

A NOTE ON THE ORIGIN, OBJECTIVES AND PROGRAMME OF PROJECT MERIT

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the Earth

Project MERIT is a special programme of international collaboration to Monitor Earth-Rotation and Intercompare the Techniques of observation and analysis. It was conceived in 1978 at IAU Symposium No 82 on Time and the Earth's Rotation and a draft proposal was prepared by a working group set up by the Presidents of IAU Commissions 19 and 31. The proposal was endorsed at the IAU General Assembly at Montreal in 1979 August and at the IUGG General Assembly at Canberra in 1979 December, when the organisation and membership of the Working Group were modified accordingly. The Group is affiliated to the Commission on the International Coordination of Space Techniques for Geodesy and Geodynamics (CSTG), which is sponsored by the International Association of Geodesy (IAG) and by COSPAR. Project MERIT has received the support of the International Council of Scientific Unions and of many national organisations and observatories throughout the world.

Project MERIT has three principal objectives: (1) To foster the development of new techniques for the measurement of the variations in the rate and axis of rotation of the Earth. These variations give rise to non-uniformities in the scale of universal time (UT) and to a quasi-cyclic revolution of the pole of rotation around the pole of figure of the Earth. (2) To obtain precise data on earth-rotation in order to improve our knowledge and understanding of the causes and effects of these variations in the rotation of the Earth. Analyses of earth-rotation data provide information about the properties of the interior of the Earth and about dynamical processes in the oceans and atmosphere as well as in the solid Earth. (3) To make recommendations on the observational basis and organisational arrangements for future international services in earth-rotation. These services are of great importance in navigation and surveying, and especially in geodesy and space navigation when the highest-possible precision is required.

The programme of activities includes special periods for intensive observation and opportunities for the participating scientists to meet to discuss the techniques of observation, data reduction and

analysis and to present the scientific results as they are obtained. There will be a short campaign of observations during 1980 August to October to test the techniques and the arrangements for international cooperation; for the new techniques of laser ranging and radio interferometry this will be the first time that any attempt has been made to obtain such results regularly and quickly. This short campaign will be reviewed at a MERIT Workshop to be held at Grasse on 1981 May 19-21; this will be followed by an IAU Colloquium at which recent scientific results in earth-rotation and Earth-Moon dynamics will be discussed. Meetings to plan the main campaign will be held during the IAG and IAU General Assemblies in 1982 and at other suitable opportunities. There will be a year-long period of regular observations by all techniques during 1983/84, followed by detailed analyses and by a careful assessment of the contributions that the different techniques should make to an improved international service for the provision of data on universal time and polar motion. These data provide the practical link between the terrestrial and celestial reference frames and so are of fundamental importance to both geodesy and astronomy.