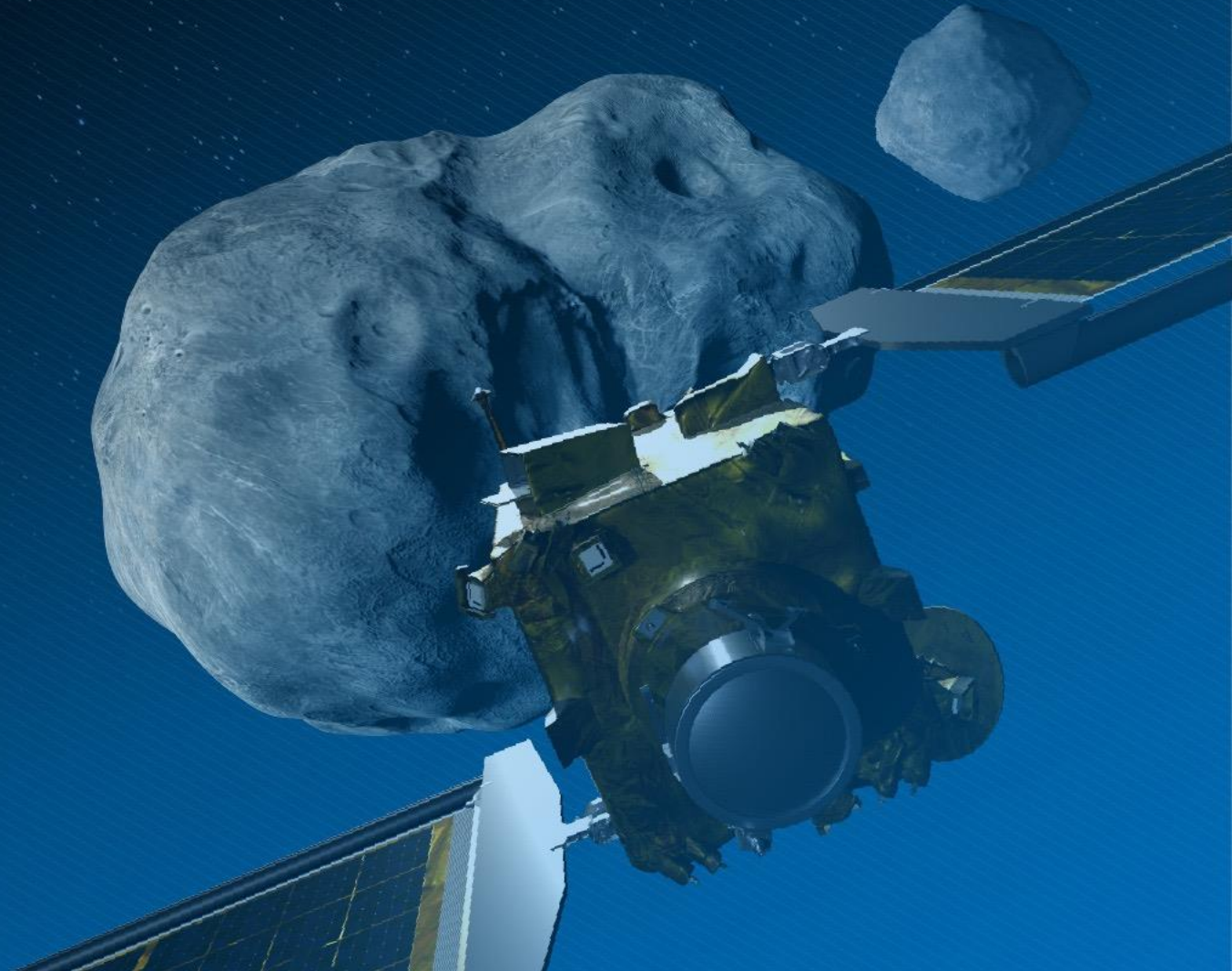


# DART Mission Design/Navigation Lightning Talk

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PDC 2021, Vienna, Austria  
Apr. 26-30, 2021



# Launch

Nov 18, 2021

**IMPACT: September 25, 2022**

**LICIACube**  
(Light Italian Cubesat  
for Imaging of Asteroids)  
ASI contribution

### DART Spacecraft

560 kg arrival mass  
18.9 m × 2.6 m × 2.1 m  
6.65 km/s closing speed

### Dimorphos

163 meters  
11.92-hour orbital period

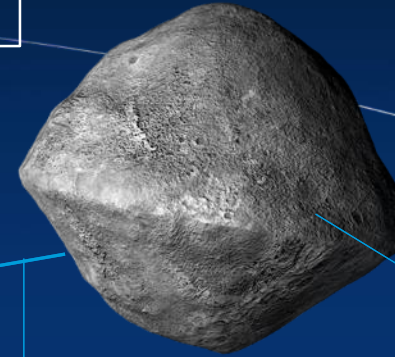
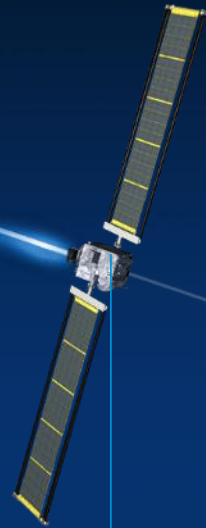
### Didymos

780 meters, S-type  
2.26-hour rotation period

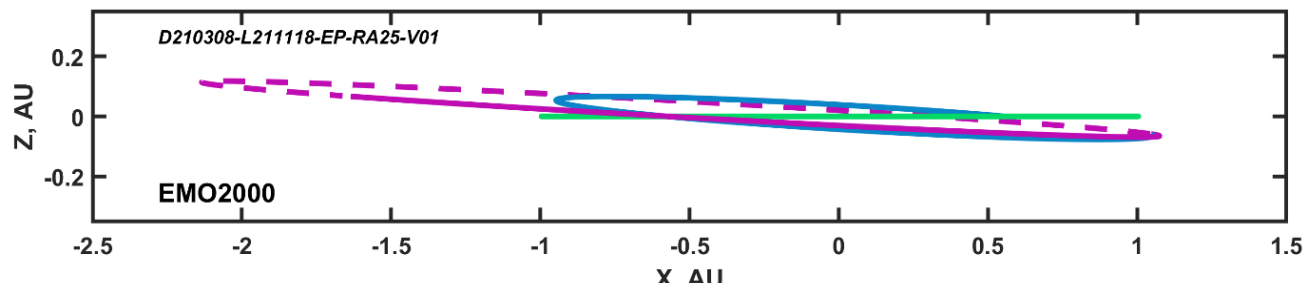
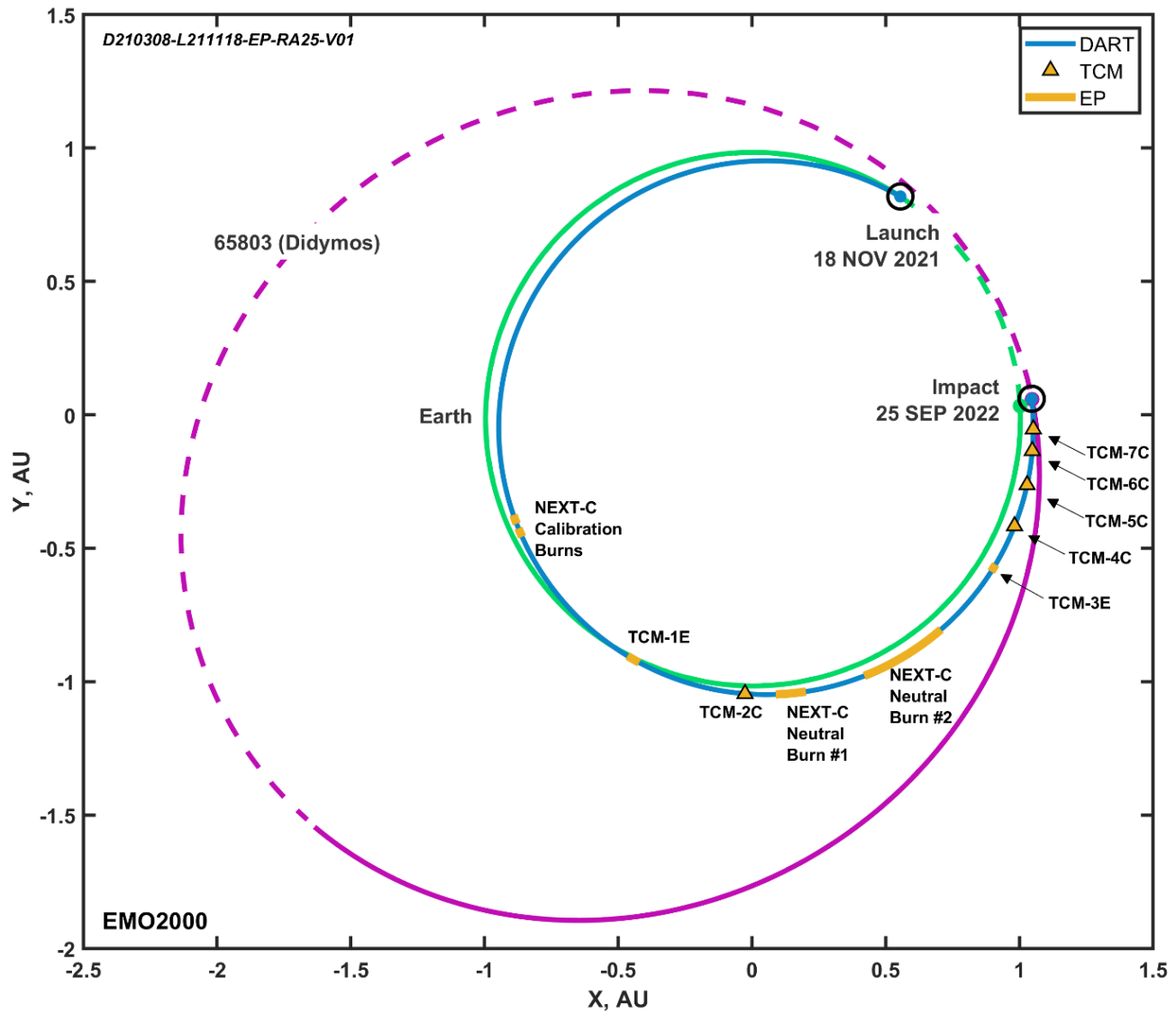
### Earth-Based Observations

0.07 AU range at impact  
Predicted ~10-minute change  
in binary orbit period

- Target the binary asteroid Didymos system
- Impact Dimorphos and change its orbital period
- Measure the period change from Earth



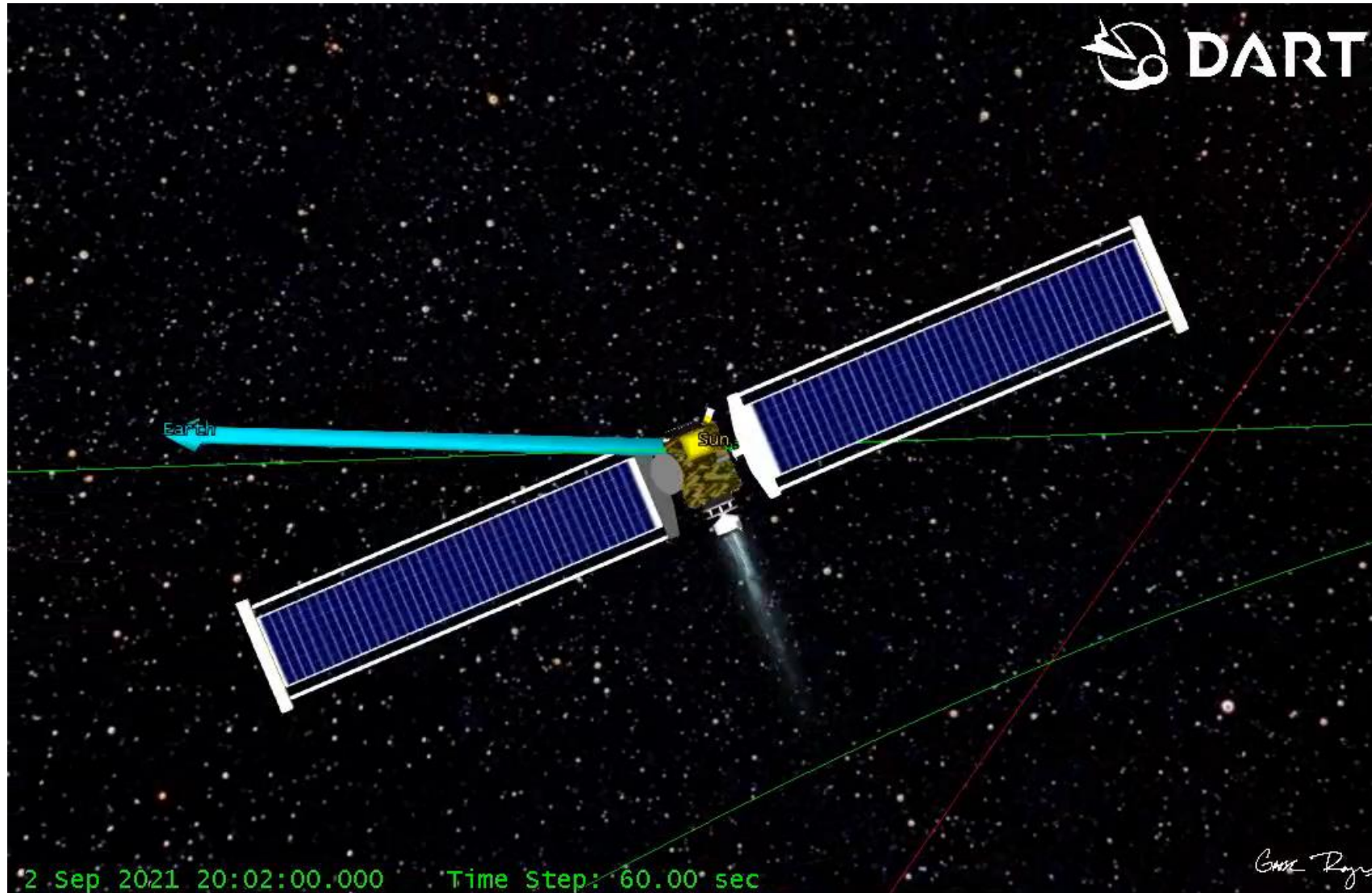
# Trajectory



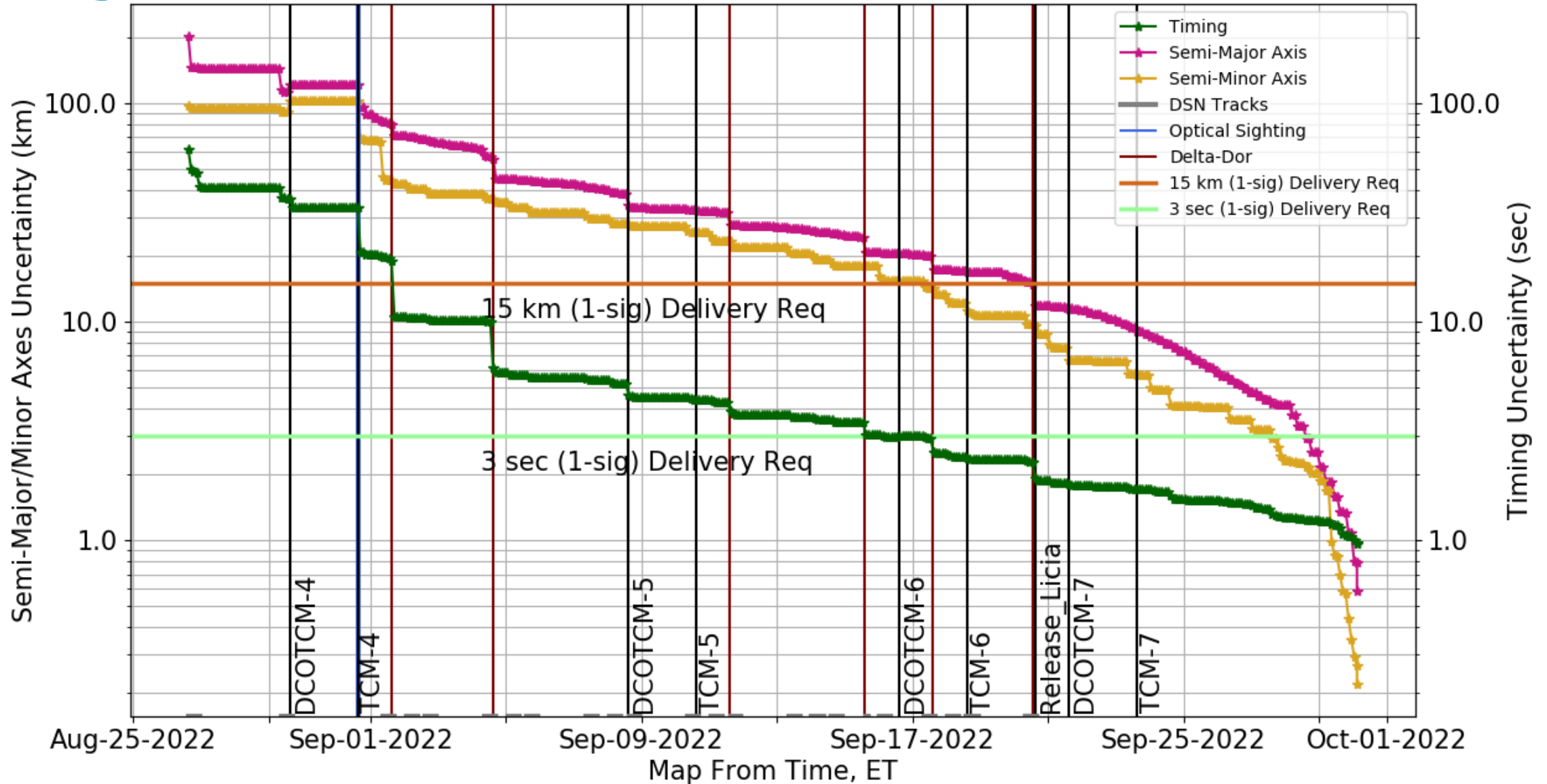


# Electric Propulsion Demonstration

- Mission can only operate NEXT-C in a manner that does not jeopardize impact
- “Neutral Burn”: maximum use of propellant, minimum impact to trajectory



# Navigation Handoff







**DART**  
dart.jhuapl.edu