June 83

SJAA

EPHEMERIS

CALENDAR

JUN 4 STAR-PARTY, HENRY COE STATE PARK

JUN 10 BOARD MEETING, JIM VAN NULAND HOST, 8:00PM 408/371-1307

JUN 11 STAR-PARTY, FREMONT PEAK.

JUN 18 GENERAL MEMBERSHIP MEETING, U OF SANTA CLARA, RM 102
SLIDE NIGHT / ANNUAL ELECTION OF BOARD MEMBERS

JUN 25 INDOOR STAR PARTY, LOS GATOS RED CROSS BLDG. 7:30PM

JULY 2 INDOOR STAR PARTY, LOS GATOS RED CROSS BLDG. 7:30PM

JULY 9 STAR PARTY, FREMONT PEAK

JULY 15 BOARD OF DIRECTORS MEETING, HOST TOM AHL 1260 Butterfly Dr.

JULY 16 PUBLIC STAR PARTY, MARRIOT'S GREAT AMERICA
CONTACT FRANK DIBBELL OR DENNI FRERICHS

JULY 23 ANNUAL PICNIC, PORTAL PARK

JULY 30 INDOOR STAR PARTY, LOS GATOS RED CROSS BLDG. 7:30PM

ADDS

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All contributions are welcome and must be received by the 15th of the preceeding month. Please type to a width of 6.5", if this is not possible, handwritten articles are welcome, single space.
EPHEMERIS also welcomes your black and white photos of astronomical interest. 8x10 prints > 5x7 print min
All submissions may be sent to SJAA EPHEMERIS editor c/o Jack Zeiders 2961 Magliocco Dr #3, San Jose, Ca. 95128 (408) 246-6189

JUNE COVER: THE TRIFFID NEBULA, PHOTO BY JOHN GLEASON

OBSERVATIONS

BY DENNI FRERICHS

April was, as it always seems to be with the opening of observing season, a very busy month for the club. The weather was an important factor this year with the late start, and many club members did not get out with their telescopes until the May 14th star party at Fremont Peak.

1st. major event was Astronomy Day on April 22nd. The SJAA had two sites planned: an elementary school near Camden and Meridian (apologies for not knowing its name), and the University of Santa Clara. A week before the 22nd. we were informed that the parking lot at the University would not be available and we therefore faced a problem at the April board meeting of what to do. An anonymous board member suggested Marriot's Great America be contacted to see if they would mind if we set up in one of their parking lots. Though it sounded like a fairly far fetched idea I went ahead and called Judy, Director of Public Affairs at Great America. No, she said, we couldn't set up in the parking lot, but would we mind setting up inside, as guests of the park for the whole day? Enthusiastically, Frank Dibbell (who did much of the follow-up phone and foot work) and myself quickly collected a dozen eager volunteers. After all, being guests of Great America for the day was a good deal!

Though the park officials had said they would close if it rained they opened the gates at 10am Saturday morning to 5,000 people standing in a downpour. Ever see 4,000 screaming, soaking wet kids in one place?

The rain had discouraged all but eight SJAAers. Frank Dibbell was there with his C-11, Dave, Mary, and Elizabeth Ambrose were there with their C-90, Kevin and I had the 4-1/4" Schiefspiegler, Bob Fingerhut had his now-famous slide show, and Chris Pratt showed up later as telescope station relief.

Marriot's had set us up under a gazebo (ah, shelter from the storm) in the Hometowm Square area of the park. Despite the non-stop rain, people would stop in to talk telescopes and astronomy, watch the slide show (through the C-90!), and generally be curious. When the rain finally stopped at 4:30 pm we moved the C-11 out to show off sunspots. That's when the crowd began to get interested. By dusk we had Venus and the Moon in a clear sky and a continuous line of people oohing and aahing. Regretfully, the park closed at 8pm and we were never able to show off Jupiter and Saturn.

Final estimate: about 250-300 viewed through the telescopes. With signs and perhaps more instruments there is a huge potential. Great America draws aprroximately 14,000-24,000 people on a clear, warm Saturday!

So, now what? Well, Marriot's has asked us back for an encore--two, in fact, on July 16 and Aug. 13. We will need 12-15 people with appropriate telescopes who wouldn't mind being guests of the park all day. The park hours will be 10am-11pm, and we should be there at 9am, but people may show up later in the day if they want. For guest pass reasons Marriot's needs specific names in advance. Frank Dibbell is event coordinator so give him a call (days) at (408) 746-6493, or me (eves) at (415) 654-6796 for details or if you want to volunteer. It's a lot of fun.

How did the other SJAA site fare? Wonderfully! Despite the late afternoon rain, over 100 parents and children showed up at the school grounds to view Venus, the Moon, Saturn, and Jupiter through telescopes brought by Tom Ahl, Paul Barton, Jeff Horne, Bill Cooke, and Kim McKelvey. Pre-Astronomy Day publicity in the local neighborhood did the trick (I believe Tom Ahl deserves the thanks for the planning). Good show, folks!

AUCTION REPORT

The other big event in April was, of course, the auction on the 30th. I'll give the statistics first since that's what everyone keeps asking about.

Attendance: 125+ (82 registered bidders)

-# of items: 411 registered items (up from 250 last year)

Net to SJAA: approximately $1050
Casualties: None
Estimated time of arrival home: 4am

The third annual Auction drew people from Salinas to San Francisco, with just as many diverse items showing up on the auction table. The increase in attendance over last year was quite noticable, as was the near double of items for sale.

The SJAA team of helpers deserve much more thanks than I can give here, and if I have left someone out, a thousand apologies.

Many thanks go to Jim van Nuland for his computer expertise, his continuing calm in the midst of chaos, and for his just being there despite back pain; Chris Pratt also for his computer expertise; Shea Pratt, for learning to run the computer on the spot, sparing Jim, and putting up with us all yelling at her at the same time; Jay Freeman, for sparing Shea; Jack Zeiders, for his initial set-up, sparing Chris, and helping out behind the auction table; Dave Ambrose and Stan Kowolski for behind-the-scenes item organization; Bob Fingerhut for munchies and the club checkbook; Dave and Mary Ambrose for the 5:30 pizza run; Rita Miram for the coffee pot and goodies; and to all the people who brought food, helped set up, tear down, move items, and lasted to the end -- thank you!

Last, but not least, thanks to Kevin Medlock, our infatigable auctioneer, who kept us going (albeit, under threats), kept the audience awake the whole 4 hours, and didn't once lose his voice!

SJAA PICNIC–JULY 23

The annual SJAA club picnic will be held July 23rd at Portal Park in Cupertino. This event is open to everyone associated with the club and their families, and has been the scene of many good times in the past. As always, the picnic serves as the officer installation for 1983-84, and the Dr. A.B. Gregory Award is also presented then.

Portal Park is ideally suited to barbeque conditions, with a large fire pit and plenty of picnic tables gather around. The open lawn area is huge and perfect for baseball, frisbie, and kite flying. Directions to the park will be in the July bulletin.

The year the fare will be all the hamburgers and hot dogs you can eat for $1, adult, .50 children. Side dishes are potluck and always a gastronomical odessy. (We're trying to persuade Sharon Cisneros to repeat her German Chocolate Cake of last year!) The SJAA will provide all the charcoal, relishes, and paper products. Beverages (soft, please), sidedishes, and utensils will need to be brought.

So, mark your calendar for July 23rd and look forward to having a good time!

(Many thanks to Chuck Olson for doing the reservation work for Portal Park)

Just a few finishing notes:

The SJAA would like to say goodbye and good luck to Jeff Horne on his new assignment at Wright-Patterson AFB in Dayton, Ohio. Jeff was with the club for a few years during his stay at Moffett Field and was a great contributor to all the events. Jeff, thanks and best of luck!

Other goodbyes: June marks my last month as president of the SJAA. Because of other time consuming committments I feel I should give some one else a chance to be dictator, er, king, er, president! Anyhow, it's been a lot of fun (alot of work at times) and I've loved doing it. Mucho thanks to all the people who shared the work load willingly and didn't mind the delegations.

Clear skies!

Dann

GREAT RED SPOT EPHEMERIDES

BY JIM VAN NULAND

The skies of California have cleared at last, and so I've been able to obtain some good timings of Jupiter's Great Red Spot. As suggested by Gerry Rattley's partial observations in Arizona, predictions based on early observations are inaccurate. I've altered the prediction equation, and calculated new predictions for coming months.

The spot showed only slight color last night -- light yellow, maybe a tinge of pink. The belt north of the Spot has faded somewhat, so the spot is somewhat more contrasty than earlier in the year.

Great Red Spot on Meridian PDT						Great Red Spot on Meridian PDT					
da	mo	d	h	m		da	mo	d	h	m	
Th	6	2	0	8	am	Th	6	16	1	38	am
Sa	6	4	1	42	am	Sa	6	18	11	6	pm
Sa	6	4	9	36	pm	Tu	6	21	0	43	am
M	6	6	3	26	am	Th	6	23	2	21	am
M	6	6	11	13	pm	Th	6	23	10	11	pm
Th	6	9	0	51	am	Sa	6	25	11	53	pm
Sa	6	11	2	29	am	Tu	6	28	1	31	am
Sa	6	11	10	24	pm	Th	6	30	10	59	pm
Tu	6	14	0	5	am	Su	7	3	0	37	am

The predictions are corrected for changing aspect, phase, and light time. At the indicated time, the Spot will be facing directly toward the Earth and is therefore central on the apparent disk of the planet. Observations may be made for about an hour before and after that time.

The times are adjusted to PDT, and include transits for which the planet is at least 1-1/2 hours up, with the Sun at least 6 degrees down. A random 0-10 minutes is subtracted to prevent anticipation when timing a transit.

To see Jupiter's Great Red Spot, very good seeing and a power of 200-300x are required. Use an apodizing screen if you have one; See Sky & Telescope, August, 1982, page 184. In the past, the Spot has been observed with a 60mm refractor, but the low contrast may now require a larger aperture.

Focus carefully, then look eastward along the southern edge of the south equatorial belt for a distinct narrowing of the belt, to about half its western width. The dent contains the Spot, which in turn is nearly 1/2 of a Jovian radius long. Now watch continuously for those moments when the air is especially stable, and the Spot will pop out at you!

The spot is set partly into the south equatorial belt, and a vague grey haze extends far south of the Spot. It seems to be wedged in between two very broad bands, with a dent in the belt north of it.

Clear Skies,
Jim Van Nuland

SPACE PROGRAM UPDATE

BY BOB FINGERHUT **NEXT PAGE**

STS-7 SCHEDULED FOR JUNE 18 LAUNCH

The Challenger is proceeding toward its second launch on June 18. It was moved from June 16'th to allow the launch of the Galaxy-A communication satellite on June 16 on a Delta 3920 booster. The Challenger is scheduled to be rolled out to the pad May 25. The shuttle will have two short launch windows,7:33 am to 7:38 am EDT and 8: 24 am to 8:26am EDT on June 18. The landing is scheduled for 6:54am EDT June 24 at Kennedy Space Center. It will carry 5 astronauts; Capt. Robert L Crippen and Cdr. Frederick H. Hauck, pilots, Lt. Col. John M. Fabian, Sally K. Ride, and Dr. Norman E. Thagard, mission specialists. This is the first time the U.S. will have five astronauts in space at the same time and the first flight of an American woman.

In addition to launching two communication satellites, Canada's Anik C2 and Indonesia's Palpa B-1, the shuttle will carry the OSTA 2 materials processing project and the German SPAS. The SPAS pallet satellite will be deployed and retrieved by the remote manipulator arm twice during the flight.

There will also be a continuous flow electrophoresis experiment, a monodisperse latex reactor and 7 getaway specials onboard.

COSMONAUTS FAIL TO REDEZVOUS

The Soviet Soyuz T-8 mission was unable to rendezvous with the Salute 7 space station and had to return to Earth on April 22, after two days in space.

SOVIET BOMBER DAMAGED WHILE CARRYING SHUTTLE

A Bison bomber carrying the Soviet shuttle orbiter piggyback was forced to make a downwind landing and ran off the side of the runway, damaging the Bison but not the orbiter.

SATCOM IR LAUNCHED

The RCA communications satellite was launched April 11 on a Delta 3924 booster. It is designen for a ten year lifetime.

NOAA-8 SPACECRAFT STABELIZED

The NOAA-8 spacecraft which was tumbling following a March 28 launch from Vandenberg AFB has now been stabilized. Its purpose is to monitor global weather conditions and aid in international search and rescue missions.

SHUTTLE ENTERPRISE, TO TOUR EUROPE

The Enterprise will tour Europe on top of its Boeing 747 carrier aircraft. It will be displayed in Germany at Bonn-Cologne airport May 21-23, the Paris airshow May 26-June 5, and Stanstead airport in England June 5-7. It will also make a stop in Ottawa Canada on the way home.

The Enterprise, which was used for approsch and landing tests will never fly in space but is still needed for launch pad checkout work at V andenberg AFB.

TDRS BEING MOVED TOWARD SYNCHRONOUS ORBIT

Several burns of the attitude propulsion system have been made since May 2 to raise the orbit of the Tracking Data Relay Satellite, TRDS, launched during the sixth shuttle flight. As of May 12 the orbit had been raisd 1200 mi. The cause of the Inertial Upper Stage, IUS, failure which left the TDRS in a low orbit is still being studied. It is believed the IUS had many problems. As a result the second TDRS is being pulled off the eighth shuttle flight and the shuttle is being remanifested. The eighth flight is now scheduled for August 11.

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PIONEER 10 PASSES PLUTO'S ORBIT

The Pioneer 10 spacecraft is now farther from the Sun than the planet Pluto. It will cross the orbit of Neptunen currently the outermost planet, on June 13. Pioneer was launched 11 years ago and is still in good condition and continuing to transmit information from the outer solar system.

ARIANE SCHEDULED FOR JUNE LAUNCH

The sixth flight of the Ariane launch vehicle was scheduled for June 3'rd but there may be a delay because ground validation testing of the launcher's third stage has fallen behind schedule.

COMET COMMENTS

BY DON MACHHOLZ

Two bright comets have been discovered during the past month. One, Comet IRAS-Araki-Alcock approached to within 3 million miles of earth and was widely observed. It will not be easily visible to us during June. The second discovery, Comet Sugano-Saigusa-Fujikawa, was found in the morning sky at magnitude 7, not far from M 33. The comet seems to be moving away from the sun, as I write this I have no predictions on this comet, they should be in my hands by late May.

On such a fast-breaking story as Comet IRAS-Araki-Alcock, we had little time to release a special mailing, so this was not attempted. Instead, some of you called me for the latest news on the comet. This is probably the best way to disseminate data in this situation and for that reason I have always included my phone number at the end of this column. I can usually give you additional information on the comets I mention along with new data on new discoveries.

We also have three periodic comets visible in our scopes, making this a good time for comet-watching. In our Past Discoveries department we look at two June discoveries made by observers in the Southern Hemisphere.

Comet IRAS-Araki-Alcock (1983d): This comet was first detected April 25 by the international earth-orbiting satellite IRAS, launched Jan. 25 from Vandenberg AFB. The ground crew did not report the observation directly to the SAO (Smithsonian Astrophysical Observatory), the clearing-house for comet discoveries, because they thought they had found a new asteroid. George Alcock of England, a reitred school teacher with four comets (two in 1959, and one each in 1963 and 1965) and several novae tohis credit, picked it up on May 3. Then the Japanese observer Araki reported it, his first discovery. Finally, the IRAS scientists confirmed that it was indeed a comet that they had discovered. Previously, three other comets have been discovered by a satellite, these were noticed after they had crashed into the sun, and were never officially named after the satellite (Solwind). So this is the first comet to be named after a satellite.

Comet 1983d was discovered a few degrees north of the star Vega, in Lyra. At that time it was sixth magnitude. It rapidly moved NW, brightening to magnitude 2.6 on May 10, with a diameter of more than 2.5 degrees, visible with the naked-eye. It was closest the earth May 11.5, at which time the comet actually seemed fainter than the night before and after. After this date the comet rapidly moved southward, dissappearing into the SE sky.

CONTINUED NEXT PAGE

Much of the general public missed viewing this comet, not because they didn't know where to look, but becuase of the light polluted skies they were observing in. Halley's Comet is not expected to get any brighter than this one when it comes by in 3 years, and if the public misses 1983d, they are going to have a rough time seeing Halley's.

Comet Sugano-Saigusa-Fujikawa (1983e): This comet was discovered by these three Japanese comet-hunters on the morning of May 8, low in the morning sky, at magnitude 7. This is Sugano's first, Saigusa's second and Fujikawa's fifth discovery. The comet appeared condensed, small (1.7' across) and magnitude 7.8 to me on the morning of May 10.

This comet was found a few degrees from the track for the lost comet Swift-Tuttle, responsible for the Perseid meteor shower each August. It is possible that these observers were searching along this track when they picked up 1983e.

PAST DISCOVERIES

Comet Austin (1982g) Discovered on Friday morning, June 18 at 4:00 A.M. by Rodney Austin of New Plymouth, New Zealand, this comet later moved north and became a naked-eye object. Austin, 37 years old, used a 6-inch, f/8 refractor to find this tenth-magnitude object after 151 search hours in 13 years. The moon was three days before New phase, and the comet was 67° from the sun at discovery. At all times it was too far S. for us to see.

The comet was mag. 10,4 and at position 04hr 04.5m, -40°05' when first seen. Two weeks before it was at 03hr 47m, -44°, and at mag. 11.6. Two weeks before this it was at 03hr 31m, -46°, and magnitude 12.3. Surprisingly, the comet remained at 67° from the sun all during this time(the sun also moves). It seems as though it could have been discovered two or three weeks before it's actual find on June 18, although it would have been mag. 12 in a moonless sky. Then the moon interferred for about 10 days, the comet could have been seen again under favorable conditions around June 15, when a waning moon was still in the sky.

Comet Austin, it seems, was picked up within a few days of it's first favorable oppertunity.

Comet Bradfield (1979c) William Bradfield of Australia found this comet on Sunday evening, June 24, 1979, at 7:30 PM local time. This was ninth comet discovery, he has since found two more. He was using his 6", f/5.5 refractor at 26 power to find this 10.2 magnitude object low in his western sky. He had searched 98 hours since his previous discovery 8½ months before.

At discovery the comet was at 08hr 37.5m, -01°20' and 44° from the sun, mag. 10.2. The moon was new, meaning it had been out of the evening sky since June 14. At that time the comet was at 08hr 30m, -16°, mag. 10.9, 56° from the sun. I would have been a faint find for Southern Hemisphere observers at that time, during the next ten days it brightened .07 mag./day. At all these times it was below the horizon as seen from the U.S. This is because our twilight lingers more in the summer, and our sunset is later, the comet had set for us by time the sky got dark. Nevertheless, S. Hemisphere observers had ten days to pick this up and they didn't. The comparative lack of S. Hemisphere comet-hunters contributed to this.

William Bradfield has never found a comet in the N. Hemisphere, but this is the closest he's gotten. If he had found the comet two days later it would have crossed the equator and been discovered in the Northern Hemisphere.

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Ephemeris for known comets

Periodic Comet Tempel 1 (1982j)

Date (1983)	R.A.	Dec,	Mag. Ests.	
05-26	12:34.2	+07°49'	11.3 (9.0)	This comet moves through Virgo. It's roughly 3' in dia. and condensed. The second mag. ests. are more accurate. IAU Cir. 3773.
06-05	12:41.0	+04 21	11.3 (9.0)	
06-15	12:51.8	+00 34	11.3 (9.0)	
06-25	13:06.1	-03 25	11.3 (9.0)	
07-05	13:43.8	-11 30	11.4 (9.1)	

Periodic Comet Kopff (1982k)

05-26	15:32.2	-09 08	10.0 (9.0)	This one retrogrades in Libra, it's roughly 4' in dia. and diffuse. IAU Cir. 3779.
06-05	15:26.7	-09 18	9.8 (8.8)	
06-15	15:23.3	-09 53	9.7 (8.7)	
06-25	15:23.3	-10 53	9.6 (8.6)	
07-05	15:27.3	-12 17	9.5 (8.5)	

Periodic Comet Tempel 2

05-26	23:24.6	-05 21	11.7	Moving from Pisces to Cetus, this comet goes in a straight-line path. IAU Cir. 3794
06-05	23:57.0	-03 53	10.8	
06-15	00:28.3	-02 35	9.8	
06-25	00:57.9	-01 30	9.6	
07-05	01:25.6	-00 43	10.1	

Comet Comments Update

An additional Ephemeris:

Comet Sugano-Siagusa-Fujikawa (1983e)

Date (1983)	R. A.	Dec.	Mag.	
05-28	00:42.1	+41°00'	8.0	This comet will be closest Earth June 12 (0.07AU). Look for it as it slides down the Summer Milky Way. Data from John Bortle.
06-02	00:21.2	+40 21	7.7	
06-07	23:34.7	+37 47	6.8	
06-12	20:21.7	+10 08	5.0	
06-17	15:34.4	-37 56	7.0	

Don Machholz

VOTE VOTE VOTE VOTE VOTE VOTE VOTE VOTE VOTE VOTE VOTE

As Benni mentioned in last month's Bulletin, June is election month for the SJAA. So instead of profiling a club member this month, I will talk a bit about our club's election process. To start, the SJAA Board of Directors is made up of nine people elected by the general club membership. Board members each serve two year terms, with four members being elected in even-numbered years, and five members being elected in odd-numbered years. This insures some form of continuity from year to year.

Club officers (President, treasurer, etc.) on the other hand, are elected by members of the board from members of the board, and serve for one year. If this sounds confusing, read on; it gets better!

To be a board member, one must have EITHER been a club member for one year, OR have attended a minimum of six board meetings. Remember, you don't need to be a board member to attend a board meeting: board meetings are open to the membership at large. Additionally, your name must be entered in nom-

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ination and seconded. This can be accomplished in one of two ways: the easiest is to call on a member of the nominating committee. The other way is to wait until election night, and have a friend nominate you when the floor is open to nominations.

Voting is by secret ballot, and the new board members are those who capture the most votes. Simple!

This year, both Jack Zeiders and Bill Cooke will be retiring from the board. Chris Pratt, Jim Van Nuland, and Denni Medlock are running for re-election. To date, Tom Ahl and Dave Ambrose have been nominated and seconded by the Election Committee.

We've said it before and we'll say it again: If you are concerned about what the SJAA does, consider running for a board position. If you feel uneasy about making a two-year commitment, consider attending a board meeting. The board has no qualms about soliciting input from non-board members who are in attendance; in fact, such input is welcomed. Remember, this club, and any other club for that matter, needs the active participation of its members to survive. Enough Soap-Box.

Once again, I urge you, if you want to run for a board position, don't be shy. Call a member of the Election Committee. Committee members are myself (408-746-6493 days), Gene Cisneros (408-923-6800), and Steve Greenberg (415-443-6638).

Frank Dibbell

WHILE THE TOWN BELOW SLEEPS, THE ASTRONOMER SWEEPS
Some Thoughts about Early Morning Observing
by Don Machholz

Would you like to observe the heavens under clear, dark, skies; while you are wide-awake, bothersome car traffic is light, and winds are calm? You would? I thought so. I'd like to make a suggestion you might consider if you want the most ideal conditions your observing site can offer. It simply requires setting your alarm clock six hours earlier than it is now. Let early morning observing dawn in your life!

Roughly 70% of my comet hunting is done after midnight. There are several reasons for this. First, more comets are visible first in the morning sky, often they remain undiscovered for a few weeks, morning discoveries are usually brighter too. Secondly, observing conditions are usually better too. The dust and air pollution has settled. The winds are usually decreased. Natural light pollution (sky-glow) has diminshed during the night. Artificial light pollution is less--the car lot and parking lot, store front, and stadium lights are turned off near midnight. The air is usually steadier too. And, if you commute to your site, you'll find fewer cars on the road, although the per capita content of alcohol is higher. Thirdly, I feel better in the early morning hours. This does require three hours of sleep before waking up. My night vision is better, for my eyes have been recently resting. I'm not fatigued, and I find that time passes very quickly when I'm sweeping the pre-dawn skies.

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This is how I go about it, and I think this would work for most people. Bedtime is 9:00 PM and the alarm is set for anywhere from midnight to 1:00 AM. At that time I wake up, check the weather, get dressed and drive up to the mountain observing site. I keep the radio on, and I'm very much awake while driving to the site. I have a planned schedule of areas to sweep so I get right down to business. I don't like coffee so I usually drink Coke-a-Cola or Seven-Up, or sometimes just water. The coldness also helps to keep one awake. When I get home I can usually exercise the option of staying awake for the rest of the day, or going back to bed for an hour or so. When I go back to bed I find I'm sleepy upon re-arising, when I don't nap I get tired for an hour or so around 1 PM.

I know of one comet-hunter who wrote me concerning his method of waking up. He doesn't want the alarm clock to wake up his wife so he drinks a certain amount of water before retiring for the night. He then awakens when he has to go to the restroom and stays awake to do his comet hunting. He's probably the only person in history who wakes up to go to the bathroom and ends up discovering a comet.

The Mid-July Messier Marathon

Seeing how we were clouded out during the March Marathon, lets plan a Messier Marathon for July 9-10 of this year. The moon will be new, the weather warmer and hopefully clearer, and about 98 of the 110 Messier Objects will be visible. The night is short (9:38 PM to 4:50 AM nautical twilights), the planets will be up, and the Summer Milky Way up all night.

I will be on Loma Prieta on Sat. evening, July 9 for the whole night, come on up and join me. Or, if you set up at another site, try it there. I have search sequences, if you need one.

Don Machholz
(408)448-7077

MEMBERSHIP WITH SKY AND TELESCOPE; $21.00

JUNIOR MEMBERSHIP-UNDER 12- $15.00 INCLUDES SKY AND TEL.

MEMBERSHIP ONLY $8.00 (FORMERLY BULLETIN SUBSCRIPTION)

SJAA MEMBERSHIP APPLICATION/RENEWAL

NAME _____

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MEMBERSHIP/S&T ☐ $21.00 JUNIOR (UNDER 12) ☐ $15.00

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