WP	CASU WP name /sub task / 05Q3m1 deliverables	Staff	Prog	Prog	Prog	Textual Summary
#			05Q1	05Q2	Jul	
1	**Management and definition of project responsibilities**					
1.1	report to VISTA, UKIDSS, JAC, ATC, GSC	all	17	25	28	
	meeting minutes, monthly reports, quarterly review/reports & planning. prepare for, attend and give talks at UKIDSS survey heads and SV meetings (27 Jul, 18 Aug). prepare for, attend and give talks at VDUC meeting (6 Sep). produce draft functionality document for VDMT ... VDUC. hold regular telecons with JAC.					held minuted CASU meetings. MJI presented pipeline status and calibration at UKIDSS survey heads meeting (27 Jul). All preparing for SV meeting (EGE,MJI,MR,STH will attend).
1.2	interface control document between CASU and JAC	MJI	100	100	100	completed
1.3a	interface control document between CASU and WFAU (WFCAM)	MJI	100	100	100	completed
1.3b	interface control document between CASU and WFAU (VISTA)	PSB	0	0	0	
	liaise with WFAU, camera and telescope team for design of VISTA FITS headers for input to ICD					no progress
1.4a	define WFCAM data structures and FITS headers	MJI, JRL, PSB	100	100	100	completed
1.4b	update proposed VISTA FITS headers as necessary	PSB	10	20	25	
	monitor and update proposed VISTA FITS headers. give feedback on test FITS files. test conformance of output FITS files with ICD.					some ESO/FITS issues resolved. reviewing VIRCAM FITS issues
1.5a	define WFCAM observing protocols	STH, DWE	55	60	65	
	monitor and update MSB guidelines. monitor observing efficiency and report.					discussion continues on observing strategies, including coadding and microstepping. analysis of observing efficiency reported to JAC and UKIDSS survey heads.
1.5b	define VISTA observing protocols	PSB	15	20	25	
	liaise with development team					reviewed current state of simulator output. fedback suggestion on state of observing templates
1.6a	liaise with UKIDSS&JAC on WFCAM obs strategy, surveys planning	STH	40	50	55	
	liaise and monitor progress					MJI attended UKIDSS survey heads meeting and presented pipeline status and analysis of observing strategy. STH and JRL hosted visit by Simon Dye to compare analysis of SV data
1.6b	liaise with Proj. Sci. on VISTA observing strategy & survey planning	PSB	17	25	28	
	liaise and monitor progress					discuss issues including hook for UK VISTA pipeline
1.7a	liaise with VDUC on VDFS products for WFCAM	STH, MJI, JRL	50	55	55	
	liaise and monitor progress. finalise reports on results from WFCAM 05A SV data. update Simon Dye on SV analysis progress					Reports on SV1 in progress.Preliminary results circulated to UKIDSS testers. CSV kept in loop.
1.7b	liaise with VDUC on VDFS products for VISTA	MJI, STH	17	25	25	
	liaise and monitor progress. assess and prioritise work required for extra UK VDFS products. revisit WPs for V1-5 in lieu of above					no progress
1.8a	liaise with UKIDSS and JAC on survey progress DB (WFCAM)	JRL	50	50	50	
	maintain OMP database mirror to be used with survey progress database, incl. simplified user interface					no further progress
1.8b	liaise with VDUC and ESO on survey progress DB (VISTA)		0	0	0	on hold

1.9	system documentation	DWE,EGS,MR	17	25	28	
	update and maintain web pages of system docs					updated and maintained WWW pages. testing version 2.1 of plone
1.10	VST processing preparation	EGS, MJI	0	10	10	
	monitor, assess and respond to VST proposal feedback and re-submission					no progress
2	**ESO VISTA software interface deliverables and documentation**					
2.1	DFS impact document	PSB	70	80	95	
	update documents					final draft accepted by ESO
2.2	Calibration Plan document	PSB	70	80	90	
	update documents					final draft accepted by ESO pending v. minor edit
2.3	Data Reduction Library Design document	PSB	70	80	95	
	update documents					final draft accepted by ESO
2.4	Data Reduction Library					subsumed into 2.3
	produce v0.1 of DRL and test in CPL environment					
2.5	ICD ESO/VPO	PSB	0	5	5	
	update FITS header doc and DID/DIC and data dictionary files					reviewed DSR proposal (ESO) full Inst. & TCS dics (ATC)
2.6	Instrument specification and interface documents	PSB	0	6	6	
	develop integration tests in CPL & QFITS environment					no progress
2.7	Delivery software modules for exposure time calculator	STH, PSB	20	60	80	
	finish updated ETC doc. produce C versions of ETC software modules					finished standalone test program & debugging. folded RIXs into doc
2.8	liaise with VISTA IR camera development team	PSB	8	25	25	
	continue liaising with VISTA IR camera development team					FITS issues (see above). test state of current camera software being run at RAL, discussed outstanding issues include. generation of first-guess WCS
2.9	Development of DQC measures	PSB	0	5	5	
	update QC measures as needed in light of test data					no progress
2.10	Documents for software modules	PSB	0	0	0	
3	**Pipeline infrastructure and pipeline progress monitoring tools**					
3.1	interactive tools for running pipeline	JRL	60	75	75	
	update tools in the light of 05A experience and document					no further progress
3.2	high level scripts to interrogate headers	MR	50	60	65	
	update header interrogation scripts and test					prototype developed further and implementing XML. DQC database/archive developed further.
3.3	automatic progression of results to web pages	MR	50	55	60	
	maintain and update web-based pipeline progress web page					interface to new archive under development
3.4	automatic checks to spot failure of pipeline	JRL	0	20	30	
	continue developing scripts to pick out problem datasets					pipeline configuration very stable. need to include trap to spot zeroed frames
3.5a	Tools for fixing problem datasets (WFCAM)	JRL	20	25	25	
	continue developing tools to handle problems in WFCAM data					no further progress
3.5b	Tools for fixing problem datasets (VISTA)		0	0	0	on hold
3.6	group documentation on pipeline infrastructure	STH, JRL	60	60	65	
	stress test documentation and update as necessary					documentation updated
3.7a	Oversee reprocessing WFCAM data after bug fixes/improvements	MR	0	30	35	
	reprocess science data from 05A as necessary					April data being reprocessed to incorporate updated photometric calibration and improved stacking

3.7b	Oversee reprocessing VISTA data after bug fixes/improvements		0	0	0	on hold
4	**Set up and manage raw science archive**					
4.1	extend UKIRT archive to cope with WFCAM data	JRL, MR	50	65	65	
	improve front page entry point of WFCAM raw data archive. initiate, manage and monitor WFCAM-ESO raw data transfers					ESO data transfer complete up to 30 June.
4.2a	Ingest and verify WFCAM data	MR, MJI	10	25	25	
	ingest and verify 05B WFCAM data					awaiting new data
4.2b	Ingest and verify VISTA data		0	0	0	on hold
5	**Set up and manage data processing system hardware**					
5.1	Investigate alternatives (benchmarking, reliability etc)	MJI, PSB, JMI	100	100	100	completed
5.2	buy hardware and install	PSB, JMI, MJI	50	100	100	completed
5.3	integrating and testing	PSB, JMI	50	100	100	completed
5.4	Manage day-to-day maintenance and upgrades	PSB, JMI	17	25	28	
	continue maintenance and upgrade programme					purchased and installed more disk servers for bulk storeage. disks integrated and tested and put straight into use
5.5	Hardware additions for further processing system		0	0	0	
	monitor need for extra hardware for further processing	MJI				no requirement identified yet
6	**Run standard pipeline**					
6.1a	Update WFCAM master calibration frames	MJI, JRL	0	9	12	
	continue updating and testing calibration frames					frames up to date
6.1b	Update VISTA master calibration frames		0	0	0	
6.2a	Monitor detector performance WFCAM	JRL, MR	0	9	12	
	monitor with 05A and 05B data					comparison between april, may and june flats, darks show detector and filters very stable.
6.2b	Monitor detector performance VISTA		0	0	0	
6.3a	oversee standard processing WFCAM	MR	0	9	12	
	oversee 05B data					awaiting new data
6.3b	Oversee standard processing VISTA		0	0	0	
6.4a	Astrometric calibration WFCAM	MJI	0	9	12	
	recalibrate 05A and 05B data					calibration up to date
6.4b	Astrometric calibration VISTA		0	0	0	
6.5a	Photometric Calibration WFCAM	STH	0	9	12	
	calibrate using 2mass and continue developing secondary standards system, Ces etc					all data calibrated to 2mass, assessment of UKIRT FS proceeding
6.5b	Photometric Calibration VISTA		0	0	0	
6.6a	Verify Science products and monitor DQC measures WFCAM	EGS, MJI	0	9	12	
	assess 05A and 05B data					SV of products ongoing
6.6b	Verify Science products and monitor DQC measures VISTA		0	0	0	
6.7	Monitor data product transfer to WFAU	MR, MJI	0	9	12	
	continue data transfer to WFAU and monitor					data transfer working well
6.8a	Reprocess WFCAM data	MR	0	9	12	

	reprocess if major bug fixes					reprocessing as required
6.8b	Reprocess VISTA data		0	0	0	
7	**Development work for summit pipeline**					
7.1a	Interface test pipelines in ORAC-DR	JRL	100	100	100	completed
7.1b	Interface test pipelines to VISTA summit DR	JRL	0	0	0	
7.2a	implement WFCAM pipeline at summit	JRL	75	80	90	A lot of work done to improve the speed of the group processing stage. Timing tests are still being done, but many efficiency savings have been made.
	update and maintain					
7.2b	Implement VISTA pipeline at summit	JRL	0	0	0	on hold
7.3a	documentation for ORAC-DR interface	JRL	60	60	60	no further progress
	update and deliver documentation as development proceeds					
7.3b	documentation for interface VISTA	JRL	0	0	0	on hold
7.4a	upgrade and maintain summit pipeline WFCAM	JRL	17	25	35	new tools written for splitting master calibration frames for summit pipeline. summit pipeline supplied with the latest master flats and confidence maps
	update and maintain as required					
7.4b	upgrade and maintain summit pipeline VISTA	JRL	0	0	0	on hold
8	**Development and testing of standard 2d processing**					
8.1a	further development of standard pipeline for WFCAM	JRL	80	80	80	
	finish implementing new version of imcore to include full param set					full standard parameter set added - still needs testing
8.1b	development of VISTA specific packages	JRL	0	0	15	
	write version 0.1 CPL recipes and modules					started coding
8.2a	liaison with WFCAM development team	JRL	8	25	28	
	continue telecons and discussions. produce and prototype cross-talk correction. finish characterising image persistence and assess strategies to deal with it					crosstalk categorized and implementation code started
8.2b	liaison with Project Scientist & VISTA development team	MJI	8	25	28	
	assess any new detector engineering test data					nothing to report
8.3a	partake in planning WFCAM commissioning observations	STH	80	100	100	WFCAM commissioning completed
8.3b	partake in planning VISTA commissioning observations	STH	0	0	0	
	liaise and discuss with camera PS and VISTA PS					no progress
8.4a	Participate directly in commissioning WFCAM	STH	50	100	100	completed
8.4b	Participate directly in commissioning VISTA	STH	0	0	0	on hold
8.5a	Tuning pipeline during commissioning and after WFCAM	MJI, JRL, EGS	20	40	40	
	keep on tuning as newer data comes in. further assessment of the quality and stability of master calibration data. assess quality of science output					no major tuning this month
8.5b	Tuning pipeline during commissioning and after VISTA	MJI, JRL, EGS	0	0	0	on hold
8.6a	documentation for 2D processing software WFCAM	JRL	50	50	50	
	update docs as necessary					no progress
8.6b	documentation for additional 2D processing software VISTA	JRL	0	0	10	
	document within recipe and module C code in doxygen compatible format					begun with basic documentation as code development proceeds - needs more detail
8.7	Comparison between automated and manual data products	STH	50	50	55	

	assess CASU processed WFCAM SV data in conjunction with CSV and Survey Heads					Met with Simon Dye for intercomparison of processed data sets
9	**Development and testing of standard catalogue products**					
9.1	add in new measures requested	MJI	60	60	60	
	finish implementation of new measures and tuning of all std parameters					no progress
9.2a	refine astrometric calibration model	MJI	85	85	85	
	refine astrometric model after final shimming adjustments of camera					no progress
9.2b	refine astrometric calibration model - VISTA specific	MJI	0	0	0	
						on hold
9.3	generate model simulations of expected data	STH	100	100	100	completed
9.4	assess catalogue parameter reliability	MJI	70	70	70	
	refine parameter error estimates and check for systematics in new params, finish in conjunction with 9.1					no progress
9.5	intercomparison of catalogue products with other packages	MJI	100	100	100	completed
9.6	Completeness	MJI, EGS	0	10	30	
	design and report on completeness model, check completeness [9.6] and error estimates and parameter reliability [9.4]					performed completeness measurements using artificial sources in stacked WFCAM data. intial reliability calculation completed. reliability of star/galaxy classification underway. will be extended to all 4 chips and more stacks. magnitude errors not yet assessed. http://apm15.ast.cam.ac.uk/casudocs/wfcam/science-verification
9.7	documentation of catalogue software and products	MJI	55	55	55	
	update catalogue products documentation					no further porgress
10	**Setup trial and run further processing pipeline**					
10.1	Manage and run further processing stages		0	0	0	placeholder (start in Q3)
10.2	development and assessment of PSF options 1,2	DWE	60	65	70	
	run prototype code for PSF levels 1,2 on 05A data					trials continue with prototype code
10.3	develop 1D/2D PSF-deconvolved Sersic profile fits	MJI	0	0	0	
	prototype methods for Sersic profile fitting					no progress
10.4	Develop LSBG/nebulosity detection/parameterisation	MJI	0	0	0	
	investigate feasibility of nebulosity detection					on hold til "crud" problems re-assessed
10.5	Full iterative profile fitting for stellar images		0	0	0	paused
10.6	Develop and optimize Bayesian image classification	MJI	0	10	30	
	trial Bayesian classification schemes					prototype written - needs more testing
10.7	Modeling and simulations of further processing steps		0	0	0	
	simulate WFCAM data and cf with code developed in 10.2					no progress
11	**Photometric standards and calibration**					
11.1	Agree on primary standards (WFCAM + VISTA)	STH	90	100	100	completed
11.2	Choose secondary standards (WFCAM + VISTA)	STH	80	80	80	
	add in last few proposed standards and update doc					no progress
11.3a	take part in commissioning observations WFCAM	STH	10	100	100	phase II on-sky characterisation - completed
11.3b	take part in commissioning observations VISTA	STH	0	0	0	on hold
11.4a	Reduce data, compute zero points and colour equations WFCAM	STH	15	25	35	
	compute WFCAM photometric zeropoints from commissioning data. update colour terms relative to 2MASS and UKIRT FS					report in progress summarising photometric calibration. 2mass colour equations updated following analysis of SV1 data
11.4b	Reduce data, compute zero points and colour equations VISTA	STH	0	0	0	on hold

11.5	Update, maintain and extend secondary standards system	STH	0	0	0	
	begin building secondary standard fields system					no progress
11.6	Investigate photometric calibration field systematics WFCAM+VISTA	STH	0	0	20	
	investigate photometric calibration systematics					started analysis of WFCAM systematics. will be included in report
11.7	assess extinction monitoring methods and develop measures	STH	50	50	60	
	use 2MASS comparison to get first order estimate and assess expected accuracy in light of results from UKIRT FS					2MASS being routinely used to monitor extinction in frames; agrees with Skyprobe measures. initial analysis of extinction from UKIRT FS underway. will be included in report.
12	**Further development of DQC measures at summit and Cambr**					
12.1	develop extra systematic noise measures	MJI	50	75	80	
	finished for WFCAM; awaiting VISTA test files					measured inter-pixel capacitance by its effect on noise properties for WFCAM & VISTA
12.2	Refine current measures for WFCAM/VISTA data	JRL, MJI	20	25	30	
	continue monitoring the DQC assessment by visually checking random sub-sample					DQC monitoring continues
12.3	implement 2mass for throughput measurement	JRL	75	100	100	implemented local access version at summit - completed
12.4	master calibration frames for detector monitoring	JRL	35	40	50	
	continue monitoring using 05A and 05B WFCAM data					analysis of 05A data well underway, writing report
13	**Co-located list driven photometry**					
13.1	test methods for master catalogue generation	MJI	100	100		completed
13.2	develop basic WCS-based list driven photometer	MJI	90	90	95	
	extend to full 80 parameter set					code updated. testing.
13.3	externally driven WCS photometry and define parameter set	MJI	75	75	80	
	extend to full 80 parameter set					code updated. testing
14	**Stacking and mosaicing**					
14.1	develop benchmark simple stacking/mosaicing framework	MJI	100	100	100	completed
14.2	NN algorithm with simple rejection	MJI	100	100	100	completed
14.3	More sophisticated rejection dealing with pixilation	MJI	100	100	100	completed
14.4	Stacking with optimum weighting and defect rejection	MJI	25	25	25	
	refine using WFCAM deep survey data					no further progress
14.5	Advanced stacking/image restoration for variable PSF	MJI	0	0	0	
	TBD as part of UK design review					no progress
15	**Continuum subtraction and basic difference imaging**					
15.1	Simple WCS-based subtraction techniques	MJI	100	100	100	completed
15.2	investigate and apply different interpolation methods	MJI	100	100	100	completed
15.3	develop adaptive kernel matching option	MJI	80	80	80	
	continue debugging and enhancements to adaptive kernel package					still debugging, improving
15.4	transient event detection	STH	20	20	20	
	continue with WASP, INT WFC and APT datasets					still testing
16	**Interpolation techniques and PSF modeling**					
16.1	investigate alternative interpolation/PSF schemes	DWE	100	100	100	completed
16.2	implications for different stacking methods	DWE	20	25	30	testing alternative interpolation schemes begun
	trial different stacking options for WFCAM deep surveys					
16.3	implications for deriving catalogues and parameters	DWE	70	75	80	
	finish testing of astrometric refinement code					PSF determination programme and PSF fitting programme (V2) being tested. Astrometric limitations due to atmospheric turbulance for WFCAM calculated.
16.4	oversampled PSF generation per detector	DWE	100	100	100	completed
16.5	develop oversampled spatially varying PSF model	DWE	20	25	30	

	asess if spatially varying PSF model required, test on 05B data					spatial variation of chi^2 from PSF fitting investigated. report started. no sign of variation in current WFCAM data.