Applications for one or more experimental astrophysics positions are now being accepted, funded through the University of Maryland, Baltimore County (UMBC) and the Center for Research and Exploration in Space Science and Technology (CRESST). The selected candidate would work in the High-Energy Gamma-Ray Group, a part of the Astrophysics Science Division and the Astroparticle Physics Laboratory, at the NASA/Goddard Space Flight Center (GSFC). Assuming positive performance and continued funding, the position terms are expected to be three years at minimum. Post Doc or research scientist positions are available, depending on the candidate’s experience. The successful candidate(s) will join the gamma-ray detector team to develop the Three Dimensional Track Imager (3-DTI) for the Advanced Energetic Pair Telescope (AdEPT), a medium-energy gamma-ray polarimeter. The 3-DTI is a large volume negative ion gas time projection chamber (TPC) with a two-dimensional gas micro-well detector (MWD) readout. The MWD readout provides high resolution (~200 μm RMS) projections of ionizing particle tracks. The third spatial coordinate is determined from the arrival time of the ionization charge at the micro-wells.

The Gamma-ray Group is currently completing the mechanical and multi-channel electronics designs for a 50 x 50 x 100 cm³ prototype of the AdEPT telescope. Successful candidate(s) will be involved with the design, testing, and laboratory integration of this prototype as well as accelerator testing and data analysis. The development of the 3-DTI and design of the AdEPT instrument will continue with the goal of a future space flight mission. In addition to the AdEPT detector development, opportunities will also exist for involvement with the science preparations for GLAST/LAT instrument.

Applicants should have a Ph.D. (masters degree may be possible, with sufficient demonstrated experience) in astronomy, engineering or physics with a strong interest in spaceflight hardware development and gamma-ray astrophysics. In addition, the candidate should have some experience in the design and operation of instrumentation for high-energy particle detectors (e.g. high voltage, gases, vacuum systems, data acquisition, etc.). General computer skills (Windows and/or Linux) are expected, and experience with simulation programs such as Geant4 and Garfield is desirable, but not required.

Each applicant should send a Curriculum Vita, list of publications, statement of research interests, and contact information for three references to:

AdEPT  
CRESST/UMBC  
Mail Code 660.8, NASA/GSFC  
Greenbelt, MD 20771, or  
Via e-mail to virginia.c.peles@nasa.gov

Salary and benefits are competitive, commensurate with experience and qualifications. The position is available beginning fall or winter, 2015.

The University of Maryland is an Affirmative Action, Equal Opportunity Employer. Women and minorities are encouraged to apply. Applications will be accepted on an ongoing basis until the position is filled. All applications received by November 30th, 2015 will receive full consideration.