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ANTARCTIC CLIMATE EVOLUTION (ACE)

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Antarctic Climate Evolution (ACE) is a new international scientific research program of SCAR that promotes the exchange of data and ideas between research groups focussing on the evolution of Antarctica's climate system and ice sheet. The targeted outcomes of the program are: (1) quantitative assessment of the climatic and glacial history of Antarctica; (2) identification of the processes which govern Antarctic climate change, and those which feed back on this change around the globe; (3) improvements in our technical ability to model past changes in Antarctica; and (4) precisely documented "case studies" of past climate events or excursions, against which models of future change in Antarctica can be tested. ACE efforts are currently focussed on a series of 6 key intervals ranging from the onset of continental glaciation at around the Eocene-Oligocene boundary 34 Ma ago, to the last glacial maximum (LGM) through to the establishment of the present ice sheet configuration.

ACE developed as the scientifically crafted successor to the SCAR ANTOSTRAT (ANTarctic Offshore STRATigraphy) project. ANTOSTRAT started in 1990 and officially came to an end in July 2002. The ACE program was designed via a series of well-attended international meetings held in 2002-2004. ACE was approved by SCAR as one of their 5 new scientific research programs in late 2004 and subsequently as an IPY activity in late 2005. Full details of the ACE programme can be found on its website, launched in January 2005 (www.ace.scar.org). Although it has only been running officially since the beginning of 2005, its two-year planning phase and its origins from a former SCAR program has allowed ACE to develop several advances in our understanding of Antarctic history. This presentation will briefly describe current ACE objectives and efforts, with a focus on proposed IPY activities. New results from data-model comparison research directed towards understanding the Cenozoic evolution of Antarctica's climate and its ice sheet will be highlighted.