

AGA 0101

8 .2 Ondas acústicas no universo primordial

Oscilações Acústicas de Bárions (Barionic Acoustic Oscillations - BAOs)

O que são BAOs:

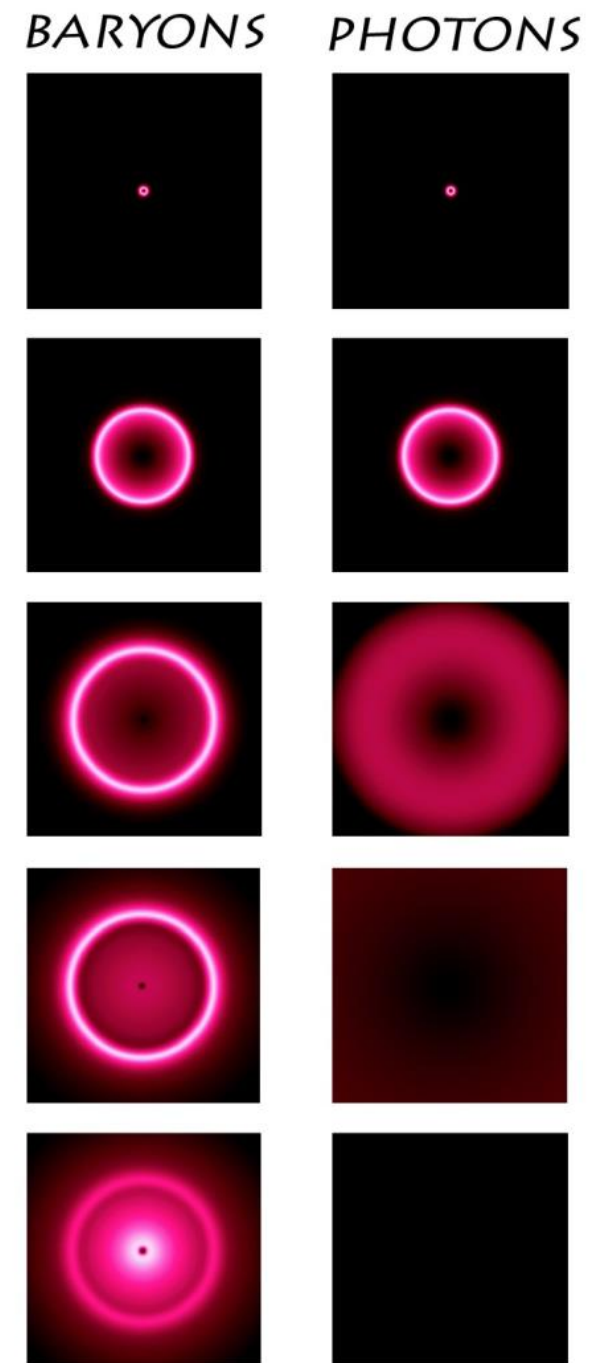
Na era radiativa **halos de matéria escura - Embriões** das galáxias atuais- começam a se formar por colapso gravitacional

Os fótons e a matéria ordinária estão acoplados eletromagneticamente e escapam dos halos devido a pressão de radiação

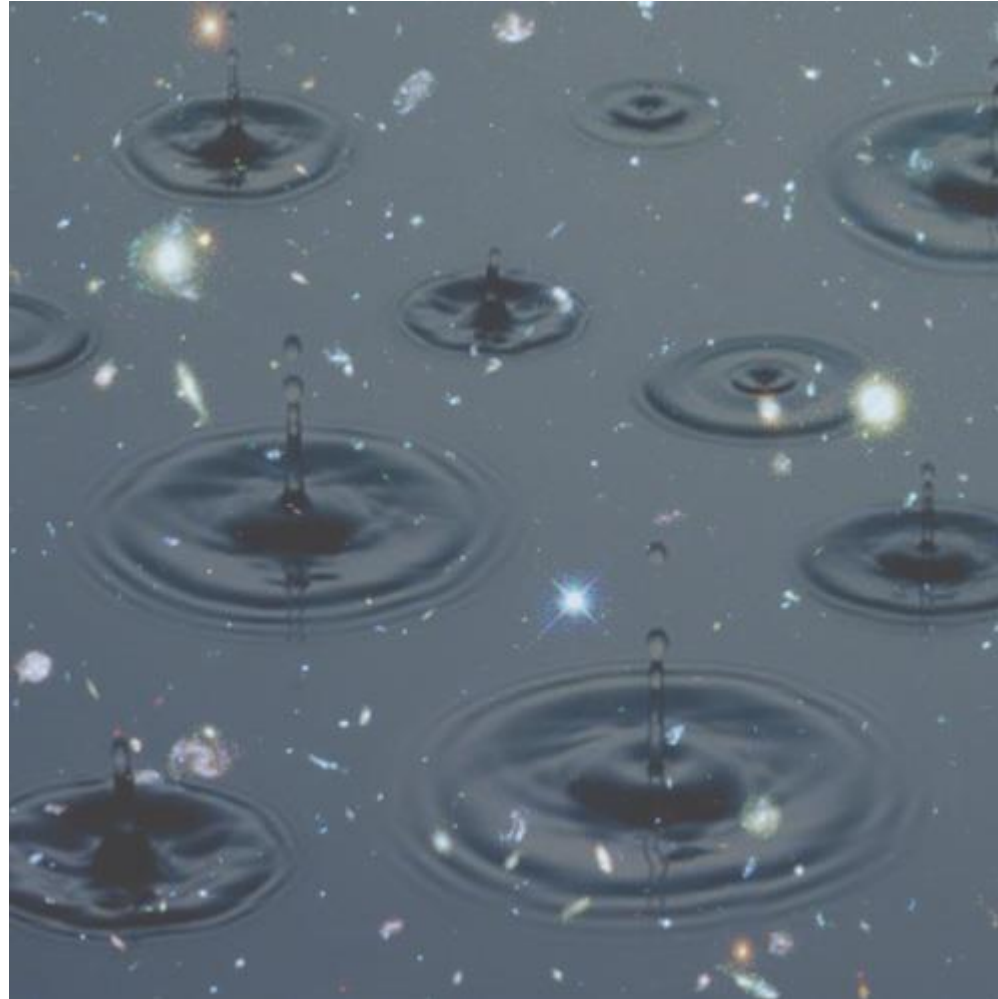
Isso produz uma onda sonora carregando fótons e bárions a partir do halo

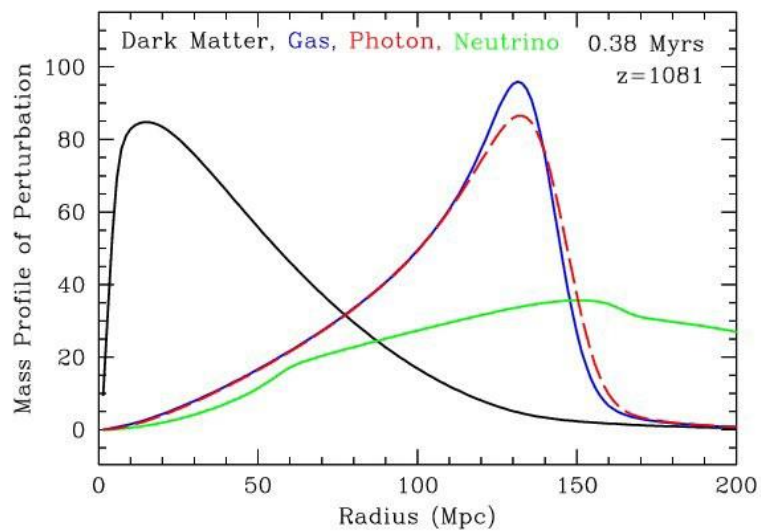
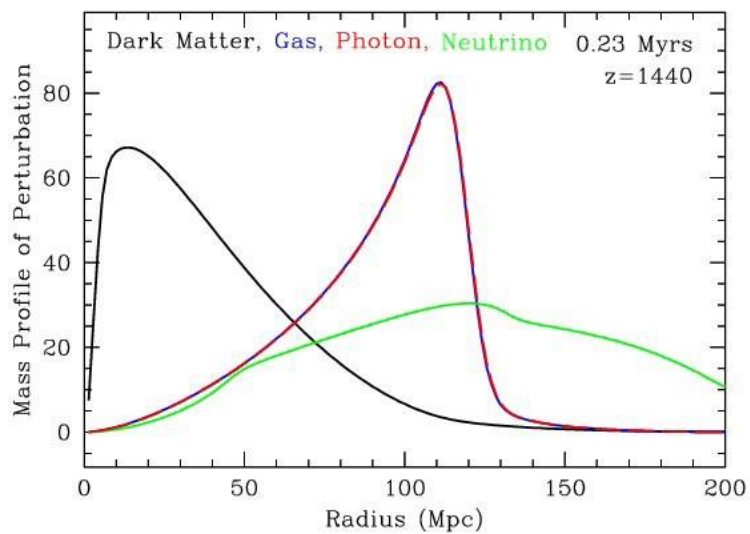
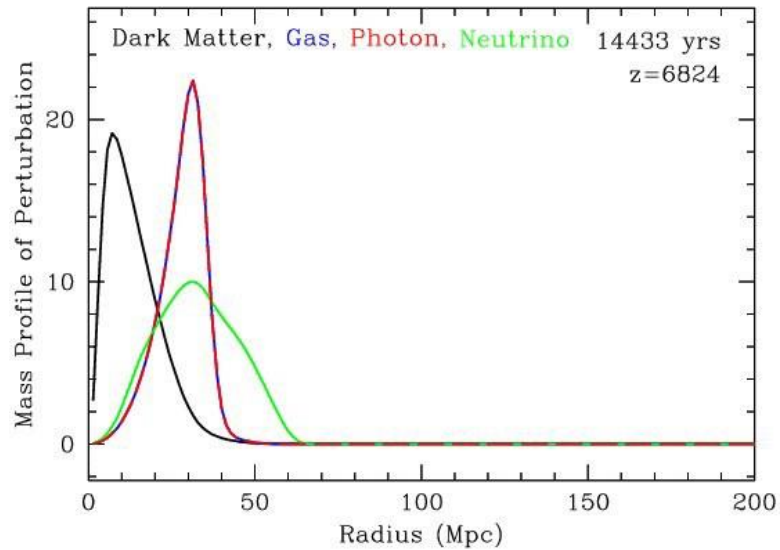
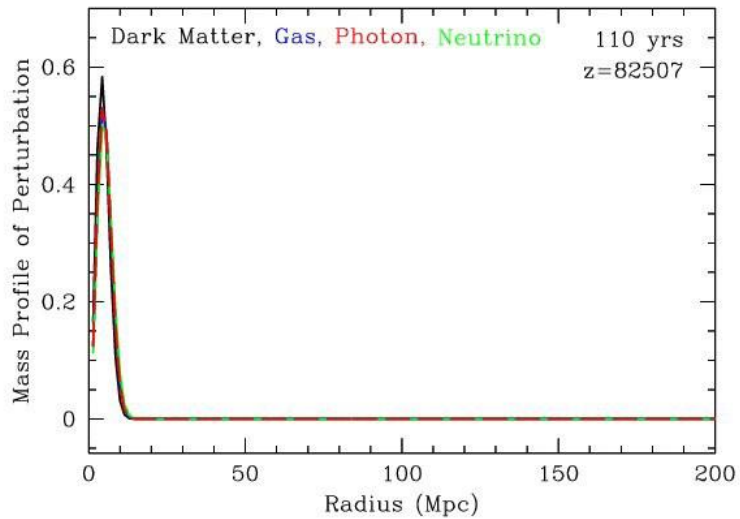
Em $z \sim 1000$, o universo fica neutro, os fótons viajam livremente e os bárions param de ser arrastados

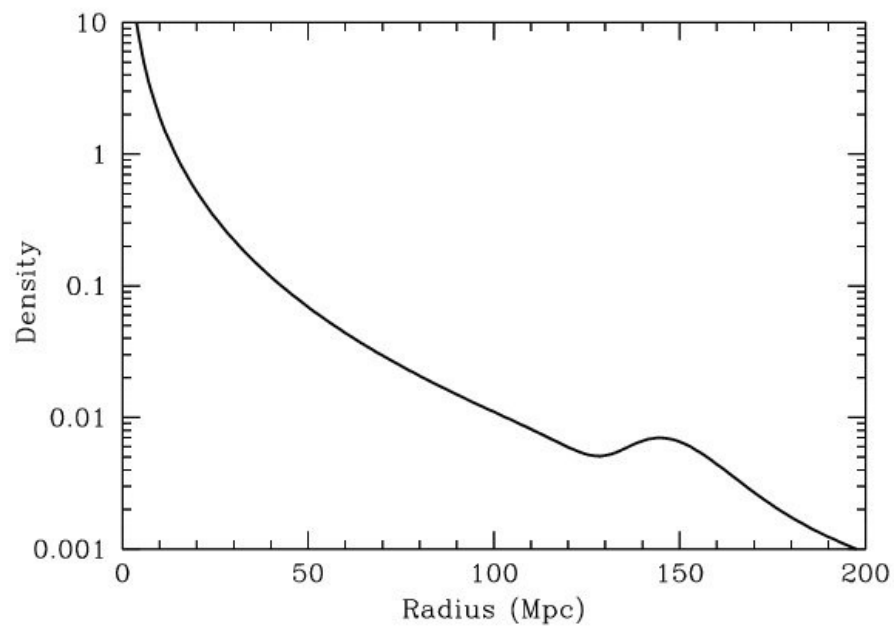
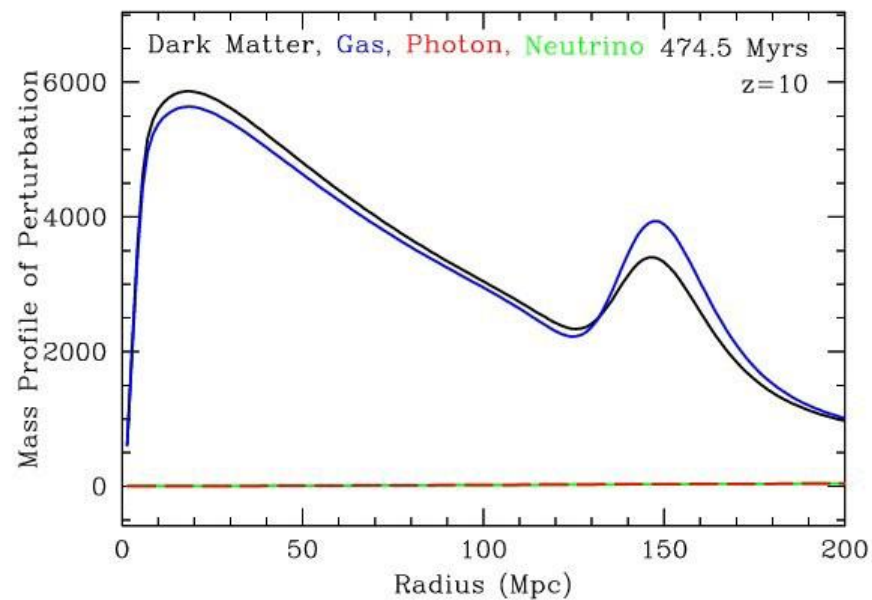
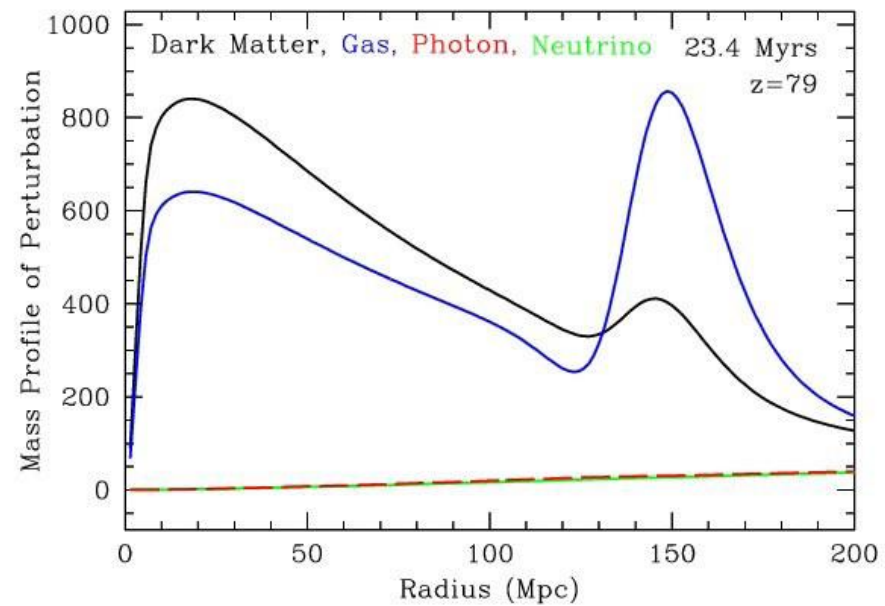
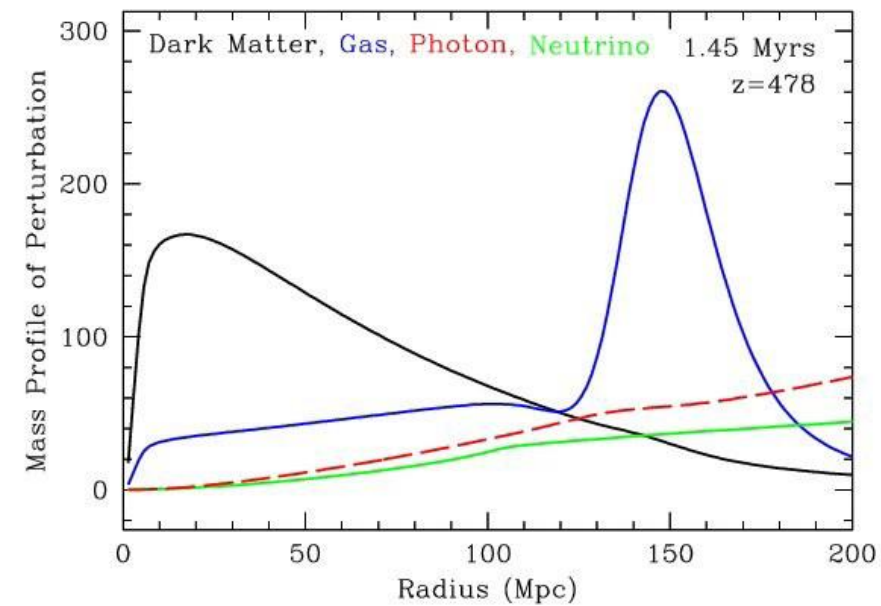
**a escala de BAO é uma régua padrão: $cst \sim 150$ Mpc
(490 mil anos-luz)**

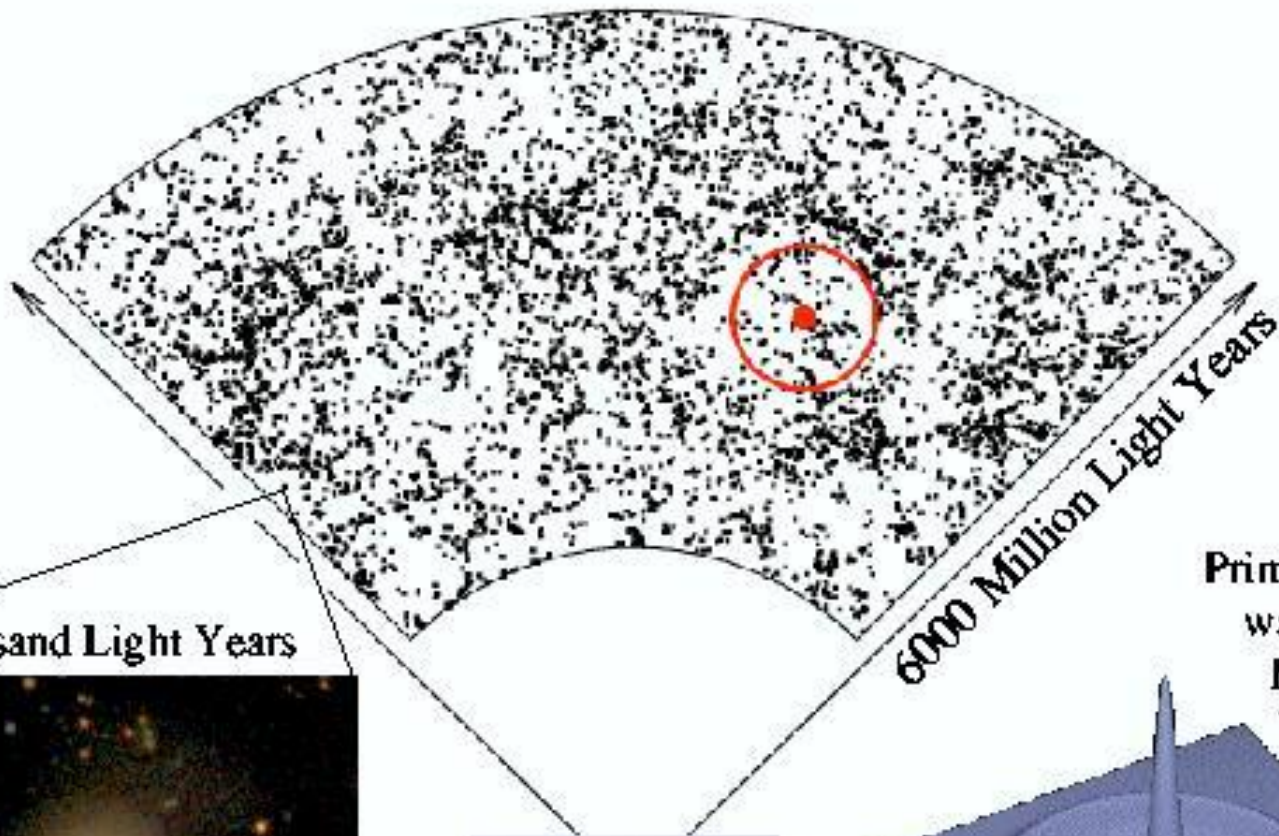


Ondas múltiplas









Primordial sound wave, now 500 Million Light Years across.

300 Thousand Light Years

