



WFIRST-AFTA SDT DE Splinter Meeting Summary (Nov 2014)



Suggestions for DE section of SDT final report (2015):

- Begin with a new subsection on “The Power of WFIRST Instrumentation for DE Studies”
 - Extraordinarily capable design with flexibility
 - Periodic review of science priorities to maximize discovery potential
 - 3 methods provides robustness and internal check, and enables validation of discoveries
 - Complementary and synergistic with other surveys (details in new subsection?)
- Follow this with a subsection on each method (Supernovae, Weak Lensing, Galaxy Clustering)
- Conclude with “Synergy With Other Surveys” subsection that includes:
 - Photo-z discussion (needs LSST photometry)
 - Use of IFU for calibration of galaxy photo-z’s (useful for all WL surveys)
 - Ground vs WFIRST supernovae (needs SNe at $z < 0.1$ from ground)



More suggestions for DE section of SDT final report (2015):

- Update all the survey parameters using new instrumentation numbers, and propagate these into DE forecasts
- Some useful technical details to include in the appendix:
 - List of work that needs to be done before launch
 - Improve the error analysis of $H\alpha$ LF
 - Calibration of galaxy photo z 's using the IFU
 - Calibration strategy of supernova survey
 - Realistic grism simulations for the GRS



Another suggestion for DE section of SDT final report (2015):

- **In WL and GC subsections, add wide survey alternatives to maximize DE FoM to demonstrate the flexibility and capability of WFIRST**
 - What depths can we get to for 10,000 sq deg for GRS & WL for the same nominal observing times & doubling them?
 - The wide WL survey is less robust in systematic uncertainties, but is needed for photo z's used to determine z's for galaxies with single observed emission lines
 - This would significantly reduce the high z galaxy science from the HLS
 - This is mainly a demonstration of how we can easily achieve a significantly higher DE FoM should the need arise