

**Answer on question #54959, Physics / Astronomy — Astrophysics**

**Question** When a telescope is pointed to two stars in turn, the received power is  $5.3 \cdot 10^{14}$  W and  $3.910^{14}$  W. What is the difference in apparent magnitude of these stars?

**Solution** From relation of brightness we can find difference in apparent magnitude as

$$m_1 - m_2 = -2.5 \log_{10} \left( \frac{F_1}{F_2} \right) = -2.5 \log_{10} \left( \frac{5.3}{3.9} \right) \approx -0.333$$