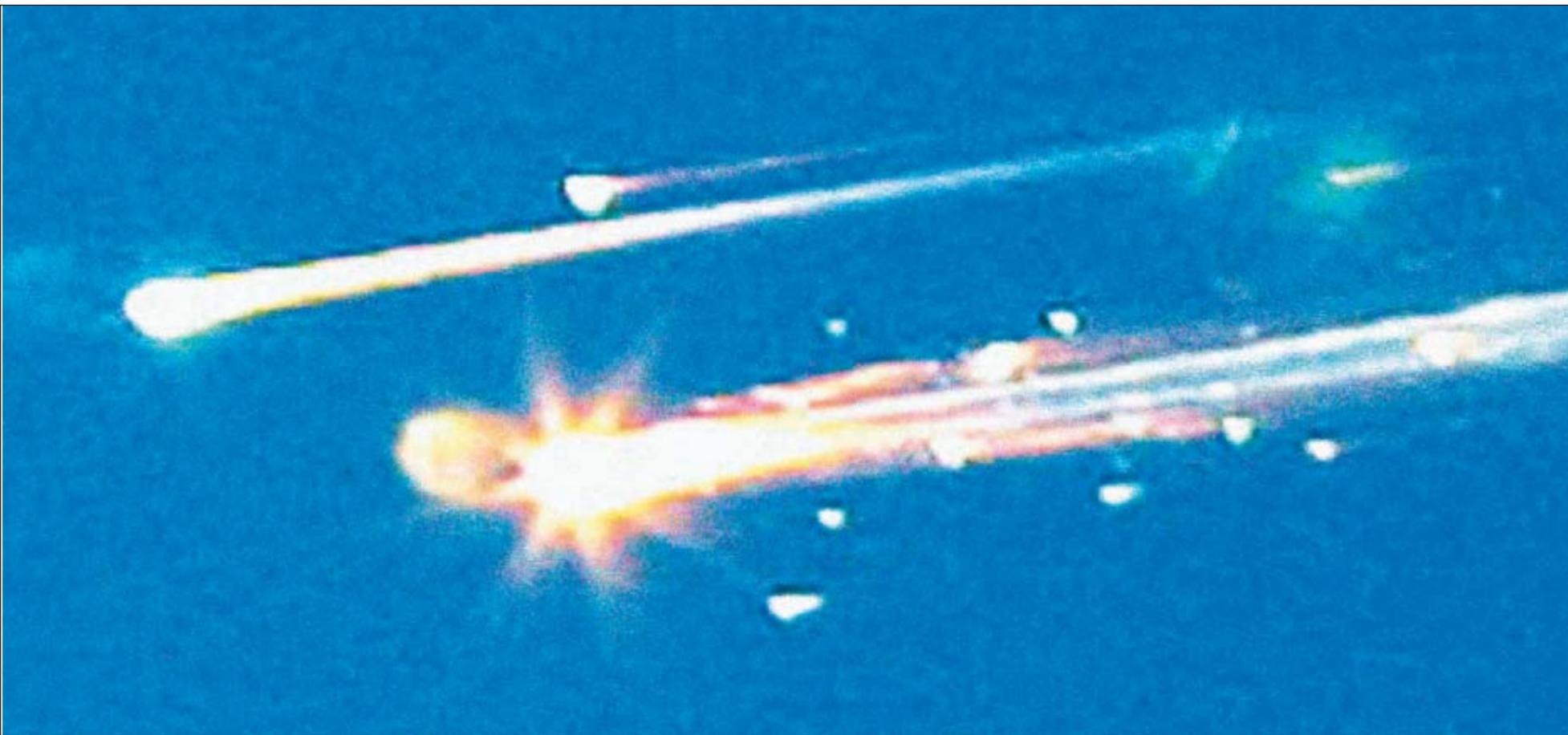


'Columbia is lost'

Shuttle disintegrates on re-entry, killing 7



Associated Press / Dr. Scott Lieberman

Debris from space shuttle Columbia streaks across the sky Saturday over east Texas. The shuttle broke apart, killing all seven astronauts just days after the anniversary of the Challenger explosion in 1986.

Chilling memories of earlier calamity

Challenger touched emotions and careers

By Joey Bunch
Denver Post Staff Writer

Saturday morning's news that space shuttle Columbia had disintegrated sent Phillip Boothby reeling back in time.

It was 1986 and he was 10, a hotel blanket wrapped around his 4-foot-5-inch body on a freezing cold January morning in Florida.

He was among six Boulder County schoolchildren and their teachers who were treated to a trip to Cape Canaveral for the launch of the ill-fated Challenger.

The Columbia tragedy reminded Boothby, and millions more Americans, of the shuttle explosion 17 years ago. "It's like reliving the experience all over again," he said.

A fourth-grader then, his mind had raced against the unfolding tragedy, as the lilting smoke and metallic debris fell from the sky.

Somehow, he thought, the crew of the Challenger would survive the explosion. To a boy who loved space, heroes should not die.

But hope gave way to shock, panic and grief.

Now in 2003, as Boothby was alone in his Boulder home, he understood how loved ones can be lost to the heavens and how high a toll science can charge to expand man's place in the universe.

Boothby's wife of two years had gone to work, and he had just plucked a bagel from the toaster.

He flipped on the TV as the words "Columbia Disaster" stretched across the screen.

This time, as he watched wreckage streak across the sky in pieces,

Please see **MEMORIES** on 9A

THE CREW • FULL PROFILES ON 6-7A



Rick D. Husband
Commander had applied four times to get into space.



William McCool
Pilot's humor and dependability were well-known.



Kalpana Chawla
CU grad's dream took her from India to space.



Ilan Ramon
Israeli combat pilot welcomed his opportunity.



Michael P. Anderson
'Eagle' was a role model to others.

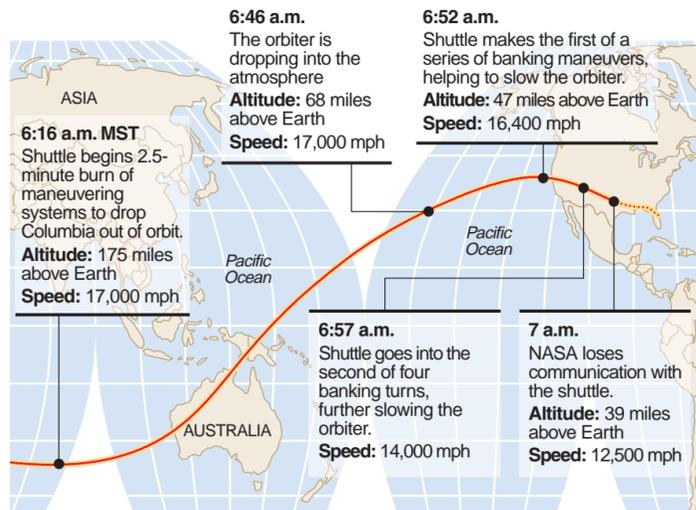


David M. Brown
Pilot, doctor, stilt walker, astronaut: He did it all.



Laurel B. Clark
Doctor was always eager for next adventure.

Columbia's final moments



Sources: NASA, National Weather Service

Debris field



The Denver Post / Severiano Galván, Joe Watt and Thomas McKay

Setback casts shadow on space station

By David L. Chandler
Special to The Denver Post

Despite NASA's official optimism, the disintegration of space shuttle Columbia appears likely to ground the remaining three shuttles for some time, analysts said.

Moreover, they warned, the disaster could threaten the continuity of the international space station's operations.

After the Challenger explosion in 1986, NASA initially minimized its expectations of how long it would have to interrupt shuttle flights. The hiatus ended up lasting more than 2 1/2 years.

After a fire killed three astronauts on

Apollo 1 in 1967, the Apollo program was shut down for more than a year while equipment was redesigned despite pressure imposed by President Kennedy's commitment to send astronauts to the moon and back before the decade was over.

Now, unlike the period after the Challenger disaster, there is more at stake than just the shuttle program. The program's primary mission these days is to get crews to and from the international space station and to deliver modules to continue the construction of the half-finished orbiting laboratory.

If investigators determine that the remaining shuttles will need to be ground-

ed for more than a few months — which could easily be the case if any redesign of the system is required — that could leave no way to continue the space station construction because there is no other launch vehicle large enough to carry the lab's huge components.

The station's present three-member crew will not be stranded in orbit because they have two other ways to get home. There is a Soyuz capsule permanently parked at the station as a kind of lifeboat, allowing the crew to return to a parachute-slowed landing in central Asia. Or they can wait for the next Soyuz

Please see **FUTURE** on 20A

Heat-shield problems suspected

Terror ruled out as Bush assures NASA's future

By Diedra Henderson
Denver Post Science Writer

Space shuttle Columbia disintegrated minutes before its scheduled landing Saturday, instantly killing seven astronauts, showering fuel and toxic debris over at least two states, and rattling the confidence of a space agency that just marked the 17th anniversary of the 1986 Challenger disaster.

NASA and the White House quickly ruled out terrorism. The shuttle was 207,135 feet above Earth, traveling at 12,500 mph, a target too high, speeding too fast, to strike from the ground.

About 7 a.m. MST, a crew member called in the loss of a tire-pressure reading. Mission Control issued a crisp reply. That routine exchange, ending with a tenuous "Roger, uh, ..." from Columbia, was the crew's last.

For 16 anxious minutes, Mission Control noted a worrying spike in malfunctioning sensors and could get no reply from the shuttle. Eyewitnesses saw the shuttle flash brightly, like an exploding star, then break into shards that fell to Earth, trailed by streaks of vapor.

President Bush, addressing a stunned nation, said "The Columbia is lost. There are no survivors."

He called the crew heroes and assured the future of an agency that is to present its 2004 budget this week. "The cause in which they died will continue," he said. "Mankind is led into the darkness beyond our world by the inspiration of discovery and the longing to understand. Our journey into space will go on."

On Tuesday, NASA workers hung their heads in sorrow, recalling three Apollo 1 astronauts killed during a launchpad fire on Jan. 27, 1967. A day later came memorials for seven astronauts killed when Challenger exploded Jan. 28, 1986, 73 seconds after launch.

On Saturday, flags were lowered to half-staff and the first of many memorial services began across the nation.

"Our landscape has changed," chief flight director Milt Heflin said during an emotional media briefing. "It was different after Apollo 1. It was different after Challenger. It's a shame it takes things like this for this country to pull together and care."

Two of Columbia's astronauts had Colorado ties. Mission specialist Kalpana Chawla earned her doctorate from the University of Colorado at Boulder in 1988. Ilan Ramon, Israel's first astronaut, made instant friends during a Denver visit in 1999. His host family traveled to Florida two weeks ago to watch the shuttle's launch.

"We had long philosophical talks about the impor-

Please see **SHUTTLE** on 18B



0 842767 0

17 PAGES OF COVERAGE INSIDE THIS SECTION