

THE SPECTRUM

Volume 1, Issue 3

HAPPY NEW YEAR!!

January/February 1999



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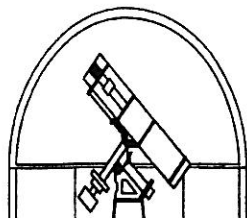
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PRESIDENT'S MESSAGE

First I would like to thank all the members for supporting our club and especially all the volunteers who are the backbone of the BAA. Without volunteers there would not be a club. There is a "core" of volunteers that are always helping out, no matter what the task is. This does not mean that we couldn't use more help. What I would like to see are more members being active with the club. Being active just doesn't mean volunteering. You could be active just by giving us some input. What could we do to have you be more active in astronomy? Let us know.

Sometime during the month of March, we will have at least two dates available to meet on a non Meeting evening (or even during the day on a Saturday) to pursue a discussion of future goals for our club. ANYONE interested in taking an active part in the shaping of the path or paths this club will take is encouraged to attend. Anyone who wishes to have their opinions known but cannot attend could send me a letter or call me. (the important thing is your chance for input) Also I'd like to invite any past members that have left for any reason to come and let us know how we can bring you back. The dates of these meetings will be published in the March/ April issue. Please feel free (new members too) to call in any questions you have in the meantime. I hope everyone is enjoying the winter skies.

Gene Witkowski
29 Delham Ave.
Buffalo, NY 14216

phone 876-4301
Email genewit@localnet.com



OBSERVATORY DIRECTOR NEEDED!!!

Step right up , don't be shy a position awaits you to reach the sky. That's right YOU can be the new observatory director!! So what does this job entail ? Mainly you will organize and coordinate public nights and observatory activities such as repair parties , public night speakers and to work with the Beaver Meadow Nature Center for coordinating joint activities. This is also a voting board position so you will be required to attend board meetings and write a observatory report for the Spectrum. Being observatory director DOES NOT require you to be at the observatory on every public function. Since Neil is the " equipment man " your job is basically the " coordinator ". DON'T DELAY SIGN UP TODAY!!!

While on the observatory topic , we also need public night volunteers. On each public night we need a speaker to provide a 20 to 30 minute astronomical talk, a telescope operator (s) for the club scopes and a greeter to direct traffic and encourage the public to sign the observatory log book. Public nights are great fun and every one is encouraged to participate in them. There is usually a cookout or pizza party before hand and all night observing for members only afterward. These are great opportunities for new members to learn observatory procedures and hands on astronomy. Reading text books is one thing but going out and learning constellations, telescope techniques and finding objects is much easier with someone who knows what their doing.



Officers

Gene Witkowski~ President
phone 876-4301
Bob Hughes~ Vice President
phone 833-2407
Steve Kramer~ Secretary
phone 634-7694
Bev Orzechowski~ Treasurer
phone 839-9109

Board Members at Large

Joe Orzechowski, phone 839-9109
Bob Titran , phone 774-2742
Bill Smith , phone 664-0841
Rowland Rupp, phone 839-1842
Tim McIntyre , phone 668-8322

Museum Representative

Dr. Jack Mack — phone 632-6210

Observatory Directors

Neil Dennis — phone 322-7596
Open Position

Membership Director

Joe Orzechowski—phone 839-9109

Spectrum Staff

Tim McIntyre — Editor
Bud & Ella Abate — circulation
phone 773-2398

A Look Inside One Eyepiece Box

by Bill Smith

Every telescope needs an eyepiece or several to be fully utilized. If expense is no object then simply buy the widest field of view eyepieces at a variety of focal lengths. Since this is usually not the case then there are some things to consider when developing an eyepiece set. Let's look at the eyepieces I use as an example.

If needed, eyepiece background information and definition of terms are available from many sources. One item, apparent angle of view, is the angle measured from your eye to the edge of the image. Think of a porthole (image seen in an eyepiece) -- viewing close to the porthole gives you a view so wide you have to move your head around to see everything; step back 5 feet and not only do you see the view through the porthole but a lot of surroundings (black inside of the eyepiece) too. This angle varies from 35°-45° for inexpensive eyepieces to 50° for Plossls, and up to 82° for Naglers. The 82° apparent view is difficult to see without swirling your eye around -- it's big.

I prefer to use the widest apparent angle of view eyepieces as they show the largest amount of sky for any given magnification. For example, a 40mm 65° shows the same amount of sky as a 55mm 50° eyepiece but at a higher magnification that allows objects to appear larger and darkens the view somewhat for better contrast with the background. Such eyepieces are often very sharp (and expensive).

Personally, the amount of time available for viewing is small due to our weather and other time constraints so I make the most of this limited time by using high quality eyepieces. All my scopes (20" f/5, 10" f/5.6 and 6" f/7) have 2" focussers. The low power views you get with 2" diameter eyepieces are nothing short of astounding. You do not need a lot of eyepieces. My eyepiece kit consists of the following:

- 40mm MegaVista in 2" barrel with a Lumicon Deep-sky light pollution filter on it for finding objects.
- 13mm TeleVue Nagler for medium power viewing.
- 6.7mm Meade Super wide angle with 1 1/4" to 2" adapter on it for general high power viewing.
- 3.7mm equivalent: 10.4mm TeleVue Plossl with 2.8x Klee barlow with 1 1/4" to 2" adapter on it for super high power viewing.
- 17mm TeleVue Plossl with O-III filter already attached for planetary nebulae finding/viewing.

You will notice from the list that I have the 1 1/4" to 2" adapters already mounted on the eyepieces. Nothing drives me more crazy than the constant swapping of parts. I swap eyepieces in and out a lot as it is. By keeping adapters in place I can just swap the eyepieces without having to find the adapter. This also minimizes the possibility of dropping things from the additional fumbling.

A quick glance at the middle 3 eyepieces below show they yield a rough doubling of the magnification from the previous. I don't think you need to have closer spacing of magnifications. Almost every object I view is seen using the first 3 eyepieces in the order shown.

continued next page eyepieces

AMENDMENTS TO BAA BYLAWS

The following change to the BAA Bylaws was passed by the Board at the October 8, 1998 meeting, and approved by the general membership on November 13, 1998. It adds the SPECTRUM Editor as a member of the Board of Directors, bringing its total membership to eleven.

Change as follows in Article 2, Section 1, Paragraph A:

1. Delete the first word "Three", and substitute "Four"
2. Add to the end of the paragraph: "The fourth shall be the Editor of the association's newsletter, THE SPECTRUM, if currently published. (See Article 2, Section 8 for the procedure for selecting the editor.)"

Also passed at the October 8th Board meeting was a proposal to change Article 5, Section 2 to increase the amount of money the Observatory Directory can spend annually without Board approval from \$50 to \$100. This change, which was inadvertently omitted from the last SPECTRUM, will be voted on at the January 1999 general meeting. A two-thirds vote is necessary for approval.

The reason for this change is that the original allocation was passed in the late 1970s, and the increase reflects the subsequent effect of inflation.

THANK YOU!

I want to thank Bill Aquino, Frank Chalupka and Neil Dennis for helping out when Genesee Community College classes came to the observatory during the summer non-credit course and the fall credit course. Neil also came to the Arcade campus and assisted with observing and a telescope lab.

————— Rowland Rupp —————

MEETINGS CANCELLATION POLICY

If, for any reason, (most likely snow or ice storms), there might be cause for cancellation of the meetings of the B.A.A., tune your radio to either WBEN (930) or WGR (550). Also if Buffalo State College has been closed due to inclement weather, so will the meeting of the B.A.A. be cancelled.

BEAVER MEADOW TELEPHONE

The telephone at Beaver Meadow, 716-457-3104, is for emergency use only at no cost. Local calls may be placed for a small charge - see the

collection box by the phone. This phone cannot make long distance calls.

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..... eyepieces continued from page 2

In chart form these eyepieces yield the following for a 6.1" f/7 scope. The power/inch applies to any f/7 scope.

Eyepiece	power	power/inch aperture	exit pupil	deg view	sky area seen
40mm MegaVista	27	4.4	5.7mm	2.58°	1
13mm Nagler	83	13.7	1.9	.98	1/7
6.7mm Meade	162	26.5	1	.52	1/25
3.7mm equiv.	292	47.9	.5	.17	1/230
17mm Plossl w/O-II	64	10.5	2.4	.78	1/11
Common 25mm 40°	43	a standard 'starter' eyepiece for comparison		.92	1/8

If you've ever looked through a 13mm Nagler you know what a huge view it has – but the 40mm shows 7 times as much sky! Just think how much easier it would be to find things with that wide view. Note the 3.7mm equivalent combo yields almost 50x per inch of aperture which is near the often quoted maximum useful magnification of 60x/inch. This 60 value is a guideline – at the Winter star party in the Florida keys we were looking at Saturn at over 150x/inch since the sky steadiness was so good. For Western New York, 30x/inch is often pushing it!

Also look at the comparison of a common starter eyepiece of 25mm focal length. It shows only 1/8th the amount of sky as the 40mm – it's no wonder beginners have a hard time finding objects! Note the 13mm Nagler yields more sky at twice the magnification (at a cost 6x that of a cheap eyepiece however).

EYEPIECE DETAILS

You will never see any object unless you can get it in the field of view. This is why I start with the eyepiece that shows a huge amount of sky. The 40mm yields a 2.6° view of the sky. The Deep-Sky filter is a mild light pollution filter that aids in detecting any object. This view also shows enough stars to be handy for star hopping as well as recognizing star patterns on many star atlases. Wide views seem to give you a better feeling of an object's place in our universe. Once the object is found you can then switch eyepieces for more detailed views.

My eyepiece of choice for most medium power viewing is the 13mm Nagler. This eyepiece gives a grand, well-corrected view at good magnification. For high power I can pop out the Nagler and pop in the 6.7mm Meade (with the already mounted 1¼" to 2" adapter). As the Nagler, this eyepiece has the widest possible apparent angle of view available (84°). If sky conditions and the object warrant I can pop in the 10.4mm TeleVue Plossl / Klee barlow / 1¼" to 2" adapter combination for very high power scrutiny.

The 17mm Plossl with O-III filter already attached is used for planetary nebula hunting. This gives a good view of many planetary nebulae. I have a separate O-III filter I can screw into the 13 Nagler, 6.7mm Meade or 10.4mm TeleVue Plossl / Klee barlow combination if more magnification is needed. As you can see I hate to put filters on and off.

As a side note, used eyepieces are a great deal as you can often save 1/3rd off the new price. My 40mm, 6.7mm, Klee barlow, 2" Deep-Sky filter and 1 of the O-III filters were so obtained. The 13 Nagler was purchased new on special with a Tirion Sky Atlas 2000 tossed in. The 2 Plossls were part of 'buy 3 for the price of 2' sale and other O-III (actually an Orion Ultra Block) was also a limited time sale.

Take time to consider what eyepieces you're using. Before you buy, attend our member's nights and try what everyone else has first!



Monthly General Meetings Notices

Meetings held in the New Science Building Aud. at Buff State

FRIDAY JANUARY 8, 1999 - 7:30 PM Getting Started Without Getting Lost In The Dark

Joe Orzechowski and Dr. Jack Mack present this introduction to navigating the night sky. To be presented in the planetarium. For all new members of amateur astronomy this meeting should hold a wealth of information. Don't miss this one.

FRIDAY FEBRUARY 12, 1999 — 7:30 PM National Weather Service

Meteorologist Bob Hamilton of the Buffalo office of the National Weather Service will give a talk on Western New York weather. So if you ever wonder why the weather can be so "wacky" around here this is "the man" to bring your questions to.

SYNTHETIC STARS

by Halina Biernacki

The glimmer of distant worlds against a clear midnight-blue sky is engaging and can hold one fixated for hours. In about ten years you may not be able to identify common stars and terrestrial based telescopes will find it difficult to see past Earth's atmosphere. This isn't a whim or a prediction, it's space age fact propelled by exact knowledge, developed just about fifty years ago, resulting in a distancing of ourselves from the night sky as our parents and grandparents saw.

Light pollution is not the only source of frustration to astronomy since industrialization set in. Smog is another contributing factor as is space junk. Progress has its benefits and its dark side. Development also makes demands. Technology cannot rely on drumming techniques, resulting in communication advancements which have spear-headed innovation. Earth based telephone wires were good ... but not good enough. Subject to atmospheric conditions often the connection was disrupted. In 1956 the first trans-Atlantic cables were in place on the ocean floor for wide spread commercial and private use, but this proved to be inadequate to handle the increasing volume of phone calls. Science looked up to the heavens, rather than down, for the next phase of communication technology.

Long before this problem was an issue Arthur C. Clarke, a British science fiction writer, in 1945 proposed the concept of communication satellites. His idea suggested constructing an international communication system using three orbiting satellites. To make this a reality many technical obstacles had to be overcome, such as: design a machine to withstand extreme heat and cold; long term power source; and lastly how to propel it. In 1957 the Russians successfully ushered in the first orbiting satellite, *Sputnik L*.

Three years later the United States launched its first communications satellite named *Echo*. It was an aluminum-coated gas-filled plastic balloon, 100 feet in diameter. It was placed in a low orbit and functioned until 1968 as the world's first passive reflector communications satellite, meaning that it bounced signals back to Earth, rather than actively transmitting them. In 1962 the U.S. hurled its first active transmitting communications satellite. It handled telephone calls and television broadcasts between Main, England and France. That same year the U.S. formed COMSAT, Communication Satellite Corporation to develop a worldwide network. Two years later eleven countries formed INTELSAT, International Telecommunications Satellite Organization, to create a jointly owned communications system and conduct scientific research. More than 130 nations now belong serving billions of people on every continent. The first INTELSAT satellite was thrust in 1965 and named *Early Bird*. Primitive by today's standards, *Early Bird*, could handle 240 phone lines or one TV channel at a time.

The 1970's new breed of INTELSAT birds revolutionized global communications. These machines could carry 6,000 phone circuits and were the first satellites capable of carrying color TV signals. The 1980's and 1990's send birds which were intelligent enough to handle up to 22,500 phone calls and three TV channels at a time. These machines are expected to last up to fifteen years, an appreciable advance from the *Early Bird* of 1965.

When *Sputnik L* was thrust into orbit, space was a lonely place. The Moon circled in silence and an occasional cosmic pebble or stone whizzed by. Currently 8,100 man-made objects, mostly space junk, crowd the heavens, in addition to the 773 working satellites that now whirl — and there's more on the way! In the next decade new lights will appear in the sky, other than cosmic stars. By 2008 there will be 1,528 birds in low, middle and geo synchronous orbit. The likelihood is that communications needs will escalate rather than diminish resulting in even higher numbers of space scrap.

Around 2001 development will start for ultra sophisticated high-bandwidth communications. These synthetic star clusters are also known as constellations or "broadband LEO's" that will make high-speed connectivity for video conferencing and Internet service available just about anywhere in the world. LEO stands for low Earth orbit at 100-1000 miles above where much of the data communications birds reside. MEO represents middle Earth orbit at 1000- 22,300 miles and is primarily used for global positioning systems. GEO or geo synchronous Earth orbit at 22,300 miles above with main uses in signal relay for broadcast, cable, direct TV and among other things. As a reference point commercial planes fly at five miles.

Communication to any point on the globe is all about bouncing a signal off a satellite from the caller on the ground to its final destination. The point above Earth where satellites seem to hover above a fixed point on the equator is about 22,300 miles in orbit. The advantage of GEO, as Clarke noted in 1945, is that satellites there appear stationary because their motion matches Earth's rotation allowing stations on the surface to send and receive signals without having to rotate in order to reach the satellite. What makes GEO's attractive, at high altitudes, is exactly what doesn't work for small mobile phones and pagers, whose signals are too weak resulting in heavy population at low orbit. The more LEO satellites the more they hear and see, and the more cellular phones can be sold to remote places on the globe. It's an eyes on the prize technology! Is it really easing the pain of living on Earth or complicating it?

Much interest is expressed in the low orbit *Iridium* satellite. Its name stems from the idea that iridium atoms are encircled by 77 electrons, and in its original engineering concept it was thought that 77 satellites in seven orbital planes of 11 birds each where to be launched. Later, the number was reduced to 66. The name stuck but still has an odd symbolism. The element iridium is found primarily on dusty debris of meteors.

How will these synthetic star grids affect Earth's magnetic field and life in general ...other than chit-chat? From the ground, increasingly new constellations at low orbit are visible on a clear night. Will these birds eventually cause new ways of calculating for telescopic viewing? The night sky will never look the same, as they multiply, so enjoy the celestial panorama while it's still relatively accessible.



Spy and Tell

by Edith Geiger

Last September, **Carl Milazzo** gave his slide show on different member's activities over last summer. He later realized that he hadn't mentioned that the trailer observatory was made by **Anthony Davoli**, a new member. Anthony has a 10-inch Meade telescope which he had at Star Fest. While there, he saw various interesting designs, and on arriving home decided to make the trailer observatory.

As a follow-up on the Nov./Dec. Spectrum, Spy and Tell item about **Cliff Stoll** and the BAA T-shirt, Cliff's wife liked the shirt so much that she wanted it for her own. Another shirt has been sent to Cliff.

Jerry Cook ordered 8 BAA sweat shirts and 12 T-shirts for her nephews and nieces, as she wanted to do something to support the "club" in memory of her son, Bruce, a former BAA member and a Spectrum editor.

On the very clear night of October 29th, **Rowland Rupp**, **Rick Pason**, **Ken Schlem**, and **Carl Milazzo** presented a program at the New Covenant Tabernacle in Tonawanda. About 60 children and their parents heard talks by Rowland and Carl, and viewed the Moon, Jupiter and Saturn in Ken's 22.5-inch telescope and Rick's 8-inch Schmidt-Cassegrain. Rick put his video camera on his scope and projected images of the Moon and the two planets.

In the last Spy and Tell it was noted that **Gene Witkowski** had, at that time, become a 30-gallon blood donor through the Red Cross Blood Services Buffalo Region. On November 3rd, a picture of Gene appeared in The Buffalo News with a similar announcement.

In The Buffalo News of November 16th, **Art Gielow** provided information and comments on the Leonid meteor shower.

Looking ahead, **Fred Price** and **Gene Witkowski** will be in England, August 6-15, 1999, where they will view the last solar eclipse of the 20th century on August 11th.

Bill and Carol Smith are enjoying their fabulous new home in Cherry Creek. It has remarkable and very creative features. Great care was also taken in planning pleasant surroundings for their dogs, cats, and horses. The horses even have a half-mile of permanent fenced pasture. The acreage and beauty of the rich landscape with trees and flowers make for a picturesque countryside.

Carol went to boot camp for the cavalry of dressage (fancy precision horse riding), but didn't enter any competitions this year. She changed her job from working at the Chamber of Commerce to working on applying industrial methods of governance at SUNY Fredonia. With concentration on many other projects, Bill has found little time for photography, but managed to enter a few shows. The trip to Starfest was fun even with cloudy nights. In the coming year traveling will again be on the agenda (perhaps to Iceland).



MINUTES OF BAA BOARD MEETING — NOV 4, 1998

Attendance:

Present: Gene Witowski (P), Bob Hughes (VP), Steve Kramer (Sec), Bev Orzechowski (Tres)[hour], Jack Mack, Bill Aquino, Joe Orzechowski, Bill Smith; Tim McIntyre, Dan Marcus, Frank Chalupka, Anthony Davoli - as members

Not Present: Rowland Rupp, Bob Tiran, Neil Dennis

T-Shirts/Sweat-shirts: G. Cooke would like 9 blue sweatshirts; need a minimum order of 25:

MOTION: for the order of 25: (JM, 2d BH) Y:5, N:0, Ab:1

Sales have netted \$250-300 of shirts. Raffle of sweat shirt at next meeting by Dan Marcus; also sales available at back table

Board & Voting: GW inquired about College of Fellows board member, JM explained. GW reviewed posting voting records of members; SK protested.

Memorandum from Bill Aquino: Re: "Funding Discrepancies for Observatory Roof Repairs", To: GW.

(two hours of unresolved, frequently acrimonious discussion on incidents of "donations" & reimbursement, leadership procedure

Observatory: BA announced he would not be available for reappointment as observatory co-director

DM reviewed observatory needs: camera for CCD eyepiece, problem with spur gear & worm drive, a reflex finder that DM would like to sell to the club.

Need Letter of thanks to a Jack Timmerman for donation of three telescopes.

SPECTRUM DEADLINE

The deadline for the **March/April** issue is

February 10 NO EXCEPTIONS

Send all submissions to Tim McIntyre

157 Dartwood Dr. Cheektowaga, NY 14227

E-Mail TMcint9320@aol.com Phone: 668-8322

Preferred format is typed or PC readable WordPerfect for DOS 5.1 or earlier, MS Word for DOS Scanning available

-- scanning available --

BAA ANNALS by Rowland Rupp

5 YEARS AGO - Channels 4's Mike Cejka was our speaker in January 1994. His topic was on solar cycles and the weather. In February we heard from Dr. Sevrin Zoledziowski on Nicolaus Copernicus. President Bill Smith was a prolific contributor to the SPECTRUM in this issue. He wrote an article on eyepieces that was carried over into the March/April issue. It's a good insight (pun?) into what was available in eyepieces then, and what to expect when they are used. He also reported on a remarkably clear morning of observing, starting at the ungodly hour of 4 AM. Finally, he presented an observing challenge designed to "get you out there" (at 4 AM?!). Observatory Director Dan Marcus reported that the addition to BMO was nearly completed, and that it was time to select a CCD camera for the growing observatory. He also promoted continuing the tradition established by Bob and Laurie Titran of having a picnic dinner preceding public nights.

10 YEARS AGO - Carl Milazzo got 1989 off to a good start with "Charts, Catalogs and Deep Sky Observing Technics" (Techniques?). Next month, new member Chris Krstanovic spoke on "The Use of the C.C.D. in Image Processing in Astronomy". We were in the preliminary stages of planning the expansion of our observatory under the auspices of President Doris Koestler. Carl Milazzo submitted some innovative preliminary sketches. These were not necessarily designed to augment the Beaver Meadow facility, but were more appropriate for another site. Al Kolodziejczak continued his series of articles on advice to a new member. This one dealt with star atlases. Darwin Christy also had his continuing series on constellations, this time on Gemini and Cancer. Other continuing articles in this SPECTRUM were: Ed Lindberg's Instrument Notes, Edith Geiger's Spy and Tell, and Rowland Rupp's BAA Annals.

15 YEARS AGO - In January 1984 our speaker was Canisius College's Dr. H. James Birx, who spoke on "Eternity and Infinity: Speculations in Cosmology". Member Claudia Bielinski spoke on astrology at our February meeting. She even cast a horoscope. An article by Rowland Rupp noted his impressions of color in double stars. It was in response to Carl Milazzo's query for information on the subject. Darwin Christy wrote an article on the method he developed to record the change in light intensity during the penumbral lunar eclipse on December 19, 1983. He used specially designed telescope, an electrical bridge circuit and strip chart recorder to obtain a lasting record of the event. Additional observation reports by Carl Milazzo and Michael Idem appeared as well.

25 YEARS AGO - In January 1974 we heard from Dale Hankin on astrophotography. Dale, a BAA member, had recently started his own magazine, "Modern Astronomy". Dr. Jack Mack made his first of many BAA presentations at our February 1974 meeting. His topic: "The Quest for the Black Hole". I guess we are still questing. Darwin Christy was our president then. According to Edith Geiger's Spy and Tell Darwin managed to fall 13 feet from a power company sky bucket. He survived. Dr. Fred Price submitted his observations of a transit of Mercury made at the museum of Science on the morning of November 10, 1973, along with other BAA members. The event ended at 8:20 that morning. Dr. Fred West's article explained "Spacecraft Launch Windows". Fred, a former faculty member at Buffalo State, was a member of the BAA.

35 YEARS AGO - I can't find the January 1964 SPECTRUM and the February issue is badly faded. If anyone has these issues and could make copies for the archives, I would appreciate it. I did make out that Ernst Both spoke on the lunar eclipse of December 30, 1963, and a panel discussion on catadioptric telescopes followed. Panel members were: Ed Lindberg, Paul Redding and Ron Clippinger. New chairmen of two special groups were made by the Executive Committee. They were:

Advanced Study Group — Ron Clippinger

Elementary Study Group — Paul Redding

The name of the Advanced observing Group was changed to the B.A.A. Observing Section.



RESULTS OF THE PERSEID, LEONID AND GEMINID METEOR SHOWERS OF 1998

We Western New Yorkers were lucky this year because it was clear outdoors during the peaks of these three meteor showers. Those of us who turned off the TV and traveled to a dark sky location, were treated to a natural fireworks display.

On the night of August 12-13 there was only 1 1/2 hours of darkness between the end of evening twilight and moonrise. About every two minutes a meteor was seen, with almost a quarter of them leaving a glowing train. They all moved swiftly with many leaving long trails and all different colors. The brightest one witnessed was about minus one in magnitude.

Trying to predict exactly what and when a meteor shower will perform, is less accurate than predicting the weather here on earth. For the Leonid meteor storm on November 17, 100,000 meteors per hour over the longitude of China was predicted. That didn't happen. Instead the maximum was at the longitude of the Atlantic Ocean where only 1000 per hour were reported. From Western New York, only 100 per hour were seen and the brightest one was a minus 4.

The Geminids reached their maximum on December 14 and 15th. Very few left a glowing train, with most having short paths which moved slowly. Most were either blue or white and the brightest was minus 2 in magnitude. Meteors were seen at the rate of one a minute. Unfortunately all three showers happened when the next day I had to go to work. If they were a Friday or Saturday event, I could have gone out to an even darker sight and stayed out till dawn. This would have enabled me to see many more including the best.

————— Carl Milazzo —————

Astronomical Happenings—TIME WELL SPENT IN ASTRONOMY

JANUARY 1999

Saturday	2nd	FULL MOON
Sunday	3rd	QUADRANTID METEOR SHOWER
Friday	8th	Mars 4 deg. N of Spica 2am in the SE
Friday	8th	BAA MEETING
Saturday	9th	LAST QUARTER MOON
Sunday	17th	NEW MOON
Thursday	21st	Jupiter 2 deg. N of Moon at sunset
Sunday	24th	FIRST QUARTER MOON
Sunday	31st	FULL MOON

FEBRUARY 1999

Tuesday	2nd	Regulus 3 deg. S of Moon 1:00 am
Sunday	7th	Mars 3 deg. S of Moon 4:00 am
Monday	8th	LAST QUARTER MOON
Friday	12th	BAA MEETING
Tuesday	16th	NEW MOON
Tuesday	23rd	FIRST QUARTER MOON
Tuesday	23rd	Venus .1 deg N of Jupiter in the evening sky DON'T MISS THIS ONE

JANUARY

Venus is barely visible in the evening twilight very low in the west southwest.

Mars is in the constellation Virgo, rises after midnight and is high in the south / south east in morning twilight.

Jupiter is high in the southwest at sunset.

Saturn is near the meridian almost due south at sunset.

There are two full moons in the month of January and in the month of March. No full moon in February. This pattern repeats on a 19 year cycle.

Mercury may be observed low in the southeast before sunrise during the first week of the month.

The Quadrantid meteor shower looks like a poor prospect with the full moon interfering.

FEBRUARY

Mercury visible last half of month low in western evening sky. Sets 1.5 hours after the sun.

Venus visible during evening sky low in the west. Sets 2.5 hours after the sun.

Mars rises before midnight.

Jupiter visible low in the west/southwest in the evening twilight. Sets about 3 hours after the sun.

Saturn visible in the southwest at evening twilight. Sets late Evening.

Starting on the 22nd look for a lineup of Mercury, Venus, Jupiter and Saturn to grace the evening sky. An unobstructed view of the western horizon is a must.

There is no full moon this month.

On the 23rd don't forget to catch Jupiter and Venus "kissing". A mere .1 deg. is all that separates them in the evening sky.

Observatory News

Although the observatory is closed to the public, it is open to any checked out member all year long. Bundle up and come on out on a clear winter night. There IS much to see. A GENEROUS donation was given to the BAA recently. Jack Timmerman from East Aurora donated a MEADE 10" LX200 go to scope, a MEADE 4 inch refractor and a home made 6 inch refractor. A VERY BIG THANK YOU on behalf of the BAA. The BAA would also like to thank former Observatory Director Bill Aquino for a job well done over the past year of public nights, along with Neil Dennis and the public night regulars: Tim McIntyre, Rick Pason, Tim Leary, Dan Marcus, Frank Chalupka and anyone else who put in the time and made the public night activities a success. Hopefully next years activities will give us more clear nights than the last.

MEMBERSHIP CORNER

Unfortunately our membership director has been very busy with work lately and hasn't had the time to write a little something, so I'll give it a go. It's my understanding that the BAA has gained a few members the past few months. Welcome aboard!! Although I don't have your names we will introduce you in this column next issue. To get the most out of the club, take advantage of the benefits the club has to offer. Once your checked out on observatory procedures you have access to all the telescopes and equipment there any time you want. How do you get checked out? You will have to demonstrate to the Observatory Director that you know how to use the equipment and operate the observatory. Helping out on public nights is the best way to learn the procedures as well as observational astronomy. You also have access to the wealth of books and video tapes at the Observatory

continued back page

BEAVER MEADOW OBSERVATORY

The observatory is open to "checked out" members any time. Call Neil Dennis (322-7596) to get checked out. Public nights are held on the 1st and 3rd Saturday nights April through October. There is "members only" viewing after every public night. Help is always needed and appreciated for our public events. You don't need a lot of experience to help out. Stop by and be an "observer" and see just how easy it is. The "vets" will show you how.

Library. We also hold members only star parties, where you can learn a ton of information and try out other peoples telescopes. We have the monthly general meetings at Buff State on the second Friday of the month from Sept. to June and of course public nights at Beaver Meadow Observatory on the 1st and 3rd Saturday of the month from April to October. Every one is encouraged to participate. You also get discounts on Sky & Telescope and Astronomy magazines and a bi-monthly newsletter. Quite a few benefits for a mere \$20. So take advantage, participate in activities and ASK Questions to get the full potential of your benefits. Any questions can be answered by contacting any club officer or board member. Finally if any member wants to learn the winter sky and take the 20 inch scope for a ride give me a call or drop me an e-mail. There is no quicker way to learn than one on one interaction.

Tim McIntyre phone 668-8322
e-mail TMcint9320@aol.com



FOR SALE:

TELEVUE 4.8mm NAGLER Like new in box. \$110. (BAA members price) Don't wait on this one. It goes on the Net in late January for \$130 and IT WILL DISAPPEAR!!!
Bill Smith 962-3412

CLUB T- SHIRTS/SWEATSHIRTS FOR SALE !!!

That's Right, you could be the proud owner of one of these T-shirts for \$ 15.00 . These 50/50 cotton blend shirts are black and contain the same logo that's on the front page of the Spectrum. The club also has sweatshirts with embroidered logo available in black or navy blue. The sweatshirts require a \$ 5.00 deposit and cost \$ 30.00 each. Help support and promote the Club with a touch of class.

Contact Gene Witkowski for more info.

FOR SALE :

Spirit Of Apollo 11 Poster — 25 x 18 in. photograph taken on July 20 , 1969 by the crew of the Eagle.....The 1st man to walk on the surface of the moon. Excellent condition \$20.00

Tasco Telescope — 60mm 1950's model, 304 power Astronomical/ Terrestrial Telescope with instruction guide and attachments. \$ 75.00

Space Related Life Magazines — 1954 -1969 Al Shepard Gemini Spacecraft, Gus Grissom, Schirra & Apollo 7, Neil Armstrong on the moon 10 issues prices negotiable.

CONTACT DOREEN (716) 877-5611

NEWSLETTER OF THE BUFFALO ASTRONOMICAL ASSOCIATION INC.

Tim McIntyre
157 Dartwood Dr.
Cheektowaga, NY 14227

Phone: 716-668-8322
Email: TMcint9320@aol.com



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Come Join The Festivities!!!!



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Make checks payable to "B.A.A." please. Price per person varies depending on menu choice below. Prices listed below include the required 15% gratuity. There will be a CASH bar. If you wish to contribute a dollar or two to the costs for the guest speaker, include that amount in your check. Thank You.

TOTAL NUMBER OF RESERVATIONS: _____

\$15.00	No. _____	Pasta Vegetarian
\$16.50	No. _____	Polynesian Chicken w/ Rice
\$17.50	No. _____	Double Pork Chops, Baked Potato
\$19.00	No. _____	10 oz NY Strip, Baked Potato
\$21.00	No. _____	14 oz NY Strip, Baked Potato

TEAR OFF THIS SLIP & KEEP LOWER SECTION.
PLEASE MAIL IN THIS SLIP WITH YOUR CHECK.

The B.A.A. Annual Dinner Meeting

DATE: Friday, March 12, 1999

PLACE: John's Flaming Hearth Restaurant

ADDRESS: 1965 Military Road, Niagara Falls NY

LOCATION: North on I-90 over Grand Island (\$.50 toll) to Niagara Falls. Take I-90 PINE AVE Exit (#22). Take Right onto Pine Ave. Take Left onto Military Road. John's Flaming Hearth Restaurant is **across from the Niagara Falls Outlet Mall** - Easy to find.

TIME: Beverages & Bar open at 6:00 p.m. - **Gala Sit Down Dinner** at 7:00 p.m.

CHOICES: *Pasta Vegetarian, Polynesian Chicken with Rice, Double Pork Chops with Baked Potato, NY Strip Steak with Baked Potato*

ALL DINNERS include: House Salad, Homemade Bread, Vegetable, Coffee, Tea and **John's Famous Pumpkin Ice Cream Pie** for dessert.

GUEST SPEAKER: *Phillip Evans*

"Astronomy in the Newspapers - 150 Year Perspective"

Entertaining (& sometimes humorous) views of astronomy headlines from around the world.

QUIET FACILITY!!!! Plenty of Parking!!!! Elegant and LARGE Banquet Room!!!!

SEE MAP on Reverse Side

What Will It Be Like This Year? Can We Possibly Come Up With New Surprises?

Bring a guest. For Reservations, Please Call Banquet Chairman Bud Abate 773-3232 or Banquet Helperbee Bev Orzechowski 632-7091. Your PAID reservation (cash or check) MUST be in by **February 26, 1999**. You can mail your check to Bud or Bev, NO CASH IN THE MAIL please.

BUFFALO ASTRONOMICAL ASSOCIATION, INC.
 c/o BEV ORZECZOWSKI
 125 ROYCROFT BLVD
 SNYDER NY 14226-4557

Place Stamp
 Here

Name: _____
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