

1 NOTE FOR MINIMUM ALTITUDE

Determined through guidance from the ITU, this note is provided to describe the change of the orbital parameters through the lifetime of the Cesium Mission 1 spacecraft in response to the fatal error listed below.

Beam	E/R	Grp Id	Table	Field	Value	Row	Valerr	Rule	F/W	Ap4 Ref	Error Message
			orbit	op_ht	500.3	1	242	4	F	A.4.b.4.f	Altitude of Perigee <= Minimum altitude <= altitude of Apogee

Figure 1: SpaceCap validation program fatal error regarding minimum altitude stated

Cesium Satellite 1 (CS1) and Cesium Satellite 2 (CS2) will deploy from an Atlas V 401 upper stage into a sun-synchronous orbit (SSO) from which they will naturally decay due to atmospheric drag. The nominal deployment altitude is 550 km.

- Nominal Insertion Case: Apogee: 550 km, Perigee: 550 km
- Inclination: ~97.6°
- Local Time: 10:30 AM

Between payload experiment operations, the electric thrusters will be used to move the spacecraft to ~96.6° to allow Earth's J_2 effect to rotate the orbit's RAAN relative to SSO. Once the desired MLT is obtained, a second maneuver will be used to return the spacecraft to SSO (dawn-dusk). The spacecraft will remain at 6:00 AM dawn-dusk orbit for the remainder of the mission. Over the course of the five-year lifetime of the mission, if the thrusters are not used to sustain an orbital altitude of 550 km, the spacecraft altitudes will gradually decrease to an end-of-mission apogee of ~524.9 km and perigee of ~500.3 km. Due to this decrease in orbital altitude, the SpaceCap file states a minimum operating altitude of 500.3 km.

2 NOTE FOR OPERATING AGENCY SYMBOL

This note is included to provide details in response to the fatal errors listed below regarding then entry of "999 (Other)" for the prompt A.3.a – Operating Administration or Agency.

Beam	E/R	Grp Id	Table	Field	Value	Row	Valerr	Rule	F/W	Ap4 Ref	Error Message
	E		grp	op_agcy	999				F	A.3.a	Value = 999 ; p
	R		grp	op_agcy	999				F	A.3.a	Value = 999 ; p

Figure 2: SpaceCap validation program fatal errors regarding entry of "999" for Operating Administration or Agency (A.3.a)

The agency code for CesiumAstro, Inc. is awaiting entry in the International Frequency List for U.S.A. commercial operators, and therefore cannot provide an agency code within the SpaceCap API filing at this time.