

METHANOL AT THE EDGE OF THE GALAXY: NEW OBSERVATIONS TO CONSTRAIN THE GALACTIC HABITABLE ZONE

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Searches have been conducted for the J=2-1 transitions of methanol at 3mm in a sample of molecular clouds located 13-23.5 kpc from the Galactic Center, using the ARO 12m telescope. The sources are in the Cygnus arms, and typically are cold with T_K approximately 20 K. Multiple transitions of this organic molecule were detected in 19 clouds, including ones at distances of approximately 23.5 kpc. Typical abundances found for methanol are 1×10^9 . The results suggest that the Galactic Habitable Zone (GHZ) may exist much further from the Galactic Center than previously thought.