REMOTE VIEWS AND EXPLORATION OF ANTARCTIC LITHOSPHERE (REVEAL): THE FUTURE OF ANTARCTIC AIRBORNE GEOPHYSICAL CAPABILITIES

Recommendation for a science plan involving NSF Antarctic Geology and Geophysics, Glaciology, Ocean and Climate, and Biology programs

The science targets (Fig. 5), general recommendations for tools required to address the key scientific issues, and more specific recommendations on desired access to one data type, airborne geophysical (Table 1), and a management structure (Fig. 8) form the starting points for a community based science plan. The overarching concepts for the science plan center on crustal evolution and lithospheric architecture of Antarctica as fundamental controls on tectonic evolution, paleoenvironments and landscape development and solid-earth processes as feedbacks and drivers for ice sheet dynamics and global environmental change. The next steps for generating a community based science plan include:

Summarizing recommendations from the REVEAL workshop for presentation at future science meetings in 02-03 such as WAIS (September, 2002); FASDRILL workshop (October, 2002); Geological Society of America meeting (October, 2002), American Geophysical Union meeting (December, 2002), and the Seismic Exploration of the Antarctic Plate workshop (March, 2003).

Refining and prioritizing science recommendations from REVEAL in this process.

Convening a small group to evaluate the cost-effectiveness of various models for airborne geophysical capabilities.

Designing drilling and seismic capacities for the science plan by future NSF OPP-funded workshops (WAIS, FASTDRILL and SEAP).

Convening a steering committee of workshop organizers (e.g. ACE, ANDRILL, ANTEC, FASTDRILL, REVEAL, Marine Infrastructure, SEAP) and other selected members to write the strategic science plan with later community input. The science plan will include recommendations on scope, cost, time lines and management structure for a 10 year program.

Determine logistical impediments to wheeled long-range operations.