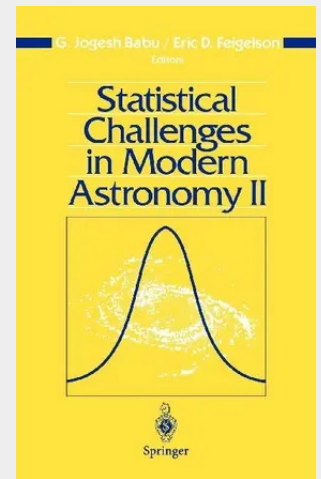


## Statistical Challenges in Modern Astronomy II

Modern astronomical research faces a vast range of statistical issues which have spawned a revival in methodological activity among astronomers. The Statistical Challenges in Modern Astronomy II conference, held in June 1996 at the Pennsylvania State University five years after the first conference, brought astronomers and statisticians together to discuss methodological issues of common interest. Time series analysis, image analysis, Bayesian methods, Poisson processes, nonlinear regression, maximum likelihood, multivariate classification, and wavelet and multiscale analyses were important themes. Astronomers frequently encounter troublesome situations such as heteroscedastic weighting of data, unevenly spaced time series, and selection effects leading to censoring and truncation. Many problems were introduced at the conference in the context of large-scale astronomical projects including LIGO, AXAF, XTE, Hipparcos, and digitized sky surveys. This volume will be of interest to researchers and advanced students in both fields—astronomers who seek exposure to recent developments in statistics, and statisticians interested in confronting new problems. It is edited by two faculty members of the Pennsylvania State University who have a long-standing cross-disciplinary collaboration and jointly authored the recent introductory monograph "Astrostatistics." G.J. Babu is Professor of Statistics, Fellow of the Institute of Mathematical Statistics, and Associate Editor of the Journal of Statistical Planning & Inference and the Journal of Nonparametric Statistics. Eric D. Feigelson is Professor of Astronomy and Astrophysics.

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