

MAPPING OBSERVATIONS OF AN UNUSUAL SiO MASER SOURCE, IRAS 19312+1950

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IRAS 19312+1950 is an SiO maser source that exhibits a prominent nebulosity and rich-molecular species. Though SiO maser sources are mostly identified as a late-type star with active mass-loss, the kind of this object is unclear. To reveal the true character of IRAS 19312+1950, mapping observations of this object were made in the CO $J = 1 - 0$, $^{13}\text{CO } J = 1 - 0$, $\text{C}^{18}\text{O } J = 1 - 0$, CS $J = 2 - 1$, and HCN $J = 1 - 0$ lines and in the 150 GHz continuum band using the Nobeyama 45m telescope. The line profiles of the ^{12}CO and HCN spectra consists of a weak component with the width of 50 km s^{-1} and a strong component of the width of 3 km s^{-1} . The profile of the ^{13}CO , C^{18}O , and CS lines have only the narrow component. Both of the components have an intensity peak at the IRAS position. The narrow component was clearly resolved with a $15''$ telescope beam. The spectral energy distribution of this object exhibits a doubly peaked profile between 1 and $25 \mu\text{m}$. The 150 GHz continuum flux density was found to be 0.07 Jy, which is consistent with the flux density predicted by the expanding envelope model with a mass loss rate of $\sim 10^{-4} M_{\odot} \text{ yr}^{-1}$ at a distance of 2.5 kpc. Though the present observations do not preclude the possibility of a young stellar object, we suggest that IRAS 19312+1950 is an AGB/post-AGB star. In addition to the results of single dish observations, we report a preliminary result of recent mapping observations in the $\text{HCO}^{+} J = 1 - 0$ line with the Berkeley-Illinois-Maryland-Association (BIMA) Millimeter Array. In the HCO^{+} spectrum, both of the strong-narrow and weak-broad components were confirmed. And then, in the integrated intensity map of HCO^{+} , we clearly found a bipolar flow, which corresponds the red- and blue-shift wings of the broad component.