Anisotropy of Galactic Iron of Energy 30 to 500 GeV/amu Studied by HEAO-3

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The anisotropy of cosmic ray iron observed by the Heavy Nuclei Experiment [1] on the HEAO-3 spacecraft has been studied. A high rigidity data set was chosen by requiring the Stoermer cutoff be greater than 7 GV, and the energy of individual events was determined by relativistic rise in the ion chamber signal [2]. Events which have estimated rigidity well above their Stoermer cutoff rigidity were chosen in order to reduce the effect of the geomagnetic field on the cosmic ray trajectories. Selecting events with estimated rigidity greater than ~58 GV from eight months of data yields 2459 events. This data set allows an anisotropy measurement with a statistical uncertainty of 3%. We will continue to try increasing the size of the selected data set while limiting systematic errors due to the geomagnetic and interplanetary fields.

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References

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