

Plankton, Aerosol, Cloud, ocean Ecosystem (PACE)

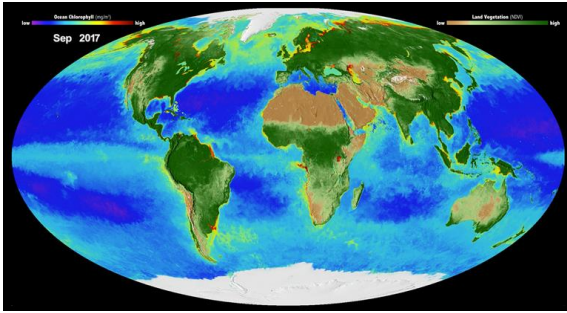


Mission Overview
June 2, 2020

**PACE PROJECT MANAGER
ANDRÉ DRESS**



Plankton, Aerosol, Cloud, ocean Ecosystem (PACE)



PACE Science

New opportunities to monitor fisheries and respond to toxic algae blooms, and key ocean and atmosphere data for forecasting air quality and weather that will improve our understanding of Earth's climate.

Mission Elements (Organization)

- Competed Science Team (NASA ESD)
- Vicarious Calibration (NASA ESD)
- Science Data Analysis (GSFC)
- Ocean Color Instrument (GSFC)
- Spacecraft – (GSFC)
- Polarimeters – (SRON, UMBC)
- Mission Operations – (GSFC)
- Launch services (LSP-SpaceX)

Key Mission Parameters

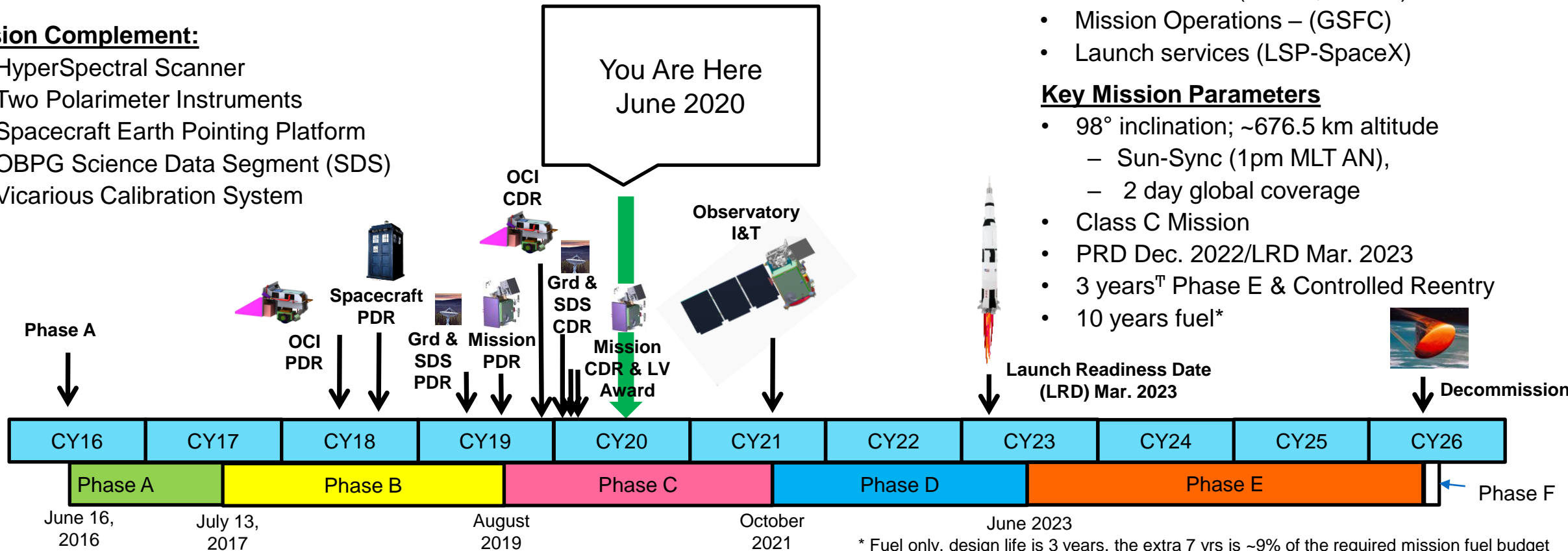
- 98° inclination; ~676.5 km altitude
 - Sun-Sync (1pm MLT AN),
 - 2 day global coverage
- Class C Mission
- PRD Dec. 2022/LRD Mar. 2023
- 3 years^T Phase E & Controlled Reentry
- 10 years fuel*



Decommission

Mission Complement:

- HyperSpectral Scanner
- Two Polarimeter Instruments
- Spacecraft Earth Pointing Platform
- OBPB Science Data Segment (SDS)
- Vicarious Calibration System





PACE Mission Phases (Past and Future)

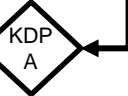


KDP – Key Decision Point (HQ Gate Review)

Pre-Phase A

- Concept studies
- Cost and schedule (large uncertainty)
- Culminates in a Mission Concept Review

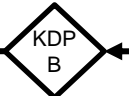
Jan 2015



Phase A

- Concept and technology development to determine what requirements are achievable
- Some hardware development to mature the technology and reduce risk
- Cost and schedule estimates are updated but with uncertainty
- Culminates in a Systems Requirements Review

June 2016



Phase B

- Preliminary design phase and technology development completion
- Requirements should be stable and well defined
- Engineering unit development
- Cost and schedule baselined (expected high confidence)
- Culminates in a Preliminary Design Review

July 2017

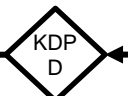


Phase C

- Final/Critical design phase and start of major flight build
- Requirements verified at the element level
- Cost and schedule performance is closely monitored against the baseline
- Culminates in a Systems Integration Review

We are here

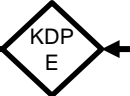
Aug. 2019



Phase D

- Final system/observatory level assembly and test
- Requirements are verified at the system level
- Culminates in a Operational Readiness Review, Launch and early in orbit checkout

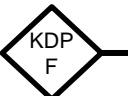
Oct. 2021



Phase E (36 months)

- Operations and Science Data Collection
- Culminates in a Decommissioning Review

June 2023

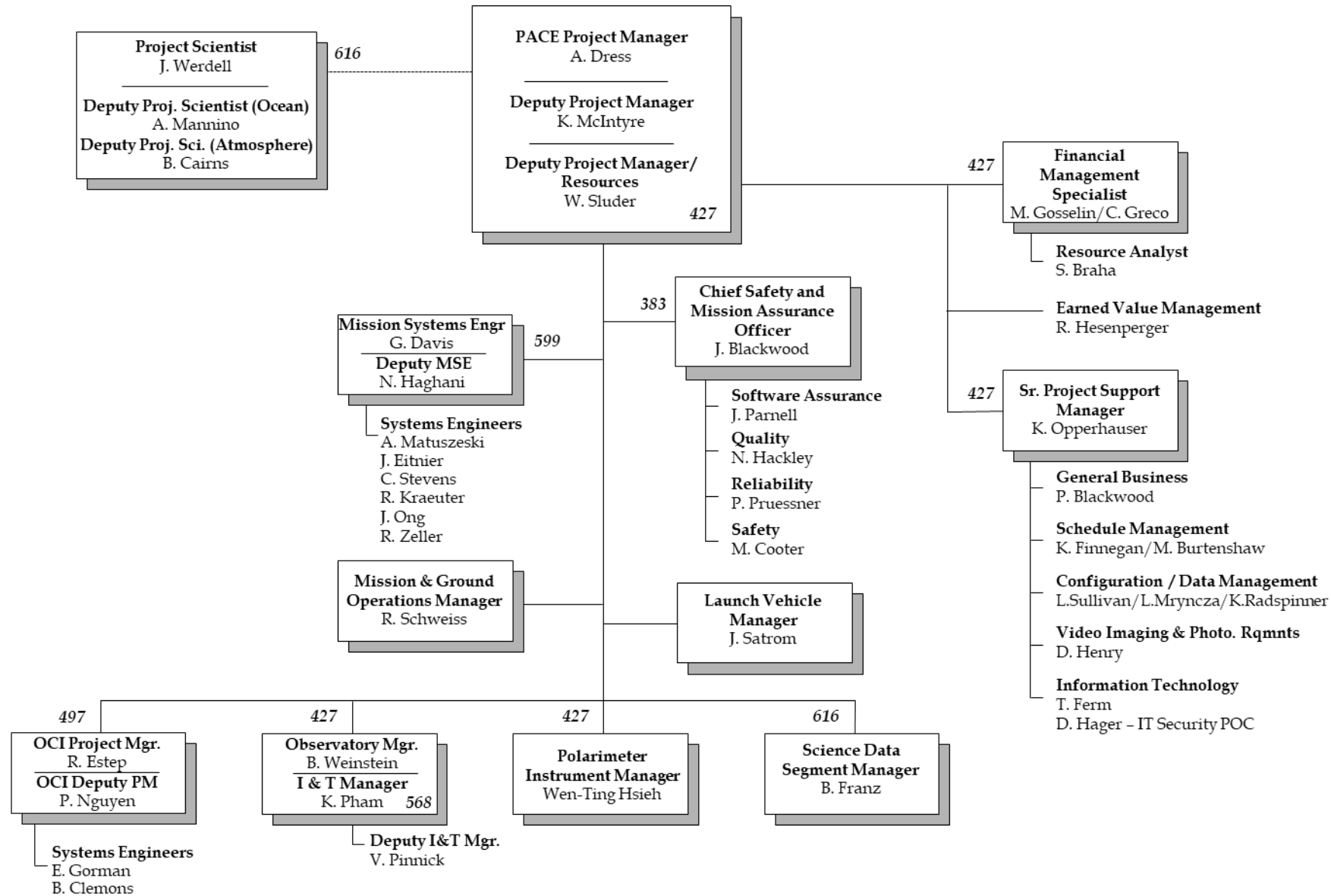


Phase F

Decommission/De-Orbit

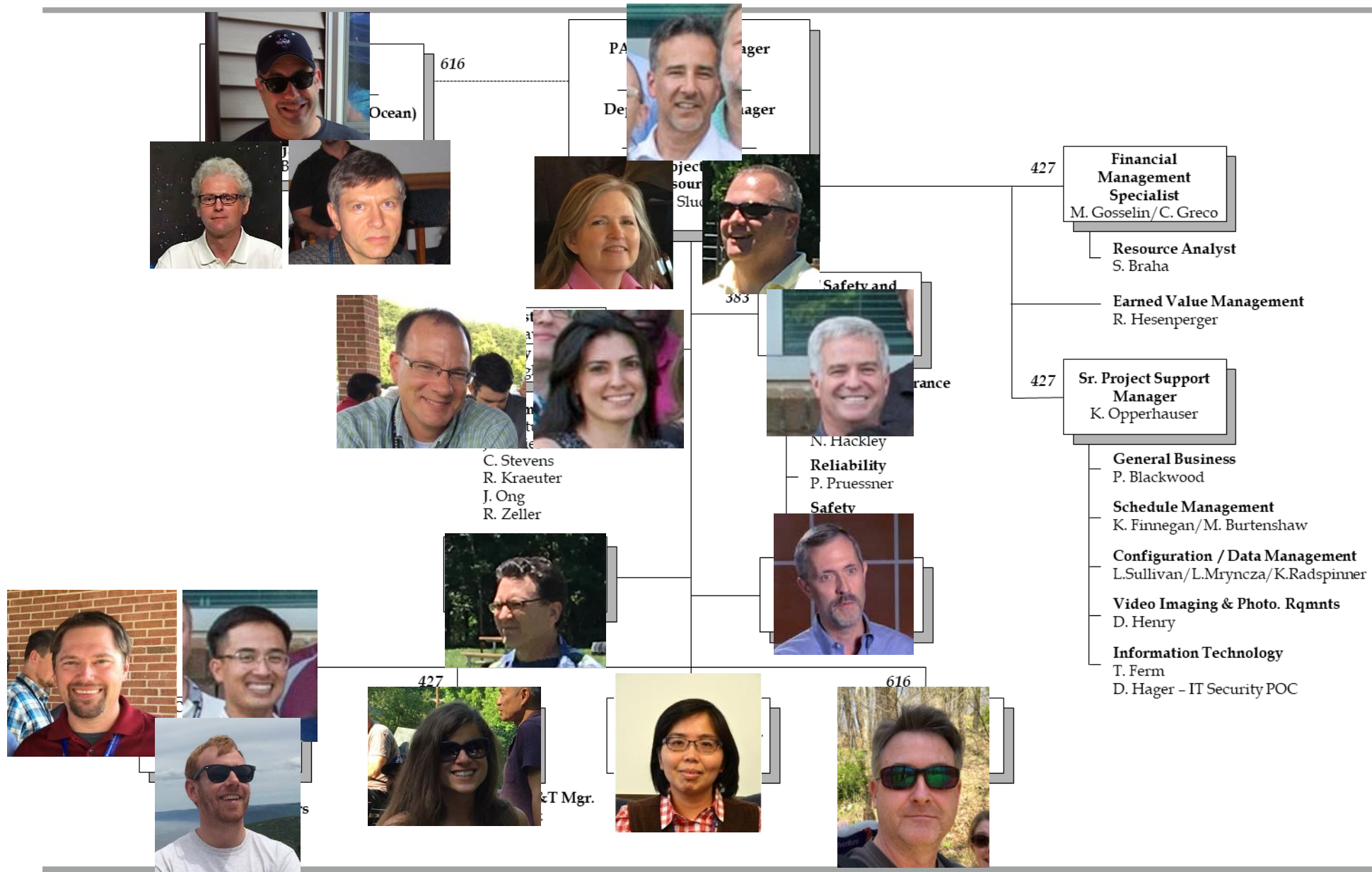


PACE Project Organization Chart

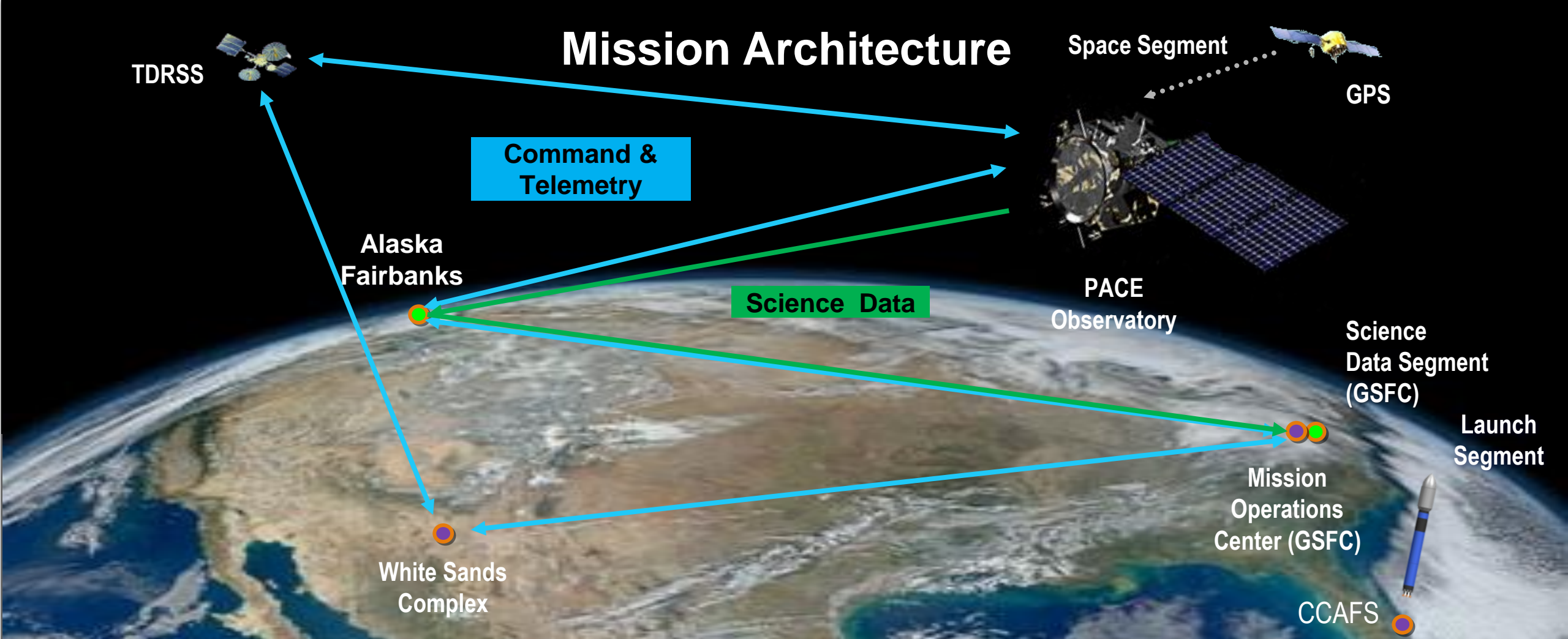




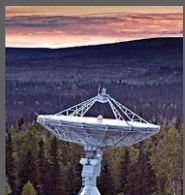
PACE Project Organization Chart



Mission Architecture



Ground Segment



Fairbanks
Primary T&C,
Science Data
June 2, 2020



Punta Arenas
Primary T&C,
Science Data



Svalbard
Primary T&C,
Science Data



Wallops Island
Alternate T&C



White Sands
Alternate T&C



Mission
Operations
Center (GSFC)