

THE GALACTIC AND EXTRAGALACTIC BACKGROUND RADIATION

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The study of the diffuse astronomical background has a long history in astronomy. The gamma-ray and X-ray bands, and the discovery of the 3 K cosmic background have given new dimensions to this field. Since their discoveries, cosmic background studies have been the subject of numerous meetings and symposia. At the same time, studies of the diffuse optical, ultraviolet, and near-infrared backgrounds underwent a renaissance when both substantial new data were acquired and new methods of analysis were introduced. The first symposium dealing with diffuse optical, ultraviolet and near-infrared background radiation was held in Heidelberg, West Germany, in June 1989.

This volume consists of the contributions made at that conference, suitably refereed and edited. It includes a historical review of the Dark Night Sky Paradox by E. R. Harrison, and reviews of the diffuse background at gamma-ray, X-ray, microwave, and radio wavelengths. The major part of the volume is concerned with the galactic and extragalactic components of the ultraviolet, visible, and near-infrared background.

Cover picture:

An ultra-deep field near the south galactic pole obtained by Tyson and co-workers. The field has a limiting magnitude of about 30 and covers $2.3 \times 4.7'$ of sky. The differential number counts of galaxies flatten at 27th B magnitude, which implies that in this picture we may well be seeing the earliest galaxies in the universe. The integrated flux from all galaxies is within a factor of 2 or 3 of the (uncertainly known) extragalactic background and may well be the major component of this background.

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