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Photometric Observation and Analysis of Supernova J081659.74+511233.7 and Search for New Supernovae in Multi-Galactic Fields with BSU's 14" Celestron EdgeHD Telescope and Apogee Alta U47 CCD Camera[1] SHANE JOHNSON, JAMIE KERN, Bridgewater State University — Photometric observations of supernovae J081659.74+511233.7, ASASSN-15la, ASASSN-15li, and ASASSN-15ln were obtained with BSU's 14" telescope and Apogee Alta U47 CCD on clear nights between February 27th and July 13th, 2015. Images were processed in MaxIm DL and lightcurves of the supernovae in B and luminance bands generated using MaxIm DL's differential photometry tool. A Gaussian fit to the early declining redshift-corrected lightcurve of type Ia supernova J081659.74+511233.7 with RMS 0.995 reveals a decline in luminance of 0.27 magnitudes from peak to phase +15. The fit to ASASSN-15la's reveals a decline in B of 0.16 magnitudes from peak to phase +15 with RMS 0.988. We present lightcurves for each type Ia supernova target. Multi-galactic fields were imaged between May 22nd and July 11th, 2015 with no cataclysmic variables detected. Future work includes generating lightcurves in V and R, and comparison of our luminance filter data to RVB passband data gathered for ASASSN-15la and -15li to attempt to determine a width-luminosity relationship for type Ia supernovae in luminance magnitude. More observations of type Ia supernovae, particularly in B and luminance, are recommended to confirm the existence of such a relationship.

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Jamie Kern
Bridgewater State University

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