



A Productive Alliance

California and NASA

California plays an integral role in NASA's mission. Over the years, successful partnerships between NASA and California's industry and academia have benefited the Golden State, the U.S. Space Program, and America's continuing quest to explore our universe and better our lives here on Earth. The **Ames Research Center (ARC)**, located at Moffett Field in Silicon Valley, provides products, technologies, and services that enable NASA missions and expand human knowledge. **Dryden Flight Research Center (DFRC)**, located inside Edwards Air Force Base, performs flight research and technology integration to revolutionize aviation and pioneer aerospace technology. The **Jet Propulsion Laboratory (JPL)**, which is managed by the California Institute of Technology, is NASA's lead for robotic exploration of the solar system.

California's Role in Project Constellation

NASA continues to foster its strong relationship with California's academic, business, and industry sectors as we continue to bring Project Constellation to reality. Building on the successes of the Apollo and Space Shuttle missions, the Orion Crew Exploration Vehicle and the Ares I & V rockets will be the next generation space vehicles that will return humans to the moon and later take them to Mars and other destinations.

ARC is the lead for Orion's thermal protection system and the Ares I launch abort system software requirements, interface, and verification. **DFRC** is the lead for Orion's abort flight test integration and operations, and is responsible for its abort test booster procurement. **JPL** will support Orion's thermal protection system advanced development.

Kirkhill-TA Co. in Brea, **Butler International** in El Segundo, **Goodrich Corp.** in Fairfield, **Force Measurement Systems** in Fullerton, **SGL Carbon Composites Inc.** in Gardena, **Cytec Engineered Materials Inc.** in Orange, **Votaw Precision Technologies** in Santa Fe Springs, and **BD Systems Inc.** in Torrance are working on the First Stage component of the Ares I Launch Vehicle. **Hampton Scott Group LLC** in Encino is working on the Upper Stage piece of the Ares I rocket. **Wind River Systems Inc.** in Alameda, **Midcom Corp.**, **Moeller Manufacturing & Supply, Inc.**, and **Thermech Engineering Corp.** in Anaheim, **Mjollnir Metallurgical** in Atascadero, **Electron Beam Welding Inc.** and **Wire Cut Company Inc.** in Buena Park, **FPI Inc.** in Burbank, **Triad Systems International** in Calabasas, **Hales Engineering Co. Inc.** in Camarillo, **Artcraft Welding Inc.** in Campbell, **Finn Tool & Instruments Inc.**, **Mooney Industries Precision**, and **Pratt & Whitney** in Canoga Park, **Interface Welding** in Carson, **Goldenwest Manufacturing Inc.** in Cedar Ridge, **Anixter Pentacon Inc.**, **Cal Metal Center**, **Dytran Instruments Inc.**, **Electro Adapter Inc.**, **Gardner Bellows Corp.**, **Micro West Tech Inc.**, and **Solara Engineering** in Chatsworth, **Rudell Carbide Inc.** in Chino, **PAC Foundries** in City of Industry, **G&D Industries Inc.** in Covina, **Harvey Titanium** in El Segundo, **Sager Electronics** in Fountain Valley, **Aerospace USA Inc.** and **Professional Plastics** in Fullerton, **Saint-Gobain Performance** in Garden Grove, **Coast Plating Inc.**, **Plasma-Coating Corp.**, and **Rayco Electronics Manufacturing, Inc.** in Gardena, **Morgan Advanced Ceramics Inc.** in Hayward, **Pacific Scientific EMC** in Hollister, **Leda Corp.** and **Rodon Products Inc.** in Huntington Beach, **FMH Investor Group** and **Marway Power Systems** in Irvine, **Uline Inc.** in Lake

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Forest, **Airdrome Parts Co.** in Long Beach, **Csula College of Engineering** and **TW Metals Inc.** in Los Angeles, **Parasoft Corporation** in Monrovia, **Accurate Tube Bending Inc.** in Newark, **A & S Case Co.**, **Allan Aircraft Supply Co.**, **EM Coating Services**, and **Laurel Sheet Metal Prod. Inc.** in North Hollywood, **Maroney Co.** and **W.W. Grainger Inc.** in Northridge, **Altemp Alloys Inc.** in Orange, **Arcturus Manufacturing Corp.** in Oxnard, **CABRAC Inc.** and **Lobart Co.** in Pacoima, **Carlton Forge Works** in Paramount, **Schlusser Forge Co.** in Rancho Cucamonga, **RBC Industrial Tectonics Bearings** in Rancho Dominguez, **Endevco Corp.** in San Juan Capistrano, **National Technical Systems** in Santa Clarita, **Le Fiell Mnfg. Co.**, **Precision Tube Bending**, and **Steven Label Corp.** in

Santa Fe Springs, **MCM Fabrication Inc.** in Shafter, **Computer Systems Supply** in Simi Valley, **Hoefner Corp.** in South El Monte, **Shultz Steel Co.** in South Gate, **L.A. Gauge Company Inc.**, **Peen-Rite Inc.**, and **Welco Electronics Inc.** in Sun Valley, **Sierra Proto Express** in Sunnyvale, **M.S. Aerospace Inc.** in Sylmar, **Airtek Engineering Services** in Tarzana, **National Process Industries** in Temecula, **Beranek Inc.** in Torrance, **HR Textron Inc.**, **Kirkhill-TA Co.**, and **Paragon Precision Inc.** in Valencia, **Blake Wire & Cable Corp.**, **Cicon Engineering Inc.**, **Electro Rent Corp.**, and **Intelligent Data Inc.** in Van Nuys, **Ceycal Inc.** and **Valley Seal Co.** in Woodland Hills, and **Mitech Controls Inc.** and **Tri-Star Plastics** in Yorba Linda are working on the Ares I rocket's Upper Stage J-2X Engine.

Educating, Innovating, and Exploring

Nurturing education—and educators—aids NASA missions and provides incalculable value to California's youth. Through these efforts, NASA powers inspiration that encourages future generations to explore, learn, and build a better future. The Agency's emphasis on education is seen through its generous commitments to educational institutions in the state.

Space Grant Consortium

NASA's academic grants and contracts fund a variety of programs in California including research, education, and outreach. The **University of California, San Diego** is part of the Space Grant Consortium, a coalition between NASA, California colleges and universities, and other institutions representing aerospace education and research activities.

NASA Explorer Schools in California

NASA supports preparatory education through the NASA Explorer Schools (NES) program. The NES program establishes a three-year partnership between NASA and local schools to bring NASA's engaging mathematics, science, and technology learning to educators, students, and families. Currently, **Ellen Ochoa Learning Center** in Cudahy, **Edward Harris Jr. Middle School** in Elk Grove, **San Cayetano Elementary School** in Fillmore, **Roosevelt Middle School** in Glendale, **Vintage Math Science Technology Magnet School** in North Hills, **Sequoia Middle School** in Porterville, **Johnson Magnet for Space Exploration and Technology** and **Rosa Parks Elementary School** in San Diego, **Columbia Middle School**

in Adelanto, **Charles T. Kranz Intermediate School** in El Monte, **Florence Griffith Joyner Elementary School** and **96th Street Elementary School** in Los Angeles, **Oak Grove Institute Foundation** in Murrieta, **Columbia Elementary School** in Perris, **Village Academy High School** in Pomona, and **Nestle Avenue Elementary School** in Tarzana are participating in the program. **Lake View Elementary** in Huntington Beach, **Lakewood High School** in Lakewood, **Flory Academy of Sciences and Technology** in Moorpark, **North Ridge Elementary** in Moreno Valley, **Toyon Elementary School** in San Jose, **Mesa Union Elementary School** in Somis, **Barnard White Middle School** in Union City, **Edwards Middle School** in Edwards, **Sycamore Hills Elementary School** in Fontana, **153rd Street Elementary School** in Gardena, **Gifford C. Cole Middle School** in Lancaster, **Washington Middle School** in Pasadena, **Shirley Avenue Elementary School** in Reseda, and **Porter Elementary School** in San Diego are previous participants.

Commercialized NASA Technology

NASA's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs allow small businesses to develop technologies specific to NASA mission-driven needs. The following companies receive funding through SBIR and STTR: **Global Aerospace Corp** in Altadena, **Applied Poceramic** and **Patz Materials & Technologies** in Benicia, **EcoPro Technologies**, **Harmonic Devices**, **Iris AO**, and **MIGA Motor Company**

in Berkeley, **SySense** in Burbank, **Hersh Acoustical Engineering** and **Optical Physics Company** in Calabasas, **Whittinghill Aerospace** in Camarillo, **Flometrics** in Carlsbad, **Makel Engineering** in Chico, **Photon Systems** in Covina, **Nyx Illuminated Clothing Company** in Culver City, **SciberQuest** in Del Mar, **Rolling Hills Research Corp** in El Segundo, **Applied Spectra** and **RAPT Industries** in Fremont, **Toyon Research Corp** in Goleta, **Microcosm** and **Systems Technology** in Hawthorne, **Apparati** in Hollister, **Hyper-Therm High-Temperature Composites** in Huntington Beach, **Futek Advanced Sensor Technology** and **MetroLaser** in Irvine, **Grainflow Dynamics** in Livermore, **M4 Engineering** in Long Beach, **Optimal Synthesis** in Los Altos, **Group4 Labs** in Menlo Park, **inXitu** and **Los Gatos Research** in Mountain View, **Complexe** in Pacific Grove, **Ultramet** in Pacoima, **Desktop Aeronautics** and **TechnoScience Corp** in Palo Alto, **Alliance Spacesystems** in Pasadena, **Empirical Systems Aerospace** in Pismo Beach, **Advanced Science** and **Novel Technology** in Rancho Palos Verdes, **Novawave Technologies** in Redwood City, **DR Technologies**, **NxGen Electronics**, **Space Micro**, and **Surface Optics Corporation** in San Diego, **Ventions** and **VIPMobile** in San Francisco, **Atlas Scientific** and **St. Croix Research** in San Jose, **Stottler Henke Associates** in San Mateo, **Advanced Scientific Concepts** in Santa Barbara, **Intelligent Fiber Optic Systems Corp** and **Intevac** in Santa Clara, **SmartWear** in Santa Monica, **VIDA Products** in Santa Rosa, **UniRF Technologies** in Saratoga, **WASK Engineering** in Shingle Springs, **M4 Engineering** in Signal Hill, **American GNC Corp** in Simi Valley, **Deployable Space Systems** in Solvang, **Polaronyx** in Sunnyvale, **Shape Change Technologies** in Thousand Oaks, **Broadata Communications**, **Innosense**, **Intelligent Optical Systems**, **Luminit**, **MARK Resources**, **NextGen Aeronautics**, **Physical Optics Corp**, and **Reifer Consultants** in Torrance, **Bossa Nova Technologies** in Venice, and **MATECH Advanced Materials** in Westlake Village.

Astronauts with ties to California

Current. Mr. Joseph Acaba; Capt. Scott Altman; Capt. Michael Baker; Lt. Col. Robert Behnken; Lt. Col. Randolph Bresnik; Col. Yvonne Cagle; Dr. Tracy Caldwell; Dr. Gregory Chamitoff; Capt. Michael Coats; Col. Nancy Currie; Capt.

Christopher Ferguson; Col. Michael Fincke; Dr. Anna Fisher; Capt. Michael Foreman; Capt. Stephen Frick; Cmdr. Kenneth Ham; Mr. José Hernández; Capt. Brent Jett, Jr.; Cmdr. Mark Kelly; Capt. David Leestma; Col. Steven Lindsey; Capt. Michael Lopez-Alegria; Dr. Stanley Love; Dr. Megan McArthur; Col. Pamela Melroy; Col. Steven Nagel; Lt. Col. Carlos Noriega; Col. Bryan O'Connor; Dr. Ellen Ochoa; Dr. John "Danny" Olivas; Dr. John Phillips; Capt. Alan Poindexter; Dr. Garrett Reisman; Dr. Stephen Robinson; Dr. Robert Satcher, Jr.; Mr. Steven Smith; Col. Frederick "Rick" Sturckow; Col. Rex Walheim; Col. Jeffrey Williams

Former. Mr. Neil Armstrong; Capt. Charles Bassett II[†]; Col. Karol Bobko; Brig. Gen. Charles Bolden, Jr.; Col. Frank Borman; Mr. Vance Brand; Dr. John Bull; Capt. Daniel Bursch; Col. Gerald Carr; Capt. Eugene Cernan; Dr. Leroy Chiao; Gen. Kevin Chilton; Lt. Col. Michael "Rich" Clifford; Col. Eileen Collins; Col. Walter Cunningham; Capt. Robert Curbeam, Jr.; Col. Brian Duffy; Dr. Samuel Durrance; Capt. Ronald Evans; Dr. William Fisher; Col. Gordon Fullerton; Dr. Andrew (Drew) Gaffney; Dr. Owen Garriott; Dr. Edward Gibson; Capt. Robert Gibson; Capt. Frederick (Rick) Hauck; Dr. Steven Hawley; Brig. Gen. Susan Helms; Col. Terence "Tom" Henricks; Cmdr. John Herrington; Col. David Hilmers; Col. Scott "Doc" Horowitz; Col. Rick Husband[†]; Mr. Gregory Jarvis[†]; Dr. Mae Jemison; Dr. Tamara "Tammy" Jernigan; Dr. Don Lind; Capt. J.M. Linenger; Dr. Gregory Linteris; Col. Jack Lousma; Mr. David Low; Dr. Edward Lu; Capt. Jon McBride; Capt. Bruce McCandless II; Cmdr. William McCool[†]; Capt. Michael McCulley; Col. Donald McMonagle; Col. Carl Meade; Dr. Curtis Michel; Capt. Edgar Mitchell; Ms. Barbara Morgan; Dr. Story Musgrave; Dr. George "Pinky" Nelson; Dr. James Newman; Dr. Brian O'Leary; Col. Robert Overmyer; Dr. Scott Parazynski; Dr. Robert Parker; Col. Charles Precourt; Capt. Kenneth Reightler, Jr.; Dr. Sally Ride; Capt. Kent Rominger; Sen. Harrison Schmitt; Capt. Winston Scott; Col. Richard Searfoss; Dr. Margaret Seddon; Mr. Elliot See, Jr.[†]; Capt. Michael Smith[†]; Col. Robert Springer; Dr. Kathryn Sullivan; Cmdr. Pierre Thuot; Dr. James "Ox" van Hoften; Dr. Taylor Wang; Dr. Mary Weber; Mr. Paul Weitz; Dr. Peter "Jeff" Wisoff; Mr. John Young

* Deceased

† Died in the line of duty

Fiscal Year 2008 Obligations

Total Obligations for California

Business	\$1,856,329,448
Large Business	\$1,567,607,381
Small Business	\$288,722,067
Small Disadvantaged Business	\$75,247,983
8(a) Program	\$22,582,955
Woman Owned Business	\$27,973,878
Small Business Innovative Research	\$16,213,726
Education	\$200,146,776
Other Minority Institutions	\$1,443,112
Government	\$1,778,554,202
Non-Profit Institutions	\$55,874,752

California-Based NASA Business Contracts Exceeding \$100M

Contractor	Location	Contracts	Obligations
The Boeing Company	Commerce, El Segundo, Huntington Beach, Los Angeles, Playa Vista, Seal Beach, and Torrance	36	\$306,010,100
Lockheed Martin	Edwards, Mountain View, Palmdale, and Palo Alto	229	\$100,938,023
Northrop Grumman	Azusa, El Segundo, Marina Del Rey, Mountain View, Redondo Beach, and San Diego	27	\$315,637,646
Pratt & Whitney Rocketdyne	Canoga Park	3	\$479,367,087

California-Based NASA Education Funding Exceeding \$20M

School	Location	Obligations
California Institute of Technology	Mountain View, Pasadena, and San Marino	\$34,663,304
Leland Stanford Jr. University	Commerce, Los Angeles, Mountain View, Playa Vista, and Stanford	\$22,230,345
Regents of the University of California	Berkeley, Costa Mesa, Davis, Irvine, La Jolla, Los Angeles, Merced, Mountain View, Oakland, Riverside, San Francisco, San Juan Capistrano, Santa Barbara, and Santa Cruz	\$48,592,750
Stanford University	Mountain View and Stanford	\$20,063,695
University of California, Santa Cruz	Mountain View and Santa Cruz	\$20,434,387

For more procurement data, visit <http://prod.nais.nasa.gov/cgi-bin/npms/map.cgi>.

National Aeronautics and Space Administration

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