The San Jose Astronomical Association

Predictions

Oct. 29-30 AANC-sponsored star party at Fremont Peak.

Nov. 4 Club star party at Sanborn Canyon.

Nov. 11 General Meeting, Rosicrucian Planetarium, 7:30 pm. Park & Naglee, San Jose. Dr. Nelson Irvine will speak on the Monterey Institute for Reseach in Astronomy (MIRA).

Nov. 11 John Cincotta's birthday.

Nov. 17 Board of Directors meeting, Bob Fingerhut's, 8:00 pm. 340 Rio Verde Pl. #4, Milpitas.

Nov. 18 Indoor star party, Los Gatos Red Cross, 7:00 pm. Equipment night.

Nov. 20 John Rhodes' birthday.

Nov. 25 Indoor star party, Los Gatos Red Cross, 7:00 pm.

Dec. 2 Club star party at Sanborn Canyon or Henry Coe Park. Close-in or far-out.

Dec. 2 Jack Zeiders' birthday.

Dec. 9 General Meeting, Rosicrucian Planetarium, 7:30 pm. Park & Naglee, San Jose. Program to be announced.

Dec. 13 Jeff Lo's birthday.

Dec. 15 Board of Directors meeting at Dr. Gregory's, 8:00 pm. 5480 Fairway Dr. San Jose.

Dec. 16 Indoor star party, Los Gatos Red Cross, 7:00 pm.

"The number of active members varies with the square root of the total membership.

Ed Schell

"Ed's the club scapegoat, you can always blame everything on Ed."

Gerry Rattley

"Everytime I open my mouth it winds up in the Bulletin."

Gerry Rattley

Next month, because of all the hassling I've been getting, there will be NO quotes in the Bulletin. Okay Gerry and Jack and John and Ed and Wolf.....

Gerry Rattley, President 732-0202 Penny Pinschmidt, Editor 356-4330

Personal Glimpses: Penny Pinschmidt, Editor

A household name among SJAA astronomers. But who, really, is this person behind our monthly blurbs and editorials? After an exclusive interview I think I have at least a partial answer to that question.

Penny became interested in astronomy through Ed Schell, who brought her to a few star parties beginning in March of 1976. Not knowing much about astronomy and less about the club and its members, Penny was a little scared and unsure about this new experience. But that didn't last long. A gift on her 19th birthday was membership to the SJAA and she's been "hooked" ever since.

She enjoys observing in general with binoculars, telescopes, and the naked eye as well as working on her 6" telescope at Chabot. She likes photography, especially with her trusty Polaroid which she never goes to a star party without. Combining astronomy with photography has so far been limited to photographing club events and star trails which she enjoys doing.

Before discovering astronomy, one of Penny's main interests was writing and publishing. She has pursued that in a variety of ways the last six years, working on such publications as her school's yearbook and newspaper and at the Los Gatos Times Observer. Responsibility for the SJAA Bulletin has been another expression of that interest, plus a good excuse to be more active in the club and to get to know the people better.

What keeps her busy 9 to 5? This fall she's resuming her role as student at West Valley College. As with astronomy, she's not limiting herself to a particular area. Instead, she's taking classes in various subjects that interest her - currently journalism, electronics, beginning typing, archery, astronomy, and astronomy. (Yes, two astronomy classes.)

This is really only an introduction to Penny Pinschmidt. I hope you've gotten to know her a little better.

by Suzanne Lowd

SECRETARY'S LIBRARY Cathy Pinheiro

I know you've all been dying to hear from the Secretary's Library since it was not able to printed last month. Well, here it is again. I'll be finishing up with what I have next month. Remember, these books, magazines, and pamphlets are available to all club members to check out of the library. Just let me know what you want. My number is 265-4824.

Pioneer F & G, Mission to Jupiter

The Pioneer Mission to Jupiter

Proceedings Joint Convention of Western Astronomers & Assn. of Lunar Planetary Observers

How to Solve It by G. Polya

The Radio Amateur's Handbook, American Radio Relay League

The Stars, A New Way to See Them by N.A. Rey

The Philosophy of Space & Time by Hans Reichenbach

The Hubble Atlas of Galaxies by Allen Sandage

IT MUST BE THAT TIME OF YEAR AGAIN.....
by Denni Medlock

If any uninitiated person (a non-astronomer) had walked in off the street to the Los Gatos Red Cross building on the night of Oct. 21, he would have wondered what planet (or channel) he was on. Darth Vadar (Frank Dibble) stood calmly talking with Capt. Kirk (Pete Manly) while the alien from Close Encounters (Doug Berger) played nearby with a hand phaser, a gray-haired witch (Debbie Moore) looking on. In another corner a brightly clad 16th century nobleman (Gerry Rattley) (in brown tights, even!) discussed photography with a robed monk (Jack Zeiders) holding his "Bible", an ATM book 1, while two grass-skirted bodies (Wolfgang Hanisch and Penny Pinschmidt) carefully avoided a greatly ionized sulfuric acid molecule (Denni Medlock). In another corner a suited businessman (Kevin Medlock) was playing chess with a Berkeley Hippie (Jay Freeman) while two down-home farm folks (Cathy Pinheiro and friend, Jim) looked on. The businessman wasn't wearing a tie, but Ed Schell made up for that with his shoestring one!

Mr. and Mrs. Neinchel looked alike in top hats, moustaches and noses (they say if you live with a person long enough.....). Norm kept jumping up and playing photographer with Ed when anyone walked in, getting in the way of archer Bob Fingerhut, whose intent seemed to be to shoot everyone with his bow and arrow. Oddest looking cupid I've ever seen.

Able to defend himself against us all came Gene Cisneros, looking formidable in his karate outfit. What we all had to defend ourselves against was the Creature From the Black Lagoon (nebula, no doubt) excellently played by himself, Phil Hermsmeyer, in his scuba diving suit. Phil dove with enthusiasm into all the contests that night: bobbing for apples (with snorkel and face mask, of course), pumpkin carving (he had to kill it first in a duel), and contact lens hunting. Alas, winning two out of three ain't bad, Phil. Sorry about the lens.

What better way to celebrate Halloween than to have a birthday cake for not one, but three of our members: Norm, Phil, and Jay. It was a deliciously decorated cake that all the great goblins gobbled with gusto. Erp.

Best costume went to Gerry Rattley for his courage to show up in tights, but the best realistic costume was definitely Suzanne Lowd, who dressed up as a pregnant lady. Other costumes on the thirty-odd people (in those costumes the description's debatable) were a belly dancer, a bum, a couple of flower-wreathed Greek togas, and some kids dressed as kids. There were, of course, the unmentionables who showed up without costumes, but I really can't include Jim Van Nuland in that list. After all, he did wear long pants.

Report of the October 7 general meeting.

Before the evening's program, pictures were taken of Don Machholz and Dr. Gregory with Don's Tuthill Comet Award plaque. (This award program was initiated about 20 months ago to honor American amateurs who discover comets.) Also, Norm Neinchel shared several slides comparing ASA 200 and 400 Ektachrome, and film treatment by chilling, gassing, or both. Quite interesting, as some variables were a lot more significant than others.

The first of the evening's three movies was "Xi Ursae Majoris", a short presentation of a double star system. "Celestial Earth", made by Dave Langley, presented the history of our solar system in its proper time perspective. "Universe" covered a variety of topics, including the origin of the universe, the planets of our solar system, pulsars, and the future of the universe. Unfortunately, no one remembered the popcorn, but there was a cake for Dr. Gregory afterwards.

Jim Van Nuland had not received all the data from the Sept. 24 graze, so could only make a partial report. Hopefully in this Bulletin .....

Suzanne Lowd - Staff Reporter

Ed Schell and I left my house at approximately 3:30 P.M. on Sept. 29 for the Fremont Peak star party. We did not arrive until 10:30. I won't go into details but...on the way.... the car broke down, and we had it towed to Morgan Hill. Had my father bring nesessary replacement part from Los Gatos. In the process of installing part, car caught on fire. My father luckily had fire extinguisher handy. Car survived. Car eventually did make it up the hill.

West Valley was there in full force with bright lights, beer cans, and shouts in the night.

Only a few from SJAA were at Coulter Camp: Wolfgang Hanisch with his family, Ron Martin, and Jay Freeman (that's about all I can remember). Back behind the ranger's house were Bob Fingerhut, Les Delong and a friend (again all I can recall...) The night was incredibly hot; I didn't even need a sweater. The sky was very light until early morning.

Saturday night was cooler, darker, and had only a few from West Valley. Much more peaceful! Cathy Pinheiro and Phil Hermsmeyer arrived for a few hours. Phil learned more constellations from Ed. (Now he knows about the Big Dipper <u>and</u> the teapot in Sagitarius.) Cathy and Jay went off with a pair of binoculars in search of the vail and other things.

Except for the trip up, the weekend was uneventful. All in all, just a few club members, some from West Valley, San Mateo and San Francisco plus a bunch of people from the Sierra Club were there.

There was another star party at Sanborn, but only a few showed up.

What is the speed of gravity? "It's theoretically predicted to be the speed of light. But this cannot be experimentally confirmed until a dependable gravity wave detector is developed, and a gravity wave can be created at a known place and time. The frequency of the gravity wave must be within the tuning range of the detector."

Allan Meyer

FOR SALE: Homemade equatorial wood and steel pipe mount. For an 8". $40.00

John Krukar 379-9489

COMET COMMENTS 10/22/78

The past two months have seen five comets discovered by amateur astronomers. However, three have slipped below our southern horizon, and one more is too faint for us to see, leaving only one of these five comets within reach of our scopes.

Periodic Comet Haneda-Campos (1978j).
Discovered Sept. 1, this comet is now magnitude 13 in the constellation Fornax. It is getting further away from us and from the sun, so it is getting even fainter.

Comet Machholz (19781).
This comet was observed by me on Oct. 11 at -47 degrees at magnitude 10½. It is moving further from both the sun and the earth, and we will not see it again as it is also moving south. It should be back, though, and the present orbit computations indicate we'll see it again in perhaps as short as 200 years from now, although that's a lower limit. Give it maybe 1,000 years for its next return.

Comet Seargent (1978m).
This bright comet (magnitude 5) was discovered Oct.1 by David Seargent of New South Wales. It was about 35 degrees due south of the sun, and it is moving south. It will continue moving south and under the earth, and our only chance of seeing it may occur in a few months; however, this remains to be seen.

Comet Fujikawa (1978n).
Discovered as an 11 magnitude object on Oct. 9 by Shigehisa Fujikawa in Japan. This is his third discovery in eight years. This comet is moving out of the sun's rays, and early orbit computations have it moving west, then north in Leo in the morning sky. An ephemeris follows.

Comet Bradfield (1978o).
Discovered Oct. 10 as a 8 magnitude object, low in our morning sky. It will continue moving south, loop west, and then north again. It is possible that this comet, then at magnitude 11, may be visible in the low south in early Nov. This is William Bradfield's eighth comet discovery in eight years.

Comet Ashbrook-Jackson (1977g).
Recovered last year, this 12 magnitude object is in the constellation Pisces. It is about 1' across. An ephemeris follows.

Comet tails: In six weeks we had five comets discovered by amateur astronomers. All five were found south of the ecliptic, four were found in the morning sky, and four were found after they had reached perihelion (the point closest to the sun). Why so many comets in so little time? We don't know.

Don Machholz - 356-7727

1978n

1978UT	R.A.	Dec.	Mag
Oct.29	10h13.7m	+17°39'	11.4
Nov. 3	10 15.4	19 19	11.7
Nov. 8	10 17.4	20 44	12.1

(from IAU Cir. 3289)

1978g

1978UT	R.A.	Dec.	
Oct.29	23h53.5	+3°58'	Mag.~12
Nov. 8	23 51.7	4 38	
Nov.18	23 52.7	5 26	
Nov.28	23 56.3	6 22	

(from IAU Cir. 3161)

SJAA

Rattley Rattles

The Finest Deep Sky Objects on the Skalnate Pleso Atlas of the Heavens
Chart II

NGC RA (1950) dec Con SP:mag,size,type,dist

147 00 30.4 +48 14 Cas eg:12:4!5x2!5:dE4:640kpc
very Faint,very Large,irregularly Round,gradual then suddenly much brighter in the Middle,Nucleus like an 11th mag star: very diffuse, use low power and a dark sky; several superimposed faint stars; member of the local group of galaxies!

185 00 36.1 +48 04 Cas eg:11½:2!2x2!2:E0:640kpc
H.II 707: pretty Bright,very Large,Round,very gradually much brighter in the Middle,mottled: use low and moderate power; high surface brightness; member of the local group of galaxies!

205 00 37.6 +41 25 And eg:9½:10!0x4!5:E6:640kpc
H.V 18: very Bright,very Large,much elongated in P.A. 165°,very gradually very much brighter in the Middle: use low power and a dark sky; in the same low power field as M.31; it is a satellite galaxy of M.31 and a member of the local group of galaxies!! (It has been suggested as M.110)

221 00 40.0 +40 36 And eg:9:3!4x2!8:E2:640kpc
M.32: Remarkable,very very Bright,Large,Round,pretty suddenly much brighter in the Middle,Nucleus: use low and moderate powers; high surface brightness; satellite galaxy of M.31 and a member of the local group!!

224 00 40.0 +41 00 And eg:4½:160'x35':Sb:640kpc
M.31: extremely Remarkable Object,extremely Bright,extremely Large,very much Elongated,the Great Andromeda Nebula: use lowest power; most distant object visable to the naked-eye; fine binocular object, the darker the night the better the view!; easy in any telescope, look for the two satellite galaxies (above); member of the local group of galaxies!!!

273 00 49.2 +47 18 Cas eg:11½:1!3x1!3:E0p:8½Mpc
H.I 159: considerably Bright,pretty Large,Round,two 10th mag stars near: use low and moderate powers; high surface brightness; Rich Milky Way field.

281 00 50.4 +56 19 Cas gn:11?(*8½):27'x23':1700pc
Faint,very Large,diffuse,small triple star on north preceding edge: use lowest power and a dark sky; best viewed in binoculars.

404 01 06.6 +35 27 And eg:10½:2!1x2!0:E0:1½Mpc
H.II 224: pretty Bright,considerably Large,Round,gradually brighter in the Middle,β And south following: use moderate bower; in field with β And; not plotted on the Skalnate Pleso Atlas but listed in the catalogue!

457 01 15.9 +58 04 Cas oc:7½:10'-100*:e:660pc
H.VII 42: Cluster,Bright,Large,pretty Rich,stars of mags 7,8,10...: bright star φ Cas on following edge (not a member); use low power; shaped like a jet airliner; very fine and pleasing cluster!!

598 01 31.1 +30 24 Tri eg:7:65'x35':Sc:740Mpc
M.33: H.V 17: Remarkable,extremely Bright,extremely Large,Round,very gradually brighter in the Middle,Nucleus: use lowest power and a dark sky for the best views of this object; visable in binoculars; spiral structure can be seen in this galaxy with an 8-inch telescope with some experience! look for the small fuzzy knot in the northern arm near a small star, this is NGC 604 (a gaseous nebula like M.42 that is in M.33)! a member of the local group of galaxies.

Rattley Rattles On . . .

Finest Skalnate Pleso Objects - Chart II, continued

NGC	RA (1950)	dec	Con	SP:mag,size,type,dist
C50-1	01 38.8	+51 19	Per	pn:12?(*16½):2!6x1!5:V?:2510pc

M.76 & H.I 193: very Bright,Double Nebula: "Little or Junior Dumbbell"; use low power; mag is realy more like 10½ than 12.

752	01 54.7	+37 25	And	oc:7:45'-70*:d:1050pc

H.VII 32: Cluster,very very Large,Rich,stars Large and scattered: use lowest power; binocular object.

869	02 15.5	+56 55	Per	oc:4½:36'-350*:f:2250pc

H.VI 33: h Per: Remarkable,Cluster,very very Large,very Rich,stars from mag 7 to 14: "Double Cluster" with NGC 884; use lowest power; Spectacular binocular object!!

884	02 18.9	+56 53	Per	oc:4½:36'-300*:e:2250pc

H.VI 34: χ Per: Remarkable,Cluster,very Large very Rich,ruby star in the Middle: "Double Cluster" with NGC 869; use lowest power; binocular object!!

891	02 19.3	+42 07	And	eg:11:11!8x1!1:Sb:2½Mpc

H.V 19: Remarkable,Bright,very Large,very much Elongated in P.A. 22°: use low and moderate power and a dark night for a rewarding view of this edge-on spiral galaxy; the equatorial dark lane in not to difficult with an 8-inch telescope; several bright foreground stars.

1023	02 37.2	+38 52	Per	eg:10:4!0x1!2:E7p:7Mpc

H.I 156: very Bright,Very Large,very much Elongated,very very much brighter in the Middle: use low and moderate power.

1039	02 38.8	+42 34	Per	oc:5½:18'-80*:d:440pc

M.34: Cluster,Bright,very Large,a little Compressed,scattered stars of 9th mag: use lowest power; fine binocular object; many double stars!

1245	03 11.2	+47 03	Per	oc:9:30'-40*:e:5000pc

H.VI 25: Cluster,pretty Large,Rich,Compressed,irregularly Round,stars of mag 12 to 15: use low power and very dark skies; difficult but rewarding object; beautiful blaze of very tiny stars!

1342	03 28.4	+37 09	Per	oc:7:15'-40*:c:830pc

H.VIII 88: Cluster,very Large,about 60 stars: use low power.

...	03 43.9	+23 58	Tau	oc:1½:100'-130*:c:130pc

M.45: Melotte 22: the "Pleiades"!!! fine naked-eye cluster; shaped like a tiny dipper; superb binocular object; very low power, and a very dark sky are all that are necessary to glimpse the faint patches of nebulosity that surround the brighter stars (I have easily viewed them in a 2-inch finder scope); the nebulosity extending south from Merope is the most extensive and easiest to view!

1491	03 59.5	+51 10	Per	gn:-(*11):3'x3':3300pc

H.I 258: very Bright,Small,irregular Figure,brighter in the Middle, mottled,star involved: use low and moderate power.

1499	04 00.1	+36 17	Per	gn:-(*4):145'x40':600pc

very Faint,very Large,Elongated north-south,diffuse: the "California Nebula"; extremely difficult object visually, I do not recommend viewing it (unless you have a good deal of experience and want a challenge); it is however a very fine photographic object for a wide field system.

1501	04 02.6	+60 47	Cam	pn:13(*13½):0!9x0!8:IIIa:4170pc

H.IV 53: Planetary,pretty Bright,pretty Small,very little Elongated: use moderate power; this tiny planetary is worth a look!

1502	04 03.0	+62 11	Cam	oc:5½:7'-15*:e:1150pc

H.VII 47: Cluster,pretty Rich,considerably Compressed,irregular Figure, Double star is Σ485: use low power; the wide bright double star in the middle makes this a unique object; two equally bright yellowish stars, mags 6.1 and 6.2, at a separation of 18" comprise the double.

Chart II objects to be continued next month . . .

The September 24th Graze Jim Van Nuland

The graze expedition began with the exploration of Bishop Ave, east of Kerman in the Central Valley. As Jim Van Nuland drove along, stopping often to examine road shoulders, elevations, clearances, etc., he managed to perplex most of the local people. Then, using the measuring bicycle, he laid out numerous stations and perplexed the rest of the local people.

By late afternoon Gerry arrived, found Jim's abandoned bus in a large clearing, and sat down to wait. Jim eventually came gasping along, verifying locations of stations, and drank several gallons of water.

After a trip to town for the weather report phone call, the clearing was soon filled with Pete Manly, Chris and Shea Pratt, Kevin and Denni Medlock, Jack Zeiders, Suzanne and Ralph Lowd and the Fresno group: Garrett Wiemer, Glynn Reavis, and the well-known McGlauflins.

Darkness revealed an excellent sky; the Milky Way was distinct, and most of the members went to set up early to do some general observing. A moment of panic occurred when someone who hadn't studied his bulletin suddenly noticed that the moon wasn't up! Reference to the bulletin revealed that moonrise would occur in time, so all was again peaceful.

But soon the crackle of the CBs punctuated the night sounds as we sought the star, verified times, transmitted WWV. After a few minutes of frenzied last-minute activity, the night sounds were suddenly dispelled by screams of OUT! and IN! and WOW! Soon the CBs were reporting results from up and down the line. Gerry, at the north end, got a probable miss; some middle stations had 8-10 events; the southern stations reported a short total. The profile elsewhere in this bulletin shows the results.

Everyone gathered around station H to further discuss the successes and failures. Don McGlauflin admitted that Jim knew how to set up a graze after all, Chris bemoaned his too-short tape, Jim and Kevin tried to diagnose Jim's dying Timekube. Poor Gerry listened to all the excited exclamations and consoled himself that the innermost miss is scientific data, too. He is guaranteed the middle of the moon on the next trip.

Gradually, most of the crew began the long drive back to San Jose. The Fresno group thanked us for scheduling the expedition so nice and close, and invited us to hold the next one there, too. Gerry and Jim finally fell into bed about 4:30 and slept till 9, when the warming sun drove them out of their vans, and they drove northward toward home.

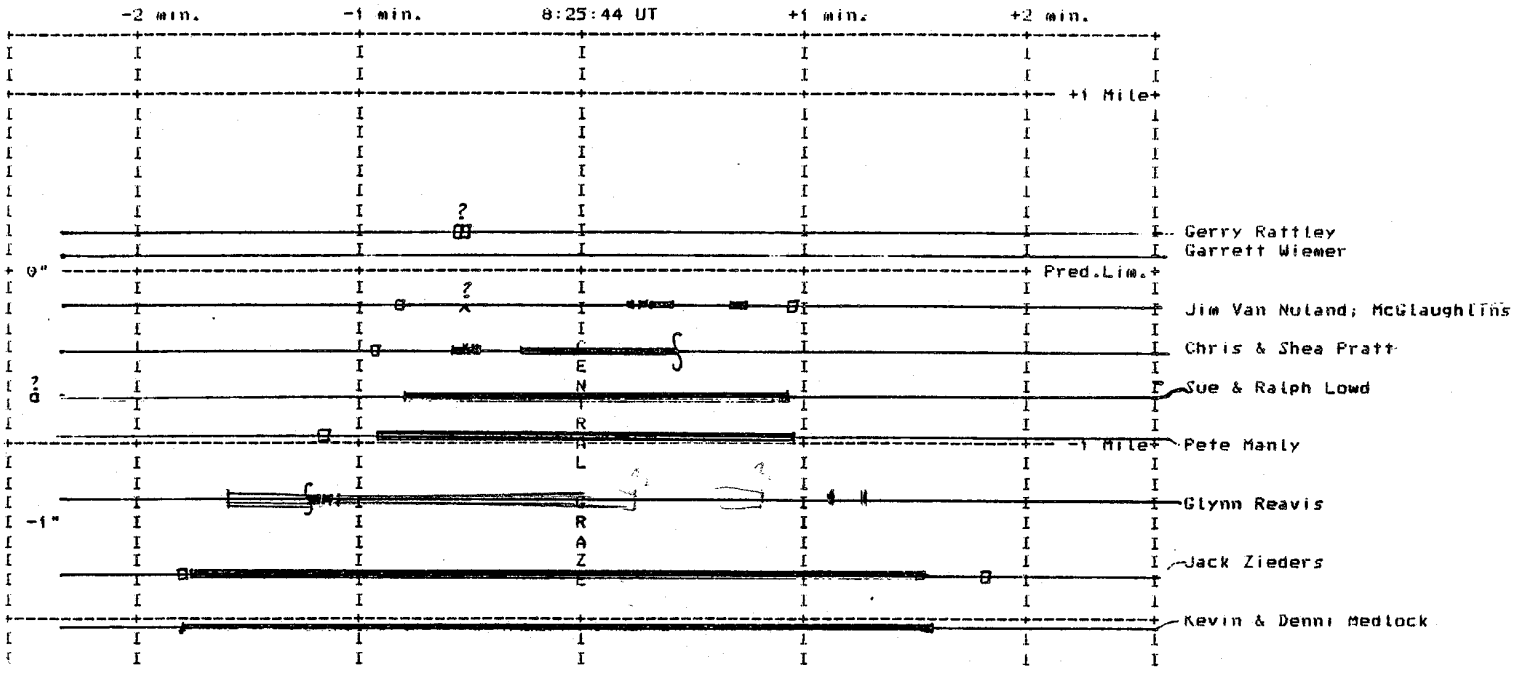
New members to add to the list published in September

Bell, Trudy E	909 3rd Ave	New York N.Y.	10022	
DeGrange, John	14850 Oka Rd. #37	Los Gatos	95030	356-7576
Maguire, Marty	1297 Ayala Dr. #3	Sunnyvale	94086	964-3004
Panish, Diane L	945 Kennard Way	Sunnyvale	94087	738-1372

Bulletin Subscribers

Aspey, S.A.	12421 Lolly Ct.	Saratoga	95070	996-8670
Freeman, Jay	1610 Milvia #3	Berkeley	94709	548-1749

Change in address: Jack Zeiders 2961 Magliocco Dr.#3 S.J. 95128 246-6189



Profile Chart on The September 24 Lunar Graze Occultation

The profile summarizes the data obtained on the expedition. Remember that the virtical scale is exaggerated about 40 times. The distance scale along the right indicates distance perpendicular to the predicted limit, not miles along the road. The scale on the left indicates seconds at arc at the moon. The dark bars indicate times when both components of the star were occulted. The white squares indicate dimmings (left) and brightenings (right). A V indicates a flash, and a ∧ indicates a blink.

Poor seeing prevented timing of most dimmings and brightenings. Glynn had tape trouble and could report only a few events, tho he saw several more.

The corrected predicted profile has not yet been recieved for comparison. The report package will soon be sent to Dr. Dunham for analysis and forewarding to the Nautical Almanac Office at the Royal Grennwich Observatory, which is the center for occultation work.

Jim Van Nuland

Excerpts from The First Three Minutes by Steven Weinberg submitted by Allan Meyer

(Weinberg uses a series of selected "frames" from a hypothetical "movie" of the birth of the universe.)

"FIRST FRAME: The temperature of the universe is 10 K. The universe is simpler and easier to describe than it ever will be again. It is filled with an undifferentiated soup of matter and radiation, each particle of which collides very rapidly with other particles. Thus, despite its rapid expansion, the universe is in a state of nearly perfect thermal equilibrium."

"It is natural to ask how large the universe was at very early times. The universe may well be infinite now, in which case it was also infinite at the time of the first frame, and will always be infinite. On the other hand, it is possible that the universe now has a finite circumference, sometimes estimated to be about 125 billion light years. Since the temperature of the universe falls in inverse proportion to its size, the circumference of the universe at the time of the first frame was less than at present by the ratio 3 K/10 K; this gives a first-frame circumference of about four light years. None of the details of cosmic evolution in the first few minutes depend on whether the circumference of the universe was infinite or only a few light years."

(to be continued)

Blurbs

As of last month, we are officially San Jose Astronomical Association according to the Bulletin's return address stamp. Bruce DeGraff gave me a new stamp using Jim's address this time. Since I didn't mention it in last month's Bulletin, I wonder if anyone noticed the change?

With the excitement of Halloween parties and what not, I totally forgot to ask people the Question of the Month. (Yes, even editors make mistakes!) So next month's Question of the Month will be the same as last month's Question of the Month, which was "What is next month's Question of the Month?"

Remember all my pleading for illustrations in past bulletins? Well, Jay Freeman has supplied me with a whole folder full of cartoons, many of them drawn on pizza parlor napkins and unxeroxable yellow paper. But, never fear, Gerry Rattley does a good job of tracing, and they all turn out like the original.

Denni, you did a great job on your Halloween article. I sometimes think you're a better writer than I am! And Jim, you really can write well; the report on the graze is proof of it!

Don't forget about equipment night at the Red Cross on Nov. 18. Bring as much as you want. (Unfinished telescope mirrors, like mine, included.) It should be a good show, so come if you can.

Red Spot Recovered

by Jim Van Nuland

Astronomical detective work was rewarded the morning of Oct. 13 as Jim Van Nuland recovered the Jovian Jewel known as the Great Red Spot. Named for a past president of our organization, the Spot lies hidden within a dent in the south equatorial belt, disguised by a layer of grey clouds but visible with the superb 8" Newtonian at high power during moments of excellent seeing. It is hoped that the Spot will soon be remounted in its old prominent place for all to see and enjoy.

Lower limits, 9.5h; 7.0h
Upper limits, 13.5h, 14.2h
With Randomizing

Great Red Spot on Meridian PDT

da	mo	d	h	m	
F	10	20	5	16	AM, PDT
M	10	23	2	45	AM
W	10	25	4	20	AM
F	10	27	5	57	AM
M	10	30	2	30	AM, PST
W	11	1	4	13	AM
Sa	11	4	1	38	AM
M	11	6	3	14	AM
W	11	8	4	59	AM
Th	11	9	0	45	AM
Sa	11	11	2	27	AM
M	11	13	4	5	AM
M ~~Tu~~	11	13	11	56	PM
W	11	15	5	41	AM — OBS. early
Th	11	16	1	33	AM
Sa	11	18	3	14	AM
M	11	20	4	48	AM
Tu	11	21	3	42	AM
Th	11	23	2	23	AM
Sa	11	25	3	57	AM — OBS.
Sa ~~Su~~	11	25	11	50	PM — You Saw
M	11	27	5	37	AM
Tu	11	28	1	26	AM
Th	11	30	3	4	AM