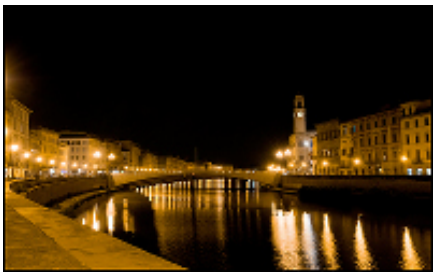

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ComPair and future perspectives in MeV Gamma-ray astronomy

Friday, 21 October 2016 15:45 (25 minutes)

The gamma-ray energy range from a few hundred keV to a few hundred MeV has remained largely unexplored since the pioneering but limited observations by COMPTEL on the CGRO (1991-2000). Fundamental astrophysics questions can be addressed by a discovery mission in the MeV range, from astrophysical jets and extreme physics of compact objects to a large population of unidentified objects. We will briefly go through the science drivers for such a mission. We will present the concept of the wide-aperture instrument ComPair (Compton-Pair Production Space Telescope) being developed by NASA/Goddard Space Flight Center in collaboration with Navy Research Laboratory, Clemson University, Washington University and University of California at Santa Cruz, to investigate the energy range from 200 keV to > 500 MeV with high energy and angular resolution and with sensitivity approaching a factor of 20-50 better than COMPTEL.
We will also present extended science requirements to include nuclear gamma-ray spectrometry, gamma-ray polarization and precise mapping of the gamma radiation from the Galactic Center.
A possible concept for a large-scale instrument to meet these requirements will be discussed

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