1. The satellite stops at its orbital apogee and descends its orbit to a new perigee (which can be captured by the Earth). Calculate the force required to brake and the speed at the latest location

2. After the satellite enters the atmosphere after the recent location (roughly estimated 100km), it carries out variable acceleration motion, and the initial speed is horizontal. It is affected by gravity and air resistance. Air resistance can be calculated using a formula . The density of the atmosphere can be roughly calculated using a formula.

3. In two-dimensional space, the motion is divided into horizontal and vertical directions. The horizontal direction is only affected by air resistance, and the vertical direction is affected by gravity and air resistance.