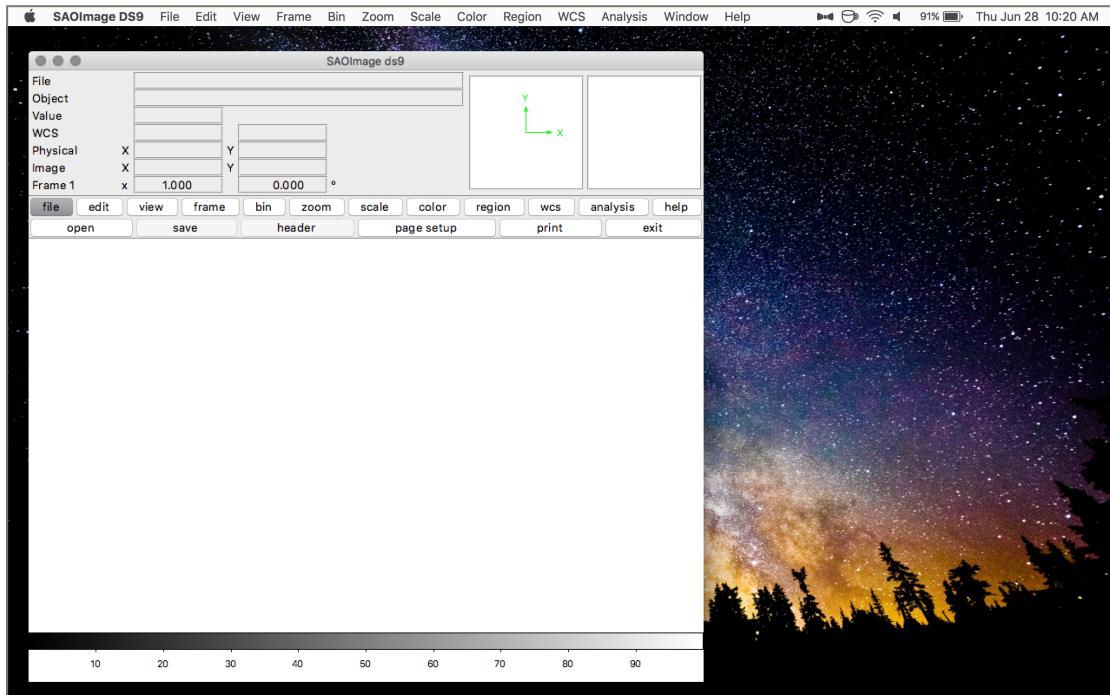
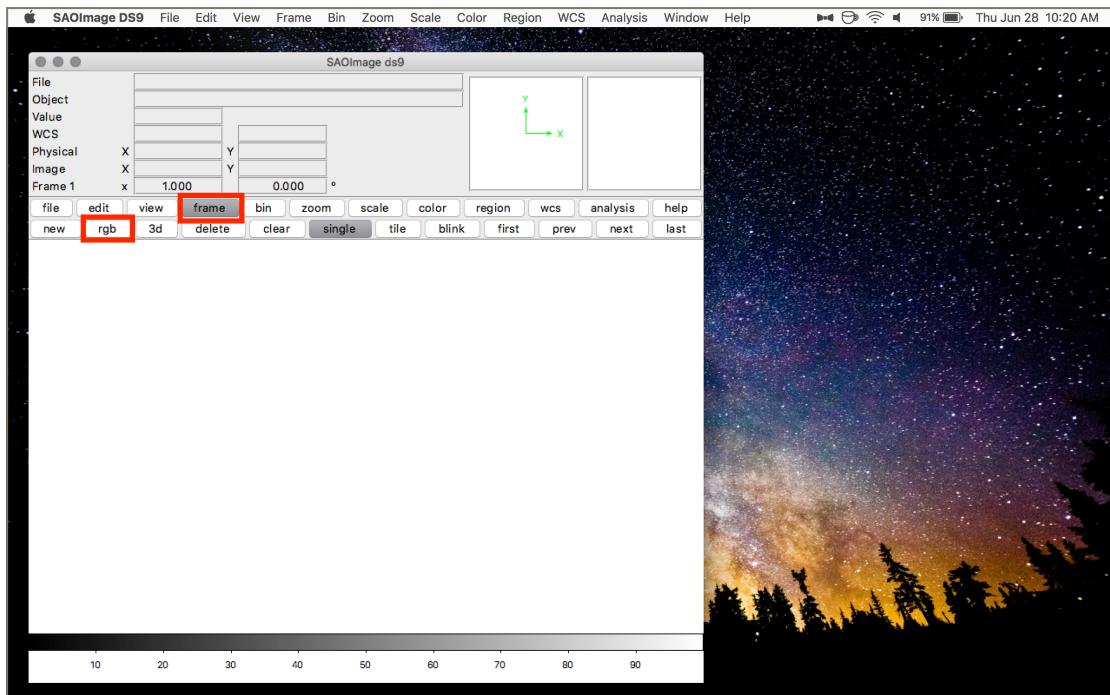


# Creating RGB images in DS9

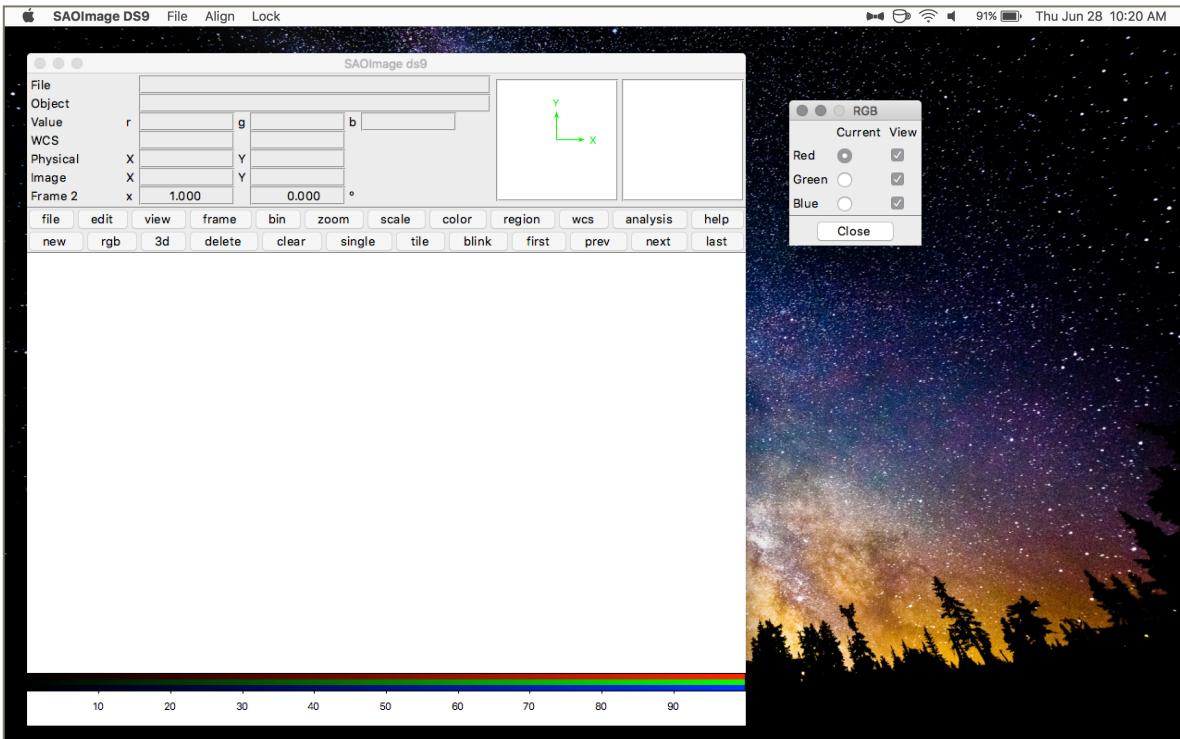
1. Open the DS9 application. You should get something like this one your screen:



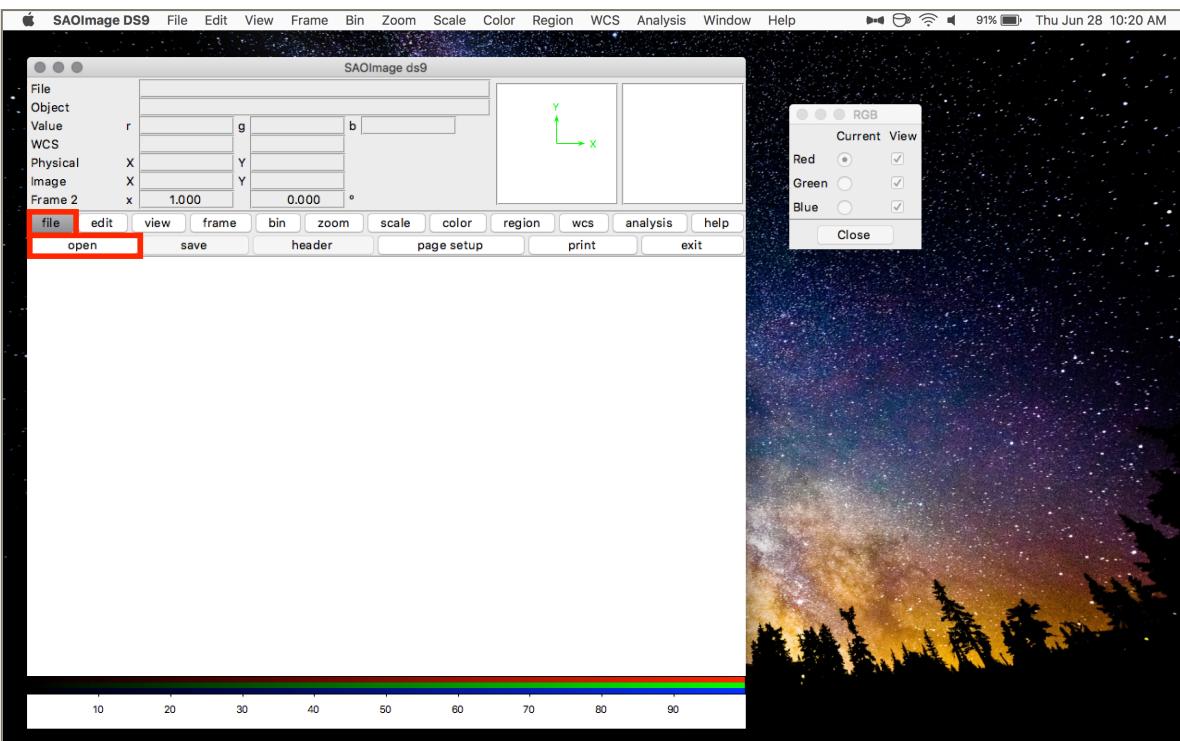
2. In the main window, there are 2 rows of buttons for various image options. Click on **Frame** - the row of buttons below it will change to actions related to the frame type. Click on **rgb**.



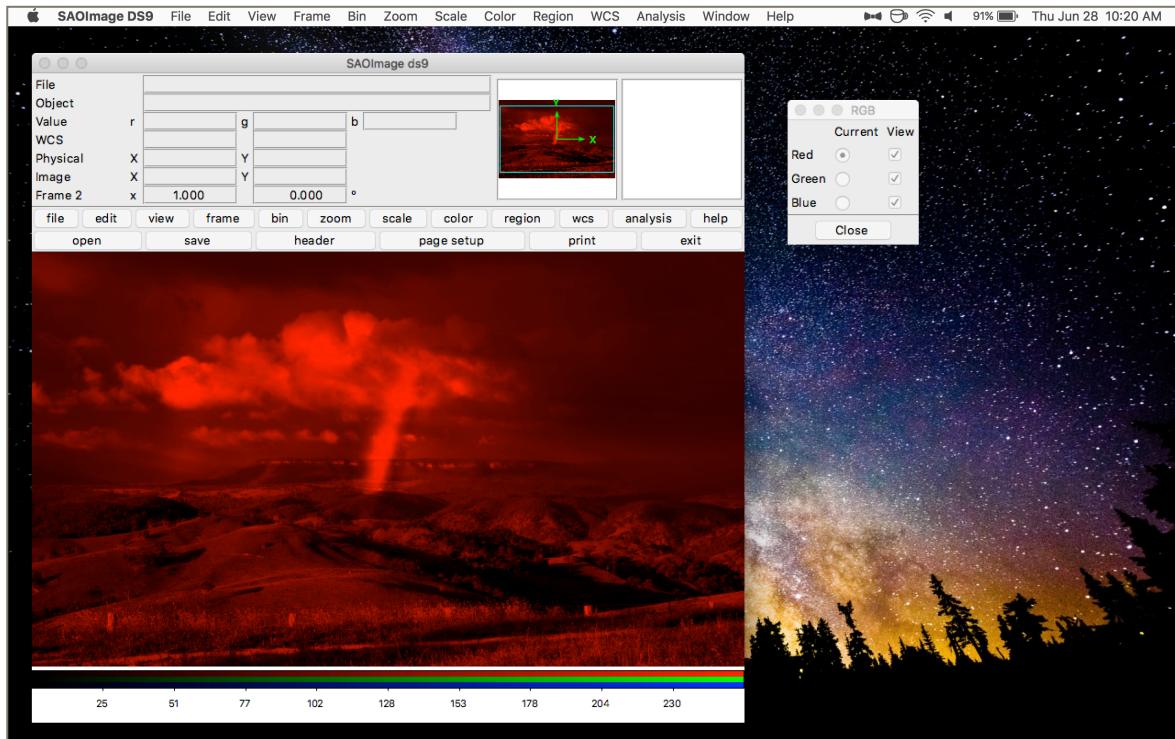
3. A second smaller window titled RGB will appear. Move it to the side so that you can see both it and the main DS9 window.



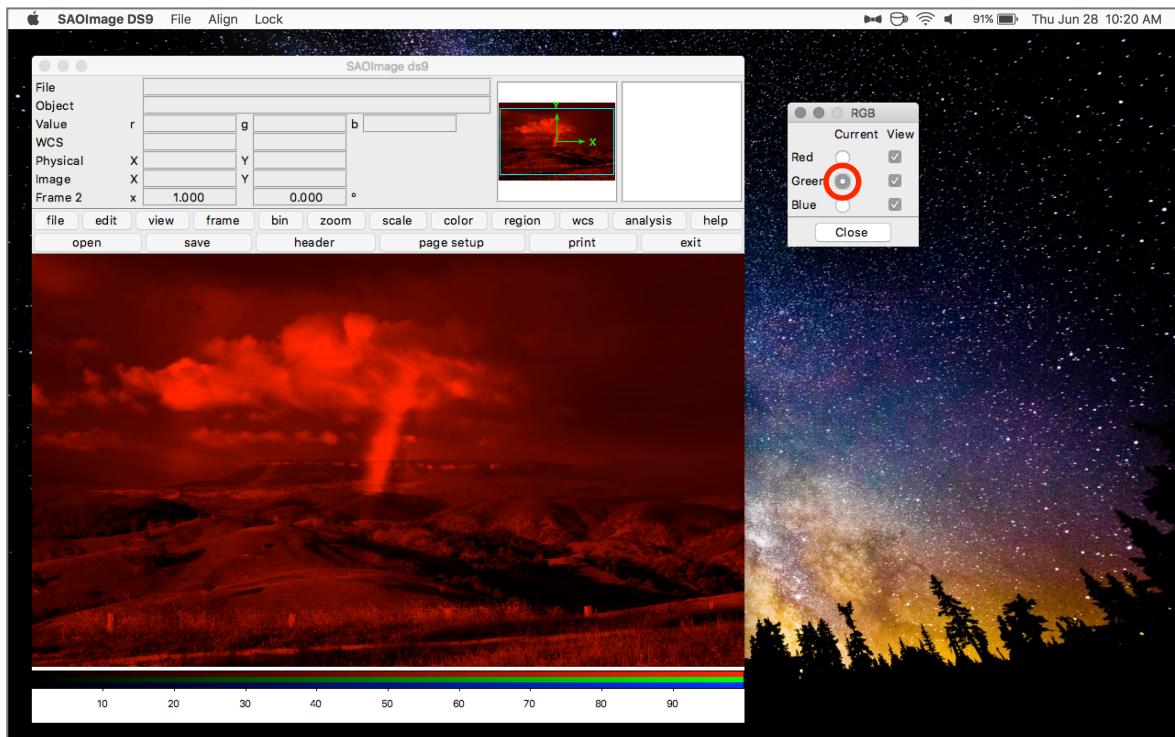
4. The round radio button in the “Current” column lets you know which channel you’re currently editing. When you open the RGB frame, Red is selected by default. Click on the **file** button in the top row, and select **open**.



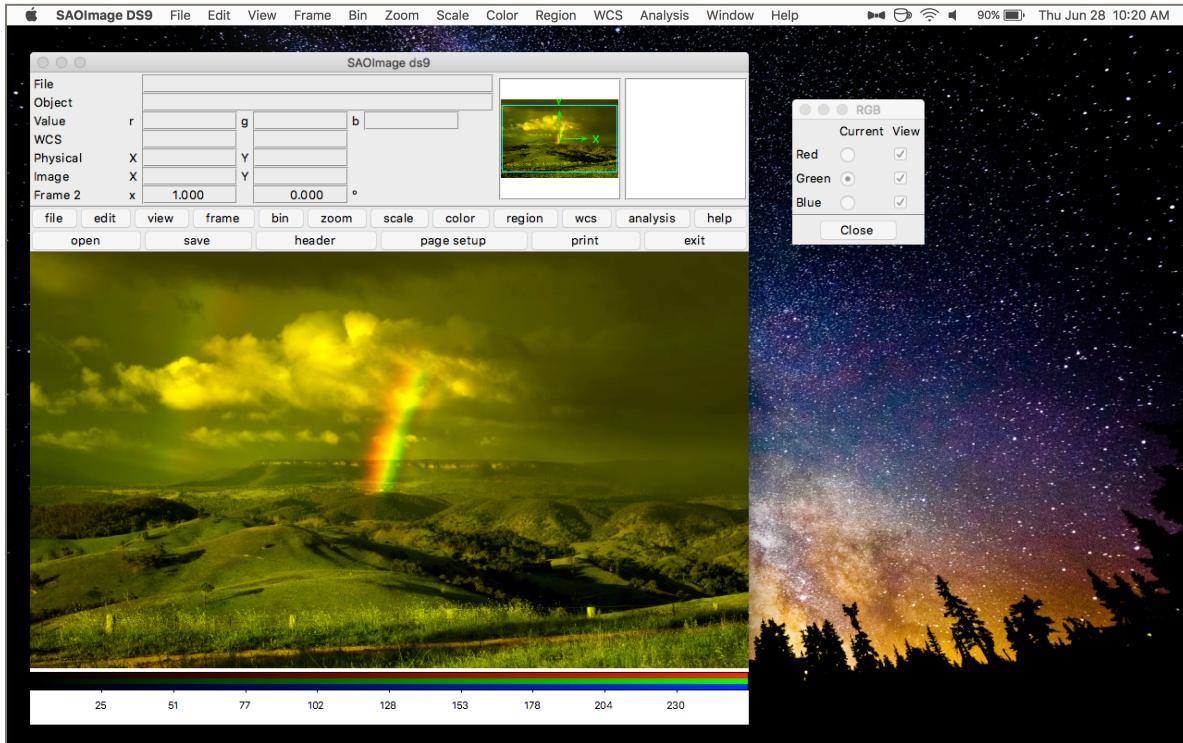
5. Find the red band image (e.g., rainbowvalley\_R.fits) and open it. You should see something like this in the main window:



6. Now click back in the **RGB** window and select the radio button next to Green in the "Current" column.



7. Now click back on the main window, and click on the **file** button and then **open**, and open the green image. For the rainbowvalley example, the result will be this:



8. Finally, repeat steps 6 and 7 for the blue image: click in the **RGB** window, select the “Current” button next to Blue. Click back in the main window, go to **file → open** and open your blue image.



## 9. Some things to explore in DS9:

- Notice that in the **RGB** window, the right column is titled “View”. If you uncheck one of the boxes in that column, that band will be turned off. You can play with this to focus on one channel at a time.
- In the main DS9 window, you can play with some of the other image options:
  - **zoom**: You can zoom in to analyze specific parts of an image (you can also zoom by scrolling up and down in the image). Above the image options there's a mini image (called a panner). When you're zoomed in, the teal rectangle indicates the part of the image currently visible below. If you click on the teal rectangle, you can move it to check a different part of the image.
  - **scale**: Selecting different scales changes the way colors are distributed across the image. When you change the scale, it only affects the current band (see in the **RGB** window which band is selected as “Current”). In each band, there's a minimum color (black) and a maximum color (the brightest red, green, or blue), and DS9 can change how the colors are distributed between those values. It's easiest to observe the effects of this if only one band is visible at a time.
- You can also adjust the contrast in any scale within the image. If you hold down right click in the image and move to the left/right, the contrast will adjust.