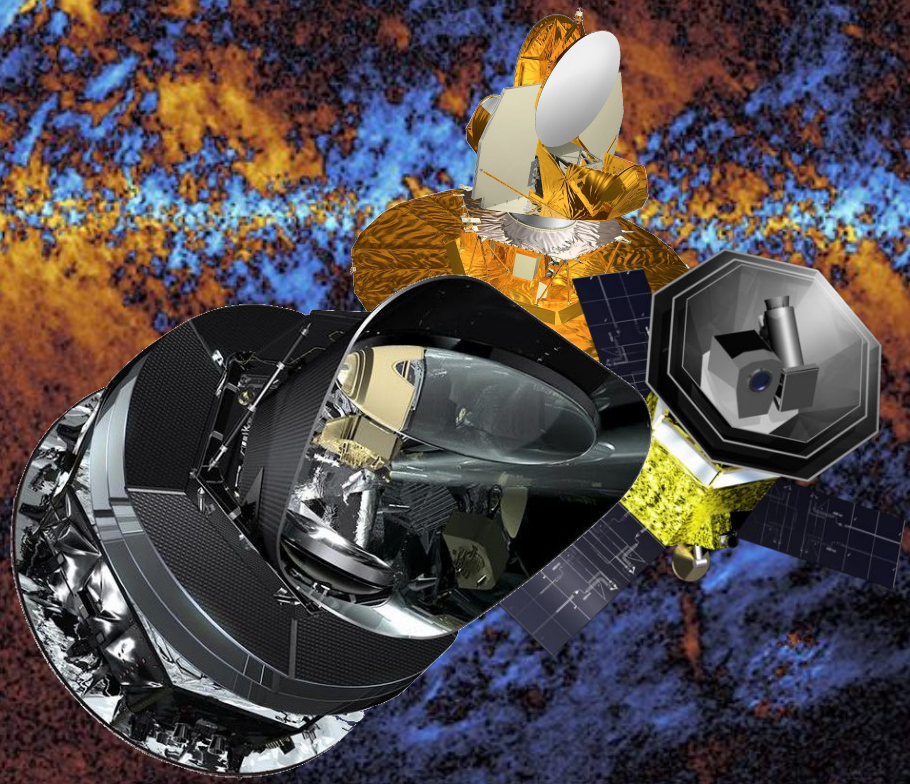
WP10: Administration

Hans Kristian Eriksen



BeyondPlanck Final Review, December 10, 2020

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776282

EU-funded work effort overview per WP

WP	PM spent	PM budgeted	PM difference	Partner breakdown
1	30	25	5	Oslo = 28, Trieste = 2
2	13	13	0	Trieste = 13
3	18	18	0	Trieste = 17, Oslo = 1
4	8	10	-2	Helsinki = 8
5	8	6	2	Helsinki = 8
6	32.5	36	-3.5	Oslo = 32.5
7	62	58	4	Oslo = 15, Milano = 47
8	0.9	0	0.9	Milano = 0.9
9	59	58	1	Planetek = 59
10	4.5	3	1.5	Milano = 1.5, Helsinki = 2, Trieste = 1, Planetek = 1,
Total	234.9	227	7.9	

Table 2: Overview of EU-funded PM efforts spent per WP (second column), compared with the budget (third column). The fourth column shows the difference between the real and projected PM counts. The fifth column provides a breakdown of the spent PMs for the individual partners.

Work effort per institution and WP

	Oslo		Milano		Trieste		Helsinki		Planetek		
WP	EU	Self	EU	Self	EU	Self	EU	Self	EU	Self	**Sum**
1	28				2						**30**
2					13	1					**14**
3	1				17	3					**21**
4							8				**8**
5							8				**8**
6	32.5	4.5									**37**
7	15	1.5	46.5	18							**81**
8			0.9	5.6							**6.5**
9									57		**57**
10		3	1.5	0.5	1		2		1		**9**
Sum	**76.5**	**9**	**48.9**	**24.1**	**33**	**4**	**18**		**58**		**271.5**

Table 3: Breakdown over PMs spent per institution, divided into EU and in-kind funding.

Consortium meetings etc.

meetings

Physical Meetings (PM)

Meeting issue	Status	Title	Location	Date	Minutes
PM1	Done	Kickoff Meeting	Oslo	Tuesday, March 6th, 2018	Agenda
PM2	Done	2nd Consortium Meeting	Helsinki	Sep 17-21, 2018	Meeting page
PM2	Done	3rd Consortium Meeting	Athens	Feb 11-15, 2019	Meeting page
	Done	1st Review Meeting	Brussels	Mar 28, 2019	Meeting page
PM3	Done	4th Consortium Meeting	Milano	Sept 16-20, 2019	Meeting page
	Done	2nd Review Meeting	Oslo	Nov 29, 2019	Meeting page
PM4	Postponed	5th Consortium Meeting	Trieste	March 30 - April 3, 2020	Meeting page
OM1	Done	Online Consortium Meeting	N/A	April 27-28, 2020	Meeting Page
FR	Upcoming	Final Review Meeting	N/A	December 10, 2020	Meeting Page

Release conference November 18-20

European Commission

Schedule

Full program of the BeyondPlanck Release Conference. All times are expressed in CET (UTC+1).

Day 1 - Wednesday, 18 Nov			
14:45	Zoom connection opens		
15:00	BeyondPlanck: Motivation and main results (**Hans Kristian Eriksen**)	Slides	Video
16:00	Planck overview (**Charles Lawrence**)	Slides	Video
	Break		
17:30	The Planck LFI instrument (**Marco Bersanelli**)	Slides	Video
18:05	Planck LFI DPC processing and final status (**Samuele Galeotta**)	Slides	Video
18:40	NPIPE (**Reijo Keskitalo**)	Slides	Video
19:10	CMB mapmaking by Gibbs sampling (**Elina Keihänen**)	Slides	Video

Day 2 - Thursday, 19 Nov			
14:45	Zoom connection opens		
15:00	Noise estimation (**Håvard Tveit Ihle**)	Slides	Video
15:35	Calibration (**Eirik Gjerløw**)	Slides	Video
16:05	Sidelobes (**Mathew Galloway**)	Slides	Video
16:20	Leakage corrections (**Trygve Leithe Svalheim**)	Slides	Video
	Break		
17:00	Commander and computational aspects (**Mathew Galloway**)	Slides	Video
17:20	BeyondPlanck frequency maps (**Anna-Stiina Suur-Uski**)	Slides	Video
17:55	CMB constraints (**Loris Colombo**)	Slides	Video
18:25	Cosmological parameters (**Simone Paradiso**)	Slides	Video

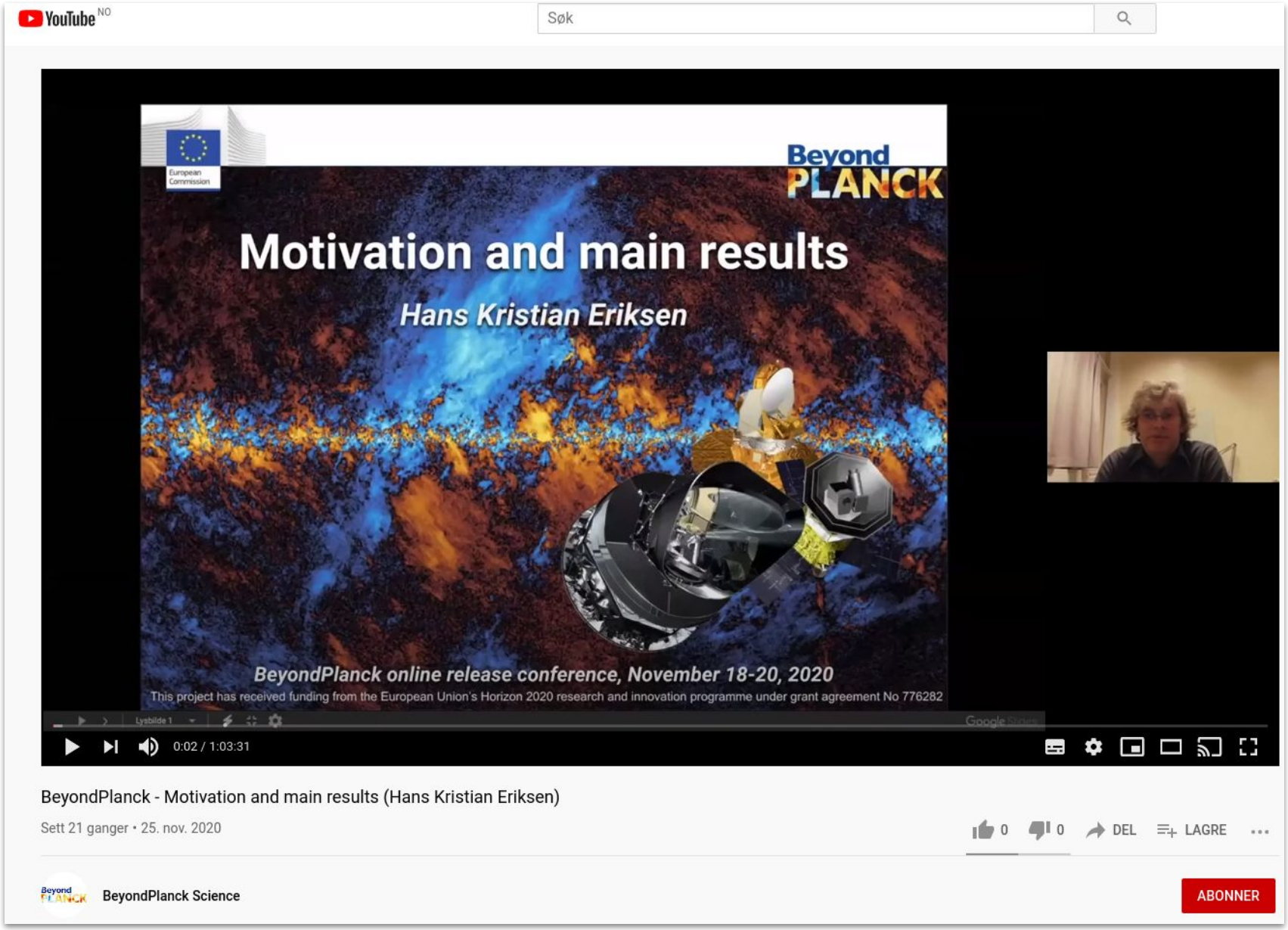
Day 3 - Friday, 20 Nov			
14:45	Zoom connection opens		
15:00	LiteBIRD (**Masashi Hazumi**)		Video
15:30	Polarization foregrounds (**Trygve Leithe Svalheim**)	Slides	Video
16:00	Intensity foregrounds (**Kristian Joten Andersen**)	Slides	Video
16:25	Preliminary analysis of external data sets (**Duncan Watts**)	Slides	Video
	Break		
17:15	BeyondPlanck and LiteBIRD (**Ragnhild Aurlien**)	Slides	Video
17:40	Cosmoglobe (**Ingunn Kathrine Wehus**)	Slides	Video
18:05	Planck products and PLA (**Marcos López-Caniego**)	Slides	Video
18:25	Summary and questions (**Bruce Partridge**)	Slides	Video

More than 180 attendees on opening talk, and more than 110 attendees on last day!

Great interest expressed from many participants

Beyond PLANCK

Release conference November 18-20



Talks are available online at Youtube; see project home page for links

Release conference November 18-20

Tutorial November 23-24

Schedule

Day 1 - Monday, 23 Nov		
14:45	Zoom connection opens	
15:00	Introduction and BeyondPlanck data model (**Hans Kristian Eriksen**)	
15:30	BeyondPlanck products (**Anna-Stiina Suur-Uski**)	Slides
16:00	Jupyter I (**Ragnhild Aurlien, Trygve Leithe Svalheim**)	
16:30	Jupyter II (**Ragnhild Aurlien, Trygve Leithe Svalheim**)	
17:00	Break	
17:30	Jupyter III (**Ragnhild Aurlien, Trygve Leithe Svalheim**)	
18:00	The Commander parameter file (**Kristian Joten Andersen**)	Slides
18:30	Installing Commander and download data set (**Maksym Brilenkov**)	
19:00	Installing Commander and download data set (**Maksym Brilenkov**)	

Day 2 - Tuesday, 24 Nov		
14:45	Zoom connection opens	
15:00	Commander walkthrough (**Eirik Gjerløw**)	
15:30	Commander walkthrough (**Eirik Gjerløw**)	
16:00	c3pp and postprocessing (**Trygve Leithe Svalheim**)	
16:30	Adding external sky maps (**Daniel Herman**)	
17:00	Break	
17:30	Adding external time-ordered data (**Mathew Galloway, Duncan Watts**)	
18:00	Adding external time-ordered data (**Mathew Galloway, Duncan Watts**)	
18:30	Cosmoglobe (**Ingunn Kathrine Wehus, Duncan Watts, Metin San**)	
19:00	Q&A	

Very popular hands-on tutorial had 70 attendees on the first day, and 50 on the second day.

Papers

Beyond PLANCK | Home | Project | Products | Publications | Documentation | Dissemination | Cosmoglobe

BEYONDPLANCK PUBLICATIONS

Label	Title	Reference
BP I	Global Bayesian analysis of the Planck Low Frequency Instrument data	BeyondPlanck Collabor (2020)
BP II	CMB map-making through Gibbs sampling	Keihänen et al. (2020)
BP III	Computational Infrastructure and Commander	Galloway et al. (2020a)
BP IV	Time-ordered data simulations	Brilenkov et al. (2020)
BP V	Open Science and reproducibility	Gerakakis et al. (2020)
BP VI	Noise characterization and modelling	Ihle et al. (2020)
BP VII	Bayesian estimation of gain and absolute calibration for CMB experiments	Gjerløw et al. (2020)
BP VIII	Sidelobe corrections	Galloway et al. (2020b)
BP IX	Bandpass and Beam Leakage Corrections	Svalheim et al. (2020a)
BP X	LFI frequency map posteriors	Suur-Uski et al. (2020)
BP XI	CMB constraints	Colombo et al. (2020)
BP XII	Cosmological parameter estimation with end-to-end error propagation	Paradiso et al. (2020)
BP XIII	Intensity foregrounds, degeneracies and priors	Andersen et al. (2020)
BP XIV	Polarized foreground emission between 30 and 70GHz	Svalheim et al. (2020)
BP XV	Limits on Polarized Anomalous Microwave Emission	Herman et al. (2020)
BP XVI	Application to simulated LiteBIRD observations	Aurlien et al. (2020)
BP XVII	Application to WMAP	Watts et al. (2020)
BP XVIII	End-to-end validation of BeyondPlanck	Galeotta et al. (2020)
	Constraints on the spectral index of polarized synchrotron emission from WMAP and Faraday-corrected S-PASS data	Fuskeland et al. (2019)
	Planck intermediate results. LVII. Joint Planck LFI and HFI data processing	Planck Collaboration (2
	A Monte Carlo comparison between template-based and Wiener-filter CMB dipole estimators	Thommesen et al. (201

Astronomy and Astrophysics Special Issue

European Commission

Astronomy & Astrophysics (A&A): Special issues

Parker Solar Probe: Ushering a new frontier in space exploration (open issue)

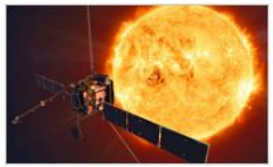
Gaia Early Data Release 3 (open issue)

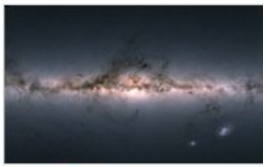
First science highlights from SRG/eROSITA (open issue)

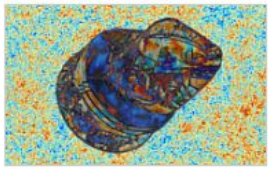
Solar Orbiter First Results (open issue)

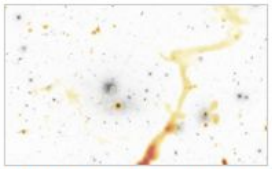
The LOFAR Two Meter Sky Survey (open issue)

The XXL Survey: third series (open issue)

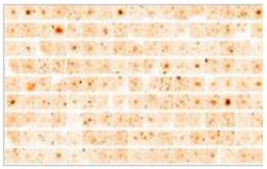

The Solar Orbiter mission (open issue)


Gaia Data Release 2


Planck 2018 results

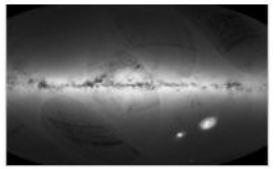

LOFAR Surveys: a new window on the Universe


Rosetta mission full comet phase results

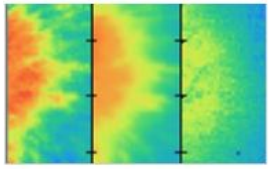

The XXL Survey: second series

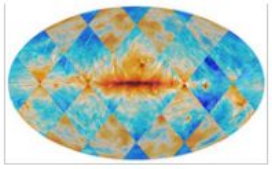

H.E.S.S. phase-I observations of the plane of the Milky Way

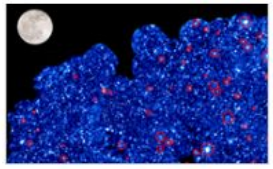

The MUSE *Hubble* Ultra Deep Field Survey


Gaia Data Release 1


The VLA-COSMOS 3 GHz Large Project


GREGOR first results

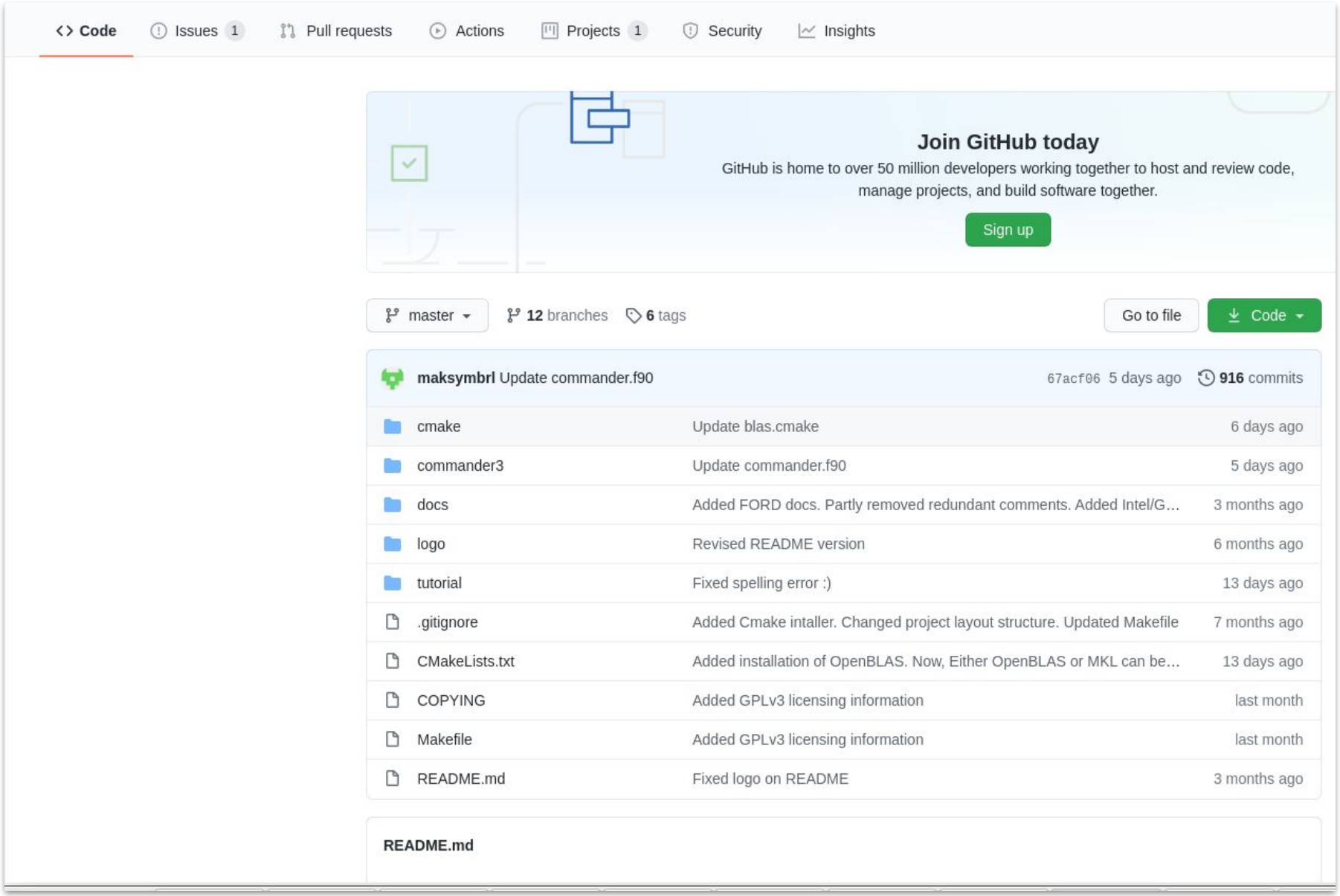

Planck 2015 results


The XXL Survey: First results


Rosetta mission results pre-perihelion

Beyond PLANCK

Commander source code



Code | Issues 1 | Pull requests | Actions | Projects 1 | Security | Insights

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master | 12 branches | 6 tags | Go to file | Code

maksymbrl Update commander.f90 — 67acf06 5 days ago — 916 commits

cmake	Update blas.cmake	6 days ago
commander3	Update commander.f90	5 days ago
docs	Added FORD docs. Partly removed redundant comments. Added Intel/G…	3 months ago
logo	Revised README version	6 months ago
tutorial	Fixed spelling error :)	13 days ago
.gitignore	Added Cmake intaller. Changed project layout structure. Updated Makefile	7 months ago
CMakeLists.txt	Added installation of OpenBLAS. Now, Either OpenBLAS or MKL can be…	13 days ago
COPYING	Added GPLv3 licensing information	last month
Makefile	Added GPLv3 licensing information	last month
README.md	Fixed logo on README	3 months ago

README.md

Data products

BEYONDPLANCK PRODUCTS

Parameter Files

Filename	Content	Filesize	Format specification
BP_param_c0001.txt	Main Commander parameter file	69 kB	Commander parameter file documentation
BP_param_Tresamp_v1.txt	Commander parameter file for high-resolution CMB TT resampling	69 kB	Commander parameter file documentation
BP_param_resamp_c0001.txt	Commander parameter file for low-resolution CMB polarization resampling	x kB	Commander parameter file documentation

Chain Files

Filename	Content	Filesize	Format specification
BP_c000x_v1.h5 (1, 2, 3, 4, 5, 6)	Main chain files	329 GB each	File Formats
BP_c000x_Tresamp_v1.h5 (1, 2, 3, 4, 5, 6)	High-res CMB T resamp chain files	(2.3, 1.5, 1.7, 1.6, 1.5, 1.7) GB	File Formats
BP_c000x_Presamp_v1.h5 (1, 2, 3, 4, 5, 6)	Low-res CMB P resamp chain files	(437, 437, 437, 376, 397, 392) MB	File Formats

Frequency Maps

Filename	Content	Filesize	Format specification
BP_030_IQU_n0512_v1.fits	LFI 30 GHz frequency map	108 MB	
BP_044_IQU_n0512_v1.fits	LFI 44 GHz frequency map	108 MB	
BP_070_IQU_n1024_v1.fits	LFI 70 GHz frequency map	432 MB	

Popular science articles

European Commission

English

Home > News > Horizon 2020 funded project BeyondPlanck takes a global approach to understanding the Big Bang

NEWS | 23 November 2020 | Brussels, Belgium | Research Executive Agency

Horizon 2020 funded project BeyondPlanck takes a global approach to understanding the Big Bang

During the last two-and-a-half years, the REA-managed BeyondPlanck project has developed a radically new approach to detecting faint signals in the cosmic microwave background (CMB), an echo from the Big Bang. During a highly attended conference on 18-20 November, the project consortium released and discussed its ground-breaking results on the one single global parametric model for CMB analysis.

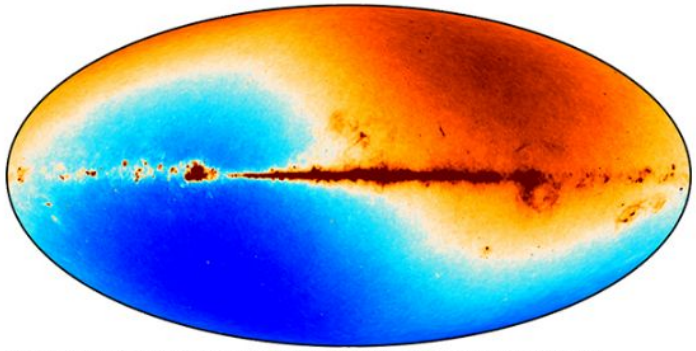
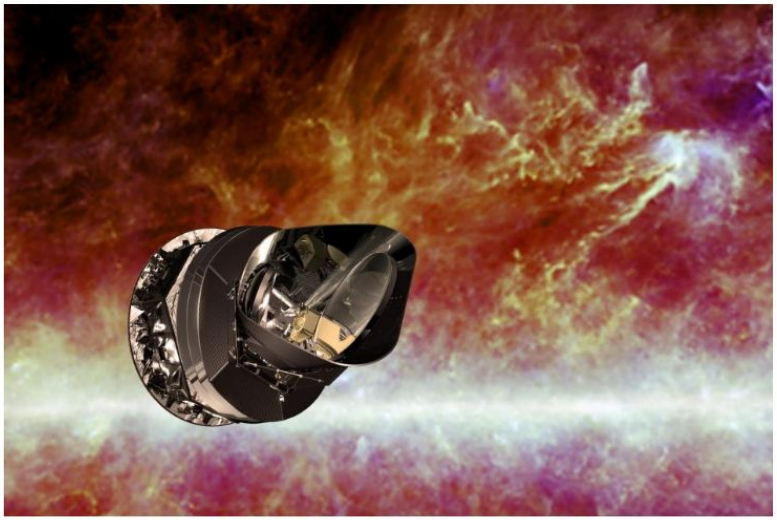


Figure: The microwave sky as observed by ESA's Planck satellite at 30 GHz and reprocessed by the global BeyondPlanck framework

The BeyondPlanck project was funded under the H2020-COMPET-2017 call, under the 'Scientific data exploitation' topic. The project, which started in March 2018, set out to develop the world's first integrated end-to-end data analysis pipeline for CMB observations, and apply this to data collected by the European Space Agency 's (ESA) Planck satellite mission. These observations provide a unique window into the early universe and the physics of the Big Bang.

Titan.uio.no

Forskningsnyheter om realfag og teknologi



Romteleskopet Planck har samlet data om den kosmiske bakgrunnsstrålingen. UiO-forskere har brukt dataene til å utvikle metoder som kan gi svar på spørsmålet om hvordan universet oppsto, om mørk materie og om mørk energi. Illustrasjon: ESA

Nå er forskerne klare til å ta imot gravitasjonsbølger fra The Big Bang

De kaller det et epokegjørende gjennombrudd i analyser av gravitasjonsbølger. Nå venter de bare på neste generasjons måleinstrumenter.

Av Eivind Torgersen

Beyond PLANCK

Funding

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776282

- "*BeyondPlanck*"
  - COMPET-4 program
  - PI: Hans Kristian Eriksen
  - Grant no.: 776282
  - Period: Mar 2018 to Nov 2020

Collaborating projects:

- "*bits2cosmology*"
  - ERC Consolidator Grant
  - PI: Hans Kristian Eriksen
  - Grant no: 772 253
  - Period: April 2018 to March 2023
- "*Cosmoglobe*"
  - ERC Consolidator Grant
  - PI: Ingunn Wehus
  - Grant no: 819 478
  - Period: June 2019 to May 2024