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This NASA image depicts a scene from *Columbia's* launch during the STS-107 mission commencing January 16, 2003. At 82 seconds into the flight, foam insulation broke away from the external fuel tank. In real time, no one knew that event had occurred, and no one realized that the breakaway foam had impacted the orbiter. This photo depicts debris following the orbiter impact.

The weather at Kennedy Space Station was perfect for the launch of mission STS-107 on January 16, 2003. As the complicated launch procedures moved ahead, the commander, pilot and crew arrived for final preparations, breakfast and suiting up.

At 9:18 a.m. EST, a “go” was given to close the hatch. Various “holds” are “planned” into the countdown sequence to make sure all is well, but at 10:10 a.m. EST, the countdown clock exited the planned hold at the “T-minus twenty minute” mark. All systems looked good. The shuttle’s payload bay doors were already closed. The countdown moved ahead.

At 10:31 a.m. EST, the countdown clock came out of the planned hold at the “T-minus 9 minute” mark. Columbia’s launch window (the time frame wherein she must liftoff or scrub the mission for the planned launch day) was 2 hours and 30 minutes.

At 10:35 a.m. EST, a “go” was given to start the auxiliary power units. As the countdown continued to “T-0,” (scroll to the end to see what is happening at this stage of the countdown), all systems were in order. It looked as though *Columbia* would, indeed, blast into space at the beginning of her launch window.

“Liftoff of the space shuttle *Columbia*” (this is the launch video) occurred at 10:39 a.m. EST. It was a spectacular launch as the shuttle left Florida, traveling upwards into the brilliantly blue sky.

At 82 seconds into the flight, however, three pieces of debris (later determined to be hardened foam insulation) broke away from the external tank and struck the shuttle's left wing. (It still isn't clear to NASA officials whether there was a single piece of debris or one large piece which broke into three parts.)

In “real time,” no one knew that had happened. It wasn't until the next day, as mission controllers reviewed the launch video, that the event was spotted.

See Alignments to State and Common Core standards for this story online at:

<http://www.awesomestories.com/asset/AcademicAlignment/COLUMBIA-S-LAST-LAUNCH-Columbia-Space-Shuttle-Explosion>

See Learning Tasks for this story online at:

<http://www.awesomestories.com/asset/AcademicActivities/COLUMBIA-S-LAST-LAUNCH-Columbia-Space-Shuttle-Explosion>



Breakfast on Launch Day

NASA Photo

View this asset at: <http://www.awesomestories.com/asset/view/Breakfast-on-Launch-Day>



Payload-Bay Doors

NASA Photo.

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Ignition of the Space Shuttle Columbia

NASA photo.

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Spectacular Launch of Columbia's Last Flight

NASA Photo.

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Leaving Florida - Columbia's Last Mission

NASA Photo.

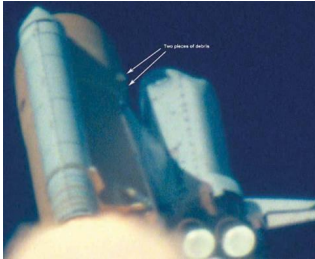
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Mission STS-107: A Perfect Launch

Image online, courtesy NASA.

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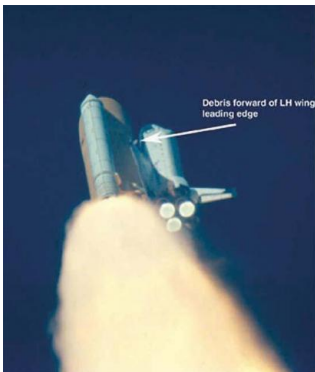


Unexpected Problems - Debris Breaks Loose During "Throttle Up"

NASA Photo, still shot from launch video.

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Unexpected Trouble - Debris Near the Orbiter's Left Wing

NASA Photo, still shot from launch video.

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