

Abstract Submitted
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Image Reduction and Aperture Photometry of SN2011fe PHILLIP ROUSE, GINGER BRYNGELSON, Francis Marion University — The ultimate goal of this research was to calculate and plot data points along a light curve for type Ia supernova 2011fe, located 21 million miles away in the Pinwheel Galaxy. This was achieved through a two-step process of image reduction and aperture photometry. Image reduction is used to process the object images taken of the supernova over a certain time interval (usually over a single night) in order to correct for imaging errors. These corrections include fixing bad pixels, filtering out background noise, and correcting readout errors. Our images were taken with the MOSAIC Instrument on the 4-meter Mayall Telescope at the Kitt Peak National Observatory near Tucson, AZ using observing time granted by the National Optical Astronomy Observatory. Photometry is used to measure the luminosity output or “flux” of supernovae and stars over an interval of time. This is done for multiple bands of optical light, and the data is used to plot points on a light curve, which shows the luminosity of the star as a function of time. Though we are typically focused on later times, my data focuses on earlier periods in the supernova’s luminous progression.

Phillip Rouse
Francis Marion University

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