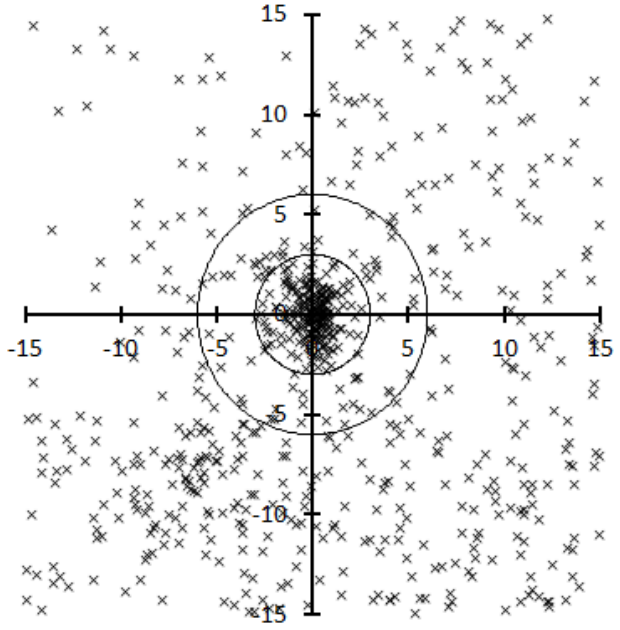
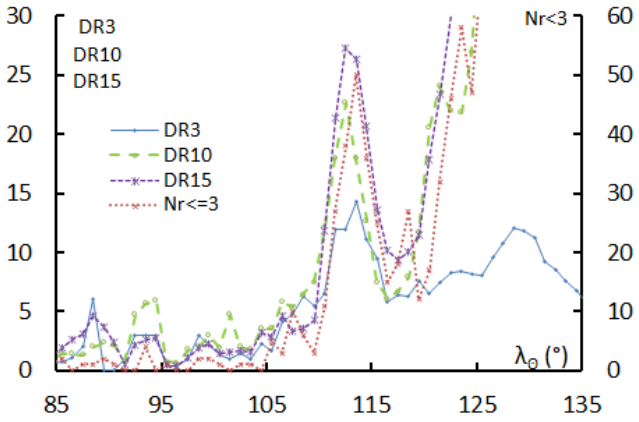
ZCS (#0444): Total of **213** orbits. $\lambda_\odot$ = 111.5°, λ_g–$\lambda_\odot$ = 277.8°, β_g = 43.0°, Δr = 3°, $\Delta\lambda_\odot$ = 5°. Perseid activity overlaps ZCS after $\lambda_\odot$ = 117° but the estimated activity curve suggests ZCS might cease at $\lambda_\odot$ = 120°.





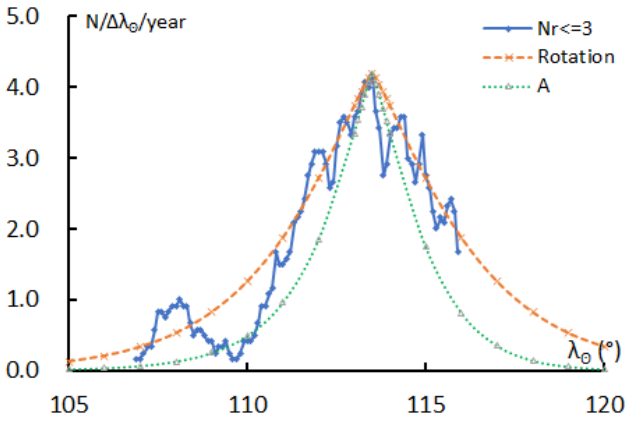


Table 1 – Number per year.

Year	N	Year	N
2007	0	2013	9
2008	3	2014	7
2009	30	2015	16
2010	34	2016	5
2011	45	2017	22
2012	17	2018	25

Table 2 – Activity profiles.

	$\lambda_\odot$	Max
Nr<=3	113.5	50
DR3	113.5	14.3
DR10	112.5	22.6
DR15	112.5	27.3

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
100	273.7	46.5	348.3	46.9	52.2	0.704	1.012	99.9	171.5	100.0	281.5	8.4	3.42
101	274.1	46.2	349.6	47.2	52.6	0.721	1.011	100.5	170.8	101.0	282.7	9.0	3.62
102	274.4	46.0	351.0	47.5	53.0	0.738	1.010	101.0	170.2	102.0	283.9	9.7	3.85
103	274.7	45.7	352.3	47.8	53.3	0.755	1.009	101.6	169.5	103.0	285.1	10.3	4.12
104	275.1	45.4	353.7	48.1	53.7	0.772	1.008	102.2	168.9	104.0	286.4	10.9	4.42
105	275.4	45.2	355.1	48.4	54.1	0.790	1.007	102.7	168.2	105.0	287.6	11.5	4.79
106	275.7	44.9	356.5	48.7	54.4	0.807	1.006	103.3	167.6	106.0	288.9	12.0	5.22
107	276.0	44.6	357.9	49.0	54.8	0.825	1.005	103.9	167.0	107.0	290.2	12.6	5.75
108	276.4	44.3	359.3	49.3	55.2	0.843	1.004	104.4	166.4	108.0	291.4	13.1	6.40
109	276.7	44.1	0.8	49.6	55.5	0.862	1.002	105.0	165.9	109.0	292.7	13.6	7.24
110	277.0	43.8	2.2	49.9	55.9	0.880	1.001	105.5	165.3	110.0	294.0	14.2	8.34
111	277.3	43.5	3.7	50.2	56.3	0.899	1.000	106.1	164.7	111.0	295.3	14.7	9.87
112	277.6	43.2	5.2	50.5	56.6	0.918	0.998	106.6	164.2	112.0	296.6	15.1	12.11
113	277.9	43.0	6.7	50.8	57.0	0.937	0.997	107.2	163.6	113.0	298.0	15.6	15.73
113.1	277.9	42.9	6.8	50.8	57.1	0.939	0.996	107.2	163.6	113.1	298.1	15.7	16.22
113.2	278.0	42.9	7.0	50.9	57.1	0.941	0.996	107.3	163.5	113.2	298.2	15.7	16.74
113.3	278.0	42.9	7.1	50.9	57.1	0.942	0.996	107.4	163.5	113.3	298.4	15.7	17.30
113.4	278.0	42.9	7.3	50.9	57.2	0.944	0.996	107.4	163.4	113.4	298.5	15.8	17.90
113.5	278.1	42.8	7.4	50.9	57.2	0.946	0.996	107.5	163.4	113.5	298.6	15.8	18.53
113.6	278.1	42.8	7.6	51.0	57.2	0.948	0.996	107.5	163.3	113.6	298.8	15.9	19.22
113.7	278.1	42.8	7.8	51.0	57.3	0.950	0.995	107.6	163.3	113.7	298.9	15.9	19.96

Table 3 – Continued, 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
113.8	278.1	42.8	7.9	51.0	57.3	0.952	0.995	107.6	163.2	113.8	299.0	16.0	20.76
113.9	278.2	42.7	8.1	51.0	57.3	0.954	0.995	107.7	163.2	113.9	299.2	16.0	21.63
114	278.2	42.7	8.2	51.1	57.4	0.956	0.995	107.7	163.1	114.0	299.3	16.1	22.58
115	278.5	42.4	9.7	51.4	57.8	0.975	0.993	108.3	162.6	115.0	300.6	16.5	40.38
116	278.8	42.1	11.3	51.6	58.1	0.995	0.992	108.8	162.1	116.0	302.0	16.9	200
117	279.1	41.9	12.8	51.9	58.5	1.015	0.990	109.3	161.6	117.0	303.3	17.4	–66.5

