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WEDNESDAY, AUGUST 7, 1991

FLORIDA

Object Near Atlantis Was Ice, NASA Says

NASA engineers said the mini-mystery oblong object seen floating beside space shuttle Atlantis after last week's satellite release was actually a chunk of ice. The five-foot-long icicle apparently was shaken loose from the outer surface of a shuttle engine nozzle when the astronauts freed the giant communications satellite a few hours after liftoff Friday, a space agency spokesman said. Engineers identified the object after repeatedly viewing a videotape beamed down by the Atlantis crew.

Mysterious 'flying bumper' keeps the shuttle company

Knight-Ridder Newspapers

MIAMI — It will probably go down in UFO lore as the "flying bumper," but the object that snuggled up to the space shuttle over the weekend wasn't a first for NASA — U.S. spacecraft have had mysterious companions before.

During nearly 30 years of manned space flight, sightings ranging from ice crystals to an astronaut's spare glove have become part of the legend of spaceflight. John Glenn logged the first mystery in 1962 when he spotted what he called "fireflies" accompanying Friendship 7. Just ice, experts said.

Later that same year, on the edge of space, Robert Michael White said he saw a large sheet of paper tumbling along beside his X-15 space plane — at 59 miles above the Earth and at four times the speed of sound. That, too, was ice, officials would later decide.

The space bumper, a slightly curved 4-foot long by half-inch-thick strip in the shape of a car bumper, was sighted by astronauts Saturday. It had been spotted on earlier shuttle missions, too. "We know it is at least the third time they have seen something nearly identical to this," said James Hartsfield, a spokesman for the National Aeronautics and Space Administration at the Johnson Space Center in Houston.

NASA officials are comparing tapes of earlier sightings to Saturday's apparition. One theory is that the object is something that floated out of the cargo bay. It seems to be about the shape of a section of the "cradle" that held the communications satellite.

Saturday's visitor floated slowly away. "We don't know what it was. But we're sure it was ours," Hartsfield said. "We definitely want to look inside the cargo bay when the shuttle gets back."

Atlantis crew prepares for Sunday touchdown

By **MARK CARREAU**
Houston Chronicle

The Atlantis astronauts plan to stow experiments and test the shuttle's re-entry systems today as they prepare to come home.

The five crew members zipped through a series of experiments Friday, pausing long enough to observe a brilliant lightning display over Central America and to offer encouragement to future space explorers.

Mission commander John Blaha is slated to guide Atlantis to a landing at the Kennedy Space Center in Florida on Sunday at 7:24 a.m. Houston time. However, if poor weather develops there, Atlantis will be diverted to Edwards Air Force Base, Calif., where it would land no sooner than 8:50 a.m.

The ship lifted off Aug. 2, its crew successfully deploying a \$125 million communications satellite hours later.

Since then, the crew has focused on

medical research and tested equipment that may be used on the space station Freedom.

On Friday, Blaha attempted to convey the mission's significance to youngsters.

"Your 30 years are going to be exciting, more exciting than my 30 years," Blaha said during an impromptu demonstration the astronauts videotaped for educational purposes. "I wish I could go back and be like you.

"One of you in the 21st century may become another Einstein."

With crewmate Jim Adamson floating upside down next to him, Blaha shook up a clear plastic bag of marshmallows and green M&M candies to demonstrate how weightlessness could be used to develop new products with commercial value.

"Look what you get when you shake the bag up, a completely different material," Blaha said.

Under the influence of Earth's gravity, the heavier M&Ms quickly settle to the bottom of the bag when it is shaken, the marshmallows on top.

But as Adamson and Blaha demonstrated in weightlessness, the two candies mix randomly without regard to their mass.



Blaha

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'Earth looks hazy,' astronauts observe

Oil fires, volcanoes may be to blame

By MARK CARREAU
Houston Chronicle

The Earth is a spectacular but unusually hazy sight from space, perhaps because of recent volcanic activity and the Kuwait oil fires, the Atlantis astronauts reported Tuesday.

"Just this morning, John and I were looking out the window, and I was commenting to him that this time the Earth looks very hazy," said astronaut Shannon Lucid.

"I don't know whether it's because of the recent volcanic eruptions or the oil fires or what," she added. "But John agreed with me that we just haven't been getting as clear a view as we have on previous missions."

Lucid flew previously in the fall of 1989 and summer of 1985.

Mission commander John Blaha and his four crew mates made their observations during a 20-minute news conference with Conus Communications, a television network.

"I agree with Shannon and John. It looks quite hazy this time," said astronaut James Adamson, who flew a 1989 mission. "This could just be a seasonal or atmospheric phenomenon associated with the Mount Pinatubo eruptions or something like that."

Pinatubo, in the Philippines, erupted in June.

"You can see the black smoke just pouring out of Kuwait into Saudi Arabia," said Blaha, who flew twice in the spring and fall of 1989.

Retreating Iraqi forces ignited about 900 Kuwaiti oil wells early this year as U.S.-led forces drove them from the tiny nation.

"This is really a sad sight," added Blaha. "I guess you can see some good things and bad things in space."

Meanwhile on Tuesday, the Atlantis astronauts sailed past the halfway point of their nine-day mission conducting medical and scientific experiments. One that they finished

measured concentrations of protective ozone in the atmosphere.

Ozone depletion has been linked to rising levels of man-made pollutants. Its loss has permitted high levels of ultraviolet radiation to reach the Earth's surface, increasing the incident of skin cancer among humans.

Also on Tuesday, a spokesman said NASA analysts believe that the long, irregular-shaped object that drifted from the shuttle hours after it lifted off last Friday was ice.

The episode, which the shuttle astronauts captured on videotape, apparently piqued the interest of UFO enthusiasts, who placed some anxious calls to NASA when news organizations reported it.

One caller said he later spotted the object at the Boston airport.

"They are about 99 percent sure it's ice off the space shuttle main engine nozzles," said James Hartsfield, a shuttle program spokesman at NASA's Johnson Space Center. "Nothing too romantic."

The 5-foot-long, 2-inch-wide object was spotted by the Atlantis astronauts last Friday afternoon as they deployed a NASA communications satellite from the shuttle's cargo bay.

"Look at that big piece of stuff that came out of the back of the vehicle," Blaha told mission control at the time. "We don't know what it is, but you can look at it there."

Ground controllers said the object resembled a car bumper.

Hartsfield said engineers believe the ice formed in the engine nozzles as residual liquid hydrogen and oxygen propellants were purged from the propulsion system after liftoff.

The Tracking and Data Relay Satellite and an attached rocket booster were ejected from the payload bay with a spring device imparting enough force to shake any ice from the nozzles, engineers believe.

A similar object was recorded last October when Discovery launched the Ulysses solar probe in an identical manner.

Though ice is the most likely explanation for the mysterious object, Hartsfield said technicians will examine Atlantis' cargo bay after it returns from space to determine if any hardware is missing.

Astronauts' Device Defies Weightlessness

■ **Space:** Experiment moves blood to counter effects of no gravity. It may ease shuttle crews' transition to Earth.

From Times Wire Services

KENNEDY SPACE CENTER, Fla.—Two space shuttle astronauts defied the effects of gravity-free space Sunday, sealing themselves in a waist-high vacuum container that forced blood from the top of their bodies to their legs.

It is one of several medical experiments being conducted during the shuttle Atlantis' nine-day flight to find ways to ease the body's rough transition from space to gravity on Earth.

Mission specialist G. David Low was the first to slip into the white, sack-like device.

The vessel was closed tightly around his waist, and the pressure inside gradually was reduced, drawing blood into his legs until the stress on his heart was about the same as it would be if he were standing on Earth.

Shannon Lucid, a biochemist, recorded echocardiograph images of Low's heart during the hourlong procedure, performed on the astronauts' third day in orbit.

Scientists believe negative pressure on the lower limbs, in addition to increased fluid consumption, may improve astronauts' readjustment to gravity after space flight. Astronauts often feel faint once back on the ground.

Shuttle pilot Michael Baker later climbed into the container for an hour of depressurization.

Baker had dreaded the thought of spending so much time in the container. In an interview before the flight, he described the operation:

"It's basically a big can. You get in it. It has a seal in it. They have a hose you basically hook to the outside of the orbiter and it pulls the vacuum. . . . As you take more vacuum out of the can, you just kind of get pulled down into the can."

Does it hurt?

"It's not comfortable," he said.

NASA officials, meanwhile, were trying to identify a mysterious object that floated beside the shuttle earlier in its mission.

The object, about five feet long and resembling a car bumper, was videotaped by the astronauts Saturday as it sailed along between the shuttle and the Earth.

A NASA spokeswoman told Reuters on Sunday the object was no longer visible from the shuttle. But the mystery remained.

The National Aeronautics and Space Administration believes the object was debris lost during the deployment of a communications satellite Friday. But the agency admits it does not know for sure what was out there.

Nearly identical objects have been seen on previous shuttle flights from which satellites were deployed. Flight Director Phil Engelauf said.

But Engelauf said at a Sunday press briefing at Johnson Space Center that NASA engineers are still scratching their heads over the object.



Lucid

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Houston Chronicle

Wednesday, Aug. 7, 1991