WP	CASU WP name /sub task / 04Q3 deliverable	Staff	effort		Q2 prog			Textual Summary
#			SW	Q1	Apr	May	Jun	
1	**Management and definition of project responsibilities**			**36.8**				
1.1	report to VISTA, UKIDSS, JAC, ATC, GSC	STH, MJI, PSB, JRL, DWE, MR, EGS		17				meeting minutes, monthly reports, quarterly review/reports & planning, VDUC meetings, JAC telecons; prepare for and attend ESO VDFS FDR
1.2	interface control document between CASU and JAC			100				completed
1.3a	interface control document between CASU and WFAU (WFCAM)			100				completed
1.3b	interface control document between CASU and WFAU (VISTA)			0				
1.4a	define WFCAM data structures and FITS headers			100				completed
1.4b	update proposed VISTA FITS headers as necessary	PSB		10				
1.5a	define WFCAM observing protocols			55				
1.5b	define VISTA observing protocols	PSB		15				liaise with development team
1.6a	liaise with UKIDSS&JAC on WFCAM obs strategy, surveys planning	DWE		40				liaise and monitor progress
1.6b	liaise with Proj. Sci. on VISTA observing strategy & survey planning	PSB		17				liaise and monitor progress
1.7a	liaise with VDUC on VDFS products for WFCAM	STH, MJI, JRL		50				liaise Dye, finalise comm-I reports, CSV & PI access to raw data
1.7b	liaise with VDUC on VDFS products for VISTA	MJI, STH		17				liaise, assess work for extra UK VDFS products, begin functional spec for UK review
1.8a	liaise with UKIDSS and JAC on survey progress DB (WFCAM)	JRL		50				maintain OMP database mirror
19.8b	liaise with VDUC and ESO on survey progress DB (VISTA)			0				
1.9	system documentation	DWE, EGS, MR		17				update and maintain WWW pages, trial Plone
1.10	VST processing preparation	EGS, MJI		0				monitor, assess and respond to VST proposal feedback
2	**ESO VISTA software interface deliverables and documentation**							
2.1	DFS impact document	PSB		70				respond to RIXs, update docs
2.2	Calibration Plan document	PSB		70				respond to RIXs, update docs
2.3	Data Reduction Library Design document	PSB		70				respond to RIXs, update docs
2.4	Data Reduction Library	PSB		0				test procedures in CPL
2.5	ICD ESO/VPO	PSB		0				update FITS header docs and DID/DIC and data dictionary files
2.7	Delivery software modules for exposure time calculator	STH, PSB		0				update ETC doc, produce C versions of ETC software modules
2.8	liaise with VISTA IR camera development team	PSB		8				
2.9	Development of DQC measures	PSB		0				respond to RIXs, update QC measures as required
3	**Pipeline infrastructure and pipeline progress monitoring tools**							
3.1	interactive tools for running pipeline	JRL		60				develop tools in the light of comm-II and document
3.2	high level scripts to interrogate headers	STH		50				update header interrogation scripts and test
3.3	automatic progression of results to web pages	MR		50				prototype a web-based pipeline progress system
3.4	automatic checks to spot failure of pipeline	STH		0				develop scripts to pick out problem datasets
3.5a	Tools for fixing problem datasets (WFCAM)	JRL		20				develop tools to handle problems in comm-II data
3.6	group documentation on pipeline infrastructure	STH, JRL		60				stress test documentation and update as necessary
3.7	Oversee reprocessing WFCAM data after bug fixes/improvements	MR		0				reprocess science data in comm-I
4	**Set up and manage raw science archive**							
4.1	extend UKIRT archive to cope with WFCAM data	JRL, MJR		50				finish V1 of WFCAM raw data archive, manage WFCAM->ESO raw data transfer
4.2	Ingest and verify WFCAM data	MR		10				ingest and verify comm-II and SV data
5	**Set up and manage data processing system hardware**							
5.1	Investigate alternatives (benchmarking, reliability etc)			100				completed
5.2	buy hardware and install	PSB, JMI, MJI		50				paused
5.3	integrating and testing	PSB, JMI		50				paused
5.4	Manage day-to-day maintenance and upgrades	PSB, JMI		17				continue maintenance and upgrade programme
6	**Run standard pipeline**							
6.1	Update WFCAM master calibration frames	MJI, JRL		/				Use WFCAM on-sky test data for this
6.2	Monitor detector performance WFCAM	JRL		/				monitor with comm-I and -II and SV data
6.3	Oversee standard processing WFCAM	MR		/				oversee processing of SV data
6.4	Astrometric calibration WFCAM	MJI		/				calibrate comm-I, II and SV data
6.5	Photometric Calibration WFCAM	STH		/				calibrate using 2MASS, develop secondary standards system, ce's etc
6.6	Verify Science products and monitor DQC measures WFCAM	EGS, MJI		/				assess comm-I and II and SV data
6.7	Monitor data product transfer to WFAU	MR, MJI		/				continue data transfer to WFAU and monitor
6.8	Reprocess WFCAM data	MR		/				reprocess if major bug fixes
7	**Development work for summit pipeline**							

7.1	Interface test pipelines in ORAC-DR	JRL		100				completed
7.2a	implement WFCAM pipeline at summit	JRL		75				demonstrate catalogue and non-catalogue DQCs; develop recipes for dealing with crosstalk, non-linearity, reset anomalies and persistence
7.3a	documentation for ORAC-DR interface	JRL		60				update and deliver documentation as development proceeds
7.4a	upgrade and maintain summit pipeline WFCAM	JRL		17				update & maintain, include commissioning enhancements
8	**Development and testing of standard 2d processing**							
8.1a	further development of standard pipeline for WFCAM	JRL		80				finish implementing new version of imcore to include full param set
8.2a	liaison with WFCAM development team	JRL		8				continue discussion on reset anomaly, crosstalk and linearity; assess science array test data for above problems and report
8.2b	liaison with Project Scientist & VISTA development team	MJI		8				assess any new detector engineering test data
8.3a	partake in planning WFCAM commissioning observations	STH		80				continue liaising with ATC/JAC
8.3b	partake in planning VISTA comissioning observations	STH		0				liaise and discuss with camera PS and VISTA PS
8.4a	Participate directly in commissioning WFCAM	STH		50				take part in second stage of WFCAM on-sky commissioning
8.5	Tuning pipeline during commissioning and after (WFCAM)	MJI, JRL, EGS		20				use commissioning data to tune processing strategy; assess the quality and stability of
8.6	documentation for 2D processing software	JRL		50				updates docs as necessary
8.7	Comparison between automated and manual data products	STH		50				assess CASU processed WFCAM commissioning data in conjunction with CSV
9	**Development and testing of standard catalogue products**							
9.1	add in new measures requested	MJI		60				finish testing and debugging new catalogue parameter measures
9.2	refine astrometric calibration model	MJI		85				assess astrometric properties of WFCAM comm-II and SV data
9.3	generate model simulations of expected data	STH		100				finished
9.4	assess catalogue parameter reliability	MJI		70				refine parameter error estimates and check for systematics in new params, finish in
9.6	Completeness	MJI, EGS		0				design and report on completeness model, check completeness [9.6] and error
9.7	documentation of catalogue software and products	MJI		55				update catalogue products documentation
10	Setup trial and run further processing pipeline							
10.1	Manage and run further processing stages			0				placeholder (start in Q3)
10.2	development and assessment of PSF options 1,2	DWE		60				develop and test prototype version of code for PSF level 2
10.3	develop 1D/2D PSF-deconvolved Sersic profile fits	MJI		0				prototype methods for Sersic profile fitting
10.4	Develop LSBG/nebulosity detection/parameterisation	MJI		0				investigate feasibility of nebulosity detection
10.5	Full iterative profile fitting for stellar images			0				paused
10.6	Develop and optimize Bayesian image classification	MJI		0				trial Bayesian classification schemes
11	Photometric standards and calibration							
11.1	agree on primary standards			100				completed
11.2	choose secondary standard fields	STH		80				final updates to standard fields, update fields in UKIRT database
11.3a	take part in commissioning observations WFCAM	STH		10				phase II on-sky characterisation
11.4a	Reduce data, compute zero points and colour equations WFCAM	STH		15				compute ZPs from commissioning data, update colour terms relative to 2mass
11.5	Update, maintain and extend secondary standards system	STH		0				begin building secondary standard fields system
11.6	Investigate photometric calibration field systematics WFCAM+VISTA	STH		0				investigate photometric calibration systematics
11.7	assess extinction monitoring methods and develop measures	STH		50				use 2MASS comparison to get first order estimate and assess expected accuracy
12	Further development of DQC measures at summit and Cambr							
12.1	develop extra systematic noise measures	MJI		50				trial with comm-II data, continue testing and monitoring systematic noise remover
12.2	Refine current measures for WFCAM/VISTA data	JRL, MJI		20				trial with comm-II data, monitor DQC assessment and random visual cehcks
12.3	implement 2mass for throughput measurement	JRL		75				implement local access version at summit
12.4	master calibration frames for detector monitoring	JRL		35				assess and report using commissioning data
13	Co-located list driven photometry							
13.1	test methods for master catalogue generation			100				completed
13.2	develop basic WCS-based list driven photometer	MJI		90				extend to full 80 parameter set
13.3	externally driven WCS photometry and define parameter set	MJI		75				extend to full 80 parameter set
14	Stacking and mosaicing							
14.1	develop benchmark simple stacking/mosaicing framework	MJI		100				completed
14.2	NN algorithm with simple rejection	MJI		100				completed
14.3	More sophisticated rejection dealing with pixellation	MJI		100				completed
14.4	Stacking with optimum wighting and defect rejection	MJI		25				refine and test current seeing weighting method on FIRES data
14.5	Advanced stacking/image restoration for variable PSF	MJI		0				TBD as part of UK design review
15	Continuum subtraction and basic difference imaging							

15.1	Simple WCS-based subtraction techniques	MJI		100				completed
15.2	investigate and apply different interpolation methods	MJI		100				completed
15.3	develop adaptive kernel matching option	MJI		80				continue debugging and enhancements to adaptive kernel package
15.4	transit event detection	STH		20				continue with WASP, INT WFC and APT datasets
16	Interpolation techniques and PSF modeling							
16.1	investigate alternative interpolation/PSF schemes			100				completed
16.2	implications for different stacking methods			20				paused
16.3	implications for deriving catalogues and parameters	DWE		70				finish development and testing of astrometric refinement code
16.4	oversampled PSF generation per detector			100				completed
16.5	develop oversampled spatially varying PSF model	DWE		0				finish development of spatially varying PSF model, final tuning on WFCAM on-sky data