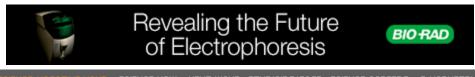
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Table of Contents

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Rethinking Earth's Early

Atmosphere

Christopher F. Chyba

More than 50 years ago, Miller performed his groundbreaking experiments that showed that an atmosphere containing methane and ammonia could yield amino acids, the building blocks of proteins. Today, many authors favor a carbon dioxide-rich atmosphere, but such an atmosphere is much less suitable for producing organic molecules. In his Perspective, Chyba highlights the report by Tian et al., who propose instead that the early atmosphere was carbon dioxide--based but may have contained many times more molecular hydrogen than previously thought. Such an atmosphere would have supported the abiotic synthesis of organic molecules far better than a carbon dioxide atmosphere with very small amounts of hydrogen.

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1 of 2 5/13/05 11:32 AM

The editors suggest these related resources at *Science*:

• A Hydrogen-Rich Early Earth Atmosphere
Feng Tian, Owen B. Toon, Alexander A. Pavlov, and H. De Sterck
Science 13 May 2005: 1014-1017
[Abstract] [Full Text] [PDF] [Supporting Online Material]

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2 of 2 5/13/05 11:32 AM