

FIGURE 2.1

The mean air pressure at sea level is not constant, but varies by a few percent around the standard atmosphere: $1 \text{ atm} = 101,325 \text{ Pa} = 1.01325 \text{ bar}$. This picture shows the world-wide sea level air pressure averaged over a 22-year period (1979–2001). The contours are isobars and the numbers are millibars. (Source: European Center for Medium-Range Weather Forecasts (ECMWF). With permission.)

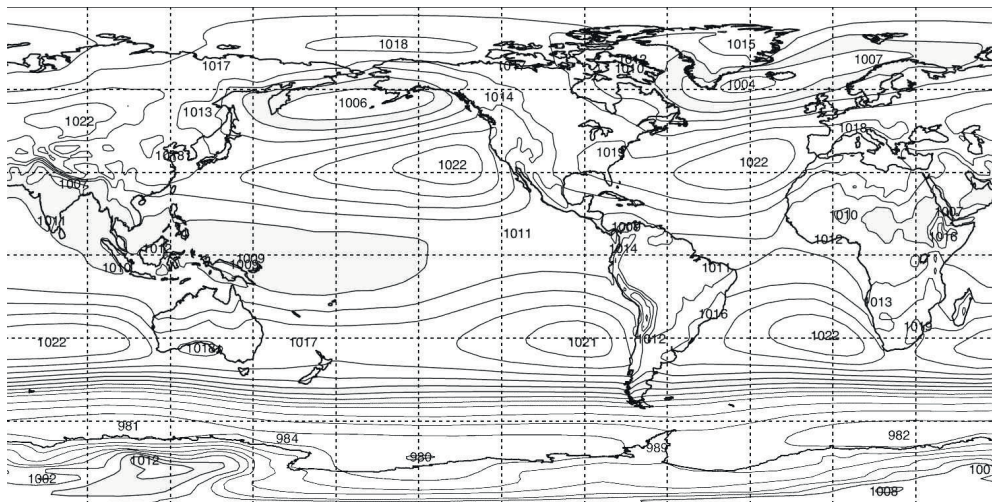


FIGURE 2.2

The pressure as a function of altitude (for $T_0 = 25^\circ\text{C}$) in three different atmospheric models analyzed in this chapter: constant density (dotted), isothermal (dashed), and homentropic (dot-dashed). The solid curve is the Standard Atmosphere (1976) model (see page 37).

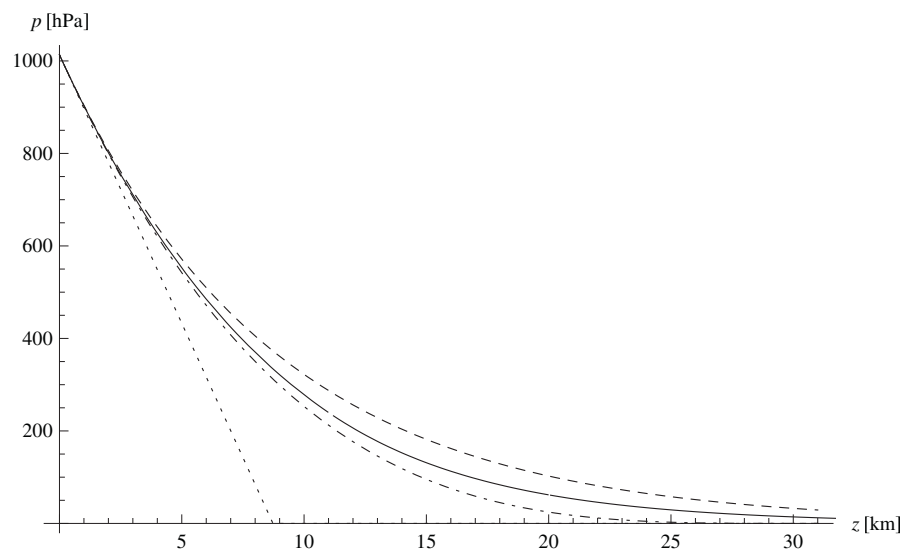


FIGURE 2.3

Plots of temperature, pressure, and density in the Standard Atmosphere (1976) for sea-level temperature $T_0 = 25^\circ\text{C}$. The vertical height is measured in kilometers, the temperature in Celsius, the pressure in bars, and the density in kilograms per cubic meter.

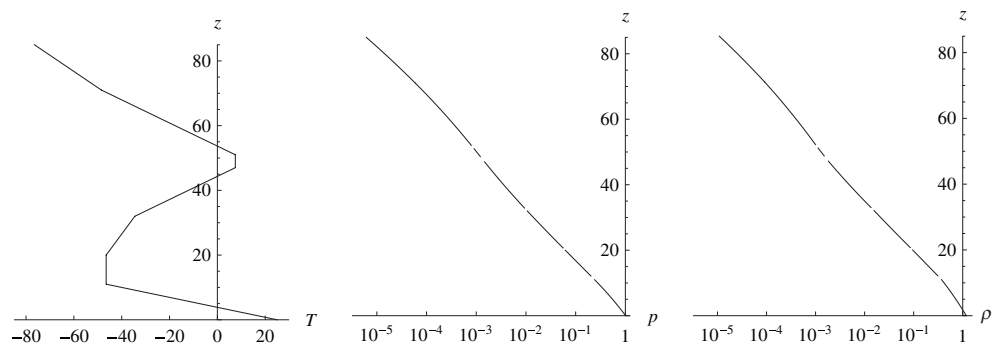


FIGURE 2.4

The temperature distribution in the Sun as a function of the distance from the center. The vertical lines are boundaries between the three major layers of the Sun. The fully drawn curve is extracted from the Standard Sun model [CDDA&96] and [3]. The dashed curve is the approximative homentropic solution (2.57) for the convective envelope.

