

Abstract.

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Tidal Disruption Events (TDEs) occur when a star is shredded by the tidal forces of a supermassive black hole (SMBH), resulting in multiwavelength flares that provide crucial insights into quiescent black holes in distant galaxies. Despite their significance, TDE rates and their correlation with host galaxy properties remain unconstrained. Previous constraints have restricted the domain of TDEs, but recent discoveries suggest they could occur beyond traditional definitions. This project aims to address these challenges using re-processed archival data from the Zwicky Transient Facility (ZTF). By developing software and utilizing a novel approach of exponentially smoothed moving average (ESMA) filters to detect and classify flares from light curves, we aim to build a comprehensive and inclusive catalog of flares. These flares will be analyzed to extract physical parameters and study their correlations with host galaxy properties, ultimately forming a broader and more precise definition of TDEs to better understand them.