Astrophysics > Cosmology and Extragalactic Astrophysics

Faint Extended OH Emission from the Local Interstellar Medium in the Direction l \approx 108\circ, b \approx 5\circ

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We have mapped faint 1667 OH line emission (TA \approx 20 - 40 mK in our \approx 30' beam) along many lines of sight in the Galaxy covering an area of \approx 4\circ \times 4\circ in the general direction of l \approx 108\circ, b \approx 5\circ. The OH emission is widespread, similar in extent to the local HI (r </= 2 kpc) both in space and in velocity. The OH profile amplitudes show a good general correlation with those of HI in spectral channels of \approx 1 km/s; this relation is described by TA(OH) \approx 1.50 \times 10^{-4} TB(HI) for values of TB(HI) </\approx 60 - 70 K. Beyond this the HI line appears to "saturate", and few values are recorded above \approx 90 K. However, the OH brightness continues to rise, by a further factor \approx 3. The OH velocity profiles show multiple features with widths typically 2 - 3 km/s, but less than 10% of these features are associated with CO(1-0) emission in existing surveys of the area smoothed to comparable resolution.

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