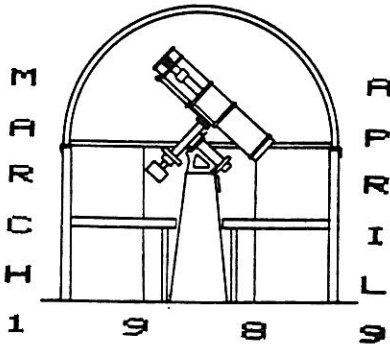


THE SPECTRUM



BUFFALO ASTRONOMICAL ASSOCIATION, INC.

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We are saddened by the death, on December 29th, of Irving A. Goetz, longtime member of the BAA, who also, in the past, served on the Board of Directors. His interest in astronomy spanned many years. He constructed his own observatory, built a couple fine telescopes, polished his own mirrors, and made most of his equipment. In addition he did some astrophotography, doing his own processing. He found great joy in his hobby, and in sharing it with others.

Irv was a fine gentleman, well-loved and admired by all who knew him. He will truly be missed. We extend our heartfelt sympathy to his family.

elg

BY-LAWS AMENDMENT

NOTICE is hereby given that Article 1, Section 1, Item B was deleted as amended September 1977, passed in 1982 and reprinted March 1987, and should be omitted by those who have already picked up their copies.

MEETING NOTICES

FRIDAY, MARCH 10, 1989 at 7:30 PM in the New Science Building Auditorium, State University College.

This month's speaker will feature Dr. Fred Price, Professor of Cell Biology and Bio-Chemistry at Buffalo State College. A founder member of the American Lunar Society, Dr. Price has been a member of the B.A.A. for 25 years, including three terms as President. His talk for this meeting is, "The 1988 Apparition of Mars." A book written by Dr. Price, "The Moon Observers Handbook", was published on January 26, 1989. Lets give a warm welcome to this distinguished member of the B.A.A.

Refreshments will follow!!!

FRIDAY, APRIL 14, 1989 at 7:30 PM in the New Science Building Auditorium, State University College.

As a follow up tribute to the dimming red planet, Mars will be the subject of our guest speaker this month. Herbert W. Tinney will entertain us with his talk entitled, "The Face on Mars; A Reality..., Artificial? Or a Quirk of Nature?" A lay member of the MARS PROJECT, Mr. Tinney will add amusement to his talk along with a slide presentation. A warm welcome awaits our speaker and perhaps prospective new member to the B.A.A.

Refreshments will follow!!!

NFCAAAA

The NFCAAAA (Niagara Frontier Council of Amateur Astronomy Associations) will hold their meeting at the Hamilton Centre RASC on May 5, 1989. More details will be given in the next "Spectrum".

* PRESIDENT'S CORNER *

In the past, the study group used to meet on the third Friday of the month, but because of a lack of interest this group was discontinued. Recently there has been some re-newed interest to try and revive this branch of the club. The study group was an informal type meeting, in which members would discuss an astronomical subject selected by the co-ordinator. Radio Astronomy and the use of the computer in Astronomy have become subjects of growing interest to many of our members. These two fields could comprise other branches of our club. An organized observing group has also been suggested. Our newer members are encouraged to participate in these specialized groups and need not feel intimidated, but could enjoy the benefits of learning from the experience of our more advanced members. Contact me if you are interested in attending and/or organizing any of these groups.

Thanks to Dave Sepulveda for printing the new membership lists, the B.A.A. By-Laws and the May Dinner tickets.

There will be a board meeting on March 7, 1989 at 7:30 PM at my home.

The "Big Apple Supper Club" in Cheektowaga was the vote of the members at the January meeting as the choice of the May Dinner meeting. The menu is a buffet which includes soup, garden and fruit salad bars, hot dishes featuring several types of fish, roast beef and a desert table. The price is \$10.00 per person with a cash bar at 6:00 P.M., dinner at 7:00 P.M. Tickets must be purchased in advance, by May 1, 1989, either at the meeting or by mail to Jack Simpson. Mark your calendar for May 12, and enjoy a relaxing social dinner meeting. A very experienced observer and entertaining speaker for this meeting will be our own member Larry Carlino. If purchasing tickets by mail, make checks payable to B.A.A. and send to Jack Simpson, 7021 Nash Rd., No. Tonawanda, N. Y. 14120

There are some excellent photographs being taken by our members, among them are Gene Witkowski's photos of Jupiter and the Sunspots. If you enjoy astro-photography, stock up on film, photograph your favorite astronomical objects and bring your photos to the June meeting, which will be a members photography meeting. An increased interest in astro-photography has developed among our members because of the guidance, patience and expertise of Dan Marcus at his photo sessions at the Beaver Meadow Observatory.

Because of the high cost of insurance requirements at area shopping malls, a display there will not be possible. However, on April 15th, Buffalo State University will host an Astronomy Celebration. We have been invited to set up a display and participate in the activities of this event. Bob Hughes has some exciting ideas for organizing our display, but he needs volunteers for a committee to assist him. Also, contact Bob if you would like to display some equipment, or spend some time at the exhibit talking with the general public. This could be an excellent opportunity for us to advertise our club and gain new members. Lets give Bob our support. Promote the B.A.A. and have fun working together.

Doris Koestler, President

Walter Semerau - Fellow, Buffalo Astronomical Association.
A Profile by Edith Geiger (Spectrum 1967)

Walter Semerau is a most unusual man. He has won high respect from friends, neighbors, associates, amateurs, professionals, and business and industry. His talents seem endless and his abilities boundless. He does with ease what many do with difficulty. His creative power and his inborn know-how set him apart as a very special human being.

The von Semerau's fatherland was Germany, Walter's father coming from Westphalia and his mother from Alsace-Lorraine. After their marriage in this country, they settled in Hermany, Pennsylvania, and their life was blessed by the arrival of a fine son, whom they named, Walter. Layland, West Virginia, was the next abode of the Semeraus, where Walter's father worked as a contractor in a coal mine. The family then moved on to the mining town of Eccles, West Virginia, where Walter spent the carefree, fun-loving hours of a wonderful boyhood. Eccles remained home to Walter through the sixth grade in school. His mother, who had become a widow when Walter was four, moved her young family of two girls and three boys to Ethel, West Virginia, where she supported them by running a boarding house for employees of the Cleveland Cliff Iron Company.

When Walter was in the ninth grade, his mother lost her job, so it became necessary for Walter to assume a man's role and go out and earn the family's bread and butter. Into the dirt and dust of the coal mines he went, working fervently until he was seventeen years old.

Washing away the blackness of the mines, Walter decided to try his hand at something different and set out for sunny California. He made two trips lasting from one and a half to two years. In California he worked at anything he could find to earn a dollar. Thus he became an

electrical contractor, wiring cabins and a school building; a night watchman in a school; and a life guard. After repairing a surf rider's board, he became very much interested in surfing, and in a pile of lumber found a board that was just right, so he made himself a fine surf board. During the next year and a half he could be seen riding swiftly on the Huntington Beach surf, whenever he was free.

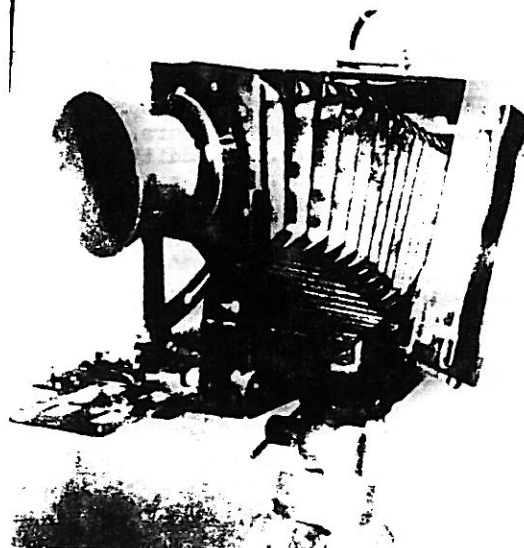
Then came the day Roosevelt closed the banks. Hitchhiking on a train, Walter headed back to "West Virginny" with fourteen dollars in his pocket. He returned as an electrician to the darkness of the coal mines for the next four years. In 1936 he found work in his home town as an electrician with the Electro-Metallurgical Company, which is a subdivision of Union Carbide, and is connected with this company to this very day.

When did Walter realize that he had mechanical talent? Well, one day while he was driving a taxi for a lady, he saw the richest boy in town spinning a padlock. As a result, Walter was to embark on an unusual sideline, and also make a discovery about his mechanical ability. He figured a way to have the boy give the padlock to him, as Walter couldn't contain himself until he found out about the workings of that lock. With that knowledge, maybe he could make keys for locks!

He took the lock home, pulled it apart, and from then on he found a way to make keys for any lock, anywhere, using a five dollar key filing jig. He could make the best possible key for a quarter, and proved to be a sensation as people gathered to watch him make keys. He was continually called upon to remake lost car keys, and various other keys people have a habit of losing. He even had a contract with the school to make keys. Yes, Walter was the original key maker, and a real safe "slicker" who could open any lock, given the time. He was offered fifty dollars if he could open the combination lock on the school safe in a week. The combination was in the safe. With Walter's unfailing know-how, the school safe was opened. Walter always notified the police when he was called upon to crack a safe so he would always be cleared of any felony. Anyone have a lock he'd like opened, or a replacement for a missing key?

The money Walter earned as a safe cracker and key maker was used for courtin' money when sweet Becky came on the scene. After a couple years, Becky and Walter were married to live happily ever after. They were, eventually, to have three children - Walter Jr., George, and a very artistic Penny.

While Walter was at the Electro-Metallurgical Company, he made a camera which played a tremendous part in shaping his career. He wanted a camera that had all the best qualities of the best cameras on the market, and quite naturally, he just up and made one. Now this camera wasn't any ordinary camera. It had all the adjustments, a rotating back and a built in couple range finder. It was all handmade except for the lens and bellows, and is a beautiful piece of workmanship, as is everything that Walter makes.



During the war the Agfa Corporation in Binghamton had published a notice that it couldn't help the amateur at that time but would when the war was over. When Walter saw this, he sent the company a snapshot of his camera. They were very impressed and asked Walter to bring his camera to the company. They would pay his wages while he was there. The company appreciated Walter's fine workmanship, and took out a patent on the range finder in his name.

While he was in Binghamton, life became very exciting. During the war, Agfa-Ansco was the headquarters for German spies in this country. Walter was completely unaware of this activity. Suddenly the FBI was investigating Walter and reading all his mail. Yes, they thought he was a German spy. He was finally exonerated because his neighbor, who was head of the company, knew Walter's camera story from the beginning and was able to explain his business with the company to the satisfaction of the FBI.

The old company changed its name, so there was an old and new company and both companies wanted Walter. He decided to stay with the Electro-Metallurgical Company. A battle ensued with the two companies over the camera, and finally when it all ended, Walter got his camera back with promises that he would never change the shape of that camera. The General Analine Film Corporation bought out Walter's patent rights. The company offered him the title of Optical Engineer if he would stay with the company, but he still decided to stay with Electro-Metallurgical.

Then one day in 1948, the metallurgical company held a company-wide fair. One could enter anything one cared to enter, so Walter entered his camera and a telescope. Becky had made some tools which were so fine that they were placed in the men's competition. Walter won the competition with its forty dollar prize. What did he do with the prize money? He bought more tools.

It so happened that there was a company official in town that day and he was staying at a hotel across from the fair. He strolled over and had a look at the entries. He liked what he saw in that fine camera of Walter's and said, "that fellow deserves a break!" He sent a delegate to ask Walter if he'd consider leaving town to work someplace else, and Walter, who had deep roots in West Virginia, said "no." Becky urged him to say "yes" if he was approached again, just to see what the company had in mind. Lo and behold, a second fellow came and asked him the same question again. This time Walter said "yes." The general manager then called him into the office and told him he deserved a break, and sent him to work at the Linde Division of Union Carbide in the Town of Tonawanda in 1948. He was hired as an instrument maker. In 1956 the company made Walter an engineer, complete with an official diploma.

At Linde, Walter designs and makes all kinds of instruments. He also builds equipment that other people use in their research. He designs machinery used in work for the biological laboratory, environmental space systems, deep sea diving systems, brain wave studies using rats, and works in the gas separation department where oxygen is taken out of the air and salt out of sea water.

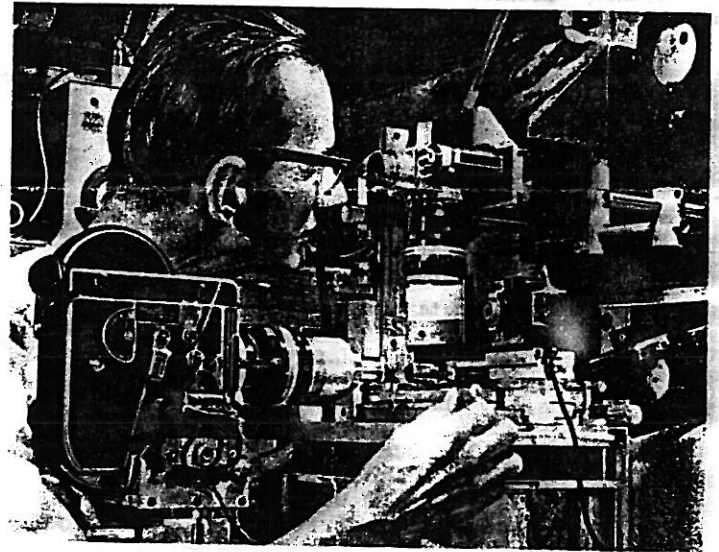
Dr. O'Brien, who was a professor at the University of Rochester, was a consultant for Linde. He was the gentleman who invented Todd-A-O, familiar to movie goers. Linde sent Walter to the university to study high speed photography with Dr. O'Brien. It was he who recommended that Walter make the first schlieren mirror for Linde. O'Brien designed a high speed rotating mirror camera and Walter made it. It was used to photograph exploding wires, but was finally used as a thermometer to measure temperatures of high speed. Walter made two of these rotating mirror cameras. He also made a Raman spectrograph which was shipped to Forest Hills. He learned about the Ebert spectrograph from O'Brien. Walter made two spectrographs which are at Linde, and he took the best features of these and used them in his own Ebert-type solar spectrograph.

How did Walter become interested in astronomy? When Walter's eldest son, Walter Jr., was a young lad of seven

in 1943, he became intensely interested in the sky. He was always looking to the heavens. Walter bought him the book, A Dipper Full of Stars, which they read and enjoyed. Then Walter decided to make his son a telescope. As years went on, young Walter's interest in the sky waned and Walter Sr.'s interest increased. Telescope building and celestial photography became a hobby, and the sky a great love.

In 1954 the bright lights of the newly built Sheridan Plaza caused Walter to give up his night observations. Not wishing to give up astronomy, he switched from the night sky to the day sky, concentrating on the Sun. Walter enjoys the challenge that solar astronomy offers in instrument making. His solar observatory is one of the most outstanding privately owned facilities of its kind in the world. His heliostat, which picks up the Sun's image, is mounted on a metal tripod fourteen feet high at the back of his house. The Sun's image is piped into the basement where Walter can conduct all of his observations in comfort, without worrying about the temperatures outside.

Another outstanding piece of equipment which Walter has made is a spectroheliograph-spectroheliograph combination, worth many thousands of dollars. This instrument separates the Sun's light into a spectrum, into many shades of basic colors, each representing radiation from some element. By tuning it, Walter can select any given color and scan the Sun in the light of that color, either visually or photographically. He has also built a quartz monochromator which uses the red light of the hydrogen atom to reveal solar prominences at the Sun's limb. With an automatic time-lapse camera attached to this filter, Walter has taken many outstanding movies of the Sun in action.



But Walter does not keep his astronomical talents to himself. During the last two years he has donated his time and talents to build a solar spectrograph and spectroheliograph for the new solar observatory at the Buffalo Museum of Science. He became a Research Associate of the Kellogg Observatory and was elected a Benefactor of the Buffalo Society of Natural Sciences in recognition of his generosity.

In Walter's basement he has a complete machine shop and also a lens-making shop, and he makes all his precision instruments with war surplus parts and scrap metal. He has built or re-built numerous hand tools, a drill press, a lathe, a diamond saw, a vacuum chamber for aluminizing his mirrors, vertical grinding spindles and a machine that measures the flatness of a surface to a millionth of an inch.

Walter's work in astronomy is held in high esteem by the astronomical profession. He wrote a chapter for the book, Amateur Scientist by C. L. Stone, and has pictures and comments in Celestial Objects for the Common Telescope by T. W. Webb, Outer Space Photography by Henry E. Paul, and pictures of his camera in Mini-Cam Photography, and the Complete Photographer which is an encyclopedia of pho-

tography. The High Altitude Observatory at Boulder, Colorado, honored Walter by using his solar observations during the last sunspot maximum. Walter was also offered the position of Technical Director of the new planetarium in Rochester, to work there for the rest of his life, but Linde didn't want Walter to leave. Never idle, he spends his lunch hour at Linde writing or reading (or, if the Sun is active, he dashes home to take some pictures).

Articles on Walter's spectroheliograph and monochromator have appeared in *Sky and Telescope*, and his observations and instrument making techniques have been seen in *Scientific American*. *Sky and Telescope* has now approached Walter about a color shot for the cover of the magazine of the fourteen foot tower housing his heliostat, accompanied by a story in the inside pages. William E. Shawcross, who is an officer of the Astronomical League and also managing editor of *Sky and Telescope*, saw Walter's equipment while at the Astronomical League's convention in Buffalo in May, and agreed that it is the most unusual piece of equipment he has ever seen, and suggested that a thirty minute movie be made of it and of the remarkable pictures Walter has taken, and all to be narrated by a professional narrator. This is a distinct honor for Walter, and a fine tribute to his excellent work.

In his latest venture he is working with Dr. Seville Chapman on an ellipsometer (or something similar) which will demonstrate Kepler's Laws. This instrument has been designed by Dr. Chapman and is being given the Semerau touch.

Not only is Walter filled with an extraordinary creative power, he is filled with warmth and kindness for his fellowman. Nothing is ever too much for Walter to do for his friends, nor time too precious, but what he finds some left to give to others.

What manner of man is this? A genius and a great man among men, unique in our time.

* * * * *

1989

Though having been retired for a number of years, he continues to do work for Linde. They bring the work for the metallurgical department to Walter and he prepares specimens for their testing.

He remains a master and an inspiration to all who know him.

E.L.G.

BAA ANNALS

5 YEARS AGO - Our SPECTRUM for March/April 1984 was loaded with good articles and good observations. It's well worth re-reading. An unsigned article on "Recurrent Novae" led off. Michael Idem, a frequent contributor to THE SPECTRUM then, had two articles: one on "Limits of Visual Perception", another on his extensive survey of 2507 Deep-Sky objects over a four year period. Darwin Christy noted that 1983 had been an excellent year for observing. His records show the cloud cover was much reduced in comparison to that of years past. Forty-nine percent of the nights were suitable for at least limited observing. Edith Geiger wrote a biography on Marilou Bebak. Spy and Tell reported that Gene Witkowski was back in Thailand helping some friends build a house, and the DiLapos were getting ready to build their new home in North Boston.

In March our speaker was Ken Brown of Rochester, who spoke on Halley's Comet. It was starting to get close then. Tom Dey, a noted amateur also from Rochester, spoke in April on "Equipment for Amateur Astronomers". Tom offered his traditional door prizes.

10 YEARS AGO - Bob Reilly, planetarium director for the Williamsville School District, presented a planetarium program. "The Legacy" at

Williamsville North High School in March. For April, astrophotographer Tom Dessert displayed professional slides of deep-sky objects the BAA had purchased with a grant from Dow and Company. Orrin Christy was also scheduled to speak. If I recall correctly, Orrin couldn't make it, but his tape recording of his talk along with slides did. (Thanks to his dad, Darwin.)

Darwin's Japanese friend, Shigeru Morikubo, had an article on micrometeorites in the SPECTRUM. A biography of Ken Biggie, written by Edith Geiger, appeared in the March/April 1979 issue.

15 YEARS AGO - In March we attended an All-Gershwin concert at Kleinhans Music Hall to help raise money for our new observatory planned for Beaver Meadow. Dr. David Meisel from Genesee spoke on "Comets" in April. (Kahoutek had just come by.) An obituary noted the death of BAA Treasurer Bob Kartyas on February 3, 1974. Bob was only 25 years old! His telescope, an 8 inch, is still in service at Beaver Meadow as a memorial.

20 YEARS AGO - Walt Semerau, whose solar work was the topic of Ernst Both's talk this past December, spoke on "Simultaneous Photography of the Solar Disc and Solar Prominences". In April, John J. Ruiz spoke on "The Mayan Calendar in Astronomy". Orrin Christy had an article on probabilities in astronomy. "Chances Are". Kurt Erland (!) wrote an editorial on our old observatory at Newstead.

Rowland A. Rupp

*** THE BEAVER MOON OF NOVEMBER ***

The Beaver Moon was so named because of the Beaver's activities to ready themselves for winter. During the summer, they must get their dams built to enable them to have the right depth of water, whereby the tunnels they build, entering their underground homes, are far enough below the water level so that it will not drop below the tunnel and deep enough so that the water will not freeze the tunnel shut, keeping their entrances open. Their homes are above the water level but still underground.

When all work is done on the tunnels and home area, they must stock it with food and bedding. They bring in much grass for their beds early in the season, but to gather their food, they must work even longer. Their food consists of mainly the bark of trees, but working from sun-up to sun-down, they must utilize as much of the sun's light as possible. At this time of year, though, the sun sets much before the time they need to continue their work. So-- near the Full Moon in November, they work past sunset by using the light of the moon. Thus the Full Beaver Moon.

Darwin Christy

The following reference to mosquitoes and our space program is from a book published in 1968 called *Nobody Loves a Cockroach* by Bill Ballantine. (pages 171-172)

"On occasion commercial exterminators are called upon to annihilate mosquitoes. In 1964 it was reported that mosquitoes were a peril to the building of the huge rocket that will be used in an attempt to land a man on the moon. Day-biting mosquitoes from the salt marshes around the Michoud, Louisiana, plant of the Boeing Company were so bad that the wives of the engineers did not dare let their children out to play, and the enforced confinement created domestic tensions that were destroying the efficiency of the plant workers. Indifference of local residents, accustomed to Southern mosquitoes, added to the exasperation of the Northerners.

ML. Bebak

**** SOLAR ****

The Sun will be eclipsed by the Moon on March 7th, only to be seen in the North Pacific where Hawaii and Alaska will be in its partial path. On March 20th, the day will be equal in day and night, which is the vernal equinox, or the beginning of spring. The Sun will be traveling from Aquarius into Pisces on March 12th, then from Pisces into Aries on April 16th. On March 26th, Cetus will be grazed by the Sun.

Astrologically, the sun will pass from Pisces into Aries in March and from Aries into Taurus in April.

**** LUNAR ****

The Moon's phases for March are New Moon on the 7th; First Quarter on the 14th; Full (SAP) Moon on the 22nd; & Last Quarter on the 30th. For April are New Moon on the 5th; First Quarter on the 12th; Full (PINK) Moon on the 20th; & Last Quarter on the 28th.

An occultation of Regulus by the Moon will occur on April 15th.

**** LUNAR CONJUNCTIONS ****

In March; Uranus on the 2nd & 29th;

**** LUNAR CONJUNCTIONS ****

In March:- Uranus on the 2nd & 29th; Neptune and Saturn on the 3rd & 30th; Mars and Jupiter on the 12th.

In April:- Jupiter on the 9th; Mars on the 10th; Uranus Neptune and Saturn on the 26th.

**** PLANETARY CONJUNCTIONS ****

In March:- Saturn and Neptune on the 2nd.

**** PLANETARY EVENTS ****

Mercury and Venus are at Superior Conjunction on April 4th; Uranus is stationary on April 9th; Neptune is stationary on April 13th; Saturn is stationary on April 22nd; & Mercury is at Greatest Elongation (21° east) on April 30th.

**** METEOR SHOWERS ****

In March:- Zeta Bootes on the 11th; Corona Australis on the 16th; Camelopardalids on the 20th; & Virginids on the 26th.

In April:- Kappa Serpentids on the 4th; Delta Aquarids on the 7th; Alpha Virginids on the 9th; Rho Leonids on the 17th; Lyrids on the 21st; Mu Virginids on the 25th; & Alpha Bootes on the 28th.

The Camelopardalids in March are a lesser known shower coming in from R.A. 07h 56m, +68° declination. A few things are known, duration of this shower is 24 days with an average count of between 5 and 15. Their color is greenish and of 4th magnitude and fainter. Much data is needed for the American Meteor Society.

The Lyrids of April 21st are one of the best known showers. It radiates from R.A. 18h 04m, +33° declination. It is an annual shower of swift streaks, white and of at least 3rd magnitude. The duration is but 2 days, of which 12 to 24 can be counted in an hours time, almost directly overhead. They are associated with Halley's Comet, 1861.

In a future issue of the "Spectrum", there will be an article dealing with how to observe meteors and the equipment which can be used for recording them. An expansion of how and why those tools are used will also be given.

Darwin Christy

KELLOGG OBSERVATORY REPORT

Warren Kutok and Lon Caracappi began renovation of the 8-inch Clark refractor on January 30th, and work should be completed by February 11th. Warren and Lon have restored many telescopes across the United States, including the 12-inch Clark refractor at Columbia University in New York City, and the Meese Observatory near Rochester, New York. Refractors are Warren's preferred instrument (he does not care for Dobsonians at all). Warren has a 12-inch refractor and a 10-inch Schmidt-Cassegrain of his own. After seeing the "before and after" photographs of other telescopes Warren and Lon have restored, the Kellogg Observ-

atory will have a beautiful face-lift as well as much improved and updated operational equipment. Not only will the bronze be returned to its original shine, but there will be computerized tracking for solar, lunar, and sidereal time as well. All lenses and eyepieces have been cleaned also. Warren has also provided us with an IBM compatible program on Astronomical Computing (details found in the February 1989 issue of Sky and Telescope). If you would like a copy of this program, contact Marilou at the Museum and provide your own blank disc.

I have reviewed the Guide to Backyard Astronomy videotape available for loan through the BAA. I found it to be an excellent basic start-up tape for anyone interested in astronomy (young or old). Most effective is the use of actual star fields to show the location of constellations and their related astronomical objects. I highly recommend this tape to anyone starting out in astronomy or just needing some pointers.

Upcoming Museum Astronomy Events...

*****Summer Sun Shows - the Kellogg and Solar Observatories will be open for solar observing during July and August 1989.

*****20th Anniversary of Apollo 11 moon landing - Astronomy activities and programs will be held at the Museum all day Thursday, July 20th. BAA help is needed! Anyone interested in showing off their equipment, slides, photographs, or presenting a space-related topic call Marilou at 896-5200 ext. 214.

*****Ice Ages Exhibit - Astronomy types needed to help man the Museum's telescopes daily from September through December 1989. We will train you in August to help present a program on astronomical causes for the Ice Ages. You'll be able to routinely observe sunspot and solar prominence activity. More info next issue!

by ML. Bebak

*** INSTRUMENT NOTES ***

A regular meeting of the Instrument Section was held on Friday, January 17th at Buffalo State College. There were 7 TM's present. We finally recovered the club's 8-inch mirror so we could test it. The mounting has been stored in Ed Czapl's garage for a long time - in fact it is wearing out its welcome. But the mirror has been playing hide and seek in parts unknown for a couple of years or more. Now there is some hope that we can get a telescope assembled.

This telescope has an interesting history. It was made by an unknown (as yet) telescope maker in Alden. He did a creditable job but after a few years has no longer actively used it and so he donated it to a local scout troop. Several scouts in Alden used it to earn their merit badges in astronomy.

We tested the mirror and found it to be essentially spheroidal. As it is f:9 in speed it would have to be parabolized to give critically good images. The big difficulty is that the mirror has been badly handled. There are several chips in the rim. One on the back is a real big one which has been painted over probably for cosmetic reasons. The big blemish is a radial crack of over an inch in length right through the disk. This crack might advance inward if any work is done on the surface.

It appears that the most practical thing to do is for the Instrument Section, or other interested parties, to reassemble the telescope and set it up out at Beaver Meadow to give visitors hand-on experience with a reflecting telescope. Perhaps a few more merit badges could be earned. Then if dissatisfaction is had with the image quality, it might be an interesting project for the TM's to refigure it.

We next tackled, with might and main, the job of collimating Gary Kielich's ten-inch Newtonian. The first method used was the diagonal centering method preferred by Bill Smith and Dan Marcus. This method is precise and centers the returning beam on the diagonal's surface. The collimation was then checked using the Cheshire eyepiece.

The alignment looked beautiful. The latter requires a greater degree of judgment and gives excellent, though not perfect collimation. But collimation on a reflector needs to be checked periodically and the Cheshire is very good for a quick check.

Of all the collimating methods I have watched or participated in, the most spectacular was when I watched a group of physicists collimating the 96-inch (that's 8 feet) Isaac Newton telescope at Hertsmonceaux in southern England in 1969. The big lattis-work tube had been lowered to a horizontal position. In back of the primary stood a technician dwarfed by the huge disk. He was adjusting screws while another worker at the center of curvature was setting up a ruby laser. The beam was directed through a small center hole in a sheet of cardboard set up transversely at the center of curvature of the mirror. The return beam produced a bright red spot on the white surface of the card. When the return beam went through the hole the mirror was "square on" as they called it.

Bill Rogers brought in a fine 6-inch telescope made by our late friend and super craftsman, Bob Mayer. The scope needed an eyepiece. We calculated the size that would be needed and then postponed further work until a diagonal secondary can be obtained.

A final comment on collimating. We used to do it with a bare flashlight bulb. It is amazing how bright a spot is produced by the return beam. But the laser method is more spectacular and the room lights need not be turned off.

Ed Lindberg



BOARD MEETING MINUTES

The B.A.A. Board of Directors met at President Doris Koestler's home the evening of January 10, 1989. All members were present in addition to Darwin Christy and Carl Milazzo The first order of business was the hearing of speakers for all general meetings between February and June Doris submitted a list she received from Al K. of various items donated by the estate of Bob Mayer and Ed Lindberg will take possession for the club The May Dinner meeting was discussed with Larry Carlino as the guest speaker and the location will soon be nailed down Darwin requested and received Board permission to send Walter Scott Houston the "Spectrum" Doris discussed the December membership survey results and a discussion followed concerning BAA participation in a spring or summer mall show or a display at Buffalo State in conjunction with the college astro. club. The Board also expressed interest in sponsoring some type of activities around the August 1989 lunar eclipse The Board discussed both the Instrument Section which currently meets 5 or 6 times a year, and the Study Section which isn't meeting at all. Rowland Rupp expressed interest in possibly revising the group if he can drum up support and cooperation of the members There was some discussion concerning an amendment to the By-laws passed in 1982 which wasn't included in the most recent printing of the By-Laws, but this turned out not to be true so no action was taken The idea of considering a new BAA Observatory, at a new location, with a bigger telescope was discussed at length. The discussion instigated by Carl Milazzo centered around the disadvantages of the current observatory, mainly the dew problem, and the need for a bigger telescope. The Board agreed to appoint Carl to head an ad hoc committee to investigate the feasibility of a new facility. Jack Mack made a motion to this effect, seconded by Bob Hughes, and Carl will start a preliminary study Dan Marcus announced he has ordered a solar filter for the Beaver Meadow Observatory with funds donated by Dave and Marty Junkin in memory of Robert Mayer.

Ken Biggle, Sec'y

Spy and Tell



Fred Price and Art Gielow were invited by Dan Furmanek, President of the UB Astronomy Club who is also a BAA member, to give a talk last December 5th at the Center for Tomorrow on the UB campus before the UB Astronomy Club. Fred spoke on the apodizing screen, and showed slides of Mars. Art talked on the exploration of the surface of Venus by radar,

and showed slides and photos of its surface.

Former member, Phil Cizdziel, and his wife, are the proud parents of a baby girl born December 6th. Phil's company sent him to Mount Palomar to try their CCD on the 200". He was allowed two hours at the telescope.

Last December Tom Reid married a young lady from China. He is now working in Japan where he is translating technical Japanese documents into English, using computers.

Doug Snyder is making progress building his 8" scope.

Hugh Pettit has ordered a solar filter type 2 from Thousand Oaks Optical for his Meade 8".

For those of you who remember Steve Desmond, he is now one of the photographers on the staff of the Orchard Park Bee.

Al Kolodziejczak has purchased a 16mm Nagler eyepiece.

Gerard Kuhn spent two weeks in early February in Mississippi on maneuvers with the National Guard.

Kevin Biggle is one of the 39 Orchard Park High School students to be honored at the second annual Orchard Pride awards dinner to be held May 2nd. Congratulations.

Gene Witkowski has taken some outstanding solar photos

Former member, Richard Jakiel, has been elected Vice President of the Atlanta Astronomy Club in Georgia.

Ted Zendarski's 25" Dobsonian has finally arrived.

An add for Fred Price's book, The Moon Observer's Handbook, appears in the February issue of Sky & Telescope in the New Titles from Cambridge University Press.

Edith L. Geiger

O SOLAR ACTIVITY O

Solar activity continues on a record breaking pace. The Level of sunspot activity reached levels in December and January that rivaled sunspot numbers that occurred during the 1958 solar maximum. Sunspot number averages for December was 173, the highest number since March 1959. During the week of January 13th - 19th the sunspot numbers exceeded 200 as many major groupings of sunspots were visible. Numerous major solar flares occurred daily during this week also. With two years left till the predicted solar maximum, this could be the greatest solar cycle ever observed.

Bob Hughes

LEO

'Neath her hind feet as rushing in his prey
The lordly Lion greets the God of day.

-Aratos

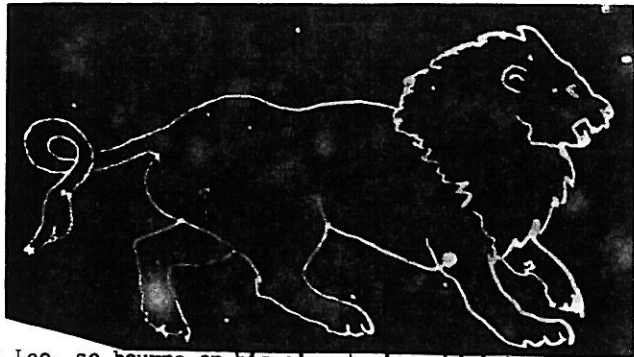
Leo, the Lion is a modern as well as an ancient constellation dating as far back as those previously written in the last "Spectrum" --2100 B.C. It is one of the few constellations to have retained its shape and very closely represents the animal, which has also been associated with the Sun. It does appear in all of the Indian and Egyptian Zodiacs as the Leo we know today.

The poets wrote of Leo, or Lion, as having been slain by Hercules, giving it the names of "Nemeaeus", "Nemeas Alumnus" and others, which represented the "Nemean Lion" from Greek and Roman mythology.

The Egyptian king Necepsos along with his philosopher Petrosiris, taught that at the creation, the Sun rose near Denebola. Leo was at that time called "Domicilium Solis" the emblem of heat and fire. In Astrology, it was the "House of the Sun", which governed the heart of man.

According to Pliny, the Egyptians of old worshipped this constellation because the inundation of the Nile occurred in those ancient times when the sun entered the constellation, Leo. Today the Egyptians seem to even believe that the Sphinx represents the Virgin's head attached to Leo's body.

Jacob, as recorded in 'Genesis' xlix, 9, allotted the tribal sign to his son Judah. It is also confirmed in 'Revelation' v, 5, by Saint John. The natal sign of Judah



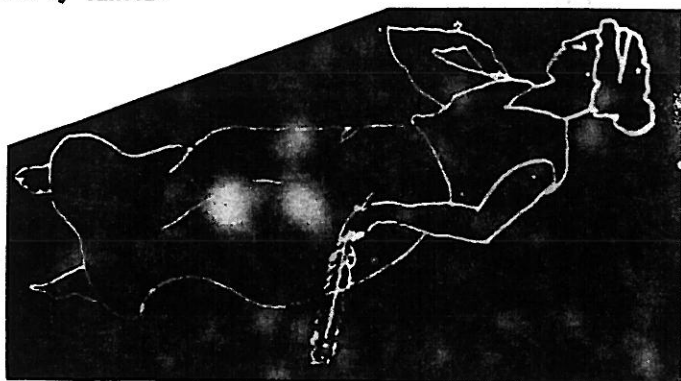
was Leo, so bourn on his signet-ring which he gave to Tamar. This association was suggested by Landseer. The Lion was also, in Middle Age Christianity, figured to be a biblical figure of the heavens but also thought it to be one of Daniel's lions. In the apostolic school it was known as a 'doubting Thomas'.

The first magnitude star, "Regulus" or Alpha Leonis, in ancient times was called the "Little King". In Copernicus' time, he named it that. It has also been called other names such as "the King", "the Mighty", "the Great", "the Hero" and even "the Ruler". Perhaps, because it was also referred to as one of the guardian stars in the heavens, the others being Fomalhaut, Aldebaran and Antares.

Four thousand years ago the longitude of Regulus was measured by the Babylonians and two thousand years later it was measured by Hipparchus. As time went on, observations of the stars Regulus and Spica led to the discovery of the precession of the equinoxes.

An ancient constellation lies between Leo and Virgo, a long forgotten asterism, "FAHNE" the Flag. Ideler wrote of it in 1564, "The Flag is a constellation of the heavens, one part in Leo and one part in Virgo. It has many stars. On the iron in front - one, on the flag - two, on every fold of the flag - one." The iron he refers to is the "arrowhead" of the staff. Brown told of it as "The constellation of the 'YOKES' like a flag floated" from a Euphratean inscription which apparently has no bearing on this area of the skies but is associated with Capricornus.

Leo can be found within the borders of Leo Minor and Ursa Major on the north; Sextans, Hydra and Crater on the south; on the east by Virgo and Coma Berenices; and on the west by Cancer.



VIRGO

Below Bootes thou seest the Virgin.
An ear of corn held sparkling in her hand.
Aratos...

Virgo, the Virgin or the Anglo-Saxon Maeden, is another of the ancient as well as modern constellations, dating back as far as 2100 B.C. An old myth tells of Virgo representing Astraea as the daughter of Jupiter and Themis. She has also been referred to as the Goddess of Justice. In the Golden Age, it is said the Astraea ruled the earth and was respected by all mankind.

As time changed, in the Brazen and Iron Ages, mankind became wicked and betrayed her and she left the world go to its fate. Virgo then took her place among the stars of the zodiac, with the Scales of Justice, represented by the constellation Libra, at her side.

Virgo was associated with the Goddess Iris according to the ancient Egyptians. She dropped the ear of corn when chased by the monster Typhon. Thus the corn which she dropped became scattered, leaving the faint glistening of stars that form the Milky Way. This very figure of ancient time, had reappeared in the Middle Ages as the "Virgin Mary" with the child Jesus. It was described in Shakespeare's "Titus Andronicus" as the "Good Boy in Virgo's lap".

The "Star of Prosperity" was Spica as known by the ancients, and it means "ear of wheat". The Egyptians worshipped Spica and built their temples in its honor. Most maps and charts have depict Virgo as holding an ear of corn in her hand.

In Astrology this constellation and Gemini are known as the 'House of Mercury'. Macrobius said that the planet mercury was created here.

John Skelton, the Royal Orator of King Henry VII, wrote:-

In autumn when the sun in Virgine
By radiant heat enriched hath our corne.

Virgo can be found located next to Coma Berenices and Bootes on the north; on the south by Corvus, Crater and Hydra; on the east by Libra; and Serpens Caput; and by Leo on the west.

Darwin Christy

IN THE BEGINNING, GOD SAID LET THERE BE LIGHT -----
BANG----- AND THERE WAS LIGHT !!!!!

DID ASTRONOMY START THERE ALSO? NO ---- THE BEGINNING WAS CREATED BY THE ASTROLOGERS, THE NOT SO SCIENTIFIC MEDIA. AS RELIGION DID NOT GROW OUT OF THE BIBLE, NEITHER DID ASTRONOMY GROW OUT OF THE STARS AND CONSTELLATIONS, SO ---- AS THE BIBLE GREW OUT OF RELIGION BY THE SEVERAL SAINTS AND APOSTLES ---- SO DID THE CONSTELLATIONS AND STARS BECOME RECOGNIZED BY THE ASTROLOGERS, JESUITS AND POETS OF ANCIENT TIMES. THE NUMBER OF PEOPLE INVOLVED LIVED MUCH BEFORE CHRIST AND USED THE STARS AS PATHWAYS OVER THE DESERTS AND WATERWAYS TO GUIDE THEM TO THEIR DESTINATIONS. BY DOING SO, THEY STARTED NAMING THE STARS AND CREATING PATTERNS OF STARS INTO HUMAN FIGURES, ANIMALS AND MATERIAL OBJECTS. SUCH WERE THE ZODIACAL CONSTELLATIONS, A LAMB, A BULL, THE TWINS, A VIRGIN, AN ARCHER, A SCORPION AND EVEN A SET OF SCALES. THESE ZODIACAL FIGURES, OF COURSE, WERE NOT THE ONLY FIGURES CREATED, DRAWN AND THEN PLACED ON CHARTS AND MAPS. AND NOW ---- MANY MEMBERS WHO RECEIVE THE "SPECTRUM" HAVE BEEN WONDERING WHERE I GET MY INFORMATION TO WRITE SUCH ARTICLES ON ANCIENT AND MODERN CONSTELLATIONS ---- WELL--I MAKE THEM UP !!!!!

MANY BITS AND PIECES OF INFORMATION WHICH I GATHERED, WAS REALLY STARTED WHEN I PURCHASED A BOOK, "STAR NAMES, THEIR LORE AND MEANING". I NOTICED THAT IT CONTAINED CONSTELLATIONS NO LONGER USED ON MODERN MAPS AND CHARTS. IT GAVE ME AN INCENTIVE TO DIG FOR OTHER ANCIENT FIGURES OF THE HEAVENS ONLY TO FIND THAT THERE ARE MANY MORE THAN I HAD ANTICIPATED. IT SURELY WAS A CHALLENGE.

SINCE STARTING TO GET INVOLVED WITH THE MANY OTHER ANCIENT FIGURES, I HAD GOTTEN MORE INFORMATION FROM THE PUBLIC LIBRARIES AND FROM BOOKS EITHER GIVEN TO ME OR LOANED TO ME FOR LONG PERIODS OF TIME TO WHICH I AM GRATEFUL. SOME OF THE BOOKS MENTIONED ARE, OLCOTT'S FIELD BOOK OF THE SKIES; 1001 QUESTIONS ON ASTRONOMY; THE GUINNESS BOOK OF ASTRONOMY, FACTS AND FEATS. OTHER EASILY OBTAINED BOOKS ARE THE ENCYCLOPEDIA BRITANNICA, ENCYCLOPEDIA AMERICANA, THE BOOK OF KNOWLEDGE AND OTHER TOMES WITHIN LIBRARY WALLS.

MANY OF THE WRITINGS I FOUND WERE FROM TOMES IN THE LIBRARIES IN OUR AREA. I DO NOT PRETEND TO REMEMBER THEM NOW, BUT FROM REFERENCES, I JOT THEM DOWN AND THEN RETURN TO THE LIBRARY OR WRITE TO PERSONS WHO I BELIEVE KNOWLEDGEABLE TO HELP ME WITH THE INFORMATION I DESIRE.

AFTER GETTING THE BITS AND PIECES, IT IS A LITTLE EASIER TO PUT MY SMALL PUBLICATIONS INTO THE "SPECTRUM".

SOME OF THE REFERENCES ARE:

ALEXANDRIAN RHETORIC (155 A.D.) BY AL ACHSASI....
 ATLASES AND PLANISPHERE BY SEVERAL - BAYER, BODE, BURRITT,
 UPTON, STIELER, HEIS, ETC....
 POETS ARE ALSO AMONG THOSE, THOUGH NOT ASTRONOMERS - HOMER
 HESIOD, ARNOLD, SIR THOMAS BROWN, ALIGHIERI DANTE, AND
 MANY OTHERS INCLUDING NONNUS....
 ONE GREAT BOOK WHICH HAS HELPED IS THE HOLY BIBLE, YOU
 WOULD BE SURPRISED AT THE ASTRONOMICAL WRITINGS WITHIN ITS
 COVERS. MY LIST COULD GO ON AND ON INTO THE EVE OF CHRIST-
 MAS IF I WERE ALLOWED TO CONTINUE; THAT I AM NOT !!!!

AND AFTER GATHERING ALL OF THE INFORMATION I HAVE BEEN
 ABLE TO FIND ---- I MAKE THEM UP !!!! IT WILL PROBABLY NOT
 STOP HERE AS I HAVE FOUND MORE ANCIENT CONSTELLATIONS AND
 HAVE HAD MANY REQUESTS TO CONTINUE WRITING ABOUT THESE
 ANCIENT CONSTELLATIONS AND TO KEEP THE CONSTELLATION OF
 THE MONTH ALIVE....

Darwin Christy

\$2 FOR SALE \$2

One- Edmund Reflecting Diffraction Grating, 20,000 lines
 per mm, 2" square. Unused in original container - \$50.00
 One- Sears Discoverer Refractor, D: 60mm, fl: 700mm with
 two (2) eyepieces and tripod - \$30.00
 One- Hurst motor, 110 VAC, 1/10 RPM reversible - \$20.00
 Three- 9 x 12cm Plateholders - \$5.00 each
 One- 8-inch square aluminized flat mirror - \$20.00
 One- 6-inch diameter Mirror Blank - \$5.00
 One- 500mm f:5 Soligar Telephoto lens - \$150.00
 Larry Hazel - (716) 745 3375

TRIVIA ANSWERED

Claudia Bielinski came forward and gave the answer to
 the trivia question which appeared in the last issue of
 the "Spectrum". She noted that in the 1900's there were
 three such dates in which seven eclipses occurred. Those
 dates are 1917, 1935 and 1982. Other members also came
 forward and asked if I had gotten the answer before from
 someone.

??? PUZZLE ANSWERS FROM LAST SPECTRUM ???

- 1) M-100, a spiral galaxy among Globular Clusters
- 2) M-31, a globular cluster among Spiral Galaxies
- 3) M-67, a spiral galaxy among Open Clusters
- 4) M-50, an open cluster among Planetary Nebulae
- 5) M-41, an open cluster among Diffuse Nebulae
- 6) M-109, a spiral galaxy among Elliptical Galaxies.
- 7) All of the Stars are within 3.3 Parsecs from the Sun
- 8) All of the listed Stars are 1st magnitude or brighter
- 9) All of the bodies mentioned orbit the sun
- 10) The constellations are all circumpolar from 43 degrees
 south latitude.....

CORRECTION

In the last issue of the "Spectrum", an error in Diane
 Borowski's phone number occurred. It stands corrected as
823-4037.

(115) CURRENT ASTRONOMY (115)

ROWLAND RUPP - EDITH GEIGER - AL KOLODZIEJCZAK
 How did the Universe begin? How will it end? What have
 space probes told us about comets, the Sun and Jupiter's
 moons? What is a black hole, a pulsar and a white dwarf?
 Is there intelligent life elsewhere in the universe, how
 will we search for it? Amateur Astronomers from the
 Buffalo Astronomical Association will present these and
 many more fascinating modern discoveries in man's oldest
 science. March 14 - May 2 (no class April 4)
 Canisius College - limit 24

Members - \$36 : Non-Members - \$43

Any questions? Call Rowland Rupp - 839 1842

NEW MEMBERS

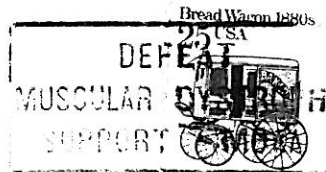
Robert & Cindy Rzoska, Luann Stipp, Geraldine Lupo & James
 McGuirl. -- WELCOME!!

* THE SPECTRUM *

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