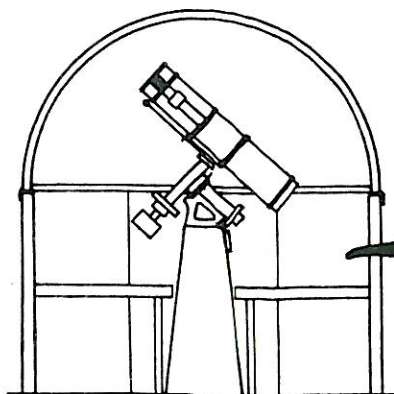


THE

SPECTRUM



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

J U N E

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JUNE MEETING: Our last indoor meeting this spring (June 12, 1970, 8:00 pm EDT) will feature Mr. John J. Ruiz of Erie, Pa. Members will remember Mr. Ruiz's stimulating discussion of Mayan Astronomy at the April, 1969 meeting. His topic this year will be "Photoelectric Observations of Variable Stars," a field in which our guest speaker has achieved world-wide renown among amateurs and professionals alike. Mr. Ruiz is a retired engineer who has travelled extensively - he has just returned from a prolonged visit to Mexico. It is with great pleasure that we again welcome to Buffalo Mr. JOHN RUIZ! - * - Also at the June meeting we will elect officers for the next two years. We sincerely hope that all members will make a very determined effort to come to the June meeting.

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ELECTION OF OFFICERS: At the June meeting we will elect officers for the next two years. The nominating committee offers the following slate:

President: Dr. Fred Price Mr. Richard Zygmunt

Vice President: Mr. Leslie Stoklosa

Secretary: Miss Lynn Meyer Mr. Larry Hazel

Treasurer: Mrs. Edith Geiger

Both Dr. Price and Mrs. Geiger are up for re-election. Our former Vice President, Mr. Orrin Christy, is due to join the Armed Forces soon (and our best wishes go with him), while our former Secretary, Mrs. Marjorie (Meyer) Sundell has declined to stand for re-election. She has served in that capacity very ably for many years, and we are grateful to her for a job well done. Further nominations from the floor will be accepted at the June meeting. COME ... AND ... VOTE ... VOTE ... VOTE.

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SUMMER STAR NIGHTS: As during summers past we are again planning to hold a series of Star Nights. These are scheduled for either Friday or Saturday nights. If the Friday night is clouded out, then the Saturday date applies. Observations begin at dusk - bring your own telescope (if it is portable), your good humor and fellowship, and your favorite disguise if you wish to escape Edith's merciless camera.

List of scheduled Star Nights (maps will appear in the July issue):

July 17/18: Camp Sprucelands; July 24/25: Irv Goetz's, 547 Taylor Rd., Hamburg, N.Y.;
July 31/Aug 1: Newstead Observatory; Aug 14/15: Camp Sprucelands; Aug 21/22: Les
Stoklosa's Summer Home; Aug 28/29: Newstead Observatory.

NOTE: SPECIAL DAYTIME PROGRAM, ONE DAY ONLY: Saturday, June 27, 1970, 10:00 AM to
2:00 PM, EDT, Walter Semerau's Solar Observatory, 135 Zimmerman Blvd., Kenmore, N.Y.
(go north on Detaware Ave, crossing Sheridan Drive. Zimmerman runs off Delaware,
about 3 or 4 blocks north of Sheridan. Turn right = east =). Bring your own lunch
if you plan to be hungry. This program takes place ONLY if skies are clear, and ONLY
on this date. Our gratitude to Mr. and Mrs. Semerau for having us again this year.

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* OBSERVATIONS OF THE TRANSIT OF MERCURY, MAY 9th, 1970 * By Fred W. Price

I managed to awaken myself at 5.45 am EDT on the morning of May 9th and on
looking out the window saw that the sky was beautifully clear. I dressed hurriedly
and hastened to the Kellogg Observatory of the Buffalo Museum of Science. I arrived
at the solar observatory just after 7 am. About eight members of the BAA were
already assembled and watching the large projected image of the Sun on the screen in
the room adjacent to the solar observatory. The planet Mercury was already on the
solar disc at sunrise in Buffalo and the transit was nearing its end. Someone remarked
to me that the planet was not easily visible just then as it was lying directly over
a rather large sunspot. I dashed upstairs to the dome of the eight-inch refractor
and found Ernst Both and an assistant (Clifford Stoll) watching the transit with the
main telescope and the five-inch Clark refractor mounted on it. In the eight-inch
I saw the small black disc of Mercury superimposed on the somewhat lighter form of
the sunspot. (Transits of Mercury are rare enough, but sunspot occultations by Mercury
must be even more so. I wonder how many times this phenomenon has actually been
observed?)

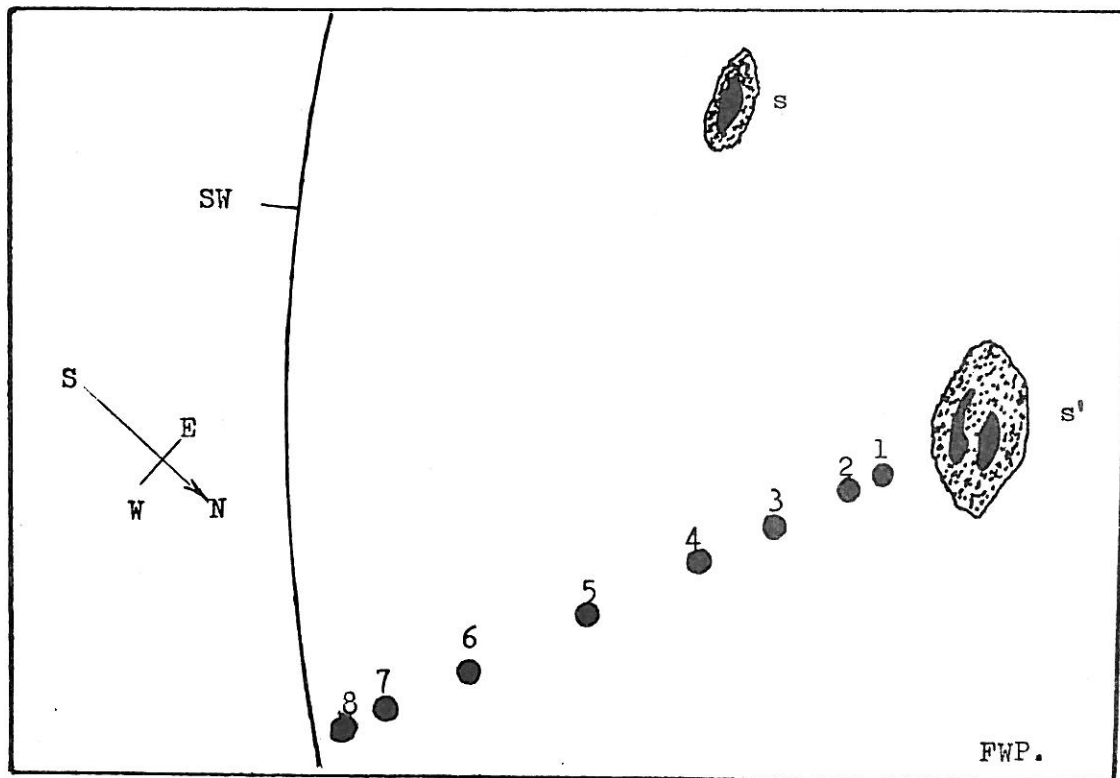
A few minutes later I was downstairs again and watching the projected solar
disc. Mercury had moved from the sunspot and at 7.17 I took the first of a series of
eight close-up pictures of the transit as seen on the projected image. For this I
used my Polaroid land camera (model Automatic 100) with close-up lens which enables
shots to be taken as close as nine inches. An optical device which slips over the
viewfinder compensates for parallax. The image was a little unsteady but my first
picture was gratifying. I took the other pictures at intervals of from five to ten
minutes. By great good fortune there were two sunspots quite close to the disc of
Mercury so that the slowly changing shape of the triangular pattern formed by the three
objects made perception of the motion of the planet quite easy. By 8.05 Mercury was
very close to the south-west limb of the Sun. Suddenly, clouds began scudding over
the solar disc and nothing was visible for a minute or so. There were dismayed
mutterings among the observers who had been waiting to watch the moment of third
contact. Then, there was a clearing of the clouds and I managed to get my last
picture which shows Mercury very close indeed to third contact. I was literally not
a second too soon in taking this picture because more clouds swept across the Sun's
disc. They can be seen encroaching on the edge of the photograph. By the time that
the clouds cleared again, Mercury was gone. I believe that I was the only person
present to record photographically that last glimpse of the planet before it
disappeared.

Although most of us were a little upset at having been cheated out of observing
third and fourth contact, we all agreed that watching the transit had been a worth-
while experience and that we really had not much to complain about. We are all
grateful to Ernst Both for placing this wonderful opportunity to observe the transit

at our disposal. It is a pity that no more than a mere handful of the BAA membership took advantage of it. This was my first-ever observation of a transit. My eight photographs form a pleasing series and the accompanying drawing is a free-hand composite based on them.

TRANSIT OF MERCURY, May 9th, 1970. 07.17 - 08.10 EDT.

Buffalo, N.Y. U.S.A.



The following are the times corresponding to the positions of Mercury shown in the drawing: 1= 7.17; 2= 7.21; 3= 7.27; 4= 7.37; 5= 7.48; 6= 7.55; 7= 8.05; 8= 8.10; s,s'= sunspots. Distance travelled by the disc of Mercury will be seen to be not strictly proportional to time. This is because the drawing is a freehand sketch based on photographs which were taken with a hand held camera. The precise distance to the screen (camera to projected image) and the degree of inclination to the screen vary somewhat from picture to picture so that exact comparisons are not feasible.

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* BAA INSTRUMENT GROUP MEETING * By Ed Lindberg

A lively meeting of the Instrument Group of the BAA was held at the home of Warren Steinberg on Friday evening, May 22nd/1970. There were nine telescope makers and guests present. We tested Frank Fronczak's 12 $\frac{1}{2}$ -inch mirror. This mirror had survived quite a hazardous experience when the telescope was tipped over by a gust of wind in Frank's driveway. A Ronchi test showed a good figure. Conclusion: Fronczak mirrors are tough! Next came Irv Goetz's newly completed 10-inch mirror. Frank's Ronchi tester showed it to be of excellent quality. Frank demonstrated how to set the Ronchi test to produce only one line and by lateral motion bring out the knife edge shadows, thus combining the Ronchi and Foucault tests. Irv's mirror passed the searching tests with flying colors. Then we experimented with thermal effects on mirror testing. Different people's fingers made interesting silhouettes in the light path, but certainly stopped progress on mirror testing. Conclusion: when testing

mirrors, chase out the people and if testing in winter, turn off the furnace! Wayne Johnson brought his No. 3 mirror, a beautiful 8-incher and it was duly put to the tests on Warren's Foucault tester. It had a very pretty curve and an elegantly polished surface.

Warren showed his very neat wooden mount which has some new ideas and should turn out to be very interesting. The conversation turned to the availability of materials such as fiber tubes and the use of fiberglass and epoxies. Ron Poling mentioned that there are several advantages in making the tube out of masonite and making it square. Irv Goetz reported that it is possible to obtain Sono tubes used for pouring concrete. These are built for strength and make good tubes at a reasonable price. Rudy Neuhauser discussed the process of hobbing worm gears with a tap and how you always come out with one less tooth in the gear instead of one, or even two extra, as one of the writers (MacIntosh) claims. Rudy, who calls himself uneducated, claims that his experience as a machinist entitles him to an opinion even though it doesn't always agree with the mathematicians. In passing, I would comment that anyone who has built a first class Maksutov telescope need not belittle himself.

It was a spirited meeting with several conversations going on simultaneously most of the time. Many ideas and even definitions cropped up. From Bob Hofer: "An uncemented achromat is a cemented achromat that didn't pass the drop test." ("Then," added Wayne, "it becomes an air-spaced achromat"). We planned work parties for the Newstead Observatory, Warren served coffee and doughnuts, and all agreed it was a most enjoyable evening. Attendance: Frank Fronczak, Irv Goetz, Bob Hofer, Walter Johnson, Wayne Johnson, Ed Lindberg, Rudy Neuhauser, Ron Poling, Warren Steinberg.

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ASTRONOMICAL LEAGUE NATIONAL CONVENTION: July 8-12, 1970, Pittsford (near Rochester), N.Y. Information at the June meeting. Registration forms available at meeting.

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FIRST CLASS