

IS THERE A MORNING MAXIMUM OF THE AURORA?*

BY A. F. HUNTER

ABOUT twenty-five years ago, Dr. M. A. Veeder, of Lyons, N.Y., published several articles on the aurora, in the course of which he brought forward two important points:— (1) There is a time, two or three hours after sunset, when the aurora attains its maximum and tends to flare up with greater brilliancy than at any other time of the night. (2) When the disturbances arising from the positions of sunspots, (with which phenomena the aurora seems to be intimately connected,) are favorable to displays of aurora being visible, we have, instead of the expected aurora, an outbreak of thunderstorms sometimes all over the whole of a continent; in other words, the aurora and the thunderstorm would appear to be interchangeable. Dr. Veeder's enunciation of these two fundamental principles is an example of how the work of an amateur may sometimes be in advance of the work of the professional men. He did not, however, indicate the existence of any other than the evening maximum of the aurora, and Professor Chant's curve of their diurnal frequency† shows substantially the absence of any other than the evening maximum. If the cathode theory of the aurora deserves the serious attention of the scientific world, and I believe it does, the question must be answered:— Why is there no morning maximum two or three hours before sunrise, just the same as the evening maximum two or three hours after sunset? Cathode rays coming up from the east would be bent around the earth just as much as those coming up from the west.

* Remarks made in the discussion upon a paper by the Editor on "The Aurora" at the meeting of the Society in Toronto, February 9, 1915.—ED.

† Drawn from data in *Encyclopædia Britannica*, Vol. I., Art. "Aurora."—ED.