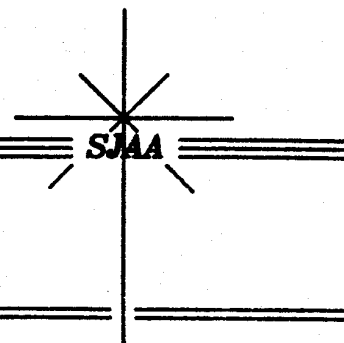


SAN JOSE ASTRONOMICAL ASSOCIATION EPHEMERIS



SEPTEMBER 1984

FROM THE EDITORS DESK

BY: JOHN GLEASON

The July 27/28 star party at Glacier Point was a success. 10 members of the SJAA were present at the point both nights. I would like to thank Brian Deis for the fine astronomy talk and slide show he presented on both evenings. Frank Dibble, Paul Barton, Paul Mancuso, Ron Walton, Dave & Mary Ambrose, Robert Fingerhut, Jack Peterson, and 2 others who were there on Saturday. I did not get their names. Plus myself and my wife, all enjoyed fine weather and dark skies at what has to be one of the better observing sites in the country.

A number of park visitors were treated to their first telescopic view of the planets and deep sky wonders. Most of the crowd disappeared around midnight leaving an evenings free observing. The SJAA was also at Marriott's Great America on August 4th. This was another repeat of last months public star party at Marriott's, treating a lot of people to first time telescopic views.

In case you haven't heard yet, the University of Santa Clara is looking for a group of people to take the 16" Alvan Clark refractor off their hands. If you recall, 5 years ago the SJAA presented a plan to the University to operate the observatory facility and maintain the telescope. The proposal was turned down. Later it was learned that the telescope was to be given away to a museum. As time has passed, nothing has been done with the telescope and now the University is looking for a group of individuals who will take the telescope and use it for astronomy. The only problem is that the SJAA does not have a site nor the funds to take on such a project. Enter the "Friends of Grant Ranch".

The Friends of Grand Ranch is an organization of individuals who provide funds for improvements to the park. As you know, the SJAA has been using the park as a "close in" observing site. Several of the people at Grant Ranch have expressed an interest in building a permanent observatory in the park and are excited about the possibility of installing a 16" Clark refractor. There is even talk of road and building funds. Ofcourse everything is talk now. There still needs to be an inspection of the refractor, site locations and evaluations, and if we get these conditions of use for the telescope, etc, etc.

Another possibility for a permanent observing site has also come up, and that is at Fremont Peak State Park. After spending an evening with park ranger Rick Morales, I found out that Rick is also interested in having a permanent observatory built at some location within the park. And, that there are formal procedures and guidelines that the SJAA could initiate to realize this dream come true. Remember, Kevin Medlock has a 30" telescope under construction that could very well be installed at a site like this one. In fact the park could get state or national attention if turned into an "Astronomy Park".

None of this can be accomplished by a few individuals, but needs the support of all the SJAA membership. The SJAA has among its membership some of the most well know amateur astronomers in the country. Deep Sky Observing, Telescope Making, Astrophotography, Comet Hunting, we have done it all. Either of these observatory projects will serve to enhance the SJAA's position in the community: "expanding the general public's interest in astronomy, conducting research within the capabilities of amateurs, and promoting the science of astronomy."

DEEP SKY NOTES

SEPTEMBER 1984

BY: STEVE GOTTLIEB

In October 1783 William Herschel began his sweeps for nebulae and ushered in a new era in observational astronomy. Up to that time, a total of 137 nebulae and clusters of stars had been catalogued. Of these, 40 were discovered by Messier and 28 by Mechain. In addition, during an expedition to the Cape of Good Hope in 1751-1753, Lacaille discovered 24 southern deep sky objects including 21 gems which Messier did not include in his catalogue. (due to being unobservable from Paris)

When William Herschel completed his sweep No. 112 on Dec. 30, 1802, he had discovered nearly 2500 deep sky objects, increasing the known total by 1800 per cent! His catalogues divided objects into 8 classes: Bright nebulae, faint nebulae, very faint nebula (VFN.s?), planetary nebulae, very large nebulae, very compressed clusters of stars, pretty much compressed clusters, and coarsely scattered clusters. In addition, he introduced the notational abbreviation which is still found in Burnham's Celestial Handbook.

Between 1825 and 1833, John Herschel continued in his father's footsteps and added 500 new objects discovered with a 20 foot reflector (focal length). Then, between 1834-1838 John traveled to the Cape of Good Hope and discovered a full 1700 new southern deep sky objects.

The first great catalogue was the General Catalogue of Nebulae and Clusters of Stars (GC) in 1864 by John Herschel containing 5079 entries. During the next 20 years, well over 1000 new objects were found, many using the 72 inch reflector of the Earl of Rosse at Parsonstown. In addition, as many inaccurate positions in Herschel's catalogue were found, John Dreyer, an assistant to Lord Rosse, was commissioned in 1888 by the Royal Astronomical Society to compile the New General Catalogue of Nebulae and Clusters of Stars (NGC), containing 7840 entries. The Index Catalogues (IC1 and IC2) added over 5000 objects discovered over the next 20 years - including most of the first photographic discoveries.

EVENTS CALENDAR

SEPTEMBER 1

Star party at Grant Ranch county park. (see map) This is a first quarter moon and planet party. This will be a good opportunity for members to check out this new observing site if they have not already. The park is close to the San Jose area, and the SJAA is considering this location for an observatory site.

SEPTEMBER 8

Equipment and slide night at the Los Gatos Red Cross Building. This usually well attended function allows members to show off recent astrophotos, slides of astronomical events, and telescopes. There will be telescopes set-up in the parking lot for observing. Ed. note: I personally encourage members to bring and show off their equipment and astrophotos. These are the kind of meetings that got beginners turned-on to astronomy. I can remember the first equipment night that I attended, the rest is history. Meeting begins at 8 pm.

SEPTEMBER 15

8 P.M. Board meeting at the Los Gatos Red Cross building. members welcome.

SEPTEMBER 22

Grant Ranch picnic and star party. This is a "bring your own everything" picnic. To be followed by an evening starparty. Picnic to start in the early afternoon.

SEPTEMBER 29

Fremont Peak star party.

OCTOBER 6

General Meeting at the University of Santa Clara. This month's guest speaker is Norman Sperling who will tell us about and give us answer to the "Four Great Questions of Astronomy".

CALL FOR MEMBERSHIP RENEWALS

If you have not renewed your membership yet, then PLEASE SEND your renewal form, remittance, and if you want to renew Sky and Telescope, their white notice card to: Robert Fingerhut, Treasurer, SJAA, 340 Rio Verde Pl.#4, Milpitas, CA. 95035. (408) 263-4455. THANKS! Please use the enclosed renewal form. You wouldn't want to miss another exciting issue of the Ephemeris now would you? You would?

ASTROMART

Here are some items that should have gone into the June Ephemeris.

17.5" Coulter optical set, new in box, \$600 or best offer. C100 refractor, heavy duty equatorial mount, \$875. 12.5" f/5 Dobsonian with Parks mirror, 1/20th wave, Movak components. \$750. Celestron 11X80 binoculars, \$175. 4.25" RFT, optical window, 2" focuser, \$125. Please contact Phyllis Rose at 293-6611, or Carlton Rose at 354-3682.

SPACE UPDATE

BY: ROBERT FINGERHUT

DISCOVERY SCHEDULED FOR LAUNCH AUGUST 29

The shuttle orbiter Discovery was moved to the launch pad on August 9. The launch is scheduled for 5:35 am PDT on August 29th. The landing is scheduled for 6:31 am. September 4 at Edwards Air Force base.

ARIANE 3 SUCCESSFUL IN FIRST FLIGHT

The first flight of an Ariane 3 on Aug. 4 placed two satellites into geostationary transfer orbit from Kourou French Guiana. The satellites were France's Telecom 1A and the European Space Agency's Eutelsat ECS-2. The next Ariane launch is scheduled for late Sept. or early Oct.

STARSTRUCK LAUNCHES ITS DOLPHIN ROCKET

The Dolphin rocket made its first test flight on August 3 from near San Clemente Island. The vertical in the ocean launch lasted 28 seconds and reached an altitude of 2300 ft. The vehicle's hybrid propulsion system produced 35,000 lb. of thrust. The objective of the Dolphin program for the rest of 1984 is to make a better sounding rocket with improved reliability and higher altitude. There are two more Dolphin vehicles being manufactured.

SPACE TELESCOPES PRIMARY MIRROR CLEANED

The mirror has been cleaned after it accidentally picked up a fine coating of dust while being stored at Perkin-Elmer. The cleaning operation used jets of dry nitrogen gas in conjunction with a special vacuum cleaner.

VISITORS TO SALYUT 7 PERFORM SPACE WALK

The Soyuz T-17 docked with the Salyut 7 on July 18. The crew included mission commander Vladimir Dzhanibekov, flight engineer Svetlana Savitskaya, and research cosmonaut Igor Volk. Among their activities was a space walk by Dzhanibekov and Savitskaya. The first by a woman. The U.S. astronaut, Kathryn D. Sullivan, is scheduled to perform a space walk during the 41-G shuttle flight which is to be launched on Oct. 1.

GOES-5 WEATHER SATELLITE FAILS

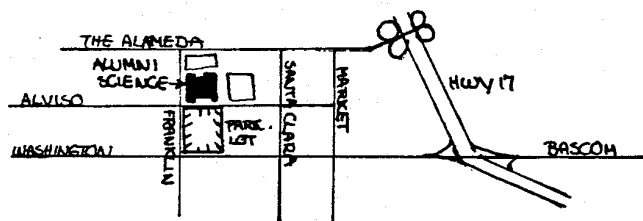
The satellite was blinded by the failure of a tungsten filament lamp on July 29. The GOES-6 satellite will be moved from its position above 135 deg. W. Long. to 98 Deg. W. Long. so that it can cover both coasts of the U.S. Cold fronts approaching Hawaii from the West will now not be visible. GOES-7 was scheduled for launch in May 1986. A pull up of both GOES-7 and 8 is being considered.

AMPTE TRIPLE SATELLITE LAUNCHED

The satellites were launched August 9 on a Delta booster from Kennedy launch complex 17. The U.S., British, and West German spacecraft are designed to study the Van Allen radiation belts and to create a large artificial comet that will be visible on Earth. The AMPTE or Active Magnetospheric Particle Tracer Explorer's consist of the U.S. Charge Composition Explorer, the United Kingdom Subsatellite, and the West German Ion Release Module.

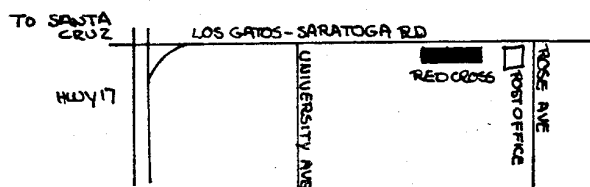
GENERAL MEETINGS:

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.



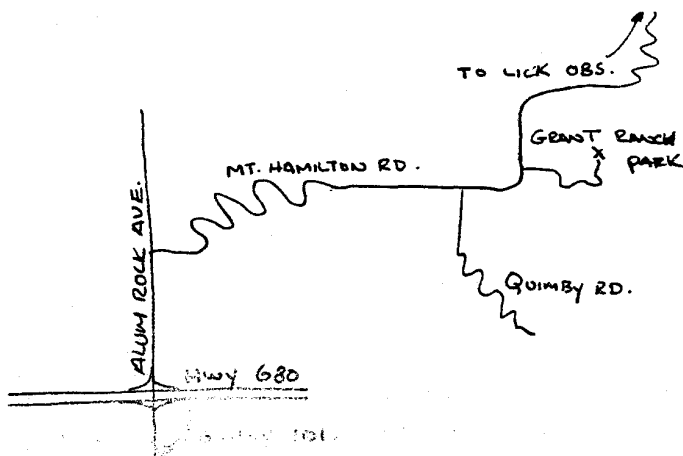
INDOOR STAR PARTIES:

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



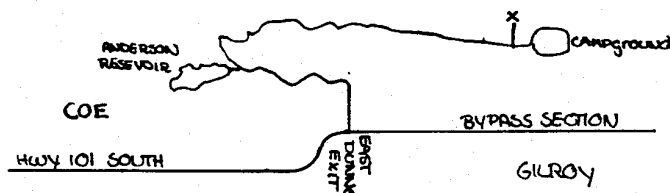
GRANT RANCH COUNTY PARK:

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.



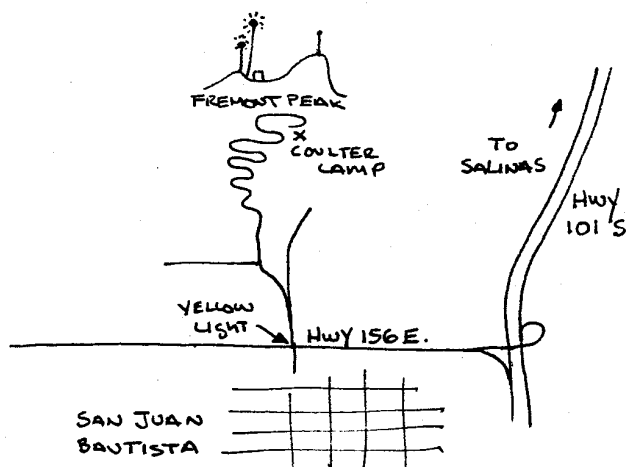
HENRY COE STATE PARK:

Take Hwy 101 south towards Gilroy and take the East Dunne exit. Continue east towards the hills (past Anderson Reservoir) 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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THE SAN JOSE ASTRONOMICAL ASSOCIATION

Deep-sky observing, Astrophotography, Telescope making, Eclipses, Computerized astronomy. Whatever your astronomical interests, you'll find people in the San Jose Astronomical Association who will enjoy sharing their knowledge with you.

ACTIVITIES

The SJAA sponsors an activity every Saturday night (except around certain holidays):

General Meetings, featuring programs on various astronomical topics, are held once a month at the Alumni Science building at the University of Santa Clara.

Star Parties-group observing sessions-are held at several different locations, some close to the San Jose area, and some in the adjacent mountains.

Indoor "Star Parties" provide an informal opportunity to show slides, work on equipment, exchange ideas, etc. They are held in the Los Gatos Red Cross building.

MEMBERSHIP BENEFITS

You need not be a member of the San Jose Astronomical Association to participate in our activities, but membership does grant certain advantages:

Twelve months of Sky and Telescope magazine, and reduced rates on products from Sky Publishing Corporation.

The SJAA EPHEMERIS, our monthly newsletter, containing a calendar of events and activities and other interesting articles. Use of club telescopes. (Both reflectors and refractors are available.) Access to the SJAA's library of books, magazines, and pamphlets.

The San Jose Astronomical Association, founded in 1954, is a non-profit group devoted to expanding the general public's interest in astronomy, conducting research within the capabilities of amateurs, and promoting the science of astronomy.

MEMBERSHIP ONLY: \$8.00 MEMBERSHIP/S&T: \$21.00 JUNIOR (UNDER 12): \$15.00

SAN JOSE ASTRONOMICAL ASSOCIATION MEMBERSHIP APPLICATION

Name _____

Questionnaire (optional)

Address _____

What are your astronomical interests (e.g. astrophotography, deep-sky observation, telescope making, etc.)? _____

Telephone (____) _____

Please bring this form to any SJAA meeting, or send to:

Robert Fingerhut, Treas.

San Jose Astronomical Association

340 Rio Verde Pl. #4, Milpitas, CA 95035

[Phone: (408) 263-4455]

Do you own a telescope? _____ If so, what kind?

Is there any specific area of astronomy that you feel qualified to help others with? _____

Membership: Adult _____ Junior (under 18) _____

Bulletin Subscription only: _____

CALICO OBSERVATORY

JUPITER'S RED SPOT EPHEMERIDES BY: JIM VAN NULAND

With seeing being a critical requirement for successful spot-watching, the Spot is readily seen with an 8-inch and for the experienced observer with instruments as small as 2 inches. However the Great Red Spot of Jupiter has faded from its brick red color to a pail gray-pink over the past 6 years. Jupiter is in the south eastern sky at the end of astronomical twilight but its low declination position does not always afford the best of seeing conditions. Please drop Jim a card indicating any of your observational results. The Red Spot and many smaller white spots in Jupiter's atmosphere have been easily observed in my 3.5 inch Questar. (Ed.)

| Great Red Spot on Meridian -- PDT | | | | | | | |
|-----------------------------------|----|----|----|-------|----|----|------------|
| da | mo | d | h | m | da | mo | d h m |
| Sa | 9 | 1 | 10 | 57 pm | F | 9 | 21 7 31 pm |
| Tu | 9 | 4 | 8 | 26 pm | Su | 9 | 23 9 10 pm |
| Th | 9 | 6 | 10 | 5 pm | F | 9 | 28 8 16 pm |
| Tu | 9 | 11 | 9 | 11 pm | W | 10 | 3 7 31 pm |
| Su | 9 | 16 | 8 | 28 pm | F | 10 | 5 9 3 pm |
| Tu | 9 | 18 | 10 | 4 pm | W | 10 | 10 8 19 pm |

COMET COMMENTS

BY: DON MACHHOLZ

One new and somewhat unusual comet has been discovered, it should be visible in our southern sky. Another bright comet is visible in our morning sky, and a faint periodic comet is visible in the southern Milky Way. We'll check up on Halley's Comet, then, in our Past Discoveries section we'll look at the type of instruments used and the number of hours spent to find comets in the past few years.

COMET AUSTIN (1984j): As reported last month, Rodney Austin found this comet while it was moving rapidly toward the Sun (as seen from Earth) on July 8. This comet was closest to the Sun (0.29 AU) on August 12, it moved into our morning sky in late August. It is now visible, but fading, so get out to see this comet soon.

Comet Austin (1984j)

| | | | | | |
|-------|-----|-------|---------|------|------|
| 08-28 | 09h | 12.3m | +22°48' | 22" | 8.5 |
| 09-02 | 09h | 00.7m | +25°19' | 30" | 9.2 |
| 09-07 | 08h | 49.5m | +27°45' | 38" | 9.8 |
| 09-12 | 08h | 37.7m | +30°12' | 46" | 10.3 |
| 09-17 | 08h | 24.5m | +32°47' | 54" | 10.6 |
| 09-22 | 08h | 08.9m | +35°33' | 63" | 10.9 |
| 09-27 | 07h | 49.6m | +38°33' | 72" | 11.2 |
| 10-02 | 07h | 24.8m | +41°44' | 82" | 11.4 |
| 10-07 | 06h | 52.4m | +44°55' | 93" | 11.5 |
| 10-12 | 06h | 10.2m | +47°42' | 105" | 11.7 |

This comet will be moving rapidly away from the Sun but towards the Earth. It's in the morning NE sky and may be as much as one magnitude brighter than predicted and display a short tail.

PERIODIC COMET TAKAMIZAWA (1984j): This comet was discovered on July 30 by the Japanese observer Takamizawa. At that time it was a ninth magnitude object about ten degrees south east of M72. We now know that the comet is periodic, with an orbital period of roughly 6 years. It was closest to the Sun (1.57 AU) on May 26, and is presently about one astronomical unit outside of our orbit and practically running with us. If the comet behaves normally, it should be visible to us through October.

Periodic Comet Takamizawa (1984j)

| | | | | | |
|-------|-----|-------|---------|------|------|
| 08-28 | 21h | 06.3m | -23°39' | 157" | 9.8 |
| 09-07 | 21h | 07.5m | -24°24' | 147" | 10.1 |
| 09-17 | 21h | 11.3m | -24°39' | 138" | 10.5 |
| 09-27 | 21h | 17.3m | -24°29' | 130" | 10.8 |
| 10-07 | 21h | 25.8m | -23°58' | 122" | 11.2 |
| 10-17 | 21h | 35.9m | -23°11' | 115" | 11.5 |

This newly-discovered comet should be an easy object if it behaves normally it will appear small, about 1-2 arc min in diameter as it pulls away from the Earth and Sun.

Why wasn't the comet found sooner? A predisccovery ephemeris shows that the comet was in the morning sky all year, brightening slowly from mag. 11 in early March to 9.5 in early May and to 8.7 in early July. On nine occasions during those months I swept the area containing the comet, I picked up fainter globular clusters and nebulae, but not the comet. Additionally, early observations show some inconsistencies in its appearance and brightness, it seems likely that the comet outburst or brightened rapidly shortly before discovery. Future observations may help to confirm this.

HALLEY'S COMET ON SEPTEMBER 14: RA: 06hr 45.4m, DEC: +13deg 13'. Distance from the Sun: 6.23 AU. Distance from the Earth: 6.50 AU. Mag. 19.5

"What is the best telescope for discovering a comet, and how long does it take to find one?" These are two questions often asked of comet hunters. There is probably no ideal telescope for comet discovery since all comets are different. And as for the amount of time needed to find a comet, there is not just skill involved, but a lot of luck too!

An examination of the amateur comet discoveries between 1975 and 1983 follows. Not all information is available, but this should give us some idea of the instruments used and time spent. I'll list the discoverer's name, the comet at discovery, the elongation from the Sun in degrees, (with Morning or Evening sky) and the number of hours for discovery. An accidental discovery is listed as "Acc".

| Discoverer | Comet | Instrument | Mag. | Hours |
|-----------------|-------|-----------------|------|-------|
| With Binoculars | | | | |
| Bradfield | 1980t | 7 x 35mm | 6.0 | 113 |
| Seargent | 1978m | 15 x 80mm | 5.0 | --- |
| Alcock | 1983d | 15 x 80mm | 6.4 | --- |
| Petruskas | 1980k | 12 x 80mm | 9.5 | 100 |
| Cernis | 1980k | 20 x 110mm | 9.5 | 880 |
| With Refractors | | | | |
| Haneda | 1978j | 3.3" | 10.0 | 463 |
| Campos | 1978j | 5" | 10.0 | 116 |
| Bradfield | 1975d | 6", f/5.5, 26x. | 9.0 | 145 |
| Bradfield | 1975p | 6", f/5.5, 26x. | 9.5 | 106 |
| Bradfield | 1976a | 6", f/5.5, 26x. | 9.4 | 57 |
| Bradfield | 1976d | 6", f/5.5, 26x. | 8.8 | 9 |
| Bradfield | 1978c | 6", f/5.5, 26x. | 8.0 | 360 |
| Bradfield | 1978o | 6", f/5.5, 26x. | 8.4 | 75 |
| Bradfield | 1979c | 6", f/5.5, 26x. | 10.2 | 98 |
| Bradfield | 1979l | 6", f/5.5, 26x. | 5.0 | 67 |
| Austin | 1982g | 6", f/8, 18x. | 10.4 | 151 |

As we can see, a wide variety of instruments has been used for discoveries. As for the time spent on each comet, those 20 times reported equal 5474 hours giving an average of 273.7 hours/find for those specifically searching for comets. If we exclude the most and least figures we get an average of 209.2 hours. If we were to know the times for all 28 amateur discoveries during this time period, the actual figure may differ somewhat. But these facts do seem to show that comet is available to anyone with a little time and dark skies, and a telescope or binoculars.

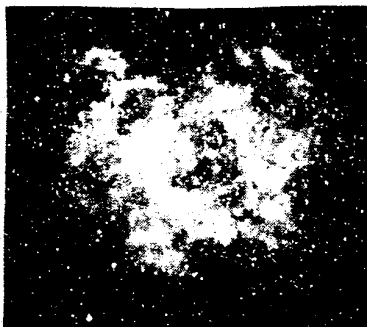
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| To remove old coatings \$3.00 Minimum charge \$8.00. | 10" | \$20.00 |
| Include postage and insurance for return mail. | 12 1/2" | \$24.00 |
| Mirror will be shipped in container received | 14 1/2" | \$28.00 |
| | 16" | \$50.00 |



Rosette Nebula NGC2237 in Monoceros. This faint nebula is seen best visually with a LUMICON UHC Filter. Photo by Dr. J. Marling from his backyard in Livermore using a LUMICON DEEP-SKY Filter. 60 min exp. on Hypered 2415 film prepared in a LUMICON Model 300 HYPER-KIT. 8 1/4" f/5 telescope using a LUMICON Newtonian EASY-GUIDER.

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