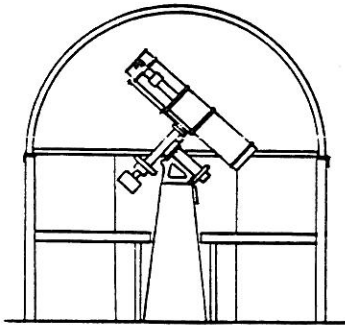


Darwin Christy, editor

THE SPECTRUM



??QUIZ??

Let us try multiple choice for a change. A statement is provided followed by four correct or incorrect answers. Do not be fooled as there could be more than one answer which is correct.

- 1) There are many mechanisms which have the effect of stirring up the interstellar medium and generating clouds, nebulae and other structural features. These include

A - 'Density Waves' associated with rotating galactic spiral arms.
 B - gravitational collapse of clouds to form new stars.
 C - ionization of certain parts of space by the ultraviolet radiation from 'O' & 'B' type stars.
 D - magnetic fields.

- 2) The Orion Nebula. about 500 P.C. from the Earth, is to most prominent H α region in the sky. It is ionized by

A - 'O' & 'B' stars.
 B - 'M' stars.
 C - the Trapezium cluster.
 D - a neutron star.

- 3) Radio source "3 C 390.3" matches

A - an open cluster.
 B - an 'N' type galaxy.
 C - a globular cluster.
 D - 'O' type stars.

- 4) On the H-R (Hertzsprung-Russell) diagram, "ZAMS" is

A - the name of an astronomer who worked with Russell in resolving the diagram.
 B - zero age main sequence.
 C - heavy element stars on the main sequence.
 D - zoned arch of the main sequence.

- 5) Of the Apollo asteroids, one is known to come closest to the Sun at perihelion.

A - Hermes B - Geographos C - Apollo D - Icarus

Answers are elsewhere in the 'Spectrum'.

- - - - -

 *** SUMMER STAR PARTY ISSUE ***
 *** JULY - AUGUST 1982 ***

The traditional SUMMER STAR PARTIES are scheduled for each Friday night during the months of July and August. In the event of inclement weather, these parties will be held on Saturday evening. All star parties start at sunset and last until the 'wee-hours-of-the-morning'. Whatever the date and wherever the location, bring your binoculars and/or your portable telescope, camera too. The summer star parties are our get-togethers in the summer and provide fun as well as learning what others may have in equipment or knowledge astronomically.

We always hope that the skies will provide us with some extraordinary GOOD weather for GOOD viewing of the heavens. MAPS WILL APPEAR ON PAGE 2 !

* * * * *

July 3rd ONLY, rain or shine, Miro Catapovic will host the star party at his cottage at 5161 E. River Rd., Grand Island, N. Y. There will be boat rides, water skiing and other activities until dusk. Star gazing will begin when the stars appear and last until you are tired and-ready for snooze-land.

July 9th if clear, if not come on the 10th rain or shine Jerry Morris will be hosting the star party at the back yard of Adrienne Kaczmarke, 20 Felber Lane, Cheektowaga, N. Y. It is reported that the skies in this suburb are unusually DARK and unobstructed to the horizon. A deluxe six inch reflector will be there.

July 16th or 17th AND -
 August 13th or 14th AND -
 August 20th or 21st These three dates are scheduled for the Beaver Meadow Observatory which houses a 12 inch Newtonian Reflector. A dark sky and plenty of room for you to show off your own telescopes if you bring them.

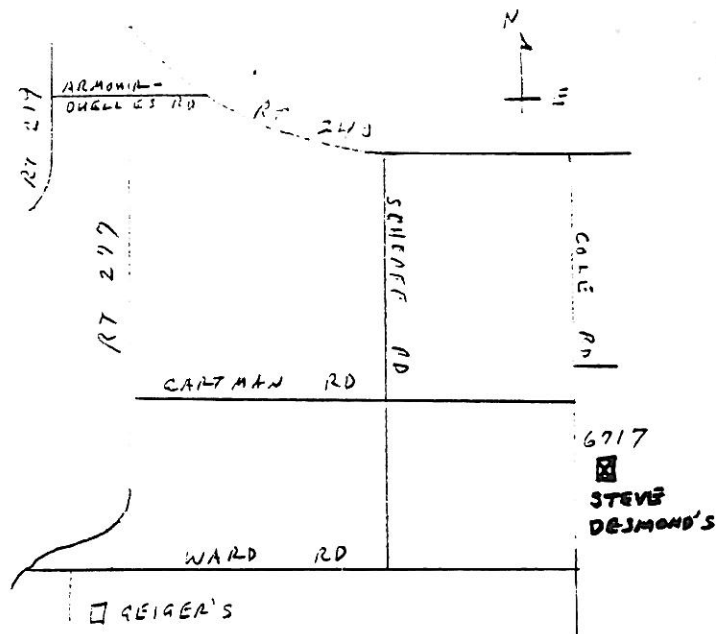
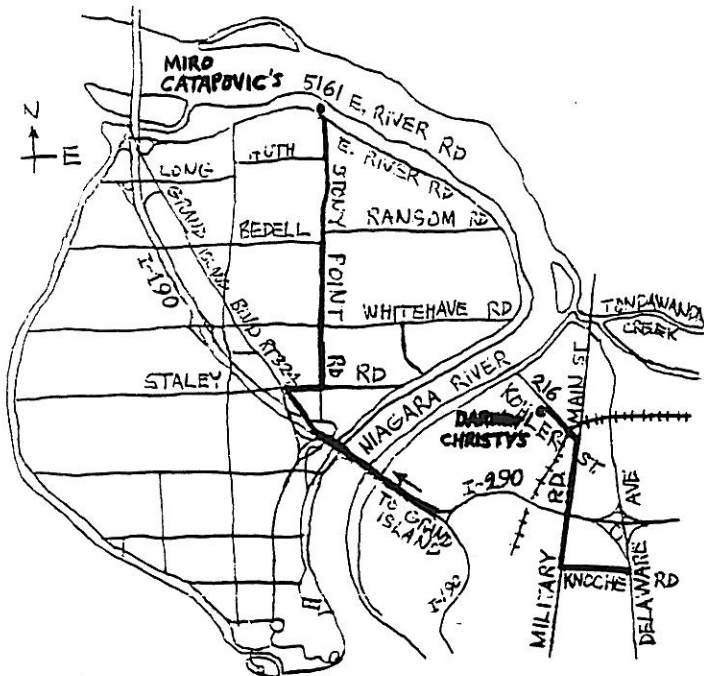
July 23rd if clear, if not come on the 24th rain or shine to Steve Desmond's, 6717 Cole Rd., Orchard Park, N. Y. Steve has a home built eight inch reflector and a 'dark-room' for color photography. Now is the time to see his equipment.

July 30th if clear, if not, on the 31st, rain or shine, Triston Dilapo's star party will host it at his night-club (TNT COCO's) at 41 Virginia Place, Buffalo, N. Y. He has a 13 inch Dobsonian telescope with a variation on the Poncet Drive. We can gather on the roof, inside, on his parking lot, or on the sidewalk like the astronomers of San Francisco do. Might be interesting !!!!!

August 7th, rain or shine, starting about 5:00 PM, come and watch the chowder master at work preparing chowder to be served along with hot-dogs and other goodies at his 'star party'. Darwin Christy, 216 Kohler St. Tonawanda, N. Y. is host and asks you to come hungry. Of course observing will be done with the 12.5" telescope in the Honey-House Observatory. If it is NOT clear, you may come on the 8th for observing and left-overs.

August 27th ONLY, rain or shine, the Kellogg Observatory at the Museum of Science will be host starting at 8:00 PM. Our host, Ernst Both, will show us how the filar-micrometer operates and if the skies are clear, we will get a chance to try out on the 8 inch refractor on the museum's roof.

-1- LET'S MAKE THESE STAR PARTIES SUCCESSFUL - BE THERE !!!



The Beaver Meadow map will be on the last page.

Re:- Book Clubs which was published in the May-June 'Spectrum'. The following is a post-script by Rowland Rupp.

A letter to the president of the Macmillan Book Clubs, the parent organization of the Astronomy Book Club, has resolved my billing problem to my satisfaction. Furthermore, I have been adequately compensated for my out-of-pocket expenses in pursuing the matter. For what it may mean, I have elected to continue my membership in the Astronomy Book Club.

Rowland A. Rupp

For Sale

ASTRO-ART - Put the Universe within your reach with Paintings and Sculpture by Beverly Botto. Any subject, any size, estimates given.... call 833-4470

as-is) Hexagonal lattice tube 70" long. Used for 12½" f:5.2 Newt. So suitable for 10" (f:5 to f:7). Made with 1½" plated electrical conduit and 3/8" threaded rod. Very strong and stiff. It can be shortened. Complete with vinyl cover to keep out stray light; flat black inside. Flat platform to mount eyepiece holder (no holder provided) and 1½" thick, 2' long plywood cradle attached. Perfect for Dobsonian. Weight 30# asking \$30. Will deliver within the Buffalo area. Call Bill Smith - 873-8807 any time after 6:00 PM.

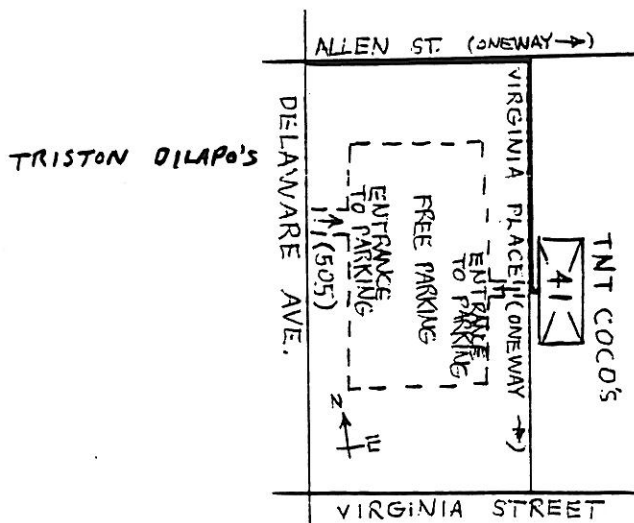
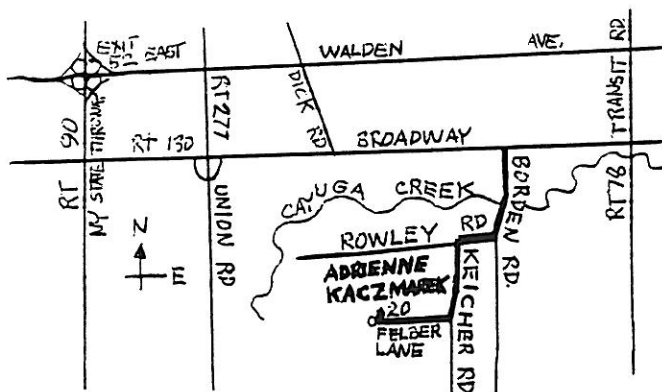
Answers to 'match-up' in last 'Spectrum'

A - j ; B - e ; C - d ; D - k ; E - b ; F - a ; G - h
H - g ; I - c ; J - f ; K - i

Quiz answers

- 1) all are correct
- 2) A & C are correct
- 3) B is correct
- 4) B is correct
- 5) D is correct

How were your answers?????



??? DID YOU KNOW ???

The longest period variable star is Epsilon Aurigae which has a period of over 27 years and will begin it's next eclipse on July 22, 1982 and end on June 25, 1984.

The star Chi in Cygnus varies by 12 magnitudes and can be as bright as magnitude +2.3.

There are those who make things happen, those who watch things happen and those who wonder what happened!

New Members

Let's welcome the following new members into the BAA.

Jerry Morris

Michael Udem

Jack Empson

Robert Hughes

David Jauck

Larry Geary

James & Barbara Mower

Welcome back to the BAA

Bill Gehrke

John Dlugosz

* * * * *

A Research Project

The Buffalo New of May 22, 1982, carried a stirring account of the British landing in the Falkland Islands the day before entitled "By Moonlight, British Hit the Beach." One officer reported it had been a clear moonlit night. He explained "I would prefer, obviously, more cloud and less moon, . . ."

Oddly enough, on the opposite side of the sheet that carried the article was the weather forecast which noted that new moon would occur at 12:40 A.M. on May 23rd, barely two days after the invasion. That means the thin crescent moon rose an hour or two before sunrise on the 21st, hardly what one thinks of as a moonlit night.

How bright can a crescent moon be, anyway? It may have peeked above the eastern horizon when it was still dark, but it would be heavily obscured by the atmosphere. By the time it rose above the denser part of the atmosphere, dawn twilight should drown it out. Possibly the prospect of combat exaggerates one's awareness of potentially dangerous conditions. Or, perhaps, we don't understand the moon's phases as well as we think.

Maybe the phases of the moon are reversed in the Southern Hemisphere, just as the seasons are. Could it be that when new moon is seen in the Northern Hemisphere, it is really full moon in the Southern? That is a worthwhile field of investigation. The BAA should consider applying for a government grant to study this possibility.

Half our membership could travel to the Southern Hemisphere (Argentina temporarily excepted) and report back to the other half up here about the lunar appearance and we could make a comparison. Of course, to make sure everyone did their job right, we would have to swap places for the next lunation. In this way, we would contribute significantly to the scientific grants, bring resounding distinction to the BAA and, quite incidentally, enjoy a month-long junket at government expense.

Anonymous.

* * * * *

MATCH-UP

Match the object in column A with that in column B

A	B
1 - Arturus	a - Orion
2 - Vega	b - Bootes
3 - Altair	c - Leo
4 - Capella	d - Taurus
5 - Rigel	e - Cygnus
6 - Procyon	f - Lyra
7 - Deneb	g - Virgo
8 - Regulus	h - Aquila
9 - Spica	i - Auriga
10 - Aldebaran	j - Canis Minor

- - - - -

In the following groups, one of the names, objects or statements is NOT relevant to the others. Cross out the

one which does not belong and explain WHY??

- 1) Open Cluster - Globular Cluster - Nebula - Galaxy
- 2) "A" - "B" - "C" - "M"
- 3) Virgo - Taurus - Andromeda - Aries
- 4) Janus - Miranda - Enceladus - Rhea
- 5) Venus - Jupiter - Uranus - Pluto
- 6) Bright Giants - White Dwarfs - Cepheid Variables - Su

Answers in the next 'Spectrum'.....

* * * * *

BAA ANNALS

5 years ago - the July-August 1977 'Spectrum' was the last issue edited by Ernst Both. Larry Carlino then took over the post. Beside the star party schedule, this issue contained the results of a questionnaire from the last issue regarding the varied interests in club members. The poll was conducted by Rowland Rupp and it indicated that 'observation technics', 'telescope building' and 'astro-photography in that order came before other subjects.

10 years ago - the July-August 1972 issue of the 'Spectrum' contained many pages and much information about summer activities. There was also an article about summer observing by John Riggs and an editorial on Newstead Observatory.

15 years ago and for many other years there was no summer 'Spectrum' printed as far as I can tell, however 20 years ago when Bruce Cook was editing there was a July-August 1962 issue. It was a review of the June business meeting and elections, and a list of the upcoming summer star parties.

Ken Kimble

* * * * *

SPY and TELL

In case you didn't recognize the gentleman behind the dapper beard and moustache, look again. It's Ernst Both wandering around incognito.

Congratulations to Steve Desmond who received a second place award in the Graphic Arts and Printing Contest sponsored by the Buffalo Club of Printing House Craftsmen. The printing samples that were entered in competition were done as class projects by students from the Buffalo metropolitan area. Steve, a senior, is a student at the Wallace D. Ormsby Vocational Center.

Ken Burke is busy with his garden of flowers and bushes. Ken, his wife, and two children enjoy summertime camping. They have camped at Plymouth Rock, the Smokies Wisconsin Dells, Mackinac Island in Michigan; Presque Island Park, Ontario; Virginia Skyline Drive and the Blue Ridge Parkway, Virginia; and Mammoth Cave, Kentucky. They'll be going camping for two weeks in August, but haven't decided just where the campsite will be.

It was a great pleasure to see former BAA members, Ron & Amy Clippinger, and Bill & Carol Chambers at the Lockport Astronomy Association's Anniversary dinner.

Anita Kirst and Dave Williams will be married June 12th at the Immaculate Conception Church in Eden. The reception will be held at Schettler's Restaurant in Elm. Congratulations and good wishes to the bride and groom to be.

James Machowski has taken over the coaching for the T Ball team of the Little League of which his son, James, is a member.

Gail Willsky is a sailboat enthusiast and has raced on Lake Ontario, and cruised in the Caribbean with a bareboat crew. The sailboat on which she was a crew member, came in third in one series of races out of the Tuscorora Yacht Club at Wilson in 1981. Gail is busy getting crews together for more racing this season.

(go to page 5)

THE SUNGRAZING COMETS

(Conclusion)

Ernst E. Both

The work of Halley had a profound influence and it is not surprising that the appearance of the sungrazer of 1843 led various astronomers to search the literature for candidates of previous appearances. Thus Boguslawsky thought it identical with the comet of 371 B.C. In the case of four comets not related to the sungrazers (those of 1786, 1796, 1805, and 1819), Encke had been able to demonstrate that they were separate apparitions of a remarkable comet with the very short period of 1208 days (this is the periodic comet that now bears Encke's name). But what was really unusual about it was the fact that at each return this comet reached perihelion a few hours earlier than before. Encke explained this behavior by postulating the existence of a "resisting medium," varying in density inversely as the square of its distance from the Sun. For the sungrazer of 1843, Oppolzer calculated that if that comet had approached the Sun with a parabolic velocity, such a supposed medium would change its orbit very quickly into an ellipse with a period of only 24 years, with a further reduction to 10 years at its second return.

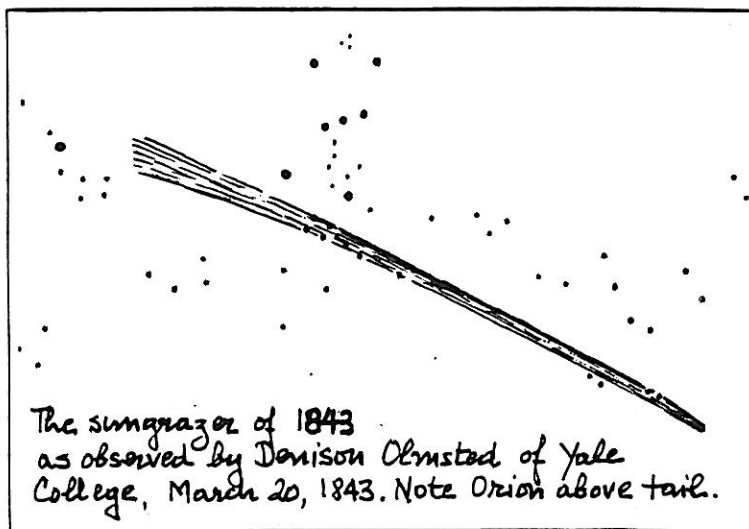
When another sungrazer appeared in 1880 with an orbit nearly identical to that of 1843, a number of astronomers were convinced that the two comets were identical, despite the fact that some orbit solutions indicated a period far longer than 37 years. Kirkwood was close to the "truth" by considering both to be separate comets - fragments of the comet of 371 B.C. Kirkwood's contemporaries did not take the idea of fragmentation seriously. Rather they attempted, in various ways, to establish identity. Klinkerfues formulated the notion that the comet of 1880 was identical with the comets of 1843, 1668, and 371 B.C. According to him the comet had an original period of 2,039 years, which was gradually reduced (by friction in the Sun's environment) first to 175 years, then to 37, and finally to 17 years, with a predicted return in 1895!! Yet some astronomers found it difficult to believe in an identity. Hind, who had computed an orbit for the sungrazer of 1880, wrote to the Astronomer Royal: "Can it be possible, that there is such a comet in the system, almost grazing the Sun's surface in perihelion, and revolving in less than thirty-seven years. I confess I feel a difficulty in admitting it notwithstanding the extraordinary resemblance of its orbit."

The appearance of the third sungrazer of the century (1882 II) made it obvious to most astronomers that while the orbits of all three (1843 I, 1880 I, 1882 II) were strikingly similar, these comets could not be different apparitions of the same object, especially since the most reliable orbit solution for 1843 I yielded a period not shorter than 400 or 500 years. And when the nucleus of 1882 II was observed to split into four parts, an empirical mechanism was provided for the existence of several comets with very similar orbits. The fourth sungrazer of the 19th century (1887 I) put to rest once and for all any question of identity. Toward the end of that century Kreutz carefully examined the orbits of the sungrazers 1843 I, 1880 I, 1882 II, and 1887 I. He came to the conclusion that all were fragments of a comet that had split into several parts some time in the past. His

investigation of 1882 II and its four nuclei showed that while its velocity at perihelion was 478,052 m/sec (478 km/sec), changes of only -1.58, -0.46, +0.46, and +1.05 m/sec in the four nuclei produced periods of 671, 772, 875, and 955 years! Kreutz also identified the comet of 1106 as a possible parent of 1882 II.

The 20th century produced several additional members of this group: 1945 VII du Toit, 1963 V Pereyra, 1965 VIII Ikeya-Seki, and 1979 XI Howard-Koomen-Michels. Comet du Toit was discovered in the southern hemisphere, rapidly approaching the Sun. It should have been visible on December 28, 1945, near the Sun, but it was not observed. Marsden and Sekanina revised the orbit, finding that it passed only 56,000 km above the Sun's photosphere - it may not have survived perihelion passage. Comet Pereyra also skimmed the Sun's surface at only 60,000 km, but it was not discovered until three weeks later, at a time when it displayed a very long and narrow tail. Its nucleus probably split into two parts.

Comet Ikeya-Seki was the most spectacular member of the Kreutz group since comet 1882 II. Visible in broad daylight just before perihelion and spectacular in the morning sky afterwards, it became (before comet Kohoutek) the most carefully observed and photographed comet of this century. Its nucleus, like that of 1882 II, broke into at least two parts with periods of 878 and 1,055 years. Marsden's calculations of Ikeya-Seki's orbit back in time indicated an earlier return that can be reconciled with the comet of 1106, making it a strong candidate for the parent of 1882 II and 1965 VIII. Similar calculations for 1963 V led Marsden to suggest as its possible parent either the comet of 1106 or that of 1075. Marsden further speculated that the primordial comet (not the parent, but the monstrous "granddaddy" of all the sungrazers) broke up at least 5 revolutions ago, perhaps even 10 or 20 revolutions ago (each revolution in terms of hundreds of years) and that only "two fragments consistently survived." Then, at the most two revolutions ago, these two fragments became the parents of the several members of the two subgroups recognized by Marsden (1668, 1695, 1943 I, 1880 I, 1882 Tewfik, 1887 I, 1963 V forming one subgroup, while the other includes 1689, 1702, 1882 II, 1945 VII, 1965 VIII). Since the separation velocities of the nuclei of 1882 II were very low, Marsden suggested a much more violent event to split the primordial comet or even the parent comets and he considered the possibility that the comet of 1680 was actually observed to separate from the comet of 371 B.C. by Ephorus.



The most recent member of the Kreutz group and one of the most interesting was comet Howard-Koomen-Michels, discovered in 1981 on data tapes obtained on August 30 and 31, 1979, by the SOLWIND coronagraph aboard the U.S. Air Force Test Program's P 78-1 satellite. The head of the comet first appeared at 1856 UT (August 30) at a distance of 6 solar radii from the Sun, being brighter than any feature in the Sun's corona (apparent visual magnitude -3.5). The comet's velocity was about 284 km/sec with no appreciable acceleration observable. The approach of the comet was from the west in an apparent orbit nearly in the observer's line of sight, the southern edge of the tail being more sharply defined than its northern edge. At 2115 UT the head disappeared behind the instrument's occulting disk at a distance of 2.5 solar radii. No observations were made between 2115 and 2344 UT. At 2344 UT the tail appeared considerably broadened along its northern edge while the southern edge remained sharply defined. The tail material had brightened considerably since the head's occultation at 2115 UT and material strewn into the Sun's northern corona began to appear. As the tail material diffused away, a brightening occurred through an angle of about 180° from the southwest to the northeast, which gradually faded during August 31 but which was still observable at 2036 UT on that date. There was no evidence of the comet's head after 2115 UT - the head apparently collided with the Sun around 2229 UT on August 30 and disintegrated, the tail material dissipating into the corona.

These observations can best be explained if one assumes a retrograde parabolic orbit with a perihelion distance of 0.75 solar radii - in other words, a collision with the Sun. If that assumption is correct, comet 1979 XI was clearly a member of the Kreutz group, similar to Ikeya-Seki. Such an orbit would have placed the comet very close to the Sun for a number of days prior to perihelion and it would have been visible during twilight with the most favorable location for viewing about 15° south of the equator, where the tail would have been nearly perpendicular to the horizon. However, as is well known from the behavior of other members of the group, the tail does not become conspicuous until after perihelion, so that is not surprising that observers apparently missed this comet in the Sun's vicinity. This orbit also requires the comet to collide with the solar photosphere on the Earth-facing side. It turns out that the energy of motion of a comet nucleus 1 km in diameter, traveling at 284 km/sec, is equivalent to the energy released by a typical solar flare, so that it is possible to have produced an observable effect on the Sun at the time of impact (2229 UT, August 30, 1979). So far no no observable effect has been reported.

What kind of primordial comet must be invoked to account for the sungrazers? Our list above includes nine definite members and eight suspected ones, but as mentioned before, the total number may be much larger, perhaps as many as 40 comets. The similarity in the orbits of the three subgroups would indicate that the primordial comet could not have broken up too many revolutions ago, otherwise the orbits would be too dissimilar. Suppose the primordial comet did break up between five and ten revolutions ago, as Marsden suggested. After a few revolutions one part may have returned as the comet of 371 B.C. If this comet did indeed split in two, one of these might have produced the sungrazer of 1680 with an orbit different from those of the Kreutz group. In this case the split would have been a far more violent event than the splitting of the nuclei of some of the members. The other part of comet 371 B.C. may well have become the

parent of some members. If one could tie the comets of 531 and 1075 to the sungrazers, and remembering that the comet of 1106 is already a strong contender as the parent of at least 1882 II and 1965 VIII, there would be enough comets to account for all known, suspected, and unknown members.

There is evidence that at least some members of the Kreutz group were somewhat flimsy objects, as comets go. 1880 I, 1887 I, and 1945 VII had poorly defined heads without conspicuous nuclei and these comets faded rapidly after perihelion. A few had bright nuclei and were visible for a much longer time (1843 I, 1882 II). Thus the nucleus of the primordial sungrazer need not have been overly large. The present nucleus of Halley's comet has a diameter of about 5 km, having survived at least 30 revolutions around the Sun. Theoretical work by Huebner in 1967 indicated that for sungrazers, the amount of ices removed by sublimation during a single passage amounts to layers of only tens of meters (even though the nucleus itself may be fragmented). A nucleus of less than 50 km in diameter for the primordial comet could account for all the members of the Kreutz group. What is remarkable is the fact that all definite members of this group have appeared in the 17th, 19th, and 20th century, without good suspects between 1106 and 1668. We may well have past the maximum display of the sungrazers and astronomers in the very distant future may observe only the dilapidated remnants of the more substantial members of this group.

* * * * *

SPY and TELL (cont.)

Bob Benedict is a millwright by trade and is also a fine golfer, teaching golfing fundamentals to 10 to 12 year old members of the Boy's Club of Buffalo. Bob has traveled with friends to various courses around the country to play on their greens. He has also been the treasurer of the Boy's Club for 5 years.

Ken and Diane Biggie and family will be wending their way westward this summer to the Rocky Mountains and California.

Edith L. Geiger

* * * * *

Instrument Notes

ALIGNING the TELESCOPE by the SUN -----

If you have trouble seeing Polaris from your location you can align your polar axis by the Sun. I was explaining this to one of our members, Len Milks. Since I don't remember having seen this idea written up I thought perhaps others might be interested.

The Sun is due south at apparent noon (noon by the sun-dial). So if you can see the Sun from your telescope location you can align the polar axis. (If you can't see the Sun, you need a better location as the ecliptic is where you will find all the planets).

To determine your geographic coordinates accurately you will need a map. But since the final adjustments will be by photography an estimate is close enough. The 42 degree north latitude line is the boundary between New York and Pennsylvania. The 43 degree line passes through Tonawanda. The 78 degree west longitude line passes through LeRoy and Perry. The 79 degree line is west of most of our members passing through Niagara Falls and Grand Island and south through Angola and near Frewsburg. So most of our members are located between 42 and 43 degrees north latitude and between 78 and 79 degrees west longitude.

The Sun's apparent travel through the sky takes 4 minutes of time per degree of longitude. Eastern Standard

Time is based on the time at the 75 meridian of longitude, which is a line passing through Philadelphia and northward through Herkimer and Old Forge, N. Y. It takes the sun 16 minutes to travel the 4 degrees westward from Herkimer to Grand Island (or 12 minutes to the LeRoy-Perry line). So if you are on Grand Island the Sun will be due south of your location at 12:16 PM EST or at 1:16 EDT. This will occur on the four days of the year that the Sun dial agrees with the clock (April 16, June 14, September 1, and December 25). For other days you will need to add or subtract the equation of time correction which can amount to as much as 14 minutes. You can get this from the Canadian Observer's Handbook or from a book on sun dials. On or near the four days noted, you will not need any other correction than that for longitude.

At the time thus calculated the shadow of your pier or of a vertical rod placed at that point will lie due north and south. Adjust the polar axis to be parallel to that line and at an angle of between 42 and 43 degrees above the horizon. It is a good idea to put in a stick on the shadow line and make your alignment later as the shadow will move too rapidly for you to get a good adjustment in a hurry.

This rough alignment will probably be found to be very near correct. You are now ready for the "fine tuning" which can be done by observation of a star near the ecliptic at high power or by photography. If a star is found to drift up or down, there is an error in the altitude or azimuth alignment. Make a correction in one or the other and observe the effect. A slight drift will not cause trouble for visual observing unless you depend on accurate setting circles. For photography you will need a few trial exposures of an hour or more to be sure that there is no drift.

Ed Lindberg.

Observations b Members

With our club's observatory at Beaver Meadow on May 25th at 10:30, a white spot was seen on Jupiter at 248x. It was about one quarter the size of the now elusive red spot and was whiter than the surrounding area. The white spot was at about latitude 45 south and just west of Jupiter's meridian.

Later that night a nova was seen 5 degrees east of M27 in the constellation of Vulpecula, near the border of Sagitta and Delphinus. It was of magnitude 8.6 and the brightness has been fairly steady for the past six months, which is extremely unusual.

Carl Milazzo

Astronomical Happenings

SOLAR - The Sun will pass from Gemini to Cancer in July and from Cancer to Leo in August. On July 20th the Sun will be eclipsed and will be seen from the extreme north-western part of North America. It is considered to be partial in nature.

LUNAR - The Moon will appear Full on July 6th, August 4th and September 3rd; Last Quarter on July 13th, and August 12th; New on July 20th and August 18th; and First Quarter on July 27th and August 26th. On July 6th a total eclipse will occur from 1:38 AM to 3:24 AM and can be seen from the United States and Canada.

Meteor Showers - July 6 - Sagittariids

July 14 - Alpha Cygnids

July 16 - Omicron Capricornids

July 23 - Capricornids

July 27 - Alpha-Beta Perseids

July 29 - Delta Aquarids

July 30 - Pisces Australids

August 1 - Alpha Capricornids

August 6 - Iota Aquarids

August 11 - Epsilon Pegasids

August 12 - Perseids

August 20 - Kappa Cygnids

August 22 - Omicron Draconids

August 26 - Zeta Draconids

Lunar-Planetary Conjunctions - July 26th, Moon & Saturn and Moon & Mars; July 27th, Moon & Jupiter; July 29th, Moon & Uranus; August 17th, Moon & Venus; August 20th, Moon & Mercury; August 22nd, Moon & Saturn; August 23rd, Moon & Jupiter; August 24th, Moon & Mars; August 25th, Moon & Uranus.

Stellar Conjunctions - July 2nd, Aldebaran & Venus; July 21st, Spica & Mars; August 9th, Pollux & Venus.

Planetary Conjunctions - July 9th, Mars & Saturn; August 9th, Mars & Jupiter.

Lunar-Planetary Occultations - July 18th, Moon & Venus; July 31st, Moon & Neptune; August 28th, Moon & Neptune.

Darwin Christy

FALLING STARS LOOK LIKE SHOWERS OF BRIGHT SILVERY MONEY
FREED BY THE SKY'S MAGIC WAND...

---From the PRESIDENT---

Star Party season is rapidly approaching. Of all the various benefits of belonging to the BAA this one is the most valuable to me. I thoroughly enjoy the opportunities they afford to try out different scopes, eyepieces, filters, binoculars, atlases, etc. I've also learned observing techniques from the veterans which would have taken me many years to discover (or reinvent on my own). But most of all I enjoy the good camaraderie with friendly people. The consistently high level of conversation with fellow astronomers is a trait I have found in no other group. So, if you are a new member or a member who has only been to one or two star parties in the past, make this summer the one that you set aside some time for friendly observing.

As you are probably aware by now I am not seeking re-election as President. It has been a great honor to serve you. In the past two years I have had innumerable opportunities to become familiar with your various skills and pleasant personalities. I am continually awed by the quality of our membership. We have much to be proud of. Now, I look forward to my new role as an active member.

It is difficult for me to adequately thank all the members who have served the BAA this last year. Hoping I have not forgotten someone, I must publicly thank:

Edith Geiger for -

- 1) Her fine service as treasurer and board member.
- 2) Her faithful purchasing of donuts each month.
- 3) Her Astronom Day moon sketches

Darwin Christy for -

- 1) His excellent job as both editor and typist of the "SPECTRUM",
- 2) His patience with my last minute articles.

Rowland Rupp for -

- 1) His board participation.
- 2) Organizing the Christmas Party.
- 3) His November presentation on Extraterrestrial Life.
- 4) His organizing of Astronomy Day display.
- 5) His friendly and willing advice.

Ken Kimble for -

- 10 His work as club secretary - including keeping both the general meeting and board meeting minutes and typing all official BAA letters.

- 2) His organizing the Study Group.
- 3) His September presentation on Stellafane.
- 4) His participation on the board.

Ed Lindberg for -

- 1) His board participation.
- 2) His organizing of the Instrument Section.
- 3) His NFCAA representation of the BAA.
- 4) His September and December presentations.

Bob Mayer for -

- 1) His board participation.
- 2) His expert, thorough and meticulous repairs, adjustments and remodeling of the 12" Beaver Meadow telescope.

Jack Mack for -

- 1) His board participation.
- 2) His generous aid in printing the "SPECTRUM".

Ken Biggie for -

- 1) His participation on the board.
- 2) His aid on advice and repairs of the observatory floor supports.

Alan Mohn for -

- 1) His board participation.
- 2) His outstanding job in the time consuming task of observatory co-director.
- 3) His participation in various work groups remodeling or repairing observatory equipment.
- 4) His coming to the club's aid when we needed a replacement for Tom Dessert.

John Riggs for -

- 1) His stepping into Jim Russell's shoes at the observatory.
- 2) His board participation.
- 3) His many new ideas at the observatory.
- 4) His outstanding job in the time consuming task of observatory co-director for half the year.
- 5) His participation in Astronomy Day activities.
- 6) His participation in various work crews remodeling or repairing observatory equipment.

Jim Russell for -

- 1) His board participation.
- 2) His outstanding job in the time consuming task of observatory co-director for half the year.
- 3) His coming to the club's aid when we needed a replacement for Tom Dessert.

Carl Milazzo for -

- 1) His board participation.
- 2) His serving on various work groups, remodeling or repairing observatory equipment.
- 3) His generous loan of his van whenever the club needed special transportation.
- 4) His organizing of the Summer Star Parties.
- 5) His never ending information on various aspects of our hobby.
- 6) His telescope loan for Astronomy Day.

Doris Koestler for -

- 1) Organizing the Christmas Party.
- 2) Her telescope loan for Astronomy Day.
- 3) Her serving on various work crews remodeling and repairing observatory equipment.
- 4) Her steady and sure serving as refreshment coordinator for our general meetings.
- 5) Her help in organizing the May dinner meeting.

Adrienne Kimble for -

- 1) Her services as membership chairperson, including collecting dues, keeping membership records and updating the club directory.

Ernst Both for -

- 1) His March talk on deep sky objects.
- 2) His willing help in official business between the club and the Science Museum.

Orrin Christy for -

- 1) His October presentation on the Hertzsprung-Russell chart.

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- 1) His February presentation on Moon Happenings.
- 2) His lunar sketches for Astronomy Day.
- 3) His handling for the paper work at Buffalo State for the use of their facilities.

Art Gielow for -

- 1) His December presentation on the Buffalo State Planetarium.
- 2) His organizing of Astronomy Day activities

My wife's generous and time consuming task of preparing refreshments for board meetings.

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- 2) His photos for Astronomy Day.

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Carroll Geiger for his kind and insightful encouragement whenever I seemed to need it the most.

Well, I hope I have remembered to mention all the major contributors. Congratulations on a great job!!!! I hope to see you all at the Summer Star Parties!!!!!!

Thank you all, each and every one.....

Al Kolodziejczak

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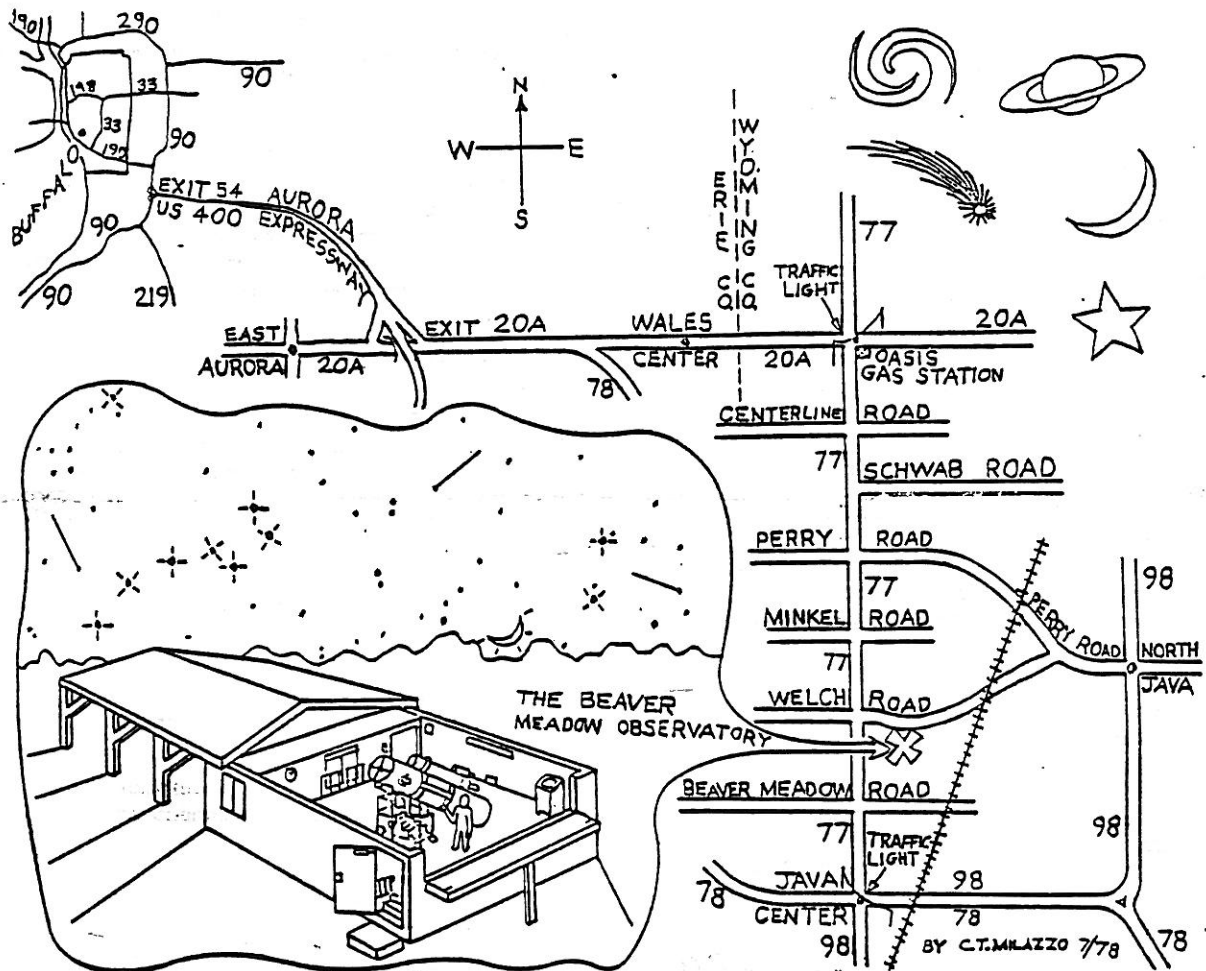
Adrienne Kimble

Ernst Both

Anonymous

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The largest and most luminous hydrogen emission region known in the universe is the Tarantula Nebula in the Large Magellanic Cloud. It is visible to the naked eye, even though it is at a distance of 190,000 ly's. If it were 1600 ly's distant like the Orion Nebula, it would be 30 degrees wide and shine with a total brightness of 3 times that of Venus.....



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