

ESASky: ESA's interface to astronomical data

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Abstract

ESASky (<http://sky.esa.int>) is an open science discovery portal providing full access to the entire sky as observed across the electromagnetic spectrum with space astronomy missions of the European Space Agency (ESA), and missions from international partners such as Suzaku (JAXA) and Chandra (NASA). Users can search, visualise and download all public high-quality data from these missions, including science-ready images, spectra and source catalogues. No prior-knowledge of any of the missions involved is needed to use the portal. The current plan for releases in Autumn 2019 include adding ground-based observatories, such as ALMA (ESO) and LAMOST (CAS), to bring together both space- and ground-based observations for the first time in ESASky.

This presentation will highlight the new data in ESASky along with the latest features, and will present pyESASky, a Jupyter Widget for ESASky. pyESASky is an extension library for Jupyter Notebook and JupyterLab that gives the user full control of the basic functionalities of ESASky from a notebook. In practice, users can instantiate ESASky with all the usual features found in the web version within Jupyter, along with interacting with it. With just a few commands, users can change the background skies, select targets, field of view, etc, and most importantly, can overlay their own datasets, from catalogues to footprints and HiPS. The ESASky Jupyter Widget will also allow scientists to share their work with colleagues, students, journals, etc., greatly improving the reproducibility of their research.