LIX Congresso della
Società Astronomica Italiana

Contribution ID: **91** Type: **Contribution**

Shedding light on the early Universe with THESEUS

Thursday, 21 May 2015 17:50 (15 minutes)

The Transient High Energy Sky and Early Universe Surveyor (THESEUS) is a mission concept aimed at exploiting Gamma-Ray Bursts for investigating the early Universe developed by a large international collaboration led by Italy (Lorenzo Amati was lead proposer for ESA/M4) , UK, Spain and including contributions from Denmark, Poland, Czech Republic, France, Slovenia, Hungary, Ireland, USA) . The main scientific objectives of THESEUS include: investigating the star formation rate and metallicity evolution of the ISM and IGM up to redshift 10, detecting the first generation (pop III) of stars, studying the sources and physics of re-ionization, detecting the faint end of galaxies luminosity function. These goals will be achieved through a unique combination of instruments allowing GRB detection and arcmin localizaiton over a broad FOV (more than 1sr) and an energy band extending from several MeVs down to 0.3 keV with unprecedented sensitivity, as well as on-board prompt (few minutes) follow-up with a 0.6m class IR telescope with both imaging and spectroscopic capabilities. Such instrumentation will also allow THESEUS to unveil and study the population of soft and sub-energetic GRBs, and, more in geeneral, perform monitoring and survey of the X_ray sky with unprecedented sensitivity.

Co-author: AMATI, Lorenzo (INAF .- IASF Bologna)

Presenter: FRONTERA, Filippo

Session Classification: Astrofisica delle Strutture Cosmiche Barioniche