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Jupiter and the Giant Planets

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Continued study of the Galileo Probe results suggests that the abundance of water on Jupiter remains undetermined. As a hypothesis, we assume that the enrichment of oxygen is comparable to that of carbon and nitrogen, with all of these enrichments produced by an early influx of low temperature icy planetesimals. We can then predict the water abundance on Jupiter. This same hypothesis successfully accounts for the observed carbon abundance on Saturn. Predictions of carbon abundances and deuterium enrichments in the atmospheres of the other giants are consistent with present observations.