

EFFECTS OF INCREASING SOLAR MODULATION ON ANOMALOUS COSMIC RAY INTENSITIES

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Anomalous Cosmic Rays (ACRs) are accelerated far out in the heliosphere at the termination shock. As they diffuse back through the solar system to 1 AU, they have been modulated in intensity. The intensity of ACRs at 1 AU seen by the Solar Isotope Spectrometer (SIS) has been decreasing since September 1997 as solar activity has been increasing. Oxygen at 7.1-10 MeV/nuc has decreased by a factor of about 80. Nitrogen and neon at similar energies have also had similar large decreases. We examine the changing fluxes of various ACR species, and the changing elemental and isotopic composition of ACRs. ACR oxygen, in particular, may no longer be observable in 2001 at 1 AU above the background of solar, interplanetary, and galactic cosmic ray particles. The $^{22}\text{Ne}/^{20}\text{Ne}$ ratio at 15 MeV/nuc has also been increasing since September 1997 from a value of about 0.1 to a value more consistent with the GCR ratio of 0.6. This is consistent with the conclusion that GCRs now dominate the quiet time flux of N, O, and Ne with energies of 10 to 30 MeV/nucleon. This work was supported by NASA under grant NAG5-6012.