J Astrophys Aerospace Technol 2018, Volume 6
DOI: 10.4172/2329-6542-C6-033

Obtaining some constraints on the early universe based on WMAP-9 and Planck by using DECIGO and BBO detectors

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The evolution stages of the universe such as: inflation, reheating, radiation, matter and acceleration can effect on the shape of the spectrum of relic gravitational waves. As well known, at the end of inflation, the scalar oscillates quickly around some point where potential has a minimum. The potential causes that the scale factor obtains unusual growth during inflation, as the amount of this growth is given by where is the e-folding number. On the other hand the behavior of the inflation and reheating stages are often known as power law expansion like respectively. The is conformal time and constrained on the and The waves being used to determine the reheating temperature in the range (GeV based on the BBO and DECIGO detectors. Hence we found constraints on the parameters and corresponding to the range of reheating temperature, WMAP-9 and Planck. As, these constraints give us valuable information about the manner of the evolution of universe and the waves during inflation and reheating stages.

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