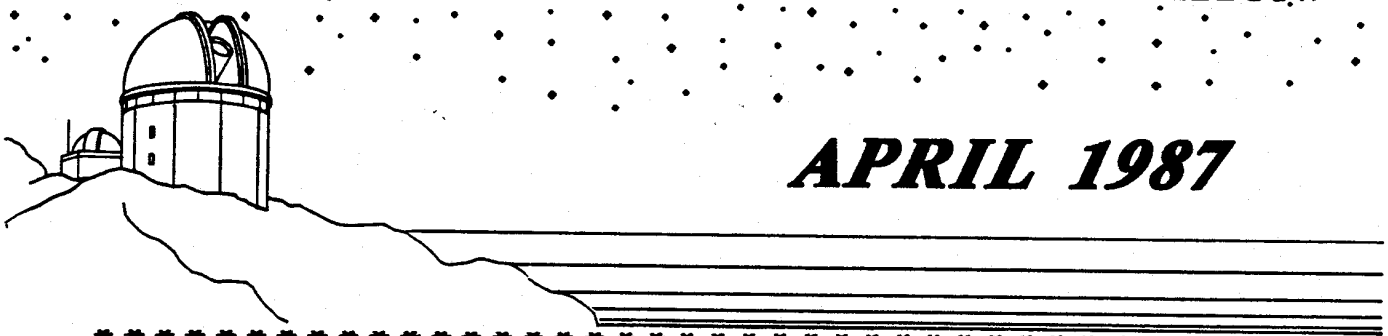
EPHEMERIS

OF THE SAN JOSE ASTRONOMICAL ASSOCIATION

APRIL 1987



APRIL 4TH 8 PM
SCOTT SANDFORD
THE EARLY SOLAR SYSTEM

APRIL	4	GENERAL MEETING. SCOTT SANDFORD, THE EARLY SOLAR SYSTEM. OUR FEATURED SPEAKER WILL DISCUSS THE PHYSICAL CHARACTERISTICS OF THE EARLY SOLAR SYSTEM.
APRIL	11	BOARD MEETING AT 7 PM, FOLLOWED BY THE INDOOR ASTRONOMY CLASS AT 8 PM, LOS GATOS RED CROSS BUILDING.
APRIL	18	INDOOR STAR PARTY AT THE LOS GATOS RED CROSS. 8 PM
APRIL	25	FIELD EXPEDITION FOR ASTRONOMICAL OBSERVATION TO FREMONT PEAK STATE PARK. DUSK TILL DAWN.
MAY	2	SEVENTH ANNUAL ASTRONOMICAL AUCTION TO BE HELD AT THE LOS GATOS RED CROSS BUILDING. DOORS OPEN AT 2 PM FOR EQUIPMENT PRE-REGISTRATION AND ITEM VIEWING. AUCTION WILL BEGIN AROUND 6 PM. GET THERE EARLY!
MAY	9	SJAA BOARD MEETING AT 7 PM, FOLLOWED BY THE INDOOR ASTRONOMY CLASS AT 8 PM. LOS GATOS RED CROSS BUILDING.
MAY	16	INDOOR STAR PARTY AT THE LOS GATOS RED CROSS. 8 PM
MAY	23	FIELD EXPEDITION FOR ASTRONOMICAL OBSERVATION TO FREMONT PEAK. RIVERSIDE TELESCOPE MAKERS CONFERENCE AT BIG BEAR LAKE CALIFORNIA. MAY 23 THROUGH THE 25TH.

FIELD OF VIEW
BY: JOHN GLEASON

APRIL 4TH GENERAL MEETING

Our guest this evening will be Scott Sandford, who will conduct us on a tour of the early solar system.. 8 PM Los Gatos Red Cross building.

SJAA BOARD ELECTS OFFICERS FOR 1987/88

Effective this June, Tom Ahl will be assuming the position of President of the SJAA. Bob Fingerhut will be stepping down into the Vice Presidents position, with both Jack Peterson and Jim Van Nuland maintaining there current positions as Treasurer and Secretary.

7th ANNUAL BAY AREA ASTRONOMICAL AUCTION

The annual auction is coming up soon folks, so start digging out those long forgotten goodies and polish them up for the sale. Members are again asked to please use the handy auction pre-registration form for all of your equipment. If you do not pre-register you equipment by auction day, you will need to come in early and register all items to be auctioned-off. The auction will start promptly at 6 PM. Arrive early to receive your bid number. You must have a bid number in order to participate in the auction bidding.

ASTROPHOTOGRAPHY CONFERENCE REPORT

Held every two-years, the Astrophotography Conference is a symposium of astrophotography and techniques. The conference always offers everyone an opportunity to view first-hand the current state of amateur astronomical photography. This year was no exception. In fact I have to consider the organization of the programs and photography displays better than in previous years.

Hypersensitized films seem to now be the standard among amateurs for any type of astrophotography. Bill Iburg presented a long series of Dumbell nebula shots on various types of color emulsions. Although all were very good, his cold camera comparison shot seemed the best of all! Bill concluded that Konica 400 Hypersensitized was the best overall color film for color balance and film grain. What happens when you use Konica 400 in the Cold Camera? This apparently has not been tried yet.

New this year were two video tapes. One tape was a hodge-podge of clips of Halley's comet coverage by the Southern California news media. Bizarre to say the least. The second video tape by Alan MacFarlane was most impressive. It depicted a number of celestial objects that he had shot directly through his C8 and his home video camera. Would you believe surface features on Mars? Yes, they were clearly evident, even in his third generation copy. Comets, planets, solar prominences, and moon craters were displayed beautifully. All were done with readily available, low cost equipment.

In addition to the presentations, there was an impressive display of astrophotography that would have made any amateur astronomer envious. The state of expertise in amateur astrophotography is clearly limited only by instrumentation and darkroom ability. Two sets of astrophotography really stood out among the rest. First there was a series of planetary photographs done by Jean Dragesco. Jean use a 40" Cassegrain telescope at the Pic du Midi observatory in France to capture on hypered 2415 what were possibly the finest planetary images of Mars and Jupiter ever taken from Earth. Second among the best of all the astrophotography were a series of black and white photographs taken by Al Lilge using an f/3.3 24"f1 astrocamera and 4x5" glass plates. The contrast and contrast of detail and the fineness of star images in the 8x10" enlargements was astounding.

Jim Riffle of Astromac fame was also at the conference. He astounded everyone with a display of photographic mosaics each consisting of four, 16x20" prints, resulting in huge 32x40" murals of celestial objects taken through the 12" f/5 Astromac. Impressive, most impressive.

There were no winners or loosers in this years astrophotography competition, since there was a final decision not to judge any of the photographs. All the better since the variety of subjects and quality level of every astrophotograph was very high. Next conference is in 1989.

YOSEMITE STAR PARTY DATE SET

August 21, 22, Friday and Saturday are the dates set for the annual SJAA field trip to Yosemite's Glacier Point for an evening of public viewing. As we did last year, we will be limited to a total of 30 members (including family members) for free camping in the Bridalveil Creek group camping area. Additional members are encouraged to attend, but you must make your own camping arrangements. I do not plan to take names until June 1st, so mark your calendars. More information in upcoming months.

RIVERSIDE TELESCOPE MAKERS CONFERENCE

Plan now to attend the 19th Annual Riverside Telesocpe Makers Conference on May 22, 23, 24, and 25, Firday afternoon through Monday morning. It will be held at Camp Oaks, which is located 5 miles east of Big Bear City onb Highway 38 at Late Williams Road. This location is 50 miles northeast of Riverside, high in the San Bernardino mountains. The YMCA Camp is located at an elevation of 7300 feet. Special events this year include Jannet Mattei, director of the AAVSO, who will be speaking Saturday evening, and Dr. Clyde Tombaugh will be speaking Sunday morning 9:00am. A charge of $5 per person will be made to attend this single presentation. Of course there will be plenty of commercial exhibitors along with hundreds of commerical and homebuilt telescopes.

FPOA GRAND OPENING DATE - MAY 30TH

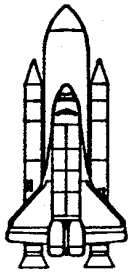
The Fremont Peak Observatory Association is planning a special Grand Opening of the 30-inch observatory at Fremont Peak. Rapidly nearing total completion, there is a special public program and observing session planned. Mark your calendars for May 30th. Programs to begin in the evening hours.

ASTRO ADS

FOR SALE: 10.1 inch Newtonian telescope with Coulter optics. Telescope is equatorially mounted on an extremely solid mount machined from aircraft grade plate aluminum, 2" on all axes. Dec. and RA. shafts 21/8" hardened tool steel riding on 41/4" Timkin roller bearings. Polar axis machined from solid 41/2" aluminum block. Mount was designed to easily handle a telescope up to 171/2" aperture. Modified DS 16 motor drive with Mead model 43 drive corrector and Mead setting circles. Three eyepieces, 5x30 finder, 3-inch 700 mm guide scope, nebula filter, universal camera adapter, illuminated reticle. Many other features not listed here. Will take $1800 firm, or will trade for large aperture Dobsonian (17.5" or larger). CALL: Dan Beck at (408) 438-2900 X 2003 Monday - Thursday, 8:30 to 5:30 or (408) 338-3001 weekdays after 6:30 pm or weekends.

FOR SALE: CELESTRON C90 ASTRO with drive base, single arm fork mounting, wedge and standard Celestron tripod, $500. TELE VUE RENAISSANCE 4" f/5.5 refractor telescope with 4-element multicoated objective. 5° Rich Field capability and high resolution. Old world craft with modern technology. Tube assembly only with case, $900. CELESTRON COMET CATCHER 5.5" REFLECTOR TELESCOPE with case and alignment tool, $175. CELESTRON SUPER POLARIS MOUNTING with Duel-Axis drive corrector and tripod, $350. CELESTRON SKY SENSOR computer control with motors for Super Polaris mounting, $150. CELESTRON C80, 80mm refractor telescope tube assembly, 1000mm FL, $150. All equipment "like new" condition. CALL: Tom Parker, (415) 961-7316 eves. (415) 967-4166 work

SPACE PROGRAM UPDATE
BY: BOB FINGERHUT



ANOTHER PIECE OF SPACE DEBRIS BITES THE DUST

Do you remember that great "meteor" in the eastern sky the night of January 31 at about 10 PM? If you were at a star party, you couldn't have missed it. The "meteor" was actually the re-entry of a Soviet communication satellite. The fourth stage of a Soviet SL-12 (Proton) booster failed to ignite leaving the booster and satellite in a low (140 x 199 mile) earth orbit. The satellite was intended to go into geosynchronus orbit. The Soviets chose to re-enter the satellite in a controlled manner rather than wait for its orbit to degrade naturally. Two days earlier the Soviets destroyed a military reconnaissance satellite that failed to descend for recovery of its cameras and film. The satellite was blown into more than 100 pieces and into orbits as high as 340 miles.

SHUTTLE RECOVERY EFFORT

The launch date for the next shuttle flight is now planned for between March 3 and April 14, 1988. The date will depend on whether an escape system is installed and if a Flight Readiness Firing on the pad is added. The first full scale test of the redesigned shuttle booster rockets is now scheduled for late July. Critical design review of the redesigned SRB is set for August.

DELTA CHOOSEN FOR MEDIUM LAUNCH VEHICLE

A new version of the Delta booster (Delta 2) has been choosen for launch of the Navstar global positioning system. The Delta 2's price of $33 million each is cheaper than the European Ariane, Chinese Long March 3 and Soviet Proton making it possible for the U.S. to compete for the commercial satellite launching business again.

LAUNCH OF MARS OBSERVER SPACECRAFT DELAYED

Shuttle launch conflicts have forced NASA to delay the launch from 1990 to 1992. The alternative was to bump the European Ulysses spacecraft off of the shuttle for a late 1991 launch on a Titan 4. Congress, program contractors and space interest groups are urging NASA to move Mars Observer to a Titan 3 booster (for a 1990 launch) but NASA does not have money to buy a Titan 3.

AIR FORCE INITIATES HEAVY LIFT VEHICLE PROGRAM

The Air Force has asked Congress for money to develop a booster capable of orbiting 100,000 - 150,000 lbs of payload for use in the Strategic Defense Initiative. They do not want to use existing Titan or shuttle technology. This was a shock to NASA, who had been discussing HLV needs with the Air Force but was completely left out of this program.

U.S. WEATHER SATELLITE SYSTEM RESTORED

The GOES-H that was launched on Feb. 26th is now in geosynchronous orbit. It will be renamed GOES-7 as soon as check out is finished in April and it is positioned at 75 W longitude. GOES-6, already in orbit, will be repositioned to 135 W longitude. The two satellites will provide complete weather coverage of the U.S. for the first time in 21/2 years.

SPACE STATION PROGRAM IN CHAOS

The projected cost of the U.S. contribution of the program has risen from $8 billion to $14 billion. As a result NASA officials are looking at delaying the program, scaling back the initial or even final capabilities of the station and even cancellation of the whole program. Release of request for proposals to hardware contractors have been postponed indefinitely and some members of Congress are threatening to withhold the stations Fiscal 1988 funding from NASA. A statement of policy from the White House is desperately needed. There is also problems formalizing an agreement with the European and Japanese partners over use of the station. The draft proposal from the Department of Defense calls for the Europeans and Japanese to have 50% use of the hardware that they contribute and no use of the U.S. modules. The partners would have to pay the full costs of operating and maintaining their elements. Congress wants the U.S. instead of the Japanese and Europeans to supply materials and life science modules. This is a critical time for the space station program. It would be a good time to let the President and Congress know your feelings about the space station program.

SOVIET CREW ACTIVATES MIR SPACE STATION

Two cosmonauts began a long duration mission on board the MIR space station in Feb. The first of four or five large modules that will be added to the space station is currently undergoing final checkout. It is an astrophysics module and contains several experiments manufactured by the European Space Agency. It will be launched in late March or early April and will be docked with MIR for at least one year. The station is expected to grow to an eventual weight of 200,000 lbs.

SOVIET SPACE SCIENCE MISSIONS PLANNED

Here is a look at a few of the upcoming missions planned by the Soviets

Aktivny-1K, 1987 launch - Demonstrate magnetospheric physics by injecting ultralow frequency waves into the magnetosphere.

Biosat, 1987 launch - Study effects of weightlessness on two monkeys and numerous rats.

Gamma-1, 1987 launch - Joint Soviet-French astrophysics project to study gamma and x-ray sources.

Roentgen module, 1987 launch - Astrophysics telescope that will be docked to the MIR space station.

Earth resources module, 1987 launch - Earth resources camera module that will be docked to the MIR space station.

Granat, 1988 launch - Joint Soviet-French project containing a X-ray telescope.

Mars/Phobos, 1988 launch - Joint Soviet-French study of Mars and its moon, Phobos.

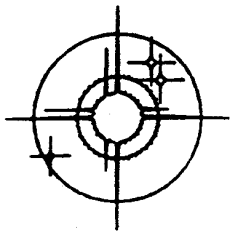
Interbol, 1988-89 launch - Joint Soviet-French project involving four spacecraft for comparative magnetospheric studies.

Aelits, 1990 launch - Joint Soviet-French project to study submillimeter emissions from deep space.

Rascas, 1988-90 launch - Automatic deployment in space of a 100ft diameter radio antenna to conduct long baseline interferometry in conjunction with ground based telescopes.

Radio Astron, 1990-92 launch - Deployment of a 33 ft diameter radio antenna to detect radio emissions from deep space.

Mars, 1992 launch - Joint Soviet-French mission to study Mars' surface



COMET COMMENTS
BY: DON MACHHOLZ

Comet Wilson, which peaked into our morning sky last month, is now visible from the Southern Hemisphere at perhaps naked-eye visibility. Northern Hemisphere observers will see it in late May. Comet Terasako (1987d) is now fainter than magnitude 12 in our evening sky. Two other comets will reappear in our morning sky this month. In our evening sky we find Comet Halley, further from the sun than Jupiter and about at the distance it was when first visually observed by Steve O'Mera in Jan. 1985. Meanwhile, two more returning comets have been recovered by a very successful team at Kitt Peak.

Periodic Comet Bus (1987f): T. Gehrels and J. Scotti recovered this 19th magnitude comet from Kitt Peak, Arizona on Jan. 29. The comet would be closest the sun on Dec. 19, but it is not expected to get brighter than mag. 18. Its orbital period is 6.5 years.

Periodic Comet Temple 2 (1987g): The same team of Gehrels and J. Scotti also recovered this 20th magnitude comet on the same night as the previous two comets. This is the most distant recovery for this comet at 4.2 A.U. (391 million miles) from the sun. Before the year is out, Comet Temple 2 should be visible to us in amateur-sized scopes; it will be getting closest the sun in Sept. 1988. In the 1990's the United States hopes to send a spacecraft to it.

EPHEMERIDES

DATE	R.A. (1950)	DEC	ELONG	MAG.	NOTES
			Comet Sorrells (1986n)		
04-20	23h 27.3m	+11° 17'	34°	10.1	This comet seemed to brighten more
04-25	23h 25.1m	+11° 29'	39°	10.1	than expected while in the evening
04-30	23h 22.4m	+11° 40'	45°	10.1	sky late last year. It is now in
05-05	23h 19.1m	+11° 50'	50°	10.1	in our morning sky, just south of
05-10	23h 15.2m	+12° 00'	55°	10.1	the Square of Pegasus.
			Comet Nishikawa-Takamizawa-Tago (1987c)		
04-20	22h 34.5m	-15° 59'	55°	8.1	Better placed for the S. Hemisphere.
04-25	22h 25.1m	-18° 15'	63°	8.1	this comet is low in our morning sky.
04-30	22h 12.8m	-21° 06'	71°	8.0	Its retrograde orbit moves it quickly
05-05	21h 55.4m	-24° 48'	81°	7.9	across our southern sky and to within
05-10	21h 29.2m	-29° 38'	93°	7.8	45 million miles from earth in May.
			Periodic Comet Halley (1982i)		
03-21	10h 11.9m	-11° 14'	151°	12.7	When Halley's Comet was this far
03-26	10h 07.5m	-10° 36'	147°	12.8	from both the earth and sun in 1985
03-31	10h 03.6m	-10° 00'	142°	12.9	it was visually observed to be mag.
04-05	10h 00.0m	-09° 24'	137°	12.9	19.6. Now, leaving the inner Solar
04-10	09h 56.9m	-08° 49'	132°	13.0	System, it is 6.5 magnitudes (400 x)
04-15	09h 54.1m	-08° 16'	127°	13.1	brighter! The sun's heat is still
04-20	09h 51.8m	-07° 44'	122°	13.2	affecting the nucleus. We are run-
04-25	09h 49.8m	-07° 15'	117°	13.2	ning out of time to see it with amat-
04-30	09h 48.2m	-06° 47'	112°	13.3	eur scopes. For 2000 coords. add 2.5
05-05	09h 47.0m	-06° 22'	107°	13.4	min. to RA, subtract 15' from Dec.

SEEKING COMETS

Comets are usually designated with three different names. Perhaps the most popular label is the discoverers proper name after the word "comet", such as "Comet Smith". We'll talk about those next month. Today we'll discuss the other two labels: the year of discovery followed by a letter, and the year of

perihelion followed by a Roman Numeral.

Immediately following confirmation, every new or returning comet is given the year of discovery followed by a letter. The first comet of this year, for example was 1987a. The second was 1987b. The third was 1987c. All the letters are small, although the twelfth comet is sometimes printed as a capital letter ("L") or written in cursive ("$\mathcal{L}$") so as not to confuse the letter "l" with the number "1".

So far the record for comets in any one year was set in 1983 with 23 reaching the letter "w". Perhaps this year we'll have more than 26 comets, what will we do then? The IAU, which oversees comet designations, has approved the use of a1, b1, c2, ...,a2, b2, etc., following the year, if more letters are needed. These numbers would be subscripts, although large numbers may become acceptable.

Since comets are not given such a designation until after confirmation, there is little wasted with this system. Only once in the past dozen years has such a label been placed on a nonexistent "comet". This turned out to be a series of photographic defects.

On the other hand, some comets never receive this preliminary designation. Those few with nearly circular orbits and therefore always under observation, and those found years later on old photographic plates don't receive a year and letter.

A final label placed on a comet is usually given to it two or three years after observation. It is the year in which it passed perihelion (the comet's closest point to the sun) followed by a Roman Numeral for the order, compared to other comets that year, in which it reached that point.

For example, the first comet to reach it's closest point to the sun in 1985 was Comet Tsuchinshan 1, discovered in September of the previous year. It was also known as 1984p. It will now be known as 1985 I. The comet known as 1985 II was also found in 1984. Meanwhile, Comet 1985 V was closest the sun in June 1985 but not found by Hartley until 1986 and was known as 1986c. These designations must be given several years after observation since often a comet will be discovered up to a year after perihelion. Only when all the comets reaching perihelion for a year are known can they be such ordered with the proper Roman Numeral.

Since we must have an accurate orbit for this designation, no false comets in modern times carry it. On occasion, however, a comet will be discovered on several very old photographic plates and an orbit computed. It will then be given the next Roman Numeral for the year it reached perihelion, even if it was closest the sun very early in that year.

SJAA MEETING AND STAR PARTY LOCATIONS

GENERAL MEETINGS

Once a month the SJAA holds a General Meeting at the Los Gatos Red Cross building in Los Gatos California. The large meeting room has kitchen facilities and large slide projection screen. 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 1.5 miles. Turn right at Rose Ave. Then turn right immediately into the parking lot of the Red Cross building. Doors open at 7:45 PM, with General meetings beginning at 8 PM.

INDOOR STAR PARTIES

Each month there are several 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. Indoor Star Parties are held at the Los Gatos Red Cross Building.

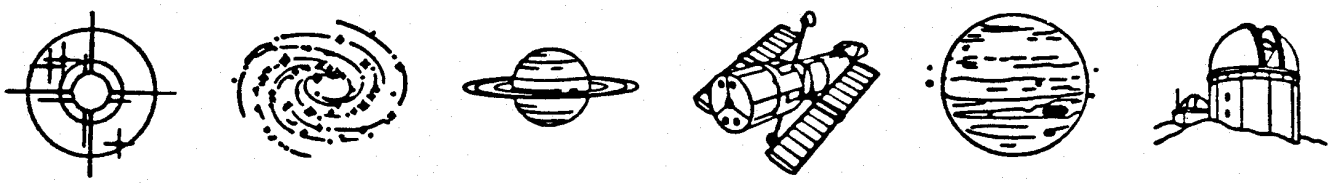
HENRY COE STATE PARK

Take Hwy 101 south towards Morgan Hill and take the East Dunne exit. Continue east towards the hills (around and past Anderson Reservior) for about 12 miles to the park. Past the park entrance you will see old ranch type buildings on the right and a horse trough. The gate (on the left) 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 dark, please. Just a short distance up a hill beyond the gate is where the SJAA sets up equipment.

FREMONT PEAK STATE PARK

Take Hwy 101 south towards Salinas. Then take Hwy 156 east (San Juan Bautista exit) for two miles to a yellow flashing light. Turn right and go about 1/4 mile to where the road reaches a "Y". Stay 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 drive up onto the main area of the park. There is usually a lot of astronomical activity here every clear new moon weekend. This is also the location of the FPOA's public observatory. Fremont Peak stands 3000 ft above sea level. Arrive early if you are setting up equipment. 30 to 40 telescopes are not uncommon at Fremont Peak.

EPHEMERIS is published monthly by the San Jose Astronomical Association, 3509 Calico Ave., San Jose California 95124. Contributors are welcome 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: $ 24.00 JUNIOR (UNDER 18): $ 17.00

Name _____

Address _____

_____

Telephone (____) _____

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

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

[Phone: (408) 262-1457]

Please check type of membership and if new or renewal.

Membership Only____ Membership/S&T____

Junior (Under 18)____

New____ Renewal____

Questionnaire (optional)

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

_____

_____

_____

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

_____

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

_____

_____

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