



**Chandra X-ray  
Observatory Center**

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**M101:** A large spiral galaxy about 25 million light years away in the constellation Ursa Major.  
(Credit: NASA/CXC/JHU/K.Kuntz et al.)

**Caption:** This Chandra image of M101 is one of the longest exposures ever obtained of a spiral galaxy in X-rays. The point-like sources include binary star systems containing black holes and neutron stars, and the remains of supernova explosions. Other sources of X-rays include hot gas in the arms of the galaxy and clusters of massive stars. These X-ray observations of M101 will be used to establish a valuable X-ray profile of a galaxy similar to the Milky Way. This will help astronomers better understand the evolutionary paths that produce black holes, and provide a baseline for interpreting the observations of distant galaxies.

**Scale:** Image is 16.8 arcmin across.

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*

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