

SJAA ephemeris

NOV '80

- Nov. 1 Indoor star party, Los Gatos Red Cross building, 18011 Los Gatos-Saratoga Rd, Los Gatos. 7:30 pm. Take Hwy 9 north off Hwy 17 south and go about a mile up the LG-S Rd, on right. Everyone is welcome.
- Nov. 7 New Moon
- Nov. 8 SJAA star party at Fremont Peak State Park. Take Hwy 101 south to Hwy 156 east. Go about two miles to yellow flashing light and turn right. Follow state park signs to end of road. (11 miles) Club sets up at Coulter Group Camp to the right after the ranger's house.
- Nov. 12 Voyager 1 reaches Saturn. More information on this in Observations.
- Nov. 15 General meeting at De Anza Junior College, Cupertino. Room S-34 near the planetarium. (Directions and map are in Observations). 8:00 pm. Our speaker this month will be Stan Kent of the Viking Fund, an organization dedicated to the exploration of space through public support. The fantastic "Mars in 3-D" movie will also be shown. Bring your friends!
- Nov. 21 Board meeting at Wolf Hanisch's, 1815 Cleveland Ave. San Jose'. 8:00 pm. 998-0861. All interested members are invited.
- Nov. 22 Full Moon
- Dec. 6 SJAA Star party at Henry Coe State Park. Take Dunn Ave. exit off Hwy 101 south at Gilroy. Follow Dunn east to end of road into park. The club observes on the dirt road just before the ranger's house (on left side). Dialing in 4565 on the SJAA lock will open the gate there.
- Dec. 12 Board meeting at Bob Fingerhut's, 340 Rio Verde Pl. #4, Milpitas. 8:00 pm. 263-4455. Everyone welcome.
- Dec. 13 General meeting at De Anza College, Room S-34. 8:00 pm. Speaker to be announced.
- Dec. 20 Indoor star party at the Los Gatos Red Cross building. 7:30 pm. Everyone welcome.

Ongoing through November: Mercury becomes a morning object on the 3rd. On the 4th, 45 minutes before sunrise one can see Venus a degree below Saturn. Jupiter lies 5° to the upper right of Venus and Spica is about 17° below it. A 25 day old Moon lies 6° above Jupiter. You can find Mars very low in the evening sky all month long.

"When it is dark enough, men see the stars."

Ralph Waldo Emerson

Kevin Medlock, president 278-8475

Denni Medlock, editor 278-8475

Observations

First off, if you've read the calendar page you know the SJAA has a new general meeting locale. Thanks to the efforts of Phil Hermas-meyer the club can now use Room S-34 across from the Minolta Planetarium at DeAnza College in Cupertino. From what's been described it can sit about 100 people and has all the A-V equipment we might need. At the last general meeting in October this site was discussed with the members present and voted in. The only stipulation that the college makes is that the SJAA man telescopes every clear Thursday night. At the recent board meeting it was agreed that two telescopes would be adequate. The club is now asking for volunteers to help show the public planetarium audiences the real sky. The hours would be from around 8:30 to 10 pm and if we get about two dozen people, one person would only have to do it once every three months. Not bad for a free meeting hall with no time limits. If interested please call Phil at 252-5529.

The is map bulletin. Once a year the maps to all of the SJAA's stomping grounds are published so somewhere in this bulletin one will find directions to the new meeting room at DeAnza College and maps to all of the observing sites the club regularly uses.

Speaking of bulletins: I don't what was worse—my making the mistake of calling last month's bulletin the November bulletin, or the fact that only a few people noticed it! So this bulletin is November, Book II.

"The sheriff must have had his head in his ear." -anon.

And the sheriff referred to is the one who kicked the club out of Sanborn Canyon Park last Oct. 4 and ruined a beautiful star party night. To prevent future mistakes such as this the rangers at Sanborn, who were not to fault in this, and the SJAA board have worked out a way for notification of our close-in star parties. Hopefully, this will not happen again.

This bulletin editor has a book "North Star to Southern Cross" that was either dropped or thrown on the road near the upper parking lot that night. The owner can claim it by giving me a call.

The next general meeting will feature Stan Kent from the Viking Fund. In the June, 1980 SJAA bulletin a description of their purpose was published but in short, they believe only public support will show the government that the space program really can survive through the joint effort of private funding and Federal funding. Their first project is to raise enough money to keep the Viking Lander craft on Mars operating by raising \$1million in private funding. This goal is on the way to being met. At the October board meeting the members voted to donate to the Viking Fund \$100, which will be present to Stan Kent at the November general meeting. All people interested in donating privately may write the Viking Fund, P.O. Box 735, San Pablo, Ca. 94806, or make a donation into the club's Suggestions box at the November meeting.

The Viking Fund is also sponsoring a Saturn Encounter at the S.F. Palace of Fine Arts, Nov. 11-12. Along with Omni Magazine the society is presenting a two day odyssey of planets through visual and audio media, with

emphasis on Voyager 1's encounter with Saturn. Tickets may be purchased at all Macy's, Capwell's and Emporium stores.

"He's an expert on atmospheres. He's going to be working on Titan." Gerry Rattley

"How's he going to get there?" Jim van Nuland

On December 6, if the Coe star party is too cloudy or too far for you to go consider this: the South Bay chapter of the L-5 Society presents a lecture on Jupiter at the Rosicrucian Planetarium at 7:30 pm. Everyone welcome.

Shuttle Update: OMS Pods reinstalled on Columbia.

"The two Orbital Maneuvering System pods that were removed from the Space Shuttle Orbiter Columbia for structural strengthening have been reinstalled .

At the same time, the three space shuttle Main Engines were removed and are undergoing modifications in the Operations and Checkout Building. The modification includes the installation of new fuel pre-burner liners and refractory shields, and a new liquid oxygen pump. The three engines are to be reinstalled in the Columbia during the second week of November.

Roll-out of the Orbiter to the Vertical Assembly Building is still scheduled for Nov. 23rd, with transference to the launch pad slated for Dec. 26, preparatory to launch March 10.

As of Oct. 12, there were 2112 tile cavities on Columbia and NASA estimated that a total of 2980 tiles have to be bonded to the vehicle. For the week a net of 426 tiles were added to the spacecraft." This from Defense Daily, 9/20/80, via Bob Fingerhut. Thanks.

Starting at the first indoor star party in January will be the SJAA's telescope making class so if you are interested in building a an instrument, or just part of one, keep this in mind. There will be more information in the December bulletin. The class will be an ongoing one structured similarly to the Chabot Telescope Makers' Workshop. No fee, no structured lectures, and a lot of advice.

The Fall, 1980 issue of the Journal of Academic T-Shirts has arrived and new in the astronomical category this season is a white on royal blue star chart of Ursa Major. All the brighter stars are shown with their greek designation, name, magnitude, type, and distance from earth listed against a background of hour angle and declination. Other astronomical T-shirts are a navy on orange Hertzsprung-Russell Diagram, and a black on tan Nicholas Copernicus portrait. All shirts are \$5.75 plus .75 postage and handling, in S,M,L,XL, but if the club can order 12 of more the price begins dropping for both shirt and postage. I'll have the Journal available to view at IDSP and general meetings for those interested. There are a number of other scientifically significant T-shirts available, also.

Sometime in the (hopefully) near future I'll research into getting some SJAA logo shirts printed, too.

Many thanks to those who contributed this month (November, Book II). Deadline for the December bulletin will be Nov. 16. Thanks again.

Denni

"Did you know it's almost impossible to observe through your finder when its solar filter is on?" Jim van Nuland

occulting zone

Occultation Results (as of October 17, 1980)

Here are reports on the recent efforts on the part of SJAA members.

(213) Kleopatra/SA0128066 1980 Oct 10 This asteroidal occultation resulted in discovery of a moon of Kleopatra, by Gerry Rattley and Bill Cooke! Klemola at Lick reports a miss by photoelectric observation. The object may be 5 - 10 miles in diameter. Gerry reports a fuzzy appearance during close approach; this may indicate a cloud of debris -- Kleopatra may be an ex-comet.

The asteroid itself was about 0.45" west, and was caught by four observers in Washington, as well as some Canadian observers. Also observing locally were Don Machholz, Jack Peterson, and Ralph Lowd, all of whom obtained misses. Several members of PAS also observed.

(78) Diana/SA075392 1980 Sept 4 Attempted by Bob Fingerhut, Jack Peterson, Don Machholz, Gerry Rattley and myself; we saw no events. The asteroid passed over Texas, and was well-measured by ten observers who obtained seven chords. No secondary events were reported, so this asteroid is probably single.

Graze of ZC1420 at Patterson, 1980 Oct 4 The weather was perfect, and the cusp of the waning moon did not interfere. Absolutely beautiful to watch. All of the 14 observers obtained events; 13, timings. There are enough dim flashes to indicate that this is probably a new double star. My analysis has been delayed by the asteroidal activities, but I'll get the results plotted soon and report further. Please get your reports to me ASAP.

Graze of ZC2399 at Greenfield, 1980 Aug 20 Nine stations on this weekday event, and despite the wind and dust, and the shortage of time, everyone obtained data! All are to be commended, especially the five first-timers.

Some of you have seen how badly the observations fitted the predicted profile; Dr. Dunham suspects that this may be due to the poor quality of the limb data on this part of the moon.

Coming Attractions

To get involved in moon-hunting you need graze equipment and somewhere to observe on short (2 day to 2 hour) notice. And the desire to lose some sleep.

(94) Aurora, 1980 Nov 2 (Saturday pm) This late evening event is expected to pass over South America, but a 1.5" shift would put it over us. Aurora is only 12.4 mag., but I'll try it anyway. If last-minute astrometry indicates a northward shift, I'll call around and get observers out for it. You might watch from home if its easy to do.

(213) Kleopatra, 1980 Nov 6 (Thursday late) This is a "must" despite the great distance (5") from us, as it has the SJAA satellite with it. See me for finder charts. No expeditions are planned.

(134) Sophrosyne, 1980 Nov 24 (Sunday evening) Biggie of the year -- crosses most of U.S. Sky & Telescope should have an article on this; if not I have the finder chart. Only 1.1" shift is needed to put it up here.

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

COMET COMMENTS

As we roll into November, we have both a recent comet recovery and a comet discovery, both by professionals, and both very faint. But most important of all we have three periodic comets in the morning sky, all brighter than magnitude 10. This will be the last full month to view these celestial visitors as two will be moving south for the winter.

Last year at this time there was an un-discovered comet in the evening sky. At magnitude 10 in October, 1979, and magnitude 9 in November, this comet slowly moved through Ophiuchus and into Scorpio in the south-western sky. Then it slipped, still unnoticed, behind the sun and reappeared in the morning sky in the Southern Hemisphere where it was discovered at magnitude 5 on Christmas Eve, 1979, by William Bradfield. You saw it early this year, Comet 1979L, as it again sailed north at magnitude 5, fading to 10 by late February. See what you missed?

Periodic Comet Reinmuth 2 (1980n): This comet was recovered by P. Jekabsons at Perth, Australia, at magnitude 8, just north of M 19. With a 6.7 year period, this comet is not expected to get much brighter.

Periodic Comet Russell 2 (1980o): K.S. Russell has done it again. On photographs taken on September 28th by J. Barrow, he has discovered a 17th magnitude comet. (He also had discovered one on September 6th.) This comet has a 7.2 year period and is not expected to get much brighter.

As stated, three periodic comets are now visible in small scopes. Info below.

P/Comet Stephen-Oterma (1980g)

Date	RA	Dec	Mag	I observed this comet at mag. 9.7, condensed, and about 3' across. It moves N through Orion and into Taurus. In early Dec. it makes a very close pass by M 1.
10-18	04:58.5	+03 ⁰ 44'	10.3	
10-28	05:10.3	05 53	9.6	
11-07	05:19.7	08 48	9.1	
11-17	05:26.4	12 39	8.6	
11-27	05:30.3	17 24	8.3	
12-07	05:31.8	22 49	8.2	

P/Comet Tuttle (1980h)

Date	RA	Dec	Mag	I observed this comet at mag. 8.9 with some condensation and about 4' across. In Nov. it moves through the Big Dipper and into Leo, then nose-dives south and out-of-sight by early December.
10-18	09:22.9	+54 ⁰ 47'	11.4	
10-28	09:46.9	47 31	10.6	
11-07	10:06.9	37 12	9.8	
11-17	10:24.1	22 02	8.9	
11-27	10:40.1	00 02	8.3	
12-07	10:56.9	-25 07	8.1	

P/Comet Encke

Date	RA	Dec	Mag	This comet might appear to be an easy target but it's large size makes it difficult, like M 33 or M 101. On Oct 18 I saw it at mag. 9.2, a size of 10 and diffuse. Try low power. It will be traveling just S of the Big Dipper 4. through Coma Berenices and into Virgo.
10-18	07:06.9	+59 ⁰ 51'	9.3	
10-28	11:22.0	51 22	7.7	
11-07	13:25.4	21 56	7.2	
11-17	14:13.0	01 50	7.1	
11-27	14:45.7	-10 29	7.3	
12-07	15:31.6	-19 42	7.8	

All three of these comets were visible to me in 20X80 binoculars on Oct. 18 from Loma Prieta. They are not too difficult. Give them a try.

Comets in Their Eyes: This year we have been observing the people, who, past and present, have discovered comets. The list is not complete, but representative of the comet-discoverers. I did not include those professionals who happen to find comets on photographs they take for other purposes from the large observatories. Nor did I include those active comet-seekers who have yet to discover a comet.

These people have had other interests besides hunting comets, and I have tried to point that out where I can. For many, hunting has not been to merely, "write my name across the sky," (although one comet discoverer is known to have said that), but rather a "relaxing challenge", a chance to get to know the sky better, a motivation to get out of the house and get into the sky. For some, the by-product has been the comet discovery.

I would not be surprised if we are seeing the "last of the big-time comet hunters." A satellite placed in earth orbit, or base on the moon, could out-discover any team of earth-bound observers. Hopefully, it will be awhile before this happens.

As I said, this list is not complete. Next month: how to report a comet discovery.

Don Machholz
(408)448-7077

The Great Henry Coe Close-in Cloud Party

The SJAA's ten-member subcommittee of congenial optimists (and three guests) met at Henry Coe State Park on the evening of October 11th. By sunset, it was already so cloudy that the park ranger didn't put the SJAA lock on the gate until after the first two cars arrived, because he didn't think anything would be happening.

The first four vehicles to arrive were driven by people who had never previously been to the site, so the ranger's verbal instructions that the observing site was "just a short way down the road" soon had us spreading rapidly across the countryside in four directions. Since my son Daniel and I had just followed the only patch of clear sky south from S.F., we were tempted to continue following it. However, the road didn't go that way, so we turned around and got more detailed directions from the ranger, now on his way out to help one of our group who had nearly slid off the road at a steep spot a couple of miles further on.

Just as Dan Barker's and Sam Fotopoulos' car arrived, the gearshift rod pulled completely out of its housing. After half an hour of poking and prodding, several members got it back together, and Dan pulled in to park, amidst applause and cries of relief. ("How do you spell relief? G-E-A-R-S-H-I-F-T!") A discussion followed about the number of stars visible ("Look! Three stars!" "That's three more than five minutes ago!"), and the relative merits of gamma versus x-ray telescopes for doing astronomy through heavy clouds, or the probability that a CCD might be sensitive enough to pick up starlight through the cloud deck.

The general consensus was that, if the clouds didn't go away, everyone would leave around 9 p.m. The deciding vote for me was cast by a lightning flash in the distance, so I left the more optimistic at 8:30 and drove back home to the accompaniment of sporadic splatters of light rain on my windshield.

Other attendees included Mark Gang, Jeff House, Paul Mancuso, John Ridgely, Ginny Stark, Jean Straube, Bruce Swayze, and Michael Welch with his guest Cliff Joy. Certificates of terminal optimism will be given to any of the above who show up at the next cloud party.

Steve Greenberg

Stellar Manners; or How to Behave in a Red Light District

Although I've been interested in astronomy for many years, I only started going to star parties three years ago, and to the SJAA star parties about a year ago. I'm mentioning these facts because not all the behavior that I'm writing about has been observed at SJAA get togethers. However, enough has been so that I made the mistake of opening my mouth on the subject at a recent board meeting. For doing so I was immediately volunteered into writing this item.

(1) Arrivals. Try to come before dark (at least in summer). When circumstances, such as winter (or your schedule) make this impossible please think twice about the manner of your arrival. If it's a couple of hours after sunset, people may have already had enough time to stop talking, set up some equipment, get dark-adapted, and even open up their camera shutters for an astro-photo. If you think that this might be the case, when you are a couple of city blocks away from the observing site, pull over to the side of the road, stop your car, turn your headlights off and your emergency flashers on. The exact spot at which to do this is very easy to determine, either by listening carefully for angry screams and/or gunfire, or by using some common sense. (The latter can be made especially easy if someone from the club will donate a sign to put in the road, saying "Observing/Photography in progress. Please stop here.") At this point there are several possible choices of behavior. (A) Wait a few minutes to get dark adapted, and then drive in slowly (using parking lights, if necessary) to a parking spot. (See also item 2); (B) Find someone with a red light (who is also heavily insured) to walk in front of your car, thus guiding you in without headlights. (C) Walk up to the observing site, and find out who, if anyone, would be fatally disturbed by your headlights. After personally checking with them and agreeing that you can come in with lights on, do it right away, and as fast as safety considerations allow. (D) Flip on your infra-red spotlight, swing the IR image intensifier scope into place, and come in at 55, scaring the h--- out of everyone. However, (A), (B), or (C) will probably result in a quieter neighborhood. Hopefully screams of "lights out!" "Who's got the shotgun?!", and "Who's the idiot with the lights on?" will become fond memories revived only at bull sessions about "the good ol' days."

(2) Parking. If you arrive early with only a little equipment, or plan to leave early, park away from the action so that latecomers with heavy equipment can move their stuff in without having to leap parked cars in a single bound. (B) Please try to park so that when you leave, if you have to turn your headlights on, they are pointed away from the observing site. Also, if you originally back into a spot facing away from the site, you won't have to turn on those bright (to dark-adapted eyes) white backup lights when you leave. (C) If, in order to leave, you must turn your car lights on, find out whose work might be ruined, and arrange with them just when you can best do it. The blood curdling scream that results from the painful impact of a high intensity photon beam on dark-adapted retinas can be quite unsettling. A quieter and more pleasant observing time will result if some thought is given to the manner of your departure.

(3) Equipment Set-Up. Try to do it early, to avoid disturbing others with your screams as your poorly lit screw-driver slips rapidly out of its slot into your waiting finger. (B) If someone is next to where you need (or want) to be, remember that some people need more instrument elbow (or nose) room than others. (For instance, Cyrano de Bergerac needed more room to rotate his head than normal.) Better yet, ask if there's room for you to set up, and then keep it as compact as you can. Forty people can set up telescopes on a helipad, or they may need a football field. Politeness and consideration allow excellent social compaction with minimal friction.

(4) Flashlights, 300,000 Candlepower Quartz-Halogen Aircraft Landing Lights, etc. (A) The former category is acceptable for star parties under certain circumstances. The use of red filters is essential, if you do not want to disturb or ruin other peoples' dark adaption. Even a small AA cell penlight can pose a hazard. (Red filters are available for a few cents from photo stores, or from army surplus dealers. Even red nail polish spread on the bulb works well.) If color film chips are being loaded into a Schmidt camera no light of any color can be tolerated. It's best to check, and to avoid pointing even a red light at the business end of anyone's equipment. (B) Large auto or aircraft searchlights may be fun to light the landscape up with, or a mountain top a mile away, but remember: (1) some astronomers are mean and armed to their sharp pointy teeth; (2) a bright light makes a perfect target; (3) a word to the wise should suffice.

(5) (A) Music, (B) Bull Sessions, and (C) Other Random Noises. (A) I've been to star parties where the noise level would have put a boiler factory to shame. Close Encounters at 80 db on the right, Holst's The Planets at 90 db to the left, and at 110 db to the solar plexus, Star Trek in counterpoint with Superman! Each person with a tape deck thought that hearing his own music, rather than someone else's noise was essential for properly viewing the stars. No one had thought to ask the others to turn the sound down a little, when, with just a twist of a knob it could all be drowned out. Meanwhile, those people who enjoy contemplating the majesty of the cosmos quietly got to be bad guys by having to shout the noise down to a tolerable level. If mood music is essential to your observing, a selection at low volume can carry quite a distance, if the night's quiet. If loud music is what people prefer then stereo earphones and a long cord may be the best solution. (B) Bull sessions. Some people begin to observe at midnight and like to sleep beforehand. Others observe 'till midnight or so, and then go to sleep. If you avoid holding talkathons near those people who are trying to sleep, probably only the people you're talking to will object to your opinions. Voices on a quiet night carry a great deal farther than most people seem to suspect. (C) Other Random Noises. Cries of, "Wow! Did you see that meteor?" or "Come here and see what the earthquake did to my telescope!", as well as normal conversations on subjects such as how to remove nesting racoons from a 12½" Newtonian, are to be expected and for the most part are welcome parts of a star party. But when it comes down to listening to my theories of _____ (fill in the blank), at 80 db for an hour around midnight, somebody's patience or temper may be broken followed rapidly by the proud owner of all three theories.

(6) Summary. The application of some common sense and politeness will almost certainly result in more enjoyable star parties for everyone.

*****WANT ADS*****

FOR SALE: 10" f 5.6 telescope, 60X700mm guide scope, photo-adapters, drive corrector/Dec. motor, Sun filters, plus books and magazines. \$700.00. Phone David Smith, 739-1061 days, or 988-5550, ex 3619 nights.

FOR SALE: Swift Mark II zoom telescope. 15X60 power. Tripod included. Leave message for Linda at (415)864-2333.

(and for all you SJAA fish people)

FOR SALE: 55 gallon fish tank with all salt water equipment—
175.00

10 gallon fish tank with equipment—\$25. Call Richard Colpaart at 287-1292

Membership list additions:

New members

Jack & Patricia Parker
425 Lily Ann Way
San Jose, Ca. 95123
578-8031

Ronald Seefred
151 Rocky Creek Rd.
Woodside, Ca.

Eva Yablonski
132 Tait Ave.
Los Gatos, Ca. 95030
354-8064

Chris Colvin
264 Blossom Hill Rd.
San Jose, Ca. 95123

James L. Lohnmann
778 Coffeewood Ct.
San Jose, Ca. 997-2653

Bulletin Subscriber

Paul Mancuso
1665 Arizona Ave.
Milpitas, Ca. 95035
946-0738

New Address

Antonio Nafarrate
1060 Terra Noble Way
San Jose, Ca 95123
251-6816

New Phone

Dave and Mary Ambrose
(415) 524-0869

Carlton Perry
400 Industrial
Campbell, Ca 95008
866-5744

Add

Charles Chew
393 So. 3rd. St.
San Jose, Ca. 95112
295-4542

(as of Dec. 20th)
Kevin & Denni Medlock
15022 Broadway Terrace
Oakland, Ca. 94511

"You know how bad Sunnyvale is? Even the astroturf is dying!"
Frank Dibbell

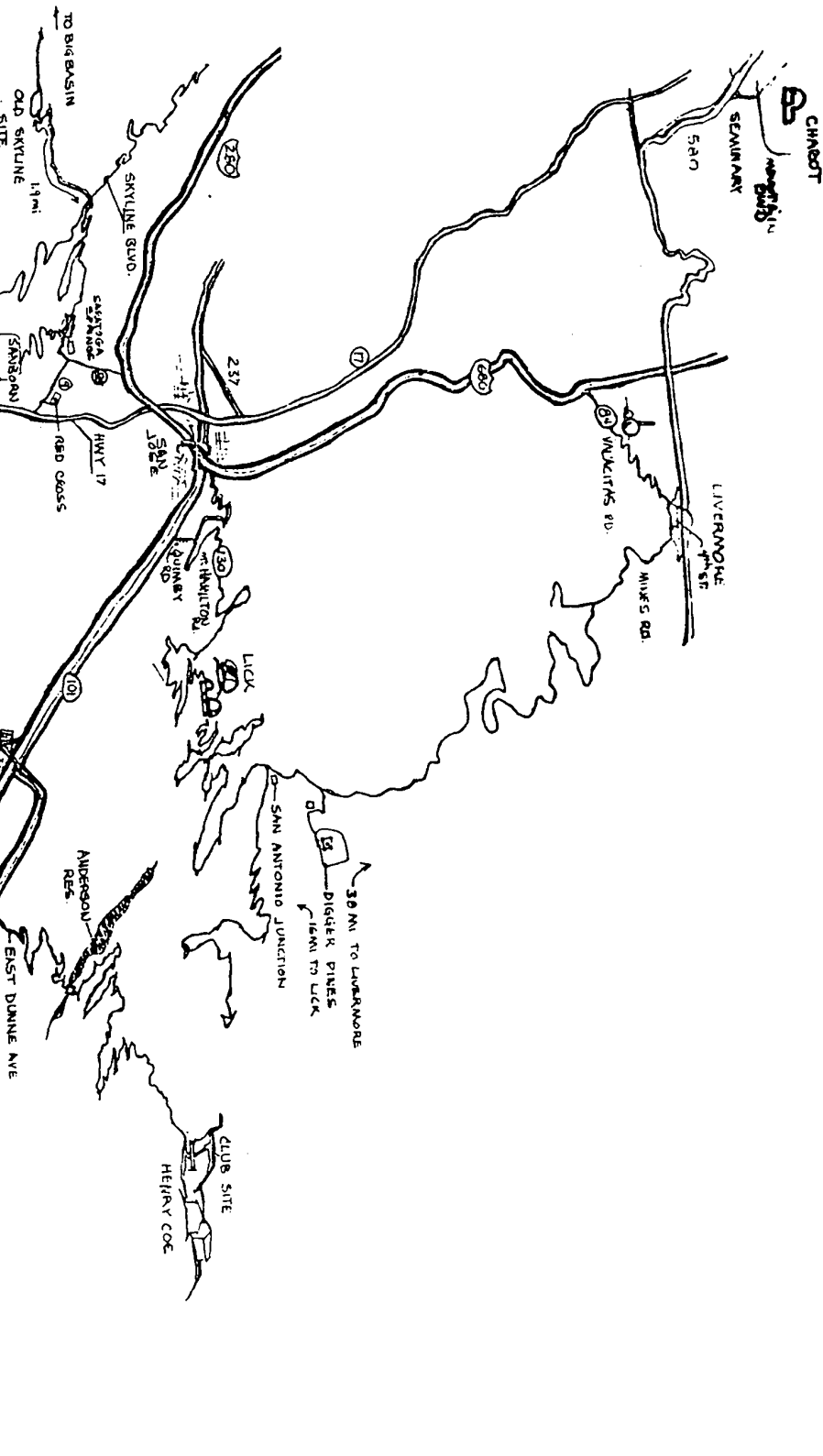
SAN JOSE TO:

QUEST: MOUNT TO 930 EXT 580 TO SEMINARY,
 TO SEMINARY AT STOP TO MOUNTAIN BLVD. RT. ARROUND
 MOUNTAIN, LEFT INTO GATE NEARTOP.
 CODE: 101 SOUTH MORGAN HILL BYPASS TO E. DUNNE AV.
 FOLLOWING DUNNE TO END.

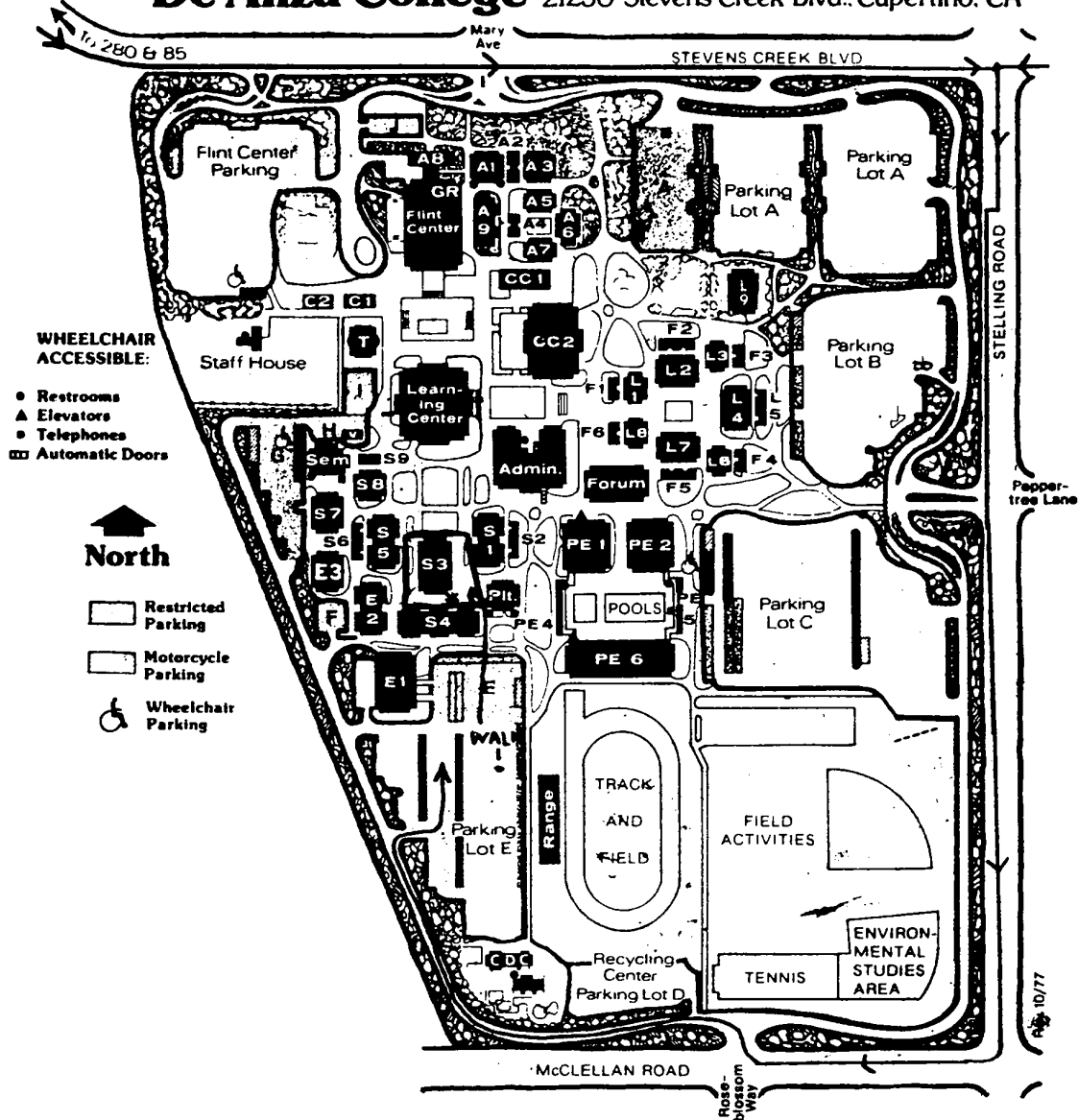
FIELD: 101 SOUTH MORGAN HILL BYPASS
 TO 101 TURN RT AT FLASHING LIGHT AT SAN JUAN
 CAUTERA, BEARL AT FORK 4 M. FOLLOW SIGNS.
 AFTER MATE. HWY 17 TO SANTA CRUZ. @ SOUTH, TO
 MOUNTAINVILLE. @ TO 101 LEADY GULCH SOUTH TO
 101 THEN TAKE AS ABOVE. 1200/1000
 E. SANTA CRUZ. HWY 17, S. TO SANTA CRUZ,
 RT. EXT. AT SUMMIT. OVER PASSWAY. LEFT
 UP SUMMIT. @ 10 MI. RD. JOGS TO RT. TURN UP
 LEFT FORK. AFTER PAVEMENT ENDS. 15 MI.
 3 CLEARINGS. DOWS IS NEAR TOP RIDGE LOOKING
 INTO SANTA CLARA VALLEY
 RED CROSS: HWY 17 TO LOS GATOS. WEST ON
 LOS GATOS. SACRAMENTO RD. @ 1.5 TO 2 MI UP RD. ON
 RT.

SAN JOSE CANYON: HWY 17 TO LOS GATOS. HWY 9 (LO-SAN JOSE RD)
 TO SAN JOSE. HWY 9 INTO MOUNTAINS TO SAN JOSE SPRINGS.
 LEFT BEFORE BRIDGE. SAN JOSE RD. AT RT SIGN WE USE THE
 UPPER PARKING LOT.

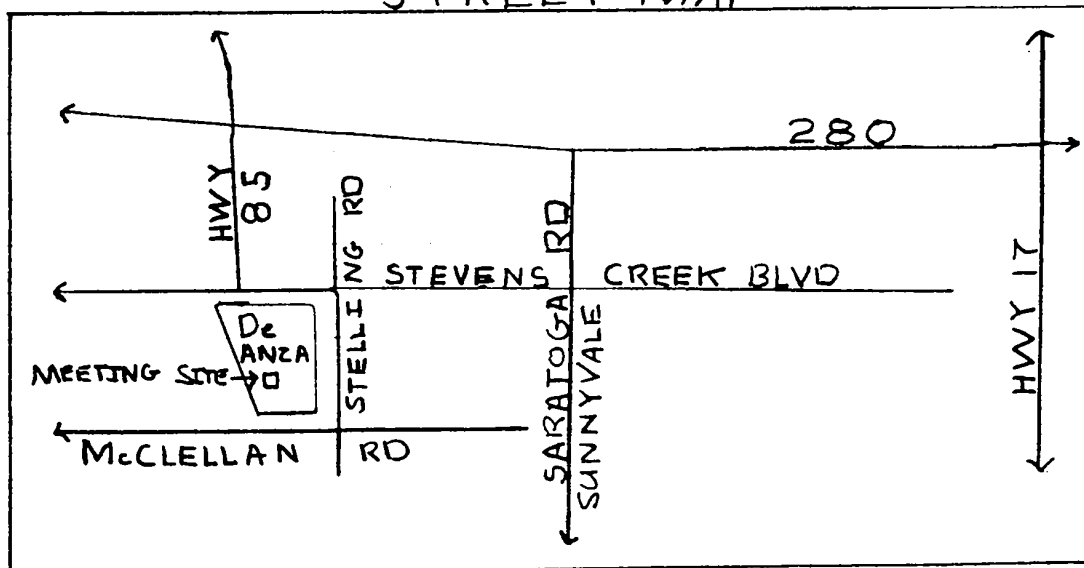
DIGGER PINES: 680 TO WILKINSON, CHANGES TO HOLMES MOUNTAIN (MORE)
 TURN AT 4th ST. AT AT MINES RD. LEFT AT TURN AS ROAD
 GOES UP FAIRLY STEEP GRADE. (SIGN ON LEFT AT RT. SECTION)
 FIRST LEFT, CHANGES TO CATTLE GUARDS. 15 MI. SIGN ON LEFT
 RT. SW. MT. HAMILTON RD. @ 10 MI. CHANGES TO DUNNE LICK. CONTINUE @ 2 MI
 EAST SAN ANTONIO JUNCTION. SIGN ON RT. \$3.00 per hour.



De Anza College 21250 Stevens Creek Blvd., Cupertino, CA



STREET MAP



DEFINITELY NOT TO SCALE !