

The Pulsation Theory of Cepheid Variables.

GENTLEMEN,—

With reference to the discussion on the pulsation theory of Cepheid stars at the November meeting of the Royal Astronomical Society*, it may be relevant to point out that in spectra of general sunlight having a dispersion of 1 mm. per angstrom, the lines are surprisingly sharp and only very slightly wider than in spectra of light taken from the centre of the Sun's disc. This is no doubt due to the general absorption of the Sun's atmosphere, which causes so great a falling off of intensity towards the limb that only the light from the central part of the disc is effective in photographs of daylight spectra. The light from portions of the disc where the rotation-velocity is greatest is practically ineffective in broadening the lines.

In the Cepheid stars the line-of-sight velocity is eight times greater than the solar-rotation velocity, but, as the dispersion employed is at least twenty times less than we apply to the Sun, it appears unlikely that the diffusion of the lines would be apparent if the stars have atmospheres as absorptive as the Sun's—which is probable, as the type is solar.

Kodaikanal,
1919, Jan. 12.

I am, Gentlemen,
Yours faithfully,
J. EVERSHED.

* *Observatory*, vol. xli. p. 434, 1918.