Results of the IMO Video Meteor Network – March 2010

Sirko Molau, Abenstalstr. 13b, 84072 Seysdorf *2010/05/10*

1. Observers

Code	Name	Place	Camera	FOV	LM	Nights	Time	Meteors
BENOR	Benitez-S.	Las Palmas	TIMES4 (1.4/50)	∅ 20°	3 mag	3	5.3	16
			TIMES5 (0.95/50)	∅ 10°	3 mag	2	1.3	2
BRIBE	Brinkmann	Herne	HERMINE (0.8/6)	∅ 55°	3 mag	17	53.2	164
CASFL	Castellani	Monte Baldo	BMH1 (0.8/6)	∅ 55°	3 mag	21	70.0	162
			BMH2 (0.8/6)	∅ 55°	3 mag	12	40.6	86
CRIST	Crivello	Valbrevenna	C3P8 (0.8/3.8)	∅ 80°	3 mag	17	75.5	233
			STG38 (0.8/3.8)	∅ 80°	3 mag	16	46.6	91
ELTMA	Eltri	Venezia	MET38 (0.8/3.8)	∅ 80°	3 mag	8	29.6	58
GONRU	Goncalves	Tomar	TEMPLAR1 (0.8/6)	∅ 55°	3 mag	11	70.7	193
			TEMPLAR2 (0.8/6)	∅ 55°	3 mag	14	54.8	125
HERCA	Hergenrother	Tucson	SALSA2 (1.2/4)	∅ 80°	3 mag	30	106.4	238
HINWO	Hinz	Brannenburg	AKM2 (0.85/25)	∅ 32°	6 mag	13	50.2	103
IGAAN	Igaz	Budapest	HUBAJ (0.8/3.8)	∅ 80°	3 mag	20	36.6	72
JOBKL	Jobse	Oostkapelle	BETSY2 (1.2/85)	∅ 25°	7 mag	3	28.6	103
KACJA	Kac	Kostanjevec	METKA (0.8/8)	∅ 42°	4 mag	10	19.6	51
		Ljubljana	ORION1 (0.8/8)	∅ 42°	4 mag	17	38.1	91
		Kamnik	REZIKA (0.8/6)	∅ 55°	3 mag	6	34.3	131
			STEFKA (0.8/3.8)	∅ 80°	3 mag	3	9.4	24
KERST	Kerr	Glenlee	GOCAM1 (0.8/3.8)	∅ 80°	3 mag	10	55.0	293
KOSDE	Koschny	Noordwijkerhout	LIC1 (1.4/50)	∅ 60°	6 mag	13	80.1	380
			TEC1 (1.4/12)	∅ 30°	4 mag	10	16.7	42
LUNRO	Lunsford	Chula Vista	BOCAM (1.4/50)	∅ 60°	6 mag	15	84.6	265
MOLSI	Molau	Seysdorf	AVIS2 (1.4/50)	∅ 60°	6 mag	11	68.1	367
			MINCAM1 (0.8/8)	∅ 42°	4 mag	22	64.8	141
		Ketzür	REMO1 (0.8/3.8)	∅ 80°	3 mag	21	55.6	124
			REMO2 (0.8/3.8)	∅ 80°	3 mag	18	66.8	145
MORJO	Morvai	Fülöpszallas	HUFUL (0.8/3.8)	∅ 80°	3 mag	15	19.1	42
OCHPA	Ochner	Albiano	ALBIANO (1.2/4.5)	∅ 68°	3 mag	16	79.1	146
OTTMI	Otte	Pearl City	ORIE1 (1.4/16)	∅ 20°	4 mag	19	86.4	207
SCHHA	Schremmer	Niederkrüchten	DORAEMON (0.8/3.8)	∅ 80°	3 mag	17	44.0	105
SLAST	Slavec	Ljubljana	KAYAK1 (1.8/28)	∅ 50°	4 mag	13	62.8	133
STOEN	Stomeo	Scorze	MIN38 (0.8/3.8)	∅ 80°	3 mag	15	81.8	198
			NOA38 (0.8/3.8)	∅ 80°	3 mag	14	77.6	196
			SCO38 (0.8/3.8)	∅ 80°	3 mag	14	86.9	247
STRJO	Strunk	Herford	MINCAM2 (0.8/6)	∅ 55°	3 mag	18	34.3	82
			MINCAM3 (0.8/8)	∅ 42°	4 mag	13	27.8	54
			MINCAM5 (0.8/6)	∅ 55°	3 mag	15	53.6	152
TEPIS	Tepliczky	Budapest	HUMOB (0.8/3.8)	∅ 80°	3 mag	10	38.7	84
YRJIL	Yrjölä	Kuusankoski	FINEXCAM (0.8/6)	∅ 55°	3 mag	12	45.3	110
Sum						31	1999.9	5206

2. Observing Times (h)

March	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BENOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	3.9	6.9	5.8	1.7	-	4.9	3.7	5.5	6.9	0.5	-	-	-	-	-
CASFL	5.3	4.1	-	-	6.0	2.6	2.0	1.7	-	-	2.4	5.2	7.1	7.8	4.3
	3.6	4.1	-	-	4.7	3.0	2.3	3.7	-	-	1.3	6.0	2.3	6.6	2.4
CRIST	1.7	2.0	-	-	10.4	-	4.6	8.4	-	-	3.5	2.1	5.7	3.2	8.7
	-	0.5	-	-	-	-	-	-	-	-	-	-	3.1	4.0	4.6
ELTMA	-	-	-	-	-	-	5.9	2.2	-	-	-	-	5.7	2.2	-
GONRU	-	-	-	-	-	-	-	-	9.0	7.1	7.4	8.5	7.6	7.0	7.9
	1.9	-	3.2	-	-	-	-	-	4.2	4.6	4.0	4.8	5.9	2.6	5.5
HERCA	0.2	1.0	1.8	5.1	7.6	2.3	1.9	-	3.4	2.7	0.5	4.3	2.8	3.1	5.8
HINWO	1.0	-	-	-	1.7	-	6.9	2.4	-	-	-	3.8	-	-	-
IGAAN	2.9	1.4	-	-	4.0	-	2.7	0.4	-	-	-	-	-	0.7	0.7

JOBKL	9.6	9.6	-	9.4	-	-	-	-	-	-	-	-	-	-	-
KACJA	-	-	-	-	2.3	0.8	1.9	-	-	-	-	4.1	-	-	1.3
	0.3	-	-	-	4.2	3.9	4.3	-	-	-	-	0.6	3.3	2.4	1.6
	-	-	-	-	-	-	3.9	-	-	-	-	10.5	9.6	-	2.6
	-	-	-	-	-	-	-	-	-	-	-	-	5.3	-	-
KERST	-	-	-	-	4.8	-	-	-	-	-	-	-	-	7.6	4.3
KOSDE	5.5	10.3	9.8	-	-	9.9	6.2	7.4	9.3	-	-	3.5	-	-	-
	2.3	0.4	-	1.7	-	-	0.8	4.2	2.2	-	-	0.9	-	-	-
LUNRO	-	-	-	-	-	-	-	-	2.2	-	-	3.6	6.2	5.4	5.7
MOLSI	4.4	5.7	-	4.0	4.2	-	9.4	8.1	-	0.4	-	-	-	-	-
	5.2	1.2	3.3	4.0	3.0	1.5	7.8	4.8	-	0.3	0.3	-	-	-	-
	2.9	0.3	8.2	0.8	-	3.9	-	8.3	8.7	3.1	-	-	-	0.8	0.6
	4.8	-	6.7	6.3	-	6.7	0.2	6.8	7.0	1.4	-	-	-	-	-
MORJO	1.5	0.7	-	-	3.5	-	0.7	-	-	-	-	-	-	2.6	0.4
OCHPA	4.3	4.7	-	-	4.7	-	4.3	5.2	-	-	-	6.2	4.8	8.0	8.1
OTTMI	-	5.8	4.6	5.8	4.7	5.2	1.5	-	-	-	-	1.0	-	-	4.6
SCHHA	5.2	5.0	2.9	5.3	-	4.8	3.5	3.0	4.4	1.0	-	-	-	-	-
SLAST	-	-	-	-	-	2.6	9.3	-	-	-	-	8.0	7.5	5.8	4.1
STOEN	-	5.0	-	-	6.6	6.0	10.9	6.2	-	-	6.5	6.6	6.3	3.4	0.2
	-	4.3	-	-	6.6	7.1	8.6	4.2	-	-	6.3	5.4	4.2	-	1.0
	-	2.4	-	-	7.5	10.0	10.9	6.7	-	-	6.5	6.5	7.2	1.1	-
STRJO	0.5	1.2	4.4	4.6	-	1.5	0.7	3.9	4.8	1.0	-	-	-	-	-
	-	0.5	1.5	2.7	-	5.1	0.5	8.1	3.8	0.5	-	-	-	-	-
	-	2.9	5.7	6.5	-	3.9	2.0	5.6	7.1	1.7	-	-	-	-	-
TEPIS	1.8	-	-	-	4.5	-	6.0	5.2	-	-	-	-	-	-	-
YRJIL	-	-	-	-	-	-	-	4.0	2.5	-	-	0.9	6.7	2.9	1.9
Sum	68.8	80.0	57.9	57.9	91.0	85.7	123.4	116.0	75.5	24.3	38.7	92.5	101.3	77.2	76.3

March	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BENOR	-	-	-	-	-	1.1	2.6	1.6	-	-	-	-	-	-	-	-
	-	-	-	-	-	0.8	0.5	-	-	-	-	-	-	-	-	-
BRIBE	2.3	2.3	0.7	-	-	2.5	1.0	-	-	-	-	-	-	0.3	2.7	1.6
CASFL	4.9	0.3	1.6	0.7	-	-	-	5.0	0.3	-	0.9	1.7	2.1	-	-	4.0
	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRIST	7.1	-	-	-	-	-	-	1.0	1.2	-	-	7.0	1.2	-	5.6	2.1
	5.6	3.1	0.5	0.6	-	-	1.4	1.3	2.0	-	4.1	4.9	3.1	0.6	7.2	-
ELTMA	4.5	1.1	-	-	-	-	-	-	-	-	-	4.8	3.2	-	-	-
GONRU	6.4	-	-	-	1.4	0.7	-	-	-	-	-	7.7	-	-	-	-
	3.4	-	-	-	-	2.0	-	-	-	6.1	2.2	4.4	-	-	-	-
HERCA	6.1	5.8	5.3	5.0	3.8	6.3	2.5	0.5	1.3	4.9	4.3	3.0	5.3	8.0	1.1	0.7
HINWO	1.5	5.3	5.8	4.0	-	-	1.8	5.1	4.4	6.5	-	-	-	-	-	-
IGAAN	2.8	0.7	2.4	1.5	2.3	0.4	-	-	0.4	1.0	0.7	0.2	5.5	4.2	-	1.7
JOBKL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KACJA	-	-	1.6	3.2	-	1.9	-	0.8	-	-	-	1.7	-	-	-	-
	8.0	0.3	0.3	3.4	-	-	-	-	-	0.3	1.2	3.0	-	0.7	-	0.3
	-	-	-	-	-	-	-	-	-	-	-	5.5	-	2.2	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	2.5	1.6	-	-
KERST	5.7	5.7	4.4	-	-	-	-	-	8.3	-	4.7	5.5	-	4.0	-	-
KOSDE	3.7	1.8	-	-	-	8.7	-	-	2.0	2.0	-	-	-	-	-	-
	-	-	-	-	-	3.6	-	-	-	0.3	-	0.3	-	-	-	-
LUNRO	4.4	8.8	9.9	-	7.3	4.5	4.4	-	6.0	-	-	4.1	6.8	5.3	-	-
MOLSI	-	-	-	7.1	-	-	-	9.1	7.7	8.0	-	-	-	-	-	-
	0.5	1.3	2.7	2.3	-	3.1	-	4.8	2.3	6.9	1.5	-	-	1.0	1.0	6.0
	0.3	1.4	2.6	-	2.4	1.3	0.4	2.9	1.1	2.4	-	-	0.3	-	-	2.9
	-	1.0	3.4	0.3	2.4	4.2	2.9	3.5	1.9	2.4	-	-	-	-	-	4.9
MORJO	0.4	-	3.8	0.7	-	0.3	-	-	0.5	0.3	1.2	0.9	-	1.6	-	-
OCHPA	5.2	1.0	-	-	-	-	-	4.3	3.4	-	2.4	9.4	3.1	-	-	-
OTTMI	7.4	5.7	9.7	1.3	-	-	6.4	6.8	-	-	4.6	0.4	-	1.9	6.7	2.3
SCHHA	1.1	0.5	-	-	-	-	1.5	-	0.7	0.4	3.3	-	-	-	1.0	0.4
SLAST	7.4	2.3	4.2	3.2	-	-	-	1.8	-	-	-	4.4	2.2	-	-	-
STOEN	5.9	1.0	-	-	-	-	-	-	-	-	-	9.8	4.1	-	-	3.3
	7.1	1.0	-	-	-	-	-	-	-	-	-	9.6	5.6	-	-	6.6
	7.6	1.0	-	-	-	-	-	-	-	-	-	8.8	5.0	-	-	5.7
STRJO	-	1.5	1.4	-	0.5	3.4	1.5	0.6	-	1.3	-	-	-	0.5	-	1.0
	-	0.7	-	-	-	1.3	2.1	0.5	-	0.5	-	-	-	-	-	-
	-	4.3	1.0	-	-	4.0	1.8	0.5	-	5.6	-	-	-	-	-	1.0

TEPIS	3.6	-	4.6	4.8	2.8	2.3	-	3.1	-	-	-	-	-	-	-	-
YRJIL	6.0	-	-	-	-	-	7.2	6.8	3.3	-	-	-	-	-	0.5	2.6
Sum	119.5	57.9	65.9	38.1	22.9	52.4	38.0	60.0	46.8	48.9	31.1	97.1	50.0	31.9	25.8	47.1

3. Results (Meteors)

March	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BENOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	13	18	25	7	-	15	8	20	22	2	-	-	-	-	-
CASFL	12	9	-	-	10	8	4	7	-	-	8	11	18	14	8
	4	9	-	-	10	6	4	8	-	-	3	15	8	14	4
CRIST	7	3	-	-	33	-	17	17	-	-	10	5	14	5	39
	-	1	-	-	-	-	-	-	-	-	-	-	8	8	12
ELTMA	-	-	-	-	-	-	15	3	-	-	-	-	7	2	-
GONRU	-	-	-	-	-	-	-	-	26	13	28	27	27	13	24
	3	-	5	-	-	-	-	-	14	10	11	14	15	8	14
HERCA	1	3	7	9	15	3	4	-	8	8	1	10	5	6	13
HINWO	2	-	-	-	3	-	12	2	-	-	-	4	-	-	-
IGAAN	6	2	-	-	9	-	4	1	-	-	-	-	-	1	2
JOBKL	26	35	-	42	-	-	-	-	-	-	-	-	-	-	-
KACJA	-	-	-	-	10	2	7	-	-	-	-	6	-	-	1
	2	-	-	-	8	9	11	-	-	-	-	2	9	8	3
	-	-	-	-	-	-	13	-	-	-	-	37	45	-	8
	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-
KERST	-	-	-	-	28	-	-	-	-	-	-	-	-	28	19
KOSDE	25	36	46	-	-	79	20	33	50	-	-	13	-	-	-
	5	6	-	4	-	-	2	6	5	-	-	2	-	-	-
LUNRO	-	-	-	-	-	-	-	-	7	-	-	11	18	11	30
MOLSI	9	18	-	22	18	-	72	67	-	3	-	-	-	-	-
	12	4	7	8	5	6	19	10	-	1	1	-	-	-	-
	7	1	22	4	-	12	-	15	13	5	-	-	-	4	2
	13	-	11	9	-	12	1	18	11	2	-	-	-	-	-
MORJO	3	2	-	-	7	-	2	-	-	-	-	-	-	4	1
OCHPA	7	7	-	-	11	-	9	13	-	-	-	11	11	12	14
OTTMI	-	11	12	11	11	14	3	-	-	-	-	4	-	-	16
SCHHA	11	13	7	9	-	11	7	9	12	3	-	-	-	-	-
SLAST	-	-	-	-	-	5	21	-	-	-	-	19	22	13	6
STOEN	-	8	-	-	29	22	34	11	-	-	7	9	10	7	1
	-	10	-	-	24	22	25	6	-	-	10	12	9	-	1
	-	5	-	-	30	27	41	12	-	-	13	15	9	1	-
STRJO	1	3	8	12	-	5	1	7	12	2	-	-	-	-	-
	-	1	3	7	-	10	1	16	7	1	-	-	-	-	-
	-	4	14	17	-	13	3	24	26	3	-	-	-	-	-
TEPIS	1	-	-	-	17	-	16	11	-	-	-	-	-	-	-
YRJIL	-	-	-	-	1	-	-	16	4	-	-	1	18	8	5
Sum	170	209	167	161	279	281	376	332	217	53	92	228	269	167	223

March	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BENOR	-	-	-	-	-	4	7	5	-	-	-	-	-	-	-	-
	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
BRIBE	7	5	2	-	-	6	3	-	-	-	-	-	-	1	7	3
CASFL	12	1	7	2	-	-	-	11	1	-	3	4	5	-	-	7
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRIST	26	-	-	-	-	-	-	2	4	-	-	29	2	-	15	5
	15	3	1	1	-	-	2	2	3	-	8	12	4	1	10	-
ELTMA	11	1	-	-	-	-	-	-	-	-	-	13	6	-	-	-
GONRU	16	-	-	-	2	1	-	-	-	-	-	16	-	-	-	-
	7	-	-	-	-	3	-	-	-	9	4	8	-	-	-	-
HERCA	13	15	10	16	14	11	5	1	6	11	7	11	9	12	2	2
HINWO	6	15	12	9	-	-	3	13	11	11	-	-	-	-	-	-
IGAAN	4	2	6	5	4	1	-	-	1	2	2	1	9	7	-	3
JOBKL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KACJA	-	-	3	11	-	3	-	2	-	-	-	6	-	-	-	-
	15	1	1	8	-	-	-	-	-	1	2	8	-	2	-	1
	-	-	-	-	-	-	-	-	-	-	-	24	-	4	-	-

	-	-	-	-	-	-	-	-	-	-	-	-	6	2	-	-
KERST	37	39	19	-	-	-	-	-	56	-	21	27	-	19	-	-
KOSDE	14	13	-	-	-	40	-	-	7	4	-	-	-	-	-	-
	-	-	-	-	-	10	-	-	-	1	-	1	-	-	-	-
LUNRO	19	35	35	-	21	8	7	-	18	-	-	21	14	10	-	-
MOLSI	-	-	-	26	-	-	-	62	36	34	-	-	-	-	-	-
	1	3	11	4	-	3	-	8	9	11	4	-	-	2	1	11
	1	3	5	-	4	4	1	6	3	3	-	-	1	-	-	8
	-	3	9	1	7	9	9	7	5	4	-	-	-	-	-	14
MORJO	1	-	7	3	-	1	-	-	2	1	3	3	-	2	-	-
OCHPA	16	1	-	-	-	-	-	7	4	-	5	15	3	-	-	-
OTTMI	18	8	21	3	-	-	19	17	-	-	9	2	-	7	17	4
SCHHA	2	2	-	-	-	-	5	-	2	1	7	-	-	-	3	1
SLAST	24	4	3	6	-	-	-	2	-	-	-	6	2	-	-	-
STOEN	22	1	-	-	-	-	-	-	-	-	-	24	7	-	-	6
	18	1	-	-	-	-	-	-	-	-	-	28	13	-	-	17
	23	2	-	-	-	-	-	-	-	-	-	30	13	-	-	26
STRJO	-	6	3	-	1	10	3	1	-	4	-	-	-	1	-	2
	-	1	-	-	-	2	3	1	-	1	-	-	-	-	-	-
	-	8	3	-	-	12	4	1	-	18	-	-	-	-	-	2
TEPIS	9	-	11	10	3	2	-	4	-	-	-	-	-	-	-	-
YRJIL	18	-	-	-	-	-	18	11	6	-	-	-	-	-	2	2
Sum	356	173	169	105	56	131	90	163	174	116	75	289	94	70	57	114

In March, the weather finally turned back to normal also in northern Europe. The number of observing nights increased to the usual level, and most camera were operated between 10 and 20 nights. Only SALSA2 of Carl Hergenrother enjoyed once more exceptional conditions and had to pause for just a single night. With 2,000 hours, the total effective observing was slightly below the record of 2009, but the meteor number (5,500) clearly above. Once more, the hourly average increased from 2.0 to 2.7 meteors. I cannot say at this time, whether this is a real effect or only due to the now automated and therefore more strict estimation of cloud gaps.

A new camera station was set up in Hungary, and provided first data from test observations in March. Jozsef Morvai is operating a Watec camera with 3.8/0.8mm Computar lens at Fülöpszallas. More camera stations in Hungary are in preparation.

March is even poorer in meteor showers than February. With the zeta Serpentids (43 ZSE), our 2009 analysis yielded just a single shower in that month. It reaches video rates up to 1.5 in the last decade of March – reason enough to check for traces of this shower in the 2010 data set. As usual, the meteor shower assignment of all observations between March 21 and 30 (1259 meteors) was repeated with a modified shower list. A total of 43 meteors were assigned to the zeta Serpentids, and 161 meteors to the Anthelion source. Figure 1 gives the distribution of shower meteors relative to the number of sporadics in each night. The ZSE seem to have been active all the time at a very low level of just 1/3 of the Anthelion source (by number).
To check, whether such an activity level can be distinguished from the sporadic background at all, I added two “synthetic” showers to the list – one 45° east and one 45° north of the zeta Serpentids. Their “activity” is plotted with thin dotted lines in fugure 1. Expect for March 29, they show the same activity level as the ZSE, hence, the zeta Serpentids cannot be distinguished from the sporadic background in 2010.

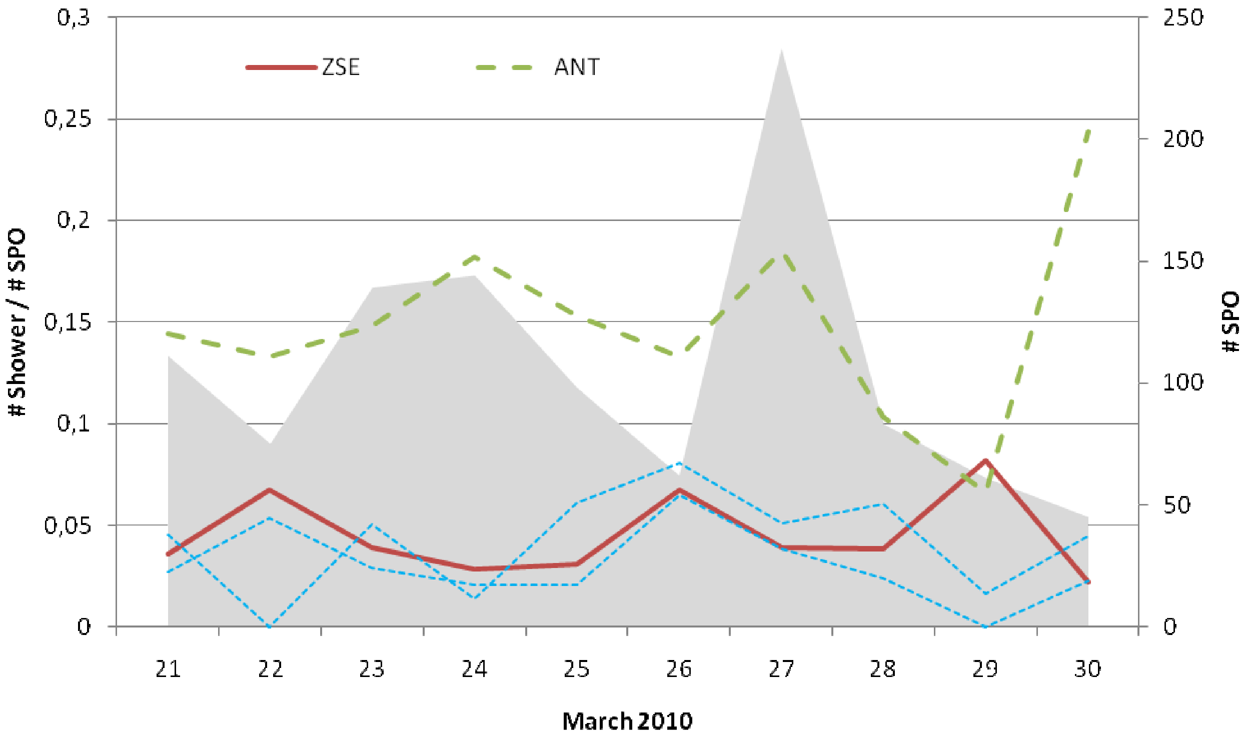

Figure 1: Number of zeta Serpentids and Anthelion meteors in the last decade of March, relative to the number of sporadic meteors in the same night. The absolute number of sporadics is given in the background. The „activity" of two „random showers" is plotted with thin dotted lines.

Finally I would like to report on the third "Meteor Orbit Workshop" that was held from April 17 to 20 at ESTEC in Noordwijk, the Netherlands. That meeting, which was initiated and coordinates by and large from Detlef Koschny, was the most interesting and fruitful workshop for video meteor observers, camera network operators and programmers that I ever joined!

The key for success was, that the operators of the largest video camera networks and the authors of the most important software packages for the detection and analysis of video meteors were all present, even though the number of participants was limited to 20. Beside the IMO network, also the Polish, Hungarian, Croatian, and Japanese network were present in the workshop. In addition there were participants from Slovakia, France and Spain, were further networks are under construction, and representatives of different astronomical institutes. At the same time, the authors of MetRec, UFO* and MeteorScan joined the meeting, just as Polish, Croatian and other programmers of meteor analysis software. In short: the list of participants read like the "Who is Who" in video meteor observation.

At first it looked as if the famous volcano on Iceland (that nobody can pronounce) would put a spoke in our wheel at the last moment, because just at the day of arrival all airports in central Europe were closed. Fortunately, the three participants from overseas arrived already earlier, and other participants switched to train or car on short notice. In the end, two thirds of the participants managed to come to Noordwijk. Right from the start, US based Pete Gural planned to join us by video phone (and each morning he indeed entered the meeting at 3:15 local time sharp). The day before the meeting we decided to organize a real video conference with video, audio and presentation sharing via Webex, which proved to be highly successful in the end. At times we had up to five virtual participants from Ireland, Croatia, Germany and the US, and some of them even presented their talks remotely. Of course, they could not take part in the many discussions we had during breaks and in the evenings, but at least in the meeting room they were almost as present as the local participants.

What was the workshop all about? On the one hand, we could discuss many problems and solutions starting from the automated detection and measurement of video meteors up to the calculation of orbits and the search for meteor showers thanks to the pooled competence of the participants. As we had the unique chance to welcome the Japanese programmer and network operator SonotaCo in our midst (the SonotaCo network is the largest video meteor network of the world with currently about twice as many cameras as the IMO network), we spend in particular much time on the presentation and demonstration of the UFO* software suite. The workshop lasted for four days, so that we did not have to jump form one lecture to the next, but that there was sufficient room for each topic. In fact, SonotaCo and me even had five days, since we met already the day before the workshop at Detlef's house and discussed in detail about MetRec and UFO*.

On the other hand, we covered practical aspects of organizing large camera networks, the equipment, the collection and analysis of observations, and the prerequisits that all observations can be collected in the unified VMO (Virtual Meteor Observatory) database in the near future. It was most interesting, which approaches were followed by the different meteor networks, and which advantages and disadvantages each of these has.

My personal highlight (and that of many other participants) was the presentation of UFORadiant by SonotaCo. It's functionality is comparable to the RadFind and StrmFind tools of MetRec. This program, which is not (yet) available to the public, allows to find meteor showers in the observational database. Moreover, UFORadiant provides breathtaking options for data visualization.At first we started with the known projection of radiants in ecliptical minus solar longitude vs. ecliptical latitude based on the latest SonotaCo network data set. Then, the data set was filtered for individual orbital elements (semimajor axis, eccentricity, inclination) and suddenly it became clear, which type of meteors provided what part of the overall sporadic background. None of the experts in the meeting room had ever seen these interrelations in such an illustrative way before.
When preparing his talk, SonotaCo had stumbled over an inconspicuous aggregation of orbits that did not fit to any known shower. During his talk he demonstrated live, how he obtains the shower parameters. His preliminary analysis resulted in a shower that is active between late October and Mid-November with a radiant position at maximum (223° solar longitude) of alpha =144°, delta=45° and a velocity of 65 km/s. Now I was almost brim-full of curiosity whether this shower would also be present in the IMO Network data. A short glimpse at the 2009 analysis (http://www.imonet.org/wgn09/sol223.html) yielded the following: The fourth strongest radiant (behind NTA, STA and ORI) at 223° solar longitude has a position of alpha=144.1°, delta=45.5° and a velocity of 64 km/s! At this point, everyone jumped up and we fell in our arms amidst the applause of the other participants. A little later I found, that we could not only confirm SonotaCo's radiant positon, but that also the shower as such was already detected in our 2009 analysis. Just because of it's similarity to the northern Apex source we did not follow up on this one so far. The clustering of orbits in the Japanese data set, however, lets us now suppose this to be a real meteor shower rather than a diffuse sporadic source.

Looking back one can say, that we did not only discuss technical aspects at the workshow, but that the "video meteor observer scene" world-wide has moved closer together once more, and that we made a big step towards the ultimate aim of a unified meteor database. Therefore once more many thanks to Detlef Koschny and the other organizers for the idea and organization of this wonderful event!