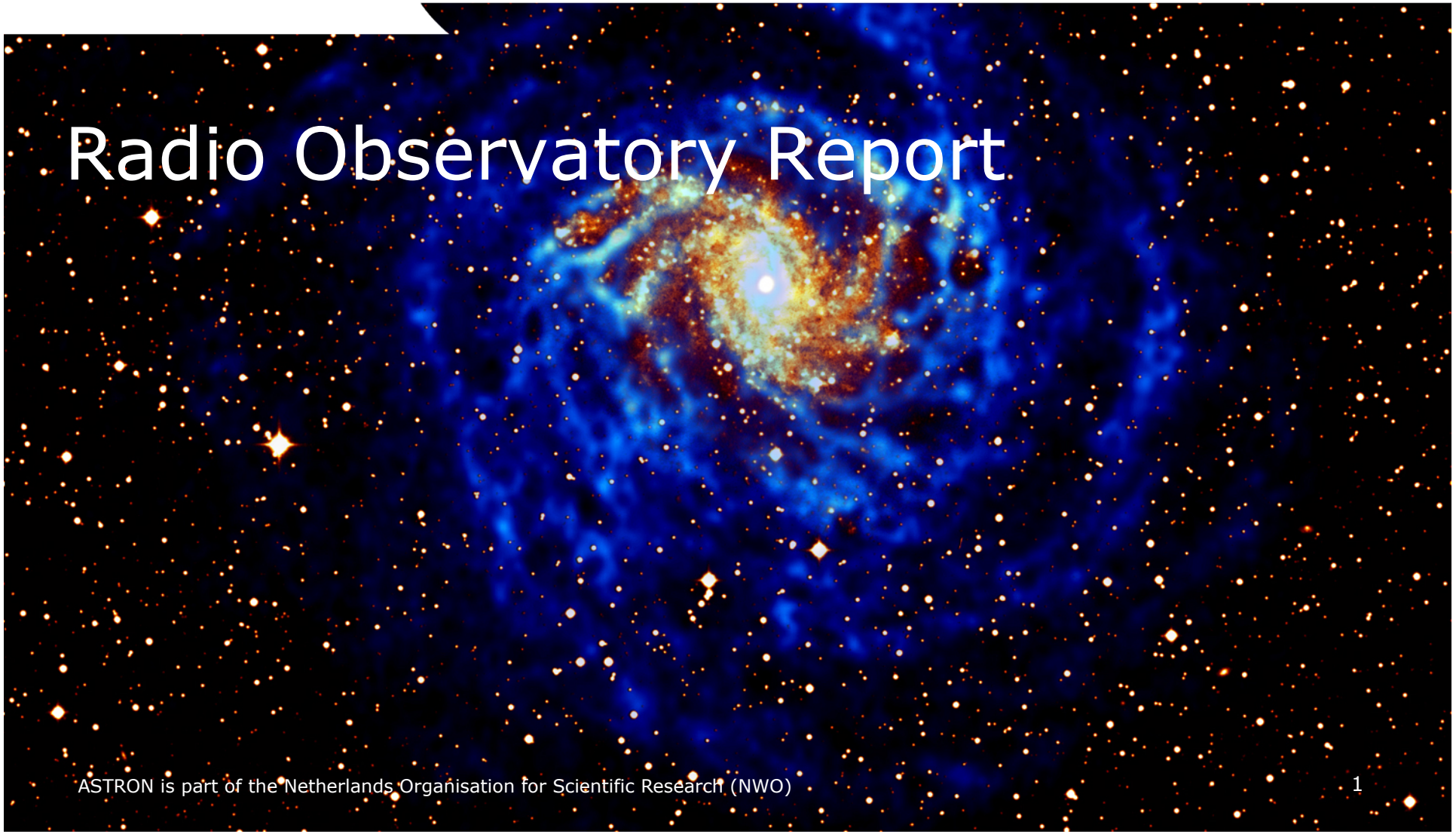
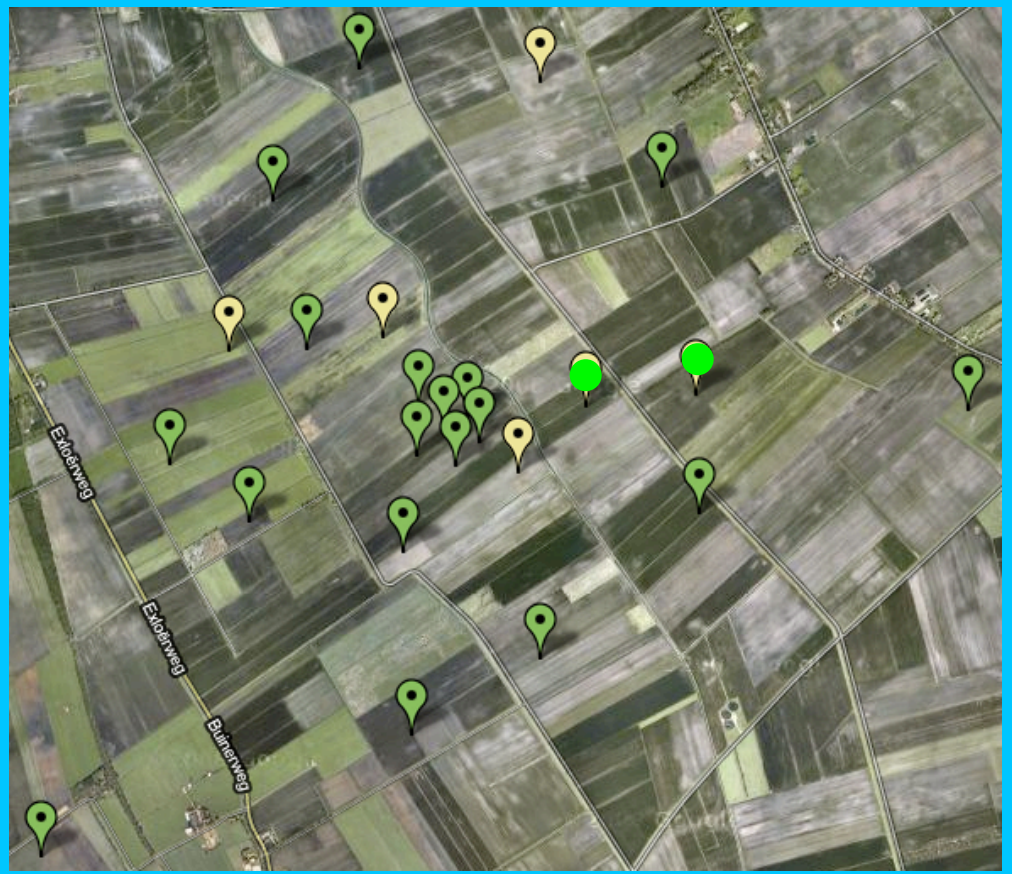
ASTRON

Netherlands Institute for Radio Astronomy

Radio Observatory Report



Station/Item	Cabinet	LBA	HBA	Fibre	CEP connection	Validated
CS302						
RS307						
RS503						
RS106						
RS208						
CS030						
CS401						
CS021						
CS032						
RS306						
CS301						
CS501						
RS509						
CS103						
CS001						
CS002						
CS003						
CS004						
CS005						
CS006						
CS007						
CS024						
CS201						
CS101						
CS026						
RS205						
CS017						
CS011						
CS013						
CS028						
CS031						
RS104						
RS210						
RS310						
RS404						
RS406						
RS407						
RS409						
RS410						
RS508						
Effelsberg						
Tautenburg						
Garching						
Potsdam						
Juelich						
Nancay						
Onsala						
Chilbolton						
Totals	39	39	39	36	35	32



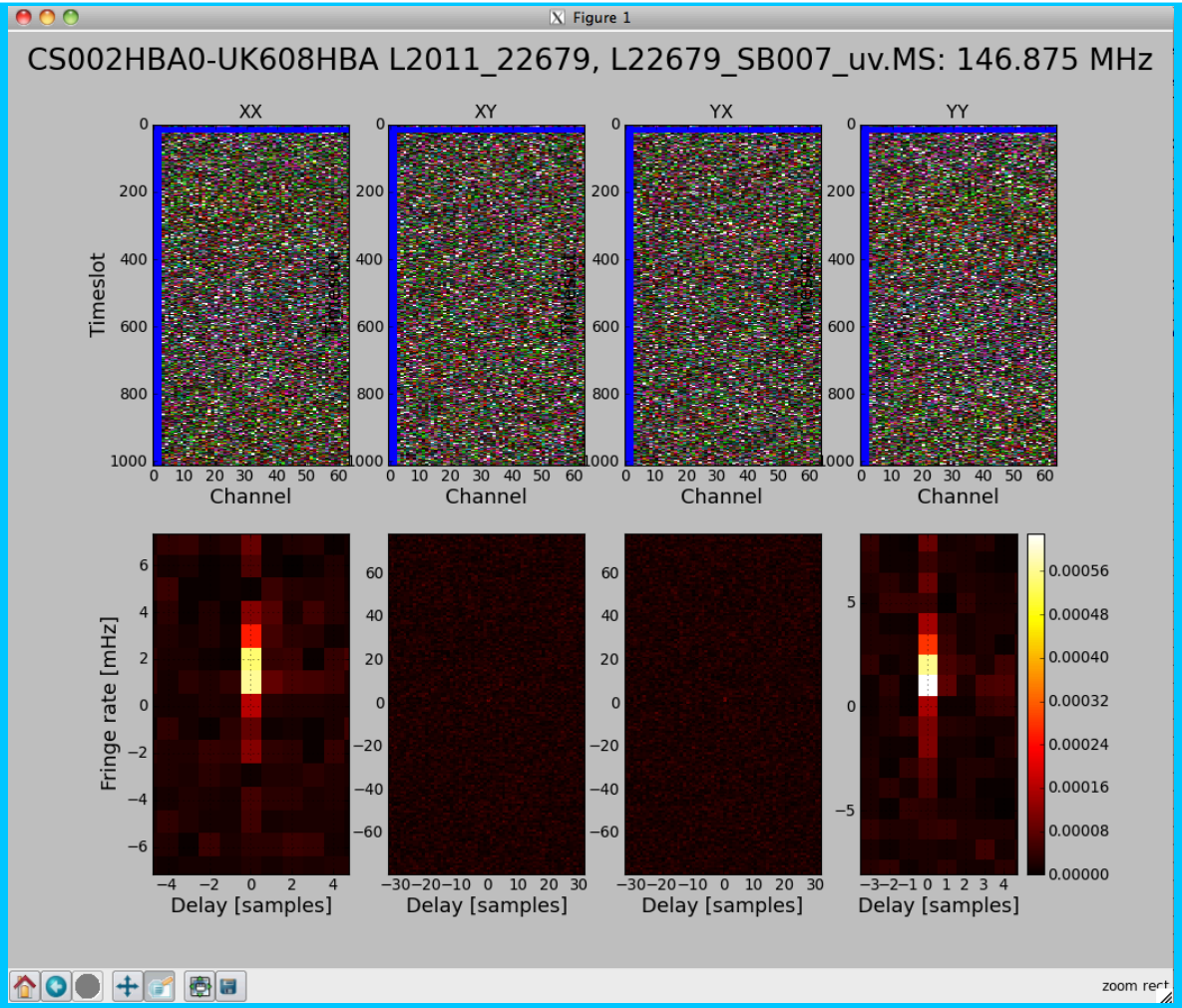
Observing System

- 26 NL stations operational 20 core and 6 remote.
- 4 core stations will become available soon (Feb ?)
- 1 remote station available soon.
- International stations: Effelsberg, Garching, Unterweilenbach, Nancay, Chilbolton (fringes)
- Potzdam and Julich to be connected soon

- Calibration tables available for many stations.
- *Stations with available calibration on Observatory "White Board" in Wiki* (http://www.l ofar.org/operations/doku.php?id=operator:current_station_overview) (last column)

- Technical Issue:
  International stations: Will move to 61 beamlets instead of 62.
  This means effectively 244 subbands (slighly reduced bandwidth).

Fringes to UK608/Chilbolton



Strong S/N ratio detection in baselines between superterp stations and UK608 (L2011_22679).

10 beamlets tested

Will continue testing with other interna-tional stations

Check the live demonstration of fringes at the AAS (courtesy of J. Van Leeuwen et al): *http://www.youtube.com/watch?v=WEp82nokhQI*

CEP Phase II Cluster

Major Milestones:

- **Hardware Installation and configuration**: January-February
  - Should have limited impact on operations
  - Require one stopday (Monday) per week for tests and integration (scheduled from the 6 days earlier)
- **Observations and Operations processing Migration:** March
  - March may see a significant reduction in scientific operations to facilitate the migration.
- **Operational use:** April
  - (Parts of) Phase I cluster will be reused

Headlines (1)

- 100 hybrid storage / compute nodes
  - 2x AMD Opteron 6172 CPUs per node
    - 12 Cores, 2.1 GHz
    - 24 Cores total, 201,6 GFlops
  - 64 GB main memory per node
    - 2.67 GB/core
  - Areca ARC-1880ixl RAID controller
  - 12x 2TB 7200 rpm disks
    - ~20 TB storage capacity available per node
  - QDR Infiniband interconnect
    - 32 Gbp theoretical maximum throughput (~20 Gbps realistic)

Headlines (2)

- Storage capacity
  - 12x 2 TB disks in RAID5
  - 2 TB scratch space per node
  - 20 TB available
  - 2 PB total capacity
- Computational capacity
  - 100x hybrid compute/storage nodes
  - 20.6 TFlops Peak performance

Milestone 1

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Milestone 1: “A-team”

1. Observe “The A-team” sources to obtain models to be used by BBS.
2. Process “A-team” observations “by hand” by commissioners.
3. Consolidate and work towards integration of existing software with a view to an integrated observing system. Aim for automated observations and first integration of the pipeline framework
4. Some observations from LEA proposals will also take place selected on their relevance to the commissioning needs.

Milestone 2

Milestone 2: “Narrow-field imaging of bright sources”

1. Develop towards executing and processing automatically observations of bright (3C- and LEA) sources of varying structural complexity using narrow-field-of-view imaging.
2. Update the system towards automatic observations in a survey style (Milestone 3)
5. Establish a stable observing system.
6. Install and migrate to CEP2 cluster.

Milestone 3

The survey can start when the following critical path items are be available, (planned for Q2 2011):

- Fully operational CEP2 cluster.
- Beginning-to-end system for survey observations.
- Functioning wide field-of-view Imager.
- Functional LOFAR Long Term Archive

Data analysis will be made automatically and is expected to take several weeks and the final products will be carefully examined for systematic errors or other effects.