

of a large database has been the first step on our journey towards a new understanding. Compilation of some of this information in *Dinosaur Tracks* and in *Dinosaur Tracks and Traces* is a useful second step. Trackers are now in motion and will begin to hit their stride once this avalanche of information is better synthesized and more rigorously interpreted. □

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## Orbital view

*Nicholas E. White*

**Imaging X-ray Astronomy: A Decade of Einstein Observatory Achievements.** Edited by Martin Elvis. *Cambridge University Press: 1990. Pp. 348. £30, \$49.50.*

THE launch of NASA's Einstein observatory on 13 November 1978 thrust X-ray astronomy into the main stream of astrophysics and caused a revolution in the prevailing view of the Universe. Before then, X-ray astronomy had been the domain of a select band of astrophysicists studying a few hundred X-ray sources using crudely collimated detectors with fields of view of a few degrees. The grazing incidence imaging optics of the Einstein observatory gave for the first time in the X-ray domain an angular resolution of a few arcseconds. This resolution, combined with an impressive array of imaging and spectroscopic detectors, produced a wealth of data still largely unsurpassed ten years later. The dramatic increase in sensitivity resulted in the discovery that virtually every class and type

of astronomical object emits X-rays "from Jupiter in our solar system, to distant quasars near the edge of the observable universe", to quote from this volume, published to celebrate the tenth anniversary of the launch of the Einstein observatory.

The book contains a series of review articles and contributed papers and is based on a symposium held at the Center for Astrophysics, Cambridge, Massachusetts. The book begins with brief personal recollections by some of the astrophysicists involved in the original proposal made to NASA in the late 1960s for a large orbiting X-ray telescope. The accounts provide a glimpse into how the determination and foresight of a few eventually prevailed on NASA to launch Einstein, a scaled-down version of the original proposal, ten years after it was first suggested.

The book is split into three parts. The first begins with an excellent review by Harvey Tananbaum summarizing the main results from the Einstein observatory, and discussing the prospects for NASA's next major X-ray satellite, the advanced X-ray astrophysics facility (AXAF). The rest of this part provides more detailed reviews by distinguished astrophysicists about the Einstein results on stellar coronae, cataclysmic variables, X-ray binaries, supernova remnants, active galactic nuclei, clusters of galaxies, nearby galaxies and the all-sky surveys. Most of these provide a full, well-written overview of the state of their respective fields in 1989. Notably absent, however, are detailed reviews of the Japanese and European X-ray astronomy missions that have followed and built on the initial Einstein discoveries.

Part 2 contains contributed papers

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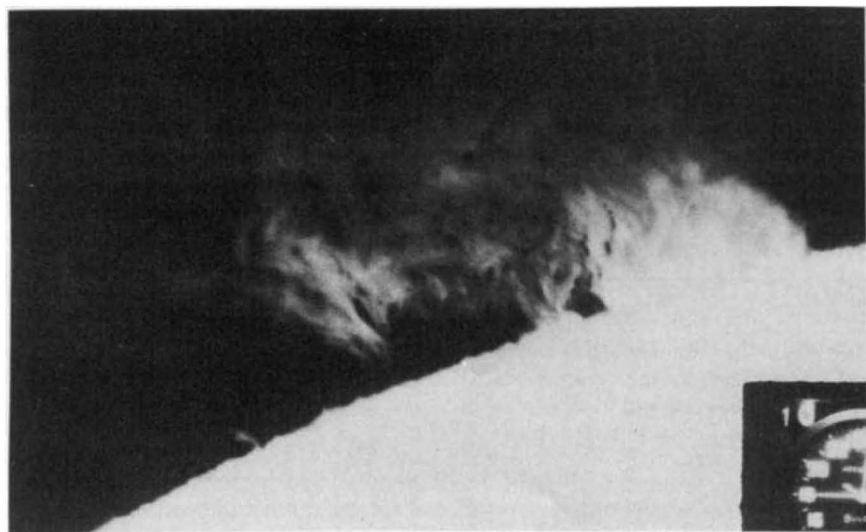
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selected to demonstrate the continuing research activities being generated by the Einstein databank. There are a few outstanding papers here ("The Softest AGN" by Cordova *et al.* is one example) but many are of interest only to a few specialists. Fortunately, these take up a relatively small fraction of the book.

Part 3 describes catalogues (referred to as databases) that are being produced for the various classes of objects observed by Einstein. This part consists mostly of a series of brief summaries of the plans to make the catalogues widely available. It is superficial, and mostly an advertisement of things available elsewhere or yet to come.

In summary, this book is an above-average conference proceedings. The first two-thirds is by far the best and provides a good historical reference to how astrophysics was revolutionized by the launch of the Einstein observatory. But the lack of a balanced view of the X-ray observations that followed in the 1980s circumscribes it as a more general reference to the state of X-ray astronomy in 1989. Nonetheless, it still provides an excellent starting point for those interested in learning more about this important X-ray observatory. □

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Solar prominences, photograph taken from the Big Bear Solar Observatory, California, 26 May 1978 — an example of what the experts can do. In *The Amateur Astronomer* Patrick Moore offers advice to both absolute beginners and those with a little experience. He tells what equipment to use, how to use it and what to look for with it. (New, updated edition, published by Norton, price is \$35.)