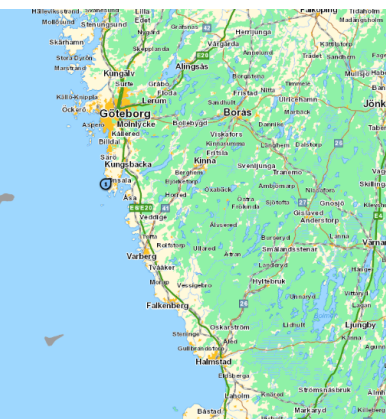
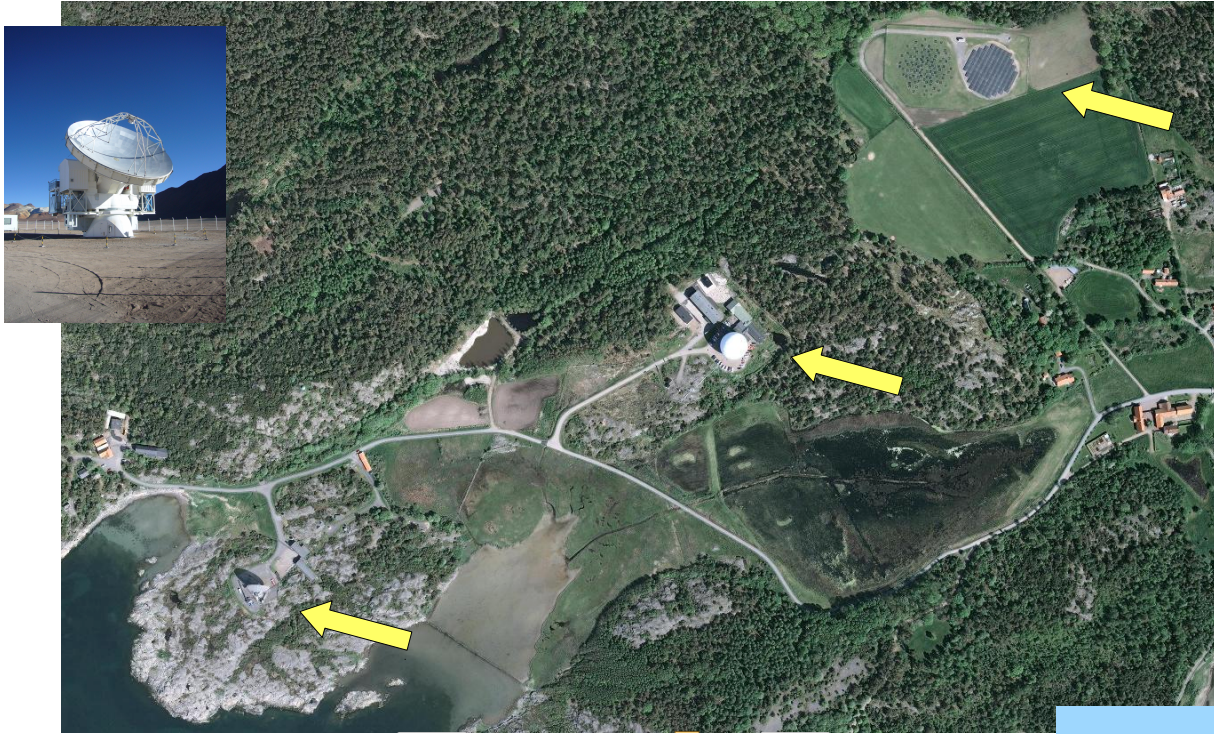




SE607 – the Swedish LOFAR station in Onsala



- Onsala Space Observatory (sometimes “Råö”)
- Founded 1949 (5x Würzburg), inaugurated 1955, 25.6m for UHF → C-band in 1964, 20m/3mm/**radome** in 1976
Submm in Chile: SEST 1987-2003, APEX 2005-
- Astro-VLBI: sp.line & continuum L-band → 3mm
Geo-VLBI: continuum S/X-band, **Twin Telescopes**
Astro-SingleDish: spectral line 18-50, **67-87**, 84-116 GHz



- Station inaugurated 25 Sept. 2011 by Minister of Education.
- Coordinates 57.40 N 11.93 E, outside of observatory premises by ~400 m
- Plastic mesh fence with wooden pole supports
- Entrance gate with card reader and IR-laser trespass alarm
- 60 cm iron anchors for LBA reinforced ground plane attachment
- Information sign for the public

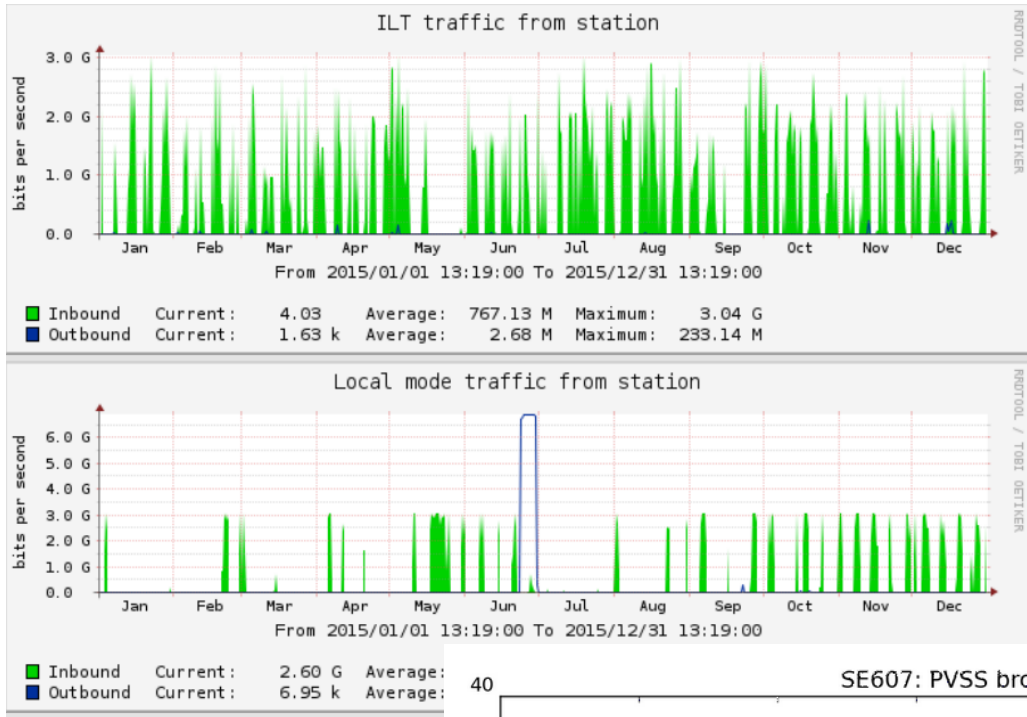
- The LOFAR team taking care of groundskeeping, hardware, software, network, planning, and daily operations. Typically a very small share per person.



Leif Helldner (with Lars E's body!), Miroslav Pantaleev, John Conway, Simon Casey, Henrik Olofsson, Jan Karaskuru, Tobia Carozzi, Lars Pettersson, Ronny Wingdén, Lars Eriksson

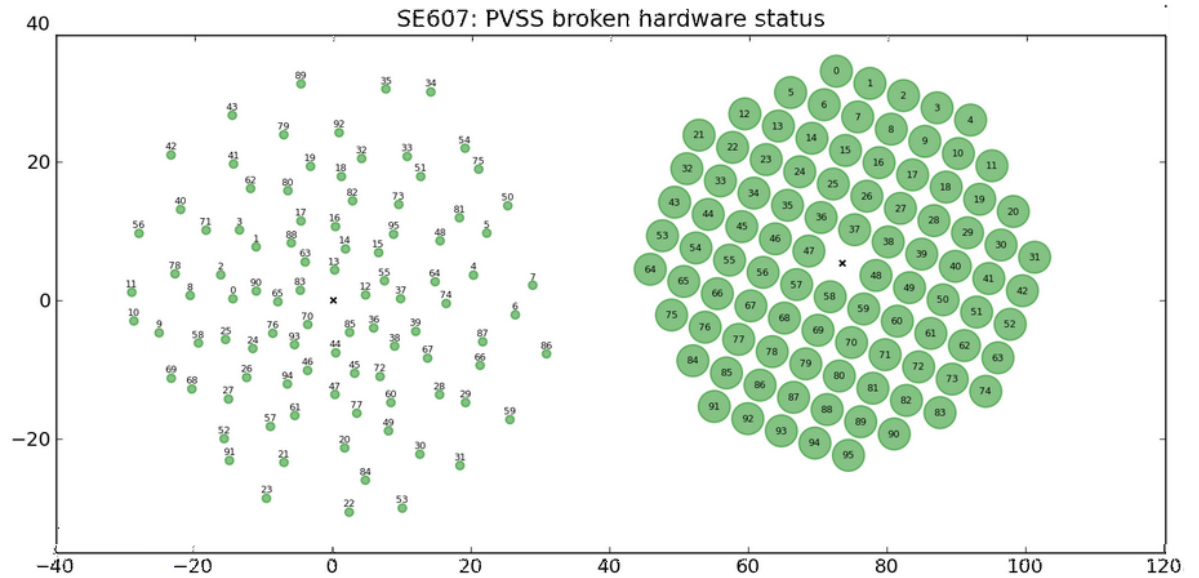
Recent additions:
Michael Lindqvist and
Stephen Bourke





Mostly smooth operations since last meeting

Clean bill of health as of 2016-01-26



Summary of events

- ASTRON maintenance visit April 2015
- UPS installed 24/4 2015 – model Liebert UPS GXT3-3000RT230 3000VA – but it does not cover frontends/backend. Lasts about an hour during a persistent power cut.
- Logging activity in the area from early spring until September
- Rubidium clock failure 2015-09-16, replaced and station returns operational on 2015-09-22
- Drainage problems near HBA that are not yet fully solved
- Stand-alone observations have increased and we are regularly running two projects by independent external “expert” observers.







Sept-Oct 2015



March 2016



Lastly...

www.chalmers.se/en/centres/oso/radio-astronomy/proposals/Pages/default.aspx

Proposals

APEX science verification proposals for SEPIA Band 9

SALSA (2.3 m lab antenna)

SEST

SKA

Weather

xs (data reduction software)

Earth sciences

Technical development

News

Events

Calls for proposals for single-dish observations with the **Onsala 20 m telescope** and **APEX**, and for stand-alone observations with the **Swedish LOFAR station** in Onsala, are normally issued twice per year, with deadlines in April/May and October. The next regular Call will have deadline **4 May 2016**. VLBI-observations are handled through a separate proposal procedure (not by Onsala Space Observatory).

Calls for proposals for observations with some other related instruments can be found here:

- > [The European VLBI Network \(EVN\)](#)
- > [ALMA Science Portal at ESO](#)
- > [European Southern Observatory \(ESO\) - Science Users Information](#)
- > [Low Frequency Array \(LOFAR\)](#)

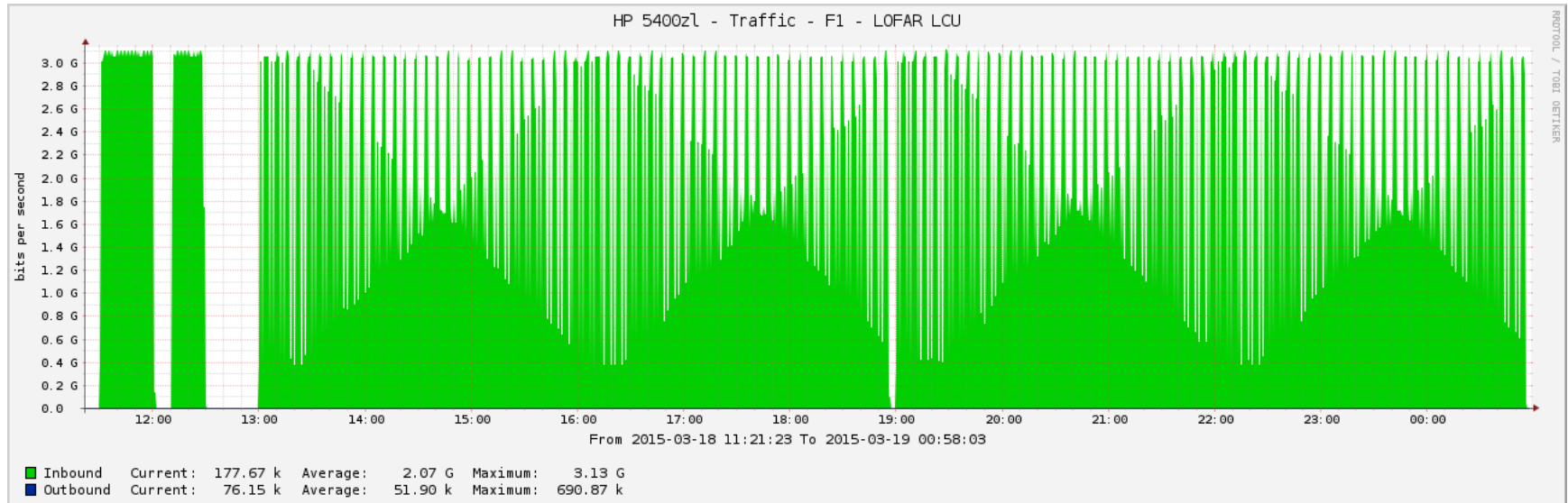
Note: APEX data can be accessed through the [ESO Science Archive APEX Query Form](#).

CONTACT PAGE RESPONSIBLE

- Can record all 4 lanes for ca 48h
- Has GPU but it is currently not used
- Expert users can observe remotely
- Data cloning possible but not used yet

THE END





Funny-looking data stream imprint 2015-03-18

Became Daily Image at ASTRON 2015-03-24:

<http://www.astron.nl/dailyimage/index.html?main.php?date=20150324>

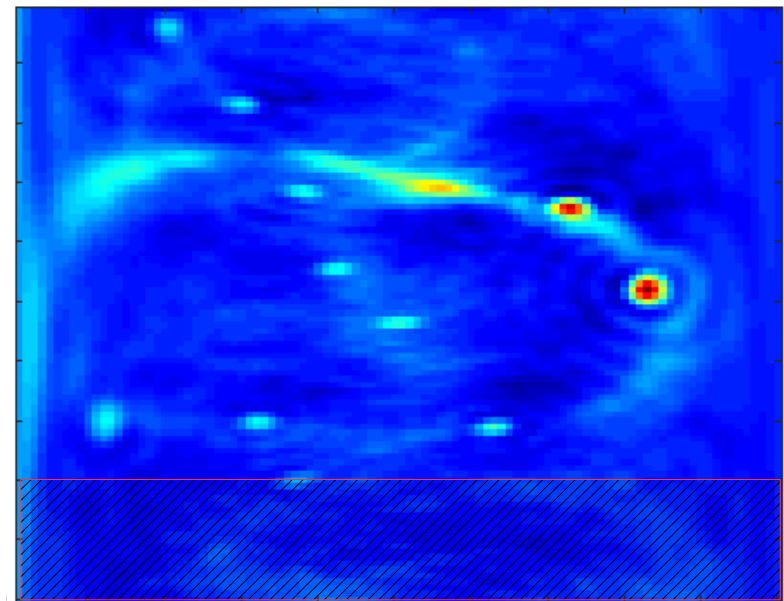
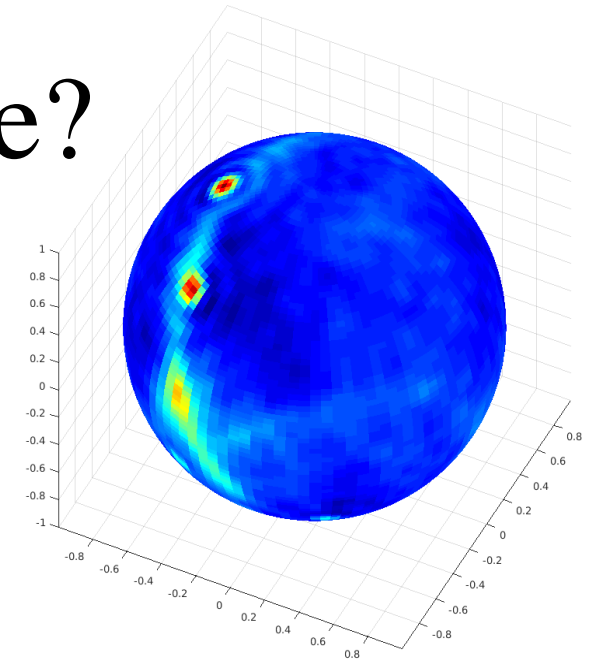


LOFAR projects: Calibration & Imaging

Tobia Carozzi

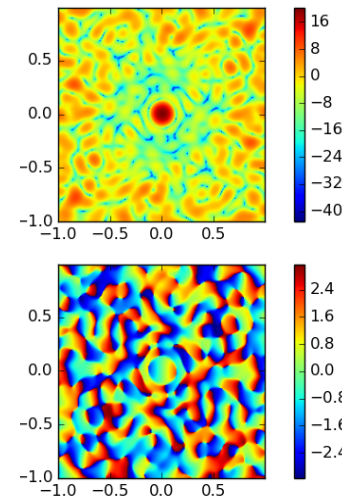
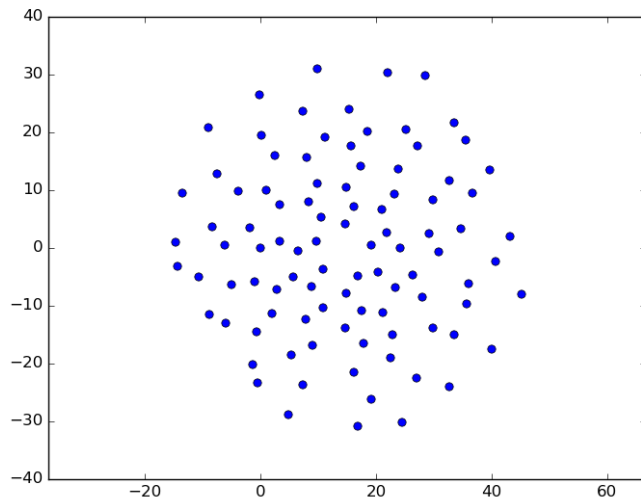
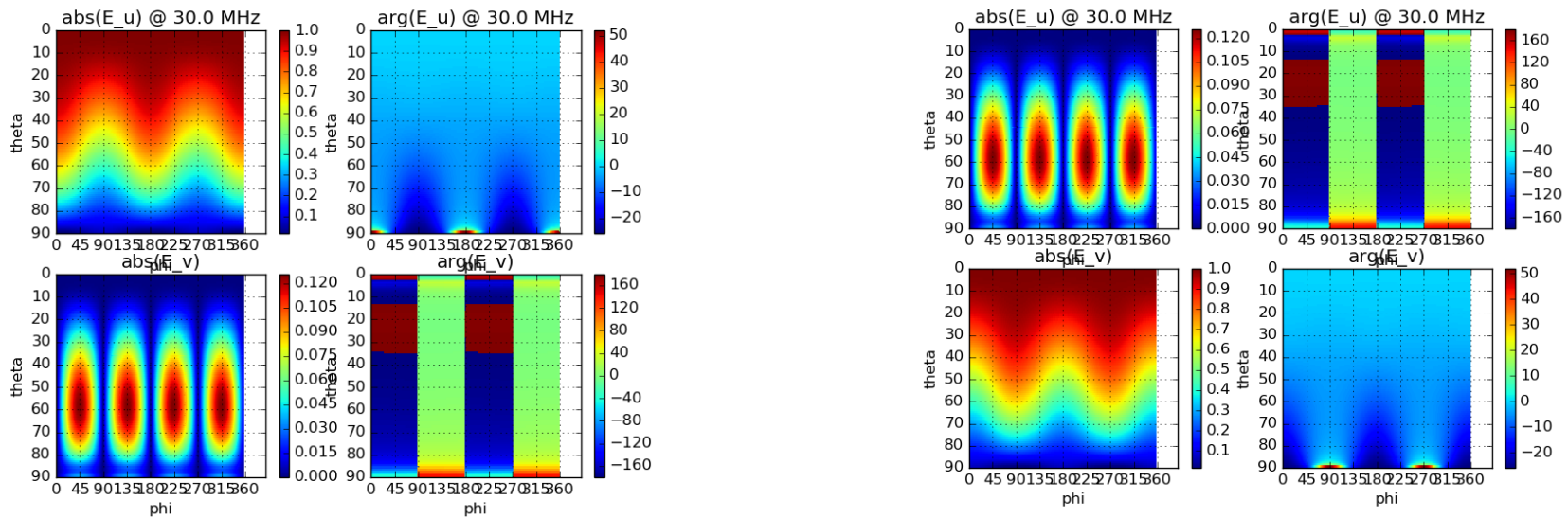
World record image?

- Widest, single-synthesis (i.e. no faceting) image
 - 37100 sq.deg. > hemisphere
 - Based on 24h of xst data from SE607
 - Using spherical interferometry, see *Carozzi "Imaging on a Sphere with Interferometers..." MNRAS 2015*



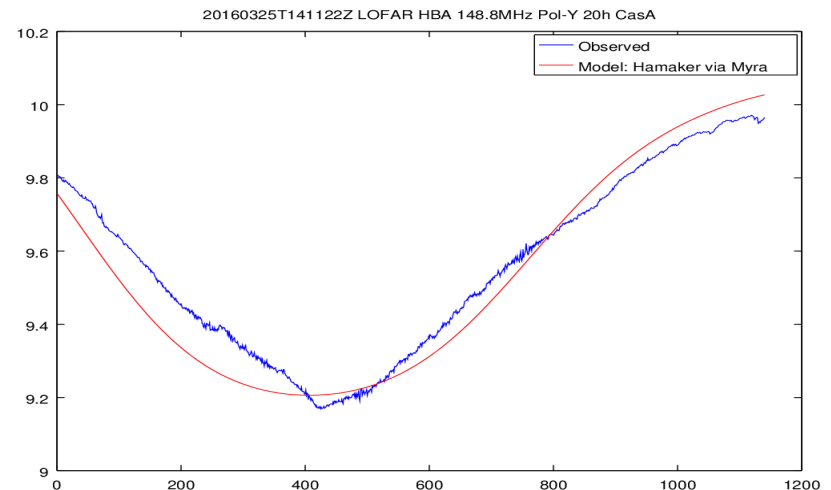
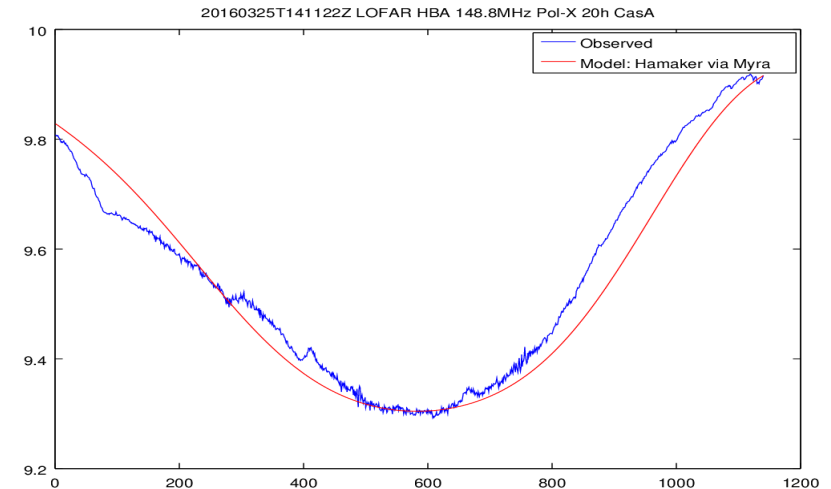
Myra & AntPat: next generation beam modelling

Example AntPat output of LOFAR LBA element & array beamform



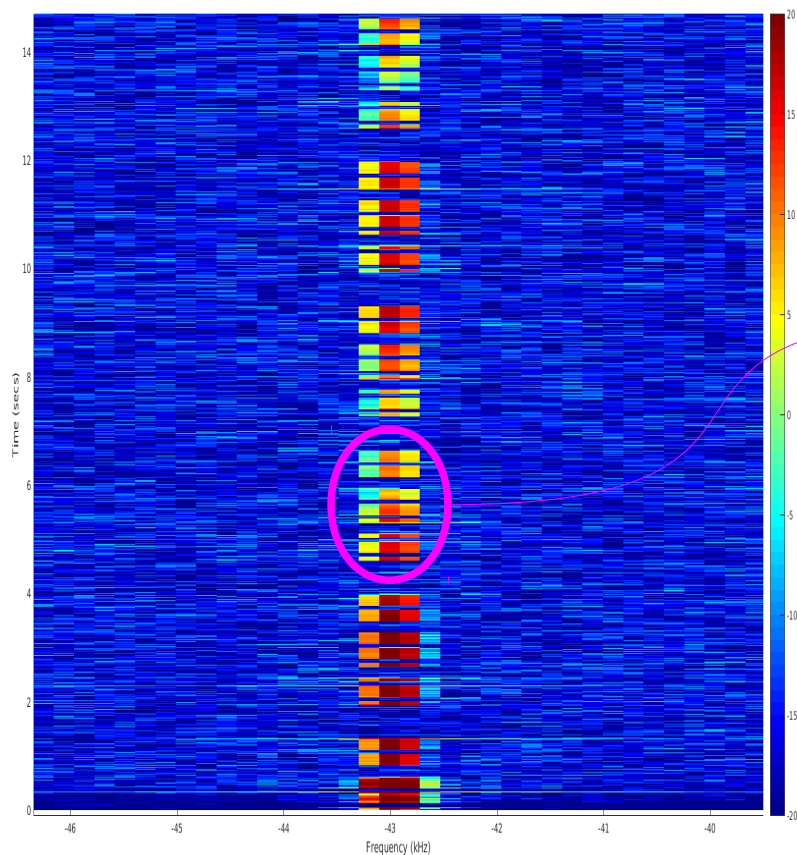
dreamBeam: beam modeling framework for radio telescopes

- Allows full simulation of radio interferometers together with AntPat (antenna pattern framework)
- Currently includes LOFAR using pipeline Hamaker model (improved alternatives in the works)
- First release due soon
- Developed on GitHub:
<https://github.com/2baOrNot2ba/dreamBeam>



Radio clock standard for LOFAR?

Example: Russian Radio Clock observed with SE607 @ 14.996 MHz.



.- .- -
=RWM

=standard frequency and time
signal radio station in Moscow,
Russia

Subsequently it sends on UT coded pulses.
Could be exploited for time-frequency
calibration “in” LOFAR data (includes
ionosphere)