Results of the IMO Video Meteor Network – March 2017

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In the last few years, the observers enjoyed favorable observing conditions in March, and 2017 was no exception. 47 out of 75 cameras that joined the IMO network in this month, collected twenty or more observing nights. Even our Slovenian observers, which are often hampered by poor weather, experienced perfect observing conditions and collected up to 31 observing nights. The overall effective observing time was slightly above 10,000 hours and thereby above the average of the previous years. The mean of 1.8 meteors per hour is one of the smallest values we ever recorded – only in March 2014 and 2015 it was still below with an average of 1.7 meteors per hour.

In the absence of relevant meteor showers, we had a quick look at the flux density of the Anthelion source and sporadic meteors. Figure 1 compares the activity of both sources in the course of the month, whereby ANT (green, right axis) were one order of magnitude weaker than SPO (red, left axis). Note that the Anthelion source is about twice as active in the middle of March compared to begin and end (whereby we omitted an outlier on March 19/20 caused by insufficient data), whereas sporadic activity is almost constant. After all, the Anthelion source is in reality a collection of smaller "streamlets" which are difficult to separate from one another. So, the increased activity at mid-March could be related to such a "streamlet".

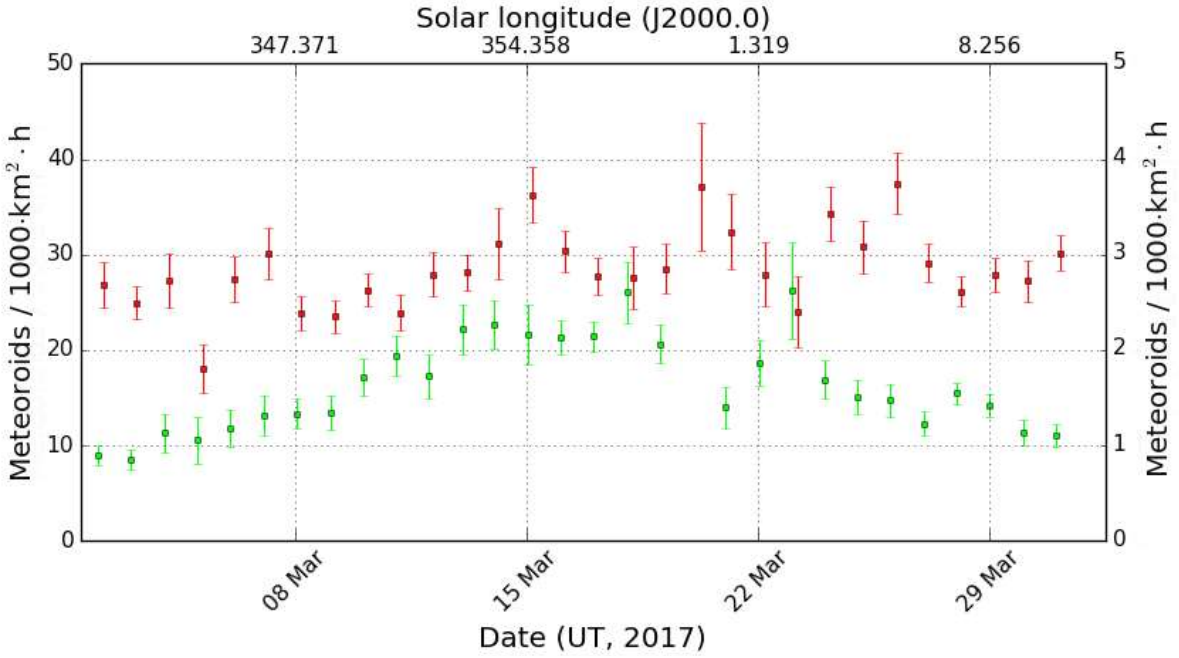

Figure 1: *Flux density profile of the Anthelion source (green, right axis) and sporadic meteors (red, left axis) in March 2017, derived from video data of the IMO Network.*

It was not possible to obtain reliable r-values from the March 2017 data alone, because there were too few Anthelion meteors. However, we may average the population index over the last six years which has the additional advantage, that lunar phase dependent fluctuations are smeared out.

Figure 2 shows for sporadic meteors (red) an almost constant population index of about 2.7 with only minor scatter. Due to the smaller number of meteors, the scatter and error bars are bigger in case of the Anthelion source, but otherwise there are no systematic variations. The average is only 0.1 smaller than in case of sporadic meteors, i.e. the brightness distributions deviate only marginally from one another.

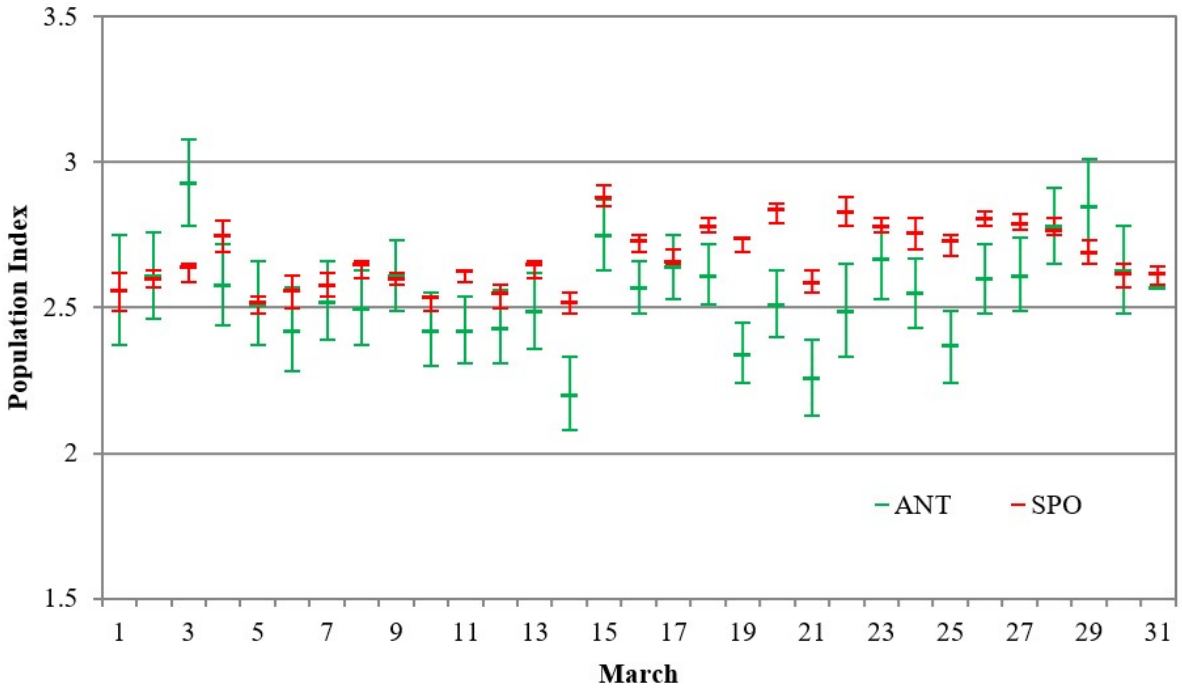

Figure 2: *Average population index of the Anthelion source (green) and sporadic meteors (red) in March 2012-2017, derived from video data of the IMO Network.*

1. Observers

Code	Name	Place	Camera	FOV [^{o2}]	St.LM [mag]	Eff.CA [km^2]	Nights	Time [h]	Meteors
ARLRA	Arlt	Ludwigsfelde/DE	LUDWIG2 (0.8/8)	1475	6.2	3779	23	129.8	459
BERER	Berkó	Ludanyhalaszi/HU	HULUD1 (0.8/3.8)	5542	4.8	3847	13	97.4	249
BOMMA	Bombardini	Faenza/IT	MARIO (1.2/4.0)	5794	3.3	739	29	204.6	484
BREMA	Breukers	Hengelo/NL	MBB3 (0.75/6)	2399	4.2	699	22	126.2	162
BRIBE	Klemt	Herne/DE	HERMINE (0.8/6)	2374	4.2	678	19	132.4	203
		Berg. Gladbach/DE	KLEMOI (0.8/6)	2286	4.6	1080	22	135.0	201
CARMA	Carli	Monte Baldo/IT	BMH2 (1.5/4.5)*	4243	3.0	371	10	61.6	200
CASFL	Castellani	Monte Baldo/IT	BMH1 (0.8/6)	2350	5.0	1611	22	187.2	328
CINFR	Cineglosso	Faenza/IT	JENNI (1.2/4)	5886	3.9	1222	22	168.0	243
CRIST	Crivello	Valbrevenna/IT	BILBO (0.8/3.8)	5458	4.2	1772	26	188.6	376
			C3P8 (0.8/3.8)	5455	4.2	1586	22	173.0	224
			STG38 (0.8/3.8)	5614	4.4	2007	28	217.6	566
ELTMA	Eltri	Venezia/IT	MET38 (0.8/3.8)	5631	4.3	2151	19	127.2	182
FORKE	Förster	Carlsfeld/DE	AKM3 (0.75/6)	2375	5.1	2154	17	100.8	217
GONRU	Goncalves	Foz do Arelho/PT	FARELHO1 (1.0/2.6)	6328	2.8	469	25	72.9	98
		Tomar/PT	TEMPLAR1 (0.8/6)	2179	5.3	1842	28	194.6	354
			TEMPLAR2 (0.8/6)	2080	5.0	1508	28	185.8	291
			TEMPLAR3 (0.8/8)	1438	4.3	571	24	166.8	115
			TEMPLAR4 (0.8/3.8)	4475	3.0	442	27	162.4	282
			TEMPLAR5 (0.75/6)	2312	5.0	2259	27	156.9	230
GOVMI	Govedic	Sredisce ob Dr./SI	ORION2 (0.8/8)	1447	5.5	1841	31	194.4	243
			ORION4 (0.95/5)	2662	4.3	1043	22	135.3	129
HERCA	Hergenrother	Tucson/US	SALSA3 (0.8/3.8)	2336	4.1	544	30	290.8	390
HINWO	Hinz	Schwarzenberg/DE	HINWO1 (0.75/6)	2291	5.1	1819	17	119.4	173
IGAAN	Igaz	Hodmezovasar./HU	HUHOD (0.8/3.8)	5502	3.4	764	18	109.9	83
		Budapest/HU	HUPOL (1.2/4)	3790	3.3	475	14	82.7	42
JONKA	Jonas	Budapest/HU	HUSOR (0.95/4)	2286	3.9	445	20	105.5	108
			HUSOR2 (0.95/3.5)	2465	3.9	715	23	151.8	124
KACJA	Kac	Kamnik/SI	CVETKA (0.8/3.8)	4914	4.3	1842	17	145.7	332
		Kostanjevec/SI	METKA (0.8/12)*	715	6.4	640	27	194.2	183
		Ljubljana/SI	ORION1 (0.8/8)	1399	3.8	268	26	185.4	331
		Kamnik/SI	REZIKA (0.8/6)	2270	4.4	840	18	146.0	535
			STEFKA (0.8/3.8)	5471	2.8	379	17	139.9	228
KOSDE	Koschny	Izana Obs./ES	ICC7 (0.85/25)*	714	5.9	1464	5	35.4	169
		La Palma / ES	ICC9 (0.85/25)*	683	6.7	2951	25	157.1	768
		Izana Obs./ES	LIC1(2.8/50)*	2255	6.2	5670	6	41.4	210
LOJTO	Łojek	Grabniak/PL	PAV57 (1.0/5)	1631	3.5	269	9	52.7	129
LOPAL	Lopes	Lisboa/PT	NASO1 (0.75/6)	2377	3.8	506	17	76.0	68
MACMA	Maciejewski	Chelm/PL	PAV35 (0.8/3.8)	5495	4.0	1584	18	75.1	88
			PAV36 (0.8/3.8)*	5668	4.0	1573	19	99.7	116
			PAV43 (0.75/4.5)*	3132	3.1	319	16	96.0	85
			PAV60 (0.75/4.5)	2250	3.1	281	22	122.1	212
MARRU	Marques	Lisbon/PT	CAB1 (0.75/6)	2362	4.8	1517	26	199.1	274
			RAN1 (1.4/4.5)	4405	4.0	1241	20	129.5	161
MASMI	Maslov	Novosimbirsk/RU	NOWATEC (0.8/3.8)	5574	3.6	773	5	32.4	65
MOLSI	Molau	Seysdorf/DE	AVIS2 (1.4/50)*	1230	6.9	6152	25	163.8	745
			ESCIMO2 (0.85/25)	155	8.1	3415	23	169.4	306
			MINCAM1 (0.8/8)	1477	4.9	1084	23	155.9	421
		Ketzür/DE	REMO1 (0.8/8)	1467	6.5	5491	24	135.5	444
			REMO2 (0.8/8)	1478	6.4	4778	22	147.3	509
			REMO3 (0.8/8)	1420	5.6	1967	23	167.1	430
			REMO4 (0.8/8)	1478	6.5	5358	23	156.4	566
MORJO	Morvai	Fülöpszallas/HU	HUFUL (1.4/5)	2522	3.5	532	25	149.6	118
OTTMI	Otte	Pearl City/US	ORIE1 (1.4/5.7)	3837	3.8	460	17	97.0	104
PERZS	Perkó	Becsehely/HU	HUBEC (0.8/3.8)*	5498	2.9	460	29	199.2	346
ROTEC	Rothenberg	Berlin/DE	ARMEFA (0.8/6)	2366	4.5	911	6	37.3	51
SARAN	Saraiva	Carnaxide/PT	RO1 (0.75/6)	2362	3.7	381	21	137.1	151
			RO2 (0.75/6)	2381	3.8	459	18	116.1	149
			RO3 (0.8/12)	710	5.2	619	20	109.2	205
			RO4 (1.0/8)	1582	4.2	549	18	86.3	82
			SOFIA (0.8/12)	738	5.3	907	23	121.5	134
SCALE	Scarpa	Alberoni/IT	LEO (1.2/4.5)*	4152	4.5	2052	24	122.8	116
SCHHA	Schremmer	Niederkrüchten/DE	DORAEMON (0.8/3.8)	4900	3.0	409	24	156.3	199
SLAST	Slavec	Ljubljana/SI	KAYAK2 (0.8/12)	741	5.5	920	24	191.3	104
STOEN	Stomeo	Scorze/IT	MIN38 (0.8/3.8)	5566	4.8	3270	29	171.4	489
			NOA38 (0.8/3.8)	5609	4.2	1911	28	181.4	455
			SCO38 (0.8/3.8)	5598	4.8	3306	30	194.4	636
STRJO	Strunk	Herford/DE	MINCAM2 (0.8/6)	2354	5.4	2751	21	110.7	265
			MINCAM3 (0.8/6)	2338	5.5	3590	20	113.4	157
			MINCAM5 (0.8/6)	2349	5.0	1896	15	95.9	120
			MINCAM6 (0.8/6)	2395	5.1	2178	19	102.1	129
TEPIS	Tepliczky	Agostyan/HU	HUAGO (0.75/4.5)	2427	4.4	1036	14	106.8	95
			HUMOB (0.8/6)	2388	4.8	1607	24	176.0	198
WEGWA	Wegrzyk	Nieznaszyn/PL	PAV78 (0.8/6)	2286	4.0	778	19	103.1	119
YRJIL	Yrjölä	Kuusankoski/FI	FINEXCAM (0.8/6)	2337	5.5	3574	16	109.5	170
Sum							31	10190.1	18723

* active field of view smaller than video frame

2. Observing Times (h)

March	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ARLRA	5.1	5.4	4.5	3.6	4.5	-	-	-	-	0.8	8.4	4.9	3.7	1.3	8.8
BERER	-	-	-	-	-	-	-	-	-	-	-	-	-	10.4	5.4
BOMMA	11.3	11.3	5.0	3.8	6.5	-	6.1	6.3	10.7	10.8	5.9	8.5	6.9	4.6	9.1
BREMA	-	7.7	3.4	-	1.6	-	2.5	-	3.3	0.6	7.5	8.1	4.9	1.5	9.7
BRIBE	-	8.1	1.4	-	-	-	4.2	1.5	-	-	10.6	7.5	4.4	-	10.3
	-	8.0	2.9	-	-	-	5.9	2.5	2.4	1.5	2.3	8.1	1.4	-	10.3
CARMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CASFL	10.9	11.3	-	-	7.8	8.7	11.1	9.7	11.0	10.9	3.8	3.8	4.6	8.4	9.2
CRIST	10.1	6.1	0.9	1.0	8.1	4.5	10.8	8.1	10.7	10.4	4.5	5.8	7.6	7.6	9.9
	3.9	0.2	-	0.7	8.5	7.5	10.7	10.5	10.7	10.6	4.8	10.4	9.3	8.3	10.1
	9.0	6.0	1.8	1.2	10.3	4.9	10.8	9.7	10.7	10.6	5.9	10.0	9.3	9.2	9.6
DONJE	-	-	5.2	4.3	7.6	-	-	7.6	10.8	10.8	6.3	10.3	-	5.3	10.2
ELTMA	8.9	10.0	3.2	3.3	-	-	6.0	-	-	10.6	2.4	6.7	4.7	1.7	-
FORKE	-	-	-	0.7	2.9	-	3.7	-	-	5.7	10.6	8.2	3.9	1.1	6.3
GONRU	2.1	1.7	1.6	-	-	0.8	0.9	5.8	10.8	0.7	-	0.4	4.1	1.0	6.3
	6.0	2.4	4.9	-	1.1	9.6	4.6	10.5	10.6	8.2	3.5	10.5	8.0	5.9	10.2
	4.9	2.5	5.0	-	0.9	9.6	5.8	10.7	10.6	7.6	3.5	10.7	7.9	4.6	10.5
	5.7	-	-	-	-	8.9	4.4	10.8	10.7	8.9	3.1	10.5	8.9	5.1	10.4
	2.7	2.3	3.7	-	-	8.8	1.4	10.7	10.8	6.4	2.2	10.7	7.7	4.9	10.5
	5.0	1.2	3.6	-	0.2	8.5	4.0	10.7	10.4	6.6	2.3	7.3	5.8	3.4	9.8
GOVMI	10.1	2.8	8.1	4.7	5.9	1.0	2.6	5.9	1.8	4.5	4.9	10.3	10.2	9.1	8.7
	8.5	-	1.9	5.1	6.5	-	-	-	1.2	4.8	4.4	-	-	-	6.3
HERCA	8.5	11.1	6.8	7.6	10.6	8.3	10.8	10.7	11.0	10.5	10.8	10.3	10.7	10.1	10.9
HINWO	-	3.7	-	-	3.2	-	3.2	-	-	6.3	10.6	8.1	4.5	4.5	7.8
IGAAN	8.2	1.0	9.7	-	2.5	4.4	-	3.3	8.2	-	5.5	-	6.0	8.3	-
	10.9	-	-	-	-	8.3	-	-	-	-	-	-	-	9.6	9.4
JONKA	11.2	4.1	1.1	-	-	7.9	-	-	-	1.7	-	7.8	2.9	4.4	4.3
	11.3	4.2	5.4	0.2	-	4.9	-	-	0.3	4.2	0.6	-	7.2	10.5	9.2
KACJA	-	-	-	-	-	-	-	-	-	-	8.2	3.7	7.9	-	7.1
	9.7	4.8	7.9	2.3	6.4	-	4.1	3.0	-	6.7	-	4.1	6.1	7.0	-
	6.8	5.3	-	-	0.2	-	4.5	1.1	2.6	10.8	9.1	4.2	10.5	-	10.2
	2.1	-	-	-	-	-	-	-	-	-	5.1	3.1	7.9	-	7.2
	-	-	-	-	-	-	-	-	-	-	7.5	3.3	6.3	-	7.0
KOSDE	10.2	9.2	6.2	6.9	-	-	-	-	-	2.9	-	-	-	-	-
	9.8	8.8	9.1	10.4	4.8	4.8	8.0	7.2	2.0	4.6	3.1	3.2	3.6	4.1	3.3
	10.4	9.3	6.3	7.2	-	-	-	-	2.0	6.2	-	-	-	-	-
LOJTO	10.5	-	-	-	1.6	-	1.2	-	-	-	-	-	-	-	-
LOPAL	3.6	0.9	-	-	-	-	6.8	9.2	3.7	1.6	5.2	6.4	7.6	-	4.3
MACMA	5.4	6.1	7.8	6.5	-	-	4.4	-	-	-	-	-	-	5.4	7.2
	3.9	6.1	1.2	6.2	-	-	5.4	-	-	-	-	-	-	8.4	8.4
	5.9	7.1	7.9	6.8	-	-	8.5	-	-	-	-	-	-	8.3	0.7
	6.9	6.9	8.8	7.2	1.5	0.5	8.5	-	-	-	-	-	-	9.4	8.3
MARRU	5.2	3.7	-	-	1.6	8.7	6.9	10.8	10.7	8.9	10.5	10.6	7.5	-	10.5
	-	-	-	-	-	6.7	10.3	10.9	10.9	2.4	5.4	3.0	8.0	0.6	3.3
MASMI	-	-	-	-	-	-	-	-	7.2	6.3	-	4.6	9.3	-	5.0
MOLSI	-	10.6	3.1	4.2	2.8	0.6	5.0	-	1.8	9.8	6.6	9.2	5.8	5.3	8.7
	-	11.0	3.9	-	2.6	-	6.3	-	2.5	9.6	6.8	9.3	6.2	6.9	10.2
	-	10.7	3.1	3.7	2.0	-	4.8	-	2.1	8.6	6.6	6.1	5.3	3.2	8.4
	4.3	6.0	4.3	4.9	4.3	-	-	-	0.4	4.9	9.0	4.7	4.6	0.2	7.9
	4.5	7.1	6.1	5.1	4.4	-	-	-	-	4.9	8.3	3.8	4.4	-	8.4
	5.1	6.9	5.9	6.0	5.7	-	-	-	0.7	6.0	10.4	6.4	6.6	-	10.0
	4.6	6.9	5.6	5.0	3.6	-	-	-	-	4.7	9.9	4.6	5.0	-	9.3
MORJO	11.3	2.7	11.0	2.6	4.0	5.5	-	-	7.9	-	-	6.0	9.0	10.6	10.3
OTTMI	-	8.5	0.3	3.6	-	-	6.9	9.9	5.5	1.6	6.1	-	0.9	10.6	10.6
PERZS	10.8	2.6	10.7	4.7	5.0	0.8	-	2.0	1.6	4.5	1.5	4.2	8.6	7.2	7.5
ROTEC	1.9	5.0	-	2.8	-	-	-	-	-	-	-	-	-	-	8.5
SARAN	4.4	-	-	-	-	7.8	8.8	9.2	9.7	-	5.1	7.3	6.6	1.5	5.3
	-	-	-	-	-	7.7	10.9	9.5	9.3	2.9	-	7.3	6.6	1.3	4.0
	-	0.6	-	-	-	6.3	10.0	9.2	9.0	2.8	7.6	5.6	6.1	0.6	-
	-	2.3	-	-	-	4.9	8.9	9.3	9.2	-	6.8	5.4	6.3	-	3.0
	3.9	-	-	-	0.9	9.0	10.9	11.1	10.9	2.2	2.1	2.0	6.9	-	-
SCALE	7.2	6.6	-	1.4	2.3	1.2	4.1	1.8	8.6	10.8	1.3	-	3.7	2.5	1.4
SCHHA	1.5	9.4	-	1.0	2.0	2.2	7.9	2.7	4.4	5.3	6.4	10.5	-	-	10.5
SLAST	9.8	7.5	-	-	1.3	-	8.4	0.9	-	10.7	9.7	-	10.6	6.1	8.5
STOEN	8.6	11.1	6.4	2.0	3.8	3.0	7.3	3.4	7.9	8.0	3.5	7.3	5.0	3.6	2.4
	8.8	11.1	6.8	2.4	3.8	3.0	6.8	3.4	10.1	10.8	3.2	9.9	5.8	5.9	3.0
	8.9	10.9	6.9	3.2	3.6	4.0	9.4	4.2	10.1	10.7	4.5	10.4	5.6	6.7	2.9
STRJO	-	6.9	2.1	0.4	-	-	1.3	1.4	-	0.2	6.6	2.7	3.8	-	6.9
	0.2	6.9	1.2	-	0.2	-	-	1.2	-	-	10.6	5.0	5.9	-	6.7
	-	6.5	-	-	-	-	1.3	-	0.2	-	6.4	3.4	-	-	6.5
	-	6.1	1.2	0.3	-	-	1.5	-	-	0.2	8.8	2.8	5.1	-	6.2
TEPIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.4
	11.1	8.7	9.9	2.7	-	7.3	1.5	6.3	2.1	6.2	-	3.5	9.1	10.3	10.3
WEGWA	6.9	0.3	0.7	1.5	-	2.0	-	3.5	-	-	-	3.4	6.2	-	3.0
YRJIL	-	-	-	5.5	10.1	10.3	-	-	-	-	8.3	-	-	-	7.1
Sum	358.5	352.2	224.5	152.7	167.2	202.9	300.1	266.2	309.8	329.5	334.6	365.9	369.0	266.5	502.6

March	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ARLRA	8.4	-	8.7	-	-	4.1	-	2.5	7.6	7.7	8.2	8.1	7.9	0.2	7.8	7.6
BERER	10.0	-	-	-	3.0	4.5	-	5.8	-	4.8	9.8	9.2	9.6	7.0	9.4	8.5
BOMMA	10.4	9.4	6.1	5.7	-	1.4	3.6	7.0	2.3	1.4	2.0	9.8	9.8	9.7	9.7	9.5
BREMA	5.3	-	-	-	-	9.7	5.9	3.6	9.7	7.5	9.5	9.5	4.9	0.5	9.3	-
BRIBE	3.4	-	-	-	-	8.8	5.6	9.1	9.7	9.1	9.5	9.4	6.4	-	9.3	4.1
	8.0	-	-	-	-	8.8	3.0	9.4	9.7	9.6	9.5	9.5	6.0	2.1	9.2	4.9
CARMA	-	2.5	-	-	-	-	1.2	-	5.5	3.8	0.5	9.9	9.8	9.8	9.7	8.9
CASFL	10.6	3.0	-	-	-	-	-	-	10.2	3.4	-	10.0	9.9	9.9	9.9	9.1
CRIST	10.3	6.5	7.7	-	10.1	3.1	-	-	1.1	-	6.9	9.7	-	9.6	9.5	8.0
	10.3	-	-	-	9.1	-	-	-	3.4	-	6.2	9.7	9.5	9.6	9.0	-
	10.3	6.3	8.7	0.3	10.1	3.4	-	-	3.8	-	8.0	9.7	9.7	9.6	9.5	9.2
DONJE	10.4	-	7.3	8.3	-	-	5.4	5.0	3.6	2.2	-	8.0	9.9	9.7	9.9	9.9
ELTMA	9.8	4.2	-	-	-	-	-	6.1	-	5.7	-	9.8	9.7	8.6	9.2	6.6
FORKE	10.3	-	-	-	-	-	-	-	9.8	9.6	3.2	5.2	2.5	-	7.8	9.3
GONRU	0.7	1.2	0.2	-	0.2	0.2	0.6	1.4	-	5.1	-	8.9	9.5	3.8	1.7	3.2
	5.4	10.4	9.9	2.6	5.7	7.5	3.4	8.7	-	6.7	-	7.1	9.8	9.8	3.8	7.8
	4.4	10.5	9.8	1.9	5.1	5.0	2.9	8.2	-	6.3	-	6.9	9.8	9.3	3.2	7.7
	5.1	10.4	9.7	2.5	3.5	-	3.3	7.9	-	5.2	-	6.3	10.1	8.2	1.3	5.9
	3.9	10.5	10.2	2.3	3.9	3.3	2.2	7.1	-	4.8	-	5.7	9.5	8.3	2.1	5.8
	1.8	10.1	9.2	-	4.0	2.3	3.2	9.0	-	5.2	-	6.3	9.8	9.1	1.5	6.6
GOVMI	10.2	4.5	1.9	4.2	9.4	7.7	7.0	2.2	0.8	5.5	9.7	9.6	9.6	9.1	9.4	3.0
	10.0	4.3	-	0.9	8.9	7.3	4.6	7.5	-	4.7	1.9	9.4	9.4	9.3	9.2	9.2
HERCA	-	10.5	9.4	10.6	9.8	10.4	10.7	6.9	10.3	10.2	8.2	10.5	6.0	9.5	10.4	8.7
HINWO	10.3	1.7	-	-	-	-	-	-	9.7	9.5	-	9.6	8.1	-	9.4	9.2
IGAAN	8.5	-	-	1.0	8.4	8.3	6.5	7.7	5.9	6.5	-	-	-	-	-	-
	9.7	-	-	2.2	7.9	-	-	-	0.3	-	3.5	3.8	3.5	3.1	3.4	7.1
JONKA	3.5	-	-	-	4.9	2.4	0.4	1.6	-	-	4.1	6.5	9.5	8.4	9.4	9.4
	10.4	-	-	-	6.6	7.3	0.2	6.1	-	5.9	9.8	9.8	9.7	8.9	9.6	9.5
KACJA	10.3	8.5	6.1	-	10.1	-	-	9.7	8.9	9.1	8.6	9.5	9.3	9.6	9.6	9.5
	10.0	4.7	4.0	1.9	10.1	9.2	8.8	9.9	8.3	7.6	9.8	9.7	9.7	9.5	9.6	9.3
	10.5	7.8	9.5	5.1	10.3	3.4	-	10.2	9.6	1.3	10.0	5.5	9.9	9.8	9.7	7.5
	10.4	8.6	6.5	-	10.3	-	-	9.7	9.0	9.4	8.6	9.5	9.4	9.8	9.7	9.7
	10.4	7.7	4.8	-	10.1	-	-	9.9	6.9	9.5	8.6	9.5	9.4	9.7	9.7	9.6
KOSDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0.3	-	2.3	4.6	8.0	9.0	9.6	9.9	-	9.8	7.0	9.8	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LOJTO	0.1	-	-	-	-	-	-	-	9.2	-	3.1	9.2	9.4	-	-	8.4
LOPAL	-	9.6	10.0	-	-	1.9	1.5	3.1	0.2	-	-	-	-	-	-	0.4
MACMA	9.4	-	-	2.8	0.2	4.6	-	-	9.8	-	2.7	0.8	0.9	0.2	0.2	0.7
	8.4	0.5	-	3.0	-	4.4	0.2	-	9.9	-	2.4	9.7	9.6	2.6	2.0	7.4
	10.4	-	-	2.6	-	4.2	0.2	-	9.7	-	1.9	9.6	5.4	-	-	6.8
	8.8	0.6	-	2.9	0.4	5.9	0.4	-	9.7	-	2.7	9.5	9.5	3.2	2.2	8.3
MARRU	-	10.5	10.4	6.3	7.5	7.7	5.5	9.4	-	5.5	0.9	7.9	10.0	9.9	3.3	8.7
	-	10.5	10.4	3.1	1.0	2.8	-	-	-	4.6	-	9.9	10.1	8.7	-	6.9
MASMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOLSI	9.8	-	-	-	5.1	1.1	-	7.8	4.8	9.2	9.1	9.1	7.7	8.9	8.9	8.8
	10.2	-	-	-	4.8	0.9	-	8.7	5.0	9.6	9.6	9.5	8.1	9.2	9.3	9.2
	10.2	-	-	-	4.1	-	-	7.9	4.7	9.6	9.6	9.5	7.9	9.3	9.3	9.2
	8.5	-	7.0	-	-	6.3	1.5	3.9	7.0	7.5	7.9	7.8	7.9	-	7.0	7.7
	9.3	-	7.9	-	-	7.0	1.9	4.3	8.0	8.9	8.9	8.9	8.7	-	8.0	8.5
	10.2	-	8.4	-	-	8.2	1.8	4.7	8.3	9.6	9.5	9.5	9.4	-	8.6	9.2
	10.2	1.2	8.5	-	-	7.5	1.4	4.7	8.2	9.5	9.5	9.5	9.4	-	8.4	9.2
MORJO	10.1	-	0.6	-	10.2	10.1	5.4	9.8	6.7	7.3	1.6	1.4	1.6	1.5	1.3	1.1
OTTMI	-	-	10.4	-	6.7	9.6	-	3.3	-	-	-	1.7	-	-	0.8	-
PERZS	10.3	3.0	-	4.4	10.2	6.8	6.3	10.0	9.4	9.1	9.9	9.8	9.8	9.2	9.7	9.6
ROTEC	9.2	-	9.9	-	-	-	-	-	-	-	-	-	-	-	-	-
SARAN	-	10.7	10.7	2.9	-	3.5	3.9	4.7	-	2.7	-	9.5	10.2	9.2	3.4	-
	-	9.2	6.9	-	-	3.1	2.6	-	-	-	-	9.4	7.2	8.3	3.5	6.4
	-	9.0	6.6	2.8	-	1.8	2.9	-	-	3.3	-	7.3	6.2	8.0	3.5	-
	-	6.2	4.4	-	-	0.8	-	0.9	-	-	-	6.9	3.0	4.7	1.0	2.3
	-	4.3	10.2	2.9	-	1.9	2.2	1.0	0.6	2.0	-	9.5	9.5	7.2	3.1	7.2
SCALE	8.5	1.0	-	-	-	-	-	3.3	4.3	3.8	5.8	7.9	9.6	8.2	8.6	8.9
SCHHA	6.9	0.2	-	-	-	8.9	9.2	9.8	10.0	9.7	9.8	9.6	7.5	1.9	9.0	-
SLAST	10.4	8.5	9.5	-	8.5	2.0	-	10.0	10.0	9.9	9.8	9.8	9.8	9.7	9.6	0.3
STOEN	10.5	4.8	3.6	-	1.4	-	0.2	4.7	7.9	6.1	3.9	10.0	8.1	9.5	9.3	8.1
	10.4	6.0	0.7	-	-	0.5	-	4.4	7.2	5.9	3.8	10.0	9.8	9.9	9.6	8.4
	10.3	1.7	8.4	0.2	0.9	-	0.2	5.4	7.5	6.5	4.4	9.8	9.6	9.7	9.7	8.1
STRJO	7.3	-	-	-	-	9.4	1.8	2.2	9.7	5.9	9.6	9.4	7.3	-	9.3	6.5
	7.7	-	-	-	-	8.9	1.6	1.4	9.7	5.2	9.6	9.3	7.2	-	9.3	5.6
	7.8	-	-	-	-	8.7	-	1.8	9.7	-	9.6	9.3	7.5	-	9.3	7.9
	7.7	-	-	-	-	9.0	-	1.7	9.7	4.9	7.0	9.3	7.3	-	9.2	4.1
TEPIS	9.3	-	-	0.2	10.0	5.9	-	6.4	7.1	4.9	9.6	9.5	9.5	6.3	9.4	9.3
	8.6	-	-	-	10.0	6.9	-	7.9	8.0	-	9.6	1.6	9.5	6.2	9.4	9.3
WEGWA	7.7	1.0	3.4	-	-	-	-	-	9.4	8.6	9.5	9.4	9.2	-	8.3	9.1
YRJIL	2.6	1.9	-	-	-	-	7.0	8.3	6.3	4.5	8.3	4.7	8.3	8.2	-	8.1
Sum	504.1	243.7	279.9	88.2	250.5	287.4	145.8	333.6	373.8	361.4	362.7	576.9	549.3	401.2	465.4	464.0

3. Results (Meteors)

March	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ARLRA	13	26	2	9	16	-	-	-	-	4	19	6	4	1	27
BERER	-	-	-	-	-	-	-	-	-	-	-	-	-	35	18
BOMMA	32	16	11	5	22	-	20	12	21	27	12	10	12	16	25
BREMA	-	8	2	-	2	-	1	-	8	1	3	9	1	1	17
BRIBE	-	11	2	-	-	-	4	1	-	-	5	7	5	-	17
	-	6	3	-	-	-	5	1	4	4	2	8	2	-	18
CARMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CASFL	18	20	-	-	15	14	25	13	23	24	2	6	5	17	20
CRIST	19	8	2	2	27	10	35	30	24	27	5	8	10	9	20
	1	1	-	3	10	5	15	20	14	21	4	6	12	17	12
	16	13	3	5	34	6	47	35	30	34	11	10	15	30	37
DONJE	-	-	2	7	21	-	-	15	25	19	10	12	-	11	19
ELTMA	10	12	5	5	-	-	23	-	-	17	4	4	3	3	-
FORKE	-	-	-	1	2	-	1	-	-	8	16	8	10	2	7
GONRU	5	3	1	-	-	1	3	4	12	2	-	2	4	1	4
	7	4	4	-	3	18	7	24	21	7	4	21	16	9	28
	3	4	3	-	2	21	4	22	17	12	4	22	14	7	19
	7	-	-	-	-	7	1	6	6	10	2	11	8	2	7
	4	2	1	-	-	14	7	17	21	8	2	18	15	9	33
	5	2	2	-	1	14	4	20	20	5	7	13	9	7	12
GOVMI	12	3	12	4	8	1	2	2	2	8	2	16	6	8	6
	9	-	1	4	5	-	-	-	5	8	2	-	-	-	5
HERCA	9	14	3	19	10	16	19	15	12	14	11	15	12	6	11
HINWO	-	7	-	-	4	-	4	-	-	7	12	10	9	4	10
IGAAN	12	1	5	-	4	2	-	2	6	-	6	-	4	3	-
	5	-	-	-	-	2	-	-	-	-	-	-	-	4	5
JONKA	13	3	6	-	-	3	-	-	-	4	-	3	7	8	10
	5	2	6	1	-	8	-	-	1	3	1	-	3	5	9
KACJA	-	-	-	-	-	-	-	-	-	-	25	11	13	-	23
	12	1	5	3	2	-	3	1	-	15	-	4	3	6	-
	5	4	-	-	1	-	10	2	3	13	22	13	16	-	14
	3	-	-	-	-	-	-	-	-	-	23	21	15	-	13
	-	-	-	-	-	-	-	-	-	-	14	12	9	-	10
KOSDE	53	46	27	42	-	-	-	-	-	1	-	-	-	-	-
	74	43	52	50	16	19	38	36	8	29	18	20	18	21	12
	55	63	25	41	-	-	-	-	11	15	-	-	-	-	-
LOJTO	30	-	-	-	1	-	1	-	-	-	-	-	-	-	-
LOPAL	1	2	-	-	-	-	8	8	15	4	2	1	1	-	2
MACMA	14	5	5	7	-	-	2	-	-	-	-	-	-	3	5
	6	11	2	6	-	-	5	-	-	-	-	-	-	4	5
	12	10	2	2	-	-	2	-	-	-	-	-	-	3	2
	14	10	11	12	1	1	13	-	-	-	-	-	-	13	12
MARRU	8	4	-	-	3	6	2	17	20	10	16	14	9	-	21
	-	-	-	-	-	18	17	20	20	1	11	7	5	2	2
MASMI	-	-	-	-	-	-	-	-	16	11	-	9	9	-	20
MOLSI	-	39	22	8	15	1	19	-	9	31	17	17	21	8	22
	-	11	8	-	2	-	8	-	3	23	13	14	15	11	10
	-	20	14	6	4	-	7	-	7	22	25	19	19	7	5
	10	28	2	4	9	-	-	-	1	15	32	11	7	1	15
	6	35	5	7	11	-	-	-	-	6	25	5	6	-	14
	5	20	3	4	12	-	-	-	1	10	27	5	11	-	15
	12	20	4	6	8	-	-	-	-	6	23	2	15	-	20
MORJO	16	1	3	1	3	2	-	-	1	-	-	3	6	7	5
OTTMI	-	11	2	7	-	-	10	7	4	2	4	-	3	8	9
PERZS	18	8	9	2	10	2	-	3	11	18	5	6	7	7	18
ROTEC	1	8	-	5	-	-	-	-	-	-	-	-	-	-	5
SARAN	6	-	-	-	-	12	15	16	14	-	1	3	8	2	3
	-	-	-	-	-	15	16	13	14	2	-	6	6	2	3
	-	3	-	-	-	16	16	30	28	3	12	13	11	2	-
	-	2	-	-	-	5	7	8	10	-	6	6	3	-	4
	6	-	-	-	1	3	14	17	18	1	5	4	4	-	-
SCALE	5	4	-	3	5	2	10	4	11	9	1	-	4	3	2
SCHHA	1	6	-	1	2	3	3	3	7	10	4	10	-	-	20
SLAST	5	5	-	-	2	-	6	3	-	6	2	-	6	2	3
STOEN	26	30	20	9	18	10	35	12	33	27	7	19	8	10	7
	19	29	24	9	16	16	36	7	23	33	5	12	9	8	8
	43	35	14	14	13	22	61	18	40	36	10	33	10	14	12
STRJO	-	21	3	1	-	-	3	8	-	1	10	8	6	-	19
	1	12	2	-	1	-	-	3	-	-	9	5	6	-	13
	-	5	-	-	-	-	1	-	1	-	4	8	-	-	8
	-	7	1	2	-	-	1	-	-	1	10	5	2	-	11
TEPIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	11	9	6	1	-	7	1	6	3	10	-	7	6	21	11
WEGWA	10	2	2	1	-	4	-	4	-	-	-	7	5	-	4
YRJIL	-	-	-	16	11	11	-	-	-	-	18	-	-	-	13
Sum	693	736	349	335	353	317	597	485	604	645	552	565	488	380	828

March	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ARLRA	43	-	51	-	-	3	-	11	21	23	56	46	35	1	20	22
BERER	19	-	-	-	3	10	-	11	-	5	32	30	27	9	23	27
BOMMA	31	23	10	11	-	5	12	13	5	5	9	36	27	18	19	19
BREMA	4	-	-	-	-	14	8	2	24	8	15	12	4	1	17	-
BRIBE	10	-	-	-	-	14	4	11	20	19	26	21	9	-	12	5
	11	-	-	-	-	16	7	13	23	17	18	20	5	3	9	6
CARMA	-	2	-	-	-	-	3	-	17	11	1	45	34	52	21	14
CASFL	17	2	-	-	-	-	-	-	13	5	-	26	16	20	13	14
CRIST	14	8	10	-	12	4	-	-	2	-	10	28	-	21	16	15
	16	-	-	-	5	-	-	-	3	-	3	17	10	18	11	-
	33	11	25	1	20	5	-	-	4	-	17	31	24	31	19	19
DONJE	19	-	7	8	-	-	9	2	2	1	-	13	12	7	8	14
ELTMA	6	3	-	-	-	-	-	12	-	2	-	25	15	15	8	10
FORKE	23	-	-	-	-	-	-	-	19	14	25	30	11	-	20	20
GONRU	4	5	1	-	1	1	2	3	-	10	-	12	6	3	2	6
	15	21	24	7	8	7	7	20	-	8	-	10	17	16	6	15
	9	26	15	6	4	5	1	11	-	8	-	10	22	8	6	6
	4	9	9	2	1	-	1	2	-	1	-	6	4	2	3	4
	13	28	22	3	3	4	4	7	-	6	-	7	8	9	9	8
	2	17	19	-	4	1	2	8	-	5	-	9	19	4	6	13
GOVMI	10	3	2	3	11	6	7	13	2	8	20	17	20	12	11	6
	13	1	-	2	9	5	5	5	-	2	3	16	8	8	6	7
HERCA	-	22	19	13	14	10	16	8	17	14	17	16	4	14	12	8
HINWO	20	1	-	-	-	-	-	-	18	6	-	15	10	-	17	19
IGAAN	5	-	-	2	4	8	3	5	6	5	-	-	-	-	-	-
	1	-	-	2	3	-	-	-	1	-	5	6	1	1	2	4
JONKA	7	-	-	-	5	3	2	4	-	-	9	5	5	1	7	3
	8	-	-	-	6	4	1	4	-	2	8	15	11	4	4	13
KACJA	23	9	9	-	17	-	-	18	7	15	20	34	27	24	33	24
	14	1	1	1	8	11	7	10	5	1	11	11	15	8	11	13
	14	6	14	9	20	6	-	19	11	2	26	15	29	23	23	11
	39	14	10	-	29	-	-	38	15	41	49	56	42	41	47	39
	14	9	6	-	8	-	-	14	9	13	15	19	28	19	16	13
KOSDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	7	23	35	33	49	44	-	37	33	52	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LOJTO	15	-	-	-	-	-	-	-	26	-	11	15	21	-	-	9
LOPAL	-	5	11	-	-	2	1	2	1	-	-	-	-	-	-	2
MACMA	10	-	-	3	1	2	-	-	12	-	4	4	5	1	1	4
	11	2	-	5	-	6	1	-	15	-	4	13	6	2	2	10
	7	-	-	5	-	1	1	-	11	-	1	10	10	-	-	6
	17	1	-	7	1	6	2	-	24	-	7	27	19	3	2	9
MARRU	-	16	28	11	9	7	3	18	-	10	1	9	13	6	2	11
	-	11	5	3	1	1	-	-	-	3	-	13	15	4	-	2
MASMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOLSI	54	-	-	-	7	1	-	31	29	60	62	67	45	50	68	42
	18	-	-	-	4	1	-	5	7	23	24	23	14	14	35	20
	27	-	-	-	4	-	-	12	9	28	26	44	24	21	41	30
	28	-	46	-	-	13	6	10	33	18	32	44	31	-	27	21
	41	-	50	-	-	20	3	24	26	31	45	57	41	-	22	29
	34	-	30	-	-	27	1	20	22	22	27	51	26	-	20	37
	39	1	64	-	-	26	3	39	29	41	52	65	29	-	29	33
MORJO	6	-	1	-	6	6	1	1	2	3	8	7	9	6	8	6
OTTMI	-	-	8	-	6	12	-	1	-	-	-	5	-	-	5	-
PERZS	22	6	-	13	23	10	10	12	13	12	11	19	14	15	19	23
ROTEC	16	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-
SARAN	-	9	9	1	-	3	7	5	-	2	-	19	9	6	1	-
	-	9	12	-	-	4	3	-	-	-	-	14	8	7	8	7
	-	9	15	4	-	3	2	-	-	3	-	14	5	6	10	-
	-	4	2	-	-	1	-	4	-	-	-	4	6	1	5	4
	-	12	4	2	-	1	7	8	1	1	-	10	5	1	4	5
SCALE	11	2	-	-	-	-	-	4	3	1	4	6	5	8	2	7
SCHHA	9	1	-	-	-	26	7	10	13	7	19	15	10	4	8	-
SLAST	5	1	5	-	6	3	-	5	5	5	6	5	7	6	4	1
STOEN	21	5	10	-	1	-	1	8	22	7	20	41	22	28	15	17
	15	6	3	-	-	3	-	9	19	12	14	36	22	20	18	24
	27	2	11	1	2	-	1	15	8	13	14	52	38	42	16	19
STRJO	19	-	-	-	-	20	1	7	26	5	40	34	9	-	18	6
	8	-	-	-	-	9	2	2	12	8	12	30	12	-	6	4
	5	-	-	-	-	4	-	1	3	-	20	32	9	-	14	5
	5	-	-	-	-	11	-	3	14	2	16	17	8	-	11	2
TEPIS	5	-	-	1	10	1	-	4	6	1	14	9	8	2	13	9
	9	-	-	-	14	7	-	7	2	-	16	3	15	3	11	12
WEGWA	7	1	8	-	-	-	-	-	8	7	8	12	11	-	6	12
YRJIL	3	2	-	-	-	-	3	15	7	7	19	3	13	16	-	13
Sum	956	326	599	149	325	412	216	590	652	626	965	1540	1049	665	888	838