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The Cosmic Ray Energetics And Mass Project EUN-SUK SEO, University of Maryland, ISS-CREAM COLLABORATION — The balloon-borne Cosmic Ray Energetics And Mass (CREAM) experiment was flown for ˜161 days in six flights over Antarctica, the longest known exposure for a single balloon project. Elemental spectra were measured for Z = 1- 26 nuclei over a wide energy range from ˜10^{10} to >10^{14} eV. Building on the success of those balloon flights, one of the two balloon payloads was transformed for exposure on the International Space Station (ISS) Japanese Experiment Module Exposed Facility (JEM-EF). This ISS-CREAM instrument is configured with redundant and complementary particle detectors. The four layers of its finely segmented Silicon Charge Detector provide precise charge measurements, and its ionization calorimeter provides energy measurements. In addition, scintillator-based Top and Bottom Counting Detectors and the Boronated Scintillator Detector distinguish electrons from nuclei. An order of magnitude increase in data collecting power is expected to reach the highest energies practical with direct measurements. Following completion of its qualification tests at NASA Goddard Space Flight Center, the ISS-CREAM payload was delivered to NASA Kennedy Space Center in August 2015 to await its launch to the ISS. While waiting for ISS-CREAM to launch, the other balloon payload including a Transition Radiation Detector, which is too large for the JEM-EF envelope, has been prepared for another Antarctic balloon flight in 2016. This so-called Boron And Carbon Cosmic rays in the Upper Stratosphere (BACCUS) payload will investigate cosmic ray propagation history. The overall project status and future plans will be presented.

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