ANOMALOUS OXYGEN ACCELERATION AND MODULATION IN THE HELIOSPHERE.

SAVOPULOS, M; QUENBY, J.J.; BLAJE, J.B.

Measurements of the singly charges oxygen component of the heliospheric cosmic ray flux taken at quiet times of minimum modulation out to 69 AU are compared with a combined terminal shock and modulation model which seemed to explain anomalous He^{+} fluxes. In particular, we use a radial diffusion coefficient given by $k=3 \times 10^{22} v^{1.4} r^{0.6} cm^{-2} s^{-1}$ where v is particle velocity and r is solar radial distance. Although this spherically symmetric acceleration plus modulation model fits 0^{+} data in the inner solar system above 10 MeV/nucl., it fails to explain data below 3 MeV/nucl. Which exhibit an up-turn at low energies far out. However, the radial gradient, which is observed to be small, is reproduced in our model. We suggest that interplanetary acceleration following injection at low energy could be adding to the component most probably originating at the terminal shock. Alternatively, misidentification of the contribution of the anomalous component to the total oxygen spectrum may have occurred.