

Data Collection Sessions for Experiment 5.2.1

Passive Dosimetry - Thermoluminescent Detector (TLD)

U.S. and Russian thermoluminescent dosimeters (TLDs) were mounted at six pre-selected locations around the Mir core module during Mir 18 and 19. During Mir 19 the crew could not find the deployment cue card for the TLDs. Thus, the TLDs were not deployed to the specified locations until MD33, July 29, 1995. Up until this day the TLDs were stored in the flight engineer's cabin. TLDs were also deployed in six locations during the entire STS-74 flight. After return to Earth, the TLDs were analyzed, and the results were used to calculate the absorbed dose and dose equivalent rates.<P>

Mir 18 Deployment Locations

- Crew Commander's Cabin
- Panel 224 Core module (Russian) and Conical section adjacent to TEPC (US)
- Panel 410 Mir Core Module
- Transfer Module - Window #14
- Panel 307 Mir Core Module (in overhead)
- Behind Panel 325 (in overhead)

Mir 19 Deployment Locations

- Crew Commanders Cabin - Outside Wall
- End of Core Module/Exercise Area
- Panel 410 Mir Core Module (near R-16 radiometer)
- Flight Engineer's Cabin
- Panel 307 Mir Core Module (in overhead)
- Transfer Module - Window #14

STS-74 Deployed Locations

- Mid deck airlock
- Mid deck outer wall
- Mid deck, above ing.
- Flight deck, aft, c/l.obs
- Flight deck, locker L-10
- Flight deck, locker R-11

Table of Sessions Performed

Payload ID	Scheduled Day	Actual Day	Actual Date	Grouped Subjects
Mir 17 (progress)	MD136	MD136	15 FEB 1995	Mir 18 US TLDs launched
Mir 18	MD1 (Mir 17)	MD1	14 MAR 1995	Mir 18 Russian TLDs launched
Mir 19/ STS-71	MD1/ FD1	MD1/ FD1	27 JUN 1995	Mir 19 TLDs launched
Mir 18/ STS-71	MD116/ FD11	MD116/ FD11	7 JUL 1995	Mir 18 TLDs returned to Earth
STS-74	FD1-FD9	FD1-FD9	12 - 20 NOV 1995	STS-74 TLDs deployed in
Mir 20/ STS-74	MD79/ FD9	MD79/ FD9	20 NOV 1995	Mir 19 and a pair of Mir 18

Crew Dosimetry - Crew Passive Dosimeter (CPD)

Each crewmember wore two crew passive dosimeters (CPD). One dosimeter made in each country, Russia and the U.S. Only one of the three U.S. made CPDs, was returned to earth for analysis. The CPD that was returned had been worn by the crewmember for approximately 80% of the mission. The CPD was analyzed and the results were used to calculate the total absorbed dose, linear energy transfer (LET) spectra, and the dose equivalent.

Table of Sessions Performed

Payload ID	Scheduled Day	Actual Day	Actual Date	Grouped Subjects
Mir 18	MD1	MD1	14 MAR 1995	CPDs deployed
Mir 18/ STS-71	MD112/ FD7	MD112/ FD7	3 JUL 1995	CPDs transferred to
Mir 18/ STS-71	MD116/ R+0	MD116/ R+0	7 JUL 1995	CPDs returned to Earth

Active Dosimetry - Tissue Equivalent Proportional Counter (TEPC)

The tissue equivalent proportional counter (TEPC) was mounted next to the area passive dosimeter (APD) at the conical section between the large and small cylinders of the Mir core module during Mir 18. Data download occurred approximately every 14 days. Data obtained from the TEPC was used to calculate the linear energy transfer (LET) spectra, absorbed dose, dose equivalent, and quality factors. Although data download sessions took place during the Mir 19 mission, no data was obtained. This was a result of the hard drive for the Mir interface to payloads system (MIPS) not being completely erased during an earlier download session.

Table of Sessions Performed

Payload ID	Scheduled Day	Actual Day	Actual Date	Grouped Subjects
Mir 18	Not Available	MD9	24 MAR 1996	TEPC download
Mir 18	MD20	MD23	4 APR 1996	TEPC download
Mir 18	MD34	MD34	18 APR 1996	TEPC download
Mir 18	MD48	MD48	2 MAR 1996	TEPC download
Mir 18	MD63	MD62	16 MAY 1996	TEPC download
Mir 18	MD76	MD77	31 MAY 1996	TEPC download/erase
Mir 18	MD90	MD90	13 JUN 1996	TEPC download
Mir 18	Not Available	MD99	26 JUN 1996	TEPC download