

900 A North Golden Springs Road  
Diamond Bar, CA 91765

# nightwatch

The Newsletter of the Pomona Valley Amateur Astronomers

January, 1988

Amateur  
astronomers  
get better  
looking . . .



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Volume 8, Number 1

*nightwatch*

January, 1988

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Program	.....	<i>Your Name Here</i>	.....	( )
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Workshop	.....	Dave Chandler	.....	(714) 946-4814
Historian	.....	Dorothy Woodside	.....	(714) 593-9823

### Calendar:

Meeting	.....	7:30pm January 15th, Millikan Hall. 6th and College streets, Claremont. Guests welcome. Bring a friend.
Program	.....	Archaeoastronomy: Sheila Pinkel & Mark Moran
Star Party	.....	Victorville, January 16th. Dress warm!
Board Meeting	...	7:00pm February 5th, Millikan Hall. All members are encouraged to attend.

## Happy New Year...

1987 was a good year for the Pomona Valley Amateur Astronomers. It has seen a significant increase in membership (almost triple what it was last January), many excellent speakers, and mirror making workshops. The Board of Officers has become much more active and has passed a set of by-laws for the club which will be published soon and distributed to the members. The attendance at our meetings and star parties has undergone a nova-like explosion.

1987 was a year of firsts for our club. We held our first annual Messier Marathon (March) and a Comethon (December). We had our first gigantic turnout at the star parties and planned, organized programs to go along with them. The trip to Mt. Palomar in July was a real thrill which we will repeat if possible. Participation in the club elections was increased through a mail-in ballot, and 1987 marked the computerization of the *nightwatch*.

We must now look forward to 1988 and what it can offer to the membership. Many activities for this year are already planned or are in the works. Mira, our 24-inch telescope is five years old, and is scheduled for a spiffy new paint job and some other improvements. Construction has begun

on a number of smaller telescopes that can be checked out to those members that do not yet have one of their own.

The coming year will see our ranks swell to over 200 members. We have at least one fundraiser planned for sometime after the Spring. The mirror making workshops will continue, and a number of new workshops will be started. The tradition of excellent speakers will continue into the new year, starting off this month with a program on Archaeoastronomy.

These things could not have happened without the time put into the club by many of its members. You get out of a club what you put into it. Participation can be as simple as attending some of the meetings and star parties or as involved as you would like to get. An excellent example is the monthly column on observational astronomy by Dave Phelps (contributions to the *nightwatch* are always welcome). If you would like to become more active in the PVAA, please contact Bob Hibble, President, or any of the other officers (see the masthead for phone numbers).

## Ancient Amateurs

Well, not exactly amateurs. The people of ancient times practiced this 'oldest of hobbies' not for fun but for survival, in an effort to predict when crops should be sown and harvested. The field of archaeoastronomy studies the artifacts and constructions left behind by these people.

Plan to attend the meeting on January 15th at 7:30 pm in Millikan Laboratory to hear Sheila Pinkel, a photography teacher at Pomona College, and Mark Moran, photographer and environmental consultant, give a talk on Archaeoastronomy.

## Star Party for January 1988

Ahh... the cold, clear nights that mid-winter offers the amateur astronomer! The emphasis should be on cold, though. The chill and apparent cloud cover served well to keep all but a dozen or so hardy souls from making it out to the December star party. Their loss, too—for the sky cleared shortly after I arrived and remained so for the rest of the night. Between frequent walks to warm up and cleaning the dew off of eyepieces we still managed to locate five comets.

The star party on January 16th will be held at the Victorville site. Bring enough to clothe an army and you might just stay warm enough to do some serious observing.

We will again be looking for a number of comets that are now or continue to be visible, as well as anything else that may be of interest to you. Orion will march through the skies — perhaps the Horsehead nebula will reveal itself to Mira. Jeff Schroder and the 11-inch behemoth may show up and also try for the Horsehead. Come and join us for a night of fun and freezing under scintillating desert skies.

**CORRECTION—1988 Calendar**

The following is an amended calendar of events for 1988. A couple of people pointed out errors in the one published in the December Nightwatch. We regret any confusion or inconvenience this may have caused.

Month	Board Meeting	Star Party	General Meeting
January	8	16	15
February	5	20 (13)	19
March	4	19	18
April	1	16	15
May	6	14	20
June	3	11	17
July	1	16 (9)	15
August	5	13	19
September	2	10	16
October	7	8	21
November	4	12 (5)	18
December	2	10	16

The Board meetings of the PVAA fall on the first Friday of the month. They are held at 7:00pm in Millikan Hall and are open to anyone wishing to attend.

The General Meetings of the PVAA are held on the third Friday of every month. They are also held in Millikan Hall but they start at 7:30pm.

Star Parties are held on the Saturday closest to the new moon. When the new moon falls on a Wednesday, there is the possibility of having two star parties that month. The second (optional) date is indicated in parentheses in the calendar above.

Be sure to set aside the last weekend in May. Not only is it Memorial Day weekend, it is the RTMC (Riverside Telescope Maker's Conference). For those of you who have never been, the Riverside Telescope Maker's Conference is the west coast's largest gathering of amateur astronomers, with 2200 people in attendance there last year!

**Wanted: Program Director**

The office of Program Director is available to anyone who would like to help the club in this capacity. Duties of the Program Director are currently limited to the procurement of speakers for the monthly meetings. Please contact Bob Hibble at (714) 989-3680 to volunteer.

**December Meeting Report**

After the usual announcements, President Bob Hibble turned the meeting over to Dave Chandler who made a most informative and unusual presentation on the retrograde motion of planets. Most certainly you would expect this to be a rather dull subject—and it should be given that planetary motion is about as exciting as watching a chrome bumper rust. But, and this is a B-I-G "but," Dave Chandler's presentation of the subject was so unusual and made with such a different thrust, that it was more than just interesting—it was downright engaging.

We all know that the paths of the planets appear to make loops across the sky, and that they sometimes set faster than at other times. The fact that we know this doesn't explain the why. The usual explanation, complete with cryptic illustrations and some math, is truly boring. Dave Chandler made it come alive. He also presented it so that the why could be easily visualized by anyone.

Dave had some specially prepared materials—computer generated, of course—which presented this original method of visualizing planetary motion. Each of us received several of these sheets and we worked out the retrograde motion of some planets without math—we simply counted dots representing days along an orbit and drew lines between the dots. Viola! In a few moments little light bulbs appeared over each head as we suddenly could "see" the why. It was great!

**December Star Party Report**

Was it cold? Well, is the Pope Catholic? Do bears live in the woods? Yes, it was cold—and wet. No rain or snow, just dew. And lots of it. Every twenty minutes or so the diagonal on Shamu would fog over and I would have to wrap it in a paper towel for twenty minutes or so to clear it up.

Other than the cold and the dew, it was an exceptional evening—in several ways. First, the crowd. Or, should I say, lack of it. Last month, as you know, we had over one-hundred star partyers. You can imagine my shock at seeing a mere hand-full of people when I arrived at the site. To tell the truth, even with the evening's planned "Comethon," the bleak weather outlook and approaching holidays made me expect a lower than usual turnout. Would you believe fewer than a dozen?

Early in the afternoon I called the FAA Flight Service Station for a check on the Victorville weather—although it was solid overcast from L.A. to Vegas, they assured me that the Victorville area would go to scattered (5-tenths or less cloud cover) by 7 p.m. As Charley Trapp and I motored toward the Cajon pass it looked bleak indeed. The L.A. side was clearing, but the mountains were totally covered.

Things didn't get better as we progressed. The closer to the site we got, the worse the sky looked. And worse. And worse. I imagined that I could see some faint clearing patches, and Charley would humor me with reluctant agreement. Besides the overcast and the cold, there was snow on the ground. However, as we approached Victorville, the snow finally gave way to the unadorned desert floor. Thank God for that!

As we left the freeway, the sky did show feeble signs of clearing. By the time we arrived at the site, there were large gaping holes in the overcast. Billie Darrah and Dorothy Woodside were the only others at the site. It was about 6. I had prepared 25 of the Comethon books for anyone that might show and I felt that pang one feels when they give a party and no one shows-up.

I gave Billie and Dorothy my weather report—scattered by seven. We needed to begin the comet search promptly at dusk or we would miss at least two of the comets. (Our goal was 13.) Obviously, there was no chance of catching the first two. The sky showed more signs of clearing, then slammed shut for about 30 minutes or so. "Well," I thought, "this is typical. When you make a plan, something always screws it up." But, like a miracle, the sky began clearing, and clearing and clearing. Right down to the horizon. Within 20 minutes there wasn't a cloud in sight, and it remained that way throughout the night. A bit better than predicted.

Shortly, Ray Magdziarz his wife and daughter, Dave Thompson and Dave Chandler arrived and we got cooking on the comethon. Then a new member who had attended his first meeting and joined the night before, Blen Koch arrived on the scene.

Despite the weather, despite the cold, despite the dew, despite the light turnout, we had a helluva' time. Between comets I managed thirty-one Messier and a half-dozen NGC objects. Oh yes, we did manage five confirmed comets: Bradfield, Borrelly, Wilson, Kohoutek, and West-Kohoutek-Ikemura. A valiant effort was given to finding Halley's (as if we didn't get enough of it in 1985 and '86) and we thought we had found Schwassmann-Wachmann 2, but it turned out to be a galaxy. Not a world's record, but at least more comets than I have ever seen in one night.

January's star party is on the 16th—I hope it's warmer and a lot less dewy... see you there?  
—Harv Pennington

**Workshop News**

I hope nobody tried to drop by on Christmas or New Year's Eves as the mirror making workshop did not meet on those days. We changed the meeting days for those two weeks to Mondays and Wednesdays to leave the holidays open.

Polishing of the mirrors is proceeding smoothly, after an initial bout with scratches. One can never be too clean when working a mirror by hand. John Gossett has been working diligently, and has completed six hours of polishing as of this writing. Most of the others have finished three to five hours. Testing of the mirrors will begin around the middle of January, and will continue for another six weeks.

**B33—A Horse of a Scope**

You may recall from last month's nightwatch that the question was raised as to how Dave Phelps came to name his 17.5-inch Coulter B33. Dave had originally named the scope *Horse* because of its size, so it was only natural to call it B33 after Barnard's dark nebula in Orion—more commonly known as the Horsehead nebula. The astronomical connections don't end there, though. The horsehead nebula is visible to us here on Earth only because it is silhouetted against the reflection nebula IC 434, so that is the name Dave gave to the trailer that B33 rides on.

Do you have a name for your telescope? We would like to hear about it. Contact Dave Thompson, nightwatch editor, at (714) 860-1927.

**Deep Sky Objects for January:**

Well up in the Western sky after sundown is the constellation of Triangulum. Although small in actual area, Triangulum boasts a Messier galaxy, two clusters of galaxies, and the double star *Iota Trianguli*. M33 is a spectacular object visible to some with the naked-eye and easily seen with binoculars. Try to identify the arms and follow them around as far as you can. Take a piece of paper and a #2 pencil and sketch what you see. Look for the knots of brightness that are H-II regions and record those also. Be sure to submit your sketch to the *nightwatch*, you may find it published in a future newsletter.

Close to M33 and even more well known, is M31—the galaxy in Andromeda. Visible to the unaided eye, and too large to be captured in its entirety in a telescope, M31 is fabulous. Find the dark lanes in its spiral arms and be sure to see M32 and M110, its companion galaxies.

No winter's night would be complete without looking at the Pleiades—sometimes called the *Seven Sisters*—and being captured one more time by their beauty and delicacy. How many of the *Seven Sisters* can you see with your unaided eyes only? The Pleiades are known by no less than five different designations: their common name of the Pleiades, Mellote 22, M45, and NGC 1432-1435 (in Japan they are known as *Subaru* — which is where the car got its name). Especially around Merope you can see part of the mist that envelopes this lovely open cluster. Can you find out why the Pleiades have been given two NGC numbers?

For the owner of a pair of binoculars, a small or medium sized telescope, or a large light-bucket with a nebula filter, the constellation of Orion offers a wealth of nebulae that will satisfy any amateur.

M42, the *Great Orion* nebula, is a huge complex web of gas that is one of the most recognized objects in our skies. Look for Theta Orionis, the Trapezium, with four bright and many small stars revolving around a common center of gravity. Just north of M42 and separated by the "fish-mouth" is M43. A short way further north is the nebulous mass NGC 1977, which is actually composed of three distinct nebulosities, NGC's 1973, 1975, and 1977, all visible in a medium telescope to the careful eye. Last winter under very good skies and with a filter, I was able to see the entire M42—NGC 1977 area as one continuous nebula.

Further north is Epsilon Orionis, the central star in the belt, surrounded by NGC 1990, a large and regular shaped nebula that doesn't taper off until it covers over 1/2-degree of sky.

Zeta Orionis is the pointer star to my favorite winter object. To the northwest is NGC 2024, the *Flame Nebula*. To the north are NGC 431 and 432, small but easy to identify. Trailing to the south and ending between the two stars HD37699 and HD37903/4 is IC 434. To the southwest is NGC 2023, and west of that is the very dim IC 435. All of the preceding objects are known as reflection nebulae, shining by the light reflected from one or more nearby stars. Superimposed on IC 434, however, is another type of nebula, a dark nebula known as Barnard 33 or the Horsehead. Barely visible in a 13-inch telescope, the Horsehead nebula should be solid in one of the 17.5's and spectacular in Mira.

**Challenge of the Month**—M1 is not the only supernova remnant in the constellation Taurus. Simeis 147 is a supernova remnant about four degrees southeast of Beta Tauri, about four times larger in diameter than the full moon, and about one-half as bright as the Veil nebula in Cygnus.

Have fun, its worth it.

— David M. Phelps

**Astronomical Events**

*January 3rd, 4:00pm PST*

Earth is at its closest point to the Sun—perihelion.

*January 4th—Quadrantid Meteor Shower.*

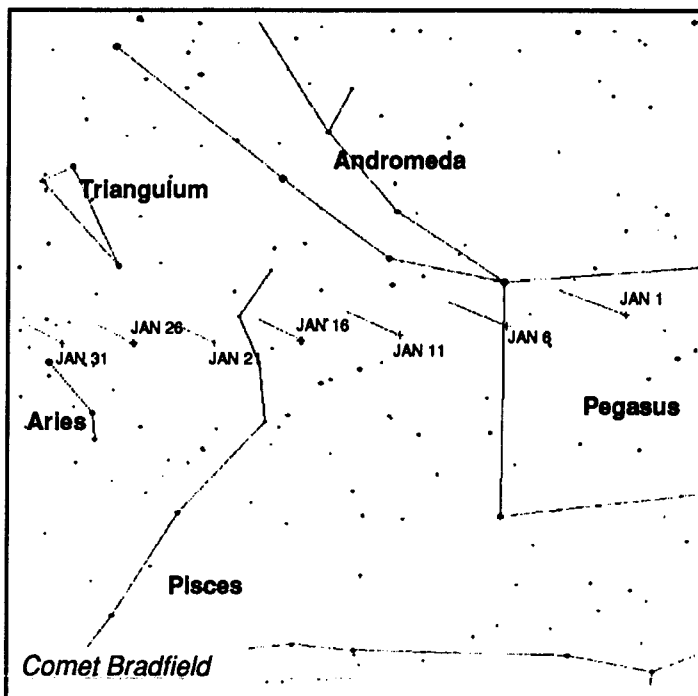
Usually a very nice shower for the early morning hours, this year the Quadrantids will be obscured by a full moon.

*January 21st, 11am PST—Venus will be occulted by the moon.*

Unfortunately this event will only be visible from south of the equator. From the northern hemisphere, the moon will appear to pass only slightly to the south of Venus. Although this is a daytime event, you should have no trouble spotting the moon and -4.0 magnitude Venus with binoculars or a telescope.

**COMET CORNER:** There are quite a few comets within reach of amateur scopes, as we discovered at the last star party. We were shooting for a dozen comets, but we ended up seeing only five (quite a feat in itself). In January, three comets should be visible in binoculars.

*Comet Bradfield* continues to put on a fine show, but is fading rapidly on its outward journey from the Sun. The comet can be found high in the evening skies as it passes through the constellations of Pegasus and Pisces. Did anyone see this comet naked-eye when it was at peak brightness? Stars on the finder chart go to 6th magnitude.

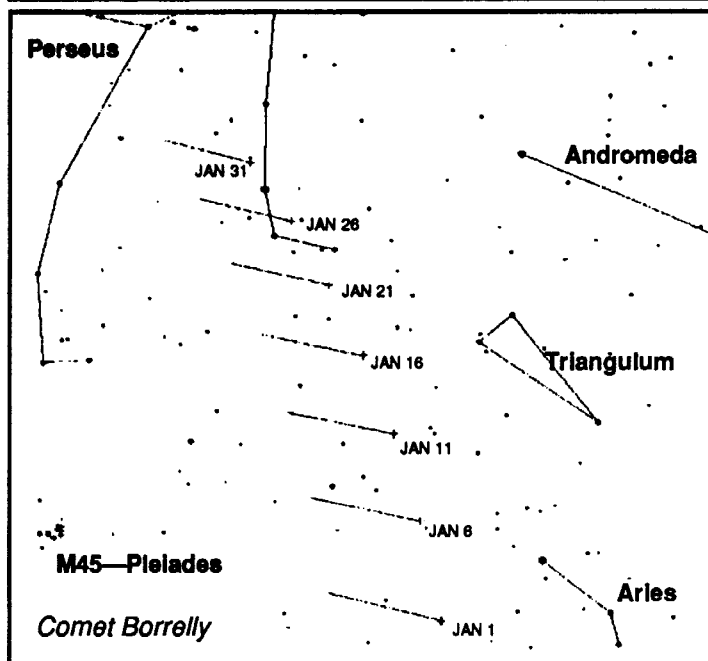


*Comet charts plotted by David Chandler's "Deep Space" software*

Comet Bradfield 7 pm PST—2000.0 coordinates

Date	R.A.	Dec	Elong	MAG
Jan 1	23 34.7	26 7	85.5	6.5
Jan 6	0 5.9	26 12	87.1	6.9
Jan 11	0 34.2	26 2	88.0	7.2
Jan 16	0 59.8	25 43	88.3	7.6
Jan 21	1 22.7	25 18	88.0	7.9
Jan 26	1 43.3	24 52	87.2	8.2
Jan 31	2 2.0	24 26	86.0	8.6

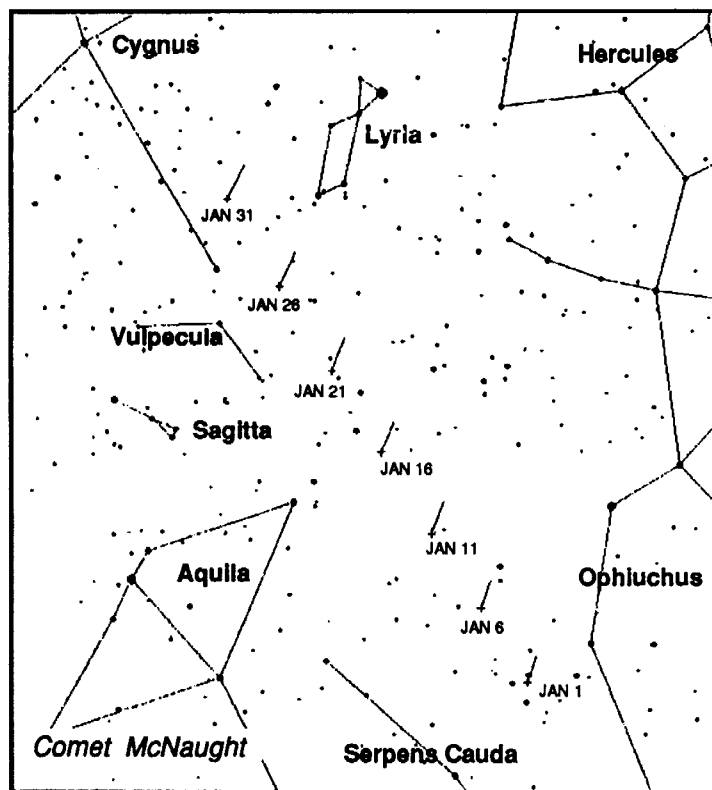
Periodic comet Borrelly, just past perihelion, will also begin to fade in January. This comet was quite spectacular at the December star party when it was 7th magnitude, and should remain so through January, dimming to 9th magnitude by month's end. If you miss comet Borrelly at this apparition, it will return to our neighborhood in 6.75 years. As comets go, Borrelly is a very short period comet. Borrelly and Bradfield are quite close together in the sky in January. Stars to 6th magnitude are plotted on the finder chart shown on the next page.



Comet Borrelly 8 pm PST—2000.0 coordinates

Date	R.A.	Dec	Elong	MAG
Jan 1	2 24.9	20 46	120.0	7.6
Jan 6	2 28.7	25 22	117.0	7.7
Jan 11	2 33.9	29 30	114.1	7.9
Jan 16	2 40.6	33 11	111.4	8.1
Jan 21	2 48.7	36 28	108.9	8.3
Jan 26	2 58.1	39 23	106.5	8.5
Jan 31	3 8.8	41 57	104.3	8.7

Comet McNaught 1987b<sub>1</sub> was discovered on October 18th by Robert H. McNaught when it was too far south to be seen from North America. The comet is now heading rapidly north, carrying it into our skies (and away from the sun) by early January. Be sure to catch this early morning comet before it fades from view. Stars on the finder chart go to 6th magnitude.

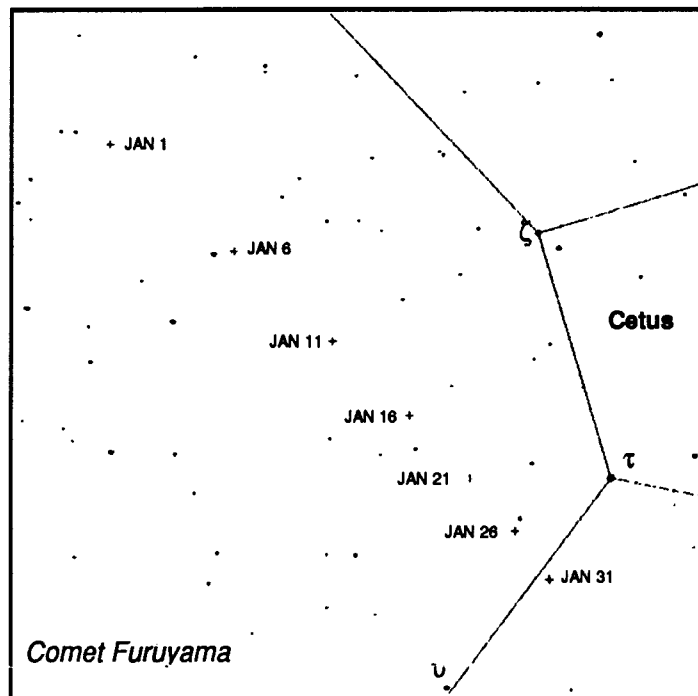


Comet McNaught 5 am PST—2000.0 coordinates

Date	R.A.	Dec	Elong	MAG
Jan 1	17 58.6	2 29	27.7	7.3
Jan 6	18 10.7	7 5	32.5	7.4
Jan 11	18 23.6	11 51	37.2	7.6
Jan 16	18 37.4	16 47	41.7	7.7
Jan 21	18 52.4	21 51	46.0	7.9
Jan 26	19 8.8	26 59	50.0	8.1
Jan 31	19 26.7	32 8	53.7	8.4

Comet Furuyama—Japanese observers have been extremely successful in discovering comets this year. Comet Ichimura will be passing perihelion on January 10th and will be too close to the Sun to observe until early February.

Comet Furuyama was one of the comets we saw at the December star party. It was then a rather large, diffuse, tenth magnitude glow near the head of Cetus. A month's time has found this celestial wanderer moved to the lower half of this whale of a constellation. A tail is not plotted on the finder chart since it did not show any elongation at the December star party. Stars shown to magnitude 7.3.



Comet Furuyama 8 pm PST—2000.0 coordinates

Date	R.A.	Dec	Elong	MAG
Jan 1	2 29.0	-8 24	109.9	10.2
Jan 6	2 17.7	-10 56	101.6	10.3
Jan 11	2 8.5	-13 2	94.0	10.3
Jan 16	2 1.1	-14 47	87.1	10.4
Jan 21	1 55.3	-16 15	80.7	10.5
Jan 26	1 50.9	-17 29	74.8	10.6
Jan 31	1 47.6	-18 33	69.3	10.7

