

Minting DOIs for CDS HiPS

Thomas Boch, Mihaela Buga, Sebastien Derriere,
Gilles Landais, Pierre Fernique

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□ Outline

- Motivations
- DOI minting process
- Landing page
- Open questions



☐ Motivations

- HiPS: a data product of its own
 - Astronomers might want to cite the HiPS they use
- DOI a step closer to FAIRness
(O'Toole, Tocknell, *FAIR standards for astronomical data*)
- Why not IVO ID?
 - ==> not well known
 - ==> no established mechanism for long-term persistency



□ Minting overall process

- Semi-automatic process
- Metadata XML document, following DataCite, automatically created from properties file for each HiPS published HiPS at CDS
- DOI string created and added to properties file (keyword **hips_doi**)
- Actual DOI minting through a script with manual validation
- Currently: 4 HiPS with DOIs (we test the process)
 - eg: <https://doi.org/10.26093/cds/aladin/3ntd-6fa>
- Goal: DOI for all 500+ HiPS managed and published by CDS



□ Landing page

- Dynamically built from properties file
- HiPS visualized with Aladin Lite v3
- Metadata in various formats:
 - [schema.org DataSet \(JSON-LD\)](https://schema.org/DataSet)
==> allows to be findable in Google Dataset search
 - Dublin Core
 - OpenGraph
- Link to generate cutout from HiPS2FITS
- Button to view HiPS in Aladin Desktop via SAMP
- Good rating on Fair checker
- Existing HiPS can be upgraded to this new landing page with latest Hipsgen beta

The screenshot displays the landing page for the CDS/P/2MASS/J dataset. The page is divided into two main sections: a metadata sidebar on the left and a visualization area on the right.

Metadata Sidebar:

- Header:** CDS/P/2MASS/J
- DOI:** <https://doi.org/10.26093/cds/aladin/3ntd-6fa>
- Data Access:** Includes a link for "HiPS2FITS cutouts" and a button "Send to Aladin Desktop".
- Properties:**
 - creator_id:** ivo://CDS/P/2MASS/J
 - obs_title:** 2MASS J (1.23um)
 - moc_sky_fraction:** 100% ⇒ 41252.96 deg². Includes a "Show coverage" button.
 - obs_description:** 2MASS has uniformly scanned the entire sky in three near-infrared bands to detect and characterize point sources brighter than about 1 mJy in each band, with signal-to-noise ratio (SNR) greater than 10, using a...

Visualization Area:

- Title:** 2MASS J (1.23um) HiPS
- Coordinates:** J2000 17 45 37.199 -28 56 10.23
- Projection:** SIN
- Field of View (FoV):** 58.63°
- Visuals:** A dark field of view showing the Milky Way galaxy with a central bright region. A pink crosshair is visible in the center.
- Controls:** A vertical toolbar on the left contains icons for zooming, panning, and other navigation functions. A "SIN" dropdown menu is in the top right corner.



□ Open questions

- Licencing
 - Combination of original data set licence and CDS own licence (ODbL if possible)
 - How to properly describe this in a machine-readable way?
- HiPS can be very large, we might consider deleting older versions of surveys
 - How acceptable is it to (rarely) delete a HiPS and create a tombstone page pointing to a new version?
 - How acceptable is it to slightly change the data (RICE compression of FITS tiles) and keep the same DOI?

