

Solar Probe Plus

A NASA Mission to Touch the Sun

Integrated Science Investigation of the Sun Energetic Particles

Preliminary Design Review

05 – 06 NOV 2013

Instrument Development Status

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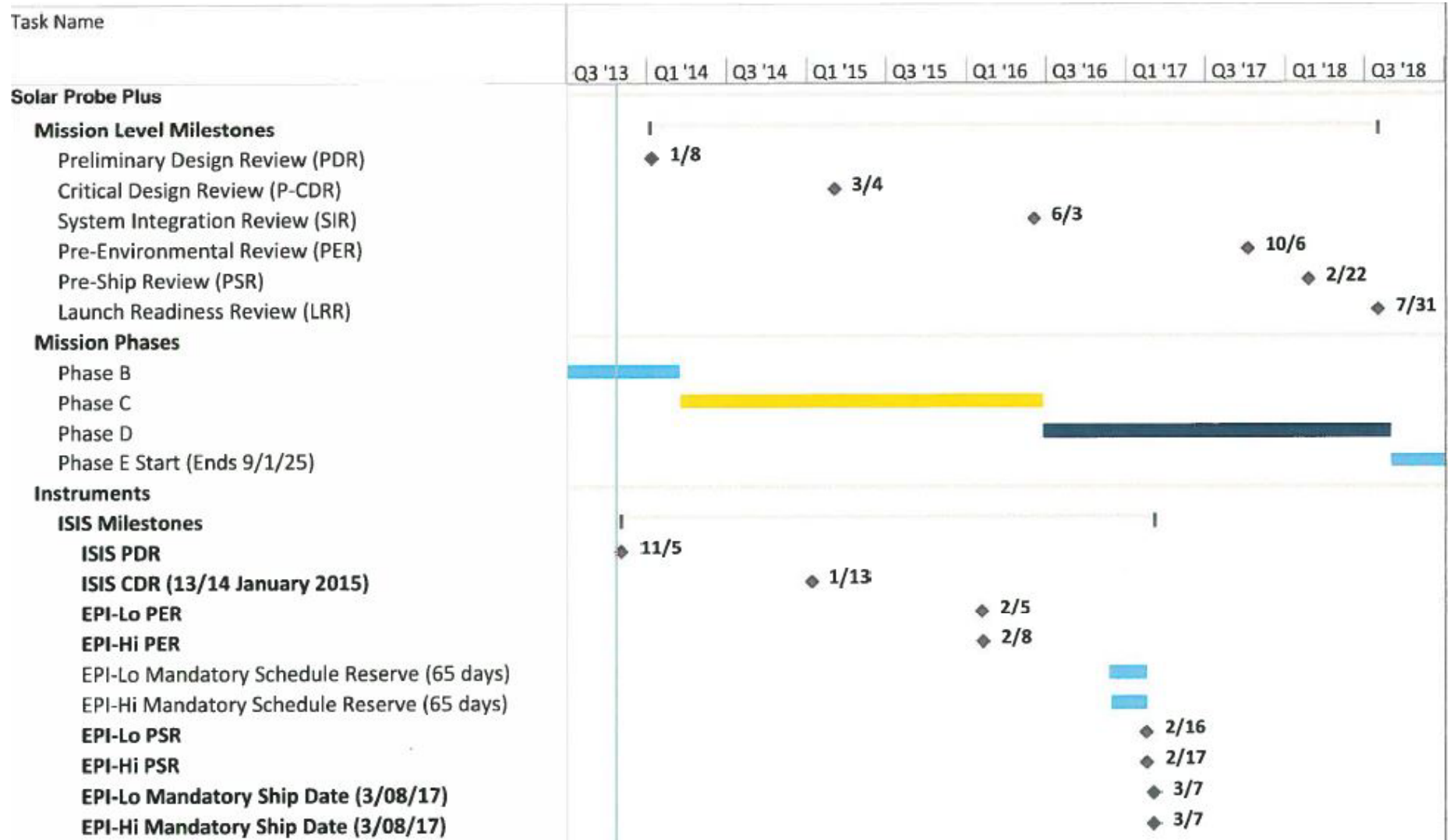
Outline



- Key Dates
- EPI-Hi EM Schedule
- EPI-Lo EM Schedule
- EPI-Hi FM Schedule
- EPI-Lo EM Schedule
- Critical Path, Reserves, and Slack
- Schedule Threats and Mitigations
- Summary

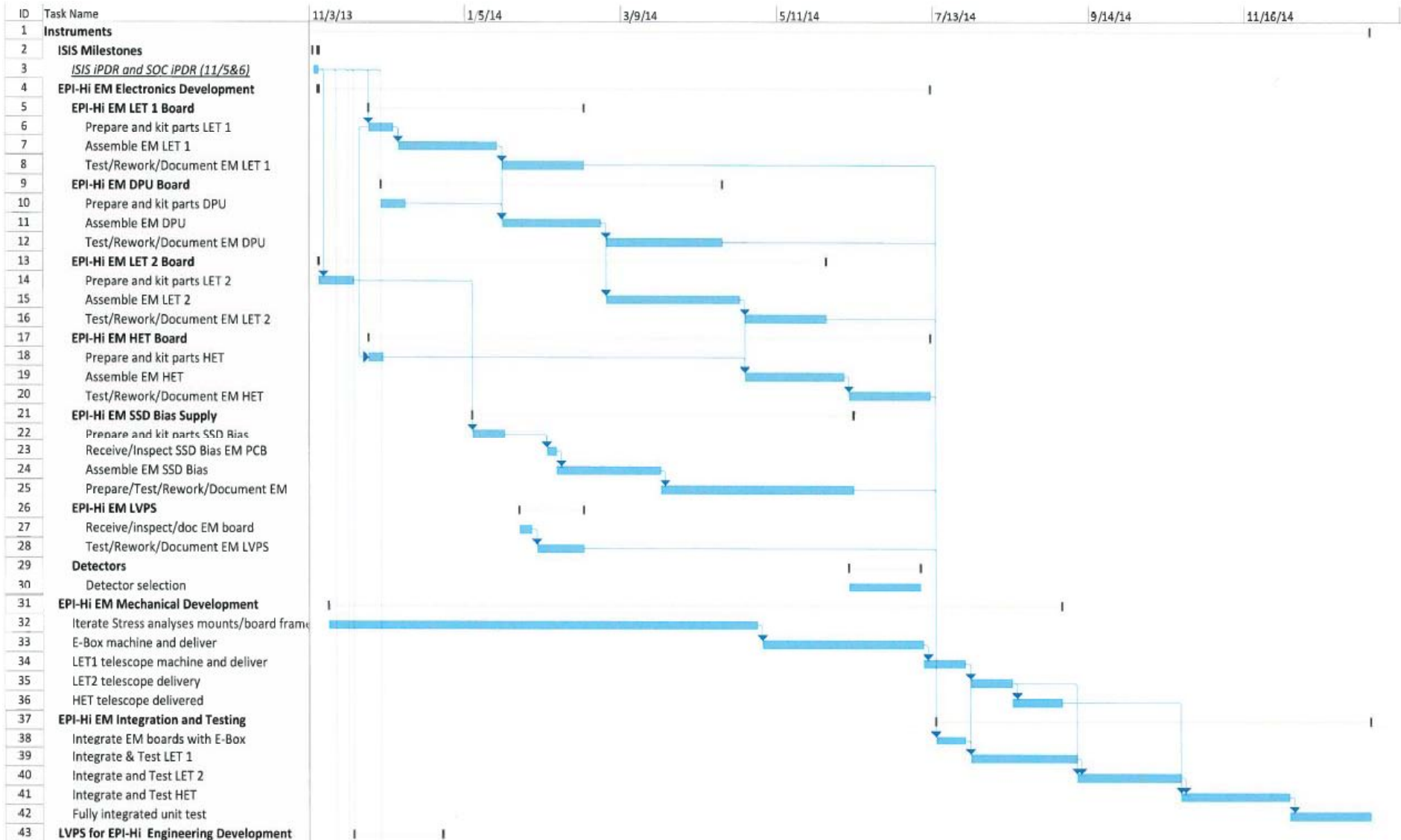
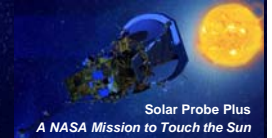


ISIS Schedule Key Dates



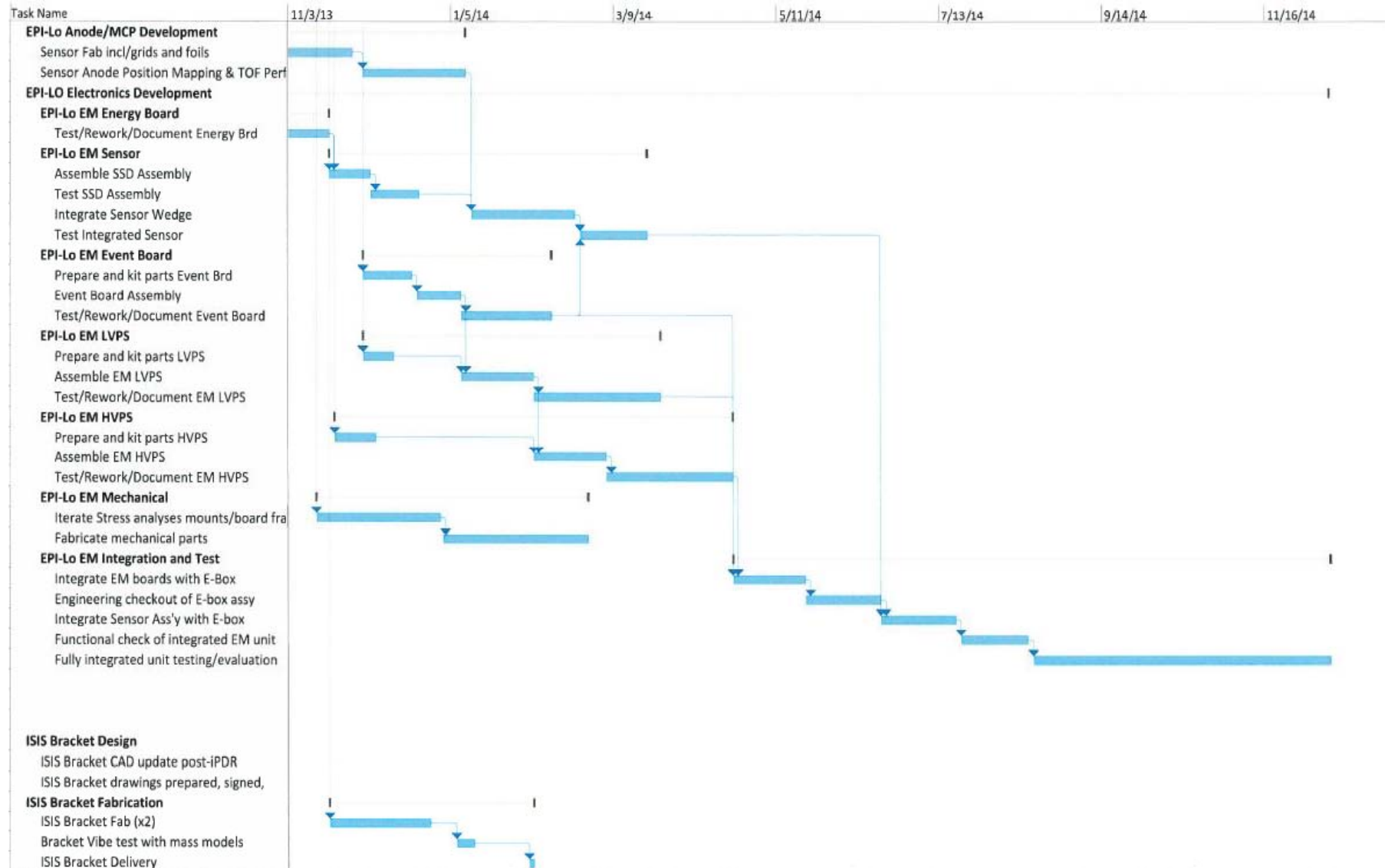
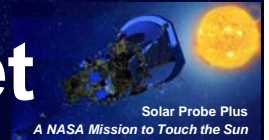


ISIS Schedule: EPI-Hi EM



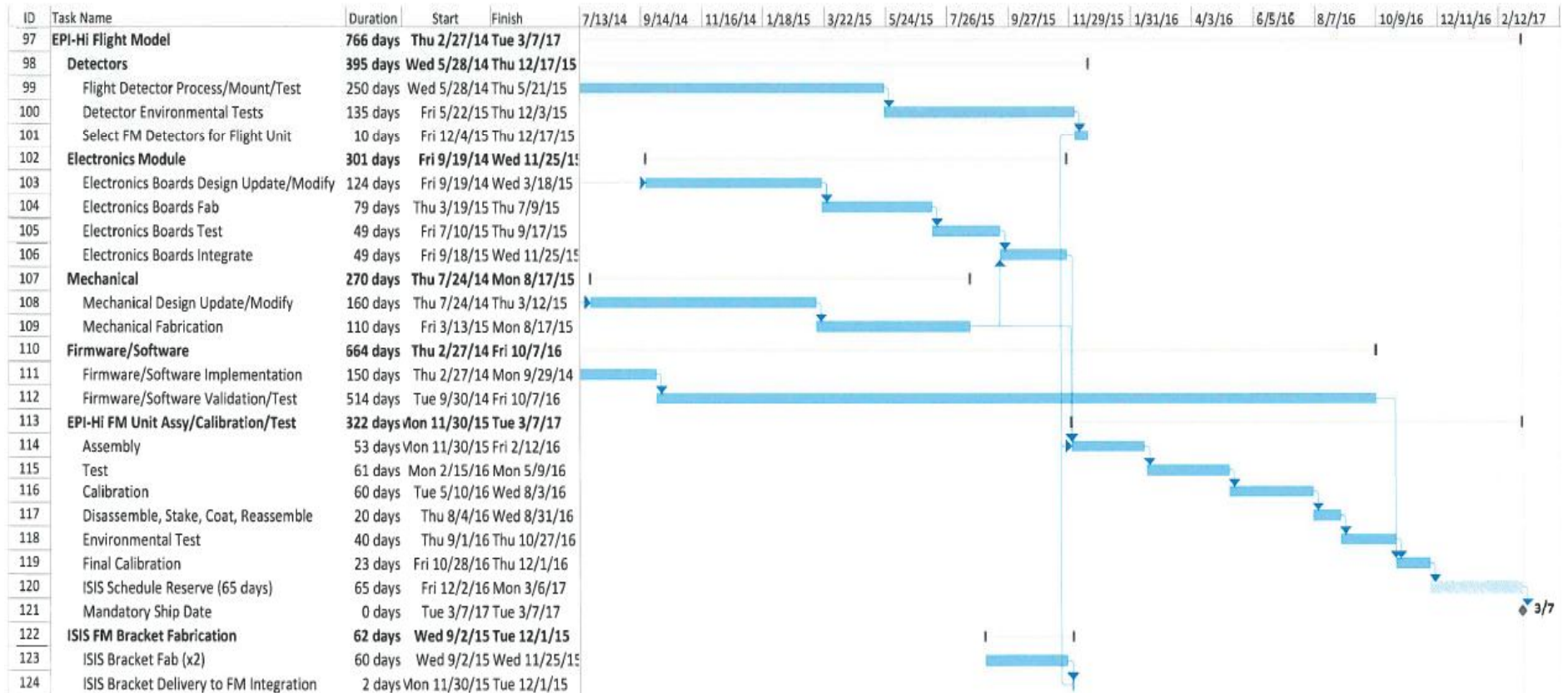


ISIS Schedule: EPI-Lo EM and Bracket



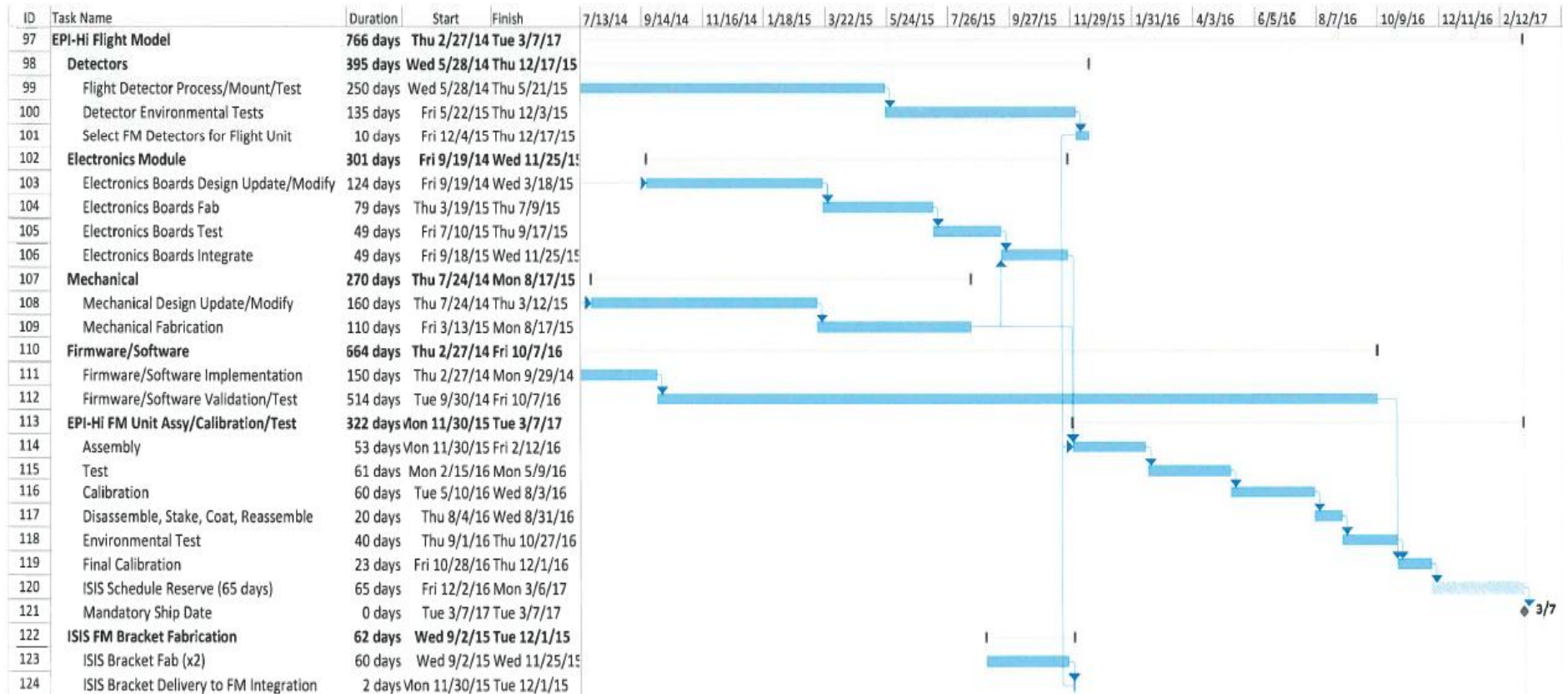
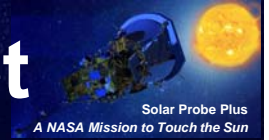


ISIS Schedule: EPI-Hi FM





ISIS Schedule: EPI-Lo FM and Bracket





Critical Path, Reserves, and Slack



- The ISIS Critical Path goes through EPI-Hi Mechanical development
 - Detectors => Telescopes => Assembly => Test
- 65 days of Reserves in-line with month/year reserves to delivery
- Within the schedule, there is slack between tasks to keep schedule pushed to the left even beyond the Reserves
- Earned Value already in use during Phase B to help keep a realistic picture of progress being made and provide early warning



Schedule Threats and Mitigations



- Schedule Threats
 - TRL6 development and other Phase B work eliminated the most serious schedule threats
 - New detectors, new ASIC designs
 - Long-lead parts always need to be watched
 - So far we've had excellent performance from Micron Semiconductor
 - Interfaces between institutions require extra attention
 - GSFC to Caltech with Mechanical and Detector Deliveries
 - JHU/APL to Caltech with LVPS Deliveries
- Mitigations
 - Planner provides weekly Look-Ahead List to the ISIS team
 - Weekly coordination meetings with all institutions
 - EM testing used to mitigate FM schedule risks
 - Earned Value Management provides early warning
 - Planner provides detailed analysis and coordinates with SPP



Summary



- ISIS Team has performed well during Phase B
- TRL 6 Achieved for all of the ISIS Technology Development
- New design elements have been prototyped and tested
- Requirements Defined
 - Baseline of ICDs and Requirements Documents
- Detailed Preliminary Design completed
 - Schematics and mechanical designs Peer Reviewed
- Preliminary analyses show good margins
- Trade studies in Phase B have reduced risk
- ISIS is on track to proceed into Phase C on schedule