

SJAA EPHEMERIS

VOLUME 4 NUMBER 10 OFFICIAL PUBLICATION OF THE SAN JOSE ASTRONOMICAL ASSOCIATION October 1993



The Eyepiece
by Bob Madden

Be sure to check out the photographs taken by Bob Keller at the September Slide and Equipment night. I was in Alaska looking for the Northern Lights and wasn't at the meeting. The following are excerpts from Jim Van Nuland. We had a lot of good slides! There was a retrospective of the RTMC and it's many unusual telescopes, by Jeff Horne and Bill Cooke. Bob Brauer displayed his ongoing efforts with the Schmidt camera. There were a number of prints shown, too, including some Perseid meteors.

Equipment

Ken Miura showed off his 6 inch long refractor on a Takahashi mounting; Bob Brauer had his photographic reflector; JVN talked about his 4.25 inch f/4 rich-field alt/az mounted with NGT-MAX computer atop. Bill Shaughnessey had a short tube reflector on a simple alt/az mount, to show that it is not necessary to spend a whole lot of money — he had about \$100 in it. There was a few more that I didn't catch particulars. All in all, a good turnout and a very useful night.

Sad News

I was saddened to learn upon

Oct 2: General Meeting at the Milpitas Library 8:00pm. preceded by the Board meeting at 6:15. The speaker will be Bruce Weaver, of MIRA, on search for new stars.

Oct 9: Star Party at Fremont Peak SP. Sset 6:37, 36% moon. Mrise 1:37am.

Oct 16: Star Party at H. Coe SP and also Grant Ranch CP. Sset 6:28pm, 4% moon, Mset 7:19am.

Oct 22: Sar Party at Houge Park. Sset 6:21pm, 58% moon, Mset 1:09am.

Oct 23: No activity.

Oct 30: Tenth and last session this year of the Beginning Observational Astronomy class, 8:00pm at Houge Park.

Oct 31: 2:00am - End of darkness squandering time.

Nov 6: General Meeting at the Milpitas Library 8:00pm. preceded by the Board meeting at 6:15. The speaker will be from NASA. More in the Oct issue.

Nov 13: Star Party at Fremont Peak or Grant Ranch (your choice). Sset 4:58pm, No moon.

Nov 19: Sar Party at Houge Park. Sset 4:55pm, 41% moon, Mset 11:17pm.

Nov 20: No activity - too much moon.

Nov 27: Thanksgiving weekend.

No Observational astronomy class

my return from our cruise in Alaska of the death of one of our most valuable members, Mr. Else. 'Someone Else's' passing creates a vacancy that will be hard to fill. Mr Else has been with us for many years and every one of those years, Someone Else did far more than a normal person's share of the work.

When ever leadership was

mentioned, this wonderful person was looked to for inspiration as well as results. When ever there was a job to do, one name was on everyone's list. 'Someone Else can work with the group.' It was common knowledge that Someone Else was always the one the organization relied on to support a particular project. Everyone just assumed that Someone Else would provide what was needed. Someone Else was a wonderful person - sometimes appearing superhuman, but a person can only do so much.

Were the truth known, everyone expected too much of Someone Else. Now Someone Else is gone. I wonder what our organization is going to do? Someone Else left a wonderful example to follow, but who is going to follow it? WHO is going to do the things that Someone Else did? When you have a chance to participate in our activities,

REMEMBER WE CANNOT DEPEND ON SOMEONE ELSE ANY MORE.

Paul Mancuso was so saddened by Mr. Else's passing that he resigned from the Vice Presidency and Board of Directors claiming that other pressures and priorities at this time require his attention. We are sorry to see Paul withdraw from an active part of our Association. Paul has contributed much time and wisdom to our activities. We regret seeing him move on, but not go far, and thank him with sincerity for filling 'Someone Else's shoes' many times.

Persied Report by Ernie Piini

My wife, Barbara, and I were on a trip to Portland, Oregon and we planned an overnight stop somewhere in either Mt. Shasta of the Siskiyou Mountain country to see the meteor shower under dark skies. The trip as far north as Redding had clear skies, but we elected to proceed further up I-5 into higher altitudes and away from Redding's light pollution. However, as we approached Mt. Shasta we started to encounter thick billowy clouds. Did we make a wrong move? We proceeded on to Yreka, about 20 miles south of the Oregon border and at an elevation of 3,000 feet. There, we found a few more holes in the cloud cover but very heavy to the northeast where the meteor show was to be the best early in the evening. It is now 7 p.m. and time for motel check-in, dinner, and then look for a good vantage point. After dinner we looked at the sky hoping for some clearing, but instead it looked worse and started to rain. I guess we screwed up, we should have stayed around Redding.

We then decided to take a ride up to the Kalamath River Rest Area, about 11 miles north of Yreka. While there, I proceeded to load two cameras with fast film at one of the picnic tables. As it got dark I could begin to see the summer triangle poke through patchy rain clouds. If it were to clear up here, we still would be troubled with the facility's lights and stopping trucks and autos.

Our next move was to backtrack to a vista point of Mt. Shasta about 6-miles north of Yreka. There, the sky was beginning to clear. We began to see our first meteors; One a non Persied and shortly followed by three Persieds! This had to be a miracle. What happened to those huge clouds that covered the sky just an hour before? the vista point still presented problems with on-coming traffic lights. It is now around 9:30 p.m. and plenty of time to look for a remote, off-the-road site away from city lights.

We decided to try driving east of Yreka and past the little town of Montague (6-miles east). There the skies were unbelievably dark-dark. I thought the skies around Ayer's Rock in Australia

were dark - these were just as dark. We could see the Milky Way from horizon to horizon! We stayed here until midnight bringing our meteor count to 43: 39 Persieds and four non-Persieds. Although the frequency of meteors were more during the early part of evening (before 10:00 p.m.) we did average about 20 meteors per hour. After 10 p.m., the frequency of a meteor streak was so slow and sporadic that I did not even attempt to set up a tripod and camera. Instead it was more of an enjoyment to look at this tremendous black sky, study the usually washed out stars and constellations, and "wowww" at an occasional meteor. It was a streak from some other comet tail or debris.

In Jack Zeider's article about the association's recent Yosemite outing he mentioned about going to Lassen country next year in place of Yosemite. After my breath taking experience with the high and dark Trinity-Siskiyou country I have to highly recommend this area. It's as good as Ayers Rock.

More Persied Reports from USNET

I observed between 9:00PM and 11:00 local time, from 40 miles south of Houston. The glow from Houston washed out everything on the horizon. I only saw 6 distinct meteors, plus two or three possibles out of the corner of my eye.

Three were the largest, brightest, and longest lasting I've ever seen. One trail was at least 90 degrees long and persisted for 3 seconds.

Also, there were two satellites, and half a dozen fireflies. I haven't seen any fireflies for 2 or 3 years, so that was pretty exciting, too.

"Real" name: Dave Moore —
InterNet Domain: DJMoore@UH.EDU
Old BITNET: DJMoore@UHOU —
THEnet or DECnet: UHOU::DJMoore

I live north of Jenner Calif at about 900 feet altitude. We observed from about 10 pm to about 2 am local time. Sky showed the Milky Way distinctly with the dust lanes sharply defined. Stars visible to the horizon in all directions. I could not split Epsilon Lyrae or see Uranus naked

eye. On good nights I can. We averaged about one per minute over the four hours. More if you count the dim ones. About one out of four was not a Persied. A lot of bright trails. One trail spanned more than sixty degrees and was naked eye visible for about four minutes. It slowly broke up and deformed like a jet contrail.

Persieds were visible all over the sky. I saw two fall through the Scorpion a few seconds apart but still aligned with the radiant on the other side of the sky. Sometimes there were lulls. Several times we would see ten in a one minute stretch.

One thing I had never seen before. We saw what we thought was a satellite brighten to visibility in the bowl of the Big Dipper and go dim again. When I checked the spot with 10 x 70 binoculars I found three satellites in a triangular formation spanning about two degrees. They were in polar orbit. We followed them as far as Polaris before we were distracted by a bright Persied display.

A very good night. The Persieds have been fogged out for me for several years.

I watched for about 30 minutes (from 22:30 to 23:00 local daylight time, 0230 to 0300 UT) here in Sarasota (lat 27 20N lon 82 32W). It was muggy and buggy with partly cloudy skies. I also had the distraction of an electrical storm some distance to the south providing intermittent bright flashes.

During the observation I saw only 5 events. One of them was going in the wrong direction for a Persied. 3 of them were pretty spectacular as meteors go, being bright and traversing at least 20 degrees of sky.

PERSEID METEORS FROM NORTHERN WISCONSIN

The Chippewa Valley Astronomical Society observed the meteor shower from the Hobbs observatory near Fall Creek, Wisconsin (91.25 W ; 44.75 N) from 3:00 UT till 7:30 UT Aug. 12. Several meteors were observed through almost complete cloud cover early in the evening. By 5:00 UT, under clear skies continued on page 3

Meteor Reports Cont from pg 2

we observed 50 to 60 meteors per hour. Activity seemed to decrease during the night. 10 per hour were brighter than magnitude 0. We even managed to capture one 15 degree trail on a CCD camera ! One of our members kept us awake during the night with quadrophonic "night music"

Bob Elliott
e-mail (elliottb@cnsvox.uwec.edu)

Observing near Livermore, CA, about an hour's drive east of San Francisco. During the time 9:15pm - 10:45pm PDT (05:15-06:45 UT, I think) I saw 16 meteors, 2 of which were random, the rest were Perseids. About half the meteors were bright, with one leaving a trail covering more than half the sky. The conditions were fairly good, I could see the Milky Way, but just barely, due to city-glow. Most of the trails were yellowish-green.

Next year I'm going out where it's really dark!!

Ken

Space Trivia from UseNet

(1) It seems that after STS-1 got in orbit, one of the astronauts was eager to try out the (older, also expensive) toilet. I think it was Crippen.

Apparently all John Young heard was this "Whoosh AHHHHHH!!!!!!".

There is a fan in it to suck down the contents. Apparently the fan was verified to be working correctly (i.e. it spun up) but nobody ever checked to see if it sucked or blew...

[From]

[HOLLIS@TITAN.KSC.NASA.GOV]

(175) "every passing year brings the Solar System forty-three thousand miles closer to Globular Cluster M13 in Hercules— and still there are some misfits who insist that there is no such thing as progress." RANSOM K. FERN

[From]

[burt@techbook.com (Burt Keeble)]

(This was posted with a smiley, so we'd like some more info on this one if anyone has any...)

CELESTIAL NAVIGATION SIMPLIFIED

By Paul Barton

Required equipment - Sextant, accurate time, and Nautical Almanac. Each of these items deserves discussion but it is omitted in the interests of brevity - - the object here is to give just the barest glimpse into how navigation by stars is done.

1. Using the sextant, measure the angle above the horizon to the celestial object (e.g. Arcturus), 90 degrees for objects exactly overhead, 45 degrees for objects half down, etc.

2. Record the time of the observation. Probably record several observations of the star. Then likely make observations on still another star, before reducing the data.

3. Suppose your observation at a specific time is 75 degrees exactly. That means your position is 15 degrees of arc from the point on the earth directly under the star (the point on the earth where the star is directly overhead). Let us call this point "K". K is the point where the star is exactly at the zenith. And our observation via the sextant tells us we are exactly 15 degrees of $15 \times 60 = 900$ minutes of arc from point K.

One nautical mile (one naut) is defined as one minute of arc on the earth's surface. $360 \text{ degrees} \times 60 = 21,600$ minutes of arc divided into the earth's circumference gives 6080 feet — one nautical mile.

So in the (for instance) example we are 900 miles from point K.

4. The nautical almanac, published yearly, gives the exact locations of the points on the earth's surface directly under the celestial objects for each date and time. It takes a bit of calculating of course. Even an out-of-date almanac can be used with some error on stars but not on the sun, moon, and planets.

So look up the latitude and longitude of point K on the earth's surface in the nautical almanac for the time of the observation. (Actually this is the star's coordinates corrected for date and time.)

5. So we are 900 miles from point K but we do not know from this one observation in what direction. But we are somewhere on a circle with center at K and radius of 900 miles. An actual

observation can yield distances up to several thousand miles, accurate to a mile or even less.

Obviously you cannot step off such large distances with dividers with any accuracy, but there is a trick available that will take care of this problem — discussed later.

6. From other information, such as dead reckoning course or an observation on another star, you will be able to say approximately where you are on the circle of position. A short arc with a (for instance) 900-mile radius becomes a straight line (a line of position). Intersecting L.O.P. s from observations of two stars gives a fix.

7. So now you know approximately where you are to perhaps 50 miles. Plot this estimated position on your chart in longitude and latitude, then determine the distance from this estimated position to point K (directly under the star).

The distance between any two points on the earth's surface can be calculated without much trouble but there are books of charts available to the navigator that give the distance between any two points (in full degrees). A full set of these books is an armful. So you calculate the distance from the estimated point to point K and find it to be a few miles off from the 900.0 miles of your sextant measurement. This means your estimated position is off by that amount. So move your estimated position on your chart by that amount. (This is the trick to obviate stepping off the large distance with dividers.)

This locates you to a mile or less quite easily — much practice inferred.

This is the barest bare bones of celestial navigation. The actual practice is more difficult. Believe it!

Although there are wonderful electronic devices for navigation now, celestial navigation is still useful to a few purist sailors.

No, I am not a navigator. I have a sextant, a shelf of books and an itch to know.



Directions to Hogue Park by your Editor

The map below shows directions to our Observational Astronomy class and public star party site at Hogue Park. The Observational Astronomy class begins at 8:00 P.M. and may be followed with a step outside to look at the constellations. Every one is welcome at these classes members and non-members alike. Star parties begin at sundown and continue until around 11:00 P.M. As you know the public is invited and so is the membership. Come display your favorite telescope, help another who is less proficient, and get some one else interested in astronomy and the night sky.

ASTRO ADS

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Bob Madden

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Criterion 6" Newtonian, f/7, motor drive, 6X30 Finder, 2 lens: 9mm and 18mm. Excellent condition - \$500. Call Sal Orlando (408) 292-1300 9/93

Owner of 17.5" telescope will share telescope in exchange for transportation to a dark sky site. Can stay over night. (408) 296-0487 1324 Blackfield Dr. Santa Clara. Ask for Mr Thompson 10/93

Planets from UseNet

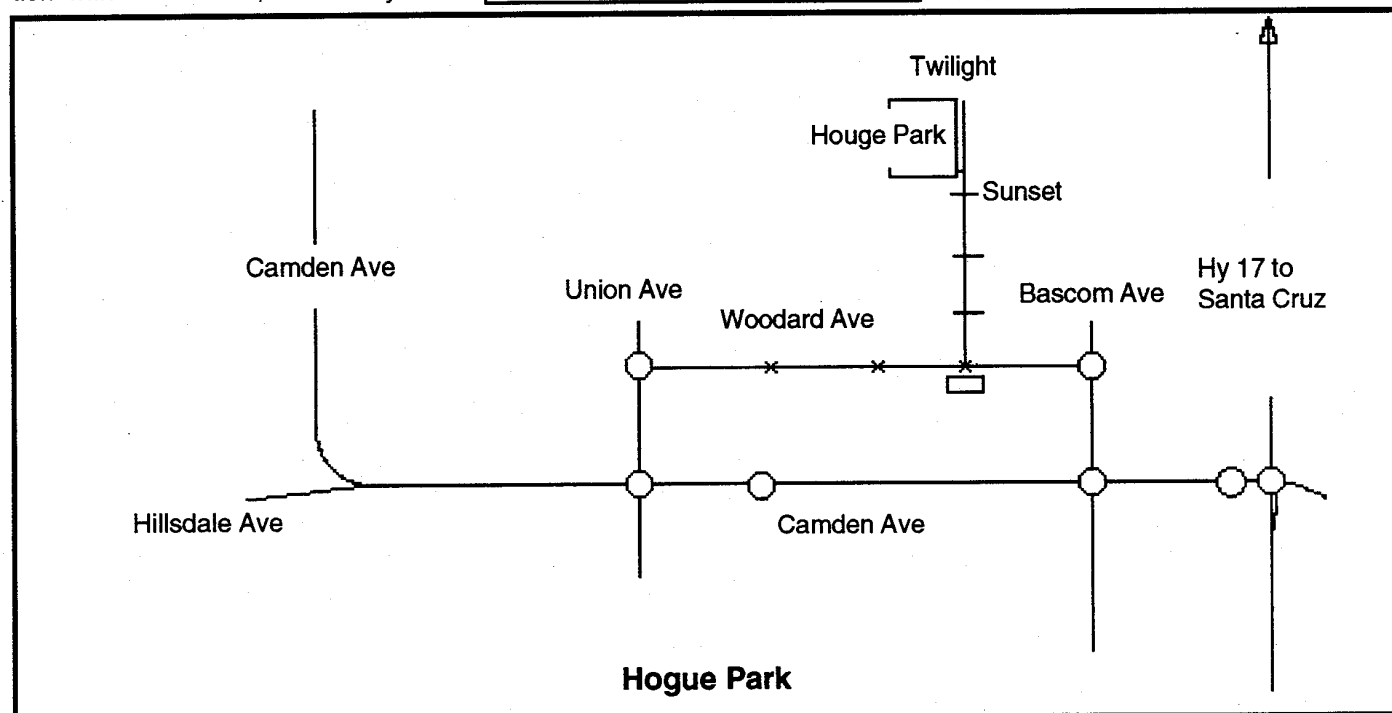
When explaining to my kids why the planets are not stars I tried to find out when and how it became obvious that they (the planets) are not self-luminous.

Certainly, when spectroscopy was applied to heavenly bodies it must have been clear that all planets just reflect solar light.

Also, when Galileo discovered phases of Venus, he reasoned that it was illuminated by the Sun. But did he conclude from Venus to the others? Mars reddish glow could have given a clue to a different view. Ptolemy's cosmos contained probably only lanterns, fire shields and the like.

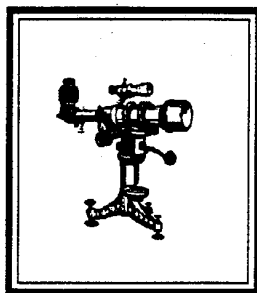
Does anyone know a more precise account on how and when (whom) it became clear that planets do not shine on their own?

Christoph Wehrli, PMOD/WRC Davos, Switzerland
chwehrli@ezrz1.vmsmail.ethz.ch

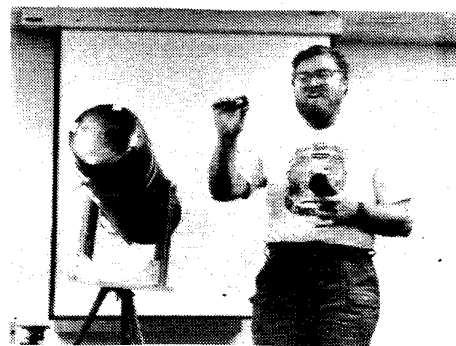




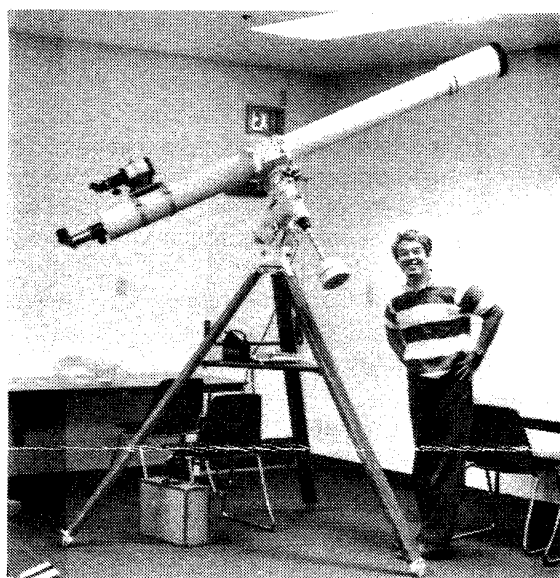
Bob Brauer explaining his his guide scope and Schmidt camera



Slide and Equipment night



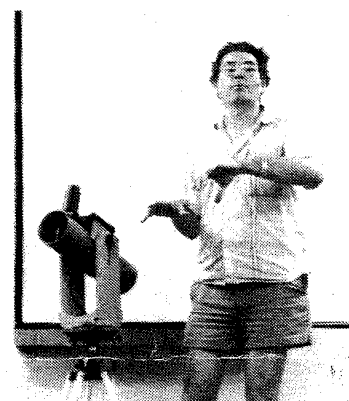
Bill Shaughnessey describing how to build a \$100 telescope



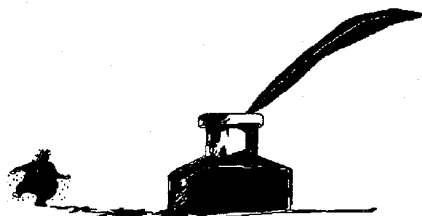
Ken Muira showing his beautiful refractor



This looks like a copy of Steve Walde's design. A good job. (We appologise for not recognising the face.)



Jim Van Nuland showing how to install a Digital Setting Circle on a small Alt/Az mount.



BBS: THE FLYING DUTCHMAN Date: 09-09-93 (08:46) Number: 1241
From: MARK PROVENCE Refer#: NONE To: ALL
Recvd: NO Subj: Clifford Holmes Conf: (43) ASTRONOMY

On September 8, 1993, one of astronomy's popularizers passed away. Clifford Holmes died at the Kaiser Permanente hospital in Riverside, California, from complications of asthma.

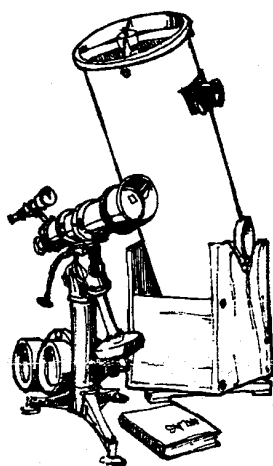
Clifford had many pictures over the years published in Sky and Telescope, as well as other astronomy magazines. He was the founder of the Riverside Telescope Makers Conference that meets in Big Bear every year, and which has grown to become one of the largest in the US, with people coming from all over the world.

For the last several years, Clifford taught astronomy at Riverside Community College and inspired many in his classes. He will be sorely missed. (I have had the pleasure to witness Cliff in action at RTMC. He was a gentleman and hard worker. The RTMC was his second love. He really hated to pass the baton to Steve Edberg two years ago. Cliff must have known. I will miss seeing him at the RTMC. May his universe be blessed. Ed)

1993 SJAA Calendar

General Meeting		Houge Park Star Party	Observational Astronomy Class
Oct	2	22	30 Last one
Nov	20	19	none
Dec	18	17	none
Jan	22	14	15
Feb	26	18	19
Mar	26	18	19
Apr	23	15	16
May	May be the 14th ?	17	21
June	25	17	18
July	23	15	16

Please read your *Ephemeris* each month for changes



SJAA Loaner Status

by Paul Barton

NO.	Name	User	Due Date
1	4-1/2" Newt/P Mount	Adam Talcot	10/5
2	6" Dobson	Available	
3	4" Quantum	Jack Petree	9/23/93
6	C-8 Celestron	Stan Stanley	8/24/93
7	12-1/2" Dobson	available	
8	14" Dobson	John Da Silva	10/13/93
9	C-11	Available to qualified member	
14	6" Newt/P mount	Available	
15	8" Dobson	Lee Courtney	10/29/93
18	8" Newt/P Mount	John Schoenenberger	10/24/93
19	6" Newt/P Mount	Available	

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

(on waiting list)
 Quantum 4 Chung-Lin Lee
 14" Dob Lee Courtney
 C-8 John Schoenenberger

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.

TelNet Info gathered by JVN

Some notes gathered mentally during a talk this week at the Space Telescope Science Institute in Baltimore:

Comet Shoemaker-Levy (1993e) may really be more of an asteroid; spectral analysis reveals little extra hydroxyl, meaning much less water than a comet is supposed to have.

The object encountered Jupiter's gravity last November. This threw it into an eccentric Jovian orbit (NOT a Solar orbit).

The object is in many pieces (confirmed by Hubble Space Telescope photos); may have been ripped apart by Jupiter gravity.

Effects of the Jupiter collision are totally speculative at this point; it's unknown exactly how close together the impacts of the object's pieces will be. Also, of course, Jupiter may or may not have a "solid" core.

Collision will be on the far side of Jupiter; the impact point will rotate into view about 90 minutes after impact.

Observations are being planned with HST and other instruments to monitor brightness of Jovian moons to view any reflected light from the impact.

There is a telnet address for a kind of bulletin board being used by scientists planning the observations. That address MAY BE:

telnet pbssbn.astro.umd.edu
 >c1993e
 no password

The speaker was NOT sure about the above address, and I haven't had time to try it. If you do, let me know. I'm sure I can find out the correct address if this is wrong. Jim Van Nuland

ASTRONOMY MAGAZINE RENEWAL

The renewal information for Astronomy magazine has not been received. Last year the renewal cost was \$16, and could go up this year. If you subscribe through SJAA, you will get a postcard telling you to renew.

If you subscribe on your own, and if your subscription expires very late in 1993 or during 1994, you may convert it to the association rate. Keep the mailing label from a recent issue, and call Jim Van Nuland (telephone on the credit marque - page 7).

CELESTIAL CALENDAR

October 1993

LunarPhases	Date	Rise	Tran	Set
LQ 12:35hr	08-10	2358	0701	1402
NM 04:36hr	15-10	0754	1313	1828
FQ 01:52hr	22-10	1456	1912	0023
FM 05:38hr	30-10	1809	0105	0801

Nearer Planets

Mercury	07-10	0926	1425	1920
0.96 AU	17-10	0950	1430	1906
Mag +0.9	27-10	0924	1405	1842

Venus	07-10	0445	1111	1734
1.52 AU	17-10	0510	1121	1729
Mag -3.9	27-10	0535	1131	1724

Mars	07-10	0905	1423	1037
2.42 AU	17-10	0902	1412	1918
Mag +1.5	27-10	0858	1401	1859

Jupiter	07-10	0745	1324	1859
6.44 AU	17-10	0717	1253	1826
Mag -1.7	27-10	0649	1222	1752

Saturn	07-10	1615	2131	0239
9.27 AU	17-10	1535	2050	0158
Mag +0.6	27-10	1456	2010	0119

SOL	Star	Type	G2	V	Mag	-	26.72
RA	DEC						
12.91	-05.53	07-10	0705	1251	1833		
13.57	-09.36	17-10	0717	1251	1821		
14.23	-12.90	27-10	0730	1250	1809		

Astronomical Twilight	Dawn	Dusk
JD 2,449,268.5	07-10	0533 - 2004
,278.5	17-10	0545 - 1952
,288.5	27-10	0557 - 1941

Sidereal Time

Transit Right	07-10	0000	PDT=2356
Ascension at	17-10	0000	PDT=0036
Local Midnight	27-10	0000	PDT=0115

Darkest Saturday Night Oct 16

Sunset	1822
Twilight End	1953
Moon Set	1910
Moon rise next morning	0958

TIMES AND DATES ARE PACIFIC DAYLIGHT

by Richard Stanton

Times are Local Civil

Derivation of these values are from
*Astronomy with Your Personal
Computer*

by Peter Duffett-Smith

MacEphem

by Elwood Charles Downey

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Comet Comments

by Don Machholtz

One new comet has been discovered recently. We'll be able to observe it over the next few months. Mean while, Comet Mueller (1993a) remains in our northern sky where it is visible all night long.

Comet Mueller (1993p): Jean Mueller discovered this comet on Aug. 16 during the course of the second Palomar Sky Survey. It was at 14th magnitude in the morning sky. We now know that it has a highly inclined orbit and reaches perihelion at 0.98 AU early next April.

Found near the planetary nebula M-76, comet 1993p will move slowly westward over the next few weeks, then turn southward, crossing the equator near Christmas. By then it will be in the evening sky, at about magnitude 10. At the end of February we lose it in the evening twilight (eighth magnitude). The Southern Hemisphere picks it up in the evening sky where it moves north, allowing Northern Hemisphere observers a chance to view it again in June and July. An ephemeris appears below, do not confuse this comet with the one found early this year by Mueller, 1993a.

EPHEMERIDES

DATE (00UT) R.A. (2000) DEC. ELONG SKY MAG

COMET MUELLER (1993a)

09-20	09h14.6m	+71°16'	74°	M	10.2
09-25	09h33.1m	+73°28'	78°	M	10.1
09-30	09h57.9m	+75°53'	82°	M	9.9
10-05	10h34.3m	+78°24'	85°	M	9.8
10-10	11h33.1m	+80°51'	88°	M	9.6
10-15	13h12.7m	+82°36'	91°	M	9.5
10-20	15h28.5m	+82°32'	93°	E	9.3
10-25	17h19.4m	+80°13'	96°	E	9.2
10-30	18h25.9m	+76°25'	97°	E	9.1
11-04	19h06.2m	+71°51'	98°	E	9.0
11-09	19h33.1m	+66°52'	98°	E	8.9

COMET MUELLER (1993p)

10-05	00h30.3m	+45°28'	139°	M	12.1
10-10	00h18.5m	+43°42'	142°	M	11.9
10-15	00h06.8m	+41°35'	143°	M	11.8
10-20	23h55.5m	+39°08'	143°	E	11.6
10-25	23h44.8m	+36°23'	141°	E	11.5
10-30	23h35.0m	+33°22'	138°	E	11.3
11-04	23h26.3m	+30°09'	134°	E	11.2
11-09	23h18.7m	+26°49'	130°	E	11.1

EPHEMERIS is published monthly by the San Jose Astronomical Association - 3509 Calico Ave., San Jose California 95124, Members are encouraged to submit articles for publication. These should be typed and submitted **no later than the 12th of the previous month**. All submissions should be sent to the editor, Bob Madden, 1616 Inglis Lane, San Jose, California 95118. A text file on a 3-1/2" IBM or MAC diskette is preferred, but written is accepted.

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