TRAPPIST comets production rates: C/2017 K2 (PanSTARR), C/2022 E3 (ZTF), C/2022 P1 (NEOWISE), and 73P/SW-3

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The authors report that they obtained from TRAPPIST robotic telescopes (Jehin et al. 2011) recent observations using cometary HB narrowband filters (Farnham et al. 2000) for the following comets and computed preliminary production rates at 10.000 km using a Haser Model (Vp=Vd=1km/s) (Haser 1957). The dust production rates proxy A(0)f(rho) were estimated by profile fitting at 10.000 km (A'Hearn et al. 1984) and corrected for the phase angle (Schleicher 2007).

C/2017 K2 (PanSTARRS)
Date UT=2022-09-01, r_h=2.26 au, Delta=2.15 au, DT=-109 days
Q(OH)=(1.01+/-0.12) E29 s-1; Q(NH)=(1.43+/-0.35) E26 s-1; Q(CN)=(2.07+/-0.12) E26 s-1; Q(C2)=(2.07+/-0.21) E26 s-1; Q(C3)=(4.92+/-0.42) E25 s-1
A(0)fp(RC)=11145+/-113 cm

C/2022 E3 (ZTF)
Date UT=2022-09-04, r_h=2.24 au, Delta=2.2 au, DT=-130 days
Q(OH)=(9.11+/-4.42) E27 s-1; Q(CN)=(2.06+/-0.16) E25 s-1; Q(C2)=(1.42+/-0.18) E25 s-1
A(0)fp(RC)=3034+/-141 cm

C/2022 P1 (NEOWISE)
Date UT=2022-09-03, r_h=1.93 au, Delta=1.14 au, DT=-85 days
Q(OH)=(3.11+/-1.63) E27 s-1; Q(CN)=(1.36+/-0.10) E25 s-1; Q(C2)=(1.26+/-0.16) E25 s-1; Q(C3)=(3.47+/-1.32) E24 s-1
A(0)fp(RC)=95+/-7 cm

73P/SW-3
Date UT=2022-09-01, r_h=0.98 au, Delta=1.01 au, DT=+7 days
Q(OH)=(2.17+/-0.74) E27 s-1; Q(CN)=(7.50+/-0.60) E24 s-1; Q(C2)=(1.33+/- 0.41) E24 s-1
A(0)fp(RC)=187+/-7 cm

Notations: r_h= heliocentric distance (in au), Delta=geocentric distance (in au), DT= Time to perihelion. OH, NH, C3, CN, C2 are the HB gaseous narrowband filters for the corresponding species, and BC, GC, RC are the blue, green and red dust continuum filters (Farnham et al.

2000)

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