

PREFACE

This volume contains papers presented at the IAU Colloquium 165 organized jointly by the Astronomical Observatory in Poznań, Poland, and by the Observatoire de la Côte d'Azur in Grasse, France, and held in Poznań, from 1 to 5 July 1996. We are indebted to the members of the Scientific and Local Organizing Committees, whose membership is listed on page *iii*, and to SOC co-chairmen K. Kurzyńska of Poznań and F. Barlier of Grasse for their planning and guidance of the successful conference.

The present volume shows that fundamental astronomy is changing rapidly from year to year. Design, realization and elaboration of results of different space missions are due to a very close collaboration between dynamics and astrometry, where one discipline contributes to the progress of the other. We are approaching the era of catalogues of millions and millions of stars with microarcsecond precision in position. New reference frames of milliarcsecond accuracy are being built on the foundation of space- and Earth-based observations. CCDs became a standard technique in astrometry. Good quality observations of natural and artificial objects over very long periods of time enable us to provide ephemerides of asteroids or comets with an accuracy reaching even 10–20 km as well as an analysis of such small effects as temporal variations of oceans, atmosphere and solid Earth mass distribution. Numerical and analytical works on rotational motion permit one to understand the evolution and internal structure of bodies. Finally, the problem of space debris is now of great importance and is discussed.

This was the second conference organized by the two observatories. Support of the International Astronomical Union and the central geographical position of Poznań permitted about 200 participants from 27 countries to take part in the colloquium, and to present 179 papers. The limited number of pages of this volume did not permit us to publish all of the 104 poster papers. The SOC decided to publish 14 of the poster papers, including them in this volume. The colloquium was accompanied by the Second US–Russian Space Surveillance Workshop, whose proceedings are published separately.

Many people contributed to the success of the conference. First of all we would like to thank the presidents of IAU Divisions I, III and Commissions 4, 8, 16, 19, 20, 24, 31 as well as the IAU Working Group on Astronomical Standards – J. Kovalevsky, M. H. Hanner, H. Kinoshita, T. E. Corbin, M. Ya. Marov, J. Vondrák, D. K. Yeomans, C. Turon, H. F. Fliegel, and T. Fukushima – for the wide support in the application to obtain the IAU

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We are grateful to the IAU Executive Committee for the recognition of rapid progress in the field of fundamental astronomy which led to the decision of sponsoring our conference.

We thank all participants for the production and presentation of so many interesting works. Special thanks to the invited speakers – J.-E. Arlot, F. Barlier, S. Breiter, V. A. Brumberg, J. Chapront, S. Coffey, T. E. Corbin, S. Débarbat, A. Elipe, S. Ferraz-Mello, T. Fukushima, A. W. Harris, F. Hoots, B. Kaufman, S. Klioner, J. Kovalevsky, J. H. Lieske, L. Lindgren, F. Mignard, A. Morbidelli, K. Muinonen, X X Newhall, S. J. Ostro, M. Pätzold, A. Rossi, B. E. Schutz, P. K. Seidelmann, M. Soffel, D. Vokhroulický, J. Vondrák, E. Wnuk, and D. K. Yeomans – for the review papers enabling a broad community to be informed about closely related fields.

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Editors



Participants in the IAU Colloquium 165