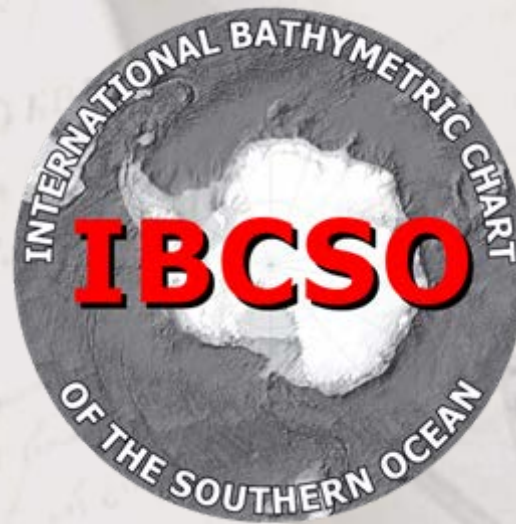


International Bathymetric Chart of the Southern Ocean **IBCSO**

- Report 2012-



Hans Werner Schenke

Alfred Wegener Institute for Polar and Marine Research

8/14/2013

Report to GEBCO-SCRUM



Technical Support



Intergovernmental Oceanographic Commission (IOC)



Scientific Committee on Antarctic Research (SCAR)



Hydrographic Committee on Antarctica (HCA) of IHO



General Bathymetric Chart of the Oceans (GEBCO)



Alfred Wegener Institute for Polar and Marine Research

Review

2007-2010 Design of IBCSO

Data collection → Database
Workshops and Reports

2011-2012 September 2011

Re-start IBCSO

GEBCO – AWI support

target: IBCSOv1 Sept. 2012 ready

grid: finished

Actions

May 2011

Arctic/Antarctic Mapping WS
Stockholm: GEBCO support
involve GEBCO alumni

Sept. 2011 Report to GEBCO-GC

- continuation approved

April 2012

WS Editorial Board @ AWI

grid, completed map specs

July 2012

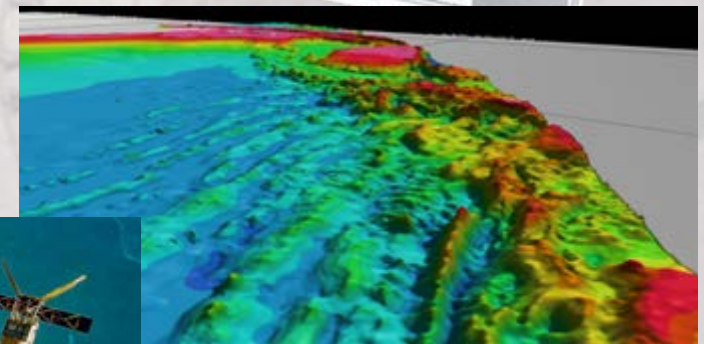
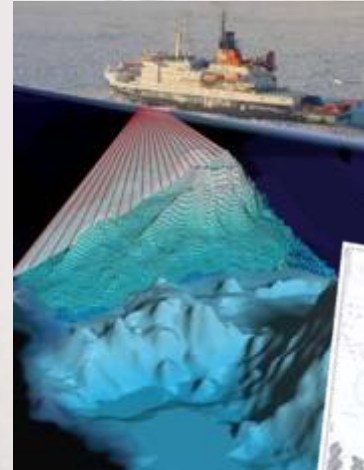
Report & paper to SCAR OSC

Data Originator and Provider

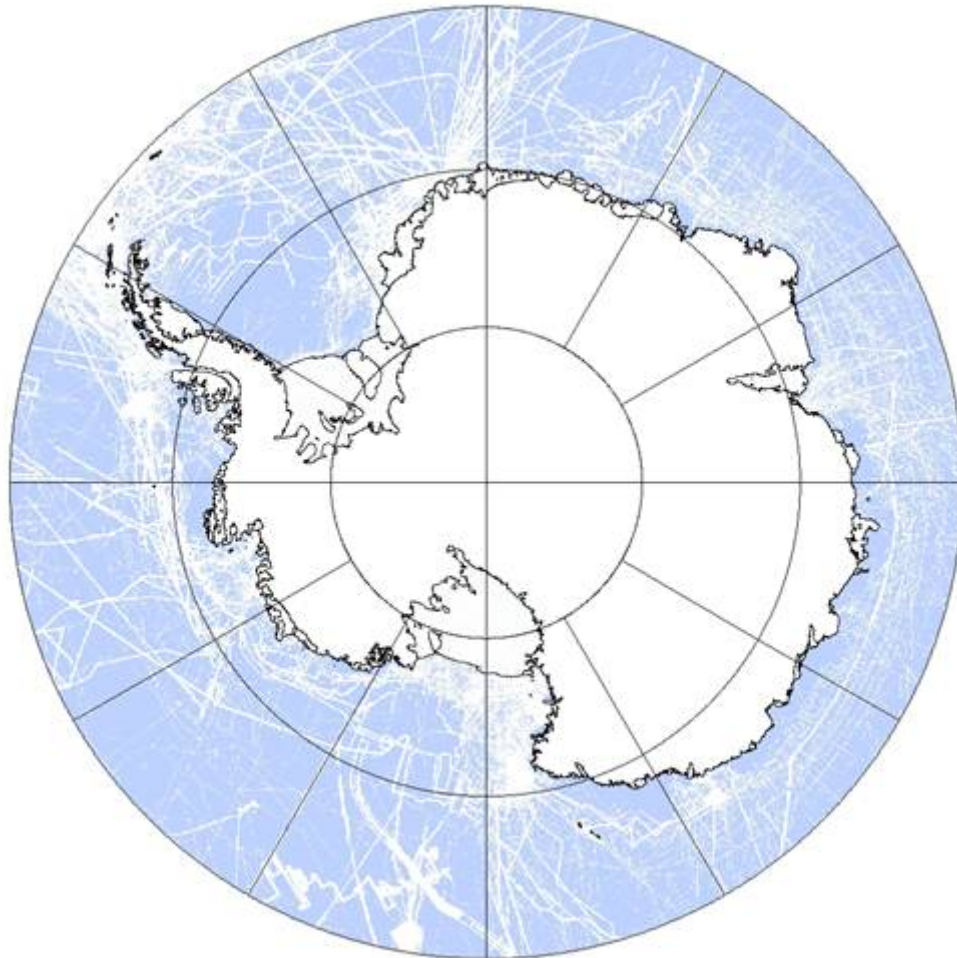
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Chile:	Servicio Hidrográfico y Oceanográfico
France:	Institut français de recherche pour l'exploitation de la mer: Louis Geli
Germany:	Alfred Wegener Institut
Italy:	Istituto di Scienze Marine: Zitellini, N. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale: Böhm, G.; Busetti, M.; Cova, A.; De Santis, L.; Tinivella, U., Marina Difesa Università degli Studi di Trieste: Della Vedova, B.
Japan:	National Institute of Polar Research
Korea:	Korean Polar Research Institute
New Zealand:	Institute of Geological and Nuclear Sciences,
Russia:	Vernadsky Institute of Geochemistry and Analytical Chemistry VNNIOkeangeologia
Spain:	Instituto Geológico y Minero de España Universidad de Granada: Galindo-Zaldivar, J.
South Africa:	South African Navy Hydrographic Office
Sweden:	Stockholm University
Ukraine:	Institute of Geological Sciences
United Kingdom:	British Antarctic Survey United Kingdom Hydrographic Office
United States of America:	Lamond-Doherty Earth Observatory National Geospatial-Intelligence Agency: von Rosenberg, J. W. National Oceanic and Atmospheric Administration National Science Foundation US Geological Survey Scripps Institution of Oceanography Woods Hole Oceanographic Institution

IBCSO Database

- Soundings
 - Multibeam
 - Singlebeam
- Nautical Charts
- Bathymetric Compilations
- Predicted bathymetry from satellite altimetry

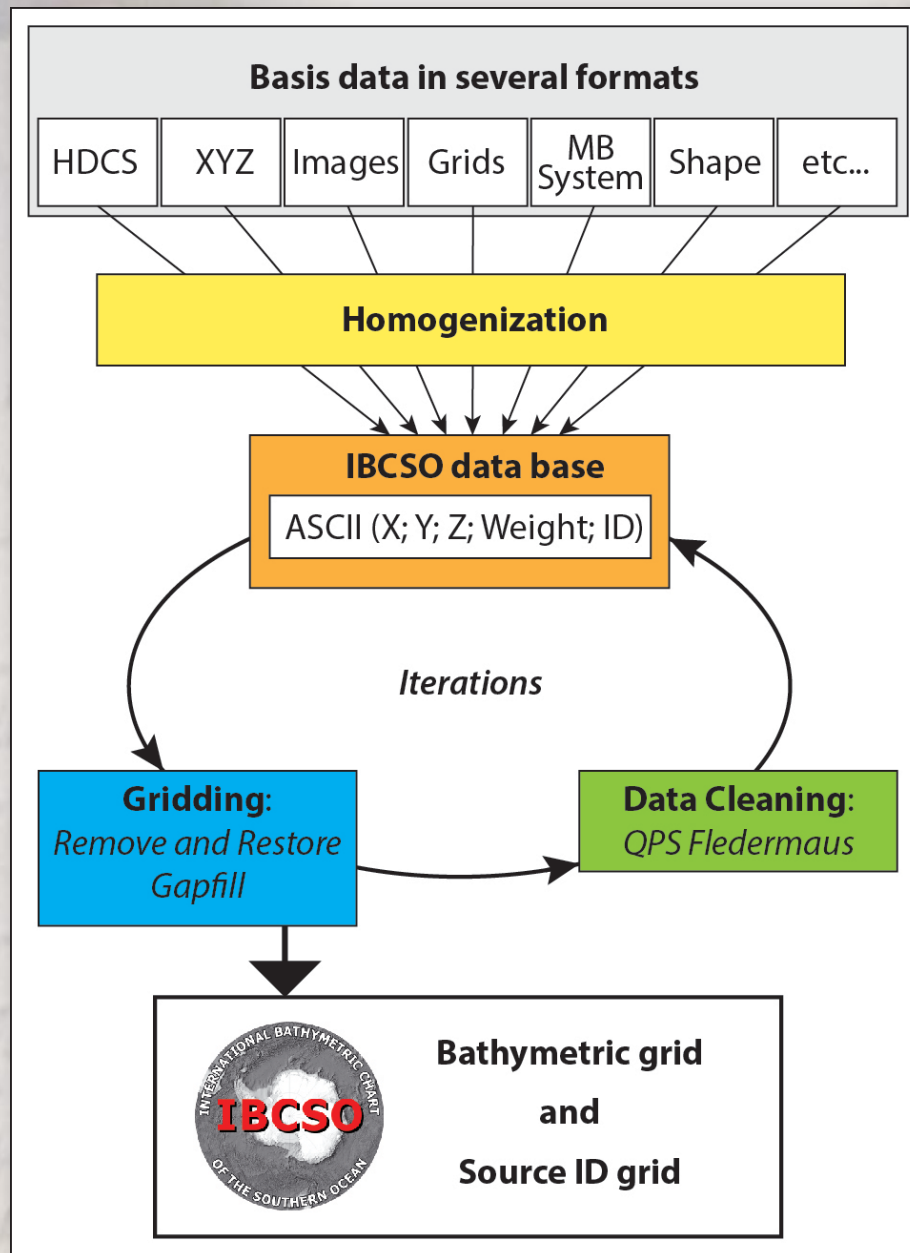


Sounding Data



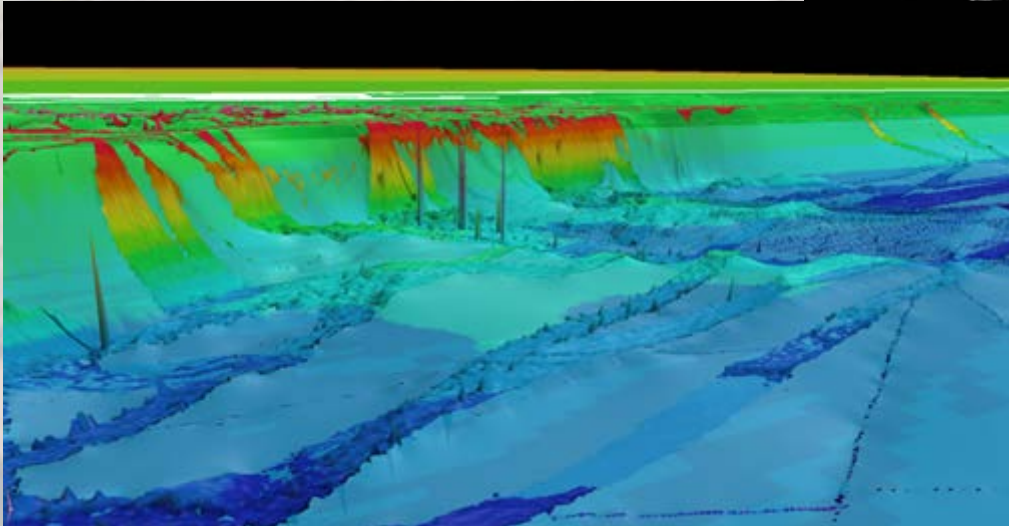
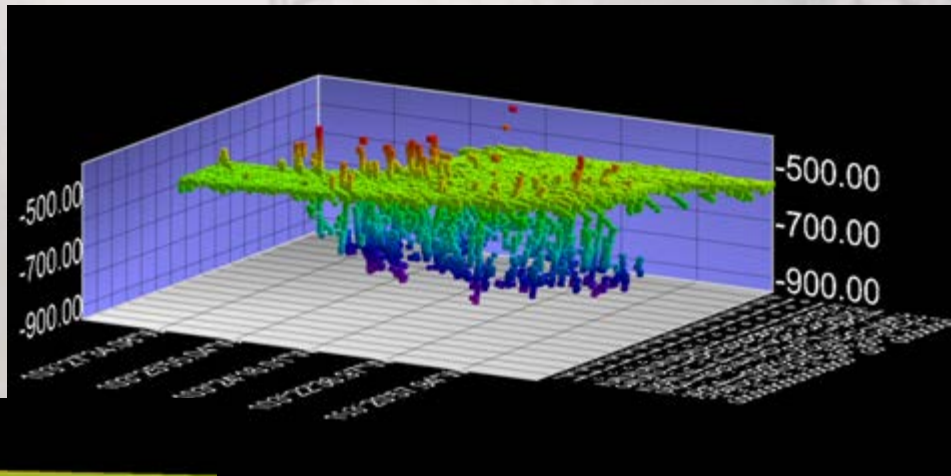
Current Dataset

Datasource	Points
Singlebeam	≈ 16.5 Million
Multibeam	≈ 3.8 Billion
Nautical Charts	≈ 17.000
Total	≈ 3.9 Billion



Data Cleaning

Visual Check of data and gridded results in QPS ,Fledermaus'



Elimination of Errors in ,3D Editor'

Gridding Algorithm

- 2000 m grid: Blockmedian filter
- 500 m grid: MB-data, nearest neighbor method
Remove and Restore technique*
- Gapfill-Method: Areas without MB-data filled with
 - bathymetry derived from satellite altimetry,
 - or other bathymetric compilations
- Gapfill-data adjusted to hi res parts
- Determination of a Source ID-grid

*Based on Jakobsson et al (IBCAO version 3.0, 2012)

Cartographic Specifications

Area covered: 60° to 90° S (Southern Ocean)

Projection: Polarstereographic
true scale @ 65° S

Scale: 1 : 7,000,000

sheet size: 1.00 m x 1.20 m

Map Content

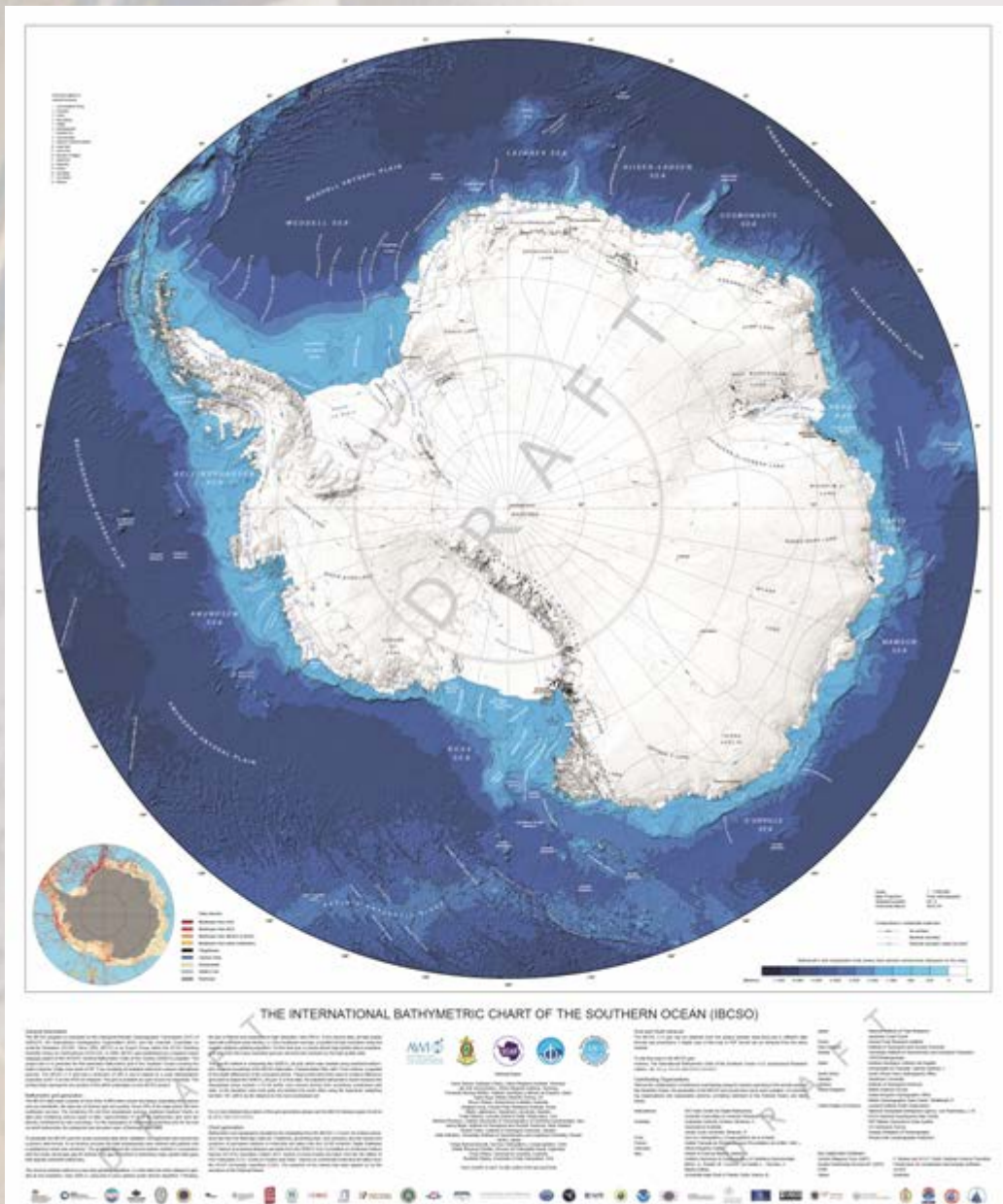
Bathymetry: grid 500 m x 500 m, shaded
1000 m contour lines

Topography: ADD-6

Nomenclature: GEBSCO/SCUFN Gazetteer
SCAR/CGA
IHO S-23

Bedrock Topo: BEDMAP 2

IBCSO (draft) Sept. 12



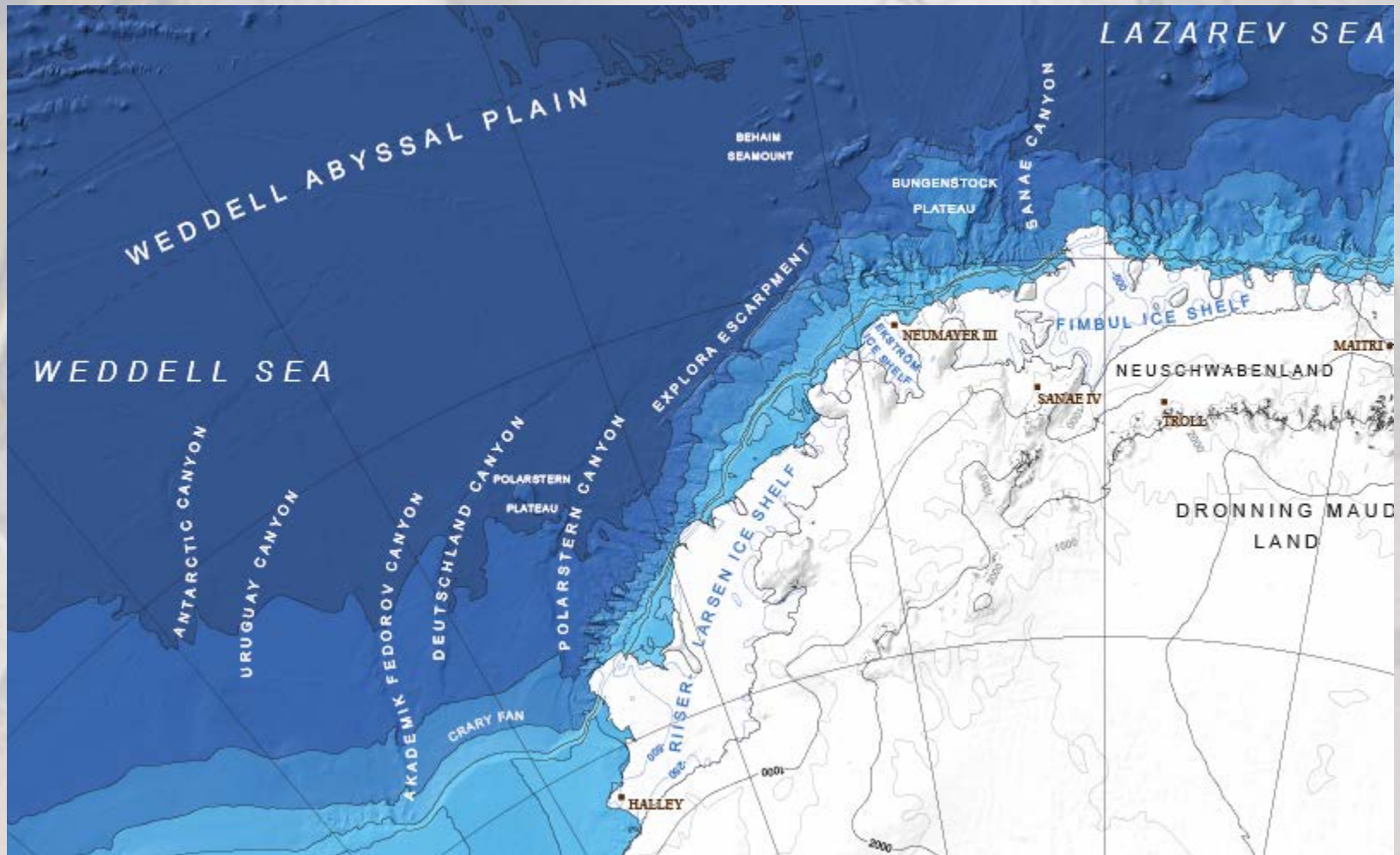


Editorial Board:

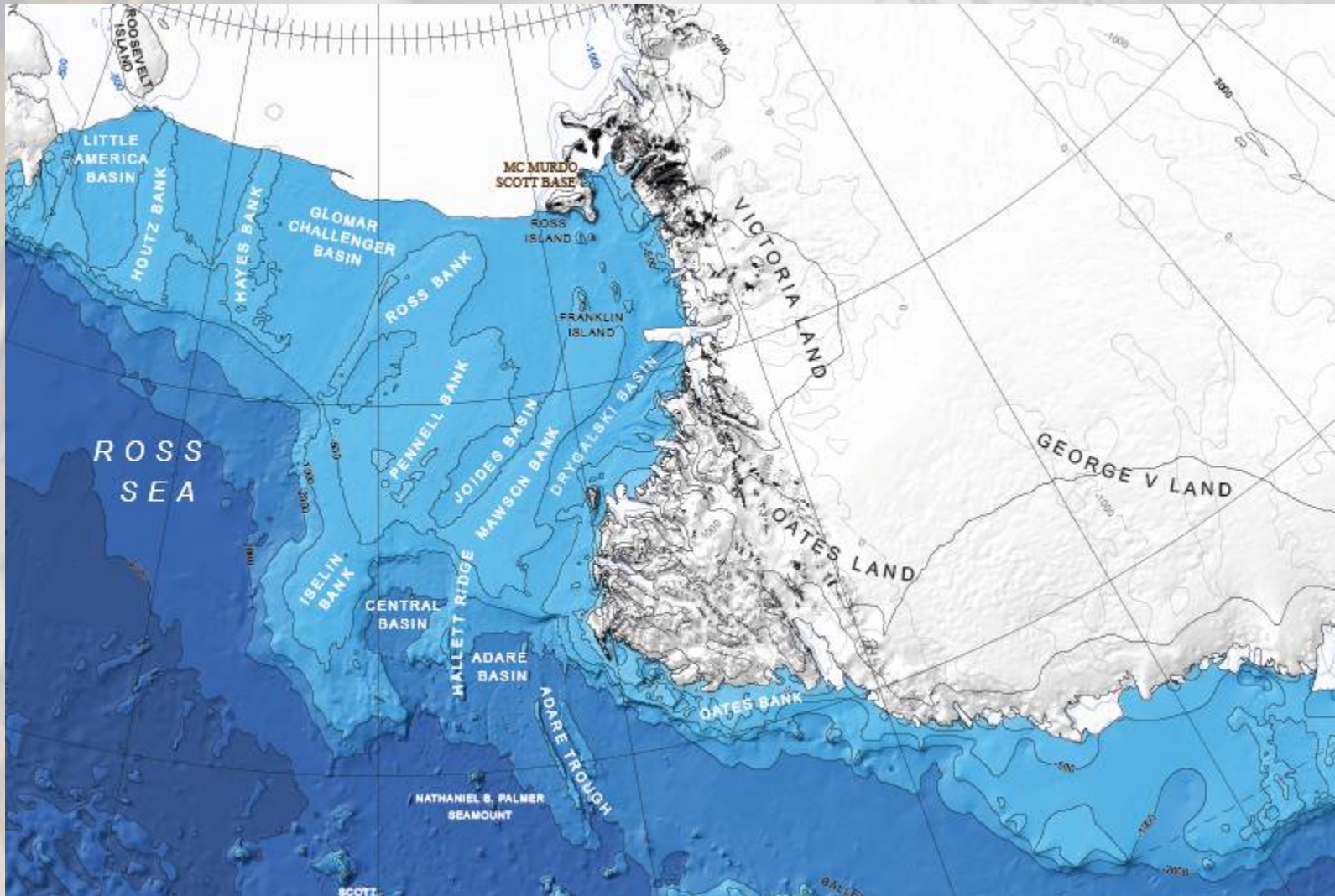
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Jan Erik Arndt (Editor), Alfred Wegener Institute, Germany
Fernando Bohoyo Muñoz, Instituto Geológico y Minero de España, Spain
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Walter Reynoso-Peralta, Servicio de Hidrografía Naval, Argentina
Olivia Wilson, Geoscience Australia, Australia
Rochelle Wigley, University of New Hampshire, USA

THIS CHART IS NOT TO BE USED FOR NAVIGATION

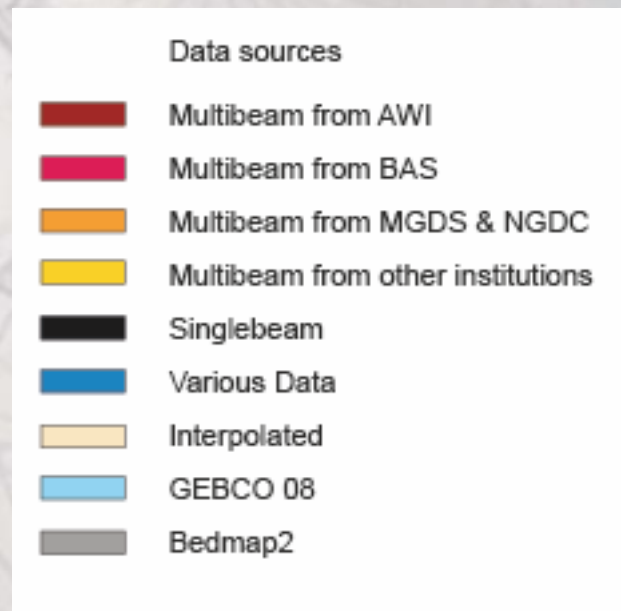
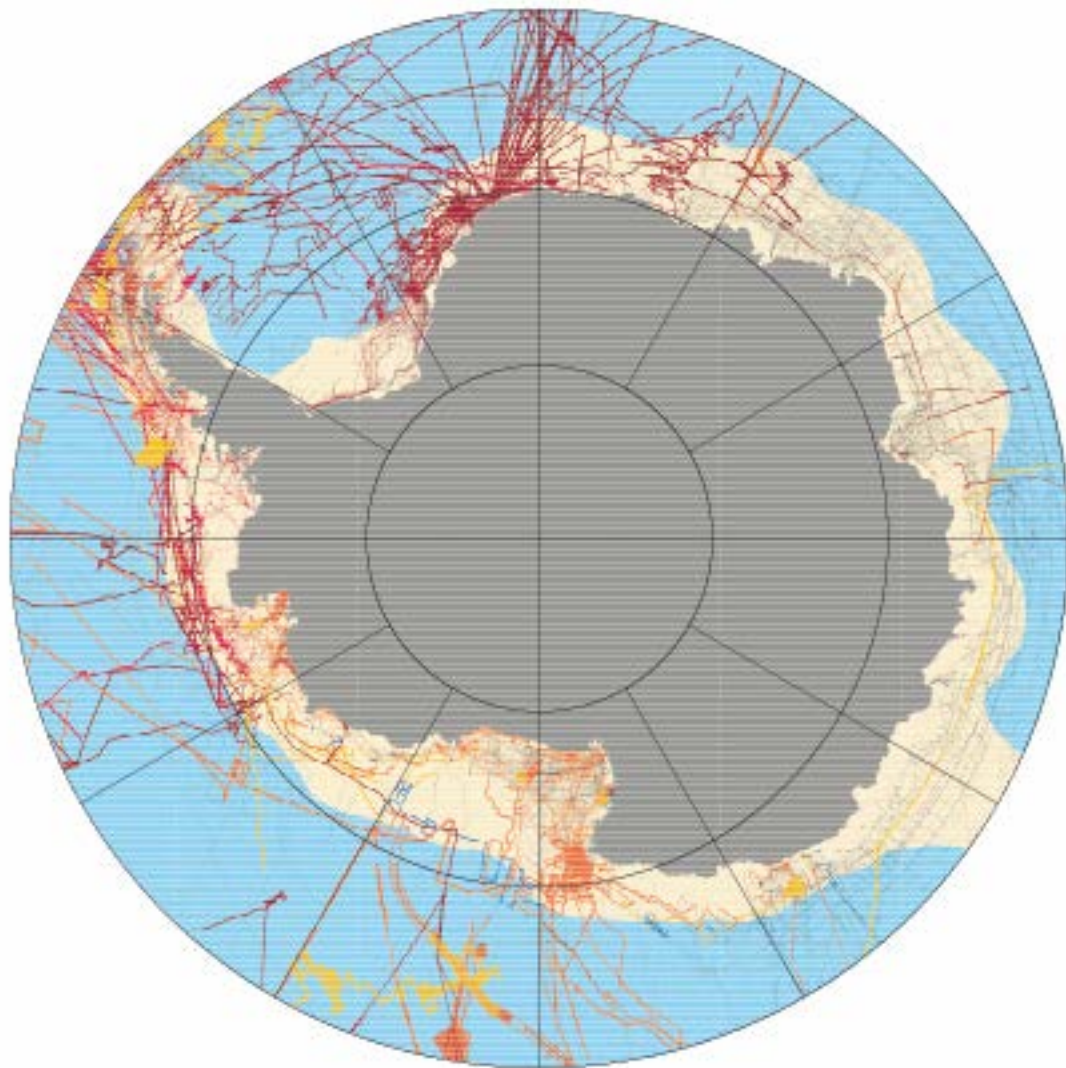
Eastern Weddell Sea



Ross Sea



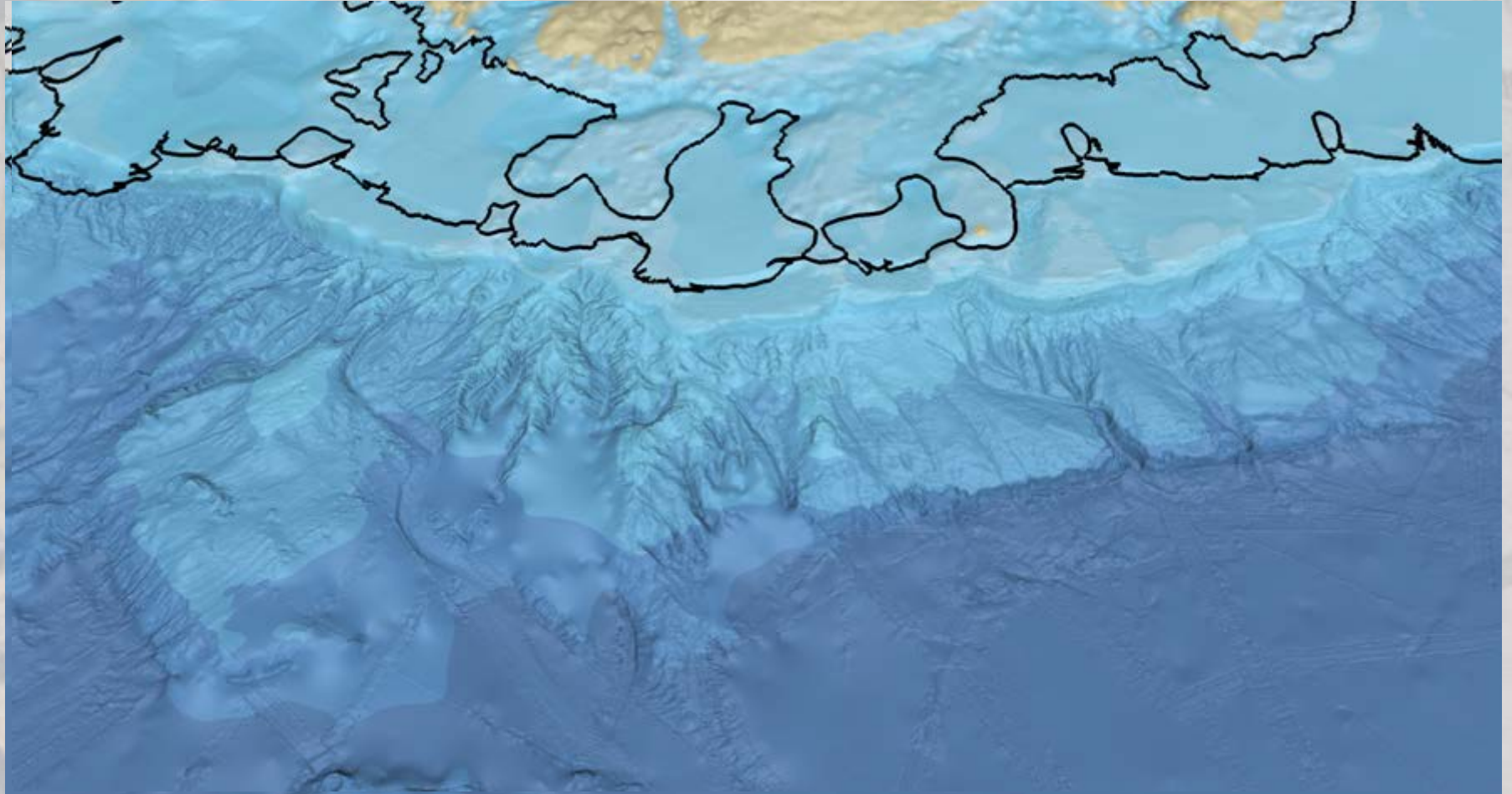
Data Sources



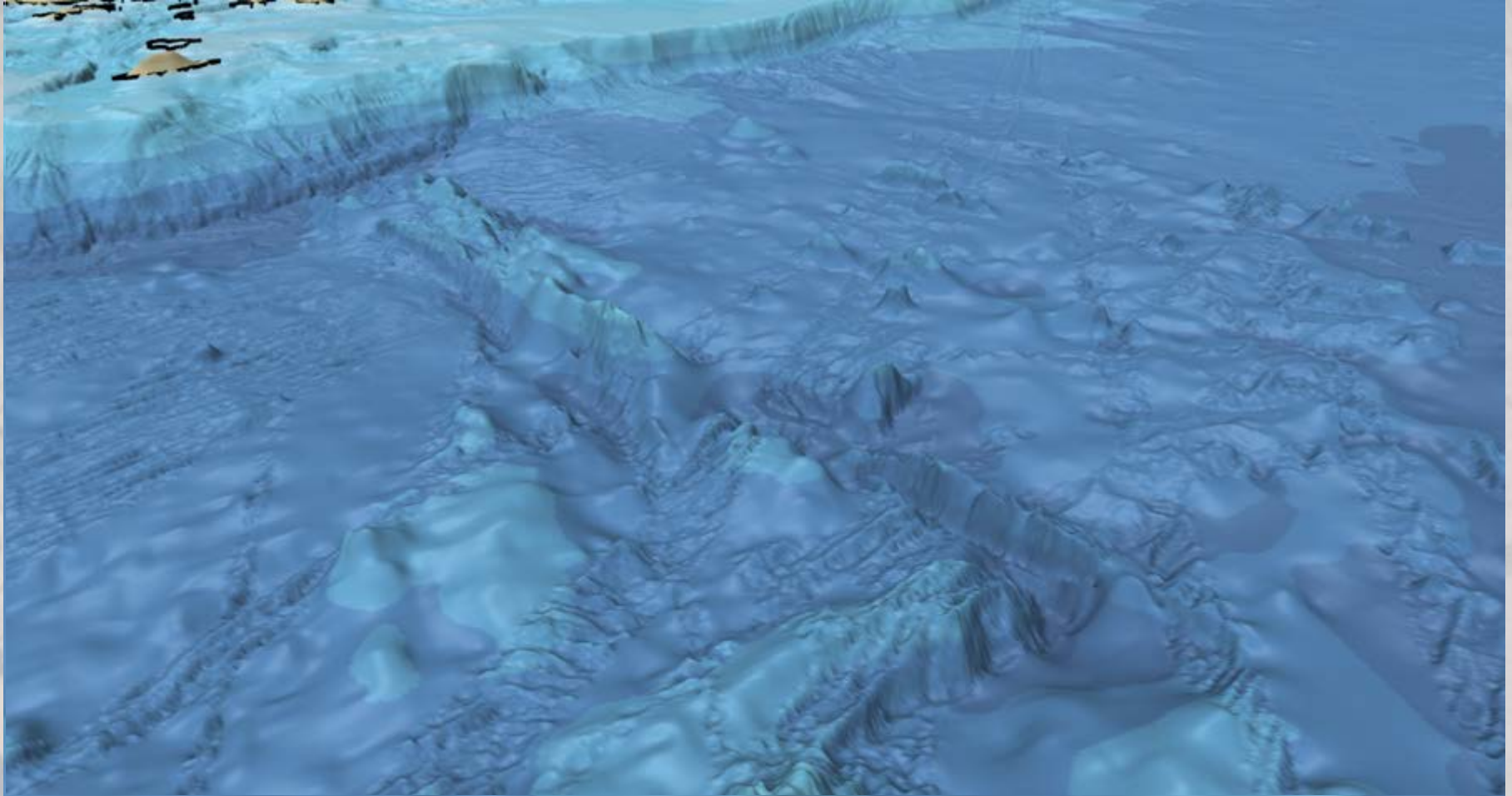


Comparison

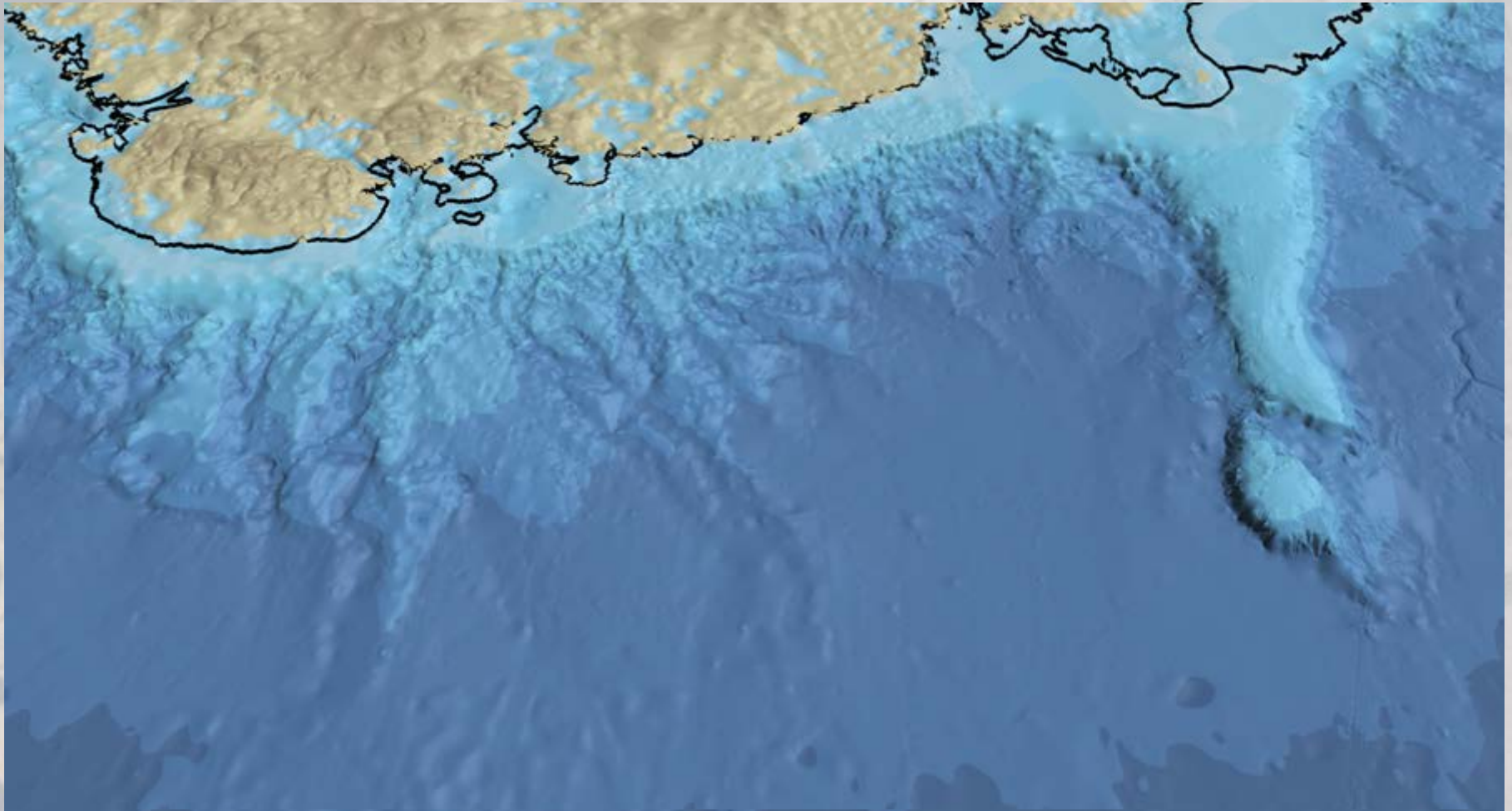
Ekstroem Ice Shelf



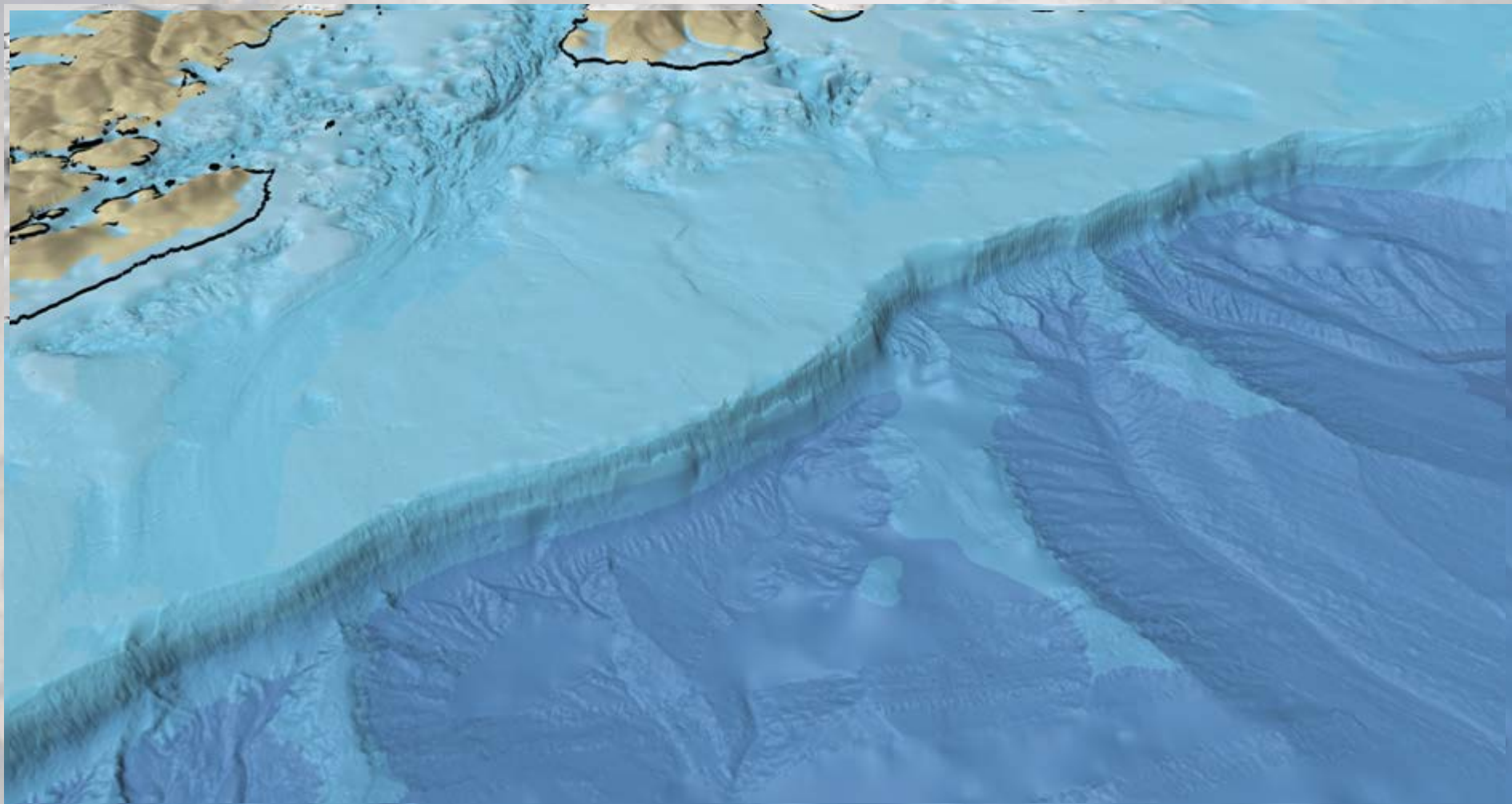
Hero Fracture Zone



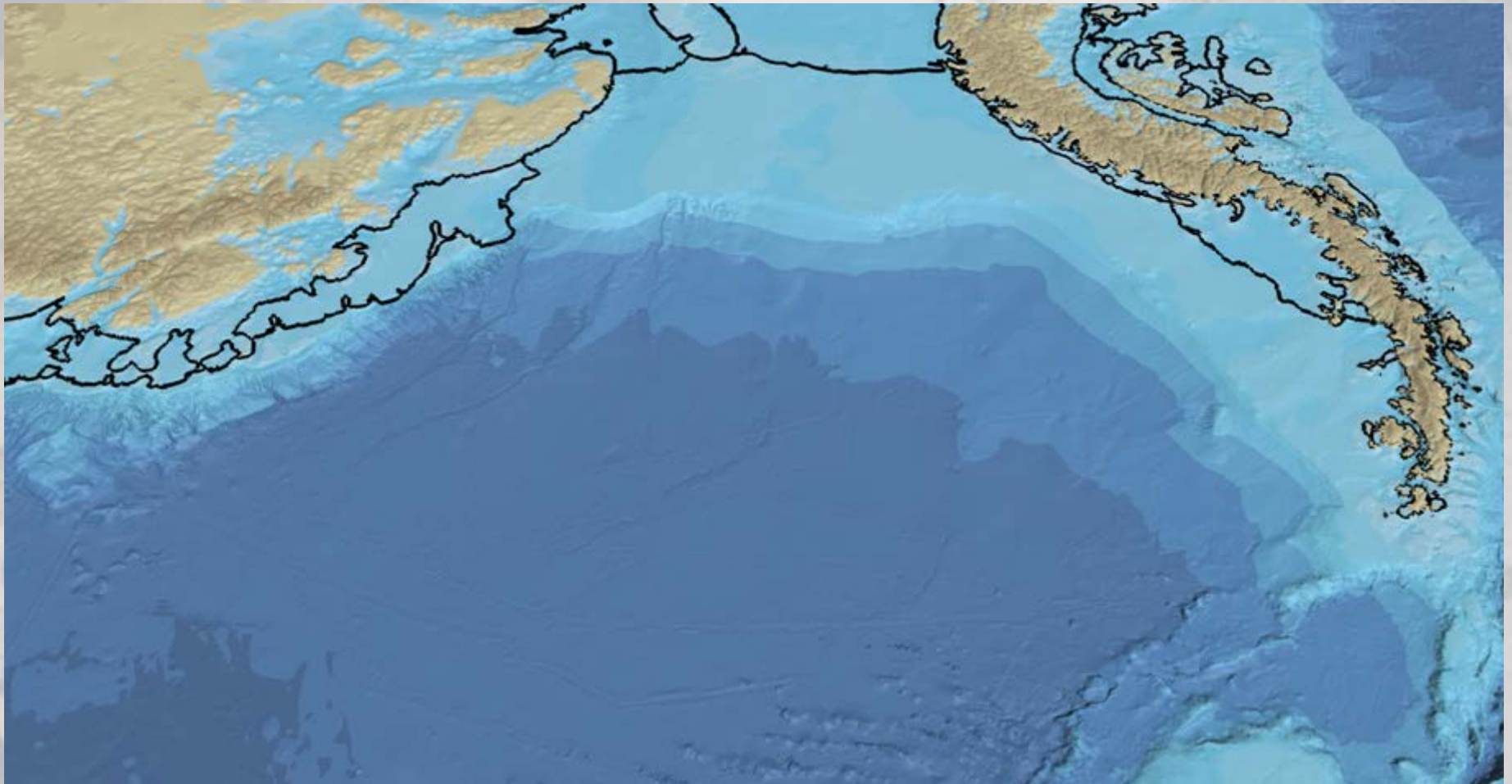
Kosmonaut Sea



Marguerite Bay



Weddell Sea



Status and Perspectives

Dead-line for data: 15 June 2012

DTM modelling IBCSO v1: **finished**

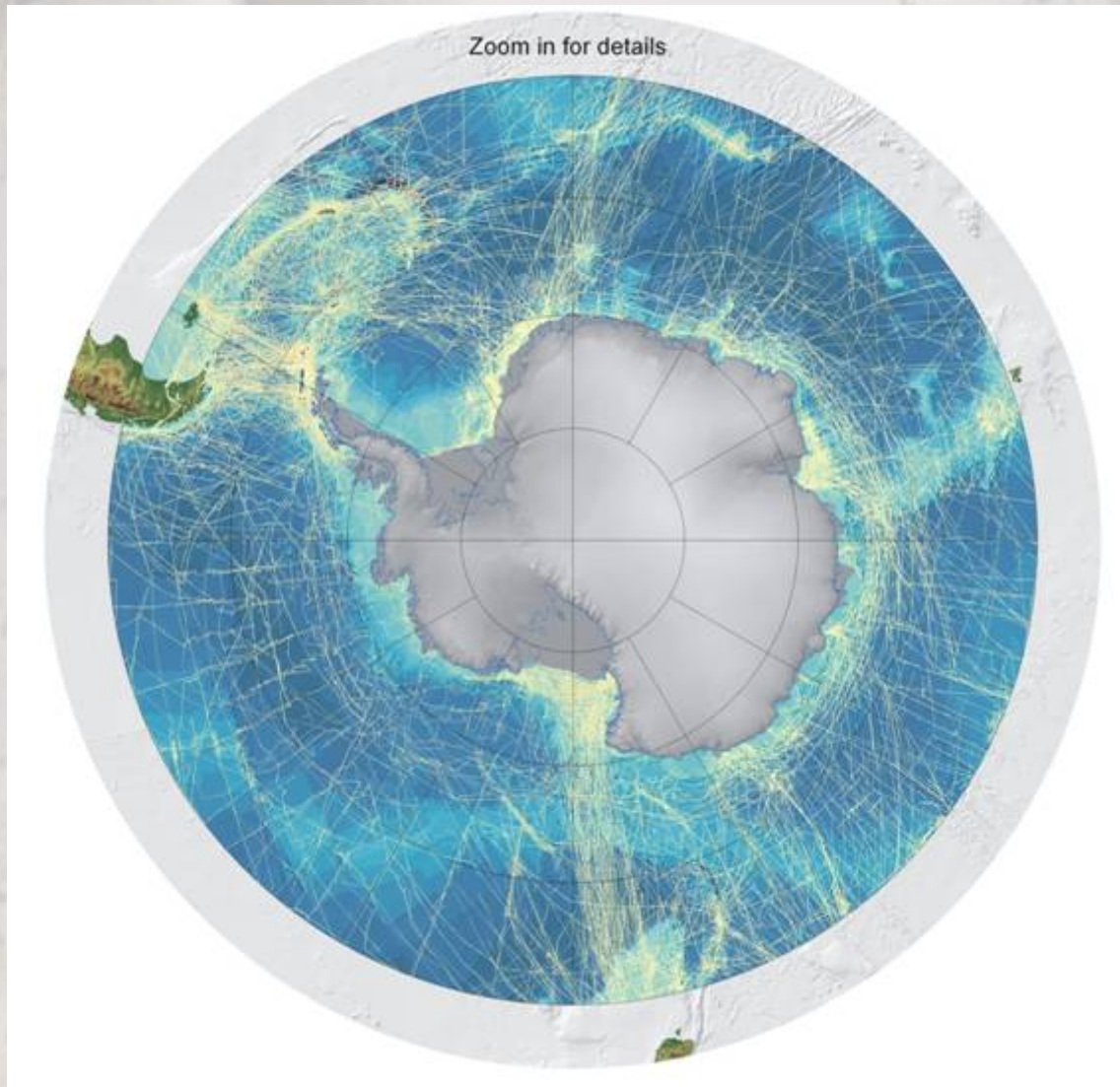
Map compilation: from September

Map & Grid Publication: AGU/FM 2012

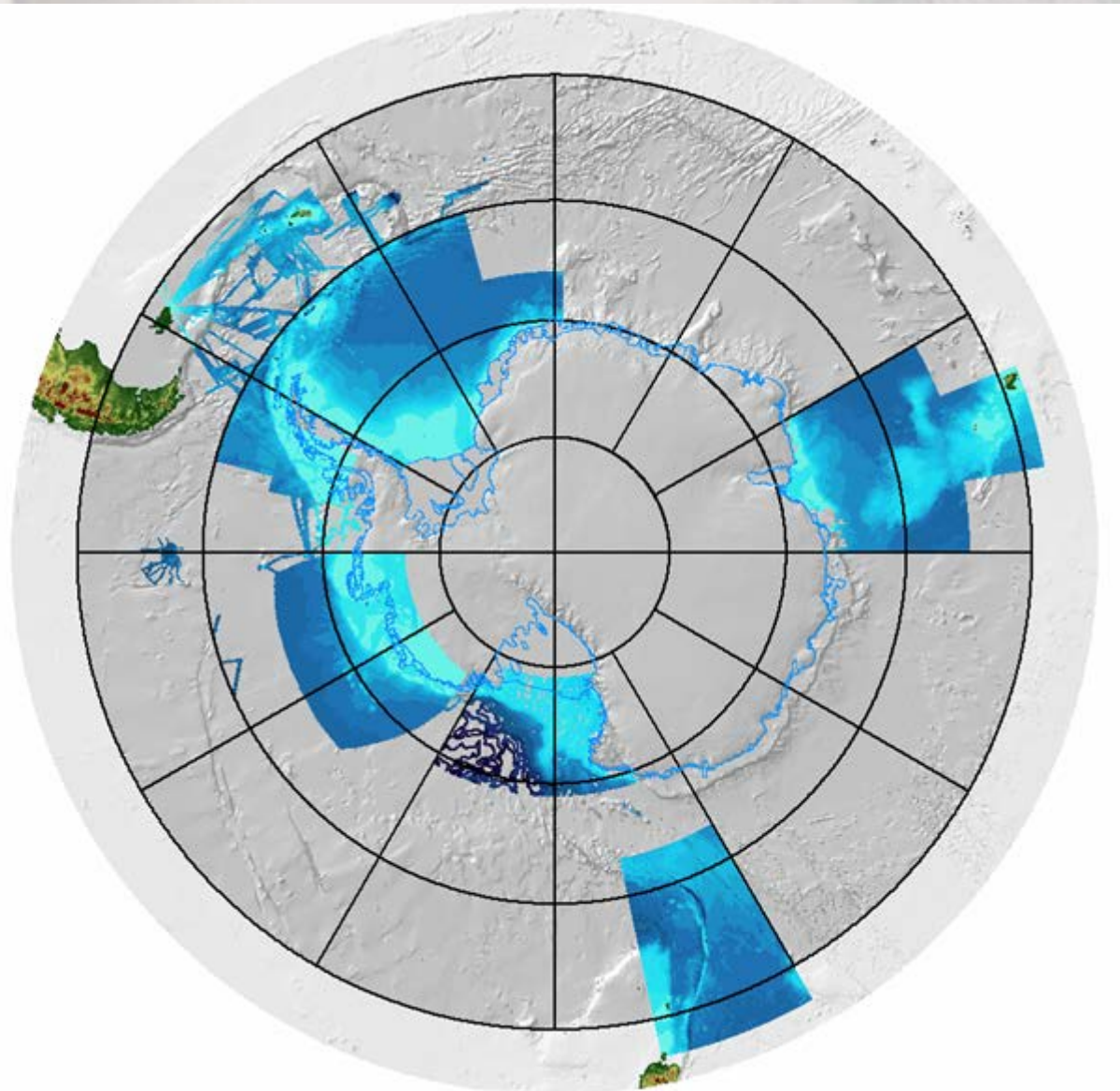
IBCSO v2: ?



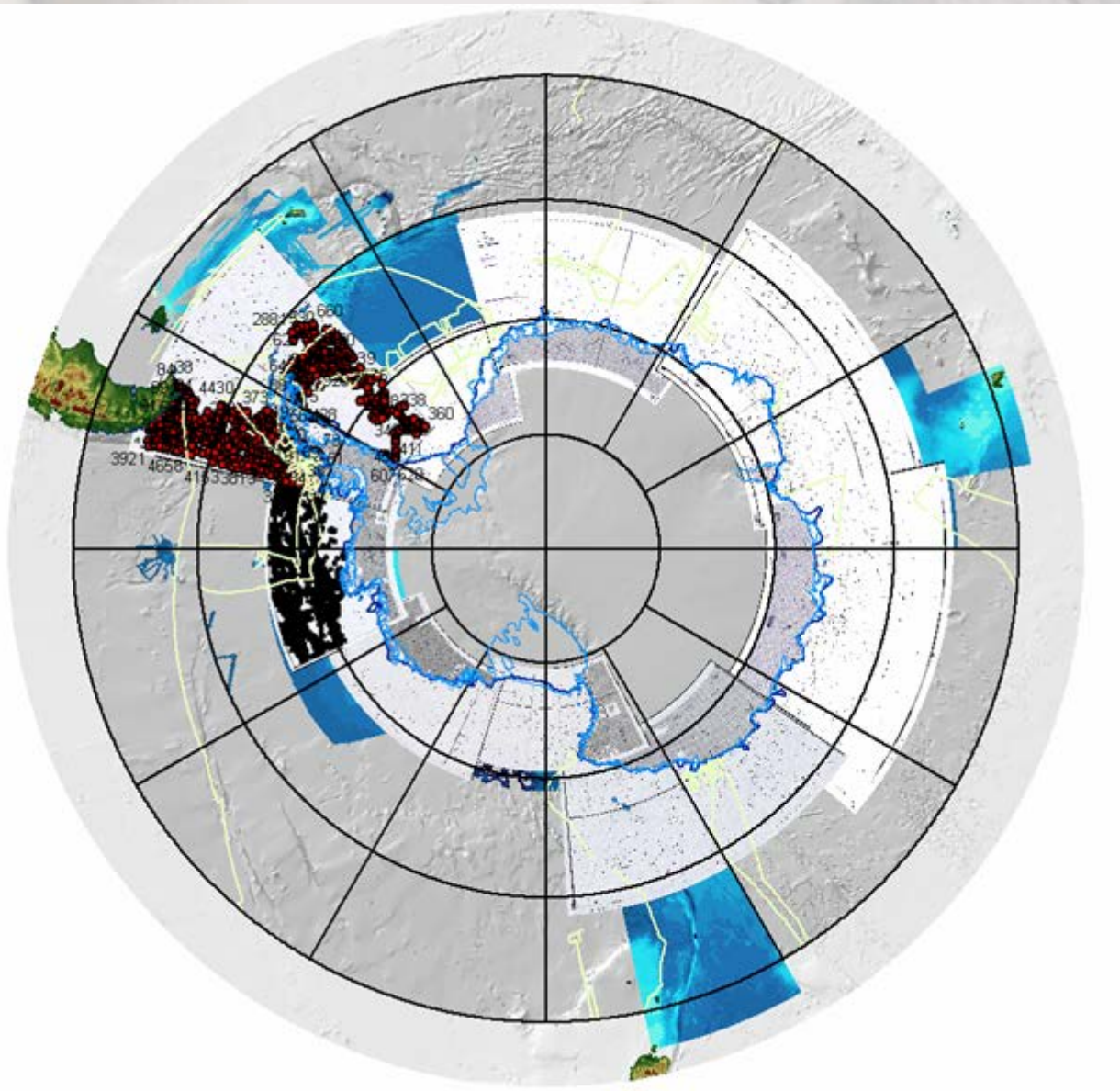
Thank you!



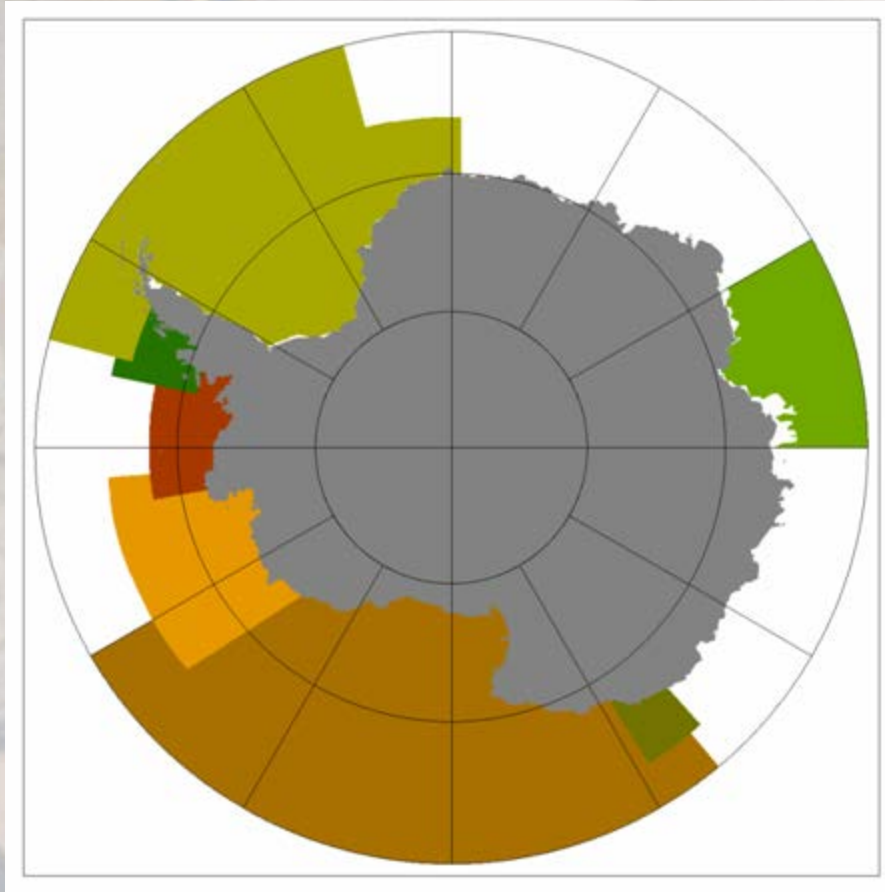
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- ADD5
- MOA
- Sediment_SO
- Mosaics
- NSIDC_Ant500m_wgs
- BEDMAP
- IBCSO
 - AWL_MB
 - NGDC_NBS
- Bathy_Grids
 - g0407g
 - elt_gr_out
 - amubathy_1k
 - jcr_out
 - bas_bathy
 - scotia_idw
 - egbd2008**
 - surface_17_1_all_tr
 - RossSea
 - kerguelen
 - macquarie
- BCWS
 - bows_dd
 - sndgs_gebco pc
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- Topo12
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 - kerguelen
 - macquarie
- BCWS
 - bcws_dd
 - sndgs_gebco pc
 - bcws_30s
 - bcws_30s
- GEBCO



Existing grids for IBCSO v1



- I Kerguelen
- II Terre Adelie & George V
- III Ross Sea
- IV Amundsen Sea
- V Bellingshausen Sea
- VI Marguerite Bay
- VII Weddel Sea

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