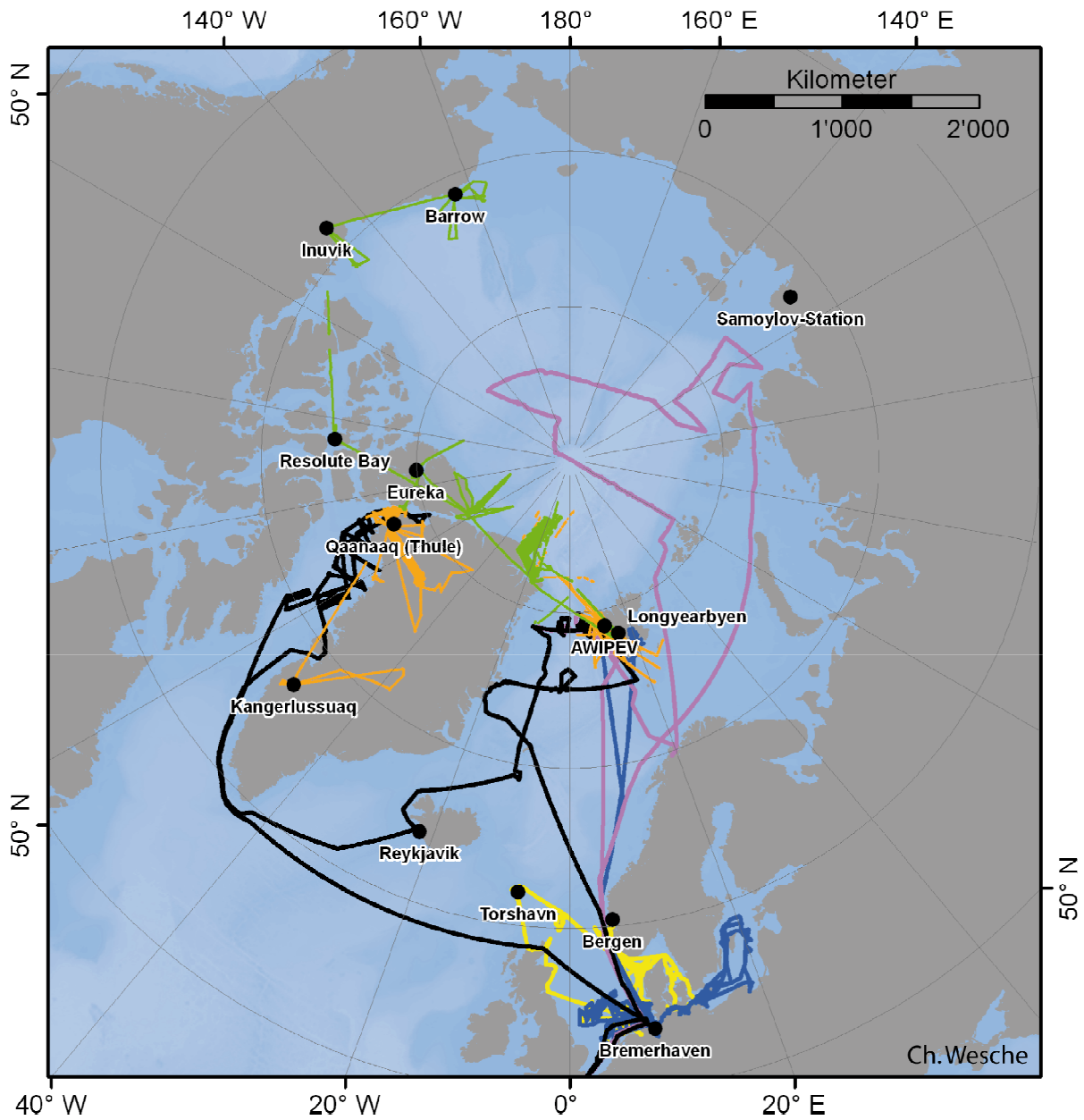








German Arctic expeditions  
2011 - 2012

ASSW, 19 – 22 April, 2012, Montreal, Canada



 Heincke 2010	 Flugkampagnen 2010	 Polarstern 2010
 Heincke 2011	 Flugkampagnen 2011	 Polarstern 2011



# Polarstern Arctic Expeditions 2011 AWI

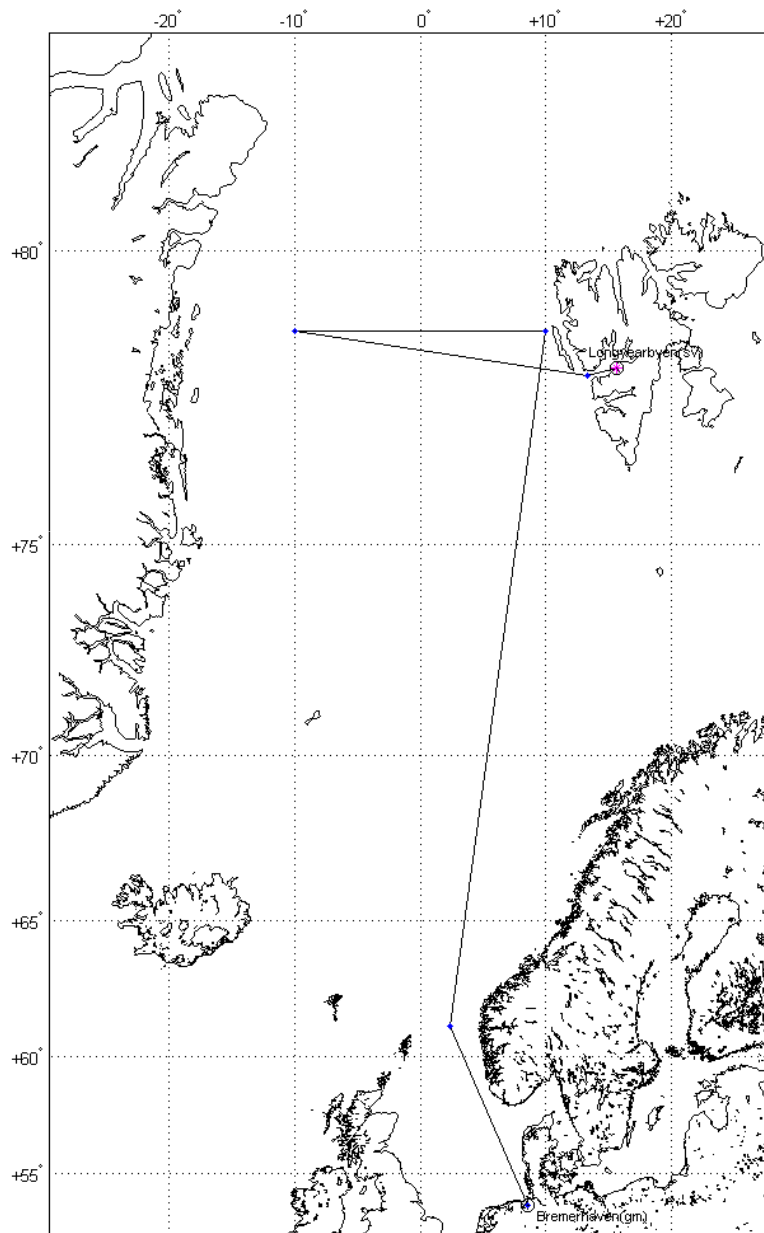
Leg	Start	End	Days	Pers.	Person days	Programme name	Mission
ARK-XXVI/1	15.06.11	13.07.11	28	74	2072	ACOBAR/ PEBCAO	Long term changes in biological and physical properties in Fram Strait
ARK-XXVI/2	13.07.11	03.08.11	21	97	2037	HAUSGARTEN/ PEBCAO	Long term changes in the deep sea environment in Fram Strait
ARK-XXVI/3	05.08.11	07.10.11	63	97	6111	TranArc	Sea ice/ocean/biosphere interactions in the changing Arctic Ocean

# Polarstern Arctic Expeditions 2012 AWI

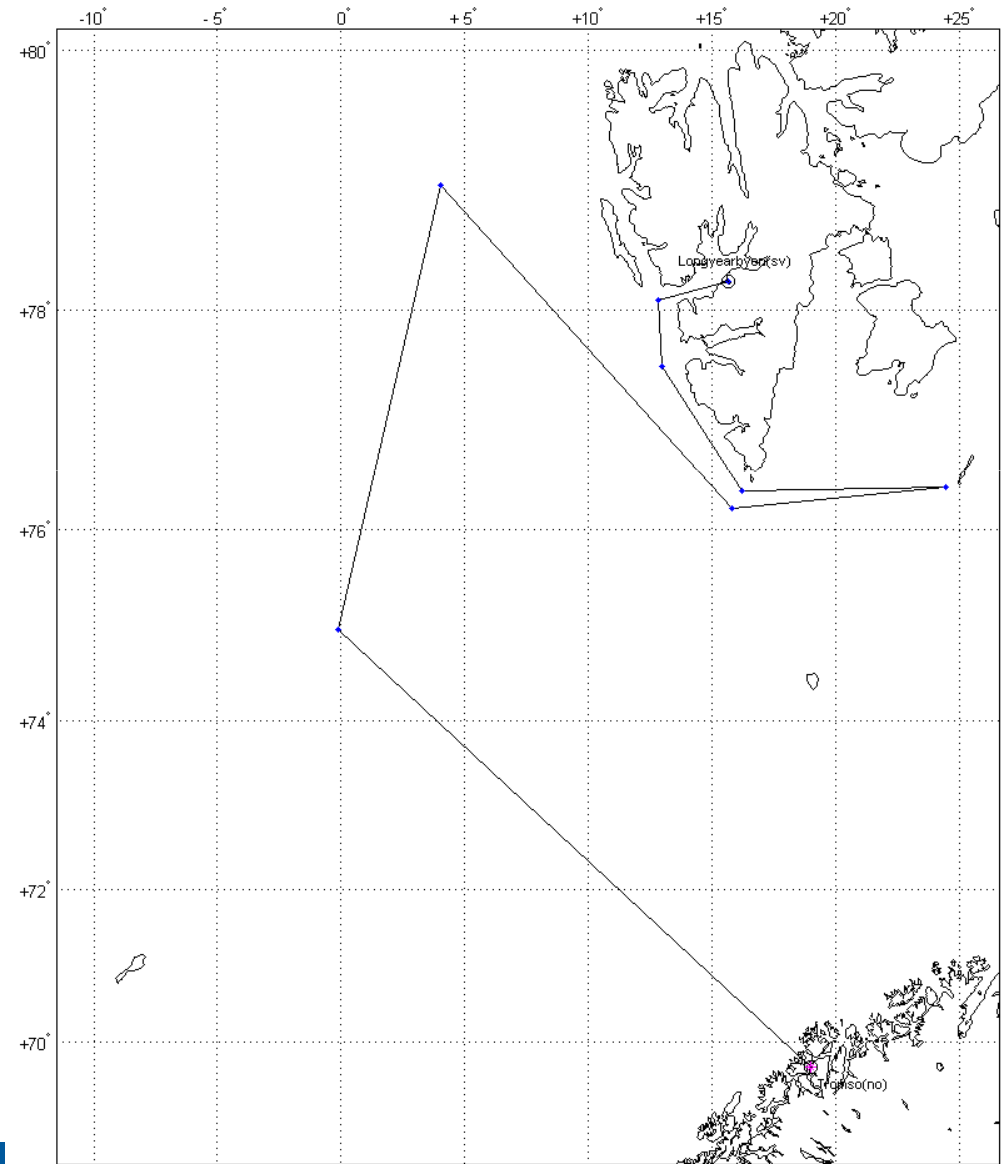
Leg	Start	End	Days	Pers.	Person days	Programme name	Mission
ARK-XXVII/1	14.06.12	15.07.12	32	88	2816	ACOBAR / PEBCAO	Physical oceanography, plankton ecology and biogeochemistry in the Fram Strait
ARK-XXVII/2	15.07.12	30.07.12	17	89	1513	PEBCAO / HAUSGARTEN	Pelagic and deep sea biology in the Fram Strait
ARK-XXVII/3	02.08.12	07.10.12	67	98	6566	IceARC	Physical, biogeochemical and planktonic studies of the water column, sea ice and the ocean floor



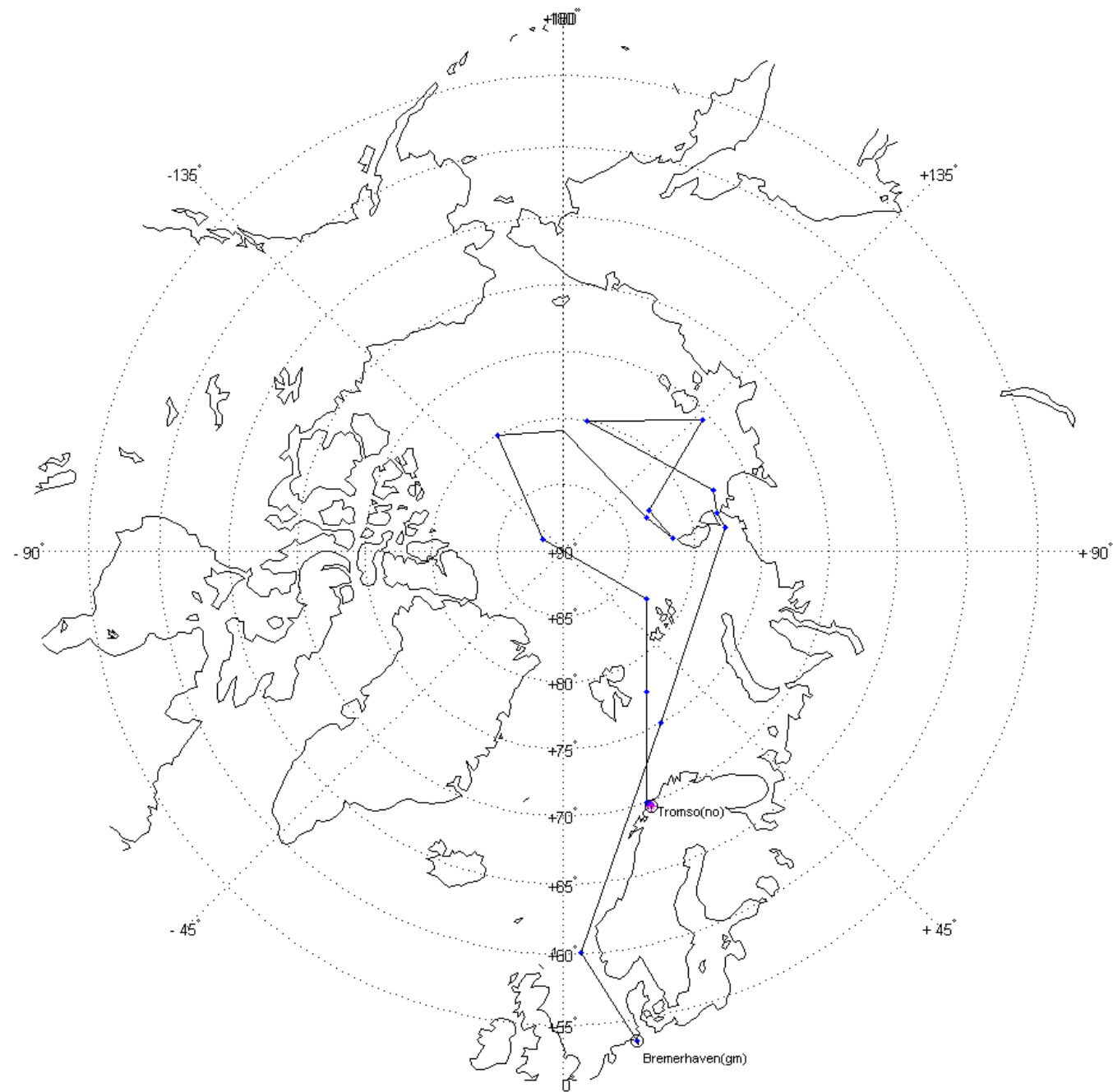
# ARK-XXVII/1



# ARKXXVII/2



# ARKXXVII/3

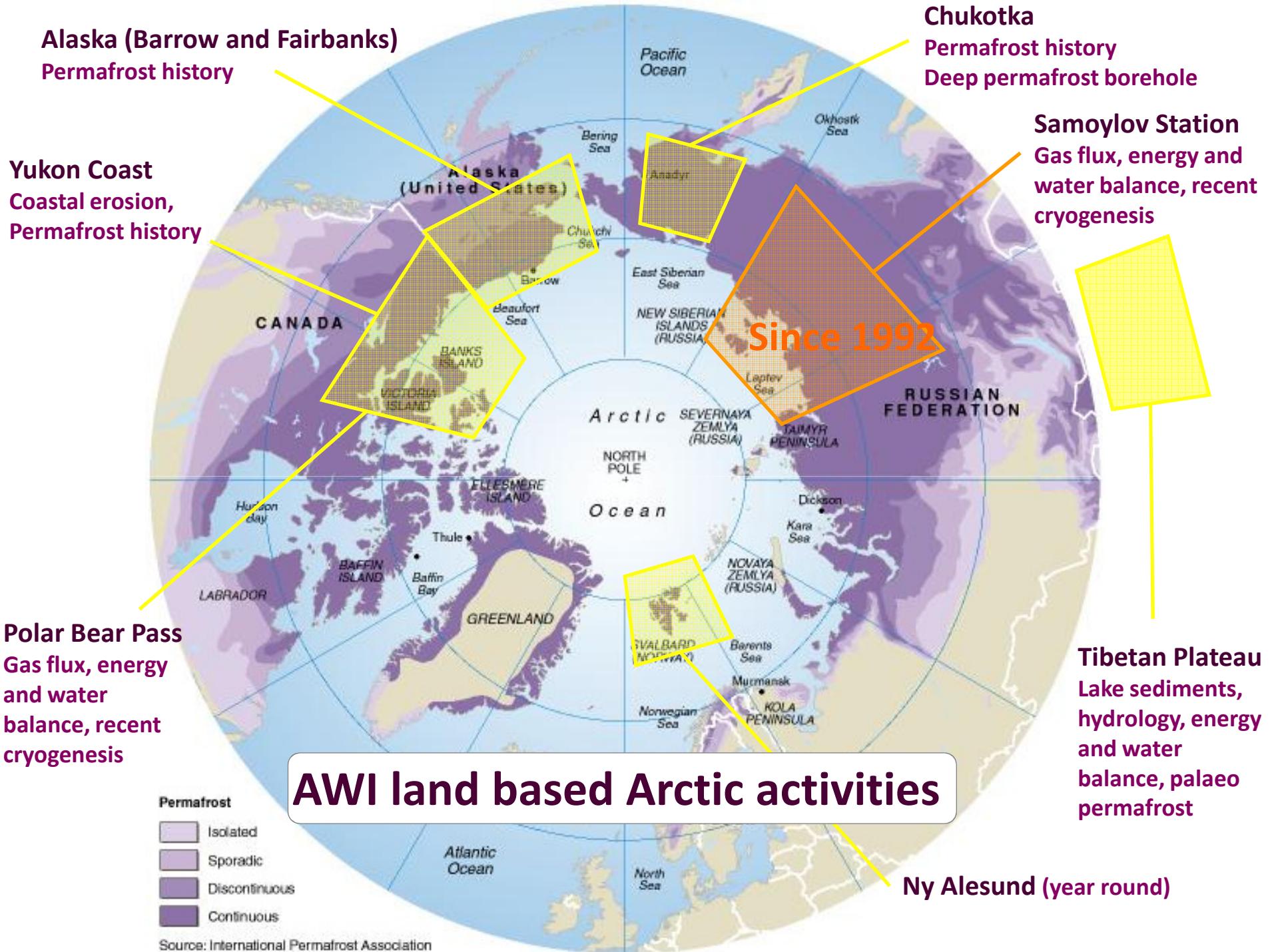


# AWIPEV Svalbard activities



Legs	Start	End	Pers. Days	Nations	Mission
38	Jan	Sep	1542 1095	France Germany	Atmospheric sciences Seismology, Gravity Marine Biology Sea ice





**Alaska (Barrow and Fairbanks)**  
Permafrost history

**Yukon Coast**  
Coastal erosion,  
Permafrost history

**Chukotka**  
Permafrost history  
Deep permafrost borehole

**Samoylov Station**  
Gas flux, energy and  
water balance, recent  
cryogenesis

**Since 1992**

**Polar Bear Pass**  
Gas flux, energy  
and water  
balance, recent  
cryogenesis

**Tibetan Plateau**  
Lake sediments,  
hydrology, energy  
and water  
balance, palaeo  
permafrost

**Ny Alesund (year round)**

**AWI land based Arctic activities**

- Permafrost**
- Isolated
  - Sporadic
  - Discontinuous
  - Continuous

Source: International Permafrost Association



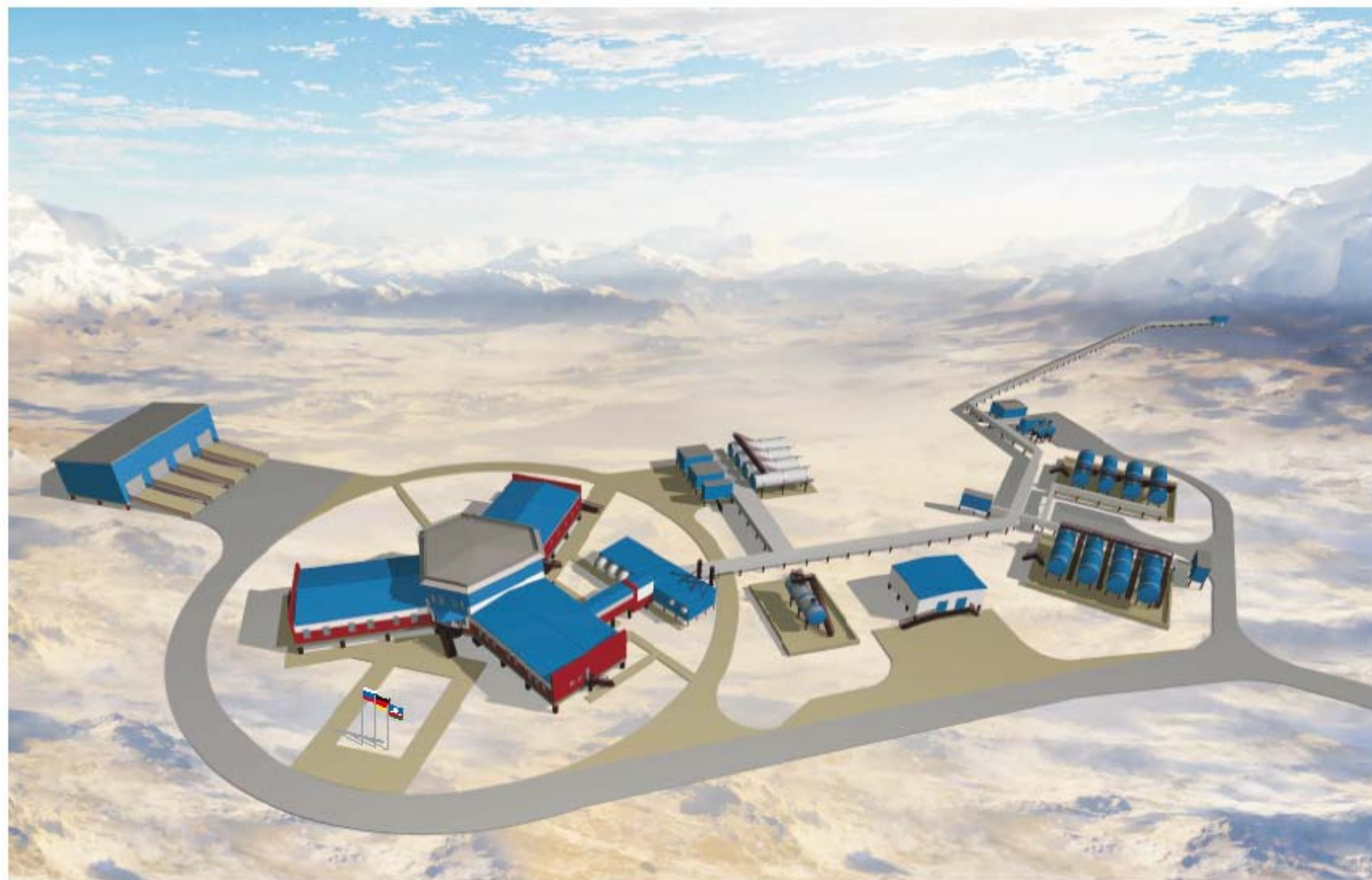
# Land based activities: Siberia & Canada

Leg	Start	End	Pers. Days	Nations	Mission
LENA 2011	April 15	Sep 01	6348	Russia Germany	Long term studies of energy and water balance, carbon turn over, greenhous gas emission in permafrost Coastal dynamic and subsea permafrost stud. Hydrological, sedimentological and biological studies in shoreface transects
Yukon Coast 2011	Jul 01	Aug 07	456	Canada Germany	Coastal erosion and permafrost geomorphology Permafrost cores → recontruct paleogeography Sediment and nutrient fluxes Bacterial activity and methan fluxes
LENA 2012	April 12	Sep 05	3968	Russia Germany	Long term studies of energy and water balance, carbon turn over, greenhous gas emission in permafrost Coastal dynamic and subsea permafrost stud. Hydrological, sedimentological and biological studies in shoreface transects
Yukon Coast 2012	Jul 18	Aug 29	462	Canada Germany	Coastal erosion and permafrost geomorphology Permafrost cores → recontruct paleogeography Sediment and nutrient fluxes Carbon budget in the nearshore zone

# Russian-German Research Station *Samoylov*, Lena Delta/Siberian Arctic







ВИДОВОЙ КАДР





ВИДОВОЙ КАДР





# Polar 5 and Polar 6





## PAMARCMIP

Alert to Svalbard,  
atmospheric research

## Airmeth

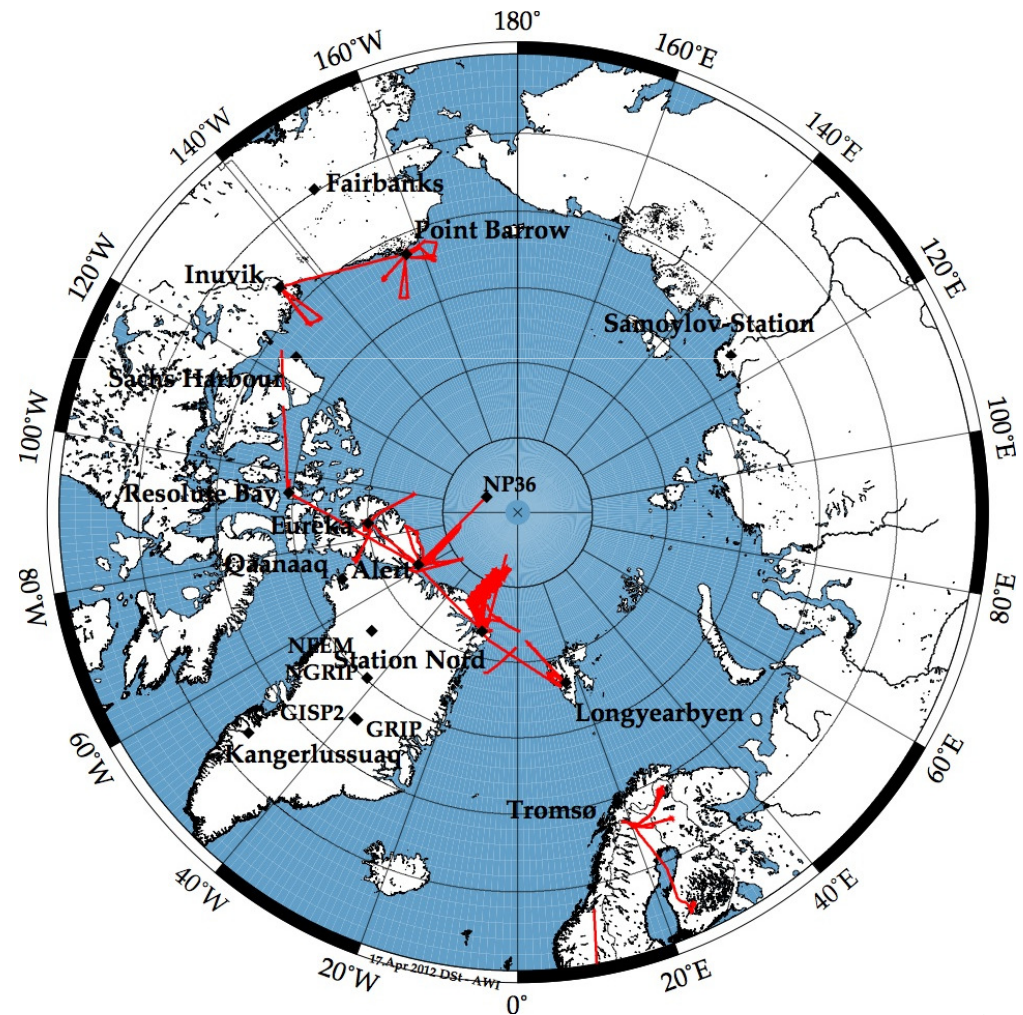
Finland, North & Baltic Sea  
methane emissions

## NOGRAM

North of Station Nord  
offshore magnetics and  
gravity anomalies mapping

## TIFAX

North of Station Nord,  
sea ice thickness mapping



# POLAR 5/6 schedule 2012



Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
PAM ARC MIP	March 19	April 08	230	AWI, Uni Alberta, EC	Polar Airborne Measurements and Arctic Regional Climate Model Simulation Project	Black carbon in atmosphere and deposition to snow/ice surfaces and climatic impacts Sea ice thickness CryoSat Cal/Val
VERDI	April 09	May 20	615	Uni Leipzig, AWI, FZJ, KIT, MPI Mainz	Vertical distribution of ice in Arctic clouds	Vertical distribution of ice in Arctic clouds and influence on distribution of ice particles and water droplets on radiation
NGT	May 14	July 15	155	AWI	North Greenland Traverse	Mapping internal structure of the ice near sites of AWI's North Greenland Traverse line and drilling of ice cores using aircraft logistics
Airmeth	June 16	July 15	155	GFZ, AWI, Uni Bremen	Airborne Measurements of Methane Emissions	Determining methane fluxes above permafrost regions





A large, rectangular iceberg floats in the ocean under a warm, golden sunset sky. The water is dark blue, and the iceberg's surface is illuminated by the low sun. A faint, semi-transparent watermark of a globe is centered over the image. The text "Thank you" is written in a simple black font across the middle of the iceberg.

Thank you

# AWIPEV 2012 (Programs 1 to 8)



Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
KOL 01	13.02.12 12.03.12 2.07.12	23.02.12 20.04.12 12.07.12	30 20	AWI	BSRN	Radiation measurements in Framework of the Baseline Surface Radiation Network
KOL 02a	12.03.12	22.03.12	15	AWI, Uni Bremen	MW/NDACC	Microwave observations of stratospheric trace species within the scope of the NDACC
KOL 02c	12.03.12	22.03.12	15	AWI, Uni Bremen	FTIR/NDACC	Fourier Transform Spectroscopy Trace gas measurements
KOL 03				AWI	AOD Measurements	Sun and star photometer, atmospheric aerosol effect on climate
KOL 04				AWI	VBB-Station	Seismological "Very Broad Band" Station (VBB-Station)
KOL 06	4.06.12	10.09.12	700	AWI	Biology of Arctic macroalgae	Marine Plants, UV-Resistance / Sensitivity
KOL 07	19.03.12 4.06.12	22.03.12 17.09.12	6 223	AWI	Marine Observatory	Marine Biology
KOL 08				AWI	Aerosol Sampler	Determination of Heavy Metals in Aerosols & Deposition Samples

# AWIPEV 2012 (Programs 9 to 17)



Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
KOL 09	2.03.12 12.03.12	28.01.12 29.03.12	44	AWI	Tropo LIDAR	Investigations of Tropospheric Aerosols by LIDAR
KOL 10	20.02.12	29.02.12	9	Uni Bremen	DOAS	DOAS-Measurements of atmospheric trace gases
KOL 11	2.07.12	23.07.12	21	AWI	Bayelva Permafrost	Heat and mass flux in permafrost soils
KOL 12	2.07.12	16.02.12	8	GFZ Potsdam	GPS High-Rate-Station	GPS-Meteorology, Occultation Measurements
KOL 13	2.07.12	16.02.12	8	GFZ Potsdam	CHAMP & GRACE Satellite Receivers	GPS-Meteorology, Occultation Measurements
KOL 14				AWI, NIPR	Cloud Observations with MPL	Observations of Clouds & Aerosols by automated Micro Pulse Lidar and All Sky Imager
KOL 15	21.06.12	28.06.12	16	GSF Munich	Neutron Measurements	Cosmic Radiation: Neutrons at high Geomagnetic Latitudes
KOL 16				AWI	Stratospheric water vapour	Balloon-Borne Measurements of Stratospheric Water Vapour
KOL 17				AWI	Match	Stratospheric Ozone Loss Determination



# AWIPEV 2012 (Programs 18 to 25) AWI

Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
KOL 18	12.03.12	20.04.12 14.05.12	20 34	AWI	Tethered balloon	Measurements of the Arctic Boundary Layer
KOL 19	20.07.12	17.08.12	40	AWI	Polar benthic succession	Benthic resilience in polar environments: a comparison
KOP 83	20.07.12	17.08.12	39	AWI	Bivalve population dynamics	Population dynamics of benthic cockle communities in polar environments
KOP 117	17.09.12	1.10.12	30	AWI, IFM-GEOMAR	CO2 effects on pteropods in winter	Limacina helicina & Limacina retroversa: sensitivities to ocean acidification and warming
KOP 124	6.08.12	6.09.12	90	AWI	Krill, an indicator of climatic adaptation	A comparison of krill species within a natural experiment of climatic adaptability
KOP 129				AWI, CNR	Lidarino	Boundary Layer Monitoring by a Micro Lidar
KOP 132	23.07.12	6.08.12	70	AWI, DLR	SPLAM	Periglacial structures on Brøgger Peninsula as analogues for Martian landforms
KOP 136	2.04.12	16.04.12	19	AWI	Test of Eddy Flux Measurements	Boundary layer measurements Fluxes and momentum

# AWIPEV 2012 (Programs 26 to 32)



Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
KOP 141	28.01.12 16.5.12	9.02.12 31.5.12	12 28	HZG	ePOPArctic	Emerging persistent organic pollutants in air & snow of the Arctic
KOP 144	11.06.12	21.06.12	20	AWI	AMPHIA	Arctic amphipods as indicator species for the impact assessment of environmental pollution
KOP 146a	29.05.12	7.06.12	13	AWI	Radiometer NDAAC	temperature and humidity measurements by radiometer
KOP 146b				AWI	Wind LIDAR	Boundary Layer feasibility investigations with wind lidar
COL 304	16.04.12	03.05.12	88	CNRS - CEPE	Hydro-Loven-FLOWS	hydro-glaciological dynamics of a polar glacier
RAP 330	18.06.12	30.07.12	100	CNRS - CEBC	ORNITHO-ENDOCRINO	Breeding phenology of Arctic Seabirds: A hormonal perspective
RAP 337	21.06.12	1.07.12	22	EOST	GRAVITE	Gravity variation, vertical motion in polar regions- Constraints on post-glacial rebound & present-day ice melting

# AWIPEV 2012 (Programs 33 to 38)



Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
RAP 399	9.01.12 12.03.12	20.01.12 29.03.12	46	LGGE/AMPERE	CHIMERPOL III	Relationship between chemical contaminant such as mercury in arctic snowpacks and the microbial communities
RAP 1015				CNRS - LOCEAN	OPTIMISM	Dynamical & thermodynamical processes involved in the sea ice mass balance
COP 1030	29.2.12	20.04.12	162	LGGE/LaMP	CLIMSLIP-NyA	Climate impacts of short-lived pollutants & methane
RAP 1039	9.8.12	30.8.12	42	Station Biologique de Roscoff	KREVET	Krill REsponse to Variations in Environmental Temperature
RAP 1059	20.8.12	27.8.12	20	University of Caen	SEISPITZ12	Record of the sedimentary deglaciation actual processes into a Spitsberg fjord
RAP 1090	14.5.12 30.7.12	29.5.12 13.8.12	138	LEMAR	ECOTAB	Effect of Climate change On The Arctic Benthos



# POLAR 5/6 plan 2013



Leg	Start	End	Pers. Days	Institutions	Programme name	Mission
STABLE	Feb 17	March 28	312	AWI	Spring Time Arctic atmospheric Boundary Layer Experiment	Temporal and regional variability of energy fluxes and momentum in the ABL and variability of the albedo above sea ice
PAM ARC MIP	March 29	April 28	300	AWI, Uni Alberta, EC	Polar Airborne Measurements and Arctic Regional Climate Model Simulation Project	Black carbon in atmosphere and deposition to snow/ice surfaces and climatic impacts Sea ice thickness CryoSat Cal/Val
TIFAX	Jul 30	Aug 10	88	AWI	Thick Ice Feeding Arctic Export	Sea ice thickness and roughness and radiation above SMOS, CryoSat Cal/Val