

SJAA ephemeris

may '80

- May 2 Board meeting at Chris & Shea Pratt's, 474 Safari Dr. San Jose'. 8:00 pm. 629-2994.
- May 3 Indoor star party at the Los Gatos Red Cross building. 7:30 pm.
- May 10 SJAA Star party at Henry Coe State Park.
- May 14 New Moon
- May 17 SJAA Star party at Fremont Peak State Park.
- May 24-26 12th annual Riverside Telescope Makers' Conference at Big Bear, Ca.
- May 29 Full Moon
- May 31 General meeting at the Los Gatos Red Cross building. This will be an equipment and slide night so if you have anything you would like to show and tell about telescope making, astrophotography, or any other topic that's astronomically legal (good books, for example), here's your chance. Slide and equipment nights are known for their entertainment and it's a good chance to get to know your fellow SJAA member. Directions: Hwy 17 to Los Gatos. West on Los Gatos-Saratoga Rd. The Red Cross building is 1.5 to 2 miles up the road on the right. 7:30 pm.
- June 6 Board meeting at Doug Buettner's, 6659 Mt. Pakron Dr., San Jose'. 8:00 pm. 997-1783.
- June 7 SJAA close-in star party at Sanborn Canyon County Park.
- June 12 New Moon
- June 14 SJAA Star party, site to be announced.
- June 21 General meeting at the Rosicrucian Planetarium, Park & Naglee, San Jose'. 7:30 pm. This will be general election night for board members and will have a secondary program to be announced.
- June 28 Full Moon
- June 28 Indoor star party at the Los Gatos Red Cross building. 7:30 pm.

Quote of the Month

"Selection for the Gregory Award is easy. Just take a roster of club members, cross off all the cynics, and see if anyone's left."

— Jay Freeman

Gerry Rattley, pres. 732-0202

Denni Medlock, ed., 278-8475

Observations

"I thought Murphy's Law covered everything but I never thought I'd be timing astrophotos around earthquakes." — Bob Fingerhut

Those of you who think you've been through it all at Fremont Peak (rain, sleet, snow, thunderstorms, 75 mph winds), think again. If you weren't at the peak on Saturday night, April 12th, you haven't experienced mother nature at her best up there. A group of San Jose members, along with a group from San Francisco were settling down to do some astrophotography, quietly minding their own business when (rumble, rumble) it became very difficult to stand up straight. Immediately recognizing from recent experience that this combined sensation of loud rumbling and the inability to keep one's feet beneath you meant earthquake we gathered together near the propane tank (very smart move) and exchanged exclamations. Bob Fingerhut and Kevin Medlock had three minutes earlier closed their camera shutters on hour long exposures (NGC 2903 & NGC 4565, respectively) and were thankful for the considerate pause. Frank Dibbell found his 8" rotated 20° from the pole, and Mike Welch, who was attempting to view M 108 through his 8" during the shake said he thought the radio tower was swaying a bit afterwards. Me— all I was trying to do was stay away from the tool shed, away from the van, and away from Kevin's 18".

Once we had calmed down enough to be able to tell the difference between aftershocks (12 in all) and our own knees shaking we turned and faced Hollister to watch the house lights go out again, one at a time. "Earthquakes at night are detrimental to amateur astronomy," we decided.

On went the radios. "Magnitude of the quake estimated at 4.7 and the epicenter is between Hollister and Salinas," said the announcer. "Hey, that's Fremont Peak!" we shouted.

Up strolled Jay Freeman from Coulter Camp. "Did you feel the quake?" we all asked. "Oh, that little thing," he replied, walking away.

I have personally talked to the ranger at Fremont Peak recently and she, well aware of the increasing problem of congestion going on behind her house during star parties, has asked me to pass along this revision of the agreement with the SJAA. Starting immediately, those who wish to do photography and use the site back behind her house must call there a few days in advance and tell her you are coming. Each individual wanting to use the facilities must do this, not just one spokesman for a group. Hopefully, this will alleviate everyone's problems and make this site useful again to those wishing to do astrophotography in a darker, light-free area. Besides, Coulter is the much more comfortable area: there are restroom facilities, and if you haven't been there lately to know, it's been graded fairly level. Much less wind, too.

Coming up on July 19th is the SJAA's annual officers' installation. On the success of last year's picnic in being one of the club's few total family events it was agreed upon again for this year instead of having a sit down banquet. A few operational changes have been made from last year including a new site, to be announced, a potluck list which Shea Pratt will have available at general meetings and indoor star parties, and a probable change of

menu to hamburgers and hotdogs. Besides the officers' installation there will be the presentation of the Dr. A.B. Gregory Award for the first time this year. The awards committee reports there have been a number of outstanding nominations for this recognition and that work on the plaque itself is proceeding well. Secondary events on the program will be, of course, frisbies, kite flying, and depending on where we're at, perhaps a good ole game of slow pitch baseball. The picnic is still two months away but mark your calendars for July 19th now and be ready to spend an enjoyable day in the sun with your family and friends. Future bulletins will have increasingly up-to-date info about this event.

SJAA Treasurer Phil Hermsmeyer reports that membership renewals are coming in slowly but surely as normal. He would like to remind everyone that renewals for adults are \$18 a year and that includes Sky & Telescope, junior memberships (under 18 yrs. old) are \$12 a year, including Sky & Telescope, and that bulletin subscriptions are \$5 a year. If you are renewing a membership just bring the yellow card sent to you this year by S&T, along with your dues to any meeting, or drop it in the mail to Phil at 20900 Alves Drive, Cupertino, 252-5529.

The SJAA is run by a board of directors under the direction of four officers: president, vice-president, secretary, and treasurer. While the officers are elected by the board members each June, the board positions are filled through open nominations from the membership. Elections are traditionally held at the June general meeting, where both candidates nominated from the floor that evening and ones suggested by the nominating committee will be on the ballot. Since the board works on an alternating term basis only half of the nine board members' terms are up, those being this year Gerry Rattley, Debbie Moore, Phil Hermsmeyer, and Frank Dibbell. If you would like to be a board member or would like to nominate someone else the best thing to do would be to contact any member of the nominating committee and present your candidate. If this is not done you can still nominate at the June 21 general meeting. Committee members are: Bob Fingerhut (263-4455), Jim van Nuland (371-1307), and Kevin Medlock (278-8475). To be a board member a person has to have been a SJAA member for a year or a member having attended six board meetings in a row.

This month's bulletin is being packed full of items to make up for last month's dismal showing. I guess I was expecting to be flooded with eclipse articles from all the members that made it to Africa and had a successful adventure. But no, not one story crossed my typewriter. A year ago, as I was just taking over this wonderful job as editor, there were enough eclipse trip articles to fill a small book on the subject. Doesn't anyone out there want to tell the SJAA of their wanderings? Most of us have seen the fantastic slides that came back, and I know of at least one person, Patty Winter, who has submitted 2nd and 3rd contact photos to Star & Sky magazine. Penny Finschmidt had the opportunity to observe in the company of the president of Tanzania, and Ernie Piini had his name, photo, and interview in at least three African newspapers. Ten percent of the club went to Africa—why hasn't anyone written anything for the rest of us grounded astronomers?

If I'm sounding like I'm complaining I'm really not. This May bulletin marks one year for me as bulletin editor—it's been a wonderful, interesting, and fun job in which I have a great deal of you to thank for its success. When people ask how I have time to write such a long bulletin I just shake my head. I don't write them—the individual members of the SJAA do, and it's to you that I give my heartfelt appreciation for the support.

So—bulletin article in mind? The deadline for June's will be May 18th. Thanks again.

Denni

"Well, we have one "why not," one "I suppose," and two "uh huhs!"—anonymous

"Falling asleep counts as an abstention."
— Gerry Rattley
conversation from the April board meeting

The 1980 Messier Marathon

Bad weather persisted on the night of March 14-15, but the next night was clear and a dozen telescopes and twenty observers were on Loma Prieta for the Messier Marathon. Strong winds and freezing temperatures encouraged many to go home, but a half-dozen of us stayed through the night. Both Ken Wilson and I observed 109 of the 110 Messier objects, missing only M 30 which rose after morning twilight. Frank Dibbell observed 101, leaving a few as a challenge for next year.

I was also on Loma Prieta the night of March 12-13 and observed 109 Messier objects, missing only M 30. It was a little bit warmer and less windy that night.

I also have word that two members of the Fittsbergh, Pennsylvania Astronomical group, Tom Reiland and Ed Flynn also observed 109 Messier objects on March 15-16. Ed used a 10" f/5.6 and Tom used a 6" f/6.6 reflector.

Next year we could attempt 109 objects in early March. Additionally, I am also planning on a type of Massive Marathon, finding several hundred objects in two observing sessions set 4-8 months apart—at the observer's discretion. I hope to have a list completed by the end of the year.

Don Machholz
448-7077

The Bay Area Chapter of the L-5 Society will be holding a lecture slide show titled "Living and Working in Space," May 3, 1980 at 7:30 pm, University of Santa Clara, Kenna 104.

Ganymede Larger Than Mercury: Analysis of the Voyager 1 and 2 photographs of Jupiter and its moons has confirmed that Ganymede, the largest moon of Jupiter, is larger than the planet Mercury. According to Rand Corp. analysis, the diameter of Ganymede is 3278 miles ± 12 miles, which compares to the 3100 mile diameter of Mercury. Ganymede may also be larger than the planet Pluto, whose diameter has recently been estimated at about 3000 miles. The jovian moon, however, is not the largest moon in the solar system. That distinction goes to Saturn's moon, Titan, whose diameter is estimated at 3624 miles. The following are the latest estimates of the diameters of Jupiter's largest four moons, compared to estimates made last year and in 1976:

	current	1979	1976
Ganymede	3278 ± 12	3241	3160
Callisto	2994 ± 12	3039	3000
Io	2256 ± 6	2259	2180
Europa	1942 ± 12	1905	1830

(reprinted from Defense Daily, April 15, 1980)

"You must realize I get like this when I'm off by myself."

Gene Cisneros

"But, Gene, you aren't off by yourself."

Bill Ramstad

"No, just off." Gene Cisneros, at an indoor star party

"You know I'm the resident troublemaker."

Wolfgang Hanisch

"I've noticed!"

Patty Winter

"A quaggy is just four yaggies."

Bruce DeGraff

IN SEARCH OF A LOGO

Definition: A logo is a group of words, letters, or designs which trademark or symbolize an organization.

Uses: Letterheads, membership cards, bulletins, name badges, star party signs, T-shirts, bumper stickers, decals, etc.

Proposed by the SJAA board: A logo contest open to everyone involved in the club. Voting will take place by those in the general membership attending the July 19th club picnic and the judging criteria should be the design's applicability to the SJAA and astronomy, and its simplicity for the ease of reproduction. Entries should be submitted at the picnic on a 8½"X11" sheet of white paper with your name attached separately. (For fairness the names of the entrants will kept anonymous until after the judging.)

Prize: One free SJAA membership for a year and the opportunity to see your handiwork on club media.

With the picnic being held July 19th that gives everyone 2½ months to think up and put down on paper a design or designs that will be given a chance to become the SJAA's future logo. If there any questions at all contact Denni at 278-8475.

COMET COMMENTS

There are no bright comets at this time but the first two comets of the year have been picked up. They are both expected to remain faint.

Periodic Comet Forbes: This comet was recovered by H-E. Schuster in Chile at the European Southern Observatory. It was found at magnitude 20, very close to predicted.

Comet Bowell: This comet was discovered by professional astronomer Edward L.G. Bowell of Lowell Observatory in Arizona. At 16.5 magnitude, it was only a few degrees from the planet Jupiter at discovery. It is possible this may have a periodic orbit with a low inclination.

COMETS IN THEIR EYES:

Jean Louis Pons: (1761-1831). Of all the comet hunters this man found more comets than any other. Born in France, and starting out as a doorkeeper at the observatory, Jean discovered at least 30 comets between 1801 and 1827, and some authorities credit him with as many as 37. In 1808 he discovered five comets in eight months, but these are so inaccurately plotted that we have no orbit for them. Little else is known about him but he probably used a five inch refractor.

T. Seki: This Japanese comet hunter search 993.5 hours for his first comet. Since then he has found 5 more for a total of six. He uses 20x120 binoculars. In the past decade he has also done a lot of comet observation and comet confirmation.

K. Ikeya: Beginning his comet hunting around 1961, this Japanese amateur has discovered 5 comets. He uses an 8". f/5 reflecting telescope/ His most recent discovery was in 1968.

Y. Sato: This comet hunter has discovered 4 comets. His last comet discovery was a shared comet (with two other Japanese amateurs) in 1975.

Don Machholz
5234 Camden Ave.
San Jose, Ca. 95124
448-7077
(new address and phone #)

Gerry Rattley would like to know if anyone in the club has access to low cost or free half-toning for printing. If you do give him a call at 732-0202 (eves).

BAFFLING THE CELESTRON 90
(alias: Stopping the strays)

by Kevin Medlock

Would all you C-90 owners out there like to get more out of your telephoto/telescope? If so, then read on. Back in February '79 after chasing the solar eclipse across Washington state and photographing it, I still had 2 shots left on my 36 exposure roll of ektachrome film. I decided to photograph the duplicate Stonehenge monument which I was overlooking. Having swung my C-90 around to frame the monument in the viewfinder I beheld a strange and frustrating sight; the field of view was so polluted with stray light I could barely see the monument. Sunlight was flooding the field and washing everything out even though the sun was about 30 degrees toward my right. So much for photographing Stonehenge. The 10 hour drive home gave me time to ponder the problem and some months later in a fit of boredom I decided to do something to eliminate the problem.

Promptly taking my C-90 in one hand and a screwdriver in the other I proceeded to dismantle my telescope. To take apart your C-90 telescope all you have to do is remove the two screws that hold on the tripod adapter plate and remove the adapter plate. Underneath you will find two more screws (sometimes they're hidden by the trim band that says Celestron on it.) They can be either a phillips head, slotted head, or allen head screw. In any case remove the screw closest to the front of the scope and unscrew the barrel of the C-90. Assembly is in reverse order. It's a double helix thread so the barrel can be started in two positions. Try to remember the orientations of your barrel assembly for reassembly.

After taking a few measurements I made a sketch of the optical system and discovered that THE CENTRAL PRIMARY MIRROR BAFFLE IS GROSSLY UNDERSIZE. It lets an awful lot of pure unrefracted light pass straight through the telescope into your camera or eyepiece to fog out the field of view. Something had to be done! This is what I came up with:

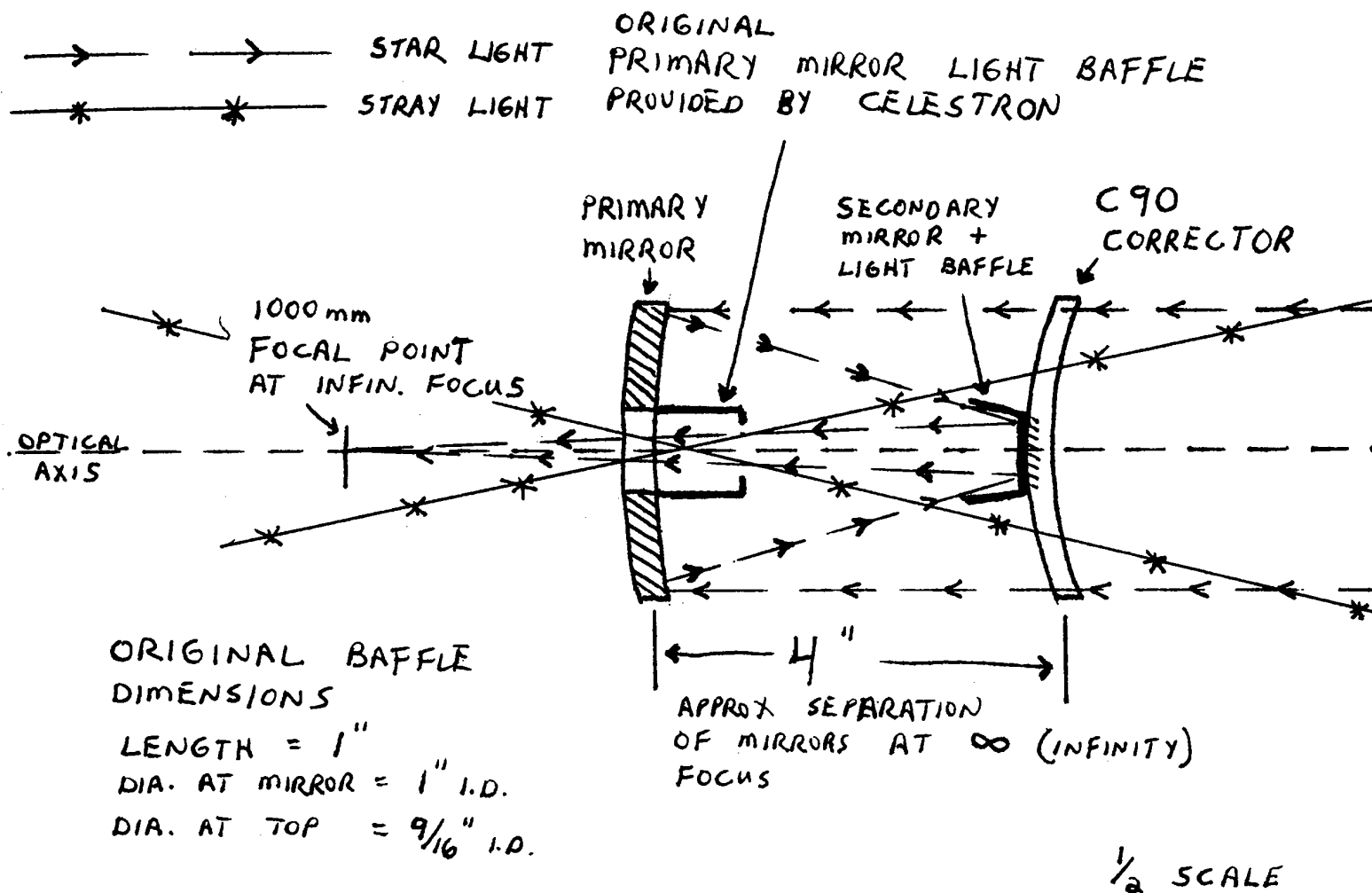
The primary mirror baffle needs to be 2.25 to 2.50 inches long, not 1 inch. The end toward the corrector should be no less than .750 inches inside diameter and not more than 1 inch outside diameter. Larger than this starts to block reflected light from the central portion of your primary mirror and we all know every photon counts. There are several ways to make this baffle. In my case I machined an aluminum cone 1 inch i.d. at the mirror end and .750 inches at the other with a wall thickness of about .063 inch. This was done on a metal lathe and took about one hour to complete. The aluminum cone was then glued on the primary mirror's hub with 5 minute epoxy after the original baffle had literally been ripped off with pliers and tossed in the trash can. However! Do not despair. A lathe is not necessary to produce a totally functional and efficient baffle. Here are a few suggestions dreamed up by myself and other club members:

- 1) Cut off a piece of 1 inch dia. acrylic tubing 2.5 inches long, paint it flat black and glue it in place of the old baffle.
- 2) Obtain a piece of .750 inch P.V.C. pipe or tubing, cut it 1.5 inches long and glue it onto the end of the existing baffle.
- 3) Roll a piece of black construction paper into a tube just big enough to slide snugly over the existing baffle and glue it in place.
- 4) Sweet talk your telescope making friends into doing it for you.
(Club member Gene Cisneros may be able to provide a kit for this)

Remember: The object is to prevent outside light from going directly from the outside to the film or eyepiece without going through the optical system. The gain in contrast is so great (particularly for daytime use) that the small amount of time required to modify the baffle is well worth the effort. Don't forget to paint your new baffle flat black before installing it.

Forever tinkering,

Kevin A. Medlock



For sale: C-90 including: 5x24 finder, star diagonal, 18mm eyepiece, 2½x Barlow, tripod adapter, lens cap and carrying case, RF adapter, Prorro-prism, and a T-ring for a Nikon camera. Hardly used. If new—\$590. Asking \$450.
Robert Scott, 238-0440 (work), 298-4156 (after 6pm)

For sale: Celestron C-8 telescope with stand, mounting wedge, four oculars (1½" Dia.) and case. Not used. I paid 1,545, will sell for 1,150. Call or write Ed Emery A/C (916) 961-7499 (eves) at 7605 Palisade Way, Fair Oaks, California, 95628.

ASTROPHOTOGRAPHY
by
Bob Fingerhut

This month's topic will be piggyback photography. Almost anyone with a telescope can get good pictures this way.

As the name suggests the camera is mounted on top of the telescope (piggyback). The telescope is used for guiding. The lens used on the camera can range from 28mm to 400mm.

The camera should be securely mounted so that there is no flexure between the telescope tube and the camera mounting. The telescope should also be balanced for the weight of the camera. The telescope should have a motor drive but if it has a smooth slow motion control a dedicated person can do without a motor drive. A mechanical or electrically operated declination control is also a help, but if the polar alignment is good and the focal length at the lens is less than 200mm, a declination control should not be needed. The camera should have a 'B' setting for time exposures and a locking cable release.

The field of view of the pictures will depend on the focal length of the camera lens. The following table lists the field of view on 35mm film for several focal lengths.

<u>Focal length</u>	<u>Angular field of view</u>
28	49.1° X 73.7°
35	39.3 X 58.9
50	27.5 X 41.3
58	23.7 X 35.6
100	13.8 X 20.6
135	10.2 X 15.3
200	6.9 X 10.3
300	4.6 X 6.9
400	3.4 X 5.2

The formula for calculating angular field of view is as follows:

$$\text{Angular field of field (degrees)} = \frac{57.296 * \text{size of film (mm)}}{\text{focal length of lens (mm)}}$$

Note: 35mm film is 24X36mm.

Example: 135mm lens with 35mm film

$$\frac{57.296 * 24\text{mm}}{135\text{mm}} = 10.2^\circ$$

$$\frac{57.296 * 36\text{mm}}{135\text{mm}} = 15.3^\circ \quad \text{field of view } 10.2^\circ \times 15.3^\circ$$

Tales of the Great Red Spot

Notice how short the list has gotten? Jupiter sets much earlier, but this cuts both ways -- it is well up as darkness falls, so your chances are enhanced.

The Spot has been less difficult as of late, mostly due to improved weather and elevation. The dark "dent" passing north of the Spot has been rather broken up following; the preceeding side is somewhat enhanced, extending southward to the mid-latitude of the Spot.

So take advantage of the nice weather and that new apodizing screen, crank up to 200-300x, and wait for the not-so-rare moments of superseeing when the Spot suddenly jumps out at you!

Jim van Nuland

If the lens is not sharp all the way across the field it may be necessary to stop it down. I usually use a 135mm lens f/1.8. The focus should of course be set at infinity. This is the easiest type of astrophotography for focusing.

When I shoot at f/2.8 with 200 ASA film I expose for 15 to 30 minutes depending on the darkness of the sky. Films that work well include: Color— Ektachrome 200

Ektachrome 400

Black & White— Plus-X

Tri-X

SO-410

SO-115

103a

Choose your exposure times based on the camera's f/ and the ASA of the film. See last month's article on eyepiece projection to calculate exposures for different ASA films and f/.

The magnification of your image will be the focal length of the lens (mm) divided by 55.

$$\text{Mag} = \frac{\text{FL}}{55} \quad \text{example: } 135\text{mm lens} \quad \text{Mag} = \frac{135}{55} = 2.5$$

The telescope should be guided with at least 10 times the magnification that the film sees.

$$\text{Example: Mag at film} = 2.5 \\ \text{Guiding mag} = 2.5 \times 10 = 25 \quad (\text{at least})$$

Almost any guiding eyepiece will give enough magnification in any telescope. Most guiding eyepieces with illuminated cross hairs come with a focal length of about 12mm.

Some objects that you might try photographing include the constellations, Barnard's Loop, the Horsehead, Tank Tracks, M-42, the Rosseta nebula, the Veil, Gamma Cygnus region, the North American Nebula, the Andromeda galaxy, the Milky Way (does anyone in the club have a milky way mosaic?), the Lagoon and Trifid nebulas. You can even use two piggyback pictures of the same area of sky for blinking. By doing this you can see astroids move across the field, variable stars brighten and dim, and you even might discover a comet or nova.

"John Cincotta does a great imitation of a vacuum cleaner." Jack Zeiders

GREAT RED SPOT ON MERIDIAN

DA MO	D	H	M
TH	5	1	10 17 PM
SU	5	4	0 4 AM
TU	5	6	9 33 PM
TH	5	8	11 7 PM
SU	5	11	0 45 AM
SU	5	11	8 40 PM
TU	5	13	10 17 PM
TH	5	15	11 54 PM
SU	5	18	9 22 PM
TU	5	20	11 4 PM
SU	5	25	10 18 PM
F	5	30	9 22 PM
SU	6	1	11 7 PM
F	6	6	10 18 PM

SJAA PROFILES

by Frank Dibbell

I first met Denni Medlock (she was Denni Frerichs then) in 1973 when she was Secretary of the Eastbay Astronomical Society. At the time I was building a telescope, and was in need of some technical assistance. A professor at U.C. gave me the name and address of the E.A.S., so I wrote a letter to the club, and got a reply from Denni, who informed me of the Chabot Telescope Makers. In spite of that, I got my telescope finally finished.

Denni tells me that she picked up her interest in astronomy from her dad. Her interest grew during the manned moon missions. Somewhat later, after graduating from high school, she went to Chabot Observatory on a date. While there she saw an ad about the Chabot Telescope Makers and decided to join, and eventually built an 8" telescope. Denni also joined the Eastbay Astronomical Society and served as the club Secretary for two years.

While at Chabot Denni met her future husband, Kevin Medlock. They were married under the dome of the 20" refractor, a truly astronomical event.

Among her other accomplishments, Denni was the founding president of the Astronomical Association of Northern California, and served as Secretary for that organization for several years as well.

Denni became acquainted with the SJAA in 1973, but didn't become a member until recently. Has something to do with not wanting to get two subscriptions to Sky & Telescope. She likes associating with the SJAA group because the people in the club are really active, involved, and willing to help newcomers. The diversity of interests among the club members, which are not solely astronomical, also interests her.

Planetary nebulae are her big turn on in astronomy. Currently she is desperately trying to finish a 14" mirror which is suffering from a radically turned-up edge. In addition to pursuing her hobby she also finds time to put together the SJAA bulletin each month. Denni is always willing to take articles for the bulletin, and she would like to hear from other club members who might have something of interest to be published in the bulletin. If you have something, see her at any of the club functions.

(I don't care what anyone says—that was embarrassing!
D.)

"Gerry bought a new hat. We'd better get used to it!"
Bobby Fingerhut

"Is there sex after astronomy?"
Steve Greenburg

"But the darn eclipses are never more than 7 minutes long!"
Patty Winter

"Don't feel bad, Cathy. At least you're not under the table like Jay."
Bobby Fingerhut

SJAA PROFILES by Frank Dibbell

The SJAA consists of a large group of individuals with a vast range of Astronomical interests. As a board member, I am interested in seeing that the club as a whole can meet the expectations of its membership. To achieve this goal I have been on a campaign of interviewing club members, and profiling them in the bulletin. I plan on continuing this exercise, however it is a very slow method of collecting information for a total club profile. Therefore I have put together a short survey which will help me gather the information I need for a club profile. Please take a few minutes to complete this survey. You may send the completed survey directly to me at 710 Georgia Ave., Sunnyvale, 94086; you may call me (after 6 pm) at 733-7208 and give me your response verbally; or you may give the completed survey directly to me or any other board member at any club function. Thank you for taking the time to respond.

SJAA SURVEY

1. Do you own a telescope? _____ (If not, proceed to question 2.)

Since many members own more than one telescope, space has been provided for up to 5 instruments:

	<u>SCOPE#1</u>	<u>SCOPE#2</u>	<u>SCOPE#3</u>	<u>SCOPE#4</u>	<u>SCOPE#5</u>
A. Aperture	_____	_____	_____	_____	_____
B. Bought or Built	_____	_____	_____	_____	_____
C. Optical configuration	_____	_____	_____	_____	_____

2. What is your principal interest(s) in Astronomy? (Fill in as many as apply)

<u>PRINCIPAL INTEREST</u>	<u>YES/NO</u>	<u>NO. OF YEARS</u>
A. Variable star work	_____	_____
B. Occultations and/or grazes	_____	_____
C. Deep sky observing	_____	_____
D. Lunar and planetary observing	_____	_____
E. Astrophotography	_____	_____
F. Telescope making	_____	_____
G. Other (please specify)	_____	_____

3. If a formal workshop were offered in telescope making, would you:

A. be interested in attending? _____
B. be interested in teaching? _____

4. If a formal workshop were offered in astrophotography, would you:

A. be interested in attending? _____
B. be interested in teaching? _____

5. If a formal workshop were offered in learning the night sky, would you:

A. be interested in attending? _____
B. be interested in teaching? _____

6. Would you be interested in being on an occultation or graze team? _____

7. Would you be interested in being on a variable star observing team? _____

8. Is there some program you would be interested in that hasn't been mentioned?

If you answered yes to any of questions 3 thru 8, please enter your name and a place/number where you may be reached.

NAME:

NUMBER:

Thank You