Variable Star Search Using ROTSE-I Data ISAAC GUERRA, ROBERT KEHOE, Southern Methodist University — We present results of a variable star search using data from the Robotic Optical Transient Search Experiment-I (ROTSE-I) telescope. Variable stars fluctuate in brightness as seen from Earth due either to intrinsic changes in the star’s brightness or to extrinsic changes in the amount of the star’s light that reaches Earth. Our research is focused on analysis of the time variation of optical light output as recorded in ROTSE-I images. Specifically, we are attempting to identify short-period variable star candidates which have amplitude variations on the order of one magnitude and periods on the order of several hours. For each candidate analyzed, we plotted a light curve and examined the shape to determine the type of variable. We also use a grouping, filtering, and averaging (GFA) algorithm that will help us reduce the error in the data taken by the telescope. Then to determine the period and amplitude of variation, we phased observations of the candidate from multiple nights into one plot using a cubic spline fit. We report on the confirmed discovery of a previously unidentified contact binary star: ROTSE1 J112431.65+460702.7. This star is now listed in the International Variable Star index (VSX) maintained by the American Association of Variable Star Observers (AAVSO).