Automated Curation of Infrared Imaging Data in the WFCAM and VISTA Science Archives

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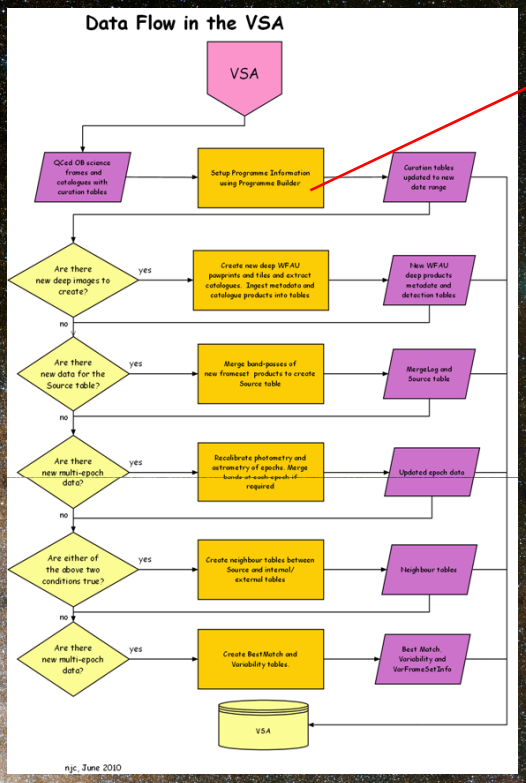

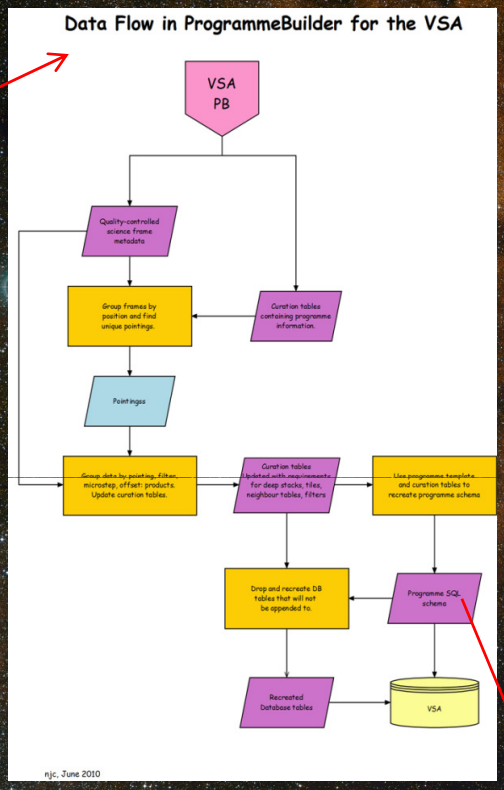

Template for colours in Source tables. Tags are used by **ProgrammeBuilder** to generate final schemas, including SQL code, and descriptor information.
The coloured parts show 3 schemas generated from the template:
VHS – Y,J,H, Ks (Y-J, J-H, H-Ks). The extra J-Ks term is useful because some regions only have J and Ks, and this avoids having all default values.
VMC - Y, J and Ks (Y-J, J-Ks).
VVV – Z,Y,J,H,Ks (Z-Y, Y-J, J-H, H-Ks)

The Wide Field Astronomy Unit at the IfA, Edinburgh process and archive imaging data from survey telescopes (UKIRT-WFCAM and VISTA).

- Wide range of programmes: main public surveys (100s hours) and small PI programmes (~ hours) data.
- Range from deep single pointings (UDS, Ultravista) to hemisphere surveys (VHS).
- Can be multi-epoch (deep, and/or wide e.g. VVV)
- Many common components:
  - deep stacks/mosaics,
  - band-merged catalogues,
  - neighbour tables
  - multi-epoch tables.
- Use data to control data flow.
- Public Surveys: additional Quality Control by survey teams + some additional features (external products created by teams).

All the control and setup parts of the automated pipeline are written in OO Python. See Collins et al. 2009, ASPC, 411, 226.

The main changes in the last two years are to do with the start up of VISTA:

- Now we have multiple layers of deep products (pawprints, tiles, mosaics)
- The ProgrammeBuilder is run on public surveys as well as PI programmes. This is designed to append to the current setup.
- Reduced the distinction between deep and shallow programmes – just a continuum.
- External products can be added in
- Multiple programmes can be added together.
- Narrow band filters and galactic extinction are handled better.

These changes allow much greater flexibility.