PHOTOGRAPHIC OBSERVATIONS OF MOREHOUSE'S COMET.

BY W. A. COGSHALL.

Comet c 1908 was found on a plate taken at the Yerkes Observatory on September 1st and has been so situated as to allow observation from any point in the northern hemisphere for several hours each night.

Most of the comets, during the time they are visible to us, are in nearly the same direction from us as the sun, and so are seen only for a short time before sunset in the evening, or before sunrise in the early morning.

Comet c had a high northern declination when found, and afterward passed within about 16 degrees of the north pole of the sky, so that during this time it was visible all night. As a result continuous records were secured through several hours, from the time it became dark in Europe till daylight in California.

These records show beyond doubt what has been indicated by several other comets—that the tail is composed of matter driven off by the action of the sun from the head of the comet, and that the velocity of motion of these particles in the tail is such that practically a new tail is formed each day.

While this comet was not very bright visually, it photographed very quickly. exposures of an hour with a short focus lens showing from 6 degrees to 10 degrees extension of tail, and it also showed unusual and sudden changes in the details of its tail.

The most prominent of these are shown in the accompanying photographs.

The first of these happened on September 30th. The photograph of September 29th shows nothing unusual in the appearance of the comet, but the next plate whose mid-exposure time was September 30th, 11 hours, shows a great change in the size, direction, and general character of the tail. This change began during the afternoon of September 30th, and by early morning following had produced the appearance shown in the plate of September 30th, 14 hours, 45 minutes.

The great cloud-like mass of tail moved away from the head of the comet at a rate of about 20 miles per second, and on the next evening (See plate October 1st, 11 hours, 00 minutes) was at a considerable distance from the head, and connected with it by very faint and straight streamers.

On plate October 2d. 10 hours, 30 minutes, it is visible still farther away, and much fainter, and the new tail near the head of the comet, is beginning to assume its usual form.

The next great disturbance took place on October 15th. The night before, the comet was quite normal in appearance, as shown in plate October 14th. 10 hours, but on October 15th, 8 hours, a great puff or explosive action is shown.

On the next plate of the same night this is shown at a greater distance from the head, and of a little different form, measurement of the plates giving velocities as high as 70 miles per second.

The plate of November 15th, 6 hours, 15 minutes, shows the comet during the latter part of its time of visibility, and when it could be seen for only an hour or two before setting, and shows a great variety of detail in the streamers and condensation in the tail, all of which were invisible in any telescope, and were known only through photography.

About seventy-five plates of the comet were secured in all, and gave a fairly complete history of it from September 21st to December 1st.

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'08, Sept. 30, 11h 00m.







'08, Uct. 14, 10h 00m.





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