

# A Conversation with Our New NASA Administrator

By Archon Ricky Raven  
Grapter, Nu Boulé



Photo Credit: (NASA/ Bill Ingalls)

**Charles F. Bolden, Jr. enters the NASA Administrator's office to start his first day as the 12th administrator of the National Aeronautics and Space Administration, Friday, July 17, 2009, in Washington.**

**N**ominated by President Barack Obama, Archon Charles Frank Bolden, Jr., of Houston, Texas's Nu Boulé was unanimously confirmed by the U.S. Senate in July as the twelfth administrator of the National Aeronautics and Space Administration (NASA). A former astronaut, Archon Bolden is a retired major general in the U.S. Marine Corps, where he served for thirty-four years. The Columbia, South Carolina, native received an appointment to the U.S. Naval Academy in 1964.

This is Archon Bolden's second stint with NASA. After joining the organization in 1980, he traveled in orbit aboard the space shuttle four times between 1986 and 1994, commanding two missions. Archon Bolden's flights included deployment of the Hubble Space Telescope and the first joint U.S.–Russian shuttle mission.

I had an opportunity to sit down with Archon Bolden at a reception that Nu Boulé held in his honor on August 26 at the Coronado Club. Our conversation ranged from the influences on his own career path to America's quest to discover the last frontier and his vision for NASA.

**Archon Ricky Raven:** I want to start by asking, What is the new frontier for NASA in the twenty-first century?

**Archon Charles F. Bolden, Jr.:** I think if you look at what President Obama has said, and look at what is important to the nation and the world, a number of things come to the forefront. One is earth science. We don't understand what we should understand about the planet on which we live – weather phenomena, things like that, that require data for scientists and climatologists to study. I have learned, since becoming the administrator, that NOAA, the National Oceanic and Atmospheric Administration, does weather, but NASA does climate. There is a difference between climate and weather, and the two organizations have different duties: NASA does the data gathering to establish long-term trends, the kinds of things that are very controversial. Some people call it global warming; we talk about climate change, but that is NASA's responsibility – to get the data, duty analysis and everything. It helps us determine what the climate is on the planet, whereas NOAA does the weather, which



Official White House photo by Pete Souza

**President Barack Obama meets with Archon Charles F. Bolden, Jr., and a White House aide in the Roosevelt Room of the White House.**

is what is happening tomorrow and next week and two weeks down the road. So that's one thing.

The other is aeronautics, which is supposed to be the big "A" in "NASA." Most people forget about aeronautics, but at one time in its history, NASA was the preeminent research-and-development organization for aeronautics in the United States. It is through NASA that, even today, companies like Boeing are able to find different ways to make flying more efficient.

When you get in an airplane, you take off, level off and then fly a little while, and then climb and level off again and so on. That's very inefficient, and uses a lot of fuel. NASA, working with the FAA, is helping develop some of what we call constant-climb and constant-descent approaches to runways, where once the [pilots are] cleared to land, they just keep coming down. They don't level off, they don't stop once they have cleared the takeoff – they just keep going. In order to do that, you have to use a different type of navigation system that allows the airplane to know where other airplanes are. That's part of the Next Generation Air Transportation System that the FAA, the Department of Defense and NASA are all responsible for trying to make work.

**R.R.:** As a general in the Marine Corps, you are someone who is a leader and makes dispositive decisions and who always has a clear course laid out. How does that training help you with running a governmental organization?

**C.F.B.:** My thirty-four years in the Marine Corps taught me how you take very little and get the absolute maximum out of it. It also taught me that you rely on people at the lowest level possible. You try to push decisions – critical decisions – down as low as you can in your organization, and it allows the person at the top to take a strategic look

at stuff. When I got to NASA, I found that the administrator was dealing with day-to-day issues, decisions that really should be made many levels below me.

I have been on the job now for six weeks. What I keep telling all my employees is that I don't want them to think about politics. I want them to come up with technical solutions to difficult problems, then give me the data and the information so if I have to sit down with the President, I can give him a technical recommendation. My job is to talk about data. If you want to talk about going to space, the first thing to do is think about the why. You need to know why you want to do this. It is expensive. And it is risky. The thing that most people – particularly people in politics – don't like to talk about is risk. They don't like to talk about losing life. And that is the conversation that the President should have with the American public when you talk about space exploration. Is this something that the nation really wants to do? We have not had that discussion ever, to be honest.

President Kennedy was pretty gutsy. He had the discussion among his senior people and he said, "Okay, we are going to do this. We are going to the moon." I have talked to NASA people who were around at that time, and they said they listened to the president, his speech at Rice University in 1962, and went home and said the president has lost his mind. "We can't do that; we don't know how to go to the moon!" And they slept on it, and woke up the next morning and said, "Well, he trusts us. He knows that we don't know how to do it."

**R.R.:** Are you at a point or position in your life that you dreamed of while growing up in Columbia, South Carolina?

**C.F.B.:** No, no. I never dreamed of being an astronaut, and I definitely did not dream of being a NASA administrator. Some of our fellow Archons will tell you. When my name came up, several of them came up and said, “You know you are going to take that job.” I said, “Nah, I don’t think so. In the first place, I have not talked to the President; I have not talked to anybody.” I did not want to be the NASA administrator because I was happy here doing what Jackie [Archousa Alexis “Jackie” Bolden] and I do very well – being with friends, playing golf, stuff like that.

I would never have become an astronaut had I not met Ron McNair [Editor’s note: African American astronaut, mission specialist and physicist who was a crew member of the ill-fated space shuttle *Challenger*]. I was a test pilot, and that was not something I dreamed of doing, but I grew into it by talking to flight instructors who were test pilots and other people who got me excited about it. It was while I was serving as a test pilot that NASA selected the first group of shuttle astronauts – Ron McNair was one of them. We had grown up 42 miles from each other in South Carolina and did not know each other. I knew Ron’s story because I had read about it. He said, “Are you going to fly for the program?” I said, “Not on your life.” He said, “Why not?” I said, “They wouldn’t pick me.” And he said, “You know, that is the dumbest thing I have ever heard.”

**R.R.:** What are NASA’s biggest political challenges?

**C.F.B.:** The biggest challenge politically is to convince Congress and the White House that they need to invest the money necessary for us to go the next step beyond the shuttle. We are going to shut down the shuttle program. We could conceivably do it by the end of 2010. Realistically, we are probably going to have to fly a few flights in 2011, and the President has said he will give us the money to do that. But that is not in our budget right now. The only money in the budget is to fly the shuttle through 2010. We have to convince the President, Congress and the Office of Management and Budget that we need to keep the International Space Station flying. The other thing is that we really do want to go to the moon – back to the moon and on to Mars. You’ve got to have a vision. That is what I was talking about with the “why.” Kids have to say, “Why do I want to do this? Why do I want to explore?” They are not going to come to NASA unless they have something in their gut that says, “Through this organization I am going to become an explorer. I am going to learn things that other people never even dreamed about.”

**R.R.:** How does NASA make space and space exploration relevant to the average American citizen?

**C.F.B.:** I want to go to schools. I want to be with kids. I have engineers and scientists who want to do the same thing. If you go down to the Johnson Space Center, they go out in different units – they have schools that they have adopted. We have actually worked with Dr. Jim Phillips, who is at Baylor College of Medicine. He is mostly responsible for recruiting, and he focuses on minority applicants. He runs a program in the springtime called Saturday Morning Science. He comes into Third Ward, Houston, and in order for kids to get into his program, they have to be underachievers. He doesn’t take A students. He doesn’t want those kinds of students. He wants the students that teachers identify and say, “If we could just find something to inspire these kids, I know they could do well.”



Photo Credit: NASA

**Archon Charles F. Bolden, Jr., was born on August 19, 1946, in Columbia, South Carolina. He accepted his commission from Annapolis in 1968. Originally an A-6 pilot, Archon Bolden flew more than 100 combat missions in Vietnam. In May of 1980 he was accepted as an astronaut, and has crewed shuttle missions as the first black Marine in space.**

He takes them in for about six to eight weeks. They come to Baylor at eight in the morning. He brings somebody in each week to talk about something that has to do with science or engineering. When he asked me if I would do it a number of years ago, I asked if we could take the kids away from the campus. He said sure. So we now bring them down to the Johnson Space Center for the day and let them go through the labs and mock-ups and simulators, and it gets them fired up. So that is the kind of stuff we have to do. That takes time and it sometimes takes money, because people are getting paid for doing that kind of stuff.

That’s what the President has to do. But he has to start out by saying, “This is why I think we do this.” And that is essentially what Kennedy said when he told us that we choose to go to the moon and do the other things “not because they are easy but because they are hard.”

**R.R.:** Do you think that NASA should make an outreach to the African American community? How should that outreach look?

**C.F.B.:** We should definitely make an outreach to the African American community, and the way you do it is again by going into the schools. However, you can’t just limit your efforts to African American schools. I tell my workforce that if you say “diversity,” people think race or



Photo Credit: (NASA/Bill Ingalls)

**Archon Charles F. Bolden, Jr., is sworn in as 12th Administrator of the National Aeronautics and Space Administration at NASA Headquarters, Friday, July 17, 2009, in Washington.**

gender. That is not diversity. That is an aspect of diversity, but I want them to talk about culture and country, because if you go into West Virginia, there is one thing they have in common: poverty. It is not black; it is not white. If you talk about Alaska, there is one thing that they have in common: an incredible wilderness environment that is very fragile and is affected by what we have done. Climate changes have devastated the state of Alaska.

When I ask my center directors how many interns and co-ops they have from Alaska or Montana, they go through their data and say, well, none. We are not being diverse. We are leaving out sections of the country that are definitely affected by the things we do and probably have a lot of ideas about what can be done to help solve some of these problems, and we are not even asking.

**R.R.:** How did growing up in a segregated, Jim Crow area affect your life's journey?

**C.F.B.:** What inspired me to want to go to the Naval Academy was television. I saw a program called *Men of Annapolis*, and it was about life at the Naval Academy. Nobody in *Men of Annapolis* looked like me, but I loved the uniforms; I loved the fact that all the girls came to the Naval Academy. I was young and naive, so I just wanted to go to the Naval Academy.

It was very racist, which is something I was semiprepared for, because I had actually gone away from South Carolina my last two summers of high school. So I had been in a predominantly white environment before going to the Naval Academy. But it was really different. It was the first time I had been somewhere where somebody told me, "You are not going to graduate because I am going to run you out of here." I didn't want to be there, but my dad told me every week, just stay one more week. So I did. But, in addition, when you have somebody tell you you can't do something, that inspires you.

Growing up in the South, Jackie and I both watched our dads, who were schoolteachers, work on the weekends in order to help the family. They waited tables just to get extra money so that we could do stuff, but that was a way of life. You knew where you could go and where you couldn't go, and you knew what the boundaries were, and every once in a while you pushed them. I never dreamed of being in the Marine Corps, but I met a person by the name of Major John Riley Love, who was my first company officer at the Naval Academy. He was a Marine, and he impressed me. He reminded me very much of my dad. He was really tough, but he was incredibly fair. He set great demands on you, but then he kind of stood back and let you do it. When it was time to graduate, I asked myself, *What do I want to do? I can do anything and I can do it well.* And I answered, *I want to be like him.*



**November 1, 1982. Major Charles F. Bolden, Jr., astronaut, speaks to members of the Indianapolis Delayed Enlistment Pool about the Marine Corps. Bolden is visiting the recruiting station.**



**Archon Charles F. Bolden, Jr., and family in 1996**



Photo Credit: NASA

**January 12, 1986. Astronaut Charles F. Bolden, STS 61-C pilot, mans the pilots station on Columbia's flight deck prior to entry.**

*It was absolutely breathtaking. It was everything I expected plus some.... I had done a lot of extra study to make sure I would recognize the different places we were going to see, the sequence they were going to come in, and I had taken it on as a personal undertaking to do as much photography of the continent of Africa as I could. I was just flabbergasted from the very beginning to find that it's just so massive, even from three hundred miles out in space, that there's just no way in the world that you can comprehend it all in the short span of, say, five or six days.*

-Charles Bolden

**An excerpt from:**

**BLACK STARS IN ORBIT, NASA's African American Astronauts**

By Khephra Burns / William Miles  
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**Others Take Up the Challenge**

Fred Gregory, Guy Bluford, and Ron McNair were not merely tokens of integration. Others soon followed. Lieutenant Colonel Charles F Bolden, Jr., had first considered applying for astronaut training in 1977 when NASA announced the Space Shuttle program. As a jet pilot with nearly three thousand hours of flying time, and as a scientist with degrees in systems management and electrical science, he had all the qualifications, but he also had some doubts because, in the past, NASA had always favored candidates with test pilot experience, at least for those astronaut candidates who were applying to be pilots of the Space Shuttle. Colonel Bolden was a pilot, but he had never been a test pilot. So, believing he would never be selected, he didn't even apply. Later, he learned that Guy Bluford, Fred Gregory, and Ron McNair were among the thirty-five members of the class of '78, the ones who were selected with that first group of shuttle astronauts. Bolden told himself that if he ever again got the chance to apply, he would give it his best shot. In the meantime, he became a test pilot, and in 1979 he got his second chance. He applied to NASA and was selected for



Photo Credit: NASA

**The STS-45 mission launched aboard the Space Shuttle Atlantis on March 24, 1992, at 8:13:40am (EST) carrying the Atmospheric Laboratory for Application and Science (ATLAS-1) as its primary payload. Crew members included: Charles F. Bolden, Jr., commander; Brian Duffy, pilot; Kathryn D. Sullivan, payload commander; Byron K. Lichtenberg, payload specialist 1; Dirk K. Frimout, payload specialist 2; David C. Leestma, mission specialist 2; and C. Michael Foale, mission specialist 3.**

astronaut training a year later. On his first flight into space on STS-61C, which lifted off January 12,1986, Charles Bolden copiloted the Space Shuttle *Columbia*.

Throughout the 1970s and 1980s other black Americans continued to take part in NASA's work behind the scenes. Astronauts like Colonel Bolden were an inspiration for some of those who would join the space agency.

*Charles Bolden was probably one of the first astronauts I met. I was out in California, doing part of my aerospace medicine residency training, and I was told that he would be speaking at one of the junior colleges in San Jose. So I went to hear him speak and I passed a note to the person who was in charge saying that I was working in an aerospace medicine residency program and I'd like to meet him. After his speech he came over and talked to me and listened to my goals and aspirations and said, "You look like you'd be a nice person to work for NASA."*

-Dr. Irene Long

When her medical training was complete, Dr. Long did join NASA. Today she is the acting director of the



Photo Credit: NASA

**August 21, 1991. STS-45 crewmembers during zero gravity activities onboard KC-135 NASA 930 Atlantis. The crewmembers, wearing flight suits, float and tumble around an inflated globe during the few seconds of microgravity created by parabolic flight. Commander Charles F. Bolden is upside down and to the left of the globe.**

Biomedical Operations and Research Office at the Kennedy Space Center. She coordinates the human life science experiments for shuttle flights as well as the environmental monitoring and support for shuttle launches, landings, and day-to-day activities.

On January 28, 1986, Ron McNair was preparing to take part in his second shuttle mission, STS-51L, aboard the Space Shuttle *Challenger*. The *Challenger's* launch was perhaps the most highly promoted of any shuttle launch. It was America in all its diversity; its crew was comprised of men and women, black, white, and Asian: Mission Specialist Ellison Onizuka; Pilot Mike Smith; the first teacher in space, Christa McAuliffe; Commander Dick Scobee; Payload Specialist Greg Jarvis; Mission Specialist Judy Resnik; and Mission Specialist Ron McNair. But what should have been the realization of a dream ended in tragedy. One minute and thirteen seconds after lifting off from Kennedy Space Center, the *Challenger* exploded in midair.

*I feel that [Ron] must have had some sort of premonition. The day before that flight, he spoke with me on the telephone, and it seemed like he just didn't want to put that telephone down. He spoke with me a long, long time. And he said, I hope they get this thing off the ground so I can get back and finish raising my children." My other boys and I had gone down for the launch, and after several postponements, we decided that we would go back to Atlanta, because we were under the impression that they were going to cancel this thing out. I went to sleep after I got home, and when I woke up, I woke up to*



Photo Credit: NASA

**The STS-31 crew of five included (left to right) Charles F. Bolden, pilot; Steven A. Hawley, mission specialist; Loren J. Shriver, commander; Bruce McCandless, mission specialist; and Kathryn D. Sullivan, mission specialist. Launched aboard the Space Shuttle Discovery on April 24, 1990 at 8:33:51am (EDT), the primary payload was the Hubble Space Telescope. This was the first flight to use carbon brakes at landing.**

*the tapes [the videotaped replay of the accident]. First I thought it was one big horrible dream. But, if you recall, they continued to show those tapes over and over again, and I realized that dreams don't repeat like that.*

-Carl McNair

For more than two and a half years after the *Challenger* disaster, no shuttle missions were launched. But recruitment and training continued, and in September 1988 the launches resumed. Today, a renewed determination to pursue space exploration is the legacy left by the *Challenger* crew. Fred Gregory, Guy Bluford, and Charles Bolden have all flown missions since the *Challenger* disaster. And new astronaut candidates continue to join the ranks at NASA. Dr. Mae Jemison applied to NASA just before the *Challenger* explosion. But the disaster prompted NASA to suspend the astronaut training program until an investigation could determine what had gone wrong. Dr. Jemison is a licensed physician who holds degrees in chemical engineering and Afro-American studies. She also studied dance in school, and she speaks Swahili, Japanese, and Russian. Before applying to NASA Dr. Jemison had already had an exciting career as a young doctor working with the Peace Corps in West Africa. Some might have been dissuaded from joining the astronaut training program following the *Challenger* tragedy, but Dr. Jemison was determined to become an astronaut. When training at NASA resumed, she immediately renewed her application and in 1986 it was accepted by NASA and she entered the astronaut training program.

*I always assumed I would go into space ever since I was a little girl. I would have applied to be an astronaut if there had never been a single person going into space.*

-Mae Jemison



Photo Credit: NASA

**December 1, 1993. Five NASA astronauts (Sts-60 crew members) and a Russian Cosmonaut take a break from training for their scheduled flight in space to pose for the traditional crew portrait. In the front (left to right) are Astronauts Kenneth S. Reightler, Jr., and Charles F. Bolden, Jr., pilot and commander, respectively. On middle row are Astronauts Franklin R. Chang-Diaz and N. Jan Davis, mission specialists. On back row are Astronaut Ronald M. Sega (left) and Russia's Sergei K. Krikalev, both mission specialists.**



Photo Credit: NASA

**December 8, 1985. The crew assigned to the STS-61C mission included (seated left to right) Charles F. Bolden, Jr., pilot; and Robert L. (Hoot) Gibson, commander. On the back row, left to right, are payload specialists Robert J. Cenker, and Congressman Bill Nelson. To the right of Nelson are mission specialists Steven A. Hawley, George D. Nelson, and Franklin R. Chang-Diaz. Launched aboard the Space Shuttle Columbia on January 12, 1986 at 6:55:00 am (EST), the STS-61C mission's primary payload was the communications satellite SATCOM KU-1 (RCA Americom).**

Six years after joining NASA, traveling on STS-47, Dr. Jemison fulfilled her childhood dream and became the first African American woman to travel into space. Her history-making flight was an important post-*Challenger* event.

One of the things Dr. Jemison experimented with on her flight was the use of biofeedback techniques to reduce space sickness. Space sickness is similar to seasickness, and most astronauts experience some form of it during their first couple of days in space.

Floating around upside down and every which way can take some getting use to. Astronauts can use a technique called biofeedback to control some of the symptoms of space sickness. By concentrating on their respiration, heart rate, and skin temperature, they can bring them within normal limits. If they are hyperventilating, they can concentrate on calming their breathing. It takes practice, but they can even learn to control their heart rate and other bodily processes in the same way.

After the successful completion of STS-47, Dr. Jemison took a leave from NASA in order to accept a fellowship to teach a course in space technology and developing countries at Dartmouth College in Hanover, New Hampshire. Her course attracted more women and minorities than any other undergraduate course in engineering in Dartmouth's history.

African Americans, Hispanics, Asian Americans, and women are all better represented in the astronaut corps of the 1990s because of the brilliance of the few black stars at NASA in the 1960s, 1970s, and 1980s. The number of minority applications for astronaut training has grown as more minority students have begun to feel confident about pursuing math and science courses in school. In 1993 the

astronaut corps included Hispanics and Asian Americans such as Sidney Gutierrez, Ellen Ochoa, and Franklin Chang-Diaz; and fifteen women, among them, Eileen Collins, the first female pilot at NASA. African Americans such as Dr. Bernard A. Harris, Jr., a licensed physician, and Winston E. Scott, a commander in the United States Navy, continue to join the elite corps of black stars in orbit. For them, as for the enslaved Africans of our folklore, freedom has wings.

*People always ask me, "What are we going to discover?," I don't know. I don't have any idea. If I knew, we wouldn't need to go. That's one of the exciting parts about space flight, just the prospect of what's going to come out that you never even dreamed of before.*

-Charles Bolden

