



San Francisco Amateur Astronomers

c/o Morrison Planetarium, California Academy of Sciences
Golden Gate Park, San Francisco, CA 94118

President	Toney Burkhart	668-9691
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BULLETIN FOR JULY 1988

Date: WEDNESDAY, JULY 20

Time: 8:00 p.m.

Place: Auditorium, JOSEPHINE D. RANDALL MUSEUM
114 Museum Way, San Francisco

Speaker: Dr. Gibor Basri
University of California, Berkeley

Subject: Observing with Satellites

Dr. Basri's talk will concentrate on methods and results of observing with the IUE, Einstein and IRAS orbiting observatories, with a look at the future of spaceborne observing, especially with the Hubble Space Telescope.

Dr. Basri earned his BS in Physics from Stanford University in 1973 and his PhD in Astrophysics from the University of Colorado in 1979. He was a Chancellor's postdoctoral fellow at Berkeley before joining the faculty there in 1982. His work is in the general areas of stellar atmospheres and very young stars. He has observed extensively at Lick Observatory and with the International Ultraviolet Explorer (IUE) satellite. Recent projects include very high resolution spectroscopy of stars to detect magnetic fields and work on protoplanetary disks around young stars.

Smile

FIELD TRIP TO CHABOT

Plan to visit Chabot Observatory in Oakland on Friday, July 8, along with other SFAA members. You should arrive in time for the planetarium show that runs from 8-9:00 p.m. Afterwards you'll have a chance to view through a 20" and an 8" Clark refractor, and to visit the telescope-makers' workshop. Call Toney Eurbhart for more information.

BOARD OF DIRECTORS MEETING

The next meeting of the SFAA Board of Directors will be on Wednesday, July 13, at 8:00 p.m. in the Copper Penny Restaurant on Geary Boulevard (across from Sears). All members are invited to attend Board meetings. Why not come to the next meeting and contribute your thoughts and ideas?

NEWS FLASH!

Two SFAA members, Joel Goodman and Nick Kanas, both faculty members at the University of California in San Francisco, have been selected to participate in the first year of a new exchange program with Leningrad University. The program is aimed at fostering the exchange of ideas and research collaborations between the faculties of the two universities in this new era of glasnost.

Dr. Goodman, whose research field is immunology, will visit Leningrad from September 25 to October 25 this year. We look forward to hearing his impressions of Russia. Dr. Kanas has conducted research for NASA on the mental effects on astronauts of extended periods in space. He will be visiting Leningrad during the summer of 1989. It's a beautiful city; we hope both enjoy their visits.

A MESSAGE FROM THE ACTING EDITOR

What do you think the purpose of this Bulletin should be? Personally, I think of it as a forum for SFAA members to exchange their ideas and experiences. Unfortunately, only a few members take the time to participate.

Whether it's the pleasure of showing kids Saturn at Mt. Tam., the thrill of finding an obscure galaxy cluster at Fiddletown, or a new book that you enjoyed reading (I hear that First Light is great), why not share your experiences with other members of the SFAA by writing an article for the next issue? We'd love to see your Mars drawings this fall and to hear about your efforts in telescope-making and astrophotography.

Contributions to the Bulletin should be on astronomical topics and generally should run no more than two typewritten pages, or about 500 words. It's nice if you can type them (so the editor won't have to). Don't worry too much about your style (or lack of); we're not competing with Astronomy magazine. Send your articles to: SFAA Bulletin, C/O Jim Shields, 190 Chilton Avenue, San Francisco 94131. The deadline for the next issue remains the 18th of the prior month.

NEXT SFAA STAR PARTY: ROCK SPRINGS, MOUNT TAMALPAIS

The next SFAA star party at Mount Tamalpais is on Saturday, July 16. We will meet at 7:00 p.m. at the Shoreline Shopping Center in Mill Valley and caravan up the mountain together.

When you leave the star party, remember to turn on your headlights BEFORE you leave your parking place. SAFETY FIRST!

MOONWATCH

The U.S. Naval Observatory needs your help in spotting the young crescent moon on July 14. The idea is to determine the exact time and place when the young moon can first be seen. Anyone with a clear western horizon and an hour to spare just after sunset can help.

Toney Burkhart will be at the Cliff House at sunset that day, with copies of the short form which you can use to report your observations to the Observatory. It should be fun!

LEARNING THE CONSTELLATIONS

The July sky features two magnificent constellations that lie in the general direction of the hub of the Milky Way galaxy. The galactic center itself is obscured by dark clouds of gas and dust; the superb star clouds and bright nebulae in this region actually lie in the next inner spiral arm of our galaxy, at a distance of about 5,000 light years.

At dusk in mid-July the bright red star to the south is Antares in the constellation of Scorpius (the scorpion). Don't confuse it with Saturn, which lies farther east. In Greek legend the scorpion was placed in the sky because its sting caused the death of Orion. South of Antares, in the scorpion's tail, lie two bright open clusters (M6 & 7) that are visible to the naked eye.

East of Scorpius (and south of Saturn) lies an asterism of bright stars called "the Teakettle" that marks the constellation of Sagittarius (the archer). This is undoubtedly the richest region of the sky for amateurs in northern latitudes; its most striking feature is a row of bright nebulae that extends northward from near the direction of the galactic center into the constellations of Serpens and Scutum. The Lagoon (M8) and Swan (M17) Nebulae are wonderful even in small telescopes; the Trifid (M20) and Eagle (M16) are equally fascinating in larger telescopes. Try using a nebular filter to increase the contrast.

IS YOUR TELESCOPE IN COLLIMATION? - by Jim Shields & Steve Gottlieb

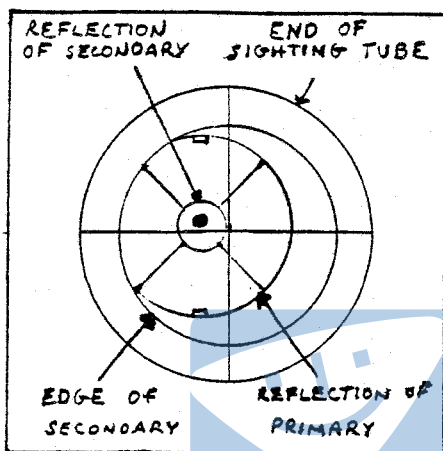
How do the stars look in your telescope? Are they sharp pin-points of light? If not, are you sure that those blobby images are the result of poor seeing? Or could your telescope be out of collimation?

If you're interested in improving the performance of your Newtonian reflector, you'll need to take two preliminary steps. First, dot the center of the primary mirror. Second, buy or make a sight tube--it's simply a piece of perfectly-round pipe with a peephole at one end and crosshairs at the other. Actual collimation then need only involve three relatively-simple steps:

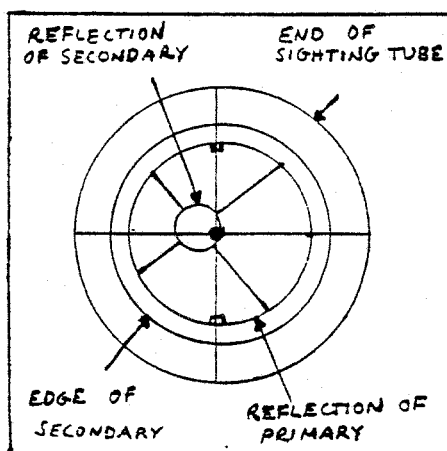
STEP ONE: Push the sight tube down in the focuser until the tube's inside edge is only slightly larger than the secondary as seen through the sight tube. Make the circular image of the secondary concentric with the circular image of the end of the sight tube by moving the diagonal up or down the length of the tube.

STEP TWO: Center the dot on the primary on the cross hairs of the sight tube by rotating or changing the angle of the diagonal. Be sure not to disturb your results in Step **One**.

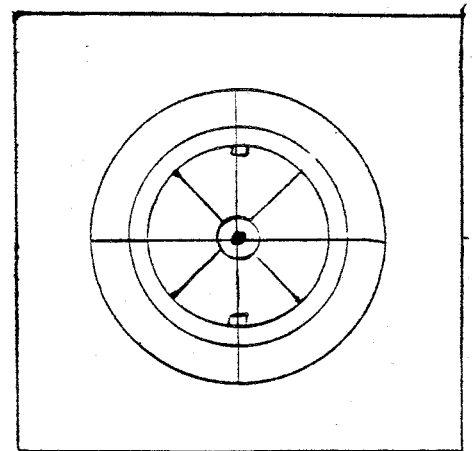
STEP THREE: Adjust the tilt of the primary to center the reflection of the secondary on the crosshairs by using the collimating screws for the primary.



STEP ONE



STEP TWO



STEP THREE

It's not a bad idea to run through these steps at home and to arrive at your observing site in plenty of time to touch up your results during twilight. After dark you can test your collimation in two ways. First, check bright stars for flares. (They shouldn't have any.) Second, examine out-of-focus star images at high power; the shadow of the secondary should be centered.

GET READY FOR MARS!

by JACK COE

We're headed for a close encounter with Mars! Between now and September 22 the orbits of Earth and Mars will bring us unusually fine views of our red neighbor planet. This will be the closest meeting since 1963, with Mars relatively high in the sky. Every amateur astronomer will have a chance to participate in what promises to be the biggest sky event since Halley.

The Planetary Society will be organizing MARS-WATCH to actively increase public awareness of this event. TV and newspapers will carry reports of Mars' progress. MARSWATCH programs are already taking place in cities around the country. Amateur observers will want to order a copy of their MARS OBSERVERS GUIDE from the address below. These are already backordered, so get your order in soon.

With all the publicity there will be lots of people wanting to see Mars with their own eyes. Public observing sessions will be taking place all over the Bay Area. Some amateurs will be operating in their local areas informally. San Francisco Amateur Astronomers will be cooperating with the Planetary Society in bringing Mars to the public. Ideas for Mars activities are in the planning stages at the moment. Watch the SFAA Bulletin for more information. If you have suggestions for activities or would like to volunteer to help out, get in touch with one of the SFAA officers listed on the front page of the Bulletin. The more people that participate, the more fun it will be!

Many people think that since the Mariner spacecraft sent back high resolution pictures that there is nothing left to learn about Mars. Nothing could be further from the truth! In preparation for the coming manned mission to Mars, the Association of Lunar and Planetary Observers (ALPO) is seeking amateurs to send in sketches of Mars. All that is needed is a telescope of moderate aperture and enthusiasm. This is one area where observers with medium sized refractors can do just as well, if not better, than amateurs with Dobsonian light buckets. Even city dwellers can get good results from their back yards.

Artistic ability is not necessary to make useful sketches. By writing to ALPO you can receive simple instructions and standard forms for submitting your results.

One important area of investigation is Martian weather. Mars is subject to severe dust storms, lasting weeks or months, which are poorly understood. A network of amateur observers watching regularly and sending in their results will provide information to the Mars mission planners which will be impossible to obtain any other way. This is an opportunity for amateur astronomers to do real science.

The coming close approach of Mars will give amateur astronomers lots to see and do, whatever your area of interest. Get out, get under, and look up!

FOR MORE INFORMATION:

MARSWATCH

c/o The Planetary Society
65 N. Catalina
Pasadena Calif. 91106

(send \$5.00 + \$1 p&h for MARS OBSERVERS GUIDE)

ALPO MARS RECORDER

Box 97-0469
Miami Fla 33197

QUINTETS, SEXTETS AND SEPTETS - by Steve Gottlieb

Compact galaxy groups hold a special fascination and challenge for many amateur observers. Often when I'm at a large star party at Digger Pines or Fremont Peak, I'll hear someone call out:

"Who knows how to find Stephen's Quintet?"

"It's near NGC 7331 in Pegasus. Let's see if you can find it in your new eight-inch."

After ten minutes or so I'll hear shouts of joy as someone has bagged his first "tough" object. Even though his view, with averted vision, may consist of only a few faint "fuzzies", the catch has just confirmed his finding techniques, telescope optics and visual acuity.

Perhaps you've wondered if there are other lesser-known tight clusters which provide an even more challenging test than Stephen's Quintet. There are; two of them are Seyfert's Sextet in Serpens and Copeland's Septet in Leo. Perhaps because these groups are not located near any bright galaxies, they have gone unnoticed by most observers and you can still be among the select group of amateurs to have tracked them down. An 8" scope may provide a tantalizing glimpse, but to observe these clusters in detail a scope in the 12-18" class is recommended. (Editor's Note: these were among the most popular objects at the Texas Star Party this year.)

Seyfert's Sextet (NGC 6027) was actually discovered by our old friend Stephen using the 32" reflector of the Marseille Observatory. Although Stephen only logged one object, his notes read: "Extremely faint, very faint star involved, 2 very faint stars near." This suggests to me that he may have unknowingly resolved several members but recorded them as stellar due to their diminutive size.

NGC 6027 was discovered to be an extremely compact galaxy cluster by Carl Seyfert as recently as 1951 on a Harvard Schmidt plate. A stunning photo taken with the 200" on Mt. Palomar can be found on page 1793 of Burnham's Celestial Handbook.

This remarkable group consists of six objects squeezed into a mere two arcminutes of sky. The wispy object labelled "e" on the accompanying chart is likely an unusual tidally-distorted portion of NGC 6027. In addition object "d" has a discordant redshift three times the other members and hence is probably a background galaxy. Still, the average three-dimensional separation of the members of this interacting group is extremely small and it is more compact than the better-known Stephen's Quintet.

You can locate Seyfert's Sextet on Sky Atlas 2000. or Uranometria 2000. northeast of the distinctive asterism of stars forming the head of Serpens at 15h 59.2m +20° 45' (2000.)

Smile

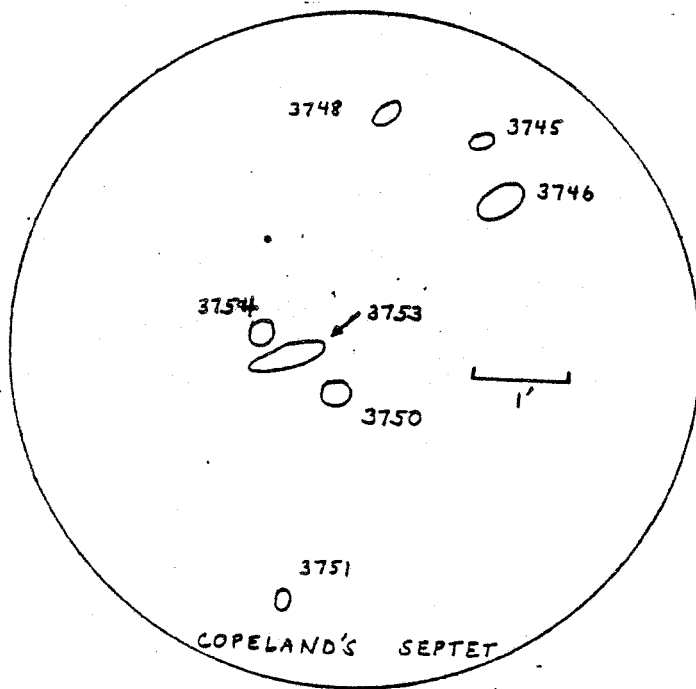
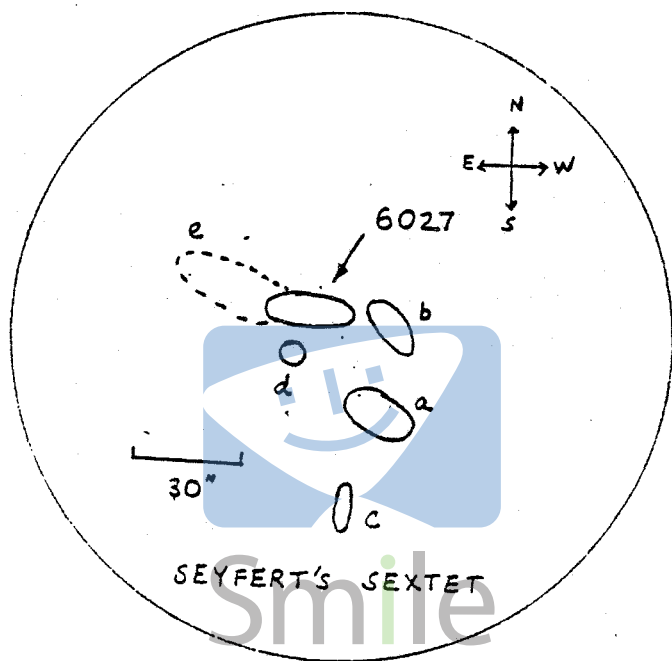
Although the brightest member of the sextet, NGC 6027, has a blue (photographic) magnitude of only 14.7, it was fair game for my 13.1" scope at Fiddletown in 1984. I also glimpsed NGC 6027A and B. A recent look with my 17.5" failed to reveal any additional members although, at mag 16., NGC 6027C or D may be visible in this aperture. I'd recommend using at least 150X on this group as the three galaxies NGC 6027/A/B are separated by less than one arcminute!

Using Lord Rosse's 72" speculum mirror, Copeland discovered the compact group now known as Copeland's Septet in 1874. The seven galaxies in the group (NGC 3745/46/48/50/51/53/54) are contained in just a five arcminute circle. The group was observed on five separate occasions by observers at Birr Castle and a sketch accurately identifies all seven cluster members.

Unfortunately, imprecise coordinates in the New General Catalog (NGC) caused the authors of the Revised New General Catalog (RNGC) to label the whole group as "non-existent". (The positions had been corrected in the notes to the Index Catalog (IC I).) You can find Copeland's Septet plotted on Uranometria 2000, about one degree northwest of the star 92 Leonis (mag 5.3) at 11h 37.8m +22° 00" (2000.). A photo can be found in Deep Sky 2.

I observed the septet recently with both a computerized 10" Schmidt-Cassegrain and my 17.5" Dobsonian. The 10" scope clearly revealed a faint clump with a few individual objects resolved. I caught six members with the 17.5" at 220X, the brightest being NGC 3753 at mag 14.6 (photographic).

I guarantee that Seyfert's Sextet and Copeland's Septet will provide a suitable challenge for virtually any telescope at your next star party. Stephen's Quintet can just move aside!



DEEP IN THE HEART OF TEXAS - by Jim Shields

Driving through the semi-arid wastelands of West Texas, I wondered why anyone would travel 1,500 miles to go to a star party. I wondered even more when I drove through the town of Saragosa, devastated only the year before by a hurricane that killed more than 20 people. Once I reached the Prude Ranch, it didn't take me long to find out why.

The stars at night are indeed big and bright at the Texas Star Party. This year the weather was superb and so was the deep sky observing. Six of the seven nights were crystal-clear and many old-timers thought it was the best star party in years. (In 1987 the sky reportedly only cleared for three or four hours during the entire week.)

By mid-week there were close to 100 telescopes set up on the football field, only one of three areas set aside for observing. At least 15 of them were 16" or larger scopes! There was an indefinable feeling of excitement in the air that was contagious among the hundreds of observers and astro-photographers present, many of whom stayed up all night most of the week. Everybody was raving about the pinkish tinges in the Trifid Nebula, the amazing detail visible in the North American and Veil and the awesome views of Omega Centauri, hundreds of sharp points of light that filled an entire field at medium power.

Four SFAA members found their way to West Texas this year: John Dobson, Bill Cherrington, Rick Decker and myself. John gave an extraordinarily wide-ranging talk on Friday, dealing with everything from "Dobson's Hole" to the Big Bang, and received a special award for his long-time contributions to amateur astronomy. (Editor's Note: "Dobson's Hole" is the area around the zenith in which it is very difficult to maneuver a Dobsonian telescope.)

Among the expert speakers scheduled for afternoon talks were Jack Marling on nebular filters, correction lenses for fast telescopes and observing faint planetaries; Robert Reeves on astrophotography; and Joel Harris on the recent solar eclipse tour attended by Irving Hochman. Among the more interesting technical innovations were electronic setting circles for Dobsonian telescopes. Once installed, they were very easy to use and surprisingly accurate. I tried them out on a 14.5" scope built by Sky Designs. The Hydra I and Centaurus galaxy clusters showed up right in the eyepiece field at the correct right ascension and declination. (Goodness knows how long it might have taken me to find them otherwise.)

The thing I'll remember best about the 1988 Texas Star Party, though, was the enthusiasm of the hundreds of amateurs there. It was a real "happening" not to be missed by anyone who enjoys sharing his love for the mysteries of the night sky; a sort of "Summer of Love" for amateur astronomers. I'll be back again next year.

COURSE ON RELATIVITY

Lewis Epstein, an SFAA member, will be teaching a short course in October based **upon** his book, Relativity Visualized. The class will **meet** three Saturdays--October 1, 8 and 15--at the University of California Extension Center in San Francisco. For more information, call the University at 642-1061.

BUMPER STICKER WINNER

We have a winner in the bumper sticker contest. Of the 39 slogans submitted, the Board chose the following, submitted by Lisa Puls:

ON THE ROAD TO THE MILKY WAY

Congratulations, Lisa! The first and second runner-ups were LETS GO STARHOPPING and ASTRONOMY IS ABOVE IT ALL, both submitted by Toney Burkhardt. The club thanks all who participated.

NEW MEMBERS

The SFAA welcomes four new members again this month: Paul Domanchuk, Gary Fujino, John Gillis and Peter Tucker. We hope to see you often at meetings and star parties and invite you to participate actively in club affairs.

SHARING RIDES

If you need a ride to the club's monthly meetings or star parties at Mt. Tam., drop a line to the acting Bulletin editor. Include your name, address and telephone number. In the next Bulletin, other club members who live nearby will be encouraged to contact you.

THANKS!

The club appreciates the recent generous donations by Irving Hochman and Ken Archuleta. We also extend our thanks to Steve Gottlieb for his contributions to the Bulletin.

SFAA MEMBERSHIP BENEFITS

Membership dues of \$15 per year include the monthly SFAA Bulletin and free entry to all club activities, such as lecture meetings, star parties, summer picnics, etc. In addition, you may obtain subscriptions to SKY & TELESCOPE, ASTRONOMY, DEEP SKY and TELESCOPE MAKING (any or all) at greatly reduced rates. For more information please contact Chelle Beard, SFAA Treasurer, 32 Penhurst Avenue, Daly City 94015. Phone: 878-4965 evenings.

Your dues are the lifeblood of the club. Please pay them on time to ensure uninterrupted receipt of the Bulletin and the magazines.

Smile



THE ASTRONOMICAL ASSOCIATION OF NORTHERN CALIFORNIA
PRESENTS

THE 1988 ANNUAL CONFERENCE

AUGUST 27 & 28, 9 a.m. to 5 p.m.

at LAWRENCE HALL OF SCIENCE, UNIVERSITY OF CALIFORNIA, BERKELEY

FEATURING:

Professional Speakers:

- ★ Steve Edberg of Jet Propulsion Laboratories will speak on Research Opportunities for Amateur Astronomers
- ★ Hyron Spinrad of the Astronomy Dept. at Univ. of Calif., Berkeley will tell about his many recent cosmological discoveries

An Awards Banquet at Shennanigans Restaurant with featured speaker

- ★ David Levy (discoverer of 4 comets in the past 4 years), a passionate speaker from Planetary Science Institute in Tucson
- ★ Presentations on a variety of subjects by amateur astronomers

ALSO

- ★ Displays of high quality astronomical products for sale
- ★ Astrophotography Contest and Exhibit
- ★ Astronomical Art Exhibition
- ★ Information about astronomy clubs from all over Northern California
- ★ Swap Meet
- ★ Star Party Sat. eve at LHS with Sidewalk Astronomers
Planet viewing through 24" telescope

For further information, contact: Don Stone
AANC President
(415) 376-3007
731 Camino Ricardo
Moraga, CA 94556

If you wish to present a paper at this conference, contact Russ Kirk, 709 Ada St. San Mateo, CA 94401 by Aug. 13

Registration fee:

\$15 for 2 days (in advance until August 16) or \$10/day at the door.

AND DON'T MISS:

Pre-conference Picnic and Star Party: August 20, 1988 }
 Post-conference Picnic/Marswatch: September 17, 1988 } BOTH AT FREMONT PEAK STATE PARK

1988 AANC CONFERENCE REGISTRATION FORM

Name (1st attendee) _____

Name(s) (additional attendees) _____

Address _____

City _____ State _____ Zip _____

Please register _____ persons @ \$15

Please reserve at banquet _____ Red Snapper @ \$18 _____

_____ Roast Top Sirloin @ \$21 _____

Total Amount Enclosed: _____

Checks payable to AANC, send to: Conference Registration, Nancy Cox, 1065 S. Van Ness #305, San Francisco, CA 94110

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CLASSIFIED ADS

Members' ads are free and will run three times. Please notify the Bulletin editor if an item is sold so the ad may be deleted. This service is provided monthly on a space-available basis.

FOR SALE: Celestron 11" Schmidt-Cassegrain telescope with Starbright optics, drive corrector, off-axis Guider Star Trap. \$3,000. Call Charles Stifflemire at (415) 946-0830. (3)

FOR SALE: Will Tirion's Sky Atlas 2000., field edition. Brand new, unopened. \$12. Call David Brown at (415) 751-9329. (1)