



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

THE SPECTRUM

OCTOBER 1967

OCTOBER MEETING: Our second meeting of the new season (October 13, 8 PM) will feature as guest speaker George T. Keene, well-known amateur astronomer from Rochester, N.Y. His topic will be "CLOSE-UP PHOTOGRAPHY OF THE MOON," a discussion of the Orbiter series illustrated with slides. Mr. Keene studied Chemical Engineering and holds a Master's degree from MIT. He also earned a Master's degree in Business Administration from the University of Rochester. Since 1952 Mr. Keene has been associated with the Eastman Kodak Company where he has worked on the development and improvement of color films (among other things). Very active with our sister-group in Rochester, he has also served as President of the Rochester Academy of Sciences and was named Fellow of the Rochester Museum in 1961. He has built 6, 10, and 12-inch reflectors (see "Some Suggestions on Astrophotography," *Sky and Telescope*, January 1959, 134-137) and has written extensively on celestial photography and other astronomical topics. Mr. Keene is the author of the popular book "Star Gazing with Telescope and Camera," published by Amphoto, N.Y. in 1962. It is our privilege to welcome Mr. George T. Keene!

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* MY EARLY TELESCOPIC OBSERVATIONS OF THE MOON. * By Fred W. Price.

Ever since I first became interested in astronomy at about the age of 10, I was attracted to the Moon. While turning the leaves of new astronomical texts I could never refrain from stopping at the pages with Moon pictures and poring over them for many minutes. My home, then as now, was in England, just on the western outskirts of London where I lived with my parents. The second World War was at its height in Europe and the Battle of Britain had been fought and won. Money and materials were scarce and it was at this time that my parents bought me my first telescope - from Woolworth's. It was made from cardboard and with the single draw tube extended, measured about fifteen inches in length. The object glass was a spectacle lens about one inch in diameter and was mounted in a wooden cell. The eyepiece also was a single smaller lens. The field of view was pitifully small and the magnifying power was about 3 times. With this tiny telescope I had my first glimpses of the Moon's craters and I was happy with it for a while.

Some time later one of my aunts bought me another telescope which although smaller seemed to be somewhat more powerful than the first. It was made partly of plastic and had three metal draw tubes. Needless to say, I saw hardly any more detail on the Moon with this telescope than with my other one.

At about the age of 12 I managed to persuade my mother to buy me a second-

hand naval telescope which I had spotted in a pawn shop window. I now possessed something which was not merely a toy but a real precision instrument. The achromatic object glass had an aperture of somewhat less than one and three quarter inches and the power was about 15 times. There were three brass draw tubes and the length fully extended was $2\frac{1}{2}$ feet. The eyepiece tube was engraved with the words "L. Casella, Maker to the Admiralty & Ordnance, London." At last I could enjoy views of the Moon which resembled the photographs I saw in books. Plato, Mare Crisium, Sinus Iridum and the Tycho streak system were all clearly discernible. When I mounted my telescope on a firm makeshift support I was amazed at the fine detail I could see on the Moon's surface. This led me to experiment with powerful microscope eyepieces which I tried in place of the low-powered terrestrial eyepiece tube and thus converted the instrument into an astronomical telescope. I achieved powers of about 30 or 40 times in this manner and I was thrilled with the fairly large image of the Moon presented to my eyes. For the first time it really did look like a world hanging in space and lit by the light of the Sun. For many years, in fact into early manhood, this telescope was the largest I possessed. I still feel much affection for it and would not part with it. Some time ago I had it cleaned and overhauled which resulted in an improved performance.

At the end of 1960 I decided that I really must have something larger as the desire to start serious lunar observing became ever more insistent. I spent what to me was quite a large sum of money on buying an altazimuth-mounted F/15 three-inch refractor by Broadhurst Clarkson of Farringdon Road, London. I won't forget the elation and anticipation I felt when I first carried home the new telescope for it was a giant compared with what I had been used to. Though of modern construction the style was "solid and old-fashioned". The metal tube was finished in black stove enamel and the robust object glass cell, viewfinder, draw tubes and eyepiece were made of brass. The telescope was mounted on a sturdy mahogany garden tripod which was wonderfully rigid. Even the visual appearance of the telescope itself was pleasing, a truly noble instrument I thought.

I already possessed a one-inch Huygenian eyepiece and as soon as I could afford it I purchased a half-inch which gave me a power of 90 times. To my great joy, the Moon now looked enormous but at the same time I was disappointed at the seeming lack of really fine definition and so I "read up" on telescope optics to find out what was wrong. Shortly afterwards, I exchanged the half-inch eyepiece for an orthoscopic of the same focal length and was delighted with the splendid sharp image which it afforded. Although I have since acquired higher powered eyepieces, the orthoscopic half-inch still remains my favourite. In an extravagant mood I next exchanged the one-inch for an orthoscopic and finally replaced the original object glass with another, the best which I could afford. I now felt that my telescope would yield the most that could be expected from three inches of aperture.

(To be concluded. In the next issue the author tells of the fine detail he observed on the Moon with his "noble instrument".)

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* HILLTOP OBSERVATORY. * By Richard S. Zygmunt.

Those who have visited Camp Sprucelands have undoubtedly seen the observatory set up there for instructional use by the campers. Hilltop Observatory is set on a knoll where the entire horizon is nearly unobstructed - and the clear country air makes travelling there worthwhile. Camp Sprucelands is located just outside of Java Center, N.Y., just forty miles southeast of Buffalo. The observatory houses a 5-inch, F/5 richest field telescope on an altazimuth mounting as its main instrument and has an outside auxiliary pier which supports a 3.3-inch, F/12 equatorially mounted refractor.

This year, along with general observing, the observatory director is extending the efforts of interested campers towards timing lunar occultations of stellar and planetary objects. A listing of occultations computed for the geographical coordinates of Hilltop has been obtained from Mr. David Dunham of the United States Naval Observatory in Washington, D.C. We hope to file a report at the conclusion of this season. Last year, a major effort was expended in visually observing meteors and attempting to determine their radiant. During the annual Perseid shower of 1966, a maximum hourly rate of over 200 was recorded. This was a beautiful display with several fireballs.

During the last three years, the Buffalo Astronomical Association held star-nights at the camp with great success. Since the observatory was built, our members have commented on the excellent site for it and the clear skies encountered there. It is very rewarding to see the enthusiastic campers swarming over the various telescopes and asking many questions. We plan to continue this relationship and hope that its popularity increases in the forthcoming years.

POSTSCRIPT AND NOTICE by the editor: Mr. Zygmunt, with his usual modesty, fails to mention that he is entirely responsible not only for building the larger refractor and the housing, but also for stimulating a sizeable interest in astronomy at this privately-owned camp. Due to some poor wording on my part, the notice in last month's Spectrum concerning the re-organization of our newsletter conveyed the impression that this was precipitated catastrophically because of Mr. Zygmunt's resignation as publisher. In reality the Board of Directors had been planning an expansion and new organization of the Spectrum for some time. We all feel that Dick has done a very remarkable job in publishing it in the past, single handedly and with laudable stamina. He simply could not continue because the job exceeds the capabilities of an individual. eeb.

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* GROOVING A PITCH LAP. * By Darwin Christy, Jr.

Cutting a pitch lap is not an easy task with a saw or knife. It leads to chipping at corners and even along the edges. In cold pressing I noticed that little depressions occurred where a sheet of plastic bunched up using it between mirror and lap. By using some twine or cord I found that I could make reasonable grooves without cutting with a knife or saw. After the pitch has been poured and conformed to the mirror, lay a piece of thin plastic, like that of "Baggies" or disposal bags on the pitch. Cut some pieces of twine or cord a little longer than the diameter of the lap and mirror and then wet them. While they are wet, place them across the plastic in a pattern as you would have the grooves cut. Place the mirror on this and cold press with an additional ten or fifteen pounds on the mirror for about 24 to 48 hours. At this stage remove the mirror and other components, add rouge and water mixture, replace the mirror and cold press for another fifteen or twenty minutes with only the weight of the mirror. Having gone through all of these steps, you are now ready to start polishing. This does not last as long as the cut grooves but does last about two or three hours of polishing time. Of course you may go through this again as before without any trouble and proceed to continue on with your polishing. GOOD LUCK!! (Good Luck Indeed! Having never been faced with the problem of "cutting a pitch lap" I shall refrain from commenting on the problem, though it sounds frightfully messy to me, what with pitch, rouge and water. Hopefully some of our masters in the art will care to comment. eeb.)

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* SPY AND TELL * : If you have missed the September meeting, you've missed a good one! Walt Semerau gave an excellent talk illustrated with superb spectrohelio-grams of very recent vintage (hot off the Sun) * * * Our well-known lunar observer confessed that he went to England to pick up some more piano duets for

another "Moonlight Serenade." * * * Then there is the story of our most devoted lunar observer who used to get up in the middle of the night this past summer (NO - NOT to observe the waning Moon) to feed some baby bunnies. It was all part of a serious research project. * * * Orrin and Darwin Christy completed a radio telescope in August. "It is constructed of wooden 2X4's for the main frame and a chicken wire of one inch mesh for the reflector of 5 ft. focus. It is 16 feet in diameter and is going to be used on 2 meters (144-148 mc.)" - Orrin had been busy calibrating it until somebody snipped-snipped the cable (nasty little cut-ups)- - well, you've got to expect that when you abandon a 12 $\frac{1}{2}$ -inch mirror in favor of a radio telescope! It's back in operation now. * * * Sev Chapman is busy with a high voltage experiment. It was commonly thought that the field of electrostatics was dead after the Greeks delved into the study of it, but Sev is studying it further with what one eyewitness described as "a formidable device" in his basement. At the present time it is still Greek to Sev (or to the eyewitness?) though progress is being made. * * * On his recent trip to London, Fred Price visited noted British solar observer W. M. Baxter, author of "The Sun and the Amateur Astronomer" published in 1963. Fred brought back some fine sunspot pictures. * * * Dale Hankin, one of our younger members has been quite active during the summer. He writes: "With summer on its way I felt it was the perfect time to build some type of observatory for my new telescope. A building 10 ft. square with walls 5 ft. high was to be the observatory. Later I added a 4X5 ft. room" for storage and work area. "The main instrument is a 6-inch F/10 reflector with plans for a 4 $\frac{1}{4}$ -inch, F/5 photographic reflector for deep sky work." Dale is particularly interested in lunar photography. With John Riggs he went to Stellafane this summer and writes about his experiences "I was very much impressed by the number of people and telescopes there. When night came, John and I found that about 80% of the telescopes were very poor optically. I had my biggest surprise when I looked at M 13 with the 16-inch, only the outer stars were resolved. Many smaller telescopes of 4 or 6-inch aperture gave equal or better results."

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