

The official public repository for distribution of *Planck* data products to the world-wide community

R. Leonardi¹, C. Arviset¹, M. F. Barreiro¹, R. Carr¹, M. Casale¹, X. Dupac¹, M. Freschi¹, J. Gallegos¹,
J. Gonzalez¹, T. Jagemann¹, A. Macfarlane¹, L. Mendes¹, P. Osuna¹, J. Tauber², D. Texier¹

¹ESAC/ESA, Spain ²ESTEC/ESA, The Netherlands

The European Space Agency (ESA) is charged with implementing the astronomical archive which makes available *Planck* data products to the world-wide community for their scientific exploitation (e.g. Tauber et al. 2010). ESA is fulfilling this obligation via the *Planck* Legacy Archive (PLA), which already is the official public repository of the *Planck* Early Release Compact Source Catalogue (ERCSC), and which will progressively include further data as proprietary periods end. In this poster contribution, we review the current status of the PLA, and we anticipate some of the functionalities that are expected in upcoming *Planck* data releases.

The PLA is freely accessible via the URL <http://pla.esac.esa.int/pla/pla.jnlp>.

The PLA is hosted at the ESA's European Space Astronomy Centre (ESAC) in Madrid, Spain. For more information visit http://www.sciops.esa.int/index.php?project=planck&page=Planck_Legacy_Archive.

CURRENT STATUS

Since January 2011, the PLA has been providing online public access to the ERCSC (*Planck* Collaboration 2011), together with facilities to select, list, display, and inspect galactic and extragalactic sources extracted from the first all-sky survey of *Planck*.

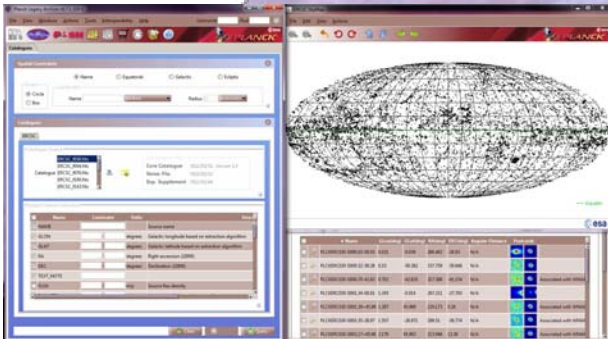


Fig. 1. The PLA GUI interface.

The PLA shares the same framework and design of ESA's scientific archives for space based missions (Osuna et al. 2010, Arviset et al. 2011). The storage layer consists of an online data repository with capability to store and handle dozens of terabytes. The PLA Graphical User Interface, illustrated in Figure 1, manages the queries and ensures proper access to stored data. The PLA is accessible via a web browser, and it allows users to search the archive, visualize items of interest, and select data for immediate download. All data are distributed through the internet via standard HTTP protocol.

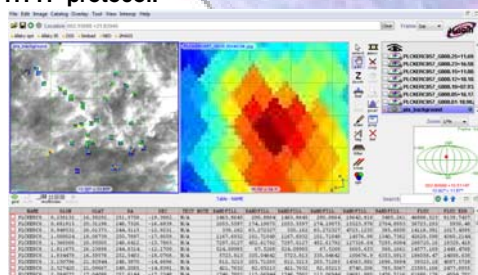


Fig. 2. A view of ERCSC sources as displayed by *Aladin*. The left panel shows the location of some ERCSC sources on top of an IRAS map. The right panel displays an ERCSC source postage stamp. The bottom panel provides some tabular ERCSC data.

In addition, the PLA adopts the Simple Application Messaging Protocol (SAMP) which allows interoperability with other tools to be achieved. Currently, the PLA inter-operates with the astronomical catalogues served by the Centre de Données astronomiques de Strasbourg (CDS), and it allows data to be automatically transferred to the interactive software *Aladin* (Bonnarel et al. 2000) and *TOPCAT* (Taylor 2005) which provide additional functionalities for, respectively, image and tabular data manipulation, as exemplified in Figure 2.

The PLA also handles proprietary data, access to which is currently restricted to members of the *Planck* Collaboration.

UPCOMING RELEASES

Less than one year from now, ESA will start to distribute the data acquired by *Planck* and processed by the *Planck* Collaboration. The PLA will provide online public access to a high-quality dataset to address modern cosmology, and a wide range of galactic and extragalactic science.

Early 2013 release: the PLA will provide online public access to *Planck* products based on data acquired during the nominal mission. This will include temperature maps of the whole sky in nine frequency bands from 30 to 857 GHz; component maps (CMB, dust, free-free, synchrotron); CMB angular power spectra and likelihood; the *Planck* Catalogue of Compact Sources (PCCS); the *Planck* Operational Status History; the performance of its payload; ancillary data and related documentation.

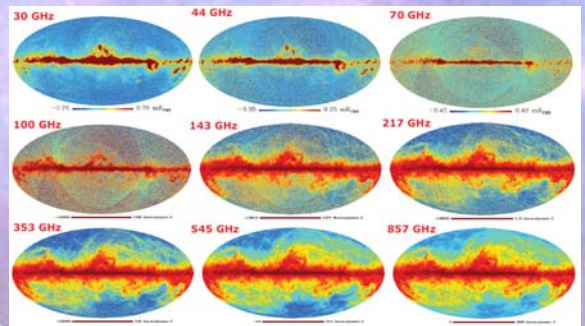


Fig. 3. Example of data to be released: the *Planck* view of the sky after almost one year of operations (CMB removed). Adapted from Zacchei et al. 2011 & *Planck* HFI Core Team 2011.

Early 2014 release: the PLA will provide online public access to *Planck* data products based on data acquired until the end of science operations (including the extended LFI-only phase). Much more data will be delivered, including temperature and polarization data, together with *Planck* time-ordered data (TOD), and improvements in previously released products.

2015 & beyond: data reprocessed by the *Planck* Collaboration will also be made available via the PLA. The PLA will be maintained by ESA for an indefinite period of time and, as the case may be, it will provide online public access to further data in view of new results and improvements.

FUTURE FUNCTIONALITIES

ESA is developing other functionalities for upcoming PLA releases which will include:

1. Improvements in its multilayer data queries.
2. Retrieval of specific subsets of TODs through queries in time and space domain.
3. Reprojection of selected map regions.

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