

39 observers with 78 video system reported their observations to the IMO video network in April. The weather was mediocre with larger gaps in the observing statistics, which is not unusual for this time of year. If we put aside the previous year with its exceptional observing conditions, the output of 2016 is comparable with the previous years both with respect to the effective observing time and meteor count. With 48 cameras, almost two out of three cameras managed to observe in twenty or more observing nights. No geographic region was given particular advantage or disadvantage.

Unfortunately, just in the night of the Lyrid maximum the weather conditions were far from perfect, so that we obtained fewer data than usual. But the Lyrid activity profile is every year the same, isn't it?

In figure 1 (left) we compare the flux density profile of 2016 (red) with the average profile of the years 2011-2015 (green). There is good agreement indeed, only in the maximum night the rate increase is stronger than usual. Also a comparison of the profiles of 2012 and 2016 (figure 1, right), which cover almost the same solar longitude interval, yields a perfect match.

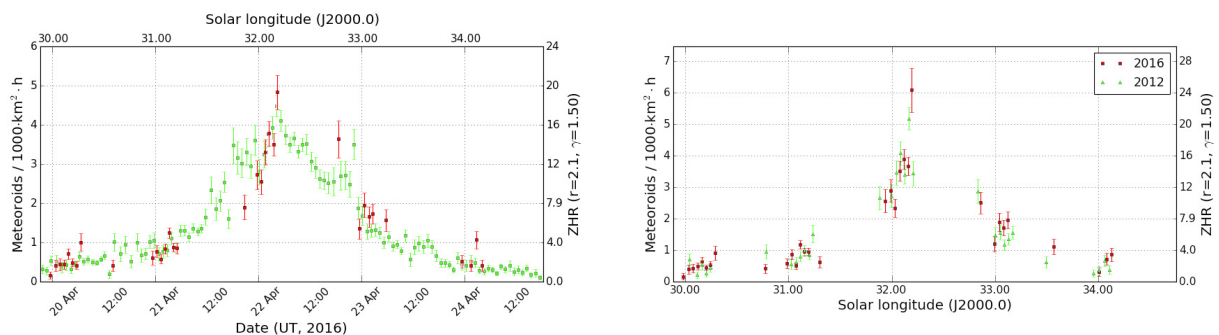


Figure 1: Comparison of the flux density profile of the Lyrids in 2016 with the average of 2011-2015 (left), and between the profiles of 2012 and 2016 (right) obtained from observation of the IMO video network.

The average profile of recent years shows that the peak activity of the Lyrids is reached at 32.17° solar longitude, which translates in 2016 to 2:20 UT on April 22. Both in 2012 and 2016 there is a remarkable increase of rates at the end of the peak night in the European observing window. A closer lookup at this night in 2016 (figure 3, left) reveals that the flux density increased almost instantly at 02:50 UT by a factor of two to three.

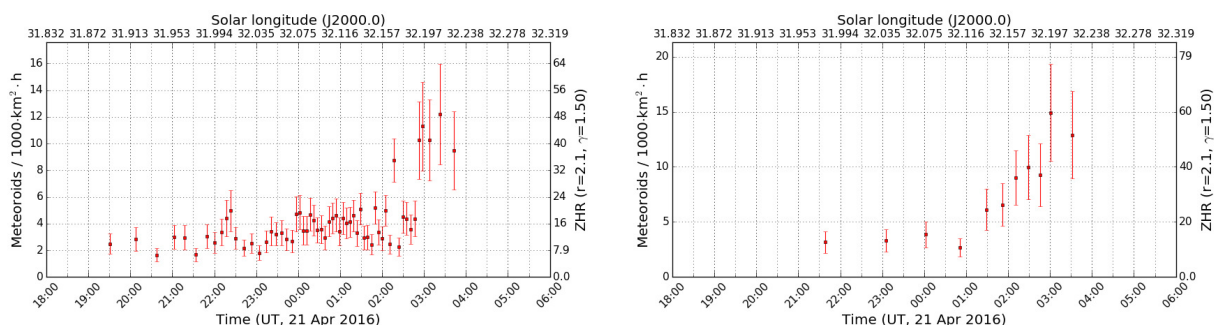


Figure 2: Detailed flux density profile from the peak of the Lyrids 2016. On the left side the data of all cameras are used, on the right side only from cameras with were still active after 3:00 UT.

Unfortunately, twilight had progress in Europe already such that only more western cameras were still active at this time. In particular here the weather was not optimal, such that the five TEMPLAR cameras of Rui Goncalves were not active, for example. So it is debatable if the rate increase is real or just a camera selection effect.

We cannot fall back to visual observations this year, since the full moon could hardly motivate any meteor observer and thus IMO did not receive a single visual observing report. If we reduce

the data set to only those cameras which were still active after 3:00 UT (BMH1, MINCAM1, MINCAM3, MINCAM4, MINCAM6, RO3), the increase starts a bit earlier but is otherwise confirmed. This is evidence that rates have indeed increased significantly in the European dawn of April 22.

The calculation of the r-values did not yield any surprise (figure 3). With 2.0, the population index of the Lyrids was about 0.25 smaller than in the year before, which can be attributed to the full moon. At the same time, we determined a sporadic population index of 2.8, compared to 2.95 in the year before. Thus, the population index of the Lyrids obtained from video data is about 0.7 to 0.8 smaller than the sporadic r-value and matches to the value of 2.1 given in the IMO Meteor Shower Calendar.

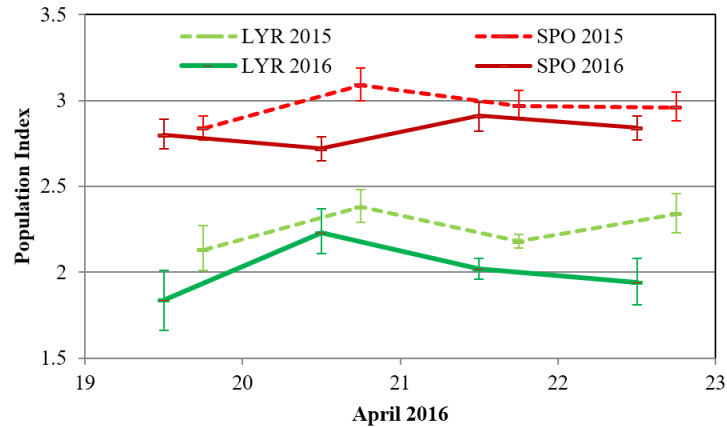


Figure 3: Population index of the Lyrids and sporadic meteors in April 2016. For comparison, the values of 2015 are given as well, whereby data points are arranged by solar longitude.

1. Observers

Code	Name	Place	Camera	FOV [°]	St.LM [mag]	Eff.CA [km ²]	Nights	Time [h]	Meteors	
ARLRA	Arlt	Ludwigsfelde/DE	LUDWIG2 (0.8/8)	1475	6.2	3779	27	107.2	455	
BANPE	Bánfalvi	Zalaegerszeg/HU	HUVCSE01 (0.95/5)	2423	3.4	361	15	10.7	73	
BERER	Berkó	Ludanyhalaszi/HU	HULUD1 (0.8/3.8)	5542	4.8	3847	13	58.7	267	
BOMMA	Bombardini	Faenza/IT	MARIO (1.2/4.0)	5794	3.3	739	22	114.7	232	
BREMA	Breukers	Hengelo/NL	MBB3 (0.75/6)	2399	4.2	699	26	134.5	161	
BRIBE	Klemt	Herne/DE	HERMINE (0.8/6)	2374	4.2	678	17	84.7	160	
CASFL	Castellani	Monte Baldo/IT	KLEMO1 (0.8/6)	2286	4.6	1080	19	99.4	142	
			BMH1 (0.8/6)	2350	5.0	1611	18	94.6	155	
CRIST	Crivello	Valbrenna/IT	BMH2 (1.5/4.5)*	4243	3.0	371	18	83.0	120	
			BILBO (0.8/3.8)	5458	4.2	1772	24	108.4	170	
DONJE	Donati	Faenza/IT	C3P8 (0.8/3.8)	5455	4.2	1586	22	76.9	89	
			STG38 (0.8/3.8)	5614	4.4	2007	26	136.5	302	
ELTMA	Eltri	Venezia/IT	JENNI (1.2/4)	5886	3.9	1222	22	128.8	344	
FORKE	Förster	Carlsfeld/DE	MET38 (0.8/3.8)	5631	4.3	2151	18	76.0	162	
GONRU	Goncalves	Tomar/PT	AKM3 (0.75/6)	2375	5.1	2154	20	104.4	203	
			TEMPLAR1 (0.8/6)	2179	5.3	1842	23	154.4	334	
GOVMI	Govedic	Sredisce ob Dr./SI	TEMPLAR2 (0.8/6)	2080	5.0	1508	23	149.2	258	
			TEMPLAR3 (0.8/8)	1438	4.3	571	21	126.2	86	
HERCA	Hergenrother	Tucson/US	TEMPLAR4 (0.8/3.8)	4475	3.0	442	21	132.9	208	
			TEMPLAR5 (0.75/6)	2312	5.0	2259	22	119.3	195	
IGAAN	Igaz	Budapest/HU	ORION2 (0.8/8)	1447	5.5	1841	20	91.5	160	
JONKA	Jonas	Budapest/HU	ORION3 (0.95/5)	2665	4.9	2069	12	51.9	71	
			ORION4 (0.95/5)	2662	4.3	1043	11	51.1	102	
KACJA	Kac	Kamnik/SI	SALSA3 (0.8/3.8)	2336	4.1	544	15	108.3	163	
			Ljubljana/SI	HUPOL (1.2/4)	3790	3.3	475	13	58.8	44
KOSDE	Koschny	Izana Obs./ES	HUSOR (0.95/4)	2286	3.9	445	21	126.0	132	
			La Palma / ES	HUSOR2 (0.95/3.5)	2465	3.9	715	21	132.8	119
LOJTO	Łojek	Grabniak/PL	CVETKA (0.8/3.8)	4914	4.3	1842	17	106.6	271	
			La Palma / ES	ORION1 (0.8/8)	1399	3.8	268	22	129.2	208
LOPAL	Lopes	Lisboa/PT	Kamnik/SI	REZIKA (0.8/6)	2270	4.4	840	17	100.2	303
			Noordwijkerhout/NL	STEFKA (0.8/3.8)	5471	2.8	379	13	73.4	88
MACMA	Maciejewski	Chelm/PL	ICC7 (0.85/25)*	714	5.9	1464	1	8.0	32	
			Izana Obs./ES	ICC9 (0.85/25)*	683	6.7	2951	23	148.0	1094
MARGR	Maravelias	Lofoupoli/GR	LIC1 (2.8/50)*	2255	6.2	5670	2	13.1	93	
			Loosdrecht/NL	LIC2 (3.2/50)*	2199	6.5	7512	26	185.4	1384
MARRU	Marques	Lisbon/PT	LIC4 (1.4/50)*	2027	6.0	4509	11	50.8	51	
			Grabniak/PL	PAV57 (1.0/5)	1631	3.5	269	13	74.7	128
MASMI	Maslov	Novosibirsk/RU	NASO1 (0.75/6)	2377	3.8	506	19	109.7	52	
			Molsi	PAV35 (0.8/3.8)	5495	4.0	1584	20	108.9	265
MOLSI	Molau	Seysdorf/DE	PAV36 (0.8/3.8)*	5668	4.0	1573	22	95.8	202	
			Ketzür/DE	PAV43 (0.75/4.5)*	3132	3.1	319	16	86.6	122
MORJO	Morvai	Fülöpszallas/HU	PAV60 (0.75/4.5)	2250	3.1	281	20	108.1	252	
			Moschani	LOOMECON (0.8/12)	738	6.3	2698	16	120.7	133
OTTMI	Otte	Pearl City/US	CAB1 (0.8/3.8)	5291	3.1	467	23	164.4	266	
PERZS	Perkó	Becsehely/HU	RAN1 (1.4/4.5)	4405	4.0	1241	16	94.8	95	
RÓTEC	Rothenberg	Berlin/DE	NOWATEC (0.8/3.8)	5574	3.6	773	10	26.3	94	
			SARAN	AVIS2 (1.4/50)*	1230	6.9	6152	21	118.0	501
SARAN	Saraiva	Carnaxide/PT	ESCIMO2 (0.85/25)	155	8.1	3415	20	114.0	193	
			RO1 (0.75/6)	2362	3.7	381	20	115.0	125	
SCALE	Scarpa	Alberoni/IT	MINCAM1 (0.8/8)	1477	4.9	1084	20	101.1	228	
			SCHHA	REMO1 (0.8/8)	1467	6.5	5491	26	145.3	535
SLAST	Slavec	Ljubljana/SI	REMO2 (0.8/8)	1478	6.4	4778	26	145.5	474	
			SLAST	REMO3 (0.8/8)	1420	5.6	1967	5	35.6	47
STOEN	Stomeo	Scorze/IT	REMO4 (0.8/8)	1478	6.5	5358	26	146.5	479	
			STOEN	REMO5 (0.8/8)	1478	6.5	5358	26	146.5	479
STRJO	Strunk	Herford/DE	HUFUL (1.4/5)	2522	3.5	532	23	163.0	150	
			STRJO	ROVER (1.4/4.5)	3896	4.2	1292	14	5.0	31
TEPIS	Tepliczky	Agostyan/HU	ORIE1 (1.4/5.7)	3837	3.8	460	14	60.9	79	
			TEPIS	HUBEC (0.8/3.8)*	5498	2.9	460	23	66.6	268
TRIMI	Triglav	Velenje/SI	ARMEFA (0.8/6)	2366	4.5	911	21	19.6	111	
			TRIMI	RO2 (0.75/6)	2381	3.8	459	22	128.1	138
YRJIL	Yrjölä	Kuusankoski/FI	RO3 (0.8/12)	710	5.2	619	22	141.4	232	
			YRJIL	SOPIA (0.8/12)	738	5.3	907	19	108.0	99
Sum			LEO (1.2/4.5)*	4152	4.5	2052	20	57.6	75	
			DORAECON (0.8/3.8)	4900	3.0	409	20	81.3	140	
			KAYAK1 (1.8/28)	563	6.2	1294	17	100.8	132	
			KAYAK2 (0.8/12)	741	5.5	920	9	42.4	60	
			MIN38 (0.8/3.8)	5566	4.8	3270	22	86.1	217	
			NOA38 (0.8/3.8)	5609	4.2	1911	23	89.4	240	
			SCO38 (0.8/3.8)	5598	4.8	3306	25	107.9	326	
			MINCAM2 (0.8/6)	2354	5.4	2751	27	122.9	330	
			MINCAM3 (0.8/6)	2338	5.5	3590	26	122.8	183	
			MINCAM4 (1.0/2.6)	9791	2.7	552	22	86.9	87	
			MINCAM5 (0.8/6)	2349	5.0	1896	23	118.7	180	
			MINCAM6 (0.8/6)	2395	5.1	2178	22	110.9	166	
			HUAGO (0.75/4.5)	2427	4.4	1036	24	169.2	171	
			HUMOB (0.8/6)	2388	4.8	1607	24	161.4	242	
			SRAKA (0.8/6)*	2222	4.0	546	14	24.5	61	
			FINEXCAM (0.8/6)	2337	5.5	3574	17	76.1	137	
Sum							30	7698.1	16477	

* active field of view smaller than video frame

2. Observing Times (h)

April	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ARLRA	2.9	2.7	0.6	2.4	0.2	2.2	7.8	7.8	-	2.0	-	4.3	0.1	7.5	7.0
BANPE	-	0.5	0.3	0.7	-	-	-	-	0.2	1.0	0.7	0.5	-	-	0.6
BERER	-	0.3	-	-	2.5	-	-	-	-	-	0.6	2.4	-	-	-
BOMMA	-	2.8	4.2	-	9.1	1.8	-	-	4.3	-	8.7	4.6	4.4	6.6	7.5
BREMA	5.9	-	0.4	4.6	5.6	5.0	6.3	6.8	2.2	8.4	4.5	3.9	5.1	3.1	-
BRIBE	-	-	-	-	-	3.2	5.7	7.1	-	8.3	3.3	5.6	2.1	0.2	5.1
	8.2	-	1.5	3.0	6.6	3.8	7.2	8.5	-	8.3	4.2	-	4.1	-	3.8
CASFL	-	7.3	2.8	6.2	9.5	-	2.5	-	0.3	8.7	9.1	6.2	-	9.0	3.9
	-	2.6	-	3.9	9.3	-	-	-	0.2	7.0	7.6	2.7	-	8.8	4.0
CRIST	-	1.8	1.3	1.9	8.6	7.6	4.4	7.8	7.3	2.7	8.1	-	3.6	6.2	7.2
	0.2	0.6	-	6.5	6.6	6.9	2.0	1.6	5.1	-	3.0	0.2	1.4	-	5.8
	-	5.0	2.2	9.2	8.9	8.1	6.5	7.7	7.2	2.6	8.4	2.1	3.2	7.2	7.9
DONJE	-	3.1	3.0	-	8.6	1.7	-	-	4.7	8.7	8.8	5.9	5.3	8.8	8.2
ELTMA	-	1.3	0.6	-	0.8	-	-	-	-	8.6	8.0	2.0	2.3	8.3	4.1
FORKE	8.9	9.1	4.6	6.2	-	3.7	-	6.9	4.2	-	-	4.4	-	6.7	-
GONRU	9.7	-	-	8.8	9.5	3.5	9.4	8.9	-	6.1	6.6	7.4	1.0	-	0.9
	9.7	-	-	9.1	9.7	3.4	9.4	8.9	-	6.1	5.7	7.8	1.1	-	0.5
	9.6	0.7	-	-	9.3	3.2	9.1	8.2	-	2.8	5.2	4.8	-	-	-
	9.3	-	-	7.0	9.7	1.9	9.2	8.9	-	5.0	-	6.7	-	-	0.5
	9.5	-	-	4.6	8.9	3.1	8.0	9.3	-	2.9	5.2	6.0	-	-	1.1
GOVMI	1.2	-	1.0	6.8	-	9.0	-	-	-	0.6	7.3	7.9	7.5	3.7	5.7
	-	-	-	-	-	-	-	-	-	1.0	8.5	2.5	6.6	-	4.4
	-	-	-	-	-	-	-	-	-	-	8.5	3.8	3.9	-	3.2
HERCA	9.4	10.3	10.2	10.1	8.1	9.7	1.4	0.4	0.5	-	-	-	-	-	-
IGAAN	-	-	-	-	-	-	-	-	-	-	-	3.1	2.7	1.6	-
JONKA	-	9.1	4.2	6.6	6.5	4.9	-	-	-	-	8.8	8.4	5.6	6.0	5.7
	-	8.9	7.0	8.0	6.5	5.8	-	-	-	-	7.3	8.6	7.1	5.7	6.2
KACJA	-	8.8	7.5	9.1	3.5	4.6	-	-	-	-	8.8	8.2	2.7	5.0	3.2
	-	9.3	9.2	9.1	8.7	8.0	0.3	-	-	1.2	9.1	4.8	4.4	3.0	3.4
	-	9.2	7.4	9.5	2.8	4.7	-	-	-	-	8.7	7.9	3.3	5.2	2.7
	-	9.4	6.6	9.3	3.4	4.4	-	-	-	-	8.8	5.9	2.6	5.1	1.9
KOSDE	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.6	4.6	-	7.2	9.5	9.4	3.4	9.4	9.3	9.3	9.3	8.2	8.0	0.4	7.5
	5.9	7.2	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.3	5.0	-	7.4	9.5	9.5	3.4	9.4	9.4	8.4	7.4	6.3	5.8	-	7.2
	-	-	0.5	-	-	5.1	-	4.7	-	7.9	-	4.5	4.0	-	-
LOJTO	7.7	7.9	-	3.6	7.4	5.6	-	-	-	-	-	-	6.5	-	-
LOPAL	7.0	-	-	-	8.2	8.5	9.0	7.1	-	3.4	3.9	2.1	-	-	-
MACMA	8.8	9.1	8.1	9.0	8.9	3.5	2.4	-	-	-	-	-	8.2	2.6	-
	7.6	9.2	4.5	8.2	8.7	3.0	1.4	-	-	-	-	-	5.3	1.3	-
	3.6	9.3	4.7	8.6	8.8	3.2	3.0	-	-	-	-	-	-	-	-
	8.4	9.1	6.4	8.8	8.9	3.4	2.6	-	-	-	-	-	8.3	2.0	-
MARGR	-	-	-	-	2.0	9.7	-	-	-	-	-	9.5	9.1	-	8.3
MARRU	9.6	1.6	-	7.1	9.6	9.2	9.6	9.6	-	4.8	3.2	4.9	8.7	4.5	-
	7.4	1.3	-	-	-	-	8.6	8.3	-	3.1	3.6	5.0	-	-	-
MASMI	8.4	2.5	-	1.2	4.0	-	-	0.6	-	-	0.7	0.7	1.4	-	1.5
MOLSI	2.8	8.7	7.5	7.7	-	6.5	-	-	3.3	8.1	8.0	5.9	1.7	7.8	-
	1.0	6.5	6.5	8.6	-	7.4	-	-	-	8.5	8.1	5.6	-	8.1	-
	4.6	8.8	4.2	6.8	-	6.5	-	-	-	8.3	7.8	4.7	-	7.7	0.3
	8.8	8.8	6.1	8.4	4.2	3.8	8.3	8.4	-	7.7	-	3.3	-	7.8	7.3
	8.9	8.9	6.1	8.6	4.4	4.6	8.5	8.4	2.3	7.9	-	3.4	-	7.9	6.8
	9.1	9.0	5.5	8.5	3.5	-	-	-	-	-	-	-	-	-	-
	9.1	9.0	5.4	8.7	4.4	4.8	8.6	8.6	-	8.0	-	2.2	-	8.1	6.6
MORJO	-	9.4	9.4	9.3	5.1	8.7	3.0	-	-	-	8.8	8.7	8.0	6.8	8.4
MOSFA	-	0.2	0.2	-	-	-	-	-	-	0.3	0.5	0.2	-	0.3	-
OTTMI	6.6	-	1.1	-	-	-	8.7	-	-	4.2	7.2	7.7	6.2	3.7	2.4
PERZS	0.4	2.0	0.8	2.1	0.2	2.2	-	0.2	-	2.3	2.7	1.7	2.9	1.3	1.7
ROTEC	0.5	0.9	-	4.0	-	0.6	1.0	0.8	-	-	-	0.4	-	1.3	0.2
SARAN	7.7	-	-	2.4	9.3	9.8	9.3	6.1	-	4.0	3.1	4.6	-	-	-
	8.4	-	-	2.6	9.0	9.1	9.4	5.5	-	4.2	3.5	3.3	-	-	-
	8.8	-	-	5.2	9.0	9.4	9.2	6.1	0.5	5.2	4.8	5.1	-	-	-
	7.1	-	-	2.8	9.2	9.3	8.1	6.5	-	2.5	2.8	4.0	-	-	-
SCALE	-	0.2	-	-	-	0.6	-	-	-	7.7	6.0	1.6	1.9	6.2	2.5
SCHHA	-	-	0.6	-	2.1	8.6	1.0	1.9	4.3	8.7	1.9	5.6	5.3	0.4	5.6
SLAST	-	9.0	6.6	8.3	7.3	6.9	-	-	-	-	-	2.8	8.4	3.7	4.1
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STOEN	-	3.1	2.7	1.8	4.9	2.4	-	-	-	7.5	8.5	0.8	0.6	8.9	2.3
	-	1.3	2.5	4.5	-	-	0.3	-	0.2	6.9	8.6	1.8	0.2	8.9	2.9
	-	2.5	3.1	4.9	5.9	2.8	0.5	-	0.2	6.9	8.8	1.5	0.7	8.9	3.4
STRJO	9.1	2.4	0.4	-	4.9	4.0	7.1	8.4	1.6	8.3	7.3	1.8	5.8	4.3	3.1
	9.0	2.5	-	1.1	5.2	-	3.4	8.5	2.2	8.4	6.2	2.9	5.5	4.1	3.9
	7.7	-	-	0.3	-	0.6	6.6	8.6	1.9	8.4	6.7	1.3	4.3	3.9	1.4
	9.1	2.6	-	1.5	5.5	-	6.5	8.6	1.7	8.4	7.2	-	6.2	4.0	3.7
	8.8	-	-	0.4	5.1	4.0	6.8	7.9	1.6	8.4	7.1	-	4.4	-	2.4
TEPIS	6.4	8.1	9.0	8.7	9.0	8.3	3.0	-	-	-	8.6	8.5	4.6	4.9	8.2
	4.9	8.6	9.0	8.7	9.0	8.9	3.0	-	-	-	8.5	8.5	5.1	5.2	7.8
TRIMI	-	0.9	0.5	-	0.3	0.3	-	-	-	-	0.8	-	3.3	2.1	-
YRJIL	6.6	6.7	6.9	3.9	-	-	7.2	2.7	-	4.8	6.7	3.6	5.2	3.4	0.8
Sum	325.2	289.7	192.3	334.1	365.1	311.2	252.1	245.1	74.7	284.5	351.8	281.3	225.7	248.2	214.8

April	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ARLRA	2.5	2.2	-	2.3	6.7	6.7	4.9	4.3	2.8	3.2	2.1	3.4	6.5	6.0	6.1
BANPE	0.3	-	-	-	1.0	1.9	0.2	-	-	1.4	-	-	-	1.2	0.2
BERER	3.3	6.5	-	5.0	8.0	7.8	6.5	-	-	-	1.3	-	-	6.9	7.6
BOMMA	1.5	2.0	7.9	8.6	8.4	0.3	0.6	-	-	8.3	8.0	6.8	0.2	8.1	-
BREMA	3.5	7.9	-	7.6	7.7	6.4	-	4.7	7.1	4.7	2.9	6.7	5.9	0.7	6.9
BRIBE	-	7.8	-	7.6	7.5	2.9	-	4.2	5.1	2.8	-	-	6.2	-	-
	0.6	6.9	-	7.7	7.6	2.4	-	5.3	3.1	-	-	-	6.6	-	-
CASFL	0.8	-	0.7	8.6	6.3	3.8	-	-	2.5	6.4	-	-	-	-	-
	2.7	-	2.1	8.5	5.6	2.1	-	-	1.7	-	-	1.7	4.5	8.0	-
CRIST	-	0.8	1.7	5.5	1.5	-	-	-	5.8	6.1	3.7	2.5	1.8	7.9	2.6
	-	-	5.2	7.2	3.7	-	-	0.5	5.2	5.0	-	0.2	3.0	5.5	1.5
	-	0.5	2.6	8.4	6.1	-	-	1.8	7.2	5.3	4.0	3.1	1.0	7.7	2.6
DONJE	1.5	3.2	7.5	8.7	8.5	-	1.2	-	-	8.0	8.1	6.7	0.8	7.8	-
ELTMA	1.3	2.9	-	4.2	7.7	1.6	0.2	-	-	6.1	-	-	7.9	8.1	-
FORKE	2.1	-	3.8	0.4	7.9	7.8	4.9	-	1.4	-	2.3	-	6.0	6.9	6.2
GONRU	8.8	8.0	-	8.7	2.5	-	-	8.3	8.6	7.1	3.6	1.6	8.5	8.5	8.4
	8.6	7.3	-	7.5	-	-	0.9	7.6	8.5	7.2	3.3	1.2	8.6	8.6	8.5
	6.5	7.8	-	8.0	2.7	-	-	7.6	8.1	6.4	1.1	2.3	8.4	5.9	8.5
	7.8	7.6	-	8.5	1.7	-	1.0	6.7	8.1	7.1	-	0.9	8.4	8.5	8.4
	6.1	7.1	0.2	6.5	1.1	-	-	3.9	5.9	6.2	-	1.2	8.3	5.8	8.4
GOVMI	3.6	2.8	-	3.7	2.8	4.0	5.7	-	-	7.5	2.7	-	-	5.9	2.1
	-	1.6	-	2.3	6.6	6.6	4.6	-	-	-	-	-	-	5.9	1.3
	-	2.8	-	2.6	7.7	7.8	4.1	-	-	-	-	-	-	5.9	0.8
HERCA	-	-	-	-	-	-	-	-	-	8.4	8.3	9.5	4.8	8.1	9.1
IGAAN	2.9	2.9	1.1	7.5	7.9	7.8	3.8	-	-	7.6	-	4.3	-	-	5.6
JONKA	8.5	-	1.0	8.2	8.3	8.2	5.0	-	-	6.4	1.1	3.9	-	6.5	3.1
	7.0	4.6	0.8	8.2	8.1	8.1	3.4	-	-	8.0	-	4.1	-	6.9	2.5
KACJA	1.6	-	-	7.9	8.2	8.1	6.3	-	-	5.5	-	-	-	7.6	-
	6.3	6.6	1.5	6.4	8.5	8.4	8.4	-	-	3.4	-	-	-	8.1	1.1
	1.7	-	-	8.0	7.4	4.2	5.4	-	-	4.4	-	-	-	7.7	-
	-	-	0.3	8.1	-	-	-	-	-	-	-	-	-	7.6	-
KOSDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.0	-	-	5.0	-	-	-	4.9	5.3	5.4	5.4	-	1.3	7.0	7.6
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.1	-	-	5.0	3.6	3.6	9.0	9.0	8.9	8.9	7.8	4.1	8.8	8.8	8.8
	2.4	6.9	-	5.1	7.0	2.7	-	-	-	-	-	-	-	-	-
LOJTO	3.2	-	6.0	3.5	7.2	7.0	7.4	-	-	-	-	-	-	1.7	-
LOPAL	5.6	-	-	5.6	2.0	2.0	-	4.8	9.0	8.9	-	1.3	5.7	6.9	8.7
MACMA	4.0	1.6	5.2	3.9	7.8	4.2	7.7	-	-	-	7.4	2.9	3.0	-	0.6
	3.6	0.9	4.5	3.0	7.7	7.7	7.6	0.2	-	0.2	7.4	0.6	2.0	-	1.2
	1.7	-	5.6	4.6	7.8	7.6	7.7	-	-	0.2	7.5	-	2.7	-	-
	3.8	2.3	5.4	3.9	7.8	7.8	7.7	0.5	-	-	7.4	-	2.6	-	1.0
MARGR	6.9	7.1	7.5	6.4	-	-	6.2	-	6.4	-	9.1	9.0	9.0	5.9	8.6
MARRU	9.1	8.3	-	6.3	-	-	-	8.4	8.8	8.8	3.8	2.9	8.4	8.6	8.6
	6.3	3.8	-	3.1	-	-	-	5.0	8.8	8.3	-	-	4.9	8.7	8.6
MASMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3
MOLSI	-	-	-	0.9	7.4	7.3	-	1.9	4.5	4.8	-	6.9	6.9	6.8	2.6
	6.2	-	2.8	1.4	7.9	6.6	-	-	4.5	5.0	-	5.6	5.6	6.0	2.1
	0.1	-	-	1.1	6.1	5.6	-	0.7	3.3	3.6	-	6.9	7.0	7.0	-
	1.7	7.6	-	1.6	7.2	7.1	3.9	5.1	1.3	1.8	5.5	6.2	6.1	1.9	5.4
	-	7.7	-	1.4	7.4	7.3	1.9	4.1	1.2	1.7	5.1	6.4	6.6	2.4	5.6
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.3	7.9	-	2.0	7.6	7.5	3.8	4.6	1.2	1.8	5.4	6.3	6.4	1.5	5.7
MORJO	8.4	6.0	-	8.4	6.5	8.2	8.2	1.5	-	8.1	3.5	3.4	-	7.7	7.5
MOSFA	0.2	0.2	-	1.0	0.2	-	-	-	-	0.3	-	0.3	0.3	0.8	-
OTIMI	1.0	-	-	-	2.6	1.7	-	0.8	7.0	-	-	-	-	-	-
PERZS	0.5	0.2	-	5.6	7.0	6.4	3.7	-	0.2	8.1	-	-	-	7.9	6.5
ROTEC	0.2	0.9	-	-	1.7	2.4	-	0.5	0.5	0.8	0.2	0.1	1.4	0.7	0.5
SARAN	4.1	1.3	-	3.8	-	1.3	-	3.9	8.8	8.9	1.3	-	8.1	8.6	8.6
	7.2	4.9	-	4.8	2.9	2.6	-	5.6	8.9	9.0	0.8	2.0	7.4	8.5	8.5
	8.0	4.8	-	6.7	4.4	2.2	-	7.0	8.6	8.7	-	3.4	7.9	8.2	8.2
	7.4	3.4	-	4.3	-	0.6	-	3.3	6.7	7.3	-	-	5.8	8.4	8.5
SCALE	1.2	2.2	3.4	2.5	5.8	0.7	0.3	-	0.2	-	1.2	0.2	5.9	7.3	-
SCHHA	2.2	8.1	-	3.3	6.2	-	-	5.4	6.2	2.5	-	1.4	-	-	-
SLAST	-	5.7	-	7.2	8.1	4.5	7.2	-	-	3.7	-	-	-	7.0	0.3
	-	-	-	7.4	8.0	8.3	8.2	1.4	0.5	1.1	-	-	-	6.5	1.0
STOEN	1.3	4.9	3.4	3.1	6.4	0.3	-	-	-	6.2	1.2	2.4	6.1	7.3	-
	1.4	4.1	3.8	4.3	8.5	2.0	-	-	0.2	6.8	2.6	3.2	6.4	8.0	-
	1.5	4.6	5.7	5.9	8.5	3.7	0.3	-	-	6.2	3.0	3.6	6.7	8.1	-
STRJO	0.9	7.6	-	4.2	7.4	6.8	0.8	3.5	5.7	1.6	-	6.3	7.1	1.3	1.2
	1.3	7.6	-	5.0	7.5	5.9	2.4	4.6	5.5	1.1	-	5.5	6.9	3.4	3.2
	1.1	1.5	-	5.6	7.7	7.6	-	4.7	4.1	2.0	-	-	0.7	-	0.2
	1.3	7.4	-	5.3	6.6	7.0	-	3.3	5.6	1.1	-	6.1	7.0	3.0	-
	1.2	7.6	-	4.7	7.6	7.6	-	3.8	5.6	-	-	6.1	6.0	1.7	2.1
TEPIS	7.8	6.8	5.4	8.1	8.0	8.0	6.2	-	-	7.7	-	4.9	5.2	7.5	6.3
	8.0	6.4	4.7	8.0	8.0	8.0	5.0	-	-	7.7	-	3.7	1.6	7.5	5.6
TRIMI	-	0.6	-	2.2	3.2	1.2	2.5	-	-	3.7	-	-	-	2.9	-
YRJIL	1.5	-	-	-	-	5.1	4.0	3.0	-	-	-	4.0	-	-	-
Sum	221.2	250.7	99.8	367.6	395.0	293.0	178.8	156.4	218.6	304.5	138.1	175.8	274.9	377.8	250.1

3. Results (Meteors)

April	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ARLRA	22	19	4	26	1	18	26	27	-	2	-	5	1	35	8
BANPE	-	3	2	5	-	-	-	-	1	6	4	3	-	-	4
BERER	-	1	-	-	16	-	-	-	-	-	3	17	-	-	-
BOMMA	-	5	6	-	4	1	-	-	5	-	15	4	8	8	21
BREMA	3	-	2	3	3	7	6	8	1	13	3	5	6	1	-
BRIBE	-	-	-	-	-	8	12	10	-	15	6	10	3	1	8
CASFL	14	-	2	2	5	4	11	17	-	18	6	-	4	-	3
CRIST	-	6	1	6	8	-	1	-	1	18	16	7	-	22	4
CRIST	-	3	-	8	5	-	-	-	1	12	11	4	-	8	7
CRIST	-	1	1	1	9	8	1	10	15	2	9	-	15	3	15
CRIST	1	2	-	4	3	3	1	2	3	-	4	1	3	-	1
CRIST	-	6	5	8	12	8	4	20	13	4	20	4	22	8	20
DONJE	-	5	2	-	13	1	-	-	8	27	23	6	11	20	40
ELTMA	-	2	-	3	-	4	-	-	-	14	18	5	4	12	18
FORKE	24	10	6	4	-	6	-	7	1	-	-	2	-	9	-
GONRU	17	-	-	17	22	4	20	26	-	22	10	17	1	-	2
GONRU	10	-	-	11	15	2	19	15	-	11	9	19	1	-	1
GONRU	7	2	-	-	6	1	4	9	-	2	1	3	-	-	-
GONRU	13	-	-	9	6	3	14	13	-	6	-	11	-	-	2
GONRU	17	-	-	6	13	3	21	10	-	1	2	5	-	-	1
GOVMI	2	-	1	8	-	7	-	-	-	1	11	7	7	5	8
GOVMI	-	-	-	-	-	-	-	-	-	1	6	3	4	-	5
GOVMI	-	-	-	-	-	-	-	-	-	-	8	2	4	-	10
HERCA	15	16	11	15	2	8	1	2	3	-	-	-	-	-	-
IGAAN	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-
JONKA	-	4	2	6	5	2	-	-	-	-	5	6	3	7	3
JONKA	-	2	4	4	1	2	-	-	-	-	1	1	8	5	4
KACJA	-	17	10	11	3	8	-	-	-	-	19	16	3	20	2
KACJA	-	5	9	4	11	5	1	-	-	2	15	4	8	4	2
KACJA	-	30	22	13	2	8	-	-	-	-	23	21	7	10	7
KACJA	-	9	7	3	1	2	-	-	-	-	14	10	3	10	4
KOSDE	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KOSDE	31	23	-	37	72	65	41	76	82	74	73	76	70	4	52
KOSDE	43	50	-	-	-	-	-	-	-	-	-	-	-	-	-
KOSDE	38	9	-	38	94	73	35	103	72	73	73	57	57	-	44
KOSDE	-	-	1	-	-	5	-	3	-	9	-	5	3	-	-
LOJTO	9	16	-	3	9	6	-	-	-	-	-	-	7	-	-
LOPAL	3	-	-	-	2	1	1	1	-	2	1	2	-	-	-
MACMA	17	23	7	14	11	21	3	-	-	-	-	-	13	1	-
MACMA	6	9	7	8	8	9	1	-	-	-	-	-	6	4	-
MACMA	2	11	3	3	5	6	2	-	-	-	-	-	-	-	-
MACMA	16	18	9	11	11	13	4	-	-	-	-	-	9	2	-
MARGR	-	-	-	-	1	12	-	-	-	-	-	11	9	-	12
MARRU	12	2	-	9	12	5	14	13	-	10	4	10	13	12	-
MARRU	7	2	-	-	-	5	6	-	2	5	4	4	-	-	-
MASMI	18	3	-	4	18	-	-	4	-	-	4	4	10	-	9
MOLSI	11	18	5	31	-	35	-	-	1	54	50	17	5	25	-
MOLSI	3	2	1	5	-	13	-	-	-	15	13	6	-	15	-
MOLSI	8	4	4	17	-	17	-	-	-	23	15	5	-	13	1
MOLSI	32	14	5	31	2	8	35	41	-	29	-	3	-	28	32
MOLSI	28	16	3	24	2	12	30	30	2	33	-	9	-	35	17
MOLSI	17	8	3	15	4	-	-	-	-	-	-	-	-	-	-
MOLSI	29	13	5	22	3	15	36	33	-	34	-	7	-	24	15
MORJO	-	4	2	7	5	3	1	-	-	-	2	8	3	6	4
MOSFA	-	1	1	-	-	-	-	-	-	2	4	1	-	2	-
OTTMI	1	-	6	-	-	-	8	-	-	4	4	4	6	7	2
PERZS	3	12	5	14	1	17	-	1	-	16	17	12	20	8	13
ROTEC	4	6	-	8	-	4	7	6	-	-	-	3	-	10	1
SARAN	9	-	-	1	13	3	11	9	-	3	3	6	-	-	-
SARAN	7	-	-	3	10	5	9	5	-	3	3	5	-	-	-
SARAN	12	-	-	9	16	9	15	7	1	4	6	6	-	-	-
SARAN	4	-	-	3	8	5	10	6	-	1	2	2	-	-	-
SCALE	-	1	-	-	-	2	-	-	-	11	6	1	2	5	5
SCHHA	-	-	1	-	3	17	1	3	3	13	2	4	7	1	9
SLAST	-	16	7	6	5	9	-	-	-	-	-	5	4	6	4
STOEN	-	3	2	2	2	2	-	-	-	15	17	5	2	29	7
STOEN	-	3	4	3	-	-	2	-	1	17	19	8	1	24	12
STOEN	-	2	3	4	3	4	1	-	1	21	24	4	2	21	12
STRJO	17	2	1	-	10	13	19	24	2	35	15	2	10	1	5
STRJO	7	2	-	1	4	-	5	17	2	13	5	3	4	1	5
STRJO	4	-	-	2	-	2	4	4	1	7	4	1	1	2	3
STRJO	10	1	-	1	2	-	9	12	1	20	7	-	3	4	5
STRJO	6	-	-	1	7	6	12	4	1	12	3	-	4	-	1
TEPIS	3	7	2	4	3	7	1	-	-	-	7	4	2	8	6
TRIMI	5	7	6	8	7	14	1	-	-	-	7	6	9	11	7
TRIMI	-	2	3	-	2	2	-	-	-	-	5	-	8	4	-
YRJIL	10	4	10	4	-	-	11	2	-	11	8	8	5	7	2
Sum	609	462	203	530	521	563	476	586	222	743	670	514	424	510	485

April	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ARLRA	4	23	-	4	30	37	9	14	7	4	6	27	51	25	20
BANPE	2	-	-	-	7	17	1	-	-	9	-	-	-	7	2
BERER	19	23	-	11	35	68	36	-	-	-	5	-	-	16	17
BOMMA	1	10	12	21	19	2	4	-	-	31	20	13	1	21	-
BREMA	2	7	-	12	15	19	-	7	5	3	1	16	2	1	10
BRIBE	-	15	-	19	20	5	-	7	10	4	-	-	7	-	-
	1	12	-	7	13	2	-	7	3	-	-	-	11	-	-
CASFL	2	-	2	25	10	9	-	-	2	15	-	-	-	-	-
	2	-	4	20	13	4	-	-	4	-	-	2	3	9	-
CRIST	-	2	4	9	1	-	-	-	15	13	6	7	1	17	5
	-	-	9	8	7	-	-	3	10	7	-	1	6	8	2
	-	1	8	26	15	-	-	3	22	17	9	9	2	23	13
DONJE	1	9	20	27	33	-	5	-	-	20	26	21	2	24	-
ELTMA	3	4	-	8	16	11	1	-	-	11	-	-	7	21	-
FORKE	1	-	9	2	32	39	6	-	1	-	4	-	19	15	6
GONRU	18	13	-	20	2	-	-	14	22	11	2	8	23	14	29
	17	12	-	14	-	-	1	10	18	13	1	3	16	17	23
	2	5	-	9	1	-	-	2	5	3	1	2	3	7	11
	13	5	-	16	1	-	1	7	20	16	-	2	10	28	12
	10	11	1	13	1	-	-	9	19	6	-	2	7	19	18
GOVMI	4	6	-	4	19	31	13	-	-	13	2	-	-	9	2
	-	3	-	1	11	13	13	-	-	-	-	-	-	8	3
	-	3	-	3	17	28	18	-	-	-	-	-	-	7	2
HERCA	-	-	-	-	-	-	-	-	-	15	12	16	12	22	13
IGAAN	1	1	1	6	4	8	7	-	-	1	-	5	-	-	3
JONKA	4	-	2	9	12	24	13	-	-	3	2	6	-	8	6
	8	8	2	9	9	22	7	-	-	12	-	4	-	4	2
KACJA	1	-	-	18	36	43	27	-	-	23	-	-	-	14	-
	6	15	1	11	25	23	24	-	-	3	-	-	-	29	1
	3	-	-	25	29	38	27	-	-	9	-	-	-	29	-
	-	-	1	15	-	-	-	-	-	-	-	-	-	9	-
KOSDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22	-	-	58	-	-	-	31	22	30	42	-	13	40	60
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29	-	-	61	20	20	56	51	46	51	46	12	76	76	74
	2	5	-	2	7	9	-	-	-	-	-	-	-	-	-
LOJTO	3	-	9	9	14	16	19	-	-	-	-	-	-	8	-
LOPAL	5	-	-	3	2	6	-	1	6	7	-	2	2	4	1
MACMA	11	1	14	6	29	41	25	-	-	-	18	4	4	-	2
	7	1	14	6	14	37	40	1	-	1	16	1	1	-	5
	2	-	4	5	10	29	31	-	-	1	6	-	2	-	-
	9	2	14	6	26	33	44	1	-	-	21	-	2	-	1
MARGR	5	8	14	2	-	-	3	-	3	-	20	14	11	4	4
MARRU	17	12	-	10	-	-	-	16	20	22	2	2	12	18	19
	8	2	-	6	-	-	-	10	10	5	-	-	5	9	9
MASMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
MOLSI	-	-	-	1	38	24	-	5	15	11	-	42	52	56	5
	14	-	7	2	30	15	-	-	5	3	-	16	21	6	1
	1	-	-	5	25	20	-	2	4	8	-	24	21	11	-
	7	36	-	3	40	57	10	20	1	2	21	25	38	4	11
	-	34	-	2	26	47	2	16	2	1	19	21	45	3	15
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	42	-	6	34	53	11	21	1	2	17	10	31	2	10
MORJO	5	4	-	8	9	32	17	1	-	3	2	4	-	9	11
MOSFA	1	1	-	6	1	-	-	-	-	2	-	2	2	5	-
OTTMI	3	-	-	-	13	7	-	5	9	-	-	-	-	-	-
PERZS	3	1	-	14	20	33	6	-	1	23	-	-	-	22	6
ROTEC	1	7	-	-	10	15	-	3	3	5	1	1	9	4	3
SARAN	5	2	-	2	-	10	-	7	6	7	3	-	3	16	6
	8	3	-	8	4	14	-	8	10	6	3	1	1	17	5
	15	10	-	11	2	19	-	14	13	17	-	4	3	20	19
	6	1	-	6	-	4	-	5	5	3	-	-	5	11	12
SCALE	3	4	3	2	8	4	2	-	1	-	3	1	2	9	-
SCHHA	7	13	-	3	26	-	-	8	11	4	-	4	-	-	-
SLAST	-	9	-	5	12	12	9	-	-	5	-	-	-	17	1
	-	-	-	5	12	16	11	1	1	2	-	-	-	11	1
STOEN	3	18	8	5	31	2	-	-	-	15	1	1	22	25	-
	3	15	8	5	23	15	-	-	1	21	7	3	21	24	-
	5	16	11	20	44	23	2	-	-	20	12	8	32	31	-
STRJO	4	26	-	13	17	36	1	12	18	5	-	18	19	2	3
	3	12	-	5	19	43	3	3	6	2	-	5	8	2	3
	2	5	-	4	6	15	-	5	5	5	-	-	4	-	1
	4	11	-	7	15	25	-	3	15	1	-	6	15	3	-
TEPIS	1	11	-	7	19	41	-	4	6	-	-	9	7	3	1
	2	1	5	12	11	37	8	-	-	6	-	8	8	13	6
	5	9	8	13	15	42	9	-	-	11	-	7	9	20	6
TRIMI	-	1	-	6	8	3	6	-	-	6	-	-	-	5	-
YRJIL	1	-	-	-	-	26	17	2	-	-	-	9	-	-	-
Sum	360	511	195	732	1073	1324	545	339	409	575	357	408	689	921	521