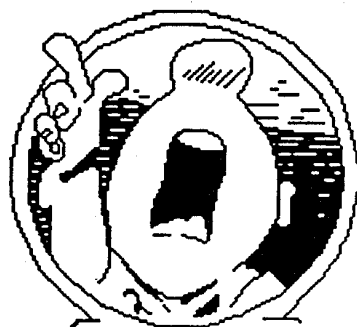


# SJAA EPHEMERIS

VOLUME 6 NUMBER 2 OFFICIAL PUBLICATION OF THE SAN JOSE ASTRONOMICAL ASSOCIATION February 1995



The Eyepiece  
by Bob Madden

This month is election month of your SJAA Board of Directors. Five Directors are to be elected at this month's general meeting. We have six candidates running for 5 seats. This is the first time I can remember this has happened since I joined the SJAA. Further on in this issue you will find each name and background. Please come to the February meeting and cast your vote. We need your help.

Two board members resigned last month, Gene Cisneros and Jack Zeiders. Gene has been a long standing board member offering his sage advice and continuity of history from earlier times of the SJAA. Gene states he will probably continue to come to the board meetings and we will welcome his continued participation. Thanks Gene for your past help. Jack Zeiders provided the necessary leadership when Tom Ahl left the area. Jack served as President for two years, passed the baton to Bob Brauer, and has sat on the board. Jack feels his business is more demanding and he can not give the support that he feels is necessary. Jack will always be near for advice and we want to thank him for his leadership and support.

Rich Newschaefer has been selected by the board to fill Gene Cisneros' position and Lew Kurtz will sit in for Jack for the remaining two months.

Ernie Piini's eclipse article graces our feature page this month, followed with some-things from the internet and other members. You may have also noticed Jim Van Nuland's article *40 Years Ago*. Jim plans to publish

**Feb 3:** Star Party, Hogue Park. Sset 5:34 pm, 20% moon sets 9:55 pm.

**Feb 4:** No Activity

**Feb 11:** Board and General Meeting at Milpitas Library. Board of Directors meeting at 6:15 pm followed with the General Meeting at 8:00pm. Speaker will be: Dr. David S. Dearborn, LLNL, on the archaeoastronomy of ancient Peru.

**ALSO:** Election of Board of Directors.  
**Feb 18:** Observational Astronomy Class, Hogue Park, 8:00 pm by Jack Petersen. The second in a series.

**Feb 25:** Star Party at Fremont Peak. Sset 5:56 pm, 13% moon rises 4:33 am. Also a star party at Grant Ranch County Park.

**Mar 3:** Star Party Hogue 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. Speaker needed.

**Mar 18:** Introductory Astronomy Class, Hogue Park, 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.

**April 1:** Star party, H Coe SP. Sset 6:03 pm, 25% moon rises 3:13 am.

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## Forty Years Ago This Month

by Jim Van Nuland

After the small turnout for the second meeting of the proposed club, it was decided to have a planning meeting to discuss goals and aspirations. They decided upon a questionnaire, and more publicity. An announcement was sent out (the first newsletter?) to all who had attended previous meetings.

The February 21 meeting was held in the Science Building at San Jose State, with 19 people attending. First speaker was member Don Thompson, who gave a blackboard talk on the constellation Gemini.

Walter Krumm then gave an illustrated talk on the moons of Jupiter, including the phenomena of occultation, eclipse, transit and shadow transit.

Mrs. R.W. Boltz followed with discussion of astronomical measurement. The radius of the Earth is used as a baseline in measuring parallax of Solar System objects, whereas parallax of stars are measured using the Earth's orbital radius. The nearest star, Alpha Centauri, has a parallax of only 0.78 arc-seconds. A frequently-used term is the parsec, which is the distance necessary to give one second of arc in relation to the Earth's orbit. This turns out to be 3.258 light years.

Lucien Dunton then took the floor with a discussion of amateur telescopes. He listed the advantage of the reflector and refractor, as to simplicity, cost, and adaptability. He then discussed power; relationship of the telescope to the job desired. His advice was for beginners to stick to f/8 and the 6 inch mirror for a starter, and not to go after too-high magnifications.

Following a short question period, the group adjourned to the roof of the science building.

this for the year as this is our 40 Year Anniversary. Hopefully we will plan other events during the year. Rich Newschaefer again has sent us his *Lunatic Fringe* article and a couple more to be published.

I hope you find this an interesting issue and if you are doing something interesting you think others would like to know, please send it to me. I'd like to publish it.

## ECLIPSE OVER THE ALTIPLANO

by Ernie Piini

A Kallaway witch doctor and part-time fortune teller was asked what outcome we could expect on the morning of the eclipse just two days hence? Dressed in his sacred robe and kneeling on a thatched carpet in a dark room near the shores of Lake Titicaca, his interpreter translated that ever so important question to him. Using a handful of coca tea leaves as his 'dice', the old wiseman caste his answer onto the carpet before him. The dark green upper side of the leaf meant good, the lighter under side bad. All but two leaves turned up dark. Could this mean there will be two clouds we'd have to worry about? Or two of the three minutes would be lost to clouds?

It was a very special occasion to have my daughter, Elaine, join me on this expedition. This was her second total eclipse and her first trip below the equator to view the Southern Skies, plus I needed my own built-in nurse to watch over me while on the 13,000-ft altiplano.

This 83-person expedition was directed by Joel Harris, President of Twilight Tours. Our basic 5-day program in Bolivia included two days at Lake Titicaca, a visit to the Tiwanaku Ruins, short stops before and after the eclipse at the hotel Terminal in Orura, eclipse observation near the centerline, and an overnight stay in La Paz.

At Lake Titicaca, the highest navigable lake in the world, we learned about the cultures of the Urus Chipayas and the Kallaway Indians. It is here where one can meet the famous Limachi brothers, builders of the reed boats, Ra II and Tigris, for the epic and historic Thor Heyerdhal expeditions. We rode a hydrofoil up the lake to the hill side town of Copacabana to visit the Cathedral and the sacred Black Virgin statue. On our way back we docked on the Island of the Sun and drank the sacred water spewing from a rock fountain. (That's how some of our expeditioners picked up the Bolivian Bug.)

The night skies were very dark within the Hotel Inca Utama complex and we were treated to the splendor of the Southern Skies including the Magellanic Clouds, 47 Tucana, and many constellations. We also saw some of our own winter constellations in an upside down display. Some of us awoke at 3 a.m. purposely to see the Southern Cross, Eta Carina, Canopus barely visible near the horizon at the break of dawn. This was a big treat for my daughter who previously had seen and studied only the northern stars and constellations.

On our third day we visited the Tiwanaku Ruins which date back to the first century

B.C. Known as the metropolis of the mountains, these ruins were for centuries one of the greatest mysteries of the Andes, perhaps of the entire world. Just recently excavated, this 2.4 square kilometer village included a pyramid, walled complexes, semi-underground temples, and a complex water distribution system. It had supported an estimated 20-25,000 people. The "Gate of the sun", an imposing stone fixture and thought to be a solar calendar, was the most interesting and photographed subject of this visit.

The various bus rides on the altiplano provided us with panoramic views of snow-capped Andean mountain ranges and unforgettable scenes of Bolivian people and their adobe villages.

Despite the predictions of 85 percent clear sky on the altiplano, there were clouds on and off for days before the eclipse with the day before a discouraging total overcast. That evening at the Terminal Hotel in Orura, while staging our telescopic equipment, we finally saw the first bright star peeking through the clouds where earlier all we had seen were lightning flashes (without the noise of thunder) far off to the west.

The 140 km (85 mile) bus ride south to the centerline was very bumpy and dusty. I carried my 3-way telescope on my lap, like a child, to prevent the possibility of nuts and set-screws from coming loose. Problems requiring repairs in remote areas are a real nuisance, even catastrophic, when discovered moments before totality.

We arrived next to the train depot in Sevaruyo around 4 a.m. This is a small town about 13 km north of the centerline. The train from La Paz with 400 eclipse-chasers on board had arrived earlier. Our bus proceeded south to a designated site within 5 km (3 miles) of the centerline. We were greeted with large bonfires, set by the local Indians. For hundreds of years they have done this for solar eclipses to warm and brighten the earth. (Don't they know that brush fires creates pollution and detrimental to clear skies?) The morning skies were still dark enough to see clearly the Southern Cross, Eta Carina, the Magellanic Clouds and many other wonders of the Southern heavens.

A squad of armed Bolivian soldiers were assigned to the Twilight Tour contingency to offer protection if deemed necessary.

Only thin clouds were present as dawn arrived. We began to set up our equipment on the desert sand as soon as we could fend our way around the sage brush. First contact came on schedule at 7:19:32 a.m. My daughter and I had set up alongside each other. Elaine's project was to operate a Sony Hi-8 camcorder with adaptation to a diffraction

grating to capture the exciting moments of the 'flash spectrum' and a 5x35 monocular to add magnification during the eclipse. I had modified my basic 3-way telescope system by substituting a Yeagers 85 mm, 600 mm focal length lens borrowed from Bob Madden, Editor of the San Jose Astronomical Association Ephemeris. I used three cameras, each loaded with an untried film including Kodak's Royal-100 (which replaces the popular Ektar-125), Kodak Lumier, and Fuji Provia. I also constructed a new objective grating to try out near third contact.

The temperature reading at first contact was a warm 73° F and the wind calm. By this time I had shed my hooded jacket and heavy wool shirt leaving only thermal upper on. The air temperature dropped rapidly as the eclipse progressed and I started to put my clothing back on. About 20 minutes before totality, a strong breeze came up but lasted for only a few minutes. The wind died down at totality as it has for 15 of the 16 eclipses I have seen (2 of the 16 were annulars).

The moon's shadow could be seen moving quickly from the west and totality finally arrived at 8:22:05 a.m. My daughter, and over 100 expeditioners and locals went wild at the sight of the "Diamond Ring" and subsequent "Bailey's Beads." A hummingbird shaped corona appeared, its very long beak (plume) pointing southwest. Jupiter and Venus were quite visible. Of the 14 totals I've observed, this one was the most colorful. The orange-gold display in the sky was awesome. Could it be due to the clear air at 13,000 feet? As usual, 3rd contact came ever too soon. A big round of applause sounded out from the thrilled spectators. "Hey, we actually got to see it." This despite our concerns during the sunless day before.

After 3rd contact, the temperature bottomed out at 46° F, a drop of 27°F. This was the biggest change I have ever recorded at an eclipse. The humidity increased from 70% to 78% during the same period.

One member from our group collapsed on the bus from high altitude sickness and had to be hospitalized. He survived but did not see the eclipse. Another expedition with 400 people reported that 20 expeditioners had missed the eclipse due to similar sickness. The 2-mile plus high altitude even affected many who did see the eclipse. Human error crept in more here than at other eclipses I've attended. The beauty and color of this eclipse also had a hypnotizing effect. By moving away from my telescope to look at the spectacle, I lost a good 30 seconds of planned experiments. It was so unbelievable that I lost track of time. My daughter was so overcome by the grandeur and beauty of Continued on the next page

## THE ALTIPLANO

the eclipse that she missed about 50 percent of her camcorder work. Eclipse fever got to her in a big way!

After the eclipse we returned to Orura for lunch at the hotel then proceeded north to La Paz for an overnight stay at the luxurious Hotel El Presidente. The entrance into this sunken city of nearly one million people was a sight to behold. It was nearing twilight when we had our first glimpse of this breath taking panorama over a thousand feet below. The view ends at this city's majestic landmark to the south - the 21'000 foot high Mt. Illimani.

Our last day was spent visiting the Witch Doctor's Market and Moon Valley, an eroded area similar to our Bryce Canyon.

In looking back, the two coca tea leaves that turned up light side could have taken on many meanings. In my case, two of my three camera experiments went sour. But all those leaves that ended dark green side up foretold more good for all of us. We saw the eclipse and my third camera experiments paid off! [editors note: Erini sent a very nice photograph of totality to me, but unfortunately I am not able to reproduce it well enough to be printed.]

### The Lunatic Fringe

by Rich Newschaefer

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 the Moon is about 9 days old, 1/2 of the way down from the top (North end) and near the terminator.

**Easy:** COPERNICUS: a large ring mountain (93km in diameter), group of central peaks and terraced walls. P.32

ERATOSTHENESE: a prominent crater (58 km) with an interesting central peak. P.31

**Medium:** STADIUS: a flooded crater (69 km) between Copernicus and Eratosthenese, in Mare Insularum. Stadius is a faint ring, just the upper edge of an old crater.

Chain of small craters formed by material ejected from Copernicus. Between Copernicus and Eratosthenese.

**Challenge:** Lunar domes: You may have to wait another day for the terminator to move far enough past Copernicus to see the small crater Hortensius (14.6 km), it is round with a sharp edge. Just above Hortensius is a group of lunar domes. These domes are low rounded features formed by volcanic action.

Several have crater pits. The seeing must be very good to see the crater pits. The domes are about 1/3 the diameter of Hortensius. P.30

\*\* Note: notes like "P.30" are pages 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.

## STAR TESTING ASTRONOMICAL TELESCOPES

by Harold Richard Suiter

A book Review

by R. Madden

This book has just been published by Willmann-Bell, Inc. in time for the Holidays. It is a hard back, well made with glossy paper book and with 364 pages.

The author begins with an Introduction which includes: Telescope evaluation, Testing the Surfaces, A Brief Overview of the Star Test and the reason for star testing. All designed to prepare you for what is to come. Second he moves on to An Abbreviated Star-Test Manual moving through Preliminaries to Optical Problems where the effects of Secondary Mirror Obstruction, Misalignment, Spherical Aberration, Rough Surfaces, Zonal Aberration, turned edges and Astigmatism are discussed. There are many diffraction images to compare with.

In later chapters, the author considers each of the above items in much more detail. He discusses the effects of each problem and sums it up in a chapter titled Accumulated Optical Problems. Even other tests are discussed, The Foucault Test, The Hartman Test, Resolution of Double Stars, Geometric Ronchi Test, Interferometry, finishing with The Null Test.

The author provides a thorough discussion of these tests and in such technical depth that, as Paul Barton said, "Requires much study." The less technical person will find this book enlightening and the technical inclined will find it a great resource. There are many illustrations included to provide the average person a guide to compare images seen in his own telescope.

The book's Price is \$24.95 and ISBN number is 0-943396-44-1. Willmann-Bell may be contacted at telephone number (804) 320-7016.

I would recommend this book for the average and technically inclined person who needs a good reference book.

## SL-9 Impacts on Jupiter

A Summary of the Presentation at  
December 1994 General Meeting  
by Bob Elsberry

The speakers at the December 17, 1994 General Meeting were a team of 4 scientists and engineers from Lockheed Missiles and Space Company (LMSC) who set out to observe the SL-9 impact on Jupiter using amateur telescopes and video recording equipment. All the team members, Jim Kiessling, Grace Autio, Jim Albers and Bryan Murahashi, were present for the meeting. Jim Kiessling is a scientist with varied interests at the Palo Alto R&D Laboratory. Grace Autio is an optical engineer working at the LMSC Sunnyvale Facility on defensive missile systems. Jim Albers and Bryan Murahashi also work in Sunnyvale where they perform modeling and analysis for space systems. Their presentation covered all aspects of the endeavor including planning the expedition, securing the equipment, setting up the base camp and observation site, operating at 10,000 ft., processing of the video recordings and of course the resulting images of the SL-9 impacts on Jupiter.

The observations were made from White Mountain at 10,000 ft. A base camp was established lower on the mountain for sleeping and eating. Although the site has an observatory dome it was basically primitive and most necessities had to be brought in. This included oxygen for prolonged observing at 10,000 ft. The vista was magnificent and the weather remained clear in spite of threatening afternoon clouds. The telescopes were set up in the observation dome on a plywood floor. The wind and flooring combined to create a challenging vibration environment for the telescopes. The telescopes used were a 10 inch dobsonian loaned from Crazy Ed Optical (Ed Erbeck, CEO), a Celestron C-8 and an 8 inch Questar.

A video camera was successfully used to record images of the SL-9 impacts on Jupiter. In this manner a virtually continuous video tape of the impacts was made covering many hours of observation. Frames from this tape were then selected and processed using image enhancement techniques to reduce noise and clarify detail. Using this method they obtained images nearly as good as those obtained by much larger observatory telescopes.

With the increasing capability of personal computers and the availability of image processing software made for the personal computer video taping and post Continued on page 4

### Impacts

processing images will become a powerful tool for amateur astronomers. Observation of unique transitory events such as the SL-9 impacts on Jupiter truly demands a real time recording technique like this with post processing to enhance the images. The process is very tolerant of vibration and tracking jitter which can be removed with post processing. It can be used with dobsonian telescopes without sophisticated tracking systems thereby opening new vistas for man amateurs with dobsonians.

We want to thank the team members for a very interesting and informative talk.

### Board of Director Candidates

The following is a list of the candidates running for office. The vote will be taken at the February general meeting. Please come and cast your vote.

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

### Jim Van Nuland

SJAA member since 1972, board member from 1973 (except 1 year), secretary from 1979. Co-ordinator for school star parties from inception about 1989. School star parties must first of all show the kids that science can be fun! Only then can we spark an interest. I favor a mix of speakers to include astronomical discoveries, equipment considerations, space program as it bears on planetary exploration, history of astronomy, and more.

Age 58, retired from IBM. 8 inch Equatorial Newtonian; 4 inch alt/az rich-field. Occasionally active in lunar occultations. Visual observer (planets and deep sky); no astrophotography.

### Paul Barton

I've been a member of the SJAA since 1979 and a member of the Board Of Directors since 1990. I currently manage the Telescope Loan Program of The SJAA. I don't consider myself an experienced amateur astronomer, but have made and modified many telescopes for the loaner program and friends. I hold a BS EE from San Jose State and have over 30 years experience in the electronic field. I received my amateur radio "Ham" license (W6JAT) in 1932, which

is still current. I've held all possible offices of the Ham Radio Club and understand what is needed. I strongly support the SJAA educational format by attending Public and school star parties and the Observational Astronomy class.

### Robert Elsberry

I became interested in astronomy about 4 yrs ago when a friend made me an offer and a challenge. He would give me a real bargain on a mirror, mount, spider and an eyepiece if I would build a telescope. Well I built the scope and that really sparked my interest in astronomy. I've been a member of the SJAA for 3 years, and my principal activity has been attending star parties to learn my way around the sky and to show others the wonders to be seen. I've particularly enjoyed school star parties and the excitement of the students seeing deep space objects for the first time. I've combined my interest in astronomy with my activities as an adult leader in the boy scouts. Each month I publicize the dates for upcoming star parties at the my district's roundtable meeting and encourage cub scout packs to attend them or set up their own star parties. I'm also currently conducting an astronomy merit badge program with a boy scout troop. I have 3 scouts working to earn their astronomy merit badges.

I seek election to the SJAA Board of Directors to contribute further to public awareness of astronomy and the objects that make up the universe we live in. If elected I would like to serve the Board as treasurer. I'm looking forward to expanding my activities in amateur astronomy and with the SJAA.

### Bill O' Shaughnessy

I enjoy observational astronomy and I have a 10" Coultter Dobsonian that I take to Houge Park and to Henry Coe Park for the clubs observings sessions. Computational astronomy is also one of my interests: ephemeris programs, coordinate conversion programs, and star map programs.

The club budget is probably the biggest issue before the club at this time. The club is running on a barely break even basis. The cyclicity of membership dues means that in some months the finances are tight.

The second most important issue in my mind is that the club does not carry insurance. This keeps us from having access to some observing and meeting sights. It also puts the club and the board at risk if someone is injured at a meeting or observing session.

To solve both of these problems I think the club should raise dues and with part of the additional dues, buy a reasonable amount of insurance. (This almost sounds like a presidential candidate running on a "Raise in Taxes Platform" :\*)

I have enjoyed being a member of the SJAA board and would appreciate your vote.

### Dean Linebarger

I work for the Santa County Executive Office as a Project Manager of the county wide Internet network. I am also Project Manager for various Client Server computer projects.

My interest is in observational astronomy, including, Houge Park, Fremont Peak, and School Star Parties. I own Three telescopes from 5-inches to 20-inches. My goal is to serve the SJAA and develop access to the Internet for members through a World Wide Web (WWW) server.

### Ed Erbeck

[Editors Note: There it is folks. Be sure to come and cast your vote at his months meeting. There are several new faces running for the Board and I am sure they will bring new direction to the Association if elected. If you do attend this months meeting and plan to vote, please be sure your membership is active. Voting will be the first item on the meeting's agenda.]

### News and Views

(continued from page 5)

The fork arms supporting the scope are equatorially mounted on an even more massive concrete and steel base.

Additional scopes are available for the observatory staff to use, including a large number of modern Zeiss refractors and cassegrain reflectors. But these range from 5 to 15 inches in diameter, the Treptower refractor is clearly the centerpiece of the Observatory.

Now that I'm back in the States, I want to wish everyone a Happy New Year, and for the SJAA that means elections. If you want to help with the elections, or you just want to express your opinions: call me at the number listed in the newsletter, or send e-mail to "Robert\_N\_Brauer@cup.portal.com". Until next time, Bob Brauer

## New Telescope Donated by Paul Barton

On 7 January 1995, Ken Miura stopped in and brought a beautiful 60 mm Bushnell refractor for the SJAA Telescope loan Program. This unit is new and in first class condition with carrying cases, extra oculars, the works, even a lense brush and map lamp. The initial cost was about \$450.00.

This will be a fun little scope, on an equatorial mount, very portable and in knowledgablands can yield a lot of fun.

We want to take this opportunity to thank Ken for his generous donation.

News and Views  
by SJAA President Bob Brauer

For this month's article, I want to share a special adventure that I recently had. I have been lucky enough to get a trip to Berlin out of my employer and my head is still spinning. The highlight of my trip was the astronomical treasures that I found in the former East Berlin.

Since this was a true business trip, I only had Sunday to go exploring. The sense of adventure was heightened by the fact that I don't speak German. This is not a problem in this era of CNN and MTV - I found that everyone was able to help me with a little English.

Armed with a pamphlet from my hotel lobby, I set out in search of the Zeiss Grossplanetarium. The excellent urban rail system of Berlin dropped me off in the north-east part of the city on Prenzlauer Allee right across the street from an enormous metallic dome. A sense of real amazement overtook me as I strolled past a display of space rockets and entered the lobby of the planetarium.

As it turned out, I had just arrived 15 minutes before a children's program was due to begin and I managed to get a quick walkthrough of the theater. Several hundred seats circled the massive Zeiss projector. The dome seemed to be at least a hundred feet across and the projector was about 12 feet tall. Admittedly, I have not been in many planetariums but this was easily the largest one I have ever seen.

In friendly, broken english, the planetarium operator suggested that I would be happier if I waited for the adult program at 5pm. This entailed a 3 hour wait, but the enticing array of desserts at the lobby cafe made me think that this wait could be quite enjoyable. As I sat down to sip a fresh cup of

December 21, 1994

Dear Editor:

I saw the item in the December *Ephemeris* about how the Society got started through my column in the San Jose News. It was my recollection that it was a man named Jack Chamberlain who approached me on the subject, but since the column you quote said it was William Weller, I will have to go with that. But it leaves me wondering what Jack Chamberlain wanted.

I am writing a memoir and have a segment relating to covering the Lick Observatory for the paper and dealing with a bunch of great men there, Robert G. Aitken, William H. Wright, Joe Moore, Gerald Kron, Hamilton Jeffers, Nick Mayall, Fritz Neibauer, Fred Chappell, Bill Baustian, C.D. Shane, C.A. Wirtanen, Arthur Wyse and others. I think it makes for some interesting reading -- including how astronomy figured in the famous Mooney case during the first third of the century.

I never get to a meeting anymore, but I keep up my dues and enjoy reading the bulletin and have been to some star parties, particularly during the Halley's comet visit. I was born at the time Halley was making its previous visit, and the fact that I was too young to appreciate its spectacular appearance has been one of my pet peeves. I guess though, if it were otherwise I would not be here to write this.

At one of the star parties I met Don Macholz, and think he is another great one.

I am not sure there is anyone left in the club who will remember me except Paul Barton. Walter Krumm was a good friend and helped me build a six-inch telescope. He went to Oregon and died there, but Mrs. Krumm returned to San Jose.

All good wishes to the members of the organization, many of whom seem quite sophisticated in astronomy and telescopes. May your skies be clear in '95!

Sincerely,

*Dick Barrett*  
*Are there any "charter" members?*

coffee, my gaze took in the small collection of books at the lobby bookshop. Several posters on the walls showed a tube which looked like a telescope, except that it was longer than any telescope I'd ever seen. The cafe operator was quite comfortable with english and he helped to translate the posters. They displayed the chief attraction of the Archenhold Observatory, the Treptower Refractor.

A quick check of the bookshop turned up a pamphlet for the Observatory. A tour and program was scheduled for that day at 3pm, 45 minutes away. I have always found observatories more intriguing than planetariums, so I decided to "go for it". The old city of Treptow is part of the eastern districts of Berlin and a rail station is about a kilometer from the observatory. I arrived at about 3:05 but I still slipped into the tour group as they started out. While the actual program was too fast for my rudimentary german skills, the slide show and tour were still fascinating. I take it that the "claim to fame" of the observatory's founder, Freidrich Simon Archenhold, was that he made the initial discovery of a nebula in Perseus. Unfortunately, an observation by the Lick observatory got published first, and we know that

nebula as the California nebula to this day.

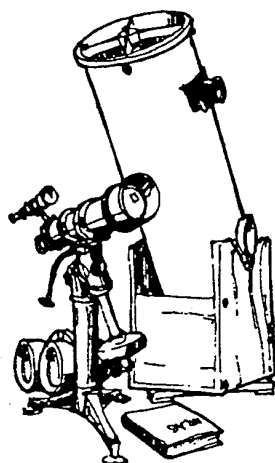
The Treptower refractor is truly amazing. Shaped like a cannon, the observer stands between two small fork arms with two huge counterweights extending back to balance the long tube. The instrument is so large that they don't even try to enclose it. It rests along the roof of the observatory's main building when it is "parked". It has spent the last 98 years exposed to the Berlin weather. Of course, a large object that is shaped like a cannon in Berlin has had to be rebuilt a few times, for obvious reasons. The objective is a crown-flint achromat, about 31 inches in diameter I think. The focal length, about 21 meters, is used to justify the claim that this is the "largest telescope in the world". It might have been more correct to call it the world's longest telescope but I'm pretty sure that some solar telescopes are much longer. Perhaps most amazing is that this telescope is still in use. It was used to show the citizens of Berlin the comet SL9 impacts on Jupiter this summer. Unfortunately, the day of my visit was dampened by rain showers, so we had to be satisfied with swinging the 170 ton scope around in RA and Dec. That's right, I said RA and Dec.

Continued on page 4

### 1994 SJAA Calendar

General Meeting		Houge Park Star Party	Observational Astronomy Class
Feb	11	3	18
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

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	2/3/95
3	4" Quantum	Jim Hodgers	3/8/95
6	C-8 Celestron	Lee Courtney	3/16/94
7	12-1/2" Dobson	Tom Rice	Indefinite
8	14" Dobson	Ken St George	2/1/95
14	6" Newt/P mount	----->	available
15	8" Dobson	Bob Elsberry	2/2/95
18	8" Newt/P Mount	Jerry Lovelace	3/10/95
19(B)	6" Newt/P mount	----->	available
20	4-1/4" Dobson	----->	available
21	10" Dobson	Steve Wincor	3/11/95
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 did a much needed welding job on #18 has been 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.

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### Long-time SJAA member

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 - FEB. 1995**

by Richard Stanton

Lunar Phases: Date Rise Trans Set  
 FQ 04:54 07 11:19 18:29 00:48  
 FM 04:17 15 18:24 00:07 06:45  
 LQ 05:04 22 00:58 06:10 11:20  
 NM We don't have one this month.

**NEARER PLANETS:**

Mercury 07 06:27 11:44 17:01  
 0.76 A.U. 17 05:40 10:49 15:58  
 Mag. -1.7 27 05:28 10:36 15:44

Venus 07 04:17 09:12 14:07  
 0.93 A.U. 17 04:26 09:22 14:17  
 Mag. -4.7 27 04:32 09:32 14:31

Mars 07 17:49 00:54 07:54  
 0.67 A.U. 17 16:49 23:54 07:04  
 Mag. -1.2 27 15:52 23:00 06:14

Jupiter 07 02:45 07:38 12:31  
 5.52 A.U. 17 02:12 07:04 11:56  
 Mag. -2.1 27 01:38 06:30 11:21

Saturn 07 08:18 13:53 19:29  
 10.6 A.U. 17 07:41 13:18 18:56  
 Mag. +1.2 27 07:05 12:44 18:22

SOL Star Type G2 VMag -26.72

RA Dec

21:22 -15:24 07 07:06 12:22 17:39  
 22:01 -12:05 17 06:54 12:22 17:50  
 22:39 -08:27 27 06:41 12:20 18:00

**ASTRONOMICAL TWILIGHT:**

	Begin	End
JD 2,449,755 07	05:38	19:07
765 17	05:28	19:17
775 27	05:15	19:26

**SIDEREAL TIME:**

Transit Right 07 00:00 = 09:00  
 Ascension at 17 00:00 = 09:39  
 Local Midnite 27 00:00 = 10:19

Darkest Saturday Night: 25-FEB-1995

Sunset 17:58

Twilight End 19:24

Moon Rise 03:50

Moon Set 14:21

Astrophoto Hours 08:25

**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

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**Rich Stanton -****Editor****Bob Madden - 408-264-4488****Distribution****Bob Madden and Paul Barton****COMET COMMENTS**

by Don Machholz

One new faint comet has been discovered recently, while two returning comets have been recovered. Meanwhile, Periodic Comet Borrelly is slowly fading in our evening northern sky.

Beginning this month, the Smithsonian Astrophysical Observatory's Central Bureau for Astronomical Telegrams will be making some changes in the way that comets are named. The preliminary designation will consist of the year of discovery followed by an uppercase letter for the half-month of the year, and a numeral for the order of discovery in that half-month. All this is preceded by a "C" for a non-periodic comet and a "P" for periodic comet (one that orbits the sun in under 200 years). For example, if the first comet of 1995 is found on Jan. 10, and it is non-periodic, it is known as C/1995 A1. If one is found Feb. 10, it is C/1995 C1. If the next comet, a new periodic one, is found the next day, it is known as P/1995 C2.

Older and established periodic comets will be preceded by a number, the first being "IP/1682 Q1 = Halley". Recoveries of returning comets will not receive further designations.

As for the "proper" name of comets, there will be a few minor changes. Comet Smith will still be Comet Smith. However, observatory teams are asked to limit the number of names on a new comet to one. In the past such a comet could contain the names of 1) the person who finds it on the plate, 2) the person who exposed the plate, and 3) the person guiding or operating the telescope during the exposure. Secondly, attempts will be made to limit the number of names on any comet to two. Finally, it may take several days before any such naming becomes official.

Periodic Comet McNaught-Russell (1994u): Robert McNaught of Siding Spring, Australia found this image on plates exposed by Kenneth Russell. It was magnitude 17 when found on Dec. 12. We now know that it orbits the sun every 15.3 years, it was last closest to the sun on Sept. 6 at 1.28 AU.

Periodic Comet Wild 4 (1994v): Jim Scotti recovered this comet from Kitt Peak on Nov. 9, with followup confirmation a month later. At that time the comet appeared stellar and at magnitude 21; it was over 4.0 AU from the earth. When it reaches perihelion in nineteen months it will be 2.0 AU from the sun and visible in moderate-sized telescopes. It orbits the sun in 6.2 years.

Periodic Comet Schwassmann-Wachmann 3 (1994w): Recovered on Dec. 28, this comet has a rather short orbital period of 5.34 years. It will be closest to the sun on Sept. 22, 1995, but at the far side of the sun and difficult to observe.

**EPHEMERIDES****19P/BORRELLY**

DATE (0000)	R.A. (2000)	DEC	EL	SKY	MAG
01-23	09h45.1m	+67d38	130d	E	9.6
01-28	09h39.1m	+68d28	129d	E	9.9
02-02	09h32.3m	+68d56	128d	E	10.2
02-07	09h25.5m	+69d03	126d	E	10.5
02-12	09h19.3m	+68d52	125d	E	10.7
02-17	09h14.1m	+68d25	123d	E	10.9
02-22	09h10.4m	+67d44	122d	E	11.1
02-27	09h08.1m	+66d52	120d	E	11.3
03-04	09h07.3m	+65d51	118d	E	11.5
03-09	09h07.8m	+64d42	116d	E	11.7

**ELEMENTS**

**PERIODIC COMET BORRELLY (19941)**  
 Perihelion date: Nov. 01.492, 1994  
 Perihelion Dist: 1.3651 AU  
 Arg. of Peri: 353.359 deg. (2000)  
 Ascending Node: 075.424 deg. (2000)  
 Inclination: 030.271 deg. (2000)  
 Eccentricity: 0.6228036  
 Orbital Per: 6.88 yrs.  
 Source: MPC 18259

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