

# the Spectrum

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

Editor: Ernst E. Both

A P R I L 1975

APRIL MEETING: For our April meeting (Friday, April 11, 1975, 8:00 p.m. EDT, Club Room, Buffalo Museum of Science) we are happy to welcome Dr. Francis J. Bajer, who will present an illustrated lecture-demonstration on "LASERS, THE NEW TECHNOLOGY." Dr. Bajer, who holds a Ph.D. degree in chemistry from the University of Buffalo, was Research Chemist with Hooker Chemical prior to joining the museum staff as Administrator of Education. His current interest centers around lasers and holography, and he will demonstrate working lasers and holograms in his lecture. WE ARE HAPPY TO WELCOME DR. BAJER!

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\*BEAVER MEADOW OBSERVATORY REPORT No. III\* By Asterios

The following friends have contributed to the Beaver Meadow Observatory Fund: Marguerite Aipel, David Bigelow, David Blake, Rudy Buecking, Bill Chambers, Seville Chapman, Bruce Cook, Bill Deazley, Tom Dessert, Dow and Company, Carroll and Edith Geiger, Irv Goetz, Rick Janas, Mike Krasner, Marcus Lawson, Bob Mayer, Sheldon Merritt Jr., Carl Millazzo, Alan Pattee, Fred Price, Alfred Ricciutti, John Riggs, Milton Rogovin, Rowland Rupp, Gretchen Schork, Theo Scott, David Steinagle, Richard Taibi, Walt Whyman, and Lillian von Gerichten.

We wish to extend to these friends our deepest gratitude and appreciation. As of March 22, \$ 2,625.00 has been raised toward the observatory. You have put us to the half way mark of our goal of \$ 5,000.00 - many, many thanks! Also, we would like to say a special thank you to Dow and Company for their generous donation, which to date, is the largest of any single contributor.

It should be noted that our Association voted unanimously for the Beaver Meadow Observatory when the project was presented to the general membership. Your vote of approval indicated great enthusiasm. We now need the same enthusiasm in order to reach our financial goal. The next month is crucial and will determine the fate of the observatory. Please, we need your contribution NOW. Let's pitch in and show that we are really serious and looking forward to observing with what will be one of the finest telescopes and observatory in Western New York!

Mail your check today to: Buffalo Audubon Society, Buffalo Museum of Science, Humboldt Park, Buffalo, N.Y. 14211. Don't forget to specify on the check that your donation is for the astronomical observatory. All contributions are tax deductible.

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ASTRONOMY COURSE TO BE OFFERED AT BEAVER MEADOW.

Starting May 2 and running through to July 11, John Riggs will offer an astronomy field course at Beaver Meadow entitled "Wonders of the Sky." Classes will meet every Friday evening in the Fred T. Hall Building, starting at 8 p.m. The course will assume no previous knowledge of astronomy, and will not require any specialized equipment. Some of the topics which will be covered are: the constellations and naked eye astronomy, the Moon and planets, deep sky objects, and use of the telescope. At all phases the course will be coordinated with actual sky observing. The main thrust of the course will be astronomy for the sheer enjoyment of it. In addition, several guest speakers from the

B.A.A. will also give presentations.

Course fees will be \$ 15.00 for members of the Buffalo Audubon and Buffalo Astronomical; \$ 20.00 for non-members. All proceeds will go to the observatory fund. For information regarding registration please call David Bigelow at 457-3228.

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#### BAKED GOODS SALE AT THE MAY MEETING

Some time ago we ran a baked goods sale, the proceeds of which were added to the observatory fund. We are scheduling another sale of baked goods at the May meeting (May 9, 1975). We are going to ask for volunteers to bake cookies, cakes, etc. If you would like to volunteer your services, please do so at the April meeting.

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#### B.A.A. INSTRUMENT SECTION MEETING REPORT, by Warren Steinberg

During the last two years the instrument section meetings have gone through a minor, but warranted transformation. Not only have there been times set aside for informal discussions on telescopes and the testing of telescope mirrors, but we have also devoted some time for dialogues on subjects related to the observatory which is being planned for Beaver Meadows. There has been some criticism of discussing observatory matters at the instrument section meetings - but such discussions are necessary at these meetings because they are attended by some of the top "doers" of our Association.

At the meeting on March 28, 1975, a couple of mirrors were brought in by two of our junior members. Bob McGreevey put under test his six inch mirror and Tim Coons tested his  $4\frac{1}{4}$ -inch mirror. While Bob and Tim discussed their polishing and figuring techniques along with other problems which face any mirror maker, the rest of our group observed the mirrors under the Ronchi test and found that with the exception of a few shallow zones, the mirrors are coming along well.

Carl Milazzo showed us his pitch lap and told of his problems in making a good one, one of which seems to be the obtaining of the right consistency in the pitch. John Riggs showed us some excellent Moon charts which undoubtedly are very useful in locating elusive objects such as lunar domes.

In discussing the financial matters of obtaining sufficient funds for our observatory, Bill Deazley suggested that we consider two points: first, financial resources should be sufficient to provide, above all else, a good foundation; second, the design problems involved in building a roll-off roof for an observatory building that may eventually (?) be equipped with a dome.

The next meeting of the instrument section is scheduled for Friday, April 25, 1975, in room 4 (Humboldt Room) at 8:00 p.m., Buffalo Museum of Science. HOPE YOU COME.

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#### \* OF MOON CITIES AND SELENITES \* Conclusion. By Ernst E. Both

Confirmation of Gruithuisen's observation of a peculiar lunar feature finally came from Heinrich Samuel Schwabe (1789-1875), an amateur astronomer who some years later was to achieve fame as the discoverer of the 11-year sunspot cycle (see his drawing on page 4 of the February-March issue of the Spectrum). Schwabe's observation, made with a small telescope similar to Gruithuisen's, was promptly challenged by Lohrmann in a very careful analysis. Based on his own observations, he demonstrated that the object in question was, in reality, a mountainous region whose appearance as an artificial formation disappeared once a sufficiently large telescope was employed. He was joined

in 1841 by the selenographer Johann Heinrich Maedler (1794-1874) who came to similar conclusions.

The articles of Lohrmann and Maedler did not receive much attention from the general public, who preferred to await with eagerness further discoveries concerning the selenites and their fantastic structures. The atmosphere of the times was ripe for an enterprising writer to reap the profits from people's gullibility.

On August 25, 1835, the New York Sun, a fledgling newspaper fighting for its existence, launched a series of articles under the heading "Great Astronomical Discoveries lately made by Sir John Herschel ... at the Cape of Good Hope." The story started innocently enough by telling how Sir John (1792-1871) had gone to the Cape in 1833 to extend the sky survey begun by his father, Sir William Herschel (1738-1822) into the southern hemisphere. It mentioned a gigantic telescope of an entirely new design with enormous powers which Sir John had constructed. The second installment described the lunar world as revealed by the magic telescope in minute detail: the forests, fields, basalt cliffs, and the strange animals! "Herds of brown quadrupeds having all the external characteristics of the bison, but more diminutive." By the third installment people were fighting to obtain copies of the paper, and its circulation multiplied until it sold over 19,000 copies, two thousand more than the London Times.

In due time the avid readers were introduced to the selenites observed by Sir John - winged creatures like bats, with humanoid features, behaving much like earthlings. The paper vividly described their splendid temples roofed with "yellow metal". The public could now buy (for 25 ¢) "a most splendid and beautiful print of the lunar animals and other objects lately discovered ..." and when the installments came to an end they were quickly reprinted in pamphlet form, as late as 1859.

The entire affair was soon exposed by the New York Herald and came to be known as "the Moon hoax", one of the greatest scientific frauds ever perpetrated, but not before a great many people, including astronomers, had been "taken in." The hoax was due to the Sun's reporter Richard Adams Locke, who was familiar with Gruithuisen's writings. On page 12 of The Moon Hoax (reprint of 1859) we read: "The formation which Professor Frauenhofer uncharitably conjectured to be a lunar fortification, Sir John Herschel ascertained to be a tabular buttress of a remarkably pyramidical mountain; lines which had been whimsically pronounced roads and canals, he found to be keen ridges of singularly regular rows of hills." The substitution of "Frauenhofer" (Joseph von Fraunhofer, 1787 - 1826, the famed physicist-optician) for Gruithuisen was a subtle touch to lend further credibility to Locke's tale. Ascribing the supposed discoveries to Herschel was a natural choice. His name was very famous and highly respected, and he was too far removed geographically to unmask the hoax prematurely.



(Left: Franz von Paula Gruithuisen, 1774-1852)

Translations of the Sun articles quickly spread over Europe and eventually reached Gruithuisen who at first considered the story a vicious attack on his work. When he learned that it originated in New York, he resigned himself with the words "well, it was not really unexpected, because after all it came from a New York paper!" Sir John was amused by the whole affair, remarking that "since there will always be foolish people who believe in all adventurous tales, we can dismiss them as being completely harmless."

Gruithuisen's preoccupation with "moon cities and selenites" was based on observations with a small telescope made with great care, but poorly interpreted. His name is all but forgotten now, but his "city in the Moon" is still there for everyone to see. All that is needed is a small telescope, the right illumination by the Sun, and a fertile imagination!

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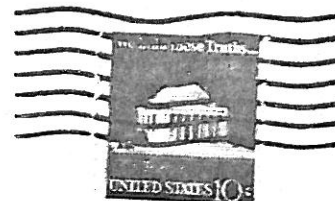
MOON CITY PHOTO CONTEST: As announced in the last issue of the Spectrum, we are soliciting photos which show the Moon city well. Entries must be 8 X 10 prints and should be sent to: Ernst E. Both, Curator of Astronomy, Buffalo Museum of Science, Buffalo, N.Y. 14211. The contest ends August 10, 1975. ALL ENTRIES MUST BE IN BEFORE AUGUST 10. First prize \$ 10.00, second prize \$ 5.00; only members of the B.A.A. are eligible, all entries are non-returnable. Winners will be announced at the September meeting, at which time prizes will be awarded.

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TOTAL LUNAR ECLIPSE, May 24/25, 1975. A total lunar eclipse will take place in the late evening hours/early morning hours of May 24/25, 1975. The Moon begins to enter the Earth's darker, inner shadow (the umbra) near midnight, Saturday May 24. The total phase starts at 1:03 a.m. Sunday morning, May 25, with mid-totality occurring at 1:48 a.m. The total phase ends at 2:33 a.m. and the Moon leaves the umbra at 3:36 a.m. Sunday morning May 25 (all times EDT). ~~The Museum's Kellogg Observatory will be open for public viewing from 11:30 p.m. May 24 until 3:30 a.m. May 25. Members of the B.A.A. who would like to bring their telescopes and help with this event are cordially invited to contact me at the April meeting. This would be an excellent opportunity to show the public what the B.A.A. is all about.~~

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