

# SJAA ephemeris      mar '80

- March      1    Full Moon
- March      7    Board meeting at the Medlock's, 16105 Via Paro,  
San Lorenzo. 8:00 PM. 278-8475
- March      8    Indoor star party, Los Gatos Red Cross building. 7:30 PM.
- March 14-15 Messier Marathon, Loma Prieta site. Map and story  
15-16 inclosed.
- March      16   New Moon
- March      22   General meeting at the Rosicrucian Planetarium. Park  
& Naglee, San Jose. 7:30 PM. (Note new time). This  
will be solar eclipse slide night, with those SJAA  
members who went to Africa showing slides of their  
trip and the eclipse.
- March      29   Indoor star party, Los Gatos Red Cross building. 7:30 PM.
- April      4    Board meeting at Frank Dibbell's, 710 Georgia Ave.,  
Sunnyvale. 8:00 PM. 733-7208.
- April      5    Indoor star party, 7:30 PM.
- April      12   Star party, Fremont Peak State Park.
- April      19   Indoor star party, 7:30 PM.
- April      26   Astronomy Day. Telescope stations will be at the  
Rosicrucian Planetarium and the Minolta Planetarium.
- April      27   Daylight savings time starts.

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For some reason since I've been bulletin editor the general meeting times have been posted as 8:00 PM. Tradition has it as 7:30 PM. Now I know why I've always been late to the meetings. So, from now on out the starting time will be listed as 7:30 PM. Last meeting everyone was there at 7:30 but me, and Chris and Shea Pratt. At least I know someone is reading the bulletin!

Denni

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Gerry Rattley, pres. 732-C202    Denni Medlock, editor 278-8475

# Observations

There are so many items for the Observations page this month it was hard to know where to start. Well, first off, the bulletin itself has a number of good member-written articles on upcoming events, interesting objects to be viewing, and astrophotography. Also this month is an interview with Walter Scott Houston, whom the SJAA had the honor of having as a guest at one of the indoor star parties. To top it all off the reader will find registration forms to both the AANC Messier Club and the 12th annual Riverside Telescope Makers' Conference. The next few months should be busy for observers.

In the People & Changes Dept: Treasurer and long time board member Cathy Pineiro is moving away to attend U.C. Santa Barbara this spring so at the last board meeting the members elected Phil Hermsmeyer to replace Cathy as handler of the funds. We wish Cathy the best of luck at school and we want her to know she'll be missed. Another familiar face that will no longer be seen is Pete Manly's. In his own words: "I've been asked to alleviate a shortage of crazies in central Arizona." Phoenix will be his new home. Good luck, Phoenix. At the last board meeting Pete addressed the problem of the club-owned CCD camera that he has done most of the work on and personally owns most of the support equipment. He asked that the camera be allowed to go with him until he can both finish the work on the system and duplicate it. This was unanimously agreed upon. Also John Cincotta now has all the club-owned electronics that Pete had been working on.

Patty Winter is now the new SJAA publicity chairperson, knowingly volunteering for this position before Astronomy Day!

Kevin Medlock has been assigned the job of director of instruments and would like to initiate a log book of all the club-owned scopes. If you have in your possession anything of the club's please call him at 278-8475. No, you won't have to give it up; however the SJAA would like to know what it's got.

Be sure to catch Don Machholz's articles on the upcoming Messier Marathon, one in this March's Astronomy, and one in Dec. '79 Night Skies.

The Western Amateur Astronomers' G. Bruce Blair gold medal this year goes to Paul Zurakowski of the Chabot Telescope Makers' Workshop. Paul is a personal friend to many of us and the work he has done over the past ten years for telescope making illustrates the love he has for the hobby. Congratulations, Paul!

Beware! Frank Dibbell has been seen running around with a Flaming Asteroid T-shirt on.

Last but not least: Jack Zeiders would like to know who has his 40 watt inverter? Call him at 246-6189.

Dates to remember: Astronomy Day is April 26, and the SJAA, instead of its usual general meeting at the planetarium, will be holding public observing sessions at numerous stations throughout the Southbay Area. So far there are two stations planned, one at the Rosicrucian Planetarium, and one at the Minolta

Planetarium in Cupertino. We would definitely like more stations! If there is a busy intersection or shopping center in your area it would be ideal. Two telescopes or more are usually needed and plenty of enthusiasm. Observing starts at sunset and continues on until about 11 P.M. If you would like to volunteer or you know of a good spot to set up, please call this editor at 278-8475 or the club president, Gerry Rattley at 732-0202.

The AANC conference dates for this year are September 13-14. No locale as yet.

The annual Tehachipi Star Party, co-sponsored by the Sacramento Valley Astronomical Society and the China Lake Astronomical Society is September 7th.

Past reports: The January 19th close-in star party at Sanborn Canyon County Park was a mob scene. Over forty people were counted in the parking lot mingling around a variety of different instruments. This was my first star party there and I was amazed at how good the sky really was that close to town. I was also amazed at how fast my hands froze outside of their gloves! It was nice to see people who normally would not show up at a Fremont Peak or Henry Coe star party show up at the park to observe, despite the cold. Objects we did see were the usual Andromeda, M 33, Orion, Jupiter, and Perseus clusters. I took off after some Herschel planetaries while others searched in vain for the Horsehead. There were numerous 8"s, a 10, the 18, and a lot of binoculars, the forgotten astronomical instrument. It clouded conveniently about the time everyone started dewing!

Jim van Nuland (the only man who can carry a six pack of RC Cola bottles in his coat pockets) reports that "the February 9th Indoor Star Party was enjoyed by the several people who came. Notables were John Rhodes, now of Vancouver, Washington; and Logan Belleville, soon to be of Vancouver. After viewing Norm's and Patty's slides, and some eyepiece comparisons with Jim's  $4\frac{1}{2}$ " f/4, the meeting ended as quietly as it began, with best wishes to those members absent and on their way to the star party in Kenya."

February 9th found nine of us crazies at Digger Fine campground with the explanation we were observing Comet Bradfield. A definite FFN! (faint fuzzy nothing). We may not have been impressed by that but we were definitely awed by the Horsehead in most everybody's telescope. Kevin's 18 had it, my 8, Jack Zeider's 10" (which has been named Sylvester), Rob Vorderbrueggen's 6", and probably Chris and Shea Pratt's 8. An impressive sight!

Just a personal note to those who try to call the Medlock house and get the recording device: I don't like it either but sometimes Kev's up to his ears in aluminum chips and I'm up to my elbows in barnsite and pitch and we can't catch the phone. Have patience! Also, calling us from San Jose is a long distance phone call so beware—if you don't want a recording and a phone bill hang up after 3 rings. We'll answer if we can.

Thanks again to the many contributors to this month's bulletin. I enjoyed compiling it! Next deadline will be March 16th.

Denni

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For Sale: American Ephemeris and Nautical Almanac for the year 1980. \$11.25 in person, \$12 by mail (no tax). Jim van Nuland, 371-1307

## 1980 MESSIER MARATHON

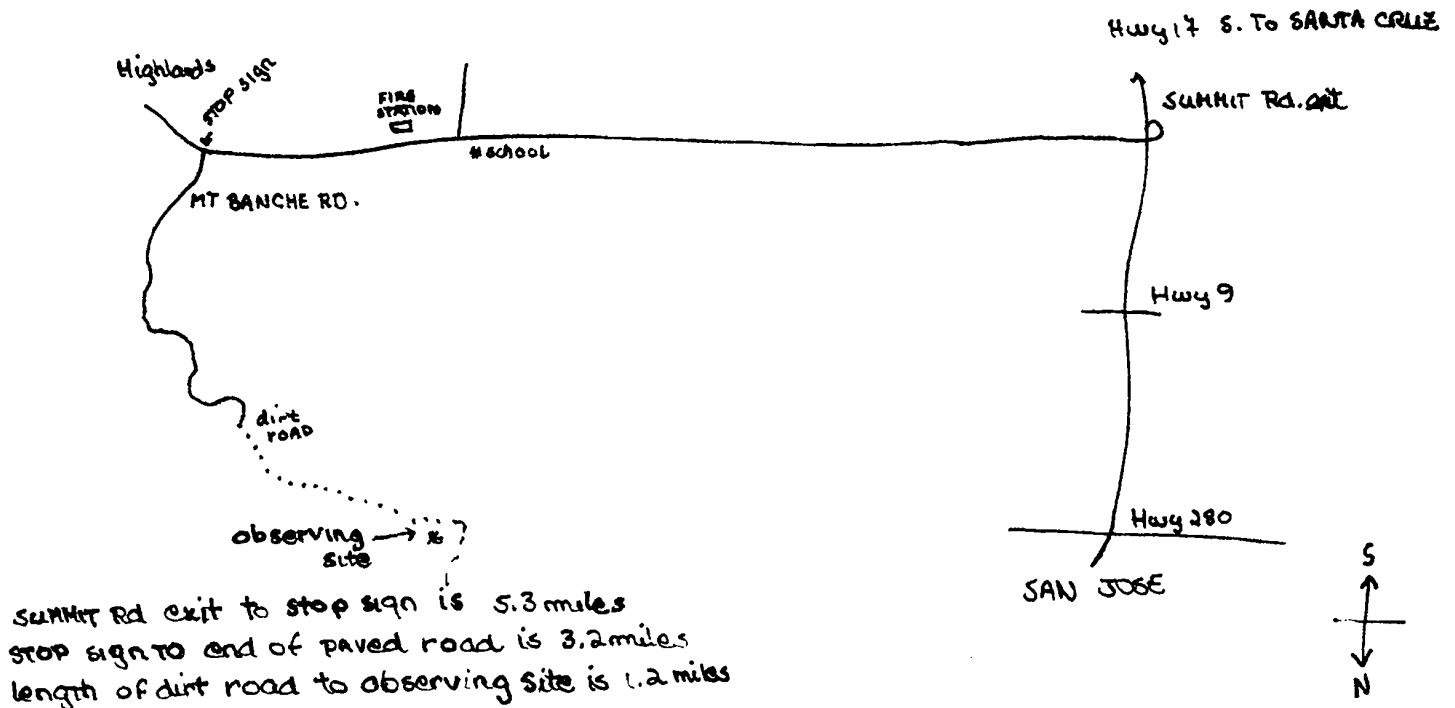
The Messier Marathon this year will be held the evenings of March 14th and 15th. These are weekend nights. Weather permitting, we will meet on Loma Prieta at these times for all night star parties. The moon will be New and 109 of the 110 Messier objects should be visible on these nights.

Everyone is invited and encouraged to participate. Whether you will try to find nearly all the objects, or you just want to find a few or you would like to look through a variety of telescopes, please come for at least a few hours. I will have copies of the suggested observing order up there, along with the registration forms for the AANC Messier Club. The road is good and there should be enough room for everyone.

It should be dark enough to begin observing around 7:20 P.M., and morning twilight begins around 5:10 A.M. Should the forecasts predict rain for the weekend, I will go up and observe as early as Wednesday, March 12. Should the weekend be clouded out, I will go out to observe the first opportunity I have through March 19th. Outside of those dates the moon will interfere.

Loma Prieta, the site of the party, is about 45 minutes south of San Jose. The last 1.2 miles is a dirt road, but that is hard packed and in good condition. We will be at 3300 feet. We will set up at my usual comet-hunting site, just off the dirt road. A map follows.

Don Machholz



"That sounds like a garbage truck coming up the road!" Jack Zeiders  
"Oh, that must be John Cincotta's truck." Chris Pratt  
Digger Pine site, Feb. 9th.



ASTRONOMICAL ASSOCIATION OF NORTHERN CALIFORNIA

AANC Messier Club

Initiated with the idea of encouraging observational astronomy among amateurs, the AANC will provide recognition to the observer who goes beyond the celestial show objects to find each of the Messier clusters, nebulae, and galaxies.

A plaque suitable for mounting on the telescope will be presented to any individual who observes all 107 Messier objects. A parchment will be given as an intermediate award to those who spot 75 or more.

Rules and regulations to qualify for the award:

- 1) Each observer must register with the AANC Messier Club, preferably before starting the program but definitely before finishing, using the attached form, indicating the beginning date and the telescope(s) to be used.
- 2) Two years are allowed to see all the objects.
- 3) All observing must be done using the individual's own instrument(s), unless permission has otherwise been granted by the Messier Club chairperson.
- 4) The observer is expected to make a record of the date, place, telescope, and description (or impression) at the time each object is viewed. This should be presented to the AANC representative or Messier Club chairperson at the completion of the project.

All AANC Messier Club correspondence should be mailed to the current AANC Messier Club chairperson:

Gerald W. Rattley, 185 Homestead Rd. #2, Sunnyvale, Ca. 94087  
Telephone, (408) 732-0202.

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NAME: \_\_\_\_\_  
                    last                    first

CLUB AFFILIATION:

ADDRESS: \_\_\_\_\_  
                    street

STARTING DATE:

\_\_\_\_\_  
                    city                    state                    zip code

INSTRUMENT(S) TO BE USED:

TELEPHONE: (    ) \_\_\_\_\_

GOOD LUCK!

## COMET COMMENTS

So far this year no new comets have been discovered, nor returning comets recovered. However, this is one comet that is still visible in our scopes, and it is reported below.

Comet Bradfield (1979L): Discovered on Christmas of 1979, this comet is now in the Northern Hemisphere as it pulls away from both the earth and the sun. Some observers have reported a short tail (or two) on this comet, and the coma is about 10 minutes across, and expect it to be about 3-4 minutes across by early March. An ephemeris follows.

### Comet Bradfield (1979L)

Date, 1980	R.A.	Dec.	Mag.
Feb. 19	03h 35.9m	+18°11	8.6
Feb. 21	03 37.4	19 08	
Feb. 23	03 38.9	19 58	9.1
Feb. 25	03 40.4	20 42	
Feb. 27	03 41.9	21 22	9.6
Feb. 29	03 43.4	21 57	
Mar. 02	03 44.9	22 30	10.0
Mar. 04	03 46.4	22 59	
Mar. 06	03 47.9	23 27	10.4

(From IAU Cir. 3443)

### Comets In Their Eyes

Pierre Mechain (1744-1804): This Frenchman was a good friend of Charles Messier, and their lives have a few similarities. Mechain was the first to observe and record 22 of the Messier objects. He would then give Messier the positions and descriptions, and Messier would look them up and record them in his own catalog. Additionally, Mechain also discovered eight comets; one of them, discovered in 1790, was later observed by Tuttle in 1858 and is now known as "Tuttle's Comet." Like most astronomers of his day Mechain was not a professional astronomer. He worked as a surveyor and he taught math. Training for the latter also helped him to compute the orbits of the comets he discovered.

Jack Bennett (1915- ): Living in South Africa and now retired, this gentleman has discovered two comets—one of which being the well-known Comet Bennett of 1969/70. Beginning his comet hunting in 1963, Jack uses a 5" Apogee (refractor) telescope. In 1974 he discovered his second comet—it disintegrated some 27 days after discovery. He continues his comet hunting today at a rate of about 100 hours a year.

Don Machholz  
246-5274

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"It doesn't matter if it's day or night. We're illogical either way."  
—Shea Pratt, Sanborn Canyon star party  
January 19th.

## On The Use Of Astronomical Films And Plates

Shiela X. MacDougal et al.  
Institute Of Sibling Rivalry  
Hoboken, New Jersey

For nearly a hundred years astrophotographers have been struggling to record the beauties of the heavens. Their laudable efforts are hampered by small telescope apertures, relatively insensitive films and an ever decreasing number of photons available from starlight. The decreasing availability of photons for astrophotography is a seldom recognized phenomenon which will soon create a shortage of crisis proportions. It stems from the well known fact that, on the average, the sum of all starlight is relatively constant. On the surface, this would seem to contradict the claim of an impending shortfall of photons. It must be realized, however, that the results of any experiment in astrophotography are not related to the total number of photons available, but rather to the number of photons entering the telescope. Thus, larger and larger telescopes are required to collect more photons. Consider, however, that the number of telescopes is steadily increasing year by year, especially in the field of amateur astronomy. Already there are tens of thousands of these amateur instruments in North America alone! There are even several more in Wyoming and New Mexico!

Since it has been demonstrated that good astrophotography results are proportional to the number of photons reaching the telescope and since the total number of photons available is a constant and since the number of telescopes is increasing then the inevitable conclusion is that the number of available photons per telescope is decreasing. This implies that ever more sensitive films will be required just to maintain the present ability to photograph faint objects.

While there have been half-hearted efforts to stem the tide of telescope proliferation through licensing, taxation, and regulation of telescope usage, it is felt that such legislation would be ineffective due to the large number of bootleg observatories that would spring up overnight, operated by closet astronomers. Such is the moral decadence of our society.

An alternative proposal, put forth here, is that the present system of astrophotography be scrapped in favor of a more efficient system, one that takes advantage of the current photon crisis. Consider that present technology films and plates are sensitive to photons (light) and consider further the typical content of most astrophotos. Most of the picture is dark, the star images seldom covering more than 5 or 10 percent of the area of the photo. Why use light sensitive films and plates which utilize only 5 or 10 percent of the photo when a dark sensitive film would utilize 90 to 95 percent of the area of the picture? It is due to the unique nature of astrophotography (mostly dark) that this is feasible. Such a technique would not be especially advantageous for conventional portrait photography which produces photos with about as many light areas as dark areas.

Consider further some of the added advantages of using dark sensitive films and plates. First, films can be stored and processed in broad daylight, eliminating the need for an expensive darkroom. Second, since the film is more sensitive to darker (fainter) objects, the effective sensitivity can be increased by using techniques which make the object appear even fainter to the film such as using a smaller (and less expensive) telescope and shorter exposure times. Finally, as an added bonus, the film would be most sensitive to objects which give off absolutely no light, enabling us to finally photograph directly the elusive black hole!

## ASTROPHOTOGRAPHY

Many people in astronomy would like to do astrophotography but do not know where to start. Fortunately the SJAA has many good astrophotographers who are willing and eager to share what they have learned with anyone that is interested. Over the next several months I will submit articles to the bulletin on each of the numerous types of astrophotography. In this article I will give a brief description of each type. Some types require sophisticated equipment, others do not even require a telescope.

**Camera on tripod:** This type of arrangement can be used to record bright stars which form a constellation outline, the moon, bright comets, and solar eclipses. Exposures are short and guiding is not necessary.

**Afocal:** A camera mounted on a tripod can be used to take a picture through a telescope without being attached to a telescope. This can be done with or without the camera lens. Exposures are short and guiding is not a necessary. Excellent closeups of the moon can be gotten this way.

**Piggyback:** This is one of the easiest and most gratifying types of astrophotography. Just mount a camera on top of a telescope and guide through the telescope. Manual slow motion controls can be used if a drive and drive corrector are not available. Objects which can be photographed this way include sections of the Milky Way, constellations, and many gaseous nebulae. Exposures are about a half hour.

**Eyeiece projection:** This method is used for photographing the planets and for high magnification pictures of the moon. It is done by using the telescope's eyepiece to project an image onto the film of the camera which is rigidly mounted several inches from the eyepiece. There is no lens on the camera. Exposures are a few seconds but a motor drive is necessary to prevent blurring of the image.

**Prime Focus:** This is the most difficult type of astrophotography. It requires the most equipment and patience. A good prime focus photograph is a work of art. This type of photography should only be attempted by dedicated and experienced amateur astronomers. This type of astrophotography is done by having the telescope objective form an image directly on the film. Eyepieces and camera lenses are not used. Guiding is critical so a motor drive and guide corrector are necessary. Exposures are from ten minutes to two hours depending on the f-number of the telescope, type of film, and whether or not a cold camera or other technique for sensitizing the film (such as gassing) is used. The field of view of these pictures is typically about 1 or 2 degrees. This makes objects such as galaxies, nebulae, globular clusters, and faint comets good objects.

Next month I will go deeper into eyepiece projection as Mars, Jupiter, and Saturn will all be well placed for photographing. If you have any questions call me and I will be glad to help you if I can.

Robert Fingerhut  
263-4455

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"I think it will be safe to say this merger will occur when donkeys fly."

Pete Manly

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WALTER SCOTT HOUSTON

Mr. Houston's interest in Astronomy began when he was in grammar school, where he made his first telescope from his mother's reading glasses. Taking the glasses, he popped out both lenses, then hid the frames. This way his mother would think that she lost them, and just buy a replacement pair. Having determined that the focal length of the one inch diameter lens was 40 inches, Walter constructed a tube out of rolled up newspaper coated with flour, water, and salt (the original fiberglass!). The result was a little one inch f/40 refractor.

While the telescope was built for a non-astronomical purpose, the moon nevertheless found its way into its field of view, where Walter discovered that its surface was covered with craters (it seems that no one had ever told him that the moon had craters). This experience so sparked his interest in Astronomy that by the time he left grade school he had used this very same telescope to observe all the 103 "real" Messier objects. This little telescope functioned as his main astronomical instrument until college.

A friend, Joe Meek, introduced him to and recruited him into AAVSO while attending the University of Wisconsin. At the University, he used their six inch refractor (the same telescope that Mr. Burnham used in the compilation of his Catalogue of Deep Sky Wonders) for variable star work. As a student, he worked here as night assistant at the time original photoelectric cell work was being done. He recalls that the original attempts were plagued by radiation. Someone had then suggested putting the cell in a vacuum. Trying this yielded the result of an increase in magnitude gain from about 6.5 to 12.5. The rest is history.

I asked him about some of the other telescopes he has built, and he told me of a 10 inch mirror that he ground which was only 3/4 of an inch thick. He used to amuse and awe his friends with that particular telescope, since flexing the mirror just so would produce a most remarkable field of view in which every star appeared double. More than one person had asked him how he was able to locate such an interesting star field!

Unlike those of us who served time with Uncle Sam and had an interest in Astronomy, Mr. Houston actually got to employ his knowledge of the heavens. The Army, upon discovering that he had some knowledge of the sky, made him an instructor of celestial navigation. While in this occupation he devised the first Army method of polar celestial navigation. Not bad for someone who didn't even know celestial navigation before being made an instructor in the subject! After the war, Walter pursued a career as an instructor of English Literature at Kansas State and Wesleyan. As a sideline, he joined Sky & Telescope to write the feature, "Deep Sky Wonders".

Currently Mr. Houston's first love is AAVSO. He did a lot of work for their solar division working with SEA (Sudden Enhancement of Atmospherics). Listening at 27kc one can hear thunderstorms all over the world. Likewise, one can detect solar flares at this frequency. It was during one of the Apollo Moon Missions that he detected a large solar flare. At the time the newspapers reported that the astronauts were suffering from "motion sickness", but it was in fact radiation sickness, a result of being exposed to the intense radiation of the solar flare.

Another of Walter's interests is counting and hunting for meteorites. A member of the American Meteor Society, he has been hunting meteorites since 1928. He found his first one in 1956 (now that's dedication!). To date he has found 14, the largest of which weighs 85 pounds.

Since he is an amateur of some renown, I asked him what kinds of problems or questions are most often posed to him from other amateur astronomers. He replied that the questions range from "How do I find M-33?" to "What can I do that is useful with this telescope I now have?". Walter suggests to these people that they should get involved with programs like IOTA and AAVSO, because these are organizations in which an amateur astronomer with even modest equipment can make a positive contribution to the field of astronomy, as well as derive personal enjoyment from the activity.

When I inquired what opportunity amateur astronomy provided him, he answered "to be with and meet a lot of people who speak my language, to be able to relax around one's own kind". This certainly seemed evident to those who attended the indoor star party of January 12. I would like to thank you, Mr. Houston, for consenting to be interviewed, and I hope that you will again drop in the next time you visit the West Coast.

Frank Dibbell  
Don Machholz

Spot-watching continues to reward the patient, and disappoint the impatient. Excellent seeing and clear air are very desirable; however, even under more usual conditions, the Spot can be seen by waiting for the moments of excellent seeing that occur.

Study the cover of Sky & Telescope, March, 1979. At the eyepiece, search for the dark belt running north of the Spot; especially easy to see is the curved portion to the northwest. Then stare, waiting for the moment of superseeing to show a sharp, yellow Red Spot.

High powers seem best. A blue or green filter might help. A much bigger help is the apodizing screen, made from an old screendoor.

The Spot moves its extreme length in about an hour, so look from about 30 minutes before the listed times. The Spot proper is about a third the radius of Jupiter, so look for something big!

I need to know of your successes, and your failures. Let me know, too, what combinations of ocular, filter, and technique you tried, especially if they worked!

Jim Van Nuland  
3509 Calico Ave.  
San Jose, Cal. 95124  
(408) 371-1307

#### Great Red Spot on meridian PST

Da	Date	h	m
F	Feb 29	8:09	PM
Su	Mar 2	1:53	AM
Su	Mar 2	9:51	PM
Tu	Mar 4	3:32	AM
Tu	Mar 4	11:23	PM
W	Mar 5	7:14	PM
F	Mar 7	1:08	AM
F	Mar 7	8:53	PM
Su	Mar 9	2:39	AM
Su	Mar 9	11:30	PM
W	Mar 12	0:09	AM
W	Mar 12	8:00	PM
F	Mar 14	1:58	AM
F	Mar 14	9:42	PM
Su	Mar 16	3:26	AM
Su	Mar 16	11:20	PM
M	Mar 17	7:08	PM
W	Mar 19	0:55	AM
W	Mar 19	8:46	PM
F	Mar 21	2:36	AM
F	Mar 21	10:31	PM
M	Mar 24	0:06	AM
M	Mar 24	7:53	PM
W	Mar 26	1:40	AM
W	Mar 26	9:32	PM
F	Mar 28	11:08	PM
Sa	Mar 29	7:04	PM
M	Mar 31	0:48	AM
M	Mar 31	8:37	PM



# RIVERSIDE TELESCOPE MAKERS CONFERENCE

(This is a very condensed version of the actual information form being sent out. If you want to see a real one come to an indoor star party.)

May 24, 25, and 26 (Saturday noon to Monday noon) are the dates for the 12th annual RTMC, held at Camp Oakes, 5 miles east of Big Bear City on Hwy 38 at Lake Williams Estate Rd. Elevation is 7300 feet.

Weekend lodging plus 5 meals is \$23.00 per person. First meal is Saturday noon, final meal Sunday night. Coffee and donuts will be provided for Monday morning.

Camping is 2.50 per person per night and 1.00 per child. If you have paid for meals and elect not to stay in the heated dorms camping on the grounds is free.

Registration fee is \$2.00 per person.

Reservations for meals and lodging must be received by May 15th.

Miscellania: Merit awards, as usual, this year with an additional award for best astrophotographic instrument (samples of your work must be provided). Friday night arrivals are welcome. All bedding for dorms must be brought with you. Prospective speakers contact Cliff Holmes ( address below) by May 1st. Swap meet is Sunday morning 9:30-11:30 am. No pets allowed. The pool will be open, the annual volleyball tournament will be played, boating and canoeing are available, as are door prizes and proceedings. Conference is held rain or shine!

NAME(S) \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

NUMBER IN PARTY \_\_\_\_\_

REGISTRATION FEE -- \$2:00 per person \_\_\_\_\_

MEALS AND LODGING --\$23.00 per person \_\_\_\_\_

CAMPING --\$2.50 per person per night \_\_\_\_\_  
\$1:00 per child (under twelve) per night \_\_\_\_\_

PROCEEDINGS -- \$7.00 per copy \_\_\_\_\_

TOTAL

Make checks payable to : RIVERSIDE TELESCOPE MAKERS CONFERENCE

Please send your remittance to:

Clifford W. Holmes, Conference Chairman  
8642 Wells Ave, Riverside, Ca. 92503

(714) 689-6893