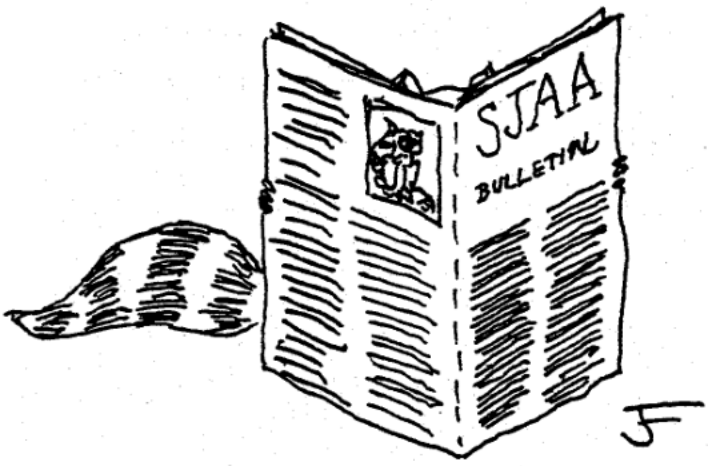
The San Jose Astronomical Association

Predictions

OCTOBER IN THE YEAR 1978

Sept. 29-30	AANC-sponsored star party at Fremont Peak.
Sept. 30	Close-in club star party at Sanborn Canyon.
Oct. 3	Dr. Gregory's birthday.
Oct. 7	General Meeting, Rosicrucian Planetarium, 7:30 pm. Park & Naglee, San Jose. Movie Night. "The Universe" from NASA, "Celestial Earth" by Dave Langley, and the double star movie on Xi Ursae Majoirs. (This is the movie that Gerry borrows from Don Warren for his double star talks.)
Oct. 13	Board of Directors meeting, 8:00 pm. at Phil Hermsmeyer's house, 20900 Alves Drive, Cupertino.
Oct. 14	Indoor star party, Los Gatos Red Cross, 7:00 pm.
Oct. 16	Phil Hermsmeyer's 18th birthday.
Oct. 19	Norm Neinchel's birthday.
Oct. 21	Indoor star party, Los Gatos Red Cross, 7:00 pm. Halloween costume party, see blurb section.
Oct. 27-28	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. Program to be announced.
Nov. 17	Board of Directors meeting, at Bob Fingerhut's, 8:00 pm. 340 Rio Verde Pl. #14, Milpitas.
Nov. 18	Indoor star party, Los Gatos Red Cross, 7:00 pm. Equipment night. See blurb section for details.
Nov. 25	Indoor star party, Los Gatos Red Cross, 7:00 pm.



... DID YOU EVER WONDER HOW THE RACCOONS ALWAYS KNOW TO SHOW UP FOR OUR STAR PARTIES...

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

DISCOVERY OF A NEW VARIABLE STAR

During the night of 26-27 Aug, while observing at Fremont Peak, I noted the presence of a fairly bright red object to the South. Upon further examination I noted that the aparent visual magnitude of the star varied between Mv -4.9 and Mv 12 as measured with a standard limburger cheese photometer. The period of the light cycle is about 1 second with the star near peak brightness about 50% of the time.

This source, located at a declination of -35.8° ,exhibited a curious motion with respect to the Celestial Sphere, moving about 1 hour Eastward per hour. Examination of the source at high magnification revealed structure within the more luminous body of the central parts. A sketch is shown below;

There was also a fainter but sharply defined structure surrounding the central core composed of very straight cylindrical members, possibly a reflection illuminated dust lane array. It is the author's opinion that, should measurements be undertaken, copious RF energy in selected bands will be detected radiating from the vicinity of this most unusual source.

Sheila Mac Dougal

Correction: After last month's Bulletin went out, Pete Manly called to inform me of two mistakes. (None of which did I make for once.)
No. 1: Concerning the report on the General Meeting, it was Bruce DeGraff who was responsible for the possible grant from IBM for a television camera, not Pete. No. 2: Pete was not at the Aug. 5th Fremont Peak star party. He was at Coe!

Don't forget that SJAAA is a good idea, but San Jose Aquarium and Astronomical Assoc.? Yuk! It should stand for San Jose Aviation and Astronomical Assoc! Amoung the intrepid aviators in our group are: Norm Neinchel, Ed Schell, Jack Petersen, Mike Gustafson and myself. Have I missed anyone?

Gene Cisneros

EDITORIAL

I perceive a lack of leadership and direction from the Board of Directors. The last board meeting was an example. A lot of talking went on, but nothing really got accomplished. For anything to get done in this club, someone has to do it themselves as an individual, not as a club project. A couple people are making the decisions for everyone. We need more participation from the membership. Penny E. Ponschmidt

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Perils of Penny and her Petty Publishing Problems

I had more problems with last month's Bulletin than anyone could imagin. (This month's as well, but that's another story.) Not only was the cost astronomical, but the printing turned out to be atrocious. Los Gatos Office Equipment, where I normally have the Bulletin duplicated, was too busy to handle the job. So I had to take it to San Jose Blue Print. And they botched it royally. Every line, crease, mark, and correction showed up to perfection. They finished just at closing time and the Bulletin needed to be mailed that night. That left no time to have them do it over right. I was furious. Why this Bulletin of all Bulletins? My first year anniversary as Editor. I wanted that Bulletin to be the best, to be special. But the printing ruined it. San Jose Blue Print, you have lost me as a customer forever.

TO BE CONTINUED

Blurbs

If anyone has a birthday coming up, tell me and I'll put it in the Bulletin. Only those that I know of do I publish.

At the last Board meeting, Cathy Pinheiro came up with the idea of having a Halloween party at the Red Cross closest to Oct. 31. The Saturday before Halloween (the 28th) had a Sanborn Canyon scheduled on it. So the Board cancelled the star party and moved it to the fallowing week. So far so good. Later, when I began putting together this month's Predictions page, I realized that the last AANC Fremont Peak star party of the season was on the Halloween party weekend. Attendance at the Red Cross would be low. Not a good night. I by-passed the Calender Keeper and moved the party to the 21st and left the 28th with only the Fremont Peak on it. It's a little early for a Halloween party, but there are no other conflicting activties that night. As for the party itself, there will be a prize for the best costume, so dress to the hilt! (Wolf will have to wear his grass skirt.) Sorry if this sounds a little confusing, but I'm still somewhat confused about it myself.

In the past, we have had an equipment night once a year as part of a regularly scheduled general meeting. This year it will be held at a Red Cross indoor star party. Why? Access up the steps and into the Rosicrucian Planetarium is poor. Parking outside the door for carrying in big, heavy telescopes and equipment is unlikely. The Red Cross has it's own parking lot near the door and lot's of space inside and out. That's why it will not be on a general meeting night. Everyone is invited, including those who don't normally to indoor star parties as it is a club event.

Rattley Rattles

This month Penny has informed me that I can only have one page in the bulletin, which is okay by me as my fish are releiving me of most of my spare time these days anyway and it gives me a sort of a rest, so I am only going to run a president's message as I have a couple of items of prime importance to past along to the membership.

First item: Pete Manly and myself, along with Mike Ryan of the San Mateo club, are going to pick up the task of lining up a charter plane flight to view the February 26, 1979 total eclipse in the northwest. We would very much like to make this means of viewing this eclipse a reality and to do so we need to know right away if we can expect to get enough persons to fill the plane(we feel that we can, but when it comes to the kind of financing involved feelings aren't good enough , we need to know!!).

The plane has 42 windows, it's a DC-8 I think, and costs $16,000 to charter. That works out to a little less than $400 per window. It will be possible to buy(reserve) a window all to yourself at this price, but you may also share a window with any number of other persons(up to 6) and split the cost. i.e. 2 persons @ $200 each. No cash commitments are being sought by us at this time, but if response is overly good then we may need a cash down deposit to reserve the plane and in turn will be demanding a cash deposit of each interested party to reserve their seats. We feel it is going to be easy to fill 42 windows, so if you don't want to get left out you had better contact either myself or Pete Manly right away. Pete is keeping a written list of those interested so he should have preference for contacting. His number is on your membership list under bulletin suscribers. No preference is given to club members on reserving these seats, it will be first come, first serve. The idea has been discussed about chartering a second plane if it seems easy to fill two with firm commitments.

It should be pointed out that the pilot is a veteran eclipse chaser, and he wants to do this one. The trip would take 6 hours, that is depart and arrive in S.F.Airport the same day, and the duration of totality would be extended from about 2.3 minutes on the ground to about 4 minutes in the air. There would be no long winter drive through the snow, no cold weather, no overnight stays, no cloud out, etc. Sounds good to me. I'm going. I don't want to miss this eclipse so close to home! More on this later.

Next item: if you read your last Sky & Telescope on page 185 there is an interesting item. In the middle of the page is a mention of the dues structure of the Astronomical League and at the bottom of the page, in the caption of the picture there, is mention of the League's opening a new region in the West. I would here like to present our clubs stand on its view of League membership for our general membership to know. This may be the first that many of you will have heard of the League's moving into the West. We, the SJAA are NOT even considering joining the League. According to their current dues structure it would cost us $60 to be a League member(it costs nothing to belong to the WAA, and $15 to belong to the AANC, with as many and more direct benefits). I'm out of space now, so enough said.

Astronomically Yours;

Tony Rattley

History

Did you know that Coulter Camp can be empty on a Friday night AANC-sponsored star party at Fremont Peak? Except for Ed Schell and me, it was. All night. Stosh Groner and one or two others from San Mateo occupied the saddle, a few campers were found in secluded places, and the ranger sometimes drove his truck around. If it had just been a little warmer, it would have been perfect. Ed thought the seeing that night was 1 in 1,000 - the best he's seen in a long time. He used the chance to check off about 30 objects in his binocular Messier survey. We left Saturday morning and, from what I heard, Saturday night was much more populated with SJAA members.

The Sept. 2 club star party at Fremont Peak was a little more popular. Maybe a dozen members showed up - enough to make things interesting. We found out about the new lady ranger, Jack tried to burn up his telescope, and Wolf had problems parking his car because some one (not a club member, thank goodness) very rudely parked his car right in the middle of the area. Because it was Labor Day weekend, most stayed over the next night also. That worked out o.k. as there were very few campers for such a long holiday.

Report of September 9 general meeting

Gerry Rattley preceded the evening's program with a few announcements. Our club was well represented the previous evening at the San Mateo club's general meeting, and those attending felt the speaker's material was interesting. Gerry has obtained Don McGlauflin's system for hydrogenating film, and by next summer it should be available to all club members. Don Machholz mentioned that a new comet had been discovered the week before in the southern hemisphere.

For the first part of the program Gerry explained that his chart talks were compiled as a result of people asking him what they should look for in various parts of the sky. With the help of the planetarium dome and some slides, he took us on a deep sky tour of an area including Cassiopeia, Perseus, Auriga, and Andromeda. After that, Gerry, Norm Neinchel, Penny Pinschmidt, John Gleason, Bob Fingerhut, Jack Peterson, and Brad Carlson each shared several slides they had taken. Various astrophotography techniques were represented, plus scenes from astronomy conferences and trips.

Suzanne Lowd, Staff Reporter

The AANC Board of Director's meeting at the Los Gatos Red Cross had more people from SJAA attending it than any other club. We had over a half dozen there. As for the meeting itself not much was accomplished, but I heard there wasn't too much on the agenda, anyway. Various club representatives grumbled about the distance they had to drive to get to the meeting.

A few of the AANC delegates did stay for the indoor star party following the meeting. Some of them spent the evening looking at Mike Ryan's slides in the back room. Others joined in on the many conversations going on. As for the San Jose group, our well-healed ex-president came, and Debrah Moore (for the first time in her life), and our hero, Don Machholz, showed up, complete with telescope and treasured telegrams confirming his comet. He was kept busy in the parking lot showing people what the sky looks like through his 3.8. It was almost like a star party.

At the sound of Ed's cowbell, Suzanne Lowd and I came out from the kitchen carrying two cakes for Don. We all sang "Happy Comet to you....." as flash bulbs flashed. Poor Don, he just stood there not knowing quite what to do. It's not every day that a person gets two cakes and has Happy Comet sung to him! Suzanne Lowd was the one who originated the whole idea. She and Ralph came to the board meeting the night before, and we planned it all out. The worst part was making sure that Don was there. However, it all worked perfectly. Many thanks to Suzanne.

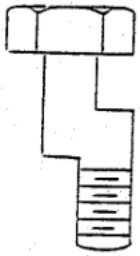
With cake crumbs everywhere, Don set up his movie projector and presented us with a very interesting home movie showing himself and his telescope up on the mountain as well as some beautiful sunset scenes. Next came slides and an excellent talk on comet seeking. After that, most of the people left, and things settled down to the normal early morning indoor star party activities.

The indoor star party on Sept. 23 was interesting to say the least. Phil Hermsmeyer, Gene Cisneros, Norm Neinchel, Ed Schell and I were the only ones there - that is, if you don't count the 2 bottles of children's bubble-making stuff. Yes, bubbles. Phil and Gene had a contest to see who could blow the largest one. Gene got the idea of using a styrofoam cup and punching a hole through the bottom and blowing out towards the bubble-coated rim. Things really got interesting then. He had bubbles up to 7 inches in diameter. Even larger cnes were made using two cups with a person on each side blowing into the same bubble. Norm got in on the act using still another cup trying to make them even BIGGER still.....

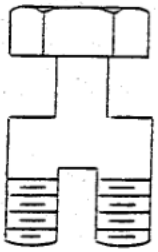
All this was quite a contrast to their discussions later on about such subjects as black holes, theoretical physics, and optical designs. Rarely does one get to see two such extremes.

The graze on Sept. 23-24 was successful. Nine stations, 14 people with some getting 6 events. Jim will have more details in next month's bulletin.

NEW LINE OF CAP SCREWS



FOR HOLES THAT DON'T LINE UP



FOR HOLES RE-DRILLED AND STILL DON'T LINE UP

COMET COMMETS 9/21/78

As we move into the month of October, there are three comets available for observation. They are mostly faint, and two are near the Southern horizon, but this provides some sense of challenge for those of you wishing to observe comets.

Periodic Comet Ashbrook-Jackson (1977g) remains near the Cetus-Pisces border at mag. 11-12. This comet is quite small, about 1' across with a 3' tail.

Periodic Comet Haneda-Campos (1978j) was discovered on Sept. 15 by Toshio Haneda of Japan. He is 69 years old and has been comet hunting off and on since the mid-1960's. It was also discovered by Jose 'da Silva Campos of South Africa. As the orbit was determined, it was found to be a periodic comet, with a period of 5.37 years and a perihelion distance of 1.1 A.U. It's inclination (tilt to the earth's orbital path) is only 5.8 degrees. The comet is 0.15 A.U. from the earth, and will be at it's closest approach to both the sun and earth in early October.

Many have wondered why this comet wasn't discovered before now. With such a short period it should have been picked up long ago. One reason may lie with it's brightness, which seems to vary. Estimates of it's brightness have ranged from 9.9 to 11.2. Some two days before it was discovered, I swept the region and did not see the comet. I estimate that if it was brighter than 10.5, I would have spotted it. However, two days later it was discovered at mag. 9, and later estimated at 10, 10.4, 11.2, and then 9.9. This is being studied.

Comet Machholz: This comet was discovered on the morning of Sept. 12 by an American amateur named Don Machholz. (Hey, I know that guy!) He found this 11th magnitude object two degrees SSW of the star Sirius. He used a 10" f/3.8 reflector at 36X, with a 2.4° field. Don has spent 1700 hours comet hunting during the past three and a half years.

The comet was confirmed on Sept. 14 by the European Southern Observatory in Chile. It is moving southward at a degree a day, and will be observable from this latitude until very early Oct. It reached perihelion (the point closest to the sun) on Aug. 25 at 1.79 A.U. At the time of discovery, it was 1.8 A.U. from both the sun and earth.

Comet tales: How many hours does it take to discover a comet? Machholz took 1,700 (and 5 min.) to find his. T. Seki took 996, George Alcock of England, 646 hours, Bennett, about 350, and William Bradfield of Astraila takes about 220 for each of his seven discoveries. Rolf Meier of Canada took 50 hours to find his comet, Merlin Kohler did only casual sweeping, and Doug Berger found his accidently, without any comet hunting at all.

Don Machholz 356-7727

The October board meeting is to be at Phil's house. I have never been to Phil's and am not familiar with the area, so I can't draw a map to the place. I forgot to ask until the night this bulletin was being put together. If you want to know where to go, you will have to call Phil and ask him. That's what I may have to do.

Ed Schell

COMET MACHHOLZ by Don Machholz

My alarm clock went off at 1:00 on the morning of Tuesday, Sept. 12, 1978, awaking me from my 3½ hours of sleep.

Quickly I dressed and drove the 17 miles to the 3300 foot level of Loma Prieta in the Santa Cruz mountains. Forty minutes after leaving Los Gatos, I had my telescope set up and ready to go. The place from which I observe is a wide section of dirt road where the horizons are low and the skies fairly dark.

That morning it was quite windy on my mountain top. I estimated gusts up to 40 mph, enough to blow my clipboard halfway across the road. But over the years I've learned to brave cold temperatures, strong winds, heavy dew, fatigue and all that comet hunting has to offer.

Before I became involved in comet hunting, I was working with other branches in astronomy. My sister got me interested in meteors when I was about 8, I received my first telescope at 13, and some three years later I replaced my 2" refractor with a 6", f/8 Criterion reflector. With it, in my first year I observed all the Messier objects from my back yard in Concord, California. I then went into astrophotography and have had a couple dozen of my photos published in some of the smaller astronomy magazines, most of which have gone out of business! In late 1974, I realized that I could discover a comet if I stuck to it long enough. I heard that 300 hours of searching would be expected before finding a comet, and I needed a program of some sort to keep me observing, so I took up comet hunting.

I began my systematic search for a comet on Jan. 1, 1975 after spending some 25 "uncounted" hours and some study into comet-hunting - all to prepare myself for this exciting field. I average 460 hours of eye-to-eyepiece sweeping a year which is, by far, more than any other American comet-hunter. The main reasons for this are the weather and the lack of any other branch of astronomy for me. I observe for about 185 nights a year. Because more comets are found in the morning sky, I spend two-thirds of my comet-hunting time after midnight.

To help me keep track of what I've swept and what I still have to sweep, I have divided the sky into 68 sections and each takes 25 to 45 minutes to sweep. Each month the sun hides a few sections, but I still manage to cover 60-65 sections per month - nearly the whole observable sky. The only area I never cover is a 300 square degree area in Coma Berenices.

My telescope is mostly home-made. I bought the optics and some of the hardware, but the rest of it I designed and assembled myself. It serves its purpose very well, and it sets up in under ten minutes. It's a 10", f/3.8 system; the eyepiece, which I have improved upon, gives me 36X and a field of view of 2.4°. I began using this telescope in Oct., 1975 after using a 4½", f/5 reflector for my first 200 hours of comet-hunting.

At 2:10 A.M. on the morning of Sept. 12, 1978, I began comet-hunting session number 691. I went out there that morning expecting to find a comet. For all of those previous 690 observing sessions, I went out expecting to find a comet. This does not mean that I am disappointed when I don't find one. I see success in comet-hunting as something other than finding a comet. Many times there is no discoverable comet up there when I am sweeping. I do not fail to find one when there is none there to be found. My greater failings have been to miss a comet later discovered (I've done that a few times), not seeing everything (such as galaxies and clusters) down to at least magnitude 10.5, or, worse yet, sleeping in when the sky is clear and the moon is not up. I view these things as my failings, and I work hard to prevent them.

On that windy Sept. morning I began my search. I covered two polar areas and one southern area - all of which I had covered only two weeks ago. After 2½ hours, at 5:10 A.M., I swung the telescope southward and began sweeping area #60. After about five sweeps, I picked up a faint patch of diffuse light about two degrees SSW of the star Sirius. It was 5:16 A.M.

I was excited!

I knew this area rather well, and I knew that nothing was supposed to be in the area. But I have taught myself to: 1) not get excited, I had some serious work to do on this object, and 2) try all I can to prove this to be something other than a comet.
First check: star charts. I keep the Pleso Field Edition next to me. I checked Chart #XIII and saw only nebula 2283 here. I checked through the telescope. 2283 was supposed to be slightly E of where this object was, so it wasn't on the chart.
Second check: catalogue. My Revised NGC catalogue would list anything I would ever see. I looked up the position - nothing was listed there. So far, so good.
Third check: higher power. Under 100 power it still did not resolve. It looked more promising all along.
Fourth check: motion. A comet will appear to move against the stars within an hour or so. So I drew three sketches of the area.
Fifth check: glare from Sirius. As I moved the tube, the object moved with the stars. It was not glare. I even rotated the tube.

At that point, I really got excited and started jumping around.

However, the sky brightened before I could detect motion. I went home, measured its exact position, and later that day sent it in to the Smithsonian Astrophysical Observatory, via telegram. I called it a "possible comet"; I wanted to confirm it myself.

On Wednesday, Sept. 13, I got up at 2:00, went up to the mountain and calmly did one hour of comet-hunting, waiting for the comet to rise. Shortly after 4:00, I turned to the area and could not find the comet in the previous day's position. Instead, it was nearly a degree further south. It had moved! It was a comet!

I rushed home and both telegramed and called the Smithsonian. Dr. Brian Marsden said that no other reports of this object had been received, but it still had to be confirmed by a professional observatory. That was up to him to do.

All day at work on Wednesday, making lenses for eyeglasses at an optical lab, I anxiously watched the telex machine, which is connected with the Smithsonian, for possible confirma-

tion reports. None arrived.

I wondered quite a bit about this eleventh-magnitude object. If it is moving southward, why hasn't anyone in the northern hemisphere observed it yet? Additionally, it appeared to be moving away from the sun. Had it remained undiscovered, yet visible, for these few months?

On Wednesday evening I made quite a few phone calls. I had discovered a comet, and even if it was still unofficial, it was as good as official. I heard a lot of excited people on the other end of the telephone line.

I also called Edgar Everhart, near Denver, Colorado. He is a good friend of mine and a comet-hunter, having discovered two comets in the 1960's. I asked if he could observe the comet for confirmation of some sort, and he happily agreed.

The next morning, Gerry Rattley and John Rhodes met me up at the observing site and saw the comet, too. It was still moving south and at magnitude about 10.7.

Shortly after getting home from observing on Thursday, Sept. 14, Brian Marsden, the Director of the Smithsonian Observatory, called. "The comet has been confirmed," he said. "It is now known as Comet Machholz, 19781."

Now <u>that</u> was exciting!

What happened during the next few days was quite an ordeal, of sorts, yet the type of experience I wish everyone could have. Penny Pinschmidt and Ed Schell did a very good job of handling the publicity. All day, at work, I received telephone interviews, and when I got home, the pace picked up. About 8:00 P.M. a call came from Channel 4; they wanted to do a live broadcast for the 11:00 News, and the camera van was already on the way. Before I knew it, I found myself back up on the mountain in the middle of a live TV interview. They also did some taping for playback the next night. And that was only the <u>first</u> one.

The newspapers and radio stations were keeping me busy, too. The Associated Press called me at work, and then sent the story to all its news outlets. An area newspaper is doing an in-depth article on my comet-hunting, too. Radio station KNX, in Los Angeles, interviewed me, as did WBAL from Baltimore. And at 4:30 A.M., Charles Osgood, from CBS, called me and interviewed me for his "First Line" report, heard all over the United States.

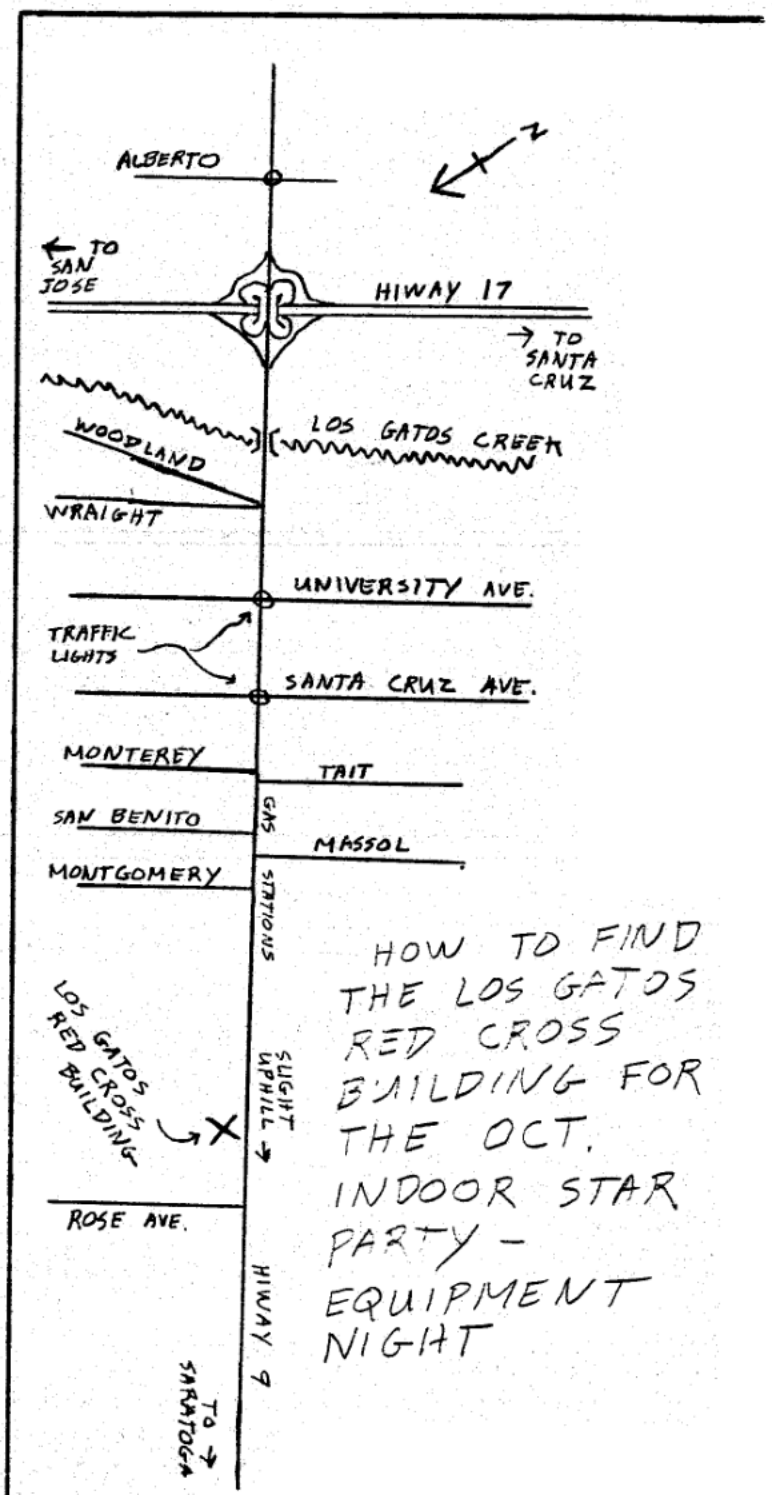
I know that all this is short-lived. In another week most people will be saying, "Comet What?" But that's all right with me. I didn't do this for the publicity or for money.

Speaking of money, my comet-hunting has costs. I use 2½ gallons of gas each observation trip, and at 180 a year, that's over $300. Not to mention the added 6,300 miles of driving each year.

I am presently planning on continuing my comet-hunting, but maybe not at quite the same rate as my first 3½ years. I must say, though, it's been a challenge, and it has been wonderful to be able to be involved in God's handiwork in this way.

As I write this, one week after the comet was confirmed, Comet Machholz is getting further and further from the sun. It was at its closest approach, at 1.789 A.U., on Aug. 25. It is in a retrograde orbit, and for the next week or so, it will be getting slightly closer to the earth. In about a week, it will slip below my southern horizon, never to be seen again in my lifetime.

What is there rising for us over other horizons in the heavens around us?



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COMET MACHHOLZ (1978ℓ)

Don E. Machholz, Los Gatos, California, reports the discovery of a comet as shown below. Available observations are:

1978 UT	α_{1950}	δ_{1950}	m_1	Observer
Sept. 12.±11	$6^h39^m.3$	-18°24'	11	Machholz
13.475	6 38.7	-19 14	10.7	"
14.4	6 38	-20.0	11	Schuster
14.438	6 37.9	-20 00	11	Everhart
14.494	6 37.9	-20 00	10.7	Machholz

D. E. Machholz (Loma Prieta, California). 25-cm reflector. Object diffuse with condensation (on Sept. 13 and 14), no tail.
H.-E. Schuster (European Southern Observatory).
E. Everhart (Denver, Colorado). Object diffuse.

PERIODIC COMET HANEDA-CAMPOS (1978j)

Further precise positions have been reported as follows:

1978 UT	α_{1950}	δ_{1950}	m_1	Observer
Sept. 2.39625	$20^h52^m14^s.78$	-29°53'41".3	10	Herald
8.23125	21 02 42.22	-33 13 56.4		Giclas

D. Herald (Kambah, near Canberra). 31-cm reflector.
H. L. Giclas (Lowell Observatory). Measurer: M. L. Kantz.

Total visual magnitude estimate by C. S. Morris, Prospect Hill Observatory (20 × 80 binoculars): Sept. 10.20 UT, 9.9.

NOVA CYGNI 1978

An objective-prism spectrogram, covering the range from Ca II H and K to Hε, was obtained on Sept. 13.2 UT by G. Schwartz and C. Whitney at the Harvard Observatory's Agassiz Station. It shows P-Cyg profiles of the moderately strong H and K absorption lines with weaker emission components. Numerous other weak emissions and absorptions were also observed. The spectrum shows a strong resemblance to that of DQ Her twelve days after discovery (1934 Dec. 25).

Visual magnitude estimates: Sept. 13.16, 6.4 (J. Ashbrook, Weston, Massachusetts); 14.38, 6.4 (C. S. Morris, Prospect Hill Obs.).

1978 September 14 Brian G. Marsden

Circular No. 3272

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Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
TWX 710-320-6842 ASTROGRAM CAM Telephone (617) 864-5758

COMET MACHHOLZ (1978ℓ)

M. P. Candy, Perth Observatory, provides the following parabolic elements and ephemeris, satisfying more than three observations over a 4-day arc with residuals exceeding 5":

T = 1978 Aug. 25.359 ET
q = 1.7890 AU
ω = 233°21
Ω = 292.18 } 1950.0
i = 131.60

1978 ET	α_{1950}	δ_{1950}	Δ	r	m_1
Sept. 19	$6^h34^m.17$	-23°50'.2	1.717	1.817	10.8
24	6 28.48	-28 29.6			
29	6 20.60	-33 34.0	1.574	1.843	10.6
Oct. 4	6 09.79	-38 59.2			
9	5 55.00	-44 37.2	1.483	1.878	10.6

$m_1 = 7.0 + 5 \log \Delta + 10 \log r$

An additional decimal place in α and δ and also the magnitude have been added at the Central Bureau.

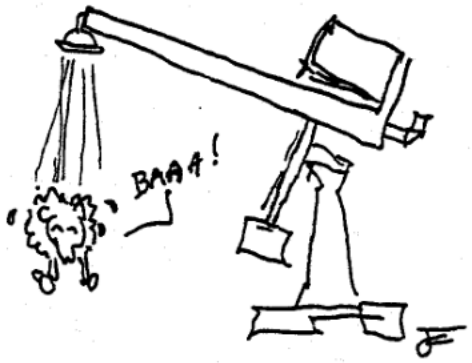
D. E. Machholz, Los Gatos, California, provides the following additional total visual magnitude estimate, difficult to make in the moonlight: Sept. 19.51 UT, 10.5 (25-cm reflector, 36 ×).

NOVA CYGNI 1978

H. W. Duerbeck, Hoher List Observatory, reports that the field of the nova was photographed on 14 nights between July 25 and Aug. 26 by U. Hopp, M. Kiehl, R. Lukas, S. Witzigmann and M. T. Larimie with the 30-cm f/5 astrograph. No image of the nova was found, and on Aug. 26.863 UT the nova was therefore fainter than magnitude 17.

T. B. Ake, H. Lanning and S. W. Mochnacki, Hale Observatories, report that results from Sept. 12-14 UT with the coudé vari-reticon on the 250-cm telescope indicate that the nova is a moderately slow one observed just after maximum light. On Sept. 12.3 the Balmer, Fe II and Ca II lines exhibit single, diffuse absorption features at a heliocentric velocity of -620 km/s and weak, broad emission at -85 km/s. The following nights show increasing emission, and by Sept. 14.2 emission at $H\alpha$ had nearly obliterated its absorption component. Equivalent-width measures of the interstellar K and D_2 lines yield a distance of 1.3 ± 0.3 kpc and suggest E(B-V) = 0.6, giving $M_V = -6.2 \pm 0.5$ at maximum light.

1978 September 21 Brian G. Marsden



EQUATORIALLY-
MOUNTED DIFFRACTION-
LIMITED ACROMATIC
...SHEEP-SPRINKLER

Question of the month: How fast is the speed of gravity?

"It's gotta be zero!" Gerry Rattley

"However fast an apple falls." Cathy Pinheiro

"It's all relative." Ralph Lowd

"As fast as Kevin in the morning."
Denni Medlock

"It is inversely proportionate to the squared square root of the mass of a colossal negative space wedgey traveling through positively negatively curved space."
Kevin Medlock

"The speed of gravity is unknown. Any good way of finding out the speed of gravity is unknown. Therefore..."
Ed Schell

"It has been determined that the speed of gravity is a varying constant, but by the time the next Bulletin comes out it will be about 10^{23} furlongs/fortnight."
Gene Cisneros

"I asked Pete Manly the question, but he never did give me an answer." Penny

Next month's question of the month will be "What do you think a good question of the month would be?"

"One problem: nowhere in this Bulletin do we mention Jack Zeiders."
Ed Schell

"Not everyone is a lunatic like me."
Jim Van Nuland

"I don't care, I like crazy Bulletins."
Gerry Rattley

"He who stands for nothing will fall for anything."

"I had my van up to 85 out at the Aldebaran graze."
Gerry Rattley

"I'd rather be sweeping than sleeping."
Don Machholz