

Starlink: the 2025A release

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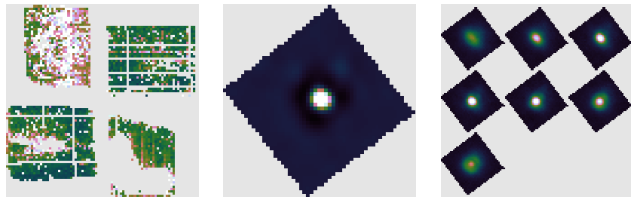
The Starlink software collection

Currently maintained by the East Asian Observatory, primarily to support data from the James Clerk Maxwell Telescope. Contains various packages, for example:

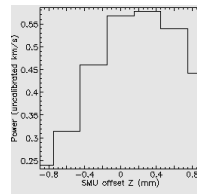
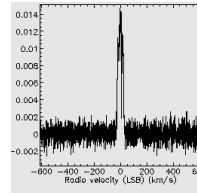
- *Data reduction*: SMURF (current JCMT instruments), CCDPACK (imaging), POLPACK (polarimetry)
- *Analysis*: CUPID (clump analysis), KAPPA (general purpose), PHOTOM (photometry)
- *Visualization*: GAIA image / data cube viewer.

Releases also include:

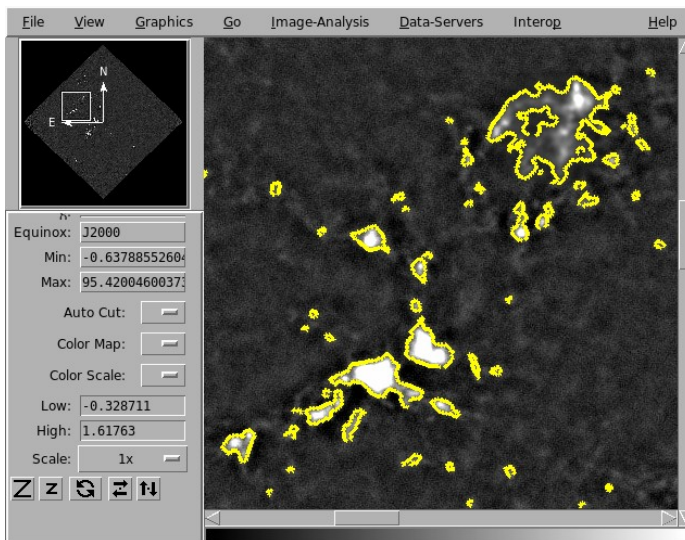
- ORAC-DR pipeline.
- StarJava applications: TOPCAT, SPLAT.



← Preview images for SCUBA-2 noise, pointing and focus observations.



↑ Preview images for heterodyne pointing and focus observations.



← GAIA image viewer with a MOC of detected emission outlined in yellow.

The 2025A (and 2023A) releases

Include the last four years of developments since Starlink was last presented at ADASS, such as:

- Updates for modern systems:
 - Starlink is now available via Flatpak (package manager) for easy installation on Linux.
 - Scripts converted from csh to sh (to allow usage on systems without csh).
 - Python scripts use interpreter “python3” (instead of unversioned “python”).
- Multi-threading has been added to more applications:
 - *CUPID*: GaussClumps method.
 - *KAPPA*: BLOCK image smoothing program.
- Support for IVOA MOC (Multi-Order Coverage) has been improved:
 - *AST library*: small features can be added to lower resolution MOCs. The outline tracing routine now handles more complex MOCs.
 - *KAPPA*: new MOCGEN program.
 - *GAIA*: only draws the part of the MOC overlapping the current plot.
- The PICARD MAKE_HIPS recipe has been made (slightly) more efficient and can take (HEALPix) “JSA tiles” as input.
- The SCUBA-2 (continuum camera) and heterodyne (spectral line) pipelines now produce useful preview images for pointing, focus and noise observations.
- A telescope position validation option (TELPOSERRMAX) was added to the heterodyne reduction program MAKECUBE.
- Various new Wesley (pre-processing pipeline) recipes to handle problematic raw data:
 - CLEAR_HEADER_SIMULATE
 - COPY_BLANK_HEADERS
 - FILTER_DOME_OPEN
 - FIX_HEADER_IFFREQ
 - FIX_HEADER_LST
 - FIX_HEADER_STEPTIME
 - FIX_INCONSISTENT_OBJECT
 - REMOVE_NAN_VALUES