SJAA EPHEMERIS

VOLUME 6 NUMBER 11 OFFICIAL PUBLICATION OF THE SAN JOSE ASTRONOMICAL ASSOCIATION November 1995

The Eyepiece
by Lew Kurtz

Bob Madden has been asking for close to a year now that someone take over as newsletter editor. For several months I have been promising Bob that I would take the job "next month". Next month has arrived. Bob has been editor of the Ephemeris for the last three or four years and during that time he did a great job and provided a valuble service to SJAA. He will continue to help with publication, a big (and necessary) help to me. Next time you see Bob, thank him for the great job as editor.

A little about me: I am 34, married for 12 years, (her name is Mary Ann) and we have two kids (Alexandra, 5 and Lauren, 2). I have been a member of SJAA since 1991 and filled Paul Barton's seat on the Board when he resigned earlier this year. I have a 10" Schmidt and enjoy a good solar eclipse.

ASTRO Ads have returned. Bob Madden talked with the post master (who had just traveled to Washington to learn about this) and the post master said our ASTRO Ads are fine.

I have moved some things. Comet Comments and Celestial Calendar are on page 6. ASTRO Ads, SJAA Calendar, and Telescope Loaner Status have moved to page 7. This provides some more space for Comet Comments.

Also inside, some star party reports, "The Lunatic Fringe", "Forty Years Ago", info on SJAA's web page and some NASA mission status reports.

Bob Garfinkle is the speaker for the November general meeting. The main topic of his talk is star hopping. He will also be talking about how to determine your field of view (useful for star hopping) and will also talk some about the moon. This is a good opportunity to get an autographed copy of his book "Star Hopping". Bob is currently working on two more books, one will be a Lunar observer's handbook, and the other will be a compilation of biographies of the names associated with lunar features. Bob is an SJAA member.

Doug Ferrell arranged for Dr Christopher P. McKay, Space Science Division, NASA Ames Reasearch Center to speak at the December general meeting. His talk will be "From Antarctica to Mars, the Search for Life".

Nov 4: No activity, full moon.
Nov 11: General Meeting 8:00 pm at Houge Park. Speaker is Bob Garfinkle on star hopping. Board meeting at 6:15 pm is open to all members.
Nov 18: Star party at Henry Coe, also Halls Valley Atronomy Group (HVAG) is at Grant Ranch. Sun sets 4:54 pm, 16% Moon rises 3:26 am.
Nov 23: Thanksgiving holiday.
Nov 24: Public star party at Houge Park, Sun sets 4:53 pm, 9% Moon sets 7:24 pm.
Nov 25: Star party at Fremont Peak. Sun sets 4:52pm, 17% Moon sets 8:30 pm.
Dec 2: No activity as there is too much moon.
Dec 9: General Meeting 8:00 pm at Houge Park. Speaker is Dr. Christopher McKay on "From Antarctica to Mars, the Search for Life". Board meeting at 6:15 pm is open to all members.
Dec 16: Star party at Henry Coe, also HVAG is at Grant Ranch.
Dec 23: No host star party at Fremont Peak.

Forty Years Ago this Month
by Jim Van Nuland

The November 21, 1955 meeting was held in the Science wing of San Jose State College.

The constellation of the Month, Taurus, was presented by our newest member, Malcolm Gilmour. He gave each person a prepared star chart of Taurus and the Pleiades. This was a big help in the discussion, and Malcolm is to be commended for his foresight and thoroughness.

Bob Ferguson told us about the map of the universe, as seen by the "Big Schmidt", the 48 inch at Mt. Palomar. He showed pictures of the instrument and also the pictures it takes.

Bob Cunningham gave a book review covering three books. Coverage of "New Handbook of the Heavens" and "Beginner's Star Book" was particularly good.

These are recommended reading of all members.

Tom Nelson told us of an Orrery, or model of the solar system. His talk was based on a particular instrument, and the reference article in Scientific American was circulated. [JVN: issue date not given.]

The chairman of the Telescope Committee, John Delaney, reported on plans for two club telescopes, the first will be a 6 inch f/8 to be completed as soon as possible, with costs kept to a minimum. It will be lent to members for 2 weeks at a time.

continued on page 2, see **Forty**

Fremont Peak Report
by Bob Elsberry

It was a good night at the Peak on September 23, 1995. Coulter Ridge was relatively uncrowded. The fog never came in to cover Watsonville so the sky was not at its darkest, but the seeing was excellent and the air was very stable. Views of Saturn were excellent - crisp and unwavering. The weather at the Peak was beautiful - shirt sleave temperatures with little or no breeze - until about 1:30 AM when high clouds rolled in and a light chilly wind came up from the sea. By 2 AM the clouds extended all the way to the eastern horizon and the last diehards called an end to a great night for observing.

I brought 2 telescopes with me, my 6" rich field (~ f/3.5) and the club's 8" f/7 dobsonian. Throughout the night I observed the same objects in both scopes doing a personal comparison of the strengths and weaknesses of each. Over the course of the night I observed 35 deep space objects and Saturn. The 8" f/7 gave far and away the best view of Saturn. The planet and its nearly edge on rings were sharp and clear and periodically some of Saturn's planetary bands were visible. At the beginning of the night 3 moons were visible. Later only 2 were visible as one had gone behind the planet. Throughout the night images of Saturn were remarkably clear and crisp.

A major highlight of the evening was observing Neptune and Uranus through a neighboring 20" dobsonian. The disk and color were easily discernable on both. At ~400X Uranus was a large quickly moving disk that required continuous movement of the scope by hand. The image was only slightly fuzzy. A tribute to the seeing conditions and the quality of the telescope.

Observing deep sky objects through the 2 scopes was a more interesting comparison. The deep sky objects were much more easily located and held with the 6" Richfield, but the images were larger and more detailed in the 8". Nebulosity in clusters and the Triffid and Lagoon were more evident with the 6". Some of the perspective on large objects like the Double Cluster in Perseus was lost in the 8", but images of the Ring Nebula, the Dumbell Nebula and globular clusters like M13 and M22 were brighter, clearer and more detailed in the 8". With a Oxygen III filter I could see a complete segment of the Veil Nebula with the 6". With the 8" I could not locate or recognize the Veil. Andromeda was easily found with both scopes, but was more detailed and impressive in the 8". Both companion galaxies M32 and M110 were clearly seen with the 8" by moving the scope slightly. I good not discern either in the 6".

Overall the night was a great success. The weather and seeing were great and I achieved my objectives in comparing the two telescopes. My desire for a larger aperture scope with a focal ratio between 4 and 6 for deep sky work has been reinforced.

Forty - continued from page 1

The second instrument is to be distinctive, such as a 10 or 12 inch richfield. It is to be of highest quality, and does not need to be as portable as the 6 inch. All labor is to be done by members of the club. Further details will be decided at future meetings.

Steve Bieda announced that he and Bob Cunningham are preparing a series of star maps (27 in all) that will be offered for sale as soon as they are printed. He quoted a special price of $1.50/set for members only.

The meeting was adjourned at 10:00. Afterward, a small group gathered in Columbus Park to admire Dean Pritchett's new 2.4 inch refractor. A very nice instrument that does a good job.

Periodical Publication Statement

The **SJAA Ephemeris**, newsletter of the San Jose Astronomical Association, is published monthly, 12 times a year, January through December.

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News and Views
by Bob Brauer

Since I last placed an article in the Ephemeris in May (Wow, where does the time go?) a lot of things have been happening for us as a club. You've seen the addition of Lew Kurtz to the editorial staff of the newsletter with this issue. Mark Wagner has generously set up a World Wide Web home page for the SJAA and I encourage everyone to check it out. Lot's of members, myself included, have had a good summer of observing after last winter's long cloudy spell.

As we celebrate our 40th anniversary as a club, we are also concluding an effort to find liability insurance. Over the last 2 years, the board of directors has looked into this issue. We found that our best option is to join the many clubs of the Astronomical League and purchase an insurance policy through them. If you want to get entangled in the details of 501(c)(3) nonprofit status and limited liability provisions, you might consider joining the Board of Directors because that's the sort of fun stuff we have been addressing.

So, you can expect to see the Astronomical League newlsetter very soon. In order to get in on the League insurance, we had to become a member club and this opens up all of the League benefits, publications and programs to you.

Do you have ideas for this or other club benefits? Have you got a great idea for a club activity? Would you like to design a new club logo? It's never too late, or too early, for you to get in on the action. Call me (phone number is on page 7) and press 2 on a touch-tone phone. This will direct your call to a mailbox for SJAA business. You can also send me e-mail at:
Robert_N_Brauer@cup.portal.com

Mt. Lassen Star Party Report

by Mark Wagner

The 2nd Annual Mt. Lassen Star Party, hosted by members of the SJAA, took place August 23 though 27. Aside from the SJAA, members of Santa Cruz Astronomy Club, Sacramento Valley Astronomical Society, Celestial Observer of Chico, Tri-Valley StarGazers, Eastbay Astronomical Society, Halls Valley Group and Local Group of Santa Clarita Valley attended.

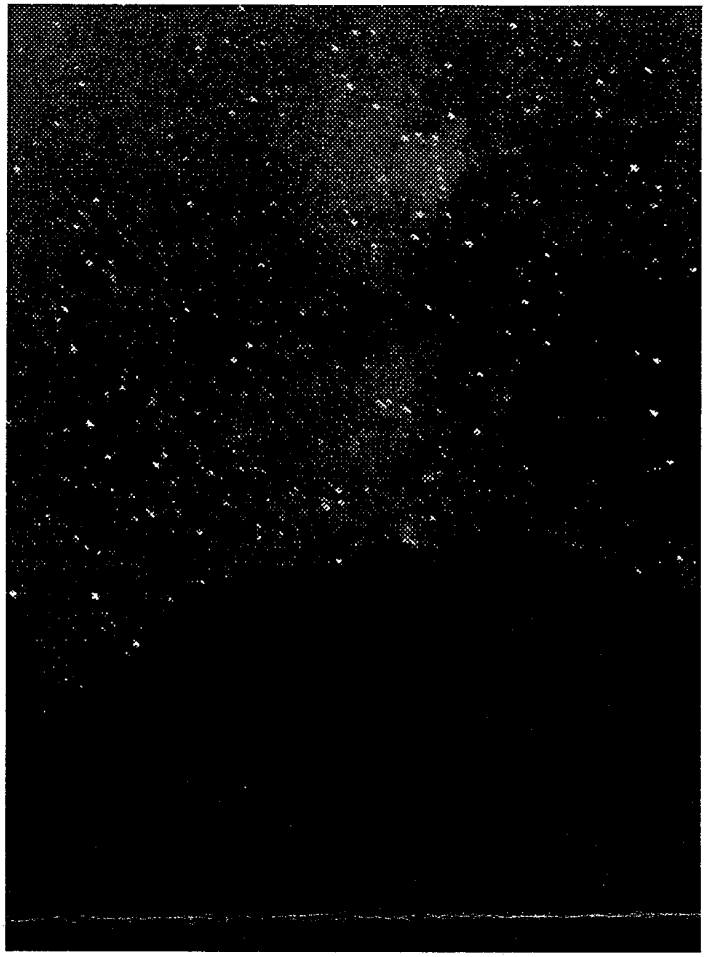
Arriving at Lost Creek Campground, early attendees were greeted by Jim Bartolini's well placed SJAA placards marking our campsites. Although it would fill to capacity, the campsite was very large and roomy, nobody was crowded.

By 7 p.m. Wednesday, about 25 people were ready to go to our observing site the Devastated Area parking lot. Upon arrival, we noted the remnants of California's wet winter covering Lassen Peak. Last year we could see one small ice-field on the northeast upper flank. This year the peak was still covered in snow. We knew we could be in for some brisk nighttime conditions.

As noted last year, as the sun set it became immediately obvious what a remote site at altitude can do for the sky. Before the sky was dark, the Milky Way was obvious. At dark, the great bulge of the galactic core extended from the border of Capricornus well into Scorpius to Libra and Ophiuchus. Seeing the bulge was not difficult. Overhead, the great rift and the dark lanes of Cygnus and black patches north of Deneb were too noticeable to ignore. If ever there is an indication of dark sky, this is what I use. Anyone looking for Barnard dark nebulae on this trip would get their money's worth.

Every time I observe with Jack Zeiders I learn something new, and true to form he began to impart his sky knowledge among the group. Using his 17" dob, he showed Dean Linebarger a nice line of Abel galaxies. What better location than Lassen's dark skies to look for these objects. Needless to say, Dean's 20" Obsession spent several nights observing these faint galaxy clusters. Zeiders showed me a group of blue giants ringing the outer rim of M31. I never knew they were there. Ed Erbeck, who had finished building his 18" dob the day before the trip, was obviously enjoying himself. Nothing like aperture and dark skies! John Gleason had Zeiss binocular-viewers on his 6" AstroPhysics, and provided spectacular views. If you have never looked through top quality bino-viewers, the effects are astonishing. Of course, it does not hurt to use them combined with that scope!

Everyone commented on the transparency. Doug Ferrell's suggestions that we use a high "spf" lotion to protect against star burn, and conduct a naked-eye Messier Marathon are good indicators. If you have never been to a really dark site, the difference between Lassen and Henry Coe or Fremont Peak can be as dramatic at times as that between Houge Park and Coe or the Peak.



Lassen Volcano: An Astronomical Eruption
by Doug Ferrell
(50mm f/2.8, 40 second unguided exposure
Kodak Royal Gold 1000 ASA film, standard processing)

Aside from great darkness and transparency, this year's trip did suffer from a few breezy nights, softness seeing, and chilly temps. Even the rangers commented it was unusually cold for August. Those of you who were first timers this year will have to come back next year to try for the perfect conditions we had in '94.

Our Thursday dinner drew between 45 and 60 participants. Barbecued whole salmon and London Broil were main courses, supplemented by a couple dozen bottles of wine, sparkling cider, many homemade salads, and breads. Dessert was coffee, tea, cookies and brownies. Special recognition goes to Carol Erbeck, Pat Wagner and Suzanne Baker for their outstanding planning and coordination the feast. BBQ cooks were Ed Erbeck and Mark Wagner.

Without doubt, the award for most preparation in the "food category" went to John Hales, who brewed two types of beer for the trip. John also won the creativity award for his refrigeration method. Driving 10 miles to the snow, he returned with his pickup truck bed filled. Once on the ground in camp and

continued on page 4, see **Mt. Lassen**

THE LUNATIC FRINGE #4

"Moon Sheep"

by Rich Neuschaefer

Ok, so that bright Moon is making it difficult to see your faint fuzzies, don't curse the light.

See if you can find the following Lunar objects.

The following objects can be seen when Moon is about 1 day past first quarter. Look about 1/3 of the way down from the top (North) of the Moon near the terminator (the line between day and night on the Moon).

The position of the terminator is very important to one's ability to see small features on the Moon.

Easy:

ARCHIMEDES: a very large flooded crater 83km in diameter. Archimedes is a little east of a curved chain of mountains, the Lunar Apennines.

ARISTILLUS: a smaller crater (55 km) than Archimedes. It is above and to the right of Archimedes has a very nice central mountain with 3 peaks.

PLATO: a large walled plain 101 km in diameter. It's in northern edge of Mare Imbrium, above and east of Aristillus. Plato is in mountain range called the lunar Alpes.

Medium:

MONS PITON, MONTES SPITZBERGEN, MONS PICO, MONTES TENERIFFE: these are the tops of mountains almost covered by the lava that formed Mare Imbrium. With a little imagination these mountains look like "white sheep" grazing in the dark Mare Imbrium.

Montes Spitzbergen and Mons Piton are a little above Archimedes and Aristillus. Mons Pico and Montes Teneriffe are a little further to the east (left) of Mons Piton and below the large walled plain Plato.

ALPINE VALLEY: a 180km long cut across the Lunar Alps.

Challenge:

PLATO RIMAE: A small rill above and left of Plato.

ARCHYTAS RIMA: about 90 km long, near Plato Rimae at the edge of the Lunar Alps and Mare Frigoris.

Four small craterlets about 2 km across on the floor of the walled plain Plato.

These lunar features can be found on charts 4, 11, and 12 in the book "Atlas of the Moon" by Antonin Rukl.

Mt. Lassen - continued from page 3

containing dozens of large beer bottles, it became know as The Hales Glacier.

Friday night was our public star party, our thanks to the park staff for their courtesy and friendliness. The rangers posted our flyers throughout the park listing time, location, and a note about "star-party etiquette." Visitors responded with consideration, very few white lights, almost no headlights, intelligent questions and appreciative remarks. By 8:30, we had at least 27 telescopes, each one having roughly 10 visitors lined up to view. This was continuous until perhaps 11, when the crowds began thinning out. Park naturalist Scott Issacson deserves special thanks for help in coordinating this outstanding event. On Saturday night we were still getting visitors who missed the Friday public star party. It was a remarkable and unforgettable event which I hope repeats next year.

After four nights of observing and in camp comraderie, many comments were heard echoing last year's sentiments . . . "The trip was too short." "Sign me up now for 96." "What are next year's dates?"

We will begin planning Lassen 96 early next year and announce signups around March.

Thank you one and all, SJAA members and other clubs, for making this year a great success.

SJAA web-page and Local bbs

by Mark Wagner

On-Line astronomy has come to the San Jose Astronomy Association! If you have a home or business computer and modem, you can now access a universe of interesting articles, software, activity schedules, and much more. You can access this information at a local bbs or on the Internet.

For those with access to the Internet, the SJAA now has its own World Wide Web (www) page. Our url (uniform resource listing, or address) is:

http://www.rahul.net/resource/sjaa

The SJAA page contains our event schedule for in-town and dark sky star parties, general meetings with speakers listed and board meetings. Maps show newcomers how to get to all SJAA events. We also have educational information relating to telescopes, solar system and deep space objects.

The SJAA page also contains links to AstroNet, which has worldwide club listings, astronomy computer shareware and freeware, helpful files such as the Amateur Telescope Maker's Resource Listings (from Bob Lombardi in Florida), the bi-monthly AstroNet digest (containing articles and discussion on many topics from amateur to professional). AstroNet is updated on the 1st and 15 of each month. The url is:

http://www.rahul..net/resource

If you have a computer and modem, but no Internet access, much of the same information is carried on AstroNet bbs. Dial in at: (408) 358-2010 Modem speeds are up to 57K-baud (uncompressed files or 14.4K-baud (for compressed). Set your modems to 57K, N81. The BBS is available 24hrs and does not support RIP, so use ANSI. This is currently a single line bbs, which is updated every two weeks along with AstroNet. Additional features are messaging among the bbs users, and the ability to upload your file contributions. There is no cost for either the Internet or bbs service.

Pioneer Mission Status - 09/29/95
by Ron Baalke
(reprinted with permission)

STATUS UPDATED: 9/29/95
Fred Wirth, Pioneer Project Manager

Pioneer 10
(Launched 2 March 1972)
Distance from Sun: 63.21 AU
Speed relative to the Sun: 12.5 km/sec (27,962 mph)
Distance from Earth: 9.40 billion kilometers (5.84 billion miles)
Roundtrip Light Time: 17 hours, 25 minutes
Active Instruments:
Plasma Analyzer
Charged Particle Instrument
Cosmic Ray Telescope
Geiger Tube Telescope
Ultraviolet Photometer

The spacecraft is healthy and continues to make valuable scientific observations in the outer regions of our Solar System.

Due to the motion of the Earth as it moves around the Sun, the space craft-earth look-angle (ELA) is presently 0.6 degrees. Data recovery is still very high. By mid-October, the Earth will be centered in the antenna beam again for optimum signal level. A precession maneuver will have to be performed in January 1996 to re-aim the spacecraft at the Earth.

Pioneer 11
(Launched 5 April 1973)
Distance from Sun: 44.08 AU
Speed relative to the Sun: 12.24 km/sec (27,380 mph)
Distance from Earth: 6.60 billion kilometers (4.10 billion miles)
Roundtrip Light Time: 12 hours, 15 minutes

The Pioneer 11 spacecraft appears to be healthy at the moment, but there is insufficient power for the operation of any of the scientific instruments. Furthermore, the spacecraft can no longer be maneuvered to point its antenna accurately toward the Earth, resulting in significant data losses. During the month of September only a few minutes of engineering data were acquired. The spacecraft is being tracked only a few hours per month to monitor its condition.

Frequently-asked Questions:
Question: Why is there less power on Pioneer 11 than on Pioneer 10, if Pioneer 10 is one year older than Pioneer 11?
Answer: The Radioisotope Thermoelectric Generators (RTGs) for Pioneer 10 were selected for highest efficiency from the 8 generators that were manufactured, since Pioneer 10 was the prime spacecraft, and Pioneer 11 was the backup spacecraft. The difference in power output between Pioneer 10 and 11 is not as great as it might seem, (about 150 milliamperes at 28 volts DC). The current requirements are different for each instrument, some requiring 300 ma, some 120 ma, others only 25 ma, etc. When the available current is insufficient for a given instrument, then that instrument is turned off.

(Editor's note: Neptune and Pluto are both approximately 30 AU from Earth and Sun.)

Galileo Mission Status - 10/1/95
by Ron Baalke
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GALILEO MISSION STATUS
October 1, 1995

The Galileo spacecraft is reaching the end of its interplanetary cruise sequences and will soon begin the first of two Jupiter approach sequences. The spacecraft is nine weeks away from probe entry and Jupiter orbit insertion on December 7, 1995.

The last Earth-to-Jupiter cruise sequence, EJ-10, which ends October 2, has seen a variety of engineering tests and preparations for Jupiter arrival. Recently this included demonstrations of one-star attitude determination and other preparations for ensuring the most robust spacecraft performance during the critical probe relay and Jupiter orbit insertion. Readouts from the magnetometer, the extreme ultraviolet instrument, and the dust detector continued throughout this period at a frequency of twice per week.

On September 18, the spacecraft switched to the use of the suppressed-carrier downlink, which allows all of Galileo's radio signal to be used for the telemetry data, boosting the effective data-rate performance. Suppressed carrier is now Galileo's standard downlink configuration.

Telemetry data showed on September 18 that the power-on reset detector in one of the two command and data system power converters had detected a power drop, which was later determined to be transient. Analysis of the cause and implications is still under way. This event did not cause any interruption of the ongoing cruise sequence, EJ-10.

About two months ago, Galileo's dust detector observed the onset of the latest in a series of interplanetary dust storms that apparently began in mid-1994. This last storm was the most intense so far, reaching a peak of nearly 20,000 particle impacts per day, and may not have entirely abated. Recent counts are in the range of hundreds of particle impacts per day, still far above the previous interplanetary background of one every three days. A special series of dust measurements is planned for early October to intensely cover a 10-hour Jupiter-rotation period. These dust measurements are designed to search for any changes which may be related to Jupiter's rotation.

The spacecraft continues to operate normally, spinning at approximately 3 rpm and transmitting coded telemetry at 10 bits per second. It is now only 40.8 million kilometers (25.3 million miles) from Jupiter and 843 million kilometers (524 million miles) from Earth. Its speed around the Sun is 6.78 kilometers per second (about 15,000 miles per hour).

COMET COMMENTS, Oct 6, 1995
by Don Machholz

An exciting bright comet is visible in our morning sky, while not far away Comet Bradfield dims. Meanwhile Comet Hale-Bopp, in the evening sky has recently dimmed by about one magnitude.

Periodic Comet de Vico (P122/, 1846 D1, C/1995 S1): This comet was discovered on Sept. 17 by Y. Nakamura, M. Tanaka, S. Utsunomiya and T. Seki of Japan, and eighteen hours later by me. Two days later, the newly-computed orbit was matched to the long-lost Periodic Comet de Vico. This comet was discovered in 1846 by Francesco de Vico, and missed when it came back in 1921. Two years ago I researched this comet and wrote a paper which was published in the Journal of the Association of Lunar and Planetary Observers. In it, I discussed the 1846 apparition, various orbital solutions, and suggested that amateurs be on the lookout for its return. A copy of this paper is still available from me for $2.00 (P.O. Box 1716, Colfax, CA. 95713).

The comet is presently barely visible to the naked eye, and through binoculars it sports a thin narrow tail several degrees long. It is in the morning sky, well north of the sun. It then crosses into the evening sky, but will be visible during both the evening and morning. Periodic Comet de Vico fades by the end of the year. We'll see it again in the year 2069.

EPHEMERIDES

122P/de Vico

DATE	R.A.	DEC	EL	SKY	MAG
00UT	2000				
10-10	11h12.2m	+22d45m	40d	M	5.7
10-15	11h57.8m	+27d20m	41d	M	5.8
10-20	12h46.lm	+30d17m	42d	M	6.1
10-25	13h33.0m	+31d33m	44d	M	6.5
10-30	14h15.3m	+31d27m	45d	M	6.9
11-04	14h51.5m	+30d28m	46d	E	7.4
11-09	15h21.9m	+29d03m	46d	E	7.9
11-14	15h47.2m	+27d28m	46d	E	8.3
11-19	16h08.5m	+25d53m	46d	E	8.8
11-24	16h26.6m	+24d23m	45d	E	9.2
11-29	16h42.3m	+23d02m	45d	E	9.6
12-04	16h56.0m	+21d50m	44d	E	10.0
12-09	17h08.2m	+20d47m	44d	E	10.3

C/1995 Q1 (Bradfield)

DATE	R.A.	DEC	EL	SKY	MAG
00ut	2000				
10-10	11h09.9m	+27d35m	43d	M	9.0
10-15	11h09.5m	+31d02m	50d	M	9.3
10-20	11h08.8m	+34d44m	57d	M	9.6
10-25	11h07.6m	+38d44m	64d	M	9.8
10-30	11h05.5m	+43d07m	72d	M	10.0
11-04	11h02.lm	+47d55m	79d	M	10.2
11-09	10h56.3m	+53d07m	87d	M	10.4
11-14	10h47.0m	+58d42m	94d	M	10.5
11-19	10h31.2m	+64d30m	102d	M	10.7
11-24	10h03.4m	+70d17m	109d	M	10.9
11-29	09h11.6m	+75d31m	115d	M	11.1
12-04	07h34.9m	+79d06m	120d	M	11.4
12-09	05h23.0m	+79d29m	123d	M	11.6

1995 O1 (Hale-Bopp)

DATE	R.A.	DEC	EL	SKY	MAG
00UT	2000				
10-10	18h16.9m	-28d51m	77d	E	11.3
10-15	18h17.6m	-28d37m	72d	E	11.2
10-20	18h18.5m	-28d23m	68d	E	11.2
10-25	18h19.7m	-28d10m	63d	E	11.2
10-30	18h21.1m	-27d57m	58d	E	11.1

1995 O1 (Hale-Bopp)

DATE	R.A.	DEC	EL	SKY	MAG
00UT	2000				
11-04	18h22.8m	-27d43m	54d	E	11.1
11-09	18h24.6m	-27d30m	49d	E	11.1
11-14	18h26.7m	-27d17m	45d	E	11.1
11-19	18h28.9m	-27d04m	40d	E	11.0
11-24	18h31.4m	-26d51m	36d	E	11.0

ORBITAL ELEMENTS

OBJECT	P/de Vico	C/1995 Q1(Bradfield)	1995 O1(Hale-Bopp)
PERI. DATE	1995 10 06.0228	1995 08 31.41866	199704 01.09654
PERI. DIST.(AU)	0.6589113	0.436402	0.9139252
ARG OF PREI.(2000)	012.9732 deg.	331.1627 deg.	130.59714 deg.
ASCEND. NODE (2000)	079.6191 deg.	178.0516 deg.	282.47197 deg.
INCLINATION (2000)	085.3914 deg.	147.3931 deg.	089.42220 deg.
ECCENTRICITY	0.9627370	0.9980457	0.9950484
ORBITAL PERIOD	74.36 yrs.	Approx 3337 yrs.	Approx. 3300 yrs.
SOURCE	MPC 25715	MPC 25714	MPC 25714

Celestial Calendar - Nov 1995
by Richard Stanton

Lunar Phase	Date	Rise	Trans	Set
FM 23:21	06	16:56	23:54	06:01
LQ 03:42	15	23:59	06:10	12:48
NM 07:42	22	06:50	12:07	17:21
FQ 22:29	29	12:41	18:44	00:15
Nearer Planets				
Mercury	07	07:24	12:11	16:58
1.43 A.U.	17	06:34	11:40	16:45
Mag. -1.3	27	07:16	12:06	16:55
Venus	07	09:07	13:47	18:28
1.52 A.U.	17	08:45	13:29	18:14
Mag. -4.1	27	09:03	13:44	18:25
Mars	07	08:51	13:32	18:14
2.26 A.U.	17	08:57	13:40	18:23
Mag. +11	27	08:52	13:33	18:15
Jupiter	07	08:14	13:01	17:48
6.16 A.U.	17	08:49	13:36	18:24
Mag. -1.8	27	08:20	13:07	17:54
Saturn	07	13:11	18:53	00:39
9.14 A.U.	17	13:59	19:40	01:26
Mag. +0.9	27	13:19	19:01	00:47

SOL Star Type G2V

RA	Dec				
14:48	-16:11	07	07:01	11:56	16:50
15:28	-18:54	17	06:49	11:53	16:56
16:19	-21:04	27	06:59	11:55	16:51

Astronomical Twilight

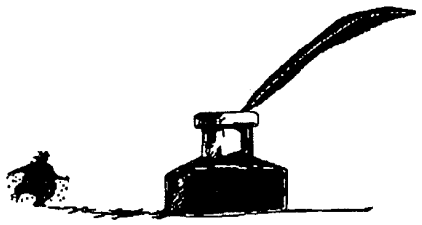
		Begin		End
JD 2,450,029	07	05:30		18:22
039	17	05:19		18:26
049	27	05:28		18:22

Sidreal Time

Transit Right	07	00:00	=	02:56
Ascension at	17	00:00	=	03:35
Local Midnight	27	00:00	=	04:15

Darkest Saturday Night: 18-Nov-1995

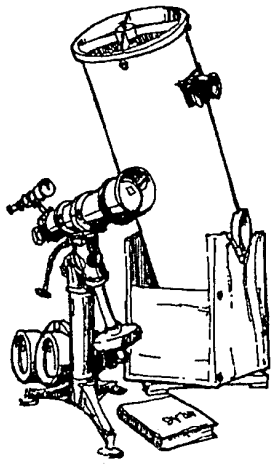
Sunset	16:55
Twilight End	18:25
Moon Rise	02:22
Dawn Begin	05:20



1995/1996 SJAA Calendar

	General Meeting	Houge Park Star Party	Observational Astronomy Class
Nov	11	24	None
Dec	9	29	None
Jan	6	26	27
Feb	3	23	24
Mar	2	22	23

Please read your *Ephemeris* each month for changes



Telescope Loaner Status
by Paul Barton

N0.	Name	User	Due Date
1	4-1/2" Newt/P Mount		**available**
2	6" Dobson	John Paul Dasilvia	*due back*
3	4" Quantum	T A Sandstrom	11/23/95
6	C-8 Celestron	Jim Marguis	11/7/95
7	12-1/2" Dobson	Tom Rice	*due back*
8	14" Dobson	In for refurb	on hand
9	C-11 Celestron	Richard Navarrete	indefinite
15	8" Dobson	Bob Elsberry	*due back*
18	8" Newt/P Mount	Jerry Lovelace	*due back*
19	6" Newt/P Mount		**available**
21	10" Dobson	Richard Lee	*due back*
23	6" Newt/P mount		**available**
24	60 mm refractor	Bob Ashford	12/6/95

Solar telescope. Available only to experienced members for special occasions such as day time public star parties, etc.

If you want to borrow a telescope call Paul Barton (number is on the credit Marque) and get your name on a general list (any telescope) or on a specific telescope list.

Wait List
Steve Wincor C-8

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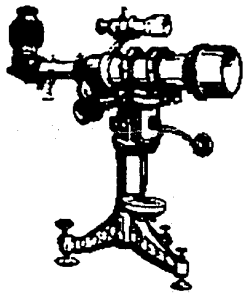

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Members are encouraged to submit articles for publication. All submissions should be sent to the editor, Lew Kurtz, 1336 Bobolink Circle, Sunnyvale, California, 94087. e-mail to kurtzm@aol.com is best, a text file on a 3-1/2" IBM or MAC diskette is fine, but typed is accepted. Articles received by the 12th will be put in the following month's newsletter.

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