



International Bathymetric Chart of the Arctic Ocean (IBCAO)

Current grid: Version 3.0, released Spring 2012

Current map: Based on version 3.0, completed 2015

IBCAO Compilation Team



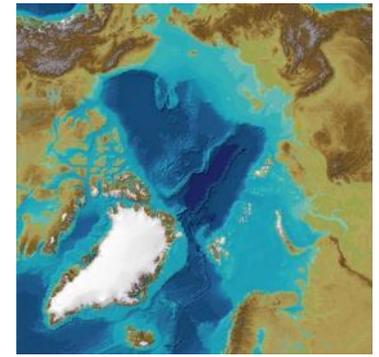
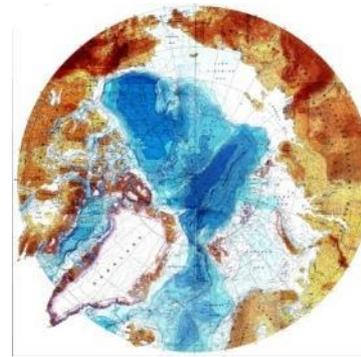
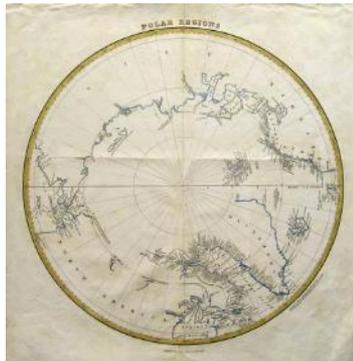
IBCAO Version 3.0

- Higher resolution: 500x500m, where possible
- Better and more accessible source data information
- First snapshots were presented during the American Geophysical Union (AGU) Fall Meeting in San Francisco, December 2011
- Journal article to accompany release published GRL
- Web page updated
- New printed map based on IBCAO 3.0: Finished 2016

The International Bathymetric Chart of the Arctic Ocean (IBCAO) Version 3.0

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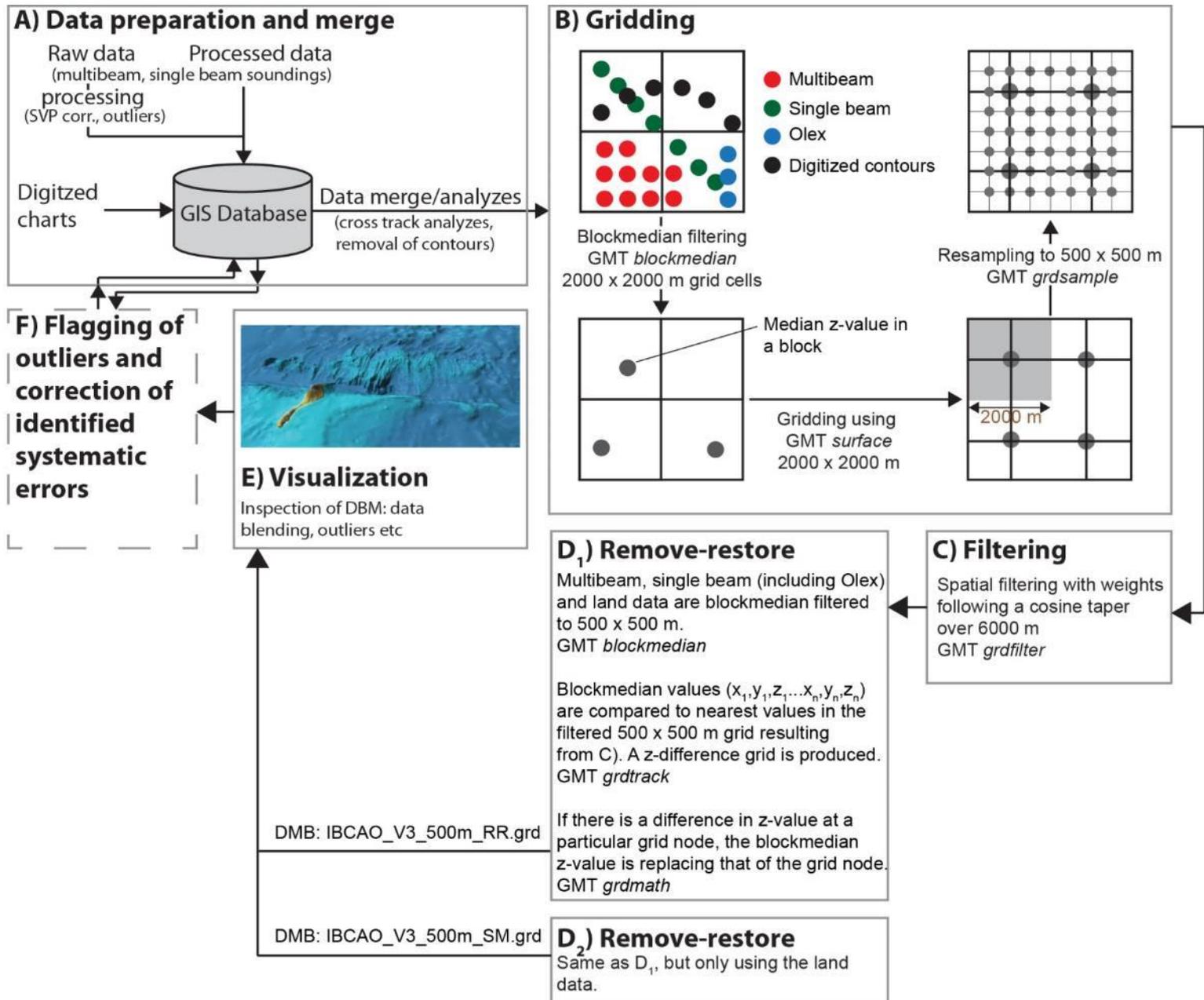
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1800

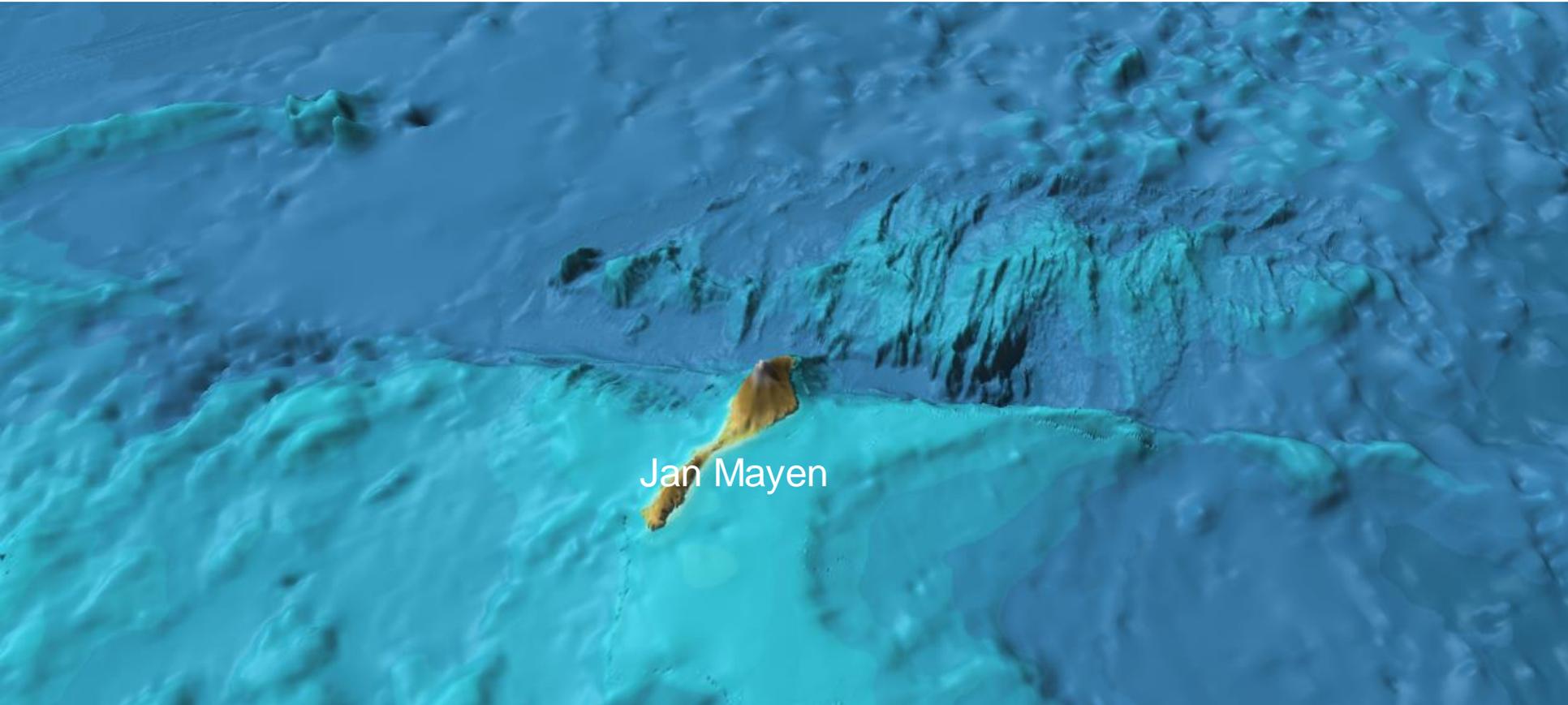
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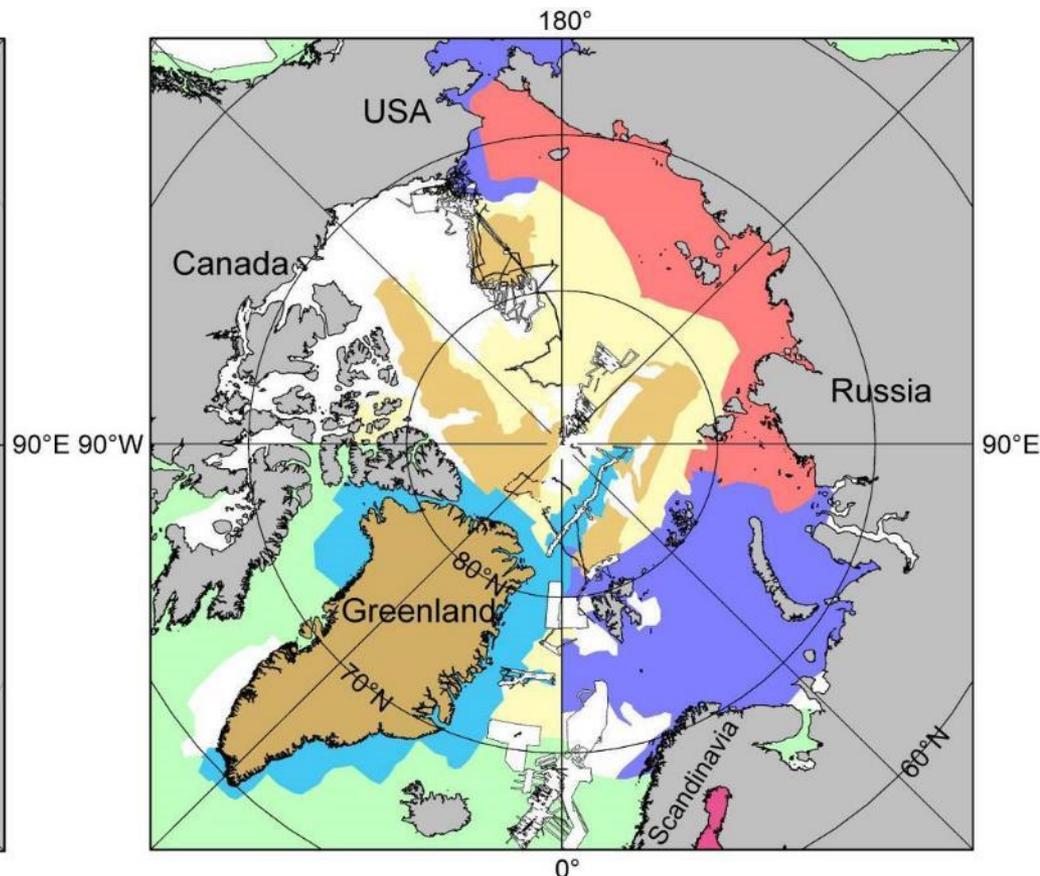
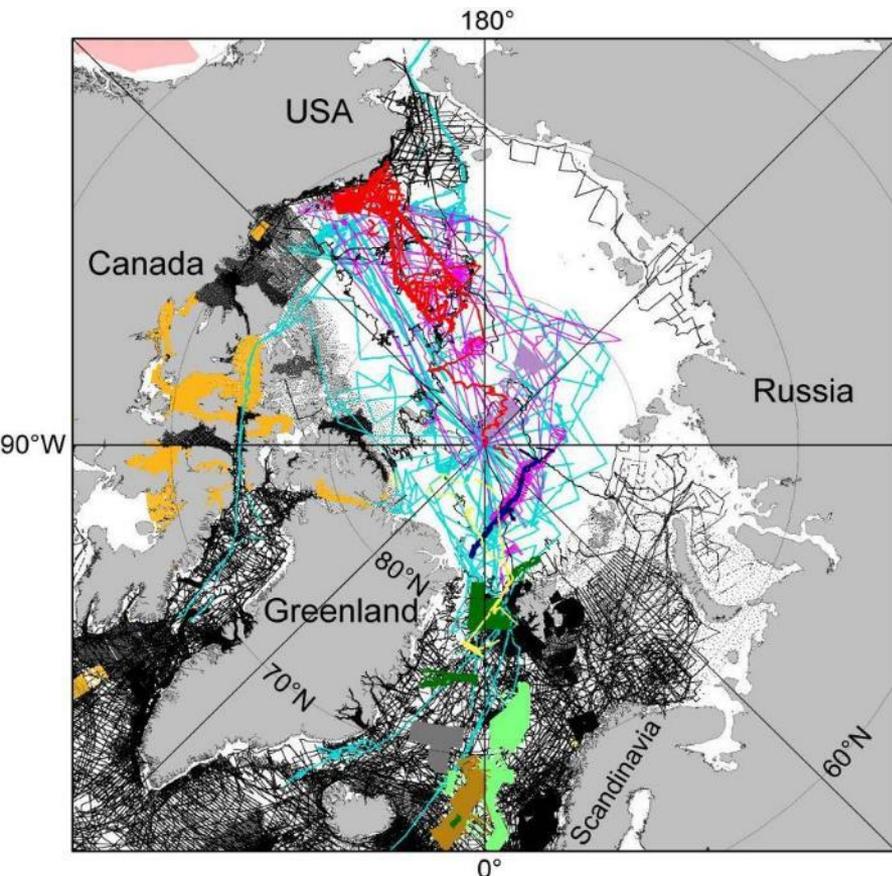
Gridding concept



High resolution is well blended with low resolution source data



IBCAO Version 2.0: Source Data (Released 2008)



Multibeam Sources

- USCGC Healy, R/V Nathaniel B Palmer
- R/V Polarstern
- I/B Oden
- Norwegian Petroleum Directorate
- AMORE (Healy and Polarstern)
- SCICEX 1999
- US Naval Research Laboratory (NRL)
- US Law of the Sea mapping by the Center for Coastal and Ocean Mapping/ Joint Hydrographic Center*

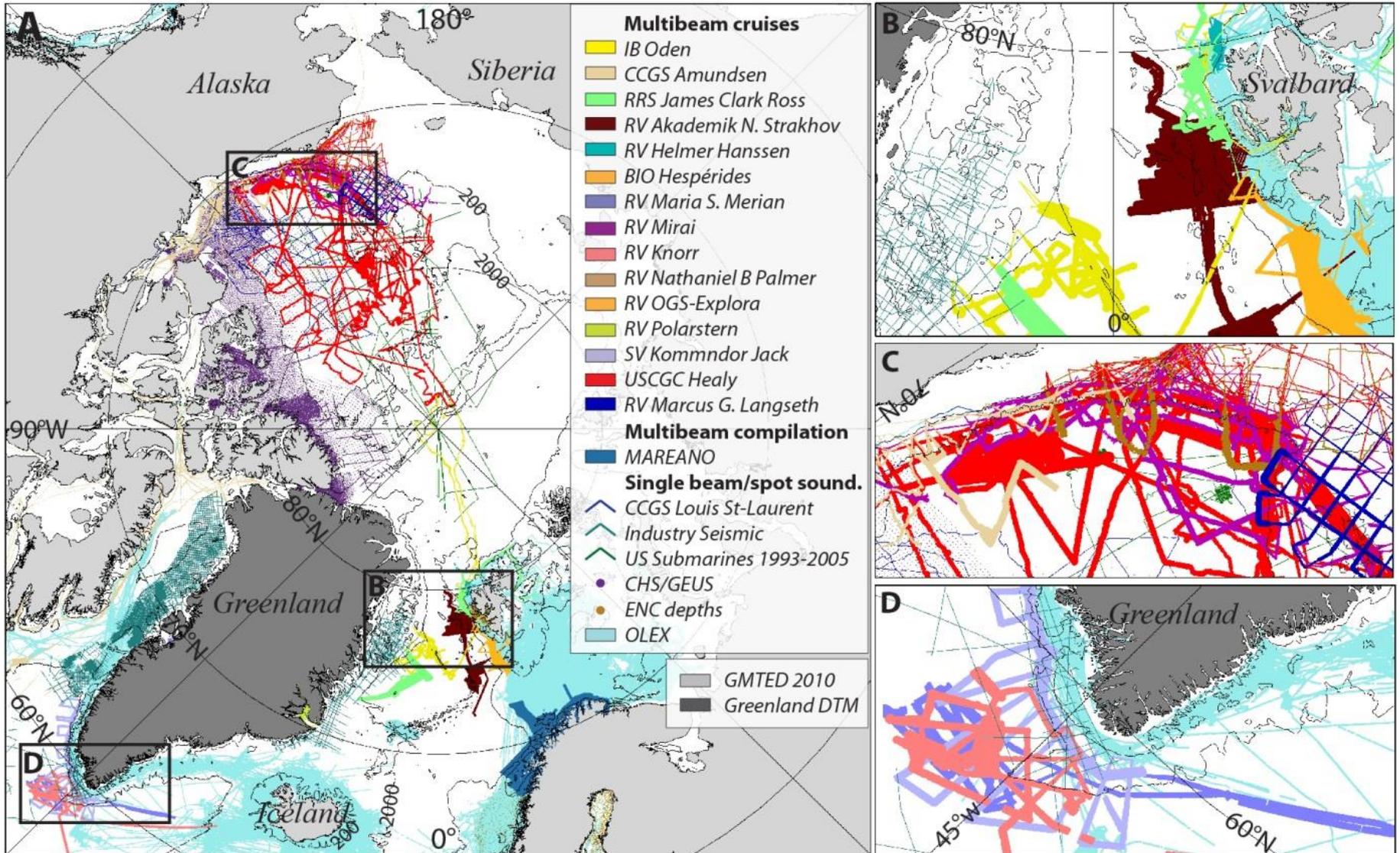
Single Beam Sources

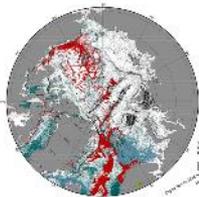
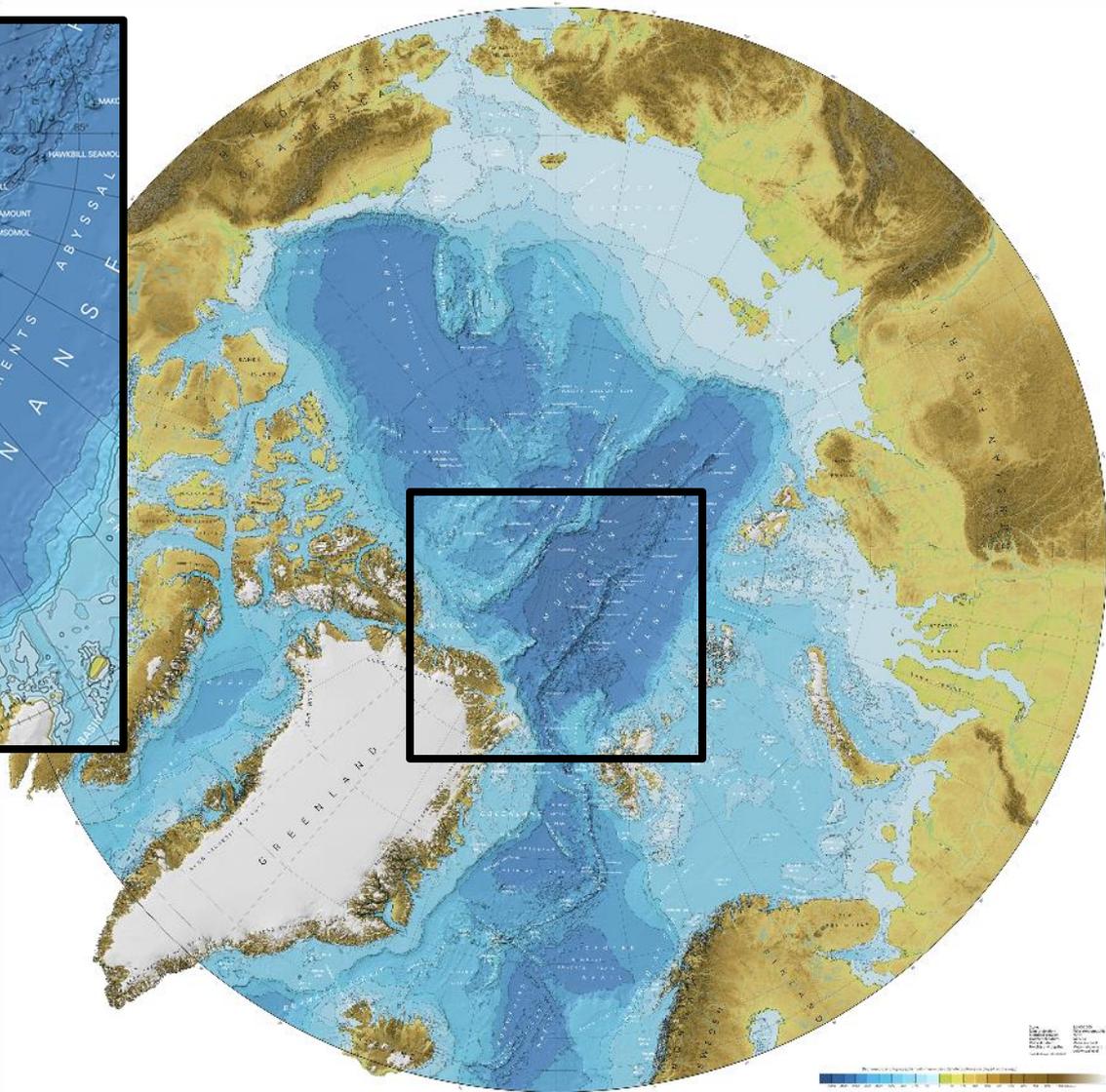
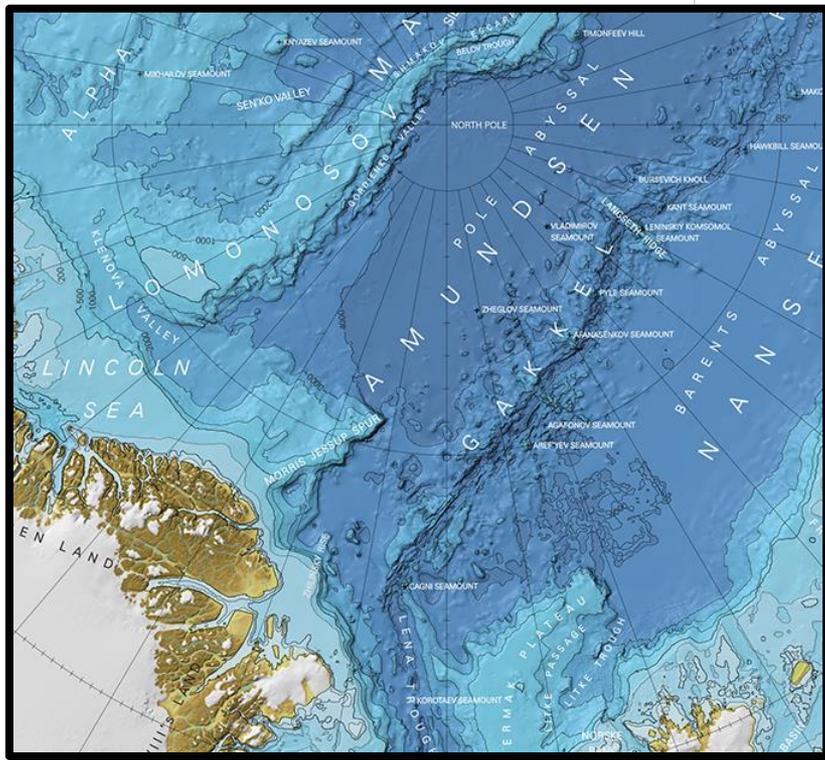
- US and British Royal Navy submarine cruises (1958-1992)
- SCICEX cruises (1993-1999)
- Norwegian Hydrographic Service survey
- Soundings from Canadian Hydrographic Service surveys not included in earlier IBCAOs
- Soundings collected by various surface vessels and ice drift stations. Five major archives have been included:
 1. US National Geophysical Data Center (NGDC)
 2. US Naval Research Laboratory (NRL)
 3. US Geological Survey (USGS)
 4. Norwegian Hydrographic Service
 5. Royal Danish Administration of Navigation and Hydrography

Maps and Regional Grids

- IBCAO drawn contours
- IBCAO drawn contours based on soundings from charts published by the Russian Federation's Department of Navigation and Oceanography (DNO)
- 1:5 000 000 scale DNO map of the Arctic Ocean (Naryshkin, 1999)
- 1:2 500 000 scale DNO map of the Arctic Ocean (Naryshkin, 2001)
- Charts published by NRL (Perry et al., 1986; Cherkis et al., 1991; Matishov et al., 1995)
- Contours retrieved from the GEDCO Digital Atlas (GDA) 2003.
- Bathymetry in the Gulf of Bothnia from a digital grid by Siefert et al. (2001)
- Greenland DTM by the Danish Cadaster and Mapping Agency (Ekholm, 1996)
- GTOPO30 topographic model (U.S. Geological Survey, 1997)

New source data added to Version 3.0





THE INTERNATIONAL BATHYMETRIC CHART OF THE ARCTIC OCEAN (IBCAO)

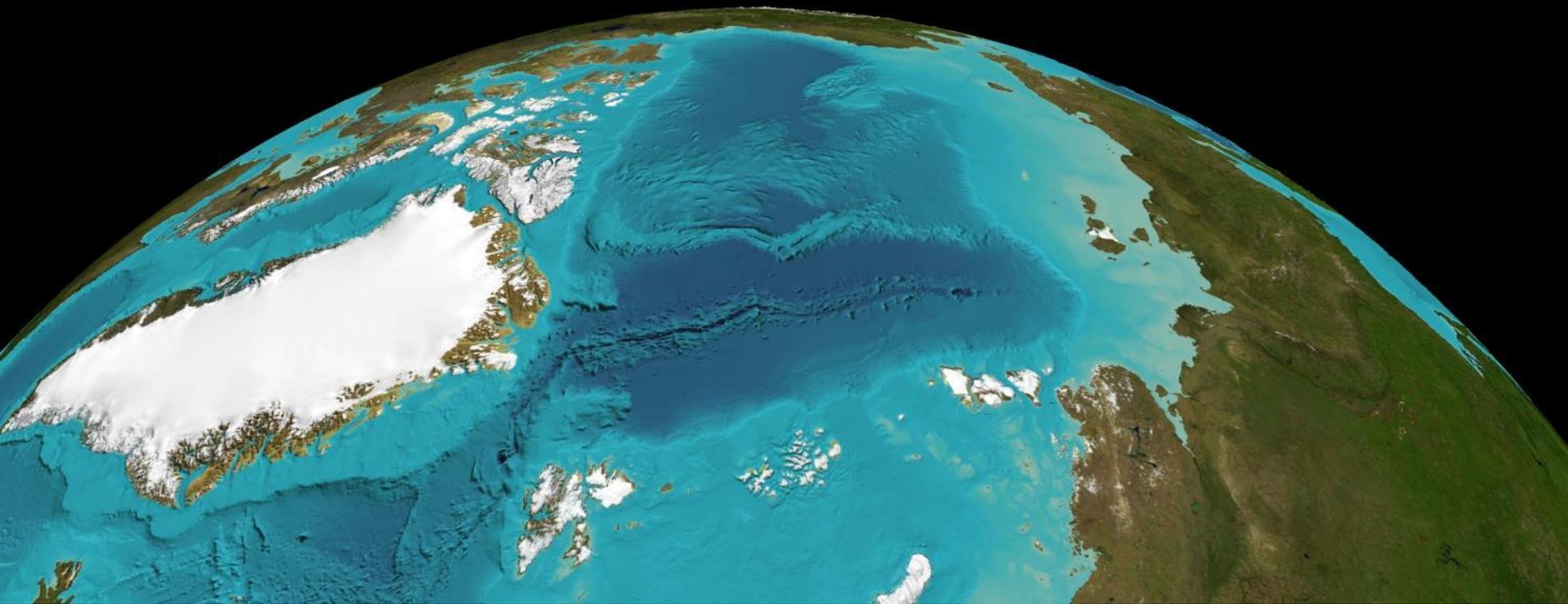
The IBCAO is a bathymetric chart of the Arctic Ocean, covering the area from 90°N to 60°N latitude and 0° to 360° longitude. It is based on data from various sources, including satellite altimetry, shipborne surveys, and historical data. The chart is available in digital format and is intended for use in navigation, scientific research, and environmental studies.



The IBCAO is a product of the International Hydrographic Organization (IHO) and the International Geographical Names (IGN) Commission. It is a collaborative effort between many countries and organizations, including the United States, Canada, and the United Kingdom. The chart is updated regularly to reflect new data and changes in the Arctic region.

For more information about the IBCAO, please visit the website: www.gebcobathymetry.org. The chart is available in digital format and is intended for use in navigation, scientific research, and environmental studies.



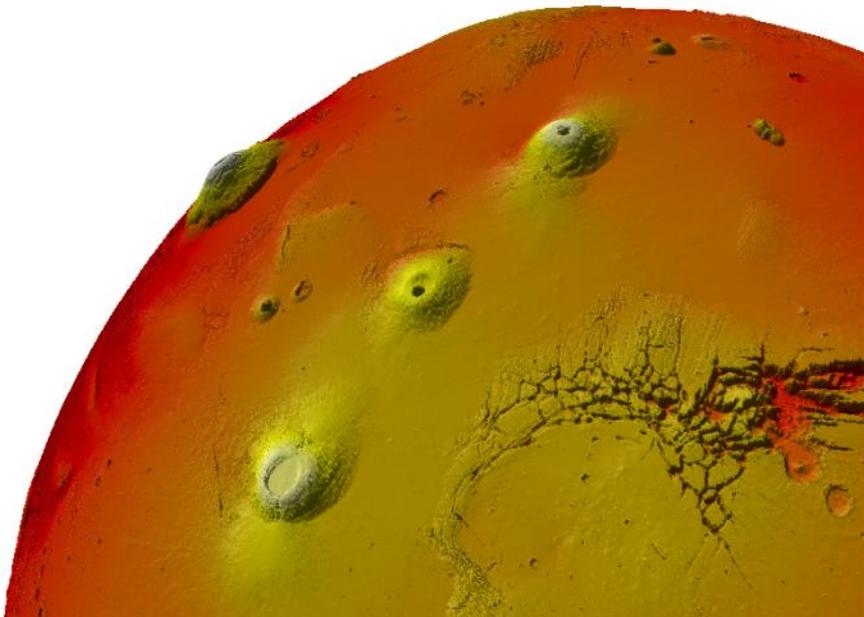


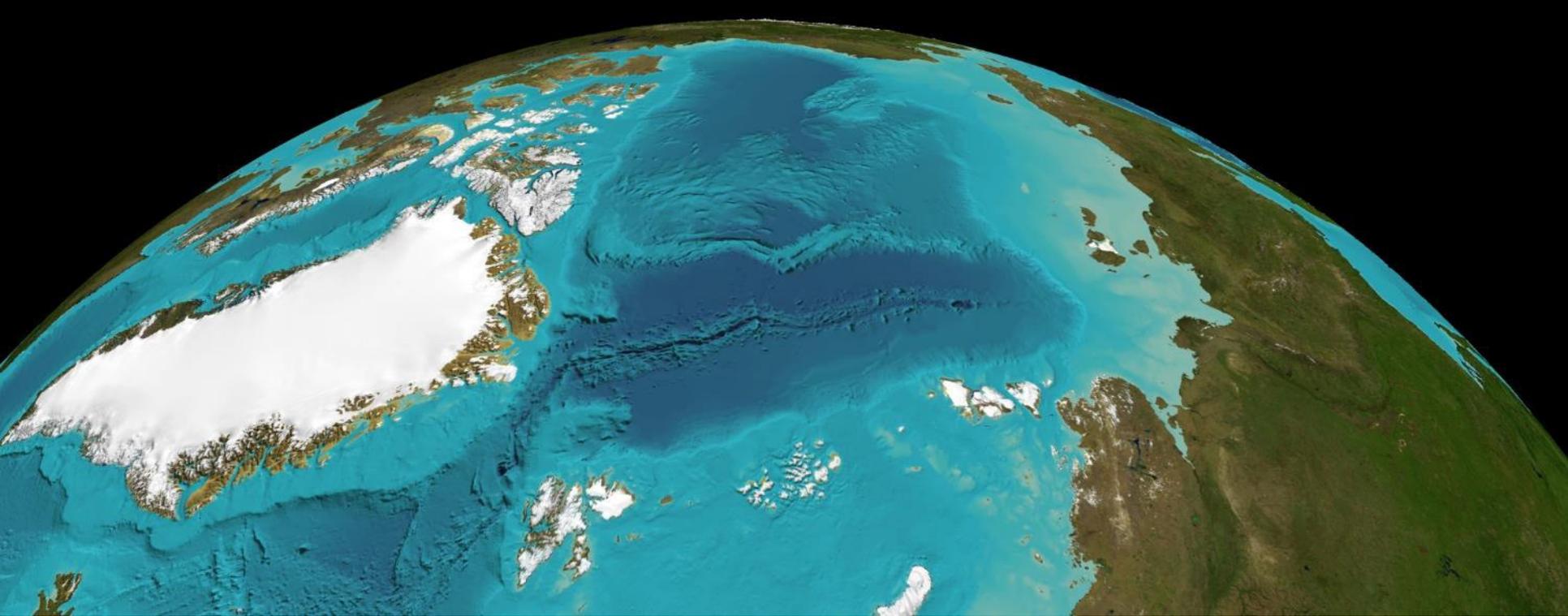
Status 2013:

< 11 % of the central Arctic Ocean is mapped with multibeam

Mars was mapped already in 1998 and 1999 by NASA's Mars Orbiter Laser Altimeter (MOLA).

From Mars Express High-Resolution Stereo Camera (HRSC) images, DTMs of 50x50 m resolution are produced and ortho-images with 12.5 m resolution (*Gwinner, et al., EPSL, 2010*)





Arctic – Antarctic Mapping Meeting 2016

Monaco June 11-12