Data processing of HAWKI data: FAQs

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Data processing of HAWKI data: Frequently asked questions

- **Are there any known problems with Hawk-I data?**

Answer: The quality control group keeps a list of know problems at

http://www.eso.org/observing/dfo/quality/HAWKI/qc/problems.html

- **How can I get a photometric calibibration of my images?**

Answer: The best way to accurately photometrically calibrate HAWK-I images is to use 2MASS stars in the field itself to derive the photometric solution. The accuracy strongly depends on the number of bright 2MASS stars within the filed of view, but ranges from a few 1/100th of a magnitude to 0.1 magnitudes if only faint stars are contained in the field. Additionally, observing supplementary standard star fields can be asked for when preparing the observations. The new pipeline to be released in 2014 will automatically perform 2MASS photometric calibration on all images.

- **How good is HAWK-I astrometry and how are PSF variations corrected?**

Answer: At present the pipeline applies a correction for PSF distortions based on a distortion map derived during HAWK-I commissioning back in 2008. Distortion images are regularly taken, but not processed. At present, the solution is to extract photometry on a chip-by-chip, exposure-by-exposure basis, derive astrometry from 2MASS on each single chip and single exposure, and the merge all the frames together.

Most of the present HAWK-I pipeline limitations will be cured in an upcoming release of the pipeline.

- **Are there any colour transformations available for the HAWK-I filters and another filter system?**

Answer: The UK in-kind HAWK-I archive reprocessing and new ESO HAWK-I imaging pipeline use the 2MASS catalogue to astrometrically and photometrically calibrate the science fields.The colour transformations used for the conversion between the HAWK-I photometric system and the system used for photometric calibration (e.g. 2MASS) can be found in the fits tables included in the data distribution (HIERARCH ESO PRO CATG = PHOTCAL_TAB).

For the current HAWK-I detectors and filters, the transformations to the 2MASS filters are:

Y = 1.52 * Jmag - 0.52 * Hmag

J = 0.85 * Jmag + 0.15 * Hmag

H = 0.06 * Jmag + 0.94 * Hmag

Ks = 0.03 * Jmag + 0.97 * Kmag

CH4 = 0.06 * Jmag + 0.94 * Hmag

H2 = 0.03 * Jmag + 0.97 * Kmag

BrG = 0.03 * Jmag + 0.97 * Kmag

NB0984 = 1.62 * Jmag - 0.62 * Hmag

NB1060 = 1.50 * Jmag - 0.50 * Hmag

NB1190 = 0.85 * Jmag + 0.15 * Hmag

NB2090 = 0.03 * Jmag + 0.97 * Kmag