The observation of anomalous cosmic rays

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Anomalous cosmic rays (ACRs) are observed as the flux enhancements of the elements He, C, N, O, Ne and Ar at low energies (a few tens of MeV/n or less) during the "quiet time" period of solar activity . The favored model explaining this enhancement was proposed by Fisk, Kozlovsky and Ramaty (hereinafter FKR model) . As expected from the FKR model, the intensity of ACRs depends on the First Ionization Potential (FIP). Large enhancements of N, O and Ne, with the high FIP above 13 eV, are observed in the "quiet time" period. On the other hand, low-FIP (< 9 eV) elements such as Mg, Si and Fe, show no enhancement. We will obtain an important information of the outer hemisphere environment as the study of ACRs.

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