

HiPS network status

New HiPS datasets, new HiPS nodes



Apps 1 - *Görlitz Interop Nov 2025*



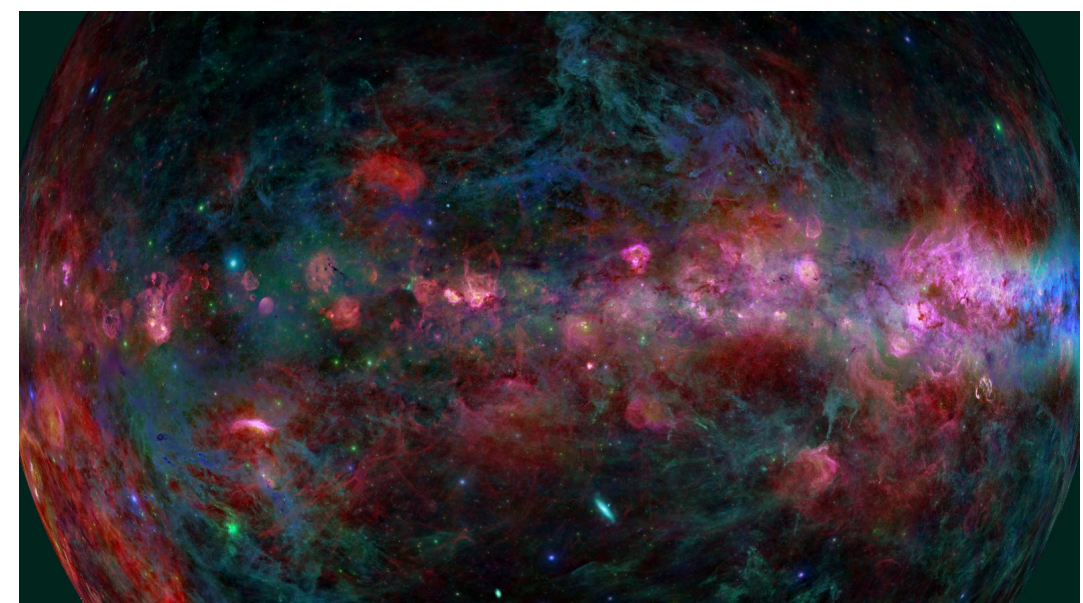
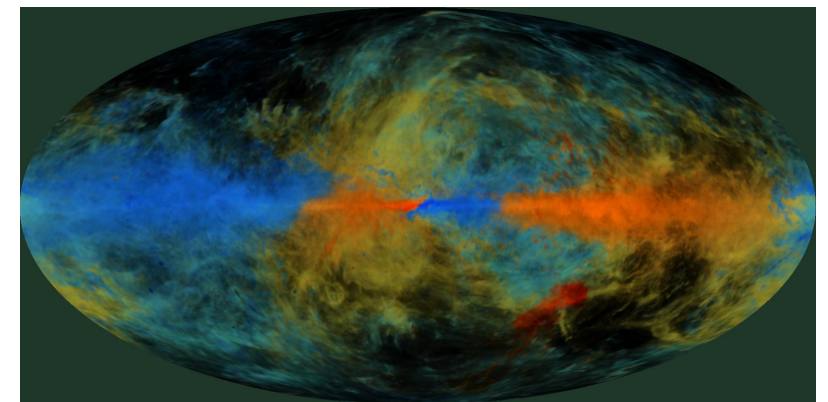
Thomas Boch

□ 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

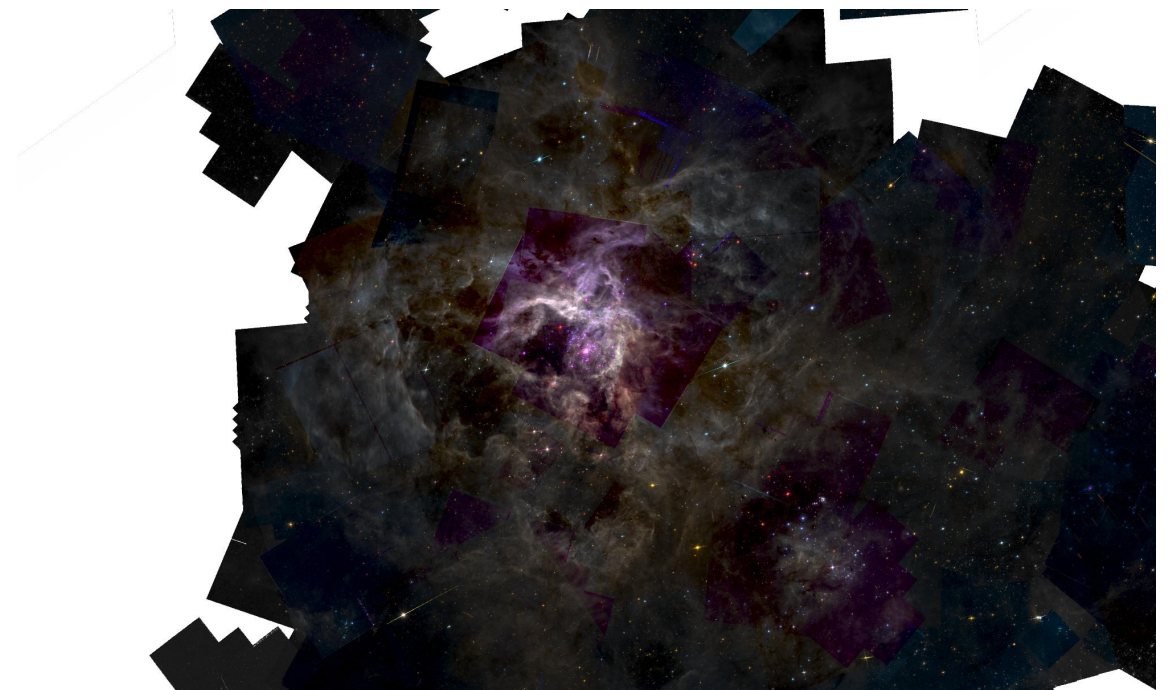
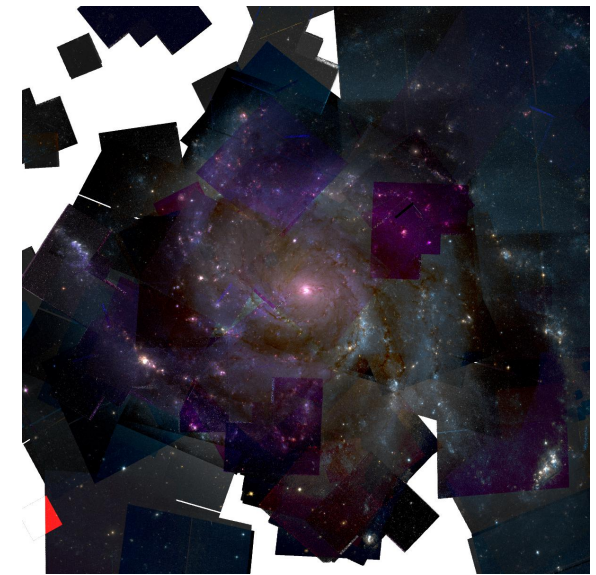
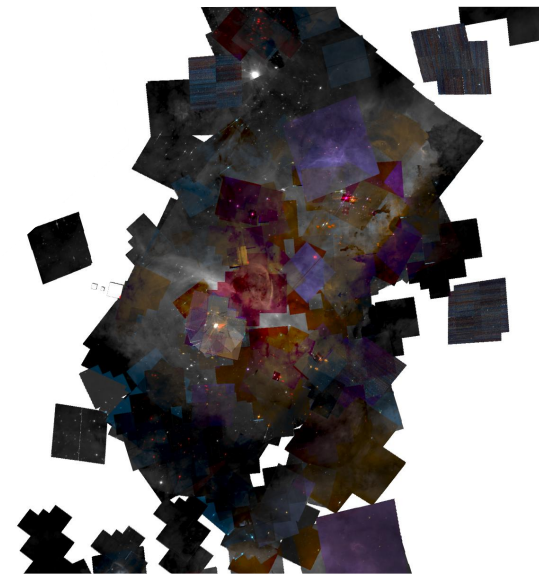


□ Many HiPS not registered

- 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



□ New HiPS at CDS

- Euclid Q1

(T. Boch)

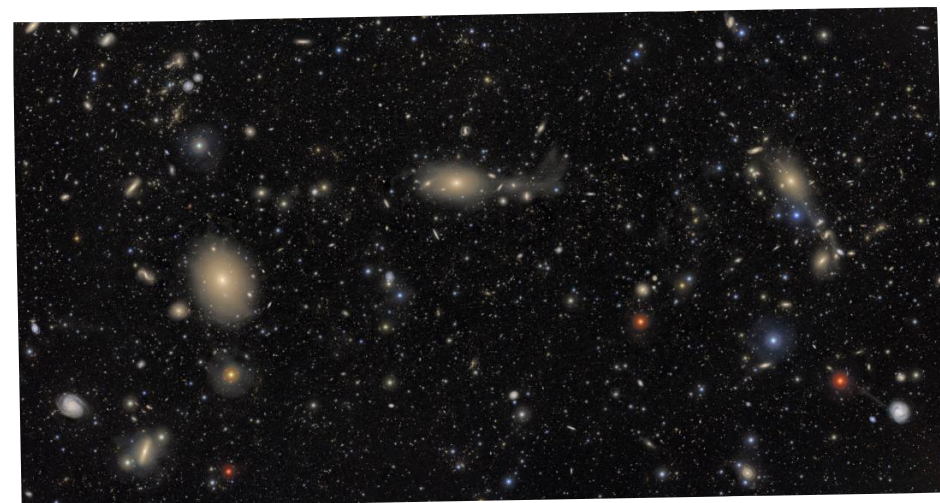
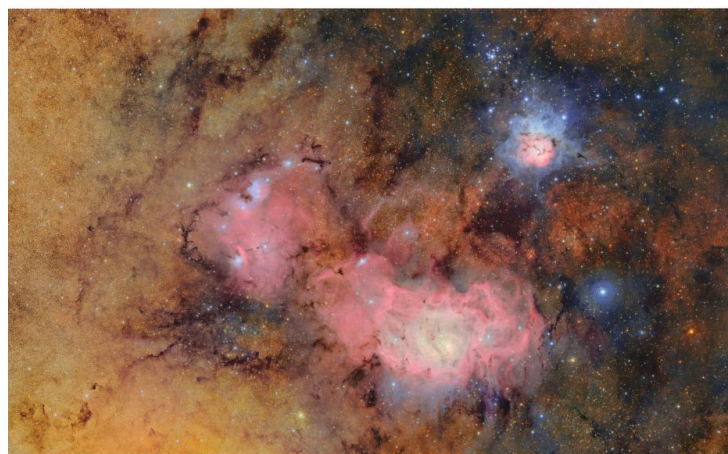
- 4 HiPS (3 NIR + VIS)
- Color HiPS
 - 1. **RGB** from NISP.H, NISP.Y, VIS
 - 2. **luminance** given by VIS



- Rubin First Look

(T. Boch)

- Color HiPS only

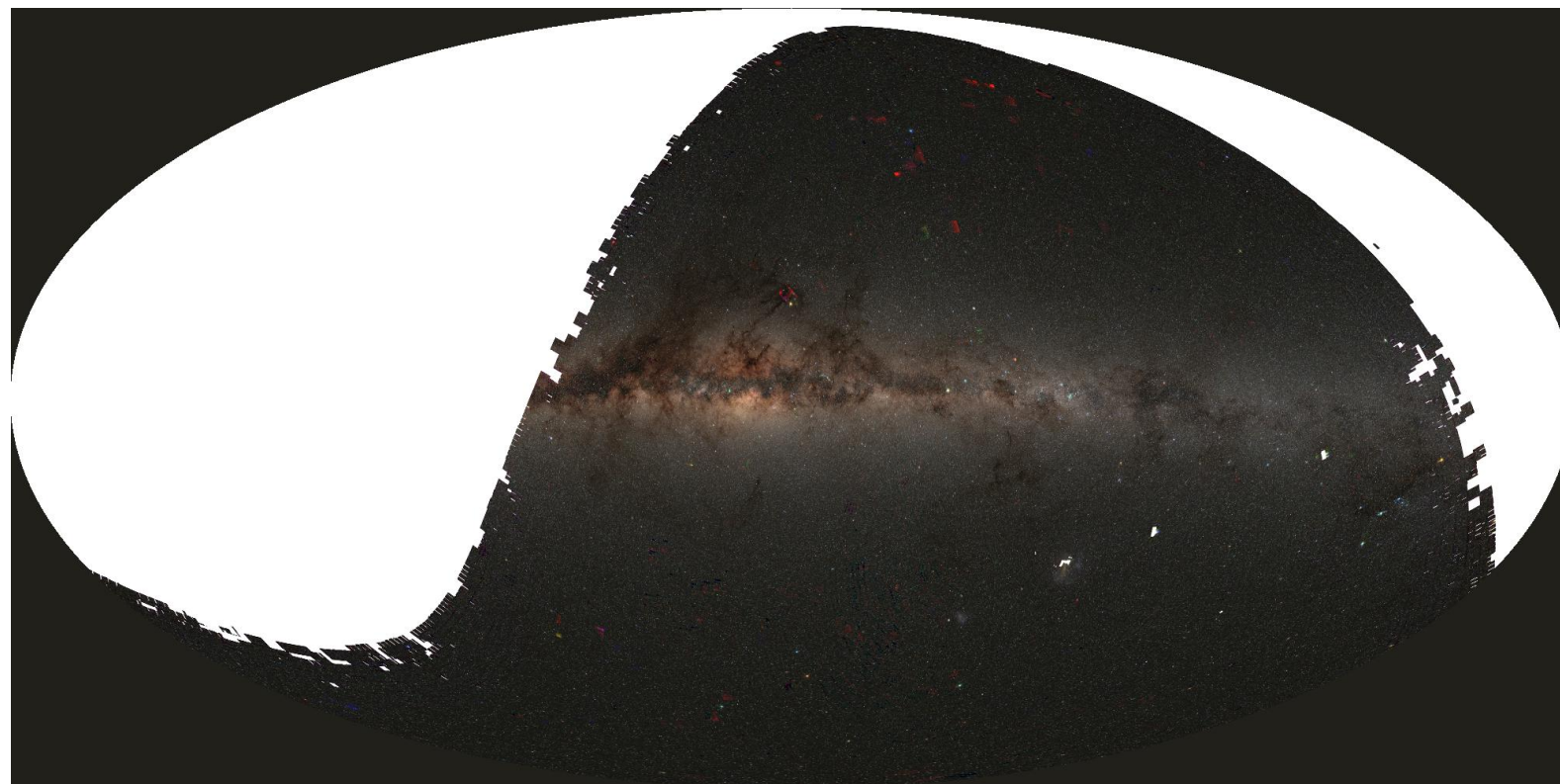


□ New HiPS at CDS

- SkyMapper DR4

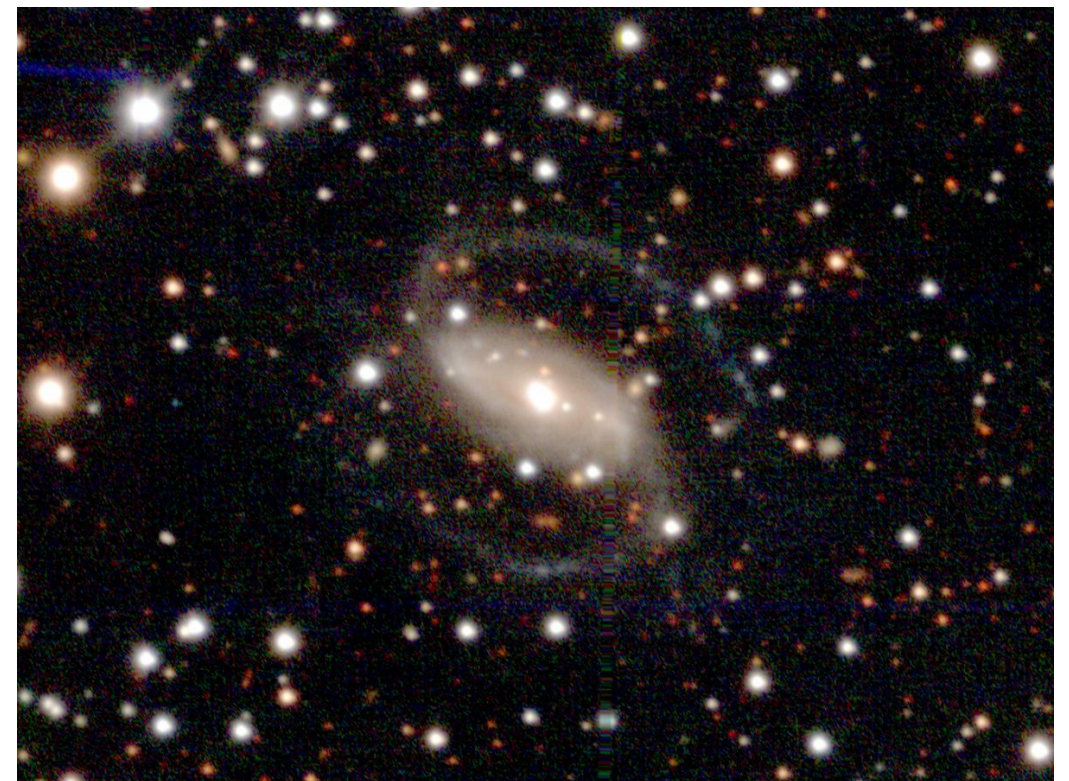
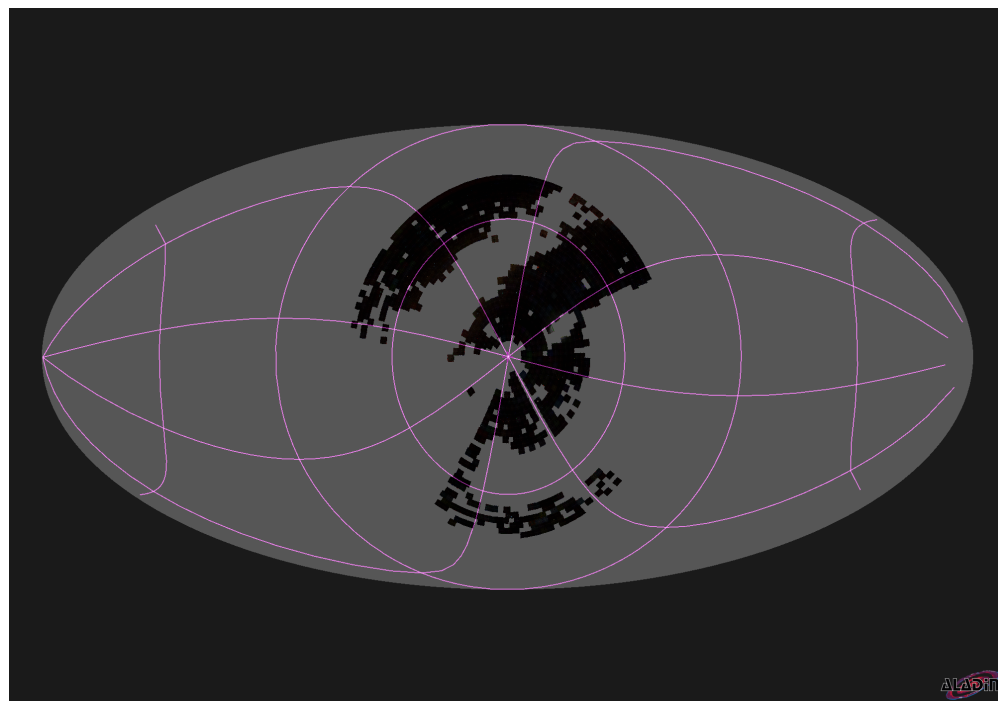
(T. Boch + C. Onken)

- *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



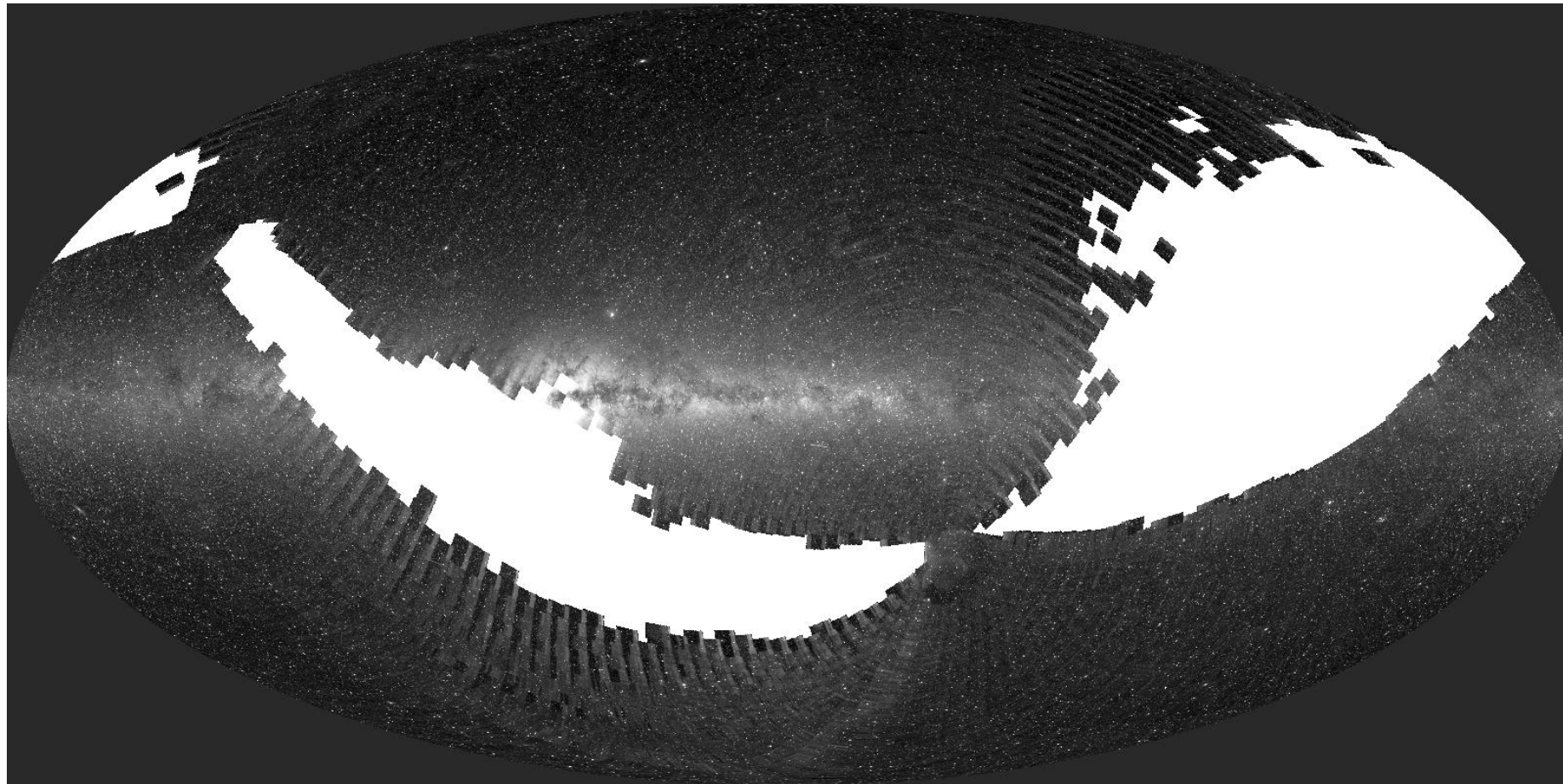
□ New HiPS at CDS

- **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



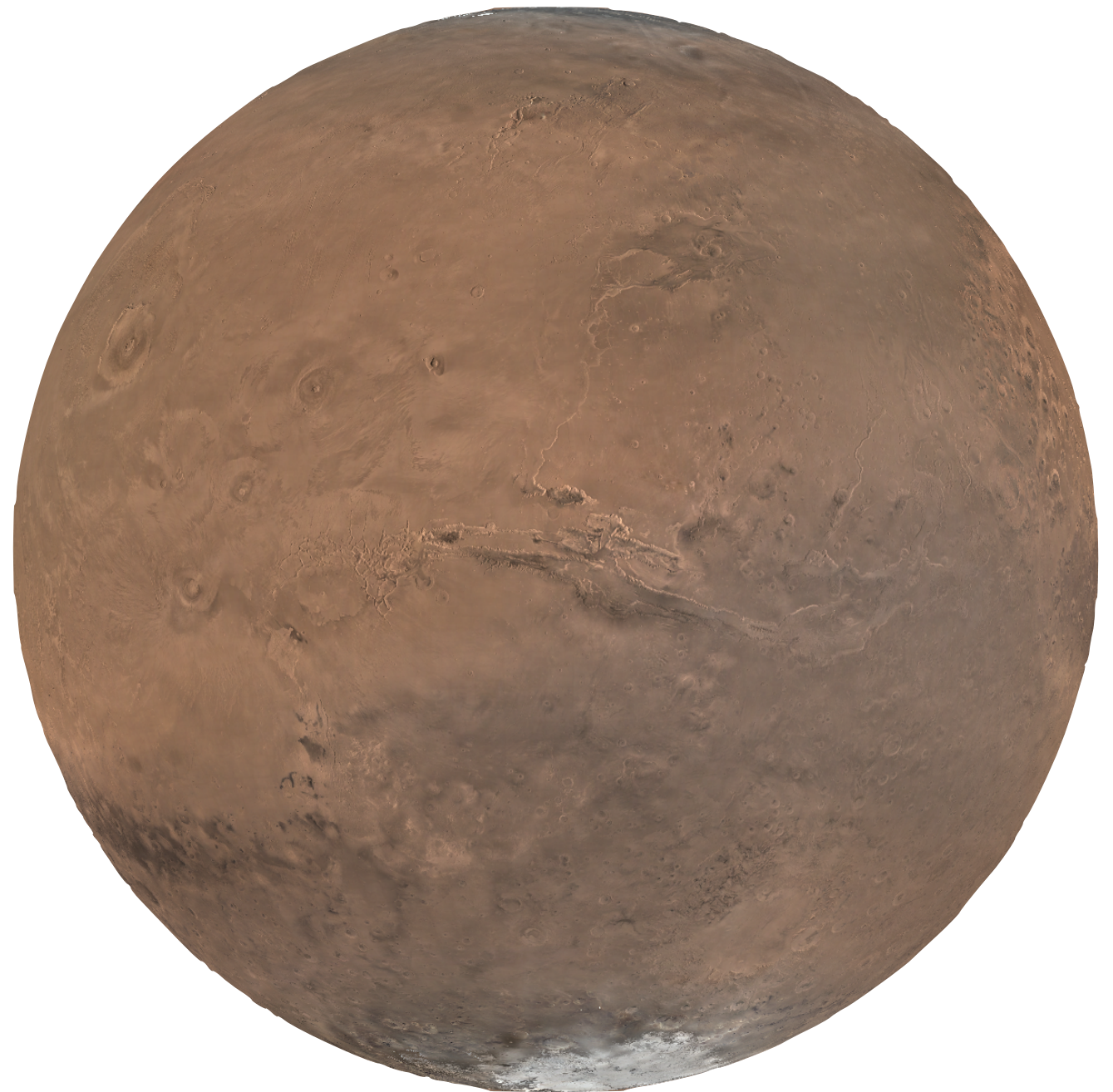
□ New HiPS at CDS

- **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



□ New HiPS at CDS

- Planets HiPS
 - Come to session Solar System IG tomorrow

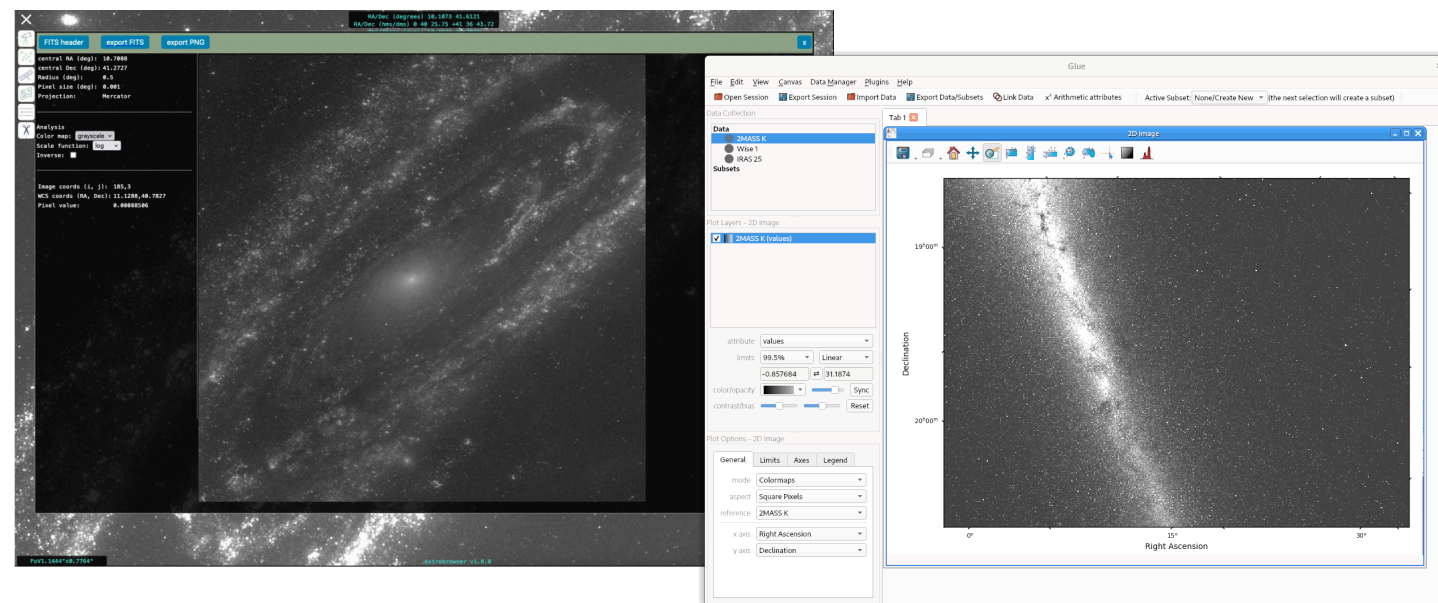
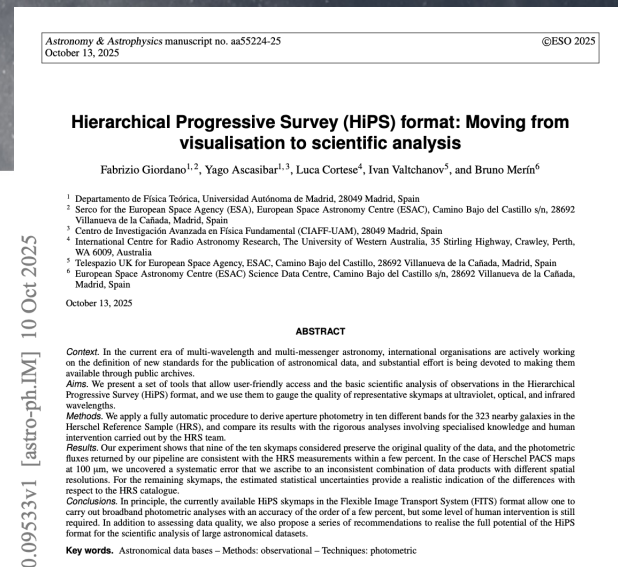


Other HiPS news

- "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



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.

□ 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