

The Planck Legacy Archive

Recent improvements

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for Planck Science Office and ESA Science Data Centre



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- 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



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Maps and Cosmology Sections



Planck Legacy Archive



Release PR2 - 2015



WELCOME TO THE PLANCK LEGACY ARCHIVE

The European Space Agency's Planck space telescope, dedicated to studying the early Universe and its subsequent evolution, was launched on May 14th, 2009 and scanned the microwave and submillimetre sky continuously for more than four years between Aug. 12th, 2009 and Oct. 3rd, 2013.

The Planck Legacy Archive provides online access to all official data products generated by the Planck mission.



PLANCK LEGACY ARCHIVE CONTENTS



MAPS

Search through all **maps** and **simulations** stored in the Planck Legacy Archive.



CATALOGUES

Perform queries on all catalogues in the Planck Legacy Archive.



COSMOLOGY

Browse cosmology products of the Planck Legacy Archive.



TIMELINES

Perform coordinate-based and time-based queries on all Planck time-ordered data.



INSTRUMENT MODELS & SOFTWARE

Browse instrument models and software of the Planck Legacy Archive.



OPERATIONAL DATA

Spacecraft and instrument house-keeping data acquired during Planck operations.

USEFUL INFORMATION



EXPLANATORY SUPPLEMENT

Detailed information on all Planck Legacy Archive products.



EXTERNAL DATA & SOFTWARE

Links to external data related to Planck products.



PLANCK COLLABORATION PAPERS

List of scientific publications by the Planck consortium.



USE OF PLANCK DATA

How to acknowledge the use of Planck products.



PLANCK LEGACY ARCHIVE UPDATE HISTORY

Changes to Planck Legacy Archive products and functionalities.



PLANCK SCIENCE TEAM HOME

General information on Planck directed to the astronomical community.





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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 <i>BPL uncorr</i>	44GHz NS256	44GHz NS1024 <i>BPL uncorr</i>	70GHz NS256	70GHz NS1024 <i>BPL uncorr</i>	70GHz NS2048 <i>BPL uncorr</i>	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**



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Maps section



PR2 - 2015 MAPS

Frequency maps CMB maps Foreground maps Ancillary maps

Open ES for that section in PLA → [Explanatory Supplement](#) ↑

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Page Discussion Read View source View history Search

2015 Sky temperature and polarization maps

(Redirected from [Frequency Maps](#))
CMB and astrophysical component maps > Sky temperature maps

Contents [hide]

- 1 General description
- 2 Production process
 - 2.1 HFI processing
 - 2.2 LFI processing
- 3 Types of maps
 - 3.1 Full mission, full channel maps (6 HFI, 7 LFI)
 - 3.2 Full mission light maps, full channel maps (6 HFI, 7 LFI)
 - 3.3 Nominal mission, full channel maps (6 HFI)

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

	30GHz NS256	30GHz NS1024 <i>BPL uncorr</i>	44GHz NS256	44GHz NS1024 <i>BPL uncorr</i>	70GHz NS256	70GHz NS1024 <i>BPL uncorr</i>	70GHz NS2048 <i>BPL uncorr</i>	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 MAPS**

Frequency maps CMB maps Foreground maps Ancillary maps

[Explanatory Supplement](#)



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

	30GHz NS256	30GHz NS1024 <i>BPL uncorr</i>	44GHz NS256	44GHz NS1024 <i>BPL uncorr</i>	70GHz NS256	70GHz NS1024 <i>BPL uncorr</i>	70GHz NS2048 <i>BPL uncorr</i>	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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- Work with the **advanced search** facility to download specific maps and simulations.
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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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- **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

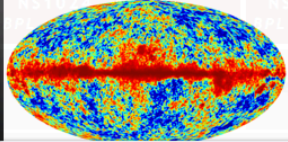


[Explanatory Supplement](#) ↓ 

light-maps

single-frequency

multi-detector

single-detector

	30GHz NS256	30GHz NS1024 BPL uncorr	44GHz NS256		70GHz NS2048 BPL uncorr	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)	(576 MB)	(192 MB)	(192 MB)

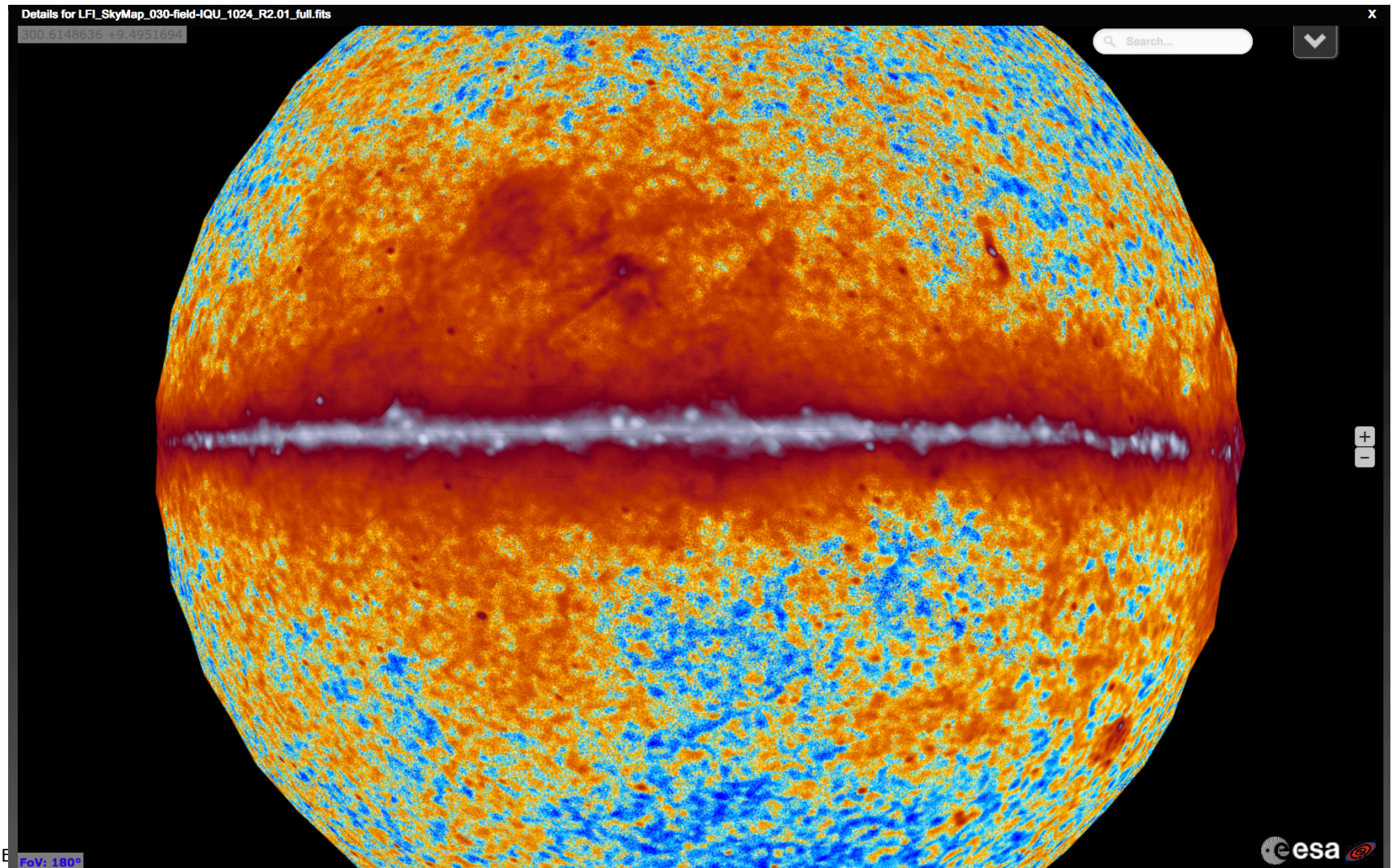
Display LFI_SkyMap_044-BPassCorrected-field-IQU_0256_R2.01_full.fits in Aladin



PR2 - 2015 ADVANCED SEARCH OPTIONS

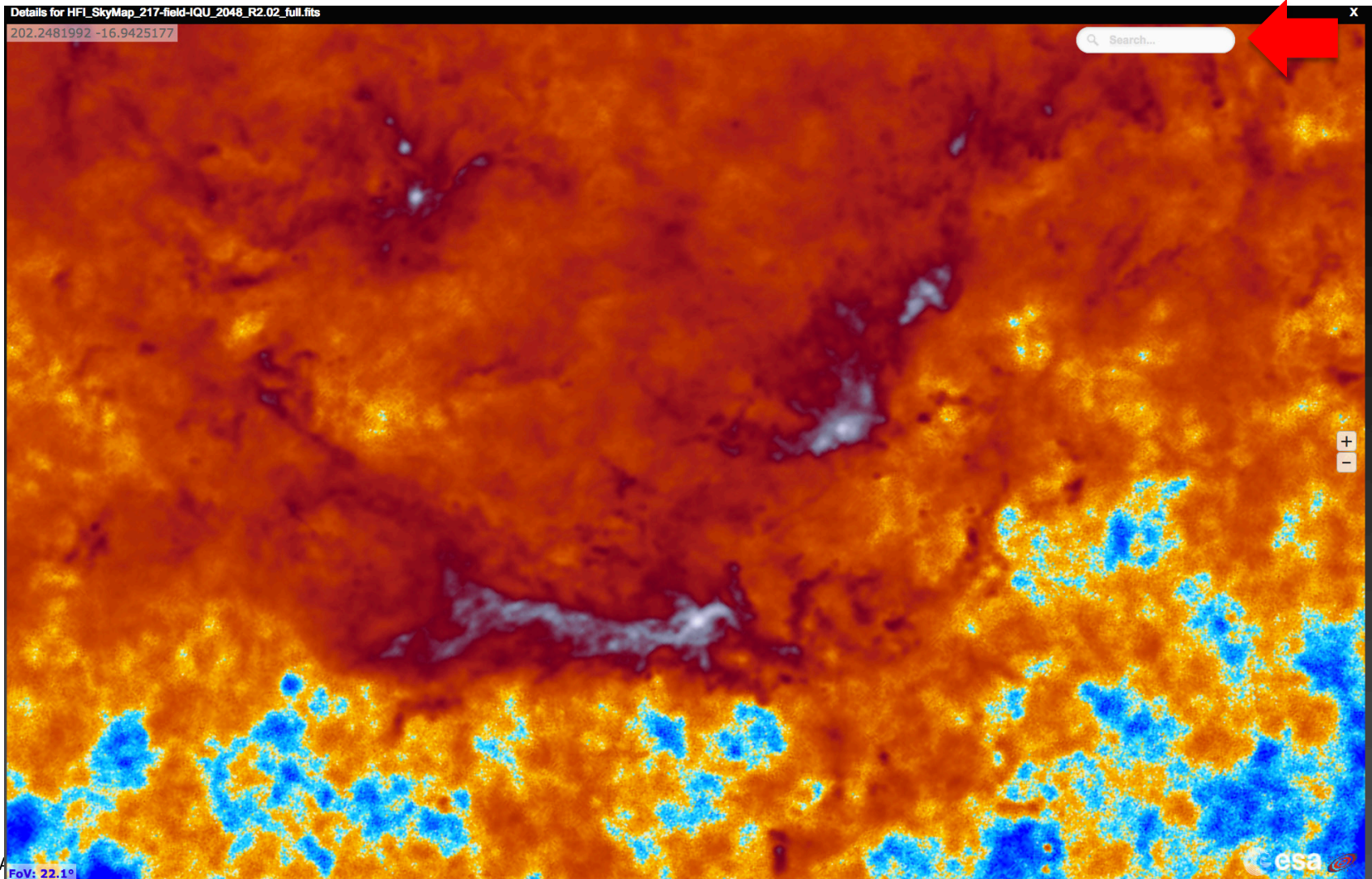
Maps Visualization with AladinLite

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) X

0 selected items

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<input type="checkbox"/>						Map name	Size	Frequency	Period	Map type	Zodicorrected	Ringhalf	Detect	Detect	Light map	Instrument	NSide	Coordinate syste	
<input type="checkbox"/>							LFI_SkyMap_030_1024_R2.01_full.fits	480 MB	30	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	1024	GALACTIC
<input type="checkbox"/>							LFI_SkyMap_030-BPassCorrected_0256_R2.01_full.fits	21 MB	30	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	256	GALACTIC
<input type="checkbox"/>							LFI_SkyMap_044_1024_R2.01_full.fits	480 MB	44	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	1024	GALACTIC
<input type="checkbox"/>							LFI_SkyMap_044-BPassCorrected_0256_R2.01_full.fits	21 MB	44	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	256	GALACTIC
<input type="checkbox"/>							LFI_SkyMap_070_2048_R2.01_full.fits	1.9 GB	70	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	2048	GALACTIC
<input type="checkbox"/>							LFI_SkyMap_070_1024_R2.01_full.fits	480 MB	70	Full	FREQUENCY_MAP	no	0	-	-	no	LFI	1024	GALACTIC
<input type="checkbox"/>							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



RESULTS Close All << < **PR2 Maps #2** > >>

Frequency maps (7) X

0 selected items

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<input type="checkbox"/>						Map name	Size	Frequency	Period	Map type	Zodiorrected	Ringh
<input type="checkbox"/>						LFI_SkyMap_030_1024_R2.01_full.fits	480 MB	30	Full	FREQUENCY_MAP	no	0
<input type="checkbox"/>						LFI_SkyMap_030-BPassCorrected_0256_R2.01_full.fits	21 MB	30	Full	FREQUENCY_MAP	no	0
<input type="checkbox"/>						LFI_SkyMap_044_1024_R2.01_full.fits	480 MB	44	Full	FREQUENCY_MAP	no	0
<input type="checkbox"/>						LFI_SkyMap_044-BPassCorrected_0256_R2.01_full.fits	21 MB	44	Full	FREQUENCY_MAP	no	0
<input type="checkbox"/>						LFI_SkyMap_070_2048_R2.01_full.fits	1.9 GB	70	Full	FREQUENCY_MAP	no	0
<input type="checkbox"/>						LFI_SkyMap_070_1024_R2.01_full.fits	480 MB	70	Full	FREQUENCY_MAP	no	0
<input type="checkbox"/>						LFI_SkyMap_070-BPassCorrected_0256_R2.01_full.fits	21 MB	70	Full	FREQUENCY_MAP	no	0

Map cutout X

Preview image of gnomonic map cutout of LFI_SkyMap_030_1024_R2.01_full.fits

PREVIEW IMAGES

MAP CUTOUT

COLUMN: I_STOKES

MAP CUTOUT SETTINGS

Get map **Send**



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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 Λ CDM 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
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Description of cosmology products

RESULTS

0 selected items



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

0 selected items



<input type="checkbox"/>		Description	File name	Size
<input type="checkbox"/>		Theory CIs 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
<input type="checkbox"/>		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
<input type="checkbox"/>		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
<input type="checkbox"/>		TT data, unbinned, with the full set of the spectrum, unbinned,	COM_PowerSpect_CMB-TT-hiL-full_R2.02.txt	94.5 KB
<input type="checkbox"/>		TT data, unbinned, with the full set of the spectrum, unbinned,	COM_PowerSpect_CMB-TT-hiL-full_R2.01.txt	87.4 KB
<input type="checkbox"/>		EE data, unbinned, with the full set of the spectrum, unbinned,	COM_PowerSpect_CMB-EE-hiL-full_R2.02.txt	75 KB
<input type="checkbox"/>		TE data, unbinned, with the full set of the spectrum, unbinned,	COM_PowerSpect_CMB-TE-hiL-full_R2.02.txt	75 KB

1 of 1 Page size:

Displaying 1-22 of 22



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Planck data in ESA Sky



GAL 64.0602083 +12.3059796

Searching PCSS catalog

3c273

Upload target list

Skies

INTEGRAL

XMM-Newton

HST

ISO

AKARI

Herschel

Planck

Others

Colour Map

☐ Reverse

Data Panel

HFI 857

HFI 545

HFI 353

HFI 217

HFI 143

HFI 100

LFI 070

LFI 044

LFI 030

HFI 353 Pol

HFI 217 Pol

HFI 143 Pol

HFI 100 Pol

LFI 070 Pol

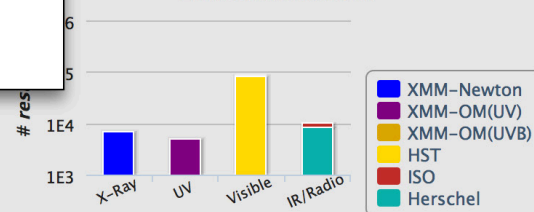
LFI 044 Pol

LFI 030 Pol

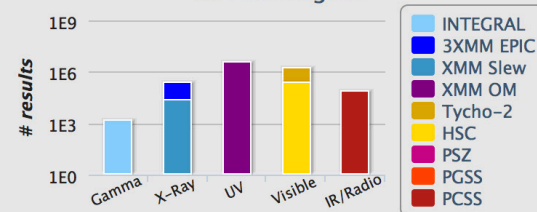
HFI R2 color (353+545+857)

LFI R2 color 30+44+70

ESA Observations



ESA Catalogues



Close data panel

FoV: 180°



Planck in ESA Sky – overlay sources



GAL \diamond 341.4424190 -45.6400809



Sky:LFI 030 Pol

crab

Upload target list

Data Panel

XMM-Newton

ObservationId

Instrument

RA (J2000)

DEC (J2000)

Showing global sky coverage for the mission.
Zoom in to see the actual footprints of the individual observations.

Close data panel

FoV: 180°



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



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