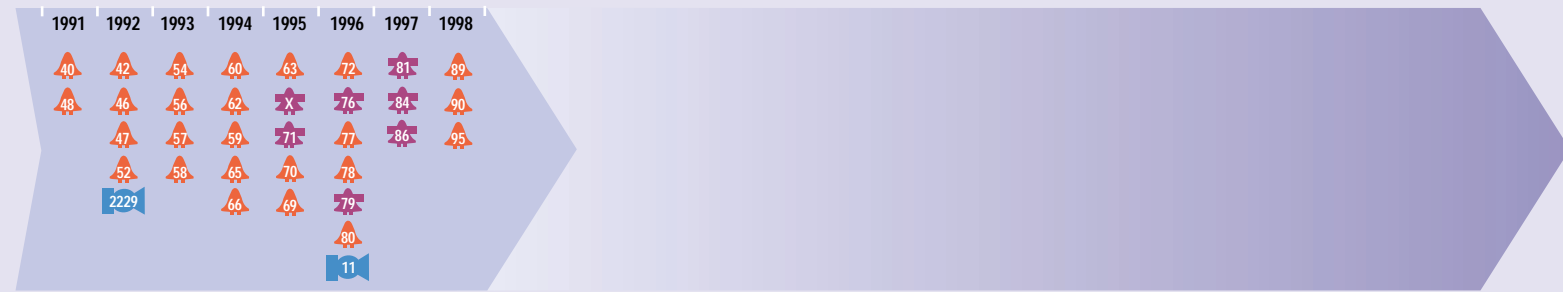


# SPACE LIFE SCIENCES MISSION DIRECTORY 1991-1998

NASA Ames Research Center

## MISSION TIMELINE



## MISSION CHRONOLOGY

Mission	Launch Date	Spacecraft / Launch Vehicle	Payload	Duration	Experiments
STS-40	06 / 05 / 91	Columbia / STS	Spacelab Life Sciences 1 (SLS-1) <sup>2</sup>	9 days	32
STS-48	09 / 12 / 91	Discovery / STS	Physiological / Anatomical Rodent Experiment 1 (PARE.01) <sup>1</sup>	5 days	1
STS-42	01 / 22 / 92	Discovery / STS	International Microgravity Laboratory 1 (IML-1) <sup>2</sup>	8 days	4
STS-46	07 / 31 / 92	Atlantis / STS	Pituitary Growth Hormone Cell Function (PHCF) <sup>1</sup>	8 days	4
STS-47	09 / 12 / 92	Endeavour / STS	Spacelab J (SL-J) <sup>2</sup>	8 days	2
STS-52	10 / 22 / 92	Columbia / STS	Physiological Systems Experiment 2 (PSE.02) <sup>1</sup>	10 days	1
Cosmos 2229	12 / 29 / 92	Cosmos C / Vostok (mod)	Bion 10	12 days	12
STS-54	01 / 13 / 93	Endeavour / STS	Physiological / Anatomical Rodent Experiment 2 (PARE.02) <sup>1</sup>	6 days	1
STS-56	04 / 08 / 93	Discovery / STS	Physiological / Anatomical Rodent Experiment 3 (PARE.03) <sup>1</sup>	9 days	2
STS-57	06 / 21 / 93	Endeavour / STS	Physiological Systems Experiment 3 (PSE.03) <sup>3</sup>	10 days	1
STS-58	10 / 18 / 93	Columbia / STS	Spacelab Life Sciences 2 (SLS-2) <sup>2</sup>	14 days	28
STS-60	02 / 03 / 94	Discovery / STS	Immune System Experiment 1 (IMMUNE.1) <sup>3</sup>	8 days	1
STS-62	03 / 04 / 94	Columbia / STS	Physiological Systems Experiment 4 (PSE.04) <sup>1</sup>	14 days	2
STS-59	04 / 09 / 94	Endeavour / STS	National Institutes of Health Cells 1 (NIH.C1) <sup>1</sup>	11 days	3
STS-65	07 / 08 / 94	Columbia / STS	International Microgravity Laboratory 2 (IML-2) <sup>2</sup>	15 days	2
STS-66	11 / 03 / 94	Atlantis / STS	National Institutes of Health Cells 2 (NIH.C2) <sup>1</sup>	11 days	2
			National Institutes of Health Rodents 1 (NIH.R1) <sup>1</sup>	11 days	13
STS-63	02 / 03 / 95	Discovery / STS	National Institutes of Health Cells 3 (NIH.C3) <sup>1</sup>	8 days	3
			Immune System Experiment 2 (IMMUNE.2) <sup>3</sup>	8 days	1
Soyuz 70	03 / 15 / 95	Atlantis-Mir / Progress	Incubator 1 <sup>4</sup>	16 days	9
STS-71	06 / 27 / 95	Atlantis-Mir / STS	Incubator 2 <sup>4</sup>	16 days	9
			Greenhouse 1 <sup>4</sup>	90 days	1
STS-70	07 / 13 / 95	Discovery / STS	National Institutes of Health Rodents 2 (NIH.R2) <sup>1</sup>	9 days	5
STS-69	09 / 07 / 95	Endeavour / STS	National Institutes of Health Cells 4 (NIH.C4) <sup>1</sup>	11 days	2
STS-72	01 / 11 / 96	Endeavour / STS	National Institutes of Health Rodents 3 (NIH.R3) <sup>1</sup>	9 days	2
			National Institutes of Health Cells 5 (NIH.C5) <sup>1</sup>	9 days	2
STS-76	03 / 22 / 96	Atlantis-Mir / STS	Biorack 1 <sup>3</sup>	9 days	3
			Incubator 3 <sup>4</sup>	16 days	9
			Environmental Radiation Measurements on Mir 1 <sup>4</sup>	188 days	1
STS-77	05 / 19 / 96	Endeavour / STS	Immune System Experiment 3 (IMMUNE.3) <sup>3</sup>	10 days	1
			National Institutes of Health Cells 7 (NIH.C7) <sup>1</sup>	10 days	2
STS-78	06 / 20 / 96	Columbia / STS	Life and Microgravity Spacelab (LMS) <sup>2</sup>	16 days	2
STS-79	09 / 16 / 96	Atlantis-Mir / STS	Greenhouse 2 <sup>4</sup>	123 days	1
			Environmental Radiation Measurements on Mir 2 <sup>4</sup>	127 days	1
STS-80	11 / 19 / 96	Columbia / STS	National Institutes of Health Cells 6 (NIH.C6) <sup>1</sup>	18 days	2
			National Institutes of Health Rodents 4 (NIH.R4) <sup>1</sup>	18 days	1
Bion 11	12 / 24 / 96	Cosmos C / Vostok (mod)	Bion 11	14 days	9
STS-81	01 / 12 / 97	Atlantis-Mir / STS	Biorack 2 <sup>3</sup>	10 days	5
			Effective Dose Measurements during EVA 1 <sup>4</sup>	10 days	1
			Environmental Radiation Measurements on Mir 3 <sup>4</sup>	132 days	1
STS-84	05 / 15 / 97	Atlantis-Mir / STS	Biorack 3 <sup>3</sup>	9 days	4
			Effects of Gravity on Circadian Rhythmicity <sup>4</sup>	143 days	1
			Greenhouse 3 <sup>4</sup>	122 days	1
			Effective Dose Measurements during EVA 2 <sup>4</sup>	**	1
			Environmental Radiation Measurements on Mir 4 <sup>4</sup>	143 days	1
STS-86	09 / 25 / 97	Atlantis-Mir / STS	Active Dosimetry of Charged Particles <sup>4</sup>	104 days	1
			Environmental Radiation Measurements on Mir 5 <sup>4</sup>	128 days	1
STS-89	01 / 22 / 98	Endeavour / STS	Closed Equilibrated Biological Aquatic System (CEBAS) <sup>1</sup>	9 days	2
STS-90	04 / 17 / 98	Columbia / STS	NeuroLab <sup>2</sup>	16 days	15
STS-95	10 / 29 / 98	Discovery / STS	National Institutes of Health Cells 8 (NIH.C8) <sup>3</sup>	9 days	1
			Vestibular Function Experiment Unit (VFEU) <sup>3</sup>	9 days	1

## ORGANISMS FLOWN

### VERTEBRATES: Adults or Juveniles

Frog ( <i>Xenopus laevis</i> )	
Human ( <i>Homo sapiens</i> )	
Japanese red-bellied newt ( <i>Cynopus pyrrhogaster</i> )	
Mouse ( <i>Mus musculus</i> )	
Oyster toadfish ( <i>Opsanus tau</i> )	
Rat ( <i>Rattus norvegicus</i> )	
Rhesus monkey ( <i>Macaca mulatta</i> )	
Swordtail fish ( <i>Xiphophorus helleri</i> )	

### VERTEBRATES: Embryonic Forms

Frog ( <i>Xenopus laevis</i> ) egg	
Japanese quail ( <i>Coturnix coturnix</i> ) egg	
Japanese red-bellied newt ( <i>Cynopus pyrrhogaster</i> ) egg	
Medaka fish ( <i>Oryzias latipes</i> ) egg	

### INVERTEBRATES: Adults or Juveniles

Black-bodied beetle ( <i>Trigonoscels gigas</i> )	
Cricket ( <i>Acheta domesticus</i> )	
Jellyfish ( <i>Aurelia aurita</i> )	
Nematode ( <i>Caenorhabditis elegans</i> )	
Snail ( <i>Biomphalaria glabrata</i> )	

### PLANTS

Hornweed ( <i>Ceratophyllum demersum</i> )	
Mouse-ear cress ( <i>Arabidopsis thaliana</i> )	
Mustard ( <i>Brassica rapa</i> )	
Oat ( <i>Avena sativa</i> ) seedling	
Wheat ( <i>Triticum aestivum</i> ) seed	

### CELL CULTURES AND UNICELLULAR FORMS

Bacterium ( <i>Burkholderia cepacia</i> )	
Chicken ( <i>Gallus gallus</i> )	
Human ( <i>Homo sapiens</i> )	
Mouse ( <i>Mus musculus</i> )	
Rat ( <i>Rattus norvegicus</i> )	
Sea urchin ( <i>Lytechinus pictus</i> ) sperm	
Sea urchin ( <i>Strongylocentrotus purpuratus</i> ) sperm	
Yeast ( <i>Saccharomyces cerevisiae</i> )	