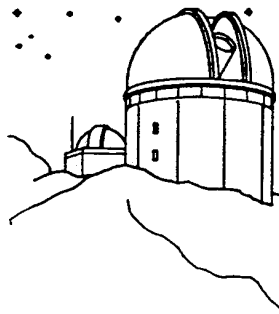


EPHEMERIS

OF THE SAN JOSE ASTRONOMICAL ASSOCIATION



SEPTEMBER 1989

* SEPTEMBER 9TH 6 PM *
* SWAP MEET FOLLOWED BY *
* SLIDE & EQUIPMENT NIGHT *

- SEPT 02 STAR PARTY AT GRANT RANCH COUNTY PARK, MAIN PARKING LOT. SUNSET, 7:34 PM; THE 8 $\frac{1}{2}$ MOON SETS 8:32 PM. ASTRONOMICAL TWILIGHT IS 9:05 PM. MORNING TWILIGHT, 5:08 AM; SUNRISE, 6:39 AM. THIS EVENT IS HELD JOINTLY WITH THE HALLS VALLEY GROUP.
- SEPT 08 (FRIDAY) -- PUBLIC STAR PARTY AT BRANHAM LANE PARK. (SEE NOTICE BELOW) THERE WILL BE A 5 $\frac{1}{2}$ MOON WHICH SETS AT 12:04 AM. OFFICIAL HOURS ARE 6:30 PM TO 11 PM.
- SEPT 09 SEPTEMBER SWAP MEET AT 6:00 PM, FOLLOWED BY SLIDE AND EQUIPMENT NIGHT AT 8:00. BRING THE NEAT NEW STUFF THAT YOU'D LIKE TO SHOW "H" TELL. SHOW YOUR BEST OR NOT-SO-BEST EFFORTS AT ASTROPHOTOGRAPHY. ALL AT THE RED CROSS BUILDING.
- SEPT 16 SJAA BOARD MEETING AT THE RED CROSS, 7:00 PM, FOLLOWED BY A INDOOR STAR PARTY. PLEASE NOTE: NO INTRODUCTORY OBSERVATIONAL ASTRONOMY CLASS: SEE THE 22ND.
- SEPT 22 (FRIDAY!) THE INTRODUCTORY OBSERVATIONAL ASTRONOMY CLASS MEETS FOR ITS ANNUAL STAR PARTY AT FREMONT PEAK STATE PARK. TIMES ARE: SUNSET, 7:03 PM; ASTRONOMICAL TWILIGHT, 8:29 PM. THE 37 $\frac{1}{2}$ MOON RISES AT 0:41 AM; MORNING TWILIGHT WOULD BE 5:28 AM. SUNRISE, 6:55 AM.
- SEPT 23 STAR PARTY AT FREMONT PEAK STATE PARK. TIMES ARE: SUNSET, 7:01 PM; ASTRONOMICAL TWILIGHT ENDS, 8:28 PM. THE 27 $\frac{1}{2}$ MOON RISES AT 1:47 AM; MORNING TWILIGHT WOULD BE 5:29 AM. SUNRISE, 6:56 AM.
- SEPT 30 SJAA STAR PARTY AT HENRY COE STATE PARK. TIMES ARE: SUNSET, 6:51 PM; THE 1 $\frac{1}{2}$ MOON SETS AT 6:59 PM. ASTRONOMICAL TWILIGHT ENDS, 8:17 PM. MORNING TWILIGHT BEGINS 5:35 AM. SUNRISE, 7:02 AM.
- OCTOBER 06 (FRIDAY) -- PUBLIC STAR PARTY AT BRANHAM LANE PARK. SUNSET, 6:43 PM; THE 41 $\frac{1}{2}$ MOON SETS 10:53 PM.
- OCTOBER 07 NO ACTIVITY. PLEASE CONSIDER COMING TO BRANHAM LANE ON OCT. 6TH.
- OCTOBER 14 GENERAL MEETING -- SPEAKER TO BE ANNOUNCED
- OCTOBER 21 SJAA BOARD MEETING AT THE RED CROSS, 7 PM, FOLLOWED BY THE FINAL SESSION OF THE INTRODUCTORY OBSERVATIONAL ASTRONOMY CLASS AT 8 PM. THE CLASS WILL START AGAIN ON JANUARY 13, 1990.
- OCTOBER 28 SJAA STAR PARTY AT FREMONT PEAK STATE PARK

FIELD OF VIEW
BY: JOHN GLEASON & JIM VAN NULAND

SWAP MEET

The September swap meet will be held at the Red Cross, preceding the meeting on September 9. Since there will be a first-aid class during the afternoon, we cannot get the building until 6 PM. Please don't come much earlier than that. The annual Slide and Equipment night program will follow at 8 or 9 pm depending upon when the swap meet ends. This is an excellent opportunity for members to share observing experiences, astrophotography, and equipment.

PUBLIC STAR PARTIES

To provide public education concerning astronomy, SJAA will conduct a series of free public observing sessions at Branham Lane Park in San Jose, from an hour before sunset to 11 pm. Dates (all Fridays) are:

| | |
|-------------|------------|
| September 8 | November 3 |
| October 6 | December 8 |

Volunteers are needed! Call Jim Van Nuland or Tom Ahl if you will be able to bring an instrument. You may feel that you are not "expert" enough to present the sky to the public -- but consider that you know vastly more than those poor unfortunates who have NEVER looked through a telescope. You'll find it's a lot of fun, too, giving someone their the Moon or Saturn!

If we can get enough volunteers, we'll form teams, so you would not have to attend each month. If all goes well, we hope to continue the series indefinitely.

PRIVATE STAR PARTIES -- GRANT RANCH

The head of Grant Ranch is concerned with liability problems when people are in the park at unscheduled times. Unless formal arrangements are made in advance, the park is considered closed after sunset. If you are a registered camper, you may observe from your campsite. The regular first Saturday star parties are, of course, open to all. If the gate is closed on the entrance side, drive in on the exit side.

At Henry Coe State Park, the knob overlooking the campground is available only by prior arrangement. If you wish to go to Coe on your own, you may set up in the overflow parking lot. This is the large field 20 yards past the large wood sign at the entrance, on the right side. The gate may be closed, but should not be locked. If after regular hours, the "night use" fee, \$3, should be deposited in the Iron Ranger at the campground. You may call the park at 408/779-2728 to be sure the overflow lot will be available (sometimes it's full of vehicles).

Fremont Peak State Park is available any time without prior arrangement. If you are not using the campground, pay only the \$3 night use fee into the Iron Ranger. Please see the special policy notice in this issue.

VISITING LICK OBSERVATORY

The public observing program at Lick Observatory has been resumed; the bad news is that it is completely booked for 1989. We will run a note when the 1990 series is announced.

The visitor's center and gift shop is now open from 1 to 5 pm daily; the gallery of the 120 inch is open 10 to 5. Closed most holidays.

BOOK FOUND

A copy of the Hubble Classification of Galaxies was left at Grant Ranch after the Picnic. The finder, (unaware of such a thing as amateur astronomy), took it up to Lick Observatory. It may be claimed there. Call 408/274-0562 and ask for the Lost and Found.

AVAILABLE -- PIECES OF THE MOON

Some of the lunar samples brought back by the Apollo astronauts are available to educators, museums, and planetariums.

Teachers that are certified can obtain lunar material under NASA's Lunar Sample Loan Program. The material consists of six samples, representing the Moon's varying geology, encapsulated in a six inch diameter clear Lucite disk. The

samples are Basalt, Breccia, Highland soil, Anorthosite, Mare soil, and Orange soil. The disks are designed for study under a microscope. About 200 disks have been made. Each is accompanied by written and graphic descriptions of each sample, a film, a sound and slide presentation or film strip and a teacher workbook.

To become certified to use the disks, a science teacher needs to attend a workshop sponsored by NASA's Space Science Education specialists. At the workshop the teacher learns how to handle the lunar material and the security requirements stipulated by NASA.

Interested teachers in our area should contact the Education Programs Office at the Ames Research Center, Moffett Field, CA 94035. For museums and planetariums, NASA has created a traveling display program. Lunar samples ranging from 77-160 grams in weight are encapsulated in clear Lucite pyramids, the samples are available for loan periods ranging from two weeks to two months. For information, contact the Office of Public Affairs, Ames Research Center, Moffett Field, CA 94035.

ANOTHER NEAR MISS

On Thursday night, August 24th, the fast-moving Apollo asteroid 1989 PB came within 2.5 million miles of Earth. Eleanor Helin discovered the object on August 9th with the Palomar 18-inch Schmidt camera. It is among the 10 all-time closest approaches by any asteroid or comet.

NEW MOONS FOR NEPTUNE

Scientists at the Jet Propulsion Laboratory have announced the discovery of three new moons around Neptune. There were seen in images taken by Voyager 2. For now the three will carry the temporary designations 1989 N2, N3, and N4. Like 1989 N1, which was first spotted in late June, the new moons occupy nearly circular orbits close to the planet's equatorial plane. Their mean distances from Neptune's center are 73,000, 52,000, and 62,000 kilometers, respectively, and their orbital periods are 13.4, 8.2, and 10.3 hours. Preliminary estimates place their diameters in the range of 100 to 200 kilometers. Astronomers realized immediately that these tiny objects lie in the same region as Neptune's elusive ring arcs, and that their existence may go a long way toward explaining why the planet's ring system is fragmentary. Moreover, since Voyager has already found four moons while still more than 35,000,000 kilometers from Neptune, outer-planet specialists believe others will be discovered during the spacecraft's historic flyby on the 24th and 25th of August.

AND SPEAKING OF PLANETS.....JUPITER

Jupiter observing season has already begun as it rises in the east before dawn and is the brightest point of light in the sky as day breaks. Jupiter's southern hemisphere has become extremely active. Last November the Red Spot moved 6 degrees in longitude. Soon after that, white spot activity in the zone following the Red Spot ceased abruptly. Now the normally prominent South Equatorial Belt has faded. Florida amateur Don Parker reports that in his 16-inch reflector the feature appears made up of two very thin bands. The southern one is darker than the northern one, but both are barely visible. The southern component is darkest near the following side of the Great Red Spot, which itself is extremely faded and small. ALPO Jupiter recorders Jose Olivarez and Philip Budine say that all these signs point to a coming South Equatorial Belt disturbance, something not seen since 1978 and long overdue. Observers with moderate-size telescopes should monitor the giant planet for further activity.

ASTRO ADS

ASTRO ADS are free to all non-commercial advertisers wishing to sell astronomically related products or services. Please send your ad directly to the Editor, John P. Gleason, 5361 Port Sailwood Dr. Newark, CA 94560 NO LATER THAN THE 15TH OF EACH MONTH. Your Astro Ad will run approximately 3-months.

FOR SALE: 10" Newt/Cass. f/5-f/20 with superb optics. 90mm f/15 refractor guide scope and 10x70 finder. Supersolid Schaffer mounting with quartz digital drive corrector. \$3800. Huge selection of accessories; eyepieces, filters, including Lumicon solar prominence filter, cases etc. Will sell accessories separately or with scope for \$4500. Call for list and photo. Jim Baumgardt (415) 574-1500 days or (415) 692-5337. 9/89

FOR SALE: 4" f/30 professional solar prominence telescope. Missing Ha filter. Great for this active solar cycle. \$150.00. Jim Baumgardt (415) 574-1500 days or (415) 692-5337. 9/89

MEADE, Model 320 refractor, 80mm, telescope with equatorial mount and tripod, several eyepieces and acc's. Like new. Call Dan, (408) 736-1827 \$500 firm. 9/89

SUPER C8+ with starbright and 2" accessories including Orion 2" adapter, star diagonal, skyglow and ultra-block rear cell filters, Parks 2X Barlow, 55mm, 40mm, 32mm, 25mm, & 10mm 2" eyepieces, counterweights, dew shield, accessory tray, accessory case (large Orion), Celestron single axis drive corrector (12 VDC operation) declination motor w/hand control. All for \$1200 firm. Call or write Mike Schartman at (408) 946-8395, 2262 Yosemite Dr. Milpitas, CA 95035.

FOR SALE: ASTRO-SCAN 2001 by Edmond Scientific, Celestron 2X Barlow, and 12.5 mm Orthoscopic eyepiece. All like new. \$300. Contact Mrs. Burns. 8/89
408-984-1409

CELESTRON 8, with wedge, Meade tripod, 6x30mm finder, diagonal, filter set, Nikon photo adapter, 40mm Kellner, 25mm Kellner, 20mm Wide-Angle Kellner and 9mm Kellner 1 1/4" eyepieces. Hardly used. \$995 or Best Offer. Chris Kralik, Home: (702) 851-2140 (Reno), Work: 415-877-5094. 8/89

TUTHILL Polar Axis finder/with instructions. \$85. Bill Dillinges 415-792-9206

FOR SALE: KOLKACH ROLL FILM COLD CAMERA. Takes 35mm cassettes. As new, complete with focusing screen/eyepiece, dry ice reservoir, full instructions; at 1976 price (\$200). Steve Greenberg (415) 423-4899 days or (209) 239-2154 after 6 pm. 7/89

CELESTRON SUPER POLARIS C8: Very good condition, with dew shield, and f/5 telecompressor lens assembly. Celestron 26mm Plossl eyepiece, 8X50 - scratchbuilt - finderscope. \$800 firm. (408) 926-8190 7/89

EDMUND 4 1/4" Newtonian on German mount. 30 years old but in very good shape (mirror is dusty but coating is still good), 6 x 30 finderscope, one Ramsden and two Kellner eyepieces. Great beginners scope. \$150 firm. (408) 926-8190

BAUSCH & LOMB REFRACTOR mounting. German equatorial mount with manual slow motion controls, setting circles, on wood tripod. Designed for 60-80mm refractor. \$50.00 firm. (408) 926-8190 7/89

MEADE 8-INCH SCHMIDT FOR SALE: The optics are in excellent condition and is fully functional. When I purchased this scope a few years back I was told the optics were 20th wave. Meade provided this scope to a prominent astronomer for his trip to Hawaii. The owner some years later sold the scope and I purchased it. View finder, tripod, clockdrive, 40mm, 25mm, 9mm, and 6mm Meade orthoscopic eyepieces, 19mm Plossl, 12mm guiding eyepiece, 2" ring adapter, 40mm, 55mm 2" eyepieces, Barlow 1.5x-2x-3x (variable), Dew Zapper, Accutrac Tracker, Motorized focus attachment, travel cases, adapter rings and tubes for photography. Asking \$1500. Call: Dave at home (408) 379-9228 or work (408) 370-5245. 7/89

FOR SALE: Celestron C8 with wedge, tripod, dual axis drive corrector, plus everything additional you need to begin both observing and astrophotography except a camera body. Equipment list includes: electric Motofocus, 8X50 finder, counterweight bar assembly, off-axis guider plus 12.5 mm Orthoscopic illuminated reticle eyepiece, 10 mm Plossl and 25 mm Orthoscopic eyepieces, 2x Barlow, The Amateur Astronomer's Handbook, Webb Society Deep-Sky Observer's Handbook (Vols. 1 to 5), The Cambridge Astronomy Guide, Astrophotography II, plus much more. \$1000 or best offer. Contact Ron at (415) 278-3335. Evenings, before 9:30 PM, please. 6/89

6-INCH REFRACTOR, f/14 on Altazimuth mount, made by Tinsley Lab around 1946-1949. Good condition and beautiful performance. Will take best offer above \$1700. Edward Hillyer, P.O. Box 6065, Salinas, CA 93912. (408) 424-0460 6/89

SEPTEMBER STARRY NIGHTS BY: RICHARD STANTON

METEORS - September will be one of those quiet months for our meteor enthusiasts. While there are several showers coming to maximum during the month, they are all minor ... some so minor they may even be extinct. Last month the Persids showed some pretty bright streakers during its duration. My

wife and I has visitors while it was going on and it served as a comfortable introduction to the night sky for them. Sharing your hobby with guests is far better than straining to find common conversational ground.

METEOR SHOWER SUMMARY

| | | |
|--------|------------------|---------|
| 08-SEP | - Delta Piscids | - Minor |
| 20-SEP | - South Piscids | - Minor |
| 21-SEP | - Kappa Aquarids | - Minor |
| 30-SEP | - Xi Piscids | - Minor |
| 30-SEP | - Rho Cygnids | - Minor |

ASTEROIDS - September is a fairly good month to go out and search down your first asteroid. The table below lists four of the brighter ones that are available for convenient viewing during the month.

SEPTEMBER ASTEROIDS

| | |
|----------------------------|----------------------------|
| (2) Pallas - Mag 8.6 | (4) Vesta - Mag 7.0 |
| 01-SEP RA 01:05 DEC -03:10 | 01-SEP RA 17:59 DEC -25:27 |
| 11-SEP 01:01 -05:37 | 11-SEP 18:08 -25:47 |
| 21-SEP 00:55 -08:16 | 21-SEP 18:19 -26:01 |
| (15) Eunomia - Mag 8.1 | (12) Victoria - Mag 9.0 |
| 01-SEP RA 21:57 DEC +02:22 | 01-SEP RA 22:08 DEC +07:14 |
| 11-SEP 21:48 +02:07 | 11-SEP 22:01 +05:49 |
| 21-SEP 21:41 +01:45 | 21-SEP 21:57 +04:15 |

AUTUMNAL EQUINOX - It's time for Jack Frost to start rummaging through the closet for his pallet of bright Autumn colors. In California where we live those colors are mostly green and green. He probably wears patchwork beach shorts too. Can't have everything I guess. At any rate Autumn will arrive the evening of September 22nd at 6:20 PM PDT no matter what we think about it.

SEPTEMBER DEEP SKY CHALLENGE - Telescopes up! Target: The Cocoon Nebula in Cygnus. This is a faint 12 X 12 Emission/Reflection? nebula. Call it by its other name, IC 5146, and it probably won't answer. The recommended minimum aperture is 20-25cm working with an H-Beta filter. Look near the end of the filamentary dark nebula Barnard 168. This one's not listed in either Webb's or Burnham's. Let's see ... do I know any masochists with a telescope? Oh, by the way, no computers or setting circles allowed.

Good Observing Until Next Time!

DOUBLE, TRIPLE, AND MULTIPLE STARS BY: PATRICK M. DONNELLY

About this time each year I start thinking about some old friends. These friends are the multiple stars of summer. By multiple stars I mean a close association of 4 or more stars in the sky. Of course, like double stars, multiples can be true multiple systems that are gravitationally bound traveling through space together or a close grouping of optical components giving the illusion of a multiple system. There are about ten multiple systems that are in a class by themselves due to their magnitudes, configurations, or their identification as a true multiple system. Let us briefly identify and describe each.

During the summer the best place to begin is in the constellation of Lyra. Three of the ten (10) best multiples are located in Lyra. These include Epsilon Lyrae, Zeta Lyrae, and Beta Lyrae. These were discussed in detail in the October 1988 issue of "Ephemeris". However, a few words on each is appropriate. Epsilon is the famous double-double visible in a 4" telescope. It consists of four (4) stars. Zeta, next to Epsilon, also consists of four (4) stars. An 8" telescope is probably needed for the dimmest component, magnitude 13. Beta has four (4) companions with the dimmest also at magnitude 13. Beta is also a famous eclipsing variable star. All three multiple stars in Lyra are probably true multiple systems.

Next to Lyra there is the constellation Cygnus. Since the Milky Way passes through the constellation, there are many fine multiple stars. However, one star stands out as a truly spectacular multiple, Beta 440. Beta 440 consists of at least six (6) components, and I've seen nine (9) components within 40" of the primary component with the 30-inch telescope at Fremont Peak. The star is located near Eta Cygni. However, both a star atlas and Burnham's is required to find it, but the search is well worth it. The dimmest component is mag. 12, so an 8" telescope is required.

Also, up north (Dec. + 39 deg 23') is 8 Lacertae. It consists of 6-8 components and appears as almost a straight line. It is a very nice sight. Star can be located with a Norton's Star Atlas. Both B-440 and 8 Lacertae are again probably true multiple systems.

In the southern summer skies are the other five. Scorpio has two of them Nu-Scorpio and Xi-Scorpio. Nu is a double-double star like Epsilon Lyrae. The primary components are 41" apart. The close components are 1.2" and 2.3" apart so a 6" telescope at the highest useful power is needed. All four (4) components form a true multiple system. There are some color differences with make the view very pretty. Northwest of Nu is Xi-Scorpio. Xi along with Sigma-1999 form a six component multiple star, which is also a true multiple system. However, in order to see all six components an 8" telescope at maximum power is necessary to resolve the magnitude 5-5.5 components separated by 1". With a small telescope the other five components are visible. Xi can be found as the only bright star northwest of Beta Scorpio.

In Sagittarius there is one spectacular multiple Mu-Sagittarii. It consists of five components, but an 8" telescope is probably needed to see all the components. The dimmest is magnitude 13. Mu is located just north of Lambda, which is the star that forms the top of the teapot. Mu is also near M8 & M21 and Vesta and Uranus are in the area at this time. There is another pretty multiple in Sagittarius, Eta. However, with a declination of -38 degrees, viewing the star is very difficult. I saw it in the southern hemisphere, but I could only resolve all the components once here in the north. It is a true multiple system. Try this one if you want a challenge.

The final star is not hard to find. It is Alpha Capricornae. This somewhat difficult multiple is the only non-true multiple system. With a 6-inch telescope four components are visible. I have seen all six components with the 30-inch. This star alone is worth a trip to Fremont Peak!

Have fun with these multiple stars.

SPACE PROGRAM UPDATE BY: BOB FINGERHUT

MORE DISCOVERIES AT NEPTUNE FOR VOYAGER

Two weeks before closest approach on August 25th, Voyages has discovered ring arcs around Neptune and 4 new moons. Light fluctuations during occultations had suggested that the ring arcs might exist but Voyager was the first to directly see them. Voyager has also returned pictures of a large storm in Neptune's atmosphere, similar to the Great Red Spot on Jupiter.

SHUTTLE COLUMBIA RETURNS TO FLIGHT STATUS

Columbia was launched on August 7th on a classified mission for the Department of Defense. The successful flight was the first for Columbia in over three years and restores the shuttle fleet to three orbiters. The next flight is scheduled for October. It will be Atlantis carrying the Galileo spacecraft for launch to Jupiter.

REPORT CALLS FOR BUILDING A FIFTH ORBITER

The congressional office of technology assessment has reported the likelihood

that another shuttle will be lost in the next 10 years and has recommended that a replacement be started now to prevent the space program from being disrupted again. It is estimated that there is a 50% chance that another shuttle will be lost in the next 34 flights. The risk rises to 72% before the first space station assembly flight, planned for mission 92, and jumps to 88% before the station is scheduled to be completed. If started in Fy 1990, the new orbiter could be completed by 1996.

LONG TERM SPACE GOALS SET BY PRESIDENT BUSH

Speaking at July 20th ceremonies commemorating the 20th anniversary of the Apollo 11 lunar landing, President Bush called for a Moon base and a manned mission to Mars. He called for completion of the space station by 1999, the Moon base in the first decade of the 21st century and the Mars mission around 2016. The President's plan will be studied by the National Space Council and a report containing recommendations will be issued in 6-9 months.

GALILEO BEING READIED FOR LAUNCH TO JUPITER

The next shuttle flight after Columbia will be Atlantis in October. The two-week delay in Columbia's launch should not effect Atlantis' launch schedule. Atlantis will carry the long awaited Galileo satellite that will go into orbit around Jupiter and drop a probe into Jupiter's atmosphere. NASA is preparing to deal with antinuclear protesters at the launch because Galileo uses Radioisotope Thermoelectric Generators (RTG's) to produce electrical power. RTG's have also been used on Pioneer 1 and 2, Voyager 1 and 2, Viking 1 and 2, and Apollo 11 through 17.

FIRST TITAN 4 BOOSTER LAUNCHED SUCCESSFULLY

On June 14th, the new Titan 4 made its first launch. The Titan 4 was developed to have the same payload capability as the space shuttle with an unmanned booster. It makes the use of the Vandenberg AFB shuttle pad very doubtful. NASA has manifested the Comet Rendezvous Asteroid Flyby spacecraft for launch on Titan 4 in 1995, if it survives this year's budget process.

FIRST PEGASUS LAUNCH SCHEDULED FOR AUGUST

Pegasus is a new small booster capable of putting 600-1000 lb. satellites into orbit. What makes it unique is that it is launched from an airplane at 40,000 ft. and at Mach 0.8. It has a wing on its first stage to generate lift.

CELESTIAL CALENDAR - SEP-1989
by Richard Stanton

| LUNAR PHASES | Date | Rise | Tran | Set |
|--------------|-------|------|------|------|
| FQ 02:49hr | 08-09 | 1436 | 1902 | 2330 |
| FM 04:51hr | 15-09 | 1854 | 0052 | 0651 |
| LQ 19:10hr | 21-09 | 2244 | 0616 | 1355 |
| NM 14:47hr | 29-09 | 0649 | 1239 | 1825 |

NEARER PLANETS

| | | | | |
|--------------|-------|------|------|------|
| Mercury..... | 07-09 | 0906 | 1434 | 2006 |
| 0.66 A.U. | 17-09 | 0825 | 1352 | 1923 |
| Mag +0.4 | 27-09 | 0635 | 1228 | 1819 |

| | | | | |
|------------|-------|------|------|------|
| Venus..... | 07-09 | 0959 | 1529 | 2101 |
| 1.0 A.U. | 17-09 | 1023 | 1536 | 2053 |
| Mag -4.1 | 27-09 | 1040 | 1543 | 2041 |

| | | | | |
|-----------|-------|------|------|------|
| Mars..... | 07-09 | 0707 | 1321 | 1939 |
| 2.6 A.U. | 17-09 | 0702 | 1307 | 1917 |
| Mag +1.7 | 27-09 | 0653 | 1254 | 1851 |

| | | | | |
|--------------|-------|------|------|------|
| Jupiter..... | 07-09 | 0105 | 0818 | 1536 |
| 5.27 A.U. | 17-09 | 0031 | 0744 | 1502 |
| Mag -2.2 | 27-09 | 2353 | 0709 | 1423 |

| | | | | |
|-------------|-------|------|------|------|
| Saturn..... | 07-09 | 1536 | 2023 | 0111 |
| 9.78 A.U. | 17-09 | 1457 | 1943 | 0032 |
| Mag +0.4 | 27-09 | 1414 | 1905 | 2349 |

SOL

| | | | | |
|-----------|-------|------|------|------|
| 1102+0609 | 07-09 | 0634 | 1252 | 1914 |
| 1138+0221 | 17-09 | 0645 | 1252 | 1902 |
| 1214-0132 | 27-09 | 0653 | 1251 | 1846 |

ASTRONOMICAL TWILIGHT

| | | | | |
|----------------|-------|------|---|------|
| JD 2,447,776.5 | 07-09 | 0510 | - | 2045 |
| 786.5 | 17-09 | 0519 | - | 2029 |
| 796.5 | 27-09 | 0527 | - | 2014 |

SIDEREAL TIME

| | | | | |
|----------------|-------|------|------|------|
| Transit Right | 07-09 | 0000 | PDT= | 2158 |
| Ascension at | 17-09 | 0000 | PDT= | 2237 |
| Local Midnight | 27-09 | 0000 | PDT= | 2316 |

TIMES & DATES ARE PACIFIC DAYLIGHT

DEPARTMENT OF PARKS AND RECREATION

Central Coast Region
Gavilan District
P.O. Box 1110
San Juan Bautista, CA 95045



June 12, 1989

To all Amateur Astronomers who frequent Fremont Peak State Park:

Because of recent crowded conditions with telescopes set up outside the Fremont Peak Observatory and the flat paved area by the park's shop, especially during new moon weekends, the following policy has been established:

1. There will be a limit of five telescopes set up at the Observatory. When there are programs at the Observatory, those telescopes will be considered a part of the program and visitors will be invited to view through them. Park all vehicles near the shop after unloading telescopes and equipment.
2. Other telescopes can be set up on the flat paved area by the shop or at the Coulter Group area.
3. All sites are available on a first come, first serve basis.
4. Arrive and set up early in the day. The gate at the entrance to the shop/FPO road will be closed at sunset.
5. If you set up at the Observatory or in the shop area, plan to stay the entire viewing period (all night or until viewing conditions deteriorate because of poor weather or a bright moon).

Thanks for your cooperation.

A handwritten signature in black ink that reads "Rick".

Rick Morales
State Park Ranger I
Fremont Peak State Park

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 its 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.

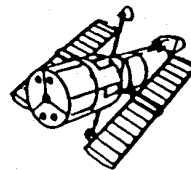
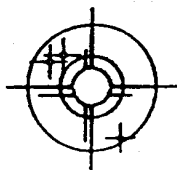
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