



Amateur astronomers just get better looking . . .

John Seaton

nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

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nightwatch

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President's Message

There will be a special election for President of the PVAA. Roy Schmidt is running for the post..I have reluctantly been doing the job. **Please come to the meeting and vote for Roy**

Joe Hillberg

PVAA General Meeting March 5, 1999

President Joe Hillberg started the meeting with Announcements:

Star Parties. PVAA will have three different Star Parties in March:

1. March 12-13 at Mesquite Springs Campground, Death Valley
2. March 20, a Messier Marathon, at Yesterday Ranch, near Barstow
3. March 27, a Public Star Party, at the First Baptist Church of Upland,
531 W. 8th Street, Upland.

Visitors/New Members. Six visitors/Guests signed the attendance listing. Of these, two joined the club. Both are students. Vanessa Beebe is a High School student from Chino; Jason Kao is a student from Harvey Mudd College. Several visitors indicated that they found PVAA by means of the Internet.

What's Up? Roy Schmidt presented What's Up with his unique blend of humor and knowledge, a fast-paced presentation that left people wondering at times what was serious and

what was presented entirely for humorous effect. Nonetheless, after hearing that the Astronomical Calendar indicates that the end of the world will be forthcoming on December 31, 1999, Roy went on to point out items of interest in the constellation Leo. (After all, we have 9 months left!) Alpha, the brightest star, was named Regulus, or "Little King" by Copernicus is, indeed a double star, although not an easy one to separate. Beta is Denebola, "The tail of the lion", and Algeiba "The Mane of the lion" is another double star. Leo is on the edge of the Virgo galaxy cluster, so it has its share of Messier objects. M65 and M66 combine with non-Messier NGC 3626 in the same field of view, for a nice trio. Also M95, M96 and M106 form another triplet. Roy announced that all of his information came from The Night Sky Observer's Guide—except for the prediction of the end of the world!

Major Speaker.

Owen Robbins arrived at the meeting with three cases of equipment, all associated with Astrophotography, using CCD cameras. He started out by telling us that one can get started

PVAA Events Calendar

Month	Star Party	General Meeting	Board Meeting
April	17	2	23
May	15	7	21
June	12	4	25
July	10	2	23

in CCD photography with an investment as small as \$55--but that it is also easy to spend in the tens of thousands of dollars for some of the equipment available today. The basic message, as indicated on Owen's handout, is: Using focal reducers to reduce the focal length of your telescope will enhance the effectiveness of inexpensive CCD Cameras; Take advantage of that!

Owen goes to Star Parties with two laptop computers, one to allow the tracking chip in his camera to act as an automatic guide to hold his telescope on target; the other to accept the data from his camera and save it, so it can be assembled into a photograph both on the spot and for later processing. Note that Owen does not use any of the many image-processing programs to "enhance" his images--what comes off the camera is what you get! Owen indicated that you don't need the very expensive laptops now available. He uses a 386 machine, which is relatively inexpensive. What you do need, however, is one of the older machine with a small joystick to serve in lieu of a mouse. The newer ones, with just a finger pad freeze up when it gets cold.

The secret of successful imaging, or CCD photography, according to Owen, is in getting the "pixel count" in the proper range. If you have 65,000 pixels, you don't want to have all of them show up in the "pixel count", since that indicates the number of pixels that have responded to light from the target object. If all respond, then the chip is saturated, you have an overexposed picture, and nothing useful will come out.

Cooling is important. CCD elements respond to random noise at room temperature, obscuring the target. You need to cool to about -20 to -40 degrees F. The coolers are capable of going colder, but that results in ice crystals forming on the chip, resulting, in Owen's words, in "weird, alien images".

CCD's do have a very small field of view, which makes it hard to find things. This situation can be remedied in two ways: (1) a focal reducer can reduce an F10 Schmidt-Cassegrain telescope to either F6.3 or F3.3, automatically making the scope see a wider field, and thus enhancing the field of view of the camera. (2) a "flip mirror", similar to one used in a single-lens reflex camera, allows the observer to switch from eyepiece to camera without changing focus or centering. The "flip mirror" is a recent product of Meade, and it is not terribly expensive.

So what is needed to get into CCD astrophotography? You need a good tracking telescope, such as a Meade or Celestron Schmidt-Cassegrain. You also need one, and preferable two laptop computers with sufficient battery power to last as long as you do. Finally, you need the CCD camera itself. Owen showed several, of which the very good ST-6 costs about \$1490. However, he also opened the promised \$55 setup, which is a kit, including the same chip as the ST-6, but which depends on the buyer for enclosure, assembly, etc.

Even at the cheap end, CCD astrophotography is not inexpensive by every member's standards! But the results and the enjoyment can be impressive. After all, who said that a hobby has to be cost-effective? Let us hear from others out there who have an interest in excited pixels!

Patrick Nicholson

School and City lights Star Parties - The Good and the Bad

Your club has had a mixed week trying to do our public service. Wednesday, March 24, we were scheduled for an elementary school star party in Chino. Clouds did not clear until noon. The evening was hazy but just clear enough for Joe Hillberg, Ron Hoekwater, Ray Magdziarz and Bob Branch to set up telescopes and give 125 students, parents and teachers a look at Venus, the Moon, M 42 and M 45. For most of those attending this was the first time they had looked through an astronomical telescope. The parents and teachers were as thrilled or more so than the 5th grade students. I have since talked to the teacher, Mrs. Paula Bell and have been a glowing report on how much our two hour effort

..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>

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was appreciated. We are going to be asked to return in the next school year.

Our City Lights star party at Jack Gardners church on March 27th was a cloud out. Four people did show up and ask some questions. We told them to try again next time but in the meantime come to our regular meeting. We need to set a date for our next try at a City Lights star party.

Two Weekends at Joshua Tree

As departure time for the March 12-13 Death Valley Star Party approached, the weather forecast was not promising. Everyone I talked to had decided not to go. Joe Hillberg quoted the National Weather Service: "cloudy and high winds." Lee Collins and I decided to go to Cottonwoods Springs.

The Cottonwood Springs Campground is at the southeast end of Joshua Tree National Park, about 30 miles past Indio. It has a very dark sky although not quite as dark as the Mequite Springs site in Death Valley.

I've always had good luck at Cottonwood. From this site I first saw spiral structure in a galaxy (M101). I once drove 60 miles into Arizona without finding clear skies. On the way back, it was clear at Cottonwood so I spent the rest of the night there. The clouds seem to go around it. I have never spent a night at Cottonwood without being able to do at least some observing.

When we arrived, Bob and Loretta Gromo, two teachers from Claremont, were already there (I had told them we were going). They offered to share their camp space and we accepted. As it became dark, Lee and I showed the Gromos Venus and Saturn. Later we looked at M51, M81, and M82, M97, M101, and M108. We also looked at the Orion Nebula and the Horse Head. After the Gromos went to bed, I spent some time looking at the Cone Nebula; I'm almost convinced I can see it.

The highlight of the night was Mars. By 1:30 AM it was well-placed for observing. Lee and I both

drew what we saw and compared it to the chart in the April 1999 issue of Sky and Telescope. The seeing was remarkably steady and much detail was visible. Mars is still getting closer and the next couple of months are ideal to observe the planet which in many ways is most like Earth.

Taking Pinto Basin Road, El Dorado Mine Road, Loop Road and Quail Springs Road to 29 Palms Highway offers a scenic route back. We stopped at Cholla Cactus Garden and Keyes View, from which you can see Mexico on a very clear day and the Salton Sea on a not-so-clear day.

On the weekend of March 20-21, the weather was again threatening. I decided not to risk Yesterday Ranch as even if it were clear, I feared it would be muddy. So it was off to Cottonwood again. This time the campground was full so I spent the night in the parking lot at the Oasis. The rangers allow amateur astronomers to spend the night there. However if you are caught sleeping, you will be ticketed for camping out of bounds.

This night the seeing very clear but not very steady. I spent about an hour looking at Mars but couldn't see it well enough to complete a drawing. Since Mars wasn't available, I decided to look for Comet Linear (Comet 1998 M5) which was discovered by robotic camera in New Mexico. There was an article about it in the April 1999 Sky and Telescope. An hours search did not reveal the comet, however it did reveal three faint galaxies somewhat near Polaris. Uranometria showed two of them to be NGC2276 and NGC2300. The third was not charted. Alper Ates checked his computer and found it to be the magnitude 14.3 IC455. This is the first time I have seen and when I turned to Uranometria it wasn't there. Even though I didn't find the comet, this was just as exciting.

April's star party is at Yesterday Ranch. I hope the weather cooperates and that many of you can make it out.

Ron Hoekwater

1999 RTMC REGISTRATION FORM

Name		
Company		
Address		
City	State	Zip

New Address? Need Vendor Booth?

MEALS AND LODGING (dorms or camping)	Cost Before May 1	Cost After May 1	Times # People	Equals Amount
Plan 1 - 5 Meals + Lodging	\$62.00	\$72.00		
Plan 2 - 6 Meals + Lodging	\$67.00	\$77.00		
Plan 3 - 7 Meals + Lodging	\$73.00	\$83.00		
Plan 4 - 8 Meals + Lodging	\$78.00	\$88.00		

CAMPING ONLY (no meals included)	Cost Before May 1	Cost After May 1	Times # People	Equals Amount
Adults (for whole weekend)	\$25.00	\$35.00		
Children 5 to 13 (under 5 free)	\$7.00	\$7.00		

DAY USE ONLY (no meals)	# Days	Cost Before May 1	Cost After May 1	Times # People	Equals Amount
Adults (Per Day)		\$10.00	\$15.00		
Children 5 to 13		\$7.00	\$7.00		

I need _____ extra parking passes.

TOTAL

Individual meal tickets can be bought at the dining hall, if the meal plans are not sold out. A snack bar by the telescope field opens Friday at 1:00 PM and stays open until dusk. It opens mid-morning on Saturday and Sunday.

Make checks payable to: **RIVERSIDE TELESCOPE MAKERS CONFERENCE**

Mail to: **Riverside Telescope Makers Conference
c/o Fox & Stephens, CPA's
8300 Utica Avenue, Suite 105
Rancho Cucamonga, CA 91730**

**We reserve the right
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