








# the Spectrum

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JAN/FEB

BUFFALO ASTRONOMICAL ASSOCIATION, Inc.

1994

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## IN CASE OF EMERGENCY

If for any reason there might be cause for cancellation of the B.A.A. meetings, tune your **radios** to **WBN 930** or to **WGR 550**. Also, if Buffalo State College has been closed for inclement weather, so will the meeting of the B.A.A. be cancelled.

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## >> MEETING NOTICE <<

**JAN 8th:** Mike Cejka on Solar cycles and the weather

**FEB 12th:** Dr. Sevrin Zoledziowski on Nicolaus Copernicus

Meetings: 2nd Fridays @ 7:30pm Jan-June and Sep-Dec.

Location: New Science Building Auditorium at Buffalo State College on Elmwood Ave.

We hope to see you all there at these meetings.

As usual refreshments will follow.

In January, Channel 4's meteorologist Mike Cejka will talk on how the solar cycles affect our weather and visual astronomy.

Our February speaker, Dr. Sevrin Zoledziowski, will talk on the life of Copernicus and feature how his work challenged existing theories on the formation of the universe.

Bring a friend and warm up this winter with an astronomy talk!

## ☞ March Dinner Meeting ☞

The March 11 Dinner Meeting will be held at Jimrickys Bar and Bistro, Northtown Plaza, 3131 Sheridan Drive, Amherst. Note: located in the same plaza as the Department of Motor Vehicles.

Cash bar will be from 6pm to 7pm, dinner will start at 7pm. The choice of entrees is Roast Sirloin of Beef with Bordelaise Sauce, or Boneless Chicken Mornay, or Vegetable Lasagna with Marinera and Alfredo Sauce.

In the case of dietary restrictions, special arrangements can be made, call Melissa Marcus at 773-5015 for details. Tickets are \$15; please send check (payable to the Buffalo Astronomical Association) and entree choice form to Steve Kramer, (phone #634-7694). **ADVANCE TICKET SALES ONLY, please reserve as soon as possible, deadline is February 25!**



## >> MEMBERSHIP DIRECTORY <<

The membership directory comes out in February. We are looking for ideas on what to put in it besides member listings. Past items included object lists, events schedule, observing aids, by-laws and others. Send ideas you'd like to see in it to Joe/Bev Orzechowski (839-9109).

## MEMBERSHIP CORNER

We hope that everyone had a joyous holiday season and that Santa was good to each and every one of you. But now that the holidays are over it is time to think of more prosaic matters like renewing your membership in the BAA. The time to renew is NOW. If your name is followed by a (93) on this issue's mailing label, your membership is about to expire. Renewing your membership means that you can continue to enjoy benefits like reduced subscription rates for Astronomy and Sky&Telescope magazines; discounts on orders from Sky Publishing; free Spectrum newsletter; and access to the equipment, reference library, and computers at Beaver Meadow Observatory for another year. The BAA's dues have not increased and are still only \$20 for Family, \$15 for Individual, and \$10 for Senior and Student memberships. So please come see us at the next general meeting or mail your renewal to us at 125 Roycroft Blvd., Snyder, NY 14226.

The 1994 BAA Membership Directory is currently being put together and will soon be available for distribution to members. If your address and/or phone number has changed, you have upgraded your equipment, or changed or expanded your interests to other areas of astronomy, we would appreciate hearing from you so that we may publish the most up to date information about you in the directory.

Finally, we ask that you give a warm BAA welcome to our newest members: Mr. & Mrs. Paul Cole of Clarence, Dr. Henry Goller of Orchard Park, Ed Ratajczak of Lancaster, and Bill White of Orchard Park. They are all interested in deep sky as well as lunar and planetary observing. In addition, the Coles are interested in solar observing, computers and photography, Dr. Goller is interested in naked eye observing (constellations, meteors) and computers, and Mr. White's interests include scope building, computers, photography, and geology.

Joe and Bev Orzechowski



### Welcome! New Members

Mark Adamchick attended Hilbert College and received a two year degree, and the New York State Accounting Award. He continued his education by going to UB, and also taking some classes at Canisius College. As Hilbert has become a 4 year college, Mark is back at Hilbert working on a business major. He was married August 21st.

Raymon Caputo received his bachelor's degree from Ohio State, and his MBA from UB. He has been in the insurance business since 1972, and owns Wolf Agency, Inc. in Orchard Park. He is also a ham radio operator.

Bud and Ella Abate Bud owns his own business as manufacturer of labels from bumper stickers to UPC symbols. The labels are manufactured in Lockport, but the business is run from his home. He has tried a couple telescopes, but now owns three: a 10" Dobsonian, Celestron C8, and a Meade 90mm refractor. He has photographic equipment for the Celestron C8 and is learning the ins and outs of astrophotography. Ella likes the Dobsonian telescope the best. She has worked for State Farm Insurance for 9 years. They have an IBM compatible computer which they use for astronomy, and they also have a modem.

Tom Bemus is president of Marshal Marts Observatory in Frewsburg (soon to become a part of Jamestown). He is an avid visual amateur astronomer, and has owned 11 different telescopes since 1986. He is a telescope dealer and does 1 hour photo processing in his lab in Jamestown. He is a happily married man.

Nils Gunnerson is retired, having worked at Bethlehem Steel for 25 years. He is married and has 7 children and 15 grandchildren. He attended the University of Miami, in Florida, with a major in journalism, and worked for the Miami Daily News before coming to Buffalo. He has a Celestron Classic 8, and is interested in deep sky and astrophotography.



Edith L. Geiger

## >> PRESIDENT'S MESSAGE <<

### THREE WISE FOLKS

Ho - Ho - Ho. Anyway you say it, it is Happy Holidays to all! I have three little stories here about three wise folks that anyone can become. If one of your New Year's astronomical resolutions is to become more involved then read on.

### 1994: THE YEAR OF THE VOLUNTEER

Volunteering is a great idea. We have an ambitious calendar for next year: finalizing the observatory expansion; revising, developing and assisting public programs; renovation of the 12" and photographic mounts; the May annular solar eclipse; promoting member activities and observing programs; ... Volunteers are needed to carry through. Let's make it easier on those who are willing to take on the big responsibilities so they end up invigorated rather than exhausted. Be a volunteer - it's easy and fun for all ages. What a great resolution, it'll pay you back many fold.

### LIGHT POLLUTION ACTIVIST'S PACK

I have prepared an "Activist's package" of materials selected from the fine collection of information sheets put out by the International Dark-Sky Association. The package consists of the best 15 of the first 68 different topical sheets. They represent an introduction to the problem (most of it is energy waste - light in the wrong spot); illustrate the issues; summarize solutions and compromises; how to push the cause; and give advice on how to work with community leaders. The club has the complete information sheet collection and a 20 slide set available for showing and educating an audience. Interested in this issue? Would you like to take a stand? You need to be well prepared. This "Activist's pack" is at the membership desk, the observatory and available by mail from me.

### WRITING: YOU CAN DO IT!

Darwin, our newsletter editor, says that while he's normally a happy guy, he would be even happier if you wrote him an article - no matter how small. Our happy-go-lucky editor would be happy to happen by your article, even if a bit hapless or haphazardly written - why it could become a regular happening with a happy ending. It would make him so happy!

Have you been wanting to write an article but needed just a little push? Then consider this column just that. It's easiest to write about something you're interested in. If a topic interests you then it probably also interests others. You do not need to be a professional writer. Your perception of the quality of a piece is far less important than getting out a new idea or point of view. Now, where's that pen...



SPY and TELL

Bill Smith

At 4 o'clock on November 14, '93, Fred Price gave a lecture at the Church of the Ascension, entitled, "Is There Life on Mars?"

On the weekend of November 13th, Dan Marcus, Joe Drabek, and Bob Hughes completed the electric wiring, and installed

red and white lights in the new addition to our observatory at Beaver Meadow.

The most terrifying event for Bob Hughes in '93 was the Watkins Glen Camel Continental Race in June. As a marshal in the observation tower, he witnessed a horrible midway accident right in front of him involving three cars. In his capacity as marshal, he called for the stoppage of the race and called in all emergency vehicles. Two cars were destroyed, one driver scrambled out of a burning car, and one driver was sent to the hospital where he luckily recovered. This was all a ghastly experience for Bob.

Congratulations to Darwin and Ruth Christy, who celebrated their 50th Wedding Anniversary on October 14th.

We all know of Darwin's reputation as an excellent gourmet cook. The following is a typical schedule which demands much of his time:

October 10th - prepared breakfast for his lodge and sister lodge from N. Tonawanda - 32 members.

October 21st - prepared Jailhouse Chicken (baked chicken legs) - 64 lodge members. Gave Middle Chamber Lecture for the Second Degree.

October 22nd - prepared stuffed game hens for the Past Masters of Tonawanda Lodge - 22 members.

October 26th - prepared stuffed pork chops for one of the members who has been installed as a Grand Stewart in the State of New York - 38 dinners.

November 18th - prepared meat loaf dinners for the Tonawanda Lodge - 64 members. Darwin participated as the First Craftsman in the degree of Master Mason.

November 4th - Darwin gave a well received lecture to the Tonawanda Lodge on the Triple Conjunction which he photographed in 1980-1981. His talk prompted inspired members to ask numerous questions which Darwin was happy to answer.

Ken and Diane Biggie spent the Thanksgiving holidays with a visit to Quantico, Virginia, to see Kevin and Nicole. They picked up Chris in Pittsburgh so they could all be together for Thanksgiving.

With his book, Boletes of North America; a Compendium, published last October, Ernst Both has started on another book on mycology, which will take several years to complete. We will look forward to its publication.

Rowland Rupp has given occasional talks at Niagara County Community College on constellations. In December he gave a Christmas show (canned plus computer) on the "Christmas Star".

Rowland has almost finished compiling the BAA history, which has been a great undertaking involving much research pouring through endless records in the BAA archives. Irene, as typist, has been a big help to Rowland in his effort to complete this enormous task. Steve Kramer and Luann Szucs have assisted in contributing items as a result of their going through accessible material. This project was started a number of years ago by Ed Lindberg, Walt Whyman, Bob Mayer, and Jim Dow, but it is Rowland who has seen it to fruition. He has revised some of the original attempts at a chronicle, and brought everything up to date, so we have a reference source available at any time. We are indebted to Rowland for devoting so many hours producing an invaluable history of the Buffalo Astronomical Association of which we can all be proud.



Edith L. Geiger

### BAA ANNALS

5 YEARS AGO - Carl Milazzo was our speaker in January 1989. His topic was "Charts, Catalogues and Deep Sky Observing Techniques". In February we heard from Chris Krstanovic who spoke on CCDs and image processing in astronomy. Al Kolodziejczak wrote another installment for the SPECTRUM in his series of articles on advice to new members. This one concentrated on astronomy text books and star atlases. Carl Milazzo submitted three sketches of possible configurations for a new observatory.

There were the on-going submissions as well. Constellations for January and February appeared which, though unsigned, had a definite ring of Darwin Christy.

Marilou Bebak gave a report on Kellogg Observatory (Museum of Science). Ken Biggie reported on the activities of the Board. Edith Geiger did "Spy and Tell" and Rowland Rupp wrote "BAA Annals".

10 YEARS AGO - Dr. James Bix from Canisius College spoke in January 1984 on "Eternity and Infinity: Speculations in Cosmology". For February we did something different. Our own Membership Chairman, Claudia Bielinski, a professional astrologer, cast a horoscope for one of our members. Rumor has it that one or two of our members boycotted the meeting, apparently for fear that astrology was catching.

Rowland Rupp had an article on "Double Star Colors". If you're having trouble finding out about or observing double star colors, this article may relieve your concerns somewhat. Darwin Christy wrote on his design for measuring and recording the changes in light intensity from the moon during a penumbral eclipse. The equipment worked well apparently, but clouds got in the way. Darwin, have you tried it since?

John Riggs was Observatory Director then. He reported that the 12-1/2 inch mirror and the diagonal had just been realuminized. He also reported that I had repaired the clock drive controller originally designed and built by Bill Deazley. Funny, I thought I fixed that just a couple of years ago - not ten!

15 YEARS AGO - "SPECIAL EXPANDED ISSUE" was the heading of the January - February 1979 SPECTRUM. Editor Larry Carlino had so much material he had to go to twelve pages. Wouldn't Darwin like to have that problem? Actually, Larry's SPECTRUM was in large type and probably contained no more material than we have today. Edith Geiger wrote a profile on Darwin's son, Orrin. Tom Giasomo wrote on the relationship between synodic period and sidereal period, and our old-time friend Anonymous wrote "Yardsticks of the Universe" - a good article on Cepheid variable stars.

Our January speaker was Dr. Francis Lestingi from Buffalo State whose topic was "Einstein". Noted for his work in producing movies, he supported his talk with his own film. Three BAA members gave short talks in February: Charlie Meiss - "Astrophotography", Larry Hazel - variable star observing and Edith Geiger - "Lunar Domes".

25 YEARS AGO - Former BAA president, Ron Clippenger, spoke on "Standard Telescopes" at the January meeting. Twenty-five years ago the SPECTRUM was published monthly and, alas, I can't find a February 1969 copy in the archives. Will someone please make me a copy, so we'll be able to do the thirty-five year annals in 2004? Actually, I can't do the thirty-five year annals this time either. Newsletters are pretty scarce prior to 1961.



Rowland A. Rupp

### THREE ICE MEN

In the 1982 March/April issue of the "SPECTRUM", Doris Koestler wrote on the Three Ice Men, and it reads:-

Three years ago, I enrolled in an adult education class on basic astronomy at Maryvale High School. They have a very nice small planetarium, and I began to learn star names and constellations. A few weeks later, while at my mother's house, I was pointing out some stars, when she asked, "Where are the Three Ice Men?" I did not know but would try to find them. Needless to say, after much searching through many books and star charts, I could not find anything by that name. I asked my mother where she had heard about the Three Ice Men. My grandfather would often take an evening walk and return saying, "It will be getting cold soon, the Three Ice Men appeared in the sky." My grandfather came from a small town in Germany with very little education and knew very little about astronomy. He did know that as soon as the Three Ice Men appeared in the sky, the weather would turn



cold, and the higher they climbed in the sky, the colder the weather would get. He also knew as long as the Three Ice Men remained in the sky, the weather would stay cold. Have you guessed who or what are my grandfather's Three Ice Men?



(THE BELT OF ORION)

Other short stories about the Belt of Orion have been written by the ancient astrologers and astronomers:-

In the early days of the Eskimos, they saw in the Belt Stars, Three Steps cut out by some celestial Eskimo in a steep snowbank to enable them to reach the top.

**Mintaka**, Delta Orion, means the Belt and is the first star to be seen in that portion of the constellation as it rises. And-astrologers considered it of great importance to moral influence of good fortune; **Alnilam**, Epsilon Orion follows and has been considered the String of Pearls of Orion's Studded Belt as found in Scott's; "Lay of the Last Minstrel"; finally, **Alnitak**, Zeta Orion, the lowest of the three stars is referred to as "The Girdle."

The Hindus gave it the name of the Three-Jointed Arrow. In other countries it had been listed as 'staves', such as the Germans calling it **Jacob Stab**; the English named it **Jacob's Rod**; From Israel, the astrologer, gave it as **Peter's Staff**; similarity of the Norse and Scandinavians, it was **Fiskikallar**, or Staff and **Frigge Rok**, or Freya's Distaff. The Laplanders strayed from the Belt to **Kaleva's Sword**, or still more changed to **Niallar**, the Tavern. In Greenland, a very different figure was given to it, **Siktut**, the Seal-Hunters.

Down under in Australia, they knew it as Young Men dancing a 'corroboree' and the Pleiades being the Maidens playing for them. Still further we find that the Seamen called it the Golden Yard-arm.

In the religious domains we find the Catholics referred to the three stars as "Our Lady's Wand"; the husbandmen of France near the Rhine called it the Rake; in upper Germany the Three Mowers; and it has often been said to be the Magi, the Three Kings, the Three Marys, or just simply the Three Stars which Tennyson had written in his, "Princess", --- those three stars of the airy Giant's zone

That glitter burnished by the frosty dark....

The Arabs designated them as **Al Nijad**, the Belt; **Al Nasak**, the Line; and **Al Alkat**, the Golden Grain or Nuts. In modern Arabic, **Nierbuhr** proclaimed it the Accurate Scale-beam, as did the Chinese who knew the three stars as a Weighing-beam, designating the stars of the Sword as a Weight at one end. Even in Roman literature, we read about them as **Balteus**, the Belt and **Vagina**, or Scabbard of Germanicus.



THE GREAT COPERNICUS CHASE AND OTHER ADVENTURES IN ASTRONOMICAL HISTORY by Owen Gingerich, Cambridge University Press. If you read *Sky & Telescope*, you will be familiar with the lucid writing of the author. The book has 36 articles, 26 from S&T, mostly from the 1978 to 1985 period. They range from ancient Egypt, Babylon (zodiac), and England (Stonehenge); through Copernicus, Kepler, and Galileo; to comets, eclipses, and Einstein. I enjoyed re-reading the two articles on astrolabes (S&T, 1982 and 1983) after we saw the two at the Science Museum a couple years ago.

WHAT IF THE MOON DIDN'T EXIST?... by Neil F. Comins, HarperCollins. I saw this noted in the Dec. 4 issue of *Science News*. It "contends that Earth would rotate three times faster and that gale-force winds would make life tough for tall creatures like humans.... and strives to portray the fragility of our atmosphere and life forms."



Steve Kramer

#### ASTRONOMER from the PAST

James Edward Keeler was born in La Salle, Illinois on September 10, 1857. An American astronomer who graduated from John Hopkins University in 1881, accompanied the famous expedition of Samuel Pierpont Langley to the top of Mount Whitney, Calif. He had been appointed to the staff of the Alleghany Observatory until 1883. In 1884, after a year of study in Germany, he was appointed assistant at Lick Observatory in 1886 and in 1888 became its director of astronomy. In 1891 through 1898 he again became active at the Alleghany Observatory as its director, and professor of astrophysics in the Western University of Pennsylvania. Also in 1898, until the time of his death, he was made director of the Lick Observatory where he had previously been an assistant and director.

While at the Lick Observatory, using the Common 37-inch reflector, which was bought by Edward Crossley and donated to them, and employing more refined techniques than that which had been formerly available, he secured some splendid photos of star clusters and nebulae. From these, he was able to announce two discoveries of great importance. ONE- that the spiral nebula is the prevailing or most numerous type of nebulae. TWO- he showed that hundreds of thousands of spiral nebulae are within the reach to be photographed with such instruments as the Crossley reflector. But-- in no case could a Laplacian nebula be detected.

His works in astronomy were that of his spectroscopic studies of the Orion Nebula and the Ring System of Saturn. The inner rings by Kepler's Law, moved faster than the outer. The spectroscope had so improved by 1885 enabling him to make the critical observations, and prove that the inner rings did, in fact, move faster at 12 miles per second by using the spectroscope at Alleghany; and that the outer rings moved 10 miles per second. He also contributed to the proper motion of Arcturus, reducing its proper motion from 70 miles per second as thought by the ancient astronomers in Ptolemy's time, to a mere four miles per second. On a trip to San Francisco, Calif., he became ill and passed away on August 12, 1900.



#### ASTRONOMICAL HAPPENINGS

JANUARY 1994

- 2 - Earth at perihelion (147 100 Mm)
- 3 - Quadrantid Meteors \*\*\*\*\*  
Mercury at superior conjunction
- 4 - Last Quarter Moon
- 5 - Moon at perigee (370 142 km)
- 6 - Conjunction - Jupiter & Moon
- 11 - Conjunction - Neptune & Sun  
New Moon

- 12 - Conjunction - Uranus & Sun
- 14 - Conjunction - Saturn & Moon  
Buffalo Astronomical Association meeting
- 16 - Venus at superior Conjunction  
Delta Cancri Meteors
- 17 - Kappa Cygnid meteors (Fireballs)\*\*\*\*  
Coma Bereniceid Meteors
- 19 - Moon at apogee (404 361 km)  
First Quarter Moon
- 20 - The Sun leaves Sagittarius and enters  
Capricornus
- 27 - Full (Wolf) Moon
- 30 - Moon at perigee (367 408 km)

#### FEBRUARY 1994

- 1 - Conjunction - Mercury & Saturn
- 2 - Ground Hog Day
- 3 - Conjunction - Jupiter & Moon  
Last Quarter Moon
- 4 - Mercury at greatest elongation (18° E)
- 8 - Conjunction - Neptune & Moon  
Conjunction - Uranus & Moon
- 9 - Aurigid Meteors \*\*\*\*
- 10 - Mercury stationary  
New Moon
- 11 - Buffalo Astronomical Association meeting  
DEADLINE for the March-April issue of the  
"SPECTRUM"
- 14 - Valentine's Day
- 15 - Moon at apogee (404 980 km)
- 17 - The Sun leaves Capricornus and enters  
Aquarius
- 18 - First Quarter Moon
- 19 - Copernicus born in 1473
- 20 - Mercury at inferior conjunction
- 21 - Conjunction - Saturn & Sun
- 25 - Full (Snow) Moon
- 26 - Conjunction - Mercury & Mars  
Delta Leonid Meteors
- 27 - Moon at perigee (361 845 km)
- 28 - Jupiter stationary



### OH, WHAT A WONDROUS MORNING!

The sky was heavily clouded at the Audubon's Trash and Treasure sale on Saturday, Sep 18. The observatory was open for visitors. It was to rain that night which means to me that it might be clear after the rain! I got back from the site at 11:30, caught a few hours of sleep and got up at 4am. The sky had a clarity that maybe was unrivaled this year. Stupendously clear! The Milky Way spread boldly from the northwest to the southeast. Orion was 2/3rd the way to its zenith. Monoceros and Sirius were up. The stars seemed a magnitude brighter than normal—Orion glared! For 20 minutes all I could do was to look up and gawk — naked eyed at the celestial candy store. I wanted to grab and devour everything I saw but I hadn't the time to satisfy the appetite. These "winter" constellations that I haven't seen in months were well up in the sky in September! Of course the benefit of relative warmth and 4 months "early" viewing comes at the price of the morning hour. Sometimes the best viewing is at those AM hours. When there is a chance of clear - *really clear* - sky then sometimes you have to just go for it.

#### SCOPE OR BINOS?

What is one to do when the candy store is open for a rampage? Pick up a few things and delight in them or grab a shovel and back up the truck? I chose the truck— I mean binoculars. Yes, the 'lowly' binos are the choice on this morning. Mounted steadily on a tripod they became my stairway to the heavens. My 16x80's collect 150x the light of the naked eye. To collect 150x as much light as the binos you would need a 38" scope. Binoculars are powerful indeed. It was time to feast and not be too picky about what's on the plate—it's all tasty!

#### SWEET DELIGHTS

Galactic structure is up for viewing. Your eye is all you need. The winter Milky Way is the part of our galaxy that is opposite from the galactic center. This opposite point is in Auriga. As we orbit the center of the galaxy we are heading in the direction of Cygnus which was now very low in the northwest. Thus we are then coming from 180 degrees from Cygnus which is in Vela which doesn't rise at our latitude. This winter Milky Way doesn't have the bright starclouds nor dark dust lanes found in Cygnus to Sagittarius because here we are looking away from the dust and star filled galaxy center. We are located off-center on the inside edge of the Orion arm so when we look at foreground clusters and bright bluish stars that we can see with the eye (Pleiades, Hyades and the bright star associations in Perseus, Orion and Canis Major) they hang

below the beautiful Milky Way in a striking and sparkling pendent fashion. I spent about 30 minutes alternating between slow binocular pans across the sky and naked eye views. Four meteors and 3 satellites were also spotted.

Inside the Milky Way's Orion arm behind the aforementioned clusters and stars lie many objects that need aid to see. Binoculars to the rescue! The great Auriga Messier open clusters M36, M37 and M38; Gemini's M35; and NGC 2237 in Monoceros are fine displays in the binoculars.

Triangulum, the Hyades and the Pleiades are high. M33 was exceptionally bold. M31 spilled across the 3.5 degree binocular field of view. Its satellites M32 and M110 were obvious. The bright winter stars show many tints of blue; a trait of their youngness. The Pleiades is the best object to be seen in binoculars. The icy blue star color and the richness of the stars was glorious. The Crab nebula, M1, was a small but bright spot; M78 in Orion was a snap to see; while the great Orion nebula, M42, was a work of art with much detail for high power binoculars. Even the elusive M43 could be seen as was NGC 2024 by the belt star Alnitak. Spend some time scanning Orion's main stars and belt region for patterns and star colors.

Also to see are the star colors in Auriga and "the kids". The Auriga Messiers show different looks. Look closely and you might see the dim and tiny NGC cluster 1907 near M38. Even in the 16x80's this little cluster is easy to overlook. Harder was NGC 2158 located very near to M35 (delightful) in Gemini. The Christmas Tree cluster in Monoceros is an upside down tree in binoculars and the Rosette nebula, NGC 2244, shown faintly and quite large. The Praesepe cluster in Cancer was naked eye as the double cluster in Perseus; a nice contrast after a search for the often slippery globular M79 in Lupus.

Venus played a laser light show as it rose through the treeline in the east. Even Leo was starting to make his appearance in the changing hues of morning twilight. Although I piggied out and was pretty full, I should have got up at 3.

Bill Smith



## 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) REVEAL HOME SKY

*Could make quite a splash on Jupiter!*

#### 2) LOSE MY STARS

*Does it contain Planet X?*

#### 3) SCAN A DRUM

*Wired Beaver Meadow - an electrifying experience!*

#### 4) MAD TREK ART

*Some say it makes up 90% of the universe!*

#### 5) MA GOT TROPIC SUN

*Planetariums on your CRT are this.*

BN1/94

Answers to last issue: 1) lunar eclipse 2) public night  
3) precession 4) finder scope 5) Orzechowski's

### Board Meeting Brief November 4, 1993

#### I) Observatory Business

A- Decisions were made on the finishing work for the Interior: Stairs will be constructed, colors for walls & carpeting, type of door needed, etc.

B- We will be ordering another platform ladder for the 20" Scope, and it was suggested we make up a complete Eye-piece Set for each main Scope for test efficiency during Public Nights.

C- Steve (Treasurer) noted that he had increased our insurance coverage to include all new equipment.

#### II) Speakers

A- Were filmed up for General Meetings through June 1994.

#### III) Publications

A- For 1994 and their content were discussed, including the Membership Directory, Observatory Schedule, and a New Members Information Packet.

#### IV) Instruments

A- Photographic Mount - Mirror is to be aluminized and a spider diagonal ordered; stepper motor to be fixed.

B- 12.5" Scope - Counterweights to be redone and the scope rebalanced. Controller and stepper motor for the declination shaft need work to get us ready for CCD Imaging. Also, researching source for a lighter-weight finder scope (11 x 80 or 4-5" Comet-catcher)



Luann Szucs, Sec'y.

#### **BEAVER MEADOW OBSERVATORY \*457-3104\***

Well it is a New Year and the Observatory expansion is almost done! The Buffalo Audubon Society has generously allocated an additional \$1500 to be used to complete the new building addition. Oh yes the new addition is almost complete, with the exception of the interior trim, lights, and final painting. The new scope should be housed in its new home when you read this article, if not it is awaiting extra help to move it to its new residence!!! Check with me or the answering machine as the front end of the 20" may be out for mounting of the new 7X50 finder! It will be nice to have a real finder instead of the Telrad (which has worked admirably by the way).

**CCD CAMERA PROJECT:** We are looking for a person(s?) to head the CCD Camera project. I would love to get a real time camera as well as a deep sky CCD unit. The real time would be good for planets, moon and solar work, the CCD computer driven, might be more useful as a deep sky comet/supernova device? Maybe there is a unit on the market which will do both for us. This position would entail raising money, selecting the camera, and equipment to acquire the images. One criteria will be that the public will be able to take the images home with them, either on video, or floppy. Please contact me or any other Board Member if you wish to volunteer your services for any part of this project.

**Observatory Activities for 94:** In case you haven't heard about our activities at the Observatory, and Star Parties, here is the scoop! Public weekends now have a new tradition, there is now a bring a dish to pass picnic dinner that starts at 5:00pm and ends when we get public for public night! This was started by Bob and Laurie Titran, and has become rapidly become a tradition. Oh yes, come early for public night, or stay late from the daytime, or just come for the picnic. Remember Beaver Meadow is especially beautiful at that time of night. You get to watch the geese and ducks land, and check out the beaver patrolling the pond. Star parties are club events, usually held at someone's home, or Beaver Meadow. These are open to all members and their friends. They can be as simple as an evening observing session, or as complicated as a bring a dish to pass dinner with all sorts of activities like horse shoes, swimming, etc, to help the time pass until it gets dark. Some are held in the city, some are held at dark sky locations, but all are guaranteed to give you a fun and entertaining evening! These are great places to learn the astronomy tricks of the trade, as well as to be able to try out new equipment. All are encouraged to bring their

ASTRONOMICAL TOYS, to all our events! I'll be doing the scheduling of star parties again this year, so see me if you wish to have one. As

usual I suggest that they be scheduled rain or shine, to avoid confusion.

#### **Star Party:**

**Saturday, March 12:** Bill Smith and Carol Lorenc invite you to their home in Jamestown for the 4th annual Messier Marathon!! There will be a bring a dish to pass dinner starting at 3:00pm. As soon as twilight starts, we start stalking the night skies for all 109 objects. Come join the fun, our record is 100 objects in one night! Oh yes, this is and all night affair, bring your sleeping bag! The rain date for this affair (one of the few star parties that has one) is on Saturday March 19. Same time, same location! Please contact Bill Smith ☎ 664-0841 for directions, and weather information.

#### **Observatory Happenings:**

##### **Saturday, May 7, ASTRONOMY DAY CELEBRATION:**

10:00am - 5:00pm. Lectures on how to view the May 10 Solar Eclipse safely. Help with your telescope, Solar viewing, (weather permitting). Check answering machine for the schedule of activities. Public night to follow from dusk to 10pm.

##### **Tuesday, May 10, ANNULAR ECLIPSE OF THE SUN:**

Observatory will be open from 11:30am to 3:15pm. The Eclipse starts at 11:40am, totality is at 1:21pm, and the eclipse ends at 3:10pm. If you are planning to bring a group, please contact us in advance so we can accommodate you.

**Saturday, July 16, NATURE FESTIVAL:** 10:00am - 5:00pm Help with your telescope, computer demonstrations, and Solar viewing - weather permitting. Public Night - Dusk to 10:00pm.

**Sunday, July 17, NATURE FESTIVAL CONTINUED:** 1:00pm - 5:00pm. Viewing of sun. Help with your telescope, computer demonstrations.

**July 19-24?: Comet collides with Jupiter.** Times to be announced. We will have the observatory open to the public on one or more of these nights.

**Thursday, August 11, Meteor shower.**

**Saturday, September 17, NATURE FESTIVAL:** 10:00am - 5:00pm Computer, slide show and solar viewing. Public Night Dusk to 10:00pm.

**Sunday, September 18, NATURE FESTIVAL:** 1:00pm - 5:00pm computer, slide show, telescope clinic and solar viewing.

**Saturday, November 12, OPEN HOUSE:** 1:00pm - 5:00pm. Viewing of the Sun, and slides. Public Night Dusk to 10:00pm.

**Sunday, November 13, OPEN HOUSE:** 1:00pm - 5:00pm. Solar viewing, computer demo, and help with your scope!

As usual I will be needing help at the Observatory this summer. The Annular Eclipse, Jupiter's comet, and the August 11 meteor shower will draw a lot of visitors. If you feel you don't know enough to talk to the visitors, please come for crowd control. So get out your new calendars, and mark down all the astro dates.

Daniel Marcus





## >> OBSERVING: President's Challenge <<

### A REVIEW OF PART 1: 33 of 36 found

The president's challenge is a list of 100 objects designed to "get you out there".

I used a 6" f/7 refractor for viewing the objects on the list. I've looked up some of the references noted on the sheets as well. Reading about them whets the appetite to observe them. I used setting circles to "dial up" most objects as this scope has no finder as yet. Setting circles sure make it easy and I think would be especially helpful in more light polluted areas where starhopping with a finder is harder. I'll only touch on some of the objects seen.

The naked eye object group consisted of 6 objects. While many are familiar with them, having to view them for themselves makes one look closer and pay attention. Trying to see and follow the constellations from star chart line drawings is a good exercise. I envision some of the lines forming triangles which I then mentally "fill-in" to form a body vs. a stick drawing. The "circlet" in Pisces is below the Great Square of Pegasus and once you think of "square peg in a round hole" it is hard not to forget where the "circlet" is.

The Moon shows an ever-changing set of features — changing due to the location of the terminator. A 48 hour old Moon was spotted on Nov. 15 showing nice earth shine. Clavius was easily seen in Sept. under warm weather and good seeing. Several small craterlets as well as the curving arc of craters were seen. Clavius' walls show wonderful terraced detail. I spent about 2 hours probing around the Moon.

The colored star XY Lyra was spotted on several occasions showing a nice reddish-orange color. Whenever I looked at Lyra I tried to remember to find XY so I can easily find it. This is a good way to build up a varied list of objects to view without having to always get out the charts.

The three double stars listed were easily found and  $\Sigma 2392$  was a triple in the 6". The two variable stars listed were observed on several nights and changes in their brightness readily seen. I particularly like Beta Lyra as you can see the change with your naked eye. I'm not a big fan of variable star observing, but it was a nice diversion.

The 5 Messier objects show up fine in the 6". M29 gives the impression of a cluster in binos but not so in a scope. I viewed them several times in the past three months and enjoy their view even with the Moon brightening the sky. M73 appears as a little cross and perhaps Messier's scope had internal reflections or something that put a haze around them.

I listed 15 NGC, IC and other objects. IC 10 and NGCs 6842 and 7635 were not seen. The rest showed a fine variety of shapes and brightnesses. The open clusters were the easiest to see with NGC 6834 the hardest. The Saturn nebula did show a color tint decidedly different than 6781. 6781 has a catalog magnitude of 12.5 but seemed brighter. The big galaxies NGCs 55 and 253 were seen in binos and easily picked up in the 6".

This "self-assignment" observing list is a great way to give yourself that little push we sometimes need to try some new objects. Part 2 will be distributed at the December meeting or I can mail you a copy. Let's keep observing!



Bill Smith

## >> IN SEARCH OF EYEPIECE HEAVEN <<

### A REVIEW OF FIVE LOW POWER EYEPIECES

I'm a fan of low power eyepieces. Their wide field of view makes it easy to find objects that can then be scrutinized with higher power eyepieces. Wide fields shows lots of background stars around objects which I think makes them more

picturesque. Low power views don't suffer as much from poor optical alignment, dirty optics, star motion from undriven scopes or scope shake from the wind as higher power eyepieces do. Viewing is more comfortable with no need to squint. They don't fog so readily in the winter. I define low power eyepieces as those that provide an exit pupil greater than 4.5mm.

Good references on eyepieces and terminology are in the following Sky and Telescope articles: Sept. 1985 p286-An eyepiece primer; May 1988 p490-Nine low power eyepieces compared; May 1991 p553-Choosing your telescope's magnification.

I owned and will review the following low power eyepieces: 55mm TeleVue (TV) Plossl, Orion Megavista 40mm, University optics 32mm orthoscopic, TV 32mm wide field and TV 27mm Panoptic. All but the ortho require a 2" focuser.

The table below shows the stats as used on my 10" f/5.6 Dobsonian. For calculations let's assume your eye can accept a 5.5mm cone of light. Thus some of a larger bundle of light from too large of an exit pupil will be wasted. Light from my 10" scope, that enters the eye, at a power that gives a 10mm exit pupil is equivalent that from a 5.5" scope at the same power. The whole view is still there, it is just dim. The table below does not take into account the light loss due to the secondary obstruction in the exit pupil.

Eyepiece	App. Field	View field	Power	Exit pupil	Eff. aperture
55 TV Plossl	50°	2.1°	28	9.8mm	5.7"
40 Megavista	70°	1.9°	36	7.1mm	7.8"
32 Ortho	40°	0.9°	44	5.7mm	9.5"
32 Wide field	65°	1.46°	44	5.7mm	9.5"
27 Panoptic	68°	1.3°	53	4.8mm	10"

Field of view comes at a price of light loss (effective aperture) and low power.

### WHAT'S APPARENT FIELD

The image as seen through an eyepiece has the appearance of being projected on a screen. That "screen" appears as a circle. An eyepiece of 40° apparent field means that circle subtends an angle of 40° from your eye. Draw a circle 8 1/4" in diameter and hold it 12" away. That subtends an angle of 40°. Move it closer so it is 6 1/4" from your eye to simulate a 70° apparent field of view and 5" away to simulate 82°. Note that your eye has to rove around to see everything in the circle. You trade off roving around for a wider view at the same power (compare the two 32mm's).

### BUT WHAT DO THEY VIEW LIKE

The eyepieces you have give you good views. You may hope for more but unless you do a direct comparison you don't know what you have to gain (or lose). The views I'm describing are using a 10" f/5.6 Dob with a 2.1" diagonal. There is no secondary obstruction in the exit pupil for refractor owners.

All the eyepieces had equal sharpness and all gave good image contrast and freedom from color ghosts in the center of the field.

The 55mm TV Plossl shows very sharp images over the entire view. The large exit pupil can be bothersome. You have to hold your eye steady and "in the air" above the eyepiece to see the field. Dark shadows slip in and out as your eye moves about. The whole field can be seen without roving. The views are great but maintaining the eye position drives me crazy.

The 40mm Megavista, despite the ad claims, does not have the edge of field correction that the Plossl has. 85% of the field diameter is pinpoint, then the points fade to seagulls. Floating shadows from the eye position are a lot less noticeable. Your eye is perfectly placed on the downturned rubber eyecup. Viewing with this is pure pleasure. The extra power, smaller exit pupil and larger effective telescope aperture are all pluses over the 55. It has replaced the

I would like to come to the March 11 dinner meeting, my selections for the Entree(s) are:

- \_\_\_ for Roast Sirloin of Beef
- \_\_\_ for Boneless Chicken Mornay
- \_\_\_ for Vegetable Lasagna
- \_\_\_ Total X \$15 = \_\_\_ due

Make checks payable to Buffalo Astronomical Association  
c/o Stephen Kramer  
80 Donna Lea Blvd.  
Williamsville, N.Y. 14221  
phone: 634-7694

Name \_\_\_\_\_

Phone # \_\_\_\_\_

55mm as my low power locating eyepiece for reflectors.

The 1 1/4" orthoscopic gave me years of good viewing. Then I bought a used 32mm TV wide field. The ortho is no match on field of view or image sharpness across the field. One look through a quality 2" eyepiece of similar power and you'll be hooked on them. The visual impact when looking through the ortho just is not there. Does anyone know where I put this eyepiece?

The 32mm TV wide field is an awesome visual tool. Like the Megavista, it does not have the edge sharpness of the Plossl. With the rubber eyecup your eye is perfectly placed. I'd rate it a touch better than the Megavista on overall quality but the magnification difference makes it a subjective judgment. Since the 40mm replaced the 55 that means the 32 is too close in field and magnification to the 40 and something in a shorter focal length is in order.

If you've looked through the club's 35mm Panoptic then you've seen what eyepiece heaven must be like. We're talkin' dead sharp and sparkling high contrast from edge to edge. I don't even know what more to ask for in an eyepiece! Well, okay, how about something between the available 35 and 22mm Panoptics.

TV must have been listening as they came out with a 27mm. When I heard about it, I sold the 32 TV and ordered a 27. I got one from the first production run. I'm back in bliss in eyepiece heaven. Any optical quality characteristic you can think of has the word 'perfect' in front of it. I found the 32 ortho and made a side by side comparison. I found it physically difficult to put the ortho in for comparisons. It is unbelievable how far eyepieces have come.

#### HOW DO THEY FIT IN AN EYEPIECE SET

If one had a fat wallet then just get the widest, highest quality field eyepieces (Naglers). Usually compromises must be made.

A selection of eyepieces allows you to match magnification and field of view to the object your viewing. I now use an eyepiece set consisting of the 40mm Megavista, 27 Panoptic, 13mm Nagler, and 6.7mm Meade Ultrawide mounted in an 1 1/4 to 2" eyepiece adapter. Thus they're all 2" now and I can change eyepieces with a minimum of fuss. A Lumicon deep-sky light pollution filter is on the 40 all the time. It helps in locating objects and doesn't "color" the view. A 10.5 TV Plossl has a O-III mounted on it most of the time for enhancing planetary viewing. A 17 TV Plossl and 2.8x Klee barlow round out the lot. I'll keep the 55 as it makes a great "finder" eyepiece with my 6" refractor. The 32 ortho is looking for a new home.

I use the 40mm for locating objects, starhopping to objects and for just enjoyable sweeps in the sky. Super-exceptional image quality is not required for this use. For higher powers I now want to see as clearly and widely as possible. The 27 is a superlative lowish power "cruising" eyepiece of impeccable character that puts all the light of the mirror into your eye. The next two eyepieces double and double the power again. The 13mm is my workhorse with which half of my viewing time is spent. It can accept 1 1/4" filters (UHC, O-III or colored) for those objects (e.g. Veil) that require its 82° apparent field. The 6.7 is my normal high power eyepiece although at times the atmosphere allows using the 10.5 with the barlow.

For those who wish to understand eyepieces more, the article will continue in the next SPECTRUM.



#### EDITOR'S NOTE

The **DEADLINE** for the March/April "**SPECTRUM**" is February 11, 1994. Included will be the continuation of, "In Search of Eyepiece Heaven"; "Catastrophy"; a past astronomer, John Louis Emil Dreyer; "Amateur Astronomy in Poland"; and other news and notes. In a future issue of the "SPECTRUM" will appear an article on, "Observing Meteorites Through a Microscope."

As editor, I appreciate all the articles I have received and hope to be presented with more for publication in our newsletter. **THANK!**



\*\*\* The SPECTRUM \*\*\*

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