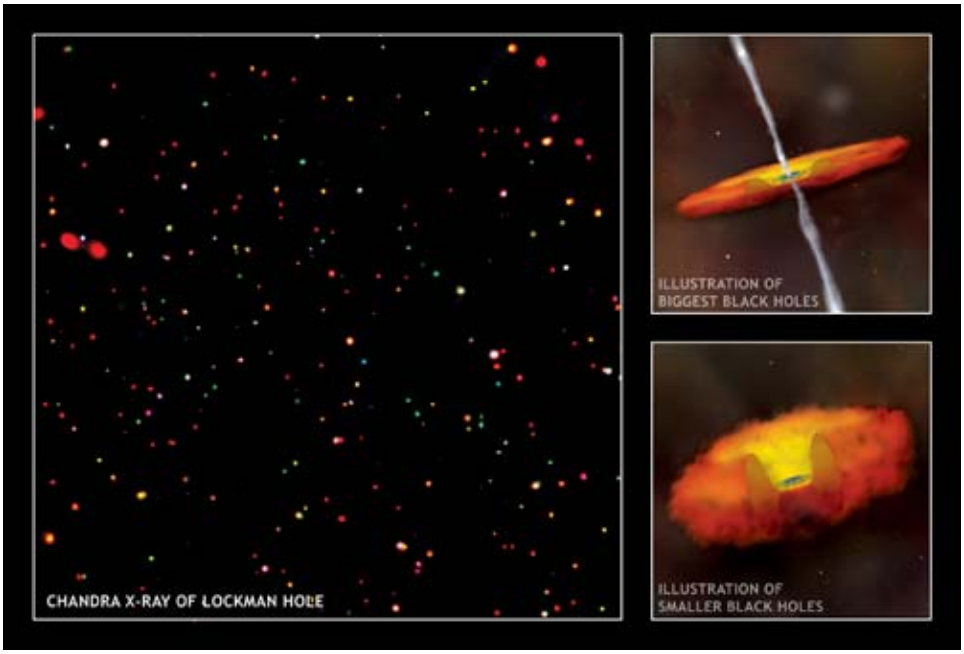

Chandra X-ray Observatory Center

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Lockman Hole: A region of the sky lying roughly between the pointer stars of the Big Dipper with a minimum of light-absorbing gas.
(Credit: X-ray: NASA/CXC/U. Wisconsin/A.Barger et al.; Illustrations: NASA/CXC/M.Weiss)

Caption: This Chandra image of the Lockman Hole region is a mosaic that shows hundreds of X-ray sources, many of which are supermassive black holes in distant galaxies. These and other data have enabled astronomers to study the rate at which these enormous black holes grow by pulling in gas from their surroundings. On average, the most massive black holes appear to have grown rapidly until they attained a mass of a few hundred million to a few billion Suns and then stopped. Intense heating released by their rapid growth could have produced a blowback effect that cleared away much of the gas and dust around the black hole (illustration, upper right). In contrast, smaller supermassive black holes grow more slowly and retain most of the gas and dust around them (illustration, lower right).

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory