

What is the duration of the solar cycle?

A 1 yr

0

B 7 yr

0

C 11 yr

0



D 42 yr

0

What are the effects of a geomagnetic storm? (multiple choice)

A Auroras

0

B Decreased density of the upper atmosphere

0

C Higher drag up to ~1000 km

0

D Risks of surface charging

0

What is the typical altitude range for Low Earth Orbits?

A 35 000 to 36 500 km

0

B 15 000 to 20 000 km

0

C < 2000 km

0



D > 37 000 km

0

What are geostationary orbits? (multiple choice)

A alt ~ 36 000 km

0

B inc ~ 0°, e~0

0

C inc ~10°, e~0

0

D T = 1 sidereal day

0

What is the ballistic coefficient?

A in kg/m²

$$BC = \frac{m}{C_D A_N}$$

0

B a shape coefficient that also depends on the coating

0

C Is high for high drag

0

D a coefficient that depend on the velocity and the cross-section

0

What is the main effect of the Earth's buldge?

A The drag 0

B A rotation of the line of nodes 0

C A central force on the objects 0

D Increases the apogee 0

What is the condition for a Sun-synchronous orbit?

A A nodal regression of $2^\circ/\text{d}$ 0

B Alt $\sim 36\,000$ km 0

C A nodal progression of $0.986^\circ/\text{d}$ 0

D An inclination of $< 90^\circ$ 0

If the crossing of the descending node is at 8am, what is the time of the ascending node?

A 8am

0

B 12pm

0

C 6am

0

D 8pm

0



Which accelerations must be taken into account to find the Lagrange points in the Sun-Earth system? (multiple choice)

A The gravitational acceleration of the Earth

0

B The gravitational acceleration of Jupiter

0

C The gravitational acceleration of the Sun

0

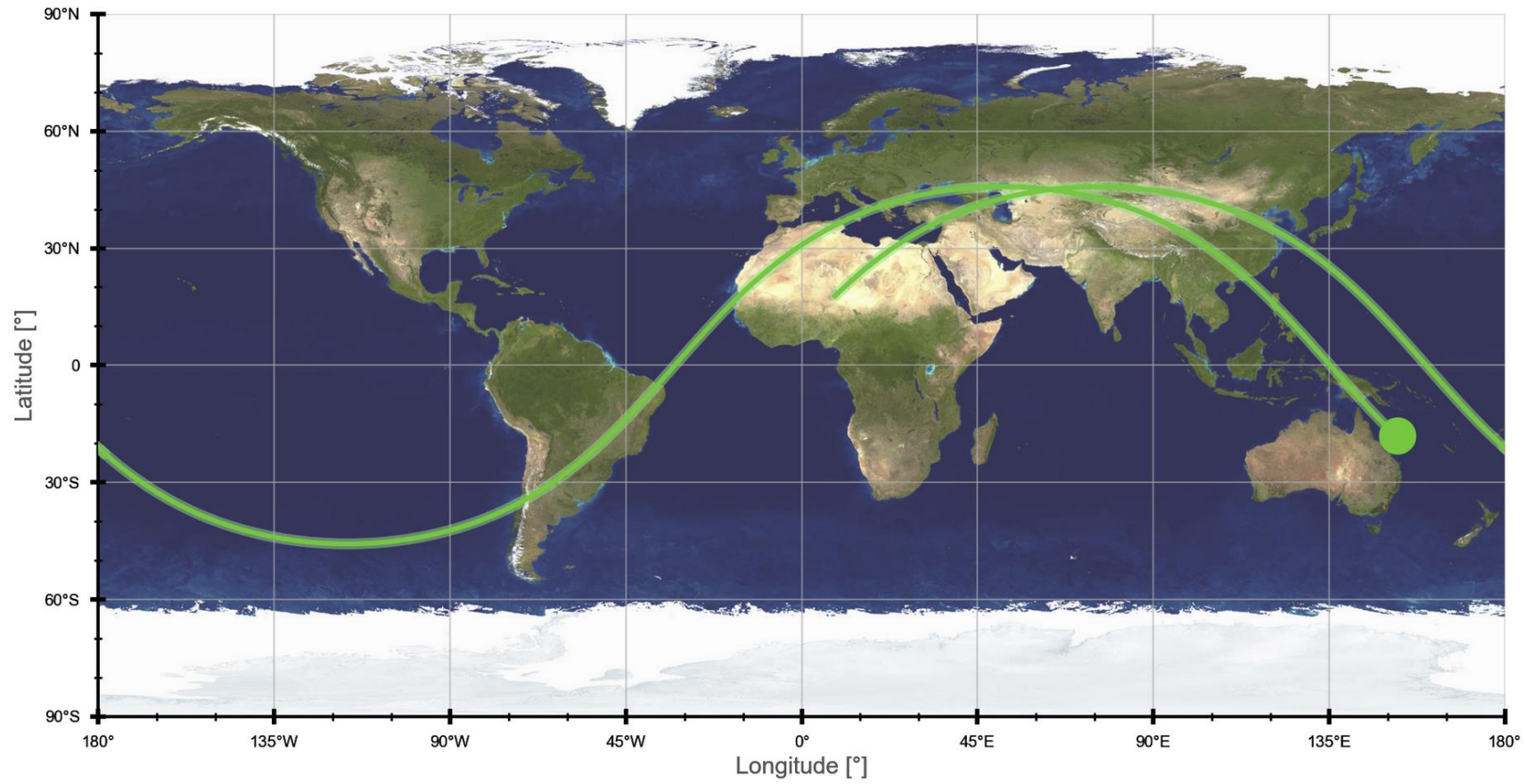
D Acceleration due to the Solar pressure

0

E The inertial angular velocity of the reference frame

0

What are the parameters of this orbit?



A alt ~ 36 000 km

0

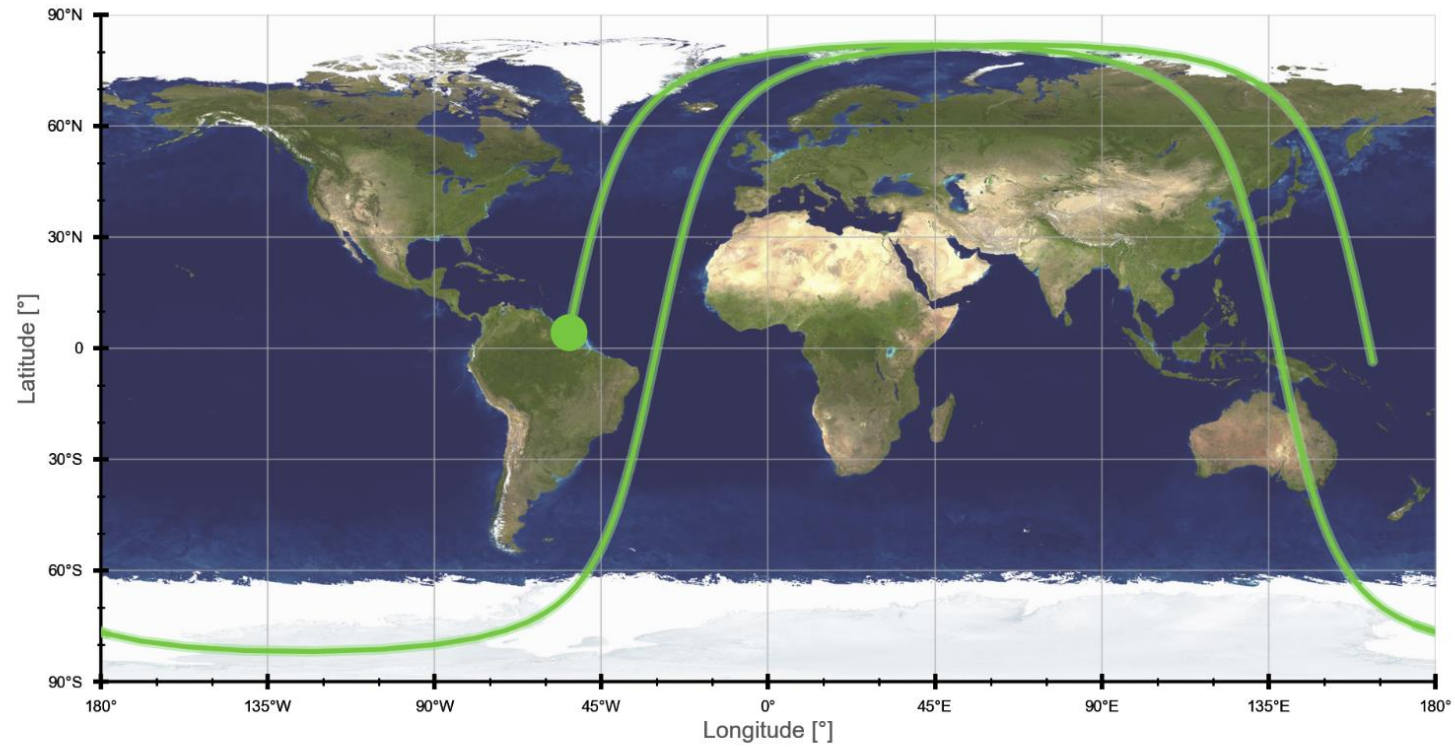
B LEO

0 ✓

C $i \sim 97^\circ$

0

What is the class of this orbit?



A GTO

0

B HEO

0

C GEO

0

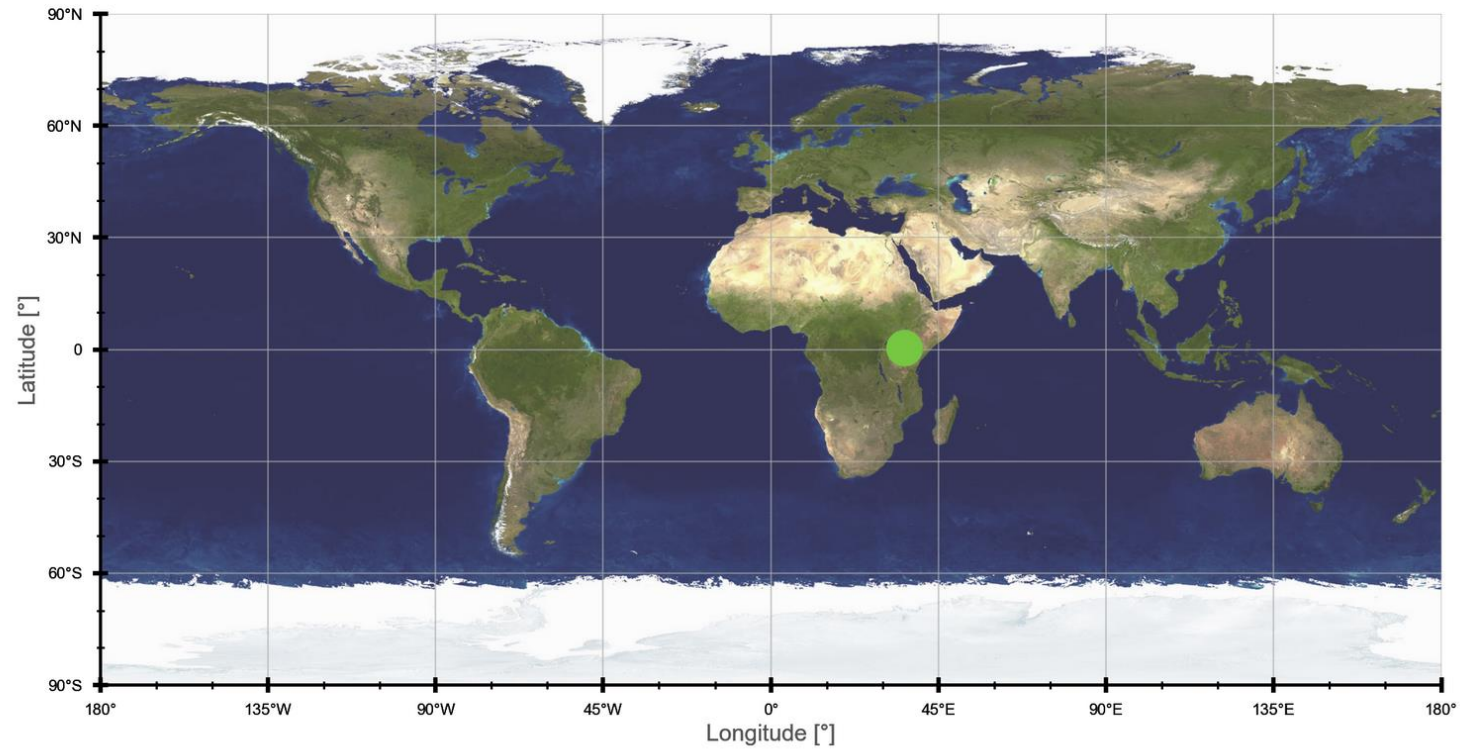
D SSO ($i \sim 97^\circ$)

0

E Graveyard orbit

0

What is the class of this orbit?



- | | | |
|---|-----------------------|---------------------------------------|
| A | GTO | 0 |
| B | LEO, $i \sim 0^\circ$ | 0 |
| C | GEO | 0 <input checked="" type="checkbox"/> |
| D | SSO | 0 |
| E | Molynia orbits | 0 |