

## ESO Phase 3 Data Release Description

<b>Data Collection</b>	GOODS_VIMOS_IM
<b>Release Number</b>	1
<b>Data Provider</b>	C. Cesarsky
<b>Date</b>	24.04.2009 – Migrated to Phase 3 infrastructure 10.12.2014

## GOODS/VIMOS Imaging Data Release: Version 1.0

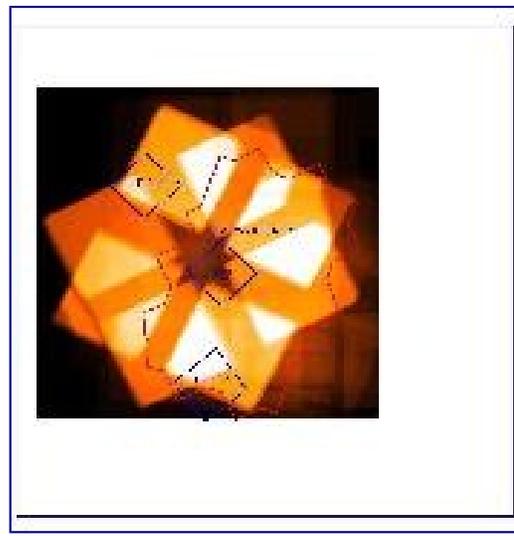
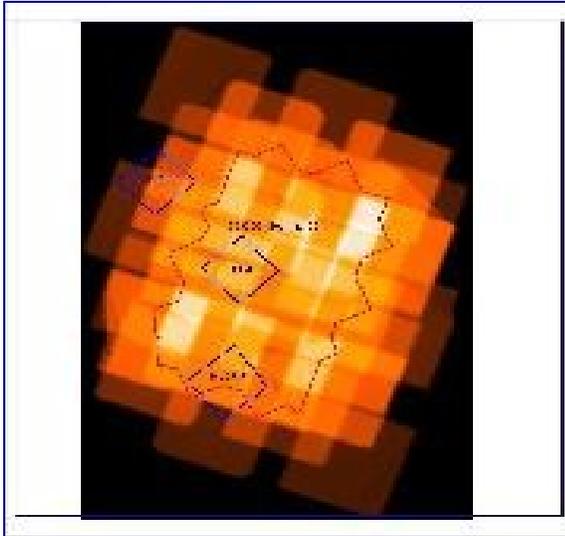
As part of the Great Observatories Origins Deep Survey (GOODS), deep imaging in the Chandra Deep Field South (CDF-S) has been carried out, using the VIMOS instrument mounted at the Melipal Unit Telescope of the VLT at ESO's Cerro Paranal Observatory, Chile.

This data release contains the coadded images in U band from the ESO large programme 168.A-0485 (P.I. C. Cesarsky) which have been obtained in service mode observations between August 2004 and fall 2006. The 1-sigma depth for VIMOS U band in the area covered by the GOODS-ACS observations is ~30 AB (within an aperture of 1" radius, ranging from 29.5 and 30.2 AB). The PSF of the VIMOS U band mosaic is ~0.8" FWHM, but varies over the field.

Also included in this data release is a coadded image in R band obtained from data retrieved from the ESO archive. Due to the different observing strategies adopted in the programmes the resulting coverage of the GOODS-ACS area is more complex than for the U band. The depth of the VIMOS R band mosaic over the ACS area ranges from ~28 AB to 29 AB (1-sigma, 1" aperture radius). The PSF of the VIMOS R band mosaic is ~0.7" FWHM and varies over the field.

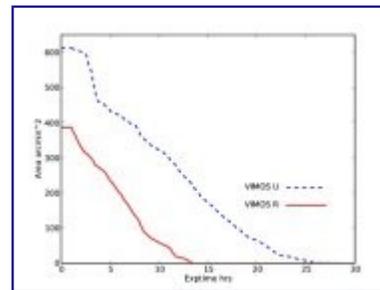
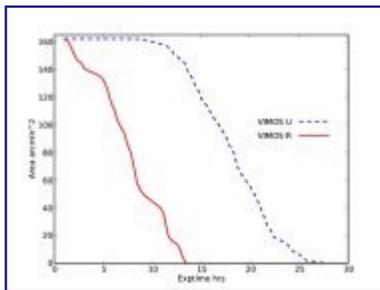
The Archive Science Group migrated the GOODS-VIMOS dataset to the Phase 3 infrastructure allowing seamless publication with the Science Data Products. Although it was possible to recover the information needed for most of the files, ASG would like to inform the archive users that it was not possible to infer the value to the required ABMAGSAT keyword.

## Layout of observations



Coverage of the coadded **VIMOS U band image** (left) and **VIMOS R band image** (right) in the GOODS-South field: the footprint of the  $\sim 10' \times 16'$  GOODS-ACS (red), the position of the Hubble Ultra Deep Field, and of parallel observations in ACS are also reported (blue). The outer blue square is the  $\sim 30' \times 30'$  of the Extended Chandra Deep Field South.

*Click on each of the images to enlarge.*



Areal coverage as a function of exposure time for the GOODS-ACS region (left) and for the whole survey (right).

*Click on each of the images to enlarge.*

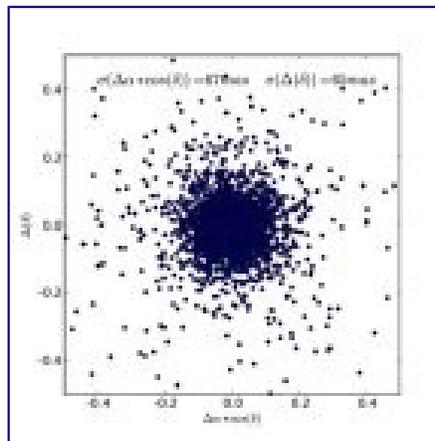
## Release Content

This release contains the photometrically and astrometrically calibrated mosaics of VIMOS U band and VIMOS R band and the related weight maps. The R band mosaic includes data from the ESO programmes, primarily 167.D-0492 (P.I. Fransson), and also 171.A-3045, 080.A-0556, 080.A-0411, 078.A-0485, 078.A-0425, 075.A-0481, 074.A-0280, 074.A-0303, 074.A-0509, 072.A-0586, 071.A-3036, and 60.A-9050.

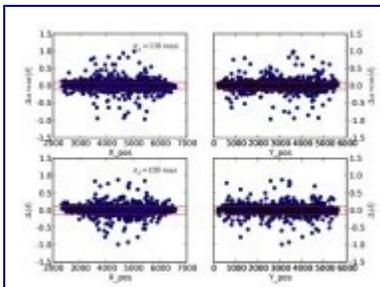
# Release Notes

Both VIMOS U band data and VIMOS R band data images have been astrometrically calibrated against a catalogue extracted from WFI R band mosaic of the GaBoDS/WFI release version 1.1. The pixel scale for both mosaics is 0".205/pixel. The mosaics' photometric zero points have been obtained from standard star observations as described in the accompanying paper. Notice the system response of VIMOS U and other U band filters. The zero points of the mosaics are: VIMOS U band 26.15 AB, with an AB\_correction of 0.515, and VIMOS R band 27.49 AB with an AB\_correction of 0.223. The AB corrections, in the sense of  $AB = Vega + AB\_correction$ , were derived using the ESO mag-to-flux converter.

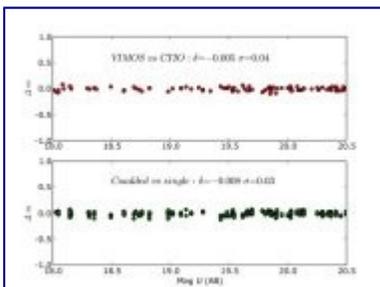
A full description of the data reduction steps can be found in the accompanying publication "Deep U band and R band Imaging of GOODS-South: Observations, data reductions and first results" by [Nonino et al. 2009, ApJSS 183 \(2009\) 244-260, 10.1088/0067-0049/183/2/244](https://doi.org/10.1088/0067-0049/183/2/244).



Astrometric comparison between the matched source from VIMOS U mosaic and reference sources. *Click on each of the images to enlarge.*



Astrometric comparison between matched sources extracted from VIMOS U mosaic and VIMOS R mosaic. *Click on each of the images to enlarge.*



External photometric comparison for matched sources from VIMOS U band mosaic and CTIO U band observations of CDF-S. *Click on each of the images to enlarge.*

## Data Format

This data release contains four files: VIMOS U band mosaic, VIMOS U band weight mosaic, VIMOS R band mosaic, VIMOS R band weight mosaic. The weight images are defined as an inverse variance map (e.g. it should be used with SExtractor using the parameters: `-WEIGHT_IMAGE weight_map.fits -WEIGHT_TYPE MAP_WEIGHT`). All relevant parameters are included in the FITS headers.

## Data Retrieval

The data products in this release that can be retrieved are listed in the table below:

Name	Description	File size
GOODS_VIMOS_MOSAIC_U_V1.0.fits	U-band mosaic image	304.4 MB
GOODS_VIMOS_MOSAIC_U_V1.0.WEIGHT.fits	U-band mosaic weight map	304.4 MB
GOODS_VIMOS_MOSAIC_R_V1.0.fits	R-band mosaic image	196.0 MB
GOODS_VIMOS_MOSAIC_R_V1.0.WEIGHT.fits	R-band mosaic weight map	196.0 MB

Please request your copy of the data from the ESO Science Archive.

## Acknowledgements

We acknowledge the financial contribution from contract ASI I/016/07/O and from INAF. When using data products provided in this release, acknowledgement should be given in the text to the ESO/GOODS programme, referring to the publication [Nonino et al. 2009](#). In addition, please also use the following statement in your articles when using these data:

*Based on observations made with ESO Telescopes at the La Silla or Paranal Observatories under programme number 168.A-0485.*