SJAA ephemeris FEB '81

Feb. 7 SJAA Close-in star party at Sanborn Canyon County Park. Take Hwy 9 up through Saratoga, heading for Big Basin. About two-three miles out of town turn left just after the white bridge. (On the right is a private campground). Follow the signs to Sanborn Canyon Park. The club sets up in the upper parking lot.

Feb. 14 SJAA General meeting at DeAnza Community College, Room S-34, across from the planetarium. The speaker this month will be our own Don Machholz and the subject will be the upcoming Messier Marathon. Don's lectures have always been very informative about what's up up in the sky and where to find it. Bring your friends. DeAnza College is located off Stevens Creek Blvd. in Cupertino. 8:00 pm.

Feb. 20 Board meeting at Frank Dibbell's, 710 Georgia , Sunnyvale. 8:00 pm. Everyone is welcome. 733-7208.

Feb. 21 Indoor Star party at the Los Gatos Red Cross building, 18011 Los Gatos-Saratoga Rd. Take Hwy 9 off Hwy 17 and continue about a mile. Building is on left. Everyone is welcome and there is an on-going telescope makers' workshop. 7:30 pm on.

Feb. 28 SJAA star party at Fremont Peak State Park. Take Hwy 17 south to Hwy 156 east towards San Juan Batista. Continue about two miles until yellow flashing light. Turn right and follow road to end, about eleven miles. SJAA sets up in the Coulter Camp overflow area just above the first ranger's house, in the picnic grounds.

March 6-7 Annual SJAA Messier Marathon at Loma Prieta Peak. See information and directions inside.

March 14 General meeting at DeAnza Community College. Room S-34 across from the planetarium. 8:00 pm. Speaker and topic to be announced.

March 20 Board meeting at Bob Fingerhut's, 340 Rio Verde Pl. #4, Milpitas. 263-4455. 8:00 pm. Everyone welcome.

March 21 Indoor star party, Los Gatos Red Cross building. 7:30 pm on.

March 28 Indoor star party, Los Gatos Red Cross building. 7:30 pm on.

"Final stages, like beginnings, are elusive. It is tempting to associate great age with advanced stage of development, but that is an anthopomorphic view. Among living things senility is not uniquely correlated with great age. The relation for stars is even less clear-cut. What is a senile star?"

from Stars & Clusters by Cecilia Payne-Gaposchkin

Kevin Medlock, president 654-6796 Denni Medlock, editor 654-6796

the san jose astronomical association

Observations

It seems this month I have enough new information on the Space Shuttle that I could write a full-size bulletin on that subject alone. I've included for February a checklist made up by Bob Fingerhut on the tests the shuttle has to pass before launch. More important is the following, again thanks to Bob.

40,000 carload passes are being given out for the shuttle landing at Edwards Air Force Base on a first write, first get basis. The address is: Office of Public Affairs
NASA/
Drysden Flight Research Center
P.O. Box 273
Edwards, California 93523

The SJAA has a new treasurer. Because of increasing school-type pressures Phil Hermsmeyer resigned at the January board meeting. A sincere vote of thanks was given him by the board for his past work in that capacity. At the same time Shea Pratt was elected into that position. Congratulations to Shea! If you have any fiscal business with the club she can be reached at 629-2994.

The board has also been working on getting together a "new members packet," an information package that can be given to new members to help get them acquainted with the SJAA. Included will be maps, membership and officers list, current bulletin and activities list, and perhaps a membership card or SJAA pin. If you have any suggestions on what you think should go into such a packet come to the next board meeting at Frank Dibbell's.

At the January 25th Winter Board meeting of the Western Amateur Astronomers Ashley McDermott, of the College of the Desert, was voted to be the 1981 recipient of the G. Bruce Blair Gold Medal Award.

Also announced at the board meeting was the WAA's Astro81, to be held July 23-26 at Chapman College in Orange County. Registration forms will be sent out in a future bulletin. Also, in next bulletin, will be the information and registration form for the Riverside Telescope Makers Conference, to be held May 22-25.

Tonight's Asteroids is a bi-monthly publication available for just sending a SASE for each month wanted to 1411 N. Mangum St. Durham, North Carolina 27701. This publication maps out positions and upcoming events concerning asteroids.

Many thanks to Bobby Fingerhut, Jay Freeman, Frank Dibbell, Don Machholz, and Jim van Nuland for their articles and contributions. Bulletin deadline for the March issue will be Feb. 15.

****

For sale: C-5 with special coatings, tripod and wedge, Teledrive Phase-4 drive corrector, eyepieces and camera mount. $950 or best offer. Call Lloyd West (408) 274-4382

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SJAA EPHEMERIS
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Vice-Pres.	Frank Dibbell	733-7208
Secretary	James van Nuland	371-1307
Treasurer	Shea Pratt	629-2994

Membership (including Sky & Telescope) $18 yr.
Bulletin subscription for non-members $ 7yr.

ATM NOTES
by Frank Dibbell

The January 10th indoor star party marked the official beginning of the SJAA's "formal" telescope making program. The program marked its debut with Kevin Medlock presenting the only planned formal class. 27 people attended, and approximately half of those indicated that they wished to build a telescope. During this orientation, Kevin explained the basic types of telescopes, why beginners generally choose a reflector to start with, the difference between long and short focal length telescopes, and what really is involved in grinding the mirror (clue: patience!) The class concluded after a question and answer session which included individual consultation as to what size telescope and focal ratio would best suit the needs of that person.

For those who missed the formal orientation but would like to join the class anyway, see Kevin, Denni, or myself about your particular needs. We plan to make this class an on going project, with the class starting when you begin grinding and ending when you see that first celestrial object through the completed instrument. We have no time limits; you may work at your own pace. We could use more volunteer instructors, since instruction will be one-on-one once the actual mirror grinding begins, If you wish to volunteer, contact one of the people mentioned above.

I plan to make this column a regular feature in the bulletin, to keep the club membership at large posted on the progress of our telescope makers. Any comments or suggestions as to its format and content will be appreciated,

Current instructors: Kevin Medlock 654-6796
Denni Medlock " "
Frank Dibbell 733-7208

The 1981 Messier Marathon

As mentioned last month, the full moon on March 20 splits the "observing window" for the Messier Marathon. The "window" extends from about March 7- April 3, when 108 or 109 of the Messier objects can be observed between dusk and dawn. The weekends thisyear fall on Match 7-8 and April 4-5. Experience shows that on the first weekend M 30 will not be visible and M 72 and M 73 will be difficult but visible, yielding 109 objects. On the latter weekend, M 30 will be visible, but M 74 won't, and M 33 and M 77 will be difficult, yielding 108 or 109 objects. These figures hold up well if the sky is fairly dark and the horizons low.

Once again, let's meet at Loma Prieta on these weekends to observe these objects (and more). Weather permitting, I'll be up there on Friday night/Saturday morning, and Saturday night/Sunday morning; March 6-8 and April 3-5. (Normally, more people attend on the Saturday night/Sunday morning sessions). In March, we can begin observing around 7:10 pm and morning twilight interferes at 5:30 am. In early April these times are 7:45 pm and 4:40 am. Of course, you need not stay all night to have an enjoyable time! Between 7 and 10:30 pm you could observe up to 70 Messier objects, Jupiter and Saturn, possibly a comet (and two comets will be in the morning sky, too!) and whatever else you wish to do. In fact, in the past a majority of observers do not stay the whole night, and that's perfectly understandable.

I will have observing (search) sequence sheets I will hand out at the observing session. If you want a copy beforehand, see me at a meeting or call me and I'll send you one. I have found it to be a good idea to use the "Atlas of the Heavens" to help locate the objects, and you may wish to purchase a copy before the Marathon. Additionally, you may wish to sign up for the AANC Messier Club, for which you receive a certificate for observing 75 Messier objects and a plaque for observing 107 (this excludes M 40, M 91, and M110). I will have the sign-up sheets for this, or see Gerry Rattley.

How does one get to Loma Prieta? Take Hwy 17 south to Summit Road. Go east for 5.3 miles (it's the first stopsign you'll get to on Summit Rd.) At this stop sign you go left (and up) Mt. Blanche Rd. (If you go straight the name of the road changes to Highlands and you begin going down.) After going up Mt. Blanche Rd. for 3.2 miles, it changes to dirt; from this point it's 1.2 miles to my observing dite. If you wish to view all the Messier objects set up towards the south end of the stretch or on the small ridge just to the west of the road. I'll mark off some areas before hand. If you're planning on setting up equipment, please park just north or south of the observing site, along the road. This way there should be room for all of us. Incidently, the site is about 45 minutes (20 miles) south of San Jose.

Dress warm, and let's have a good time at it! Shouls the weekends appear to become cloudy, I'll try to get up there on a weekday night a few days before or after.

Don Machholz
448-7077

Comet Comments

Comet-mania continues into early 1981. In the past month two more bright comets have been discovered and are now visible. Add that to Comet Meier, P/Comet Stephen-Oterma (fading quickly now), and Periodic Comet Borrelly, and we have five comets visible at magnitude 12 or brighter. Meanwhile, 21 comets were discovered or recovered, one of which being an erroneous observation. Of the remaining 20, 10 were recoveries by professional astronomers attempting to do just that, 6 were discovered by professionals attempting to do some other line of work, and 4 were discovered by amateurs, people like you and me who enjoy observing. It has been a big year for comets!

Comet Lovas (1980s): Discovered December 5th by Miklos Lovas as a magnitude 17 object, this comet may not get too much brighter. However, a definite orbit has not been determined and it may be a short-period comet.

Comet Bradfield (1980t): Discovered by William Bradfield of Australia, in the morning sky at magnitude 5-6. At that time it was too far south for us to see. Since then it's moved into the evening sky and North, where it's now observable. This is Bradfield's eleventh comet discovery in nine years. Within 0.26 AU of the Sun on Dec. 29th., it is now speeding away from both the Sun and us. Positions follow.

Comet Panther (1980u): Discovered Christmas evening at magnitude 9.5, two degress from the star Vega, by Roy Panther of England. Now in the morning sky it is still moving slowly towards the Sun and us, reaching its closest point to the Sun on January 28 at 1.64 AU. An ephemeris follows.

P/Comet Longmore (1981a): This comet was recovered by T. Seki of Japan on January 2 at magnitude 18. With a period of 7.0 years, it is not expected to get much brighter.

P/Comet Stephen-Oterma

Date	RA	Dec	Mag.
01-26	05:49.2	+42°38'	10.3
02-05	06:02.1	43 50	11.0
02-15	06:18.0	44 20	11.8
02-25	06:35.6	44 22	12.5

This comet travels Auriga as it receeds from both us and the Sun. The magnitude estimates are about right. It's up in the sky all night long.

Comet Meier(1980q)

01-26	17:48.5	+21°15'	10.7(9.2)
02-05	17:43.7	21 06	10.8(9.3)
02-15	17:36.0	21 19	10.9(9.4)
02-25	17:24.2	21 47	10.9(9.4)
03-07	17:07.1	22 28	11.0(9.5)

A very diffuse object, this comet is in the morning sky in Hercules. The magnitude estimates in () seem to apply more to my observed values.

Periodic Comet Borrelly

01-26	00:51.8	-08°03'	12.1(11.1)
02-05	01:15.2	-01 29	12.1(11.1)
02-15	01:39.8	+05 02	12.1(11.1)
02-25	02:05.8	+11 21	12.1(11.1)
03-07	02:33.5	+17 19	12.1(11.1)

We pull slowly away from this comet as it approaches the Sun. The mag. ests. in the () are close to Gerry Rattley's ests. In the evening sky, it moves into the twilight zone in March.

Comet Bradfield (1980t)			
01-26	21:28.0	+05°23'	9.1
02-05	21:45.6	06 43	10.5
02-15	21:58.6	07 14	11.5
02-25	22:09.0	08 36	12.4

Until February 15 this comet remians low and due West after sunset, then it enters the morning sky and is difficult to observe. Try real soon on this one!

Comet Panther (1980u)			
01-06	18:52.9	+42°00'	9.5
01-16	18:59.1	45 46	9.4
01-26	19:06.5	50 41	9.2

In the morning sky and moving from Lyra to Cygnus, this comet is showing a faint tail now. These are all the positions I presently have. Call me for more

Great Comets:

Comet Enke: As with Halley's Comet, this one is also named for its orbit computer rather than for its discoverer. Over a period of 36 years it was discovered four times before the German astronomer J. Enke realized these four comets were actually four observations of one comet.

It was first sighted by Frenchman Pierre Mechain Jan 17, 1786. Due to bad weather, it was observed only one other night-Jan 19. No orbit could be determined.

Nearly ten years later, Caroline Herschel discovered it as a naked-eye object, but, but no parabolic (very long period) orbit could fit the observed positions of the comet.

In late 1805, some ten years later, Louis Pons (and others) discovered it again, and it was then that Enke worked out an elliptical orbit of 12.12 years (nearly three times the actual figue).

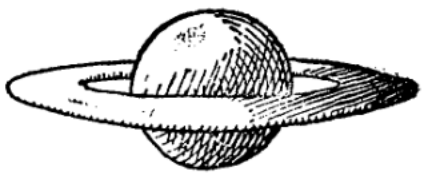
Thirteen years later, Pons discovered it again; and this time it was visible for 7 weeks.

Here Enke tried a new computing technique developed by K. Gauss (who had used it to recover the first minor planet, Ceres). For six weeks Enke worked almost nonstop on the mathematical calculations. Finally he arrived at an orbital period of 3.3 years, and then he determined that the four aforementioned comets are all one and the same, which is now known as Comet Enke.

A problem concerning the orbit of this comet has been recently solved. It seems the comet completes an orbit about 2½ hours sooner than it should, even when perturbations from all the planets are taken into account. The cause? The nucleus rotates and the sunward side evaporates, "jetting" it slightly out of orbit.

And, despite all its close approaches (o.33 AU) to the Sun, Comet Enke has shown little wear and tear—it's only slightly fainter now than when first discovered 194 years ago.

Don Machholz
448-7077



SHUTTLE COUNTDOWN

by Bob Fingerhut

The space shuttle Columbia went to the pad December 29th. The following test milestones must be met between the shuttle's arrival on pad 39A and liftoff.

		scheduled completion
☒	Shuttle/pad interface validation	Jan. 10
☒	Umbilical plugs-out test	Jan. 17
☒	Ground power-out test	Mid Jan.
☒	Auxiliary power unit fluid servicing	Late Jan.
☐	Main propulsion system serial autoload and detanking tests	Late Jan.
☐	Auxiliary power unit hot-fire	Early Feb.
☐	Hazardous fluids servicing	Early Feb.
☐	Dry countdown demontration test	Feb. 8
☐	Flight readiness firing	Feb. 10
☐	Mission verification test	Mid Feb.
☐	Post-flight readiness firing maintenance and test	Late Feb.
☐	Final shuttle systems test	Late Feb.
☐	Final launch readiness verification test	Early March
☐	Mission/countdown	March 17

The key tests are the propellant autoload and detanking tests and flight readiness firing. This article will be updated as events unfold.

Conversations from a board meeting

"I, being of sound mind and body—" Phil Hermsmeyer
"Ha, ha, ha, ha, ha, ha, ha, ..." Jay Freeman

"If you've seen one brick trying to glide, you've seen them all"
Jay Freeman

"I have a date for the big AANC star party in June." Gerry Rattley
"What's her name?" Jay Freeman

"Hey, you don't need those headphones on—you're ignoring him great!"
Chris Pratt to Phil Hermsmeyer

"I don't consider being a board member a privilege." Gerry Rattley

JANUARY STAR PARTY RAINED OUT

A club star party was scheduled for the evening of Saturday, January 3, 1981, at Fremont Peak, but the passage of a wintertime cold front seems to have dampened everyone's enthusiasm; to say nothing of dampening the sky, the air, and the earth below. The timing of this front was unfortunate, because the weather at the peak a day or two before and after the third was superb: I went up on the evening of the first, and found that the fog was in on the lowlands so that the sky was nice and dark. There was a fair amount of wind from time to time during the evening, but it was not too cold and --wonder of wonders--there was no a trace of dew! I did not realize how good a night it was until I decided to look for the dwarf galaxy, Leo I, and there it was, (Celestron 14, 71X). One other observer was there--someone I didn't know, with a medium-sized Newtonian.

By Sunday the fourth the sky was clear again, so off I went. This time there was no fog below, so the sky was not as dark as on the first, but there wasn't any wind to speak of. Early in the evening, I started noticing a little dew on dark-colored horizontal surfaces insulated from the ground, but after a while that all went away. My optics remained undewed throughout. There were a handful of other people there -- no club members -- with a C-8, a six-inch RFT, a Meade eight-inch Newtonian, and an eight-inch Astrola Newtonian. I spent most of the evening galaxy-hunting in cat country (Leo, Leo Minor, Lynx).

I have a copy of the new AAVSO Variable Star Atlas that Sky Publishing has put out. It's magnificent! It shows approximately the same collection of deep-sky stuff that the Skalnate Pleso does, but the chart limit for stars is about magnitude 9½ -- much fainter than the Skalnate -- which makes an immense difference in finding faint fuzzy nothings: magnitude 9½ is about as faint as my 10X40 finder will go, which means that every star I can see through the finder is on the charts, and vice-versa. Futhermore, there are plenty of 9½ magnitude stars -- the new atlas has no great empty starless spaces like some of the older ones. Thus it is very easy to use my finder to point the main telescope at an object that is much too faint to see in the finder itself. It seems almost unsportsmanlike to track down a 13th-magnitude galaxy so easily.

On the other hand, a hundred and seventy-eight charts is a thick, heavy packet, and woe to the observer who gets them out of order or has the wind start blowing them away. I have been keeping the box open in the car and fishing out only one chart at a time. It's not too hard to figure out which chart you need for a particular right ascension and declination.

One of my Christmas presents was an item which diehard winter observers might want to duplicate: a pair of warm, lightweight boots, with an inch-and-a-half insulated soles, and with uppers--which come almost half way up my calves--made of ski-parka stuff. The boots are light-duty: if I tried to go hiking with them, or even walked around much, they would rapidly get torn to shreds; but in consequence they are also light in weight and very comfortable. The basic market for these is people who ride snowmobiles, but we astronomers also spend fair amounts of time sitting out in the cold, and might find such boots very handy.

- Jay Freeman

A REPORT ON THE JANUARY 4 COMET PARTY

by Frank Dibbell

The Star Party which was scheduled for Saturday January 3 at Fremont Peak was cancelled due to the bad weather. Insult was added to injury when the following day turned out to be beautiful. Well, I decided I was not going to let Mother Nature get the best of me, so I planned on organizing an impromptu close-in Star Party for Sunday night. I was having very little success, until I got ahold of Gerry Rattley. He mentioned something about several comets being in the early evening sky, and that he was going up to Loma Prieta to observe them. I told him about my vain attempt to organize a close-in Star Party, that the evening would be too nice to sit at home, eventhough it was a Sunday, and that I would join him at sunset on Loma Prieta. At this point we decided that we would change the Star Party into a Comet Party, since there were quite a number visible.

Loma Prieta was moderately windy, and cold, but not freezing. Seeing was poor to fair because of scintillation, but the atmosphere was very clear. The Zodiacal Light was so prominent in the West that I momentarily mistook it for the Milky Way! In fact, even Jim Van Nuland could see it. Anyway, Gerry, myself, and Bill Cooke arrived just before sunset in an attempt to view Comet Bradfield, which was at approximately 3rd magnitude and very close to the sun. We didn't have any luck in that endeavor. Jim Van Nuland arrived at this time and he also vainly looked for the comet.

We did see comets Panther and Stephan-Oterma, each at about magnitude 9 to 9.5. After viewing the comets in both my 8 inch and his 10 inch, Gerry came to the conclusion that it was time to clean the crud off his mirror. We also viewed Comet Borelly, which was a bit of a surprise. Its magnitude was calculated to be around 12, which is pushing the limit of not only my scope but my lousy eyesight, but it appeared to be as bright as the other two 9th magnitude comets. In fact, we could detect a nucleus. Is it possible that this comet had increased in brightness? Don Machholz, where are you?

Before disbanding, we viewed a couple of the celestial showpieces such as NGC-253, M33, M31, and the Crab (as Jim referred to himself in commenting on his earlier mood upon arrival at the sight). All in all, it was a very satisfying and enjoyable evening. It also demonstrated the feasibility of Sunday night star parties in the winter months. We had left the mountain at 8 PM, after about two full hours of observing. Maybe we should plan future Winter Sunday night Star Parties. Any feedback?

The Ultimate Cloud Out!

Every astronomer has his favorite "clouded out" story, but probably the most famous occured during the 18th century to the French astronomer Guillaume-Joseph-Hyacinthe-Jean-Baptise le Gentil de la Galaisiere. (le Gentil, for short.)

By the mid 1700's, a fairly good relative scale of the solar system had been established. The absolute scale was quite weak. That is, it was known that Mars was about one and a half times further away from the sun than the earth, but the earth-sun distance was not known in miles. If Venus were carefully observed from various parts of the earth as it transited across the disc of the sun, triangulation would permit assigning miles to earth-Venus-sun distances. Transits of Venus occur in pairs, seperated by intervals of about eight years, The last pair occured in 1874 and 1882; the next pair will be on June 8, 2004 and June 6, 2012.

Since there is such a long gap between pairs, it was considered essential to take advatage of the transits of 1761 and 1769. Astronomers were dispatched to distant parts of the worl to observe the event from as great a variety of angles as the size of the earth would permit. Le Gentil had been dispatched from Brest on March 26, 1760, with the hope of observing the first transit from the French colony of Pondicherry in southeast India. Although a fellow passenger had committed suicide and the English fleet had chased the ship round the Cape of Good Hope, Le Gentil arrived at the Isle de France in July, 1769, almost a year before the event. (Isle de France is modern day Mauritius). Unfortunately, the British were laying seige to Pondicherry at the time. Le Gentil contemplated observing the transit from Batavia instead, but decided to join the troops being sent to relieve Pondicherry. He embarked on March 11, 1761--still plenty of time until the June 6 transit. Bad weather slowed the journey, so the ship did not arrive off the Malabar coast until late May. Pondicherry had fallen to the British, so, in all haste, the ship retraced its route to the Isle de France. Thus it was on the high seas under clear skies that Le Gentil watched the transit, but he was unable to make the measurements from the pitching deck.

Le Gentil decided to remain in the area for a year or two to record some geography and natural histroy. As this stretched into several years, he decided to stay until the second transit in 1769. He worked on various research in the Phillipines, Madagascar, and other islands.

Although Le Gentil wanted to observe the second transit from Manila, Paris advised him to observe instead from Pondicherry. This time, he arrived 14 months before the transit and constructed an excellent observatory on the ruins of the city's fort. On the eve of the transit, the weather was perfect and he made observations of the satillites of Jupiter during the night. At seven in the morning, however, the time of the transit, the sun was hidden behind a cloud! Within a half hour the sky was clear again. <u>After ten years he had missed both transits</u>. "This is the fate that often touches astronomers," he said resignedly, "it appears I have traversed such a large span pf oceans, exiled myself from my country to be an observer of a fatal cloud which passed in front of the sun at the precise moment of my observation, to remove the fruit of my hard work and pains."

And Manila? Oh, it had been clear in Manila.

by Dr. Bruce Weaver, reprinted from the MIRA Newsletter