

The Ups and Downs of Alpha Centauri and Friends

Thomas Ayres [Thomas.Ayres@colorado.edu], *Center for Astrophysics and Space Astronomy (CASA), University of Colorado, Boulder, CO, USA*

A recent addition to the stellar cycle toolbox is the use of orbiting X-ray and UV telescopes (such as Chandra and HST) to explore how the highest energy ($T \sim 1-10$ MK) “coronal” emissions evolve over a stellar activity cycle. Only a few stars have been observed persistently by this technique – nearby Alpha Centauri A (G2V) and B (K1V) are the best examples – but the preliminary results are encouraging, in helping us understand how the much more extreme X-ray variations (compared with Ca II) come about. I will discuss the existing high-energy observations of stellar cycles, but mainly focus on the X-ray time series of the Alpha Cen stars, which extends back two decades and involves three different high-energy observatories. I also will describe the past nearly five years of semiannual high-resolution FUV spectroscopy of A and B by Hubble’s Space Telescope Imaging Spectrograph (covering spectral territory similar to the IRIS solar UV spectral imager). I will highlight important lessons learned from these comparisons, and pitfalls to be avoided.