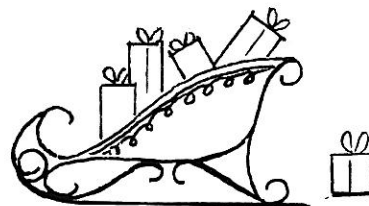


The Spectrum



elg

* MEETING NOTICES *

The NOVEMBER 8th and DECEMBER 13th meetings will be held in the New Science Auditorium at Buffalo State College on Elmwood Ave. We hope to see you all there at these meetings. Refreshments after.

Our guest speaker at the November meeting will be Dr. Gilbert Brink, Professor at the State University College at Buffalo (formerly U. B.), and member of the B.A.A. His topic will be, "COSMIC CONFUSION." Let us welcome Dr. Brink!

Our December meeting will host Tom Nigrelli who let us in on "DECEMBER'S SKIES", followed by Joel Stuckey who will enlighten us about the "CCD COMMITTEE." Of course we must not forget "CANDID CAMERA" by Edith Geiger. All these good topics will be followed by our annual Christmas, Wine & Cheese Party. Anyone who wishes to donate a few Christmas Cookies for the party, they will be greatly appreciated and enjoyed.

MERRY CHRISTMAS to all and to all have a GOOD NIGHT.

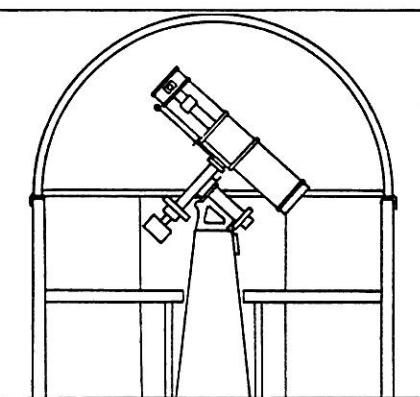


The next issue of "The SPECTRUM" will have an article by Dave Fliss entitled, "The Eye and Astigmatism." Other articles will be appreciated for future issues. Also, it would be nice to see some observation reports.



DEADLINE

The DEADLINE for the JANUARY-FEBRUARY issue of "the SPECTRUM" is DECEMBER 13, 1991. PLEASE have your articles to me by that time. The Christmas Holiday is upon us and I cannot get this paper out without the deadline being complied with. Ed



NOVEMBER

DECEMBER

1991

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From "TELESCOPIC TOPICS", the newsletter of the Mohawk Valley Astronomical Society, we find the following article which might interest all you observers of the DEEP-SKY. It as other space programs, has its problems, hopefully this one will be solved before it is too late. (ed.)

GALILEO and GASPARA
by Perry Pezzolanella

On Tuesday, October 29, 1991 at 5:39 p.m. EST, the U.S. Space Program will achieve another first. At the time, the Galileo spacecraft will fly past minor planet Gaspra, providing our first close look at one of the nearly five thousand asteroids that orbit the Sun.

Gaspra was not originally a target for Galileo. The first plan was for the spacecraft to be launched from the shuttle with a powerful Centaur booster in May, 1986. It would then have taken a quick, direct route to its destination, Jupiter, reaching it by December, 1988. On the way it was to fly by minor planet Amphitrite on December 6, 1988. Unfortunately, the Challenger disaster in January, 1986, delayed the mission; and the liquid-fueled Centaur booster was declared too risky to be carried on the shuttle. Thus Galileo had to settle for a safer but less powerful booster and take nearly six years to get to Jupiter.

Launched from space shuttle 'Atlantis' on October 18, 1989, Galileo would have to loop past Earth twice to get a gravitational boost to Jupiter. The first Earth-boost was on December 8, 1990, sending Galileo out as far as the asteroid belt, where Gaspra happened to be at the right place at the right time. Because the Soviets did not take advantage of the five-year delay to visit a minor planet, the U.S. will receive the credit.

What is the big deal? The minor planets orbit mainly between Mars and Jupiter. All are less than 600 miles in diameter and are made of rock, ice or metal--or a combination of these materials. While a collision with Earth might destroy civilization and may have caused the extinction of the dinosaurs, this is not the reason we want a close look at one. The reason is to find out whether the minor planets actually were once a larger planet that was destroyed by Jupiter's powerful gravity or were allowed to become a planet because of Jupiter's gravity. Possibly we will find a clue to the origin of the Solar System.

Galileo bristles with equipment and will pass within 1000 miles of Gaspra, revealing surface details only 150 feet across. Gaspra is about eight miles in diameter and is probably shaped like a potato. Galileo will photograph Gaspra thoroughly and be able to determine the composition of the surface. Because it will pass closest at the terminator, there may be some spectacular views of craters, ridges and other features standing out sharply in shadows.

When these pictures will be seen depends on the main antenna on Galileo. It has not opened fully, and communications with Earth are slow without it. Efforts are being made to unjam it, but so far, no luck. If worse comes to worse, the data will be stored aboard Galileo and relayed when the spacecraft makes its second flyby of Earth on December 8, 1992. Maybe the wizards at the Jet Propulsion Laboratory will get a picture of Earth from the neighborhood of Gaspra.

Astrophotographers take note! The October 'Sky & Telescope' has an article on finding and photographing Gaspra. At a magnitude of 16.4, it will be a challenge. There is only one first encounter, and this is it for the minor planets. Galileo will fly by minor planet Iad on August 29, 1993, but that won't be a first encounter. So-- get your cameras ready!

Before the Voyagers, it was thought that the moons of the outer planets would all be alike and basically dull. The same thinking seems to apply to the minor planets. Voyager proved otherwise, and Galileo may leave us all gasping at Gaspra.

Stars come in all sorts of colors. The trouble is we think of Hollywood saturation instead of just tints. It is difficult to see color in a pinpoint that is scintillating due to atmospheric disturbance and diffraction from your diagonal. Defocussing doesn't help much due to the uneven brightness and streaky interior of the resulting disk which has a black center to it!

The solution is to minimize these four trouble spots.

- Atmospheric disturbance is minimized by reducing the aperture. A smaller aperture is always less affected by the atmosphere.
- Diffraction from your diagonal is eliminated by simply avoiding getting it in the aperture.
- Defocussing effects are avoided by not defocussing.
- Pinpointness is avoided by looking at the airy disk instead of a dot.

WHAT?!

Confused? Concerned about my sanity? Okay okay so you're only confused. What you do is take a piece of cardboard, cut a 1.5" hole off-center to avoid the diagonal or its holder and use an eyepiece to give you 70-150 power.

The small hole solves all four problems. 70 power gives you 50 power per inch of aperture - plenty to create an Airy disk that will be rock steady and look like Michelangelo himself delicately filled the disk with the most even color possible.

I find colors to be enhanced by looking at double stars of different spectra such as Albiero or Alpha Hercules. The color contrast makes each star more vivid. Of course a 1.5" aperture collects less light so you can't look at mag 10 stars or too close doubles. A 1.5" should separate doubles of 3 arc seconds or larger.

Experiment with different hole diameters and powers. You can use the full aperture to make finding the doubles easier than pop on the cardboard mask. Additionally, if you've never seen the Airy disk except in a textbook you'll find out how they got in the book in the first place!

Perhaps, although I haven't tried it myself, masking the aperture could be used for final tweaking the alignment of the mirrors since one would adjust until the diffraction rings are centered around the very steady Airy disk.



SPY and TELL

Congratulations to the Astronomy Club at Buff State for winning the Best Astronomy Day Award for 1991, sponsored by the Astronomical League and Sky Publishing Corporation. The award was presented at the Astronomical League Convention on August 8th, at which time the BAA and other participating groups were also mentioned. Entries came from both the United States and Canada. Buff State's Astronomy Club which sponsored Astronomy Day at the college on April 20th, received a \$200 gift certificate to Sky Publishing Corporation, and perhaps a plaque will be forthcoming. We are very proud that the BAA took part in the winning Astronomy Day event.

A gentleman from the University of Miami, who has his doctorate in physics, visited the museum. He had not been able to see the 500,000 mile chain of sunspot activity because of Hurricane "Bob," and no one on the east coast had been able to see the group because of "Bob." The professor took the sunspot sketches at the museum for a week and faxed them to a National Solar Observatory at Kitty Hawk, North Carolina.

Ernst and Billie Both took a vacation to New England where they also encountered "Bob."

Marguerite Aiple spent her summer in the humongous undertaking of moving from Indian Church Road, West Seneca, to 73 Oakridge Drive in West Seneca.

Dave Bull and his family took a trip to Lancaster, Pennsylvania, from August 10-17, where Dave went to a rock and gem show. He and son, Jeffrey, went on a junket for gold dust and were fairly successful after spending three hours panning in a creek.

On September 13th, Bob Hughes participated in the Simulated Multiple Casualty Drill at the Buffalo airport, spon-

sored by the Red Cross and Erie County. Bob filled a supporting role by ham radio communication. On the 14th, he also participated in "Run for Your Life" in the same capacity around the city of Buffalo.

Larry Carlino had a very busy summer building an observatory with a 10 x 10 roll-off roof for his 6" refractor.

Ken and Cheryl Kimble were married on August 3rd. Congratulations and our very best wishes.

Darwin Christy put in a lot of time on his Honeyhouse Observatory during the summer. The track was not level so he corrected that by replacing the old cherry wood track with an all new oak track. The skirt was starting to rot the wood which supported the wheels, so he replaced that with 2 x 4s. The wheels were still all right, so Darwin reattached them to the base, and extended it downward by cutting away 8" of rotten siding and replacing it with new 12" skirting. He also made a new door on the slit door of the dome which folds down rather than out.

Orrin Christy went to Tel Aviv and Jerusalem to do research for Moore Business Forms. He left Buffalo on October 3rd and returned October 10th.

Doris and Bill Koestler left for Los Vegas on October 5, and returned the 12th. A visit to Hoover Dam was on their agenda. They are expecting their second grandchild around March 2nd. By the way, their son, Kevin, was born on March 7, (1961), and his daughter, Kathy, on March 18th, so March will be a special month on the Koestler calendar.

Al and Mary Kolodziejczak vacationed in California during the summer. They were very unhappy with the weather which was cloudy and cold. They did, however, get to see a few art exhibits. Al and Mary have started the school year with enthusiasm, and with Al being assigned to the "pleasures" of cafeteria duty. Al has started a "Need to Read" program in the school. He is stimulating students and teachers alike, with his ideas that promote reading. One of his ways of motivating students is through the use of book reviews, where a student or faculty member reads a book and types a brief synopsis of it, which appears on the bulletin board along with the reader's picture. Al has placed books in the cafeteria so students may read if they so choose. On one day each month, everyone in the school reads, be it from comic books or the finest literature, but they READ, READ, READ. Al has the support of the faculty and administration in this exceedingly worthwhile project. Congratulations to this excellent, caring teacher, for his tremendous efforts to upgrade the knowledge and ability of our youth through the joy of reading which will be invaluable throughout their lives. (Al teaches at Sweet Home High School.)

Steve Kramer, our treasurer, thought we might be in hot water with our federal and state tax numbers, but all is well. If there had been any trouble, he was going to say it was all Ken Biggie's fault for suggesting the transfer of the funds to our savings account.

Edith L. Geiger

OBSERVING REPORT: MESSIER OBJECTS by Bill Smith BINOCULAR VIEWING IN DARK SKIES

In early August Carol and I and friends went horseback riding at the Wapiti Meadow ranch on the edge of the Frank Church Wilderness of No Return in south-central Idaho. Forseeing a long hard day in the saddle I thought it best to minimize sitting afterward so I brought along my 16 x 80mm binoculars, tripod to mount them on and sky atlas 2000. I thought I'd give the night sky a bino Messier survey.

The sky clarity was superb although the sky was not as dark as I had seen elsewhere out West. There were three mercury vapor lamps on the ranch that couldn't be turned off; but the sky still seemed brighter than those lights could cause. Although shaded by cabins the light on the ground and fences etc. affected my night vision.

I knew the viewing would be good when the Andromeda galaxy extended across the bino field (3.5 degrees). The North American nebula was completely traced. Picking up the Veil nebula in Cygnus and the nebula around Merope in the Pleiades put the stamp of excellence on that sky.

I tried to find the Messiers from memory and the 1 page Messier map that Sky and Telescope puts out. I did this so I wouldn't anticipate their location and 'imagine' I'd be seeing a faint object because 'it should be there'. I used the atlas for star-hopping on a few occasions when the location was hard to pinpoint or the Messier hard to find.

Interestingly, objects seen through telescopes and especially long exposure photographs get set in your mind enough so that when viewing through big binoculars you can convince yourself that 'I think the oval glow around M51 really are small spiral arms'. For me this enhances the satisfaction of bino viewing. Coming across a new object does bring you back to reality as the new object shows a featureless disk - no detail to be seen!

I saw all the Messier objects I tried for. 69 were seen in a total of almost 7 hours of viewing during 3 nights and mornings. Mountains raised my east and west horizons to 25 degrees which covered many objects. I'll try and cover those from home in a later article.

I'd classify the objects into the following bins of increasing difficulty for large binocular viewing. Each bin has 2 or 3 levels where I feel the objects are visually equivalent. (For example 'easy' is broken down into: easy-easy, easy, and hard easy)

- 23, 17, 22, 8, 25, 13, 27, 6, 7, 3, 38, 45, 35, 31, 34

Easy:- 52, 39, 16, 20, 18, 15, 30, 56, 29, 11, 5, 4, 81, 36, 24

- 28, 2, 73, 92, 71, 37, 33

- 19, 62

Moderate:- 57, 10, 12, 9, 80, 51, 82, 110, 103, 54, 69, 14, 70

- 55, 107, 101, 1

Difficult:- 21, 72, 75, 26, 63, 94, 97, 32

- 108, 77, 74

Very Difficult:- 109, 76

The most difficult in this list for me was M109 in Ursa Major. I viewed it on 3 nights and it was always tough. Its closeness to mag 2.4 Phecda, small tight starlike nucleus and faint spiral arms make it a tough binocular object. M108 is of similar total magnitude but of more even illumination which makes it an easier bino object.

The gas nebulas M's 8, 17, and 20 were the best I've seen them in years and the best as I can remember outside of seeing them in Utah's Arches National Park in 1979.

Even though M57 is the smallest Messier object at 70 arc-seconds it is not that hard at 16x. There was never a doubt that it was a star. The core of M109 seemed smaller.

In brighter skies all objects go up in difficulty some but the gaseous nebula and galaxies much more so. M33 rated hard-easy in clear dark skies is just about invisible in bins from my parents Town of Tonawanda home. Open and most globular clusters are less dependent on dark skies than nebulae and galaxies.

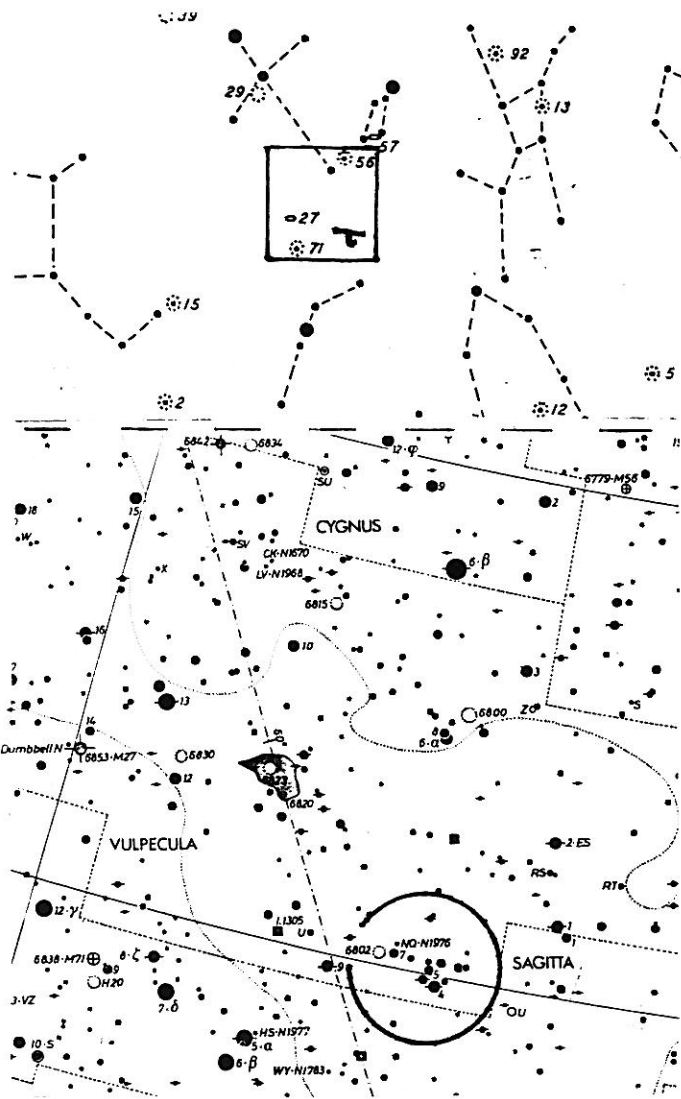
In the guidebooks magnitudes vary. The listing below is in increasing viewing difficulty based on the Idaho trip. Object size are roughly the same (2-6 minutes of arc). My ratings for my old 15x65 bins are from various times and places in 1980 (11 years ago already!). Skat Pleso is the Skalnate Pleso atlas. S&T Mess is the 1 page Sky and Telescope Messier map.

1991	1980	old	new	old	new	old	new
16x80	15x65	Skat	S&T	Burnham	Webb	Sky Atlas	
M56 Gb	easy+	8.2	9	8	8.2	8.2	
M71 Gb	mod -	---	8	9	8.3	8.3	
M62 Gb	easy(1)	6.6	7	6.5	6.5	6.6	
M80 Gb	mod +	7.7	8	8	7.3	7.2	
M70 Gb	diff-	9.6	8	8	8.2	8.1	
M1 Pl	easy	8.4	9	9	---	8.4	
M97 Pl	diff+(2)	12.0	11	11	11.4	11.2	
M77 Ga	---	8.9	10	10.0	8.9	8.8	
M76 Pl	---	12.2	11	11	9.4	11.5	
M109 Ga	diff+(2)	10.8	10	10.9	9.9	9.8	

(1) a note said "easier than M80"

(2) a note said "averted vision needed"

Lots of factors go into visibility of objects (that's another topic) but just because some book says NGC xxxx is of such and such magnitude don't believe it is too faint to see until you try it!



BAA ANNALS

5 YEARS AGO - A show at Buffalo State's Whitworth Ferguson Planetarium entitled "Sky Watchers of Ancient Mexico" was our main feature for November 1986. BAA member Art Gielow, planetarium director, was our host. For December we had John Yerger give us instructions for sketching astronomical subjects. Edith Geiger's "Candid Camera" was also featured. Wine, cheese and Christmas cookies followed, as always. Edith contributed a profile on Gene Witkowski for THE SPECTRUM.

10 YEARS AGO - Ten years ago we heard about "Extraterrestrial Intelligence". At least you heard about it; I was too busy to listen—I was the speaker. As far as I know, we're still searching with no better luck, but much more sophistication. In December we had another planetarium show put on by Art. What was the topic?

Edith's profile was on Jim Makowski. Carl Milazzo wrote an article, "Celestial Boulders", that brought us up to date on asteroids. Shaun Hardy had an article on misnomers in astronomy, concentrating on terminology used in stellar classification and evolution. Of course, many of these misleading names result from early theories that have been replaced, while the terminology has been retained.

15 YEARS AGO - In November 1976 Dr. Donald Botteron from the Syracuse Astronomical Society spoke on "Origins of Life". In December Fred Price and Joe Provato spoke on observations of Jupiter and Saturn, respectively. Following Edith's camera profiles, Dr. James Oregren gave us a show in the planetarium.

Apparently November and December are planetarium months. THE SPECTRUM contained the first announcement for meetings to be held at Buffalo State. The Museum of Science, our perennial home before, was undergoing redecorating and was also experiencing operating fund difficulties. Observatory Director Tom Dessert reported on the assets and activities at the newly built Beaver Meadow Observatory. We were saddened by the death of Dr. Seville Chapman, who had been instrumental in establishing our former observatory at Newstead.

25 YEARS AGO - Ron Clippinger spoke on "The Golden Age of Amateur Astronomy". The meeting was held at the Museum where, when nights were clear, we went to the roof after meetings to peer through the 8-inch refractor.

The November SPECTRUM contained the second part of an article on "Extraterrestrial Intelligence", in which the author, Carl Kalweit, discussed the Greenbank Equation (Drake Equation). This topic has been around a long time. By the way, a four-cent stamp sufficed to mail THE SPECTRUM in 1966.

Olga Lindberg was our Christmas speaker that year. Her subject was "Eclipse of 1965 in Thailand". Edith did her photo show, and we retired to cake and ice cream.



Rowland A. Rupp

A Deal is a Deal

For several years Darwin (our Spectrum editor) has had a deal with several publishers. Simply put, our club gets free books if we publish a book review of the book in our newsletter. Darwin has usually given the book to the reviewer for writing the review. Over the years this has worked out for many of us. So far so good. But occasionally a publisher sends us a dud. This month I have the pleasant task of trying to review a book that has absolutely no connection with Astronomy. This book is clearly in the "dud" category. Let me give it the old "college try".

The book is titled Rhetoric, Hermeneutics and Translation in the Middle Ages (Hermeneutics is the science of interpretation). It is 295 pages and is published by Cambridge University Press. The author is Rita Copeland. The text is difficult. It reads like a Ph.D. thesis. I could find not one single reference to astronomy. I strongly recommend that you forget about this new addition to human culture.

So, let's get back to something useful. Should we review books irrelevant to astronomy in our Spectrum? I humbly suggest that we renegotiate the "deal". A simple call or letter spelling out our new agreement should do the trick (or maybe if they actually read this review they'll get the hint). I suggest that we forcefully explain that we will review astronomy books only! Any other books received will not be reviewed or returned. That saves us a lot of time and effort. But, until we do renegotiate - a deal is a deal. This concludes my review of Rhetoric, Hermeneutics, Etc.

Alphonse Kolodziejczak



Dues...dues...dues...dues...!
Don't forget that 1991-92
annual membership period
started in September. If you
have not renewed as yet, you
can renew by mail or at the
next General Meeting. If you
have NOT received your SPECTRUM
lately, we may have the wrong
address. Call me at 675-2906 if
this is the case.

Bruce Newman



ASTRONOMICAL HAPPENINGS

SOLAR

The Sun will travel from Libra into Scorpio on November 17, and will enter Ophiuchus on November 24, then into Sagittarius December 14. There it will remain into January 20th. December 22nd the Sun will be at its most southern point as seen from the northern hemisphere, it being the winter solstice.

SOLAR CONJUNCTIONS

Mars - November 8th; Pluto - November 12th; Mercury in inferior on December 8th.

LUNAR

The lunar phases will be New Moon on November 6th & December 5th; First Quarter Moon on November 14th & December 14th; Full (Beaver) Moon on November 21st & (Cold) December 21st; Last Quarter Moon on November 28th & December 27th.

LUNAR CONJUNCTIONS

Jupiter - November 1st & 29th and December 26th; Venus - November 2nd & December 2nd; Mercury - November 8th; Uranus - November 10th & December 8th; Neptune - November 11th & December 8th; Saturn - November 12th & December 10th.

PLANETARY CONJUNCTIONS

Mercury & Mars - December 8th.

PLANETARY EVENTS

Venus, greatest elongation 47° west - November 2nd; Mercury, greatest elongation 22° east - November 18th; Mercury stationary - November 28th & December 18th; Mercury, greatest elongation 22° west - December 27th.

MINOR PLANETARY EVENTS

Pallas in conjunction with the Sun on November 4th; Ceres in conjunction with the Sun on December 11th.

METEOR SHOWERS

Quadrantids - Nov. 2nd; Cepheids - Nov. 3rd; Northern Taurids - Nov. 10th; Mu Pegasids - Nov. 11th; Arietids - Nov. 12th; Bielids - Nov. 14th; Leonids - Nov. 16th; Andromedes Nov. 28th; Phoenicids - Dec. 5th; Monocerotids - Dec. 10th; Chi Orionids (northern) - Dec. 10th; Rho Hydrids - Dec. 11th; Chi Orionids (southern) - Dec. 11th; Delta Arietids Dec. 11th; Geminids - Dec. 13th; Ursids - Dec. 22nd.

NEWS NOTE

The Naval Observatory was established December 6, 1830.

Darwin Christy



Your club needs You. If you haven't yet heard, the BAA is enthusiastically pursuing funding for our new proposed 20" telescope. With a funding goal of \$5000.00 we will get a large aperture Dobsonian mounted scope that is portable and available for Star parties as well as private and public observing at Beaver Meadows. The sooner we raise the funds - the sooner we reap the benefits of large aperture. I am asking members to come forward with donations payable to the BAA. Seeing I am spearheading this project for Our club, I ask that everyone tries to help. My personal goal will be to raise funding from 50 members @ \$100.00 a person. Any larger donations will be gratefully accepted. Please send your checks payable to the BAA c/o Thomas Nigrelli, 336 Utica Street, Tonawanda, New York 14150. Any questions please call me at 695-7193.

Thank You - Tom Nigrelli



ERATOSTHENES

Born in Cyrene, Africa in 276 B.C., Eratosthenes was a Greek astronomer, geographer and philosopher. He went to Greece after studying in Alexandria, where he became Librarian, as well as improving the science of mathematical geography, which he reduced to system. His greatest gain of renown was his investigations of the size of the Earth. His estimation of the circumference proved surprising accurate and near the truth. He also wrote on chronology, grammar, philosophy, literature as well as history and drama; although he was not considered to be a poet. He rendered such services in astronomy and first observed the obliquity of the ecliptic. In 196 B.C., Eratosthenes, having become blind, committed suicide by starving himself to death. The extant fragments of his writings were collected in 1822 by Bernhardt in his 'Eratosthenica'. Berger, in 1880 published his geographical fragments.

His commentary on 'Timaeus', of Plato, seems to have been highly valued in his day and his philosophical dialogues became popular as they were intended. "On the Old Comedy", treated the foremost comic poets in 12 of his books which were looked upon as really great works. He dealt in it with the works of the poets and the general life and management of the theater. He may be said to have been the father of exact chronology since he endeavored to ascertain the dates of the principal events in history, in politics and in literature from the fall of Troy to his own day. He deals in his 'Katasterismoi', in the interesting manner with the relation existing between the popular Greek mythology and the constellations. Issued in three books of geography, he made the first known attempt to treat the subject scientifically, historically and experimentally. Two books which did not survive him that he wrote were on mathematics. In them he worked out a 'sieve' to discover all prime numbers.

The naming of the craters on the Moon gave recognition that he, among others, must have been a very well known astronomer in his day. Rightfully so, as the one in his honor is a very well known and large crater.

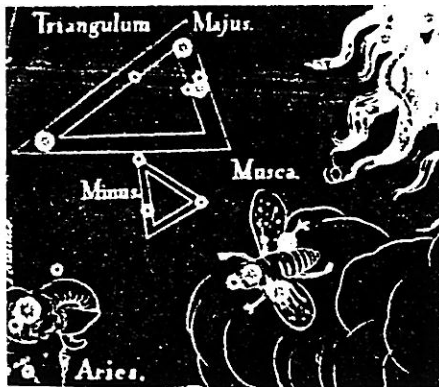
Darwin Christy



ANCIENT CONSTELLATIONS

TRIANGULUM MINOR

TRIANGULUM MINOR, the Lesser Triangle, is a small ancient constellation in a portion of the Zodiacal constellation Aries. It lies in the upper right of the constellation, north of the brightest star Hamal. Hevelius formed this constellation from three stars, 10, 16 & 20 in Aries, immediately below the major constellation. It has been discontinued since Flamsteed's time, although Gore recently revived it on the planisphere in his translation of "l'Astronomie Populaire", calling it Triangula. Proctor also added it to his reformed list. But all has been lost, although not really forgotten.



MUSCA BOREALIS

Not far from Triangulum Minor, is another ancient constellation, MUSCA BOREALIS, the Northern Fly. It too, is in the constellation of Aries, a little east of the triangle. The stars 35, 39 & 41, by Flamsteed, in Aries make up a better triangle than do those in Triangulum Minor, and can be mistaken for that constellation.

This lesser constellation has been given its name from Houzeau attributing its formation to Habrecht. Others gave it birth to Bartschius who called it Vespa, the Wasp, as well as Apis, the Bee. In more modern times, Royer contended the figure to be that of a Lily, thus in 1679, he gave 'le Lis' or 'le Fluer de Lis' with the French coat of arms. It has since been rejected from all the books, charts and maps as such but the Fly still remains in question. It has remained on some popular astronomical works, but has not been figured by the scientific Heis, Argalander nor Klein. It is not recognized in the British Association Catalogue neither.

Darwin Christy

OBSERVATORY REPORT *457-3104*

Mirror: Our main mirror will soon be sent out for recoating. Bill Smith has inquired about getting a high reflection coating. Currently the recoat time is 3 to 5 months! The coating people said to call back in November for an update, as they expect the backlog to drop dramatically by then. I will post news on this on the Observatory answering machine when I know more.

Help Wanted!: Beaver Meadow Public weekend is coming! November 9, from 10am to 5pm and public night 7pm to 10pm. As usual I could use some help. Bring a scope, computer, charts, radios for tracking satellites, or any other piece of equipment you enjoy sharing with others. So come and join in on the fun. Last time we were looking at Venus and Jupiter at 11:00 am!

Public Nights: End on November 9! This was a very successful year for the amount of visitors. The public weekends have been well received, and public nights have had 20+ visitors on clear nights. We had over 93 people sign in the log for the October 19 public night! Beaver Meadow had a moon walk that night and over 150 people showed up. I would like to extend my thanks to Bruce Newman who showed up to give Dave Fliss and myself a hand with the mob! We had people lined up 10 deep on all three scopes all night.

New Scope: Tom Nigrelli is chairing a committee for raising funds for a second main scope for the Beaver Meadow Observatory. At present the plans call for a 20" Dobson to supplement the fine 12.5" equatorial we currently have. In conjunction with this new scope, there is a second committee

looking into acquiring a IBM compatible computer and a CCD camera for deep sky imaging. I have been putting feelers out to local computer dealers to see if anyone would like to make a tax deductible donation to the Observatory of any IBM compatible equipment like:

- XT/AT computer
- Hard drive
- VGA B&W or color monitor
- 5.24/3.5 floppy drives
- Modem and program
- DOS program

MONEY

If you know of any computers gathering dust because of bad parts, we can use parts from several compatible units to create one good one.

Repair Day Results: Thanks again to Dave Fliss, and Bruce Newman. The window trim, and the doors now look white instead of mouldy grey. We took the rotating rings apart and cleaned them. They are still stiff, but they turn a little easier. The main drive was also checked out and found to be in working order. If the scope does not want to track properly, please check the balance. If you are doing photography, please contact me, Dan Marcus, and I can give you some tips to alleviate a slipping clutch.

Photo sessions: There will be no scheduled Photo sessions scheduled until January 92.

Daniel R. Marcus

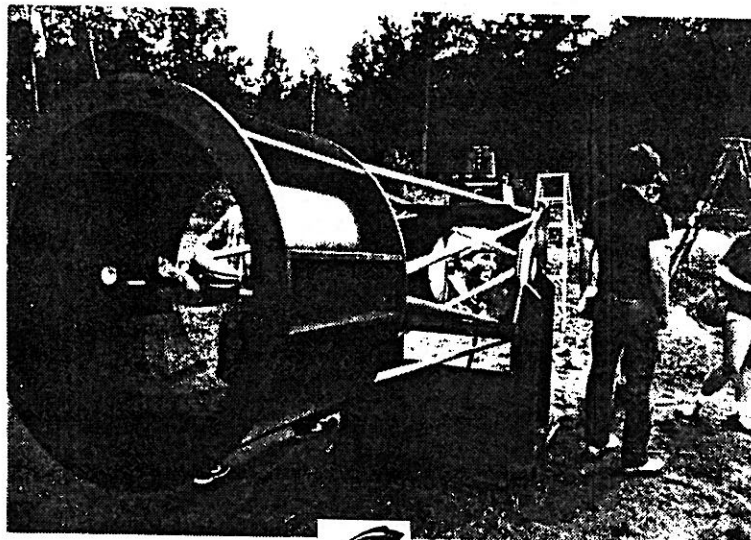
FOR SALE

TWO - 1/4 SHARES IN A 26 INCH DOBSONIAN TELESCOPE.

THE SCOPE IS AN F/4.4 WITH A TWO INCH FOCUSER. THE ENTIRE SECONDARY ASSEMBLY SLIDES, WHICH ALLOWS FOR LESS LIGHT SCATTERING AND AN UNDERSIZED SECONDARY. THIS FEATURE ALLOWS THE SCOPE TO HAVE THE LIGHT GATHERING ABILITY OF A 29" SCOPE.

- * 26 INCH F/4.4 PYREX MIRROR FIGURED BY PAUL JONES OF STAR INSTRUMENTS.
- * 18 POINT MIRROR CELL AND SLIDING FOCUSER DESIGNED AND BUILT BY BOB MAYER.
- * COMPLETELY OPERATIONAL FOR ONE PERSON.
- * DESIGNED FOR DEEP SKY-OBJECTS. GALAXIES AND NEBULA AS FAINT AS 16.0 MAG. HAVE BEEN SEEN WITH THIS SCOPE. (STARS DOWN TO 17.5 MAG.)

CALL AL KOLODZIEJCZAK 634-5443 FOR DETAILS.



SKYGLOBE 2.5

Do you have an IBM compatible computer? You might try this planetarium program. This is a \$15 shareware program that contains 25,000 stars, plus all the Messier Objects. To obtain a copy, see Jack Empson, Dave Sepulveda, Bruce Newman, or download it from the Taxicom Bulletin Board. Some of the things you can do with this program include: plotting and labeling major and minor constellations,

labeling 300 stars, plotting animated movement of Solar System objects. It is a great program for showing students how the Sun, Moon, Planets, and the Stars move from night to night. It has been fascinating to watch Mercury, Venus, and Jupiter do their celestial dance. Now with this tool, you can show others what goes on with out getting up at 6am! Or when they ask you what is that bright star I see at 10:57pm?, you can call it up on your screen for that exact time and direction, and say with confidence, oh that? don't see it here, you sure you didn't see a UFO?, or you can say that was not Mercury between Jupiter and Venus, it was just a star, see it right here!

Two problems with the program are: you can not tell the Magnitude of the stars, and the planetary data for the year you wish to see must be in the data file. The program comes with the years 1990-2009. You can purchase additional years (\$5) in blocks of 34 years before and after those dates. If you belong to Compuserve, you can contact the author as 76207,3377. When we get the computer for the observatory, this will be one of the first programs on it! The star charts can be then printed as normal, or mirror images on a dot matrix, or laser printer.

Daniel R. Marcus



INSTRUMENT NOTES

If your telescope is not performing up to your expectations, you may wish to test it. The time honored way of testing a telescope goes back to the earliest days of telescope making. You simply look critically at a star. Pick out a convenient bright star and get it into the field. then rock the focusing control back and forth so that the image is seen both inside and outside as well as right through the focal plane. The image will vary in size being smallest when in sharpest focus. The star image will be a disk. It will vary in size but should be perfectly round in all positions of the focusing adjustment. Be sure to use only a high grade eyepiece, such as as orthoscopic, for this test to eliminate any contributing distortion by the eyepiece.

If your scope produces good round star images, try it on a double star, preferably a vari-colored one, such as Albireo in Cygnus. A goos scope will show Albireo as a beautiful blue and gold double, each component being clear and sharp. Next- go on to a more difficult multiple star such as Epsilon in Lyra. This is the so called double-double or quadruple star. A good 6-inch telescope will separate all four components sharply at 100 to 150 power.

If a telescope passes all these tests you can be pleased with it. But what if the star images, when expanded are not perfectly round? Then you have distortion in your primary optics or the collimation (alignment) is faulty. If your scope is a refractor there is a very small chance that there is anything wrong with the collimation as the tube has been machined and both the objective lens and the eyepiece fit into their sockets snugly. In that case there is primary aberration. Our group is not equipped to correct defects in an objective lens. Your only recourse is to move up to a higher quality instrument. But if the telescope is a

reflector, the collimation may have been disturbed in handling. It is possible to improve the collimation.

As a check of collimation point the tube at a bright lighted projection screen. Then look into the eyepiece tube with the eyepiece removed. You will see an image of the primary mirror centered in the secondary mirror or prism. You will find that the image moves considerably as you move your head from side to side. You will need a mask in the eyepiece tube to more accurately center your eyepiece in the tube. It happens that an empty 35mm film can slides into the eyepiece tube very nicely. Cut away the bottom and put a quarter inch hole in the can top centering it as closely as possible. It will then be found that if you can see the diagonal mirror, the pupil of the eye will be accurately centered in the eyepiece tube. If the image of the primary is not centered on the diagonal you will need to find by trial how to adjust the primary mirror mounting screws and the diagonal adjustments so that the images are concentric. Some years ago I made up what is known as a Cheshire eyepiece for collimation work. This is inserted into the eyepiece tube and makes possible a very accurate collimation. These are now sold commercially by some of the optical suppliers. A complicated catadioptric telescope can be collimated with this device. It is a rather tedious job but it makes possible a precise collimation procedure.

After collimation repeat the star test. If the results are still not there, it is sure to be primary aberration. Our group makes frequent mirror tests. If the mirror is one that you have made yourself and the polishing and figuring laps are available, we can probably help you figure your mirror. But if the mirror has been commercially made we would have to make up the laps. And since you did not figure the mirror yourself you would not be familiar with the figuring process. This sort of project is beyond our present facilities. You will simply have to move up to a better scope.

Ed Lindberg



ACKNOWLEDGMENTS

Thanks to Edith Geiger, Perry Pezzolanella, Bill Smith, Rowland Rupp, Alphonse Kolodziejczak, Bruce Newman, Tom Nigrelli, Dan Marcus, Ruth Christy for all the help with articles and to get the newsletter out.

Darwin Christy,
editor





Well let's see . . . a 60 inch Newtonian reflector, a CCD camera, digital setting circles, low humidity, clear skies . . .

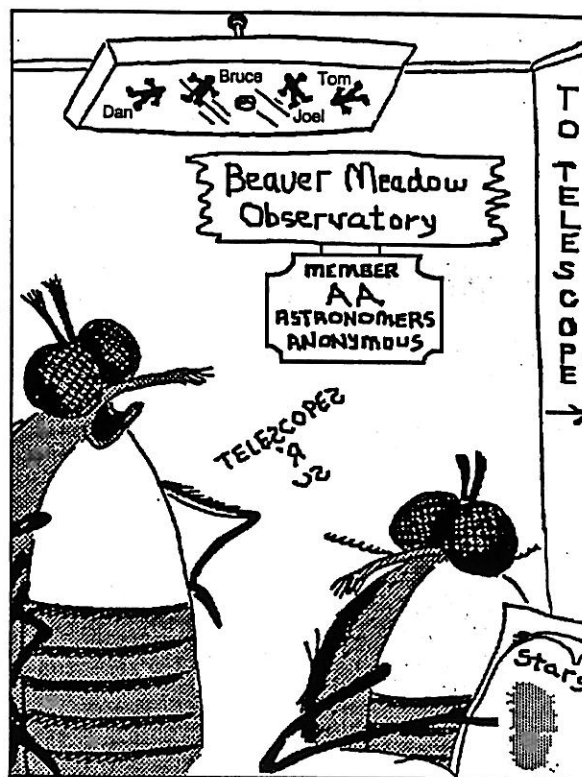
8

* The "SPECTRUM" *

BUFFALO ASTRONOMICAL ASSOCIATION, Inc.

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** FIRST CLASS MAIL **



"Good grief! . . . Didn't we clean out that light just last week?"