

FIRST SCIENTIFIC OBSERVATIONS WITH THE NEW ALMA PROTOTYPE ANTENNA OF THE ARIZONA RADIO OBSERVATORY: HCN AND CCH IN THE HELIX NEBULA

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Observations have been conducted with the new 12 m antenna of the Arizona Radio Observatory (ARO) at 3 mm towards the Helix Nebula. This object is the oldest known planetary nebula. The  $J = 1 \rightarrow 0$  transition of HCN at 88 GHz and two hyperfine components of the  $N = 1 \rightarrow 0$  line of CCH at 87 GHz were observed towards nine positions sampling different regions across the nebula. Both molecules were detected at all positions at the 5 – 30 mK intensity level. The line profiles exhibited multiple velocity components, as also seen in  $\text{HCO}^+$  and  $\text{H}_2\text{CO}$  towards the same positions. The widespread distribution of HCN and CCH at this late stage of stellar evolution is further evidence that polyatomic molecules are being dispersed into the ISM. It also suggests that the progenitor star in the Helix is carbon-rich.