



Evidence from the Moon indicates that a cosmic bombardment of major proportions struck the planets about 4 billion years ago. Some moon rocks brought back by the Apollo mission date at 4.5 billion years old. This indicates that the Moon was only partially melted by the cosmic bombardment. In contrast, the Earth's oldest known rocks date at 3.7 billion years old indicating that the entire crust of the Earth was melted prior to this time.

WATER VAPOR CONDENSES TO FORM SEAS

The three heat sources -- gravitational friction, radioactive heating, and cosmic bombardment -- are thought to have combined to outgas

FIGURE 4.11

The recycling of water (hydrologic cycle). The illustration does not include the cycle in the polar regions where snow falls to form snowfields and ice. Water vapor evaporates or sublimates from snow and glaciers to reenter the atmosphere. Ice and snow also melt to flow into streams, lakes, and the oceans. Although the oceans are permanent features of our planet, the water in them is recycled through the atmosphere and fresh water systems about once every 2 million years.