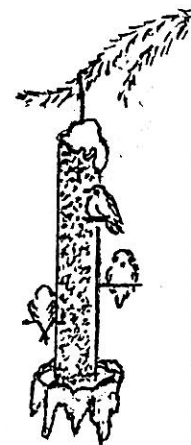
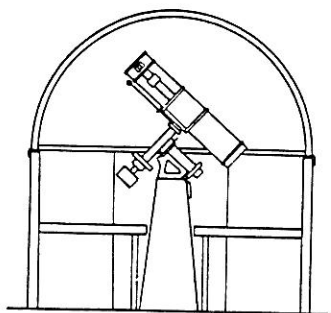


the Spectrum

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BUFFALO ASTRONOMICAL ASSOCIATION, Inc.
JANUARY-FEBRUARY 1993



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The telephone at **Beaver Meadow** is for emergency use only at **no cost**. However, for domestic calls, there is a box placed near the phone for which we ask that you pay **50¢** for the first three minutes and **10¢** per minute thereafter. Please, abide by this ruling. **Thank you.**

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"SPECTRUM" DEADLINE

The DEADLINE for the MARCH/APRIL issue of
The "SPECTRUM" is FEBRUARY 12th 1993.

>> MEETING NOTICES <<

JANUARY 8th: 20" automated CCD scope, Marshall Martz club & musical sky show presented by Tom Bemus.

FEBRUARY 12th: Get the most out of your scope: Observer's roundtable discussion, presented by our members.

Meetings are held on the 2nd Fridays @ 7:30pm, in the Auditorium of the New Science Building at Buffalo State College on Elmwood Ave. We hope to see you all there at these meetings. Bring a friend. As usual refreshments will follow!

In January Tom Bemus will present 3 topics: construction of an remotely controlled 20" telescope where viewing is done completely with a CCD camera; projects of the Marshall Martz club in Jamestown and a musical sky slide show. Tom is president of the Marshall Martz club, a versatile observer and active promotor of public astronomy. Let's give a warm welcome to Tom!

The February meeting will be a interactive roundtable presenting tips, techniques and personal viewing experiences by our members. Items to be discussed include sky orientation, preparing to observe, star maps, small and medium scope experiences (3-5" and 10-13") and city observing hints. A handout of ideas, tips and useful references will help you to get on the right foot for next year's observing.



WE WILL BE OBSESSED!

Within the next three months our club will be embarking on a new era of the latest in high tech telescope design.

As most of us already know our 20" Obsession telescope has been ordered and a February 1993 completion and delivery date has been established. Hopefully this exciting event will renew the interest of our members into observing again and take us through the nineties and into the next century. I would like to thank all the members that contributed to this very important step into our future. Just remember in a few months we will all know what it means to be Obsessed.

Thank you all very much!
Tom Nigrelli



PRESIDENT'S CORNER

1993: A NEW YEAR!

As we start a new year it's time to reflect on where we've been and where we want to go. It's time for resolutions. Progress takes place at the pace we allow it. I looked over my platform and there are several areas I'd like to try to bring to fruition. The underlying foundation is that astronomy should be fun and not made difficult. We are always open for suggestions to improve our meetings, help our members get more out of astronomy and for ways to broaden our public activities -- send them in. We should all resolve to share a few stars with others this year. Seeing the joyful faces of those who came out to Beaver Meadow for the lunar eclipse on Dec 9 warms the heart like no other way.

By March we will have a new 20" portable telescope and a working computer out at Beaver Meadow. An expansion room to the building is in the planning for next year. During next year I'd like to see completed a helpful new member's package, hands-on sky and equipment lessons, guided celestial tours to better acquaint one with celestial objects and expand the astrophotography sessions by using the other equipment available. I'd like to see a couple more star parties and a club trip. I'd also like to try a couple of public nights away from Beaver Meadow. If you can spare the time these projects are looking for a few volunteers. Yes, these are ambitious projects but they repay you back in terms of the satisfaction from helping others and your own enjoyment and personal fulfillment. Our future lies ahead -- let's have a great year.



Bill Smith

MEMBERSHIP CORNER

Please take a moment to look at the mailing label affixed to this issue of the Spectrum. Is there a "92" or a "93" in parentheses following your name? If "93" appears on the label, we would like to thank you for your dues payment and pat ourselves on the back for not bungling your membership application or renewal. If, however, a "92" is on your label, it may mean that we have failed to correctly record your dues payment in the membership database; please notify us at once so that we may correct this oversight. In the unlikely event that you have not yet paid your dues for the 1992-1993 membership year, the mailing label will also exhibit the dreaded "92".

Among other things, your paid up membership entitles you to full access to all equipment at the Beaver Meadow Observatory (including our new 20" scope when it arrives) and a one year subscription to the Spectrum which, I am sad to say for all you "92's", will expire with this issue. As we mentioned in the last issue, the annual dues for each of the membership categories are \$20 for Family, \$15 for Individual or Regular, and \$10 for Student or Senior Membership. You may renew your membership at the next General Meeting or by mailing your annual dues to either of us (or both of us if you prefer) at 125 Roycroft Blvd., Snyder, NY 14226.

Joe and Bev Orzechowski



BEAVER MEADOW OBSERVATORY *457-3104*

Observatory Combination Has been changed. If you are an Observatory user, and have not recieved the new combination, it is due to one of two problems. 1) You have NOT paid your dues, or 2) I have not been able to get a hold of you yet! Please contact me for the combination which will be given after varification of membership.

20" Telescope! ☺ We now have a 20" telescope on order for the Observatory! Best reason yet to get checked out to be an observatory user. We should have some fantastic public nights as well as club nights with this baby!

Star Party: Saturday March 20 - There will be a Messier

Marathon at the Observatory. We will be using the new 20" as well as the new computer for the first time! so come on out and join the fun! We will start an hour before sunset, and will be up all night. (a Messier Marathon is bset held in the spring because if you are good, you can observe all the Messier Objects in one night!!!)

Star Party #2: Saturday March 27 - Bill and Carol are having a messier marathon again at there place in Jamestown. We hope to try out the new 20", so come on down!!!! This is an all nighter, so bring your sleeping bag. Their farm is more like a petting zoo, so don't be afraid to bring the whole family!! This is great fun for beginners, where else can you get a guided tour of the whole Messier Catalog in one night! Time: come before dark on Saturday March 27,

Computer: The Geek squad will be meeting in January, the time and place will be decided at the December meeting. We need to realise some cash to get a monitor and vidio card. I am asking for donations twards the monitor, so we can free up funds for sheltering our new scope!

Daniel R Marcus



Observatory Wish List

The Observatory is looking for the following items:

Computer Parts, ie a B&W monitor and card, old mother boards, math coprocessors, hard drives, floppies, power supplies, printers, power supplies, you get the idea. Contact Dave Sepulveda at 694-5361 if you get any leads.

Multiple outlet with surge suppression

TV set, we have access to a play only tape player!

Star Atlases, Uranometria 2000 would be nice, or an old Nortons

Light Pollution Filters, or filters of any kind would be fun.

CCD Imaging equipment, some old surveillance cameras could be fun. Do you know any security firms who install these things??

Book Shelves

Hair Dryers, gets dewy out there!

5 1/4 Floppy disks!!, we need more to copy our shareware on to. Your company converting to 3.5"? let us know.

Since we are a not for profit teaching organization, any contributions to us can be tax deductible! In some cases you can get larger tax deduction, than you will by selling the item!

Daniel R Marcus



Observations

Decembers Lunar Eclipse had clear skies!!!! even though it was cold and windy Bob Titran and I enjoyed the view from Grand Island. Although we viewed it looking through Buffalo's light pollution, the eclipse seemed to be much darker than normal. The penumbral part seemed to be darker than in the past. When the Moon was eclipsed, it seemed to be more grey than redish.

Observation Report - Orion and Mercury

During a recent trip to Newark, DE, I brought along my 10X50 binos and a few astronomy magazines. I was hoping to find a clear patch of sky at some point during my stay, and on the night of December 3rd, the clouds parted. I took Phil Harrington's "Binocular Star Hop in Orion" from the January '93 Sky and Tel - here's what I saw.

I started out with M42, a faint colorless fuzzy which initially showed little detail through the hazy, well-lit sky. Despite the combined interference of the half moon and the hotel's parking lot lights, some detail did become apparent with further study. As the haze cleared, I was able to discern the dark lane separating M42 from M43. The observing literature I consulted implies that this would be very difficult under these conditions, but I found it to be far from impossible. The 2 components of Theta 2 were easily resolved during the clearest periods of my star hop.

Next I moved on to Iota Orionis and Struve 747. By bracing the binos against a wall, I was able to resolve the 2 components of 747, which are separated by 36". The stars 42 and 45 Orionis were a pretty sight, but I was unable to detect either the colors or nebulosity mentioned in the S&T article.

The open cluster NGC 1981 at the top of Orion's sword was an unexpected surprise. Through the binos it appeared as a line of 3 stars set against a soft background glow. With further study and clearing skies, another 5 stars were picked out. In contrast to NGC 1981, Collinder 70 (the cluster to which the "belt stars" belong) fills the field with bright points of light. I wasn't able to detect the color contrast between the K5 star SAO 132270 and it's neighbors, but 31 Orionis, another K5 star which is 1.2 magnitudes brighter, had a definite yellow-orange tint.

As thin clouds moved in, I tried for the final 2 doubles Harrington mentioned, Delta Orionis and Sigma Orionis. Though both double's components are separated by more than the 36" gap I had resolved earlier, these doubles are both made up of stars with large differences in brightness. The fact that I was unable to see either as anything but a single star illustrated how differences in magnitude complicates the observation of double stars.

What have I learned from this star hop? First, I learned what a large number of interesting sights can be found in one finderscope or bino field if you know where to look and what to look for. Research done ahead of time, either your own or a good "guided tour" is an essential part of observing. Second, I've gained a greater appreciation for binoculars as an astronomical tool. Their use goes well beyond quickly hunting down the Messier list. Finally, I know a lot more about what's to be seen in Orion. When (if?) the skies over Buffalo clear and the telescope comes out, I'll be able to revisit the dozen or so friends I made in Newark rather than spending a few minutes looking at M42 and then chasing down another showpiece object.

On the morning of December 6th, at about 6:30 AM, I was able to spy the planet Mercury. I had expected an elusive dot very low in the sky, but was surprised to see a bright spark of light a full handsbreadth over the horizon. I was so skeptical that I quickly (and noisily) set up the 'scope on my 3rd floor balcony and confirmed that it really was a planet. While I had been shown Mercury in a telescope before, this marks the first occasion that I've been able to locate and observe the planet on my own!

Bob Titran



David M. Fliss

Born on the south side in Buffalo, Dave attended School #69. He enjoyed his classes in science, and in 7th and 8th grades became interested in astronomy. Being an excellent student, he was awarded the Jesse Ketchum medal at graduation.

His high school days were spent at Hutch Tech at the time when it enrolled boys only. Dave took the college preparatory course, and valued the treat of going to UB to play with old computers. He studied drafting for two years, and continued his intense interest in science. His talents led him to writing and directing the senior play. Along with his other activities, he was a member of the color guard. He was inducted into the National Honor Society, and at graduation from Tech had the top math average and also the top science average, and was the Valedictorian of his class.

He went off to Rensselaer Polytechnic Institute in Troy, New York, for two years. While there he was a member of the astronomy club. Dave returned to Buffalo and graduated from UB with a B.A. degree in science, and continued on to grad school to receive his Masters in physics. His project was to make a radio telescope, so he constructed the aerial and put the radio telescope together with surplus military equipment. While he was at the university, he was a member of the astronomy club on the Main Street campus. When Larry Carlino graduated, Dave took over Public Nights at the observatory with sessions on Friday nights from 7-12. He put red lights in the dome, and a stereo sound system which played soft background music. In March 1970, he and two other students traveled to Kinston, North Carolina, to view the solar eclipse. It was Dave's first solar eclipse and he was greatly impressed, and took some fine pictures of the event. He first became interested in photography as a grad student.

After graduation he remained unemployed for a year searching out the job market, then took a temporary job for the Christmas season, at Brand Names on Main Street. He tried working for one summer at the state college Planetarium with grade school students, building projectors to which he added background music for slides. It was then back to Brand Names where he became assistant manager at the South Gate Plaza branch. He has continued to work for

Brand Names for many years, and is now in the service department on Broadway where defective products from Brand Names stores are returned to the manufacturers.

Dave made his first telescope with magnifying lens from Edmund Scientific and a cardboard tube, which proved to be good for viewing the moon. In college, he purchased a Celestron-8 which he continues to use. He has spent two years on Friday nights as a volunteer at the Kellogg Observatory where he uses his 4" refractor when there are many people on Public Nights. His main interests in astronomy include: optics, lunar, planetary, meteors and deep-sky.

He has been engrossed in computers for a long time, and is learning desk-top publishing, and does computer graphics, making landscapes, and a free range of art creations, and a computer graphics special program with fractals.

Dave enjoys music from the classics to New Age music with rock-and-roll in between. Besides his listening to, and appreciation of, musical works and styles, he uses background music for various projects, observing, and slide demonstrations, and wherever and whenever it seems fitting.

He takes pleasure in traveling around New York State to visit the State Parks. He has also traveled to Florida; Cape Cod for whale watching, and to Kutztown, Pennsylvania, for an astronomical convention. He prefers to drive rather than fly, so he can enjoy the wonders along the way. He delights in going to Beaver Meadow where he helps out on numerous occasions and, liking gardening, he has landscaped the back yard of his home to resemble Beaver Meadow; planting trees and fashioning ponds in a natural setting.

Dave has been a member of the BAA for two years, and has contributed much to our organization in a very short time. He is a highly intelligent and knowledgeable gentleman of mild manners, with a magnetic personality; one who appreciates the beauty of the world around him, and takes time to "smell the roses," and helps others to do the same.



Edith L. Geiger

HOW TO RATE A METEOR SHOWER

The following article is from the *Journal of the Astronomical Society of the Atlantic*, February 1992, written by Mike Boschat -

The standard by which all meteor showers are rated by visual observers is the 'ZENITH HOURLY RATE' (ZHR), which describes the number of meteors which an observer would count under perfectly ideal conditions. These are; perfectly dark skies far away from cities, cloud-free and transparent conditions, no moon, an unobstructed horizon and the radiant of the shower [that point from which the meteors appear to stream] located at the zenith, directly overhead.

Of course, no shower is ever observed under these ideal conditions. In order to normalize counts taken by observers with different viewing conditions, a few normalizing factors must be used. First, an observer must make a count. Next to calculate the ZHR based on less than ideal conditions, we do the following;

- 1) Determine the altitude of the shower radiant at the time of observation. A quick guess is probably sufficient.
- 2) Determine the magnitude of the faintest star visible during the observations. A star-chart showing a range of star-magnitudes is useful at this step.
- 3) Look up the correction factors for altitude and star visibility in Tables 1 and 2.
- 4) Divide the raw count of meteors per hour by each correction factor. The order is not important.
- 5) Voila! You have a ZHR suitable for comparison with other observers or historical records.

For example;- let us assume that 60 meteors are observed in an hour when the radiant is 30 degrees high, and the faintest star visible is magnitude 5.5. The tables gives correction factors of 0.59 for the radiant altitude and 0.40 for the limiting magnitude. Therefore the correct ZHR is

NOT BAD !

Table 1

Altitude vs. Correction

ANGLE	FACTOR
90 d.	1.00
70 d.	0.97
50 d.	0.83
30 d.	0.59
20 d.	0.44
10 d.	0.28

Table 2

Magnitude vs. Correction

MAGNITUDE	FACTOR
6.2	0.75
6.0	0.63
5.5	0.40
5.0	0.25
4.5	0.16
4.0	0.10
3.5	0.06



ASTRONOMICAL HAPPENINGS

JANUARY 1993

- 3 - Closest approach of MARS
EARTH at perihelion
QUADRANTID meteors (over 100 during the
peak hour)
- 7 - MARS at opposition
- 8 - GENERAL MEETING
Conjunction - URANUS & SUN
Conjunction - MARS & MOON
Conjunction - NEPTUNE & MOON
FULL (WOLF) MOON
- 10 - MOON at perigee
- 14 - Conjunction - JUPITER & MOON
LAST QUARTER MOON
- 16 - DELTA CANCRID meteors
- 17 - KAPPA CYGNID meteors (expect fireballs)
COMA BERENICEID meteors
- 19 - VENUS at greatest elongation (47° east)
- 20 - SUN leaves SAGITTARIUS and enters CAPRICORNUS
- 22 - NEW MOON
- 23 - MERCURY at superior conjunction
- 25 - Conjunction - URANUS & NEPTUNE (see the
article, "A Preview of Whats to Come.")
- 26 - MOON at apogee
Conjunction - VENUS & MOON
- 29 - JUPITER stationary
- 30 - FIRST QUARTER MOON

FEBRUARY 1993

- 4 - Conjunction - MARS & MOON
- 6 - FULL (SNOW) MOON
- 7 - MOON at perigee
- 9 - Conjunction - SATURN & SUN
AURIGID meteors (fairly easy to observe)
- 10 - Conjunction - JUPITER & MOON
- 12 - GENERAL MEETING
- 13 - LAST QUARTER MOON
- 15 - MARS stationary
- 17 - Conjunction - NEPTUNE & MOON
Conjunction - URANUS & MOON
- 18 - SUN leaves CAPRICORNUS and enters into
AQUARIUS.
- 21 - MERCURY at greatest elongation (18° east)
NEW MOON
- 22 - MOON at apogee
- 23 - Conjunction - MERCURY & MOON
- 24 - VENUS at greatest brilliancy
Occultation - VENUS & MOON (see informa-
tion below)
- 26 - DELTA LEONID meteors
- 27 - MERCURY stationary



A Preview of Whats to Come

The two aqua-coloured giants, Uranus & Neptune, are not often on people's minds. Being planets far out from the Sun in the solar system, and being of a small magnitude, it requires the use of a telescope or a good pair of binoculars to see them. As the Great Conjunction in 1980-1981 between JUPITER & SATURN, so is this conjunction between these two giants. Although this conjunction is not the same as the Triple Conjunction in 1980-1981, it will be the last time to be seen until the 23rd century, the same century that another triple conjunction will occur again, between Jupiter & Saturn. More often in conjunction than are Uranus & Neptune, the conjunction of Jupiter & Saturn are visible about every 19.85 years.

Uranus in its 84+ years of orbit about the sun is little more than an average lifetime. Neptune, however, takes 165 years to go around the sun, they therefore meet only once in about every 171 years. This means that we better get out there and observe this great event, as it will be the last time for us to see it. At this point in time, they are not far from each other, and are converging slowly. The actual time of conjunction is on January 26th 1993 when they should appear to about 1.2 degrees apart. These two frozen bodies were last seen together on September 9, 1821 before Neptune was even discovered. So—it should be a rare treat for those avid observing astronomers. It will even be observable through good binoculars, probably better than through a telescope, unless the telescope in use has a large field of view and of low power.

As we know, our solar system is like a giant clockworks, lying on a fairly flat plane. This causes periodic line-ups, either in conjunctions or occultations. Our ancient brothers observed these nocturnal events, holding nightly vigils, perhaps by drum-beating, ceremonial dances, even sacrifices, believing the Gods were about to descend to punish them for evil doings they might have committed. Today, the primary conjunction induced aberrant behavior involves blurry-eyed amateurs, even professionals, to tiptoe, not through the tulips, but down the driveways, dragging their telescopes behind them and then prepare the 'scopes, determined not to miss the spectacular show.

To say the least, conjunctions occur quite frequently. Some are monthly, some are annual and the rare ones are as long or longer than a century. The moon does pass by the planets at the monthly timing, and if the planes of the moon and object in conjunction are the same, we will have an occultation.

We are now approaching the spectacular event not seen since 1821 as previously established. At our present day we can find the two objects, URANUS & NEPTUNE approaching conjunction. They are seemingly at that point in conjunction now, but be patient, the official occurrence is January 26, 1993. They are not to be seen again until June 13th 2164, a good reason to get out and observe this once in a lifetime event.

They are low in the Southern skies in the constellation, Sagittarius. A very good record to make, would be a series of photographs, say one per week (starting today). This, I have done back in 1980-1981 when I recorded the Great Conjunction between JUPITER & SATURN on film. I didn't manage to get photographs daily, but I did manage to get a fairly good series, alluding to the number of cloudy nights we have to encounter here in our area. What I did manage to record on film was good enough to be copied by Dr. David Meisel of the State University College at Geneseo, which they do use on occasion in one of their astronomy classes. A good set of drawings would also be a nice thing to produce. Those drawings to be made from a good pair of binoculars or a very low power telescope having a wide field of view.

Darwin Christy



TESTUDO

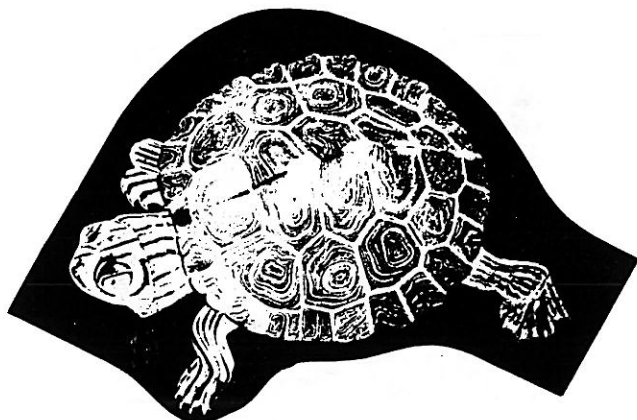
This ancient and almost unknown constellation was first reported by William Henry Smyth. He called it a new asterism of stars between Alpha Ceti and B Andromedae. He also said that it was at one time proposed as a new constellation between the Whale's Tail and the Cord of Pisces.

As Horace alluded to it:-

Decus Phoebi, et dapibus supremi
Grata testudo Jovis; O laborum
Dulce lenimen;

He doubtlessly had in mind a current story that the Tortoise-Lyre was placed in the skies being drawn near Hercules for the alleviation of his toils.

As turtles do, according to an Alphonsine illustration, it pictures the turtle with its legs being drawn in as if to protect itself from approaching dangers.



Somewhere in ancient Roman history, we find that they made a sort of covering or screen which a body of troops formed with their oblong shields. This covering was made by holding their shields over their heads, while standing tightly together. It took the appearance of the back of a turtle or tortoise giving them protection from enemy missiles coming in from above. Also, moveable structures were prepared with a sort of covering which, too, looked like the shell of a turtle forming a protection for the men who tried to undermine the defences of their enemies while manning these instruments of war. Perhaps, this is why Smyth decided to fill the area with a new asterism or constellation.

Darwin Christy



"The STAR of the MAGI"

"The STAR of the MAGI", a show which has become a holiday season tradition at Buffalo State College, will be featured in a series of weekend presentations at the Ferguson Planetarium in the New Science Building through Sunday, December 20th.

This production blends history and astronomy to examine events surrounding the birth of Christ, including astronomical occurrences which may have been interpreted by the Three Kings as omens warranting their journey to Bethlehem. Traditional music, narrative and special visual effects will accompany the show.

"The STAR of BETHLEHEM" will be shown at 8 P.M. on Fridays, 2 and 8 P.M. on Saturdays and 2 P.M. on Sundays. Admission is \$3 general; \$2 for senior citizens and for children under 12 \$2. A half-hour video precedes all shows. For more information, call the planetarium at 878-4911.

Art Gielow



5 YEARS AGO - January and February are inclement months around here so the BAA tries to feature club members as speakers to reduce long drives. In 1988 we heard from Rowland Rupp on "Extraterrestrial Intelligence" and from Darwin Christy on "Micrometeorites". Darwin has a distinct advantage in his field - he has had first-hand encounters with his subjects, whereas, I assure you, I have not.

The SPECTRUM carried an article by Walter Whyman, a Fellow of the BAA, on how a denizen of Mars might observe our planet. (Has anyone heard about Walter recently?) We also had an article by Richard Head, extracted with permission, from THE OLD FARMER'S ALMANAC, on changes in the solar constant over the centuries. Al Kolodziejczak contributed the first of two articles on "Advice to a New Member". Some material is dated, much isn't - especially the recommendation to consult with fellow members before buying a new telescope. Observations were reported by Gary Kielich, Carl Milazzo, Dave Bull, Bob Hughes and Marylou Bebak. Jack Empson announced the startup of the Computer Section of the BAA.

10 YEARS AGO - Keeping with our policy of having local speakers in the winter months, we heard from Shaun Hardy in January 1983 and from Ed Lindberg, Al Kolodziejczak and Beverly Botto in February. Shaun spoke on "The Classification and Origin of Meteorites", Ed and Al teamed to talk about their latest trip to Stellafane and Beverly showed her highly regarded space paintings.

Observatory Director John Riggs noted we had new equipment at the observatory. Rowland Rupp built an eyepiece defogger and "Sky Atlas 2000" was added to our inventory of atlases. Study Group leader Ken Kimble announced that Carl Milazzo would head up the discussion about quasars at the next meeting.

We had an article on "Red Dwarfs" submitted anonymously; another, on the lunar formation Nasmyth, was written by Fred Price. Edith Geiger wrote a profile of member Dr. Elton Rock. A reprint of a 1968 article by Orrin Christy, "Chances Are", appeared as well.

15 YEARS AGO - Three speakers, Jack Mack, Paul Schenk and Walt Whyman, all BAA members, were featured in January 1978. Their topics: Jack - Martian glaciers, Paul - lunar crater ejecta and from Walt - a surprise! In February we returned to the Museum of Science following an absence while they renovated. Phil Cizdziel reported on his recent researches, and we also perused BAA members' astronomical photographs, drawings and paintings on exhibit at the Museum.

Our old friend, Anonymous, had an article in this SPECTRUM too. This time he (she?) took us to the largest of the asteroids, Ceres. What would life be like there. Get a copy of the January, February 1978 SPECTRUM and find out. Darwin Christy was the subject of Edith Geiger's profile. Larry Carlino reported on his sky test of the famous Celestron 8-inch telescope. Excellent astrophotos of the Great Nebula in Orion and M31 in Andromeda were submitted by Tom Dessert and Mrs. Charles Meiss respectively.

25 YEARS AGO - In January 1968 Ray Manners spoke on "A New Theory of the Solar System". I wonder what that was. Kurt Erland, Anonymous' predecessor, I believe, wrote on the Cerro Tololo Observatory recently opened in Chile.

Fred Price spoke in February on the "Possibility of Water and Life on the Moon". Fred, what did you conclude? Darwin Christy wrote an article "Life in a Globular Cluster". It would be a veritable treat for astronomers who would see hundreds of stars as bright as Venus, some as bright as the Moon, and some of the closer ones exhibiting large proper motion.

Rowland A. Rupp



Ken Biggie is enjoying his new job as a substitute teacher. He has been teaching science, language arts, Spanish, health, technical education (formerly industrial arts), and math in the Orchard Park Schools. He is ready and willing to teach any subject.

The Sigurdsons are expecting another child in April and are very excited about the coming event. In mid-November, Lynn attended a conference in Denver of the American Society of Cell Biology.

Luann Szucs is singing alto in the 15 member choir at the Abundant Life Assembly of God Church in North Tonawanda. A quartet, of which she is a member, goes to nursing homes to sing for the residents, and also goes to the Teen Challenge Christian oriented home for troubled young men in Buffalo.

Michael Krasner took a wonderful solo trip to Australia for four weeks in August and September '92. He toured the whole continent. In his travels he visited the metropolis of Sydney, and viewed the darkest skies he has ever seen while he was at Kakadu National Park, 200 miles from the nearest town of Darwin. He saw spectacular sights in a star studded sky; the brilliant Southern Cross, Alpha Centauri, and all the 1st magnitude stars that can't be seen from Buffalo. What a great opportunity! Michael wanted to get as far away from Buffalo as possible, and went south 200 miles from Perth. He took a 10 mile round trip bus ride on which a couple and Michael were the only passengers. Much to Michael's amazement he found that the wife of the couple was from Grand Island. (Oh well, you can't get away from it all.) On his breathtaking vacation he also visited Tahiti, the largest of the Society Islands in the South Pacific, with its luxuriant vegetation. What a beautiful voyage to those faraway places!

Cathy Sepulveda is a Cub Scout Den Mother with Dave being an all-round helper. The meetings are held at their home. Dave, Cathy, and the children were in Sandwich, Cape Cod, for Christmas. At that time of year, the museums are beautifully decorated in a Victorian motif; those affiliated with Thornton Burgess, and the Green Briar Nature Preserve Jam Kitchen. A marvelous sight to behold.

Though Steve Kramer is still suffering from back trouble, he reports that it has stabilized and is easing to some extent.

Ernst Both was the TV star for the December 9 lunar eclipse, guiding television viewers and answering questions from the media.

Tom and Nancy Nigrelli had a delightful vacation in Cancun, Mexico, the last week in November, where they celebrated Tom's birthday. The sky was gorgeous both day and night, bringing exquisite sunrises and sunsets. Tom has been quoted as saying that they went to Mexico to sit back in the sun and let people wait on them. With all the work in which Tom has been involved in procuring funds and a grant, that the BAA might have a larger telescope, it was appropriate that he could sit back and enjoy a vacation with his wife.

LOST: Tom lost his scarf at the November meeting. It is black with white letters, E M S, on it. If anyone has seen this scarf, please contact Tom.

May the coming year bring you many happy hours.

Edith L. Geiger



ASTRONOMY CLASS

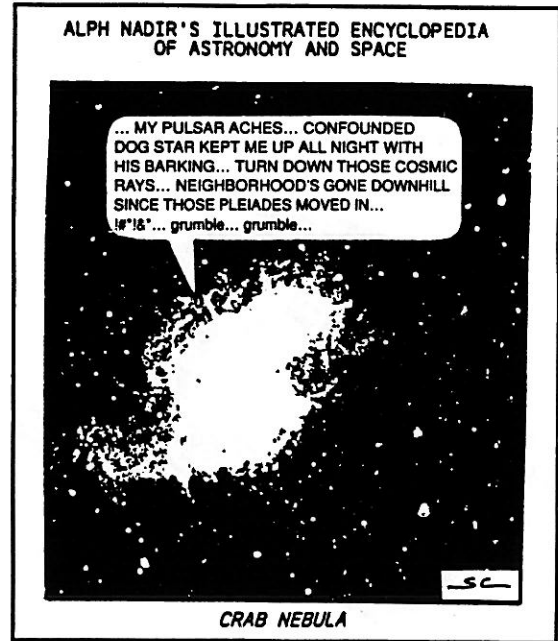
On January 6th 1993 (Tuesday) an Astronomy Class will begin at the Museum of Science at 7:30 P.M. For more information call the Museum at 896 5200 or Rowland Rupp 839 1842.



The following is from the ASTRONOMY NETWORK NEWS

Cosmic Corner

This comic is from Silas Cole of the Cheyenne Astronomical Society. Contact us if your club has a cartoonist who would like work to appear here.



Two Book Reviews

星座名所案内

"The Guide Book for Sight Seeing of Constellations"

After having read and reviewed this book, and with my limited knowledge in the Japanese language, I find the book to be for the amateur astronomer who might be interested in the constellations and who might be learning the Japanese language. Each page displays a constellation with the high-lights of what can be found in that region of the heavens. As in the constellation "Cetus", two objects are shown, the variable star "Mira" and the Messier object M-77. The authors have left ample space to make notes and jot down other objects of interest, possibly for future reference.

The authors, S. Morikubo and S. Nakano, are both Japanese amateur astronomers. Mr. Morikubo happens to be the person with whom I have had the pleasure of studying meteorics with over themany years we were doing our research.

The book is in hard cover and sells for 2300 Yen, about \$15.00 U.S.

Darwin Christy



The BAA's library at Beaver Meadow Observatory will soon be graced with an addition - a book on the "new cosmology". I received it unsolicited from the publisher on behalf of the club. Since the author's address is the same as the publisher's, I suspect they are one and the same. The book is THE ETERNAL UNIVERSE by Harold W.G. Allen. Orders, accompanied by our club discount price of \$9.72, may be directed to:

Reading this book is a little like listening to Ravel's Bolero. It starts quietly enough by reviewing, as many astronomy books do, the general state of knowledge about the solar system, stars, galaxies and cosmology. Then the pace quickens as the author introduces his own explanation of gravitation, the propagation of radiation, the creation of matter and its evolution through 400 steps, matter's worthiness and spiritual aspects. We learn that much of our perspective of the universe results from our alarming proximity to the "cosmic edge". When we reach the edge we face a kind of disintegration. Not to worry, we're unlikely to get there in the next decade or even the next century. At last comes a crescendo of numbers and concepts - cosmological numbers taken to four significant places - concepts that explain simply, cogently, a variety of bothersome issues a generation of astronomers has agonized over. And, abruptly, it ends.

I won't go into details and tell you about how flowing quanta may retard or enhance the propagation velocity of light, or of how "A", if it is worthy, progresses slowly up the evolutionary steps, how it combines again and again until, at step 133, it becomes a proton. Not until step 310 does it become a man but, amazingly, only seventeen more steps are needed to become a black hole. And there are still more steps to go to reach Perfection. I'll let you explore the mathematics that shows it takes light 40 or 50 billion years to travel 15 billion light-years from distant galaxies to us and how the time interval between reincarnations is determined to be 1100 years.

Doubters may reject some of these new ideas, but the author reminds us that many times in the past science stagnated while rejecting new, revolutionary concepts. I suppose we should think of Copernicus, Galileo and Newton - well, maybe not Newton - I believe Allen found he was a bit off the track.

Although Allen talks about the "new cosmology", really a new steady state cosmology, he arrives at it, I believe, by archaic philosophical methods. He ponders it abstractly, lacing his narrative with "may we not assume", "there is reason to suspect", "armed with the assumption". Nonetheless, he exhorts the scientific community to remedy misconceptions about gravity, light propagation and cosmic origin and to "not allow the instinctive prejudice of man to refute ideas simply because they require admission of past error."

Rowland A. Rupp

FOR SALE

Televue Wide field eyepieces for sale:-

24mm - \$125.00 or best offer;

19mm - \$110.00 or best offer

Ted Zendarski - 826-2488

LOST & FOUND

Two XL sweatshirts have been found. One is white with a Buffalo Bills monogram. The other is red with the Museum of Science on it. If these are yours; contact Rowland Rupp - 839 1842.....

B.A.A. GRAMS

Astronomy anagrams. Use clue to find astronomy term. Hidden term will be one or two words. Answers will be found in the next issue of the B.A.A. SPECTRUM.

1) POLICE LASERS

Moon - get out of my way! Buffalo, May 1994.

2) SLEEP AID

It's on the back of a Subaru automobile.

3) SO I TREAD

On your way from Mars to Jupiter.

4) A BLUER ONION

Just a tad away from the horse's head.

5) FLORAL EARS

What do you think preceeds an aurora? BN 1/93

Answers to Nov-Dec issue: 1) Andromeda 2) Betelgeuse
3) Constellation 4) William Smith 5) lunar phases

Treasurer's Corner

by
Steve Kramer



Balance, Sep. 1 | 3896.58

Debits

~ Spectrum print	72.00
" mail, &c.	44.03
Supplies	26.95
Expenses	4.90
Bank chg	4.90
Telephone, BMO	47.03
Insurance	229.68
~ Refreshments	108.29
NFAAA	314.65
~ Mag. Subscrip.	196.00
Group offers	118.80

Beaver Meadow	.00
New Scope	2500.00

Total | 3667.23

Credits

~ Dues	775.00
Bank Interest	9.87
~ Kitty	19.20
NFAAA	420.00
~ Mag. Subscrip.	196.00
Group Offers	99.00

Beaver Meadow	135.80
New Scope	280.00

Total | 1934.87

Balance, Nov. 30 | 2164.22

Article in the Future

"ANCIENT SAGITTA"

A profile of HAROLD JACOBI
"A SURVEY OF GLOBULAR CLUSTERS"
and many others

From the January-February "SPECTRUM"

CREATOR - GRIM REAPER

M-42 in Orion is perhaps the most beautiful object in the sky. The sight of this object always causes me to ponder on the subject of gravity, the weakest of all forces, has reached out tenuous arms and gathered in hydrogen from surrounding space. Slowly, over a period almost unthinkable, the hydrogen began collapsing. It came together unevenly, and blobs were formed. In the blobs gravity was also at work. It crushed the hydrogen more and more, until the atoms could stand it no longer. The nuclear furnace fueled with hydrogen gathered from space ignites. And so a star is born - but the role of gravity is not yet over. In fact, although it takes a back seat to nuclear, magnetic and electric forces, it still plays an important role.

The star that gravity has created will burn for eons. It will take hydrogen and convert it to helium. In so doing, it will remain in a balanced state for an eternity - but eventually the balance will terminate. If our star does not explode catastrophically and if its mass greatly exceeds that of our Sun, an event of

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* The "SPECTRUM" *

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startling nature will occur. The gravity that was Creator will now become Grim Reaper. Gravity may be the weakest force in the universe, but it will, none the less, crush the star into nothingness. I am not exaggerating! Once the star has been crushed to the gravitational radius, it will be compacted instantly into **zero volume and infinite density**. Not very likely you say? It can be shown mathematically that this is entirely possible. Not just mathematicians think it can be so - leading astrophysicists seriously discuss Gravitational Collapse.

Gravitational Collapse is controversial in its final stage. Many believe that rather than collapse to singularity, a star may be converted into radiant energy. This would be a relatively short-term process lasting only a few thousand years. This may be one explanation for Quasars. It would not only account for their tremendous energies, but also for the enormous redshifts. When one considers the possibility of not just a single star but clusters of stars, or even whole galaxies being annihilated, a Quasar becomes a most interesting object. Pulsars too may be a gravitational phenomenon. A single star rotating quickly may temporarily halt collapse converting angular momentum into radiant energy. A Pulsar following this model would be constantly losing energy. Its period of pulsation would be constantly increasing. This appears to be the case in most pulsars yet observed.

(Birth, death and conversion. Gravity, the weakest of all known forces, seems indeed powerful. **Think about it!**

Bill Parker
former BAA