# EPHEMERIS

OF THE SAN JOSE ASTRONOMICAL ASSOCIATION

## DECEMBER 1988

DECEMBER 3RD 8 PM
RICHARD HOAGLAND
"A FACE ON MARS"

| | | |
|---|---|---|
| DEC | 3 | DICK HOAGLAND WILL SPEAK ON HIS EXAMINATION OF THE EVIDENCE FOR THE CELEBRATED (OR INFAMOUS) FACE ON MARS. |
| DEC | 10 | STAR PARTY AT GRANT RANCH COUNTY PARK. SUNSET, 4:46 PM, TWO-DAY OLD, 4% MOON SETS AT 6:12 PM, ASTRONOMICAL TWILIGHT ENDS AT 6:23 PM. |
| DEC | 17 | SJAA BOARD MEETING 8 PM AT GENE CISNEROS' HOME. IF YOU HAVE NOT BEEN THERE BEFORE, PLEASE CALL 923-6800 BEFORE YOU LEAVE. |
| DEC | 24 | NO ACTIVITY, A VERY MERRY CHRISTMAS TO ALL! FULL MOON |
| DEC | 31 | NEW YEAR'S EVE. NO OFFICIAL ACTIVITY PLANNED. EIGHT HOURS OF DARKNESS BEFORE MOONRISE WOULD YIELD A GOOD STAR PARTY TO USHER IN THE NEW YEAR. SUNSET AT 4:56 PM, ASTRONOMICAL TWILIGHT AT 6:34 PM, 42% WANING MOON RISES AT 1:25 AM. |
| JAN | 7 | STAR PARTY AT HENRY COE STATE PARK. SUNSET, 5:00 PM, ASTRONOMICAL TWILIGHT, 6:37 PM. NEW MOON. MORNING TWILIGHT, 5:48 AM, SUNRISE, 7:25 AM. |
| JAN | 14 | GENERAL MEETING, SPEAKER TO BE ANNOUNCED. |
| JAN | 21 | BOARD MEETING AT 6:30 PM, INTRODUCTORY ASTRONOMY CLASS RESUMES AT 8:00 PM. RED CROSS BUILDING IN LOS GATOS. |

## FIELD OF VIEW
BY: JOHN GLEASON and JIM VAN NULAND

### FACES ON THE RED PLANET

In 1976 the Viking orbiter returned a set of famous images of the surface of Mars. These images have been the subject of much media hype as they represent possible "alien" structures on the surface of the Martian landscape. Come and join us as Dick Hoagland will speak on his examination of the evidence for the celebrated (or infamous) Face on Mars. 8 PM Los Gatos Red Cross building.

### NEW GENERAL MEETING DATE

A new year is upon us. We are adjusting our General Meeting date from the first Saturday of the month to the second Saturday. This will allow for New Moon star parties to be scheduled without interfering with our General Meetings.

### STILL LOOKING FOR MEMBERSHIP CARD ENTRIES

Entries are still being accepted for a new membership card design. When entries stop coming in, a new card will be chosen, only if a new entry is judged superior to the existing one. The Winner will receive a free year's membership to the SJAA!!! Enter early and enter often.

# GOODBYE BRIGHT LIGHTS
## BY: DENISE HUTSON

Saying goodbye is never easy. But for Don Grabski, former part-time Orion employee and SJAA member, what he'll be saying hello to makes it all worth it. At over 2,000 ft. elevation, Don's new home in Auburn, California offers much in the way of lifestyle -- especially in the darkness of its night skies!

In my last contact with Don, he told me that he was in the process of finalizing a company transfer as well as tying up loose ends on the sale of his home. When all is said and done, he'll bid his farewells and make the final move, (his telescope is already there!).

And if you hadn't noticed already, Don's suggestion in the July Ephemeris (regarding a female reporter) has taken root. I look forward to filling Don's shoes as reporter and wish to tank him on behalf of all of in the SJAA, for his contributions to past issues of the newsletter.

Good luck Don!

## ASTRO ADS

WANTED: 10.1" Coulter Odyssey telescope or 10" Newtonian with Dobsonian mount. Maximum price $350. Contact Roger Hall at 408-732-2803 or 408-245-1741, 11:00 a.m. to 8:30 p.m. 12/88

MEADE 8-inch f/6 Model 628 Newtonian Reflector with RA and DEC motors, drive corrector with slow motion control joystick, 40mm wide-field eyepiece, 50mm f/12 guide telescope, 6 X 30 finderscope, equatorial mount, accessory tray, transportation cradle for scope. All for $800 or best offer. Contact: David Ferry, 408-259-2366 after 5:00 p.m. 12/88

MEADE 2080 LX-5, like new, used 4 times. includes: Meade counter weight set, Meade Variable polarizing system, Meade variable focus camera adapter, Meade focus back, Meade super Plossl 20mm eyepiece, Meade dewshield, Meade piggyback camera mount, Orion t-mount & adapter, Orion moon, orange, violet, blue, and yellow/green filters, Orion sky glow filter, Celestron 26mm Plossl & 25mm Kellner, Tel-Rad view finder, Jim's Moto-Focus, Orion dew zapper, Orion accessories case (large), Olympus OM-1 camera with f/1.8 50mm lens, deluxe flexible cable release, misc. extras, and Tele-Vue 9mm Nagler & 55 Plossl. (most original boxes available.) Sold as package deal only! $1750.00 FIRM!! Don Grabski. 408-292-9144 (home), 408-925-9650 (voice pager). 12/88

WANTED: Issues 17 and 24 of Telescope Making magazine. I have extras of number 26, and 27 to swap, or will pay reasonable price. Also desire numbers 10 to 15, and 1 to 5, in descending order. Contact: Jim Van Nuland, (408) 371-1307, 10 am to 11 pm. 11/88

4" BRASS REFRACTOR for sale. Unitron lens with a solid brass tube and 8X50 brass finder. Super Polaris mount with stepper motor drive. Tripod is hand rubbed mahogany. Also includes a drive corrector and portable power supply. Excellent optics and a real looker. $950. Call Jim Baumgardt at: (415) 692-5337 after office hours. 11/88

MEADE 2080 GEM 8". It comes with 3 eyepieces; Meade Series 4000 super Plossl 26mm, 9.7mm, Celestron 2X Barlow lens, all 1 1/4". $700 Contact: Julie Ide 708 Columbia St. Santa Cruz, CA. 95060 (408) 423-6495. 11/88

CELESTRON SUPER C8 with wedge, Meade heavy duty tripod, Meade drive corrector, 6.5 Amp/hr battery with charger, Celestron 45mm Plossl eyepiece, Celestron 7mm Ortho. $750. Don Irving 978-6114 evenings before 9 pm. 11/88

CELESTRON COMET CATCHER with beautiful vernier Dobsonian mount. Telrad finder, Televue 26mm Plossl. $350 Don Irving 978-6114 evenings before 9 pm. 11/88

FOR SALE: Super Polaris C8 w/starbrite coatings, Sky Sensor computer control, piggyback mt. dewcap, 25mm Plossl, $925. Celestron 5 w/wedge and tripod, star diagonal, 25mm and 7mm ortho. eyepieces, image erector, tripod leg height adjusters, dewcap, $ 575. Comet Catcher (Schmidt-Newtonian), w/tube rings for Super Polaris or Polaris mount with guidescope attachment, T-adapter, 25mm eyepiece, Celestron deluxe 2X Barlow, $300. Dual axis drive corrector for Super Polaris mount, $125. Meade 15.5mm Research Grade Erfle, 1.25", $50. Meade 32mm Research Grade Erfle, 2.00", $80. All of the above equipment has new appearance and is in excellent operating condition. Jim Molinari. (408) 255-7030 (H), (408) 298-7557 (W). 11/88

FOR THE ASPIRING ASTROPHOTOGRAPHER. Classic Orange Celestron C8 with wedge, adjustable tripod, and everything you need for astrophotography except a camera. Equipment includes : Accutrack 2120 dual axis drive corrector with joystick hand controller and declination motor, Jim's Mobile electric

Motofocus, 8X50mm finder, setting circle lights, work table, counterweight bar assembly, dew shield, off-axis guider plus 12.5mm Orthoscopic illuminated reticle eyepiece for deep sky astrophotography, tele-extender tube for close-up planetary and lunar photography, piggyback camera mount for wide-field astrophotography, 10mm Plossl and 25mm Orthoscopic eyepieces, 2X Barlow, accessory case, The Amateur Astronomer's Handbook, 3rd Ed., Webb Society Deep-Sky Observer's Handbooks, Vols. 1 to 5, The Cambridge Astronomy Guide, plus more! Asking $1795. Contact Ron at 415-278-3335 for details. Evenings, before 9:30 PM, please. 10/88

BAUSCH & LOMB 60mm telescope. Telescope is only 5 months old and in excellent condition. $190 For more specific details contact: Gary Mathers 408-286-4004, 707-576-0778. 10/88

CELESTRON Super C8+ with tripod and wedge. 1 year old, mint condition, original boxes. Includes 2.5x Televue Barlow, dew cap, star diagonal, 2 eyepieces, etc. Paid $1200: will sell for $900 or best offer. Contact: Brett Johnson at work 408-553-2965 or home 408-293-2053. 10/88

## THE GREAT RED SPOT OF JUPITER
## BY: JIM VAN NULAND

On Oct. 21 with perfect seeing, I found two white ovals within the South Equatorial Belt, just following (east of) the Great Red Spot. I had not seen them before, and on the 31st with mediocre seeing, they were not visible. The spots were about half the size of the Great Red Spot. and turned sort of half-sideways within the SEB. It was a treat to see more than vague details: my backyard only very rarely delivers seeing better than fair.

In addition to the Great Red Spot, Jupiter features a continuing show of satellite events -- shadow and moon transits, occultations, and eclipses. These are given in detail in the Astronomical Almanac for the given year, but can also be inferred from the diagram given in astronomical magazines. I've sometimes seen Jupiter with only two satellites. Has anyone seen only one? On April 9, 1980 there were two hour-long periods with NO satellites at all, but, unhappily, S&T did not call attention to it. It was visible in the Pacific and Far East. There are other possibilities on June 15, 1990, and June 2, 1991, but I don't have enough equations to check it out.

The predictions are corrected for the changing aspect, phase, and light-time. At the given times, the Spot will be facing directly toward Earth, and thus will appear central on the apparent disk of tahe planet. Observations may be made for over an hour before and after that time.

| da | mo | d | h | m | | da | mo | d | h | m | | da | mo | d | h | m | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Th | 12 | 1 | 5 | 27 | pm | W | 12 | 14 | 3 | 16 | am | Tu | 12 | 27 | 6 | 47 | pm |
| F | 12 | 2 | 3 | 23 | am | W | 12 | 14 | 11 | 2 | pm | Th | 12 | 29 | 0 | 33 | am |
| F | 12 | 2 | 11 | 10 | pm | Th | 12 | 15 | 6 | 52 | pm | Th | 12 | 29 | 8 | 28 | pm |
| Sa | 12 | 3 | 6 | 58 | pm | Sa | 12 | 17 | 0 | 41 | am | Sa | 12 | 31 | 2 | 10 | am |
| M | 12 | 5 | 0 | 48 | am | Sa | 12 | 17 | 8 | 31 | pm | Sa | 12 | 31 | 10 | 10 | pm |
| M | 12 | 5 | 8 | 43 | pm | M | 12 | 19 | 2 | 19 | am | Su | 1 | 1 | 5 | 56 | pm |
| W | 12 | 7 | 2 | 25 | am | M | 12 | 19 | 10 | 15 | pm | M | 1 | 2 | 11 | 44 | pm |
| W | 12 | 7 | 10 | 21 | pm | Tu | 12 | 20 | 6 | 1 | pm | Tu | 1 | 3 | 7 | 32 | pm |
| Th | 12 | 8 | 6 | 7 | pm | W | 12 | 21 | 11 | 50 | pm | Th | 1 | 5 | 1 | 24 | am |
| F | 12 | 9 | 4 | 6 | am | Th | 12 | 22 | 7 | 39 | pm | Th | 1 | 5 | 9 | 13 | pm |
| Sa | 12 | 10 | 0 | 1 | am | Sa | 12 | 24 | 1 | 24 | am | F | 1 | 6 | 5 | 5 | pm |
| Sa | 12 | 10 | 7 | 52 | pm | Sa | 12 | 24 | 9 | 15 | pm | Sa | 1 | 7 | 10 | 49 | pm |
| M | 12 | 12 | 1 | 38 | am | Su | 12 | 25 | 5 | 6 | pm | Su | 1 | 8 | 6 | 48 | pm |
| M | 12 | 12 | 9 | 23 | pm | M | 12 | 26 | 3 | 3 | am | Tu | 1 | 10 | 0 | 29 | am |
| Tu | 12 | 13 | 5 | 14 | pm | M | 12 | 26 | 10 | 55 | pm | Tu | 1 | 10 | 8 | 23 | pm |

## SPACE PROGRAM UPDATE
## BY: BOB FINGERHUT

### SHUTTLE ORBITER ATLANTIS IS SCHEDULED FOR NOVEMBER LAUNCH

The shuttle Atlantis was rolled to the launch pad on November 2nd. The launch could come as early as Nov. 28 or 29. The launch window opens about 7 am. The payload, a secret Pentagon satellite, was installed in the cargo bay on Nov. 10. The five man crew plans to spend 3 - 4 days in space and then land at Edwards Air Force Base.

### SOVIET SHUTTLE SUCCESSFULLY LAUNCHED

The Soviet shuttle Buran (Snowstorm) was launched and orbited successfully on November 15th. The original countdown was halted on Oct. 29, only 51 seconds before lift off. The Soviets say that the cancellation was due to the failure of an access arm to retract. Unmanned, the Buran was flown for three orbits and then landed by remote control. A second orbiter named Pitchka (Birdie) has been completed and up to three more orbiters are under construction.

### MIR COSMONAUTS REPAIR X-RAY TELESCOPE

The repair was conducted during a 4 hour EVA (space walk) by two cosmonauts on Oct. 20. An earlier repair attempt on June 30 failed when a critical tool broke.

### PHOBOS-1 REVIVAL ATTEMPTS ABANDONED

The Soviet Union has given up hope of recovering its Phobos-1 spacecraft that is enroute to Mars and the Martian moon Phobos. It is believed that Phobos-1 has stabilized in a gravity gradient attitude with its solar panels pointed away from the Sun.

### GOES-WEST WEATHER SATELLITE FAILS

The satellite exceeded its five year design life in April. It failed and was boosted out of it geosynchronous orbit in early November. The final failure occurred when the last of four light bulbs, used in the satellite's scanning encoder system of the imager, burned out. There will now be only one GOES weather satellite in orbit for at least 18 months. GOES-East will be kept in an easterly position for the hurricane season and then moved west during the severe winter storm season.

### 1989 SHUTTLE LAUNCH SCHEDULE

| | | |
|---|---|---|
| 2/18/89 | Discovery | Launch TDRS track and data relay satellite. |
| 4/28/89 | Atlantis | Launch Magellan spacecraft to Venus. |
| 7/1/89 | Columbia | Secret Pentagon mission. |
| 8/10/89 | Discovery | Secret Pentagon mission. |
| 10/12/89 | Atlantis | Launch Galileo spacecraft to Jupiter. |
| 11/13/89 | Columbia | Launch communication satellite and retrieve Long-Duration Exposure Facility. |

## DOUBLE, TRIPLE AND MULTIPLE STARS
BY: PATRICK DONNELLY

Rather than describing some of the double stars of a single constellation, it seems appropriate to provide a list of some of the more interesting doubles visible in the evening hours in early December. The list was compiled using such criteria as magnitude, separation, color variations, and configuration (for multiples), and this list is also provided as a beginners list for those just getting started. All the stars listed can be found in the Edmund Mag 5 Star atlas, which should help beginners.

To view each double or multiple on the list you should begin by 8:00 PM in the evening to take advantage of the stars setting in the west. Observe each double for at least five minutes, and try to determine the colors. For doubles with a separation of 5" (5 seconds) or less, use as high a power on the scope as the seeing permits. I hope you find these stars as interesting as I did.

| NAME | MAGNITUDES | SEPARATION | NOTES |
|---|---|---|---|
| 1. Gamma Andromeda | A-2.0 B-5.0 | 10.0" | Yellow-blue pair |
| 2. Beta Cepheus | A-3.3 B-8.8 | 13.7" | White-blue pair |
| 3. Xi Cepheus | A-4.5 B-6.5 | 7.2" | Both blue |
| 4. Zeta Aquarius | A-4.4 B-4.6 | 2.5" | Both white |
| 5. Eta Cassiopeia | A-3.6 B-7.4 | 9" | Yellow-purple |
| 6. Iota Cassiopeia | A-4.7 B-7.0 | AB-2.3" | Yellow-blue |
| | C-8.2 | AC-7.2" | triple |
| 7. Alpha Pisces | A-4.3 B-5.2 | 3" | Blue-green |
| 8. Epsilon Perseus | A-2.9 B-8.1 | 9" | Both white |
| 9. Zeta Perseus | A-2.9 B-9.3 | | |
| | C-11. D-9.5 | AB-13" | Multiple star |
| | | AC-33" | |
| | | AD-94.2 | |
| 10. Gamma Cetus | A-3.7 B-6.4 | 3" | Yellow-blue |
| 11. Gamma Aries | A-4.8 B-4.8 | 8" | White-gray |
| 12. Lambda Aries | A-4.8 B-7.6 | 37.4" | White-blue |
| 13. 14-Auriga | A-5.0 B-7.0 | AB-14.6" | Yellow-blue-white |
| | C-11. | AC-11.1" | trio |
| 14. Omega Auriga | A-5.0 B-8.0 | 5.4" | Both white |
| 15. Theta Auriga | A-3.0 B-7.5 | AB-3.4" | All white triple |

| | | | | |
|---|---|---|---|---|
| | C-11.0 | | AC-51.5" | |
| 16. 30-Taurus | A-5.0 | B-10.0 | 9" | Green-purple |
| 17. 32-Eridanus | A-5.0 | B-6.3 | 7" | Yellow-green |
| 18. Alpha Gemini | A-2.0 | B-2.8 | AB-2.2" | Nice triple |
| | C-9.0 | | AC-73" | |
| 19. Delta Gemini | A-3.5 | B-8.0 | 6.3" | Yellow-red |
| 20. Polaris | A-2.1 | B-9.0 | 18.3" | Yellow-blue |

## COMET COMMENTS
## BY: DON MACHHOLZ

Periodic Comet Temple 2 continues to fade in our evening sky. Meanwhile, two more comets have been discovered on images recorded by an earth-orbiting satellite.

I am now the Comet Recorder for the Association of Lunar and Planetary Observers (ALPO). One aspect of this position is to collect observations, photographs and drawings of comets. Please call or write me if you wish to submit such records.

Comet SMM 4 (1988m) and Comet SMM 5 (1988n): Once again the Solar Maximum Mission Satellite has imaged two more comets. Both were recorded entering the solar vicinity and were observed for only a few hours. They were not seen leaving the solar vicinity, and both were probably members of the Kreutz Sungrazing Group.

Comet SMM 4 attained magnitude -3 and was closest the sun on Aug. 21.8.

Comet SMM 5 was much brighter than mag. -4 and was closest the sun on Oct. 12.1. Backtracking the comet's path, we see that it raced through the morning sky and into the solar region in late September. By Oct. 1 it would have risen before morning astronomical twilight from almost all latitudes, and, if it behaved normally, it would have shone at mag. 7.5. Over the next ten days it continued to move toward the sun as it brightened. Perhaps it could have been found by earth-based observers, but it would have been a difficult object.

One wonders if it is possible to find these comets during the daytime. I had tried this for several months a few years ago; I used a variety of instruments, filters and methods. One hint is to hide the sun behind a distant object, putting both you and the instrument objective in the shade. It probably does no good to sweep beyond ten degrees from the sun, and a tail is unlikely to be seen. You have to make sure you don't confuse a comet with Mercury or Venus, and confirmation would be difficult since it would be visible for only a few hours.

PERIODIC COMET TEMPLE 2 (1987g)

| DATE | R.A. (1950) | DEC | ELONG | MAG | NOTES |
|---|---|---|---|---|---|
| 11-25 | 21h 40.8m | -25°57' | 77° | 10.7 | This comet sets at |
| 11-30 | 21h 56.6m | -24°45' | 76° | 10.9 | roughly 10 PM local |
| 02-05 | 22h 11.9m | -23°28' | 74° | 11.1 | time from most of the |
| 12-10 | 22h 26.7m | -22°08' | 73° | 11.4 | U.S., giving us still |
| 12-15 | 22h 40.9m | -20°45' | 72° | 11.7 | some time to get out |
| 12-20 | 22h 54.6m | -19°21' | 70° | 11.8 | and see it. It has |
| 12-25 | 23h 07.9m | -17°55' | 69° | 12.0 | put on an impressive |
| 12-30 | 23h 20.8m | -16°29' | 67° | 12.3 | show and remained vis |
| 01-04 | 23h 33.3m | -15°02' | 65° | 12.5 | ible for six months. |

## SEEKING COMETS

During what time of year are the most comets found? Here we look at four sets of comet discoveries, divide into the month when the comet was found.

The first column lists those 42 comets found visually from 1975 through 1987. Secondly we look at 510 comets found visually from 1700-1985. This is from Michael Rudenko's studies, as is the next column, listing 187 comets found photographically. Finally, we look at the 11 Sungrazing comets found by the Solwind and SMM satellites.

The bias here represents the fact that most comets are found from the Northern Hemisphere of the earth. Summer months have clearer weather, but they are short. Winter months are longer, but cloudier. Generally, the Autumn has clear and fairly long nights. This allows better coverage and discovery of fainter comets. Also, the Northern Hemisphere Autumn mornings see an upward twisting of the ecliptic along with longer darkness, this allows much more sky

to sweep and more time to cover it.

As for the satellite finds, those Sungrazers coming to perihelion from late May through August are difficult to see from earth because the arrive from the far side of the sun. Assuming that the satellite images are patrolled year-round, I see no reason why Sungrazers prefer the second half of the year.

| MONTH | 1975-87 AMAT. VIS. | % | 1700-1985 VISUAL | % | 1700-1985 PHOTO. | % | SATELLITE SUNGRAZERS | % |
|---|---|---|---|---|---|---|---|---|
| JAN. | 5 | 12% | 40 | 7.8% | 16 | 8.6% | 1 | 9% |
| FEB. | 2 | 5% | 32 | 6.3% | 17 | 9.1% | 0 | 0% |
| MAR. | 2 | 5% | 43 | 8.4% | 14 | 7.5% | 0 | 0% |
| APR. | 1 | 2% | 46 | 9.0% | 12 | 6.4% | 0 | 0% |
| MAY | 4 | 10% | 35 | 6.9% | 7 | 3.7% | 0 | 0% |
| JUN. | 2 | 5% | 36 | 7.1% | 18 | 9.6% | 1 | 9% |
| JUL. | 5 | 12% | 50 | 9.8% | 14 | 7.5% | 2 | 18% |
| AUG. | 2 | 5% | 43 | 8.4% | 20 | 10.7% | 2 | 18% |
| SEP. | 5 | 12% | 47 | 9.2% | 20 | 10.7% | 1 | 9% |
| OCT. | 6 | 14% | 38 | 7.5% | 20 | 10.7% | 3 | 27% |
| NOV. | 4 | 10% | 50 | 9.8% | 19 | 10.2% | 1 | 9% |
| DEC. | 4 | 10% | 50 | 9.8% | 10 | 5.3% | 0 | 0% |
| TOTAL | 42 | 100% | 510 | 100% | 187 | 100% | 11 | 100% |

## YES STARS REALLY DO MOVE!
## BY: TODD HANSEN

Any introductory text will state that the stars move. The phenomenon is proper motion, i.e. the shift of the position of one object relative to more distant ones. That stars in the seemingly changeless sky do in fact shift over long periods of time has been known since the ancient Greek Hipparchus (130 B.C.). But I wished to prove it, using only visual means, for myself.

I first thought of the idea from the August, 1969 issue of Sky & Telescope. On page 77, a list is given of very large proper motion stars, topped by Barnard's Star. This star is famous not only for having the highest proper motion (10.27" per year) of any star, but also for being the closest star next to the three of the Alpha Centauri system. It is also the most likely candidate for having a planetary system. Considering that a double star of 10" separation is readily split in a small telescope, I decided one should be able to detect for oneself the proper motion from year to year.

On July 4, 1977, I plotted the position of Barnard's Star for the first time. Rather than use any "assist" (other than the telescope), I tried my hand at plotting the field stars without help of a chart or photograph. Then I plotted my target using as many possible angles and proportional distances as I could with the field stars. A "Vee" of stars seen in the various finder charts were especially helpful in creating these angles and distances. The sketch made of the field (without Barnard's Star) I eventually photocopied and reused year after year. For finders I originally used Sky & Telescope articles from September, 1966 (p. 169) and August, 1967 (p. 121). More recent finders are in the October, 1979 (p. 386), July, 1981 (p. 50), and June, 1983 (p. 531) issues.

So what did I find? I plotted Barnard's Star five years between 1977 and July 3, 1983. And it moved! In fact, the motion was detectable over a two to three year period. However it was interesting that the accuracy of my simple hand-drawn charts was inadequate to show a yearly motion of 10". Visual results are more qualitative than quantitative, and one must conclude that photographically based results are the only reliable technique to try for precise measurements.

In addition to Barnard's Star, I also plotted Groombridge 1830 (third highest proper motion at 7.04"/year) over the same period of time- but without any evidence it had moved! I hope I was watching the right star! Kapteyn's Star (second highest proper motion at 8.73"/year) at declination -45 degrees is difficult to plot from mid-northern latitudes, but on December 13, 1980 I did make a chart of it as well. There is a special element of this observing program. If one is lazy, putting off observations for a year of two is an advantage!

# SJAA MEETING AND STAR PARTY LOCATIONS

## GENERAL MEETINGS

Once a month the SJAA holds a General Meeting at the Red Cross building in Los Gatos California. Guest speakers are invited to give talks on a wide range of astronomical topics which have included equipment and slide presentations. This is also the location for the SJAA's "Indoor Star Parties", informal sessions where members gather to share their astronomical interests. Whatever your interest, astrophotography, deep sky observation, telescope making, or just arm chair observing, you'll find a friendly atmosphere at all of our meetings.

The Red Cross building is located at 18011 Los Gatos-Saratoga Rd. From Hwy 17 take the Hwy 9 (Saratoga) exit and continue west up the Los Gatos-Saratoga road for about 0.6 miles. Turn right at Rose Ave. Then turn right immediately into the parking lot of the Post Office and Red Cross building. Doors open at 7:45 PM, with General meetings beginning at 8 PM. General Meetings are currently held on the 1st Saturday of each month.

## INDOOR STAR PARTIES

Occasionally there are a few Saturday evenings set aside for informal gatherings of amateur astronomers to share their common interest in astronomy, to "talk shop", or to simply enjoy the company of friends. Members are encouraged to bring in telescopes and accessories to share with the group. Typically there will be several telescopes operating in the parking lot or there will be a slide show of recent astrophotography and star party events in progress in the meeting hall. The SJAA also holds it board meetings during this time as well as an introductory astronomy workshop that is conducted once a month.

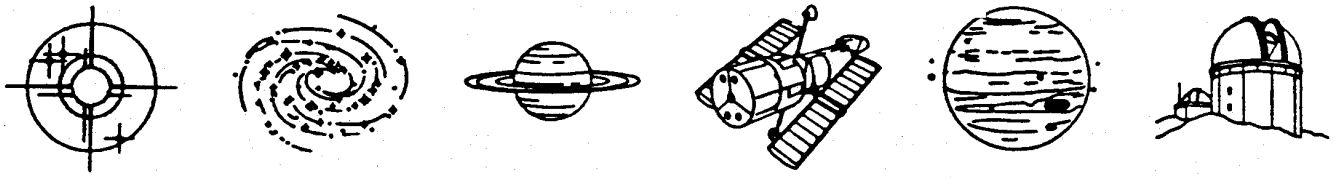
## FIELD EXPEDITIONS

On the Saturdays closest to the New Moon, the SJAA will conduct a "Star Party" for astronomical observation at a designated location. Several times a year these star parties are held close to San Jose while others are held as far away as Yosemite national Park. Watch the EPHEMERIS for star party locations.

## FREMONT PEAK STATE PARK

The most popular of locations for bay area amateur astronomers is Fremont Peak State Park. Located 70 miles south of San Jose near the town of San Juan Bautista, Fremont Peak rises nearly 3000 ft. above the valley floor. For two decades amateurs have gathered at the "Peak" during New Moon weekends for serious deep sky observing and astrophotography. To get to Fremont Peak for San Jose, take Hwy 101 south towards Salinas. Then take Hwy 156 east (San Juan Bautista exit) for 3 miles to a yellow flashing light. Turn right and go about 1/4 mile to where the road reaches a "Y". Veer left for about 25 yards and then go right. (Watch closely for the Fremont Peak sign) Follow the Canyon Road for about 11 miles up into the park. The SJAA sets up in Coulter Camp. It's visible on your right as you first drive onto the main area of the park. Expect to find a lot of astronomical activity here every clear New Moon weekend. Arrive early if you are setting up equipment. 50 to 100 telescopes are not uncommon at Fremont Peak during the summer months.


EPHEMERIS is published monthly by the San Jose Astronomical Association, 3509 Calico Ave., San Jose California 95124. Members are encouraged to submit articles for publication. These should be typed and submitted no later than the 12th of the previous month. All submissions should be sent directly to the editor, John Gleason, 5361 Port Sailwood Dr. Newark, CA. 94560.



**SAN JOSE ASTRONOMICAL ASSOCIATION MEMBERSHIP APPLICATION**

**MEMBERSHIP ONLY: $10 MEMBERSHIP/S&T: $26 JUNIOR (UNDER 18): $18**

Name:_____

Address:_____

_____

Telephone (____)_____

MAKE CHECKS PAYABLE TO **"SJAA"**

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

Jack Peterson, Treasurer
San Jose Astronomical Association
1840 Yosemite Dr.
Milpitas, CA. 95035

Telephone: (408) 262-1457

**Please check type of membership and if New or Renewal**

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