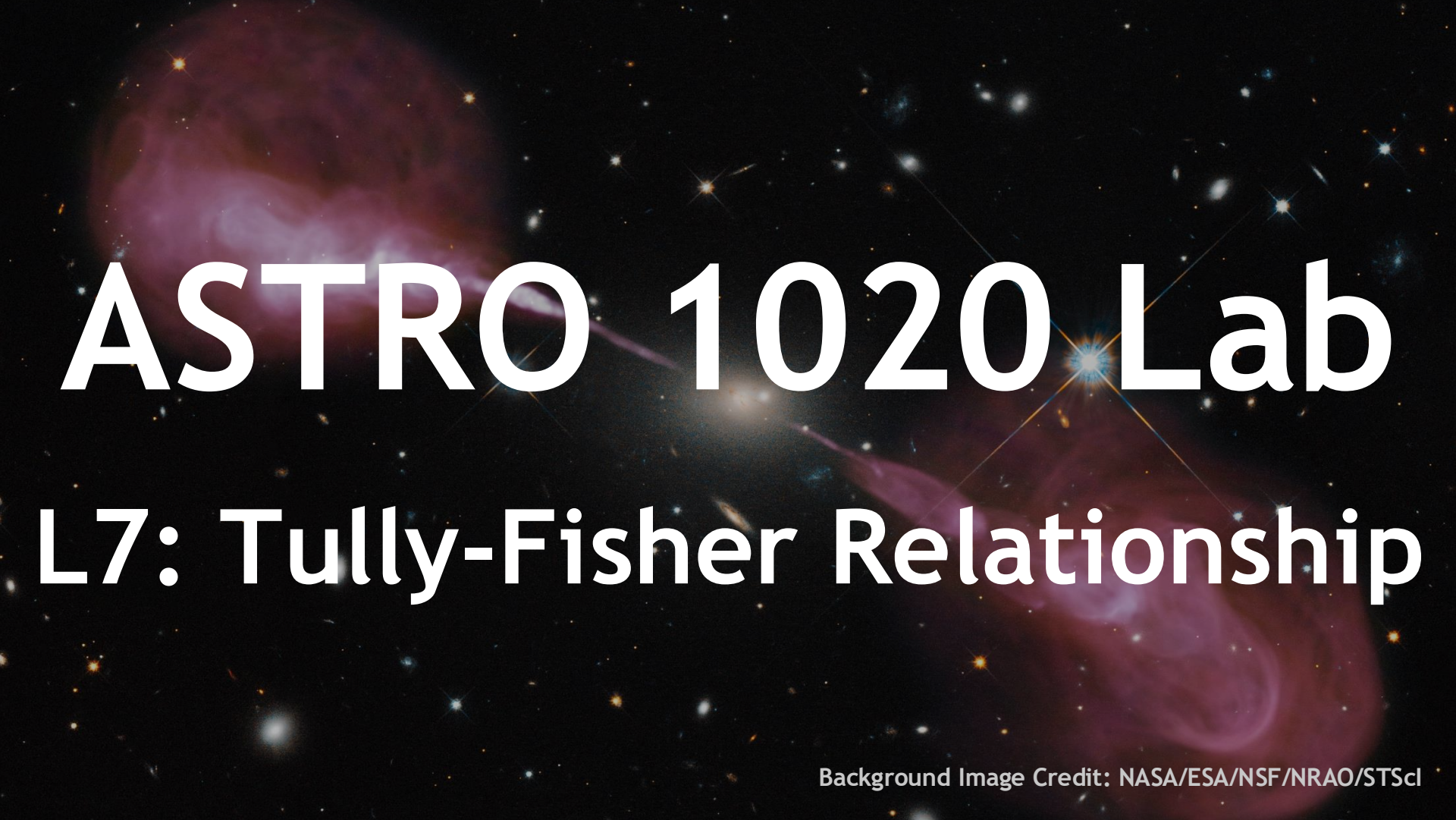
ASTRO 1020 Lab

L7: Tully-Fisher Relationship



Background Image Credit: NASA/ESA/NSF/NRAO/STScI

Grading

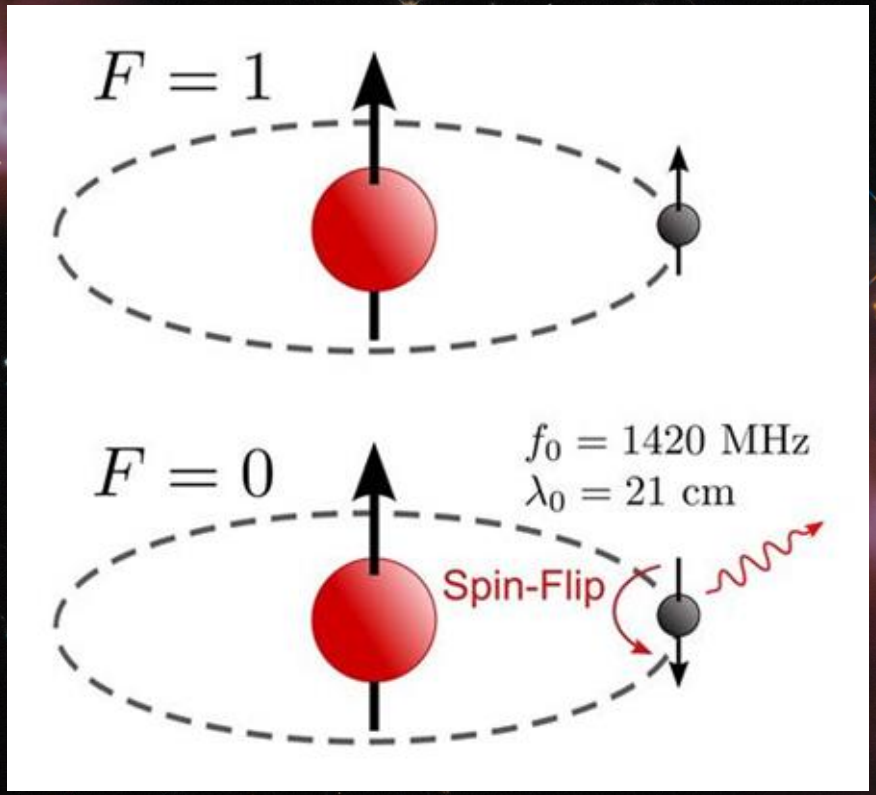
- All labs are scaled to be graded out of 10 points*

Points per question	Description
1.0	A correct answer with units and work shown. Answers that don't require work will be graded on completion
0.8	A correct answer without units or work shown
0.6	An incorrect answer with units and work shown
0.4	An incorrect answer without units or work shown
0.2	Some work shown without an answer
0.0	Not Attempted

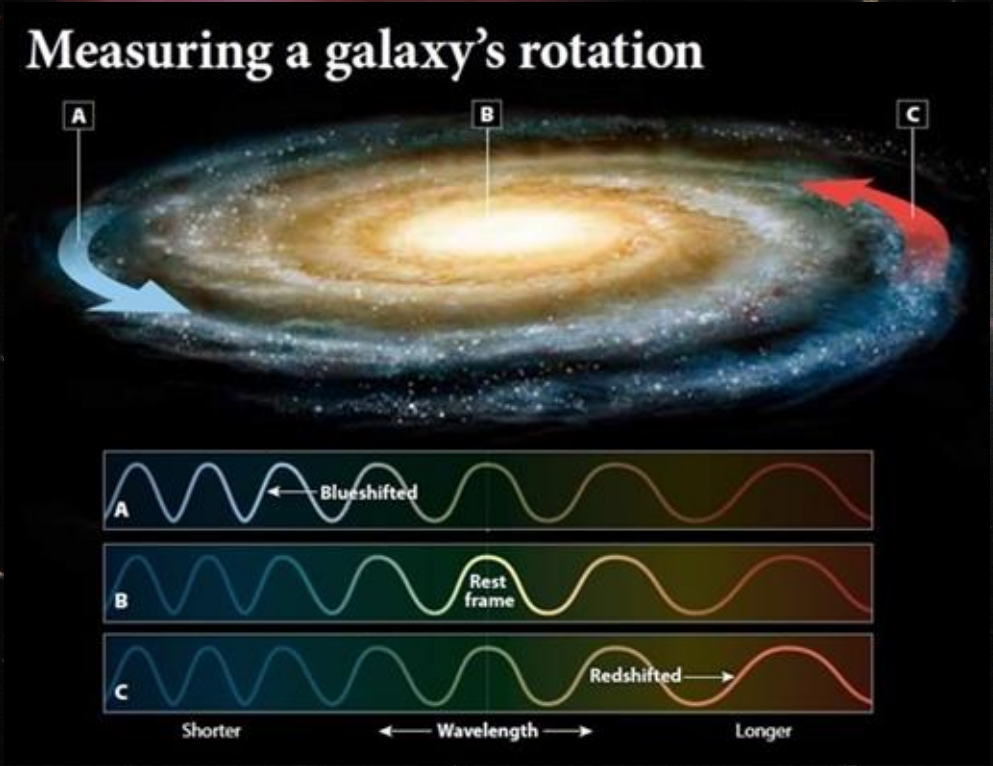
Things you need to know for Lab 7

- H I line emission
- Radial velocities
- Galactic inclinations
- Tully-Fisher relationship
- Distance modulus

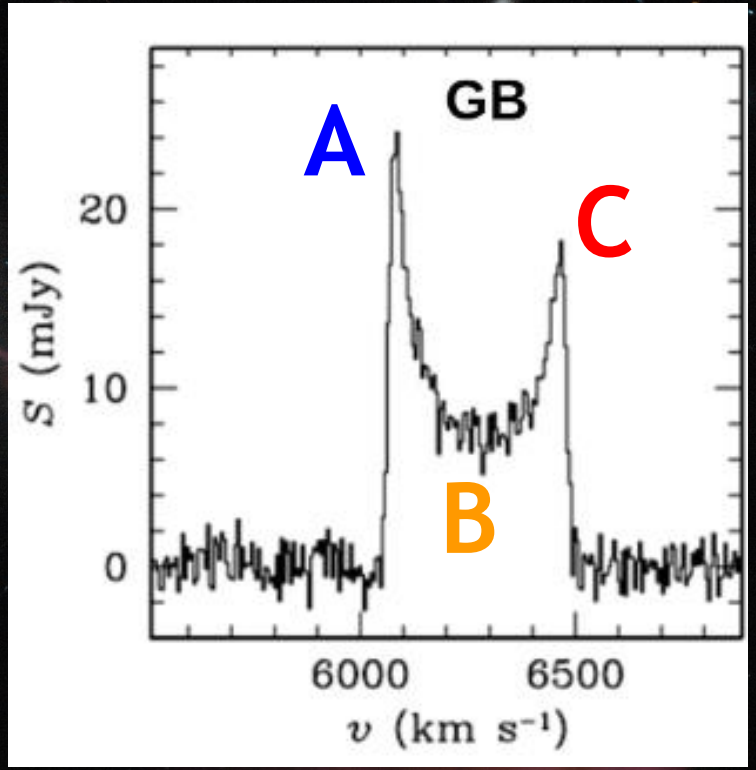
H I line emission



Radial Velocities

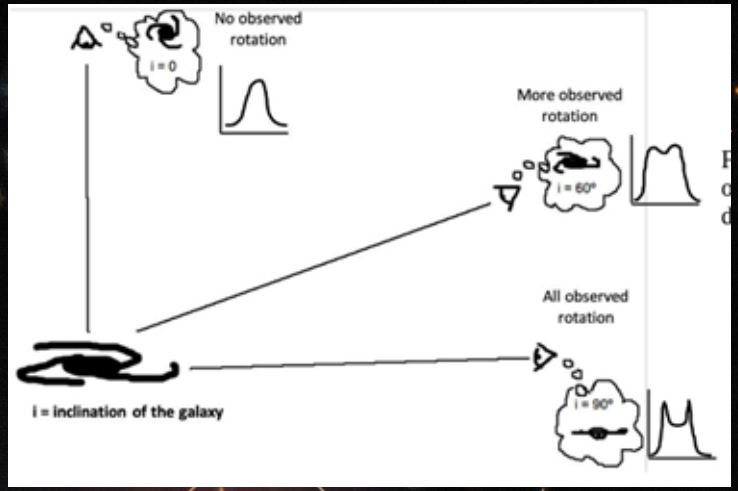


Credit: Astronomy/Roen Kelly



Galactic Inclinations

- Galaxy's viewing angle
- Measured in degrees
- 0° is face on, 90° is edge on
- Edge on is ideal for radial velocity measurements



Credit: Ching-Wa Yip

Tully-Fisher Relationship

- Relates the radial velocity of a galaxy to its luminosity

$$L = (W_{50-C})^4$$

Distance Modulus

- Relates the luminosity of a galaxy to its distance

$$M = -2.5log_{10}(L) + 4.82$$

$$D = 10^{(m-M+5)/5}$$


Questions?