Results of the IMO Video Meteor Network – January 2012

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The year 2012 started with a big beat of the drum. Typically, the number of recorded meteors is going down significantly after the Quadrantids, and mediocre weather is doing the rest. Thus, we never got more than 3,000 hours of effective observing time in January, and last year was the first where we had recorded more than 10,000 meteors. Not so in 2012! The observers in Southern and Eastern Europe experienced nearly perfect observing conditions, and even in Germany a few cameras collected more than 20 observing nights. With 66 active cameras and the longest nights of the year, the effective observing time suddenly jumped to over 9,000 hours, which is the second best monthly outcome ever. With 29,000 meteors, also the meteor count was more than considerable. It's more than we recorded in January of the previous three years altogether. A year can hardly begin any better than this!

With the begin of 2012, the Slovenian team grew by one more observer. Rok Pucer has been operating a Mintron camera dubbed MOBCAM1 with 6 mm f/0.75 Panasonic lens.

With respect to meteor showers, there was only one highlight in January. The maximum of the Quadrantids was predicted for 7 UT on January 4. That was outside the observing window for most European observers but let us expect steeply growing rates in the night of January 3/4. On the one hand, the (at mid-northern latitudes) circumpolar radiant is raising significant after local midnight. On the other hand, the peak is of only short duration which lets the activity raise sharply in the hours before the maximum. And it was just that what the observers witnessed. Figure 1 shows the overall flux density profile from the Quadrantids 2012 based on 925 shower meteors (with more than 1,100 Sporadics in parallel). Within twelve hours, the Quadrantid activity rose from the sporadic background level with less than one meteoroid per 1,000 km^2 and hour to a peak values beyond 15, which translates to a ZHR of about 70. Compared to the flux density of other major showers like the Perseids (over 40) or Geminids (over 100), the Quadrantid peak flux density was rather weak. That may suggest that the real peak occured as expected after the European observing window . A look at IMOs visual profile confirms this at least partly – highest rates were observed between 5 and 9 UT. However, even here the ZHR hardly passed 80. That's not much for a shower that can produce zenithal hourly rates in the triple-digit range. If another growth in rates at 18 UT on Jan 4 is real or just caused by other visual observers cannot be decided because of a gap in the video data.

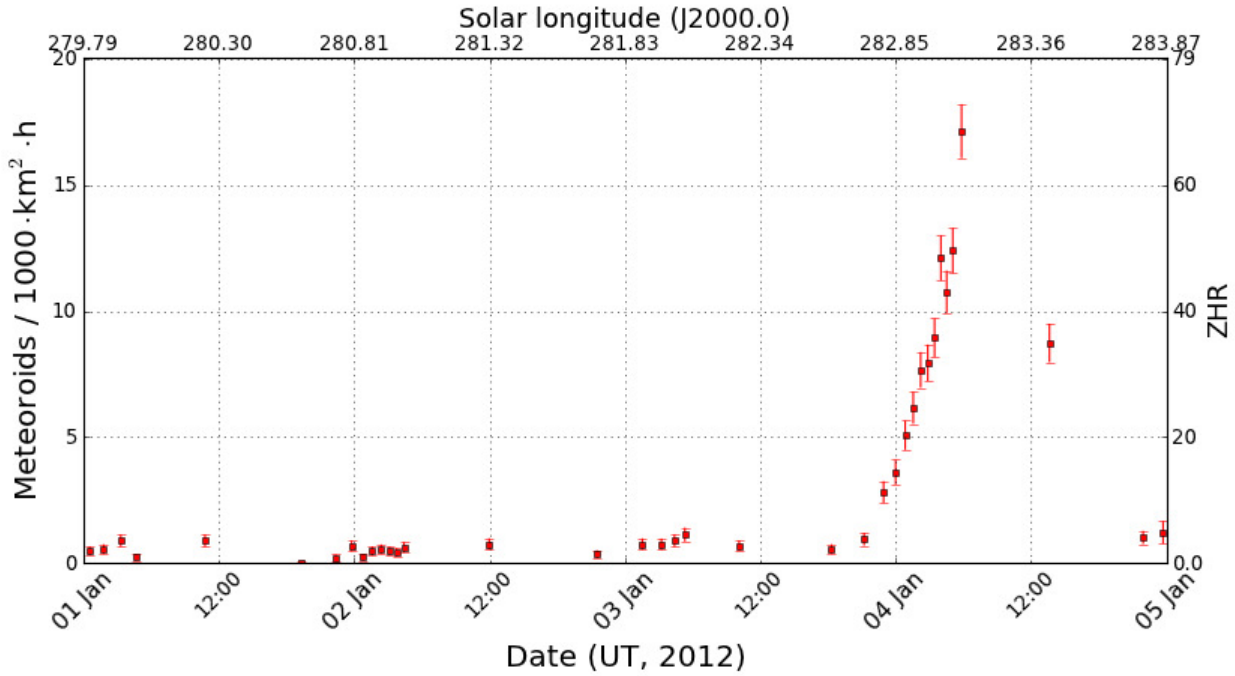

Figure 1: *Flux density profile of the Quadrantids 2012, obtained from 925 shower meteors.*

1. Observers

Code	Name	Place	Camera	FOV [^{o2}]	St.LM [mag]	Eff.CA [km^2]	Nights	Time [h]	Meteors
BASLU	Bastiaens	Hove/BE	URANIA1 (0.8/3.8)*	4545	2.5	237	11	63.6	40
BERER	Berko	Ludanyhalaszi/HU	HULUD1 (0.95/3)	2256	4.8	1540	17	134.1	612
			HULUD2 (0.75/6)	4860	3.9	1103	17	95.1	280
			HULUD3 (0.75/6)	4661	3.9	1052	17	77.9	228
BOMMA	Bombardini	Faenza/IT	MARIO (1.2/4.0)	5794	3.3	739	17	62.0	210
BREMA	Breukers	Hengelo/NL	MBB3 (0.75/6)	2399	4.2	699	15	127.5	237
			MBB4 (0.8/8)	1470	5.1	1208	16	111.3	208
BRIBE	Brinkmann	Herne/DE	HERMINE (0.8/6)	2374	4.2	678	20	119.6	253
		Berg. Gladbach/DE	KLEMOI (0.8/6)	2286	4.6	1080	14	90.9	239
CASFL	Castellani	Monte Baldo/IT	BMH1 (0.8/6)	2350	5.0	1611	29	173.2	589
			BMH2 (1.5/4.5)*	4243	3.0	371	28	153.7	559
CRIST	Crivello	Valbrevenna/IT	BILBO (0.8/3.8)	5458	4.2	1772	23	197.0	820
			C3P8 (0.8/3.8)	5455	4.2	1586	23	193.9	698
			STG38 (0.8/3.8)	5614	4.4	2007	22	209.0	1175
CSISZ	Csizmadia	Zalaegerszeg/HU	HUVCSE01 (0.95/5)	2423	3.4	361	18	107.2	169
ELTMA	Eltri	Venezia/IT	MET38 (0.8/3.8)	5631	4.3	2151	24	223.1	604
GONRU	Goncalves	Tomar/PT	TEMPLAR1 (0.8/6)	2179	5.3	1842	25	235.2	846
			TEMPLAR2 (0.8/6)	2080	5.0	1508	26	270.7	786
			TEMPLAR3 (0.8/8)	1438	4.3	571	28	299.6	685
GOVMI	Govedic	Sredisce ob Dr./SI	ORION2 (0.8/8)	1447	5.5	1841	27	188.7	652
			ORION3 (0.95/5)	2665	4.9	2069	20	99.7	235
			ORION4 (0.95/5)	2662	4.3	1043	25	166.7	272
HINWO	Hinz	Brannenburg/DE	ACR (2.0/35)*	557	7.4	4954	12	68.2	394
IGAAN	Igaz	Baja/HU	HUBAJ (0.8/3.8)	5552	2.8	403	25	98.6	364
		Debrecen/HU	HUDEB (0.8/3.8)	5522	3.2	620	19	131.9	268
		Hodmezovasar./HU	HUHOD (0.8/3.8)	5502	3.4	764	20	126.4	234
		Budapest/HU	HUPOL (1.2/4)	3790	3.3	475	7	32.0	35
		Sopron/HU	HUSOP (0.8/6)	2031	3.8	460	18	64.0	346
KACJA	Kac	Kamnik/SI	CVETKA (0.8/3.8)	4914	4.3	1842	24	201.2	799
		Kostanjevec/SI	METKA (0.8/8)*	1372	4.0	361	12	117.9	251
		Ljubljana/SI	ORION1 (0.8/8)	1402	3.8	331	26	216.8	501
		Kamnik/SI	REZIKA (0.8/6)	2270	4.4	840	24	209.7	1158
			STEFKA (0.8/3.8)	5471	2.8	379	24	209.8	716
KERST	Kerr	Glenlee/AU	GOCAM1 (0.8/3.8)	5189	4.6	2550	11	64.0	421
KOSDE	Koschny	Izana Obs./ES	ICC7 (0.85/25)*	714	5.9	1464	21	168.3	1216
		Noordwijkerhout/NL	LIC4 (1.4/50)*	2027	6.0	4509	15	115.2	240
LERAR	Leroy	Gretz/FR	SAPHIRA (1.2/6)	3260	3.4	301	3	9.2	10
MACMA	Maciejewski	Chelm/PL	PAV35 (1.2/4)	4383	2.5	253	17	71.5	91
			PAV36 (1.2/4)*	5732	2.2	227	18	76.1	108
			PAV43 (0.95/3.75)*	2544	2.7	176	15	28.1	63
MARGR	Maravelias	Lofoupoli/GR	LOOMECON (0.8/12)	738	6.3	2698	7	38.5	205
MOLSI	Molau	Seysdorf/DE	AVIS2 (1.4/50)*	1776	6.1	3817	7	58.0	507
			MINCAM1 (0.8/8)	1477	4.9	1084	24	154.2	310
		Ketzür/DE	REMO1 (0.8/8)	1467	6.0	3139	21	151.2	734
			REMO2 (0.8/3.8)	5613	4.0	1186	15	105.4	306
MORJO	Morvai	Fülöpszallas/HU	HUFUL (1.4/5)	2522	3.5	532	24	190.7	424
OTTMI	Otte	Pearl City/US	ORIE1 (1.4/5.7)	3837	3.8	460	21	137.0	437
PERZS	Perko	Becsehely/HU	HUBEC (0.8/3.8)*	5498	2.9	460	27	159.3	955
PUCRC	Pucer	Nova vas nad Dra./SI	MOBCAM1 (0.75/6)	2398	5.3	2976	28	219.1	593
ROTEC	Rothenberg	Berlin/DE	ARMEFA (0.8/6)	2366	4.5	911	13	74.2	201
SARAN	Saraiva	Carnaxide/PT	RO1 (0.75/6)	2362	3.7	381	29	279.0	518
			RO2 (0.75/6)	2381	3.8	459	28	273.6	528
			SOFIA (0.8/12)	738	5.3	907	29	297.8	476
SCALE	Scarpa	Alberoni/IT	LEO (1.2/4.5)*	4152	4.5	2052	24	218.2	478
SCHHA	Schremmer	Niederkrüchten/DE	DORAEMON (0.8/3.8)	4900	3.0	409	19	128.7	187
STOEN	Stomeo	Scorze/IT	MIN38 (0.8/3.8)	5566	4.8	3270	26	268.1	948
			NOA38 (0.8/3.8)	5609	4.2	1911	26	263.5	751
			SCO38 (0.8/3.8)	5598	4.8	3306	26	255.3	1133
STRJO	Strunk	Herford/DE	MINCAM2 (0.8/6)	2362	4.6	1152	9	47.3	118
			MINCAM3 (0.8/12)	728	5.7	975	5	26.6	58
			MINCAM5 (0.8/6)	2349	5.0	1896	13	71.9	266
TEPIS	Tepliczky	Budapest/HU	HUMOB (0.8/6)	2388	4.8	1607	20	145.1	493
TRIMI	Triglav	Velenje/SI	SRAKA (0.8/6)*	2222	4.0	546	26	139.1	460
YRJIL	Yrjölä	Kuusankoski/FI	FINEXCAM (0.8/6)	2337	5.5	3574	7	19.5	47
ZELZO	Zelko	Budapest/HU	HUVCSE02 (0.95/5)	1606	3.8	390	1	9.3	4
			HUVCSE03 (1.0/4.5)	2224	4.4	933	8	47.9	90
Sum							31	9187.1	28839

* active field of view smaller than video frame

2. Observing Times (h)

January	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BASLU	-	-	7.1	-	-	-	-	1.6	-	-	-	-	0.5	6.9	12.3
BERER	-	-	0.7	7.4	-	11.7	-	-	6.0	-	-	-	-	9.5	11.3
	-	-	-	5.3	-	10.8	-	-	2.9	-	-	-	-	6.2	12.7
	-	-	-	5.6	-	8.3	-	-	6.3	-	-	-	-	5.2	3.5
BOMMA	0.7	-	5.7	1.0	6.1	12.7	10.3	5.1	3.4	6.3	4.8	1.2	0.3	0.2	-
BREMA	-	8.7	8.3	-	2.0	-	-	-	-	-	-	7.2	-	-	13.7
	-	7.7	7.6	-	-	-	-	-	-	-	-	5.5	3.1	-	12.7
BRIBE	-	11.4	9.4	0.3	2.6	0.7	0.1	-	-	-	-	5.7	3.8	1.0	-
	-	11.1	7.4	-	-	-	-	-	-	-	-	2.1	2.5	6.5	13.5
CASFL	4.0	1.6	6.9	4.2	5.1	6.3	8.6	5.5	7.3	10.5	11.4	6.5	6.7	6.8	7.9
	5.1	1.8	7.0	3.9	4.9	8.3	7.0	9.7	8.9	6.9	13.5	-	6.5	6.1	4.4
CRIST	-	4.3	11.9	8.1	8.4	-	12.8	10.8	12.0	13.0	7.1	0.2	11.1	12.9	12.9
	-	5.7	10.9	7.4	7.6	13.1	13.1	13.0	13.0	13.0	0.4	-	9.6	12.9	12.9
	-	5.4	13.1	10.1	9.1	13.1	13.1	12.5	13.0	13.0	9.5	0.2	10.7	12.9	12.9
CSISZ	-	2.0	7.9	3.9	-	9.6	-	2.0	-	5.4	3.2	2.7	5.2	10.0	3.8
ELTMA	10.3	-	6.6	5.4	-	10.1	12.9	11.8	8.2	13.2	6.4	4.4	10.5	12.4	13.2
GONRU	-	6.8	8.4	4.0	8.2	7.6	9.0	8.5	7.2	8.8	11.5	5.6	-	-	-
	-	6.4	8.5	3.8	7.8	9.8	12.7	12.7	11.5	11.3	12.6	5.4	-	-	-
	2.0	12.8	11.6	6.2	10.0	12.2	12.6	12.7	12.7	11.3	8.0	-	4.1	-	6.0
GOVMI	8.1	-	10.1	1.7	4.8	11.0	6.0	0.7	-	9.0	12.6	8.2	10.9	11.6	9.3
	8.7	-	-	-	5.0	12.9	5.1	1.5	2.3	8.8	-	2.6	6.6	4.0	5.0
	8.7	-	6.4	-	5.0	8.4	3.6	-	2.5	1.4	13.0	8.7	11.5	12.0	9.8
HINWO	-	1.0	2.9	1.3	-	13.1	-	-	-	-	-	4.1	-	-	10.7
IGAAN	3.2	2.1	5.7	4.5	0.8	10.5	-	5.5	2.7	-	0.3	-	7.6	6.0	2.8
	-	4.7	-	6.5	2.6	7.3	-	-	-	-	2.5	-	8.6	2.6	9.9
	1.7	4.1	5.4	6.1	2.8	4.0	-	-	4.2	-	3.6	7.1	10.0	9.0	6.4
	-	-	-	-	3.9	-	-	-	-	2.4	3.7	-	-	-	8.9
	-	-	2.7	1.3	3.2	6.8	0.7	-	-	4.4	1.0	-	-	-	-
KACJA	8.6	-	-	3.5	1.0	-	2.8	1.2	4.1	12.7	11.6	11.4	10.9	12.9	13.1
	10.0	-	-	-	-	11.4	-	-	-	7.7	-	8.6	10.7	12.6	12.0
	8.4	-	-	2.2	3.5	13.4	9.9	2.8	5.2	12.8	11.4	10.6	12.6	13.1	13.3
	9.0	-	-	3.8	4.9	-	2.1	3.0	4.8	10.6	12.0	9.9	12.5	12.0	13.1
	9.7	-	-	3.3	0.5	-	3.0	1.2	5.0	12.4	12.5	11.6	12.2	13.2	13.1
KERST	7.4	8.5	8.5	6.0	6.5	-	4.9	5.2	1.8	-	5.1	-	-	-	-
KOSDE	5.4	6.6	0.4	5.2	-	-	-	-	7.4	-	-	-	-	-	10.7
	-	7.3	7.1	-	2.2	2.5	5.8	-	2.4	-	-	-	-	6.7	12.5
LERAR	-	-	-	-	8.2	-	-	-	-	-	-	-	-	-	-
MACMA	2.3	0.3	1.3	4.3	0.5	0.8	0.9	-	1.1	0.2	3.0	-	-	-	-
	2.5	-	6.0	3.6	0.2	-	0.3	-	1.4	0.5	3.5	0.7	0.6	-	-
	-	-	4.2	4.1	0.2	0.5	2.1	-	1.5	-	2.9	-	-	-	-
MARGR	-	0.5	4.9	-	5.8	-	0.7	-	-	-	-	-	-	-	-
MOLSI	-	-	-	-	-	-	-	-	-	-	-	-	1.5	7.3	12.6
	7.9	2.8	3.0	3.1	2.3	1.9	-	0.4	-	2.6	3.7	13.3	3.3	11.3	13.4
	-	9.4	7.0	-	-	6.5	0.9	0.9	1.5	0.9	-	8.7	13.7	13.7	3.5
	-	8.1	5.8	1.7	3.0	5.4	-	-	-	-	-	7.4	13.7	13.7	-
MORJO	3.9	5.8	12.8	4.8	4.4	13.5	-	11.1	3.1	-	3.5	8.2	11.7	11.9	7.2
OTTMI	-	9.2	5.3	8.7	8.5	7.3	5.9	5.4	9.2	9.4	-	1.6	4.9	2.3	7.7
PERZS	7.4	2.6	3.5	4.4	3.7	8.8	3.2	0.3	-	3.0	2.4	4.8	7.9	9.0	7.5
PUCRC	12.7	-	-	3.9	0.4	9.2	4.3	10.3	5.6	7.0	12.0	0.3	10.4	10.2	13.2
ROTEC	-	5.0	4.1	-	-	-	-	-	-	-	-	2.0	-	11.5	3.8
SARAN	4.4	12.3	6.1	11.2	12.6	9.6	9.7	9.6	6.5	9.9	3.4	-	1.9	0.2	-
	2.5	12.5	5.9	11.5	12.6	9.0	12.6	12.7	6.0	10.3	4.6	-	2.1	-	1.3
	3.4	12.4	6.5	11.4	12.7	12.2	12.6	13.0	5.8	9.4	8.7	-	2.0	-	2.4
SCALE	8.7	-	3.8	4.6	4.0	8.4	10.8	12.1	9.8	12.7	11.7	-	12.1	13.0	13.0
SCHHA	-	9.1	7.9	-	4.4	1.3	0.9	-	-	-	-	11.1	1.7	6.6	13.7
STOEN	11.5	-	5.7	7.3	4.5	10.3	11.6	12.5	11.3	13.2	12.0	9.4	13.4	13.1	13.1
	11.7	-	5.8	7.2	3.3	8.7	11.8	12.7	11.5	13.1	11.9	10.3	13.0	13.0	13.0
	8.7	-	3.7	3.7	4.4	9.9	8.3	11.1	9.6	13.2	11.5	11.3	13.0	13.1	13.1
STRJO	-	4.8	7.2	-	-	-	-	-	-	-	-	0.7	3.6	-	13.1
	-	1.3	6.2	-	-	-	-	-	-	-	-	-	-	-	-
	-	5.5	7.2	-	-	-	-	-	-	-	-	0.5	2.1	1.8	8.3
TEPIS	-	3.5	8.1	2.1	2.3	1.3	-	-	-	-	-	2.5	4.3	8.2	6.6
TRIMI	2.0	-	4.9	4.5	2.7	8.9	7.0	3.2	-	5.1	6.3	6.0	8.7	7.2	10.7
YRJIL	0.2	-	-	-	-	-	0.8	1.3	-	-	-	-	-	-	-
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	0.5	1.2	-	-	7.1	-	11.2	2.3	-	-	-	-	-	6.7
Sum	200.8	225.6	326.3	224.1	219.2	376.2	260.5	254.8	241.0	305.4	278.8	228.3	334.3	392.3	488.2

January	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BASLU	0.7	12.1	-	-	-	8.4	-	-	-	-	2.1	1.5	-	-	-	10.4
BERER	8.9	2.8	1.4	-	8.3	-	-	-	7.0	9.9	3.3	11.7	-	12.8	9.3	12.1
	6.0	1.8	2.2	-	6.3	-	-	0.7	5.7	9.2	0.3	6.5	-	8.2	6.0	4.3
	6.2	2.1	1.0	-	6.9	-	-	0.2	3.4	4.6	0.3	4.4	-	6.5	7.8	5.6
BOMMA	-	-	-	-	-	-	-	-	1.7	2.0	-	-	0.2	-	0.3	-
BREMA	13.7	12.9	-	6.6	-	-	-	8.3	9.2	5.9	3.1	6.6	-	-	8.3	13.0
	13.6	12.9	-	3.9	4.6	-	-	6.1	3.1	3.1	0.4	5.6	-	-	8.4	13.0
BRIBE	13.6	13.5	-	2.2	5.2	-	2.0	2.9	7.2	7.6	4.3	13.2	-	-	-	12.9
	13.5	12.9	-	-	0.3	-	1.3	-	-	-	2.3	4.4	-	-	0.4	12.7
CASFL	9.4	1.5	1.5	6.4	4.9	6.0	3.3	9.7	8.5	9.6	6.7	-	0.3	5.4	0.7	-
	6.3	0.7	1.4	6.5	3.7	3.2	4.0	7.9	4.1	11.9	3.2	0.8	-	3.8	2.2	-
CRIST	12.9	4.8	-	4.1	12.3	8.0	0.6	2.3	12.6	11.1	-	-	-	-	2.8	-
	12.9	2.2	-	0.6	12.7	4.5	0.3	3.5	12.6	8.9	-	-	-	-	3.1	-
	12.9	5.5	-	4.6	12.8	8.6	1.1	2.3	12.6	-	-	-	-	-	-	-
CSISZ	-	-	-	-	5.6	-	-	-	5.1	-	7.7	9.9	-	2.1	12.7	8.4
ELTMA	10.8	-	-	-	2.4	3.9	6.4	7.3	12.9	7.8	-	12.7	10.1	12.7	10.7	-
GONRU	11.7	12.5	12.4	9.0	12.4	12.4	9.4	12.0	11.7	4.5	-	12.2	11.2	7.6	-	10.6
	12.5	12.5	12.5	9.0	12.5	12.4	8.9	12.3	12.3	4.5	-	12.3	12.2	12.2	12.1	10.0
	12.6	12.5	12.5	9.1	12.5	12.5	10.9	12.4	12.4	-	9.5	12.3	12.2	12.2	12.2	11.6
GOVMI	3.5	2.0	5.1	-	2.4	1.9	11.7	-	9.7	11.3	8.2	8.4	3.6	5.2	9.7	2.0
	-	0.7	7.5	-	-	-	-	-	4.6	5.3	4.1	3.9	-	3.7	4.2	3.2
	3.7	2.1	7.5	-	-	1.9	1.9	-	1.1	8.6	11.9	12.7	4.2	4.3	12.5	3.3
HINWO	9.5	5.8	1.1	-	-	-	-	-	2.3	11.9	-	-	-	-	-	4.5
IGAAN	1.7	-	4.2	-	7.7	0.2	2.5	-	2.6	4.6	2.2	7.8	0.2	0.2	9.3	3.7
	4.0	7.0	-	-	7.3	-	2.9	6.1	5.0	-	10.8	-	5.9	12.8	12.7	12.7
	9.1	-	6.7	-	7.6	-	2.9	-	-	-	2.9	-	-	8.8	11.9	12.1
	-	-	-	-	-	-	-	1.3	-	-	-	11.4	-	0.4	-	-
	-	-	2.4	-	4.7	-	2.6	0.4	2.8	5.7	3.1	6.5	1.9	4.4	-	9.4
KACJA	12.5	11.2	7.8	-	5.0	4.1	7.1	1.3	12.8	12.8	8.4	11.8	-	-	12.6	-
	7.3	-	-	-	4.2	-	-	-	-	11.7	11.8	9.9	-	-	-	-
	12.3	9.5	2.7	-	5.0	5.8	2.0	1.7	6.6	12.0	11.7	12.6	3.0	-	12.7	-
	12.3	12.1	9.5	-	5.2	4.2	7.1	1.4	13.1	13.0	9.0	12.3	-	-	12.8	-
	12.5	12.2	9.2	-	5.1	5.4	7.4	1.4	12.7	12.9	8.9	11.6	-	-	12.8	-
KERST	-	-	6.3	-	-	-	-	-	-	-	-	-	-	-	-	3.8
KOSDE	10.7	10.7	6.0	9.8	9.6	8.8	8.4	10.6	8.2	4.5	6.3	9.5	8.5	-	10.5	10.5
	12.5	8.5	-	-	-	10.0	-	8.6	-	-	7.4	9.6	-	-	-	12.1
LERAR	-	-	-	0.3	-	-	-	-	-	-	-	0.7	-	-	-	-
MACMA	-	-	-	-	-	-	1.3	4.9	-	-	-	1.9	13.0	12.5	12.6	10.6
	-	-	-	-	0.7	1.9	0.7	4.2	-	-	-	-	13.0	12.9	12.7	10.7
	-	-	-	-	-	2.4	0.4	3.1	-	-	-	1.3	1.3	1.3	1.6	1.2
MARGR	-	-	-	10.6	8.1	-	7.9	-	-	-	-	-	-	-	-	-
MOLSI	12.3	12.1	-	-	-	-	-	-	6.5	-	5.7	-	-	-	-	-
	13.3	13.3	2.3	-	2.4	1.4	3.5	-	9.9	-	6.9	-	-	6.9	12.8	12.5
	-	8.7	-	7.3	6.0	3.0	1.4	-	-	13.3	9.3	-	-	9.6	13.0	12.9
	-	8.8	-	6.6	5.4	2.6	-	-	1.2	13.0	9.0	-	-	-	-	-
MORJO	4.7	-	6.9	-	5.5	-	3.1	-	3.1	10.4	5.5	12.2	-	12.7	12.6	12.1
OTTMI	-	9.9	-	-	-	3.4	-	-	8.5	-	8.8	3.6	3.6	-	9.0	4.8
PERZS	1.7	-	5.4	-	7.8	2.0	6.6	-	9.9	10.7	9.0	11.2	1.4	7.6	10.8	6.7
PUCRC	11.5	8.9	4.1	-	4.5	4.6	0.8	1.9	12.9	10.7	12.8	13.0	11.0	6.8	11.7	4.4
ROTEC	-	5.7	-	4.0	0.5	0.2	2.0	-	-	13.3	-	-	-	-	12.0	10.1
SARAN	12.8	12.5	11.9	12.3	12.4	12.4	11.6	12.4	8.7	8.4	7.2	12.1	11.6	12.2	12.1	11.0
	12.6	11.3	12.5	12.3	12.4	12.4	10.6	12.3	8.0	-	6.8	12.2	11.6	12.2	12.1	10.7
	12.9	12.5	11.8	12.3	12.5	12.4	11.6	12.3	8.7	10.9	8.2	12.1	11.5	12.2	12.1	11.3
SCALE	10.1	-	-	-	-	-	4.2	8.4	12.6	12.6	12.3	9.7	4.7	11.6	7.0	0.3
SCHHA	13.7	13.6	-	2.8	5.8	0.6	5.5	3.9	-	-	1.0	12.1	-	-	-	13.0
STOEN	11.0	-	-	-	4.0	8.0	10.2	10.3	12.8	12.8	12.8	11.0	3.7	12.8	9.8	-
	11.7	-	-	-	4.3	7.0	9.2	10.8	12.8	12.7	12.7	10.4	3.3	12.7	8.9	-
	11.3	-	-	-	5.4	5.9	11.5	10.3	12.8	12.9	12.8	10.2	4.7	12.8	10.1	-
STRJO	0.6	7.6	-	-	-	-	-	-	3.8	5.9	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	3.4	-	-	3.1	12.6
	1.3	13.2	-	-	-	-	-	-	2.3	7.6	-	3.2	-	-	9.5	9.4
TEPIS	2.1	-	7.0	-	8.9	-	-	0.6	12.3	12.8	12.1	12.7	-	12.6	12.6	12.5
TRIMI	5.5	2.5	3.8	3.0	3.0	3.3	7.0	-	4.6	8.3	8.3	6.6	-	1.5	4.5	-
YRJIL	-	-	-	-	-	-	-	-	-	-	-	-	12.4	0.5	1.4	2.9
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.3
	-	-	-	-	-	-	-	-	-	-	-	-	-	8.0	-	10.9
Sum	438.9	345.6	186.6	143.3	296.8	205.7	213.8	216.1	375.0	391.2	311.1	401.7	180.3	302.7	430.7	391.8

3. Results (Meteors)

January	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BASLU	-	-	10	-	-	-	-	1	-	-	-	-	1	5	7
BERER	-	-	1	45	-	61	-	-	20	-	-	-	-	46	52
	-	-	-	19	-	35	-	-	7	-	-	-	-	26	33
	-	-	-	19	-	28	-	-	13	-	-	-	-	21	15
BOMMA	4	-	45	7	17	19	16	20	20	21	5	7	2	1	-
BREMA	-	6	38	-	2	-	-	-	-	-	-	7	-	-	35
	-	12	44	-	-	-	-	-	-	-	-	5	3	-	19
BRIBE	-	33	56	1	1	1	1	-	-	-	-	6	2	6	-
	-	34	35	-	-	-	-	-	-	-	-	4	4	23	33
CASFL	18	9	66	11	19	21	28	29	32	22	37	13	26	26	23
	12	10	75	13	16	25	27	32	28	23	13	-	22	29	27
CRIST	-	52	144	27	33	-	60	45	41	41	8	1	24	47	43
	-	36	128	29	38	53	32	58	35	35	2	-	22	39	26
	-	13	219	48	48	85	83	70	58	80	19	1	20	80	73
CSISZ	-	1	18	8	-	27	-	1	-	9	14	5	16	6	3
ELTMA	22	-	28	7	-	26	53	38	43	41	17	6	32	41	36
GONRU	-	13	98	2	34	26	40	28	15	26	33	14	-	-	-
	-	7	103	3	34	25	46	44	31	40	27	8	-	-	-
	4	32	83	1	32	21	32	25	29	22	20	-	8	-	13
GOVMI	32	-	101	5	26	43	18	2	-	17	40	13	32	45	34
	25	-	-	-	29	44	19	1	2	9	-	7	9	12	10
	21	-	47	-	12	33	5	-	1	4	21	4	5	10	8
HINWO	-	12	7	4	-	76	-	-	-	-	-	13	-	-	82
IGAAN	14	4	18	25	5	49	-	21	5	-	1	-	30	16	15
	-	8	-	36	12	22	-	-	-	-	3	-	23	5	26
	8	10	17	26	2	4	-	-	12	-	5	8	17	11	16
	-	-	-	-	7	-	-	-	-	6	1	-	-	-	12
	-	-	11	1	32	56	7	-	-	14	9	-	-	-	-
KACJA	47	-	-	11	4	-	5	9	22	59	64	39	75	47	69
	25	-	-	-	-	38	-	-	-	7	-	15	28	25	26
	15	-	-	4	13	50	33	9	21	29	28	17	32	44	38
	70	-	-	16	41	-	10	21	45	35	74	44	81	50	83
	29	-	-	3	3	-	7	7	37	28	46	37	46	55	59
KERST	50	66	51	44	32	-	29	27	11	-	24	-	-	-	-
KOSDE	42	52	13	32	-	-	-	-	42	-	-	-	-	-	82
	-	14	33	-	3	5	8	-	5	-	-	-	-	7	35
LERAR	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-
MACMA	1	2	3	15	2	3	3	-	1	1	4	-	-	-	-
	2	-	4	18	2	-	1	-	2	1	8	4	2	-	-
	-	-	8	14	1	2	3	-	3	-	3	-	-	-	-
MARGR	-	2	56	-	26	-	2	-	-	-	-	-	-	-	-
MOLSI	-	-	-	-	-	-	-	-	-	-	-	-	1	95	124
	6	8	2	3	8	1	-	1	-	15	10	9	3	24	44
	-	70	115	-	-	12	2	6	4	1	-	20	71	72	1
	-	36	50	1	14	9	-	-	-	-	-	14	33	35	-
MORJO	9	19	84	20	13	31	-	23	9	-	9	7	24	24	19
OTTMI	-	31	70	22	18	26	36	29	25	23	-	5	17	9	15
PERZS	50	6	47	22	28	82	20	4	-	15	6	9	36	39	35
PUCRC	38	-	-	17	2	52	26	31	25	22	33	1	30	39	37
ROTEC	-	35	25	-	-	-	-	-	-	-	-	1	-	18	5
SARAN	10	27	53	20	27	26	22	27	9	14	6	-	1	1	-
	7	38	53	34	24	23	21	19	5	11	17	-	4	-	1
	8	26	65	14	21	28	18	17	4	7	14	-	1	-	1
SCALE	11	-	18	2	20	15	36	33	31	41	32	-	17	31	31
SCHHA	-	25	55	-	4	1	2	-	-	-	-	11	2	2	11
STOEN	33	-	20	24	25	41	72	53	44	53	47	22	36	54	58
	22	-	20	15	17	21	47	35	31	47	45	13	43	42	53
	47	-	19	19	34	55	60	74	80	52	37	28	65	59	88
STRJO	-	9	48	-	-	-	-	-	-	-	-	1	2	-	18
	-	3	25	-	-	-	-	-	-	-	-	-	-	-	-
	-	28	74	-	-	-	-	-	-	-	-	3	9	13	20
TEPIS	-	6	113	16	20	7	-	-	-	-	-	6	9	34	15
TRIMI	7	-	41	15	10	42	28	13	-	14	14	13	23	25	31
YRJIL	1	-	-	-	-	-	1	2	-	-	-	-	-	-	-
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	1	5	-	-	25	-	16	5	-	-	-	-	-	19
Sum	690	796	2562	738	818	1375	959	871	853	885	796	441	989	1339	1659

January	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BASLU	2	4	-	-	-	3	-	-	-	-	2	1	-	-	-	4
BERER	26	14	4	-	48	-	-	-	31	53	7	50	-	63	50	41
	13	4	4	-	23	-	-	1	21	25	1	15	-	18	19	16
	11	4	2	-	21	-	-	1	12	14	1	14	-	15	23	14
BOMMA	-	-	-	-	-	-	-	-	10	13	-	-	1	-	2	-
BREMA	25	27	-	11	-	-	-	10	7	3	3	21	-	-	16	26
	19	23	-	9	2	-	-	18	8	1	2	17	-	-	15	11
BRIBE	30	37	-	1	2	-	3	1	5	6	6	29	-	-	-	26
	28	37	-	-	1	-	1	-	-	-	6	4	-	-	1	28
CASFL	30	5	3	21	10	12	12	30	27	14	27	-	2	13	3	-
	23	2	8	21	10	10	11	29	23	28	21	2	-	12	7	-
CRIST	50	6	-	20	47	11	1	6	63	46	-	-	-	-	4	-
	32	3	-	3	35	6	2	19	39	24	-	-	-	-	2	-
	72	16	-	26	73	16	6	9	60	-	-	-	-	-	-	-
CSISZ	-	-	-	-	8	-	-	-	11	-	13	10	-	2	10	7
ELTMA	50	-	-	-	3	2	6	15	41	26	-	22	20	13	16	-
GONRU	44	42	41	24	54	44	25	38	32	3	-	46	51	47	-	26
	42	27	33	20	40	33	15	27	28	2	-	32	40	43	27	9
	36	26	24	13	26	28	23	26	25	-	21	26	25	24	24	16
GOVMI	8	4	5	-	2	5	29	-	32	44	33	31	5	8	32	6
	-	2	4	-	-	-	-	-	2	15	8	14	-	5	15	3
	2	4	2	-	-	11	12	-	7	9	4	16	5	3	21	5
HINWO	50	58	3	-	-	-	-	-	11	65	-	-	-	-	-	13
IGAAN	5	-	15	-	34	1	10	-	9	13	9	20	3	2	29	11
	7	12	-	-	14	-	2	1	5	-	13	-	7	26	28	18
	26	-	5	-	18	-	4	-	-	-	5	-	-	5	22	13
	-	-	-	-	-	-	-	1	-	-	-	7	-	1	-	-
	-	-	5	-	36	-	27	2	21	36	27	26	3	14	-	19
KACJA	45	33	5	-	3	4	40	2	30	44	42	38	-	-	62	-
	18	-	-	-	1	-	-	-	-	33	19	16	-	-	-	-
	28	15	5	-	11	5	4	1	3	23	21	22	5	-	25	-
	68	79	18	-	10	10	48	5	76	85	59	59	-	-	71	-
	29	48	13	-	6	9	33	1	38	57	30	37	-	-	58	-
KERST	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	39
KOSDE	78	71	39	61	83	69	64	81	69	49	48	52	54	-	74	61
	26	13	-	-	-	22	-	16	-	-	19	11	-	-	-	23
LERAR	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-
MACMA	-	-	-	-	-	-	2	4	-	-	-	1	13	14	14	8
	-	-	-	-	2	1	1	4	-	-	-	-	18	10	15	13
	-	-	-	-	-	1	2	4	-	-	-	4	4	4	7	3
MARGR	-	-	-	43	34	-	42	-	-	-	-	-	-	-	-	-
MOLSI	100	133	-	-	-	-	-	-	34	-	20	-	-	-	-	-
	34	39	3	-	4	2	4	-	25	-	6	-	-	3	30	26
	-	55	-	34	14	5	4	-	-	65	49	-	-	22	44	68
	-	38	-	10	4	5	-	-	1	36	20	-	-	-	-	-
MORJO	16	-	5	-	6	-	11	-	7	14	10	14	-	15	16	19
OTTMI	-	23	-	-	-	8	-	-	13	-	22	16	6	-	15	8
PERZS	5	-	17	-	30	11	59	-	79	70	75	67	5	35	74	29
PUCRC	38	13	4	-	6	10	4	5	25	39	16	28	18	9	20	5
ROTEC	-	30	-	10	1	1	4	-	-	39	-	-	-	-	11	21
SARAN	20	25	14	21	20	12	17	20	5	7	13	15	26	23	18	19
	19	23	20	21	20	15	17	13	7	-	11	24	21	23	19	18
	23	15	18	12	10	17	22	21	4	15	7	14	24	24	11	15
SCALE	23	-	-	-	-	-	3	17	21	29	19	16	7	13	10	2
SCHHA	18	16	-	3	1	1	5	2	-	-	2	12	-	-	-	14
STOEN	60	-	-	-	7	6	14	32	54	52	51	23	15	30	22	-
	30	-	-	-	11	4	8	39	52	50	35	24	9	28	10	-
	63	-	-	-	12	5	18	32	60	61	53	30	14	35	33	-
STRJO	1	23	-	-	-	-	-	-	2	14	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	2	-	-	10	18
	2	31	-	-	-	-	-	-	1	28	-	2	-	-	25	30
TEPIS	5	-	4	-	31	-	-	1	33	26	28	40	-	35	36	28
TRIMI	24	7	9	12	10	12	20	-	17	19	26	14	-	3	11	-
YRJIL	-	-	-	-	-	-	-	-	-	-	-	-	27	2	4	10
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	7
Sum	1404	1087	380	397	844	417	635	534	1186	1295	910	986	428	654	1111	800