6 Concluding Remarks

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This issue is a Special issue planned in order to bring together the content and results of research and development conducted by the Space-Time Standards Group, New Generation Network Research Center in accordance with the second medium-term plan. Preceding to this special issue, a special issue on Time and Frequency Standards was published in 2003 and another special issue on Achievements of Large Aperture Radio Telescopes at Kashima Space Research Center was published in 2001 in the area of space-time standards. Following these special issues, this issue includes papers which report the subsequent research and development achievements and reviews which arrange the circumstances surrounding the space-time standards field and basic concepts as a result of the efforts of the writings and references of the members of the group. In the introduction of this issue, the two phases of the current major revolutionary period are discussed. The first phase is the steady improvement of the Mutual Recognition Arrangement framework for Metrology standards and the second phase is the revolutionary development of measurement technology. From the viewpoint of this special issue, it should be possible to see the mutual connection and deep correlation of each initiative created in order to achieve the goal of establishing the world's highest level of accurate and stable space-time standards set by the Space-Time Standards Group and realize the ideal of enabling the use of such space-time standards using various methods in response to these two phases. This type of research and development connectivity produced through such constant goals is one of the major characteristics of the Space-Time Standards Group. Our leading-edge research and development is based on the maintenance and supply of Japan Standard Time for which the maximum reliability is required and, conversely, the quality and reliability of the base system is improved by the latest research and development conducted in an environment of international competition and cooperation. Although this type of mutual partnership has been an aspect that has been gradually cultivated throughout the history of research and development in the space-time field, it could be said that this is a result of the sharing of goals by members of one group formed in the space-time field by the second mid-term plan and the efforts by this group to maximize their achievements. This research institution performs unified research and development under the concepts of space-time standards and is extremely unique, even around the world. This is considered to be our strength, a driving force of previous research and development and an important component of determining future research and development policies. It is not sufficient for only one research institution to acquire leading technology to construct space-time standards. Higher standards developed through the cooperation of numerous research institutions, the verifi-

cation of equivalence through mutual comparisons and the accumulation of data through cooperation in high quality observations must be performed as well as promoting research in an internationally competitive environment. In this environment, we feel that the presence of our research group, which performs unified research and development on space-time standards, is rising every year. According to the third mid-term plan commencing from fiscal 2011, a research plan is being developed with the goal of making space-time standards more reliable and accurate, making important contributions to the new definition of a second and creating space-time standards in a unified manner. Along with these initiatives, we aim to raise the foundation of all technology through technological leadership and transfer as a major player in the Asia-Pacific Region and build partnerships with research institutions in other regions as a representative of ours. While promoting these initiatives, we hope that this special issue assists mutual understanding within the group and facilitates in communicating our goals to the outside community.

In addition, we wish to take this opportunity to sincerely thank all those who provided guidance and cooperation in this research and development and the many people who assisted us in promoting cooperative research.

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Space Geodesy, Radio Science