THE SAN JOSE
ASTRONOMICAL ASSOCIATION

EPHEMERIS

FEBRUARY 1985

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*      FEBRUARY  23RD  GENERAL MEETING      *
*         ANOTONIO NAFARRATE PRESENTS:      *
*  OPTICAL FABRICATION TECHNIQUES FOR MAKING *
*         SCHMIDT CORRECTOR PLATES          *
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FEBRUARY	2	Los Gatos Red Cross build. Indoor star party. Doors open at 8 p.m.
FEBRUARY	5	Full Moon
FEBRUARY	8	The Peninsula Astronomical Society presents SOLAR ECLIPSE 84'. (see article inside)
FEBRUARY	9	Los Gatos Red Cross build. Indoor star party and board meeting. Doors open at 8 p.m.
FEBRUARY	12	Last Quarter Moon
FEBRUARY	16	Annual field expedition for astronomical observation at Henry Coe State Park. See map inside. Use the clubs lock and combination 4565 to enter gate. Please close and lock the gate behind you. Jim Van Nuland still promises to have plenty of RC Cola on hand to celebrate the re-opening of park since last springs earthquake. (see Paul Barton's article on "cold Feet")
FEBRUARY	19	New Moon
FEBRUARY	23	General meeting 8 p.m. at the University of Santa Clara Alumni Science building. Board nominations and elections. Antonio Nafarrate will follow with a presentation on optical fabrication techniques used to make Schmidt corrector plates.
FEBRUARY	27	First Quarter Moon
MARCH	3	Los Gatos Red Cross Building. Indoor star party. Doors open at 8 pm. Don Machholz will be giving an informal talk on the up comming Messier Marathon.
MARCH	6	Full Moon
MARCH	9	Board meeting 8 pm at Bob Fingerhut's home.
MARCH	13	Last Quarter Moon
MARCH	15/16	Messier Marathon part I at Loma Preta. (see article)

5TH ANNUAL ASTRONOMICAL AUCTION

As of this Ephemeris, the 5th annual SJAA Astronomical Auction will be held on May 4th at the Los Gatos Red Cross building. Mark your calendars. No times have been set yet. Please watch for a mailing and more information in the months to come.

AND THE LIGHT SHINES IN DARKNESS

BY: CAROL AND BARRY BEAMAN

Barry and I were assigned to run the July 28th public viewing session at Quarry Hill Observatory. We opened the observatory a little before dark since Saturn and Jupiter were both up. It was a clear, warm night and we had a good turn out. I was showing Jupiter through a small 4.25" reflector on the front lawn and Barry had the observatory's 12.5" reflector trained on Saturn.

There were about 30 people in line awaiting their turn at the larger scope's eyepiece. As one rather athletic looking fiftyish gentleman approached the ladder he asked Barry to help him up to the eyepiece. A little surprised, Barry guided him up the 12 step ladder. Midway up, the man whispered: "I'am almost totally blind, I just want to see a star. Where do I look?" At first Barry started to point toward the eyepiece and then he realized that that wouldn't help much. He took the man's hand and guided it around the eyepiece, instructing him to look right in the middle. As the man leaned over, he exclaimed: "I see it, I see a star!" Barry started to explain that the object he was looking at was the planet Saturn, but it really didn't matter. The man said that he couldn't see anything more than the light, but he was satisfied.

As they reached the bottom of the ladder the man thanked Barry and said: "That's the first time I've ever seen a star!" As the man's companion guided him back out of the observatory, the young woman next in line gasped - "My gosh, he's blind!" The dome fell strangely silent as the other people all pondered the idea of never seeing starlight.

THE ARTIFICIAL COMET

BY: DON MACHHOLZ

As widely publicized, an artificial satellite was scheduled to release a barium cloud on Christmas morning, 1984. However, real clouds prevented proper observation and aircraft placement so the dump took place on Dec. 27. I was on Loma Prieta that morning and was able to observe it.

Using both 7X50 binoculars and a 10-inch telescope, the cloud was seen for nine minutes. It first appeared as a fuzzy star, then a small ball with definite edges. This expanded rather rapidly, and when it was about 0.3 deg. in diameter, a "wrinkle" developed across the center. As the cloud continued to expand, a tail formed on it. It was a wavy tail, and very faint.

The release was made 70,000 miles from Earth. From our location it was just below the star Spica, 30 deg. high in the SE sky. At no time did it become brighter than mag. 4. It was barely visible to the naked eye. After observing this I went back to looking for real comets.

FROM THE EDITORS DESK

BY: JOHN GLEASON

The long awaited 1985 Membership roster is in the process of being edited. During this process I discovered that we are missing a lot of telephone numbers of many members. I would like to include as many of these numbers as possible in the new roster. Below is a list of members for whom I do not have telephone numbers. If your name is listed below could you please call my number (415) 790-9250 and leave your telephone number on the answering machine. I am looking at a March 85' printing date for the up-dated roster publication.

BILL ALBRECHT
NORRIS ALLEN JR.
DAVID ANDERSON
JOHN BALLY
DAVID BAROSSO
JIM BAUMGARDT
LEE BONNEAU
MATT BOWMAN
THOMAS BREITLING
RON CARMICHAEL
DAVID COOPER
JOE COPSON
RAY COUTCHIE
PETER CURZON
BRUCE DEGRAAF
FRANK DIBBLE
NICK DOUKAS
PAUL DUNN
OWEN DURDEN
STEVE EDBERG
MATHEW EDWARDS
DAVID FERRY
ANDY FRAKNOI
BRUCE FRANK
RICHARD FRAZIER
RICK MORALES
MARY SCHIFFMANN
HELENE SEEFRED
RONALD SEEFRED
NORM SPERLING
JOSEPH SUNSERI
MICHAEL SUTORIUS
EVE TANNER
ALAN THOMETZ
PAUL TREJO
MARVAN VANN
DONALD VANZANDT
JUDY WARREN
EDWARD WEINBERG
CLARENCE FUNK
PETER GRADY
JOSEPH GULINO
JAMES HERRELL JR.
FREDERIC HOLLAND
JEFF HORNE
ALFRED HORTON
PATRICK JONES
EDWARD KINNEY
STEVEN KISSINGER
FRED KLEIN
HOWARD KUHLMAN
HARRY LEITNER
ART LUMLEY
STEVE MANDELL
PETER MANLY
JACK MARLING
CONNIE MASSEY
DOUG MCCARDLE
JAMES MCMAHON
JOSEPH METZ
DAVID MILLIGAN
BRIAN MINNIE
GARY PALMER
JACK PARKER
RALPH PARLETTE
GARY PARMETER
VINCE PECORA
DOUGLAS PENA
CATHY PINHEIRO
JOSEPH PYCIOR
ERNIE PYER
RICHARD RANDS
RICK REIS
JOHN RHODES
MICHEAL RYAN

30TH ANNIVERSERY

August 26th 1985 marks the SJAA's 30th year. Jim Van Nuland has a number of interesting items from those first meetings that your editor hopes to share with you in the August Ephemeris. If any of the membership has any trivia that they would like to see get into that issue, than please forward it to your editor.

JG: "Gene, you were a member in 1955?"
JZ: "Yea, he was 32 years old!"

A GIANT GRANT FOR A GIANT TELESCOPE

BY: ERICA GOODE

The world's most powerful optical telescope, to be put atop an extinct Hawaiian volcano, will become a reality through a $70 million grant from a private foundation.

The grant, from the William M. Keck Foundation - a $500 million trust created by a California oil magnate - to the California Institute of Technology is believed to be the largest single private gift ever made for a scientific project.

Sometime in 1986, engineers will begin construction of the giant "10-meter" telescope - equipped with a unique mirror almost 400 inches across, and made up of 36 hexagonal segments - in the cloudless, calm air high on Mauna Kea, Hawaii's 13,796-foot high inactive volcano.

Once it is finished, UC and Cal-tech astronomers will have at their disposal "the world's most fantastic time machine," allowing them to watch the unfolding of cosmic events - the birth of stars and formation of galaxies - that took place 12 billion years ago.

Building the telescope has been the dream of UC scientists for more than two decades. The honeycomb-like, segmented-mirror design was the brainchild of physicist Jerry Nelson and his colleagues at UC's Lawrence Berkeley National Laboratory.

Originally, UC officials hoped to be able to raise the $85 million to $100 million needed to build the telescope, perhaps with some participation by another university. Last April, they announced that UC had received a $36 million gift from the estate of Marion O. Hoffman, and even went so far as to christen the observatory with Hoffman's name. But finding additional money to complete the effort proved difficult, and legal problems complicated the Hoffman bequest.

UC officials decided to approach Caltec hoping the private university, renowed for its astronomy department, would be able to make up some of the difference. But instead, Caltech came up with the $70 million Keck grant, an amount that will cover nearly the entire cost of the project.

Now the telescope and observatory will bear Keck's name, and although UC will be responsible for operating the telescope, its ownership will be held by Caltech. For UC scientists who have spent years working on the project, the Keck grant has created mixed feelings. "From the UC point of view, it's a little disappointing that UC's share in all this is reduced," said Nelson. "We had originally thought that we would have sole use of the telescope, and now that use will have to be shared with Caltech astronomers."

The fate of the $36 million Hoffman bequest - still held by UC - remains in question, and will be decided by next march

UC and Caltech scientists said they hope the telescope will begin operation in 1992. Mauna Kea, where numerous smaller telescopes are already located, is considered an ideal spot because of its clear sky, high above the atmospheric watervapor that blocks infrared wavelengths and can make telescopic images "fat and fuzzy."

THE SHADOW CAST BY VENUS

BY: DON MACHHOLZ

Last year at this time I wrote about the fact that the planet Venus can cast a visible shadow. At that time the planet was in the morning sky and mag. -4.1. Well, now Venus is in the evening sky, and it will be at its brightest (mag. -4.6) in late February. Three nights ago I observed the faint but distinct shadow of my hand cast upon a sheet of white paper while I was at Saratoga Gap in the Santa Cruz Mountains. That can mean only one thing...the shadow is back!

I would encourage you to try observing the shadows that Venus is now bright enough to cast. From a dark observing site, use a white piece of paper and hold it perpendicular to Venus. Then place your hand, or a pencil or whatever in front of it, two or three feet away. You should see the shadow of the object on the paper. Shaking it may make this more apparent. Even at great separation the shadow should remain sharp. you might even notice that under some conditions the light from Venus is not steady, but scintillating. This is due to the "shadow band" effect that I mentioned last year.

It would be interesting to try photographing this. High contrast film would be needed. I'd like to hear of any results you obtain.

DEEP SKY NOTES -- FEBRUARY

BY: STEVE GOTTLIEB

The region surrounding Zeta Orionis is filled with telescope challenges beckoning the winter observer. Let's start with Zeta itself - the eastern most star in the belt of Orion. I find this mag. 1.9 star an excellent challenge because located just 2.6 seconds of arc away is a difficult companion. This distance is comparable to the "double-double" (Epsilon Lyrae) separations and you might think that Zeta would split with comparable ease. But in this case, at mag. 5.5, the companion is 3.6 magnitude or over 27 times fainter than the primary star!

On a very steady night when Zeta shines with no accompaning turbulence, look just SSE for a relatively faint point of light. In my C8, the contrasty pair forms a striking duo on still nights using 222X. I have also split this pair cleanly with a 5" off-axis mask on my 13.1" Odyssey at similar magnification. Though theoretically within the range of a 2"-3" scope, it would present a severe observing challenge. What is the smallest aperture that has pulled this duo apart? Owners of larger reflectors or SCT's may want to experiment with off-axis masks.

Just 15' ENE of Zeta is a large emission nebula NGC 2024. This object would certainly be a showpiece of its own if it was not overpowered by the brilliant glare from Zeta. Of course it is Zeta's energy which ionizes the gas cloud NGC 2024 and causes it to glow. The observing trick here is to use a medium power and then place Zeta just outside your restricted field of view. A narrow band pass nebula filter such as a UHC filter will enhanse your view of this nebula. With my C8 at 100X, I see a large cosmic "V", 15' - 20' in size, with the east side of the V slightly longer. a careful look a the base of the V reveals that it is broken, with a small gap occurring at its SW corner. Splitting the 2 sides of the V is a dark rift running down the center in a north-south orientation.

Surrounding Zeta are a number of reflection and emission nebulae incasing moderately bright stars. The easiest of these is NGC 2023 located 27' ESE of Zeta. In this case a mag. 8 star is surrounded by a 5' roundish glow which is quite obvious in my C8. Slightly fainter is IC 432 which can be found 27' north of Zeta. Again we are dealing with a mag. 8 star enveloped by an easy diffuse glow about 4' in diameter.

The supreme challenge in this area is certainly IC 434 and B33, the bright and dark nebulae which forms the famous "Horsehead Nebula." Before tackling the elusive horeshead itself, move Zeta just beyond the north edge of your eyepiece field and employ a fairly low power eyepiece. A standard nebula filter (UHC or Daystar 300) adds necessary contrast, though I have heard the Lumicon's H-Beta filter works even better in this case.

This past December 22, Mary Engle and I had a good look at this region in Bob Kestener's 18" at his observatory in the Sierra foothills near Fiddletown. First I noticed a long strip of very faint emission nebulosity running due south of Zeta through the full field. The narrow band, with a 1 deg. length running well south of NGC 2023, is catalogued as IC 434 and it must be obvious with avertaed vision to view the horsehead itself. A careful use of averted vision revealed a half - circular dark indentation protruding into the east side of IC 434 midway along its length and also just south of NGC 2023. There are 2 "pointer" stars just south which aid in pinpointing the precise location. This indentation into IC 434 was catalogued by E.E. Barnard as B33 and only long - exposure photographs reveal its striking horsehead appearance. B33 is actually a dark dense cloud of dust and gas and recently astronomers have pinpointed 4 regions of probable current star formation at its edges.

SOLAR ECLIPSE 84'

The Peninsula Astronomical Society presents SOLAR ECLIPSE 84' for it's February 8th meeting. SOLAR ECLIPSE 84' will bring the two exciting eclipses of the year to those of us who stayed at home. Veteran "eclipse chasers" Jacques Guertin and Ernie Piini will narrate this color slide, print and movie presentation. Featured will be the astrophotgraphs of Huguette Guertin, Rick Baldridge, Joe Schrock, Bill Sorrells, as well as the narrators. Collectively the photographers have over 50 credits for publication of their photos in national Astronomy magazines. The program will be held in Appreciation Hall on the Foothill College Campus, Los Altos Hills, on Friday, February 8th at 8:00 PM. No Charge. For further information, you can call Bob Shelton at 408-257-8525 (eves)

COLD FEET

BY: PAUL BARTON

This little story was brought on by an evenings outing at Grant Ranch.

Us older citizens, (over 39) love to reminisce*, but whose to listen? *Seems to be no such verb, but there should be.

Back in the good old days, cold feet were a problem too. Put on nice warm heavy wool sox on nice warm feet. Slip them into toasty warm boots and then go out into the cold, cold world. This is guaranteed to give you cold feet, frozen yet, if the weather is cold enough.

The problem is a little dewy perspiration will form and break down the heat insulation of the wool sox. I hear there are improved sox these days, but you had best eliminate this perspiration anyway.

Be sure your boots and heavy sox are dry. Dry in an oven for a half an hour or so and cool, if necessary. Then put them outside to really cool. The floor level temperature is usually low enough so your feet will not perspire much, barefooted, or in light sox and slippers. Be sure your feet are dry and cool. Now go outside and wait 5 minutes before putting on the chilled heavy sox and boots (snow pax), for a reasonably comfortable outing.

Fifty years ago, in the northern states, like Montana, a guest was expected to remove his boots and leave them outside. Commonly slippers would be provided. But visiting in stocking feet was quite acceptable. On upon leaving, one would go outside and sit for 5 minutes to chill the feet, then resume the cold boots. This applied even at the grocery (general) store, at the bar or where ever of the small farming community. At the dance hall you brought your own dancing shoes.

I once froze my feet by going into a bar for no more than five minutes, without removing my boots. Frozen (frosted) feet feel like walking on stilts. They even sound like stilts on wood!

ASTRO ADS

FOR SALE: Unitron 4" equitorial refractor, Model 152 (circa 1970) with all original accessories plus motor drive, drawtube has been modified with 1.25" star diagonal to accept 1.25" eyepieces. $1000 FIRM. Contact: William R. Dellinges, 5271 Dupont Ave. Newark, CA 94560, 415 792-9206

QUESTION OF THE MONTH

" Why are there so many ladybugs at professional observatories?"

TRAVELS WITH CHARLIE TELESCOPE

BY: DENNI MEDLOCK

Those of us with portable telescopes who take them out observing have a myriad of stories to relate concerning amusing incidences which have happened while still on the road en route to some observing site. Since we tend to travel with everything but the kitchen sink , most often the tube assembly of the largest telescope is delegated to a roof top view, and from that position has formed the basis of many a hilarious situation.

In the early days of our travels with telescopes, our vehicle was a 1968 VW Squareback with a roofrack that held the tube assembly for Kevin's 12" named Starlost. (As a side note, this telescope has subsequently been owned by SJAAer's Don McGlauflin, Lary Webster, Cris Pratt and now Joe Sunseri). As was the fashion with telescope makers at the time, the sono tube was covered with silver contact paper. Perched atop the Squareback, optics et al, it was a curious site to say the least.

On our 1974 trip to Kitt Peak the scopes (Kev's 12" and my 8") went with the 12" in its usual place on top. By then we had gotten used to the curious stares given us from sidewalks and passing cars. It seemed very few people knew (or could figure out) what that thing atop the car was. One waitress in a hamburger joint near Winslow didn't at first ask for our order. Instead, she asked what that silver tube on the car was. When we said it was a telescope she turned triumphantly to the crew in the kitchen and said, "I win! it's a telescope!"

Arizona proved to be a great place to travel with the scopes. One man asked Kevin if the 12" was a one man sub. (In Arizona?!") We were asked what type of gas we were using by a road crew we had to stop for in the desert. And, since many people travel the same tourist route, ie, canyon lands, petrified forest, painted desert, etc., we came back to the car after hiking the meteor crater to find a somewhat familiar station wagon parked next to us, its occupants leaning against the VW, apparently waiting for our return. Their comment: "We've been following you for the last 500 miles. What is that thing on top of your car?"

Having gotten used to people not knowing what it was we were rather surprised when, after pulling into a rock shop in old Tuscon, the clerk behind the counter said, "That's a nice telescope you have there. It's a 12", isn't it?" After he picked us up off the floor he introduced himself as John Luthnes, public relations photographer for Kitt Peak. And then he smiled and said, "I have something you might like," and pulled from a dark, dusty corner an 18"X24" black and white arial photo of Kitt Peak, which he gave to us. Who says telescopes can't open doors?

The 12" saw us through many, many star parties at Fremont Peak. Returning home one Sunday morning we were on Hwy 101 about to make the Hwy 17 interchange to Oakland when we were passed by a car that had a woman leaning out the passenger window and yelling, "My husband's an astronomer too!" Who else do you think it was but Jean(Mrs. A.B.) Gregory, in a very uncharacteristic pose!

The 12" passed to other hands but still maintained its roof top position with dignity. Don McGlauflin, in a hurry to get to a grazing occultation the SJAA was having in Morgan Hill one evening, was pulled over in his Mazda by the CHP for speeding. His explanation included that he was late for an important astronomical event and that scientific data would be lost if he didn't get there with his telescope (gestering to the tube assembly on the roofrack). The officer, no doubt dazzled by the strangest excuse for speeding he had ever heard, and intimidated by the silver thing atop the car let Don go without a ticket!

As the years went on and the telescopes grew in size so did the vehicles used to haul them. When the 18" came into being we acquired a 1968 Chevy van that soon had roofrack on top and an "End Light Pollution" sticker on the bumper. The 18" tube assembly box for the declination housing. At the time it did not look like a conventional amateur telescope.

We found a man waiting for us when we came out of a store in Modesto on the way to the 1970 Riverside Conference.

"That's a nice telescope you have, but what's that thing underneath it?" he asked. (At the time the 18" had a blue 6" RFT mounted to the declination box as a finder scope.)

Kevin: "That's the telescope."
Person: " I know, and it's a nice one, but what's that thing underneath it?"
Kevin: "That's the telescope."
Person: (the implications slowly dawning) "Oh..... "

Our summer of 1980 trip cross country to the Stellafane Convention had its high points. We were mistaken for a balloon chase team somewhere in Wisconsin (ballooning is big in the Midwest, evidently bigger than astronomy) and had to silently endure the overheard conversations of a pack of Boy Scouts in an A & W in Missouri. ("It's a telescope." "Naw, it ain't no telescope . It doesn't look like one. It ain't even white.")

1500 miles worth of smashed bugs had collected on the front surfaces of the tube assembly by the time we arrived in Vermont and we weren't about to show off our pride and joy with a multi layer coating of wings attached so we found a car wash in Chester, and, you guessed it, ran the van, telescope and all through the spray wash!

If you've ever been to Stellefane you know it can be difficult to find even though the conference site is only about two miles out of Springfield. What signs the Springfield Telescope Makers put up Thursday night are gone to souvenier hunters Friday morning. We discovered this problem as we approached the site and realized we probably and overshot the side road. (it's in a dense hardwood forest. You can't see anything but the road.) Turning around, we stopped to ask the first of about a dozen cars that were behind us if they knew the way to Stellafane. The driver just stared at us in disbelief.

"I was following you. After all, you're the one with the telescope on top. I figured you would know where you were going." Wonderful. Despite this misplaced confidence we all found the site.

Rocky Mountain National Park is a very busy tourist attraction, busy enough to have three entry kiosks. We took the far right one and were paying the day use fee when we noticed that the ranger in the far left station was waving and yelling at us excitedly.

"Where did you by your telescope? he yelled across to us.

"I made it," Kevin yelled back.

"Where did you get the kit?" the ranger asked back.

We eventually pulled over and in the ensuing conversation discovered that the ranger had a C-5 and was looking for something larger. On seeing the 18" he thought it was just what he was looking for. I never did ask him what size vehicle he had.

Travelling with a telescope in full view of the public can give you a good education in human nature. We've had people yelling questions at us about astronomy from cars doing 70 mph down the freeway. I don't know how many pictures of the scopes have been shot from passing cars. I know of one amateur who got so tired of all the looks and questions he came up with a great solution. Doug Berger has a 16" green Dobson named Edelweiss, the tube of which he also carries atop his car. His approach to the problem? He has a custom bumper sticker made that when placed on the side of the tube reads: "BERGER THE HUMAN CANNONBALL"

COMET COMMENTS

BY: DON MACHHOLZ

No comets have been discovered or recovered during the past month. There are three comets still visible in our skies, though, and I'll include the positions for them. We'll then look at Halley's Comet. Some of you may wish to attempt to photograph it although it is still rather faint.

The year 1984 saw a total of 21 comets discovered or recovered. This ties for the record with the year 1983. Eight returning comets were recovered by professional astronomers, this is about the average for the past ten years. Meanwhile, eight new comets were discovered by professional astronomers, more than for the average year. Five of these finds were by the Shoemakers. Amateur astronomers found five comets, the average for the past ten years being 3.3. Let's wait and see what the year 1985 brings!

DATE	R.A. (1950)	Dec.	Elong.	Mag.
Comet Levy-Rudenko (1984t)				
01-30	16h 44.8m	+65°12′	95°	9.2
02-04	15h 32.5m	+71°26′	104°	9.3
02-09	13h 18.4m	+74°36′	113°	9.4
02-14	10h 56.9m	+71°23′	121°	9.6
02-19	09h 37.8m	+64°03′	127°	9.9
02-24	08h 58.7m	+55°52′	131°	10.3
03-01	08h 38.0m	+48°16′	131°	10.6
03-06	08h 26.3m	+41°42′	130°	11.0

This comet moves swiftly through the north Polar region, it will be above our horizon all night. This is our brightest known comet this month, it may even brighter than predicted here.

Comet Shoemaker (1984s)				
01-30	05h 33.4m	-17°21′	120°	10.3
02-04	05h 52.8m	-16°22′	121°	10.5
02-09	06h 11.3m	-15°10′	123°	10.7
02-14	06h 28.9m	-13°50′	124°	10.9
02-19	06h 45.7m	-12°25′	124°	11.2
02-24	07h 01.5m	-10°58′	124°	11.4
03-01	07h 16.6m	-09°33′	125°	11.7
03-06	07h 30.8m	-08°11′	125°	12.0

This comet might be difficult to see because it's so diffuse. Look for a fuzzy object appearing like M 33, but 3′ in dia. Some observers have reported a tail. It will be in southern Orion, then north of the star Sirius.

Periodic Comet Schaumasse (1984m)				
01-30	15h 26.3m	-04°52′	79°	10.5
02-04	15h 36.7m	-05°27′	82°	10.7
02-09	15h 46.2m	-05°57′	84°	10.8
02-14	15h 54.8m	-06°24′	87°	11.0
02-19	16h 02.4m	-06°46′	90°	11.1
02-24	16h 09.0m	-07°05′	93°	11.3
03-01	16h 14.7m	-07°21′	97°	11.5
03-06	16h 19.3m	-07°35′	100°	11.6

This comet appears small, and the magnitude predictions may be off by a bit. The comet is moving away from the sun and holding at about 1.2 AU from the earth.

WHAT GOES AROUND COMES AROUND--HALLEY'S COMET

One of the best ways to understand the path of Halley's Comet of the next two years is to visualize it making several passages across the sky. Each passage is different than the others, but each begins and ends with a solar conjunction. That is, the comet will emerge from the sun's rays in the morning sky, slowly (taking a few months) move across the stary sky, then disappear in the solar glare in the evening sky. While we know exactly where it will be at any particular time, the brightness, or magnitude of the comet is still (and always will be) debatable. Here are the passages of the comet which most concern us.

We can expect to pick it up with amateur telescopes next August as it emerges into the morning sky from the solar glare. This is the beginning of passage #2, listed above, which should be memorable for northern Hemisphere observers. During those months the comet will brighten to naked eye visibility while nicely placed in our evening December skies.

PASS	BEGIN	MAGNITUDE	DECLINATION	OPPOSITION	END
#1	6/20 1984	about 21 to 17.	+14° to +11° to 17°	12/23 1984	6/12 1985
#2	6/12 1985	about 15.5 to 4.0.	+17° to +22° to -10°	11/18 1985	2/06 1986
#3	2/06 1986	4.0 to 4.5 to 4.0 to 12.3.	-10° to -47° to -5° to -9°	04/14 1986	9/18 1986

The important thing to remember is that the comet is best seen away from light pollution. A good test you can conduct this very evening is to go outdoors and look for the Andromeda Galaxy, M 31, with the naked eye. If you can see that, then you will probably be able to see Halley's Comet with the Naked eye less than year from now. If you don't know where to find M 31, then now is the time to begin learning the sky. Buying astronomy magazines from the grocery store, borrow books from the library, and visit the planetarium. You won't regret it.

Passage #3 will give very good views from the Southern Hemisphere, as the comet will be south of the equator for the whole passage. While it will be higher in the sky for southern observers, it will still be visible to mid-northern observers for nearly the whole passage. The longest tail should be displayed then too. By late April 1986, the comet will be climbing in our southern sky but getting fainter, beyond naked eye visibility.

Presently we're in Passage #1; the comet is in northern Orion and too faint to be seen in most telescopes. But it can be photographed with large instruments, the positions are listed below. The distance to the sun and earth is in millions of miles. The comet will be about magnitude 19 for the whole month, and probably appear as a faint star with even fainter nebulosity around it.

The comet seems to be pulling away from us, and that is due to the earth's orbital motion. We are looking at it "out the rear window", so to speak, when it's in the evening sky. But fear not, it is heading toward the sun, its present speed is 36,425 miles per hour.

DATE	R.A. (1950)	Dec.	Dis. to Sun	Dis. to Earth	Elong.
01-30	05h 15.4m	+12°36.3′	465.9	483.2	129°
02-04	05h 11.1m	+12°44.6′	461.6	485.6	123°
02-09	05h 07.3m	+12°53.6′	457.2	488.5	117°
02-14	05h 03.8m	+13°03.2′	452.8	491.6	111°
02-19	05h 00.8m	+13°13.4′	448.4	495.2	105°
02-24	04h 58.2m	+13°24.2′	443.9	498.9	100°
03-01	04h 56.0m	+13°35.4′	439.4	502.7	94°
03-06	04h 54.2m	+13°47.0′	434.9	506.6	89°

1985 MESSIER MARATHON

BY: DON MACHHOLZ

Our Seventh Annual Messier Marathon will be held on two weekends this year. The first will be March 15-17, the second in March 22-24. Each will be held at a different site. The first weekend, during which 109 of the 110 Messier Objects should be visible, will be at Loma Prieta. On the second weekend, from Grant Ranch Park, we should see 108 of the Messier objects.

The object of the Messier Marathon is to locate and observe most of the 110 galaxies, clusters and nebulae in the Messier Catalogue in one night. The catalogue is now 200 years old, it was developed by a comet hunter named Charles Messier. These objects are so placed on the celestial sphere that 109 of them can be observed in one night during March of each year. The moon helps to determine the days too, we pick weekends when the moon is not too bright.

Loma Prieta is in the Santa Cruz Mtns. To get there, take Hwy. 17 S. to Summit Rd. Go east on this road for 5.5 miles to your first stop sign. From here go left onto Mt. Bache Rd. for 3.3 miles. At this point the pavement ends, keep going 1.2 miles to the observing site - a wide area along the dirt road. Several months ago a sign was posted on the mountain to keep the four-wheelers and shooters away. It has worked too. But astronomers are still welcome. In our area astronomical twilight is at 7:40 PM PST in mid-March, so you need not get there before, say, 6 PM.

Weather permitting, March 22-24 will find us at Grant Ranch Park, at the upper site if it's dry (unlikely), at the lower site if the ground is still wet (the norm). The upper site is found by driving up Mt. Hamilton Rd., to 3.4 miles past Grant Ranch Park. On the left is a dirt road, take that for another 1.3 miles to the set-up site. The lower site is in the park itself, at the southern parking lot. Because there are facilities in the park, you may want to come early and picnic. You might find our lock on the gates to either site. (combination is 4565)

You can do the marathon from nearly any site, as long as the horizons are low and the site is dark. Not everyone who attends are involved in the Messier objects, some observe the planets and NGC objects. Very few even stay out all night. And we find that Saturday nights are more popular than Friday nights. If you want observing order sheets or additional notes on the Marathon, please call. (408) 448-7077.

SPACE PROGRAM UPDATE

BY: BOB FINGERHUT

SHUTTLE LAUNCH SCHEDULE REVISED

A new schedule has been issued for the first six missions to be flown in 1985.

51-C: Discovery is scheduled for launch Jan 23 between 1:15 and 4:15 PM EST. This Department of Defense mission will use an IUS upper stage.

51-E: Challenger is scheduled for launch Feb 20. There will be a crew of six and a mission duration of four days. The payload will be two communication satellites, Telesat I and the second Tracking and Data Relay Satellite (TDRS-B). The Telesat will use a PAM upper stage and the TDRS an IUS.

51-D: Discovery is scheduled for launch March 19. The crew of seven will be up for 6 days. Included in their mission will be deployment of the Syscom IV-3 communications satellite and retrieval of the Long Duration Exposure Facility which was left in orbit in April 84.

51-B: Challenger is scheduled for launch April 30. The seven member crew is scheduled for seven days in space. The main payload is Spacelab 3.

51-G: Discovery is scheduled for launch on May 30. The crew of 5 is scheduled for a seven day flight. Discovery will carry three communication satellites, Telestar 3-D, Morelos - A, and Arabsat - A. All will use PAM upper stages. It will also carry the Spartan 1 (Shuttle Pointed Autonomous Research Tool for Astronomy) which was bumped from mission 41-F.

51-F: Challenger is scheduled to fly this mission on July 9. This is a 7 day mission with a crew of 7. The payload will be Spacelab 2 with an igloo and three pallets.

WEATHER SATELLITE LAUNCHED

NOAA-F has been put into a stable polar orbit after launch on an Atlas-E rocket. This satellite carries search and rescue equipment so that it can detect emergency distress signals from ships and planes around the world.

RUSSIAN HALLEY'S COMET PROBES LAUNCHED

Vega-1 and 2 were launched on Dec. 15 and 21st to study the planet Venus and Halley's comet. They will drop capsules on Venus in June 1985 and continue on to probe Halley's comet in March 1986. The spacecraft were launched from Tyuratam on Proton boosters.

USSR TESTS SPACEPLANE

The USSR flew the fourth space test and re-entry of a subscale spaceplane vehicle on Dec. 19th. It made one orbit and then landed in the Black Sea.

ESA APPROVES DEVELOPMENT OF RETRIEVABLE SPACE PLATFORM

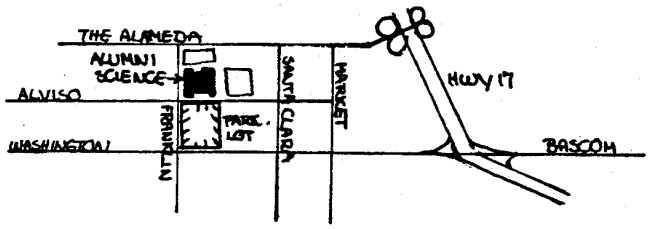
The European Space Agency has approved development of the Eureca retrievable space platform. The initial flight will be in early 1988. It will be released from the space shuttle for a six month free flight with a payload of materials sciences, life sciences, communications and propulsion experiments.

JOINT US/USSR MANNED SPACE FLIGHT PROPOSED

The possibility of a joint mission will be discussed soon. The type of joint mission is yet to be determined.

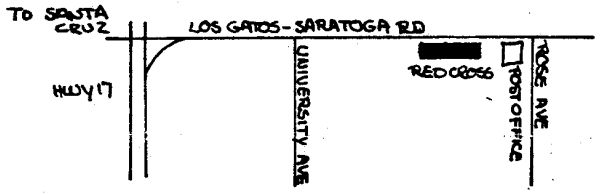
GENERAL MEETINGS:

University of Santa Clara, Alumni Science Hall, room 102. Heading north on Hwy 17, exit at Bascom/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 the parking lot. Alumni Science Hall is the 3 story building that borders the east end of the parking 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. MEETINGS BEGIN AT 8 PM.



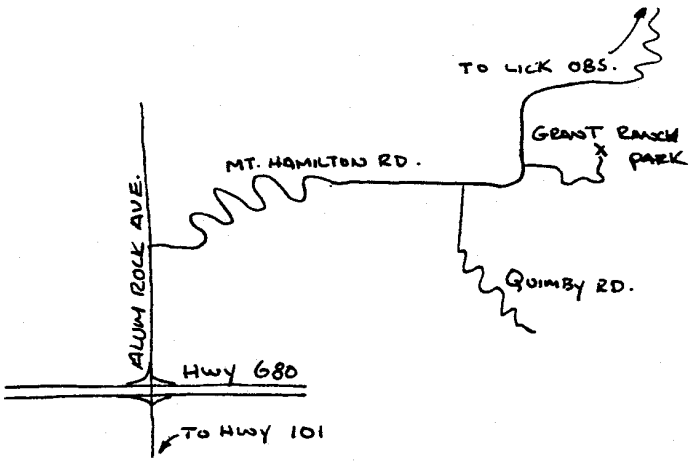
INDOOR STAR PARTIES:

Los Gatos Red Cross Building, 18011 Los GatosSaratoga Rd., Los Gatos. From Hwy 17 south take the Hwy 9 (Saratoga) exit and continue up Los Gatos Saratoga road for about 1.5 miles. Turn right at Rose Ave., and turn right immediately into the parking lot of the Red Cross Building. OPEN AT 8 PM.



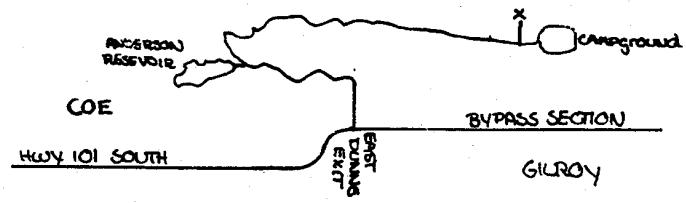
GRANT RANCH COUNTY PARK:

This site is a new one for the SJAA so come and try it out. Located on Mt. Hamilton Road, halfway between San Jose and Lick Observatory. To get to Mt. Hamilton Road, take Hwy 101 (either direction) to Alum Rock Rd. Go east up Alum Rock Road to Mt. Hamilton Road and follow it. Grant ranch is just past the Quimby road intersection. After sunset the park front gate will be locked with the SJAA's combination lock. Use the sequence 4565 to open, but be sure to lock the gate behind you, coming or going. There are two gates, the lock may be on the exit gate, if so enter the park from this gate.



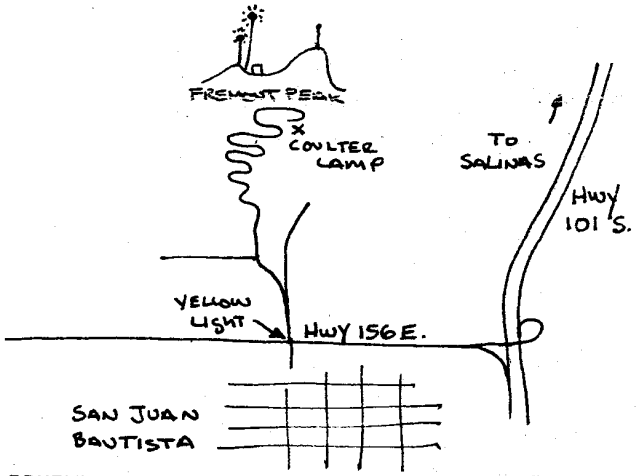
HENRY COE STATE PARK:

Take Hwy 101 south towards Gilroy and take the East Dunne exit. Continue east towards the hills (past Anderson Reservior) for about 12 miles to the park. Past the park entrance you will see old ranch buildings on the right and a horse trough. The gate is locked but the club combination is 4565. Always lock the gate after yourself. If arriving after dark, please park outside the 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) for two miles to a yellow flashing light. Turn right and go about .25 miles to where road curves slightly to the left and splits. Stay left for about 50 yards and then bear right when road splits again Follow road for about 11 miles up into the park. SJAA sets up at Coulter Camp overflow area, it's visible as you drive up into main area of camp. Parking lights only after dark, please.



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