

the san jose astronomical association

SJAA

OCTOBER IN THE YEAR 1977

What all is suposed to happen

- Oct. 1 Indoor star party, Los Gatos Red Cross building, 7:00 pm.
- Oct. 7 General Meeting, Olinder Center, William St. Park, 7:30 pm.
Slide, Print and Equipment night.
- Oct. 7 Board of Directors Meeting, John Rhodes' Motor home, in the parking lot, right after the general meeting.
- Oct. 7,8 AANC Post Conference star party, Fremont Peak State Park.
- Oct. 15 Close-in Club star party, Lexington School.
- Oct. 15 Far-out Club star party, Fremont Peak State Park.
- Oct. 22 Indoor star party, Los Gatos Red Cross building, 7:00 pm.
- Oct. 29 Indoor star party, Los Gatos Red Cross building, 7:00 pm.
- Oct. 29 Peninsula Astronomical Society, Oak Ridge Observatory.
Contact Gerry Rattley for more info. about the star party.
- Nov. 4 General Meeting, Olinder Center, William St. Park, 7:30 pm.
Gerry's chart talks, chart numbers to be announced.
- Nov. 11 Board of Directors Meeting, Allen Meyer's apartment building recreation room, 200 E. Dana, apt. B-34, Mountain View.
- Nov. 12 Far-cut Club star party, Henry Coe State Park.
- Nov. 19 Close-in Public star party, Sanborn Canyon Park.
West Valley College astronomy classes invited.
- Nov. 26 Indoor star party, Los Gatos Red Cross building, 7:00 pm.

THE ECLIPSE OF THE SUN JUNE 22, 1666

The eclipse in London had a duration of 1 hour 54 minutes and began at 5:43. The limb of the moon was seen without the disk of the sun. The eclipse was observed by Mr. Willughby, Dr. Pope, Mr. Hook and Mr. Philips with a 60 foot and a 5 foot telescope.

From Paris, Monsieur Payn reports that in timing the eclipse, it was "judged that time by the pendulum may be sufficient for mechanicall operations, yet 'tis not exact enough for establishing the grounds of true astronomy."

Philosophical Transactions, September 9, 1666
The Royal Society of London

Good evening, my name is Penny Pinschmidt. As of the last board meeting, Sept. 10, I became the new bulletin editor. The unfortunate part of all this was that I had only 2 weeks to get this months bulletin written, typed, material gathered, put together, printed, and mailed. So, when you see a mistake or two, bear with me. I wouldn't have gotten this put together at all if it weren't for the help of the President, former Editors, club officers as well as the many others who made it possible for me to get out my first bulletin. Thank you for all your help.

Unlike past bulletins, when money spent was left up to the editor, I now have an average budget of \$35 or less a month. And, again, unlike past bulletins, printing costs can now be cut nearly in half, (hopefully.) I have my own inexpensive, local copy service in Los Gatos, and, John Rhodes has access to an in house printing place at H.P. where he works. Money saved can go into thicker, more entertaining, and informative bulletins.

That's where you guys come in. I need material! Badly. Articles, pictures for the cover, or drawings, anything. It need not be of any great length or professional quality. Just a half a page, a paragraph or two. If you have something you want to share with others, something you want to say, tell about, write it up and send immediately to me, or call.

Thank you,
Penny E. Pinschmidt
Penny Pinschmidt
16385 Peacock Lane
Los Gatos, Ca. 95030
356-4330

NEWS NOTEZ Ed Schell

A nova in Ophiuchus, detected by satellite sensors, has flared up to probably the second strongest source of X-ray emission in the sky.

San Jose News, Sept. 19

Confirmed by later IAU Circulars at 1.5 crab.

The rings of Uranus are predicted to occult a 9.3 mag. red star ($14^{\text{h}}48^{\text{m}}44.66^{\text{s}}$ $-15^{\circ}49'47.9''$) on Dec. 23. The star that will be occulted by the planet at about 7:20 UT is the brightest predicted to be occulted by the rings during the next 3 years.

IAU Circular 3108

Merlin Kohler from Quincy, Calif. discovered a comet on Sept. 4. It was predicted to be at $16^{\text{h}}33.29^{\text{m}} +18^{\circ}02.3'$ on Oct. 4 mag. 9.2. But later Circulars, including one quoting Don Machholz of Los Gatos, indicates it is brighter than predicted. (I have not received predictions for later dates, which is kind of strange in itself. Ed)

IAU Circular 3105, et squ.

If anyone knows of any news that I miss, please let me know. Also, if anyone has any idea of a better name for this, let me know - I don't like NEWS NOTEZ.

BLURBS

The Oct. 7 General Meeting will be a slide, print and equipment night - show and tell. Everyone that has slides, please get them to John Gleason before the meeting starts so they can be loaded in the projector. The equipment should be set up before the meeting. Please bring something, especially telescopes.

Everyone could come to the Board meeting - it would be very painless because it's on the same night as the general meeting at the same place, right out in the parking lot. Because of limited seating in John's motor home, the whole thing may have to be moved. Denny's Resterant? That's up to the president.

The same night again, the AANC Post Conference star party starts at Fremont Peak. You might want to go on down after the meeting.

John Dobson is going to give his "Astronomy for children under 80" class at the star party. If you haven't heard any of it, you should sit in on at least some of it. John will have a class in telescope making at the Lawrence Hall of Science thursdays at 7:00 pm starting Oct. 13. For more info. call John at (415) 567-2063 or see him at the star party. Maybe they will stop by at the equipment night on the way down and bring the 24.

Any star party at Coe, like the one on Nov. 12, the lock on the gate to the upper site must be kept in series. If the other users are locked out, it may mess up our chances of using the site. WATCH IT! Our lock is wrapped with gray tape, the combination is 4565 or something.

Gerry's chart talk in Nov. will cover chart 11, 5, 15.

The Conference was good. The eclipse trip was won by Mary Lynn Cabbage, of the San Francisco Sidewalk Astronomers. It's getting too late and I am getting tired. If you want to hear more, maybe we will have a report at the meeting. If not, see you next month.

I didn't mean to have the President's message as the last page, but I need a blank page on the back for the address - sorry John.

Adds Adds? with only one?

FOR SALE 8 inch Newtonian f/7 included: car top rack
 4 eyepieces
 finder
 \$289.00

Brad Carlson (408) 268-1580

MORE BLURBS

Sept. star party, Henry Coe State Park Reported by Jim Van Nuland

Saturday, Sept. 10, saw about 30 members and guests at Coe Park, along with at least 15 telescopes. Observing got off to a good start with Comet Kohler, found by John Rhodes, and seen as a round fuzzy, maybe 9th magnitude.

As the fog below us cut out the city lights we were treated to dark skies, good seeing, and no dew. Although rather low, dust lanes in the Trifid were seen by several persons using a superb 8" Newtonian. (was this Jim's telescope? Ed.) M31 was a bright naked-eye object and M57 proved to be a strange but fascinating sight.

The rising of Orion heralded the coming winter, as did the chilly air, but the splendor of the view, along with the rising of the planets, made it all worth while.

Last month's general meeting Also by Jim Van Nuland

Dr. Therkelson's talk on celestial navigation was excellent, informative and well-received. He said the use of modern electronic aids has largely replaced the stars (GASP!) for military and commercial navigation, but they are still very important to many sailors. He discussed the history and theory of celestial navigation such that it could be easily understood.

One method uses a combination of graphical and analytic techniques to simplify the calculations. By using an assumed position, referring to various tables, measuring the elevation of a star and checking the time, one can readily find a line of position on the Earth. Several stars are used to obtain other lines of position to fix a location.

A Partial Occultation of the Sun

The October 12 lunar occultation of the sun (eclipse) will begin locally at about 11:49 am PDT; mid-event at 1:01 pm. and end at 2:13 pm.

Where possible, members should set up to show the sun by projection, and should warn onlookers not to try direct viewing of the sun.

(This has been edited from what Jim gave me, he may not want to take the blame for it. Penny)

Visual Binary Stars for the Year 1980

by Gerry Rattley

All double stars components are in motion, some doubles being optical and having linear motions and others being true binaries with orbital motions. Historically now most of the wide rapid binary stars have been well observed for many decades and most of those showing any kind of rapid binary motion have had their orbits computed. As these rapid binaries are constantly changing their position angle and their apparent separation, then almost any source or double star list that is consulted to find out what the binary's current P.A. and separation are is almost certainly wrong.

Most amateurs do not have access to an electronic computer nor do they have the latest orbits for these binaries available, but if they did it would then be possible to compute from the orbital elements a P.A. and a separation of where the binary should then be in its orbit. This is what I have done in the double star list included with this article. The list this month is the first page of a series that will be published in club bulletins a page or two at a time until it is complete and covers the entire sky.

The list includes all binaries with computed orbits that have possible maximum separations of 0.5 seconds of arc or greater. The list also includes reference to those binaries that are mentioned in other popular double star lists but are never as widely separated as $0^{\circ}5$ and are therefore quite difficult, if not impossible, for amateur observation. The P.A. (θ) in degrees counterclockwise from the North Pole and the separation (ρ) in seconds of arc are for the year 1980.0. Bright binaries that never open wider than $0^{\circ}4$ have the entry - close in the θ and ρ columns. This means that for most of these binaries these empirical measures are going to be usable for about the next five to ten years.

The first columns list the stars catalogue name, the component designation, and the constellation it is in. Next is its 1950.0 co-ordinate position. Then come the component magnitudes and spectral types. The next two columns are for θ and ρ respectively and the column following these lists the period in years of the orbit used to compute the θ and ρ given in the preceding two columns.

The last column lists a special rating of the reliability of the orbit used for the computation. This rating number of from 1 to 5 was assigned by Finsen and Worley in their catalogue of orbits and is as follows:

- 1 orbit is definitive, star has been well observed through several revolutions.
- 2 orbit is reliable, star has been observed through at least one revolution.
- 3 orbit is preliminary, star has been observed through at least half of a revolution.
- 4 orbit is premature, star has been observed through less than half of a revolution.
- 5 orbit is indeterminate, the observed arc is very short and shows little curvature.

The little arrows in the last column indicate when a star is opening rapidly (\uparrow) for the next few decades, or closing rapidly (\downarrow). If there is no arrow in this last column it means that there will be little change in the separation of the components in the next few decades or there will be a note below the star telling when the star will next be at maximum separation. (article to be continued)

Star		1950	pos	$m^1 - m^2$	sp	θ	ρ	P		
β	862	And	00 02.2	+37 54	10.1-10.4	G	16°	0".4	195	3↑
OΣ	547,AB	And	00 02.8	+45 32	9.4- 9.4	K+M	173	5.9	362	5
Σ	3062	Cas	00 03.6	+58 09	6.5- 7.3	G+G	287	1.4	107	1
Σ	2	Cep	00 06.5	+79 26	6.9- 7.1	A	19	0.6	300	3↑
β	1026	Cas	00 09.5	+53 21	7.4- 7.8	A+F	- close -	68	2	
OΣ	2,AB	And	00 10.8	+26 43	6.5- 8.0	F	180	0.3	693	4↑
Σ	13	Cep	00 13.4	+76 40	6.9- 7.1	B	57	0.9	1600	5
OΣ	4	And	00 14.1	+36 13	8.2- 8.5	F+F	172	0.5	112	2↓
Grb	34,AB	And	00 15.5	+43 44	8.2-10.6	M+M	62	36.5	3020	5
β	1015	Psc	00 18.0	+12 02	8.7- 8.9	F	20	0.4	254	4↑
h	1018	Cep	00 18.2	+67 23	8.6- 9.2	G	86	1.4	163	3
OΣ	6,AB	Cep	00 18.6	+66 44	7.4- 8.4	B+A	151	0.6	240	3↑
Hu	1007	Cas	00 25.5	+63 28	10.0-10.0	G	68	0.5	198	5
B	1909	Cet	00 25.8	-20 37	7.1- 7.2	G	- close -	11	1	
OΣ	12	λ Cas	00 29.0	+54 15	5.5- 5.8	B	183	0.6	640	5
I	260,CD	β^2 Tuc	00 29.3	-63 14	4.9- 5.7	A	316	0.5	44	3
Ho	212,AB	13 Cet	00 32.7	-03 52	5.9- 6.1	F	- close -	7	2	
β	395	Cet	00 34.8	-25 03	6.4- 6.5	G	327	0.3	25	1
		-- β 395 will next be widest in 1989;			$\theta=110^{\circ}$; $\rho=0".8$					
OΣ	18,AB	Psc	00 39.8	+03 54	7.8- 9.4	F	200	1.5	546	4
Σ	60,AB	η Cas	00 46.1	+57 33	3.6- 7.5	G+M	307	12.0	480	2
β	495	Psc	00 46.1	+18 25	8.4- 8.4	G	14	0.3	171	4↓
β	232,AB	Cas	00 47.6	+50 22	8.5- 9.0	F+F	236	0.8	219	3
Hu	201	Cet	00 49.6	-13 30	10.0-10.0	K+K	101	0.8	146	3
OΣ	20,AB	66 Psc	00 51.9	+18 55	6.2- 6.9	A	224	0.5	360	3
Σ	73,AB	36 And	00 52.3	+23 22	6.2- 6.6	K	259	0.6	165	3↑
β	1099,AB	Cas	00 53.8	+60 06	6.0- 6.7	B+B	- close -	86	3	
A	1903,AB	Cet	00 57.0	-01 28	9.3- 9.7	G	312	0.4	150	4
OΣ	21	And	01 00.1	+47 07	6.7- 8.0	A	175	0.9	450	4
AG	14	Psc	01 02.9	+20 52	9.7-10.1	K	6	0.3	185	4↑
A	1516,AB	And	01 04.3	+38 23	8.0- 8.0	F	- close -	34	2	
Rst	3352	ν Phe	01 05.5	-41 45	5.9- 6.1	A	- close -	28	3	
OΣ	515	ϕ And	01 06.6	+46 59	4.8- 5.4	B	140	0.5	372	4
β	1100	Cas	01 11.6	+60 41	8.2- 8.2	F	37	0.5	102	3
I	27,CD	Tuc	01 13.3	-69 05	8.1- 8.5	G	190	1.0	81	3
β	4,AB	Psc	01 18.7	+11 17	7.4- 7.9	F	114	0.4	180	3
β	1163	Cet	01 21.8	-07 10	6.7- 6.8	F+F	- close -	16	1	
Rst	33	Phe	01 23.8	-48 09	8.3- 9.0	G	306	1.0	172	3
Don	17	Tuc	01 24.6	-68 05	8.8- 9.6	K	282	0.6	195	4↑
β	1164,AB	95 Psc	01 25.1	+05 06	7.9- 8.2	G	156	0.4	64	3↓
Hwe	4	Cet	01 31.2	-12 28	9.6- 9.7	G	338	0.8	144	3
δ	31,AB	Scl	01 32.7	-30 10	7.8- 7.9	K	- close -	5	1	
β	1000,AB-C	Scl	01 32.7	-30 10	7.2-10.5	K	296	1.3	112	3
h	3447	τ Scl	01 33.8	-30 10	6.0- 7.2	F	332	1.4	1876	5↑
Kui	7	Cet	01 35.1	-09 40	6.9- 7.4	F	- close -	28	3	
Luy	726-8	UV Cet	01 36.4	-18 13	12.5-13.0	M+M	276	1.8	55	4
Δ	5	p Eri	01 37.9	-56 27	6.0- 6.1	K	195	11.1	484	4
β	453	Cas	01 41.7	+56 52	10.1-10.4	G	209	0.9	119	5
h	3461,AB	ε Scl	01 43.3	-25 18	5.4- 9.4	F	29	4.7	1192	4
OΣ	34	Cep	01 44.3	+80 38	7.9- 8.1	A	97	0.5	165	3
Σ	183	Tri	01 52.2	+28 33	7.8- 8.5	F	126	0.1	193	3↑
	-- Σ 183 will next be widest in 2066;				$\theta=9^{\circ}$; $\rho=0".7$					
Σ	186	Cet	01 53.3	+01 36	6.9- 7.0	G	53	1.2	155	2↓
β	513,AB	48 Cas	01 57.8	+70 40	4.8- 6.5	A	198	0.7	60	1
A	1813,AB-C	Tri	01 59.2	+36 29	8.0-11.5	G	222	1.0	330	4
Σ	202	α Psc	01 59.4	+02 31	4.3- 5.2	A+A	281	1.7	720	5
OΣ	38,BC	γ^2 And	02 00.8	+42 06	5.5- 6.3	B+A	108	0.6	61	1

BOARD MEETING NOTES

As most of you know, it is the members of the Board of Directors of the SJAA who plan the monthly program of General Meetings and star parties--and it is largely through their efforts that we secure our speakers and arrange for star party sites.

What is not so well known is the variety of other topics which the Board addresses at their monthly meetings. A typical agenda might include such things as membership cards, club letterhead, budget allocations, dues, club By-laws clarifications, Bulletin content, general meeting program and location, star party sites and arrangements, and new-member bootstrap programs.

For example, though star parties represent a major activity of the club, they are also a major headache for the Board. In selecting a time and a site, we must consider phase of the moon, potential weather conditions, availability of sites, expected attendance, and conflicts with other astronomy groups' programs.

In addition, we have traditionally found that those people who attend star parties often have different and sometimes conflicting objectives. Beginners want an opportunity to see through a selection of telescopes a variety of "spectacular" objects. More seasoned veterans are anxious to use their evenings and instruments to view new and difficult objects or to study in detail such things as lunar features, planets, double stars, or occultations. Other highly skilled individuals seek especially dark skies and serene surroundings to take their precisely-guided photographic exposures--or examine 13th magnitude objects through 8-inch glasses.

In the past, the star parties have roughly alternated between close-in sites and far-away sites--with a smattering of public features (AANC Astronomy Day). In the following months we are trying a new scheme where we schedule simultaneous star parties at close-in and far-away sites. (In months with two equally-moonless weekends, we will separate the dates). We will additionally designate one of the close-in parties every three months as an invitational--specifically designed for the astronomy students at West Valley or other colleges.

With this plan we hope to better represent the diverse interests of our club membership. We think it will give our talented and dedicated astrophotography contingent more opportunity to pursue their interests without feeling that they are ducking out of the club activities. It should also provide more time at close-in sites for our less experienced members to learn observing skills from the veterans. The Board thinks the scheme has promise. See you at a star party!

-- John Rhodes
September 1977

OCCULTING ZONE

The SJAA Graze Section announces an expedition to observe the graze of a 6.3 mag. star. The rather shallow profile should yield 4 to 6 events for some well-placed observers.

As with an eclipse (correctly, an occultation) of the sun, the occultation of a star is seen only in a broad belt along the Earth. Within this zone, the star is hidden by the moon for up to an hour; outside the zone, the moon misses the star. But at the limit line, the star is seen to "graze" to moon, and, since the moon's limb is irregular, the star will be seen to disappear behind the mountains and then reappear within the valleys and mountain passes of the moon.

When: Nov. 5, 1977, 2:48 AM PST (Sat. morning)

Star: SAO118023, Leo, 6.3 mag. spectral type K0 (yellow)

Moon: 37% sunlit, waning, elevation 26, azimuth 99 (ESE)

P.A.: 16 deg, Northern cusp, CA 2.6 deg.

Place 12 mi. S. of Hollister, off Hy. 25, about 65 miles from downtown San Jose.

A PLANNING MEETING will be held Oct 29 at the Red Cross. Bring your questions and we'll explain timing techniques, reduction of tapes, etc. Additional instructions are being prepared. If you lack equipment, come down and see if someone can help you out. If you can't make the planning session, please call Jim or Gerry, if possible, prior to the meeting.

SITE: We will meet at the general store in the hamlet of Paicines, 14 miles S. of Hollister, at or before midnight. Stations will be laid out about 2 miles South on Cienega Road and/or Limekiln Road, several miles to the west.

EQUIPMENT: West Valley College has generously volunteered use of their scopes, but we'll need tape recorders and especially receivers for WWV at 5 or 10 MHz. Digital watches may be useable with an assistant and tape recorder. Calibrate before and after, and practice beforehand.

Test your setup beforehand to be sure your drive inverter doesn't interfere with your radio or recorder.

CB: Probably 17 (highway) and 4 (site). Shout for "the Moon Grazers", and answer such calls with your usual handle or first name.

So now is your chance to do something for science, for your Association, and if that's not enough, a chance to see a rare and beautiful phenomenon. See you at the Red Cross.

Jim Van Nuland
371-1307

Gerry Rattley
732-0202

To get to Paicines:

1. Take Hwy 101 south past Gilroy.
2. Go east on Hwy 25 to Hollister (this is the Pinnacles turn-off from Hwy 101 which is just north of our normal San Juan Batista turn-off to Fremont Peak.).
3. Go through Hollister on 25. Hwy 25 is well marked through Hollister.
4. We will meet in Paicines around Midnight.

