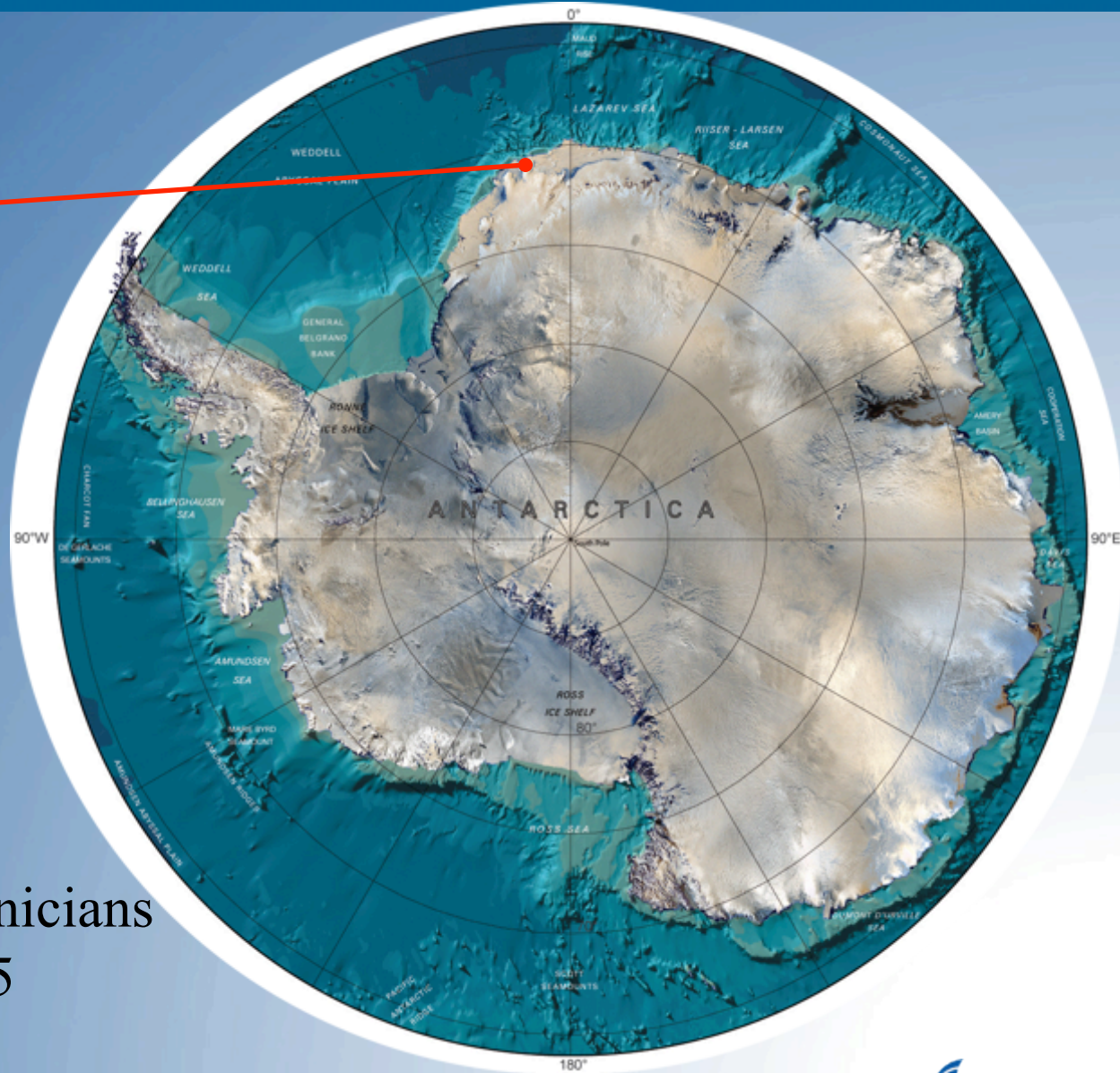


Antelope in Antarctica



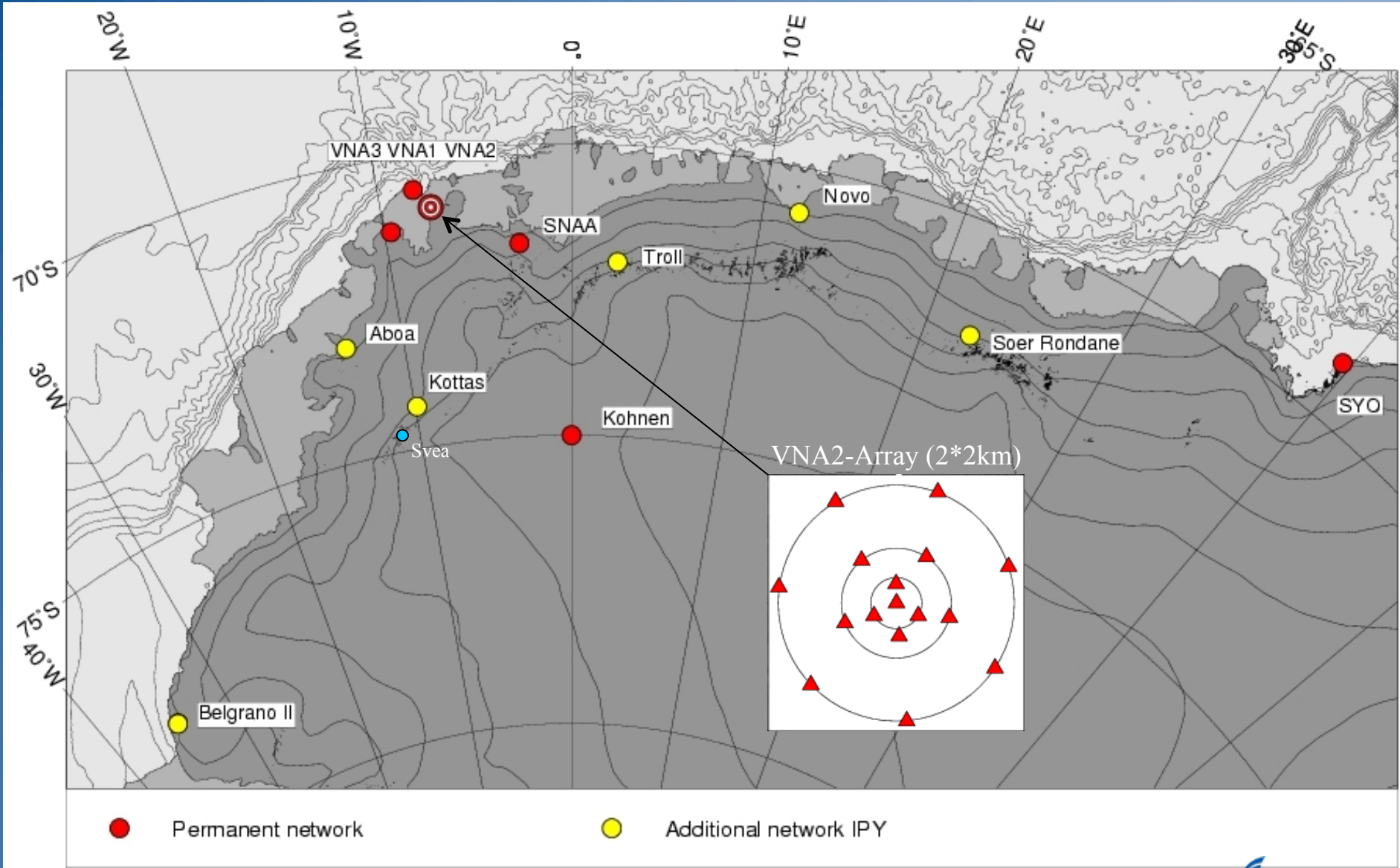
AUG 2012
Trieste, Italy

Tanja Fromm
Alfred-Wegener-Institute for Polar and Marine Research



- Accessible only 4 month in summer
- Winter personnel: 9,
2 Geophysicists,
1 Meteorologist,
1 Airchemist,
Cook, Doctor, Technicians
- Crew change after 15 months

- Detection of local and regional events
→ array processing
- First analysis of events during winter with real-time accessible stations
- Most data stored on disks and need to be merged with existing datasets

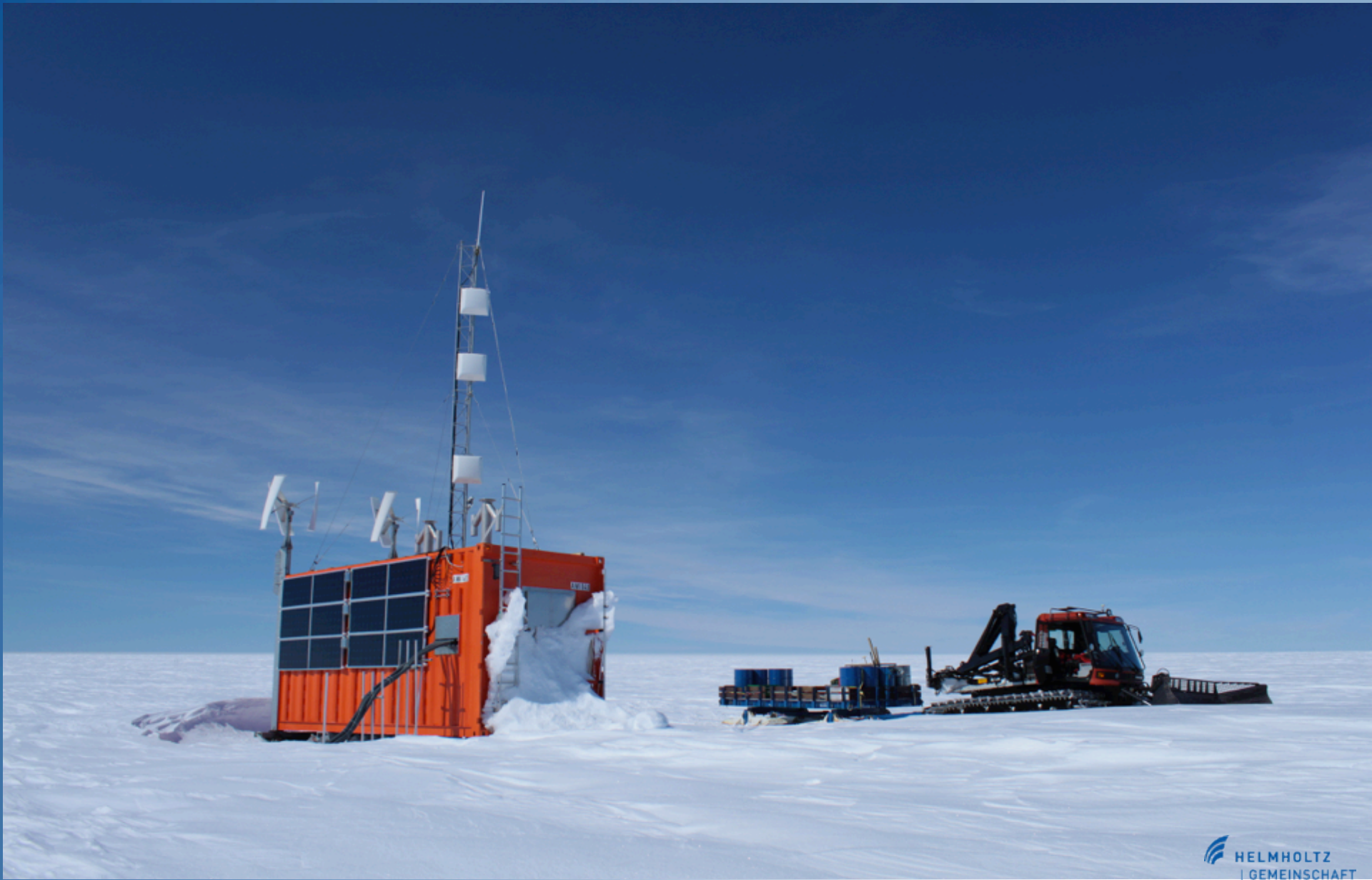


Station	Coms	Power	Rec	Seismometer
VNA1	LAN	Generator	Q330	Lennartz LE-3D/20s
VNA2	VHF	Solar, Wind	Q330	Guralp CMG3ESP/120s, Mark L4C
VNA3	VHF	Solar, Wind	Q330	Guralp CMG3ESP/120s
SNAA	Internet	Generator	Q330	Streckeisen STS-2
Svea	none	Solar, Wind	Reftek	
Kohnen	none	Solar, Wind	Reftek	
Kottas	none	Solar	Reftek	
Troll	none	Generator	Reftek	
Novo	none	Generator	Reftek	

- SunFire V245: Data Acquisition
- MacPro 2,93 GHz Intel 12core Xeon:
Array Processing

How does a station look like?

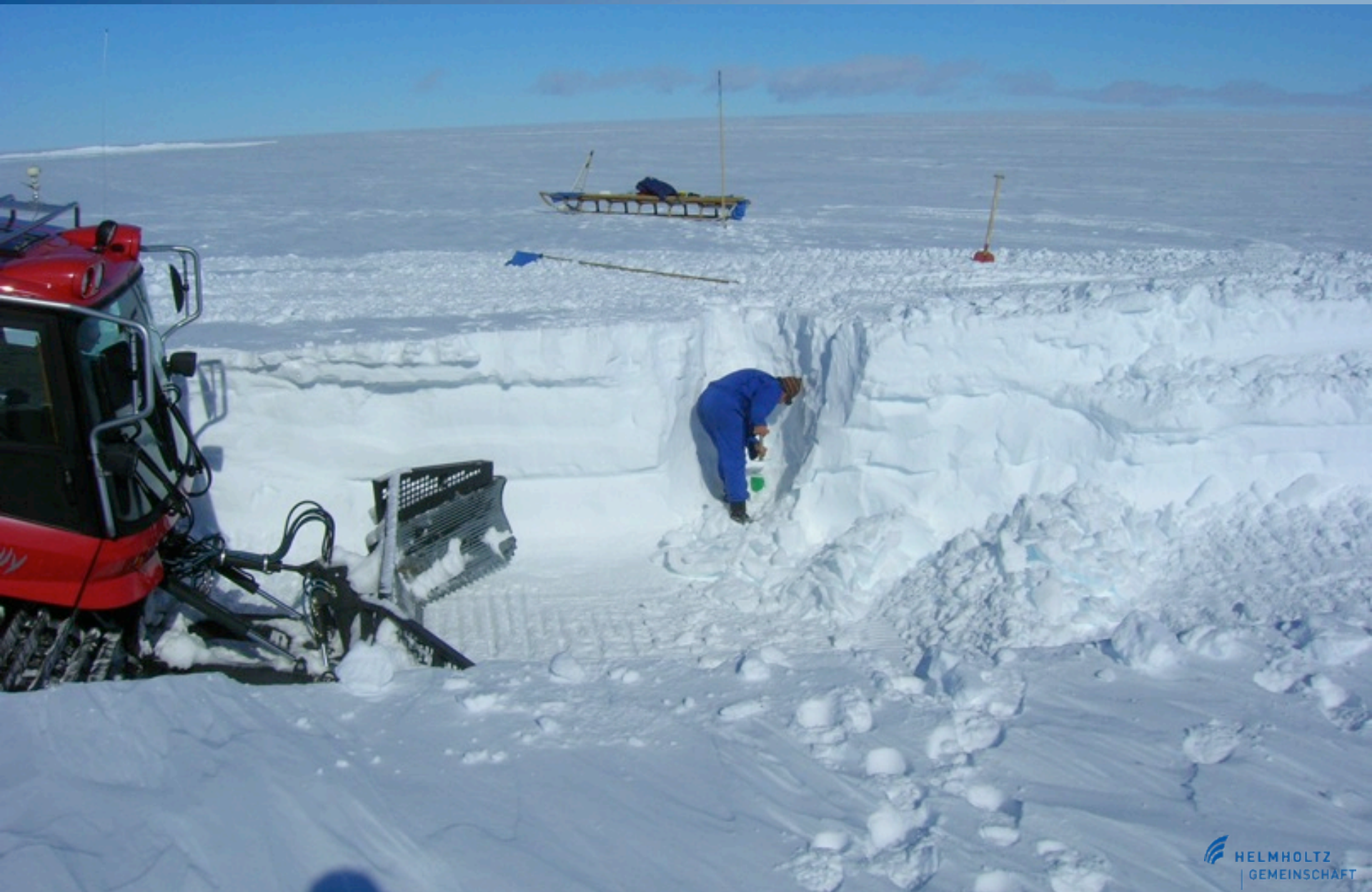
- VNA2
- VNA3







Station VNA2 - Maintenance



Station VNA2 - Maintenance



Station VNA3 - Maintenance

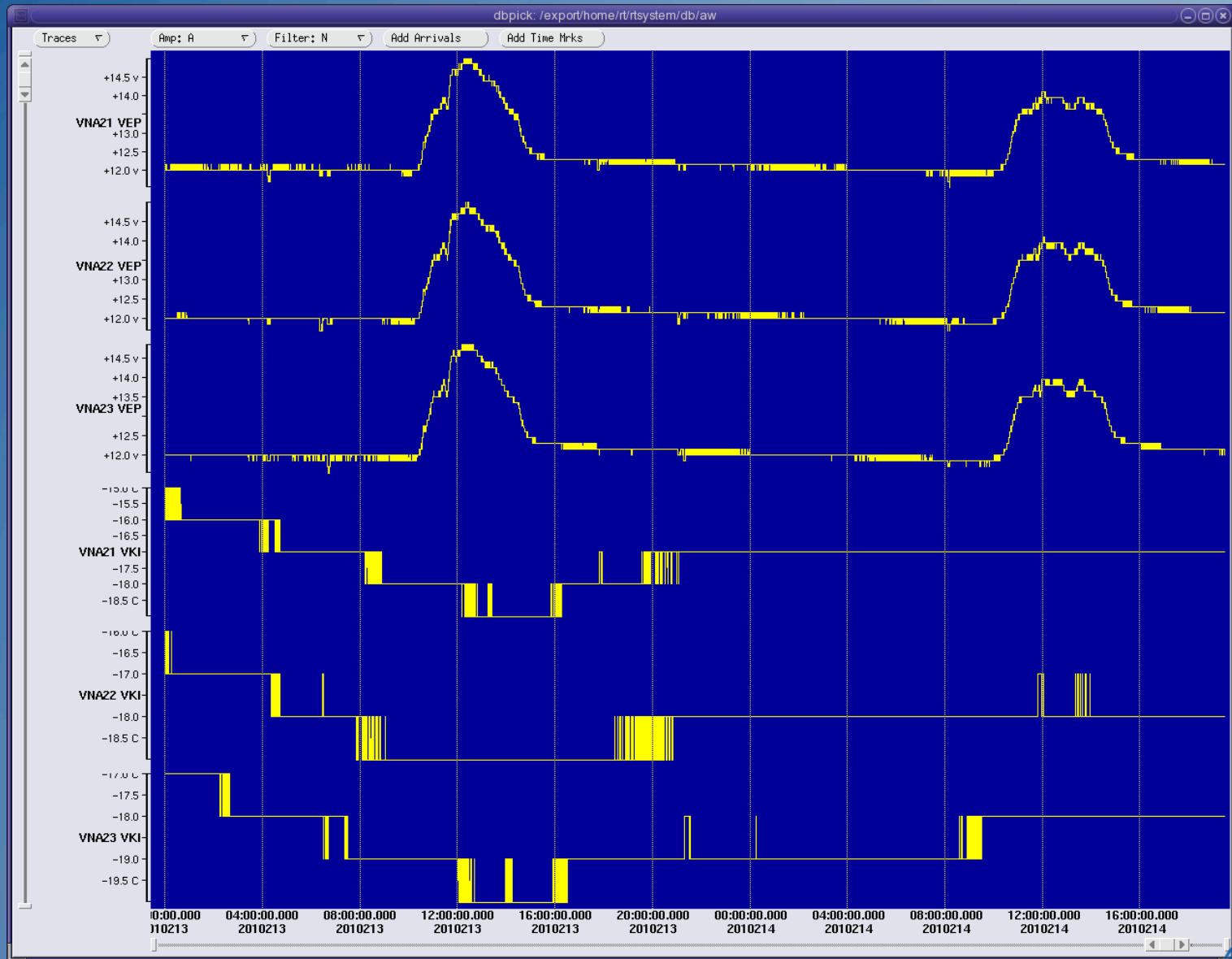


Station VNA3 - Maintenance

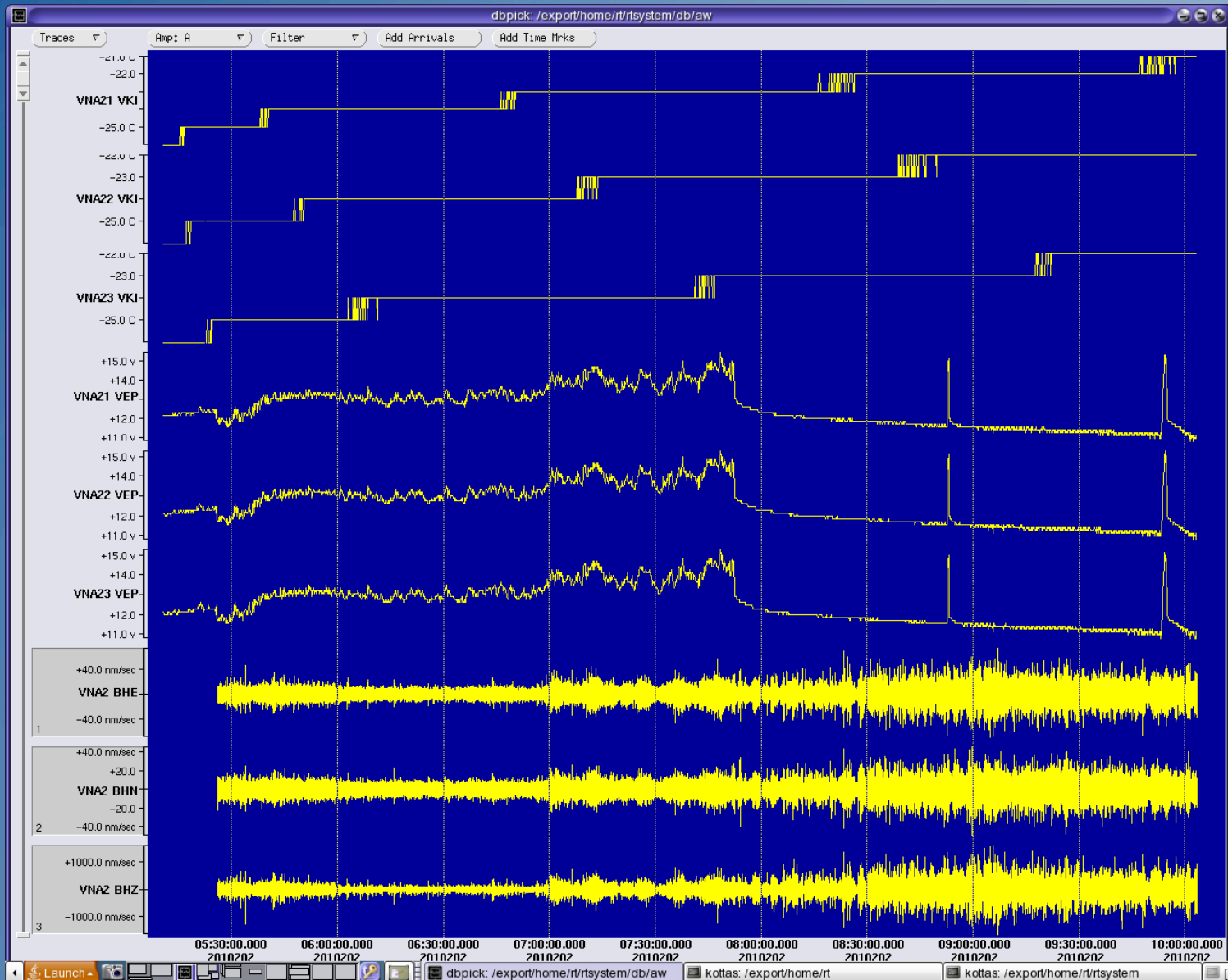


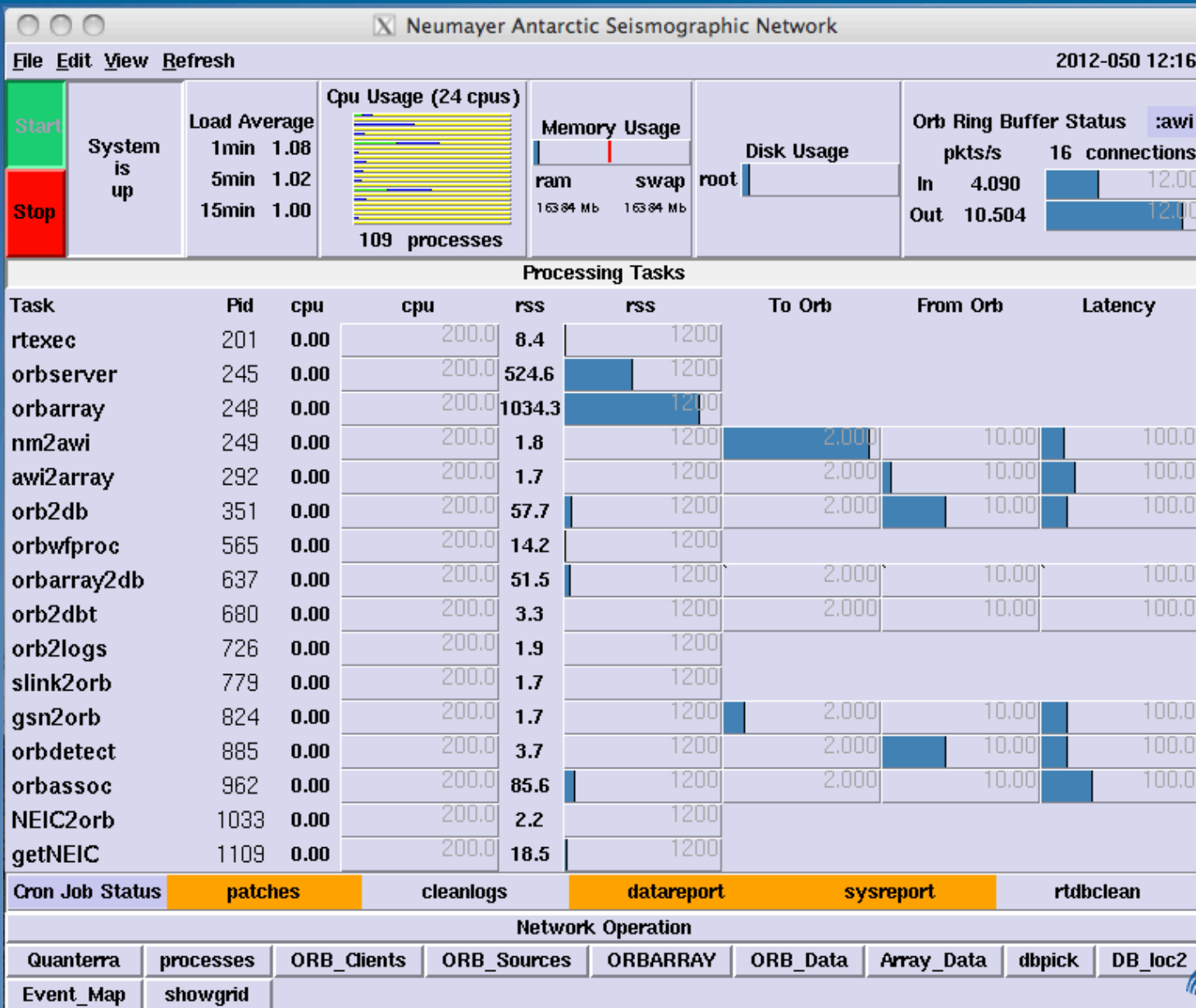
- Energy supply
 - No sunlight during winter time
 - Wind power is not reliable, too much wind
 - Batteries too cold for charging
- Short periods for maintenance
- Logistics
- Weather conditions
- changing personnel

Charging Batteries in winter



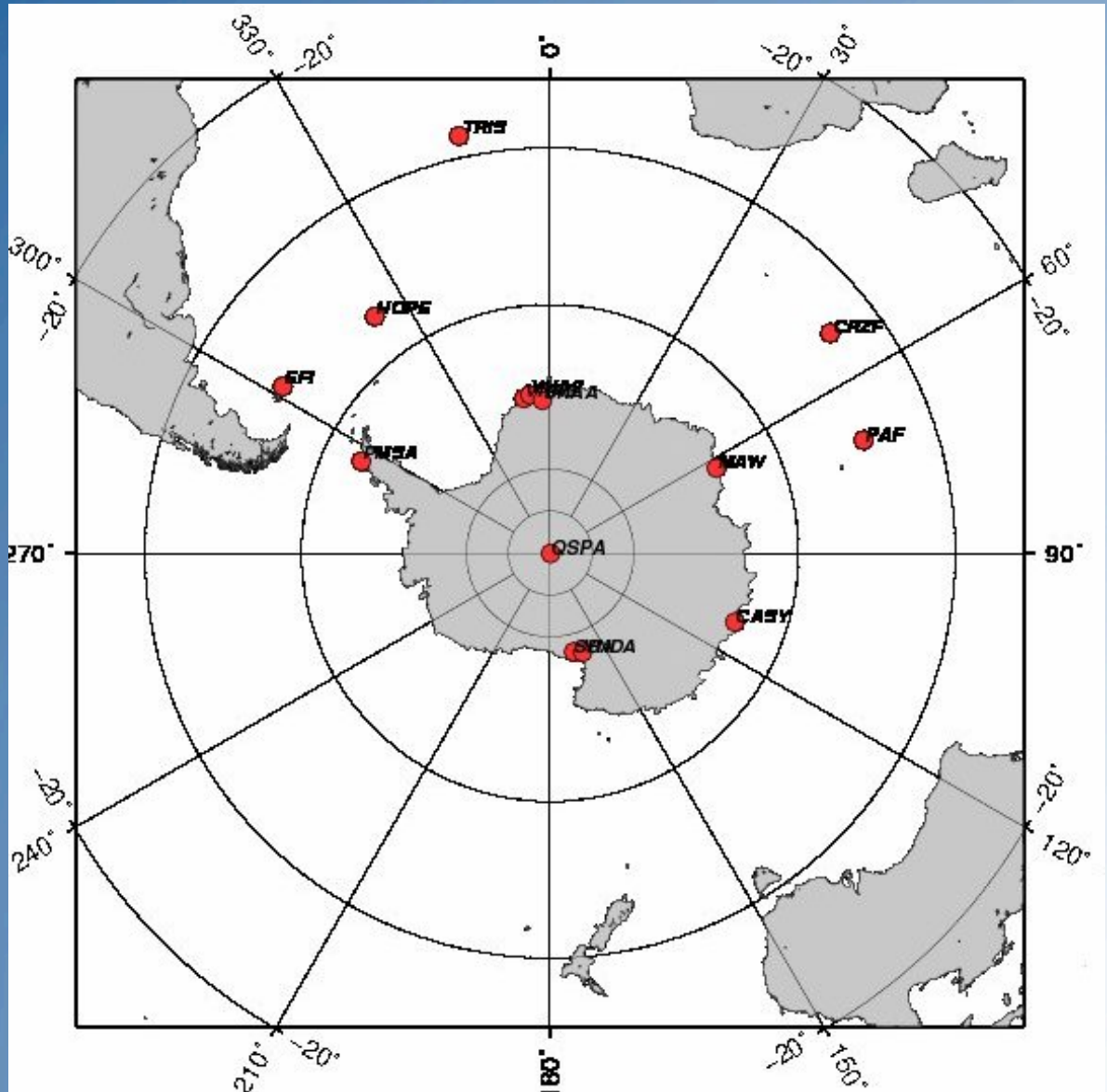
Battery voltage during storm



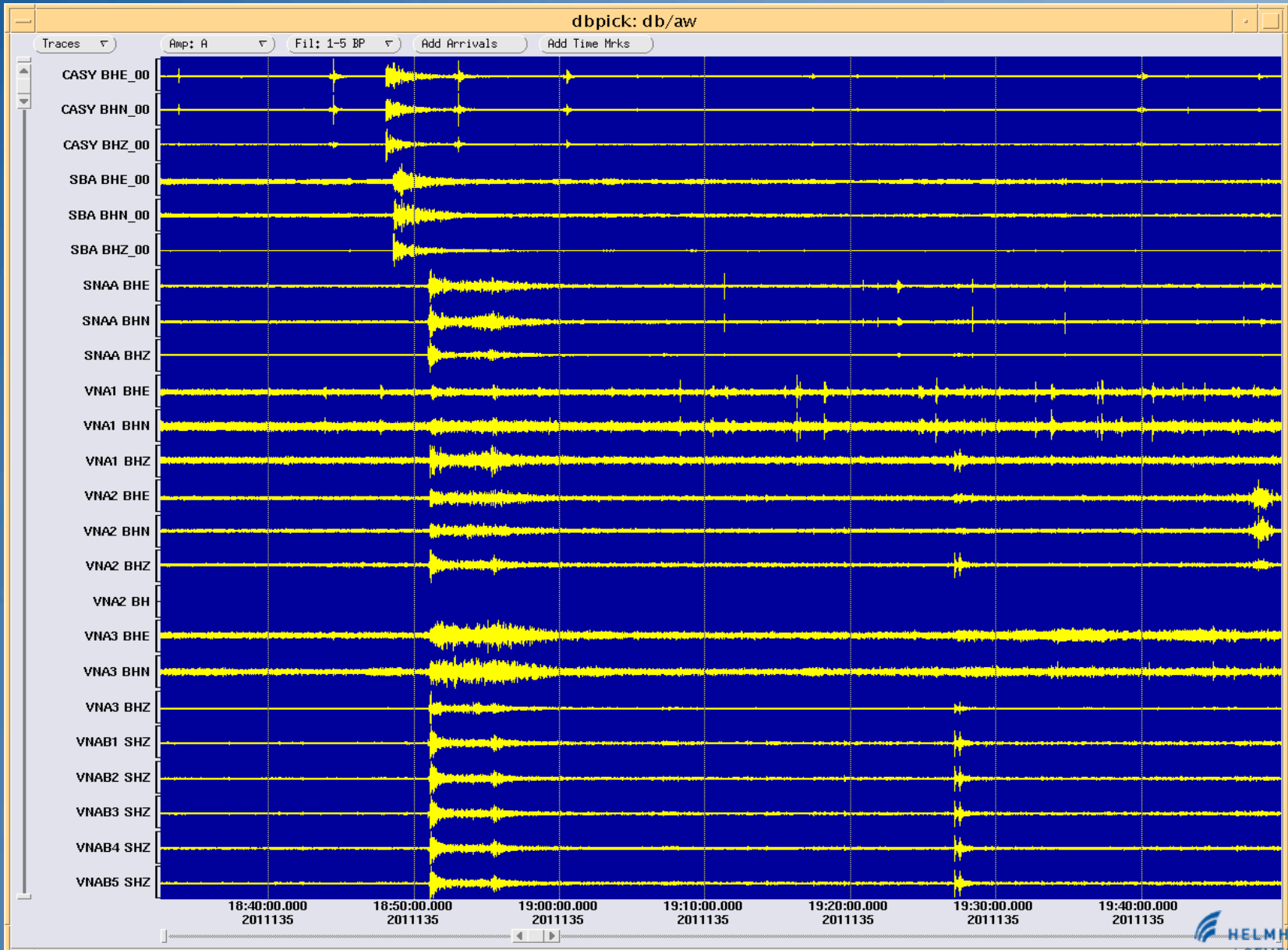


- Automated processing is difficult due to the small amount of stations available
- Event detection with `orbdetect`, `orbassoc`
- Using NEIC list to locate global earthquakes
- Picking local events manually for later relocating with additional offline stations
- Using `array2db` to get values for slowness and azimuth for corresponding picks
- Trigger on semblance not reliable due to high levels of background noise from sea swell
- Daily bulletin for NEIC

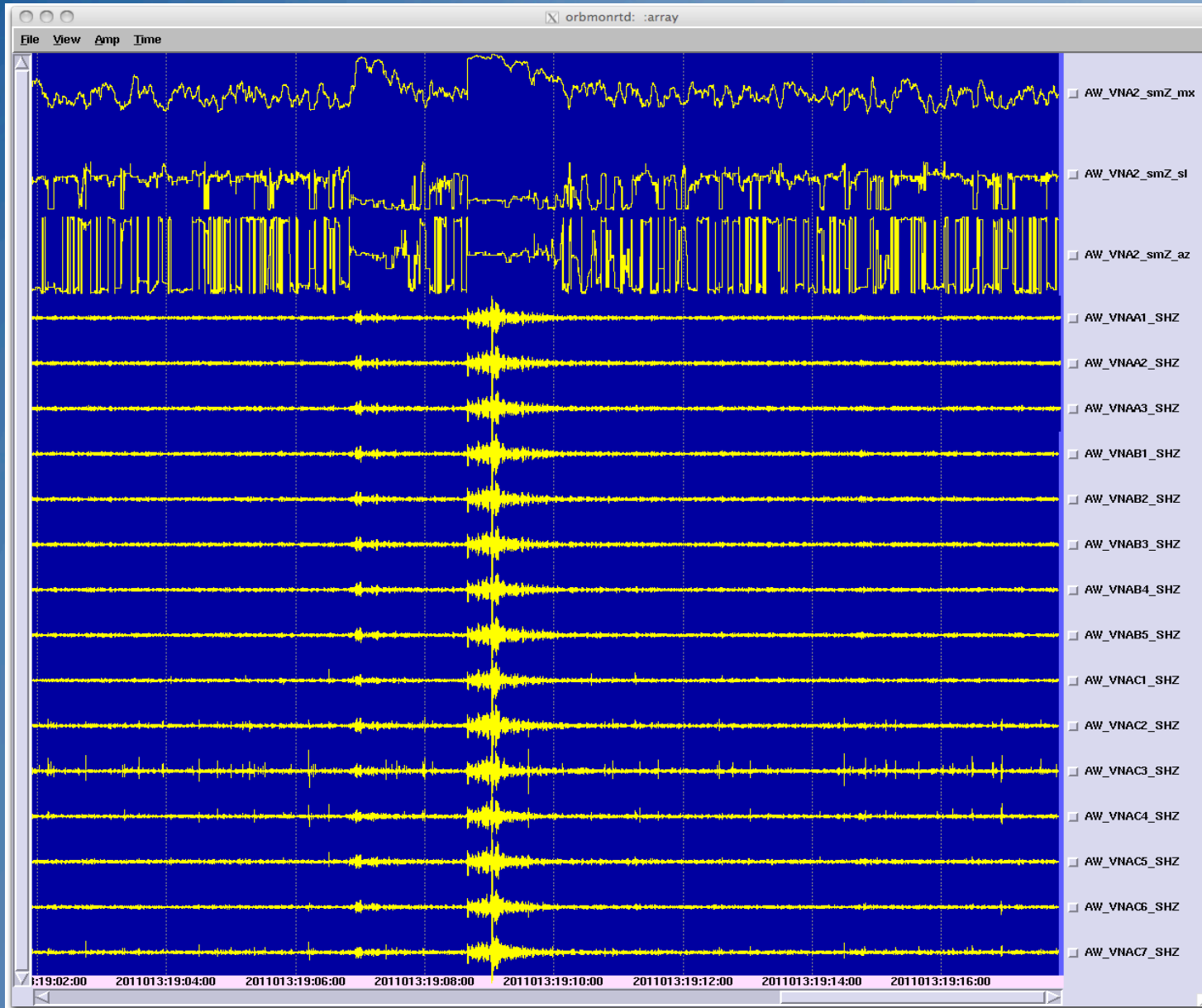
Stations for initial earthquake location



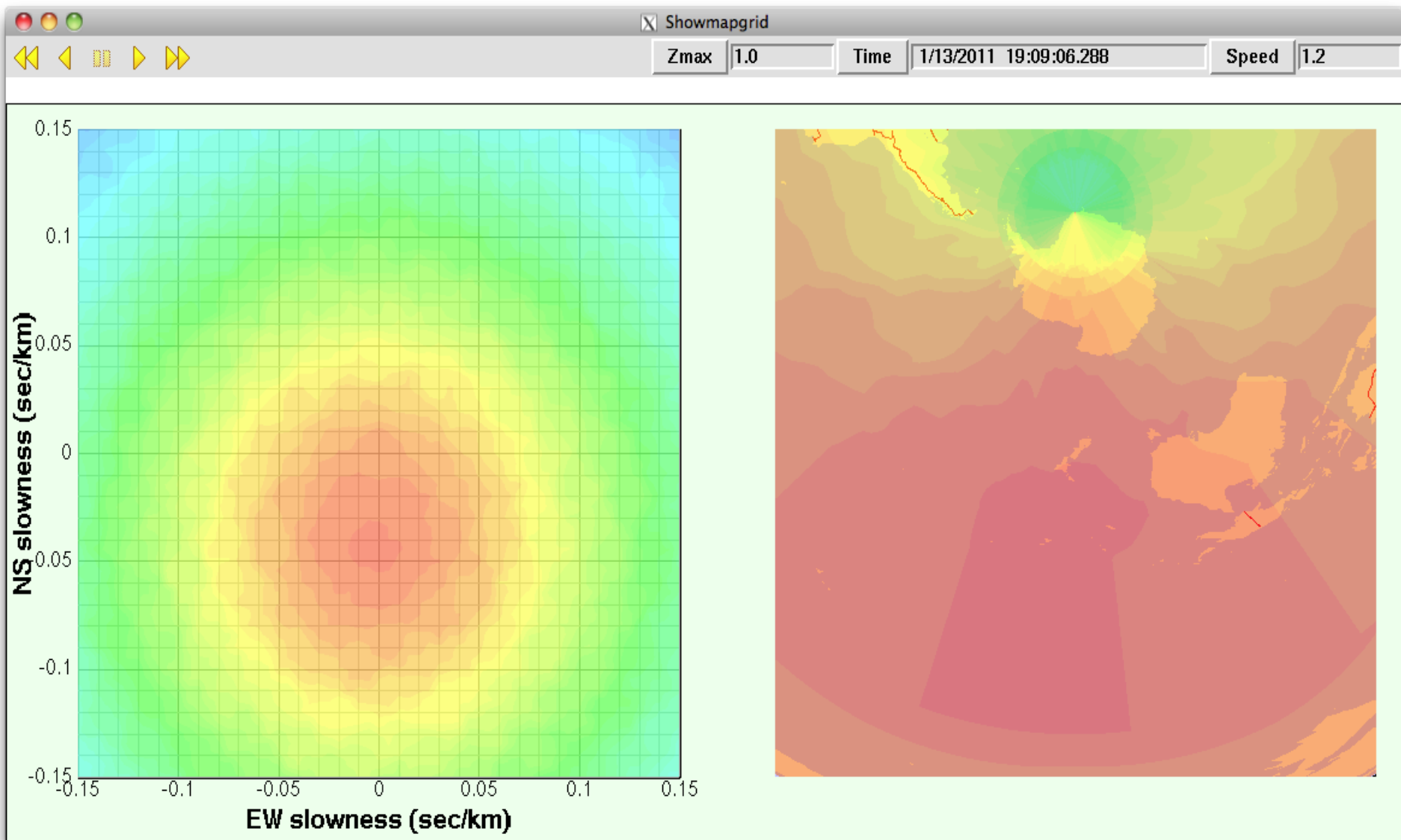
Example Event



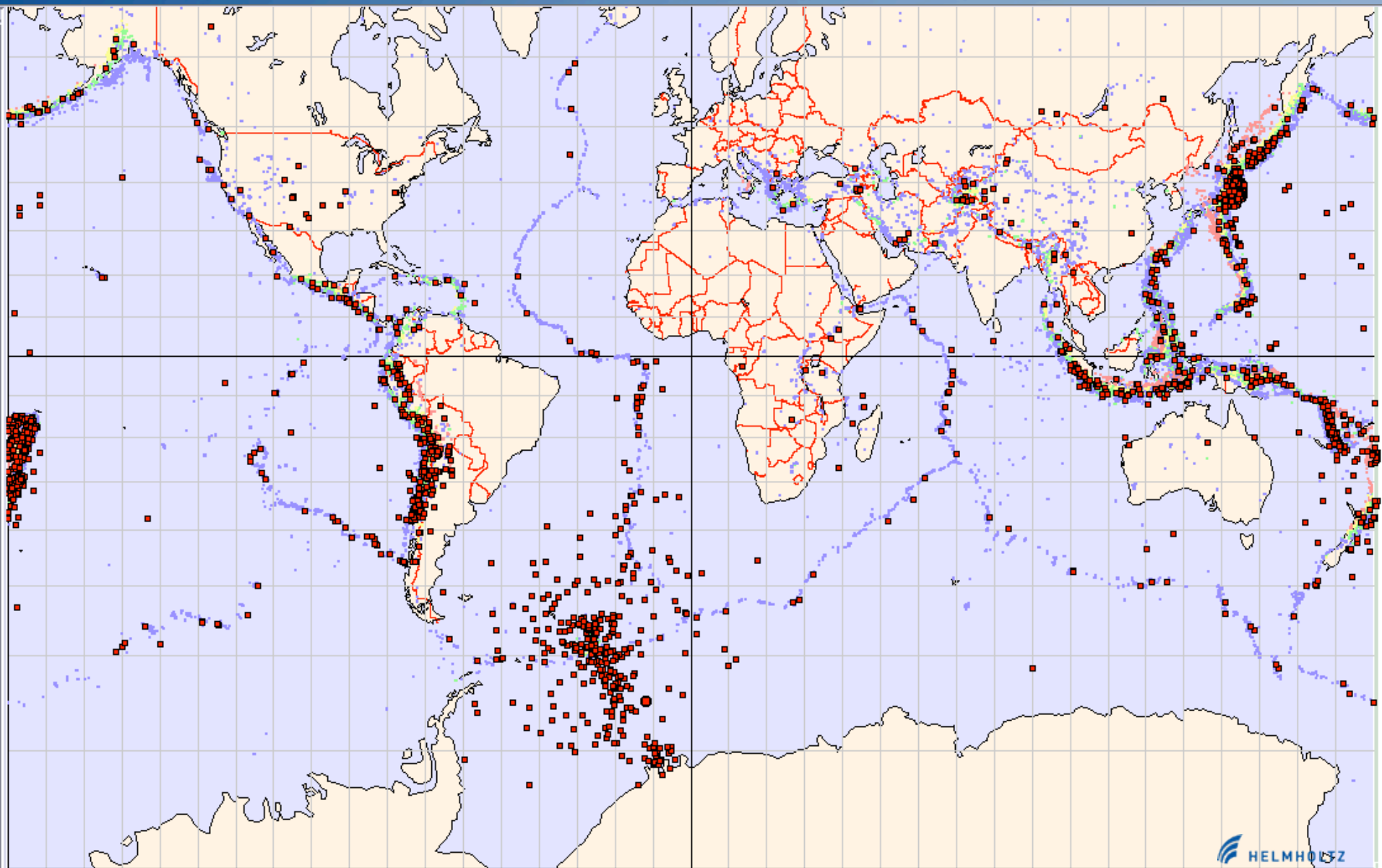
Example Event



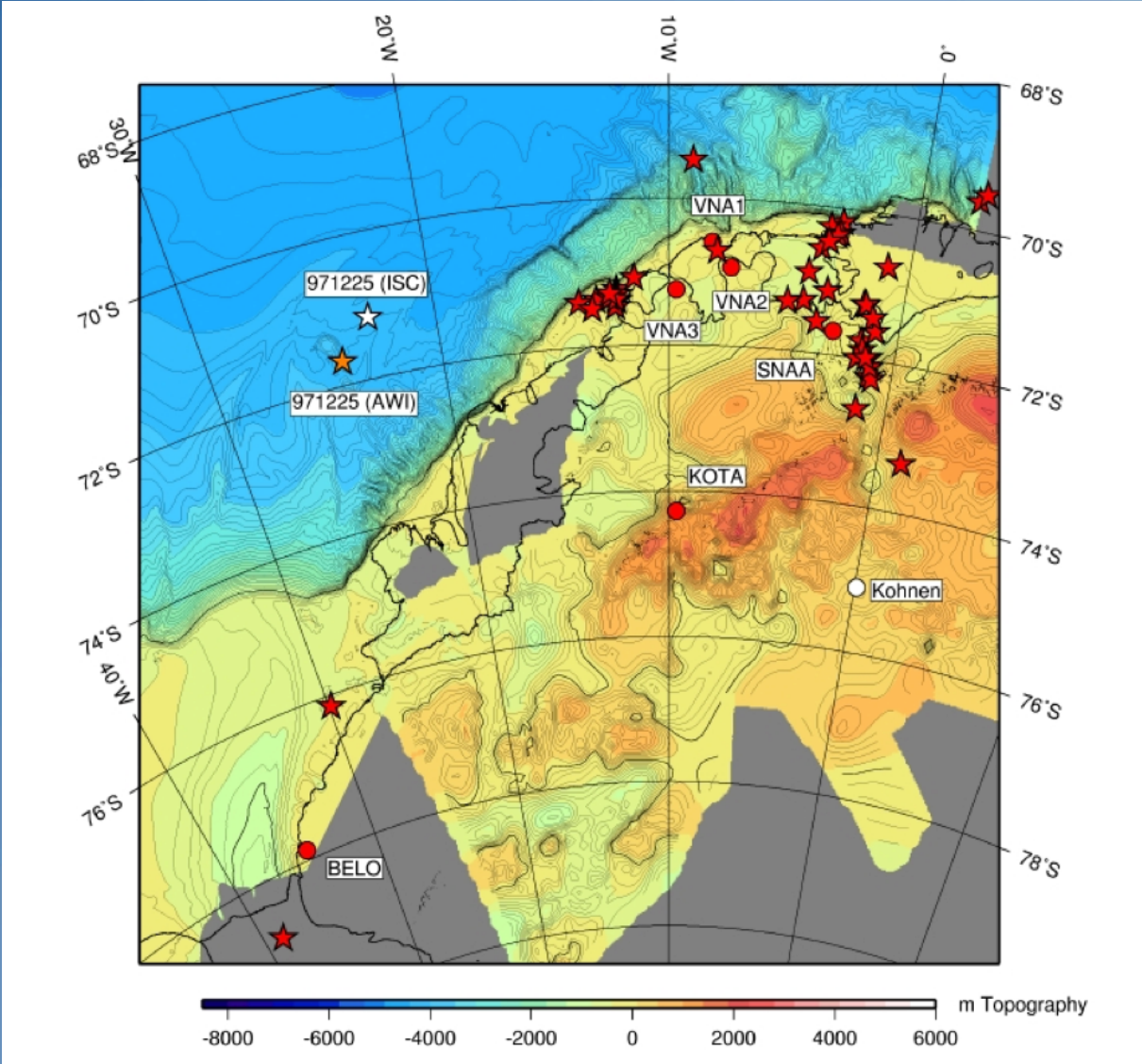
Example Event



Located Events in 2011



Local Events



- Importing offline station data into existing Antelope database
- Batch-Processing offline stations with automated event detection
- Include old datasets from pre-Antelope times
- Run array-processing with offline data
- Synchronizing databases in Bremerhaven with Neumayer

Questions, suggestions, remarks, ..?

Thanks for your attention