

# ***VCR - Virtual Control Room***

*web application for NenuFAR user*

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# *Presentation content*

- Concept
- General Status of Nenufar
- Observation management
- Monitoring
- Documentation
- Administrator VCR view

# Concept

- Interface for different types of users
  - Scientists -> manage observation
  - Technicals -> manage instrument, survey and configuration
  - Users -> view planning/observation and SST/BST
  - Operators -> general survey instrument



common entry point for all  
control / command of NenuFAR

- Modular interface following type of users
- Interface adaptable to all platform & all browser
- Interface easy to use
- Login with account

# Concept / Home page

*Current observation*

*Status bar*

*Hardware/software state*

NenuFAR v3.18.6

Hello, Christophe Science

09:49:15 UTC

- Stairway To Heaven
- Planning
- Coordinates
- Dashboard
- Real time
- Google map
- Survey
- Documentation

f t




WELCOME TO

## NenuFAR

Welcome to the largest low-frequency radiotelescope in the world Nançay

Just come in and have a look at this wonderful world



Continue

*Menu & Sub-menu*



*Question / bug*

# General Status of Nenufar / Dashboard

The dashboard displays the following information:

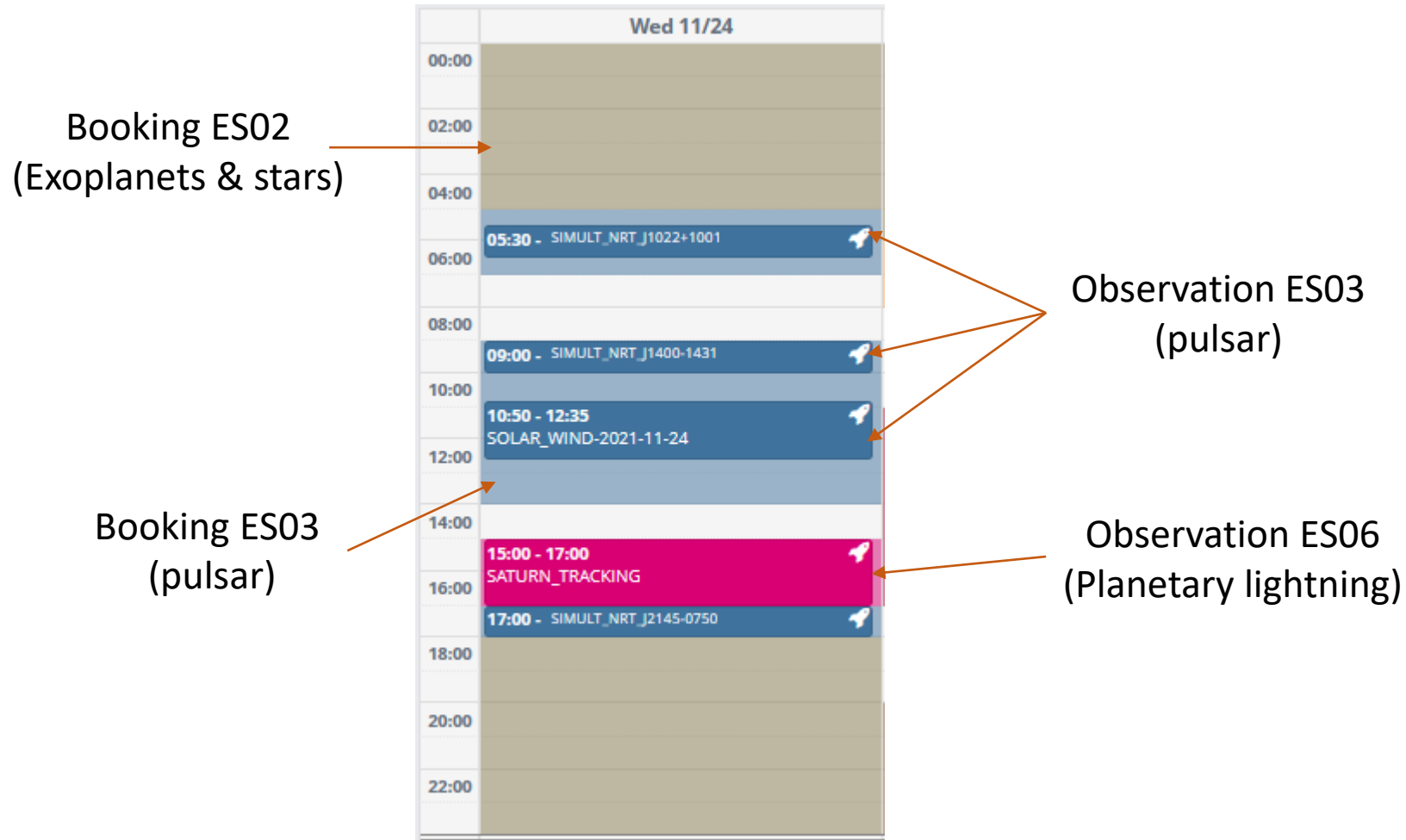
- Header:** NenuFAR v3.18.6, NCP\_COSMIC\_DAWN, starts soon.
- Left Sidebar:** Navigation menu including Stairway To Heaven, Planning, Coordinates, Dashboard (selected), Real time, Google map, Survey, Documentation, About GUI, Users guide, and Release notes - Gui NenuFAR.
- Main Content:**
  - LST:** Local Sidereal Time, 23:43:12.
  - Top Right:** Sky map visualization.
  - Data status:** 601.3 MB (20:00:00) with a spectral plot for (11/12) 20:31:56.
  - BST:** Backend Status Table, 168.75 KB (20:32:00) with a plot for (11/12) 20:31:45.
  - MA (Mini Array):** MA2, MA21 : Disabled. 81 MA enabled.
  - BK (Backend):** Monitor, SST, XST, BST on all MA for each enabled BK. 24 BK card enabled.
  - Services:** All services running.
  - Disks space:** DATANCU, 9 TB used on 22 TB.
- Recent activity:** Messages from all services (2021-11-10 to 2021-11-12). Includes a red banner for "Last error : 2021-11-08 20:50:03 ( from BackendControl )". The activity log shows various events from services like Pointage\_Auto, BackendControl, and Fire.
- Footer:** Social media icons (Facebook, Twitter, RSS) and a help icon.

# Observation management

- Planning : observation & booking
- Target selection
- Create observation
- Manage observations

# Observation management / Planning : observation & booking

## Schedule management



- One color for each Key Program  
Observation -> Key program with specific color  
booking -> idem with light color
- Booking: *defined for 6 months*

# Observation management / Planning : observation & booking

Navigate by week

30 min left

Nov 8 - 14, 2021 *Display mode*

	Mon 11/8	Tue 11/9	Wed 11/10	Thu 11/11	Fri 11/12	Sat 11/13	Sun 11/14
00:00	20:00 - 05:00 CRAB_TRACKING	20:35 - 04:00 NCP_COSMIC_DAWN	23:00 - 03:00 FRB180814	23:00 - 03:00 FRB180814	23:00 - 03:00 FRB180814	20:32 - 04:00 NCP_COSMIC_DAWN	23:00 - 03:00 FRB180814
02:00							
04:00	05:00 - 11:00 FRB181030_TF_PULSAR	04:00 - YZ_CMI_TRACKING			03:00 - 04:58 POLARISATION_CALIBRATION		
06:00		05:00 - 11:00 FRB181030_TF_PULSAR	06:30 - SIMULT_NRT_J1022+1001	06:00 - 10:00 WISEPA_J101905	05:00 - 06:58 POLARISATION_CALIBRATION		
08:00					07:00 - 08:58 POLARISATION_CALIBRATION		
10:00			10:00 - SIMULT_NRT_J1400-1431		09:00 - 10:58 POLARISATION_CALIBRATION		
12:00				11:40 - 13:25 SOLAR_WIND-2021-11-11	11:00 - POLARISATION_CALIBRATION		
14:00		13:01 - 15:03 HER_A_TRANSIT	12:00 - 18:00 J1825-134_TRACKING		12:02 - POLARISATION_CALIBRATION		12:00 - 18:00 J1825-134_TRACKING
16:00					13:00 - 14:58 POLARISATION_CALIBRATION		
18:00		17:00 - 21:00 EV_LAC_TRACKING	18:00 - SIMULT_NRT_J2145-0750	17:00 - 21:00 EV_LAC_TRACKING	15:00 - 16:58 POLARISATION_CALIBRATION		
20:00	20:35 - 04:00 NCP_COSMIC_DAWN	21:00 - 23:00 UV_CETI_TRACKING		21:00 - 23:00 UV_CETI_TRACKING	17:00 - 18:58 POLARISATION_CALIBRATION		
22:00		23:00 - FRB180814		23:00 - FRB180814	19:00 - POLARISATION_CALIBRATION		

Not yet booked



# Observation management / Planning : observation & booking

NenuFAR v3.18.6

POLARISATION\_CALIBRATION 27 min left

Hello, Christophe Science

11:29:10 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

Google map

Survey

Documentation

Select a date today Booking View only mine

Nov 8 - 14, 2021

timetable week

Mon 11/8	Tue 11/9	Wed 11/10	Thu 11/11	Fri 11/12	Sat 11/13	Sun 11/14
20:00 - 05:00 CRAB_TRACKING	04:00 - 05:00 YZ_CMI_TRACKING	03:00 - 03:29 BS_1679_064452+452408	00:00 - 00:29 BS_1690_045314+832657	03:00 - 04:58 POLARISATION_CALIBRATION	23:00 - 03:00 FRB180814	
05:00 - 11:00 FRB181030_TF_PULSAR	05:00 - 11:00 FRB181030_TF_PULSAR	03:30 - 03:59 BS_1680_070839+422630	00:30 - 00:59 BS_1691_044643+793002	05:00 - 06:58 POLARISATION_CALIBRATION		03:00 - 03:02 TESTAMPLI
13:32 - 13:41 TESTANT	13:01 - 15:03 HER_A_TRANSIT	04:00 - 04:29 BS_1681_074112+441010	01:00 - 01:29 BS_1692_044642+733615	07:00 - 08:58 POLARISATION_CALIBRATION		03:02 - 03:10 TESTANT
13:46 - 13:55 TESTANT	15:03 - 15:11 TESTANT	04:30 - 04:59 BS_1682_081650+425610	01:30 - 01:59 BS_1693_051554+665648	09:00 - 10:58 POLARISATION_CALIBRATION		03:10 - 03:12 TESTRELAY_CELL
14:17 - 14:19 TESTRELAY_CELL	15:11 - 15:13 TESTRELAY_CELL	05:00 - 05:29 BS_1683_083735+395801	02:00 - 02:29 BS_1694_054842+610234	11:00 - 11:56 POLARISATION_CALIBRATION		12:00 - 18:00 I1825-134_TRACKING
14:22 - 14:25 TESTAMPLI	15:13 - 15:15 TESTAMPLI	05:30 - 05:59 BS_1684_090823+395801	02:30 - 02:59 BS_1695_061552+513853	12:02 - 12:58 POLARISATION_CALIBRATION		
20:00 - 20:32 CYGA_TRACKING_COSMIC_DAWN	15:36 - 15:45 TESTANT	06:30 - 07:30 SIMULT_NRT_J1022+1001	03:00 - 03:29 BS_1696_064833+492042	13:00 - 14:58 POLARISATION_CALIBRATION		
20:35 - 04:00 NCP_COSMIC_DAWN		10:00 - 11:00 SIMULT_NRT_J1400-1431	03:30 - 03:59 BS_1697_071636+462319	15:00 - 16:58 POLARISATION_CALIBRATION		
	17:00 - 21:00 EV_LAC_TRACKING	12:00 - 18:00 I1825-134_TRACKING	04:00 - 04:29 BS_1698_075047+462319	17:00 - 18:58 POLARISATION_CALIBRATION		
	21:00 - 23:00 UV_CETI_TRACKING	18:00 - 19:00 SIMULT_NRT_J2145-0750	04:30 - 04:59 BS_1699_081623+445436	19:00 - 19:58 POLARISATION_CALIBRATION		
	23:00 - 03:00 FRB180814		05:00 - 05:29 BS_1700_085115+405728	20:00 - 20:32 CYGA_TRACKING_COSMIC_DAWN		
		21:00 - 21:29 BS_1685_025114+863759	05:30 - 05:59 BS_1701_092232+405728	20:32 - 04:00 NCP_COSMIC_DAWN		
		22:00 - 22:29 BS_1686_023804+830158	06:00 - 10:00 WISEPA_J101905			
		22:30 - 22:59 BS_1687_042511+855446	11:40 - 13:25 SOLAR_WIND-2021-11-11			
		23:00 - 23:29 BS_1688_034204+830158	17:00 - 21:00 EV_LAC_TRACKING			
		23:30 - 23:59 BS_1689_031434+724700	21:00 - 23:00 UV_CETI_TRACKING			
			23:00 - 03:00 FRB180814			

# Observation management / Target selection

The screenshot shows the NenuFAR v3.18.6 interface. The top bar includes the user name 'Hello, Christophe Science', the current time '11:30:25 UTC', and a '26 min left' timer. The main area is titled 'POLARISATION\_CALIBRATION'. A red dashed box highlights the 'Type of target' section, which includes buttons for 'Planets IMCCE', 'Pulsars psrcat', 'Simbad query', and 'J2000 coordinates'. Below this, a 'Select your transit date:' section shows '2021-11-12' and a green 'Other target' button. A legend for 'Visibility adjustment' shows 'Standard visibility (Elevation > 40°)' in green and 'Maximum visibility (Elevation > 1°)' in orange. The main display is a calendar grid for November 11-13, 2021, with a 'now' marker at 12:00 on Nov 12. A red dashed box highlights a 'Predefined target' (B0329+54) in the grid. Red arrows point to the 'Other target' button, the 'Date transit selection' text, and the 'Elevation > 40°' and 'Elevation > 1°' labels.

**Type of target**

**Visibility adjustment**

- Standard visibility ( Elevation > 40 °)
- Maximum visibility ( Elevation > 1 °)

Select your transit date :

2021-11-12

**Select another target**

**Date transit selection**

**Predefined target**

**Elevation > 40°**

**Elevation > 1°**

	Thu 11 November				Fri 12 November				Sat 13 November				S				
	08:00	12:00	16:00	20:00	00:00	04:00	08:00	12:00	16:00	20:00	00:00	04:00	08:00	12:00	16:00	20:00	0
B0329+54	Maximum				Standard				Maximum				Standard				
B0531+21	Maximum		Standard		Maximum		Standard		Maximum		Standard		Maximum		Standard		
B0809+74	Standard		Maximum		Standard				Maximum				Standard		Maximum		
B1508+55	Standard				Maximum				Standard				Maximum				
B2217+47	Maximum		Standard		Maximum				Standard				Maximum		Standard		

# Observation management / Target selection

NenuFAR v3.18.6

POLARISATION\_CALIBRATION 25 min left

Hello, Christophe Science

11:31:21 UTC

Planets IMCCE Pulsars psrcat Simbad query J2000 coordinates

Select your transit date : 2021-11-12 Other target

Standard visibility ( Elevation > 40 ° )  
Maximum visibility ( Elevation > 1 ° )

Select an elevation

	Thu 11 November				Fri 12 November				Sat 13 November							
	08:00	12:00	16:00	20:00	00:00	04:00	08:00	12:00	16:00	20:00	00:00	04:00	08:00	12:00	16:00	20:00
B0329+54	[Orange]				[Green]				[Orange]				[Green]			
B0531+21	[Orange]				[Green]				[Orange]				[Green]			
B0809+74	[Green]				[Orange]				[Green]				[Orange]			
B1508+55	[Green]				[Orange]				[Green]				[Orange]			
B2217+47	[Orange]				[Green]				[Orange]				[Green]			

**B0809+74**

**J2000 :**  
RA: 123.747917° (8:14:59.5)  
DEC: 74.484917° (74:29:5.7)

**Transit time :**  
Date: (12) 04:42:37  
Elevation: 62.96°

**Standard visibility ( EI > 40° ) :**  
From: (11) 21:18:07  
To: (12) 12:07:07

**Max visibility ( EI > 1° ) :**  
From: (11) 16:42:37  
To: (12) 16:42:37

**Graphic information :**  
Date: (12) 08:34:37  
Elevation: 53.57 °

*Target tracking* →

*Information about target visibility*

# Observation management / Observation creation

NenuFAR v3.18.6

POLARISATION\_CALIBRATION 24 min left

Hello, Christophe Science

11:32:17 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

Google map

Survey

Documentation

Welcome to this new template space.  
[more details...](#)

Search by names or tags...

Filter by tags: XST BHR Subarraying Antenna off Azelfile SUN 3C405 B0950+08

**+ New template** Import files Azelfile management

	<b>ZENITH_XST</b> azelgeo_transit	Modified on 2018-08-30 14:52:03	XST	ES00 Debug
	<b>ZENITH_DRIFT_TEST_5M</b> azelgeo_transit	Modified on 2018-11-12 14:35:23		ES00 Debug
	<b>ZENITH_DRIFT_TEST_20M</b> azelgeo_transit	Modified on 2018-08-30 14:51:43	SST BST	ES00 Debug
	<b>ZENITH_DRIFT_TEST</b> azelgeo_transit	Modified on 2018-08-30 14:51:34	SST BST	ES00 Debug
	<b>ZENITH_2BEAM_2MIN</b> azelgeo_transit	Modified on 2018-09-24 11:54:29	BST	ES00 Debug
	<b>ZENITH-BEAMANALOG_XST</b> azelgeo_transit	Modified on 2018-08-30 14:51:17	XST	ES00 Debug
	<b>ZENITH-BEAMANALOG</b> azelgeo_transit	Modified on 2018-08-30 14:51:07		ES00 Debug
	<b>ZENITH</b> azelgeo_transit	Modified on 2018-10-25 12:19:00		ES00 Debug

Observation creation

# Observation management / Observation creation

The screenshot shows the NenuFAR v3.18.6 interface for creating a new observation template. The interface is divided into several sections, each with a red dashed box and a red arrow pointing to a descriptive label:

- Observation** (green header): Contains fields for Name, Comment, Key project (ES00 Debug), and Contacts (ctaffoureau@obs-nancay.fr). A red dashed box surrounds this section, with an arrow pointing to the label "General observation settings".
- Analog beams** (green header): Shows "0 analog beam" and two buttons: "Add Transit" and "Add Tracking". A red arrow points from these buttons to the label "Add transit or tracking target".
- XST** (orange header): Includes a "Set to default" button, a dropdown for "XST (2.7 Go/h)" set to "Creation", and a text input for "Sb list" containing "192,193,194,195,196,197,198,199,200,201". A red arrow points to the label "Correlation settings (subband, ...)".
- Imager** (orange header): Includes a "Set to default" button, a dropdown for "Imager" set to "Used", and a text input for "Subbands #" containing "50-53,194-197,242,266,290,314,338,3". A red arrow points to the label "Imager settings".
- Advanced settings** (green header): Includes dropdowns for "SST" (No copy), "BHR Format" (8 bits), "Azal correction" (Enable), and "Calibration" (Use current file). A red dashed box surrounds this section, with an arrow pointing to the label "Others settings".

# Observation management / Observation creation

NenuFAR v3.18.6

Hello, Christophe Science

11:33:48 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

Google map

Survey

Documentation

POLARISATION CALIBRATION 22 min left

### Add transit analog beam

Select the transit date: 2021-11-25

Visibility above 40° elevation, click here to bypass the standard visibility limit

Select an elevation

Planets IMCCE Pulsars psrct Simbad query J2000 coordinates Azelgeo coordinates

Other target

Click on the visibility bar of one source below :

	Thu 25 November	04:00	08:00	12:00	16:00	20:00	Fri 26 N
	00:00						00:00
B0329+54	Green bar	Green bar	Grey bar	Grey bar	Grey bar	Green bar	Green bar
B0531+21	Green bar	Green bar	Grey bar	Grey bar	Grey bar	Green bar	Green bar
B0809+74	Green bar	Green bar	Green bar	Green bar	Grey bar	Green bar	Green bar
B1508+55	Grey bar	Green bar	Green bar	Green bar	Green bar	Grey bar	Green bar
B2217+47	Green bar	Grey bar	Grey bar	Green bar	Green bar	Green bar	Green bar

Selected target

Busy or not booked

Booked for KP

Cancel

# Observation management / Observation creation

The screenshot shows the NenuFAR v3.18.6 interface for observation management. The main window displays the observation details for 'B0809+74\_TRANSIT'. A sidebar on the left shows the user's profile and navigation options. A 'Hours of B0809+74' window is open, showing a timeline of observation hours with 'start' and 'stop' markers. The main panel shows the observation schedule for 2021-11-25, with a 'Start of observation' at 08:00:00 and an 'End of observation' at 11:00:00. A 'Beam configuration' table is visible, showing a single beam configuration for 'B0809+74' with 416 beamlets. The interface includes buttons for 'Save as template', 'Submit loop', and 'Submit'. Red annotations highlight key features: 'Adjust observing time' points to the observation start and end times; 'Analog beam' points to the beam configuration table; 'Beam' points to the beam configuration details; 'Beam configuration' points to the beam configuration table; 'Delete beam' points to the delete icon; 'Add beam' points to the add icon; and 'Number of beamlets used' points to the '416 beamlets' indicator.

**Hours of B0809+74**

Hours information:

- Transit date: 2021-11-25
- Transit date: 03:51:31
- Transit time: (25) 03:51:31
- Start: (25) 08:36:10
- Stop: (25) 10:11:20
- Duration: 01:35:10
- StarHA: 04:44:39
- StopHA: 06:19:49

**Analog & numeric beams (1 analog beams)**

Start of observation: 2021-11-25 08:00:00, Duration: 03:00:00

End of observation: 2021-11-25 11:00:00

Beam configuration table:

Start time	End time	Beam name	Configuration	Beamlets
08:01:10	10:59:50	B0809+74	Squint : 50 MHz All mini-arrays	1 beam
08:01:10	10:59:50	B0809+74	416 blts : 7.422-88.477 MHz	416 beamlets

# Observation management / Observation creation

## Analog beam configuration

The screenshot displays the NenuFAR web interface for creating a new template for observation B0809+74\_TRANSIT. A 'Filter settings' dialog is open, showing the following configuration:

- Pointing (J2000):** A red dashed box highlights this section, labeled 'Analog pointing settings'. It includes fields for Label (B0809+74\_TRANSIT), Psrcat (B0809+74), Right Ascension (8:14:59.5), Declination (74:29:5.7000), Type (Transit), Decal transit (0 seconds), and Beam squint (50 MHz).
- Filters:** Labeled 'Filter settings', it shows 'At (UTC)' as 2021-11-25 08:01:10 (start) and 'Set' as High pass 25 MHz.
- Mini-array:** Labeled 'Mini array used', it shows 'Mini-arrays list' set to 'Use all built mini-array'.
- Antennas:** Labeled 'Antenna settings in mini array', it shows 'Antenna' set to 'All antennas' and 'Antenna state' set to 'ON'.



# Observation management / Observation creation

## Digital beam configuration

**Beam pointing settings**

Pointing (J2000) ?

Label: B0809+74\_TRANSIT

Same as analog pointing

Psract: B0809+74

Right Ascension: 8:14:59.5

Declination: 74:29:5.7000

Azimuth offset (°): 0

Elevation offset (°): 0

Type: Transit

**Processing settings (Pulsar, waveform, dynamic spectrum)**

Processing: TBD

**Parameters field**

Parameters

**Subbands definition**

Subbands ?

Unity: Frequency MHz (nn-mm,xx,zz)

Frequency list: 7.422-88.477

Beamlet list: 38-453

416 beamlets selected

Use subband loop: No

**Parameters help**

Parameters help

Parameters :

Some parameters which are not included or going to be included in the GUI you have to specify specially for pulsars observations and time-frequency acquisition.

**Pulsars parameters**

- Folding mode :**  
--fold=fold dump time, 10.737 sec is the default)  
FOLD: --tfold=10.737 --src=B0000+00
- Single pulse :**  
--search=don't fold, write time series  
--dstime=Downsample in time (int, power of 2)  
SINGLE: --search --dstime=128 --src=B0000+00
- waveform :**  
WAVE: --src=0000+00
- Olaf waveform :**  
WAVEOLAF: --src=0000+00
- Piggy-back :**  
--projid=es and its number (like es03)  
PIGGY-BACK: --projid=es03

WaveForm parameters :

# Observation management / Observation creation

The screenshot displays the NenuFAR v3.18.6 interface for creating a new observation template. The top navigation bar includes the user name 'NenuFAR v3.18.6', a menu icon, the current session 'POLARISATION\_CALIBRATION' with a '20 min left' timer, and various utility icons. The left sidebar shows navigation options: Stairway To Heaven, Planning, Coordinates, Dashboard, Real time, Google map, Survey, and Documentation.

The main content area is titled 'B0809+74\_TRANSIT / Create new template' and features three buttons: 'Save as template', 'Submit loop', and 'Submit'. The interface is divided into several sections:

- Observation**: Fields for Name (B0809+74\_TRANSIT), Comment, Key project (ES00 Debug), and Contacts (ctaffoureau@obs-nancay.fr).
- XST**: A dropdown menu currently set to 'No creation'.
- Imager**: A dropdown menu currently set to 'Not used'.
- Advanced settings**: A 'more settings' button.
- Analog & numeric beams (1 analog beams)**: A timeline view for the observation on 2021-11-25. It shows a start time of 08:00:00 and an end time of 11:00:00. A specific beam entry is highlighted for the duration 08:01:10 to 10:59:50, labeled 'B0809+74' with a 'Squint : 50 MHz' and 'All mini-arrays' configuration. A context menu is open over this beam, listing options: 'Duplicate analog beam', '+ Add analog beam with other target', '+ Add numeric beam', '+ Add numeric beam with other target', and 'Remove'. A red arrow points to this menu with the text 'Add analog or digital beam'. The beam entry also shows a duration of 02:58:40 and '416 beamlets'.

# Observation management / Observation creation

**NenuFAR** v3.18.6  
POLARISATION\_CALIBRATION 20 min left

Hello, Christophe Science

11:36:14 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

Google map

Survey

Documentation

**B0809+74\_TRANSIT / Create new template**

Save as template Submit loop Submit 2 errors

**Observation**

Name: B0809+74\_TRANSIT

Comment:

Key project: ES00 Debug

Contacts: ctaffoureaux@obs-nancay.fr

**XST**

XST (2.7 Go/h) No creation

**Imager**

Imager: Not used

**Advanced settings**

more settings

Analog & numeric beams (2 analog beams)

Select another date

2021-11-25 08:00:00 Start of observation Duration 03:00:00

08:01:10 #0 B0809+74 Squint : 50 MHz 02:58:40 1 beam

10:59:50 All mini-arrays

08:01:10 B0809+74 02:58:40

10:59:50 416 blts : 7.422-88.477 MHz

same time #1 B0809+74 Squint : 50 MHz 02:58:40 1 beam

08:01:10 All mini-arrays

08:01:10 B0809+74 02:58:40

10:59:50 416 blts : 7.422-88.477 MHz

2021-11-25 11:00:00 End of observation

832 beamlets

*Submit observation when no errors*

*loop*

*Errors on observation settings*

*Analog beam added*

*Beam added*

# Observation management / Observation management

The screenshot displays the NenuFAR observation management interface. It features two configuration panels at the top and a main observation table below.

**Left Configuration Panel:** EV\_LAC\_TRACKING (Completed, duration 04:00). Includes a 'Configurations' section for 'Observation configurations' and a 'STAR' section for 'ES02 Exoplanets & stars'. The 'status' field is set to 'Unknown', with a red dashed circle around it and a red arrow pointing to the text 'Observation status to indicate !!!'. Below the configuration panel is a red dashed box containing buttons: 'Edit & replay', 'Tracking', 'Downloads', 'Output', and 'Close'. A red arrow points from the 'Tracking' button to the 'Observation played' label in the table.

**Right Configuration Panel:** POLARISATION\_CALIBRATIO... (Pending, duration 01:00). Includes a 'Configurations' section for 'Observation configurations' and an 'OTHER' section for 'ES03 Pulsars'. Below this panel is a red dashed box containing buttons: 'Edit & replay', 'Downloads', and 'Close'. A red arrow points from the 'Edit & replay' button to the 'Future Observation' label in the table.

**Main Observation Table:** A grid of observation slots with columns for time, name, and status. The table shows various observations, including 'EV\_LAC\_TRACKING' (17:00 - 21:00) and 'POLARISATION\_CALIBRATION' (17:00 - 18:58). A red arrow points from the 'Observation played' label to the 'EV\_LAC\_TRACKING' entry, and another red arrow points from the 'Future Observation' label to the 'POLARISATION\_CALIBRATION' entry.

Observation played

Observation status to indicate !!!

Future Observation

# Observation management / Observation management

**EV\_LAC\_TRACKING** Completed

**Configurations**  
Observation configurations

- Observation Timeline
- Parset user file
- Parset file
- Tracking file
- Log
- AltazA
- AltazB
- Lanes

**768 beamlets**

**Analog & numeric beams (1 analog beams)**

**2021-11-09 17:00:00** Start of observation  
Duration 04:00:00

17:01:10 → **EV LAC Squint : 60 MHz**  
MA: 0,1,3,4,6-20,22-36,3... (52 selected) 03:58:40 2 beams

20:59:50 → EV LAC  
384 blts : 12-86.9 MHz 03:58:40 122 Go

17:01:10 → EV LAC  
384 blts : 12-86.9 MHz 03:58:40 122 Go

20:59:50 → 22:46:15 / 47:10:19  
384 blts : 12-86.9 MHz 03:58:40 122 Go

same time → 22:46:15 / 47:10:19  
384 blts : 12-86.9 MHz 03:58:40 122 Go

**2021-11-09 21:00:00** End of observation

*Complete observation configuration*

# Observation management / Observation management

**EV\_LAC\_TRACKING** **Configurations** Observation configurations duration 04:00

Observation Timeline

- Parset user file**
- Parset file
- Tracking file
- Log
- AltazA
- AltazB
- Lanes

```
Observation.contactName=philippe.zarka
Observation.name="EV_LAC_TRACKING"
Observation.title="STAR"
Observation.contactEmail=philippe.zarka@obspm.fr
Observation.nrBeams=2
Observation.topic=exoplanets_and_stars

Anabeam[0].target="EV_LAC_TRACKING"
Anabeam[0].simbadSearch=EV_LAC
Anabeam[0].trackingType=tracking
Anabeam[0].transitDate=2021-11-09T19:22:17Z
Anabeam[0].startTime=2021-11-09T17:01:10Z
Anabeam[0].duration=14320s
Anabeam[0].maList=[0,1,3,4,6..20,22..36,38..55]
Anabeam[0].filterStart=2
Anabeam[0].optFrq=60

Beam[0].target="EV_LAC_TRACKING"
Beam[0].subbandFrq=[12-86.9]
Beam[0].useParentPointing=true
Beam[0].todo=dynamicspectrum
Beam[0].parameters="tf: df=3.05 dt=42.0 hamm"

Beam[1].target="J2000_TRACKING"
Beam[1].trackingType=tracking
Beam[1].transitDate=2021-11-09T19:21:41Z
Beam[1].ra='22:46:15'
Beam[1].dec='47:10:19'
Beam[1].startTime=2021-11-09T17:01:10Z
```

*Observation configuration*

*Analog beam configuration*

*Beam configuration*

Close

# Observation management / Observation management

EV\_LAC\_TRACKING Completed duration 04:00

Configurations Observation configurations

ES02 Exoplanets & stars

STAR

Submission time 2021-11-05 01:26:38 ✓ by Philippe Zarka

Start time 2021-11-09 17:00:00 ✓

Stop time 2021-11-09 21:00:00 ✓

status Unknown ? Please indicate if this observation is in error.

Edit & replay Tracking Downloads Output Close

- Observation config
- Outputs (pdf)
- BST (fits) *may take time*

Create zip

**Replay observation**

EV\_LAC\_TRACKING Completed duration 04:00

Configurations Observation configurations

ES02 Exoplanets & stars

STAR

Submission time 2021-11-05 01:26:38 ✓ by Philippe Zarka

Start time 2021-11-09 17:00:00 ✓

Stop time 2021-11-09 21:00:00 ✓

status Unknown ? Please indicate if this observation is in error.

Edit & replay Tracking Downloads Output Close

- Tracking orders 03:59
- Azimuth Elevation 04:27

**Tracking orders for this observation**

**Download configuration & output of this observation**

EV\_LAC\_TRACKING Completed

Configurations Observation configurations

ES02 Exoplanets & stars

STAR

Submission time 2021-11-05 01:26:38 ✓ by Philippe Zarka

Start time 2021-11-09 17:00:00 ✓

Stop time 2021-11-09 21:00:00 ✓

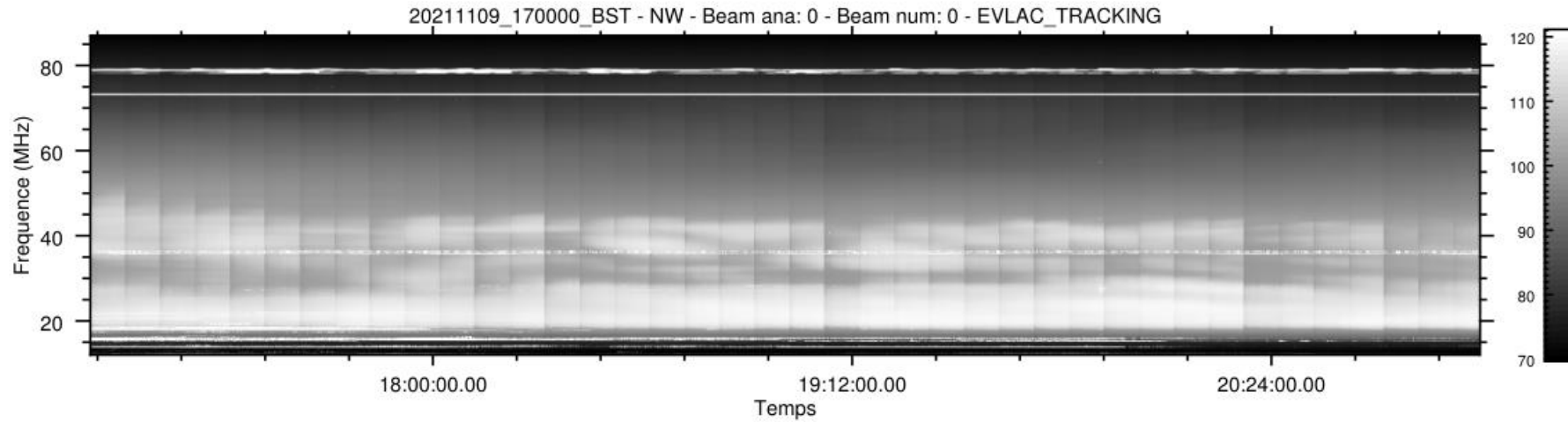
status Unknown ? Please indicate if this observation is in error.

Edit & replay Tracking Downloads Output Close

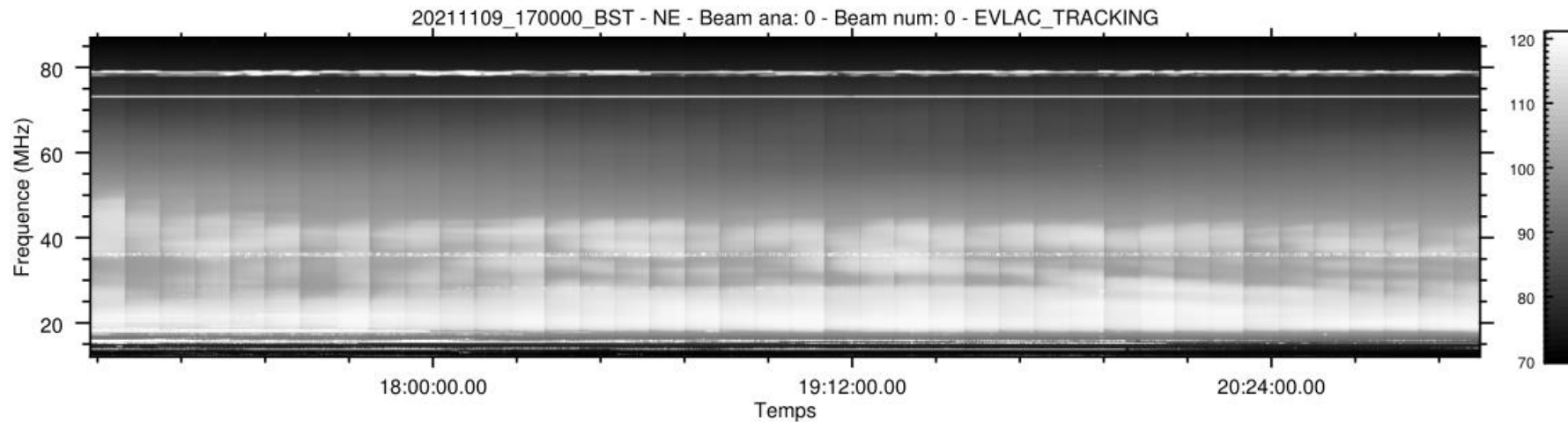
- EV\_LAC\_TRACKING20211109\_170000\_BST\_Sum\_Up 03:30 - 16:58
- EV\_LAC\_TRACKING20211109\_170000\_BST\_BEAM1\_J2000\_TRACKING 07:00 - 18:58
- EV\_LAC\_TRACKING20211109\_170000\_BST\_BEAM0\_EVLAC\_TRACKING 09:00 - 19:58
- EV\_LAC\_TRACKING\_SST\_Sum\_Up 17:00 - 18:58
- EV\_LAC\_TRACKING\_SST\_MR 19:00 - 19:58

**Slow rate data for this observation**

# Observation management / Observation management



*Example: BST file*





# Observation management / Observation management

NenuFAR v3.18.6

POLARISATION\_CALIBRATION 24 min left

Hello, Christophe Science

11:32:17 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

Google map

Survey

Documentation

Welcome to this new template space. [more details...](#)

## Import observation (parset\_user file)

Search by names or tags...

Filter by tags: XST BHR Subarraying Antenna off Azelfile SUN 3C405 B0950+08

+ New template Import files Azelfile management

	<b>ZENITH_XST</b> azelgeo_transit	Modified on 2018-08-30 14:52:03	XST	ES00 Debug
	<b>ZENITH_DRIFT_TEST_5M</b> azelgeo_transit	Modified on 2018-11-12 14:35:23		ES00 Debug
	<b>ZENITH_DRIFT_TEST_20M</b> azelgeo_transit	Modified on 2018-08-30 14:51:43	SST BST	ES00 Debug
	<b>ZENITH_DRIFT_TEST</b> azelgeo_transit	Modified on 2018-08-30 14:51:34	SST BST	ES00 Debug
	<b>ZENITH_2BEAM_2MIN</b> azelgeo_transit	Modified on 2018-09-24 11:54:29	BST	ES00 Debug
	<b>ZENITH-BEAMANALOG_XST</b> azelgeo_transit	Modified on 2018-08-30 14:51:17	XST	ES00 Debug
	<b>ZENITH-BEAMANALOG</b> azelgeo_transit	Modified on 2018-08-30 14:51:07		ES00 Debug
	<b>ZENITH</b> azelgeo_transit	Modified on 2018-10-25 12:19:00		ES00 Debug

# Monitoring

- Slow rate data survey
- Antenna state survey
- Day data survey
- VTEC
- Time per key project

# Monitoring / slow rate data survey

NenuFAR v3.18.6 POLARISATION\_CALIBRATION 12 min left

Hello, Christophe Science

11:44:23 UTC

Last subbands on 2021-11-12 11:43:57 UTC

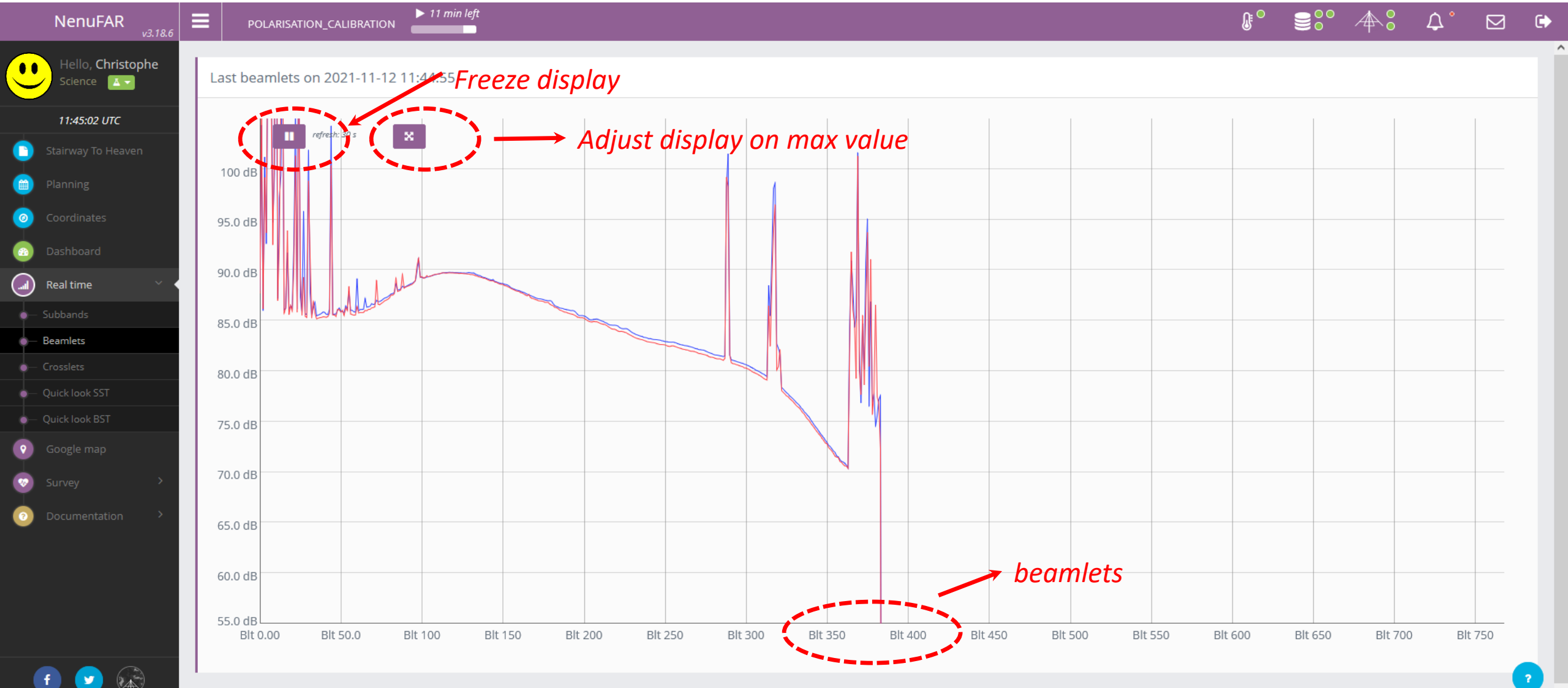
*Polarization & mini Array selection*

MA	NW	NE
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

*Zoom possible*

*Freeze display*

# Monitoring / slow rate data survey



# Monitoring / slow rate data survey

NenuFAR v3.18.6 POLARISATION\_CALIBRATION 10 min left

Hello, Christophe Science

11:45:42 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

- Subbands
- Beamlets
- Crosslets
- Quick look SST
- Quick look BST
- Google map
- Survey
- Documentation

Quick look SST

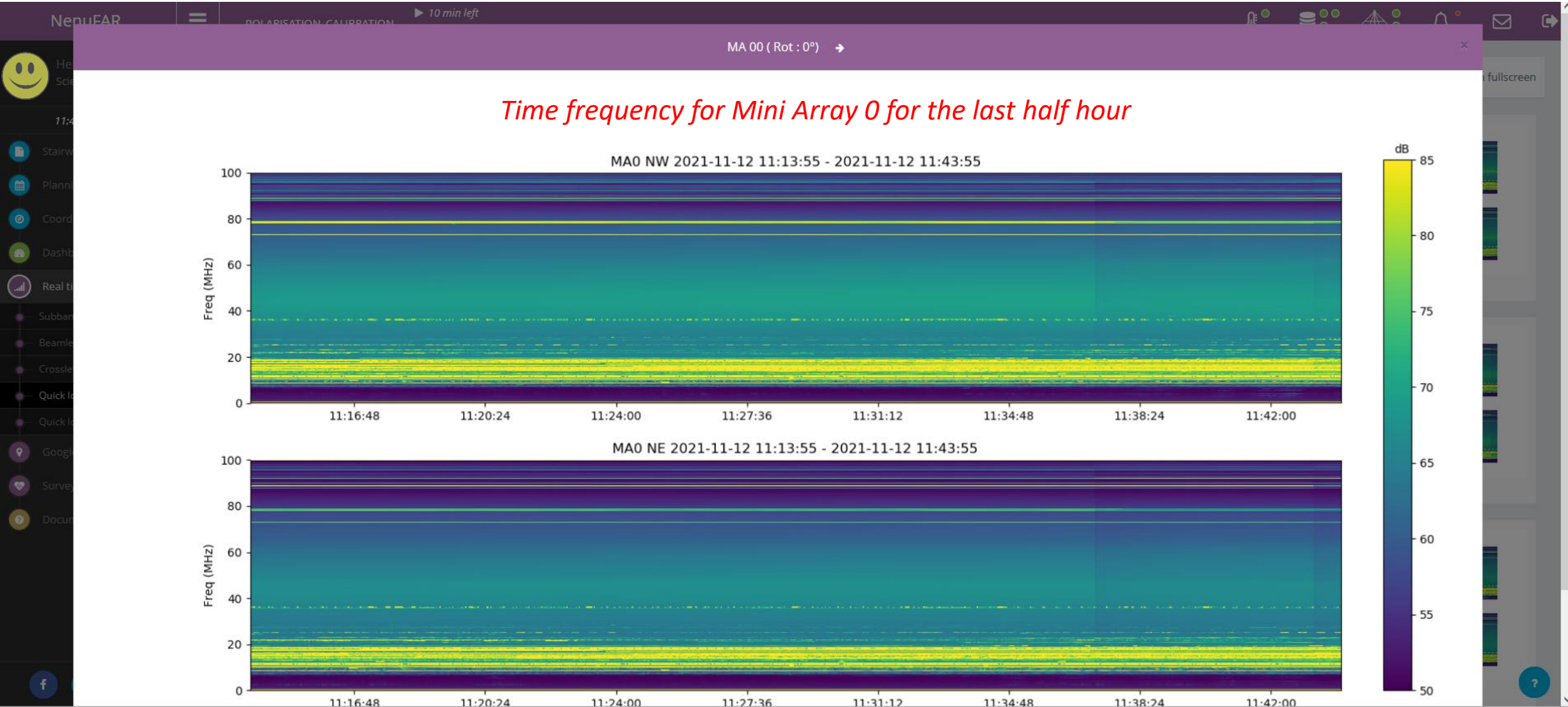
Sort by MA

Open in fullscreen

*Mini Array or rotation sort*

MA	Rot
MA 00	0°
MA 01	30°
MA 02	300°
MA 03	200°
MA 04	20°
MA 05	180°
MA 06	180°
MA 07	230°
MA 08	150°
MA 09	240°
MA 10	290°
MA 11	310°

# Monitoring / slow rate data survey



# Monitoring / slow rate data survey

NenuFAR v3.18.6

POLARISATION\_CALIBRATION ▶ 10 min left

Hello, Christophe Science

11:46:12 UTC

Stairway To Heaven

Planning

Coordinates

Dashboard

Real time

- Subbands
- Beamlets
- Crosslets
- Quick look SST
- Quick look BST

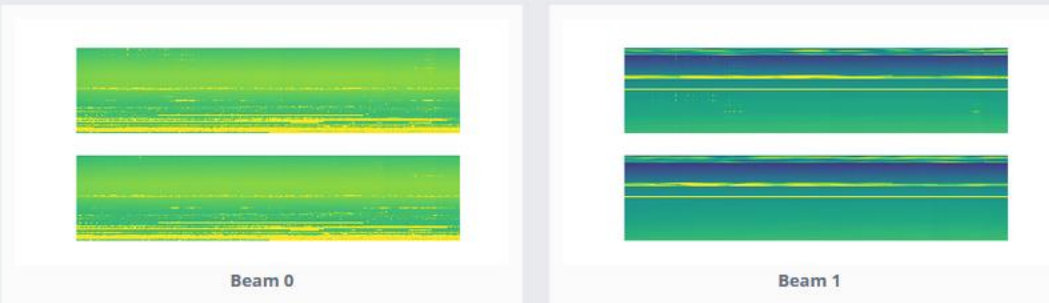
Google map

Survey

Documentation

Quick look BST

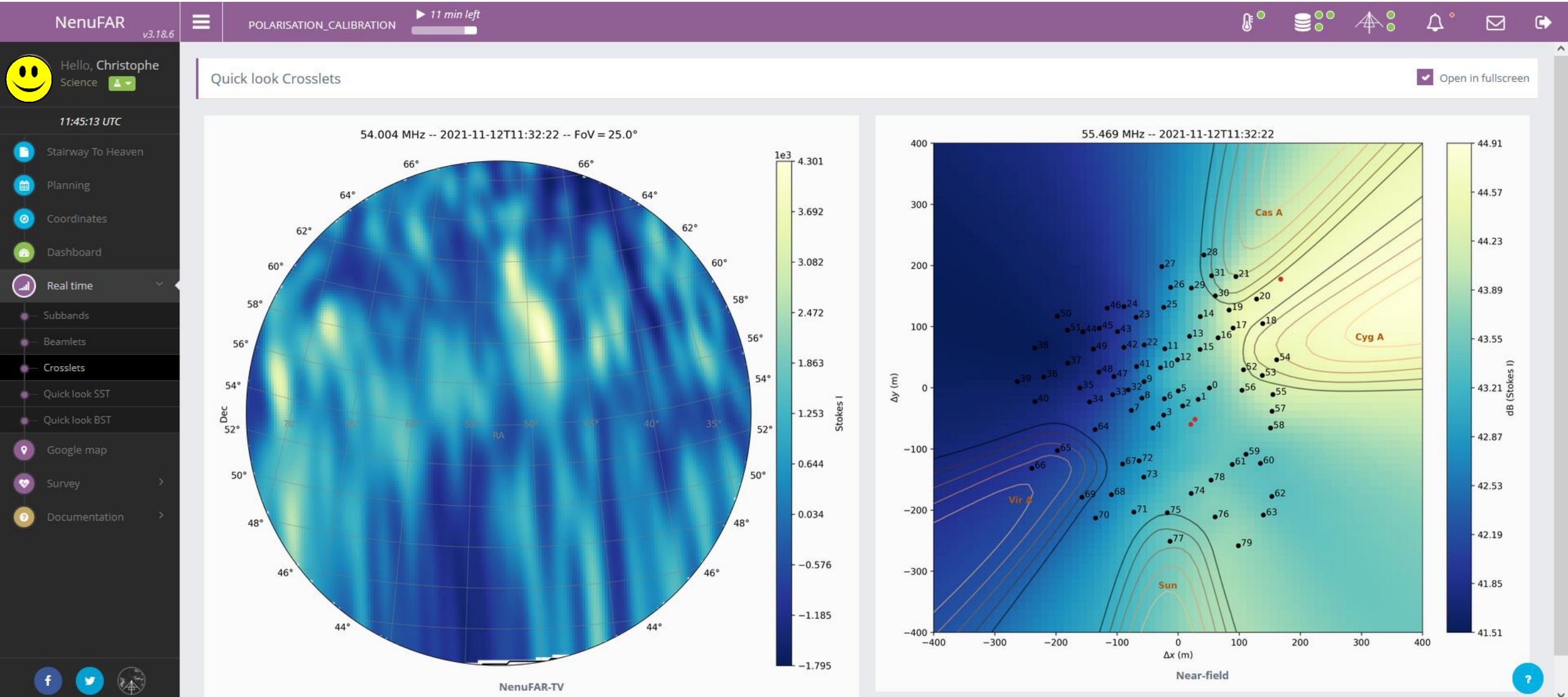
Open in fullscreen



Beam 0

Beam 1

# Monitoring / slow rate data survey





# Monitoring / antenna state survey

The screenshot displays the NenuFAR monitoring interface. At the top, the header shows 'NenuFAR v3.18.6' and 'POLARISATION\_CALIBRATION' with a '10 min left' timer. The main content area features a satellite map of the NenuFAR site, with numerous mini-arrays marked by colored pins (green, orange, blue). A red dashed circle highlights a central area of the site, labeled 'NenuFAR central core'. A red arrow points to a specific mini-array labeled 'MA0' in the sidebar, with the text 'Display position of a MA'. Below the map, a sidebar contains a list of mini-arrays with their status: 'Antennas issues' (unchecked) and 'Amplifiers issues' (checked). A red dashed circle highlights the 'Amplifiers issues' checkbox, with the text 'Choose issues'. Below this, a list of 'Last tests' is shown, including 'Last amplifiers test', 'Last antennas test', 'Last relay test cell', and 'Last relay test full'. A red arrow points to a specific mini-array on the map, labeled 'Mini Array with no problem'. The interface also includes a left sidebar with navigation options like 'Stairway To Heaven', 'Planning', 'Coordinates', 'Dashboard', 'Real time', 'Google map', 'Survey', and 'Documentation'. The bottom of the interface shows social media icons and a help button.

Mini Array with no problem

# Monitoring / day data survey

The screenshot displays the NenuFAR v3.18.6 interface. The top header shows the user 'NenuFAR v3.18.6', the session name 'POLARISATION\_CALIBRATION', and a '9 min left' timer. A sidebar on the left contains navigation options like 'Stairway To Heaven', 'Planning', 'Coordinates', 'Dashboard', 'Real time', 'Google map', 'Survey', 'SST 10s display', 'Weather', 'Key projects', and 'Documentation'. The main content area is titled 'SST 10s display' and includes a 'Sort by MA' dropdown menu.

Annotations in red text point to specific features:

- Date selection:** Points to the 'Select date:' field showing '2021-11-12'.
- MA selection:** Points to the 'Select MA:' dropdown menu showing 'MA 0 (rot:0°)'.
- Export pdf file:** Points to a button labeled 'MA 0 (rot:0°) PDF'.
- Navigate day to day:** Points to a circular navigation control with four arrows (up, down, left, right).
- New observation:** Points to a vertical red line on the spectrogram plot.

The main display consists of two spectrograms. The top one is titled 'MA0 NW 2021-11-12 00:00:00 - 2021-11-12 11:44:30' and the bottom one is 'MA0 NE 2021-11-12 00:00:00 - 2021-11-12 11:44:30'. Both plots show frequency (MHz) on the y-axis (0 to 100) and time on the x-axis (00:00:00 to 09:36:00). A color scale on the right indicates signal intensity in dB, ranging from 55 to 85.

# Monitoring / VTEC

NenuFAR v3.18.6

POLARISATION\_CALIBRATION 9 min left

VTEC

9 min left

Display mode & time slice selection

Azimuth / elevation display

Azimuth

Time (UTC)	Azimuth (degrees)
10:50	~300,000
10:55	~300,000
11:00	~300,000
11:05	~300,000
11:10	~300,000
11:15	~300,000
11:20	~300,000
11:25	~300,000
11:30	~300,000
11:35	~300,000
11:40	~300,000
11:45	~300,000

degrees

Anabeam 0

current 353.7284

Elevation

Time (UTC)	Elevation (degrees)
10:50	~25,000
10:55	~25,000
11:00	~25,000
11:05	~25,000
11:10	~25,000
11:15	~25,000
11:20	~25,000
11:25	~25,000
11:30	~25,000
11:35	~25,000
11:40	~25,000
11:45	~25,000

degrees

Anabeam 0

current 12.4218

Vertical Total Electron Content

Vertical Total Electron Content

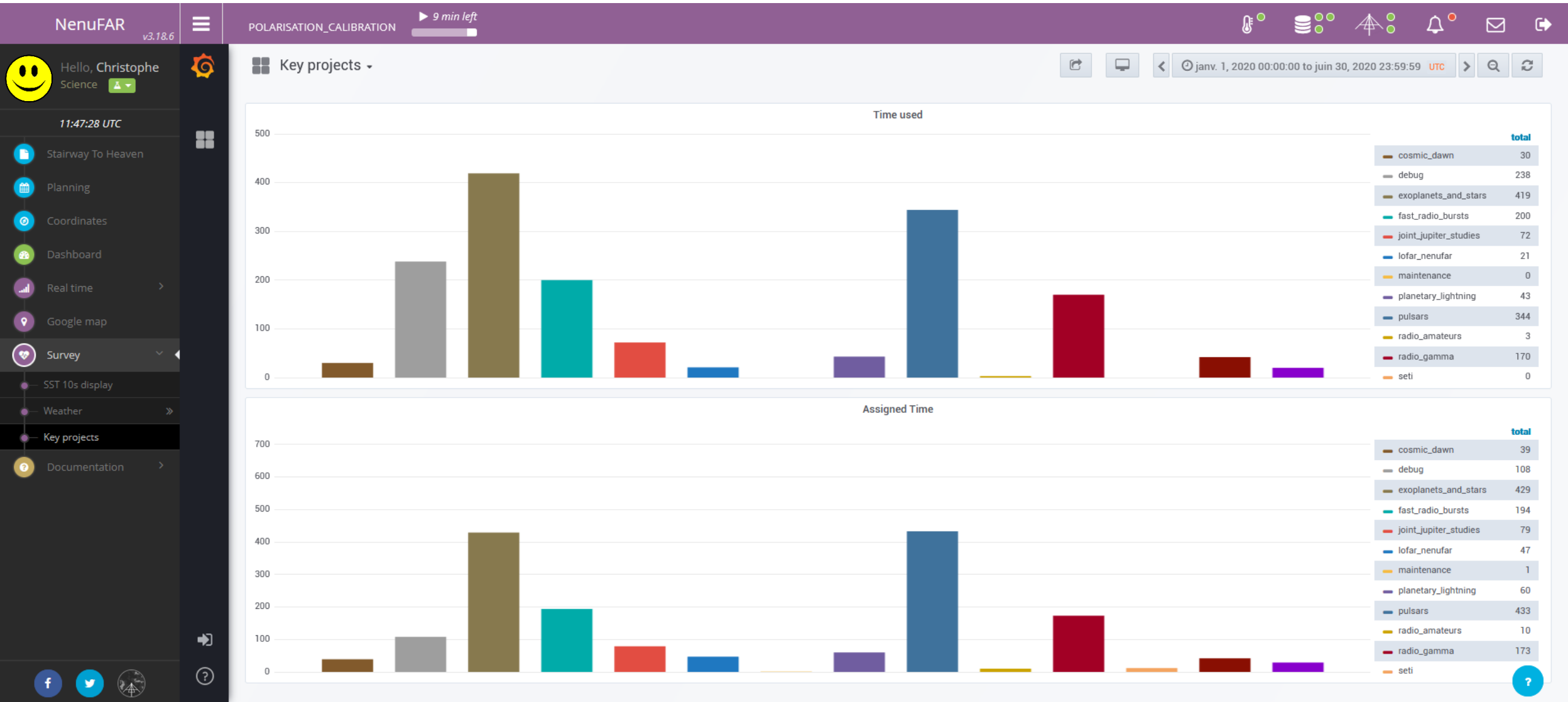
1 TECU = 10<sup>16</sup>electrons/m<sup>2</sup>

Time (UTC)	VTEC (TECU)
10:50	8.00
10:55	8.00
11:00	8.00
11:05	8.00
11:10	8.00
11:15	8.00
11:20	8.00
11:25	8.00
11:30	8.00
11:35	8.00
11:40	8.00
11:45	8.00

TECU

SWPC@NOAA Min: 8.056 Max: 9.473 Current: 9.276

# Monitoring / Time per key projects



# Documentation

- User guide
- Gui release notes

Table des matières

- About
- Configuration of observation
  - parsetFile user (.parset\_user)
    - Pulsar parameters (undysputed)
    - Expert mode
- Created from parsetFile user
  - parsetFile (.parset)
  - disabled list (.disabled)
  - tracking orders (.poi)
  - az/el analog beam (.altazA)
  - az/el numeric beam (.altazB)
- Statistics files (SST, BST, XST)
- Undysputed-tf

## Users Guide

### parsetFile user (.parset\_user)

Write in this file only the parameters which have not default values.

#### Writing rules:

- File extension must be `.parset_user`.
- Line must have this format: **description.field = value**
  - Values of description are:
    - Observation: Observation description.
    - Output: Files type
    - AnaBeam[k]: analog beam, k starts at 0.
    - Beam[k]: numeric beam, k starts at 0.

If a field is absent, it is considered to have the default value.

#### 'Observation'

field	description	value	default value
title	observation description.	' xxxx ' or "xxxx"	
name	observation name, single ou double quotes are required.	' xxxx ' or "xxxx" only a-z, 0-9, +, -, _	
contactEmail	Email of the user, can be a list of users, separated with a comma.		user email
nrAnabeams	number of analog beams, at least 1	from 1	1
nrBeams	number of numeric beams	from 0	0
topic	key project	[pulsars, exoplanets_and_stars, fast_radio_bursts, radio_recombination_lines, transients, planetary_lightning	

# Documentation / Gui release notes

The screenshot shows the NenuFAR v3.18.6 documentation page. The top navigation bar includes the NenuFAR logo, a hamburger menu, the current session name 'POLARISATION\_CALIBRATION', and a timer '8 min left'. The left sidebar contains a user profile 'Hello, Christophe Science' and a list of navigation items: Stairway To Heaven, Planning, Coordinates, Dashboard, Real time, Google map, Survey, Documentation, About GUI, Users guide, and Release notes - Gui NenuFAR. The main content area is titled 'Release notes - Gui NenuFAR' and features a green banner stating 'You're currently on : 3.18.6'. Below this, a vertical timeline lists several versions with their release dates and change logs. Red arrows highlight specific versions: 'Current Gui version' points to 3.18.6, 'Release version' points to 3.18.4, and 'Beta version' points to 3.18.5-b1.

**Current Gui version**

**Release version**

**Beta version**

**3.18.6**  
Release date: 2021-10-19

**3.18.5-b1** 2021-09-28

- Correction d'un soucis dans la navigation des SST 10s
- Envoi de mails par la voiture balai si le booking est rempli a moins de 75%
- Refonte de la modale d'assistance
- Ajout du mode d'emploi pour le mode Piggy-back dans le bulle d'aide Parameters
- Ajout des securites pour le mode Piggy-back
- Creation des pages de surveillance de RadioGaGa
- Correction d'un bug pour les observations qui ne prenaient pas toute la largeur du booking dans le planning
- Changement de serveur pour le calcul des coordonnees
- Retrait des debugs dans le calcul des coordonnees

**3.18.4**  
Release date: 2021-07-07

**3.18.4-b7** 2021-07-05

- Suppression d'une securite qui se declenchait de maniere intempestive
- Ajout d'une securite empechant d'avoir 2 fois la meme proposition de replay

**3.18.4-b6** 2021-07-05

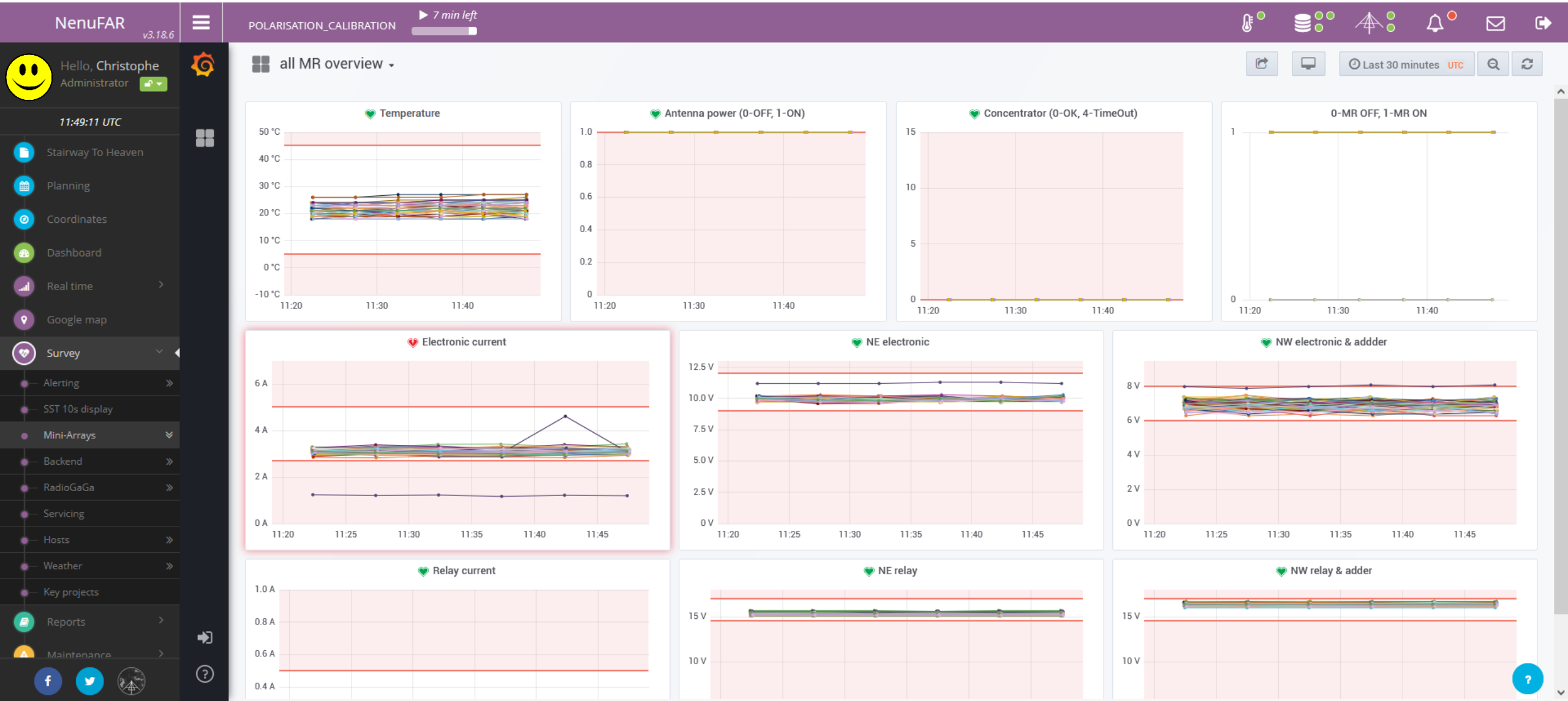
- Suppression d'une securite qui se declenchait de maniere intempestive
- Ajout d'une securite empechant d'avoir 2 fois la meme proposition de replay

# Administrator VCR view

- Monitoring
- Configuration
- Reports



# Administrator VCR view / monitoring Mini-Arrays



# Administrator VCR view / monitoring antenna state

Hello, Christophe Administrator

11:49:40 UTC

- Stairway To Heaven
- Planning
- Coordinates
- Dashboard
- Real time
- Google map
- Survey
- Reports
- Maintenance
  - Active MA
  - Active BK
  - Test results
    - Amplifiers Test
    - Antennas Test
    - Antennas Test display
    - Relay Test Cell
    - Relay Test full display
    - Manual pointing

Test by date MA history

Select date: 2021-11-08 13:46:00 UTC Stop date: 2021-11-12

Legend

- Antenna not used
- Antenna now OK (related to previous valid test)
- Antenna now in error (related to previous valid test)
- Antenna still in error (related to previous valid test)

Antennas test of 2021-11-08 13:46:00 UTC

North-West																			
MA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 0				4									13			16			
MA 1				4	5								13			16	17		
MA 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 3								8	9								17		
MA 4																			
MA 5																			
MA 6							7				11								
MA 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 8													13	14	15	16	17	18	19
MA 9					5								13	14	15	16	17	18	19
MA 10				4												17	18	19	
MA 11								9											
MA 12			3								11								
MA 13	1	2	3	4	5	6	7												
MA 14			3	4	5	6	7												
MA 15					6					11									
MA 16																		19	
MA 17								9											
MA 18																			

North-East																			
MA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 0			3	4	5	6	7										17	18	19
MA 1		2		4	5	6	7	8					13	14	15	16	17	18	19
MA 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 3								8											
MA 4			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 5		2											13	14	15	16	17	18	19
MA 6					5		7	8	9				13	14	15	16	17	18	19
MA 7													13	14	15	16	17	18	19
MA 8					5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MA 9			3										13	14	15	16	17	18	19
MA 10																			
MA 11								6								16	17	18	19
MA 12					5										15	16	17	18	19
MA 13																			
MA 14																			
MA 15																			
MA 16		2	3	4	5			8	9	10	11	12	13	14	15	16	17	18	19
MA 17								8	9										
MA 18																	17	18	19

# Administrator VCR view / Backend configuration

NenuFAR v3.18.6
POLARISATION\_CALIBRATION ▶ 5 min left

👤 Hello, Christophe Administrator
🕒 11:50:54 UTC

- 📁 Stairway To Heaven
- 📅 Planning
- 📍 Coordinates
- 📊 Dashboard
- 📈 Real time
- 📍 Google map
- 📄 Survey
- 📄 Reports
- ⚠️ Maintenance
  - Active MA
  - Active BK
  - Test results
  - Manual pointing
  - Signal generator
  - Remote power control
  - Websites
  - Tracker

📄
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### How to

You can change the status of each mini-array by clicking on it several times.

You can also disconnect or connect each backend card. If you disconnect backend card, each mini-arrays connected to this card will be offline.

**i** The restart of the backend service is necessary if :

- you enable or disable backend card
- you set the status of a mini-array to "Only monitor"
- you change the status of a mini-array that was in "Only monitor"

All other changes will be effective at the next observation.

[Click here to restart nenuFAR\\_backend\\_service](#)

### Legend

Backend	MA	Acquisition
Enabled	MA xx	Monitor, SST, XST, BST
	MA xx	Monitor, SST
	MA xx	Only monitor
Offline	MA xx	MA unused

### Active BK

BK 01	Enabled	MA 07	MA 06	MA 05	MA 04	MA 03	MA 02	MA 01	MA 00	Enabled	BK 00
BK 03	Enabled	MA 15	MA 14	MA 13	MA 12	MA 11	MA 10	MA 09	MA 08	Enabled	BK 02
BK 05	Enabled	MA 23	MA 22	MA 21	MA 20	MA 19	MA 18	MA 17	MA 16	Enabled	BK 04
BK 07	Enabled	MA 31	MA 30	MA 29	MA 28	MA 27	MA 26	MA 25	MA 24	Enabled	BK 06
BK 09	Enabled	MA 39	MA 38	MA 37	MA 36	MA 35	MA 34	MA 33	MA 32	Enabled	BK 08
BK 11	Enabled	MA 47	MA 46	MA 45	MA 44	MA 43	MA 42	MA 41	MA 40	Enabled	BK 10
BK 13	Enabled	MA 55	MA 54	MA 53	MA 52	MA 51	MA 50	MA 49	MA 48	Enabled	BK 12

# Administrator VCR view / Reports

NenuFAR v3.18.6

POLARISATION\_CALIBRATION 5 min left

Hello, Christophe Administrator

11:51:13 UTC

- Stairway To Heaven
- Planning
- Coordinates
- Dashboard
- Real time
- Google map
- Survey
- Reports
- Daily
- Daily data
- Logs
- GUI statistics
- Maintenance
- Tools
- Documentation

### All software logs

Soft logs	Size	Last modified	Status
SQL error (DATANCU incon)	33kB	2021-10-26 20:00:14	unchanged
From LCU (DATANCU incon)	1kB	2019-01-17 16:10:56	unchanged
NenuFAR Todo (FNCU)	13kB	2021-05-20 03:30:17	unchanged
Maintenance Auto (FNCU)	190kB	2021-11-07 10:10:08	unchanged
Mr Status Error (NCU)	5MB	2021-11-09 15:27:32	unchanged
Signal Test (NCU)	395kB	2021-11-09 12:58:15	unchanged
Test Ampli (NCU)	810kB	2021-11-09 15:13:03	unchanged
Test Relay cell (NCU)	4MB	2021-11-09 15:11:24	unchanged

Backend logs	Size	Last modified	Status
FPGA version (NCU)	242kB	2021-11-11 16:29:22	modified
Configuration Error (NCU)	132kB	2021-11-12 11:20:00	modified
Controller Error (NCU)	3MB	2021-10-30 06:15:04	unchanged
Pointing Error (NCU)	6kB	2021-01-11 07:59:00	unchanged
Read Stats Error (NCU)	1MB	2021-11-12 11:17:24	modified
TBB service Log (nenufarB0)	1MB	2021-11-12 00:01:02	modified

GUI logs	Size	Last modified	Status
WebServer	5MB	2021-11-11 16:28:42	modified
WebServer Beta	64kB	2021-11-08 13:03:24	unchanged
Deploy	135kB	2021-10-19 11:30:38	unchanged
Zip Creation	843kB	2021-11-05 14:52:40	unchanged
Import Trace	93kB	2021-10-22 21:23:26	unchanged
SubmitLoop	69kB	2021-06-28 07:52:30	unchanged
Gui Mails	3MB	2021-11-12 00:01:01	modified

Releases Notes	Size	Last modified	Status
AntennaTest	432 B	2018-04-03 14:52:17	unchanged
CreParsetFile	3kB	2020-04-30 13:55:27	unchanged
MRStatus	846 B	2019-05-02 08:28:39	unchanged
PointageFire	792 B	2021-07-07 08:17:38	unchanged
BackendControl	9kB	2021-10-13 07:59:22	unchanged
HPAPBFirmware	1kB	2021-02-25 11:07:58	unchanged
PointageAuto	832 B	2021-10-28 15:28:05	unchanged
PointageListen	578 B	2021-10-28 15:27:44	unchanged
SignalTest	402 B	2021-07-12 13:40:51	unchanged

**Questions ?**

**Now, demo !**