Results of the IMO Video Meteor Network – December 2011

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1. Observers

Code	Name	Place	Camera	FOV [°²]	St.LM [mag]	Eff.CA [km²]	Nights	Time [h]	Tot. CA [10³km²h]	Meteors
BASLU	Bastiaens	Hove/BE	URANIA1 (0.8/3.8)*	4545	2.5	237	8	12.7	-	16
BENOR	Benitez-S.	Las Palmas/ES	TIMES4 (1.4/50)	2359	3.2	492	10	80.2	-	207
BERER	Berko	Ludanyhalaszi/HU	HULUD1 (0.95/3)	2256	4.8	1540	12	68.8	58.6	437
			HULUD2 (0.75/6)	4860	3.9	1103	12	52.2	37.0	240
			HULUD3 (0.75/6)	4661	3.9	1052	11	45.4	29.1	152
BOMMA	Bombardini	Faenza/IT	MARIO (1.2/4.0)	5794	3.3	739	12	78.7	56.0	268
BRIBE	Brinkmann	Herne/DE	HERMINE (0.8/6)	2374	4.2	678	18	67.0	-	253
		Berg. Gladbach/DE	KLEMOI (0.8/6)	2286	4.6	1080	12	33.5	-	273
CASFL	Castellani	Monte Baldo/IT	BMH1 (0.8/6)	2350	5.0	1611	25	188.5	208.8	714
			BMH2 (1.5/4.5)*	4243	3.0	371	23	185.4	374.9	817
CRIST	Crivello	Valbrevenna/IT	BILBO (0.8/3.8)	5458	4.2	1772	28	243.4	-	1534
			C3P8 (0.8/3.8)	5455	4.2	1586	27	235.1	338.4	1058
			STG38 (0.8/3.8)	5614	4.4	2007	8	69.3	282.2	415
CSISZ	Csizmadia	Zalaegerszeg/HU	HUVCSE01 (0.95/5)	2423	3.4	361	10	54.3	17.4	250
ELTMA	Eltri	Venezia/IT	MET38 (0.8/3.8)	5631	4.3	2151	20	156.6	-	837
GONRU	Goncalves	Tomar/PT	TEMPLAR1 (0.8/6)	2179	5.3	1842	25	203.8	265.1	856
			TEMPLAR2 (0.8/6)	2080	5.0	1508	26	232.5	290.2	819
			TEMPLAR3 (0.8/8)	1438	4.3	571	26	221.9	132.7	605
GOVMI	Govedic	Sredisce ob Dr./SI	ORION2 (0.8/8)	1447	5.5	1841	21	108.7	-	715
			ORION3 (0.95/5)	2665	4.9	2069	7	15.0	-	50
			ORION4 (0.95/5)	2662	4.3	1043	14	62.8	36.9	236
HINWO	Hinz	Brannenburg/DE	ACR (2.0/35)*	557	7.4	4954	8	44.4	-	280
IGAAN	Igaz	Baja/HU	HUBAJ (0.8/3.8)	5552	2.8	403	15	58.0	-	382
		Debrecen/HU	HUDEB (0.8/3.8)	5522	3.2	620	8	42.0	18.2	160
		Hodmezovasar./HU	HUHOD (0.8/3.8)	5502	3.4	764	14	73.5	-	261
		Budapest/HU	HUPOL (1.2/4)	3790	3.3	475	4	26.5	9.5	85
		Sopron/HU	HUSOP (0.8/6)	2031	3.8	460	19	82.0	95.8	783
JONKA	Jonas	Budapest/HU	HUSOR (0.95/4)	2286	3.9	445	14	66.9	59.2	285
KACJA	Kac	Kamnik/SI	CVETKA (0.8/3.8)	4914	4.3	1842	12	83.1	-	568
		Kostanjevec/SI	METKA (0.8/8)*	1372	4.0	361	9	59.5	27.0	146
		Ljubljana/SI	ORION1 (0.8/8)	1402	3.8	331	14	60.9	-	436
		Kamnik/SI	REZIKA (0.8/6)	2270	4.4	840	13	95.1	-	883
			STEFKA (0.8/3.8)	5471	2.8	379	12	90.4	-	449
KERST	Kerr	Glenlee/AU	GOCAM1 (0.8/3.8)	5189	4.6	2550	15	80.4	151.2	731
KISSZ	Kiss	Sulysap/HU	HUSUL (0.95/5)*	4295	-	-	15	46.8	-	98
KLAGR	Kladnik	Tacen/SI	TACKA (0.8/12)	715	5.4	796	5	21.1	-	75
KOSDE	Koschny	Izana Obs./ES	ICC7 (0.85/25)*	714	5.9	1464	15	136.0	-	1162
		Noordwijkerh./NL	LIC4 (1.4/50)*	2027	6.0	4509	13	59.4	39.4	245
LERAR	Leroy	Gretz/FR	SAPHIRA (1.2/6)	3260	3.4	301	16	39.4	18.4	119
MACMA	Maciejewski	Chelm/PL	PAV35 (1.2/4)	4383	2.5	253	17	74.3	-	265
			PAV36 (1.2/4)*	5732	2.2	227	20	88.3	-	332
			PAV43 (0.95/3.75)*	2544	2.7	176	17	87.6	-	219
MARGR	Maravelias	Lofoupoli/GR	LOOMECON (0.8/12)	738	6.3	2698	22	133.5	283.8	1299
MOLSI	Molau	Seysdorf/DE	AVIS2 (1.4/50)*	1776	6.1	3817	7	42.2	82.1	694
			MINCAM1 (0.8/8)	1477	4.9	1084	17	85.0	63.8	549
		Ketzür/DE	REMO1 (0.8/8)	1467	6.0	3139	23	128.0	239.5	1219
			REMO2 (0.8/3.8)	5613	4.0	1186	22	118.1	82.6	710
MORJO	Morvai	Fülöpszallas/HU	HUFUL (1.4/5)	2522	3.5	532	16	97.0	47.5	317
OTTMI	Otte	Pearl City/US	ORIE1 (1.4/5.7)	3837	3.8	460	17	97.9	-	417
PERZS	Perko	Becsehely/HU	HUBEC (0.8/3.8)*	5498	2.9	460	23	98.5	-	1350
ROTEC	Rothenberg	Berlin/DE	ARMEFA (0.8/6)	2366	4.5	911	10	29.6	12.6	108
SARAN	Saraiva	Carnaxide/PT	RO1 (0.75/6)	2362	3.7	381	29	217.3	-	561
			RO2 (0.75/6)	2381	3.8	459	30	221.9	-	598
			SOFIA (0.8/12)	738	5.3	907	30	217.9	-	410
SCALE	Scarpa	Alberoni/IT	LEO (1.2/4.5)*	4152	4.5	2052	25	159.3	232.7	691
SCHHA	Schremmer	Niederkrüchten/DE	DORAEMON (0.8/3.8)	4900	3.0	409	20	79.1	-	415
SLAST	Slavec	Ljubljana/SI	KAYAK1 (1.8/28)	588	-	-	8	28.2	-	107
STOEN	Stomeo	Scorze/IT	MIN38 (0.8/3.8)	5566	4.8	3270	21	177.6	316.8	1257
			NOA38 (0.8/3.8)	5609	4.2	1911	21	135.2	229.6	650
			SCO38 (0.8/3.8)	5598	4.8	3306	21	147.0	-	1293
STORO	Stork	Ondrejov/CZ	OND1 (1.4/50)*	2195	5.8	4595	3	11.6	17.0	288
STRJO	Strunk	Herford/DE	MINCAM2 (0.8/6)	2362	4.6	1152	11	24.2	-	145
			MINCAM3 (0.8/12)	728	5.7	975	13	30.2	-	171
			MINCAM5 (0.8/6)	2349	5.0	1896	15	32.1	-	245
TEPIS	Tepliczky	Budapest/HU	HUMOB (0.8/6)	2388	4.8	1607	15	87.4	-	691
TRIMI	Triglav	Velenje/SI	SRAKA (0.8/6)*	2222	4.0	546	8	22.7	-	77
YRJIL	Yrjölä	Kuusankoski/FI	FINEXCAM (0.8/6)	2337	5.5	3574	11	32.0	-	151
ZELZO	Zelko	Budapest/HU	HUVCSE03 (1.0/4.5)	2224	4.4	933	2	10.4	7.7	14
Sum							31	6308.5	-	33176

* active field of view smaller than video frame

2. Observing Times (h)

December	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BASLU	-	-	1.7	0.7	1.2	-	4.0	1.0	-	-	-	-	0.6	-	-
BENOR	-	3.6	-	-	-	-	-	-	-	-	-	-	9.4	7.0	9.9
BERER	-	-	-	-	10.5	7.2	5.1	6.0	-	5.0	-	-	2.7	-	-
	-	-	-	-	8.7	5.4	4.5	5.2	-	2.4	-	-	2.2	-	-
	-	-	-	-	9.7	5.0	1.6	5.2	-	1.8	-	-	2.3	-	-
BOMMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	0.2	9.8	-	0.8	6.7	-	2.3	-	7.8	8.9	1.6	3.5	6.9	5.3	0.2
	0.3	4.7	-	0.5	2.0	-	2.6	-	2.9	6.5	-	3.0	6.2	2.9	-
CASFL	1.4	-	3.2	-	7.2	11.1	6.6	6.7	-	-	-	-	6.0	5.8	7.0
	-	-	3.2	0.3	7.9	11.5	-	6.4	-	-	-	8.9	-	-	8.2
CRIST	0.4	-	4.1	1.8	10.5	12.6	13.1	3.8	-	2.3	0.8	12.5	0.8	4.3	10.8
	1.0	-	3.1	0.6	10.5	13.1	13.1	1.1	-	2.9	-	12.2	0.3	2.4	12.2
	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CSISZ	-	-	-	-	3.9	4.8	-	9.1	-	-	-	-	9.6	0.7	-
ELTMA	2.5	-	-	-	-	11.2	11.9	11.0	-	-	0.7	-	5.9	1.3	-
GONRU	1.7	10.8	7.1	-	1.1	7.9	2.0	-	-	-	1.7	1.2	-	6.4	1.5
	2.2	10.8	6.2	-	1.5	7.7	4.6	-	-	-	2.7	1.8	-	6.6	8.5
	3.6	11.3	8.3	1.9	2.2	12.7	-	-	-	-	-	0.7	0.8	4.0	3.5
GOVMI	-	0.2	2.2	-	-	9.5	7.5	9.5	-	4.1	-	-	7.7	3.0	5.5
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	7.9	-	2.2
HINWO	7.0	4.0	-	-	8.9	-	-	-	-	-	-	-	-	-	3.1
IGAAN	-	-	0.4	0.3	1.1	7.5	0.2	8.8	-	0.5	-	-	1.6	5.6	0.8
	-	-	-	-	2.5	8.3	1.3	11.2	-	-	0.5	-	-	-	-
	-	-	1.5	3.2	-	9.8	-	9.9	-	-	2.0	3.4	3.8	2.7	-
	-	-	-	-	10.6	5.4	3.5	7.0	-	-	-	-	-	-	-
	-	-	0.2	-	6.8	1.9	2.4	2.9	-	-	2.5	4.0	5.2	-	6.5
JONKA	-	-	-	-	7.5	3.8	2.2	6.7	-	2.6	-	-	1.7	-	2.0
KACJA	12.1	-	-	-	-	4.2	7.3	6.3	-	7.5	-	0.4	9.9	-	-
	-	-	-	-	-	5.1	5.8	6.9	-	-	-	-	-	-	-
	-	-	1.2	-	-	9.4	6.7	6.9	-	8.7	-	2.4	6.6	0.6	2.2
	12.2	-	-	-	-	12.4	7.8	4.9	-	6.5	-	0.4	9.4	-	-
	12.1	-	-	-	-	9.9	8.6	6.8	-	9.6	-	0.4	11.1	-	-
KERST	4.5	-	-	-	-	-	-	4.5	-	3.9	-	3.2	6.7	7.7	-
KISSZ	-	-	-	2.3	3.5	4.7	3.7	5.8	-	2.0	-	-	-	-	1.6
KLAGR	-	-	-	-	-	9.2	-	4.2	-	-	-	-	-	-	-
KOSDE	9.6	11.1	9.4	3.7	7.8	2.6	-	-	5.7	-	-	-	10.5	11.0	11.0
	-	4.0	-	2.5	6.0	-	4.9	1.6	-	4.1	-	-	5.3	1.8	-
LERAR	-	-	-	3.0	1.6	-	4.2	-	1.1	5.9	-	2.3	2.3	4.0	-
MACMA	1.9	4.4	1.5	0.6	0.3	5.0	-	3.4	-	7.9	13.6	-	2.0	3.5	-
	4.3	4.4	2.7	0.8	9.3	8.8	-	0.4	-	5.7	12.5	0.2	3.3	3.4	-
	4.1	3.6	3.2	-	11.1	10.8	-	3.5	0.2	8.7	13.8	-	3.0	2.1	-
MARGR	8.3	11.1	8.9	6.5	9.2	2.4	1.0	1.1	6.9	4.8	1.8	4.2	7.5	10.7	8.1
MOLSI	11.0	-	-	-	3.5	-	-	-	-	-	-	7.3	3.5	8.5	4.1
	-	-	-	0.5	9.8	2.1	5.0	4.2	-	-	-	9.7	4.3	9.1	6.0
	0.4	10.5	6.6	0.5	4.6	6.5	-	0.2	2.6	11.3	7.4	10.2	9.6	4.9	7.3
	-	10.3	5.4	-	3.5	5.6	-	0.2	2.7	9.8	7.6	9.7	9.8	4.0	6.6
MORJO	-	-	-	0.8	1.7	6.4	3.8	10.3	-	-	-	-	3.1	4.7	1.9
OTTMI	5.1	-	-	-	-	2.6	0.6	-	7.6	7.9	-	-	-	-	9.3
PERZS	-	1.2	1.4	0.3	-	6.0	4.2	6.6	-	1.7	-	3.0	12.7	3.3	5.7
ROTEC	-	4.9	2.9	-	-	3.5	-	-	1.8	4.3	4.5	-	-	-	-
SARAN	3.0	10.4	8.3	3.5	5.5	9.4	4.2	0.2	4.0	2.4	2.6	0.9	2.0	7.7	1.0
	3.3	10.4	7.4	3.2	3.6	9.7	5.9	-	4.2	1.4	2.9	1.0	1.7	8.0	1.9
	3.8	9.4	7.6	3.7	6.4	11.0	6.5	0.6	4.3	3.1	1.8	0.8	1.4	7.8	0.4
SCALE	1.1	1.3	-	-	1.6	8.9	11.1	-	-	2.3	-	1.9	6.1	1.2	1.5
SCHHA	0.7	7.0	1.2	4.3	5.9	1.1	5.5	0.3	10.6	10.3	-	4.1	7.0	6.6	1.2
SLAST	-	-	-	-	-	4.2	3.3	3.7	-	-	-	-	4.1	-	-
STOEN	4.3	-	-	-	-	12.5	13.5	7.9	-	4.0	0.2	-	3.4	-	2.4
	4.5	-	-	-	-	9.1	13.4	6.9	-	1.7	0.6	-	3.2	-	2.4
	3.0	-	-	-	-	7.6	7.9	7.2	-	4.9	0.2	-	3.2	-	2.2
STORO	-	-	-	-	-	-	-	-	-	-	-	4.8	2.4	4.4	-
STRJO	-	4.8	0.3	-	0.3	-	-	-	1.5	5.5	0.3	3.6	6.0	0.5	-
	-	6.4	0.9	0.8	-	0.9	0.4	0.2	2.8	3.9	0.3	3.9	7.2	0.3	-
	-	5.6	0.2	0.4	1.8	1.5	0.3	-	0.7	7.2	-	5.9	7.1	-	-
TEPIS	-	-	-	-	8.9	4.9	1.6	8.0	-	-	-	-	9.7	4.1	2.8
TRIMI	7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YRJIL	-	1.3	3.0	3.1	0.7	10.7	-	-	-	-	0.3	-	-	-	-
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum	138.0	177.3	113.3	50.6	227.6	365.1	225.7	224.3	67.4	194.0	82.9	131.5	266.7	177.9	161.5

December	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BASLU	-	-	-	-	-	-	-	-	-	-	-	-	2.5	1.0	-	-
BENOR	8.4	7.7	-	-	10.3	7.7	-	5.8	-	-	10.4	-	-	-	-	-
BERER	-	6.1	5.7	-	6.5	-	-	-	-	3.0	-	-	-	-	6.0	5.0
	-	6.5	6.0	-	4.7	-	-	-	-	1.1	-	-	-	-	4.1	1.4
	-	4.3	4.4	-	7.1	-	-	-	-	3.2	-	-	-	-	-	0.8
BOMMA	-	6.5	-	3.7	5.6	5.0	8.4	3.4	1.2	8.8	-	9.4	8.6	-	6.6	11.5
BRIBE	2.7	2.7	1.6	-	-	-	-	-	2.6	-	-	-	1.7	1.7	-	-
	-	-	-	1.2	-	-	-	-	-	-	-	-	-	0.7	-	-
CASFL	5.4	5.9	7.2	7.1	13.2	13.0	11.7	7.0	8.2	11.4	5.8	7.1	9.7	5.2	7.3	8.3
	4.8	9.0	8.3	8.1	13.4	10.9	11.3	10.7	7.7	9.0	5.0	8.5	9.8	3.1	6.4	13.0
CRIST	8.7	13.2	12.9	13.2	11.8	11.5	13.2	-	13.2	13.2	3.9	13.2	4.4	12.2	13.2	7.8
	9.1	13.2	11.3	13.2	10.9	11.7	13.2	-	13.2	13.2	2.5	13.2	4.5	13.2	13.2	7.0
	-	-	-	-	-	-	-	-	-	11.5	5.0	13.2	4.4	12.9	13.2	8.1
CSISZ	-	-	3.1	6.7	9.6	-	1.8	-	-	-	-	5.0	-	-	-	-
ELTMA	-	7.0	3.6	-	5.9	5.6	13.5	12.6	5.3	13.4	4.1	13.5	13.1	-	7.3	7.2
GONRU	8.6	12.4	-	12.6	10.2	4.5	12.8	12.8	11.1	5.1	12.8	12.8	11.2	12.7	12.7	10.1
	8.6	11.2	11.9	12.7	10.3	4.2	12.8	12.8	12.8	11.0	12.8	12.8	10.9	12.8	12.8	9.5
	8.3	9.6	12.8	12.8	8.5	3.8	12.7	12.7	12.7	9.8	12.8	12.9	10.3	12.8	12.6	7.8
GOVMI	-	8.7	-	1.8	10.3	4.5	3.7	6.7	3.6	2.0	-	4.7	-	2.6	8.4	2.5
	-	-	-	-	-	0.5	1.9	6.7	1.9	1.7	-	1.2	-	1.1	-	-
	-	10.8	-	2.5	9.4	4.4	1.7	6.7	2.3	2.6	-	5.5	-	2.7	2.7	1.4
HINWO	-	-	1.3	0.5	-	-	-	-	-	-	13.0	1.3	-	-	-	-
IGAAN	-	5.6	-	-	8.9	-	-	-	-	1.6	-	-	-	-	3.3	11.8
	-	4.3	11.3	-	-	-	2.6	-	-	-	-	-	-	-	-	-
	-	9.8	9.5	-	6.1	-	1.1	-	2.9	7.8	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	5.5	4.4	10.2	3.8	3.3	-	-	6.6	-	0.6	0.9	-	6.9	7.4	-
JONKA	-	5.5	2.7	-	9.5	-	-	-	2.2	7.7	-	-	-	-	4.7	8.1
KACJA	-	-	-	-	5.7	10.3	3.1	11.0	-	5.3	-	-	-	-	-	-
	-	-	-	-	8.7	-	1.2	10.8	-	4.3	-	4.7	-	-	12.0	-
	-	-	-	3.3	-	3.9	-	-	1.4	5.1	-	-	-	-	-	2.5
	-	5.6	-	-	5.8	10.3	3.4	10.8	-	5.6	-	-	-	-	-	-
	-	-	-	-	5.6	7.8	2.7	10.2	-	5.6	-	-	-	-	-	-
KERST	-	1.4	-	-	5.5	7.3	-	-	6.1	6.9	3.7	-	-	4.0	7.8	7.2
KISSZ	-	4.4	3.3	-	9.0	-	-	-	1.7	2.0	-	-	-	0.7	0.4	1.7
KLAGR	-	-	-	2.7	-	3.0	-	2.0	-	-	-	-	-	-	-	-
KOSDE	11.0	-	11.0	9.8	-	-	-	-	-	-	-	-	-	10.9	10.9	-
	6.3	-	5.8	-	-	-	-	-	-	-	1.9	-	9.5	5.7	-	-
LERAR	1.7	0.4	5.8	-	-	-	-	2.5	-	0.5	0.6	-	2.7	0.8	-	-
MACMA	-	-	11.6	4.1	-	-	-	-	-	-	-	3.5	4.9	3.8	2.3	-
	1.8	-	11.4	5.0	-	-	-	-	-	-	-	3.1	4.5	4.4	2.1	0.2
	2.4	-	8.9	5.1	-	-	-	-	-	-	-	-	4.4	1.3	1.4	-
MARGR	10.6	4.7	6.8	-	11.5	-	-	-	-	4.3	-	-	-	0.9	2.2	-
MOLSI	-	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.0	5.8	-	7.4	-	-	-	-	4.0	0.3	-	-	8.0	2.9	4.9	-
	-	5.0	4.0	7.2	-	4.1	-	-	9.8	-	-	-	4.6	0.7	6.7	3.3
	0.4	4.6	3.7	7.1	-	4.0	-	-	9.4	-	-	-	4.2	0.7	5.9	2.9
MORJO	-	9.5	9.3	-	13.5	-	1.9	-	-	8.2	-	-	-	0.9	7.4	13.6
OTTMI	-	10.1	6.3	0.5	-	0.9	9.2	8.6	6.5	10.0	2.9	5.5	4.3	-	-	-
PERZS	-	5.3	2.5	3.8	11.6	5.1	5.9	4.7	3.0	2.4	-	1.3	-	1.0	5.8	-
ROTEC	-	1.0	0.4	-	-	2.4	-	-	-	-	-	-	-	-	-	3.9
SARAN	4.6	-	12.6	11.7	5.9	12.6	10.5	12.6	12.8	12.8	12.5	12.6	-	12.5	12.5	6.0
	2.4	0.6	11.6	12.2	3.4	12.8	11.7	12.3	12.7	12.3	12.7	12.8	9.9	12.7	12.6	4.6
	4.9	0.3	12.7	11.4	5.4	-	9.8	12.8	12.8	12.8	12.6	12.7	10.4	12.7	12.0	6.0
SCALE	1.9	-	5.5	11.0	9.7	5.5	13.3	11.7	4.4	12.8	2.8	13.3	13.3	1.6	6.4	9.1
SCHHA	1.5	-	0.3	-	-	-	-	-	2.9	-	-	0.3	6.1	2.2	-	-
SLAST	-	-	-	1.3	-	0.9	-	-	-	10.3	-	-	-	-	-	0.4
STOEN	-	13.5	6.3	11.6	10.4	5.5	13.4	12.6	5.4	12.4	-	13.1	10.4	-	3.6	11.2
	-	13.1	6.2	7.9	3.9	5.4	9.2	1.4	4.2	4.6	-	13.1	9.7	-	3.5	11.2
	-	10.5	5.4	10.3	8.2	4.3	12.9	11.6	5.4	10.9	-	12.0	6.4	-	3.6	9.3
STORO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STRJO	-	0.6	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-
	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	0.2	-	0.2	-	-	-	-	0.6	-	-	-	0.2	-	0.2	-
TEPIS	-	2.2	6.1	-	10.1	-	9.3	-	-	3.7	-	-	-	3.1	3.1	9.8
TRIMI	-	-	-	-	-	-	-	-	-	1.6	0.3	8.4	0.6	0.6	2.6	1.2
YRJIL	-	-	-	-	-	-	2.4	-	3.1	-	0.3	6.1	1.0	-	-	-
ZELZO	-	-	2.3	-	-	-	-	-	-	8.1	-	-	-	-	-	-
Sum	117.3	268.6	277.8	239.9	309.9	196.7	242.3	233.5	214.5	299.9	139.0	257.7	206.2	185.7	271.8	225.4

3. Results (Meteors)

December	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BASLU	-	-	1	2	5	-	2	1	-	-	-	-	1	-	-
BENOR	-	7	-	-	-	-	-	-	-	-	-	-	93	43	24
BERER	-	-	-	-	97	36	42	36	-	23	-	-	39	-	-
	-	-	-	-	42	14	31	17	-	15	-	-	22	-	-
	-	-	-	-	36	16	6	16	-	6	-	-	21	-	-
BOMMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	1	21	-	3	16	-	10	-	15	41	1	4	82	33	1
	1	16	-	2	3	-	20	-	4	40	-	7	135	40	-
CASFL	5	-	17	-	27	39	32	33	-	-	-	-	22	53	24
	-	-	13	1	38	47	-	24	-	-	-	136	-	-	40
CRIST	2	-	48	13	76	106	87	9	-	17	1	202	1	45	47
	6	-	18	2	45	55	48	3	-	21	-	159	2	21	54
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CSISZ	-	-	-	-	8	4	-	13	-	-	-	-	176	11	-
ELTMA	1	-	-	-	-	46	70	20	-	-	1	-	46	4	-
GONRU	3	57	19	-	1	45	3	-	-	-	2	1	-	38	1
	3	48	13	-	4	42	4	-	-	-	5	6	-	75	4
	4	57	20	4	15	52	-	-	-	-	-	1	6	29	3
GOVMI	-	1	16	-	-	27	32	26	-	13	-	-	313	28	24
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	147	-	7
HINWO	-	7	-	-	70	-	-	-	-	-	-	-	-	-	16
IGAAN	-	-	2	2	7	38	1	58	-	4	-	-	17	100	5
	-	-	-	-	5	30	3	39	-	-	1	-	-	-	-
	-	-	3	4	-	27	-	44	-	-	13	3	28	20	-
	-	-	-	-	42	19	11	13	-	-	-	-	-	-	-
	-	-	1	-	29	13	18	11	-	-	25	98	219	-	65
JONKA	-	-	-	-	40	12	15	21	-	19	-	-	7	-	12
KACJA	66	-	-	-	-	19	61	24	-	55	-	19	217	-	-
	-	-	-	-	-	8	26	16	-	-	-	-	-	-	-
	-	-	3	-	-	23	61	16	-	51	-	44	204	5	7
	117	-	-	-	-	95	107	20	-	84	-	13	209	-	-
	39	-	-	-	-	41	34	21	-	39	-	13	169	-	-
KERST	25	-	-	-	-	-	-	18	-	32	-	34	113	190	-
KISSZ	-	-	-	1	9	6	7	9	-	4	-	-	-	-	2
KLAGR	-	-	-	-	-	33	-	16	-	-	-	-	-	-	-
KOSDE	67	87	56	29	71	12	-	-	25	-	-	-	246	148	85
	-	7	-	8	19	-	14	10	-	17	-	-	92	10	-
LERAR	-	-	-	12	4	-	14	-	4	17	-	3	9	21	-
MACMA	5	5	3	1	2	15	-	12	-	24	51	-	36	55	-
	7	11	5	3	33	15	-	1	-	20	68	1	47	38	-
	1	6	2	-	26	16	-	10	1	30	35	-	29	20	-
MARGR	56	74	74	65	48	8	15	7	34	10	4	12	218	440	31
MOLSI	128	-	-	-	30	-	-	-	-	-	-	132	125	171	41
	-	-	-	1	29	5	31	6	-	-	-	179	76	135	18
	1	93	26	1	17	77	-	1	12	83	44	198	342	83	40
	-	45	9	-	8	45	-	2	2	40	13	85	278	61	21
MORJO	-	-	-	4	4	18	13	29	-	-	-	-	26	45	8
OTTMI	31	-	-	-	-	21	4	-	33	50	-	-	-	-	52
PERZS	-	12	12	1	-	29	48	40	-	6	-	67	584	37	69
ROTEC	-	34	7	-	-	21	-	-	2	24	16	-	-	-	-
SARAN	1	33	21	12	14	33	8	2	3	2	12	2	18	66	5
	5	32	10	10	9	39	11	-	6	4	11	1	14	96	7
	3	26	10	16	8	24	5	1	3	6	1	1	10	64	1
SCALE	1	2	-	-	6	26	28	-	-	15	-	30	35	9	12
SCHHA	2	13	3	16	11	1	27	1	35	27	-	8	119	119	2
SLAST	-	-	-	-	-	11	12	5	-	-	-	-	31	-	-
STOEN	16	-	-	-	-	70	94	27	-	42	1	-	38	-	12
	10	-	-	-	-	35	59	25	-	8	2	-	29	-	10
	14	-	-	-	-	65	95	35	-	63	1	-	49	-	25
STORO	-	-	-	-	-	-	-	-	-	-	-	156	39	93	-
STRJO	-	14	1	-	3	-	-	-	5	33	1	13	69	3	-
	-	20	4	5	-	4	2	1	9	16	2	15	82	2	-
	-	33	1	2	5	8	2	-	4	50	-	27	107	-	-
TEPIS	-	-	-	-	66	21	16	28	-	-	-	-	303	35	25
TRIMI	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YRJIL	-	9	9	11	5	59	-	-	-	-	4	-	-	-	-
ZELZO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum	661	770	427	231	1033	1571	1229	767	197	1051	315	1670	5340	2486	800

December	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BASLU	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-
BENOR	7	9	-	-	13	8	-	2	-	-	1	-	-	-	-	-
BERER	-	47	38	-	20	-	-	-	-	11	-	-	-	-	39	9
	-	31	21	-	18	-	-	-	-	7	-	-	-	-	20	2
	-	18	14	-	15	-	-	-	-	2	-	-	-	-	-	2
BOMMA	-	32	-	30	22	9	32	14	7	20	-	30	24	-	23	25
BRIBE	12	2	1	-	-	-	-	-	5	-	-	-	4	1	-	-
	-	-	-	2	-	-	-	-	-	-	-	-	-	3	-	-
CASFL	32	23	34	29	2	47	58	28	33	38	24	27	29	14	18	26
	26	33	46	41	3	52	45	37	36	35	19	33	43	13	24	32
CRIST	66	73	72	71	39	58	115	-	88	59	20	77	8	37	80	17
	55	48	49	57	31	42	82	-	57	62	3	58	7	19	45	9
	-	-	-	-	-	-	-	-	-	100	33	99	7	53	98	22
CSISZ	-	-	1	15	14	-	2	-	-	-	-	6	-	-	-	-
ELTMA	-	89	30	-	58	12	132	62	34	52	34	65	49	-	9	23
GONRU	29	38	-	62	42	5	72	50	66	32	67	30	44	61	58	30
	38	18	39	47	30	3	68	43	63	29	43	53	37	42	48	14
	22	29	36	53	11	4	39	25	36	14	34	26	12	30	34	9
GOVMI	-	36	-	13	34	17	10	37	34	4	-	4	-	8	35	3
	-	-	-	-	-	3	3	29	10	1	-	1	-	3	-	-
	-	5	-	17	13	7	2	19	5	1	-	2	-	6	4	1
HINWO	-	-	4	9	-	-	-	-	-	-	69	8	-	-	-	-
IGAAN	-	42	-	-	43	-	-	-	-	6	-	-	-	-	17	40
	-	31	46	-	-	-	5	-	-	-	-	-	-	-	-	-
	-	32	12	-	39	-	1	-	3	32	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	45	10	83	9	15	-	-	47	-	8	2	-	34	51	-
JONKA	-	22	15	-	43	-	-	-	14	19	-	-	-	-	19	27
KACJA	-	-	-	-	28	24	12	25	-	18	-	-	-	-	-	-
	-	-	-	-	15	-	7	32	-	2	-	6	-	-	34	-
	-	-	-	5	-	3	-	-	4	5	-	-	-	-	-	5
	-	9	-	-	50	105	25	32	-	17	-	-	-	-	-	-
	-	-	-	-	28	18	7	27	-	13	-	-	-	-	-	-
KERST	-	9	-	-	33	53	-	-	47	54	15	-	-	28	31	49
KISSZ	-	10	11	-	24	-	-	-	3	5	-	-	-	2	2	3
KLAGR	-	-	-	14	-	9	-	3	-	-	-	-	-	-	-	-
KOSDE	65	-	66	54	-	-	-	-	-	-	-	-	-	79	72	-
	16	-	15	-	-	-	-	-	-	-	2	-	23	12	-	-
LERAR	6	2	7	-	-	-	-	9	-	1	1	-	7	2	-	-
MACMA	-	-	14	2	-	-	-	-	-	-	-	13	18	4	5	-
	1	-	27	4	-	-	-	-	-	-	-	12	22	12	4	1
	1	-	22	2	-	-	-	-	-	-	-	-	10	2	6	-
MARGR	66	25	19	-	71	-	-	-	-	8	-	-	-	4	10	-
MOLSI	-	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	10	-	34	-	-	-	-	6	1	-	-	7	2	8	-
	-	12	20	51	-	14	-	-	50	-	-	-	15	1	34	4
	1	2	3	45	-	7	-	-	16	-	-	-	5	1	19	2
MORJO	-	31	14	-	50	-	2	-	-	10	-	-	-	3	23	37
OTTMI	-	25	30	1	-	1	51	29	36	29	6	9	9	-	-	-
PERZS	-	87	6	23	79	48	40	61	36	9	-	7	-	5	44	-
ROTEC	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	1
SARAN	15	-	33	36	7	29	26	31	26	15	28	26	-	23	31	3
	8	2	22	39	12	25	26	27	29	28	24	13	20	29	30	9
	15	1	26	25	4	-	13	29	24	23	17	16	8	9	18	3
SCALE	18	-	39	48	66	19	82	40	33	52	19	40	30	9	6	26
SCHHA	9	-	2	-	-	-	-	-	3	-	-	1	15	1	-	-
SLAST	-	-	-	4	-	4	-	-	-	38	-	-	-	-	-	2
STOEN	-	102	51	106	94	42	150	81	59	84	-	83	33	-	21	51
	-	69	23	45	9	47	78	7	45	6	-	48	29	-	21	45
	-	109	61	90	86	44	123	74	58	85	-	85	32	-	29	70
STORO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STRJO	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	1	-	1	-	-	-	-	1	-	-	-	2	-	1	-
TEPIS	-	13	13	-	35	-	49	-	-	3	-	-	-	28	25	31
TRIMI	-	-	-	-	-	-	-	-	-	5	1	21	5	2	2	4
YRJIL	-	-	-	-	-	-	13	-	10	-	1	29	1	-	-	-
ZELZO	-	-	2	-	-	-	-	-	-	12	-	-	-	-	-	-
Sum	518	1292	995	1158	1190	775	1370	853	1025	1047	469	930	558	583	1098	637

The year 2011 ended with unsteady weather. Between December 6 and 8 and during the Geminid maximum there were once more about 50 cameras active, but later in the month there were larger gaps. Only almost all of our southern European observers in Italy, Portugal and Greece collected twenty and more observing nights. In total, there were 68 cameras in operation – twenty more than a year before. Whereas the effective observing time almost doubled with over 6,000 hours, the number of meteors increased only by about 10% to 33,000. More than 5,300 meteors were recorded in the night of December 13/14 alone, which became the second best night of this year after October 21/22.

Our camera network won two new observers at the end of year. Szabolcs Kiss from Sulysap in Hungary is operating HUSUL, a KTC350BH camera with vari-focal f/0.95 Fujinon lens at 5 mm focal length. In Italy, Mario Bombardini joined our forces. His Mintron camera MARIO is currently equipped with a 4 mm f/1.2 Tamron lens.
Mitja Govedic installed two new cameras ORION3 and ORION4 at his Slovenian observing site. The camera ICC7 of Detlef Koschny was shipped from Holland to the Canary Islands and is now serving at the Izana Observatory at Tenerife.

Highlight of December were expectedly the Geminids. Figure 1 shows their flux density profile at the peak interval of December 12 to 15, based on 3,900 Geminids and roughly 800 Sporadics in parallel. At northern latitudes, the radiant is located high above the horizon for most of the night, which is why the influence of the zenith exponent is rather small. Still the data set was processed with zenith exponents between 1.0 and 2.0 in steps of 0.1. At 1.0, there is a temporary activity increase both in the nights before and after the maximum, whereas at 2.0 there is a fish tail at the begin of the peak night. At a value of 1.5, the profile looks overall best. For demonstration, Figure 1 shows only the flux density profile for the discussed three values.

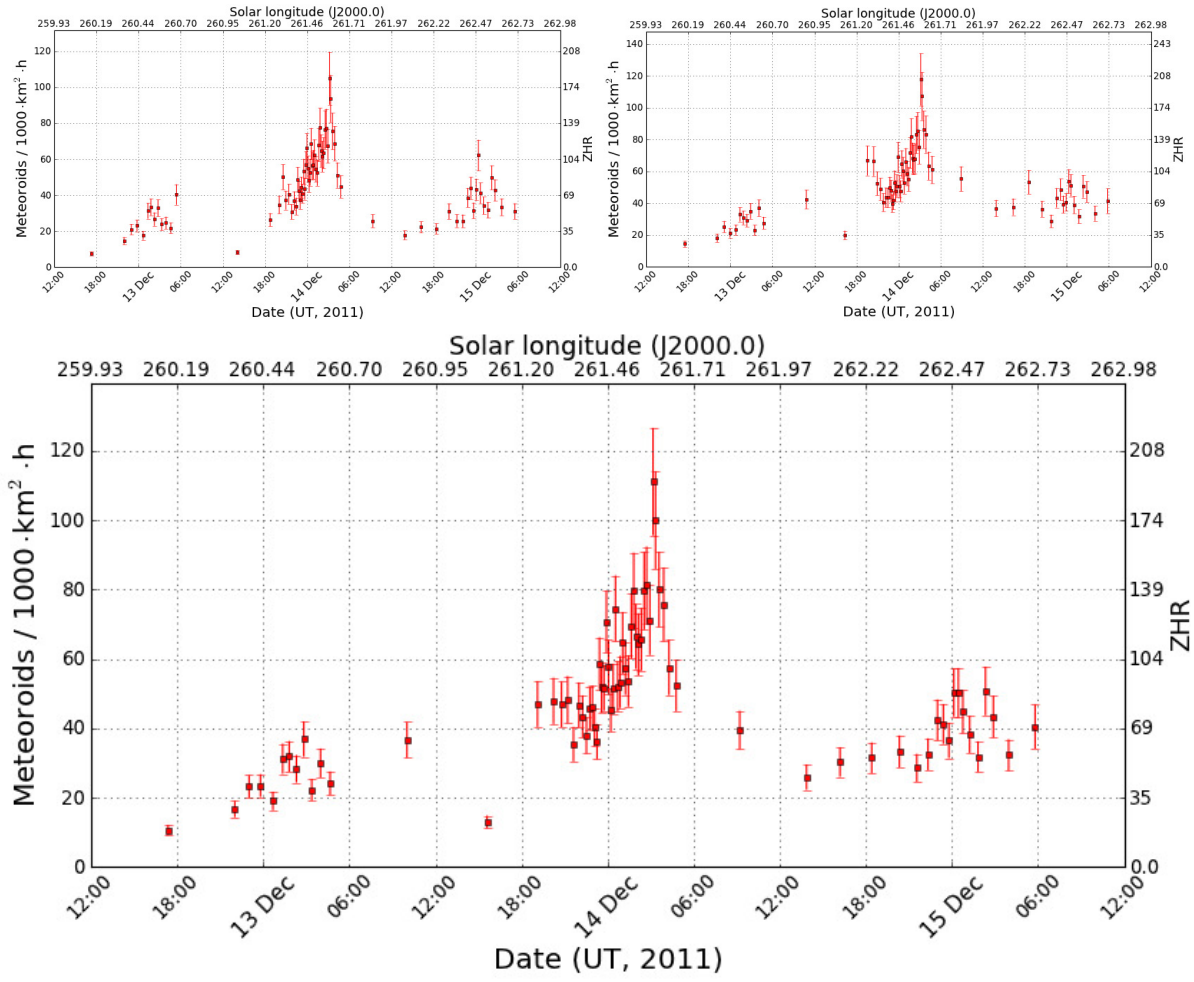

Figure 1: *Flux density profile of the Geminid peak 2011, calculated with zenith exponents of 1.0 and 2.0 (top) as well as 1.5 (bottom).*

Overall the Geminid activity raised by more than a factor of two in the night of December 13/14, and thereafter it dropped even stronger at dawn. The highest flux density value of above 100 meteoroids per 1,000 km^2 and hour was measured in a 15 min time interval at 3:15 UT on December 14. That corresponds to a ZHR of roughly 180 at a solar longitude of 261.596°. So the peak was quite early, given that it was observed in previous years between 261.5° and 262.4° solar longitude.
In the flanking intervalls between 2:30 and 3:50 UT the flux density was still above 80 meteoroids per 1,000 km^2 and hour, which corresponds to a ZHR of 150. For comparison, the Perseids yielded hardly a flux density of 40, whereas even at the Draconid outburst the flux density was just marginally higher with about 110 meteoroids per 1,000 km^2 and hour.
Lets compare the result with the IMO quick look analysis for the Geminds. Unfortunaley, visual observers were less active during the Geminds 2011 – probably because the Moon hampered the observations significantly. Based on roughly 1,500 visual Geminids, the highest ZHR of 200 was observed in the afternoon hours of December 14 (15 UT). At the video maximum time, the visual ZHR was only about 100.
By the way, there is a simple explanation why the ZHR values derived from the Geminid flux densities are more realistic than before. Upon checking the code of the online flux tool, Geert Barentsen noticed that the population index was fixed at 2.0 In the latest version of the tool, the same r-values as used by MetRec are introduced, i.e. 2.6 for the Geminids. That reduced the calculated zenithal hourly rates by almost a factor of three!

The Ursids showed a sharp peak in the evening hours of December 22 at 19 UT (Figure 2). That corresponds to a solar longitude of 270.40°. Here the flux density was little above 10 meteoroids per 1,000 km^2 and hour, which is about the same figure as the ZHR at an population index of 3.0. Also in case of the Ursids, the peak was earlier than usual. There were, however, predictions for one or two extra peaks in the evening hours of December 22 with exactly the observed ZHR. They resulted from the proximity of the parent comet 8P/Tuttle.

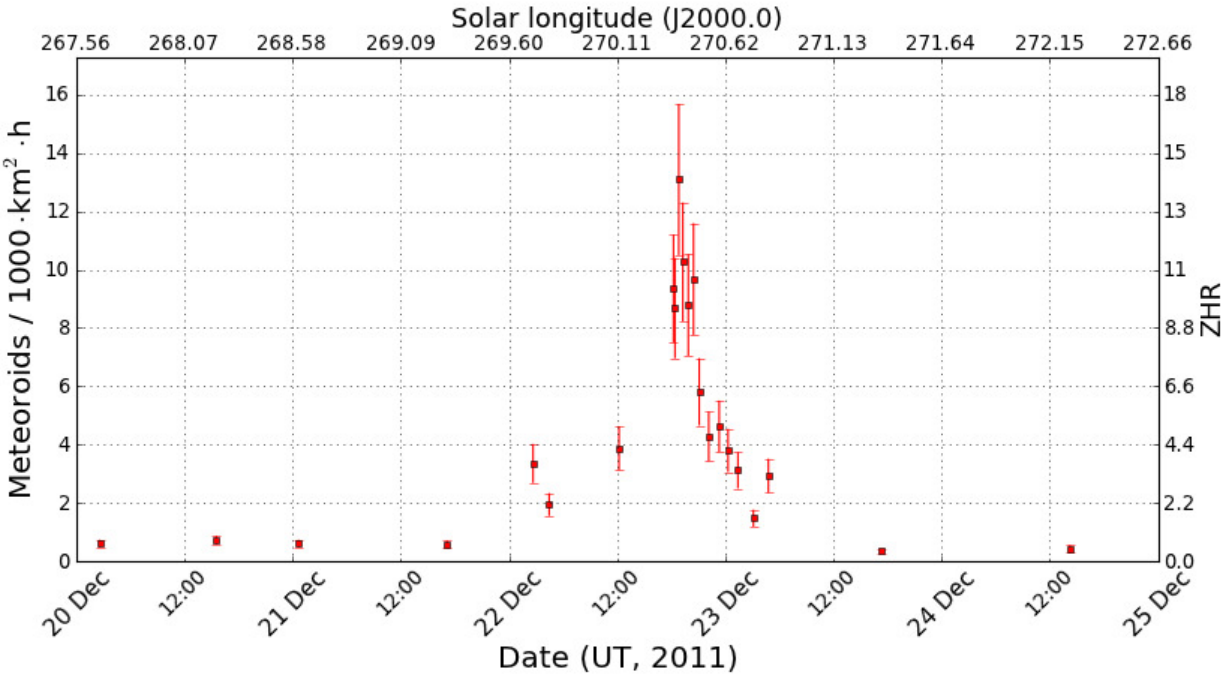

Figure 2: *Flux density profile of the Ursids in 2011, derived from observations of the IMO Video Meteor Network.*

In the end we present the annual statistics for 2011. As reported recently, the exponential growth of the IMO network with respect to the effective observing time and number of meteors continued in 2011. 46 observers (2010: 34) from 16 countries (2010: 12) took part with an overall of 80 video systems (2010: 58) in the video network. For the first time, Germany lost the

pool position with respect to the number of cameras. In December, there were 15 active cameras in Hungary, 12 in Germany, and 11 in Italy and Slovenia. Further cameras were located in Belgium, Spain, Portugal, France, Finland, Poland, Greece, the Netherlands and the Czech Republic. The English camera is currently moved to Hawaii and will hopefully resume operation soon. Outside Europe, we were supported by observers from the US and Australia.

As in the year before, we did not have to skip a single night. In total we achieved 68,900 hours (2010: 35,500) of effective observing time in those 365 nights, which almost doubled the result of the year before. For the first time, we recorded more than 10,000 meteors in every month, with a range of about 11,000 meteors in February and almost 60,000 in October. The annual total was over 310,000 meteors (2010: 192,000) – which is a plus of more than 60%. On average we recorded 4.5 meteors per hour, which matches almost exactly to the average value over the last ten years.

With respect to the weather, 2011 presented strong contrasts. Almost perfect spring (March to May) and fall (September to November) months alternated with only mediocre summer and winter months (Table 1). Overall, the weather was clearly better than in the year before, though, which is why the individual outcome of almost all observers improved.

Table 1: *Monthly distribution of video observations in the IMO camera network in 2011.*

Month	# Observing Nights	Eff. Observing Time	# Meteors	Meteors / Hour
January	31	2,895.1	12,774	4.4
February	28	3,366.6	11,289	3.4
March	31	4,692.6	11,534	2.5
April	30	4,819.0	13,857	2.9
May	31	4,952.9	15,115	3.0
June	30	3,106.4	10,069	3.2
July	31	3,865.6	18,838	4.9
August	31	7,353.5	53,541	7.3
September	30	8,691.7	36,374	4.2
October	31	10,104.7	59,645	5.9
November	30	8,829.7	35,692	4.0
December	31	6,308.5	33,176	5.3
Overall	***365***	***68,986.3***	***311,901***	***4.5***

In the observer statistics, the top flight has further compacted: In 2011, three observers managed to collect more than 300 observing nights. Sirko Molau recaptured the prime position with 324 nights and won out tightly over Antal Igaz (320 nights) and Stefano Crivello (315 nights). 18 further observers managed to collect more than 200 nights, and another 10 observers more than 100 nights.
With respect to the effective observing time, Sirko Molau ranked first with little over 5,400 hours, followed by Enrico Stomeo with almost 5,400 and Javor Kac with almost 5,200 hours. When it comes to the number of recorded meteors, however, Enrico was defeated by no one as in the year before. With almost 35,900 meteors he performed clearly better than Sirko Molau (27,800 meteors) and Javor Kac (25,200 meteors).
Table 2 gives the details for all active observers in the IMO Video Meteor Network, whereby the number of cameras and sites in the last column refers to the main part of the year.

Table 2: *Distribution of video observations over the observers in 2011.*

Observer	Country	# Observing Nights	Eff. Observing Time [h]	# Meteors	Meteors / Hour	Cameras (Sites)
Sirko Molau	Germany	324	5,430.8	27,831	5.1	4 (2)
Antal Igaz	Hungary	320	4,474.7	19,470	4.3	4 (4)
Stefano Crivello	Italy	315	4,411.8	23,887	5.4	2 (1)
Flavio Castellani	Italy	295	2,862.5	11,176	3.9	2 (1)
Bernd Brinkmann	Germany	280	2,341.3	9,033	3.9	2 (2)
Rui Goncalves	Portugal	278	4,343.9	17,858	4.1	3 (1)

Enrico Stomeo	Italy	277	5,386.4	35,905	6.7	3 (1)
Javor Kac	Slovenia	270	5,159.2	25,200	4.9	4 (3)
Zsolt Perko	Hungary	269	1,401.1	9,074	6.5	1 (1)
Erno Berkó	Hungary	258	3,641.0	14,196	3.9	3 (1)
Hans Schremmer	Germany	251	900.2	3,009	3.4	1 (1)
Steve Kerr	Australia	247	1,868.9	14,165	7.6	1 (1)
Mitja Govedic	Slovenia	246	1,323.5	5,365	4.1	1 (1)
Jörg Strunk	Germany	245	2,523.8	10,584	4.2	3 (1)
Mihaela Triglav	Slovenia	235	982.6	3,395	3.5	1 (1)
Carl Hergenrother	USA	233	1,670.3	3,774	2.3	1 (1)
Maurizio Eltri	Italy	229	1,658.5	7,281	4.4	1 (1)
Istvan Tepliczky	Hungary	223	1,252.2	6,411	5.1	1 (1)
Karoly Jonas	Hungary	223	1,095.0	4,101	3.7	1 (1)
Szilárd Csizmadia	Hungary	220	770.9	2,641	3.4	1 (1)
Mike Otte	USA	219	1,023.2	4,568	4.5	1 (1)
Jozsef Morvai	Hungary	197	1,066.7	3,083	2.9	1 (1)
Detlef Koschny	Netherlands	173	1,197.8	5,958	5.0	2 (1)
Eckehard Rothenberg	Germany	173	816.0	2,498	3.1	1 (1)
Stane Slavec	Slovenia	169	682.9	2,320	3.4	1 (1)
Carlos Saraiva	Portugal	168	2,031.8	6,584	3.2	2 (1)
Ilkka Yrjölä	Finland	155	682.6	2,918	4.2	1 (1)
Maciej Maciejewski	Poland	132	2,022.7	4,890	2.4	3 (1)
Wolfgang Hinz	Germany	132	816.4	4,565	5.5	1 (1)
Leo Scarpa	Italy	118	916.9	3,896	4.2	1 (1)
Arnaud Leroy	France	100	379.7	818	2.2	1 (1)
Malcolm Currie	UK	97	416.6	1,139	2.7	1 (1)
Martin Breukers	Belgium	86	720.4	2,696	3.7	2 (1)
Orlando Benitez-Sanchez	Spain	79	311.1	676	2.2	1 (1)
Zoltan Zelko	Hungary	74	585.2	1,578	2.7	2 (1)
Gregor Kladnik	Slovenia	59	316.4	1,469	4.4	1 (1)
Luc Bastiaens	Belgium	58	138.7	285	2.0	1 (1)
Robert Lunsford	USA	51	318.0	1,311	4.1	1 (1)
Grigoris Maravelias	Greece	36	225.0	1,783	7.9	1 (1)
Szabolcs Kiss	Hungary	35	152.6	294	1.9	1 (1)
Tom Roeland	Belgium	31	199.5	345	1.7	1 (1)
Rosta Stork	Czech Rep.	20	143.4	2,897	20.2	2 (2)
Daniel Judge	Australia	17	100.4	252	2.5	1 (1)
Grahame Kelaher	Australia	16	121.7	131	1.1	1 (1)
Mario Bombardini	Italy	12	78.7	268	3.4	1 (1)
Klaas Jobse	Netherlands	5	57.3	423	7.4	1 (1)

In 2011, the TOP 10 of the most successful video cameras is clearly dominated by Italian observers (table 3) – there are only occasionally cameras from Hungary, Portugal and Germany inbetween. The difference are only small, though. The places 11 to 13, for example, are hold by three cameras with 257 observing nights. Once more the two cameras with most meteors are not in the TOP 10: GOCAM1 (14,165 meteors), which obtained also the second best effective observing time (1,868.9 hours), and AVIS2 (13,865 meteors).

Table 3: *The ten most successful video systems in 2011.*

Camera	Observing Site	Observer	# Observing Nights	Eff. Observing Time [h]	# Meteors	Meteors / Hour
C3P8	Valbrevenna (IT)	Stefano Crivello	277	1,919.3	8,217	4.3
SCO38	Scorce (IT)	Enrico Stomeo	273	1,812.4	13,809	7.6
HUBEC	Becsehely (HU)	Zsolt Perko	269	1,401.1	9,074	6.5
MIN38	Scorce (IT)	Enrico Stomeo	266	1,842.0	12,512	6.8
NOA38	Scorce (IT)	Enrico Stomeo	266	1,732.0	9,584	5.5
MINCAM1	Seysdorf (DE)	Sirko Molau	260	1,516.0	5,690	3.8
BMH1	Monte Baldo (IT)	Flavio Castellani	260	1,513.9	5,731	3.8

BMH2	Monte Baldo (IT)	Flavio Castellani	260	1,348.6	5,445	4.0
TEMPLAR2	Tomar (PT)	Rui Goncalves	259	1,678.2	6,655	4.0
REMO1	Ketzür (DE)	Sirko Molau	258	1,447.6	4,672	3,2

In the end I would like to thank as always the diligent observers, and in particular the team of IMO network administrators, which check all the observations for consistency every month and assure the quality of the database. Knocking on wood that the new year will be as sympathic to us as 2011!