

Abstract for an Invited Paper  
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**The Samuel K. Allison Lecture: B<sup>2</sup>FH, The CMB & Cosmology**

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Some historical aspects of the development of the theory of stellar nucleosynthesis will be discussed. I shall then go on to describe the problems originally encountered by Gamow and his associates in trying to decide where the helium was made. This leads me to a modern discussion of the origin of <sup>2</sup>D, <sup>3</sup>He, <sup>4</sup>He and <sup>7</sup>Li, originally described by B<sup>2</sup>FH as due to the x-process. While it is generally argued, following Gamow et al, that these isotopes were synthesized in a big bang I shall show that it is equally likely that they isotopes were made in active galactic nuclei, as was the CMB, in a cyclic universe model. The key piece of observational evidence is that the amount of energy released in the conversion of hydrogen to helium in the universe is very close to the energy carried by the CMB, namely about  $4.5 \times 10^{-13}$  erg cm<sup>-3</sup>.