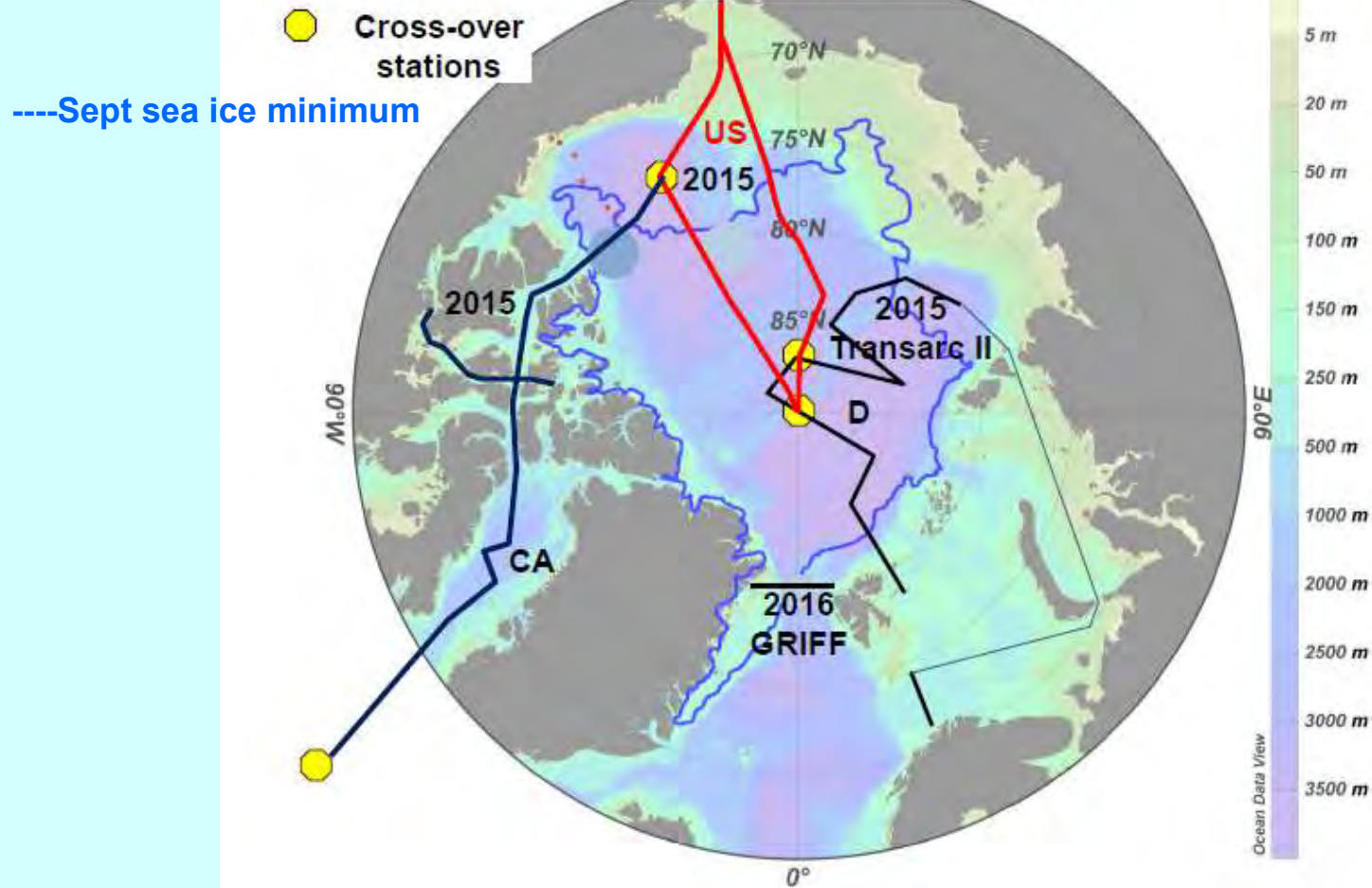


Arctic GEOTRACES 2015 - 2016



GEOTRACES expeditions 2015/2016



This project (multi-national, multi-icebreaker field effort) is of historic significance; it is unprecedented in regional scope and scientific breadth and will provide a comprehensive, pan-Arctic geochemical data set.

International Arctic GEOTRACES

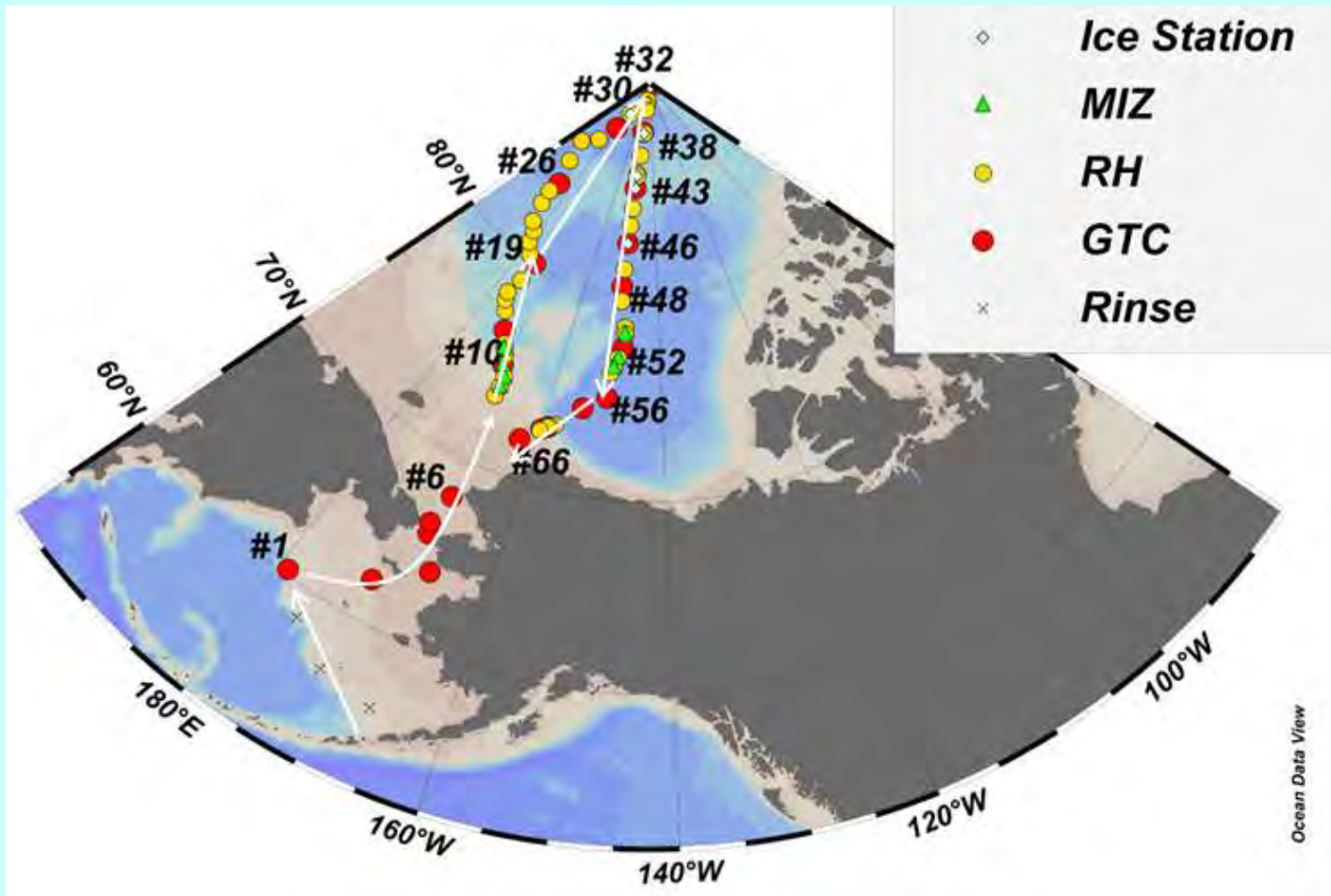
GEOTRACES – international effort to conduct multidisciplinary studies of processes affecting marine biogeochemical cycling; Emphasis on key trace elements and isotopes (TEIs), and their *sensitivity to changing environmental conditions.*

TEs serve as nutrients, tracers, and can be contaminants,

- **Extremely relevant to the Arctic, where *rapid climate change* and *accompanying biogeochemical responses* are occurring.**



US Program



Very thin - to - no ice on northward leg.
First unaccompanied US surface vessel to North Pole

Overarching Scientific Goals of US Arctic GEOTRACES:

- Understand current biogeochemical processes
- Establish baselines against which future conditions can be compared
- Provide insights into the Arctic's future-provide data for models



US Arctic GEOTRACES

- **US: Management proposal funded 2014, then 25 science proposals funded ~ 43 PIs.**
- **CLIVAR – Repeat Hydrography “piggy-back” participation ~ 35 additional stations, 5 days**
 - provided enhanced spatial resolution –small Rossby radius (e.g. eddy resolution)
- **Ship was “full-up”: 51 science berths + 94 crew**



**Canadian Program
Vancouver Workshop May 2017**



Somewhat different emphasis than US Program

- Modeling an important component of the Canadian effort
Stephanie Waterman (mixing), N. Steiner (biogeochemical – production model)
- River sampling (K.A. Brown, M. Colombo) – Canadian Archipelago
- Ecosystem, primary production studies
e.g. J. Laroche (diazotroph community in the Arctic, effect on N cycling)

Trade-off: not as many TEIs as US program.

R. Francois and J. Cullen to discuss



**US and Germany at North Pole
Sept 7, 2015**

Michiel Rutgers van der Loeff: "The ship is still vibrating from the wonderful experience yesterday. What a chance that we finally managed to have this meeting and exchange, such a welcome happening for all on board. And a landmark for GEOTRACES. "

