3. 21-CM RADIATION FROM GALAXIES: LEIDEN AND JODRELL BANK

L. Volders

21-cm observations of galaxies have been made at Leiden, Harvard and Jodrell Bank. Total, about 25 galaxies: Sb and Sc spirals; irregulars and ellipticals.

Leiden: systematic velocities, hydrogen mass and, for some of the nearby galaxies, rotation and hydrogen density distribution. Total mass, estimated from velocity spread, gives M_H/M of 1 to 10% for Sb and Sc; 10 to 20% for the irregulars; and an upper limit of 4% for the elliptical M32.

Jodrell Bank has much higher resolving power and has taken drift curves for M31, M33 and few others. M31 shows a density in the centre less than at 1° along the major axis. The density distribution in M33 has a flattened top.

4. REPORT FROM HARVARD

M. H. Roberts

Harvard uses a maser (constructed by B. F. C. Cooper of the Radio-physics Laboratory of Sydney and J. V. Jelley of Harwell) and goes to fainter galaxies of greater radial velocities. Using $M/L = 5$, they find that, for Sc, $M_H/M = 10\%$.

5. RADIO SOURCES: IDENTIFICATION, STRUCTURES AND DIAMETERS OF 175 SOURCES

T. A. Matthews

90 were observed in two position angles. Of the 90, 45 were unresolved. Three-quarters of the resolved sources are elongated with axial ratio greater than 2. An hypothesis of two well-separated equal regions explains one-quarter, but one-half are unsymmetrical by as much as 10 to 1. At Nançay, measurements out to 7000 Mc/s have confirmed Cal. Tech. results in general. The central component of NGC 5128 consists of two equal components at 960 Mc/s; but direct observations at Stanford show that at 3300 Mc/s the eastern component is larger and stronger. Cygnus A shows two components, with signs of some emission between them and edge-brightening on the outer edges; observations elsewhere at other frequencies show somewhat different intensity ratios, spacings and position angles. Three out of the 45 objects show jets which, however, could easily be overlooked at great distances, and about 15 have known redshifts.

6. LUMINOSITY FUNCTION OF RADIO SOURCES

R. Minkowski

Lack of distance measures hinders progress. At present we must first make an optical identification, then estimate the distance by redshift.

A luminosity function determined from about 45 identified sources is $\log n = 6{\cdot}9 + 0{\cdot}48\,M$ where n is the number of sources per cubic megaparsec stronger than M. This leads to a computed curve, of source counts against distance, in agreement with that observed by Mills.