SJAA EPHEMERIS

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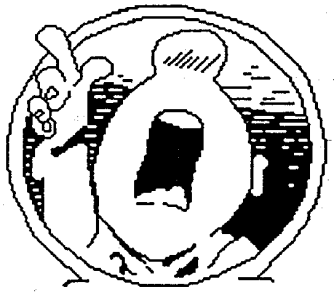

The Eyepiece
By Bob Madden

Another successful Swap and Auction has passed. This year had several nice eyepieces that changed hands and several small telescopes also. We hope both sellers and customers went away happy.

The weather turned clear enough for us to receive some reports from Fremont Peak. It looks to us that Mark Wagner is having fun reporting to us. I have also included an article by Jay R. Freeman about the Peak that is interesting. How many did - or start - a messier marathon? If you did, then send it in and we will report it.

Can someone author a regular Column titled, "My favorite Objects"? Targets to view for the published month. Oh, it might even be tied loosely to the Observational Astronomy Class. Perhaps more than one person will help. The idea I have is to write about objects that are currently in our sky. Who wants to try?

This column is short of space, so there is one final item. Mark Wagner has a short piece about the summer trip to Mount Lassen. Space for telescopes is closed up and he is about to commit to the Park on the number of camp sites required. Please read it if you are planning to attend.

May 5: Star Party, Houge Park, Sset 8:01 pm, 33% moon sets 0:55 am.
May 6: Astronomy Day. Above plus Solar scope at Milpitas Library.
May 13: General Meeting at Houge Park 8:00pm, preceeded by the Board meeting at 6:15. Dr. Ken Croswell of Berkeley, topic: the Milky Way. (He has lead article in April S&T)
May 20: Observational Astronomy Class, Houge Park, 8:00 pm Jack Petersen
May 27: Star parties, Fremont Peak and Coe Parks. Sset 8:17 pm, 1% moon rises 5:30 am. ALSO: Public star party at Grant Ranch County Park.
RTMC May 26,27,28,29 at Camp Oakes, Big Bear, Ca.
June 2: Star Party, Houge Park, Sset 8:23 pm, 20% moon down 11:32 pm.
June 3: No activity. Too much moon, sets at midnight.
June 10: General Meeting at Houge Park 8:00 pm preceeded by the Board meeting at 6:15. Speaker To Be Announced.
June 17: Observational Astronomy Class, Houge, Jack Petersen
June 24: Star party, Coe Park. Sset 8:30 pm, 7% moon up 4:11 am. ALSO: Public star party at Grant Ranch County Park.
July 1: Star party, Fremont Peak. Sset 8:29 pm, 16% moon sets 10:41 pm.
Yosemite Star Party: July 28 - 29
Lassen Star Party: Aug. 24 - 28

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Forty Years Ago this month
by Jim Van Nuland

Robert Cunningham, one of the 15 year old members, addressed the group on the subject of Objects for Amateur Observation. He covered the planets and their locations, and best times to observe. Then to double stars, nebulae both gaseous and planetary, and on to galactic clusters, open and globular. He gave the more easily observable examples of each, with their magnitudes and the magnifications necessary for best observing. His talk brought out the need for slides to illustrate each of the examples given, and for star charts to keep it all in place. Our universe is so full of such a number of things, that we need close definition and cataloging to keep from going astray.

John Delaney gave the Constellation of the Month: Bootes. Apart from Arcturus (4th most brilliant), the stars of Bootes are such that they are difficult to see with the naked eye in competition with the city lights.

Mr. Lindsay continued his dissertation on lenses, optical relationships in finders, along with the various eyepieces, construction, focal length and magnification, etc.

The last item of business was the most important.

From December 1954 until May 1955, the ongoing topic had been "shall we form an astronomy club?". Now the answer was: YES! The name San Jose Amateur Astronomers was chosen, a board of directors was elected, and drafts of the By-Laws and incorporation papers were approved. Preparation of final versions are undertaken by member attorney Harry Hill.

Blue Moon

by a group of internetters

Here is what started the conversation: A couple guys on the internet were posting and one asked, "Does anyone know what the term for the second full moon in a calender month?" "A 'blue moon', or is this a trick question ? ;-)", a second asked. The fourth said, "This is what people call a "blue moon". It happens rarely, hence the expression "once in a blue moon"." "On second thought, is the second *new* moon the blue one?", he asked. "Now wait a minute!", one said and continued, "It is the second full Moon in a calendar month."

"With respect to "A "blue moon", or is this a trick question ? ;-)", he said, "Pfah. That's the modern, weak, young Republican definition of "blue Moon": it's perfectly predictable, not very rare, and dull. A *real*, original, Democratic "blue Moon" is when the Moon actually looks blue, because of scattering by atmospheric particles from volcanic eruptions or forest fires, and is rare, unpredictable, and wonderful. "Oh geeseh, we're into politics!", another said under his breath.

Another long winded amateur astronomer sauntered up and quipped, "By coincidence, I have recently found myself on the receiving end of some tricky questions on this subject. To the point where I am asked, "When is the next blue moon?" - which is a logical question once we have already said what a 'blue moon' actually is."

"Given the definition here and in other posts, it seems at first to be a trivial task to just look for the next month which has two full moons. But while doing this, I realised that the definition does not specify how to handle time zones and different locations on the Earth."

"That is, to allocate a full moon to a month do I say it is the month in LOCAL TIME at the time of FULL MOON, or is it the month in some standard international time (eg. UT)."

"For example, here are the dates/time of three consecutive full moons in 1999, local Perth (WAST) time and UT :

WAST (UT+8hrs)		UT	
March 2	15:00	March 2	7:00
April 1	6:50	March 31	22:50
April 30	22:55	April 30	14:55

Looking at this the blue moon is 30 April in WAST, and in UT it is 31 March."

"Alternatively, we could just set UT as the standard and say the blue moon is 31 March for everyone regardless of location/time zone."

"I favour the former, since this representation is what appears on 'local' calendars, and so appears to most people to have integrity. They may not realise that people in U.K. already had their blue moon in March. If they did then I'm sure they'd accept the reason of different time zones."

"If you favour the latter, then you might have a tough time telling people that the 'blue moon' is 31 March, when quite clearly on the calendar the full moon really occurs on 1 April!"

"Other variants are also possible eg, the day of 'first moon rise after full moon' - this will also result in 'blue moons' being dependent on time zones, and will only serve to complicate things even more."

"I realise the term 'blue moon' doesn't really have any astronomical significance, and that the phrase has just been coined by someone, without any thought of specific definition (to my knowledge that is)."

"In fact, Patrick Moore in his book 'Astronomy Facts', only mentions the term when talking about the moon actually appearing the colour blue as the result of volcanic dust in the atmosphere. He also mentions 'red' moons. He apparently does not recognise other meanings."

May Speaker: Ken Croswell

by Jim Van Nuland

Hi, Bob, just in case you have not seen this in sci.astro — it's our May speaker, and heres' something of his topic.

Ken is the author of a new book on the Milky Way Galaxy entitled The Alchemy of the Heavens, which will be published by Doubleday/Anchor in May. To support the book, he will be giving talks before astronomy groups beginning in late April. Because he lives in Berkeley, California, He will be giving the first talks (in April and May) in the San Francisco Bay Area. After that, he may be touring, although where has not yet been decided.

He has already committed to give talks before the following groups:

April 29: Mt. Tam Observers (location: Mt. Tamalpais)
May 4: San Mateo Astronomical Society (Foster City)
May 12: Peninsula Astronomical Society (Los Altos)
May 13: San Jose Astronomical Association (San Jose)
May 17: San Francisco Amateur Astronomers (Golden Gate Park, SF)
May 20: Sacramento Valley Astronomical Society (Sacramento)
May 23: Mt. Diablo Astronomical Society (Walnut Creek)

All other dates are open. Here is the publisher's description of the book:

THE ALCHEMY OF THE HEAVENS:
Searching for Meaning in the Milky Way

The Milky Way Galaxy—home of the Earth, Sun, and countless other stars—has long been an object of human fascination. To some of Australia's aborigines the Milky Way was the smoke from a heavenly campfire, while the Chinese considered it a mighty river that separated two lovers. More recently, in the nineteenth and early twentieth centuries, astronomers brought their telescopes to bear on the Milky Way, hoping to discern its shape and map the stars that fill its bounds.

Yet as astronomer Ken Croswell describes in THE ALCHEMY OF THE HEAVENS, it's been only within the last 45 years that scientists have made some of the most stunning discoveries about the galaxy we call home. With a strong grasp of the science and a remarkable

Continued pn page 3 (see Croswell)

Croswell **(continued from page 2)**

ability to make the most difficult concepts clear, Croswell skillfully leads the reader through a detailed exploration of current thinking on the Milky Way. He reveals, for example,that the Milky Way probably formed as many earlier galaxies smashed together; that most of the elements on the Earth—including the iron and oxygen that course through our bodies—were cast into the Milky Way by exploding stars; that in all likelihood a massive black hole lies at the center of the Galaxy, with a million times more mass than the Sun; and that the Milky Way's oldest stars preserve the elements created in the big bang,thereby serving as fossils of the universe's birth.

Along the way Croswell introduces us to the brilliant and colorful astronomers who made these discoveries, and recounts the fierce debates that have driven our understanding of the Galaxy forward. We also see how knowledge about the Galaxy gives us tremendous insight into the universe as a whole—its origin, present structure, and ultimate fate.

KEN CROSWELL earned his Ph.D. in astronomy from Harvard University for his study of the Milky Way, and has written articles for many magazines,including Astronomy, New Scientist, and Sky & Telescope. He also writes for the Star Date radio program, which airs on over 300 radio stations nationwide. He lives in Berkeley, California.

340 pages; hardcover; 14 b&w photos; 22 line drawings ISBN: 0-385-47213-7 pub date: May 6, 1995

ENDORSEMENTS:

"Ken Croswell has done the impossible: provided a synthesis of our knowledge of the Galaxy that is not only accessible to anyone who wants to know where we came from but will also be invaluable to the scientists working in the field. This is no run-of-the-mill popular science book;Croswell has painted a truly vast canvas with the finest of brush strokes. From the moment you open this book, it is obvious that you are in the hands of someone who knows his subject inside out and can explain it vividly. Astronomers are fortunate indeed that a writer of this caliber exists to communicate what they are up to." —MARCUS CHOWN, science editor, New Scientist, and author of Afterglow of Creation.

"THE ALCHEMY OF THE HEAVENS is an exhaustively researched yet eloquently written account of what amounts to the great story of our Galaxy, the Milky Way. Clear, concise, and up-to-date, this work stands head and shoulders above other popular-level books about the Galaxy. Dr. Croswell intrigues and delights the reader by deftly explaining the intricacies of the astrophysics using excellent analogies, yet his attention to detail and science fact is impeccable. He is one of the few science writers I know who is endorsed by both non-specialists and the astronomer alike." —JEFF KANIPE, editor-in-chief, Star Date magazine.

"THE ALCHEMY OF THE HEAVENS is an important contribution to astronomy for the general reader and an illuminating guidebook to the galaxy we live in. Milky Way research has come a long way in the last few decades, and Croswell excels in conveying the excitement of these discoveries. His book bristles with interesting stories about what we know and how we know it." —LAURENCE A. MARSCHALL, author of The Supernova Story.

A Night at Fremont Peak

by Jay R. Freeman
freeman@netcom11.netcom.com

I was at Fremont Peak (near Salinas, California), on the evening of March 25-26, enjoying a clear dark night after a long, wet winter. I brought my 90 mm refractor — a Vixen fluorite with the Celestron label — and planned to go through the Messier objects well-placed for spring evenings, which I had not yet done with this instrument. I did a quickie polar alignment as soon as Polaris was visible, and started out before the end of twilight, using my 20mm Erfle eyepiece for 40 diameters magnification.

Usually I am too cold and lazy to look at the Virgo/Coma galaxies till later in the year, when it's warm, at which time I enter the area by star-hopping north a degree or so from rho Virginis, to M60 and M59. But with Virgo only partly risen, this route was not available, so I had to approach the area via what is for me the "back door". I found 5th-magnitude 11 Coma Bernices — relatively isolated in a star-poor area east of Leo and south of the Coma star cluster, and verified that it was the right star by noting bright M85 only about a degree to the east. Then back to 11 Coma and not quite two degrees south to M100 — also pretty bright, and a good guidepost to M99 and M98, flanking 5th-magnitude 6 Coma Bernices a degree and a half southwest. Now back to M100 and a couple degrees further south, and here are M84 and M86, in the heart of the Virgo cluster, and from there it is all easy pickings. I casually noted many more galaxies than just those that Messier cataloged.

Later I looked at NGC 4565, just east of the wide end of the arrowhead of the Coma star cluster. Even in only 90mm aperture, this edge-on spiral is a wonderful sight, showing as a clear linear streak with noticeable central bulge and a hint of a star-like nucleus.

I put in my 4mm orthoscopic to try Mars at 202 diameters. The seeing was good, and faint markings were visible on the ochre disc, but the planet was not impressive.

Before the Pleiades set I swung the telescope there and was able to show several observers the faint, broad streak of the Merope nebula, at 40 diameters again. More than one person remarked unprompted that there appeared to be nebulosity around several other Pleiades stars in the field, and we all bewailed the difficulty of making sure that circularly symmetric glow about a star is really nebulosity and not dew or halation within the eye. The Merope nebula is asymmetric, which makes it easy to confirm. We compared the naked-eye view of the Pleiades to that of the nearby alpha Persei association — to my eye, there often appears to be naked-eye nebulosity in the Pleiades, and on that night the alpha Persei association looked much "cleaner".

I was coming down with a cold, so had to leave early. But it was a fine night.

Fremont Peak 4/1/95
By Mark Wagner

Not much of a crowd... the cold temps must be keeping people in their homes. Paul Barton, Terry Kahl, Jim Bartolini, Alan Nelms, Dean Linebarger, John Kuklewicz, John Hales and Daniel Wagner were good company. Ulike the prior weekend (3/25), the sky was banded with clouds and there was a fair breeze from the North. The valley toward Salinas was fogged in, but it never rose to our altitude. During the cloud cover, there were lively discussions about local and national politics. Thankfully we had breaks in the conversation when the sky would open up.

The highlight of the night for me was viewing the summer globulars (M3, M13 and M92) through Dean's 20" Obsession with the 9 Nagler. Another great view was M64 (Blackeye Galaxy) in Alan's 18" Obsession. The cold wind and clouds persisted just until about 11PM, when the sky opened up. Of course we had just finished packing in all our equipment.

Clouds, wind, cold, city light, transparancy 6-7.

NGC	Description	Con	Mag
3227	El galx	Leo	10.80
3226	Rnd Galx	Leo	11.40
3222	Rnd Galx	Leo	12.80
4147	Glb cstr	Com	10.30
3607	Rnd Galx	Leo	10.00
3608	Rnd Galx	Leo	11.00
5457	Spi gal	UMa	7.70
5194	Spi gal	CVn	8.40
5053	Glb cstr	Com	9.80
5024	Glb cstr	Com	7.70
5466	Glb cstr	Boo	9.09
3992	Eln Galx	UMa	9.80
3587	Plan neb	UMa	11.19
3556	Eln Galx	UMa	10.09
3998	Rnd Galx	UMa	10.59
3990	Rnd Galx	UMa	12.59
3977	Rnd Galx	UMa	13.00
3972	Eln Galx	UMa	13.00
3982	Rnd Galx	UMa	12.00
3610	Rnd Galx	UMa	10.80
3642	Rnd Galx	UMa	11.09

Wow, it IS refractor-like!
by Bob Brauer

I LOVE MY NEW SCOPE! I recently joined the ranks of the Schmidt-Cassegrain owners with a Takahashi TSC-225 that was thought to give refractor-like images.

On April 3rd, I realized that the start of daylight savings time gives me an opportunity to leave work in daylight, pack the scope into the car, and get most of the way to Fremont Peak before dark. I was able to get to the park at 8:30 and setup by 9. My new Takahashi has a small fan to exchange air through the optical tube and I let that run for a half-hour while I sat down to a little dinner.

When I bought the scope, I liked the images. Now, I love them. What changed? Collimation! It makes a Great Deal of Difference. I have looked through a lot of SCT's and I have spoken with their owners. The idea of "fooling around" with the adjustments on an expensive and high-tech optical tube is a bit daunting, and I think many owners would rather leave it alone. I think it is worth doing. I have now done the collimation on 3 Schmidt-Cass scopes, and I have it down to a procedure: - Get the right tool for the job. My SCT was made in Japan and uses metric hex keys to adjust the collimation screws. Meades are made in the USA and use tools that are sized in inches. Do not use a tool that is "close enough". Do not risk damaging the collimation screws on your expensive scope for lack of an inexpensive tool. Get the correct key for your collimation screws. - Know which screws to adjust. The 3 collimation screws for adjusting the secondary mirror are located on the secondary mirror support in the middle of the corrector plate. If your scope is like mine, you will see 4 screws there. The one in the center holds the whole secondary mirror assembly together, DO NOT TOUCH THAT ONE. - Pick a star to use. I guess that the star should be at zenith so that you are collimating the system without gravity pulling to one side. I cannot comfortably reach the collimating screws with the tube pointing to the zenith, so I picked Merak in Ursa Major which was about 70 degrees up. Center the star in your finder scope. - "Un-freeze" the collimation screws. I have found that the collimation screws tend to be stuck in their current positions because they are rarely turned. Start by giving each screw a quarter turn to loosen it up, then a quarter turn to gently tighten it back to the original position. The previous collimation setting is now irretrievably gone - don't worry, you will get it back in collimation soon. All three screws should now be slightly loose. - Snug up the three screws to "finger-tight". This step is calibrating your hand. As in the last step, loosen and tighten the collimation screws an eighth of a turn. When tightening each screw, you will feel some resistance. Torque this screw only as much as makes you comfortable. This level of torque is to be used for all further tightening. There will be no final tightening step in this procedure, so you should get used to tightening the screws the same way, to the same torque, every time. - Pick a reasonably high power eyepiece. (Example, my Takahashi can range from 60X to 270X with my eyepieces. I use 180X for collimation.) - Center the target star in the scope. Defocus the star to get a central disk and diffraction rings. Start small with this defocused image. Each collimation adjustment will move the optical axis of the secondary, so the star image will move. As you get closer to collimation, the adjustments will be smaller, the star image will move less, and you can use a larger de-focused image. - Examine the image. Seat yourself in a comfortable, repeatable position so that your eye position is the same for each observation. Memorize the position angle that the central spot makes with the center of the diffraction rings. - Loosen one screw an eighth of a turn and tighten another screw an eighth turn until "finger-tight". Recenter the de-focused star and check the pattern. Did it get better (more like a bulls-eye) or worse? Always use just two screws, loosening one and tightening the other. This will give you a repeatable pattern. Don't try to loosen one and take up half the slack on the other two, this will frustrate you because it is not as repeatable. - Learn the pattern of the tilts. You will soon see that the central disk moves in a certain direction for a

Continued on page 5 See New Scope

New Scope (continued from page 4) particular pair of screws. Use this pattern to move the central disk closer to the center of the diffraction ring pattern. As you get close, you can de-focused the image more and use smaller turns on the screws. A more de-focused image will give a larger bulls-eye so you can see the smaller motions. Resist the urge to give the collimation screws a final tightening down. Once you get a perfect bulls-eye pattern, stop! Further adjustments will lose the pattern. This is why you have to properly tighten after each step. It's hard to predict when you will get a perfect centering so each adjustment may be your last one. - Rack through focus to get a ring pattern on the other side of focus. Check that this pattern is also centered. If it isn't, you will have to compromise with the centering so that each side of center is out-of- round by the same amount. This should be rare. You will probably see an equally perfect bulls-eye on the other side of focus.

This procedure took me about an hour (9:30 to 10:30) at a leisurely pace. From 10:30 PM to 1AM, I enjoyed truly refractor-like images of Mars and M13. I sat slack-jawed and stunned for over two hours, examining just these two sights. The improvement in the image I gained by going from "almost collimated" to truly collimated is so astounding that I cannot find words to describe it. I used to scoff at SCT's and I thought that I would never own one. Then I read the book "Telescope Optics". The discussion of the SCT in that book led me to try adjusting collimation of a poorly performing Meade 4 inch SCT. This scope had never shown me any detail on Mars before. Now I was seeing dark features and the polar cap. Wow! The improvement is not as marked for high contrast, point sources like open star clusters. The improvement comes with lower contrast, extended sources like planets. Of course, a 9-inch f/12 refractor should outperform my SCT, but it would never fit in my car. I have used a 9 inch Alvin Clark refractor in the past, so I have memories for comparison. The images are still only "refractor-like". There are detectable differences. I am surprised at how close the SCT can get. You have to see it to believe it.

Grant Ranch - 4/2/95

by Mark Wagner

After getting chilled, blown and clouded out of Fremont Peak last night, Rich Neuschaefer joined John Hales and myself at Grant Ranch for a "short" session Sunday night. Daylight savings had just begun, so it seemed late when we got started. The sky was very clear, very good transparancy (perhaps an 8) and fairly steady. Rich was trying out his new Takahashi 78mm refractor. Beautiful images of a sliver of Moon, great contrast! John finally had his JMI 18" out, and was using a home-made laser columnator tool to align. I had my new 10" f5.6 dob.

It never seemed very cold and there was almost no wind, and minimal dewing. The park was quiet except for a few amorous pigs, an unhappy cow and some head-bangers playing heavy-metal at the campgrounds. All in all a very good night. We took in easy, sharing views in each other's telescopes, relaxing and discussing equipment and Mt. Lassen. I started on the first Herschel list (from the Astronomical League) and was having no trouble locating the objects. I did not attempt the 15th mag NGC3377A, though (Dean, where were you when we needed you?). Highlights of the night were the Sombrero (M104) through the 18, and NGC4565 in the 18 and Takahashi.

I had planned to leave Grant by 11PM as it was Sunday night, but when I saw Jupiter come up I knew it had to be close to 1AM... well, it was fun. Below is my Herschel score for the night.

Very clear, cool/cold, city light, slight dewing late.

"BOBSHIRE" Collimation Tool

by Bob Madden

Everyone knows or has heard what a "Cheshire" collimation device is but there are not many who would want to pay out the $40-some to purchase one. From many of the long time members I have heard stories when Jack Petersen made some for the members. At that time I wasn't a member and I was sure I could use the money towards eyepieces, so I set out to see if I could make one easily and cheaply. I succeeded and showed my prototype to Mark Wagner, who still has it and won't return it. Bill O' Shaughenssy has one also and both of them swear (if that is allowed) by it. Mine cost half of a comercial unit, and does look as though a ATM made it, but when I saw Bob Brauer's article next to this, I thought that both methods may complement each other. Use the Bobshire first and finish with Bob Brauers method. Call me if youre interested in having one.

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Meade 8-inch SC, MC Corrector, GEM Mount, Pole align Scope, 26 mm EP, RA drive. Asking $900. Call Maria Petersen (408) 262 1457 after 6 pm 4/95

Mount Lassen Star Party for August 1995 is now filled. We have increased to an absolute maximum of 25 telescopes, but cannot accomodate more. There will be an inquiry at Lassen regarding a possible larger (but more distant) site that may handle a larger group. Thanks to Bob Madden for his efforts in announcing this event, and to last years participants and their input in helping organize for this year.

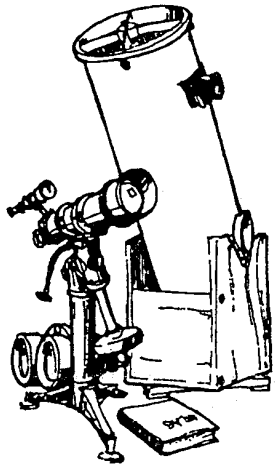
YOSEMITE STAR PARTY

our Yosemite date is July 28 - 29, with a 1 to 2 day moon. Rules will be as in previous years: no vehicles left in the observing area; camping at the group site in Bridalveil Campground. It is not yet known if we will actually use the site above the Ranger's residence at Glacier Point. Jim Van Nuland is taking reservations: 371-1307 afternoons or evenings,or catch him at a meeting. The guideline is to have at least one scope for each two people. The limit is 25 people (not cars).

1995 SJAA Calendar

	General Meeting	Houge Park Star Party	Observational Astronomy Class
May	13	5	20
June	10	2	15
July	8	7	17
August	12 (picnic)	4	26
Sept	9	1 and 29	16
Oct	-	-	- Last one
Nov	-	-	-
Dec	-	-	-

Please read your *Ephemeris* each month for changes



Telescope Loaner Status
by Paul Barton

N0.	Name	User	Due Date
1	4-1/2" Newt/P Mount	---------->	available
2	6" Dobson	John Paul Dasilvia	4/3/95
3	4" Quantum	---------->	available
6	C-8 Celestron	Bob Maillot	6/16/95
7	12-1/2" Dobson	Tom Rice	indefinite
8	14" Dobson	Ken St George	4/15/95
14	6" Newt/P mount	---------->	Avaliable
15	8" Dobson	Bob Elsberry	4/21/95
18	8" Newt/P Mount	Jerry Lovelace	4/10/95
19(b)	6" Newt/P Mount	---------->	Avaliable
20	4-1/4" Dobson	---------->	Avaliable
21	10" Dobson	Steve Wincor	4/11/95
23	6" Newt/P mount	Jim Marquis	Avaliable
24	60 mm refractor	---------->	Avaliable

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

(on waiting list)

Lee Courtney #8 14-inch Dob

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

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12.5" f/7 Dobsonian. Mirror by D&G Optical. Novak mounting hardware including 9pt. cell and 2.14" spider/diagional holder. 2" low profile Tectron rack & pinon focuser with 1.25 adapter. 8X50 finder/rings, and Telrad finder. Tube is Sona tube, 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

Retireing: 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

TeleVue Pronto 70mm ED f6.8 telescope. LN, comes with a 2" diagonal, 1 1/4" adapter, 21mm plossl, and soft sided travel case. Plus, a screw-on. Full aperture Thousand Oaks solar filter. $785 Call Rich Neuschaefer (408) 446-0975 3/95

Televue Plossl Eyepieces, 32 mm, 26 mm, 21 mm, 17 mm, 13 mm, 10.5 mm, 2.5x Barlow, 1.8x Barlow, all in a case. Also, Meade 8.8 mm UWA (84 deg field. Every thing in perfect condition. Sacrifice all for $500 (1/2 retail). Call Edward at (209) 892-8926 Evening. (Patterson, Ca) 3/95

Celestial Calendar - MAY 1995
by Richard Stanton

Lunar Phase		Date	Rise	Trans	Set
FQ	14:44	07	12:13	18:53	01:34
FM	13:48	15	19:54	00:59	06:03
LQ	04:36	21	01:12	06:46	12:17
NM	02:28	29	05:51	12:52	19:57
Nearer Planets					
Mercury		07	07:02	14:28	21:55
0.73 A.U.		17	07:00	14:29	21:57
Mag. -0.3		27	06:36	13:55	21:14
Venus		07	04:57	11:19	17:42
1.49 A.U.		17	04:49	11:25	18:03
Mag. -4.1		27	04:42	11:33	18:24
Mars		07	12:54	19:49	02:46
1.29 A.U.		17	12:35	19:24	02:16
Mag. +0.4		27	12:18	19:02	01:48
Jupiter		07	22:01	02:57	07:49
4.36 A.U.		17	21:17	02:13	07:06
Mag. -2.6		27	20:32	01:29	06:22
Saturn		07	03:53	09:41	15:29
10.0 A.U.		17	03:16	09:05	14:53
Mag. +1.0		27	02:39	08:29	14:17

SOL Star Type G2V VMag -26.72

RA	Dec				
02:55	+16:43	07	06:04	13:04	20:05
03:34	+19:15	17	05:55	13:04	20:14
04:14	+21:14	27	05:48	13:05	20:22

Astronomical Twilight

		Begin	End
JD 2,449,844	07	04:25	21:46
,854	17	04:10	21:59
,864	27	03:59	22:11

Siderial Time:

Transit Right	07	00:00	=	13:51
Ascension at	17	00:00	=	14:30
Local Midnight	27	00:00	=	15:09

Darkest Saturday Night: 27-MAY-1995

Sunset	20:22
Twilight End	22:11
Moon Set	19:03
Dawn Begin	03:58

TIMES AND DATES ARE PACIFIC DAYLIGHT
Times are Local Civil

COMET COMMENTS
by Don Machholz

With not much comet activity presently, we can look forward to things picking up a bit this summer. Meanwhile, I'm including positions for Periodic Comet d'Arrest (my magnitude predictions are brighter than some sources) and Periodic Comet Chiron. Although 95P/Chiron is quite faint, it has an unusual history and warrants observation by those with larger telescopes.

Chiron was discovered in 1977 by Charles Kowal. At that time it was thought to be a minor planet at a large distance. It takes 50 years to orbit the sun, getting as close as Saturn and as far away as Uranus. The diameter is about 130 miles.

As Chiron approached perihelion, however, further observations revealed a coma, or very extended atmosphere, forming around the object. At times it even exhibits a faint tail. Chiron has since been classified as a comet; it is the largest comet discovered to date. Although it reaches perihelion next year, it is presently in the evening sky and is a good target for large instruments.

EPHEMERIDES

6P/d'ARREST

DATE(00UT)	R.A.(2000)	DEC	EL	SKY	MAG
04-23	19h15.7m	+03d23m	100d	M	13.1
04-28	19h26.5m	+04d11m	102d	M	12.9
05-03	19h37.5m	+05d00m	103d	M	12.6
05-08	19h48.6m	+05d49m	105d	M	12.3
05-13	19h59.9m	+06d36m	106d	M	12.0
05-18	20h11.3m	+07d21m	108d	M	11.8
05-23	20h23.0m	+08d02m	109d	M	11.6
05-28	20h34.8m	+08d39m	110d	M	11.4
06-02	20h47.0m	+09d09m	112d	M	11.3
06-07	20h59.4m	+09d31m	113d	M	11.1

95/CHIRON

DATE(00UT)	R.A.(2000)	DEC	EL	SKY	MAG
04-23	11h18.9m	-00d15m	138d	E	15.5
04-28	11h18.2m	-00d07m	133d	E	15.5
05-03	11h17.7m	+00d00m	128d	E	15.6
05-08	11h17.3m	+00d06m	123d	E	15.6
05-13	11h17.2m	+00d11m	118d	E	15.6
05-18	11h17.1m	+00d15m	113d	E	15.6
05-23	11h17.3m	+00d18m	109d	E	15.7
05-28	11h17.6m	+00d20m	104d	E	15.7
06-02	11h18.2m	+00d21m	99d	E	15.7
06-07	11h18.8m	+00d21m	95d	E	15.8

ORBITAL ELEMENTS

6P/d'ARREST	OBJECT	95P/CHIRON
1995 July 27.36197	PERIHELION DATE	1996 Feb. 14.75375
1.34587 AU	PERIHELION DIST. (AU)	8.439422 AU
178.0504 deg.	ARG. OF PERI. (2000)	339.55286 deg.
138.9874 deg.	ASCENDING NODE (2000)	209.38540 deg.
019.5232 deg.	INCLINATION (2000)	006.92994 deg.
0.6140404	ECCENTRICITY	0.3831118
6.51 yrs.	ORBITAL PERIOD	50.73 yrs.
MPC 20122	SOURCE	MPC 22797

CC201.TXT

Don Machholz (916) 346-8963

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