

Program Update



Presented to:
SOFIA Users Group
Meeting #12

Presented by:
SOFIA Program Manager
Eddie Zavala

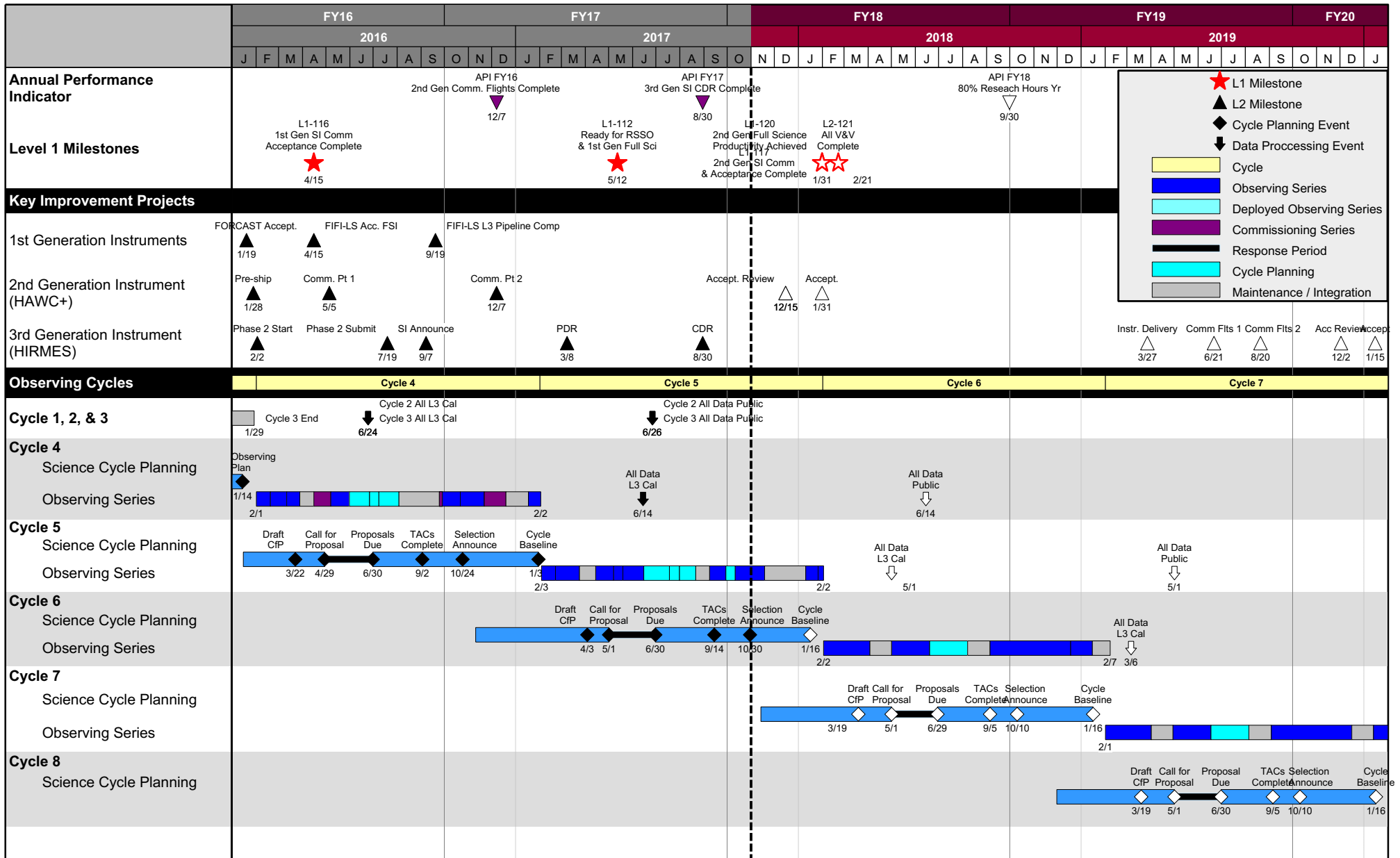
Observations of a Comet's First Passage through the Solar System Reveals Unexpected Secrets

Charles Woodward of the University of Minnesota's Minnesota Institute for Astrophysics observed [Comet C/2012 K1](https://sofia.usra.edu/public/news-updates/observations-comet's-first-passage-through-solar-system-reveals-unexpected) (also called Pan-STARRS after the observatory that discovered it in 2012) on SOFIA, searching for new insights into the evolution of the early solar system. <https://sofia.usra.edu/public/news-updates/observations-comet's-first-passage-through-solar-system-reveals-unexpected>

Artist's depiction of Comet C/2012 K1 (also called Pan-STARRS) and its coma during its first approach into the solar system. Credit: (NASA/SOFIA/ Lynette Cook)

November 16, 2017

SOFIA Top-Level Schedule



Executive Summary – 1 of 3

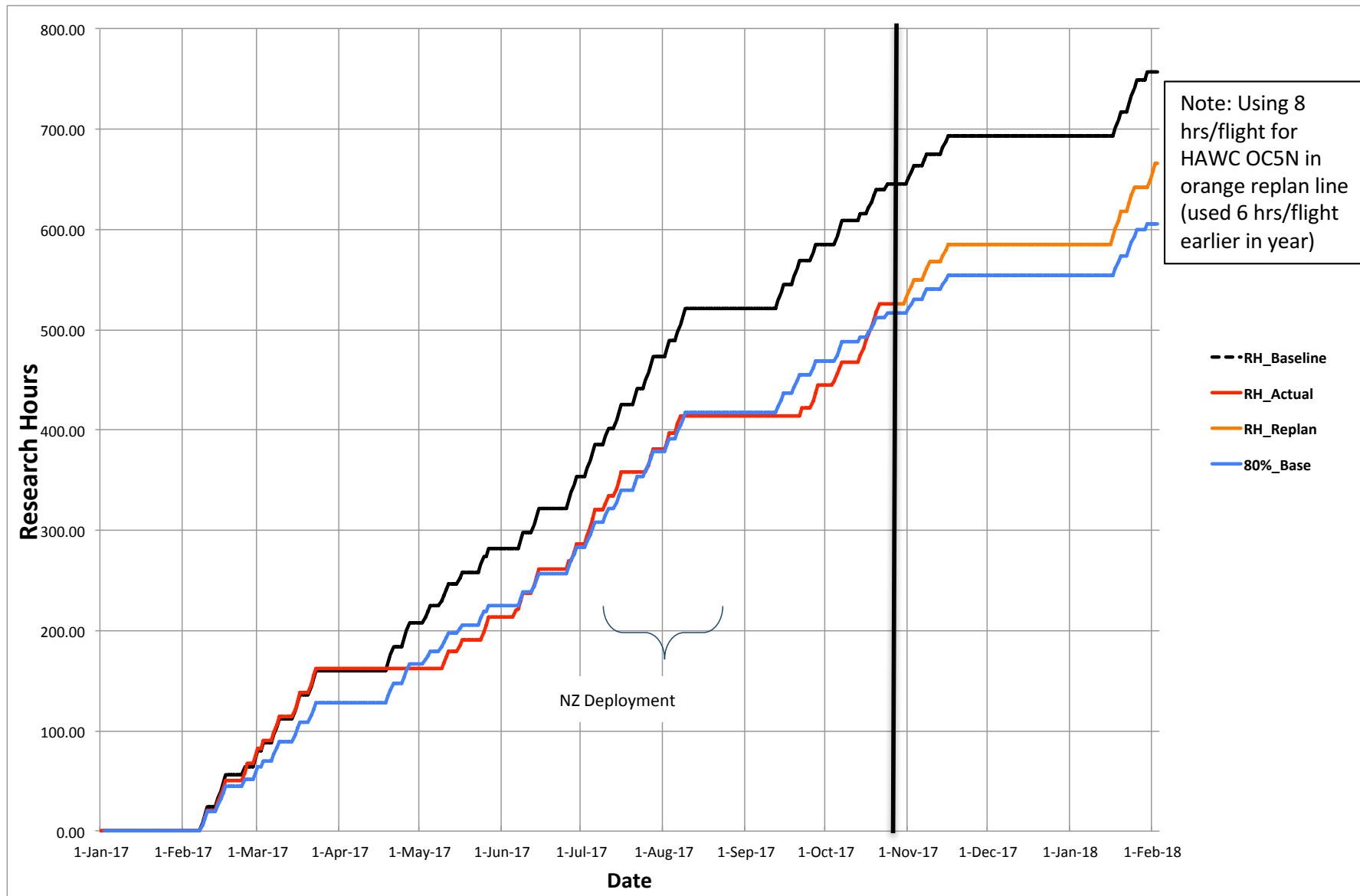


Program Update Since June 1, 2017

- Program has had good performance, due to team's ability to make significant adjustments to avoid impacts from negative situations
- In response to low dispatch rate, SMO made significant Fall schedule adjustments to recover and accomplish 80% of planned research hours
- New Zealand Deployment was completed from June 21 - August 13, 2017
- B703 Deluge Discharge Mishap occurred on July 27, 2017, causing significant damage to southeast quadrant of facility, including SOFIA personnel offices and SI labs. SOFIA was in New Zealand at the time and was not damaged.
 - SIs relocated to Mirror Coating Facility for temporary operations
 - SOFIA personnel relocated to temporary work locations
 - Mishap is still under investigation
- B703 Repair Project Status
 - Demolition started all floors to remove facility damage
 - SOFIA SI lab demolition was completed on October 31, 2017
 - SOFIA Lab Repair has started on November 6, 2017
 - SI lab Repairs Complete January 1, 2018
 - Repair of Office Space Complete May 8, 2018
- SOFIA flight operations are proceeding normally despite 703 damage

Cycle 5 Cumulative Research Hours

Status through Flight 447 on October 26



Executive Summary – 2 of 3



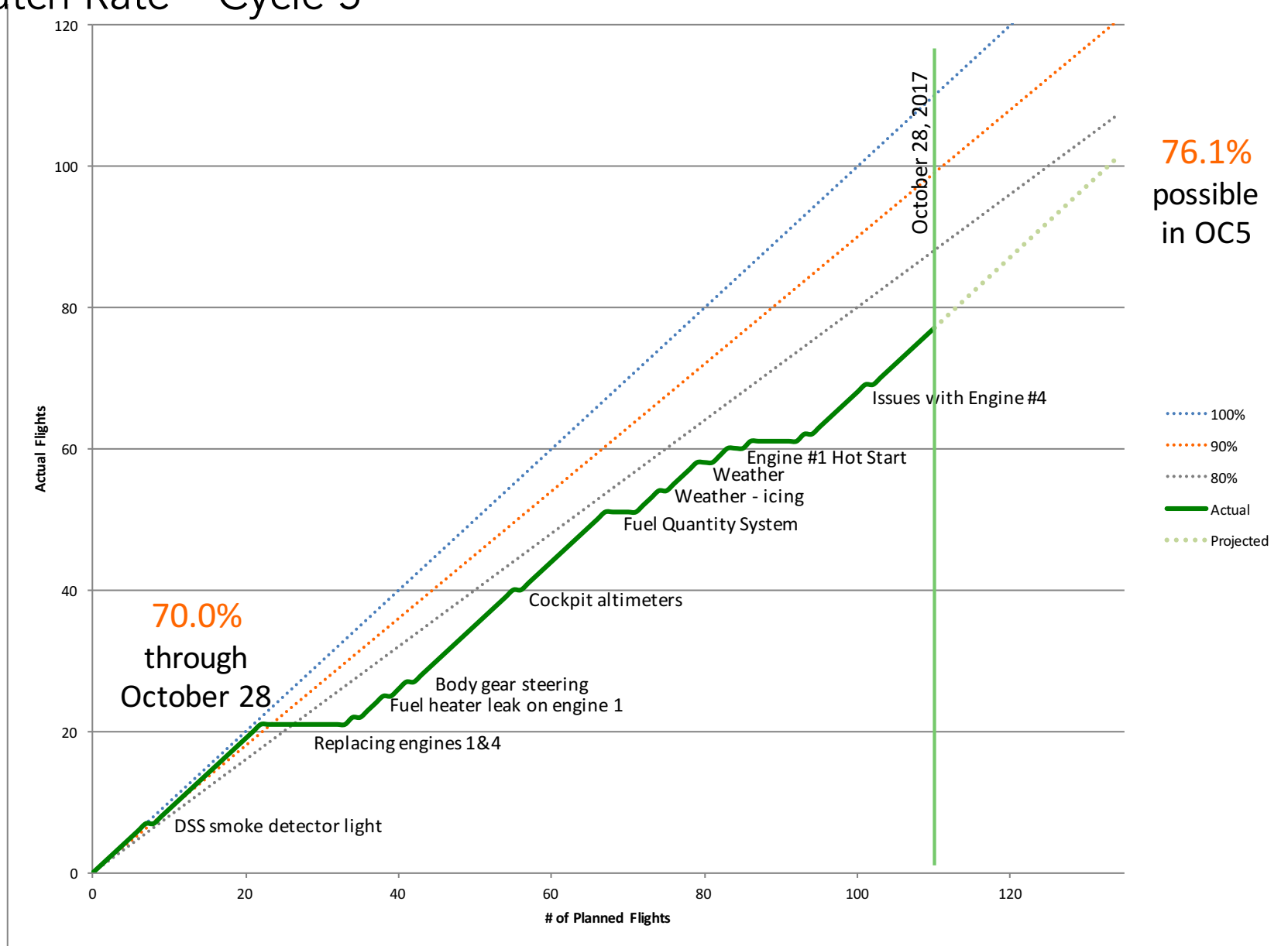
Program Update Since June 1, 2017

- HIRMES CDR (FY17 GRAMA API) completed on August 30, 2017 and is making good progress toward March 2019 delivery
- Exercised the first “suit-case deployment” for science operations in Daytona, Florida from October 2-6, 2017 (4 science flights, including Triton occultation)
- HAWC+ Science Instrument repairs were completed and Fall science flights have started. The hold-time issue has been resolved
- Cycle 6 draft schedule has been approved to support science proposal selections (109 science flights, 27 contingency flights, 872 RH)
- Since last SUG meeting science flight series execution has been good, but not without some cancellations. Program implementing Ops Strategies to improve science observing project completion
- Ferry flight to LHT in Hamburg, Germany for Maintenance/Upgrade period #15 is scheduled for November 19, 2017. SOFIA will return to Palmdale on January 6, 2018.
- Transition of USRA to the new contract has been completed

SOFIA Operations Center

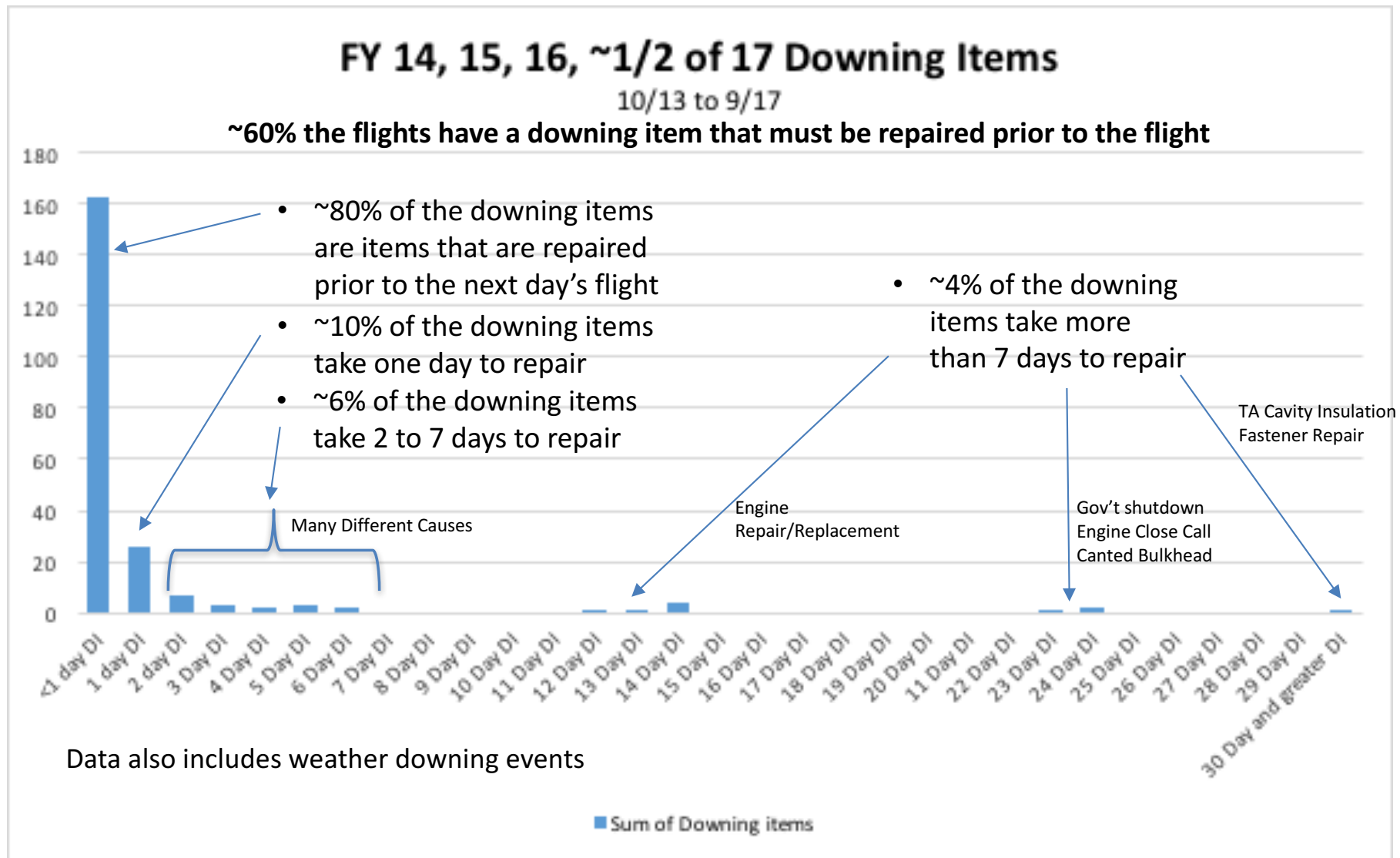


Dispatch Rate – Cycle 5

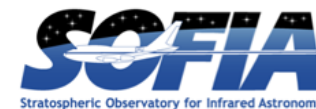


Downing Item (DI) History

- Data from ~270 flights over ~3.3 years
- ~88% of all flights have no DIs or the DI was resolved with no impact to schedule
- Downing Item is a logged issue that must be resolved prior to the next flight



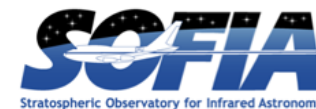
Key Operational Strategies



- Science Operations Planning
 - New Optimization criteria for the Cycle Scheduler (planning tool for targets placement) and Short Term Scheduler (planning tool for instrument flight series placement)
 - Science flight planning will be optimized for the completion of high-priority science observation projects

- SOFIA Operations Footprint and Capacity
 - Exercised the first “suit-case deployment” for science operations in Daytona, Florida from October 2-6, 2017 (4 science flights, including Triton occultation)
 - Using this experience to develop operational templates, with approved operational airports, for the future utilization of “suit-case deployments” by the SOFIA SMO
 - Implementing operations schedule efficiencies and applied budget to increase the number of planned flights with an appropriate number of contingency flights

Key Operational Strategies



- SOFIA Operations Reliability
 - Independent Assessment of Aircraft Operations and Maintenance - Spring 2018
 - Internal statistical analysis to identify the Downing Items (DI's) associated with observatory outages - ongoing
 - Program will apply the analysis results and assessment recommendations to improve SOFIA Operations reliability; i.e. dispatch rate
 - Targeted Mission Systems Upgrades to improve in-flight
 - New AOG (Aircraft-On-Ground) contracts being established with manufacturer and service providers to provide on-call response (24/7) and improve Program ability to aircraft-related issues
 - Engines: Treat as rotables with established ready-spares that are certified by test-cell operation
 - Aircraft engineering expertise for response to external influences; e.g. service bulletin disposition and required repairs
 - Avionics/Electrical Systems troubleshooting/repair technical support
 - Fuel Tank troubleshooting/repair