



Science Archive Quality Control and User-Interface

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Introduction



Quality Control – QC



Need for QC



Implementation in the WFCAM/VISTA Science Archive
(WSA/VSA)



Accessing the data



Describe user-interface (UI)



WSA/VSA website and query forms



Access via AstroGrid





Need for QC

-  Identify issues with pipeline or ingest
-  Handle re-processed data
-  Minimise contamination
-  Ensure data are good enough for science goals
-  Survey uniformity





Quality control

- Deprecation model implemented for WSA/VSA
- Bad multiframes/detectors identified and assigned a deprecation code (flagged).
- Re-processed frames, old version deprecated during curation
- SQL scripts run by WFAU, done for each release cycle
 - Semi-automatic; identify problems with metadata and pipeline
 - More manual investigation of science criteria: eg seeing, ellipticity, sky-level, zero-point and their impact on depth
 - For open-time projects basic QC scripts are run automatically
- Eyeball by UKIDSS/VISTA PIs
- Flagged multiframes (deprecated > 0) are kept in archive but not present in released databases.
- If needed deprecations can be rolled back
- Feedback to CASU/UKIDSS/UKIRT/VISTA





List of deprecation codes

Flag	Meaning
1	Stack frames that have no catalogue or other frameTypes deprecated at ingest (e.g. because a reprocessed frame supercedes it)
2	Dead detector frames
3	Undefined and or non-sensible critical image metadata attributes
4	Sky subtraction not OK (via pipeline sky sub scale factor) NB. not used from October 2005 onwards
5	Incorrect combination of expTime,numExp,numInts for survey specific projects
6	Incorrect frame complements within groups/nights (for incomplete MSBs)
7	Undefined values of critical catalogue attributes for stacks
8	Seeing=0.0 for a stack
9	High value of sky that compromises the depth, or otherwise invalid sky level (e.g. sky < 0)
10	Seeing outside specified maximum
11	Photometric zeropoint too bright
12	Average stellar ellipticity too high (> 0.25)
13	Depth (as calculated from sky noise and 5sigma detection in fixed aperture) is too shallow compared to overall histogram distribution (i.e. shallower than ~0.5mag wrt the modal value) OR sky noise is too high given the sky level
14	AperCor3 outlying in aperCor3 versus seeing distribution
15	Pipeline MAGZPT inconsistent between image PHDU, extension HDUs and/or catalogue extension HDUs (from attributes photZP, photZPExt and photZPCat)
16	Difference in detector sky level wrt to mean of all 4 detectors is outlying in the distribution of the same.
18	Provenance indicates that a constituent frame of a combined frame product includes a deprecated frame.
19	Inconsistent provenance for a stack or leav product indicating something wrong with the image product (usually screwed up FITS keywords confusing the pipeline)
20	Detector number counts indicate some problem (loads of crud images)
21	5-sigma depth of detector frame more than 0.4mag brighter than modal value for a given filter/project/exposure time
22	Basic astrometry check (pixel size and/or aspect ratio) indicates something is wrong with the image
26	Deprecated because frame is flagged as ignored in pipeline processing
27	Deprecated because frame is flagged as part of a summit-rejected MSB
40	Science (*stack) frame is not part of a survey (e.g. high latitude sky frames in the GPS)





List of deprecation codes (cont)

60	Eyeball check deprecation - trailed
61	Eyeball check deprecation - multiple bad channels
62	Eyeball check deprecation - Moon ghost
63	Eyeball check deprecation - Sky subtraction problem
64	Eyeball check deprecation - Disaster (catchall category for the indescribable)
65	Eyeball check deprecation - Empty detector frame
66	Eyeball check deprecation - Flat field problem
67	Eyeball check deprecation - Malfunction in crosstalk correction
70	Eyeball check deprecation, but this is the best that can be done so should not be reobserved (e.g. very bright star in FOV)
80	Deprecated because observation (MSB,object,filter) has been repeated later (shallow surveys only). The latest duplicate in each case is kept
81	Deprecated because observation (MSB,object,filter) has been repeated in a later Semester (shallow surveys only). The deepest duplicate in each case is kept
99	Manually deprecated because of some DFS issue (e.g. pipeline screw-up)
100	Multiframe deprecated because all detectors have been previously deprecated (and the MF not already deprecated)
101	MultiframeDetectors deprecated because parent Multiframe is deprecated (and the MFD not already deprecated)
102	*Detection deprecated because parent MFD deprecated
103	MultiframeDetector of a stack deprecated because all constituent frames of the same detector are deprecated
110	Intermediate stack frame photometry found to be poor wrt run of all stacks in a deep field
111	Stack replaced by a filtered version
127	Unwanted frame ingested.
≥128	Frame deprecated because reprocessing supercedes it





WSA QC

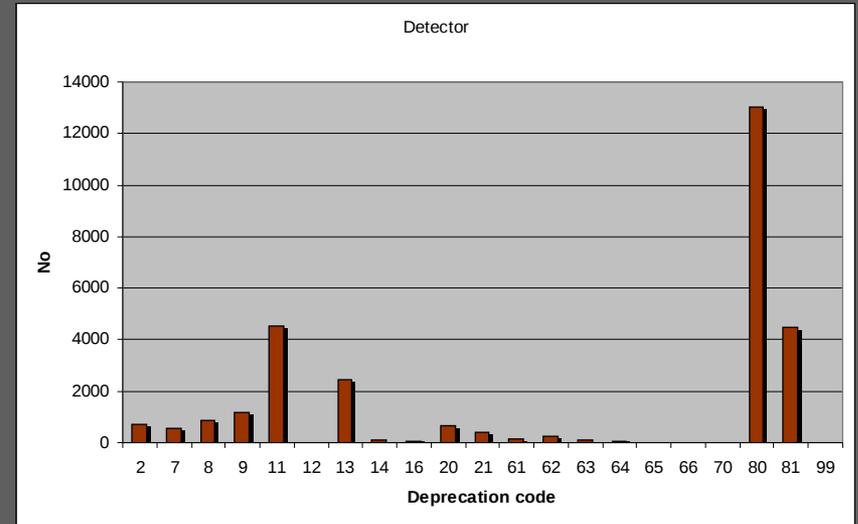
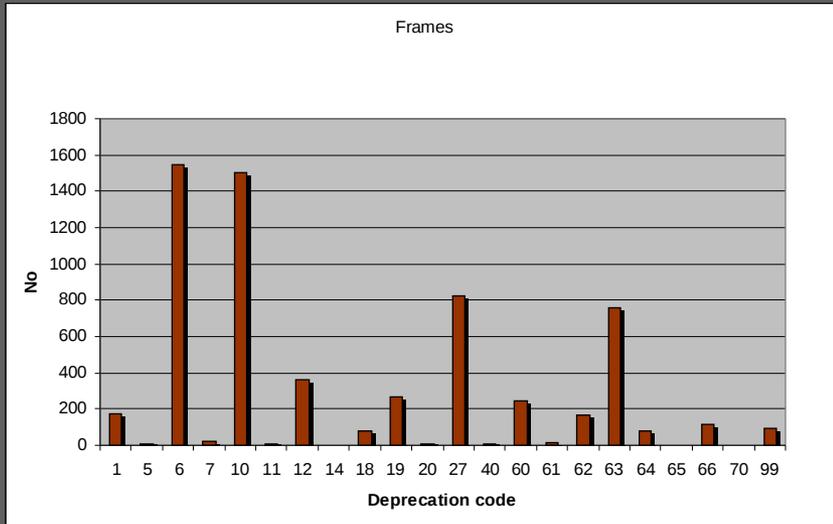
 WSA deprecation stats on 202,092 stack frames,
808,305 detectors

	frames	detector
un-deprecated stacks, code = 0:	76%	75%
deprecated stacks, code < 128:	6%	7%
deprecated stacks, code \geq 128 (reprocessed):	18%	18%





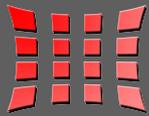
WSA distribution of deprecation codes



6: incorrect complement of frames
10: seeing
27: summit rejected MSB
63: sky-subtraction problem

11: zero-point
13: depth
80: repeats within semester
81: repeats cross semester





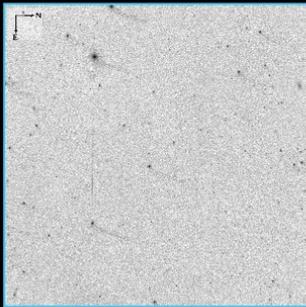
Eyeball examples

Displaying multiframe: w20050903_00862_st

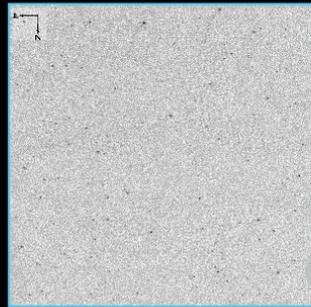
[Download compressed Image FITS file](#) (11.85 Mb)

[Download uncompressed Image FITS file](#) (Note: please download compressed file as uncompressed files are 3-5 times larger)

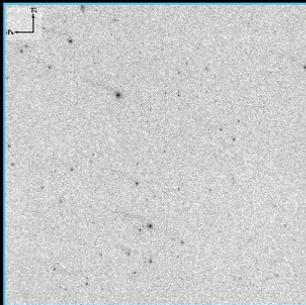
Compressed files can be uncompressed using [imcopy](#). Library jpegs images of multiframe are blocked down by a factor of 2 and then displayed below at a size of width=300 pixels. To see the full blocked down version click on the required image.



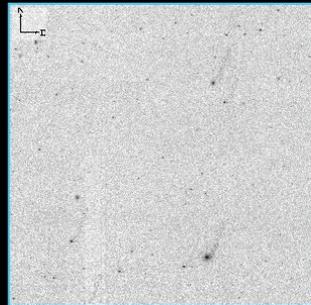
Image/detector: 1



Image/detector: 2



Image/detector: 3



Image/detector: 4

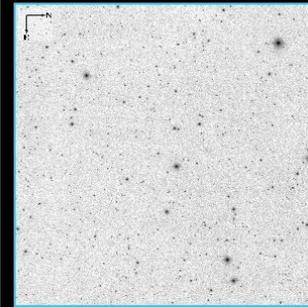
The multiframe images/detectors displayed above are shown in the order they appear in the FITS file and do not represent the order or orientation on the sky

Displaying multiframe: w20051123_01762_st

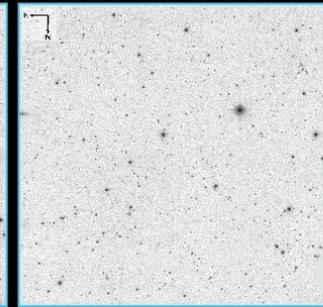
[Download compressed Image FITS file](#) (10.73 Mb)

[Download uncompressed Image FITS file](#) (Note: please download compressed file as uncompressed files are 3-5 times larger)

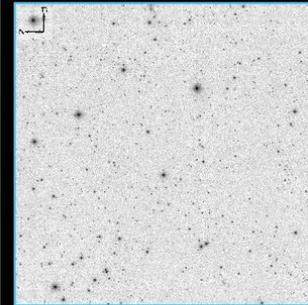
Compressed files can be uncompressed using [imcopy](#). Library jpegs images of multiframe are blocked down by a factor of 2 and then displayed below at a size of width=300 pixels. To see the full blocked down version click on the required image.



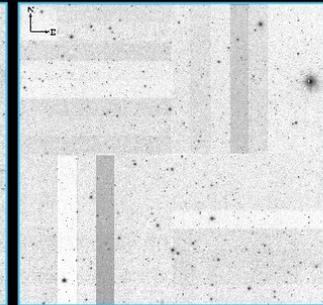
Image/detector: 1



Image/detector: 2



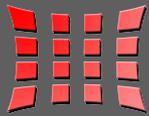
Image/detector: 3



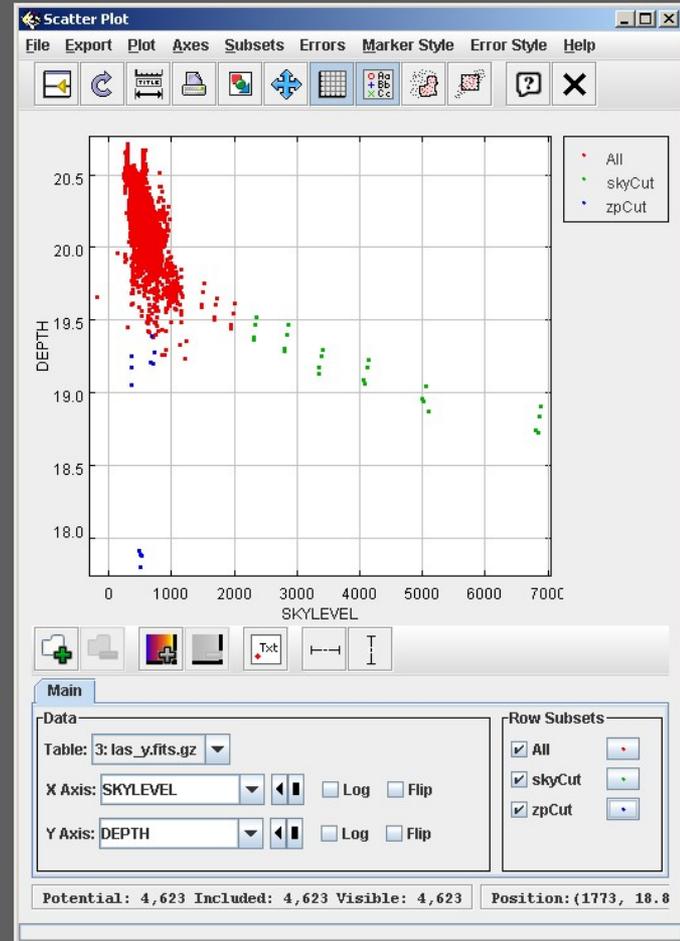
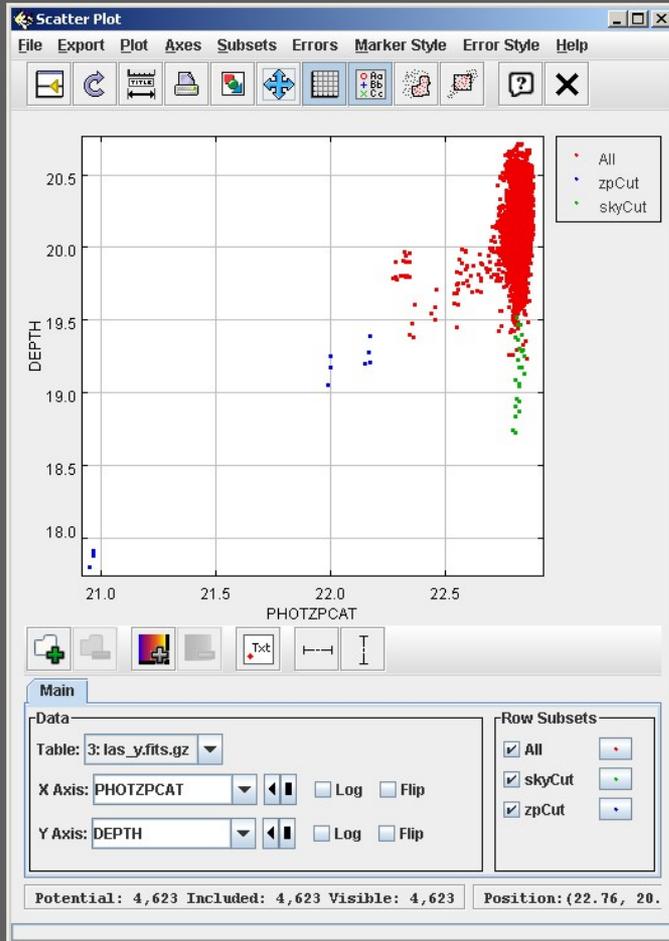
Image/detector: 4

The multiframe images/detectors displayed above are shown in the order they appear in the FITS file and do not represent the order or orientation on the sky





QC plots (zero-point vs depth & sky-level vs depth)

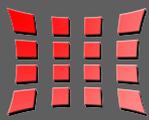




Catalogues

- Objects flagged in detection tables: ppErrBits, eg
 - Deblended
 - Bad pixel(s) in default aperture
 - Close to saturated
 - Possible crosstalk artefact/contamination
 - Lies within a dither offset of the stacked frame boundary





User-interface:

<http://surveys.roe.ac.uk/wsa> & <http://surveys.roe.ac.uk/vsa>



Web-site provides documentation



ESO-UKIDSS/VISTA consortia have logins



Web based forms query released SQL databases



Databases also accessible through AstroGrid/VO



Logged in users can access proprietary databases



Catalogue and pixel data accessible

Home | Overview | Browser | Access | Login | Cookbook | nonSurvey 

WFCAM Science Archive

WSA Home
Start Here
Data Overview
Known Issues the Surveys
Schema browser
Data access
Login
Archive Listing
GetImage
ColourImage
MultiGetImage
Region
Menu query
Freeform SQL
CrossID
Analysis services
SQL Cookbook
Q&A
Glossary
Release History
non-Survey
Gallery
Publications
Monitor
Downtime
Links

WSA - WFCAM Science Archive

*UKIDSS release DR6 - Data Release 6 - October 13th 2009 (GPS added January 8th 2010).
Public release of the UKIDSS DR3 - 5th June 2009 .
(see the surveys page)*

The WFCAM Science Archive (WSA) holds the image and catalogue data products generated by the Wide Field Camera (WFCAM) on UKIRT. The primary contents of the archive will originate from the UKIRT InfraRed Deep Sky Surveys (UKIDSS): Large Area Survey, Galactic Plane Survey, Galactic Clusters Survey, Deep Extragalactic Survey and the Ultra Deep Survey.

Survey data is being released in phases, firstly to the UKIDSS community and then to the public (see [data policy](#)).

The latest UKIDSS release is *UKIDSS data release 6 (UKIDSSDR6PLUS)*
The latest WORLD release is *UKIDSS data release 3 (UKIDSSDR3PLUS)*

Information on the various archive releases can be found on the [surveys page](#)

The history of archive releases, updates and bug fixes is recorded under the [release history](#) page. Users wishing to receive email announcements of such entries should subscribe to the WSA_Announcelist (contact wsa-support@roe.ac.uk).



Picture: Early Commissioning - Central region of a full tile, showing dramatic clouds of gas and dust illuminated by stars in the southern half of the Orion nebula. This is an image at three infrared wavelengths (red represents narrow-band emission from molecular hydrogen gas at 2.12 microns, green represents K-band emission at 2.2 microns, and blue represents J-band emission at 1.25 microns).

Credit: Joint Astronomy Centre. Data processing by Dr Chris Davis and Dr Watson Varicatt.

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Listing | Region | MenuQuery | FreeSQL
Links | Credits

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or +44 131 668 8100 (switchboard)

wsa-support@roe.ac.uk
8/1/2010





Website documentation

Includes:



Data overview



Monitor pages (status of ingest)



Schema browser (detailed description of database contents)



SQL cookbook



Q & A



Release history



Known issues

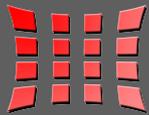




Access rights

- For WSA, released DBs are proprietary for 18 months
- Users login to a community
- Communities maintained by community contacts at each institute
- User's login session used to present list of accessible DBs
- Similar for VSA but surveys are separated.





Pixel data



Archive listing: given inputs, lists matching ingested frames and returns meta-data and links to jpegs and FITS files (accesses released databases and daily synced version of load server). QC eyeballing.



Image cut-outs: GetImage & MultiGetImage, FITS/jpegs



Colour images



AstroGrid SIAP

Home | Overview | Browser | Access | Login | Cookbook | nonSurvey

Status: Logged in as - User:mikeread Community:roe.ac.uk

The current version of DR6 does not contain UDS detection/source data and no new UDS mosaic. Users wishing to access UDS data should use the DR5plus database.

Archive Listing

This form allows users to retrieve listings of the multiframes (multi-extension FITS images) held in the WSA. Links are returned that allow users to view the compressed jpeg library images and download the FITS files.
Notes on using the form

Database release to use:

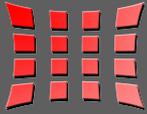
Select the programme/survey:

Choose which parameters:

Use the parameters below to search for frames. A maximum of 100 entries per page will be returned.

Observation type:	<input type="text" value="WSA"/>		
Frame type:	<input type="text" value="WFCAMCAL08B"/> Transit		
Filter/waveband:	<input type="text" value="WFCAMOPENTIME"/>		
Minimum RA of base position:	<input type="text" value="0.0"/>	<input type="text" value="decimal hours"/>	Note return values are in decimal hours. If minimum > maximum searches will be wrapped around 0.0 hours
Maximum RA of base position:	<input type="text" value="24.0"/>		
Minimum Dec of base position:	<input type="text" value="-90.0"/>	<input type="text" value="decimal degrees"/>	Note return values are in decimal degrees.
Maximum Dec of base position:	<input type="text" value="+90.0"/>		
Start Date:	Day: <input type="text" value=""/> Month: <input type="text" value=""/> Year: <input type="text" value=""/>	observation dates	
End Date:	Day: <input type="text" value=""/> Month: <input type="text" value=""/> Year: <input type="text" value=""/>		
Deprecation:	<input type="text" value="purge deprecated frames"/>		
MultiframeID number:	<input type="text" value=""/>		
List MultiframeID numbers:	<input type="text" value=""/> Clear List	delimited by commas or space, maximum 100	
FramesetID number:	<input type="text" value=""/>		
Rows per page:	<input type="text" value="100"/>	number of rows (maximum 1000)	





Archive listing

VSA ImageList



Archive Listing

Searching:

Survey: VHS: VISTA Hemisphere Survey

Minimum RA: 0 0 hours Maximum RA: 24 0 hours

Minimum Dec: -90.0 degrees Maximum Dec: 90.0 degrees

Using database: VSA

View column link shows jpeg images of multiframe in a new window plus links to download file(s)

Img column link download the [RICE compressed](#) FITS image file. Use View column link to retrieve uncompressed images.

Cat column link download the FITS catalogue file.

Links to wget scripts will appear at the end of this page.

begin row 1

View	Img	Cat	multiframeID	frameType	obstype	raBase	decBase	shortname	exptime	dateObs	project	numDetectors	vistaRunNo
view	FITS	FITS	13603	stack	OBJECT	+0.0229720	-0.8261100	J	+5.000000	2009-11-04 00:29:14.7	VHS	16	1
view	FITS	FITS	13607	stack	OBJECT	+0.0229720	-0.6429300	J	+5.000000	2009-11-04 00:30:58.4	VHS	16	3
view	FITS	FITS	13611	stack	OBJECT	+0.0290780	-0.8261200	J	+5.000000	2009-11-04 00:32:47.1	VHS	16	5
view	FITS	FITS	13615	stack	OBJECT	+0.0290790	-0.6429300	J	+5.000000	2009-11-04 00:34:33.1	VHS	16	7
view	FITS	FITS	13619	stack	OBJECT	+0.0351850	-0.8261100	J	+5.000000	2009-11-04 00:36:20.7	VHS	16	9
view	FITS	FITS	13623	stack	OBJECT	+0.0351840	-0.6429400	J	+5.000000	2009-11-04 00:38:04.5	VHS	16	11
view	FITS	FITS	13627	stack	OBJECT	+0.0229720	-0.8261100	H	+5.000000	2009-11-04 00:40:13.1	VHS	16	13
view	FITS	FITS	13631	stack	OBJECT	+0.0229720	-0.6429300	H	+5.000000	2009-11-04 00:41:54.5	VHS	16	15
view	FITS	FITS	13635	stack	OBJECT	+0.0290780	-0.8261200	H	+5.000000	2009-11-04 00:43:36.0	VHS	16	17
view	FITS	FITS	13639	stack	OBJECT	+0.0290790	-0.6429300	H	+5.000000	2009-11-04 00:45:20.1	VHS	16	19
view	FITS	FITS	13643	stack	OBJECT	+0.0351850	-0.8261100	H	+5.000000	2009-11-04 00:47:04.0	VHS	16	21
view	FITS	FITS	13647	stack	OBJECT	+0.0351840	-0.6429400	H	+5.000000	2009-11-04 00:48:42.4	VHS	16	23
view	FITS	FITS	13651	stack	OBJECT	+0.0229720	-0.8261100	Ks	+5.000000	2009-11-04 00:50:47.4	VHS	16	25
view	FITS	FITS	13655	stack	OBJECT	+0.0229720	-0.6429300	Ks	+5.000000	2009-11-04 00:52:34.9	VHS	16	27
view	FITS	FITS	13659	stack	OBJECT	+0.0290780	-0.8261200	Ks	+5.000000	2009-11-04 00:54:18.7	VHS	16	29
view	FITS	FITS	13663	stack	OBJECT	+0.0290790	-0.6429300	Ks	+5.000000	2009-11-04 00:56:04.7	VHS	16	31
view	FITS	FITS	13667	stack	OBJECT	+0.0351850	-0.8261100	Ks	+5.000000	2009-11-04 00:57:50.3	VHS	16	33
view	FITS	FITS	13671	stack	OBJECT	+0.0351840	-0.6429400	Ks	+5.000000	2009-11-04 00:59:29.8	VHS	16	35
view	FITS	FITS	13675	stack	OBJECT	+0.0896720	-0.8261100	J	+5.000000	2009-11-04 01:01:55.8	VHS	16	37
view	FITS	FITS	13679	stack	OBJECT	+0.0896720	-0.6429300	J	+5.000000	2009-11-04 01:03:33.0	VHS	16	39
view	FITS	FITS	13683	stack	OBJECT	+0.0957780	-0.8261200	J	+5.000000	2009-11-04 01:05:17.3	VHS	16	41
view	FITS	FITS	13687	stack	OBJECT	+0.0957790	-0.6429300	J	+5.000000	2009-11-04 01:07:04.4	VHS	16	43
view	FITS	FITS	13691	stack	OBJECT	+0.1018850	-0.8261100	J	+5.000000	2009-11-04 01:08:45.4	VHS	16	45

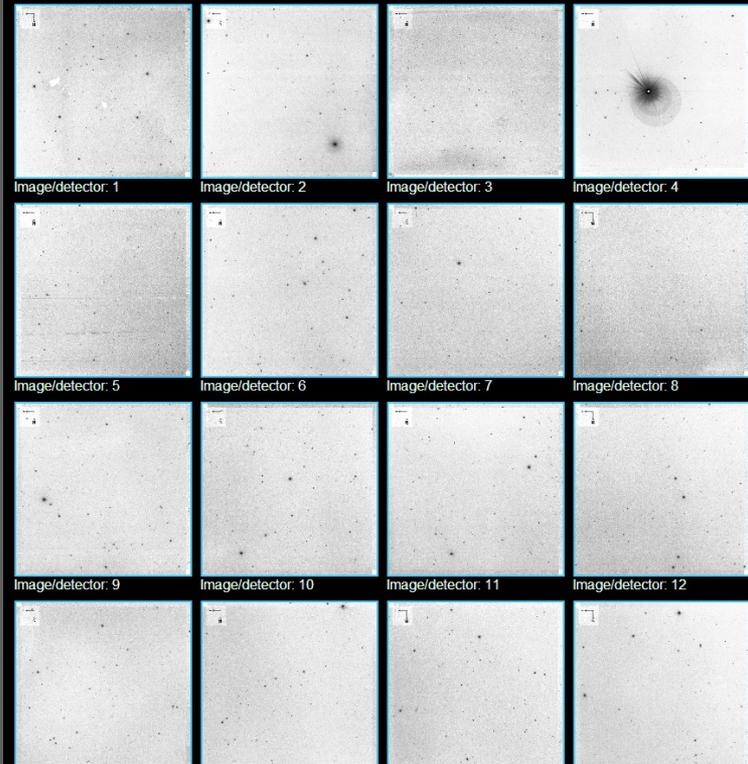
Displaying multiframe: 13627 v20091103_00105_st

[Download compressed Image FITS file](#) (55.11 Mb)

[Download uncompressed Image FITS file](#) (Note: please download compressed file as uncompressed files are 3-5 times larger)

[Download Catalogue FITS file](#) (3.24 Mb)

Compressed files can be uncompressed using [imcopy](#). Library jpegs images of multiframe are blocked down by a factor of 4 and then displayed below at a size of width=200 pixels. To see the full blocked down version click on the required image.



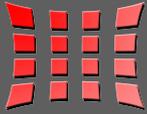


Image cut-outs

Single position: GetImage

GetImage cut-out results

J2000 coords: RA: 178.0640927 Dec:0.247309

Programme: UKIDSS Large Area Survey, LAS

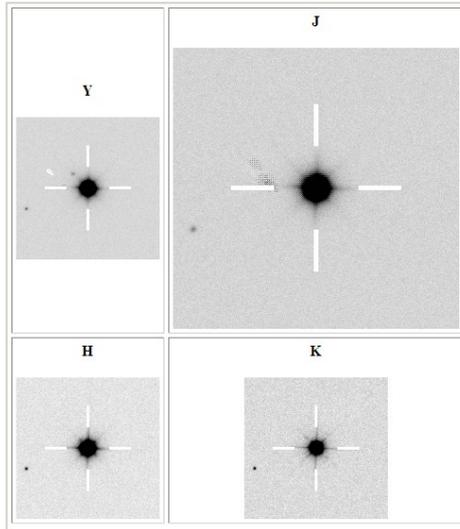
Filter: all

Processing ...

Connecting to database: UKIDSSDR6PLUS

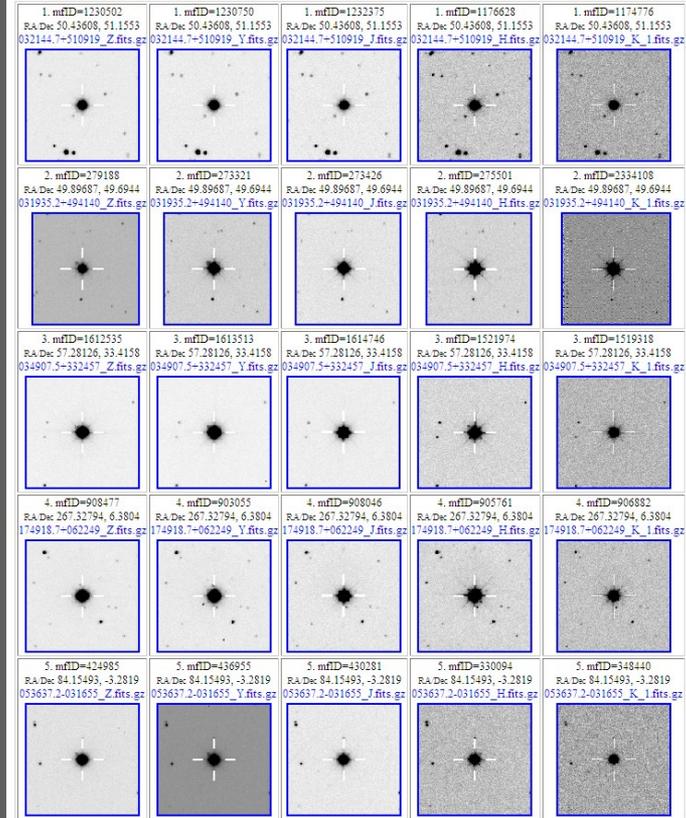
Link	multiframeID	frametype	obstype	filterid	shortname	dateObs	extNum
show	2321537	stack	OBJECT	2	Y	2008-04-15 09:29:51.8	5
show	2321557	leavestack	OBJECT	3	J	2008-04-15 09:52:55.4	5
show	2319378	stack	OBJECT	4	H	2008-03-25 10:53:51.0	5
show	2319398	stack	OBJECT	5	K	2008-03-25 11:15:14.1	5

4 rows returned.



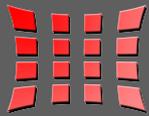
List of positions: MultiGetImage

UKIDSS Galactic Clusters Survey, GCS ZYJHK_1:
page 1 of Summary 1 2



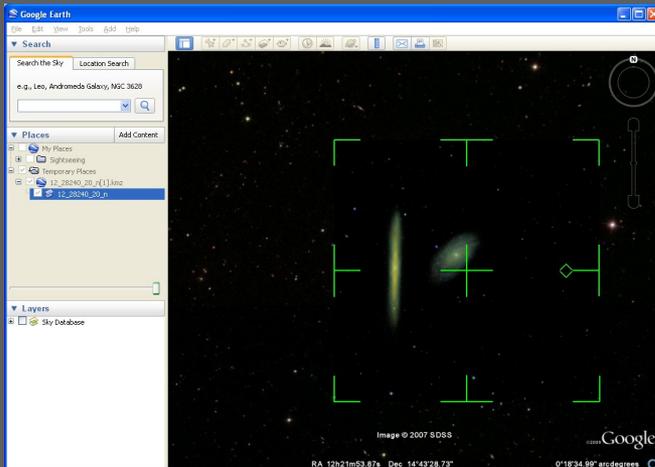
page 1 of Summary 1 2





Colour image

- Specify position, size & resolution and filters for RGB
- Uses SWarp to mosaic detectors
- Returns jpeg and Google KML file



Colour Image Service

RA: 185.37989 Dec: 14.59603 Size: 10.0 x 10.0 arcmin Red:K Green:H Blue:Y

Download links for FITS files: [R fits](#) [G fits](#) [B fits](#)

Download link for Google Sky KML archive file: [kmlz file](#)

Dimensions of jpeg: 1499 x 1499

Images with one dimension > 600 pixels are displayed as thumbnails below.

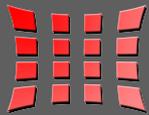
For large images we suggest you right click to download rather than opening them in a browser

Adjust image? minLevel: maxLevel: sigma: clip:



minL=12, maxL=28240, sigma=20 clip=n





Catalogue data



Cone search of main science tables



Menu driven SQL query builder



Freeform SQL query



CrossID of list of objects



Cone searches and ADQL/SQL queries in AstroGrid

Home | Overview | Browser | Access | Login | Cookbook | nonSurvey **WSA**

Status: Logged in as - User:mikeread Community:roe.ac.uk

The current version of DR6 does not contain UDS detection/source data and no new UDS mosaic. Users wishing to access UDS data should use the DR5plus database.

SQL by Menu Step 2

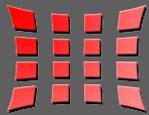
In this section you should select the parameters you wish to extract from the UKIDSSDR6PLUS.JasYJHKsource table and/or apply constraints to. **Indexed variables** are highlighted, searches making use of indexed quantities will execute faster.

You must select or enter at least one parameter.

Select:

sourceID	cuEventID	framesSetID	ra	dec	sigRa
sigDec	epoch	muRa	muDec	sigMuRa	sigMuDec
chi2	nFrames	cx	cy	cz	htmlID
l	b	lambda	eta	priOrSec	ymj_1Pnt
ymj_1PntErr	j_1mhPnt	j_1mhPntErr	hmkPnt	hmkPntErr	ymj_1Ext
ymj_1ExtErr	j_1mhExt	j_1mhExtErr	hmkExt	hmkExtErr	mergedClassStat
mergedClass	pStar	pGalaxy	pNoise	pSaturated	eBV
aY	aJ	aH	aK	yHallMag	yHallMagErr
yPetroMag	yPetroMagErr	yPsiMag	yPsiMagErr	ySerMag2D	ySerMag2DErr
yAperMag3	yAperMag3Err	yAperMag4	yAperMag4Err	yAperMag6	yAperMag6Err
yGausig	yEll	yPA	yErrBits	yDeblend	yClass
yClassStat	yppErrBits	ySeqNum	yObjID	yxi	yEta
j_1HallMag	j_1HallMagErr	j_1PetroMag	j_1PetroMagErr	j_1PsMag	j_1PsMagErr
j_1SerMag2D	j_1SerMag2DErr	j_1AperMag3	j_1AperMag3Err	j_1AperMag4	j_1AperMag4Err
j_1AperMag6	j_1AperMag6Err	j_1Gausig	j_1Ell	j_1PA	j_1ErrBits
j_1Deblend	j_1Class	j_1ClassStat	j_1ppErrBits	j_1SeqNum	j_1ObjID
j_1Xi	j_1Eta	j_2HallMag	j_2HallMagErr	j_2PetroMag	j_2PetroMagErr
j_2PsMag	j_2PsMagErr	j_2SerMag2D	j_2SerMag2DErr	j_2AperMag3	j_2AperMag3Err





SQL queries

- Powerful and flexible
- Table views simplify some queries
- Queries can be joined with other major datasets (SDSS, 2MASS)
- Results in FITS / ASCII / VOTable

Freeform SQL Query

This form allows you to submit an SQL query to the WSA database ([notes and tips](#)).

Database release to use:

Upload SQL query from file into this form:

```

or enter
SQL statement: SELECT zAperMag3-jAperMag3 AS zmj,
zAperMag3 AS z
FROM gcsPointSource
WHERE
/* Positional cuts for the Sigma Orionis in the
Orion Nebula Cluster (in degrees for both): */
ra BETWEEN +84.00 AND +85.00 AND
dec BETWEEN -2.85 AND -2.30 AND
/* Magnitude cuts to avoid saturated sources: */
zAperMag3 > 11.3 AND
yAperMag3 > 11.5 AND
jAperMag3 > 11.0 AND
hAperMag3 > 11.3 AND
k_lAperMag3 > 9.9 AND
/* Magnitude/colour cuts to select out the member
sequence: */
zAperMag3 < 5.0*(zAperMag3-jAperMag3) + 10.0 AND
jAperMag3-hAperMag3 > 0.3

```

ensure one of the file formats is selected below if you want to save your results.

WSA Database - SQL Query Results

Data file generating queries can take a bit longer to execute as they write to a file ALL rows returned by the query.

A web link to your generated output file will appear at the bottom of this page.

Connecting to UKIDSSDR6PLUS database

QUERY STARTED: Thu Jan 21 22:20:35 GMT 2010 [1 active, 5137 total]

Please keep this browser window open and wait for your results or further information to appear below...

timeout: 3600

Connected to database

Submitted query: SELECT zAperMag3-jAperMag3 AS zmj, zAperMag3 AS z FROM gcsPointSource WHERE /* Positional cuts for the Sigma Orionis in the Orion Nebula Cluster (in degrees for both): */ ra BETWEEN +84.00 AND +85.00 AND dec BETWEEN -2.85 AND -2.30 AND /* Magnitude cuts to avoid saturated sources: */ zAperMag3 > 11.3 AND yAperMag3 > 11.5 AND jAperMag3 > 11.0 AND hAperMag3 > 11.3 AND k_lAperMag3 > 9.9

... OK

	zmj	z
1	+0.684647	+17.461388
2	+1.321213	+19.469225
3	+0.914549	+18.431257
4	+1.063080	+19.178596
5	+0.521610	+17.668072
6	+0.508320	+18.239601
7	+0.432016	+18.772482
8	+1.039431	+19.810425
9	+0.502993	+16.177141
10	+0.769297	+18.745730

(Query returned 5457 result rows, only the first 10 rows are shown in the displayed table.)

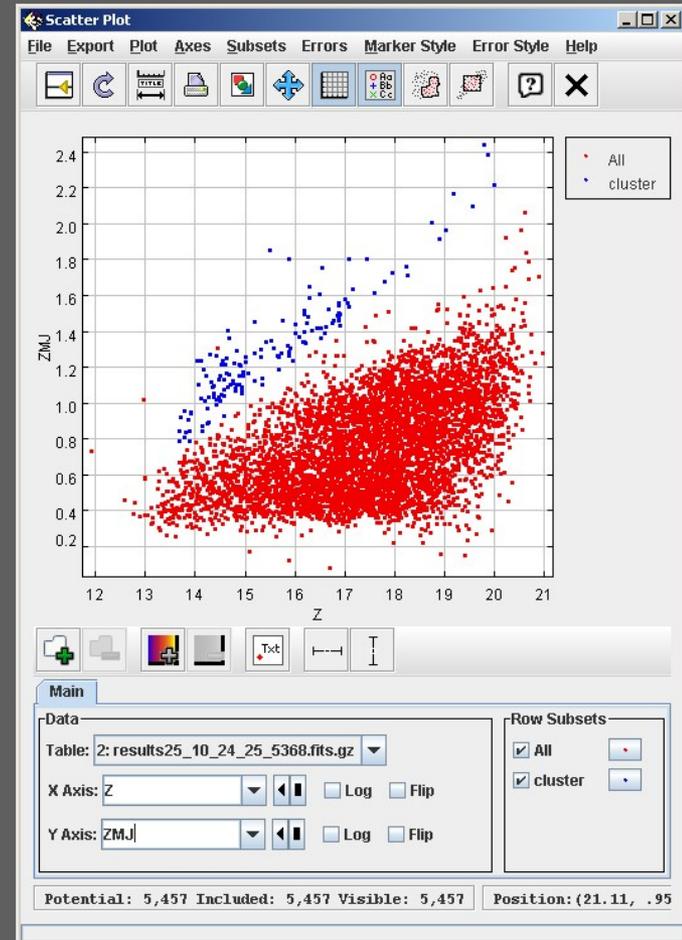
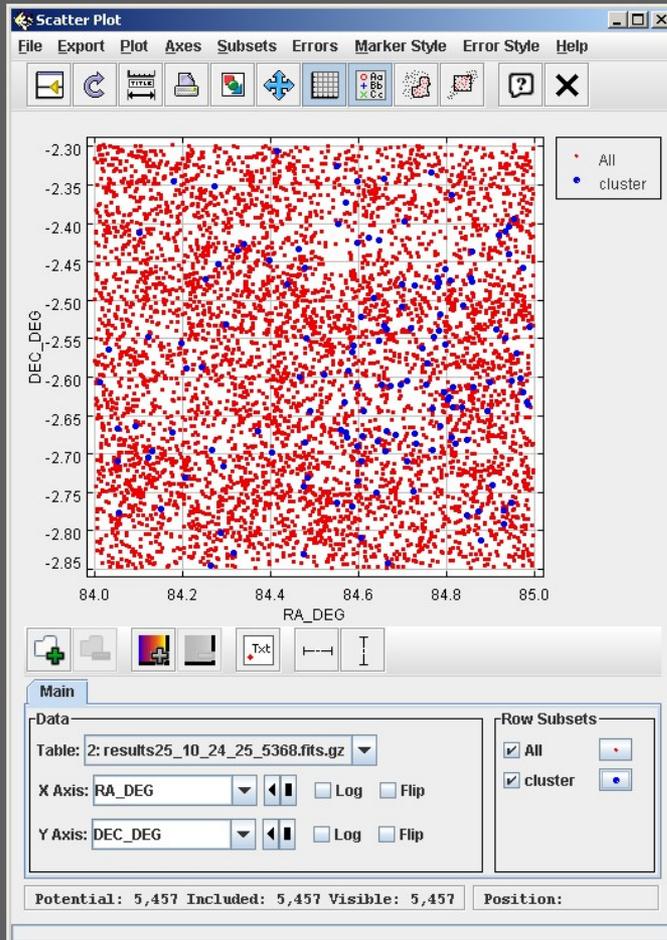
[Download Results File](#), your results in a gzipped FITS file (Contains 5457 rows, 37.4 KB)

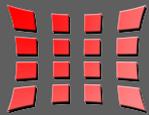
[Launch file in Topcat](#) (requires Java 1.4 and Java Web Start, approx 3Mb download for Topcat application)





Results in TOPCAT





AstroGrid/VO

- Released DBs accessible via AstroGrid
- Catalogue and pixel data available.
- Cone search & ADQL
- Users able to script access/queries via eg Python

```
>>> from astrogrid import DSA
>>> db = DSA('ivo://wfau.roe.ac.uk/ukidsDR6-v1/wsa/ceaApplication')
>>> app = db.query('SELECT TOP 2 s.ra, s.dec, s.yapermag3 FROM lasSource AS s where s.yapermag3 between 11 and 13')
>>> app.status()
'DONE'
>>> result = app.results()[0]
>>> print result
<?xml version='1.0' encoding='UTF-8'?>
<VOTABLE xmlns='http://www.ivoa.net/xml/VOTable/v1.1' xmlns: xsi='http://www.w3.org/2001/XMLSchema-instance' xsi:schemaLocation='http://www.ivoa.net/xml/VOTable/v1.1 http://software.astrogrid.org/schemas/vo-formats/VOTable/v1.1/VOTable.xsd' version='1.1'>
  <RESOURCE>
    <TABLE>
      <FIELD name='ra' ID='ra' ucd='POS_EQ_RA_MAIN' datatype='double' unit='Degrees' >
        <DESCRIPTION ID='ra'>
          Declination Right Ascension
        </DESCRIPTION>
      </FIELD>
      <FIELD name='dec' ID='dec' ucd='POS_EQ_DEC_MAIN' datatype='double' unit='Degrees' >
        <DESCRIPTION ID='dec'>
          Declination Declination
        </DESCRIPTION>
      </FIELD>
      <FIELD name='yaperMag3' ID='yaperMag3' ucd='PHOT_MAG' datatype='float' unit='mag' >
        <DESCRIPTION ID='yaperMag3'>
          Default point/extended source Y aperture corrected mag (2.0 arcsec aperture diameter)
        </DESCRIPTION>
      </FIELD>
    </TABLE>
  </RESOURCE>
  <TABLEDATA>
    <TR>
      <TD>138.84093100546802</TD>
      <TD>10.057656405707027</TD>
      <TD>11.000011</TD>
    </TR>
    <TR>
      <TD>51.35374036841854</TD>
      <TD>-1.1524943847170404</TD>
      <TD>11.000025</TD>
    </TR>
  </TABLEDATA>
  </TABLE>
</VOTABLE>
```

The screenshot shows the VO Explorer interface with a list of resources. The selected resource is UKIDSS DR6 (Secure Access). The interface includes a menu bar (File, Edit, View, Resource, Interop, Window, Help), a left sidebar with Resource Lists, and a main content area with a table of resources. The table has columns for Flag, Title, Capability, Validity, and Date. The selected resource is highlighted in blue. Below the table, there are sections for Actions (Build ADQL, About, Email Curator) and Information (Table Metadata, Content Type, Relationships).

Flag	Title	Capability	Validity	Date
	XMM-Newton Serendipitous Source Catalogue (2XMM)			2009-04-17
	XMM-Newton Serendipitous Source Catalogue (2XMM)			2009-04-17
	WFAU Publishing Registry			2008-02-14
	VOTable to KML Converter			2009-05-12
	UKIDSS DR6 (Secure Access)			2009-10-30
	UKIDSS DR6 (Secure Access)			2009-10-30
	UKIDSS DR5 (Secure Access)			2009-05-08
	UKIDSS DR5 (Secure Access)			2009-05-08
	UKIDSS DR4 (Secure Access)			2009-05-08
	UKIDSS DR4 (Secure Access)			2009-05-08
	UKIDSS DR3 SIAP Service			2009-07-29
	UKIDSS DR3 (Secure Access)			2009-05-08
	UKIDSS DR3 (Secure Access)			2009-05-08
	UKIDSS DR3			2009-06-05
	UKIDSS DR3			2009-06-05
	UKIDSS DR2 World Release			2009-05-08
	UKIDSS DR2 World Release			2009-05-08
	UKIDSS DR2 SIAP Service			2009-05-08
	UKIDSS DR2			2009-05-08
	UKIDSS DR2			2009-05-08
	UKIDSS DR1 SIAP Service			2009-05-08
	UKIDSS DR1			2009-11-03
	UKIDSS DR1			2009-11-03
	Two Micron All Sky Survey (2MASS)			2009-11-24
	Two Micron All Sky Survey (2MASS)			2009-11-24
	SuperCOSMOS Sky Surveys SSS SIAP Cutout Service			2009-04-17
	SuperCOSMOS Science Archive (SSA)			2009-11-17
	SuperCOSMOS Science Archive (SSA)			2009-11-17
	SDSS DR6 SEGUE			2008-06-27
	SDSS DR6 SEGUE			2008-06-27
	SDSS Data Release 7 (DR7)			2009-09-09
	SDSS Data Release 7 (DR7)			2009-09-09
	SDSS Data Release 5 (DR5)			2009-08-12
	SDSS Data Release 5 (DR5)			2009-08-12
	SDSS Data Release 3 (DR3)			2009-08-24
	SDSS Data Release 3 (DR3)			2009-08-24
	Rontgen Satellite Archive (ROSAT)			2008-03-26
	Rontgen Satellite Archive (ROSAT)			2008-03-26

UKIDSS DR6 (Secure Access)
 IVOA-ID: ivo://wfau.roe.ac.uk/ukidsDR6-v1/wsa
 Resource Type: CatalogService Created: 2009-10-30

Content Type: survey Subject: infrared, galaxies, stars, survey Level: research
 This DSA hosts data release 6 of the UKIRT Infrared Deep Sky Survey housed at the Wide Field Astronomy Unit at the University of Edinburgh. In order to access this data you need to contact Mark Holliman at msh@roe.ac.uk to be added to the authorized users list (unless you are already logged on with a valid WFAU community account). This catalog contains WFCAM data primarily originating from the five UKIDSS surveys: Large Area Survey, Galactic Plane Survey, Galactic Clusters Survey, Deep Extragalactic Survey and the Ultra Deep Survey (see the www.ukids.org for survey descriptions). [Further Information...](#)

Relationships: service-for: ivo://wfau.roe.ac.uk/ukidsDR6-v1/wsa/ceaApplication

Annotations: Flag, Highlight, Alternative title, Notes, Tags, Availability: Service OK





End

wsa-support@roe.ac.uk

vsa-support@roe.ac.uk

