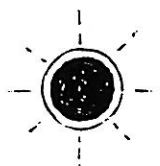




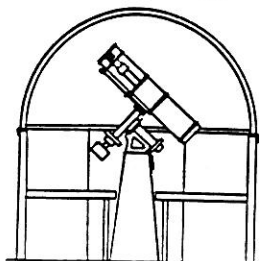
the Spectrum



BUFFALO ASTRONOMICAL ASSOCIATION, INC.

MAY

JUNE



1
9
9
4

officers

Bill Smith - President
Bruce Newman - Vice President
Luann Szucs - Secretary
Steve Kramen - Treasurer

board members at large

Joseph Drabek - Joel Stuckey
Ed Lindberg - board member emerita
Rowland Rupp - Fellow Representative
Dr. Jack Mack - Museum Representative
Joe & Bev Onzechowski - Membership
Dan Marcus - Observatory Director
Darwin Christy - "SPECTRUM" Editor

"The SPECTRUM" is the official newsletter of the Buffalo Astronomical Association, Inc. 'Permission' is hereby granted to any non-profit astronomical society, to reprint, in whole or in part any article in this, or any other issue of "The SPECTRUM", provided credit is due this newsletter the Buffalo Astronomical Association, Inc., date of issue and author of said article.

BEAVER MEADOW TELEPHONE

The telephone at BEAVER MEADOW (716 457 3104) is for emergency use only at no cost. There is however, a box placed near the phone for which we ask that you deposit 50¢ for the first three minutes and 10¢ per minute thereafter for domestic calls. Please abide by this ruling. THANK YOU!

IN CASE OF EMERGENCY

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



DEADLINE for the **SUMMER ISSUE** of **"SPECTRUM"** is **NO later than the** **1st of JUNE 1994!** For the **SEPTEMBER/** **"SPECTRUM"**, the **DEADLINE** is no **an AUGUST 15th** which is a **MONDAY**

>> MEETING NOTICE <<

May 13th: Physiology of the eye and observing. Plus a 10 minute Kodak video on the making of the Keck multiple mirror telescope mirrors using ion figuring.

June 10th: Annual business meeting with election of officers. Slide program on amateur conventions.

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.

The May meeting will feature Tom Dey. Tom is an optical engineer at Kodak and a longtime amateur astronomer. Proficient in observing, instrument making and astrophotography, Tom has an eye for what it takes to see. Our June meeting will feature Carl Milazzo on amateur conventions. He's traveled to many over the last 20 years. Stellefane, Hidden Hollow, Starfest and other conventions offer good locations, great speakers and viewing, and are a FUN escape.

Bring a friend and roll into Spring with an astronomy talk!



>> PRESIDENT'S MESSAGE <<

TIME TO TAKE ADVANTAGE

MEMBER ACTIVITIES

Spring and summer mean warm weather for observing. Some things to take advantage of include:

Club observatory @ Beaver Meadow - 20" Obsession telescope

Member viewing anytime, loaner scope; club library

Public nights: sharing the sky, members only time after 10 PM

Telescope, observing and astrophotography clinics

Summer star parties: picnics, scope tune-ups, observing

Upcoming CCD @ Beaver Meadow via Joel Stuckey

Don't sit back and wait to be discovered, join in the fun! Every part of the BAA from instruments to club services is the result of volunteer effort. We welcome your help on committees, public nights, meeting presentations, board or officer positions and we need your ideas. We want you to take advantage of what we have to offer from telescopes to camaraderie. For whatever reasons you joined the BAA and for whatever level of interest you have in Astronomy, we hope our alliance will be helpful.

CANDIDATES FOR OFFICERS

Elections for President, Vice-President, Secretary and Treasurer take place in June. This is a perfect opportunity to become a more active member. These positions are truly fun and you get a good feeling in seeing your club grow. Call a member of the search committee: Edith Geiger, Bob Hughes or Bill Smith and say you want to be a candidate for a particular position.

SUPERNOVAE

M51 has a supernova discovered 4/1; a type II in its earliest stages. It is mag 13.5 and 18" SE from the nucleus's center. A star in our galaxy is in front of M51 and is mag 13 at 90" NW from the nucleus — don't mistake it for the supernova. The supernova is very close to the nucleus. I needed 200X with a 10" to see it well. A supernova in such a major, easy to find galaxy is a rare event — try to see it!

NGC 4526 (RA 12h 34m, Dec 7° 42') has a mag 11.8 supernova 11" NW of the mag 10 galaxy's center.

COMET

A mag 6.5 comet with a 20' halo is near Aldebaran (on 4/4). Call Sky and Telescope's skyline (617-497-4168) for current positions of this fast mover.

FINAL NOTICE

**Annular solar eclipse over Buffalo -- the BIG event
Tuesday, May 10, 11:41-3:09 PM
Observatory open -- don't miss it!!**



Bill Smith

MEMBERSHIP CORNER

In the last issue we mentioned that we were on our way to the Florida Keys to attend the Winter Star Party. It certainly seems as though we have been made to pay the price for that brief respite from winter's ice and cold. But have faith! Winter will end soon and the time for more comfortable star gazing will be upon us.

One sure sign that spring is approaching is the publication of the annual BAA Membership Directory which will be available to members at the April, May and June meetings. Members who are unable to attend these meetings will have the directory mailed to them. If there are any errors or omissions in your directory entry please let us know so that they may be corrected. Additions were made to the directory right up to the day it was printed. But even this did not guarantee that everyone who should be in it got into the directory. I hope the following five members please accept our apologies for not being included:

ADAMCHICK 2624 AMSDELL RD HAMBURG NY 14075 Deep Sky, Galaxies, Comets, Radio Astronomy, Computers	MARK	627-9263
BORKOWSKI 114 CALVIN CT S TONAWANDA NY 14150-8804 Variable/Multiple Stars, Naked Eye Observing	LOUIS	836-8563
EMPSON P.O. Box 1335 N TONAWANDA NY 14120-9335 Satellites, Radio Astronomy, General Observing, Astrocomputing	JACK	731-5083
MATYAS 68 TIERNON PARK KENMORE NY 14223 Scope building, Optics, Planetary, Galaxies, Asteroids, Comets	CHRISTOPHER	832-9244
SIEGEL 5120 BROOKFIELD LN CLARENCE NY 14031-1404 Eclipses, Scope bldng, Radio astronomy, Deep sky, Comets, Optics	VERNON	634-5276

We would like to take this opportunity to invite any new members to introduce themselves to us at one of the membership meetings (we are usually at the back of the room at the "membership table") or give us a call at 839-9109. We will be happy to answer any of your questions about the BAA and we can point you to the right people and the right activities that will help you get the most out of your membership in the BAA. Clear skies, everyone!

Joe and Bev Orzechowski

HISTORY OF THE BUFFALO ASTRONOMICAL ASSOCIATION, INC. 1947-1993

Announcing the publication in May 1994 of the Buffalo Astronomical Association's new history! Forty-nine pages of text, in 8 1/2 x 11 format, with an every-name index. A history of the BAA from its earliest days to 1993, with over 160 individuals cited for contributions to the association.

Special pre-publication price (until May 13, 1994) is \$6 per copy. Regular price, for orders received after May 13, 1994, is \$7.50 per copy. Ready for pickup at the June BAA meeting. For delivery by mail, add \$1 for postage & handling. Mail orders will be sent after June 10, 1994.

Orders can be sent to Rowland A. Rupp, 132 Burroughs Drive, Snyder, New York 14226. Make your check payable to "Buffalo Astronomical Association, Inc."



AMATEUR ASTRONOMY IN POLAND (PART 2)

This is the second part of a two part article written by Lech Jaszowski, a Polish amateur astronomer. He makes his home in Cieszyn, Poland and is currently studying physics at the Pedagogical University at Cracow. He is a member of the Section of Observers of Positions and Occultations of the Polish Amateur Astronomers Society.

Planetariums in Poland

There are 8 planetariums made in the famous "ZEISS" factories in Germany. There are 4 types of machinery, each a bit different in its range of demonstration capabilities. The Silesian Planetarium's dome has a diameter of 23 meters (over 25 yards). The dimensions of the dome correspond to the capacity of the Planetarium projection hall, which in the Silesian Planetarium seats 400 people. Every astronomical display is accompanied by a suitable lecture, often illustrated by films or slides. It is significant that young people constitute over 60% of the visitors, who number about 200,000 yearly. Each year over three hundred special displays are organized for foreign delegations and visitors, with texts in sixteen languages. In Olsztyn there is the Space Flight Planetarium — fully automatic machinery adapted to a hall a dozen or so meters in diameter, which has room for 200 spectators. In some small towns there are also small planetariums, with halls several meters in diameter, which have room for tens of people.

The Planetarium of the Nicholas Copernicus Museum of Frombork is located within historical walls. It is the place where Nicholas Copernicus spent thirty years of his life. The building is an eight-cornered tower of the fortress on the cathedral hill of Frombork into which an 8 meter projection dome has been built. The walls of the planetarium have a thickness of seven to eight meters. The dome seats 88 visitors. The planetarium began its work in 1973 when the 500th birthday of the great Polish scientist, Nicholas Copernicus, was celebrated all over the world. Most of the millions of visitors to this planetarium have been tourists who want to see the place where Copernicus lived and worked. Many school classes also come to the planetarium to attend the easily understandable popular programs. In addition, programs adapted to the subjects of astronomy lessons are offered. These programs are characterized by live comments on the projections and immediate answers to the students' questions.

In Polish planetariums, in addition to performances on various subjects and at various levels, astronomical and astronomical exhibitions, olympiads and competitions for young people are organized, series of lectures are presented and amateur astronomers are instructed in the area of amateur telescope building.

"Holidays in the planetarium"

"Holidays in the planetarium" has been organized by the Frombork Planetarium since 1978. It is attended mainly by secondary school and university students who come to Frombork for this event. They widen their knowledge in astronomy. They work autonomously, e.g., showing the visitors sunspots through the 63/840 mm (diameter/focal length) TELEMENTOR school telescope arranged at the entrance to the planetarium, or they do celestial observations in the observatory and even projection shows in the planetarium. Many of them come back to Frombork again and again. In 1983, these youngsters founded the PULSAR Association of Friends of the Planetarium and Observatory of Frombork, and all of them are very helpful to the planetarium staff.

The Astronomical Olympiad

Among the multifarious activities described thus far, mention must also be made of the Astronomical Olympiad, which the Silesian Planetarium at Chorzow organizes every year. This interesting event is open to all the senior pupils in Poland. It was organized in the 1957/58 school year for the first time. This year the 35th edition of the Olympiad has started. Two to five hundred competitors attend this Olympiad. Those who successfully pass two eliminations arrive at the Silesian Planetarium for the Olympiad Final and here the year's best astronomy adepts are selected. For years the students of the lower classes have made up a big part of the astronomical olympiads' entrants. Most often they participate in olympiads many times. The influence of the olympiads on the development of astronomical interests is significant for this "notorious" group. You can see it in the results attained by them.

Teaching of Astronomy in Poland

Astronomy is not separated as a distinct subject in the present curriculum. The physics curriculum of secondary schools contains elements of astronomy but the teaching of astronomy and astronautics starts earlier. Namely in geography lessons in the fifth class and in the 6th-8th classes during the teaching of physics. Astronomical subjects are included in the curriculum of geodesy studies and in some pedagogical and university studies (physics, geography). People can major in astronomy at five Polish universities - Cracow, Warsaw, Torun, Poznan and Wroclaw.

The main of school astronomical education consists of explaining astronomical phenomena and providing immediate answers to students' questions. Of course, we have much more trouble with the questions astronomers concern themselves with than with those in science; but this is the problem which is faced in teaching this exceptional subject, in spite of the few hours dedicated to astronomy in the curriculum. Sometimes casual participation in events organized by amateur astronomers broadens one's horizons more than systematic teaching in school. Sincere interest connected with an experience, with an adventure - even though in miniature - forms the mind to an equal degree as correct lessons including writing formulas and checking acquired knowledge. The astronomical knowledge acquired by self-study is most permanent. This is undoubtedly connected with emotional engagement, which always accompanies reading chosen articles, doing observations planned by oneself or visiting astronomical institutions.

Amateur Telescopes

There is (only!) one firm making telescopes in Poland. The Mr. Uniwersal's firm in Zywiec. He manufactures types of telescopes (3 types of refractors and 6 types of reflectors). These are their data (dia/f.l.):

refractors:	1.9"/19.1"	2.6"/15.1"	2.6"/31.5"
reflectors:	2.8"/21.7"	2.8"/31.5"	3.5"/35.4"
	5.9"/59.1"	5.9"/35.4"	9.8"/59.1"

[* billed as a comet seeker]

However, they are criticized for many weak points in construction of the mounting. Some amateurs try to build telescopes themselves. Others bring them from the West, but they are too expensive for us.



Lech Jaszowski

BAA ANNALS

5 YEARS AGO - The Lord Amherst was the site of our May dinner meeting in 1989. Ernst Both spoke on "Voyager", a hot topic then because Voyager II had just completed its tour of the outer solar system. In June we had a Voyager follow-up talk by Marilou Bebak. Also, Bob Hughes spoke on "How Sunspots Affect the Ionosphere".

The May-June 1989 SPECTRUM didn't have much in the way of articles submitted by members, it didn't even have an observation report. There was an article on "Getting Started in Amateur Radio Astronomy" by Jeff Lichtman, President of the Society of Amateur Radio Astronomers. Those interested in that highly technical field of astronomy might want to get a copy of this article. By the way, if you find an article mentioned in these "BAA Annals" that you would like to read, check with Darwin Christy or me about getting a copy. An obituary for Esther Goetz, the BAA's poet laureate, appeared in this SPECTRUM.

10 YEARS AGO - For May 1984 we had a panel of experts meeting in which the experts who were prepared to "field questions from the audience on any topic in astronomy." Our experts were: Ernst Both, Jack Mack, Michael Idem, Fred Price, Carl Milazzo and John Riggs. In June, Jeff Pignatara from the Lockport Astronomy Association spoke on "Galaxy Clusters". He dealt both with their physical properties and observing techniques."

Edith Geiger wrote a joint profile on Tristan and Debbie DiLapo for the SPECTRUM. There were several observation reports. Contributors were: Michael Idem, Darwin Christy and John Riggs. Larry Carlino submitted a detailed report of his observations of Mars during its 1983 apparition, which was the best since 1973. The planet reached an angular diameter of over 17 arc seconds. Observatory Director John Riggs was planning to open Beaver Meadow Observatory to the public for the May 30th partial solar eclipse. He pointed out that this would be the first solar eclipse easily seen from our still relatively new observatory.

According to "Spy and Tell" BAA members were active in 1984. Darwin Christy was teaching a class in telescope making at Remick Observatory in Lockport. Beverly Botto had one of her space art paintings displayed at an exhibit in Cleveland. Dan Marcus had an aurora photo published in ASTRONOMY magazine and Bill Chambers had just left for a new job at Lockheed in Pasadena.

15 YEARS AGO - David Atkins from the Finger Lakes Astronomical Society spoke at the May meeting on his visit to the radio telescope at Arecibo, PR. Although June was strictly a business meeting then, we were to have "selected short topics" to spice things up a bit.

Carl Milazzo wrote a SPECTRUM article on celebrities who were interested in amateur astronomy. Among them were: Johnny Carson, John Denver, Hugh Downs, Robert Frost, Barbara Feldon, Arthur Godfrey, Gary Moore, Dave Garroway and several others less well known. Edith Geiger did her profile thing, this time on - me.

Darwin Christy reported on his observations or luminosity and temperature changes during the partial solar eclipse, presumably, of February 26, 1979. I say "presumably" because Darwin didn't mention the date - shame! I have trouble reconciling this with John Rigg's comment in the 1984 SPECTRUM, mentioned earlier, that the coming eclipse was the first easily seen from Beaver Meadow since the observatory was built. Explanation anyone?

25 YEARS AGO - George Keene, a well-known astrophotographer from Rochester, spoke on his specialty at the May 1969 meeting. He had written a book about astrophotography (I have a copy), had articles published in SKY & TELESCOPE and was active in the space program as part of his work at Eastman Kodak. A trip to Rochester's Strassenburgh Planetarium was planned for our June meeting.

The club was planning to hold an astrophotography exhibit at the museum. Orrin Christy wrote a brief article on astrophotography for the May SPECTRUM.

40 YEARS AGO - A round table meeting on telescope making was scheduled for May 1954. Who participated? There were no June meetings then.



Rowland A. Rupp

ASTRONOMICAL HAPPENINGS

MAY 1994

- 1 - Conjunction - Neptune & Moon
Conjunction - Uranus & Moon
Phi Bootid meteors
- 2 - Last Quarter Moon
- 3 - Omega Scoriid meteors
- 4 - Conjunction - Saturn & Moon
Eta Aquarid meteors ***
- 5 - Conjunction - Venus & Aldebaran
- 6 - Mercury at perihelion
- 7 - Conjunction - Mars & Moon
- 8 - Moon at apogee (406,423 km)
- 10 - New Moon
Annular Solar Eclipse *****
The Sun leaves Aries and enters Taurus
- 13 - Conjunction - Venus & Moon
BAA Meeting 7:30
- 15 - "O" Cetid meteors
Conjunction - Mercury & Aldebaran
- 17 - Pluto at opposition
Zeta Herculid meteors
- 18 - First Quarter Moon
Venus at perihelion
- 23 - Conjunction - Jupiter & Moon
Moon at perigee (358,816 km)
- 24 - Full (Flower) Moon
Partial Eclipse of the Moon
- 28 - Conjunction - Neptune & Moon
Conjunction - Uranus & Moon
- 30 - Mercury at greatest elongation - 23° east
Eta Pegasid meteors
- 31 - Last Quarter Moon

JUNE 1994

- 1 - Conjunction - Saturn & Moon
- 3 - Tau Herculid meteors
- 5 - Moon at perigee (405,693 km)
Chi Scoriid meteors
- 6 - Conjunction - Mars & Moon
- 7 - Ceres in conjunction with the Sun
- 8 - Arietid meteors (daytime)
Librid meteors
- 9 - New Moon
Zeta Perseid meteors (daytime)
Alpha Scoriid meteors
- 10 - Conjunction - Mercury & Moon
BAA Meeting 7:30
June Arietid meteors
Conjunction - Venus & Pollux

- 12 - Mercury stationary
Conjunction - Venus & Moon
- 13 - Theta Ophiuchid meteors
- 15 - Lyrid metros - see article below
- 16 - First Quarter Moon
- 18 - Mercury at aphelion
- 19 - Conjunction - Jupiter & Moon
The Sun leaves Taurus and enters Gemini
- 20 - Ophiuchid meteors ** - see article below
- 21 - Moon at perigee (362,954 km)
Summer Solstice
- 23 - Full (Strawberry) Moon
Saturn stationary
- 24 - Conjunction - Neptune & Moon
- 25 - Conjunction - Uranus & Moon
Mercury at inferior conjunction
Vulpeculid meteors
- 26 - Corvid meteors
- 28 - Conjunction - Saturn & Moon
Bootid meteors
Draconid meteors *****
- 30 - Last Quarter Moon
Beta Taurid meteors

JUNE LYRID METEORS

The June Lyrid meteors appear on the 15th, radiating from Right Ascension 10h 32m at Declination +35°. These meteors are considered as a stream of white, short, quick streaks. They last for about 10 days producing at maximum, nearly 10, 3rd magnitude meteors hourly. These showers are not to be confused with the April Lyrid meteors. More data is needed to add to the already known information.

+

OPHIUCHID METEORS

The Ophiuchid meteors radiate from Right Ascension 17h 20m at Declination -20° on the 20th. This is another stream of white, 3rd magnitude streaks giving us about 20 hourly and lasting about 10 days. Additional information is needed to add to the already known data.



BACK TO THE NEBULA

In the March-April SPECTRUM catastrophic theories of the formation of the solar system were considered. These ideas replaced the old nebular theories formulated by Kant and Laplace in the eighteenth century. Their problem was that they failed to explain why the preponderance of the solar system's angular momentum resided in the planets' revolution, while so little resided in the sun's rotation. The sun has 99.9 percent of the solar system's mass, but only two percent of its angular momentum.

To the rescue came a flock of theories in which a one-time cataclysmic event took place that led to the formation of the planets, long after the sun had been formed. A close encounter with another star offered several variations on this theme. The sun passing through a dust and gas cloud offered more. While the probability of such an event was extremely low, the fact that we are here and no other explanation was plausible convinced eminent astrophysicists, like Sir James Jeans, of its validity. If it suggested few, if any, other systems would have formed in the lifetime of the Milky Way, we had at least rid ourselves of an attractive, but physically unrealizable, alternative - the nebular theory.

But discomfort with the improbability of the reigning paradigm led theorists, like Whipple, Weiszacker, Kuiper and Alfven, to develop new variations of the nebular theory. Whipple imagined the solar nebula peacefully condensing until its diameter became about the size of Pluto's orbit. At that point the gravitational influence of the protosun disrupted the nebular gas, creating whirlwinds within its structure. When the sun finally formed into roughly its present state, some of these whirlwinds detached and eventually formed the planets. The satellites repeated this process. But like earlier versions of the nebular theory, this one fails to explain satisfactorily the peculiar distribution of angular momentum. It did have the virtue of creating the planets out of relatively cold material. Geological evidence had shown by this time that the Earth had never been subjected to extremely high temperatures.

Weiszacker was careful to address the angular momentum issue at the outset. He envisaged the rotating nebular disc breaking into eddies, all rotating at different rates. Where they interacted with one another, viscous stresses were set up that tended to accelerate the slower rotating eddies while retarding the faster ones. The planets formed not from the eddies themselves, but in the region where they interacted. Shear forces resulted that handily explained why the majority of the planets rotate from west to east. In time, the viscous reaction between the originally rapidly spinning sun and the eddies slowed the sun's rotation, and transferred its high angular momentum to the eddies and the planets. As the gases dissipated into space they carried away from the system the excess angular momentum formerly in the sun.

Kuiper showed that Weiszacker's eddies would be too short lived to create planets. Instead, he suggested that a nebulosity accompanying the sun, and having five or ten percent of the sun's mass, contracted, flattened and became gravitationally unstable. It broke into very massive protoplanets that were partly dissipated as the sun heated up. The inner planets, being hotter, lost all of their volatile components and were left with rocky material and metals. The outer planets, although they dissipated ninety percent of their mass, were cold enough to retain large quantities of hydrogen and helium.

To explain the prograde rotation of the planets, Kuiper asserted that, initially, because of solar gravitational tidal forces, each protoplanet rotated synchronously with its period of revolution. Hence their rotation had to be direct at the outset. As they contracted, their rotation speeded up to their present rates.

Alfven, the instigator of the plasma theory currently being debated among cosmologists, offered an explanation for the formation of the solar system that accounts for the distribution of angular momentum based on magnetic interaction with, of all things, a plasma. He saw the atoms of the nebular cloud becoming ionized, that is, stripped of their electrons, as they plummeted toward the protosun. These charged particles were then influenced more strongly by the sun's magnetic field than by its gravity. Consequently, the process of collapse halted and the ionized particles formed rings around the rapidly spinning protosun.

Magneto-hydrodynamic effects came into play, causing the sun's angular momentum, in the form of its rotation, to be transferred to these

pre-planetary rings. The rings' revolution sped up and the sun's rotation slowed down until their angular velocities were equal. Since angular momentum is determined by the product of velocity and the distance of the mass from the axis of rotation, the majority of the angular momentum was concentrated in the remote, rapidly revolving rings. The material in the rings accreted, neutralized the ionized particles, and, eventually, formed planets and their satellites.

Alfven's ideas also faced difficulties. For one thing the sun's present magnetic field is very weak - many orders of magnitude too weak to provide the magneto-hydrodynamic interaction required. Could the field have been stronger when the sun formed? If so, what happened to it? Secondly, according to theorists, the ionization process for the infalling material is none too plausible either.

So, where are we today? Apparently we have returned to the nebular theory. The theory seems to be somewhat supported by a limited set of observations of debris around a couple of nearby stars, which suggests this process of accretion may be occurring elsewhere today. We are still stuck with a variety of explanations to account for the century old problem of the distribution of angular momentum. Perhaps the viscous stresses favored by Weiszacker answer the question. On the other hand, Kuiper's gravitational tidal effects may explain better why the sun rotates so slowly. On the third hand, possibly Alfven has the right idea - magnetic forces acting on ionized particles may have transferred angular momentum from the sun outward.

In any case the close encounter theories appear to be out of vogue. Nonetheless, I would hesitate to toss out text books of a couple of decades ago that expounded these theories. You never know----



SPY and TELL

Leslie Martin

On February 5th, Joe and Beverly Orzechowski and Tom Bemu met at Bill and Carol Smith's home in Jamestown, and packed their luggage in Bill's van, and left for Florida to attend the Winter Star Party hosted by the Southern Cross Astronomical Society of Southern Florida. The star party was held on a Girl Scout campground in the Keys, 30 miles north of Key West.

Before arriving at the star party, they stopped at the Kennedy Space Center for a two hour tour, and spent the night in a motel getting needed sleep for the big event ahead. Bill's van had a sleeping area in the back in which the travelers took turns en route sleeping amidst the equipment, and clothing. They arrived at the star party around 2 or 3 P.M. and set up their telescopes, equipment, and tents. Joe and Beverly had a 3" refractor; Bill and Carol, a 6" reflector; and Tom, an 11" reflector. Joe and Beverly had a pup tent, Tom, a small tent, and Bill and Carol slept in the truck.

They started observing at sunset and observed until 3 or 4 A.M. for four nights. They were in the shadow of a 36" reflector. Joe climbed the ladder to get a spectacular view of M1. There were other large scopes, 18", 20", and 25", and CCDs were in evidence. During the day there were talks to attend, and on one day they spent time at the beach. No rain no snow, just lovely weather.

This trip was not all astronomy. There was also unrestrained lunacy by this unbridled quintet, the descriptions of which only their telling can do justice. Don't hesitate to ask them about their behavior while in Florida; the van breaking down when they were ready to head home; Carol losing her credit card; plane ticket mix-ups, etc. These things happen when this little band of merrymakers go on a holiday.

Mark Reville and his wife, Cathy, took a few days off near the end of March to enjoy some sunshine in the Bahamas. Mark works with computers, and Cathy is an occupational therapist. They have a lovely 20 month old daughter, Abbey. Mark enjoys his 10" Dobsonian, and does a great deal of observing when weather permits. Electronics hold a special attraction for him. He has made a small computer, and also dabbles in putting radios together. He has rewired their home to produce special effects.

Michael Gardiner, who is a biomedical engineer at the Veterans Administration Medical Center, has recently purchased an astronomy program from Expert Astronomer. He relaxes by sailing his Bristol XXIV in the summer breeze.

Larry Carlino's 28" scope is under construction and is finished except for the mirror. The tube and all the accessories are ready and waiting. The place in Arizona from which Larry had ordered the mirror and had been promised delivery since April 1993, notified him recently, that they could not do the work as they had a faulty blank. Larry has now ordered a mirror from Nova Optical Systems in Utah, and they have promised delivery in 90 days. If they keep their word, the scope will be ready for Star Party time.

Joel Stuckey will be a senior at Buff State next year, and will be graduating with a bachelor's degree in physics. He is building a CCD for the BAA. Most of the parts have arrived and Joel is busy with the construction.

Terry Farrell, who was a BAA member in the early 80s, has renewed his membership and we welcome his return. He is now married and has two children, Shannon age 5, and Matthew who is a one year old. Terry works as an accountant at Associate Health Care, on Main Street in Buffalo. He was president of the Southtowns Astronomy Association in which some of our former members were part of the group. Besides astronomy he has another hobby, that of wooden model ship building. He has made a Mississippi River boat; the Bluenose fishing schooner; and the Revenge, the English galleon that Drake used to defeat the Spanish Armada. Terry studies the history of the boats before putting them together, and makes changes in the model kits accordingly.

Ed Lindberg, who has had three strokes, is now in the Williamsville Suburban Nursing Home, 193 South Union Rd. Wmsvl, 14224. He is in a wheelchair, and is able to converse, so don't hesitate to pay him a visit. He would enjoy your company. He would also appreciate your cards, and letters.

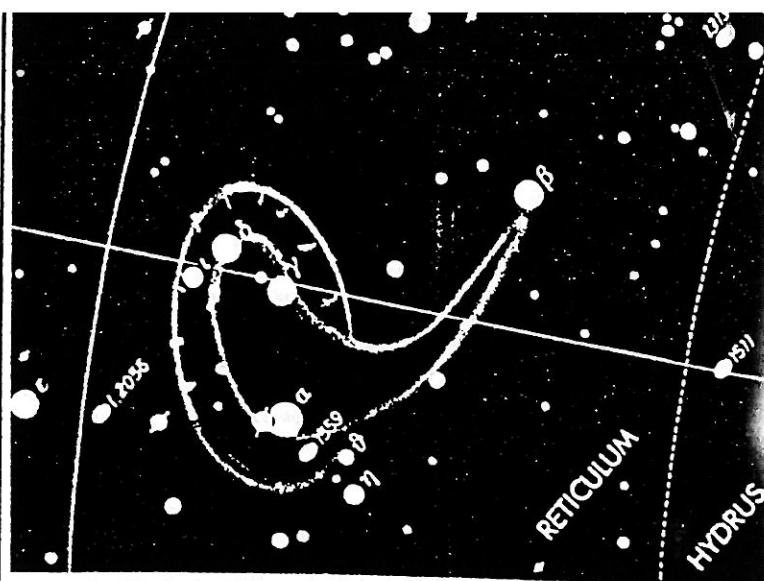


Edith L. Geiger

ANCIENT CONSTELLATIONS

ROBUR CAROLINUM, or Charles' Oak was published by Halley in 1679. He so commented it to the Royal Oak of his patron Charles II, who had been in hiding for twenty-four hours following his defeat in the battle of Worcester by Cromwell on the third day of September, 1651. Halley received his master's degree from Oxford in 1678 for his secured invention by the king's express command. This prompted La Calle to complain that it ruined some of the finest stars of the Ship. Thus, the figure now ceases to exist among the constellations. Bode tried to restore it without success. Burritt did indeed incorporate it on his maps, giving it twenty-five stars. Its place was around the star Beta Argus which is known as Carina.

SOLARIUM, the Sun Dial was included in Miss Bouvier's list of ancient constellations and Burritt drew it in his atlas. As time lingered on, it seems to have disappeared even before it was recorded on charts and maps. At least it has been ignored by our astronomers. It was formed from stars between Horologium, Hydrus and Dorado. I cannot find where or when it was originated.



COR CAROLI, an ancient constellation invented by Halley in 1725, is not only a star in the constellation Canes Venatici, but is that lone star, Alpha. Halley is said to have set it aside in honor of Charles II. It was done at the request of Sir Charles Scarborough, saying it had shone with such brilliance on the eve of the king's return to London, May 29, 1660. Many maps have shown it as a Heart-shaped figure surmounted by a crown which might have been worn by King Charles. It has been well represented by many, but as Flamsteed did not include it on his maps and charts, so---has fallen by the way-side and left only as an ancient constellation.



The star is a double and at present is at position angle 230°. The two components are about 20" apart but have not as yet been proven to be a binary system, although their distances are nearly the same. Their colors are considered by some to be pale yellow and fawn or yellowish-brown.



STAR PARTY: MESSIER MARATHONS 1994

109 Messiers! (well 14 and 95, including the same 14, on two separate nights)

Two marathons were held down at our rural home in Jamestown on March 12 and 19th. The weather here may be different from Buffalo so calling for current conditions is always best. That way minimizes missing events.

MARCH 12 (New Moon)

The sky looked great at noon on the 12th and deteriorated from then on. Joe and Bev Orzechowski, Dan Marcus and Bob Titran came down from Buffalo and Tom Bemus from nearby Bemus Pt. arrived for about 1.5 hour of viewing through thin to thick haze and clouds. We spotted 14 Messiers before the sky was totally wiped out.

Just how murky was it? Well, Joe could only pick out the Trapezium in M42 — no gas clouds. The large open cluster M41 looked like a spatter vs. a shower of stars in Joe's 3". My 10" wasn't able to do better: M81 and 82 could be seen only when a slight thinning of the haze came by; the 3 Auriga open clusters looked more like gauzy galaxies than clusters and M1, normally bright and bold, was reduced to looking like a piece of Scotch invisible tape on a gray board. So, not many were seen nor well, but our per hour rate was high! We had a fine indoor picnic, visited and made fun of the clouds. We would have much rather have liked to make light of them!

MARCH 19 (1st quarter Moon)

Clear blue sky all day and night! Perhaps burned by the earlier weekend, none of the previous weekend observers came back. Dan did call about a monster meteor he saw low in the west at 7:33 PM and reported poor skies in Buffalo. Joe and Bev checked in to see if I was out there and if I finished the "Chinese chili" from last weekend. Anticipating phone calls, I brought the portable phone out to my "Winter" observing site just outside the barn. Was I out on a rare clear weekend night? You bet I was out!

I used a 6" refractor and 16x80 binos — the 10" is just too much to lug very far solo in the winter. Besides I've never looked for the Messiers with a scope of this aperture. The first quarter Moon lit up the sky quite well and proved to be a thorn in the eye until it set around 1am. M's 31, 32 and 110 (barely) were found first in the northwest in the light dome of Jamestown. M33 was a very spurious object even with a Lumicon Deep Sky light pollution filter. Based on this I didn't even try for M's 74 and 77. M76, higher off the horizon, was also marginal, but there, in the 6".

With the low horizon objects over I could relax knowing the next 75 objects would be in darker skies. Three friends from town stopped out for a tour of a few bright objects and then we enjoyed some very detailed views of the Moon. They left after 45 minutes with warm views to counter their frozen bodies. Back to the job at hand!

I used two eyepieces to view the objects: a 32mm orthoscopic for finding and a 13mm Plossl for detailed views. Always take the time to change eyepieces when viewing objects — you'll see more details that way. Changing eyepieces gives the eyes a rest from intense viewing and viewing through the next eyepiece will be fresher. For some objects I used a 17mm as the 13 gave a poorer view (the light was spread out too much).

The 6" worked super! 56 Messier objects from 0h to 14hr RA were seen by 12:30am with the quarter Moon in the sky. The most difficult to see in the 6" were M's 98 and 109. Never underestimate the hindering effect of even slight moonlight on extended objects.

My near-the-barn observing site has a poor southern horizon (I never saw the Teapot of Sagittarius that night) and there was too much snow in the pasture and not enough energy in the observer to move the scope. So, to get the final objects I took the big binos to the street around 5am and caught M's 6, 7, 8, 20, 22, 28 and 62. Binoculars are neglected instruments and offer viewing without a lot of hassle — perfect when all you have is a few minutes. Back to the barn to try for M's 72 and 73 in the 6" but the sky was already too bright!

In total, 95 Messier objects were seen in the 6" or binos. Missed objects included M's 74 and 77 (too low in a bright sky); M 1 (too close to the Moon); M's 79, 55, 54, 69, 70 and 75 (in the trees); M's 72 and 73 (looked for them too late in brightening sky) and M30 (lost in the solar glare). A delightful bonus was Jupiter. I looked at it 4 times over 5 hours and enjoyed both great detail and the play of the Jovian moons.

Seeing so many objects in one night gives one a feeling of the great diversity of types of objects and of the variety in each type. It also helps to visualize the makeup of our galaxy like no other way can. You can try the Messier Marathon anytime but only in mid-March is it possible to see all but M30.



Bill Smith

BEAVER MEADOW OBSERVATORY *457-3104*

Bob Titran has published a Annular Eclipse booklet that we are distributing for a donation of \$2. Feel free to get as many donations for it that you can!

Astronomy Day May 7, 10am to 5pm: I'm going to need all the help I can muster for this one. There will be great interest in the Eclipse, so we are expecting a real crowd. We will need computers, telescopes, help with activities— walking tour of the Solar System, pinhole projection box construction, solar system stamps (for the kids), Eclipse talk, computer demo, and anything else you can think of!!!

Annular Eclipse of the Sun May 10: From 11am to 4pm we will be viewing the "Moon". There will be a large number of people for this event especially if clear. We will be using the 12" and the 8" to show the public the Sun. Anyone who can bring a scope please do! as we will need all we can find. Also bring any pinhole projection boxes you can find.

Observatory is almost completed. I hope to have it done by the May 7 public day. The combination will be changed on August 13!!! So please come and get rechecked in on the new equipment.

Star Parties: I'm doing the star party coordination again this year, and as usual it is first come, first serve. What is a star party? We all bring our toys (optional) to someone's observing site and have fun doing astronomy together. These parties are rain or shine, sometimes are a bring a dish to pass, and all are loads of fun! This is a great time to introduce your family to the joys of Astronomy.

Daniel Marcus



A BOWL FULL OF GALAXIES

Although this winter hasn't been real clear there have been some reasonable nights. March 30 was one of those. I got a late start and didn't get out till 10pm, so instead of bouncing all over I decided to observe in just a small spot of sky. Ursa Major (the Big Dipper to me) was directly overhead and I decided to try to observe all the galaxies in the "bowl" that were shown in the Uranometria atlas. Uranometria showed 62 galaxies! The stage was set.

I used a 10" f/5.6 Dobsonian and a 27mm Panoptic for star-hopping and finding; and a 13mm Nagler for seeing details. I figured that by starting at Merak, the bowl star near M108 and the planetary nebula M97, I would at least begin with 2 objects I know I could see! Nearby NGC 3594 was suspected but not really "seen". Closer to Merak are NGCs 3499 (gently lit), 3517 (far easier), 3530 (very spurious) and 3488 (suspected). Things were not going well; a check with the catalog showed these galaxies (listed by my opinion of increasing difficulty to see) were:

NGC	Size	Mag	Surface Brightness
3517	0.9' x 0.8'	13.0	12.5
3499	0.7 x 0.6	13.6	12.5
3530	0.6 x 0.2	13.8	11.3
3488	1.9 x 1.3	12.9	13.7
3594	1.3 x 1.1	13.7	13.9

Surface brightness is a calculated value along the lines of magnitude/area but is more complex. See the Deep Sky Field Guide to Uranometria p7 or Deep Sky Magazine issues 31-34. There is a connection between magnitude, surface brightness and observability.

The brightest was definitely not the easiest. Its light has to be spread over a larger area. The light, however, is not evenly spread. Much depends on the type of galaxy, its size, shape and whether it has a bright nucleus. Let's try a different corner.

THE CROUTON

Between Merak and Phecda is a bright "V" of stars 4" in diameter, the so-called "Crouton" in the bottom of the bowl. 13 galaxies intertwine on the Phecda side of the "V". It is much easier to see something if you are sure you're in the right spot. A star pattern helps a lot. However, these didn't prove to be any easier! Going up the side of the crouton, NGCs 3737, 3888, 3898 were fairly easy to see; 3733, 3759, 3850 were fair, 3759A just suspected and NGCs 3737A and 3846A and UGC 6816 not seen. Suspected galaxies are seen 10-35% of the time. There were other (usually smaller) suspected phantoms in some of the fields as well. Two "crumbs" off the side of the crouton were the best: 3738 was bright and had a good core while 3756 a smooth bright patch with a nucleus.

Enough of this! By now Tom Bemus arrived and we changed atlases to Tirion's Sky Atlas 2000 which depicts "the brightest and the best" of Uranometria. Sky Atlas 2000 showed 17 galaxies within the bowl. What a pleasant change: these 17 list from mag 10 to 12.4 and surface brightness averaged 13.2. This surface brightness may seem low but meshed with the total magnitude, these are the easy galaxies (compared with the rest of the 62). All were visible in the 10" although some a bit gossamer. A 6" in a darker sky might bag them all. Take your time. Expect to spend at least 1½ hours to view these 17 galaxies in a 10". Some of the best were 3610 (bright with bold nucleus), 3613 (bright core), 3738 (nice shape w/oval core), 3756 (uneven light) and the trio 3972, 82 & 98. Naturally M108=NGC 3556 was the brightest, largest and showed internal mottling the easiest. Reward yourself afterwards by viewing some nice bright objects as we did: M's 13, 51, 57, 65, 66, 92, 95, 96 and 105.

Why view these faint objects? They certainly don't look like much when (and if) you find them. They do enhance your finding and observing skills. You can use those skills to see more detail in the brighter objects. Plus, you get a sense of achievement in seeing something that few others have seen.



- Bill Smith

Astronomer from the Past

Fr. Angelo Secchi

Angelo Secchi was an Italian astronomer, born, Emilia Reggio on June 18, 1818 and died on February 26, 1878 in Rome. He entered the order of the Jesuits in 1833, after which, he taught in various Jesuit colleges, including Georgetown University in Washington, D.C. In 1849 he was appointed professor of astronomy and director of the observatory at the Collegio Romano near Rome, Italy. When he was expelled by the Jesuits from Italy in 1870, he was permitted to retain his position.

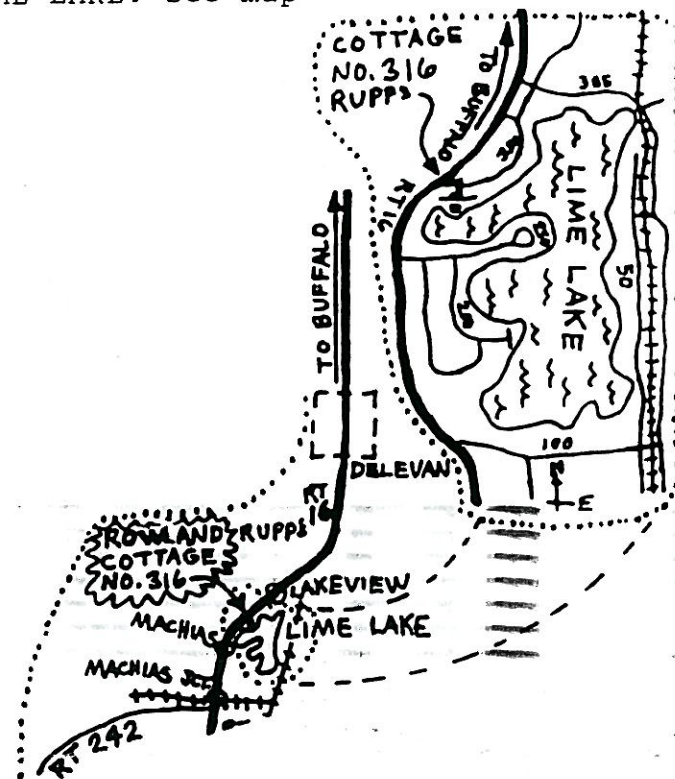
Father Secchi made a careful study of the physical constitution of the sun, the nature of sun-spots and the solar prominences. A much greater work which he pioneered, and did so with less than perfect instruments was that of stellar spectroscopy or astrophysics; working with Huggins contemporaneously. He was instrumental in making the first systematic spectroscopic survey of the heavens and also, proposed a classification of stellar spectra under four main types. This proved later to be a very valuable basis for subsequent research.

Among his works are, "Catalogo delle Stelle di cui si è determinato lo Spettro Luminoso" in 1867; "L'Unità delle Forze fisiche" in 1869; "Le Soleil" in 1870; and "Le Stelle" in 1877.



Darwin Christy

JUNE 25 ~~26~~ STAR PARTY
AT ROWLAND RUPP'S AT
LIME LAKE. see map



BUFFALO ASTRONOMICAL ASSOCIATION, Inc.

Darwin Christy, Editor
216 Kohler St.
Tonawanda, NY 14150

** FIRST CLASS MAIL **



ROWLAND & IRENE RUPP (94)
132 BURROUGHS DR
SNYDER NY 14226

