

Ny-Ålesund Recent Radiosonde Observations and Future Activities

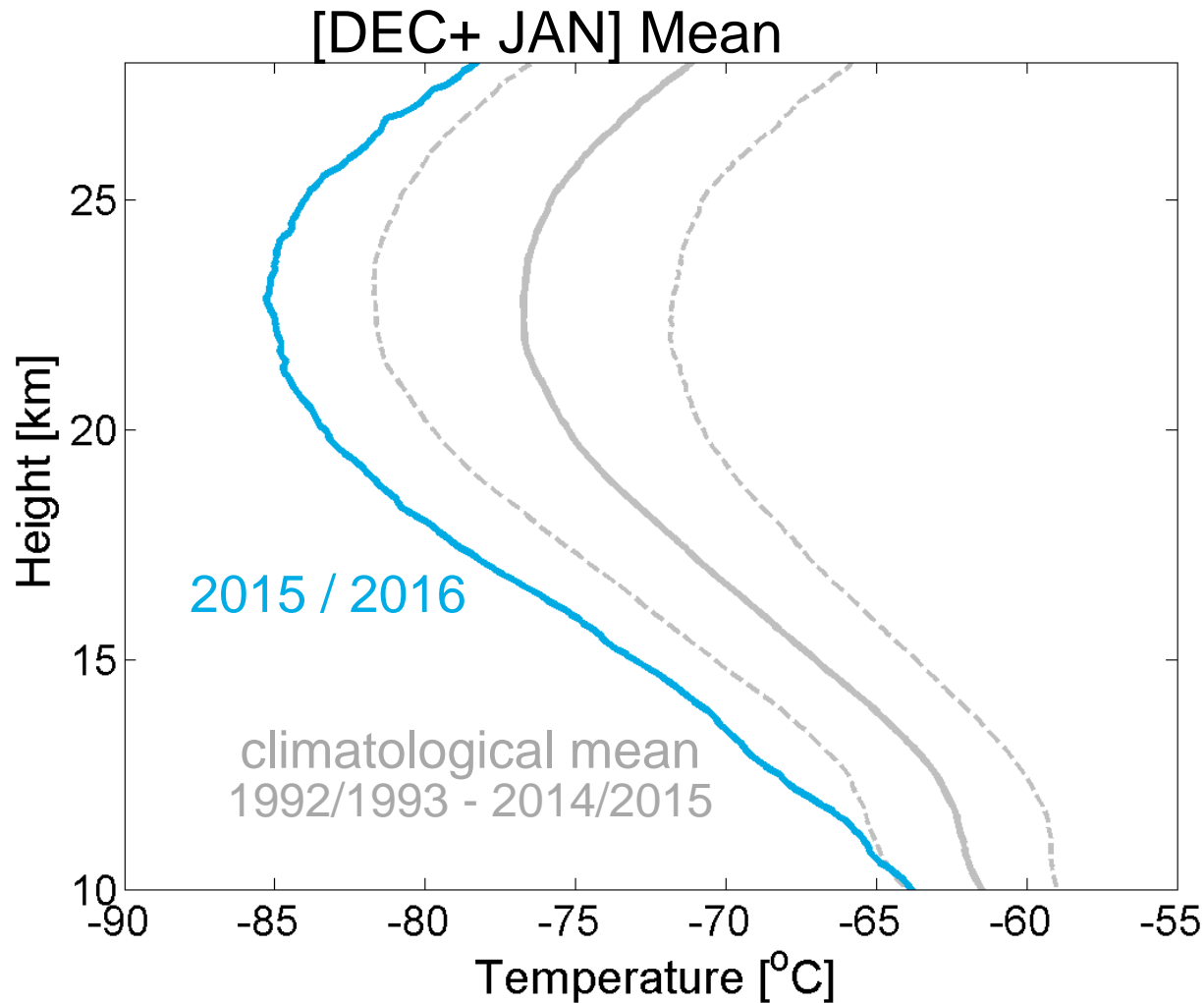
Marion Maturilli

*M. Kayser
R. Treffeisen
J. Inoue
S. Kazutoshi
and others*

GRUAN ICM-8, Boulder, Colorado, 25-29 Apr 2016

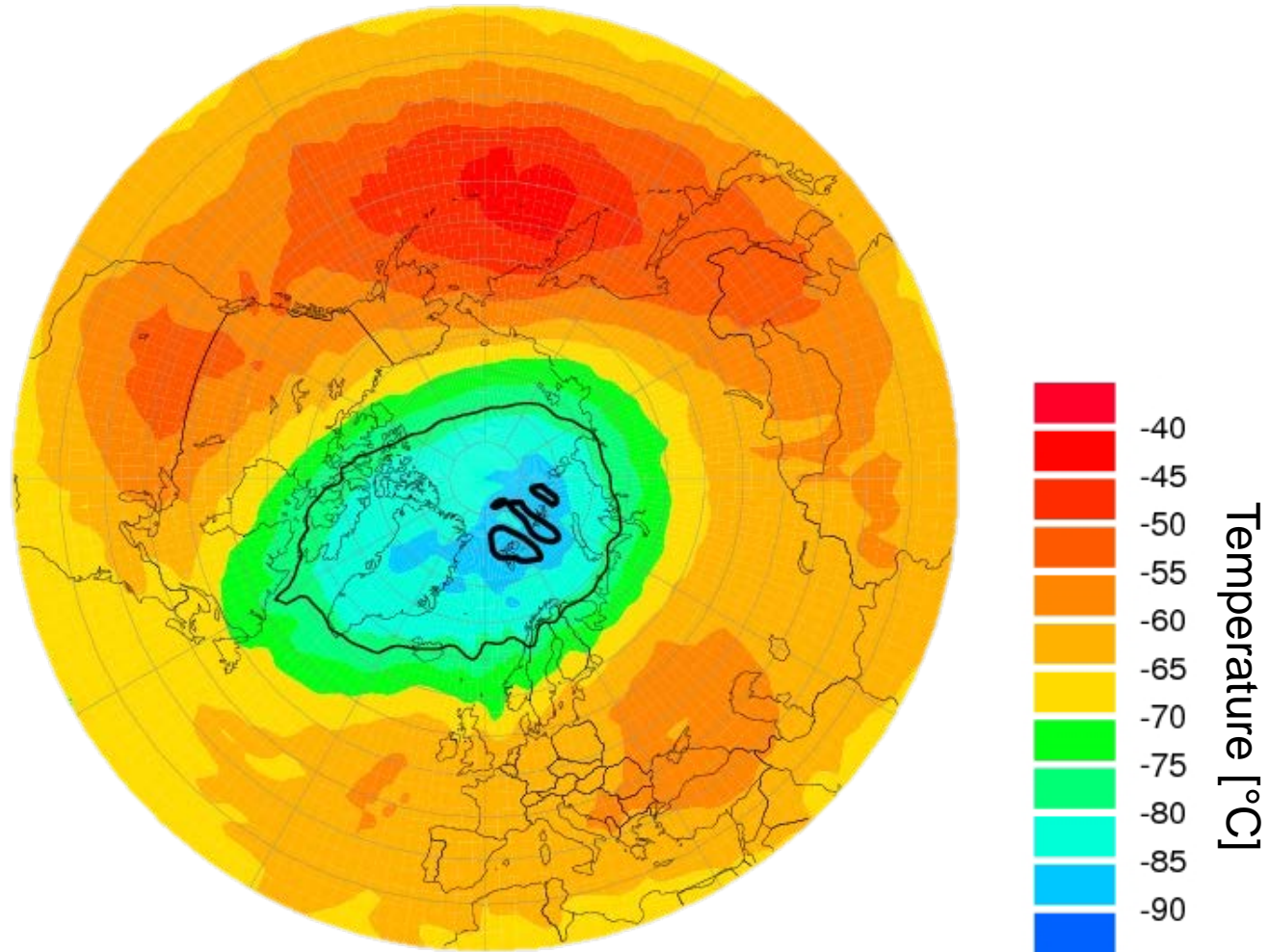


ALFRED-WEGENER-INSTITUT
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UND MEERESFORSCHUNG

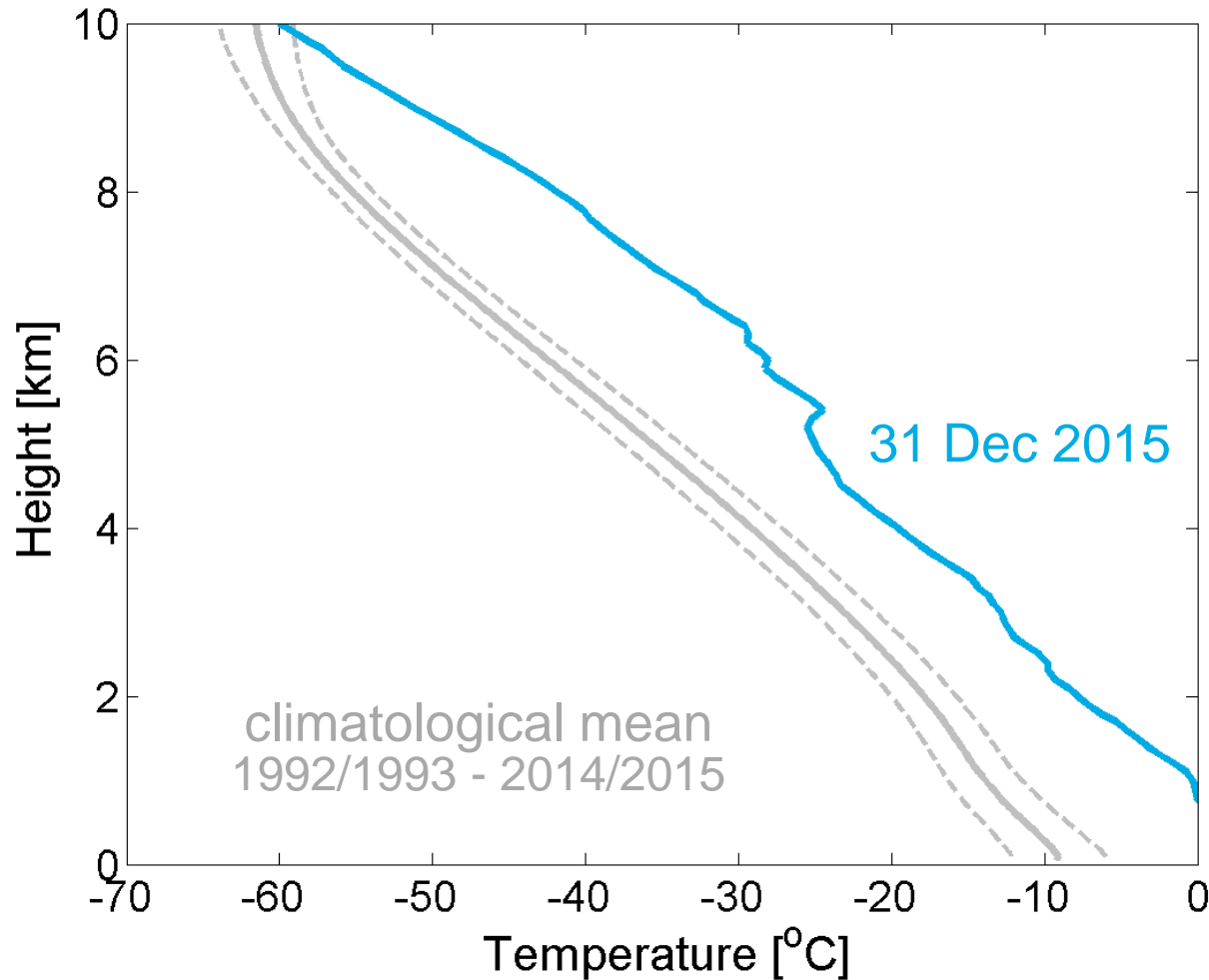


475 K Level
30 Dec 2015

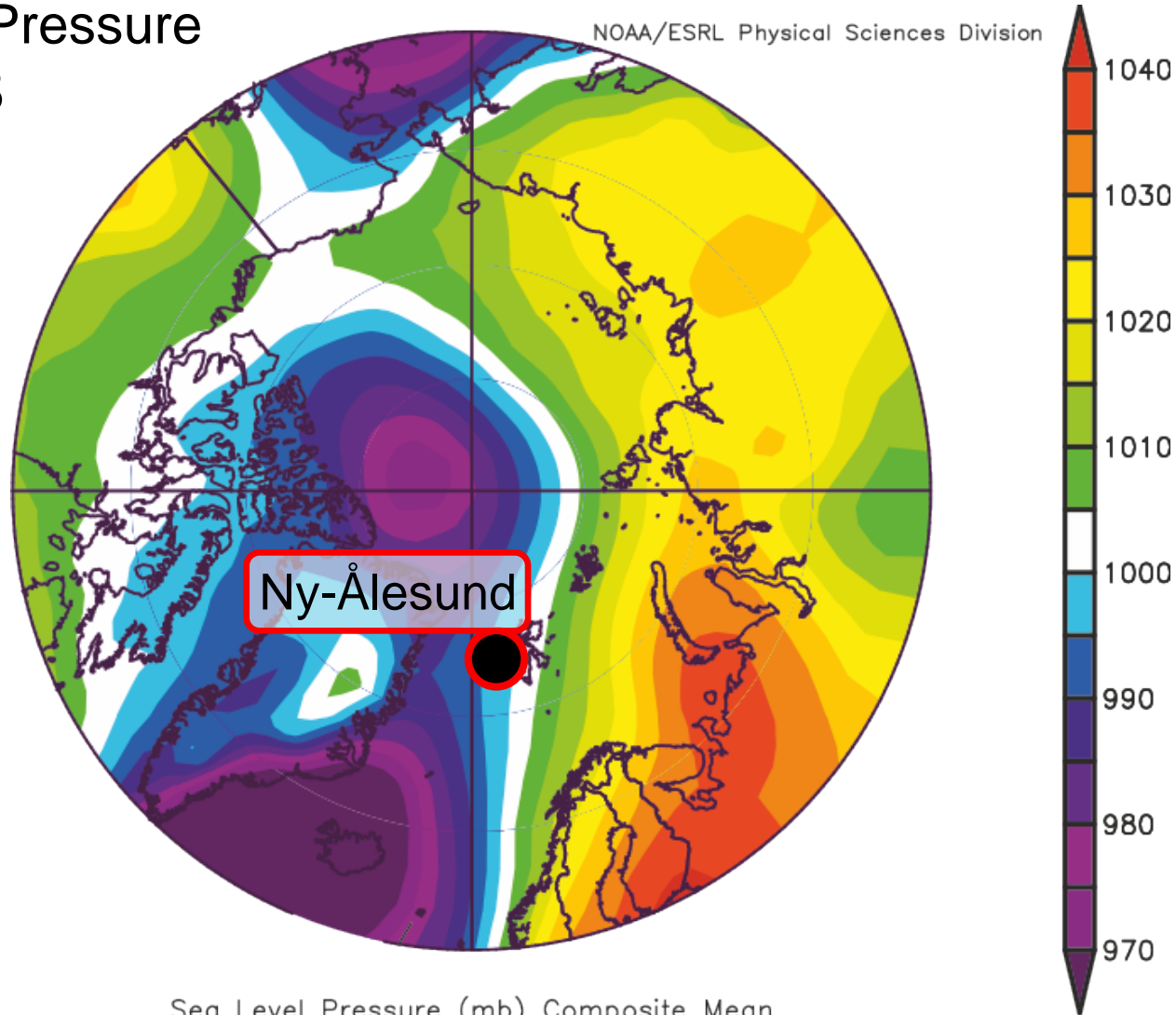
Polar Vortex Temperature



ECMWF operational data

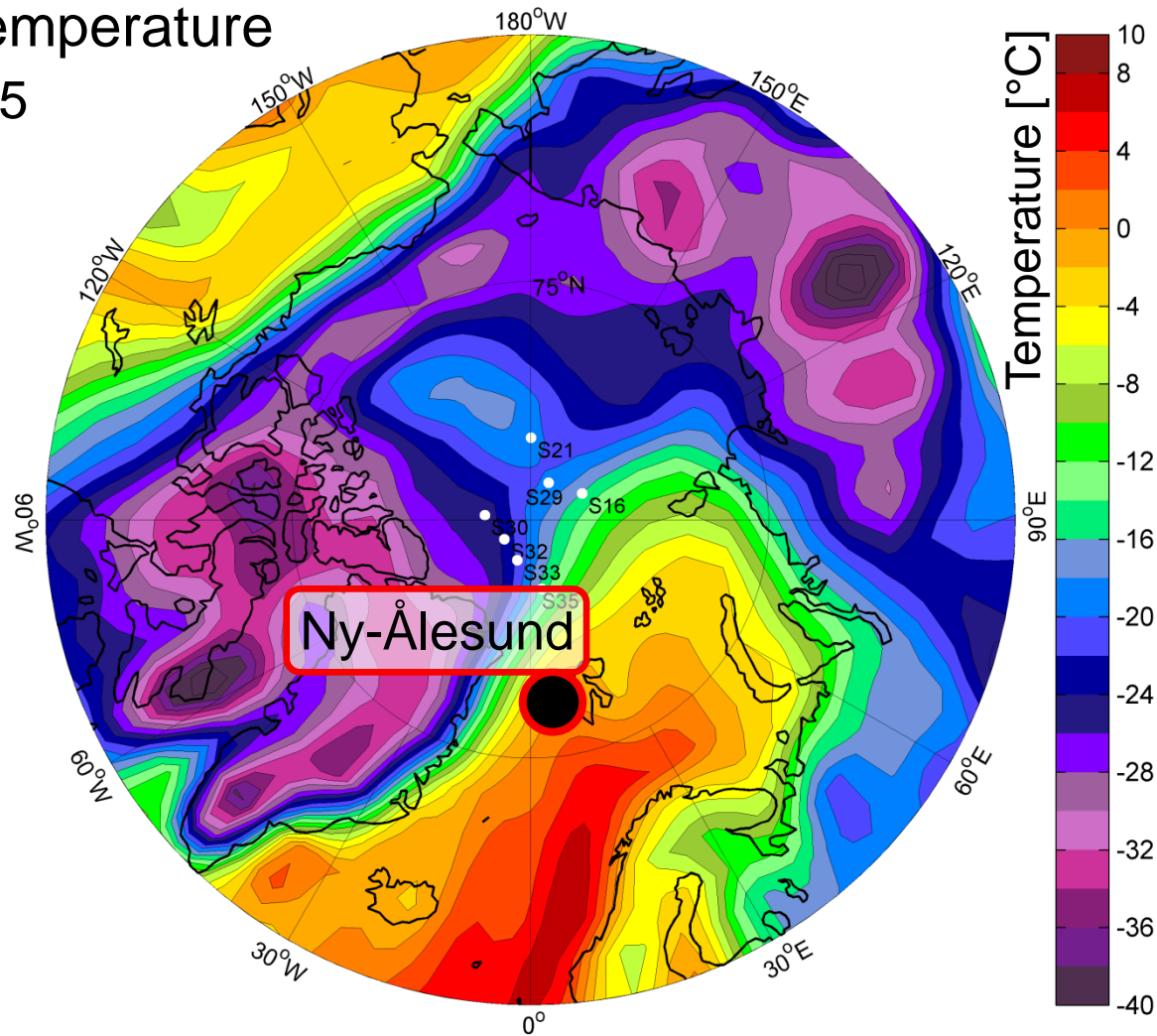


Sea Level Pressure 30 Dec 2015



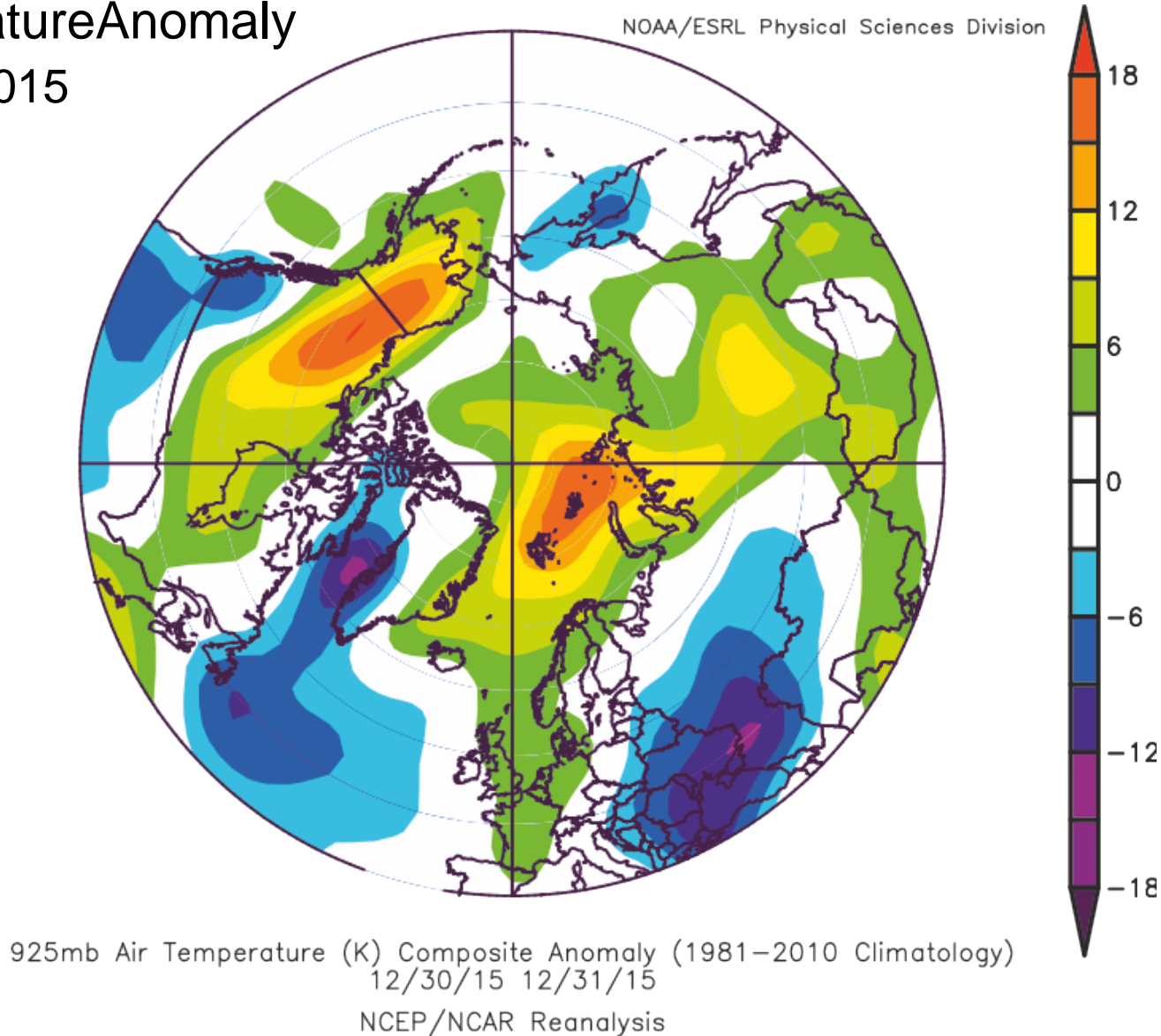
Sea Level Pressure (mb) Composite Mean
12/30/15 to 12/30/15
NCEP/NCAR Reanalysis

Surface Temperature 30 Dec 2015

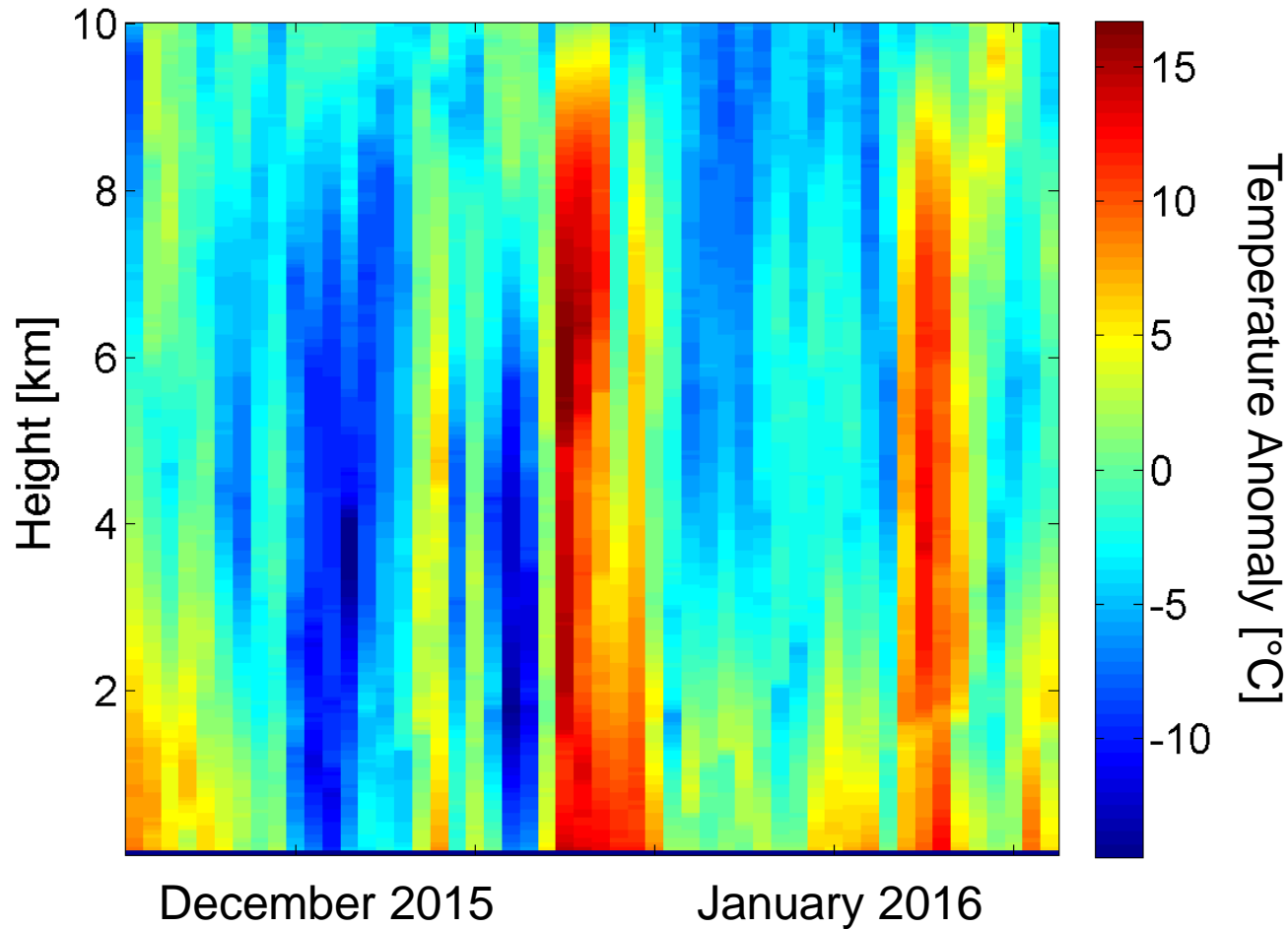


NCEP/NCAR reanalysis data
www.esrl.noaa.gov/psd/products

Temperature Anomaly 30 Dec 2015



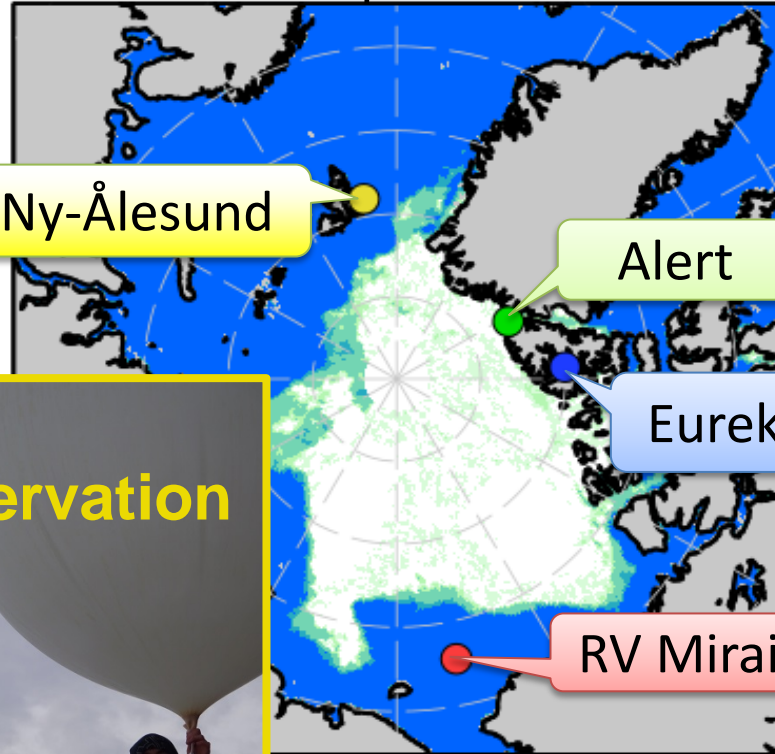
Temperature Anomaly from Climatological (Dec/Jan)-Mean



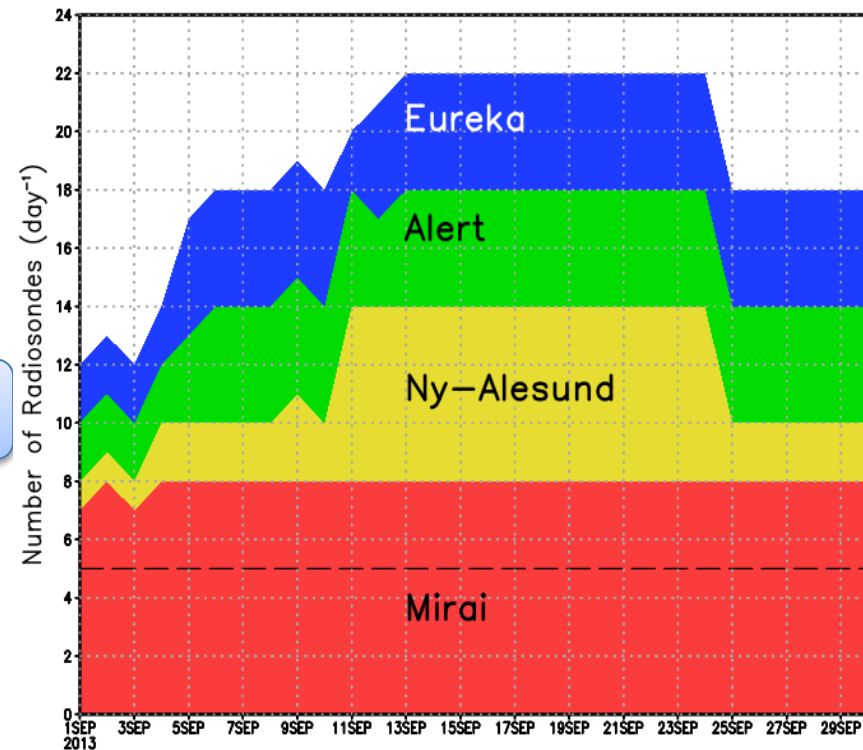
Cyclonic Activity in the Nordic Seas → Arctic Region

- Impact of Additional Radiosonde Launches -

ARCROSE-Sept.2013



additional radiosondes



Observation



Cyclonic Activity in the Nordic Seas → Arctic Region

“Additional Arctic observations
improve weather and sea-ice forecasts for the Northern Sea Route”
Inoue et al. (2015), *Nature Scientific Reports*, doi: 10.1038/srep16868

impact on sea ice advection
in coupled ice-ocean model

improved wind field
over the Arctic ocean

additional radiosonde data

Observation



Data Assimilation



cooperation with Jun Inoue



NiPR
National Institute of Polar Research

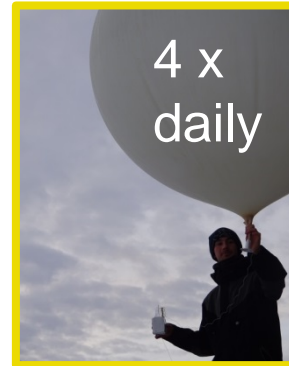


JAMSTEC 国立研究開発法人
海洋研究開発機構
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

Future Activities - Campaigns

ARCROSE Winter Campaign

5 – 20 December 2016



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- polar lows
- meridional advection
- Nordic Sea “atmospheric entry way” to the Arctic ocean
- ...

cooperation with Jun Inoue

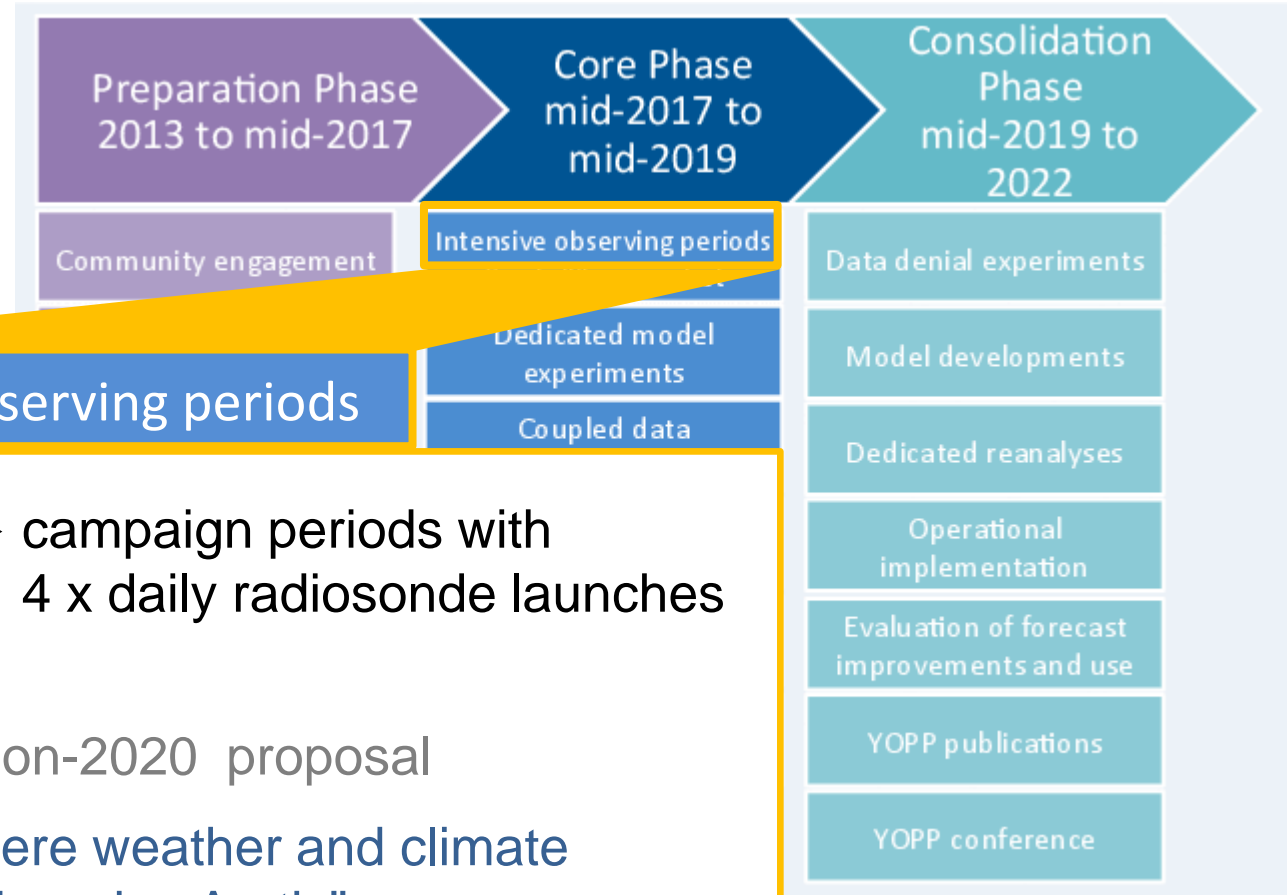


NiPR
National Institute of Polar Research



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Future Activities - Campaigns



Ny-Ålesund → campaign periods with
4 x daily radiosonde launches

within the EC Horizon-2020 proposal

“Northern Hemisphere weather and climate
influenced by the changing Arctic”
(NECTAR)

Future Activities - Change from RS92 to RS41

Feb 2016 • installation of MW41 ground equipment

3 March 2016 • first 'official' RS41 sounding

since March 2016

twin sounding RS92–RS41
1x weekly

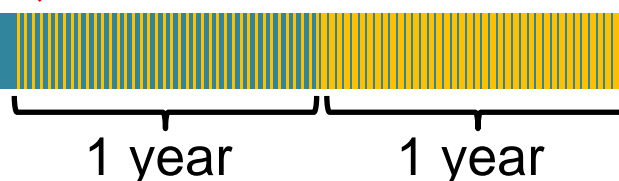
GRUAN



current plan:

1 x daily RS92 and 1 x weekly twin RS92-RS41 for 1 year
then switch to

1 x daily RS41 and 1 x weekly twin RS92-RS41 for 1 year





Thank you.