

sjaa

July '76 Bulletin



Jack Zeiders
Editor

WHAT'S GOING ON IN THE CLUB:

July 10: This is the deadline for returning your banquet reservations. Please get them in as soon as possible.

July 19: Rancho Grand View 7:00 P.M.

The general meeting this month is replaced with the installation of the new officers and banquet.

July 23-24: Mt. Diablo

The A.A.N.C. is sponsoring a star party.

July 31: El Sereno Dusk till Dawn

The club star party this month is again at El Sereno. The June star party was cold and not well attended, although the sight proved to be excellant. Last month's bulletin contains a map to the sight, and signs will be posted.

August 6: Olinder center 7:30 P.M.

The general meeting this month will give you a chance to show off all the fascinating slides and prints you've acquired recently.

August 7: Down in the valleysomewhere

The club is going to have a star party without making you trapse all over the countryside. The location will be in the next issue of the bulletin.

August 13: Debbie Moore's home 8:00 P.M. Board meeting

August 18-21: Escondido

The 1976 Western Amateur Astronomers convention.

August 27-28: Fremont Peak

Another weekend star party sponsored by the A.A.N.C.

Editors note: The bulletin is looking for astrophotos, if you have any black and whites why not submit them?

This month's cover features a negative impression of John Gleason's Trifid shot. The original was a 45 minute exposure on 103af through a Celestron 8 at f/5.

Ads Infinitum: Clayton Neece has an 8" Optical Craftsman for sale. It's a Discoverer model f/6.3 with a combination rack and pinion helical focus, 2 eyepieces, barlow, and clock drive for \$350 and a copy of the Scalnate Pleiso Field atlas is included. Call 378-5574 after 3:30 P.M.

Introduction to "The Orbits of Visual Binary Stars" contributed by
Gerry Rattley.

From this month forward "Rattley" will almost totally be replaced by a series of articles under the title given above. These articles will contain orbital diagrams and ephemerides for many of the bright visual binary stars of interest to amateur astronomers. Of course I cannot do just any star in these articles, as only a few hundred of the many tens of thousands of known double stars have computed orbits that are known with any amount of accuracy at all and many of these are in reality only very rough guesses at best. Therefore, I shall only choose the more interesting stars whose orbits I have to run in these articles. But don't dispair, as you shall see in the future, I have some pretty good stars to choose from.

My references for the orbits that will be used in this series of articles are as follows:

1. "The Third Catalogue of the Orbits of Visual Binary Stars", by W. S. Finsen & C. E. Worley, 1970.
2. "Atlas of the Heavens-II, Catalogue", by Antonin Becvar, 1964.

For those who wish to know more about how to use these orbits or how they are obtained from the orbital elements, I will be giving talks at the meetings from time to time and if enough people wish, I could easily give a full lecture on the subject at some future meeting. If you can't wait that long or wish to investigate this subject on your own, you can obtain a copy of the reprint of the two part article that appeared in Sky & Telescope in January and February 1970 titled "Some Bright Visual Binary Stars" by Jean Meeus. This reprint can be obtained either through the club or from Peninsula Scientific in Palo Alto.

I hope you enjoy and can make these articles of some use. I have spent many hours and overcome, with the help of many friends, many problems in order to gain the experience to do them, but I have found much satisfaction in the efforts.

Astronomically Yours:
Gerald W. Rattley

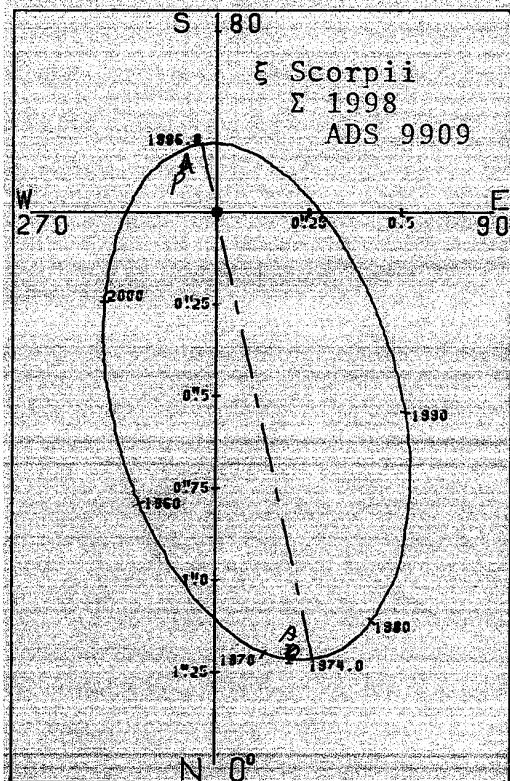
Special Notice: club membership renewals are officially due this month. Dues are currently set at \$15.00 for membership if you are over the age of 18, and \$10.00 for junior membership, under 18. Send your dues along with your "yellow card" from Sky & Telescope to Gerry Rattley at 185 Homestead Rd. #2, Sunnyvale, Ca. 94087, or you can pay your dues at the July banquet or call Gerry at 732-0202 if other arrangements are desired (we're flexible). This is the last month to renew without the penilty of possibly missing an issue of Sky & Telescope, if that interests you.

Make checks payable to "San Jose Amateur Astronomers".

The Orbits of Visual Binary Stars . . contributed by Gerald W. Rattley

Elements of the orbits as listed in the Third Catalogue of the Orbits of Visual Binary Stars by W. S. Finsen and C. E. Worley, 1970.

star name	1975 pos RA dec	P yrs	T yr	e	a "	i °	w °	Ω °	authority	name	date
ξ Sco	16 03 -11 18	46	1951.74	0.72	37	348	202	P. Baize	1942		
α Sco	16 28 -26 22	900	1889.00	3.21	86	0	273	W. D. Heintz	1960		



Ephemeris for ξ Scorpii:

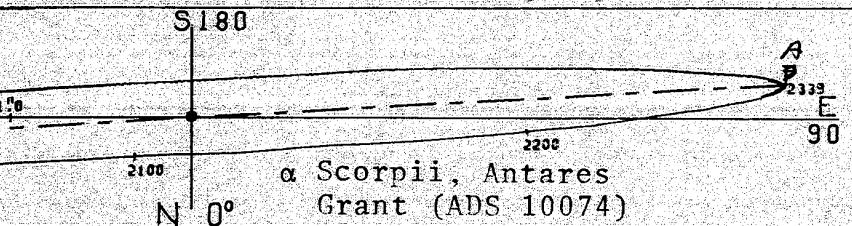
1975.0	130°.7	1°.24
1977.5	17.2	1.23
1980.0	21.0	1.19
1982.5	25.0	1.13
1985.0	29.7	1.04
1987.5	35.5	0.91
1990.0	43.5	0.75
1992.5	57.1	0.53
1995.0	94.5	0.27
1997.5	231.5	0.20
2000.0	308.2	0.39

Ephemeris for α Scorpii:

1975.0	275°.5	2°.65
1980.0	275.7	2.59
1985.0	275.9	2.52
1990.0	276.1	2.45
1995.0	276.4	2.37
2000.0	276.6	2.30

Xi Scorpii; Σ 1998 (ADS 9909); located 9° north of β Scorpii, is a pretty triple system. The A and B components are both 4.9 magnitude yellowish stars with F-type spectra. Because this pair has been observed through several revolutions, the orbit is very accurately known. Currently at maximum, this pair will rapidly close to minimum in 1996 after which it will again open to another maximum in 2020. This system is at a distance of 85 lt-yrs which makes the combined mass of the two stars about 3½ solar masses and the average separation between the two components of 19 a.u. (about the distance from the Sun to Uranus). Star C (7.2 mag, green: $48^{\circ} 7' 9''$; 1941) is in retrograde orbital motion with the A-B pair, with the separation increasing, but no orbit has as yet been computed. 281" south of and a little following ξ Scorpii is the double Σ 1999 (ADS 9910: $99^{\circ} 4'$: $11^{\circ} 3'$: 1915), which shares c.p.m. with ξ , and itself has retrograde orbital motion between its 7.8 mag bluish primary and 8.1 mag yellowish secondary, though here too no orbit has as yet been computed.

Alpha Scorpii; Grant (ADS 10074); this is Antares, a 1.2 magnitude, fiery red supergiant with a faint blue-green companion of magnitude 6.5. Seeing this companion can be very difficult except under the most favorable atmospheric conditions. This companion was first seen in 1819 by Berg, and has since shown very little motion, so the orbit is still very doubtful, though the two stars are physically connected. Presently the companion is closing, and, according to Heintz, will be closest, 0".2, in 2114 after which it will widen to 3".2 east of the primary in 2339. Observing a lunar occultation of Antares in the morning skies can be a very rewarding experience!!!

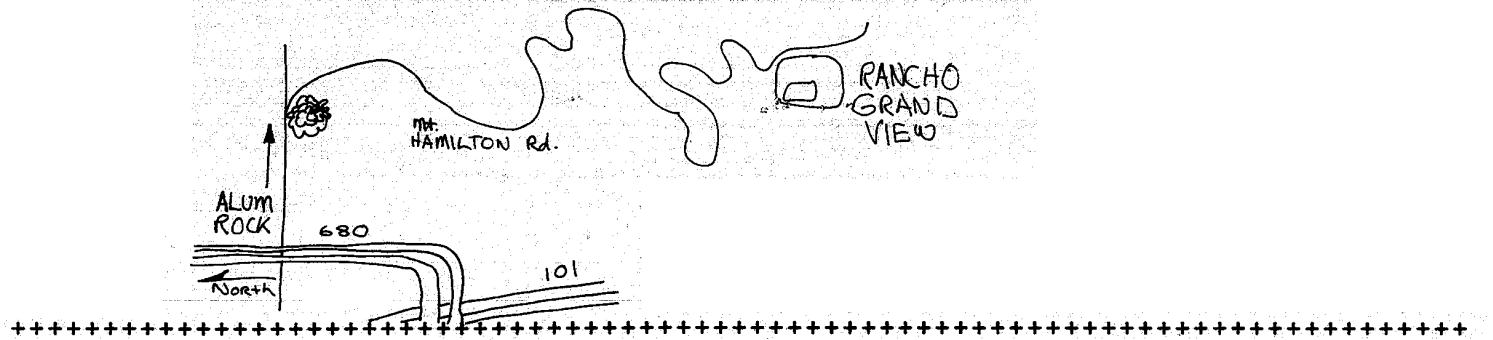


1976 BANQUET &
INSTALLATION OF OFFICERS

The banquet this year is at the Rancho Grand view, a rest raunt on the Mt. Hamilton road. The club will be the only group there on monday, July 19th. Frank Holden will give a talk about the new telescope at Cerro Tellola.

The dinners will cost 7.50 for adults and 3.75 for child ren. Included will be; soup, salid, chicken or rib roast,desert, and beverage.

The time to be there is 7:00 P.M. with dinner being served at 7:30. Please fill out the reservation slip below and return it to Gerry Rattley before July 10th. This is so we may inform the management of our needs.



Send to: Gerry Rattley 185 Homestead rd. #2, Sunnyvale 94087
Please make all checks payable to the San Jose Amateur Astronomers

NAME _____ AMOUNT INCLOSED \$ _____

NUMBER OF ADULTS _____ @ \$ 7.50 NUMBER OF CHILDREN _____ @ \$ 3.75

CHOICE, CHICKEN ROAST INDICATE HOW MANY PLEASE
REMEMBER TO RETURN BY JULY 10 th