

COSMOLOGY
Assignment Set E

1. Compute the locations of event horizons for the $k = 0$ FLRW model filled with dust and for the de Sitter solution.
2. Show that in the epoch after the recombination the density of light sources $n(z)$ changes according to

$$n(z) = n_0(1 + z)^3,$$

where z denotes the redshift, and n_0 is the current density. Assume that possible evolutionary effects in light sources are negligible.