

What is a False Color Image? (Review for Adopt-A-Supernova Assessment)

Go to http://chandra-ed.harvard.edu/learning_ds9.html. Open ds9 on the desktop computers and do each of the activities in the “Part 1 Sections Contents.”

- 1) How do you load an image into ds9?
- 2) Define
 - a) Contrast
 - b) Bias
- 3) How do you change each of the following in ds9?
 - a) Contrast
 - b) Bias
- 4) How does ds9 make color images? What are the colors of each pixel based on?
- 5) Why would you use different color maps?
- 6) An incoming X-ray photon is focused by the X-ray telescope and then hits the X-ray detector which can either be the HRC or ACIS? What information about the photon is recorded by the
 - a) HRC?
 - b) ACIS?
- 7) In this ds9, what does “value” in the upper left corner refer to?
- 8) What do the numbers next to “Physical” in the upper left corner refer to?
- 9) Does changing the colors and/or contrast in ds9 change the data? Explain how you know.
- 10) What happens to the color bar at the bottom of the ds9 screen when you change the contrast?

11) What happens to the color bar at the bottom of the ds9 screen when you change the bias?

12) Why do astronomers use different colors and contrasts?

Go to http://chandra.harvard.edu/photo/false_color.html

13) Why must images of Chandra data be false color images?

14) In the black and white Chandra X-ray image of Cas A, what do the darker, lighter and white areas represent?

15) In the middle or orange image of Cas A, what do the white to yellow and orange to red areas represent?

16) How was the image of Cas A on the right produced? What do the red, green and blue colors represent?