SAN JOSE ASTRONOMICAL ASSOCIATION

EPHEMERIS

SJAA

JULY 1984

FROM THE EDITORS DESK

BY, JOHN GLEASON

Looking for ways to reduce the work for the editor, I have decided to use the format you have in your hand right now for the Ephemeris. I hope you will enjoy reading it as much as I enjoyed putting it together. To maintain the high quality news letter that we have come to expect, the following guidelines will apply. First, All articles must be submitted to the editor by the 15th of each month. Second, All time value material will receive highest priority as far as placement in the Ephemeris. All other material will be printed on a first come, first served basis, and is going to be limited to space. If I cannot fit your article in a particular month, it will get first priortiy the following issue. Third, Type written material would be appreciated, but I will accept clearly hand written articles.

Expanded Ephemeris' will come in the future, but for now I need to get calibrated with the printer and postal service. I suspect that some of the membership is going through cultural shock at the size of the July issue, but you may be surprized to learn that this format contains nearly as much printed material as past issues. Your new editor is also considering producing the Ephemeris every other month, to reduce costs, and the end of the month publishing crunch. This would also funnel more money into th e observatory fund. Your feedback will help guide me in the right direction.

Special thanks to this months contribuitors, Steve Gottlieb, Bob Fingerhut, Don Macholz, and Jim Van Nuland. Thank you, Jack Marling for your June talk on "Advanced Techniques for Astrophotography". Jack's talk was well received by a large gathering of the memebership at the University of Santa Clara. Hypersensised Fuji 400 processed as a negative and then duplicated as a transparency certainly produces a viable alternative to the cold camera when it comes to Deep Sky Astrophotography. Certainly this is true for beginning astrophotographers who don't have the time to fuss with the "Chilly" camera. But I would almost bet that chilling Fuji and processing it as a negative would produce some pretty exciting results. Your editor needs to do some experimenting.

JUNE ELECTIONS

Welcome Joe Sunseri to the SJAA Board of Directors. Re-elected were Gene Cisneros, Steve Greenberg, Dave Ambrose. Dave Ambrose has also been re-elected as our club President, and Bob Fingerhut was voted in in continue as the clubs treas.

EVENTS CALENDAR

JULY 7

Marriott's Great America star party. More volunteers are needed to man telescopes. Please contact Frank Dibble.

JULY 12

Darthmouth Jr. High star party. (see article)

JULY 14

SJAA Annual Picnic at Portal Park. Once again the annual nicpic is at Portal Park in Cupertino. Burgers and Dogs will be provided. Bring your own drinks, condements, and side dishes.

JULY 19

Darthmouth Jr. High star party, part II. (see article)

JULY 21

Red Cross indoor/outdoor star party and board meeting. All members are welcome to attend. Please come and give your inputs about the Observatory Fund.

JULY 28

Fremont Peak star party.

JULY 28

Yosemite National Park star party at Glacier Point. (see article) Come and enjoy deep sky astronomy from the worlds most beautiful observing site.

AUGUST 4

General Meeting. This will be a special star party at Marriott's Great America. More information in August Ephemeris.

AUGUST 11

Red Cross indoor/outdoor star party

AUGUST 25

Fremont Peak star party

MEMBERSHIP RENEWAL

Membership renewal is NOW! Please contact Bob Fingerhut (408) 268-4455 for renewal information. Dues are from July 1st to June 30th.

DARTHMOUTH ASTRONOMY

Tom Ahl and Ron Carmichael have made arrangements with Darthmouth Jr. High to have members of the SJAA demonstrate telescopes and provide an evenings astronomy to 30-40 Jr High students. Dates are set for July 12th at 6:30 pm and July 19th at 7:30pm. This is part of the SJAA's commitment to the community by providing an interpretive program on astronomy to the public. Anyone interested in attending and bringing a telescope should contact Tom Ahl at 997-1383, or Ron Carmichael at 268-3199.

YOSEMITE STAR PARTY

1983 was the first year in which members of the W.A.A. associated amateur astronomy organizations were invited to participate in observing sessions for the public at Glacier Point. This year the SJAA has been invited to participate again on the weekend of July 28th. Last year was considered a pilot summer for the park and they feel that it was most successful. This year the park service has a set of guidelines that they would like us to follow. If you are interested in attending the SJAA star party at Glacier Point then you will need to contact John Gleason, (415) 790-9250 and make your reservations. Overnight camping at the Glacier Point Ranger Station will be limited to a maximum of 16 persons and six cars. Any excess will be required to stay on a space available basis at Bridalveil Campground. Please make your reservations soon. Those attending will receive a copy of the detailed guidelines. Camping and entrance fees are waived for those attending with a telescope.

OBSERVATORY FUND

The clubs observatory fund is now at $1500. The Board of Directors is currently entertaining ideas for site locations for the observatory. Members are encouraged to give ideas and suggestions to board members.

DEEP SKY NOTES

BY STEVE GOTTLIEB

(JULY)

The constellation of Ophiuchus contains the single largest collection of globular clusters - ancient stellar systems which form a halo around the galactic nucleus. Within the boundaries of Ophiuchus, Burnham's Celestial Handbook lists 20 NGC globulars, fully 20% of all such objects visually observable. Though a 4"-5" scope will reveal almost all of these, an 8"-16" is really necessary to fully appreciate the splendor of these dense spherical swarms.

The principal challenge for visual observers is the degree of resolvability into stars for each system. This depends highly on 2 factors; the degree of concentration of the stellar members and the distance of the globular. Tightly packed clusters will tend to resist resolution but will have a high surface brightness which aids in visibility even to distances comparable to the Magellanic Clouds. Medium or loosely concentrated clusters may allow a high degree of resolution in an 8" if they are relatively nearby. Globulars discovered photographically and unabservable in amateur scopes (only 20%) are those both sparsely populated and vary distant or else highly obscured by dust in the galactic plane. Here are some favorites in Ophichus:

M107 (NGC 6171) Even the dimmest of the Messier globulars is fairly bright in my C8. The outer halo appears grainy and a few mag 14 stars appear on the NW edge at 220X. The small, bright unresolved core is very prominent in my Odyssey I, which resolved the outer regions into a number of faint stars 2 years ago at Digger Pines.

M10 (NGC 6254) The C8 will resolve this symmetrical beauty down to the core. Faint stars cover the bright central region and dozens of stragglers stream from the nucleus in lanes. The core is intensely bright in the 13" and densely packed with resolved stars.

M12 (NGC 6218) Though the bright core admits to only partial resolution in the C8, the irregular outer halo resloves impressively with a few bright stars imbedded. The core yields to the 13" at high powers and faint stars are scattered over the center.

M62 (NGC 6266) The C8 reveals a non-symmetrical appearance, flattened in the SE direction (due to dust) and fanning out to the west where a few faint stars can be made out. The outer shell just resolves in steady seeing into numerouis faint stars at 288X in my Odyssey I.

M19 (NGC 6273) Though in a dark sky, the C8 only resolves a few faint stars at the north edge. This globular is clearly elongated north-south in the Odyssey, which resolves many faint stars at high power, particularly south of the core.

M9 (NGC 6333) Again, the C8 shows a very grainy disk with a few faint stars resolved around the periphery at 220x, especially on the east side. The unresolved core appears mottled in the 13" but many faint stars are bunched at the edges of the core at 288X, and the outer halo breaks up into numerous stars.

M14 (NGC 6402) This cluster lies in a heavily obscured region which dims its members and makes resolution difficult in the C8. Last July at Fremont Peak with the 13", I recorded M14 as fairly large, moderate central condensation, smooth halo with a dozen very faint stars sprinkled over the halo at 288X.

NGC 6366 This is a strange object easily located just 17' east of a mag 4.5 star on the Tirion atlas. Visually it appears large, diffuse with a low surface brightness due to its loose concentration, though some brighter field stars appear at its edges. I could make out about a dozen faint stars over the unconcentrated haze in the 13" last July at Fremont Peak.

IC 1257 This object is located just 2 degrees South of NGC 6366. On the Skalnate Pleso atlas it is shown as an open cluster but the Tirion atlas plots it as a questionable globular. I have failed to locate it with the Odyssey I in the Sierras. Has anyone had success with this mystery object?

Steve Gottlieb
(415) 524-4678

COMET COMMENTS

BY DON MACHHOLZ

We now know that Comet Bradfield (1984a), discovered last Jan. 7 and now magnitude 16, is periodic and will be back in about 165 years. Of his twelve discoveries, this is his first to have a period of less than 200 years.

Meanwhile, Comet Clark (1984b) does not exist, this being an observational error.

It's been found that Halley's Comet varies in brightness, the comet changes by roughly 1 magnitude in a period ranging from about eight hours to more than a day.

A faint comet has been discovered recently by professional astronomers; it should be visible in our scopes sometime next year. I'll discuss it more below.

Finally, with the approaching of the L.A. Olympic Games, in our Past Discovery section we'll take a look at the countries represented by their comet discoveries.

Comet Shoemaker (1984f). This comet was discovered on May 27 by Carolyn and Eugene Shoemaker with the 18" Schmidt telescope at Mt. Palomar. At that time the comet was mag. 14 at RA: 16hr 37m, Dec. +13deg 48'. It was a far 5.2 AU from the Sun and the latest orbital calculations place it closest the Sun (2.8 AU) in Sept. 1895, some 16 months away. If the predictions hold out and this is "iffy", then Comet Shoemaker will be 10-11mag. Next year at this time in our southern skies, and it should remain brighter than mag. 12 for nearly a year, although it will be in the southern sky throughout that time. This extended period of visibility is due to its high intrinsic brightness (absolute mag. = 4.0, the average comet = 6-7), and its distant Perihelion location. I did not see this comet on June 2 using Rich Page's 14" reflector, the comet should have been slightly fainter than mag. 14, near the "fuzzyobject" limit of the scope, but IF it behaves "normally", the comet will be visible to us most of next year.

Halley's Comet on July 15: RA: 06hr 26.6m Dec: +14deg02.6'. Dis. from Sun: 6.72 AU. Dis. from Earth: 7.69 AU> Mag.: 20.2

Ephemeris:
Periodic Comet Clark (1983w)

DATE	R. A. (1950)	DEC.	ELONG.	MAG.
06-29	20h 45.5m	-36deg 52'	148deg	11.0
07-09	20h 47.6m	-38deg 43'	154deg	11.0
07-19	20h 45.7m	-40deg 05'	158deg	11.2
07-29	20h 41.9m	-40deg 46'	158deg	11.3
08-08	20h 38.0m	-40deg 43'	155deg	11.6
08-18	20h 35.9m	-40deg 01'	149deg	11.9

NOTES:
This comet is moving both S and into the evening sky. It will be visible to us for a few more weeks. The mags. are estimates, it may be slightly fainter. Be sure to get out to see this one!

PAST DISCOVERIES

Since there is only a limited number of comets discoverable, some friendly competition (along with the co-operation) exists among amateur comet hunters. Concurrently, we find the comet hunting activity is stronger in some parts of the world than in others. So it's only natural that, in our study of the 28 comets found by amateurs between 1975 and 1983, we look at the discoveries by country.

If we treat Comet Denning-Fujikawa (1978n) as a "new" discovery by Fujikawa, for he was searching for new comets when he cmae across this one, then 21 comets were labled by only one name, two comets had two names attached to them and five comets had three names, that is, three discoveries made and reported for each object within a couple of days of each other. With first place awarded to the first discoverer, second place to the second discoverer, and third for the third, this is what we get:

COUNTRY	FIRST	SECOND	THIRD	TOTAL
JAPAN	7	4	3	14
AUSTRALIA	10	0	0	10
U.S.A.	2	1	1	4
CANADA	3	0	0	3
U.S.S.R.	2	1	0	3
ENGLAND	1	0	1	2
PHILIPPNES	1	0	0	1
NEW ZEALAND	1	0	0	1
SOUTH AFRICA	0	1	0	1
IRAS	1	0	0	1
TOTALS	28	7	5	40

While we note that this represents only the discoveries reporting and "naming" the comets, we can see that Japan has been involved with a great deal of activity, with Australia second (it's being led by Bradfield with 9 of the 10). The rest of the world seems to show comparitively little interest in seeking comets, although the observation of known comets seems to be very important in some of these countries.

Compare this to the fact that between the mid1700's and the mid-1800's the comets were found mostly by those in France, Germany, and England. In the late 1800's through the early 1900's, the Americans were finding most of the comets. Since the early 1900's, two changes have taken place. First, the distinction between amateur and professional became more certain. Secondly, a broader selection of countries began making the discoveries as the professional astronomers crossed international borders to the observatories at the best locations, and (home-made) telescopes became more accessable to the amateur.

Don Machholz
(408) 448-7077

SPACE UPDATE

BY BOB FINGERHUT

DISCOVERY PASSES FLIGHT READINESS FIRING

Discovery's engines were fired for 18 seconds on June 2. After the firing one of the engines was found to have a delaminated heat shield in the fuel preburner. The engine was replaced with one of Challenger's, though a repair could have been made on the pad. The first launch of Discovery is now scheduled for between June 25 and June 28. The landing will be at Edwards Air Force Base after 112 Earth orbits.

SALYUT-7 IMPROVEMENTS CONTINUE

The Salyut-7 cosmonauts have conducted their fifth space walk within the last month. They installed additonal solar array structures on one of the Salyut-7's three main arrays.

NASA NAMES 17 ASTRONAUT CANDIDATES

17 new astronaut candidates have been named for the space shuttle and space station program. 7 are shuttle pilots and 10 mission specialist candidates. They will go through a one-year training program before becoming eligible for shuttle flight assignments.

FRENCH FIX SIZE OF HERMES MINI-SHUTTLE

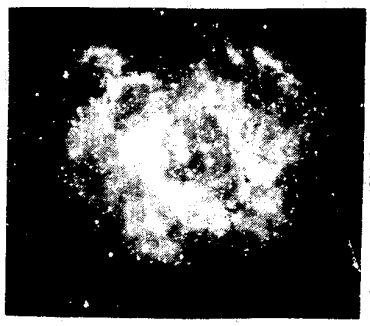
The size of France's proposed manned minishuttle has been fixed. It is designed to carry 4 astronauts and would have a cargo bay able to carry Spacelab type equipment racks to a space station. The design has a length of 15-18 meters and a wingspan of 10 meters. If approved for production, Hermes could fly in 1996 on a new version of the Ariane booster.

VENUS ORBITER TO STUDY ENCKE AND HALLEY'S COMET

IN April the Pioneer Venus Orbiter was manuevered so that it could recalabrate its instruments and observe comet Encke. It showed that Encke is loosing water through evaporation at a rate three times higher than expected. It was observed during an 8 hour period on April 15. During Halley's perihelion passage, both Venus and Halley will be on the far side of the Sun from the Earth The spacecraft will be in a favorable position to view Halley at that time but Earth will not. The Venus orbiter will therefore be reoriented again to observe Halley between December 1985 and February 1986.

EPHEMERIS is published monthly by the San Jose Astronomical Association, 3905 Calico Ave., San Jose, Ca. 95124

Commercial ads are priced according to size and may be placed by contacting: Gene Cisneros at (408) 923-6800.



Rosette Nebula NGC2237 in Monoceros. This faint nebula is seen best visually with a LUMICON UHC Filter. Photo by Dr. J. Marling from his backyard in Livermore using a LUMICON DEEP-SKY Filter, 60 min exp. on hypered 2415 film prepared in a LUMICON Model 300 HYPER-KIT, 8"f/4.5 telescope using a LUMICON Newtonian EASY-GUIDER.

CALICO OBSERVATORY

Great Red Spot on Meridian -- PDT

da	mo	d	h	m		da	mo	d	h	m	
Su	7	1	1	58	am	F	7	20	2	31	am
Su	7	1	9	49	pm	F	7	20	10	22	pm
Tu	7	3	3	35	am	M	7	23	0	1	am
Tu	7	3	11	24	pm	W	7	25	1	45	am
F	7	6	1	2	am	W	7	25	9	34	pm
Su	7	8	2	43	am	F	7	27	11	12	pm
Su	7	8	10	30	pm	M	7	30	0	54	am
W	7	11	0	11	am	W	8	1	10	20	pm
F	7	13	1	51	am	F	8	3	11	57	pm
F	7	13	9	38	pm	M	8	6	9	23	pm
Su	7	15	11	18	pm	W	8	8	11	5	pm
W	7	18	0	56	am	Sa	8	11	0	40	am

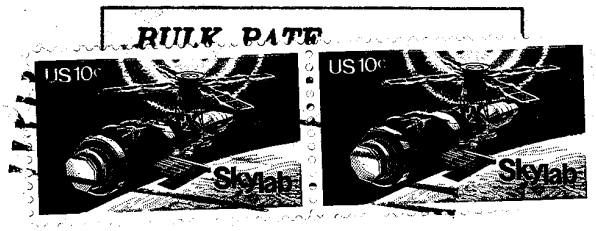
Clear Skies,
Jim Van Nuland

ASTROMART

FOR SALE: CELESTRON 8 With observatory pier, enhanced coatings/silver, off-axis guider with illuminated reticle, tele-extender, counter weights, many eyepieces and other accessories. All in excellent condition $1000. CONTACT: Curt Kendall (408) 247-1019, evenings.

FOR SALE: 6" f/15 REFRACTOR hand picked optics by Marv. Vann, EXCELLENT. 90" tube, baffled, dew cap, 3" f/16 Unitron guidescope, 8X50 finder, Shaeffer mount w/7" circles and Byers drive electronics by ???, 6.5 ft. pier with 4 bolt base, 9 eyepieces, barlow, diagonal, solar filter, books. Also 3" RFT REFRACTOR on Edmund equitorial mount, eyepieces, Unihex, clock drive. CONTACT: Bill Unruh (day) (408) 970-1375 (ask to page him, message re. "telescope" (eve) (415) 681-9602 6" Refractor presently located on property in Morgan Hill.

SJAA EPHEMERIS
3509 CALICO AVE
SAN JOSE,CA 95124



TIME VALUE–DATED
NEWS MATERIAL