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FINAL

SHUTTLE LOST

COLUMBIA DISINTEGRATES OVER TEXAS

VIRGINIAN AMONG SEVEN KILLED ON SPACECRAFT'S 28TH FLIGHT



THE DISASTER



CRAIG RUBADOUX/THE ASSOCIATED PRESS

Henry and Danielle Marin of Jacksonville, Fla., consoled each other yesterday at the Kennedy Space Center at Cape Canaveral.

THE ASSOCIATED PRESS

Space shuttle Columbia disintegrated 39 miles over Texas yesterday in a meteoric streak that rained smoking debris over hundreds of miles of countryside. All seven astronauts were killed.

Suspicion immediately turned to possible damage to the left wing during liftoff.

The catastrophe occurred in the last 16 minutes of the 16-day mission as the spaceship glided in for a landing in Florida.

In its horror and in its backdrop of a crystal blue sky, the day echoed one almost exactly 17 years before, when the Challenger exploded.

"The Columbia is lost," said President Bush, after he telephoned the families of the astronauts to console them.

"The same creator who names the stars also knows the names of the seven souls we mourn today," Bush said in a televised speech, his eyes glistening. "The crew of the shuttle Columbia did not return safely to Earth but we can pray they are safely home."

NASA began the painstaking process of finding the cause and appointing a commission to investigate. The agency said the first indication of trouble yesterday was

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THE CREW



NASA VIA THE ASSOCIATED PRESS

Columbia crew (from left): David Brown, Rick Husband, Laurel Clark, Kalpana Chawla, Michael Anderson, William McCool and Ilan Ramon.

BY ANDREW PETKOFSKY
AND PAUL BRADLEY
TIMES-DISPATCH STAFF WRITERS

As astronaut David M. Brown orbited aboard the space shuttle Columbia, he let friends on Earth know he looked forward to coming home to share his experiences and insights.

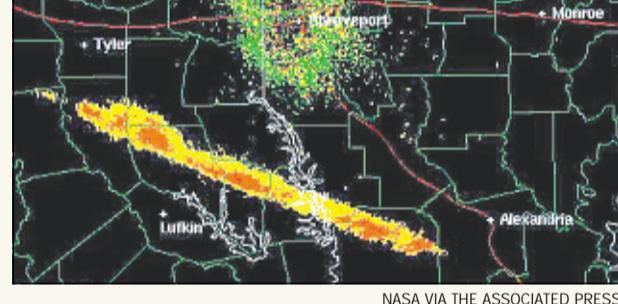
"One of his last statements was what a wonderful planet Earth is," said Cliff Gauthier, a College of William and Mary gymnastics coach and old friend who received e-mail messages from the astronaut during the flight. "He was so excited about being able to do what he was doing."

The shuttle mission ended in catastrophe yesterday as Columbia broke up and burned while carrying Brown and six crewmates toward their scheduled landing at Cape Canaveral, Fla.

The disaster sent a shock through the nation that was amplified in Virginia, where Brown had created a legacy of extraordinary achievement, deep ties to the people and institutions that had nurtured him and joyful embrace of chances to inspire others.

Brown, 46, was a native of Arlington County who went to high school there, spent his college years at William and

THE RISK



NASA VIA THE ASSOCIATED PRESS

This radar image taken at 9:15 a.m. EST in Shreveport, La., shows a reddish-yellow streak thought to be caused by debris and smoke from Columbia.

BY A.J. HOSTETLER
AND PETER BACQUE
TIMES-DISPATCH STAFF WRITERS

As one astronaut put it, space-shuttle missions are dangerous "from ascent until landing."

While launch is clearly the most perilous portion of a mission, the shuttle's return from space to Earth's atmosphere holds its own great risks. The shuttle's nose and bottom surfaces, and especially the leading edges of its wings, experience fierce temperatures as the craft maneuvers through the uppermost levels of the atmosphere.

The greatest immediate threat is heat. Heat can destroy the structure in a fraction of a second, before a crew can react, aerospace experts say.

As the shuttle enters Earth's atmosphere, traveling about 17,300 mph, or Mach 26, it has two main protections from the heat generated by the drag: the shuttle's angle of attack and the ceramic tiles that sheath the craft.

The entry into the atmosphere starts when the shuttle is about 557,000 feet above Earth. The shuttle has to perform a series of maneuvers to dissipate energy and to slow down for its eventual landing. That means turning speed into heat.

The trajectory cannot be far off, said one aerospace en-

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NINE PAGES OF COVERAGE A10-18

TOP PHOTO BY DR. SCOTT LIEBERMAN VIA THE ASSOCIATED PRESS

SUNDAY

ONLINE ► <http://www.timesdispatch.com>

Today's weather

Partly cloudy.
High: 52.
Low: 35. /B8

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Assembly action

Delegates approve estate-tax repeal, abortion restrictions.

General Assembly /A25

Ties that bind

Pieces of the past sing out in colors and symbols.

Flair /F1

CONFRONTING



WAR

Military call-ups hit local agencies

Richmond-area police, fire and sheriff's departments stand to lose large numbers of reservists if war breaks out. Many Virginians have already been called to active duty.

Metro /B1

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