

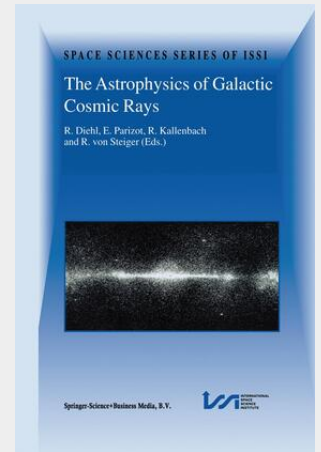
Diehl / von Steiger / Parizot

## The Astrophysics of Galactic Cosmic Rays

Proceedings of two ISSI Workshops, 18;22 October 1999 and 15;19 May 2000, Bern, Switzerland

R. DIEHL, R. KALLENBACH, E. PARIZOT and R. VON STEIGER / The Astrophysics of Galactic Cosmic Rays 3 I: KEY OBSERVATIONS ON GALACTIC COSMIC RAYS M. E. WIEDENBECK, N. E. YANASAK, A. C. CUMMINGS, AJ. DAVIS, I. S. GEORGE, R. A. LESKE, R. A. MEWALDT, E. C. STONE, P. L. HINK, M. H. ISRAEL, M. LIJOWSKI, E. R. CHRISTIAN and TT VON ROSENINGE / The Origin of Primary Cosmic Rays: Constraints from ACE Elemental and Isotopic Composition Observations 15 R. A. MEWALDT, N. E. YANASAK, M. E. WIEDENBECK, AJ. DAVIS, W. R. BINNS, E. R. CHRISTIAN, A. C. CUMMINGS, P. L. HINK, R. A. LESKE, S. M. NIEBUR, E. C. STONE and TT VON ROSENINGE / Radioactive Clocks and Cosmic-Ray Transport in the Galaxy 27 J. J. CONNELL / Cosmic-Ray Composition as Observed by Ulysses 41 R. RAMATY, R. E. LINGENFELTER and B. KOZLOVSKY / Spallogenic Light Elements and Cosmic-Ray Origin 51 E. PARIZOT / Galactic Cosmic Rays and the Light Elements 61 G. MEYNET, M. ARNOULD, G. PAULUS and A. MAEDER / Wolf-Rayet Star Nucleosynthesis and the Isotopic Composition of the Galactic Cosmic Rays 73 S. P. SWORDY / The Energy Spectra and Anisotropies of Cosmic Rays 85 G. TARLE and M. SCHUBNELL / Antiparticles 95 D. MULLER / Cosmic Rays Beyond the Knee 105 II: LESSONS FROM THE HELIOSPHERE G. M. MASON / Heliospheric Lessons for Galactic Cosmic-Ray Acceleration 119 R. A.

This volume, together with those on Cosmic Rays in the Heliosphere and on Cosmic Rays at Earth, rounds off a trilogy devoted to cosmic rays. It specifically deals with the astrophysical sources and acceleration processes of cosmic rays. The principal aims are to examine the cosmic ray phenomenon in the context of our evolving understanding of the Galaxy as an astrophysical system. Observations of cosmic rays, and theoretical models of their origin and propagation, are critically reviewed. The extent to which these reinforce, or conflict with, other astronomical information about the Galaxy is addressed. Other themes are the extent to which galactic-scale processes can be illuminated by studies or analogous heliospheric processes, and the identification of key questions for future investigations. The workshop assembled physicists working in the fields of cosmic rays origin and propagation, structure, evolution, and composition of the Galaxy and the interstellar medium. In addition, researchers working in relevant areas of radio, optical, X-ray and gamma-ray astronomy attended the workshops. This has strengthened the interdisciplinary links between these scientific communities.



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