

HOMWORK PROBLEMS 7

ASTR 360

The Early Universe

Due date: Tuesday, 4/30/24 — 5pm

View this as a low impact workout to prep you for the final.

1. Carroll and Ostlie problem 29.58, parts (a), (d), (e), (f) and (g) only. You will need to numerically integrate the relevant integrals to compute all the requested quantities. Use WMAP values for the key cosmological parameters.

[50 points credit]

2. Carroll and Ostlie problem 29.32. Again use WMAP values for the key cosmological parameters. The relevant scattering cross section is the Thomson one, $\sigma_T = 6.65 \times 10^{-25} \text{ cm}^2$.

[25 points credit]

3. Carroll and Ostlie problem 30.7.

[25 points credit]