

Abstract Submitted
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Unveiling the Origin of Cosmic Rays ANGELA V. OLINTO, The University of Chicago — The origin of cosmic rays, relativistic particles that range from below GeVs to hundreds of EeVs, is a century old mystery. Extremely energetic phenomena occurring over a wide range of scales, from the Solar System to distant galaxies, are needed to explain the non-thermal particle spectrum that covers over 12 orders of magnitude. Space Missions are the most effective platforms to study the origin and history of these cosmic particles. Current missions probe particle acceleration and propagation in the Solar System and in our Galaxy. This year ISS-CREAM and CALET join AMS in establishing the International Space Station as the most active site for studying the origin of Galactic cosmic rays. These missions will study astrophysical cosmic ray accelerators as well as other possible sources of energetic particles such as dark matter annihilation or decay. In the future, the ISS may also be the site for studying extremely high-energy extragalactic cosmic rays with JEM-EUSO. We review recent results in the quest for unveiling the sources of energetic particles with balloons and space payloads and report on activities of the Cosmic ray Science Interest Group (CosmicSIG) under the Physics of the Cosmos Program Analysis Group (PhysPAG).

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