The Structure of Our Galaxy -- The Milky Way
The Spiral Structure of the Milky Way

Spiral Arm Tracers
- Hot OB-type stars
- H II regions
- Supergiants
- Young clusters
- Dust
Neutral Hydrogen – HI and the rotation curve of the Galaxy

21 cm emission line in the radio

Differential rotation: greater angular speeds closer to the galactic center.
Galactic Bulge and Galactic Center (nucleus)

Obscured by $> 30$ mags of extinction by dust

The infrared view
25 microns

60 microns

100 microns
Sgr A – the galactic center
Massive black hole
$> 10^6 \, M_{\text{sun}}$
Multiwavelength composite image

- Thermal Filaments
- Arches Cluster
- Pistol
- Radio Arc (NTF)
- Sgr A
The Black Hole at the Galactic Center
Massive Compact Object  $4 \times 10^6$ Msun
Formation and Evolution of the Galaxy
Gravitational Collapse of a large cloud

Clues – age and kinematics of different populations

But … increasing evidence for galactic mergers
The Sagittarius Dwarf Galaxy – current merger with the Milky Way