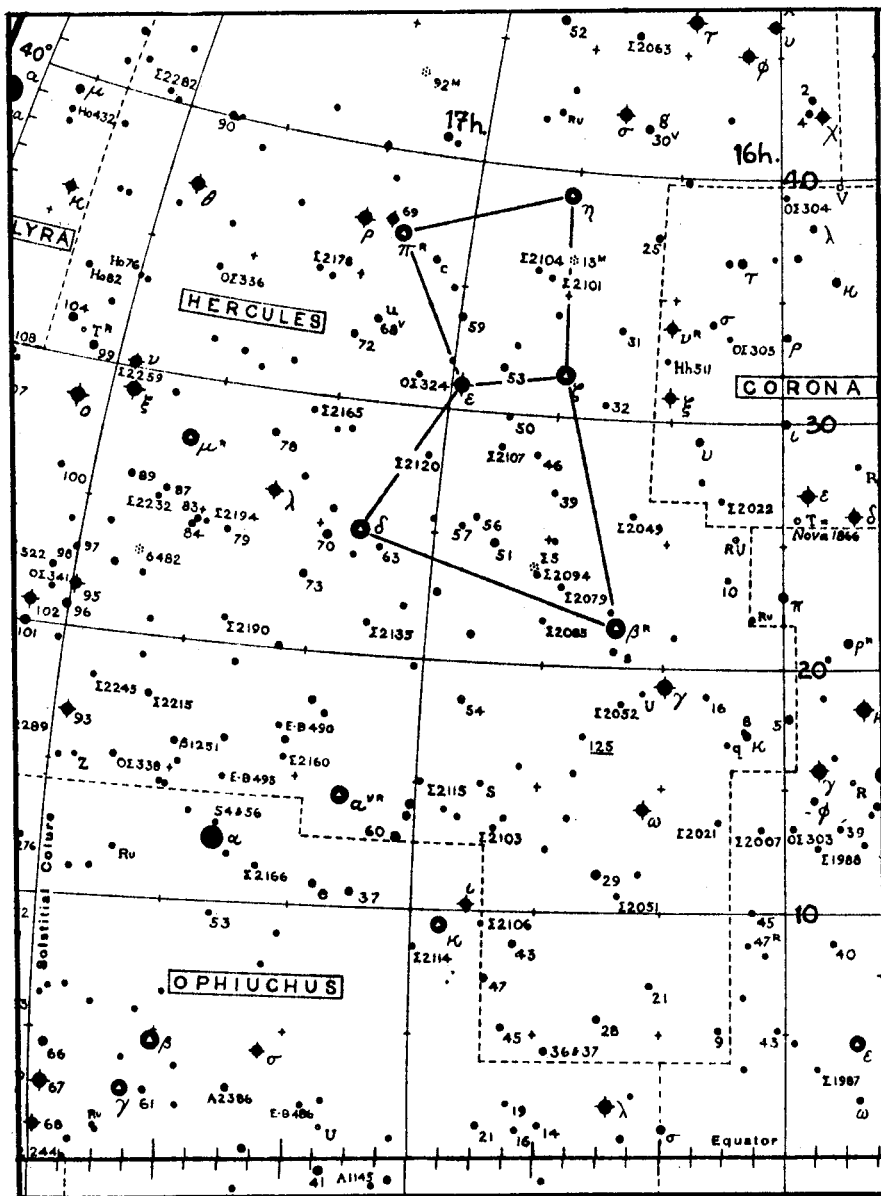


JULY '83 (REALLY)

SJAA

# EPHEMERIS



# CALENDAR

- JULY 2 INDOOR STAR PARTY, LOS GATOS RED CROSS BLDG. 7:30PM
- JULY 9 STAR PARTY, FREMONT PEAK
- JULY 15 BOARD OF DIRECTORS MEETING, HOST TOM AHL 1260 Butterfly Dr.
- JULY 16 PUBLIC STAR PARTY, MARRIOTT'S GREAT AMERICA  
CONTACT FRANK DIBBELL OR DENNI FRERICHs
- JULY 23 ANNUAL PICNIC, PORTAL PARK
- JULY 30 INDOOR STAR PARTY, LOS GATOS RED CROSS BLDG. 7:30PM
- AUG 6 STAR PARTY, HENRY COE STATE PARK -LOCK COMB: 4565
- AUG 12 BOARD MEETING, LOCATION TO BE DETERMINED  
THE MEMBERSHIP IS ALWAYS INVITED TO ATTEND AND CONTRIBUTE
- AUG 13 OPEN MEETING AT THE RED CROSS, BRING YOURSELF, YOUR SCOPE,  
ANY NEW OR OLD PROJECTS, AND INTERESTS. 7:30 PM ON...  
HWY 17 SOUTH, TURN RIGHT ON LOS GATOS-SARATOGA RD. THRU  
TOWN, AND 1/2 WAY UP THE HILL, LOS GATOS RED CROSS BLDG.
- AUG 20 GENERAL MEETING, TOPIC AS YET UNDETERMINED. IF THERE IS  
SOMETHING YOU WOULD LIKE TELL ANY BOARD MEMBER, THIS IS  
ALWAYS ACCEPTABLE, AS THIS CLUB IS FOR ALL ITS MEMBERS.
- AUG 27 ANOTHER RED CROSS NIGHT, STAR PARTY IN THE PARKING LOT  
NEWCOMERS ESPECIALLY INVITED TO LOOK AND LEARN, I WILL  
HAVE A C-S TO PLAY WITH THERE. (JZ)

## ADDS

CELESTRON EYEPIECES; K-40,K-25mm,OR.18mm,OR.12.5mm,OR.6mm, \$15 EACH  
1.25in. star diagonal #12, complete set w/case \$80  
10 INCH F/5.0 NEWTONIAN, ON EQUATORIAL FORK (WOOD) 3.1 in. diag.\$450  
7x50 finder, WILL FIT IN V.W. BUG BUT NOT MY DATSUN.  
5 INCH MAKUTOV GUIDE SCOPE NEEDS WORK, \$100 (TOM MATHIS BUILDER) or  
\$50 with 10", has cradle and counter weight to fit ten inch  
CALL JACK ZEIDERS 246-6199 EVENINGS

---

EPHEMERIS, is published monthly by the San Jose Astronomical  
Association, 3509 Calico Ave, San Jose, Ca. 95124 (408) 378-1307

All contributions are welcome and must be received by the 15th  
of the preceeding month. Please type to a width of 6.5", if this  
is not possible, handwritten articles are TOLERATED single space.

All submissions may be sent to SJAA EPHEMERIS editor c/o DENNI  
MEDLOCK 15022 BROADWAY TERRACE, OAKLAND, Ca. 94611 (415) 654-6796

SJAA President; Debra Frerichs  
15022 Broadway Terrace, Oakland, CA 94611 (415) 654-6796  
SJAA Treasurer; Bob Fingerhut  
340 Rio Verde Pl #4, Milpitas, Ca. 95035

Board of Directors:	Dave Ambrose (415) 524-0869
Eugene Cisneros (408) 923-6800	Denni Frerichs (415) 654-6796
DAVE AMBROSE (415) 524-0869	Chris Pratt (408) 629-2994
Steve Greenberg (415) 443-6638	Jim Van Nuland (408) 371-1307
PAUL MANCOSO NEWLY ELECTED	Tom Ahl (408) 997-1383

JULY COVER: STOLEN FROM THE NORTON'S STAR ATLAS. FINDER FIELD FOR  
THE HERCULES CLUSTER

FOR SALE

MEADE SPOTTING SCOPE AND SILK TRIPOD, STAR DIAGONAL AND 2 EYEPieces  
.965 SIZE \$350.00 ALL

CONTACT MIKE RAMIREZ AT (408) 247-0127

WANTED

A FINDER SCOPE FOR THE CLUB 14" DOBSONIAN PREFERABLY 7X50 OR LARGER

CONTACT RON PROBST (408) 249-8775

---

## MID-JULY MARATHON

The mid-summer Messier Marathon will be held Sat. July 9, if the weather is clear. You can observe from your favorite observing site, I'll be at Loma Prieta all night. Some 98 of the 110 Messier Objects should be visible, we'll just have to go out and see if that's true. I have search sequences, if you want one.

Don Machholz

---

## SJAA PICNIC AT PORTAL PARK

The annual SJAA picnic will be held this year at Portal Park in Cupertino from 11am to 5 pm. Hamburgers and hot dogs will be provided at a minimal fee (\$1, adult, .50 kids covers everything). We've had such a great success in the past with potluck side dishes we're asking people to bring their favorites to share. Everyone is welcome: family and friends.

Portal Park is ideal for a picnic with a large barbeque pit and shaded table area. There is also a huge lawn area reserved which is always the scene of baseball, kite flying, and crazy frisbee playing. Plan to spend a very pleasant day with your family and other SJAAers Saturday, July 23rd.

Directions: From San Jose take Hwy 280 north and get off at the Cupertino-Saratoga-Sunnyvale Rd. exit. Turn left onto Stevens Creek Blvd and continue down it until you reach Protal Ave. Turn left and continue into the park.

Remember: hamburgers and hot dogs with all the relishes will be there. Please bring beverages (soft, please), utensils, side dish to share, family, friends, kites, frisbees, appetites, etc.

Since the picnic takes the place as the July general meeting we will also have officer installation (bolted down or plugged in?) and the presentation of the Dr. A.B. Gregory Award. (More on this below)

---

## DR. A.B. GREGORY AWARD BY DENNI FRERICHs

At the June board meeting nominations were taken and voted on for the Dr. A. B. Gregory Award, to be presented to a club member who has contributed much to the SJAA in the past year. When the ballots had been counted Bob Fingerhut came out the winner. Congratulations, Bob!

Bob is a long time member of the club and has contributed much as board member and often-harried treasurer for the SJAA. He is much deserving of the award (as are many of the club members). Please show your support by attending the presentation at the July 23rd picnic.

Thanks also go to Mrs. Jean Gregory for her recent donation to the award fund, and for her continuing interest in the SJAA.

---

## CAPTION CONTEST

BY DENNI FRERICHs

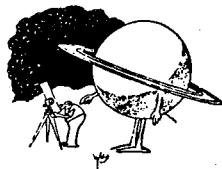
As promised, but a month late, the Board voted on all of the entries for the caption contest announced earlier. Below are all the entrants. The winner is Ken Wilson, of Richmond, Virginia, who submitted #1-14! Congratulations! He will be sent a T-shirt

from the U.C. Berkeley Ten Meter Telescope Group.

#15 was from Allan Takahashi, #16 from Don Stone, and #17 from Kevin Medlock.

Oh! The winner (by the way) is #10.

- 1) No, sorry, I'm not interested...I'm strickly a Deep Sky Observer!
- 2) Pardon me, sir, but could you direct me to the SJAA Halloween Party?
- 3) No I don't know the way to the thryouts for Goerge Lucas' new musical!
- 4) Hey, Ethyl! I've finally found an error in the Astronomical Almanac! It said Saturn would be out tonight and it's nowhere to be found!
- 5) Yes, Jim, I've definitely got a disappearance here; I can't see Saturn at all!
- 6) OK! OK! Keep your rings on, I'll be through in a minute! If there's one thing I can't stand, it's a pushy planet!
- 7) Whaddaya mean "invading your privacy?"
- 8) What do you mean "watch out for the Roche Limit?"
- 9) The Complete Novice Astronomer's Handbook by I.M.A. Beeginor  
see Chapter One - The dangers of Excessive Magnifying Power
- 10) Pardon me, sir, but could you tell me how to get to JPL? They called and told me my pictures were ready.
- 11) Hey! Turn off that bright light, will you! I'm looking for Saturn and I can't see a thing with all that light!
- 12) What do you mean "you're looking for the Ring Leader?"
- 13) An Avid Amateur Astronomer's Anthropomorphic Astronomical Apparition.
- 14) Not tonight, sweetheart, it's New Moon!
- 15) "Ring Around the Collar!"
- 16) Excuse me, but do you happen to know my coordinates?
- 17) Excuse me, do you happen to have an Ephemeris I could borrow?



---

## 9'TH ANNUAL UPSILON PEGASIDS WATCH

This year the conditions will be excellent for the Upsilon Pegasid Meteor Shower. The current focus of the research is on photographic patrol of the shower radiant.

### The 1982 Upsilon Pegasid Fireball

On August 19, 1982, the European Meteor Network photographed a -14.0 Upsilon Pegasid Fireball with five Czech cameras of the network. The reduction of this data confirmed the orbital elements of the shower and answered many of the questions concerning this new shower. However many questions still exist concerning rates, size of the radiant and radiant drift. A good spectra is also needed.

### Photographic Techniques

The ideal camera for photographing this meteor shower is a 35 mm camera with a fast 50 mm lens. Do not use either a telephoto or wide angle lens. Point the camera directly at the radiant which is in the Square of Pegasus. The recommended films are Kodak 2475 Recording Film and Tri-X. Keep the exposures short--five minutes or less. Process the film for three times the normal development time. If you choose not to develop the films yourself, I will be glad to process them for you without charge. Color films are not recommended, but if you do wish to try them, use the new Kodacolor VR 1000.

### Dates of the Shower

The maximum of Upsilon Pegasids is thought to be about August 8th. New moon occurs on August 9th, so both the Upsilon Pegasids and the Perseids will occur in dark skies. Observations should be started by August 5th and extend well past the Perseid maximum which occurs on August 12th.

## Characteristics of the Upsilon Pegasids

The velocity of these meteors is slightly slower than the Perseids and slightly faster than the Delta Aquarids. The average magnitude is slightly fainter than that of the Perseids. The most commonly reported color is yellow-white. Most shower members have not left any significant trains.

## Information and Reports

For further information and reporting of observations of this shower, write to the following address: Harold Povenmire  
Florida Fireball Patrol  
215 Osage Drive  
Indian Harbour Beach  
Florida 32937

## GREAT AMERICA STARPARTY

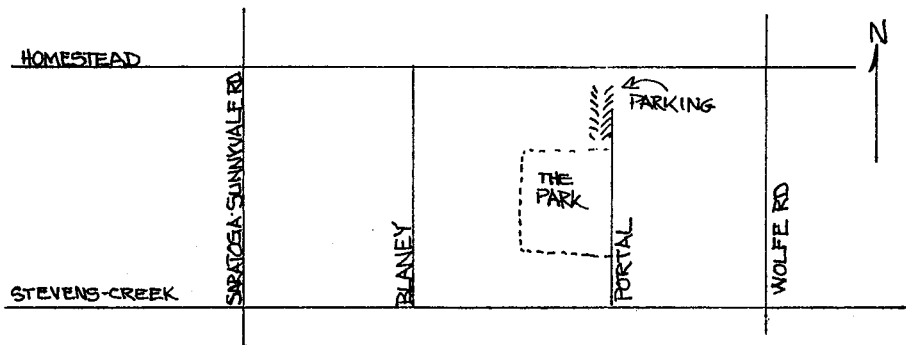
I still need some more volunteers to spend the day at Marriott's Great America on Saturday, July 16, from 9AM to approximately midnight. Only those volunteers who have contacted me will be allowed free admission to the park, so please don't arrive unannounced; I need to get your names in a week in advance. You don't need to bring a telescope - just your knowledge of Astronomy and a desire to help. If you are interested, please call me (Frank Dibbell) at (408) 746-6493 on weekdays between 8AM and 5PM.

### SJAA Annual Picnic at Portal Park

Remember to circle Saturday, July 23, on your calendar, for a day of fun, food, frisbees, and friends! We have had so much success with Portal Park as a location for our Annual Picnic that we will be holding it there again.

This year we will be asking for a one dollar donation per hamburger (fifty cents for those under 12). As in previous years, the SJAA will supply the meat and buns; everything else is potluck! So be sure to bring your favorite dish to share.

One warning: be prepared to have a good time! The picnic starts at 11AM, and breaks up around sunset or so. See you there!



# GREAT RED SPOT EPHEMERIDES

The critical requirement for successful Spot-watching continues to be seeing. With very steady air, the Spot is readily seen with an 8-inch, and probably with smaller instruments.

But I have received no reports one way or the other! Please drop me a card indicating your results. Include telescope size, magnification, seeing conditions, and a few words about your results. I'll summarize here to encourage those with modest instruments.

The belt north of the Spot continues to fade; it has blurred out so it no longer interferes. The Spot showed definite color at last Saturday's star party. During moments of good seeing, my 8-inch at 185 and 305x showed a nice light yellow using the apodizing screen, though less experienced observers present called it colorless as seen with a C-8.

Note that this list is appreciably shorter than last month. August will provide only about five opportunities! Get out for the early evening times -- Jupiter is well up by twilight. Frequently the late twilight period, when the Sun has set but the ground has not yet begun to radiate, provides the best seeing of the night. The morning clouds do not form till late.

Great Red Spot on Meridian PDT				
da	mo	d	h	m
Th	6	30	10 54	pm
Su	7	3	0 39	am
Tu	7	5	10 1	pm
Th	7	7	11 48	pm
Tu	7	12	10 52	pm
F	7	15	0 26	am

Great Red Spot on Meridian PDT				
da	mo	d	h	m
Su	7	17	9 54	pm
Tu	7	19	11 39	pm
Su	7	24	10 44	pm
F	7	29	9 51	pm
Su	7	31	11 27	pm
F	8	5	10 33	pm

Recent timings are consistent with predictions, so the tracking equation has not been altered. These times are a continuation from last month.

Clear Skies,  
Jim Van Nuland

---

## THE CELESTIAL TOURIST SPEAKS

BY JAY REYNOLDS FREEMAN

Notwithstanding pessimistic press, scanty ephemerides and the baleful glare of city lights, Comet IRAS-Araki-Alcock was an easy naked-eye object on the evenings of May 10 and 11. I first acquired it visually from the College of San Mateo campus shortly before the end of evening twilight on the 10th. Later that evening, it was prominent from my home on the flats of Belmont, as a half-degree diffuse patch, of magnitude perhaps between 3 and 4, with a few degrees of tail. Inspection with an 11x80 binocular showed a substantial central brightening within the coma, but nothing that I would call a true nucleus. Naked-eye observation on the 11th showed the comet apparently larger and perhaps a half a magnitude brighter, though with less tail. My estimates of size and magnitude may be biased by different sky conditions on the two nights.

The newspaper and radio publicity that I noticed about this comet, was very disappointing: Everyone was being pessimistic about its naked-eye visibility. The inference was that it wasn't worth trying to look for it. What sloppy journalism! No doubt many of the press were trying to avoid a repeat of the excessively optimistic publicity given to Comet Kohoutek in 1973, but an underestimate is no less a misrepresentation of fact than an over-

estimate. Too bad that people were not encouraged to go out for a beautiful view.

One of the finer points of astronomical one-upsmanship is to start a conversation about observing the Hercules Cluster and then, five minutes later, explain that you meant the cluster of galaxies and not M 13. Those of you who would like to attempt this feat might want to survey a half-degree-diameter field centered at 1950 coordinates 16h 2.0m, n17deg. 55min. This field is in Hercules, not quite a degree east of a fifth-magnitude star shown (for example) in Norton's Star Atlas and on the AAVSO Variable Star Atlas. The latter atlas also shows a 6.9-magnitude star which is just at the western edge of the field in question. On the night of August 1-2, 1981, observing from Fremont Peak with my Celestron at 122x, I found five or six galaxies in that field. I noted that the brightest two might be detectable with less aperture.

If you don't have luck in this area with the low magnifications of five or so per inch of aperture, that are commonly used for deep-sky observing, try some more power. I have found that as much as 15 diameters per inch of aperture -- about 200X on the C-14-- often helps with the detection of distant galaxies. Possibly the reason is that more power spreads out the brighter portions of these galaxies -- the nuclei -- enough to make it obvious that they are not stars. Or maybe the reduced apparent brightness of the background is helping. Or maybe what counts is the reduction in total quantity of light reaching the retina. Anyway don't be afraid of putting a little power on diffuse objects.

The angular diameter of the Hercules Cluster is in fact many, many times greater than half a degree. No doubt there are other fields where some of its members can be seen in a largish amateur telescope.

I would like to add a few words to the discussion of apodizing screens in Jim Van Nuland's article last month. About a year ago I did a theoretical analysis of apodizing screens and a few related subjects, for my own interest. It takes moderately complicated mathematics (messy integral transforms) to show what's going on, so I will just sum up the results.

They certainly ought to work. It turns out that in proportion as you make the transmission of your optical system go smoothly and gently to zero at the edge of the incoming beam, then the proportion of the total light in the successive bright rings of the diffraction pattern of a star will become smaller and smaller. One can be very precise about what is meant by "smoothly and gently" and by "smaller and smaller", but not without invoking some complicated mathematical terminology. You pay a slight price for this improvement, in that the diameter of the central disc of the diffraction pattern is slightly increased. The prediction is that the with an apodizing screen, an otherwise perfect telescope should provide better contrast for fine detail down to perhaps one and a half times as wide as its theoretical resolving power. That is, a six-inch telescope, whose theoretical resolving power is about 0.76 arc seconds, might show features down to 1.1 arc seconds in size slightly better with an apodizing screen than without.

My analysis did not broach the question of what an apodizing screen does to poor seeing.

If a telescope has a turned-down, turned-up or otherwise defective edge to its objective, an apodizing screen might offer

a substantial improvement in performance simply by masking it off. But even perfect optics should be improved with a properly matched apodizing screen, for certain kinds of detail.

Actually, my analysis was directed at the opposite problem: What happens when you "de-apodize"; that is, when you block out the center of the objective with a big fat secondary mirror? We all know that the diffraction rings get brighter, and a few of us know that the central disc gets smaller. I wanted to know how much smaller. It turns out that a telescope whose secondary has a diameter that is 32 percent of the primary diameter (e.g., my C-14), will produce a diffraction pattern whose central disc is about ten percent smaller than that produced by an unobstructed primary. No, I am not talking about the amount of light in the disc, I mean the angular distance between the center of the diffraction pattern and the first minimum-- the center of the first dark ring.

That is, an immaculately fabricated Maksutov or Schmidt-Cassegrain in the contemporary style should out-resolve by some ten percent an equally well-fabricated apochromatic refractor or Schiefspiegler; when observing double stars of approximately equal magnitude. (The latter qualification is extremely important; and as many will be quick to point out, the owner of a refractor or a Schiefspiegler can always install a temporary central obstruction in the event that it turns out that I do know what I am talking about.)

If a little is good, how about some more? Let's enlarge the central stop to 90 percent of the primary diameter. That throws a horrendous amount of light into the diffraction rings, and reduces the image brightness a lot simply by discarding 81 percent of the photons that are trying to get through the telescope; but the central disc of the diffraction pattern is now only two-thirds the size as for an unobstructed primary. That is a fifty percent improvement in resolving power for bright, equally bright double stars. Such a device might better be termed a ring interferometer than a conventional telescope.

As a final benchmark, consider a classical interferometer, a focusing optical system fed by two small apertures, whose distance apart equals our telescope's primary diameter. It will image a bright star with a series of bright and dark fringes, and the angular spacing between centers of adjacent bright and dark fringes will be only 41 percent of the angular spacing between the center of the unobstructed telescope's Airy disc and the middle of the first dark ring.

---

## COMET COMMENTS

BY DON MACHHOLZ

Comets abound this summer, as three periodic comets grace our skies, while a fourth comet fades out in the Southern sky. Additionally, a faint periodic comet has been recovered and the artificial satellite IRAS has discovered it's second comet.

In our Past Discoveries department, we look at two amateur comet discoveries during recent Julys. Between 1975 and 1982, of the 25 comets discovered by amateurs, only eight were discovered during the first six months of these years. The remaining 17 were found during the latter half of these years.

Periodic Comet du Toit-Neujmin-Delporte (1983g): This comet, originally discovered in 1941, has been recovered by J. Gibson with the 48-inch Schmidt at Mt. Palomar. It was picked-up in Aquarius on May 20 at magnitude 19. It is not expected to get any brighter.



Comet IRAS (1983f): This comet, the second discovered in three weeks by the Infrared Astronomical Satellite, was first observed by IRAS on May 13 and was confirmed five days later. At discovery it's magnitude was 17 and it was seen in the constellation Hydra, near it's star Alpha. It now appears that this comet was closest the sun Jan. 20 of this year, when, in the S. Hemisphere, it reached mag. 14.5. It is now moving away from the sun and earth and is not expected to get any brighter.

#### PAST DISCOVERIES

Comet Kobayashi-Berger-Milon (1975h): This mid-summer comet was first seen by Toru Kobayashi of Japan on Thursday morning, July 3, 1975. Then it was spotted by Doug Berger (Union City, Calif) and Dennis Milon, observing from Wyoming. Many other observers saw this comet in the first week too. On July 3 the moon was two days past Last Quarter and the comet was mag. 7.3 and  $134^\circ$  from the sun at RA 21:47, Dec.  $-7^\circ$ .

This comet was not a "comet-hunter's comet", it was far from the sun (in degrees) and not in the part of the sky likely to be swept by amateur comet-hunters. The moon had left this part of the sky four days before, meaning it could have been discovered from June 30 onwards. A bright moon interfered between June 18 and June 30. On June 18, two weeks before discovery, the comet was at RA 22:03, Dec.  $-18^\circ$ , at mag. 9.2. And two weeks before that, (one month before discovery), it was at RA 22:01, Dec.  $-22^\circ$ , and mag. 10.7.

This comet showed a "tame" light curve during observation, we may therefore assume that it did not "flare" into visibility in early July. Worldwide weather in June, 1975 was good, so the question remains: Why wasn't this comet discovered up to a month before it was first spotted? I can think of at least two reasons. First, it wasn't in the usual comet-hunting grounds. Comet hunters missed it for this reason. Secondly, the comet was in an unspectacular part of the sky, casual observers did not pick up the comet until it neared the globular cluster M 2. Indeed, the second and third discoverers of this comet were searching for M 2 when they found the comet. Therefore, neither comet hunters nor non-comet hunters had any reason to search in the area where a bright, undiscovered comet lingered for over a month.

Comet Cernis-Petraskas (1980k): This comet was discovered by these two Russian amateurs on Thursday evening, July 31, 1980. It took two weeks to confirm the discovery. Cernis used 20x110 binoculars while Petraskas used 12x80's. Cernis had spent 808 hours searching, and Petraskas had swept for around 100 hours, both men were observing together when the comet was discovered. It was at first reported to be mag. 9, but later estimates indicate it was probably mag. 9.5 at discovery, when it was at RA 11:50,  $+32^\circ$ . It was  $43^\circ$  from the sun and it was four days after Full Moon. This was probably the second evening since Full Moon when the comet could have been discovered, but what about the weeks before that?

Six weeks before discovery the comet was as bright as mag. 6.7, but it was  $18^\circ$  from the sun and not visible in a dark sky. In the months before it was slightly fainter but always within  $25^\circ$  of the sun, and therefore undiscoverable. Only in the first week of July did the comet peek above the horizon after evening astronomical twilight, then it climbed steadily until, on July 31, when it was  $26^\circ$  degrees high at twilight, and fading in brightness. The moon, Full on July 27, interfered for a week prior to that date, this leaves the second and third week of July, and the last two days of July as probable discovery times.

It seems as though this comet would have been a difficult "find" during mid-July because it was still close to the horizon. Then the moon's light got in the way, finally the fading comet was discovered when it was easiest visible, high above the horizon and still fairly bright.

## Ephemeris for known comets:

Date (1983) R. A. Dec. Mag Ests.

### Periodic Comet Temple 1 (1982j)

06-25	13:06.1	-03°25'	11.4 (10.4)	This comet moves thru Virgo, passing between Saturn and Spica mid-month. It's about 3' in dia. and condensed.
07-05	13:23.6	-07 29	11.4 (10.4)	
07-15	13:43.8	-11 30	11.6 (10.6)	
07-25	14:06.6	-15 23	11.7 (10.7)	
08-04	14:31.6	-19 01	11.9 (10.9)	IAU Cir 3773.

### Periodic Comet Kopff (1982k)

06-25	15:23.2	-10 53	9.6 (8.6)	Running brighter than expected, this comet is diffuse and about 5' in dia. It's about 15° WNW of Jupiter.
07-05	15:27.3	-12 17	9.5 (8.5)	
07-15	15:35.7	-13 57	9.5 (8.5)	
07-25	15:48.4	-15 49	9.6 (8.6)	
08-04	16:04.8	-17 44	9.7 (8.7)	IAU Cir. 3779.

### Periodic Comet Temple 2 (1982d)

06-25	00:57.9	-01 30	9.9	This comet races thru N. Cetus. It is about 7' in dia. and diffuse. It will be fading rapidly.
07-05	01:25.6	-00 43	10.1	
07-15	01:51.1	-00 16	10.3	
07-25	02:13.8	-00 09	10.6	
08-04	02:33.6	-00 23	10.8	IAU Cir 3794.

### Comet Sugano-Saigusa-Fujikawa (1983e)

06-28	14:05.3	-41 41	9.1	This comet barely moves in the evening southern sky as it moves away from us.
07-03	13:57.9	-41 51	9.9	
07-08	13:55.0	-41 57	10.7	
07-13	13:54.6	-42 05	11.3	Data from Dennis di Cicco.

Don Machholz  
(408) 448-7077

## JUNE STAR PARTY BY JIM VAN NULAND

The June 4 star party at Henry Coe State Park was very successful. After an afternoon of showing Venus and the Sun to the hikers, the evening began by getting cool rather quickly, but made up for it by also being clear and steady.

The planets were the major attraction for awhile, as I compared the three and five-layered apodizing screens. The five-layer is definitely superior. Less bleary light, sharper details, and with less-noticeable spectra.

Mid evening was punctuated by a nice fireball in the southern sky, which lighted up the site -- we were yelling about whose headlights when we realized what was going on!

There were only about 10 members in attendance, which was too bad for those who didn't come. We had a good one. Final guests were a pair of raccoons who wouldn't take no for an answer -- went on trying to steal the rest of my potato chips until I finally discouraged them by dousing at least one with some RC Cola!

June 11 saw an impromptu session at Loma Prieta. Conditions were even better than described above; no wind after dark and excellent seeing for the early part of the evening. Major attendees were co-workers of Dave Klausner and myself.

Attempts at observing the four comets that were predicted were mostly unsuccessful. We did get a look at p/Kopff when Don

Machholz stopped by on his way up. Others were suspected but were too dim to be sure.

Many Milky Way objects were enjoyed. The clear horizon along the south added to the lovely view of the Sagittarius - Scorpius region.

---

## BEGINNERS' CORNER

BY BRUCE DE GRAAF

With summer approaching, it is time to discuss star party etiquette. We have developed the following rules of behavior over time as problems arose and were solved. As the SJAA is a not for profit if not downright poor organization, we are highly dependent on the good will of citizenry and governments for access to observing sites. Also, there is a certain nobility in doing something properly just because it is the right thing to do.

Most of the rules stem from the "Zen" of astronomy: people working with minimal resources (minimal photons and minimal dollars) to achieve remarkable results. Any cluttering of such a person's environment results in the need to expend extraordinary amounts of energy to overcome the trash. Therefore:

-When in a vehicle and approaching an observing site, if conditions permit, turn off your headlights, wait for your eyes to adjust, and then proceed on parking lamps. Don't clutter the environment with stray photons! If the star party is one of the special, astrophotographic parties, arrive early: exercise even more consideration. Under any circumstances, whatever you do, don't run over a 'scope (or a person, for that matter)! Try to park so as to not block the access. When I get cold, I want to go home, not admire your Belchfire V12 Blortzmobile blocking the road!

-Music is wonderful, except when it is noise! One person's music is garbage to another person's ears. I admit to especially enjoying the Tomita version of "Pictures at an Exhibition" played in the dark and on a mountain top. However, a good friend of mine (Bill), a novice astronomer and excellent musician cannot stand Tomita. Bill feels that Tomita is the "Lawrence Welk of synthesizer music." Before you crank up your fully digital, equalized, four megawatt stereo, make sure that nobody objects (including the neighbors down the road). Don't clutter the environment with phonons! We are an astronomy mob, not concert promoters!

-Do you like to take pictures? One very beautiful photograph is a time exposure of the observing site (about a half an hour). At the end of the exposure, walk about with an electronic flash aimed at the ground. Fire the flash about six times. The image is really quite nice. Your medical bills will not be worth it however! There is nothing quite so awesome as a strobe beam down a ten inch Newtonian... or an enraged VanNuland once his night vision returns! Don't strew photons about! They are precious gems!

-It's cold! A little nip will make you feel warmer. Actually, it will make you more

susceptible to the cold because alcohol constricts the blood vessels. Because of this, it also reduces your night vision. If you are stopped because of alcohol, imagine what kind of reputation you are dropping on the SJAA. How would you like to pay five bucks a head just to enter the observing site? It could happen.

-Gotta have a -grette! I pity you with your addiction: it will reduce your night vision too. Don't set the countryside on fire, pocket the filter, and do it downwind. What!? A doobie!? ...not at the observing site, idiot! A joint could blow away years of careful cultivation of trust by many benefactors to the SJAA.

-It's time to go home. What should be cleaned up? A simple rule: if it don't grow, it gotta go... 'cept rocks! Just as when you borrow something, return it in better shape than when you received it. That is sometimes very hard to do: try your best. Another slogan is "Take nothing but pictures and leave nothing but footprints."

None of the above is very hard to remember. Just keep in mind the Zen of astronomy: remarkable results from minimal resources.

## LAST OF THE BIGTIME COMMET HUNTERS

BY DON MACHHOLZ

The discoveries of Comet IRAS-Araki-Alcock (1983d) and Comet IRAS (1983f) remind me once again that the era of the visual comet hunter is limited, and that "space-age technology" is helping to bring it to a close.

The first telescopic observation of a comet seems to have been by Kepler in 1618, the first comet discovered with a telescope being that of 1680 by Kirch. Some 80 years later, in 1760, telescopic searches for comets began. The Frenchmen Messier, Mechain and Pons, then the Americans Swift, Brooks and Barnard, championed in comet discoveries--all telescopic visual discoveries.

Photographic comet discoveries began in the late 1800's and reached prominence in the 1940's and 1950's when the large-field Schmidt cameras were pressed into service for nova and asteroid patrol. While some of these comets became bright enough to have been discoverable by amateurs' telescopes, most were short-period faint comets, never getting near the sun or earth. Between 1975 and 1982, 64 comets were discovered, 39 by the professional astronomers using photographic techniques, and 25 by amateurs using visual means. Only a handful of the 39 "professional" discoveries would have been discovered by amateurs, an example being Comet West (1975n).

But now the satellites are beginning to discover comets. Last year it was reported that the SolWind satellite, which is supposed to be watching the sun, accidentally discovered three comets, over a 1½ year period, crashing into the sun. And recently, the earth-orbiting satellite IRAS has made two discoveries.

We have known for years that a well-placed comet-hunting satellite would have several advantages over the earth-based observer. Weather would always be clear, no horizons would obstruct the areas near the sun, and no atmosphere would scatter the sunlight. The point is that no one can afford to send up a satellite for comet-hunting only--these discoveries have

been made by satellites involved in other activities. As more satellites are sent up, more comets are likely to be discovered by them.

I recall the conversation I had with Dr. Everhart, of Colorado, a comet expert with a couple of comet discoveries in the 1960's. I mentioned the possibility of a comet-searching satellite bringing the era of visual comet-hunter to a slow end, but Edgar foresees the time when it will become automated. An observer could hook up a television camera to his telescope, boost the signal, then introduce high contrast so he can easily spot comets as they sweep across his television screen. Indeed, with a little money he could place automated telescope-cameras in both the Northern and Southern Hemispheres, (at the clearest and darkest locations) and transmit the video to his home, where he can sit at home and watch the sky sweep across his television screen, with the ever-changing co-ordinates flashing across the bottom of his screen.

Somehow, it seems like it would be more fun to peer through a telescope or binoculars from some mountain top in 30° weather, spending a thousand hours of lone sweeping to cross paths with an undiscovered comet. Such days, and such comets, are numbered.

---

## RIVERSIDE '83

BY DENNI FRERICHs

The Riverside Telescope Makers' Conference, held Memorial Day weekend at Big Bear Lake in southern California, had between 900 and 1,000 amateur astronomers and telescope enthusiasts attending. I drove down early (4 am!) Friday morning in a caravan consisting of Bob Schalck, Steve and Dan Greenberg, Jack Marling, and Dennis Merrill.

The full Moon evidently kept the conference numbers down as well as the number of SJAAers who attended. Other club members I saw there were Gene and Sharon Cisneros, Kim McKelvey, Joe Sunseri, Norm Neinchel and John Gleason.

RTMC head host Cliff Holmes and his wife Jackie had travelled cross country last year to attend Stellafane and the influence of that Vermont conference were evident from the start. Instead of a free-for-all in camping on the main field, only telescopes in competition were allowed to set up there, sharing it with the commercial exhibitors that are usually in abound. This consolidation of telescopes in competition really was a boost to the normally exhausted judges, who in past years have had to hike from the lake to "telescope alley" looking for scopes with numbers on them. In all, only 40 instruments were entered in competition, down from the near 60 that

have been seen in the past three years. They represented a hodge-podge of telescopes and accessories ranging from a 3" refractor to the 29.5" Dobson from the Santa Barbara Astronomical Society. The overall quality appeared to be down from recent years but there were some good examples of innovation and craftsmanship. Dennis Gallagher has his solar telescope with a handmade, tuneable to  $\pm 2 \text{ \AA}$  H alpha filter which had a higher resolution and contrast than any of the other three commercial ones available there. Don Schaffer from the Sacramento area brought his fork mounted 24" that weighed only 210 pounds, including the mirror! An aircraft designer by profession, he had adapted state of the art epoxy graphite technology to the fork and base, in what was his first telescope. A neat, collapsible 8" backpacking telescope on a billiard ball (Omni-scope type) mount won the Warren Estes Award.

The reduction in the people attending actually made using the facilities quite comfortable. For example, an expected reopening of the newly remodeled kitchen didn't happen on time and all the meals ended up catered. The food wasn't bad and you could go back for seconds and thirds of everything.

It was shirt-sleeve star party weather the whole weekend - hot during the day and the warmest at night I've ever known the RTMC; light sweater needed at night at most. Too bad it was full moon.

The quality of telescopes and the number of people should pick up next year as the moon's phase gets better, but all in all, it wasn't a bad way to spend Memorial Day weekend.

---

---

## TEXAS STAR PARTY 1983

On the other hand, the Texas Star Party for '83 was a total contrast to Riverside, or even Stellafane. Held June 7-12 at Fort Davis in western Texas, it is billed as a star party with telescope competition on the side. About 450 people showed up and camped at the Prude Dude Ranch, setting up telescope in 3

football sized areas of the ranch. Most instruments were commercial but the home built's that were there would have held their own at any other conference.

Kevin and I had left home the previous weekend and travelled to Palomar, Kitt Peak, and Sacramento Peak observatories before pulling into the star party Wednesday afternoon. The weather along the way had been a comfortable 75-80°. Temperature the whole four days at the ranch was 100 -110°, dry and dusty, and not an air conditioner to be found. I tried living in the ice chest but it wasn't big enough. Ft. Davis actually ran out of ice trying to supply the group, and to top it off, a water main was broken so there was little pressure for the showers. What a way to camp!

However, the observing was decent. Kevin had brought along his new brass 6" refractor. I say new because everything from the cradle down, including equatorial head, tripod, and weight-driven drive was new. The lens and tube assembly are an unknown from the turn of the century. After working with much larger aperture for so long I was surprised to find out what a long focus 6" could actually pull out of the sky. Nebulae and star clusters were superb and the planets were unsurpassed.

At the TSP were two people I had been wanting to meet for a very long time. One was Sherman Schulze of Macalister College in Minnesota, leader of an active telescope making class at the college and author of many articles for Telescope Making. The three telescopes Sherman brought all won for optical excellence. The other man was Dr. John Gregory, of Gregory-Maksutov fame. He unfortunately did not have his prize-winning Mak with him but he did bring an interesting 4" refractor. There seems to be a resurgence in refractor allegiance: there were at least 6 there, and three of them were Alvan Clark's.

The talks were very well arranged and given. Guest speakers included Geoffery Burbidge, Harlan Smith, Alan Gorki, and Walter Scott Houston. Talks of similar topics were scheduled on the same

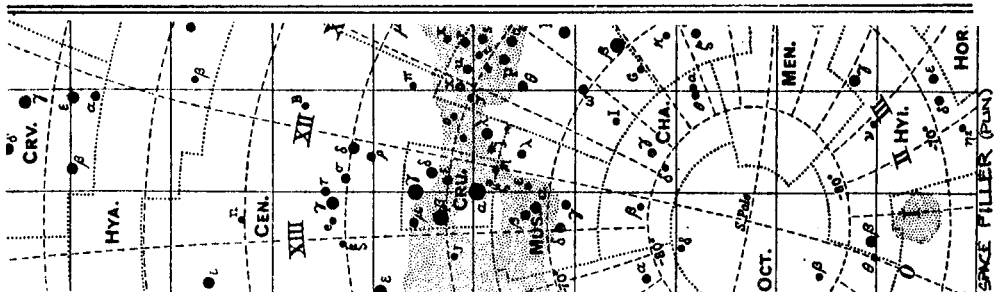
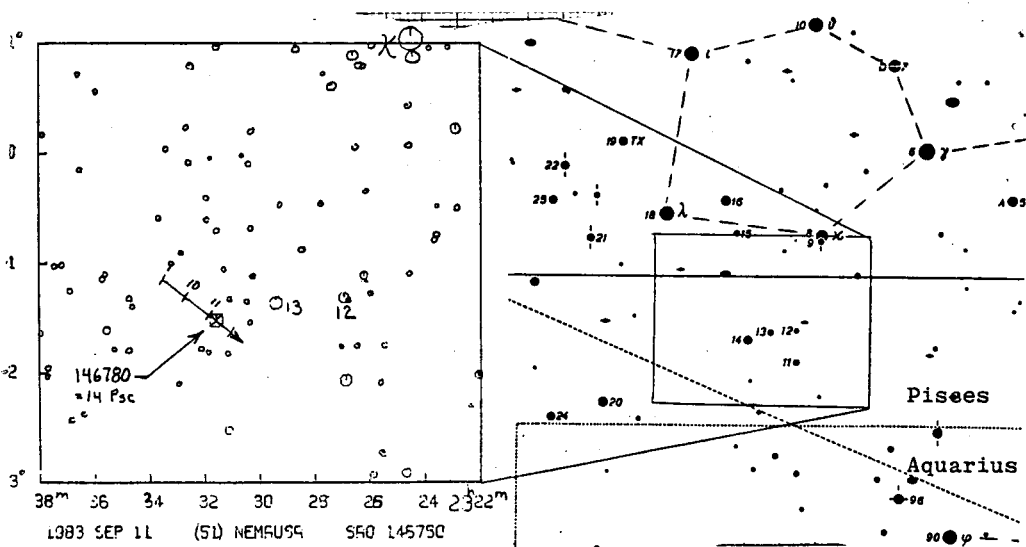
day so there was no scattering of interests back-to-back.

Kevin's refractor won for Overall Excellence in Craftmanship and Design and that was a pleasant surprise. Another surprise was that Tut Campbell of Dixie Telescopes in Atlanta, who is supposedly a refractor "expert" feels that because of the lens arrangement and design of the tube assembly that it is probably a Brashear. Now that would be nice! However, we will probably never know its true origins.

The people at TSP were very nice and friendly even if the weather wasn't. (Kev says it was cooler than last year!) It was worth the trip but we don't think we'll do it again. If we want to star party, you'll see us at "cool" Fremont Peak!

## PALLAS OCCULTATION OF 1 VULPECULA

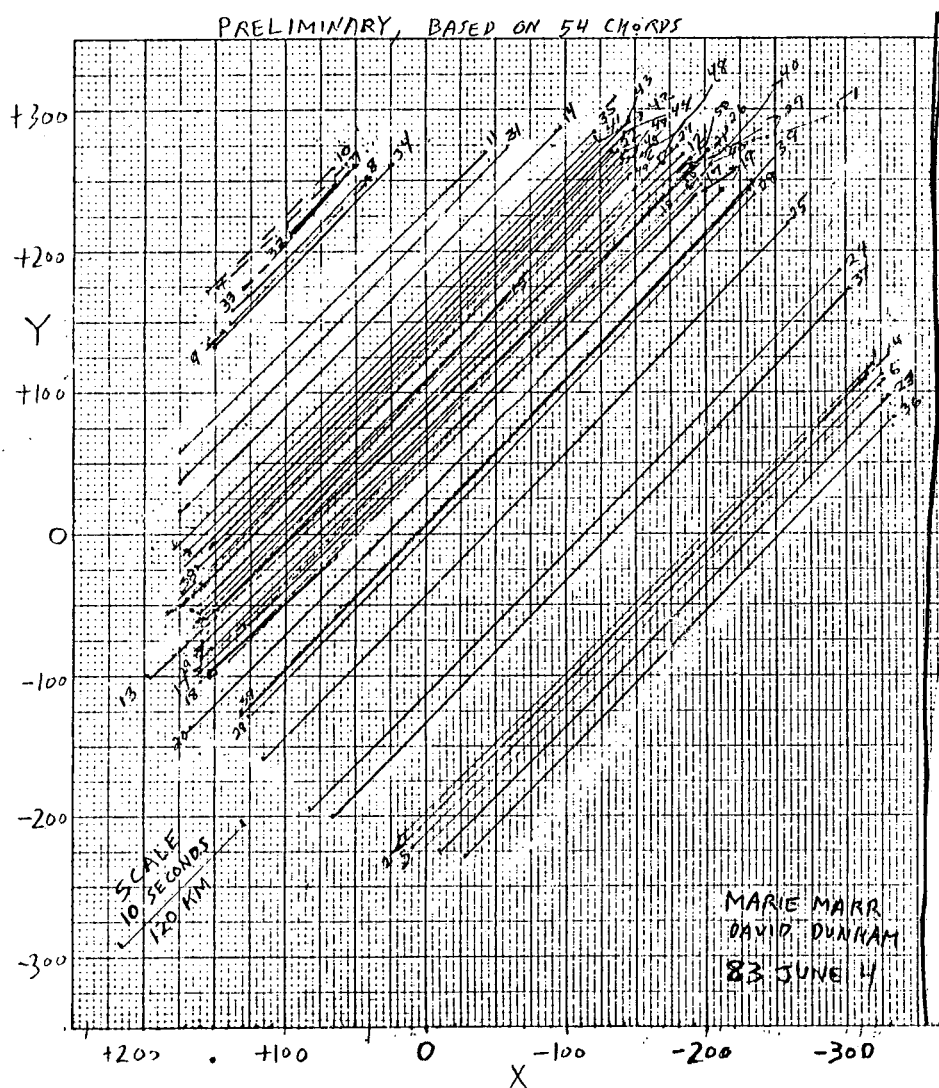
BY JIM VAN NULAND





# 1983 MAY 29 OCCULTATION

PRELIMINARY, BASED ON 54 CHORDS



# CHORDS FOR PRELIMINARY PALLAS PLOT

- 1 DANIA, FL-W.I.N.  
DANIA, FL-W.I.N.  
DANIA, FL - J.Z.
- 2 DANIA, FL - J.Z.  
DANIA, FL - J.Z.
- 3 ANDYTOWN, FL-DWD  
ANDYTOWN, FL-DWD  
ANDYTOWN, FL-DWD ↓
- 4 ANDYTOWN, FL-JBD Y  
ANDYTOWN, FL-JBD 1  
ANDYTOWN, FL-JBD 2  
ANDYTOWN, FL-JBD 6
- 5 ANDYTOWN, FL-L.W.  
ANDYTOWN, FL-L.W.
- 6 ANDYTOWN, FL-R.T.  
ANDYTOWN, FL-R.T.  
ANDYTOWN, FL-R.T.
- 7 KITT PEAK  
KITT PEAK
- 8 GREEN VALLEY, AZ-R  
GREEN VALLEY, AZ-R  
GREEN VALLEY, AZ-R  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
9 DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM  
DAVIS RANCH, AZ-JM
- 10 LEE, FL-DAN BACON  
LEE, FL-DAN BACON
- 11 NR. GAINESVILLE, FL  
NR. GAINESVILLE, FL
- 12 ROCKLEDGE, FL-M.S.  
ROCKLEDGE, FL-M.S.  
SATELLITE B.OBS.
- 13 SATELLITE B.OBS.  
SATELLITE B.OBS.
- 14 BRONSON, FL-UF OBS  
BRONSON, FL-UF OBS  
BRONSON, FL-UF OBS  
BRONSON, FL-UF OBS

- 15 COCOA, FL-R.WOOD  
COCOA, FL-R.WOOD
- 16 W. MELBOURNE, FL-DS
- 17 S. MELBOURNE, FL-NH  
S. MELBOURNE, FL-NH  
VALKARIA AIR F.JD
- 18 VALKARIA AIR F.JD
- 19 VALKARIA AIR F.RM  
VALKARIA AIR F.RM
- 20 WABASSO, FL-L.REED  
WABASSO, FL-L.REED
- 21 MELBOURNE, FIT16  
MELBOURNE, FIT16
- 22 TITUSVILLE, FL-WH  
TITUSVILLE, FL-WH
- 23 N. NAPLES, FL -T.C.  
N. NAPLES, FL -T.C.  
N. NAPLES, FL -T.C.
- 24 MYAKAA S.P., FL-TK  
MYAKAA S.P., FL-TK
- 25 ST. PETERSBURG, FL  
ST. PETERSBURG, FL
- 26 HICKORY HILL OBS.  
HICKORY HILL OBS.
- 27 CLERMONT, FLA.-AH  
CLERMONT, FLA.-AH
- 28 TAMPA, FL -C.M.  
TAMPA, FL -C.M.
- 29 MELBOURNE, FIT14  
MELBOURNE, FIT14
- 30 TEMPE, AZ - K.T.  
TEMPE, AZ - K.T.
- 31 CORONADO PEAK, AZ  
CORONADO PEAK, AZ
- 32 ATHENS, TX B.D.  
ATHENS, TX B.D.  
ATHENS, TX B.C.
- 33 CLIBURN, TX -C.W.  
CLIBURN, TX -C.W.
- 34 CORSICANA, TX T.W.  
CORSICANA, TX T.W.
- 35 BILOXI, MS - J.M.  
BILOXI, MS - J.M.

36 HIALEAH, FL G.G.  
 36 HIALEAH, FL G.G.  
 36 HIALEAH, FL G.G.  
 37 VENICE, FL D.STRUM  
 37 VENICE, FL D.STRUM  
 38 TITUSVILLE, FL WH  
 38 TITUSVILLE, FL WH  
 39 AUSTIN, TX RLM16, UT  
 39 AUSTIN, TX RLM16, UT  
 40 MCDONALD 30-IN.  
 40 MCDONALD 30-IN.  
 41 STAMPEDE, TX LF, GM  
 41 STAMPEDE, TX LF, GM  
 42 STAMPEDE, TX G.R.  
 42 STAMPEDE, TX G.R.  
 43 MOFFAT, TX B.C.77  
 43 MOFFAT, TX B.C.77  
 44 BELTON, TX SR, JC  
 44 BELTON, TX SR, JC

45 BELTON, TX M.M.  
 45 BELTON, TX M.M.  
 46 BELTON, TX DG, JG  
 46 BELTON, TX DG, JG  
 47 BELTON, TX A.W.  
 47 BELTON, TX A.W.  
 48 SALADO, TX P.ROY  
 48 SALADO, TX P.ROY  
 49 SALADO, TX D.F.  
 49 SALADO, TX D.F.  
 50 PRAIRIE DELL, TX-RR  
 50 PRAIRIE DELL, TX-RR  
 51 JARRELL, TX MB, AJ  
 51 JARRELL, TX MB, AJ  
 52 THEON, TX J.L., G.K  
 52 THEON, TX J.L., G.K  
 53 WALBURG, TX JC, LD  
 53 WALBURG, TX JC, LD  
 54 WALBURG, TX JG, JG  
 54 WALBURG, TX JG, JG

APPOLOGIES TO JIM VAN NULAND FOR RUNNING THIS OCCULTATION  
 REPORT BEFORE HE COULD CLEAN IT UP, BUT IT'S 9:30, THE BULLETIN  
 IS LATE, AND I'M STILL AT WORK.

I WOULD LIKE TO EXPRESS MY GRATITUDE TO EVERYONE WHO CONTRIB-  
 UTED TO THIS VERSION OF YOUR CLUB NEWSLETTER. PLEASE CONTINUE TO  
 SUPPORT THE NEW PUBLISHER, EDITOR, PASTE-UP ARTIST, GO-FER, POSTAL  
 INTERFACE...DENNI FRERICHS, DENNI MEDLOCK, DEBRA DENNISE FRERICHS-  
 MEDLOCK, ALL SYNONYMS I HAVE USED IN THE PAST TO REFER TO ONE LADY  
 WHO CONTINUES TO CARRY A MAJOR (LONG DISTANCE) LOAD FOR THIS CLUB.

JACK ZEIDERS

## SJAA MEMBERSHIP APPLICATION/RENEWAL

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_

PHONE \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

AREA OF INTEREST \_\_\_\_\_

MEMBERSHIP/S&T ☐ \$21.00

JUNIOR (UNDER 12) ☐ \$15.00

MEMBERSHIP ONLY ☐ \$8.00

SJAA EPHEMERIS  
3509 CALICO AVE.  
SAN JOSE, CA. 95124

BULK RATE  
U.S. POSTAGE PAID  
PERMIT NO.5381  
SAN JOSE, CA. 95125

TIME VALUE -- DATED  
NEWS MATERIAL