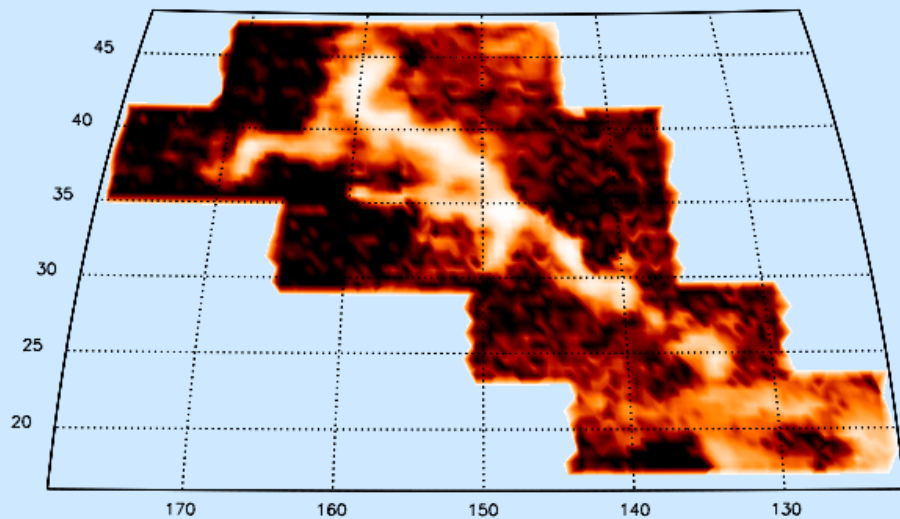


# A Search for Emission from Ionized Gas on the Outskirts of M31, M33, and the Milky Way

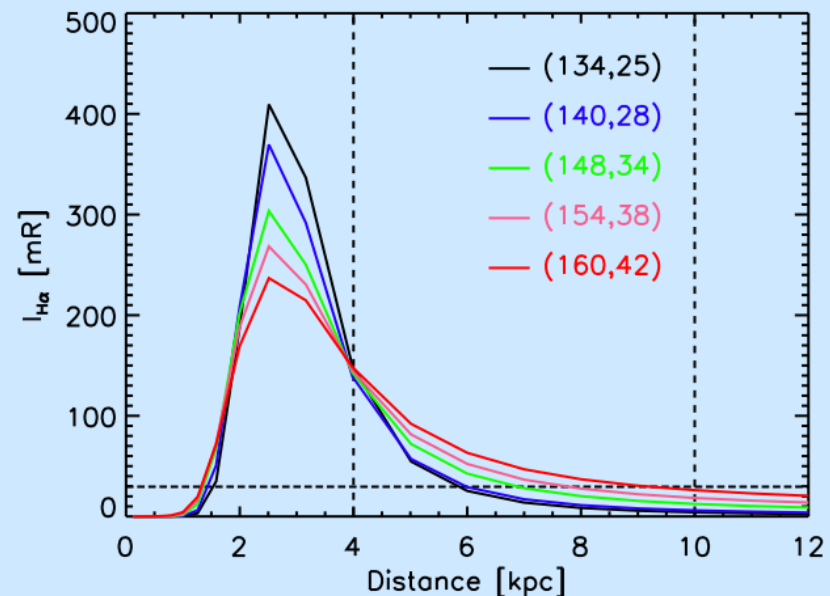
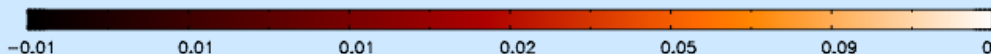
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- faint, diffuse H $\alpha$  emission from HVCs; probe of UV radiation
- requires high sensitivity + spectral resolution
- H $\alpha$  Map of Complex A: distribution, kinematics, ionizing flux

$-165 \text{ km s}^{-1} < V_{\text{LSR}} < -135 \text{ km s}^{-1}$



HI Column Density [ $10^{20} \text{ cm}^{-2}$ ]



- Davies' Cloud (Davies 1975, de Heij et al 2002)
  - $\approx 2^\circ$  away from M31, may be tidal
  - moving at  $\approx -200$  km/s wrt M31
- Wright's Cloud (Wright 1979)
  - few degrees from M33, offset by  $\approx -150$  km/s
  - large size, velocity gradients
- M31/M33 'bridge' (Braun & Thilker 2004)
  - filament at  $\approx 3 \times 10^{17}$  cm<sup>-2</sup>

