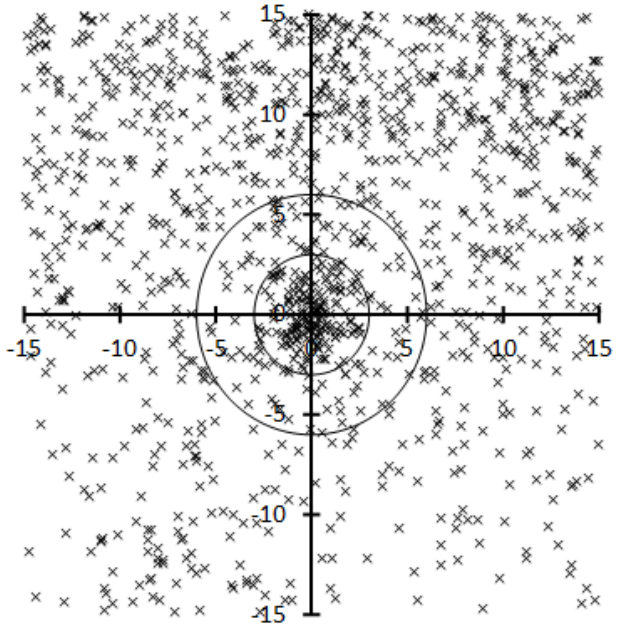
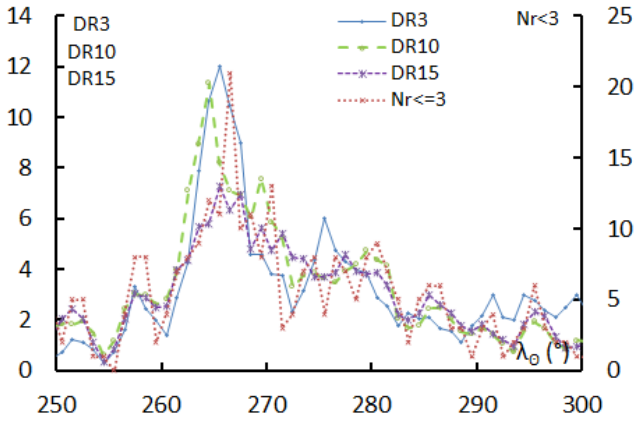
TPY_3 (#0340): Total of **173** orbits. $\lambda_\odot$ = 272°, λ_g–$\lambda_\odot$ = 260.3°, β_g = –31.4°, Δr = 3°, $\Delta\lambda_\odot$ = 10°. TPY in the SD contains clearly two showers. Here we call TPY0, TPY1 and TPY2 in the SD as TPY_0 and TPY3 as TPY_3 in *Tables 1~3*.





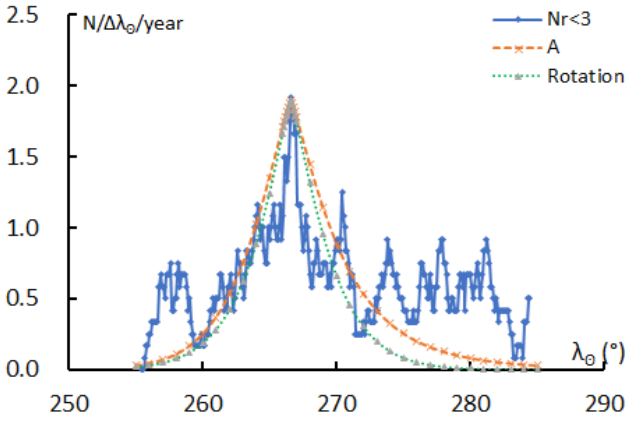


Table 1 – Number per year.

Year	N	Year	N
2007	7	2013	15
2008	13	2014	19
2009	21	2015	15
2010	10	2016	9
2011	14	2017	20
2012	12	2018	18

Table 2 – Activity profiles.

	$\lambda_\odot$	Max
Nr<=3	266.5	21
DR3	265.5	12.0
DR10	264.5	11.3
DR15	265.5	7.3

Table 3 – Evolution of the orbital parameters during the activity period.

$\lambda_\odot$	λ_g–$\lambda_\odot$	β_g	α_g	δ_g	v_g	e	q	i	ω	Ω	λ_Π	β_Π	a
255	259.1	–34.7	143.1	–22.3	61.0	0.855	0.925	118.7	29.9	75.0	59.6	25.9	6.39
256	259.2	–34.5	144.1	–22.5	61.1	0.856	0.925	119.1	29.8	76.0	60.5	25.7	6.44
257	259.3	–34.3	145.0	–22.6	61.2	0.858	0.925	119.4	29.7	77.0	61.4	25.5	6.50
258	259.3	–34.1	146.0	–22.8	61.4	0.859	0.926	119.8	29.6	78.0	62.3	25.4	6.56
259	259.4	–33.9	146.9	–23.0	61.5	0.860	0.926	120.1	29.4	79.0	63.2	25.2	6.62
260	259.5	–33.7	147.9	–23.2	61.6	0.862	0.926	120.5	29.3	80.0	64.1	25.0	6.69
261	259.5	–33.5	148.9	–23.3	61.7	0.863	0.926	120.8	29.2	81.0	65.0	24.8	6.76
262	259.6	–33.3	149.8	–23.5	61.9	0.864	0.927	121.2	29.1	82.0	65.9	24.6	6.83
263	259.6	–33.1	150.8	–23.7	62.0	0.866	0.927	121.5	29.0	83.0	66.8	24.4	6.91
264	259.7	–33.0	151.8	–23.9	62.1	0.867	0.927	121.9	28.9	84.0	67.8	24.2	6.99
265	259.8	–32.8	152.7	–24.1	62.2	0.869	0.928	122.3	28.8	85.0	68.7	24.0	7.08
266	259.8	–32.6	153.7	–24.3	62.4	0.871	0.928	122.6	28.6	86.0	69.6	23.8	7.18
266.1	259.8	–32.5	153.8	–24.3	62.4	0.871	0.928	122.6	28.6	86.1	69.7	23.8	7.19
266.2	259.8	–32.5	153.9	–24.4	62.4	0.871	0.928	122.7	28.6	86.2	69.8	23.8	7.20
266.3	259.8	–32.5	154.0	–24.4	62.4	0.871	0.928	122.7	28.6	86.3	69.9	23.8	7.21
266.4	259.9	–32.5	154.1	–24.4	62.4	0.871	0.928	122.8	28.6	86.4	70.0	23.7	7.22
266.5	259.9	–32.5	154.2	–24.4	62.4	0.872	0.928	122.8	28.6	86.5	70.1	23.7	7.23
266.6	259.9	–32.4	154.3	–24.4	62.5	0.872	0.928	122.8	28.6	86.6	70.2	23.7	7.24
266.7	259.9	–32.4	154.4	–24.5	62.5	0.872	0.928	122.9	28.6	86.7	70.2	23.7	7.25
266.8	259.9	–32.4	154.5	–24.5	62.5	0.872	0.928	122.9	28.5	86.8	70.3	23.7	7.26
266.9	259.9	–32.4	154.6	–24.5	62.5	0.872	0.928	122.9	28.5	86.9	70.4	23.6	7.27

Table 3 – Continued, evolution of the orbital parameters during the activity period.

$\lambda_\odot$	$\lambda_g-\lambda_\odot$	β_g	α_g	δ_g	v_g	e	q	i	ω	Ω	λ_Π	β_Π	a
267	259.9	–32.4	154.7	–24.5	62.5	0.872	0.928	123.0	28.5	87.0	70.5	23.6	7.28
268	259.9	–32.2	155.7	–24.7	62.6	0.874	0.929	123.3	28.4	88.0	71.5	23.4	7.38
269	260.0	–32.0	156.7	–24.9	62.8	0.876	0.929	123.7	28.3	89.0	72.4	23.2	7.49
270	260.1	–31.8	157.7	–25.1	62.9	0.878	0.929	124.0	28.1	90.0	73.3	23.0	7.61
271	260.1	–31.6	158.7	–25.4	63.0	0.880	0.930	124.4	28.0	91.0	74.3	22.8	7.74
272	260.2	–31.4	159.6	–25.6	63.1	0.882	0.930	124.8	27.9	92.0	75.2	22.6	7.87
273	260.2	–31.2	160.6	–25.8	63.3	0.884	0.930	125.1	27.7	93.0	76.2	22.4	8.02
274	260.3	–31.0	161.6	–26.0	63.4	0.886	0.931	125.5	27.6	94.0	77.1	22.2	8.17
275	260.4	–30.8	162.7	–26.3	63.5	0.888	0.931	125.8	27.5	95.0	78.1	22.0	8.33
276	260.4	–30.6	163.7	–26.5	63.6	0.891	0.932	126.2	27.3	96.0	79.0	21.8	8.51
277	260.5	–30.4	164.7	–26.7	63.8	0.893	0.932	126.6	27.2	97.0	80.0	21.5	8.70
278	260.5	–30.2	165.7	–26.9	63.9	0.895	0.933	126.9	27.1	98.0	80.9	21.3	8.90
279	260.6	–30.0	166.7	–27.2	64.0	0.898	0.933	127.3	26.9	99.0	81.9	21.1	9.12
280	260.7	–29.8	167.7	–27.4	64.2	0.900	0.933	127.6	26.8	100.0	82.9	20.9	9.35
281	260.7	–29.6	168.7	–27.7	64.3	0.903	0.934	128.0	26.6	101.0	83.8	20.7	9.61
282	260.8	–29.5	169.8	–27.9	64.4	0.905	0.934	128.4	26.5	102.0	84.8	20.5	9.88
283	260.8	–29.3	170.8	–28.1	64.5	0.908	0.935	128.7	26.3	103.0	85.8	20.2	10.18
284	260.9	–29.1	171.8	–28.4	64.7	0.911	0.935	129.1	26.2	104.0	86.8	20.0	10.50
285	260.9	–28.9	172.9	–28.6	64.8	0.914	0.936	129.5	26.0	105.0	87.8	19.8	10.85
286	261.0	–28.7	173.9	–28.9	64.9	0.917	0.936	129.8	25.9	106.0	88.7	19.6	11.24
287	261.1	–28.5	175.0	–29.1	65.0	0.920	0.937	130.2	25.7	107.0	89.7	19.4	11.67
288	261.1	–28.3	176.0	–29.3	65.2	0.923	0.937	130.5	25.6	108.0	90.7	19.1	12.14