

## HST INS Work Item Data Sheet

1. SI/Title: ACS/CTE Corrections for Image Restoration, with Time-Dependence (Study)
2. INS Lead: K. Sembach (tentative contact until lead within INS is identified)
3. Description of Work:

Study the methods of correcting the images for CTE effects, beyond basic photometric corrections. Develop algorithms for performing the corrections, if possible, and assess the feasibility of implementing these algorithms in software. Determine the effort and deliverables required to implement time-dependent corrections of the CTE for the WFC and HRC for both point and extended sources.

These techniques have potential use for other instruments (WFPC2, WFC3, STIS).
4. Schedule Constraints and Dependencies:

The work of determining and implementing time-dependent CTE corrections may be required for the ACS PSF variability study described on a separate work item sheet.
5. Risks and Open Issues:

Risk – Previous efforts to provide significant solutions in this area have been conducted, with better understanding of limitations resulting, but only limited gains in available calibrations.
6. Priority: High
7. Priority Justification:

A widely applicable time-dependent CTE correction will likely be needed for other upcoming work, such as a PSF variability analysis effort. Therefore, it is highly desirable to scope out the effort as soon as possible. Data to do make this assessment should already be available.
8. Resources (including estimated calendar duration for each portion):
  - a. Requirements  
ACS Instrument Scientists (0.25 FTE)
  - b. Development  
N/A
  - c. Testing  
N/A
9. Documentation and Deliverables:

Project Plan Document  
TIR or white paper, which will include a description of the methodology and algorithms, a recommendation for any necessary calibration observations required to implement the time-dependent corrections, and a high-level overview of the science that would benefit from implementation of these corrections.