

Discovery of New Type of Optical Transients

Yong-Ik Byun¹ and Young-Ho Bae^{1,2}

¹*Yonsei University Observatory*

²*Korea Astronomy Observatory*

The image archive of YSTAR-KAO South Africa Station contains several evidences of optical flash events. These transients have the look of point sources and not distinguishable from normal stars. The duration of transient cannot be determined from YSTAR database, but should be less than the interval of successive exposures which is typically 30 minutes. These objects cannot be explained as a satellite glint or aircraft flash as there is no trailing. They are completely absent in the images taken 30 minutes earlier or later, indicating that they cannot be asteroids or comets, novae or dwarf novae. We can also rule out the possibility of flare stars because the amplitude is too large. This paper presents examples of these optical transients and statistical estimates of their occurrence extended to whole sky. We also speculate on ways to investigate further into the nature of these transients.