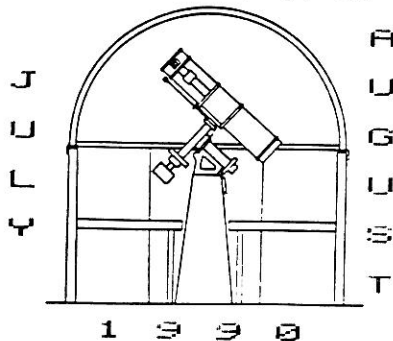


S U M M E R



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A TELEPHONE HAS BEEN INSTALLED AT BEAVER MEADOW FOR EMERGENCY CALLS AT NO COST. IT CAN, HOWEVER, BE USED TO MAKE DOMESTIC CALLS FOR 50 CENTS FOR THE FIRST 3 MINUTE AND 10 CENTS PER MINUTE THEREAFTER. PLEASE ABIDE BY THIS RULING. THANK YOU! THE NUMBER IS (716) 457 3104.

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SEPTEMBER/OCTOBER 1990
SPECTRUM DEADLINE - SPECTRUM DEADLINE

AUGUST 17, 1990 - AUGUST 17, 1990

OBSERVATORY & STAR PARTY REPORT

If you missed the Comet Austin star party, you missed a real party!!!! I have not had as much fun star watching since I was Outback at Alice Springs Australia searching for the Big Dipper! Sunday morning April 22 over twenty people, 7 scopes (one 12", one 13") lots of food (eggs sausages, home fries, and all sorts of pastries) and reasonable skies greeted those who came. What you thought we were fogged out? WELL who you gonna call? **THE OBSERVATORY! #457-3104!!** and you would have gotten the latest report on the weather, food, comet, and the fun report. While I'm on the star party kick, summer star parties are a lot more fun if you bring a telescope - any size will do! It is great fun comparing eyepieces, and determining the smallest, and largest usable scope size. (a 40" dob may be good for Deep Sky, but a really good 6" may prove better for planets on nights of really bad seeing). If the party is located at a light polluted sight, come ready for planetary, double star, and light pollution filter viewing. If the site is dark, it is fun to compare your scope with other's.

PUBLIC NIGHTS: help! HELP! John Yerger is stepping up advertising public night, so we need more **HELP!** especially on clear nights. If you have not volunteered, or think you don't know enough, but would like to know more about astronomy, give us a call 457-3104 and see if it is clear. July 21,22 is Beaver Meadow Nature Festival day. John Yerger will be on ch 17 trying to drum up visitors, so if the weather is good, we could see over 1000 people. So bring a scope, computer, photos, and join the party! p.s. this is a rain or shine event.

DONATIONS WANTED for the Observatory: We are looking for a variable frequency drive corrector, a 1 RPM reversi motor for the tangent arm of the Bell Aero Systems mount. In place of the 1 RPM motor, if someone wishes to build a stepper circuit, we can use a stepper motor. A microwave oven, and a shortwave radio would come in real handy.

STAR PARTIES, & OBSERVATORY EVENTS: all events are rain or shine.

June 23: Jack and Jayne Mack's Star Party. 1 Hunters Lane, Williamsville, tel 632-6210. Starts at 8:00 pm (not 7:00 as listed in May/June) Theoretical astronomy at its best. As usual there will be lively discussions, bring a scope, bring your filters, as this is a good light polluted test sight.

cottage #316 at Lime Lake by Machias. Starts at 1:30pm, they will supply the hot dogs, the drinks, and request you bring a dish to pass. Daytime activities include loosing at horseshoes. (unless you are on Rowland's team) **romantic** cruises around Lime Lake, tennis, and swimming (falling of dock).
home phone #839-1842
cottage phone #353-4636

July 7: Public Night at the Beaver Meadow Observatory. Dusk to 10:00pm. The **Nature Company** from the Galleria Mall will be advertising this one so come on out and give us a hand! **Remember call 457-3104** around 7:30 to get a weather report, if you get the usual message call back a little later!

July 14: Marilou Bebak's Star Party/ Bastille Day party at 4962 Mt. Vernon Blvd, Hamburg, at 7:00pm. Everyone is welcome, and Marilou has issued a special invitation to new members, and families, so bring a scope to show them the stars. If you are a new member bring your scope, and maybe we can show you some new techniques. Tel #627-2333

July 21/22: Beaver Meadow Observatory will be open 10:00am to 5:00pm & dusk to 10:00pm on Saturday, and 1:00pm to 5:00pm on Sunday. **HELP!!** We will be doing solar viewing, slide shows, computer programs, and public night viewing. Bring your scope, computer, photos, but most important **bring your enthusiasm**. Remember the more people the more fun! P.S. the Moon is new! and the skies are dark. John Yerger will be advertising this on ch 17. We may also get coverage from other stations, as well as the newspapers.

July 28: Carol Lorenc and Bill Smith Star Party. 184 Creek Road, Jamestown NY. Phone # 1-664-0841. Bill has promised to have his 20" Dobson completed for this gala event. They have DARK SKIES and good horizons so all we need is a clear night.
Bill and Carol will provide:
-Hot Dogs/Burgers, drinks, and request you bring a dish to pass
-Overnight accommodations indoor/outdoor camping on a 20 acre farm.
-Sunday breakfast for overnights
-Horses on site along with a friendly goat to blame the weather on.
-Saturday visit to a Llama ranch?!

-Great horizons, 20" Dob, 10" Dob, 8" f4, Big binos.
How to get there? follow map, and watch for star signs. Intersection at Busti is a little confusing, as it has a 5 road intersection. Take the 2nd left (Mill Street). The Large light brown building (Fire Department) will be on your left as you drive by. Go over a bridge with bright yellow guard rails, turn RIGHT immediately after bridge. Stay right. 1.5 mi is Wing Road, on your left DO NOT TAKE. Stay on Creek .2 mi more. The Red Barn/House/Garage on the Left is it. A detailed set of instructions can be obtained from Dan Marcus phone #773-5015, or from Bill. The Drive is 1½ hr from Buffalo and is not hard to find with Bill's comprehensive maps!!

August 4: Public Night Dusk to 10:00pm at the Beaver Meadow Observatory

August 11: Perseids' Meteor Star Party, at the Beaver Meadow Observatory, hosted by Dan and Melissa Marcus. 7:00pm till ? The Moon will not rise

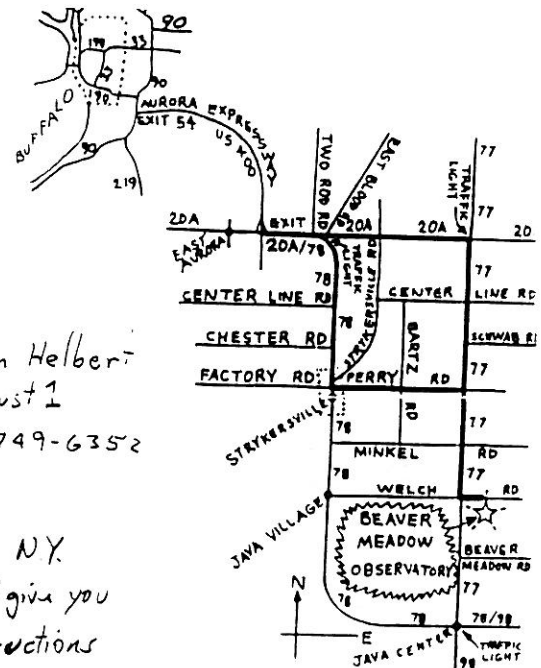
As usual bring your camera, lawn chair, and relax. Oh yes, as usual I may be needing help carting all my "junk" so feel free to give me a call if you have space.

August 18: Public Night at Beaver Meadow Observatory Dusk to 10:00pm. P.S. The Moon is new!

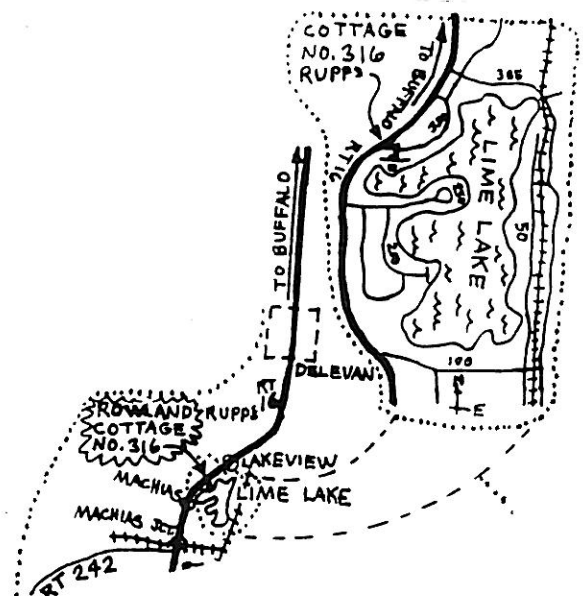
August 25: Bill and Carolyn Helbert invite you to their home in Monticello, N.Y. (approx. 5½hr from Buffalo). They have **VERY DARK** skies, and a 8" f7 Dob. This may seem a little far, but Carolyn and Bill really miss their friends in the BAA. They will supply all the Chili you can eat, and room on the floor (please bring your own sleeping bag!). They **DO** request that you RSVP by August 1. Their phone is 1-914-794-6352. Ask for detailed instructions when you RSVP.

See you soon!!!

Daniel R. Marcus

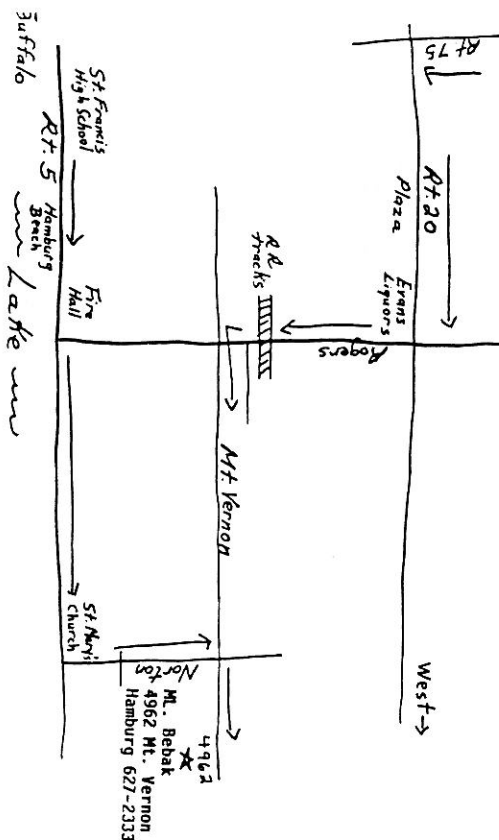


Bill & Carolyn Helbert
RSVP August 1
Tel 1-914-749-6352
Apt 4
Wood Ave
Monticello NY
and they will give you
Detailed instructions



From Buffalo: Take Rt 5 west. Stay on Rt 5. About 3 miles past St. Francis High School, turn left onto Morton. Then turn right onto Rt. Vernon. 4962 is 3rd house on right - blue.

From Thruway: Take exit 56. Take Rt 75 to Rt 20. Turn left onto Rt 20. Take Rt 20 to Rogers Rd. Turn right onto Rogers. Cross RR tracks & turn left onto Mt. Vernon. Follow Mt. Vernon to 4962 - blue house.



KELLOGG OBSERVATORY REPORT

Summer Sun Shows begin July 9th and run Mondays through Fridays from 10:00 am - 2:00 pm until August 24th. BAA member Nancy Adams will show you some spectacular views of the sun using the Museum's heliostat, 8-inch refractor with H-alpha filter, and the spectrograph. Stop by and observe sunspots and prominences during this peak cycle of solar activity, plus see demonstrations on light and solar energy.

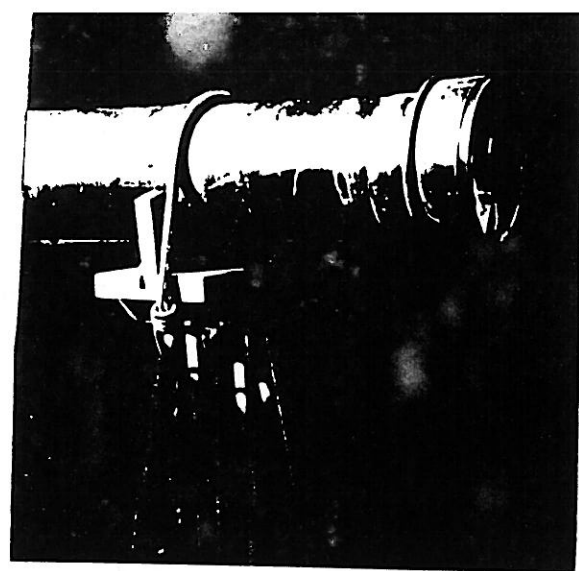
Special thanks from the Museum to Gene Witkowski, Conrad Stolarski, and Dan Marcus for helping out at the Museum's Telescope Fix-Up Day. About 100 people came with telescopes of all shapes and sizes with one thing in common - their owners couldn't figure out how to use them! Gene, Conrad and Dan made adjustments and sent everyone home with a usable instrument. The day was well-received, and we've had many requests to do another one. We'll try it again in March of 1991.

The average sunspot numbers for the beginning of 1990 are: January 179.4, February 128.4, March 140.8, April 139.8. Friday night observing in the Kellogg Observatory will resume in September.

ML. Bebak

ELECTION OF OFFICERS

THE BAA HELD THEIR ELECTIONS AT THE JUNE 8TH MEETING WITH THE FOLLOWING RESULTS - ROWLAND RUPP, PRESIDENT, ROBERT HUGHES, VICE PRESIDENT, LYNN SIGOURDSON, SECRETARY, STEVEN KRAGER, TREASURER. ALSO, THE FELLOW MEMBERS OF THE BAA, RECOMMENDED DAN MARCUS BE INSTATED AS A FELLOW, AND WAS, WITH THE APPROVAL OF THE BAA MEMBERSHIP.



Byrne 1877 4" installed on new Joseph Meek solar observatory. ~~Red~~ ~~Faded~~ Faded by 10° flat + image projected on screen inside had 26mm Plössl eyepiece - ~~had~~ image diameter 31 inches. Refraction excellent.

FROM

WALTER SCOTT HOUSTON

SPY and TELL

Congratulations to Ernst Both who is not only the Director of the Buffalo Museum of Science but is now the President of the Buffalo Society of Natural Sciences.

He traveled to Austria for a meeting at the end of May and was very fortunate, while he was in the country, to be able to attend the 40th Anniversary of his high school graduating class.

On May 21st, Ernst was seen on TV speaking before the Buffalo City Council for increased funding for the museum and Tiffet Farm. Representatives from other cultural institutions were also seeking increased funding.

Nancy Adams finished her first year at SUNY at Stony Brook where she received an A in astronomy and learned a considerable amount about blackbody radiation and cosmology. No doubt, Nancy and Jack Mack could have some live discussions on these subjects.

Fred Price went home to England in June, was back in Buffalo in July, and will return to England for another visit in August.

Jack Mack appeared on Channel 2 on April 24th, commenting on the successful launch of the Hubble Space Telescope and what it will mean to astronomers.

Rowland Rupp is getting in shape for the summer horses competitions. Good luck, Champ!

Rowland and Irene enjoyed a couple days during the first part of June in the Finger Lakes region with a visit to two wineries on their agenda.

Gene Witkowski has a new kayak 7' 10" long and 21" wide. He took the kayak, which is fiberglass, to a fiberglass shop and had the seat lowered about an inch, which helped the stability of the kayak by bringing the center of gravity lower. Gene has been practicing Eskimo rolling in the YWCA pool downtown, and has also been out in 3' waves in the lake during the windy spells.

In an article in the Buffalo News on June 7th concerning Jessie W. Sharp and his fatal plunge over the Horseshoe Falls, Gene had some comments on his own preparedness for safe kayaking.

astronomy presentation to 11 year olds in the 4H Club in Springville

Congratulations to Christopher Biggie who was one of 59 students named to the National Honor Society from the Orchard Park High School Junior Class. He is the son of Ken and Diane.

Marilou Bebak answers astronomy question calls for the museum and on occasions she gets some real doozies. A seemingly knowledgeable gentleman, who claimed to be well versed in Latin, was working on a difficult science crossword puzzle and had the following letters in place:

ATO A. He figured the clue (mares) must mean one of the seas on the moon. He had been unable to locate such a sea and turned to the museum for help. Marilou, also unable to find such a sea, informed the caller that the plural of mare is maria not mares and asked if he was sure his word didn't refer to a female horse instead. Lo and behold, Marilou had set him straight and he was able to fill in the blanks in the puzzle; mares EATOATS. Yeah for Marilou! Have any questions? Call Marilou.



Edith L. Geiger

AQUILA

Aquila is next

Divides the ether with her ardent wing
Beneath the Swan, not far from Pegasus,
Poetic Eagle.

AQUILA, the Eagle, is another constellation dating back before 1200 B.C. even though very little interest is given in the way of mythology and legend, there are some descriptions. On the Euphratean Uranographic Stone of 1200 B.C. it is supposed to represent the figure of a bird. The great spirit of Sumerian-Akkadian Eagle was known as "Alula", the symbol of the noon-time sun. It, perhaps, was just known among the Persians, Arabs, Greeks, Hebrews and Latins as a constellation representing and called the "Eagle."

Jove for the prince of birds decreed,
And carrier of his thunder, too,
The bird whom golden Ganymede
Too well for trusty agent knew.

translation of Horace's "ODES".



from Gladstone's -

It is said to have been in close connection with Aquarius, both being related to Ganymede, the Cup Bearer of the Gods. And-- that an eagle, the bird of Zeus, bore Ganymede aloft in its talons to a place among the stars in the sky.

An ancient constellation being apart of Aquila is "Antinous", which was written and published in an earlier "SPECTRUM", dated September-October 1980.

Aquila has been known as a bird of prey. The titles, "Eagle of the Winds" and "Soaring Eagle" are just a few among the many it has received by the ancients. In the region around Aquarius we do find aquatic creatures, so-- in this portion of the heavens we find the Swan, the Falling Eagle (Lyra) and the Swooping Eagle (Aquila).

Those constellations surrounding Aquila are:- Aquarius, Delphinus, Sagitta, Hercules, Ophiuchus, Serpens Cauda, Scutum, Sagittarius and Capricornus.



Darwin Christy

5 YEARS AGO - Summer star parties are a long tradition in the BAA. We hold them instead of regular meetings to give us a chance to see other members' telescopes, to have experienced members show us new objects and to socialize. In 1985 star parties were hosted by the Morrises, Claudia Bielinski, Larry Carlino, Brian Fallon, the Marcuses, DiLapos, Biggies, and Nelson Pinochet. And if that wasn't enough, we also scheduled two star parties at Beaver Meadow. If you're a new member I encourage you to take these opportunities to meet members and learn more about astronomy.

Don Botteron wrote an article for the SPECTRUM on the double star Xi Ursa Majoris, which is just now nearing closest approach of 0.9 arc seconds. He has been watching the relative motion of these two components for over twenty-five years. Other articles were on the nineteenth century father and son astronomers William and Charles Smyth, by Rowland Rupp, and on "Seeing Very Faint Stars" by Michael Idem.

10 YEARS AGO - Ten years ago star parties were held by the Brinks, Joe Provato, Darwin Christy, Ken Biggie and the Geigers. We also held a picnic at a park, an annual event in those days. Al Kolodziejczak wrote a thank you to all the members who supported the exhibit at Eastern Hills Mall that he organized. Exorbitant insurance costs prevent us from having exhibits of this kind now.

The SPECTRUM contained an article by Carl Milazzo on deep sky objects and a biography on Edith Geiger by that ubiquitous contributor to our publication, Anonymous. Congratulations were extended to Bob Hewitt's daughter Lynne who had just graduated summa cum laude and Phi Beta Kappa from Cornell. Also on the academic scene was the acceptance of Phil Cizdziel for a masters-doctorate program in astronomy by the University of Hawaii. Phil has been a frequent speaker at BAA meetings since.

20 YEARS AGO - Star parties in 1970 were held at the home of Irv and Ester Goetz, Les Stoklosa's summer home, Newstead Observatory and Camp Sprucelands. Little else was found in the four page SPECTRUM of that time except maps telling one how to get to the star parties. It did contain a very brief note that Kellogg Observatory had reached its fortieth anniversary and had had 500,000 visitors. Maybe someone on the Museum staff could tell us why the observatory is named "Kellogg".

25 YEARS AGO - More star parties. They were at Newstead, Camp Sprucelands, Ed Stoklosa's, Ernst Both's and Walter Semerau's. That was about it. If anyone doubts the efforts made by contributors and our editor, Darwin Christy, to the current SPECTRUM, I invite you to look at those from the past.



Rowland A. Rupp

FOR SALE

Meade - model 6600 - 6-inch f/5 reflecting telescope with tripod and equatorial mount - plus accessories. Asking \$300 or best offer. Also a Konica 35mm camera for sale. Call me or write- David Czuba
11555 Partridge Rd.
Holland, NY 14080



HOW SMART ARE YOU ??

Do you know how many navigational stars there are ???????
Do you know what an epicycle is ?
Do you know the meaning of SYZYGY ?

Answers will be in the next issue of the "SPECTRUM." !!!!

SUNSPOT GROUPS AND THEIR BASIC CHARACTERISTICS

by Peter O. Taylor

When Rudolf Wolf devised the Relative Sunspot Number in the mid-nineteenth century, he envisioned an evolutionary nature of sunspot-cluster growth. In 1938, M. Waldmeier of the Swiss Federal Observatory in Zurich, defined a group classification scheme which was based on this concept (Waldmeier, 1947). Today this system, known as the Zurich Classification, is employed by sunspot observers all over the world.

According to Noyes (1982), "All sunspots begin their lives as tiny pores no larger than a single solar-granule. They are created when a cluster of sub-surface gas carrying a strong magnetic field breaks the surface..." A pore may last only an hour or so, or may go on to become a huge group of spots many times the size of the Earth.

Invariably a new group first appears as one or more tiny spots without penumbra (the filamented structures which surround the dark, or umbral, portions of the spots). Such a group is classified "A". An "A" group is a unipolar, rather than bipolar cluster.

Visually bipolar groups consist of two or more spots which are oriented in an East to West direction. If a small group does show a bipolar structure, it is classified as a "B" group. Many clusters never develop beyond the "A" or "B" stage, and consequently their lifetimes are a few days at most. In spite of their insignificant appearance, these small activity centers are often quite numerous, and can make up a substantial portion of the daily sunspot count. Sometimes, and especially during the minimum of a sunspot cycle, these are the only groups which are present on the Sun's disk.

A few of the "A" or "B" type clusters develop rapidly into larger and more complicated systems. One of the first signs of impending greatness is a very rapid surge in growth shortly after the spot's initial emergence. Within a few hours, the group may have grown to become a "C" or "D" group. The most distinguishing feature of the "C" group is the appearance of a single penumbra. The penumbra can appear around the preceding (most westerly) or following spot; however, more often than not the penumbra appears around the leader.

On the other hand, the "D" group is characterized by penumbra around both preceding and following spots. Most "D" groups pass through the "C" stage, but often their growth is so rapid that they appear as "A" or "B" types on one day, and as class "D" on the next. Professor Waldmeier specifies a maximum length of up to ten heliographic (solar) degrees for this stage of group development.

A small fraction of the "D" clusters continue to grow and become "E" groups. Length (and to some extent, structure) is the difference between "D" and "E" groups. The "E" types must demonstrate a longitudinal spread between ten and fifteen

variation, is not considered.

Although "E" groups represent only a small percentage of the total number of clusters, a few of them continue to grow into the largest group of all, the type "F". Again length is the determining factor: their longitudinal spread must exceed fifteen degrees. Such groups can be spectacular! The spot count in one "F" type cluster alone can exceed one-hundred, and they can spread over areas of billions of square-miles. The lifetime of the "F" group is usually long; they often rotate back onto the visible disk for additional appearances.

All groups have one thing in common: their growth is far more rapid than their decay. Maximum growth can usually be recognized by a lack of further spread in longitude. And, when the numerous tiny spots that are characteristically associated with developing clusters start to disappear, it is most often a sign that the group has started to decay.

The decay process is similar for all groups. The smaller "C" and "D" types usually desolve into a rather long-lasting single spot with penumbra. If decay ends in a single spot it is deemed to be class "J" if less than two and one-half degrees in diameter, and "H" if its size exceeds this. The "H" group which remains from the decay of an "F" group is particularly long-lasting and may reappear for several solar rotations. Small spots may come and go around the edges of these groups.

The larger "D," and the "E" and "F" type complexes often desolve into two such spots. This stage of decay is classified "G." These clusters generally decay further into a single spot which is frequently the preceding member of the group. These in turn are classed as either "J" or "H" type groups, depending on their diameter.

The groups which we have described (except for types "A," "J" and "H") have visually bipolar structures. Occasionally a great group develops that lacks this structure. These clusters are also classed "H" even though they do not represent a decayed group. Usually they grow to be quite large, and may become great flare producers. More rarely, a small, unimpressive group which lacks a bipolar structure will occur, and it should be classified "J" even though it too did not come about through a decay process.

Note: In the "Modified Zurich Classification", "G" groups are included in the definition of classes "E" and "F," while "J" types are assigned to class "H."



INSTRUMENT NOTES

An important piece of equipment for any instrument is a reference plane surface. In the machine shop this reference surface is known as a surface plate. It is made of carefully heat treated steel, ground flat on the top surface and provided with a strong reinforcing ribs underneath to give extreme rigidity. It is checked for flatness by contact with a master flat. Toolmaker's dye is applied to the master flat and the two surfaces put in contact and lightly rubbed. High spots on the plate under test will show up as areas of purple dye. These high spots are carefully worked down to the reference level using a hand scraper. The surface is not perfectly continuous as we think of an optical surface. A microscope would show low spots. But it is the higher areas which contact the

measurements of height. And for precision assembly the work pieces are very flat and large compared to the minute irregularities. It is required that there be at least six high spots at the reference level for each square inch of the whole area. It must be a painstaking job checking the flat against a master and working down the high spots to the proper level by hand scraping. But it would even be much more tedious working three flats against each other as they must have had to do in the early days of the Industrial Revolution.

The reference plane surface in an optical shop is the optical flat. It is made of glass or other vitreous material and is much more precise than the surface plate of the machinist. The machinist's reference may deviate from flatness by a thousandth of an inch and still be adequate for its purpose. But an optical flat is checked against a master flat and is held at the Bureau of Standards (for example) to about a tenth of a fringe. Fringes are seen when two optical flats are placed in contact. A straight edge is laid along the fringes and a determination made of the number of fringes intersected by the edge. Each fringe represents a half wave length of light or about ten millionths of an inch.

In the early days of amateur telescope making in the twenties and thirties amateurs found that plate glass automobile windshields were of good optical flatness. They would cut up the large area into pieces of a size suitable for telescope diagonals. Then they would try the pieces in contact viewing them in the monochromatic yellow light from common salt heated by a candle flame. Sometimes they could pick out a set of three pieces which were deemed to be near enough to flatness to serve as diagonals.

Amateurs can make satisfactory diagonal flats by working pieces of glass (or better - Pyrex) against a lap that has been cold pressed against a sheet of plate glass. The lap is placed face up and the piece of glass moved very slowly back and forth across the lap surface. But making a large optical flat is beyond all but a very few advanced craftsmen. I watched a lady instrument maker in the workshop of the Observatory at Turku, Finland. She was figuring 8-inch optical flats. She had an 11-inch lap that had been cold pressed against a 12-inch master flat. She applied very little pressure to the flat being figured. The strokes were slow and deliberate, about two seconds to a cycle. The result was doubtless another fine optical flat. This expert craftsman makes many fine flats and telescope mirrors for the universities of Europe.

It is inspiring to contemplate that with dedicated effort and much skill developed by long practice a craftsman can make a work piece that is a little better than the tools used to produce it. This has been the steady upward rise in precision that has been a hallmark of the Industrial Revolution.

Ed Lindberg

Bruce Newman

Bruce is one of our more recent members. He was born in Rochester, and went to elementary school on Hoover Road from second to sixth grade. The family moved to Greece, north of Rochester, so Bruce attended junior high on Britton Road, and graduated from Greece Olympia High School, where he was on the track team and was a crackerjack of a runner.

An amateur astronomer who lived across the street from his home had a 12" motorized German equatorial mounted telescope, and tracked satellites. Bruce, then in junior high, became interested in astronomy as he observed the sky with his neighbor. They watched ECHO, which resembled a Mylar balloon, and tracked it when its orbit was decaying. His astronomer friend had a radio and listened for the time of satellite passings, which was exciting to young Bruce. The skies were much darker then!

After high school he went to the University of Pitts-

burgh, majoring in economics. While a college student was interested in student government and served on the student council. He started to work on computers and is involved with computers today. Receiving his degree, he went on to the University of Buffalo for his Masters in Business Administration.

After graduation, he subsequently became a budgetary analyst at Marine Midland. He was transferred to Albany for two and a half years where he worked on financial planning, and was involved in bank mergers. He came back to Buffalo, continuing for one and a half years with Marine Midland, working on profit planning systems with a rather large computer system. In 1974 he went from Marine Midland to Rich Products on Niagara Street. He held various positions and was recently promoted to Director of Administrative Services in the Bakery Division.

Two and a half years ago, Bruce and his family went on a trip to Europe. In a book store in London, his son, Greg, discovered a book on astronomy which Bruce enjoyed, and awakened his former interest in the subject. Arriving in Buffalo, he called the museum and asked Marilou Beba if they had a course in astronomy. They didn't have any but she told him about the BAA, and shortly thereafter he became one of our members.

His main interests in astronomy are deep-sky, double stars and sunspots. He has a 13" Coulter scope and has made an 8x50 finderscope using plastic pipe and procedural instructions in an article in the November issue of Sky Telescope. He also made a mount, and a solar screen for a solar filter.

Bruce is an ardent skier and finds great satisfaction in the time spent on the slopes at Holiday Valley. He went skiing at Lake Placid in 1982 where he had a bad spill and suffered a concussion. He, with a group, has gone skiing in Austria three times; twice at Kitzbuehl and once at Innsbruck. He found that there are so many stars visible in the Alps that one has a difficult time locating the constellations.

He is quite the traveler, having been to England, Germany, Switzerland, Austria, France, Liechtenstein, Luxembourg and Iceland, and having seen much of the United States. The family drove to Arizona where Bruce was awe-struck by the splendor of the Grand Canyon. A photograph he took the evening caught the shimmering beauty of the changing colors on one of Nature's masterpieces.

Bruce and his wife own a travel agency where they arrange group travel. It is called Travelogs International, Inc. and is located at 490 Center Road in West Seneca. Bruce takes care of the accounting and bookkeeping and his wife handles the travel arrangements.

In August, Bruce and his wife, Linda, nee Meister, who have been married twenty-one years. They have two children: Lauren, 18, soon to be a student at SUNY College at Fredonia, and Greg, 14, who is going into 9th grade this fall. Lauren did some theater work in high school, and Greg is a basketball and hockey player.

Bruce has put together a Messier Catalog printed on heavy stock, 8x11, and has also made a listing of meteor showers, both of which are very handy astronomical references. He is now trying for a copyright on an innovative overlay of different degrees for finder charts and telescopes and for use on Sky Atlas 2000.0 and Uranometria 2000.0. If he is granted a copyright, he will be selling the item through distributors.

Bruce has a very warm, pleasant, outgoing personality with a keen enjoyment of life. He has a well-ordered mind which has served him advantageously in the positions he has held and endeavors he has pursued. We are pleased to have him as a member, and know we will hear more about his various activities as time goes along.

Edith L. Geiger

SOLAR:- The Sun will appear to pass from Gemini into Cancer on the 19th of July, and then into Leo on August 9th where it will remain into September. An eclipse of the Sun will occur on July 21st. The partial eclipse can be seen from the northwestern part of North America and Hawaii. Totality will be seen from portions of the Aleutian Islands. On July 4th (Independence Day) the Sun will be at aphelion, its nearest approach to the Earth. Also, Jupiter will be in conjunction with the Sun on July 15th.

LUNAR:- The phases of the Moon will be Full (Buck) Moon on July 7th and Full (Sturgeon) on August 6th; Last Quarter Moon on July 15th and August 13th; New Moon on July 21st and August 20th; and First Quarter Moon on July 29th and August 28th. An eclipse of the Moon will occur on August 6th beginning at about 3:30 A.M.PST. The eclipse will not be seen from our area.

LUNAR OCCULTATIONS:- On August 18th the Moon will occult Jupiter.

LUNAR CONJUNCTIONS:- Uranus on July 7th and August 3rd & 30th; Neptune on July 7th and August 3rd & 30th; Saturn on July 8th and August 1st & 31st; Mars on July 16th and August 13th; Venus on July 19th and August 18th; Mercury on July 23rd and August 22nd.

PLANETARY EVENTS:- Mercury in superior conjunction on July 2nd; Neptune at opposition on July 5th; Saturn at opposition on July 14th; Pluto stationary on July 30th; Mercury at greatest elongation on August 11th - 27 degrees east; and Mercury stationary on August 24th.

METEOR SHOWERS:- Sagittariids- July 6th; Alpha Cygnids- July 14th; Phoenicids- July 14th; Omicron Draconids- July 16th; Capricornids- July 23rd; Alpha-Beta Perseids- July 27th; Delta Aquarids- July 29th; Alpha Capricornids- July 30th; Piscis Australids- July 30th; Iota Aquarids- August 6th; Upsilon Pegasids- August 11th; Perseids- August 11th;

August 12th; Epsilon Cygnids (fireballs)- August 20th; Iota Aquarids (southern)- August 20th; Omicron Draconids- August 22nd; and Zeta Draconids- August 26th.



Darwin Christy

CARTOON

On the back cover of the May-June 1990 issue of the "SPECTRUM" was a cartoon. The explanation now follows:- "A prophetic cartoon which appeared in 1910 in the magazine, "Kladderedsatsch", the German equivalent of the English "Punch". Its caption reads, "WILLIAM THE CONQUERER, An English Dream. Halley's Comet appeared in 1066 - when William the Conqueror took England. Halley's Comet is here today!" Four years later World War I began! One shudders to think what might happen when Halley's Comet returns in 1986! * (Our thanks to Kurt Erland for the cartoon which we hope comes through the press in good shape. Notice the evil look of Kaiser Wilhelm and the totally UN-astronomical appearance of the comet. eeb) Editor's note:- eeb are the initials of Ernst Both, the editor of the "SPECTRUM" at the time the cartoon has published. dpc.



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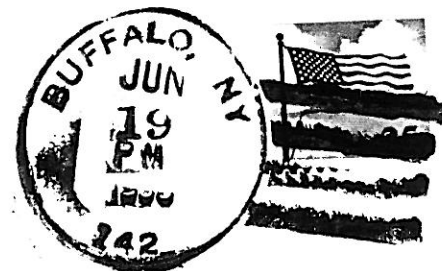
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BUFFALO ASTRONOMICAL ASSOCIATION, INC.

DARWIN CHRISTY, EDITOR
216 KOHLER ST.
TONAWANDA, N. Y. 14150



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Rowland & Irene Rupp
132 Burroughs Dr.
Snyder NY 14226