

1 Weekly main assignment for week 3 AST3220

Prepare for class (to be discussed in plenary)

Do exercise 1.1 from Elgaroy's lecture notes. Then try to think of a universe that is:

- a) Homogenous, but not isotropic
- b) Isotropic, but not homogeneous

How would you go about trying to detect if we were living in such universes? Does the Copernican principle hold in your universe in a)?

What if we observe a universe that is isotropic from where we are and some alien friends of ours tell us that the universe also looks isotropic from their point of view. Is this enough to guarantee that the universe is homogeneous?

Prepare or at least look at before class

Exercise 1.4 in the lecture notes.