

NEWS NOTES

by

Kenneth Wilson

New Comet

All right all you comet freaks out there. After more than a year's wait, there is finally a new comet that is actually visible in amateur telescopes. It's named Comet Kojima (1972j). The predicted positions, magnitudes, and orbital elements are listed below. It's no Comet Bennet, but then few ever are!

DATE	α 1950	δ 1950	Δ	r	m_1
Dec. 19	5 ^h 40 ^m .31	-23° 14.7	1.451	2.243	10.8
24	5 12.93	21 56.0			
29	4 46.39	20 09.3	1.451	2.213	10.8
Jan. 3	4 21.72	18 01.5			
8	3 59.61	15 41.1	1.535	2.187	10.8
13	3 40.34	13 16.2			
18	3 23.91	10 53.2	1.685	2.168	11.0
23	3 10.11	8 30.2			
28	2 58.64	6 27.1	1.878	2.156	11.2

Second Optical Pulsar

Arthur Davidson, J. Patrick Henry, John Middleditch and Harding E. Smith of the University of California at Berkley recently reported having found a source of optical pulsations for the radio pulsar Hercules X-1. They found the star HZ Herculis to be pulsing at a rate of $1.2379 \pm .0002$ seconds. The discovery has been confirmed by William F. Forman, Christine A. Jones and William Liller of Harvard College Observatory who suggest that the sources X-ray pulsations are caused by a surface source on what probably is a neutron star revolving around an A or F-type sub-giant. They also suggest that the optical peculiarities in pulsations may be caused by tidal effects between the two. The first, and only, previously known optical pulsar was the Crab nebula pulsar.

Some New Material for Frank M.: The Apollo 17 commander was ordered by Houston Control not to climb the highest hill at their landing site. The reason given was that they did not want to have another "Cernan" on the mount.

(While you are groaning about the above, turn the page and read on; there's worse to come.)

THE INCREDIBLE Man Made FIREBALL

by

Frank McCullough

Well it was time to travel again! It was Apollo 16 in April, a solar eclipse in Cap Chat, and now back to Cape Kennedy for Apollo 17.

We left Detroit December third at 1:30 p.m. "We" consisted of Chris Edsall (W.A.S.), myself (W.A.S.), my sister, and two friends, one who came by bus from Kimberly, Wisconsin (Dave Debruin). The weather was very cold when we left, but as we got to Kentucky, it became time to shut off the heater and shed our wraps (of course not all of them). Twenty five and one half hours later, we reached Cape Kennedy and as if it were an old dream, there she sat: Apollo 17. It looked the same as 16, but I know this was to be a different thrill; it was to be a night launch!

The first night we did little except take pictures of the rocket across an 11 mile strip of water from which I witnessed the Apollo 16 liftoff. To my surprise the floodlights were not turned on the rocket, but little red lights that were flickering from the tower and the gantry. It looked like a Christmas tree with red lights all over it.

We woke up Tuesday morning and made a day of eating and talking to people. That night we broke the old 6" reflector out and observed Orion which was nearly at our zenith (just a little bit of exaggeration there).

The next day was launch day, to pass the time away we went to Cocoa Beach to wade in the water and see the scenery (boy, what scenery!). My sister gave her dog its first swimming lessons, but for some reason the fleas didn't like the idea of a dip in the ocean, so where did they go? Where it was dry of course! The dog screamed till the rest of its body dried besides only its face. We then took a free tour of the Cape, furnished by a pass Chris obtained from Washington; also this pass would allow us to observe the launch from 3 miles away from one of the NASA roadways. We finished our tour, took one of our members to his bus, because he got a V.I.P. pass and shortly we entered our area, and were the third car in the parking area. The sun was just setting and there it was next to a palm tree which was near us. It was so beautiful, a giant, peaceful, pearly white pillar with black squares painted on it. She was alive, venting, yet she was tranquil. Too pretty and content for the awesome spectacle which was to follow nearly seven hours later. We all excitedly got our cameras, telephotos, telescopes, and movie cameras set up as close to the boundaries as we could. We were all set up and ready to go yet we had nearly four hours to wait not counting the nearly two hour delay. We shot a couple of pictures, talked with people and before you knew what was happening the carnival atmosphere prevailed once again. Some 10,000 people were loaded on a 3½ mile strip of roadway, 7,000 more on another strip, and over a million eyes were watching from some vantage point along the way. A speaker system was set up for the visitors, filling us in with valuable information on what the astronauts were doing.

We all talked about our exposures, but then it was announced to shoot for daylight exposures. My telephoto was a 250m.m. with an f. ratio of 5.6, so knowing this my shots would be 1/125, 1/250, 1/500 of a second – which turned out very well. We saw the truck take the astronauts to the rocket and then we waited some more. Chris had a Celestron 5 and could just fit the rocket in with amazing closeness; this would be his set-up.

Time was drawing close - the final minutes were tense ones, then hours were down to minutes, minutes to seconds, and as the seconds ticked off we got to 30 seconds. We saw a couple puffs of smoke and heard over the intercom that we had a “hold” which led to moans and groans. I myself was massaging my heart to get it pumping again. I succeeded or I wouldn’t be writing this. The computer said it was “no go” for nearly two hours, so it was a plan to out-fox the computer. I felt I had lost that thrill, that when the rocket went off it would not be that exciting to me or the other people there. Finally they started from 8 minutes and time which had stood still had gone back and was starting forward again. It was like a Time War!

We hit the 30 second mark again and a cheer went up, then a “15” and they started counting down, “10, 9, 8, 7, 6, 5, 4, “pop” – 3, 2, 1, we have lift-off.” The rocket burst into a brilliant flash, then slashed across the sky licking the horizon with furious yellow-orange flames, quietly going upward. Then the trembling of the earth, the violent roar and as it got higher, a thunderous clapping sound- people were screaming with awe and amazement, I trembled with an overwhelming excitement which made the vibration from the rocket seem minor. It was a spectacle of beauty, violence, and unleashed power!! Just as I ran out of film, the rocket gave us one last beautiful farewell. Staging took place. Where was my film when I needed it?!? (It was a dumb astronomer’s fault for forgetting how many pictures he had taken.

Well it’s over, I’m back home now, and it has become just another memory in my short life and a short life the Apollo program had. The pictures were a success, the movies my favorite (and only) sister took were a very terrific success, and the tape was a success. To end on a comical note, I turned to Chris, (after the launch) who had the Celestron with all the power and asked, “Well, how did you do and how many pictures did you get?” He said, “It was incredible, I saw a flash of white light and it was gone!”

THE END

TO ALL . . . A VERY MERRY CHRISTMAS

AND

THE HAPPIEST OF NEW YEAR’S

FROM THE EDITORS OF THE W.A.S.P.



GLEANINGS FOR ATM^s

by

Robert Cox Harrington

Low Cost Abrasives for Mirror Grinding

In an attempt to find lower cost abrasives, several amateur astronomy clubs in southern Michigan have evaluated the performance of numerous common household compounds when used as mirror grinding abrasives. As a result of this coordinated effort, they have provided us at Sky and Telescope with the following data and recommendations.

Granulated Sugar: This is a fairly good substitute for #80 abrasive.

Domino seemed to be the best, but Pioneer performed quite well. There are some precautions however. Be sure that you are not using Domino Dots cubes; one member of the DOAA inadvertently used cubes, and ground huge pits into his mirror before he knew it. Also, another member walked around the barrel for eight weeks, and couldn't figure out why the grinding was going so slow. It turns out that he was using Confectioners XX sugar. One final note on using granulated sugar; one member of the WAS reported that he left his mirror grinding and went to bed. The next day his mirror was swarming with ants!

Freeze Dried Coffee: Excellent for the first rough grinding stages.

Maxim seemed to have a more uniform particle size than Sanka; however the Sanka lasted longer between wets. Also, if the wets are made with hot water, the resulting slurry (containing ground glass) can be used to get rid of unwanted spectators. Just serve them a cup of it. They won't bother you anymore.

Salt: Salt was found to be quite good for the medium grinding stages, due to its very uniform particle size. One other advantage is that it comes with a shaker-top container. Also, it was found that mirror grinding could be conducted outside in winter without freezing the wet. Thus, no longer does the grinding have to be done indoors in the winter.

Pepper: As a medium abrasive, pepper was found to be inferior to salt because of large variations in particle size. A handy trick of the trade is to use pepper as a grinding compound in between grit-size changes. The continual sneezing tends to keep the work piece free from dust. It also comes in a shaker-top container.

Foot Powder: This is a good performer for the polishing stages. Dr.

Scholl's was much better than Mennen, and is even a little cheaper. However, after a few wets your basement starts to smell like a locker Room containing 200 pairs of old tennis shoes. Thus, the WAS recommends that mirror polishing be performed with alternate applications of foot powder and perfumed talc.

Baking Powder: This is an excellent grit for finish grinding. However, great care must be exercised to remove all flour, if flour has been used in any previous grinding stages. One member of the KAS, who

started grinding with baking powder without removing the flour, encountered significant difficulty. This difficulty is that, when left overnight in a warm basement, the mirror was actually observed to rise. However, this may be ideal for those ATMs who have a thin blank, and would like it a little thicker. One word of warning should be mentioned; caution must be used not to bump the barrel during the rising process. One member of the GRAA accidentally kicked his barrel and the center of his mirror fell! The DOAA, which is of course research oriented, now has a research project in this area, with the goal of trying to use this phenomenon to make low f-ratio mirrors without grinding. This requires a very controlled kick. Preliminary data indicate the following:

<u>Shoe</u>	<u>Kick Intensity</u>	<u>f-Ratio Achieved</u>
Hush Puppies	Light	f 5.0
Thom MCCann(9C)	Medium	f 4.0
Florsheim (10B)	Medium	f 3.0
8-Buckle Galoshes	Hard	f 2.0

A turned-down edge and some dog-bisquiting was observed after a hard kick with 8-buckle galoshes.

Dentu-Creme: As a side benefit of this study, it was found by one of the DOAA members who wears dentures that Colgate Dentu-Creme is an excellent substitute for the pitch lap. Furthermore, it requires no heating. But don't overdo it, because it really holds. In fact, one WAS member heard about it, used an entire tube of Dentu-Creme, and his blank stuck so tightly to his tool that he had to make an 8" achromat out of them.

One final word of warning when using real pitch for the lap; after pouring the pitch lap and cutting it into sections, be sure to put it up in a safe place. There have been numerous instances in which members of the KAS have wandered in to kibitz, thought it was fudge, and ate several pieces. .

Next month we will continue our helpful column for the amateur by describing a simple liquid-helium cooled, ruby-laser reflectometer that any amateur can build with just a few simple tools.

Robert Cox Harrington

ASTRO-ALMANAC

By
Ken Wilson

JAN. / EVENT

- 1 Moon 4° S of Mars, at Moon 5° S of Neptune at 13hrs. HAPPY NEW YEAR!!
- 2 Earth at perihelion, Moon 3°S of Venus at 13hrs.
- 3 Moon 1°S of Mercury at 8hrs, maximum of Quadrantids (Jan. 1-4) radiant: 152052; average speeds.
- 4 New Moon at 15:42, Annular eclipse vis. over Pacific, Africa, S. Amer.
- 5
- 6
- 7
- 8
- 9 Mars 1°4 S of Neptune at 14hrs.
- 10 Jupiter in conjunction at 9hrs.
- 11 Mercury at aphelion
- 12 First Quarter at 5:27, Mars 5°N of Antares at 8hrs.
- 13 Pluto stationary at 20hrs.
- 14
- 15 Moon 4°N of Saturn at 22hrs, Mercury at 191023 56 (-.5 mag.), Venus at 181723 04 (-3.4 mag.), Mars at 163621 54 (+1.7 mag.), Jupiter at 193121 59 (-1.4 mag.), Saturn at 045321 59 (0.0 mag.)
- 16
- 17 γ Cygnid meteor shower maximum (radiant: 194053); slow w. evanescent trails.
- 18 Full Moon at 21:28, penumbral lunar eclipse starts at 7:17 AM E.S.T. Dur. -4hrs.
- 19 Vesta stationary at 16hrs.
- 20
- 21 Venus at descending node, lunar perigee at 21hrs. (225,200mi.)
- 22
- 23
- 24 Mars at descending node
- 25 Moon 6°S of Uranus at 9hrs.
- 26 Last Quarter at 26:06
- 27 Uranus stationary at 10hrs.
- 28 Mercury at superior conjunction at 20hrs, Lunar apogee, Moon 6°S of Neptune at 22hrs.
- 29
- 30 Moon 2°S of Mars at 1hr.
- 31 Mars 6°S of Jupiter, Mercury at greatest Lat. S.

NOTE: All times unless otherwise noted are in 24hr. Universal Time.

ASTROPHOTOGRAPHERS

Save time and film. Twenty-page booklet (8½ by 11 in.) contains exposure data for the sun, moon and planets, and has a recently expanded eclipse section for the sun and moon. Seventeen exposure guides list shutter speeds for all films (4 to 2000 ASA) and f ratios (1.4 to 256.0). Includes instructions for first focus, afocal, negative and positive projection telescope photography. Send \$2.00 to Larry F. Kalinowski, 15674 Flanagan Ave., Roseville, Mich. 48066. Phone (313)-776-9720. SPECIAL OFFER: \$1.00 off regular price of \$2.00 for all Warren Astronomical Society Members.

WANTED: Articles for the W.A.S.P. No experience required. Salary non-existent. Fringe benefits: few. Recognition: small. But then, our standards are quite low.

W.A.S. Gen. Meeting 8 p.m.