MODERN CELESTIAL MECHANICS:
FROM THEORY TO APPLICATIONS

Modern Celestial Mechanics: From Theory to Applications

*Proceedings of the Third Meeting on Celestial Mechanics – CELMEC III,
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Participants of the CELMEC III Conference

PREFACE

At the opening of the “Third Meeting on Celestial Mechanics – CELMEC III”, strong sensations hit our minds. The conference (18–22 June 2001) was being held in Villa Mondragone, a beautiful complex of buildings and gardens located within the township of Monte Porzio Catone, on the hills surrounding Rome. A former papal residence, the building has been recently restored by the University of Rome “Tor Vergata” to host academic activities and events. The conference room is called “Salone degli Svizzeri”: here, Gregory XIII, on February 24, 1582, gave its sanction to the reform of the Julian calendar and declared officially in use the calendar still adopted nowadays. The magnificent high walls and tall ceiling strongly resounded, giving to our voice a peculiar Vatican sound, which took us by surprise. May be – we thought – a distant echo of the very words of Gregory XIII proclaiming the modern calendar was still haunting the room.

Around us, in the audience, many countries were represented, thus indicating that the idea of putting together the three “souls” of modern Celestial Mechanics – perturbation theories, solar and stellar system studies, spaceflight dynamics – had been successful. CELMEC III is in fact the latest of a series of meetings (the first two editions took place in 1993 and 1997 in L’Aquila, Italy) whose aim is to establish a common ground among people working in Celestial Mechanics, yet belonging to different institutions such as universities, astronomical observatories, research institutes, space agencies and industries.

The meeting has been dedicated to Paolo Farinella and, in the opening lecture, a passionate portrait of him was given by Andrea Milani. To those who had the chance of knowing Paolo as a friend and as a colleague, it still hurts that he had to leave our planet so soon. Yet, his human qualities and the incredible amount of good science he was able to carry out in his lifetime clearly appeared, making us feel lucky that Paolo has been living on our planet.

Finally, we note an amusing coincidence. The roman football team had just won the Italian championship and we felt that we could share the happiness and the joyful attitude of the people around us. After all, both celestial mechanics and football are dealing, basically, with the same problem: handling stiff trajectories in space.

The CELMEC III organizing committee composed by Alessandra Celletti (University of Rome “Tor Vergata”), Andrea Milani (University of Pisa), Ettore Perozzi (Telespazio, Rome) and Giovanni B. Valsecchi (Institute for Space Astrophysics and Cosmic Physics, CNR, Rome) wishes to thank all participants for their enthusiasm in keeping the discussion alive. Many institutions have supported the meeting. To the University of Rome “Tor Vergata” we acknowledge kind hospitality and funding. The township of Monte Porzio Catone provided an essential aid in solving many logistic problems and a widely appreciated visit to the local wine museum, while the Observatory of Rome at Monte Porzio Catone offered a

pleasant music concert. The Gruppo Nazionale per la Fisica Matematica (GNFM) and Telespazio had provided a continuing financial support, which dates back to the first CELMEC. The meeting was also sponsored by the Department of Mathematics of the University of Rome “Tor Vergata”, the University of Pisa, the CNR Institute for Space Astrophysics and Cosmic Physics, the European Space Agency (ESA) and the Italian Space Agency (ASI). All of them have also greatly helped us in keeping the meeting open to the new generations of scientists by means of grants to your participants. The publication of this book has been made possible thanks to the support of the Office of the Italian National Research Council (CNR) President.

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