

## IPY 2007/08 Lead/Cluster Project No. 77

### "Plate Tectonics and Polar Gateways in the Earth System" (PLATES & GATES)

The list includes all PLATES & GATES projects which were funded and carried out in the Antarctic field seasons 2006/7 to 2008/9 and Arctic field seasons 2007 to 2009.

Status: 16 June 2009

PROJECT TITLE	MAIN CONTACT	POLAR REGION	EXPEDITIONS (YEAR/SEASON: SHIP/LAND; REGION; METHODS)
The Arctic phosphogenic province (PHOSARCTIC)	Krzysztof Krajewski (Inst. Geol. Sci., Pol. Ac. Sci., Poland)	Arctic	2007, 2008: land expeditions; Svalbard; geological sampling, geochemistry
The dynamic continental margin between the mid-Atlantic ridge system and the Bear Island region	Johannes Schweitzer (NORSAR, Norway), Alexander Guterch (Inst. Geophysics, Pol. Ac. Sci., Poland), Marek Grad (Univ. Warsaw, Poland), Mechita Schmidt-Aursch (AWI, Germany)	Arctic	2007, 2008: RV Horizont II; western Barents Sea, Bear Is.; seismology, refraction seismics; 2008: RV Håkon Mosby; western Barents Sea, Bear Is., Mohs Ridge, Knipowich Ridge, Hopen, S. Spitsbergen; refraction seismics
Evolution of glacial Arctic continental margin (EGLACOM)	Michele Rebesco (OGS, Italy)	Arctic	2008: RV OGS-Explora; S. Svalbard margin; seismics, bathymetry, bottom-sampling
Tectonic evolution of West Arctic - North Atlantic (TEWANA)	Alexander Tebenkov (PMGRE, Russia)	Arctic	2007, 2008: land expeditions; Spitsbergen; geological sampling
Lomonosov Ridge off Greenland: a key to Arctic Ocean glacial history and tectonic evolution (LOMROG)	Martin Jakobsson (Univ. Stockholm, Sweden), Trine Dahl-Jensen & Christian Marcussen (GEUS, Denmark)	Arctic	2007: RV Oden; Lomonosov Ridge off Greenland; seismics, bathymetry, bottom sampling
Continuous seismic reflection buoys - a future direction for marine geophysical exploration of the Arctic Ocean	Yngve Kristoffersen (Univ. Bergen, Norway)	Arctic	2007, 2008: sea-ice expeditions; Yermak Plateau, Lomonosov Ridge; autonomous seismic data bouys
High school students - building scientific and polar curiosity through participation in Fram-V: a scientific field camp on drifting sea ice	Yngve Kristoffersen (Univ. Bergen, Norway)	Arctic	2008: sea-ice expedition; Yermak Plateau; seismics, bottom sampling, CTD
Tectonics of New Siberian Islands and adjacent East Arctic shelf: a key to a non-contradictory model of Amerasian Basin opening	Alexander Kuzmichev (Geol. Inst., RAS, Russia)	Arctic	2007, 2008: land expeditions; New Siberian Islands; geological sampling

Arctic tectonic evolution: Ellesmere Island	Victoria Pease (Univ. Stockholm, Sweden)	Arctic	2007, 2009: land expeditions; Ellesmere Is., central Canadian Arctic; geological sampling
Circum-Arctic structural events (CASE)	Karsten Piepjohn (BGR, Germany)	Arctic	2007, 2008: land expeditions; Svalbard, Ellesmere Is.; geological sampling/mapping
Processes of ultra-slow spreading Gakkel Ridge	Vera Schlindwein (AWI, Germany)	Arctic	2007, 2008: RV Oden, RV Polarstern; Gakkel Ridge, Lena Trough; seismology
The Mesozoic-Cenozoic climate history of the Alpha and Mendeleev Ridges, central Arctic Ocean (AMEX)	Wilfried Jokat & Rüdiger Stein (AWI, Germany)	Arctic	2008: RV Polarstern; central Arctic Ocean, E Siberian Sea; seismics, gravity, magnetics, sediment sampling
Crustal architecture and evolution of the conjugate volcanic margins and basins off Barents Sea and East Greenland	Wilfried Jokat (AWI, Germany)	Arctic	2009: RV Polarstern; NE Greenland margin; seismics, gravity, magnetics
Geodynamic evolution of Davis Strait and Baffin Bay, Northwest Atlantic, and their role as a paleoceanographic gateway (DAVIS GATE)	Karsten Gohl (AWI, Germany), Bernd Schreckenberger (BGR, Germany), Thomas Funck (GEUS, Denmark)	Arctic	2008: RV M.S. Merian; Davis Strait, S. Baffin Bay; seismics, gravity, magnetics
Deciphering the Eirik Drift, South Greenland, for reconstructing paleo-currents	Gabriele Uenzelmann-Neben (AWI, Germany)	Arctic	2009: RV M.S. Merian; Eirik Drift, S Greenland margin; seismics, sediment sampling
Neotectonics in the Southern Scotia arch (SCOTIANEOTEC)	Jerónimo López-Martínez (Univ. Autonoma Madrid, Spain)	Antarctica	2006/7, 2007/8: land expeditions; northern Antarctic Peninsula, S. Orkney Isl.; geological/geomorphological sampling & mapping
Nature and development of continental margins and initial stages of oceanic gateways opening in the NE Antarctic Peninsula	Andrés Maldonado & Jesus Galindo Zaldivar (Univ. Granada, Spain); Emanuele Lodolo (OGS, Italy); Luis Somoza (IGME, Madrid); Luiz Gamboa (Brazil); Anatoly Schreyder (RAS, Russia)	Antarctica	2006/7, 2007/8, 2008/9: RV Hesperides & land expedition; Scotia Sea, NW Weddell Sea, N. Antarctic Peninsula, S. Shetland Is.; seismics, magnetotellurics, bathymetry, sediment sampling, dredging, geol. sampling/mapping on land
Spatio-temporal distribution of orogenic and ocean circulation proxies that record opening of Drake Passage (SCOTIA)	David Barbeau (Univ. South Carolina, USA)	Antarctica	2008/9: land expedition; Antarctic Peninsula; geological sampling & mapping
Bathymetric surveying of Scotia Sea	Philip Leat (BAS, UK)	Antarctica	2006/7, 2008/9: RV J.C. Ross; central Scotia Sea; bathymetry
Scotia Sea gateway evolution	Ian Dalziel (Univ. Texas-Austin, USA)	Antarctica	2007/8: RV N.B. Palmer; central Scotia Sea; bathymetry, seismics, magnetics, gravity, dredging
Geodynamic evolution of the South Shetland Islands, West Antarctica	Alexander Guterch (Inst. of Geophysics, Pol. Ac. Sci., Poland); Marek Grad, (Warsaw Univ., Poland)	Antarctica	2006/7: MS Polar Pioneer; Admiralty Bay, King George Isl.; 3D-seismics

South Shetland Islands geological field workshop	Sergio Marensi (Inst. Ant. Argentino, Argentina)	Antarctica	2006/7: land expedition; South Shetland Isl; geological sampling
Paleomagnetism to study the tectonic behaviour of Patagonia during Gondwana breakup	Ruben Somoza & Haraldo Vizán (Univ. Buenos Aires/CONICET, Argentina)	Antarctica	2006/7: land expedition; Patagonia; geological sampling
Geological Connection between West Antarctica and Patagonia since the Late Paleozoic (GeoPaSAA)	Marcelo Leppe (INACH, Chile)	Antarctica	2006/7, 2007/8, 2008/9: RV DAP Mares, RV Oscar Viel & land expeditions; N. Antarctic Peninsula, Patagonia; bathymetry, geological sampling
Dispersal of Antarctica–Africa: the onset of Gondwana break-up (DIANA)	Arto Luttinen (Univ. Helsinki, Finland)	Antarctica	2007/8: land expedition; western Dronning Maud Land; geological/geochemical sampling & mapping
Geodynamic, depositional and environmental history of the region off the Amery Ice Shelf (Prydz Bay – Kerguelen Plateau Geotransect)	German Leitchenkov (VNIOkeangeologia, Russia)	Antarctica	2006/7, 2008/9: RV A. Karpinsky; Prydz Bay, Princess Elizabeth Trough, Davis Sea; seismics, gravity, magnetics
Geodynamic and tectonic evolution of the continental margin of the Prydz Bay area	Karsten Gohl (AWI, Germany); German Leitchenkov (VNIOkeangeologia, Russia)	Antarctica	2006/7: RV Polarstern; eastern Enderby Basin, Prydz Bay, Princess Elizabeth Trough; seismics, gravity, magnetics
Tectonics and sedimentation of Enderby Basin	Yoshifumi Nogi (NIPR, Japan)	Antarctica	2007/8: RV Hakuho-maru; Enderby Basin; bathymetry, magnetics, gravity, sediment sampling
Connection between Adare Basin and Ross Sea	Steve Cande (Scripps Inst. Ocean., USA); Fred Davey (GNS, New Zealand)	Antarctica	2006/7: RV N.B. Palmer; Adare Basin, Ross Sea; seismics, magnetics
Separation of New Zealand from West Antarctica	Christine Siddoway (Colorado College, USA)	Antarctica	2006/7: land expedition; Ford Ranges, Marie Byrd Land; geological sampling & mapping
Cenozoic Antarctic glaciation: an integrated atmosphere-ocean-ice sheet model approach	Gerrit Lohmann (AWI, Germany)	Antarctica	(modelling project)
Tectonic Map of the Earth's Polar Regions (TEMPORE)	Jean-Paul Cadet (CCGM, France); German Leitchenkov (VNIOkeangeologia, Russia)	bipolar	(mapping project)

Summary: Total projects: 32  
Total expeditions: 45 (26 land expeditions, 26 marine expeditions (8 combined land-sea))