ing these possibilities are under way, but results obtained so far indicate that differences between the methods are small, except when layer-dependent factors, such as the damping constant, critically affect equivalent widths.

Observations of Planetary Nebulae at $\lambda 3.75$ cm.

JERRY R. EHMAN, *Radio Astronomy Observatory, The University of Michigan*.—Observations of 70 planetary nebulae at a wavelength of 3.75 cm (8000 MHz) with the University of Michigan's 85-ft radio telescope gave values of flux density above $0.1 \times 10^{-26} \text{ W m}^{-2} \text{ Hz}^{-1}$ on 46 nebulae while the remaining 24 were too weak to give useful values. Antenna temperatures of the 46 nebulae ranged from about 0.01° to 0.57°K compared to the rms noise output of the receiver, which ranged between 0.04° and 0.06°K with a 4-sec time constant.

Daily calibrations were made with respect to Cygnus A [with an assumed flux density of $(200 \pm 10) \times 10^{-26} \text{ W m}^{-2} \text{ Hz}^{-1}$] or to other sources whose flux densities relative to Cygnus A are known. Antenna temperatures were corrected for pointing errors, antenna gain variations across the source, and antenna gain variations due to antenna orientation.

Comparison of these observations with published radio and optical observations shows that several nebulae with large radii appear to be optically thick at 8000 MHz.

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Photoelectric Technique for Detecting Fringes Formed by a Michelson Stellar Interferometer.

JAMES L. ELLIOT, *Harvard College Observatory*, AND FRANK SCHERB, *University of Wisconsin*.—A photoelectric technique for detecting the interference fringes formed by a Michelson stellar interferometer is under development. The technique employs a grid of alternate opaque and transparent bands which moves in the plane in which the fringes are focused. The grid motion converts the spatial variation of light intensity in the fringe pattern to a time variation of the intensity of the light which is transmitted through the grid. The transmitted light is then detected by a photomultiplier.

The signal in the photomultiplier output is related to the visibility of the interference fringes. The fringe visibility can be measured as a function of the separation of the entrance apertures in the Michelson stellar interferometer, and from these measurements angular distributions of the light source can be inferred.

This technique gave good results when employed

to measure the visibility function of a small light source in the laboratory, and is presently being used on bright stars to study the effects of atmospheric disturbances. The results have been encouraging enough to warrant further work which is now in progress at Harvard College Observatory and the University of Wisconsin.

Observations of 3C345, M82 and Other Peculiar Objects with a Scanning Dual-Beam Polarimeter.

AINA ELVIUS, *Astronomical Observatory, Uppsala, Sweden*.—The polarization of light from some quasi-stellar and other peculiar objects has been studied with the scanning polarimeter, constructed by J. S. Hall and described by him in a separate paper. The data were obtained with the 72-in. Perkins reflector of Ohio Wesleyan and the Ohio State University at the Lowell Observatory.

In the observations of starlike objects the scanning served to record the sky background simultaneously with the faint object itself. 3C273, as observed on 9 May, showed no polarization. 3C279 and 3C345 showed variable polarization, as reported by T. D. Kinman (*Astrophys. J.* **148**, L53, 1967).

TABLE I. Observational data for 3C345.

Date (UT) 1967	Filter	P (%)	θ ($^\circ$)	B N (mag)
4 May	BG 12 (+Wr 2B)	3.6	81.4	1 16.4
7 May	None	6.6	75.4	1
7 May	BG 12	5.0	75.0	1 16.4
8 May	None	9.3 ± 0.1	93.9 ± 1.7	2
6 June	None	11.9 ± 0.7	86.1 ± 3.2	2
7 June	None	12.1 ± 1.2	86.3 ± 0.1	2
7 June	UG 1	9.5	92.0	1
8 June	None	8.5 ± 0.4	95.0 ± 0.2	2
9 June	None	8.8 ± 0.9	94.8 ± 0.4	2
9 June	OG 5	10.3	111.6	1
10 June	None	8.2 ± 0.2	93.1 ± 1.8	2
11 June	None	9.3 ± 1.6	99.1 ± 1.6	2

Extended objects were scanned with a slit elongated parallel to a bright filament or dark lane. Tests on the Crab nebula confirmed the observations by Baade and others that the light from its bright filaments is considerably more polarized than the nebulous background.

In the outer parts of M82 individual filaments were scanned in an attempt to discriminate between the polarization due to light from the filament itself and the polarization of the faint luminous background, surrounding the filament. Although the filament showed higher polarization than the background on one side of it, the background light on the other side showed even higher polarization.