

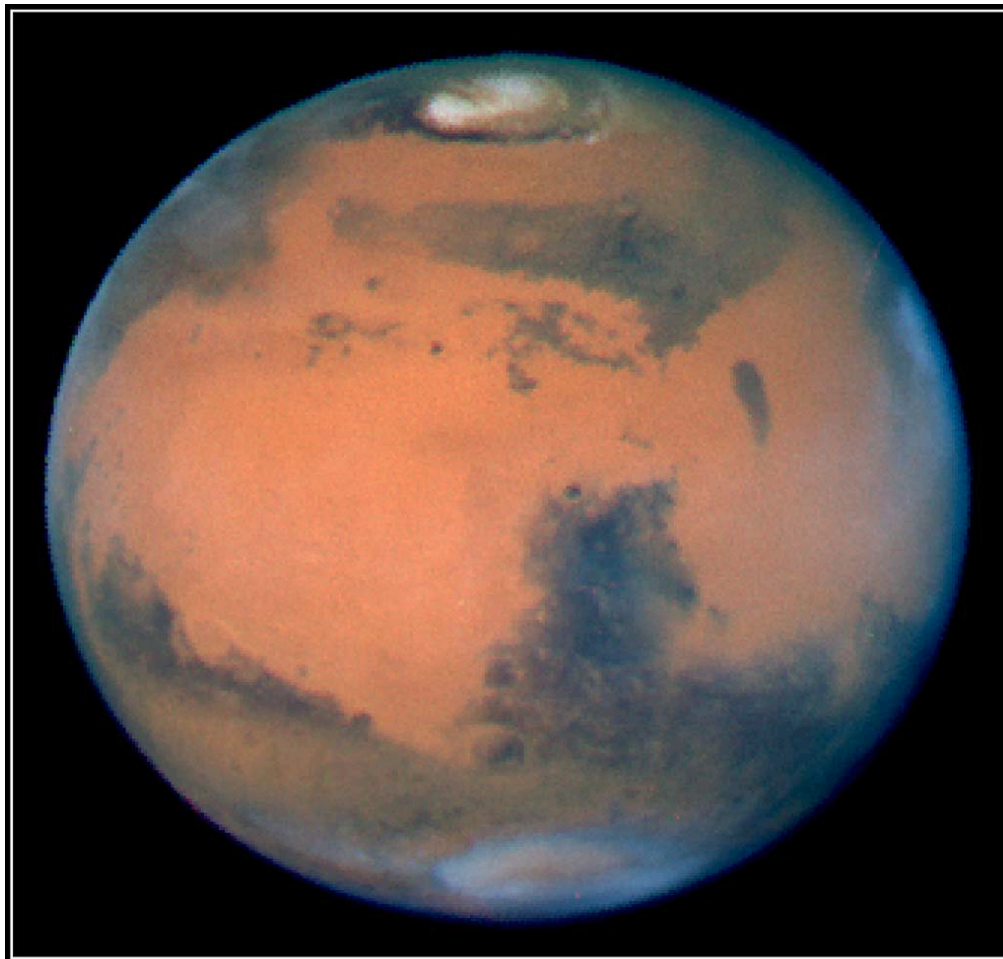
# Information Summaries

National Aeronautics and  
Space Administration

JANUARY 2005

NP-2005-01-001JSC

# Astronaut Fact Book



“It is with an iron will that they embark on the most daring of all endeavors . . . . to meet the shadowy future without fear and conquer the unknown.

— *Ferdinand Magellan, circa 1520.*

## **PREFACE**

The National Aeronautics and Space Administration (NASA) selected the first group of astronauts in 1959. From 500 candidates having the required jet aircraft flight experience and engineering training as well as height below 5 feet 11 inches, 7 military men became the Nation's first astronauts. The second and third groups chosen included civilians who had extensive flying experience. By 1964, requirements had changed, and emphasis was placed on academic qualifications; in 1965, 6 scientist astronauts were selected from a group of 400 applicants who had a Doctorate or equivalent experience in the natural sciences, medicine, or engineering. The group named in 1978 was the first of space shuttle flight crews and since then, 14 additional groups have been selected with a mix of pilots and mission specialists.

There are currently 95 astronauts, 11 astronaut candidates and 46 management astronauts in the program; 132 astronauts have retired or resigned; and 36 are deceased.

Though most of the information in this document pertains only to U.S. Astronauts, several sections are included to provide information about the international astronauts and Russian trained Cosmonauts who are currently partners with the U.S. Space Program participating in the International Space Station endeavor. The non-U.S. information presented here was gathered from the biographies provided by the various space agencies with which these individuals are affiliated.

Payload specialists are career scientists or engineers selected by their employer or country for their expertise in conducting a specific experiment or commercial venture on a space shuttle mission. Information about them is not included in the Astronaut Fact Book.

The space flights and statistics listed in this publication resulted from the vertical takeoff of an American space vehicle or Soyuz taxi flights to the International Space Station. Astronauts listed (unless otherwise noted) are individuals who participated in the United States astronaut program including those who are in the training program.

NASA accepts applications for the Astronaut Candidate Program on a continuing basis and selects candidates as needed.

This document is online at: <http://spaceflight.nasa.gov/spacenews/factsheets/pdfs/astro.pdf>

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### Cover Art

Image of Mars taken by the Hubble Space Telescope.

## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Acaba, Joseph M.	2004	19	0	Candidate
Adamson, James C.	1984	10	2	Former
Akers, Thomas D.	1987	12	4	Former
Aldrin, Buzz	1963	3	2	Former
Allen, Andrew M.	1987	12	3	Former
Allen, Joseph P.	1967	6	2	Former
Altman, Scott D.	1995	15	3	Current
Anders, William A.	1963	3	1	Former
Anderson, Clayton C.	1998	17	0	Current
Anderson, Michael P.	1995	15	2	Deceased
Antonelli, Dominic A.	2000	18	0	Current
Apt, Jerome	1985	11	4	Former
Archambault, Lee J.	1998	17	0	Current
Armstrong, Neil A.	1962	2	2	Former
Arnold, Richard R., II	2004	19	0	Candidate
Ashby, Jeffrey S.	1995	15	3	Management
Bagian, James P.	1980	9	2	Former
Baker, Ellen S.	1984	10	3	Management
Baker, Michael A.	1985	11	4	Management
Barratt, Michael R.	2000	18	0	Current
Barry, Daniel T.	1992	14	3	Current
Bassett, Charles A., II	1963	3	0	Deceased
Bean, Alan L.	1963	3	2	Former
Behnken, Robert L.	2000	18	0	Current
Blahe, John E.	1980	9	5	Former
Bloomfield, Michael J.	1995	15	3	Former
Bluford, Guion S., Jr.	1978	8	4	Former
Bobko, Karol J.	1969	7	3	Former
Boe, Eric A.	2000	18	0	Current
Bolden, Charles F., Jr.	1980	9	4	Former
Borman, Frank	1962	2	2	Former
Bowen, Stephen G.	2000	18	0	Current
Bowersox, Kenneth D.	1987	12	5	Management
Brady, Charles E., Jr.	1992	14	1	Former
Brand, Vance D.	1966	5	4	Management
Brandenstein, Daniel C.	1978	8	4	Former
Bridges, Roy D., Jr.	1980	9	1	Management
Bresnik, Randolph J.	2004	19	0	Candidate
Brown, Curtis L., Jr.	1987	12	6	Former
Brown, David M.	1996	16	1	Deceased
Brown, Mark N.	1984	10	2	Former
Buchli, James F.	1978	8	4	Former
Bull, John S.	1966	5	0	Former
Burbank, Daniel C.	1996	16	1	Current
Bursch, Daniel W.	1990	13	4	Management
Cabana, Robert D.	1985	11	4	Management
Cagle, Yvonne D.	1996	16	0	Current
Caldeiro, Fernando (Frank)	1996	16	0	Current
Caldwell, Tracy E.	1998	17	0	Current
Camarda, Charles J.	1996	16	0	Current
Cameron, Kenneth D.	1984	10	3	Management
Carey, Duane G.	1996	16	1	Current

## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Carpenter, M. Scott	1959	1	1	Former
Carr, Gerald P.	1966	5	1	Former
Carter, Manley Lanier, Jr.	1984	10	1	Deceased
Casper, John H.	1984	10	4	Management
Cassidy, Christopher J.	2004	19	0	Candidate
Cernan, Eugene A.	1963	3	3	Former
Chaffee, Roger B.	1963	3	0	Deceased
Chamitoff, Gregory E.	1998	17	0	Current
Chang-Diaz, Franklin R.	1980	9	7	Management
Chapman, Philip K.	1967	6	0	Former
Chawla, Kalpana	1995	15	2	Deceased
Chiao, Leroy	1990	13	3	Current
Chilton, Kevin P.	1987	12	3	Former
Clark, Laurel B.	1996	16	1	Deceased
Cleave, Mary L.	1980	9	2	Management
Clifford, Michael R.	1990	13	3	Former
Coats, Michael L.	1978	8	3	Former
Cockrell, Kenneth D.	1990	13	5	Management
Coleman, Catherine G.	1992	14	2	Current
Collins, Eileen M.	1990	13	3	Current
Collins, Michael	1963	3	2	Former
Conrad, Charles, Jr.	1962	2	4	Deceased
Cooper, L. Gordon, Jr.	1959	1	2	Deceased
Covey, Richard O.	1978	8	4	Former
Creamer, Timothy J.	1998	17	0	Current
Creighton, John O.	1978	8	3	Former
Crippen, Robert L.	1969	7	4	Former
Culbertson, Frank L., Jr.	1984	10	3	Former
Cunningham, Walter	1963	3	1	Former
Curbeam, Robert L., Jr.	1995	15	2	Current
Currie, Nancy J.	1990	13	4	Management
Davis, N. Jan	1987	12	3	Management
Drew, Alvin B.	2000	18	0	Current
Duffy, Brian	1985	11	4	Former
Duke, Charles M., Jr.	1966	5	1	Former
Dunbar, Bonnie J.	1980	9	5	Management
Dutton, James P.	2004	19	0	Candidate
Edwards, Joe F., Jr.	1995	15	1	Former
Eisele, Donn F.	1963	3	1	Deceased
England, Anthony W.	1967	6	1	Former
Engle, Joe H.	1966	5	2	Former
Evans, Ronald E.	1966	5	1	Deceased
Fabian, John M.	1978	8	2	Former
Ferguson, Christopher J.	1998	17	0	Current
Feustel, Andrew J.	2000	18	0	Current
Fincke, E. Michael	1996	16	1	Current
Fisher, Anna L.	1978	8	1	Current
Fisher, William F.	1980	9	1	Former
Foale, C. Michael	1987	12	6	Current
Ford, Kevin A.	2000	18	0	Current
Foreman, Michael J.	1998	17	0	Current

## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Forrester, Patrick G.	1996	16	1	Current
Fossum, Michael E.	1998	17	0	Current
Freeman, Theodore C.	1963	3	0	Deceased
Frick, Stephen N.	1996	16	1	Current
Fullerton, Charles G.	1969	7	2	Management
Garan, Ronald J., Jr.	2000	18	0	Current
Gardner, Dale A.	1978	8	2	Former
Gardner, Guy S.	1980	9	2	Former
Garriott, Owen K.	1965	4	2	Former
Gemar, Charles D.	1985	11	3	Former
Gernhardt, Michael L.	1992	14	4	Current
Gibson, Edward G.	1965	4	1	Former
Gibson, Robert L.	1978	8	5	Former
Givens, Edward G., Jr.	1966	5	0	Deceased
Glenn, John H., Jr.	1959	1	2	Former
Godwin, Linda M.	1985	11	4	Management
Good, Michael T.	2000	18	0	Current
Gordon, Richard F., Jr.	1963	3	2	Former
Gorie, Dominic L.	1995	15	3	Current
Grabe, Ronald J.	1980	9	4	Former
Graveline, Duane E.	1965	4	0	Former
Gregory, Frederick D.	1978	8	3	Management
Gregory, William G.	1990	13	1	Former
Griggs, S. David	1978	8	1	Deceased
Grissom, Virgil I.	1959	1	2	Deceased
Grunsfeld, John M.	1992	14	4	Management
Gutierrez, Sidney M.	1984	10	2	Former
Haise, Fred W., Jr.	1966	5	1	Former
Halsell, James D., Jr.	1990	13	5	Current
Ham, Kenneth T.	1998	17	0	Current
Hammond, L. Blaine, Jr.	1984	10	2	Former
Harbaugh, Gregory J.	1987	12	4	Former
Harris, Bernard A., Jr.	1990	13	2	Former
Hart, Terry J.	1978	8	1	Former
Hartsfield, Henry W., Jr.	1969	7	3	Former
Hauck, Frederick H.	1978	8	3	Former
Hawley, Steven A.	1978	8	5	Management
Helms, Susan J.	1990	13	5	Former
Henize, Karl G.	1967	6	1	Deceased
Henricks, Terence T.	1985	11	4	Former
Hernandez, Jose M.	2004	19	0	Candidate
Herrington, John B.	1996	16	1	Current
Hieb, Richard J.	1985	11	3	Former
Higginbotham, Joan E.	1996	16	0	Current
Hilmers, David C.	1980	9	4	Former
Hire, Kathryn P.	1995	15	1	Current
Hobaugh, Charles O.	1996	16	1	Current
Hoffman, Jeffrey A.	1978	8	5	Former
Holmquest, Donald L.	1967	6	0	Former
Horowitz, Scott J.	1992	14	4	Current
Hurley, Douglas G.	2000	18	0	Current
Husband, Rick D.	1995	15	2	Deceased

## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Irwin, James B.	1966	5	1	Deceased
Ivins, Marsha S.	1984	10	5	Current
Jemison, Mae C.	1987	12	1	Former
Jernigan, Tamara E.	1985	11	5	Former
Jett, Brent W.	1992	14	3	Current
Johnson, Gregory C.	1998	17	0	Management
Johnson, Gregory H.	1998	17	0	Current
Jones, Thomas D.	1990	13	4	Former
Kavandi, Janet L.	1995	15	3	Current
Kelly, James M.	1996	16	1	Current
Kelly, Mark E.	1996	16	1	Current
Kelly, Scott J.	1996	16	1	Current
Kerwin, Joseph P.	1965	4	1	Former
Kilrain, Susan L.	1995	15	2	Former
Kimbrough, Robert S.	2004	19	0	Candidate
Kopra, Timothy L.	2000	18	0	Current
Kregel Kevin R.	1992	14	4	Management
Lawrence, Wendy B.	1992	14	3	Current
Lee, Mark C.	1984	10	4	Former
Leestma, David C.	1980	9	3	Management
Lenoir, William B.	1967	6	1	Former
Lind, Don L.	1966	5	1	Former
Lindsey, Steven W.	1995	15	3	Current
Linenger, Jerry M.	1992	14	2	Former
Linnehan, Richard M.	1992	14	3	Current
Llewellyn, John A.	1967	6	0	Former
Lockhart, Paul S.	1996	16	2	Management
Lopez-Alegria, Michael E.	1992	14	3	Management
Loria, Christopher J.	1996	16	0	Management
Lounge, John M.	1980	9	3	Former
Lousma, Jack R.	1966	5	2	Former
Love, Stanley G.	1998	17	0	Current
Lovell, James A., Jr.	1962	2	4	Former
Low, G. David	1984	10	3	Former
Lu, Edward T.	1995	15	3	Current
Lucid, Shannon W.	1978	8	5	Management
Magnus, Sandra H.	1996	16	1	Current
Marshburn, Thomas H.	2004	19	0	Candidate
Massimino, Michael J.	1996	16	1	Current
Mastracchio, Richard A.	1996	16	1	Current
Mattingly, Thomas K., II	1966	5	3	Former
McArthur, K. Megan	2000	18	0	Current
McArthur, William S., Jr.	1990	13	3	Current
McBride, Jon A.	1978	8	1	Former
McCandless, Bruce, II	1966	5	2	Former
McCool, William C.	1996	16	1	Deceased
McCulley, Michael J.	1984	10	1	Former
McDivitt, James A.	1962	2	2	Former
McMonagle, Donald R.	1987	12	3	Former
McNair, Ronald E.	1978	8	1	Deceased
Meade, Carl J.	1985	11	3	Former

## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Melnick, Bruce E.	1987	12	2	Former
Melroy, Pamela A.	1995	15	2	Current
Melvin, Leland D.	1998	17	0	Current
Metcalf-Lindenburger, Dorothy M.	2004	19	0	Candidate
Michel, F. Curtis	1965	4	0	Former
Mitchell, Edgar D.	1966	5	1	Former
Morgan, Barbara R.	1998	17	0	Current
Morin, Lee M.	1996	16	1	Management
Mullane, Richard M.	1978	8	3	Former
Musgrave, Story	1967	6	6	Former
Nagel, Steven R.	1978	8	4	Management
Nelson, George D.	1978	8	3	Former
Newman, James H.	1990	13	4	Management
Noriega, Carlos I.	1995	15	2	Current
Nowak, Lisa M.	1996	16	0	Current
Nyberg, Karen L.	2000	18	0	Current
Ochoa, Ellen	1990	13	4	Management
O'Connor, Bryan D.	1980	9	2	Management
O'Leary, Brian T.	1967	6	0	Former
Oefelein, William A.	1998	17	0	Current
Olivas, John D.	1998	17	0	Current
Onizuka, Ellison S.	1978	8	1	Deceased
Oswald, Stephen S.	1985	11	3	Former
Overmyer, Robert F.	1969	7	2	Deceased
Parazynski, Scott E.	1992	14	4	Current
Parker, Robert A. R.	1967	6	2	Management
Patrick, Nicholas J. M.	1998	17	0	Current
Peterson, Donald H.	1969	7	1	Former
Pettit, Donald R.	1996	16	1	Current
Phillips, John L.	1996	16	1	Current
Pogue, William R.	1966	5	1	Former
Poindexter, Alan G.	1998	17	0	Current
Polansky, Mark L.	1996	16	1	Current
Precourt, Charles J., Jr.	1990	13	4	Management
Readdy, William F.	1987	12	3	Management
Reightler, Kenneth S., Jr.	1987	12	2	Former
Reilly, James F.	1995	15	2	Current
Reisman, Garrett E.	1998	17	0	Current
Resnik, Judith A.	1978	8	1	Deceased
Richards, Paul W.	1996	16	1	Former
Richards, Richard N.	1980	9	4	Former
Ride, Sally K.	1978	8	2	Former
Robertson, Patricia Hilliard	1998	17	0	Deceased
Robinson, Stephen K.	1995	15	2	Current
Rominger, Kent V.	1992	14	5	Management
Roosa, Stuart A.	1966	5	1	Deceased
Ross, Jerry L.	1980	9	7	Management
Runco, Mario, Jr.	1987	12	3	Management
Satcher, Robert L.	2004	19	0	Candidate
Schirra, Walter M., Jr.	1959	1	3	Former



## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Schmitt, Harrison H.	1965	4	1	Former
Schweickart, Russell L.	1963	3	1	Former
Scobee, Francis R.	1978	8	1	Deceased
Scott, David R.	1963	3	3	Former
Scott, Winston E.	1992	14	2	Former
Searfoss, Richard A.	1990	13	3	Former
Seddon, Margaret Rhea	1978	8	3	Former
See, Elliot M., Jr.	1962	2	0	Deceased
Sega, Ronald M.	1990	13	2	Former
Sellers, Piers J.	1996	16	1	Current
Shaw, Brewster H., Jr.	1978	8	3	Former
Shepard, Alan B., Jr.	1959	1	2	Deceased
Shepherd, William M.	1984	10	4	Former
Shriver, Loren J.	1978	8	3	Former
Slayton, Donald K.	1959	1	1	Deceased
Smith, Michael J.	1980	9	0	Deceased
Smith, Steven L.	1992	14	4	Management
Spring, Sherwood C.	1980	9	1	Former
Springer, Robert C.	1980	9	2	Former
Stafford, Thomas P.	1962	2	4	Former
Stefanyshyn-Piper, Heidemarie M.	1996	16	0	Current
Stewart, Robert L.	1978	8	2	Former
Stott, Nicole P.	2000	18	0	Current
Sturckow, Frederick W.	1995	15	2	Current
Sullivan, Kathryn D.	1978	8	3	Former
Swanson, Steven R.	1998	17	0	Current
Swigert, John L., Jr.	1966	5	1	Deceased
Tani, Daniel M.	1996	16	1	Current
Tanner, Joseph R.	1992	14	3	Current
Thagard, Norman E.	1978	8	5	Former
Thomas, Andrew S. W.	1992	14	3	Current
Thomas, Donald A.	1990	13	4	Management
Thorne, Stephen D.	1985	11	0	Deceased
Thornton, Kathryn C.	1984	10	4	Former
Thornton, William E.	1967	6	2	Former
Thuot, Pierre J.	1985	11	3	Former
Truly, Richard H.	1969	7	2	Former
Van Hoften, James D. A.	1978	8	2	Former
Veach, Charles Lacy	1984	10	2	Deceased
Virts, Terry W., Jr.	2000	18	0	Current
Voss, James S.	1987	12	5	Former
Voss, Janice E.	1990	13	5	Management
Walheim, Rex J.	1996	16	1	Current
Walker, David M.	1978	8	4	Deceased
Walker, Shannon	2004	19	0	Candidate
Walz, Carl E.	1990	13	4	Management
Weber, Mary E.	1992	14	2	Former
Weitz, Paul J.	1966	5	2	Former
Wetherbee, James D.	1984	10	6	Management
Wheelock, Douglas H.	1998	17	0	Current
White, Edward H., II	1962	2	1	Deceased

## UNITED STATES ASTRONAUTS

<u>Astronaut</u>	<u>Selection Year</u>	<u>Group</u>	<u># Flights</u>	<u>Status</u>
Whitson, Peggy A.	1996	16	1	Management
Wilcutt, Terrence W.	1990	13	4	Current
Williams, Clifton C., Jr.	1963	3	0	Deceased
Williams, Donald E.	1978	8	2	Former
Williams, Jeffrey N.	1996	16	1	Current
Williams, Sunita L.	1998	17	0	Current
Wilmore, Barry E.	2000	18	0	Current
Wilson, Stephanie D.	1996	16	0	Current
Wisoff, Peter J. K.	1990	13	4	Former
Wolf, David A.	1990	13	3	Current
Woodward, Neil W., III	1998	17	0	Current
Worden, Alfred M.	1966	5	1	Former
Young, John W.	1962	2	6	Former
Zamka, George D.	1998	17	0	Current

## INTERNATIONAL ASTRONAUTS CURRENTLY IN THE U.S. PROGRAM

<b>Astronaut</b>	<b>Selection Year</b>	<b>Agency</b>	<b>Country</b>	<b># U.S. Flights</b>	<b>Status</b>
Doi, Takao	1995	JAXA	Japan	1	Current
Eyharts, Leopold	1998	ESA	France	0	Current
Fuglesang, Christer	1996	ESA	Sweden	0	Current
Furukawa, Satoshi	2004	JAXA	Japan	0	Current
Hadfield, Chris A.	1992	CSA	Canada	2	Current
Hoshide, Akihko	2004	JAXA	Japan	0	Current
MacLean, Steve	1996	CSA	Canada	1	Current
Nespoli, Paolo	1998	ESA	Italy	0	Current
Nicollier, Claude	1980	ESA	Switzerland	4	Current
Noguchi, Soichi	1996	JAXA	Japan	0	Current
Payette, Julie	1996	CSA	Canada	1	Current
Pontes, Marcos	1998	BSA	Brazil	0	Current
Schlegel, Hans	1998	ESA	Germany	1 *	Current
Thirsk, Robert B.	1998	CSA	Canada	1	Current
Vittori, Roberto	1998	ESA	Italy	0	Current
Wakata, Koichi	1992	JAXA	Japan	2	Current
Williams, Dafydd Rhys	1995	CSA	Canada	1	Current
Yamazaki, Naoko	2004	JAXA	Japan	0	Current

\* Flew as a payload specialist on STS-55

## RUSSIAN COSMONAUTS CURRENTLY IN THE U.S. PROGRAM

<b>Cosmonaut</b>	<b># Flights</b>	<b>Status</b>
Budarin, Nikolai	3	Current
Dezhurov, Vladimir	3	Current
Gidzenko, Yuri	2	Current
Kaleri, Alexander	1	Current
Korzun, Valery	1	Current
Krikalev, Sergei	5	Current
Lonchakov, Yuri	1	Current
Malenchenko, Yuri	2	Current
Morukov, Boris	1	Current
Onufrienko, Yuri	3	Current
Poleshchuk, Alexander	1	Current
Ryumin, Valery	4	Current
Sharipov, Salizhan	1	Current
Solovyev, Anatoly	4	Current
Strekalov, Gennady	4	Current
Titov, Vladimir	5	Current
Tokarev, Valery	1	Current
Treschev, Sergei	1	Current
Tyurin, Mikhail	2	Current
Usachev, Yuri	5	Current
Yurchikhin, Fyodor	1	Current

## CURRENT U.S. ASTRONAUTS

**ALTMAN, Scott D.**, Captain, U.S. Navy

Pilot.

Born August 15, 1959, in Lincoln, Illinois. Hometown, Pekin, Illinois.

Bachelor of Science in aeronautical/astronautical engineering from University of Illinois;

Master of Science in aeronautical engineering, Naval Postgraduate School.

Flew on STS-90, STS-106 and STS-109.

Cumulative days of space flight are more than 38.

**ANDERSON, Clayton C.**, Civilian

Mission Specialist.

Born February 23, 1959, in Omaha, Nebraska. Hometown, Ashland, Nebraska.

Bachelor of Science in physics from Hastings College, Nebraska; Master of Science in aerospace engineering from Iowa State University.

**ANTONELLI, Dominic A.**, Lieutenant Commander, U.S. Navy

Pilot.

Born in Detroit, Michigan.

Bachelor of Science in aeronautics & astronautics from the Massachusetts Institute of

Technology; Masters of Science in aeronautics & astronautics from the University of Washington.

**ARCHAMBAULT, Lee J.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born August 25, 1960, in Oak Park, Illinois. Hometown, Bellwood, Illinois.

Bachelor and Master of Science in aerospace/aeronautical engineering from University of Illinois-Urbana.

**BARRATT, Michael R.**, Civilian

Mission Specialist.

Born April 16, 1959, in Vancouver, Washington.

Bachelor of Science in zoology from the University of Washington; Doctor of Medicine from Northwestern University; Masters of Science in aerospace medicine from Wright State

University. Board certified in Internal and Aerospace Medicine.

**BARRY, Daniel T.**, Civilian

Mission Specialist.

Born December 30, 1953, in Norwalk, Connecticut. Hometown, South Hadley, Massachusetts.

Bachelor of Science in electrical engineering from Cornell University; Master of Engineering, Master of Arts and a Doctor of Philosophy in electrical engineering and computer science from Princeton University; Doctor of Medicine from the University of Miami.

Flew on STS-72, STS-96 and STS-105.

Cumulative hours of space flight are more than 734.

Cumulative EVA time is more than 25 hours.

**BEHNKEN, Robert L.**, Major, U.S. Air Force

Mission Specialist.

Born in Creve Coeur, Missouri.

Bachelors of Science in physics & mechanical engineering from Washington University;

Masters of Science and Doctor of Philosophy in mechanical engineering from the California Institute of Technology.

**BLOOMFIELD, Michael J.**, Colonel, U.S. Air Force

Pilot

Born March 16, 1959, in Flint, Michigan. Hometown, Lake Fenton, Michigan.

Bachelor of Science in engineering mechanics from the U.S. Air Force Academy; Master of Science in engineering management from Old Dominion University.

Flew on STS-86, STS-97 and STS-110.

Cumulative hours of space flight are more than 753.

## CURRENT U.S. ASTRONAUTS

**BOE, Eric A.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born October 1, 1964, in Miami, Florida.

Bachelor of Science in aeronautical engineering from the U.S Air Force Academy; Master of Science in electrical engineering from the Georgia Institute of Technology.

**BOWEN, Stephen G.**, Commander, U.S. Navy

Mission Specialist.

Born February 13, 1964, in Cohasset, Massachusetts.

Bachelor of Science in electrical engineering from the U.S. Naval Academy; degree of Ocean Engineer from the Massachusetts Institute of Technology.

**BURBANK, Daniel C.**, Commander, U.S. Coast Guard

Mission Specialist.

Born July 27, 1961, in Manchester, Connecticut. Hometown, Tolland, Connecticut.

Bachelor of Science in electrical engineering from the U.S. Coast Guard Academy and a Master of Science in aeronautical science from Embry-Riddle Aeronautical University.

Flew on STS-106.

Cumulative hours of space flight are more than 283.

**CAGLE, Yvonne D.**, Colonel, U.S. Air Force

Mission Specialist.

Born in West Point, New York. Hometown, Novato, California.

Bachelor of Science in biochemistry from San Francisco State University and a Doctor of Medicine from the University of Washington. Received certification as a senior aviation medical examiner from the Federal Aviation Administration.

**CALDEIRO, Fernando (Frank)**, Civilian

Mission Specialist.

Born June 12, 1958, in Buenos Aires, Argentina. Hometowns, New York City, NY and Merritt Island, Florida.

Bachelor of Science in mechanical engineering from the University of Arizona, an A.A.S. in aerospace technology from the State University of New York at Farmingdale and a Master of Science in engineering management from the University of Central Florida.

**CALDWELL, Tracy E.**, Civilian

Mission Specialist.

Born August 14, 1969, in Arcadia, California.

Bachelor of Science in chemistry from California State University-Fullerton; Doctor of Philosophy in physical chemistry from the University of California-Davis.

**CAMARDA, Charles J.**, Civilian

Mission Specialist.

Born May 8, 1952, in New York, New York.

Bachelor of Science in aerospace engineering from the Polytechnic Institute of New York, a Master of Science in engineering science from George Washington University and a Doctor of aerospace engineering from Virginia Polytechnic Institute and State University.

**CAREY, Duane G.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born April 30, 1957, in St. Paul, Minnesota.

Bachelor of Science in aerospace engineering and mechanics and a Master of Science in aerospace engineering from the University of Minnesota-Minneapolis.

Flew on STS-109.

Cumulative days of space flight are more than 10.

**CHAMITOFF, Gregory E.**, Civilian

Mission Specialist.

Born August 6, 1962, in Montreal, Canada. Hometown, San Jose, California.

Bachelor of Science in electrical engineering from California Polytechnic State University; Master of Science in aeronautical engineering from California Institute of Technology;

## CURRENT U.S. ASTRONAUTS

Master of Science in planetary geology (Space Science) from the University of Houston, Clear Lake; Doctor of Philosophy in aeronautics/astronautics from the Massachusetts Institute of Technology.

**CHIAO, Leroy**, Civilian

Mission Specialist.

Born August 28, 1960, in Milwaukee, Wisconsin. Hometown, Danville, California.

Bachelor of Science in chemical engineering from University of California, Berkeley; Master of Science and Doctor of Philosophy in chemical engineering from the University of California, Santa Barbara.

Flew on STS-65, STS-72 and STS-92.

Cumulative days of space flight are more than 36.

Cumulative EVA time is more than 26 hours.

**COLEMAN, Catherine G.**, Lieutenant Colonel, U.S. Air Force

Mission Specialist.

Born December 14, 1960, in Charleston, South Carolina.

Bachelor of Science in chemistry from Massachusetts Institute of Technology; Doctor of Philosophy in polymer science & engineering from University of Massachusetts.

Flew on STS-73 and STS-93.

Cumulative hours of space flight are more than 500.

**COLLINS, Eileen M.**, Colonel, U.S. Air Force

Pilot.

Born November 19, 1956, in Elmira, New York.

Bachelor of Arts in math and economics from Syracuse University; Master of Science in operations research from Stanford University; Master of Arts in space systems management from Webster University.

Flew on STS-63, STS-84 and STS-93.

Cumulative hours of space flight are more than 537.

**CREAMER, Timothy J.**, Lieutenant Colonel, U. S. Army

Mission Specialist.

Born November 15, 1959, in Ft. Huachuca, Arizona. Hometown, Upper Marlboro, Maryland.

Bachelor of Science in chemistry from Loyola College in Baltimore, Maryland; Master of Science in physics from the Massachusetts Institute of Technology.

**CURBEAM, Robert L., Jr.**, Commander, U.S. Navy

Mission Specialist.

Born March 5, 1962, in Baltimore, Maryland.

Bachelor of Science in aerospace engineering from the United States Naval Academy; Master of Science in aeronautical engineering from the Naval Postgraduate School; Degree of aeronautical and astronautical engineering from the Naval Postgraduate School.

Flew on STS-85 and STS-98.

Cumulative hours of space flight are more than 593.

Cumulative EVA time is more than 19 hours.

**DREW, B. Alvin**, Lieutenant Colonel, U.S. Air Force

Mission Specialist.

Born November 5, 1962, in Washington, D.C.

Bachelor of Science in physics & astronautical engineering from the U.S. Air Force Academy; Master of Science in aeronautical science from Embry-Riddle Aeronautical University.

**FERGUSON, Christopher J.**, Commander, U.S. Navy

Pilot.

Born September 1, 1961, in Philadelphia, Pennsylvania.

Bachelor of Science in mechanical engineering from Drexel University; Master of Science in aeronautical engineering from the Naval Postgraduate School.

## CURRENT U.S. ASTRONAUTS

**FEUSTEL, Andrew J.**, Civilian

Mission Specialist.

Born August 25, 1965, in Lancaster, Pennsylvania.

Bachelor of Science in solid earth sciences and Master of Science in geophysics from Purdue University; Doctor of Philosophy in seismology from Queen's University-Canada.

**FINCKE, Edward Michael "Mike"**, Lieutenant Colonel, U.S. Air Force

Mission Specialist.

Born March 14, 1967, in Pittsburgh, Pennsylvania. Hometown, Emsworth, Pennsylvania.

Bachelor of Science in aeronautics and astronautics as well as earth, atmospheric and planetary sciences from the Massachusetts Institute of Technology and a Master of Science in aeronautics and astronautics from Stanford University and a Master of Science in Physical Sciences (Planetary Geology) from the University of Houston, Clear Lake.

Cumulative days of space flight are more than 187.

**FISHER, Anna L.**, Civilian

Mission Specialist.

Born August 24, 1949, in New York City, New York. Hometown, San Pedro, California.

Bachelor, Master of Science in chemistry and Doctor of Medicine from the University of California at Los Angeles.

Flew on STS 51-A.

Cumulative hours of space flight are more than 191.

**FOALE, C. Michael**, Civilian

Mission Specialist.

Born January 6, 1957, in Louth, England. Hometown, Cambridge, England.

Bachelor of Arts in physics and Doctor of Philosophy in laboratory astrophysics from Cambridge University.

Flew on STS-45, STS-56, STS-63, STS-84/Mir, Mir/STS-86, STS-103 and Expedition 8.

Cumulative days of space flight are more than 374.

Cumulative EVA time is more than 22 hours.

**FORD, Kevin A.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born July 7, 1960, in Portland, Indiana.

Bachelor of Science in aerospace engineering from the University of Notre Dame; Master of Science in international relations from Troy State University; Master of Science in aerospace engineering from the University of Florida; Doctor of Philosophy in astronautical engineering from the Air Force Institute of Technology. Graduate of Squadron Officer School the Air Command and Staff College Associate Program, and Air War College.

**FOREMAN, Michael J.**, Captain, U.S. Navy

Mission Specialist.

Born March 29, 1957, in Columbus, Ohio. Hometown, Wadsworth, Ohio.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from the Naval Postgraduate School.

**FORRESTER, Patrick G.**, Colonel, U.S. Army

Mission Specialist.

Born March 31, 1957, in El Paso, Texas.

Bachelor of Science in applied sciences and engineering from the U.S. Military Academy and a Master of Science in mechanical and aerospace engineering from the University of Virginia.

Flew on STS-105.

Cumulative hours of space flight are more than 285.

Cumulative EVA time is more than 11 hours.



## CURRENT U.S. ASTRONAUTS

**FOSSUM, Michael E.**, Civilian, U.S. Naval Reserve

Mission Specialist.

Born December 19, 1957, in Sioux Falls, South Dakota. Hometown, McAllen, Texas.

Bachelor of Science in mechanical engineering from Texas A&M University; Master of Science in systems engineering from the Air Force Institute of Technology; Master of Science in physical science (space science) from the University of Houston-Clear Lake.

**FRICK, Stephen N.**, Commander, U.S. Navy

Pilot.

Born September 30, 1964, in Pittsburgh, Pennsylvania.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy and a Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-110.

Cumulative hours of space flight are more than 259.

**GARAN, Ronald J., Jr.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born October 30, 1961, in Yonkers, New York.

Bachelor of Science in economics from the State University of New York; Master of Aeronautical Science in aeronautics from Embry-Riddle Aeronautical University; Master of Science in aerospace engineering from the University of Florida.

**GERNHARDT, Michael L.**, Civilian

Mission Specialist.

Born May 4, 1956, in Mansfield, Ohio.

Bachelor of Science in physics from Vanderbilt University; Master of Science and Doctor of Philosophy in bioengineering from the University of Pennsylvania.

Flew on STS-69, STS-83, STS-94 and STS-104.

Cumulative days of space flight are more than 43.

Cumulative EVA time is more than 23hours.

**GOOD, Michael T.**, Lieutenant Colonel, U.S. Air Force

Mission Specialist.

Born October 13, 1962, in Parma, Ohio.

Bachelor and Master of Science in aerospace engineering from the University of Notre Dame.

**GORIE, Dominic L.**, Captain, U.S. Navy

Pilot.

Born May 2, 1957, in Lake Charles, Louisiana.

Bachelor of Science in ocean engineering from the United States Naval Academy; Master of Science in aviation systems from the University of Tennessee, Knoxville.

Flew on STS-91, STS-99 and STS-108.

Cumulative days of space flight are more than 32.

**HALSELL, James D., Jr.**, Colonel, U.S. Air Force (Retired)

Pilot

Born September 29, 1956, in Monroe, Louisiana.

Bachelor of Science in engineering from the U.S. Air Force Academy; Master of Science in management from Troy State University; Master of Science in space operations from the Air Force Institute of Technology.

Flew on STS-65, STS-74, STS-83, STS-94 and STS-101.

Cumulative hours of space flight are more than 1,250.

**HAM, Kenneth T.**, Commander, U.S. Navy

Pilot.

Born December 12, 1964, in Plainfield, New Jersey.

Bachelor of Science aerospace engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from the Naval Postgraduate School.

## CURRENT U.S. ASTRONAUTS

**HERRINGTON, John B.**, Commander, U.S. Navy

Mission Specialist.

Born September 14, 1958, in Wetumka, Oklahoma.

Bachelor of Science in applied mathematics from the University of Colorado at Colorado Springs and a Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-113.

Cumulative hours of space flight are more than 330.

Cumulative EVA time is more than 19 hours.

**HIGGINBOTHAM, Joan E.**, Civilian

Mission Specialist.

Born August 3, 1964, in Chicago, Illinois.

Bachelor of Science in electrical engineering from Southern Illinois University at Carbondale; Masters of Science in management and in space systems from the Florida Institute of Technology.

**HIRE, Kathryn P.**, Captain, U.S. Naval Reserve

Mission Specialist.

Born August 26, 1959, in Mobile, Alabama.

Bachelor of Science in engineering and management from the U.S. Naval Academy; Master of Science in space technology from the Florida Institute of Technology.

Flew on STS-90.

Cumulative hours of space flight are more than 381.

**HOBROUGH, Charles O.**, Lieutenant Colonel, U.S. Marine Corps

Pilot.

Born November 5, 1961, in Bar Harbor, Maine.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy.

Flew on STS-114.

Cumulative hours of space flight are more than 306.

**HOROWITZ, Scott J.**, Colonel, U.S. Air Force

Pilot.

Born March 24, 1957, in Philadelphia, Pennsylvania. Hometown, Thousand Oaks, California.

Bachelor of Science in engineering from California State University at Northridge; Master of Science and Doctor of Philosophy in aerospace engineering from the Georgia Institute of Technology.

Flew on STS-75, STS-82, STS-101 and STS-105.

Cumulative hours of space flight are more than 1,138.

**HURLEY, Douglas G.**, Lieutenant Colonel, U.S. Marine Corps

Pilot.

Born October 21, 1966, in Endicott, New York.

Bachelor of Science in civil engineering from Tulane University.

**IVINS, Marsha S.**, Civilian

Mission Specialist.

Born April 15, 1951, in Baltimore, Maryland.

Bachelor of Science in aerospace engineering from the University of Colorado.

Flew on STS-32, STS-46, STS-62, STS-81 and STS-98.

Cumulative hours of space flight are more than 1,318.

**JETT, Brent W.**, Captain, U.S. Navy

Pilot.

Born October 5, 1958, in Pontiac, Michigan. Hometown, Ft. Lauderdale, Florida.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-72, STS-81 and STS-97.

Cumulative hours of space flight are more than 699.

## CURRENT U.S. ASTRONAUTS

**JOHNSON, Gregory C.**, Civilian, U.S. Naval Reserve

Pilot.

Born July 30, 1954, in Seattle, Washington.

Bachelor of Science in aerospace engineering from the University of Washington.

**JOHNSON, Gregory H.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born May 12, 1962, in Upper Ruislip, Middlesex, United Kingdom.

Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Science in flight structures engineering from Columbia University.

**KAVANDI, Janet L.**, Civilian

Mission Specialist.

Born July 17, 1959, in Springfield, Missouri.

Bachelor of Science in chemistry from Missouri Southern State College; Master of Science in chemistry from the University of Missouri; Doctor of Philosophy in analytical chemistry from the University of Washington.

Flew on STS-91 and STS-99 and STS-104.

Cumulative days of space flight are more than 33.

**KELLY, James M.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born May 14, 1964, in Burlington, Iowa.

Bachelor of Science in astronautical engineering from the U.S. Air Force Academy; Master of Science in aerospace engineering from the University of Alabama.

Flew on STS-102.

Cumulative hours of space flight are more than 307.

**KELLY, Mark E.**, Commander, U.S. Navy

Pilot.

Born February 21, 1964, in Orange, New Jersey. Hometown, West Orange, New Jersey.

Bachelor of Science in marine engineering and nautical science from the U.S. Merchant Marine Academy and a Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-108.

Cumulative hours of space flight are more than 283.

**KELLY, Scott J.**, Commander, U.S. Navy

Pilot.

Born February 21, 1964, in Orange, New Jersey.

Bachelor of Science in electrical engineering from the State University of New York Maritime College and a Master of Science in aviation systems from the University of Tennessee, Knoxville.

Flew on STS-103.

Cumulative hours of space flight are more than 191.

**KOPRA, Timothy L.**, Lieutenant Colonel, U.S. Army

Mission Specialist.

Born April 9, 1963, in Austin, Texas.

Bachelor of Science in computer science from the U.S. Military Academy; Master of Science in aerospace engineering from the Georgia Institute of Technology.

**LAWRENCE, Wendy B.**, Captain, U.S. Navy

Mission Specialist.

Born July 2, 1959, in Jacksonville, Florida.

Bachelor of Science in ocean engineering from the U. S. Naval Academy; Master of Science in ocean engineering from the Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution (WHOI).

Flew on STS-67, STS-86 and STS-91.

Cumulative hours of space flight are more than 894.

## CURRENT U.S. ASTRONAUTS

**LINDSEY, Steven W.**, Colonel, U.S. Air Force

Pilot.

Born August 24, 1960, in Arcadia, California. Hometown, Temple City, California.

Bachelor of Science in engineering sciences from the U.S. Air Force Academy; Master of

Science in aeronautical engineering from the Air Force Institute of Technology.

Flew on STS-87, STS-95 and STS-104.

Cumulative hours of space flight are more than 896.

**LINNEHAN, Richard M.**, Civilian

Mission Specialist.

Born in Lowell, Massachusetts.

Bachelor of Science in animal sciences microbiology from the University of New

Hampshire; Doctor of Veterinary Medicine from the Ohio State University College of Veterinary Medicine.

Flew on STS-78, STS-90 and STS-109.

Cumulative days of space flight are more than 43.

Cumulative EVA time is more than 21 hours.

**LOVE, Stanley G.**, Civilian

Mission Specialist.

Born June 8, 1965, in San Diego, California. Hometown, Eugene, Oregon.

Bachelor of Science in physics from Harvey Mudd College; Master of Science and Doctor of Philosophy in astronomy from the University of Washington.

**LU, Edward T.**, Civilian

Mission Specialist.

Born July 1, 1963, Springfield, Massachusetts. Hometowns, Honolulu, Hawaii, and Webster, New York.

Bachelor of Science in electrical engineering from Cornell University; Doctor of Philosophy in applied physics from Stanford University.

Flew on STS-84, STS-106, Expedition 7 and Soyuz TMA-2.

Cumulative days of space flight are more than 206.

Cumulative EVA time is more than 6 hours.

**MAGNUS, Sandra H.**, Civilian

Mission Specialist.

Born October 30, 1964, in Belleville, Illinois.

Bachelor of Science in physics and Master of Science in electrical engineering from the University of Missouri-Rolla, and a Doctor of Philosophy in materials science and engineering from the Georgia Institute of Technology.

Flew on STS-112.

Cumulative days of space flight are more than 10.

**MASSIMINO, Michael J.**, Civilian

Mission Specialist.

Born August 19, 1962, in Oceanside, New York. Hometown, Franklin Square, New York.

Bachelor of Science in industrial engineering from Columbia University; Master of Science in mechanical engineering, Master of Science in technology and policy, a degree of mechanical engineer and Doctor of Philosophy in mechanical engineering from the Massachusetts Institute of Technology.

Flew on STS-109.

Cumulative days of space flight are more than 10.

Cumulative EVA time is more than 14 hours.

## CURRENT U.S. ASTRONAUTS

### **MASTRACCHIO, Richard A.**, Civilian

Mission Specialist.

Born February 11, 1960, in Waterbury, Connecticut.

Bachelor of Science in electrical engineering and computer science from the University of Connecticut, a Master of Science in electrical engineering from the Rensselaer Polytechnic Institute and a Master of Science in physical sciences from the University of Houston-Clear Lake.

Flew on STS-106.

Cumulative hours of space flight are more than 283.

### **McARTHUR, K. Megan**, Civilian

Mission Specialist.

Born August 30, 1971, in Honolulu, Hawaii. Hometown, California.

Bachelor of Science in aerospace engineering from the University of California-Los Angeles; Doctor of Philosophy in oceanography from the University of California-San Diego.

### **McARTHUR, William S., Jr.**, Colonel, U.S. Army (Retired)

Mission Specialist.

Born July 26, 1951, in Laurinburg, North Carolina. Hometown, Wakulla, North Carolina.

Bachelor of Science in applied science and engineering from the U.S. Military Academy;

Master of Science in aerospace engineering from the Georgia Institute of Technology.

Flew on STS-58, STS-74 and STS-92.

Cumulative days of space flight are more than 35.

Cumulative EVA time is more than 13 hours.

### **MELROY, Pamela A.**, Colonel, U.S. Air Force

Pilot.

Born September 17, 1961, in Palo Alto, California. Hometown, Rochester, New York.

Bachelor of Science in physics and astronomy from Wellesley College; Master of Science in earth and planetary sciences from the Massachusetts Institute of Technology.

Flew on STS-92 and STS-112.

Cumulative hours of space flight are more than 562.

### **MELVIN, Leland D.**, Civilian

Mission Specialist.

Born February 15, 1964, in Lynchburg, Virginia.

Bachelor of Science in chemistry from the University of Richmond; Master of Science in materials science engineering from the University of Virginia.

### **MORGAN, Barbara R.**, Civilian

Mission Specialist.

Born November 28, 1951, in Fresno, California. Hometowns, Fresno California and McCall, Idaho.

Bachelor of Arts in human biology from Stanford University; teaching credentials from the College of Notre Dame in Belmont, California.

### **NORIEGA, Carlos I.**, Lieutenant Colonel, U.S. Marine Corps (Retired)

Mission Specialist.

Born October 8, 1959, in Lima, Peru. Hometown, Santa Clara, California.

Bachelor of Science in computer science from the University of Southern California; Master of Science in computer science from the Naval Postgraduate School; Master of Science in space systems operations from the Naval Postgraduate School.

Flew on STS-84 and STS-97.

Cumulative hours of space flight are more than 461.

Cumulative EVA time is more than 19 hours.

## CURRENT U.S. ASTRONAUTS

**NOWAK, Lisa M.**, Commander, U.S. Navy

Mission Specialist.

Born May 10, 1963, in Washington, D. C. Hometown, Rockville, Maryland.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy and a Master of Science in aeronautical engineering and a degree of aeronautical and astronautical engineer from the U.S. Naval Postgraduate School.

**NYBERG, Karen L.**, Civilian

Mission Specialist.

Born October 7, 1969, in Parkers Prairie, Minnesota. Hometown, Vining, Minnesota.

Bachelor of Science in mechanical engineering from the University of North Dakota; Master of Science and Doctor of Philosophy in mechanical engineering from the University of Texas.

**OEFELIN, William A.**, Commander, U.S. Navy

Pilot.

Born March 29, 1965, in Ft. Belvoir, Virginia. Hometown, Anchorage, Alaska.

Bachelor of Science in electrical engineering from Oregon State University; Master of Science in aviation systems from the University of Tennessee Space Institute.

**OLIVAS, John D.**, Civilian

Mission Specialist.

Born May 25, 1966, in North Hollywood, California. Hometown, El Paso, Texas.

Bachelor of Science in mechanical engineering from the University of Texas-El Paso; Master of Science in mechanical engineering from the University of Houston; Doctor of Philosophy in mechanical engineering & materials science from Rice University.

**PARAZYNSKI, Scott E.**, Civilian

Mission Specialist.

Born July 28, 1961, in Little Rock, Arkansas. Hometowns, Palo Alto, California, and Evergreen, Colorado.

Bachelor of Science in biology and Doctor of Medicine from Stanford University.

Flew on STS-66, STS-86, STS-95 and STS-100.

Cumulative hours of space flight are more than 1,019.

Cumulative EVA time is more than 19 hours.

**PATRICK, Nicholas J.M.**, Civilian

Mission Specialist.

Born March 22, 1964, in Saltburn, North Yorkshire, United Kingdom. Hometowns, London, England and Rye, New York.

Bachelor and Master of Arts in engineering from the University of Cambridge, England;

Master of Science and Doctor of Philosophy in mechanical engineering from the Massachusetts Institute of Technology.

**PETTIT, Donald R.**, Civilian

Mission Specialist.

Born April 20, 1955, in Silverton, Oregon.

Bachelor of Science in chemical engineering from Oregon State University and a Doctor in chemical engineering from the University of Arizona.

Flew on STS-113(up)/Exp 6.

Cumulative days of space flight are more than 161.

Cumulative EVA time is more than 13 hours.

**PHILLIPS, John L.**, Civilian, U.S. Naval Reserve

Mission Specialist.

Born April 15, 1951, in Fort Belvoir, Virginia. Hometown, Scottsdale, Arizona.

Bachelor of Science in mathematics and Russian from the U.S. Naval Academy; a Master of Science in aeronautical systems from the University of West Florida; and a Master of Science in geophysics and space physics, and a Doctor in geophysics and space physics from the University of California-Los Angeles.

Flew on STS-100.

Cumulative hours of space flight are more than 283.

## CURRENT U.S. ASTRONAUTS

**POINDEXTER, Alan G.**, Commander, U.S. Navy

Pilot.

Born November 5, 1961, in Pasadena, California. Hometown, Rockville, Maryland.  
Bachelor of aerospace engineering from the Georgia Institute of Technology; Master of Science in aeronautical engineering from the Naval Postgraduate School.

**POLANSKY, Mark L.**, Civilian

Pilot.

Born June 2, 1956, in Paterson, New Jersey. Hometown, Edison, New Jersey.  
Bachelor of Science in aeronautical and astronautical engineering and a Master of Science in aeronautics and astronautics from Purdue University.

Flew on STS-98.

Cumulative hours of space flight are more than 309.

**REILLY, James F.**, Civilian, U.S. Naval Reserve

Mission Specialist.

Born March 18, 1954, Mountain Home Air Force Base, Idaho. Hometown, Mesquite, Texas.

Bachelor of Science, Master of Science and Doctor of Philosophy in geosciences from the University of Texas-Dallas.

Flew on STS-89 and STS-104.

Cumulative hours of space flight are more than 517.

Cumulative EVA time is more than 16 hours.

**REISMAN, Garrett E.**, Civilian

Mission Specialist.

Born February 10, 1968, in Morristown, New Jersey. Hometown, Parsippany, New Jersey.

Bachelor of Science in economics and in mechanical engineering from the University of Pennsylvania; Master of Science and Doctor of Philosophy in mechanical engineering from the California Institute of Technology.

**ROBINSON, Stephen K.**, Civilian

Mission Specialist.

Born October 26, 1955, in Sacramento, California.

Bachelor of Science in mechanical/aeronautical engineering from the University of California, Davis; Master of Science in mechanical engineering from Stanford University; Doctor of Philosophy in mechanical engineering and Aeronautic/Astronautic engineering from Stanford University.

Flew on STS-85 and STS-95.

Cumulative hours of space flight are more than 497.

**SELLERS, Piers J.**, Civilian

Mission Specialist.

Born April 11, 1955, in Crowborough, Sussex, United Kingdom.

Bachelor of Science in ecological science from the University of Edinburgh (Scotland), and Doctor of Philosophy in biometeorology from Leeds University (United Kingdom).

Flew on STS-112.

Cumulative hours of space flight are more than 252.

Cumulative EVA time is more than 19 hours.

**STEFANYSHYN-PIPER, Heidemarie M.**, Commander, U.S. Navy

Mission Specialist.

Born February 7, 1963, in St. Paul, Minnesota.

Bachelor and a Master of Science in mechanical engineering from the Massachusetts Institute of Technology.

**STOTT, Nicole P.**, Civilian

Mission Specialist.

Born November 19, 1962, in Albany, New York. Hometown, Clearwater, Florida.

Bachelor of Science in aeronautical engineering from Emory Riddle Aeronautical University; Master of Science in engineering management from the University of Central Florida.

## CURRENT U.S. ASTRONAUTS

**STURCKOW, Frederick W.**, Lieutenant Colonel, U.S. Marine Corps

Pilot.

Born August 11, 1961, in La Mesa, California. Hometown, Lakeside, California.

Bachelor of Science in mechanical engineering from California Polytechnic State University.

Flew on STS-88 and STS-105.

Cumulative hours of space flight are more than 568.

**SWANSON, Steven R.**, Civilian

Mission Specialist.

Born December 3, 1960, in Syracuse, New York. Hometown, Steamboat Springs, Colorado.

Bachelor of Science in engineering physics from the University of Colorado-Boulder,

Master of Applied Science in computer systems from Florida Atlantic University; Doctor of Philosophy in computer science from Texas A&M University.

**TANI, Daniel M.**, Civilian

Mission Specialist.

Born February 1, 1961, in Ridley Park, Pennsylvania. Hometown, Lombard, Illinois.

Bachelor and Master of Science in mechanical engineering from the Massachusetts Institute of Technology.

Flew on STS-108.

Cumulative days of space flight are more than 11.

Cumulative EVA time is more than 4 hours.

**TANNER, Joseph R.**, Civilian

Mission Specialist.

Born January 21, 1950, in Danville, Illinois.

Bachelor of Science in mechanical engineering from the University of Illinois.

Flew on STS-66, STS-82 and STS-97.

Cumulative hours of space flight are more than 762.

Cumulative EVA time is more than 33 hours.

**THOMAS, Andrew S. W.**, Civilian

Mission Specialist.

Born December 18, 1951, in Adelaide, Australia.

Bachelor of engineering and Doctor of Philosophy in mechanical engineering from the University of Adelaide (South Australia).

Flew on STS-77, STS-89/Mir, Mir/STS-91 and STS-102.

Cumulative days of space flight are more than 163.

Cumulative EVA time is more than 6 hours.

**VIRTS, Terry W., Jr.**, Lieutenant Colonel, U.S. Air Force

Pilot.

Born December 1967, in Baltimore, Maryland.

Bachelor of Science in mathematics from the U.S. Air Force Academy; Master of

Aeronautical Science in aeronautics from Embry-Riddle Aeronautical University.

**WALHEIM, Rex J.**, Lieutenant Colonel, U.S. Air Force

Mission Specialist.

Born October 10, 1962, in Redwood City, California. Hometown, San Carlos, California.

Bachelor of Science in mechanical engineering from the University of California-Berkeley and Master of Science in industrial engineering from the University of Houston.

Flew on STS-110.

Cumulative hours of space flight are more than 259.

Cumulative EVA time is more than 14 hours.

**WHEELLOCK, Douglas H.**, Lieutenant Commander, U.S. Army

Mission Specialist.

Born May 5, 1960, in Binghamton, New York. Hometown, Windsor, New York.

Bachelor of Science in applied science from the U.S. Military Academy; Master of Science in aerospace engineering from the Georgia Institute of Technology.



## CURRENT U.S. ASTRONAUTS

**WILCUTT, Terrence W.**, Colonel, U.S. Marine Corps (Retired)

Pilot.

Born October 31, 1949, in Russellville, Kentucky. Hometown, Louisville, Kentucky.

Bachelor of Arts in math from Western Kentucky University.

Flew on STS-68, STS-79, STS-89, and STS-106.

Cumulative hours of space flight are more than 1,007.

**WILLIAMS, Jeffrey N.**, Colonel, U.S. Army

Mission Specialist.

Born January 18, 1958, in Superior, Wisconsin. Hometown, Winter, Wisconsin.

Bachelor of Science in applied sciences/engineering from the U.S. Military Academy;

Master of Science in aeronautical engineering and degree of aeronautical engineer from the U.S. Naval Postgraduate School; Master of Arts degree in National security and strategic studies from the U.S. Naval War College.

Flew on STS-101.

Cumulative hours of space flight are more than 236.

Cumulative EVA time is more than 6 hours.

**WILLIAMS, Sunita L.**, Commander, U.S. Navy

Mission Specialist.

Born September 19, 1965, in Euclid, Ohio. Hometown, Needham, Massachusetts.

Bachelor of Science in physical science from the U.S. Naval Academy; Master of Science in engineering management from the Florida Institute of Technology.

**WILMORE, Barry E.**, Commander, U.S. Navy

Pilot.

Born December 29, 1962, in Murfreesboro, Tennessee.

Bachelor and Master of Science in electrical engineering from Tennessee Technical University; Master of Science from the University of Tennessee-Knoxville.

**WILSON, Stephanie D.**, Civilian

Mission Specialist.

Born September 27, 1966, in Boston, Massachusetts. Hometown, Pittsfield, Massachusetts.

Bachelor of Science in engineering science from Harvard University and a Master of Science in aerospace engineering from the University of Texas.

**WOLF, David A.**, Civilian

Mission Specialist.

Born August 23, 1956, in Indianapolis, Indiana.

Bachelor of Science in electrical engineering from Purdue University; Doctor of Medicine from Indiana University.

Flew on STS-58, STS-86/Mir, Mir/STS-89 and STS-112.

Cumulative days of space flight are more than 143.

Cumulative EVA time is more than 23 hours.

**WOODWARD, Neil W., III**, Commander, U.S. Navy

Mission Specialist.

Born July 26, 1962, in Chicago, Illinois.

Bachelor of Science in physics from the Massachusetts Institute of Technology; Master of Arts in physics from the University of Texas-Austin and a Masters in Engineering Management, The George Washington University, Washington D.C.

**ZAMKA, George D.**, Lieutenant Colonel, U.S. Marine Corps

Pilot.

Born June 29, 1962, in Jersey City, New Jersey. Hometown, Rochester, Michigan.

Bachelor of Science in mathematics from the U.S. Naval Academy; Master of Science in engineering management from the Florida Institute of Technology.

## INTERNATIONAL ASTRONAUTS CURRENTLY IN THE U.S. SPACE PROGRAM

**DOI, Takao**, Japan Aerospace Exploration Agency

Mission Specialist.

Born September 18, 1954 in Tokyo, Japan.

Bachelor and Master of Engineering from the University of Tokyo; Doctor of Philosophy in aerospace engineering from the University of Tokyo.

Flew on STS-87.

Cumulative hours of space flight are more than 376.

Cumulative EVA time is more than 12 hours.

**EYHARTS, Léopold**, European Space Agency

Mission Specialist.

Born April 28, 1957, in Biarritz, France.

Graduated as engineer from the Salon de Provence Air Force Academy.

**FUGLESANG, Christer**, European Space Agency

Mission Specialist.

Born March 18, 1957, in Stockholm, Sweden.

Master of Science in engineering physics from the Royal Institute of Technology (KTH), Stockholm, Sweden; Doctor of Philosophy in experimental particle physics from the University of Stockholm.

**FURUKAWA, Satoshi**, Japan Aerospace Exploration Agency

Mission Specialist Candidate.

Born 1964 in Yokohama, Kanagawa, Japan.

Doctorate in Medicine, and Ph.D. in medical science from the University of Tokyo, Japan.

**HADFIELD, Chris A.**, Canadian Space Agency, Colonel, Canadian Air Force

Mission Specialist.

Born August 29, 1959, in Sarnia, Ontario, Canada.

Bachelor degree in mechanical engineering, Royal Military College, Kingston, Ontario, Canada; post-graduate research at University of Waterloo, Ontario, Canada; Master of Science in aviation systems, University of Tennessee.

Flew on STS-74 and STS-100.

Cumulative hours of space flight are more than 481.

Cumulative EVA time is more than 14 hours.

**HOSHIDE, Akihiko** Japan Aerospace Exploration Agency

Mission Specialist Candidate.

Born 1968 in Tokyo, Japan.

Bachelor of Science in mechanical engineering from Keio University and Master of Science in aerospace engineering from University of Houston Cullen College of engineering.

**MACLEAN, Steve**, Canadian Space Agency

Mission Specialist.

Born December 14, 1954, in Ottawa, Ontario, Canada.

Bachelor of Science in honors physics, and Doctor of Philosophy in physics from York University, Toronto, Canada.

Flew as a payload specialist on STS-52.

Cumulative hours of space flight are more than 236.

**NESPOLI, Paolo**, European Space Agency

Mission Specialist.

Born April 6, 1957, in Milan, Italy. Hometown, Verano Brianza, Milan, Italy.

Bachelor of Science in aerospace engineering and Master of Science in aeronautics and astronautics from the Polytechnic University of New York. Laurea in Ingegneria Meccanica, Università degli Studi di Firenze.

## INTERNATIONAL ASTRONAUTS CURRENTLY IN THE U.S. SPACE PROGRAM

**NICOLLIER, Claude**, European Space Agency

Mission Specialist.

Born September 2, 1944, in Vevey, Switzerland.

Bachelor of Science in physics from the University of Lausanne, Switzerland; Master of Science in astrophysics from University of Geneva.

Flew on STS-46, STS-61, STS-75 and STS-103.

Cumulative hours of space flight are more than 1,000.

Cumulative EVA time is more than 8 hours.

**NOGUCHI, Soichi**, Japan Aerospace Exploration Agency

Mission Specialist.

Born April 15, 1965, in Yokohama, Japan. Hometown, Chigasaki, Kanagawa, Japan.

Bachelor and Master of aeronautical engineering from the University of Tokyo, Japan.

**PAYETTE, Julie**, Canadian Space Agency

Mission Specialist.

Born October 20, 1963 in Montreal, Quebec, Canada.

International baccalaureate, United World International College of the Atlantic, South Wales, UK; Bachelor of electrical engineering from McGill University, Masters of Applied Science in computer engineering from the University of Toronto.

Flew on STS-96.

Cumulative hours of space flight are more than 235.

**PONTES, Marcos**, Brazilian Space Agency, Major, Brazil Air Force

Mission Specialist.

Born March 11, 1963 in Bauru, Brazil.

Bachelor of Science degree in aeronautical engineering from the Instituto Tecnológico de Aeronautica University, and Master of Science in systems engineering from the Navy Post Graduate School in Monterey, California.

**SCHLEGEL, Hans**, European Space Agency

Mission Specialist.

Born August 3, 1951, in Überlingen, Germany. Hometown, Aachen, Germany.

Masters degree in Physics from Aachen University.

Flew as a payload specialist on STS-55.

Cumulative hours of space flight are more than 222.

**THIRSK, Robert B.**, Canadian Space Agency

Mission Specialist.

Born August 17, 1953, in New Westminster, British Columbia.

Received a Bachelor of Science degree in mechanical engineering from the University of Calgary, a Master of Science degree in mechanical engineering from the Massachusetts Institute of Technology (MIT) in 1978, a Doctorate Of Medicine from McGill University, and a Master of Business Administration from the MIT Sloan School of Management.

Flew on STS-78.

Cumulative hours of space flight are more than 405.

**VITTORI, Roberto**, European Space Agency

Mission Specialist.

Born October 15, 1964, in Viterbo, Italy.

Graduate of the Italian Air force Academy. Currently attending the IV year of a Physics degree at the University of Perugia.

**WAKATA, Koichi**, Japan Aerospace Exploration Agency

Mission Specialist.

Born August 1, 1963, in Omiya, Saitama, Japan.

Bachelor of Science in aeronautical engineering and Master of Science in applied mechanics and Doctor of Philosophy in aerospace engineering from Kyushu University.

Flew on STS-72 and STS-92.

Cumulative hours of space flight are more than 523.

## **INTERNATIONAL ASTRONAUTS CURRENTLY IN THE U.S. SPACE PROGRAM**

**WILLIAMS, Dafydd (Dave) Rhys**, Canadian Space Agency

Mission Specialist.

Born May 16, 1954 in Saskatoon, Saskatchewan, Canada.

Bachelor of Science in biology, Master of Science in physiology, Doctor of Medicine and

Master of Surgery from McGill University, Montreal.

Flew on STS-90.

Cumulative hours of space flight are more than 381.

**YAMAZAKI, Naoko**, Japan Aerospace Exploration Agency

Mission Specialist Candidate.

Born in 1970 in Matsudo, Chiba Prefecture, Japan.

Bachelor and Master of Science in aerospace engineering from the University of Tokyo, Japan.

**RUSSIAN COSMONAUTS CURRENTLY IN THE U.S SPACE PROGRAM**  
**(Trained by the Russian Space Agency)**  
**Flight times include non-U.S. flight information from Cosmonaut bio sheets**

**BUDARIN, Nikolai**, Russian Space Agency

Born April 29, 1953, at Kirya Settlement, Chuvashia, Russia.  
Graduated from the S. Ordzhonikidze Moscow Aviation Institute with a mechanical engineering diploma.  
Flew on STS-71 (Mir crew upload.) and STS-113.  
Cumulative days of space flight are more than 161.

**DEZHUROV, Vladimir**, Russian Space Agency

Born June 30, 1962, at Yavas Settlement, Zubovo-Polyansk district, Mordovia, Russia.  
Graduated from the S.I. Gritsevits Khalikov Higher Military Aviation School with a flight-engineering diploma.  
Flew on STS-71 (Mir crew download.) and STS-105(up)/Exp 3/STS-108(down).  
Cumulative days of space flight are more than 232.

**GIDZENKO, Yuri**, Russian Space Agency

Born March 26, 1962, in Elanets, Elanetsky district, Nikolayev region.  
Graduated from Kharkov Military Aviation College of Pilots and from Moscow State University of land surveying and cartography.  
Flew on Exp 1/STS-102(down).  
Cumulative days of U.S. space flight are more than 320.

**KORZUN, Valery**, Russian Space Agency

Born March 5, 1953, in Krasny Sulin.  
Graduate of the Kachin Military Aviation College; Commander Department of the Gagarin Air Force Academy.  
Flew on STS-111(up)/Exp 5/STS-113(down).  
Cumulative days of U.S. space flight are more than 381.  
Cumulative EVA time is more than 9 hours.

**KALERI, Alexander**, Russian Space Agency

Born May 13, 1956, in Yurmala, Latvia.  
Graduate of the Moscow Institute of Mechanical Physics.  
Flew on Exp 8.  
Cumulative days of space flight are more than 610.  
Flight time includes 5 EVAs.

**KRIKALEV, Sergei**, Russian Space Agency

Born August 27, 1958, in Leningrad (St. Petersburg,) Russia.  
Received a mechanical engineering degree from the Leningrad (St. Petersburg) Mechanical Institute.  
Flew on STS-60, STS-88 and Exp 1/STS-102(down).  
Cumulative space flight time is more than 1 year, 5 months and 10 days.  
Flight time includes 7 EVAs.

**LONCHAKOV, Yuri**, Russian Space Agency

Born March 4, 1965, in Balkhash, Dzhezkazkansk Region.  
Graduated from Oresburg Air Force Pilot School as a pilot-engineer and Zhukovski Air Force Academy as pilot-engineer-researcher.  
Flew on STS-100.  
Cumulative hours of space flight are more than 283.

**MALENCHENKO, Yuri**, Russian Space Agency

Born December 22, 1961, in Svetlovodsk, Kirovograd region, Ukraine.  
Graduated from S.I. Gritsevets Kharkov Higher Military Aviation School with a pilot-engineer's diploma; graduated from the Zhukovsky Air Force Engineering Academy.  
Flew on STS-106 and Exp 7.  
Cumulative days of space flight are more than 321.  
Cumulative EVA time is more than 18 hours.

**RUSSIAN COSMONAUTS CURRENTLY IN THE U.S SPACE PROGRAM**  
**(Trained by the Russian Space Agency)**  
**Flight times include non-U.S. flight information from Cosmonaut bio sheets**

**MORUKOV, Boris**, Russian Space Agency

Born October 1, 1950, in Moscow, Russia.

Doctor of Medicine from the 2nd Moscow Medical Institute (now Moscow Medical University;) Doctor of Philosophy in space, aviation and naval medicine from the Institute for Biomedical Problems.

Flew on STS-106.

Cumulative days of space flight are more than 11.

**ONUFRIENKO, Yuri**, Russian Space Agency

Born February 6, 1961, in Ryasnoe, Zolochiv district, Kharkov region, Ukraine.

Graduated from the V.M. Komarov Eisk Higher Military Aviation School for Pilots with a pilot-engineer's diploma; graduated from Moscow State University with a degree in cartography.

Flew on STS-108(up)/Exp 4/STS-111(down).

Cumulative days of space flight are more than 388.

Cumulative EVA time is more than 12 hours.

**PADALKA, Gennady**, Russian Space Agency

Born June 21, 1958, in Krasnodar, Russia.

Graduated from Eisk Military Aviation College in 1979; in 1994 he left UNESCO International Center of Instruction Systems, where he was an engineer-ecologist.

**POLESCHUK, Alexander**, Russian Space Agency

Born October 30, 1953, in Cheremkhovo, Irkutsk region, Russia.

Graduated from S. Ordzhonikidze Moscow Aviation Institute with a mechanical engineering diploma.

**RYUMIN, Valery**, Russian Space Agency

Born August 16, 1939, in the city of Komsomolsk-on-Amur in the Russian Far East.

Graduated from the Kaliningrad Mechanical Engineering Technical College with the specialty "Cold Working of Metal;" graduated from the Department of Electronics and Computing Technology of the Moscow Forestry Engineering Institute with the specialty "Spacecraft Control Systems."

Flew on STS-91.

Cumulative days of space flight are more than 371.

**SHARIPOV, Salizhan**, Russian Space Agency

Born August 24, 1964, in Uzgen, Oshsk region, Kirghizia.

Graduated from the Air Force Pilot School; graduated from Moscow State University with a degree in cartography.

Flew on STS-89.

Cumulative hours of space flight are more than 211.

Cumulative EVA time is more than 5 hours.

**SOLOVYEV, Anatoly**, Russian Space Agency

Born January 16, 1948, in Riga.

Graduated from the Lenin Komsomol Chernigov Higher Military Aviation School.

Flew on STS-71 (Mir crew upload.)

Cumulative days of space flight are more than 188.

Cumulative EVA time is more than 5 hours.

**STREKALOV, Gennady**, Russian Space Agency

Born October 26, 1940, in the Mytishohi Moscow region, Russia.

Graduated from N.E. Bauman Moscow Higher Technical School with an engineer's diploma.

Flew on STS-71 (Mir crew download.)

Cumulative days of space flight are more than 153.

**RUSSIAN COSMONAUTS CURRENTLY IN THE U.S SPACE PROGRAM**  
**(Trained by the Russian Space Agency)**  
**Flight times include non-U.S. flight information from Cosmonaut bio sheets**

**TITOV, Vladimir**, Russian Space Agency

Born January 1, 1947, in Sretensk, in the Chita Region of Russia.  
Graduated from the Higher Air Force College in Chernigov in the Ukraine, and the Yuri Gagarin Air Force Academy.  
Flew on STS-63 and STS-86.  
Cumulative days of U.S. space flight are more than 387.  
Cumulative EVA time is more than 18 hours.

**TOKAREV, Valery**, Russian Space Agency

Born October 29, 1952, at the town of Kap-Yar, Astrakhan region, Russia.  
Master's degree in state administration from the National Economy Academy affiliated with the Russian Federation Government in Moscow.  
Flew on STS-96.  
Cumulative hours of space flight are more than 235.

**TRESCHEV, Sergei**, Russian Space Agency

Born August 18, 1958 in Volynsky District, Lipetsk Region (Russia).  
Graduated from the Moscow Energy Institute.  
Flew on STS-111(up)/Exp 5/STS-113(down).  
Cumulative days of U.S. space flight are more than 184.  
Cumulative EVA time is more than 5 hours.

**TYURIN, Mikhail**, Russian Space Agency

Born March 2, 1960, in Kolomna, Russia.  
Graduated from the Moscow Aviation Institute with a degree in engineering and a specialization in creating mathematical models related to mechanical flight. He is currently doing graduate work in his field of research.  
Flew on STS-105(up)/Exp 3/STS-108(down).  
Cumulative days of space flight are more than 129.

**USACHEV, Yury**, Russian Space Agency

Born October 9, 1957, in Donetsk, Rostov on Don Region, Russia.  
Graduated from the Moscow Aviation Institute with an engineering diploma.  
Flew on STS-101 and STS-102(up)/Exp 2/STS-105(down).  
Cumulative days of space flight are more than 670.  
Space flights include 6 EVAs.

**YURCHIKHIN, Fyodor**, Russian Space Agency

Born January 3, 1959, in Batumi, Autonomous Republic of Ajara in Georgia (Russia).  
Attended the Moscow Aviation Institute named after Sergey Ordzhonikidze and is qualified as a mechanical engineer, specializing in airspace vehicles. Received a PhD in economics from the Moscow Service State University.  
Flew on STS-112.  
Cumulative hours of space flight are more than 259.

## U.S. ASTRONAUTS IN NASA MANAGEMENT POSITIONS

**ASHBY, Jeffrey S.,** Captain, U.S. Navy (Retired)

Born 1954, in Dallas, Texas. Hometown, Evergreen, Colorado.  
Bachelor of Science in mechanical engineering from University of Idaho; Master of Science in aviation systems from University of Tennessee, Knoxville. Graduate of the Naval Test Pilot School, and the Naval Fighter Weapons School (Top Gun).  
Flew on STS-93, STS-100 and STS-112.  
Cumulative hours of space flight are more than 660.

**BAKER, Ellen S.,** Civilian

Born April 27, 1953, in Fayetteville, North Carolina. Hometown, New York, New York.  
Bachelor of Arts in geology from State University of New York at Buffalo; Masters in public health from the University of Texas School of Public Health. Doctor of Medicine from Cornell University.  
Flew on STS-34, STS-50 and STS-71.  
Cumulative hours of space flight are more than 686.

**BAKER, Michael A.,** Captain, U.S. Navy (Retired)

Born October 27, 1953, in Memphis, Tennessee. Hometown, Lemoore, California.  
Bachelor of Science in aerospace engineering from the University of Texas.  
Flew on STS-43, STS-52, STS-68 and STS-81.  
Cumulative hours of space flight are more than 965.

**BOWERSOX, Kenneth D.,** Captain, U.S. Navy

Born November 14, 1956, in Portsmouth, Virginia. Hometown, Bedford, Indiana.  
Bachelor of Science in aerospace engineering from the U.S. Naval Academy; Master of Science in mechanical engineering from Columbia University.  
Flew on STS-50, STS-61, STS-73, STS-82 and STS-113/Exp 6.  
Cumulative days of space flight are more than 211.  
Cumulative EVA time is more than 13 hours.

**BRAND, Vance D.,** Civilian

Born May 9, 1931, in Longmont, Colorado.  
Bachelor of Science in business and aeronautical engineering from the University of Colorado; Master of Science in business administration from the University of California at Los Angeles.  
Flew on Apollo-Soyuz Test Project, STS-5, STS 41-B, and STS-35.  
Cumulative hours of space flight are more than 746.

**BRIDGES, Roy D., Jr.,** Major General, U.S. Air Force (Retired)

Born July 19, 1943, in Atlanta, Georgia.  
Bachelor of Science in engineering science from the U.S. Air Force Academy; Master of Science in astronautics from Purdue University.  
Flew on STS 51-F.  
Cumulative hours of space flight are more than 190.

**BURSCH, Daniel W.,** Captain, U.S. Navy

Born July 25, 1957, in Bristol, Pennsylvania. Hometown, Vestal, New York.  
Bachelor of Science in physics from the U.S. Naval Academy; Master of Science in engineering science from the Naval Postgraduate School.  
Flew on STS-51, STS-68, STS-77, STS-108(up)/Exp 4/STS-111(down).  
Cumulative days of space flight are more than 227.  
Cumulative EVA time is more than 11 hours.

**CABANA, Robert D.,** Colonel, U.S. Marine Corps (Retired)

Born January 23, 1949, in Minneapolis, Minnesota.  
Bachelor of Science in mathematics from the U.S. Naval Academy.  
Flew on STS-41, STS-53, STS-65 and STS-88.  
Cumulative hours of space flight are more than 1,010.



## U.S. ASTRONAUTS IN NASA MANAGEMENT POSITIONS

**CAMERON, Kenneth D.**, Colonel, U.S. Marine Corps (Retired)

Born November 29, 1949, in Cleveland, Ohio.

Bachelor and Master of Science in aeronautics and astronautics from the Massachusetts Institute of Technology.

Flew on STS-37, STS-56 and STS-74.

Cumulative hours of space flight are more than 561.

**CASPER, John H.**, Colonel, U.S. Air Force (Retired)

Born July 9, 1943, in Greenville, South Carolina. Hometown, Gainesville, Georgia.

Bachelor of Science in engineering science from the U.S. Air Force Academy; Master of Science in astronautics from Purdue University. Graduate of the Air Force Air War College.

Flew on STS-36, STS-54, STS-62 and STS-77.

Cumulative hours of space flight are more than 825.

**CHANG-DIAZ, Franklin R.**, Civilian

Born April 5, 1950, in San Jose, Costa Rica.

Bachelor of Science in mechanical engineering from the University of Connecticut; Doctor of Philosophy in applied plasma physics from the Massachusetts Institute of Technology.

Flew on STS 61-C, STS-34, STS-46, STS-60, STS-75, STS-91 and STS-111.

Cumulative hours of space flight are more than 1,601.

Cumulative EVA time is more than 19 hours.

**CLEAVE, Mary L.**, Civilian

Born February 5, 1947, in Southampton, New York.

Bachelor of Science in biological sciences from Colorado State University; Master of Science in microbial ecology and Doctor of Philosophy in civil and environmental engineering from Utah State University.

Flew on STS 61-B and STS-30.

Cumulative days of space flight are more than 10.

**COCKRELL, Kenneth D.**, Civilian, U.S. Naval Reserve (Retired)

Born April 9, 1950, in Austin, Texas. Hometown, Rockdale, Texas.

Bachelor of Science in mechanical engineering from the University of Texas; Master of Science in aeronautical systems from the University of West Florida.

Flew on STS-56, STS-69, STS-80, STS-98 and STS-111.

Cumulative hours of space flight are more than 1,560.

**CURRIE, Nancy J. (Sherlock)**, Lieutenant Colonel, U.S. Army

Born December 29, 1958, in Wilmington, Delaware. Hometown, Troy, Ohio.

Bachelor of Arts in biological science from Ohio State; Master of Science in safety engineering from the University of Southern California; Doctor of Philosophy in industrial engineering from the University of Houston.

Flew on STS-57, STS-70, STS-88 and STS-109.

Cumulative hours of space flight are more than 999.

**DAVIS, N. Jan**, Civilian

Born November 1, 1953, in Cocoa Beach, Florida. Hometown, Huntsville, Alabama.

Bachelor of Science in applied biology from the Georgia Institute of Technology; Bachelor of Science in mechanical engineering from Auburn University; Master of Science and Doctor of Philosophy in mechanical engineering from the University of Alabama in Huntsville.

Flew on STS-47, STS-60 and STS-85.

Cumulative hours of space flight are more than 673.

## U.S. ASTRONAUTS IN NASA MANAGEMENT POSITIONS

### **DUNBAR, Bonnie J.**, Civilian

Born March 3, 1949, in Sunnyside, Washington.  
Bachelor and Master of Science in ceramic engineering from University of Washington;  
Doctor of Philosophy in mechanical/biomedical engineering from the University of Houston.  
Flew on STS 61-A, STS-32, STS-50, STS-71 and STS-89.  
Cumulative hours of space flight are more than 1,208.

### **FULLERTON, Charles G.**, Colonel, U.S. Air Force (Retired)

Born October 11, 1936, in Rochester, New York.  
Bachelor and Master of Science in mechanical engineering from the California Institute of Technology.  
Flew Space Shuttle approach and landing tests 1, 3 and 5; STS-3 and STS 51-F.  
Cumulative hours of space flight are more than 382.

### **GODWIN, Linda M.**, Civilian

Born July 2, 1952, in Cape Girardeau, Missouri. Hometown, Jackson, Missouri.  
Bachelor of Science in mathematics and physics from Southeast Missouri State; Master of Science and Doctor of Philosophy in physics from the University of Missouri.  
Flew on STS-37, STS-59, STS-76 and STS-108.  
Cumulative days of space flight are more than 38.  
Cumulative EVA time is more than 10 hours.

### **GREGORY, Frederick D.**, Colonel, U.S. Air Force (Retired)

Born January 7, 1941, in Washington, D.C.  
Bachelor of Science from the U.S. Air Force Academy; Master of Science in information systems from George Washington University.  
Flew on STS 51-B, STS-33, and STS-44.  
Cumulative hours of space flight are more than 455.

### **GRUNSFELD, John M.**, Civilian

Born October 10, 1958, in Chicago, Illinois.  
Bachelor of Science in physics from the Massachusetts Institute of Technology; Master of Science and Doctor of Philosophy in physics from the University of Chicago.  
Flew on STS-67, STS-81, STS-103 and STS-109.  
Cumulative days of space flight are more than 45.  
Cumulative EVA time is more than 37 hours.

### **HAWLEY, Steven A.**, Civilian

Born December 12, 1951, in Ottawa, Kansas. Hometown, Salina, Kansas.  
Bachelor of Arts in physics and astronomy from the University of Kansas; Doctor of Philosophy in astronomy and astrophysics from the University of California at Santa Cruz.  
Flew on STS 41-D, STS 61-C, STS-31, STS-82 and STS-93.  
Cumulative hours of space flight are more than 770.

### **LEESTMA, David C.**, Captain, U.S. Navy (Retired)

Born May 6, 1949, in Muskegon, Michigan.  
Bachelor of Science in aeronautical engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.  
Flew on STS 41-G, STS-28, and STS-45.  
Cumulative hours of space flight are more than 532.

### **LOCKHART, Paul S.**, Lieutenant Colonel, U.S. Air Force

Born April 28, 1956, in Amarillo, Texas.  
Bachelor of Arts in mathematics from Texas Tech University and a Master of Science in aerospace engineering from the University of Texas.  
Flew on STS-111 and STS-113.  
Cumulative days of space flight are more than 26.

## U.S. ASTRONAUTS IN NASA MANAGEMENT POSITIONS

### **LOPEZ-ALEGRIA, Michael E.**, Captain, U.S. Navy

Born May 30, 1958, in Madrid, Spain. Hometowns, Madrid, Spain, and Mission Viejo, California.

Bachelor of Science in systems engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Graduate of Harvard University's Kennedy School of Government Program for Senior Executives in National and International Security.

Flew on STS-73, STS-92 and STS-113.

Cumulative days of space flight are more than 42.

Cumulative EVA time is more than 33 hours.

### **LORIA, Christopher J.**, Lieutenant Colonel, U.S. Marine Corps

Born July 9, 1960, in Newton, Massachusetts. Hometown, League City, Texas.

Bachelor of Science in general engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from Florida Institute of Technology; NASA Harvard Fellow.

### **LUCID, Shannon W.**, Civilian

Born January 14, 1943, in Shanghai, China. Hometown, Bethany, Oklahoma.

Bachelor of Science in chemistry; Master of Science and Doctor of Philosophy in biochemistry from University of Oklahoma.

Flew on STS 51-G, STS-34, STS-43, STS-58, STS-76/Mir and Mir/STS-79.

Cumulative hours of space flight are more than 5,354.

### **MORIN, Lee M.**, Captain, U.S. Navy

Born September 9, 1952, in Manchester, New Hampshire.

Bachelor of Science in mathematical/electrical science from the University of New Hampshire; Master of Science in biochemistry, Doctor of Medicine and microbiology degrees from New York University, and Master of public health from the University of Alabama at Birmingham.

Flew on STS-110.

Cumulative hours of space flight are more than 259.

Cumulative EVA time is more than 14 hours.

### **NAGEL, Steven R.**, Colonel, U.S. Air Force (Retired)

Born October 27, 1946, in Canton, Illinois.

Bachelor of Science in aeronautical and astronautical engineering from the University of Illinois; Master of Science in mechanical engineering from California State University - Fresno.

Flew on STS 51-G, STS 61-A, STS-37, and STS-55.

Cumulative hours of space flight are more than 723.

### **NEWMAN, James H.**, Civilian

Born October 16, 1956, in Trust Territory of the Pacific Islands. Hometown, San Diego, California.

Bachelor of Arts in physics from Dartmouth College; Master of Arts and a Doctor of Philosophy in physics from Rice University.

Flew on STS-51, STS-69, STS-88 and STS-109.

Cumulative days of space flight are more than 43.

Cumulative EVA time is more than 43 hours.

### **OCHOA, Ellen**, Civilian

Born May 10, 1958, in Los Angeles, California. Hometown, La Mesa, California.

Bachelor of Science in physics from San Diego State University; Master of Science and Doctor of Philosophy in electrical engineering from Stanford University.

Flew on STS-56, STS-66, STS-96 and STS-110.

Cumulative hours of space flight are more than 978.

## U.S. ASTRONAUTS IN NASA MANAGEMENT POSITIONS

**O'CONNOR, Bryan D.**, Colonel, U.S. Marine Corps (Retired)

Born September 6, 1946, in Orange, California.

Bachelor of Science in engineering from the U.S. Naval Academy; Master of Science in aeronautical systems from West Florida University. Graduated from the Naval Safety School at the Naval Postgraduate School, Monterey, California and from the Naval Test Pilot School, Naval Air Test Center, Patuxent River, Maryland.

Flew on STS 61-B and STS-40.

Cumulative hours of space flight are more than 383.

**PARKER, Robert A. R.**, Civilian

Born December 14, 1936, in New York City, New York.

Bachelor of Arts in astronomy and physics from Amherst College; Doctor of Philosophy in astronomy from the California Institute of Technology.

Flew on STS-9 and STS-35.

Cumulative hours of space flight are more than 462.

**PRECOURT, Charles J.**, Colonel, U.S. Air Force (Retired)

Born June 29, 1955, in Waltham, Massachusetts. Hometown, Hudson, Massachusetts.

Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Science in engineering management from Golden Gate University; Master of Arts in national security affairs and strategic studies from the United States Naval War College.

Flew on STS-55, STS-71, STS-84 and STS-91.

Cumulative hours of space flight are more than 932.

**READDY, William F.**, Civilian Captain, U.S. Naval Reserve (Retired)

Born January 24, 1952, in Quonset Point, Rhode Island. Hometown, McLean, Virginia.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy.

Flew on STS-42, STS-51 and STS-79.

Cumulative hours of space flight are more than 672.

**ROMINGER, Kent V.**, Captain, U.S. Navy

Born August 7, 1956, in Del Norte, Colorado.

Bachelor of Science in civil engineering from Colorado State University; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-73, STS-80, STS-85, STS-96 and STS-100.

Cumulative hours of space flight are more than 1,608.

**ROSS, Jerry L.**, Colonel, U.S. Air Force (Retired)

Born January 20, 1948, in Crown Point, Indiana.

Bachelor and Master of Science in mechanical engineering from Purdue University.

Flew on STS 61-B, STS-27, STS-37, STS-55, STS-74, STS-88 and STS-110.

Cumulative hours of space flight are more than 1,393.

Cumulative EVA time is more than 58 hours.

**RUNCO, Mario, Jr.**, Lieutenant Commander, U.S. Navy (Retired)

Born January 26, 1952, in Bronx, New York. Hometown, Bronx, New York.

Bachelor of Science in meteorology and physical oceanography from City College of New York; Master of Science in meteorology from Rutgers University; Doctor of Philosophy in earth science from the City College of New York.

Flew on STS-44, STS-54 and STS-77.

Cumulative hours of space flight are more than 551.

Cumulative EVA time is more than 4 hours.

**SMITH, Steven L.**, Civilian

Born December 30, 1958, in Phoenix, Arizona. Hometown, San Jose, California.

Bachelor and Master of Science in electrical engineering and Masters in business administration from Stanford University.

Flew on STS-68, STS-82, STS-103 and STS-110.

Cumulative hours of space flight are more than 959.

Cumulative EVA time is more than 49 hours.

## U.S. ASTRONAUTS IN NASA MANAGEMENT POSITIONS

### **THOMAS, Donald A.**, Civilian

Born May 6, 1955, in Cleveland, Ohio.  
Bachelor of Science in physics from Case Western Reserve University; Master of Science and Doctor of Philosophy in materials science from Cornell University.  
Flew on STS-65, STS-70, STS-83 and STS-94.  
Cumulative hours of space flight are more than 1,040.

### **VOSS, Janice E.**, Civilian

Born October 8, 1956, in South Bend, Indiana. Hometown, Rockford, Illinois.  
Bachelor of Science in engineering science from Purdue University; Master of Science in electrical engineering and Doctor of Philosophy in aeronautics and astronautics from the Massachusetts Institute of Technology.  
Flew on STS-57, STS-63, STS-83, STS-94 and STS-99.  
Cumulative days of space flight are more than 49.

### **WALZ, Carl E.**, Colonel, U.S. Air Force

Born September 6, 1955, in Cleveland, Ohio.  
Bachelor of Science in physics from Kent State University; Master of Science in solid-state physics from John Carroll University.  
Flew on STS-51, STS-65, STS-79 and STS-108(up)/Exp 4/STS-111(down).  
Cumulative days of space flight are more than 231.  
Cumulative EVA time is more than 18 hours.

### **WETHERBEE, James D.**, Captain, U.S. Navy (Retired)

Born November 27, 1952, in Flushing, New York. Hometown, Huntington Station, New York.  
Bachelor of Science in aerospace engineering from the University of Notre Dame.  
Flew on STS-32, STS-52, STS-63, STS-86, STS-102 and STS-113.  
Cumulative hours of space flight are more than 1,592.

### **WHITSON, Peggy A.**, Civilian

Born February 9, 1960, in Mt. Ayr, Iowa.  
Bachelor of Science in biology/chemistry from Iowa Wesleyan College and Doctor of Biochemistry from Rice University.  
Flew on STS-111(up)/Exp 5/STS-113(down).  
Cumulative days of space flight are more than 184.  
Cumulative EVA time is more than 4 hours.

### **YOUNG, John W.**, Captain, U.S. Navy (Retired)

Born September 24, 1930, in San Francisco, California.  
Bachelor of Science in aeronautical engineering from Georgia Institute of Technology.  
Flew on Gemini 3, Gemini 10, Apollo 10, Apollo 16, STS-1 and STS-9.  
Cumulative hours of space flight are more than 835.  
Cumulative EVA time is more than 20 hours (on the moon.)

## 2004 U.S. ASTRONAUTS CANDIDATE CLASS

**ACABA, Joseph M.,** Civilian

Educator Mission Specialist.  
Born May 17, 1967 in Inglewood, California.  
Bachelor of Science in geology from the University of California-Santa Barbara.

**ARNOLD, Richard R., II,** Civilian

Educator Mission Specialist.  
Born November 26, 1963 - Cheverly, Maryland.  
Bachelor of Science in accounting from Frostburg State University; Master of Science in marine, estuarine and environmental science from the University of Maryland.

**BRESNIK, Randolph J.,** Major, USMC

Pilot.  
Born September 11, 1967 in Fort Knox, Kentucky.  
Bachelor of Science in mathematics from The Citadel; Master of Science in aviation systems from the University of Tennessee-Knoxville.

**CASSIDY, Christopher J.,** Lieutenant Commander, U.S. Navy

Mission Specialist.  
Born January 4, 1970 in Salem, Massachusetts.  
Bachelor of Science in mathematics from U.S. Naval Academy; Master of Science in Ocean Engineering from the Massachusetts Institute of Technology.

**DUTTON, James P., Jr.,** Major, U.S. Air Force

Pilot.  
Born November 20, 1968 in Eugene, Oregon.  
Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Science in Aeronautics & Astronautics from the University of Washington.

**HERNANDEZ, Jose M.,** Civilian

Mission Specialist.  
Born August 7, 1962 in French Camp, California.  
Bachelor of Science in electrical engineering from the University of the Pacific; Master of Science in electrical & computer engineering from the University of California-Santa Barbara.

**KIMBROUGH, Robert S.,** Major, U.S. Army

Mission Specialist.  
Born June 4, 1967 in Killeen, Texas.  
Bachelor of Science in aerospace engineering from the U.S. Military Academy; Master of Science in operations research from the Georgia Institute of Technology.

**MARSHBURN, Thomas H.,** Major, U.S. Army

Mission Specialist.  
Born August 29, 1960 in Statesville, North Carolina.  
Bachelor of Science in physics, Davidson College; Masters of Science in engineering physics from the University of Virginia; Master of Medical Science from the University of Texas Medical Branch; Medical Doctor from Wake Forest University.

**METCALF-LINDENBURGER, Dorothy M.,** Civilian

Educator Mission Specialist.  
Born May 2, 1975 in Colorado Springs, Colorado.  
Bachelor of Science in geology from Whitman College.

**SATCHER, Robert L., Jr.,** Civilian

Mission Specialist.  
Born September 22, 1965 in Hampton, Virginia.  
Bachelor of Science in chemical engineering from Massachusetts Institute of Technology; Doctorate in chemical engineering from Massachusetts Institute of Technology; Medical Doctor from Harvard University.

## 2004 U.S. ASTRONAUTS CANDIDATE CLASS

**WALKER, Shannon**, Civilian

Mission Specialist.

Born June 4, 1965 - Houston, Texas.

Bachelor of Arts in physics, Master of Science in space physics and a Doctorate in space physics from Rice University.

## FORMER U.S. ASTRONAUTS

**ADAMSON, James C.**, Colonel, U.S. Army (Retired)

Born March 3, 1946, in Warsaw, New York.

Bachelor of Science in engineering from the U.S. Military Academy; Master of Science in aerospace engineering from Princeton University. Graduate of the U.S. Navy Test Pilot School.

Flew on STS-28 and STS-43.

Cumulative hours of space flight are more than 334.

**AKERS, Thomas D.**, Lieutenant Colonel, U.S. Air Force (Retired)

Born May 20, 1951, in St. Louis, Missouri. Hometown, Eminence, Missouri.

Bachelor and Master of Science in applied mathematics from the University of Missouri-Rolla.

Flew on STS-41, STS-49, STS-61 and STS-79.

Cumulative hours of space flight are more than 814.

Cumulative EVA time is more than 29 hours.

**ALDRIN, Buzz**, Colonel, U.S. Air Force (Retired)

Born January 20, 1930, in Montclair, New Jersey.

Bachelor of Science in mechanical engineering from the U.S. Military Academy; Doctor of Science in astronautics from the Massachusetts Institute of Technology.

Flew on Gemini 12 and Apollo 11.

Cumulative hours of space flight are more than 289.

Cumulative EVA time is more than 2 hours.

**ALLEN, Andrew M.**, Lieutenant Colonel, U.S. Marine Corps (Retired)

Born August 4, 1955, in Philadelphia, Pennsylvania.

Bachelor of Science in mechanical engineering from Villanova University.

Flew on STS-46, STS-62 and STS-75.

Cumulative hours of space flight are more than 904.

**ALLEN, Joseph P.**, Civilian

Born June 27, 1937, in Crawfordsville, Indiana.

Bachelor of Arts in mathematics and physics from DePauw University; Master of Science and Doctor of Philosophy in physics from Yale University.

Flew on STS-5 and STS 51-A.

Cumulative hours of space flight are more than 313.

Cumulative EVA time is more than 12 hours.

**ANDERS, William A.**, Civilian Major General, U.S. Air Force Reserve (Retired)

Born October 17, 1933, in Hong Kong.

Bachelor of Science in nuclear engineering from the U.S. Naval Academy; Master of Science in nuclear engineering from the Air Force Institute of Technology.

Flew on Apollo 8.

Cumulative hours of space flight are more than 147.

**APT, Jerome**, Civilian

Born April 28, 1949, in Springfield, Massachusetts. Hometown, Pittsburgh, Pennsylvania.

Bachelor of Arts in physics from Harvard College; Doctor of Philosophy in physics from the Massachusetts Institute of Technology.

Flew on STS-37, STS-47, STS-59 and STS-79.

Cumulative hours of space flight are more than 847.

Cumulative EVA time is more than 10 hours.

**ARMSTRONG, Neil A.**, Civilian

Born August 5, 1930, in Wapakoneta, Ohio.

Bachelor of Science in aeronautical engineering from Purdue University; Master of Science in aerospace engineering from the University of Southern California.

Flew on Gemini 8 and Apollo 11.

Cumulative hours of space flight are more than 205.

Cumulative EVA time is more than 2 hours.



## FORMER U.S. ASTRONAUTS

**BAGIAN, James P.,** Civilian

Born February 22, 1952, in Philadelphia, Pennsylvania.  
Bachelor of Science in mechanical engineering from Drexel University; Doctor of Medicine from Thomas Jefferson University.  
Flew on STS-29 and STS-40.  
Cumulative hours of space flight are more than 337.

**BEAN, Alan L.,** Captain, U.S. Navy (Retired)

Born March 15, 1932, in Wheeler, Texas.  
Bachelor of Science in aeronautical engineering from the University of Texas.  
Flew on Apollo 12 and Skylab 3.  
Cumulative hours of space flight are more than 1,671.  
Cumulative EVA time is more than 10 hours.

**BLAHA, John E.,** Colonel, U.S. Air Force (Retired)

Born August 26, 1942, in San Antonio, Texas.  
Bachelor of Science in engineering science from the U.S. Air Force Academy; Master of Science in astronautical engineering from Purdue University.  
Flew on STS-29, STS-33, STS-43, STS-58, STS-79/Mir and Mir/STS-81.  
Cumulative hours of space flight are more than 3,864.

**BLUFORD, Guion S., Jr.,** Colonel, U.S. Air Force (Retired)

Born November 22, 1942, in Philadelphia, Pennsylvania.  
Bachelor of Science in aerospace engineering from Pennsylvania State University; Master of Science and Doctor of Philosophy in aerospace engineering from the Air Force Institute of Technology; Master of Business Administration from the University of Houston-Clear Lake.  
Flew on STS-8, STS 61-A, STS-39, and STS-53.  
Cumulative hours of space flight are more than 688.

**BOBKO, Karol J.,** Colonel, U.S. Air Force (Retired)

Born December 23, 1937, in New York, New York.  
Bachelor of Science from the U.S. Air Force Academy; Master of Science in aerospace engineering from the University of Southern California.  
Flew on STS-6, STS 51-D, and STS-51-J.  
Cumulative hours of space flight are more than 386.

**BOLDEN, Charles F., Jr.,** Brigadier General, U.S. Marine Corps

Born August 19, 1946, in Columbia, South Carolina.  
Bachelor of Science in electrical science from the U.S. Naval Academy; Master of Science in systems management from the University of Southern California.  
Flew on STS-61C, STS-31, STS-45, and STS-60.  
Cumulative hours of space flight are more than 680.

**BORMAN, Frank,** Colonel, U.S. Air Force (Retired)

Born March 14, 1928, in Gary, Indiana.  
Bachelor of Science from the U.S. Military Academy; Master of Science in aeronautical engineering from the California Institute of Technology.  
Flew on Gemini 7 and Apollo 8.  
Cumulative hours of space flight are more than 477.

**BRADY, Charles E., Jr.,** Captain, U.S. Navy

Born August 12, 1951, in Pinehurst, North Carolina. Hometown, Robbins, North Carolina.  
Doctor of Medicine from Duke University.  
Flew on STS-78.  
Cumulative hours of space flight are more than 405.

## FORMER U.S. ASTRONAUTS

**BRANDENSTEIN, Daniel C.,** Captain, U.S. Navy (Retired)

Born January 17, 1943, in Watertown, Wisconsin.

Bachelor of Science in mathematics and physics from the University of Wisconsin - River Falls.

Flew on STS-8, STS 51-G, STS-32, and STS-49.

Cumulative hours of space flight are more than 788.

**BROWN, Curtis L., Jr.,** Colonel, U.S. Air Force (Retired)

Born March 11, 1956, in Elizabethtown, North Carolina.

Bachelor of Science in electrical engineering from the U.S. Air Force Academy.

Flew on STS-47, STS-66, STS-77, STS-85, STS-95 and STS-103.

Cumulative hours of space flight are more than 1,381.

**BROWN, Mark N.,** Colonel, U.S. Air Force (Retired)

Born November 18, 1951, in Valparaiso, Indiana.

Bachelor of Science in aeronautical and astronautical engineering from Purdue University;

Master of Science in astronautical engineering from the U.S. Air Force Institute of Technology.

Flew on STS-28 and STS-48.

Cumulative hours of space flight are more than 249.

**BUCHLI, James F.,** Colonel, U.S. Marine Corps (Retired)

Born June 20, 1945, in New Rockford, North Dakota. Hometown, Fargo, North Dakota.

Bachelor of Science in aeronautical engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering systems from the University of West Florida.

Flew on STS 51-C, STS 61-A, STS-29, and STS-48.

Cumulative hours of space flight are more than 490.

**BULL, John S.,** Civilian

Born September 25, 1934, in Memphis, Tennessee.

Bachelor of Science in mechanical engineering from Rice University; Master of Science and Doctor of Philosophy in aeronautical engineering from Stanford University.

**CARPENTER, M. Scott,** Commander, U.S. Navy (Retired)

Born May 1, 1925, in Boulder, Colorado.

Bachelor of Science in aeronautical engineering from the University of Colorado.

Flew on Mercury 7.

Cumulative hours of space flight are more than 4.

**CARR, Gerald P.,** Colonel, U.S. Marine Corps (Retired)

Born August 22, 1932, in Denver, Colorado.

Bachelor of Science in mechanical engineering from the University of Southern California;

Bachelor of Science in aeronautical engineering from the U.S. Naval Postgraduate School; Master of Science in aeronautical engineering from Princeton University;

honorary Doctor of Science in aeronautical engineering from Parks College, St. Louis University.

Flew on Skylab 4.

Cumulative hours of space flight are more than 2,017.

Cumulative EVA time is more than 15 hours.

**CERNAN, Eugene A.,** Captain, U.S. Navy (Retired)

Born March 14, 1934, in Chicago, Illinois.

Bachelor of Science in electrical engineering from Purdue University; Master of Science in aeronautical engineering from the U.S. Navy Postgraduate School.

Flew on Gemini 9, Apollo 10, and Apollo 17.

Cumulative hours of space flight are more than 566.

Cumulative EVA time is more than 22 hours.

## FORMER U.S. ASTRONAUTS

**CHAPMAN, Philip K.**, Civilian

Born March 5, 1935, in Melbourne, Australia.

Bachelor of Science in physics and mathematics from the University of Sydney; Master of Science in aeronautics and astronautics and Doctor of Science in instrumentation from the Massachusetts Institute of Technology.

**CHILTON, Kevin P.**, Brigadier General, U.S. Air Force

Born November 3, 1954, in Los Angeles, California.

Bachelor of Science in engineering sciences from the U.S. Air Force Academy; Master of Science in mechanical engineering from Columbia University.

Flew on STS-49, STS-59 and STS-76.

Cumulative hours of space flight are more than 704.

**CLIFFORD, Michael R.**, Lieutenant Colonel, U.S. Army (Retired)

Born October 13, 1952, in San Bernardino, California. Hometown, Ogden, Utah.

Bachelor of Science from the U.S. Military Academy; Master of Science in aerospace engineering from the Georgia Institute of Technology.

Flew on STS-53, STS-59 and STS-76.

Cumulative hours of space flight are more than 666.

Cumulative EVA time is more than 6 hours.

**COATS, Michael L.**, Captain, U.S. Navy (Retired)

Born January 16, 1946, in Sacramento, California.

Bachelor of Science from the U.S. Naval Academy; Master of Science in administration of science and technology from George Washington University; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS 41-D, STS-29, and STS-39.

Cumulative hours of space flight are more than 463.

**COLLINS, Michael**, Civilian Major General, U.S. Air Force Reserve (Retired)

Born October 31, 1930, in Rome, Italy.

Bachelor of Science from the U.S. Military Academy.

Flew on Gemini 10 and Apollo 11.

Cumulative hours of space flight are more than 265.

Cumulative EVA time is more than 1 hour.

**COOPER, L. Gordon, Jr.**, Colonel, U.S. Air Force (Retired)

Born March 6, 1927, in Shawnee, Oklahoma.

Bachelor of Science from the U.S. Air Force Institute of Technology; Doctor of Science in aeronautical engineering from Oklahoma City University.

Flew on Mercury 9 and Gemini 5.

Cumulative hours of space flight are more than 225.

**COVEY, Richard O.**, Colonel, U.S. Air Force (Retired)

Born August 1, 1946, in Fayetteville, Arkansas. Hometown, Fort Walton Beach, Florida.

Bachelor of Science in engineering sciences from the U.S. Air Force Academy; Master of Science in aeronautics and astronautics from Purdue University.

Flew on STS 51-I, STS-26, STS-38, and STS-61.

Cumulative hours of space flight are more than 645.

**CREIGHTON, John O.**, Captain, U.S. Navy (Retired)

Born April 28, 1943, in Orange, Texas.

Bachelor of Science from the U.S. Naval Academy; Master of Science in administration of science and technology from George Washington University.

Flew on STS 51-G, STS-36, and STS-48.

Cumulative hours of space flight are more than 404.

**CRIPPEN, Robert L.**, Captain, U.S. Navy (Retired)

Born September 11, 1937, in Beaumont, Texas.

Bachelor of Science in aerospace engineering from the University of Texas.

Flew on STS-1, STS-7, STS 41-C, and STS 41-G.

Cumulative hours of space flight are more than 565.

## FORMER U.S. ASTRONAUTS

**CULBERTSON, Frank L., Jr.**, Captain, U.S. Navy (Retired)

Born May 15, 1949, in Charleston, South Carolina. Hometown, Holly Hill, South Carolina.  
Bachelor of Science in aerospace engineering from the U.S. Naval Academy.  
Flew on STS-38, STS-51 and STS-105(up)/Exp 3/STS-108(down).  
Cumulative days of space flight are more than 146.  
Cumulative EVA time is more than 5 hours.

**CUNNINGHAM, Walter**, Civilian Colonel, U.S. Marine Corps Reserve (Retired)

Born March 16, 1932, in Creston, Iowa.  
Bachelor and Master of Arts in physics from the University of California - Los Angeles.  
Advanced management program, Harvard Graduate School of Business.  
Flew on Apollo 7.  
Cumulative hours of space flight are more than 263.

**DUFFY, Brian**, Colonel, U.S. Air Force

Born June 20, 1953, in Boston, Massachusetts.  
Bachelor of Science in mathematics from the U.S. Air Force Academy; Master of Science in systems management from the University of Southern California.  
Flew on STS-45, STS-57, STS-72 and STS-92.  
Cumulative hours of space flight are more than 976.

**DUKE, Charles M., Jr.**, Brigadier General, U.S. Air Force (Retired)

Born October 3, 1935, in Charlotte, North Carolina.  
Bachelor of Science in naval sciences from the U.S. Naval Academy; Master of Science in aeronautics from the Massachusetts Institute of Technology.  
Flew on Apollo 16.  
Cumulative hours of space flight are more than 265.  
Cumulative EVA time is more than 20 hours.

**EDWARDS, Joe F, Jr.**, Commander, U.S. Navy (Retired)

Born February 3, 1958, in Richmond, Virginia. Hometowns, Roanoke and Lineville, Alabama.  
Bachelor of Science in aerospace engineering from the United States Naval Academy;  
Master of Science in aviation systems from the University of Tennessee, Knoxville.  
Flew on STS-89.  
Cumulative hours of space flight are more than 211.

**ENGLAND, Anthony W.**, Civilian

Born May 15, 1942, in Indianapolis, Indiana.  
Bachelor and Master of Science in earth sciences from the Massachusetts Institute of Technology; Doctor of Philosophy in geophysics from the Massachusetts Institute of Technology.  
Flew on STS 51-F.  
Cumulative hours of space flight are more than 190.

**ENGLE, Joe H.**, Major General, Air National Guard/U.S. Air Force (Retired)

Born August 26, 1932, in Dickinson County, Kansas.  
Bachelor of Science in aeronautical engineering from the University of Kansas.  
Flew 16 flights in USAF/NASA X-15 - 3 flights into space; flew on Space Shuttle approach and landing tests 2 and 4, STS-2, and STS 51-I.  
Cumulative hours of space flight are more than 224.

**FABIAN, John M.**, Colonel, U.S. Air Force (Retired)

Born January 28, 1939, in Goosecreek, Texas.  
Bachelor of Science in mechanical engineering from Washington State University; Master of Science in aerospace engineering from the U.S. Air Force Institute of Technology;  
Doctor of Philosophy in aeronautics and astronautics from the University of Washington.  
Flew on STS-7 and STS 51-G.  
Cumulative hours of space flight are more than 316.

## FORMER U.S. ASTRONAUTS

**FISHER, William F.,** Civilian

Born April 1, 1946, in Dallas, Texas.

Bachelor of Arts from Stanford University; Master of Science in engineering from the University of Houston; Doctor of Medicine from the University of Florida.

Flew on STS 51-L.

Cumulative hours of space flight are more than 170.

Cumulative EVA time is more than 11 hours.

**GARDNER, Dale A.,** Captain, U.S. Navy (Retired)

Born November 8, 1948, in Fairmont, Minnesota.

Bachelor of Science in engineering physics from the University of Illinois.

Flew on STS-8 and STS 51-A.

Cumulative hours of space flight are more than 336.

Cumulative EVA time is more than 11 hours.

**GARDNER, Guy S.,** Colonel, U.S. Air Force (Retired)

Born January 6, 1948, in Altavista, Virginia.

Bachelor of Science in engineering sciences, astronautics and mathematics from the U.S.

Air Force Academy; Master of Science in astronautics from Purdue University.

Flew on STS-27 and STS-35.

Cumulative hours of space flight are more than 320.

**GARRIOTT, Owen K.,** Civilian

Born November 22, 1930, in Enid, Oklahoma.

Bachelor of Science in electrical engineering from the University of Oklahoma; Master of Science and Doctor of Philosophy in electrical engineering from Stanford University.

Flew on Skylab 3 and STS-9.

Cumulative hours of space flight are more than 1,674.

Cumulative EVA time is more than 13 hours.

**GEMAR, Charles D.,** Lieutenant Colonel, U.S. Army

Born August 4, 1955, in Yankton, South Dakota. Hometown, Scotland, South Dakota.

Bachelor of Science in engineering from the U.S. Military Academy.

Flew on STS-38, STS-48 and STS-62.

Cumulative hours of space flight are more than 581.

**GIBSON, Edward G.,** Civilian

Born November 8, 1936, in Buffalo, New York.

Bachelor of Science in engineering from the University of Rochester; Master of Science in engineering from the California Institute of Technology; Doctor of Philosophy in engineering and physics from the California Institute of Technology.

Flew on Skylab 4.

Cumulative hours of space flight are more than 2,017

Cumulative EVA time is more than 15 hours.

**GIBSON, Robert L.,** Captain, U.S. Navy (Retired)

Born October 30, 1946, in Cooperstown, New York. Hometown, Lakewood, California.

Bachelor of Science in aeronautical engineering from California Polytechnic Institute.

Flew on STS 41-B, STS 61-C, STS-27, STS-47 and STS-71.

Cumulative hours of space flight are more than 868.

**GLENN, John H., Jr.,** Colonel, U.S. Marine Corps (Retired)

Born July 18, 1921, in Cambridge, Ohio.

Bachelor of Science in engineering from Muskingum College.

Flew on Mercury 6, and STS-95.

Cumulative hours of space flight are more than 217.

## FORMER U.S. ASTRONAUTS

**GORDON, Richard F., Jr.**, Captain, U.S. Navy (Retired)

Born October 5, 1929, in Seattle, Washington.

Bachelor of Science in chemistry from the University of Washington; honorary Doctor of Science from Niagara University.

Flew on Gemini 11 and Apollo 12.

Cumulative hours of space flight are more than 315.

Cumulative EVA time is more than 1 hour.

**GRABE, Ronald J.**, Colonel, U.S. Air Force (Retired)

Born June 13, 1945, in New York, New York.

Bachelor of Science in engineering science from the U.S. Air Force Academy.

Flew on STS 51-J, STS-30, STS-42, and STS-57.

Cumulative hours of space flight are more than 627.

**GRAVELINE, Duane F.**, Civilian

Born March 2, 1931, in Newport, Vermont.

Bachelor of Science and Doctor of Medicine from the University of Vermont; Master of Science in public health from Johns Hopkins University.

**GREGORY, William G.**, Lieutenant Colonel, U.S. Air Force (Retired)

Born May 14, 1957, in Lockport, New York.

Bachelor of Science in engineering science from the U.S. Air Force Academy; Master of Science in engineering mechanics from Columbia University; Master of Science in management from Troy State University.

Flew on STS-67.

Cumulative hours of space flight are more than 399.

**GUTIERREZ, Sidney M.**, Colonel, U.S. Air Force (Retired)

Born June 27, 1951, Albuquerque, New Mexico.

Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Arts in management from Webster College.

Flew on STS-40 and STS-59.

Cumulative hours of space flight are more than 488.

**HAISE, Fred W., Jr.**, Civilian

Born November 14, 1933, in Biloxi, Mississippi.

Bachelor of Science in aeronautical engineering from the University of Oklahoma.

Flew on Apollo 13 and Space Shuttle approach and landing tests 1, 3, and 5.

Cumulative hours of space flight are more than 142.

**HAMMOND, L. Blaine, Jr.**, Colonel, U.S. Air Force (Retired)

Born January 16, 1952, in Savannah, Georgia. Hometown, St. Louis, Missouri.

Bachelor of Science in engineering science and mechanics from the U.S. Air Force Academy; Master of Science in engineering science and mechanics from the Georgia Institute of Technology.

Flew on STS-39 and STS-64.

Cumulative hours of space flight are more than 462.

**HARBAUGH, Gregory J.**, Civilian

Born April 15, 1956, in Cleveland, Ohio. Hometown, Willoughby, Ohio.

Bachelor of Science in aeronautical and astronautical engineering from Purdue University;

Master of Science in physical science from the University of Houston-Clear Lake.

Flew on STS-39, STS-54, STS-71 and STS-82.

Cumulative hours of space flight are more than 817.

Cumulative EVA time is more than 18 hours.

## FORMER U.S. ASTRONAUTS

**HARRIS, Bernard A., Jr.,** Civilian

Born June 26, 1956, in Temple, Texas.

Bachelor of Science in biology from the University of Houston; Doctor of Medicine from Texas Tech University.

Flew on STS-55 and STS-63.

Cumulative hours of space flight are more than 438.

Cumulative EVA time is more than 4 hours.

**HART, Terry J.,** Civilian

Born October 27, 1946, in Pittsburgh, Pennsylvania.

Bachelor of Science from Lehigh University; Master of Science in mechanical engineering from the Massachusetts Institute of Technology; Master of Science in electrical engineering from Rutgers University; honorary Doctor of Engineering from Lehigh University.

Flew on STS 41-C.

Cumulative hours of space flight are more than 167.

**HARTSFIELD, Henry W., Jr.,** Colonel, U.S. Air Force (Retired)

Born November 21, 1933, in Birmingham, Alabama.

Bachelor of Science in physics from Auburn University; Master of Science in engineering science from the University of Tennessee.

Flew on STS-4, STS 41-D, and STS 61-A.

Cumulative hours of space flight are more than 482.

**HAUCK, Frederick H.,** Captain, U.S. Navy (Retired)

Born April 11, 1941, in Long Beach, California.

Bachelor of Science in physics from Tufts University; Master of Science in nuclear engineering from the Massachusetts Institute of Technology.

Flew on STS-7, STS 51-A, and STS-26.

Cumulative hours of space flight are more than 435.

**HELMS, Susan J.,** Colonel, U.S. Air Force

Born February 26, 1958, in Charlotte, North Carolina. Hometown, Portland, Oregon.

Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Science in aeronautics and astronautics from Stanford University.

Flew on STS-54, STS-64, STS-78, STS-101 and STS-102(up)/Exp 2/STS-105(down).

Cumulative days of space flight are more than 211.

Cumulative EVA time is more than 8 hours.

**HENRICKS, Terence T. "Tom",** Colonel, U.S. Air Force (Retired)

Born July 5, 1952, in Bryan, Ohio. Hometown, Woodville, Ohio.

Bachelor of Science in civil engineering from the U.S. Air Force Academy; Master of Arts in public administration from Golden Gate University.

Flew on STS-44, STS-55, STS-70 and STS-78.

Cumulative hours of space flight are more than 1,026.

**HIEB, Richard J.,** Civilian

Born September 21, 1955, in Jamestown, North Dakota.

Bachelor of Arts in mathematics and physics from Northwest Nazarene College; Master of Science in aerospace engineering from the University of Colorado.

Flew on STS-39, STS-49, and STS-65.

Cumulative hours of space flight are more than 766.

Cumulative EVA time is more than 17 hours.

**HILMERS, David C.,** Colonel, U.S. Marine Corps (Retired)

Born January 28, 1950, in Clinton, Iowa.

Bachelor of Arts in mathematics from Cornell University; Master of Science in electrical engineering from the U.S. Naval Postgraduate School.

Flew on STS 51-J, STS-26, STS-36, and STS-42.

Cumulative hours of space flight are more than 494.

## FORMER U.S. ASTRONAUTS

### **HOFFMAN, Jeffrey A.,** Civilian

Born November 2, 1944, in Brooklyn, New York. Hometown, Scarsdale, New York. Bachelor of Arts in astronomy from Amherst College; Masters degree in materials science from Rice University; Doctor of Philosophy in astrophysics from Harvard University. Flew on STS 51-D, STS-35, STS-46, STS-61 and STS-75. Cumulative hours of space flight are more than 1,211.

### **HOLMQUEST, Donald L.,** Civilian

Born April 7, 1939, in Dallas, Texas. Bachelor of Science in electrical engineering from Southern Methodist University; Doctor of Philosophy in physiology and Doctor of Medicine from Baylor University; Juris Doctor from the University of Houston.

### **JEMISON, Mae C.,** Civilian

Born October 17, 1956, in Decatur, Alabama. Bachelor of Science in chemical engineering from Stanford University; Doctor of Medicine from Cornell University. Flew on STS-47. Cumulative hours of space flight are more than 190.

### **JERNIGAN, Tamara E.,** Civilian

Born May 7, 1959, in Chattanooga, Tennessee. Bachelor of Science in physics and Master of Science in engineering science from Stanford University; Master of Science in astronomy from the University of California at Berkeley; Doctor of Philosophy in space physics and astronomy from Rice University. Flew on STS-40, STS-52, STS-67, STS-80 and STS-96. Cumulative hours of space flight are more than 1,513. Cumulative EVA time is more than 7 hours.

### **JONES, Thomas D.,** Civilian

Born January 22, 1955, in Baltimore, Maryland. Hometown, Essex, Maryland. Bachelor of Science in basic sciences from the U.S. Air Force Academy; Doctor of Philosophy in planetary science from the University of Arizona. Flew on STS-59, STS-68, STS-80 and STS-98. Cumulative hours of space flight are more than 1,272. Cumulative EVA time is more than 19 hours.

### **KERWIN, Joseph P.,** Captain, Medical Corps, U.S. Navy (Retired)

Born February 19, 1932, in Oak Park, Illinois. Bachelor of Arts in philosophy from the College of the Holy Cross; Doctor of Medicine from Northwestern University Medical School. Naval Aviator. Flew on Skylab 2. Cumulative hours of space flight are more than 672. Cumulative EVA time is more than 3 hours.

### **KILRAIN, Susan Still,** Commander, U.S. Navy

Born October 24, 1961, in Augusta, Georgia. Bachelor of Science in aeronautical engineering from Embry-Riddle University; Master of Science in aerospace engineering from the Georgia Institute of Technology. Flew on STS-83 and STS-94. Cumulative hours of space flight are more than 471.

### **KREGEL, Kevin R.,** Civilian

Born September 16, 1956, in New York, New York. Hometown, Amityville, New York. Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of public administration from Troy State University. Flew on STS-70, STS-78, STS-87 and STS-99. Cumulative hours of space flight are more than 1,265.



## FORMER U.S. ASTRONAUTS

**LEE, Mark C.**, Colonel, U.S. Air Force

Born August 14, 1952, in Viroqua, Wisconsin.  
Bachelor of Science in civil engineering from the U.S. Air Force Academy; Master of Science in mechanical engineering from the Massachusetts Institute of Technology.  
Flew on STS-30, STS-47, STS-64 and STS-82.  
Cumulative hours of space flight are more than 789.  
Cumulative EVA time is more than 26 hours.

**LENOIR, William B.**, Civilian

Born March 14, 1939, in Miami, Florida.  
Bachelor of Science, Master of Science and Doctor of Philosophy in electrical engineering from the Massachusetts Institute of Technology.  
Flew on STS-5.  
Cumulative hours of space flight are more than 122.

**LIND, Don L.**, Civilian

Born May 18, 1930, in Midvale, Utah.  
Bachelor of Science in physics from the University of Utah; Doctor of Philosophy in high-energy nuclear physics from the University of California - Berkeley.  
Flew on STS 51-B.  
Cumulative hours of space flight are more than 168.

**LINENGER, Jerry M.**, Captain, U.S. Navy (Retired)

Born January 16, 1955, in Mount Clemens, Michigan. Hometowns, Eastpointe, Michigan, and Coronado, California.  
Bachelor of Science in bioscience from the U.S. Naval Academy; Master of Science in systems management from the University of Southern California; Doctor of Medicine from Wayne State University; Master of Public Health in health policy from the University of North Carolina; Doctor of Philosophy in epidemiology from the University of North Carolina.  
Flew on STS-64, STS-81/Mir and Mir/STS-84.  
Cumulative hours of space flight are more than 3,435.  
Cumulative EVA time is more than 5 hours.

**LLEWELLYN, John A.**, Civilian

Born April 22, 1933, in Cardiff, Wales, UK.  
Bachelor of Science and Doctor of Philosophy in chemistry from the University College at Cardiff.

**LOUNGE, John M., "Mike,"** Civilian

Born June 28, 1946, in Denver, Colorado.  
Bachelor of Science in physics and mathematics from the U.S. Naval Academy; Master of Science in astrogeophysics from the University of Colorado.  
Flew on STS 51-I, STS-26, and STS-35.  
Cumulative hours of space flight are more than 482.

**LOUSMA, Jack R.**, Colonel, U.S. Marine Corps (Retired)

Born February 29, 1936, in Grand Rapids, Michigan.  
Bachelor of Science in aeronautical engineering from the University of Michigan; degree of aeronautical engineer from the U.S. Naval Postgraduate School.  
Flew on Skylab 3 and STS-3.  
Cumulative hours of space flight are more than 1,619.  
Cumulative EVA time is more than 11 hours.

**LOVELL, James A., Jr.**, Captain, U.S. Navy (Retired)

Born March 25, 1928, in Cleveland, Ohio.  
Bachelor of Science from the U.S. Naval Academy; Advanced Management Program, Harvard Business School.  
Flew on Gemini 7, Gemini 12, Apollo 8, and Apollo 13.  
Cumulative hours of space flight are more than 715.

## FORMER U.S. ASTRONAUTS

**LOW, G. David**, Civilian

Born February 19, 1956, in Cleveland, Ohio.

Bachelor of Science in physics-engineering from Washington and Lee University, and in mechanical engineering from Cornell University; Master of Science in aeronautics and astronautics from Stanford University.

Flew on STS-32, STS-43 and STS-57.

Cumulative hours of space flight are more than 714.

Cumulative EVA time is more than 5 hours.

**MATTINGLY, Thomas K., II**, Rear Admiral, U.S. Navy (Retired)

Born March 17, 1936, in Chicago, Illinois.

Bachelor of Science in aeronautical engineering from Auburn University.

Flew on Apollo 16, STS-4, and STS 51-C.

Cumulative hours of space flight are more than 508.

Cumulative EVA time is more than 1 hour.

**McBRIDE, Jon A.**, Captain, U.S. Navy (Retired)

Born August 14, 1943, in Charleston, West Virginia.

Bachelor of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS 41-G.

Cumulative hours of space flight are more than 197.

**McCANDLESS, Bruce, II**, Captain, U.S. Navy (Retired)

Born June 8, 1937, in Boston, Massachusetts.

Bachelor of Science from the U.S. Naval Academy; Master of Science in electrical engineering from Stanford University; Master of Science in business administration from the University of Houston Clear Lake.

Flew on STS 41-B and STS-31.

Cumulative hours of space flight are more than 312.

Cumulative EVA time is more than 11 hours.

**McCULLEY, Michael J.**, Captain, U.S. Navy (Retired)

Born August 4, 1943, in San Diego, California.

Bachelor and Master of Science in metallurgical engineering from Purdue University.

Flew on STS-34.

Cumulative hours of space flight are more than 119.

**McDIVITT, James A.**, Brigadier General, U.S. Air Force (Retired)

Born June 10, 1929, in Chicago, Illinois.

Bachelor of Science in aeronautical engineering from the University of Michigan.

Flew on Gemini 4 and Apollo 9, and was the Apollo Spacecraft Program Manager.

Cumulative hours of space flight are more than 338.

**McMONAGLE, Donald R.**, Colonel, U.S. Air Force (Retired)

Born May 14, 1952, in Flint, Michigan.

Bachelor of Science in astronautical engineering from the U.S. Air Force Academy; Master of Science in mechanical engineering from California State University - Fresno.

Flew on STS-39, STS-54 and STS-66.

Cumulative hours of space flight are more than 605.

**MEADE, Carl J.**, Colonel, U.S. Air Force (Retired)

Born November 16, 1950, at Chanute Air Force Base, Illinois.

Bachelor of Science in electronics engineering from the University of Texas; Master of Science in electronics engineering from the California Institute of Technology.

Flew on STS-38, STS-50 and STS-64.

Cumulative hours of space flight are more than 712.

Cumulative EVA time is more than 6 hours.

## FORMER U.S. ASTRONAUTS

**MELNICK, Bruce E.**, Commander, U.S. Coast Guard (Retired)

Born December 5, 1949, in New York, New York.

Bachelor of Science in engineering from the U.S. Coast Guard Academy; Master of Science in aeronautical systems from West Florida University.

Flew on STS-41 and STS-49.

Cumulative hours of space flight are more than 311.

**MICHEL, F. Curtis**, Civilian

Born June 5, 1934, in LaCrosse, Wisconsin.

Bachelor of Science and Doctor of Philosophy in physics from the California Institute of Technology.

**MITCHELL, Edgar D.**, Captain, U.S. Navy (Retired)

Born September 17, 1930, in Hereford, Texas.

Bachelor of Science in industrial management from the Carnegie Institute of Technology (now Carnegie-Mellon University); Bachelor of Science in aeronautical engineering from the U.S. Naval Postgraduate School; Doctor of Science in aeronautics and astronautics from the Massachusetts Institute of Technology.

Flew on Apollo 14.

Cumulative hours of space flight are more than 216.

Cumulative EVA time is more than 9 hours.

**MULLANE, Richard M.**, Colonel, U.S. Air Force (Retired)

Born September 10, 1945, in Wichita Falls, Texas.

Bachelor of Science in military engineering from the U.S. Military Academy; Master of Science in aeronautical engineering from the U.S. Air Force Institute of Technology.

Flew on STS 41-D, STS-27, and STS-36.

Cumulative hours of space flight are more than 356.

**MUSGRAVE, Story**, Civilian

Born August 19, 1935, in Boston, Massachusetts. Hometown, Lexington, Kentucky.

Bachelor of Science in mathematics and statistics from Syracuse University; Bachelor of Arts in chemistry from Marietta College; Master of Business Administration in operations analysis and computer programming from the University of California at Los Angeles; Master of Science in physiology and biophysics from the University of Kentucky; Master of Arts in literature from the University of Houston; Doctor of Medicine from Columbia University.

Flew on STS-6, STS 51-F, STS-33, STS-44, STS-61 and STS-80.

Cumulative hours of space flight are more than 1,166.

Cumulative EVA time is more than 26 hours.

**NELSON, George D.**, Civilian

Born July 13, 1950, in Charles City, Iowa.

Bachelor of Science in physics from Harvey Mudd College; Master of Science and Doctor of Philosophy in astronomy from the University of Washington.

Flew on STS 41-C, STS 61-C, and STS-26.

Cumulative hours of space flight are more than 410.

Cumulative EVA time is more than 9 hours.

**O'LEARY, Brian T.**, Civilian

Born January 27, 1940, in Boston, Massachusetts.

Bachelor of Arts in physics from Williams College; Master of Arts in astronomy from Georgetown University; Doctor of Philosophy in astronomy from the University of California at Berkeley.

**OSWALD, Stephen S.**, Civilian

Born June 30, 1951, in Seattle, Washington. Hometown, Bellingham, Washington.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy.

Flew on STS-42, STS-56 and STS-67.

Cumulative hours of space flight are more than 814.

## FORMER U.S. ASTRONAUTS

**PETERSON, Donald H.,** Colonel, U.S. Air Force (Retired)

Born October 22, 1933, in Winona, Mississippi.

Bachelor of Science from the U.S. Military Academy; Master of Science in nuclear engineering from the U.S. Air Force Institute of Technology. Graduate of Air Force Test Pilot School and War College.

Flew on STS-6.

Cumulative hours of space flight are more than 120.

**POGUE, William R.,** Colonel, U.S. Air Force (Retired)

Born January 23, 1930, in Okemah, Oklahoma.

Bachelor of Science in education from Oklahoma Baptist University; Master of Science in mathematics from Oklahoma State University.

Flew on Skylab 4.

Cumulative hours of space flight are more than 2,017.

Cumulative EVA time is more than 13 hours.

**REIGHTLER, Kenneth S., Jr.,** Captain, U.S. Navy (Retired)

Born March 24, 1951, in Patuxent River, Maryland. Hometown, Virginia Beach, Virginia.

Bachelor of Science in aerospace engineering from the U.S. Naval Academy; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School; Master of Science in systems management from the University of Southern California.

Flew on STS-48 and STS-60.

Cumulative hours of space flight are more than 327.

**RICHARDS, Paul W.,** Civilian

Born May 20, 1964, in Scranton, Pennsylvania. Hometown, Dunmore, Pennsylvania.

Bachelor of Science in mechanical engineering from Drexel University and a Master of Science in mechanical engineering from the University of Maryland.

Flew on STS-102.

Cumulative hours of space flight are more than 307.

Cumulative EVA time is more than 6 hours.

**RICHARDS, Richard N.,** Captain, U.S. Navy (Retired)

Born August 24, 1946, in Key West, Florida. Hometown, St. Louis, Missouri.

Bachelor of Science in chemical engineering from the University of Missouri; Master of Science in aeronautical systems from the University of West Florida.

Flew on STS-28, STS-41, STS-50 and STS-64.

Cumulative hours of space flight are more than 813.

**RIDE, Sally K.,** Civilian

Born May 26, 1951, in Los Angeles, California.

Bachelor of Science in physics; Bachelor of Arts in English; Master of Science and Doctor of Philosophy in physics from Stanford University.

Flew on STS-7 and STS 41-G.

Cumulative hours of space flight are more than 343.

**SCHIRRA, Walter M., Jr.,** Captain, U.S. Navy (Retired)

Born March 12, 1923, in Hackensack, New Jersey.

Bachelor of Science from the U.S. Naval Academy; graduate of the U.S. Naval Test Pilot School.

Flew on Mercury 8, Gemini 6, and Apollo 7.

Cumulative hours of space flight are more than 295.

**SCHMITT, Harrison H.,** Civilian

Born July 3, 1935, in Santa Rita, New Mexico.

Bachelor of Science in geology from the California Institute of Technology; Doctor of Philosophy in geology from Harvard University.

Flew on Apollo 17.

Cumulative hours of space flight are more than 301.

Cumulative EVA time is more than 22 hours.

## FORMER U.S. ASTRONAUTS

**SCHWEICKART, Russell L.,** Civilian

Born October 25, 1935 in Neptune, New Jersey.

Bachelor of Science in aeronautical engineering from the Massachusetts Institute of Technology; Master of Science in aeronautics and astronautics from the Massachusetts Institute of Technology.

Flew on Apollo 9.

Cumulative hours of space flight are more than 241.

Cumulative EVA time is more than 1 hour.

**SCOTT, David R.,** Colonel, U.S. Air Force (Retired)

Born June 6, 1932, in San Antonio, Texas.

Bachelor of Science from the U.S. Military Academy; Master of Science in aeronautics and astronautics and engineer in aeronautics and astronautics from the Massachusetts Institute of Technology.

Flew on Gemini 8, Apollo 9, and Apollo 15.

Cumulative hours of space flight are more than 546.

Cumulative EVA time is more than 20 hours.

**SCOTT, Winston E.,** Captain, U.S. Navy (Retired)

Born August 6, 1950, in Miami, Florida.

Bachelor of Arts in music from Florida State University; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-72 and STS-87.

Cumulative hours of space flight are more than 590.

Cumulative EVA time is more than 19 hours.

**SEARFOSS, Richard A.,** Colonel, U.S. Air Force (Retired)

Born June 5, 1956, in Mount Clemens, Michigan. Hometown, Portsmouth, New Hampshire.

Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Aeronautics from the California Institute of Technology.

Flew on STS-58, STS-76 and STS-90.

Cumulative hours of space flight are more than 938.

**SEDDON, Margaret Rhea,** Civilian

Born November 8, 1947, in Murfreesboro, Tennessee.

Bachelor of Arts in physiology from the University of California at Berkeley; Doctor of Medicine from the University of Tennessee.

Flew on STS 51-D, STS-40 and STS-58.

Cumulative hours of space flight are more than 722.

**SEGA, Ronald M.,** Civilian Colonel, U.S. Air Force Reserve

Born December 4, 1952, in Cleveland, Ohio. Hometowns, Northfield, Ohio, and Colorado Springs, Colorado.

Bachelor of Science in physics and math from the U.S. Air Force Academy; Master of Science in physics from Ohio State University; Doctor of Philosophy in electrical engineering from the University of Colorado.

Flew on STS-60 and STS-76.

Cumulative hours of space flight are more than 420.

**SHAW, Brewster H., Jr.,** Colonel, U.S. Air Force (Retired)

Born May 16, 1945, in Cass City, Michigan.

Bachelor and Master of Science in engineering mechanics from the University of Wisconsin.

Flew on STS-9, STS 61-B, and STS-28.

Cumulative hours of space flight are more than 533.

## FORMER U.S. ASTRONAUTS

**SHEPHERD, William M.**, Captain, U.S. Navy (Retired)

Born July 26, 1949, in Oak Ridge, Tennessee. Hometown, Babylon, New York.  
Bachelor of Science in aerospace engineering from the U.S. Naval Academy; degree of ocean engineer and Master of Science in mechanical engineering from the Massachusetts Institute of Technology.  
Flew on STS-27, STS-41, STS-52 and Exp 1/STS-102(down).  
Cumulative days of space flight are more than 159.

**SHRIVER, Loren J.**, Colonel, U.S. Air Force (Retired)

Born September 23, 1944, in Jefferson, Iowa.  
Bachelor of Science in aeronautical engineering from the U.S. Air Force Academy; Master of Science in astronautical engineering from Purdue University.  
Flew on STS 51-C, STS-31, and STS-46.  
Cumulative hours of space flight are more than 386.

**SPRING, Sherwood C.**, Colonel, U.S. Army (Retired)

Born September 3, 1944, in Hartford, Connecticut.  
Bachelor of Science in general engineering from the U.S. Military Academy; Master of Science in aerospace engineering from the University of Arizona.  
Flew on STS 61-B.  
Cumulative hours of space flight are more than 165.

**SPRINGER, Robert C.**, Colonel, U.S. Marine Corps (Retired)

Born May 21, 1942, in St. Louis, Missouri.  
Bachelor of Science in naval science from the U.S. Naval Academy; Master of Science in operations research and systems analysis from the U.S. Naval Postgraduate School.  
Flew on STS-29 and STS-38.  
Cumulative hours of space flight are more than 237.

**STAFFORD, Thomas P.**, Lieutenant General, U.S. Air Force (Retired)

Born September 17, 1930, in Weatherford, Oklahoma.  
Bachelor of Science from the U.S. Naval Academy.  
Flew on Gemini 6, Gemini 9, Apollo 10, and Apollo-Soyuz Test Project.  
Cumulative hours of space flight are more than 507.

**STEWART, Robert L.**, Brigadier General, U.S. Army (Retired)

Born August 13, 1942, in Washington, D.C.  
Bachelor of Science in mathematics from Southern Mississippi University; Master of Science in aerospace engineering from the University of Texas at Arlington.  
Flew on STS 41-B and STS 51-J.  
Cumulative hours of space flight are more than 289.  
Cumulative EVA time is more than 12 hours.

**SULLIVAN, Kathryn D.**, Civilian

Born October 3, 1951, in Paterson, New Jersey.  
Bachelor of Science in earth sciences from the University of California - Santa Cruz;  
Doctor of Philosophy in geology from Dalhousie University, Halifax, Nova Scotia.  
Flew on STS 41-G, STS-31, and STS-45.  
Cumulative hours of space flight are more than 532.  
Cumulative EVA time is more than 3 hours.

**THAGARD, Norman E.**, Civilian

Born July 3, 1943, in Marianna, Florida. Hometown, Jacksonville, Florida.  
Bachelor and Master of Science in engineering science from Florida State University;  
Doctor of Medicine from the University of Texas.  
Flew on STS-7, STS 51-B, STS-30, STS-42 and Mir/STS-71.  
Cumulative hours of space flight are more than 3,360 including time on Mir.

## FORMER U.S. ASTRONAUTS

### **THORNTON, Kathryn C.,** Civilian

Born August 17, 1952, in Montgomery, Alabama.  
Bachelor of Science in physics from Auburn University; Master of Science and Doctor of Philosophy in physics from the University of Virginia.  
Flew on STS-33, STS-49, STS-61 and STS-73.  
Cumulative hours of space flight are more than 975.  
Cumulative EVA time is more than 21 hours.

### **THORNTON, William E.,** Civilian

Born April 14, 1929, in Faison, North Carolina.  
Bachelor of Science in physics and Doctor of Medicine from the University of North Carolina.  
Flew on STS-8 and STS-51B.  
Cumulative hours of space flight are more than 313.

### **THUOT, Pierre J.,** Commander, U.S. Navy

Born May 19, 1955, in Groton, Connecticut. Hometowns, Fairfax, Virginia and New Bedford, Massachusetts.  
Bachelor of Science in physics from the U.S. Naval Academy; Master of Science in systems management from the University of Southern California.  
Flew on STS-36, STS-49 and STS-62.  
Cumulative hours of space flight are more than 654.  
Cumulative EVA time is more than 17 hours.

### **TRULY, Richard H.,** Vice Admiral, U.S. Navy (Retired)

Born November 12, 1937, in Fayette, Mississippi.  
Bachelor of aeronautical engineering from the Georgia Institute of Technology.  
Flew on Space Shuttle approach and landing tests 2 and 4, STS-2, and STS-8.  
Cumulative hours of space flight are more than 199.

### **VAN HOFTEN, James D. A.,** Civilian

Born June 11, 1944, in Fresno, California.  
Bachelor of Science in civil engineering from the University of California - Berkeley; Master of Science in hydraulic engineering and Doctor of Philosophy in fluid mechanics from Colorado State University.  
Flew on STS 41-C and STS 51-I.  
Cumulative hours of space flight are more than 337.  
Cumulative EVA time is more than 21 hours.

### **VOSS, James S.,** Colonel, U.S. Army (Retired)

Born March 3, 1949, in Cordova, Alabama. Hometown, Opelika, Alabama.  
Bachelor of Science in aerospace engineering from Auburn University; Master of Science in aerospace engineering sciences from the University of Colorado.  
Flew on STS-44, STS-53, STS-69, STS-101 and STS-102(up)/Exp 2/STS-105(down).  
Cumulative days of space flight are more than 202.  
Cumulative EVA time is more than 15 hours.

### **WEBER, Mary E.,** Civilian

Born August 24, 1962, in Cleveland, Ohio. Hometown, Bedford Heights, Ohio.  
Bachelor of Science in chemical engineering from Purdue University; Doctor of Philosophy in physical chemistry from the University of California at Berkeley.  
Flew on STS-70 and STS-101.  
Cumulative hours of space flight are more than 450.

### **WEITZ, Paul J., Captain,** U.S. Navy (Retired)

Born July 25, 1932, in Erie, Pennsylvania.  
Bachelor of Science in aeronautical engineering from Pennsylvania State University; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.  
Flew on Skylab 2 and STS-6.  
Cumulative hours of space flight are more than 793.  
Cumulative EVA time is more than 2 hours.

## FORMER U.S. ASTRONAUTS

**WILLIAMS, Donald E.**, Captain, U.S. Navy (Retired)

Born February 13, 1942, in Lafayette, Indiana.

Bachelor of Science in mechanical engineering from Purdue University.

Flew on STS 51-D and STS-34.

Cumulative hours of space flight are more than 287.

**WISOFF, Peter J. K.**, Civilian

Born August 16, 1958, in Norfolk, Virginia.

Bachelor of Science in physics from University of Virginia; Master of Science and Doctor of Philosophy in applied physics from Stanford University.

Flew on STS-57, STS-68, STS-81 and STS-92.

Cumulative hours of space flight are more than 1,063.

Cumulative EVA time is more than 19 hours.

**WORDEN, Alfred M.**, Colonel, U.S. Air Force (Retired)

Born February 7, 1932, in Jackson, Michigan.

Bachelor of Science in military science from the U.S. Military Academy; Master of Science in astronautical and aeronautical engineering and instrumentation engineering from the University of Michigan.

Flew on Apollo 15.

Cumulative hours of space flight are more than 295.

Cumulative EVA time is more than 39 minutes.



## DECEASED U.S. ASTRONAUTS

- ANDERSON, Michael P.**, Lieutenant Colonel, U.S. Air Force  
Born December 25, 1959, in Plattsburgh, New York. Hometown, Spokane, Washington.  
Bachelor of Science in physics/astronomy from University of Washington; Master of Science in physics from Creighton University.  
Flew on STS-89 and STS-107.  
Cumulative hours of space flight are more than 593.  
Died February 1, 2003, in the STS-107 accident.
- BASSETT, Charles A., II**, Captain, U.S. Air Force  
Born December 30, 1931, in Dayton, Ohio.  
Bachelor of Science in electrical engineering from the Texas Technological College.  
Died February 28, 1966, in St. Louis, Missouri, in the crash of a T-38 jet.
- BROWN, David M.**, Captain, U.S. Navy  
Born April 16, 1956, in Arlington, Virginia.  
Bachelor of Science in biology from the College of William and Mary and a Doctor of Medicine from Eastern Virginia Medical School.  
Flew on STS-107.  
Cumulative hours of space flight are more than 382.  
Died February 1, 2003, in the STS-107 accident.
- CARTER, Manley Lanier, Jr., "Sonny,"** Captain, U.S. Navy  
Born August 15, 1947, in Macon, Georgia.  
Bachelor of Arts in chemistry and Doctor of Medicine from Emory University.  
Flew on STS-33.  
Cumulative hours of space flight are more than 120.  
Died April 5, 1991, near New Brunswick, Georgia, in the crash of a commercial airliner while on NASA business travel.
- CHAFFEE, Roger B.**, Lieutenant Commander, U.S. Navy  
Born February 15, 1935, in Grand Rapids, Michigan.  
Bachelor of Science in aeronautical engineering from Purdue University.  
Died January 27, 1967, at NASA John F. Kennedy Space Center, Florida, in the Apollo spacecraft fire.
- CHAWLA, Kalpana**, Civilian  
Born July 1, 1961, in Karnal, India.  
Bachelor of Science in aeronautical engineering from Punjab Engineering College; Master of Science in aerospace engineering from University of Texas at Arlington; Doctor of Philosophy in aerospace engineering from University of Colorado.  
Flew on STS-87 and STS-107.  
Cumulative hours of space flight are more than 758.  
Died February 1, 2003, in the STS-107 accident.
- CLARK, Laurel B.**, Commander, U.S. Navy  
Born March 10, 1961, in Ames, Iowa. Hometown, Racine, Wisconsin.  
Bachelor of Science in zoology and a Doctor of Medicine from the University of Wisconsin-Madison.  
Flew on STS-107.  
Cumulative hours of space flight are more than 382.  
Died February 1, 2003, in the STS-107 accident.
- CONRAD, Charles, Jr.**, Captain, U.S. Navy (Retired)  
Born June 2, 1930, in Philadelphia, Pennsylvania.  
Bachelor of Science in aeronautical engineering from Princeton University.  
Flew on Gemini 5, Gemini 11, Apollo 12, and Skylab 2.  
Cumulative hours of space flight are more than 1,179.  
Cumulative EVA time is more than 13 hours.  
Died July 8, 1999, in Ojai, California, in a motorcycle accident.

## DECEASED U.S. ASTRONAUTS

**EISELE, Donn F.**, Colonel, U.S. Air Force (Retired)

Born June 23, 1930, in Columbus, Ohio.

Bachelor of Science in astronautics from the U.S. Naval Academy; Master of Science in astronautics from the U.S. Air Force Institute of Technology.

Flew on Apollo 7.

Cumulative hours of space flight are more than 260.

Died December 2, 1987, in Tokyo, Japan, of a heart attack.

**EVANS, Ronald E.**, Captain, U.S. Navy (Retired)

Born November 10, 1933, in St. Francis, Kansas.

Bachelor of Science in electrical engineering from the University of Kansas; Master of Science in Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on Apollo 17.

Cumulative hours of space flight are more than 301.

Cumulative EVA time is more than 1 hour.

Died April 6, 1990, in Scottsdale, Arizona, of a heart attack.

**FREEMAN, Theodore C.**, Captain, U.S. Air Force

Born February 18, 1930, in Haverford, Pennsylvania.

Bachelor of Science from the U.S. Naval Academy; Master of Science in aeronautical engineering from the University of Michigan.

Died October 31, 1964, at Ellington Air Force Base, Houston, Texas, in the crash of a T-38 jet.

**GIVENS, Edward Galen., Jr.**, Major, U.S. Air Force

Born January 5, 1930, in Quanah, Texas.

Bachelor of Science in naval sciences from the U.S. Naval Academy.

Died June 6, 1967, near Houston, Texas, in an automobile accident.

**GRIGGS, S. David**, Civilian

Born September 7, 1939, in Portland, Oregon.

Bachelor of Science from the U.S. Naval Academy; Master of Science in administration from George Washington University.

Flew on STS 51-D.

Cumulative hours of space flight are more than 167.

Cumulative EVA time is more than 3 hours.

Died June 17, 1989, near Earle, Arkansas, in the crash of a World War II era training plane.

**GRISSOM, Virgil I.**, Lieutenant Colonel, U.S. Air Force

Born April 3, 1926, in Mitchell, Indiana.

Bachelor of Science in mechanical engineering from Purdue University.

Flew on Mercury 4 and Gemini 3.

Cumulative hours of space flight are more than 5.

Died January 27, 1967, at NASA John F. Kennedy Space Center, Florida, in the Apollo spacecraft fire.

**HENIZE, Karl G.**, Civilian

Born October 17, 1926, in Cincinnati, Ohio.

Bachelor of Arts in mathematics from the University of Virginia; Master of Arts in astronomy from the University of Virginia; Doctor of Philosophy in astronomy from the University of Michigan.

Flew on STS 51-F.

Cumulative hours of space flight are more than 190.

Died October 5, 1993, of respiratory and heart failure during a climb of Mount Everest.

**HUSBAND, Rick D.**, Colonel, U.S. Air Force

Born July 12, 1957, in Amarillo, Texas.

Bachelor of Science in mechanical engineering from Texas Tech University; Master of Science in mechanical engineering from California State University.

Flew on STS-96 and STS-107.

Cumulative hours of space flight are more than 617.

Died February 1, 2003, in the STS-107 accident.

## DECEASED U.S. ASTRONAUTS

**IRWIN, James B.**, Colonel, U.S. Air Force (Retired)

Born March 17, 1930, in Pittsburgh, Pennsylvania.

Bachelor of Science in naval science from the U.S. Naval Academy; Master of Science in aeronautical engineering and instrumentation engineering from the University of Michigan.

Flew on Apollo 15.

Cumulative hours of space flight are more than 295.

Cumulative EVA time is more than 19 hours.

Died August 8, 1991, of a heart attack.

**McCool, William C.**, Commander, U.S. Navy

Born September 23, 1961, in San Diego, California.

Bachelor of Science in applied science from the U.S. Naval Academy, a Master of Science in computer science from the University of Maryland and a Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.

Flew on STS-107.

Cumulative hours of space flight are more than 382.

Died February 1, 2003, in the STS-107 accident.

**McNAIR, Ronald E.**, Civilian

Born October 21, 1950, in Lake City, South Carolina.

Bachelor of Science in physics from North Carolina A&T State College; Doctor of Philosophy in physics from the Massachusetts Institute of Technology.

Flew on STS 41-B.

Cumulative hours of space flight are more than 191.

Died January 28, 1986, in the STS 51-L accident.

**ONIZUKA, Ellison S.**, Lieutenant Colonel, U.S. Air Force

Born June 24, 1946, in Kealahou, Kona, Hawaii.

Bachelor and Master of Science in aerospace engineering from the University of Colorado.

Flew on STS 51-C.

Cumulative hours of space flight are more than 73.

Died January 28, 1986, in the STS 51-L accident.

**OVERMYER, Robert F.**, Colonel, U.S. Marine Corps (Retired)

Born July 14, 1936, in Lorain, Ohio.

Bachelor of Science in physics from Baldwin Wallace College; Master of Science in aeronautics from the U.S. Naval Postgraduate School.

Flew on STS-5 and STS 51-B.

Cumulative hours of space flight are more than 290.

Died March 22, 1996, in the crash of a light aircraft he was testing.

**RESNIK, Judith A.**, Civilian

Born April 5, 1949, in Akron, Ohio.

Bachelor of Science in electrical engineering from Carnegie-Mellon University; Doctor of Philosophy in electrical engineering from the University of Maryland.

Flew on STS 41-D.

Cumulative hours of space flight are more than 144.

Died January 28, 1986, in the STS 51-L accident.

**ROBERTSON, Patricia Hilliard**, Civilian

Born March 12, 1963, in Indiana, Pennsylvania. Hometown, Homer City, Pennsylvania.

Bachelor of Science in biology from Indiana University of Pennsylvania; Doctor of Medicine from the Medical College of Pennsylvania.

Died May 24, 2001, of injuries sustained in the crash of a private plane at Wolfe Air Park, Manvel, Texas.

## DECEASED U.S. ASTRONAUTS

- ROOSA, Stuart A.**, Colonel, U.S. Air Force (Retired)  
Born August 16, 1933, in Durango, Colorado.  
Bachelor of Science in aeronautical engineering from the University of Colorado.  
Flew on Apollo 14.  
Cumulative hours of space flight are more than 216.  
Died December 12, 1994, due to complications of pancreatitis.
- SCOBEE, Francis R.**, Major, U.S. Air Force (Retired)  
Born May 19, 1939, in Cle Elum, Washington.  
Bachelor of Science in aerospace engineering from the University of Arizona.  
Flew on STS 41-C.  
Cumulative hours of space flight are more than 167.  
Died January 28, 1986, in the STS 51-L accident.
- SEE, Elliot M., Jr.**, Civilian  
Born July 23, 1927, in Dallas, Texas.  
Bachelor of Science from the U.S. Merchant Marine Academy; Master of Science in engineering from the University of California - Los Angeles.  
Died February 28, 1966, in St. Louis, Missouri, in the crash of a T-38 jet.
- SHEPARD, Alan B., Jr.**, Rear Admiral, U.S. Navy (Retired)  
Born November 18, 1923, in East Derry, New Hampshire.  
Bachelor of Science from the U.S. Naval Academy.  
Flew on Mercury 3 and Apollo 14.  
Cumulative hours of space flight are more than 216.  
Cumulative EVA time is more than 9 hours.  
Died July 21, 1998, after a lengthy illness.
- SLAYTON, Donald K.**, Civilian Major, U.S. Air Force Reserve  
Born March 1, 1924, in Sparta, Wisconsin.  
Bachelor of Science in aeronautical engineering from the University of Minnesota.  
Flew on Apollo-Soyuz Test Project.  
Cumulative hours of space flight are more than 217.  
Died June 13, 1993, in League City, Texas, from complications of a brain tumor.
- SMITH, Michael J.**, Captain, U.S. Navy  
Born April 30, 1945, in Beaufort, North Carolina.  
Bachelor of Science in naval science from the U.S. Naval Academy; Master of Science in aeronautical engineering from the U.S. Naval Postgraduate School.  
Died January 28, 1986, in the STS 51-L accident.
- SWIGERT, John L., Jr.**, Civilian  
Born August 30, 1931, in Denver, Colorado.  
Bachelor of Science in mechanical engineering from the University of Colorado; Master of Science in aerospace science from the Rensselaer Polytechnic Institute; Master of Business Administration from Hartford College.  
Flew on Apollo 13.  
Cumulative hours of space flight are more than 142.  
Died December 27, 1982, of cancer.
- THORNE, Stephen D.**, Lieutenant Commander, U.S. Navy  
Born February 11, 1953, in Frankfurt-am-Main, West Germany.  
Bachelor of Science in engineering from the U.S. Naval Academy.  
Died May 24, 1986, in Alta Loma, Texas, in an airplane crash.
- VEACH, Charles Lacy**, Civilian  
Born September 18, 1944, in Chicago, Illinois. Hometown, Honolulu, Hawaii.  
Bachelor of Science in engineering management from the U.S. Air Force Academy.  
Flew on STS-39 and STS-52.  
Cumulative hours of space flight are more than 436.  
Died October 3, 1995, following a lengthy illness.

## DECEASED U.S. ASTRONAUTS

**WALKER, David M.**, Captain, U.S. Navy (Retired)

Born May 20, 1944, in Columbus, Georgia. Hometown, Eustis, Florida.  
Bachelor of Science from the U.S. Naval Academy.  
Flew on STS 51-A, STS-30, STS-53 And STS-69.  
Cumulative hours of space flight are more than 724.  
Died April 23, 2001, following a sudden and brief illness.

**WHITE, Edward H., II**, Lieutenant Colonel, U.S. Air Force

Born November 14, 1930, in San Antonio, Texas.  
Bachelor of Science from the U.S. Military Academy; Master of Science in aeronautical engineering from the University of Michigan.  
Flew on Gemini 4.  
Cumulative hours of space flight are more than 97.  
Cumulative EVA time is more than 23 minutes.  
Died January 27, 1967, at NASA John F. Kennedy Space Center, Florida, in the Apollo spacecraft fire.

**WILLIAMS, Clifton C., Jr.**, Major, U.S. Marine Corps

Born September 26, 1932, in Mobile, Alabama.  
Bachelor of Science in mechanical engineering from Auburn University.  
Died October 5, 1967, near Tallahassee, Florida, in the crash of a T-38 jet.

## U.S. ASTRONAUT SELECTION BY GROUP

- GROUP 1** -- Mercury Astronauts, April 1959: Carpenter, Cooper, Glenn, Grissom, Schirra, Shepard, Slayton (7)
- GROUP 2** -- Pilot Astronauts, September 1962: Armstrong, Borman, Conrad, Lovell, McDivitt, See, Stafford, White, Young (9)
- GROUP 3** -- Pilot Astronauts, October 1963: Aldrin, Anders, Bassett, Bean, Cernan, Chaffee, M. Collins, Cunningham, Eisele, Freeman, Gordon, Schweickart, D. Scott, C. Williams (14)
- GROUP 4** -- Scientist Astronauts, June 1965: Garriott, E. Gibson, Graveline, Kerwin, Michel, Schmitt (6)
- GROUP 5** -- Pilot Astronauts, April 1966: Brand, Bull, Carr, Duke, Engle, Evans, Givens, Haise, Irwin, Lind, Lousma, Mattingly, McCandless, Mitchell, Pogue, Roosa, Swigert, Weitz, Worden (19)
- GROUP 6** -- Scientist Astronauts, August 1967: J. Allen, Chapman, England, Henize, Holmquest, Lenoir, Llewellyn, Musgrave, O'Leary, Parker, W. Thornton (11)
- GROUP 7** -- Air Force Manned Orbiting Laboratory Astronauts, August 1969: Bobko, Crippen, Fullerton, Hartsfield, Overmyer, Peterson, Truly (7)
- GROUP 8** -- Pilots and Mission Specialists, January 1978: Bluford, Brandenstein, Buchli, Coats, Covey, Creighton, Fabian, A. Fisher, D. Gardner, R. Gibson, F. Gregory, Griggs, Hart, Hauck, Hawley, Hoffman, Lucid, McBride, McNair, Mullane, Nagel, Nelson, Onizuka, Resnik, Ride, Scobee, Seddon, Shaw, Shriver, Stewart, Sullivan, Thagard, van Hoften, Walker, D. Williams (35)
- GROUP 9** -- Pilots and Mission Specialists, January 1980: Bagian, Blaha, Bolden, Bridges, Chang-Diaz, Cleave, Dunbar, W. Fisher, G. Gardner, Grabe, Hilmers, Leestma, Lounge, O'Connor, R. Richards, Ross, M. Smith, Spring, Springer (19)
- GROUP 10** -- Pilots and Mission Specialists, May 1984: Adamson, E. Baker, M. Brown, Cameron, Carter, Casper, Culbertson, Gutierrez, Hammond, Ivins, Lee, Low, McCulley, Shepherd, K. Thornton, Veach, Wetherbee (17)
- GROUP 11** -- Pilots and Mission Specialists, June 1985: Apt, M. Baker, Cabana, Duffy, Gemar, Godwin, Henricks, Hieb, Jernigan, Meade, Oswald, Thorne, Thuot (13)
- GROUP 12** -- Pilots and Mission Specialists, August 1987: Akers, A. Allen, Bowersox, C. Brown, Chilton, Davis, Foale, Harbaugh, Jemison, McMonagle, Melnick, Readdy, Reightler, Runco, James Voss (15)
- GROUP 13** -- Pilots and Mission Specialists, January 1990: Bursch, Chiao, Clifford, Cockrell, E. Collins, Currie (Sherlock), W. Gregory, Halsell, Harris, Helms, Jones, W. McArthur, Newman, Ochoa, Precourt, Searfoss, Sega, D. Thomas, Janice Voss, Walz, Wilcutt, Wisoff, Wolf (23)
- GROUP 14** -- Pilots and Mission Specialists, March 1992: Barry, Brady, Coleman, Gernhardt, Grunsfeld, Horowitz, Jett, Kregel, Lawrence, Linenger, Linnehan, Lopez-Alegria, Parazynski, Rominger, W. Scott, S. Smith, Tanner, A. Thomas, Weber (19)
- GROUP 15** -- Pilots and Mission Specialists, January 1995: Altman, M. Anderson, Ashby, Bloomfield, Chawla, Curbeam, Edwards, Gorie, Hire, Husband, Kavandi, Lindsey, Lu, Melroy, Noriega, Reilly, S. Robinson, Kilrain (Still), Sturckow (20)
- GROUP 16** -- Pilots and Mission Specialists, May 1996: D. Brown, Burbank, Cagle, Caldeiro, Camarda, Carey, Clark, Fincke, Forrester, Frick, Herrington, Higginbotham, Hobaugh, J. Kelly, M. Kelly, S. Kelly, Lockhart, Loria, Magnus, Massimino, Mastracchio, McCool, Morin, Nowak, Pettit, Phillips, Polansky, P. Richards, Sellers, Stefanyshyn-Piper, Tani, Walheim, Whitson, J. Williams, Wilson (35)
- GROUP 17** -- Pilots and Mission Specialists, June 1998: C. Anderson, Archambault, Caldwell, Chamitoff, Creamer, Ferguson, Foreman, Fossum, Ham, G. C. Johnson, G. H. Johnson, Love,

## U.S. ASTRONAUT SELECTION BY GROUP

Melvin, Morgan, Oefelein, Olivas, Patrick, Poindexter, Reisman, Robertson, Swanson, Wheelock, S. Williams, Woodward, Zamka (25)

**GROUP 18** -- Pilots and Mission Specialists, July 2000: Antonelli, Barratt, Behnken, Boe, Bowen, Drew, Feustel, Ford, Garan, Good, Hurley, Kopra, M. McArthur, Nyberg, Stott, Virts, Wilmore (17)

**GROUP 19** -- Pilots, Mission Specialists and Educator Mission Specialists, May 2004: Acaba, Arnold, Bresnik, Cassidy, Dutton, Hernandez, Kimbrough, Marshburn, Metcalf-Lindenburger, Satcher, Walker (11)

## CONGRESSIONAL SPACE MEDAL OF HONOR

In honor of NASA's 20th anniversary, President Jimmy Carter visited NASA John F. Kennedy Space Center on October 1, 1978, and awarded the first Congressional Space Medal of Honor to six former astronauts. Authorized by Congress in 1969, the award recognized "any astronaut who in the performance of his duties has distinguished himself by exceptionally meritorious efforts and contributions to the welfare of the Nation and mankind." Recipients are recommended by the NASA Administrator and presented by the President of the United States. These astronauts received this special honor:

Neil A. Armstrong, for actions to overcome problems on the Gemini 8 mission and for Apollo 11 when he took his "...giant leap for mankind."

Frank Borman, who commanded the Gemini 7 and Apollo 8 missions. The latter was the first manned spacecraft to orbit the Moon.

Charles Conrad, Jr., who participated in four space flights of increasing duration, complexity and achievement: Gemini 5, Gemini 11, Apollo 12, and Skylab 2. On the first manned Skylab mission, he commanded the crew that performed repairs to the damaged orbital workshop, thus saving the two billion dollar program from potential failure.

John H. Glenn, Jr., who in Mercury 6 was the first American to orbit the Earth. The success of his flight demonstrated the value of the human pilot in space.

Virgil I. Grissom (posthumously), the second American in space, who took part in Mercury and Gemini flights and lost his life during preparations for the first Apollo flight. He flew on Mercury 4 and Gemini 3.

Alan B. Shepard, Jr., who was the first American in space, aboard Mercury 3. He also commanded the Apollo 14 mission.

Roger B. Chaffee (posthumously) was one of the third groups of astronauts chosen but lost his life before his first flight during preparations for the first Apollo flight. President William Clinton awarded the medal on December 17, 1997.

Edward H. White (posthumously) piloted Gemini 4 and performed the first U.S. space walk, floating outside the capsule for 21 minutes. President William Clinton awarded the medal on December 17, 1997.

John W. Young, who demonstrated leadership, courage, and technical skill in a space flight career that spanned two decades and five (at that time) space flights pivotal to human progress in space. He flew on Gemini 3, Gemini 10, Apollo 10, Apollo 16, and STS-1 prior to receipt of the medal which was presented May 19, 1981, by President Ronald Reagan.

Thomas J. Stafford, who commanded the first flight of the lunar module to the Moon and the American crew that rendezvoused with a Soviet spacecraft in 1975. He was recognized for his past contributions, and for continuing to serve the Nation in charting a future vision for our space program. He flew on Gemini 6 and 9, Apollo 10, and the Apollo-Soyuz Test Project. Vice President Dan Quayle at the direction of President George Bush presented the medal 1992.

James A. Lovell, who flew on Gemini 7 and 12, and Apollo 8 and 13, was presented the medal on July 26, 1995. In his remarks, President Bill Clinton especially commended Lovell for his performance on Apollo 13, which demonstrated, "the kind of resourcefulness, grit, and grace under pressure that is the province of heroes."

Shannon Lucid, who spent 188 days in space on the U.S. shuttle and Russian space station Mir, was presented the medal on December 2, 1996. Noting that the medal is given out sparingly because it honors "extraordinary service to the nation," President Bill Clinton added that "Dr. Lucid achieved that kind of service for 188 days this year, the longest flight by an American in space, the longest time for any woman of any nation in space, five shuttle missions altogether."

William Shepherd, who was the first astronaut to command a crew on the International Space Station, received the medal from President George W. Bush on January 15, 2003. Shepherd and the two



## **CONGRESSIONAL SPACE MEDAL OF HONOR**

other members of his crew spent 141 days in space, beginning a new era of international cooperation in space exploration.

Francis R. Scobee, Michael J. Smith, Judith A. Resnik, Ellison S. Onizuka, Ronald E. McNair, Gregory B. Jarvis and Sharon Christa McAuliffe were posthumously presented the medal for their ultimate sacrifice in service to their Nation and mankind. NASA Administrator Sean O'Keefe presented the medal to their families on July 23, 2004.

## **CONGRESSIONAL GOLD SPACE MEDAL OF HONOR**

The Congressional Gold Space Medal of Honor is considered the Nation's highest civilian award. It is authorized by Congress and given to the recipient by the President of the United States or his appointee. All Congressional Gold Medal legislation must be cosponsored by at least two-thirds (290) of the Members of the U.S. House of Representatives. The first Congressional Gold Medal was given in 1776.

Rick Husband, Michael Anderson, Laurel Clark, David Brown, William McCool, Kalpana Chawla, and Ilan Ramon were present the Congressional Gold Medal of Honor in recognition of their outstanding and enduring contributions to the Nation. Congress authorized the medal July 26, 2004.

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
AK		Oefelein	
AL	Hire, K. Thornton <i>Hartsfield, Jemison, James Voss</i> <b>C. Williams</b>	Davis <i>Edwards, James Voss</i>	<b>U of Alabama:</b> J. Kelly <b>U of A (Huntsville):</b> Davis <b>U of A (Birmingham):</b> Morin <b>Auburn:</b> Davis, K. Thornton, C. Williams. <i>Hartsfield, Mattingly, James Voss</i> <b>Troy State:</b> Ford, Halsell, Kregel <i>W. Gregory</i>
AR	Parazynski <i>Covey</i>		<b>U of Arizona:</b> Acaba
AZ	Creamer, S. Smith	Phillips	<b>U of Arizona:</b> Caldeiro, Pettit <i>Jones, Spring</i> <b>Scobee</b>
CA	Acaba, Caldwell, J. Hernandez, Lindsey, Love, Melroy, Morgan, Ochoa, O'Connor, Olivas, Poindexter, Robinson, Sturckow, Walheim, Young <i>Chilton, Clifford, Coats, Hauck, McCulley, Ride, van Hoffen</i> <b>McCool</b>	M. Baker, Cagle, Chamitoff, Chiao, A. Fisher, Horowitz, Lindsey, Lopez-Alegria, K. M. McArthur, Morgan, Newman, Noriega, Ochoa, Parazynski, S. Smith, Sturckow, Walheim <i>R. Gibson, Linenger</i>	<b>CA Institute of Tech:</b> Behnken, Chamitoff, Fullerton, Parker, Reisman <i>Borman, E. Gibson, Meade, Michel, Schmitt, Searfoss</i> <b>U of CA (Berkley):</b> Chiao, Walheim <i>Jernigan, Lind, O'Leary, Seddon, van Hoffen, Weber</i> <b>U of CA (LA):</b> Brand, A. Fisher, K. McArthur, Phillips, Robinson <i>Cunningham, Musgrave</i> <b>See</b> <b>CA Polytechnic:</b> Chamitoff, Sturckow <i>R. Gibson</i> <b>U of CA (Davis):</b> Caldwell, Robinson <b>U of CA (San Diego):</b> K. McArthur <b>U of CA (Santa Barbara):</b> Acaba, Chiao, J. Hernandez <b>U of CA (Santa Cruz):</b> Hawley <i>Sullivan</i> <b>CA State (Fresno):</b> Nagel <i>McMonagle</i> <b>Husband</b> <b>CA State (Fullerton):</b> Caldwell <b>CA State (Northridge):</b> Horowitz <b>Golden Gate:</b> Precourt <i>Henricks</i> <b>Harvey Mudd:</b> Love <i>Nelson</i> <b>San Diego State:</b> Ochoa <b>San Francisco:</b> Cagle <b>Southern Cal:</b> Currie, Noriega <i>Armstrong, Bobko, Bolden, Carr, Duffy, Linenger, Reightler, Thuot</i>
CA Cont.			<b>Stanford:</b> E. Collins, Fincke, Lu, Morgan, Ochoa, Parazynski, Robinson, S. Smith <i>Bull, W. Fisher, Garriott, Helms, Jemison, Jernigan, Low, McCandless, Ride, Wisoff</i> <b>Naval Postgrad:</b> Altman, Bursch, Curbeam, Ferguson,

CURRENT-REGULAR - FORMER-*ITALICS* - DECEASED **BOLD ITALICS**

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
			Foreman, Frick, Ham, Herrington, Jett, M. Kelly, Leestma, Lopez-Alegria, Noriega, Nowak, Poindexter, Rominger, J. Williams <i>Carr, Cernan, Coats, Hilmers, Lousma, McBride, Mitchell, Reightler, W. Scott, Springer, Weitz</i> <b>Evans, McCool, Overmyer, M. Smith</b> <b>University of The Pacific:</b> Hernandez
<b>CO</b>	Brand, Metcalf-Lindenburger, Rominger  <i>Carpenter, Carr, Lounge</i>  <b>Roosa, Swigert</b>	Ashby, Burbank, Parazynski, Swanson  <i>Sega</i>	<b>U of Colorado:</b> Brand, Herrington, Ivins, Swanson <i>Carpenter, Hieb, Lounge, Sega, James Voss</i> <b>Chawla, Onizuka, Roosa, Swigert</b> <b>Colorado State:</b> Cleave, Rominger <i>van Hoften</i> <b>Air Force Acad:</b> Bloomfield, Boe, Bridges, Casper, Drew, Dutton, F. Gregory, Halsell, G. H. Johnson, J. Kelly, Kregel, Lindsey, Precourt, Virts <i>Blaha, Bobko, C. Brown, Chilton, Covey, Duffy, G. Gardner, Grabe, W. Gregory, Gutierrez, Hammond, Helms, Henricks, Jones, Lee, McMonagle, Searfoss, Sega, Shriver</i> <b>Veach</b>
<b>CT</b>	Barry, Burbank, Mastracchio  <i>Spring, Thuot</i>	Burbank	<b>U of Connecticut:</b> Chang-Diaz, Mastracchio <b>Hartford:</b> <b>Swigert</b> <b>Yale:</b> <i>J. Allen</i> <b>Coast Guard Acad:</b> Burbank, Melnick
<b>DE</b>	Currie		
<b>DC</b>	Drew, F. Gregory, Nowak  <i>Stewart</i>		<b>Georgetown:</b> <i>O'Leary</i> <b>George Washington:</b> Camarda, F. Gregory, Woodward <i>Coats, Creighton</i> <b>Griggs</b>
<b>FL</b>	Boe, Davis, Lawrence  <i>Lenoir, R. Richards, W. Scott, Thagard</i>	Caldeiro, Jett, Stott  <i>Covey, Thagard</i>  <b>Walker</b>	<b>Embry-Riddle:</b> Burbank, Drew, Garan, Stott, Virts, Kilrain <b>Florida Atlantic:</b> Swanson <b>FL Tech:</b> Higginbotham, Hire, S. Williams, Zamka <b>Florida State:</b> <i>W. Scott, Thagard</i> <b>U of Central Florida:</b> Caldeiro <b>U of Florida:</b> Ford, Garan <i>W. Fisher</i> <b>U of Florida (Central):</b> Stott <b>U of Miami:</b> Barry <b>West Florida:</b> Cockrell, O'Connor, Phillips <i>Buchli, Melnick, R. Richards</i>
<b>GA</b>	Bridges  <i>Hammond, Kilrain</i>  <b>Carter, Walker</b>	Casper	<b>Emory:</b> <b>Carter</b> <b>GA Tech:</b> Boe, Davis, Horowitz, Kimbrough, Kopra, Mangus, W. McArthur, Poindexter, Wheelock, Young <i>Clifford, Hammond, Kilrain, Truly</i>

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
HI	K. McArthur <b>Onizuka</b>	Lu <b>Veach</b>	
IA	J. Kelly, Whitson <i>Cunningham, Hilmers, Nelson, Shriver</i> <b>Clark</b>		<b>Cornell:</b> <i>Hilmers</i> <b>Iowa State:</b> C. Anderson <b>Iowa Wesleyan:</b> Whitson
ID	Reilly	Morgan	<b>U of Idaho:</b> Ashby <b>Northwest Nazarene:</b> <i>Hieb</i>
IL	Altman, Archambault, Grunsfeld, Higginbotham, Magnus, Nagel, Tanner, Woodward <i>Cernan, Kerwin, Mattingly, McDivitt, Meade</i> <b>Veach</b>	Altman, Archambault, Tani, Jan Voss	<b>U of Chicago:</b> Grunsfeld <b>U of Illinois:</b> Altman, Archambault, Higginbotham, Nagel, Tanner <i>D. Gardner</i> <b>Northwestern:</b> Barratt <i>Kerwin</i>
IN	Ford, Ross, Jan Voss, Wolf <i>J. Allen, Borman, M. Brown, England, D. Williams</i> <b>Grissom</b>	Bowersox	<b>Depauw:</b> <i>J. Allen</i> <b>Indiana:</b> Wolf <b>Notre Dame:</b> Ford, Good, Wetherbee <b>Purdue:</b> Bridges, Casper, Feustel, Polansky, Ross, Janice Voss, Wolf <i>Armstrong, Blaha, M. Brown, Cernan, Covey, G. Gardner, Harbaugh, McCulley, Shriver, Weber, D. Williams</i> <b>Chaffee, Grissom</b>
KS	Hawley <i>Engle</i> <b>Evans</b>	Hawley	<b>U of Kansas:</b> Hawley <i>Engle</i> <b>Evans</b>
KY	Bresnik, Wilcutt	Wilcutt <i>Musgrave</i>	<b>U of Kentucky:</b> <i>Musgrave</i> <b>Western Kentucky:</b> Wilcutt
LA	Gorie, Halsell		<b>Tulane:</b> Hurley
MA	Bowen, Cassidy, Linnehan, Loria, Lu, Precourt, Wilson <i>Apt, Duffy, McCandless, Musgrave, O'Leary</i>	Barry, Precourt, S. Williams <i>Thuot</i>	<b>Amherst:</b> Parker <i>Hoffman</i> <b>MIT:</b> Antonelli, Bowen, Cassidy, Chamitoff, Chang-Diaz, Coleman, Creamer, Fincke, Grunsfeld, Lawrence, Massimino, Melroy, Patrick, Satcher, Stefanyshyn-Piper, Tani, Janice Voss, Woodward <i>Aldrin, Apt, Cameron, Chapman, Duke, England, Hart, Hauck, Lee, Lenoir, Mitchell, Schweickart, D. Scott, Shepherd</i> <b>McNair</b> <b>U of Mass:</b> Coleman

CURRENT-REGULAR - FORMER-*ITALICS* - DECEASED **BOLD ITALICS**

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
			<b>Harvard College:</b> <i>Apt</i> <b>Harvard University:</b> Satcher, Wilson <i>Hoffman, Schmitt</i> <b>Holy Cross:</b> <i>Kerwin</i> <b>Tufts:</b> <i>Hauck</i> <b>Williams:</b> <i>O'Leary</i>
<b>MD</b>	Arnold, Curbeam, Ivins, Virts  <i>Jones, Reightler</i>	Creamer, Nowak, Poindexter, Virts  <i>Jones</i>	<b>Frostburg State University:</b> Arnold <b>Johns Hopkins:</b> <i>Graveline</i> <b>Loyola:</b> Creamer <b>U of Maryland:</b> Arnold <i>P. Richards</i> <b>McCool, Resnik</b> <b>Naval Acad:</b> Bowen, Bowersox, Bursch, Cabana, Cassidy, Curbeam, Foreman, Frick, Gorie, Ham, Hire, Hobough, Jett, Lawrence, Leestma, Lopez-Alegria, Loria, Nowak, O'Connor, Phillips, Readdy, S. Williams, Zamka <i>Anders, Bolden, Buchli, Coats, Creighton,</i> <i>Culbertson, Duke, Edwards, Linenger, Lounge,</i> <i>Lovell, McCandless, Oswald, Reightler, Schirra,</i> <i>Shepherd, Springer, Stafford, Thuot</i> <b>Eisele, Freeman, Givens, Griggs, Irwin,</b> <b>McCool, Shepard, M. Smith, Thorne, Walker</b>
<b>ME</b>	Hobough		
<b>MI</b>	Antonelli, Bloomfield, Jett, Leestma  <i>Linenger, Lousma,</i> <i>McMonagle, Searfoss,</i> <i>Shaw, Worden</i>  <b>Chaffee</b>	Bloomfield, Zamka	<b>U of Michigan:</b> <i>Lousma, McDivitt, Worden</i> <b>Freeman, Henize, Irwin, White</b>
<b>MN</b>	Cabana, Carey, Nyberg, Stefanyshyn- Piper <i>D. Gardner</i>		<b>U of Minnesota:</b> Carey <b>Slayton</b>
<b>MO</b>	Behnken, Godwin, Kavandi  <i>Akers, Springer</i>	Godwin  <i>Akers, Hammond,</i> <i>R. Richards</i>	<b>U of Missouri:</b> Godwin <i>R. Richards</i> <b>U of Missouri (Rolla):</b> Magnus, Kavandi <i>Akers</i> <b>Missouri Southern:</b> Kavandi <b>Southeast Missouri:</b> Godwin <b>Washington Univ:</b> Behnken <b>Webster:</b> E. Collins <i>Gutierrez</i>
<b>MS</b>	<i>Haise, Peterson, Truly</i>		<b>Southern Miss:</b> <i>Stewart</i>
<b>MT</b>			<b>John Carroll:</b> Walz
<b>NC</b>	E. Baker, Marshburn, W. McArthur	W. McArthur  <i>Brady</i>	<b>Davidson College:</b> Marshburn <b>Duke:</b> <i>Brady</i> <b>U of North Carolina:</b> Brady

CURRENT-REGULAR - FORMER-*ITALICS* - DECEASED **BOLD ITALICS**

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
	<i>Brady, C. Brown, Duke, Helms, W. Thornton</i> <b>M. Smith</b>		<i>Linenger, W. Thornton</i> <b>Wake Forest: Marshburn</b> <b>Agricultural &amp; Tech State: McNair</b>
<b>ND</b>	<i>Buchli, Hieb</i>	<i>Buchli</i>	<b>U of North Dakota: Nyberg</b>
<b>NE</b>	C. Anderson	C. Anderson	<b>Creighton: M. Anderson</b> <b>Hastings: C. Anderson</b> <b>Wayne State: Linenger</b>
<b>NH</b>	Morin <b>Shepard</b>	<i>Searfoss</i>	<b>Dartmouth: Newman</b> <b>U of New Hampshire: Linnehan, Morin</b>
<b>NJ</b>	Ham, M. Kelly, S. Kelly, Polansky, Reisman, Zamka  <i>Aldrin, Schirra, Schweickart, Sullivan</i>	M. Kelly, Polansky, Reisman	<b>Rutgers: Runco</b> <i>Hart</i> <b>Princeton: Barry</b> <i>Adamson, Carr,</i> <b>Conrad</b>
<b>NM</b>	<i>Gutierrez, Schmitt</i>		
<b>NY</b>	Cagle, Camarda, Cleave, E. Collins, A. Fisher, Fullerton, Garan, Hurley, Kregel, Massimino, Parker, Runco, Stott, Swanson, Wetherbee, Wheelock  <i>Adamson, Bobko, E. Gibson, R. Gibson, Grabe, W. Gregory, Hoffman, Melnick</i>  <b>M. Anderson</b>	E. Baker, Bursch, Caldeiro, Kregel, Lu, Massimino, Melroy, Patrick, Runco, Wetherbee, Wheelock  <i>Hoffman, Shepherd</i>	<b>City College: Runco</b> <b>Columbia: Bowersox, G. H. Johnson, Massimino</b> <i>Chilton, W. Gregory, Musgrave</i> <b>Cornell: E. Baker, Barry, Lu, D. Thomas</b> <i>Jemison, Low</i> <b>New York U.: Morin</b> <b>NY Polytechnic: Camarda</b> <b>Rensselaer Polytechnic: Mastracchio</b> <b>Swigert</b> <b>Rochester: E. Gibson</b> <b>NY State: E. Baker, Garan</b> <b>NY State (Farmingdale): Caldeiro</b> <b>NY State (Maritime): S. Kelly</b> <b>Syracuse: E. Collins</b> <i>Musgrave</i> <b>Merchant Marine Acad: M. Kelly</b> <b>See</b>  <b>West Point: Kimbrough, Kopra, Forrester, W. McArthur, Wheelock, J. Williams</b> <i>Adamson, Aldrin, Borman, Clifford, M. Collins, Gemar, W. Mullane, Peterson, D. Scott, Spring, Worden</i> <b>White</b>
<b>OH</b>	Foreman, Gernhardt, Good, D. Thomas, Walz, S. Williams  <i>Armstrong, Cameron, Glenn, Harbaugh, Henricks, Lovell, Low, Segal, Weber</i>	Currie, Foreman  <i>Harbaugh, Henricks, Segal, Weber</i>	<b>Baldwin-Wallace: Overmyer</b> <b>Case Western: D. Thomas</b> <b>Kent State: Walz</b> <b>Marietta: Musgrave</b> <b>Ohio State: Currie, Linnehan</b> <i>Segal</i> <b>Muskingum: Glenn</b> <b>Wright State: Barratt</b> <b>Air Force Inst of Tech: Ford, Fossum, Halsell, Lindsey,</b>

CURRENT-REGULAR - FORMER-*ITALICS* - DECEASED **BOLD ITALICS**

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
	<b>Bassett, Eisele, Henize, Overmyer, Resnik</b>		<i>Anders, Bluford, M. Brown, Cooper, Fabian, Mullane, Peterson Eisele</i>
<b>OK</b>	Herrington  <i>Cooper, Garriott, Pogue, Stafford</i>	Lucid	<b>U of Oklahoma:</b> Lucid <i>Garriott, Haise</i> <b>OK Baptist:</b> <i>Pogue</i> <b>OK City:</b> <i>Cooper</i> <b>OK State:</b> <i>Pogue</i>
<b>OR</b>	Dutton, Pettit  <b>Griggs</b>	Love  <i>Helms</i>	<b>Oregon State:</b> Oefelein, Pettit
<b>PA</b>	Bursch, Ferguson, Feustel, Fincke, Frick, Horowitz, Tani  <i>A. Allen, Bagian, Bluford, Hart, P. Richards, Weitz</i>  <b>Conrad, Freeman, Irwin, Robertson</b>	Fincke  <i>Apt, P. Richards</i>	<b>Carnegie-Mellon:</b> <i>Mitchell Resnik</i>  <b>Drexel:</b> Ferguson <i>Bagian, P. Richards</i> <b>Lehigh:</b> <i>Hart</i> <b>PA Med College:</b> <b>Robertson</b> <b>Penn State:</b> <i>Bluford, Weitz</i> <b>U of Pennsylvania:</b> Gernhardt, Reisman <b>Robertson</b> <b>Thomas Jefferson:</b> <i>Bagian</i> <b>Villanova:</b> <i>A. Allen</i>
<b>RI</b>	Readdy		<b>Naval War College:</b> J. Williams
<b>SC</b>	Casper, Coleman, Fossum  <i>Bolden, Culbertson</i> <b>McNair</b>	<i>Culbertson</i>	<b>The Citadel:</b> Bresnik
<b>SD</b>	Fossum  <i>Gemar</i>	<i>Gemar</i>	
<b>TN</b>	M. Baker, Wilmore  <i>Bull, Jernigan, Seddon, Shepherd</i>		<b>Tennessee Tech:</b> Wilmore <b>U of Tennessee:</b> Arnold, Ashby, Gorie, Hurley, S. Kelly, Wilmore <i>Edwards, Hartsfield, Seddon</i> <b>Vanderbilt:</b> Gernhardt <b>Tenn Space Institute:</b> Oefelein
<b>TX</b>	Ashby, Cockrell, Forrester, Kimbrough, Kopra, Lockhart, S. Walker  <i>Bean, Blaha, Creighton, Crippen, Fabian, W. Fisher, Harris, Holmquest, Mitchell, Mullane, D. Scott</i>  <b>Givens, Husband,</b>	Cockrell, Fossum, Loria, Olivas, Reilly	<b>Baylor:</b> <i>Holmquest</i> <b>U of Houston:</b> Currie, Dunbar, Mastracchio, Olivas, Walheim <i>Bluford, W. Fisher, Harbaugh, Harris, Holmquest, McCandless, Musgrave</i> <b>U of Houston (Clear Lake):</b> Chamitoff, Fincke, Fossum, Mastracchio <i>Bluford, McCandless</i> <b>Rice:</b> Newman, Olivas, S. Walker, Whitson <i>Bull, Hoffman, Jernigan</i> <b>Southern Methodist:</b> Holmquest <b>U of Texas:</b> M. Baker, Cockrell, Lockhart, Nyberg, Wilson, Woodward

CURRENT-REGULAR - FORMER-*ITALICS* - DECEASED **BOLD ITALICS**

ASTRONAUTS AFFILIATIONS TO STATES

ST	BIRTHPLACE	HOME TOWN	COLLEGE
	<i>See, White</i>		<i>Bean, Crippen, Meade, Thagard</i> <b>U of Texas (Arlington): Stewart</b> <b>Chawla</b> <b>U of Texas (Dallas): Reilly</b> <b>U of Texas (El Paso): Olivas</b> <b>U of Texas Medical Branch: Marshburn</b> <b>U of Texas-Public Health: E. Baker</b> <b>Texas A&amp;M: Fossum, Swanson</b> <b>Texas Tech: Lockhart</b> <i>Harris</i> <b>Bassett, Husband</b>
<b>UT</b>	<i>Lind</i>	<i>Clifford</i>	<b>U of Utah: Lind</b> <b>Utah State: Cleave</b>
<b>VA</b>	Bowersox, Melvin, Oefelein, Phillips. Satcher  <i>Edwards, G. Gardner, Wisoff</i>  <b>D. Brown</b>	Readdy  <i>Reightler, Thuot</i>	<b>Eastern VA Medical: D. Brown</b> <b>Old Dominion: Bloomfield</b> <b>Virginia Polytech: Camarda</b> <b>William &amp; Mary: D. Brown</b> <b>U of Richmond: Melvin</b> <b>U of Virginia: Forrester, Marshburn, Melvin</b> <i>K. Thornton, Wisoff</i> <b>Henize</b> <b>Washington and Lee: Low</b>
<b>VT</b>	<i>Graveline</i>		<b>U of Vermont: Graveline</b>
<b>WA</b>	Barratt, Dunbar, G. C. Johnson  <i>Gordon, Oswald</i>  <b>Scobee</b>	<i>Oswald</i>  <b>M. Anderson, Clark</b>	<b>U of Washington: Antonelli, Barratt, Cagle, Dunbar, Dutton, G. C. Johnson, Kavandi, Love</b> <i>Fabian, Gordon, Nelson</i> <b>M. Anderson</b> <b>Washington State: Fabian</b> <b>Whitman College: Metcalf-Lindenburger</b>
<b>WV</b>	<i>McBride</i>		
<b>WI</b>	Chiao, J. Williams  <i>Brandenstein, Lee, Michel</i>  <b>Slayton</b>	J. Williams  <b>Clark</b>	<b>U of Wisconsin: Shaw</b> <b>Clark</b> <b>U of Wisconsin (River Falls): Brandenstein</b>



**ASTRONAUTS BORN IN OTHER COUNTRIES\* (Includes Current International Astronauts)**

<b>ARGENTINA:</b>	Caldeiro	<b>INDIA:</b>	<i>Chawla</i>
<b>AUSTRALIA:</b>	<i>Chapman</i> , A. Thomas	<b>ITALY:</b>	<i>M. Collins</i> , Nespoli, Vittori
<b>BRAZIL:</b>	Pontes	<b>JAPAN:</b>	Doi, Wakata, Noguchi
<b>CANADA:</b>	Chamitoff, Hadfield, MacLean, Payette, D. R. Williams, Thirsk	<b>PACIFIC ISLANDS:</b>	Newman
<b>CHINA:</b>	<i>Anders</i> , Lucid	<b>PERU:</b>	Noriega
<b>COSTA RICA:</b>	Chang-Diaz	<b>SPAIN:</b>	Lopez-Alegria
<b>ENGLAND:</b>	Foale, G.H. Johnson, Patrick, Sellers,	<b>SWITZERLAND</b>	Nicollier
<b>FRANCE:</b>	Eyharts	<b>SWEDEN:</b>	Fuglesang
<b>GERMANY:</b>	Schlegel, <i>Thorne</i>	<b>WALES:</b>	<i>Llewellyn</i>

\*See biographical sketches for city.

## ASTRONAUTS' SCOUTING RECORDS (Includes Current International Astronauts)

### EAGLE:

Bowersox, Chamitoff, Forrester, Fossum,  
Fullerton, G.H. Johnson, Lindsey, Parazynski,  
Pettit, Tanner,

*Adamson, Armstrong, Bagian, Bluford, Brady,  
Carr, Covey, Creighton, Duke, W. Gregory,  
Hoffman, Jones, Lee, Lind, Llewellyn (King's  
Scout, U.K.), Lovell, McCulley, O'Leary,  
Oswald, Reightler, Searfoss, Truly*

***Carter, Chaffee, Eisele, Griggs, McCool,  
Onizuka, See, D. Walker***

### LIFE:

M. Baker, Brand, Bridges, Casper, F. Gregory,  
Kregel, W. McArthur, Poindexter, Robinson.

*Anders, Cooper, Fabian, G. Gardner, Low,  
Mattingly, Mitchell, D. Scott, Spring, Springer,  
van Hoften*

***Bassett, D. Brown, Evans, Givens, C.  
Williams***

### STAR:

Barry, Marshburn, Noguchi, J. Williams  
*Cameron, England, W. Fisher, Garriott, R.  
Gibson, Gordon, Haise, Lounge, Stafford  
Grissom, McNair*

### 1st Class:

C. Anderson, Bloomfield, Camarda, Foreman,  
Linnehan, Oefelein, Reilly  
*J. Allen, Bean, Clifford, Coats, Edwards, Engle,  
D. Gardner, E. Gibson, Hammond, Nelson,  
Schirra, Schweickart, W. Scott, Worden  
Freeman, Henize, Overmyer, Shepard,  
Veach*

### 2nd Class:

Altman, Herrington, Parker, Woodward, Young  
*Bolden, Buchli, Carpenter, Cernan,  
Culbertson, Mullane, Pogue, Shriver, W.  
Thornton  
Husband, Swigert, White*

### TENDERFOOT:

Bursch, Garan, Hawley, Kopra, Love, S. Smith  
*Aldrin, Lousma, McDivitt, Michel, P. Richards,  
Schmitt*

### EXPLORER:

Barratt  
*O'Connor, D. Williams*

### GIRL SCOUT:

Cagle, E. Collins, Currie, Davis, A. Fisher,  
Higginbotham, Hire, Lawrence, Magnus, K.M.  
McArthur, Metcalf-Lindenburger, Morgan, Nowak,  
Stefanyshyn-Piper, Janice Voss

*Helms, Jernigan, Kilrain, Seddon, Sullivan, K.  
Thornton, Weber*

***Clark***

### CUB SCOUT:

Burbank, Carey, Dutton, Foale (Wolf,  
Germany), Gernhardt, Hadfield, Hobough, M.  
Kelly, S. Kelly, Lopez-Alegria, Loria, Massimino,  
Phillips, Readdy, Rominger, Sellers (Wolf),  
Thomas, D.R. Williams, Wolf

*A. Allen, C. Brown, Duffy, Henricks, Leestma,  
McBride, Meade, Musgrave, Shepherd, Thuot*

***Conrad***

### WEBELO:

Arnold, Drew, Fincke, Ford, Gorie, J. Kelly, Loria,  
Massimino, Noriega, Olivas

***M. Anderson***

### RANK UNKNOWN:

Morin, Polansky

*Bull, Harris, James Voss*

### CAMP FIRE GIRL:

S. Walker

**UNITED STATES SERVICE ACADEMIES FROM WHICH ASTRONAUTS  
EARNED DEGREES**

**The Citadel:** Bresnik

**U.S. Air Force Academy:** Bloomfield, Boe, Bridges, Casper, Drew, Dutton, F. Gregory, Halsell, G. H. Johnson, J. Kelly, Kregel, Lindsey, Precourt, Virts

*Blaha, Bobko, C. Brown, Chilton, Covey, Duffy, G. Gardner, Grabe, W. Gregory, Gutierrez, Hammond, Helms, Henricks, Jones, Lee, McMonagle, Searfoss, Sega, Shriver*

***Veach***

**U.S. Air Force Institute of Technology:**

Ford, Fossum, Halsell, Lindsey,

*Anders, Bluford, M. Brown, Cooper, Fabian, Mullane, Peterson*

***Eisele***

**U.S. Coast Guard Academy:** Burbank,

*Melnick*

**U.S. Merchant Marine Academy:** M. Kelly,

***See***

**U.S. Military Academy:** Forrester, *Gemar*, Kimbrough, Kopra, W. McArthur, Wheelock, J. Williams

*Adamson, Aldrin, Borman, Clifford, M. Collins, Mullane, Peterson, D. Scott, Spring, Worden*

***White***

**U.S. Naval Academy:** Bowen, Bowersox, Bursch, Cabana, Cassidy, Creighton, Curbeam, Foreman, Frick, Gorie, Ham, Hire, Hobbaugh, Jett, Lawrence, Leestma, Lopez-Alegria, Loria, Nowak, O'Connor, Phillips, Readdy, S. Williams, Zamka

*Anders, Bolden, Buchli, Coats, Culbertson, Duke, Edwards, Linenger, Lounge, Lovell, McCandless, Oswald, Reightler, Schirra, Shepherd, Springer, Stafford, Thuot*

***Eisele, Freeman, Givens, Griggs, Irwin, McCool, Shepard, M. Smith, Thorne, D. Walker***

**U.S. Naval Postgraduate School:** Altman, Bursch, Curbeam, Ferguson, Foreman, Frick, Ham, Herrington, Jett, M. Kelly, Leestma, Lopez-Alegria, Noriega, Nowak, Poindexter, Rominger, *W. Scott*, J. Williams

*Carr, Cernan, Coats, Hilmers, Lousma, McBride, Mitchell, Reightler, Springer, Weitz*

***Evans, McCool, Overmyer, M. Smith,***

**U.S. Naval War College:** J. Williams

## CURRENT U.S. ASTRONAUTS IN ACTIVE & RESERVE MILITARY SERVICE

### AIR FORCE:

Archambault, Behnken, Bloomfield, Boe, Cagle, Carey, Coleman, E. Collins, Drew, Dutton, Fincke, Ford, Garan, Good, Horowitz, G. H. Johnson, J. Kelly, Lindsey, Lockhart, Melroy, Virts, Walheim, Walz

### AIR FORCE RESERVES:

Fossum

### ARMY:

Creamer, Currie, Forrester, Kimbrough, Kopra, Wheelock, J. Williams

### COAST GUARD:

Burbank

### MARINE CORPS:

Bresnik, Hobaugh, Hurley, Loria, Sturckow, Wilcutt, Zamka

### NAVY:

Altman, Antonelli, Bowen, Bowersox, Bursch, Cassidy, Curbeam, Ferguson, Foreman, Frick, Gorie, Ham, Herrington, Jett, M. Kelly, S. Kelly, Lawrence, Lopez-Alegria, Morin, Nowak, Oefelein, Poindexter, Rominger, Stefanyshyn-Piper, Wetherbee, S. Williams, Wilmore, Woodward

### NAVY RESERVES:

Hire, G.C. Johnson, Phillips

# *U.S. HUMAN SPACE FLIGHT LOG*

Mission	Crew	Date	Mission	Cumulative	
				elapsed time(MET), hr:min:sec	U.S. man-hr. in space, hr:min:sec
Mercury-Redstone 3		Shepard	May 5, 1961	00:15:22	
Mercury-Redstone 4		Grissom	July 21, 1961	00:15:37	
	00:30:59				
Mercury-Atlas 6	Glenn	Feb. 20, 1962	04:55:23	05:26:22	
Mercury-Atlas 7	Carpenter	May 24, 1962	04:56:05	10:22:27	
Mercury-Atlas 8	Schirra	Oct. 3, 1962	09:13:11	19:35:38	
Mercury-Atlas 9	Cooper	May 15-16, 1963	34:19:49	53:55:27	
<b>Total - Project Mercury - 53:55:27</b>					
Gemini-Titan III	Grissom, Young	Mar. 23, 1965	04:52:31	63:40:29	
Gemini-Titan IV	McDivitt, White	June 3 to 7, 1965	97:56:12	259:32:53	
Gemini-Titan V	Cooper, Conrad	Aug. 21 to 29, 1965	190:55:14	641:23:21	
Gemini-Titan VII	Borman, Lovell	Dec. 4 to 18, 1965	330:35:01	1302:33:23	
Gemini-Titan VI-A	Schirra, Stafford	Dec. 15 and 16, 1965	25:51:24	1354:16:11	
Gemini-Titan VIII	Armstrong, D. Scott	Mar. 16, 1966	10:41:26	1375:39:03	
Gemini-Titan IX-A	Stafford, Cernan	June 3 to 6, 1966	72:20:50	1520:20:43	
Gemini-Titan X	Young, M. Collins	July 18 to 21, 1966	70:46:39	1661:54:01	
Gemini-Titan XI	Conrad, Gordon	Sept. 12 to 15, 1966	71:17:08	1804:28:17	
Gemini-Titan XII	Lovell, Aldrin	Nov. 11 to 15, 1966	94:34:31	1993:37:19	
<b>Total - Gemini Program - 1939:41:52</b>					
Apollo-Saturn 7	Schirra, Eisele, Cunningham	Oct. 11-22, 1968	260:09:03	2774:04:28	
Apollo-Saturn 8	Borman, Lovell, Anders	Dec. 21-27, 1968	147:00:42	3215:06:34	
Apollo-Saturn 9	McDivitt, D. Scott, Schweickart	Mar. 3-13, 1969		241:00:54	
Apollo-Saturn 10	Stafford, Young, Cernan	May 18-26, 1969	192:03:23	4514:19:25	
Apollo-Saturn 11	Armstrong, M. Collins, Aldrin	July 16-24, 1969	195:18:35	5100:15:10	
Apollo-Saturn 12	Conrad, Gordon, Bean	Nov. 14-24, 1969	244:36:24	5834:04:22	
Apollo-Saturn 13	Lovell, Swigert, Haise	Apr. 11-17, 1970	142:54:41	6262:48:25	
Apollo-Saturn 14	Shepard, Roosa, Mitchell	Jan. 31-Feb. 9, 1971	216:01:58	6910:54:19	
Apollo-Saturn 15	D. Scott, Worden, Irwin	Jul. 26-Aug. 7, 1971	295:11:53	7796:29:58	
Apollo-Saturn 16	Young, Mattingly, Duke	Apr. 16-27, 1972	265:51:05	8594:03:13	
Apollo-Saturn 17	Cernan, Evans, Schmitt	Dec. 7-19, 1972	301:51:59	9499:39:10	
<b>Total - Apollo Program - 7506:01:51</b>					
Skylab SL-2	Conrad, Kerwin, Weitz	May 25-Jun. 22, 1973	672:49:49	11518:08:37	
Skylab SL-3	Bean, Garriott, Lousma	Jul. 28-Sep. 25, 1973	1427:09:04	15799:35:49	
Skylab SL-4	Carr, E. Gibson, Pogue	Nov. 16/73-Feb. 8/74	2017:16:00	21851:23:49	
<b>Total - Skylab Program - 12351:44:39</b>					
Apollo-Soyuz Test Project (ASTP)		Stafford, Brand, Slayton	July 15 to 24, 1975		
<b>Total ASTP - 652:25:09</b>					

Source: NASA Historical Data Book Volumes 1 and 11

# U.S. HUMAN SPACE FLIGHT LOG

## Space Transportation System

Mission Crew	Date	MET (lift-off to main gear touchdown). hr:min:sec	Cumulative U.S. man-hr Space, hr:min:sec
STS-1 Young, Crippen	Apr. 12-14, 1981	54:20:53	22612:30:44
STS-2 Engle, Truly	Nov. 12-14, 1981	54:13:11	22720:57:06
STS-3 Lousma, Fullerton	Mar. 22-30, 1982	192:04:46	23105:06:38
STS-4 Mattingly, Hartsfield	Jun. 27-Jul. 4, 1982	169:09:31	23443:25:40
STS-5 Brand, Overmyer, J. Allen, Lenoir	Nov. 11-16, 1982	122:14:26	23932:23:24
STS-6 Weitz, Bobko, Peterson, Musgrave	Apr. 4-9, 1983	120:23:42	24413:58:12
STS-7 Crippen, Hauck, Ride, Fabian, Thagard	Jun. 18-24, 1983	146:23:59	25145:58:07
STS-8 Truly, Brandenstein, D. Gardner, Bluford, W. Thornton	Aug. 30-Sep. 5, 1983	145:08:43	25871:41:42
STS-9 Young, Shaw, Garriott, Parker, Lichtenberg, Merbold	Nov. 28-Dec. 8, 1983	247:47:24	27358:26:06
41-B Brand, R. Gibson, McCandless, McNair, Stewart	Feb. 3-11, 1984	191:15:55	
41-C Crippen, Scobee, van Hoften, G. Nelson, Hart	Apr. 6-13, 1984	167:40:07	29153:06:16
41-D Hartsfield, Coats, Resnik, Hawley, Mullane, C. Walker	Aug. 30-Sep. 5, 1984	144:56:04	30022:42:40
41-G Crippen, McBride, Ride, Sullivan, Leestma, Garneau, Scully-Power	Oct. 5-13, 1984	197:23:38	31404:28:06
51-A Hauck, D. Walker, D. Gardner, A. Fisher, J. Allen	Nov. 8-16, 1984	191:44:56	
51-C Mattingly, Shriver, Onizuka, Buchli, Payton	Jan. 24-27, 1985	73:33:23	32730:59:41
51-D Bobko, Williams, Seddon, Hoffman, Griggs, C. Walker, Garn	Apr. 12-19, 1985	167:55:23	33906:27:22
51-B Overmyer, F. Gregory, Lind, Thagard, W. Thornton, van den Berg, Wang	Apr. 29-May 6, 1985	168:08:46	35083:28:44
51-G Brandenstein, Creighton, Lucid, Fabian, Nagel, Baudry, Al-Saud	Jun. 17-24, 1985	169:38:52	
51-F Fullerton, Bridges, Musgrave, England, Henize, Acton, Bartoe	Jul. 29-Aug. 6, 1985	190:45:26	
51-I Engle, Covey, van Hoften, Lounge, W. Fisher	Aug. 27-Sep. 3, 1985	170:17:42	38457:47:20
51-J Bobko, Grabe, Hilmers, Stewart, Pailes	Oct. 3-7, 1985	97:44:38	38946:30:30
61-A Hartsfield, Nagel, Buchli, Bluford, Dunbar, Furrer, Messerschmid, Ockels	Oct. 30-Nov. 6, 1985	168:44:53	40296:29:34
61-B Shaw, O'Connor, Cleave, Spring, Ross, Neri-Vela, C. Walker	Nov. 26-Dec. 3, 1985	165:04:49	
61-C R. Gibson, Bolden, Chang-Diaz, Hawley, G. Nelson, Cenker, B. Nelson	Jan. 12 to 18, 1986	146:03:51	42474:30:14
51-L Scobee, M. Smith, Resnik, Onizuka, McNair, Jarvis, McAuliffe	Jan. 28, 1986	n/a	42474:30:14
STS-26 Hauck, Covey, Lounge, G. Nelson, Hilmers	Sep. 29-Oct. 3, 1988	97:00:11	42959:31:09
STS-27 R. Gibson, G. Gardner, Mullane, Ross, Shepherd	Dec. 2-6, 1988	105:05:37	
STS-29 Coats, Blaha, Bagian, Buchli, Springer	Mar. 13-18, 1989	119:38:50	44083:13:24
STS-30 D. Walker, Grabe, Thagard, Cleave, Lee	May 4-8, 1989	96:56:27	44567:55:39
STS-28 Shaw, R. Richards, Adamson, Leestma, M. Brown	Aug. 8-3, 1989	121:00:08	
STS-34 Williams, McCulley, Chang-Diaz, Lucid, E. Baker	Oct. 18-23, 1989	119:39:21	
STS-33 F. Gregory, Blaha, Musgrave, Carter, K. Thornton	Nov. 22-27, 1989	120:06:48	
STS-32 Brandenstein, Wetherbee, Dunbar, Low, Ivins	Jan. 9-20, 1990	261:00:36	47676:50:04
STS-36 Creighton, Casper, Mullane, Hilmers, Thuot	Feb. 28-Mar. 4, 1990	106:18:22	48208:21:54
STS-31 Shriver, Bolden, Hawley, McCandless, Sullivan	Apr. 24-29, 1990	121:16:06	48814:42:24
STS-41 R. Richards, Cabana, Shepherd, Melnick, Akers	Oct. 6-10, 1990	98:10:04	49305:32:44

# U.S. HUMAN SPACE FLIGHT LOG

## Space Transportation System

Mission	Crew	Date	MET (lift-off to main gear touchdown). hr:min:sec	Cumulative U.S. man-hr in space, hr:min:sec
STS-38	Covey, Culbertson, Springer, Meade, Gemar	Nov. 15-20, 1990	117:54:31	14985:05:19
STS-35	Brand, G. Gardner, Hoffman, Lounge, Parker, Durrance, Parise	Dec. 2-10, 1990	215:05:08	51400:41:15
STS-37	Nagel, Cameron, Ross, Apt, Godwin	Apr. 5-11, 1991	143:32:44	52118:34:55
STS-39	Coats, Hammond, Bluford, Harbaugh, Hieb, McMonagle, Veach	Apr. 28-May 6, 1991	199:22:23	53514:01:36
STS-40	O'Connor, Gutierrez, Seddon, Bagian, Jernigan, Gaffney, Hughes-Fulford	Jun. 5-14, 1991	55041:41:56	218:14:20
STS-43	Blaha, M. Baker, Lucid, Adamson, Low	Aug. 2-11, 1991	213:21:25	56108:29:01
STS-48	Creighton, Reightler, Buchli, Gemar, M. Brown	Sep. 12-18, 1991	128:27:38	56750:47:11
STS-44	F. Gregory, Henricks, Musgrave, Runco, James Voss, Hennen	Nov. 24-Dec. 1, 1991	166:50:44	57751:51:35
STS-42	Grabe, Oswald, Thagard, Hilmers, Readdy, Bondar, Merbold	Jan. 22-30, 1992	193:14:44	59104:34:43
STS-45	Bolden, Duffy, Sullivan, Leestma, Foale, Frimout, Lichtenberg	Mar. 24-Apr. 2, 1992	60603:40:59	214:09:28
STS-49	Brandenstein, Chilton, Hieb, Melnick, Thuot, K. Thornton, Akers	May 7-16, 1992	213:17:38	62096:44:25
STS-50	R. Richards, Bowersox, Dunbar, E. Baker, Meade, DeLucas, Trinh	Jun. 25-Jul. 9, 1992	331:30:04	64417:1
STS-46	Shriver, A. Allen, Hoffman, Chang-Diaz, Nicollier, Ivins, Malerba	Jul. 31-Aug. 8, 1992	191:15:03	65756:0
STS-47	R. Gibson, C. Brown, Lee, Apt, Davis, Jemison, Mohri	Sep. 12-20, 1992	190:30:23	67089:3
STS-52	Wetherbee, M. Baker, Veach, Shepherd, Jernigan, MacLean	Oct. 22-Nov. 1, 1992	236:56:13	68511:1
STS-53	D. Walker, Cabana, Bluford, James Voss, Clifford	Dec. 2-9, 1992	69387:49:08	2175:19:47
STS-54	Casper, McMonagle, Runco, Harbaugh, Helms	Jan. 13-19, 1993	143:38:19	70106:00:43
STS-56	Cameron, Oswald, Foale, Cockrell, Ochoa	Apr. 8-17, 1993	222:08:24	71216:42:43
STS-55	Nagel, Henricks, Ross, Precourt, Harris, Walter, Schlegel	Apr. 26-May 6, 1993	239:39:59	72894:2
STS-57	Grabe, Duffy, Low, Currie, Wisoff, Janice Voss	Jun. 21-Jul. 1, 1993	239:44:54	74332:52:00
STS-51	Culbertson, Readdy, Newman, Bursch, Walz	Sept. 12-22, 1993	236:11:11	75513:47:55
STS-58	Blaha, Searfoss, Seddon, W. McArthur, Wolf, Lucid, Fettman	Oct. 18-Nov. 1, 1993	336:12:32	77867:
STS-61	Covey, Bowersox, Musgrave, K. Thornton, Nicollier, Hoffman, Akers	Dec. 2-2, 1993	259:58:37	79427:07:21
STS-60	Bolden, Reightler, Chang-Diaz, Davis, Sega, Krikalev	Feb. 3-11, 1994	199:09:22	80622:03:33
STS-62	Casper, A. Allen, Thuot, Gemar, Ivins	Mar. 4-18, 1994	335:16:41	82298:26:58
STS-59	Gutierrez, Chilton, Godwin, Apt, Clifford, Jones	Apr. 9-20, 1994	269:49:30	83917:23:58
STS-65	Cabana, Halsell, Hieb, Walz, Chiao, Thomas, Mukai	July 8-23, 1994	353:55:00	86040:53:58
STS-64	R. Richards, Hammond, Linenger, Helms, Meade, Lee	Sep. 9-20, 1994	262:49:57	87617:53:40

# *U.S. HUMAN SPACE FLIGHT LOG*

STS-68 Baker, Wilcutt, Wisoff, S. Smith, Bursch, Jones

Sep. 30-Oct. 11, 1994269:46:08 89236:30:28



# U.S. HUMAN SPACE FLIGHT LOG

## Space Transportation System

Mission	Crew	Date	MET (lift-off to main gear touchdown). hr:min:sec	Cumulative U.S. man-hr in space. hr:min:sec
STS-66	McMonagle, C. Brown, Ochoa, Tanner, Clervoy, Parazynski	Nov. 3-14, 1994	262:34:02	
STS-63	Wetherbee, E. Collins, Harris, Foale, Janice Voss, Titov	Feb. 3-11, 1995	198:28:15	2002:44:10
STS-67	Oswald, W. Gregory, Grunsfeld, Lawrence, Jernigan, Durrance, Parise	Mar. 2-18, 1995	399:08:48	94796:45:46
STS-71	R. Gibson, Precourt, E. Baker, Harbaugh, Dunbar, Solovyev, Budarin, Dezhurov, Strekalov, Thagard	Jun. 27-Jul. 7, 1995	235:22:17	
STS-70	Henricks, Kregel, Thomas, Currie, Weber	Jul. 13-22, 1995	214:20:05	missions and
STS-69	Walker, Cockrell, Jim Voss, Newman, Gernhardt	Sep. 7-18, 1995	260:28:56	
STS-73	Bowersox, Rominger, Coleman, Lopez-Alegria, K. Thornton, Leslie, Sacco	Oct. 20-Nov. 5, 1995	381:52:21	Cumulative
STS-74	Cameron, Halsell, Hadfield, Ross, W. McArthur	Nov. 12-20, 1995	196:30:46	man-hours
STS-72	Duffy, Jett, Chiao, W. Scott, Wakata, Barry	Jan 1-20, 1996	214:00:45	will no longer
STS-75	A. Allen, Horowitz, Hoffman, Cheli, Nicollier, Chang-Diaz, Guidoni	Feb. 22-Mar. 9, 1996	377:40:21	be calculated.
STS-76	Chilton, Searfoss, Sega, Clifford, Godwin, Lucid	Mar. 22-31, 1996		
STS-77	Casper, C. Brown, A. Thomas, Bursch, Runco, Garneau	May 19-29, 1996		
STS-78	Henricks, Kregel, Linnehan, Helms, Brady, Favier, Thirsk	Jun. 20-Jul. 7, 1996	405:47:36	
STS-79	Readdy, Wilcutt, Apt, Akers, Walz, Blaha, Lucid	Sep. 16-26, 1996		
STS-80	Cockrell, Rominger, Jernigan, Jones, Musgrave	Nov. 19-Dec. 7, 1996	423:53:00	
STS-81	M. Baker, Jett, Wisoff, Grunsfeld, Ivins, Linenger, Blaha	Jan. 12-22, 1997	244:55:00	
STS-82	Bowersox, Horowitz, Tanner, Hawley, Harbaugh, M. Lee, S. Smith	Feb. 11-21, 1997	239:37:00	
STS-83	Halsell, Kilrain, Janice Voss, Gernhardt, D. Thomas, Crouch, Linteris	Apr. 4-8, 1997		
STS-84	Precourt, E. Collins, Clervoy, Noriega, Lu, Kondakova, Foale, Linenger	May 15-24, 1997	221:20:00	
STS-94	Halsell, Kilrain, Janice Voss, Gernhardt, D. Thomas, Crouch, Linteris	Jul. 1-17, 1997		
STS-85	C. Brown, Rominger, Davis, Curbeam, Robinson, Tryggvason	Aug. 7-19, 1997		
STS-86	Wetherbee, Bloomfield, Titov, Parazynski, Chretien, Lawrence, Wolf, Foale	Sep. 25-Oct. 6, 1997	259:21:00	
STS-87	Kregel, Lindsey, Chawla, W. Scott, Doi, Kadenyuk	Nov. 19-Dec. 5, 1997	376:34:00	
STS-89	Wilcutt, Edwards, Reilly, M. Anderson, Dunbar, Sharipov, A. Thomas, Wolf	Jan. 22-31, 1998		
STS-90	Searfoss, Altman, Linnehan, Hire, Dave Williams, Buckey, Pawelczyk	Apr. 17-May 3, 1998		
STS-91	Precourt, Gorie, Chang-Diaz, Lawrence, Kavandi, Ryumin, A. Thomas	Jun. 2-12, 1998	235:54:00	

# *U.S. HUMAN SPACE FLIGHT LOG*

## Space Transportation System

Mission	Crew	Date	MET (lift-off to main gear touchdown). hr:min:sec	
STS-95	C. Brown, Lindsey, Robinson, Parazynski, Duque, Mukai, Glenn		Oct. 29-Nov. 7, 1998	213:
STS-88	Cabana, Sturckow, Ross, Currie, Newman, Krikalev		Dec. 4-15, 1998	
STS-96	Rominger, Husband, Jernigan, Ochoa, Barry, Payette, Tokarev	May 27-Jun. 6, 1999	235:13:00	
STS-93	E. Collins, Ashby, Coleman, Hawley, Tognini	Jul. 22-27, 1999	118:49:00	
STS-103	C. Brown, S. Kelly, S. Smith, Clervoy, Grunsfeld, Foale, Nicollier		Dec. 19-27, 1999	
STS-99	Kregel, Gorie, Thiele, Kavandi, Janice Voss, Mohri		Feb. 11-22, 2000	
STS-101	Halsell, Horowitz, Weber, J. Williams, James Voss, Helms, Usachev		May 19-29, 2000	
STS-106	Wilcutt, Altman, Burbank, Lu, Mastracchio, Malenchenko, Morukov	Sep. 8-20, 2000	283:10:57	
STS-92	Duffy, Melroy, Chiao, McArthur, Wisoff, Lopez-Alegria, Wakata		Oct. 11-24, 2000	309:40:25
STS-97	Jett, Bloomfield, Tanner Noriega, Garneau,	Nov. 30-Dec. 1, 2001	259:58:20	
STS-98	Cockrell, Polansky, Curbeam, Ivins, Jones	Feb. 7-20, 2001	309:20:00	
STS-102	Wetherbee, J. Kelly, A. Thomas, P. Richards, Jim Voss, Helms, Usachev, Shepherd, Gidzenko, Krikalev	Mar. 8-21, 2001	309:49:00	
STS-100	Rominger, Ashby, Hadfield, Phillips, Parazynski, Guidoni, Lonchakov		Apr. 19-May 1, 2001	283:30:00
STS-104	Lindsey, Hobaugh, Gernhardt, Kavandi, Reilly	Jul. 12-24, 2001	306:35:00	
STS-105	Horowitz, Sturckow, Forrester, Barry, Culbertson, Dezhurov, Tyurin, Jim Voss, Helms, Usachev		Aug. 10-22, 2001	285:13:00
STS-108	Gorie, M. Kelly, Godwin, Tani, Walz, Bursch, Onufrienko, Culbertson, Dezhurov, Tyurin	Dec. 5-17, 2001	283:36:00	
STS-109	Altman, Carey, Grunsfeld, Currie, Linnehan, Newman, Massimino	Mar. 1-12, 2002	262:10:00	
STS-110	Bloomfield, Frick, Walheim, Ochoa, Morin, Ross, Smith	Apr. 8-19, 2002	259:43:00	
STS-111	Cockrell, Lockhart, Chang-Diaz, Perrin, Korzun, Whitson, Treschev, Onufrienko, Walz, Bursch		Jun 5-19, 2002	332:35:00
STS-112	Ashby, Melroy, Wolf, Magnus, Sellers, Yurchikhin		Oct. 7-18, 2002	252:58:00
STS-113	Weatherbee, Lockhart, Lopez-Alegria, Herrington, Bowersox, Budarin, Pettit, Korzun, Whitson, Treschev		Nov. 23-Dec. 7, 2002	330:47:00
STS-107	Husband, McCool, Chawla, D Brown, M. Anderson, Clark, Ramon		Jan. 16-Feb. 1, 2003	382:20:00 Broke apart on reentry.

# *U.S. HUMAN SPACE FLIGHT LOG*

## INTERNATIONAL SPACE STATION

<b>Mission</b>	<b>Crew</b>	<b>Dates</b>	<b>Mission Duration</b>	<b>Launch Site</b>
Exp 1	W. Shepard, Y. Gidzenko, S. Krikalev 140:23:38		10/31/2000-3/21/2001	
Exp 2	Y. Usachev, James Voss, S. Helms	3/8/2001-8/22/2001	167:06:41	39B Kennedy Space Ctr
Exp 3	F. Culbertson, V. Dezhurov, M. Tyurin	8/10/2001-12-17/2001	128:20:45	39A Kennedy Space Ctr
Exp 4	Y Onufrienko, D. Bursch, C. Walz	12/5/2001-6/19/2002	195:19:39	39B Kennedy Space Ctr
Exp 5	V. Korzun, P. Whitson, S. Treschev	6/5/2002-12/7/2002	184:22:14	39A Kennedy Space Ctr
Exp 6	K. Bowersox, D. Pettit, N. Budarin	11/23/2002-5/3/2003	161:01:17	39A Kennedy Space Ctr
Exp 7	Y. Malenchenko, E. Lu Cosmodrome	4/25/2003-10/27/2003	184:21:47	Baikanur
Exp 8	A. Kaleri, M. Foale Cosmodrome	10/18/2003-4/29/2004	194:18:35	Baikanur
Exp 9	G. Padalka, M. Fincke Cosmodrome	4/18/2004-10/23/2004	187:21:17	Baikanur