

AST353 (Spring 2016)

ASTROPHYSICS

Problem Set 6

Due in class: Thursday, April 28, 2016

(worth 10/100)

1. Population III Gamma-ray Bursts

Carefully read Sections 4.4 and 6.5 on Gamma-ray Bursts (GRBs) in Loeb's textbook.

Succinctly (no more than 1/2 page) summarize the key argument for why GRBs may be good probes of the first (Population III) stars.

2. Fossils from the First Stars

Devise a *back-of-the-envelope* argument to approximately answer the following question: What fraction of your body's mass, roughly, was once inside a Population III star, sometime in the distant past?