MASTER-MIND BEHIND the MISSION

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Solar Array 3 (SA3) Installation

Once the telescope is in the shuttle's cargo bay, the astronauts can begin replacing **instruments** and equipment. They will accomplish their tasks while at least one of them is attached to the shuttle arm. The arm serves as a dolly, allowing the astronaut to move conveniently from one location to another.

The first parts of the telescope to be replaced are the four large, flexible solar arrays, which have powered Hubble for over 8 years. **Radiation** and debris take their toll on the sensitive electronics in the panels, which makes the solar arrays unreliable. To ensure an uninterrupted supply of energy for the remainder of the mission, new solar arrays are being installed. Although these arrays are one-third smaller, they take advantage of current technology and produce slightly more power than the old arrays. Since they don't roll up, the arrays are rigid and less susceptible to extreme temperatures, and their smaller size will reduce the effects of atmospheric drag on the spacecraft.

Once removed, the old solar arrays will be stored in the shuttle's cargo bay and returned to Earth, as will all the replaced instruments and equipment.

New rigid solar arrays

Solar array in cleanroom