SJAA EPHEMERIS

VOLUME 3 NUMBER 3 OFFICIAL PUBLICATION OF THE SAN JOSE ASTRONOMICAL ASSOCIATION MARCH, 1992

To The Members of the SJAA

Kevin and I wish to thank the SJAA for replacing our Gregory Awards (1980, 1981) which were lost with our home in the Oakland fire last October. Jack Zeiders surprised us with the two new plaques recently. The act epitomized the collective style we have come to know and like about the San Jose Astronomical Association. We fully appreciate the effort that went on behind the scenes (that is, probably Jack Zeiders) to have the plaques redone. They now hang on a (concrete) wall in our shop, hopefully safe and secure from any other natural disaster.

The fire quite literally eliminated most of our telescope collection and at first it appeared beyond recovery. But then small miracles began arriving in the form of gifts: a set of eyepieces, a few astronomy books, an 8" mirror grinding kit, a can of grit, and the insistence of a friend back in September that he borrow the 18".

True, there are some things that will never be replaced. And yet we gained in great amounts intangible items. The generosity of our friends is quite frankly, overwhelming. I don't know what we would have done without them. Many, many thanks!

Clear Skies,

Denni Medlock

FREMONT PEAK STAR PARTY

Paul Barton

Saturday, 25 January 1992 - The Day started out to be overcast, with rain possible, but by noon the sky cleared up nicely so: "Off we go (to music)". Arrived at the Peak about 4:00 p.m. and the sky looked as if there would be possible viewing so we set up. Present were:

Paul Barton	JMI 18
Jim Baggott	C8
Shelly Mc Aleese	(7 meese)
others w/o scopes	

Shelly helped Paul Barton on the JMI 18, which had electronics problems so it was used as a Dobson. There was broken high stuff that was looked through and around. Fog set in about 10:00 p.m., but the 6 or 8 of us had a nice "rag chew" social gathering. Shelly camped out with her meese, while the rest of us abandoned ship about 11.

March 7: Star Party at Grant Ranch with Halls Valley Group

March 13: Star Party at Branham Lane City Park. Enter gates at Longs Drugs store on the West side

March 14: 8:00 p.m. General Meeting at Milpitas Library. Board of Directors meet at 6:30 p.m. Preceeding the Program. Speaker: Shilo Unruh of Lick Observatory.

March 21: Beginning Astronomy Class - Milpitas Library

March 28: Star Party at Fremont Peak

April 4: Star Party at Grant Ranch with Halls Valley Group

April 5: Darkness Squandering time begins

April 10: Star Party at Branham Lane City Park. Enter gates at Longs Drugs store on the West side

April 11: 8:00 p.m. General Meeting at Milpitas Library. Board of Directors meet at 6:30 p.m. Preceeding the Program. Speaker: Bill Dellinges - Astronomical Seminars

April 18: Beginning Astronomy Class - Milpitas Library

April 25: Star Party at Henry Coe State Park. Old 3/4 Moon.

April 26 - May 9: Texas Star Party

THE EYEPIECE

by ed

We will have an interesting and entertaining speaker at our meeting this month. Shilo has spoken to our group before about the history of Lick Observatory. Be sure to come and listen.

Well!! We're really into talking and discussing what we would want for an observatory. Do any of you have ideas? I think the Board of Directors would be interested in your dialog. Please step forward and present your opinion before decisions are made. Please become pro-active in this project. Del Johnson will welcome all the help he can get. As I stated in our last newsletter, the last meeting really brought this project to many members attention. We need to work hard, ourselves, with the Park Planning Comission to get an agreement we approve of. At this time it appears there may be two Observatories at Grant Ranch - Halls Valley and SJAA's. But, who's to say? We have a wonderful opportunity to enter into an agreement with the park and provide a public educational service for the comunity. This project can not be done by a few, however. Lets all get behind it.

Dr. Clyde Tombaugh's talk to the EAS

1989 March 4

(Continued from February)

*(slide) Pluto's position plotted from night to night. In the upper left, Pluto's discovery positions are...then it went westward and slowed down around the guide star Delta Geminorum, then back. The gap there is due to the fact it's behind the sun, and unobservable. Then I picked it up the following Fall in the morning sky, and then it went to eastern stationary, then back to the left (west is to the left) and so on. It makes a loop like that every year. So Pluto moved eastward through the Zodiac at that time about 1.4 degrees per year.

*(slide) The M-33 spiral galaxy as it appeared in my plates.

*(slide) Shows the orbit predicted by Percival Lowell in the upper right there, that dashed ellipse, and the actual orbit just inside that, which was in remarkable agreement, really, it was much better than was the predicted and actual orbits of Neptune! And, uh, for a few decades a lot of astronomers found it very hard to believe that this was a mere accident. They felt that Lowell's prophecy was fulfilled. Of course we know now that the mass is too small to have produced the effect!

*(slide) Shows one of the "by-product" discoveries: that shaded area there from Pegasus up to Perseus is probably the second largest supercluster of galaxies known, which I discovered in 1937. I counted 1800 galaxies in that area.

*(slide) The telescope, taken with my family, taken 24 years after the discovery of (Pluto). There's Patsy there, in the background, and our daughter, Annette, who now has four daughters, and is now a grandmother, and our son (Alden?) who is now vice-president of the First National Bank of Las Cruces. He apparently wasn't overly impressed with astronomer's pay so he became a banker! And he plays golf!

*(slide) Shows a greatly magnified image from one of the Naval Observatory photographs taken with their 60-inch telescope showing Pluto. And the bump is Pluto's satellite. And when Christy ran onto that he was making accurate position measurements to refine the orbit of Pluto, and he thought something must have happened to the telescope (he'd bumped it maybe). And so he laid it aside thinking that he could not rely on an accurate center of gravity for the image.

In a few more plates he found it, (a bump) at the bottom. Then he realized, here was Pluto with a satellite!! So that was discovered, I believe, in 1978. There you see the orbit on the right, and the plane of the orbit for the last two years has been essentially edge-on to us, and so the moon of Pluto goes in front and behind Pluto. And the photoelectric photometer, by noting the manner of dimming and the duration, we now have rather accurate values for the sizes of Pluto and its moon. And, of course, we got the mass by using Kepler's Third Law.

*(slide) This shows the total area of the sky. You see the position of the celestial equator and the ecliptic (which everyone knows as so curved). And the ecliptic is in the center of the zodiac belt. The Zodiac extends 60 degrees on each side of it. That, of course, is the exact projection of the Earth's orbital plane on the sky. It is also the exact path of the Sun in a years time. And now, the Sun is approaching the left end up there, about to come to the Vernal Equinox. I did all the area north of south 50 degrees declination; and the upper part was also photographed and the Milky Way comes down there in the left part. I intended to do some more of that, but World War II came on. I was in the military draft, and so I was assigned to teaching navigation in the Navy school for seven semesters. And the search never was resumed. Now, if there's a planet in there as yet undiscovered, you'll just have to blame it on Adolf Hitler and the Japanese minister Tojo!!

*(slide) Just to give an idea of the scale, the Belt of Orion as it appeared on my 13-inch plates. You see the Horsehead Nebula down at the lower left, hanging down there from Zeta; and I can guarantee that not a single one of those little specks of light there is the image of a planet!

*(slide) A color photograph taken with the 100-inch telescope (not one of mine) showing the Horsehead and the beautiful glowing red hydrogen gas; and of course on the left you see only a few stars, on the right a lot of stars, and so the stars on the left are in FRONT of that dust cloud.

*(slide) Oh, yes, here's the Rosette Nebula east of Orion, right in the heart of the Milky Way. I remember seeing it and ALL those star images ... that was a real mess, and I saw every one of those images to see if it moved. That's a SMALL section of the Milky Way!

*(slide) Shows me in a documentary in 1969. They wanted a story about it, so we got the plates out of the vault room and put them on the machine, so Pluto is on one of the plates there.

*(slide) Shows the worst region of all in the sky: this is the Scutum Cloud on the upper left, and the famous Sagittarius Cloud in the middle there. That was absolutely the worst region I ever encountered. The images, small as they were, around 1/25th of a millimeter, and they were almost touching each other over a large area. That was taken with the small camera with a long exposure on an equatorial mounting....Well, it took 9 PAIRS of the 14" by 17" plates with the 13-inch telescope to cover that region, which actually recorded about 7 million stars in that region. And of course you see some of the dark nebula there showing up — and I always loved those because there are less stars, and I could make better progress, so the dark nebulae were most welcomed!

*(slide) The Scutum Cloud with a larger instrument still not as big as the scale as the 13-inch — and you see how it breaks down and resolves into great numbers of star images.

*(slide) That's our observatory east of New Mexico State University on "A" Mountain. "A" stands for Aggies, and it also stands for Astronomy!

(End)

Transcribed by Conrad Jung, first published in the Bulletin of the Eastbay Astronomical Society. Reprinted with permission.

Cure For Horizon Envy

Passed on from ***FIDONET*** by
Jim Van Nuland

[a conversation between Alex Pujic and Scott Smith]

Scott: I just read a message of yours about how "low" in the sky the Ring Nebula (M 57) is, and your difficulty in thus seeing it. I had to laugh. Not at you of course, but at the fact that I have often cursed my Southern horizon and all the wonderful sights that lie below it, hidden from my view. I never thought about anything "up here" in the Northern hemisphere that people like you couldn't see.

Alex: On the contrary, Scott. the northern sky is filled with numerous galaxies. I use Gregg Thompson's Supernova Sky Charts to detect supernova in galaxies. The inability to see so many more galaxies (that are in the Northern sky) is sometimes very frustrating. The reigon of Cassiopia is filled with nebulosity, and have you ever tried to compete in a Messier Marathon despite the fact that it is impossible to see all of the Messier objects?

Scott: Anyway, I have a question for you. What does the Magellenic clouds look like? Are they naked eye visible, or best in binoculars, what can you see through a telescope? The lowest declination objects I've ever seen were at the Texas Star Party, where I got a very good view of Omega Centuri, and several nice galaxies due south of it.

Alex: You should not have asked that question. From my observing site, the limiting magnitude on an excellent night is about 5.5. The Magellenic Clouds are easily visible as large nebulous areas using naked eyes. The Trantula nebula is visible as a condensation near the western end of the LMC. The SMC is much smaller and shows less detail. In binoculars, both objects show numerous condensations, regions of nebulosity and clusters. The Trantula nebula is visible in binoculars as a circle of filaments emanating from a central core of stars (it does look a bit like a spider). In my 16" f/4.5 reflector, the entire fields of both galaxies are filled with open and globular star clusters, nebulosities, supernova remnants, variable stars and novae (which are relatively common in the LMC).

Alex: However, it was not until I went on a camping trip with some friends to North Stradbroke Island that I was in awe at the clouds. On the first night, I went outside and looked at the sky from a truly dark sky. To the north, the Andromeda galaxy was easily visible just above the Pacific ocean horizon. When I turned around to look south, I nearly fell over. In the sky were the brightest Magellenic Clouds I had ever seen. Visible with the naked eye were details in these galaxies that a 16" telescope at 300X fails to show in galaxies like M 99 or M 83. In the LMC, condensation were visible through out the nebula, the Trantula Nebula showed evidence of filaments, and some of the nebula within the cloud were visible as smaller clouds within the SMC. Seeing such detail in another galaxy with the naked eye impressed upon me how mediocre my home observing site was.

Alex: You also mentioned Omega Centuri. Most Northern hemisphere observers think that, being the biggest globular, it must also be the best. Omega is certainly large; however, its core is not concentrated. Above 100X in my telescope, it fills the view but lacks kick. However, 47 Tuc is a *slightly* smaller globular but has a much more concentrated core. Using a 9 mm Nagler in the 16", the view was fantastic. The outer stars do spill over the field of view, but the concentrated core, with its slightly yellow color, is breathtaking. In May, I will spend several days observing from Mount Coliery with members of the Southern Astronomical Society. The temperatures can reach -9 celsius (!) but the sky is extremely dark and the seeing is superb. The entire outline of Eta Carina nebula (the entire 1.5 degrees) can be seen with the naked eye including the central L-shaped dark cloud in front of it.

Alex: I guess the point is that the sky is always starrier on the other side of the celestial equator. I think the Northern sky is filled with many wonderful sights and I am equally envious of your fortune. Besides, I believe the amateur scene in the US is more vibrant than it is in the Southern hemisphere. We don't yet have anything approaching the Texas Star Party, Stellafane or Breezy Hill (etc) and the number of ALPO and BAA members in Australia can be counted on three hands. Why don't you 'come on down"?

CELESTIAL CALENDAR

LunarPhases	Date	Rise	Tran	Set
NM 05:22hr	04-03	0617	1218	1816
FQ 18:36hr	11-03	1039	1801	0125
FM 10:18hr	18-03	1834	0018	0603
LQ 18:30hr	25-03	0113	0557	1038
Nearer Planets				
Mercury	07-03	0659	1316	1927
0.74 AU	17-03	0636	1315	1958
Mag +2.9	27-03	0545	1208	1835
Venus	07-03	0514	1024	1530
1.53 AU	17-03	0512	1034	1552
Mag -3.9	27-03	0508	1044	1616
Mars	07-03	0453	0956	1455
2.10 AU	17-03	0436	0947	1454
Mag +1.2	27-03	0419	0938	1454
Jupiter	07-03	1659	2331	0603
4.46 AU	17-03	1613	2346	0520
Mag -2.4	27-03	1528	2203	0438
Saturn	07-03	0447	0952	1453
106 AU	17-03	0411	0916	1419
Mag +0.8	27-3	0334	0481	1344

SOL Star Type G2V Mag - 26.72

2305-0529	17-03	0619	1205	1747
2345-0127	17-03	0607	1205	1800
0025+0235	27-03	0558	1206	1817

Astronomical Twilight

JD 2,448,689.5	07-03	0447 - 1918
,699.5	17-03	0435 - 1931
,709.5	27-03	0425 - 1949

Siderial Time

Transit Right	07-03 0000	PST=1054
Ascention at	17-03 0000	PST=1133
Local Midnight	27-03 0000	PST=1212

Darkest	Saturday Night	Mar 28
Sunset		1818
Twilight End		1951
Moon Rise		0255

TIMES AND DATES ARE PACIFIC STANDARD

FEBRUARY 1 GRANT RANCH STAR PARTY

by Paul Barton

[Our roving reporter, Paul Barton, has continued to keep us all supplied with the latest on star parties. We need to thank him for his continued effort. Quite a bit of time is spent traveling to the sites and then providing a short write-up. Thanks Paul]

The weather was in the low 40's and very wet! Almost everyone had enough by midnight, leaving the fields to the coyotes, pigs, crows, et. al. Those in attendance:

Paul Barton	JMI 18
David E. Cooper	SC 8
Paul Mancuso	16" DOB
Rich Neuschaefer	6" f/9 Starfire
Crazy Ed	14.5 Home brew Newt
David Enos	10" SCT
Bruno Brememfeld	SC 8
Tony Americh	Eyes
Susan Hall	5" Clark

Ron Bricmont and many others.

FEBRUARY 2 FREMONT PEAK STAR PARTY

by Paul Barton

The weather looked good all day and evening. It was clear, cool and wet. The temperature was in the mid 30's and wet up to about midnight, when it became dry and perhaps a little warmer.

The seeing was excellent. One could see the winter Milky Way in Monoceros, which is exactly opposite Sagittarius. The winter Milky Way looks away from the center of our galaxy while the summer Milky Way looks into the center.

We observed R Monocerotis, Hubble's variable nebula, which is not yet understood. The nebula looked like a small fan shaped comet - perhaps at 11th magnitude.

Good viewing, but tiresome due to the wetness and cold. Those attending were:

Paul Barton	JMI 18
Glenn Mac Dougal	Daly City 18" Dob
Jim ----------	14" Dob

The two Dobsonians were beautiful examples of home made Dobsons

I left my wallet home (with my driver's license in it) and Ranger Rick put the $5 tab on the cuff. Rick had to quiet a bunch of campers, who were very noisy and shining lights all over the area. Rick's help was much appreciated by the astronomers, who were on the verge of having to leave. [It pays to not interfere with other people's enjoyment. We can certainly set an example... ed]

SJAA OBSERVATORY

Progress Report

by Del Johnson

Just so people don't have to depend on me gesturing vaguely towards the horizon as I attempt to point out Halley Hill, the proposed site of our observatory at Grant Ranch County Park, a site survey team has been formed. Several tasks have been identified for the team:

1) Properly locate Halley Hill from known bench marks.
2) Prepare a topographical map of Halley Hill showing elevation contours of five foot intervals.
3) Prepare a topographical map of the probable observatory site on the hill with elevation contours of two feet.
4) Establish a profile of the current trail to determine if it meets regulations. In determining where it should be, the site can be developed with minimal disruption to the natural habitat.
5) Locate and chart out croppings of rock in the vicinity of any civil work.

The team members are:

Bob Maillot
Ed Stokke
John Wright

The team is working directly with Ethan Cliffton in doing the ground work (no pun intended), which must precede the observatory design. All survey work will be done with permission of the park and park planning/engineering staff will be invited to observe/participate. Copies of the information gained by the team will be supplied to the county. I'll continue to coordinate as requested and required.

Based on some old scratchings and studies supplied by Jack Zeiders, Bob Madden has prepared a draft proposal of the SJAA Observatory for the Grant Ranch endeavor. A copy of the proposal as well as the Grant Ranch Master Plan (also a draft) will be available at the next several Board and General Meetings for review.

While the proposed site is being surveyed effort in two areas must continue:

1) Complete a written wish list of features to be included in the designs.
2) Prepare several design concepts (domes, roll-off, one vs two buildings, et al).

For the wish list, write me via the ***Ephemeris***, hand in a written slip of your desires at the general meeting, or send a fax to (408)-266-5870. For the design concepts, I'll be calling on a number of you who signed up many months ago expressing skill/desire in hardware design. **Note:** If you didn't sign up but still wish to become involved, call me at (408)-448-0239.

MOUNT LEMON OBSERVATORY ASTRONOMY CAMPS

by Bill Dellinges

I'd like to share with the association members a neat experience I had the pleasure to partake in last year. The University of Arizona, under the auspices of the Arizona Alumni Association, operates a series of adult and childrens astronomy camps through out the year.

I took the novice class last April, which ran Friday through Sunday afternoon. We never stopped! The staff was absolutely marvelous in keeping us entertained - I was astounded at how generous they were with their time. I mean these people are real astronomers! Dr. Don McCarthy and his staff of graduate students were most amiable; it was as though they had nothing else to do but to assure that we experienced as much astronomy as possible in three days.

Friday morning started at the university and we were given an orientation and history of the astronomy department at the U of A. I believe afterward,

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Group 70 Friday Jan 17,1992
by Jack Zeiders

Arriving at the shop about 7:30 PM I found Kevin Medlock, Rob Taube, Chris Paul, Dick Vaubell and another fellow I didn't recognize around the A-frame with the glass mirror blank suspended about 6 inches above the support of its shipping crate timbers. The group had acquired a pair or heavy duty chain hoists that were now supporting the full weight of the glass through the lifting ring a bunch of us built last spring at one of the work parties in the shop. About 58-1 inch wood blocks transferred the 3,000 plus pounds of force required to lift the glass to the 3/8" thick steel band, to a pair of lifting shackles the chain hoists and finally the massive A-frame also built by Group 70 members. There was a brief discussion of how much torque had been used to tighten the retaining bolts that secured the two halves of the lifting band around the 1.8 Meter glass disc. After checking with a torque wrench as well as the age old check how it feels by hand method, several people ascended to the top of the disc. As they stood,then jumped on it there was no slippage of the disc or ring As a final test of integrity I had to get up on the disc as if it hadn't had enough abuse already. Well with myself, Kevin and Dick up on the disc there was still no movement. All present felt it was well secured and could be moved.

The disc was raised to about 3 1/2 feet above the wooden bed that had been its resting place for as long as anyone knows. Perhaps even since 1939 when it was cast at the Corning Glass works. The disc was tilted up and we all saw clearly the deeply curved face that will one day form as astronomical optic and gather light from the far reaches of the universe. The impressions of the fire bricks that formed the bottom of the mold were clearly in evidence. As the ring was not precisely at the disc's center of gravity it took a bit of pressure to hold the disc upright. With a bit of nylon rope to secure it, it was lowered a bit and secured. Several photos were taken of the crew in front of the glass to record another of the many steps in this huge project.

After some debate, it was decided to remove the concrete test disc from the grinding machine and put the glass in place for grinding to begin. The disc was raised again to allow the wooden cradle to be removed. Two of the large timbers would serve as blocking. The disc was lowered to about 6" above the floor and the A-frame pushed into position in front of the grinding machine. With the blocking in place the glass was again hoisted about 3.5 feet above the floor, high enough to clear the support pads of the cell that will support it while it is being worked. The frame was pushed slowly forward until the glass was in position. The positioning was checked with a borrowed tape measure and deemed within 1/4 inch. The disc was lowered onto the 18 pads of the cell. With the A-frame, ring and chains still in place but the weight being born by the machine now another couple of photos were taken with the crew.

The ring was now loosened, raised and the frame rolled away from the grinding machine. The drip trays were repositioned around the base of the grinding machine. Odd how small the disc looks sitting on the machine, until someone goes and stands next to it. Four of the crew lift the 50+ inch grinding tool onto some wood spacers placed on the glass. It looks awfully small. Well it is now about 12:30 AM Saturday morning and I have a 50 mile drive home.

Saturday January 18, 1992 I arrive at the Hayward shop about noon, Rob Taube is the only one there. It seems Dave Barroso and Kevin have taken a load of junk over to be disposed of. I had brought a new toy along today, a 8 mm camcorder. Kevin and Dave arrive after a few minutes and it was decided to fabricate the adaptor plate that will allow the drive ball to be mounted to the tool, and thus allow us to actually start grinding today. There will be a board of directors meeting this afternoon so it is off to work. Well I got to chase parts, Dave was the designated hole driller, Rob ran the bandsaw and Kevin orchestrated the chaos. Well the correct parts emerged a while later and were installed on the tool as Jay Freemen conducted the official business of the board of directors. I heard fragments of discussions regarding elections, insurance, fund raising, and other related topics.

About mid afternoon, everything was ready so a break was called in the board meeting to turn on the spindle and then the overarm. The first 80 grit and water proceeded to break the virgin skin of the blank. As there was a great din arising from the grinding and excited people, visitors soon gathered to swell the group to about 15 or so. Just about everyone present managed to throw a handful or two of grit into the slurry. After a while we ran low of grit on hand and the machine was shut down, the tool removed, and the glass cleaned. The edge and center were grinding nicely but the 70% zone remained untouched. It seems the back side of the disc has a curve similar to that of many Schmidt Cassegrain corrector plates. A piece of aluminum extrusion served as a quick straight edge to check the depth of the low spots. Not quite two dimes.

Well a major milestone has been reached, we are now making a telescope not just planning only. There is much to be done and your help is needed. We need you to come and put in the hours needed to grind the optics. Call me or Kevin, Dave Barroso, or Bob Ashford to volunteer to join one of the grinding teams. Come and shovel grit with us one or two evenings a week or all day on the weekend. You can be flexible about when you come by, but do participate. This is perhaps the easiest part of the project, grinding the primary. With some basic instruction all of us can make a real contribution and have some fun doing it. Oh, yeah lest I forget financial contributions are also very welcome.

HOW MANY OF YOU CAUGHT THE FEBRUARY MISTAKE? FIRST PAGE FOR THOSE WHO DIDN'T! IT REALY WAS FEB - NOT JAN! SORRY!

Comet Comments

by Don Machholz

Two more comets have been found recently. Meanwhile, Comet Shoemaker-Levy (1991d) remains in our morning sky, while Comet Mueller, if it survives perihelion, will spring into our morning sky in late March.

Comet Helin-Alu (1992a): The first new comet of the year was discovered by E. Helin and J. Alu on Jan. 9 at magnitude 16 with the 18" Schmidt at palomar. It will be closest to the sun in July at 3.0 AU and should not get much brighter.

Comet bradfield (1992b): Bill Bradfield of Austrailia discovered this, his fifteenth comet, on Jan. 31. At that time it was magnatitude ten, in the morning sky, and fifteen degrees south of the star Antares. The comet will be closest the sun at 0.5 AU in mid-March, but will not be easily visible to Northern Hemisphere observers.

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we toured the mirror shop nearby and saw Roger Angel's spin-cast furnace. Then we piled into several vans (there were about 15 of us) and drove up to Mt. Lemon Observatory high in the Catalina mountains (9,000 feet) overlooking Tucson.

The balance of the day, and the next, were loaded with hikes and informal lectures. I recall not having a spare moment, though we were not obligated to attend every activity. If you wished, you could just roam around and read.

That night we used the 40" and 60" reflectors to view various deep sky objects till about 3:00 A.M. A staff person had used a program to determine when and where the Hubble Space Telescope would be crossing the sky that night. Sure enough, right on time, cameras ready, a steady brightening light appeared out of Canis Major in the S.W. and traversed the heavens - it got as bright as Jupiter at one point. I thought that was a pretty unique sight. Later that night I set up their C-8 in an empty dome about 25 feet in diameter. It was a strange sight I imagine, this lone gazer pointing a little C-8 around the starry night sky, positioned in the middle of a huge vacant observatory. Running the dome around with the hand control was a blast, giving me a feeling of a resident astronomer (it was too windy to set up outside). By the way, the C-8 was in terrible condition! I pointed out its many problems to the staff later.

The next night we took a short drive down the road to Mt. Bigelow to use the 61" and 16" Schmidt telescopes. Noticing lousy images in the 61", I shined my red flashlight on the focuser and was horrified to see a Meade 12.5 mm, 1-1/4" reticle eyepiece in place. No wonder the field was so small. I think the best views were through the 40" back at the summit.

Sunday morning we had a wonderful buffet breakfast at a restaurant at a nearby village while the staff showed slides of some of the objects we photographed plus candid shots of <u>us</u> doing our thing over the weekend. I elected to take the optional Kitt Peak Observatory tour even though I have been there many times. Good move. Dr. McCarthy ran us all over that facility taking us through the catacombs of the McMath Solar Telescope and 158" Mayall reflector.

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EPHEMERIDES

DATE (UT)	RA (2000)	DEC	ELONG	SKY	MAG
		COMET SHOEMAKER-LEVY (1991d)			
02-23	19h30.2m	+41°23'	65°	M	11.2
02-28	19h42.3m	+41°28'	65°	M	11.3
03-04	19h53.6m	+41°33'	64°	M	11.3
03-09	20h04.2m	+41°40'	64°	M	11.4
03-14	20h14.0m	+41°48'	64°	M	11.4
03-19	20h23.2m	+41°57'	64°	M	11.5
03-24	20h31.6m	+42°06'	64°	M	11.5
03-29	20h39.3m	+42°17'	65°	M	11.6
04-03	20h46.3m	+42°29'	65°	M	11.6
04-08	20h52.6m	+42°41'	66°	M	11.7
		COMET MUELLER ($1991h_1$)			
02-23	01h59.4m	+05°47'	56°	E	11.2
02-28	01h43.6m	+00°38'	46°	E	10.4
03-04	01h27.9m	-03°52'	37°	E	9.3
03-09	01h10.0m	-07°48'	28°	E	7.8
03-14	00h46.7m	-10°54'	19°	E	5.1
03-19	00h12.9m	-11°32'	12°	E	3.4
03-24	23h36.3m	-05°23'	12°	M	3.7
03-29	23h18.5m	+04°54'	18°	M	5.6
04-03	23h12.8m	+15°04'	26°	M	7.0
04-08	23h12.3m	+24°27'	33°	M	8.1

Don Machholz (916) 346-8963

ASTRO ADS

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NO LATER THAN THE 12TH OF EACH MONTH! Your Astro Ad will run approximately 3-months.

Celestron 14 complete with fork, drive base, drive corrector, 2-inch diagonal, counter weights. With heavy steel pedestal, three legs, plus wedge. Excellent condition with excellent optics. $5500 firm! (no eyepieces). You pick up! Contact: John Gleason 415-7928248 2/92

C-5 Orange Optical Tube assembly on a Tasco-like German Equatorial mount. 6X30 Finder, special coatings, visual back, 1-1/4 diagonal, No eyepieces. Same mount pictured on Orion Telescope Center's "Space Probe 4.5" in their catalog, but w/o motor hookup linkage. Nice slow motion controls. Ideal for travel and quick set up gazing sessions. Super RFT when used with Celestron F6.3 reducer/corrector. Tube assembly in near mint condition. $800 Bill Dellinges (510) 792-9206 1/92

Tele-View 7.4 mm Eyepiece (1-1/4") $50. Bill Dellinges (510) 792-9206 1/92

Wanted 5" STARFIRE, W/or/WO 600 Mount and Pier. Bill Dellinges (510) 792-9206 1/92

Wanted: Pentax / Spot Matic body w/wo Lenses, Herb Robbins (408) 269-0946 1/92

Custom C-14 Astrophotographic system, includes giant cold camera, gassing equipment, special mounting, and numerous extras. Make offer. call Norm (408)-378-4488 1/92

Quantum 4 Used once, in the box. call Norm (408)-378-4488 1/92

C-8 w/Cold Camera - Also make offer - call Norm (408)-378-4488 1/92

Lumicon 1-1/4 enhanced aluminum coating mirror star diagonal; few months old, will sell for $69 firm. Edward Hillyer, 4900 N. HWY 99 SP. 238, Stockton, CA. 95212. Call (209)-931-0486 evenings. 2/92

Celestron SC 10", f13, w/ Celestron 4" SC, Two erecting diagonals, Eyepieces - 6,10, 16 mm Cave, 12.5, 25, 40 mm Celestron, two ultra-rigid mounts - one portable one fixed. Plus 2 1/ x 3 1/2 cut film Nicon Photographic accessory. Extra film holders. $2,700 - Call Jack Connoly Tele/Fax (415)-592-7236 2/92

For Sale. 15 mm,19 mm Teleview Widefield, 95$ ea. 32 mm, 2" OD, Mead Super Widefield, $130. CAT (Computer Aided Telescope system) for C-11, $495. Astro Master digital setting circles for Super Polaris mount, $240. 30 mm, 1-1/4" OD Orion Ultrascopic, $58. Tuthill Polar Axis finder, $45. C-11 Motodec declination drive motor, $35. Orion Moon filter, $6. All items are in excellent condition. Jim Molinari (408)-255-7030 2/92

IBM PC computer, w/8087 math chip, V-20 cpu, 135 power supply. 20 meg hard disk, two 360k floppy drives. Xebec controller. Monochrome and CGA displays (IBM), APL character set on mono (hardware switch). Two extra 64k memory boards. Memory: 768 main, 1472k EMS 3.1 (comfigurable) Two printer ports, two serial ports, two-stick game port. Software: PC DOS 3.3, w/BASICA, drivers for memory management, SKYGLOBE 2.5, misc utilities. Fast boot software with source. No printer. Original shipping boxes. $350 takes all, or what have you? Call Jim Van Nuland, (408)-371-1307 11 AM to 11PM. 2/92

New Celestron Ultima 8 PEC, w/RA and DEC motors, Focus motor and Advanced Astro Master Computer. Complete Astro Photography equipment, inc. OM1 camera. Telescope case, tripod bag and metal photography accessory case included. Too many other items to mention. Must sell, $1900 OBO. Call Reg at: (510)-846-7460 4PM to 8PM. 1/92

National Astronomy Expo at ASP meeting in Madison, Wisconsin, June 20-25, 1992. Talks will be on black holes and warped spacetime, dark matter and the structure of the universe, Hubble Space Telescope, and astronomy for hobbyists (by Alan Dyer). Following the Society's meeting will feature tours of the Yerkes Observatory (and maybe a visit with SJAA's friend John Briggs). Write to:
Meeting Dept.
ASP
390 Ashton Avenue
San Francisco, CA 94112
or call: (415)-337-1100 1/92

Celestron C8 Schmidt - Cassigrain. Drive system with Joy stick with declination and right assention. Has starbright coating, 28 mm ER eyepiece. Also optional field tripod with wedge and 8X50 finder scope. The optical system is perfect! For $1,000. Call Syd Goldstein (408)-932-6706 (H) 3/92

8-Inch Celestron Schmidt Camera. F/1.5, field 4.5X6.5. Two cut-film holders for 35 mm. Excellent optical condition, minor scratch on exterior. Makes great comet photos when attached to your telescope and mount! $1750. Dale Cruikshank (408)-446-2935. 3/92

2 Coulter Mirrors 10" f/5.6 - Matched focal lengths, new in the box. $300 for both. Ed allen (408)-438-1014 3/92

Continued from page 6

We returned to Tucson about 9:00 P.M. completely overwhelmed by this three day marathon. Yet, I'm sure we were all saddened with the prospect of this experience coming to an end. Again, I can't say enough good things about the staff. They were all wonderful - informative, helpful, and cordial.

I highly recommend this seminar. It will cost about $350 and includes all meals and lodging (separate building for men and women, double occupancy). The Kitt Peak tour is an additional $30. The U of A Alumni Association offers these astronomy camps several times a year for both adults and special classes for children and teens (advanced and novice). The one I took is usually offered in the spring and fall. For information contact Lisa Roubal or Kim Dow at (602) 621-5233 or 1-800-BEAT-ASU, or Don McCarthy (director) at (602) 621-4079. Be patient, I had difficulty reaching them by telephone. If necessary, write:

Arizona Alumni Assoc.
111 N. Cherry Ave.
Tucson, AZ 85721

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