

THE EFFECT OF SELF-CONSISTENT STOCHASTIC PREACCELERATION OF PICKUP IONS ON THE COMPOSITION OF ANOMALOUS COSMIC RAYS.

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We have previously calculated the spectrum of anomalous cosmic rays (ACR) by employing the supposed spectrum of interstellar pickup ions as the seed population for a Monte Carlo model of the solar wind termination shock. This pickup ion spectrum was extrapolated from measurements some distance from the shock under the assumption that adiabatic loss was the only energy change process acting prior to reaching the shock. Our results while reasonable in many respects were underabundant in He^+ and O^+ ions relative to H^+ as determined by observation. le Roux and Ptuskin have shown that stochastic preacceleration is more effective for He^+ and O^+ ions than for H^+ ions thereby redressing this underabundance. We have employed the results of le Roux and Ptuskin as input to our previous model and have shown that, at least in the model we explored, He^+ and O^+ are enhanced by about a factor of 2.5 which is not enough to bring the model into agreement with observations.