

Richard Sheppard captured a close-up view of the metal he recovered in western Zambia. Sheppard recovered the metal in 2000 and took this photo in 2002. Flight controllers believe the metal is probably debris from the Apollo/Saturn-203 mission, which launched July 5, 1966.

Page 3 photo: A man stands next to the piece of metal that Graham Sheppard and his son Ian first saw in 1975 while transporting missionaries to an airstrip in western Zambia. Graham took this photo when he returned to the airstrip in 1976.

NASA JSC2006E00786

mystery

Following his first failed attempt due to poor road conditions in 1999, Richard resumed his search to locate the metal in 2000. He first went to the West Two Airstrip in Zambia, where his father thought he had seen the metal 24 years earlier.

Just as he was concluding the search at West Two with no results, his fortunes took an abrupt upward turn when he showed the picture to a local woman. She knew the man in the photo and told Richard that the man lived by the West One Airstrip.

Richard went to the West One Airstrip and quickly had success. He discovered the debris in a most unlikely place. “We went down the road,” Richard said, “and it was being used as the roof of a washroom.”

Richard said the metal on the outhouse stood out in the area because the buildings were mostly constructed with mud bricks and thatch. He purchased the metal from the villagers for \$200, which he said was nearly a year’s salary for a villager, and took it back to his ranch.

Unfortunately, all of the identifying marks that appeared on the original piece of metal were gone. The villagers told Richard that many years ago, Europeans had cut off the four-foot by four-foot piece that contained the markings, leaving the remaining piece measuring about 12 feet by 10 feet.

WHERE DID IT COME FROM?

Now that Richard had found the metal, the next step was to determine where it came from.

Richard eventually made contact via e-mail with several people at the Johnson Space Center Astronomical Society. One of those contacted was Chuck Shaw.

Shaw, who is currently serving as mission director for Hubble Space Telescope Servicing Mission 4, said the ensuing investigation involved both current and past flight controllers.

After months of investigating, the group began leaning toward Apollo 6 as the source of the metal debris. Apollo 6 was the final uncrewed test mission prior to NASA’s successful missions to the moon. The mission’s objectives were the final qualification of the Saturn V launch vehicle and Apollo spacecraft for the upcoming crewed lunar flights.

Apollo 6 became a possible source because the Saturn V rocket experienced engine problems on its second-stage burn. The spacecraft did reach its desired orbit, but flight controllers burned the engines longer than planned. The second stage reentered the atmosphere further downrange than planned, placing the potential debris footprint over Zambia.

Richard and Ian traveled to the United States in November 2005 and visited Rocket Park looking for an answer to the metal’s origin by matching the debris to the Saturn V rocket.

A NEW TWIST

However, further investigations in December led to another and more likely source of the debris—the Apollo/Saturn-203 (AS-203) mission.

AS-203 was an uncrewed test flight of the Saturn rocket. It launched from Kennedy Space Center in Florida on July 5, 1966.

“Apollo 6 was looking like a good bet until we discovered that this mission (AS-203) had debris in Zambia,” Shaw said.

According to a list from the Senate Committee on Aeronautical Space Sciences report published in 1972, a piece of metal similar in size to that of the Sheppards’ was found in Zambia in July 1966. It was identified as a piece of the Saturn-IVB stage of AS-203 rocket.

Later that year, another piece was found in Swaziland, also in southern Africa. It was identified as a part of the Saturn-IVB stage of AS-203. To date, Shaw said there is no evidence that Apollo 6 debris has ever hit land.

“We know that the vehicle fragmented early on the fourth orbit,” Shaw said. “They were doing a pressurization check between the ground station at Corpus Christi and Trinidad.”

Shaw said that it was very possible that debris from a rocket launched in 1966 could stay undetected for many years. Another factor pointing to AS-203 is that pieces of the Saturn-IVB stage have the same waffle pattern as the piece found by the Sheppards.

Even though there is a strong case for AS-203, it may not ever be confirmed as the source.

“We will never know for sure,” Shaw said. “But it looks like AS-203 is the source of the debris. It is not unreasonable to think that more than one piece could land there.”

LESSONS LEARNED

Shaw said the efforts to find the source of the metal have been a good experience. “It was gratifying that people around the world hold our accomplishments in such high regard,” Shaw said. “I made a couple of new friends from the other side of the Earth.”

In addition to being fun, he said that his research has inspired him to write the best documentation he can. “It was neat looking back in time. [The Apollo engineers] did a good job at documenting day-to-day activities. It makes me want to do the best job I can in documenting our activities.”

Researching the notes from his predecessors has also given Shaw a better understanding of what went on during NASA’s Apollo missions.

“You can read about the Apollo Program and about all they did,” he said, “but when you read the notes, it brings it to life. It gives you a better appreciation of the challenges they faced.”

As for the current location of the metal debris, Richard shipped it to the United Kingdom, where it is at a friend’s house. Richard is exploring options on what to do with it next.

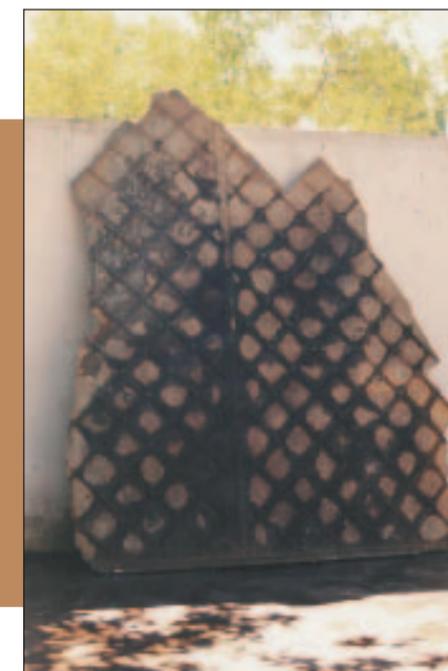
Unfortunately, Graham passed way in August 2005 before his sons could visit JSC and learn about the possibility of the out-of-place object originating from AS-203. The brothers said they continued the quest to discover the origin of metal with their father in mind.

“It was something he was very interested in,” Richard said. “He was very fascinated with the space program. It was a tribute to him.”

“It is like coming full circle,” Ian said.

“Apollo 6 was looking like a good bet until we discovered that this mission (AS-203) had debris in Zambia.”

The metal debris stands up against a wall at Richard Sheppard’s lodge in Zambia. Sheppard recovered the debris in 2000 and took this photo in 2002. The metal measures about 12 feet by 10 feet.



NASA JSC2006E00788

What I about JSC



NASA/Bair JSC2006E01019

I love the “campus” look of JSC. I love the way folks work to get along with all the other creatures that live here. I love the fact that hard-core engineers and scientists are still enthralled, with an almost childish delight, by the things that are accomplished here on a daily basis.

Judi Mayes
Staff Technical Support Specialist
Barrios Technology



NASA/Bair JSC2006E010604

I love the fact that unlike most of what we call the “real world,” people at JSC are here because they want to be. Because they believe in, love and want to be a part of human spaceflight, at the only human spaceflight center in the world outside of Moscow and now Beijing. Many could work in other places. Many would prefer to live in other cities, but they choose to be here because they share a dream of exploration and love to share that dream with those around them.

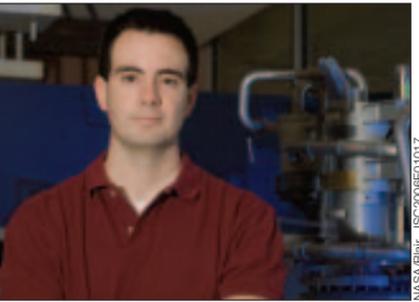
Michael Lutomski
Risk Manager
NASA



NASA/Bair JSC2006E010118

I love the passion that people have for their work. I feel like I am part of something bigger than myself and have the opportunity to do something that makes Americans proud.

Elizabeth Blome
Space Station System Integrator
NASA



NASA/Bair JSC2006E01017

I love that there is always more to learn when working at JSC, no matter who you are. If you are willing to just sit back and listen for a while, you’ll learn amazing things from some of the most intelligent and creative people in the world.

Ken Stroud
Space Human Factors Analyst
NASA

I love JSC because it still evokes emotions working here even after over 22 years.

Richard Lehman
Space Station Software Safety & Mission Assurance
Science Applications International Corporation

I love our lawn ornaments. They remind us where we’ve been and where we want to go.

Ken Jenks
Engineer
NASA

I love that each part done by everyone here at JSC makes a mission complete! Our commitment to mission success unifies us. Few things are more awesome than watching the ignition of grumbling gases within the shuttle’s engines and hearing my coworkers cheer after...“3, 2, 1...liftoff!”

L. Therese Ramirez
Customer Service, JSC Locksmith Shop
Diamond Group

I love the fact that even though there are a lot of different companies and separate groups working at JSC, you still feel like you are part of a large family interested in the space program.

Brenda Voisine
Print Shop Customer Service
GeoControl Systems, Inc.

I love JSC’s historical significance in the adventure of human spaceflight, and the fact that it continues to play a major role in our present and future missions. We have good people, a beautiful setting and exciting work. How can you not love it here?

Silvia Molano
Human Resources Staffing Specialist
NASA

Unquestionably, it’s the people! We have some of the brightest, funniest and most caring people you could ever find in one collection, and we’re as diversified as the world itself. I love JSC for its heart and spirit.

Mary Peterson
Writer/Editor
MEI Technologies

I love the free-ranging deer, native birds, and, in the spring, the new patch of wildflowers and bluebonnets that all grace the spacious landscape of JSC.

Maria J. Hooks
Contract Specialist
NASA

This morning my wife said she’s leaving me. My kids wouldn’t give me kisses and hugs. My best friend died. My dog bit me. But today I get to come to the Johnson Space Center and play with the astronauts. I don’t just love this job; I live for it!

Tom Hanson
Team Lead, Space Shuttle Training Division
Barrios Technology

This is a dream. I wake up...Drive to work passing beautiful lakes full of boats and people enjoying themselves...Pass by the smiling security guards...I’m surrounded by intelligent people who are also my friends...Walk outside in the most beautiful 60-degree weather and admire the pond where all the little critters enjoy life...I go home feeling fulfilled... Wait a minute! The only part that is a dream is the 60-degree weather. Other than that, it’s a typical day at JSC. We are all so lucky!

Heather Boudreaux
Medical Records Receptionist
Kelsey-Seybold

What I love about JSC is the enthusiasm and inspiration JSC employees have for the space program. It’s important to commit yourself to something you believe in, and I am surrounded every day by people who work to make dreams come true and the unbelievable a reality.

Jenna C. Mills
Public Affairs Specialist
NASA

I love the incredible people I get to work with on a daily basis. My coworkers are creative, talented, dedicated and truly want to make NASA the best it can be. In addition to being professional and hardworking, my coworkers are also my best friends.

Tiffany Travis
Media Outreach Team Lead
Tessada & Associates, Inc.
JIMMS Contract

What I love about JSC is all of the animals—the deer, ducks, squirrels, birds and pigeons. This makes JSC more than a place for us humans to work with each other; it’s a chance to work and live among other amazing creatures.

Jessica Madrigal
Flight Program Support Branch
REDE/Critique

I love that there is a wealth of knowledge here. I love the diverse culture and that the Vision for Space Exploration is far-reaching. I love that there are no boundaries, but only limits that we ourselves impose. I love that we have exceeded our own expectations.

Oretta Cade
Secretary, Program Integration Office
REDE/Critique

(In the style of a Robert Frost verse)
When dreams lead “man” towards exploring the universe,
JSC reminds me, I have no limitations
When patriotism and honor is a test of “man’s” courage,
JSC reminds me, of that richness and diversity of existence
When dreams are realized,
JSC reminds me, I can touch the stars

Linda Kennedy
Publicist
United Space Alliance

The people! What a fantastic group of folks. Every day I’m impressed with the professionalism and dedication of the workforce at JSC. We are truly a team working towards a common mission, and I’m honored to be a part of it all.

Susan White
Acting Manager, Human Resources Development Office
NASA

I love the spirit and excitement obvious in faces when we accomplish great things together—for our great nation foremost, but also for the entire planet. But I also treasure the closeness of a true family when we do have those very bad days and need each other for support.

Richard Guidry
Payload Safety Engineer
NASA

