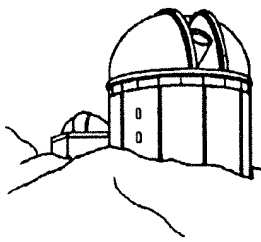

SJAA EPHEMERIS

Confessions Of A Messier Marathoner

Akkana Peck

A Messier Marathon? What a silly idea! Isn't that some kind of competitive thing where you have to knock yourself out in a whirlwind tour ("If this is 11:20, this must be M97") where you don't get time to enjoy looking at any object before rushing on to the next? And how'd I let myself get talked into trying it?

The March 8 Messier Marathoners arrived at Henry Coe park in rare clear weather, which turned cloudy and windy as sunset approached. Spirits remained high, though, among the 25-plus marathoners as we searched the northwestern horizon for the first sign of Comet Hale-Bopp, a welcome beginning and ending to this year's Marathon.

Eventually an LX200 owner took pity on all the poor binocular users and located the comet the high-tech way. The evening Hale-Bopp is still unimpressive compared to its morning appearance, but its sight was welcomed by a horde of astronomers eager to stop getting up at 5am to follow Hale-Bopp's development.

Soon the sky darkened, the clouds and wind vanished, and the Marathon began. I was using my 6" f/8 Cave reflector on a homebuilt Dobsonian mount, set up next to a friend using a 14" Dobsonian.

We had spent the previous few weeks heatedly debating the impact of aperture when performing a Messier marathon; based on the results, I think the conclusion is that it doesn't make much difference.

continued on page 5, see **Confessions**

Activities Calendar

April

5 Star parties at Henry Coe and Fremont Peak. HVAG at Grant Ranch. Sunset 6:33 pm, no Moon.

6 Begin Darkness Squandering Time: at 1 am move clock to 2 am.

11 Houge park star party. Sun set 7:40 pm, 26% Moon sets 0:21 am. TAC star party at Fisher Middle School in Los Gatos

12 AANC Astronomy Day. SJAA event is last night's Houge star party.

19 Bay-Area Swap Meet and Auction, Houge Park, Noon; auction starts 4 pm.

26 Astronomy class at Houge Park, 8 pm.29th.

May

2 Houge park star party. Sunset 7:58 pm, 18% moon rise 4:17 am. Texas Star Party May 2 thru10, new site, new moon 6th.

3 Star Parties at Fremont Peak and Coe; HVAG at Grant Ranch. Sunset 7:57 pm, 10% moon rises 4:54 am.

10 Star party at Fremont Peak. Sunset 3:03 pm, 20% moon sets 11:48 pm.

16 Houge park star party. Sunset 8:11 pm, 75% moon sets 3:25 am

23 Riverside Telescope Makers Conference thru 26th, full moon on Friday.

~~**24**~~ **17** General meeting 8pm, Paul Mortfield on astrophotography. Open board meeting 6:30 pm.

31 Star party, and Beginning Astronomy Class, both at Fremont Peak. Sunset 8:19 pm, 20% moon rises 3:32 am.

24 hour News and Information:
SJAA Hotline: **408-559-1221**

Small Aperture Messier Hunting

Jay Freeman

Friday and Saturday, March 7 and 8, was Messier marathon weekend for a lot of us. I have never done a Messier marathon -- and am not one to break tradition -- but I do undertake a Messier survey with each telescope or binocular I use, and this weekend I did a fair amount of observing with the three for which surveys are now in progress.

Friday night saw Fremont Peak with clear sky, no fog below, and seeing that ranged from good to ratty. Conditions were similar at Henry Coe State Park on Saturday. I brought my "survey" instruments to each site: a 10x50 Orion UltraView binocular, a 50 mm f/12 Meade model 165 refractor, and a Brandon 98 mm f/6.7 refractor.

The Brandon 98 has an unusual past: It might better be described as a Brandon 94 mm f/7 that has been hot-rodded, starting with boring out the cylinder. The retaining ring at the front of the lens cell reads "92 mm" -- a well-known early-production typo. Some prior owner unscrewed the ring and enlarged the aperture by 4 mm, thus producing a 98 mm refractor. Now, I would have been reluctant to mess with the craftsmanship of Vernonscope and of Roland Christian, yet as an occasional advocate of improving telescopes by hacksaw, I cannot but admire the spirit of the act, and the optical quality seems uncompromised -- those extra two mm of radius did not include a bad turned edge, for example.

continued on page 3, see **Messier**

Volume 8 Number 4 Official Publication of the San Jose Astronomical Association, April 1997

SJAA Bay Area Swap Meet And Auction This Month!

The San Jose Astronomical Association's periodic Swap Meet and Auction is making another pass this month, Saturday April 19, at noon in the spacious Houge Park convention center. The auction follows at 4pm.

A vast assortment of telescopes, ATM parts, and even garage stuffers will be available at bargain prices. Anything relevant to amateur astronomy and telescope-making is welcome: telescopes, components, accessories, eyepieces, books, charts; photo equipment, computers and software.

Sellers pay a 10% commission to SJAA, with a cap of $50 for any one item. Sellers set minimum prices and terms for both the swap meet and auction. There are no admission or table charges for the Swap Meet.

Auctioned items must be registered during the swap meet, prior to 3:45 pm. Participants (both sellers and buyers) must have a bidder number, for which a $1 donation is requested.

Payments for auction purchases are accepted only after the close of the auction. A single payment made to/by SJAA will cover net of purchases and sales. We regret that credit cards are not accepted.

The commissions are tax-deductible, as SJAA is a tax-exempt 501(c)(3) organization. Outright donations are gratefully accepted!

Directions: Houge Park is in San Jose, near Campbell and Los Gatos.

From Hwy.17, take the Camden Avenue exit. Go east 0.4 miles, and turn right at the light, onto Bascom Avenue. At the next light, turn left onto Woodard Road. At the first stop sign, turn right onto Twilight Drive. Go three blocks, cross Sunrise Drive, then turn left into the park.

From Hwy.85, take the Bascom Avenue exit. Go north, and turn right at the first traffic light, onto White Oaks Road. At the first stop sign, turn left onto Twilight Drive. You will now be passing the park. Turn right at the first driveway, into the parking lot.

School star parties

Jim Van Nuland

The school star party program is probably the most important of SJAA'sactivities. April events suffer from the onset of Darkness Squandering Time, forcing a later start time. Comet Hale-Bopp will be prominently featured at April events!

March saw SJAA at six schools, only one was impacted by weather, and we showed Mars and the Moon to a large crowd. Thanks to all who supported these events.

Apr.3 -- Sartorette Elementary, Almaden area. GATE kids, grades 3, 4, 5.
Apr.10 -- Independence High theatre. Follows talk by David Morrison, NASA.
Apr.11 -- Bernal Middle, SE San Jose. Always a good crowd.
Apr.14 -- Ocala Middle, East San Jose. Intended for 7th graders.
May 15 -- Pending.

School events typically run from 7 to 9 or 9:30 pm. If you can help, contact Jim Van Nuland by e-mail at jim.van.nuland@sjpc.org (best), or phone 408.371.1307 11 am to 10 pm. He'll supply details of the activity and driving directions. If you find that you can come, but have not contacted Jim, phone him first, as there can be cancellations!

Be A Visiting Astronomer

New NSF/NASA Program for 1997-98

The Astronomical Society of the Pacific is seeking amateur and pro fessional astronomers and advanced astronomy students to participate in Project ASTRO, an innovative program that matches astronomers with 4th-9th grade teachers in Bay Area schools and community centers.

Project ASTRO helps astronomers form a partnership with a teacher.

Astronomers with experience working with children or teens, or presenting astronomy to the public are encouraged to apply. Astronomers must attend a summer training workshop with their partner teacher, and make at least four daytime visits during the school year.

Astronomers also should have time to plan with their teacher between visits. (The ASP can provide a letter for astronomers' employers if needed.)

Project ASTRO provides training in how to be an effective resource for teachers and how to do hands-on activities that make astronomy interesting and fun for kids. Astronomers and teachers together attend a two-day training workshop, receive a wide variety of activities and resource materials, and work together to plan school year activities and programs.

During the school year visiting astronomers (depending on their interests) can help to lead hands-on activities, serve as a resource for teachers, organize evening observing sessions, create a school astronomy club, present auditorium programs, arrange field trips, or assist with science fair projects. The project's emphasis is on a hands-on, inquiry-based approach that research has shown is most effective to help students learn the process of science.

The 1997-98 training workshop is scheduled for Friday, August 8 through Saturday, August 9, 1997 at the Lawrence Hall of Science in Berkeley. Participating astronomers are required to attend all or most of the workshop. Visits will begin in fall 1997.

The first application deadline (for preferred placement) is April 11, although applications will be accepted after this date. To request an application call (415)337-9210 or e-mail astro@aspsky.org. For more information contact Nicole Taddune, Bay Area Coordinator, at the Astronomical Society of the Pacific: (415) 337-1100.

Project ASTRO is funded by the National Science Foundation and NASA.

Leaky Lick Lid

Bill Arnett

The San Jose Mercury News recently ran a sad story about Lick Observatory, homeof the 36" Clarke refractor. It was once the largest telescope ever built, and after more than 100 years is still the second largest refractor inthe world.

But it seems that the great state of California via its premier institution of higer learning and research, the University of California, cannot come up with the money to fix the roof! The newpaper article is accompanied by a picture of the beautiful wooden observing floor strewn with plastic buckets to catch the drips. So far the telescope itself has not been damaged but obviously fears are mounting.

A fund has been established to fix the roof; the estimate is $18000. If you would like to contribute please send your (tax deductible) donation to

Lick Observatory
PO Box 85
Mount Hamilto CA 95140 USA

The check should be made out to "UC Regents" and designated for the dome-painting fund.

Membership List Publication

David North

In the past SJAA distributed to its members a **membership list** with names, addresses and phone numbers. The board would like to do this again. If you do not want your name included in this list, please kindly tell a board member. Alternately, you may wish to have your name appear, but not your phone number, address or email address, or any combination.

Board member contact information is available on page 7.

This list will only go to other SJAA members, and no one else. We encourage your participation, as it's a good way to make friends, find observing partners, or trade notes on projects or interests.

Fremont Peak Photo Needed

Robert Hoyle

Ranger Rick Morales at Fremont Peak is requesting that if anyone has a fairly recent photo (print or slide -- maybe even CCD) taken at Fremont Peak (preferably, from the area around the 30" telescope) of the southern horizon toward the Soledad prison, before the new lights came on line (about last April 1996).

Rick's supervisor wants to talk to the prisons -- on a State Department of Parks, to State Department of Corrections basis -- about the effect of their light pollution on the Peak, and she thinks a "Before" photo would be persuasive in this effort.

What would be best is a "wide angle" shot showing the relative lack of skyglow in that region before the new prison was built. Surely someone has taken such a "piggyback" photo of, say, the lower Scorpio region that would cover this prison area. If we can get a good "before" shot, we can then duplicate its exposure time, etc to do an "after" shot -- and then use these to show the prison officials what an effect their lights have had on the night sky at the Peak.

Send photos to:

Rick Morales
Fremont Peak Observatory Assn
P.O.Box 787
San Juan Bautista, Ca. 95045.
(408) 623-4255.

Promoting Darkness

Lew Kurtz

The board approved SJAA joining the International Dark Sky Association (**IDA**). If you would like to know more about the IDA , check out their web site (www.darksky.org). If you are interested in dealing with light pollution issues, let a board member know, and they will put you in contact with other SJAA members so you can effectively organize your efforts and take advantage of the club's IDA membership. If you want to see some pictures showing the light pollution from Soledad prison, go to url: http://www.rahul.net/resource/fpoa/soledad/

Messier, continued from page 1

I have been doing a Messier survey with the Brandon, which is no big deal -- 98 mm is more than enough for any Messier object -- so I will spare you the details. Perhaps of more interest are the surveys I am undertaking with the two 50 mm instruments, the 10x50 UltraView binocular and the little Meade beginner refractor.

I am almost done with the 10x50. I have only three objects to go, all relatively easy spring-sky stuff that should be readily visible.

The Meade 50 mm survey is not so far along -- only 66 objects to date -- but I have gotten all the tough ones, so there is little doubt that the Meade can do it. On the 7th and 8th of March, I worked my way through the Virgo and Coma Berenices galaxies with the Meade, at 33x and 24x. Several were difficult, but all were solid detections. The most difficult object with both 50 mm instruments was M76, on grounds of just plain faint.

The main trouble with the Virgo and Coma galaxies is not so much seeing things, as finding them -- this area of sky is star-poor, not only to the naked eye but also to the limiting magnitude 8 or so of many popular charts. Uranometria goes deep enough to provide plenty of guide stars, as does the AAVSO atlas. I had the Meade and the Brandon set up simultaneously, and would alternate between the two; the galaxies were all obvious in the larger aperture, so it was a most useful "observing aid" for the Meade 50 mm.

Web Page Maintenance

Bill Arnett has requisted help maintaining his excellent SJAA web page. Anyone wishing to contribute to this effort can contact him via email at billa@znet.com for further information.

Observational Astronomy Class To Focus On Moon And Mars

David North

The **Observational Astronomy Class**'s March presentation on basic astrophotography on by John Gleason was very well attended and extremely well done and informative. He thoroughly discussed simple tripod photography, (or even just plunking a camera down on a rock) through tracking platforms, with a generous dose of exposure times, shutter technique, and film critiques thrown in.

John also showed a number of examples of the results that can be obtained with clever composition, ranging from "outstanding" to "breath-taking." He also showed some of his more recent work,which must be seen to be believed. Reception to the talk was so strong he has volunteered to return later in the year and explain more advanced techniques.

Jack Zeiders will be "reclaiming" the class on April 26 at 8pm to explain (and exhibit) the art of planetary observation. As Mars should be well presented at classtime, telescopes will be available to show how the views look through various types of scopes, filters, and aperture styles (skies permitting).

"Planet busting" is one of the most demanding astronomical pursuits, and it's expected that observers of all levels of acuity will be able to pick up at least a pointer or two. Moonrise will be late (nearly midnight), and probably not a factor.

The class has been remarkably successful this year, and everyone is encouraged to attend these top notch instructional meetings (which are open to anyone, require no enrollment, and like most SJAA events are free even to nonmembers).

Anyone wishing to bring along a scope for presentation/evaluation is encouraged to do so; several are already committed, but it's impossible to have too many.

Mars, Moon, Double Stars And Bright Skies

Jay Freeman

On March 18, I set up my Intes MK67 6-inch f/10 Maksutov in the driveway of my home in Palo Alto. My main goals for the evening were the Moon and Mars. I look at the Moon fairly often, but mostly with smaller telescopes. Seeing was acceptable but not perfect -- the Airy discs and at least the first diffraction rings of bright stars were always visible, though generally in motion.

I can get lost in my imagination looking at the Moon. I have been a lightplane pilot, and one of my reactions to looking at terrain, or images of terrain, from above, is to think what it would be like flying down in it. How would I navigate? What would be good landmarks and reference features for pilotage? What would I use for air? (Well, never mind...) Some of the maps for flying have a resolution of a kilometer or two, just about the linear resolution of a good six-inch looking at Luna, which encourages the feeling of similarity, which is a very odd sensation.

At 300x, the view of the Moon was very rewarding. The terminator ran roughly down 30 degrees west Selenographic longitude. The Riphaeus Mountains were strongly highlit, though further to the (Selenographic) east, Fra Mauro had just about faded into obscurity against the flatlands of Mare Cognitum. It was fun to look at the terracing and slumping in the great crater Copernicus -- there are slumped landforms in the coastal hills near San Francisco, on a scale that is somewhat smaller. Thus the physical geography looks very familiar, which is very strange when looking at another world.

On the terminator south of the Riphaeus Mountains, I spotted a north-south system of rilles that I was not familiar with. A glance at Rukl's Moon atlas showed that I was looking at the old crater Hippalus, just on the terminator. The Intes showed nearly all the detail that Rukl did. Under the grazing illumination, Hippalus seemed to have a very irregular floor.

I looked at Pitatus and Hesiodus -- I had watched the Hesiodus sunrise ray the previous day. Though this area was by now well illuminated, shadows still persisted near the gap in the common wall through which the ray emerges.

Further north, the sunrise line crossed Sinus Iridium. Laplace Promentory was prominent, as were some of the wrinkle ridges crossing Mare Imbrium to the south.

The Straight Range, Teneriffe Mountains, and Pico were all well-illuminated and full of detail.

Mars was rather disappointing. The Intes showed a fair amount of shadowy detail, but on the whole the disc of the planet was washed out and appeared rather obscured, and the planet's color was much yellower than I am used to. Does anyone else think there is obscuration at present in the Martian atmosphere itself?

[Ed. nøte: Mars has been improving as more obvious features turn into view , but some clouding seems to be evident at times.]

I finished off the evening by looking at a couple of moderately demanding double stars. Otto Struve 256 was an easy split, but the much similar Burnham 929 merely appeared elongated -- perhaps it has closed since the most recent measurement. All three components of 35 Coma Bernices were no trouble -- the wide pair is very easy, the narrower one similar to 78 Ursae Majoris, which I also split.

It's nice to be able to do some interesting astronomy under light-polluted suburban sky. I enjoy chasing down faint fuzzies, but the popularity of that side of our hobby should not deter anyone from seeking out things that are easily detected in brighter conditions.

Confessions, continued from page 1

Nearly any instrument is suitable for viewing Messier objects. (I suppose we all knew that anyway.)

Equipment used ranged from handheld binoculars to a one-day-old 18" Obsession seeing first light.

The one object for which aperture might have helped was M74, which I was unable to find in the evening twilight with the 6". Once the sky darkened, the rest of the early Messier objects were easy, and we had plenty of time to talk, share views of the same object through different instruments, and compare notes on finding objects.

I had recently added a Daisy unit-powered sight to my six incher's usual 6x30 finder, and I wa struck by the way some objects were much easier to locate with the reflex sight, while some were much easier using a magnifying finder.

It's definitely worthwhile to have both options available.

Coe isn't a particularly dark site, with the lights of San Jose in direct view to the northwest and to the southwest, but this was a good night, with the zodiacal light visible and excellent transparency, and even in the 6", the Messier galaxies in Leo and Virgo were accompanied by a host of fainter NGC neighbors.

At one point, I counted seven galaxies visible in one roughly 1-degree field in the 6".

Identifying the galaxies, of course, is the trick, and several hours were spent galaxy-hopping through Virgo and Coma Berenices. Teamwork proved helpful at this point; I became stuck on M90, and some suggestions for different approaches, as well as some moral support, helped. (Taking a short break to eat something and go paw and drool on, I mean look through, the 18" Obsession helped as well.)

A Messier Marathon would be pretty grim as a solo endeavor, but it's fun as a team exercise. Galaxy hopping is interesting and fun, though sometimes frustrating.

It's especially frustrating when your flashlight batteries run out halfway through Virgo and you haven't had the foresight to bring spares. It doesn't help when, after a good samaritan offers you some double-A's, you somehow manage to break the flashlight bulb in the process of changing batteries.

Fortunately another good samaritan was more prepared than I, and loaned me his extra flashlight. I'll be better prepared with a spare next time.

Near the end of the Virgo ordeal, someone called out that he'd found Omega Centauri, and several of us trooped over to look.

I'd been looking forward to seeing NGC 5128 (Centaurus A, the elliptical galaxy with the odd dust lane and the strong radio emissions), which I'd seen as a teenager from the southern California desert, but not since. 5128 is farther north than Omega Cen, so I lugged my 'scope over to a spot with a clearer southern horizon (there are some definite advantages to small telescopes) and tried.

Finding it was easy; seeing detail in the 6" in an object so low on the horizon was not. Later, it was found in several larger 'scopes which showed more detail, and was dubbed the "Hamburger Galaxy".

Scorpius and then Sagittarius rose, to a chorus of coyotes singing to each other several ridges west of us. We wondered whether, like ourselves, they were waiting for Hale-Bopp, as we scanned the northeastern hillsides with binoculars in between checking off Messier globulars.

One binocular searcher finally called out that he thought he saw Hale-Bopp's tail rising. He was ridiculed by everyone else: obviously the bright light he saw was a headlight from a car headed down from some other part of the park, or even a searchlight.

We'd all seen Hale-Bopp from town, and knew that it couldn't possibly have a tail that looked like a searchlight beam. But the "searchlight beam" was indeed Hale-Bopp, and what a sight from dark skies!

The jet structure of the nucleus is clearly visible to the naked eye; the overall brightness exceeds Deneb's; I traced out over twenty degrees of tail with my 8x42 binoculars; and the helical structure was fabulous at high magnification (the best view I saw was in an 18" Dob).

I, like many other observers present, abandoned the Marathon at this point to concentrate on Hale-Bopp. Every instrument and every magnification gives a different and equally wonderful view of this comet, and I had photographs to take, as well.

By the time I was able to wrest my attention from the comet, twilight had begun -- and in less than ten minutes, the sky was so bright that no one save the DSC owners could find any remaining objects. (M30 was too low even for the DSC observers.)

Score: 102 Messier objects found, 8 objects missed (one in evening twilight, the rest in morning twilight); one hamburger galaxy; one world-class comet; lots of photographs (as yet unseen), one great night of observing and camaraderie, and no regrets about the objects missed in order to watch Hale-Bopp.

Directions to SJAA places

Henry Coe State Park is east of Morgan Hill. From Hwy.101, exit onto East Dunne Avenue. Continue for 12 miles, far past Andersen Reservoir, to the park, atop the ridge.

Fremont Peak State Park is south of the village of San Juan Bautista. From Hwy.101, about 11 miles south of Gilroy, take the eastbound Hwy.156 exit. Run for 3.0 miles, to a traffic light, and turn right onto county Hwy.G-1. Follow G-1 for 12 miles into the park. The park charges a $3 entrance fee.

Periodical Publication Statement

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

San Jose Astronomical Association
5380 Pebbletree Way
San Jose, CA 95111-1846

COMET COMMENTS

Don Machholz

Comet Hale-Bopp continues to put on a spectacular display. The inner coma shows fountains and hoods while both the gas and dust tails are prominent. By late March the comet is well-placed in the evening sky and no longer visible the morning sky. The evening viewing "season" for Comet Hale-Bopp begins with the partial lunar eclipse on March 23 (the moon will be in the evening sky before that date), and continues through the first week of May. Most comet watchers will have their last view of the comet as it slips southward in the western evening sky in early May.

Many astronomy clubs are taking the time to show the comet to the public. Astronomy Day (April 12) provides an opportunity to show the comet and the crescent moon in the west, and a bright planet Mars in the east.

A few more faint comets have been discovered recently. **Comet C/1996 R3** was found on plates taken last autumn, it will remain faint. **Comet C/1997 D1** (Mueller) was found by Jean Mueller as she worked on the Second Palomar Sky Survey. It will be closest to the sun late this year (at 2.24 AU) and may then be visible in amateurs' scopes.

Ephemerides – Epoch 2000, 0h UTC

C/1995 O1 (Hale-Bopp)

Date	R.A.	Dec	EL	Sky	Mag
00 UT	2000				
04-02	01h57.5m	+44°11'	42°	E	-1.1
04-07	02h38.9m	+41°43'	41°	E	-1.0
04-12	03h13.8m	+38°38'	39°	E	-0.8
04-17	03h42.9m	+35°16'	37°	E	-0.6
04-22	04h07.0m	+31°53'	35°	E	-0.3
04-27	04h27.2m	+28°34'	33°	E	-0.1
05-02	04h44.2m	+25°23'	31°	E	-0.4
05-07	04h59.2m	+22°25'	29°	E	-0.1
05-12	05h12.4m	+19°38'	28°	E	0.1

81P/Wild 2

Date	R.A.	Dec	EL	Sky	Mag
00 UT	2000				
04-02	03h41.9m	+22°16'	46°	E	10.5
04-07	04h04.5m	+24°10'	47°	E	10.6
04-12	04h27.6m	+25°50'	47°	E	10.8
04-17	04h51.1m	+27°16'	48°	E	10.9
04-22	05h14.8m	+28°25'	48°	E	11.1
04-27	05h38.6m	+29°17'	49°	E	11.3
05-02	06h02.5m	+29°54'	49°	E	11.5
05-07	06h25.7m	+30°14'	49°	E	11.7
05-12	06h48.4m	+30°18'	50°	E	12.0

The Spacewatch program on Kitt Peak picked up an object first believed to be an asteroid but now showing a coma. Comet C/1997 BA6 (Spacewatch) is presently 8.8 AU from the sun and won't reach perihelion (3.45 AU) until Dec. 1999-nearly three years away. The coma is showing a slight amount of activity, and it is possible that the comet will be visible in amateur instruments deep in the Southern Hemisphere in 1999.

46P/Wirtanen

Date	R.A.	Dec	EL	Sky	Mag
00 UT	2000				
04-02	03h41.9m	+22°16'	46°	E	10.5
04-07	04h04.5m	+24°10'	47°	E	10.6
04-12	04h27.6m	+25°50'	47°	E	10.8
04-17	04h51.1m	+27°16'	48°	E	10.9
04-22	05h14.8m	+28°25'	48°	E	11.1
04-27	05h38.6m	+29°17'	49°	E	11.3
05-02	06h02.5m	+29°54'	49°	E	11.5
05-07	06h25.7m	+30°14'	49°	E	11.7
05-12	06h48.4m	+30°18'	50°	E	12.0

Orbital Elements -- Epoch 2000.0

Object:	Hale-Bopp	P/Wirtanen	P/Wild 2
Peri. Date:	1997 04 01.135	1997 03 14.143	1997 05 06.62789
Peri. Dist (AU):	0.9141030 AU	1.0637469 AU	1.5826156 AU
Arg/Peri (2000):	130.59083°	356.34322°	041.77000°
Asc. Node (2000):	282.47069°	082.20387°	136.15458°
Incl (2000):	089.42936°	011.72255°	003.24276°
Eccen:	0.9950969	0.6567490	0.5402220
Orbital Period:	~4700 years	5.46 years	6.39 years
Reference:	MPC 28052	MPC 27080	MPC 28272
Epoch:	1997 03 13	1997 03 13	1997 04 22
Absol. Mag/"n":	-1.5/4.0	9.0/6.0	7.0/6.0

Celestial Calendar - Apr 1997

Richard Stanton

Lunar Phase	time (pdt)	date	rise	trans	set
NM	04:04	07	07:03	13:34	20:12
FQ	10:01	14	12:34	19:38	01:57
FM	13:36	22	19:56	00:47	06:31
LQ	19:37	29	01:31	06:52	12:17

Mercury	Dist: 0.64 AU				Mag: +2.6
date	rise	trans	set	RA	Dec
07	07:24	14:18	21:13	02:12.8	+16:19
17	06:48	13:47	20:46	02:24.4	+17:19
27	06:04	12:49	19:34	02:06.2	+13:32

Venus	Dist 1.72 AU				Mag -3.9
07	06:55	13:17	19:40	01:11.0	+06:15
17	06:44	13:23	20:04	01:57.3	+11:00
27	06:37	13:32	20:27	02:44.9	+15:19

Mars	Dist 0.73 AU				Mag -0;9
07	17:04	23:17	05:55	11:26.1	+06:56
17	16:14	22:40	05:10	11:18.0	+07:20
27	15:32	21:57	04:27	11:14.7	+07:12

Jupiter	Dist: 5.36 AU				Mag: -2.3
07	04:09	09:19	14:30	21:15.1	-16:30
17	03:34	08:46	13:58	21:21.4	-16:03
27	02:59	08:12	13:25	21:26.8	-15:39

Saturn	Dist: 10.4 AU				Mag: +1.1
07	06:39	12:49	18:58	00:44.7	+02:25
17	06:01	12:13	18:26	00:49.3	+02:54
27	05:25	11:38	17:52	00:53.7	+03:21

SOL Star Type G2V Intelligent Life in System ?

07	06:45	13:10	19:36	01:04.7	+06:53
17	06:28	13:07	19:47	01:41.5	+10:32
27	06:15	13:05	19:56	02:19.0	+13:53

Astronomical Twilight		Begin	End
JD 2,450, 545	07	05:12	21:08
555	17	04:55	21:20
565	27	04:39	21:33

Sidreal Time		
Transit Right	07	00:00 = 11:54
Ascension at	17	00:00 = 12:34
Local Midnit	27	00:00 = 13:13

Darkest Saturday Night:	05-Apr
Sunset	18:36
Twilight End	20:12
Moon Set	06:24
Dawn Begin	06:07

Astro Ads

Brand new **Celestron C90** spotting scope model 81011 with special coating, 45 degree erect image diagonal, 25mm sma wide angle lens, and a celestron hard case $250.
Loran 408-733-1110

Celestron Firstscope 60 EQ: "like-new" condition (less than 3 months old). Recently bought a larger scope. 60 mm equatorial refractor. Includes 20 mm, 12.5 mm, and 2X .96" Barlow lens. Asking $90.
Mike (w)408-256-0881

Astro Ads are free to all noncommercial advertisers selling astronomically related products or services. Please send your ad directly to the Editor, (via e-mail to northsjsu@aol.com or a letter to 549 Arleta Ave, San Jose, CA 95128). Ads will run for one month and be automatically deleted unless you request an extension (hasn't sold yet) by the 10th of the previous month.

Members are encouraged to submit articles for publication in the SJAA Ephemeris. Send articles to Dave North (via e-mail to North SJSU@aol.com. Articles received by the 10th will be put in the following month's newsletter. Please include your name and phone number.

Telescope Loaner Program Status

Mike Koop

No.	Scope Description	Borrower	Due Date
1	4.5" Newt/P Mount	Bob Bootz	4/11/97
2	6" f9 Dob	John Paul De Silva	never returned
3	4" Quantum S/C	Mike Koop	4/11/97
4	60mm refractor	Del Johnson	indefinite
5	60mm refractor	**available**	
6	8" Celestron S/C	Rudy Norvelle	5/11/97
7	12.5" Dobson	Tim Sanstrom	4/9/97
8	14" Dobson	**available**	note 1
9	C-11 Compustar	Paul Barton	Indefinite
15	8" Dobson	**available**	
16	Solar Scope	Jack Peterson	indefinite note 2
18	8" Newt/P mount	Ram Saxena	4/12/97
19	6" Newt/Polar mount	Gary Flint	4/19/97
21	10" Dobson	To be returned	3/16-Availible
23	6" Newt/P mount	Mike Bennett	4/6/97
24	60mm refractor	Reserved for Ravi Tembhekar	
26	11" Dobson	Alex Crichton	5/1/97
27	13" Dobson	Bob Bart	3/26/97
28	13" Dobson	Doug Snyder	4/9/97
29	C8 Super Polaris	Robert Dannels	02/09/97 note 4
30	7" f/9 Newt/pipe mount	Brian Ambrose	5/1/97

Notes:
1. Upgraded, easier to assemble
2. Available for special occasions, call.
3. Does anyone know the whereabouts of John Paul De Silva? We have lost contact with him and he has moved. Hope he is enjoying the loaner telescope.

All scopes are available to any SJAA member. To reserve a scope, please contact Mike Koop at (408) 473-6315 or via email at koopm@best.com.

Recent Board Actions

The Board of Directors is engaged in efforts to enroll the SJAA into the International Dark Sky Association as soon as the technicalities can be carried out. This is expected to cost the club $100, and seems like a worthy cause to support.

Anyone interested in pursuing this matter is very much encouraged to contact any board member.

The annual election of officers was held at the March 22 meeting, with no changes save for the new Ephemeris editor and the addition of an activities committee. There are plans for an SJAA picnic at Fremont Peak.

Officers and Board of Directors

Pres Jack Zeiders	281-0220
VP Ed Erbeck	379-5413
Sec Jim Van Nuland	371-1307
Tres Bob Elsberry	281-3559
Dir Bob Brauer	292-7695
Dir Terry Kahl	629-0563
Dir Paul Mancuso	946-0738
Dir David North	297-5257
Dir Bill O'Shaughnessy	984-3985

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Printing Lew Kurtz	739-7106
Mailing Bob Brauer	292-7695

Mentoring Program Chairman

Ed Erbeck 379-5413

Activities Committee

Bill O'Shaughnessy	984-3985
Dave Smith	978-5503

Observational Astronomy Teacher

Jack Zeiders 281-0220

Observatory Committee

Bob Brauer	292-7695
David North	297-5257

School Star Party Chairman

Jim Van Nuland 371-1307

Telescope Loaner Program

Mike Koop 446-0310

Web Page

Bill Arnett billa@znet.com

San Jose Astronomical Association Membership Form

New __ Renewal ___
Membership - $15 __
Junior (younger than 18 years old) - $6 __
Sky and Telescope - add $27 to membership
(Sky & Tel will not accept multiyear subscriptions)

Make checks payable to "SJAA"

Bring this form to any SJAA Meeting
or send (along with your check) to
Bob Elsberry, Treasurer
San Jose Astronomical Association,
5380 Pebbletree Way
San Jose, CA 95111-1846
Telephone: (408) 281-3559

Name: _____

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