

With respect to the observing conditions, January 2013 was catastrophic, but February wasn't any better. There was hardly any starry night in central and eastern Europe, and even our observers in Italy and at the Iberian peninsula had to step back a bit. In addition, a number of cameras were out of order or under reconstruction. Only seven of the overall 67 cameras obtained twenty and more observing nights. Compared to 2012, the effective observing time reduced by 40% to about 4,800 hours. For the first time in the last two and a half years we recorded less than 10,000 meteors, unless the missing 32 meteors are reported late. Also that figure is 40% smaller than last February.

In addition to the unfavorable weather conditions, February is poor in meteor showers – maybe it is the month with fewest meteor showers at all. Whereas in January we could detect 11 meteor showers, our long-term analysis from spring 2012 revealed only one shower in February with the typical criteria (activity in at least five degrees solar longitude) beside the Antihelion source.

The beta Herculids (418 BHE) are weak, but still detectable. Between February 13 and 16, the shower is continuously among the five strongest meteor sources in the sky, at maximum a rank of four is reached. Roughly 150 meteors are assigned to that shower. There is good agreement with the MDC list values (table 1), which is not really surprising given that the beta Herculids were detected in our own 2009 analysis. So our 2009 data set was a subset on the new analysis. Only the sign of the radiant drift has changed, but also that is acceptable. If the activity interval is so short and if so few meteors are available, only minor changes in the radiant position or interval length can lead to different drift values.

Table 1: Parameters of the beta Herculids from the MDC Working List and the analysis of the IMO network in 2012.

Source	Solar Longitude		Right Ascension		Declination		Vinf	
	Mean [°]	Interval [°]	Mean [°]	Drift [°]	Mean [°]	Drift [°]	Mean [km/s]	Drift [km/s]
MDC	324	322-326	246.0	+0.9	+23.5	-0.9	55.5	-
IMO 2012	325	324-327	246.4	-0.9	+24.9	+1.2	54.3	-

More prominent is another shower in February, which is detected between January 26 and March 4 with 1,500 meteors in our database. Most of the time it is the strongest source in the night sky. The scatter in meteor shower parameters is acceptable and the activity profile is flat with no structure. Our analysis software identified this shower as the Northern delta Leonids (112 NDL), but our radiant is almost ten degrees away from the position given in the MDC list, and also the velocity deviates significantly. Thus, the meteor shower assignment is questionable. The shower fits much better to the Antihelion source, which lies at the ecliptic about 15° east of the antihelion point (table 2).

Table 2: Parameters of the Antihelion source in February from the analysis of the IMO network in 2012.

Source	Solar Longitude		Right Ascension		Declination		Vinf	
	Mean [°]	Interval [°]	Mean [°]	Drift [°]	Mean [°]	Drift [°]	Mean [km/s]	Drift [km/s]
-	325	-	157	-	+7.8	-	30	-
IMO 2012	325	306-343	157.2	+1.0	+10.2	-0.3	29.3	-

To improve the outcome a bit, we searched additionally for showers with an activity interval shorter than five degrees. This yielded the February eta Draconids (427), which can be detected between February 3 and 6, where they are briefly the second strongest source in the sky. About

150 meteor from our database are assigned to that shower, which shows only little scatter in its parameters. Our values fit well to the MDC data, only the velocity deviates a bit more (table 3).

Table 3: Parameters of the February eta Draconids from the MDC Working List and the analysis of the IMO network in 2012.

Source	Solar Longitude		Right Ascension		Deklination		Vinf	
	Mean [°]	Interval [°]	Mean [°]	Drift [°]	Mean [°]	Drift [°]	Mean [km/s]	Drift [km/s]
-	315.1	-	239.9	-	62.5	-	37.3	-
IMO 2012	315	314-317	239.6	+0.5	60.9	-0.1	33.8	-

There are also no candidates for new meteors showers in February but one. We could assign to this candidate 180 meteors between February 27 and March 4. It reaches a rank of four to five, which is quite ok. There is remarkable scatter in the shower parameters and no clear activity profile, which is why we consider it currently only as meteor shower hypothesis until there is independent confirmation (table 4).

Table 4: Parameters of a possibly unknown meteor shower from the analysis of the IMO network in 2012.

Source	Solar Longitude		Right Ascension		Deklination		Vinf	
	Mean [°]	Interval [°]	Mean [°]	Drift [°]	Mean [°]	Drift [°]	Mean [km/s]	Drift [km/s]
IMO 2012	340	338-343	243.7	+0.9	+43.0	+0.0	40.8	-

Last but not least there are traces of the pi Hydrids (101 PIH) in our February data, but the data set is not sufficient for an undoubtful detection of the shower. The February mu Virginids (516 FMV) are found in only two solar longitude intervals – so also that detection is questionable.

1. Observers

Code	Name	Place	Camera	FOV [$^{\circ}$]	St.LM [mag]	Eff.CA [km 2]	Nights	Time [h]	Meteors
BANPE	Bánfalvi	Zalaegerszeg/HU	HUVCSE01 (0.95/5)	2423	3.4	361	3	18.3	15
BASLU	Bastiaens	Hove/BE	URANIA1 (0.8/3.8)*	4545	2.5	237	4	19.5	14
BERER	Berkó	Ludanyhalaszi/HU	HULUD1 (0.8/3.8)	5542	4.8	3847	4	34.2	126
			HULUD2 (0.95/4)	3398	3.8	671	5	35.6	39
			HULUD3 (0.95/4)	4357	3.8	876	4	34.4	33
			HUAGO (0.75/4.5)	2427	4.4	1036	8	44.3	45
BIRSZ	Biro	Agostyan/HU	HUAGO (0.75/4.5)	2427	4.4	1036	8	44.3	45
BOMMA	Bombardini	Faenza/IT	MARIO (1.2/4.0)	5794	3.3	739	12	21.4	149
BREMA	Breukers	Hengelo/NL	MBB3 (0.75/6)	2399	4.2	699	9	46.5	74
			MBB4 (0.8/8)	1470	5.1	1208	14	72.0	74
BRIBE	Brinkmann	Herne/DE	HERMINE (0.8/6)	2374	4.2	678	14	72.6	101
		Berg. Gladbach/DE	KLEMOI (0.8/6)	2286	4.6	1080	13	71.2	92
CASFL	Castellani	Monte Baldo/IT	BMH1 (0.8/6)	2350	5.0	1611	14	130.7	217
			BMH2 (1.5/4.5)*	4243	3.0	371	12	114.1	169
CRIST	Crivello	Valbrenna/IT	BILBO (0.8/3.8)	5458	4.2	1772	18	163.7	407
			C3P8 (0.8/3.8)	5455	4.2	1586	21	156.6	268
			STG38 (0.8/3.8)	5614	4.4	2007	18	171.6	425
			HUVCSE02 (0.95/5)	1606	3.8	390	10	11.4	28
CSISZ	Csizmadia	Baja/HU	HUVCSE02 (0.95/5)	1606	3.8	390	10	11.4	28
ELTMA	Eltri	Venezia/IT	MET38 (0.8/3.8)	5631	4.3	2151	17	151.1	300
GONRU	Goncalves	Tomar/PT	TEMPLAR1 (0.8/6)	2179	5.3	1842	15	153.5	431
			TEMPLAR2 (0.8/6)	2080	5.0	1508	19	176.9	378
			TEMPLAR3 (0.8/8)	1438	4.3	571	22	180.8	296
			TEMPLAR4 (0.8/3.8)	4475	3.0	442	19	168.8	302
GOVMI	Govedic	Sredisce ob Dr./SI	ORION3 (0.95/5)	2665	4.9	2069	6	27.8	38
			ORION4 (0.95/5)	2662	4.3	1043	3	18.9	25
IGAAN	Igaz	Baja/HU	HUBAJ (0.8/3.8)	5552	2.8	403	11	42.9	58
		Debrecen/HU	HUDEB (0.8/3.8)	5522	3.2	620	16	66.9	115
		Budapest/HU	HUPOL (1.2/4)	3790	3.3	475	6	38.1	12
JONKA	Jonas	Budapest/HU	HUSOR (0.95/4)	2286	3.9	445	6	50.7	42
KACJA	Kac	Kamnik/SI	CVETKA (0.8/3.8)	4914	4.3	1842	6	34.5	73
		Ljubljana/SI	ORION1 (0.8/8)	1402	3.8	331	4	20.7	11
		Kamnik/SI	REZIKA (0.8/6)	2270	4.4	840	4	29.9	110
		STEFKA (0.8/3.8)	5471	2.8	379	5	31.7	77	
KOSDE	Koschny	Izana Obs./ES	ICC7 (0.85/25)*	714	5.9	1464	19	138.4	818
		Noordwijkerhout/NL	LIC4 (1.4/50)*	2027	6.0	4509	9	55.2	74
LERAR	Leroy	Gretz/FR	SAPHIRA (1.2/6)	3260	3.4	301	10	58.3	28
MACMA	Maciejewski	Chelm/PL	PAV35 (1.2/4)	4383	2.5	253	7	20.5	24
			PAV36 (1.2/4)*	5732	2.2	227	7	22.2	41
			PAV43 (0.95/3.75)*	2544	2.7	176	4	18.4	13
			LOOMECON (0.8/12)	738	6.3	2698	14	76.1	165
MARGR	Maravelias	Lofoupoli/GR	LOOMECON (0.8/12)	738	6.3	2698	14	76.1	165
MOLSI	Molau	Seysdorf/DE	AVIS2 (1.4/50)*	1230	6.9	6152	2	20.4	155
			MINCAM1 (0.8/8)	1477	4.9	1084	9	42.5	72
			REMO1 (0.8/8)	1467	5.9	2837	13	76.5	321
		Ketziir/DE	REMO2 (0.8/8)	1478	6.3	4467	12	67.7	259
			REMO3 (0.8/8)	1420	5.6	1967	8	59.2	68
			HUFUL (1.4/5)	2522	3.5	532	10	49.0	34
MORJO	Morvai	Fülöpszallas/HU	HUFUL (1.4/5)	2522	3.5	532	10	49.0	34
OCAFR	Ocana Gonzales	Madrid/ES	FOGCAM (1.4/7)	1890	3.9	109	21	160.2	136
OCHPA	Ochner	Albiano/IT	ALBIANO (1.2/4.5)	2944	3.5	358	11	11.5	73
OTTMI	Otte	Pearl City/US	ORIE1 (1.4/5.7)	3837	3.8	460	12	65.3	170
PERZS	Perkó	Becsehely/HU	HUBEC (0.8/3.8)*	5498	2.9	460	10	50.5	147
PUCRC	Pucer	Nova vas nad Dra./SI	MOBCAM1 (0.75/6)	2398	5.3	2976	19	145.8	274
SARAN	Saraiva	Carnaxide/PT	RO1 (0.75/6)	2362	3.7	381	21	167.4	227
			RO2 (0.75/6)	2381	3.8	459	22	193.8	274
			SOFIA (0.8/12)	738	5.3	907	21	173.6	203
			LEO (1.2/4.5)*	4152	4.5	2052	13	77.7	104
SCALE	Scarpa	Alberoni/IT	LEO (1.2/4.5)*	4152	4.5	2052	13	77.7	104
SCHHA	Schremmer	Niederkrüchten/DE	DORAEMON (0.8/3.8)	4900	3.0	409	17	85.9	138
SLAST	Slavec	Ljubljana/SI	KAYAK1 (1.8/28)	563	6.2	1294	4	13.7	19
STOEN	Stomeo	Scorze/IT	MIN38 (0.8/3.8)	5566	4.8	3270	20	130.6	461
			NOA38 (0.8/3.8)	5609	4.2	1911	15	116.0	314
			SCO38 (0.8/3.8)	5598	4.8	3306	19	133.7	455
			MINCAM2 (0.8/6)	2362	4.6	1152	6	36.0	46
STRJO	Strunk	Herford/DE	MINCAM3 (0.8/12)	728	5.7	975	8	44.5	42
			MINCAM5 (0.8/6)	2349	5.0	1896	9	52.8	85
			HUMOB (0.8/6)	2388	4.8	1607	5	26.8	66
TEPIS	Tepliczky	Budapest/HU	HUMOB (0.8/6)	2388	4.8	1607	5	26.8	66
TRIMI	Triglav	Velenje/SI	SRAKA (0.8/6)*	2222	4.0	546	8	12.0	60
YRJIL	Yrjölä	Kuusankoski/FI	FINEXCAM (0.8/6)	2337	5.5	3574	4	26.9	41
ZELZO	Zelko	Budapest/HU	HUVCSE03 (1.0/4.5)	2224	4.4	933	2	13.9	17
Sum							28	4854.3	9968

* active field of view smaller than video frame

2. Observing Times (h)

February	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BANPE	-	-	-	-	-	-	8.6	3.9	-	-	-	-	-	-	-
BASLU	-	-	-	4.3	-	-	-	5.4	-	2.2	7.6	-	-	-	-
BERER	-	-	-	-	-	-	-	4.8	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	5.4	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	5.9	-	-	-	-	-	-	-
BIRSZ	-	-	5.9	1.1	1.2	-	12.2	9.7	-	0.3	-	-	-	-	-
BOMMA	-	-	0.9	2.4	-	-	1.1	2.3	1.2	1.1	-	-	-	2.9	0.9
BREMA	-	2.1	-	-	-	6.4	1.6	-	-	-	-	-	7.9	-	-
	0.7	2.6	-	-	3.3	7.2	-	3.1	-	11.3	2.9	-	4.3	-	-
BRIBE	-	-	-	3.4	-	3.5	-	0.5	8.3	11.3	7.4	-	12.2	-	-
	-	-	-	1.6	4.0	-	-	2.5	5.3	9.4	6.4	1.8	10.7	-	-
CASFL	-	0.7	9.8	9.4	5.5	9.3	12.5	12.1	12.4	4.0	-	8.8	-	11.8	-
	-	-	7.8	9.4	-	5.8	12.2	11.6	11.8	-	-	8.6	-	11.0	3.3
CRIST	-	-	12.3	-	4.9	8.3	11.4	12.0	12.0	-	-	11.9	11.2	5.5	8.3
	-	1.5	12.2	-	2.8	7.4	8.3	12.0	12.0	-	-	11.9	8.5	4.0	9.7
	-	3.7	12.3	-	8.2	9.2	12.1	12.0	12.0	-	-	10.7	11.8	8.7	10.4
CSISZ	-	-	-	1.8	-	0.6	-	3.4	-	-	1.5	-	-	-	-
ELTMA	-	-	7.2	8.1	-	11.9	11.4	10.7	5.6	5.2	-	6.0	-	9.7	10.5
GONRU	-	12.2	11.6	9.6	11.5	12.0	11.7	11.9	6.6	-	-	-	7.6	9.1	6.1
	-	12.2	11.6	9.2	11.6	12.1	11.9	11.9	11.4	-	-	-	7.6	8.9	6.0
	5.1	12.1	12.0	8.7	10.6	11.8	11.2	11.9	8.3	0.4	-	1.5	7.5	11.6	5.5
	-	12.2	11.6	8.2	11.0	11.8	11.5	11.9	9.3	-	-	-	7.7	8.8	6.0
GOVMI	-	-	-	-	-	3.3	10.5	-	-	7.3	-	-	-	-	-
	-	-	-	-	-	4.1	10.4	-	-	-	-	-	-	-	-
IGAAN	-	-	8.7	5.0	0.7	-	7.6	7.2	-	3.6	4.5	-	-	-	-
	-	-	1.3	-	4.8	-	2.8	0.3	-	-	4.9	-	1.4	0.5	3.7
	-	-	6.6	-	-	-	10.1	-	-	-	-	-	-	-	-
JONKA	-	-	8.0	-	-	-	9.3	12.0	-	-	-	-	-	-	-
KACJA	-	-	4.2	9.0	-	-	-	-	-	7.5	-	-	-	-	1.8
	-	-	2.9	8.3	-	0.9	-	-	-	-	-	-	-	-	-
	-	-	-	8.9	-	-	-	-	-	7.4	-	-	-	-	2.3
	-	-	4.1	8.7	-	-	-	-	-	7.1	-	-	-	-	0.5
KOSDE	-	10.1	10.8	-	-	11.0	9.9	11.3	-	6.4	10.7	10.5	-	6.6	3.9
	-	-	-	-	-	4.8	3.8	2.5	-	9.3	9.3	4.3	-	-	-
LERAR	4.0	11.1	-	-	-	-	5.2	-	1.5	-	-	-	-	0.7	8.4
MACMA	-	-	-	1.2	4.0	-	-	-	-	-	7.0	-	-	1.0	-
	-	-	-	1.2	4.0	-	-	-	-	-	7.2	-	-	1.4	-
	-	-	-	-	4.5	-	-	-	-	-	7.3	-	-	-	-
MARGR	5.1	-	-	8.0	-	-	-	4.8	7.5	7.7	5.9	8.3	1.2	9.4	2.9
MOLSI	-	-	-	-	-	-	-	-	-	10.4	-	-	-	10.0	-
	-	4.7	-	-	0.4	-	3.0	-	6.4	12.3	-	-	-	10.9	-
	-	10.7	2.7	12.3	11.2	2.8	1.2	2.4	2.5	12.3	-	12.3	-	-	-
	-	10.8	2.8	12.4	11.4	3.1	-	0.5	2.3	12.4	-	6.2	-	-	-
	-	10.9	2.6	12.0	11.2	3.1	-	-	-	12.4	-	4.6	-	-	-
MORJO	-	-	-	-	-	-	6.5	9.9	-	-	-	-	-	-	-
OCAFR	5.7	-	11.5	11.5	9.2	9.6	6.5	9.0	8.4	-	10.3	-	10.7	11.4	11.3
OCHPA	-	-	0.3	1.2	-	-	2.8	1.3	1.2	-	-	1.1	0.3	-	-
OTTMI	-	-	-	0.4	4.5	-	-	-	-	-	-	5.6	1.6	2.8	8.7
PERZS	-	-	8.3	4.1	2.4	4.0	12.2	7.0	-	-	-	-	-	-	-
PUCRC	-	-	5.4	8.1	0.3	7.9	7.0	-	10.9	5.6	-	10.1	0.8	12.0	11.5
SARAN	3.0	12.2	12.8	8.8	12.3	11.0	12.3	12.5	10.8	-	0.9	-	-	12.1	8.8
	4.8	12.0	12.0	8.5	11.5	10.4	11.9	11.8	10.7	-	-	1.9	11.6	11.6	8.6
	4.9	11.6	10.3	8.3	9.9	11.2	-	11.8	11.1	-	1.2	2.6	11.6	11.6	8.1
SCALE	-	-	4.8	5.7	-	5.1	8.3	7.8	2.6	4.9	-	1.7	-	4.7	4.6
SCHHA	-	-	-	3.1	2.7	5.8	-	-	5.3	9.8	8.6	0.2	10.5	-	0.7
SLAST	-	-	2.6	8.0	-	-	2.5	-	-	-	-	-	-	-	-
STOEN	-	-	4.6	7.7	1.9	12.2	9.0	8.2	3.9	6.6	-	9.7	2.6	11.6	4.7
	-	-	5.7	7.7	3.0	12.3	11.4	9.0	4.5	6.1	-	8.6	-	-	-
	-	-	5.7	8.0	3.1	12.2	10.9	7.7	4.9	6.1	-	9.7	3.4	12.0	6.4
STRJO	-	-	-	-	-	-	2.3	-	4.1	11.7	-	-	11.2	-	-
	-	-	-	-	5.0	-	3.9	-	4.2	11.9	-	-	9.3	-	-
	-	-	-	2.0	9.3	1.8	3.2	-	3.9	12.0	-	-	11.3	-	-
TEPIS	-	-	2.6	-	-	-	-	8.7	-	-	-	-	-	-	-
TRIMI	-	-	0.5	0.9	-	1.5	0.9	-	-	1.8	-	-	-	-	-
YRJIL	-	-	-	-	-	-	4.5	-	-	-	-	-	-	-	-
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum	33.3	153.4	257.0	258.2	201.9	255.4	327.6	310.6	222.9	237.8	103.6	158.6	184.5	222.3	163.6

February	16	17	18	19	20	21	22	23	24	25	26	27	28
BANPE	-	-	-	-	-	-	-	-	-	-	-	-	5.8
BASLU	-	-	-	-	-	-	-	-	-	-	-	-	-
BERER	-	-	-	-	11.4	-	-	-	-	-	-	11.3	6.7
	-	-	0.8	-	9.8	-	-	-	-	-	-	11.3	8.3
	-	-	-	-	9.8	-	-	-	-	-	-	11.3	7.4
BIRSZ	-	-	2.3	-	11.6	-	-	-	-	-	-	-	-
BOMMA	0.3	-	2.8	3.3	-	-	-	-	-	-	-	-	2.2
BREMA	6.5	7.4	-	4.6	4.3	5.7	-	-	-	-	-	-	-
	6.3	5.2	-	4.4	4.9	5.4	10.4	-	-	-	-	-	-
BRIBE	-	11.1	1.5	4.4	2.5	2.6	3.4	-	-	0.5	-	-	-
	-	8.9	3.8	-	5.3	6.8	4.7	-	-	-	-	-	-
CASFL	-	-	11.9	11.1	-	-	-	-	-	-	-	-	11.4
	-	-	11.7	9.7	-	-	-	-	-	-	-	-	11.2
CRIST	11.7	10.4	11.6	-	-	-	8.5	-	-	2.7	11.2	1.4	8.4
	9.4	5.8	11.6	-	-	0.3	10.0	-	1.5	0.8	11.2	6.6	9.1
	11.5	11.5	11.6	-	-	-	-	-	-	5.1	11.2	1.9	7.7
CSISZ	0.2	1.3	-	-	0.5	-	-	0.4	1.1	-	-	-	0.6
ELTMA	10.0	8.1	11.2	-	-	-	-	-	3.8	11.3	-	10.3	10.1
GONRU	-	-	-	-	-	-	-	11.3	11.3	10.7	10.3	-	-
	-	3.1	-	-	-	1.2	2.8	11.4	11.4	10.9	10.4	-	11.3
	-	-	-	-	-	2.3	3.2	11.2	11.2	11.3	11.2	1.1	11.1
	-	2.3	-	-	-	0.3	1.3	11.4	11.3	10.9	10.1	-	11.2
GOVMI	1.0	-	-	-	1.2	-	-	-	-	-	-	-	4.5
	-	-	-	-	-	-	-	-	-	-	-	-	4.4
IGAAN	1.7	1.2	-	-	1.1	-	-	-	1.6	-	-	-	-
	5.5	7.9	-	-	5.2	-	2.0	-	-	8.9	0.2	10.0	7.5
	3.9	-	-	-	9.7	-	-	-	-	-	-	1.5	6.3
JONKA	-	-	-	0.4	11.7	-	-	-	-	-	-	-	9.3
KACJA	-	-	11.2	0.8	-	-	-	-	-	-	-	-	-
	-	-	8.6	-	-	-	-	-	-	-	-	-	-
	-	-	11.3	-	-	-	-	-	-	-	-	-	-
	-	-	11.3	-	-	-	-	-	-	-	-	-	-
KOSDE	7.4	4.0	-	-	3.2	7.0	6.5	3.8	5.2	1.7	-	8.4	-
	-	-	-	-	5.4	9.9	5.9	-	-	-	-	-	-
LERAR	5.5	11.9	7.5	-	-	-	2.5	-	-	-	-	-	-
MACMA	-	-	-	-	-	-	-	-	-	-	1.3	4.2	1.8
	-	-	-	-	-	-	-	-	-	-	2.6	4.5	1.3
	-	-	-	-	-	-	-	-	-	-	-	5.0	1.6
MARGR	3.7	-	-	-	-	-	-	4.3	-	-	-	4.6	2.7
MOLSI	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	0.3	-	3.4	-	1.1	-	-	-	-	-	-
	-	-	-	-	1.9	-	2.1	-	-	-	-	-	2.1
	-	-	-	-	3.0	-	0.4	-	-	-	-	-	2.4
	-	-	-	-	2.4	-	-	-	-	-	-	-	-
MORJO	4.5	1.7	4.7	1.0	10.6	-	-	-	1.9	-	-	1.0	7.2
OCAFR	8.7	-	0.9	-	-	2.5	-	11.2	11.1	7.3	0.8	0.5	2.1
OCHPA	0.3	0.3	1.0	1.7	-	-	-	-	-	-	-	-	-
OTTMI	7.1	6.4	-	8.2	7.1	-	-	7.3	5.6	-	-	-	-
PERZS	0.6	0.8	-	-	6.1	-	-	-	-	-	-	-	5.0
PUCRC	11.3	11.4	11.3	-	-	-	-	1.5	1.2	11.3	-	7.0	11.2
SARAN	-	2.3	-	9.1	-	-	1.1	2.4	7.1	6.8	8.4	2.7	10.0
	-	5.4	-	10.6	-	3.3	-	1.7	9.5	10.6	11.0	3.3	11.1
	-	4.2	-	9.6	-	-	-	3.5	9.6	10.4	10.4	3.3	8.4
SCALE	-	-	8.5	-	-	-	-	-	-	7.9	-	-	11.1
SCHHA	0.2	8.8	8.4	7.2	8.3	3.2	2.9	-	-	-	-	-	0.2
SLAST	-	-	-	0.6	-	-	-	-	-	-	-	-	-
STOEN	3.1	4.6	9.3	-	-	-	-	-	3.1	10.1	0.5	6.7	10.5
	-	3.6	9.7	-	-	-	-	-	3.7	11.2	-	8.0	11.5
	4.2	5.1	9.9	-	-	-	-	-	4.2	10.9	0.6	8.7	-
STRJO	-	-	-	3.6	-	-	3.1	-	-	-	-	-	-
	-	1.8	-	-	-	2.2	6.2	-	-	-	-	-	-
	-	-	-	4.5	-	-	4.8	-	-	-	-	-	-
TEPIS	-	-	-	-	11.5	1.7	-	-	-	-	-	-	2.3
TRIMI	-	-	4.7	0.2	-	-	-	-	-	-	-	-	1.5
YRJIL	-	-	-	-	-	-	-	-	-	4.2	9.3	8.9	-
ZELZO	-	-	-	-	6.1	-	-	-	-	-	-	-	7.8
Sum	124.6	156.5	199.4	95.0	158.0	54.4	82.9	81.4	115.4	165.5	120.7	143.5	266.3

3. Results (Meteors)

February	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BANPE	-	-	-	-	-	-	11	1	-	-	-	-	-	-	-
BASLU	-	-	-	4	-	-	-	3	-	1	6	-	-	-	-
BERER	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
BIRSZ	-	-	5	2	1	-	19	5	-	1	-	-	-	-	-
BOMMA	-	-	7	16	-	-	6	19	9	7	-	-	-	25	7
BREMA	-	5	-	-	-	4	2	-	-	-	-	-	11	-	-
	2	3	-	-	3	3	-	3	-	19	1	-	5	-	-
BRIBE	-	-	-	3	-	3	-	1	12	22	8	-	11	-	-
	-	-	-	1	1	-	-	2	2	11	14	1	10	-	-
CASFL	-	3	14	11	8	14	21	21	21	2	-	18	-	10	-
	-	-	11	11	-	10	19	15	11	-	-	21	-	11	3
CRIST	-	-	46	-	19	14	29	25	42	-	-	44	16	22	17
	-	5	25	-	9	8	19	16	27	-	-	29	19	9	15
	-	8	44	-	16	9	31	39	36	-	-	37	33	23	21
CSISZ	-	-	-	7	-	1	-	4	-	-	3	-	-	-	-
ELTMA	-	-	8	5	-	24	26	24	16	6	-	10	-	22	24
GONRU	-	43	49	30	36	36	41	36	14	-	-	-	17	25	8
	-	32	38	19	22	29	17	34	18	-	-	-	12	20	8
	12	20	25	21	17	15	18	23	8	1	-	3	9	19	1
	-	33	27	22	25	24	18	20	14	-	-	-	9	8	4
GOVMI	-	-	-	-	-	5	18	-	-	11	-	-	-	-	-
	-	-	-	-	-	9	12	-	-	-	-	-	-	-	-
IGAAN	-	-	12	12	1	-	11	6	-	2	2	-	-	-	-
	-	-	2	-	12	-	4	1	-	-	11	-	4	2	6
	-	-	3	-	-	-	5	-	-	-	-	-	-	-	-
JONKA	-	-	7	-	-	-	12	6	-	-	-	-	-	-	-
KACJA	-	-	6	18	-	-	-	-	-	19	-	-	-	-	2
	-	-	2	4	-	2	-	-	-	-	-	-	-	-	-
	-	-	-	37	-	-	-	-	-	22	-	-	-	-	2
	-	-	8	19	-	-	-	-	-	11	-	-	-	-	1
KOSDE	-	67	67	-	-	58	73	63	-	31	56	67	-	36	34
	-	-	-	-	-	7	8	2	-	10	10	4	-	-	-
LERAR	1	6	-	-	-	-	2	-	3	-	-	-	-	3	2
MACMA	-	-	-	5	4	-	-	-	-	-	8	-	-	1	-
	-	-	-	3	13	-	-	-	-	-	11	-	-	2	-
	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-
MARGR	22	-	-	27	-	-	-	14	8	22	22	16	2	23	2
MOLSI	-	-	-	-	-	-	-	-	-	118	-	-	-	37	-
	-	8	-	-	1	-	1	-	7	32	-	-	-	11	-
	-	70	15	72	56	9	2	5	3	64	-	8	-	-	-
	-	47	17	49	51	8	-	3	12	54	-	7	-	-	-
	-	15	7	10	15	6	-	-	-	13	-	1	-	-	-
MORJO	-	-	-	-	-	-	4	7	-	-	-	-	-	-	-
OCAFR	5	-	19	12	5	11	1	7	4	-	16	-	5	8	10
OCHPA	-	-	2	8	-	-	19	7	7	-	-	7	2	-	-
OTTMI	-	-	-	2	17	-	-	-	-	-	-	31	9	5	22
PERZS	-	-	38	20	1	25	35	4	-	-	-	-	-	-	-
PUCRC	-	-	3	7	1	20	3	-	24	2	-	14	1	28	38
SARAN	3	23	28	7	12	22	15	13	12	-	1	-	-	13	10
	9	20	16	8	19	13	13	15	15	-	-	1	9	17	6
	12	15	11	7	8	16	-	18	12	-	2	1	18	11	2
SCALE	-	-	3	3	-	8	6	11	4	2	-	3	-	9	14
SCHHA	-	-	-	9	1	8	-	-	4	14	13	1	13	-	1
SLAST	-	-	1	16	-	-	1	-	-	-	-	-	-	-	-
STOEN	-	-	15	8	7	56	53	35	16	8	-	32	15	40	7
	-	-	18	8	11	40	30	30	20	6	-	29	-	-	-
	-	-	14	12	13	61	51	31	17	12	-	36	11	39	13
STRJO	-	-	-	-	-	-	3	-	7	16	-	-	15	-	-
	-	-	-	-	5	-	2	-	8	11	-	-	12	-	-
	-	-	-	2	13	2	1	-	8	26	-	-	22	-	-
TEPIS	-	-	6	-	-	-	-	16	-	-	-	-	-	-	-
TRIMI	-	-	3	5	-	11	6	-	-	13	-	-	-	-	-
YRJIL	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum	66	423	622	542	428	591	673	597	421	589	187	421	290	479	280

February	16	17	18	19	20	21	22	23	24	25	26	27	28
BANPE	-	-	-	-	-	-	-	-	-	-	-	-	3
BASLU	-	-	-	-	-	-	-	-	-	-	-	-	-
BERER	-	-	-	-	46	-	-	-	-	-	-	61	12
	-	-	1	-	18	-	-	-	-	-	-	9	8
	-	-	-	-	8	-	-	-	-	-	-	15	8
BIRSZ	-	-	1	-	11	-	-	-	-	-	-	-	-
BOMMA	2	-	17	22	-	-	-	-	-	-	-	-	12
BREMA	11	4	-	18	7	12	-	-	-	-	-	-	-
	5	3	-	11	3	5	8	-	-	-	-	-	-
BRIBE	-	13	1	11	4	5	6	-	-	1	-	-	-
	-	18	2	-	11	13	6	-	-	-	-	-	-
CASFL	-	-	25	15	-	-	-	-	-	-	-	-	34
	-	-	24	18	-	-	-	-	-	-	-	-	15
CRIST	26	24	31	-	-	-	14	-	-	7	19	3	9
	11	10	10	-	-	2	14	-	3	2	18	9	8
	32	29	24	-	-	-	-	-	-	9	31	1	2
CSISZ	1	4	-	-	1	-	-	2	3	-	-	-	2
ELTMA	14	21	21	-	-	-	-	-	10	22	-	22	25
GONRU	-	-	-	-	-	-	-	29	28	19	20	-	-
	-	5	-	-	-	1	7	22	28	25	17	-	24
	-	-	-	-	-	1	4	19	18	21	20	1	20
	-	4	-	-	-	1	5	15	20	17	14	-	22
GOVMI	1	-	-	-	1	-	-	-	-	-	-	-	2
	-	-	-	-	-	-	-	-	-	-	-	-	4
IGAAN	1	2	-	-	4	-	-	-	5	-	-	-	-
	10	13	-	-	11	-	3	-	-	12	1	14	9
	1	-	-	-	1	-	-	-	-	-	-	1	1
JONKA	-	-	-	2	8	-	-	-	-	-	-	-	7
KACJA	-	-	27	1	-	-	-	-	-	-	-	-	-
	-	-	3	-	-	-	-	-	-	-	-	-	-
	-	-	49	-	-	-	-	-	-	-	-	-	-
	-	-	38	-	-	-	-	-	-	-	-	-	-
KOSDE	53	14	-	-	14	41	32	31	22	9	-	50	-
	-	-	-	-	9	15	9	-	-	-	-	-	-
LERAR	2	4	4	-	-	-	1	-	-	-	-	-	-
MACMA	-	-	-	-	-	-	-	-	-	-	2	3	1
	-	-	-	-	-	-	-	-	-	-	5	6	1
	-	-	-	-	-	-	-	-	-	-	-	4	1
MARGR	1	-	-	-	-	-	-	2	-	-	-	3	1
MOLSI	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	1	-	10	-	1	-	-	-	-	-	-
	-	-	-	-	1	-	3	-	-	-	-	-	13
	-	-	-	-	7	-	1	-	-	-	-	-	3
	-	-	-	-	1	-	-	-	-	-	-	-	-
MORJO	2	3	4	1	5	-	-	-	2	-	-	1	5
OCAFR	3	-	1	-	-	1	-	7	11	7	1	1	1
OCHPA	2	2	6	11	-	-	-	-	-	-	-	-	-
OTTMI	13	8	-	25	10	-	-	15	13	-	-	-	-
PERZS	3	2	-	-	12	-	-	-	-	-	-	-	7
PUCRC	32	14	18	-	-	-	-	3	1	28	-	12	25
SARAN	-	1	-	13	-	-	2	2	12	10	13	3	12
	-	8	-	20	-	4	-	1	20	16	19	6	19
	-	2	-	7	-	-	-	5	10	13	16	2	15
SCALE	-	-	14	-	-	-	-	-	-	13	-	-	14
SCHHA	1	27	3	21	16	3	2	-	-	-	-	-	1
SLAST	-	-	-	1	-	-	-	-	-	-	-	-	-
STOEN	8	26	42	-	-	-	-	-	10	28	2	20	33
	-	10	36	-	-	-	-	-	4	25	-	12	35
	8	19	42	-	-	-	-	-	6	41	4	25	-
STRJO	-	-	-	3	-	-	2	-	-	-	-	-	-
	-	1	-	-	-	1	2	-	-	-	-	-	-
	-	-	-	9	-	-	2	-	-	-	-	-	-
TEPIS	-	-	-	-	28	1	-	-	-	-	-	-	15
TRIMI	-	-	11	1	-	-	-	-	-	-	-	-	10
YRJIL	-	-	-	-	-	-	-	-	-	10	12	14	-
ZELZO	-	-	-	-	11	-	-	-	-	-	-	-	6
Sum	243	291	456	210	258	106	124	153	226	335	214	298	445