

HE3/HE4 ISOTOPE ABUNDANCES IN SOLAR ENERGETIC PARTICLE EVENTS: SOHO/COSTEP OBSERVATIONS

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We present results from a systematic survey of 441 MeV/N He3/He4 isotope abundances with ratios > 0.01 detected by the Comprehensive SupraThermal and Energetic Particle analyzer (COSTEP) onboard the SOHO spacecraft. More than about 25% of the events showed He3/He4 ratios in the range 0.1-1. For events with sufficiently high count rates, mass plots could be resolved up to a time resolution of 1 hour. These events were compared with in situ solar wind plasma and magnetic field measurements and SOHO's optical and white-light/EUV observations of the Sun. The correlations show an association with passages of shock associated coronal mass ejections with high plasma He/H overabundances. The CMEs were likely released in strong magnetic reconfiguration processes at the solar source sites.