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Abstract

Applications of the Global Positioning System (GPS) to Earth Science are numerous. The International GPS Service (IGS), a federation of government agencies and universities, plays an increasingly critical role in support of GPS-related research and engineering activities. Contributions from the IGS Governing Board and Central Bureau, analysis and data centers, station operators, and others constitute the 2001 / 2002 Technical Reports. Hard copies of each volume can be obtained by contacting the IGS Central Bureau at the Jet Propulsion Laboratory. This report is published in black and white. To view graphs or plots that use color to represent data trends or information, please refer to the online PDF version at http://igscb.jpl.nasa.gov/overview/pubs.html.

Preface

It is a somewhat humbling experience to be a user of IGS products. A moment's consideration reveals the huge global enterprise that goes into constructing a product such as the IGS precise ephemeris, so critical to achieving high-precision scientific results with GPS. These results are now considered routine, but were difficult or impossible to achieve 10 or 15 years ago. The main difference is IGS.

While the reader of a typical scientific article employing GPS data may be unaware of IGS' contribution, the author of that article is (or should be) fully aware of the key role played by IGS in the generation of his or her scientific results. In most scientific research articles, space does not permit the proper acknowledgment of the full scope of those contributions. My guess is that, on average, a minimum of several hundred people around the world who are affiliated with IGS have made key (but largely unsung) contributions to the work described in a typical geophysical research paper, including station installation and maintenance; maintaining Internet connections; archiving activities, data analysis at several facilities for production of satellite ephemerides, satellite clocks, and other products; improvement of geophysical models; development of new algorithms and software for data analysis; and comparison and validation of results. Without all these contributions by members of IGS, we simply could not do modern geodetic research.

Members of IGS have a shared global vision. They realize that by pooling data and ideas, the sum is much greater than the parts. IGS serves as a model of unselfish global cooperation, exploiting the Internet to bypass political and institutional boundaries, pumping vast amounts of data around the world in record time, and generating something important with it, to amazingly high technical standards. The goal of all this activity is to generate data products of unprecedented accuracy that facilitate a wide range of scientific and environmental applications. As we survey the state of the world in 2004, with its host of problems, the answer to at least a few of them seems obvious: act more like IGS.

IGS is a remarkable organization, and its members can be justly proud of their accomplishments on this 10th anniversary of its founding.

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