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 NOVEMBER - DECEMBER  
 1985  
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BUFFALO ASTRONOMICAL ASSOCIATION, Inc.

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#### ASTRONOMER FROM THE PAST

HALLEY, Sir Edmund Halley was born in Haggerston, England on November 8, 1656 and passed away at Greenwich, January 14, 1742. He was not only a noted astronomer, but also he was a mathematician. He obtained his education at Queen's College, Oxford, and before he was 19 years of age, he had published 'A Direct and Geometrical Method of Finding the Aphelia and Eccentricity of Planets', which supplied a defect in Kepler's theory of planetary motion. From observations on a spot which appeared on the sun's disc in July and August of 1676, he truly established the certainty of the motion of the sun around its own axis. On August 21, 1676 he fixed the longitude of the Cape of Good Hope by his observation of the occultation of Mars by the Moon. He published the 'Catalogus Stellarum Australium' in 1679 and his 'Theory of the Variation of the Magnetical Compass' in 1683, which he endeavors to account for the phenomenon

by the supposition of the whole globe of the Earth as being one giant magnet, and having four circulating magnetical poles or points of attraction.

In 1699, Halley set sail on a voyage for the purpose of making further observations relative to the variation of the compass. After having traversed both hemispheres, he arrived in England in September 1700. The spot at Saint Helena where he had erected a tent for observing and making astronomical sightings is still called Halley's Mount. The result of his researches, he had published a general chart showing at one view the variation of the compass in all those seas with which English navigators were acquainted. He next became employed to observe the course of the tides in the English Channel. The longitudes and latitudes were to be the principal headlands and in consequence of which he published a large map of the Channel.

In 1703 Halley was elected Salivian professor of geometry at Oxford and in 1721 he received the appointment of astronomer-royal at Greenwich, where he resided thereafter. He devoted his time to completing the theory of the motion of the moon. In the same year he began his observations, scarcely ever missing of taking a meridian view of the moon when the weather permitted. This he did for 18 years. In 1752, ten years after his death, his 'Astronomical Tables' appeared; and he was the author of a great number of paper in the 'Philosophical Transactions'. The Great Comet of 1910 and others previously by increments of 76 years were given his name---HALLEY'S COMET!!!

Darwin Christy

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#### BOOK REPORT

Halley's Comet, Francis Reddy,  
 Astromedia 1985 \$9.95

This is an informative, well-organized, clearly written and nicely illustrated short book. It is certainly not inexpensive for 60 pages, although with wire binding and monochrome illustrations it gives the appearance of home-spun frugality.

The organization is unusual. Five chapters of text are laid out in a mere 35 pages, single-column format with marginal illustrations, with the central half (approximately) devoted to charts, starfinders, and a cut-out. This latter is said to assemble into a 3-dimensional model of the comet orbit with respect to the ecliptic. There remains room for about 15,000 words of text, roughly a fifth of a typical gee-whiz opus by Issac Asimov. However, the short text is beautifully written, and the illustrations which fill much of the extra space are very well chosen and reproduced.

I learned a fair amount from the chapter on the history of the comet, and expect that most readers will find new information here. The chapter on spacecraft missions is a

close second, and may be the most popular section with most Spectrum readers. The chapters on observing the comet and the nature of comets are more a summary of material easily available in Sky & Telescope and Astronomy, but useful in a single binding. The chapter on 'cometary encounters' is an overly brief introduction to meteor showers probably too sketchy to please our learned editor and resident meteor expert. Here, more than elsewhere, it seems that the brevity of the book allows us to only glimpse the feast, then bars us from the table.

The comet charts are clearly aimed at those heading south on comet cruises. There are charts for every latitude containing dry land, organized on a fairly readable scale, around 12 arc minutes per mm.

For comparison, AAVSO charts are about 5' per mm.

The 12' scale gives plenty of accuracy for a comet search, where the target is identifiable by its appearance and its position is often unpredictable by many arc minutes. The moon, with phase, is plotted on the charts, a useful touch.

In comparison to the comet charts, all-sky star maps are about the size of a hamburger patty, and about as useful as a guide to the skies.

In conclusion, I'm tempted to suggest that you steal a copy of this excellent but overpriced micro-opus. As a compromise, buy one from the new Buffalo State College Planetarium gift shop, after coming in for a viewing of "A Comet Called Halley". That way you'll enjoy at least one bargain!

Dr. Jack Mack

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## MEETING NOTICES

**NOVEMBER MEETING:-** Our general meeting this month will be Friday the 8th at 7:30 PM in the New Science Building Auditorium at the State University College Campus. The guest speaker, brought back by popular demand, will be Tom Dey who attracted a standing room only audience that went home very pleased a year and a half ago. Tom is a past president of the Rochester Academy of Science and an amateur astronomer for 6 years. He is a graduate of the University of Rochester and has obtained a master's degree in optics and mathematics. He is currently employed by Eastman Kodak and has had two feature articles in Telescope Making magazine. He will be having a one man show at the Strasenburgh Planetarium in Rochester of his astrophotography from mid-November to mid-January.

His illustrated talk will be about his experience with gas-hypersensitized astrophotography with a 5 inch f:1.7 Schmidt-Cassegrain. Also with a modified 12 inch f:5 Newtonian and wide field shots with a press camera. Tom will also have some slides of the annular solar eclipse from South Carolina and the progress of the construction of an observatory for his 29 inch telescope. Tom will even be offering some special door prizes.

**DECEMBER MEETING:-** Can you believe Christmas is almost here- and I'm still out on the Niagara River sailing with the warm fall breezes?? Anyway, December 13th is a very special get-together for BAA members and friends featuring our holiday season wine and cheese party organized by Vice President Doris Koestler. And, to highlight the evening will be Edith Geiger's "Candid Camera" slide presentation, surely to delight us all. It will follow a slide show of the 50th anniversary of Stellafane by Carl Milazzo Clare & Bill Owens, where nearly 3000 amateur telescope makers assemble near Springfield, Vt. Also, anyone wishing to bring a small dish of homemade goodies (cookies, cakes, etc) for the party table is welcome to do just that. You are also welcome to bring family or friend - that is as long as you're not really that popular and remember we will be at the Buffalo State Campus again in December---

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## PRESIDENT'S CORNER

A reminder that the Board of Directors will be meeting every other month on the first Tuesday of the month, and if any member has a matter to bring before the board,

please feel free to either attend a meeting or contact myself or any other Board member about it. The next meeting will be November 5th, 7:30 PM at my house in West Seneca.

We are always in search of possible guest speakers for our regular meetings. If anyone has any suggestions concerning potential future speakers, or suggestions for a topic they would like to have presented, please let me know.

Members are always needed to help out and assist with the various activities and functions the BAA is involved in. For example:---

....Ernst Both needs occasional (clear weather) help with the Friday evening public nights at the Museum's Kellogg Observatory.

....Carl Milazzo needs persons capable of supervising Sunday evening public nights at our own Beaver Meadow Observatory.

....John Yerger is looking for 4 or 5 persons to organize and implement an ongoing BAA public presentation program to be available upon request from school groups, scouts, campers, etc. John recently did one for a South Shore school group which resulted in revenues for our 'kitty' and several new members for the club. I did one recently for a local middle school science club and it too was very successful. SO---please contact John Yerger and let's all make this worthwhile effort a success by contributing a little of our own time and expertise.

....We will probably be having another mall show at Eastern Hills next spring, and if it can be arranged, a show at the new McKinley Park mall in Hamburg. This way we can cover both north and south suburban areas. These shows require a lot of assistance and provide a good opportunity for our members to get involved in BAA activities.

....People will also be needed to help with planning next year's May Dinner meeting. More details later.

....Our "Spectrum" editor, Darwin Christy, would appreciate some help with the folding, addressing, stamping and mailing of the "Spectrum" every other month. We need some one who can pick up the "Spectrum" from Darwin, prepare them for mailing, and get them out within a couple of day time - or 'time' is of the essence in this case. If you feel you are able to do this task, and want to help Darwin and your organization, please contact him or me about the details.

....FINALLY- we are also looking for anyone who would like to make a mini-presentation (5 - 15 minutes) at any of our regular meetings. Please try to make your topic informative or educational in nature, and remember basic astronomy subject matter is what we're looking for so don't eliminate something you may think is too simple or taken for granted that everyone already knows. (ed's note -- no-one knows all there is about astronomy).

Please offer to assist with some of these activities. You don't have to be an expert to get involved, but believe me you will either gain valuable experience for yourself, or impart some of yours on others and that makes it all worthwhile...

Ken Biggie

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## \$ DUES ARE DUE \$

Please make payments to Claudia Bielinski, 5450 Clinton St., Elma, N. Y. 14059 - John Raymonda, 80A Foxberry Dr. Getzville, N. Y. 14068 - OR at one of our regular meetings

Regular Membership.....\$ 10.00

Family Membership.....\$ 15.00

Senior Citizens.....\$ 5.00

Student Membership.....\$ 5.00

Subscription Only.....\$ 2.00

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## + NEW MEMBERS +

Let us welcome the following new members...

Dina Adimey - Gary T. Rog - James P. McCullough - David E. Corni - Christine E. Lubelski - Jon Smith - James W. Smit - Kathy Bronner - Richard Jakiel - James & Sally Orgren.

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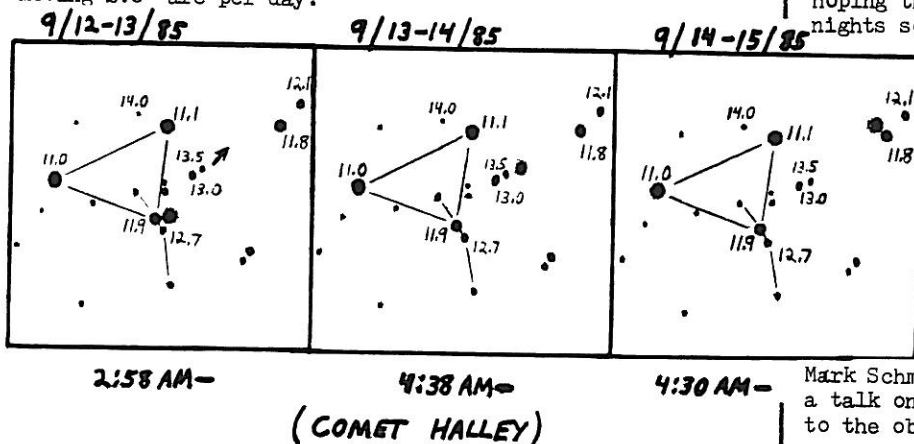
September 3-4 even though the sky conditions were very poor an attempt was made to observe the occultation of the star SAO 58030 by comet Giacobini-Zinner. The coma along with its companion starfield was first acquired at 3:10 AM-EDT.

In this inferior sky only the comet's nucleus and inner-most coma were visible. At this time the comet lay 2' arc northwest of its orangish target star. As predicted, probably only the comet's dust envelope would obstruct the star and in so doing indicate, by the degree of diminution, the density of this surrounding envelope. The predicted time of coverage was 3:35 AM EDT +/- 5 minutes. Right up to 3:34 AM the star remained at full light with respect to its 6.8 and 7.4 magnitude companion stars, the comet's nucleus now lay only 0.5' arc north.

Then, as luck would have it, clouds covered the field at the most critical moment, finally clearing again at 3:37.5 AM. Once again the star appeared to be at full light. Thus unless the star dimmed during the 3½ minute observational gap, the results must be considered negative or too slight to notice, 0.1 magnitude total dimming. After clouding over completely at 3:40 AM, EDT observations were concluded.

September 12-13 comet Halley is now just within range of a 6" reflector. At 152x looks to be 0.4' x 0.4' in extent and of an estimated magnitude of 13.4. This, by-the-way, is about one magnitude fainter than some predictions would have placed the comet at this time.

September 14-15 comet Halley again observed tonight. The comet continues to grow larger looking to be 0.45' x 0.45' arc in extent. Visually the comet is estimated at magnitude 13.3. Comet moderately condensed to the middle, outer envelope is quite thin and diffuse. At 4:30 AM, EDT the comet is located just south-south-east of a 11.8 magnitude star, separation is 20" arc center to center. Comet Halley now moving 2.6' arc per day.



September 19-20 carbon star 'R' Corona Borealis has begun to fade, most of the time this star shines at magnitude 6.0 but at irregular intervals carbon soot builds up in the star's atmosphere with a resultant rapid fading at visual wave-lengths. Tonight this star looks to be of magnitude 7.7 while one night later it had faded still more to magnitude 8.2.

September 20-21 observed Halley's comet still again. Tonight the comet looks to be of magnitude 13.2 and a considerable 0.5' x 0.5' in extent. Thus Halley's comet appears to be growing larger more rapidly than it is growing brighter. Luckily the nuclear region now appears more condensed than previously. Visually a bright compact 0.25' diameter center surrounded by a faint diffuses halo.

Michael Idem

Generally we report on observations that we intended to make. This one is an observation made while watching a traffic signal.

When returning home from the October 11th BAA meeting, I had to stop at the traffic light at Harlem And Kensington. While waiting, I saw a magnificent meteor pass from east to west in the northern sky about 30° above the hori-

zon. Had it been much higher, the roof of the car would have obstructed my view.

It seemed to travel slowly, an illusion, I'm sure, brightening as it went and finally flaring and breaking apart like a fireworks display. I saw colors of red and green, but can't be sure of their time sequence. Estimating magnitude is not one of my strong points, but this brilliant meteor was several times brighter than Venus. I will guess its magnitude was at least -7. It left a faint luminescent trail that persisted for four or five seconds.

Anyone familiar with this intersection is aware of the high intensity lighting there. I think a third magnitude star would be hard to see, yet this object was brilliant. I wonder how it would have appeared in dark skies. I'm sure the trail I saw for a few seconds would have lasted much longer, and I think the bolide would have been bright enough to cast a shadow.

Rowland Rupp

## OBSERVATORY REPORT

For December and January only, the new public hours on Sundays at the Beaver Meadow Observatory will be from 6 to 9 PM. This is because Halley's Comet sets very early and starting in February the regular hours of 8 to 11 PM will return.

The first three Sundays of November are scheduled for showing Halley's Comet to the public at our club's observatory from 8 to 11 PM. A reporter from the Buffalo News will be there to interview both the public and our club members who bring portable telescopes. There is a good chance that a fairly large public turnout at our club's observatory. With some extra scopes the lines would be shortened and many of these visitors could potentially be new members of our astronomy club. And as always we are hoping that more club members will volunteer to do public nights so it is more fair to those that do by spreading

out of the work more evenly. Public nights showing Halley's Comet will be every Sunday in December and the first three in January. It would be wise to bring binoculars, cameras, fast film and a tripod.

The BAA's observatory has received a lot of publicity lately, it appeared on Channel 2's PM Magazine TV show. In the Buffalo News front page in Terence Dickinson's October astronomy column and in the weekly Gusto.

Special tours of our club's observatory was given to two boy scout groups, one was given by Mark Schmidt and the other by Ken Biggie. John Yerger gave a talk on astronomy to a school group and has donated \$25 to the observatory.

Repairs on the observatory were made by Bob Mayer and Carl Milazzo where friction on the right ascension axis was increased. Also a broken pulley for the roof drive system was replaced with a new one for \$2.40. In the donation box, \$30 was collected over the past two months.

Usage of the observatory continues to be quite high, in fact on Friday October 11th, 8 BAA members were there observing and photographing. Halley's Comet has been a popular object. 11 members have seen it and 2 have caught it with their camera so far. Kathy Bronner is the newest member to be shown how to operate the club's Beaver Meadow Observatory. One of our club's active astrophotographers, Dan Marcus, had a nice picture he took on October 17th of Halley's Comet which appeared in the Buffalo News the following day.

The following BAA members have been borrowing the 8" loaner telescope for a month and waiting 4 months at a time because the popularity of it. Nelson Pinochet, Kate O'Brian, Brian Fallon and Bob Hughes.

Carl Milazzo

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Library Stack Bookcases. From 1901 - 1903 era. A beautiful investment---Prices from \$ 450.00 to \$ 850.00 - For information, ask for Dennis at 634 5580.....



It's been nearly 76 years since our solar system's most famous snowball made its last appearance. Some are still alive to remember it's gossamer tail sweeping across the night sky.

Times were different in 1910. Light pollution was virtually nonexistent and people could see the stars even from the centre of major cities. Most people still lived in the country, where the skies were black and the Milky Way shone every clear night. Telescopes were few and far between and prohibitively expensive for most. There was no television or radio. Only newspapers and illustrated news magazines spread the word of comet Halley's approach.

When Earth passed through Halley's tail, the papers sensationalized the fact that the Earth would be bathed in deadly cyanogen gas! From this, some unscrupulous businessmen preyed on the ignorant public by offering gas masks and "comet pills" to protect against the non-existent deadly fumes. Some astrologers predicted the end of the world, as astrologers are apt to do when a bright comet visits us..

but most folks ignored the fuss, and were content to admire the celestial phantom as it circled the sun and headed back to the dark reaches of our solar system.

In 1948, when comet Halley once again began its headlong rush towards the inner solar system, the preparations for its homecoming were underway. The optical industry, which had grown dramatically during the two world wars, was now turning its efforts to civilian markets. During the 1950's, the marketing of astronomical telescopes mushroomed as more and more domestic manufacturers came on line and imported optics (mostly from Japan) continued to feed and cultivate our growing interest in space and astronomy. Popular scientific magazines also flourished, in which many of the telescope manufacturers and distributors advertised to those curious about the night sky. Amateur astronomy was a growing hobby and the astronomy "industry" was reaping the benefits.

However, only a small percentage of the populace owned a telescope or binoculars. The space programme had helped to generate public interest to look up, but what the industry really needed was a greater catalyst to sell astronomical instruments. Something that would captivate the world's interest. Something spectacular and mysterious. Moreover, something so special, it shouldn't be missed at any cost.

As comet Halley swept ever closer to the sun, an idea was reborn in the minds of marketing men. It wasn't a gigantic mountain of ice that was heading our way. No, comet Halley would be a gold mine to be exploited to the fullest.

No better event could have been conceived by the minds of men for the purpose of selling astronomy to the masses. Walk up to anyone in the street, ask them to name a famous celestial object and they'll probably mention Halley's comet. Sighting the comet is a once-in-a-lifetime event, therefore something not to be missed. And few objects are as spectacular as the public's perception of a comet, with its long sweeping tail and brilliant head (despite the fact that most comets are small and faint). A comet can be seen from nearly everywhere on the planet and in the case of Halley, will be visible for many months. Most important of all, comet Halley's predicted return is a long established fact, which gives manufacturers and marketers a lot of time to promote their products.

There have been many moves afoot to maximize the profitability of Halley's return. A few years ago, a telescope manufacturer based in California was brought out by a Swiss conglomerate. This firm was long known for its schmidt-cassegrain telescopes designed for serious observation. New ownership, however, introduced a different marketing strategy. Now the firm aggressively markets and promotes a line of refractors, and binoculars under the "Cometron" label.

A Miami, Florida based sales organization, long known for its inexpensive refractors and reflectors has recently introduced a wide range of small telescopes known as the "Halley's Comet Series".

marketing its "Comet Scope" telescope, which constitutes a line of small catadioptric newtonians on alt-azimuth mount.

Most recent to enter the fray is the Halleyscope, which is being widely advertised in the print medium. It's a 40x spotting scope with a zoom range of 8 to 32 power, and includes a camera adapter to photograph the comet it's named after.

All of these telescopes made to view Halley's comet have several points in common. They are all imported from Japan where they can be made quite cheaply and in large quantities. They are all attractively packaged to appeal to the general consumer. And they are all intended to generate a lot of profit. In terms of observing performance, they range from good to useless, with a disturbing proportion falling into the latter category.

If we examine the advertising techniques used to sell these instruments, we see a classic case of "selling the sizzle". The upcoming apparition of comet Halley will be quite unfavourable, especially for observers in the northern hemisphere. Yet, most advertisements show the comet as a tremendously bright spectacle, which it almost certainly will not be. To label such advertising as deceptive is understating the fact severally.

No doubt a lot of interest in astronomy will be generated by the media blitz and some people will continue in the hobby thanks to the catalyst comet Halley will provide. But far more will likely be bitterly disappointed with inadequate telescopes under light-polluted skies, with grandiose delusions of how it should look to their untrained eyes.

Comet Halley is being used to promote much more than telescopes, books, T-shirts, bumper stickers, motion pictures, ocean cruises and tours to southern lands are but a few of the things borrowing from its fame. As the comet draws closer, maybe we'll find comet Halley breakfast cereal next to boxes of Mr. T on supermarket shelves. And perhaps we'll see the comet get its own Saturday morning cartoon show (Halley the Amazing Comet??). Keep your eyes peeled for gas masks and comet pills sold in some weekly tabloid that also predicts Halley's destruction of planet Earth. It's all good capitalist fun really, and as long as few expectations are raised, such merchandising is harmless.

But, as comet Halley once again wheels out of the inner solar system, and millions of people shove their "Halley" telescope into closets and attics, I wonder how many of them will be feeling "ripped-off"????

Clive Gibbons  
member of the RASC Hamilton Centre.  
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## INSTRUMENT NOTES

The September meeting of the Instrument Section, which is now NOT meeting at a regular time and place, was held at Dave Sepulveda's home in North Tonawanda. There were seven members and four telescopes present.

Darwin officiated at the reassembly of one of the club's rental telescopes. He had made the mirror and most of the telescope from materials picked up at the place in which he used to work. After assembly, with little adjustment, this scope proved to be well collimated.

We checked a fine instrument donated to the BAA by the parents of Bob Kartyas. Bob Mayer had also made some of his fine touches on this one.

Bob Hughes set up his telescope out in the front yard. It was a clear evening although the moon was pretty prominent. This gave us a chance to view the moon and Jupiter.

Our instrument group offers free help to any member experiencing difficulties with equipment. Maybe the members all have new commercial telescopes. Or any home made ones have been put in perfect working order. FINE!! But if any help is needed, call on the T/Ms.

Ed Lindberg

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The astronomical use of ancient eclipses also figured in a part by Halley. John K. Fotheringham published conclusions on the lunar accelerations based on thorough studies of 11 solar eclipses - the first of that in Babylon, July 31, 1063 B.C. and the last at Theon, June 16, 346 A.D. The eleven were chosen because the accounts of them were clearer and had been more completely studied. Such an acceleration in the moon's motion has been confirmed by Halley in 1695 and again by Richard Dunthorne in 1749.

Halley was also instrumental to point out the value of the transit of Venus across the disc of the sun. The transits of Venus have furnished one of the most accurate methods for finding the solar parallax, giving us the earth's mean distance from the sun, the astronomical unit (AU). His basic idea was to station two astronomers (observers), one as far north on earth as possible and the other as far south as practicable. Each observer would then observe the time of ingress of the planet on the sun's disc. If these times could be noted with a very high degree of accuracy, the lengths of the respective paths as seen from each station could be computed. Knowing, already, the period of Venus, it is not now difficult to calculate, determining the sun's distance.

Even in the 18th century learned men disbelieved that stones (meteors) fell in from space. Even the great 'French Academie des Sciences' went on record denying these little bodies originated in outer space. The work to prove meteors by Ernst F. F. Chladni around 1794 was ridiculed. April 26, 1803 at L'Aigle, France, there was a fall which was investigated by Jean B. Biot and convinced even the philosophers. Two German students, H. W. Brandes and J. F. Benzenberg carried out simultaneous observations in 1798 from two stations at a distance apart. Through a method of triangulation determined an approximate height at which meteors appeared and then disappeared. Then Sir Edmund Halley did calculate a fireball path which occurred in 1719. The methods were now well understood, although, scientists did neglect meteors almost entirely. On November 13, 1833, meteoric astronomy was born when the "Great Leonid Shower" appeared over America.

Not only was Halley noted for his efforts in the field of astronomy, he also found interest of having laid the foundations of scientific life insurance by calculating a mortality table from data he had collected. This data was from the compiled data which was relative to 5,869 deaths Caspar Neumann of Breslau did in 1691. His information was gathered from the parish records of that city which he pointed out that the supposed fateful significance of the years seven (7) and nine (9) as being unfounded.

His experiences also were under the ocean floor. The 'diving bell' where it was first read of in Europe, was tried at Cadiz by two Greeks in the presence of Charles V, the Emperor. The first note of any, was made by Halley.

Even the naming of a constellation in the southern hemisphere was made by Halley. In 1679 the 'Southern Cross' (CRUX) was added to the maps and charts by LaCaille and others from Halley's mapping.

The most interesting of all the comets from an historical standpoint is "Halley's Comet". It is quite typical in its behavior and serves as a very excellent example how these bodies are usually expected to act. Of course, this comet moves in a retrograde direction in its orbit as seen looking from earth, such as the hands of a watch or clock move.

The comet is not on a true 76 year cycle. Its period varies from between 74 to 79 years. This variation is due to the attraction the planets have on it in its journey about the sun.

A bright comet was seen in 467 B.C., which could have been Halley's Comet; it is certain to have been seen in China in 240 B.C. and every successive return plus 28 more were identified. Our knowledge of this comet, therefore, dates back for over 2000 years without a break.

It is named after Sir Edmund Halley because he is the first person to bring forth proofs that the comets which were seen in 1531 and 1607 had moved in practically the same orbit as that which he observed in 1682.

All of them being bright objects, Halley had the sagacity to infer that they were all really different returns of the same comet, so---- he predicted that the next appearance would occur in 1758. He also had predicted that these bodies were a part of our solar system which was supposed discounted by many of the other mathematicians, philosophers and astronomers.

Unfortunately, Halley died in 1742 and did not live to see the vindication of his work but the comet was rediscovered on Christmas night in 1758. This finally settled the fact that some of the comets at least, moved around the sun in ellipses similar to the planets. Their orbits, though, are very much more elongated as astronomers would say "orbits of greater eccentricity".

Darwin Christy

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## ASTRONOMICAL HAPPENINGS

**SOLAR:-** The Sun continues to go south in November, but--- in December it will make a turn-around on the 21st and head back north. Even though we are encountering cold weather, when the clouds are gone, we have a lot of observing time. For those who like to eclipse-hop, the sun will be eclipsed by the moon on the 12th of November, although it will only be seen from 'down-under' in the southern part of South America and Antarctica.

**LUNAR:-** The phases of the moon for November will occur as follows- last quarter on the 5th; new moon on the 12th; first quarter on the 19th; & full moon (Beaver) on the 27. For December:- last quarter on the 5th; new moon on the 11th; first quarter on the 18th; & full moon (Cold) on the 27th.

### LUNAR & PLANETARY CONJUNCTIONS:-

For November- Venus on the 11th  
Mercury on the 13th  
Uranus on the 14th  
Neptune on the 15th  
Jupiter on the 17th  
For December- Mercury on the 10th  
Saturn on the 10th  
Jupiter on the 15th

### PLANETARY & STELLAR CONJUNCTIONS:-

For November- Venus & Spica on the 3rd  
Mercury & Antares on the 8th  
For December- Mars & Spica on the 2nd  
Mercury & Venus on the 3rd  
Venus & Saturn on the 5th  
Mercury & Jupiter on the 16th  
Mercury & Uranus on the 29th

### SOLAR & PLANETARY CONJUNCTIONS:-

In November- Moon on the 12th  
Saturn on the 22nd  
In December- Uranus on the 10th  
Neptune on the 25th

### METEOR SHOWERS:-

November 3rd - Southern Taurids \*\*\*\*  
9th - Cepheids  
10th - Northern Taurids \*\*\*\*  
11th - Mu Pegasids  
12th - Aretids  
14th - Bielids (Andromedes) \*\*\*\*\*  
16th - Leonids \*\*\*\*\*  
28th - Andromedes (NOT the Bielids)  
December 5th - Phoenicids  
10th - Monocerotids  
10th - Chi Orionids (Northern)  
11th - Rho Hydrids  
11th - Chi Orionids (Southern)  
13th - Geminids \*\*\*\*\*  
22nd - Ursids \*\*\*\*\*

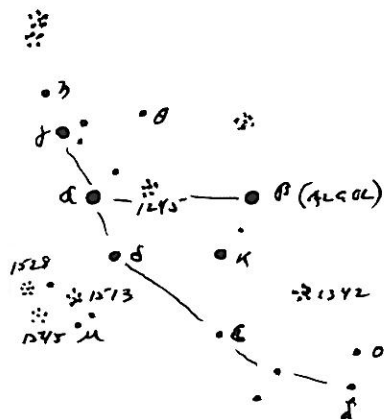
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Can you name the stars ?? If not they will appear in the next issue of the "SPECTRUM".

## NORTHERN CONSTELLATION

PERSEUS, The Champion or Hero. Much can be said for this Champion as the 'Rescuer' of the Lady in Chains (Andromeda). But so many have heard of this Myth that I will not go into the legend. The creation of Perseus dates back as far as 400 B.C. or even perhaps farther than that. It is a very popular constellation because it holds many fine astronomical objects, which are observed both by naked eye and with a telescope.

It is bordered by Cassiopeia & Camelopardalis on the north; Auriga on the east; Aries & Taurus on the south; and Cassiopeia, Andromeda & Triangulum on the west.



Objects of interest in Perseus are as follows:-

Galaxies - NGC's 1003, 1023, 1058, 1169, 1175, 1270 & 1275

Open Clusters - NGC's 744, 957, 1220, 1444, 1513, 1528, 1545, the Double Cluster & Kg-5

Planetary Nebulae - NGC 650 (M-76) - I, 351 - I, 2003

Diffuse Nebulae - NGC's 1039 (M-34), 1333, 1491, 1499, 1579, 1624 & I, 348

Novae - N-1901 & N-1974

Double Stars - Beta, Epsilon, Zeta, Eta, Omicron, Tau, 20 & 40

Variable Stars -  $\beta^1$ , U, KK, AD, S, SU, YZ, XX, IQ, KP, GK, V400, W, IT, IW, UZ, R, AG, W, AW, KS, YY, Theta, and of course, BETA (ALGOL).....

## SOUTHERN CONSTELLATION

COLUMBA NOAE, Noah's Dove, now known simply as 'COLUMBA' was not recognized by Bartschius, Tycho, Hevelius, Bayer nor Flamsteed. It was given its name in the 18th century, though, by Royer and HALLEY, the latter giving it ten stars. It was made up of some of the outliner stars in Canis Major which is near the Ship,--Noah's Ark of yesteryear's constellations.

It is bordered by Lepus & Canis Major on the north; Canis Major & Puppis on the east; Puppis & Pictor on the south; and by Caelum on the west.

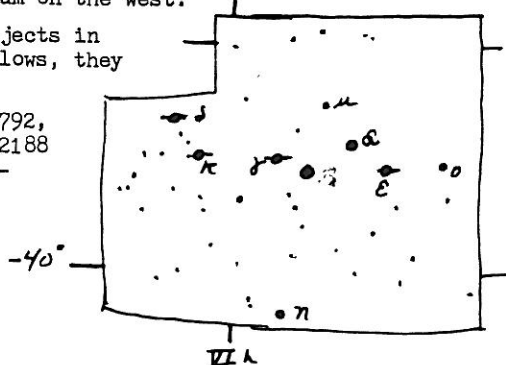
Interesting objects in Columba are as follows, they are few....

Galaxies - NGC's 1792, 1800, 1808, 2090, 2188

Globular Clusters - NGC 1851

Variable stars - R, T

Double stars - alpha

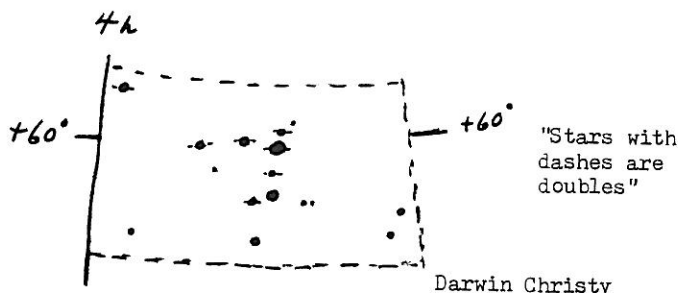


## ANCIENT CONSTELLATION

TARANDUS vel RANGIFER, The Reindeer (NOT one of old St. Nick's) is a small and faint asterism located in part in Cassiopeia and Camelopardalis. It was formed by Pierre Charles LeMonnier as a memento of his stay in Lapland when he was engaged in Geodetic work in 1736, under the title 'Renne'.

The Germans knew it as 'Renntier'. Bode inserted it in 'Die Gestirne' as such in the 18th century.

It was seldom figured in the constellations, and today it is never mentioned except on occasion as this.



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The following article was taken from "The Economist", Mar-Apr 1985, page 13 and was submitted by Ray Dague the Syracuse Astronomical Society's newsletter, 'The Astronomical Chronical'-----

## "STOP THAT COMET"

Allowing Halley's Comet to bring new disasters would be foolish....

The world has enough threatening crises to confront without accepting yet another. Here comes Halley's Comet, a phenomenon that has heralded catastrophes since before history began. Halley's missile is now racing to earth at 73,000 miles per hour. It must be stopped, preferably by a preemptive nuclear strike.

A comet like Halley's, some say, brought extinction to the dinosaurs. Others reckon it was the precursor of Herod's slaughter of the innocents. In 1066, Halley's comet was unarguable the harbinger of King Harold's defeat. In 1456, Pope Calixtus III condemned it as an agent of the devil. And in 1910---as it streaked across the skies of Sarajevo---Mark Twain, Tolstoy, Florence Nightingale and King Edward VII died.

Calixtus was right. With the power of nuclear destruction at its fingertips, the world cannot afford to risk allowing Halley's comet to return in 1986. The credulity of comet-struck crowds in the third world will be exploited by unscrupulous politicians and holy men. Elsewhere, it will again bring vapours to our weaker sex. In 1910, women in Chicago boarded themselves into their houses to escape comet gas. People who last year brought more than 1m Boy George records and watched many hours of Dallas cannot be immune.

Annihilation aside, Halley's Comet will damage the world economy and the environment. Businessmen are busily preparing to turn valuable raw materials into comet memorabilia. Because much of the memorabilia will be produced in Asia and turned to garbage in America, it will increase the stains caused by America's worsening trade deficit as well as add to the pollution of the environment, both of which are undesirable in a mid-term election year.

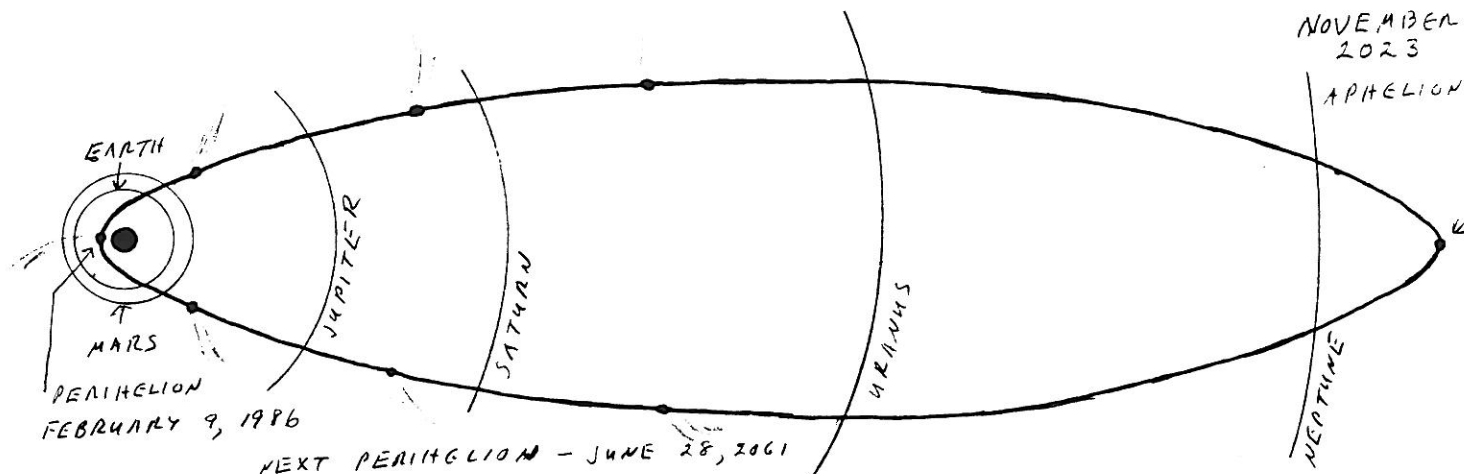
Protection from such dangers is by itself worth the vast resources which a nuclear strike against the comet will require. But the endeavour will also leave lasting benefits. For peace, it will help overcome a psychological barrier facing the Geneva talks; instead of dismantling their hard won missiles, generals will be able to see them off in a blaze of glory. For Dr. Strangeloves, the comet-stopping mission will provide real star-wars experience. And there is power to win.

Any nation willing to send the products of the best minds of a generation and a significant portion of its gnp hurtling into space to blast a ball of ice three miles across will be treated very carefully by its neighbors. The nation that hits the comet, at a distance of 37m miles, will gain new respect worldwide. Let next Monday be the day when statesmen take the first step towards a comet-free future.

EDITOR'S COMMENT - - "WHAT???????"



# HALLEY'S COMET



It was said in 1910 that Halley's Comet would travel out beyond the planet Neptune before turning around and orbit back towards the sun.

This encounter brings the comet below the celestial equator, thus observing the comet will create some problem for those of us who live here in the northern hemisphere. But--for the die-hard observers, where to find the comet (with a pair of binoculars) among the stars, is to follow with the predicted dates. The magnitudes are not estimated with the dates -- SORRY! -----

## NOVEMBER ---

- 1st - it will approach Iota Tauri.
- 9th - it will be near Kappa Tauri.
- 13th - it will appear about 4-5 degrees south of the Pleiades.

16th - Zeta Arietis is its next pass.

26th - it should appear 4 degree south of Gamma Arietis.

28th - it will approach Eta Piscium.

## DECEMBER ---

5th - we will see it near the star 58 Piscium.

10th - the comet will near Iota Piscium.

14th - Gamma Piscium is the next approach.

25th - it will pass near Eta Aquarii.

29th - it will be near Gamma Aquarii.

## JANUARY ---

5th - its pass will be near the star Omicron Aquarii.

23rd - it should go by, within 2 degrees, Beta Aquarii.

At this point, because it will be in the glare of the Sun, we will have to wait until it makes its journey through perihelion on February 9, 1986 and until it comes out of the glare of the Sun again.

## MARCH ---

8th - it should appear about 2 degrees north-west of Rho Caprinorni.

20th - it will approach 52 Sagitarii.

26th - it will make its way below the handle of the 'Teapot' of Sagitarii.

## APRIL ---

3rd - it will near that star Theta Scorpii.

9th - look near Alpha Lupi for the comet.

13th - should be interesting as it passes between 1 & 2 Upsilon Centauri.

20th - it will approach Xi Hydrae.

29th - it will be near Alpha Crateris.

## MAY ---

1st - it will have moved to Nu Hydrae.

From here on, it will be telescopic again and we will have to wait until 2061 for its next appearance and its approach to perihelion.

Darwin Christy

\*\*\*\*\*

## STAR TEST

TWINKLE, TWINKLE LITTLE STAR,  
TEST MY LENS AT  $\lambda$ .  
CENTER ABOVE THE RINGS SO HIGH.  
STREHL RATIO ONE, OF SOMETHING NEARBY.  
TWINKLE, TWINKLE LITTLE STAR,  
AIRY DISK IS WHAT YOU ARE!

BRIAN A. F. BLANDFORD

\*\*\*\*\*

Reprinted from the St. Petersburg Astronomy Club's newsletter, "EXAMINER". March 1985 issue.....

## Halley's Comet Update-----

Halley's Comet remains near the border of Orion and Taurus. As for its brightness, some sources state that it should be magnitude 16 by mid-month. This implies a fully active coma, or head, of the comet. Latest observations, however, show the comet to be quite small, about 25 seconds of arc across, with the coma reflecting more light than it is emitting. Estimates in early February place it at roughly magnitude 20, but this varies by about 2 magnitudes over a period of roughly a day. This variability may be due to rotation; or it is possibly due to some comet behavior we don't yet understand. As the comet warms, the coma will brighten tremendously, becoming magnitude 13 by August. By then, Halley's Comet will be in our morning sky and visible in amateurs' telescopes.

Don Machholz

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## PIF SPY & TELL PIF

Rowland Rupp placed first in the Horseshoe Championship, M Division, held during the summer at Rome, N.Y.

Ernst Both spent the last weekend in September searching for mushrooms at the Peck Foray held every fall in Albany.

Nelson Pinochet has returned from his home in Chile resume his studies at Eden High School. While in Santiago he contacted the astronomy club in that city and found that it had 600 members and a 12" and 23" homemade telescope. The observatory has two domes and viewing is done 40 miles east of the city in the foothills of the Andes. Nelson brought back copies of their newsletter of about ten pages.

Paul Noye, one of our new members, has retired and often spends moonless nights at a campground near Beaver Meadow, and goes over to the Center to observe with his 3" homemade refractor.

Bill Smith exhibited some of his fine photographs at the Quaker Arts Festival in Orchard Park in September.

Carl Milazzo was one of four people who gave short talks previous to the main speaker at the Niagara Falls

(also) meeting in September. Carl spoke on summer astronomical activities.

Michael Idem, Jerry Morris and Carl Milazzo went to Beaver Meadow on September 14th to view Halley's comet. It was supposed to be 13.2 magnitude but was closer to 14.2. Using averted vision, it appeared as a spot.

On that same date, Dan Marcus took a very unusual photograph of comets Halley and Giacobini-Zinner on the same print. They were within 2° of each other.

Ben Ungerlirider is a busy man at Scott Aviation where the company makes modern day gas masks for the army, navy, and airforce. It also supplies oxygen for commercial airlines as well as military airlines, and makes Scott Air-packs used by firemen.

On September 14th, Ellen Christy, an Erie County Sheriff Deputy, and daughter of Darwin and Ruth Christy, was married to Paul Sikora, Assistant City Attorney for North Tonawanda, at Salem United Church of Christ in Tonawanda.

Miro Catipovic, who donated his 20" scope to the University of Buffalo, is now making a 16" for himself.

The following people were on hand to help Ernst Both with the public attending the reopening of the Kellogg Observatory on September 20th: Ken Biggie, Marilou Bebak, Tristen DiLapo, Kate O'Brien, and Carl Milazzo. Ken Biggie brought his 60mm refractor, Carl Milazzo his 13" Dobsonian, and former member, Warren Steinberg, an 8" reflector.

Lisa Wisnet is a hard working student at ECC City Campus majoring in word processing.

Marilou Bebak reports that an amphitheater is being built in the Gibson Hall of Space Center at the museum which will seat about twenty people who will be able to watch video programs.

Several members are going to be traveling south to view Halley's comet. Places to be visited include: Florida, Chile, Hawaii, Brazil, Peru, and Australia.

On Monday, October 7th, our Beaver Meadow Observatory appeared as part of the P.M. Magazine TV program.

Edith L. Geiger

\* \* \* \* \*

JANUARY - FEBRUARY 1986  
SPECTRUM DEADLINE  
DECEMBER 30TH

As of September 23rd, John Riggs has been employed at Kitt Peak National Observatory in Tucson, Arizona, doing nighttime observations and telescope operation with the McMath solar telescope. He is living on the mountain where he is able to do personal observations from the mountain top.

John joined the BAA in 1966, and his intense devotion to astronomy through the years has made him a master of the heavens. We owe John a debt of gratitude for his service to the BAA. Because of his efforts, sufficient funds were raised to make our Beaver Meadow Observatory possible. As director of the observatory he gave endless hours serving the public; showing many celestial objects and supplying interesting information concerning each one. He wanted the observatory to be used as an important educational facility and dedicated himself to the accomplishment of that goal. He also hoped that more of our members would avail themselves of the telescope. He brought about a number of new additions and improvements and left the observatory in fine condition.

With his outstanding intelligence and amazing skills, I'm sure Kitt Peak will find John to be an exceptionally capable addition to its staff. The BAA wishes him the very best in his new career, and the success he so richly deserves.

Edith L. Geiger

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FOR SALE

CELESTRON 5" Schmidt-Cassegrainian - Complete with clock-drive, slow motion controls, equatorial wedge, celestron adjustable tripod and special coatings, piggy-back camera mount for astrophotography, solar filter. LIKE NEW condition - \$ 900.00 - contact Larry Carlino  
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Phone 716 433 3432

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\* THE SPECTRUM \*

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