

Preface

2005 was an auspicious year: not only was it an International Year of Physics commemorating the centennial of Einstein's great achievements of 1905---it also was an anniversary of Einstein's development of his gravity theory, General Relativity, and of Hilbert's discovery of the general-coordinate-invariant action for gravity at the same time. The final form of the field equations for this theory, Einstein's greatest achievement, was submitted to the Prussian Academy of Sciences on 25 November, 1915. By the way, this year was also the jubilee of Utiyama's 1955 paper, which followed Yang-Mills' work and proposed the gauge-invariant interpretation of all interactions, a work which paved the way for far-reaching research on gauge theories of gravity and quantum gravity.

On the 90 anniversary of the birth of general relativity, at National Central University (NCU), Jhongli, Taiwan, 38 local participants were joined by 47 distinguished guests from Canada, China, France, Japan, Korea, Russia, and the USA to participate in the seventh in a series of International Conferences on Gravitation and Astrophysics (ICGA7). This series of conferences has been aimed especially to serve the growing needs of the workers in this research field in the Asia-Pacific region. Previous ones, with a growing number of local, regional and international participants, had been held in Seoul, Korea (1993), Hsinchu, Taiwan (1995), Tokyo, Japan (1997), Beijing, China (1999), Moscow, Russia (2001), and Seoul, Korea (2003).

Over 50 papers were presented at the ICGA7 conference. This volume includes almost all of these reports. We regret that due to circumstances beyond the control of the editors we were not able to include 7 reports (interested readers can get some idea of the missing presentations from works of these individuals which are available elsewhere). We do believe that the depth and breadth of the reports included here well reflect the quality of the conference and the development of this field in this Asia-Pacific region.

According to our standards and goals, as well as the feedback received from participants, the ICGA7 meeting turned out to be quite successful. Some factors which contributed to this included good support, nice weather and a good venue, along with the great effort and thoughtful attention to numerous details of the many local workers. NCU President Chuan Sheng Liu (a plasma physicist) came and spoke

about the development of research in physics in general and relativity in particular at NCU, in Taiwan and in the Asia-Pacific region. We were especially pleased that a good number of people (about 13) from mainland China managed to cross the Taiwan strait and attend the meeting. This signified a growing scientific communication and exchange across the Taiwan strait. The various funding agencies, the Taiwan National Science Council, Ministry of Education, and National Center for Theoretical Sciences, the Asia Pacific Center for Theoretical Physics (Korea), the National Central University and the University of Massachusetts Dartmouth Foundation were quite helpful and provided enough support. We note that the ICGA7 meeting happened towards the end of a year packed with meetings that had kept the science historians so busy that, regretfully, none were in the end able to make it to ICGA7.

We believe that this ICGA series of conferences fills a big need and serves an important purpose for the researchers in this field in this region, especially since most of the other gravity meetings are held very far away from this Asia-Pacific neighborhood, and therefore only a limited number of the researchers from here are able to attend. We believe that this series of meetings will continue and that ICGA7 will play its role in carrying on the interchange of scientific and cultural ideas between East and West.

August, 2006

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