

# Parallel Efforts

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## 1. Canadian Geochronology Knowledgebase

Canadian Geochronology Knowledgebase ([ntserv.gis.nrcan.gc.ca/cgd/geochron/information\\_e.html](http://ntserv.gis.nrcan.gc.ca/cgd/geochron/information_e.html)) is a compilation of publicly available geochronological information for Canada accessible and searchable online through the Canadian Geological Survey. We are planning to federate the database with CHRONOS in 2006.

## 2. Carnets de Geologie/Notebooks on Geology

Carnets de Geologie/Notebooks on Geology (<http://paleopolis.rediris.es/cg/uk-index.html>) is a multi-lingual electronic journal for stratigraphy, sedimentology, and paleontology.

## 3. CoreWall

CoreWall (<http://www.evl.uic.edu/cavern/corewall/>) is an integrated visualization tool for the study of lake and ocean sediment cores. It is a collaborative project among the University of Illinois at Chicago's Electronic Visualization Laboratory (EVL), U.S. National Lacustrine Core Repository (LacCore) at the University of Minnesota, and the Integrated Ocean Drilling Program (IODP) through Joint Oceanographic Institutions. Chronos is collaborating with the CoreWall group to combine this visualization environment with the database network of CHRONOS and implement it initially as part of the ANDRILL project.

## 4. CSIRO Australia XMML project

CSIRO Australia XMML project ([xmml.arrc.csiro.au](http://xmml.arrc.csiro.au)): XMML, the eXploration and Mining Markup Language, is an XML-based encoding for geoscience and exploration information. It is intended to support exchange of exploration information in a wide variety of contexts. It includes code for the geologic time scale that Chronos is using to render the 2004 GTS.

## 5. DateView

DateView (<http://www.usask.ca/geology/isotope>) is an international geochronology database with an online version currently under development. Bruce Eglinton, DateView.s developer and compiler, has been working with Chronos and the Canadian Geological Survey to develop U/Pb and Ar/Ar databases.

## 6. Digital Library for Earth System Education

Digital Library for Earth System Education (DLESE, [www.dlese.org](http://www.dlese.org), part of the National

Science Digital Library) is a distributed community effort involving educators, students, and scientists working together to improve the quality, quantity, and efficiency of teaching and learning about the Earth system at all levels. DLESE resources include electronic materials for both teachers and learners, such as lesson plans, maps, images, data sets, visualizations, assessment activities, curriculum, and online courses. DLESE is one of the vehicles used by Chronos for dissemination of educational activities.

## 7. EarthChem

EarthChem ([www.earth-chem.org](http://www.earth-chem.org)) is a collaboration of three databases - GEOROC ([georoc.mpch-mainz.gwdg.de/georoc/](http://georoc.mpch-mainz.gwdg.de/georoc/)), NAVDAT ([navdat.geo.ku.edu/](http://navdat.geo.ku.edu/)), and PetDB ([www.petdb.org](http://www.petdb.org)) - that share the same basic schema and jointly provide a network of data management for geochemical analyses of igneous rocks and minerals.

## 8. EarthRef

EarthRef - MagIC ([www.earthref.org](http://www.earthref.org)): Earth Reference Data and Models is the IT arm of the Geochemical Earth Reference Model Initiative, based out of Scripps Institution of Oceanography, UCSD. MagIC is a project to develop a database for paleomagnetic data.

## 9. GEON

GEON ([www.geongrid.org](http://www.geongrid.org)): the Geoscience Network project has deployed a distributed system consisting of "nodes" that host datasets and/or tools and applications programs, called the GEONgrid. The development of this prototype is guided by science problems being addressed in the Rocky Mountains and the Mid-Atlantic coast science test beds. The IT development of GEON takes place at the San Diego Supercomputer Center. Chronos is one of the nodes on the GEONgrid.

## 10. Geowhen

Geowhen ([www.stratigraphy.org/geowhen/](http://www.stratigraphy.org/geowhen/)) is a project aimed to reconcile the international stratigraphic standards with many of the regional and local naming schemes that appear in the literature. It provides an attempt to convert between various time scales. Robert Rohde is working with ICS to test the conversions that will eventually be available through web services developed by Chronos.

## 11. iGeoInfo

iGeoInfo ([www.igeoinfo.org](http://www.igeoinfo.org)): the International Coalition for Geoinformatics was started at a

workshop held in conjunction with the 32nd IGC and is a forum dedicated to building a community that would promote data sharing concepts, and geoinformatics in general, for sedimentary geology and paleobiology at an international level. Chronos started this initiative together with colleagues in Germany, France, and the UK (Klump et al., 2005).

## 12. National Geophysical Data Center - NOAA

National Geophysical Data Center - NOAA ([www.ngdc.noaa.gov](http://www.ngdc.noaa.gov)): NGDC is one of the largest repositories of data and contains also data relevant to CHRONOS.

## 13. Neogene Marine Biota of Tropical America (NMITA)

Neogene Marine Biota of Tropical America (NMITA) ([porites.geology.uiowa.edu](http://porites.geology.uiowa.edu)) is an online biotic database of images and data for taxa used in analysis of Tropical American biodiversity over the past 25 million years. During 2006, Chronos will work with NMITA workers (Nancy Budd and colleagues) to upgrade the output functions and network the database with Chronos.

## 14. New Zealand Institute of Geological and Nuclear Science Ltd.

New Zealand Institute of Geological and Nuclear Science Ltd. ([www.gns.cri.nz/store/databases/indexb.html](http://www.gns.cri.nz/store/databases/indexb.html)) holds 19 major databases, files, and collections of scientific and commercial importance. They are national in scope and are continuously updated. Information in these databases is used for scientific research and for planning and management related to land use, the environment, earthquakes, volcanoes, geology, minerals, groundwater, the petroleum exploration industry, and the geothermal energy industry. Of particular interest for the Chronos community are the NZ stratigraphic lexicon, the NZ fossil record file, and the NZ paleontological collections and database that will be federated with Chronos in 2006.

## 15. ODP JANUS

ODP JANUS ([www-odp.tamu.edu/database/](http://www-odp.tamu.edu/database/)) is the Ocean Drilling Program's Oracle relational database, the latest federated addition to the Chronos network. The database contains 450 tables of ODP's marine geoscience data that are collected onboard the drill ship JOIDES Resolution. The database includes paleontological, lithostratigraphic, chemical, physical, sedimentological, and geophysical data for ocean sediments and hard rocks. JANUS has been used to collect data since Leg 171A (January 1997). During the first post cruise ("moratorium") year, access to proprietary ODP data is only given to scientists who participated on the cruise. Proprietary data are released to the public one year after the end of

each cruise. Non-proprietary data such as ODP and DSDP site information are available to everyone. Data collected prior to Leg 171A are being added to JANUS as time permits.

## 16. Paleobiology Database

Paleobiology Database ([www.paleodb.org](http://www.paleodb.org)): The purpose of the Paleobiology Database is to provide global, collection-based occurrence and taxonomic data for marine and terrestrial animals and plants of any geological age, as well as web-based software for statistical analysis of the data. Hosted at the National Center for Ecological Analysis and Synthesis (NCEAS), University of California at Santa Barbara, Paleobiology is federated to CHRONOS.

## 17. Paleoportal

Paleoportal ([paleoportal.org](http://paleoportal.org)) is an educational site maintained by the University of California Museum of Paleontology and is the result of collaboration between UCMP, the Paleontological Society, the Society of Vertebrate Paleontologists and USGS. It gives access to collection databases of several museums and records of fossil finds throughout the United States using the Tapestry of Time geological map of USGS. Paleoportal is one of Chronos.s education partners.

## 18. PaleoStrat

PaleoStrat ([www.paleostrat.org](http://www.paleostrat.org)) is a collaborative digital information system for sedimentary, paleontologic, and stratigraphic data designed to help phylogenetic, paleobiologic, sequence stratigraphic, chemostratigraphic, deep-time paleoclimatology, basic analysis, paleogeographic, and other studies that address a variety of questions about the evolution of the Earth's tectonostratigraphic systems.

## 19. Pangaea

Pangaea ([www.pangaea.de](http://www.pangaea.de)) is a German public data library for science aimed at archiving, publishing and distributing georeferenced data with special emphasis on environmental, marine and geological basic research. Pangaea shares Chronos.s vision for public data access.

## 20. Solid Earth Sample Registry

Solid Earth Sample Registry (SESAR, [www.geosamples.org](http://www.geosamples.org)) is a web-based digital registry for solid earth samples that will provide a way to uniquely name and identify samples on a global scale, along with the generation of barcodes for sample labeling. Chronos is

collaborating with the SESAR project to implement the registry in the database network.

## 21. Stratigraphy.net

Stratigraphy.net ([www.stratigraphy.net](http://www.stratigraphy.net)) is a German-based project to provide a stratigraphic database to the public. Since Snet.s goal converges with Chronos.s, we are partnering to develop an international network for stratigraphy.