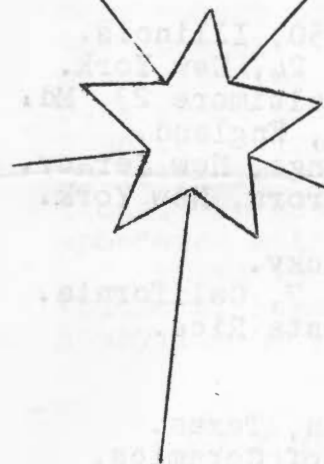


Volume I, Number 6

August 1, 1947

THE STROLLING ASTRONOMER

(Association of Lunar and Planetary Observers)



*"The Stars Hang
Bright Above"
Phantoms by Day-
Sentinels by Night-
Infinite in
Beauty and
Light!*

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The above list includes all paying subscribers
(as of July 23) not mentioned in the May issue. We
thank you for your support of THE STROLLING ASTRONOMER
and hope that you will tell your astronomical friends
about our publication.

I N T R O D U C T I O N

It would be laboring a very trite expression to say that Mr. Latimer J. Wilson does not need to be introduced to American astronomers. Making his first telescope in 1908, our contributor is the veteran lunar and planetary observer of this country. Over a period of 40 years he has published numerous papers in Popular Astronomy and elsewhere on his visual and photographic studies of the members of the solar system. With very modest equipment, he has obtained photographic results that compare favorably with work done at large professional observatories. Published reproductions of his drawings do scant justice to the originals. Mr. Wilson's astronomical work has been recognized with membership in the American Astronomical Society, The Société Astronomique de France, and other associations. He has carried on pleasant, helpful, and patient correspondence with many of us, including the editor since 1936.

There is a biography of Mr. Wilson in Amateur Astronomy, Volume 4, Page 1, 1938. His address is 1606 Woodland Street, Nashville 6, Tennessee.

PLANETARY and LUNAR PHOTOGRAPHY

by

LATIMER J. WILSON

The arrangement of the camera used with an f8 12-inch reflector for photographing the moon, Mars, Jupiter, and Saturn is shown in the diagram on the next page. Since the prime focal images are very small, this arrangement has been found satisfactory for enlarging the images from two to five, or more, diameters.

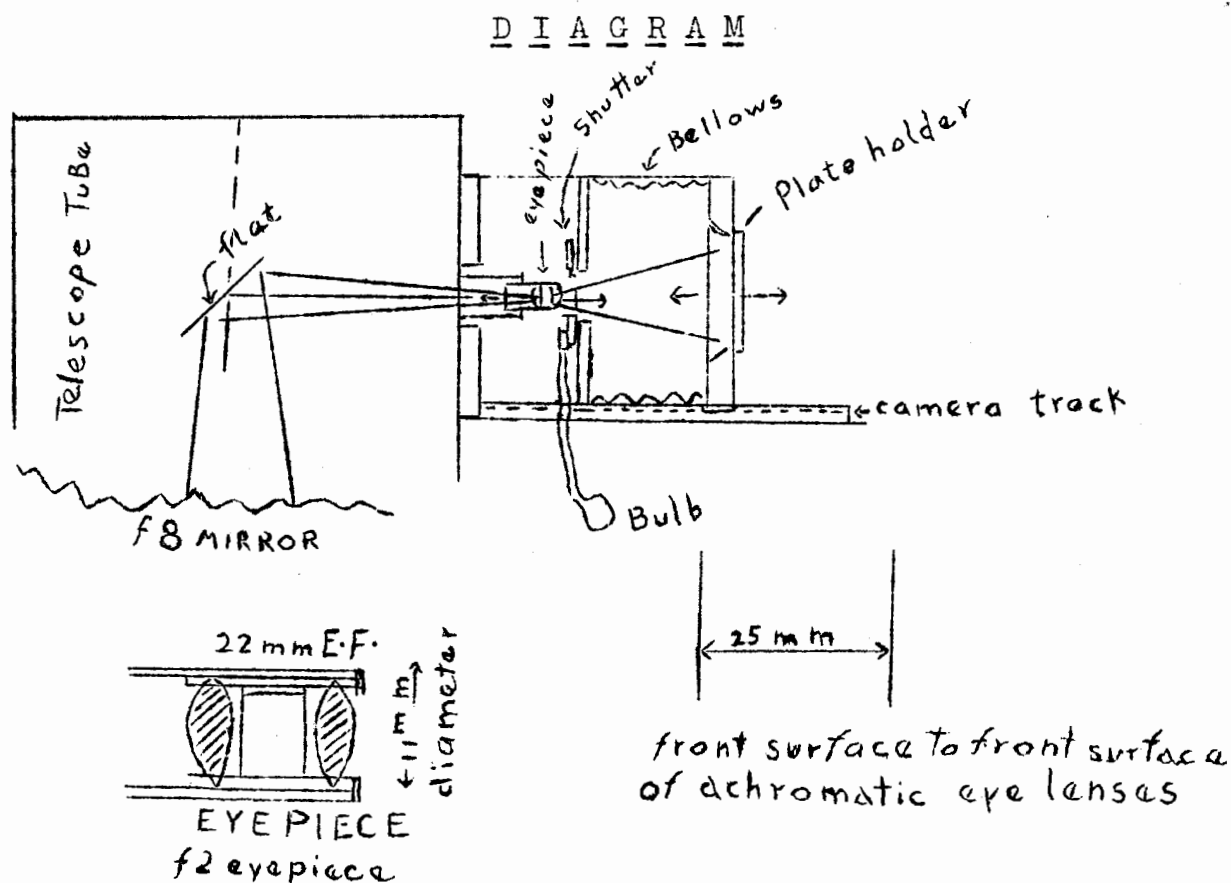
Unless a fixed-size image is desired, the camera should be arranged so that it can be moved forward or backward, as well as extended or shortened. Since there is no camera-lens, the image is projected through an achromatic eyepiece. Therefore, the eyepiece must be focussed also. A ground glass of fine grain is inserted in the position to be occupied by the film. Ordinary film holders are employed. Filmpacks are also useful (when it is possible to get them).

The shutter is fixed to the front of the camera, and exposures are made by pressing the bulb at the end of a long tube. The type of shutter employed here is that in which a plunger is operated by air pressure.

Since the enlarged image is less bright than the prime image, the larger the size, the longer the exposure required. Mars at or near opposition, magnitude near -2, furnishes sufficiently dense negatives through tricolor filters in about 1/10 second, with film of about 100 Weston speed (125 Eastman). Jupiter, curiously, though minus 2, furnishes weaker images through the same filters. WHY? (Could it be because of the greater apparent diameter of the roughly equally bright Jupiter? W.H.H.)

My telescope is a portable one, and no driving mechanism is employed. The images are photographed as the object moves through the field, about 30 being secured on a $2\frac{1}{2} \times 3\frac{1}{2}$ film. The exposures are estimated at 1/8 to 1/10 second, the quickest bulb exposures I can make.

With a good drive, exposures of one second or longer could be made, and images of greater enlargement secured. By all means, I recommend the use of a driving mechanism. To secure good photographs of Saturn, a drive is practically necessary.



The Moon and Meteors

by

WALTER H. HAAS

It is often stated in textbooks that there is a constant rain of meteorites striking the lunar surface at their cosmic velocities averaging, perhaps, 26 miles per second. It is naturally here supposed that the moon has no trace of an atmosphere. When such meteorites strike the thus unprotected lunar surface, they must give rise to impact-flares; and it is easy to compute that many such flares should be visible from the earth. Actually, empirical evidence of their occurrence is completely lacking.

A very slight trace of lunar atmosphere would greatly modify these phenomena. Few meteorites would then reach the moon's surface; and most of them would be consumed high above it, there giving rise to luminous lunar meteors. The brightest of these meteors would be visible in the telescope as luminous specks moving short distances over the lunar surface during their brief periods of visibility. Over a dozen such specks have been observed in 1941-7 by me and others.

I have treated the problem outlined above more fully in Popular Astronomy, Volume 55, Page 266, 1947 (May).

An unusual opportunity for observing either lunar meteors or lunar meteoritic impact-flares is presented by the Perseid epoch, centering near August 11. This stream apparently has a large cross-section, and its members may well encounter the moon as well as the earth. I urge all those who can to examine telescopically, while the shower is in progress, the north half of the non-sunlit portion of the moon. Such systematic searches will be of greatest value if the observer reports the date, the times of beginning and ending, the number of minutes spent in actual watching, the stellar magnitude of the faintest object that could have been seen against the moon, the location of the lunar region watched, its area, and his results. If something unusual is seen - this work is a little like searching for comets - the observer should examine it most attentively and should try to record the time of appearance, the apparent angular diameter, the stellar magnitude, the color, the duration of visibility, the position on the moon's surface, the length of path (if a moving speck), and any other pertinent information.

Let's hope for clear skies near the Perseid maximum.

— Acknowledgements —

L. J. WILSON has sent us a lovely drawing of Jupiter in colors. The editor is hardly artist enough to attempt to draw this planet in colors, especially since the task must be completed within ten minutes (because of Jupiter's swift rotation); but such sketches are very attractive, and they do possess some scientific value that a black-and-white depiction lacks.

E. HARE has submitted some splendid drawings of Mars in 1946 and of Jupiter in 1946 and 1947.

We thank A.F.O'D. ALEXANDER for calling attention to THE STROLLING ASTRONOMER in Circular 4 of the Saturn Section of the British Astronomical Association.

E. J. REESE has submitted a beautiful set of drawings showing the behavior of the Red Spot Hollow region and the South Tropical Disturbance on Jupiter in March-May, 1947. We regret that costs are too high to permit the making of a print for each subscriber of Mr. Reese's sheet of drawings.

It was a pleasant surprise to receive from H. M. JOHNSON a set of Jupiter observations made with A. E. Chennell's 6-inch reflector. Mr. Johnson was one of our foremost observers before the war, and it is pleasant to see him active again.

The editor is personally much obliged to DAVE BARCROFT and KING WHITE for many personal kindnesses that they extended to him when he recently visited their homes. A major pleasure, of course, was looking through their telescopes. Mr. Barcroft employs a 10-inch reflector sturdily mounted in a yoke; Mr. White uses a 9-inch reflector, which is mechanically very convenient to use, enclosed in what few amateurs attempt to build - a hemispherical dome.

R. SCHMIDT has submitted a drawing of Jupiter as well as a planetary occultation report mentioned elsewhere in this issue.

It was the privilege of editors, O. E. MONNIG (Texas Observers' Bulletin), G. BRUCE BLAIR (Astronomical Information Sheets), and W. H. HAAS to address the San Diego, California, amateur astronomers on the evening of June 19. The general subject was "Useful Observing Programs for Amateurs"; Professor BLAIR spoke about comets, Mr. MONNIG discussed meteors and meteorites, and Haas (amazingly enough!) talked about the moon and the planets. A very enjoyable meeting and question-period were had under the guidance of President RUDOLPH M. LIPPERT.

We thank D. W. ROSEBRUGH, F. M. GARLAND, E. K. WHITE, (Miss) A. I. HOTH, R. SCHMIDT, F. R. VAUGHN, L. T. JOHNSON, and others for their interest in giving opinions about the best organizational format of the Association of Lunar and Planetary Observers. Mr. Rosebrugh had an article on this subject in the May issue. We should like to have the reactions of more members to guide us in our policies.

KING WHITE'S home in Kimberley, B.C., Canada, was the Capitol of the lunar and planetary observers of this globe for a number of days near July 1st. TED HAKE and LEN LIGHTY of York, Pennsylvania, FRANK VAUGHN of Chicago, and the editor all converged on what is perhaps the best private observatory in Canada. We understand that King's recently constructed dome was taken to be a hot-dog stand by some of his neighbors in Kimberley! We were all much obliged to our host and his wife for a wonderful time and look forward to more astronomical reunions in the future. Strangers who share an interest in the stars are friends.

- - - - -

A Mathematical Puzzle

Clearly, $16 - 36 = 25 - 45$.

Hence, $16 - 36 + 81/4 = 25 - 45 + 81/4$;

or $(4 - 9/2)^2 = (5 - 9/2)^2$.

Hence, $4 - 9/2 = 5 - 9/2$;

and $4 = 5$.

WHAT IS WRONG WITH THIS REASONING?

- - - - -

REMINDER

For those of you whose subscription to THE STROLLING ASTRONOMER began with the April issue, the September issue (Volume I, Number 7) will be the last issue you will receive on your present 6-month subscription. In order not to miss any issues and to simplify our bookkeeping, you might like to renew your subscription now, before it expires. Renewal rates are on Page 8.

Recent Observations

The Red Spot Hollow has continued to exist as a large white oval area in the South Tropical Zone (see May issue for nomenclature of belts and zones). Central meridian Transits by Haas between May 26 and July 18 (inclusive) give these longitudes in System II: preceding end (left in inverting telescope) at 212° , (nine transits), center at 222° (seven transits), following end at 234° (seven transits). The Hollow appears to be about stationary in System II. L. J. Wilson reports that on June 15 the terminal ends were at 215° and 239° respectively. H. M. Johnson put the following end at 242° (II) on both June 7 and June 15. These differences suggest large personal systematic errors between the different observers. No Red Spot has been visible inside the Hollow to H. Johnson, Barcroft, Vaughn, White, or Haas, but the Spot has been faintly depicted there, in obviously pleasing views, by Reese and Hare.

By May 29 the South Tropical Disturbance so prominent early in the year had shortened to such an extent that one saw only a diagonal dark band across the South Tropical Zone. The south component of the South Equatorial Belt was still very dark following the band. Just following the south base of this band a conspicuous section of the South Temperate Belt terminated, being closely followed by a white bay indenting the north edge of the belt. Here are some longitudes (II) determined by Haas:

<u>Date</u>	<u>S Base Band</u>	<u>N Base Band</u>	<u>Fol. End Strong Section STB</u>
May 29	297°	307°	302°
June 1	294	309	292
June 6			293
June 8(H.Johnson)			299
June 11	287	310	293
July 2			279
July 7			275

A drawing by Wilson on June 1 confirms the description above. According to Reese, a white "cloud" broke away from the zone following the diagonal streak and then drifted past the streak along the north edge of the South Temperate Belt. H. Johnson on June 8 apparently drew the south part of the streak concealed by this bright area. However, Haas observed the streak to cross the zone on both June 6 and June 11. (Was the "cloud" on the preceding side by the later date?) On June 25 he only

suspected this band, and on July 2 and 7 he could not see it. He did observe on July 7 a tiny hump on the north edge of the South Temperate Belt, presumably a feeble remnant of the Disturbance.

A transit by Haas places Reese's "cloud" at $280^{\circ}(\text{II})$ on July 7.

Perhaps this rather detailed description of a small portion of Jupiter will show that there is a pleasant variety and unpredictableness to events on that planet's surface.

In recent weeks there have been observed a number of tiny dark humps and small bright spots along the north edge of the north component of the South Equatorial Belt. This current has usually been quiescent during the last decade and is the more deserving of close attention now for that reason.

What happened to the historical South Tropical Disturbance of 1901-1939? B. M. Peek, the Jupiter Director of the British Astronomical Association, has been unable to find certain evidence of its presence for some years subsequent to 1939. Now on June 9, 1947, H. Johnson drew in the South Tropical Zone a feature certainly looking like the famous old object did in 1938 and 1939. Johnson put the preceding end at $68^{\circ}(\text{II})$. In the first days of July, Vaughn saw some faint dark columns across this zone; and near the middle of the month Haas observed darker columns of this sort, several of which appeared to be excellent imitations of the old J.T.D. Can anyone enlighten us?

Mars is still remote, but in June and July Vaughn and Haas were able to observe a small and brilliant south cap and a dimmer (and more diffuse) north cap. Your editor, at least, was rather surprised to find that Mars can be seen well enough for drawing near noon with only seven inches of aperture. Such a view on July 7 at C.M. 91° revealed, in spite of vile seeing, Bosphorus Gemmatus, Tithonius Lacus, Mare Sirenum, a large shading over Amazonis, and perhaps Sirenius canal.

Recent reports indicate that a number of observers saw dark spots at the north edge of the South Equatorial Belt of Saturn during the 1946-7 apparition. In this country E.J. Reese and W.H. Haas did so on a number of occasions, and a recently received drawing by E. Hare on January 10 shows four evenly spaced spots at the latitude in question. A.F.O'D. Alexander informs us that such marks were seen by W.E. Fox and himself in England and by three observers in Prague, Czechoslovakia. It is evidently very much worthwhile to look attentively for delicate Saturnian spots under suitable conditions and to time carefully when they cross the C.M. of the planet.

R. Schmidt alone has reported on the daylight occultation of Jupiter by the moon on June 28. It has frequently been observed at planetary occultations that when the planet is partly behind the bright limb of the moon, a grayish band concentric with the limb of the moon is seen across the face of the planet (J.R.A.S.C., Vol. 38, pg. 351, 1944), (also several issues of Sky and Telescope in 1944). No such appearance is

seen at the moon's dark limb. This band has been imputed to an absorbing lunar atmosphere rising some miles above the heated lunar surface during the day and has also been considered an illusion due to the differing brightness of the moon and the planet. Hampered by a very hazy sky, Mr. Schmidt did not see this band, using a 12-inch reflector; but he did note a separating space between the bright limb of the moon and the visible portion of the disc of Jupiter at emersion. This space certainly might well be an imperfect view of the dark band in the bright and hazy sky.

In connection with this subject of the lunar atmosphere, it is of interest to quote part of a recent letter from M. Williams: "(I very clearly saw) the bright star dim out as it approached the lunar disc...., and the effect lasted for quite a bit of time growing gradually dimmer until the image was too dim to be sure when it touched the disc.... Nor does the theory that it was caused by a high ridge gradually cutting off the star's light hold good at all. Also, on another occasion when mist could not have been present, I saw a star image drift along the rim of the moon for many minutes, right on the summits of the mountains, yet it remained bright and clear as if it were a spotlight being carried on a lunar automobile on some mountain roadway. We have all seen the instantaneous snap-out of a star's light when occulted at a point where the lunar atmosphere is perfectly clear, hence an impression of dimming out would be entirely unlooked for and could be credited to nothing except mist caused, as was the case mentioned above, by the close proximity of the terminator to the limb, during a lunar sunrise."

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