Basic plots about Sea Ice from Satellite Data

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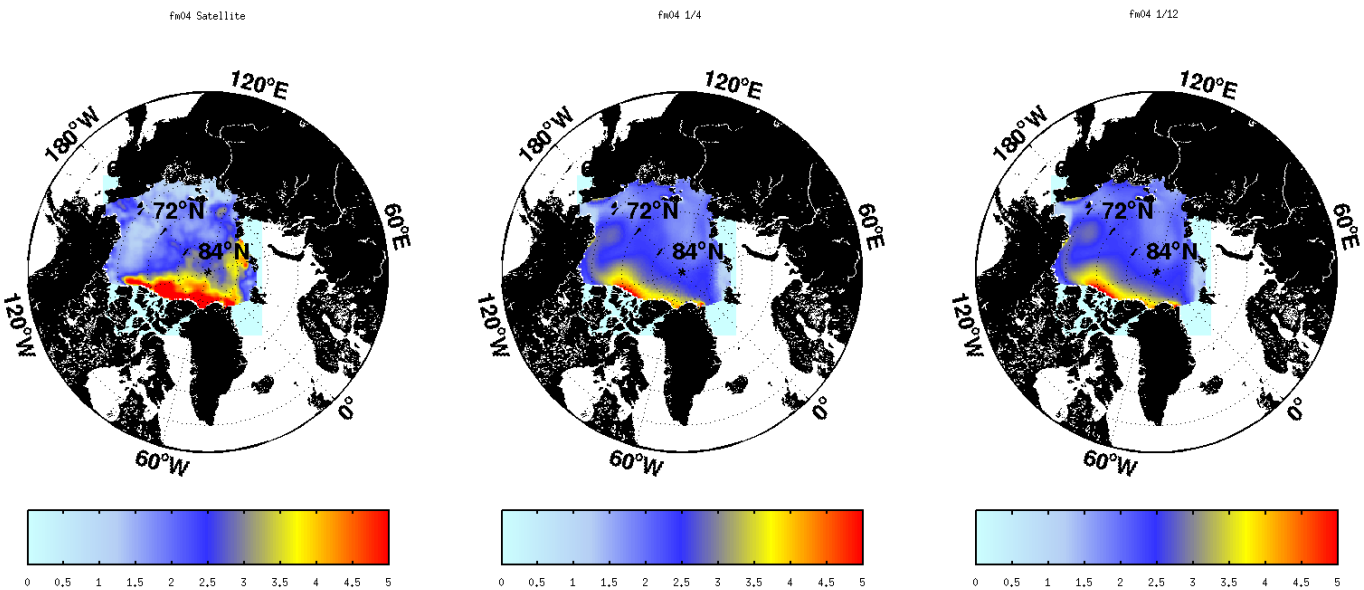
Sea-Ice Thickness Model VS Satellite

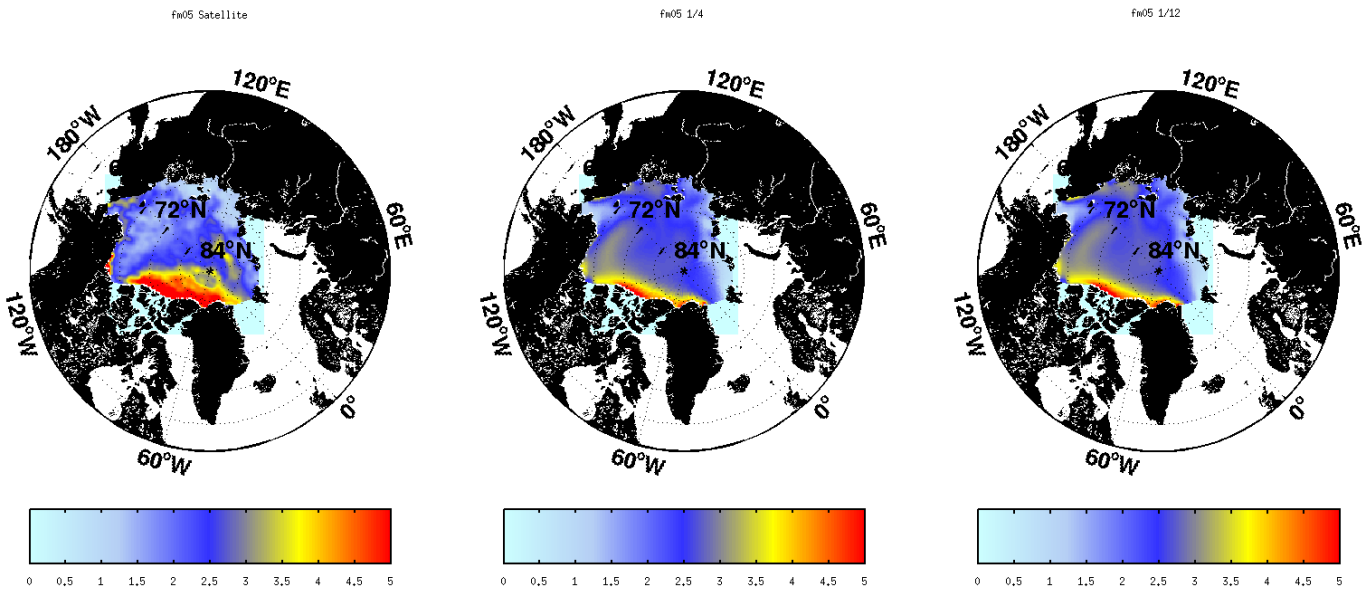
The grid of satellite data is $25km \times 25km$ square in a limited area, there is 140×140 grid points. And there are two situations:

- If the satellite data on a certain point is NaN or 0, then I set the model output to Nan or 0) correspondingly.
- If there is a valid data on the point, then I selected the nearest 4 valid points in the model and do interpolation.

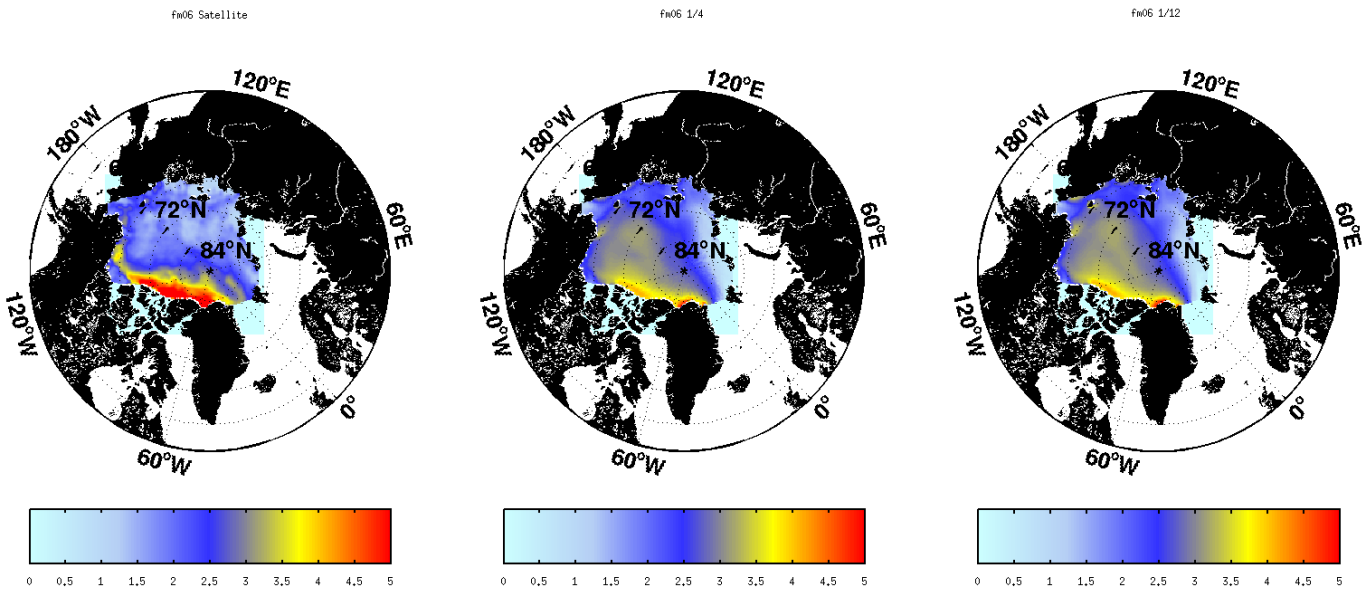
Sea-Ice Thickness on FM04: Satellite, ANHA4, ANHA12



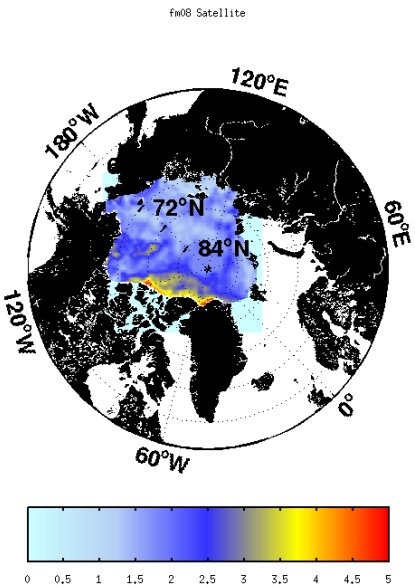
Sea-Ice Thickness on FM05: Satellite, ANHA4, ANHA12

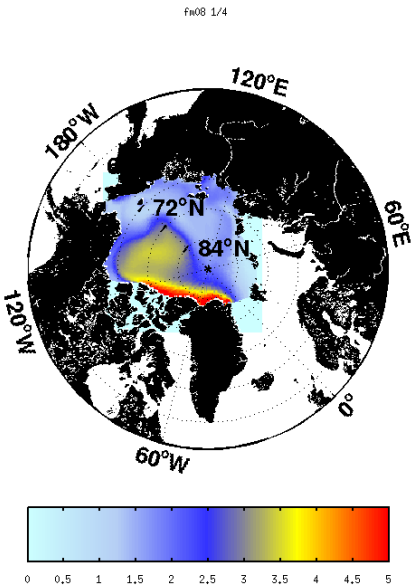


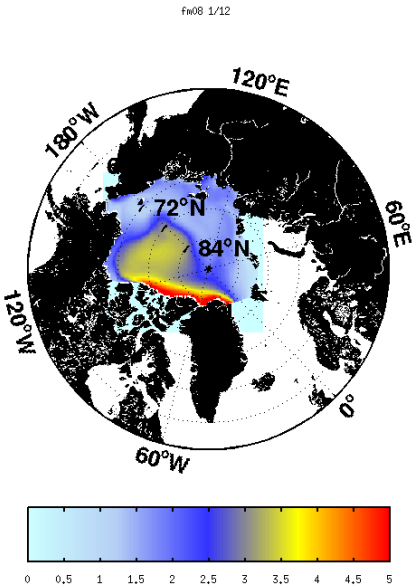
Sea-Ice Thickness on FM06: Satellite, ANHA4, ANHA12



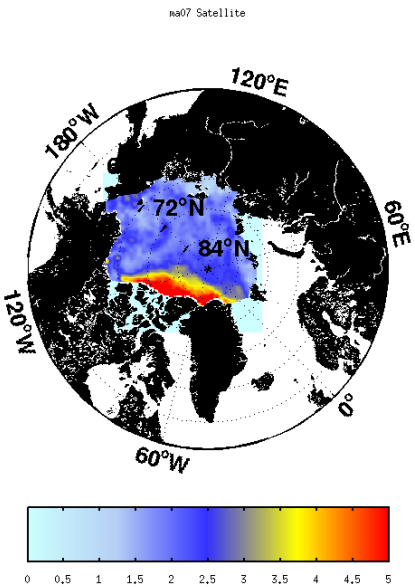
Sea-Ice Thickness on FM08: Satellite, ANHA4, ANHA12

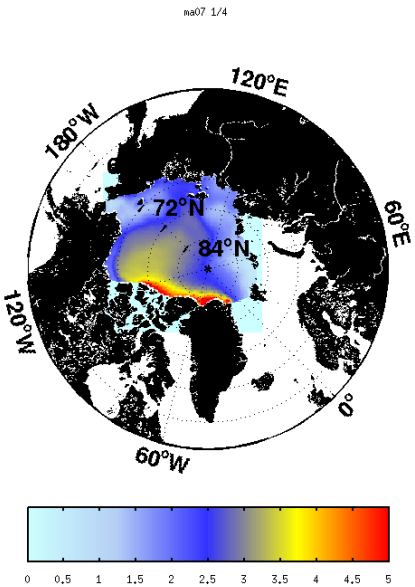


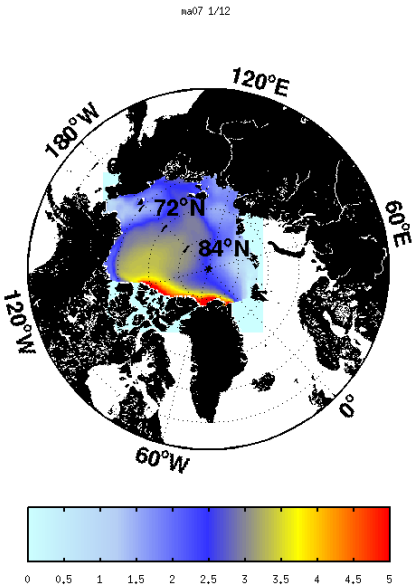




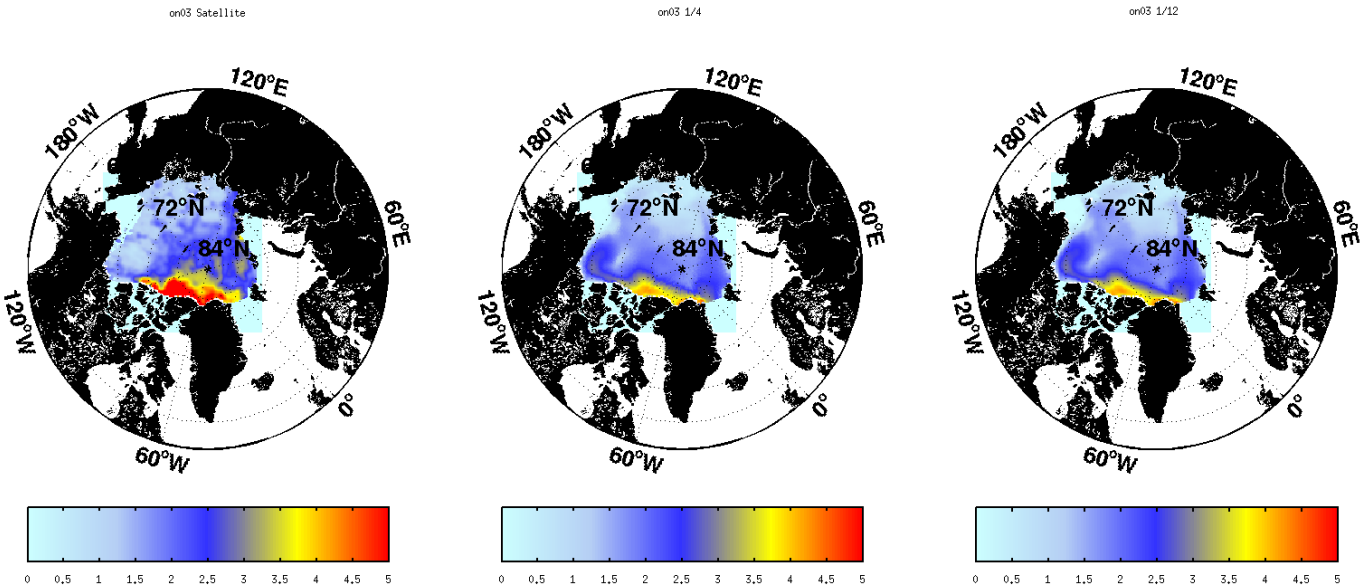
Sea-Ice Thickness on MA07: Satellite, ANHA4, ANHA12



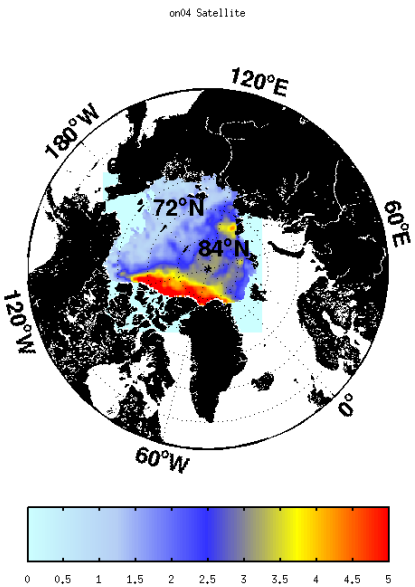


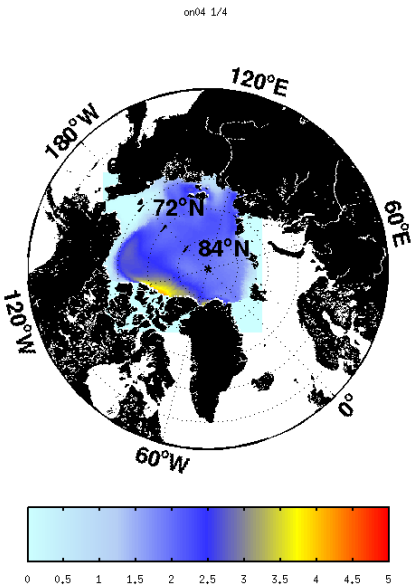


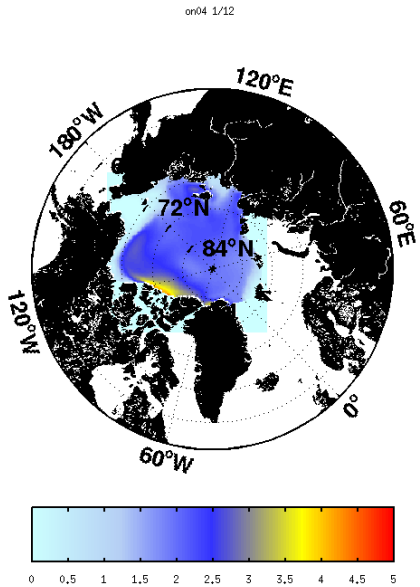
Sea-Ice Thickness on ON03: Satellite, ANHA4, ANHA12



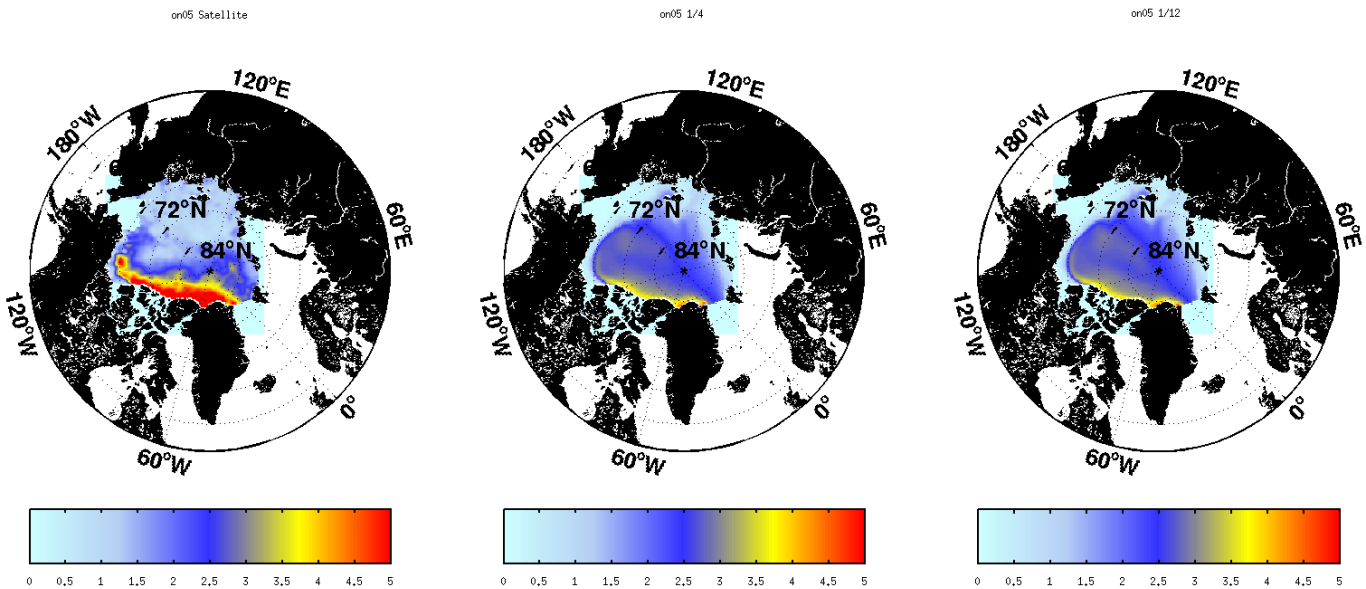
Sea-Ice Thickness on ON04: Satellite, ANHA4, ANHA12



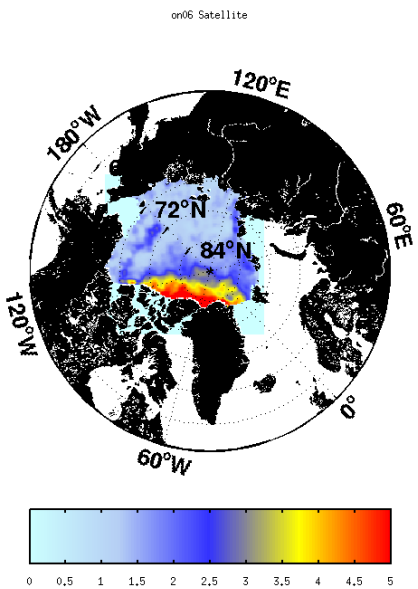


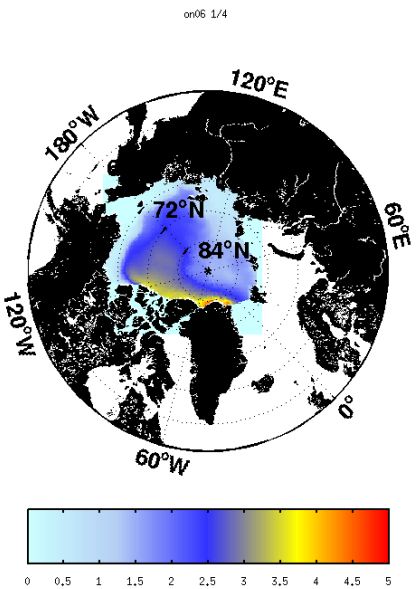


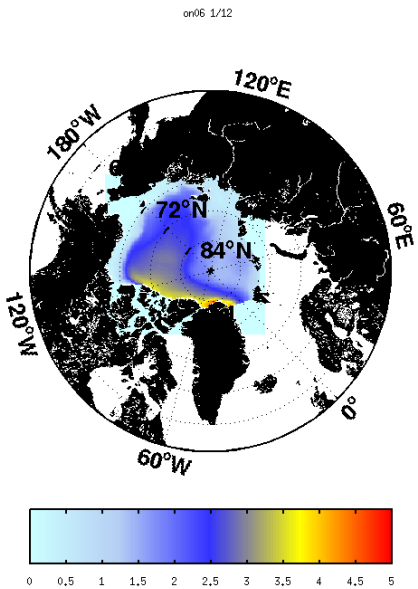
Sea-Ice Thickness on ON05: Satellite, ANHA4, ANHA12



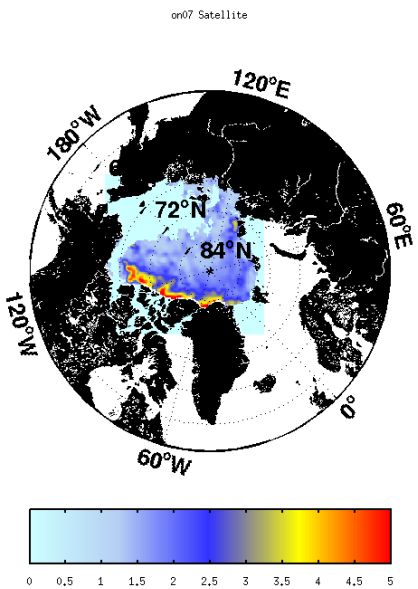
Sea-Ice Thickness on ON06: Satellite, ANHA4, ANHA12

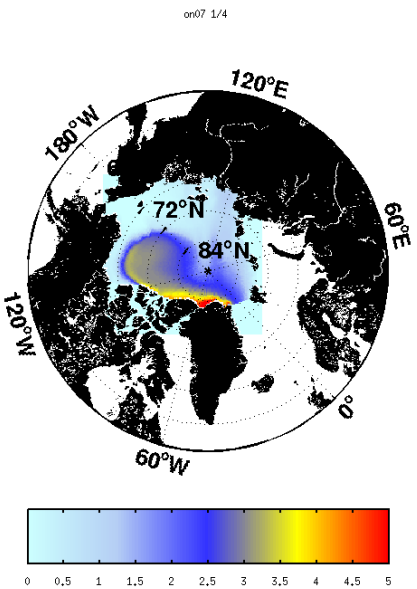


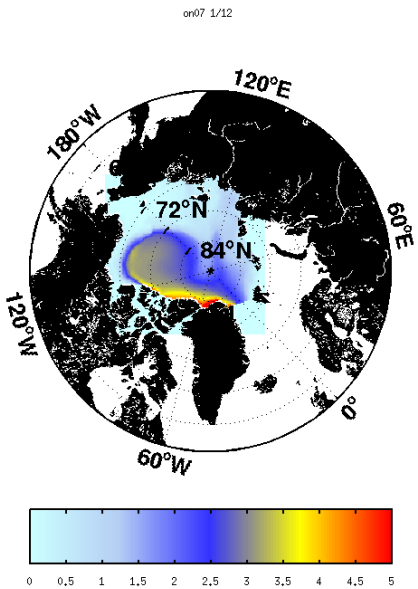




Sea-Ice Thickness on ON07: Satellite, ANHA4, ANHA12







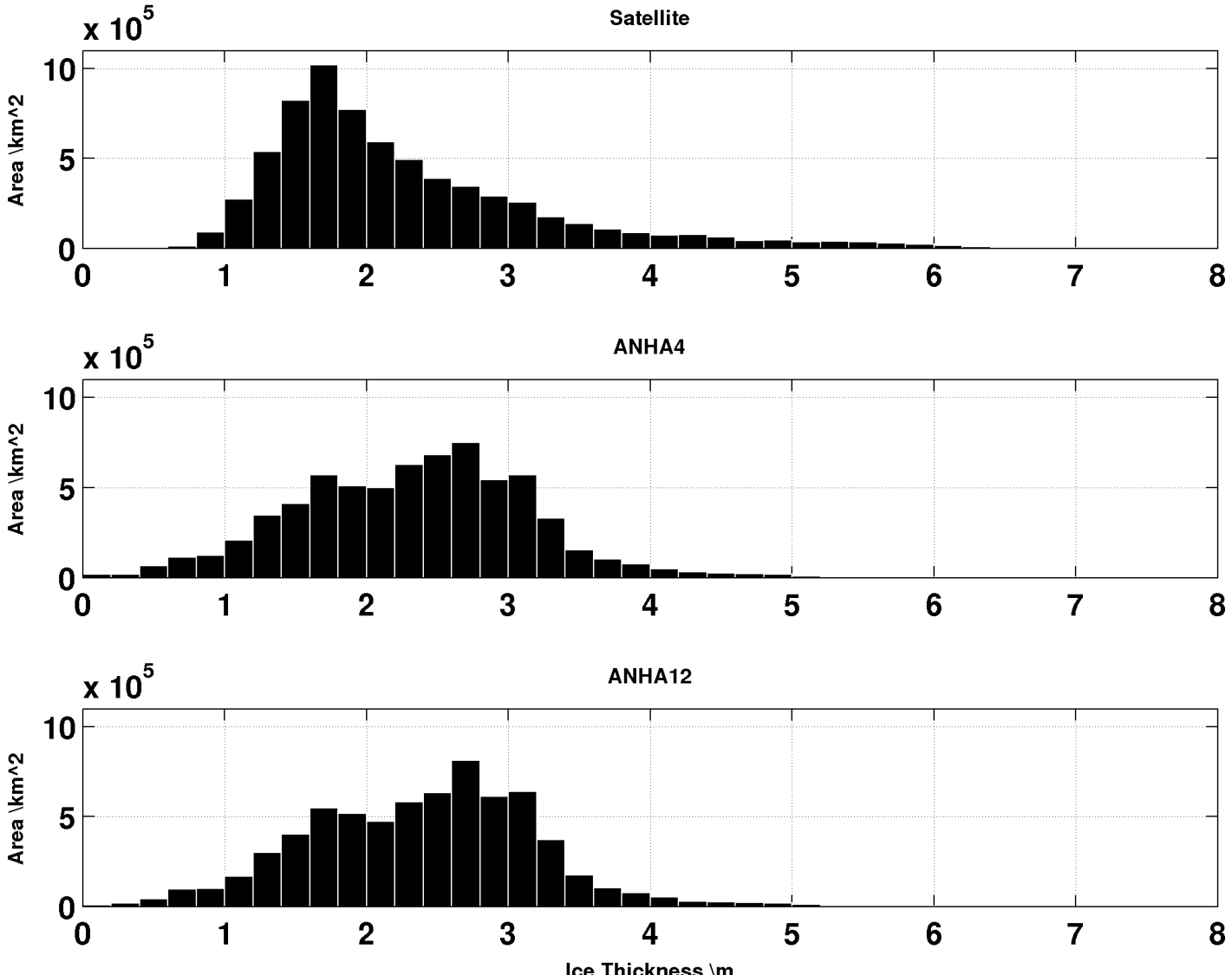
Sea-Ice Thickness Distribution Model VS Satellite

I compared 2 sets of satellite observation with the model output.

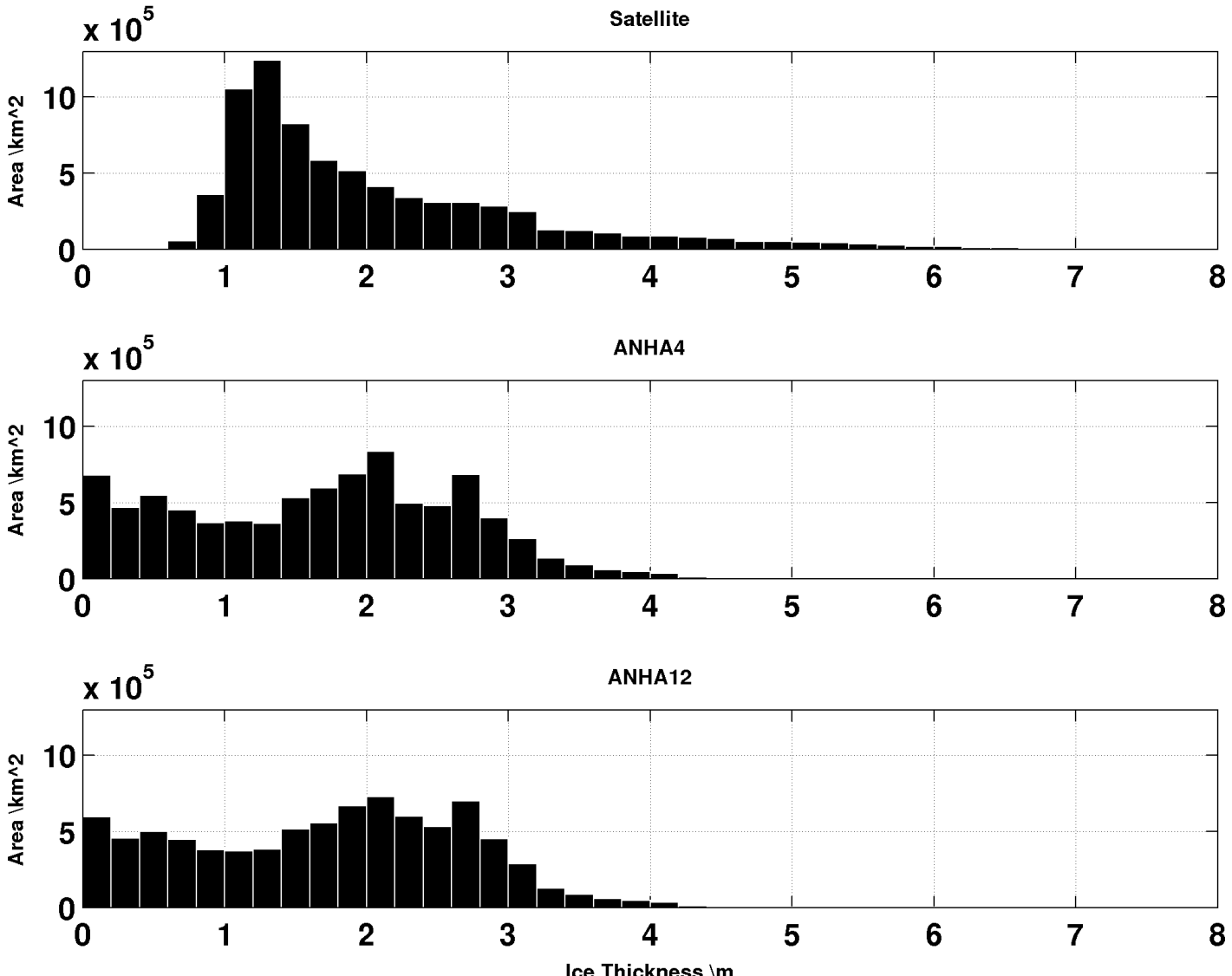
- February and March in 2004, 2005, 2006 and 2008[1]
- October and November in 2003, 2004, 2005, 2006 and 2007

[1] There is no satellite data on February 2007

Sea-Ice Thickness Distribution on FM 04 05 06 08



Sea-Ice Thickness Distribution on ON 03 04 05 06 07



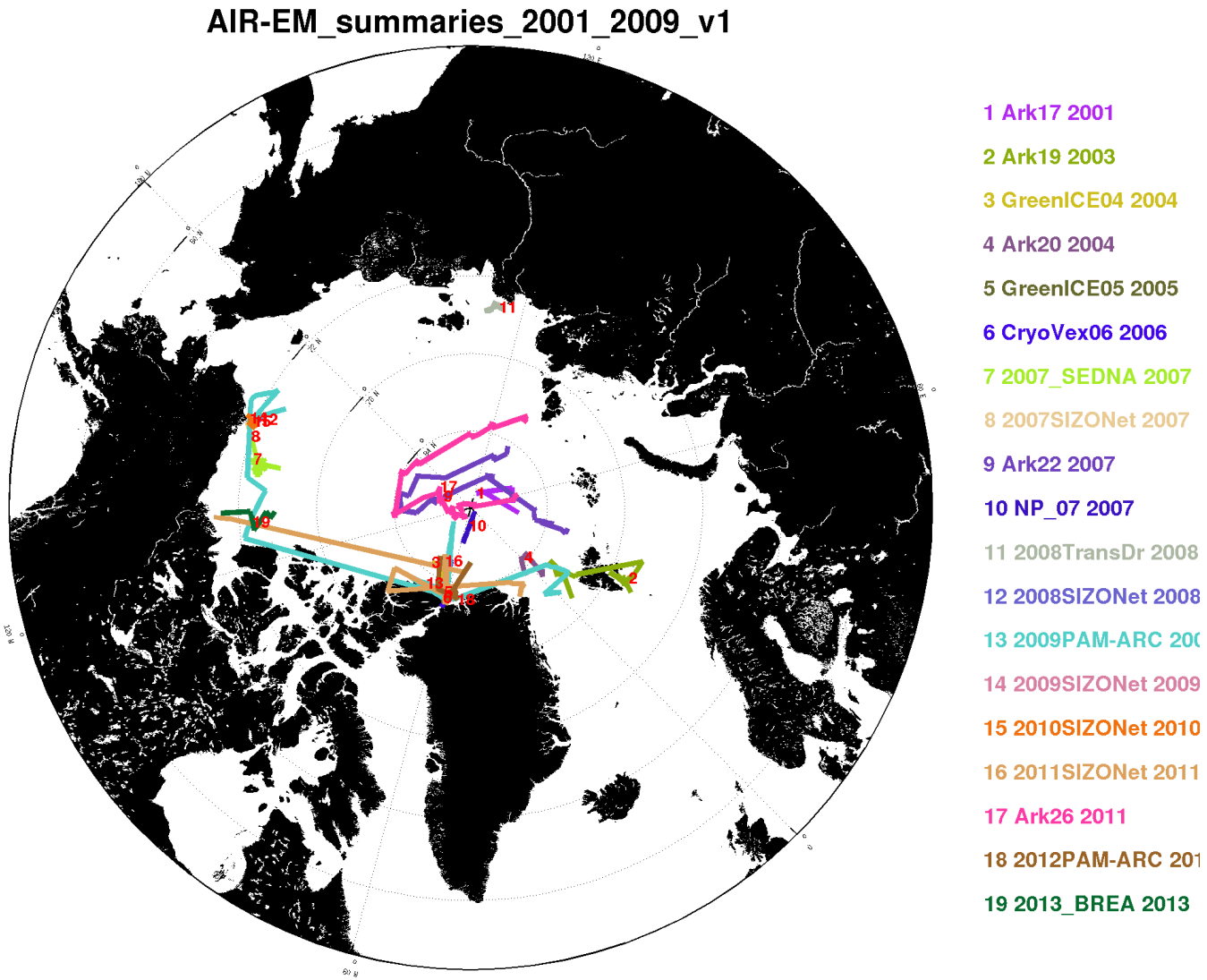
Observation Plot

Xinamin and I selected a data set *Unified Sea Ice Thickness Climate Data Record* [2] from the website provided by Paul. There are 15 recode there and I plotted the observation location in each individual data, there are mainly two types:

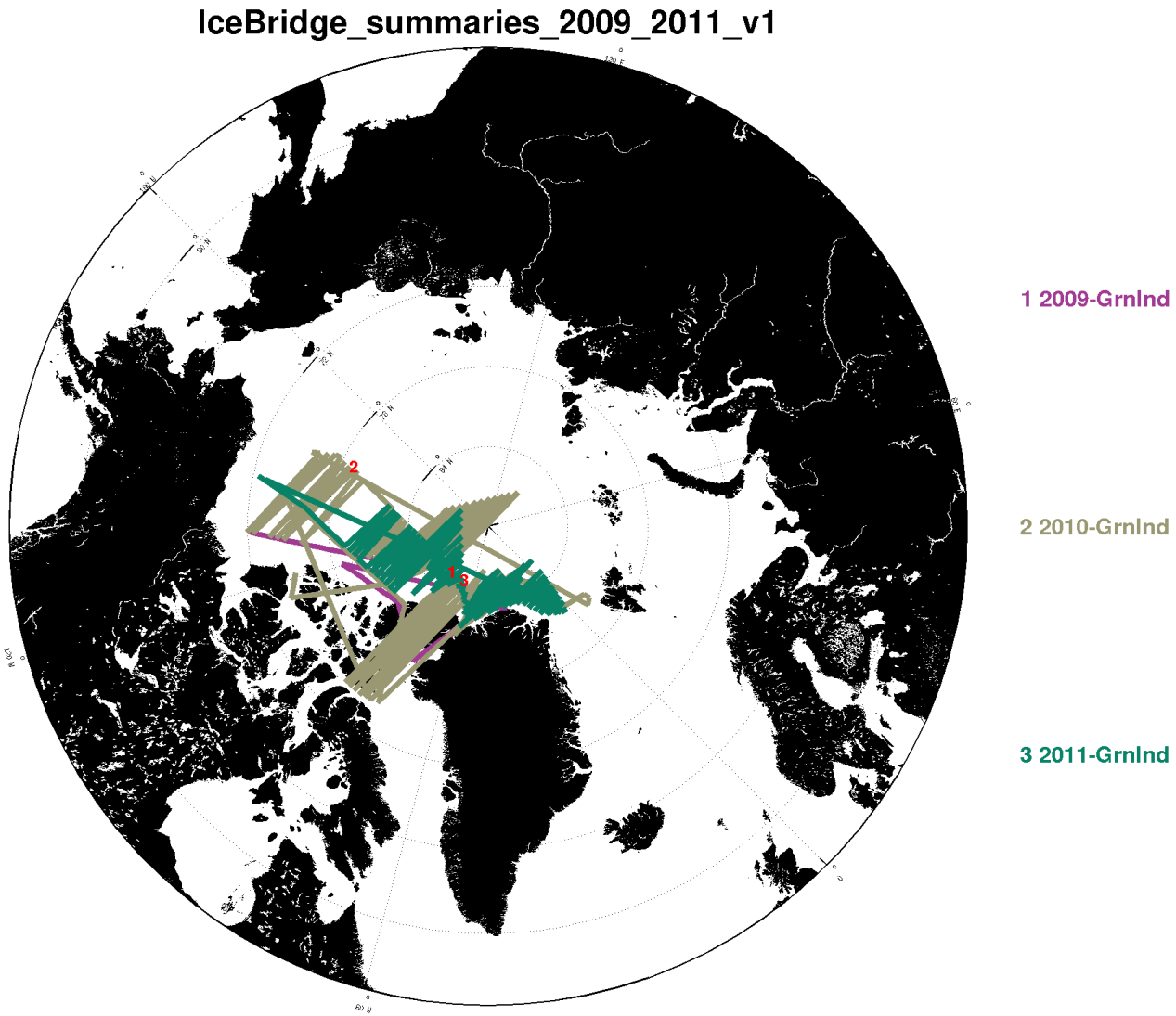
- The first type contains different tracks, including aircraft, satellite and submarine.
- The second type contains observations from several independent sites.

[2] `http://psc.apl.washington.edu/sea_ice_cdr/index.html`

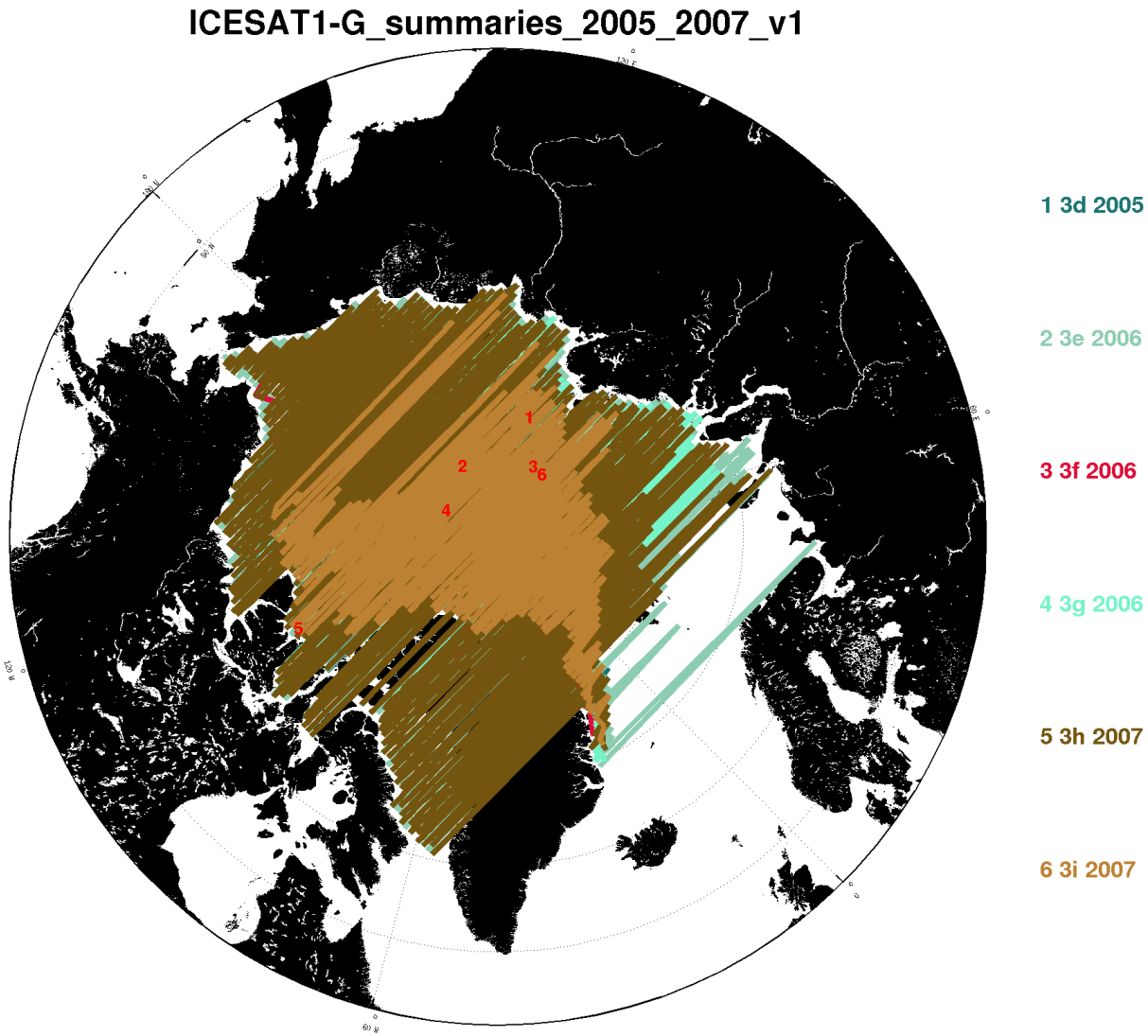
Sea-Ice Thickness Distribution on ON 03 04 05 06 07



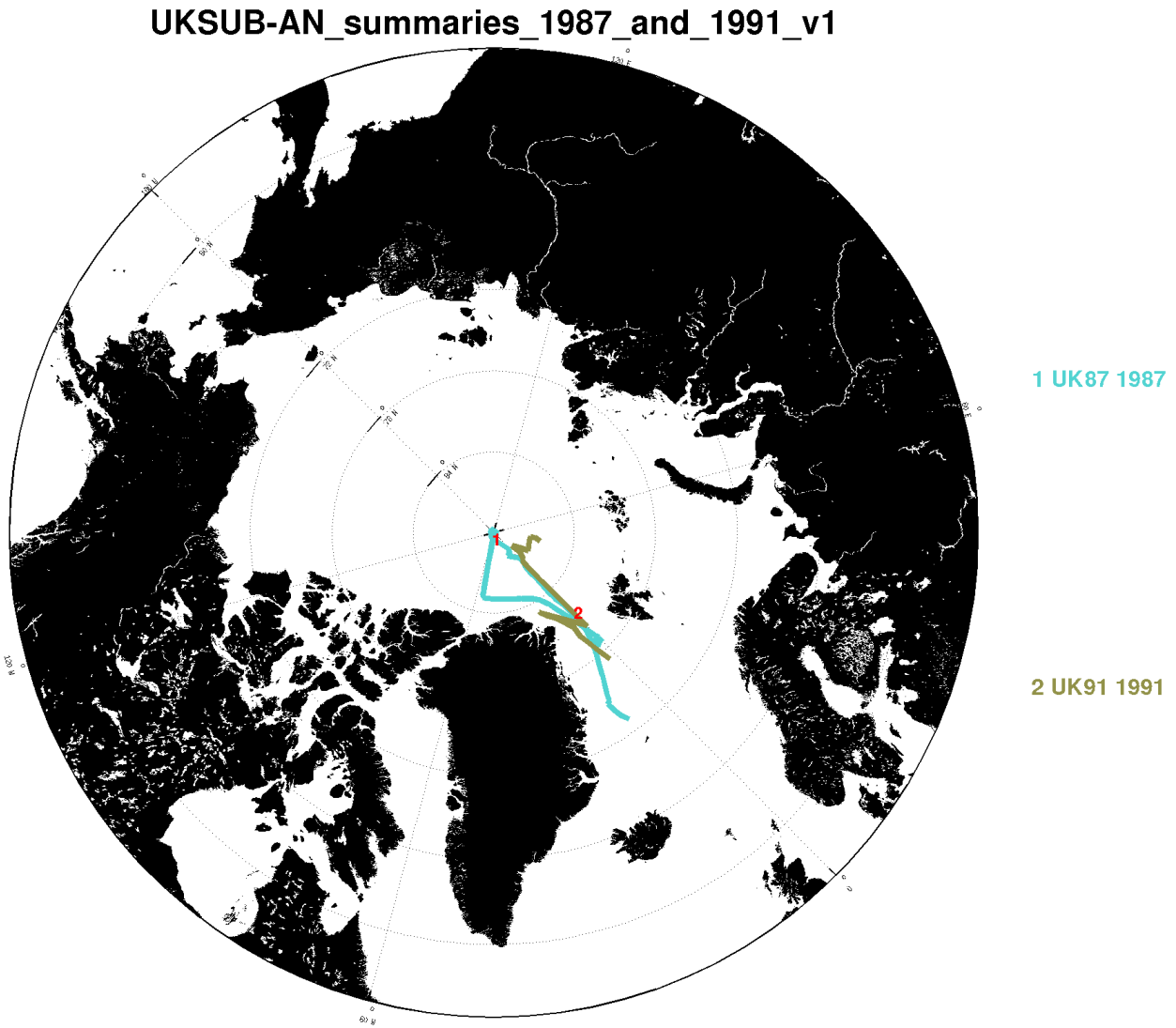
Observation from satellite



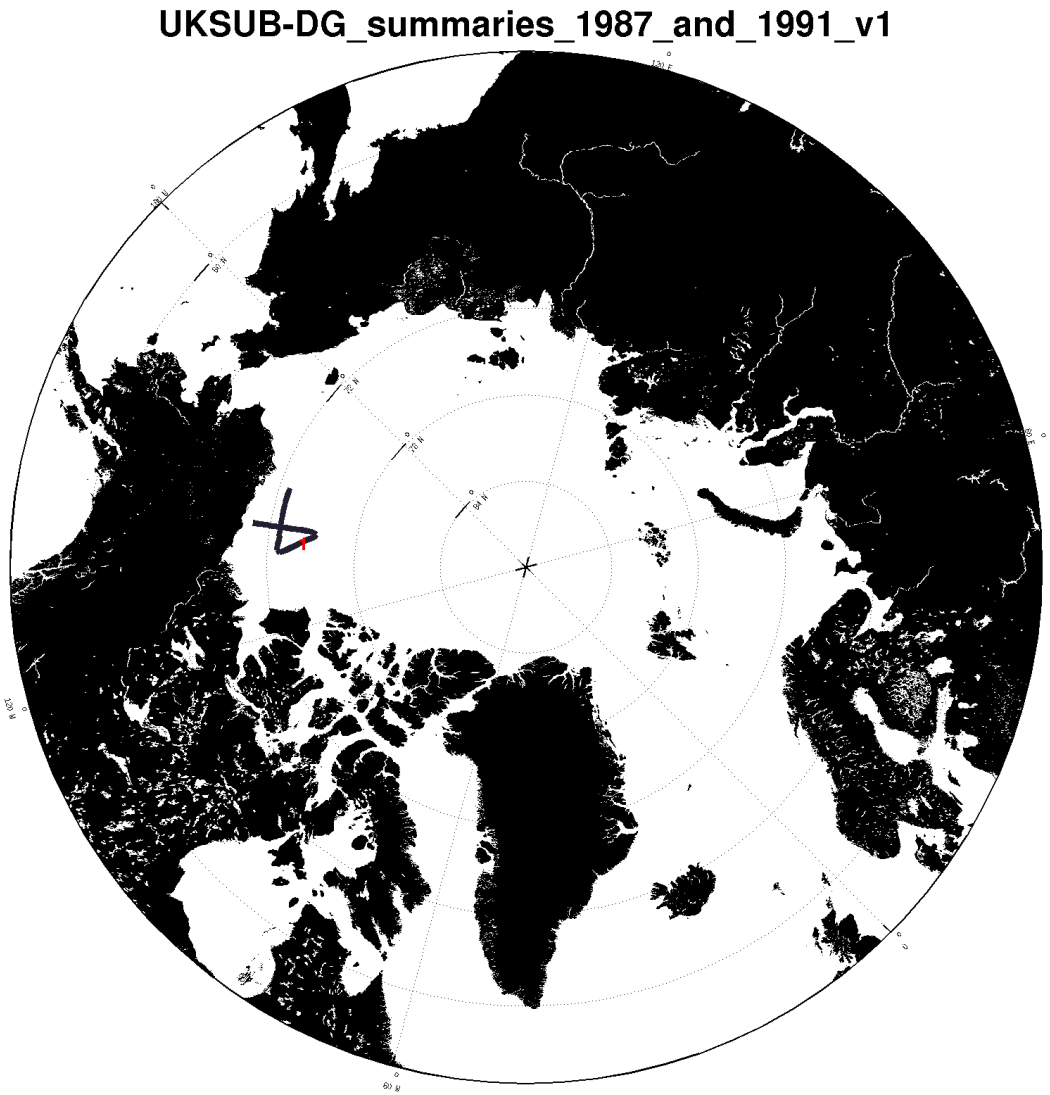
Observation from satellite



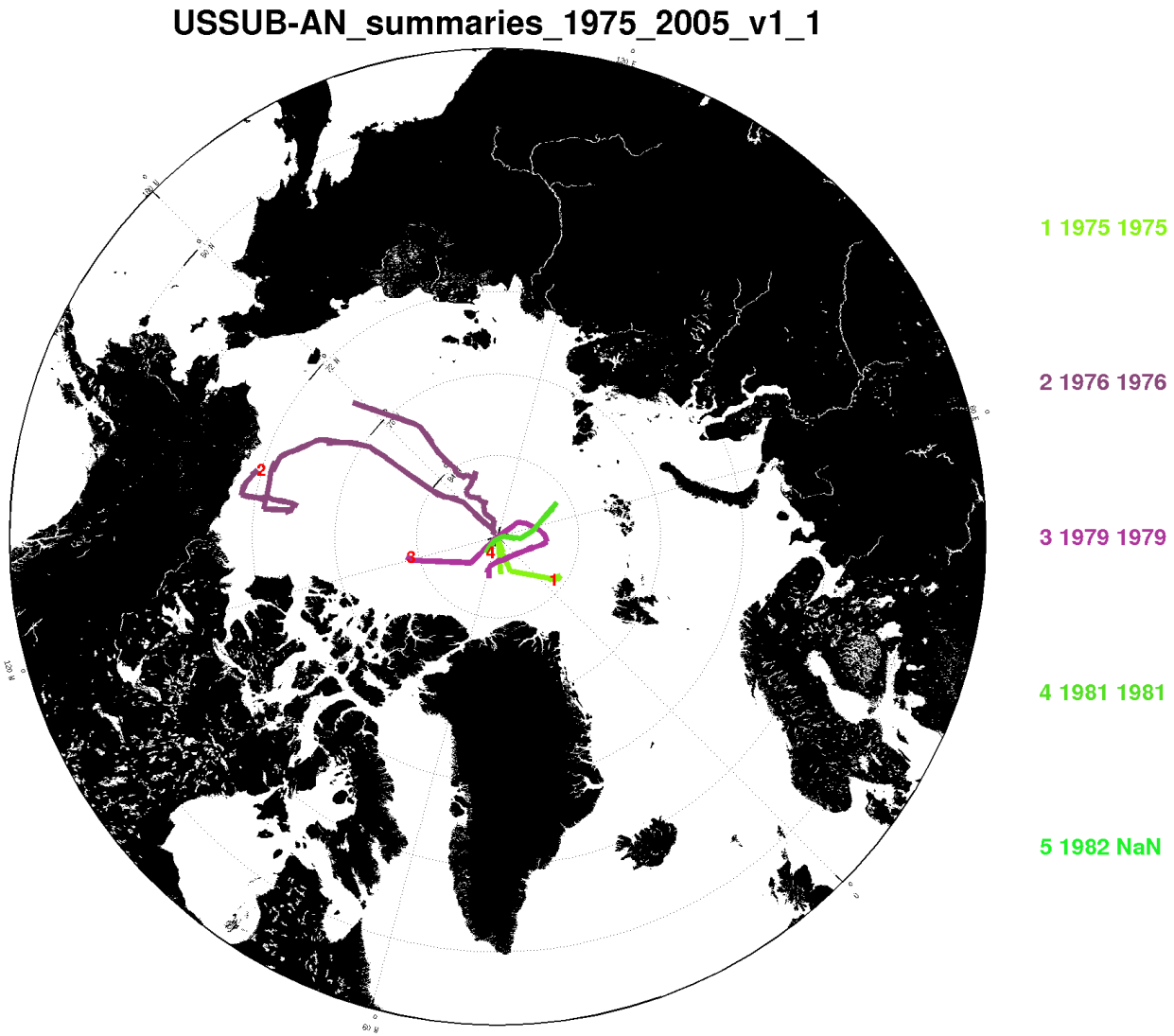
Observation from submarine



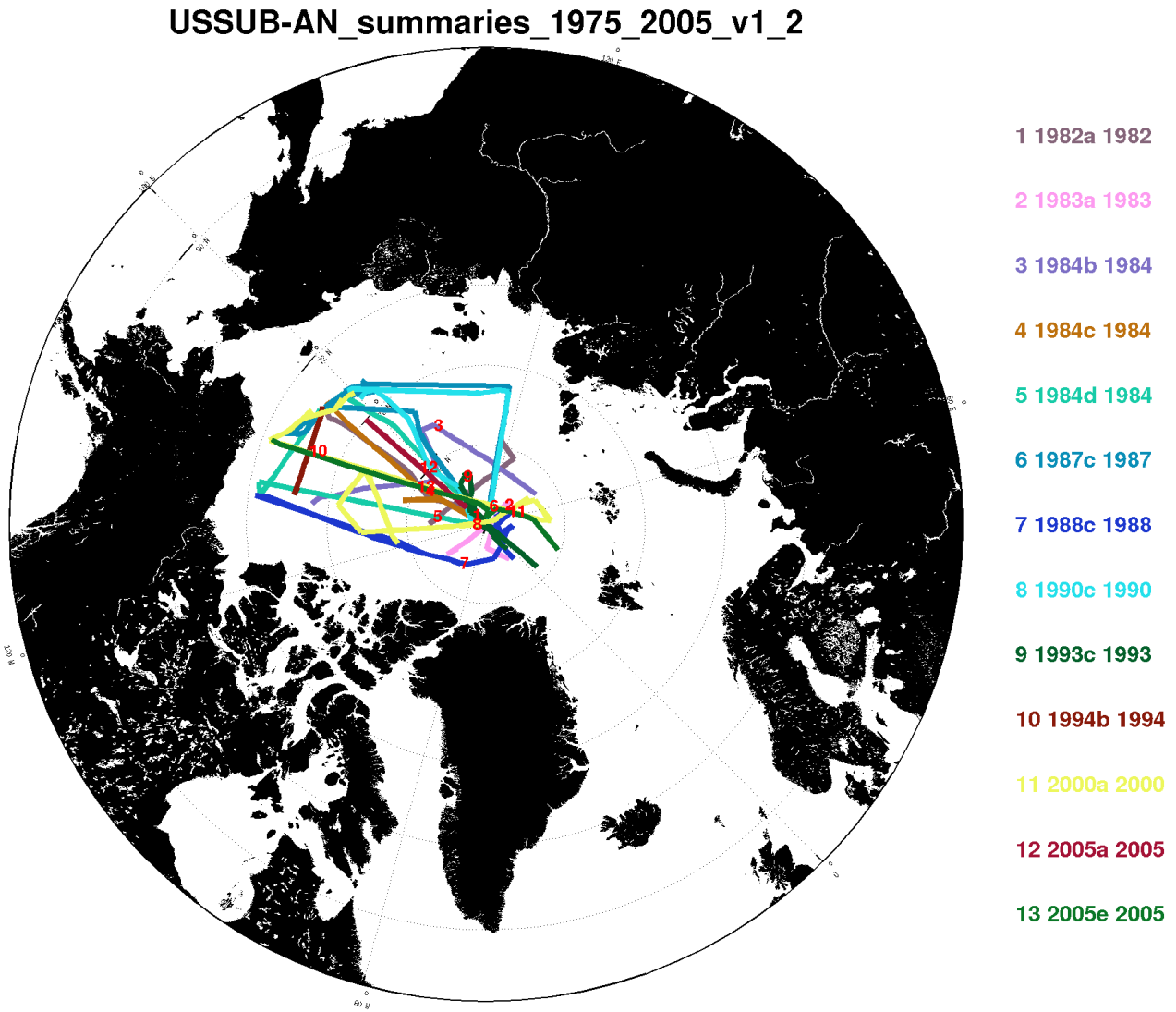
Observation from submarine



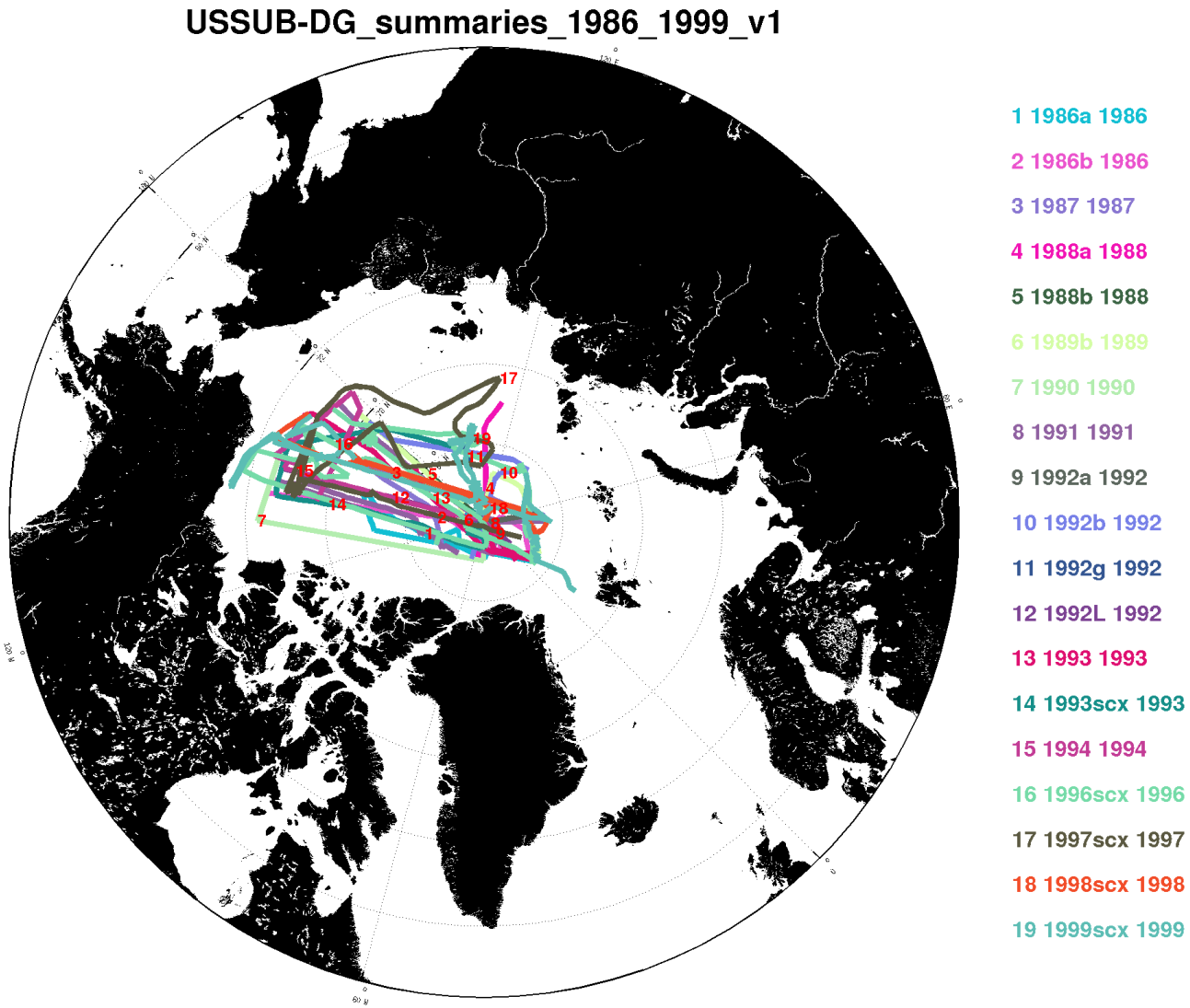
Observation from submarine



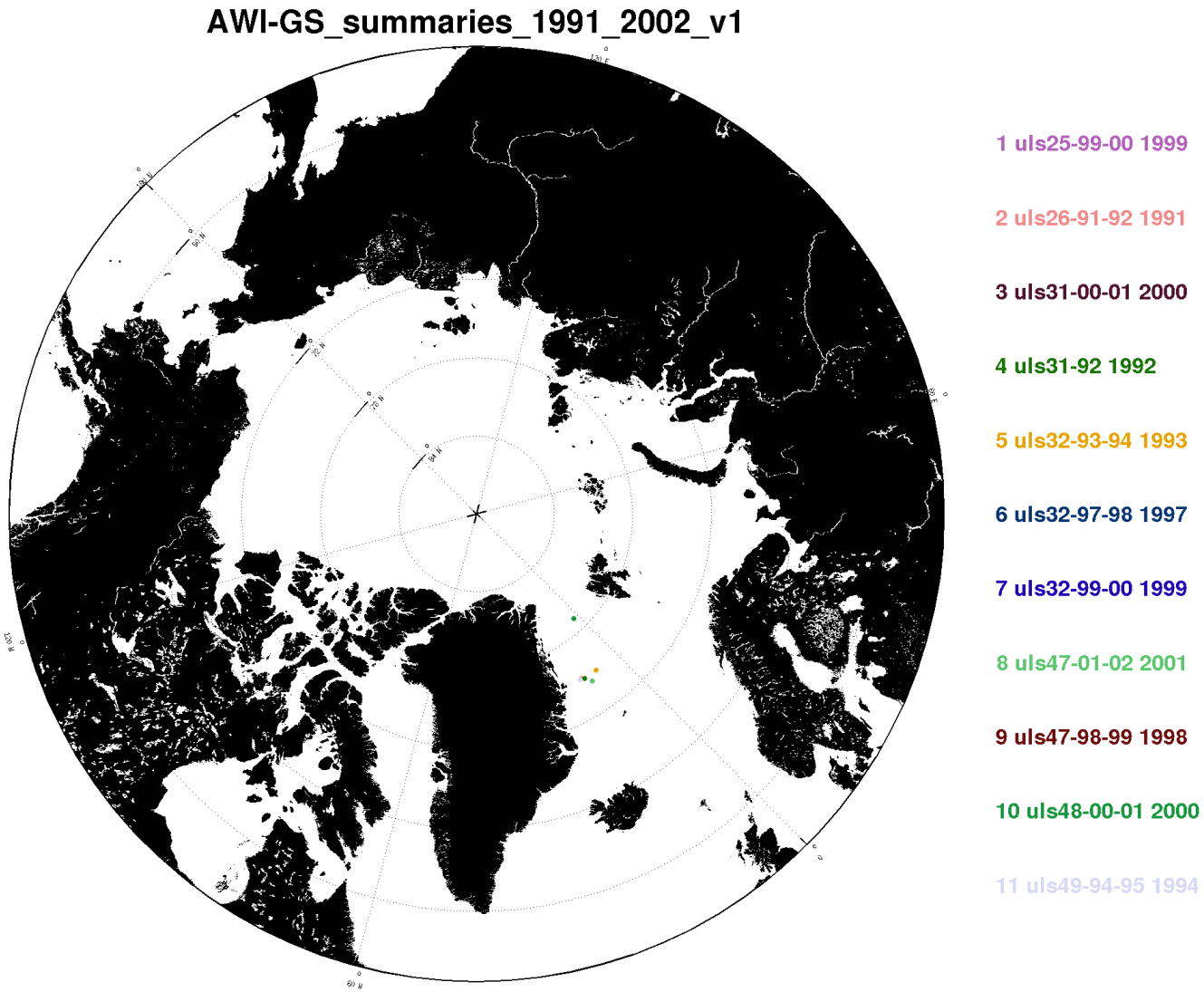
Observation from submarine



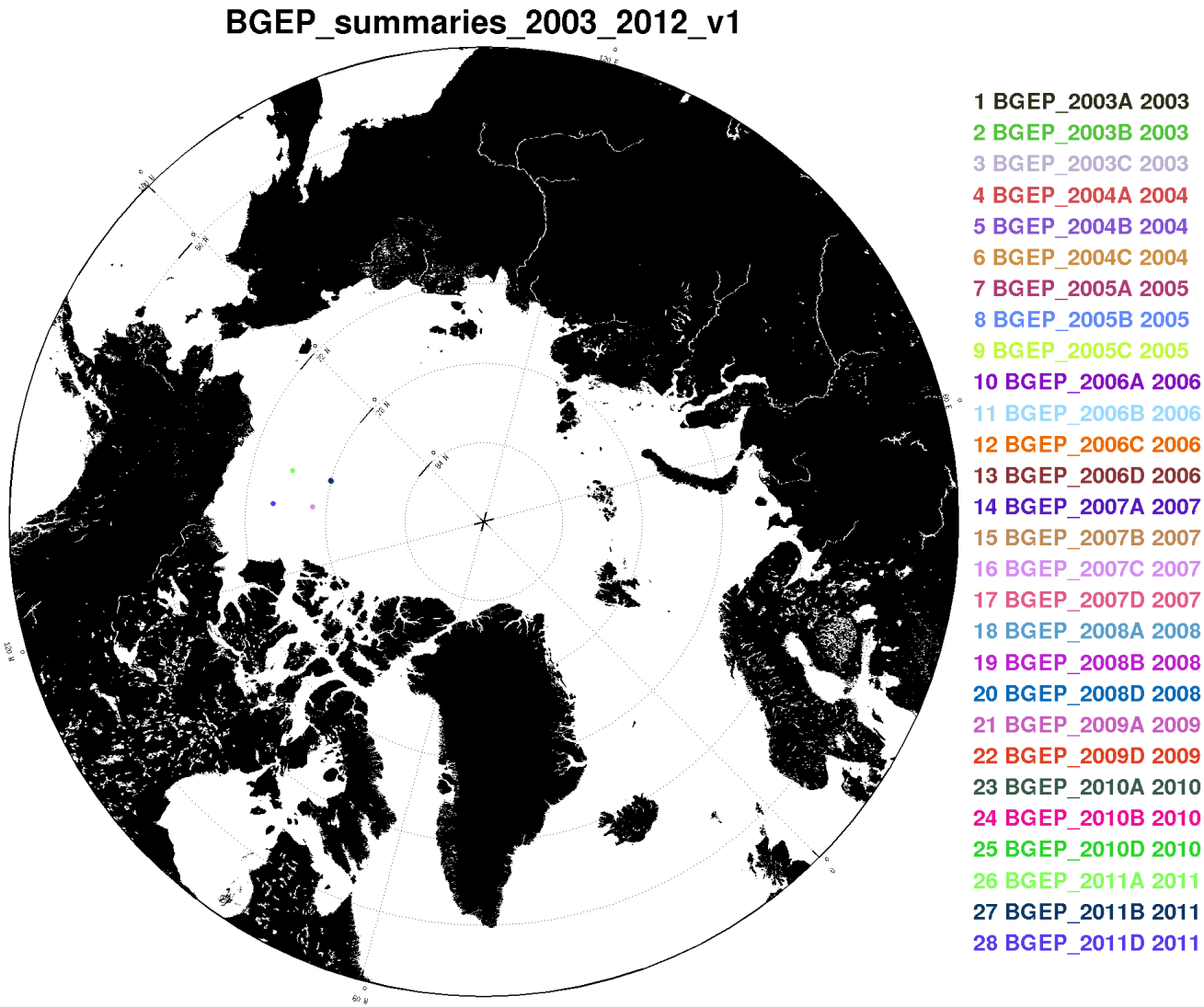
Observation from submarine



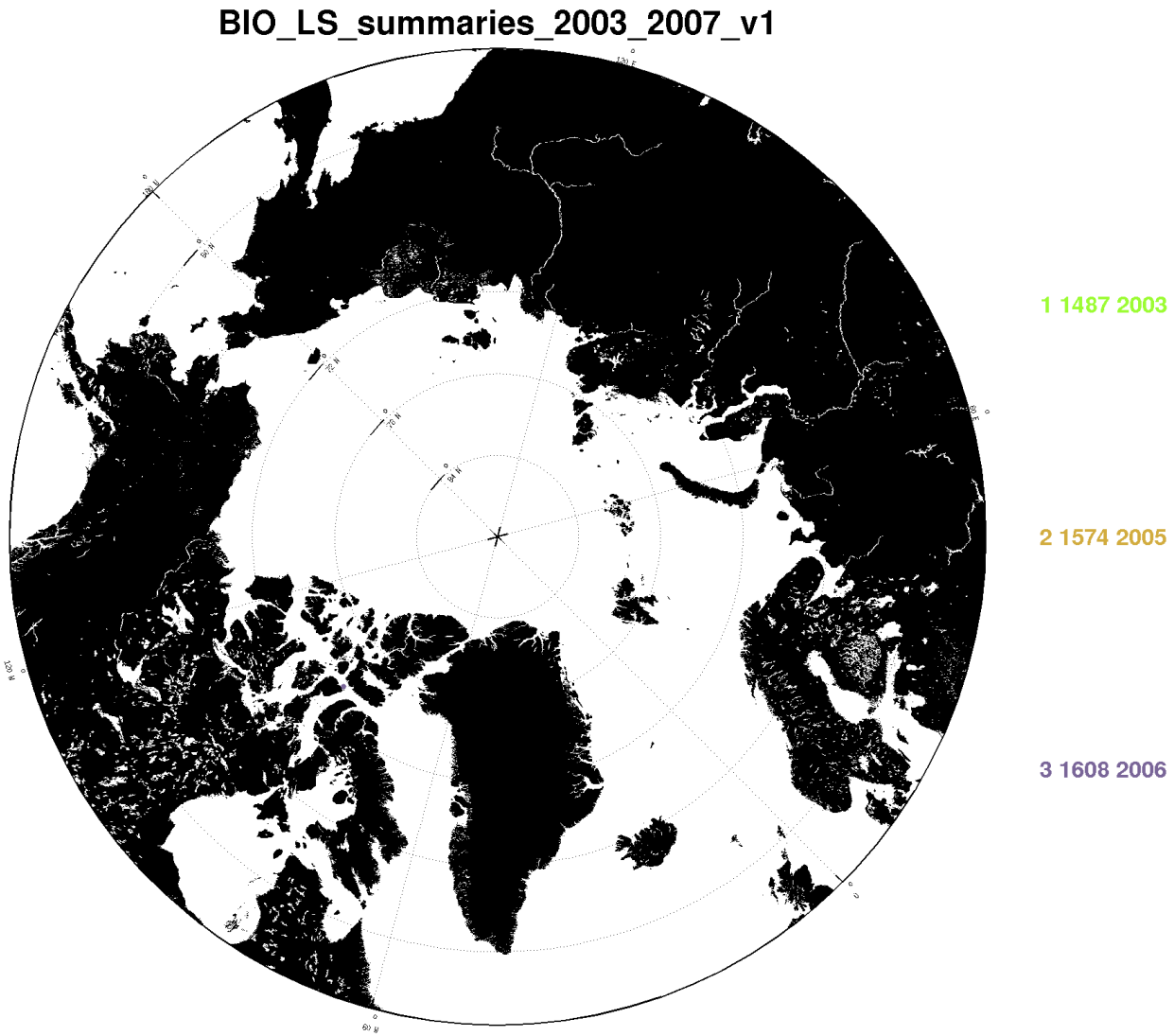
Observation from individual sites



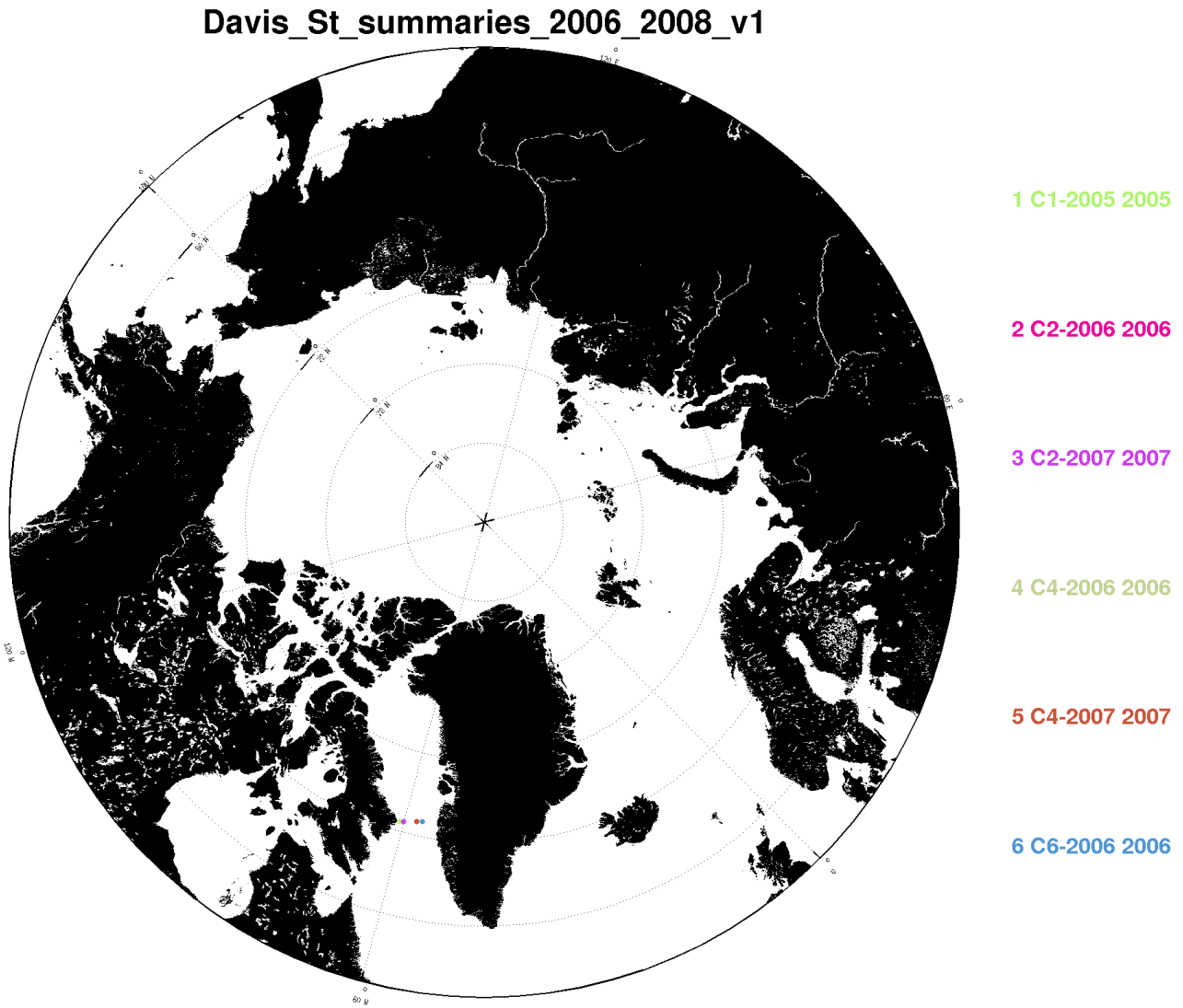
Observation from individual sites



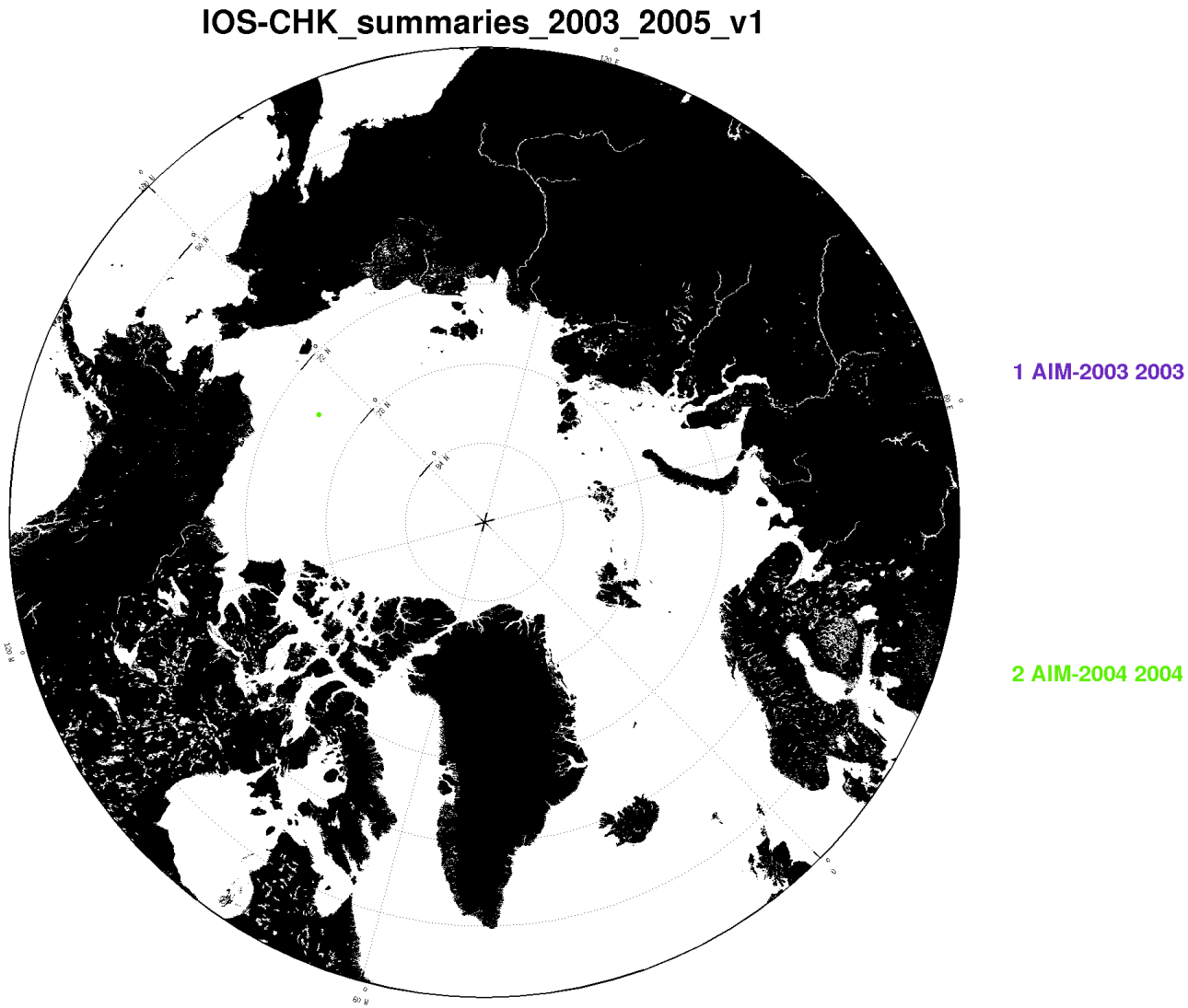
Observation from individual sites



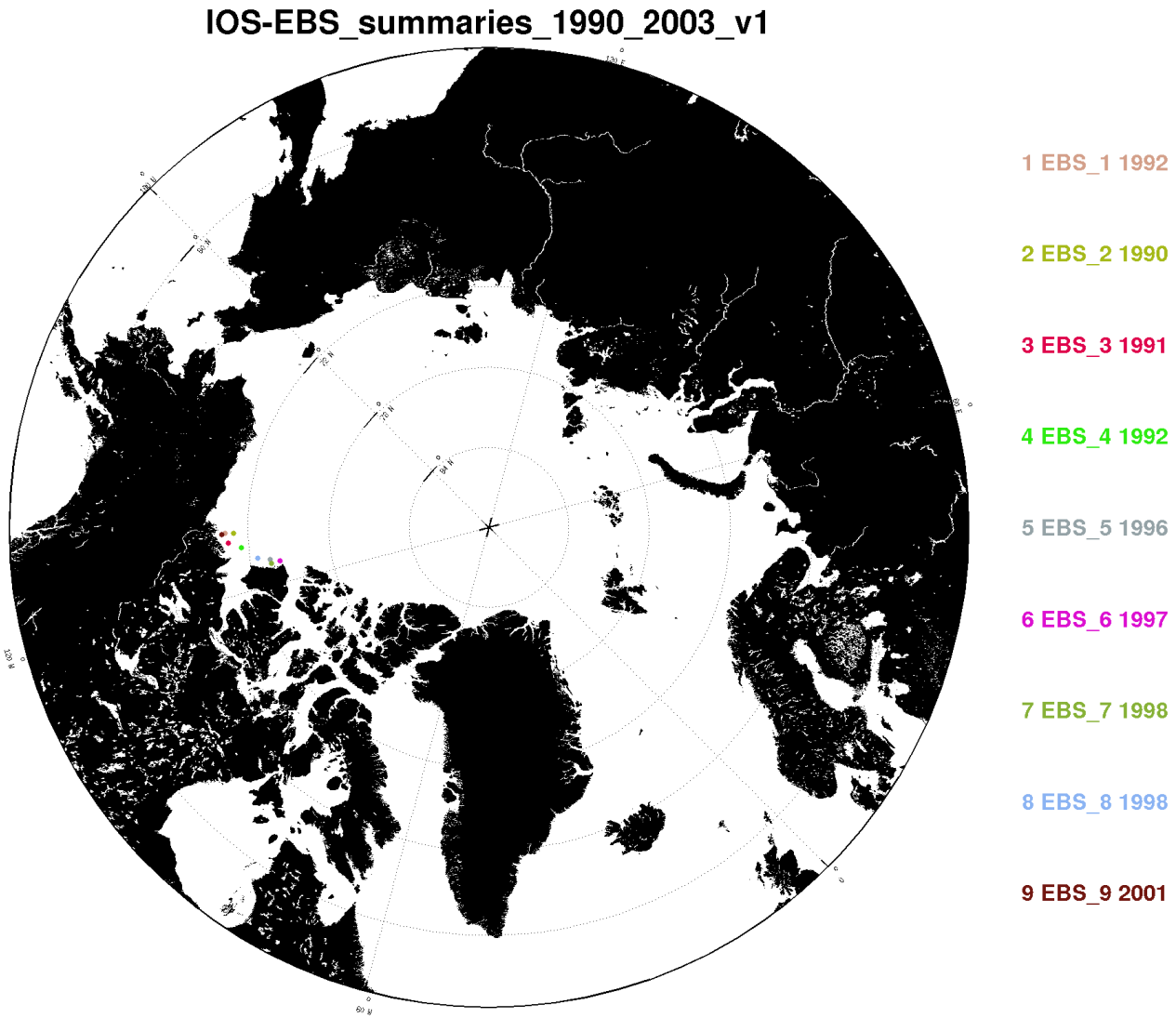
Observation from individual sites



Observation from individual sites



Observation from individual sites



Observation from individual sites