SJAA EPHEMERIS

VOLUME 6 NUMBER 3 OFFICIAL PUBLICATION OF THE SAN JOSE ASTRONOMICAL ASSOCIATION March 1995

The Eyepiece
by Bob Madden

Sigh! I'm writing this in February and last Friday was the first day in 35 that the skies were clear and I went to Chabot Mirror Making Lab. Read Paul Barton's article about Houge Park to see how the star party went. Many of the folks began shaking the "cabin" fever which had built up during the rains.

NOTICE: Effective immediately the membership dues have increased to $15. Further on in this issue is an explanation as to why this has occurred. Your Board of Directors carefully considered this issue and weighed the facts before deciding to increase the dues. I feel it was logically thought out. Your membership continues to be a bargain, and your membership is valued.

Further on you will find several articles obtained from the Internet. They are included for those who don't have access. You may also note that the column width has been changed from three to two. I have done this because of the tables, names, etc. may be easier to read. Please let me know if this agreeable to you.

Jim Van Nuland's article "40 Years Ago" continues. It is interesting to watch Jim read old Board meeting notes and condense them for us to read. It is quite a history lesson. Are there any other authors who would like to have an article printed. I finally have my scanner and OCR software working. All you have to do is send me a typed article and I can use it. Don't forget I can also use a Mac or PC disk of your article (in ASCII format) or send it by e-mail to madden@netcom.com.

Mar 3: Star Party Houge Park. Sset 6:04 pm, 8% moon sets 8:39 pm.
Mar 4: Star Party, H. Coe SP. Sset 6:03 pm, 14% moon sets 9:36 pm. Also Star Party at Grant Ranch Co Pk.
Mar 1: Board and General Meeting at Milpitas Library. Board of Directors meeting at 6:15 pm followed with the General Meeting at 8:00pm. Bob Fingerhut will talk on his experiences watching the solar eclipse from the high plains of Chile.
Mar 18: Observational Astronomy Class, Houge Park, 8:00pm Jack Petersen presenting.
Mar 25: Star party, Fremont Peak. Sset 6:22 pm, 13% moon rises 4:33 am. ALSO: Public star party at Grant Ranch County Park.
Apr 1: Star party at H Coe SP. Sset 6:29 pm, 4% moon sets 8:21 pm.
Apr 2: Start of Summer time (darkness squandering time)
Apr 7: Star Party at Houge Park. Sset 7:35 pm, 49% moon sets 2:19 am.
Apr 8: SWAP/AUCTION at Houge park
Apr 15: Observational Astronomy Class, Houge Park, 8:00 pm, Jack Petersen presenting
Apr 22: Star party at H Coe SP. Sset 7:47 pm, 39% moon rises 2:53 am. ALSO: Public star party at Grant Ranch County Park.
Apr 29: Star party, Fremont Peak SP. Sset 7:53 pm, 0% moon sets 8:08pm.

For Planning
May5: Star Party at Houge Park.
May6: Astronomy Day at Houge Park plus Solar scope at Milpitas Library.

The ***Ephemeris*** is published by
The San Jose Astronomical Association
240 S 12th Street
San Jose, Ca 95112

Forty Years Ago this month
by Jim Van Nuland

The March planning meeting was occupied with organization and incorporation. A survey showed that there are 5 completed telescopes, and another 11 in progress, and considerable interest in astronomy. The decision was made to to go ahead, and temporary officers were elected.

It was proposed to offer Sky & Telescope magazine to the members at a cost of $2.50 per year.

The March 21, 1954 meeting at San Jose State College was a little late due to difficulty getting into the building [some things never change!].

Steve Bieda gave a talk on the Solar System, running through the nine planets coverings motions, phases, satellites, atmospheres, etc.

Mr. Milner, secretary of the PAS, briefed the group on the Western Amateur Astronomers, of which the PAS is a local unit. The WAA has 15 member clubs, and sponsors club communication and a yearly convention.

Mr. Nelson gave the "Constellation of the Month" on Leo. He covered the stars of Leo and also those in the vicinity that are of special interest.

A collection was taken, and the $4.40 was turned over to the acting treasurer to cover costs in mailing of notices, etc.

Mr. Krumm discussed briefly the program of construction of finders, planetariums, and telescopes.

A large montage photo of the moon was displayed by Mr. Johnson.

Afterward, the inner Quad was investigated as a place to set up scopes. Opinion was favorable.

Houge Park Star Party

February 3, 1995
by Paul Barton

After the wettest winter in recent years, the moon and stars finally triumphed: We had a great star party.....first one this year.....at Houge Park. It was warm, with lots of dew, a very small moon, while Jim Van Nuland chased Saturn below the western horizon early on. The air was surprisingly stable, though fairly transparent, so the big refractors of Dean Linebarger, Rich Neuschaefer, Alan Nelms and others were able to use high magnification on Mars. Stanley Thompson brought a home-made 4.5-inch refractor and home-made mount.

Alex Calderon, a regular at our Observational Astronomy Class, helped with the Association's C-11. The Houge Park star parties nearly always include Terry Kahl and her very low slung 8-inch Dobson. Jack Zeiders also came by for a chat and answered questions about the Group 70's 1.8 Meter Large Amateur Telescope project. Just about all the regulars were there and a few more.

There were about 20 telescopes and over 100 people, including some of Paul Graves' students. Every one was orderly and had a lot of fun.

Objects observed included the moon, Saturn, Mars, the Orion Nebula, The Twins, the Crab Nebula and more. For the general public, the dim objects are difficult to show.....we must stick to brighter objects for the less experienced. After most of the public left, 9 to 10 o'clock, a genuine star party took place. Sometimes it is surprisingly dark at Houge Park.

It's sometimes asked, "Who's in charge here?" Well gee whizz, nobody is in charge. It is just a picnic. Sometimes the questioner is referred to Jim Van Nuland or Bob Brauer, but efforts at organizing the viewing through various telescopes haven't been very successful because of the limited bright objects and the capabilities of the various telescopes. The Association's C-11 (computer controlled) is one of the best for these affairs, but usually stays on one or two bright objects all evening.

It would be a great help if every one would look for the "sign-up" sheet to sign-in. The sheet is usually located near the C-11. After night fall it is hard to tell who has been missed.

Those in attendance were:

Paul Barton	C-11
Ed Erbeck	10" Dob.
Jim Van Nuland	8" f/6
Jim Bartolini	10" Dob
Mark Wagner	10" Dob
Alan Nelms	refractor
Alex Calderon	7x50 Bin.
Frank Vanslager	3.5 Questar
Ken Miura	6" f/15 refractor
	10" f/6 reflector
John Hales	70 mm Pronto
Rich Neuschaefer	155 mm Reflector
Paul Graves	8" and C-90
Bob Elsberry	6" RFT Dob
Bill O'Shaghnessy	4" reflector
Stanely Thompson	4.5" refractor
Dean Linebarger	5.1" APO
Danny Shesman	50 mm reflector
Terry Kahl	8" Dob
Roy Beck	5" refractor
Leon Jones	10" Dob
Jack Zeiders	

Real Time Lunar & Planetary Imaging

by Gene Cisneros
Alta Vista Observatory

While exploring my favorite electronics surplus store last spring, I came across a little CCD camera which caught my interest. Its size alone was impressive, about 2"X2"X1", and I'm a sucker for miniaturization. So, I paid my $175 and rushed home to play with my new prize. It only took a few minutes to hook it up to a video monitor and get it working but I could only use the tiny built in lens that came with it, which had a focal length of 4mm. This gives a very wide angle of view and a depth of field which ranges from about a few inches to infinity.

These cameras were intended for surveillance. One interesting thing was to reverse the tiny lens and leave it screwed out as far as possible, which resulted in a very fine high power video microscope! I soon ran out of amusing things to do with the camera and began to wonder, what's it good for? Well, it was good to set on the shelf with the rest of my junk, and it did until the SL9 events. I had been hoping to complete one of two cooled CCD projects, which I have been working on, to image Jupiter but realized that this was not possible in the time remaining before the event. It occurred to me that the tiny, very sensitive, camera might be useable.

It only took a few hours to mount the boards in a small box and attach a C-Mount to the front of it. I could now connect up to a TV lens, or with adapters, to 35mm lenses or 1.25" eyepiece tubes.

By this time SL9 events were already happening and I was anxious to try the camera and was delayed by bad weather. Finally, a good night, provided by a break in the weather, allowed me the opportunity to try the camera with the 4" fluorite refractor. I decided to try the 4" fluorite first because of its wide field, and because the CCD detector itself is very small — about 6mm wide.

With Jupiter centered in the finder I could see some brightness on one side of the monitor. A push of one of the slewing buttons and the screen illuminated the room. There was Jupiter, about a half inch in diameter on the screen, along with four of its satellites! Unfortunately, the image was completely saturated. I tried a 2.4X Barlow and the disk, though much larger now, was still "burned in" and no details were visible. The problem was that the electronic shutter in the camera was not compensating for the brightness. This shutter works by integrating the total light over the entire active surface and adjusting the shutter speed for the correct exposure. So, if I could make Jupiter large enough its brightness would go down, as the square of its diameter, and the electronic shutter might work.

The appropriate eyepiece projection adapters were not available so I couldn't try this. As a last resort, I reduced the effective aperture of the 4" to about 1.5" and the bands were clearly visible, but there wasn't enough resolution, at this effective aperture, to resolve the impact remnants. The next test was to try to image the moon, which would fill the field and therefore activate the electronic shutter. It worked perfectly, and the moon gave excellent images which were always of correct exposure. Even though the seeing was poor the image on the monitor looked very good and when I captured the images they were even better.

I use an 8 bit PC based frame grabber for this, and do image processing on them later. The images could be stored on a VCR as well. The results of my tests, on this camera, indicate that it could be useful for imaging Solar System objects, such as the Sun, Moon and planets. To complete the tests on the camera, I will put together an adapter which will allow eyepiece projection on the 4" and the 12" Schmitt Cass.

Also, I hope to probe the tiny circuit boards in search of the

Continued on page 3 - see CCD Camera

Asterisms — Webb And Neckerman Objects: 02/25
by Val German

From: Celestial Objects For Common Telescopes, Vol. II, The Stars —

"But it is to be hoped that some zealous lover of this great display of the glory of the Creator will carry out the author's idea, and study the whole visible heavens from what might be called a picturesque point of view."

This is what Larry Neckerman of Boonville, Missouri, started out to do in the mid-1960s after reading Webb. He combined this with a program for observing some 2,000 double stars through the 1960s and 1970s. Over the last 15 years, inspired by Mr. Neckerman and by Webb, I have been doing something quite similiar and have found a few interesting asterisms myself, which I call Webb Objects. In this series I intend to present a couple dozen objects, most by Mr. Neckerman but a few of my own. I hope my readers enjoy them.

Neckerman 2 (NK-2) — The Tomahawk In Cepheus.

Approximate Position (2000): RA 22h 04m; DEC +59d 50m.

This is a beautiful geometric pattern of bright stars discovered by Mr. Neckerman in 1963 with a 40mm Unitron refractor—how many of my readers remember those! I say that he discovered this because even though the brightest of the stars in the group are plotted on most charts no other observer has noticed the pattern here, which is quite striking.

Description: In small scopes, four stars, bright, startlingly geometric, beautiful. In larger telescopes two more stars appear and they reinforce the pattern. At low power (50X) NK-2 appears to resemble a tomahawk, thus the name.

To Find: NK-2 is about three degrees northwest of delta Cephei and contains the star 15 Cephei. See Tirion's Sky Atlas 2000, Chart 3, for the exact location. Atlas Coeli (my favorite) plots it, too.

Discussion: A Showpiece. It never fails to please at our public star parties and is a winner in any telescope, large or small. Most people marvel at the exactness of the pattern, its seeming ruled symmetry. Inconvenient for SCTs when overhead.

Mars the heart of the lion
by Rich Neuschaefer

Hi Stargazers,

In January Mars made a noticable move in Leo. Leo looks like a lion resting on the ground with his head up. The head of Leo points west and the triangle that makes up Leo's haunches points east toward Virgo.

On January 1st you could find Leo in the east about 1am. Mars will look like the bright, red heart of Leo. By the end of January Mars had moved west to look like a red jewel on Leo's neck. It is interesting to see how much Mars moves in relation to the background stars.

In 1995, January and February were the best months to see Mars. It was at it's brightest and biggest near February 12th. Mars only gets close about every 2 years. Give Mars a try this year. Even a small telescope will show Mars as a disk. If the seeing is good a 4" or larger telescope will let you see a polar ice cap on Mars and maybe one of its dark features. One feature on Mars looks like the continent of Africa. If you watch one of these dark features for several hours you will see it move as Mars rotates on its axis. A Martian day is just 37 minutes longer than a day on Earth.

By February 12th Mars was very bright and will have moved further west, under Leo's nose.

Rich

CCD
Continued from page 2

control line for the electronic shutter. If I can locate it and cut it, I will be able to drive it externally, and will have complete control over the exposure time. That is, from 1/30 to 1/10000 of a sec. This will be the most important aspect of using this camera, as other methods of reducing the brightness of objects do not optimize signal to noise ratio. I will follow up on this article in the future if I have any success, or if there should be sufficient interest in the subject.

—
MINERALOGICAL RESEARCH CO.
email minresco@ix.netcom.com
Phone (408)923-6800
FAX (408)926-6015

Orrery
by D.R. de Lacey

Oops! apologies to all those who contacted me to point out that I'd omitted all the salient details about the orrery I described.

I got it through:

The Science Museum Catalogue
Euroway Business Park,
Swindon SN5 8SN,
UK

+44-793-480200 (telephone orders)
+44-0793-487002 (fax)
+44-0793-480666 (information)

They accept all major credit cards.

The kit is made by
Rosedale Products,
Unit 18,
Sandall Road,
Wisbech,
Cambs PE13 2RS

and is designed and marketed (I think) by Cambridge Innovative Products; but they seem mighty coy about details, including telephone numbers. However, they offer a remarkable level of service: acknowledging that small parts easily get lost they cheerfully offer replacements if necessary.

Hope that helps.
Douglas de Lacey
(Just a satisfied customer:-)w

[This is included in case anyone has been looking for an Orrey to explain the solar system to some young children. I believe it costs about $20 US. ED.]

The Lunatic Fringe

by Rich Neuschaefer

Hi Guys,

Attached is another Lunatic Fringe not.

Heck, I need to look at the Moon again before I forget what's up there.

Take care,
Rich

The Lunatic Fringe

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 close to full, about 1/3 of the way down from the top (North end) and near the terminator. The position of the terminator is very important to ones ability to see many of the Moons features.

Easy:

ARISTARCHUS: is a very bright crater but not too large (40km in diameter), it is thought to be about 450 million years old. #18

MARIUS: is a crater about the same size of Aristarchus but it is flooded so you just see the rim. Marius is a little south of Aristarchus (about 250 km). #29

Medium:

SCHROTER'S VALLEY: is next to Aristarcus and is the largest sinuous valley (rill) on the Moon. It forms an upside down "U". It is thought to be a lava tube with a collapsed roof. The widest part of the valley is 10 km. The end of the Schroter's Valley near Aristarchus is the top of a volcano. #18

Challenge:

RUPES TOSCANELLI: is a fault about 70 km long. It runs north/south and starts about 50 km north of Aristarcus. #18

MARIUS RILLE: is between Aristarchus and Marius. It's about 250 km long with several bends. Its width narrows from 2 km at its south end to 500 m. at its northeast end. #18

** numbers like "#18" are maps in the book "Atlas of the Moon".

"Atlas of the Moon" by Antonin Rukl will be a big help in finding your way around the Moon. It sells for about $29.99 and is available from Orion Telescope Center and (I believe) through "Astronomy" magazine.

Election Results

The Board of Director's elections were held at the Feburary's General meeting. The results are:

Jim Van Nuland — Paul Barton
Bill O' Shaughnessy — Bob Elsberry
Ed Erbeck

Budget - Jim Hodgers, Board Member

Reported by Jim Van Nuland, secretary

Jim Hodgers distributed an excellent 1994 year summary. It presented actual expenses, which are not identical with yearly averages, so some adjustments were made as we worked through the following budget. Input from various members who have knowledge of each item.

	1994	1995	
Speakers: $25/mo*9 mo	$225	$300	
Room: 10/mo*10 mo	100	100	Auction and Picnic excepted
Phone: 15/mo*12 mo	180	216	
Hot Line:		50	existing machine wearing out
501.3(c) Filings: 5/year	5	5	Ca. Secretary of State
Picnic: 10/year	10	20	
Houge fees: 25/half	50	50	
Club scopes: 250/year	250	250	
Scope supplies: 100/year	100	100	Eyepieces, etc.
Class books: 210/year	210	210	Paid back by sale
Newsletter: 106/mo*12mo	1272	1440	incl. bulk mail yearly permit
Labels: 5/mo*12 mo	60	36	Newsletter
Dues (AANC): 20/year	20	20	
Misc: 5/mo*12	60	60	Treasurer & Secretary misc.
Insurance:		600	
TOTAL:	$2542	$3457	

INCOME:			
	1994	1995-	
Dues	$2556	$3195	Assume 213 paid members and $12/yr membership in 1994 and $15/yr in 1995
Advertising	25	0	Commercial ad's not allowed by P.O. for 501.3(c) Bulk Mail
Auction	300	300	(Variesfrom year to year)
Donations	0	0	
TOTAL:	$2881	$3495	

With the expected 1995 total, income based on 1994 dues (dues + auction) we project a shortfall of $626, neatly close to $3/member. The above income (1995) shows the effect of a $3 increase, which is needed mostly to cover the anticipated cost of liability insurance and we can not operate with out insurance.

Motion to increase the dues to $15/year made, seconded and passed.

PLEASE TAKE NOTE !!

THE BOARD OF DIRECTORS MOTIONED, SECONDED, AND PASSED TO MOVE THE GENERAL MEETING SITE TO HOUGE PARK. APRIL WILL SEE THE SWAP AND AUCTION HELD THERE AND MAY WILL BEGIN THE GENERAL MEETINGS AT HOUGE PARK. PLEASE MARK THIS CHANGE ON YOUR CALENDARS.

Good H-alpha-Sensitive Films

by Anthony E Arnerich
arnerich@hpcc01.corp.hp.com

Small quantities of the good old Fuji HG 400 are around, but getting hard to come by and Fuji ain't making any more. It was replaced some time ago with an "improved" version which was vastly inferior in sensitivity to the H alpha emission line. They changed the sensitizing dyes and the peak sensitivity moved away from the H-alpha 656nm line.

I see in the new S&T the results from the new Fuji Pro 800 neg film, but even the local pro photo store doesn't know when it'll be coming in (and the S&T article wasn't quantitive when they compared it's grain to the old HG400). So what about 400 EI films, available right now?

Today I took a long look at the Fuji and Kodak product data sheets and found some interesting information. It's easy to see why Fuji lost the H-alpha: almost all of their films have a red-sensitive layer that peaks well short of 656 nm, which lands well down the very steep slope. There's at least a stop of sensitivity loss, maybe more (I don't recall if the Y-axis was logarithmic or not).

However, there does still exist a Fuji HG 400, and a pro version, NHG 400. These films are available in 35mm and 120. The sheet for the NHG showed a red-sensitive layer peak *right at 656nm*. Kind of broad, too, so that even if the curve isn't quite plotted right, there's a safety margin. Fuji also states the usual "blah blah blah same granularity as a 100 speed film blah blah blah...". It at least ought to be in the same granularity ballpark as the old HG400 we grew to know and love.

Same fortuitous peak location on the Kodak Pro 400 film, also available in 35mm and 120 sizes. (Ektachrome 100 was also well placed, but the 200 and 400 were not. Kodachrome 200 was perfect, but the list of Kodachrome process-ers is shrinking fast.)

So it would appear that H-alpha sensitive films are alive and well! There are a couple of disclaimers, though:

- The data sheets might be out of date (the films might have been "improved" since the printing date). The January S&T had a nice shot of the Rosette by George Greeney that was shot on 120-format HG400 - George, are you listening? What's the vintage of the film?

- The behavior of these films with respect to hydrogen hypering is an important ingredient to success.

I picked up some rolls and will be running some tests, but if any of you out there have a hankering to try something new, you might want to give one of these films a shot. Note: avoid the Kodak Pro 400 MC, which is a lower-contrast version of the regular Pro 400.

A sci.astro.amateur reader was kind enough to remind me of a third disclaimer.Where I wrote:

There are a couple of disclaimers, though:

- The data sheets might be out of date ...

- The behavior of these films with respect to hydrogen hypering is an important ingredient to success.

To which should be added:

* The sensitivity of any color film at the 500 nm region (to pick up emission from H-beta at 486nm, and the two OIII lines 496 & 501 nm) is important to accurate color rendition of nebulae. Most films do very poorly here; it was suggested that the films I mention are typical in this regard. A purely red M42 is a sign of not picking up these blue-green emission lines, while a more accurate rendition would be more pink, or even orange (see David Malin's tricolor picture available as a poster from Sky Publishing).

In my personal experience, Konica 3200 gives a grainy red M42 with a pink eastern filament. Hypered Fuji HG400 shows it as an overall smooth pink, with a rather magenta eastern filament.

- Tony A.

Astronomical Fun Factors

by Val Germann
Central Missouri Astronomical Society
Columbia, Missouri

In evaluating amateur telescopes and accessories all of us are accustomed to making decisions based on price and performance: optical performance, mechanical performance, etc. But one very important feature that is frequently overlooked is the Astronomical Fun Factor or AFF. The AFF is used to calculate something called the Astronomical Fun Unit, or AFU, per hour. The AFU varies from +1.0, a whole lot of fun, through 0.0, no fun at all, to -1.0, or negative fun. To calculate AFU you must perform:

Observing Time, Hours X Fun Factor = Astronomical Fun Units

Let us use these concepts to investigate the AFF of a 50mm finder on a 12.5-inch, f/6.0 Newtonian on a Dobsonian mount. For several reasons I have been forced lately to use this telescope without the finder. This is not a lot of fun. For the first ten minutes or so it is not so bad but then things get worse and by the time I've been struggling along for an hour or so the experience has definite overtones of negative fun. Three calculations are made and then the results summed:

1) 0.167 Hours X +1.0 AFF = +0.167 Astronomical Fun Units.
2) 0.333 Hours X 0.0 AFF = 0.000 Astronomical Fun Units.
3) 0.500 Hours X -1.0 AFF = -0.500 Astronomical Fun Units.
-0.333 Astronomical Fun Units.

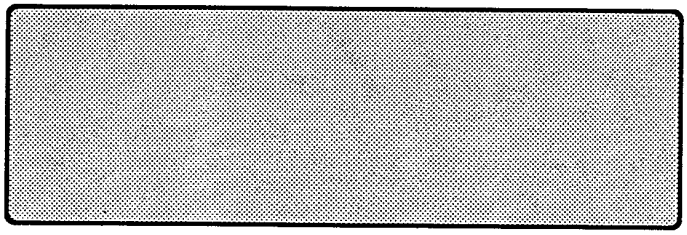
At this point I have had enough and go back into the house to watch The Simpsons on Channel 13 or Unsolved Mysteries on Lifetime.

Since the use of the 50mm finder for an hour is a whole lot of fun, AFF equal to +1.0, the AFU associated with its use is the total difference between an hour of observing with the finder and an hour of observing without it, viz:

4) AFU w/finder (1.00) - AFU w/o finder (-0.333) = +1.333 AFU.

Is this scientific, or what! Articles to come will discuss the AFU of various astronomical products. Clear Skies!

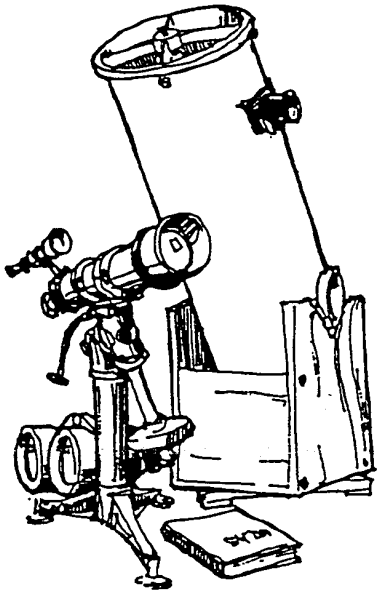
Val Germann



The 15th Annual

Bay Area Astronomical Auction

April 8th, 1995



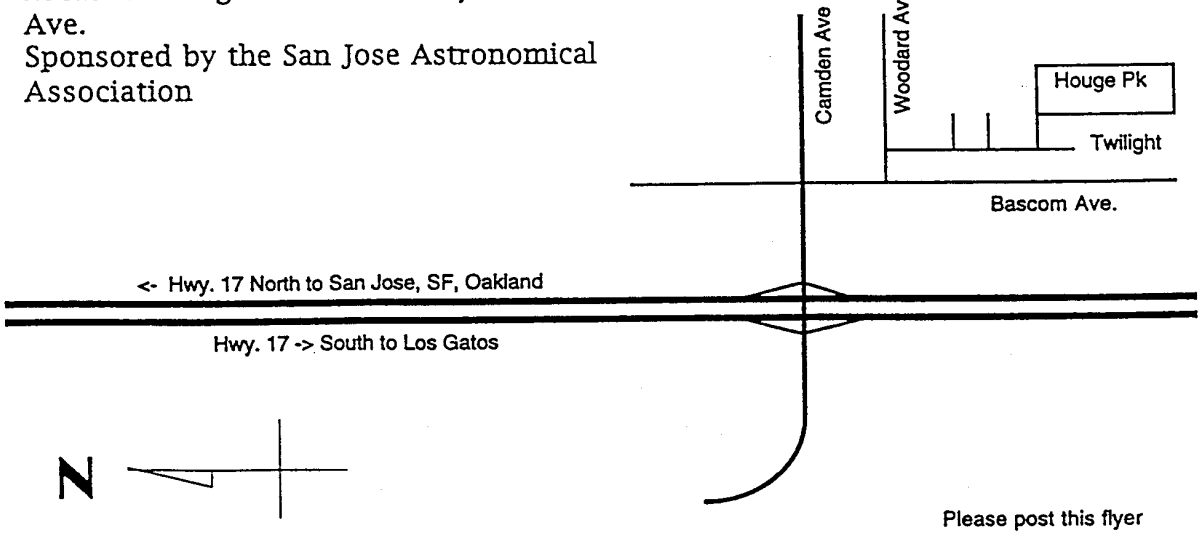
Doors open at 1:00 PM

Swap Meet 2:00 - 5:00 PM

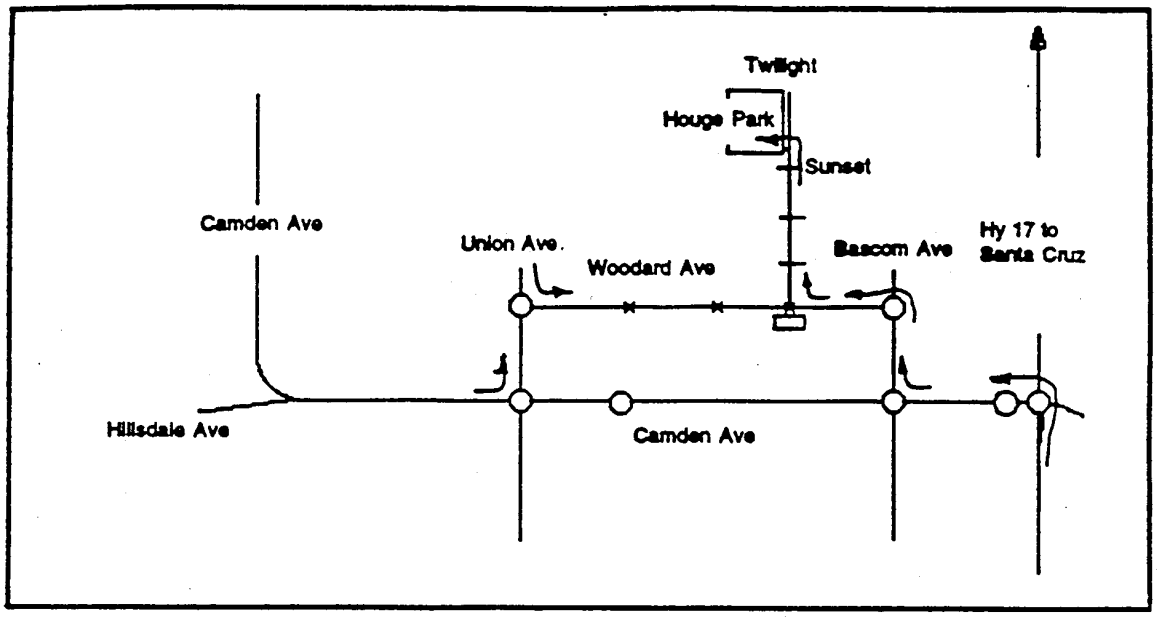
Auction starts at 6:00 PM

Bring those unused goodies and swap 'em for something new and different or turn the dust collectors in the garage and closet into cash.

Located at Hogue Park near Hwy. 17 and Camden Ave.
Sponsored by the San Jose Astronomical Association



Please post this flyer



Directions to HOUGE PARK

1995 Bay Area Astronomical Auction Registration

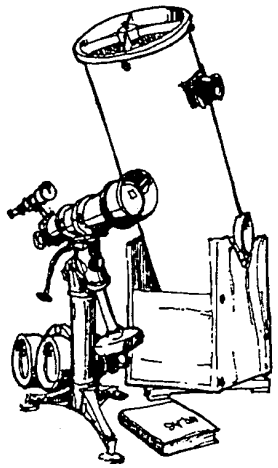
Bidder # from SJAA	Name			City
	Addr			Zip
Item # from SJAA	Qty	Min Bid	Donation 10% min	Description (40 - 50 Characters)

10% of all sales go to the SJAA - Please pre-register - fill this out and Mail to J Van Nuland, 3509 Calico Ave, SJ, CA 95124

1994 SJAA Calendar

General Meeting		Houge Park Star Party	Observational Astronomy Class
Mar	11	3	18
Apr	8	7	15
May	13	5	20
June	10	2	15
July	8	7	17
August	12 (picnick?)	4	26
Sept	9	1 and 29	16

Please read your *Ephemeris* each month for changes



Telescope Loaner Status

by Paul Barton

SJAA no.		Name	User	Due
1	4-1/2"	Newt/P mount	---------->	available
2	6"	Dobson	John Paul Dasilva	3/3/95
3	4"	Quantum	Jim Hodgers	4/8/95
6	C-8	Celestron	Lee Courtney	4/16/94
7	12-1/2"	Dobson	Tom Rice	Indefinite
8	14"	Dobson	Ken St George	4/1/95
14	6"	Newt/P mount	---------->	available
15	8"	Dobson	Bob Elsberry	3/2/95
18	8"	Newt/P Mount	Jerry Lovelace	4/10/95
19(B)	6"	Newt/P mount	---------->	available
20	4-1/4"	Dobson	---------->	available
21	10"	Dobson	Steve Wincor	4/11/95
23	6"	Newt/P mount	---------->	available
24	60 mm	Refractor	---- (new) ---------->	available

Solar telescope (#16). Available only to experienced members for special occasions such as day time public star parties, etc. Call.

(on waiting list)

Bob Mallot - C8. Bob has bee n waiting since October for the C8

Due to weather all have been extended

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

ASTRO ADS

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Meade 6-inch Optical Tube Assy. Has a scratch on diagional. Good for parts or fixing. Can be made into a Dobson $150 Call Bob Madden 264-4488 12/94

Questar 3.5-inch, Pyrex Mirror w/standard coatings, New power-glide w/hand control, runs on 9VDC, CW, Camera Adpater, solar filter, Davis&Sanford tripod. MC. $2500. Call Herb Robins 408-269-0946 or 408-356-8659 12/94

8-inch Meade: Schmidt Cass w/heavy duty Meade tripod, clock drive (8-inch Classic model), 20mm and 7mm extra wide angle eyepieces. $750 OBO. Call Larry Chase (408)-988-2516 or (800)-700-1993. 2/95

12.5" f7 Dobsonian. Mirror by D&G Optical. Novak mounting hardware includes 9 pt. mirror cell and 2.14" spider/diagonal holder. 2" low profile Tectron rack&pinion focuser with 1.25" adapter. 8x50 finder/rings, and Telrad finder. Tube is sonotube, finished outside with glossy medium blue paint and inside with flat black. The scope is in new condition since it's hardly been used. The base is unfinished wood, and should probably be rebuilt. The parts alone cost $1200, will sell for $900. Call William Cooke
work: (408) 492-5640
home: (408) 295-6560 2/95

Retiring: ATM stock of lenses, objectives, eyepieces, hardware, etc (no mirrors). Most items are surplus in good condition. One lot. Interested persons should send a SASE with 55 cents postage for complete list. Robert F. Jensen, 524 Ivy Pointe Circle, San Ramon, CA 94583. (510) 736-8562. 2/95

Doug Wells no longer drives, so he needs a ride to the general meetings. He lives at Villa Fontana, 5555 Prospect Road, just west of Lawrence Expressway. Would someone who could bring him along please call him at 255-5555 apartment 227.

CELESTIAL CALENDAR - MAR. 1995

by Richard Stanton

Lunar Phase		Date	Rise	Trans	Set
NM	03:49	01	06:28	12:3	18:40
FQ	02:13	09	11:25	18:44	01:15
FM	13:27	16	18:27	00:25	05:50
LQ	12:10	23	00:53	06:02	11:11
NM	18:10	30	05:33	11:57	18:29

NEARER PLANETS:

Mercury	07	05:27	10:41	15:55
1.16 A.U.	17	05:29	10:56	16:23
Mag. -1.6	27	05:31	11:16	17:03
Venus	07	04:35	09:39	14:44
1.13 A.U.	17	04:34	09:48	15:02
Mag. -4.4	27	04:31	09:56	15:22
Mars	07	15:10	22:20	05:35
0.79 A.U.	17	14:24	21:34	04:49
Mag. -0.7	27	13:45	20:54	04:07
Jupiter	07	01:10	06:01	10:52
5.07 A.U.	17	00:33	05:25	10:16
Mag. -2.3	27	23:52	04:47	09:37
Saturn	07	06:36	12:16	17:56
10.6 A.U.	17	06:00	11:41	17:22
Mag. +1.2	27	05:23	11:06	16:49

SOL Star Type G2V

RA	Dec				
23:11	-05:15	07	06:30	12:19	18:08
23:46	-01:28	17	06:15	12:16	18:18
00:23	-02:29	27	06:00	12:13	18:27

Astronomical Twilight

Julian Day		Begin	End
2,449,784	07	05:04	19:34
2,449,794	17	04:49	19:44
2,449,804	27	04:32	19:55

Sideral Time

Transit Right	07	00:00	=	10:50
Ascension at	17	00:00	=	11:30
Loc. Midnight	27	00:00	=	12:09

Darkest Saturday Night: 25-MAR-1995

Sunset	18:25
Twilight End	19:53
Moon Rise	02:34
Dawn Begin	04:34
Astrophoto Hours	06:28

TIMES AND DATES ARE PACIFIC STANDARD

Times are local civil

Derivation of these values are from

Astronomy with your Personal Computer

by Peter Duffet-Smith

MacEphem

by Elwood Downey

COMET COMMENTS

by Don Machholz

The first comet discovery of the year has taken place, but the comet is very faint. Meanwhile, Periodic Comet Borrelly finally fades from view Comet P/1995 A1 (Jedicke): This comet was found by Robert Jedicke while using the 0.9-meter Spacewatch telescope from Kitt Peak on Jan. 8. We now know that the comet is periodic, orbiting the sun every 14.4 years, with a perihelion distance of 3.8 AU. It is presently magnitude 18 and fading.

The tenth edition of the "Catalogue of Cometary Orbits (1995)" is now available from the Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge, MA. 02138. This is a 108-page summary of all comets for which orbits have been computed. The orbital elements are given for each comet, along with the new and old comet designations. The cost is $20.00, $30.00 for airmail delivery outside North America.

From that catalogue we learn that 878 comets have been observed accurately enough for the orbit to be calculated. A growing percentage of them are periodic, that is, they orbit the sun in under 200 years. Presently, 21% (184 comets) are periodic, some have visited us many times. Therefore, the total number of cometary apparitions is 1444.

As I described last month, established periodic comets now carry a number as part of their designation. Here are some of the more popular comets:

P/Halley: Probably the most famous comet of all, 76-years, 30 appearances.
2P/Encke: Shortest orbital period: 3.3 years, 56 appearances.
6P/d'Arrest: 6.4 years, due back this summer.
8P/Tuttle: 13.5 years, responsible for the Ursid meteor shower, Dec. 22.
9P/Tempel 1: 5.50 years.
10P/Tempel 2: 5.48 years.
19P/Borrelly: Visible in our skies now.
26P/Grigg-Skjellerup: 5.10 years.
29P/Schwassmann-Wachmann 1: Occasionally outbursts by several magnitudes.
45P/Honda-Mrkos-Pajdusakova: Visits us every 5.30 years.
55P/Tempel-Tuttle: 33 years. Responsible for the Leonids meteor shower
95P/Chiron: A very large distant comet, once thought to be an asteroid.
96P/Machholz 1: 5.24 yrs, shortest periodic comet perihelion dis. (.126 AU).
107P/Wilson-Harrington: 4.3 years. Occasionally observed as an asteroid.
109P/Swift-Tuttle: Responsible for the Perseid meteor shower.

EPHEMERIS
19P/BORRELLY

DATE(OOUT)	R.A(2000)	DEC	EL	SKY	MAG	ELEMENTS
02-22	09h10.4m	+67d44	122d	E	11.1	Peridoc Comet Borrelly (19941)
02-27	09h08.1m	+66d52	120d	E	11.3	Perihelion date: Nov. 01.492, 1994
03-04	09h07.3m	+65d51	118d	E	11.5	Perihelion Dist: 1.3651 AU
03-09	09h07.8m	+64d42	116d	E	11.7	Arq. of Peri: 353.359° (2000)
03-14	09h09.6m	+63d28	114d	E	12.0	Ascending Node: 075.424° (2000)
03-19	09h12.4m	+62d09	112d	E	12.3	Inclination: 030.271° (2000)
03-24	09h16.0m	+60d46	110d	E	12.7	Eccentricity: 0.6228036
						Orbital Per: 6.88 yrs.

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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