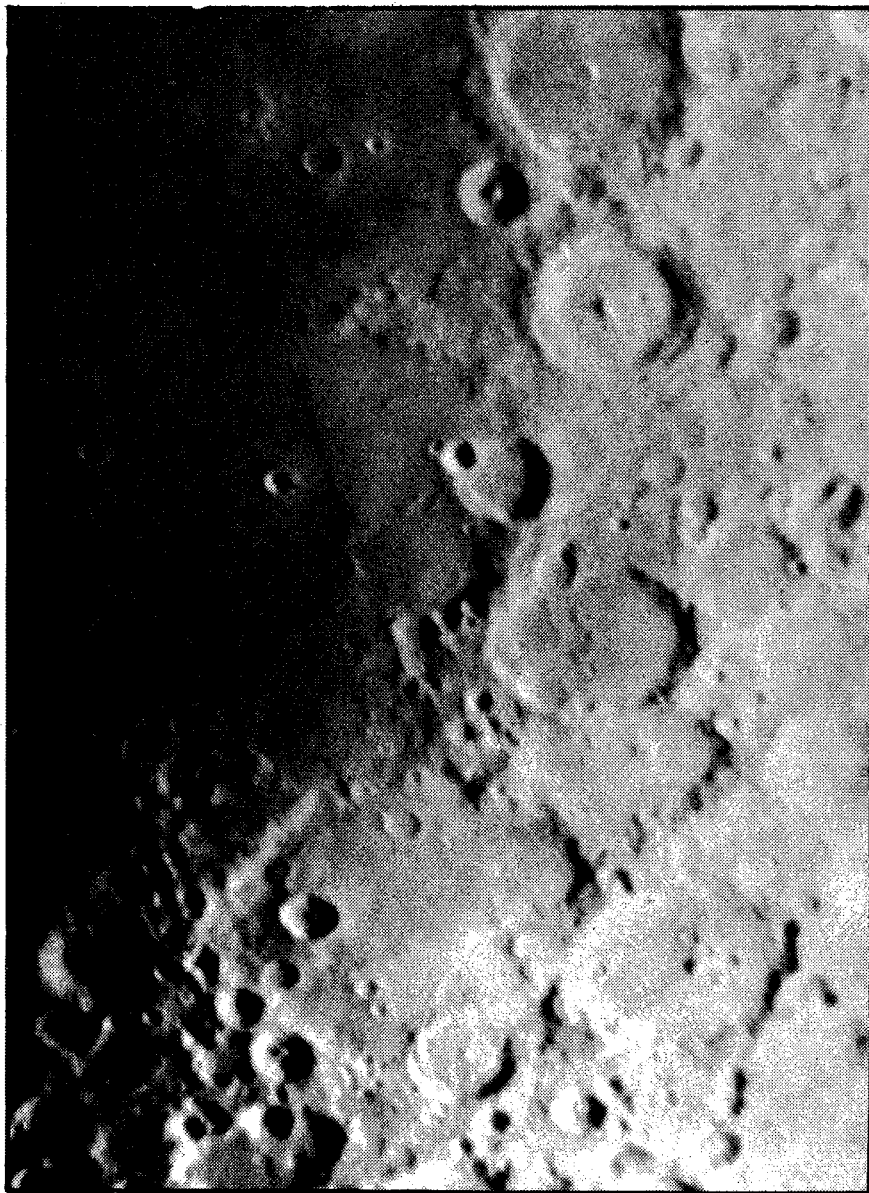


SEPTEMBER '83

SJAA

# EPHEMERIS



# OBSERVATIONS

## UPCOMING EVENTS

September's General Meeting will be the annual SJAA Slide and Equipment night, a members-oriented get-together that's always fun. It's a show and tell session in an informal setting - so bring that new gagit, eyepiece, telescope, camera accessory, whathaveyou, and tell everyone about it. Slides can be anything astronomically related - star parties, Messier marathons, telescope conferences, observatory trips, star trails, and astrophotos. The meeting's at the Los Gatos Red Cross Building (directions are on the back of the Ephemeris' calendar page), and it starts at 8:00 PM. Refreshments will be available. Refreshment bringers will be greatly appreciated!

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October's general meeting will feature members Ernie Piini, Jack Peterson, and Bob Fingerhut with a fantastic, colorful slide show of their Java eclipse experiences. If you've heard anything about the eclipse this last June you've probably heard that it was the best one in the last twelve years. Come and see pictures why! The meeting will be held at the University of Santa Clara, Alumni Science Hall, room 102, at 8:00 PM. See you there!

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The Twelfth Annual Tehachapi Star Party, sponsored by the China Lake Astronomical Society and the Kern Astronomical Society will be held on Saturday, September 10, at the Antelope Canyon Ranch in Tehachapi, California. This annual summer star party is usually well attended and a good time to see people you only get a chance to see at the Riverside Conference. The registration fee is \$3.00 per person, or \$7.00 per family. There are improved campsites available with showers for \$2.50. For more information please contact the China Lake A. S. at P.O. Box 1783, Ridgecrest, Ca. 93555.

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The Tenth Annual Astronomical Association of Northern California's (AANC) Astronomy Conference will be held at Lawrence Hall of Science, University of California, Berkeley, on September 17-18. There will be amateur and professional speakers, an astrophotography display and competition, a swap meet, and commercial exhibitors. There will be a keynote speaker at the banquet, to be held at Spenger's Fish Grotto in Berkeley on Saturday, the 17th. The Messier Club awards will also be given out at that time. Preregistration by mail closes on September 3rd, but there should be registration at the door. The registration form is located at the end of OBSERVATIONS for your convenience.

(To get to Lawrence Hall of Science from San Jose, take Highway 17 north to Berkeley. Take the University Ave. exit and head east towards the hills. At the end of University Ave. turn left on Oxford for one block, then right on Hearst Ave. Continue up Hearst Ave for about a mile, turn right on Gayley Rd. Continue on Gayley for about a half mile, turn left at Centennial. Go to the stop sign and turn right. Continue all the way up the hill to Lawrence Hall of Science. You'll know it by the original cyclotron magnet sitting in the driveway. There's plenty of parking. If you don't go for the conference go for the view from the hall.)

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The October 29th Indoor Star Party will be an advertised public star party, so bring your telescopes and set up in the parking lot. The observing from Los Gatos isn't all that bad. (I've even seen Milky Way from there). Bringing a telescope to any indoor star party for viewing from the parking lot isn't such a bad idea, either. We should have more of that.....

The Astronomical Society of the Pacific (ASP) would like to announce two items:  
1) There is now a free table of the solar system, stating characteristics of all the known planets and satellites. It was prepared under the supervision of planetary astronomer David Morrison. Please send a self-addressed, stamped envelope to Solar System Table, A.S.P., 1290 24th Ave., San Francisco, Ca. 94122.

2) The ASP will be sponsoring a major public lecture series on new developments in astronomy, to be held at Stanford University's Dinkelspiel Auditorium on October 30th, from 9 AM to 5:30 PM. Speakers will include Allan Sandage on cosmology, William Kaufman on black holes, David Morrison on the exploration of the solar system, Bernard Oliver on the search for extraterrestrials, Sandra Faber on telescopes of the future, and Ed Krupp on the astronomy of earlier civilizations. Please call Andrew Fraknoi at (415) 661-8660 for details concerning talks, costs, lunch, etc. Sounds good!

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### CLUB TELESCOPES

The SJAA has three telescopes available to loan to members. The loan period is normally two months, but if nobody wants it at the end of the time it's yours until somebody does. All pickup arrangements should be made between the interested party and the person presently holding the telescope. If you borrow the telescope please call either the editor or one of the board members to let them know who now has what.

The 6" is presently with George Delwert (408) 257-6658. I believe it needs work to its cradle if there are any volunteers.

The 12" Dobson is with Tom Stravolone (408) 277-4711, and should be available.

The 14" Dobson is with Ron Probst and may be ready for loaning. (408) 249-8775. Ron deserves a lot of credit for finishing that long term project.

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### NEW MEMBER:

Congratulations to Jack and Nancy Marling on the birth of their son, Alan. He'll be an astrophotographer before you know it!

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### AANC REGISTRATION FORM

Name(s) \_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

Please check if you wish to give a talk or present a paper ☐

Registration Fee, per person ( ) x \$11.00 \_\_\_\_\_

Banquet(s) at Spengers (Sept 17) \_\_\_\_\_

Seafood Captains Plate ( ) x \$11.00 \_\_\_\_\_

Roast Sirloin of Beef ( ) x \$11.00 \_\_\_\_\_

Saturday Box lunch(s) ( ) x \$ 4.50 \_\_\_\_\_

Sunday Box Brunch(s) ( ) x \$ 4.50 \_\_\_\_\_

TOTAL \_\_\_\_\_

Send to Cindy Miller - C/O Space Microwave Labs  
1255 North Dutton Ave., Santa Rosa, Ca. 95401. Make checks payable to AANC  
Confirmation letter and information will be sent to those preregistering.

## HENRY COE

But once in my membership in the SJAA have I ever arrived at event on time and the Saturday (1983 August 6) star party at Henry Coe Park was not it! That was okay; I arrived after the mosquitoes had retired, much of Morgan Hill had shut down, and the smog had dissipated.

Being fashionably late, I did not want to drive my truck up the hill to the observing site only to find no parking space and possibly demolish some optics while turning around. Besides, I can never seem to remember how to work the club's padlocks. As I walked up the dirt road, I was amazed at how warm without being "muggy" the air was and how transparent the sky seemed. Spread above me was the Milky Way and the various dark lanes were clearly visible.

Enough people were present to make a nice group without crowding. Jim van Nuland had his blue bus, Newt 8, and RC cola there and was being teased about wearing pants: I guess shorts are for only the dead of winter when the really cold winds blow! Somebody from San Francisco had a large Dobsonian set up, and one of the Henry Coe campers had spotted our group and brought up his backpack scope: an Edmund "bowling ball" Newtonian. An elderly gentleman (I am afraid I missed his name other than "Paul") had a set of 11X80 binoculars on a tripod and he could "star hop" with the best. He told stories of how he had surveyed much of Northern California when there were large tracts of land which had not even been explored, much less mapped.

Early in the morning, someone mentioned looking for the Andromeda galaxy and I eagerly awaited its acquisition in one of the telescopes. I have seen it through only my Quantum 4 and I found it be setting circles and not star hopping. I had always believed that the days of seeing something like that by naked eye were gone with all of the light pollution and crud in our atmosphere. It was quite a thrill to be shown how to locate it starting with the great square of Pegasus and then to actually see the thing without any mirrors or lenses. At first, it looked like some luminous cloud puff about the same size as the Moon. Then I noticed that it could be thought of as a large eye, examining the landscape.

The fact that not just Andromeda but several other "fuzzies" could be seen without aid will give you an idea of just how clear the sky was. It was not dark, however. Sky glow was significant and I suspect caused by street lights. Morgan Hill is almost completely illuminated by low pressure sodium vapor lamps whose yellow light does not seem to hinder the ability to see the heavens.

High clouds now and then threatened but never seemed to prevent us from having a very enjoyable observing session. At least two good meteors were spotted, and everyone joked about "real astronomers" not telling you about the trails until AFTER they had faded. I left about 03:00; I understand Jim held ground until after 04:00. Maybe it wasn't Yosemite, but it was very nice!

Bruce deGraaf

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## FREMONT PEAK STAR PARTY

August 6 brought a very mixed group of amateur astronomers to Fremont Peak. On our arrival, we were greeted by Frank Dibbell, who had already set up his C-11 and was minutely examining the teenagers on top of the peak. We were also met by a small horde of Fremont Peak flies.

The prevailing heat was oppressive and the high clouds weren't very encouraging either. Amid talk of returning home, we found ourselves admiring the sunset. Fortunately the clouds were thinning out and disappeared completely by the time we could start observing in earnest.

Other SJAAers in attendance were Gary Rice, Jackie Rice, and Phyllis Rose. Other notables included Doug Berger, Fred and Julie Schumacher, Earl

Watts, and Rick Sarraica. Upon arriving Rick announced that he left the base to his 16" Dobsonian AT HOME. After much talk of illegal wood cutting (use the stump for a base), Rick created a new base from three spikes, a ratchet handles, and a beach towel! There ought to be a prize for such ingenuity.

Once the sun was down, we were treated to very pleasant, shirt sleeve temperatures and good skies. A shadow transit across Jupiter was clearly visible in Frank's C-11. Deep sky objects were observed in abundance by the Dobsonian crowd. Binoculars were very popular with the chase-lounge and arm-chair crowd. A fine night was had by all with most people turning in by 2 or 3.

Dave Ambrose

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How good is Frank Dibbell's C-11?

"You can see the toenails on that Husky!"

(anonymous exclamation while viewing, through the C-11, various people and other animals standing on the peak)

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### YOSEMITE STAR PARTY

August 5-6 also saw a number of members at Yosemite Park's Glacier Point, invited by the Santa Cruz Astronomical Society, MIRA, & and the National Park System. Kevin & myself joined Jack Zeiders & Bob Fingerhut to caravan up Saturday morning. Already encamped behind the ranger station there were Tom Ahl & his son, Jim & Toni Eiselt, John & Norma Gleason, not to mention numerous members of the Santa Cruz & Diablo Valley Astronomical Societies. Chuck Olsen & his wife also showed up Saturday afternoon.

Overcast skies greeted us that afternoon but those who had set up Friday night were rewarded with crystal clear skies only the Sierra's can give. John Gleason said the opportunity was too good to miss & spent the evening doing visual work with his C-14. Early Perseids were surprisingly numerous & bright against the dark skies.

The skies cleared by sunset Saturday as we set up on the point. What a spectacular view with the falls running full down below and Half Dome dominating the eastern horizon! We viewed the sights through the telescopes until sunset, when Ranger Dave Balow gave a 15 minute slide show for the 100+ campers who gathered for the program.

Afterwards, we showed almost anything we wanted to see - the skies were that good. What was then considered to be a darkening in one of Jupiter's bands was later confirmed by Fremont Peak observers to be a shadow transit. The Red Spot, which was on the meridian at 10:40, was not visible to us. The USSR space station Salyut 7 transited our skies at around 10:00 at 17° to the horizon & a group went over to the lookout area to view that. On Friday night it had traveled through the Big Dipper's Bowl.

I did some naked eye and 11 X 80 binocular astronomy, having left the 8" at home. The North American & Pelican Nebulas stood out plainly against the Milky Way near Cygnus. What we miss with low contrast from the Bay Area!

Clouds shut off our skies around 12:30 & everyone packed it in at that, satisfied they'd had some good high altitude, dark sky observing to remember the next time they set up "down below."

Denni Frerichs

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# COMET COMMENTS

BY DON MACHHOLZ

Three new comets have been discovered in the past few weeks, one of them presently visible in the morning sky. Meanwhile, Comet Kopff remains in the evening sky, traveling through the rich Summer Milky Way. In our Past Discoveries section we look at three amateur discoveries -- one being the faintest comet of the 25 amateur discoveries (1975-1982) which we are presently studying, and the other two being the "double discovery" of Oct. 5, 1975.

Periodic Comet IRAS (1983j): This 15-magnitude comet was picked up by the Infrared Astronomical Satellite on June 28 at R.A. 01h 22m, Dec: -22°. This was IRAS' third comet discovery, the others being Comets 1983e and 1983 f. The orbit is determined to be elliptical, reaching perihelion (1.7 AU) on August 23 of this year. It is not expected to get brighter than magnitude 13.8. Orbital period is 13.3 years.

Comet IRAS (1983k): Yet another comet was discovered by the IRAS satellite on July 11 at magnitude 17. The comet was at R.A. 11h 58m, Dec. -49°, and moving northward. An early orbit determination shows the comet pulling away from both the Sun and Earth after being closest the Sun on April 28, 1983. As it continues to recede it will be getting fainter.

Comet Cernis (1983l): Human beings began discovering comets again with this find by Kazimeras Cernis of the USSR. He found the 11.5 magnitude object on July 19 at R.A. 02h 43m, Dec +12°. He used a 19", f/5 reflector at 65X. The comet was small, being 1.2' in diameter at discovery.

This is Cernis' second comet discovery; he co-discovered Comet Cernis-Petrauskas on July 31, 1980. Since then, Petrauskas has discontinued this hobby while Cernis has been comet-hunting at about 95 hours/year.

## PAST DISCOVERIES

Comet Meier (1979i): Rolf Meier of Ottawa, Canada, found this comet on the evening of Wednesday, Sept 19, 1979. At that time it was at magnitude 11.8 and at R.A. 13h 35 m, Dec. +68°. As with his first discovery (Comet 1978f in April, 1978), Rolf used the 16". f/5 reflector, 56X. 1½" field telescope owned by the Royal Astronomical Society of Canada. Meier had logged 35 hours of searching since his previous discovery. On the day of the discovery the Moon was New.

In the pre-discovery nights the comet was fainter, being magnitude 12.1, and near the bowl of the Little Dipper one month before discovery. It moved at about ½° per day and brightened at about 0.3 magnitude per month until discovery. It appears that any telescope whose user can sweep up twelfth magnitude objects would have picked it up sooner, but such instruments are rare, even today. So it appears that this comet was not discovered earlier because of its faintness. And, since it further brightened by no more than 0.4 magnitude after discovery it seems safe to say that if Meier had not found this comet, it likely would have gone unnoticed.

Comet Mori-Sato-Fujikawa (1975j): This comet was found on the morning of Oct. 5, 1975 by Hiroaki Mori, Yasuo Sato, and Shigehisa Fujikawa, all of Japan. This was Mori's first comet, Sato's fourth, and Fujikawa's second discovery. At the time of discovery that comet was at magnitude 10.8, and 68° from the Sun, in the morning sky at R.A. 08h 20m, Dec. +3°. The moon was new on that day. The comet was moving SE at 0.6° per day. It was diffuse with no tail.

# ADS

FOR SALE: Eyepieces in very good condition (Have revamped my collection).  
1 $\frac{1}{4}$ " Celestron Kellners, 40mm & 12mm - \$18.00 each.  
1 $\frac{1}{4}$ " Meade Research Grade Ortho's, 28mm, 16.8mm, 10.5mm - \$30.00 each  
University Optics 2" Barrel 32mm Erfle - \$50.00  
Meade 1 $\frac{1}{4}$ " 2X Barlow - \$20.00  
Call Bill Dillenges at (415) 792-9206

\*\*\*\*\*

## CELESTRON 5 FOR SALE:

Basic Celestron C-5 package, special coating, wedge, 1 $\frac{1}{4}$ " oculars, tripod  
T-adapter, T-rings for Canon and Konica cameras, tele-extender, eyepiece  
filter set, lens hood and weights, Tele-Phase IV drive; all in mint condition.  
Value \$1600, sale price \$750.  
Call Lloyd West at (408) 274-4382

\*\*\*\*\*

C-90 telescope with wedge, drive, tripod, qwicky knobs, colored filters,  
and barlow. Retail for \$819, asking \$475.  
Also, Sears refractor, \$125, or \$50 if purchased with above C-90.  
Call Tom Tuohy at (408) 736-4569 (after 5:30 PM)  
929 West Iowa, Sunnyvale, 94086

\*\*\*\*\*

10" f/6.6 Newtonian telescope with three eyepieces and accessories. \$285.  
Call Chris Angelos at (408) 688-3562  
609 Townsend Dr., Apt., La. 95003

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SJAA members and associates may place non-commercial ads in  
the EPHEMERIS at no charge. Ads will run for two months unless  
editor is notified of sale or desire to run ad longer.

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# SJAA

## CALENDAR

- Sept. 3 (Labor Day Weekend) Star Party at Fremont Peak State Park, Coulter Camp. Bring your telescope and stay all three nights!
- 6 New Moon
- 10 Star Party at Henry Coe State Park at the club site.
- 10 The Twelfth Annual Tehachapi Mountain star party, Tehachapi, Ca. Information in OBSERVATIONS.
- 16 Board meeting at Steve Greenberg's, 990 Ventura, Livermore, (415) 443-6638. Everyone is invited to attend! 8:00 PM.
- 17-18 AANC Annual Astronomy Conference, Lawrence Hall of Science, University of California, Berkeley. Information and registration elsewhere in the Ephemeris.
- 17 Indoor Star Party for those who don't want to make the trek to the AANC conference. Los Gatos Red Cross Building, 7:30 PM onward.
- 21 Full Moon
- 24 SJAA General Meeting at the Los Gatos Red Cross Building. 8:00 PM. This is the annual SJAA Slide and Equipment Night. Bring what you've got and tell us about it!
- Oct. 1 Star Party at Fremont Peak State Park, Coulter Camp. You don't have to have a telescope to attend.
- 8 Star Party at Henry Coe State Park at the club site.
- 15 SJAA General Meeting at the University of Santa Clara, Alumni Science Hall, room 102. "Eclipse in Java" will be given by Ernie Piini, Jack Peterson, and Bob Fingerhut. Bring the family and friends and enjoy this colorful slide show. 8:00 PM.
- 22 Indoor Star Party at the Los Gatos Red Cross Building. 7:30 PM onward. Food, slides, good conversation. Board meeting also scheduled.
- 29 Indoor Star Party at the Los Gatos Red Cross Building. 7:30 PM onward. We're advertising this as a public star party so bring your telescopes and have some fun in the parking lot explaining things such as what power your scope is and how far you can see!

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FULL DIRECTIONS & MAPS TO REGULAR EVENTS ON BACK OF CALENDAR



## DIRECTIONS & MAPS TO ALL SJAA REGULAR EVENTS

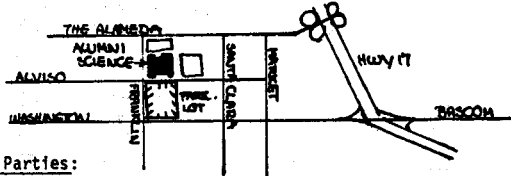
**General meetings:**

University of Santa Clara, Alumni Science Hall, room 102

Heading north on Hwy 17, exit at Bascum/Washington Ave (north), proceed to Franklin, then turn right.

Heading south on Hwy 17, exit at the Alameda (north), proceed to Franklin, then turn left.

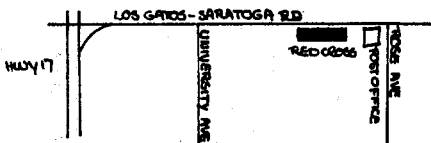
Go two blocks and turn left into parking lot. Alumni Science Hall is the 3 story building that borders the east end of the lot. Room 102 is on the ground floor and is best gotten to by entering the first door on the right side of the building when walking in from the parking lot.



### Indoor Star Parties:

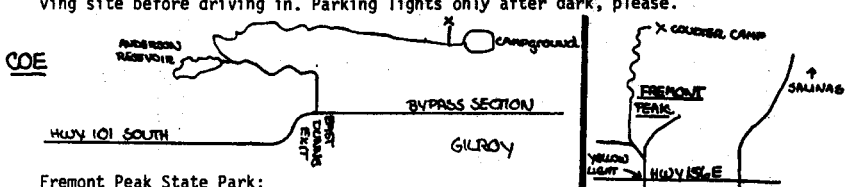
Los Gatos Red Cross Building, 18011 Los Gatos-Saratoga Rd., Los Gatos

From Hwy 17 south take the Hwy 9 (Saratoga) exit and continue up Los Gatos-Saratoga Rd. for about 1.5 miles. Turn right at Rose Ave., and turn right immediately into the parking lot of the Red Cross Building.



**Henry Coe State Park:**

Take Hwy 101 south towards Gilroy and take the East Dunne exit. Continue east towards the hills (past Anderson Reservoir) for about twelve miles to the park. Past the park entrance you will see old ranch buildings on the right and a horse trough on the left. The gate to the SJAA site is on a dirt road just before the trough. The gate is locked but the club combination is 4565. Always lock the gate after yourself. If arriving after dark, please park outside gate and hike in first to find an observing site before driving in. Parking lights only after dark, please.



**Fremont Peak State Park:**

Take Hwy 101 south towards Salinas. Take Hwy 156 East (San Juan Bautista) <sup>Hwy 101 S.</sup> for two miles to a yellow flashing light. Turn right and go about 1/2 mile to where road curves slightly to left and splits. Stay left for about 50 yards and then bear right when road splits again. Follow road for about 11 miles into park. SJAA sets up at Coulter Camp overflow area - it's visible as you drive up into main area of camp. Parking lights after dark, please.

## COMET COMMENTS continued....

Four days before discovery the moon had just "cleared" the morning sky and the comet would have been magnitude 10.8 and discoverable. One month before discovery the comet was magnitude 11.7 and at R.A. 07 h 53m, Dec +17°, some 45 degrees from the Sun. Before that it was generally too close to the sun to be easily discoverable considering its faint magnitude. This seems to bracket the possible discovery time as being between about September 4 through October 4 -- during this time the comet was undiscovered and brightening from magnitude 11.7 to 10.8 as it gradually increased its elevation in the morning sky.

It seems as though this comet remained undiscovered during this time because of its faintness and diffuseness. Such comets, as we are finding, go undiscovered for weeks after they first become observable.

Periodic Comet Suzuki-Saigusa-Mori (1975k): The second comet found on Oct. 5, 1975 was discovered by Shigenori Suzuki (his second), Yoshikazu Saigusa (his first), and Hiroaki Mori (his second - he had found Comet 1975j only 70 minutes before!), all of Japan. At discovery the comet was at magnitude 8.9 and at R.A. 11h 12m, Dec. +44°, just south of the bowl of the Big Dipper. The comet was moving less than 0.1° per day ESE and brightening at about 0.1 magnitude per day. The Moon was New. The comet was 51° from the Sun, in the morning sky.

Four days after discovery, the Moon would have just left the morning sky and the comet would have been at its (nearly) same position at magnitude 9.3 and quite observable. One month before discovery however, the comet was at magnitude 11.5 and R.A. 11h 02m, Dec. +43°, and a close 36° from the Sun. Some twenty days before discovery, when the Moon was nearing Full and about to enter the morning sky, the comet was at magnitude 10.7 and 41° from the Sun, a rather difficult object.

Because the comet was moving rapidly towards the Earth and brightening quickly, it appears that the comet was discovered close to its first opportunity for discovery. It passed 10 million miles from Earth in late October, 1975, and we now know it has an orbital period of 466 years.

### Ephemeris for known Comets

#### Periodic Comet Kopff (1982k)

Date(UT)	R.A.	Dec.	Est. Mag.	This diffuse comet, about 6' in diameter, moves through the Milky Way clouds -- this may make it difficult to pick out. It may be 0.5 mag. brighter than predicted. From IAU Cir. 3779
08-24	16h47m	-21°15'	10.0	
09-03	17 13	-22 40	10.2	
09-13	17 40	-22 45	10.5	
09-23	18 07	-24 25	10.7	
10-03	18 35	-24 41	11.0	
10-13	19 04	-24 33	11.3	

#### Periodic Comet Cernis (1983l)

08-31	02h19m	-00°53'	10.2	This comet was closest the Sun (32. AU) on Aug. 31, but we are still moving slowly towards it. It's not far from Mira. From John Bortle.
09-10	02 06	-15 12	10.0	
09-20	01 48	-10 13	10.0	
09-30	01-28	-15 12	9.9	

Don Machholz  
(408) 448-7077

## PRESIDENT'S SOAP BOX

### Non-Profit Status by Dave Ambrose

For years, many members of our organization have wanted a permanent observing site. A permanent site would give our club a permanent observatory and perhaps a place for meetings. The board has been working steadily in this direction for several years now.

Thus far, our primary financial motive power for a site has been the auction. However, the profits from the auction won't do the job alone. We will need additional donations to get a site. Presently, donors cannot deduct their donations from their income taxes. If we are to receive larger donations for this project, we must become a non-profit, "charitable", organization.

This change will be strictly for tax purposes and shouldn't materially alter the way the club is run or what we do. Our activities already fall into educational and scientific categories. They are by definition "in the public interest".

The catch is that we have to convince the IRS of this. Those of you who have been audited know how difficult it is to convince the IRS of anything! To get the charitable status, we need the advice and assistance of a lawyer. The consensus of the board favors paying for these efforts from the general fund or the "building fund" if we need to. There should be enough money in the general fund to allow us to hire an attorney. As soon as we find an appropriate lawyer we will probably give them the authorization to begin work on our behalf. If you know of any lawyers who are skilled in these areas (perhaps through your church), please contact me or any other board member. Getting the right lawyer could save us many hundreds of dollars, money which could be saved for the site. Clear skies and warm nights.

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### AUGUST BOARD MEETING

A major topic was our "charitable" status with the IRS. It has been decided to investigate hiring a lawyer to make the application and see it through the bureaucracy. We have made little progress in the past two years and it was felt that we cannot afford to wait. For more on this subject, see the President's Soapbox.

On a related subject, we voted to transfer \$500 from the general fund into a long term, high interest bearing account reserved for the permanent site. These funds came from our auction profits.

The board scheduled the October board meeting for the 22nd at the Red Cross. This coincides with an indoor star party and it is hoped that the change in location will bring greater participation by the general membership. If you have never been to a board meeting this is a good chance to see just what goes on "behind the scenes".

There was a discussion of a proposal to move the elections to some month when we get more people at the meetings. It was decided to table this issue until the October board meeting so we can get some more input from the membership. If you have any ideas or opinions on this, please call me or any board member and let us know!

Other items --

The board approved the purchase of an expansion memory board for the SJAA's Atari 400.

The board also voted to thank Mrs. A. B. Gregory for her gift to the Dr. Gregory award fund, and for her continued interest and support of the SJAA.

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New Business

1. Calendar
2. Treasurer's report
3. Building Fund Status
4. November's speaker
5. Site Survey

Old Business

1. Club brochures -- status report
2. Report on our application for non-profit status with the IRS
3. Club Computer Status

## GREAT RED SPOT EPHEMERIDES

Recent experiments indicate that observation of the Great Red Spot is quite practical shortly after sunset -- no need to wait for full darkness; indeed, a somewhat light sky reduces the glare and may help things generally. Moreover, there is a short period, these warm days, between sunset and dark during which seeing is particularly good, before the earth starts radiating the day's heat to the night sky.

Accordingly, the following predictions include some for which the sky will be rather light. Give it a try. You may find that seeing is better than it will be for the rest of the night.

Great Red Spot -- on Meridian PDT									
da	mo	d	h	m	da	mo	d	h	m
Th	9	1	8	6 pm	Su	9	18	7	16 pm
Th	9	8	8	54 pm	Su	9	25	8	2 pm
Tu	9	13	8	1 pm	F	9	30	7	9 pm

Although Jupiter will be visible low in the western sky until nearly December, after this month it will be too low to make useful observations. Therefore this column will be suspended until next spring, when Jupiter will once again be observable and I will have recovered the Spot. Thanks to those who took time to let me know of their successes. See you in spring.

Clear Skies,  
Jim Van Nuland

EPHEMERIS is published monthly by the San Jose Astronomical Association, 3509 Calico Ave., San Jose, Ca. 95124.

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## SPACE PROGRAM UPDATE

by Bob Fingerhut

### Space Shuttle Launch Delayed

The STS-8 launch has been delayed 10 days to August 30 due to the need to check out the Tracking and Data Relay Satellite (TDRS) further. Challenger was rolled out to the pad August 2. There also will be a slip in the STS-9 Spacelab launch to October 28.

### TDRS Relays Data

On August 7 TDRS relayed S-band how-data-rate transmissions from the Landsat 4 spacecraft. It has since successfully relayed high-data-rate, thematic mapper transmissions which require an autotrack capability by one of the TDRS antennas. This is the first thematic mapper data received since the X-band transmitter on Landsat 4 failed several weeks ago.

### Landsat 4 Spacecraft Needs Repairs

The Landsat 4 satellite has 3 major failures. A retrieve and repair mission by the Space Shuttle is now being considered. Landsat 4 has lost 50% of its electrical power and is expected to lose more. Its thematic mapper direct ground link has failed and so has its prime command and data handling computer. The backup D-prime spacecraft is now planned for launch February 15 on a Delta booster.

The electrical power problem is the most severe of the Landsat's problems. Wires connecting the 4 solar arrays to the spacecraft are being broken by differential thermal expansion due to the use of the wrong potting material. Loss of one more of the 4 panels could result in loss of control of the satellite. If a shuttle repair mission is to be attempted in 1985 or 1986, the Landsat must be lowered from its 435 miles polar orbit to a 335 mile orbit that the shuttle can reach, before control is lost. All the repairs that Landsat needs can be accomplished and have all ready been made on the backup D-prime satellite.

### Revised Shuttle Schedule

Mission STS-10 has been cancelled due to problems with the IUS upper stage. Missions 12 and 13 may be reversed. It would result in the Solar Maximum Satellite repair mission going first and allowing an additional month to fix the IUS before using it to launch the second Tracking and Data Relay Satellite (TDRS-B).

### Window Damage

One of the Challenger's windows was damaged on STS-7 by a micrometeorite or a piece of space debris. The damage is 0.0178 inches deep with a width of 0.0892 inches. The window has been replaced.

A Salyut 7 space station window also was struck and damaged on July 27 causing a loud crack heard by the cosmonauts. The 0.15 inch diameter crater that formed does not threaten the structural integrity of the window. The strike coincided with preparations for training exercise called "urgent escape from the station".

### More IRAS Discoveries

The Infrared Astronomical Satellite (IRAS) has discovered material circling the star Vega. Originally it was thought to be the planets of a solar system but it is now believed to be a very large asteroid belt. The IRAS also has discovered a 20 million mile long tail on the comet Tempel 2, which made its closest approach to the Sun in June. No tail had been observed previously.

### Delta Launches Schedules for September

1. RCA Satcom 2R - September 8
2. Galaxy 2, communication satellite - September 22

### Navstar Accuracy Increased for Civilians

The accuracy of Navstar signals available to civil users will be increased to 100 meters when the system becomes operational in 1988. Higher accuracy will be available to U.S. and allied military users. A production contract for 28 Navstar global positioning system (GPS) satellites was recently issued.

### Soviets Marketing the Proton Booster

The Russians have quoted launch fees to the International Maritime Satellite Organization (Inmarsat) to orbit maritime communications satellites beginning in 1988. They will be competing with Ariane and the space shuttle.

### Ariane Bookings

New orders have provided sufficient payloads for Ariane flights through at least the 24th. mission.

### French Minishuttle

France is proposing the Hermes minishuttle for development. It would be launched on an Ariane 5 launcher and would accomodate four crew members and have a small cargo bay.

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# renewal

If you haven't already renewed your membership to the SJAA you've probably discovered that you haven't received your latest Sky and Telescope. Renewals are still being taken, however, and this year we have changed the policy concerning mandatory S & T subscriptions. Also, if you were a bulletin subscriber in the past and want to continue, you are automatically an SJAA member now for the same price. (And it is time to renew for that). All rates are listed below. Please send renewal form, remittance, and if you want to renew S&T, their white notice card, to: Bob Fingerhut, Treasurer, SJAA, 340 Rio Verde Pl. #4, Milpitas, Ca. 95035. (408) 263-4455. Thanks!

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