

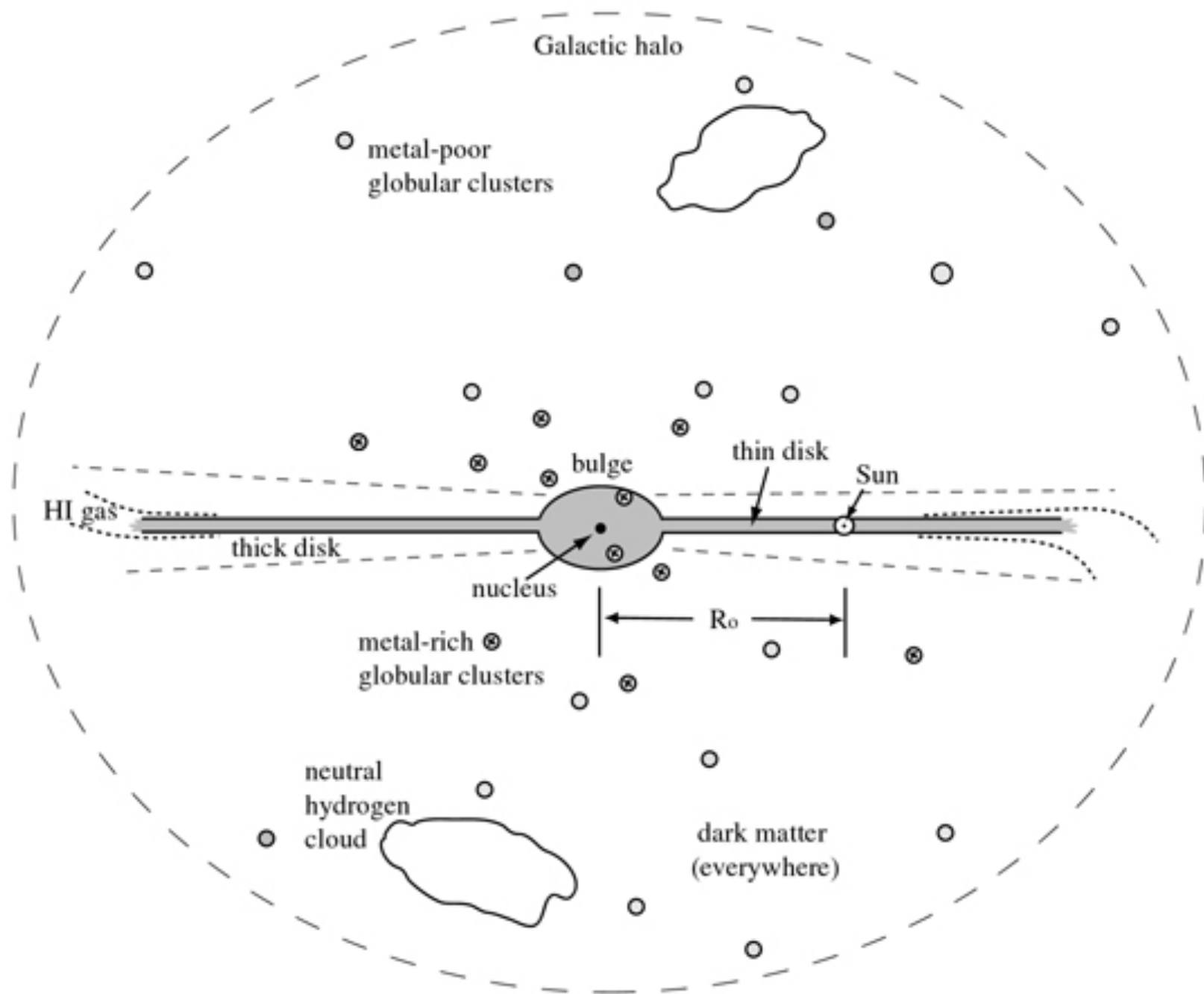


Fig 1.8 'Galaxies in the Universe' Sparke/Gallagher CUP 2007

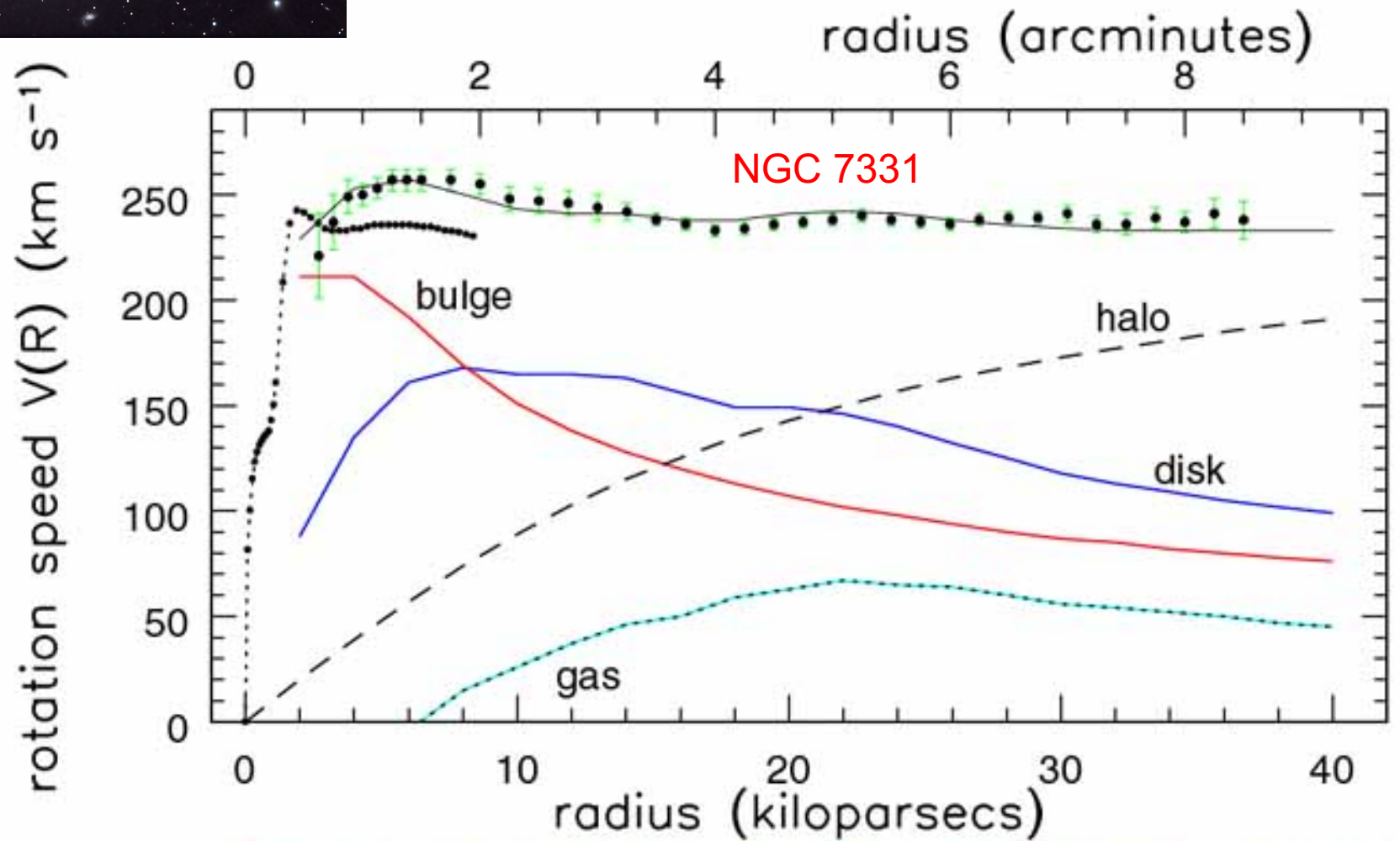


Fig 5.20 (Begeman, Sofue) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007

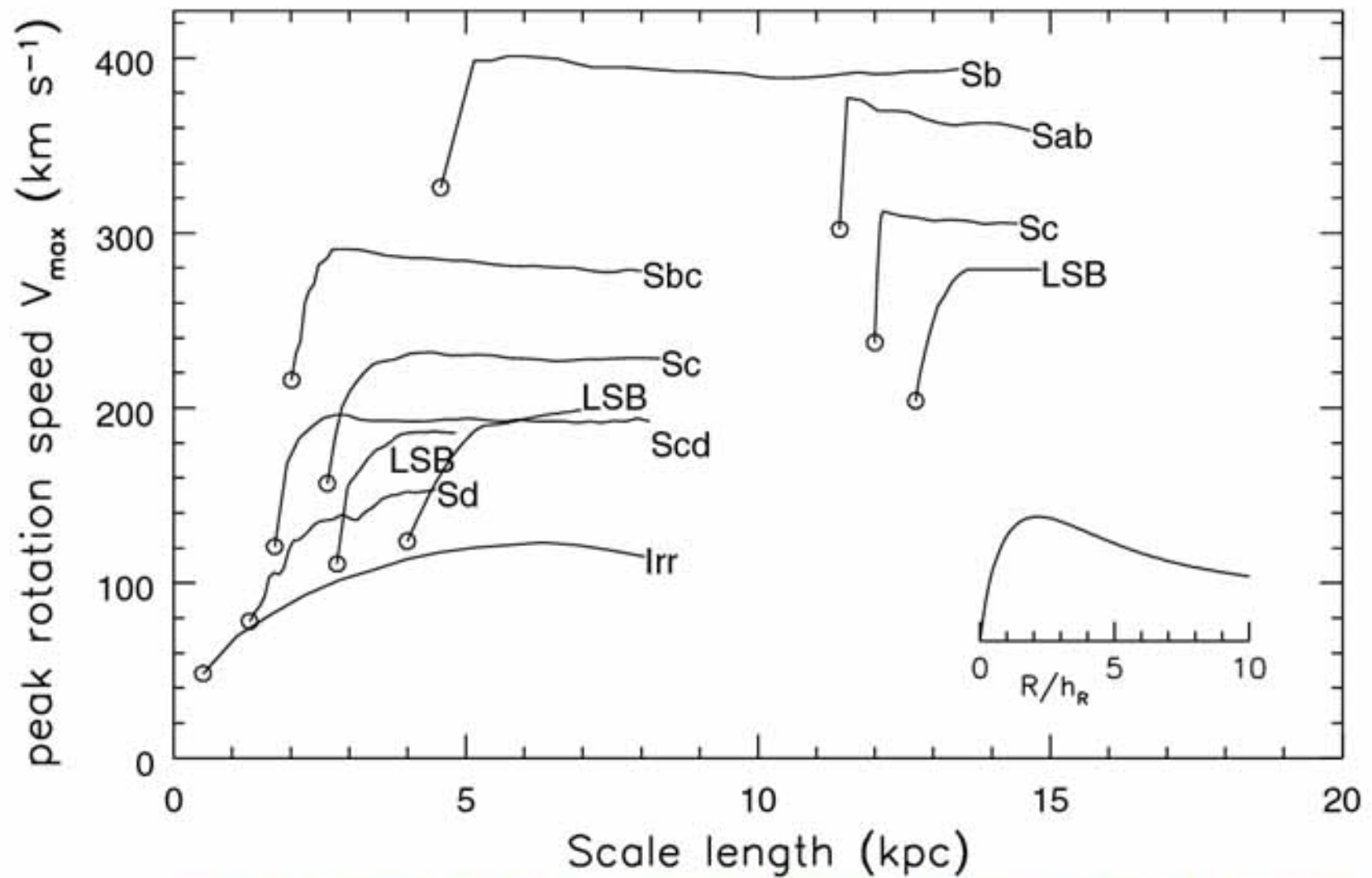


Fig 5.21 (Broeils & de Blok) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007

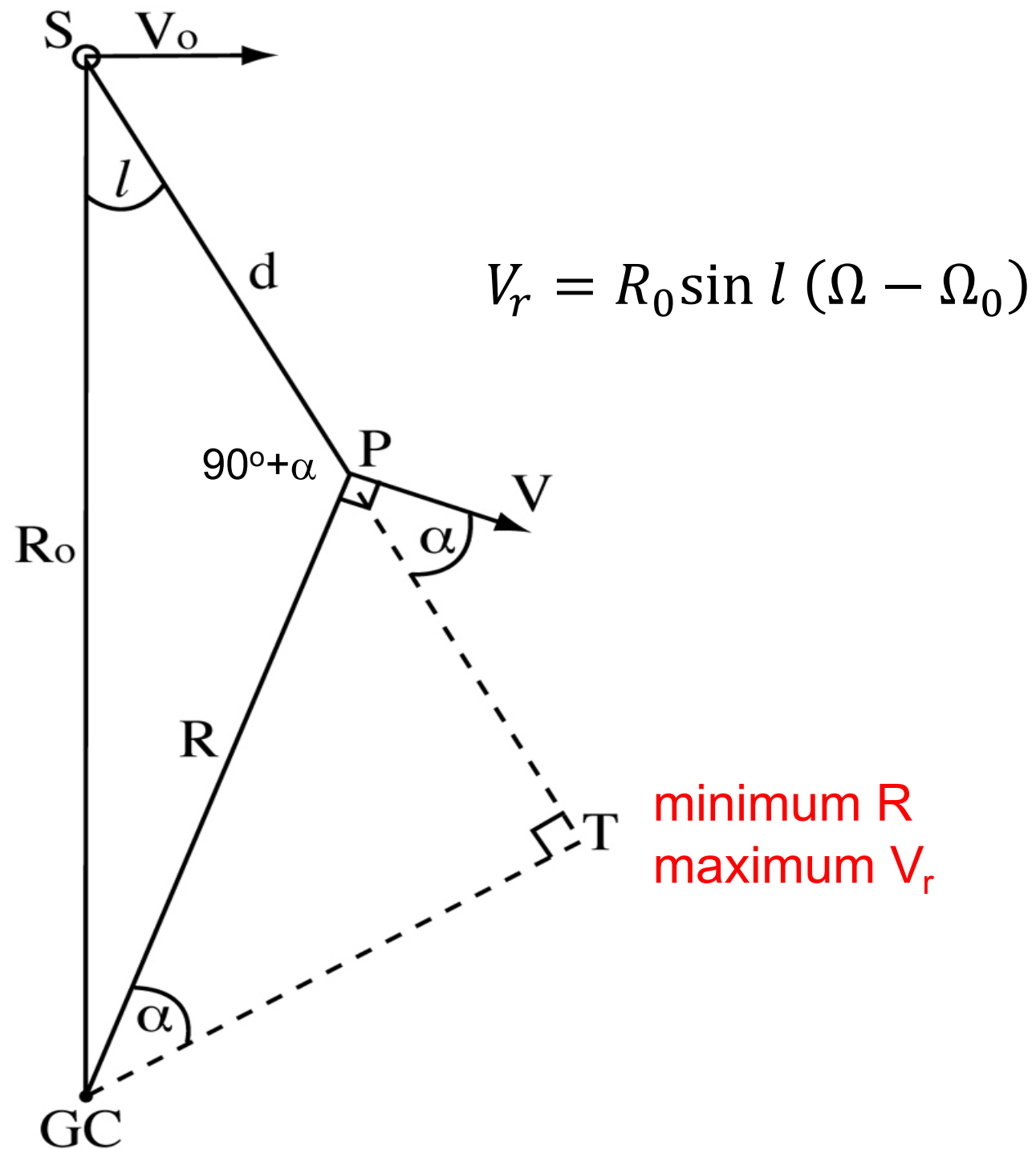


Fig2.19 'Galaxies in the Universe' Sparke/Gallagher CUP 2007

Leiden/Dwingeloo & IAR HI Surveys; $b = 0$

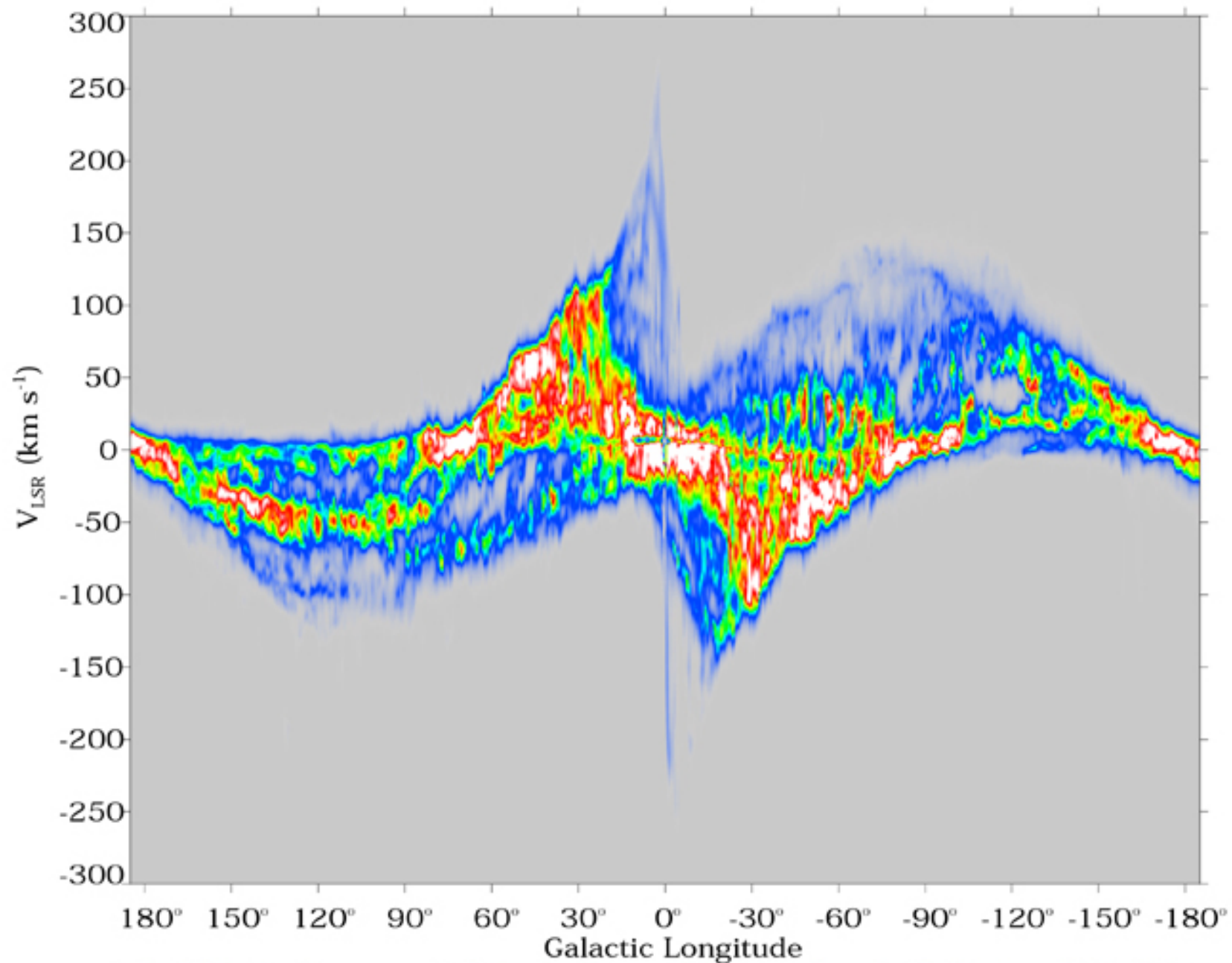
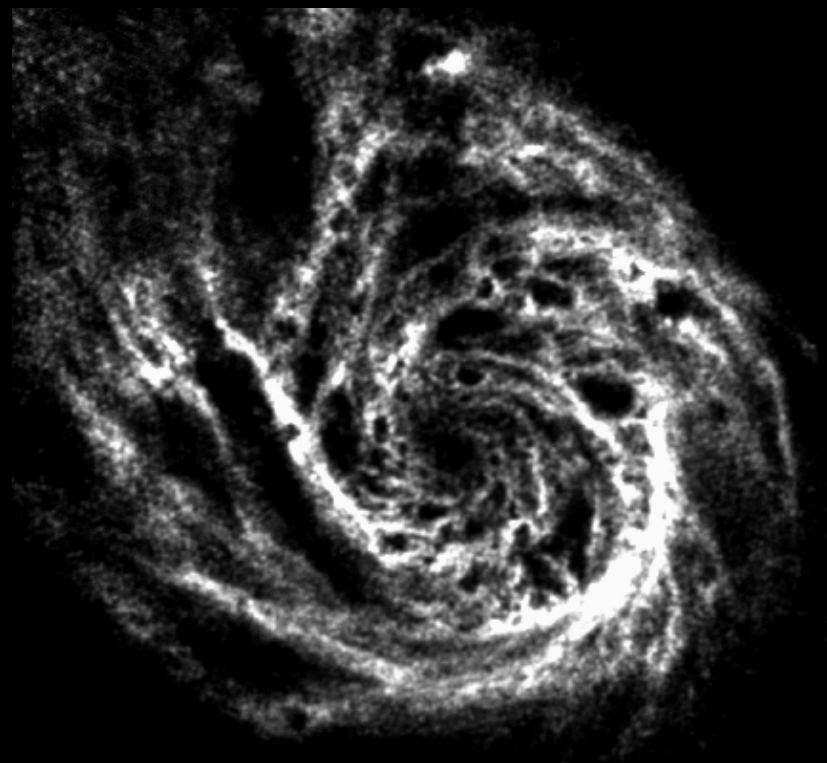
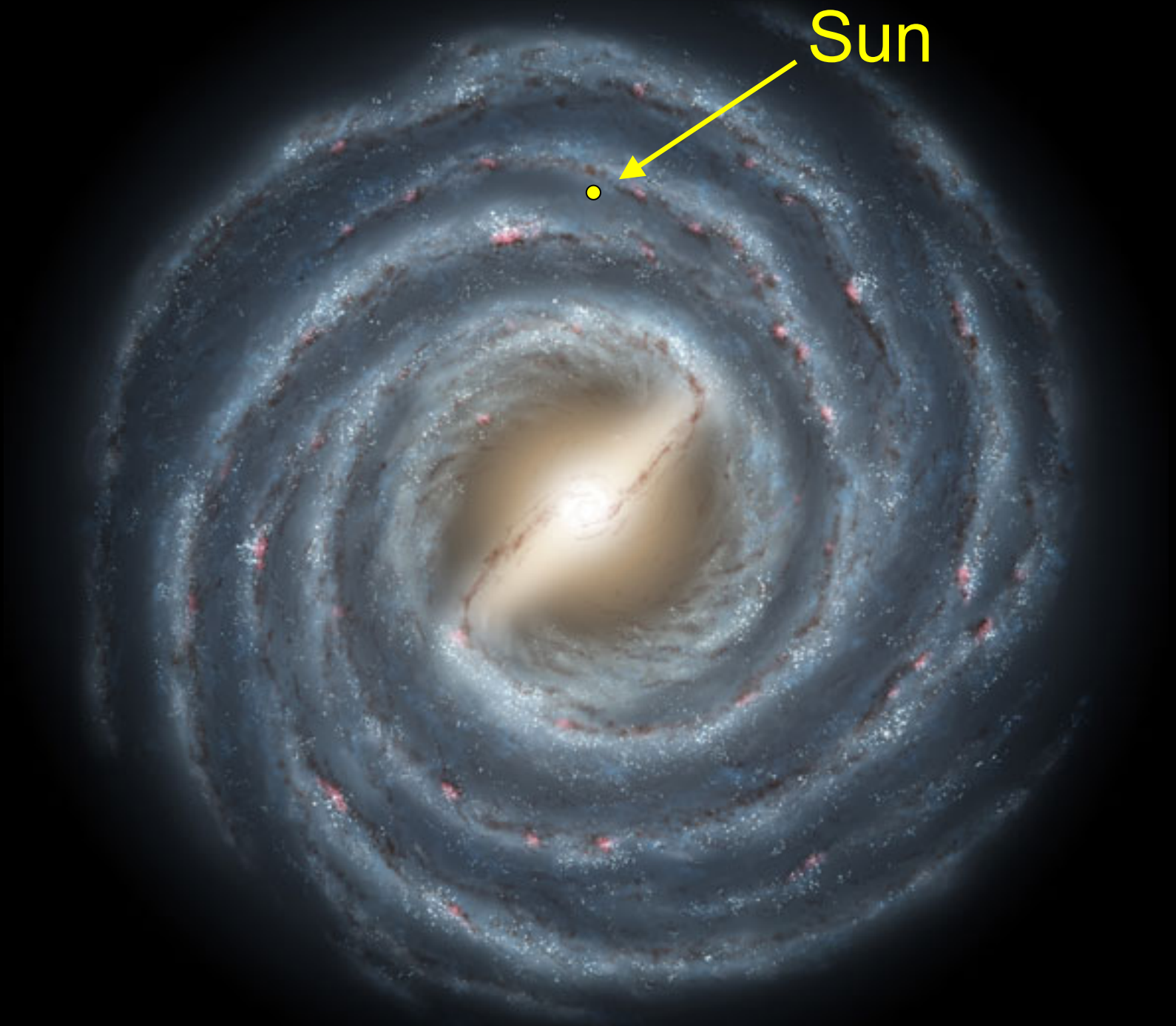


Fig 2.20 (D. Hartmann) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007





Sun

phase	component	T (K)	n (cm ⁻³)	M _{tot} (M _⊙)	scale (pc)
molecular cloud	cold	10 – 20	> 10 ³	3 x 10 ⁹	10 – 50
dust	cold/cool	—	~ 10 ⁻¹² n _H	few x 10 ⁷	
HI cloud	cool	100	20	6 x 10 ⁹	100
HI cloud	warm	10 ⁴	0.2		>1 kpc
corona/ bubble	hot	> 10 ⁶	~ 10 ⁻³	10 ⁸	galaxy

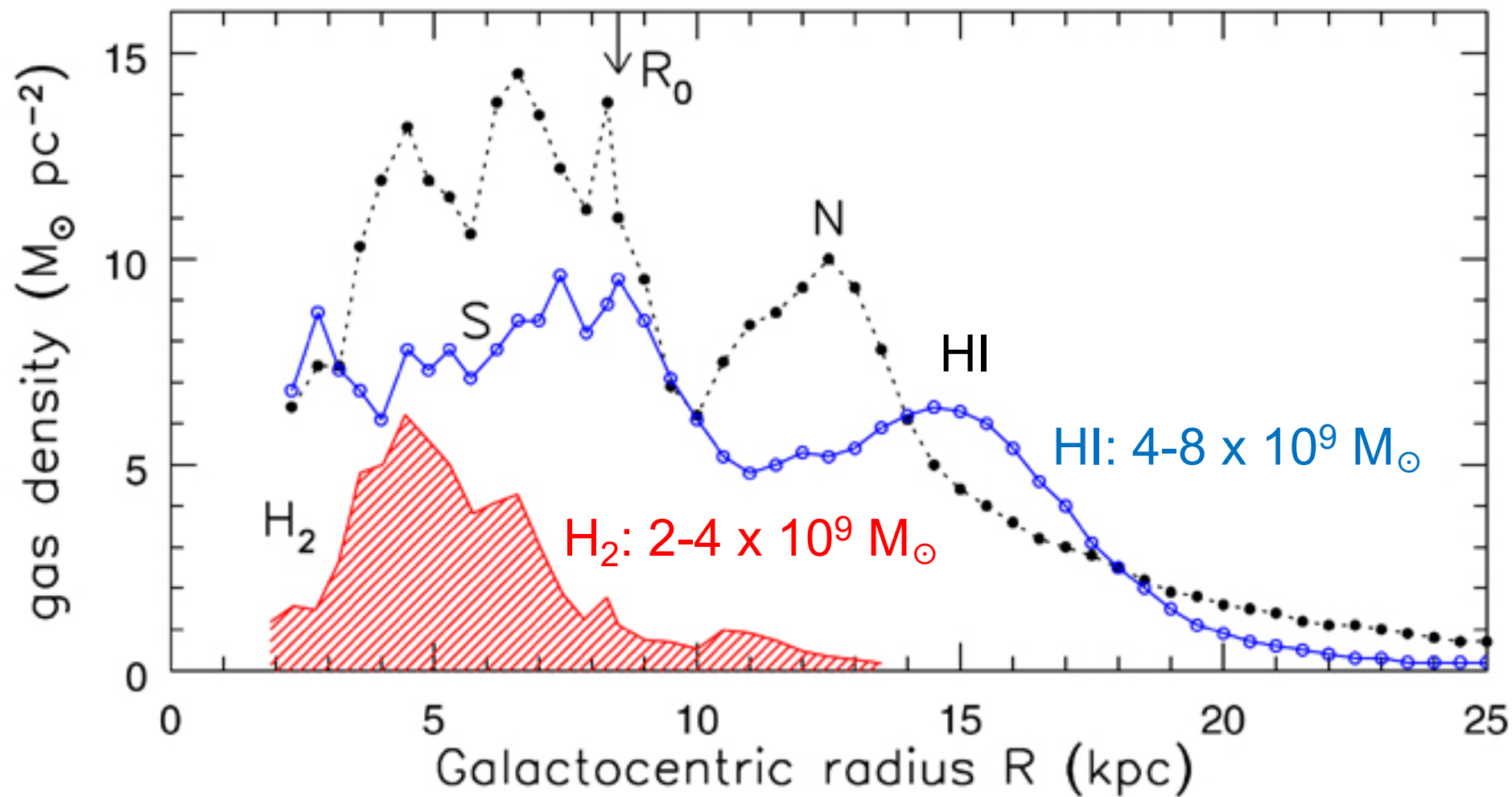


Fig 2.22 (Burton, Dame) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007

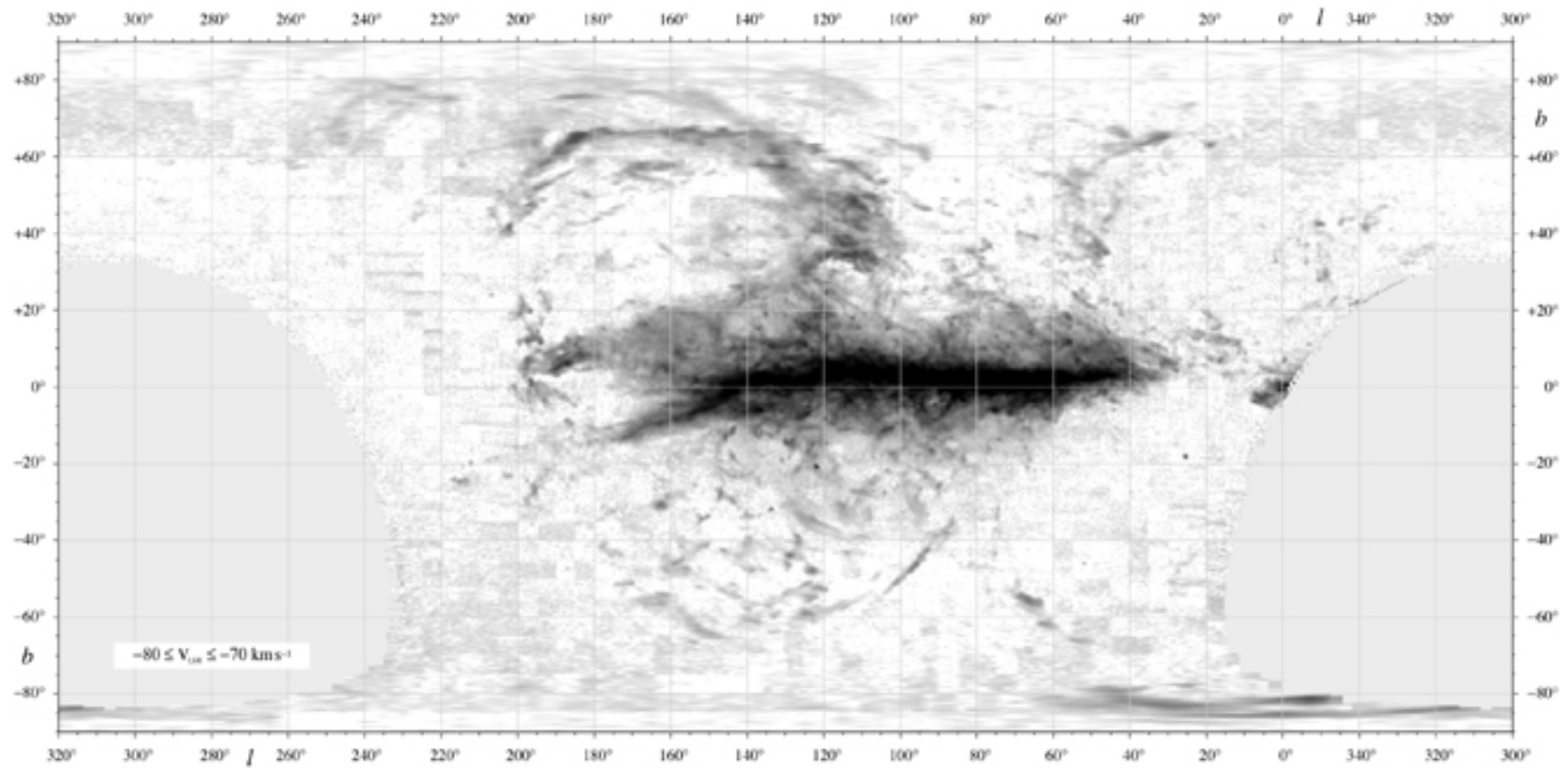


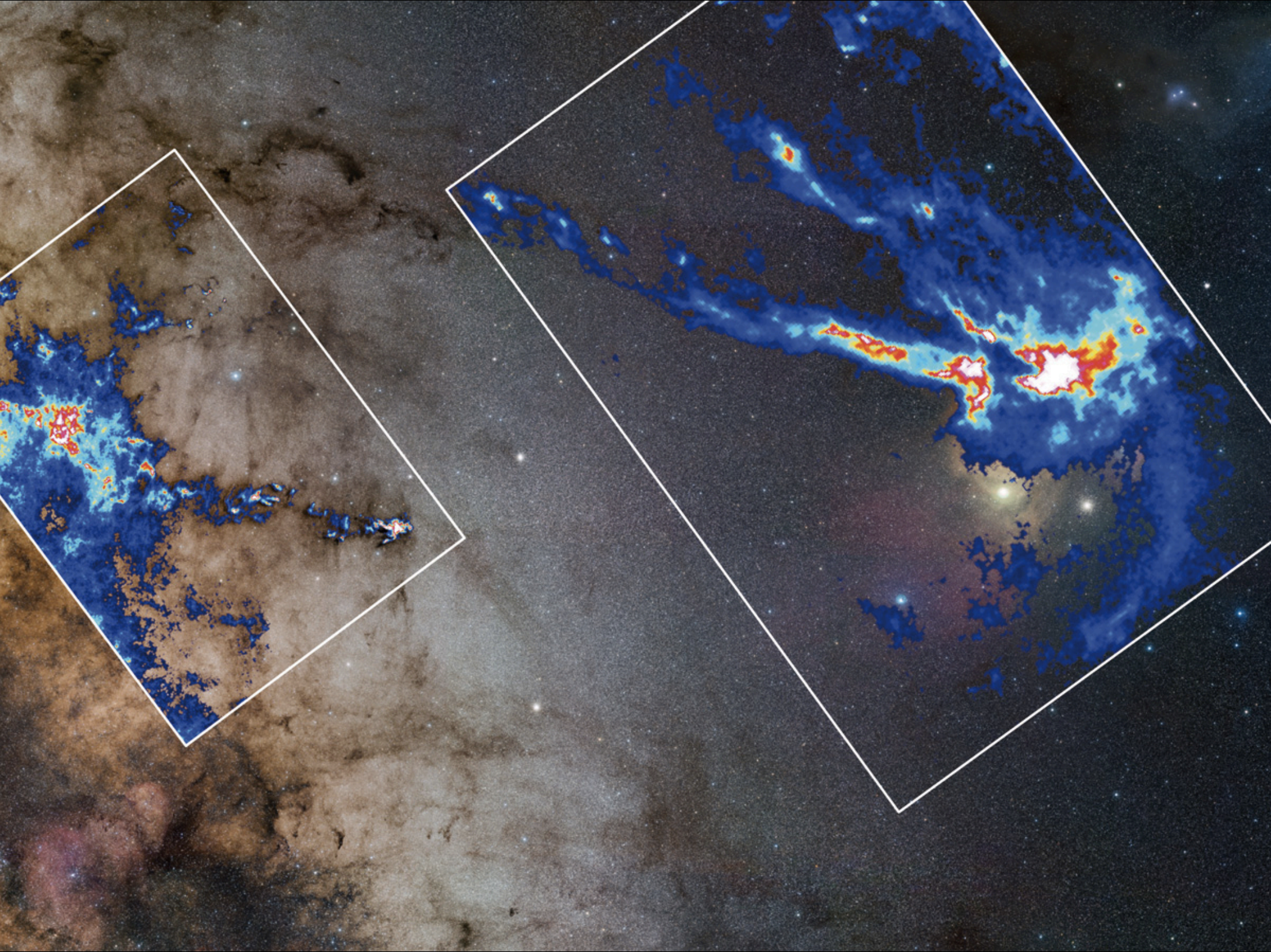
Fig 2.23 (Hartmann & Burton) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007

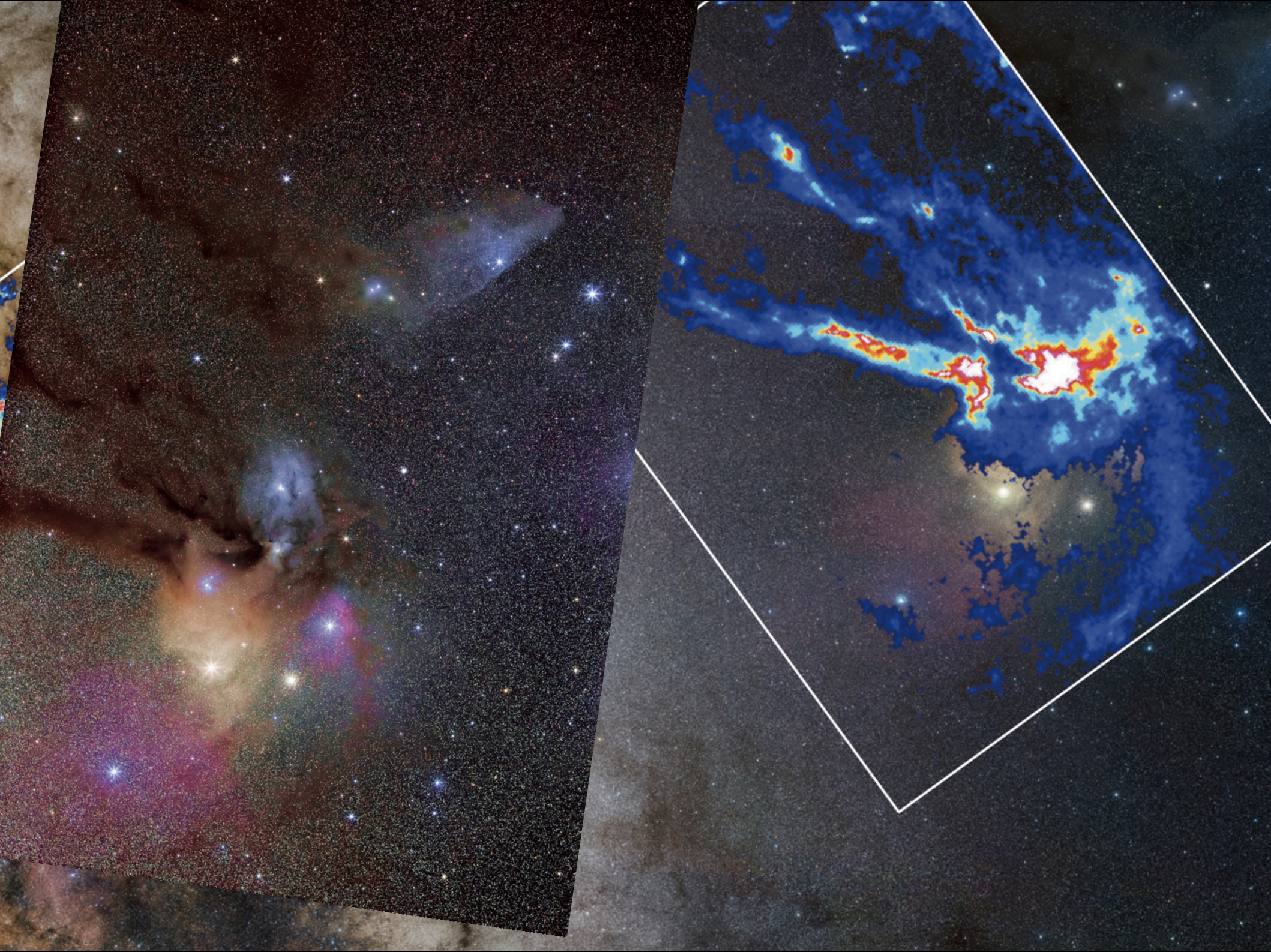


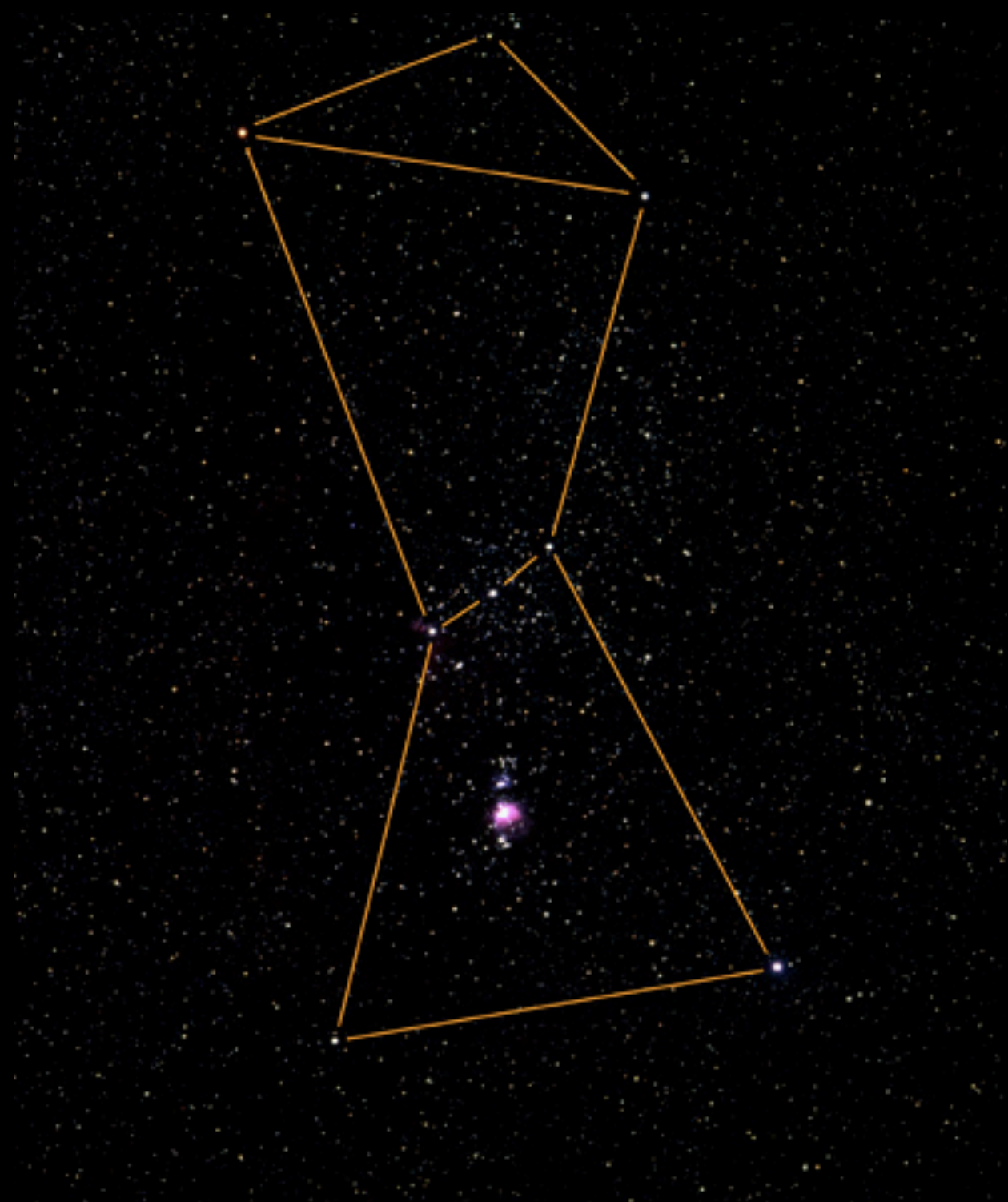


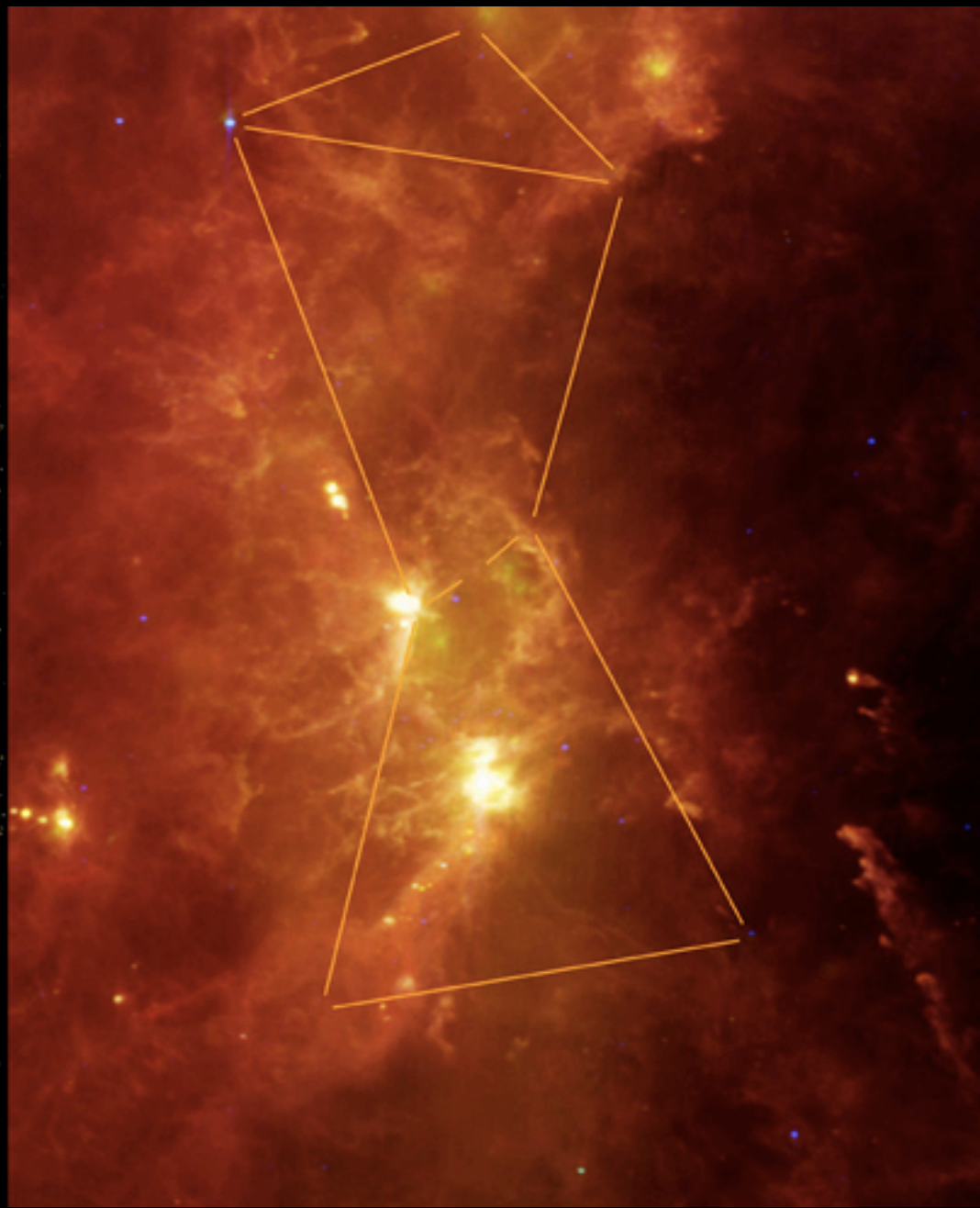
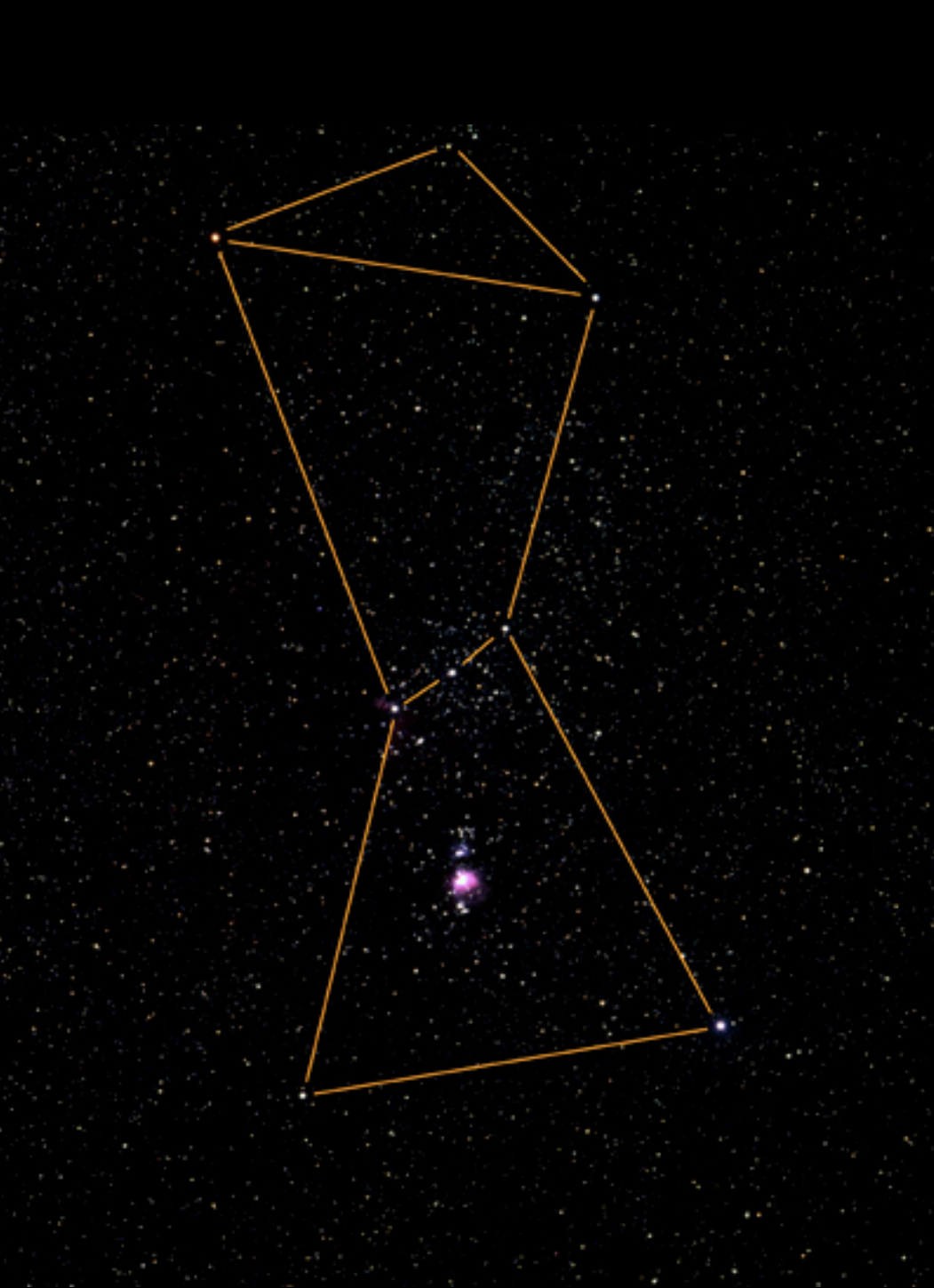




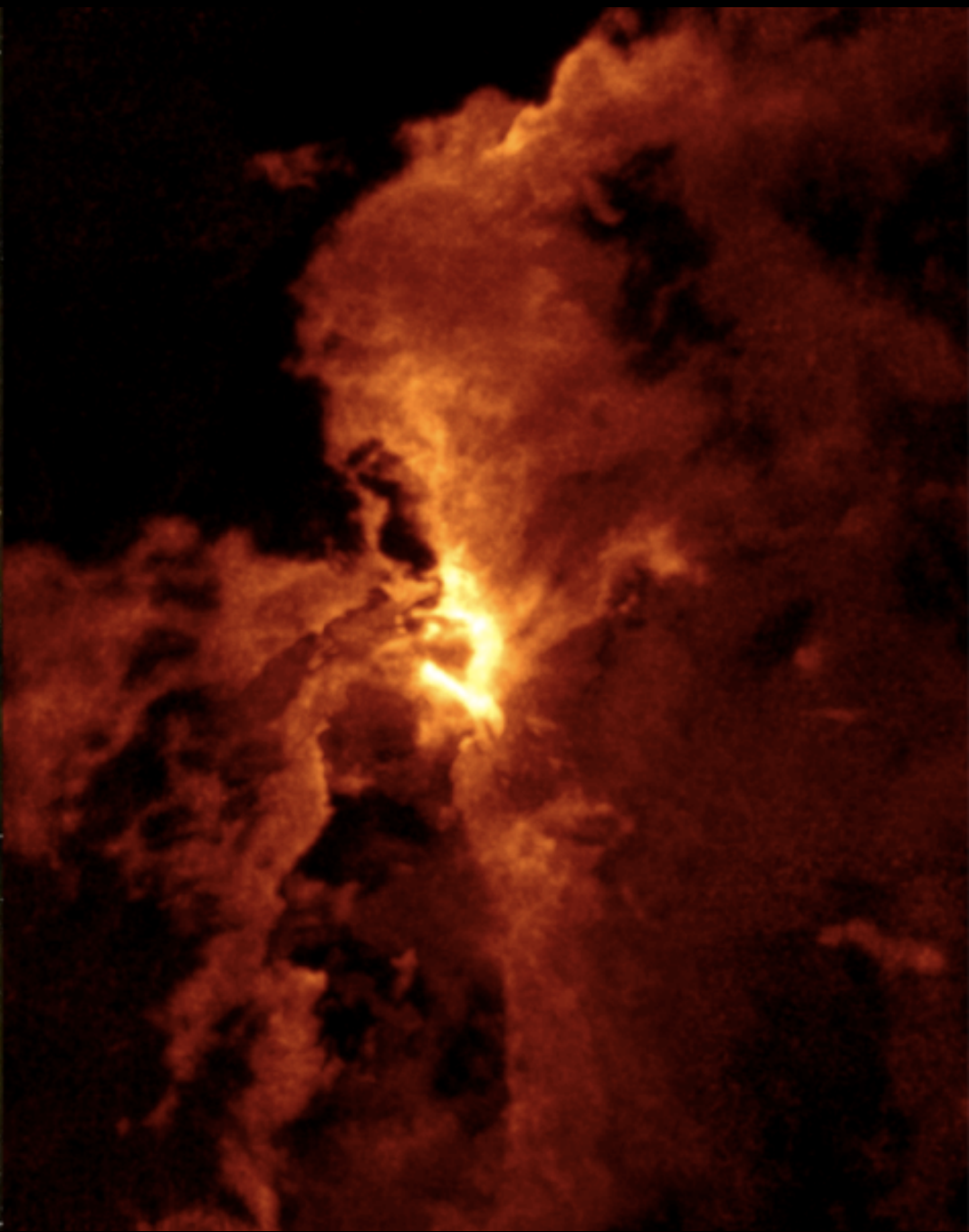


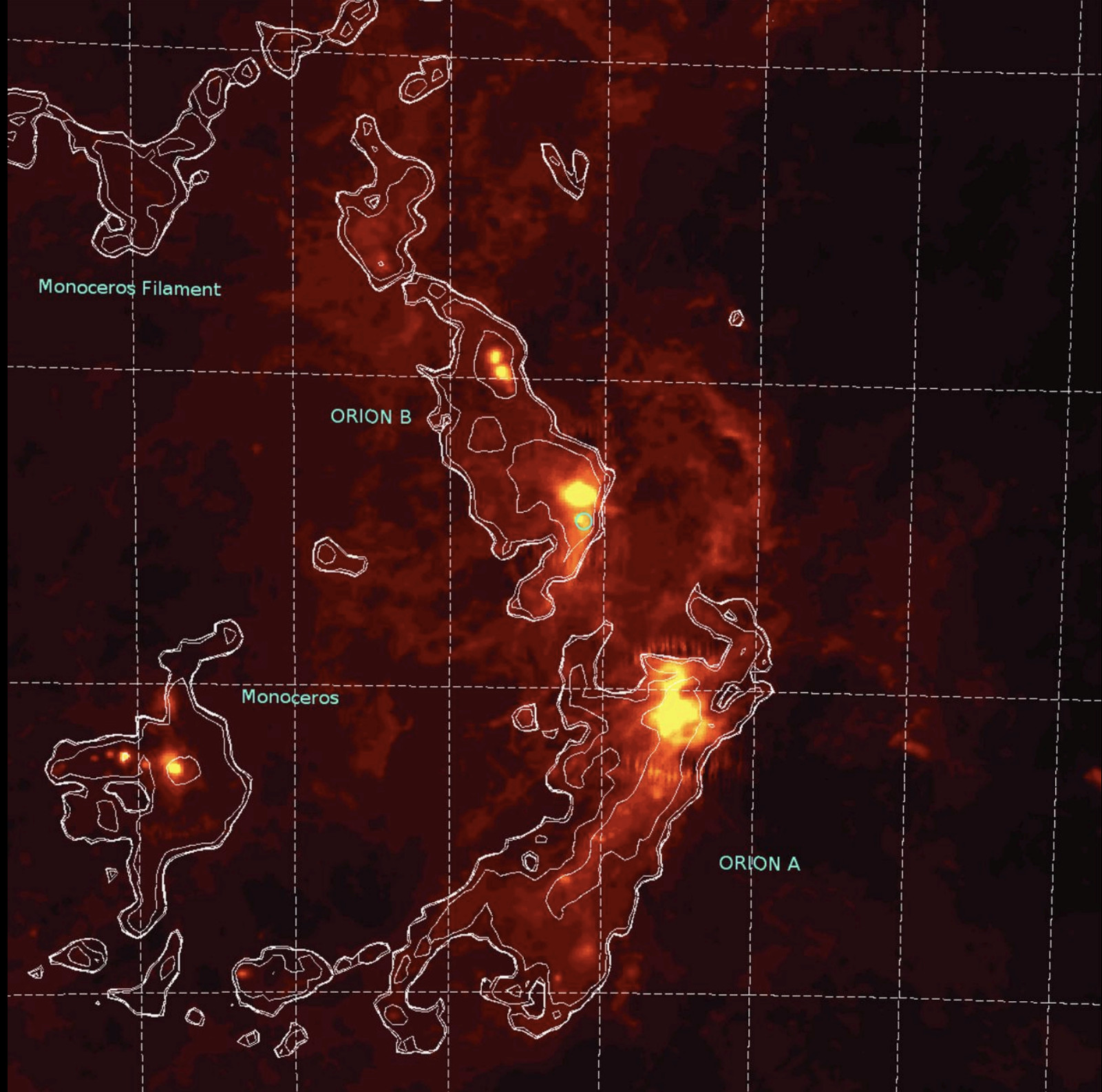












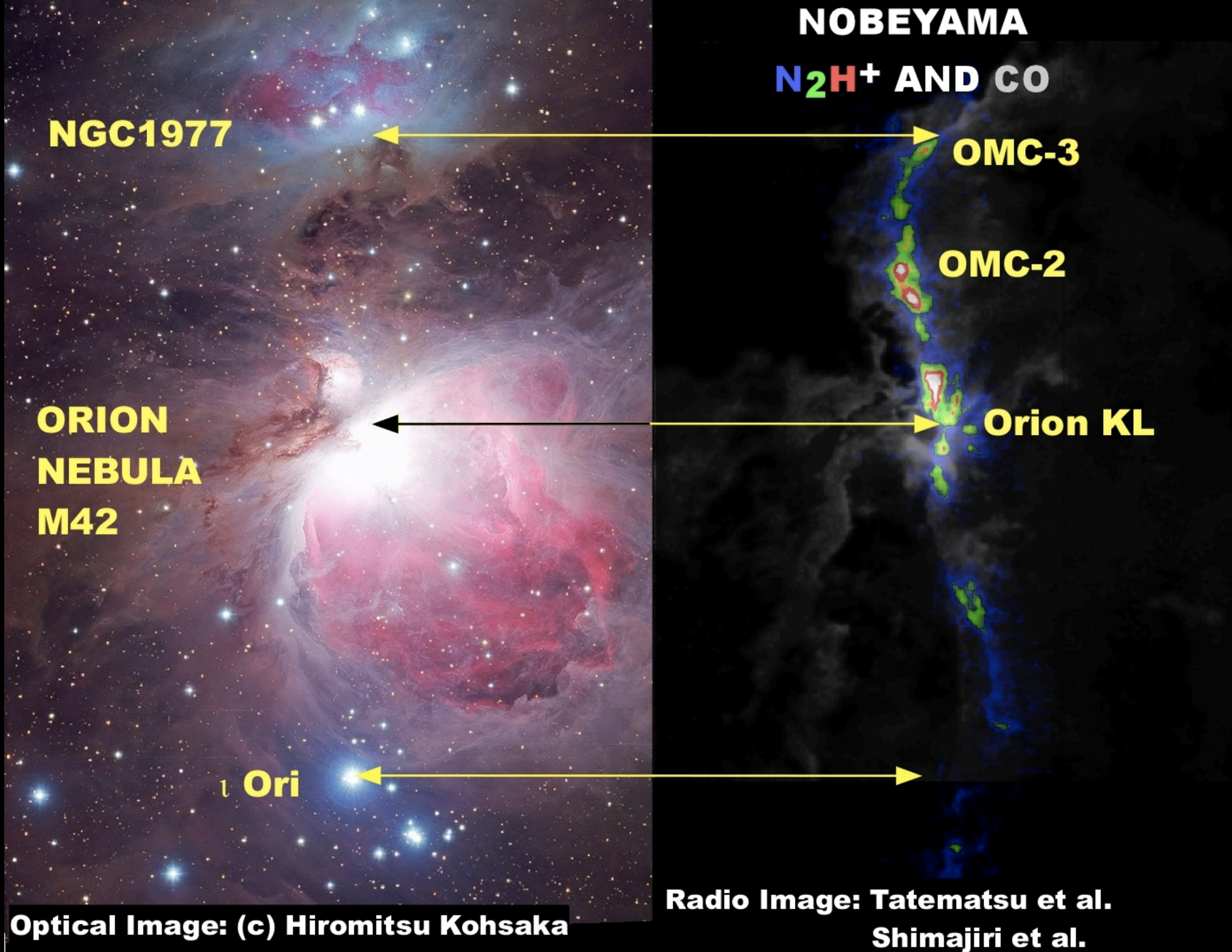


Table 2.5 Main processes that cool the interstellar gas

<i>Temperature</i>	<i>Cooling process</i>	<i>Spectral region</i>
$>10^7$ K	Free-free	X-ray
10^7 K $< T < 10^8$ K	Iron resonance lines	X-ray
10^5 K $< T < 10^7$ K	Metal resonance lines	UV, soft X-ray
8000 K $< T < 10^5$ K	C, N, O, Ne forbidden lines	IR, optical
Warm neutral gas: ~ 8000 K	Lyman- α , [OI]	1216 Å, 6300 Å
100 K $< T < 1000$ K	[OI], [CII], H ₂	Far IR: 63 μ m, 158 μ m
$T \sim 10-50$ K	CO rotational transitions	Millimeter-wave

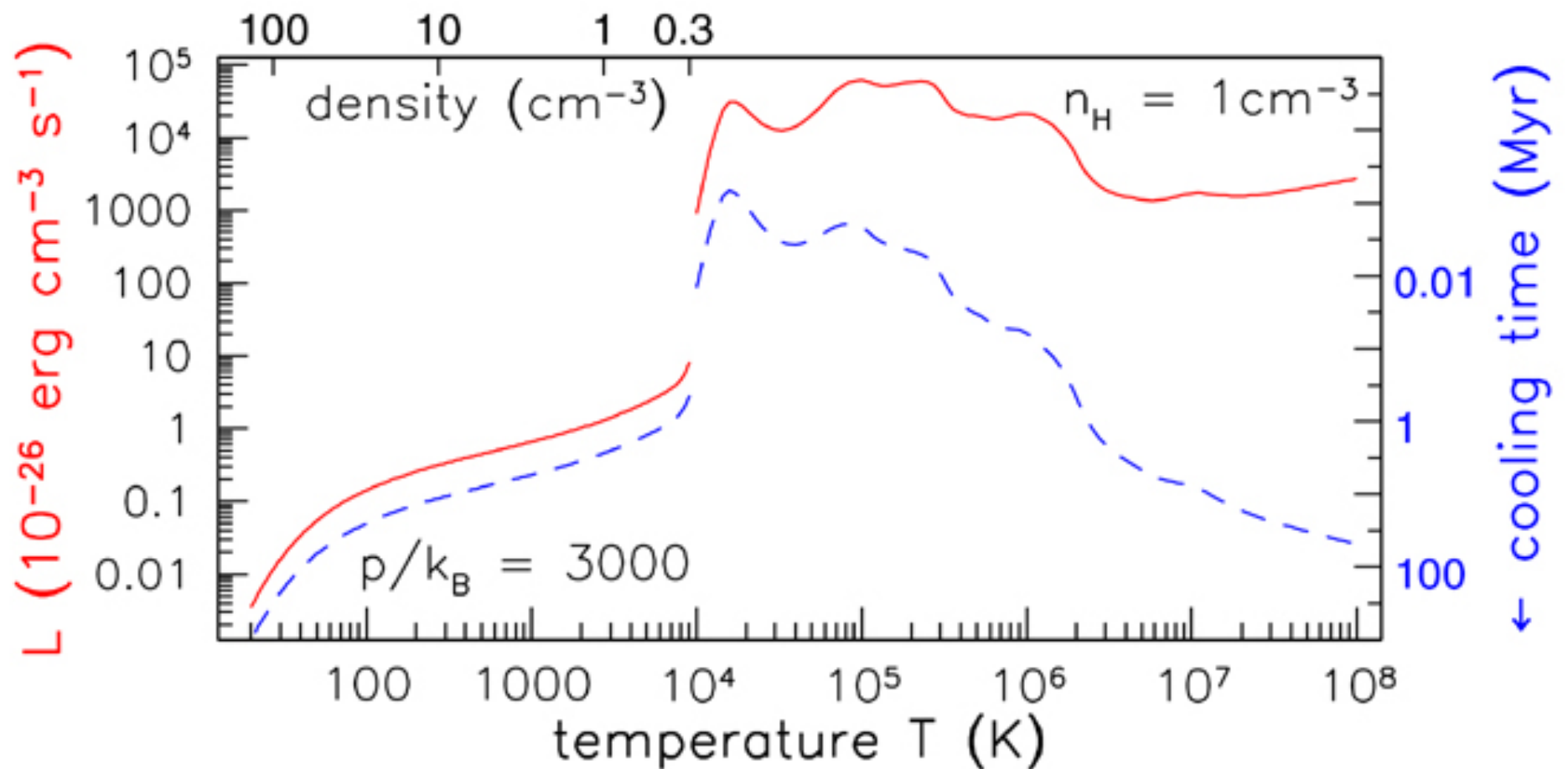


Fig 2.25 (Hensler, Wolfire) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007