in Earth's sky, but at 13th magnitude this object is still about as difficult to see as the planet Pluto. I have seen Pluto before, but have never seen 3C273. On this occasion the problem was that it is in the southwestern sky at the time and date when I was looking. This is the direction of Indio and Palm Springs. The quasar is near in the sky to magnitude 12.1 NGC 4420, a spiral galaxy of the Virgo cluster. I think I succeeded in finding NGC 4420 (although the field is so rich with galaxies I'm not 100% certain) but I failed to identify 3C273. It was just too cloudy. Even the thin semitransparent clouds of the desert sky were reflecting too much of the light from Indio for me to capture my quarry. I'm not giving up though. Some day I will track it down.

I started casting about for something else to look at. Where to look next? Corona Borealis was high above the horizon and in a clear section of sky. After failing to find a distant quasar I decided to try for a distant galaxy cluster. At an average distance of one billion light years, Abell 2065 is a cluster of about four hundred 16th magnitude and fainter galaxies in the constellation Corona Borealis. About ten of the brightest members of the cluster might just be visible in my scope. I searched diligently, but again must admit failure. It is possible I just glimpsed some members of the cluster with averted vision, but there is a high degree of uncertainty involved in that observation. Sometimes I wish I had Joe

Hillberg's sensitive eye for faint and indistinct objects.

Next I searched for another Abel galaxy cluster, 2151 in Hercules. This time I think my efforts were met with success although again the targeted galaxies were faint I am not absolutely certain. Abell 2151 is the closest of the objects for which I strained my eyes that night. The average distance of these galaxies is stated to be 700 million light years in *The Night Sky Observer's Guide* by George Robert Kepple and Glen W. Sanner. The brightest members of the cluster are 13th and 14th magnitude.

At 3:54 in the morning we saw a second Iridium flare and then at 4:07 AM, a spectacular passage of the International space station. It took four minutes to pass out of sight but it seemed even longer than that. With binoculars, we were able to follow it right up until it disappeared behind the mountain. This was the first time that I have seen the new space station and it was thrilling. Several years ago I saw the Mir space station with a space shuttle docked along side traverse the early evening sky over Joshua Tree National Park. How exciting to think that there are again human beings up there, high above the Earth, endeavoring to expand our knowledge of the universe. How wonderful to contemplate the best our species is capable of accomplishing. How magnificent to ponder these portents of the future.

As a glorious albeit warm morning began to dawn, we saw first Saturn and then Mercury rise over the hill having already been preceded by the Moon. Even though I didn't locate every object that I sought we all had a good time and I think I gained some experience that will be beneficial on the next trip out to look for faint fuzzies of the cosmos.

Our next star party will be August 10th (two days before the Perseids meteor shower) at Cow Canyon Saddle, about one mile above Mount Baldy Village on the Glendora Ridge Road. It's a very short drive and a reasonably dark sky. I hope many of you can make it out for the fun.

Ron Hoekwater

Bob Marvos moved to Oregon

Here is his message. "I Have been pretty busy unpacking and haven't taken the time to set up my telescope yet. The skies are nice and dark here.

I am 10 miles out of town and NO STREET LIGHTS in the neighborhood! I'll try to catch a meeting or star party with you folks whenever I head south."

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ELECTION IN AUGUST

It's time for nominations for the officers of the club. At the July meeting, please present the names of the members you think will do the club good. Remember though the nominees must be willing to serve in the elected office.