

Preface

In 1998, the chairman of Working Group V-8 of the International Association of Geomagnetism and Aeronomy (IAGA) issued a call for candidate models for the purpose of updating the International Geomagnetic Reference Field (IGRF). The intention was to finalise this revision of the IGRF at the General Assembly of the International Union of Geodesy and Geophysics (IUGG) in Birmingham in July 1999 and this would have accommodated concerns of users of software incorporating the IGRF who required the new model to be available in advance of 1st January 2000 when the so-called “millennium bug” was expected to affect systems. However, the Danish satellite Ørsted was launched in February 1999, and data from this important mission were becoming available for modelling after the deadline for submission of candidate models. Inevitably these considerations conflicted with each other, as scientifically it was desirable to wait for Ørsted data to be available to produce a better model, but the looming “Year 2000” deadline was a very real one for the user community. This difficult problem was resolved at the IUGG meeting by the creation of a task force under the leadership of Frank Lowes, with the remit to produce an IGRF main-field model for 2000.0 by the end of November 1999. This was the first time that the adoption of an IGRF was not made at an assembly of IAGA or IUGG.

In addition to publication of the adopted model, the papers presented in this issue trace the whole adoption process, including the preparation of the original candidate models not using Ørsted data, their evaluation, the work of the task force, and the preparation of the Ørsted model, together with related papers. It is evident from the work presented here how desirable it is to have satellite data for modelling the main field, but also how important magnetic observatory data are for modelling the secular variation.

As has been done in previous updates of the IGRF, we draw attention to the extraordinary international cooperation which allows this model to be produced. Of course the highlight of this current update is the Danish satellite Ørsted, and we salute the Danish team for their willingness to share their data with the international community. However we must not forget that equally important are the organisations running magnetic observatories around the world, sometimes in very difficult conditions, for whom we hope that the regular publication of updates of the IGRF demonstrates a practical and tangible result of their work over the years. We wish to thank these organisations, and individuals too numerous to mention, for supplying their data. We also thank the individuals who produced candidate models and who participated in their evaluation, and whose work is found in this issue. One important aspect of maintaining the quality of the IGRF is the process of refereeing the submitted manuscripts, a job which is often taken for granted. We wish to explicitly acknowledge the important contribution made by the following referees: D. R. Barraclough (who also performed the duty of guest editor for one paper), C. Barton, J. Cain, C. Constable, A. De Santis, V. Golovkov, P. Hejda, R. Holme, G. Hulot, A. Jackson, P. Kotzé, J.-L. Le Mouél, S. R. C. Malin, S. McLean, T. Moretto, N. Olsen, V. Papitashvili, M. Purucker, J. Quinn, C. Reeves, M. Torta, S. Zatman, W. Webers and six other anonymous referees. Finally we thank Terra Scientific Publishing Company for once again allowing the presentation of this international effort in Earth, Planets and Space.

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