Abstract

A book about the Saturn system which predates the imminent discoveries of Pioneer 11 and Voyager would seem to be premature. However, this compendium of review papers on Saturn, its satellites, its rings, and its magnetoshere is the most comprehensive available source of information on the Saturn system and amply demonstrates the essential role of ground-based observations in the planning and interpretation of in situ measurements.

Saturn's ring system is the most extensive and complex in the solar system, extending hundreds of thousands of kilometers from the planet. In the early 1980s, NASA's two Voyager spacecraft revealed that Saturn's rings are made mostly of water ice. They also found "braided" rings, ringlets, and "spokes," dark features in the rings that circle the planet at different rates from that of the surrounding ring material. Saturn has 52 known natural satellites, or moons, and there are probably many more waiting to be discovered. Saturn's largest satellite, Titan, is a bit bigger than the planet Mercury. (Titan is the second-largest moon in the solar system; only Jupiter's moon Ganymede is bigger.) Titan is shrouded in a thick, nitrogen-rich atmosphere that might be similar to what Earth's was like long ago.