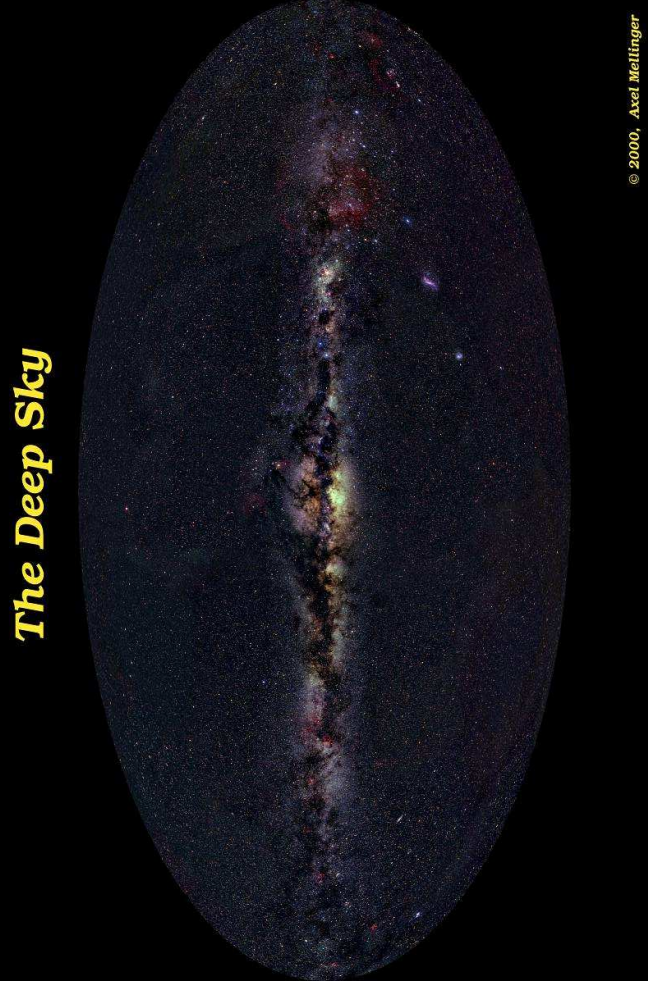




The Local Group



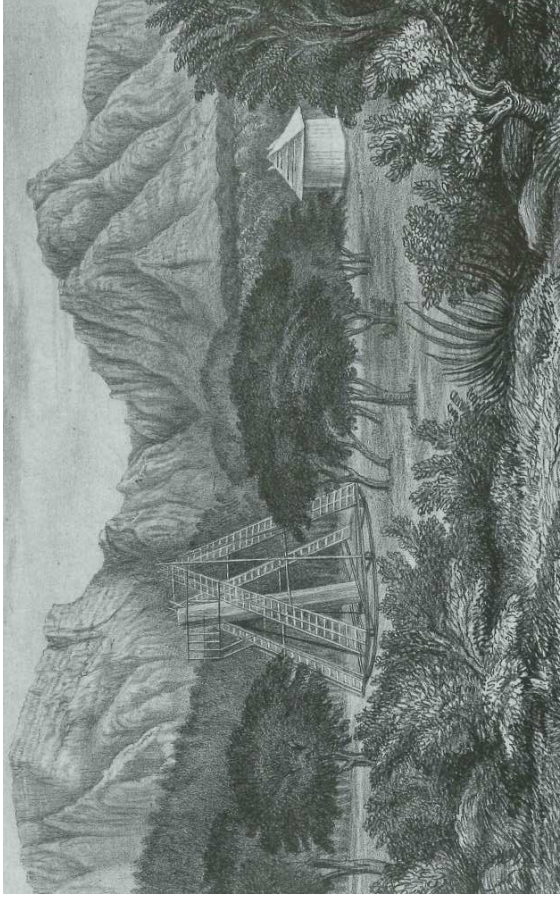
Milky Way



Andromeda galaxy (=M31; closest real neighbour galaxy, diam. 20kpc, distance: 675 kpc), NOAO/AURA/NSF

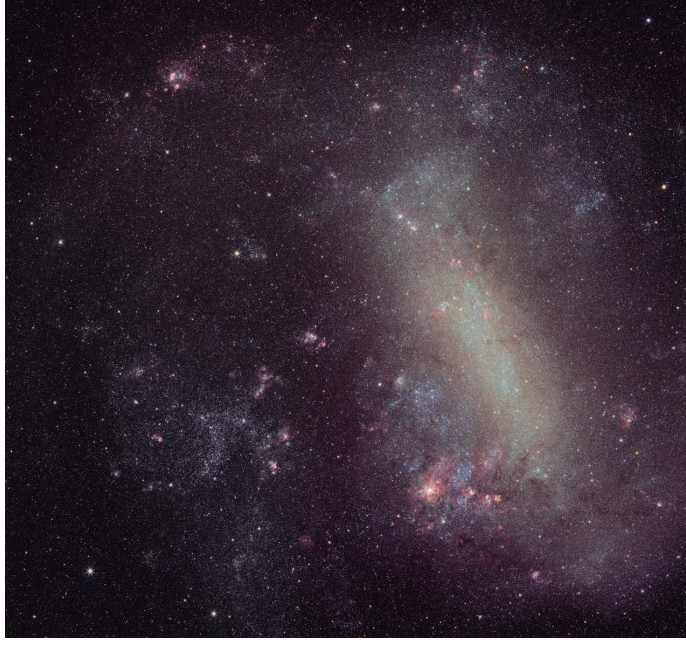


M 33 (= "Triangulum Galaxy"; $L \sim 0.2 L_{\text{Milky Way}}$)

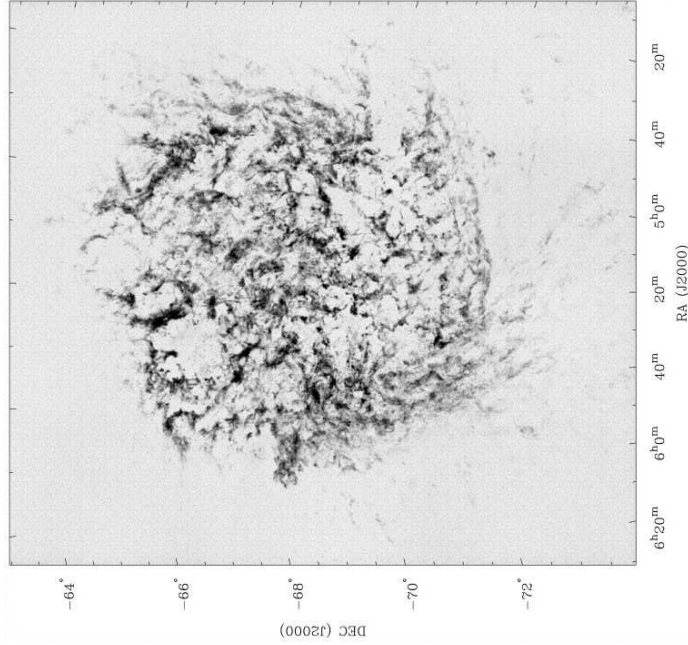


Block & Freedman, 2008, Fig. 40

21 Foot telescope of John Herschel in Feldhausen (table mountain, close to cape town; 1825–1838)
 J. Herschel (1851): . . . there are *nebulae in abundance both regular and irregular, globular clusters in every state of condensation, and objects of a nebulous character quite peculiar, which have no analogue in any other region of the heavens. . .*



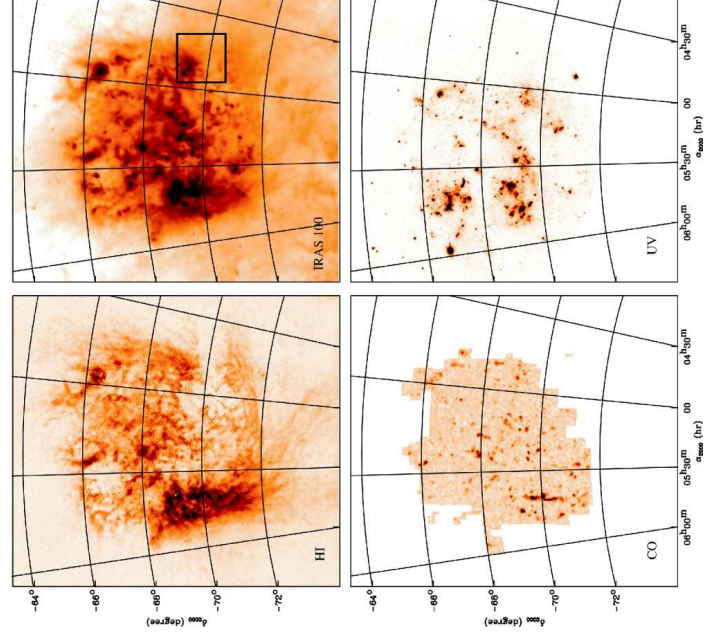
Optical: "cigar structure" of stars, many star formation regions visible through $H\alpha$ emission.



(Kim et al., 1998, Fig. 1)

Large Magellanic Cloud:

- distance: 49 kpc
- Size $15^\circ \times 13^\circ$ (~ 14 kpc)
- Prototype of Magellanic Spirals (Sm)
- Morphology: from 21 cm: flat disk, tilted by $\sim 45^\circ$ against plane of sky



Distribution of emission in different bands:

- H I: cold gas
- IRAS: warm gas/dust
- CO: molecular clouds (star formation!)
- UV: hot stars (star formation!)

Note holes and loops: SNe and hot stars push colder ISM aside \implies hot bubbles
 Such structure is typical for irregular galaxies

SAGE (Meixner et al., 2006): Infrared mapping of the LMC with Spitzer: blue: IRAC-1 3.6 μm , green: IRAC-2 4.8 μm , red: MIPS

