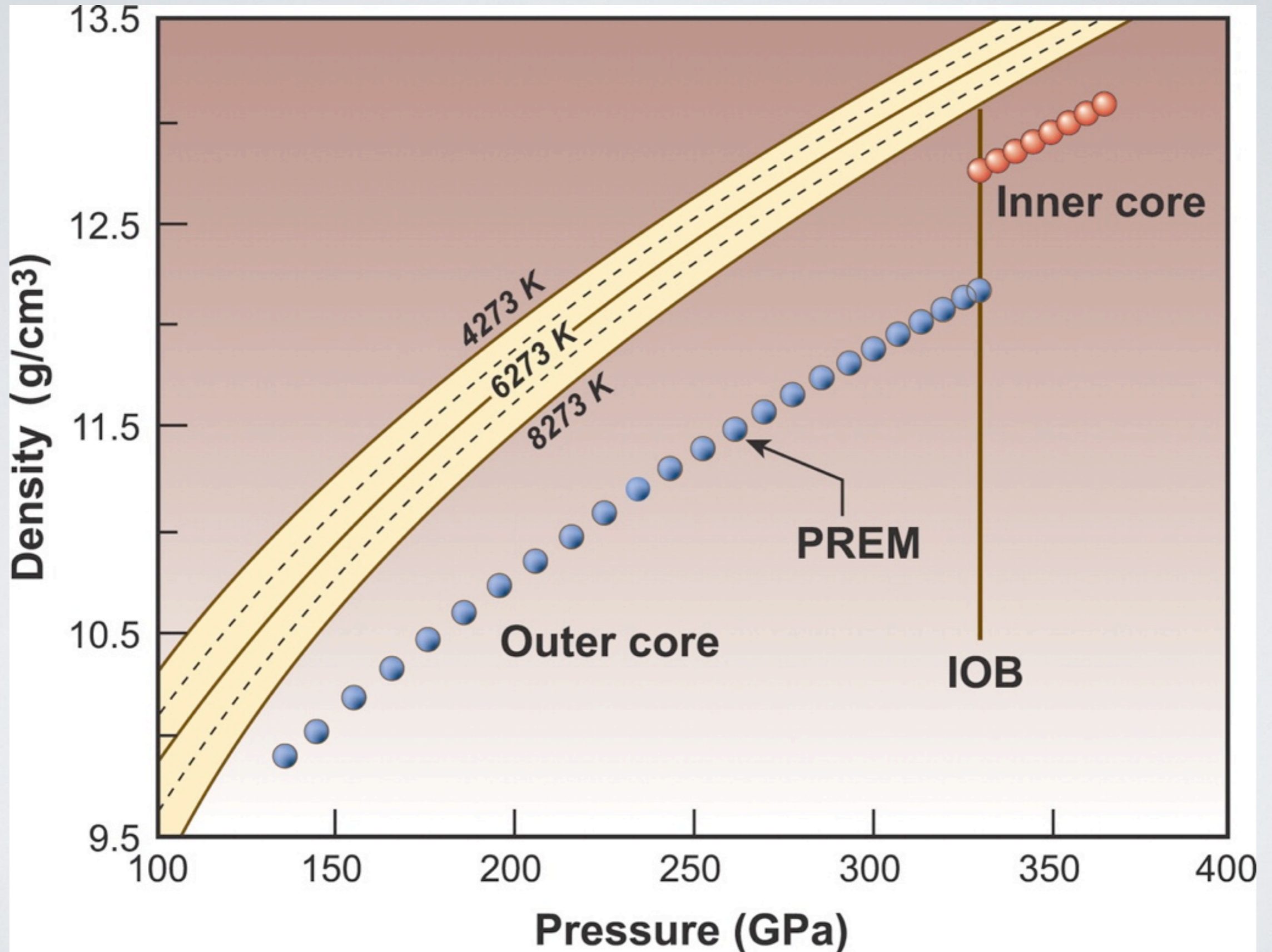


### The Earth's Lower Mantle and Core



**FIGURE 2** Density of pure iron (with the *hcp* structure) as obtained from X-ray diffraction as a function of pressure and temperature (yellow area). The extrapolation of these data to core conditions shows an excess density for pure iron (ca 10% in the outer core and 4% in the inner core) compared to geophysical data (after Uchida et al. 2001). PREM: preliminary reference Earth model; IOB: inner core-outer core boundary.