

| Table of Manned Space Flights |  |          |          |            | SpaceCalc   |
|-------------------------------|--|----------|----------|------------|---|
| Total: 267                    | Crew   | Launch   | Land     | Duration   | By Robert A. Braeunig*  |
| Vostok 1                      | Yuri Gagarin   | 04/12/61 | 04/12/61 | 1h:48m     | First manned space flight (1 orbit).  |
| MR 3                          | Alan Shepard   | 05/05/61 | 05/05/61 | 15m:22s    | First American in space (suborbital). Freedom 7.  |
| MR 4                          | Virgil Grissom   | 07/21/61 | 07/21/61 | 15m:37s    | Second suborbital flight; spacecraft sank, Grissom rescued. Liberty Bell 7.   |
| Vostok 2                      | Guerman Titov  | 08/06/61 | 08/07/61 | 1d:01h:18m | First flight longer than 24 hours (17 orbits).  |
| MA 6                          | John Glenn   | 02/20/62 | 02/20/62 | 04h:55m    | First American in orbit (3 orbits); telemetry falsely indicated heatshield unlatched. Friendship 7.   |
| MA 7                          | Scott Carpenter  | 05/24/62 | 05/24/62 | 04h:56m    | Initiated space flight experiments; manual retrofire error caused 250 mile landing overshoot. Aurora 7.   |
| Vostok 3                      | Andrian Nikolayev                                      | 08/11/62 | 08/15/62 | 3d:22h:22m | First twinned flight, with Vostok 4.  |
| Vostok 4                      | Pavel Popovich   | 08/12/62 | 08/15/62 | 2d:22h:57m | First twinned flight. On first orbit came within 3 miles of Vostok 3.   |
| MA 8                          | Walter Schirra   | 10/03/62 | 10/03/62 | 09h:13m    | Developed techniques for long duration missions (6 orbits); closest splashdown to target to date (4.5 miles). Sigma 7.                                  |
| MA 9                          | Gordon Cooper  | 05/15/63 | 05/16/63 | 1d:10h:20m | First U.S. evaluation of effects of one day in space (22 orbits); performed manual reentry after systems failure, landing 4 miles from target. Faith 7. |
| Vostok 5                      | Valeri Bykovsky  | 06/14/63 | 06/19/63 | 4d:23h:08m | Second twinned flight, with Vostok 6.   |
| Vostok 6                      | Valentina Tereshkova                                   | 06/16/63 | 06/19/63 | 2d:22h:51m | First woman in space; passed within 3 miles of Vostok 5.  |
| X-15/Flight 90                | Joseph Walker  | 07/19/63 | 07/19/63 | <15m       | First rocket-powered aircraft to reach space (FAI definition); sub-orbital reaching 347,800 feet (106,010 m) altitude.                                  |
| X-15/Flight 91                | Joseph Walker  | 08/22/63 | 08/22/63 | <15m       | Rocket-powered aircraft; sub-orbital reaching 354,200 feet (107,960 m) altitude.  |
| Voskhod 1                     | Vladimir Komarov, Konstantin Feoktistov, Boris Yegorov | 10/12/64 | 10/13/64 | 1d:00h:17m | Modified Vostok; first three man crew in space; first without space suits.  |

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| Voskhod 2 | Pavel Belyayev, Alexei Leonov                  | 03/18/65 | 03/19/65 | 1d:02h:02m  | Modified Vostok; first spacewalk by Leonov (10 min) via inflatable airlock.   |
| Gemini 3  | Virgil Grissom, John Young                     | 03/23/65 | 03/23/65 | 04h:53m     | First American two man crew; first piloted spacecraft to change its orbital path; first computer, allowing onboard calculation of manoeuvres.                         |
| Gemini 4  | James McDivitt, Edward White                   | 06/03/65 | 06/07/65 | 4d:01h:56m  | First American spacewalk by White (21 min); first US 4-day flight; manual reentry made after computer failure.  |
| Gemini 5  | Gordon Cooper, Charles Conrad                  | 08/21/65 | 08/29/65 | 7d:22h:55m  | First use of fuel cells for electric power; evaluated guidance and navigation system.   |
| Gemini 7  | Frank Borman, James Lovell                     | 12/04/65 | 12/18/65 | 13d:18h:35m | Longest US flight for 8 years (206 orbits), record until Soyuz 9; rendezvous with Gemini 6.   |
| Gemini 6  | Walter Schirra, Thomas Stafford                | 12/15/65 | 12/16/65 | 1d:01h:51m  | First manned rendezvous, to within 6 feet of Gemini 7 (as planned Agena was lost).  |
| Gemini 8  | Neil Armstrong, David Scott                    | 03/16/66 | 03/17/66 | 10h:41m     | First docking (with Agena) of one space vehicle with another; emergency reentry after control malfunction; first Pacific landing.                                     |
| Gemini 9  | Thomas Stafford, Eugene Cernan                 | 06/03/66 | 06/06/66 | 3d:00h:21m  | 127 min EVA by Cernan; rendezvous but no docking with target; landed 1/2 mile from recovery ship.   |
| Gemini 10 | John Young, Michael Collins                    | 07/18/66 | 07/21/66 | 2d:22h:47m  | Docked with Agena 10 and used engine to attain record 474 mile (763 km) altitude; rendezvous with Agena 8; 39 min EVA by Collins.                                     |
| Gemini 11 | Charles Conrad, Richard Gordon                 | 09/12/66 | 09/15/66 | 2d:23h:17m  | Used Agena engine to attain record 850 mile (1369 km) altitude; 163 min EVA by Gordon, connected Gemini and Agena by tether; first automatic computer-guided reentry. |
| Gemini 12 | James Lovell, Edwin Aldrin                     | 11/11/66 | 11/15/66 | 3d:22h:35m  | Final Gemini mission; Agena docking; record 5.5 hours of EVA by Aldrin, first work carried out during a EVA; automatic computer-guided reentry.                       |
| Soyuz 1   | Vladimir Komarov                               | 04/23/67 | 04/24/67 | 1d:02h:48m  | Retroparachute failed to open, causing cosmonaut to be killed.  |
| Apollo 7  | Walter Schirra, Donn Eisele, Walter Cunningham | 10/11/68 | 10/22/68 | 10d:20h:09m | First piloted flight of Apollo spacecraft, command-service module only; first US 3-man flight; live TV footage of crew.   |
| Soyuz 3   | Georgi Beregovoi                               | 10/26/68 | 10/30/68 | 3d:22h:51m  | Rendezvous with unmanned Soyuz 2.   |

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| Apollo 8  | Frank Borman, James Lovell, William Anders                          | 12/21/68 | 12/27/68 | 6d:03h:01m  | First manned lunar orbit and piloted lunar return reentry (CSM only); first manned Saturn V; views of lunar surface televised to Earth.  |
| Soyuz 4   | Vladimir Shatalov, Aleksei Yeliseyev (down), Yevgeni Khrunov (down) | 01/14/69 | 01/17/69 | 2d:23h:21m  | First docking of two piloted spacecraft, with Soyuz 5.   |
| Soyuz 5   | Boris Volynov, Aleksei Yeliseyev (up), Yevgeni Khrunov (up)         | 01/15/69 | 01/18/69 | 3d:00h:54m  | Docked with Soyuz 4; Yeliseyev and Khrunov transferred by EVA to Soyuz 4.  |
| Apollo 9  | James McDivitt, David Scott, Russell Schweickart                    | 03/03/69 | 03/13/69 | 10d:01h:01m | First piloted flight of lunar module (Earth orbit); 56 min Schweickart EVA tested lunar suit.  |
| Apollo 10 | Thomas Stafford, John Young, Eugene Cernan                          | 05/18/69 | 05/26/69 | 8d:00h:03m  | First lunar module orbit of Moon, descent to within 50,000 feet (15,000 meters) of Moon's surface; holds manned speed record, 6.8863 mi/s (11.0825 km/s) at atmosphere entry.                                |
| Apollo 11 | Neil Armstrong, Michael Collins, Edwin Aldrin                       | 07/16/69 | 07/24/69 | 8d:03h:19m  | First lunar landing made by Armstrong and Aldrin (20-Jul); 151 min lunar EVA; collected 48.5 lb (22 kg) of soil & rock samples; lunar stay time 21h:36m.   |
| Soyuz 6   | Georgi Shonin, Valeri Kubasov                                       | 10/11/69 | 10/16/69 | 4d:22h:43m  | Rendezvous with Soyuz 7/8; first welding of metals in space.   |
| Soyuz 7   | Anatoli Filipchenko, Vladislav Volkov, Viktor Gorbatko              | 10/12/69 | 10/17/69 | 4d:22h:40m  | Triple rendezvous with Soyuz 6/8; space lab construction test made; first time 3 spacecraft, 7 crew members orbited the Earth at once.   |
| Soyuz 8   | Vladimir Shatalov, Aleksei Yeliseyev                                | 10/13/69 | 10/18/69 | 4d:22h:51m  | Triple rendezvous with Soyuz 6/7; part of space lab construction team.   |
| Apollo 12 | Charles Conrad, Richard Gordon, Alan Bean                           | 11/14/69 | 11/24/69 | 10d:04h:36m | Conrad and Bean made second Moon landing; 2 lunar EVAs totalling 465 min; collected 74.7 lb (33.9 kg) of samples; lunar stay time 31h:31m.   |
| Apollo 13 | James Lovell, John Swigart, Fred Haise                              | 04/11/70 | 04/17/70 | 5d:22h:55m  | Mission aborted following service module oxygen tank explosion; crew returned safely using lunar module; circumlunar return; holds manned altitude record, 248,665 miles (400,187 km) above Earth's surface. |
| Soyuz 9   | Andrian Nikolayev, Vitali Sevastyanov                               | 06/01/70 | 06/19/70 | 17d:16h:59m | This flight marked the beginning of working in space under weightless conditions; endurance record for solo craft remains.   |

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| Apollo 14 | Alan Shepard, Stuart Roosa, Edgar Mitchell                  | 01/31/71 | 02/09/71 | 9d:00h:02m  | Shepard and Mitchell made third Moon landing; 2 lunar EVAs totalling 563 min; collected 96 lb (43.5 kg) of lunar samples; lunar stay time 33h:31m.  |
| Salyut 1  | Unmanned space station                                      | 04/19/71 | 10/11/71 | 175d        | First space station; occupied by Soyuz 11 crew for 23 days.   |
| Soyuz 10  | Vladimir Shatalov, Aleksei Yeliseyev, Nikolai Rukavishnikov | 04/22/71 | 04/24/71 | 1d:23h:46m  | Adjustment of an improved docking bay between the spacecraft and the orbiting Salyut space station, but no cosmonauts entered the orbiting station.   |
| Soyuz 11  | Georgi Dobrovolsky, Vladislav Volkov, Viktor Patsayev       | 06/06/71 | 06/29/71 | 23d:18h:22m | Docked and entered Salyut 1 space station; orbited in Salyut 1 for 23 days; crew died during reentry from loss of pressurization.   |
| Apollo 15 | David Scott, Alfred Worden, James Irwin                     | 07/26/71 | 08/07/71 | 12d:07h:12m | Scott and Irwin made fourth Moon landing; first lunar rover use; first deep spacewalk; 3 lunar EVAs totalling 19h:8m; collected 170 lb (77 kg) of samples; lunar stay time 66h:54m; 38 min Worden EVA; subsatellite released. |
| Apollo 16 | John Young, Thomas Mattingly, Charles Duke                  | 04/16/72 | 04/27/72 | 11d:01h:51m | Young and Duke made fifth Moon landing; 3 lunar EVAs totalling 20h:14m; collected 213 lb (97 kg) of lunar samples; lunar stay time 71:14; subsatellite released   |
| Apollo 17 | Eugene Cernan, Ronald Evans, Harrison Schmitt               | 12/07/72 | 12/19/72 | 12d:13h:52m | Cernan and Schmitt made sixth piloted lunar landing; 3 lunar EVAs totalling 22h:4m; collected 243 lb (110 kg) of samples; record lunar stay of 74:59; 66 min Evans EVA.   |
| Skylab 1  | Unmanned space station                                      | 05/14/73 | 07/11/73 | 2,249d      | First U.S. space station; occupied by Skylab 2, 3 & 4 crews.  |
| Skylab 2  | Charles Conrad, Joseph Kerwin, Paul Weitz                   | 05/25/73 | 06/22/73 | 28d:00h:50m | First American piloted orbiting space station; made long-flight tests, crew repaired damage caused during boost; 2 EVAs + SEVA.   |
| Skylab 3  | Alan Bean, Owen Garriott, Jack Lousma                       | 07/28/73 | 09/25/73 | 59d:11h:10m | Crew systems and operational tests, exceeded pre-mission plans for scientific activities; 3 EVAs totalling 13:44.   |
| Soyuz 12  | Vasili Lazarev, Oleg Makarov                                | 09/27/73 | 09/29/73 | 1d:23h:16m  | After Soyuz 11 accident, new life support equipment was tested.   |
| Skylab 4  | Gerald Carr, Edward Gibson, William Pogue                   | 11/16/73 | 02/08/74 | 84d:01h:15m | Final Skylab mission; endurance record until Soyuz 29-Salyut 6; 4 EVAs, set then-record spacewalk of 7h:1m.   |

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| Soyuz 13       | Pyotr Klimuk, Valentin Lebedev               | 12/18/73 | 12/26/73 | 7d:20h:56m  | Astrophysical observations made with Orion ultraviolet telescope; Earth is photographed.   |
| Salyut 3       | Unmanned space station                       | 06/25/74 | 01/24/75 | 213d        | 2nd space station; occupied by Soyuz 14 crew.  |
| Soyuz 14       | Pavel Popovich, Yuri Artyukhin               | 07/03/74 | 07/19/74 | 15d:17h:30m | Sole occupation of Salyut 3 (no docking).  |
| Soyuz 15       | Gennadi Sarafanov, Lev Demin                 | 08/26/74 | 08/28/74 | 2d:00h:12m  | Failed to dock with Salyut 3 because of Soyuz systems failures; first return to Earth during the night.                                |
| Soyuz 16       | Anatoli Filipchenko, Nikolai Rukavishnikov   | 12/02/74 | 12/08/74 | 5d:22h:24m  | Trial run with a modified Soyuz capable of docking with the U.S. Apollo spacecraft.  |
| Salyut 4       | Unmanned space station                       | 12/26/74 | 02/03/77 | 770d        | 3rd space station; occupied by 2 crews for 93 days.  |
| Soyuz 17       | Aleksey Gubarev, Georgi Grechko              | 01/10/75 | 02/09/75 | 29d:13h:20m | First Salyut 4 occupation; Soviet endurance record.  |
| Soyuz 18A      | Vasili Lazarev, Oleg Makarov                 | 04/05/75 | 04/05/75 | 21m:27s     | Launch to Salyut 4 aborted when stage 1 failed to separate; 14g reentry.   |
| Soyuz 18B      | Pyotr Klimuk, Vitali Sevastyanov             | 05/24/75 | 07/26/75 | 62d:23h:20m | 2nd Salyut 4 occupation; Soviet endurance record.  |
| Soyuz 19-ASTP  | Alexei Leonov, Valeri Kubasov                | 07/15/75 | 07/21/75 | 5d:22h:31m  | First U.S./USSR joint flight; docked with Apollo 18 for 2 days; conducted experiments, shared meals, and held a joint news conference. |
| Apollo 18-ASTP | Vance Brand, Thomas Stafford, Donald Slayton | 07/15/75 | 07/24/75 | 9d:01h:28m  | Joint flight with Soyuz 19.  |
| Salyut 5       | Unmanned space station                       | 06/22/76 | 08/08/77 | 412d        | 4th space station; occupied by 2 crews for 65 days.  |
| Soyuz 21       | Boris Volynov, Vitali Zholobov               | 07/06/76 | 08/24/76 | 49d:06h:24m | First Salyut 5 occupation (48 days); acid fumes forced return.   |
| Soyuz 22       | Valeri Bykovsky, Vladimir Aksyonov           | 09/15/76 | 09/23/76 | 7d:21h:52m  | Spacecraft was modified to enable the crew to photograph the Earth.  |
| Soyuz 23       | Vyacheslav Zudov, Valeri Rozhdestvensky      | 10/14/76 | 10/16/76 | 2d:00h:07m  | Docking between the spacecraft and Salyut 5 failed; first Soviet splashdown after emergency return.                                    |
| Soyuz 24       | Viktor Gorbatko, Yuri Glazkov                | 02/07/77 | 02/25/77 | 17d:17h:26m | 2nd Salyut 5 occupation.   |
| Salyut 6       | Unmanned space station                       | 09/29/77 | 07/28/82 | 1763d       | 5th space station; occupied for 676 days by 5 long stay + 11 visiting crews.   |
| Soyuz 25       | Vladimir Kovalyonok, Valeri Ryumin           | 10/09/77 | 10/11/77 | 2d:00h:45m  | The planned manual docking with Salyut 6   |

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| Soyuz 26  | Yuri Romanenko (up), Georgi Grechkon (up), Vladimir Dzhanibekov (down), Oleg Makarov (down)          | 12/10/77 | 01/16/78 | 37d:10h:06m  | First Salyut 6 occupation, returned in Soyuz 27; Progress 1 resupplies the orbiting complex.                          |
| Soyuz 27  | Vladimir Dzhanibekov (up), Oleg Makarov (up), Yuri Romanenko (down), Georgi Grechkon (down)          | 01/10/78 | 03/16/78 | 64d:22h:53m  | First space station dual occupancy; returned in Soyuz 26.   |
| Soyuz 28  | Aleksey Gubarev, Vladimir Remek  | 03/02/78 | 03/10/78 | 7d:22h:16m   | First international crew (USSR and Czechoslovakia), to Salyut 6.  |
| Soyuz 29  | Vladimir Kovalyonok (up), Aleksandr Ivanchenkov (up), Vladimir Bykovsky (down), Sigmund Jaehn (down) | 06/15/78 | 09/03/78 | 79d:15h:24m  | First 100+ day flight, to Salyut 6; returned in Soyuz 31: Progress 2, 3 & 4 resupply the orbiting complex.            |
| Soyuz 30  | Pyotr Klimuk, Mirosław Hermaszewski  | 06/27/78 | 07/05/78 | 7d:22h:03m   | 2nd international crew (USSR and Poland), to Salyut 6.  |
| Soyuz 31  | Vladimir Bykovsky (up), Sigmund Jaehn (up), Vladimir Kovalyonok (down), Aleksandr Ivanchenkov (down) | 08/26/78 | 11/02/78 | 67d:20h:13m  | 3rd international crew (USSR and East Germany), to Salyut 6; returned in Soyuz 29.                                    |
| Soyuz 32  | Vladimir Lyakhov (up), Valeri Ryumin (up), unmanned (down)   | 02/25/79 | 06/13/79 | 108d:04h:25m | Cosmonauts board Salyut 6; endurance record; returned in Soyuz 34: Progress 5, 6 and 7 resupply the orbiting complex. |
| Soyuz 33  | Nikolai Rukavishnikov, Georgi Ivanov   | 04/10/79 | 04/12/79 | 1d:23h:01m   | 4th international crew (USSR and Bulgaria); failed to dock with Salyut 6 after engine failure.                        |
| Soyuz 34  | Unmanned (up), Vladimir Lyakhov (down), Valeri Ryumin (down)   | 06/06/79 | 08/19/79 | 73d:18h:17m  | Delivered for Soyuz 32 crew return to compensate for Soyuz 33 failure.  |
| Soyuz 35  | Leonid Popov (up), Valeri Ryumin (up), Valeri Kubasov (down), Bertalan Farkas (down)                 | 04/19/80 | 06/03/80 | 55d:01h:28m  | 4th Salyut 6 long stay; endurance record; returned in Soyuz 37: Progress 8, 9 and 11 resupply the orbiting complex.   |
| Soyuz 36  | Valeri Kubasov (up), Bertalan Farkas (up), Viktor Gorbatko (down), Pham Tuan (down)                  | 05/26/80 | 07/31/80 | 65d:20h:54m  | 5th international crew (USSR and Hungary), to Salyut 6; returned to Soyuz 35.   |
| Soyuz T-2 | Yuri Malyshev, Vladimir Aksyonov   | 06/05/80 | 06/09/80 | 3d:22h:20m   | First manned space flight of the new spacecraft; manual docking with Salyut 6.  |
| Soyuz 37  | Viktor Gorbatko (up), Pham Tuan (up), Leonid Popov (down), Valeri Ryumin (down)                      | 07/23/80 | 10/11/80 | 79d:15h:17m  | 6th international crew (USSR and Vietnam), to Salyut 6; returned in Soyuz 36.   |
| Soyuz 38  | Yuri Romanenko, Arnaldo Tamayo Mendez  | 09/18/80 | 09/26/80 | 7d:20h:43m   | 7th international crew (USSR and Cuba), to Salyut 6.  |

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| Soyuz T-3        | Leonid Kizim, Oleg Makarov, Gennadi Strekalov   | 11/27/80 | 12/10/80 | 12d:19h:08m  | Resumption of 3-man flights; Salyut 6 repair work: Progress 11 resupplies the orbiting complex.                                   |
| Soyuz T-4        | Vladimir Kovalyonok, Viktor Savinykh  | 03/12/81 | 05/26/81 | 74d:17h:37m  | Last Salyut 6 long-stay; 50th Soviet/100th spaceman: Progress 12 resupplies the orbiting complex.                                 |
| Soyuz 39         | Vladimir Dzhanibekov, Jugderdemidiyn Gurragcha  | 03/22/81 | 03/30/81 | 7d:20h:42m   | 8th international crew (USSR and Mongolia), to Salyut 6.  |
| STS-1/Columbia   | John Young, Robert Crippen  | 04/12/81 | 04/14/81 | 2d:06h:22m   | First space shuttle flight; orbital test flight; some thermal tiles lost.   |
| Soyuz 40         | Leonid Popov, Dumitru Prunariu  | 05/14/81 | 05/22/81 | 7d:21h:42m   | 9th international crew (USSR and Romania), to Salyut 6; last flight of old Soyuz design.  |
| STS-2/Columbia   | Joseph Engle, Richard Truly   | 11/12/81 | 11/14/81 | 2d:06h:14m   | First reuse of space shuttle; 2nd orbital test flight; test of Canadian robot arm (RMS); 5-day mission halved by fuel cell fault. |
| STS-3/Columbia   | Jack Lousma, Gordon Fullerton   | 03/22/82 | 03/30/82 | 8d:00h:06m   | Third orbital test flight; first experiments; payload: astronomy; landing delayed 1 day by storm.                                 |
| Salyut 7         | Unmanned space station  | 04/19/82 | 02/07/91 | 3216d        | 6th space station; occupied for 812 days by 10 crews.   |
| Soyuz T-5        | Anatoli Berezovoi (up), Valentin Lebedev (up), Leonid Popov (down), Aleksandr Serebrov (down), Svetlana Savitskaya (down) | 05/13/82 | 08/27/82 | 106d:05h:06m | First Salyut 7 occupation + long stay; returned in Soyuz T-7: Progress 13, 14, 15 and 16 resupply the orbiting complex.           |
| Soyuz T-6        | Vladimir Dzhanibekov, Aleksandr Ivanchenkov, Jean-Loup Chretien   | 06/24/82 | 07/02/82 | 7d:21h:51m   | 10th international crew (USSR and France), to Salyut 7.   |
| STS-4/Columbia   | Thomas Mattingly, Henry Hartsfield  | 06/27/82 | 07/04/82 | 7d:01h:11m   | Last orbital test flight; first concrete runway landing; SRBs lost; beginning of operations; payload: military.                   |
| Soyuz T-7        | Leonid Popov (up), Aleksandr Serebrov (up), Svetlana Savitskaya (up), Anatoli Berezovoi (down), Valentin Lebedev (down)   | 08/19/82 | 12/10/82 | 113d:01h:51m | Salyut 7 visit; Savitskaya is 2nd woman in space; returned in Soyuz T-5.  |
| STS-5/Columbia   | Vance Brand, Robert Overmyer, Joseph Allen, William Lenoir  | 11/11/82 | 11/16/82 | 5d:02h:15m   | First operational space shuttle mission; first 4-person crew; depolyed 2 communications satellites (COMSATs); EVA cancelled.      |
| STS-6/Challenger | Paul Weitz, Karol Bobko, Donald Peterson, Story Musgrave  | 04/04/83 | 04/09/83 | 5d:00h:25m   | First Challenger flight; first shuttle EVA; Tracking & Data Relay Satellite (TDRS).   |

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| Soyuz T-8        | Vladimir Titov, Gennadi Strekalov, Aleksandr Serebrov  | 04/20/83 | 04/22/83 | 2d:00h:18m   | Failed to dock with Salyut 7 for long stay; radar failed and manual approach aborted.                |
| STS-7/Challenger | Robert Crippen, Frederick Hauck, John Fabian, Sally Ride, Norman Thagard   | 06/18/83 | 06/24/83 | 6d:02h:25m   | Ride first U.S. woman in space; first 5-person crew; 2 COMSATs, German platform SPAS-1.              |
| Soyuz T-9        | Vladimir Lyakhov, Aleksandr Pavlovich Aleksandrov  | 06/27/83 | 11/23/83 | 149d:10h:46m | Salyut 7 long stay; 2 EVAs added 2 solar panels; Progress 18 resupplies the orbiting complex.        |
| STS-8/Challenger | Richard Truly, Daniel Brandenstein, Dale Gardner, Guion Bluford, William Thornton  | 08/30/83 | 09/05/83 | 6d:01h:10m   | Bluford first U.S. black in space; first night launch/ landing; 1 communications satellite deployed. |
| Soyuz T-10A      | Vladimir Titov, Gennadi Strekalov  | 09/26/83 | 09/26/83 | 05m:13s      | Launchpad fire, first use of escape tower. Descent module re-used by T-15.                           |
| STS-9/Columbia   | John Young, Brewster Shaw, Owen Garriott, Robert Parker, Byron Lichtenberg, Ulf Merbold  | 11/28/83 | 12/08/83 | 10d:07h:48m  | Merbold first German on U.S. mission; first 6-person crew; first Spacelab Mission (SL-1).            |
| 41-B/Challenger  | Vance Brand, Robert Gibson, Bruce McCandless, Ronald McNair, Robert Stewart  | 02/03/84 | 02/11/84 | 7d:23h:17m   | First untethered EVA & testing of MMU jetpack; first Kennedy Space Center landing; 2 COMSATs.        |
| Soyuz T-10B      | Leonid Kizim (up), Vladimir Solovyov (up), Oleg Atkov (up), Yuri Malyshev (down), Gennadi Strekalov (down), Rakesh Sharma (down) | 02/08/84 | 04/11/84 | 62:22h:41m   | First long-stay triple crew, to Salyut 7; 6 EVAs totalling 22h:56m; returned in Soyuz T-11.          |
| Soyuz T-11       | Yuri Malyshev (up), Gennadi Strekalov (up), Rakesh Sharma (up), Leonid Kizim (down), Vladimir Solovyov (down), Oleg Atkov (down) | 04/03/84 | 10/02/84 | 181d:21h:49m | 11th international crew (USSR and India), to Salyut 7; returned in Soyuz T-10B.                      |
| 41-C/Challenger  | Robert Crippen, Francis Scobee, George Nelson, James van Hoften, Terry Hart  | 04/06/84 | 04/13/84 | 6d:23h:41m   | First in-orbit satellite retrieval/repair (SMM); LDEF deployment.                                    |
| Soyuz T-12       | Vladimir Dzhhanibekov, Svetlana Savitskaya, Igor Volk  | 07/17/84 | 07/29/84 | 11d:19h:15m  | Salyut 7 visit; Savitskaya makes first EVA by a woman (3h:45m).                                      |
| 41-D/Discovery   | Henry Hartsfield, Michael Coats, Judith Resnik, Steven Hawley, Richard Mullane, Charles Walker                                   | 08/30/84 | 09/05/84 | 6d:00h:57m   | First flight of Discovery; first commercial payload specialist; 3 communications satellites.         |

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| 41-G/Challenger | Robert Crippen, Jon McBride, Kathryn Sullivan, Sally Ride, David Leestma, Marc Garneau, Paul Scully-Power            | 10/05/84 | 10/13/84 | 8d:05h:25m   | Garneau first Canadian in space; first 7-person crew; first U.S. woman EVA; first 2-women flight; Environmental satellite ERBS. |
| 51-A/Discovery  | Frederick Hauck, David Walker, Anna Fisher, Dale Gardner, Joseph Allen   | 11/08/84 | 11/16/84 | 7d:23h:46m   | First satellite retrieval/return; 2 COMSATs.  |
| 51-C/Discovery  | Thomas Mattingly, Loren Shriver, Ellison Onizuka, James Buchli, Gary Payton  | 01/24/85 | 01/27/85 | 3d:01h:34m   | First mission dedicated to Dept. of Defense (DOD); classified military payload deployed; 100th manned orbital mission.          |
| 51-D/Discovery  | Karol Bobko, Donald Williams, Rhea Seddon, Jeffery Hoffman, David Griggs, Charles Walker, Jake Garn                  | 04/12/85 | 04/19/85 | 6d:23h:56m   | Garn first U.S. senator in space; 2 COMSATs, EVA to repair Syncom IV satellite.   |
| 51-B/Challenger | Robert Overmyer, Frederick Gregory, Don Lind, Norman Thagard, William Thornton, Lodewijk van den Berg, Taylor Wang   | 04/29/85 | 05/06/85 | 7d:00h:10m   | 2nd Spacelab science mission; 1 satellite released .  |
| Soyuz T-13      | Vladimir Dzhanibekov, Viktor Savinykh (up), Georgi Grechko (down)  | 06/06/85 | 09/26/85 | 112d:03h:12m | Reactivation of Salyut 7; Savinykh stayed with Soyuz T-14 crew: Progress 24 resupplies the station.                             |
| 51-G/Discovery  | Daniel Brandenstein, John Creighton, Shannon Lucid, John Fabian, Steven Nagel, Patrick Baudry, Sultan Salman Al-Saud | 06/17/85 | 06/24/85 | 7d:01h:40m   | Salman Al-Saud first Arab in space; Baudry first French person on U.S. mission; 3 communications satellites.                    |
| 51-F/Challenger | Gorden Fullerton, Roy Bridges, Story Musgrave, Anthony England, Karl Henize, Loren Acton, John-David Bartoe          | 07/29/85 | 08/06/85 | 7d:22h:46m   | 3rd Spacelab astronomy/science mission.   |
| 51-I/Discovery  | Joseph Engle, Richard Covey, James van Hoften, John Lounge, William Fisher   | 08/27/85 | 09/03/85 | 7d:02h:18m   | 3 COMSATs, EVA to repair Syncom IV satellite.   |
| Soyuz T-14      | Vladimir Vasyutin, Aleksandr Volkov, Georgi Grechko (up), Viktor Savinykh (down)                                     | 09/17/85 | 11/21/85 | 64d:21h:52m  | Salyut 7; first mission to be ended by illness (Vasyutin); Grechko returned with Soyuz T-13.                                    |
| 51-J/Atlantis   | Karol Bobko, Ronald Grabe, David Hilmers, Robert Stewart, William Pailes   | 10/03/85 | 10/07/85 | 4d:01h:46m   | First flight of Atlantis; 2nd DOD mission: details classified.  |

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| 61-A/Challenger | Henry Hartsfield, Steven Nagel, James Buchli, Guion Bluford, Bonnie Dunbar, Reinhard Furrer, Ernst Messerschmid, Wubbo Ockeis                            | 10/30/85 | 11/06/85 | 7d:00h:46m   | First 8-person crew; 1st German Spacelab mission (D1).  |
| 61-B/Atlantis   | Brewster Shaw, Bryan O'Conner, Mary Cleave, Sherwood Spring, Jerry Ross, Rodolfo Neri Vela, Charles Walker   | 11/27/85 | 12/03/85 | 6d:21h:06m   | Neri first Mexican in space; 3 COMSATs, space structures assembly test.   |
| 61-C/Columbia   | Robert Gibson, Charles Bolden, Franklin Chang-Diaz, Steven Hawley, George Nelson, Robert Cenker, Bill Nelson   | 01/12/86 | 01/18/86 | 6d:02h:05m   | Bill Nelson first U.S. congressman in space; 1 COMSAT, material & astronomy experiments.  |
| 51-L/Challenger | Francis Scobee, Michael Smith, Judith Resnik, Ellison Onizuka, Ronald McNair, Gregory Jarvis, Christa McAuliffe  | 01/28/86 | None     | 01m:13s      | Exploded during liftoff, all were killed.   |
| Mir             | Unmanned space station   | 02/20/86 | 03/23/01 | 5,510d       | New-generation space station with 6 docking ports; occupied by multiple crews.  |
| Soyuz T-15      | Leonid Kizim, Vladimir Solovyov  | 03/13/86 | 07/16/86 | 125d:00h:01m | First Mir occupation; excursion to Salyut 7 5-May to 26-Jun; two Salyut EVAs totalling 8h:50m; re-used descent module from T-10A abort.             |
| Soyuz TM-2      | Aleksandr Laveykin, Yuri Romanenko (up), Aleksandr Viktorenko (down), Mohammed Faris (down)  | 02/05/87 | 07/30/87 | 174d:03h:26m | 2nd Mir long stay; Romanenko remained at station and set new endurance record; Romanenko returned in Soyuz TM-3.                                    |
| Soyuz TM-3      | Aleksandr Pavlovich Aleksandrov, Aleksandr Viktorenko (up), Mohammed Faris (up), Yuri Romanenko (down), Anatoli Levchenko (down)                         | 07/22/87 | 12/29/87 | 160d:07h:17m | Mir visit; Aleksandrov remained at station replacing Laveykin.  |
| Soyuz TM-4      | Vladimir Titov (up), Musa Manarov (up), Anatoli Levchenko (up), Anatoliy Solovyov (down), Viktor Savinykh (down), Aleksandr Panayotov Aleksandrov (down) | 12/21/87 | 06/17/88 | 178d:22h:54m | 3rd Mir long stay occupation; Titov/Manarov swapped with Romanenko/Aleksandrov; endurance record; 3 EVAs totalling 13h:40m; returned in Soyuz TM-6. |

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| Soyuz TM-5       | Anatoliy Solovyov (up), Viktor Savinykh (up), Aleksandr Panayotov Aleksandrov (up), Vladimir Lyakhov (down), Abdul Mohmand (down)      | 06/07/88 | 09/07/88 | 91d:10h:46m  | Mir visit; all returned in Soyuz TM-4.  |
| Soyuz TM-6       | Vladimir Lyakhov (up), Valeri Polyakov (up), Abdul Mohmand (up), Vladimir Titov (down), Musa Manarov (down), Jean-Loup Chretien (down) | 08/29/88 | 12/21/88 | 114d:05h:34m | 4th Mir long stay; physician Polyakov remained with Titov/Manarov.  |
| STS-26/Discovery | Frederick Hauck, Richard Covey, John Lounge, George Nelson, David Hilmers  | 09/29/88 | 10/03/88 | 4d:01h:01m   | Redesigned shuttle makes first flight; Tracking/Data Relay Satellite TDRS-C.  |
| Soyuz TM-7       | Aleksandr Volkov, Sergei Krikalyov, Jean-Loup Chretien (up), Valeri Polyakov (down)  | 11/26/88 | 04/27/89 | 151d:11h:08m | 5th Mir long stay; Volkov/Krikalyov swapped with Titov/Manarov; Chretien EVA, returned in Soyuz TM-6; Volkov/Krikalyov in TM-7. |
| STS-27/Atlantis  | Robert Gibson, Guy Gardner, Richard Mullane, Jerry Ross, William Shepherd  | 12/02/88 | 12/06/88 | 4d:09h:06m   | 3rd DOD mission; first Lacrosse imaging radar satellite for all-weather day/night reconnaissance.                               |
| STS-29/Discovery | Michael Coats, John Blaha, James Bagian, James Buchli, Robert Springer   | 03/13/89 | 03/18/89 | 4d:23h:40m   | Data Relay Satellite TDRS-D, experiments.   |
| STS-30/Atlantis  | David Walker, Ronald Grabe, Norman Thagard, Mary Cleave, Mark Lee  | 05/04/89 | 05/08/89 | 4d:00h:58m   | Magellan Venus orbiter launched on IUS stage, arrived Venus Aug 1990.   |
| STS-28/Columbia  | Brewster Shaw, Richard Richards, James Adamson, David Leestma, Mark Brown  | 08/08/89 | 08/13/89 | 5d:01h:01m   | 4th DOD mission; deployed military satellite for relaying reconnaissance satellite imagery?                                     |
| Soyuz TM-8       | Aleksandr Viktorenko, Aleksandr Serebrov   | 09/05/89 | 02/19/90 | 166d:06h:58m | 5th Mir long stay; received Kvant 2; 5 EVAs including 2 with manoeuvring backpack.  |
| STS-34/Atlantis  | Donald Williams, Michael McCulley, Franklin Chang-Diaz, Shannon Lucid, Ellen Baker   | 10/18/89 | 10/23/89 | 4d:23h:40m   | Galileo Jupiter orbiter launched on IUS stage, arrived Jupiter Dec 1995.  |
| STS-33/Discovery | Frederick Gregory, John Blaha, Story Musgrave, Manley Carter, Kathryn Thornton   | 11/23/89 | 11/28/89 | 5d:00h:08m   | 5th DOD mission; deployed intelligence satellite?   |
| STS-32/Columbia  | Daniel Brandenstein, James Wetherbee, Bonnie Dunbar, David Low, Marsha Ivins   | 01/09/90 | 01/20/90 | 10d:21h:02m  | Deployed 1 COMSAT, retrieved/returned Long Duration Exposure Facility (LDEF).   |

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| Soyuz TM-9       | Anatoliy Solovyov, Aleksandr Balandin   | 02/11/90 | 08/09/90 | 179d:01h:18m | 6th Mir long stay; received Kristall; two EVAs.  |
| STS-36/Atlantis  | John Creighton, John Casper, Richard Mullane, David Hilmers, Pierre Thuot   | 02/28/90 | 03/04/90 | 4d:10h:19m   | 6th DOD mission; deployed reconnaissance satellite.  |
| STS-31/Discovery | Loren Shriver, Charles Bolden, Steven Hawley, Bruce McCandless, Kathryn Sullivan                                  | 04/24/90 | 04/29/90 | 5d:01h:17m   | Deployed Hubble Space Telescope (HST); set Shuttle altitude record of 385 miles (619 km).                                    |
| Soyuz TM-10      | Gennadi Manakov, Gennadi Strekalov, Toyohiro Akiyama (down)   | 08/01/90 | 12/10/90 | 130d:20h:36m | 7th Mir long stay; emphasised Kristall materials processing, one EVA.  |
| STS-41/Discovery | Richard Richards, Robert Cabana, William Shepherd, Bruce Melnick, Thomas Akers                                    | 10/06/90 | 10/10/90 | 4d:02h:11m   | Ulysses solar probe launched on IUS stage.   |
| STS-38/Atlantis  | Richard Covey, Frank Culbertson, Robert Springer, Carl Meade, Charles Gemar                                       | 11/15/90 | 11/20/90 | 4d:21h:55m   | 7th DOD mission; deployed intelligence satellite?  |
| STS-35/Columbia  | Vance Brand, Guy Gardner, Jeffery Hoffman, John Lounge, Robert Parker, Samuel Durrance, Ronald Parise             | 12/02/90 | 12/11/90 | 8d:23h:06m   | Astronomy Spacelab ASTRO, UV/X-ray telescopes.   |
| Soyuz TM-11      | Viktor Afanasyev, Musa Manarov, Toyohiro Akiyama (up), Helen Sharman (down)                                       | 12/02/90 | 05/26/91 | 175d:01h:51m | 8th Mir long stay; 4 EVAs; Akiyama (Japan) returned in Soyuz TM-10.  |
| STS-37/Atlantis  | Steven Nagel, Kenneth Cameron, Jerry Ross, Jay Apt, Linda Godwin  | 04/05/91 | 04/11/91 | 5d:23h:34m   | Deployed Gamma Ray Observatory (GRO); 2 EVAs (first since 1985).   |
| STS-39/Discovery | Michael Coats, Blaine Hammond, Guion Bluford, Gregory Harbaugh, Richard Hieb, Donald McMonagle, Charles Veach     | 04/28/91 | 05/06/91 | 8d:07h:23m   | Infrared astronomy experiments.  |
| Soyuz TM-12      | Anatoli Artsebarsky, Sergei Krikalyov (up), Helen Sharman (up), Toktar Aubakirov (down), Franz Viehboeck (down)   | 05/18/91 | 10/10/91 | 144d:15h:22m | 9th Mir long stay; Sharman (UK) returned in Soyuz TM-11, Artsebarsky in TM-12, Krikalyov in TM-13; 6 EVAs totalling 31h:58m. |
| STS-40/Columbia  | Bryan O'Conner, Sidney Gutierrez, Rhea Seddon, James Bagian, Tamara Jernigan, Drew Gaffney, Millie Hughes-Fulford | 06/05/91 | 06/14/91 | 9d:02h:15m   | First Spacelab for Life Sciences (SLS-1); first dedicated life sciences research.  |

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| STS-43/Atlantis  | John Blaha, Michael Baker, Shannon Lucid, James Adamson, David Low  | 08/02/91 | 08/11/91 | 8d:21h:22m   | Tracking/Data Relay Satellite TDRS-E; Lucid first woman to make 3 flights.  |
| STS-48/Discovery | John Creighton, Kenneth Reightler, James Buchli, Charles Gemar, Mark Brown  | 09/12/91 | 09/18/91 | 5d:08h:28m   | Upper Atmosphere Research Satellite (UARS) deployed.  |
| Soyuz TM-13      | Aleksandr Volkov, Toktar Aubakirov (up), Franz Viehboeck (up), Sergei Krikalyov (down), Klaus-Dietrich Flade (down) | 10/02/91 | 03/25/92 | 175d:02h:52m | 10th Mir long stay; first mission with 2 researchers; Viehboeck (Austria) & Aubakirov (Kazakh) returned in Soyuz TM-12, Volkov in TM-13; one EVA. |
| STS-44/Atlantis  | Frederick Gregory, Terrence Henricks, Story Musgrave, Mario Runco, James Voss, Thomas Hennen                        | 11/24/91 | 12/01/91 | 6d:22h:52m   | DOD satellite, contaminations research.   |
| STS-42/Discovery | Ronald Grabe, Stephen Oswald, Norman Thagard, David Hilmers, William Readdy, Roberta Bondar, Ulf Merbold            | 01/22/92 | 01/30/92 | 8d:01h:16m   | Spacelab International Microgravity Laboratory (IML-1).   |
| Soyuz TM-14      | Aleksandr Viktorenko, Aleksandr Kaleri, Klaus-Dietrich Flade (up), Michel Tognini (down)                            | 03/17/92 | 08/10/92 | 145d:14h:11m | 11th Mir long stay; Flade (Germany), returned in Soyuz TM-13; Viktorenko/ Kaleri in TM-14; 123m EVA.  |
| STS-45/Atlantis  | Charles Bolden, Brian Duffy, Kathryn Sullivan, David Leestma, Michael Foale, Byron Lichtenberg, Dirk Frimout        | 03/24/92 | 04/02/92 | 8d:22h:10m   | Atmospheric Lab for Applications & Science (ATLAS-1).   |
| STS-49/Endeavour | Daniel Brandenstein, Kevin Chilton, Pierre Thuot, Kathryn Thornton, Richard Hieb, Thomas Akers, Bruce Melnick       | 05/07/92 | 05/16/92 | 8d:21h:19m   | First Endeavour flight; 4 EVAs by 4 crew totalling duration record 60.1 manhours; first 3-person EVA; Intelsat-VI recovery and redeployment.      |
| STS-50/Columbia  | Richard Richards, Kenneth Bowersox, Bonnie Dunbar, Ellen Baker, Carl Meade, Lawrence DeLucas, Eugene Trinh          | 06/25/92 | 07/09/92 | 13d:19h:31m  | US Microgravity Laboratory (USML-1); first Extended Duration Orbiter (EDO); Shuttle duration record.  |
| Soyuz TM-15      | Anatoliy Solovyov, Sergei Avdeyev, Michel Tognini (up)  | 07/27/92 | 02/01/93 | 188d:21h:41m | 12th Mir long stay; Tognini (France) returned in Soyuz TM-14, Solovyov/ Avdeyev in TM-15; 4 EVAs totalling 18h:21m.                               |

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| STS-46/Atlantis  | Loren Shriver, Andrew Allen, Jeffery Hoffman, Franklin Chang-Diaz, Claude Nicollier, Marsha Ivins, Franco Malerba | 07/31/92 | 08/08/92 | 7d:23h:16m   | EURECA platform deployment; tether experiment TSS-1.   |
| STS-47/Endeavour | Robert Gibson, Curtis Brown, Mark Lee, Jan Davis, Jay Apt, Mae Jemison, Mamoru Mohri                              | 09/12/92 | 09/20/92 | 7d:22h:31m   | 50th shuttle mission; Jemison 1st black woman in space; Mohri 1st Japanese national; Lee & Davis 1st married couple to travel together in space; first Japanese Spacelab (SL-J). |
| STS-52/Columbia  | James Wetherbee, Michael Baker, Charles Veach, William Shepherd, Tamara Jernigan, Steven MacLean                  | 10/22/92 | 11/01/92 | 9d:20h:57m   | Deployment of LAGEOS 2; US Microgravity Payload (USMP); materials experiments.   |
| STS-53/Discovery | David Walker, Robert Cabana, Guion Bluford, James Voss, Michael Clifford  | 12/02/92 | 12/09/92 | 7d:07h:21m   | Last DOD mission; DOD satellite deployed; laser experiment.  |
| STS-54/Endeavour | John Casper, Donald McMonagle, Mario Runco, Gregory Harbaugh, Susan Helms   | 01/13/93 | 01/19/93 | 5d:23h:39m   | Deployment of TDRS-F, Differential X-ray Experiment (DXS), 268 min EVA.  |
| Soyuz TM-16      | Gennadi Manakov, Aleksandr Polishchuk, Jean-Pierre Haignere (down)  | 01/24/93 | 07/22/93 | 179d:00h:44m | 13th Mir long stay; first docking with Kristall androgynous port; two EVAs.  |
| STS-56/Discovery | Kenneth Cameron, Stephen Oswald, Michael Foale, Kenneth Cockrell, Ellen Ochoa                                     | 04/08/93 | 04/17/93 | 9d:06h:09m   | Crew included the 300th human in space; Ochoa 1st Hispanic woman in space; 2nd Atmospheric Mission ATLAS-2, SPARTAN-2.   |
| STS-55/Columbia  | Steven Nagel, Terrence Henricks, Jerry Ross, Charles Precourt, Bernard Harris, Ulrich Walter, Hans Schlegel       | 04/26/93 | 05/06/93 | 9d:23h:41m   | 2nd German Spacelab mission (D2); Earth observation & astronomy experiments; Shuttle program exceeded 1 year aggregate flight time.  |
| STS-57/Endeavour | Ronald Grabe, Brian Duffy, David Low, Nancy Sherlock, Peter Wisoff, Janice Voss                                   | 06/21/93 | 07/01/93 | 9d:23h:46m   | First Spacehab; EURECA retrieval; GAS; EVA.  |
| Soyuz TM-17      | Vasili Tsibliyev, Aleksandr Serebrov, Jean-Pierre Haignere (up)   | 07/01/93 | 01/14/94 | 196d:17h:45m | 14th Mir long stay; Haignere (France) returned in Soyuz TM-16, Tsibliyev/ Serebrov in TM-17; five EVAs.  |
| STS-51/Discovery | Frank Culbertson, William Readdy, James Newman, Daniel Bursch, Carl Walz  | 09/12/93 | 09/22/93 | 9d:20h:12m   | Adv. Comsat ACTS/TOS deployed; ORFEUS-SPAS; EVA; first KSC night landing.  |

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| STS-58/Columbia  | John Blaha, Richard Searfoss, Rhea Seddon, William McArthur, David Wolf, Shannon Lucid, Martin Fettman             | 10/18/93 | 11/01/93 | 14d:00h:14m  | First dissection in space; 2nd Spacelab for Life Sciences (SLS-2); 2nd EDO, record duration.  |
| STS-61/Endeavour | Richard Covey, Kenneth Bowersox, Story Musgrave, Kathryn Thornton, Claude Nicollier, Jeffery Hoffman, Thomas Akers | 12/02/93 | 12/13/93 | 10d:19h:59m  | First Hubble Space Telescope servicing mission; 5 EVAs for 4 crew totalling 35h:28m; Akers set new U.S. EVA duration record (29h:40m).  |
| Soyuz TM-18      | Viktor Afanasyev, Yuri Usachyov, Valeri Polyakov (up)  | 01/08/94 | 07/09/94 | 182d:00h:27m | 15th Mir long stay; physicist Polyakov remained aboard for record duration, returning with Soyuz TM-20.   |
| STS-60/Discovery | Charles Bolden, Kenneth Reightler, Jan Davis, Ronald Sega, Franklin Chang-Diaz, Sergei Krikalyov                   | 02/03/94 | 02/11/94 | 8d:07h:10m   | Krikalyov was first Russian on U.S. shuttle; attempt to deploy the Wake Shield Facility (a device to create vacuums in space) failed; Spacehab 2.   |
| STS-62/Columbia  | John Casper, Andrew Allen, Pierre Thuot, Charles Gemar, Marsha Ivins   | 03/04/94 | 03/18/94 | 13d:23h:18m  | Microgravity Payload USMP-2; OAST-2; SSBUV/A; DEE; 3rd EDO.   |
| STS-59/Endeavour | Sidney Gutierrez, Kevin Chilton, Linda Godwin, Jay Apt, Michael Clifford, Thomas Jones                             | 04/09/94 | 04/20/94 | 11d:05h:50m  | First flight of Space Radar Lab; mapped 20% of Earth surface in three dimensions; environmental studies conducted; CONCAP-IV; GAS; NIH-Experiments; Endeavour made record 412 manoeuvres. |
| Soyuz TM-19      | Yuri Malenchenko, Talgat Musabayev, Ulf Merbold (down)   | 07/01/94 | 11/04/94 | 125d:22h:54m | 16th Mir long stay, two EVAs.   |
| STS-65/Columbia  | Robert Cabana, James Halsell, Richard Hieb, Carl Walz, Leroy Chiao, Donald Thomas, Chiaki Mukai                    | 07/08/94 | 07/23/94 | 14d:17h:56m  | 2-day flight of International Microgravity Laboratory IML-2; more than 80 experiments conducted; 4th EDO, record duration.  |
| STS-64/Discovery | Richard Richards, Blaine Hammond, Jerry Linenger, Susan Helms, Carl Meade, Mark Lee                                | 09/09/94 | 09/20/94 | 10d:22h:51m  | Laser experiment LITE; SPARTAN-3; SAFER (EVA); ROMPS.   |
| STS-68/Endeavour | Michael Baker, Terrence Wilcutt, Thomas Jones, Steven Smith, Daniel Bursch, Peter Wisoff                           | 09/30/94 | 10/11/94 | 11d:05h:47m  | Space Radar Lab SRL-2; GAS; Stamps; secondary payloads.   |
| Soyuz TM-20      | Aleksandr Viktorenko, Yelena Kondakova, Ulf Merbold (up), Valeri Polyakov (down)                                   | 10/04/94 | 03/22/95 | 169d:05h:22m | 17th Mir long stay; Merbold (ESA) returned with Soyuz TM-19.  |

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| STS-66/Atlantis  | Donald McMonagle, Curtis Brown, Ellen Ochoa, Scott Parazynski, Joseph Tanner, Jean-Francois Clervoy  | 11/03/94 | 11/14/94 | 10d:22h:35m  | Atmospheric Mission ATLAS-3; CRISTA/SPAS; ESCAPE-2.   |
| STS-63/Discovery | James Wetherbee, Eileen Collins, Michael Foale, Janice Voss, Bernard Harris, Vladimir Titov  | 02/03/95 | 02/11/95 | 8d:06h:30m   | Rendezvous with Mir, Spacehab 3, first female pilot (Collins); 2nd Cosmonaut; SPARTAN-4; EVA.             |
| STS-67/Endeavour | Stephen Oswald, William Gregory, Tamara Jernigan, John Grunsfeld, Wendy Lawrence, Ronald Parise, Samuel Durrance   | 03/02/95 | 03/18/95 | 16d:15h:10m  | 2nd UV Astronomy Spacelab (ASTRO-2); 5th EDO, record duration.  |
| Soyuz TM-21      | Vladimir Dezhurov (up), Gennadi Strekalov (up), Norman Thagard (up), Anatoliy Solovyov (down), Nikolai Budarin (down)  | 03/14/95 | 09/11/95 | 181d:00h:41m | 18th Mir long stay; Thagard first NASA researcher; all crew returning on NASA Shuttle STS-71; three EVAs. |
| STS-71/Atlantis  | Robert Gibson, Charles Precourt, Ellen Baker, Bonnie Dunbar, Gregory Harbaugh, Anatoliy Solovyov (up), Nikolai Budarin (up), Vladimir Dezhurov (down), Gennadi Strekalov (down), Norman Thagard (down) | 06/27/95 | 07/07/95 | 9d:19h:23m   | First Mir docking/crew exchange, 100th US human space flight, Spacelab carried.                           |
| STS-70/Discovery | Terrence Henricks, Kevin Kregel, Nancy Currie, Donald Thomas, Mary Weber   | 07/13/95 | 07/22/95 | 8d:22h:21m   | Deployed TDRS-G; crystal growth and biological experiments.   |
| Soyuz TM-22      | Yuri Gidzenko, Sergei Avdeyev, Thomas Reiter   | 09/03/95 | 02/29/96 | 179d:01h:42m | 20th Mir long stay; ESA researcher Reiter performed 2 EVAs.   |
| STS-69/Endeavour | David Walker, Kenneth Cockrell, James Voss, James Newman, Michael Gernhardt  | 09/07/95 | 09/18/95 | 10d:20h:30m  | Wake Shield Facility (2nd flight); SPARTAN; 30th Shuttle EVA.   |
| STS-73/Columbia  | Kenneth Bowersox, Kent Rominger, Kathryn Thornton, Catherine Coleman, Michael Lopez-Alegria, Fred Leslie, Albert Sacco   | 10/20/95 | 11/05/95 | 15d:21h:53m  | Spacelab USML-2; educational experiments; 6th EDO.  |
| STS-74/Atlantis  | Kenneth Cameron, James Halsell, Jerry Ross, William McArthur, Chris Hadfield   | 11/12/95 | 11/20/95 | 8d:04h:32m   | Mir-Docking/2; delivered docking unit for future Shuttle missions & new solar arrays.                     |

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| STS-72/Endeavour | Brian Duffy, Brent Jett, Leroy Chiao, Daniel Barry, Winston Scott, Koichi Wakata                                      | 01/11/96 | 01/20/96 | 8d:22h:02m   | Retrieved SFU Space Flyer Unit, SPARTAN/OAST Flyer, two EVAs.   |
| Soyuz TM-23      | Yuri Onufrienko, Yuri Usachyov, Claudie Andre-Deshays (down)  | 02/21/96 | 09/02/96 | 193d:19h:08m | 21st Mir long stay; 6 EVAs totalling 30h:31m.   |
| STS-75/Columbia  | Andrew Allen, Scott Horowitz, Franklin Chang-Diaz, Maurizio Cheli, Jeffery Hoffman, Claude Nicollier, Umberto Guidoni | 02/22/96 | 03/09/96 | 15d:17h:41m  | Microgravity Payload USMP-3; Tether Satellite TSS-1R; OARE; 7th EDO.  |
| STS-76/Atlantis  | Kevin Chilton, Richard Searfoss, Linda Godwin, Michael Clifford, Ronlad Sega, Shannon Lucid (up)                      | 03/22/96 | 03/31/96 | 9d:05h:17m   | Mir-Docking/3; Spacehab short module; delivered Lucid for Mir stay; EVA mounted experiments on Mir's docking module.          |
| STS-77/Endeavour | John Casper, Curtis Brown, Daniel Bursch, Mario Runco, Marc Garneau, Andrew Thomas                                    | 05/19/96 | 05/29/96 | 10d:00h:40m  | Inflatable Antenna Experiment (IAE); Spacehab 4; PAMS; SPARTAN; TEAMS.  |
| STS-78/Columbia  | Terrence Henricks, Kevin Kregel, Susan Helms, Richard Linnehan, Charles Brady, Jean-Jacques Favier, Robert Thirsk     | 06/20/96 | 07/07/96 | 16d:21h:49m  | Life & Microgravity Science Spacelab (LMS); SAREX-II; 8th EDO, record duration.   |
| Soyuz TM-24      | Valeri Korzun, Aleksandr Kaleri, Claudie Andre-Deshays (up), Reinhold Ewald (down)                                    | 08/17/96 | 03/02/97 | 196d:17h:26m | 22nd Mir long stay; Andre-Deshays (France) returned in Soyuz TM-23; two EVAs.   |
| STS-79/Atlantis  | William Readdy, Terrence Wilcutt, Thomas Akers, Jay Apt, Carl Walz, John Blaha (up), Shannon Lucid (down)             | 09/16/96 | 09/26/96 | 10d:03h:20m  | Mir-Docking/4; Spacehab double module; crew exchange (Blaha/Lucid); Lucid set new U.S. space endurance record (188d:4h); EVA. |
| STS-80/Columbia  | Kenneth Cockrell, Kent Rominger, Tamara Jernigan, Thomas Jones, Story Musgrave  | 11/19/96 | 12/07/96 | 17d:15h:54m  | Wake Shield Facility (3rd flight); ORFEUS-SPAS II; Space Experiment Module (SEM); EVA; 9th EDO, record duration.              |
| STS-81/Atlantis  | Michael Baker, Brent Jett, Peter Wisoff, John Grunsfeld, Marsha Ivins, Jerry Linenger (up), John Blaha (down)         | 01/12/97 | 01/22/97 | 10d:04h:56m  | Mir-Docking/5; Spacehab-DM; SAREX-II; crew exchange (Linenger/Blaha).   |
| Soyuz TM-25      | Vasili Tsibliyev, Aleksander Lazutkin, Reinhold Ewald (up)  | 02/10/97 | 08/14/97 | 184d:22h:08m | 23rd Mir long stay; Ewald (Germany) returned in Soyuz TM-24; collision with Progress 25-Jun-97; one EVA.                      |

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| STS-82/Discovery | Kenneth Bowersox, Scott Horowitz, Joseph Tanner, Steven Hawley, Gregory Harbaugh, Mark Lee, Steven Smith   | 02/11/97 | 02/21/97 | 9d:23h:38m   | 2nd Hubble Space Telescope servicing mission; 5 EVAs for 4 crew totalling 33h:11m, replaced 10 instruments. |
| STS-83/Columbia  | James Halsell, Susan Still, Janice Voss, Michael Gernhardt, Donald Thomas, Roger Crouch, Greg Linteris   | 04/04/97 | 04/08/97 | 3d:23h:14m   | Microgravity Science Lab MSL-1 (returned 12 days early due to fuel cell problem); Reflight as STS-94.       |
| STS-84/Atlantis  | Charles Precourt, Eileen Collins, Jean-Francois Clervoy, Carlos Noriega, Edward Lu, Yelena Kondakova, Michael Foale (up), Jerry Linenger (down)  | 05/15/97 | 05/24/97 | 9d:05h:21m   | Mir-Docking/6; Spacehab-DM; crew exchange (Linenger/Foale).   |
| STS-94/Columbia  | James Halsell, Susan Still, Janice Voss, Michael Gernhardt, Donald Thomas, Roger Crouch, Greg Linteris   | 07/01/97 | 07/17/97 | 15d:16h:46m  | Microgravity Science Lab MSL-1 reflight.  |
| Soyuz TM-26      | Anatoliy Solovyov, Pavel Vinogradov, Leopold Eyharts (down)  | 08/05/97 | 02/19/98 | 197d:17h:35m | 24th Mir long stay; 7 EVAs to repair damage caused by Progress collision.                                   |
| STS-85/Discovery | Curtis Brown, Kent Rominger, Jan Davis, Robert Curbeam, Stephen Robinson, Bjarni Tryggvason  | 08/07/97 | 08/19/97 | 11d:20h:28m  | CRISTA/SPAS II; Japanese Manipulaor (MFD); small payloads.  |
| STS-86/Atlantis  | James Wetherbee, Michael Bloomfield, Scott Parazynski, Vladimir Titov, Jean-Loup Chretien, Wendy Lawrence, David Wolf (up), Michael Foale (down) | 09/25/97 | 10/06/97 | 10d:19h:22m  | Mir-Docking/7; Spacehab-DM; crew exchange (Foale/Wolf).   |
| STS-87/Columbia  | Kevin Kregel, Steve Lindsey, Kalpana Chawla, Winston Scott, Takao Doi, Leonid Kadenyuk   | 11/19/97 | 12/05/97 | 15d:16h:35m  | Microgravity Payload USMP-4; SPARTAN-201; 2 EVAs; small payloads.   |
| STS-89/Endeavour | Terrence Wilcutt, Joe Edwards, James Reilly, Michael Anderson, Bonnie Dunbar, Salizhan Sharipov, Andrew Thomas (up), David Wolf (down)           | 01/23/98 | 01/31/98 | 8d:19h:48m   | Mir-Docking/8; Spacehab-DM; crew exchange (Wolf/Thomas).  |
| Soyuz TM-27      | Talgat Musabayev, Nikolai Budarin, Leopold Eyharts (up), Yuri Baturin (down)   | 01/29/98 | 08/25/98 | 207d:12h:51m | 25th Mir long stay; Eyharts (France) returned in Soyuz TM-26; 5 EVAs.                                       |

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| STS-90/Columbia   | Richard Searfoss, Scott Altman, Kathryn Hire, Richard Linnehan, Dafydd Williams, Jay Buckey, James Pawelczyk             | 04/17/98 | 05/03/98 | 15d:21h:51m  | Neurolab (16th Spacelab); bioreactor; small payloads (GAS).   |
| STS-91/Discovery  | Charles Precourt, Dominic Gorie, Wendy Lawrence, Franklin Chang-Diaz, Janet Kavandi, Valeri Ryumin, Andrew Thomas (down) | 06/02/98 | 06/12/98 | 9d:19h:55m   | Mir-Docking/9; Spacehab-SM; returned Thomas; first GAS payload.   |
| Soyuz TM-28       | Gennadi Padalka, Sergei Avdeyev (up), Yuri Baturin (up), Ivan Bella (down)   | 08/13/98 | 02/28/99 | 198d:16h:31m | 26th Mir long stay; Baturin returned in Soyuz TM-27; Avdeyev remained aboard Mir; one EVA.  |
| STS-95/Discovery  | Curtis Brown, Steve Lindsey, Scott Parazynski, Stephen Robinson, Pedro Duque, Chiaki Mukai, John Glenn                   | 10/29/98 | 11/07/98 | 8d:21h:45m   | Spacehab-SM, SPARTAN-201; John Glenn reflight.  |
| STS-88/Endeavour  | Robert Cabana, Frederick Sturckow, Nancy Currie, Jerry Ross, James Newman, Sergei Krikalyov                              | 12/04/98 | 12/16/98 | 11d:19h:19m  | 1st International Space Station (ISS) assembly flight 2A, Unity Module; 3 EVAs for 2 crew totalling 21h:22m; first habitation of ISS. |
| Soyuz TM-29       | Viktor Afanasyev, Jean-Pierre Haignere, Ivan Bella (up), Sergei Avdeyev (down)   | 02/20/99 | 08/28/99 | 188d:20h:16m | 27th Mir long stay; Bella returned in Soyuz TM-28; returned Avdeyev; three EVAs.  |
| STS-96/Discovery  | Kent Rominger, Rick Husband, Ellen Ochoa, Tamara Jernigan, Daniel Barry, Julie Payette, Valeri Tokarev                   | 05/27/99 | 06/06/99 | 9d:19h:14m   | 2nd ISS assembly flight 2A.1, Spacehab-DM, Starshine; first docking with ISS; 1 EVA for 2 crew totalling 7h:55m.                      |
| STS-93/Columbia   | Eileen Collins, Jeffrey Ashby, Steven Hawley, Catherine Coleman, Michel Tognini  | 07/23/99 | 07/28/99 | 4d:22h:50m   | Deployed Chandra/AXAF; first female commander (Collins).  |
| STS-103/Discovery | Curtis Brown, Scott Kelly, Steven Smith, Michael Foale, John Grunsfeld, Claude Nicollier, Jean-Francois Clervoy          | 12/20/99 | 12/28/99 | 7d:23h:12m   | 3rd Hubble Space Telescope servicing mission; 3 EVAs for 4 crew totalling 24h:33m.  |
| STS-99/Endeavour  | Kevin Kregel, Dominic Gorie, Janet Kavandi, Janice Voss, Mamoru Mohri, Gerhard Thiele                                    | 02/11/00 | 02/22/00 | 11d:05h:40m  | Shuttle Radar Topography Mission (SRTM); used radar systems to obtain high-resolution digital topographic database of Earth.          |
| Soyuz TM-30       | Sergei Zalyetin, Aleksandr Kalen   | 04/04/00 | 06/16/00 | 72d:19h:42m  | 28th & final Mir long stay; reactivated Mir under contract with MirCorp (a private concern); returned 16-Jun-00.                      |

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| STS-101/Atlantis  | James Halsell, Scott Horowitz, Mary Weber, Jeffrey Williams, James Voss, Susan Helms, Yuri Usachyov   | 05/19/00 | 05/29/00 | 9d:20h:10m   | 3rd ISS assembly flight 2A.2a, Spacehab-DM; 1 EVA for 2 crew totalling 6h:44m.  |
| STS-106/Atlantis  | Terrence Wilcutt, Scott Altman, Daniel Burbank, Edward Lu, Richard Mastracchio, Yuri Malenchenko, Boris Morukov   | 09/08/00 | 09/20/00 | 11d:19h:12m  | 4th ISS assembly flight 2A.2b, Spacehab-DM; 1 EVA for 2 crew totalling 6h:14m.  |
| STS-92/Discovery  | Brian Duffy, Pamela Melroy, Koichi Wakata, Leroy Chiao, Peter Wisoff, Michael Lopez-Alegria, William McArthur   | 10/11/00 | 10/24/00 | 12d:21h:44m  | 5th ISS assembly flight 3A, PMA-3, IMAX; 4 EVAs for 4 crew totalling 27h:19m.   |
| Soyuz TM-31       | Sergei Krikalyov (up), Yuri Gidzenko (up), William Shepherd (up), Talgat Musabayev (down), Yuri Baturin (down), Dennis Tito (down)  | 10/31/00 | 05/06/01 | 186d:21h:49m | Delivered Expedition 1 crew (Shepherd, Gidzenko, Krikalyov), first ISS extended stay totalling 136 days on ISS; returned on STS-102.  |
| STS-97/Endeavour  | Brent Jett, Michael Bloomfield, Joseph Tanner, Carlos Noriega, Marc Garneau   | 12/01/00 | 12/11/00 | 10d:19h:58m  | 6th ISS assembly flight 4A, PV Module P6; 3 EVAs for 2 crew totalling 19h:20m.  |
| STS-98/Atlantis   | Kenneth Cockrell, Mark Polansky, Robert Curbeam, Thomas Jones, Marsha Ivins   | 02/07/01 | 02/20/01 | 12d:21h:21m  | 7th ISS assembly flight 5A, US Lab; 3 EVAs for 2 crew totalling 19h:49m, final EVA 100th in U.S. history.   |
| STS-102/Discovery | James Wetherbee, James Kelly, Andrew Thomas, Paul Richards, Yuri Usachyov (up), James Voss (up), Susan Helms (up), William Shepherd (down), Yuri Gidzenko (down), Sergei Krikalyov (down) | 03/08/01 | 03/21/01 | 12d:19h:51m  | 8th ISS assembly flight 5A.1, MPLM; delivered Expedition 2 crew (Usachyov, Voss, Helms), returned Expedition 1 crew (Shepherd, Gidzenko, Krikalyov); 2 EVAs for 4 crew totalling 15h:17m. |
| STS-100/Endeavour | Kent Rominger, Jeffrey Ashby, Chris Hadfield, Scott Parazynski, John Phillips, Umberto Guidoni, Yuri Lonchakov  | 04/19/01 | 05/01/01 | 11d:21h:31m  | 9th ISS assembly flight 6A, Canadarm2, Raffaello MPLM; 2 EVAs for 2 crew totalling 14h:50m.   |
| Soyuz TM-32       | Talgat Musabayev (up), Yuri Baturin (up), Dennis Tito (up), Victor Afanasyev (down), Konstantin Kozeyev (down), Claudie Haignere (down)   | 04/28/01 | 10/31/01 | 185d:21h:23m | Exchanged Soyuz TM-32 for TM-31 to serve ISS as emergency escape vehicle; Tito first space "tourist" having paid \$20 million for trip.   |

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| STS-104/Atlantis  | Steve Lindsey, Charles Hobaugh, Michael Gernhardt, James Reilly, Janet Kavandi   | 07/12/01 | 07/25/01 | 12d:18h:37m  | 10th ISS assembly flight 7A, ISS Airlock.   |
| STS-105/Discovery | Scott Horowitz, Frederick Sturckow, Daniel Barry, Patrick Forrester, Frank Culbertson (up), Vladimir Dezhurov (up), Mikhail Tyurin (up), Yuri Usachyov (down), James Voss (down), Susan Helms (down) | 08/10/01 | 08/22/01 | 11d:21h:14m  | 11th ISS assembly flight 7A.1, Leonardo MPLM; delivered Expedition 3 crew (Culbertson, Dezhurov, Tyurin), returned Expedition 2 crew (Usachyov, Voss, Helms); 2 EVAs for 2 crew totalling 11h:45m.              |
| Soyuz TM-33       | Victor Afanasyev (up), Konstantin Kozeyev (up), Claudie Haignere (up), Yuri Gidzenko (down), Roberto Vittori (down), Mark Shuttleworth (down)  | 10/21/01 | 05/05/02 | 195d:18h:52m | Exchanged Soyuz TM-33 for TM-32 to serve ISS as emergency escape vehicle.   |
| STS-108/Endeavour | Dominic Gorie, Mark Kelly, Linda Godwin, Daniel Tani, Yuri Onufrienko (up), Carl Walz (up), Daniel Bursch (up), Frank Culbertson (down), Vladimir Dezhurov (down), Mikhail Tyurin (down)             | 12/05/01 | 12/17/01 | 11d:19h:37m  | ISS utilization flight UF-1, Raffaello MPLM, GAS, MACH-1; delivered Expedition 4 crew (Onufrienko, Walz, Bursch), returned Expedition 3 crew (Culbertson, Dezhurov, Tyurin); 1 EVA for 2 crew totalling 4h:12m. |
| STS-109/Columbia  | Scott Altman, Duane Carey, John Grunsfeld, Nancy Currie, James Newman, Richard Linnehan, Michael Massimino   | 03/01/02 | 03/12/02 | 10d:22h:11m  | 4th Hubble Space Telescope servicing mission, Advanced Camera for Surveys (ACS).  |
| STS-110/Atlantis  | Michael Bloomfield, Stephen Frick, Jerry Ross, Steven Smith, Ellen Ochoa, Lee Morin, Rex Walheim   | 04/08/02 | 04/19/02 | 10d:19h:44m  | ISS assembly flight 8A, Center Integrated Truss Assembly S0 (ITS S0), Mobile Transporter (MT).  |
| Soyuz TM-34       | Yuri Gidzenko (up), Roberto Vittori (up), Mark Shuttleworth (up), Sergei Zalyotin (down), Frank De Winne (down), Yuri Lonchakov (down)   | 04/25/02 | 11/10/02 | 198d:17h:38m | Exchanged Soyuz TM-34 for TM-33 to serve ISS as emergency escape vehicle; Shuttleworth first South African in space and 2nd space tourist.  |

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| STS-111/Endeavour | Kenneth Cockrell, Paul Lockhart, Franklin Chang-Diaz, Philippe Perrin, Valeri Korzun (up), Sergei Treschev (up), Peggy Whitson (up), Yuri Onufrienko (down), Carl Walz (down), Daniel Bursch (down)         | 06/05/02 | 06/19/02 | 13d:20h:36m  | ISS utilization flight UF-2, MPLM, Mobile Base System (MBS); delivered Expedition 5 crew (Korzun, Treschev, Whitson), returned Expedition 4 crew (Onufrienko, Walz, Bursch).           |
| STS-112/Atlantis  | Jeffrey Ashby, Pamela Melroy, David Wolf, Piers Sellers, Sandra Magnus, Fyodor Yurchikhin   | 10/07/02 | 10/18/02 | 10d:19h:59m  | ISS assembly flight 9A, Integrated Truss Assembly S1 (ITS S1), Crew Equipment Translation Aid (CETA).  |
| Soyuz TMA-1       | Sergei Zalyotin (up), Frank De Winne (up), Yuri Lonchakov (up), Nikolai Budarin (down), Kenneth Bowersox (down), Donald Pettit (down)   | 10/30/02 | 05/04/03 | 185d:22h:56m | Exchanged Soyuz TMA-1 for TM-34 to serve ISS as emergency escape vehicle; returned Expedition 6 crew (Bowersox, Budarin, Pettit).  |
| STS-113/Endeavour | James Wetherbee, Paul Lockhart, Michael Lopez-Alegria, John Herrington, Kenneth Bowersox (up), Nikolai Budarin (up), Donald Pettit (up), Valeri Korzun (down), Sergei Treschev (down), Peggy Whitson (down) | 11/24/02 | 12/07/02 | 13d:18h:49m  | ISS assembly flight 11A, Integrated Truss Assembly P1 (ITS P1), CETA; delivered Expedition 6 crew (Bowersox, Budarin, Pettit), returned Expedition 5 crew (Korzun, Treschev, Whitson). |
| STS-107/Columbia  | Rick Husband, William McCool, Michael Anderson, Kalpana Chawla, David Brown, Laurel Clark, Ilan Ramon   | 01/16/03 | 02/01/03 | 15d:22h:20m  | Spacehab-DM, Freestar; Ramon first Israeli in space; orbiter broke up during reentry resulting in the loss of both vehicle and crew.   |
| Soyuz TMA-2       | Yuri Malenchenko, Edward Lu, Pedro Duque (down)   | 04/26/03 | 10/27/03 | 183d:22h:47m | Exchanged Soyuz TMA-2 for TMA-1 to serve ISS as emergency escape vehicle; delivered & returned Expedition 7 crew (Malenchenko, Lu).  |
| Shenzhou 5        | Yang Liwei  | 10/15/03 | 10/15/03 | 21h:23m      | First Chinese manned flight (14 orbits).   |
| Soyuz TMA-3       | Aleksandr Kaleri, Michael Foale, Pedro Duque (up), Andre Kuipers (down)   | 10/18/03 | 04/30/04 | 194d:18h:33m | Exchanged Soyuz TMA-3 for TMA-2 to serve ISS as emergency escape vehicle; delivered & returned Expedition 8 crew (Foale, Kaleri).  |
| Soyuz TMA-4       | Gennadi Padalka, E. Michael Fincke, Andre Kuipers (up), Yuri Shargin (down)   | 04/19/04 | 10/24/04 | 187d:21h:16m | Exchanged Soyuz TMA-4 for TMA-3 to serve ISS as emergency escape vehicle; delivered & returned Expedition 9 crew (Padalka, Fincke).  |
| SpaceShipOne      | Michael Melvill   | 06/21/04 | 06/21/04 | 1h:30m       | First privately funded, non-government manned space flight; suborbital reaching 328,491 feet (100,124 m) altitude.   |

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| SpaceShipOne      | Michael Melvill   | 09/29/04 | 09/29/04 | 1h:23m       | First of two flights to claim Ansari X-prize; suborbital reaching 337,569 feet (102,891 m) altitude.  |
| SpaceShipOne      | Brian Binnie  | 10/04/04 | 10/04/04 | 1h:27m       | Second of two flights to claim Ansari X-prize; suborbital reaching 367,442 feet (111,997 m) setting rocket-plane altitude record.   |
| Soyuz TMA-5       | Salizsan Sharipov, Leroy Chiao, Yuri Shargin (up), Roberto Vittori (down)                                     | 10/14/04 | 04/24/05 | 192d:19h:02m | Exchanged Soyuz TMA-5 for TMA-4 to serve ISS as emergency escape vehicle; delivered & returned Expedition 10 crew (Chiao, Sharipov).  |
| Soyuz TMA-6       | Sergei Krikalyov, John Phillips, Roberto Vittori (up)   | 04/15/05 | 10/11/05 | 192d:19h:02m | Exchanged Soyuz TMA-6 for TMA-5 to serve ISS as emergency escape vehicle; delivered Expedition 11 crew (Krikalyov, Phillips).   |
| STS-114/Discovery | Eileen Collins, James Kelly, Stephen Robinson, Soichi Noguchi, Andrew Thomas, Wendy Lawrence, Charles Camarda | 07/26/05 | 08/09/05 | 13d:21h:32m  | ISS logistics flight LF-1, Raffaello MPLM, External Stowage Platform; test and evaluate new safety procedures; 3 EVA for 2 crew totalling 20h:05m.  |
| Soyuz TMA-7       | William McArthur, Valery Tokarev, Gregory Olsen (up), Marcos Pontes (down)                                    | 10/01/05 | 04/08/06 | 189d:19h:53m | Exchanged Soyuz TMA-7 for TMA-6 to serve ISS as emergency escape vehicle; delivered Expedition 12 crew (McArthur, Tokarev); Olsen 3rd space tourist.  |
| Shenzhou 6        | Fei Junlong, Nie Haishen  | 10/12/05 | 10/16/05 | 4d:19h:32m   | Second Chinese manned flight; first two man crew (76 orbits).   |
| Soyuz TMA-8       | Pavel Vinogradov, Jeffrey Williams, Marcos Pontes (up)  | 03/30/06 | 09/29/06 | 182d:22h:43m | Exchanged Soyuz TMA-8 for TMA-7 to serve ISS as emergency escape vehicle; delivered Expedition 13 crew (Vinogradov, Williams).  |
| STS-121/Discovery | Steve Lindsey, Mark Kelly, Mike Fossum, Lisa Nowak, Stephanie Wilson, Piers Sellers, Thomas Reiter (up)       | 07/04/06 | 07/17/06 | 12d:18h:38m  | ISS assembly flight ULF-1.1, Leonardo MPLM, performed ISS maintenance, delivered supplies & crewmember Reiter, tested new safety equipment & procedures; 3 EVA for 2 crew totaling 21h:29m. |
| STS-115/Atlantis  | Brent Jett, Christopher Ferguson, Joseph Tanner, Daniel Burbank, Steven macLean, Heidemarie Stefanyshyn-Piper | 09/09/06 | 09/21/06 | 11d:19h:07m  | ISS assembly flight 12A, installed the P3/P4 integrated truss and second set of solar arrays with rotary joint; 3 EVA for 4 crew totaling 20h:19m.  |
| Soyuz TMA-9       | Mikhail Tyurin, Michael Lopez-Alegria, Anousheh Ansari (up)   | 09/18/06 | 3/21/07  | 215d:08h:23m | Exchange Soyuz TMA-9 for TMA-8 to serve ISS as emergency escape vehicle; delivered Expedition 14 crew (Lopez-Alegria, Tyurin). Ansari 4th space tourist, first female.                      |

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| STS-116/Discovery | Mark Polansky, William Oefelein, Robert Curbeam, Joan Higginbotham, Nicholas Patrick, Christer Fuglesang, Sunita Williams (up), Thomas Reiter (down) | 12/09/06 | 12/22/06 | 12d: 20h:45m | ISS assembly flight 12A.1, installed the P5 integrated truss, rewired ISS power system, Spacehab-SM, exchanged crewmembers Williams & Reiter; 4 EVA for 3 crew totaling 25h:45m, record 4 EVA in one mission by Curbeam. |
| Soyuz TMA-10      | Fyodor Yurchikhin, Oleg Kotov, Charles Simonyi (up)  | 04/07/07 | 10/21/07 | 196d:17h:5m  | change Soyuz TMA-10 for TMA-9 to serve ISS as emergency escape vehicle; delivered Expedition 15 crew (Yurchikhin, Kotov); Simonyi 5th space tourist.   |
| STS-117/Atlantis  | Frederick Sturchow, Lee Archambault, Patrick Forrester, Steven Swanson, John Olivas, James Reilly, Clayton Anderson (up), Sunita Williams (down)     | 06/08/07 | 06/22/07 | 13d:20h:12m  | ISS assembly flight 13A, installed the S3/S4 integrated truss and third set of solar arrays with rotary joint, exchanged crewmembers Anderson & Williams; 4 EVA for 4 crew totaling 27h:58m.                             |
| STS-118-Endeavour | Scott Kelly, Charles Hobaugh, Tracy Caldwell, Richard Mastracchio, Dafydd Williams, Barbara Morgan, B. Alvin Drew                                    | 08/08/07 | 08/21/07 | 12d:17:56m   | ISS assembly flight 13A.1, installed the S5 integrated truss, deployed ESP-3, replaced CMG 3; first use of station-to-shuttle power transfer system (SSPTS); 4 EVA for 2 crew + 1 ISS crew totaling 23h:15m.             |
| Soyuz TMA-11      | Peggy Whitson, Yuri Malenchenko, Sheikh Muszaphar Shukor (up), So-Yeon Yi (down)   | 10/10/07 | 04/19/08 | 191d:19h:7m  | Exchange Soyuz TMA-11 for TMA-10 to serve ISS as emergency escape vehicle; delivered Expedition 16 crew (Whitson, Malenchenko). Shukor first Malaysian in space; Whitson first female ISS commander.                     |
| STS-120/Discovery | Pamela Melroy, George Zamka, Scott Parazynski, Stephanie Wilson, Douglas Wheelock, Paolo Nespoli, Daniel Tani (up), Clayton Anderson (down)          | 10/23/07 | 11/07/07 | 12d:2h:24m   | ISS assembly flight 10A, installed Harmony Node 2 module, relocated P6 integrated truss, exchanged crewmembers Tani & Anderson; 4 EVA for 3 crew totaling 27h:14m.   |
| STS-122/Atlantis  | Steve Frick, Alan Poindexter, Leland Melvin, Rex Walheim, Hans Schlegel, Stan Love, Leopod Eyharts (up), Dan Tani (down)                             | 02/07/08 | 02/20/08 | 12d:18h:22m  | ISS assembly flight 1E, installed ESA's Columbus research module, returned nitrogen tank assembly, returned CMG, exchanged crewmembers Eyharts & Tani; 3 EVA for 3 crew totaling 22h:08m.                                |

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| STS-123/Endeavour | Dominic Gorie, Gregory Johnson, Robert Behnken, Michael Foreman, Richard Linnehan, Takao Doi, Garrett Reisman (up), Leopold Eyharts (down) | 03/11/08  | 03/27/08 | 15d:18h:12m | ISS assembly flight 1J/A, delivered Japanese Experiment Module (Kibo) and Canadian Special Purpose Dexterous Manipulator (SPDM or Dextre), first full utilization of SSPTS, exchanged crewmembers Reisman & Eyharts; 5 EVA for 4 crew totaling 33h:28m. |
| Soyuz TMA-12      | Sergei Volkov, Oleg Kononenko, So-Yeon Yi (up)   | 04/08/08  | TBD      | TBD         | Exchanged Soyuz TMA-12 for TMA-11 to serve ISS as emergency escape vehicle; delivered Expedition 17 crew (Volkov, Kononenko). Yi first Korean in space; Volkov first 2nd generation cosmonaut.  |
| STS-124/Discovery | Mark Kelly, Kenneth Ham, Karen Nyberg, Ronald Garan, Michael Fossum, Akihiko Hoshide, Gregory Chamitoff (up), Garrett Reisman (down)       | 05/31/08  | 06/14/08 | 13d:18h:13m | ISS assembly flight 1J, delivered Japanese Kibo Pressurized Module and Remote Manipulator System, exchanged crewmembers Chamitoff & Reisman; 3 EVA for 2 crew totaling 20h:32m.   |
| <b>Total: 267</b> | <b>(GMT used throughout)</b>   | <b>* Source: <a href="http://www.braeunig.us/space">http://www.braeunig.us/space</a> (used with permission)</b> |          |             |   |