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When was the Falcon 9 launch of 23 satellites to orbit from Florida, and was this a geosyncronous orbit with earth?

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The most recent Falcon 9 launch of 23 satellites to orbit from Florida occurred December 7, 2024. This launch was not to geosynchronous orbit but to low Ear orbit (LEO). SpaceX's Starlink satellites, which were the payload for this launch typically deployed into LEO, not geosynchronous orbit.

Bot how do these satellites stay i orbit without decay?

Answer

Satellites in orbit, including those like Starlink satellites, don't stay in orbit with decay, but they are designed to minimize this decay as much as possible. Here how they manage to stay in orbit:

1. **Altitude**: The Starlink satellites are placed in a relatively high low Earth orb (LEO), around 550 kilometers altitude. At this altitude, atmospheric drag is significantly reduced compared to lower orbits, slowing down the rate of orbital decay.
2. **Ion Propulsion**: Many modern satellites, including Starlink, are equipped v ion thrusters or other propulsion systems. These thrusters provide small b continuous thrust, which can be used for station-keeping. This means the can periodically boost themselves back into their optimal orbit to counter the effects of drag.

ion propulsion space debris management

3. **Atmospheric Conditions**: The upper atmosphere's density changes due t

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orbits in response to these changes.

4. **Design for Deorbit**: Starlink satellites are also designed with the end of th life in mind. They have enough fuel for about 5 years of operation, after wh they can be maneuvered to deorbit safely, burning up upon re-entry into Earth's atmosphere. This is part of managing space debris.
5. **Orbit Maintenance**: Satellites in LEO need regular orbit maintenance beca even at high altitudes, there's still some atmospheric drag. This maintenar involves periodic thruster firings to keep the satellite from falling back to E too quickly.

The combination of these factors allows satellites to maintain their orbits for extended periods, though they will eventually decay without intervention. The technology and operational strategies are continuously improving to extend th operational life of satellites while also managing their end-of-life in an environmentally responsible manner.

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