

With the increase availability of technology in the hands of astronomers, scientists, and researchers more resources for learning and creating captivating images are being made available to the public. These resources can help spark the imagination and passion of individuals who possess limited experience in astronomy while continuing to provide excellent resources for college students and professionals to investigate or examine images of objects in space.

One example of one of those fantastic resources is the Cosmic Coloring Compositor provided by National Radio Astronomy Observatory NRAO (<https://public.nrao.edu/color/>).

Below is an example of an image that can be created on the website. The target I selected is the M51 Whirlpool Galaxy. This galaxy was first discovered by Charles Messier in 1773 (NRAO , 2021). This beautiful galaxy is 31 million light years away from Earth (NRAO , 2021). This galaxy is a common target of seasoned astronomers and can be admired with backyard telescopes. I built the image in multiple steps, one by one using every source available on the National Radio Astronomy observatory website. I picked blue/green colors that seemed to complement one another to “color” the image.



Using the powerful tools at the website, enables all levels of researchers to learn about and explore the various wavelengths of light as captured in the composite image above. These wavelengths, converted to the composite image are a combination of wavelengths found at the following telescopes:

- **Radio from the Very Large Array-** the radio can analyze the radio emission of the Carbon Monoxide(CO) (NRAO , 2021)
- **Infrared from the Spitzer Space Telescope-** captures the dust in the arms of the that is radiating the light it receives from the galaxy's stars.
- **Visible from the Hubble Space Telescope-** this is the light in the spectrum that is visible to humans.
- **Ultraviolet from the XMM-Newton Space Telescope**

- **X-Ray From the Chandra X-Ray Observatory**- The x-ray within the Whirlpool galaxy is remnants of gas that has been heated by supernova explosions (NASA, 2015).

Another example of resources available to the public is from the National Radio Astronomy Observatory to make your own radio image. <http://www.gb.nrao.edu/epo/image.html>

These are just two examples of how you can use art to explore and learn in the STEM field.

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Works Cited

NASA. (2015). Messier 51 (M51). Cambridge: NASA.

NRAO . (2021, 08 12). Cosmic Coloring Compositor. Retrieved from National Radio Astronomy Observatory: https://public.nrao.edu/color/?composite_id=8767