

Non-polar Auroral Light from the Night Sky in the Tropics

IN a previous communication from one of us,¹ it was stated that the brightness of the auroral green line in the northern and southern night skies at Poona (lat. $18^{\circ} 31' N.$) does not show the midnight maximum observed by Lord Rayleigh and by McLennan and his collaborators in temperate latitudes. Further estimates of intensity obtained by exposing Mimosas extreme orthochromatic plates through suitable green and orange filters, and with an aperture of about 45° towards the zenith, shows definitely that, in general, the brightness of the overhead sky gradually decreases from sunset to a minimum at about midnight, and increases after midnight.

To test whether the result was due to admixture with zodiacal light (it is questionable whether we should consider it as separate from night sky light), simultaneous photographs were taken on a few occasions of the spectrum of the sky with the spectrograph pointed approximately towards the pole star. These confirm that even in the north sky there is a distinct minimum of brightness within an hour of midnight. It may be mentioned that the nights were all perfectly clear. Occasional casual variations, such as have been noted by various observers in Europe and America, also occur.

If the excitation of the green line is directly or indirectly due to ultra-violet light from the sun, one would *a priori* expect a minimum brightness of the sky some time after midnight depending on the height of the effective layer of atomic oxygen. The maximum brightness observed in temperate latitudes at about this hour is in need of adequate explanation.

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Jan. 14.

¹ [NATURE, 129, 280, Feb. 20, 1932.]