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The AMEGO View of MeV AGNs

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Extensive observations by Fermi, AGILE, and TeV telescopes have opened a new window into the high-energy physical processes of AGNs and raised questions about the physics of their jets, their formation and cosmological evolution, and their impact on their environments and the growth of structure in the Universe. Multi-wavelength observations in X-rays and at GeV and TeV energies point to a large class of blazars whose peak output is in the poorly explored MeV band. With unprecedented sensitivity between 200 keV and 10 GeV, the All-Sky Medium Energy Gamma-ray Observatory (AMEGO) will fill in the MeV gap in blazar spectral energy distributions, providing crucial clues about their emission mechanisms in this regime. Also, with its wide field of view, AMEGO will survey the entire sky every 3 hours, allowing it to monitor variations in blazar light curves on short and long timescales that arise from changes in their jets. Furthermore, multiwavelength observations of the blazar population indicate that the sub-population of MeV blazars are among the most distant and luminous AGNs; thus, AMEGO observations of MeV blazars will allow it to probe the growth of supermassive black holes at earlier epochs than allowed by other types of AGNs.

Author: VENTERS, Tonia (NASA Goddard Space Flight Center)
Co-author: ON BEHALF OF THE AMEGO COLLABORATION
Presenter: VENTERS, Tonia (NASA Goddard Space Flight Center)

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