

3. A STUDY OF BRIGHT MEMBERS OF THE LARGE MAGELLANIC CLOUD

M. W. FEAST, A. D. THACKERAY AND A. J. WESSELINK

Radcliffe Observatory, Pretoria, South Africa

(This is an abstract of the paper presented by A. D. Thackeray at the symposium.
The full paper is in *The Observatory*.*)

A progress report on work on (a) spectral types and (b) radial velocities of twenty-eight members of the Large Cloud (mostly $m_{pg} = 11$ or brighter) will appear shortly in *The Observatory*. The commonest spectral types found lie between B 5 and A 2. A star with $M_{pg} = -10.1$ has slightly narrower H-lines than the galactic A 2 super-giant HD 92207. [Fe II] emission appears in four of the stars, including recent spectra of S Dor.

The radial velocities exhibit the rotation of the Cloud about an axis in position angle 75° agreeing within 5° with de Vaucouleur's minor axis derived from the outer structure.

The angular velocity appears to be constant out to a projected distance of some 3 kpc. This central body rotates with a period about 180 million years.

The angular velocities of stars and diffuse nebulae appeared to be 3.3 times that of the H I gas, as suggested by the published radio data at the time of submitting the paper. The explanation of the discrepancy was offered that the complexity of 21-cm profiles might have led to underestimated velocities for the inner core. This explanation has been confirmed by verbal conversations at the Dublin General Assembly of the Union.

Discussion

Morgan: Can Dr Thackeray tell us the magnitude of, say, the fifth or tenth brightest of the A super-giants which he has observed in the Magellanic Clouds in order to give an idea of the nature of the bright end of the luminosity curve as compared with individual isolated members.

Thackeray: About tenth magnitude, apparent. I should say that these magnitudes are extremely unreliable. Most of these stars are variable and, if they are faint, they tend to show emission lines of forbidden iron.

Morgan: Are these A super-giants variable as a group?

Thackeray: Many of them are.

* *Obs.* 75, 216, 1955.