

Supplementary Information

Supplementary Table 1: List of data sources used in this study. Data is split by usage and shown for each year, links for these data sources are provided in supplementary material.

Year	Data	Resolution	Source
Front Position			
1948	AMS C501 Greenland Topographic Series	1: 250,000	Polar Geospatial Centre
1962–63	Corona Declassified Spy Satellite	-	USGS Earth Explorer
1968/9	USAF Operational Navigation Charts	1:1,000,000	Perry-Castañeda Library, University of Texas
1975–94	Landsat 1-5 MSS	30 m	USGS Earth Explorer
1978	Aerial Photographs	2 m	Danish History Museum (Korsgaard et al., 2016)
1986–87	SPOT-1 Satellite Imagery	10 m	European Space Agency
1992–1999	ERS-1/2 SAR Imagery		European Space Agency
2000–2012	Landsat 7 ETM–Panchromatic band (band 8)	15 m	USGS Earth Explorer
2013–2015	Landsat 8–Panchromatic band (band 8)	15 m	Rapid Ice Sheet Change Observatory USGS Earth Explorer
Ice Velocity			
1991/92	ERS 1 winter velocity	500 m	Greenland Ice Sheet CCI project (Nagler et al., 2016)
1995/96	ERS 2 winter velocity	500 m	Greenland Ice Sheet CCI project (Nagler et al., 2016)
2000/01	MEaSUREs Greenland Annual Ice Velocity from InSAR (Version 2)	500 m	National Snow and Ice Data Center (Joughin et al., 2015)
2011–2013	MEaSUREs Greenland Ice Velocity: Selected Glacier Site Velocity Maps from InSAR (TerraSAR-X)	100 m	National Snow and Ice Data Center (Joughin et al., 2011)
2014–2016	Sentinel-1 SAR velocity	500 m	Greenland Ice Sheet CCI project (Nagler et al., 2016)
Surface Elevation Change			
1996–2011	ERS1, ERS2 and ENVISAT 5-yr means	5 km	Greenland Ice Sheet CCI project (Sørensen et al., 2015)
2011–2015	Cryosat 2 Surface Elevation Change v2 2-yr means	5 km	Greenland Ice Sheet CCI project
Surface elevation, Ice thickness, bed topography			
Nominal date 2007 (Data collected between 1993–2014)	Ice surface elevation Ice thickness Bedrock elevation	150 m	National Snow and Ice Data Center IceBridge Bed Machine (Morlighem et al., 2014)
1978	Surface Digital Elevation Model	25 m	NOAA National Centers for Environmental Information (Korsgaard et al., 2016)
Climate-ocean data			
1948 - 2015	Air Temperature - DMI Automatic Weather Stations	-	Danish Meteorological Institute (Vinther et al., 2006)
1979–2016	Sea Ice Concentrations from Nimbus-7 SMMR	25 km	National Snow and Ice Data Center (Cavalieri et al., 1996)