

ASTROSTATISTICS by G.J. Babu and E.D. Feigelson
Chapman and Hall, New York, 1996, pages 216 + xii.

This fine book is the output of a collaboration between a statistician and an astronomer. It is aimed at professionals and graduate students in astronomy and statistics.

Chapters 1-5 provide overviews of each topic. Chapters 6-10 are organized by statistical topics (spatial statistics, linear regressions, multivariate classification and analysis, time series analysis and, censoring and truncation). These chapters present examples of statistical problems and methods arising in recent research in astronomy. The final chapter reviews some of those controversial issues in astronomy which have a strong statistical component.

The book avoids complete mathematical presentations of statistical methods. Instead, the emphasis is on providing the astronomer an intuitive feel of the origin and function of these methods. Similarly, no complete astrophysical interpretations of data is aimed at. Thus, the treatment of some significant problems in astronomy and of the statistical methods which may be brought to bear upon these problems is brief. The authors' goal is to motivate the reader for further research and application of statistical methods with an eye towards attacking some of the controversial and unsolved problems in astronomy.

Just as in genetics, astronomy has no shortage of enormous data bases and it is a challenge to the statisticians to discover new methods and techniques to deal with such data with their peculiarities such as high dimensionality, censoring, missing observations, errors in variables etc. Reasonable discussions of some recent methodologies have been included. Pertinent information regarding programmes, software, sources of data etc. add greatly to the value of the book. Finally, the lengthy bibliography provided will certainly help those who are willing to venture into the recent and exciting world of, as the authors coin it, "astrostatistics".