

3.21) WHITE DWARF STARS HAVE BEEN OBSERVED WITH  $T_{\text{surf}} = 200,000^\circ\text{C}$ .  
WHAT IS THE WAVELENGTH OF THE MAXIMUM INTENSITY?

USING WIEN'S LAW

$$\lambda_{\text{MAX}} T = 2.898 \times 10^{-3} \text{ m}\cdot\text{K} \quad (3.14)$$

GIVES

$$\lambda_{\text{MAX}} = \frac{2.898 \times 10^{-3} \text{ m}\cdot\text{K}}{T}$$

WITH  $T = 200,273 \text{ K}$  (AS IF THAT 273K MATTERS!)

$$\lambda_{\text{MAX}} = \frac{2.898 \times 10^{-3} \text{ m}\cdot\text{K}}{200273 \text{ K}}$$

$$\lambda_{\text{MAX}} = 1.45 \times 10^{-8} \text{ m}$$

$$\lambda_{\text{MAX}} = 14.5 \text{ nm} \quad \leftarrow \text{IN THE EXTREME UV RANGE!}$$

NEED A UV TELESCOPE TO OBSERVE THESE!