

Figure 10.3 Equivalent 1-MeV electron fluence for a silicon solar cell in a variety of orbits (altitude in kilometer) and inclinations (°)

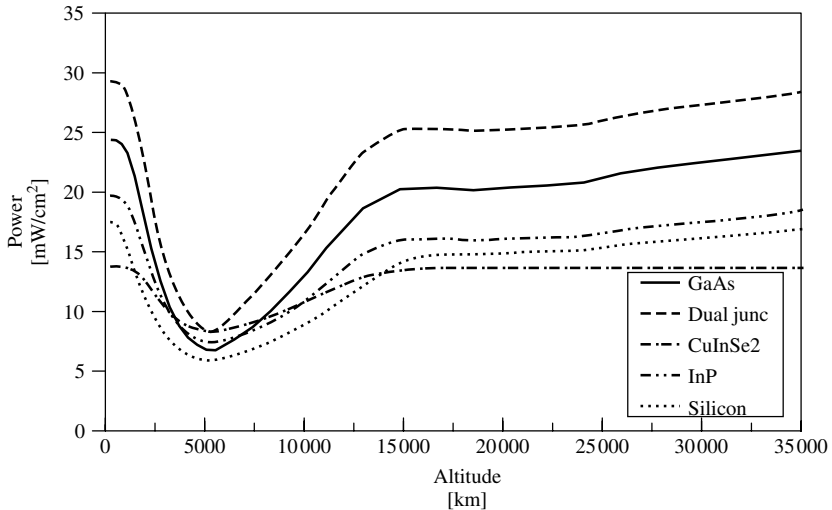


Figure 10.4 Solar cell power density as a function of altitude after 10 years in a 60° orbit with a cover glass thickness of 300 μm (GaAs: BOL 24.4 (mW/cm^2) [27]; Dual Junc – GaInP/GaAs/Ge [28]: BOL 29.3 (mW/cm^2); CuInSe2: BOL 14.4 (mW/cm^2) [29]; InP: BOL 19.7 (mW/cm^2) [30]; Si: BOL 17.5 (mW/cm^2) [31]). (Graph courtesy of Tom Morton, Ohio Aerospace Institute)

sun tracking and -80°C when in the longest eclipse. The average illuminated temperature at the orbit of Jupiter is -125°C , whereas at the average orbit of Mercury the temperature is 140°C . Similarly, the average intensity at the orbit of Jupiter is only 3% of the solar intensity at the Earth's radius, whereas the average intensity at Mercury is nearly double