



# COMMERCIAL SPACEFLIGHT FEDERATION



## Annual Report 2009





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### Letter from the President

This report showcases a year's worth of exciting progress for the commercial spaceflight industry and the members of the Commercial Spaceflight Federation. In recognition of just how far our industry has come, *Aviation Week and Space Technology* magazine recently named "The Space Entrepreneur" as its 2009 Person of the Year, and a key White House blue-ribbon panel stated that the time is right for commercial transportation of astronauts to Low Earth Orbit.



The CSF is honored to represent this exciting industry, and I would like to extend a heartfelt thank you to our member companies and the CSF Officers, including our former Chairman of the Board Alex Tai, who served from June 2006 to May 2009. His tireless dedication to this organization played a key role in helping to push the commercial spaceflight industry forward. All of us are anticipating another great year of inspirational accomplishments in 2010.

A handwritten signature in black ink, appearing to read "Bretton Alexander".

Bretton Alexander, President

### Executive Director's Message

2009 was a momentous year for commercial spaceflight. The past twelve months have been filled with hardware milestones, vehicle rollouts, prize-winning flights, and an increasing media spotlight on this growing industry, and we hope you agree the CSF has risen to the challenge of providing support to such exciting endeavors.



It is a deep honor to be part of an organization that embodies such an innovative and entrepreneurial spirit. Since the Commercial Spaceflight Federation's founding, we have expanded to represent 20 companies located in 30 states with over 2,600 employees, including developers and operators of orbital and suborbital vehicles, spaceports, and commercial spaceflight suppliers including providers of training and life support services.

We should all be very proud of what our industry and our organization has accomplished in 2009, and the CSF has been privileged to work with our members on activities ranging from safety and regulatory issues to policy advocacy at NASA, the White House, and Congress. I am greatly looking forward to what will assuredly be an even more groundbreaking year ahead for commercial human spaceflight.

A handwritten signature in black ink, appearing to read "John Gedmark".

John Gedmark, Executive Director

# Commercial Spaceflight Federation 2009 Accomplishments

## Successfully Pursued Policy and Legislative Agenda:

- **Obtained endorsement from the Augustine Committee** – The White House's Human Space Flight Review Committee has proposed a multibillion-dollar Commercial Crew program as well as expanded funding for technology R&D and innovation. (As part of our advocacy efforts, the CSF submitted a detailed white paper to the Committee and held multiple discussions with Committee members.)
- **Secured \$4 million for Centennial Challenges** – For the first time in 5 years, funding was appropriated for new NASA prizes, and at the full level requested by the President.
- **Secured \$1 million for parabolic and suborbital research programs** – NASA received \$1 million of new funding for IPP's "Innovation Incubator" account, which includes the FAST program for parabolic flights and funding for the Commercial Reusable Suborbital Research (CRuSR) program. (These programs had received no funding in previous years.)
- **Obtained \$500,000 for Spaceports Infrastructure** – The FAA's Space Transportation Infrastructure Matching Grants (STIM-Grants) Program is being funded for the first time since being created in 1993, and will award competitive grants to spaceports.
- **Secured initial \$50 million for Commercial Crew** – CSF staff worked with White House, NASA, Congress, and our members to secure \$50 million of stimulus funds for NASA's new Commercial Crew Development (CCDev) program.
- **Organized CEOs' meeting with White House and NASA senior leadership** – CSF staff coordinated a meeting between industry leaders, NASA Administrator Charles Bolden, and NASA Deputy Administrator Lori Garver, as well as a similar meeting with the President's Science Advisor, John Holdren, and his top aides.
- **Testified before Congress on spaceflight safety** – On behalf of the CSF, CSF President Brett Alexander testified before the House Science Committee's Space Subcommittee, and CSF Vice-Chairman Jeff Greason testified before the House Transportation and Infrastructure Committee's Aviation Subcommittee, both on the topic of spaceflight safety.
- **Organized Lunar Lander Challenge Prize Ceremony** – The CSF played a pivotal role in organizing the LLC Prize Ceremony in November with the NASA Administrator, Rep. Schiff, Rep. Hall, Deputy Science Advisor Tom Kalil, and numerous other senior officials.



Norm Augustine



Lunar Lander Prize Ceremony

## Technical Standards and Regulatory Work:

- **Increased leadership role in FAA and NASA Advisory Groups** – In 2009 CSF President Bretton Alexander was named to the NASA Advisory Council (NAC) as Chair of the NAC's Commercial Space Committee, and he was also named Chairman of the RLV Working Group of FAA's Commercial Space Transportation Advisory Committee (COMSTAC).
- **Provided support and feedback regarding FAA regulations** – CSF worked with members to provide feedback on implementation of FAA regulations, particularly as related to the impacts of FAA/AST's Final Rule on amateur rocket activities.
- **Drafted Informed Consent Document** – The CSF developed a first draft of an Informed Consent Document designed to comply with FAA regulations in 14 CFR Part 460. The document includes results from a detailed analysis of historical human spaceflight incidents.
- **Responded to Congressional-Mandated Study on Commercial Spaceflight Safety** – The CSF responded to a survey of industry by the Government Accountability Office and held a group teleconference of suborbital company representatives with GAO officials.
- **Convened Orbital Human Spaceflight "Human-Rating" Working Group** – To respond to safety questions concerning Commercial Crew, the CSF convened a broad group of industry technical leads, held three in-person meetings including NASA and FAA guests, and developed a draft document on the principles of orbital human spaceflight safety.

## Expanded CSF Organization and Capabilities:

- **Created the Suborbital Applications Researchers Group (SARG)** – To increase awareness of the science potential of commercial suborbital vehicles, the CSF created a science advisory panel chaired by NASA's former top scientist, Alan Stern. SARG panel members briefed White House and Congressional staff in November, and held two meetings to expand CSF's outreach efforts to the broader science community.
- **Conducted two Commercial Suborbital Science Workshops** – To increase support for the program, the CSF held a May workshop in downtown Los Angeles and a November workshop at NASA JPL, drawing participation by 100+ scientists in various fields.
- **Held Two Spaceports Executive Summits and formed Spaceports Council** – CSF organized two first-ever Spaceports Executive Summits, bringing together spaceport principals from around the world and resulting in the formation of the 10-member CSF Spaceports Council.
- **Launched new website and expanded media presence** – In June the CSF launched our new website and has since posted dozens of news updates to publicize industry accomplishments and explain policy issues to journalists, bloggers, and the public.
- **Brought on top public relations firm** – The CSF signed a pro-bono agreement with top public relations firm Makovsky + Company, the 2009 winner of the Stevie Award for "PR Agency of the Year," to provide the CSF with industry messaging and PR services.
- **Hired Associate Director** – In June the CSF hired a full-time Associate Director with both engineering and policy experience, significantly increasing the CSF's staff capabilities.



Science Workshops

# Industry Accomplishments in 2009



## Armadillo Aerospace

Armadillo Aerospace wins NASA Northrop Grumman Lunar Lander Challenge prizes for the second consecutive year (September), and boosted hops set new altitude record for Armadillo (November)



## Blue Origin

Blue Origin selects three science payloads, from the University of Central Florida, Purdue, and Louisiana State, to fly on the New Shepard vehicle (November)



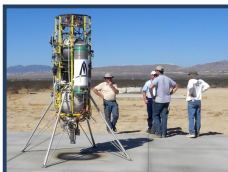
## ETC - NASTAR Center

NASTAR announces training program for suborbital scientist-astronauts, including centrifuge and altitude chamber runs (August)



## Excalibur Almaz

Excalibur Almaz releases details of plan to use its Almaz RRVs (reusable reentry vehicles) and Almaz service modules for orbital space missions (August)



## Masten Space Systems

Masten conducts first un-tethered free flight (September), and Xoie vehicle claims \$1 million prize for Level 2 of NASA's Northrop Grumman Lunar Lander Challenge (November)



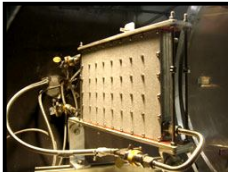
## Mojave Air and Space Port

Mojave hosts multiple successful flights for NASA's Northrop Grumman Lunar Lander Challenge (October and November) and hosts SpaceShipTwo's unveiling (December)



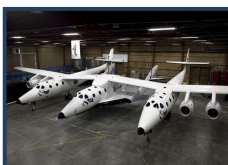
## Oklahoma Spaceport

Oklahoma Spaceport joins four other spaceports in issuing "FastForward" report on feasibility of point-to-point travel between spaceports (October)



## Paragon Space Development Corporation

Paragon announces partnership with Google Lunar X PRIZE team Odyssey Moon (March), and is named as a finalist in the NASA CCDev Program (November)



## Scaled Composites

Scaled Composites conducts over 20 successful flights of White Knight Two throughout 2009, and completes the first SpaceShipTwo (December)

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## Sierra Nevada Corporation

SNC Space Systems Chairman Mark Sirangelo is elected Chairman of the Commercial Spaceflight Federation (May), and SNC is named a finalist in the NASA CCDev Program (November)



## Space Adventures

Charles Simonyi returns to the Space Station for the 2<sup>nd</sup> time (March), and Guy Laliberte becomes Canada's 1<sup>st</sup> private space explorer (October)



## Space Florida

Space Florida hosts eight other spaceports at the first-ever CSF Spaceports Executive Summit (May), and Frank DiBello becomes President of Space Florida (September)



## Spaceport America

Governor Bill Richardson gives keynote address at Spaceport America's runway groundbreaking (June), and terminal hangar construction begins (November)



## SpaceX

SpaceX's Falcon 1 is the first privately-built liquid rocket to place a satellite in orbit (July), and the flight stages of Falcon 9 are successfully test-fired in Texas (October-November)



## XCOR Aerospace

XCOR's Lynx aerodynamic design is tested at the Wright-Patterson Air Force Base wind tunnel (July), and South Korean Space Center selects XCOR for suborbital flights (December)



## Virgin Galactic

With Governors Arnold Schwarzenegger and Bill Richardson delivering keynote speeches, Virgin Galactic unveils VSS Enterprise (December)



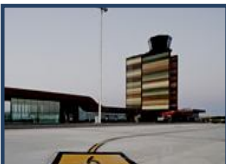
## Wyle

Wyle begins bioastronautics research on human system integration for a potential Commercial Crew Program under a NASA JSC contract (October)



## X PRIZE Foundation

Google Lunar X PRIZE reaches 20 registered teams (September), and an X PRIZE-managed competition awards \$1.65M in the Lunar Lander Challenge (November)



## Aeroports de Catalunya

President of Catalonia visits Lleida-Alguaire facilities under construction (February), and aircraft test flights are conducted to verify navigational systems (June)



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