Astronomy & Astrophysics : An Introductory Survey

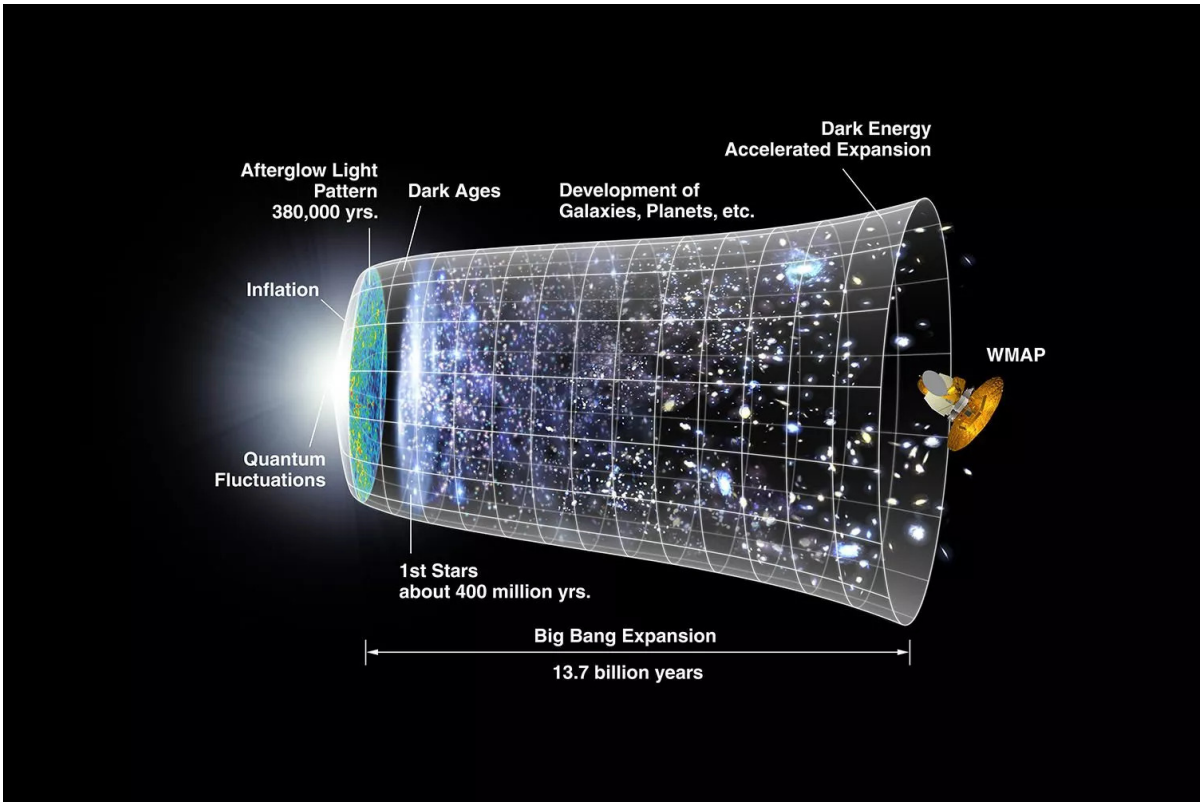
A lecture series by Prof. G. Srinivasan

A 'Golden Jubilee Celebration' Event of the Astronomical Society of India

Lecture 40 : The Big and Small (Part-II)
The Inflationary Universe

Message from Prof. Srinivasan : *This is the 40th and the penultimate lecture of this series. There is only one more lecture to go. It has been a long journey, but surprisingly there have been very little feedback. I would love to hear from as many of you as possible, with your views on the lectures, how comprehensible they were, were they interesting, do you feel motivated to pursue astronomy further, etc. Do type in your comments. Better still, send me a detailed email to* – **astrowithsrini@gmail.com**.

In this lecture, ideas developed in the previous lecture will be invoked to understand why the universe might have initially expanded exponentially the so-called inflationary phase. First, the idea of spontaneous symmetry breaking and phase transitions are reviewed. Then the concept of cosmological phase transitions associated with symmetry breaking are introduced. With this background, Alan Guths idea of exponential expansion associated with the Grand Unified Theory phase transition is explained.



Combined references for Lectures 40 & 41 would be included in the Supplementary Material for Lecture 41.

3 February 2023

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