



IAN FRANCIS

SPACE RACE

Glynn S. Lunney (above) saw the space race from its inception, and he saw most of it from the inside. As a member of the initial NASA Space Task Group that got U.S. manned space flight off the ground, Lunney has been a part of every manned space effort from the Mercury program to the space station. Today he's part of a multibillion-dollar mega-partnership between Rockwell Space Operations and Lockheed Space Operations. "The new partnership is called the United Space Alliance, or USA for short," says Lunney, a member of **Bay Oaks Country Club** in **Houston** and vice president and program manager of the space shuttle program. When we asked Lunney to name what he thought were the 10 greatest moments in American manned space flight, he gave us 13. "It's too hard to narrow it down to 10," he says.

1. **Sputnik 1. October 5, 1957.** "Sputnik started it all."
2. **Yuri Gagarin. April 12, 1961.** "His was the first manned space flight — a major shock to us. At first the Russians gave every indication they could beat us in space."
3. **Mercury 3. May 5, 1961.** "Al Shepherd's flight on a Mercury Redstone rocket. Our first suborbital flight."
4. **Mercury 6. February 20, 1962.** "John Glenn was the first American to orbit the earth. There was a lot of celebration."
5. **President Kennedy announces America will put a man on the moon by the end of the decade. September 12, 1962.** "It determined the course of the space program for the '60s, and to some degree even today. We were beginning to realize that the vehicles it would take to go to the moon were gargantuan. The Redstone and Atlas rockets and the Mercury spacecraft were primitive first steps compared to what we ultimately had to develop."
6. **The Gemini Program. March 23, 1965 through November 11, 1966.** "Gemini's 10 manned flights put us in shape for Apollo. The series was a dramatic testing ground. We did a little bit of everything, making incremental but important steps in learning how to operate in space. We did EVAs [extra-

vehicular activity], put digital computers on board for the first time, and had propulsion systems that could maneuver the spacecraft in orbit. By the time we were done with Gemini, we were ready to take Apollo to the moon."

7. **Apollo 8. December 1, 1968.** "We went to the moon and around it and came back. From then on, Apollo was downhill. Once we took the big rocket and our manned ship all the way to the moon and put it in orbit there, we felt like all we had to do was stick the lunar module on the rocket, take it out to the moon, and land it."

8. **Apollo 11. July 16, 1969.** "We landed on the moon just nine months after the first manned Apollo flight. There was a lot of turmoil in our country with the Vietnam War and civil rights demonstrations. Apollo was the perfect response to our need to be reassured that America was still number one. Neil Armstrong's landing and walk with Buzz Aldrin was a tremendous culmination of so many efforts by so many people."

9. **Apollo 13. April 11, 1970.** "That was the longest night of my life. We had lost the cryogenic fluids that were basically the fuel for the fuel cells — the power system aboard the command ship. When the astronauts moved into the lunar module, we had a problem with the carbon dioxide scrubbers [that remove carbon dioxide from the air]. We had the CO₂ filters, but the holes in which they fit and the shape of them was entirely different in the two ships. The engineers went off and jerry-rigged some tape, some flight plan pages, and stuff like that, so that the filter canisters from the command module could be used in the lunar module so the astronauts could breathe.

"We also had to figure out how to power up the command ship from absolutely no power in freezing temperatures. And for the first time we were on a non-free return — a trajectory that was not coming back to earth. The ship was going to go around the moon and then go off into space. The Lord was smiling on us, because we got the crew back and turned what would have been a terrible disaster into a major achievement. Even today, I get goosebumps talking about it."

10. **Apollo-Soyuz. July 15, 1975.** "I was the American project director. We were in the deepest part of the Cold War, and it was much more of a cultural achievement than a technical one. It set the stage for the cooperation that's occurring now."

11. **First flight of Columbia. April 4, 1981.** "That was the first flight of the space shuttle. We probably solved more unknowns relative to the shuttle in that flight than we have in all the shuttle flights since — a big learning step for us."

12. **Shuttle missions STS-2 through 51-G. November 12, 1981 through June 17, 1985.** "I was the space shuttle program manager. That was like the Gemini series for me; it was 17 shuttle flights characterized by solid achievement."

13. **Challenger explosion. January 28, 1986.** "It brought about a rededication to the fact that safety must be constantly considered, from design decisions to flight decisions before launch and during flight. Now we're unforgiving in many respects, especially during the launch phase of the mission."