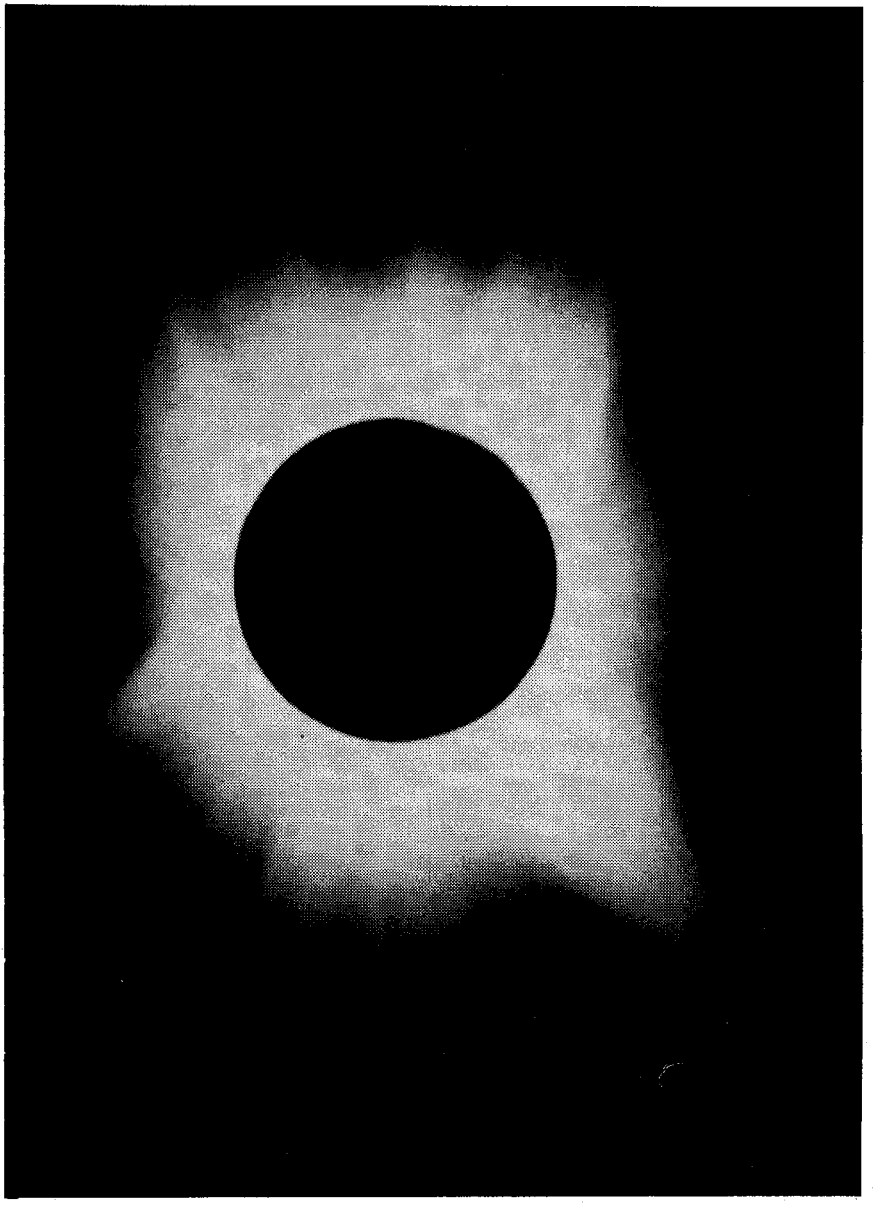
OCTOBER '83

SJAA

EPHEMERIS



OBSERVATIONS

UPCOMING EVENTS

It's always nice when we can have a general meeting at where the lecturer is a member of the SJAA. How about three lecturers in one evening, all members? Our October general meeting at the University of Santa Clara will have Ernie Piini, Jack Peterson, and Bob Fingerhut giving a colorful slide and talk show on their exclipse experience in Java. As many of you know, last June's eclipse was considered by those who should know as the best in the last twelve years. Come & see evidence as to why "Eclipse in Java" will be an entertaining evening for you, your family, and friends. Oct. 15, 8:00 PM.

Our cover photo this month is courtesy of Ernie Piini, and look further in the Ephemeris for "An Indonesian 'Gerhana Matahari Total'", also courtesy of Ernie.

If you enjoyed Fred Witteborn of NASA in August, talking on the Infrared Shuttle Telescope, we have a follow-up to that speaker for the November general meeting. Jeff Scargle, also of NASA, will be speaking to us on "Detection of Extra-Solar Planets." How does searching for and finding other solar systems with planets relate to the Shuttle's Infrared Telescope? Detection of such dim and distant objects such as planets circling another star are accomplished using infrared observing methods, and this project may be one assigned to the Infrared Telescope once it is up and orbiting. Come enjoy this state-of-the-art astronomy lecture, Nov. 12.

GENERAL NEWS NOTES

The Astronomical Society of the Pacific is presenting a one day lecture series title " The Universe Unfolding," to be held Sunday, Oct. 30, from 9-5:30 pm in the Dinkelspiel Auditorium on the Stanford University campus. Titles and lectures will be, "33 New Worlds: a Tour of the Solar System" by David Morrison, "Age Dating the Creation Event: The Expansion of the Universe," by Allan Sandage, "Echoes of the Ancient Sky," by E.C. Krupp, "Black Holes inGalaxies & Quasars," by William Kaufmann, "Astronomy for the Next Decade," by Sandra Faber, "The Search for Extraterrestrial Intelligence," by Bernard Oliver.

Fees for the series is as follows: regular registration - $35; A.S.P. members - $30; Seniors over 65 -$30; Student w/ ID -$30.

Send checks to A.S.P. Stanford Lecture Series Dept., 1290-24th Ave., San Francisco, Ca. 94122. Tickets should be reserved as early as possible.

Every Sunday from 11:00 AM to 1:00 Pm Andrew Fraknoi of the Astronomical Society of the Pacific hosts "Exploring the Universe," a radio talk show on astronomy on KGO FM104. He will answer call-in questions at (415) 928-0104. Dr. Fraknoi also announces upcoming public star parties and astronomical events. So tune in and explore the universe!

New Member: Anne Lucile Cincotta, born June 6 to John and Jane Miller Cincotta. 10 lbs, 8 oz and beautiful. She made her debut at the AANC conference, smiling at everyone.

AN INDONESIAN "GERHANA MATAHARI TOTAL"

by Ernie Piini

In Indonesian, "Gerhana Matahari Total" means a total eclipse of the sun --- or mythically speaking --- when the giant Red Dragon Kala Rau swallows the burning, hot sun during the daylight hours. It signifies a warning to pregnant women, who fear potential birth defects, to take cover under their beds, & for villagers to beat on bamboo drums to ward off the risk of blinness.

The Indonesian government went so far as to mobilize its army & police forces, set up an information campaign, & seek the help of the local (predominantly Muslim) religious leaders to prevent an all out panic when the eclipse over Indonesia occured.

To the 4000 or more astronomers from 22 countries, the June 11, 1983 event meant an excellent opportunity to observe & study an unusually long, five minute happening near the equator, where weather conditions were considered optimal.

For me, it meant the chance to further my knowledge of eclipse phenomena, experiment with newly developed equipment, & to explore the culture & lands of Indonesia, Singapore, Thailand, Hong Kong, & China. This was me eighth such adventure, bringing my entire log time to a grand total of 25 minutes & 10 seconds.

As members of the 62 person expedition organized by the Amateur Astronomers, Inc., of Cranford, New Jersey, which included Jack Peterson, Bobby Fingerhut, & Gerry Rattley from the SJAA, we were fortunate to be guests of the Gadjah Mada University in Yogyakarta. The eclipse site was located a block area at the school's athletic field. The background setting was highlighted by Mount Merapi (9,441 feet), an active volcano, which was actually spouting smoke during our entire sojourn.

The initial, patial phases of the eclipse was mildly obscured by high cirrus clouds; however, the sun emerged into a clear blue sky at approximately 45 minutes before second contact & held until the end, or fourth contact.

The high humidity content in the surrounding air (above 85%), stimulated by heavy, torrential rains the previous days -- but normal for the tropical region -- concerned some of the experienced eclipse chasers who know that this can easily condense to form clouds as the sun's energy diminishes. In fact, we spotted some sporadic cloud pockets but fortunately, these soon burned away.

It was hard to believe that I was about to observe my second solar eclipse completely free from any cloud cover. The huge shadow of the moon moved rapidly toward us from the west. The last rays of the sun through the Valleys of the Moon (or through the teeth of the dragon) formed a sparkling diamond ring. This soon changed into a black disc surrounded by a majestic corona full of delicate streamers.

As usual, sheer pandemonium developed during those precious five minutes. Camera shutter clicks sounded like a field of crickets. Armed guards were stationed along the sight to fend off locals, but excitement & curiousity soon got the best of both guards & the guarded. All & sundry gradually inched their way into the maze of telescopes.

The expeditioners were most receptive to sharing the spectacular telescopic sights. At the beginning of totality, we had to tell the natives that it was safe to stop groundwatching and okay to look at the totally eclisped sun!

The volcano, Merapi -- now backlit by the horizon hues of orange & blue -- continued to smoke. First timers became instant believers -- probably hooked for life into becoming regulars. The sun proved too hot for the dragon's mouth & the letting go caused yet another spectacular diamond ring effect in reverse. This awesome display of solar splendor ended much too soon.

JD GRANT RANCH SITE SURVEY

BY JIM EISELDT

On August 27 an emergency meeting of the Board members was held to discuss and make decisions on some vital subjects concerning the future directions of the SJAA. One of the topics brought up was the need for evaluating close in (close to San Jose) star party sites for easy access for both club members and the public.

Paul Mancuso, currently a board member, suggested J.D. Grant Park as a possible location for such events and the next day I decided to find out if Grant Park would past the test for an observing site.

I called Paul up to see if he just might be interested in going up to Grant Park with me that evening to check out the heavens. As it turned out he was planning on going up anyway so we decided to meet at Grant to see what we could see.

I thought it would be nice to know just how long it would take to get to the park from my house which is located near Stevens Creek Blvd. and Lawrence Expressway....40 minutes including one stop light which forced me to wait two turns and a rather slow vehicle going up Mt. Hamilton Road. Oh, by the way, J.D. Grant Park is located about half was between San Jose and Lick Observatory on Mt. Hamilton Road.

I arrived at the park just at sunset which is normally when it closes to the public. The head ranger (Dick Gonzales) was at the gates locking them and asked me if I needed some help. Well, I told him what I was up to and that it would be great if the SJAA could have use of the park for star parties and so on. The ranger was very helpful and assured me that the SJAA was more than welcome to use the facilities anytime we have a need for them. He said arrangements could be made to set up anywhere in the park and that camping overnight was no problem and that "that's what we're here for!" The only snag in the plan seems to be a $3.00 per vehicle fee for using the park, which can probably be ironed out or ironed down with him at a later date. About the time I had finished my business with him Paul drove up and I filled him in on what had transpired, then I asked Dick if we could move inside the park off of the main road so we wouldn't be bothered by all those wonderful low flying head lights variables. Dick said "no problem" and left the gate open for us.

The seeing was good! "Just how good was it, Jim?" Well, first the good points. It was a beautiful day that day (it had been cloudy for several days prior to that) and I couldn't pass up the chances even if moonrise was at 11:00 PM. Rather than bringing two C-8's, Paul brought his 6 inch reflector and I my C-8. Paul and I observed several deep sky objects, all of which seemed to me to be as good as observing as at Fremont Peak on a good night. The sky was very steady and observing was very good in all parts of the sky except in the low west due to the sky glow from San Jose. I think that Lick is probably worse considering it doesn't have a ridge of hills obstructing some of that glow. There was no wind at all to speak of and I was truly amazed that the apparent amount of sky glow did not really hamper viewing at all. I guess I would wrap this up by saying that you won't get really black skies at Grant Park but you'll be able to see most of the 'fuzzies' without much problem and it means a decrease of at least 40 minutes of travel time to reach the site from San Jose. We may even look to Grant Park as a possible permanent observing site for the club if relations stay this good with the park officials. I guess I don't really have any 'bad points' about the site except for the sky glow.

I suppose for those folks who just have to have dark skies all the time, there's always places like Fremont Peak, but if you want to get to a spot sometime that's pretty close in, save some traveling and as Paul puts it, "is actually quite good", then Grant will fill that niche for you.

BILL UNRUH'S SITE

by DON MACHHOLZ

Last March, after Lick Observatory Historian Bill Unruh presented his talk to our club, he invited members to come out to his property to observe the stars. I took him up on his offer and I'm glad I did.

Bill lives in the Little Uvis Valley, six miles south of Calero Reservoir, on several acres of isolated farmland at an elevation of 900 feet. From my home in central San Jose, this is the closest dark-sky site I've found, being only about a twenty-five minute drive away.

Bill lets you set up on a fairly flat area near his garage; you can drive all the the way up to the set-up area. The sky is dark - the only problem area is thelight from San Jose in the NNW. The horizons are low to the East and West, but there is a hill to the South which cuts out about 15 degrees of altitude. There is very little traffic in the valley - no streetlights, no noise, and no one is going to bother you on private property. It is a good all-around observing site.

The hill on the south end of Mr. Unruh's property is a good place for an observatory, and Bill is planning on building one for his 6". f/15 refractor. Meanwhile, he wants to re-work his mounting and could use some experts in this area.

Bill can reached at (408)224-0222. It is important to call before going out there so that he can open the security gate for you.

THE YEAR THE PERSEIDS FELL FLAT ON ITS FACE

by Don Machholz

There is nothing more frustrating, astronomically,
than looking for something which you just plain can't see.
I suggest that 1983 should now take place,
as the year the Perseids fell flat on its face.

We were expecting as many as 100 meteors an hour,
that's not asking too much from a most-popular shower!
Although the moon was not up, and the sky was clear,
counts of under forty an hour is what I hear.

Up in the mountain named Santa Cruz,
hopes of a strong shower was making the news.
This brought out some observers such as Roger, Steve, and Rich,
"This is as exciting as being rained-out at a solar eclipse."

Well, maybe next August, in 1984,
the shower may be stronger, the meteors may be more.
But will you be able to see them? -- no punches I pull,
next August 11 the moon will be FULL!

CALENDAR

Oct. 1 Star Party at Fremont Peak State Park, Coulter Camp.

8 Star Party at Henry Coe State Park, SJAA site.

15 SJAA General Meeting at the University of Santa Clara, Alumni Science Hall, room 102. "Eclispe to Java" will be presented by Ernie Piini, Bob Fingerhut, and Jack Peterson. Bring the family and friends and enjoy this colorful slide show. 8:00 PM.

22 Indoor star party at the Los Gatos Red Cross Building. Board meeting also scheduled. Good conversations, food, slides, etc. If clear, maybe we'll have a star party in the parking lot. 7:30 PM on, Board meeting at 8:00.

29 Indoor star party at the Los Gatos Red Cross. 7:30 PM on.

Nov. 5 Star Party at the J.D. Grant Ranch. Go up Mt. Hamilton Rd. halfway to Lick Observatory. It's a county park located in a saddle between two ranges of hills. It's close to San Jose. Consider attending and trying out this new site.

12 SJAA General Meeting at the University of Santa Clara, Alumni Science Hall, room 102. 8:00 PM. Our lecturer will be Jeff Scargle of NASA speaking to us on "Detection of Extra-Solar Planets."

13 Grazing occultation! More information in the November Ephemeris, but meanwhile contact Jim van Nuland at 371-1307 if you can't wait to find out about the first graze expedition in two years!*

19 Indoor star party at the Los Gatos Red Cross building.

19 Board meeting at the Indoor star party. 8:00 pm. Everyone welcome to attend.

26 Thanksgiving weekend -- nothing scheduled by the SJAA Enjoy the holiday!

Dec. 1 Star party, site to be announced.

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* A grazing occultation is when the limb of the Moon just grazes a background star, making the star either blink out momentarily, flash, or disappear altogether, depending on the surface of the Moon at that point, (mountains, valleys, etc.). They happen quite frequently in the scheme of the solar system but appear less on the surface of the Earth, and even rarer in the vicinity of the SJAA. The club usually makes trips to the locales where the more favorable grazes occur and times the occultations. Sounds weird, but it's really a lot of fun and actually contributes data to the scientific community about the location and surface of the Moon.

SPACE PROGRAM UPDATE

BY BOB FINGERHUT

NOAA-8 Make First Rescue Assist

The NOAA-8 weather satellite, which carries search and rescue (SARSAT) equipment, located the Canadians whose canoe had capsized in the wilderness of Ontario. The satellite detected signals emitted by their Emergency Locator Transmitter. Since September, 1982, when the SARSAT program was started, 58 persons have been saved due to the three satelites carrying SARSAT equipment. Two of the satellites are Russian and one is U.S.

Space Shuttle Mission, STS-8, a Success

The STS-8 mission made a successful night landing at Edwards AFB on Sept. 5. During the flight an Indian Communications satellite was sent to geosynchronous orbit, the manipulator arm was exercised with a weight which simulates satellites that it will have to manipulate in the fututre, and living cells were seperated with high purity in a electrophoresis experiment.

Insat -1B Solar Array Unfolded But Not Deployed

The first Spacelab payload was installed in the shuttle orbiter, Columbia, on 16th. August. The launch is scheduled for 28th. October. This will be the last flight for Columbia until November, 1985. After the STS-9 mission. Columbia will be put in storage for 14 months to make room in the Rockwell Palmdate facility for the B-1 bomber production and so that it can provide spare parts for the orbiters Challenger and Discovery. When the orbiter Atlantis completes production in January, 1985, Columbia will begin modification to convert it from a test vehicle to one with the same capabilities as the production orbiters.

The first launch of the Discovery is scheduled for May 7, 1984 on the STS-12 mission. The first launch of the Atlantis is scheduled for May 21, 1985 on STS-25.

Soviet Space Station Returns Material to Earth/ Is Resupplied

A large reentry vehicle from the Cosmos 1443 space station tug returned 700 pounds of exposed film, materials processing samples, and spent hardware to earth on August 23rd. It was seperated from the Salyut 7 space station earlier to make room for the Progree 17 tanker spacecraft to dock.

Shuttle Processing Contract Won by Lockheed

The work will involve refurbishing orbiters as well as assembling space shuttle systems at the Kennedly and Vandenburg Space Centers.

Oscar 10 Satellite in Wrong Orbit

The Oscar 10 Amsat amateur radio satellite is providing only about one-quarter of its planned radio relay coverage, due to being placed in the wrong initial orbit. Efforts to move it to the proper orbit have been delayed because the satellite was struck by its Ariane launcher after its initial third stage seperation.

4100 Person Apply to be Canadian Astronauts

There have been 4100 apllications for six Canadian astronaut positions. Those selected are to be trained for flights on the space shuttle starting with Mission 31 scheduled for launch Nov. 26, 1985.

Earth Remote Sensing Satellite to be Sold

The Commerce Department is preparing to request proposals on the sale of the US Earth Remote Sensing Satellites to the private sector despite congressional opposition. President Reagan ordered the sale of meteorogiccal and Landsat spacecraft in March.

SATCOM 11R Launched Successfully

The RCA SATCOM 11R was launched on Sept. 8, from Cape Canaveral on a Delta launch vehicle. It will replace the SATCOM 11 which was launched in 1976 and will be positioned in geosynchronous orbit at 66 degrees west longitude.

The "Disappearance" of Two "Bright" Comets

by Don Machholz

It has occured to me that two recent comets seemed to disappear from the sphere of the sky at the time when they should have been brightest. This misbehaviour on the part of the comets is not only an embarassment to astronomers but a frustration to the general public.

The first case is that of Comet IRAS-Araki-Alcock. It passed to within 3.1 million miles of our tiny Earth on May 11, the closest any known comet has passed to Earth in over 200 years. This was "hyped" by the press to be a comet that anyone could see if they would only step outside and look "towards the Big Dipper".

May 11 came and went and I heard reports, from both amateur astronomers, and the general public, that the comet was not visible. I knew that I had seen it, as did a few other people, but the public was, for the most part, keenly disappointed in the comet's performance. A CBS radio commentator renamed her "News and Comment" program "News and No Comet" and spent three minutes complaining how that comet had vanished from her downtown skies.

What can we learn from this? First, we should never suggest that the public look for a tail-less comet. I'm sure that many people saw the comet after all, but, since it had no visible tail, they did not think they were seeing a comet. Everyone has seen pictures of Halley's Comet and they expect every comet to look like that one. (A lot of people expect a comet to streak across the sky, but that is an entirely different matter.) Secondly, it must be explained that the potential observer of this hit-and-run comet must have dark skies and dark-adapted eyes. One cannot step out to a safe location under a street light and expect to see Comet I-A-A, as it came to be called. As one astute astronomer told me: "Some people are expecting to see a rocket launching." Finally, we must understand that a comet close to the Earth appears large and diffuse -- the surface brightness is actually not too great. That 2.2 magnitude comet had it's light spread out over an area of about three square degrees. That is the "Delta Effect".

Only a month later came another "Earth-grazing" comet with the name of Comet Sugano-Saigusa-Fujikawa. Passing only 6 million miles from Earth, this comet barely made the press, not just because no one could pronounce the name, but because compared to Comet I-A-A, this comet was in the next country. And, since I-A-A was such a disappointment, S-S-F barely made a splash in the sea of newsprint ink. Earth-grazing comets had become "old hat".

Comet S-S-F probably deserves such treatment, though, because the "Delta Effect" was much more pronounced with this comet than with Comet I-A-A. This comet was difficult to find using several instruments when it was closest the Earth June 14 -- its large size and diffuse nature made it disappear into the Milky Way near Altair. This comet truely became a "ghost in the night-time sky".

And most people would not have had a ghost of a chance of seeing it.

Don Machholz
(408) 448-7077

COMET COMMENTS

BY DON MACHHOLZ

In the past month two periodic comets have been recovered, one of them will be easily visible to us early next year. Meanwhile, two comets remain visible in our skies -- Period Comet Kopff fades out in the evening sky while Comet Cernis remains in the morning sky. In our Past Discoveries department, we review three comets, one being a bright discovery near the sun.

Periodic Comet Wolf (1983m); This comet was recovered by J. Gibson of Palomar, using the 48-inch Schmidt telescope, on August 1. The comet was at magnitude 20 and in South east Hercules at the time. It is not expected to get much brighter.

Periodic Comet Crommelin (1983n); Lubos Kohoutek recovered this comet from the Hamburg Observatory on August 9. Then in the constellation Vulpecula, the comet was at magnitude 20, brighter than predicted. This comet, with an orbital period of 27 years, should be visible in binoculars in early 1984.

PAST DISCOVERIES

Comet Seargent (1978m); This comet was discovered on October 1, 1978 at RA: 11 hr 54 min; Dec: -37°00', by David Seargent of New South Wales, who was using a pair of 15X80 binoculars. The comet was 37° south of the sun and showed a tail of less than 1°. The moon was one day before new and the comet was moving south at 1.7° per day. The comet was found on a Sunday morning at about 4:30 local time.

The comet was slightly brighter but closer to the sun for the three weeks prior to discovery. Before that it was in the Northern evening sky - during August, 1978, the comet was brightening from magnitude 10.5 to 6.7 as it neared the NW horizon, setting at astronomical twilight by September 1. Considering the moon's phase, comet brightness and comet-sun configurations, the "discovery window" was between August 21-27 for Northern hemisphere observers, and September 29 - October 1 for Southern hemisphere observers. These are rather narrow windows for a comet which was eventually discovered at magnitude 5. It seems, therefore, that due to the comet's closeness to both the sun and the horizon, it was not easily discovered until the morning it was finally picked up.

Periodic Comet Denning-Fujikawa (1978n); This diffuse object was "discovered" on Monday morning, October 9, 1978 by S. Fujikawa of Japan at 10hr 24m, +5° 24' at magnitude 10.0. It was later determined that this comet was the same as the one discovered by Denning in 1881. This object has an orbital period of 9.0 years and had not been observed for 97 years. The moon was 1 day past first quarter and the comet was 38° from the sun.

The comet could have been discovered as much as four days before it actually was, although it would have been closer to the sun. For 25 days before that the comet was too close to the sun for discovey. On September 1, however, the comet was in the Southern hemisphere's evening sky, at R.A. 14:18. Dec. -42°, and magnitude 10.8. For the next eight days until the moon interferred, the comet could have been discovered as it slowly brightened and moved northward. Exactly why it wasn't seen sooner, we'll never know.

Comet Brafield (1978o): William Bradfield of Australia discovered this object on Tuesday morning, October 10, 1978, at magnitude 8.4, at R.A.: 11hr 01m; Dec: -19° 09'. This was Bradfield's eighth find; he has since found three more. He was using a 6". f/5.5 refractor. The comet was moving SSW at 1.6° per day, and was 31° from the sun. The moon was two days past first quarter.

As with the other two comets reported previously, this one was closer to the sun prior to discovery. (Most morning comets are). However, although it was in the evening sky one month before discovery, it was too faint to be observed, and very close to the sun, as seen from Earth. Therefore, October 10th was probably very close to the first opportunity for this comet to be discovered.

Ephemeris for known comets:

Periodic Comet Kopff (1982k)

Date (UT)	R.A.	Dec.	Est. Mag.	
09-23	18h07m	-24°25'	10.7	As this comet pulls away from
10-03	18 36	-24 41	11.0	both the Earth & Sun, it
10-13	19 04	-24 33	11.3	faintens as it travels against
10-23	19 33	-24 01	11.6	a Milky Way background. It
11-02	20 00	-23 09	11.9	may by 0.5 mag brighter than est. Data from IUA Cir. 3779.

Comet Cernis (1983L)

09-23	01 46	-10 50	10.3	This comet may be two magnitudes
10-03	01 26	-15 28	10.2	brighter than estimated here.
10-13	01 05	-19 43	10.2	It is about 2.5 AU from us
10-23	00 45	-23 18	10.3	at this time, & about 3' across.
11-02	00 26	-26 05	10.4	Data from Comet News Service, 83-4

renewal

Please send renewal form, remittance, and if you want to renew S&T, their white notice card, to: Bob Fingerhut, Treasurer, SJAA, 340 Rio Verde Pl. #4, Milpitas, Ca. 95035. (408) 263-4455. Thanks!

SJAA MEMBERSHIP APPLICATION/RENEWAL

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

MEMBERSHIP ONLY ☐ $8.00

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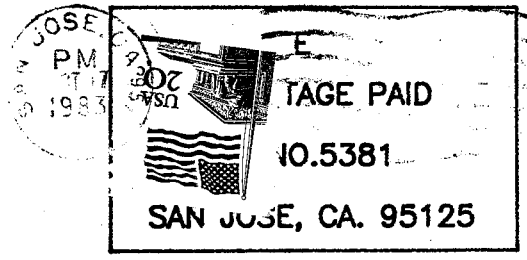

TIME VALUE – DATED

NEWS MATERIAL