ABSTRACT ONLY

SEARCH FOR COMETARY ACTIVITY IN TRANSITIONAL OBJECTS USING ARCHIVAL IMAGES AND NEW OBSERVATIONS: PRELIMINARY RESULTS

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We present the monitoring of a set of Asteroids in Cometary Orbits (ACOs) and Activated Asteroids (AAs), which are part of transitional objects: bodies that do not fully fit the traditional categories of asteroids and comets. Using archival images from the Dark Energy Survey (results not revised by the Collaboration yet), ESO's Very Large Telescope, and Instituto de Astrofísica de Canarias, alongside recent data from Observatório Astronômico do Sertão de Itaparica, we employ two distinct techniques to detect signs of cometary activity: i) the comparison of the surface brightness profile of the objects with those of field stars, ii) the study of the reduced magnitude vs. the heliocentric distance in search of increases in brightness, using data from the Minor Planet Center, and those obtained in the observations. We analyze the profiles of 133 ACOs and seven AAs and the reduced magnitudes of all the ACOs (705). Eleven ACOs presented a deviation in the surface brightness profile and/or in the reduced magnitude. We found a very small percentage of objects with signs of low-level activity, which would rule out a slow transition from active to inert. Four AAs were active in the images, three being coincident with the existing reports, while in the case of P/2015 X_6, we extended the activity period in 19 days. We could observe that the episodes of activity are very restricted in time and do not always occur in the same region of the orbit.

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