

Introduction to Astronomy and Astrophysics I/II

Discussion Section/Exercises Tuesday, Sep. 27, 2005

- 1) How bright would the galactic center appear seen from the sun's distance (at $0.5\mu\text{m}$) if the black hole at the center were to accrete at $0.3 L_{\text{edd}}$.

Assume the emergent luminosity were a black body of $15,000 \text{ K}$.

- 2) At what radius (in units of the Schwarzschild radius, R_s) does a star like our sun get disrupted by tidal forces from a black hole if a) $M_{\text{BH}} = 10^3 M_{\text{SUN}}$ or b) $10^8 M_{\text{SUN}}$?