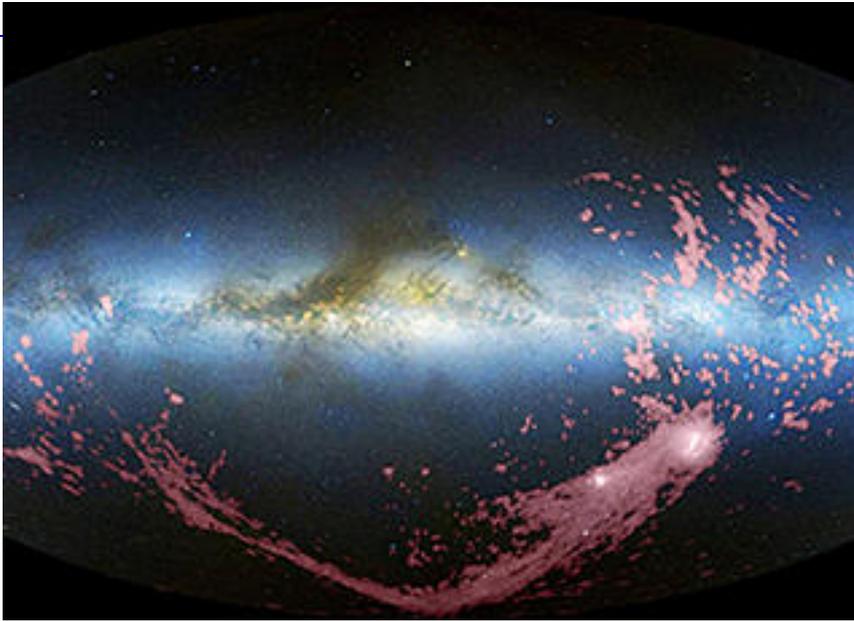


Hubble Finds Source of Magellanic Stream



[1]Astronomers using NASA's

Hubble Space Telescope have solved a 40-year mystery on the origin of the Magellanic Stream, a long ribbon of gas stretching nearly halfway around our Milky Way galaxy.

The Large and Small Magellanic Clouds, two dwarf galaxies orbiting the Milky Way, are at the head of the gaseous stream. Since the stream's discovery by radio telescopes in the early 1970s, astronomers have wondered whether the gas comes from one or both of the satellite galaxies. New Hubble observations reveal most of the gas was stripped from the Small Magellanic Cloud about two billion years ago, and a second region of the stream originated more recently from the Large Magellanic Cloud.

A team of astronomers, led by Andrew J. Fox of the Space Telescope Science Institute in Baltimore, MD, determined the source of the gas filament by using Hubble's Cosmic Origins Spectrograph to measure the amount of heavy elements, such as oxygen and sulfur, at six locations along the Magellanic Stream. They observed faraway quasars, the brilliant cores of active galaxies that emit light that passes through the stream. They detected the heavy elements from the way the elements absorb ultraviolet light.

Fox's team found a low amount of oxygen and sulfur along most of the stream, matching the levels in the Small Magellanic Cloud about two billion years ago, when the gaseous ribbon is thought to have formed. In a surprising twist, the team discovered a much higher level of sulfur in a region of the stream that is closer to the Magellanic Clouds.

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Published on Scientific Computing (<http://www.scientificcomputing.com>)

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