

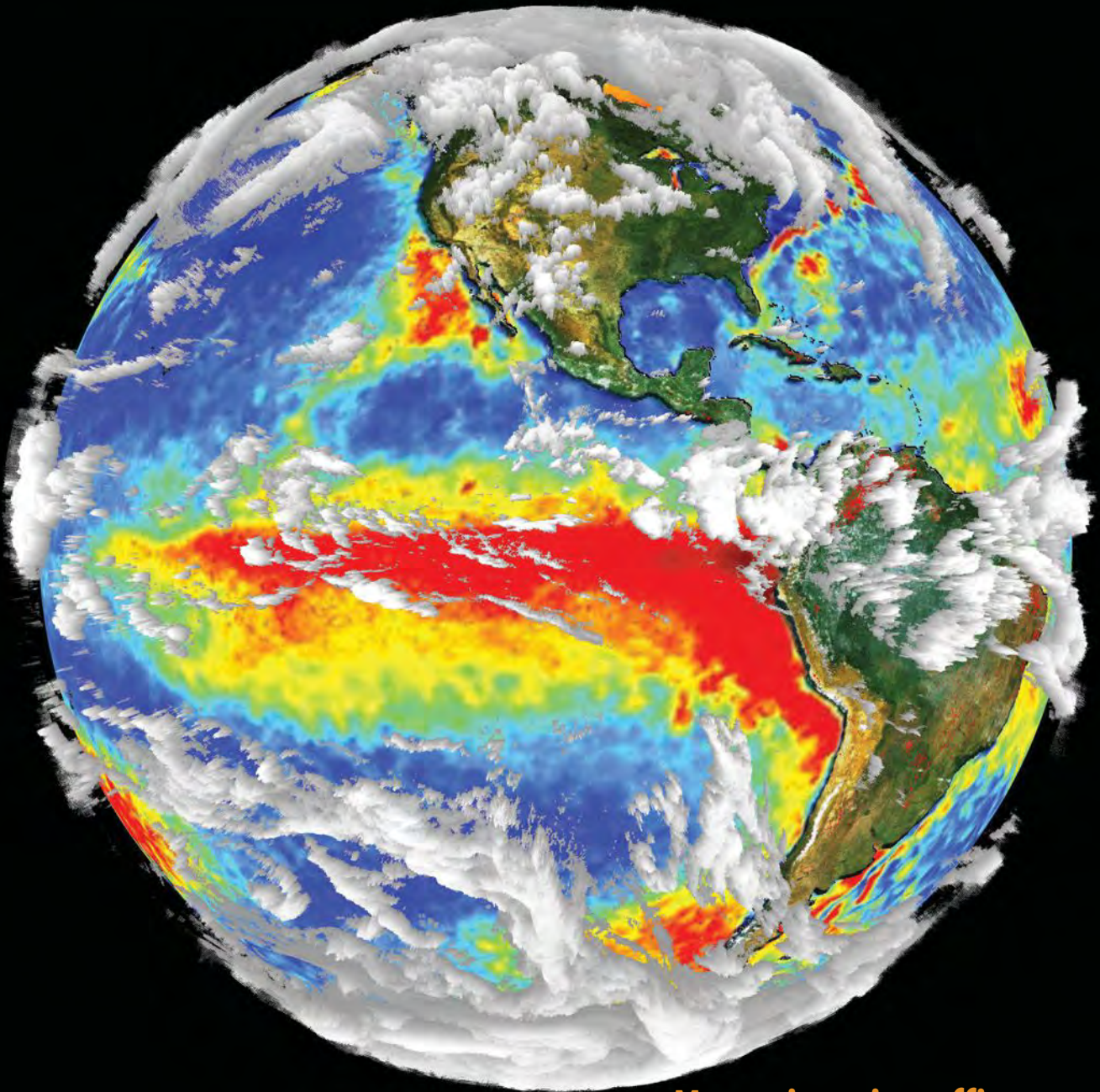
February 2014

# AEROSPACE

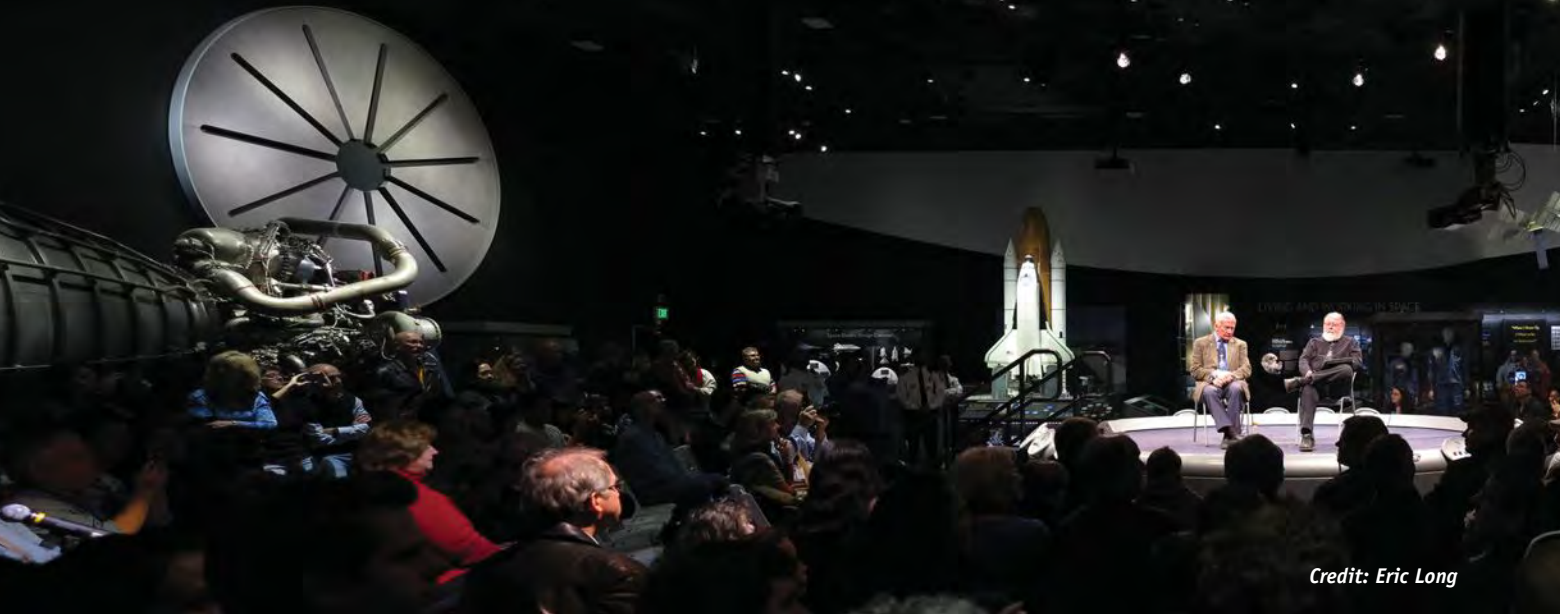
A M E R I C A

## Target: Climate change

*Two satellites that could cool the debate*



**Managing air traffic,** page 32  
**Moonwalking with Buzz,** page 24



Credit: Eric Long

## “ M O O N W A L K I N G ”

I'm sitting on the stage with Buzz Aldrin at the 2,600-seat Robinson Center Music Hall in Little Rock, Arkansas. We're here to tell the packed house about Buzz's latest book, "Mission to Mars: My Vision for Space Exploration," which I helped him write.

During the question-and-answer session, a voice rises from the throng: "What about the guy who said that Apollo 11 was a hoax?"

It's a reference to Buzz's 2002 encounter—captured on video and subsequently gone viral on YouTube—with a man who chased Buzz and challenged him to put his hand on a Bible and swear that he walked on the moon.

The audience falls quiet as Buzz moves forward in his chair. Yup, he says, he punched the man:

"He called me a liar and a cheat. What do you expect me to do?"

The crowd bursts into applause.

At age 84, Buzz has learned to use his Apollo 11 legacy as a springboard to argue for a revitalized American role in space exploration, this time to send humans to Mars.

My job the past year has been to help Buzz present the book's salient points in the form of a stage conversation between Buzz and me, backed by explanatory slides. Keeping our mission on course has not always been easy. Sometimes our high-tech slide clicker refuses to advance to the next image. We try not to get too technical, but some "Buzzwords" are inevitable. It's not easy to boil down the concept Buzz

has embraced for using the gravity of Mars and Earth to permanently shuttle spacecraft back and forth. The technique is called spaceship cycling, and it would avoid expending fuel to accelerate and decelerate large spacecraft.

Buzz likes talking about that future, but he's also gracious about discussing the past. Hearing the story of Apollo 11's tense touchdown on the moon from the man who piloted the Eagle lander remains a riveting heart-stopper.

Each audience must know that Neil Armstrong and Buzz do make it onto the moon on July 20, 1969. Yet the crowd seems to be sweating bullets. Will they get down safe and sound?

As Buzz tells it, alarms are going off on the control panel. "We could have looked in a document in the cabin to tell us what those alarms meant...but we were a little busy at the time," he reminds the audience.

With precious fuel nearly gone, the Eagle's shadow stretches out, blanketing the landscape as lunar dust spews outward.

"I call out 'contact light' and 'engine stop,'" Buzz says.

There is a palpable sigh of relief from the crowd, and an ovation. The celebrated landing on the moon has been made one more time.

The truth is that Buzz winces a bit at the familiar question, "What was it like to be on the moon?" Even so, his answer still entralls and often touches on the second-most-famous words uttered from the lunar surface: "beautiful,

beautiful; magnificent desolation." Here is Buzz explaining those words to an audience at the National Air and Space Museum in Washington, D.C.:

"In the back of my mind there were Neil's words about his putting a step on the moon, a small but overall big picture step. I felt that one had to acknowledge the great magnificence of humanity getting to the point, from horse and buggy, railroads, airplanes, rockets...and now walking on the moon. That is a testimonial to the progress of the creatures here on Earth."

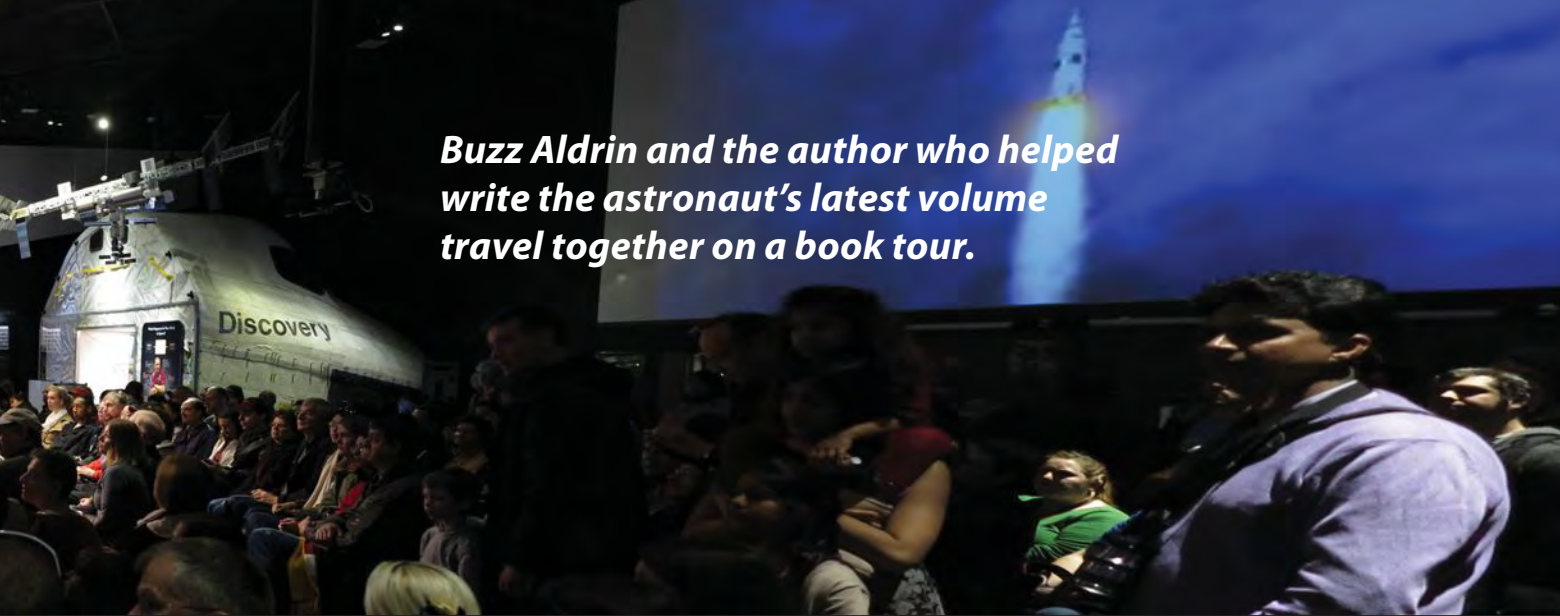
He describes the lunarscape this way:

"In my mind, I knew that it hadn't changed in hundreds of thousands of years. It was just the same scenery. You couldn't find any place like that on Earth. The airlessness...brilliant sunlight illuminates the dust, which was everywhere. And the horizon was so clear because there wasn't any pollution."

As for ambling on the surface, Buzz says "it really was much easier than we had thought it might be." All



Buzz and author Leonard David.  
Credit: Eric Long.



**Buzz Aldrin and the author who helped write the astronaut's latest volume travel together on a book tour.**

# WITH BUZZ ALDRIN

by Leonard David

those moonwalking simulations here on Earth, “they were hokey,” he now admits.

Harkening back to President John F. Kennedy’s Apollo commitment, Aldrin is quick to point out a historical fact. “The President didn’t say anything about walking around. He said send a man to the moon...bring him back safely. We could have landed, looked out the window, taken a few pictures and come back home.”

## Two-planet species

So what next? By the book’s title, you’d think the volume is all Red Planet proselytizing. That is not the case. The tome spells out Aldrin’s stepping-stone vision from Earth, into low Earth orbit and then on to deep space. His “mission” is to eventually plant humans on Mars, and on an everlasting basis. But those critical stepping stones are necessary to help build up the confidence level needed for becoming a two-planet species.

Watching Buzz autograph books has shown me the great public admiration that endures for the risk takers who shot for the moon. People are excited to shake the hand of someone who has been so far away.

Nevertheless, there can be trouble in the book lines.

Given all the eBay fanaticism out there, the desire to have memorabilia signed by notable individuals can look a lot like a gold rush. People have wanted Buzz to sign everything from posters and small lunar replicas to

musty-smelling encyclopedias and time-weathered newspapers.

Some want to tell Buzz where they were on the planet when he stepped onto the moon. Others tell him how grateful they are for his service to the country, which Buzz always appreciates. Others tell him a father or other relative designed a switch Buzz threw sometime during the Apollo 11 mission, or tucked in the parachutes that brought him safely back to Earth.

It’s the children who tug the heartstrings, often lining up in astronaut apparel with books for Buzz to sign. They are eager to be Mars-bound.

## Coast to coast

Buzz signs the autographs, but the big reason he is on tour is to pose a question to audiences around the country: What should America’s space program be reaching for now...and why?

Buzz wants what he calls a Unified Space Vision, meaning one in which the U.S. and like-minded nations partner to explore space. To reach beyond low Earth orbit, he sees a progressive suite of missions that are the vital underpinnings—a foundation—for the vision.

Buzz’s case to the American public is that Apollo was a “get-there-in-a-hurry, straightforward space race strategy.” The thinking was, don’t waste time developing re-usability. “That chapter in the space exploration history books is closed,” Buzz says.

A second race to the moon is a dead end, Buzz tells audiences. The effort “would be a waste of precious re-

sources, a cup that holds neither national glory nor a uniquely American payoff,” he says. Let nations such as China and India tie into the International Space Station family of countries. “The risk is low and the value on the political and collaborative front is high.”

Today, the call should be for a unified international effort to explore and utilize the moon, a partnership that involves commercial enterprise and other nations building on Apollo. “For the United States, other finish lines await,” he says.

At Mars, humankind has been given a set of moons—two different choices, Phobos and Deimos—from which hardware and personnel can be pre-positioned prior to occupying Mars with increasing numbers of people... not just one select group of individuals. “To succeed at Mars, you cannot stop with a one-shot foray to the surface,” he tells audiences.

Buzz knows he needs to reach young people to do all this. We have added a surprise video prior to questions and answers: “The making of Buzz Aldrin’s ‘Rocket Experience,’” Buzz’s pro-space rap.

This video shows rapper Snoop Dogg (now Snoop Lion), lauding Buzz, with Talib Kweli, Soulja Boy and master music-maker Quincy Jones.

As Buzz explains in the video: “I have only two passions: space exploration and hip hop.”

Who would have thought?

But then again, he did hop across the moon. ▲