Astrophysics Seminars

Tuesday

March 20

12:30 P.M.

Rm 184 NSH

The Primordial Lithium Problem

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Big bang nucleosynthesis (BBN) remains one of the major pillars of modern cosmology. A comparison of predicted and observationally-inferred primordial 2H and 4He abundances implies a baryon density in excellent agreement with the density inferred from the cosmic microwave background. However, there is one piece of the puzzle that does not quite fit: BBN predicts a primordial 7Li abundance that is roughly three times higher than the observationally-inferred abundance. This has been dubbed the primordial lithium problem. Possible solutions lie in three broad categories: (1) Something is wrong with our observational estimates, (2) We are missing some critical piece of nuclear physics in our BBN calculations, or (3) Physics beyond the Standard Model is alters standard BBN. I will discuss all three possibilities, including a number of proposals in category (3).

PHYSICS