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THE VASCO PROJECT: 100 RED TRANSIENTS AND THEIR FOLLOW UP

Abstract

The “Vanishing Appearing Sources during a Century of Observations” (VASCO) project uses existing survey data to find examples of exceptional/unknown astrophysical transients. Among the broad set of astrophysical goals related to long-term variability of astrophysical objects, are the goals to look for signatures of extra-terrestrial intelligence, which includes signs of vanishing stars, Dyson spheres and photometric signatures of red lasers. We present the results from the Villarroel et al. (2020) paper, where we compare 600 million objects from the US Naval Observatory Catalogue (USNO) B1.0 with the significantly deeper Pan-STARRS Data Release-1 (DR1). We present a candidate sample of 150,000 USNO objects that lack a Pan-STARRS counterpart within 30 arc seconds. Of these, a small subset was visually examined and we find 100 short-lived red transients. Possible natural explanations are strong M dwarf flares or optical counterparts or high-redshift supernovae. We will focus this talk on the results of this work, but also present the latest results from the follow-up on the 100 red transients and the running citizen science project.