

Interferometric Molecular Line Observations of RW LMi

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We have observed the carbon star RW LMi (CIT 6) in the HCN($J=1 \rightarrow 0$), CN($N=1 \rightarrow 0$), HC₅N($J=34 \rightarrow 33$), HNC($J=1 \rightarrow 0$), SiS($J=5 \rightarrow 4$) and HC₃N($J=10 \rightarrow 9$) lines with the IRAM interferometer on Plateau de Bure. The SiS emission is clearly confined to regions close to the star. We see the expected structure of a hollow CN brightness distribution outside that of the HCN emitting region, but the CN brightness distribution appears to deviate significantly from spherical symmetry. The HNC molecules appear to be distributed in a shell, and so do the HC₃N and HC₅N molecules. In all cases, the results are qualitatively in accord with current models of photospheric and circumstellar chemistry. A model for the circumstellar molecular line emission will be used in the interpretation of the data.