

## Homework 3 Solutions

Ch5 7).  $\epsilon$ ,  $\frac{1}{9}$  as bright  
Brightness =  $\frac{1}{4\pi d^2}$

13). D, 10,000 K  
 $T = \frac{2,400,000 \text{ nm} \cdot \text{K}}{290 \text{ nm}}$

Ch6 7). B, 4 times larger  
Light-gathering power =  $\pi \times \left(\frac{d}{2}\right)^2$

12). D, atmospheric seeing

Ch5 44).  $d = 97.7 \text{ AU}$ ,  $a = 0.8$ ,  $T = ?$   
 $T = 279 \text{ K} \cdot \left(\frac{1-0.8}{97.7^2}\right)^{1/4}$

$$T = 18.9 \text{ K}$$