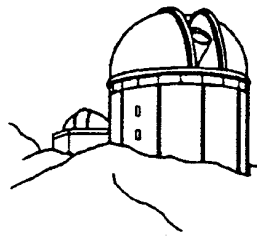

SJAA EPHEMERIS

Double Stars In Cepheus

Jay Freeman

I hauled my 6-inch Intes Maksutov-Cassegrain into my Palo Alto yard on September 14 for Sissy Haas's double-star tour of Cepheus, from her article on p. 106 of the September 1998 "Sky & Telescope."

The sky had been clear all afternoon, and stars were very steady shortly after dusk, which promised good seeing. Yet something in the feel of the air, and the dense covering of fog off the nearby coast, clearly visible in satellite images, suggested possible moisture and sky cover.

My six-inch Maksutov has excellent correction, and provides a lot of performance in a very small package. Its main disadvantage for quick looks is thermal settling time. I got home late from work, took the telescope out into 20 C cooler air than in my overwarm house, and started looking.

Fortunately, Sissy Haas's Cepheus list is composed mostly of wide doubles. I could resolve the majority with my 57x find-and-center-it eyepiece (Meade 28 mm Research-Grade Orthoscopic), notwithstanding that neither telescope nor atmosphere had yet settled.

Several of these wide pairs are indeed very pretty. Delta, beta, and xi Cephei are all quite reasonable showpiece objects, and easy to find.

Delta is the point star of the acute triangle that marks the south corner of the "square" part of Cepheus, beta is the opposite corner, and xi is right in the middle of the square.

continued on page 5, see **Cepheus**

SJAA Activities Calendar

November

7 General Meeting at Houge Park, 8 pm. Norm Sperling on "Oxymoronic Astronomy", aimed straight at the funny bone.Not to be missed!
Open board meeting 6:30 pm.

13 Houge park star party. Sunset 4:59 pm, 21% moonrise 2:33 am. Also, daylight occultation of Mars at 10am.

14 Star party at Fremont Peak, Coe. Sunset 4:57 pm, 14% moonrise 3:26 am.

21 Star party at Fremont Peak. Sunset 4:53 pm, 8% moon sets 7:11 pm.

27 Houge park star party. Sunset 4:51 pm, 8% moon sets 1:03 pm.

December

5 General Meeting at Houge Park, 8 pm. Jeff Moore, a Planetary Scientist working for NASA, will explain the latest details about Jupiter's enigmatic Europa.
Open board meeting 6:30 pm.

11 Houge Park star party. Sunset 4:50 pm, 35% moonrise 1:21 am.

12 Star parties at Fremont Peak, Coe. Sunset 4:49 pm, 26% moonrise 2:14 am.

19 Star party at Fremont Peak. Sunset 4:53 pm, 1% moonset 5:56 pm.

25 Christmas, but you knew that.

31 New Year's Eve. See above.

24 hour News and Information:
SJAA Hotline: 408-559-1221
Web Address:http://www.seds.org/billa/sjaa/sjaa.html

PLEASE NOTE THAT SJAA INSURANCE COVERS ONLY SJAA MEMBERS AT SJAA SPONSORED EVENTS.

SJAA At Yosemite

Jim Van Nuland

We had 6 scopes on Friday night, September 11, and 4 on Saturday.

Weather threatened Friday afternoon, but by dark, the clouds were gone and the rest of the week-end was clear. The air was cool but comfortable for sightseeing.

Late night was as low as 40 degrees, so one needed a good sleeping bag.

At night, the sky was very good, with the overhead Milky Way seeming to cast shadows. Seeing was very good to excellent most of the time, so Jupiter and Saturn were wonderful to see. Even after moonrise near midnight, the Milky Way remained distinct.

The "crowd" was small, perhaps 20 to 30 people each night. This allowed us time to teach people how to focus the scope, use averted vision, etc., so it was nicer than the hordes we'd entertained at other events.

The park's newspaper did not list our event, presumably because it was added only after the cancellation in June.

We saw no rangers at the Point. Fortunately, the new observing area was readily available, and we are skilled at finding our way in and out. (All that experience at school events!)

The new area is a wonderful improvement on the old dirt field, with paved areas and electricity available in some of the sites.

continued on page 5, see **Yosemite**

Volume 9 Number 11 Official Publication of the San Jose Astronomical Association, November 1998

The Celestial Tourist Speaks

Jay Freeman

Look Closely:

It is often a good observing trick to go through lots of objects close to one another in a single session. That saves repositioning the telescope, and facilitates star-hopping.

On Aperture And Cassiopeia Clusters:

I observed most of these clusters on September 5-6, 1980 -- over eighteen years ago -- with my six-inch hand-held Newtonian, at 36x. And my only previous observation of NGC 225 was a day short of twenty years ago, with a 7x50 binocular. It's not too often that an observation with Refractor Red (a 55mm Vixen fluorite refractor) provides an increase in aperture, but it does happen.

On The Peak:

I have been the sole human mortal at Fremont Peak many times, there amid the Vampires, Velociraptors, and Vogons that only come out when there is no one else to watch your back.

It's actually a lot of fun, and can be quite exciting. My red flashlight is pretty bright with the potentiometer dialed all the way up, and occasionally I sweep the beam a full 360 degrees through the surrounding underbrush, looking for eyes staring back.

It is surprising how often there actually *are* eyes staring back. Of course, none of them have belonged to anything terrible, or I wouldn't be making this report.

But on the other hand, there used to be other people who would go up there alone now and then, and I haven't heard from any of them for a long, long, time.

On Refractophilia:

I want you all to know that I am *not* a refractorholic, I can quit any time I want.

On The New 70mm Vixen Refractor:

These little fluorites are sure pretty. The tube and dewcap were gloss white, with the fittings a pale matte green, about the color of wasabe, the horseradish condiment often served with sushi.

Vixen uses hardware much less thick in cross section than that of most of its competitors. (It is actually more than enough to do the job.) Thus their telescopes appear particularly finely drawn and gracile. I had planned to refinish the newcomer, and have in mind another uncommon paint job (I just completed changing my Brandon 98 to pink and gold), but it is so attractive as is, that I am having second thoughts.

(Editor's note: the idea that someone would "do" a telescope so well that Mr. Taste would leave it alone is literally astounding, so I thought the last sentence should be recorded for posterity...)

Editor's Extras

David North

Here are Norm Sperling's own comments about his eagerly anticipated talk at the coming meeting:

"Oxymoronic Astronomy" starts with my 1990 article in Astronomy Magazine, then explores the ins and outs of what "planet" has meant over the centuries, and ends with quotations from boners committed by my worst students. The talk includes appreciable science and historical science, but mainly aims at the funny bone."

Being a basically silly person, I'm very much looking forward to it.

In other good news, it appears a replacement editor for the Ephemeris has been secured. Of course everyone's curious who it will be, but I think that announcement should be left to the new editor, not me.

However, I promise both my fans out there you won't be disappointed; the new editor will most certainly do a better job than I have. Of this there will be neither doubt nor argument.

Besides, when it comes to the Ephemeris, there's only one rule really: The Editor Is Always Right. To fully understand any other rule, simply refer to this one.

The late summer Houge events were strong, with good participation on the part of both the club and the public. All concerned are to be congratulated for their efforts. We also had a nearly unprecedented heavy load of school star parties to handle (thanks, Jim) late in the month. Weather has been a problem all year, but the club just keeps slugging along.

Elections will eventually take place, and we have a nominating committee. Anyone interested in running should contact Mark Taylor, Terry Kahl or Bill Arnett and get your name on the slate. The more the merrier!

The Shallow Sky

Akkana Peck

Mercury is visible in the early evening in early November, and reaches greatest elongation on November 10, but is already low on the horizon by the time it gets dark. It's near Antares, but brighter.

Venus is too close to the sun to be observed this month, as is Pluto.

Mars rises around 2 am, and is best observed shortly before dawn when it is high in the sky. Its disk is still very small, only five arcseconds, but we're catching up to it now and its size will start to increase gradually toward opposition next spring.

Jupiter shines brightly in the southern sky at nightfall and is up until after midnight. There's been a lot of activity this year in both equatorial bands; look for white ovals in the SEB near the Great Spot Formerly Known as Red, festoons and streamers off the NEB, and color shading inside the spot itself. You can use my Java applet at http://www.shallowsky.com/jupiter.html to predict moon, moon shadow, and GSfkaR transit times.

There will be a double shadow transit of Europa and Ganymede at 4:45 am on the morning of November 4.

Saturn just passed opposition last last month, and is visible high in the sky all night. Don't forget to look for Cassini's division, separating the two main rings; the dim "crepe" ring, inside the two main rings; and, for larger telescopes in steady air, the finer divisions in the outer ("A") ring.

Uranus and Neptune are readily observable on November evenings. Look for their bluish-green disks in Capricornus; Sky Publishing has a finder chart on the web at http://www.skypub.com/whatsup/images/urnep98.gif

1 Ceres, the largest asteroid, reaches opposition on November 28 at magnitude 7 or 8 (about the same as Neptune, though more difficult to identify since the color isn't distinctive). It will be crossing through the Hyades; the November issue of *Sky and Telescope* has a finder chart.

Mooning

David North

At the beginning of November we'll be winding out of another low first quarter Moon and watching it ascend as it approaches full (it will be at its highest a few days after the full moon). This means we're starting into a season where a decent elevation can be expected for the prime viewing slot between 1st Quarter and Full.

It's not yet at its best, but it will be getting better in the next few months.

Prior to first quarter, we're in something of the doldrums. You'll notice it's low in the sky and seems hard to see. This has been going on for a few months, but is almost over. The worst of it is now reserved for the late third quarter rather than the "good" new moon times, so in almost every respect we can expect better mooning over the next few months.

I say "almost" because of the weather, which is entirely unpredicable. If it's like last year, forget seeing the moon at all...

We have a number of near misses this month, with Aldebaran making a close approach on the 5th, Regulus doing the same on the 11th, and Jupiter getting darn close on the 27th. But the real news for daytime viewers is an occultation of Mars on Friday the 13th at just a few minutes after 10pm (or maybe right on 10. It would be a good idea to be ready a tad earlier than that...)

Even though it's daytime, it should be fun to look.

The east and west librations take place when the respective limbs are dark this month, which simply means the lit side will be more foreshortened than usual, but offers no interesting viewing opportunities.

There is, however, a strong northern libration just after the full moon (one or two days, depending on your viewing habits) and this may offer some very interesting edge-on craters and an opportunity to get a dramatic view of the northern reaches all around the period of full moon. It's surprising how much more detail you can see even in the "not exactly polar" northern craters when you get a strong libration like this. So I'd suggest at least a glance up there during the whole period surrounding the full moon.

This particular full has another distinction: it's the closest and largest of the year. It will also be pretty high in the sky, meaning it will be extremely bright. And as an added bonus, it will create dramatic tides (a real plus for anyone vacationing at the Bay Of Fundy for example).

A general suggestion for mooners: check the seeing each night, and maybe once or twice later if it doesn't seem good at first glance. Sometimes it improves. Try to look when it's highest in the sky (sunset before first quarter -- when your scope should have already cooled in the shade, then later each night thereafter). These two simple tips can home you in on the best Lady Selene has to offer.

Meteor Watch

David North

It s meteor month, so hold on to your hats, folks. I ll cut to the chase and go out of order this month: everyone is curious about the prospects for...

The Leonids

A shower of short duration, lasting only one week centered on November 16/17. They are particles from comet Temple-Tuttle, which will reach perihelion in 1998.

A great concentration of particles exist near the parent comet. In years when the comet is far from the inner solar system, the activity remains below 10 meteors per hour. However, for approximately 10 years centered on the perihelion passage of Temple-Tuttle, the Leonids can produce high rates of activity.

This is one of the years everyone has been waiting for since the possibility of a storm exists.

1997 activity dramatically increased with ZHR's well over 100 for the U.S. West coast.

This year the peak is expected to occur over China near 18h30 UT. A storm lasting about 1 hour is possible there. For the rest of the world, ZHR's should be quite high, perhaps reaching 200 or more? This is controversial, and the local results may be anywhere from disappointing to spectacular.

Begin observing around 11pm on the 16th. There will be an SJAA presence at Coe and Fremont Peak that night (a Monday/Tuesday, alas!). Activity will increase as the night progresses. Many shower members are bright and leave long lasting trains.

The 1998 return will be under ideal conditions with a New Moon on November 19.

The Leonid stream collides with the earth from a head on position that produces the highest velocity of all major showers.

South Taurids

This year the maximum will be close to a full moon and so will not be an enjoyable experience. If you feel compelled to observe, face a Northerly direction on November 4-5.

North Taurids

Maximum will follow a last quarter moon on the morning of Nov 12. Observations will be best prior to midnight on the 11th and tolerable after the moon rises later.

Thanks to George Zay for his unrelenting research.

October Board Notes

Bill Arnett

The meeting was called to order 6:40 pm October 3 at Houge Park. All directors were present (eventually) except Dave who was excused (Happy Birthday, Dave!).

Bill Arnett was unsure about the procedure we follow for board elections. Jim Van Nuland explained that if the election is contested then all candidates are placed on the ballot and each member votes for N of them where N is the number of open seats. The N candidates with the most votes win.

Bill pointed out that this, like all multi-candidate election schemes has flaws but this is simple and will do.

Mark Taylor, Terry Kahl and Bill Arnett were appointed to be the Nominating Committee for the upcoming election. Most of the incumbents indicated a desire to run again. There are also several challengers out there this time.

Several members had asked about the possibility of moving the board meeting to a weekday evening instead of Saturday. Most of the current board members find it better on Saturday, however. No action was taken.

Bad news about the trees at Houge Park. Terry talked to the person at the Parks Department who is in charge. He told her that the trees will stay and will not be pruned. Terry invited him to come and explain the situation in more detail to us but it is unclear when that will be possible. (To be fair, we have to remember that we are not the only users of Houge Park.)

On a brighter note, Terry reported that the magazine give-away at our star parties is being very well received. So much so that she is out of material to give away. Anyone with old (or new) astronomy magazines is encouraged to contact Terry.

We are still in need of a speaker for the January meeting.

Jim gave the usual recitation of the upcoming calendar. No surprises.

Mike purchased a Telrad and two Quickfinders for the loaner program. He and Jay are working on an eyepiece list. But it is clear that we will need quite a few (maybe as many as 26) more eyepieces. This could run as much as $1000 unless we can get some donations (hint, hint...)

Mike also needs some help with the manuals he is making for each scope. He will post a list of sections that need writing. Contact him if you can help.

The beginning astronomy class needs a teacher/coordinator for next year. Unless one is found we may not be able to do it next year.

We agreed to order 30 of the RASC handbooks for next year. We agreed that the SJAA customized APOD (a daily diary of SJAA and astronomical events) will sell for $10, with the clear indication that it is in large part a donation to the SJAA loaner fund.

The meeting was ended at 7:30.

Cepheus

From Page One

Cepheus is circumpolar from my latitude, so these stars are often well placed for observing. Furthermore, their declination, far from the equator, reduces their drift rate through the eyepiece field of an undriven telescope, so they are good star-party objects.

The Intes, however, had a driven mounting. I worried about using equatorial mountings in my yard -- there are so many trees that I am forever moving the telescope to chase after objects, so I anticipated that polar alignment would be a pain.

Fortunately, that has not proved so. With polar-axis elevation preset to my latitude, and with due care to selecting reasonably level ground, I can eyeball the polar axis to within a few degrees of the right position as I set the telescope down, and that is more than sufficient for many minutes of visual observation.

The sidereal drive did help greatly with some of Haas's tougher targets, for which I was using more magnification. By the time I worked down her list to Struve 2843 and 2845, sky and telescope both were permitting the use of 187x, and Struve 2780 took 375x to resolve.

All these stars might have separated with lower magnification, though -- I simply grabbed an 8 mm Brandon from my eyepiece pouch and added a 2x Celestron Ultima Barlow when I wanted more magnification.

At 375x, seeing was good: The Airy discs of stars were continuously well defined, and the rings were usually visible, but always in motion.

By this time, the sky above was hazy with moisture, and occasional low clouds drifted between me and the stars. Sometimes these conditions bring fine seeing.

At 375x, I was also able to separate all three components of Struve 2764 -- Haas lists the B/C pair as 0.75 arc seconds and magnitudes 9.5 and 9.7, so the Intes was indeed doing well.

The same magnification also showed a possible separation of the B/C pair of Struve 2872 -- the pair was certainly notched, but the seeing was not steady enough to let me say for sure whether the dark minimum extended all the way across the neck between the stars.

Haas lists this B/C pair as 0.8 arc seconds, with magnitudes both 8.0, but with some suspicion that the actual separation may be closer. My observation is consistent with that notion: I found Struve 2872 B/C a good deal more difficult than Struve 2764 B/C, even though the latter pair is nominally closer, and has fainter components.

I have done a moderate amount of double-star observing in the past, but Haas works fainter than the limit of the old "Atlas Coeli" catalog from which I selected targets. Thus about half the stars on her list were ones I had not looked at before.

It is nice to be able to step outside the front door and extend the limits of one's hobby. Even in the suburbs of San Francisco, back yard astronomy lives.

Maybe next time I will set up the Celestron 14.

Yosemite

From Page One

SJAA has visited Glacier Point at various dates during the summer, and most them have had very rewarding skies. I don't know whether there is a "best" time to go. Early is better so far as seeing the falls.

An unseasonable rain on the previous Wednesday had restarted Yosemite Falls, which was a nice bonus for us.

Medlock Simplifies CCDs

David North

October 10 is Double 10 Day in Taiwan, a sort of local 4th of July. So for fireworks we got Kevin Medlock showing the astro class the basics of CCD imaging.

Kevin has a smooth and direct style that can make anything seem easy, and a clear presentation that leaves even rank beginners like me at least *thinking* we got a clear idea of what was going on.

But more important, he shows you exactly how things work -- first in the room at Houge by showing how pre-exposed images (from his and Denni's Pixel camera) can be manipulated, then by going outside and setting up to let everyone see how images are made, right on the spot!

It's a powerful presentation.

The outdoor portion involved running some power lines, carrying a table out, and improvising Scope #2 when #1 failed to track, but even with the minor hitches we were all impressed with the ease and simplicity of the setup procedure. After a brief focus job, Kevin was ready to roll.

So he imaged the Ring, Andromeda, a minor NGC Galaxy, M15... all in what seemed to be a matter of minutes. The exposures were generally between one and two minutes (partly because of impatience and partly because the mount was not corrected for periodic error) but the results were stunning, even with such short exposures.

Once you're running, it's possible to move from object to object almost as fast as you can with visual observing, and acquire images far brighter than are possible "through the eye" in just a matter of a minute or so.

On the other hand, the seeing was outstanding and the "plain old" views of Jupiter and Saturn were also remarkable. It was an incredible evening overall...

As impressive as the technology was, it was probably more important that Kevin's infectious enthusiasm left us all with a feeling for how much fun playing around with CCDs can be.

Informal History Of Fremont Peak
Jim Van Nuland

The question was asked about earliest astronomy at Fremont Peak.

Of course, individuals have been up there from the time of John C. himself. But I thought to search the SJAA Ephemeris files; my holding runs from only 1975, with partial coverage from late 1970.

From mid-1972 until October 1975, the Peak events were mostly listed as an "AANC star party", often with the San Francisco Sidewalk Astronomers; the SJAA events were scheduled at Coe, the Skylight/Hwy.9 site, and a few other places.

After October 1975, SJAA regularly used the Peak, in alteration with Coe, for club star parties.

The earliest specific event at the Peak was an SJAA event for 1970 August 1, for an "overnight" star party at Fremont Peak.

But even this is late. There was a star party scheduled for 1972 June 10; included was a comment that "For the past six years, SJAA members have been having overnight star parties at Fremont Peak".

The implied "earliest date" then is mid-1966.

Astronomy Tutoring
Bill Arnett

SJAA members Mark Wagner and Rich Neuschaefer are holding tutoring sessions in Deep Sky and Lunar/ Planetary observing.

If you want to learn more about those aspects of amateur astronomy and get some hands on experience and help from two real experts, check out their WWW site at http://www.astronomy-mall.com/TAC/ #TUTOR
or call Mark at 408 356 1072 or Rich at 408-285-1730.

Directions to SJAA places

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.

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. The current SJAA site is the parking lot on the right about 1/2 mile before the main entrance. There is now a fee for use.

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. Be careful to note the "left/ right jog" about 1/4 mile after the turn; signs are posted. The park charges a $3 entrance fee.

Grant Ranch County Park is located on Mt.Hamilton Road, which is also Hwy.130, leading to Lick Observatory.

From Alum Rock Ave. in San Jose, pick up Mt.Hamilton Rd. and go 7.7 miles to the park, on the right. Allow a half hour from the freeway. (ok, this is not really an 'SJAA place', it is where Halls Valley Astronomical Group has their star parties.)

Activities Through Other Clubs

TAC has reserved the Montebello site for every Wednesday, more or less indefinitely (weather permitting). It's a good idea to check TAC's web-page at http://www.rahul.net/ resource/TAC/ (mailing list archives) before going. There must be a permit holder present to use the facility. To get there, take Page Mill Road off 280 (or get to it via El Monte Road) until you're near the top. Montebello's sign will be visible on the left.

PAS opens Foothill Observatory for public viewing every clear Friday evening from 8:30 p.m. until 11:00 p.m. PAS operates a 16-inch reflector and a 6-inch refractor. Solar viewing is also held every clear Saturday morning from 10:00 a.m. until noon with a very nice filter setup. Both of these programs are outstanding, and all SJAA members are encouraged to check them out.

HVAC continues to have dark sky parties at Grant Ranch (these will normally be on the Saturday night closest to the new moon) but we have not been successful in getting a schedule from anyone involved. The only known way to join the club is to show up at one of these parties and pay the modest $5 fee; no postal or other method is known to the editor.

Developments at Chabot mean there will be more interesting events up there, and a resurgence in activity through both San Francisco clubs means the Bay Area Astronomer has more choices than ever before!

November
13 PAS General Meeting "Planetary Ring Systems" with Dr. James Lissauer of NASA Ames, who will present the latest theories and observations. 7:30 pm at Foothill College in the Forum Building, Room F-1.
18 PAS Board Meeting 7:30 pm Foothill College Observatory

December
11 PAS Annual Meeting and Board Elections 7:30 pm at Foothill College
16 PAS Board Meeting 7:30 pm Foothill College Observatory

John Gleason Needs No Introduction, And It's A Good Thing

David North

When John Gleason took the floor to give this year s class on astrophotography, he got a bit of a surprise, but nothing like he gave the crowd.

Things got off to a bit of a rough start when the Peter Principle took over. Jack Zeiders couldn't start the class since he was out of town, and Jim Van Nuland (along with a crew of others) was up at Yosemite, leaving only Mike Koop and myself to mind the store. And we had both gone to the Chabot auction earlier in the day.

Mike left early to open up for John, and I stayed behind to try to get a camera body for the Meteor program (a success!), so I was a little late. When I got there, Mike was nowhere in sight -- he had to leave to get a screen for the projector! So John, being a trooper, simply started the class without an introduction.

No problem, really. He doesn t need one, and did fine.

In fact, better than fine.

It was perhaps the best single presentation I ve seen, one of the most amusing since Bob Fingerhut did his talk on Schmidt cameras, and the best show of "troopering" since Don Machholtz managed an outstanding presentation while nearly dead on his feet from the flu.

John s talk last year was riveting, but it s obvious he put a great deal of thought and trouble to improving on it for this year: the results showed.

All the general topics of interest to the budding astrophotographer were covered succintly: tripod photography, piggyback, and the elements of shooting with a scope. Suitable lenses and camera bodies were outlined, and an eye was kept to getting an inexpensive introduction.

John explained the how the improvements in films, mounts and guiding systems were making sky images easier and more accessible all the time, and what a great time this was to be doing astrophotography.

In the process, he raced through a general history and some stories of notable local astrophotographers.

But the sharpness of his presentation was in the illustrations: the photos themselves.

He had gone back through his files and dug up some of his very first efforts at various kinds of astro imaging, and some more recent attacks on the same targets.

The early shots were interesting and fun, and he explained the approach he had taken and how the images were critiqued at the time (they loved them).

Then he would show the contemporary shot (gasps all 'round) and tell us it was actually easier with modern films and equipment.

All this was done with nothing more than a tiny slide screen (the best Mike could do on a moment's notice) and with some photos and some inkjet printouts!

Yes, I said inkjet printouts.

John has been experimenting with scanning his photos, then "cleaning them up" on a computer. And one of the experiments involved printing the proof copies on photograde paper with an inkjet printer from The Company He Works For.

The results were stunning. It's incredible how far this technology has come, and it's even more amazing what can be done when it's in the hands of a capable operator.

There is some chance that the astro classes will falter next year without someone to coordinate them. That would be a tragedy indeed -- some of my most memorable evenings in recent years have been in those classes, and one of the most enlightening, entertaining, and astounding was just those few weeks back.

Hopefully, we'll find a way to have these classes again next year!

Image Brightness

Jay Freeman

For maximum image brightness without wasting light, the requirement is that the beam of light coming out of the eyepiece be small enough to fit into the pupil of your eye.

Young adult pupils are typically 7 mm in diameter when fully dark-adapted; they contract as you age.

The diameter of the beam of light coming out of the eyepiece is equal to the telescope clear aperture divided by the magnification; if your pupils are 7 mm in diameter, that leads to a minimum magnification of about 0.14 times the telescope clear aperture, in millimeters, or of 3.5 times the clear aperture in inches.

However, that low a magnification may be too low for best viewing of faint fuzzies; many people prefer a minimum magnification somewhat higher -- perhaps 0.2 times the clear aperture in millimeters, or 5 times the clear aperture in inches.

In my experience, magnifications of two or three times more may give the best views of many galaxies.

Comet Comments

Don Machholz

The evening sky reveals four telescopic comets, the latest being Periodic Comet Howell, which outburst recently and is now visible at mag ten. Periodic Comet Giacobini-Zinner is presently at its brightest. Meanwhile, Comet Williams swings behind the sun and into our morning sky.

On September 13 Roy Tucker found a comet on an CCD image while conducting his asteroid project. It was the same object as (what was first believed to be) an asteroid picked up two weeks earlier by the Lowell Observatory Near-Earth Object Search. This comet, now named Comet LONEOS-Tucker has an 8-year orbital period and is expected to remain fainter than magnitude fourteen.

COMET HUNTING NOTES: As seen from the earth, how far are comets from the sun when first discovered? This angle, called elongation, has been calculated for the 78 comets found visually by amateurs since 1975. It ranges from 22 to 171 degrees. Over half of the comets have been found within 58 degrees of the sun. Seventy of the seventy-eight were found within 92 degrees of the sun. Why are they found at such small elongations? Not only do comet hunters concentrate their searches on areas near the sun, but comets generally become brightest in those regions.

Ephemerides -- Epoch 2000, 0h UTC

C/1997 J2 (Meunier-Dupouy)

Date	R.A.	Dec	EL	Sky	Mag
11-03	21h00.1m	-12°29°	94°	E	12.6
11-08	21h01.7m	-13°22°	89°	E	12.7
11-13	21h03.5m	-14°10°	84°	E	12.8
11-18	21h05.7m	-14°54°	79°	E	12.9
11-23	21h08.2m	-15°33°	74°	E	13.0
11-28	21h11.0m	-16°08°	70°	E	13.1
12-03	21h14.0m	-16°40°	65°	E	13.2
12-08	21h17.3m	-17°08°	61°	E	13.3

21P/Giacobini-Zinner

Date	R.A.	Dec	EL	Sky	Mag
11-03	19h06.1m	-04°43°	68°	E	9.2
11-08	19h27.4m	-07°16°	68°	E	9.1
11-13	19h50.1m	-09°50°	68°	E	9.0
11-18	20h14.3m	-12°23°	68°	E	8.9
11-23	20h39.7m	-14°49°	68°	E	8.9
11-28	21h06.1m	-17°05°	69°	E	8.9
12-03	21h33.4m	-19°06°	70°	E	9.0
12-08	22h01.1m	-20°48°	70°	E	9.1

88P/Howell

Date	R.A.	Dec	EL	Sky	Mag
11-03	18h54.0m	-26°45°	62°	E	10.4
11-08	19h12.7m	-26°17°	62°	E	10.5
11-13	19h31.0m	-25°40°	60°	E	10.6
11-18	19h49.0m	-24°56°	59°	E	10.7
11-23	20h06.6m	-24°04°	58°	E	10.8
11-28	20h23.7m	-23°07°	57°	E	10.9
12-03	20h40.3m	-22°04°	56°	E	11.1

C/1998 P1 (Williams)

Date	R.A.	Dec	EL	Sky	Mag
11-03	13h26.9m	-23°44°	18°	M	8.8
11-08	13h26.1m	-22°40°	21°	M	8.9
11-13	13h25.1m	-21°35°	25°	M	8.9
11-18	13h24.0m	-20°28°	30°	M	9.0
11-23	13h22.5m	-19°18°	35°	M	9.0
11-28	13h20.7m	-18°03°	41°	M	9.1
12-03	13h18.4m	-16°42°	47°	M	9.2
12-08	13h15.6m	-15°13°	53°	M	9.2

C/1998 M5 (Linear)

Date	R.A.	Dec	EL	Sky	Mag
11-03	18h52.2m	+36°34°	80°	E	10.0
11-08	18h49.3m	+36°17°	77°	E	10.0
11-13	18h47.3m	+36°06°	74°	E	10.0
11-18	18h46.1m	+36°01°	72°	E	9.9
11-23	18h45.5m	+36°03°	70°	E	9.9
11-28	18h45.5m	+36°13°	68°	E	9.9
12-03	18h46.0m	+36°31°	66°	E	9.8
12-08	18h46.9m	+36°58°	65°	E	9.8

Orbital Elements -- Epoch 2000.0

Object:	Giacobini-Zinner	Meunier Dupouy	Williams	LINEAR	Howell
Peri. Date:	199811 21.32107	1998 03 10.4365	1998 10 17.836	1999 01 24.5733	1998 09 27.19738
Peri. Dist (AU):	1.0337095 AU	3.051186 AU	1.14674 AU	1.742213 AU	1.404878 AU
Arg/Peri (2000):	172.54569°	122.6864°	294.473°	101.2873°	234.8593°
Asc. Node (2000):	195.39930°	148.8467°	156.379°.	333.3766°	057.65738°
Incl (2000):	031.85856°	091.2706°	145.730°	082.2285°	004.39961°
Eccen:	0.7064344	1.001019	1.0	1.0	0.5531119
Orbital Period:	6.61 years	Long Period	Long Period?	Long Period?	5.57 years
Ref:	NK 629	MPC 30738	MPEC 1998-Q10	MPC 32169	MPC 31205
Epoch:	1998 11 21	1998 07 06	1998 10 17	1999 01 22	1999 08 10
Absol. Mag/"n":	9.0/6.0	4.0/4.0	6.5/4.0	5.5/4.0	7.7/4.0

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Submit

Members are encouraged to submit articles for publication in the SJAA Ephemeris. Send articles to Dave North (via e-mail to Timocharis @aol.com).

Finding Fremont Peak

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. Take the second left, then a quick right to stay on the road! Follow G-1 for 12 miles into the park. Be careful to note the "left/right jog" about 1/4 mile after the turn; signs are posted. The park charges a $3 entrance fee.

Telescope Loaner Program Status

Mike Koop

Available to any SJAA member; contact Mike Koop at (408) 473-6315 .

Current Scope Loans

These are scopes that have been recently loaned out. If you are interested in borrowing one of these scopes, you will be placed on the waiting list till the scope becomes available after the due date.

#	Scope Description	Borrower	Due Date	Note
3	4" Quantum S/C	Eric Anderson	10/31/98	
6	8" Celestron S/C	Bud Wittlin	11/28/98	
7	12.5" Dobson	Morris Jones	10/18/98	
15	8" Dobson	Robert D. Hogan	11/14/98	
16	Solar Scope	Nick Tucci	11/1/98	
18	8" Newt/ P Mount	Mike Rupe	1/4/99	
19	6" Newt/P Mount"	Ran Talbott	10/31/98	
27	13" Dobson	George Cooper	11/16/98	
28	13" Dobson	Ramin Ghafouri	12/12/98	
29	C8 Astrophotography	Alexander Koczur	12/1/98	

Extended Scope Loans

These are scopes that have had their loan period extended. If you are interested in borrowing one of these scopes, we will contact the current borrower and try to work out a reasonable transfer time for both parties.

#	Scope Description	Borrower	Due Date	Note
2	6" f9 Dob	John Paul De Silva	?	
4	60mm Refractor	Del Johnson	Indefinite	
9	C-11 Compustar	Paul Barton	Indefinite	
26	11" Dobson	Raymond Brinson	1/11/99	

Available Scopes

These scopes are available for immediate loan, stored at other SJAA members homes. If you are interested in borrowing one, please contact Mike Koop at (408) 473-6315 for a scope pickup at any listed SJAA events.

#	Scope Description	Stored At
1	4.5" Newt/ P Mount	Mark Cousins
8	14" Dobson	Ralph Seguin
21	10" Dobson	Alexander Koczur
23	6" Newt/ P Mount	Alexander Koczur
24	60mm Refractor	Akkana Peck
30	7" f/9 Newt/Pipe Mount	David Manley
31	8" f/8 Dobson"	Mark Taylor

Waiting List

23	6" Newt/ P Mount	Al Case

Notes: Do you have some space to store a scope or two? Please call Mike Koop at 446-0310 or koopm@best.com

Periodical Publication Statement

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San Jose Astronomical Association
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