



**Chandra X-Ray
Observatory Center**

Harvard-Smithsonian Center for Astrophysics
60 Garden Street, Cambridge, MA 02138
<http://chandra.harvard.edu>

NGC 5548: A spiral galaxy located in the constellation Boötes, of a type known as a “Seyfert galaxy” because of the intense energetic activity produced by its central region.

Credit: NASA/SRON

This X-ray spectrum taken by NASA’s Chandra X-ray Observatory shows details of the energy radiated by the hot gas located around the galaxy’s central giant black hole. In what amounts to a cosmic bar code, this spectrum allows scientists to take an inventory of elements, such as carbon, nitrogen, and oxygen that are present in the multimillion degree gas. It also reveals that some of the hot gas is flowing away from the black hole, probably because of the enormous amount of energy that is being radiated by the extremely hot gas very near the black hole.

Chandra X-ray Observatory HRC/LETG Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory