



OSIRIS-REx

ASTEROID SAMPLE RETURN MISSION



UNIVERSITY OF ARIZONA

NASA'S GODDARD SPACE FLIGHT CENTER

LOCKHEED MARTIN



OSIRIS-REx Status – 2020 ‘The Year of TAG’



Recent Activities:

- On Dec. 4, 2019, the primary and backup sample sites were selected
 - Primary Sample Site – ‘Nightingale’
 - Backup Sample Site – ‘Osprey’
- Recon-B operations phase began on Jan. 6, 2020 (Launch +3 years, 18 weeks). Recon-B will perform mid-altitude (625m) and low-altitude (250m) flyovers of the primary (Nightingale) and backup (Osprey) sample sites.
- Recon-B flyover of the Nightingale sample site completed on Jan. 21st.

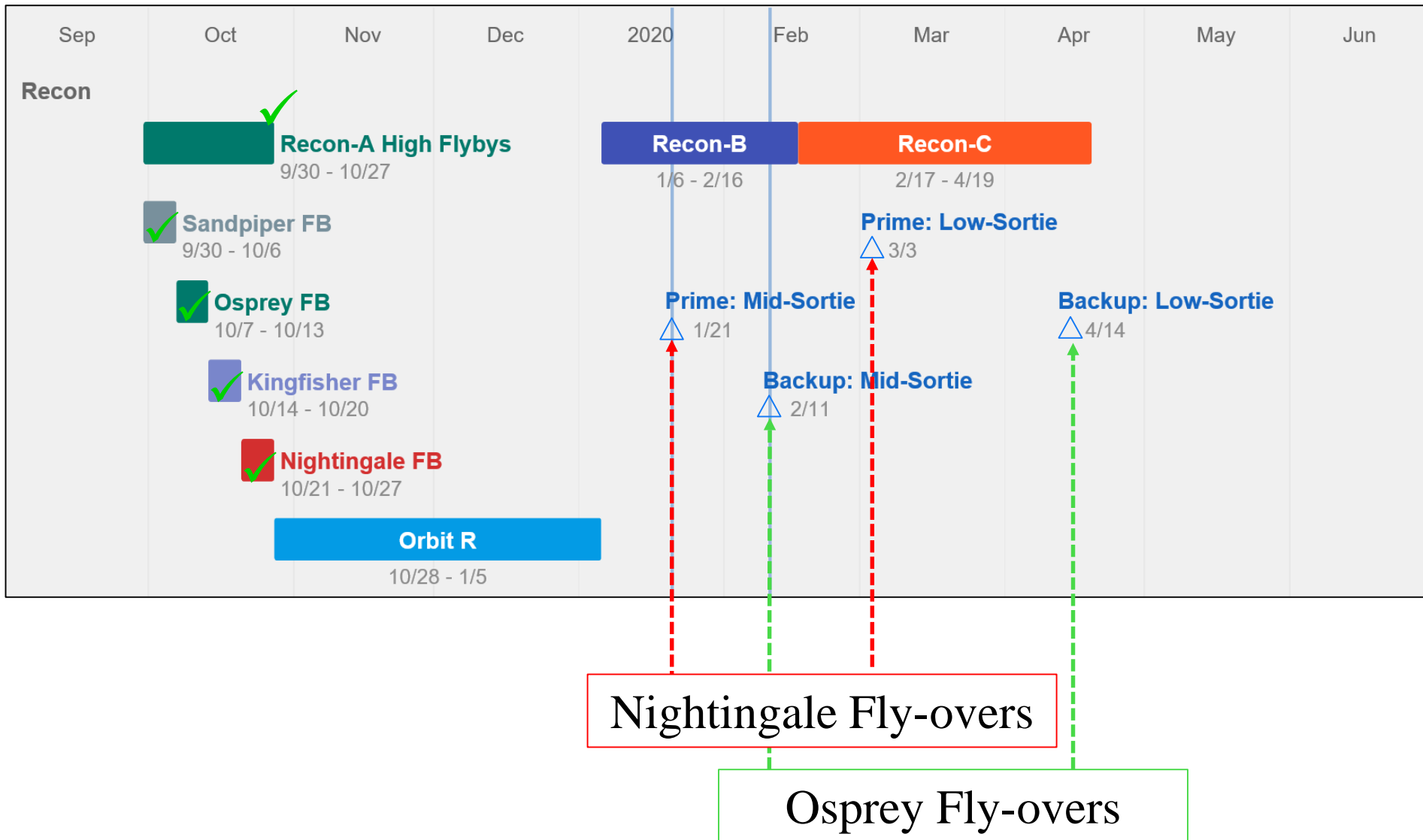
Upcoming Activities:

- Continued cataloguing of natural features at the primary sample site in preparation for use with Natural Feature Tracking optical navigation algorithms during the touch-and-go (TAG) sampling phase of the mission.
- Completion of Recon B mid-level fly over of sample sites (Feb. 17th)
- Completion of Recon C low-level fly over of primary sample site (Mar. 8th)
- Checkpoint Maneuver Rehearsal
- First TAG sampling attempt (Aug. 25th)



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Asteroid Proximity Operations Timeline—Recon

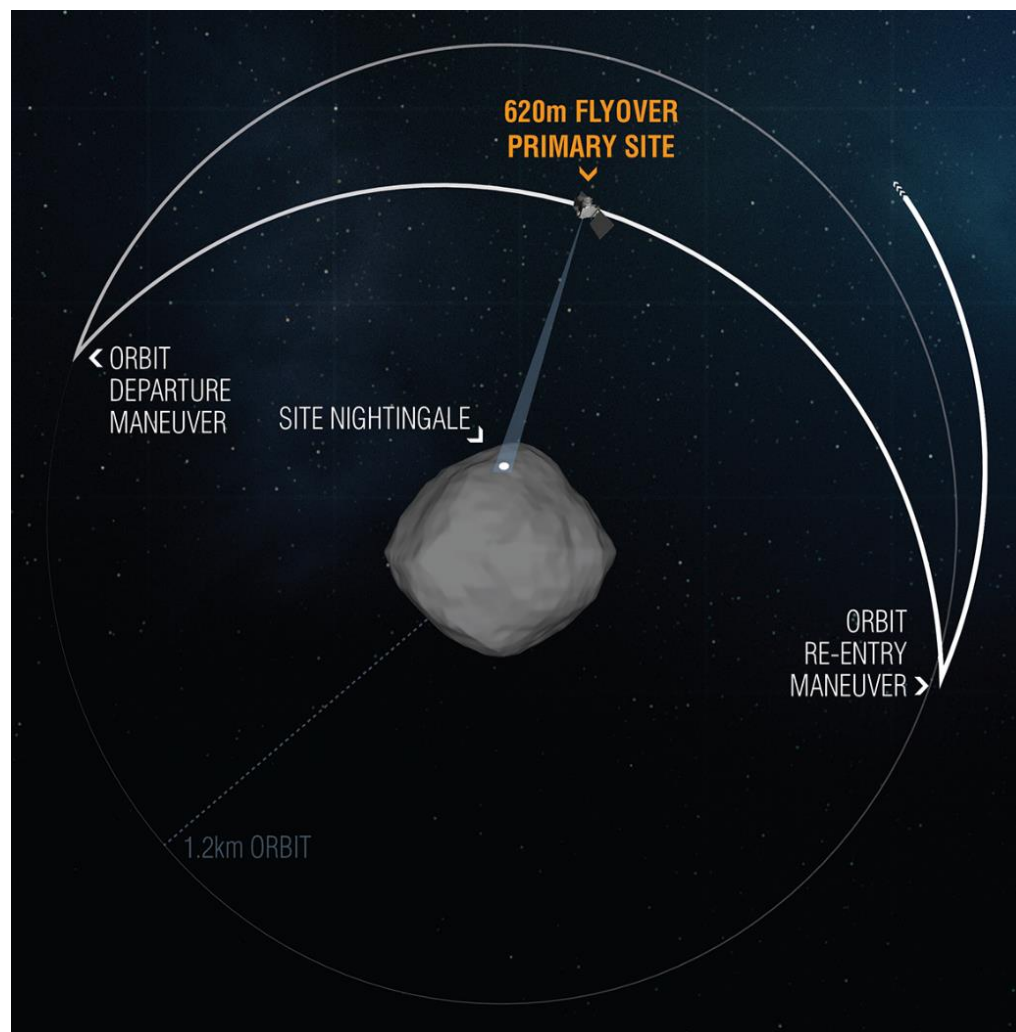




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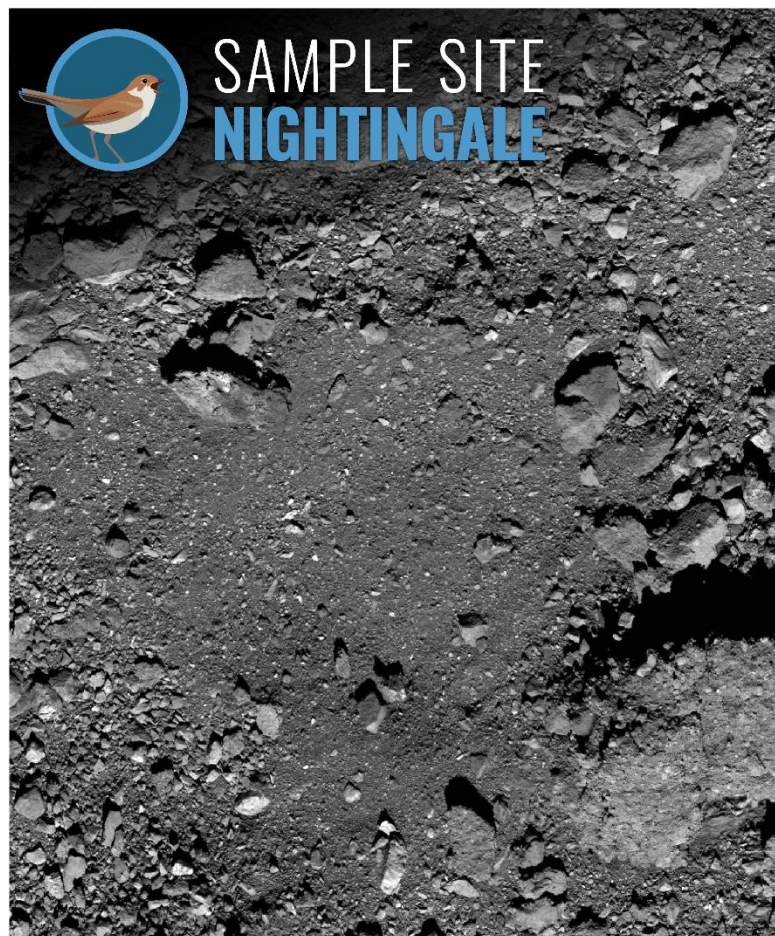


Mid-Level Flyover of 'Nightingale' Primary Sample Site – Jan. 21st

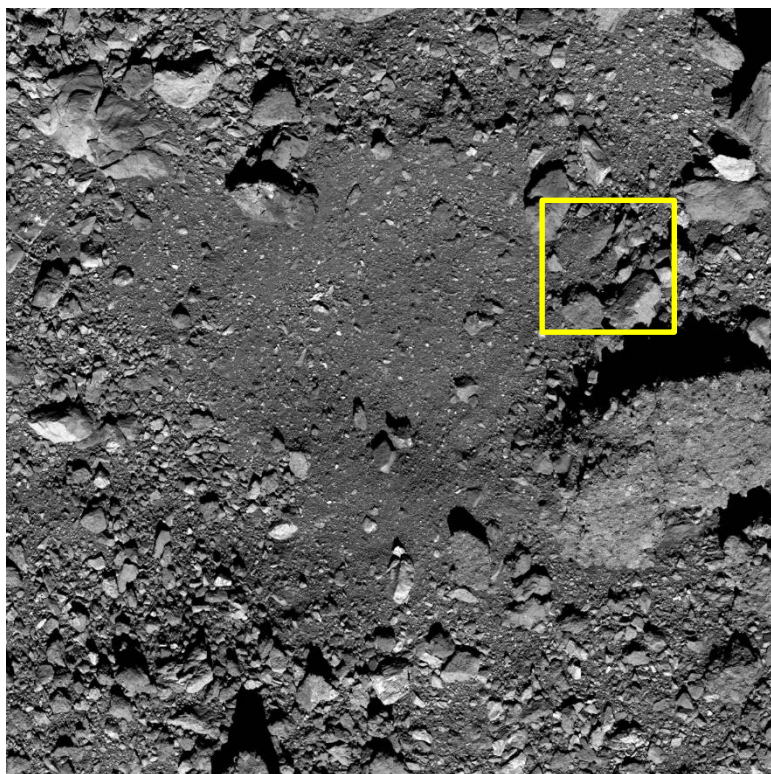


Mid-Level Nightingale fly-over maneuvers

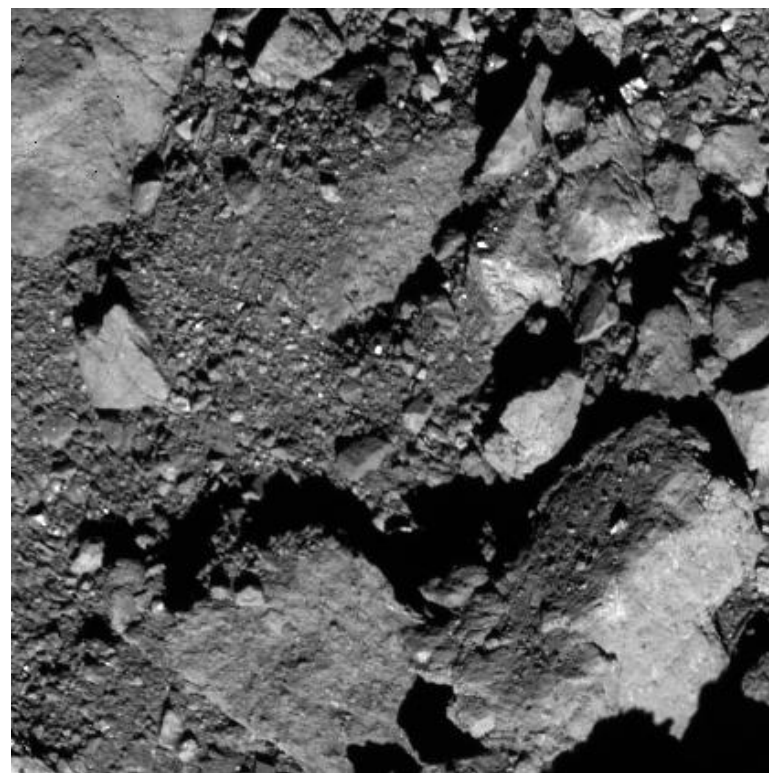
'Nightingale' Sample Site Recon A High Flyover



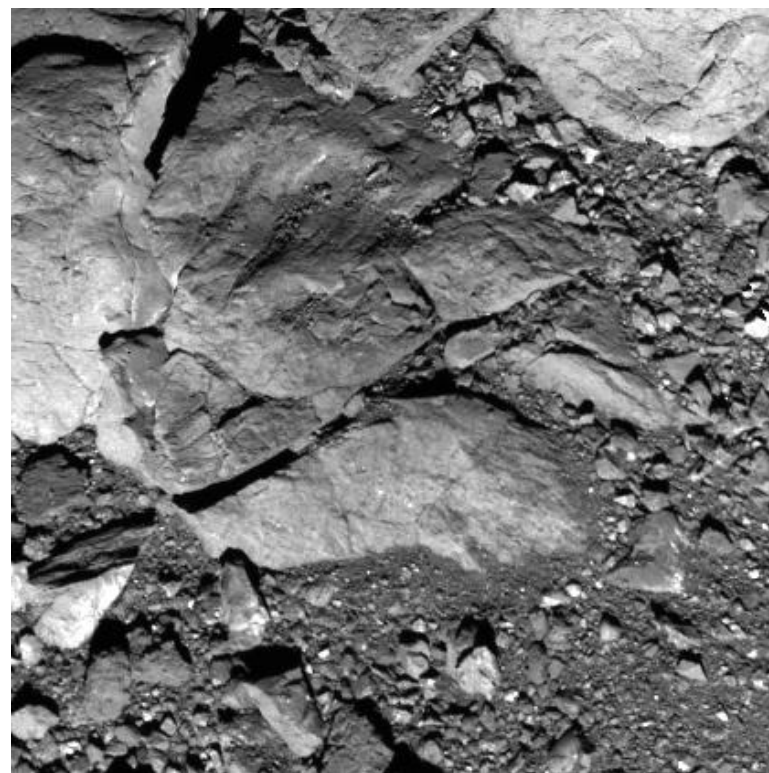
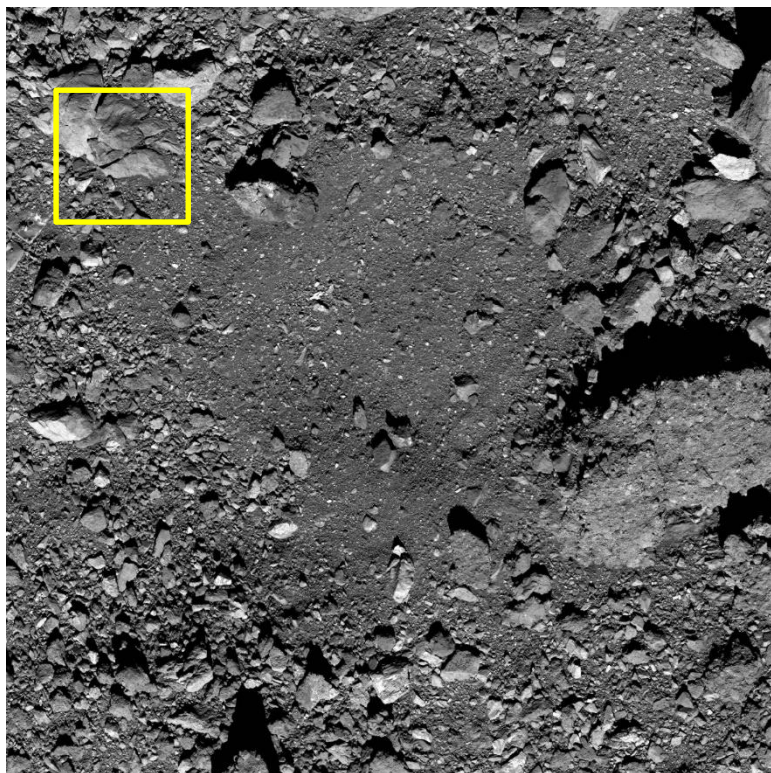
PolyCam Image – 5-10cm resolution. 30m tall obstacle, lower right ('Mt. Doom'). No 'sandy beach' on Bennu



0 1.25 2.5 5 7.5 10 Meters

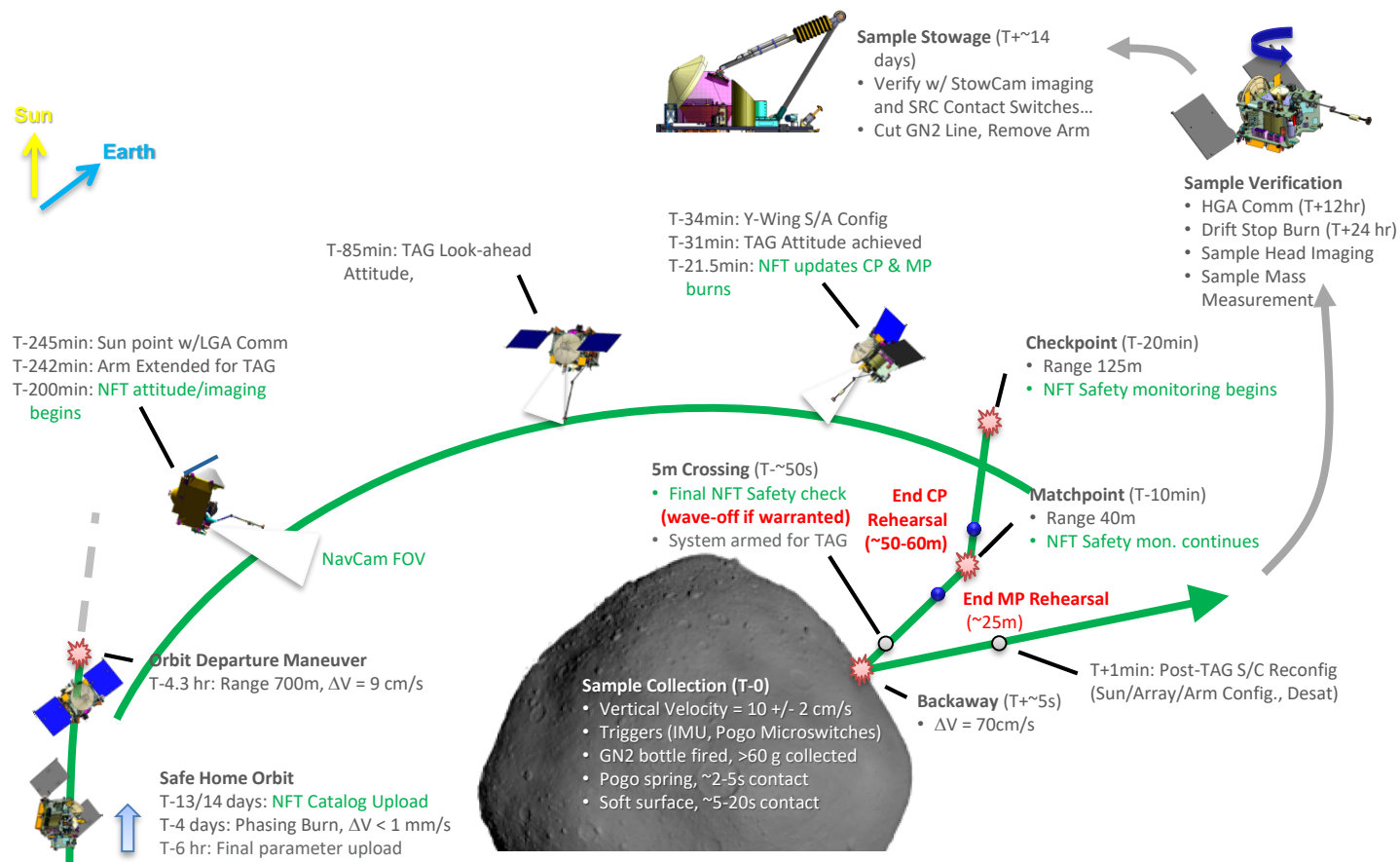


Evidence of fine grained ejecta at the edges of the Nightingale crater. Promising site for sample collection.



More evidence of fine grained ejecta at the edges of the Nightingale crater, collecting around larger rocks.

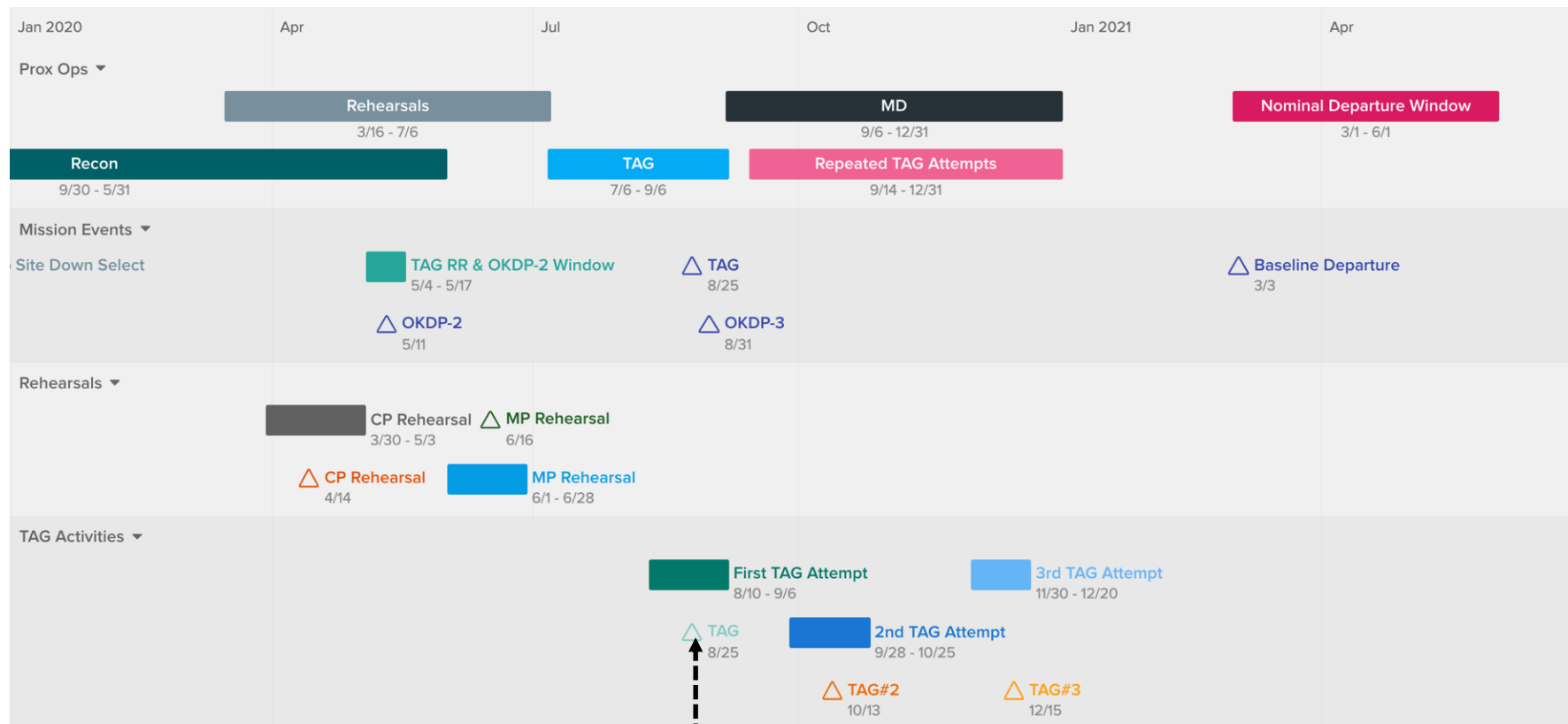
TAG Campaign Overview





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Asteroid Proximity Operations Timeline—TAG



Sample Collection Scheduled for Aug. 25th