The Planck Legacy Archive

Recent improvements

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for Planck Science Office and ESA Science Data Centre

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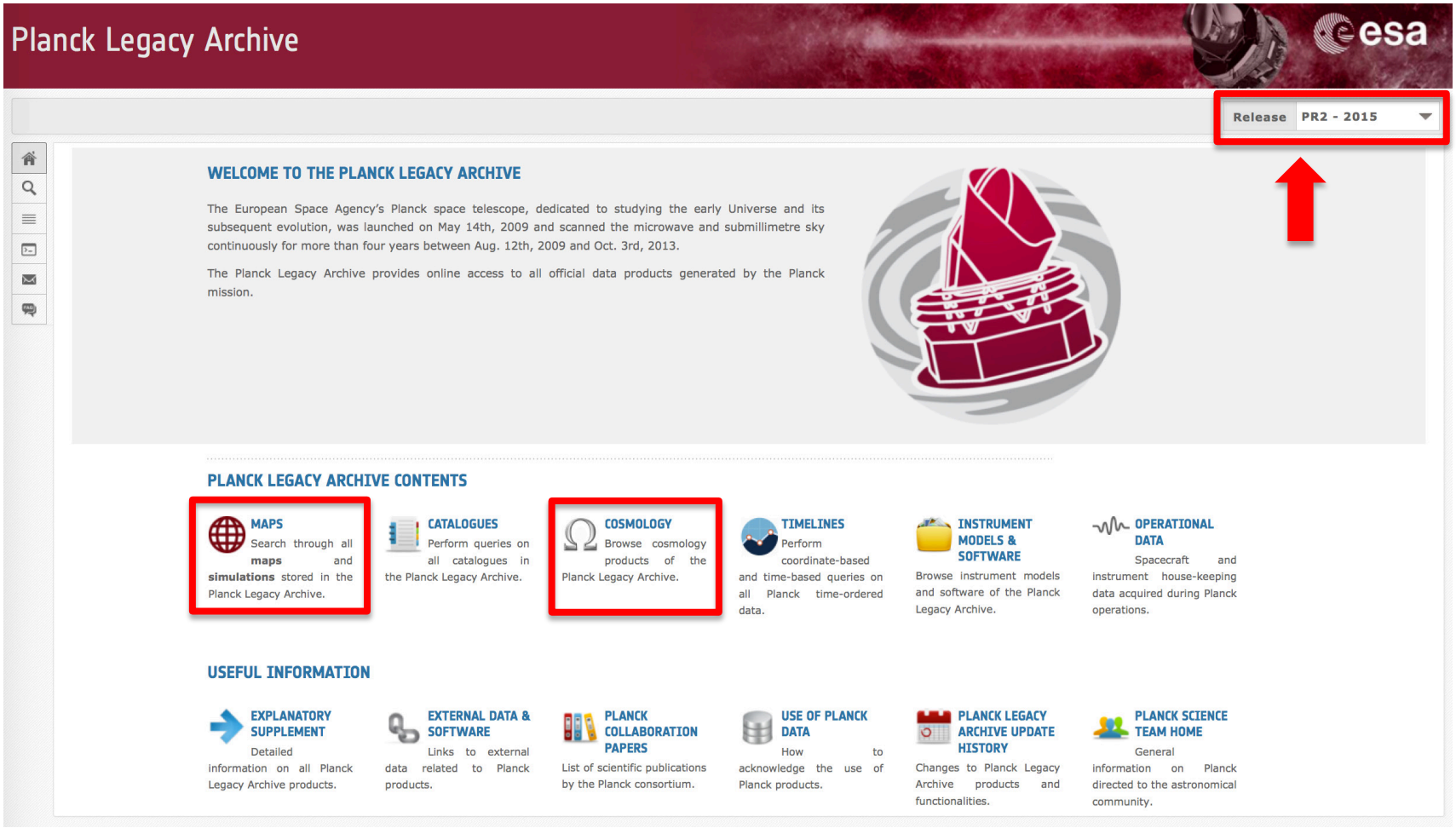
Introduction

- Current PLA version includes improvements in terms of:
  - Layout and functionalities in the Maps and Cosmology sections
  - Light-maps section for quick download of frequency maps (signal only)
  - Expanded description of the Cosmology products
  - Quick visualization of Explanatory Supplement contents within the PLA
  - New or expanded functionalities across the PLA
  - Quick visualization of products
    - AladinLite visualizer of all the maps in the archive
    - ESA Sky visualization of some Planck products

Maps and Cosmology Sections



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Maps Section

Search through all maps stored in the Planck Legacy Archive.

- Use the **matrix** for quick downloads from a limited range of high-demand products.
- Work with the **advanced search** facility to download specific maps and simulations.
- Use the **Aladin Lite** visualizer (🔭) to navigate the maps or send them to external applications via SAMP.
- **Click** on the icon (🔎) in order to get more details about the map selected.

PR2 - 2015 MAPS

Frequency maps | CMB maps | Foreground maps | Ancillary maps

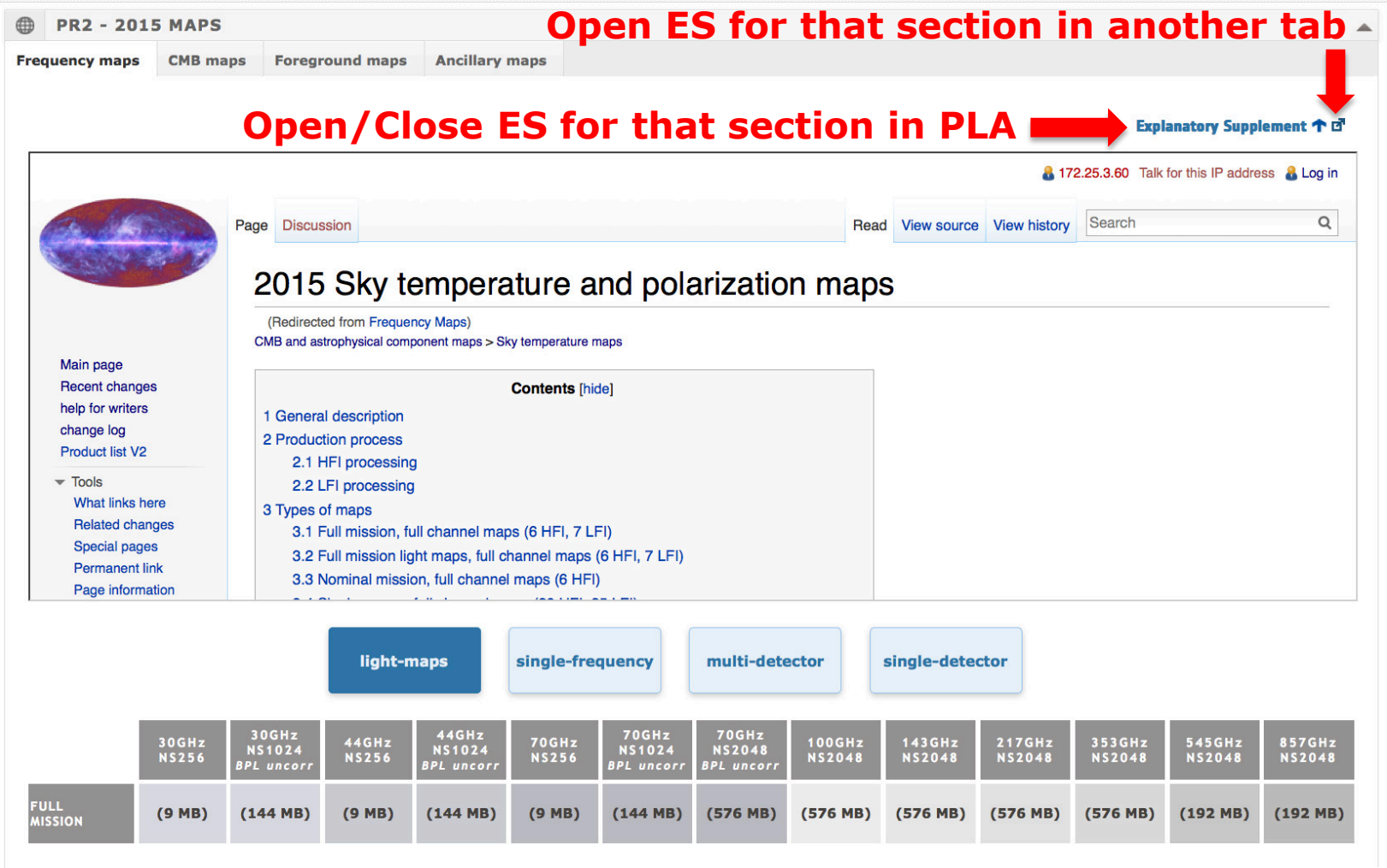
Explanatory Supplement

light-maps | single-frequency | multi-detector | single-detector

	30GHz NS256	30GHz NS1024 BPL uncorr	44GHz NS256	44GHz NS1024 BPL uncorr	70GHz NS256	70GHz NS1024 BPL uncorr	70GHz NS2048 BPL uncorr	100GHz NS2048	143GHz NS2048	217GHz NS2048	353GHz NS2048	545GHz NS2048	857GHz NS2048
FULL MISSION	(9 MB)	(144 MB)	(9 MB)	(144 MB)	(9 MB)	(144 MB)	(576 MB)	(576 MB)	(576 MB)	(576 MB)	(576 MB)	(192 MB)	(192 MB)

PR2 - 2015 ADVANCED SEARCH OPTIONS

Maps section



Planck sky maps

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PR2 - 2015 MAPS

Frequency maps | CMB maps | Foreground maps | Ancillary maps

Explanatory Supplement

light-maps | **single-frequency** | multi-detector | single-detector

	30GHz NS256	30GHz NS1024 *BPL uncorr*	44GHz NS256	44GHz NS1024 *BPL uncorr*	70GHz NS256	70GHz NS1024 *BPL uncorr*	70GHz NS2048 *BPL uncorr*	100GHz NS2048	143GHz NS2048	217GHz NS2048	353GHz NS2048	545GHz NS2048	857GHz NS2048
FULL MISSION	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(576 MB)	(576 MB)
FULL MISSION RINGHALF-1	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(576 MB)	(576 MB)
FULL MISSION RINGHALF-2	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(576 MB)	(576 MB)
HALF MISSION-1								(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(576 MB)	(576 MB)
HALF MISSION-2								(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(576 MB)	(576 MB)
NOMINAL MISSION								(576 MB)	(576 MB)	(576 MB)	(576 MB)	(576 MB)	(576 MB)
SURVEY-1	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(21 MB)	(480 MB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(1.9 GB)	(576 MB)	(576 MB)

CMB maps

Search through all maps stored in the Planck Legacy Archive.

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- **Click** on the icon (🔎) in order to get more details about the map selected.

PR2 - 2015 MAPS

Frequency maps | **CMB maps** | Foreground maps | Ancillary maps

Explanatory Supplement

smica | commander | nilc | sevem | fgsub-sevem | common masks

	IQU NS1024	I NS2048
FULL MISSION	**(168 MB)**	**(240 MB)**
FULL MISSION RINGHALF-1	(144 MB)	(192 MB)
FULL MISSION RINGHALF-2	(144 MB)	(192 MB)
HALF MISSION-1	(144 MB)	(192 MB)
HALF MISSION-2	(144 MB)	(192 MB)

Maps Visualization with AladinLite

Search through all maps stored in the Planck Legacy Archive.

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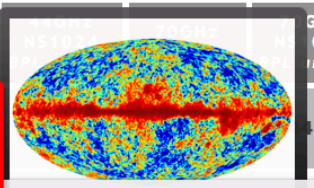
PR2 - 2015 MAPS

Frequency maps | CMB maps | Foreground maps | Ancillary maps

Explanatory Supplement

light-maps | single-frequency | multi-detector | single-detector

	30GHz NS256	30GHz NS1024 BPL uncorr	44GHz NS256	70GHz NS2048 BPL uncorr	100GHz NS2048	143GHz NS2048	217GHz NS2048	353GHz NS2048	545GHz NS2048	857GHz NS2048
FULL MISSION	(9 MB)	(144 MB)	💾 🐞	(576 MB)	(576 MB)	(576 MB)	(576 MB)	(576 MB)	(192 MB)	(192 MB)

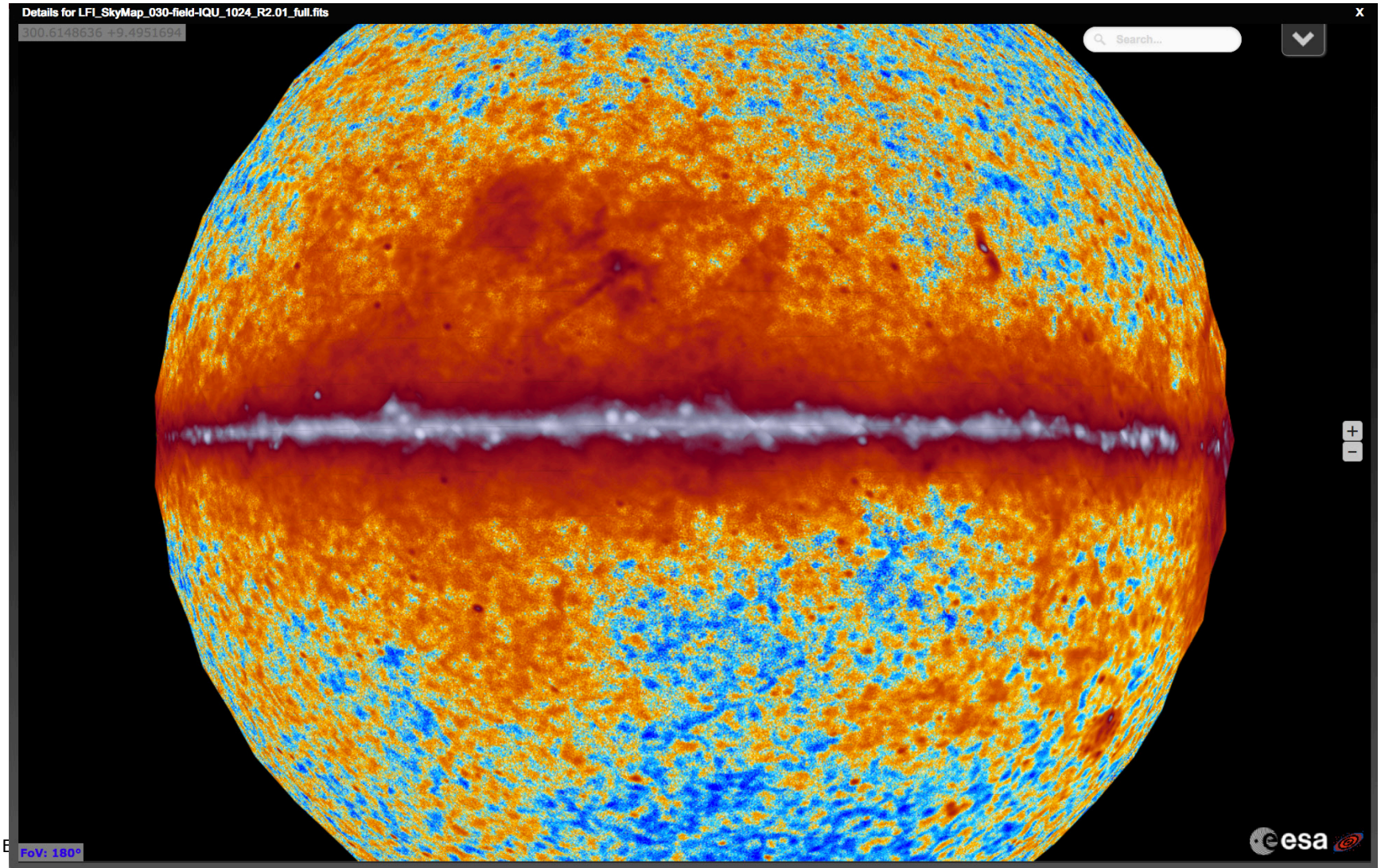


Display LFI_SkyMap_044-BPassCorrected-field-IQU_0256_R2.01_full.fits in Aladin

PR2 - 2015 ADVANCED SEARCH OPTIONS

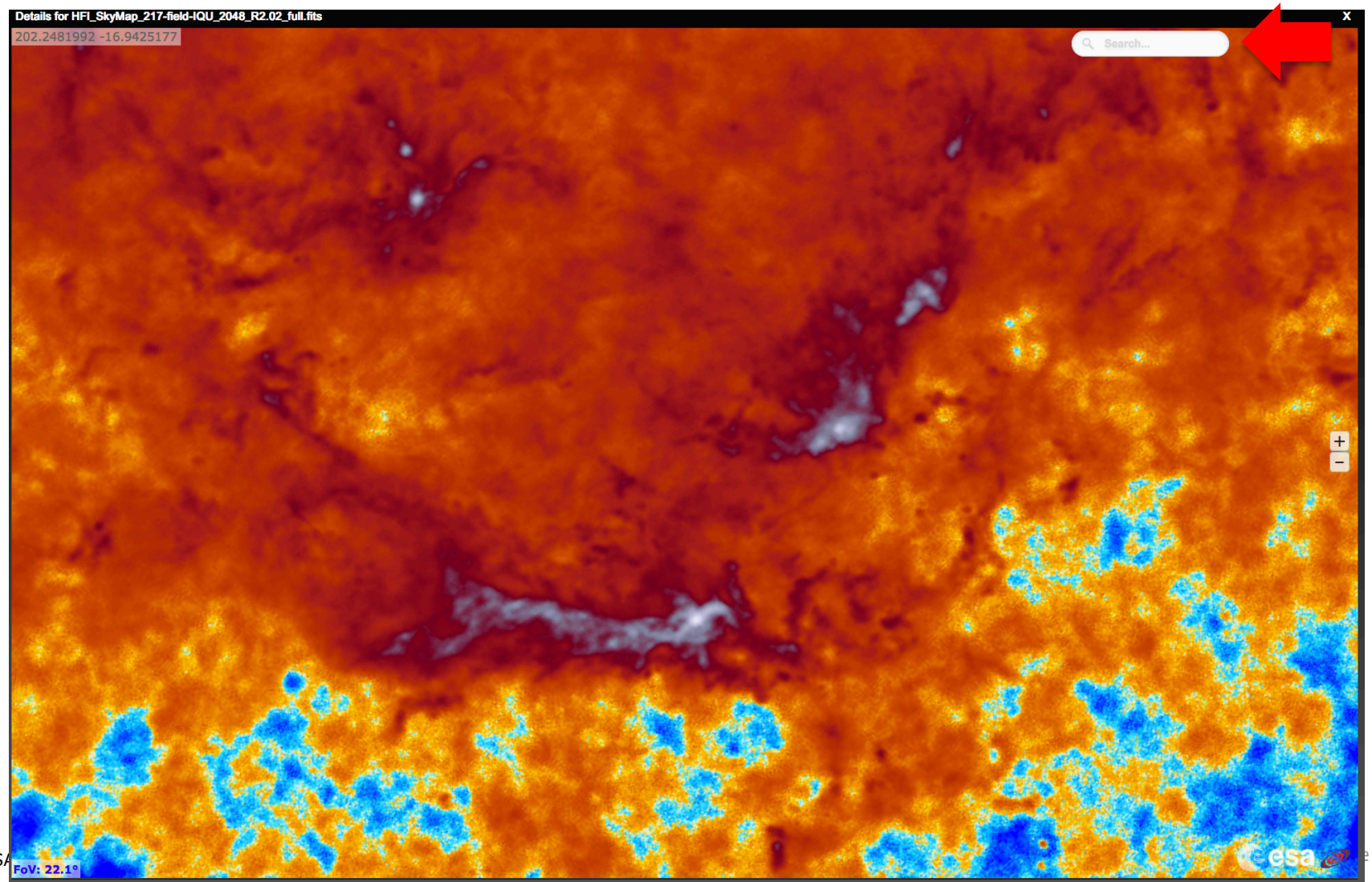
Maps Visualization with AladinLite

AladinLite is used for visual exploration of the maps



Maps Visualization with AladinLite

From here it is possible to download or send the map to Aladin



Map results panel

RESULTS

Close All | << | < | PR2 Maps #2

Frequency maps (7)

0 selected items

Explanatory Supplement

Map name	Size	Frequency	Period	Map type	Zodicorrected	Ringhalf	Detecto	Detecl	Light map	Instrument	NSide	Coordinate syste
LFI_SkyMap_030_1024_R2.01_full.fits	480 MB	30	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	1024	GALACTIC
LFI_SkyMap_030-BPassCorrected_0256_R2.01_full.fits	21 MB	30	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	256	GALACTIC
LFI_SkyMap_044_1024_R2.01_full.fits	480 MB	44	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	1024	GALACTIC
LFI_SkyMap_044-BPassCorrected_0256_R2.01_full.fits	21 MB	44	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	256	GALACTIC
LFI_SkyMap_070_2048_R2.01_full.fits	1.9 GB	70	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	2048	GALACTIC
LFI_SkyMap_070_1024_R2.01_full.fits	480 MB	70	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	1024	GALACTIC
LFI_SkyMap_070-BPassCorrected_0256_R2.01_full.fits	21 MB	70	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	256	GALACTIC

Large map image

Map re-projection (Gnomonic)

AladinLite visualization tool

Map meta-data and full header

Download map

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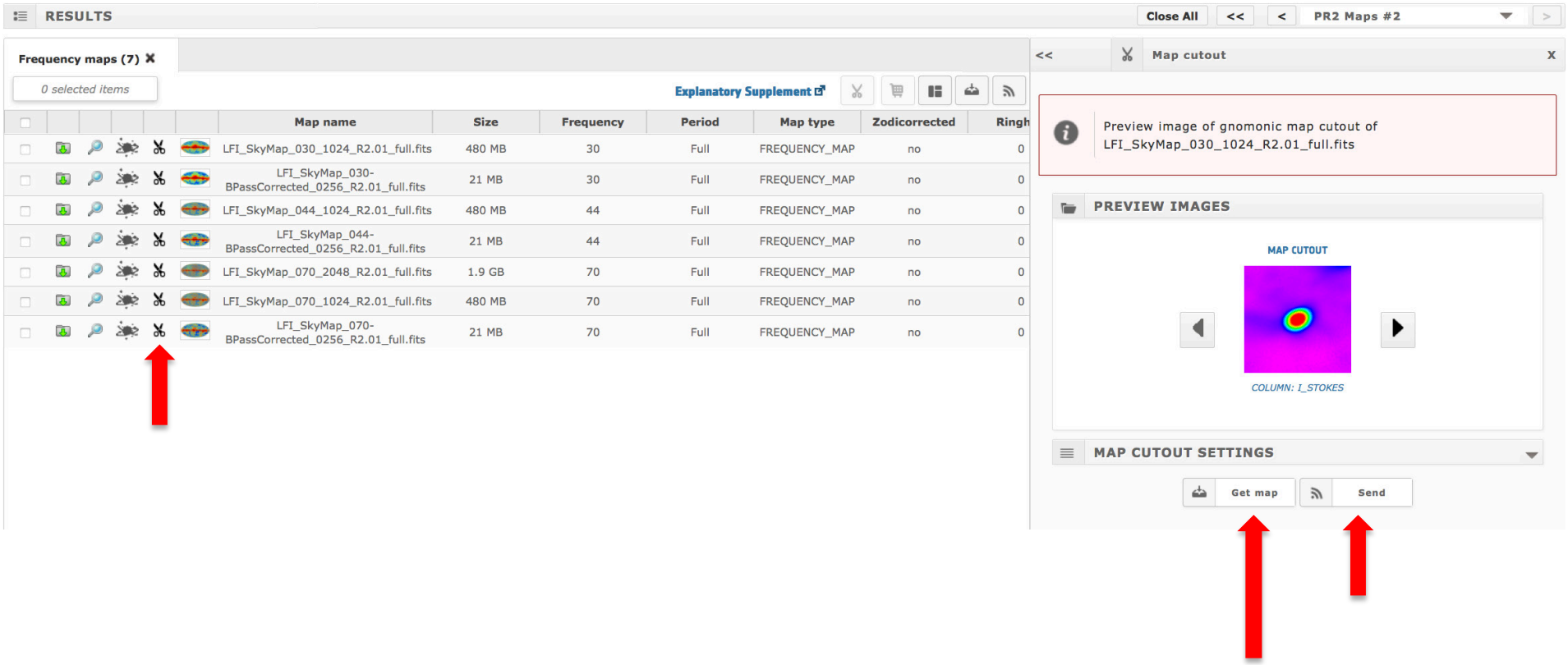
Advanced Search Panel – Map re-projection



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Cosmology Section – Cosmo Parameters

Browse cosmology products of the Planck Legacy Archive.

PR2 - 2015 COSMOLOGY PRODUCTS

Explanatory Supplement

Cosmological Parameters | CMB Angular Power Spectra | Likelihood | Lensing Products | Compton Parameter Maps | Noise Covariance Matrices

Summary table

Planck 2015 results. XIII. Cosmological parameters (http://xxx.lanl.gov/abs/1502.01589). Submitted to A&A.

Planck Collaboration: Cosmological parameters

Table 4. Parameter 68 % confidence limits for the base ΛCDM model from *Planck* CMB power spectra, in combination with lensing reconstruction ("lensing") and external data ("ext," BAO+JLA+H_0). Nuisance parameters are not listed for brevity (they can be found in the *Planck Legacy Archive* tables), but the last three parameters give a summary measure of the total foreground amplitude (in μK^2) at $\ell = 2000$ for the three high-ℓ temperature spectra used by the likelihood. In all cases the helium mass fraction used is predicted by BBN (posterior mean $Y_P \approx 0.2453$, with theoretical uncertainties in the BBN predictions dominating over the *Planck* error on $\Omega_b h^2$).

Parameter	TT+lowP 68 % limits	TT+lowP+lensing 68 % limits	TT+lowP+lensing+ext 68 % limits	TT,TE,EE+lowP 68 % limits	TT,TE,EE+lowP+lensing 68 % limits	TT,TE,EE+lowP+lensing+ext 68 % limits

Description of cosmology products

RESULTS

0 selected items

Description	File name	Size
Full grid of results.	COM_CosmoParams_fullGrid_R2.00.tar.gz	3.6 GB
Baseline high-ell Planck power spectra (plik cross half-mission, 30 <= ell <= 2508).	COM_CosmoParams_base-plikHM_R2.00.tar.gz	415.3 MB
Bicep-Keck-Planck fiducial B mode likelihood.	COM_CosmoParams_base-r-plikHM-BKP_R2.00.tar.gz	173.4 MB
Planck baseline model: TT low-ell temperature and LFI polarization (bflike, 2 <= ell <= 29).	COM_CosmoParams_base-plikHM-TT-lowTEB_R2.00.tar.gz	46.7 MB
Lensing power spectrum reconstruction only; T,E fixed to best-fit spectrum + priors.	COM_CosmoParams_base-lensonly_R2.00.tar.gz	13.5 MB

Cosmology Section – Angular Power Spectrum

Browse cosmology products of the Planck Legacy Archive.

PR2 - 2015 COSMOLOGY PRODUCTS

Explanatory Supplement

Cosmological Parameters | **CMB Angular Power Spectra** | Likelihood | Lensing Products | Compton Parameter Maps | Noise Covariance Matrices

RESULTS

Plots of the Cl have been added

0 selected items

			Description	File name	Size
☐			Theory Cls for the best-fit LCDM model that is plotted in Figs. 1 and 3 of the Planck 2015 results XIII, Cosmological parameters.	COM_PowerSpect_CMB-base-plikHM-TT-lowTEB-minimum-theory_R2.02.txt	200.8 KB
☐			The CMB spectra and their uncertainties; contains low ell *E and *B spectra in addition to the TT spectra (5 additional extensions for a total of 12 extensions).	COM_PowerSpect_CMB_R2.02.fits	160.3 KB
☐			The CMB spectra and their uncertainties; corrects a small error in the effective ell of the bin of the binned data in R2.00.	COM_PowerSpect_CMB_R2.01.fits	120.9 KB
☐			e spectrum, unbinned,	COM_PowerSpect_CMB-TT-hiL-full_R2.02.txt	94.5 KB
☐			e spectrum, unbinned,	COM_PowerSpect_CMB-TT-hiL-full_R2.01.txt	87.4 KB
☐			t of the spectrum, -1996.	COM_PowerSpect_CMB-EE-hiL-full_R2.02.txt	75 KB
☐			t of the spectrum, 1996.	COM_PowerSpect_CMB-TE-hiL-full_R2.02.txt	75 KB

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Displaying 1-22 of 22

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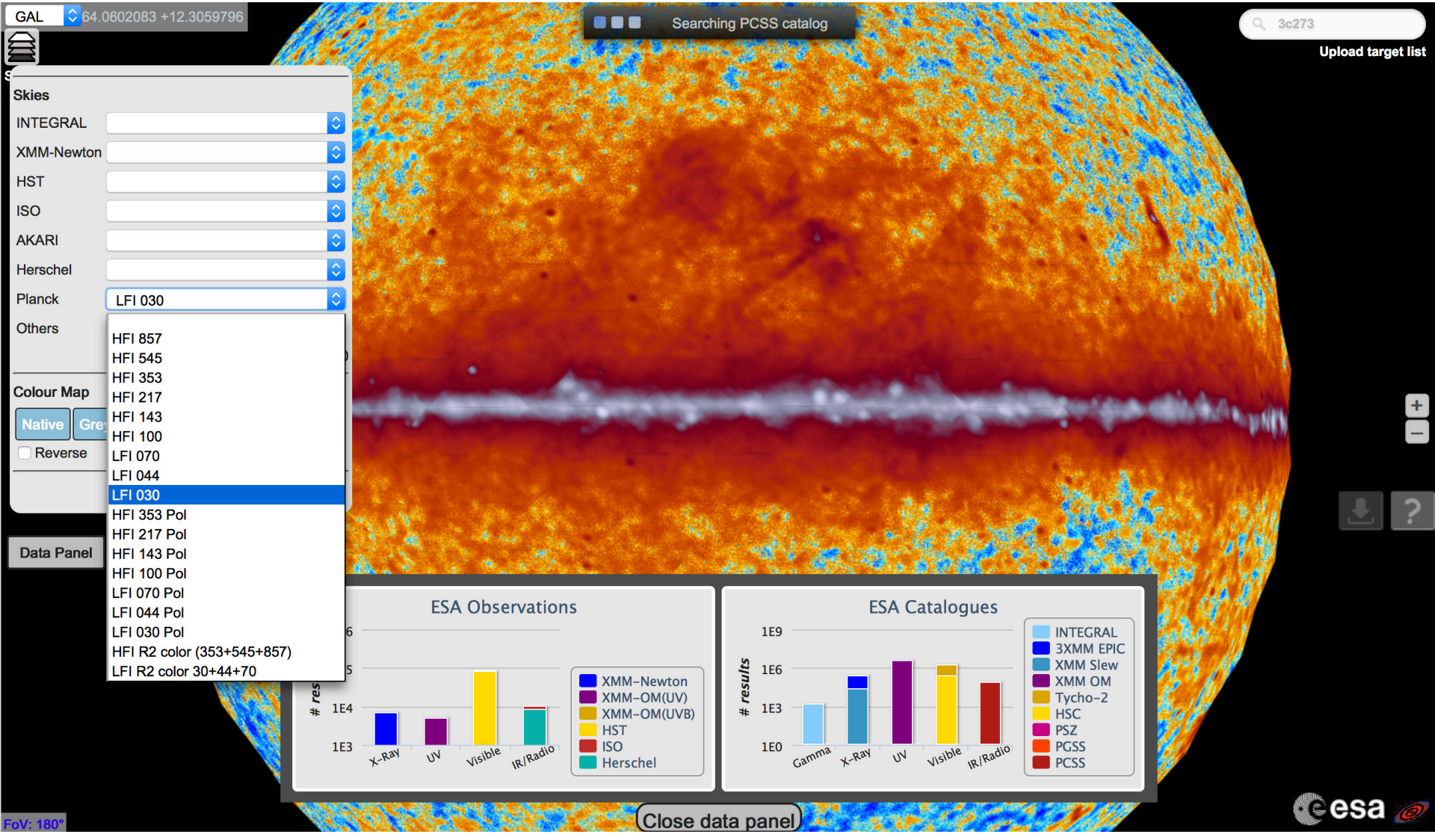
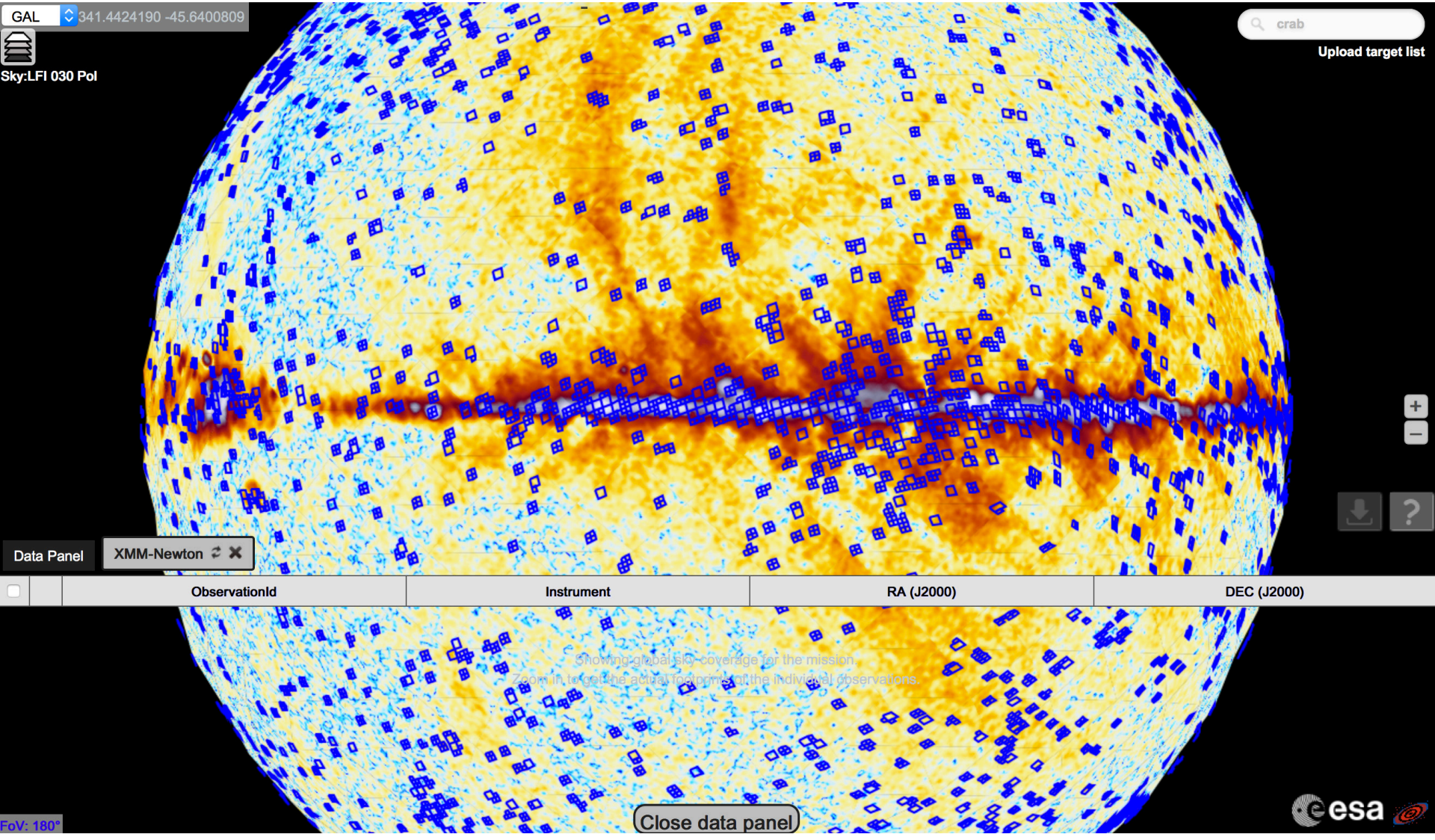
Planck data in ESA Sky



Planck in ESA Sky – overlay sources



Future functionalities

- In a future releases ~ end of July 2016 and ~ Nov. 2016, we plan to include several new "value-added" functionalities:
  - Masking of PLA maps
    - Using existing masks
    - Defining masks using existing source catalogues
    - Uploading custom-made masks
  - Colour-correction (using UCCC code)
  - Unit conversion of PLA maps (using UCCC code)
  - Planck Sky Model simulations
    - Generation of new simulations
    - Observation of the Planck sky by other instruments
  - Simple map-making from time-ordered data
  - Map-making from "4D" maps
  - Component separation and component subtraction