

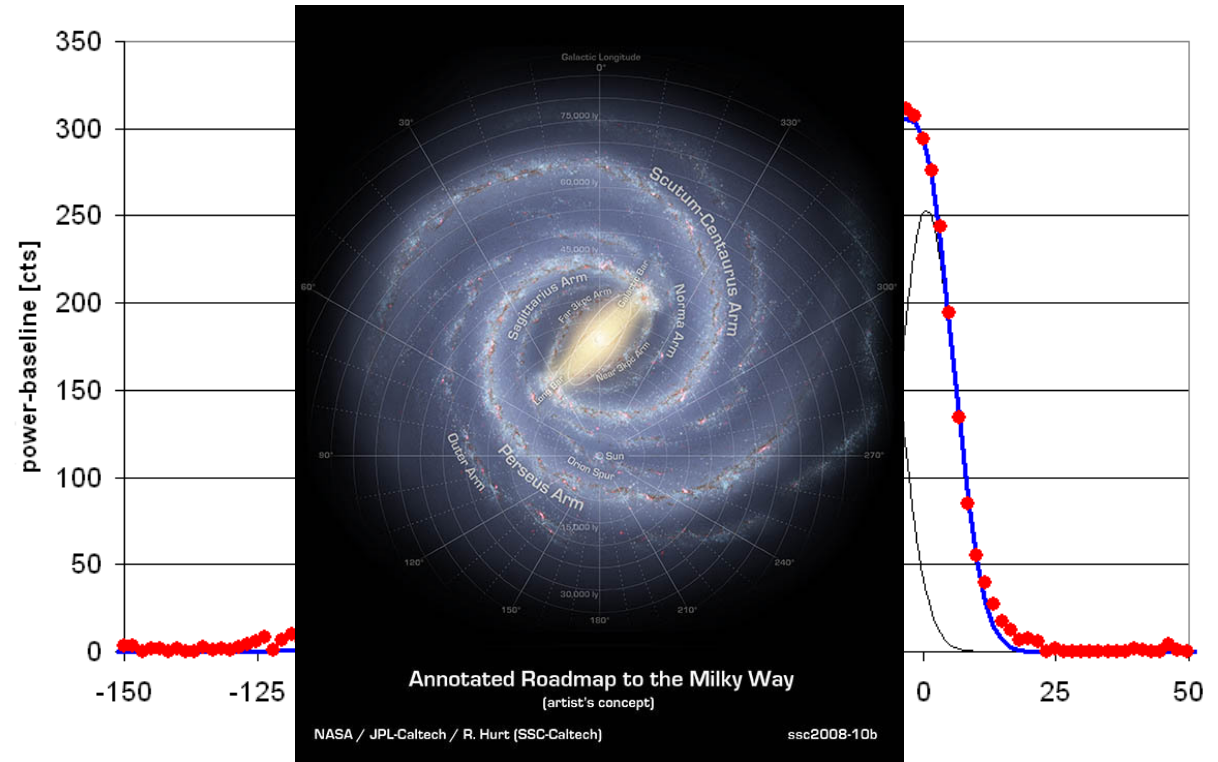
# Introductory Astronomy

Week 7: Galaxies

Clip 4: Disk Structure

# Disk Structure

- Hydrogen and young objects: OB stars, HII concentrated in spiral arms
- First found from analysis of Doppler shifted 21-cm radiation



# M83 in V and IR



# Gas and Dust

- Disk contains  $5 \times 10^9 M_{\odot}$  of interstellar gas
- 77% HI 17% H<sub>2</sub> 6% HII
- Dust is 0.7% of gas by mass. Tracks H<sub>2</sub>
- Dust and gas confined tightly to galactic plane
- Density drops past 8kpc

# Credits

- Spiral Milky Way: NASA/JPL-Caltech/R. Hurt (SSC-Caltech)  
<http://www.spitzer.caltech.edu/images/1925-ssc2008-10b-A-Roadmap-to-the-Milky-Way-Annotated->
- M83 V: ESO/IDA/Danish 1.5 m/R. Gendler, S. Guisard (www.eso.org/~sguisard) and C. Thöne  
<https://www.eso.org/public/images/m83/>
- M83 IR: ESO/M. Gieles. Acknowledgement: Mischa Schirmer <https://www.eso.org/public/images/eso1020a/>