THE SPECTRUM

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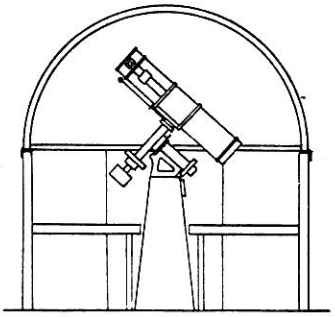

SEPTEMBER - AUGUST
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BUFFALO ASTRONOMICAL ASSOCIATION, INC.

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ASTRONOMER FROM THE PAST

QUETELET, Lambert Adolphe Jacques was a Belgian Statistician and Astronomer. He was born February 22, 1796 in Ghent; and died February 17, 1874 in Brussels.

In 1814 he became professor of Mathematics at Ghent and in 1819 was appointed to the same chair in the Brussels Athenaeum, also was lecturer from 1828 through 1834. He superintended the erection of the Royal Observatory and he was appointed its first director from 1828 until his death.

He applied the mathematical methods of probabilities and averages to the study of man, both as an individual and as a member of society.

His ideas have been set forth in, "Sur L'Homme et le Developpement de Ses Faculties" (2nd edition in 1869) and in "L'Anthropometrie" in 1871.

Darwin Christy

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THE DINOSAUR PROBLEM AGAIN

At intervals through the years we have read of the fate of the dinosaurs. Paleontologists tell us that some 65 million years ago a disaster befell the mammoths and they were exterminated. The theories explaining this catastrophe have ranged from the onset of an ice age, poisonous vegetation, epidemics of disease to attacks on their eggs by some newly evolved enemy.

Doubt has been cast on these theories by some recent findings. Scientists, studying some quarter of a million plant and animal species many through fossil remains and with the aid of computer compilation, have found that many other species became extinct at about the same time as the dinosaurs. And former theories do not apply to these other species.

The revelation that has excited the scientific world is that the extinction of these many species was not a unique event. Studies covering a 250 million year span show that similar events occur at regular intervals of about 26 million years. Then, many, if not all, existing species become extinct. When the sun returns and calm is restored, life begins again and develops by natural evolution.

In 1979 a group of California scientists analyzed geologic layers of clay dating from about 65 million years ago contained about 100 times the concentration of the element iridium as did later samples. The first thought was that a meteor impact was responsible for bringing in the metal and that this might have been the cause of the demise of the ...nt lizards. Estimates of the necessary impact put the ...or diameter at about 10 km (6 miles). An impact of such ...dy travelling at cannon ball speed would raise a dust ...r that would reduce the brightness of the sun to about that of the normal full moon. This condition would last for several years with resulting cessation of photosynthesis and loss of animal food. There would be a virtual ice age with resulting extermination of most, if not all, earthly life.

Another theory is that our sun is one of a binary system. The other component star has been christened "Nemesis" named for the ancient Greek Goddes of Vengeance. One more controversial part of this theory is that Nemesis oscillates in distance from the sun between limits of one half to two light years. Nemesis is said to have a mass of about one tenth that of the sun and is said by one sub-group of scientists to revolve with the sun about their common center of gravity with a period of about 26 million years. At some point in its revolution the sun passes near the astronomer Oort's "Comet Cloud" and attracts a heavy stream of comets to fall on the solar system. This rain of stones, minerals and ice may be a cause of the cataclysm that occurs every 26 million years.

Astronomers are divided in opinion as to the stability of the orbit of the disputed star Nemesis. Does it really exist and does it vary in distance from the sun ? Or does it and its system of planets revolve in an orbit around the solar system in an elliptical path about the common center of gravity ? Meanwhile, while they await the resolution of the puzzle of Nemesis, astronomers at Berkley have begun a searc

Continued on page 4----

MY BED WAS TWO BOULDERS

"My Bed was Two Boulders", and as I lay wedged and bent on their up-bulginh sides, beguiling the hard, cold time in gazing into the starry sky and across the sparkling bay, magnificent upright bars of light in bright prismatic colors suddenly appeared, marching swiftly in close succession along the northern horizon from west to east as if in diligent haste, an auroral display very different from any I had ever before beheld.

Once long ago in Wisconsin I saw the heavens draped in rich purple auroral clouds fringed and folded in most magnificent forms; but in this glory of light, so pure, so bright, so enthusiastic in motion, there was nothing in the least cloud-like. The short color-bars, apparently about two degrees in height, though blending, seemed to be as well defined as those of the solar spectrum.

How long these glad, eager soldiers of light held on their way I cannot tell; for sense of time was charmed out of mind and the blessed night circled away in measureless rejoicing enthusiasm....

On the third night I reached my cabin and food. Professor Reid and his party came in to talk over the results of our excursions, and just as the last one of the visitors opened the door after bidding good-night, he shouted, "Muir, come look here. Here's something fine."

I ran out in auroral excitement, and sure enough, here was another aurora as novel and wonderful as the marching rainbow-colored columns - a glowing silver bow spanning the Muir Inlet in a magnificent arch right under the zenith or a little to the south of it, the ends resting on top of the mountainwalls. And though colorless and steadfast, its intense, solid, white splendor, noble proportions, and fineness of finish excited boundless admiration. In form and proportion it was like a rainbow, a bridge of one span five miles wide; and so brilliant, so fine and solid and homogenous in every part, I fancy that if all the stars were raked together into one window, fused and welded and run through some celestial rolling-mill, all would be required to make this one glowing white colossal bridge.

After my last visitor went to bed, I lay down on the moraine in front of the cabin and gazed and watched. Hour after hour the wonderful arch stood perfectly motionless, sharply defined and substantial-looking as if it were a permanent addition to the furniture of the sky. At length while it yet spanned the inlet in serene unchanging splendor a band of fluffy, pale gray, quivering ringlets came suddenly all in a row over the eastern mountain-top, gliding in nervous haste up and down the underside of the bow and over the western mountain-wall. They were about one and a half times the apparent diameter of the bow in length, maintained a vertical posture all the way across, and slipped swiftly along as if they were suspended like a curtain on rings.

Had these lively auroral fairies marched across the fiord on the top of the bow instead of shuffling along the ynder side of it, one might have fancied they were a happy band od spirit people on a journey making use of the splendid bow for a bridge. There must have been hundreds of miles of them; for the time required for each to cross from one end of the bridge to the other seemed only a minute or less, while nearly an hour elapsed from their first appearance until the last of the rushing throng vanished behind the western mountain, leaving the bridge as bright and solid and steadfast as before they arrived. But later, half an hour or so, it began to fade. Fissured or cracks crossed it diagonally through which a few stars were seen, and gradually it became thin and nebulous until it lokked like the Milky Way, and at last vanished, leaving no visible monument of any sort to mark its place.

..,Just as I was about to retire, I thought I had better take another look at the sky, to make sure that the glorious show was over ... and found that the pale foundation for another bow was being laid right overhead like the first. The, losing all thoughts of sleep, I ran back to my cabin, carried out blankets and lay down on the moraine to keep watch until daybreak.

I had seen the first bow when it stood complete in full splendor, and its gradual fading decay. Now I was to see the building of a new one from the beginning. Perhaps in less than half an hour the silvery material was gathered, condensed and welded into a glowing, evenly proportioned arc like the first and in the same part of the sky. Then in due time over the eastern mountain-wall came another throng of restless electric auroral fairies, the infinitely fine pale-gray garments of each lightly touching those of their neighbors as they swept swiftly along the underside of the bridge and down over the western mountain like the merry band that had gone the same way before them, all keeping quivery step and time to music too fine for mortal ears.

While the gay throng was gliding swiftly along, I watched the bridge for any change they might make upon it, but not the slightest could I detect. They left no visible track, and after all had passed the glowing arc stood firm and apparently immutable, but at last faded slowly away like its glowious predecessor.

Excepting only the vast purple aurora mentioned above, said to have been visible over nearly all the continent, these two silver bows in supreme, serene, supernal beauty surpassed everything auroral I ever beheld.

John Muir, Travels in Alaska, Houghton Mifflin Co. 1915.

Shaun Hardy

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ASTRONOMICAL HAPPENINGS

SOLAR:-

The Sun will be crossing the celestial equator on the 22nd of September. It's shadow will cause the Moon to be eclipsed on the 28th of October and will be visible throughout Australia, Asia, Africa and Europe, but not in our area. (TOO BAD !!).

LUNAR:-

The Lunar Phases for September and October are:-

First Quarter - September 21st & October 20th
Full Moon - September 28th & October 28th
Last Quarter - September 7th & October 7th
New Moon - September 14th & October 13th.

Full Moon in September is called the "Harvest Moon".
Full Moon in October is called the "Hunter's Moon".

LUNAR & PLANETARY CONJUNCTIONS:-

Venus - September 12th & October 12th
Mars - September 13th & October 11th
Saturn - September 18th & October 16th
Uranus - September 20th & October 17th
Neptune - September 21st & October 18th
Jupiter - September 24th & October 21st
Mercury - October 15th

PLANETARY CONJUNCTIONS:-

Mercury & Mars - September 4th
Mars & Regulus - September 8th
Venus & Regulus - September 21st
Venus & Mars - October 4th
Mercury & Saturn - October 21st

METEOR SHOWERS:-

For September:-
Beta Lacertids - 1st
Aurigids - 1st
Epsilon Perseids - 11th
Southern Piscids - 20th
Kappa Aurigids - 21st
Alpha Aurigids - 22nd
Sextantids - 29th

For October:-
Quadrantids - 2nd ***.
Andromedes - srd
Draconids - 9th *****
Northern Piscids - 12th
Epsilon Arietids - 17th
Epsilon Geminids - 19th
Orionids - 21st *****
Leo Minorids - 24th

Two New Meteorite falls

Two meteorite falls occured successively in Japan last summer. These were indeed, the first after an interval of twenty-six years.

The first one fell at about 1:50 p.m. on June 30, in Aomon city, in the northern part of Honshu island. It penetrated the zinc roof of a printshop and broke into many pieces. About a dozen fragments have been recovered so far, and the total weight is about 320 grams. The weather was fine at the time of the fall but no one noticed the flight of a fireball or detonation.

Mr. Murayama (Director, department of physical sciences) was informed about the fall by Mr. S. Odagiri, a teacher at Aomori High-school, and the next morning was able to visit the scene of the fall in the afternoon of July 2, interviewing Mr. Kazuo Ogura, the owner of the printshop and his family who witnessed it.

The fragments, partly covered by black fusion crust, were easily recognized to be of the L-group, ordinary chondrite.

Surprizingly, only 53 days after the Aomori fall, in the morning of August 23, Mr. M. Koishikawa of the Sendai Astronomical Observatory phoned Mr. Murayama, and reported that two small meteorites had fallen in Tomiya-cho, Miyagi Prefecture, about ten kilometers north of Sendai city. This time, he was able to examine the specimens in the evening of the same day, just one day after their arrival on earth.

According to Mrs. Y. Asano who witnessed the fall, at about 1:35 p.m. on Aug. 22, when she was in the living room in front of a small yard, she was astonished at a sudden violent noise outside and only a few seconds later, a small black stone fell on the pajamas of her small daughter which had been left on the veranda to air. She picked up the stone at once, and found it was rather cold and smelt a little of fish. After looking around, Mrs. Asano and Mrs. Sato of the neighboring house found another black stone on the roof of a small storehouse. The big noise heard by them must have been caused by this stone when it hit the zinc roof.

Zinc roof penetrated by Aomori meteorite.

These small stones weigh only 19.2 grams and 8.3 grams respectively. Both of them are entirely covered by black fusion crust, and undoubtedly seem to be fragments from a meteoritic shower. But no other fragments have been found up to the present time. This stone belongs to the H-group, ordinary chondrite. Curiously again at the time of this fall, neither the flight of a fireball nor detonation were observed.

As both the Aomori and Tomiya meteorites were very quickly recovered, fresh samples could be obtained with the kind permission of the owners, and detailed chemical, radiochemical and petrographical analyses are being carried out by Dr. Masako Shima and her colleagues of the museum.

Fragments of Aomori meteorites.

"Against every great and noble endeavor stand a million mediocre minds"------

* * * * *

Albert Einstein

** DUES ARE DUE **

FAMILY MEMBERSHIP - $15.00
REGULAR MEMBERSHIP - $10.00
STUDENT & SENIOR CITIZEN - $5.0
SUBSCRIPTION ONLY - $2.00

Please amke payment to either Claudia Bielinski or John Raymonda.....

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NEW MEMBERS

Welcome to the following new members:--
Paul Francis Warms
Kevin D. Bolt
Eugene & Carol McCarthy
Edward S. Czapla
Gregory J. Was

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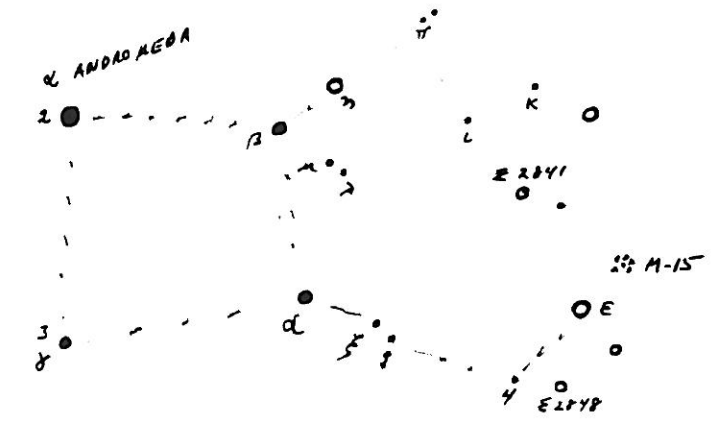
NORTHERN CONSTELLATION

PEGASUS.

That poetic steed
With beamy mane, whose hoof struck out from earth
The fount of Hippacrene--------

Bryant's
The Constellations



The Winged Horse, as it is known among the mythologists is bordered on the south by Pisces & Aquarius; on the eas by Pisces; on the west by Delphinus & Equuleus; and on the north by Andromeda,. Lacerta & Cygnus. It is well defined t the 'Great Square' which trails the 'Summer Triangle' of Vega, Deneb & Altair.

Noteable objects in Pegasus include: Galaxies- NGC's 16 23, 7137, 7177, 7212, 7331, 7332, 7448, 7454, 7457, 7469, 7479, 7619, 7625, 7626, 7678, 7741, 7742, 7743, 7769, & 78 Open Cluster is NGC 7772. A Globluar Cluster NGC 7078 (M-1 Double Stars include: Chi (10), 1, 40, 33, 72, 64, 57, 37, Xi (46), 34, 30, 3, 4, Epsilon (8), 20 52, & 66. Variable Stars are: AC, AK, AP, AW, BC, BETA, EE, GO, K-648, R, RR, RX, RZ, S, SS, SV, SW, SX, TU, TW, V, VX, W, & Z.

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ANCIENT CONSTELLATION

ROBUR CAROLINUM, Charles' Oak, was formally published by Halley in 1679. It was in commemoration of the Royal Oak o his patron, Charles II, in which the king had lain hidden for twenty-four hours after his defeat by Cromwell in the battle of Worcester. This was on September 3rd, 1651. Halley's invention earned him his master's degree from Oxford in 1678 by the king's express command. LaCaille complained that the construction of the figure ruined the already incomplete constellation from the finest stars in th 'Ship'. Now the 'Oak' ceases to flourish after nearly a ha century of possession. Bode sought to restore and failed a Burritt incorporated it into his maps, assigning to it 25 stars. Halley's 2nd magnitude star 'Alpha Roburis' was changed to 'Beta Argus', now in Carina.

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SOUTHERN CONSTELLATION

FORNAX, Fornax Chemica or Fornax Chymiae, the Chemical Furnace was formed by LaCaille from stars within the southern bend of the river, Eridanus. It is bordered on the west by Sculptor; on the south by Phoenix; on the east and north by Eridanus; and on the north by Cetus.

Noteable objects in Fornax includes the main star, "Alph which is a double of 4th and 7th magnitudes, 3" apart with postiton angle of 320° and could be a binary.

Other objects are: Galaxies- NGC's 922, 986, 1079, 1097, 1202, 1255, 1288, 1292, 1302, 1305, 1316, 1317, 1326, 1339, 1341, 1344, 1351, 1366, 1371, 1374, 1379, 1380, 1381, 1385, 1387, 1398, 1399, 1404, 1406, 1425, & 1427. A Globular Cluster NGC 1049. A Planetary Nebula NGC 1360.

Variable stars: R, RZ . Double Stars: Alpha as explained above, Gamma, Eta, Chi & Upsilon.

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for the hypothetical star. There is a question of whether it is detectable photographically as it is said to be a white dwarf. But if it can be brought out on a photographic plate it can be detected by blink comparison as it should move through the star field rather rapidly.. The tedious study will include perusal of photos from the orbiting infra-red telescope "IRAS".

Another hypothesis relates to the solar system travelling alone through the galaxy. This theory denies the existance of a companion star to Sol. Our solar system is stiuated near the rim of the Milky Way galaxy. As part of the galaxy it revolves about the galactic center, completing a revolution about every 250 million years. Meanwhile, the solar system passes back and forth through the plane of the galaxy. When our system passes through the plane of the galaxy it encounters an increased density of material and therefore frequently attracts a large swarm of comets. Opponents of this theory say that the last extinction of any species on earth occurred about 11 million years ago and at that time the solar system was a considerable distance away from the galactic plane.

So the study and controversy go on. The discussion spawns a renewed consideration of the theory of evolution. Does all life vanish and then reappear again every 26 million years ? We can ponder the fatalistic connection of our earth with the unending cosmos. We can only speculate on the gigantic unknown propelling forces guiding out "Cosmic Ship" and its passengers on its eternal voyage over the imponderable space-ocean. (Material for this article was abstracted from article in "Homo kaj Kosmo" - Man and Cosmos - an astronomical journal published in the language Esperanto in Zagreb, Yugoslavia)

Ed Lindberg

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* OBSERVATORY REPORT *

More volunteers are needed to help out with public nights at the Beaver Meadow Observatory. We have gained a total of 14 additional helpers so far. During the public nights of October 6th & 13th, Halley's Comet will be one of the celestial objects to be observed, from 8:00 through 11:00 PM if clear. Hopefully this will attract a large crowd as well as additional club members to help out by bringing their own portable telescopes. About half of the new members joining the B.A.A. are those who have discovered we hold public nights at the Beaver Meadow Observatory

Since April, a total of $100 has been collected from the donation box. From that we have purchased refreshment supplies for the observatory as well as a Constellation and Lunar Map for the display board.

The average public turn-out is now up to 35 each Sunday evening. Our own club members are using the observatory just about every clear night, both visually and photographically.

Repairs have been made by our members, such as fine tuning the 12 inch scope by Dam Marcus, Bob Mayer, Tom Reid & Ed Lindberg. Work on the door lock by Paul Noye, who is also the latest to have been shown the operation of the observatory and telescope and is qualified. Repair to the roof latch roof pully system and the door step were made by Carl Milazzo.

In addition to past publicity, the observatory's public nights are posted in the public libraries of Wyoming Co. where Beaver Meadow is located. The observatory for the Beaver Meadow Nature Festival was open all day, July 13 & 14. The sun was projected for the public to view on a white board.

The 8 inch telescope for loan has been used consistently. It is limited to one month per person due to any one time there are perhaps four members awaiting to borrow it.

Carl Milazzo, Obs. Director

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NOVEMBER - DECEMBER 1985 SPECTRUM DEADLINE OCTOBER 23RD

--FOR SALE--

4-sale - home-made clock drive for 8 to 10 inch telesco Any reasonable offer is welcome....Ronny Coyle 633-7844

For sale - 13.1" Coulter Dobsonian Telescope - Excellen condition - asking $475 OR trade for smaller telescope. Tristan Dilapo - 874-1589, 886-4513 or 941-5613

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* OBSERVATION *

Comet Giacobini-Zinner was seen 5 times in August as it crossed the rich Milky-Way of Cassiopeia and Perseus. It w magnitude 7.7 with a star-like nucleus and high surface brightness coma of 10 minutes of arc in size. Its tail is wide and diffuse and can be seen extending a full degree long. The periodic comet was viewed with 10x50 binoculars, 5 inch f:4.2 refractor, 13 and 24 inch Dobsonian telescope

The face-on galaxy M-74 in Pisces was seen with an 18" Dobsonian scope. It's hub was very bright but its spiral a arms were on the limit of detectability.

Carl Milazzo

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MEETING NOTICES

SEPTEMBER 13th Meeting will feature a real treat to start off the new year-- a Halley's Comet Year. Thanks to the efforts of our own Ernst Both we will have Dr. David Meis of Geneseo State College, a real comet expert, just back from a visit to Russia, who will give us the latest infor ation on Halley's Comet and the efforts to investigate th phenomena, BE THERE!!!!

OCTOBER 11th meeting thus far, at press time, the speaker is still tentative, but may feature a movie or two on the Universe, or if possible another Halley's Comet topic. speakers originally planned for September and October had to cancel out, but Tom Dey will be back in Novemver we can all look forward to then.

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19 of the 108 Messier objects can be seen with the nake eye, They are M-4, M-6, M-7, M-8, M-13, M-22, M-24, M-31, M-33, M-34, M-35, M-39, M-41, M-42, M-44, M-45, M- M-48 and M-93.

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The easiest Messier object to see is the open cluster M-45 in Taurus. The most difficult is the galaxy, M-74 in Pisces.

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PRESIDENT'S CORNER

Well, now that it is September, its back to the old ofi summer routinem which for us means good-bye star parties and hello regular monthly meeting. Remember that our meetings are on the 2nd Friday of each month at 7:30 PM at Buf falo State College, New Science Building, through December and at the Buffalo Museum of Science from January until June.(except the May Dinner meeting which will be announce

Much much thanks and sincere appreciation to all those who sponsored star parties this summer and also for those who attended.

We will need volunteers on September 20 & 21 (Friday & Saturday - 10 AM - 10 PM) to help with a small display, a couple of telescopes and a table, at the Museum of Science as part of a cultural celebration in cinjunction with the 50th anniversary of the Buffalo Philharmonic. It will be a excellent apportunity to boost our own club and be part of the celebration. Contact me to offer your assistance. We will also be helping Ernst Both at the Museum, and by the way, Ernst will bw starting Friday Public Nights at the Museum's Kellogg Observatory again on a regular basis and he can use some help from any of us who would be willing to bring a small scope up to the roof and mix with the pub lic.

Ken Biggie

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OBSERVATION REPORTS

April 20-21 while out at Beaver Meadow this night variable star and deep-sky observing took a secondary place due to the occurrance of a most unusual Auroral display.

As twilight ended a most intense but amorphis arc was noted lying some 15° above the northern horizon. Within five minutes multitudes of huge rays shot upward towards the zenith and often right into the southern skies. By 9:00 PM the rays had disappeared and the northern amorphis arc had subsided. This, though, set the stage for a most unusual event, an amazingly bright southern arc errupted into being. The southern arc brightened and meandered wildly often extending to within 15° of the southern horizon! It was strange to watch bright Sirius actually lying within an Auroral patch. By 9:30 PM the Aurora had seemed to be dying out but, surprise, the northern arc suddenly reactivated at 10:20 PM. Indeed though still amorphis it became so bright as to illuminate the landscape not unlike a full moon. Some clouds situated along the northern horizon were actually back-lit by the Aurora while others higher up were silhouetted upon the Aurora's fainter outer halo. By midnight the Aurora was a virtual false dawn and stubby rays again were present and now pulsed with a pale green light. At times the more intense spines shone pale pinkish in color. By 12:30 AM the Aurora mutated into a curtain-like form seemingly consisting of hundreds of shifting, 10° - 40° long, rays. The display again weakened losing its curtain-like form by 1:45 AM. Once again the Aurora errupted, at 2:15 AM, this time in the form of rapidly pulsing and flaming ripples. These flame fronts often coursed into the southern skies to within 45° of the horizon. After 2:30 AM the display once again diminished in intensity but persisted into the dawn.

Thus in the course of a single night this Aurora demonstrated almost every type of Auroral structure. Curiously the Sun when onserved earlier appeared totally inactive, no spots being present.

June 21-22 I split double star Eta Corona Borealis with considerable ease. Currently the components are separated by 0.81 arc seconds. Postiton angle is almost north-south. At 298x dark sky was seen between the components. On June 30th I used the 6" f:10 reflector at 254x and found it to resolve this pair virtually as well as the 13.1" had done nine nights before.

June 23-24 I resolved double star Gamma Cornca Borealis with the 13.1" reflector. It was a fairly difficult pair as the two stars are of unequal magnitudes. The current separation of this double is 0.54 arc seconds and positon angle looks to be 120°.

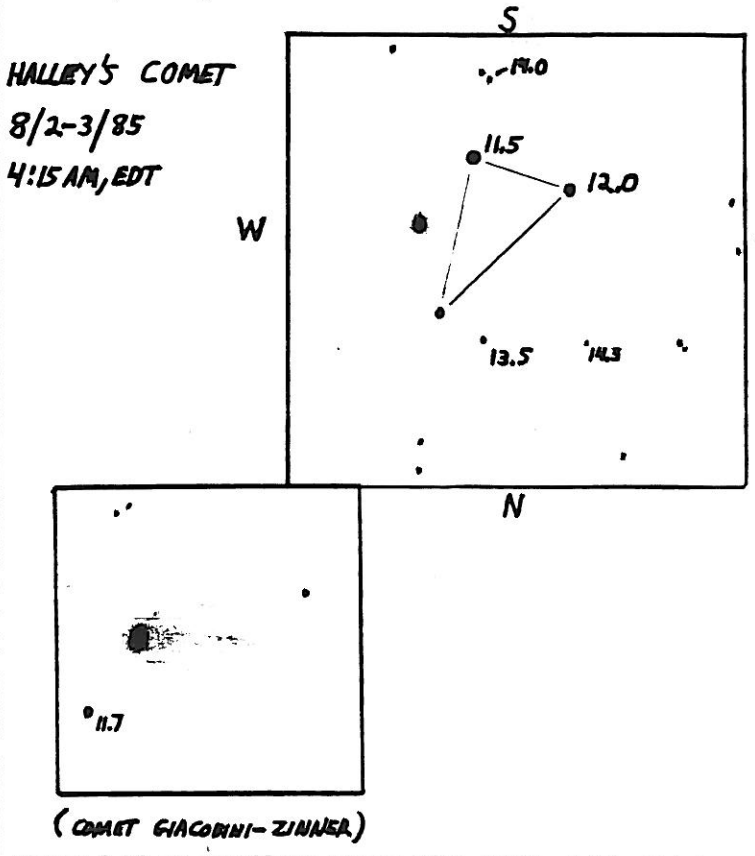
July 4-5 I observed periodic Comet Giacobini-Zinner. At 59x looks to be a moderately condensed patch of 2' arc apparent extent. Outer bounds of the coma are quite diffuse and ill-defined, no tail was visible. Estimated magnitude, with reference to comparison stars, is 11.8. Later that night I resolved still another fairly close double, Struve 359 in Hercules. The component stars are of magnitude 6.4 & 7.0 for the primary and secondary, respectively. The present separation is 0.65 arc seconds with a positon angle of 7°.

July 7-8 I observed Comet Giacobini-Zinner once again just before the clouds rolled in. The comet looks to be brightening nicely and increasing in apparent extent as well. Visually it looks to be of magnitude 11.4 and 2.3' arc in full diameter, still moderately condensed to the middle and also tail-less.

July 11-12 I observed recurrent Nova 'T' Corona Borealis and found it to be of magnitude 10.2, normal minimum magnitude is 10.0. This slight dimming could be important for historically just such a fading occurs some 200 days before maximum so random fluctuation or not it may be worth an occasional look this winter.

August 2-3 I observed Halley's Comet visually with my 12.5" f:4 reflector. Initially sighted at 4:00 AMEDT but best view obtained at 211x at 4:15AMEDT. Estimated magnitude of the comet is 13.9. 0.3' x 0.3' in apparent extent and moderatel condensed to a bright but non-stellar nucleus. Surprisingly easy to find being located less than 1° south of 57 Orionis Perfect comet hunting conditions here at Beaver Meadow this night, limiting magnitude being 15.6 even with the moon up!

Quite a few early perseid meteors were observed tonight as well as numerous fine sporadic meteors with a bright moo but a superb night no matter.



(COMET GIACOBINI-ZINNER)

August 9-10 An excellent observation of Comet Giacobini-Zinner was obtained tonight. This comet has now developed a stubby tail which fans westward. A compact almost stellar nucleus is now also present. Bright and easy at an estimate magnitude of 9.0, visually 6' x 3' arc in apparent extent a 3:45 AMEDT.

COMET HALLEY continues to brighten slowly looking to be magnitude 13.7 tonight. Still looks to be 0.3' x 0.3' arc i extent and moderately condensed to the middle. Ceratinly within the range of a ten inch aperature at 3:57 AMEDT.

Michael Idem

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I do not think that I have ever seen such a night as tha of August 11-12 here in Tonawanda. For once I was able to see with little difficulty, 5th magnitude stars. This made it easy to observe the Perseid Meteors. I first observed on at 22:43 EDT and by the time I had counted 185 meteors I sort of dosed off and that ended my observing, which as about 02:00 EDT of the 12th. In the course of observing, I saw only two sporadic meteors, but they were very impressiv The first was a long, slow, white meteor of -6 magnitude to the south of me. Its trajectory was from the south-west to the north-east. The second meteor was a short, fast, white meteor of -2 magnitude, nearly overhead which traversed through the three stars in Cygnus known as the 'wing' or 'cross' stars. This has been the best meteor shower I have seen since the Quadrantids in 1980.

Darwin Christy

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TO AVOID CRITICISM -----
DO NOTHING,
SAY NOTHING,
BE NOTHING!!!

COLLEGE OF FELLOWS

The following distinguished members of the BAA were nominated by the College of Fellows, approved by the Board of Directors, and elected as Fellows by the general membership of the BAA who were present at the annual business meeting on June 14, 1985:

Kenneth Biggie

Ken became interested in astronomy when he was introduced to it in earth science class in high school. While he was a student at U.B. he took an evening course in astronomy with Ernst Both as instructor. This increased his desire to learn more about the subject.

He visited the famous London Planetarium while in England, and the observatory at the Air Force Academy at Colorado Springs, and the observatories on Mt. Palomar and Mt. Wilson.

In 1972, after joining the BAA, he purchased a Tasco 60mm refractor which he still uses.

He enjoys talking to youth groups and gave a mini-course on sunspots at a youth camp-out, and he and John Yerger spoke on comets at the Science Club at the Middle School in Orchard Park.

We are indebted to Ken and his brother, Tim, who in the late summer of '75, set about building our Beaver Meadow Observatory. They lived and worked at Beaver Meadow for two weeks, constructing the building. With help from other members to do wiring, paneling and carpeting, the observatory was ready in February '76. Ken represented the BAA on the Beaver Meadow Board of Managers until the board was dissolved about three years ago. He also acted as liaison between the BAA and the Buffalo Museum of Science.

He has served our members as refreshment host at our meetings, and has given a great deal of time and energy at our mall and museum exhibits.

Ken has an amazing record as vice president of the BAA from 1976-1984, serving under three presidents. He is now in his first term as president.

Rowland Rupp

Rowland first became interested in astronomy when, as a ten year old school boy, he was studying geography with the usual maps, a globe and an atlas. It was in the atlas that he found a representation of the solar system which held such a fascination for him that he proceeded to memorize the page, including distances, diameters and number of moons which, by the way, he continues to have at his command to this day.

When Rowland was in 8th grade, he received a 25x spy glass which opened up with five extensions. This helped him to appreciate the wonders of the heavens to a greater degree. During high school, a variety of activities caused his interest in astronomy to wane, but it was revived with the coming of the space program with its astronauts and exploration. He purchased an Edmund 3" reflector which he used for three years and still uses on occasions. He also owns a 6" Dynascope. In the summer of '83 he bought a 12.5" Skyliner.

When Rowland was visiting in Baltimore, he met a gentleman from the Bendix Corporation who was a member of the astronomical group in Baltimore. He suggested that Rowland check with our museum to find out if there was an astronomical group in Buffalo. This he did, and found out about our association and joined the BAA in early 1973.

Rowland is interested in astrophotography. In 1970 he took pictures of a partial solar eclipse with a 1.6" refractor. He has photographed the moon, Jupiter and Saturn with his 6" reflector using the afocal system. He has also photographed the constellations using the piggyback method. Another interest of Rowland's is that of double stars.

In his desire to increase his knowledge of astronomy, he has been an active member of the Study Section. He is a collector of early books on astronomy, and has many volumes which date from the late 19th to the early 20th century.

He has been a speaker at our meetings on such subjects as: extraterrestrial intelligence, binary stars, and the Hertzsprung-Russell diagram. He has spoken to the Photography Club of Lockport on astrophotography, and to the Lockport Astronomical Association on the Hertzsprung-Russell diagram.

He was asked to give a talk to 3rd graders at the Wildermere Elementary School in Amherst, on earth orbiting vehicles. He was amazed at the children's comprehension of the subject, and their thoughtful questions.

For two years, Rowland was one of the instructors in the Life Workshop program at the University of Buffalo, and for three years he was in charge of an astronomy course at the museum in which four BAA members acted as instructors.

Rowland has contributed many interesting and thought provoking articles to the Spectrum, and for three years he compiled the information for the BAA Annals column. He was in charge of the revision of the BAA By-laws, and the BAA Directory that was published in 1978.

He has provided a great service at our Beaver Meadow Observatory by repairing the frequency controller, making a heater for the eyepiece, and working on the clock drive.

Rowland has served on the Board of Directors for eight years. From '76-'80 he was the BAA secretary; from '80-'82 he was member at large on the Board, and from '82-'84 he was our president.

He is now working on a project which will be most helpful to our members. He is making an index for all of the Spectrums, so we will no longer have to look through many issues when trying to find articles and items on various subjects.

Darwin Christy

Darwin became interested in astronomy when his son, Orrin, who was in high school at the time, received a gift certificate from Science Kit. Orrin was enthused over astronomy, so it was decided that the gift certificate would be used to get a 3" reflector kit. With this, Orrin and Darwin made their first telescope. The blank meter cover was a $\frac{1}{2}$" piece of glass, 7" in diameter. The question then arose as to who was going to use the telescope when it was time for observing, so it became necessary to make another one. This was in 1959. From this beginning, interest in telescopes and astronomy mushroomed at the Christys.

Honeyhouse, the Christy's observatory, was built in 1962. Darwin has made 14 telescopes, the last one being a 12.5" reflector. Orrin was very successful in the field of radio telescopes with Darwin helping him with the massive structure which was stationed in the Christy's back yard until gale winds damaged the framework.

Since 1972, Darwin has developed a new astronomical interest. He has become absorbed in the study of micrometeorites and meteors and has given many lectures on the subject. He made a tape on micrometeorites for educational TV in Canada, where it went on tour for 9 months. He has been a speaker on this subject before the NFCAAA (two times), Masters University Club (RASC), London, Ontario (RASC), Lockport Astronomy Association, Elmira-Corning Astronomical Association, and th BAA. He has also spoken on meteors at a meeting of the NFCAAA in Syracuse.

Darwin was invited to give a lecture (on tape) on the May 30, 1984 eclipse of the sun as seen from his Honeyhouse Observatory, using electronic instruments. This lecture was given before the 17th General Assembly of the Amateur Astronomy Association of Japan, held near Kyoto. The tape was given in English and was also translated into Japanese. Darwin's drawings were shown along with the lecture.

Besides being president of the BAA for two terms, he was president of the NFCAAA, and vice president and program chairman of the Lockport Astronomy Association. It was during Darwin's term as president of the BAA that the Beaver Meadow Observatory became a reality.

He also served three terms on our Board of Directors, and is now starting his sixth year as editor of the Spectrum. He has done a great deal to further astronomy in the area.

Kenneth Kimble

In 1976 Ken met Darwin Christy through a friend of Ken's mother. As a result, he visited Darwin's Honeyhouse Observatory. He was also invited to Orrin's home when Orrin's adult education class in astronomy met there for follow-up study and observation. Darwin encouraged Ken to attend the BAA meetings. Ken was impressed with our group and soon became a member.

Being interested in the sun, he embarked on an ambitious project of building a spectrohelioscope. He had a long discussion with Walter Semerau, former BAA member an now an honorary member, well-known for his spectroheliograph and spectacular equipment. Ken bought some parts and had his partially completed scope on exhibit at U.B.'s Astronomy Day in '84, and explained its workings to numerous people.

Ken is ardently pursuing the study of astronomy with another of his interests being nucleosynthesis, the study of the creation of new elements in the stars. He is also diligently working with computers with the idea of figuring out problems in astronomy.

He taught astronomy for five sessions in three years at the Life Workshop at the University of Buffalo, and taught a course for three years at the Buffalo Museum of Science along with three other BAA members. He lectured on the solar system, including discoveries from planetary probes; the sun, evolution of the sun and stars, neutron stars, black holes, and cosmology.

He spoke to the Boy Scouts on astronomy, on three different occasions illustrating his talk with slides. These presentations were given to help the scouts with their astronomy merit badge. He helped with two groups which were connected with churches, and one group at a scout camp for which he was presented a certificate.

Ken was leader and coordinator of the BAA Study Section for several years. He keeps the records for our astronomy lending library, and is in charge of the archives and all BAA property. He has also written the BAA Annals column in the Spectrum for several years.

He is now in his third term as BAA secretary and member of the Board of Directors, and gladly assists in all of the association's activities.

Larry Carlino

Larry Carlino has had a consuming interest in astronomy since the time, when he was eleven or twelve, a neighbor showed him a view of Saturn in a small refractor. This inspired him to purchase a 1.2" refractor for $17.95. He saved enough money to buy a 2.4" Unitron when he was a sophomore in high school.

Between his junior and senior year he participated at the University of Buffalo in the National Science Foundation program for gifted scientists. Ernst Both arranged for him to use the museum's telescope in connection with this program, for his study of Venus.

During the summer between high school and college, Larry bought lenses and designed a 6" refractor. With the help of his father, he put the telescope together, using it throughout his college years. This was an excellent scope for planetary observing. At U.B. he was president of the Astronomy Club and had an opportunity to use the university's 10" Cassegrain.

He joined ALPO, Association of Lunar and Planetary Observers, and made a number of sketches of Mars, Jupiter and Venus which appeared in six or seven issues of the Strolling Astronomer. In the April '83 issue, two of Larry's drawings of Jupiter '76 - '77 appeared, mentioning his observations and color notes. He has had drawings, photos and a book review published in Astronomy magazine, and the French Astronomical Society asked him to submit drawings to their journal, l'Astronomie.

Larry's main area of concentration in astronomy is planetary. He is also actively working on a long term project sketching all the bright planetary nebulae.

He is an authority on telescopes and accessories. When he was in the service in Thailand, the low latitude permitted him to see the Southern Cross. He felt such an opportunity demanded a telescope, so he built a 4.5" Cassegrain using a flare container for a tube, and various unusual pieces of equipment at hand, to complete the telescope. It was a fine scope and he brought it back to the U.S., disassembling it to use parts for a 5" refractor he was building.

He has taught English at Williamsville South for a number of years with an added course in astronomy. His astronomy class has tackled many projects. Some students have built telescopes and many have chosen independent study projects.

He has had several scopes, including an Edmund Astroscan, Quantum, Celestron 8, a Cave 12" and a 5.5" Comet Catcher. He has built a 17.5" Newtonian Dobsonian and now has a new 22.5" f4.2 Dobsonian. His evaluation of telescopes and accessories has appeared in the Spectrum from time to time along with articles on observing.

Larry has served the BAA as editor of the Spectrum (Sept.'77 - Aug.'79); as a member of the Board of Director and as a member of the nominating committee.

Jack Mack

After graduating from high school, Jack's strong interest in science prompted him to enroll at Fordham University to major in physics. After graduating from Fordham, he went on to Washington, D.C. and Catholic University where he earned his doctorate in physics. While at the university he met a professor, Dr. Stewart Bowyer, whose suggestion that Jack go into x-ray astronomy, changed the course of Jack's career. Dr. Bowyer moved to the University of California at Berkley. Jack followed him there and remained for three years, working on research projects. His thesis entitled "Galactic X-Ray Sources," was defended at Catholic University.

As a student at the University of California Space Sciences Lab, Jack worked on the lab staff on exciting experiments with high altitude balloons which flew detectors to study x-rays in space, and with rockets to do lower energy x-ray studies. This project took him to Alamogorda Air Force Base in New Mexico, where balloons were used to carry detectors of x-rays above the atmosphere, and to Brazil where two rocket experiments were launched to study x-rays in the southern hemisphere of the sky.

Jack went on to become a research associate at NASA's Johnson Space Center at the University of Houston, and also a research associate at the university. He worked on x-ray astronomy and cosmic ray physics, and in addition found time to invent a detector for extremely high energy particles. This detector was a highly specialized instrument.

Jack started to teach part time in the local colleges and discovered that he enjoyed this experience very much. In the summer of '73, he came to Buffalo to teach at Buff State.

For three summers Jack journeyed back to the University of California, twice to pursue research on extreme ultraviolet physics and once to write a textbook, "Working Manual of Observational Astronomy."

On July 15, 1975, the U.S. and the U.S.S.R. launched the Apollo-Soyuz Joint Test Space Project from Cape Canaveral. Twenty-seven science experiments were scheduled for the flight. A group from the University of California, which had an experiment aboard the Apollo, hired Jack to work on the support for the experiment which attempted to see ultraviolet radiation across space, which up to then had been thought to be opaque to such rays, and also to measure the properties of detectors which would be used in future experiments.

In the college year, 1977-78, Dr. Mack was promoted to an associate professor at State, and in May he was honored by receiving the Chancellor's Award for Excellence in Teaching, the only professor on campus to receive this accolade in 1979. He became chairman of the Geo-science Department at Buff State in the fall of '80.

Jack has written at least twenty-four articles which have appeared in such journals as Astrophysics and Space Sciences, Astronomical Journal, Applied Optics, Nature, and the Buffalo museum's Collections. He has received over 250 citations (literature citations) for works which he has authored or co-authored.

He is a member of the American Physical Science Society, the American Astronomical Society, is president of Buff State's chapter of Sigma Xi, national scientific research society; and is a research associate of the Buffalo Museum of Science.

Jack has given innumerable lectures, state-wide, on

topics including: black holes, the missing mass, and various aspects of cosmology. He has been interviewed from time to time on astronomical subjects, and has appeared on television.

Jack was responsible for the 16" Ealing Educator telescope which is now located on the campus at Buff State, through an arrangement between a college having a telescope with stolen missing parts and a defunct astronomy department, and Buff State, which would exchange some small telescopes and astronomical slides plus workshops conducted by Jack on teaching an introductory course in astronomy so that college could reinstate its astronomy department, and Buff State could receive their telescope. Because of Jack, both colleges gained, with improvements to each one's astronomy department.

Jack has been the Museum Representative on the BAA Board of Directors for a number of years and is a very active member of our association.

Edith L. Geiger

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?? SPY & TELL ??

Miro Catipovic, with his usual generosity, has donated his 20" Cassegrain telescope to the observatory now under construction on U.B.'s Amherst campus.

Shaun Hardy and Carl Milazzo were speakers at the Corning-Elmira Astronomy Club meeting on June 7th. Shaun spoke on meteorites and Carl spoke on Mees Observatory, Stellafane, star parties, and telescope making.

On July 11th at the Chautauqua Institution, Carl heard a lecture by Pat Osmer, formerly of Jamestown and now director of Cerro Tololo Observatory in Chile. Carl had also heard him speak at the Martz Club in Frewsburg on July 9th.

On August 31st, Carl gave a one night course on basic astronomy to the Audubon Society at the Fred T. Hall Visitors Center.

Beverly Botto is a computer graphics student at R.I.T.

Al and Mary Kolodziejczak spent some time in Paris in early August visiting art galleries.

Tenderhearted Claudia Belinski has been feeding three wild cats (not wildcats) at her home, summer and winter. The cats won't let anyone near them, but come to Claudia's backdoor regularly for food which she puts out for them to eat while she remains out of sight.

Jack Empson is enthused over the shuttle program and tracking and tuning it up on shortwave radio. He is also interested in meteorology and uses a computer and weather maps, and receives data on weather and atmospheric conditions over a wide area at a given time. He is involved in ham radio, and uses shortwave to tune in WWZ in Colorado to pick up solar information.

On June 20th Rowland and Darwin Christy prepared a Swiss steak dinner for eighty "old timers" at the Masonic Temple. Darwin comments that "It was great and there were No complaints. It could be cut with a fork instead of a knife."

Ken Biggie is a member of the West Seneca Developmental Center baseball team. They played People Incorporated at the Buffalo Psychiatric Center on July 26th and won 16 - 1.

The Biggie family went on a trip to Florida at the end of June and visited Disney World and just missed being on the monorail which caught fire. They were greatly impressed with the Epcott Center and superb fireworks and light display on the lake adjacent to the Center.

Ken, who is an ardent sailor, had his 24' boat out on the lake a bit ago. It was raining and a tornado watch was in effect. His boat and the Sheriff Patrol seemed to be the only boats out on the lake. He headed for the dock. The front of his boat shifted out, and in his effort not to bang into the boat next to him, he put his foot on the dock and proceeded to fall into the river. Nice going!

During the summer, Marilou Bebak and Dan Kujawinski, a science teacher, were on Eye Witness News on Channel 7, speaking on the museum's Solar Lab.

Marilou reports that they had about 2000 people at the Summer Sun Shows. During the shows she mentioned the BAA and our Beaver Meadow Observatory.

The Gibson Hall of Space will soon have a laser video disc player showing old Voyager videos and current NASA footage.

On September 20-21, there will be an open house at the museum at which time the Kellogg Observatory will be officially reopened. From then on, it will be opened to the public every Friday night until 10:00.

Edith L. Geiger

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Congratulations to Edith & Carroll Geiger on their 50- wedding anniversary--------

dpc

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Acknowledgements:-
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* THE SPECTRUM *

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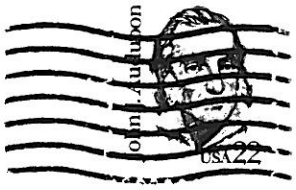

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