

P109a **Distribution of 9 cm CH Emission in Heiles Cloud 2**

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A mapping observation of the  $J = 1/2$   $\Lambda$ -type doubling transition (3.3 GHz) of CH has been carried out toward Heiles Cloud 2 (HCL2) in the Taurus molecular cloud. The CH emission is found to be extended over the whole region of HCL2. It is brighter in the southeastern part including TMC-1 (Cyanopolyne peak) than the northwestern part. Its distribution looks continuous from the CI peak to the TMC-1 ridge, as if it connects the distributions of the [C I] and  $C^{18}O$  emissions. Since CH is an intermediate in chemical reactions from C to CO, its emission should trace the transition region. The above distribution of the CH emission is consistent with this chemical behavior. More importantly, the CH line profile is found to be composed of the narrow and broad emissions. Although the broad component is dominant around the CI peak, the narrow components appears in the TMC-1 ridge and dense core regions such as L1527 and TMC-1A. This trend seems to be related to dissipation of turbulent motions during the dense core formation. These results suggest that the 3.3 GHz CH line is a useful tool to trace chemical and physical evolution of molecular clouds, particularly in the dense core formation phase.