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Measuring Proper Motion of Barnard's Star KATRINA WIECHMANN, TOM MICHALIK, Randolph College — Stars of the night sky are generally considered to be fixed points, not changing noticeably over generations of observations. While most stars seem to appear in the same place year after year, some change location noticeably, the best example being Barnard's Star. Barnard's star is closer to Earth than any other star except Proxima Centauri. It also appears to move across the sky faster than any other star. This change in apparent location is caused by the movements of our Solar System and the motion of the star in question, and is known as proper motion. Using the astrometric capabilities of the MIRA software along with precise positional information for reference stars from the Tycho satellite star catalogue, the position of Barnard's star is computed relative to the reference stars. We calibrate a series of images of Barnard's Star taken in the Randolph College Observatory between 2001 and 2008 in order to independently determine the coordinates of Barnard's Star, revealing how these change over time. By measuring changes in the celestial coordinates, Right Ascension and Declination, we determine the proper motion of Barnard's star and compare this measurement to the accepted value of 10.25" per year.

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