References

VAN DE HULST, H. C. (1958).—*Rev. Mod. Phys.* **30**: 913–23. *Symp. IAU* **8**: 913–23. [Cambridge, Mass. 1957.]
KERR, F. J. (1962).—*M.N.* **123**: 327–45.
KERR, F. J., HINDMAN, J. V., and CARPENTER, MARTHA STAHR (1957).—*Nature* **180**: 677–9.
MCGEE, R. X., and MURRAY, J. D. (1961).—*Aust. J. Phys.* **14**: 260–78.
MCGEE, R. X., and MURRAY, J. D. (1963).—*Proc. I.R.E.* (*Aust.*) **24**: 191–6.
MCGEE, R. X., MURRAY, J. D., and MILTON, JANICE A. (1963).—*Aust. J. Phys.* **16**: 136–70.

Discussion

Buscombe: Mrs. Kennedy and I (*M.N.* **124**: 195–200 (1962)) have measured interstellar calcium velocities, for clouds in front of several early southern B stars, which agree closely with Mr. McGee's hydrogen results.

Burke: In a survey of the anticentre region we made several years ago at the Carnegie Institution we found a somewhat smaller velocity dispersion within the cloud associated with the Taurus complex—12 km/sec or slightly less. As for the larger structure, associated with the Perseus arm extending across the anticentre, we find, using simple dynamical behaviour as a criterion, a dimension of about 500×1500 pc, a dimension very similar to the other large concentrations you have shown.

Davies: Spectra taken with a 12′ beam and a 3 kc/s bandwidth at Jodrell Bank show three or four velocity features in various parts of the local system. Have you made a study of systematic motions within your extended clouds?

McGee: Not yet.

de Vaucouleurs: Your maps of HI total brightness show a good general and in places a detailed correlation with maps of obscuration from galaxy counts. In addition to the correlation with the Taurus-Orion dark nebula (first noted at Harvard some years ago by Professor Bok and his group) and with the Ophiuchus dark nebula, your HI contours seem to agree well with the extensive obscured area over the region of the South Celestial Pole. In this connection, I wish to call the attention of the Mount Stromlo astronomers to the importance of procuring homogeneous galaxy counts to a faint limiting magnitude over the south celestial polar cap where only preliminary and heterogeneous Harvard data are available.

31. A LARGE HIGH VELOCITY CLOUD AT $l^{II} = 41°$, $b^{II} = -15°$

J. H. OORT
Leiden Observatory

In a study made by Miss Gail Smith at Leiden a cloud was found with a rather exceptional velocity and a large velocity spread. The cloud is elongated, with a ratio of length to breadth of about 3 : 1. Its length is about 10°. The average velocity relative to the local standard of rest is +90 km/sec; the width of the profiles is considerable, corresponding to a halfwidth of about 30 km/sec. The mass can be estimated only if we know the distance. Taking 200 pc as a reasonable estimate of the minimum distance of the cloud the minimum mass is about 200 solar masses. The computed mass varies as the square of the distance.

It is possible that we are witnessing here part of an old supernova shell, or rather the gas swept up by a supernova shell, of the same kind as we find in the Cygnus loop. However, the mass of the exploded shell and its original velocity must have been quite high to explain the observed cloud.