Earth’s atmosphere today is mostly nitrogen and oxygen. Carbon dioxide was a major component in the early atmosphere. Now it exists as only 0.034%. Where did it go? And where did the oxygen come from? Blame life. When photosynthesis evolved (3.5 billion years ago), it removed carbon dioxide and added oxygen. What happened to all the water vapor that existed in the early atmosphere? When Earth’s surface cooled enough for liquid water to be stable, water vapor precipitated to form the oceans! To this day, Earth remains unique in the solar system for its high content of water, both inside and outside its surface. Finally, why did nitrogen become so abundant? It doesn’t react with much at Earth’s surface, so it simply accumulates over time, as the other materials disappear.