



the Spectrum

BUFFALO ASTRONOMICAL ASSOCIATION INC.
BUFFALO MUSEUM OF SCIENCE
HUMBOLDT PARKWAY
BUFFALO NEW YORK 14211

Editor: Ernst E. Both

SEPTEMBER - OCTOBER 1973

SEPTEMBER MEETING: Friday, September 14, 1973, at 8:00 p.m., EDT, Club Room, Buffalo Museum of Science. For our first meeting of the new season we welcome our President, DARWIN CHRISTY, who will present an illustrated lecture entitled: "Micrometeorites." The term micrometeorite has, no doubt, become a familiar one from its use in the space program. But did you know that you can collect your own microscopic meteorites right in your back yard? Collecting them is easy, but identifying them as meteorites - well, let Darwin tell you how he is doing it!! This should be a very interesting meeting and we hope to see all of our members and friends there. Refreshments afterward. WELCOME, MR. PRESIDENT!!!

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OCTOBER MEETING: Friday, October 12, 1973, at 8:00 p.m., same place. Ten years ago a "joint meeting of several regional groups active in astronomy" was held at the University of Buffalo (SUNYAB). The speaker that evening was a (then) relative newcomer to the U.S., Dr. Fred W. Price. We are happy to welcome Dr. Price on the 10th anniversary of his first B.A.A. lecture. Dr. Price will present an illustrated lecture on "Amateur Lunar Observations." No stranger to our members, Dr. Price is Associate Professor of Biology at the State University College at Buffalo and a past President of our association. He currently serves on our Board of Directors. We are looking forward to an interesting lecture by our own DR. PRICE!!

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FUTURE MEETINGS: The following list is a tentative schedule for future meetings, and is subject to change.

November, 1973: TOTAL SOLAR ECLIPSE ROUND-UP, various members of the BAA.

December, 1973: ANNUAL WINTER SOLSTICE CELEBRATION, with Edith Geiger's Candid Camera and Ed and Olga Lindberg in an illustrated talk.

January, 1974: SIMPLE ASTROPHOTOGRAPHY, an illustrated lecture by Dale Hankin.

February, 1974: GALAXIES, an illustrated talk by Ernst Both.

March, 1974: GERSHWIN NIGHT AT THE PHILHARMONIC, co-sponsored by the Buffalo Astronomical Association and the Buffalo Audubon Society.

APRIL, 1974: COMETS, an illustrated lecture by Dr. David Meisel, Geneseo State College.

May, 1974: ASTROPHYSICS AND THE AMATEUR ASTRONOMER, by Dr. Martin Green, Elmira, N.Y.

June, 1974: ANNUAL BUSINESS MEETING

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WELCOME, NEW MEMBERS: Laurence M. Carlino, Robert Carmody, Timothy Coons, Thomas Huebsch, Robert Kirchgessner, Robert Livingston, Mr. and Mrs. Rowland A. Rupp, Wayne Sisson, Richard M. Wesolowski, and Richard F. Wesolowski - a hearty, albeit belated, Welcome!

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MESSAGE FROM THE PRESIDENT:

I am certainly proud of the B.A.A.'s fine membership. While I have not been able to attend all Summer Star Parties, the ones that I did attend showed much enthusiasm. I was particularly pleased to see so many at Beaver Meadows. It was an exciting evening with beautiful skies until the rains came in the early morning.

At Stellafane, near Springfield, Vermont, I was overwhelmed to see such a representation from our club: The Deazley's, Hankin's, Lindberg's, Mayer's, Parker's, Christy's, and Larry Hazel. But I was particularly proud of BAA's Alan Gorski, also in attendance there, who won the "Special Equipment" award for his spectrum-camera.

I am hoping that we can continue to have Star Nights throughout the fall and winter months as we did last year. Most of our members will probably shy the cold nights but there are always some die-hards ... I for one will attend if I can break away from my own observations.

I am looking forward to as good a year as we had in the past. If your support and cooperation is as it was last year, we will all have another excellent year.

Good observing!

Darwin Christy

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SOME NEWS ABOUT OUR ASSOCIATION:

Our President and Bob Kartyas are in the process of setting up various committees, such as Publicity, Membership, Observatory, etc. Anyone interested please contact either Darwin Christy (692-0305) or Bob Kartyas (692-6928).

Our meetings have a habit of starting later and later as the season wears on. This year we shall make a determined effort to start promptly at 8:00 p.m. Also a determined effort will be made to terminate meetings and refreshments at 10:00 p.m.

Despite the fact that we will move the 12 $\frac{1}{2}$ -inch Newstead reflector to Beaver meadows, we will maintain the Newstead facility as an observatory for the instrument section. The observatory has recently been "spruced up" by Bob Kartyas and Ed Lindberg.

There is a DESPERATE NEED for help with the refreshments at each meeting. Miss Gretchen Schork has been in charge of arranging the refreshments, but she simply has to have help with setting up the equipment, and with taking it down at the end of the meeting. This is a serious plea for help: IF YOU ENJOY THE REFRESHMENTS, PLEASE HELP - OTHERWISE WE MAY HAVE TO DROP THIS PHASE OF OUR PROGRAMS. And while we are on the subject of refreshments: they are free, but we solicit contributions to defray the cost largely of the doughnuts, so that we do not have to use otherwise needed funds. As it is, we just about break even.

PLEASE NOTE CAREFULLY: On March 8, 1974 GERSHWIN NIGHT AT THE POFS will benefit both the Buffalo Astronomical Association and the Buffalo Audubon Society. More specifically, it will benefit our new observatory at Beaver Meadows. The following

March 8

is taken from a Buffalo Philharmonic Orchestra leaflet: "The Buffalo Philharmonic Orchestra furnished its entire orchestra, conductor, soloists, hall, tickets, programs, ticket takers, ushers, and dance orchestra. Everything necessary for a successful concert ALL YOUR ORGANIZATION HAS TO DO IS SELL TICKETS. Benefit groups must sell at least 35 tickets. For each \$ 4.00 ticket sold, your group retains \$ 1.00. For each \$ 10.00 patron ticket sold (admitting two people to the concert) your group retains \$ 4.00. Tickets include dancing following the concert. Patron ticket buyers are entitled to patron listing in the evening program." We hope that ALL our members and friends will help with this program, by supporting it, by coming to the concert (this is ONE event your wife will like, too// or husband//), by hopefully buying patron tickets, by selling many tickets, etc.

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* DEEP SKY OBSERVING FOR SEPTEMBER-OCTOBER * By John Riggs

As the richly endowed constellations of Scorpius and Sagittarius set, many amateurs pack their telescopes away and wait for the seeming sparseness of the autumn sky to be replaced by the brilliance of Orion and the winter Milky Way. And although I hardly blame anyone for not wishing to observe the 12th and 13th magnitude galaxies of Capricornus, Aquarius, and Pisces, there is another area of the sky also well placed for observation, but which usually only receives minor attention. This area is the section of the sky located near the zenith, north to the celestial pole and is composed of the constellations of Cepheus and Cassiopeia. There are over 30 open clusters within the borders of these constellations as well as many planetary and diffuse nebulae which the amateur can enjoy. The summer star clouds of Sagittarius may be setting, but the Milky Way is still alive and well. Even if all you have are binoculars, this is a splendid place to roam and experience the richness and beauty of the Milky Way.

Of the five different types of deep sky objects, by far the fewest and most elusive to amateurs are the diffuse nebulae. A great number are listed in the Skalnate Pleso Atlas of the Heavens Catalogue, but the vast majority of these are photographic and completely invisible to visual observation. There are of course, several well known exceptions, but on the whole, even the diffuse nebulae which are visible to amateurs are faint and often difficult. The faintness of most of these objects, however, does not detract from the challenge in finding them, and many observers wage a continuous effort to see things like the North America Nebula, the Veil Nebula, the nebulosity around the Pleiades, and, of course, the Horsehead Nebula. Over the past years, many articles have been written about seeing the above four objects, but little attention is given to other diffuse nebulae which also can be seen with amateur telescopes.

There lie in Cepheus two such nebulae which are, in my opinion, every bit as interesting and challenging to see. The first of these is NGC 7023, located at 21h 01.4m, +67° 58', about $3\frac{1}{2}$ degrees southwest of beta Cephei. The only detailed observation of this object which I have seen is Sir William Herschel's of October 18, 1794. I think this little nebula deserves more notice than it seems to be getting. With my 10-inch reflector it appears as an extremely faint, ill-defined glow surrounding the bright 7th magnitude star, GC 29401. The nebula is brightest around the star, and then diffuses out rapidly, filling most of the field of view with an even fainter glowing background which seems to blot out several neighboring stars. Other stars farther away from the nebula do not show this appearance of being obscured. It is an interesting region for telescopes of moderate aperture.

The second nebula, NGC 7129, was also discovered by Herschel on October 18, 1794. It is located at 21h 42.0m, +65° 52', and is easier to see than NGC 7023. The 10-inch shows it as a faint, relatively small, irregularly shaped glow surrounding two 10th magnitude stars and one 11th magnitude star closely grouped together. At first glance, both of these observations may sound like a case of dewing, so the observer should make sure that all of his optics are clean and free of any trace of moisture.

In writing articles such as this, the author realizes that all of his readers will not be able to see some of these objects for want of a good sky. To these people I apologize, but hope that they will understand that it is difficult to compromise the requirements needed to see many deep sky objects with the restriction imposed by city lights and pollution. I have observed from a suburban backyard on many occasions and have compared what can be seen from the country. The difference is great, and so much so that I strongly urge all urban dwellers to try and get out from the confines of the city to see the sky and its wonders the way they really deserve to be seen, at least for a few nights out of the year.

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* SPY AND TELL * Larry Hazel had a phantastic time in Eastern Africa during the recent total eclipse. Rumor has it that he wants to return and go on several safaris ..
 ** Seen lounging on the Canberra off the coast of West Africa: Walter Semerau, Vern Siegel, and Dr. and Mrs. Chapman. We hear that a dust storm just before the eclipse chased them out to sea ...** Incidentally, Larry Hazel got some spectacular photos ...** Orrin Christy (on the way to Stellafane) took time out to study Radar (the police variety, that is) - fortunately he slowed down in time!! ...** In anticipation of the December program, we would like to share some lovely sentiments about *you*know*who* by Esther L. Goetz (Mrs. Irv Goetz):

"I love you Edith Geiger,
 You can tame a snake or tiger,
 You're multi-faceted
 In every form of Art.
 And when you serve me dinner
 You upset my diet cart.
 The only time I hate you

(and I can't resist the quip)
 Is when you stalk me in the darkness
 With a camera on your hip.
 Your camera shows the awful truth
 on every Christmas slide,
 And I as B.A.A. member
 Can never find a place to hide!"

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* TWO HOURS WITH ALVAN CLARK, SR. * By Charles S. Palmer
 (concluded from July-August issue)

It has always been my impression that Mr. Clark had gotten that shaking-palsy habit from his standing and polishing the lenses with the tips of his fingers and thumbs, in the natural forward-and-back motion; for I distinctly recall that he called my attention to the fact that there is no polishing leather so soft for the final finish as the tips of the fingers and thumbs, and I think that he must have said something about the shaking habit so contracted, - at least that was my impression.

I was invited to wander about for myself. I was not told not to touch things, but naturally I did not dare to violate such sacred grounds; however, I did look a whole lot, on the main floor, and in an ell or cellar, I have forgotten which. All were busy with work. Both the Elder and the Younger Clark, with several assistant workmen, were doing this and that to several lenses, on what looked like lap-wheels or polishing stools. All was quiet, but much was doing. After about an hour,

Mr. Alvan Clark, Senior, came to me and asked what he could do for me; and frankly I told him that my intrusion, though perhaps insolent, was based, however, on a real interest, for I had heard of him all my life, and wanted to see him at work. And then the unexpected happened, as that wonderful old gentleman took me right in for just what I was, a most respectful and most interested ignoramus; and what a time we had together! It was as though he were my own grandfather, as he first showed me all the details of his work that I might be expected to understand, from a nice 10 or 15-inch lens that was being finished, to the great 36-inch crown glass of what was later to be the Lick Telescope at Mt. Hamilton. They were then waiting for the completion of the 36-inch flint to match it.

After that Mr. Clark took me into the garden and showed me the trial-tube for all new lenses. That one was never used up to its prophetic limit, for he told me that it would carry a 50-inch lens. Then we went to the garden proper, where we talked of men and books, and people. He filled our straw hats with grapes, and we ate like boys, talking 333 words to the minute, - for Alvan Clark was thoroughly human. I may not remember all that he said, but there was one remark that I have often quoted. It was just before I thanked him heartily, and said good-bye, that he looked up and exploded with - "Some people say that there isn't any God, - Nonsense, - of course there is." Dear Old Saint, of course there is a God, even if you do say it on a mild October morning, while that same God is filling your mouth with delicious grapes, and in the presence of one of his saints. Well, I never saw Alvan Clark in the flesh again; but his enthusiasm remained with me and has been an inspiration many times, as I went away and reflected on his technique, his human-nature, and his commonsense goodness; and when we are despondent over the petty ambition of some men - we are counterbalanced by that marvelous and reverent creative genius of an Alvan Clark. ... (The foregoing appeared in POPULAR ASTRONOMY in 1926, vol. 35, pp. 143-145).

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** ABOUT DISTANCES IN THE SOLAR SYSTEM ** By Ernst E. Both

When dealing with distances within the solar system, we use a unit of measurement called the Astronomical Unit (abbreviated A.U.), which, roughly speaking, is the equivalent of the average Earth-Sun distance, in round figures 93,000,000 miles. For those who thirst for precision, it is 1.496×10^{13} cm = 9.2957×10^7 miles. Well, that's all well and good - but what does 93 million miles really mean? Can you visualize such a distance? Can you compare it with some personal experience? For example: I have been driving for about 20 years with an accumulated mileage of about 300,000 miles! That's slightly past the Moon, or about 12 times around the Earth. If I continue to drive at that rate, I'll have covered the distance to the Sun in 6,200 years (here I come, A.D. 8173).

Suppose I dedicate all my energy to getting to the Sun: If I were to drive at a constant speed of 60 miles/hour, without ever stopping, I would cover the distance of 93 million miles in 175 years! At the speed of light it would take a mere 8.28 minutes!! The only planet one could reach conveniently within a life time (at a constant 60 mph) is Venus = only $4\frac{1}{2}$ years away. If one were extremely precocious, one might make it to Mercury (107 years) or Mars (92 years). You can forget about Jupiter (735 years), Saturn (1194 years), Uranus (3181 years), Neptune (5085), and Pluto (6727 years). Even at the speed of light you would need some 5 hours to Pluto. And the nearest star? At a constant 60 mph it would take you $47\frac{1}{2}$ million years!!

Those of our readers who are fast on the draw with a slide rule (do people still use those things?), or a desk computer, might want to boggle their minds by calculating, say, how many cars one would use on a trip to Jupiter (assuming one

were to drive each for 100,000 miles), how much gasoline one would need, how many tires, how much the whole thing would cost, etc. The possibilities are endless!

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NIAGARA FRONTIER COUNCIL OF AMATEUR ASTRONOMICAL ASSOCIATIONS Meeting Nov. 10:

The Lockport Astronomy Assoc. will host the Fall meeting of the NFCAA on Saturday, November 10, in the North Ball Room at the Sheraton Hotel, 515 S. Transit Street (NYS #78) Lockport, N.Y. (North Entrance). The meeting begins promptly at 2 p.m. All members of regional clubs are urged to attend. The agenda will include updating the speaker's list, presentations by members, dinner at the Sheraton and a guided tour of the Remick Memorial Observatory (observing if clear). If you are interested in giving a 10-15 minute presentation, notify: Bill Minard, 813 Onondaga Ave., Syracuse, N.Y. 13207 (315-4728942).

Dinner at the Sheraton has been arranged at \$ 5.00 per plate (choice of: Baked Sugar Cured Ham; Yankee Pot Roast of Beef; One Half Tender Fried Chicken. For those who wish to stay overnight at the Sheraton, the rates for double occupancy are: one double bed = \$ 15.00; two single beds = \$ 20.00; for reservations write to: Lockport Astronomy Association, Mrs. Sylvia Mosure, 2742 1/2 Maple Avenue, Newfane, N.Y. 14108. Reservations for dinner and rooms at the Sheraton (indicating choice of dinner, and choice of rooms) must be in Mrs. Mosure's hands by October 26, 1973.

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NEEDED: MATERIAL FOR THE SPECTRUM: NEWS NOTES: ARTICLES: LINE DRAWINGS: IDEAS: DEDEEN

SORRY TO SAY, BUT DUES ARE DUE, DUES ARE DUE, SEE BOB KARTYAS AS SOON AS POSSIBLE...

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FIRST CLASS
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*Mr. John Riggs
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