

HiPS network status

New HiPS datasets, new HiPS nodes

The logo for ALADiN, featuring the word in a bold, black, sans-serif font. A vibrant, multi-colored (red, orange, yellow, green, blue) nebula-like swirl is positioned behind the letters, partially obscuring them. The background of the slide is a dark, starry space image with a vertical white line on the right side.

Apps 1 - *Görlitz Interop Nov 2025*



Thomas Boch

□ Outline

- HiPS network updates
- New HiPS at CDS
- Other HiPS news

□ HiPS network

- New HiPS nodes
 - CAMRAS
 - Non-profit organization of volunteers maintaining *Dwingeloo Radio Telescope*
 - 4 HiPS derived from *Leiden Argentina Bonn HI* survey
 - simg.de
 - German amateur astrophotographer Stefan Ziegenbalg (@Pulsnitz)
 - 21 HiPS

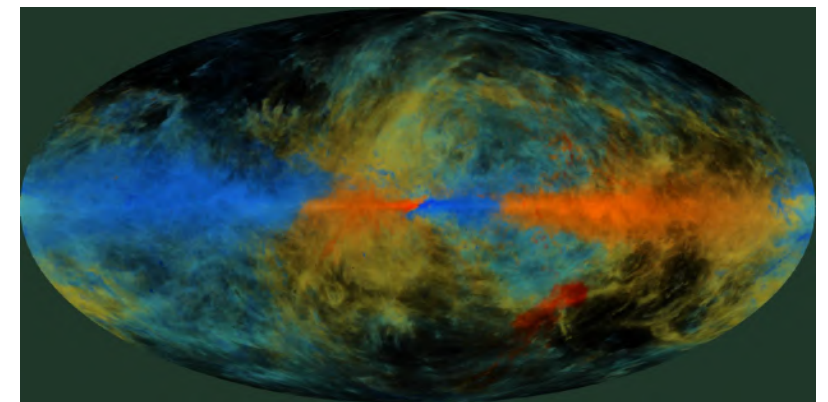
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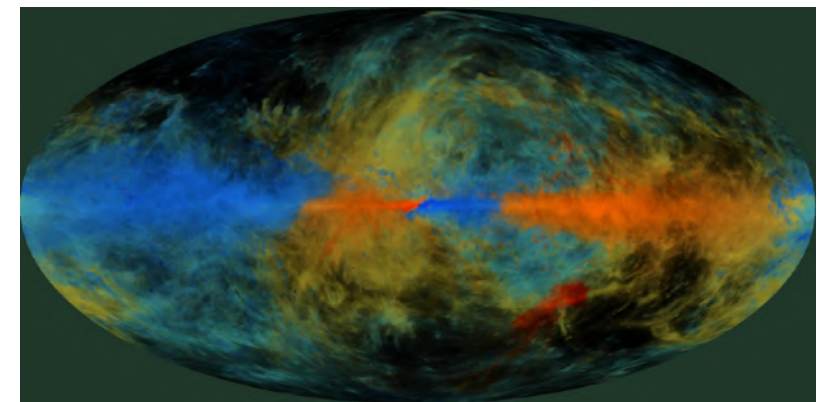
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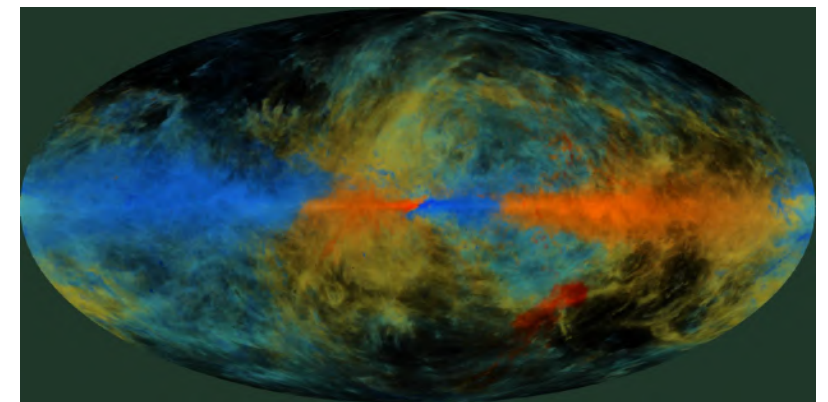
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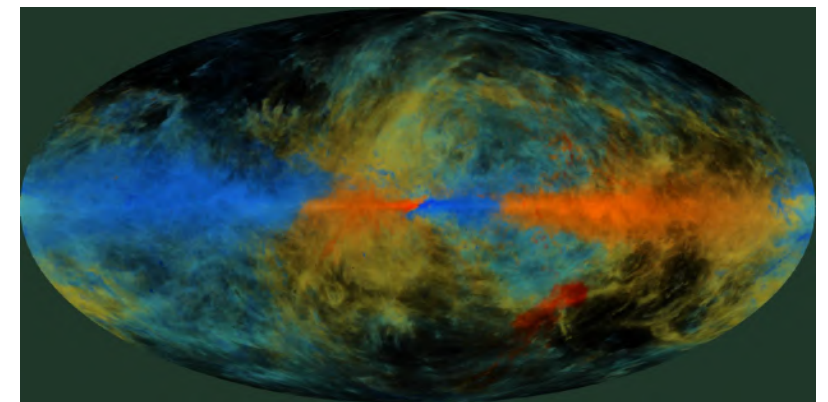
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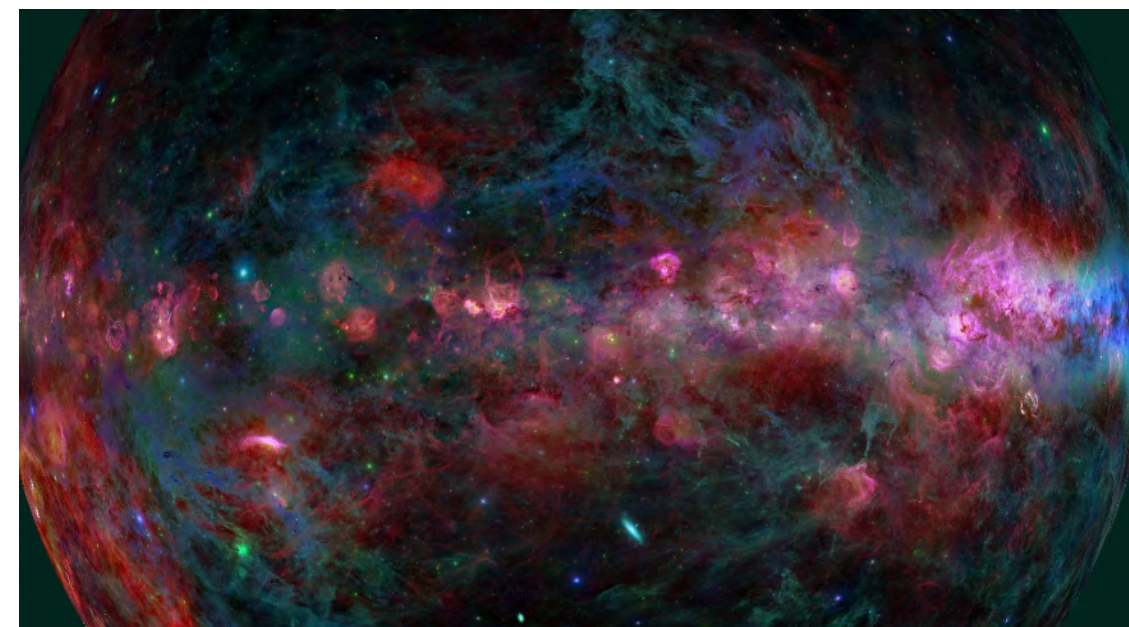
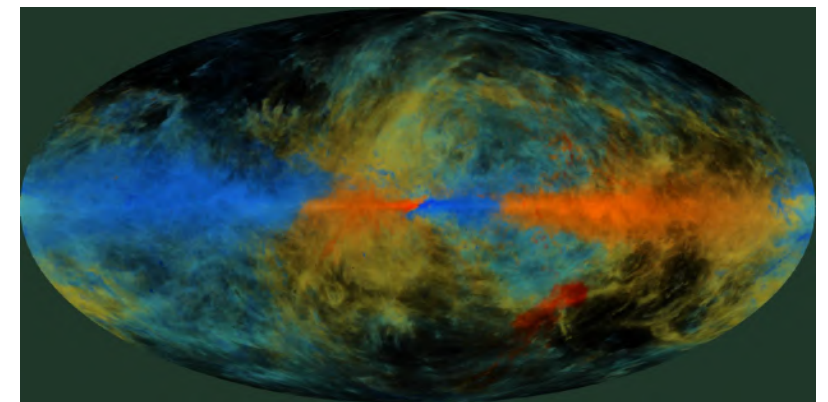
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□ Many HiPS not registered

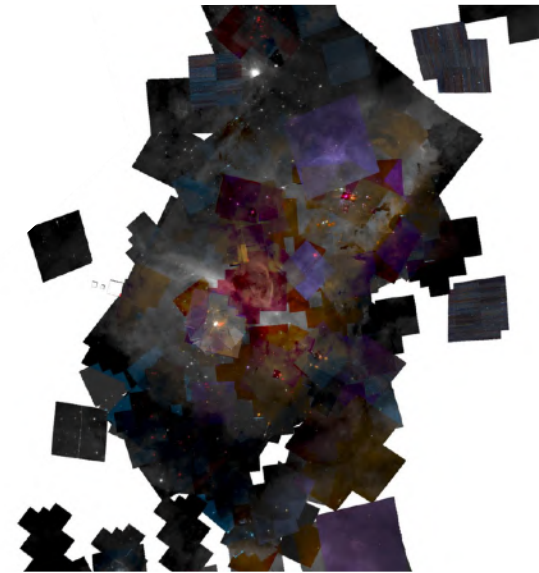
- Growing number of HiPS generated
- Too many still unregistered - and unseen
 - Available only from project website or specific tool
⇒ **not findable**
- Please register your HiPS datasets!
 - Win-win
 - More visibility for your data
 - Easier discovery for all HiPS clients

□ New HiPS at CDS

- **HST** HiPS updated
(D. Durand)
 - New script to download only new images from HST archive
 - 25 HiPS in total
 - Grouped by filters
(eg SDSSr = F625W and F622W)
 - 1 color HiPS
 - combines 18 HiPS:
Halpha, Hbeta, NII, SDSSz, SIII, Y, H, J, I, R, B, U, V, UV, SDSSg, SDSSr, OIII, OII
 - quite patchy
 - global preview of HST archive content

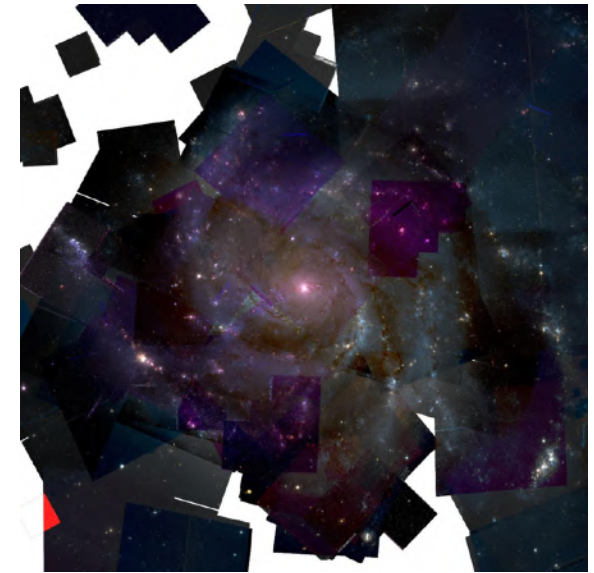
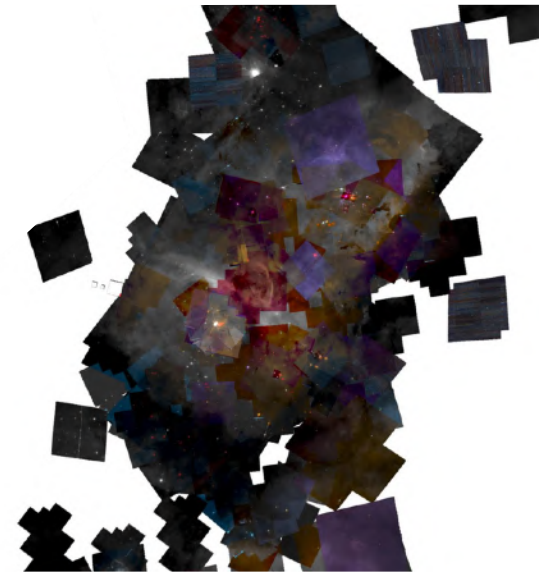
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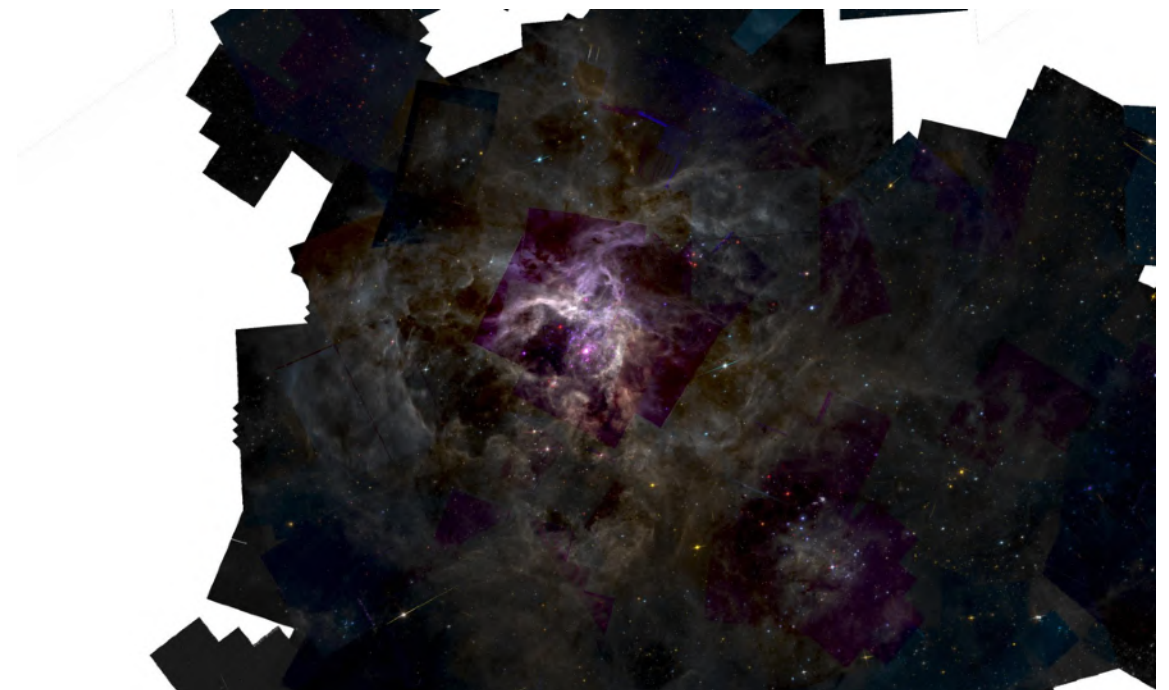
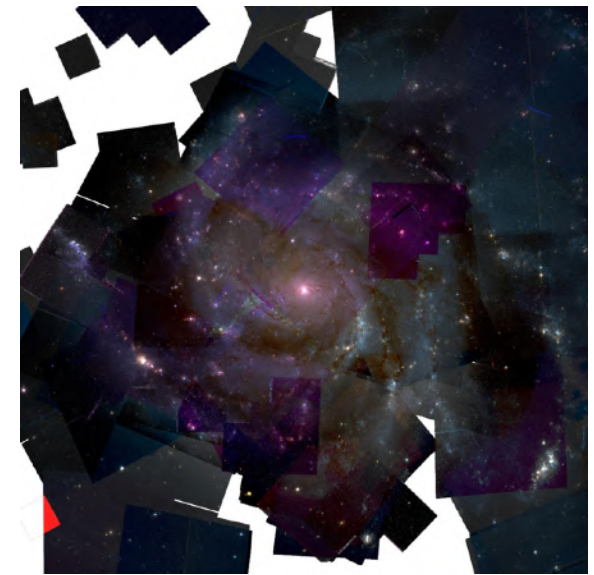
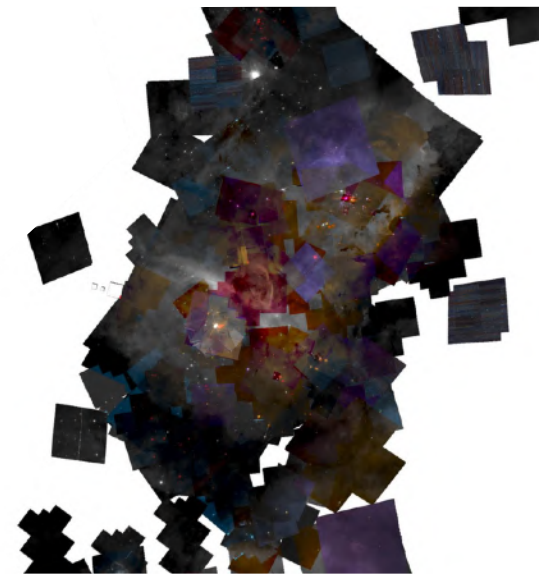
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□ New HiPS at CDS

- Euclid Q1

(T. Boch)

- 4 HiPS (3 NIR + VIS)
- Color HiPS
 - 1. **RGB** from NISP.H, NISP.Y, VIS
 - 2. **luminance** given by VIS

- Rubin First Look

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- Color HiPS only

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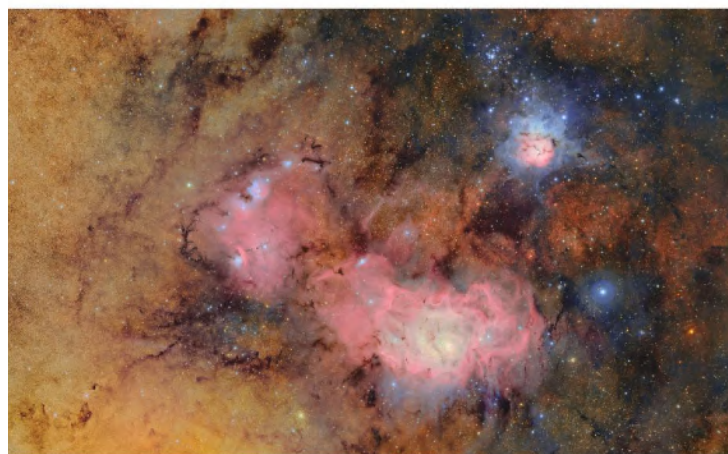
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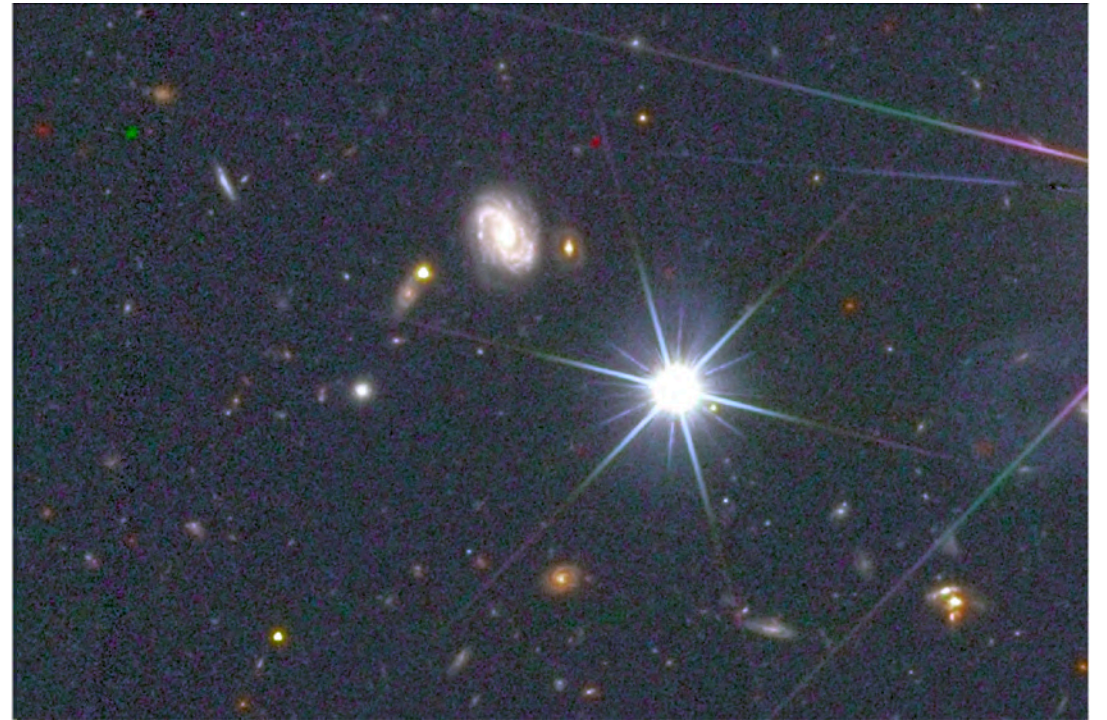


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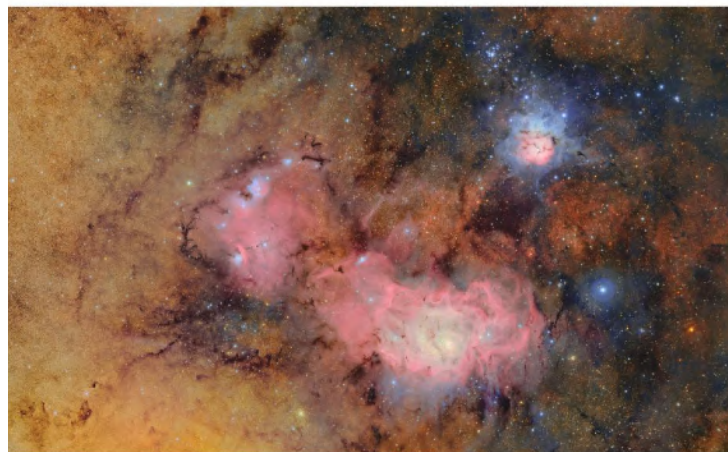
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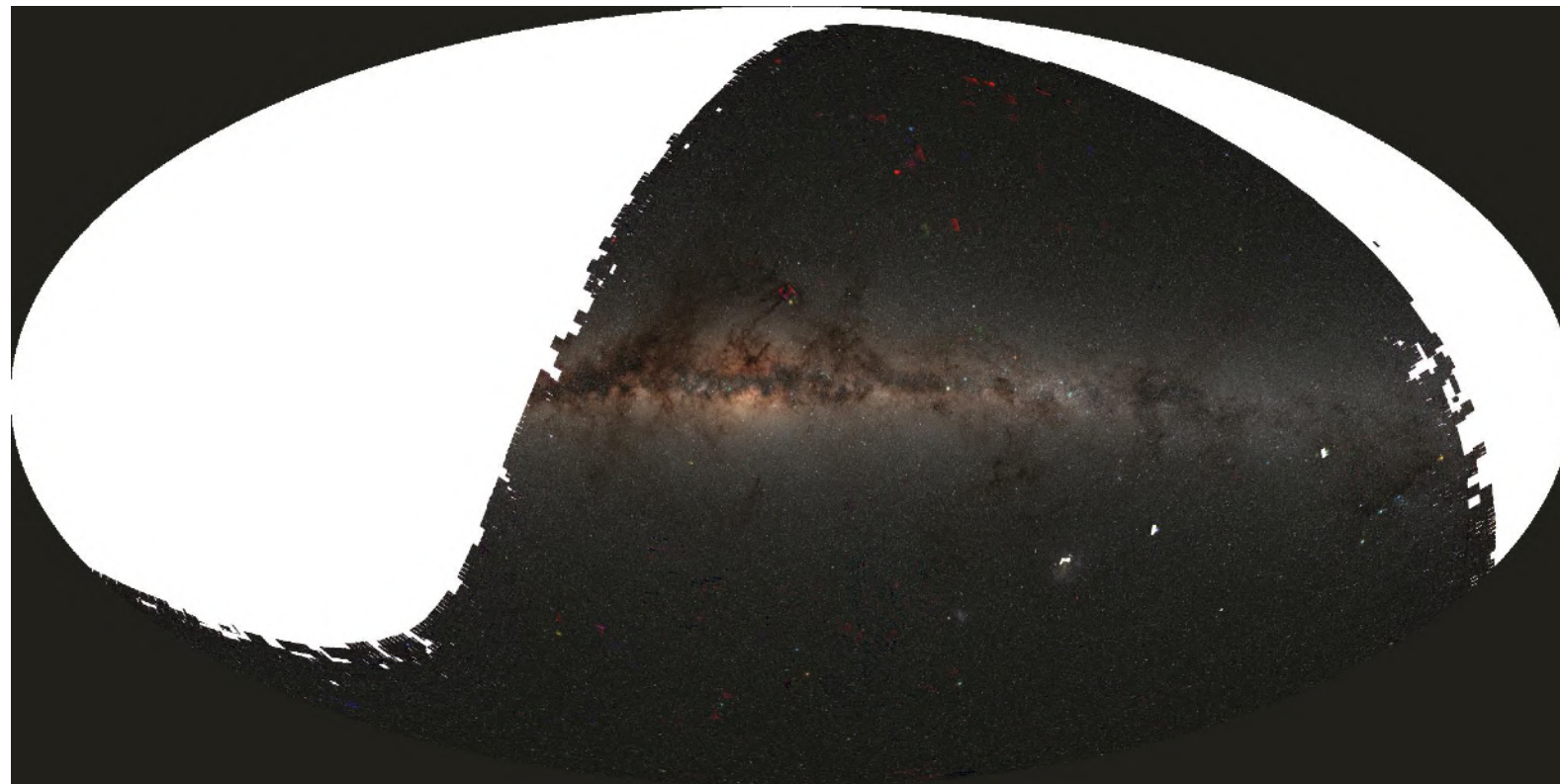


□ New HiPS at CDS

- SkyMapper DR4
(T. Boch + C. Onken)
 - *Deep* + *shallow* images combined
 - Hipsgen using **overlayMeanMax**
 - Limit number of progenitors per tile
 - Completed:
 - 3 bands *g*, *r*, *i*
 - *Color*
 - In progress: bands *u*, *v*, *z*

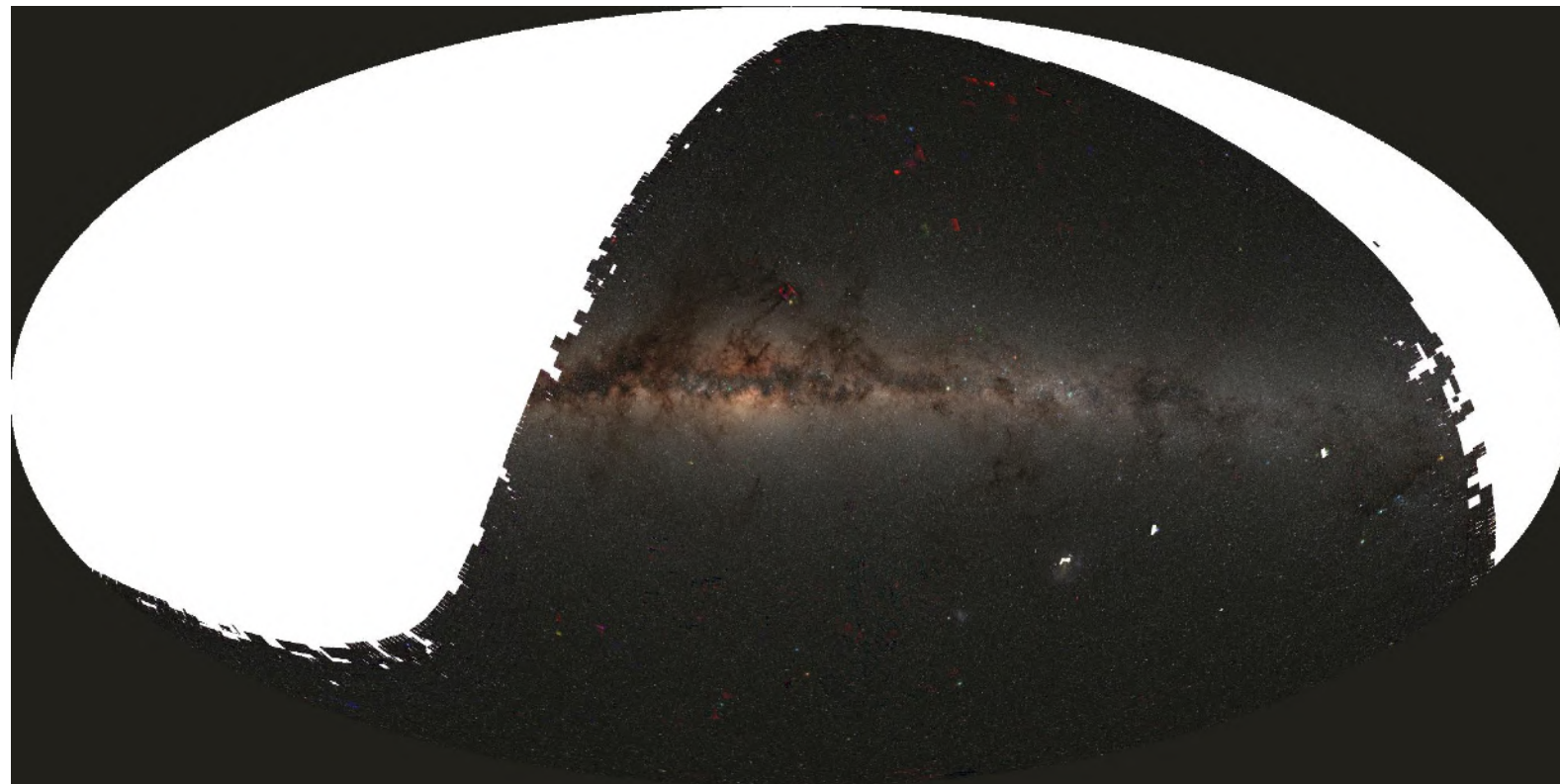
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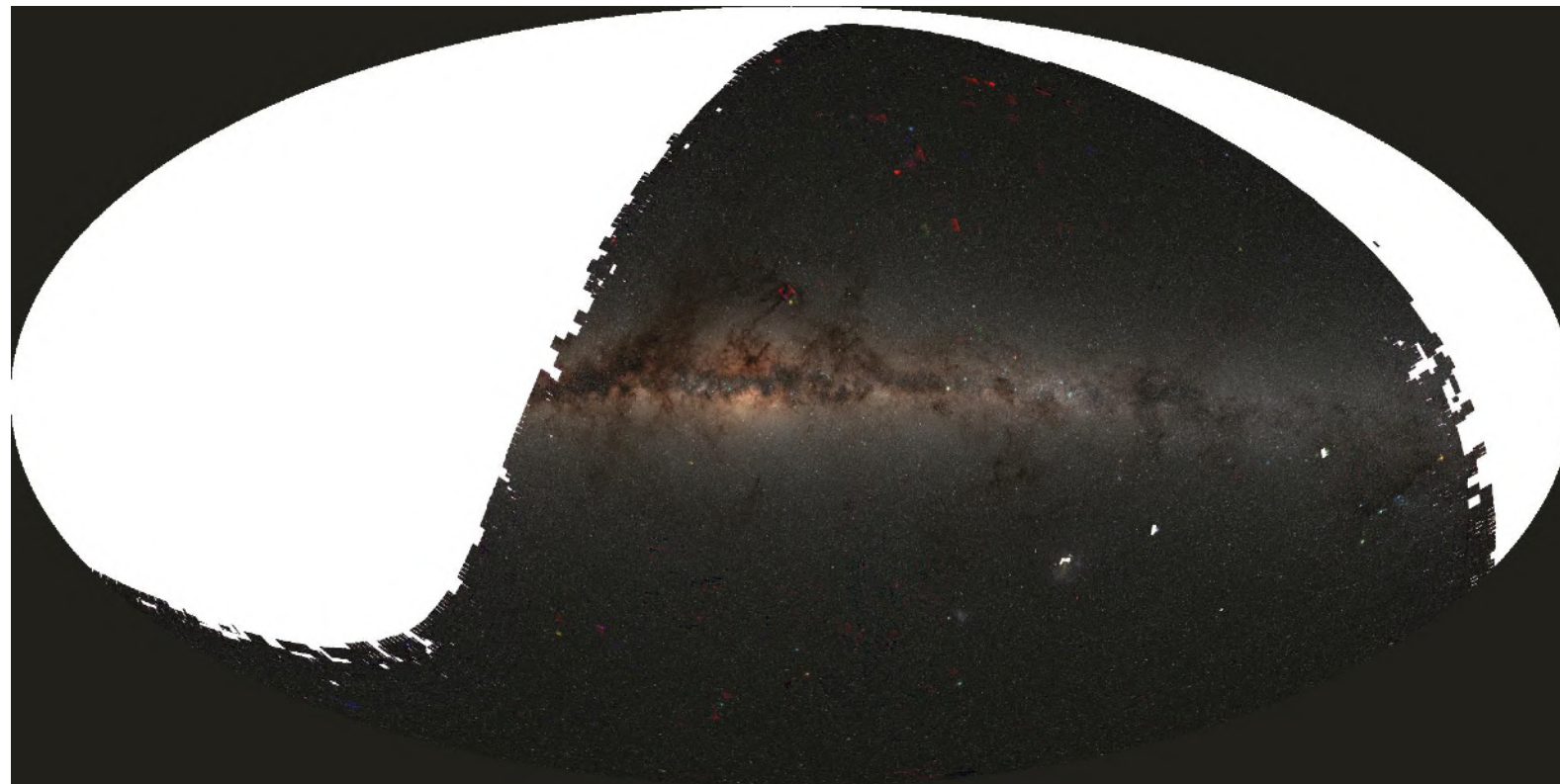
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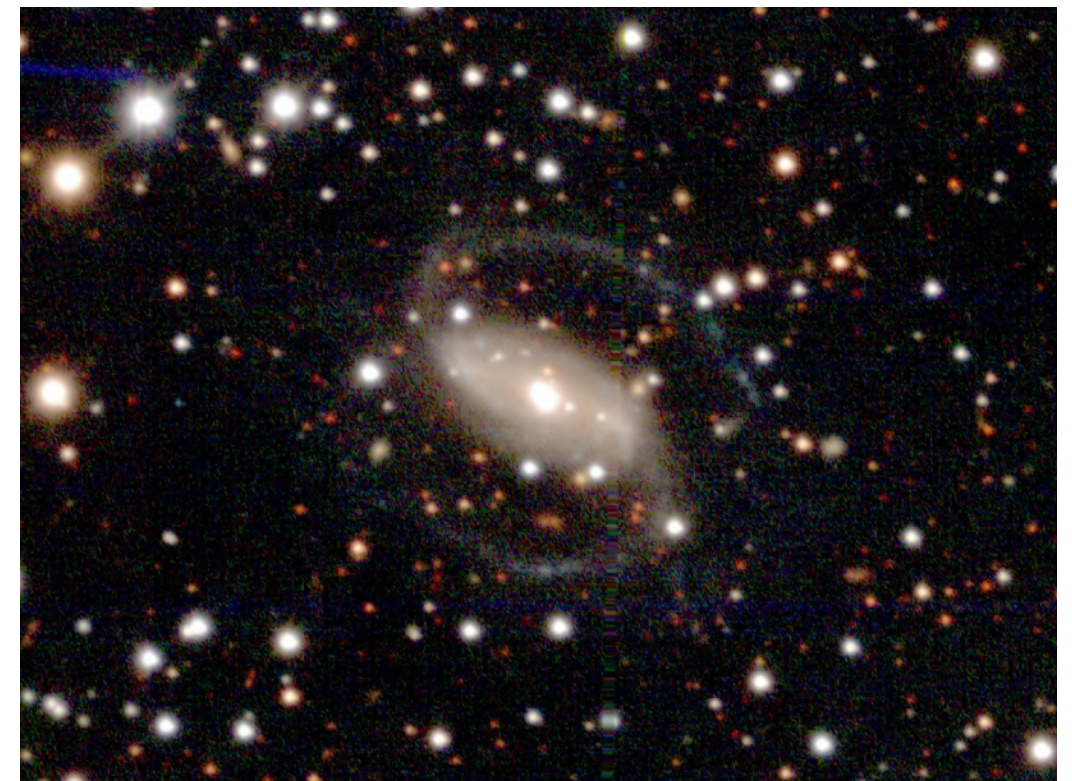


□ New HiPS at CDS

- **KS4: KMTNet Synoptic Survey of Southern Sky**
(Seo-Won Chang)
 - 4 bands B, V, R, I + color
 - Created by SNU
(with CDS assistance)
 - Hosted at CDS

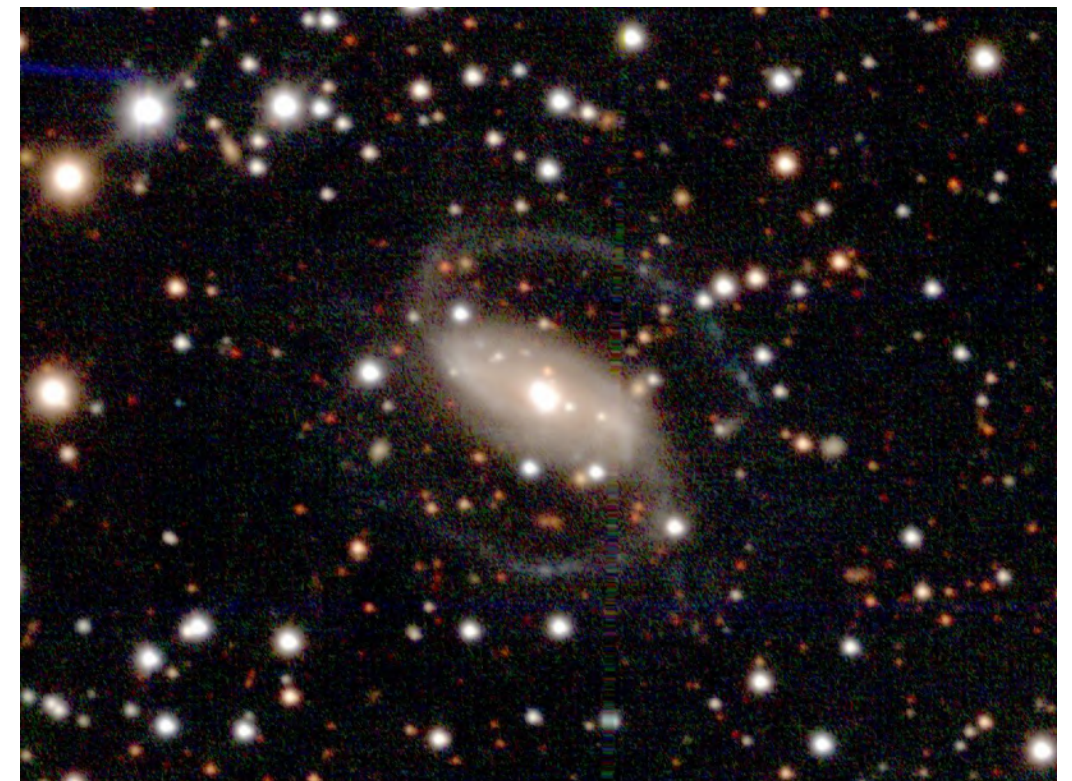
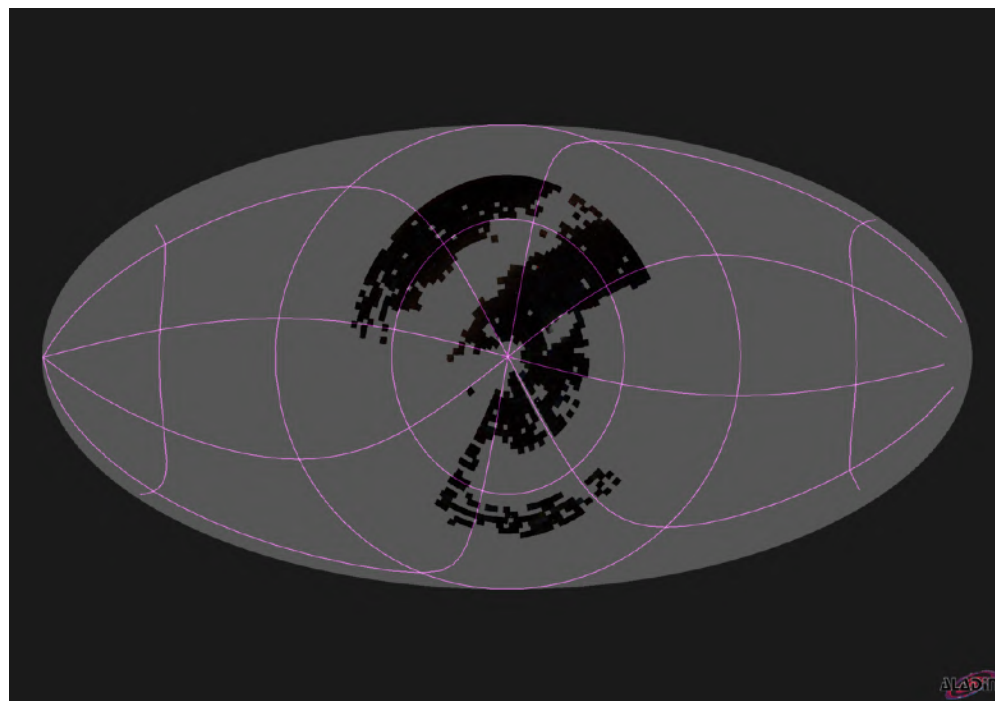
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- SPHEREx QR2
(M. Buga + T. Boch)
 - Band D1 published
 - Pre-processing:
 - Removal of zodiacal light
 - Many error flags set to NaN
 - Other bands to come

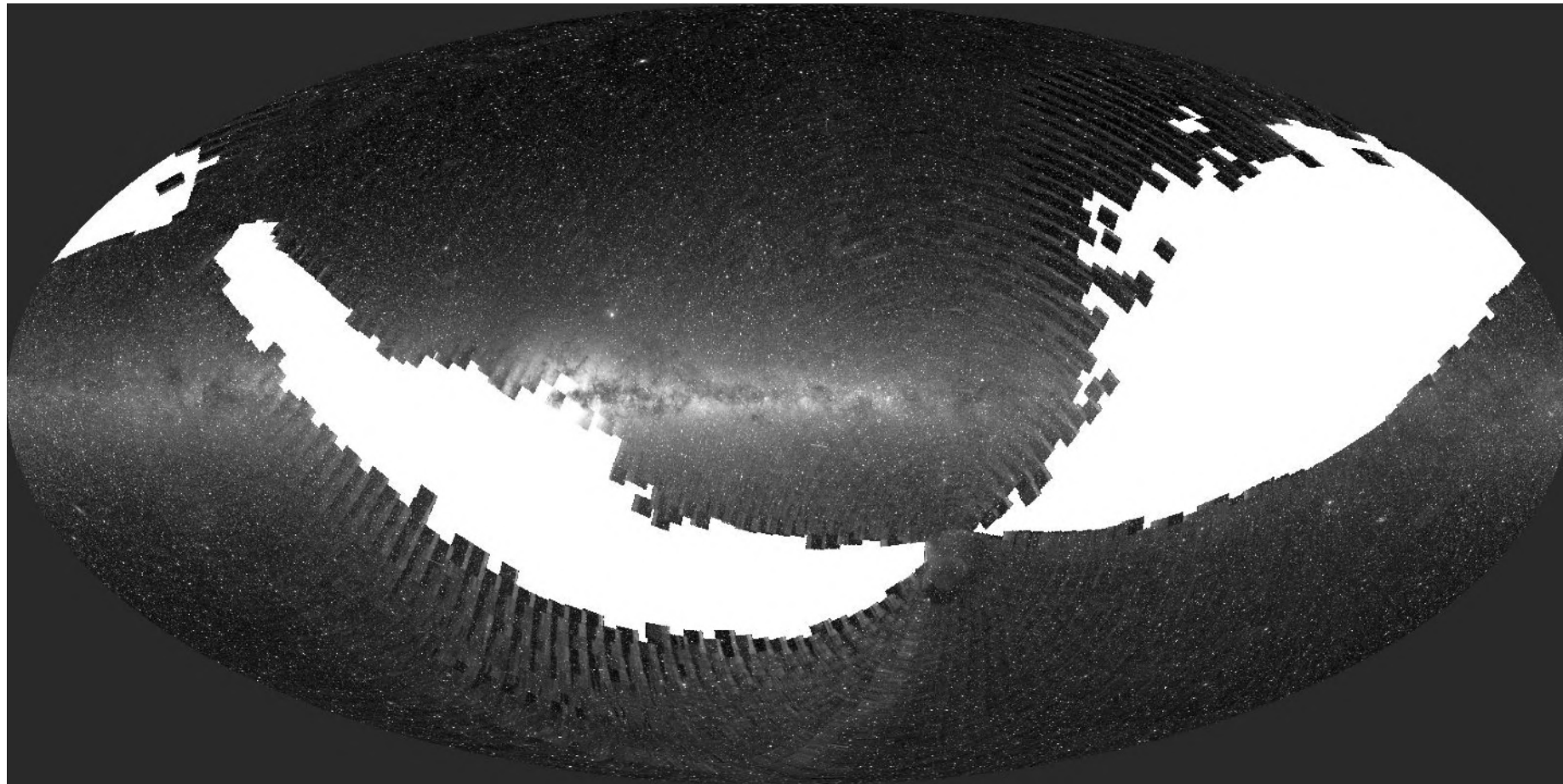
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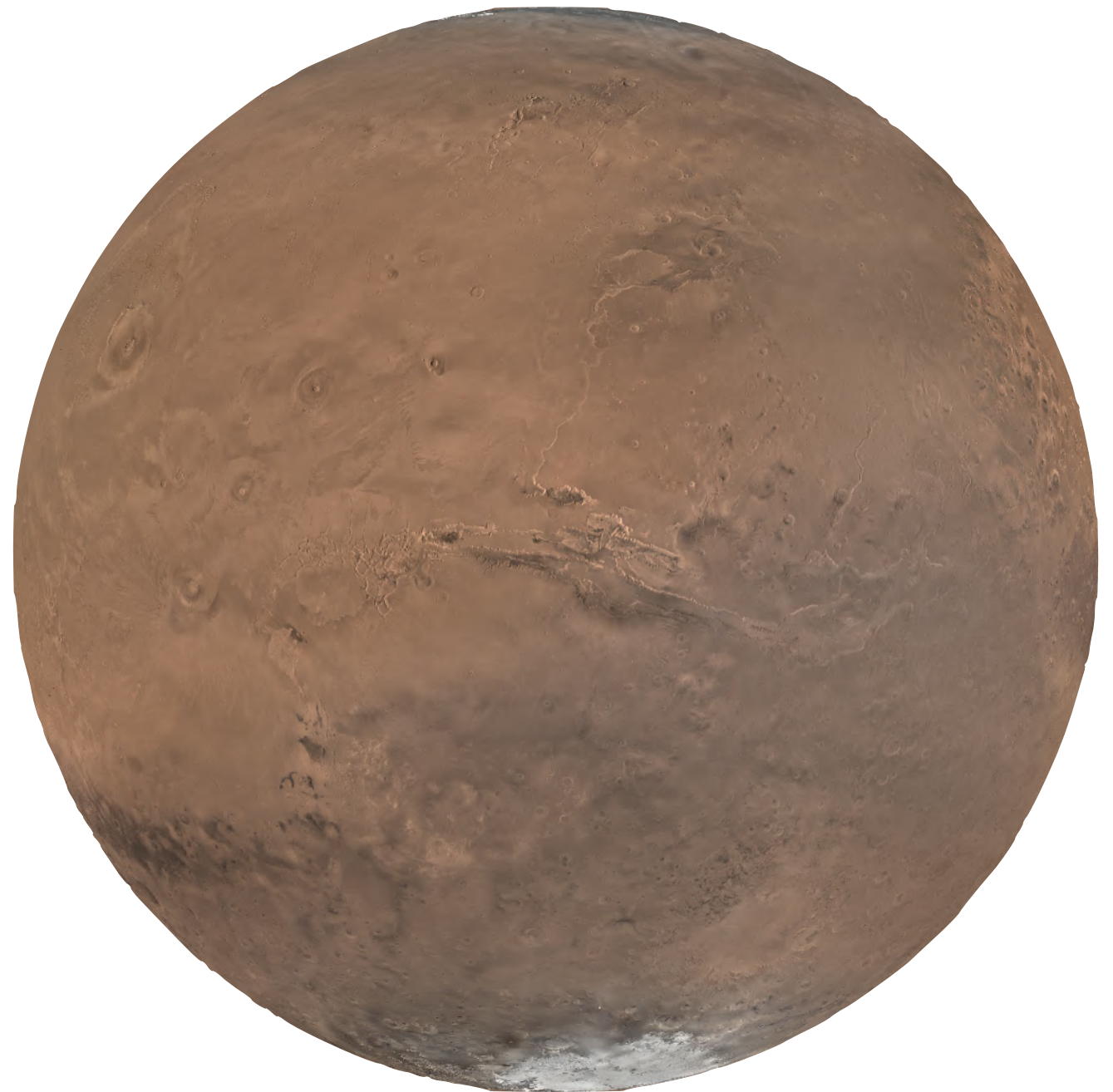
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□ New HiPS at CDS

- Planets HiPS
 - Come to session Solar System IG tomorrow

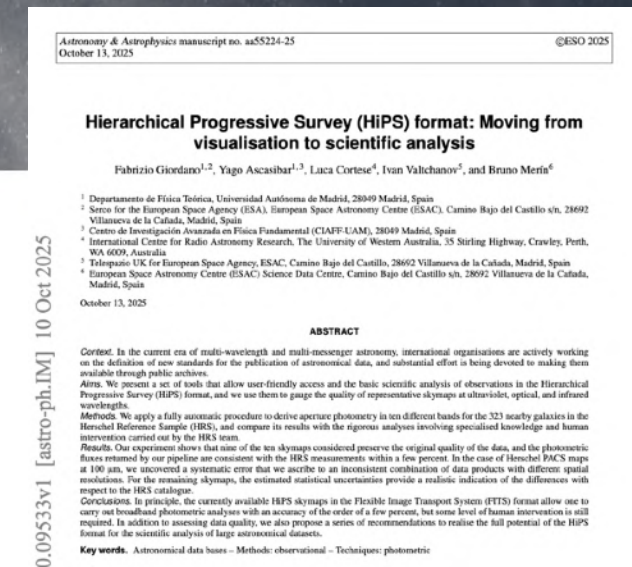


□ Other HiPS news

- *"HiPS format: moving from visualisation to scientific analysis"*
(Giordano et al.)
- New HiPS clients
 - **AstroBrowser**
(<http://astrobrowser.ft.uam.es/>)
 - **GLUE**
(<https://glueviz.org/>)
- HiPS generation by **reproject**
 - HiPS images and HiPS 3D

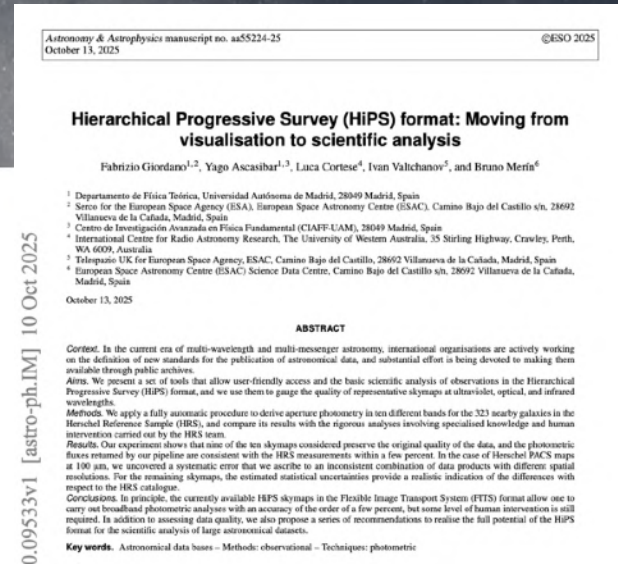
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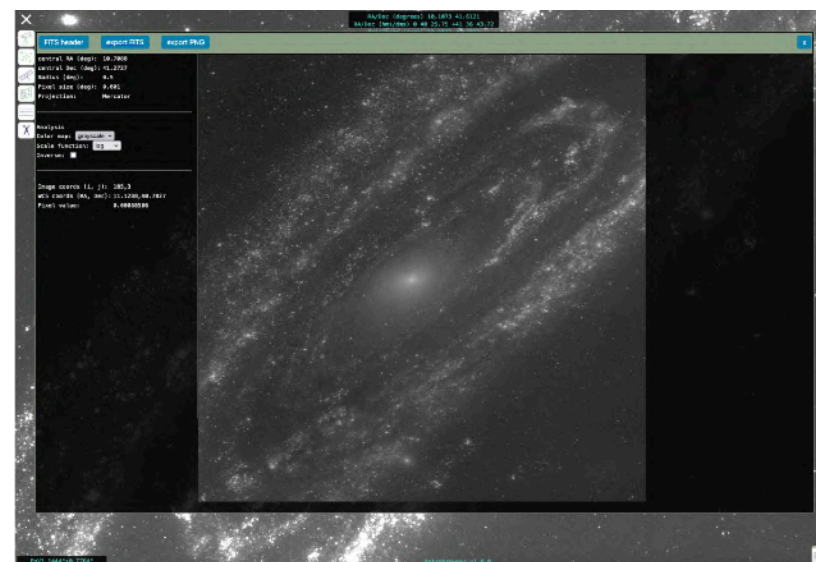


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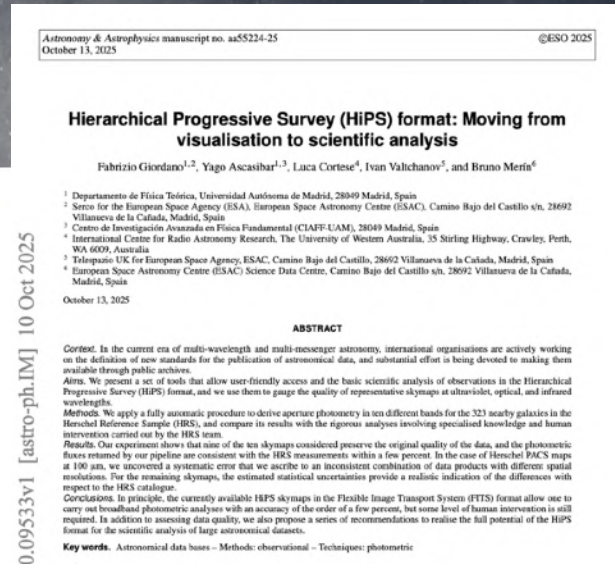


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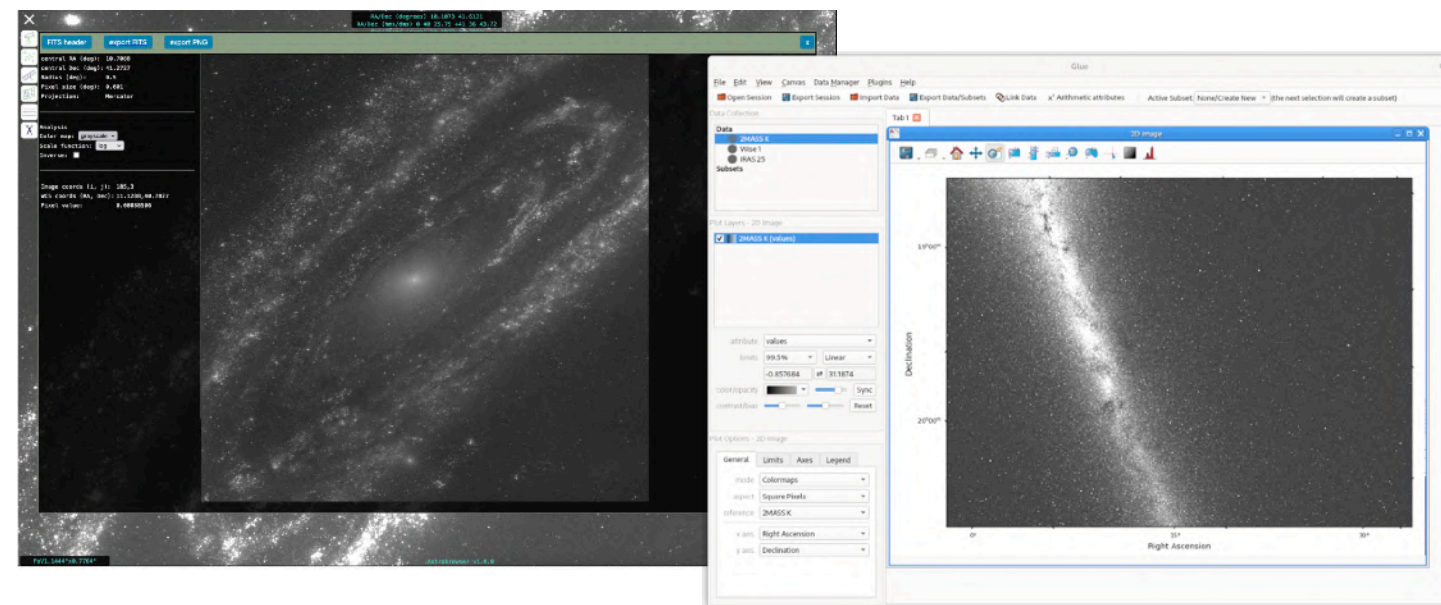


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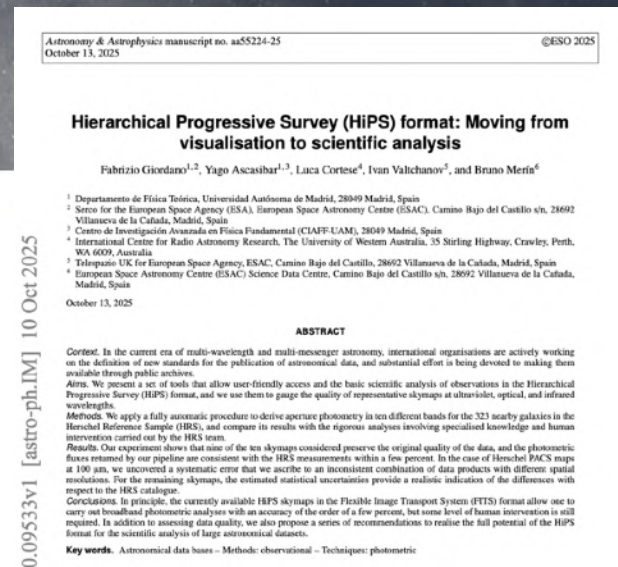
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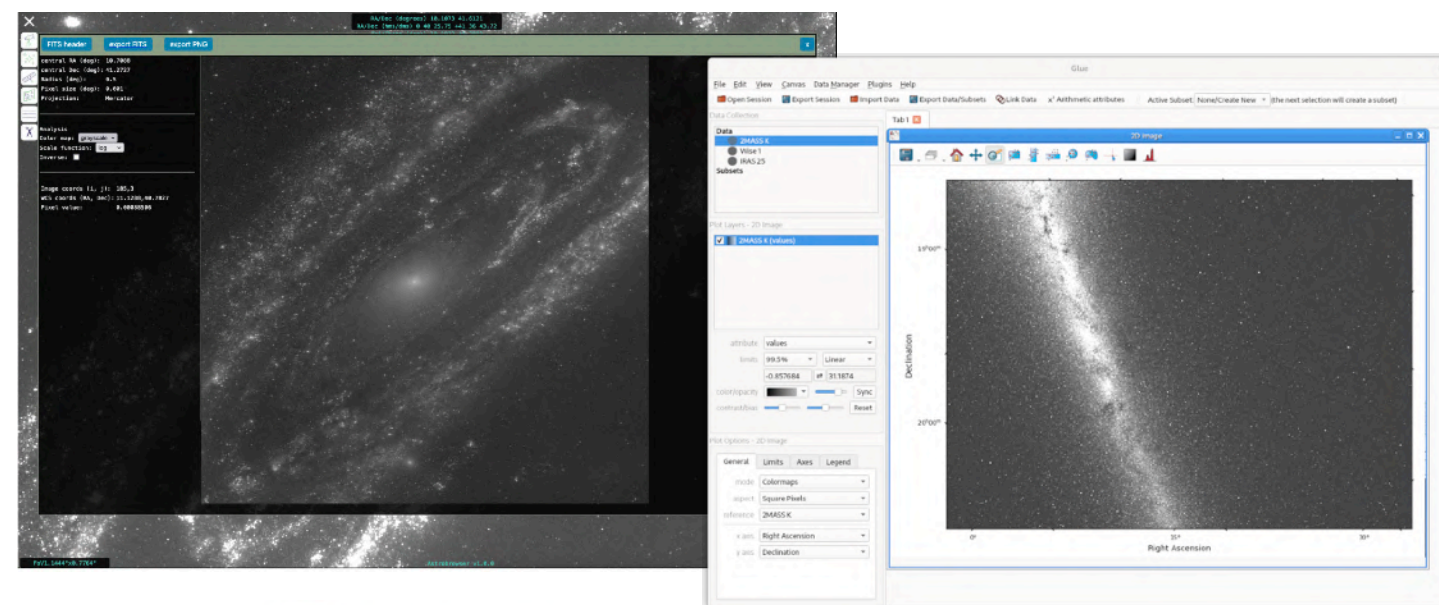
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HiPS (Hierarchical Progressive Surveys)

Warning

The hips functionality in the reproject package is currently experimental, so use with care and please report issues at <https://github.com/astropy/reproject>

HiPS (Hierarchical Progressive Surveys) is a standard that can be used to representing astronomical images by a series of tiles at different resolutions. It is used for example by Aladin.

The `reproject.hips` sub-package includes helper functions for constructing HiPS datasets from a variety of inputs. The main function is `reproject_to_hips()`, which takes in data in a variety of formats and types (see `reproject_to_hips()`), for example FITS files, HDU objects, PNG/JPEG images with AVM metadata, and so on.

Unlike the other reprojection functions, the output is not a file but a directory, which contains all the tiles, as well as metadata and an `index.html` file which can be used to view the dataset.

- HiPS generation by reproject
 - HiPS images and HiPS 3D

□ Conclusion

- HiPS network is growing
- 40+ new or updated HiPS at CDS in the last 6 months
- New clients, new HiPS generator
- HiPS 3D are coming







