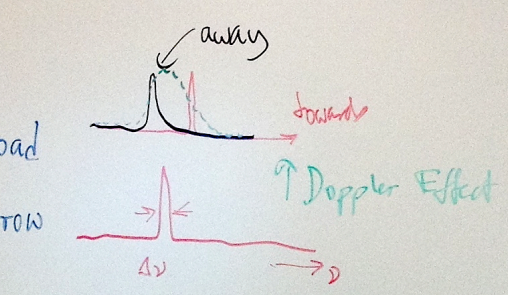


Active Galactic Nucleus
 LINERs
 Seyfert I, II
 Radio galaxies
 QSO / Quasar
 Blazar

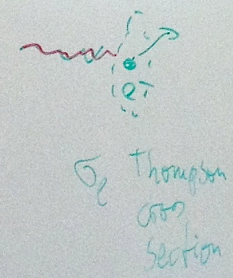
Overall luminosity
 [Radio luminosity]

Emission lines → broad
 → narrow
 X-ray continuum
 X-ray Emission lines

< 1 light-hr ≈ 7 AU



6.4 keV transition in ⁵⁶Fe



σ_T Thomson cross section

$$\frac{\lambda_{obs}}{\lambda_{true}} = \sqrt{\frac{1 + v/c}{1 - v/c}}$$

$$E_\gamma = p_\gamma c$$

$$L = \frac{\Delta E}{\Delta t}$$

$$\text{Energy Flux density} = \frac{L}{4\pi R^2}$$

$$\text{Momentum flux density} = \frac{L/c}{4\pi R^2}$$

$$\text{Force on surface or electron} = \frac{L/c \cdot \sigma_e}{4\pi R^2}$$

$$\frac{L/c \cdot \sigma_e}{4\pi R^2} \leq \frac{GMm_p}{R^2}$$

$$L_{max} = \frac{4\pi GMm_p c}{\sigma_e}$$