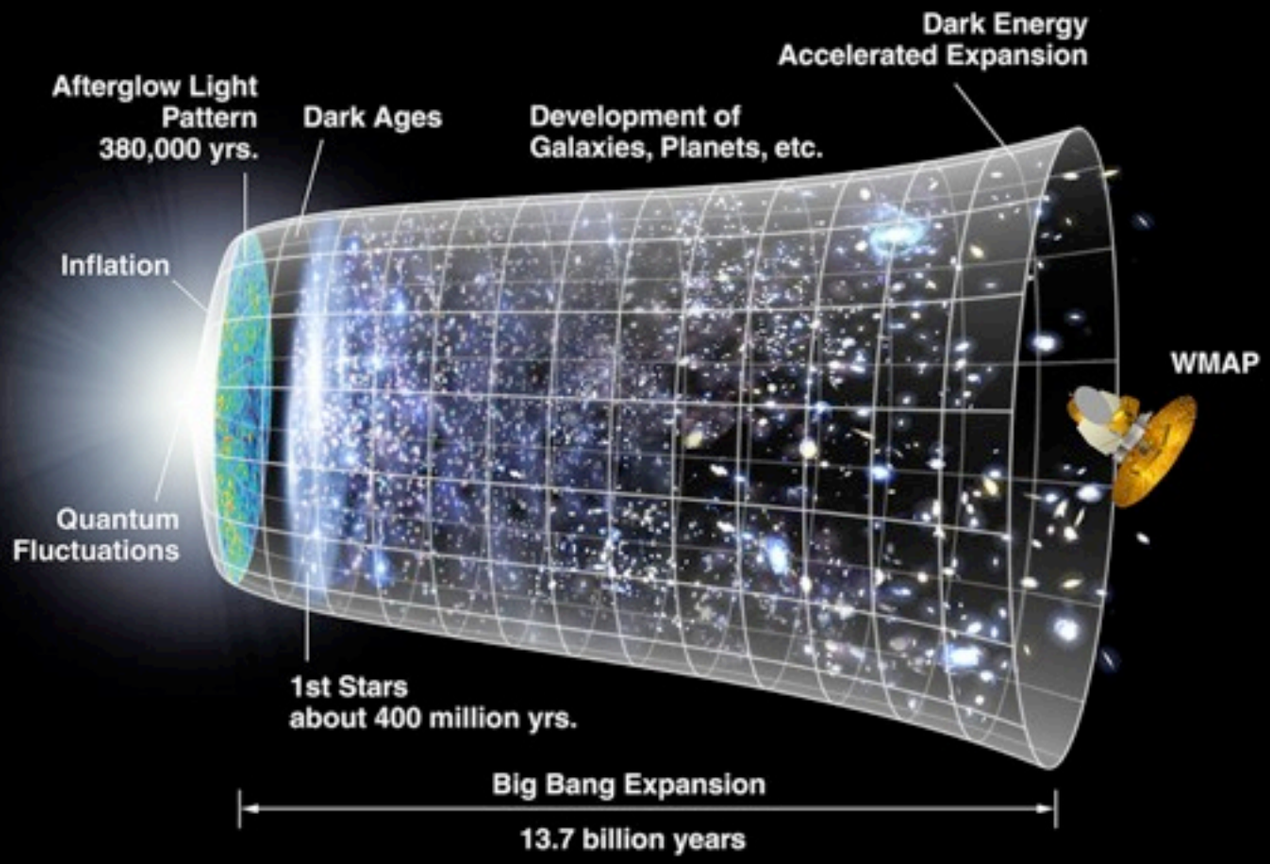
“Radio Science”

or rather: how do radio telescopes enhance our understanding of the Universe

Roger Deane

this lecture will present our current understanding of how the Universe moves from the left to the right in the below graphic. It will highlight the key epochs in the Universe, pointing out various radio sources (and the types of radio telescopes needed to observe them) that will be discussed in greater detail other lectures. The lecture is meant to set a cosmological context for the science possible and being driven by radio telescopes. In so doing, it is hoped it will set a context for the types of arrays we use, and how the techniques in development here at RATT will contribute to that.



CMB

EoR

First galaxies and BHs

Cosmic Noon

$$z=0$$

Our Galaxy

- magnetic fields
- pulsars
- SNe & remnants
-

Tools of the trade

- pick the right wrench
- links to types of arrays (Kshitij lecture)

NEXT LECTURE:

what's ahead

21st century "radio science" and who's going to do what

- this will be pretty much like the overview lecture link below, but significantly shorter
- SKA and its pathfinders (with key science outlined)
- https://science.nrao.edu/science/meetings/2014/14th-synthesis-imaging-workshop/lectures-files/P_Dewdney_VLA_SS_v3.pdf