

DETECTION OF THE $2_0 \rightarrow 3_1$ TRANSITION OF $^{13}\text{CH}_3\text{OH}$

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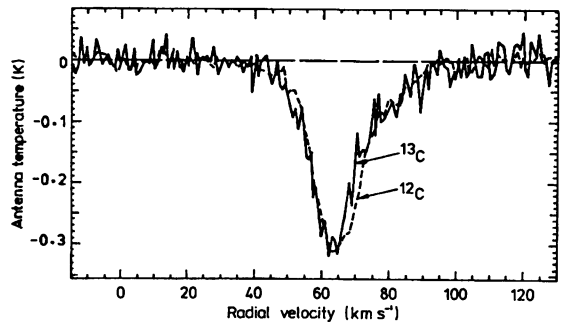
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The $2_0 \rightarrow 3_1$ E-type transition of $^{13}\text{CH}_3\text{OH}$ at 14.78 GHz has been detected towards four continuum sources: Sgr B2, two positions in Sgr A (the peaks of the '+20 km/s' and the '+40 km/s' clouds), and W33. The NASA Deep Space Network 70-m antenna near Canberra, Australia, which has a 66 arcsec beam at this frequency, was used. A comparison of the ^{13}C and ^{12}C profiles for Sgr B2 indicates a rest frequency of $14,782.27 \pm .03$ MHz, 0.12 MHz above the laboratory value of Haque *et al.* (1974). For the Galactic Centre sources, the $^{12}\text{C}/^{13}\text{C}$ abundance ratios derived using the simplest assumptions lie in the range 30-40, higher than the 20-25 range derived from H_2CO observations. For W33 the apparent value of ~ 50 is lower than the value of ~ 100 derived by Henkel *et al.* (1983) from H_2CO . There may be no discrepancy, however, as W33 contains two velocity components -- the higher velocity one at 36 km/s is more prominent in CH_3OH and the lower 33 km/s more prominent in H_2CO .



Methanol spectra of Sgr B2. The ^{12}C scale has been adjusted to fit the ^{13}C spectrum.

Haque, S.S., Lees, R.M., Saint Clair, J.M., Beers, Y., and Johnson, D.R. 1974, *ApJ. (Lett.)*, **187**, L15.
Henkel, C., Wilson, T.L., Walmsley, C.M., and Pauls, T. 1983, *Astr. & Astroph.*, **127**, 388.

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