

Abstract Submitted
for the NEF15 Meeting of
The American Physical Society

LIFE IN THE WHISPERING COSMOS? PAUL H. CARR, AF Research Laboratory Emeritus — Could there be life on the billions and billions of exoplanets in the Whispering Cosmos (1)? This is the back-body radiation that has expanded and cooled from the hot big bang 13.8 billion years ago. The 4.5 billion year history of our planet is our best data source for life. About 0.8 billions years after the earth was formed, the first prokaryote cells emerged. Two billion years later, they developed photosynthesis that slowly converted the carbon dioxide, CO₂, in the earth's early atmosphere to 20% oxygen. This enabled the Cambrian explosion of multicellular life 0.54 years ago. Dinosaurs needed these higher concentrations to oxidize sugar for energy. Harvard biologist Ernst Mayr believed that single celled life may be common in our universe, but intelligence is rare. Venus had a runaway greenhouse effect. Its dense CO₂ atmosphere is 730 K, hot enough to melt lead. Might our earth undergo a runaway greenhouse effect similar to Venus? Since the industrial revolution, the increased burning of fossil fuels is raising CO₂ levels 300 times faster than the CO₂ increase after the Ice Age. REFERENCE (1) Paul H. Carr, "Not with a Bang, but a Whisper," APS News, Letter, December 2007.

Paul H. Carr
AF Research Laboratory Emeritus

Date submitted: 19 Oct 2015

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