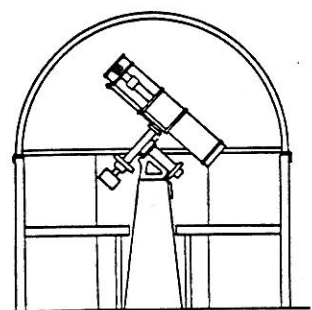


# THE SPECTRUM

J U L Y



A U G U S T

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BUFFALO ASTRONOMICAL ASSOCIATION, Inc.

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## SPECTRUM DEADLINE

FOR THE SEPTEMBER-OCTOBER ISSUE IS AUGUST 12TH!

## SUMMER STAR PARTIES

Summer is here, with the warm nights for the year. It's time for Star Parties! For those members who have never been to one, it's like an instrument section, observers session, study section, picnic and social event all rolled into one. It is a fascinating way to learn all aspects of astronomy and have fun doing

it. Everyone is encouraged to bring their equipment; charts, telescopes, eyepieces, computers, ect. There will always be people there who can show you new ways to use your equipment, help you collimate optics and finders. It is an excellent opportunity to learn from other members. So don't be shy about asking questions, as most people are flattered you asked! One other thing, you might check with the host to see if you can bring a dish to pass.

Please note: ALL PARTIES, and EVENTS this year are RAIN OR SHINE! MAPS ON PAGE 7

Saturday, June 24, starting at 2:00pm Rowland and Irene Rupp invite you to their cottage at Lime Lake, Martin Lots, #316. 839-1842 or, 353-4636

The Rupp's will provide meat and beverages; and ask that you bring a dish to pass. Although the skies are poor for deep sky viewing, bring your favorite solar, and planetary scope, and join the fun. There is also boating, swimming, horse shoes, and lively discussions.

Saturday, July 1, starting at dusk to 11:00pm. Public Night at Beaver Meadow. Help us show the stars to the public.

Friday, July 7, starting at 8:00pm. Hosted by Bill and Carolyn Halbert. (parents house) 79 Wilkshire, Lancaster. 683-6425 (684-3572)

The skies are reasonable, and the moon sets early, so we should have some nice views in their 8" dobsonian. They encourage you to bring a scope.

Saturday, July 15, 10:00AM to 5:00pm :: Dusk to 11:00pm. Beaver Meadow Observatory.

There will be a Nature Festival held at the Beaver Meadow Audubon Center. The observatory will be open for solar viewing during the day, and we will be having public viewing at night. If you have not tried our new solar filter, come on out and give us a hand. All help will be welcome, as we should get lots of visitors!

Sunday, July 16, 1:00pm to 5:00pm. Beaver Meadow Nature Festival continued!

Public solar viewing at the observatory. This is a great opportunity to introduce the public to astronomy!

Saturday, July 22, starting at 3:00pm. Hosts

Bill Smith, and Carol Lorence. Carol's place 7miles south of Jamestown, on Creek Rd. The house is the second on the left, south of Wing Rd. 484-2343 (664-0841)

The site has very dark skies, and a 10" dobsonian. Bill is also planning a trip to the Marshal Marts Observatory (30") which is only a few miles away. A corn roast will be provided; if possible, bring a dish to pass. There will also be hiking trails, swimming (clean pond) and horseback riding. If you wish to stay over and return in the morning, bring your sleeping gear!!! A more detailed map can be obtained by calling Bill at (1) 484-2343 and leaving a message on his machine.

**Saturday, July 29, sunset to 2:00am at Larry Carlino's.** 7118 Kinne Road, Lockport. 433-3432

Larry has dark skies and a 22½" dobsonian that he has made. Not only is he a talented observer, but he has tried just about all the accessories. So if you wish to learn a few tricks, and try out some equipment, this is the party for you. In addition to the 22½" Larry has a 11", 8", 5½" scopes.

**Saturday, August 5, starting at 3:00pm.** hosts Doris Koestler and Jack Empson at Beaver Meadow Observatory. 683-2970, 694-3814

Come see Beaver Meadow in the daytime! There are hiking trails, and we can do some solar viewing. Our hosts will provide the drinks, and hotdogs; and ask that you bring a cold dish to pass. The location of the shelter, and picnic benches and shelter will be posted on the observatory door. Now is your chance to get checked out on the scope! Public night to follow.

**Saturday, August 12, starting at 3:00pm.**


Dan and Melissa Marcus. 23 Riverdale Dr., Grand Island. 773-5015

Think Hawaii "91"! Join us for a Tropical Isle star party. We will have tropical finger foods, solar viewing, and swimming. Bring your own scopes and cameras; the darkroom will be open for black and white developing.

**Wednesday, August 16, sunset to 1:00am.** Hosted by Conrad Stolarski

The Beaver Meadow Observatory will be open for public viewing of the total eclipse of the moon. The starting time is 9:21, and it ends 12:56EDT. Anyone who can help by bringing a scope would be much appreciated. If you are interested, please contact Conrad. 683-5147

**Saturday, August 19, dusk to 11:00pm.** Public Night at Beaver Meadow Observatory.

 Daniel R. Marcus

#### PRESIDENT'S CORNER

A good time was had by over 50 members and friends who attended the May Dinner meeting. After the bill was paid, a small amount of money was left which was deposited in the treasury. Our speaker, Larry Carlino, gave an excellent talk and slide presentation on nebulae. Dr. Fred Price was the recipient of this year's College of Fellows award for his achievement on the publication of his book.

There will be a Board meeting on July 18 at 7:30 PM.

Dan Marcus has set up a great list of Summer Star Parties for July and August. Plan to include them on your busy list of summer activities. We also need your continued help of Public Nights at Beaver Meadow.

Due to the bad weather on June 9th, the June meeting was cancelled. An effort was made to contact as many mem-

bers as possible on the cancellation. If we were unable to reach you, my sincere apologies for any inconvenience. The members "Photographic Showcase" will be rescheduled for another meeting this fall. The election of Board Members will be held at the September meeting.

I would like to express my many thanks to:---

Joe Provato for serving the coffee at each meeting.

Ken and Diane Biggie for bringing the donuts.

Ed Lindberg for contacting the speakers this past year and the start of next season.

Bill Halbert for recruiting candidates to run for the Board.

Dr. Fred Price for requesting permission to use the auditorium and equipment for our meetings.

Bill Rogers and Rowland Rupp for organizing the study group.

And a specila thanks to my fellow officers, board members, editor and membership director for their suggestions, advice and support this past year.

Our next regular meeting will be on September 8, 1989 at the New Science Building Auditorium at Buffalo State College.

Have a safe, pleasant and enjoyable SUMMER.

Doris Koestler, Pres.




#### OBSERVATORY REPORT

With all the clouds this spring, the last two photographic sessions, and all the public nights have been cloudy. At least Conrad Stolarski, Bob and Brian Rzoska had the opportunity of watching a spectacular thunderstorm on June 3. They tell me no public showed; but the light, and sound show was worth the trip. The next astrophoto session will be Sept. 16, after public night.

Conrad Stolarski has volunteered to open the observatory to the public for the TOTAL ECLIPSE OF THE MOON on August 16. He will be needing all the help and extra scopes he can get. Note the umbra phase starts at 9:21EDT, start totality 10:20EDT, mid 11:08EDT, end totality 11:56, end umbra 12:56.

I am still looking for public night leaders, and assistants. Please give me a call if you wish to help out. Remember, you don't have to be an expert to help. My phone is 773-5015.

 Daniel R. Marcus

#### \* KELLOGG OBSERVATORY REPORT\*

**Summer Sun Shows** - The Solar Observatory and the Kellogg Observatory will be open Mondays through Fridays from July 5th until August 25th. Hours are 10:30 - 1:30. Astronomy assistant Dan Kujawinski and BAA member Nancy Adams will show you sunspots, solar flares, prominences, and the solar spectrum using the Museum's heliostat, refractor with H-alpha filter, and spectrograph. Hope all BAA members will stop by for a summer visit!

**Return to the Moon** - The Museum will celebrate the 20th anniversary of the Apollo 11 lunar landing on Thursday July 20th with special astronomy exhibits. (similar to Astronomy Day at Buff State). I will be calling those of you who have already signed up the first week of July to finalize plans. Anyone else interested in participating please call Marilou at 896-5200 ext. 214 as soon as possible.

**ICE AGE OBSERVATORY TRAINING** - Training sessions for the Ice Age Exhibit Observatory Program "Reasons for Seasons" will take place on Tuesday September 5th from 9:30 am - 12:30 pm, Tuesday September 5th from 6:30 pm - 9:30 pm, and Saturday September 13th from 9:00 am - 11:00 am. You need attend only one of these training times. (Later sessions are repeats of the first session.) After attending a training session, you may sign up to staff the program between Sept. 16 - Dec. 31. BAA help is needed...now's your chance to observe our active sun! The Museum is expecting over 250,000 visitors during this exhibit. Those of you who have already signed up will receive more info in the mail over the summer. Anyone else interested please call Marilou at 896-5200 ext. 214.

ML. Bebak

#### INSTRUMENT NOTES

Activities of the Instrument Section will be limited to impromptu meetings at various sites including some work at Beaver Meadow.

During the approximately three decades of its existence this group has been involved in some interesting activities. Our most ambitious project was perhaps building the club's first telescope to be installed in a new observatory building at Newstead, just east of the village of Clarence. The early meetings were held in Ed Stoklosa's basement. The mechanical group consisted of Ed Stoklosa, Frank Fronczak and Thad Topoczky with occasional help from the rest of us. The optical group consisted of Walter Semerau, Rudy Buecking and myself.

I made a grinding machine and ground and polished the 12 inch mirror. It was passed as very good by the others on the team. It was also given a zonal test and pronounced as very good by the area's leading telescope maker, David Broadhead of Mayville.

We collaborated on the mounting but were not completely pleased with the product. None of us were expert machinists.

What was missing was the help and direction of Bob Mayer, an expert machinist and pattern maker. Bob often expressed regret that he was unable to participate in the project due to the pressing demands of his active pattern business at his shop, "Precision Patterns," which made high grade patterns for makers of pipe fittings and other exacting clients. Bob later disposed of the business and was able to more than make up for his early absence by rebuilding our telescope and making it a fine piece of equipment.

With the passing of time our group has shrunk. We have lost some of our experts who used to give advice and encouragement. This is partly offset by the arrival of new members attracted by our club star parties and our public nights at Beaver Meadow.

When a new member is attracted to the club and finds enjoyment in its functions, he automatically incurs an obligation. As he acquires expertise it becomes a duty for him to lend his expertise to other members. If we maintain our equipment and new members acquire expertise and share it with other members we need have no fears for the future of the club or its sub-sections.

Ed Lindberg

#### The NFCAA SPRING MEETING

The spring meeting of the Niagara Frontier Council of Amateur Astronomical Associations was held at Hamilton on Saturday, May 6, 1989. There were some 40 plus delegates and guests present from 9 regional clubs. The meeting sessions were all held in the "Dragon City Restaurant and

Tavern", a small dining room of a conveniently located Chinese restaurant.

Sue Rugel of Syracuse presided over the business meeting. There was a roll call of societies present with a report of the past year's activities by a member of each society. One topic that received quite a bit of attention was the election of officers. The suggestion that the club officers of the club hosting the meeting act as council officers for that meeting met with only indifferent response.. Sue and Peter jointly arrived at the arrangement that Peter would preside over meetings held in Canada while Sue would preside at meetings in New York State.

Sue presided very capably over the paper session where short excerpts of papers were offered for possible presentation at member club meetings. Among the papers presented were, "Observing Sunspots", "Penumbra Lunar Eclipse", by Darwin Christy, "Observing the M-Objects" and "Optimum Features for a Personal Telescope." Invitations were extended by the North York group for "Starfest 1989" and by Sue for the coming "Syracuse Summer Seminar."

The well prepared banquet offered a choice of Chinese or Canadian menus. The after dinner speech was by Dr. Douglas Welch of McMaster University. The subject was "Infra-Red Astronomy for the Amateur Astronomer." Next fall's meeting will be hosted by the Niagara Falls group and next spring's meeting will be held in Rochester.

Ed Lindberg

#### BAA ANNALS

5 YEARS AGO - No meetings were scheduled during the summer months, but there were plenty of star parties. Hosts were: the Biggies, Claudia Bielinski (Membership Chairman at that time), the Macks, the Marcuses, Tristan DiLapo, Miro Catipovic, the Rupps and Clare Owen. Other meetings were held at Beaver Meadow, including one of the first astrophotography workshops run by Dan Marcus.

Carl Milazzo's article, "Double Stars with Contrasting Colors", resulted from a compilation he had done. He listed 74 stars with color and position information that should still be a valuable reference for double star observers. Double stars are great objects to observe because, unlike deep-sky objects, they can be seen despite light pollution. You can also estimate separation and position angle by a variety of methods, which adds to the challenge. Instead of just looking, you can also make some measurements. I can supply a copy of this list if you are interested in it.

10 YEARS AGO - Star parties in 1979 were held by the Brinks, the Christys and the Catipovics. We also held a picnic at Chestnut Ridge Park and took a trip to Toronto's David Dunlop Observatory.

This was the last SPECTRUM edited by Larry Carlino. It announced the appointment of Darwin Christy to that post, a position he has held continuously for the last ten years.

15 YEARS AGO - Different names, like Bill Deazley and Kermit Schlitzer, appear as star party hosts in 1974. We also had star parties at our old Newstead Observatory and at Beaver Meadow before we constructed our present observatory. We were all checking out the location and the observing conditions there before we made our commitment. Obviously we approved of what we saw.

25 YEARS AGO - More star parties. Hosts were: Paul Redding, Ron Clippinger and Ernst Both. We observed from Camp Sprucelands and Newstead in those days too.

Rowland A. Rupp



### SAGITTARIUS

\* \* \* glorius in his Cretian Bow,  
Centaur folloows with an aiming Eye,  
His Bow full drawn and ready to let fly.  
Creech's 'Manilius'

and Ovid wrote of it----  
Midst golden stars he stands refulgent now  
And thrusts the Scorpion with his bended bow.

Another of the zodiac constellations-----



The Archer is an old constellation dating back as far as the other constellations of the zodiac, perhaps near 4000 B.C. In Greek mythology the figure supposed to have represented the celebrated Centaur - Chiron being half man and half horse. The son of Saturn and Philyra, and married to Rhea. His wife being a jealous person, it is said that he changed himself to escape from her because of her nature.

Chiron, in his day, was famous for his knowledge in marksmanship, medicine and music and is said to have taught the use of herbs and plants to all mankind for medical curing of humans. Apollo, Hercules, AEsculapius, Jason and Aeneas were famous personages who numbered among his pupils who he taught as a noted educator.

The Arabs' conception of a part of this asterism was just an arrow, while another part as a herd of ostriches in the midst of their keeper.

His death has been ascribed to having received a scratch from his poisoned arrow from his own sheath. He was therefore honored by Jupiter, who had him placed among the stars.

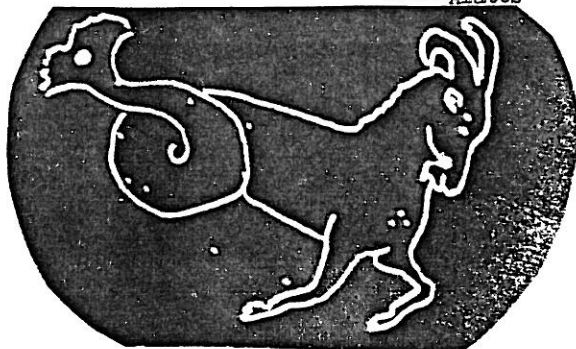
Another name it was sometimes called was, "Bull Killer", signifying that when the stars of Sagittarius started to rise in the east, they seemed to drive the stars of Taurus, the 'Bull', below the horizon.

Sagittarius can be found amongst the constellations Aquila, Scutum and Serpens Caput on the north; Telescopium and Corvo Australe on the south; Ophiuchus and Scorpius on the east; and by Capricornus and Microscopium on the west.

### CAPRICORNUS

The Goat  
Dim in the midst, but four stars surround him  
One pair set close, the other wider parted.

-----Aratos



The 'She Goat' is another of the zodiacal constellations which has come down through all ages with its form unchanged. It appears with the head of a goat and the tail of a fish. The identity of its shape as seen today is recorded on the Babylonian Boundary Stones, well before Christ. And--in ancient times the goat was referred to as the "Southern Gate of the Sun."

"Wild Goat" is the name the Chaldeans gave it according to Macrobius. Also, in ancient Greek mythology, Capricornus was considered the "Gate of the Gods" and believed that through its stars men's souls were released after death into the land of the hereafter. The star, Alpha, was celebrated among the ancients who regarded it as a good omen, and that it marks the southern tropic or winter solstice, this gave it to be known as "The Southern Gate of the Sun." The Greeks also had sometimes called the constellation "Pan", whence came the word 'panic.' The Romans regarded the constellation with great reverence, having shed its influence towards the birth of Augustus, believing it was under the special protection of Vesta. In ancient Egyptian lore, Capricornus was called the "God of Waters", being associated with the river Nile.

The tail representing that of a fish being attached to the goat became significant of the rains and flooding in the southern hemisphere and passing through Capricornus, giving us the zone called, "Tropic of Capricorn."

Capricornus can be found north of Piscis Australis and Microscopium; south of Aquarius and Aquila; west of Aquarius; and east of Sagittarius.

Darwin Christy

## STAR TREATMENT

For one brief and twinkling moment in 18th-century France, cats had their place in the heavens with the rest of the astronomical menagerie. The astronomer Joseph Jérôme de Lalande took a little here from the star formation Hydra and a little there from Antlia Pneumatica and made the constellation Felis. Although Felis is still on the books at the Paris Observatory, eventually its stars were returned to its more well-known progenitors.



### ANCIENT ASTRONOMER

Johannes de Sacrobosco (Joannes de Sacro Bosco) was born in Halifax, Yorkshire, England, in 1190 A.D. He was a mathematician and astronomer. In 1221, he entered the University of Paris. He became a professor at the university from 1240-1255, during which time his work involved a treatise, Sphaera Mundi, a paraphrase of a portion of the Almagest, an immense work on astronomy and mathematics compiled by Ptolemy c. 150 A.D. For three centuries Sacrobosco's work continued to be the most used of its kind. It was printed in 1472, and published by Erhard Ratdolt in Venice in 1485. It was frequently reprinted with additions of able mathematicians. He was also the author of a treatise, de Anni Retione, Seu de Computo Ecclesiastico, and a work on arithmetic, de Algorismo, which is one of the earliest treatises in which Arabic numerals are used. He died in 1255 while at work at the University of Paris.

Darwin Christy

### COLLEGE of FELLOWS AWARD

The fourth annual College of Fellows Award was presented to Fred W. Price at the May 12th Dinner Meeting "for distinguished lunar observations culminating in the publication of The Moon Observer's Handbook, Cambridge University Press, 1988.

Neptune was the topic of the March meeting of the Study Section. We plan to have a follow-up on that topic after the Voyager encounter. I was unable to attend, but had prepared some notes on Neptune's moons, which are given here. Thanks go to Dick Klemann for supplying material on Triton's diameter.

Neptune's two moons, Triton and Nereid, are about as dissimilar as astronomical bodies of the same classification can be. William Lassell discovered 14th magnitude Triton in the same year Neptune itself was discovered, 1846. Over a century elapsed before Gerard Kuiper discovered Nereid in 1949. The following table shows the contrast between these two satellites:

PARAMETER	TRITON	NEREID	UNITS
Distance	220	3500	K miles
Diameter	2350	170	Miles
Mass	1.9	1/2500	Lunar mass
Density	1.9	1.8	gr/cu cm
Brightness	+14	+20	Magnitude
Orbit			
Direction	Retrograde	Prograde	---
Period	5.88	360	Days
Eccentricity	0.0	0.75	---
Inclination	20	28	Degrees

Diameter, mass and density are all poorly known; Voyager's coming fly-by should refine these properties.

For example, the diameter of Triton is calculated by measuring brightness and estimating reflectivity. If its surface consists of moderately reflective methane ice, then a diameter of around 2200 miles accounts for its apparent brightness. More reflective ice, like water ice, means a lower diameter, around 1400 miles; dark hydrocarbons imply a larger diameter, in the order of 3000 miles. (I think the smallest diameter is very unlikely because if the estimate of Triton's mass is correct it would become the densest body in the Solar System by a wide margin.) If the largest diameter turns out to be right, Triton rivals Jupiter's Ganymede as the largest moon in the Solar System.

Little else is known about surface conditions. One significant observation is that Triton's brightness varies depending on where it is in its orbit around Neptune. The conclusion that Triton always presents the same face to the planet results. Like our moon, its rotation is synchronously locked to its period of revolution around its primary. One hemisphere appears to have a more reflective surface than the other, causing this periodic variation in brightness.

Triton has an atmosphere. Cruikshank, Pilcher and Apt discovered traces of gaseous methane on the satellite. Nitrogen was found subsequently. The density of nitrogen implied by its spectral properties suggests that Triton may even have liquid nitrogen in the form of a shallow ocean in its cold polar regions. Perhaps Voyager will tell us for sure.

One great puzzle that Voyager will not resolve is the cause of Triton's peculiar orbit. Unlike the other six major satellites in the Solar System, Triton's orbit is highly inclined to its planet's equator, and its direction is retrograde. Triton's orbital motion is clockwise when viewed from above the ecliptic; the rest of the Solar System moves counter-clockwise. Only a few minor moons, captured asteroids most likely, go backwards.

Decades ago Raymond Lyttleton suggested that, once upon a time Pluto was also a satellite of Neptune. The two moons interacted. Triton wound up with an unusual orbit, and Pluto was flung out of its path around Neptune to become the ninth planet. In part, this also explains Pluto's highly eccentric orbit.

Subsequent study makes this scenario improbable. If Pluto's original orbit had carried it close enough to Triton to reverse Triton's direction, the encounter would have thrown Pluto completely out of the Solar System. Had Pluto's orbit been sufficiently remote to remain in the Solar System, it would have been too far away to disturb Triton's orbit so drastically. The fact that Pluto is closer to the sun than Neptune at times has been cited as support for this interaction conjecture. However, Pluto's orbit is so highly inclined to the plane of the ecliptic that it appears impossible for it ever to have been close to Neptune's system.

Current thought is that both Triton and Pluto were planetesimals that formed during the birth of the Solar System. Neither of them swept up enough primordial material to become full size planets. Triton was gravitationally captured by Neptune, explaining its odd orbit, while Pluto roams the edge of the Solar System. (Is capture consistent with such low eccentricity for Triton's orbit? Perhaps being so close to a massive planet has circularized its orbit.)

An even more bizarre explanation of Neptune's moons' erratic behavior is that an unknown planet interacted with all three of them - Triton, Nereid and Pluto. The violence of the encounter gave Pluto an orbit that isolates it from Neptune, and gave the remaining moons unusual orbits. The unidentified planet? It's out there somewhere, too distant and too dim to be seen readily.

Being so near Neptune leads to one final controversy about Triton. Calculations by Tom McCord in 1966 indicated that Triton's orbit was decaying, and in a few tens of million years will reach Neptune's Roche limit where gravitational tidal effects will tear the moon apart. Future observers might see a glorious ring that matches Saturn's. Subsequently, Alan Harris found what he believes is an error in these computations, and has extended Triton's life expectancy to ten billion years. Good news for Triton, bad news for future observers!

After all this about Triton, what about Nereid? Other than that it has the most eccentric orbit by far of any moon, not much. Perhaps Voyager will have something interesting to report about this remote, frigid world. It has for many others in its historic journey through the Solar System.

Rowland A. Rupp

## MEMBERSHIP DUES

FAMILY - \$ 15.00

REGULAR MEMBER - \$ 10.00

STUDENT - \$ 5.00

SENIOR - \$ 5.00

SUBSCRIPTION ONLY - \$ 4.00

PLEASE MAKE PAYMENT TO - BUFFALO ASTRONOMICAL ASSOCIATION, INC. AND SEND TO DIANE BOROWSKI - 4096 LORING AVENUE, BLADELL, N. Y. 14219 OR YOU CAN GIVE YOUR DUES TO DIANE AT A MEETINGS.... CASH PREFERRED!!

**SOLAR:-** The Sun will pass from Gemini into Cancer on July 19th where it will stay until the 9th of August and will then pass into Leo and remain there into September. We will approach aphelion on July 4th, some 94,531,172 miles away. A partial eclipse will occur on August 31st, only to be seen from southern Africa and the Antarctica.

**LUNAR:-** The Moon's phases for July and August are:- New Moon in July will be on the 3-4th and the 1st & 31st of August. First Quarter Moon is on July 10th and August 9th. Full Moons are on July 18th (BUCK) and August 16th (STURGEON). And Last Quarter Moons on July 25th and August 23rd.

**LUNAR CONJUNCTIONS:-** July 1st, Mercury & Venus; July 5th, Mars; July 16th, Uranus; July 17th, Saturn & Neptune; July 19th, Jupiter; August 2nd, Mercury; August 3rd, Mars; August 4th, Venus; August 13th, Uranus, Saturn & Neptune; August 26th, Jupiter.

**ECLIPSE:-** A lunar eclipse will occur on August 16th. First contact is 7:23 pm EST; entering the umbra at 9:20; mid-eclipse is at 10:00; leaves the umbra at 10:56; and final contact will occur at 12:53 am EST on August 17th. The entire eclipse will be seen from our observational area.

**PLANETARY CONJUNCTIONS:-** July 2nd, Mercury & Jupiter; July 12th, Venus & Mars; August 5th, Mercury & Mars.

**Other Planetary Events:-** July 18th, Mercury at superior conjunction; July 28th, Pluto stationary; August 29th, Mercury at greatest elongation, 27 degrees east.

**METEOR SHOWERS:-** The July meteor shower is not a significant shower, the Phoenicids of the 14th. A good time for some observational data of these white, 4th magnitude meteors lasting about 15 days around the 14th. They radiate from 2 hours, 4 minutes R.A. at -48 degrees declination. What is not particularly known is their trajectory, type and hourly count. They are perhaps too far south for this data to be recorded from our area, but it should not deter ones ability to try to observe them. Other meteors for July include the Sagittariids of the 6th; Alpha Cygnids of the 14th; Omicron Draconids on the 16th; Capricornids on the 13rd; Alpha-Beta Perseids on the 27th; Delta Aquarids on the 29th; and Alpha Capricornids and Piscis Australids on the 30th.

In August the meteor shower is the renowned shower, the Perseids of the 11th or 12th. These reddish, 3rd magnitude, fast but short meteors radiate from 3 hours, 18 minutes R.A. at +58 degrees declination. Their duration is about 5 days around the 11th and range from 30 to 50 in an hours time. It is said that the comet Tuttle 1862 III is responsible for their being. This one shower is also an annual one and never seems to not give us an excellent display of streaks across the skies. Other showers are the Alpha Cygnids of the 2nd; Iota Aquarids of the 5th; Upsilon Pegasids on the 11th with the Perseids; the Iota Aquarids & Kappa Cygnids on the 20th; Omicron Draconids on the 22nd; and the Zeta Draconids on the 26th.



Darwin Christy

#### SPY AND TELL

A very fine article on Ernst Both appeared in the Buffalo News on May 2nd, praising his work as the Director of the Buffalo Museum of Science, while also giving a brief account of his extraordinary life. We are very proud that he is receiving the recognition he so justly deserves for making the museum a highly respected cultural institution.

Some of our members who attended the lecture at Buffalo State by Clyde W. Tombaugh (discoverer of Pluto), had their BAA membership cards autographed by the speaker.

In the Tonawanda News of April 21st, listing events of 25 years ago (1964), Orrin Christy's name appeared as the first place winner in the Western New York Science Congress finals at the Buffalo Museum of Science. Orrin, then a student at Tonawanda High School, presented a lecture demonstration dealing with "Studies of the Lunar

Cleft System and Measurement of Lunar Thermal Radiation."

Doris Koestler and a girlfriend spent a week in April enjoying a vacation in Florida.

Bruce Newman has an IBM computer in which he inputs the latitude, longitude and time of day, and can get any Messier object above 15° altitude. With a different program, he inputs a Messier list with the R.A. and Dec. and it will list altitude and azimuth of any Messier object for 1½ hours. He purchased Ted Zendarski's 13" Dobsonian.

George Dalton is interested in astrophotography. He has a small scope and is hoping for some fine photos using fast film. His daughter gave him an adapter for his camera.

Rosemary Paar has a 2" refractor and she uses it to check on sunspots. She records her findings on graph paper. Rosemary used to work at Gold Circle and with its closing, she enrolled at ECC City Campus in a vocational training class for banking. She attends classes for three days a week and spends two days a week at City Bank in Hamburg. Julius works at Bethlehem Steel, but has found time to paint his father-in-law's house inside and out. The Paar's daughter, Christina, graduated from Buffalo State in business studies. She works at CVS in Hamburg, and also in the Hamburg Library as a senior page.

On calling Ed Czapla, I found that he had just come up from his basement where he had finished taping paper to the cellar floor. He is using the paper as part of the figuring process for the size and length of the tube for the 17" Dobsonian he is building. Eventually he wants to put it on an equatorial mount. He hasn't set a date for its completion.

During July, Fred Price will be the organist for the services at Ascension Episcopal Church on Linwood Avenue.

Joe Provato is looking forward to his trip to England in August.

Jeff Pignatora is studying at UB for a librarianship. He hopes to finish it next summer.

Daniel Furmanek graduated on May 21st from UB with a B.S. in Technology Design Application. He is now working at UB with Dr. Gilbert Brink (BAA member) on thin film superconductors. Dan was a recent president of the UB Astronomy Club.

Ruth and Darwin Christy went on an enjoyable trip to Pennsylvania from May 15-20. They went to Gettysburg, where it rained for two days, and went on to Lancaster and stopped at Wilten Armitele, the pewter shop, and shopped in Amish country.

Orrin Christy is a very busy, busy fellow. He went on a business trip to Boston on May 31, June 1-2, and to Chautauqua June 5-9.

On May 24th, Ruth Christy received a Service Award for having served over 1000 hours in volunteer work in the gift shop at De Graff Memorial Hospital in North Tonawanda. Congratulations!

Dr. Clark R. Chapman, son of the late Dr. Seville Chapman (former BAA member) and Mary Chapman, has written a book with Dr. David Morrison entitled Cosmic Catastrophes. Clark and Dr. Morrison are two eminent planetary researchers. Clark's other book, Planets of Rock and Ice, has been available at book stores for several years. He has published over 100 technical articles. Asteroid 2409 Chapman is named for our distinguished former resident of Amherst who is a planetologist at the Planetary Science Institute in Tucson, Arizona.



Edith L. Geiger

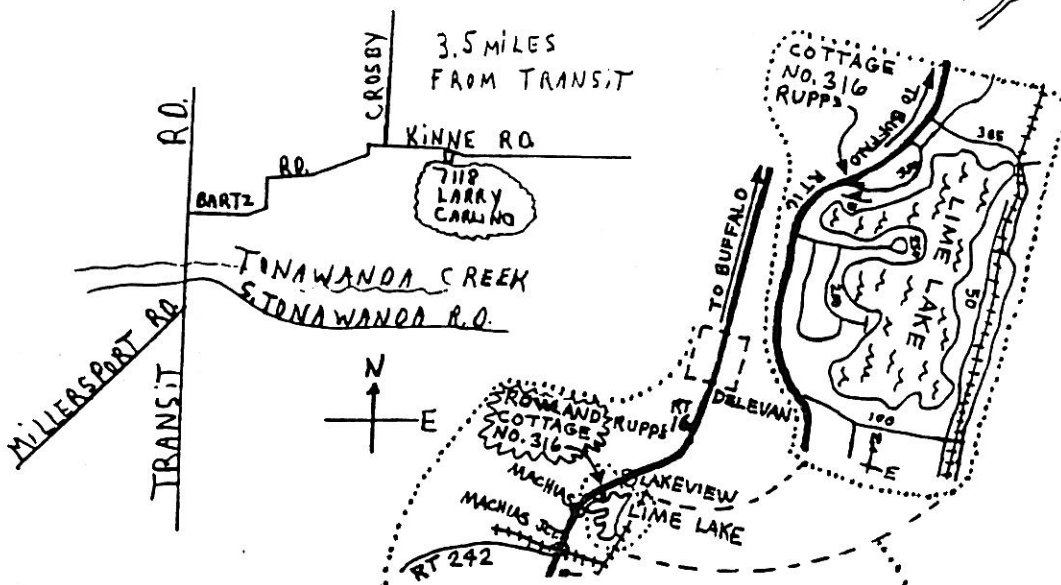
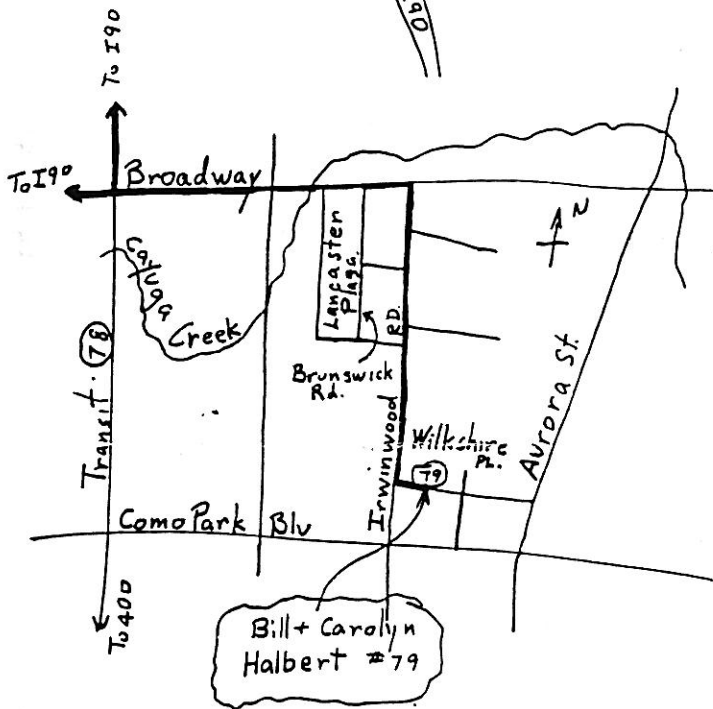
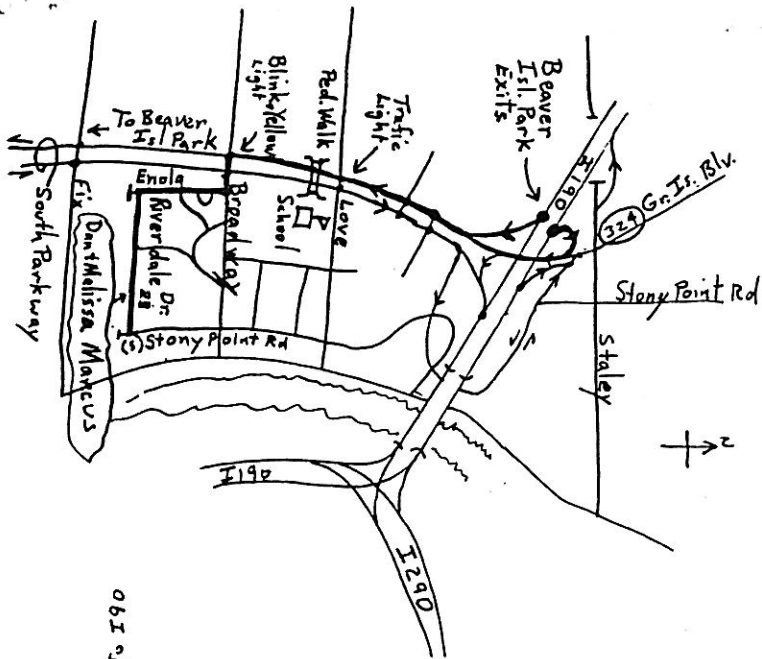
#### LIGHT POLLUTION

Who says that you cannot fight light polluters? For your information, it can be done through the courts. In the July 1989 issue of Astronomy magazine, pages 12 and 16, enjoy what has been done in Flagstaff, Arizona and what was done in Kosciusko County Circuit Court in Warsaw, Indiana. In the latter, it is not only considered to be light pollution, but also a "private nuisance", interfering 'with the darkness of their sky.'

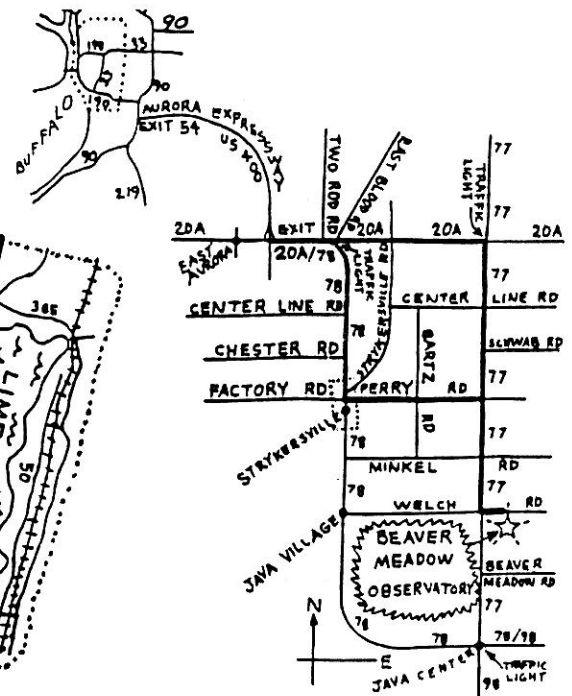
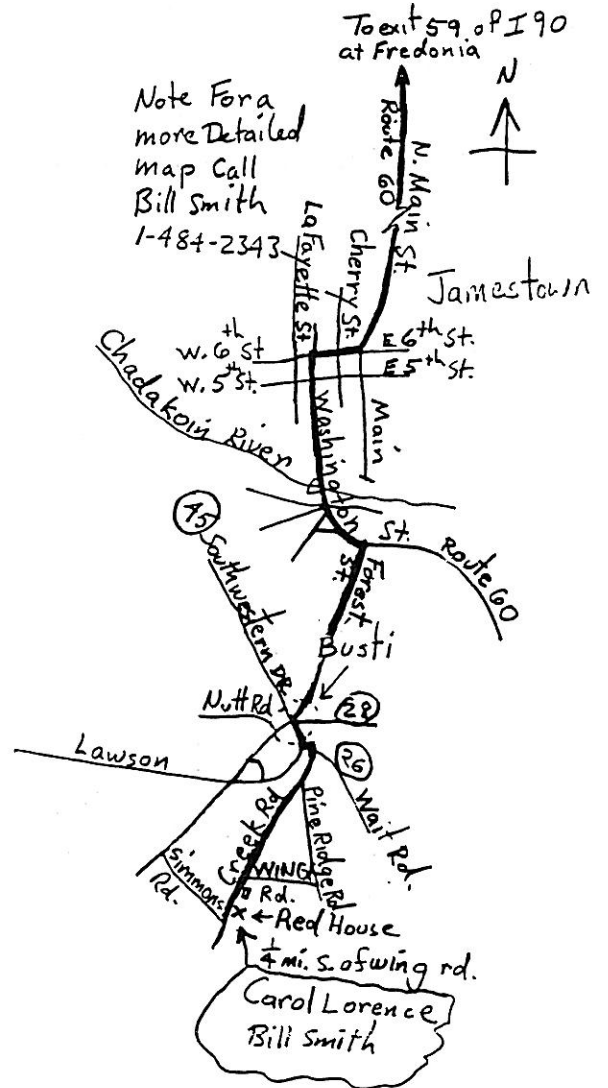


Darwin Christy





Note For a more Detailed map Call Bill Smith 1-484-2343



CAMILLE FLAMMARION

Camille Flammarion (1842-1925) was a French astronomer considered to be the greatest of French writers on astronomy. He was born in Montigny-le-Roi, Haute-Marne, on February 26, 1842, and was educated in Langres and Paris. He studied for the priesthood, and was also trained as an engraver, but decided on a career in astronomy.

He joined the computing staff at the Paris Observatory in 1858, at age 16, as assistant to Le Verrier. After four years he transferred to the Bureau des Longitudes where he stayed until 1866. In 1882 he set up his own small observatory and meteorological station at Juvisy-sur-Orge, near Paris, where he remained until his death on June 4, 1925, at age 83.

He was a prolific writer of technical books as well as many popular books on astronomy for the layman. His first books were: La Pluralité des Mondes Habites (1862; 36th ed. 1890), Les Mondes imaginaires et les Mondes reels (1865; 21st ed. 1892), and Les Merveilles Celestes (1866; 7th ed. 1881).

He made a study of the upper regions of the atmosphere during several balloon ascents which he described in Voyages en Ballon (1868; 20th ed. 1889). He was the founder, in 1882, of the Société Astronomique de France and its monthly periodical L'Astronomie. Flammarion gained considerable fame for original researches in astronomy, especially in connection with double stars, computing the orbits of several, as well as researching multiple stars and colors of stars. Other astronomical endeavors were the topography and physical constitution of Mars and the Moon. He made a map of the Moon and several accurate maps of Mars, and wrote two books on the history of Martian research. He also made observations of sunspots, and the common proper motion of the stars.

He held a strong belief that there were many inhabited worlds in the universe. Along another line, because the behavior of organic life is changed by changes in the seasons, and efforts were being made to find a parallel, he showed that in his region of the earth the flowering of

one class of plants and the return of the swallows, cockoos and nightingales seemed to be influenced by changes in the Sun's activity.

His many works include: Etudes et Lectures sur l'Astronomie 9 vol. (1867-80); Dieu dans la Nature (1867; 22nd ed. 1892); Contemplations Scientifiques (1869); Lumen (1872; 40th ed. 1890); Vie de Copernic (1872); L'Astronomie (1872); Histoire du Ciel (1873); Petite Astronomie (1877); Les Terres du Ciel (1877); Catalogue des Etoiles Doubles (1878); Francois Arago (1879); Les Etoiles et les Curiosites du Ciel (1881); Le Monde avant la Creation de l'Homme (1886); Les Tremblants de Terre (1886); Uranie (1889); Qu'est-ce le Ciel (1891); La Planete Mars et ses Conditions d'Habitabilite (1893); & la fin du Monde (1894). Also Astronomy for Amateurs (1904); Thunder and Lightning (1906); Mysterious Psychic Forces (1907); La Mort et Son Mystere (1920-21). His chief work was Astronomie Populaire (1880).

Flammarion was a great writer, famous lecturer, and popularizer of astronomy.

Darwin Christy

STELLAFANE

On Breezy Hill near Springfield, Vt., the Telescope Makers Convention will be held August 4-5-6. This year is their 54th convention.

S.A.S SUMMER SEMINAR

The Syracuse-Summer Seminar will be held at their observatory near Tully, NY. July 28-29-30. Observing - Camping - Paper Presentations - and a good meal.

ARTICLES! -----ARTICLES! -----ARTICLES

Articles are needed for the next few "Spectrums"!! PLEASE-help out the cause of your newsletter by writing something

Thank You!

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\* THE SPECTRUM \*

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