



COMMUNICATIONS AND TELEMETRY

L3Harris communications and telemetry technologies have served many key NASA missions. Our antenna system for **Echo**, NASA's earliest communications satellite, enabled the first active, two-way communications between a space satellite and Earth. Our pulse code modulation (PCM) technology for NASA's **Nimbus weather satellites** marked the first use of PCM in an orbiting space vehicle and helped deliver unprecedented long-term forecasts.

Other L3Harris solutions, including our unfurlable space antennas, ground systems and ground-based antennas, have played a major role in NASA's **Tracking and Data Relay Satellite System** since the program's beginning. L3Harris' 5-meter unfurlable space antenna supplied critical communications monitoring connectivity with the Jupiter-orbiting Galileo spacecraft. Our fine guidance and focus control equipment has served the **Hubble Space Telescope** throughout its nearly three decades of operation.

Similarly, manned missions have relied on L3Harris communications and telemetry systems. **Mercury** astronauts used L3Harris radio technology to communicate with tracking stations. L3Harris equipment performed flawlessly aboard **Apollo** spacecraft and lunar modules. Apollo missions also relied on an L3Harris antenna system to help recovery teams locate command modules after splashdown. L3Harris technology was on board every **space shuttle**, either providing direct mission support via onboard computers and electronics, or as part of the spacecraft's payload. The **International Space Station** depends on onboard audio/video distribution technology from L3Harris and is using our reconfigurable software-defined