

Title: The DXL sounding rocket mission for the study of solar wind charge exchange and Local Bubble X-ray emission

Abstract: The Diffuse X-ray emission from the Local Galaxy (DXL) sounding rocket is a NASA approved mission with a scheduled first launch in December 2012. Its goal is to identify and separate the X-ray emission of the SWCX from that of the Local Hot Bubble (LHB) to improve our understanding of both. With  $1,000 \text{ cm}^2$  proportional counters and grasp of about  $10 \text{ cm}^2 \text{ sr}$  both in the the  $\frac{1}{4}$  and  $\frac{3}{4}$  keV bands, DXL will achieve in a 5 minutes flight what cannot be achieved by current and future X-ray satellites. To separate the SWCX contribution from the LHB, DXL will use the SWCX signature due to the helium focusing cone at  $l=185^\circ$ ,  $b=-18^\circ$ . The talk will focus on the science drivers for the DXL mission, its expected performance, and its scientific goal.