



Monitoring the activity and composition of comet C/2017K2 (PanSTARRS) with TRAPPIST telescopes

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We report on the results of a long photometry and monitoring of comet C/2017 K2 (PanSTARRS), hereafter 17K2, with the TRAPPIST telescopes [1]. 17K2 is an Oort cloud comet discovered by the Pan-STARRS survey in 2017 [2], at a large heliocentric distance of 16 au. The comet was later identified in archival imagery to be active at 23.8 au from the Sun, the second most distant discovery of an active comet [3]. It has been claimed that 17K2 is a rare CO-rich comet [4]. We started observing 17K2 with TRAPPIST-North on October 25, 2017 using broad-band filters when the comet was at 15 au from the Sun with a magnitude of 18. We started collecting broad and narrow-band images [5] with TRAPPIST-South on September 9, 2021 (rh=5.4 au) when the comet became visible and bright from the southern hemisphere. The comet will reach its perihelion on December 19, 2022 at rh=1.8 au, and we will monitor its activity on both sides of perihelion. As writing this abstract, we detected emission of CN, C₂, and C₃ radicals as well as the dust continuum in four bands. By fitting the observed gas profiles with Haser model [6] after subtraction of the dust continuum, we derived the gas production rates for a different detected species. From the continuum and broad-bands images, we computed the A_{fp} parameter, and a dust production proxy [7]. In this work, we will show the magnitude evolution of this comet over 4 years (2017-2022), as well as the gas and dust activity for several months as a function of heliocentric distances.

References

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