TRAPPIST comet production rates: 6P/d'Arrest, 67P/C-G, 4P/Faye, 19P/Borrelly, 57P/D-N-D

ATel #15117; *E. Jehin, Y. Moulane, J. Manfroid, M. Vander Donckt, S. Hmiddouch, F. Pozuelos, M. Ferrais, and D. Hutsemekers (STAR Institute, University of Liege)*
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Credential Certification: Emmanuel Jehin (ejehin@uliege.be)

Subjects: Optical, Comet

E. Jehin, Y. Moulane, J. Manfroid, M. Vander Donckt, S. Hmiddouch, F. Pozuelos, M. Ferrais, and D. Hutsemekers (STAR Institute, University of Liege) report that they obtained from TRAPPIST-South (code=I40, Chile) robotic telescopes (Jehin el al. 2011) observations using 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). Their dust production rates proxy A(0)f(rho) was estimated by profile fitting at 10.000 km (A'Hearn et al. 1984) and corrected for the phase angle (Schleicher 2007).

6P/d Arrest
Date UT=2021-12-02, r_h=1.60 au, Delta=1.44 au
Q(OH)=(5.40+/-0.55) E27 s-1; Q(CN)=(1.53+/-0.15) E25 s-1; Q(C2)=(1.77+/-0.17) E25 s-1; Q(C3)=(4.67+/-0.27) E24 s-1
A(0)fp(RC)= 142+/-8 cm

67P/C-G
Date UT=2021-12-02, r_h=1.27 au, Delta=0.43 au, DT=+30 days
Q(OH)=(6.33+/-0.67) E27 s-1; Q(CN)=(1.14+/-0.10) E25 s-1; Q(C2)=(8.14+/-0.13) E24 s-1; Q(C3)=(1.34+/-0.22) E24 s-1
A(0)fp(RC)= 853+/-14 cm

4P/Faye
Date UT=2021-11-30, r_h=1.82 au, Delta=0.94 au
Q(CN)=(4.21+/-0.17) E24 s-1; Q(C2)=(6.29+/-0.16) E24 s-1; Q(C3)=(1.04+/-0.34) E24 s-1
A(0)fp(RC)= 565+/-18 cm

19P/Borrelly
Date UT=2021-11-30, r_h=1.54 au, Delta=1.18 au
Q(OH)=(9.65+/-0.47) E27 s-1; Q(CN)=(2.16+/-0.16) E25 s-1; Q(C2)=(1.56+/-0.17) E25 s-1; Q(C3)=(2.94+/-0.33) E24 s-1
A(0)fp(RC)= 1011+/-10 cm

57P/DuToit-Neujmin-Delporte
Date UT=2021-11-21, r_h=1.75 au, Delta=2.10 au
Q(CN)=(2.51+/-0.17) E25 s-1; Q(C2)=(1.65+/-0.19) E25 s-1
A(0)fp(R)= 1715+/-20 cm
57P is at the limit of the C-chain depleted comets based on the -0.18 limit for Log(C2/CN) from A'Hearn et al. 1995.

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)