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2015 KOPRI Activities in the Arctic: Physical Oceanography

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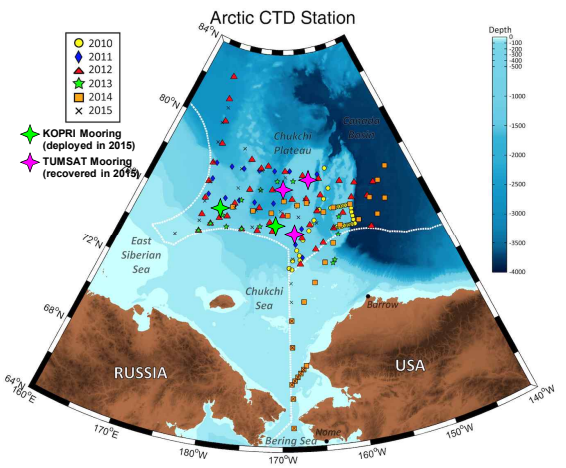
IB R/V ARAON Arctic Cruises (2010~2015)



	2010	2011	2012	2013	2014	2015
CTD	38	18	44	16	32	42
XCTD	*	33	48	36	51	61
Period	07/20~08/10	08/02~08/16	08/04~09/06	08/24~09/01	08/01~08/23	08/01~08/21

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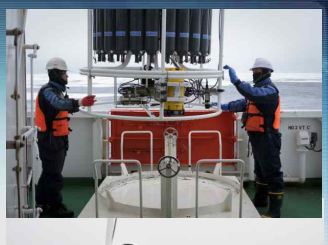
What we observed

Equipment

- CTD, Lowered ADCP, XCTD
- Ocean Mooring System
- Bio/Geo/Chemical equipment



Items

- Temperature, salinity, DO, fluorescence, PAR, transmission, backscatter, water velocity
- Primary production and new production,
- Phytoplankton composition,
- Chlorophyll-a and HPLC,
- Zooplankton composition and abundance
- Bacterial and virus biomass
- Micro-zooplankton biomass, composition, and grazing
- Nutrients, POC, PON, DOC, DON, DOP
- N_2O gas, pCO_2, DIC , pH, SS, TA
- Atmospheric components

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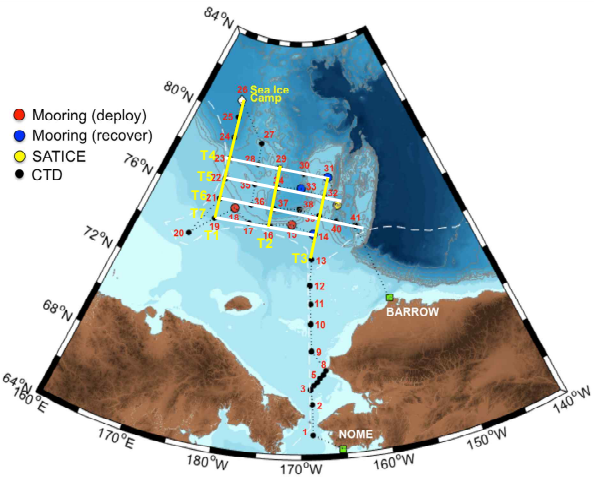
CTD: Transects



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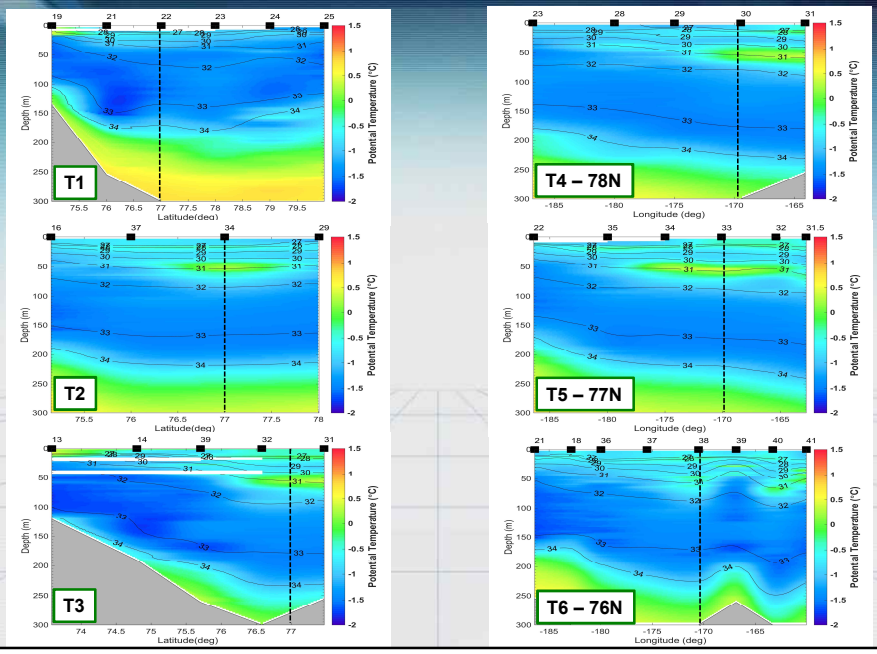
CTD: Transects (2015)



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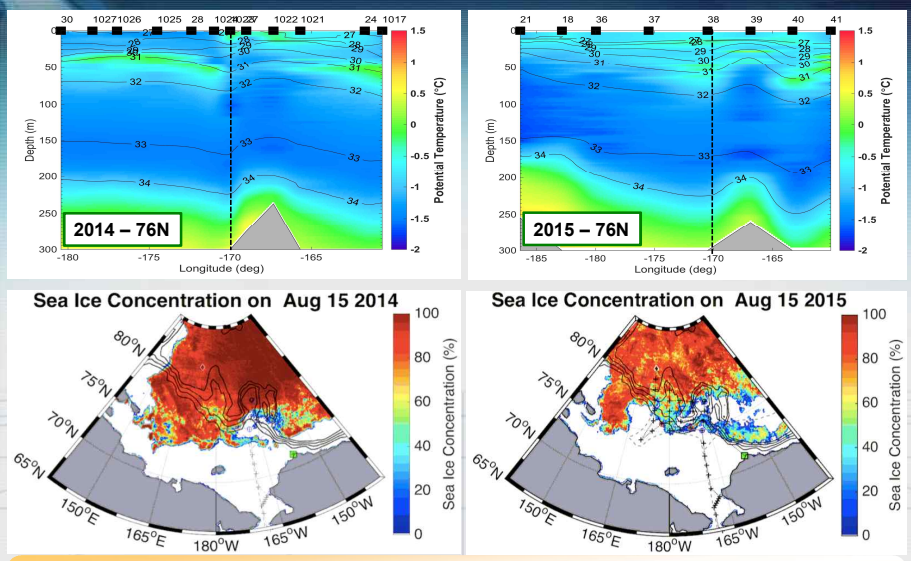
CTD/XCTD: E-W Transects



- The pathway of PSW in 2015 appears to move to the north compared to that in 2014.

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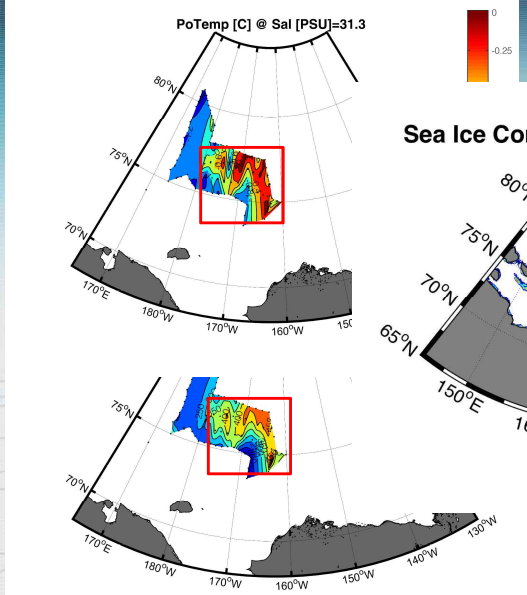
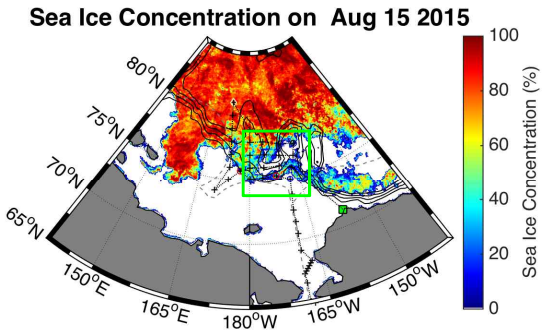
Horizontal Distribution: PSW, HC vs. SIC





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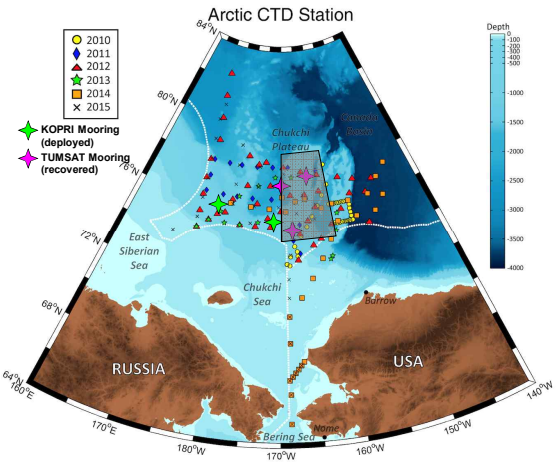
CTD/XCTD: θ, S



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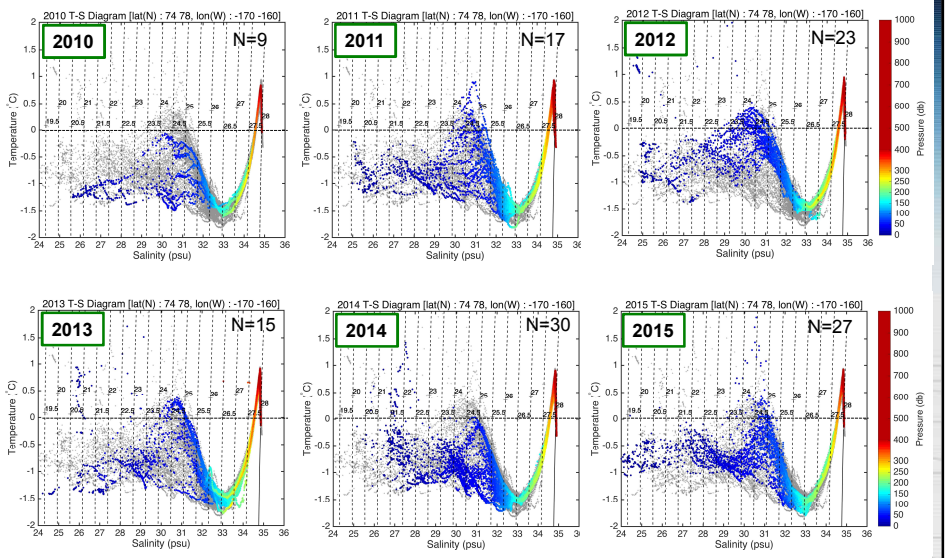
CTD/XCTD: θ-S Diagram (selected area)



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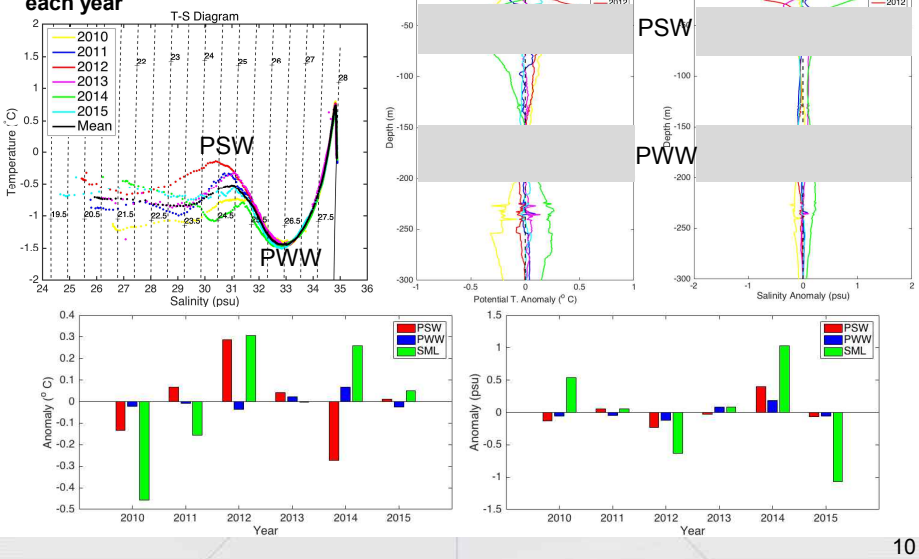
CTD/XCTD: Anomaly of θ, S (local area)

Diagram of θ-S averaged over the area (170°W~160°W, 74°N~78°N) each year



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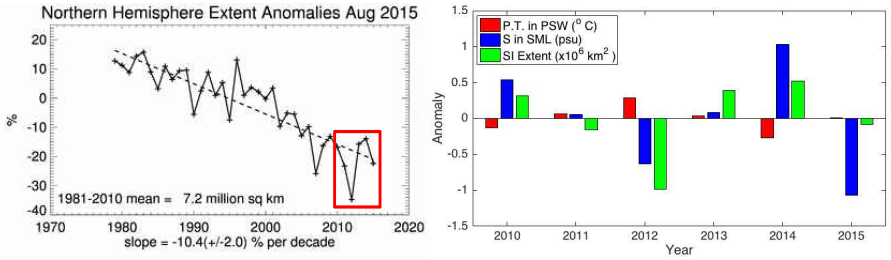
Anomaly of θ, S vs. SI Extent in August



- Temperature anomaly in PSW vs. Sea ice extent anomaly: negative
- Salinity anomaly in SML vs. Sea ice extent anomaly : positive

Sea Ice Extent data are available at https://nsidc.org/data/seaice_index/archives.html

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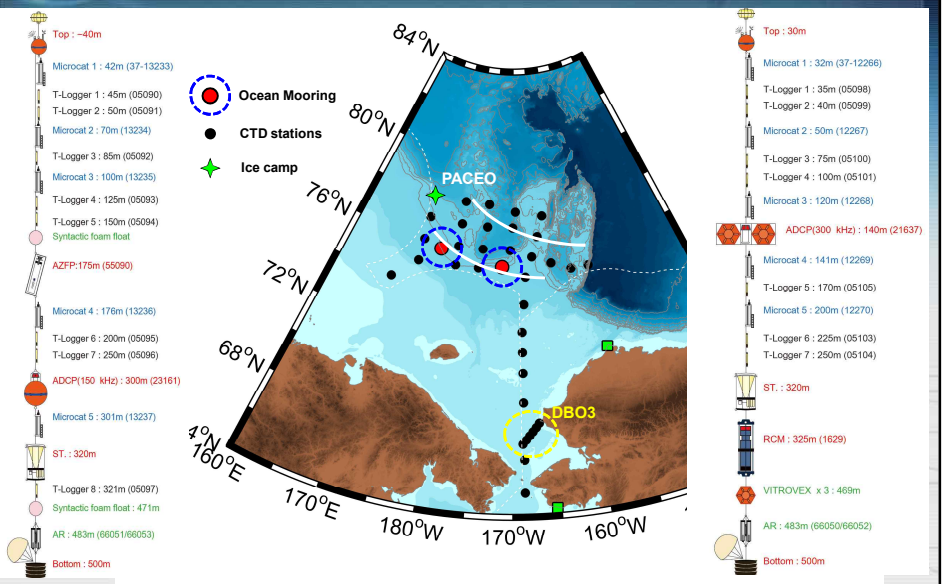
2016 ARAON Cruise Plan: Station Map



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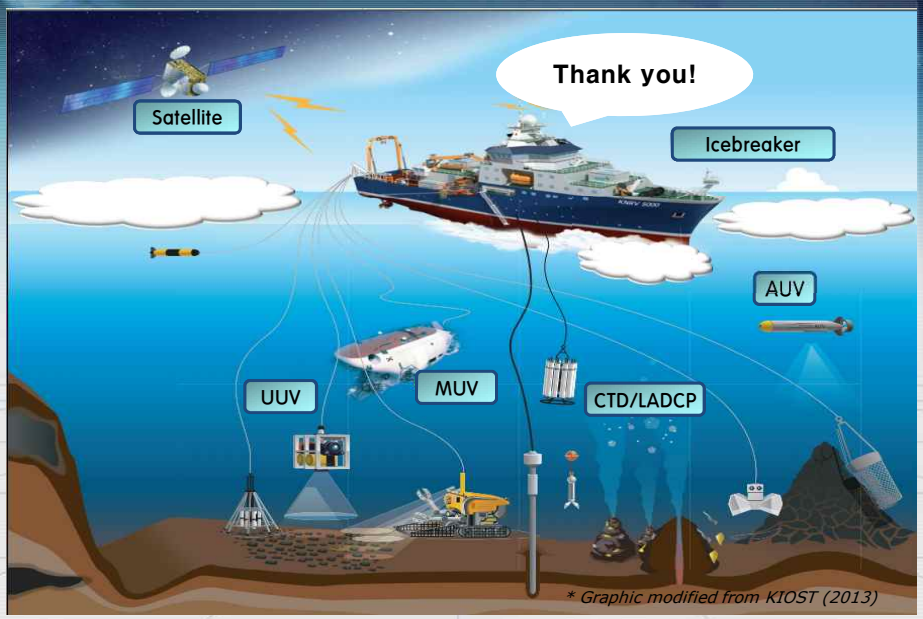
Questions or Comments?



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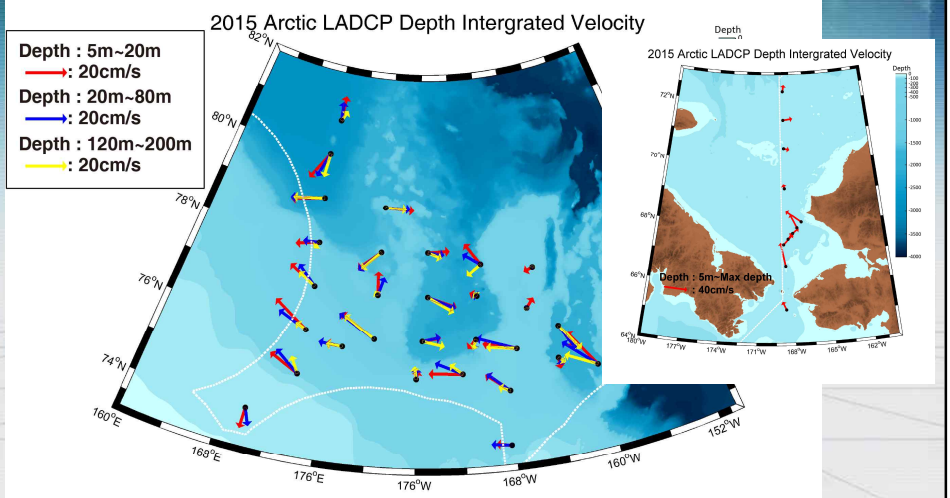

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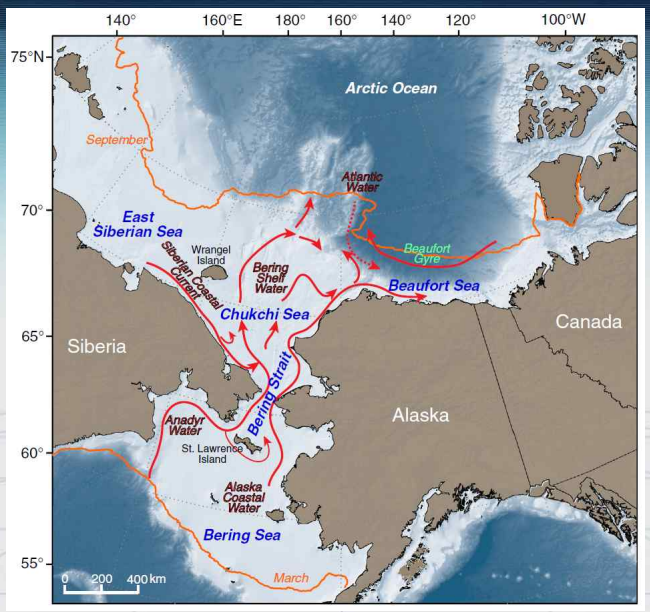

Pacific Arctic regional map depicting maximum (March) and minimum (September) sea ice extent (see Frey et al., 2015; Fig. 1) and major currents (see Wood et al., 2015; Fig. 13).

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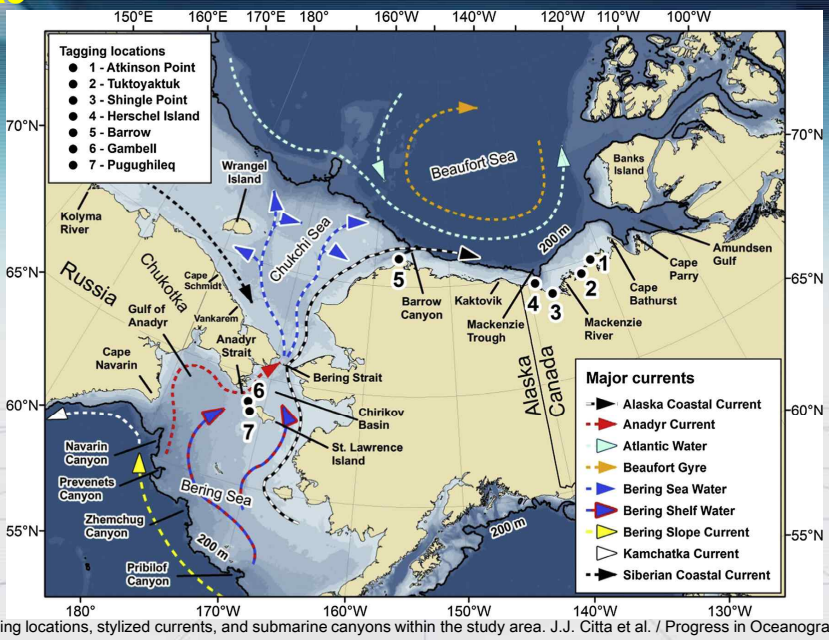
A3



Tagging locations, stylized currents, and submarine canyons within the study area. J.J. Citta et al. / Progress in Oceanography 136 (2015) 201–222

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