

Gas-to-dust ratio influenced by massive star formation

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How massive star formation influences the gas-to-dust ratio is still a mystery. As we know, during the process of its formation, a massive young stellar object gives out energetic feed-backs to and changes the physical conditions such as temperature and pressure and even chemical abundance of its surrounding. This will certainly change fraction of dust in the molecular cloud. We address this question by investigating the column density of the dust and molecular cloud in the massive star-forming region M17. The dust is traced by the near infrared extinction while the gas is traced by CO line emission. The spatial resolution has been set to 1 arcmin. We found that in some particular area near massive YSOs, the gas-to-dust ratio has been changed significantly. Our preliminary result suggests that the region deserves further study with higher resolution and more sensitive facilities.