

P134a **High mass star formation in M16's region explained by cloud-cloud collision**

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M16 is a famous region for high mass stars formation, but the comprehension of its formation mechanism is still poorly understood. Indeed, observation of high mass star formation is technically difficult due to a short time scale and a really fast evolution. Moreover, clouds with high density usually result in fragmentation, which prevents the formation of a dense core. Using observations of $^{12}\text{CO } J=2-1$ and $J=1-0$ from NANTEN2 telescope, which have a low resolution but cover a large area, and combining it with $^{12}\text{CO } J=1-0$ from Nobeyama 45m telescope, which has a high resolution, two molecular clouds with a velocity separation of 10 km s^{-1} are revealed to be associated with M16, which is around 2100 pc from us. The clouds have a crossing time of 2×10^5 years and contains about 11 O stars. The blue shift cloud, which fits clearly the Spitzer bubble N19, has a velocity from 16 to 20 km s^{-1} , has a size of 15 pc and a mass of $3 \times 10^4 M_{\odot}$, seems to have a hole in it which is filled in by the red shift cloud, at a velocity from 21 to 27 km s^{-1} , a size of 40 pc and a mass of $1 \times 10^5 M_{\odot}$. Using channel velocity maps and $J=2-1$ over $J=1-0$ ratios, and using the numerous articles and pieces of evidence for cloud-cloud collision, we suggest that cloud-cloud collision is a trigger for the O star formation in M16's region.