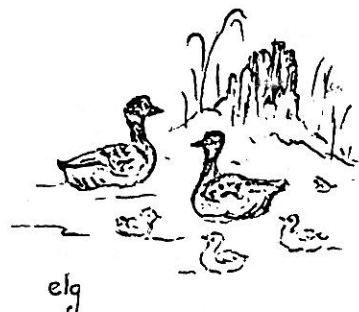




THE SPECTRUM



MARCH/APRIL 1994



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IN CASE OF EMERGENCY

If for any reason there might be cause for cancellation of the meetings of the B.A.A., tune your **radios** 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.

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>> MEETING NOTICE <<

MAR 11th: Dinner meeting at **Jimricky's Restaurant, Northtown Plaza**, Amherst - Call Steve Kramer, 634-7694 for reservations. See notice and reservation slip in this issue.

APR 8th: Solar eclipse preparation: viewing safely, what to see, photograph the eclipse

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 March Dinner Meeting will feature longtime member Dr. Fred Price who will speak on the history of and a tour through the Royal Greenwich observatory in England. His slide show will present historical and modern instruments set within the beautiful English countryside.

Our April meeting will feature short talks by members on solar topics:

Marilou Bebak will show solar flares and the capabilities of the Science Museum's solar instruments.

Steve Kramer will bring a antikythera device, which is a 2000 year old instrument that predicts lunar and solar eclipses.

Dan Marcus will present eclipse viewing safety and photography hints.

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 Bristo, Northtown Plaza, 313 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 Chargrilled with Monay Sauce, or Vegetable Lasagna 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, 80 Donna Lea Blvd., Williamsville, N.Y. 14221 (634-7694). **ADVANCE TICKET SALES ONLY, please reserve as soon as possible.** The speaker will be Dr. Fred Price, and his talk will be on the Royal Greenwich Observatory.

If this column seems a bit more terse than usual it is because I am writing this the day before Bill Smith and his wife Carol, Tom Bemus, and my better half and I leave for the Winter Star Party in the Florida keys. Given the weather we have had in the past month or so, thoughts of temperatures on the high size of the freezing mark are quite distracting.

Having said that, let's get to the point. You all know what I am going to say but I thought that I would put it in a more positive light this time. So, members who HAVE paid their dues for 1993-1994 will continue to receive the "Spectrum" newsletter, will continue to enjoy reduced subscription rates for Astronomy and Sky&Telescope magazines, will continue to be eligible for discounts on all orders from Sky Publishing, and will continue to have access to the equipment at the "NEW" observatory. Nuff said. Also, the 1994 BAA Membership Directory will be available for distribution to members at the April meeting.

I would also like to once again remind everyone that newsletters and journals from a number of different astronomy clubs and societies are available to members for their perusal. Among the publications available are the Journal of the Astronomical Society of the Atlantic, Via Stellaris from the Von Braun Astronomical Society, Focal Point from the Atlanta Astronomy Club (do we really want to be reminded of Atlanta), SCOPE from the Royal Astronomical Society of Canada Toronto Centre, and the Rosette Gazette from the Rose City Astronomers of Portland, Oregon. If anyone is interested in reading some of the articles in these publications, stop by the membership table at the monthly meetings or give us a call at 839-9109.

And now, off to the Sunshine State!

Joe Orzechowski



>> PRESIDENT'S MESSAGE <<

OPPORTUNITY KNOCKING

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. It's hard to believe a year and a half already passed! A search committee has been formed to seek candidates. The committee consists of Edith Geiger, Bob Hughes, Bill Smith and Gene Witkowski. You can make their jobs easy by calling one of them and say you want to be a candidate for a particular position.

MARCH DINNER MEETING

Just another reminder that the annual dinner meeting is in March at Jimricky's restaurant in the Northtown Plaza in Amherst. Our own Dr. Fred Price will be the speaker. He will present a slide show on the history and tour of the Royal Greenwich Observatory in England. Hope to see you there!



Bill Smith

>> IN SEARCH OF EYEPIECE HEAVEN <<

continued from the last issue of the "SPECTRUM"

IS A NEW EYEPIECE WHAT I NEED

I spent 20 years observing objects with 8 and 10" scopes with nothing more than 1 1/2" eyepieces: Ramsdens, Kellners and a couple orthos at prices ranging from \$4 to \$25 (back in 1967-74). I made a barlow at home out of an Edmund lens. I didn't buy another eyepiece until 1983 when I bought the 13 Nagler. During those early years I observed all the Messiers and some 900 NGC's and other deep sky objects. While I knew better eyepieces were available, the ones I had

experience. Truly a porthole into space! The other eyepieces seemed like looking through a keyhole. Within 2 years another 1400 NGC's were added to the list. They were both found and seen easier. The view was sharp to the edge. Fuzzy stars in the outer third of an eyepiece field can really tire out the eye. Many previously found objects were revisited and took on a new character. I found I could observe longer with less fatigue and frustration as the Nagler (as the low power eyepieces I'm supposed to be reviewing) have excellent eye relief and sharp, wide views. It was comfortable to observe!

If you are dissatisfied with observing; if the view is cramped or soft; if you have a hard time finding objects; if your eye gets tired before the rest of you then perhaps an eyepiece upgrade is in order. There are a lot of other concerns too: main optics quality and cleanliness, secondary size and field of view illumination, and focuser size are some. All are beyond the scope of this article but well within the scope of BAA meetings, star parties (try out equipment before buying) and experienced member's phones. Take advantage of them.

EYEPIECES ON THE CHEAP

Used eyepieces are a great deal. As long as the glass isn't scratched or sleekeed they're probably as good as new. The Starry Messenger (nationwide swap sheet) is a great outlet to buy and sell goods. I got the 55 TV for about half of new, the 32 TV for 75%, the Meade 6.7 and Klee barlow were 80%, 2" deep sky filter @ 40% and UHC @ 70%. Sometimes it is unavoidable but to buy new, however you can wait for promos. The Megavista was bought new for 75% during an inventory reduction, the 13 Nagler came with a Sky Atlas 2000 promo, the 17 and 10.5 TV plossis came from a 3 for 2 TV price war. Only the O-III and 27 Panoptic were bought at full price — ouch!

RECOMMENDATIONS

Everyone is on a budget. Use what you have (they've worked so far) and upgrade when you can and feel you need to. Excellent 1 1/4" eyepieces run from 40-\$80. Low end 2" oculars will have soft views in the outer third of the view; double the price gets you discernible improvements. I'd rather have 1-2 excellent eyepiece than 3-5 so-so ones. The eye is very adaptable at picking out details if all you have is one or 2 eyepieces. Which is best? It depend on what you want to view — we'll have to talk about that!

This article was supposed to be just on low power eyepieces which I use a lot — well I got rambling. Viewing time gets more precious every year. Everything you see gets funneled through the eyepiece. I've made the decision to put visual image quality and visual impact first and foremost. It was not an inexpensive choice. Quality eyepieces keep you in a better mood for viewing and you'll do a lot more viewing — I know, as now I don't stop viewing till I drop!



Bill Smith

ANNOUNCEMENT

Fred Price's latest book, "The Planet Observer's Handbook", will be published by the Cambridge University Press (England) next June. This four-hundred page volume is the result of three years of intensive research and writing. Most of the line drawings are Fred's own work and many of his own telescopic observations of Mars and Jupiter appear among the illustrations as well as several of our own Gene Witkowski's photographs of these planets. Before going to press most of the text was thoroughly reviewed by John Westfall, Executive Director of the ALPO; he also wrote the foreword. A valuable feature of the book is that the chapters on individual planets each begin with a detailed history of observation of that planet. This gives the beginning observer background information and an idea of what areas can be fruitfully explored. The book has chapters on CCD camera photography and photoelectric photometry and ends with both subject and name indexes.

As a previously published author in astronomy Fred has thus for the second time helped to put the BAA "on the map" so we look forward to the publication of his book. Fred deserves our congratulations on his latest accomplishment.



OBITUARY

WALTER SCOTT (SCOTTY) HOUSTON

BORN IN 1912, MR. HOUSTON, ALSO KNOWN AS "TWINKIE", BECAME INTERESTED IN ASTRONOMY AT AN EARLY AGE, MAKING SOMEWHAT A CAREER IN THE FIELD. HE WROTE, "DEEP SKY WONDERS" FOR SKY & TELESCOPE MAGAZINE. ANY WHO KNEW HIM, WILL REMEMBER HIS "SHADOWGRAMS" AT THE ANNUAL TELESCOPE KAMER'S CONVENTION HELD ON BREEZY HILL NEAR SPRINGFIELD, VERMONT. HIS INTERESTS WERE DEEP SKY AS WELL AS VARIABLE STARS AND OBSERVING METEORS. ON DECEMBER 23, 1993, IT WAS LEARNED THAT HE PASSED AWAY IN CANCUN, YUKATAN, MEXICO FROM PNEUMONIA. HE WILL BE GREATLY MISSED BY THE MANY WHO REMEMBERED HIM FOR WHAT HE WAS, A GENTLEMAN'S GENTLEMAN AND AVID AMATEUR ASTRONOMER.

DARWIN CHRISTY

AMATEUR ASTRONOMY IN POLAND (PART 1)

This is the first 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 PTMA.

The Polish Amateur Astronomers Society (PTMA)

In Poland there is one main astronomical society which organizes into union all amateurs, the Polish Amateur Astronomers Society. The headquarters of the PTMA has its seat in Cracow. The Society came into being in 1921 in Warsaw. Till 1928 its activity was limited to Warsaw, then regional departments started to originate. In 1939 the Society consisted of 300 members. In 1947, after the Second World War, the Society was reactivated in Cracow. At that time there were 6 regional departments and there were 350 members. Nowadays the PTMA consists of about 2500 members in 25 regional departments. Departments are very differently equipped with telescopes. Almost all of them have their own libraries and the central library (2000 books and 500 volumes of magazines) is at the Society headquarters. From 1969 the Society has been a member of the International Union of Amateur Astronomers. The Society organizes lectures and popularized scientific seminars, public shows (with telescopes), and workshops. It also issues the monthly magazine URANIA, guides for observers and other books, maps, etc. There are 6 specialty sections:

1. Section of Solar Observers in Frombork
2. Section of Meteor Observers in Frombork
3. Section of Variable Star Observers in Cracow
4. Section of Observers of Positions and Occultations in Lodz
5. Section of Comet Observers in Torun
6. Instrument Section in Warsaw.

The Section of Observers of Positions and Occultations is the best acting section. It consists of about 70 members and has existed since 1979. Its activities include:

- observations of positions of planetoids and comets,
- observations of occultations of stars by the Moon, planetoids and planets,
- observations of mutual occultations of the Solar System's bodies (including transits of Mercury and Venus), Solar and Lunar eclipses.

The Section unites people interested in doing the above mentioned observations and carrying on computations connected with these phenomena. The Section gives help to observers in the realm of:

- distribution of ephemerides of phenomena,
- observing techniques,
- publication of results of observations in domestic and foreign periodicals.

The seat of the Section is the Lodz Planetarium and Astronomical Observatory. The Section of Observers of Positions and Occultations issues its own materials containing members' works and factual information a few times a year. Once a year there is a seminar which last 2 to 3 days, with participation by a majority of members, dedicated to the interchange of experiences and to fix a program for the next period. In 1992, 42 observers made 632 observations (380 disappearances and 252 reappearances of stars by the Moon).

Astronomical Clubs

In Poland, there are no such clubs like in the United States. I know of only two clubs. One of them rallies young people, 10-19, with its seat in Tarnow. It has been active since 1987 and is named Hevelius. Theoretical classes and hands-on training take place once a week. There are also classes for schools. The second is a correspondence club in Silesia.

Magazines

The PTMA issues a 32-page monthly magazine, URANIA. The first issue appeared 70 years ago, in March 1922. Till now 608 issues have been published. URANIA provides amateur astronomers honest information about the most important problems of Universe cognition and comprehensive help with their pastime. URANIA tries to bring the sky nearer, uncover its mysteries, show its beauty, arouse people's interests in its uncommonness, teach sensible observation of everything that surrounds our small planet and what happens around it, and inspire active participation in the amateur scientific movement. How are these tasks realized?

A few survey articles compose the basic part of each issue. They are dedicated to the most actual astronomical problems. Their authors are usually professional astronomers and experienced popularizers of astronomy. Recently, articles written by young amateur astronomers, winners of astronomy competitions, students, etc. appear more and more often. The articles' level varies from completely rudimentary to more difficult, requiring some knowledge by readers. Sometimes a series of articles is dedicated to one subject.

In the *Chronicle* column there is news about the most important events in the world of astronomy. *Vade-mecum for Observers* is an important column of URANIA. There are different training materials which teach, help, facilitate and encourage amateur astronomers to build telescopes, make observations, work out their results, write astronomical computer programs, etc. There also appears in URANIA information about the history of astronomy and the amateur astronomy movement, descriptions of Polish amateur astronomers' activity, reports on some interesting astronomy conferences and scientific symposiums, the more interesting excerpts of letters to the editor (which can be interesting to a broad circle of readers), various scientifically curious details from the activity of institutions and scientific organizations, accounts of famous astronomers' lives, etc. Only recently have color pictures appeared. The *Astronomical Calendar* completes each copy of URANIA. Prof. Sitarski, a specialist in the domain of celestial mechanics and an outstanding investigator of comets' movements, has been the Calendar author since 1960. Unfortunately the PTMA's financial situation is so bad that publication of URANIA is in danger.

The other magazine, a 24-page quarterly titled Vade-mecum of Amateur Astronomy is issued by Mr. Brzozowski's private publishing firm. It originated in May 1991. Mr. Brzozowski has serious difficulties with the distribution of his *Vade-mecum* so the magazine appears with very big delays. This periodical is addressed to beginning amateur astronomers and to young people. We can find there answers for such questions as: how to discern the most important constellations, how to find planets and other interesting

objects in the sky, how to build the most simple telescope, how to take photos of the sky by oneself. The subject matter of Vade-mecum of Amateur Astronomy refers mainly to practical problems, which motivate readers to carry on their own astronomical observations. No theoretical information can supply so many wonderful impressions as the first successful observations of the sky.

Amateur Observatories

These observatories (astronomical stations) aim at public sky shows and amateur and educational observations. There are 17 such observatories in Poland. Some of them, for instance at the Silesian Planetarium and at the planetarium in Olsztyn, have equipment besides amateur telescopes available for research work. Moreover, almost all departments of PTMA have telescopes for sky shows at their disposal.



Lech Jaszowski

ASTRONOMICAL HAPPENINGS

MARCH 1994

- 2 - Conjunction - Jupiter & Moon
- 3 - Pluto stationary
- 4 - LAST QUARTER MOON
Mercury stationary
- 7 - Conjunction - Uranus & Moon
Conjunction - Neptune & Moon
- 9 - Conjunction - Mercury & Moon
- 10 - Conjunction - Mars & Moon
Conjunction - Saturn & Moon
Virginid meteors
- 11 - Zeta Bootid meteors
- 12 - NEW MOON
SUN will leave Aquarius and enter Pisces
- 13 - Conjunction - Venus & Moon
- 14 - Conjunction - Mars & Saturn
Buffalo Astronomical Ass'n meeting - 7:30
- 15 - MOON at apogee (405,891 km)
- 16 - Corona Australid meteors
- 18 - Mercury at greatest elongation 28° west
- 20 - VERNAL EQUINOX
FIRST QUARTER MOON
Camelopardalid meteors
- 24 - Conjunction - Mercury & Saturn
- 26 - Virginid meteors
- 27 - FULL(WORM) MOON
- 28 - MOON at perigee (357,958 km)
- 29 - Conjunction - Saturn & Moon

APRIL 1994

- 2 - Daylight savings time begin after midnight
LAST QUARTER MOON
- 3 - Conjunction - Neptune & Moon
Conjunction - Mercury & Mars
Conjunction - Uranus & Moon
- 4 - Kappa Serpentid meteors
- 7 - Conjunction - Saturn & Moon
Delta Draconid meteors
- 8 - Conjunction - Mars * Moon
Buffalo Astronomical Ass'n meeting - 7:30
DEADLINE FOR THE MAY-JUNE ISSUE
- 9 - Conjunction - Mercury & Moon
Alpha Virginid meteors
- 10 - NEW MOON
- 11 - MOON at apogee (406,468 km)
- 12 - Conjunction - Venus & Moon
Venus will be occulted by the Moon but seen only from Northern Greenland and the Arctic Area.
- 15 - Juno stationary
- 16 - SUN will leave Pisces and enter Aries
- 17 - Rho Leonid meteors
- 18 - FIRST QUARTER MOON
- 21 - Lyrid meteors *****
- 25 - FULL (PINK) MOON
MOON at perigee (356,928 km)
Neptune stationary
Mu Virginid meteors

- 26 - Conjunction - Jupiter & Moon
- 28 - Vesta in conjunction with the Sun
Alpha Bootid meteors
- 30 - Jupiter at opposition
Mercury in superior conjunction
Uranus stationary



OBSERVING REPORT

On December 14, Bud Abate, Dan Marcus and I (the BAA's "Grand Island Section") did some observing from my backyard. The yard faces south, into the neighbors' backyards, which works to our advantage: since few people put "decorative" lighting behind their houses, there is less light pollution to contend with. The yard is fairly open, and I've got good access to most of the eastern, western, and southern skies. As I set up the scope, I paused to view a slim crescent moon, 38 hours old, low in the west. This sliver of moonlight quickly followed the sun below the horizon, and was gone before the sky had darkened enough to allow the earthshine on the moon's unlit side to be seen. As darkness fell, I saw two fast, faint meteors, most likely Geminids, zip overhead.

Bud and Dan arrived soon after sunset. Bud brought along his C8 and a 90mm refractor to join my 8" SCT. With the back patio crowded with "toys," the hunt began! I located M76 in Perseus for the first time. It was a small round patch that stood out well with averted vision, but otherwise didn't show much detail. I didn't have any luck pinning down M74. Dan hunted awhile before declaring it "invisible." Meanwhile, Bud had piggy-backed a camera to his C8 and was photographing the eastern sky, hoping to catch a meteor on film. The night was turning out to be a fine one for viewing, with the Milky Way, Double Cluster and (with some imagination) the Andromeda Galaxy visible to the naked eye.

A couple friends of mine dropped by, so we decided to show them some famous or showy objects. We started with M1, the Crab Nebula. It was a faint, oval patch in the 8-inch. Again, no real detail, other than it's out-of-roundness, was apparent. We tried using a Lumicon O-III filter on the nebula, but, unfortunately, didn't find it to be much help. Next, we turned to M42. With the O-III filter still in, the nebula displayed its sweeping arcs of fluorescent gas in magnificent detail. The sight made quite an impression on our visitors, as did a bright white meteor, another Geminid, which brilliantly raced across the sky before us all.

After viewing M31, M32, and M110, Dan went hunting for a more obscure target. After a good deal of searching Dan pinned down NGC 7662, a small but bright planetary nebula in Andromeda. High surface brightness objects like these aren't washed out by our suburban light pollution, they stand up to high magnification (which also serves to darken the background sky), and they respond well to nebula filters. All in all, this makes small planetaries excellent targets for small 'scopes in light-polluted areas. NGC 7662 was no exception, and it's bright little disk was a satisfying reward after a protracted search.

On December 16, I received a used Astroscan. That evening, I popped a low-power eyepiece into the little 'scope and took it out for a quick look around. The young moon, now a somewhat larger crescent, was a gorgeous sight! Earthshine brightly lit the dark side, making the dark maria easily visible. The bright crescent made the moon really look like a sphere lit from the side, and its appearance was striking. While an Astroscan might not be the "correct" instrument for lunar viewing, I'll take it! Remarkable sights like this can't be beat.

On December 26, I used one of the Astroscan's more accepted strengths - portability. I took it over to Dan's and we went hunting for a 7th magnitude nova in Cassiopeia. Before long we (sort of) found it with both the Astroscan and Dan's Comet Catcher. While we were quickly able to confirm a "new" star which was not plotted on our charts, only after several more observations over the next few weeks did we determine with certainty which star in the field was the nova.



Bob Titran

SPY and TELL

We can all be proud of Gene Witkowski who has to date given 17 gallons of blood to the Red Cross; 8½ gallons of whole blood, and 8½ gallons of platelets. He has given much of himself to save many lives.

grandparents of Devon John Biggie, and to the happy parents, Kevin and Nicole Biggie. Kevin, who graduated from Carnegie-Melon University in May, is now a Second Lieutenant in the United States Marine Corps. He presently is attending a school in Norfolk, Virginia, for a few months, after which he is being shipped to Okinawa for 3 years.

Rowland Rupp is teaching an introductory course in astronomy at Niagara Community College.

Melissa Marcus is Environmental Protection Chairman in the 8th District of the Federation of New York Garden Clubs. She is also on the board of IKEBANA International, Buffalo Chapter 50; a Japanese Flower Arranging Club. Her board position is that of hospitality. Melissa has started a basic IKEBANA course in the philosophy of flower arranging.

Ed Czapple is very active in a church group in Lancaster. He is a member in the Secular Franciscan order, guiding and overseeing other groups in the Buffalo area.

Terry Radder continues to plan for his outdoor garden railroad. He has 10 more cars (each 1½ feet in length) and needs more track.

Steve Kramer has a good suggestion for a sputtering snow blower. Put a little dribble of fuel dryer (that which you put in your car's gas tank) in the blower's gas tank, and the problem is solved. Also, when you finish using the snow blower, never turn the switch off, turn off the gas supply so the carburetor runs dry.

During the winter months, Steve and Marilyn have enjoyed feeding the birds at their home. Steve converted an old B-B gun to a weak spring, to shoot peanuts out through a partially opened window to squirrels and bluejays. He has concluded that jays learn faster than squirrels.

On February 3rd, President Clinton spoke on family values to students at Stephen Kramer Junior High School in Washington, D.C. Stephen Kramer for whom the school was named was Assistant Superintendent of Schools in Washington, and was also Steve's grandfather.

Bill Halbert is having an opportunity of a lifetime. He is studying at Indiana University with Giorgio Tozzi, who was a leading bass-baritone at the Metropolitan Opera House in the 50s and 60s. He went on to sing at the La Scala in Milan, and is now the Director of the Music Department at Indiana University. He had heard Bill sing at the Bel Canto Opera Seminar which he directed last summer at Northwestern University, and suggested that Bill study with him. Bill will be a student of Tozzi for six months to a year, depending on Bill's readiness to take leading bass-baritone roles in major opera companies. At that time Tozzi will recommend him for important roles.

Bruce Newman went out to the Beaver Meadow Observatory on the night of February 7th. He was trying to get in the door but couldn't because the snow wasn't shoveled away in front of it. He proceeded to fall waist deep into the snow and complained that the situation was brutal, to which Tom Nigrelli remarked that Bruce wouldn't expect to be able to get in the door at his own home if he hadn't first shoveled away the snow.



Edith L. Geiger

BAA ANNALS

5 YEARS AGO - The BAA's own Dr. Fred Price was our speaker at the March 1989 meeting. His topic was "The 1988 Apparition of Mars". Fred's book, "The Moon Observer's Handbook", had just been published; his new one on planetary observing is due to be published later this year. In April Herbert Tinney also spoke on Mars - the "face" on Mars.

A reprint of Edith Geiger's 1967 profile of the BAA's honorary member, Walter Semerau, appeared in this issue of the SPECTRUM. Walter was noted for his home-built solar observatory. It was featured on the cover of an issue of SKY AND TELESCOPE in the late 1960s. Irv Goetz's obituary appeared in this SPECTRUM.

President Doris Koesler was trying to stir up some interest in reviving the BAA's special sections like the

Instrument Section and the Study Section. She even suggested a Computer Section. With all the cybernetic whizzes we have in the club today that might be a good idea right now. She also appointed Carl Miliazzo to investigate options for a new telescope and a new observatory.

10 YEARS AGO - In March and April 1984 we met at the Museum of Science. Ken Brown from Rochester spoke in March on Halley's Comet, which was just beginning to make news then. Ken has an astronomical astronomy library exceeding 500 volumes from which he drew historical facts to spice his talks. Tom Dey, also from Rochester, was our speaker in April. His topic was "Equipment of Amateur Astronomers." Tom is a well-known expert observer.

One of the BAA's expert observers at that time was Michael Idem who reported on the results of the deep sky survey of 2507 objects he had just completed using his thirteen-inch telescope. He also had an article on "Limits of Visual Perception" and two observation reports. Carl Milazzo and Darwin Christy also submitted observation reports.

Marilou Bebak was the subject of Edith's Profile. The SPECTRUM also had an anonymous article on "Recurrent Novae" and a follow-up on double star colors by Ken Brown. Gene Witkowski was visiting friends in Thailand and helping them build a house according to "Spy and Tell".

15 YEARS AGO - In March 1979 we met at the planetarium in Williamsville North High School. Planetarium Director Bob Reilly presented a show entitled "The Legacy", a tour of the solar system through U.S. space technology. Former club member Tom Dessert showed the newly acquired Dow Collection of astronomical slides at the April meeting. Darwin Christy's Japanese meteoric colleague, Shigeru Morikubo, sent the SPECTRUM an article on collecting meteoric dust. Edith's profile was on Ken Biggie, later to be President of the BAA. The SPECTRUM had a news note: Fred Price's "Basic Molecular Biology" was just going to print. Let's see - that's his third book this Annals has reported.

25 YEARS AGO - Walter Semerau talked on solar phenomena in March 1969. He included his fine solar photographs showing prominences and other solar features. John Ruiz from Erie, Pa. spoke on "The Mayan Calendar in Astronomy". Orrin Christy contributed an article "Chances Are" in which he considered probability in astronomy. John Riggs wrote his monthly feature, "Deep-Sky Objects".

Kurt Erland (Who?) wrote, on the issue of the Buffalo Society of Natural Sciences indecision about their plans for a nature center near East Aurora. With the recent death of Fred T. Hall, who was instrumental in planning the venture in which he hoped to see an observatory as part of the complex, the project went into limbo. Today we are all familiar with the Beaver Meadow Environmental Center where our newly expanded observatory is a stone's throw from the Fred T. Hall building.

Thanks to Darwin Christy and Edith Geiger, I now have copies of the February 1969 SPECTRUM for the archives. John Riggs and Dale Hankin, both BAA members, spoke on "Deep Sky Observations" and "Lunar Studies" respectively at the February meeting. The obituary for Fred T. Hall, who had been the museum's director since 1951, appeared in that issue.

40 YEARS AGO - According to program chairman Jack Ballentyne, the speaker for the March 1954 meeting was to be Dr. Wilmer from Bell Aircraft on "Speed". Paul Stevens of Rochester was to talk on "Solar Eclipse Plans" in April. We were asked by the Bird Watchers group at the museum to record flights of birds when we observed.



Rowland A. Rupp

BOOK REVIEW CORNER:
1000+: The Amateur Astronomer's Field Guide
To Deep-Sky Observing
by: Tom Lorenzin
From: Sky Publishing (\$40)

This field guide is an interesting combination of extremely useful info and excellent star charts.

It has a beginning like that of the MAG 6 star atlas, it covers a lot of basic information for advancing novice to intermediate astronomers.

It then moves to a set of descriptions of over 1000 (hence the name) deep sky objects (DSO's, a neat acronym) as seen mostly through an 8" scope. The descriptions are very concise, well organized and list other objects of interest that are near the listed object, very handy.

Finally it has a set of large scale 6th magnitude star charts that are among the very best available. The guide is spiralbound in a dewproof cover. It is fairly large at 11"x15", but its size is due to its very readable large-scale charts and the sheer volume of the info enclosed.

At \$40, some might find 1000+ pricey, but the combination of the really nice charts and well organized data and descriptions made it worth the price. It is a ready-made lifetime observing project.

Discover The Stars

By: Richard Berry

From: Sky Publishing (\$13)

Do you know someone who is just getting started with a new telescope or binos? Do they find most books about astronomy too complex and too expensive? Well, this is an excellent book to recommend for just these reasons.

Richard knows well the novice astronomer's perspective, what they can handle and what they really need to know.

In this small, inexpensive guide you start with one of the best sections giving "a quick explanation of just about everything a beginner needs to know about how the sky works" ever written. You'll also find monthly all-sky maps, more detailed star charts showing the locations of bright DSO's, a basic rundown of the history and highlights of the constellations, info on buying equipment and how telescopes work and much more.

One of the things I like most about this boob, is its use of line drawings and actual "at the eyepiece" sketches to depict how things are really going to look, no Kitt Peak color photos! If I had to pick one guide for the beginner, this would be it!

Tom Bemis



BOOK REVIEW

"CONCEPTIONAL PHYSICS"

Seventh Edition by Paul G. Hewitt

Reading a book on physics is not an easy task, but by going through this book, I found it refreshing to the mind, which I had lost in those days long gone in High School. It does not have a great deal to do with astronomy but, what is in it, clarifies some of the technical aspects in astronomy. It does not help the observational astronomer but it does give him the aptitude to catch on to the physical concepts of astronomy. Anyone interested in astronomy surely has to have some general knowledge in geometry, as the solar system surely is a great part of geometry in its motions, magnitudes and physical constitutions.

The author, Paul G. Hewitt, is a professor of physics who began his career at City College of San Francisco in 1964. Since 1980, he has taught an evening course at the Exploratorium in San Francisco as well as at the University of California at Berkeley. He has recently been teaching at the University of Hawaii at Manoa. He has just completed another book, "Conceptional Physical Science", co-authored by his daughter Leslie, a geologist, and his nephew, John Suchocki, a chemist.

Darwin Christy



In the November-October 1993 "SPECTRUM" the evolution of the nebular theory of planetary origin as formulated by Kant and Laplace was described. It was pointed out that this theory explained much of what was known about the solar system.

But, by the beginning of the twentieth century, about 150 years after its formulation, the theory fell into disrepute. What happened, and what replaced the nebular theory?

It was mathematicians who eventually threw a monkey wrench into the works. Several problems emerged. Probably the most devastating stemmed from the conservation of angular momentum. Right now the sun's rotation contributes only about two percent of the total angular momentum of the entire solar system - the rest is in the revolution of the planets about the sun. This slow rotation of the sun at the present time couldn't remotely approach causing it to cast off material as required by the nebular theory. Even if all the angular momentum of the solar system were contained in the sun's rotation, causing it to spin fifty times faster, it still couldn't shed material; its gravity is too strong. What if all the solar system's angular momentum were in the sun's rotation and its size were expanded to the orbit of the outermost planet, as once it must have been, could centrifugal motion exceed gravity then? NO! As is this weren't bad enough, theorists also concluded that if the sun rotated fast enough to discharge its material, it would simply burst rather than gently dislodge a ring. Even if a ring were formed, mathematicians showed its contents would disperse, not coalesce.

So a new theory of planetary origin was needed. Several were proposed as one after another proved untenable, but they are lumped together generally as catastrophic theories. Catastrophic in the sense that, unlike the nebular theory, the planets were formed by a one-time encounter with a passing object - an event depressingly unlikely to occur in a galaxy with such enormous distances between stars. Actually the idea wasn't quite new. In 1750, when comets were believed to be very massive objects, Georges Buffon proposed that one of them had collided with the sun and the planets were formed from the debris.

By the twentieth century we knew that comets, though plentiful, weren't massive - so a passing star had to be substituted. The improbability of such an event was daunting and, besides, failed to account for solar system dynamics. A close encounter or near approach worked better. It was somewhat more probable, and tidal effects during passage could explain why all the planets revolve in the same direction and plane. An odd coincidence is required, though, because the plane in which the planets revolve was caused by the angle of approach during the encounter, yet it is nearly the same as the equatorial plane of the sun's rotation which was established long before.

Theorists labored to show that the massive outer planets were created as the two stars approached one another, while the small inner planets formed after closest approach, explaining these two distinct classes of planets. Obviously, such a catastrophe should cause highly elliptical planetary orbits. Ingenious mathematicians showed that the orbits would approach circles as the planet swept through gas and dust left over from the encounter. The planets neatly accreted this material, removing the evidence.

When the tidal forces caused by a close encounter proved insufficient to create planets, Jeffreys suggested a grazing encounter, a sort of catastrophic compromise. Even here, too little energy was available to produce the huge angular momentum of the planets. Besides, it was shown that the hot solar gas dislodged by the graze would disperse instead of condense.

Other ideas were put forward. Lyttleton suggested the sun was originally part of a binary system - after all, most stars are. The intruder star disrupted the sun's companion, created the planets and flung the companion clear out of the system, again ridding us of the evidence. But wouldn't the planets tend to orbit the star of their ori-

gill - the computer...
formly about the sun?

Otto Schmidt sought to improve probabilities by suggesting the encounter was between the sun and a gas cloud. The sun would drag some of these gases along as it passed through and eventually the gases would become planets. Here too were devils. Any encounter gaster than a half-mile per second, and unrealistically low velocity, wouldn't work. Also, even if it did, the massive sun would simply gobble up the gases. This theory was patched up by simultaneously having another star closely pass by the interacting gas cloud and sun, thereby lending its gravitational influence to alleviate the technical problems. At least this theory had one big advantage - the high angular momentum of the planets could be attributed to the original angular momentum of the gas cloud, however improbable the sequence of events that followed might be. Improbability plagued all catastrophic theories, but as their proponents argued, when all else fails one must resort to the unlikely.

In the first decades of this century Sir James Jeans applied himself to the close encounter theory. He postulated the close approach would raise a cigar-shaped filament from the sun's surface. The largest planets would be formed in the fat middle and the smaller ones at the ends. When tiny Pluto was discovered in 1930, Jeans appeared to obtain fortuitous verification.

He too concluded that orbits became circular as the newly formed planets swept up debris. Since the average plane of the planets' revolution differs slightly from the sun's rotational plane, he argued this discredited the old nebular theory and supported the close encounter view. Thus a potential objection was converted to a confirmation. He speculated that the satellites were formed by close encounters too, but now the planets played the role of the sun. Because large planets like Jupiter and Saturn remained gaseous longer than their smaller counterparts, they were more susceptible to forming satellites - a result easily verified by observation.

Thus, near mid-century some version of a catastrophic encounter was the best explanation of solar system origin we had. Despite the appeal of the old nebular concept, whose main virtue was that it required no chance event, it simply was unacceptable because of the angular momentum problem. Finally, after more than a century of misconception, we had a theory, or at least the essence of a theory that could explain how the solar system really formed.



Leslie Martin

A CLUB PROJECT THAT'S DIFFERENT

How about a novel and innovative club project? How about putting on a public access TV documentary program about the BAA? Being a Buffalo based organization makes us eligible to use Buffalo Cable Access Media's equipment and studio.

If we put together a program by late spring we could promote public nights at Beaver Meadow Observatory during the summer and, perhaps, obtain some new members for the fall. We have a lot to tell about: a new telescope, club computers and an expanded observatory. If we have access to a CCD camera we might record May's annular solar eclipse, weather permitting, and include it in the show.

A 12-hour training session in the use of the equipment and facility is required by BCAM. I believe this training is scheduled in 3-hour sessions on Saturdays over a 4-week period. BCAM is located on LaSalle St. near Main and Hertel.

I'm somewhat interested in doing this, but don't want to undertake it by myself. I already have some video material taken during the construction of the addition last summer that may be usable. Here's a chance to do some video and script work on behalf of the BAA. If you're interested please see me or call me a 839-1842.

Rowland A. Rupp

JOHN LOUIS EMIL DREYER

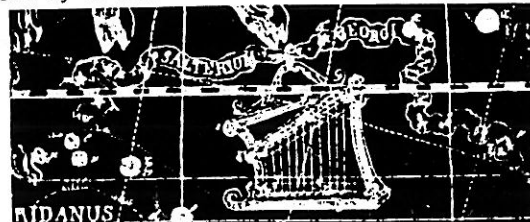
John Louis Emil Dreyer was born in Copenhagen in 1852 and died in 1926. He was educated at the University of Copenhagen and was made assistant astronomer from 1874 through 1878 at the Earl of Rosse's Observatory. Though he was born in Denmark, he was considered an Irish astronomer and served as assistant astronomer at the Observatory of Trinity College in Dublin. In 1882 he was given the job as director of the Armagh Observatory. Though he is probably not well known, he did add to the astronomical world. He published 'The Second Armagh Catalogue of 3300 Stars' in 1886; he wrote a 'New General Catalogue of Nebulae and Clusters of Stars' in 1888 with supplements in 1895 and again in 1908; he wrote on the astronomer 'Tycho Brahe' in 1890; he supplemented the 'History of the Planetary Systems from Thales to Kepler' in 1906; and in 1912 he published an edition of Herschel's Scientific Papers for the Royal Astronomical Society of the United Kingdom.



ANCIENT CONSTELLATION

PSALTERIUM GEORGII, George's Harp is another ancient constellation, sometimes referred to as Harpa Georgii, and was formed by Abbe Maximilian Hell in 1781. This he did to honor King George II of England. Stieler placed it on his 'Planisphere' as Georg's Harfe and Bode included it on his charts as Georg's Harffe.

It can be found lying between the feet of the Bull and the River Eridanus. The stars are inconspicuous as it is among the constellations. The Psalterium is no longer recognized by astronomers.

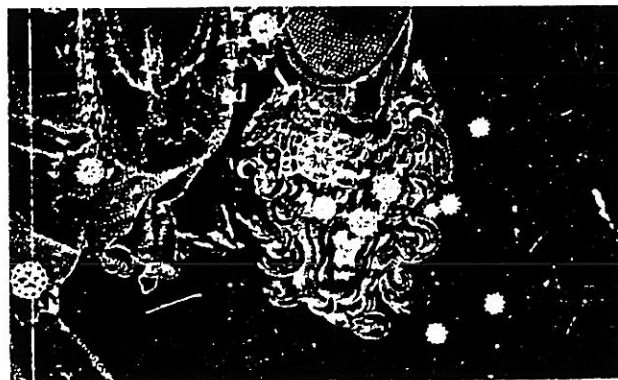


The Gorgon's head, a ghastly sight,
Deformed and dreadful, and a sign of woe.

as translated of the ILIAD by Bryant

CAPUT MEDUSAE, the Head of Medusa is an ancient constellation which was formed out of four stars, including ALGOL in Perseus. Besides Algol, the other three stars are Pi, Rho and Omega Persei. Hipparchus and Pliny both made a separate constellation of the Gorgon stars. They called it the, "Head of Medusa." Algol, the Demon Star or Blinking Demon, is said to have been called this because of the rapid and wonderful variations produced by it. Ptolemy catalogued it, "the bright one of those in the Gorgon's head." Al Ghul literally signified it as the Mischief-maker and appears still, in the Ghoul of the 'Arabian Nights', even of our day.

Algol is a white star which is famous for being a spectroscopic binary and variable, ranging from magnitude 2.3 to 3.5 at minimum, then back again in a period of 2 days, 20 hours, 48 minutes and 55 seconds.



Beaver Meadow Observatory

Very little activity has gone on at the Observatory. The snow and the cold have made it difficult to finish construction on the new addition. By the end of March we will be working to get the Observatory completed before the May open house. Hopefully the weather will cooperate with us and we will get it finished on schedule. I could use some help spackling, and cabinet making. Then comes the cleanup and organization! We should also have the 20" reassembled with the new finder in by the end of March.

Help me!! May 7: I will be needing help for public Saturday. **Need help on Annular Eclipse lectures**, and the usual computers and scopes!! **May 10 Annular Eclipse** I will be needing help at the Observatory, we may have a really large crowd if it is clear. If you can help our rain or shine, please let me know!! We will be needing extra scopes, and people for crowd control!!!!

Star parties: It is that time of the year! our star parties are being scheduled. As usual I suggest that you schedule rain or shine, to alleviate confusion as to "weather" or not it is going to happen. Please do not schedule one the same time as an Observatory event! Wonder what a star party is, but are afraid to ask? Well these are really formal events. Tuxes and astro ties are mandatory! Just kidding. We have these things for fun! You invite the club over to your place, every one brings their favorite astro toys, and if it is a bring a dish to pass party, we usually gain a couple of pounds stuffing

those with light polluted sites, schedule them on a full moon nigh when there aren't any dark skies anyway, or hold one at the Observatory!! That way you can show off "your" 20". All things considered we always have a great time.

Has anyone seen the nova in Cassiopeia? It was around 8th mag at the beginning of Feb. Bob and I first saw it when it was around 7th. It should be easily seen from the city. All you need is clear skies!

Bud Abate has made some nifty BAA member stickers. They are on a Hologram style stock with the BAA logo and stars in the background. These nifty stickers can be acquired at the membership table for a donation of \$1.

CCD camera : Joe Stuckey is now in the process of making our CCD camera. The parts have been ordered, and we are awaiting their arrival.

Daniel Marcus



TOPICS IN ASTRONOMY

Rowland Rupp, Edith Geiger and Alphonse Kolodziejczak

Edith Geiger, Al Kolodziejczak and Rowland Rupp will present Topics in Astronomy at the Museum of Science starting Tuesday, March 15. The class will run for seven weeks, with a week off at Easter. The topics will range from the moons of the solar system, to double stars, galaxies, black holes and the prospect of extraterrestrial intelligence. To sign up contact the museum's education office at 896-5200.



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** The SPECTRUM **

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