Instrumental Calibration Schedule

- **Version 0 - 8/30/2007:** *prototype and dataflow infrastructure*
    - Initial version that uses mock input calibrations complete
    - Specifications for ground-based calibration deliverables w/ suggested algorithms

- **Version 1 - 5/31/2008:** *input test / simulation data with signatures from ground characterization*
    - Complete pipeline modules and core pipeline thread: *offset corrections using ref pixels for bands 3/4 (banding effects?); droop and other electronic artifacts, non-linearity*
    - Pipeline threads for creating on-orbit calibrations: *responsivity and sky-offset corrections*
    - Ground (static) calibration products generated (see earlier slides)
    - Calibration directory structure for static and dynamic products in place and functional
    - Create test suite: obtain simulation data with instrumental signatures included and compare calibrated frames from pipeline with truths

- **Version 2 - 11/30/2008:** *mission scenario testing using simulations and Spitzer data*
    - QA diagnostics and metrics for level-1 image products implemented (as per QA plan).
    - Check uncertainty estimation/propagation (via error model) using simulated SUR data
    - Required metadata and DB infrastructure for creating/querying dynamic and static calibration products defined and in place
    - Level-1 FITS image header metadata defined (for archival)

- **Version 3 - 6/30/2009:** *operations readiness testing, launch, IOC*
    - Optimization of core modules
    - Final Product Generator for Level-1 image products and metadata
    - Adopt existing or write new software to derive of ancillary calibrations from IOC, e.g: *linearity, droop, low-frequency responsivity maps*

- **Version 3.5 - 12/30/2009:** *tune-up pipelines/modules according to on-orbit performance*
    - Input parameter tuning and feedback from QA: check and/or update calibrations derived from IOC, update bad-pixel masks and optimize intervals for on-orbit calibration products
    - Further optimization (if needed)
    - Start to distill documentation/analysis pages into Explanatory Supplement

- **Version 4 - 9/20/2010:** *reprocessing (final processing pass)*
    - Tune up/optimize all parameters for final processing pass
    - Ensure all frames/scans are appropriately matched to 'best' calibration products from either first pass processing or re-derived. Account for anneals and other unforeseen transients
    - Ultimate goal: select/match the calibration sets that give the best photometric repeatability throughout the mission

Frame Co-addition (Image Atlas generation) Schedule

- **Version 0 - 8/30/2007:** *prototype and dataflow infrastructure*
  - Basic co-addition with bad pixel masking complete

- **Version 1 - 5/31/2008:** *input test / simulation data with signatures from ground characterization*
  - Selection of specific mask bits to flag against using specifiable bit-string template
  - Outlier detection and rejection implemented. Completeness/Reliability analysis
  - Uncertainty model versus repeatability checks and input uncertainty rescaling
  - Frame background (gain/throughput and offset) matching implemented, rescaling of calibration zero points in co-add headers
  - Sky tiling geometry for Image Atlas settled: dimensions and pixel sizes
  - IRSA-WISE image server capabilities, infrastructure and budgeting

- **Version 2 - 11/30/2008:** *mission scenario testing using simulations and Spitzer data*
  - Frame co-addition pipeline thread/wrapper
  - QA diagnostics and metrics on Atlas Image tiles defined and implemented; trackback utility
  - Sky tiling and frame indexation/querying scheme in place with DB infrastructure
  - Atlas Image stitching/background matching algorithms (for IRSA image server) designed
  - Atlas Image FITS and DB metadata defined

- **Version 3 - 6/30/2009:** *operations readiness testing, launch, IOC*
  - Optimization: analytic fits to input PRFs; FFTs to speed up convolution steps (TBD)
  - Noise-correlation correction factors to assist aperture photometery off co-adds (for explanatory supplement)
  - Final Product Generator (metadata integrated with image server)

- **Version 3.5 - 12/30/2009:** *tune-up pipelines/modules according to on-orbit performance*
  - Input parameter tuning: outlier thresholds, interpolation accuracy, masking bit templates
  - Point Response Functions (versus array location, brightness[IPC?] if necessary) derived
  - Further optimization (if needed)
  - Quality assurance (with feedback to other subsystems): e.g., temporal variations from frame stacks at poles to tune upstream instrumental calibrations, distortion, pointing accuracy.
  - Start to distill documentation/analysis pages into Explanatory Supplement

- **Version 4 - 9/20/2010:** *reprocessing (final processing pass)*
  - Tune up: derive best or scan-matched PRFs, thresholds, optimized to support final reprocessing
  - HIRES improvements for offline use/research.