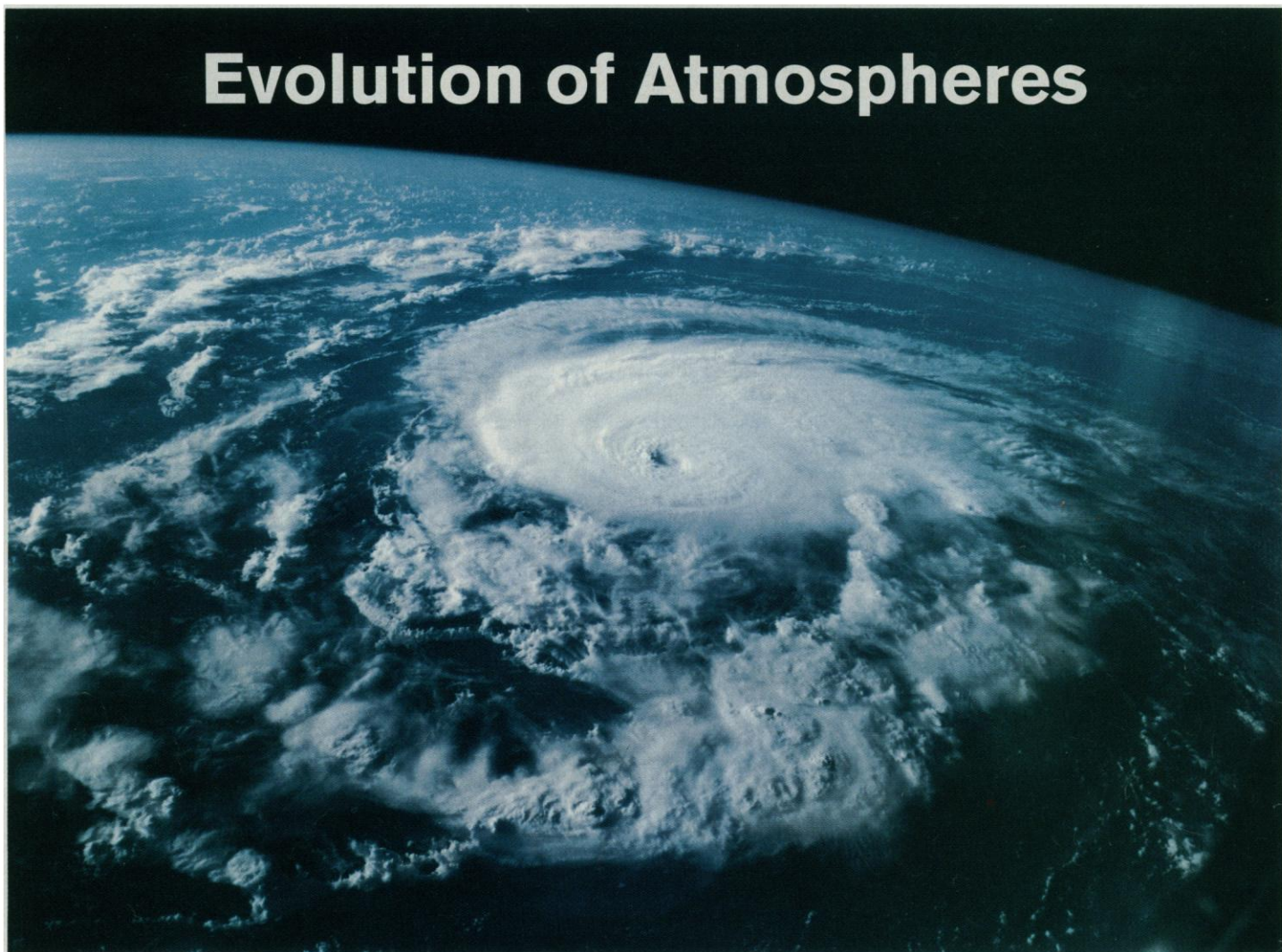


Evolution of Atmospheres



NASA

A sea of gases energized by the sun, the atmosphere becomes a maelstrom during Hurricane Bonnie, seen from the Space Shuttle last September. This special section of *Science* describes how Earth's atmosphere and those of other planets have evolved over the past 4.5 billion years, and what lessons atmospheres past and present hold for future climate change.

Editorial

Evolution of Atmospheres 875

News

Is the Geological Past a Key to the (Near) Future? 906

Searching for Clues to Ancient Carbon Dioxide 908

An 'Outrageous Hypothesis' for Mars: Episodic Oceans 910

Earth Scientists Look NASA's Gift Horse in the Mouth 912

The Sad Saga of Small Satellites 913

Articles

Atmospheric Evolution of the Terrestrial Planets

Donald M. Hunten 915

Earth's Early Atmosphere

James F. Kasting 920

The Ice Record of Greenhouse Gases

D. Raynaud, J. Jouzel, J.M. Barnola, J. Chappellaz,
R.J. Delmas, and C. Lorius 926

The Global Carbon Dioxide Budget

Eric T. Sundquist 934