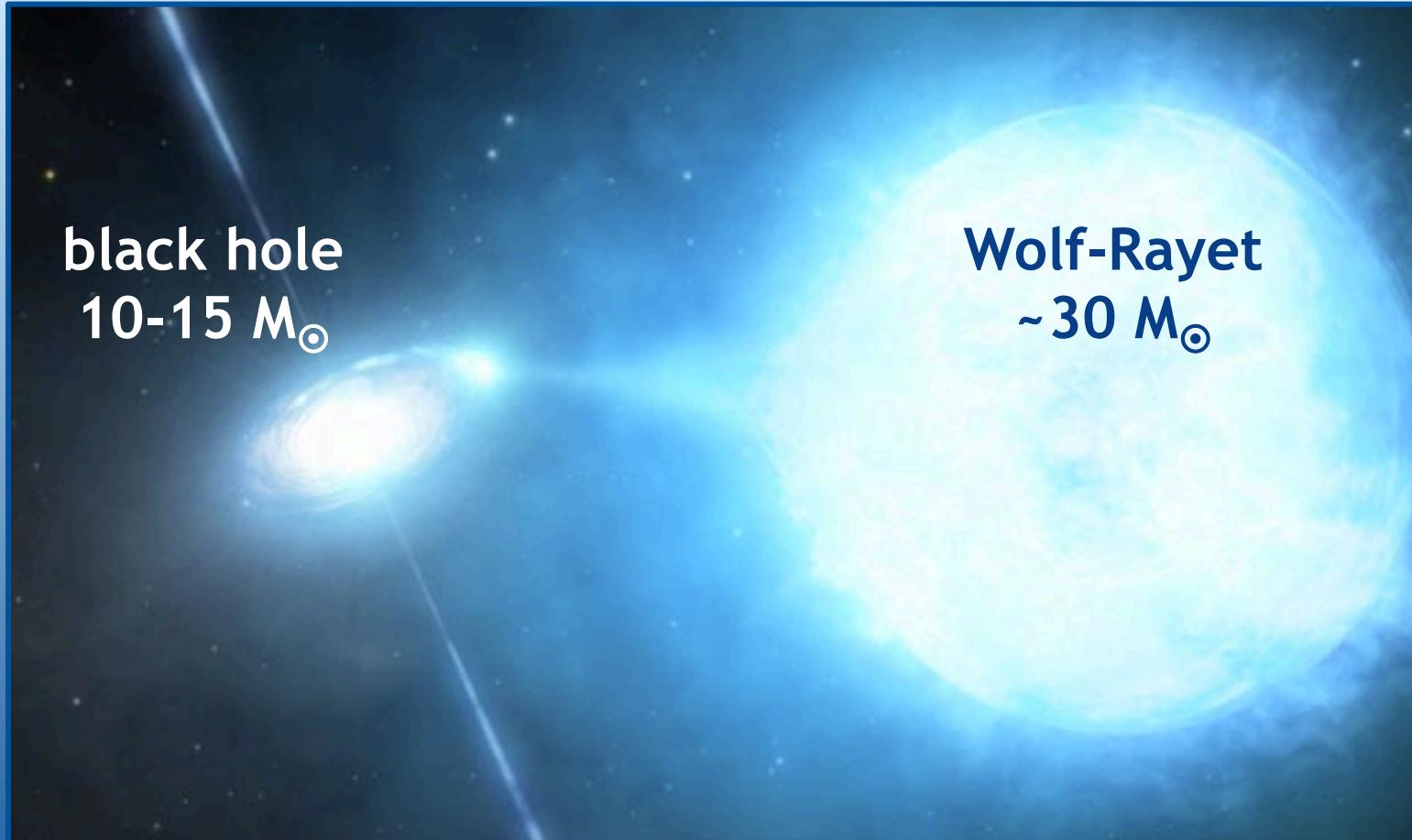


# Investigating the Wolf-Rayet + Black Hole Binary NGC 300 X-1

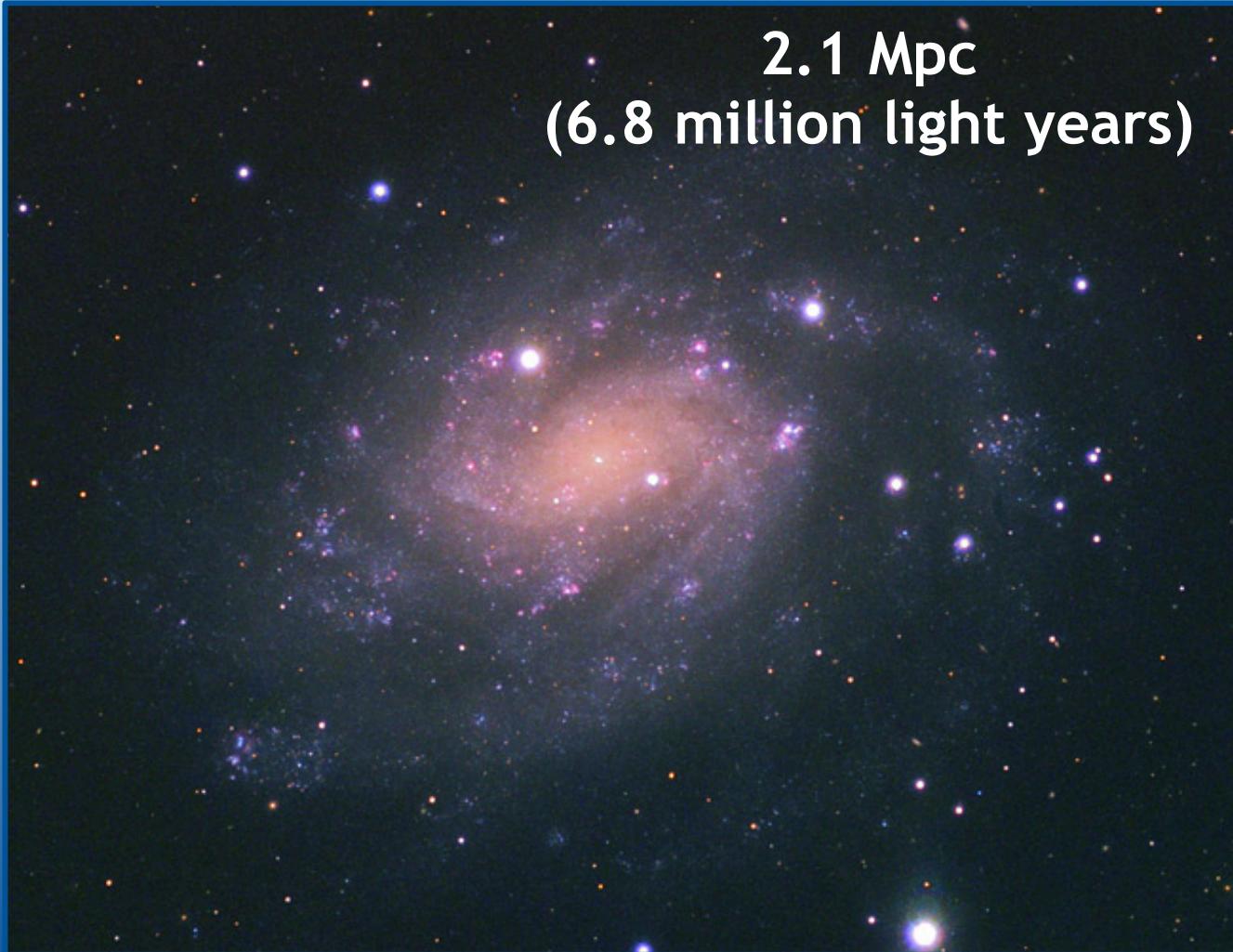
Dr. Breanna Binder  
Pre-MAP Project Pitch  
October 3, 2014

# NGC 300 X-1



# NGC 300 X-1

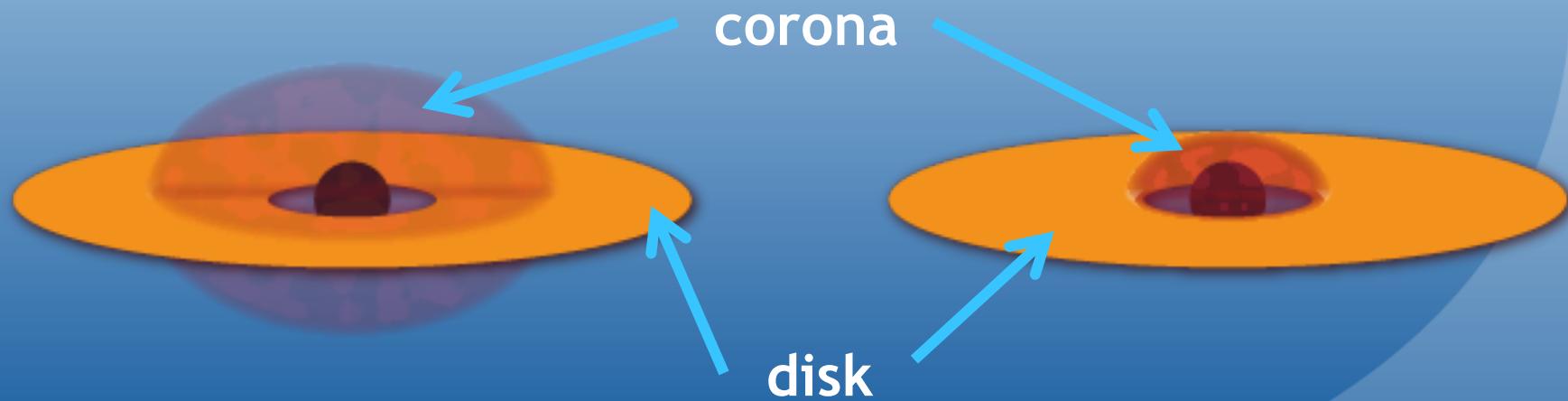
2.1 Mpc  
(6.8 million light years)



# The Project

New *Chandra X-ray Observatory* + *Hubble Space Telescope*  
observations of NGC 300

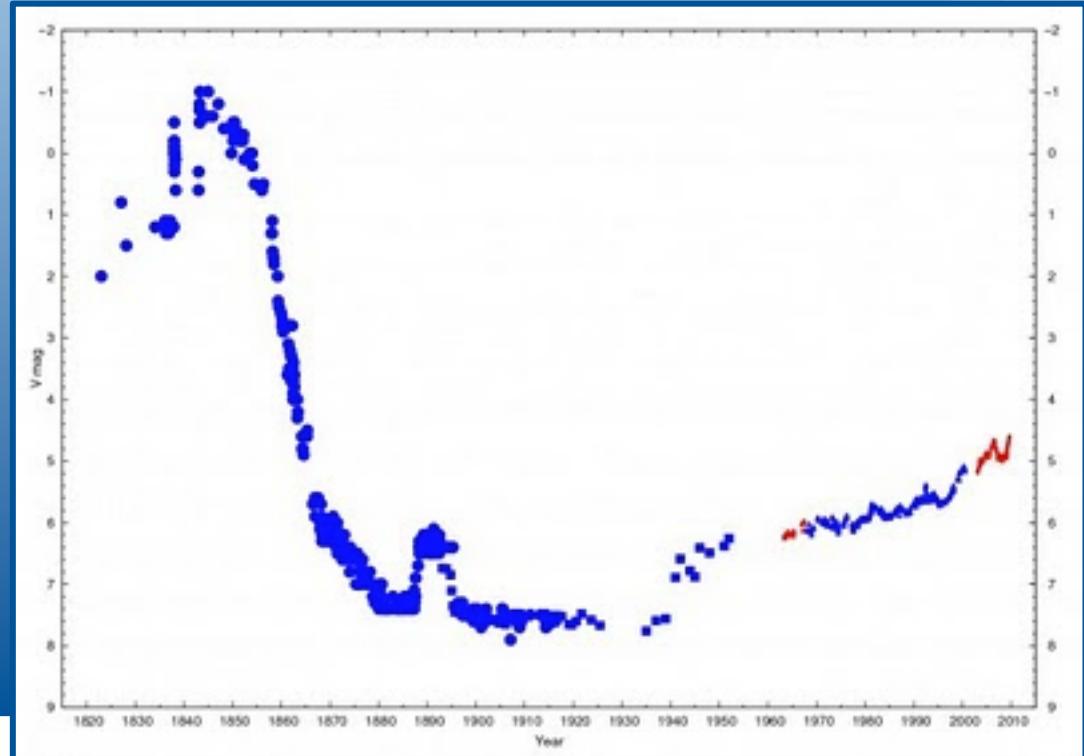
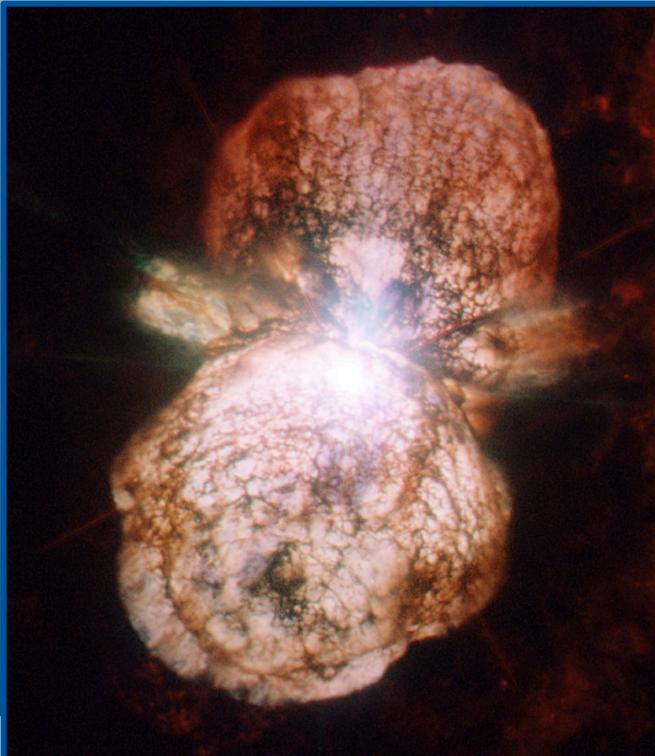
- *Q1: What is the shape of the X-ray spectrum?*



# The Project

New *Chandra X-ray Observatory + Hubble Space Telescope*  
observations of NGC 300

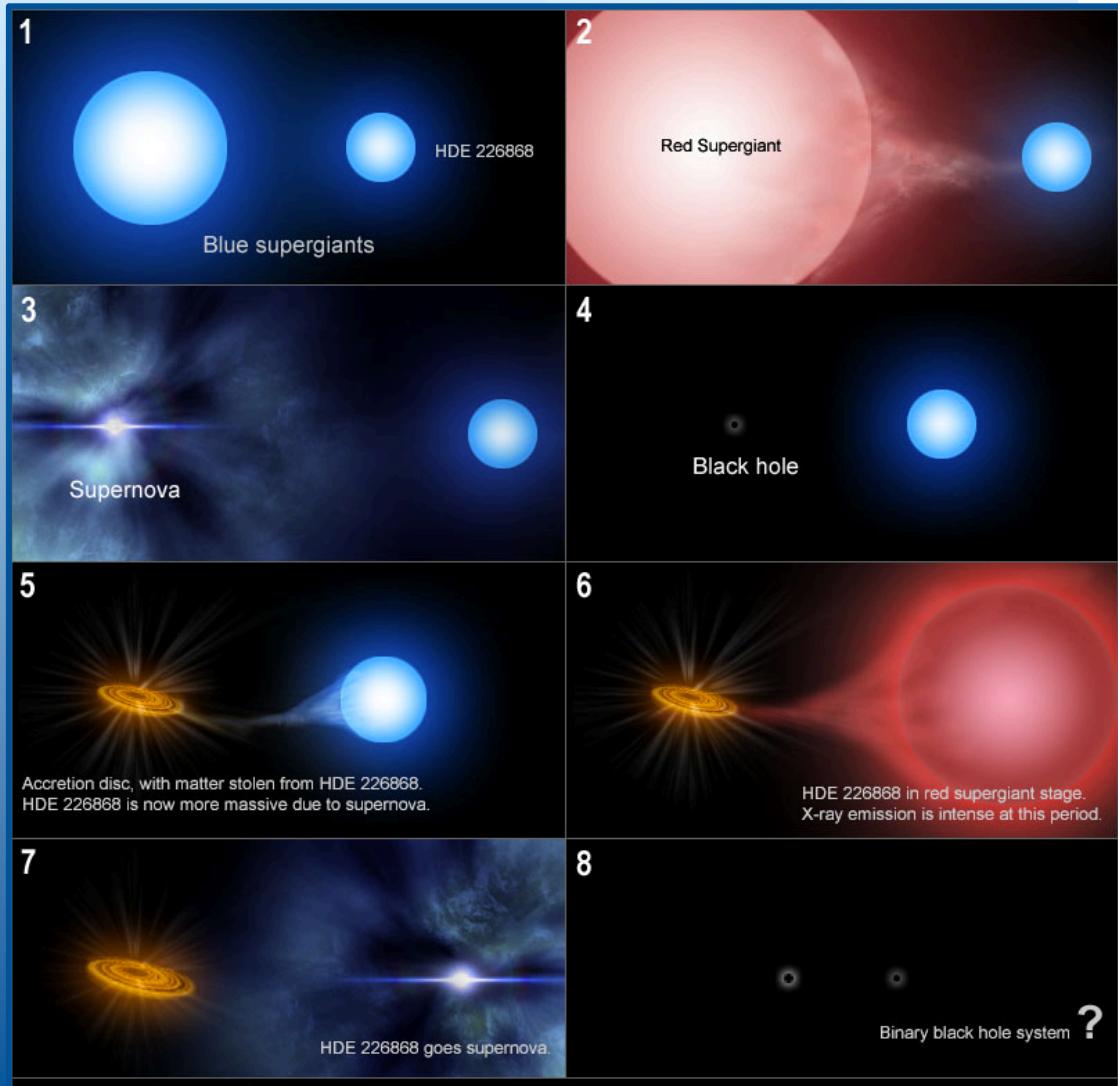
- *Q2: Is the X-ray emission variable or persistent?*



# The Project

*Other questions: What was the binary like before the black hole formed? What is the ultimate fate of NGC 300 X-1?*

Another *Chandra* observation of NGC 300 is scheduled for November



# Software

- IDL to plot the light curve and perform statistical tests
- XSPEC to model the X-ray spectrum
- possibly Binary Star Evolution (BSE) code to model progenitor/future state of the binary

# Parting Thought

*Whatever the fate of X-1, it's already happened.  
We're still waiting for the information to reach us.*