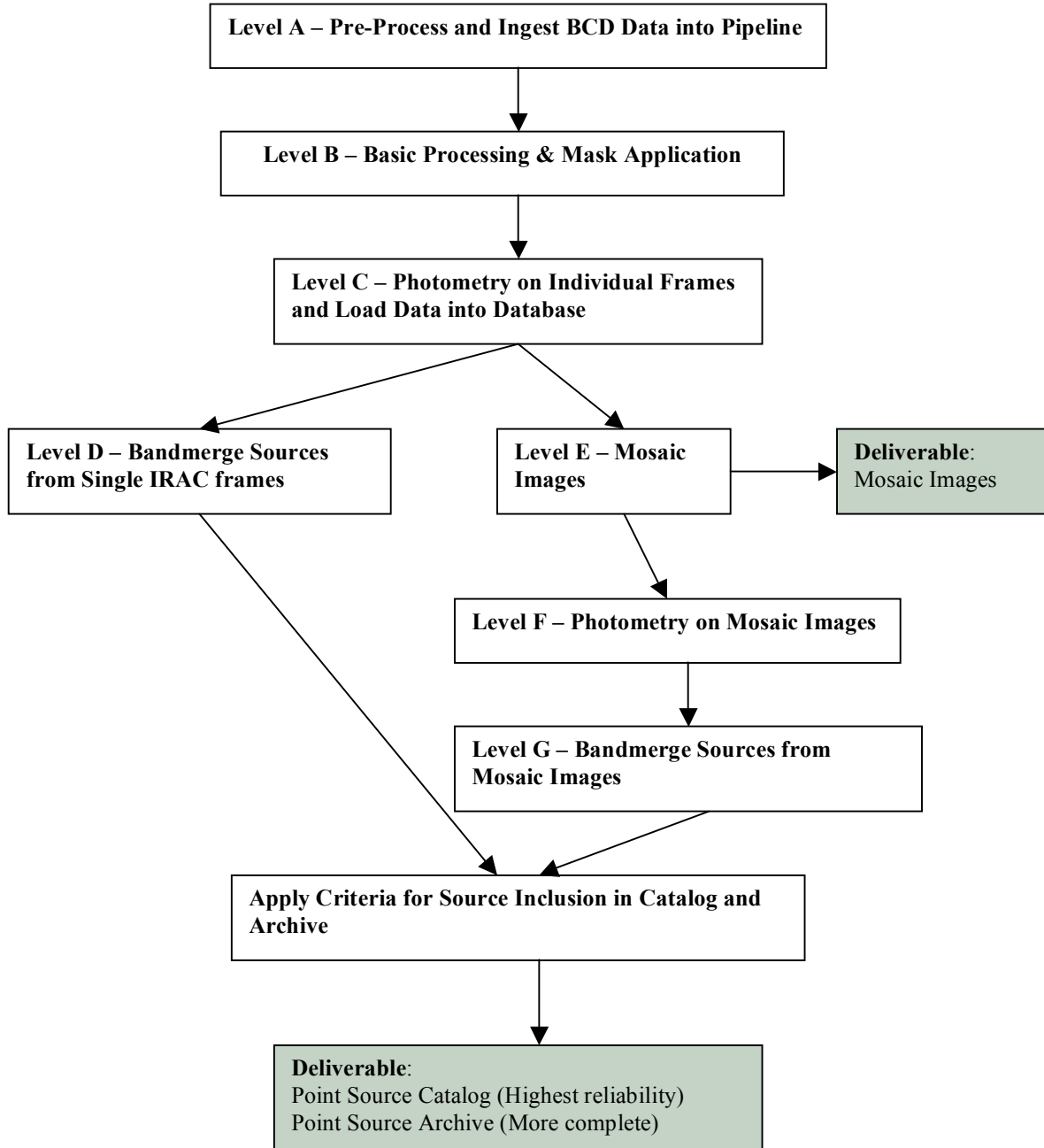
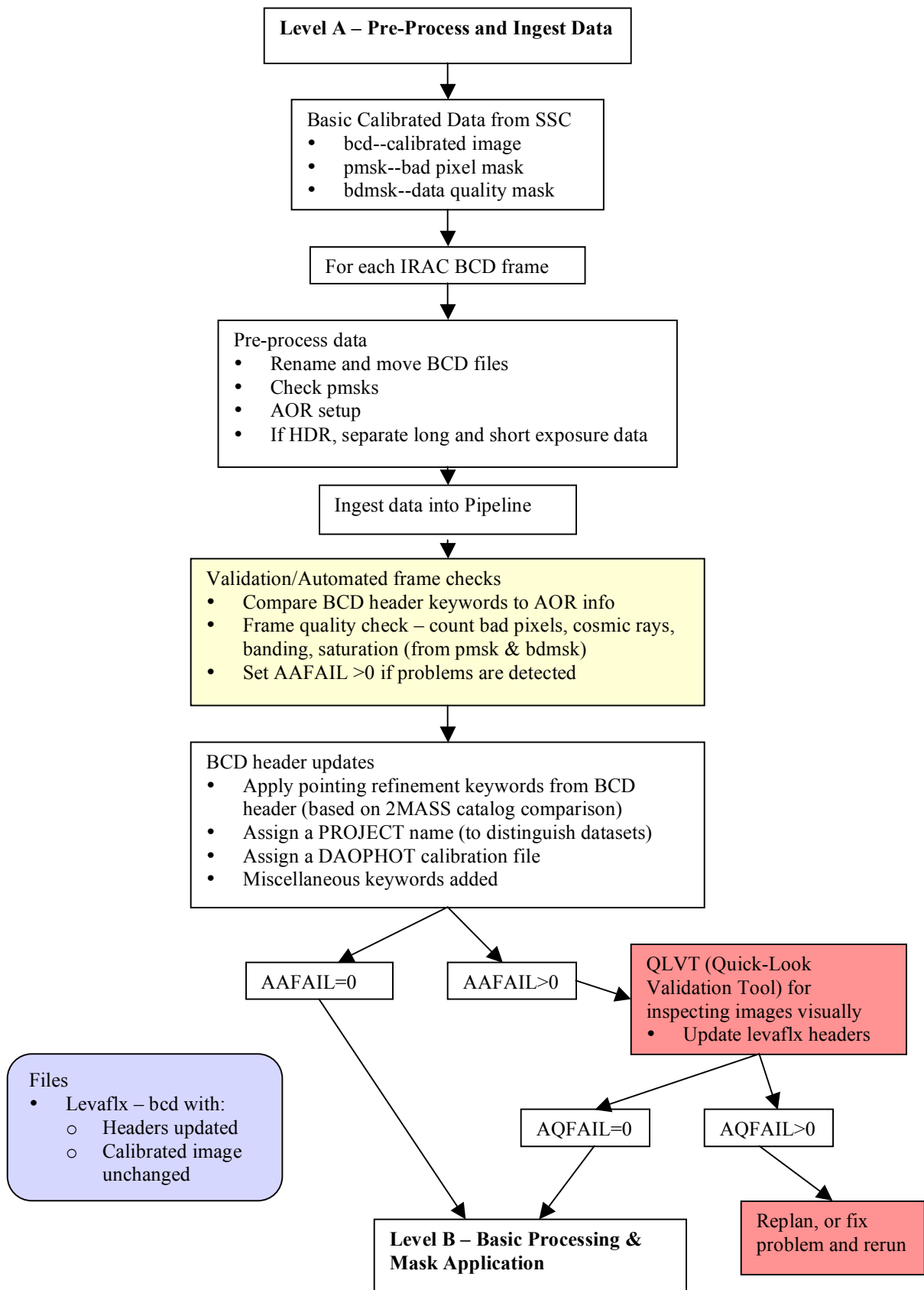
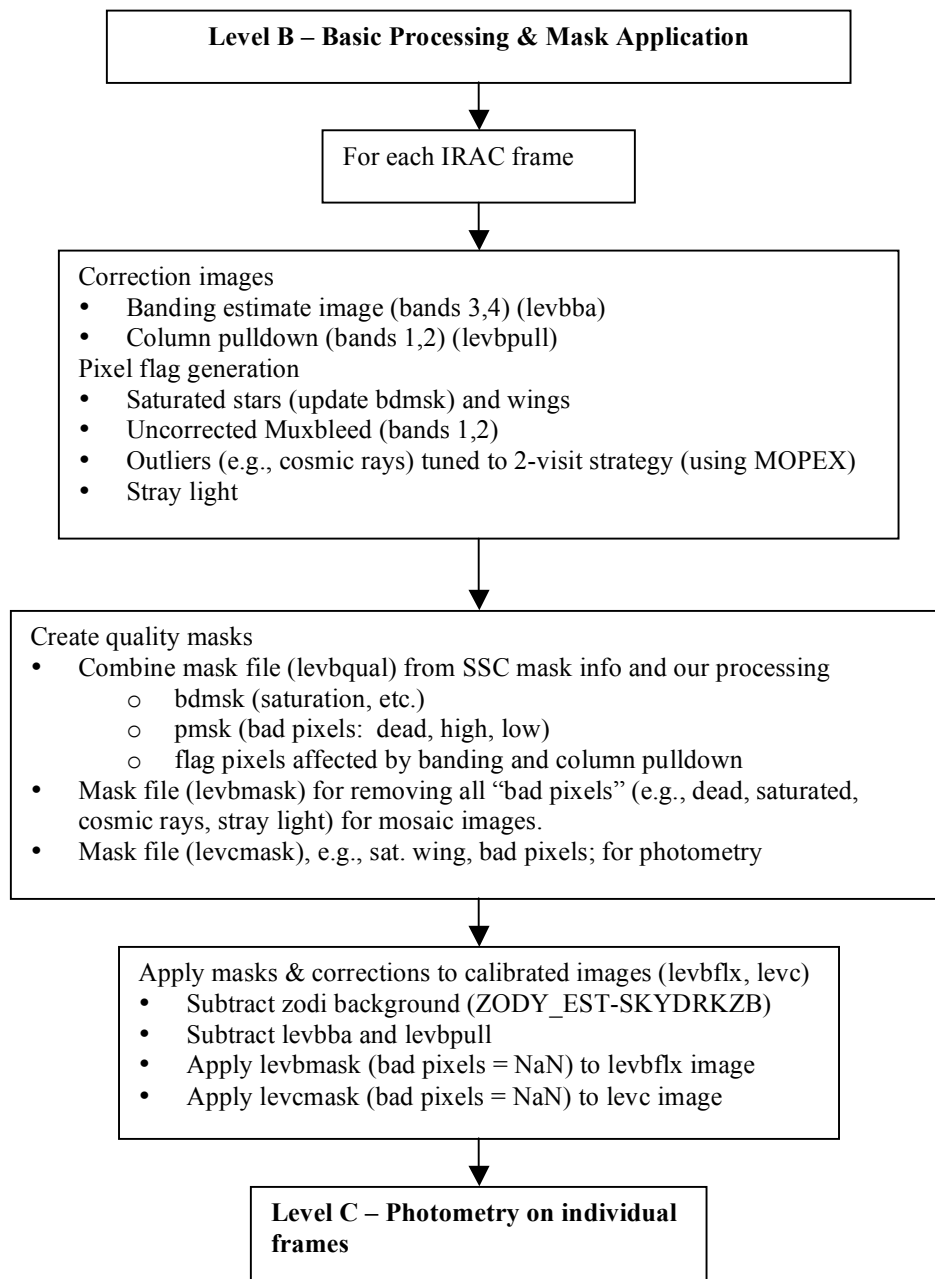


Wisconsin IRAC Data Processing

Available at www.astro.wisc.edu/glimpse/flowchart.pdf







Files

- levbflx—calibrated image (used for mosaic product)
- levbqual—combined mask (informational)
- levbmask—levbflx image mask
- levbba—banding estimate image for bands 3&4
- levbpull—column pulldown estimate image (bands 1,2)
- levbmux—muxbleed estimate image (bands 1,2)
- levbflx_smask—stray light masks
- levbflx_rmask—outlier masks
- levc—calibrated DN image (used for photometry), converted to DN
- levcmask—levc image mask

Level C – Photometry on Individual Frames, Load to Database

Photometry

- Find stars: DAOPHOT FIND
 - Modified for complex background variations in GLIMPSE fields which helps minimize false source detections
- Photometry: DAOPHOT ALLSTAR
 - Iterative PSF fitting
- “Tweaking,” (improves ALLSTAR results in complex backgrounds)
 - Aperture photometry on flattened residual image to correct over- and under- subtracted sources.

Update DAOPHOT calibration file:

- Generate PSFs for the 4 IRAC wavelengths
- Establish tweaking parameters for 4 IRAC wavelengths

Files

- levcregid—residual images
- levc.cat—source lists
- tweak file
- Log/trailer files

Post-process residual images

- Mask outer 4 rows/columns

Load images into database (BCD, levels A-C)

Make master source lists

- Pixel positions (x,y) converted to (RA,dec), and (l,b)
 - Including geometric distortion (WCSLIB)
- Add Source Quality Flag (from Level B, and Level C processing)
- Local Source density calculation

Files

- levc.mwcs—master source lists (for each frame)

Load master source lists into database

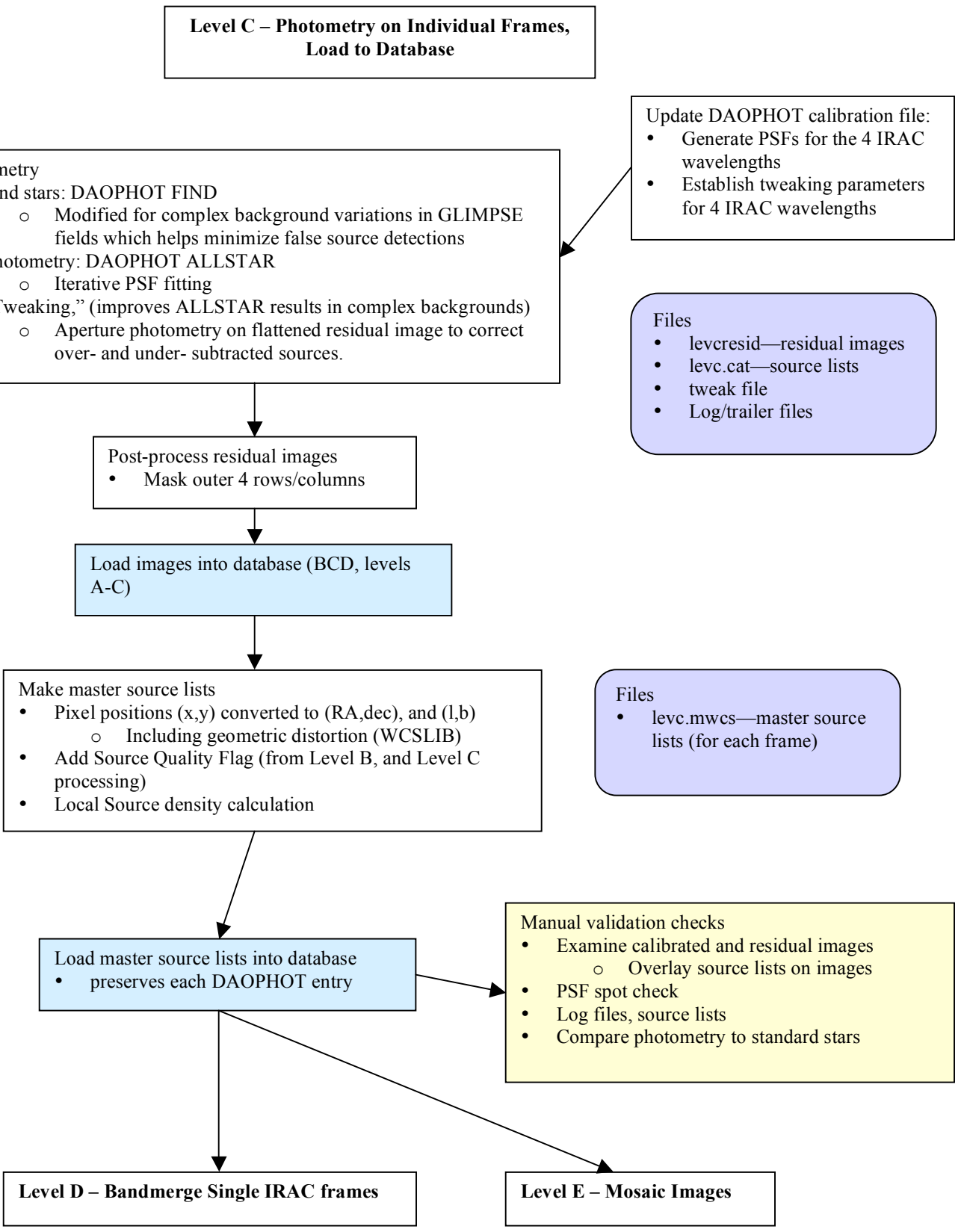
- preserves each DAOPHOT entry

Manual validation checks

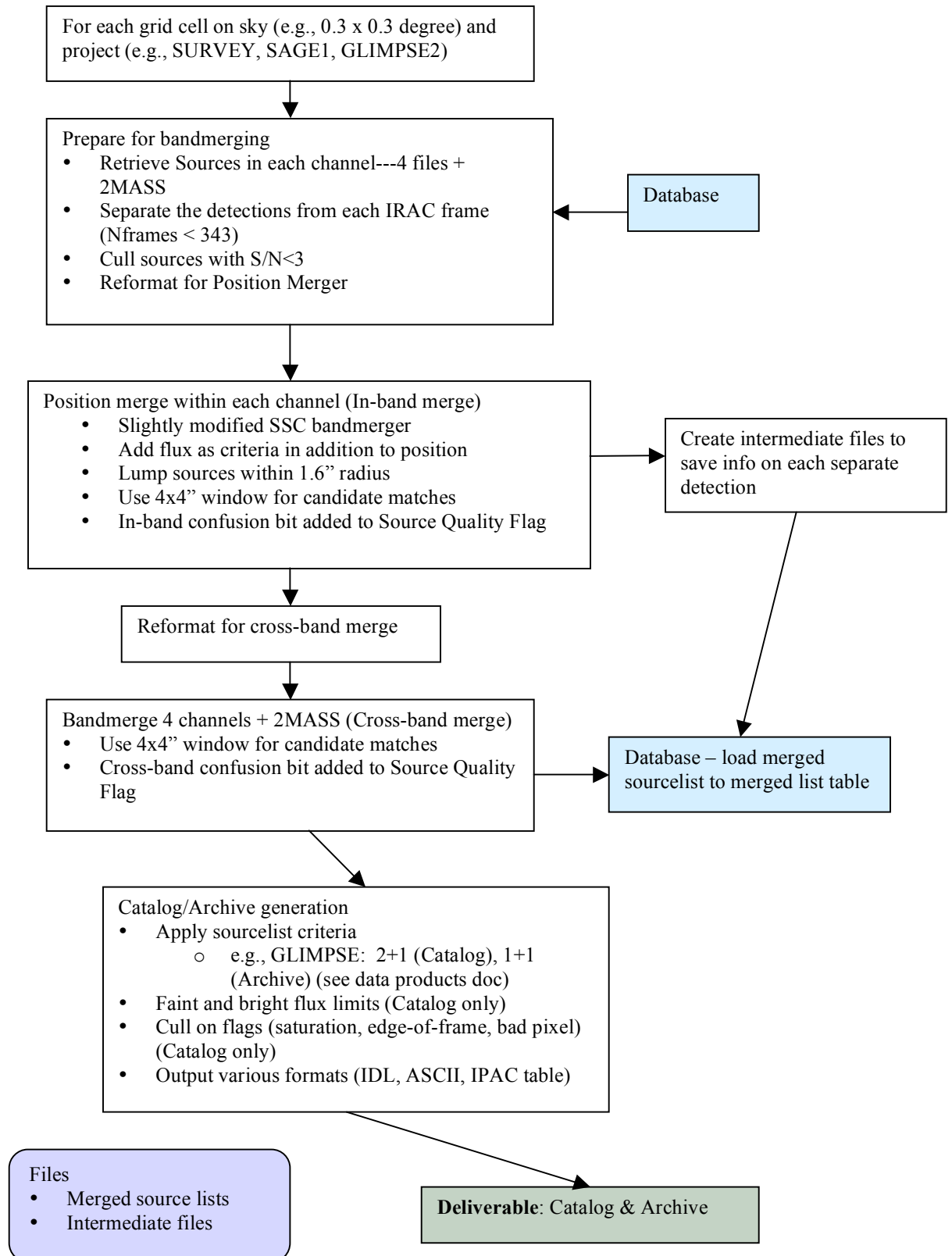
- Examine calibrated and residual images
 - Overlay source lists on images
- PSF spot check
- Log files, source lists
- Compare photometry to standard stars

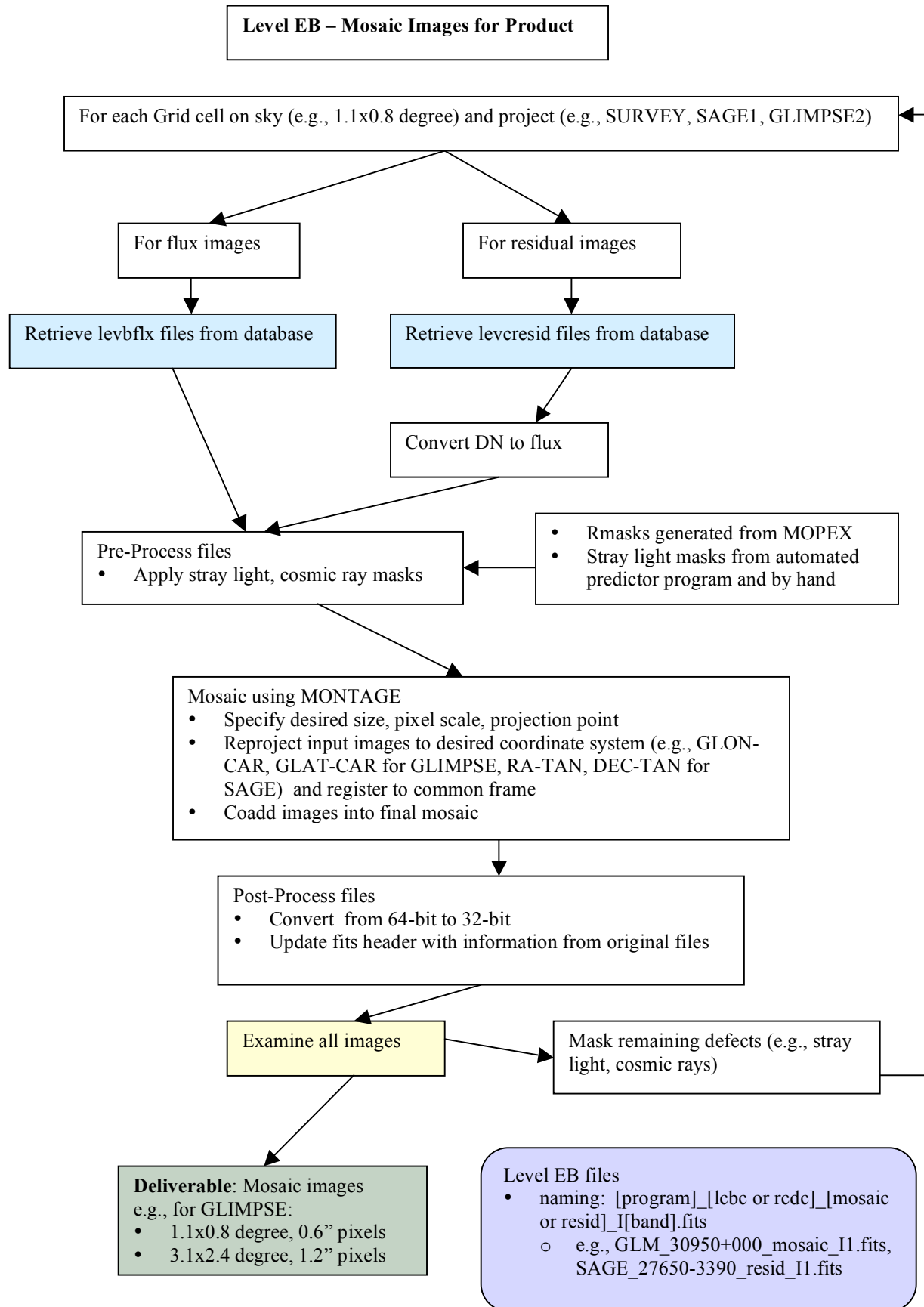
Level D – Bandmerge Single IRAC frames

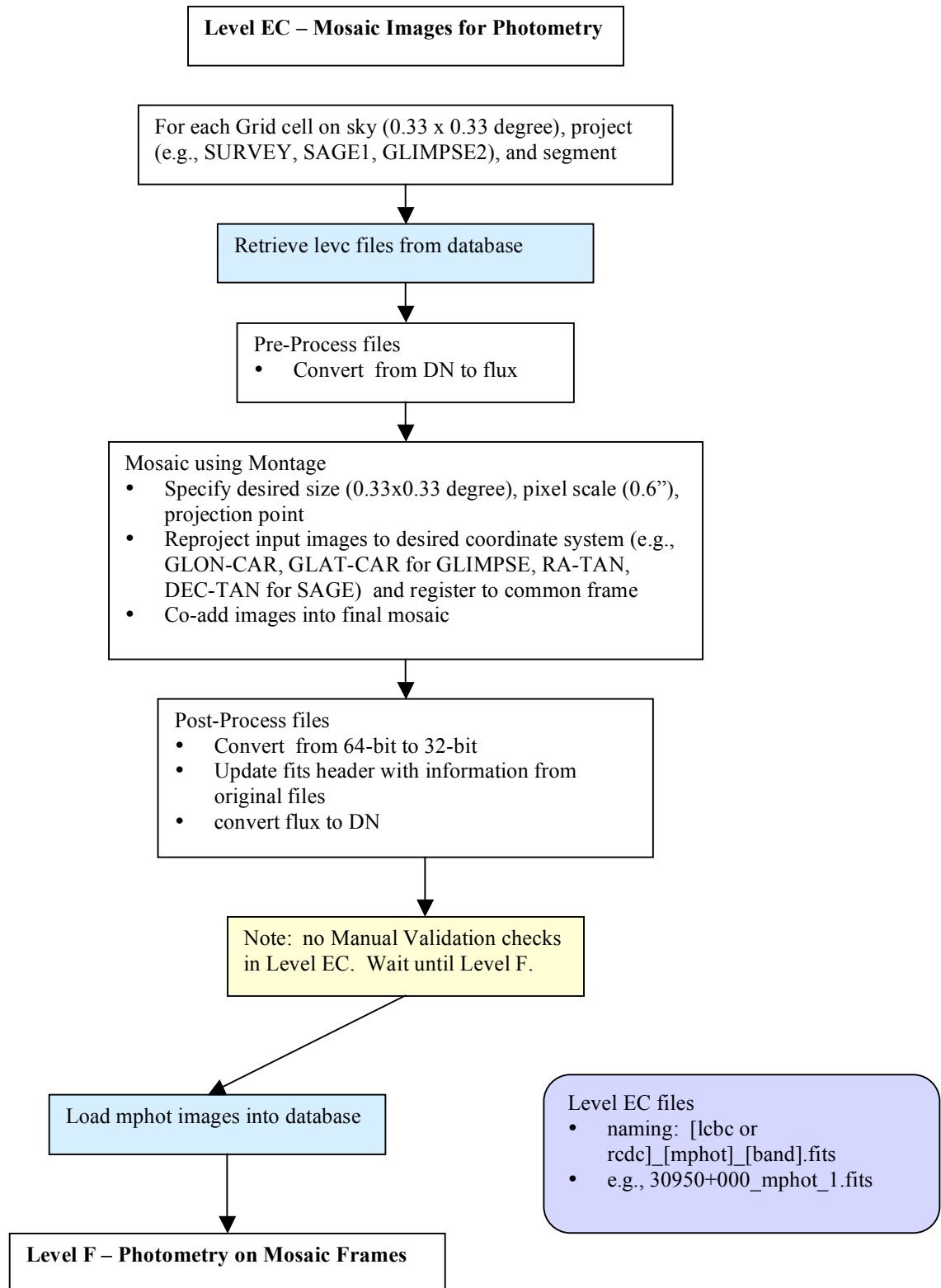
Level E – Mosaic Images



Level D – Bandmerge Sources from Single IRAC Frames







Level F – Photometry on Mosaic Frames

