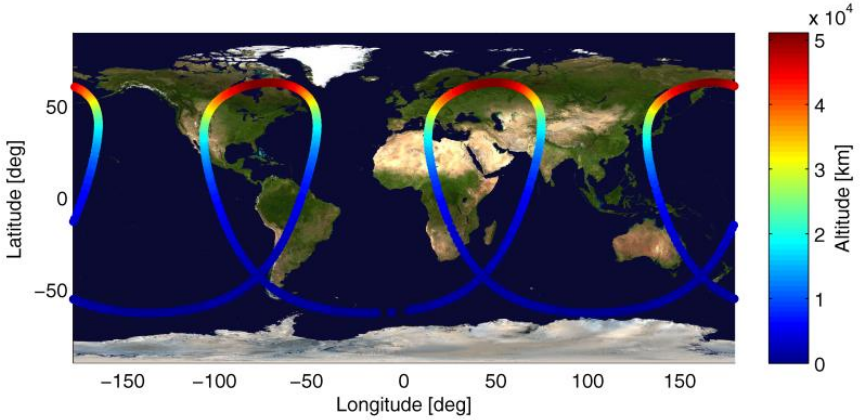
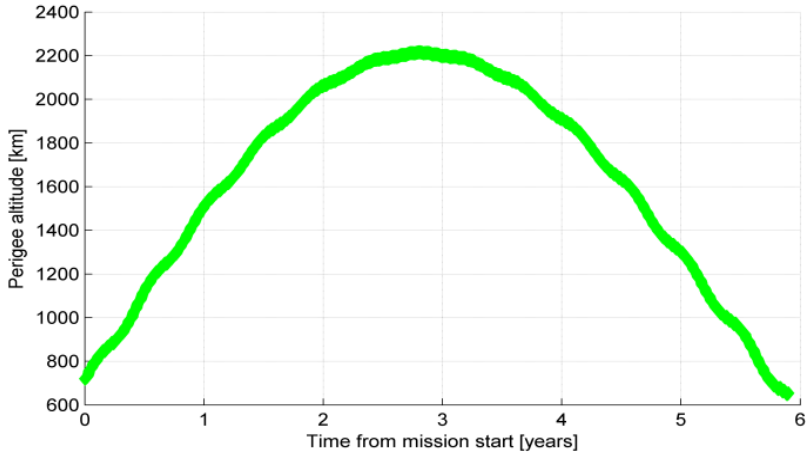
STE-QUEST Mission Overview

Mission Profile

- Launch 2022/2024 with Soyuz/Fregat into HEO. Mission Duration: 5 (6) years, de-orbit after mission completion (no extension past 6 years).
- Two main instruments: Atomic Clock (ATC), Atom Interferometer (ATI). Supporting payload: Science Links, Precise Orbit Determination equipment.
- Three science ground terminals: Boulder, Turin, Tokyo.
- Orbit optimized for Clock comparisons and interferometer measurements.
- Proposed new orbital elements at Epoch 8187.841 (TBC):
  - Semi-Major Axis: 32090 km
  - Eccentricity: 0.77943
  - Inclination :62.58 DEG
  - Right Ascension of Ascending Node: 265.4 DEG
  - Argument of Perigee: 271.9 DEG
  - True Anomaly: 28.64 DEG





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Spacecraft Design and Interface Description

- "box"-type spacecraft, central cylinder, instruments accommodated within central cylinder (preferably).
- Accommodation constraints: Volume (1194 mm cylinder), Mass, Power, Thermal(!). → Cf EID-A.

Instrument	Standby power (W)	Survival heater power (W)	Long Peak power (W)	Average power (W)
Atomic Clock	300 (tbd)	5	400	360
Atom Interferometer	400 (tbd)	5	900	680

Instrument	*Allocated Mass [kg]*
Atomic Clock	180
Atom Interferometer	265