

STAR FORMATION IN M81

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VLA observations of the spiral galaxy M81 in the radio continuum at wavelengths of 6 and 20-cm have been used to check the predictions of the density wave theory. The non-thermal radiation from the arms has been detected and the arms are found to be broader than the predictions of the classical density wave theory. Their width does seem to agree with that predicted by models which take the clumpy nature of the interstellar medium into account. These data are also able to separate giant HII regions from the non-thermal arms. Collaborators have furnished optical H α data on the HII regions and HI 21-cm data, from the VLA, which will be used to find and measure the location of the HII regions with respect to the spiral shock wave and to measure the visual extinction in the disk of M81.

RADIO CONTINUUM OBSERVATIONS OF THE BARRED GALAXY NGC 4314

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ABSTRACT. VLA observations have been made of the continuum emission at 20-cm from the barred spiral galaxy NGC 4314 with an angular resolution of 3.5 arcseconds that corresponds to a linear scale of approximately 156 pc at a distance to the galaxy. This resolution was sufficient to resolve the central region into several compact sources. The radiation is linearly polarized which may indicate a non-thermal origin. No emission was detected from the extended bar to a level of 130 Jy.

1. INTRODUCTION

NGC 4314 is a barred spiral galaxy being classified as SBa(rs)pec due to its peculiar hot spot nucleus (Sandage and Tammann 1981, *A Revised Shapley-Ames Catalog of Bright Galaxies*, Sersic, J.L. 1973, Publ. Astr. Soc. Pacific 85, 103, Vorontsov-Vel'yaminov, G.A., Zaitseva, G.V., and Lyuti, V.M. 1972, Soviet Astronomy J. 16, 71). Emission lines were only