

The pleasant spring weather continued in May 2014. Everywhere in Europe the observers could enjoy many clear nights. 75 video systems were active on May 5, and 47 out of the overall 81 cameras managed to obtain observations in twenty or more observing nights. Enrico Stomeo missed only one night with his camera SCO38, and Carl Hergenrother (who is currently on top of the 2014 observing statistics with a margin of five nights) had to pause just two nights with his camera SALSA3. Under such excellent conditions it's no surprise that we collected almost 7,500 hours of effective observing time, which is a 20% plus compared to the previous best May 2012. With over 18,000 meteors, also the meteor count increased by 20% compared to 2012.

There were no new cameras in May, but Maciej Maciejewski provided most of his video equipment for a Camelopardalid expedition to Canada. Everyone knows that the hoped-for outburst did not materialize (at least not for visual and video observers) - still it is worthwhile to have a quick look at the collected data. Peter Brown reported that the Camelopardalids were prominent in the Canadian CMOR radar, which confirms the predicted outburst. However, most recorded echoes were underdense, i.e. the outburst was rich in faint meteors. Based on the IMO quick-look analysis, the peak ZHR hardly reached 20, and also the meteor cameras in America recorded only few shower meteors. Even the airborne campaign of Peter Jenniskens had to content with roughly 20 Camelopardalids, and also the full IMO network could record only about 30 shower members on May 23/24. It is impossible to obtain an activity profile from such a small data set.

Better visible were the eta Aquariids and eta Lyrids. The first shower is always challenging for the observers in the IMO network, because for most of the cameras it becomes visible only in morning twilight and most meteors are recorded at low radiant altitudes.

Let's first look at a summary profile with low temporal resolution, calculated from over 5,000 eta Aquariids recorded in the last four years (figure 1). It shows an almost symmetric profile with a peak at 46.3° solar longitude and a peak flux density of almost 50 meteoroids per 1,000 km² and hour (at $\gamma=1.5$).

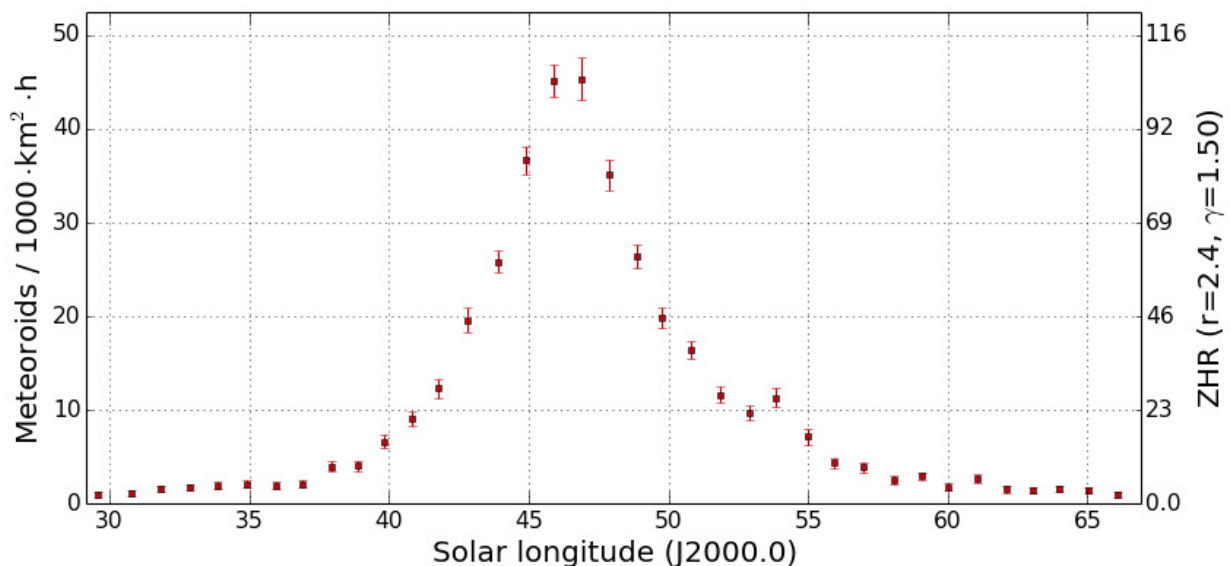


Figure 1: Overall activity profile of the eta Aquariids from flux density measures in the IMO IMO Video Meteor Network 2011 till 2014.

Looking at the individual years, the picture becomes more differentiated (figure 2). The unusual peak of 2013 is easily visible, and so is a shift of the 2014 activity profile. Both the ascending and descending activity branch were a little later in this year than in the previous.

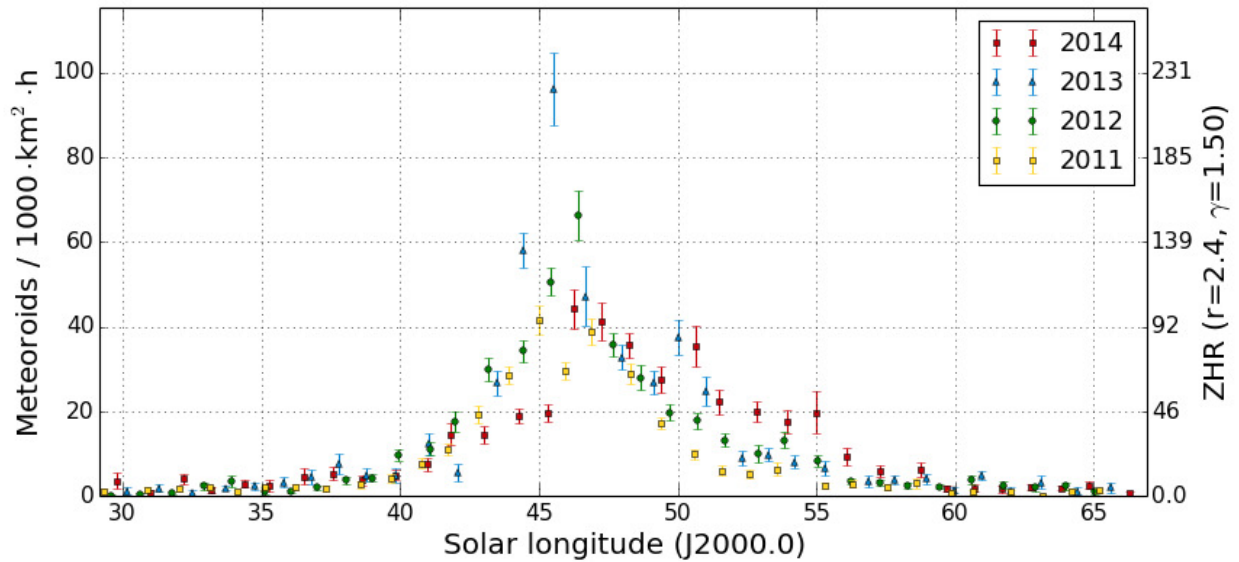


Figure 2: Activity profile of the eta Aquariids, separated for the years 2011 till 2014.

The limits become visible in a high resolution graph of the 2014 peak (figure 3). Whereas there is only little scatter at the begin of the observing window, when the radiant is lowest in the sky, the rates increase rapidly towards the end of the observing window. That cannot be explained by the zenith exponent, since it has the biggest impact on the first few intervals. As the effect was not observed in previous years it can be speculated, that this is just a selection effect (i.e. that other cameras dominated at the end of the night than at the begin). Unfortunately, the fluxviewer has currently not the options to select or reject individual cameras to easily substantiate this hypothesis.

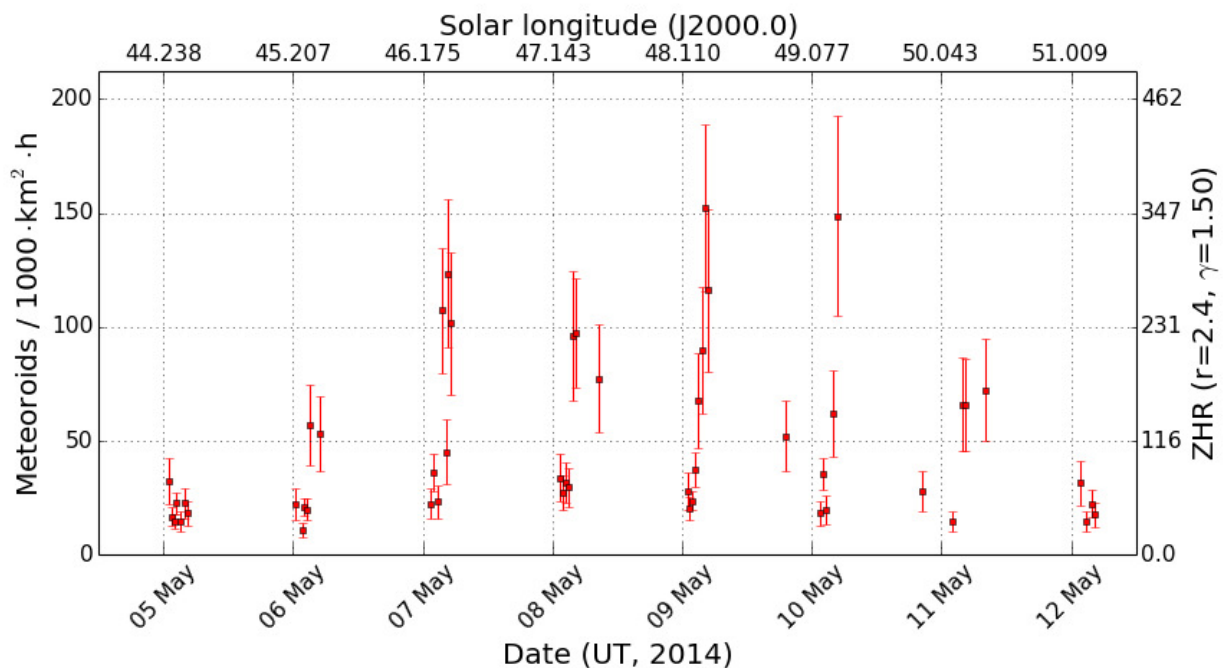


Figure 3: High resolution activity profile from the peak of the eta Aquariids in 2014.

The eta Lyrids, which are active only a few days later, show an unusual activity profile. It is consistent over the last four years and statistically on quite solid ground with meanwhile over 1,000 shower members. Up to a solar longitude of 49°, the shower hardly stands out from the sporadic background. Thereafter the flux density jumps suddenly by a factor of two, but instead of a clear peak, the activity remains almost constant for over two days (figure 4). With some fantasy, the averaged activity profile yields a peak at 49.4° solar longitude (figure 5).

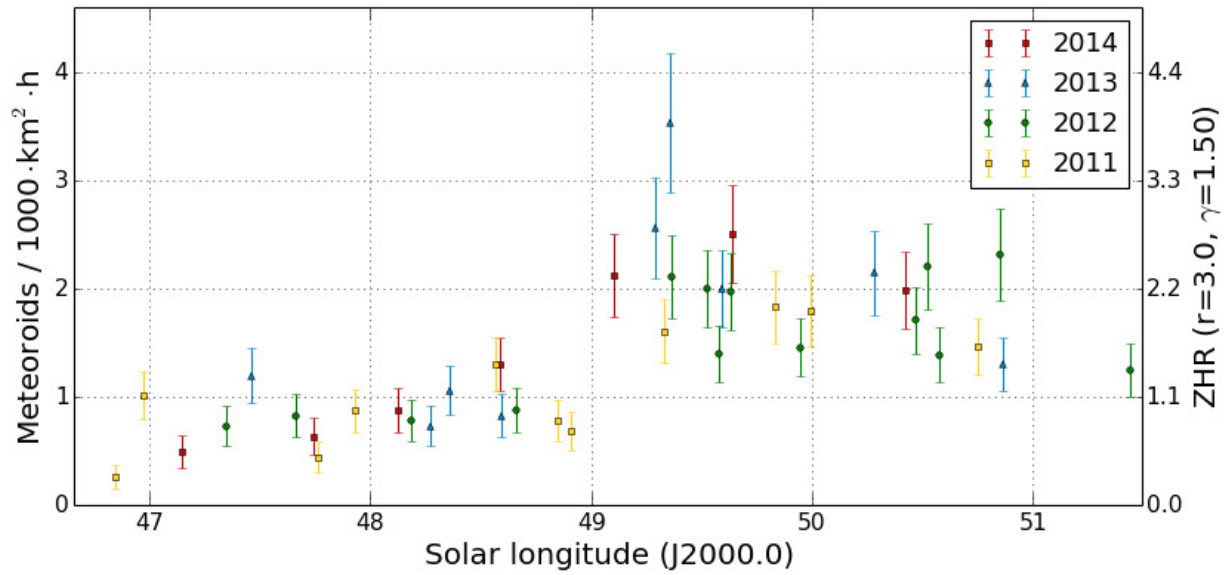


Figure 4: Activity profile of the eta Lyrids, separated for the years 2011 till 2014.

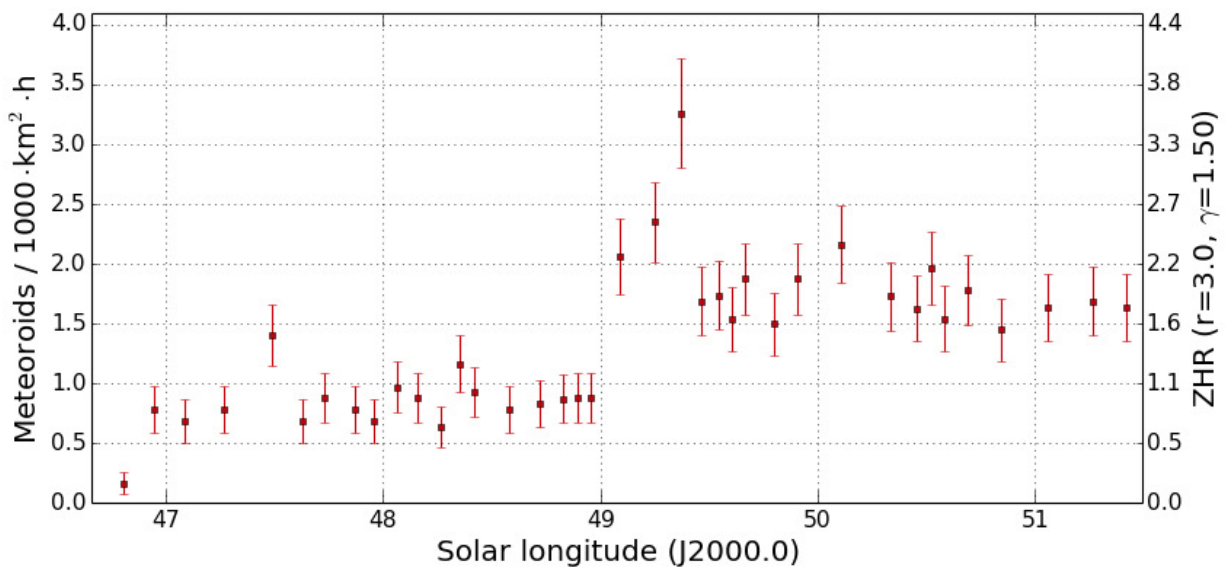


Figure 5: Overall activity profile of the eta Lyrids from data between 2011 and 2014.

1. Observers

Code	Name	Place	Camera	FOV [$^{\circ}$]	St.LM [mag]	Eff.CA [km^2]	Nights	Time [h]	Meteors
ARLRA	Arlt	Ludwigsfelde/DE	LUDWIG2 (0.8/8)	1475	6.2	3779	22	87.9	411
BERER	Berkó	Ludanyhalaszi/HU	HULUD1 (0.8/3.8)	5542	4.8	3847	12	68.2	226
			HULUD3 (0.95/4)	4357	3.8	876	6	31.9	27
BOMMA	Bombardini	Faenza/IT	MARIO (1.2/4.0)	5794	3.3	739	24	107.4	426
BREMA	Breukers	Hengelo/NL	MBB3 (0.75/6)	2399	4.2	699	12	55.5	75
			MBB4 (0.8/8)	1470	5.1	1208	20	85.8	100
BRIBE	Klemt	Herne/DE	HERMINE (0.8/6)	2374	4.2	678	12	60.9	110
		Berg. Gladbach/DE	KLEMOI (0.8/6)	2286	4.6	1080	22	98.4	166
CASFL	Castellani	Monte Baldo/IT	BMH1 (0.8/6)	2350	5.0	1611	24	127.7	228
			BMH2 (1.5/4.5)*	4243	3.0	371	22	111.5	152
CRIST	Crivello	Valbrenna/IT	BILBO (0.8/3.8)	5458	4.2	1772	24	135.1	276
			C3P8 (0.8/3.8)	5455	4.2	1586	26	108.9	148
			STG38 (0.8/3.8)	5614	4.4	2007	26	146.6	337
DONJE	Donati	Faenza/IT	JENNI (1.2/4)	5886	3.9	1222	27	152.9	618
ELTMA	Eltri	Venezia/IT	MET38 (0.8/3.8)	5631	4.3	2151	19	91.4	205
FORKE	Förster	Carlsfeld/DE	AKM3 (0.75/6)	2375	5.1	2154	15	51.5	113
GONRU	Goncalves	Tomar/PT	TEMPLAR1 (0.8/6)	2179	5.3	1842	18	115.2	362
			TEMPLAR2 (0.8/6)	2080	5.0	1508	25	167.7	337
			TEMPLAR3 (0.8/8)	1438	4.3	571	26	160.7	191
			TEMPLAR4 (0.8/3.8)	4475	3.0	442	25	161.1	339
			TEMPLAR5 (0.75/6)	2312	5.0	2259	27	140.7	314
GOVMI	Govedic	Sredisce ob Dr./SI	ORION2 (0.8/8)	1447	5.5	1841	20	105.4	234
			ORION3 (0.95/5)	2665	4.9	2069	18	63.5	95
			ORION4 (0.95/5)	2662	4.3	1043	21	90.5	141
HERCA	Hergenrother	Tucson/US	SALSA3 (1.2/4)*	2198	4.6	894	29	238.3	376
HINWO	Hinz	Schwarzenberg/DE	HINWO1 (0.75/6)	2291	5.1	1819	13	50.5	117
IGAAN	Igaz	Baja/HU	HUBAJ (0.8/3.8)	5552	2.8	403	21	111.4	117
		Debrecen/HU	HUDEB (0.8/3.8)	5522	3.2	620	21	110.7	145
		Hodmezovasar./HU	HUHOD (0.8/3.8)	5502	3.4	764	21	105.4	100
		Budapest/HU	HUPOL (1.2/4)	3790	3.3	475	8	38.4	22
JONKA	Jonas	Budapest/HU	HUSOR (0.95/4)	2286	3.9	445	21	96.7	102
KACJA	Kac	Kamnik/SI	CVETKA (0.8/3.8)	4914	4.3	1842	16	81.1	255
		Kostanjevec/SI	METKA (0.8/12)*	715	6.4	640	6	40.8	89
		Ljubljana/SI	ORION1 (0.8/8)	1402	3.8	331	19	85.5	71
		Kamnik/SI	REZIKA (0.8/6)	2270	4.4	840	19	100.2	379
			STEFKA (0.8/3.8)	5471	2.8	379	14	73.8	151
KISSZ	Kiss	Sulysap/HU	HUSUL (0.95/5)*	4295	3.0	355	16	59.3	41
KOSDE	Koschny	Izana Obs./ES	ICC7 (0.85/25)*	714	5.9	1464	25	182.5	1340
		La Palma / ES	ICC9 (0.85/25)*	683	6.7	2951	26	182.1	1514
		Noordwijkerhout/NL	LIC4 (1.4/50)*	2027	6.0	4509	22	79.2	170
LOJTO	Łojek	Grabniak/PL	PAV57 (1.0/5)	1631	3.5	269	13	58.3	50
MACMA	Maciejewski	Chelm/PL	PAV35 (0.8/3.8)	5495	4.0	1584	7	26.8	70
			PAV36 (0.8/3.8)*	5668	4.0	1573	8	32.7	91
			PAV43 (0.75/4.5)*	3132	3.1	319	20	86.2	83
MASMI	Maslov	Novosibirsk/RU	NOWATEC (0.8/3.8)	5574	3.6	773	20	56.4	176
MOLSI	Molau	Seysdorf/DE	AVIS2 (1.4/50)*	1230	6.9	6152	19	70.0	513
			MINCAM1 (0.8/8)	1477	4.9	1084	19	85.5	164
		Ketzür/DE	REMO1 (0.8/8)	1467	6.5	5491	23	101.9	437
			REMO2 (0.8/8)	1478	6.4	4778	23	99.9	297
			REMO3 (0.8/8)	1420	5.6	1967	17	64.1	58
			REMO4 (0.8/8)	1478	6.5	5358	24	102.1	414
MORJO	Morvai	Fülöpszallas/HU	HUFUL (1.4/5)	2522	3.5	532	20	113.8	101
MOSFA	Moschini	Rovereto/IT	ROVER (1.4/4.5)	3896	4.2	1292	26	49.5	185
OCHPA	Ochner	Albiano/IT	ALBIANO (1.2/4.5)	2944	3.5	358	21	130.4	143
OTMI	Otte	Pearl City/US	ORIE1 (1.4/5.7)	3837	3.8	460	20	62.5	180
PERZS	Perkó	Becsehely/HU	HUBEC (0.8/3.8)*	5498	2.9	460	21	110.5	295
PUCRC	Pucer	Nova vas nad Dra./SI	MOBCAM1 (0.75/6)	2398	5.3	2976	23	99.8	177
ROTEC	Rothenberg	Berlin/DE	ARMEFA (0.8/6)	2366	4.5	911	17	83.7	67
SARAN	Saraiva	Carnaxide/PT	RO1 (0.75/6)	2362	3.7	381	27	160.8	215
			RO2 (0.75/6)	2381	3.8	459	27	169.3	269
			RO3 (0.8/12)	710	5.2	619	27	183.0	452
			SOFIA (0.8/12)	738	5.3	907	25	162.9	181
SCALE	Scarpa	Alberoni/IT	LEO (1.2/4.5)*	4152	4.5	2052	17	70.3	102
SCHHA	Schremmer	Niederkrüchten/DE	DORAEMON (0.8/3.8)	4900	3.0	409	22	83.0	157
SLAST	Slavec	Ljubljana/SI	KAYAK1 (1.8/28)	563	6.2	1294	11	38.9	26
STOEN	Stomeo	Scorze/IT	MIN38 (0.8/3.8)	5566	4.8	3270	28	99.5	374
			NOA38 (0.8/3.8)	5609	4.2	1911	27	111.2	321
			SCO38 (0.8/3.8)	5598	4.8	3306	30	120.4	437
STORO	Štok	Kunzak/CZ	KUN1 (1.4/50)*	1913	5.4	2778	3	14.2	113
		Ondrejov/CZ	OND1 (1.4/50)*	2195	5.8	4595	3	14.5	124
STRJO	Strunk	Herford/DE	MINCAM2 (0.8/6)	2354	5.4	2751	20	78.4	167
			MINCAM3 (0.8/6)	2338	5.5	3590	22	77.4	180
			MINCAM4 (1.0/2.6)	9791	2.7	552	18	69.3	83
			MINCAM5 (0.8/6)	2349	5.0	1896	20	75.6	146
			MINCAM6 (0.8/6)	2395	5.1	2178	19	71.0	113
TEPIS	Tepliczky	Agostyan/HU	HUAGO (0.75/4.5)	2427	4.4	1036	19	85.2	89
		Budapest/HU	HUMOB (0.8/6)	2388	4.8	1607	19	82.4	153
TRIMI	Triglav	Velenje/SI	SRAKA (0.8/6)*	2222	4.0	546	20	40.3	151
YRJIL	Yrjölä	Kuusankoski/FI	FINEXCAM (0.8/6)	2337	5.5	3574	5	13.1	29
ZELZO	Zelko	Budapest/HU	HUVCSE03 (1.0/4.5)	2224	4.4	933	7	15.4	33
			HUVCSE04 (1.0/4.5)	1484	4.4	573	6	15.5	26
Sum							31	7448.0	18062

* active field of view smaller than video frame

2. Observing Times (h)

May	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ARLRA	-	-	6.6	5.0	6.4	5.3	4.5	-	3.9	-	0.9	2.1	4.9	0.8	5.8
BERER	-	-	-	7.4	6.9	-	-	7.0	5.1	1.8	-	4.4	-	-	-
BOMMA	-	-	-	7.4	6.4	-	-	7.1	5.0	1.7	-	4.3	-	-	-
BREMA	2.6	-	-	7.2	5.4	5.5	2.3	6.6	6.5	4.8	4.3	1.2	3.7	3.2	0.6
BRIBE	3.2	6.8	-	6.7	-	2.4	2.5	-	3.5	-	-	4.5	5.9	2.5	5.9
CASFL	-	4.4	6.8	5.9	1.2	-	2.1	-	4.9	-	-	3.2	5.7	2.4	5.9
CRIST	-	-	-	-	6.4	-	-	-	-	-	-	-	6.2	3.6	6.0
DINJE	-	1.3	6.1	6.5	6.7	-	4.2	-	3.2	3.7	-	0.5	6.1	5.6	6.1
ELTMA	-	-	8.0	7.9	7.8	2.0	4.7	5.1	7.2	7.4	7.5	2.1	5.9	7.4	2.5
FORKE	-	1.7	7.8	7.7	7.6	-	4.2	3.0	7.5	6.8	3.1	-	4.2	7.2	2.2
GONRU	3.9	-	-	7.6	7.6	-	7.0	6.4	6.0	-	4.3	2.4	2.8	7.1	5.6
GOVMI	2.2	0.2	0.4	7.7	5.5	-	6.3	6.3	2.0	-	6.2	3.1	4.5	7.2	6.2
HERCA	3.8	-	2.2	7.6	7.6	2.5	7.0	7.4	7.4	-	7.2	6.5	5.4	7.1	6.4
HINWO	3.8	-	-	7.9	8.1	7.8	3.1	7.8	7.7	6.6	6.4	4.1	5.1	4.3	2.4
IGAAN	7.1	-	-	4.7	6.7	5.9	1.8	7.7	7.2	3.4	4.6	-	4.4	2.3	-
JONKA	4.8	-	2.7	3.8	5.9	-	3.3	-	-	-	1.1	0.4	-	-	-
KACJA	8.1	8.2	4.8	8.4	7.3	3.2	5.9	-	7.1	4.4	8.2	8.1	8.1	7.9	2.1
KISSZ	7.9	8.5	8.5	8.4	7.0	2.2	6.1	-	4.5	-	8.2	8.1	8.1	8.0	3.2
KOSDE	7.1	8.5	8.5	8.3	5.9	1.9	4.4	4.4	5.5	7.0	8.0	7.9	7.8	7.9	2.0
LOJTO	8.0	8.5	8.5	8.4	7.0	2.2	4.0	-	5.2	3.3	8.1	8.0	8.1	8.0	2.3
MACMA	7.1	8.5	8.5	8.4	6.1	2.3	5.0	-	5.2	3.0	8.1	7.2	2.2	2.6	1.2
MASMI	6.3	-	0.2	7.6	7.4	5.6	1.2	7.3	-	5.2	1.0	-	-	-	-
MOLSI	7.5	2.9	-	6.8	5.7	3.3	1.0	6.6	-	-	0.9	-	-	-	-
MORJO	9.1	8.5	8.7	9.2	6.8	9.2	6.3	9.1	8.9	9.0	8.8	9.0	9.0	8.7	8.9
MOSFA	6.9	2.9	-	6.3	7.5	6.0	-	7.3	7.1	7.0	-	4.2	-	-	-
OCHPA	6.3	-	-	4.3	4.6	6.7	-	6.4	7.0	7.1	-	6.9	-	-	-
OTTHA	5.9	-	-	5.9	7.3	5.2	-	7.2	7.2	5.0	-	6.9	1.5	-	-
PERZS	0.5	-	-	7.1	-	2.1	-	-	4.4	-	-	-	-	-	-
PUCRC	7.6	2.4	-	7.4	5.9	-	-	4.8	4.7	4.2	-	1.8	-	-	-
ROTEC	7.0	-	-	7.6	7.3	5.4	-	7.2	1.9	4.3	-	-	0.3	-	-
SARAN	-	4.5	-	-	7.7	7.6	-	-	-	7.2	-	-	-	-	-
SCHHA	1.2	-	-	7.6	7.7	5.0	-	7.5	5.1	3.0	-	-	0.8	-	-
SLAST	7.2	-	-	7.7	7.7	6.3	-	7.5	3.5	4.7	-	-	-	-	-
STOEN	7.7	-	-	7.6	6.0	4.8	-	7.3	1.5	3.4	-	-	-	-	-
STRJO	-	-	-	7.0	6.4	2.3	-	7.3	1.4	4.2	-	1.0	-	-	0.3
TEPIS	8.8	8.3	7.7	6.7	6.2	4.6	6.1	8.6	8.6	8.6	-	7.3	-	3.0	2.0
TRIMI	9.0	9.0	9.0	8.9	-	8.9	6.5	8.3	7.8	6.8	6.2	5.7	4.2	-	-
YRJIL	1.2	5.8	5.8	5.4	0.3	1.6	-	-	4.5	-	0.2	-	3.4	3.4	5.1
ZELZO	6.1	-	3.6	6.0	-	-	-	4.3	-	5.1	-	1.4	4.9	-	-
Sum	3.6	-	-	-	2.7	3.5	1.6	6.3	2.6	6.5	-	-	-	-	-
	4.1	-	-	4.6	2.3	4.2	1.3	6.5	3.4	6.3	-	-	-	-	-
	3.7	0.7	-	4.6	2.4	-	0.9	6.5	4.0	6.6	-	5.3	2.2	2.3	-
	5.5	5.6	-	-	5.3	5.2	3.7	1.0	2.0	3.2	0.4	0.3	-	3.8	4.4
	0.8	-	-	6.5	6.5	1.6	1.6	-	1.7	0.3	1.4	-	-	3.2	1.3
	1.7	-	-	7.3	7.2	1.1	2.5	-	2.4	-	1.3	-	-	3.5	1.6
	-	2.8	6.7	-	6.5	3.7	4.1	-	3.2	-	1.2	2.3	5.7	-	5.7
	-	2.2	6.7	-	6.5	3.7	4.0	-	3.6	0.5	-	1.2	5.3	-	5.8
	-	2.3	-	-	-	-	3.5	-	3.1	-	-	2.5	5.7	-	5.8
	-	2.9	6.7	-	6.6	3.4	3.8	-	3.3	0.6	0.8	1.9	5.4	-	5.8
	7.7	-	-	7.0	7.3	6.0	-	7.3	5.3	6.4	-	-	-	-	-
	0.2	0.8	6.0	7.4	3.9	0.2	2.5	0.5	1.4	1.5	2.1	-	1.2	4.9	0.5
	-	4.4	7.6	7.9	7.8	-	-	-	6.5	7.4	7.2	-	6.0	7.4	2.9
	-	6.6	1.4	0.9	4.7	1.4	-	-	3.3	0.3	-	-	1.9	-	-
	7.8	4.6	-	7.6	7.6	7.0	1.0	7.4	1.8	4.2	-	-	-	-	-
	-	0.7	-	7.2	6.9	6.0	-	7.6	7.4	3.7	3.0	-	0.7	4.6	-
	-	2.8	6.5	6.5	6.4	4.6	5.1	-	-	-	-	-	5.0	-	5.6
	5.9	8.1	8.1	8.2	8.3	2.5	4.6	6.4	7.0	4.0	6.6	6.2	0.8	6.0	7.5
	7.1	8.2	8.4	6.4	8.3	1.8	3.3	5.3	8.0	4.5	8.0	7.4	7.8	7.9	7.8
	7.1	8.1	8.2	8.2	8.2	4.6	5.7	7.5	8.0	6.3	7.9	7.7	7.7	7.8	7.9
	5.9	8.1	8.1	8.2	8.3	3.0	5.0	7.5	8.0	6.2	8.0	7.6	-	5.3	6.0
	4.7	-	-	4.3	5.1	2.8	2.5	6.8	5.2	2.4	6.0	-	6.1	4.3	-
	-	0.9	6.9	5.9	3.4	1.5	2.3	-	4.1	3.9	0.5	2.4	-	5.5	5.9
	-	-	-	-	6.9	2.0	-	0.9	5.3	4.2	-	-	-	-	-
	5.3	-	0.8	5.5	7.0	6.4	1.4	7.1	5.8	2.1	5.5	-	4.3	3.0	0.2
	3.8	-	1.0	5.8	7.2	6.4	1.3	6.6	7.0	2.7	6.7	-	6.2	4.7	-
	5.7	0.3	1.4	5.4	7.2	6.9	2.4	7.1	7.6	3.0	6.7	0.2	6.3	5.0	-
	-	-	-	6.6	5.4	-	2.2	-	-	-	-	-	-	-	-
	-	-	-	6.5	5.9	-	2.1	-	-	-	-	-	-	-	-
	-	3.6	6.2	5.4	5.9	-	-	-	4.1	1.3	-	-	2.5	1.3	3.9
	0.8	2.8	6.3	4.5	5.8	-	-	-	4.3	1.5	-	-	2.8	1.5	3.7
	-	2.9	6.5	5.4	6.3	-	-	-	1.5	-	-	-	2.2	1.1	3.7
	-	3.1	6.3	5.2	5.6	-	-	-	4.0	1.7	-	-	2.4	1.1	3.6
	-	2.5	6.2	5.2	5.5	-	-	-	4.4	-	-	0.3	2.6	1.2	3.8
	6.4	-	-	7.2	5.0	3.6	-	7.0	4.0	1.6	-	1.7	0.4	-	-
	7.0	0.7	-	7.2	5.4	4.4	-	7.0	3.1	-	-	0.5	-	-	-
	2.6	1.7	-	1.8	1.6	3.0	-	2.3	-	1.2	-	-	-	0.3	-
	2.9	3.2	1.8	-	-	3.1	2.1	-	-	-	-	-	-	-	-
	-	-	-	-	3.7	-	-	-	1.4	-	-	-	-	-	-
	-	-	-	-	2.0	-	-	-	2.5	-	-	-	-	-	-
Sum	275.7	192.6	236.5	455.4	456.6	235.4	172.1	297.3	329.6	233.0	179.3	169.8	214.7	195.9	176.1

May	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ARLRA	2.2	0.4	-	5.5	-	-	5.3	2.6	3.5	5.1	4.5	-	-	4.9	3.4	4.3
BERER	-	-	-	-	6.5	6.3	6.0	6.3	-	4.5	-	-	6.0	-	-	-
BOMMA	0.7	-	6.5	3.0	7.3	2.0	-	-	7.2	-	7.0	4.3	6.0	4.7	-	4.8
BREMA	5.8	5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	5.7	5.9	5.9	5.6	3.9	0.7	-	5.5	5.5	-	-	-	-	-	-	-
CASFL	6.0	6.0	5.8	5.6	2.4	2.7	-	5.0	5.6	0.9	-	-	-	-	5.2	3.2
CRIST	2.9	7.2	2.6	0.5	7.1	5.2	-	6.6	6.9	3.5	-	6.1	-	-	-	3.6
DINJE	7.1	7.0	-	0.6	6.9	3.8	-	6.1	6.7	2.0	-	5.6	-	-	-	2.7
ELTMA	6.1	6.9	6.5	-	6.6	5.9	-	6.6	6.7	-	2.2	6.6	6.1	6.5	2.5	5.2
FORKE	6.8	5.7	5.9	-	6.4	4.2	-	0.9	6.7	-	0.5	4.6	1.3	3.2	0.5	4.4
GONRU	7.0	6.3	6.5	-	6.7	6.2	-	6.4	6.7	-	2.4	0.4	5.2	6.5	2.8	5.4
GOVMI	0.6	7.4	6.8	3.4	7.3	7.3	-	7.2	7.2	0.8	7.1	4.8	6.7	4.8	-	6.4
HERCA	1.8	-	2.7	0.2	6.3	6.9	-	4.9	7.0	-	-	-	-	-	-	5.8
HINWO	-	-	-	4.5	5.0	5.0	5.0	0.5	3.9	2.6	-	-	-	-	-	3.0
IGAAN	7.9	7.8	-	4.0	-	-	-	3.7	-	-	-	-	-	-	-	-
JONKA	8.0	8.0	5.4	6.8	-	-	1.6	7.7	7.7	7.6	7.4	-	5.6	-	5.7	7.5
KACJA	7.7	7.7	3.9	5.8	-	-	-	7.5	7.4	7.4	-	0.4	5.7	-	4.8	7.3
KISSZ	8.0	8.0	-	7.3	-	-	0.7	7.7	7.7	7.5	6.6	-	5.4	-	5.1	7.5
KOSDE	8.0	7.9	3.5	3.6	0.6	-	2.1	7.8	7.7	7.7	-	1.1	6.1	-	1.7	7.5
LOJTO	-	-	6.8	5.5	6.6	6.6	6.5	-	6.3	6.4	4.7	5.1	-	3.1	6.0	-
MACMA	-	-	6.7	4.4	1.8	1.3	0.3	-	-	0.8	3.5	1.5	-	2.4	6.1	-
MASMI	-	-	6.6	4.6	6.6	6.2	2.2	-	6.4	6.1	2.5	4.0	-	2.0	5.9	-
MOLSI	8.9	7.3	8.9	8.8	8.6	8.0	-	7.6	8.7	3.7	7.8	8.5	6.6	-	8.4	7.3
MORJO	-	-	-	1.7	6.7	6.6	6.5	6.4	6.2	5.1	1.2	2.2	6.5	5.5	-	1.6
MOSFA	-	-	6.6	6.6	6.2	6.4	6.3	5.7	1.6	4.4	4.1	4.5	3.5	0.3	5.2	-
OCHPA	-	0.6	5.6	6.7	6.6	6.5	2.4	6.5	2.0	-	1.8	2.0	6.4	6.2	-	-
OHPA	-	-	-	6.6	6.6	6.6	-	6.5	-	-	-	-	4.6	-	-	-
OTPMI	1.8	-	2.8	6.7	6.6	6.6	6.5	6.5	1.7	5.1	0.9	2.8	3.6	6.3	-	-
PERZS	-	-	-	5.3	6.6	6.2	6.1	4.4	6.5	-	-	-	-	2.4	2.6	-
PUCRC	-	-	-	-	7.0	6.8	-	-	-	-	-	-	-	-	-	-
ROTEC	-	-	0.4	1.5	6.8	6.7	4.1	3.8	6.6	4.5	5.5	5.0	-	-	-	2.7
SARAN	-	-	0.2	4.0	6.9	6.8	6.7	4.6	6.6	2.4	6.5	5.6	-	3.0	2.3	-
SCHHA	-	-	3.9	6.7	6.8	6.6	4.4	6.5	-	-	-	-	-	0.6	-	-
SLAST	2.2	-	3.4	0.3	-	6.3	4.6	6.3	-	-	-	2.7	3.6	-	-	-
STOEN	8.4	8.4	8.4	7.6	-	6.2	-	8.2	-	-	8.2	8.1	8.2	8.1	8.1	8.1
STORO	3.4	3.4	4.6	5.5	6.0	6.5	7.0	7.9	-	5.7	8.4	8.4	8.4	-	8.3	8.3
STRJO	5.1	5.0	4.9	4.8	-	-	1.4	3.0	3.8	4.4	-	-	-	3.2	4.1	2.8
TEPIS	-	-	1.7	4.9	-	5.4	-	4.7	5.0	5.2	-	-	-	-	-	-
TRIMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YRJIL	-	4.2	5.8	5.3	5.0	5.7	5.6	5.6	4.7	5.1	-	-	-	-	-	-
ZELZO	0.2	1.2	3.5	4.0	3.9	-	-	-	-	-	-	0.2	2.4	0.6	-	-
Sum	-	-	5.6	5.6	5.5	5.5	-	4.5	4.6	4.0	-	-	-	5.0	4.8	4.8
	-	-	6.5	6.4	6.4	6.3	5.8	5.0	5.0	4.2	-	-	-	5.9	5.4	5.4
	5.6	-	1.5	5.4	5.4	5.4	5.2	4.0	3.7	5.1	4.4	-	-	4.8	4.8	4.7
	5.7	-	1.3	5.6	5.5	5.4	5.3	4.3	3.5	5.2	4.0	-	-	4.9	4.9	4.8
	5.7	-	1.9	5.6	4.0	2.1	1.0	3.8	3.3	5.2	4.2	-	-	4.4	-	-
	5.8	-	2.2	5.6	5.5	5.3	5.3	4.0	3.4	5.2	3.8	-	-	5.0	4.9	4.9
	-	3.8	3.2	6.7	6.6	6.5	6.5	6.5	6.2	4.5	3.2	3.3	3.7	6.1	-	-
	5.3	3.1	-	0.6	2.5	1.0	-	0.6	0.9	0.2	-	0.3	-	1.1	0.3	0.5
	7.3	6.0	-	-	1.8	5.7	-	7.0	6.8	6.4	-	5.6	-	6.2	6.6	5.9
	3.5	3.7	5.4	2.2	2.1	3.8	4.4	4.3	3.5	0.2	-	-	-	4.7	4.2	-
	-	-	6.8	-	6.8	6.8	6.7	-	6.6	6.6	2.5	6.2	2.4	2.0	6.4	1.7
	-	-	4.2	4.3	5.5	6.7	5.3	3.6	6.6	3.0	4.9	0.2	-	0.3	3.2	4.2
	-	-	-	5.3	5.3	4.0	5.1	-	3.9	4.8	3.7	-	-	-	4.7	4.4
	7.6	7.8	3.1	3.5	-	5.3	3.4	4.8	6.3	7.6	7.2	-	-	-	6.8	7.2
	7.7	7.7	2.9	4.0	-	4.7	3.2	7.6	6.1	7.4	7.0	-	-	-	3.5	7.3
	7.6	7.6	3.4	3.8	-	5.3	3.3	6.9	6.3	6.9	7.2	-	-	-	6.6	7.2
	6.9	7.3	3.4	3.2	-	6.3	-	4.7	6.6	7.6	7.2	-	-	-	7.3	7.2
	-	-	5.2	-	3.2	3.8	-	-	6.5	-	1.1	-	-	0.3	-	-
	6.0	1.8	5.6	5.3	-	0.4	0.6	5.5	5.5	-	-	-	-	-	5.1	4.0
	-	-	-	2.4	5.9	4.4	-	-	1.0	-	-	-	-	-	2.7	3.2
	3.9	2.2	1.5	1.0	6.3	7.0	1.7	2.4	6.9	2.6	0.8	-	0.2	2.3	1.9	4.4
	5.0	3.9	1.6	2.1	6.4	6.8	4.1	1.1	7.1	2.7	-	1.0	0.2	2.8	2.6	4.4
	5.8	4.7	1.7	2.0	6.5	6.9	4.0	2.3	7.1	3.1	0.5	0.8	0.3	3.2	2.3	4.0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.4	5.1	-	5.0	4.9	4.7	-	4.7	1.5	4.5	3.0	-	-	-	4.2	4.2
	2.4	5.1	-	5.0	4.9	4.6	-	4.4	1.7	3.6	2.6	-	-	0.7	4.2	4.2
	-	5.5	-	5.3	5.3	4.9	-	-	1.6	4.9	2.8	-	-	0.6	4.6	4.2
	2.3	5.1	-	5.0	4.9	4.6	-	4.4	1.5	3.6	2.8	-	-	-	4.2	4.2
	2.3	5.1	-	5.0	4.9	4.8	-	4.7	1.8	-	2.5	-	-	-	4.2	4.0
	-	-	5.6	6.4	6.3	6.2	6.1	5.9	1.1	-	2.1	-	-	4.6	4.0	-
	-	-	3.1	5.4	5.7	6.2	6.2	5.6	-	1.3	2.9	1.9	-	4.3	4.5	-
	-	-	2.0	1.0	2.1	1.7	4.6	1.8	5.3	-	1.5	1.2	0.8	1.3	2.5	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	2.7	1.7	-	1.5	3.7	-	-	-	-	0.7	-	-	-
	-	-	-	3.4	1.5	-	-	3.3	-	-	-	-	2.8	-	-	-
Sum	226.9	219.2	222.1	284.6	310.3	322.2	201.4	303.7	325.1	224.8	174.7	114.8	112.2	142.8	215.7	227.5

3. Results (Meteors)

May	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ARLRA	-	-	33	29	25	29	22	-	15	-	2	4	20	2	24
BERER	-	-	-	32	19	-	-	31	11	1	-	11	-	-	-
BOMMA	-	-	-	7	3	-	-	6	6	2	-	3	-	-	-
BREMA	7	-	-	34	19	25	20	33	32	25	26	5	18	13	2
BRIBE	2	10	-	12	-	6	2	-	6	-	-	7	7	2	6
CASFL	-	5	11	10	1	-	1	-	8	-	-	2	9	1	6
CRIST	-	-	-	-	7	-	-	-	-	-	-	-	14	8	7
DINJE	-	3	15	10	6	-	6	-	7	8	-	1	13	6	9
ELTMA	-	-	10	21	21	3	10	8	16	7	13	6	6	19	4
FORKE	-	2	8	11	15	-	8	1	16	7	8	-	5	9	2
GONRU	3	-	-	26	14	-	30	15	17	-	4	12	7	9	12
GOVMI	3	1	1	15	5	-	8	4	5	-	7	7	9	10	10
HERCA	2	-	5	31	28	2	24	16	25	-	11	23	16	11	11
HINWO	6	-	-	40	37	28	17	58	40	30	26	10	19	19	2
IGAAN	6	-	-	16	22	17	6	12	15	12	15	-	13	9	-
JONKA	4	-	10	8	9	-	11	-	-	-	2	2	-	-	-
KACJA	17	28	33	27	24	6	8	-	13	9	34	26	19	24	4
KISSZ	19	15	27	19	12	6	5	-	3	-	21	17	17	12	5
KOSDE	10	8	11	18	1	4	5	4	3	5	6	11	4	8	2
LOJTO	19	21	21	31	10	5	6	-	6	2	20	19	12	11	5
MACMA	15	19	24	27	7	7	13	-	6	8	19	11	10	7	2
MASMI	8	-	1	21	15	14	5	18	-	6	3	-	-	-	-
MOLSI	7	3	-	6	8	4	5	12	-	-	4	-	-	-	-
MORJO	11	2	-	16	12	10	4	14	-	1	3	-	2	-	-
MOSFA	15	25	12	16	5	12	12	17	23	23	18	14	11	13	16
OCHPA	-	-	16	7	12	-	4	-	3	-	4	-	-	-	-
OTTHA	1	1	-	10	12	2	-	9	11	10	-	3	-	-	-
PERZS	5	-	-	11	5	3	-	18	11	11	-	10	-	-	-
PUCRC	3	-	-	6	11	4	-	9	6	6	-	4	2	-	-
ROTEC	3	-	-	2	-	1	-	2	-	-	-	-	-	-	-
SARAN	7	1	-	6	11	-	-	13	5	5	-	2	-	-	-
SCHHA	10	-	-	32	31	17	-	33	9	7	-	-	2	-	-
SLAST	-	10	-	-	30	14	-	-	-	13	-	-	-	-	-
STOEN	2	-	-	7	15	4	-	7	5	4	-	-	1	-	-
STRJO	30	-	-	36	40	17	-	41	17	16	-	-	-	-	-
TEPIS	7	-	-	13	20	11	-	26	9	4	-	-	-	-	-
TRIMI	-	-	-	4	3	1	-	5	2	3	-	1	-	-	1
YRJIL	50	55	57	69	66	50	50	69	69	77	-	40	-	10	22
ZELZO	46	62	80	92	-	91	32	96	88	81	70	65	49	-	-
Sum	3	15	10	11	1	5	-	8	-	1	-	3	4	9	9
ARLRA	6	-	-	4	-	-	-	7	-	3	-	3	2	-	-
BERER	7	-	-	-	4	1	5	20	12	22	-	-	-	-	-
BOMMA	2	1	-	5	2	-	1	8	5	5	-	10	3	4	-
BREMA	12	11	-	-	18	19	13	6	8	15	4	1	-	19	10
BRIBE	2	-	-	61	53	4	7	-	3	1	4	-	-	9	2
CASFL	3	-	-	11	7	2	4	-	2	-	2	-	-	6	2
CRIST	-	15	29	-	24	10	20	-	14	-	2	6	22	-	37
DINJE	-	12	25	-	16	12	10	-	14	3	-	3	8	-	14
ELTMA	-	2	-	-	-	-	4	-	4	-	-	1	5	-	6
FORKE	-	19	31	-	20	13	11	-	7	1	2	4	21	-	25
GONRU	7	-	-	9	8	3	-	10	7	6	-	-	-	-	-
GOVMI	1	4	17	24	7	1	17	3	5	8	13	-	5	8	1
HERCA	-	3	11	16	12	-	-	-	5	1	9	-	5	10	1
HINWO	-	12	3	5	14	7	-	-	16	2	-	-	4	-	-
IGAAN	18	3	-	22	21	20	2	26	2	9	-	-	-	-	-
JONKA	-	1	-	16	13	6	-	16	8	4	10	-	2	7	-
KACJA	-	1	8	1	3	3	5	-	-	-	-	-	4	-	8
KISSZ	8	8	13	12	16	2	16	12	15	6	8	7	1	6	7
KOSDE	8	22	18	18	18	1	12	6	4	5	16	10	6	8	7
LOJTO	25	21	18	22	24	5	19	18	17	10	29	22	18	15	14
MACMA	7	14	8	9	15	1	7	15	5	5	13	12	-	3	2
MASMI	3	-	-	6	12	7	2	4	16	4	10	-	11	9	-
MOLSI	-	2	11	13	2	5	2	-	7	8	2	11	-	12	11
MORJO	-	-	-	-	3	2	-	2	4	3	-	-	-	-	-
MOSFA	17	-	2	19	24	24	5	20	23	9	32	-	27	17	1
OCHPA	9	-	3	24	20	13	2	15	16	6	29	-	19	12	-
OTTHA	16	2	4	19	33	14	12	21	24	4	24	1	32	22	-
PERZS	-	-	-	45	47	-	21	-	-	-	-	-	-	-	-
PUCRC	-	-	-	58	49	-	17	-	-	-	-	-	-	-	-
ROTEC	-	10	26	16	6	-	-	-	6	1	-	-	4	1	5
SARAN	1	8	21	8	5	-	-	-	15	1	-	-	9	2	4
SCHHA	-	3	9	6	6	-	-	-	3	-	-	-	6	2	3
SLAST	-	13	9	8	9	-	-	-	10	2	-	-	1	1	3
STOEN	-	6	11	11	4	-	-	-	6	-	-	1	4	4	7
STRJO	2	-	-	14	13	7	-	4	2	1	-	1	1	-	-
TEPIS	9	2	-	15	18	11	-	16	1	-	-	1	-	-	-
TRIMI	3	2	-	13	13	14	-	16	-	7	-	-	-	2	-
YRJIL	8	11	3	-	-	5	2	-	-	-	-	-	-	-	-
ZELZO	-	-	-	-	8	-	-	-	4	-	-	-	-	-	-
Sum	-	-	-	-	5	-	-	-	6	-	-	-	-	-	-
Sum	495	494	669	1323	1157	611	532	842	828	553	526	410	508	386	331

May	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ARLRA	3	1	-	30	-	-	32	6	8	22	20	-	-	32	27	25
BERER	-	-	-	-	23	29	12	22	-	13	-	-	22	-	-	-
BOMMA	4	-	28	13	22	4	-	-	22	-	24	10	15	13	-	12
BREMA	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	4	6	7	4	-	-	-	5	7	1	-	-	-	3	6	3
CASFL	7	18	6	13	6	3	-	6	15	-	-	-	-	-	-	-
CRIST	10	12	8	12	2	2	-	10	10	1	-	-	-	-	8	7
DINJE	8	10	6	1	9	12	-	8	12	2	-	9	-	-	-	7
ELTMA	9	10	-	2	6	4	-	7	8	3	-	6	-	-	-	5
FORKE	11	17	10	-	10	10	-	17	14	-	1	10	8	11	1	7
GONRU	7	9	7	-	8	6	-	2	9	-	2	5	1	4	1	2
HERCA	16	19	15	-	16	14	-	5	14	-	3	1	9	17	1	2
HINWO	3	17	30	12	33	18	-	34	34	4	22	11	34	14	-	20
IGAAN	10	-	2	1	8	12	-	12	11	-	-	-	-	-	-	6
JONKA	-	-	-	12	10	4	16	1	11	4	-	-	-	-	-	9
KACJA	22	22	-	16	-	-	-	30	-	-	-	-	-	-	-	-
KISSZ	16	23	4	18	-	-	2	18	20	23	9	-	3	-	10	13
KOSDE	8	14	3	6	-	-	-	12	12	14	-	1	4	-	8	9
LOJTO	18	22	-	15	-	-	2	17	18	13	18	-	5	-	7	16
MACMA	14	17	3	9	1	-	8	17	14	21	-	8	10	-	3	14
MASMI	-	-	14	14	12	18	8	-	15	26	7	6	-	5	18	-
MOLSI	-	-	7	3	7	7	2	-	3	5	2	-	3	7	-	-
MORJO	-	-	8	11	5	6	4	-	10	8	1	2	-	4	7	-
MOSFA	20	7	10	13	6	8	-	5	15	4	10	10	12	-	13	11
OCHPA	-	-	-	13	11	1	15	-	8	9	-	-	-	-	-	14
OTPMI	-	-	-	4	8	8	6	4	2	4	2	6	5	8	-	1
PERZS	-	-	9	8	5	8	7	8	2	7	3	5	5	2	2	-
PUCRC	-	1	5	4	6	6	7	6	1	-	1	1	5	6	-	-
ROTEC	-	-	-	-	3	7	-	2	-	-	-	-	-	2	-	-
SARAN	2	-	1	9	7	2	8	3	1	7	1	4	4	3	-	-
SCHHA	-	-	-	28	19	11	7	19	26	-	-	-	-	1	3	-
SLAST	-	-	-	-	-	15	7	-	-	-	-	-	-	-	-	-
STOEN	-	-	1	3	3	2	1	1	7	3	2	1	-	-	-	2
STRJO	-	-	1	21	29	15	12	23	37	10	15	9	-	6	4	-
TEPIS	-	-	-	10	11	8	7	13	11	-	-	-	-	1	-	-
TRIMI	5	-	1	1	-	3	3	4	-	-	3	1	-	-	-	-
YRJIL	78	63	60	48	-	-	38	-	54	-	42	54	63	45	61	50
YRZLO	11	24	25	23	32	48	56	69	-	61	51	55	66	-	75	66
Sum	9	11	8	13	-	-	2	6	9	7	-	-	-	15	14	6
SCALE	-	-	6	4	-	4	-	6	4	3	-	-	-	-	-	-
SCHHA	-	2	5	1	4	6	2	12	3	2	-	-	-	-	-	-
SLAST	1	7	4	11	8	-	-	-	-	-	-	-	1	6	2	-
STOEN	-	-	45	44	36	39	-	49	33	27	-	-	-	-	37	57
STRJO	-	-	15	14	15	14	10	15	8	13	-	-	-	-	14	7
TEPIS	11	-	1	26	24	11	31	16	15	24	10	-	-	29	40	20
TRIMI	10	-	1	19	20	10	15	11	12	18	17	-	-	20	15	12
YRJIL	3	-	1	4	3	1	1	2	3	10	3	-	-	5	-	-
YRZLO	8	-	2	30	31	8	27	19	16	31	11	-	-	26	30	21
Sum	-	5	1	5	4	1	8	7	4	5	1	2	4	4	-	-
ARLRA	20	7	-	3	7	6	-	4	8	1	-	2	-	8	2	3
BERER	10	7	-	-	1	5	-	7	7	10	-	2	-	6	7	8
BOMMA	22	6	6	4	1	6	9	24	21	1	-	-	7	10	-	-
BREMA	-	-	12	-	22	30	13	-	17	19	1	21	4	7	23	3
BRIBE	-	-	6	14	10	6	3	8	18	2	8	1	-	1	11	6
CASFL	4	8	5	5	4	3	1	8	10	15	7	-	-	-	6	6
CRIST	12	14	1	6	-	4	3	14	11	15	13	-	-	-	2	15
DINJE	10	21	6	3	-	16	2	18	22	26	17	-	-	-	12	22
ELTMA	5	8	1	2	-	7	-	5	7	11	6	-	-	-	3	10
FORKE	-	-	6	-	1	5	-	4	-	4	1	-	-	1	-	-
GONRU	8	4	5	14	-	1	1	13	7	-	-	-	-	-	12	6
HERCA	8	4	5	14	-	1	1	13	7	-	-	-	-	-	12	6
HINWO	-	-	3	3	2	-	-	2	-	-	-	-	-	-	1	1
IGAAN	12	9	9	3	22	19	5	9	25	2	4	-	1	14	9	11
JONKA	13	13	6	8	16	15	11	3	27	3	-	3	1	8	15	11
KACJA	23	23	6	6	15	22	7	9	29	9	3	3	2	18	18	16
KISSZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KOSDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LOJTO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MACMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MASMI	6	14	-	18	5	5	-	14	1	4	5	-	-	-	10	10
MOLSI	4	8	-	20	18	9	-	11	4	6	2	-	-	3	16	5
MORJO	-	7	-	10	2	3	-	2	4	3	-	-	-	1	9	4
MOSFA	6	14	-	10	12	5	-	9	4	8	4	-	-	-	14	4
OCHPA	1	9	-	7	4	4	-	10	3	-	1	-	-	-	13	7
OTPMI	-	-	5	2	7	4	7	3	2	-	1	-	-	5	8	-
PERZS	-	-	5	18	7	18	7	2	-	1	4	1	-	4	13	-
PUCRC	-	-	12	5	12	10	3	7	13	-	4	4	1	5	5	-
ROTEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SARAN	-	-	-	7	4	-	3	6	-	-	-	-	1	-	-	-
SCHHA	-	-	-	6	2	-	5	-	-	-	-	-	2	-	-	-
SLAST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STOEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STRJO	6	14	-	18	5	5	-	14	1	4	5	-	-	-	10	10
TEPIS	4	8	-	20	18	9	-	11	4	6	2	-	-	3	16	5
TRIMI	-	7	-	10	2	3	-	2	4	3	-	-	-	1	9	4
YRJIL	6	14	-	10	12	5	-	9	4	8	4	-	-	-	14	4
YRZLO	1	9	-	7	4	4	-	10	3	-	1	-	-	-	13	7
Sum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum	492	516	451	727	638	592	438	718	781	548	367	258	289	373	634	575