

HI-Bearing Ultra-Diffuse Galaxies: VLA Imaging of AGC 749290 and AGC 238764 ()

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Ultra-diffuse galaxies (UDGs) are galaxies with a very low optical surface brightness; they have very few stars for their given radius. Since UDGs are thus difficult to study in visible light, we observe radio emission from neutral hydrogen gas (HI) in these galaxies. Here we present observations of the HI gas in the UDGs AGC 749290 and AGC 238764. Initially selected from a sample of Ultra-Diffuse Galaxies detected in the ALFALFA survey, these sources were imaged as a part of a follow up program using the Jansky Very Large Array (VLA) in both C and D configurations. We reduce the data using the CASA software suite, removing radio interference, applying calibration, and creating images. From these data we obtain spectra and maps of the galaxies' HI distribution and radial velocities. We find that both sources show ordered gas distributions and rotation, and that the HI gas extends well beyond the already extended optical emission. Further, we estimate inclinations and plot these sources on the Baryonic Tully-Fisher relation, providing tentative evidence that these sources are rotating too slowly for their given mass. This work has been supported by NSF grant AST-1637339.

Publication:

American Astronomical Society, AAS Meeting #233, id.351.15

Pub Date:

January 2019

Bibcode:

2019AAS...23335115G

