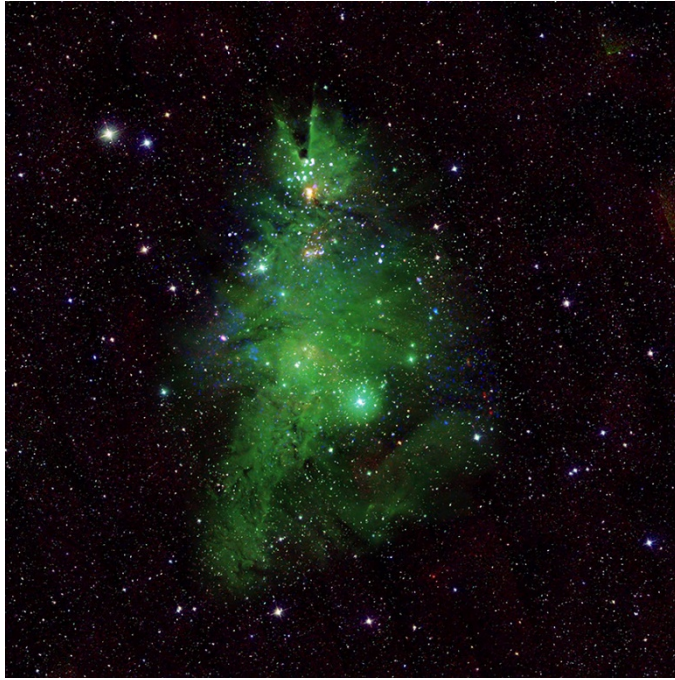




Chandra Science Highlight

Sprightly Stars Illuminate 'Christmas Tree Cluster'



This new composite image of NGC 2264 enhances the resemblance to a Christmas tree through choices of color and rotation. The blue and white lights (which blink in the animated online version) are young stars that produce X-rays detected by Chandra. Optical data from the NSF-supported WIYN 0.9-meter telescope on Kitt Peak shows a nebula of gas in the cluster in green, corresponding to the “pine needles” of the tree. Finally infrared data from 2MASS shows foreground and background stars in white. This image has been rotated clockwise by 160 degrees from the astronomer’s standard of North pointing upward, so that it appears like the top of the tree is toward the top of the image.

- NGC 2264 is a cluster of young stars that has been colored and rotated to visually emphasize its nickname of the “Christmas Tree Cluster”.
- The stars in this cluster are between one and five million years old, compared to the Sun’s age of 5 billion years old.
- An online animation shows blinking of the young stars detected by Chandra, to emphasize the locations of the young stars and further highlight the resemblance to a Christmas Tree.
- Young stars like this in NGC 2264 are volatile and produce strong flares in X-rays and other types of light, but not in any coordinated way as is shown in the online animation.

Distance estimate: 2,500 light-years

Credits: X-ray: NASA/CXC/SAO; Optical: T.A. Rector (NRAO/AUI/NSF and NOIRLab/NSF/AURA) and B.A. Wolpa (NOIRLab/NSF/AURA); Infrared: NASA/NSF/IPAC/CalTech/Univ. of Massachusetts; Image Processing: NASA/CXC/SAO/L. Frattare & J.Major

Instrument: ACIS

Online animation and more information:

<https://chandra.si.edu/photo/2023/ngc2264/>

**The CXC is operated for NASA by the Smithsonian
Astrophysical Observatory**



December 2023