

60cm 電波望遠鏡を用いた L134 および IC5146 の $^{12}\text{CO}(J=2-1)$, $^{13}\text{CO}(J=2-1)$ 観測

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Abstract

We have carried out $^{12}\text{CO}(J=2-1)$ and $^{13}\text{CO}(J=2-1)$ observations of two dark clouds using the 60cm radio telescope, namely the Very Small Telescope (VST), installed at the Nobeyama Radio Observatory (Nagano, Japan). One of the clouds is L134 in the Serpens region, and the other is a dark cloud complex near IC5146. We mapped the whole cloud surfaces with these emission lines to reveal the molecular distributions in the clouds, and identified some clumps where the CO column densities are higher. We estimated the total molecular mass to be $27.8 M_{\odot}$ for L134 and $3200 M_{\odot}$ for the cloud near IC5146. We also investigated the velocity structures of the clouds and found that all of the clumps in L134 are in the velocity range $0 < V_{\text{lsr}} < 5 \text{ km s}^{-1}$, while the velocities of the clumps in the IC5146 region changes gradually from $V_{\text{lsr}} = -5$ (the eastmost clump) to 10 km s^{-1} (the westmost clump).

Key words: radio astronomy, molecular clouds, interstellar medium

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