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E-Science for Geoscience: Preparing for the International Polar Year (2007-2008) with the "Electronic Geophysical Year" Initiative

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The International Geophysical Year (IGY, 1957-1958) was inspired by the realization that much better and more complete information was needed about the Earth and surrounding geospace on which human society becomes more and more dependent. The Electronic Geophysical Year (eGY, 2007-2008) is an initiative of the International Union of Geodesy and Geophysics to provide (in 21st century terms) a forward boost to the "e-Science for Geoscience" as did the IGY initiative fifty years ago. The eGY activities range from digitization of old analogue records to establishment of a system of Virtual Observatories now being "deployed" in cyberspace and embracing all available and upcoming geophysical data (e.g., atmospheric, geomagnetic, geophysics, glaciology, ocean and climate, etc). This concept implies free access to all available geosciences data through the World Wide Web, establishing a worldwide "data fabric". At the same time, the existing World Data Centers would become a part of that distributed worldwide data source, dipping into the "data fabric" and extracting newly available data for the permanent archives. The data providers (or the Data Centers) may digitally "sign" produced (or archived) data sets, so the data users would know the quality of data spread through the worldwide data fabric. Thus, by exploiting the power of modern communications and information management capabilities, eGY aims to accomplish "e-Science for Geoscience" - namely ready, open access by the world community to vastly better and more comprehensive information about the Earth and geospace. Theme areas are: (a) electronic data access, (b) data discovery,

(c) data release, and (d) data preservation, linked to programs of capacity building and outreach. Promoting the development of Virtual Observatories is a central feature of eGY - similar themes can be identified in the "data and information" objectives of the International Polar Year (IPY, 2007-2008), International Heliophysical Year, International Year of Planet Earth, as well as of other relevant international activities. Therefore, the eGY concept provides a common thread to these international activities through the e-Geoscience data and information management. Additional resources: http//:www.egy.org.