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The Kilo-Degree Survey second data release multi-band source catalog.
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M.,
Sikkema G., Valentijn E.A., Begeman K.G., Brescia M., Cavuoti S., Choi
A.,
Cordes O.-M., Covone G., Dall'Ora M., Hildebrandt H., Longo G.,
Nakajima R.,
Paolillo M., Puddu E., Rifatto A., Tortora C., van Uitert E.,
Buddendiek A.,
Harnois-Deraps J., Erben T., Eriksen M.B., Heymans C., Hoekstra H.,
Joachimi B., Kitching T.D., Klaes D., Koopmans L.V.E., Koehlinger F.,
Roy N., Sifon C., Schneider P., Sutherland W.J., Viola M., Vriend W.-J.
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ADC_Keywords: Photometry, ugriz ; Galaxy catalogs
Mission_Name: ESO
Keywords: methods: observational; surveys; galaxies: general;
large-scale structure of Universe

Abstract:

The Kilo-Degree Survey (KiDS) is an optical wide-field imaging survey carried out with the VLT Survey Telescope and the OmegaCAM camera. KiDS will image 1500 square degrees in four filters (ugri), and together with its near-infrared counterpart VIKING will produce deep photometry in nine bands. Designed for weak lensing shape and photometric redshift measurements, its core science driver is mapping the large-scale matter distribution in the Universe back to a redshift of ~ 0.5 . Secondary science cases include galaxy evolution, Milky Way structure, and the detection of high-redshift clusters and quasars.

Description:

KiDS data releases consist of ~ 1 square degree tiles that have been successfully observed in all four survey filters (u,g,r,i). The second data release (KiDS-ESO-DR2) was available in February 2015 and contains imaging data, masks and single-band source lists for all tiles observed in all four filters for which observations were completed during the second year of regular operations (1 October 2012 to 31 September 2013), a total of 98 tiles. Apart from the data products mentioned above, KiDS-ESO-DR2 also provides a multi-band source catalogue based on the combined set of 148 tiles released in the first two data releases. A complete list of all tiles with data quality parameters can be found on the KiDS website: <http://kids.strw.leidenuniv.nl/DR2/>

Acknowledging the KiDS-ESO-DR2 in publications:

Users of data from this release should cite "de Jong et al. 2015A&A...582A..62D)" and are required to acknowledge the source of the data with the following citation in their publications:

Based on data products from observations made with ESO Telescopes at the La Silla Paranal Observatory under programme IDs 177.A-3016, 177.A-3017 and 177.A-3018, and on data products produced by

Target/OmegaCEN, INAF-OACN, INAF-OAPD and the KiDS production team, on behalf of the KiDS consortium. OmegaCEN and the KiDS production team acknowledge support by NOVA and NWO-M grants. Members of INAF-OAPD and INAF-OACN also acknowledge the support from the Department of Physics & Astronomy of the University of Padova, and of the Department of Physics of Univ. Federico II (Naples).

File Summary:

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File Name      Lrecl      Records      Explanations
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ReadMe         80          .           This file
kids_dr2.sam   543         1000        *KiDS-ESO-DR2 multi-band source catalog
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Note on kids_dr2.sam: This is a sample of the complete multi-band catalog containing 16,622,442 sources.

See also:

- V/139 : The SDSS Photometric Catalog, Release 9 (Adelman-McCarthy+, 2012)
 - VII/250 : The 2dF Galaxy Redshift Survey (2dFGRS) (2dFGRS Team, 1998-2003)
 - J/MNRAS/452/2087 : Galaxy And Mass Assembly (GAMA): DR2 (Liske+, 2015)
 - J/A+A/568/A126 : SDSS-DR9 photometric redshifts (Brescia+, 2014)
 - J/MNRAS/440/2036 : VPHAS+ survey synthetic colours (Drew+, 2014)
 - J/ApJ/749/38 : CFHTLS-SL2S-ARCS strong lens candidates (More+, 2012)
 - J/AJ/141/189 : Classifiers for star/galaxy separation (Vasconcellos+, 2011)
 - J/MNRAS/413/1145 : Galaxy clusters in the COSMOS field (Bellagamba+, 2011)
 - J/MNRAS/382/109 : Massive galaxies in Extended Groth Strip (Trujillo+, 2007)
 - J/AJ/132/926 : Galaxies in the Hubble Ultra Deep Field (Coe+, 2006)
 - J/MNRAS/246/433 : CCD photometry + APM parameters for galaxies (Maddox+ 1990)
- <http://kids.strw.leidenuniv.nl/DR2> : kiDS DR2 home page

Byte-by-byte Description of file: kids_dr2.sam

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Bytes Format Units      Label      Explanations
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 1- 25 A25   ---      KiDS      Source identifier (KIDS
JHHMMSS.ss+DDMMSS.ss)
                                (SourceID) (1)
 27- 36 F10.6 deg      RAdeg     Right ascension (J2000) (RAJ2000)
 38- 47 F10.6 deg      DEdeg     Declination (J2000) (DEJ2000)
 49- 51 I3     ---      mClass    ?=-99 Star/galaxy separation (2)
 53- 61 F9.4  pix      A         Linear semi major axis in pixel units
 63- 70 F8.4  pix      B         Linear semi minor axis in pixel units
 72- 76 F5.3   ---      S/G       SExtractor star/galaxy classifier
                                (0=galaxy) (mClassStat)
 78- 82 F5.3   ---      Ell       Ellipticity
 84- 95 F12.4 pix      grad      ? g-band SExtractor FLUX_RADIUS
(FLUX_RADIUS_G)
 97-108 F12.4 pix      irad      ? i-band SExtractor FLUX_RADIUS
(FLUX_RADIUS_I)
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110-124 F15.4 pix	rrad	? r-band SExtractor FLUX_RADIUS
(FLUX_RADIUS_R)		
126-138 F13.4 pix	urad	? u-band SExtractor FLUX_RADIUS
(FLUX_RADIUS_U)		
140-153 F14.4 pix	gFWHM	? g-band SExtractor FWHM_IMAGE
(FWHM_IMAGE_G)		
155-166 F12.4 pix	iFWHM	? i-band SExtractor FWHM_IMAGE
(FWHM_IMAGE_I)		
168-178 F11.4 pix	rFWHM	? r-band SExtractor FWHM_IMAGE
(FWHM_IMAGE_R)		
180-193 F14.4 pix	uFWHM	? u-band SExtractor FWHM_IMAGE
(FWHM_IMAGE_U)		
195-197 I3 ---	gflg	[0/120] g-band SExtractor extraction flag (flg_G) (3)
199-201 I3 ---	iflg	[0/120] i-band SExtractor extraction flag (flg_I) (3)
203-205 I3 ---	rflg	[0/124] r-band SExtractor extraction flag (flg_R) (3)
207-209 I3 ---	uflg	[0/120] u-band SExtractor extraction flag (flg_U) (3)
211-213 I3 ---	gflgISO	[0/255] g-band mask flag (IMAFLAGS_ISO_G)
(4)		
215-217 I3 ---	iflgISO	[0/255] i-band mask flag (IMAFLAGS_ISO_I)
(4)		
219-221 I3 ---	rflgISO	[0/255] r-band mask flag (IMAFLAGS_ISO_R)
(4)		
223-225 I3 ---	uflgISO	[0/254] u-band mask flag (IMAFLAGS_ISO_U)
(4)		
227-233 F7.4 pix	Rad	Kron-radius used for MAG_AUTO (KRON_RADIUS)
235-242 F8.5 mag	e_gmag	? g-band error in MAG_AUTO (MAGERR_AUTO_G)
(5)		
244-251 F8.5 mag	e_imag	? i-band error in MAG_AUTO (MAGERR_AUTO_I)
(5)		
253-260 F8.5 mag	e_rmag	? r-band error in MAG_AUTO (MAGERR_AUTO_R)
(5)		
262-269 F8.5 mag	e_umag	? u-band error in MAG_AUTO (MAGERR_AUTO_U)
(5)		
271-278 F8.5 mag	e_gmagISO	? g-band error in MAG_ISO (MAGERR_ISO_G)
(5)		
280-287 F8.5 mag	e_imagISO	? i-band error in MAG_ISO (MAGERR_ISO_I)
(5)		
289-296 F8.5 mag	e_rmagISO	? r-band error in MAG_ISO (MAGERR_ISO_R)
(5)		
298-305 F8.5 mag	e_umagISO	? u-band error in MAG_ISO (MAGERR_ISO_U)
(5)		
307-314 F8.5 mag	gmag	[10.4/42.8]? g-band AB magnitude
(MAG_AUTO_G)		
316-323 F8.5 mag	imag	[9.8/40.4]? i-band AB magnitude
(MAG_AUTO_I)		
325-332 F8.5 mag	rmag	[10.5/41.4]? r-band AB magnitude
(MAG_AUTO_R)		
334-341 F8.5 mag	umag	[8.7/40.5]? u-band AB magnitude
(MAG_AUTO_U)		
343-350 F8.5 mag	gmagISO	[11.2/42.7]? g-band AB magnitude
(MAG_ISO_G)		
352-359 F8.5 mag	imagISO	[10.1/42.9]? i-band AB magnitude
(MAG_ISO_I)		
361-368 F8.5 mag	rmagISO	[11.1/30.5]? r-band AB magnitude
(MAG_ISO_R)		
370-377 F8.5 mag	umagISO	[12.1/43.7]? u-band AB magnitude
(MAG_ISO_U)		

379-385	I7	---	gNmp	g-band number of masked pixels
(NIMAFLAGS_ISO_G)				
387-393	I7	---	iNmp	i-band number of masked pixels
(NIMAFLAGS_ISO_I)				
395-401	I7	---	rNmp	r-band number of masked pixels
(NIMAFLAGS_ISO_R)				
403-409	I7	---	uNmp	u-band number of masked pixels
(NIMAFLAGS_ISO_U)				
411-417	I7	pix2	gisoA	g-band isophotal aperture (ISOAREA_IMAGE_G)
419-425	I7	pix2	iisoA	i-band isophotal aperture (ISOAREA_IMAGE_I)
427-433	I7	pix2	risoA	r-band isophotal aperture (ISOAREA_IMAGE_R)
435-440	I6	pix2	uisoA	u-band isophotal aperture (ISOAREA_IMAGE_U)
442-448	F7.3	deg	PA	[-90/90] Position angle (POSANG)
450-455	I6	---	SeqR	[/600929]?=-99 r-band sequence number
(SEQNR)				
457-466	F10.4	pix	gXpos	X pixel position in g-band image (XPOS_G)
468-477	F10.4	pix	iXpos	X pixel position in i-band image (XPOS_I)
479-488	F10.4	pix	rXpos	X pixel position in r-band image (XPOS_R)
490-499	F10.4	pix	uXpos	X pixel position in u-band image (XPOS_U)
501-510	F10.4	pix	gYpos	Y pixel position in g-band image (YPOS_G)
512-521	F10.4	pix	iYpos	Y pixel position in i-band image (YPOS_I)
523-532	F10.4	pix	rYpos	Y pixel position in r-band image (YPOS_R)
534-543	F10.4	pix	uYpos	Y pixel position in u-band image (YPOS_U)

Note (1): Some names with missing "0", having formats like

JHHMMSS.ss+DDMMSS.s

or JHHMMSS.s+DDMMSS.ss have been corrected by CDS and the agreement

of the author in order to match the unique format

JHHMMSS.ss+DDMMSS.ss

as in DR3.

Note (2): The result of the star/galaxy (S/G) classification is available via

the 2DPHOT (mClass) flag. Flag values are:

- 1 = high-confidence star candidates,
- 2 = objects with FWHM smaller than stars in the stellar locus, e.g., some cosmic-rays and/or other unreliable sources),
- 4 = stars according to S/G separation, and
- 0 = otherwise (galaxies);

flag values are summed, so 2DPHOT=5 signifies a high-confidence star candidate that is also above the S/G separation line.

Note (3): The extraction flag of a source given as a sum of powers of 2 by SExtractor. If a source has neighbors (flag = 1) and is blended with another source (flag = 2) and some pixels are saturated (flag = 4), then the final extraction

flag

given to the source is 7 (= 1 + 4 + 2). Generally, a source with

the

extraction flag 0 gives the most reliable photometry.

For detailed information on this flag, see

the SExtractor User's Manual.

Note (4): The flag image is used during source extraction for the single-band

source list to flag sources whose isophotes overlap with the

critical

areas. The resulting flags are stored in the following two

SExtractor

parameters:

IMAFLAGS_ISO: sum of all mask flags encountered in the isophote profile;

NIMAFLAG_ISO: number of flagged pixels entering IMAFLAGS_ISO.

See section 4.4 in de Jong et al. (2015A&A...582A..62D) for
further explanations.

Note (5): Magnitudes uncertainties ≥ 100 mag have been left blank by CDS.

History:

* Catalog downloaded from <http://www.eso.org/qi/catalog/show/53>

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(End) Francois-Xavier Pineau, Emmanuelle Perret [CDS] 14-
Oct-2016