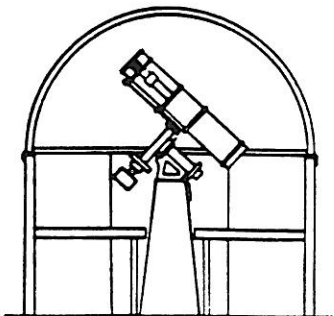


# The Spectrum



NOVEMBER                      DECEMBER

1                      15                      15                      15

BUFFALO ASTRONOMICAL ASSOCIATION, INC.

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Ken Biggie - President  
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"SPECTRUM" Editor - Darwin Christy

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## !! MEETING NOTICES !!

**NOVEMBER 14th Meeting**---Our November meeting will be held at Buffalo State College, 1300 Elmwood Ave. in the usual location - The New Science Building at 7:00 PM. We will gather there for the usual business portion of our meeting and then, at the invitation of our own Art Gielow, director of the Whitworth Ferguson Planetarium, we will transfer the lot of us downstairs to the planetarium for a program titled, "Shy Watchers of Ancient Mexico." After the show everyone is expected for refreshments upstairs in the hall. This should be a very entertaining program so be sure to mark your calendar for that evening.

**DECEMBER 12th Meeting**---Our December meeting (can you believe Christmas is just around the corner already!?) will feature our holiday wine and cheese, cookies, and other assorted edibles party, plus Edith Geiger's annual "Candid Camera Corner" slide presentation where she and Carroll

poke good natured fun at a full spectrum of our club members. And for something completely different, we will be treated to an art lesson by our own John Yerger, who will show us some helpful methods and techniques for sketching astronomical objects. This is somewhat of a follow-up to our October program on Jupiter by Fred Price which featured many sketches of the planet by Dr. Price; and showed us the value of sketching and drawing as alternatives to photography in astronomical observation.

Thanks go out to Art Gielow, the Geigers and John Yerger for offering these upcoming programs. And--for those who look down the road a little further than the rest of us, Coming in January will be Ken Kimble on "The Sun", and in February a Cosmology Round Table is planned, so head to your local library or book store to prepare for this one -- and maybe even be a member of the 'round table'.

KEN BIGGIE

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## PRESIDENT'S CORNER

A reminder to all our members that starting with the January 9, 1987 meeting we switch our location to the Buffalo Museum of Science thru the June meeting, with the exception of the May dinner meeting, which location will be announced at a later date.

Again, I am requesting our members to volunteer their assistance occasionally to help John Yerger with public nights out at our Beaver Meadow Observatory next spring & summer; to help Marilou Betak on clear Friday evenings at the Museum's Kellogg Observatory for public nights; and also to help the B.A.A. when we sponsor Mall Shows or other public events from time to time. Remember, the strength and vitality of our association depends upon what each and everyone of us as individual members is willing to contribute.

Anyone interested in representing the B.A.A. (as an affiliate of the Buffalo Museum of Science) and in assisting the Museum with its 1986 Annual Fund Drive should contact Carol Bieron, coordinator of Volunteers and Membership Services at 896-5200 - ext. 252. You are needed to make follow-up phone calls during early evening hours sometime between now and November 21, 1986. You can also contact me for further information if you would like to help.

Another reminder to all members. I am always looking for short (5 - 10 minutes) presentations which can be given at our regular meetings just before our regular speaker. Any topic related to astronomy is fine, and if you have slides let me know enough in advance so the proper equipment is available.

Special thanks to John Yerger, and others out at the observatory, for the sprucing up of the facility.

Ken Biggie

In the Cosmos we observe bodies moving with very large velocities relative to each other. If these velocities are appreciable percentages of the speed of light, we encounter some relativistic surprises.

Suppose from our position on earth, we observe Galaxy A receding from us at 135,000 kilometers per second (45% of the speed of light), while in the diametrically opposite direction, we observe Galaxy B receding from us at 180,000 Km/sec. (60% of the speed of light), then  $V_A + V_B = 135,000 + 180,000 = 315,000$  Km/sec.

We can see that the two Galaxies are separating at 105% of the speed of light, therefore, light emitted by Galaxy B could never catch up to Galaxy A, and so Galaxy B would be invisible to Galaxy A and vice versa,----right?? Seems logical, but isn't true.

The Lorentz transformation equations give the distance and time contractions of a moving body as judged by a stationary observer. By differentiating the Lorentz transformation equations we obtain the velocity transformation.

Here is the solution:

Galaxy	VA = 135,000 Km/s	VB = 180,000 Km/s	Galaxy
A	0		B
	Vx = ??		

then  $V_x = \frac{V_A + V_B}{1 + (V_A * V_B) / C^2}$  (C = speed of light = approx. 300,000 Km/sec.)

$$V_x = \frac{135000 + 180000}{1 + \frac{135000 \times 180000}{(300000)^2}} = \frac{315000}{1 + 0.27} = 182,081 \text{ Km/sec.}$$

$$\text{and } \frac{182081}{300000} = .6069 = 60.69\% \text{ of the speed of light.}$$

Therefore, contrary to sense experience, the actual velocity of separation is only 182,081 Km/sec (or 60.69% of the speed of light) as seen by an observer on either Galaxy A or B, so either observer can see the other Galaxy. At relativistic speeds, velocities cannot be simply added.

As a comparison, consider the same situation except that Galaxy A is receding at 6000 Km/sec (2% of the speed of light) and Galaxy B is receding at 9000 Km/sec (3% of the speed of light). Again, using the velocity transformation equation:

$$V_x = \frac{V_A + V_B}{1 + (V_A * V_B) / C^2} = \frac{15000}{1.0006} = 14991 \text{ Km/sec or } 4.997\%$$

of the speed of light. Here the error of simply adding the velocities amounts to approximately 1%, whereas the error in the previous situation amounted to about 42%.

Paul Noye.

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DECEMBER 12, 1986

ASTRONOMY

PICKERING, Edward Charles, an American Astronomer was born on July 19, 1846 in Boston, Massachusetts and passed away February 3, 1919 in Cambridge, Massachusetts.

In 1865 he graduated from Harvard where he became an instructor in mathematics at the Lawrence Scientific School until 1867. He there-upon accepted the Chair of Physics at the Massachusetts Institute of Technology and remained there until 1877, after which he returned to Harvard to become Professor of Astronomy and director of the Harvard Observatory.

Among his accomplishments, he established the first physical laboratory in the United States; constructed the first telephone receiver in 1870 and published the "Elements of Physical Manipulation" (1874-76). In Cambridge he made over 1.4 million measurements of light from the stars, and under his direction the endowments of the observatory increased seven-fold. 250,000 photographs were taken of the

stars; 70 quarto volumes of annals were recorded and published. Also a station was established in Arequipa, Peru, which supplemented the study of stars in all parts of the sky, also over 240,000 photos were taken. He was a member of various scientific societies all over the world.

While at the Harvard Observatory, he grew downright disgusted with the carelessness of the young men who helped him in his work and retorted, "I could train my cook to do better!" So he did. Williamina Fleming, 1857-1911 came out of the kitchen, at his direction, and became a pioneer female astronomer, which follows-----

FLEMING, Williamina Paton Stevens an American Astronomer was born at Dundee, Scotland on May 15, 1857 and passed away on May 21, 1911. From 1871 to 1876 she taught school at Dundee. Upon arriving in the United States, she took a job as cook for some depressed astronomers at Harvard. She was picked up by Edward Pickering and became an avid astronomer. Pickering appointed her as an assistant at the Harvard College Observatory in 1879. In 1898 she became the curator of astronomical photographs there and subsequently was placed in charge of the Astrophysical Building. In 189 and again in 1902, she found the Spectrum of 'N' meteors on exposed plates. She also discovered several new stars. She was made honorary member of the Royal Astronomical Society of London after 1906.

Her published works include "A Photographic Study of Variable Stars" (1907) and "Spectra and Photographic Magnitudes of Stars in Standard Regions". (1911)

Darwin Christy

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Hugh Pettit has a metal detecting hobby in which he has been involved for four years. His daughter and two grandchildren are also interested. Hugh belongs to the Niagara Frontier Relic Hunter's Association which meets every month. After the September meeting, Hugh gave a demonstration with his telescope which the members enjoyed.

Paul Scolese is a sophomore at the State University of Binghamton, majoring in history and German. In his freshman year, he took a course in astronomy. Astronomy is a very important hobby for Paul.

Buehl Ray, retired Supervisor of Language Arts in the Buffalo Public Schools, plays violin in the Amherst Symphony, in which he has been a member for many years.

Christine Lubelski is working on her Masters at Buffalo State. She has a two and a half day internship, and is a graduate assistant in exceptional education, along with her regular grad course. This keeps her very busy but, as she says, "It's enjoyable."

Leonard Milks and his wife went to Florida in June for two weeks in their travel trailer. After a quiet summer, they are ready to hole up for the winter.

Dave Williams is taking an advanced course in EMT (Emergency Medical Technician) at Erie Community College South from 7-10 one night a week. He works full time at Toys R Us in Hamburg, and is also a volunteer fireman at the Armor Fire Company.

Kathy Bronner is a senior at the University of Buffalo, majoring in electrical engineering.

Doris Koestler went to New York for three days in September to visit former member, Pat Loebel. They toured Liberty Island and took a boat ride around the bay. They enjoyed the Metropolitan Museum of Art, and the glitter of Chinatown and colorful Little Italy, along with the bright lights of Manhattan. Pat is a technician in a photo lab and is doing very well.

Jack Mack is excited over his flashy Buick Le Sabre. It's a beaut!

Bill Kirst has joined a Camera Club. His interests beside photography include computers and Kathy, a teacher at Hilbert College. Bill is recuperating from a bout with mono. Bill and Dave Williams have a new computer program game which took them 2½ hours to play.

Dave and Anita Williams are the proud parents of a baby boy born October 2nd. He weighed 8 lbs. 11oz. and has been named, Michael David.

On September 26th, Irene Rupp, regent of Abigail Fillmore Chapter, National Society, Daughters of the American Revolution, led a delegation to the 90th New York State Conference in Rochester.

During the summer, Fred Price spent some time working with Betty Robbins at the Buffalo Museum of Science, helping in the identification of some of the instruments and accessories in the collection of antique microscopes. This took him to the Museum of History of Science in Oxford, England, where he went to get further assistance. He met with Dr. E. Turner, world authority, to receive help with some of the identification. While at home in England, Fred visited the Cambridge University Press to discuss production details of his book, The Moon Observer's Handbook.

Former BAA member, Sheridan Simon, who is an associate professor of physics at Guilford College in Greensboro, North Carolina, has a fine article appearing in the November Astronomy magazine entitled "The View from Europa."

Edith L. Geiger

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## ANSWERS TO QUIZ

The words of the puzzle which occurred in the September-October 'SPECTRUM' were: 1-PLANET; 2-GALAXY; 3-ANNUAL; 4-SYSTEM; 5-NEBULA; 6-METEOR; 7-CRATER; 8-FILTER. Did you get them all and right???? We will try them again sometime...

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## O PROFILE O

Eugene Witkowski

This adventuresome young man has propelled himself into many unusual situations, through which his life has been enriched. Gene was born in south Buffalo and lived there throughout his high school years. His early education was obtained at St. Valentine's Elementary School. While in grade school he became interested in space when he saw Alan Shepard's flight televised in May of 1961. His friend, who made model rockets, further sparked his interest.

In South Park High School he learned the basics of photography and joined the Camera Club in his sophomore year. He had an Edmund 4½" reflector and did some astrophotography using a box camera. In 1965 he won the Buffalo News Photo Contest with a picture of the Lafayette monument on a night of misty rain, with reflections in the water of a person walking by. In 1970 he again won the Buffalo News Photo Contest with an unusual shot of his mother's house taken from above, showing the angle of the roof, and a woman waiting for a bus. This year he had a photograph exhibited in the western New York show at the Albright-Knox Art Gallery, which was not the first time he had exhibited there.

After Gene's graduation from high school in 1965, he joined the Air Force and received his basic training at the Lackland Air Force Base in Texas, where he was stationed for about six weeks. From there he was sent to the Photographic Technical School at Lowery Air Force Base outside Denver. The members at the base often marched at night beneath the beautifully clear skies of Colorado. One night in the barracks, a scuffle occurred causing someone to trip over the fire alarm, sending everyone outside. It proved to be an exciting evening for Gene, for he saw a formation of those unexplained Lubbock Lights in the sky. There appeared to be around 18-21 lights. There

was no sound whatsoever, and the formation covered an altitude from 45° above till it disappeared at 20° altitude behind a building, taking about 4 seconds. Needless to say it was a puzzling sighting.

His next assignment was at Langley Air Force Base in Hampton, Virginia, where he worked in the reconnaissance lab developing film. In '68-'69 he was sent overseas to a Thailand Air Force Base at Korat. While in Thailand, he developed a friendship with the Thai people to the extent that he was asked to participate in the baptism of a child in a Buddhist ceremony. In a baptism, the child gets his first haircut, and water is then poured on the head in the act of baptism. Gene poured the water on the child's head thus consecrating the sacred rite of baptism.

As Gene returned to Buffalo, he yearned to go back to Thailand. He had seen some of the country when he was in the service and was greatly impressed by the beauty of the land and its people. While at the Air Force Base he worked a six day week, which prohibited him from seeing all he would have liked. He tried to save enough money to return to Thailand by working at Republic Steel, Myers Photography doing black and white printing for commercial photographers, and working at Markel as a spot welder for a few months. He finally saved enough money to sojourn to his beloved Thailand, where he spent seven months traveling all over the country, visiting friends, and photographing the countryside.

Back in Buffalo again, he saved enough money to go to California in '75. He bought a stationary mobile home and stayed six months, deciding that he wasn't ready for California at that time, and that he should return to Buffalo. In '79, however, he thought he was then prepared to go to California, so he headed west and got a job at a rental place which sold party tents, tables, chairs, party supplies and also medical supplies. He worked for seven months, when an opportunity for a job in Houston, Texas, came along. He was employed at a chemical distillery for six months, and then started home to Buffalo. His Fiat broke down two weeks after arriving, so he decided to stay.

Again possessed by a strong desire to go to Thailand, he left for Texas in '82 to work at a welding job to earn money for the trip. In November of '83 he went to his revered land for six months, visiting with his many friends. At a refugee camp in northern Thailand, he had a rather strange experience. There was a black cloud of smoke from a fire, but as Gene hadn't seen the fire, many thoughts raced through his mind as to what this black cloud might be. As excited people babbled, he knew it was something serious. Moving beyond a tree, he spotted the fire in the camp, and where many people would naturally run from it, he ran straight toward it. He knew there was only one way to fight the fire, so he started dismantling the straw and wood dwellings so the fire wouldn't spread. He tossed clothing and other objects down the hillside to try to save all he could. He dipped his hands in earthenware jars to get whatever water he could find. Eighty to one hundred people became homeless, but other housing was in the process of being built, so these folks were cared for. The people were very grateful for all Gene's help, and assistance in putting out the conflagration. As he started walking back to town he met a truck filled with vegetables and workers, and he was given a much needed ride.

Another time when he was in the northern part of Thailand, a German gentleman asked if he would like to share expenses for a trip to the Golden Triangle, which is a borderline between Laos, Burma, and Thailand, and is a tourist spot for Thais. Gene agreed to go, and they went in a high speed longboat along the Laotian border. They were as close as 75 feet from the Laotian shore, and Gene waved to the people as a universal sign of friendship. The people in that area were so downhearted that no one acknowledged his friendly wave, and there were no smiles. Laos had turned Communist since his last visit. These dejected, downtrodden people saddened Gene.

In Nan, a small town, also in northern Thailand, Gene

got into an elevator with two other men who were advanced scouts for a Japanese crew who were going in search of a primitive hill tribe called "Yellow Leaf," which they hoped to record on television. Gene, who likes adventure, went on an excursion with a man for three and a half days in a jungle, looking for this tribe. On the way they stayed in dwellings of the Hmong tribe, another of the hill people, and they slept on mats on dirt floors. The Hmong raise pigs, hogs, chickens and corn. The "Yellow Leaf" primitives worked for other people, and lived in small family groups, usually away from civilization. Primitives received clothing and food from the Thais. These people were unknown to the Thai government at this time. Eventually Gene and the man located the "Yellow Leaf" tribe and carried word back to the television crew. Gene didn't want to go back with the crew as they were accompanied by soldiers with guns to protect the Japanese people from the Communists who were supposed to be in the area. Many Thai social agencies went along to add to the bureaucratic circus.

At present, Gene is intensely interested in the energy machine, an invention of 50 year old Joseph Newman of Mississippi, which converts a mass of copper wire into usable electricity. This amazing machine has a greater external energy output than external input. If the invention is accepted by the Patent Office and goes into production, the inventor claims it will make gas stations and nuclear reactors obsolete. There have been many obstacles in the way leading to the acceptance of this machine. Many people have invested in the machine and many scientists believe in its workability, though some scientists and government adversaries doubt that it can do as claimed. Newman has had problems with the Patent Office, the National Bureau of Standards and the U.S. District Court, and has instituted a lawsuit against the Patent Office. He appeared before the Energy Subcommittee on July 30th, and Gene was in attendance. Newman is going to New York where he will be working on an electric car, and hoping to get help from Wall Street. Gene will be in New York when Newman is there. Newman also has some ideas about the Grand Unified Theory which involves gyroscopic particles. Gene is greatly impressed by the machine and the ideas put forth by this brilliant, energetic inventor.

For the last year and a half, Gene has been working with a local inventor, Dick Iseman, on a bicycle transmission, and has also been acting as a consultant. General Motors Institute in Michigan has been working with them. The invention is now on hold while they wait for venture capital to finish its development which they hope will come in the next six months.

Gene learned about the BAA as a result of having a pet pigeon, a bird with an injured wing he had rescued at Bethlehem Steel, and aided in its recovery. The bird became attached to its benefactor. Gene was walking in Delaware Park with his pigeon in '70 and he chanced to meet and talk with Fred Price and Joe Provato who, in the conversation, mentioned the BAA, the organization Gene would join later. In '74 he took two astronomy courses from Jack Mack at Buff State.

A few years ago, he saw an ad in Sky & Telescope placed by a Mr. Rockholt of Madera, California, stating that he made telescopes up to 14". Gene ordered a 14", and in '79, while he was in California, he went from San Diego to Madera with his Fiat to collect the telescope. Mr. Rockholt was a bit shocked at seeing a Fiat there to collect a 14" telescope. Surprising as it may seem, the telescope was safely mounted on and in the car and driven across the country to Buffalo with the alignment still undisturbed.

Gene's interest in astronomy is mainly in the moon and planets and, of course, general astronomy to a certain extent along with some cosmology. He has taken photographs of the moon, Mars, Venus, Jupiter and Saturn. He reads a great deal and is presently reading a book entitled Rotational Physics.

Gene is always in pursuit of the unknown. Around '79-'81 he had set up his telescope and invited people over for some observing. There was a quarter moon, and he had seen

a couple meteors. Then suddenly an object with three light appeared in the sky. It was shaped like an equilateral triangle with the lights at the three points. The street was quiet, and the object moved in silence. In checking, he found that the object was seen in Batavia, and also was seen by a state trooper's wife, and a policeman. Because of the puzzling objects he has seen in the sky, he has become interested in the UFO phenomenon, and has read several books on the subject.

Gene is a remarkable individual with a driving force that takes him into unusual places in search of the extraordinary. When he has a goal in mind, he perseveres until the goal is reached. He devotes much time to studying, as he tries to understand the inner nature of things, and is conversant on many subjects, and enjoys thoughtful discussions. Gene is self-effacing and compassionate toward others. He is indeed, a fine human being.

Edith L. Geiger

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Dear Mrs. Geiger,

I want to let you know how much I enjoy receiving "The SPECTRUM". James Dow, one of your members and my father has been sending me a subscription for several years. Like my father, I will be graduating with a B.S. in Astrophysics this spring. Since the interest in astronomy runs in the family, he suggested I write and let you know what I have been doing recently.

Two summers ago when I was working at the Science Museum of Virginia in Richmond, I organized a class in telescope making and built myself an 8 inch f:8 Newtonian Reflector. The tube and pedestal were all constructed out of a cherry wood.

This summer I was a research assistant at the United Kingdom Infrared Telescope on Mauna Kea in Hawaii. This is the largest infrared telescope in the world. I studied the center of the galaxy, Halley's Comet and the supernova on Centaurus!

Through all this, "The SPECTRUM" has followed me. Keep up the good work!

Sincerely,

Kimberly Dow.

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Dear Darwin,

The "SPECTRUM" is a most interesting news letter, so - congrats. The first issue gave me a real jolt...i.e. the Darwin Christy piece on Norma Nilotica. He sure can dredge them up! I immediately checked with Allen's STAR NAMES and sure enough there it was tucked away.. I had never noticed it. Then I looked at my copy of Burritt and there the little Norma Nilotica was. Burritt included as many of the defunct constellations as he could - his generation indicated their educational status by how many obscure bits from the classics as they could. Anyhow it is a little gem and you have neatly scooped all the "professional" magazines. Keep up your most interesting publication. I gotta nephew in Buffalo..he is a reporter for the local paper, name's Gates. Good guy, might be a help to you at times. Use my name.

Cheers,

"Twinky"

Walter Scott Houston.

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Editor's note:- WALTER SCOTT HOUSTON writes for SKY & TELESCOPE an article entitled, "DEEP SKY WONDERS". That is one of many things he contributes to astronomy. He also hosts the Stellafane Convention in Springfield, Vermont on Breezy Hill with his evening talk called, "Stellafane Shadowgrams."

DFC

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## \$\$\$ DUES ARE DUE \$\$\$

DUES ARE DUE ----- DUES ARE DUE ----- DUES ARE DUE

Dues are due. A new membership list will be made in January therefore your dues must be paid by December 31, 1986. Payment may be made at the November and December meeting, or mail a check to Doris Koestler, 166 Poinciana Pkwy., Cheektowaga, N. Y. 14225 OR to John Raymonda, 80A Foxberry Dr., Getzville, N. Y. 14068

FAMILY MEMBERSHIP ---\$ 15.00

INDIVIDUAL MEMBERSHIP ---\$ 10.00

Students or Senior Citizens ---\$ 5.00

Subscription only ---\$ 4.00

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## ASTRONOMICAL INFORMATION

**SOLAR:** The Sun is still on its way south making more observational time for the astronomers in the northern hemisphere. On December 21st, though, the Sun will have reached its farthest southern point and will start its trek back north. (Winter Solstice) Though it will not be seen here in this area, the Sun will be transitted by Mercury on November 13th.

**LUNAR:** The Moon's phases for November and December are as follows:  
 New Moon - November 2nd & December 1st & 30th  
 First Quarter Moon - November 8th & December 8th  
 Full Moon - (Beaver) November 16th  
 (Cold) December 16th  
 Last Quarter Moon - November 24th & December 24th

### LUNAR CONJUNCTIONS:

Mercury - November 3rd

Saturn - November 4 & 30 - December 29th

Uranus - November 4th

Neptune - November 5th - December 3rd

Mars - November 8th - December 7th

Jupiter - November 10th - December 7th

Venus - November 29th - December 27th

### PLANETARY CONJUNCTIONS:

Mars & Jupiter - December 19th

Mercury & Saturn - December 19th

Mercury & Uranus - December 25th

### PLANETARY:

Venus will be at its greatest brilliancy December 11th  
 Mercury will be at its greatest elongation November 29th

### METEOR SHOWERS:

SOUTHERN TAURIDS \*\*\*\* - November 3rd

CEPHEIDS - November 9th

NORTHERN TAURIDS \*\*\*\* - November 10th

MU PEGASIDS - November 11th

ARIETIDS - November 12th

BIELIDS (ANDROMEDES) \*\*\*\*\* - November 14th

LEONIDS \*\*\*\*\* - November 16th

ANDROMEDES - November 28th

PHOENICIDS - December 5th

MONOCEROTIDS - December 10th

CHI ORIONIDS (NORTHERN) - December 10th

RHO HYDRIDS - December 11th

CHI ORIONIDS (SOUTHERN) - December 11th

GEMINIDS \*\*\*\*\* - December 13th

URSID \*\*\*\*\* - December 22nd.

**METEOR SHOWER FOR NOVEMBER IS 'NORTHERN TAURIDS'** which occur at maximum on the 3rd. They are one of the better showers, producing a fine yellowish, 4th magnitude streak of about 100 degrees long, lasting about 2 seconds. The radiant is 03h 40m R.A. & +15 degrees declination. One might see as many as 15 or more per hour well after midnight. This shower is related to the Comet Encke and are also sometimes called the Taurid-Arietids. They are NOT to be confused with the 'Northern Taurids' which occur on the 10th, but their radiants are very close to another.

**METEOR SHOWER FOR DECEMBER IS 'PHOENICIDS'** occurring on December 5th at maximum. Little is known about this shower and needs more observational data, though it comes from the

southern hemisphere. Its radiant is 01h 00m R.A. & -55 degrees declination. They are visible in the north though. Two things that have made it into existence are the number per hour which is about 50 and their magnitude which is reported as being near fourth. They appear white and the duration is but 12 hours long. Some astronomers have said that the Comet Blanpain is responsible for these meteors and others are still undecided. A good place to observe these meteors would be at our Beaver Meadow Observatory with a good southern sky. Any information obtained from this shower would be greatly appreciated by the American Meteor Society.

Darwin Christy

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## INSTRUMENT REPORT

At our first meeting of the new season, Doug Snyder brought in an 8 inch mirror blank that he had been working on during the summer. It was rough ground to f:6, which was what he was aiming at. It is good to see new projects being started from time to time. There is still some interest in Telescope making, even though the projects do not have the same urgency as back in the 20's when Stellafane reigned as the TM capital.

There are still some unfinished mirrors lying in basements, reminders that it is the morrow that is the most difficult project, winter is a good time to dust off the accumulation, relocate your notes and work up the enthusiasm that you had way back then. Remember, we'll help you all we can.....

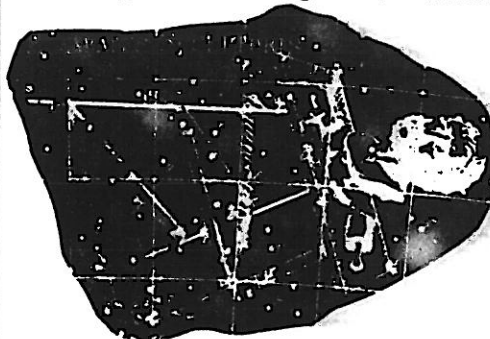
Ed Lindberg

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## NOVEMBER CONSTELLATION

**SCULPTOR**, sometimes referred to as Apparatus Sculptoris, is a small constellation surrounded by Cetus and Aquarius on the north; Fornax on the east; Phoenix on the south; & Piscis Australis and Grus on the west. One thing of interest is that the South Galactic Pole is located in Sculptor. The coordinates are R.A. 00h 52m - declination -27° 10'. There is also another area of interest known as the Sculptor System located near R.A. 01h 00m - declination -33° 45'. It is an area mapped out on the Tirion Sky Atlas 2000 measuring a degree in diameter.

This constellation was formed primarily by La Caille with no particular bright stars within its borders. The few objects recognized by the various charts and maps include the following:  
 Galaxies- NGC's 24, 55, 134, 148, 150, 253, 259, 289, 300, 439, 613, 7707, 7713, 7755 & 7793, also I, 5332.  
 Open Cluster NGC 286  
 Variable Stars- R, S, SW, & Y.  
 Double Stars- Delta, Epsilon, Kappa-1, Lambda-1, Tau & Zeta.



## ANCIENT CONSTELLATION

**COR CAROLI** is not only a star in the constellation of Canes Venatici, but is also an ancient constellation which was introduced by Halley in 1725. It is a constellation consisting of nine stars, and it was suggested to Halley by Sir Charles Scarborough. He so named it to honor King Charles. The reason being that it shone with a special brilliancy on the of King Charles' return to London on May 29, 1660.



On maps it has been depicted as that of the Heart of King Charles. Today it no longer is recorded and has since been lost among modern astronomers.

## DECEMBER CONSTELLATION

CETUS, the Whale or Sea Monster is a constellation which has been identified since the time of Aratos. It was this monster which was sent out to devour Andromeda. It lay between Aries & Pisces on the north; Taurus & Eridanus on the east; Fornax & Sculptor on the south; and Aquarius on the west. The many objects Cetus contains, among them the most prominent, is the variable star OMICRON, also known as MIRA



For the avid deep-sky observer, the following would be of interest to him--- Galaxies NGC's 45, 151, 157, 175, 178, 210, 227, 237, 245, 247, 255, 268, 274, 275, 375, 428, 450, 521, 533, 578, 584, 596, 615, 636, 681, 701, 720, 779, 788, 864, 895, 908, 936, 941, 955, 958, 991, 1022, 1032, 1035, 1042, 1048, 1052, 1055, 1068 (M-77), 1073, 1087, & 1090, also NEW-1. Planetary Nebula- NGC 246. Variable Stars- S, T, TZ, U, UV, V, X, Z as is Mira. Double Stars are- 12, 13, 15, 26, 37, 42, 58, 61, 66, 84, 94, 95, Epsilon & Gamma.

Darwin Christy

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## \*\*\* OBSERVATIONS \*\*\*

August 12-13 I also observed the 'cloud phenomena' reported by Darwin Christy in the last issue of the "SPECTRUM". Looking up at 10:02 P.M. EDT, following the observation of the variable star SU Ursae Majoris, I observed an exceptionally bright whitish cloud. At first sight it was  $2^{\circ} \times 1\frac{1}{2}^{\circ}$  in outline, roughly elliptical in shape and perceptibly expanding. Quickly directing the telescope finder onto the cloud I noticed that a magnitude 6.5 'satellite' was immediately preceeding it as it drifted northeast towards the constellation of Andromeda. Clearly both objects possessed similar trajectories. By 10:08 PM EDT the cloud was rapidly dissipating having grown to  $4^{\circ} \times 2\frac{1}{2}^{\circ}$  extent. As it expanded it became increasingly elongated and internal streaks and patches became evident. At 10:10PM the cloud had expanded to  $6^{\circ} \times 3^{\circ}$  extent and had taken a shape like the Greek letter 'Theta'. At 10:11 PM the cloud set along the northeast horizon. So what was it?!-- Apparently it was Japanese rocket/satellite assembly venting its remaining propellant stores into space.

August 21-22 I observed newly discovered Nova Cygni 1986 tonight. Already slightly past maximum it is still quite bright, at this hour it is magnitude 10.5 and visible in the finder scope. Its slightly rudy tint distinguishes it from an extremely rich surrounding milky-way field. The Nova's year 2000 coordinates are: RA 19h 54m 36.4s and declination  $+35^{\circ} 26.4'$ .....

September 14-15 I observed the peculiar erupting star EY Cygni. This star brightens only after having spent long periods of time at minimum light. Tonight it shines at magnitude 14.5. When last this bright, it was seven years ago. Despite its relative faintness it is easily found lying, as it does, in the same field as does Chi Cygni.

September 24-25 Seeing conditions very good tonight. Jupiter superb even at 397x. A curious preponderance of white ovals seemed to be present upon the disk tonight as well as several fine festoons--- located upon the north equatorial belt. Curiously an isolated dark linear patch was

noted just north of the north temperate belt. All four of the major Jovian moons displayed disks, but of course, showed no surface detail at all.

Also tonight I observed my 3010th Deep-Sky Object. I've finally reached my, now somewhat expanded, goal of six years ago.....

Michael Idem

Ed's note--Congratulaions Mike!!

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On September 13th, I observed a meteor, -3rd magnitude and white at 9:49 PM EDT from the Science Museum's Kellogg Observatory. It started just south of the Big Dipper's handle and traveled 50 degrees to the border of Hercules and Ophiuchus, lasting about  $1\frac{1}{2}$  seconds. While traveling its last 15 degrees, it broke up into four pieces.

On the same date the following objects were seen with my 26 inch Dobsonian scope from the dark skies of Boston:

M-76, the Cork Nebula, a planetary in Perseus with a UHC nebula filter. It somewhat resembles a barred spiral galaxy and it has a bar of high surface brightness that is mottled and is brightest at its long dimension. Faint and thin arcs extend clockwise from both ends of the bar, like the field lines of a magnet and gradually decrease in surface brightness and breaks up into patches.

M-20, the Trifid Nebula, a HII region in Sagittarius, which has a blue triple star in the center of the bright nebula, it is the light from that star that makes the nebula fluorescent. The nebula is irregular in shape and brightness towards its center. Three prominent winding dust lanes and a fourth that is fainter criss-cross it as a silhouette. Some branched off from the main rifts as short dead-ends.

M-1, the Crab Nebula, in Taurus is a supernova remnant that glows mainly of blue synchronous light. It has a slight 'S' shape that is wide and short, and of medium surface brightness. Low contrast mottling all over its surface was the filaments, which were rounded, which some-what resembled a walnut lump.

On October 11th the Eskimo Nebula in Gemini was seen, (catalogued as NGC 2392) its inner half is of very high surface brightness and aqua in color. It has a 10th magnitude central star, and the nebula mottled with low contrast darker areas. Surround it is an outer broken ring of very low surface brightness. With a transmission diffraction grating in front of the eyepiece, it showed only an oxygen III emission line, while the stars in the field showed a continued spectra.

M-42, the Orion Nebula, was so bright and colorful that for the first time I saw an after glow of the image after leaving the eyepiece and looking at the ground. The core of the nebula is blue and green, nebulosity of high contrast, both soft and sharp and dark and bright. Some of it is oval while others are angular with one fairly straight shock ridge is of a pale maroon color. Extending from it are two violet colored streamers that are gently arced with a number of bays and one that is peach and pink colored. The sharp edged dark rifts looking turbulent, gives a very highly 3-D effect to the nebula as a whole. Extending over a degree, many slender curved short filaments of low surface brightness and brighter paths. Sprinkled all over are many faint stars and a few brighter ones, with an ever increasing concentration towards the center, with four bright blue stars making the Trapezium.

Carl Milazzo

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On October 3rd, I made an attempt to observe the Solar eclipse. It was not easily observed as the cloud cover was so over-whelming that it was almost impossible to detect. Though it was not visible to the eye, my chart recorders did, to a certain degree, detect the loss of light as the Moon passed between us and the Sun. Much 'noise' on the chart shows because of the clouds not being evenly distributed. That is what makes it difficult to determine if the eclipse really did take place. By careful evaluation

from my charts, I was able to determine a percentage of lightloss, but not the amount which I had hope to see.

All I can say is I hope to see another and be able to have the best of weather to record it both on charts and visually.....

Darwin Christy

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## PIZZA GUESS

The following puzzle is like the one in the last issue of the "SPECTRUM". The graph contains 48 letters which you will need to spell eight astronomical words of 6 letters each. Each letter has a numerical value which is determined by the sum of the row and column each letters are found. For example: one of the letters "S" is in the 3rd row column 4 which equals 7; therefore that "S" equals 7. There are other "S's" which makes for an interesting puzzle. When a letter is used, it should be crossed off as it is no longer going to be used. One clue is that you should try to use the highest and lowest numbers first as there are less of those values. HAVE FUN!

	1	2	3	4	5	6	7	8
1	M	A	I	L	O	E	C	Y
2	S	D	N	A	M	F	U	N
3	R	C	Q	S	Q	U	I	U
4	T	T	R	U	O	S	T	S
5	T	U	I	A	A	B	A	N
6	O	N	C	T	A	E	X	U

A	6	10	8	7	11	3
B	8	7	2	8	10	4
C	5	9	6	5	9	12
D	12	4	11	5	10	9
E	5	7	9	3	8	11
F	8	9	4	13	6	13
G	10	8	14	6	9	7
H	11	7	6	10	12	7

Answers will appear in the January-February "SPECTRUM".

GOOD LUCK !!

## FROM PAST SPECTRUMS

From the November-December 1976 "SPECTRUM" for those who have not been informed of our facility near Java Center...

### IMPORTANT CHANGES at BEAVER MEADOW OBSERVATORY

Since Beaver Meadow Observatory became functional nearly one year ago (now eleven years ago), the 40 and 80-inch (focal length, that is) telescopes have been proven to be exceptional instruments for observation and photography. With the recent availability of free film, all the tools for the amateur have been provided. A 35mm camera body with all necessary adapters and focusing devices is available. Bill Deazley recently completed an illuminated reticle eyepiece for the micro-magnifier built by Bob Mayer. These two devices give the user extremely high magnification which is necessary for certain kinds of photography. Another recent addition is a 35mm, f:2.8 wide angle lens for the camera body. This will give our members the opportunity to do excellent Milky way and constellation photography. If you prefer to use your own camera, you can use the camera platform built by Bob Mayer, a platform capable of handling all systems including 4 x 5's.

Projects for the coming year include updating the Kartyas 8-inch reflector to make it available to more members. In the planning stage and under construction is a completely automatic star tracker - again we have to thank Walter Semerau for building the beam splitter, which is the heart of the tracker. A gift of two 1P28 photo-multiplier tubes has been received for use in a planned photometer. It is through the thoughtfulness of members and friends that we have a successfully working observatory at Beaver Meadow.

We are now entering one of the best times of the year for astro-photography. Winter, with its giant nebulas and spectacular presentation of the planets will produce a heavy attendance at the Observatory. Public Nights will continue each Saturday night (from dusk until midnight). However, if attendance is low, as may be the case during very cold weather, the facility can be used even on Saturdays by individual members and friends. Unfortunately demand for observing time is exceeding availability. Therefore, starting December 1, 1976, time will be allotted at the observatory as follows:

1. The order of access to the main telescope shall be determined by the order of arrival as listed in the observatory log upon arrival.

2. When more than one member is present, time at the telescope shall be limited to no more than one hour nor less than  $\frac{1}{2}$  hour.

3. When three or more members are present, time shall be divided as follows:

Members waiting: 1	allotted time: 1 hour
2	45 minutes
3 or more	30 minutes

4. Unused time cannot be added to access time, either one's own or another one's.

5. After all members who have signed in have completed their time, a new list of access time will be made, or if no new members have arrived, the old list for that evening may be used again.

6. On nights other than Saturday, members are discouraged from requesting access time for their friends. They may not use access time for non-members, if BAA members are waiting.

Tom Dessert, Director

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TOM DESSERT  
RUTH CHRISTY

!!! EDITORIAL !!!

I certainly appreciate all of the help I receive for producing this "SPECTRUM". Surely there are others who can also contribute to the newsletter with articles, short notes, OBSERVATIONS, trivia, questions, answers to the questions, and even drawings you may have of celestial objects which can be Xerox'd. Articles and/or notes which should have been in for this issue are still not among the articles written. If these articles do not enter my desk before the 'deadlines', I foresee a dwindling newsletter. I alone cannot produce every article there is to be written, so PLEASE make your contributions when the deadline approaches.....

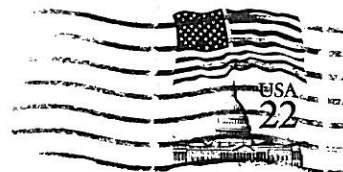
Your editor..

\* THE SPECTRUM \*

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