SDSS-II Work Breakdown Structure (WBS)

as of 02/09/05

WBS	Task Name
3	**New Development**
3.1	**SEGUE Project Development**
3.1.1	**Segue Science Requirements**
3.1.1.1	Develop SEGUE Science Requirements Document
3.1.1.2	Review and revision of SEGUE Science Requirements Document
3.1.1.3	SEGUE Science Requirements Document approved by MC
3.1.2	**SEGUE Survey Stategy**
3.1.2.1	Develop the baseline 3-year SEGUE observing plan, in prioritized order
3.1.2.2	Baseline SEGUE observing plan reviewed by MC, Head of Survey Coordination
3.1.2.3	Baseline SEGUE observing plan approved
3.1.3	**SEGUE Target Selection**
3.1.3.1	Formalize SEGUE target selection web page
3.1.3.2	**SEGUE Target Selection Code Changes**
3.1.3.2.1	Cool white dwarf numbers allowed to exceed (on rare occassions) 10/plate pair.
3.1.3.2.2	Incorporate proper motion catalog from AMNH/Shara et al.
3.1.3.2.3	SEGUE target selection code finished
3.1.3.3	**SEGUE Target Selection Technical Paper**
3.1.3.3.1	Write and publish SEGUE target selection paper
3.1.3.3.2	SEGUE target selection paper published
3.1.3.4	**SEGUE Qualilty Assurance Program**
3.1.3.4.1	**SEGUE Imaging Quality Assurance**
3.1.3.4.1.1	Develop process for inspecting new SEGUE imaging data at APO
3.1.3.4.1.2	Develop process for inspecting new SEGUE imaging data in DP Factory
3.1.3.4.1.3	SEGUE imaging QA processes defined
3.1.3.4.2	**SEGUE Spectra Quality Assurance**
3.1.3.4.2.1	Develop process for inspecting new spectra in each of the 11 target selection categories
3.1.3.4.2.2	Develop process for monitoring overall SEGUE plate qualilty on "next-day" basis during operations
3.1.3.4.2.3	SEGUE specta QA processes defined
3.1.4	**Refined Derived-Parameters Determinations**
3.1.4.1	Compute and verify photometric parallax info
3.1.4.2	Determine effects of zero-point errors in photometry and variations across the sky
3.1.4.3	Determine errors in Teff, log, g, etc, with respect to F subdwarf model atmospheres
3.1.4.4	Quantify how the determinations of velocity and log(g) scale with S/N
3.1.4.5	Determine the S/N for a star of fiducial flux and exposure time
3.1.4.6	Define the set of model atmospheres, known star templates and isochrones that will be used and verify their self-consistency.
3.1.4.7	Determine the appropriate number of sky fibers per faint plate.
3.1.5	**Calibrations/Catalogs of Spectroscopy of Star of Known Metalicity**
3.1.5.1	Design globular cluster and open cluster plates at high S/N to assist with star catalog assembly
3.1.5.2	Observe SEGUE globular and open cluster plates
3.1.5.3	Assemble catalog of stars of known metalicity, gravity, Teff for use in refining atmosperic parameter measuring code.
3.1.5.4	SEGUE star catalog assembled
3.1.5.5	Incorporate data from SEGUE globular and open cluster plates into processing algorithms.
3.1.6	**SEGUE Spectroscopic Data Processing Pipelines**
3.1.6.1	**SEGUE specBS Pipeline**
3.1.6.1.1	Incorporate most recent ELODIE catalog of known star templates into SEGUE specBS
3.1.6.1.2	Prune ELODIE templates to clean zero-pointed list
3.1.6.1.3	Generate list of new data model outputs from ELODIE matches and diagnose quality of fit
3.1.6.1.4	Perform regression tests on modified SEGUE specBS pipeline and verify production-readiness
3.1.6.1.5	SEGUE specBS pipeline development complete
3.1.6.2	**SEGUE Spectro-2D Pipeline**
3.1.6.2.1	Generate Spectro-2D outputs that are co-added and wavelength calibrated
3.1.6.2.2	Modify Spectro-2D to output non-sky subtracted spectra.
3.1.6.2.3	Make modifications to Lick indices and documentation for them
3.1.6.2.4	SEGUE Spectro-2D pipeline development complete
3.1.6.3	**Incorporate Proper Motions into Stellar Parameters**
3.1.6.3.1	Incorporate proper motions (USNO-B2.0) into included stellar parameters and derived distance, space velocities, with errors
3.1.6.3.2	Proper motions incorporated into stellar parameters
3.1.6.3.3	Develop methodology and process
3.1.6.4	**SEGUE Spectro Parameter Flat File Format**

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WBS	Task Name
3.1.6.4.1	Develop process for packaging new spectro parameters into uniform flat file format for collaboration (Year 1)
3.1.6.4.2	Process developed for packaging new spectro parameters into flat files
3.1.6.5	**SEGUE Stellar Parameter Pipeline**
3.1.6.5.1	Determine Teff, RV, chi-sq, log(g), etc. for each star, with errors on quantities
3.1.6.5.2	Develop pipeline for computing stellar atmosphere parameters, incorporating proper motions and generating flat files
3.1.6.5.3	Test Stellar Parameter Pipeline and verify production-readiness
3.1.6.5.4	Incorporate Stellar Parameter Pipeline into SEGUE data processing production operation
3.1.6.5.5	SEGUE Stellar Parameter Pipeline development complete
3.1.6.6	**SEGUE Database Development**
3.1.6.6.1	Produce DAS-style flat-fields for SEGUE outputs (imaging and spectra)
3.1.6.6.2	Produce CAS-style indexed look-up with new SEGUE parameters included.
3.1.6.6.3	Incorporate other Spectro-2D v5 data model changes into CAS data releases
3.1.6.7	**SEGUE Stellar Parameter Technical Paper**
3.1.6.7.1	Write and publish paper on SEGUE stellar parameter techniques
3.1.6.7.2	SEGUE stellar parameter technical paper published
3.1.7	**Additional Services for SEGUE Survey**
3.1.7.1	**SEGUE Theory/Simulation Work**
3.1.7.1.1	Define a method to quantify how well SEGUE will test the distribution of dark matter
3.1.7.1.2	Develop new models of the galaxy with kinematics in order to compare SEGUE scan data and radial velocities.
3.1.7.2	**Photo Pipeline Modifications for Crowded Field Data**
3.1.7.2.1	Explore photometry error systematics in crowded field data
3.1.7.2.2	DAOPHOT/DoPhot-style PSF only (no galaxies) fitting with PHOTO, to reduce load on photo deblender in crowded fields.
3.1.7.2.3	Perform regression tests on modified Photo and verify production-readiness
3.1.7.2.4	Photo pipeline modifications done
3.1.7.3	**Very-Low-Latitude Target Selection and Data Processing Analysis**
3.1.7.3.1	Generate list of suggested cross-scans that could be provided to Survey Coordinator when asked.
3.1.7.3.2	Develop and implement target selection algorithm for open cluster plates
3.1.7.3.3	Develop and implement target selection algorithm for Sagitarrius stream plates
3.1.7.3.4	Very-low-latitude target selection algorithms and analysis complete