

**SJAA**

Jack Zeiders  
Editor  
292-0107

## september '76

WHAT'S GOING ON IN THE CLUB

August 27 - 28 : Fremont Peak

Possibly you may not be aware that we have rejoined the A.A.N.C. This means that the regional activities will again be listed in the bulletin. This weekend the A.A.N.C. has called a two day event prior to the conference.

September 3 : Olinder Center 7:30 P.M.

This month Dr. Delbert Franz of the Penninseula Astronomical Society will give a talk on "Coordinate Systems".

September 4 : Saratoga High School 8:00 P.M.

The in valley star party for those who don't wish to attend the star parties up in the mountains.

September 10: Board meeting at Norm Wild's home 8:00 P.M.

September 18 - 19: Lawrence Hall of Sceince, Berkley

Enclosed with this months bulletin you should find a flyer detailing the happenings at this years A.A.N.C. conference.

September 24 -25 : Fremont Peak

The A.A.N.C. post conference star party.

September 25: El Sereno

The club has scheduled a star party at this site for those who may not wish to attend the Fremont Peak gathering.

October 1: Olinder Center

We are currently attempting to get someone from N.A.S.A. (viking?)

October 8: Board meeting at John Rhodes' home 8:00 P.M.

October 23: Henry Coe State Park star party

For anyone who may be looking for astronomical supplies, there is a new dealer over in Concord. It is The Odd Assortment, it is located at 2057 Salvo Street, Concord, Ca. 94520 (415) 798-7562

# rattley rattles

Rattley rattles again . . . I have another correction that needs to be pointed out concerning my article which appeared in the July bulletin (the one with Antares and Xi Scorpii). In the columns which list the ephemeride for the two stars, the three columns are, from left to right, year, position angle, and separation. The second column, position angle, is incorrectly labeled with units of seconds of arc ("), it should be labeled with degrees ( $^{\circ}$ ). Third column, separation, is incorrectly labeled with degrees ( $^{\circ}$ ), and it should be labeled with units of seconds of arc ("). I trust that this will be the last corrections I will have to make to this first article, and I will do my best to try to make less errors in future articles. Thank you.

The following is a questionnaire which you may, if you wish to be heard, fill out and get back to me, Gerry, either by mail or at a meeting or star party.

-----tear on-dotted line-----

The following is a list of club activities at the monthly meetings. Please indicate which you feel you like best, find adequate, or would like to see more of: (a blank space is provided for your comments)

- |  |           |          |           |       |
|--|-----------|----------|-----------|-------|
| 1. Lectures by professional speakers,                    | like best | adequate | need more | _____ |
| 2. Talks by amateur astronomers and fellow club members, | like best | adequate | need more | _____ |
| 3. Films & Slide shows                                   | like best | adequate | need more | _____ |
| 4. Equipment nights, show and tell type activities,      | like best | adequate | need more | _____ |
| 5. Gab session which follows meetings,                   | like best | adequate | need more | _____ |

Is there any other activity not listed here that you would like to see the club have?

Are there any additional comments that you would care to make at this time?

The following is a list of star party sights available to the club. Rate each of the sights as indicated. You will want to mark more than one choice.

- |                    |            |      |                   |         |       |
|--------------------|------------|------|-------------------|---------|-------|
| 1. Skyline site    | don't like | good | excellent         | too far | _____ |
| 2. Mt. Umunum site | don't like | good | too far           | _____   | _____ |
| 3. El Sereno site  | don't like | good | excellent         | too far | _____ |
| 4. Ed Levin Park   | don't like | good | too close to city | _____   | _____ |
| 5. Henry Coe Park  | don't like | good | excellent         | too far | _____ |
| 6. Freemont Peak   | don't like | good | excellent         | too far | _____ |

Are there any additional comments you would like to make to the above sights or any other sights you would like to see the club use?

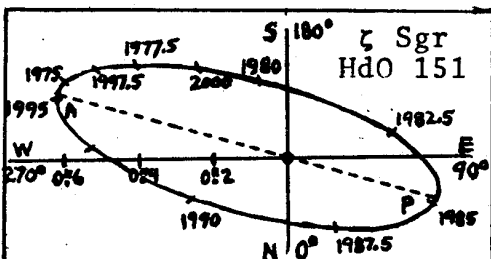
What do you feel concerning the club trying to have a star party someplace right down here in the valley so you don't have to travel so far on those twisty mountain roads?

Thank You!!

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

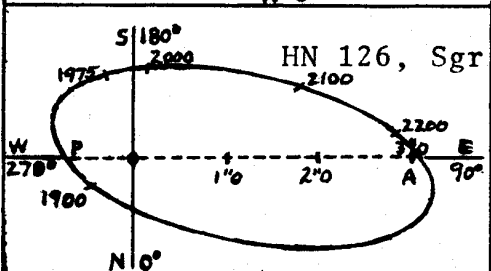
Elements of the orbits as listed in the Third Catalogue of the Orbits of Visual Binary Stars by W. S. Finsen and C. E. Worley, 1970.

J. J. O'Connell, J											
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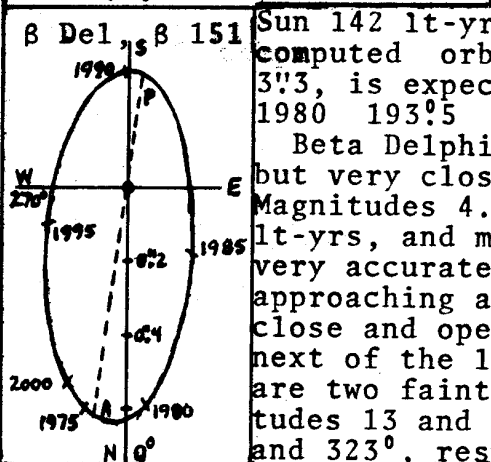
Zeta Sagittarii; HdO 150 (ADS 11950); is a rapid but very close system only suitable for larger instruments. Magnitudes 3.4 and 3.5, spectra A4, distance from Sun 83 lt-yrs, and mean separation in orbit  $13\frac{1}{2}$  a.u. The orbit of these two stars is very accurately known and very reliable. The system just passed a maximum,  $0''.64$ , in 1974 and is now closing then will open to its other maximum,  $0''.42$ , in 1984. The next of the greater maxima,  $0''.64$ , will occur in 1995. Ephemeris:

1975	250.9	$0''.63$	1990	294.3	$0''.28$
1980	199.6	0.22	1995	255.5	0.64
1985	72.2	0.42	2000	224.4	0.34



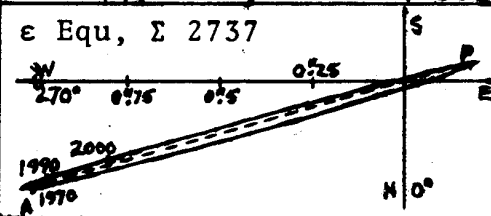
HN 126 (ADS 11989) in Sagittarius; here is an easy system for amateur telescopes. Magnitudes 7.5 and 7.7, spectra G1, distance from Sun 142 lt-yrs, and mean separation in orbit 99 a.u. The computed orbit is premature. The greatest separation,  $3''.3$ , is expected to occur in about 2320. Ephemeris:

1980	193.5	$0''.95$	1990	182.4	$0''.96$	2000	171.6	$0''.99$
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Beta Delphini;  $\beta$  151 (ADS 14073); this is another rapid but very close system only suitable for larger instruments. Magnitudes 4.1 and 5.1, spectra F3, distance from Sun 96 lt-yrs, and mean separation in orbit 14 a.u. The orbit is very accurately known and very reliable. The system is now approaching a maximum,  $0''.64$ , in 1977, after which it will close and open to its other maximum,  $0''.31$ , in 1990. The next of the larger maxima will occur in 2004 ( $0''.64$ ). There are two faint comites to this system. They are of magnitudes 13 and 11, separations  $18''.7$  and  $42''.4$ , and P.A.s  $126^\circ$  and  $323^\circ$ , respectively, as measured in 1961. Ephemeris:

1975	349.0	$0''.61$	1990	180.9	$0''.31$
1980	5.4	0.59	1995	294.9	0.24
1885	44.8	0.25	2000	342.7	0.55



Epsilon Equulei;  $\epsilon$  2737 (ADS 14499); this is a fine triple system, with the closer pair having a very accurately known orbit, however the orbit of the C component is as yet undetermined, though it is surely physical. The 1975 separation of the C component is  $10''.2$  in P.A.  $68^\circ$  (P.A. decreasing, separation decreasing). Magnitudes of A, B, and C are 5.9, 6.2, and 7.1, all spectra F4, distance from Sun 165 lt-yrs, and mean separation in orbit of the AB pair 33 a.u.

Ephemeris for  $\epsilon$  2737 AB:

1975	285.8	$1''.05$
1980	285.6	1.06
1985	285.4	1.04
1990	285.2	0.99
1995	285.0	0.92
2000	284.8	0.82

Due to the large inclination, large eccentricity, and argument of periastron close to  $0^\circ$ , the B component spends more than half its orbital time between P.A.  $290^\circ$  and  $280^\circ$ . The greater of the two maxima,  $1''.06$  is due in 1978, and the lesser maximum,  $0''.21$ , is due in 2022. There is a  $12\frac{1}{2}$  mag. comes  $74''.8$  distant in P.A.  $280^\circ$ , 1924.

# occulting zone

## TOTAL OCCULTATIONS

Sept PM, PDT	Star	Mag(s)	CA	PA	DOUBLE-STAR NOTES
4 10:00:06	GC28286	6.2/8.3	18N	11	
10:05:22D	$\beta$ Cap	3.5/4.7/6.7	25N	17	GC28286: .8" at 84 deg.
10:58:59R			-51N	301	$\beta$ Cap: .02" at 60 deg,
27 7:48:50	Z15486	7.7	46N	55	.0001" 3rd comp
7:55:07	Z15478	6.5	42S	148	$\gamma$ Sco: 1.2" at 2 deg,
7:58:09D	$\gamma$ Sco	4.3/5.6/6.5	38S	152	41" at 337 deg.
8:32:07R			-21S	210	Z15478: Triple, no data
28 8:56:17	ZC2477	8.8	44N	47	
29 8:11:10	Z18150	7.1	7N	5	Other stars are single.

The D or R after the time indicates disappearance or reappearance.

Dates and times are P.M. daylight times.

Cusp angle is measured around the limb of the moon, away from the lighted cusp.

Position angle starts at the north point of the limb, and increases to east (ccw in usual telescope).

GC28286: Probably won't be able to see the secondary as the moon is 89% illuminated.

You have a chance to resolve a spectroscopic binary!!

$\beta$  Cap will disappear in steps, maybe a tenth of a second or so. Watch closely!

The primary of  $\gamma$  Scorpii is itself a spectroscopic binary, and its distant companion is also double. Watch for this star to disappear in steps or maybe a slow fade.

Red Spot watchers note: I have predictions for the spot, but as Jupiter is still a morning object, I won't run the complete list. Please contact me if you'd like a copy. The spot will be visible at our Sept. 25-26 star party about 1 A.M. So bring your spotted eyeballs. Satellites I-IV will be in sequence outward from the planet.

Jim Van Nuland, 371-1307

saqa

SAN JOSE AMATEUR ASTRONOMERS - AUGUST 1976

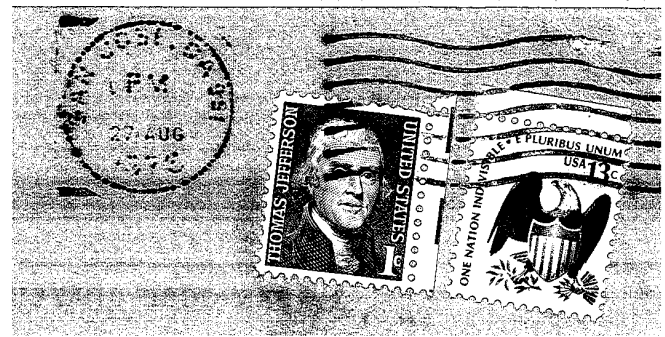
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