

OBSERVED SOLAR DAILY VARIATIONS OF GALACTIC COSMIC RAYS: 1965-2000

H. S. Ahluwalia and M. M. Fikani

Department of Physics & Astronomy, University of New Mexico

We report the results of our continuing analyses of the characteristics of the observed galactic cosmic ray (GCR) solar daily variations for over three decades. The period spans 4 solar cycles (20 to 23) and 4 epochs of solar polar field reversals. Data obtained with neutron monitors, underground muon telescopes, and ion chambers are used in our analyses. These detectors respond to a wide range of the GCR rigidity spectrum. The results obtained are generally consistent with those reported by us at the earlier International Cosmic Ray Conferences since 1965. Some of the observed features depend upon GCR rigidity while others are independent of it. The physical significance of the results obtained by us will be discussed.