

FOREWORD

This proposal is the confluence of three recent developments:

- A long series of discussions and meetings among members of the geosciences community who recognized the importance and power in seismic imaging of the Earth's interior;
- The demonstration using the present sparse digital data set that, in principal, the Earth can be imaged at all depths and at all scales;
- The technological advances in recording, processing, retrieval and dissemination of large quantities of digital seismic data, that now make it practical for a centrally managed system to serve the entire seismological community.

In recent years great advances have occurred in seismology. New instrumentation has been developed and prototypes deployed; new techniques of data analysis have been developed and tested. The potential of large digital seismic data sets to reveal images in the earth's interior in unprecedented detail has been clearly demonstrated. This proposal, for a major new initiative in the Earth sciences, is the scientific community's grass roots response to these discoveries.

More than 60 scientists from over 40 universities and government agencies have been involved in preparing this proposal. In addition, various committees and reports of the National Academy of Sciences/National Research Council have contributed indirectly and directly to the scientific themes and implementation strategies proposed herein. While these committees accurately reviewed the state of the science and its potentials, they could not have foreseen the great excitement engendered and the rapid coalescence of the seismological community.

IRIS, the Incorporated Research Institutions for Seismology, which submits this proposal is a newly formed (May 1984) consortium of universities and research institutions dedicated to the establishment of a major new "facility" for the Earth Sciences. After less than a year in existence, its membership, listed on the following page, includes some 40 U.S. Universities.

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