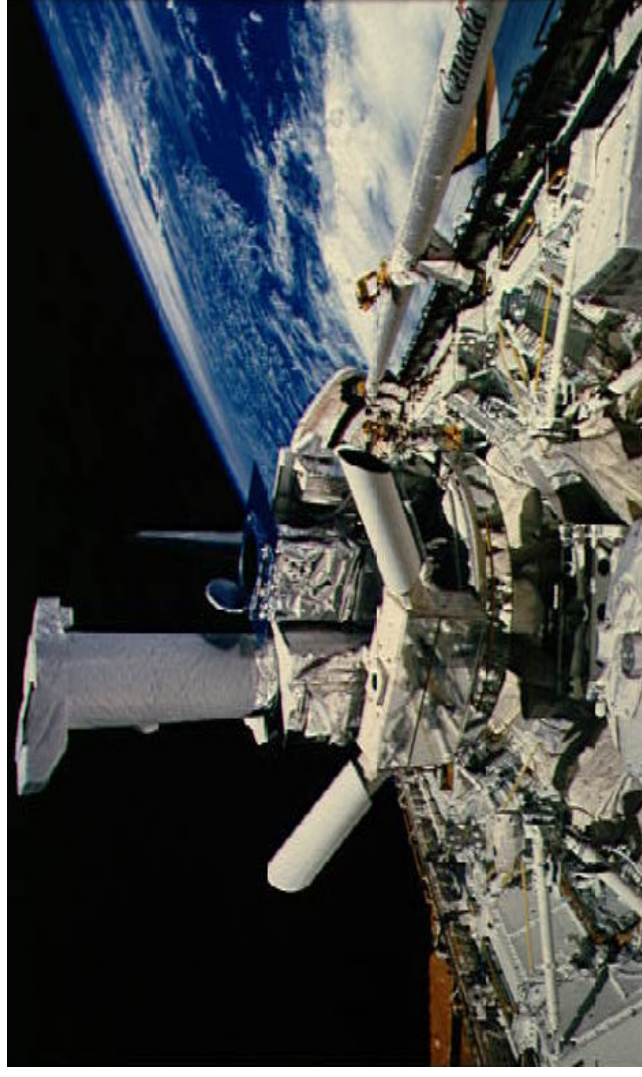
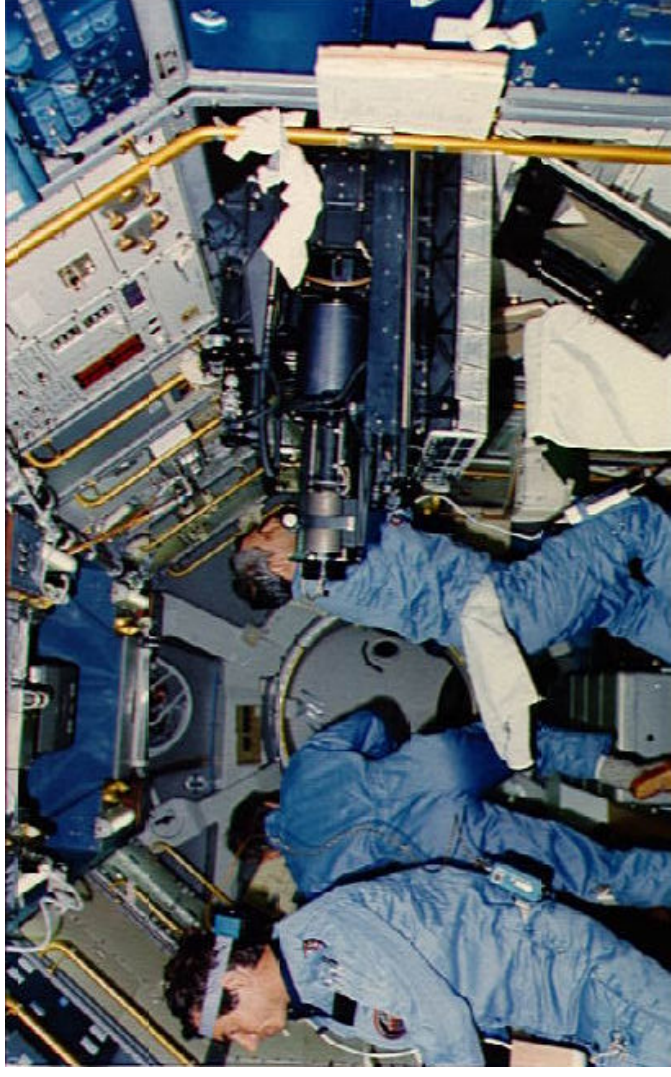


ESA Spacelab - Highlights



Overview

- ❖ Versatile space laboratory developed for NASA by the European Space Agency (ESA) – 50 firms and 10 European countries participated in the construction.
- ❖ Modular in design with interchangeable components (modules, pallets, igloo, Inertial Pointing System). These elements could be used in various combinations depending on the scientific goals of the mission.
- ❖ 22 of the 135 (16%) Space Shuttle missions were Spacelab Missions.
- ❖ Average Spacelab mission length was 11 days.
- ❖ Approximately 240 days of onorbit Spacelab mission operations. Many of the missions were conducted with two-shift operations to maximize science.
- ❖ Spacelab Missions were multi-national, multi-center operations.



Spacelab Module

❖ 16 Spacelab module missions:

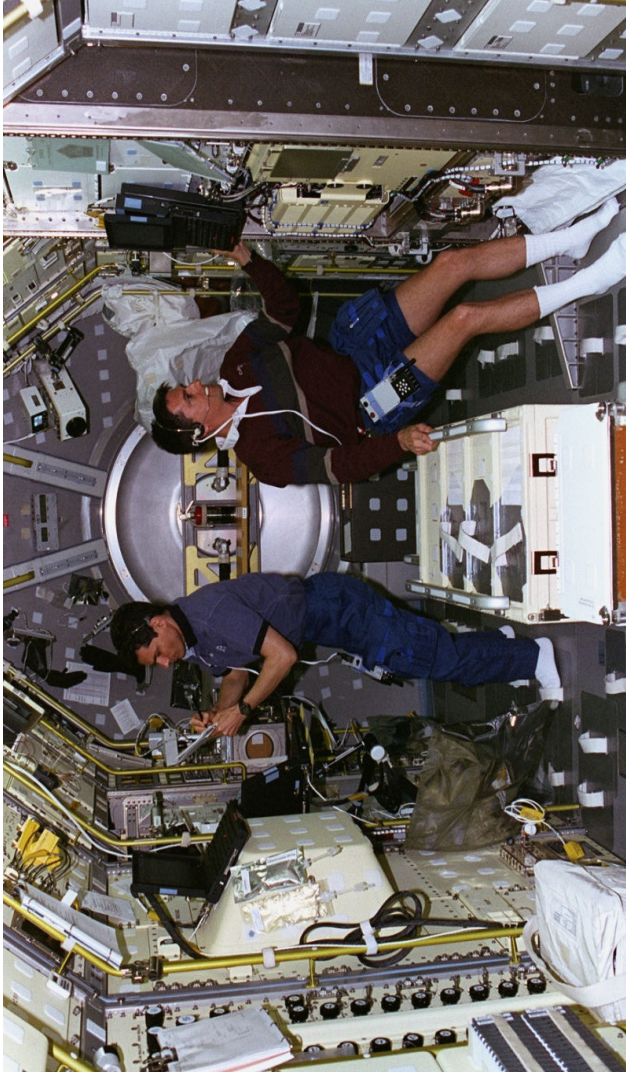
- ❖ Spacelab -1, 3
- ❖ Spacelab D1, D2
- ❖ SLS-1, 2
- ❖ IML-1, 2
- ❖ USML-1, 2
- ❖ Spacelab-J
- ❖ Shuttle/Mir Docking #1
- ❖ LMS
- ❖ MSL-1, MSL-1 Reflight
- ❖ Neurolab

❖ Science categories included:

- ❖ Astronomy
- ❖ Space Plasma Physics
- ❖ Atmospheric Physics
- ❖ Earth Observations
- ❖ Life Sciences
- ❖ Material Science
- ❖ Fluid Mechanics
- ❖ Combustion Science
- ❖ Neuroscience
- ❖ Solar Physics

❖ Over 550 investigations

❖ Hundreds of scientists from >15 nations



Spacelab Pallet

- ❖ Six Spacelab Pallet missions:
 - ❖ Spacelab 2
 - ❖ Astro-1, 2
 - ❖ Atlas -1, 2, 3
- ❖ The Spacelab pallet hardware was also flown on several non-Spacelab missions
- ❖ Scientific Research in the areas of:
 - ❖ Plasma Physics
 - ❖ Astronomy
 - ❖ High-energy Astrophysics
 - ❖ Solar Physics
 - ❖ Atmospheric Physics
- ❖ Astro Series – precise ultraviolet measurements of celestial objects (planets, stars, galaxies). Complement observations made by the Hubble Space Telescope.
- ❖ Atlas Series – part of NASA’s “Mission to Planet Earth”, a long-term effort to study the Earth as a global environmental system.

