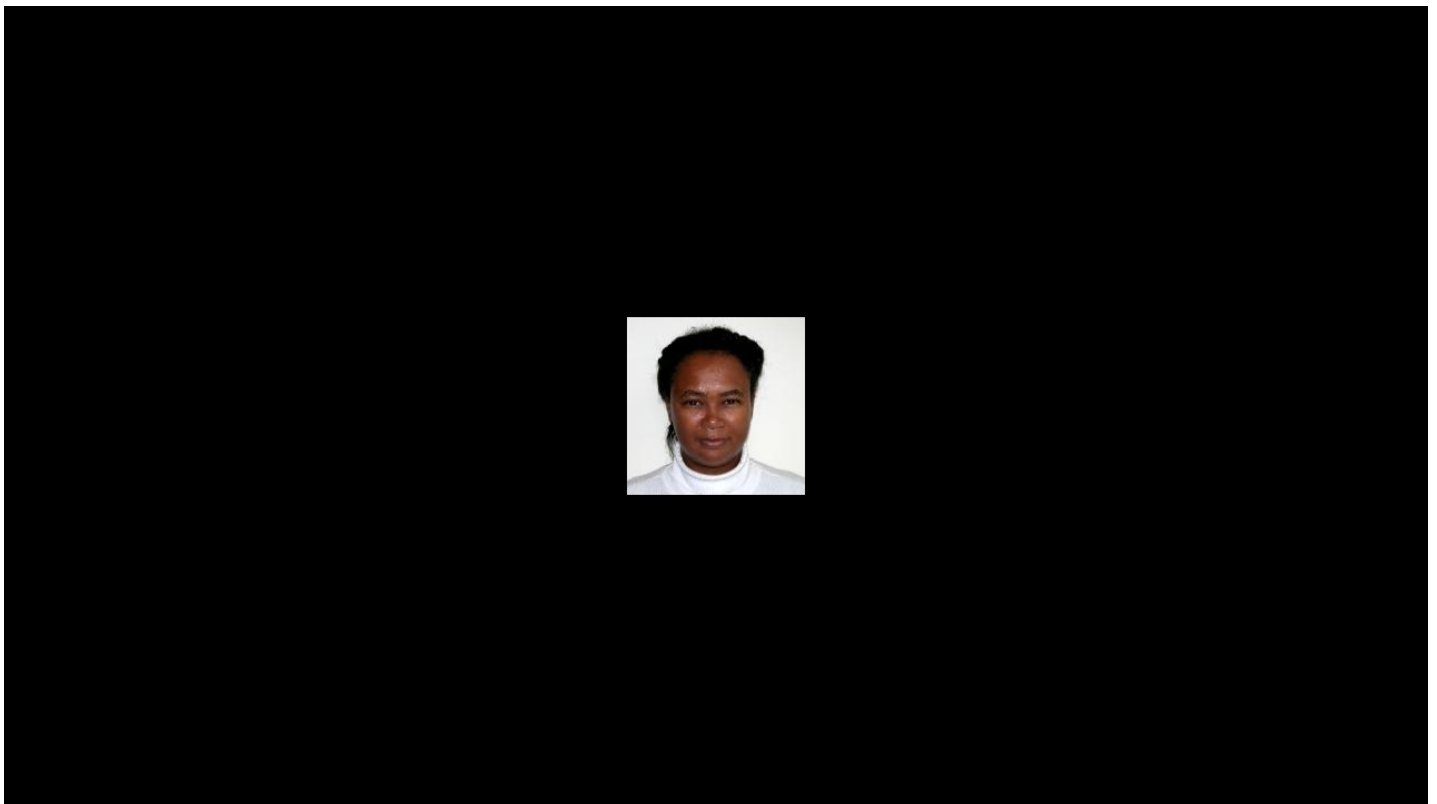




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## Jarita Holbrook: Guiding Star

By [Anne Sasso](#) | Jun. 1, 2007, 8:00 AM



Many cultures have looked to the night sky for help to navigate long journeys. Jarita Holbrook (pictured left) studies this rich tradition in African culture.

Holbrook's uncharted journey has taken her from the California Institute of Technology (Caltech) and astrophysics to the anthropology of astronomy. She studies how astronomy and knowledge of the night sky inform people's beliefs, religions, myths, agriculture, and social structures. Much of her research is focused on celestial navigation. Her own ability to navigate between cultures--both ethnic and scientific--has positioned her as a top researcher in her field and as a guiding star for countless students who choose to follow her example.

Even with the advent of modern compasses and Global Positioning System devices, many cultures—including those in Fiji, Tunisia, and East Africa, which Holbrook has observed directly—still choose traditional navigation methods, using the moon, stars, and planets to determine their place in the world and to get to where they're going. Today, Holbrook seeks to understand how sky lore reflects fundamental social and environmental aspects of a culture, and how this knowledge is transmitted from one generation to the next.

From the beginning, Holbrook's compass pointed to science. "It never dawned on me that I should be bad at math. It never dawned on me that I *couldn't* be a professor," Holbrook says. Her mind was open to scientific possibilities because science and math were part of her culture. She was born in Honolulu in 1965 and grew up in San Bernardino and Los Angeles, California. Her grandparents were professors at Alcorn State University, a historically black university in Lorman, Mississippi. Edna Holbrook, her aunt, teaches mathematics at Jackson State University in Jackson, Mississippi. Both her parents have bachelor of science degrees, her father in science education and her mother in nursing.

Still, her family didn't expect her interest and talent to land her at Caltech, where she majored in physics. At Caltech, she also met Ed Danielson, a member of the research staff and the first of a series of mentors who would help her navigate her scientific course.

After Caltech, Ted Daub, her master's thesis adviser and now a professor emeritus in astronomy, steered her through San Diego State. Mike Bolte, a professor of astronomy and astrophysics at the University of California (UC), Santa Cruz, supported her through her doctorate. "They're all white guys," Holbrook says of her mentors.

That's because there weren't many people around who looked like her. "I've never had an African-American professor, not for any of the sciences. That's how isolated I was," Holbrook says. "I had no idea that there were other African-American woman astronomers until I hooked up with the National Society of Black Physicists during my master's degree." Her experience, she says, shows that even in environments lacking in racial, ethnic, and gender diversity, you can still find good mentors, people who believe in you and help you believe in yourself.

## Changing course

Despite the support of her mentors, Holbrook's time in the physical sciences took its toll. By the end of her doctoral program in 1997, she wondered if she'd charted the correct course. "It's hard to be a woman and a minority in the sciences because the culture is exclusionary," she says. "People are harsh. The things they think it's okay to say to you are unbelievable." Students, she says, need a thick skin and a support network. "If it weren't for my mentors, I would have quit a long time ago."

Her passion about astronomy, but she also loved to travel and to learn how other cultures perceive the world. After Caltech, she spent a year in Fiji with the Peace Corps. Between San Diego State and UCSC, she worked at NASA's Goddard Space Flight Center. Her curiosity about the intersection of astronomy and culture was growing, especially as it related to African and African-American experience, and eventually it seduced her. "I knew that there were people who studied the astronomy content of other cultures, but I didn't think that I could make a career of it," she says. Nevertheless, she embarked on a new transformation, leaving scientific research behind to pursue ethnography.

Holbrook traveled to UC Los Angeles to take a postdoc at the Center for the Cultural Studies of Science, Technology, and Medicine. There, she worked with Sharon Traweek, an associate professor of history. Traweek is "betwixt and between," says Holbrook--not a scientist, but a scholar of the culture of science, especially physics. "She's a brilliant mentor," Holbrook says.

Her grounding in astronomy has served her well--the people she studies "can never tell me anything about the sky that I don't know from a scientific basis"--but her indoctrination in the scientific culture was less helpful in her new role. "There's a certain interaction style among astronomers. You have to be arrogant, and you have to be obnoxious," she says. "Being a good anthropologist-ethnographer, you have to be really close to invisible."

"The ways that we convey to our colleagues that we know what we are talking about are not the same in these two arenas," says Traweek. "The styles highly regarded and widely emulated in one community are not respected in the other."

"Fortunately, Dr. Holbrook's understanding of this new context emerged quickly," Traweek observes. "She became an anthropologist of her academic transition and then applied that knowledge to her ethnographic studies of celestial knowledge."






Jarita Holbrook with reptilian associates at Temple of the Python, Ouidah, Benin, West Africa in 2004 (credit: Romeel Dave')

## Guiding the next generation

When it came time to look for an academic position, Holbrook had a clear criterion that had to be met: a joint hire with her husband, astrophysicist Romeel Davé, whom she met at UCSC. They were apart during their postdocs, but "when it came to permanent positions, we refused to entertain offers that weren't double offers. It was a priority for us. And that only happens when you are willing to work to be at the top of your field; otherwise, you're not going to be able to leverage like that."

In 2002, the pair accepted positions at the University of Arizona, Davé in the astronomy department and Holbrook as a member of the faculty in the **Bureau of Applied Research in Anthropology** (BARA). At BARA, a research unit, faculty members are expected to spend 60% of their time in the field and to teach just one class a year. The light teaching load has made it easier to balance raising two girls--Mirabai, 7, and Jasmina, 3--with staying at the top of her field.

Holbrook bristles at the suggestion that, as an African-American scientist, she has an obligation to give back to her community; "nobody asks the white boys to give back to their communities," she observes. But that doesn't keep her from being one of the most sought-after mentors on campus. "Jarita has made a major effort in offering a path into the sciences and social sciences for African-American students," says Timothy Finan, BARA's director. Last year, Holbrook secured funding to sponsor a group of African-American students to travel to Ghana to meet with African physicists,

as'  or  or  cultural astronomers during the solar eclipse in March. "My students are my legacy," Holbrook says.

She hopes that her studies of indigenous African astronomy will motivate a wider range of African Americans to study physics and astronomy. "There's a huge weeding-out process. By the time you get to African-American students who are Ph.D.s in physics and astronomy, they all came from the middle class and above," Holbrook says. "It's rare to find someone who is truly from the ghetto. We all came from money." Rethinking Astronomy 101 may provide a solution. "There is a history of sky-watching all over the world, but the way that we teach astronomy is only Newton and Galileo and perhaps Stonehenge. If you bring in examples of African cultural astronomy for black students in introductory astronomy classes and give them a sense of ownership of the sky, perhaps they'll feel more like this is a field that belongs to them. And perhaps they'll stay in it longer and do better."

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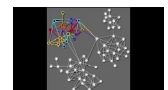
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