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＜硏 究 論 文＞

PMS Objects and Star Formation Efficiency in Dark Clouds within Taurus Complex

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Using the 1m telescope of Agematsu Infrared Observatory, we have carried out an infrared (J, K) survey in three dense portions of the Taurus dark cloud complex, and detected 328 sources in total. For each source detected in the survey, we also conducted a photometry in the J, H and K bands. A discrimination between pre-main sequence objects and field stars was attempted in a two color $(J-H, H-K)$ diagram. From the analysis of our survey together with the IRAS survey, 27 pre-main sequence (PMS) candidates have been newly identified, which increases the amount of stellar mass in the clouds significantly. The cloud mass in the survey regions was estimated from extinction of the field stars. We derived the mass ratios of PMS objects to the clouds to be 5～6% for all these clumps. These values are sligtly larger than previously estimated ones but still far smaller than the lower limit to make a gravitationally bound stellar system. The star formation in the Taurus dark cloud complex appears to from unbound stellar groups.

Time Monitoring of 19 SiO Maser Sources

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We monitored SiO $v=1$, $J=1\rightarrow0$ maser line for well known 19 sources with 14m radio telescope at Daeduk from April 1989 to March 1990.

The observed sources include of 13 Mira type variables, 3 semi-regular variables, 2 irregular supergiants and Orion A.

We compared the line profile and the intergrated flux of Mira type variables with those of irregular supergiants. The variation characteristics of the observed line profiles and the integrated flux of the maser lines through visual phase are discussed. And the missing maxima of the maser lines of the Mira type variables at visual phase $\phi=0.2$ are also discussed.