Results of the IMO Video Meteor Network – January 2010

Sirko Molau, Abenstalstr. 13b, 84072 Seysdorf *2010/03/11*

1. Observers

Code	Name	Place	Camera	FOV	LM	Nights	Time	Meteors
BENOR	Benitez-S.	Las Palmas	TIMES4 (1.4/50)	∅ 20°	3 mag	7	22.6	67
			TIMES5 (0.95/50)	∅ 10°	3 mag	6	7.0	13
BRIBE	Brinkmann	Herne	HERMINE (0.8/6)	∅ 55°	3 mag	9	18.7	58
CASFL	Castellani	Monte Baldo	BMH1 (0.8/6)	∅ 55°	3 mag	22	89.5	279
			BMH2 (0.8/6)	∅ 55°	3 mag	18	88.9	270
CRIST	Crivello	Valbrevenna	C3P8 (0.8/3.8)	∅ 80°	3 mag	20	96.1	367
			STG38 (0.8/3.8)	∅ 80°	3 mag	14	51.7	135
ELTMA	Eltri	Venezia	MET38 (0.8/3.8)	∅ 80°	3 mag	5	21.2	81
GONRU	Goncalves	Tomar	TEMPLAR1 (0.8/6)	∅ 55°	3 mag	10	63.1	305
			TEMPLAR2 (0.8/6)	∅ 55°	3 mag	12	53.7	193
GOVMI	Govedic	Sredisce ob Dravi	ORION2 (0.8/8)	∅ 42°	4 mag	9	34.1	162
HERCA	Hergenrother	Tucson	SALSA (1.2/4)	∅ 80°	3 mag	9	31.4	83
			SALSA2 (1.2/4)	∅ 80°	3 mag	22	82.2	232
HINWO	Hinz	Brannenburg	AKM2 (0.85/25)	∅ 32°	6 mag	1	7.8	20
IGAAN	Igaz	Budapest	HUBAJ (0.8/3.8)	∅ 80°	3 mag	8	21.2	103
JOBKL	Jobse	Oostkapelle	BETSY2 (1.2/85)	∅ 25°	7 mag	8	48.5	270
KACJA	Kac	Kostanjevec	METKA (0.8/8)	∅ 42°	4 mag	5	16.4	47
		Ljubljana	ORION1 (0.8/8)	∅ 42°	4 mag	3	9.8	48
		Kamnik	REZIKA (0.8/6)	∅ 55°	3 mag	2	7.4	92
			STEFKA (0.8/3.8)	∅ 80°	3 mag	3	20.8	92
KERST	Kerr	Glenlee	GOCAM1 (0.8/3.8)	∅ 80°	3 mag	8	47.9	353
KOSDE	Koschny	Noordwijkerhout	LIC1 (1.4/50)	∅ 60°	6 mag	11	29.6	173
			TEC1 (1.4/12)	∅ 30°	4 mag	7	7.7	21
LUNRO	Lunsford	Chula Vista	BOCAM (1.4/50)	∅ 60°	6 mag	20	139.2	664
MOLSI	Molau	Seysdorf	AVIS2 (1.4/50)	∅ 60°	6 mag	1	5.3	38
			MINCAM1 (0.8/8)	∅ 42°	4 mag	9	22.3	103
		Ketzür	REMO1 (0.8/3.8)	∅ 80°	3 mag	8	14.1	49
OCHPA	Ochner	Albiano	ALBIANO (1.2/4.5)	∅ 68°	3 mag	15	89.8	327
OTTMI	Otte	Pearl City	ORIE1 (1.4/16)	∅ 20°	4 mag	18	85.8	285
ROTEC	Rothenberg	Berlin	ARMEFA (0.8/6)	∅ 55°	3 mag	8	15.2	34
SCHHA	Schremmer	Niederkrüchten	DORAEMON (0.8/3.8)	∅ 80°	3 mag	9	15.7	57
SLAST	Slavec	Ljubljana	KAYAK1 (1.8/28)	∅ 50°	4 mag	1	9.4	40
STOEN	Stomeo	Scorze	MIN38 (0.8/3.8)	∅ 80°	3 mag	12	77.3	359
			SCO38 (0.8/3.8)	∅ 80°	3 mag	11	88.8	481
STRJO	Strunk	Herford	MINCAM2 (0.8/6)	∅ 55°	3 mag	4	5.4	20
			MINCAM3 (0.8/8)	∅ 42°	4 mag	3	7.6	23
			MINCAM5 (0.8/6)	∅ 55°	3 mag	1	10.6	33
TEPIS	Tepliczky	Budapest	HUMOB (0.8/3.8)	∅ 80°	3 mag	2	7.9	23
YRJIL	Yrjölä	Kuusankoski	FINEXCAM (0.8/6)	∅ 55°	3 mag	15	77.8	256
Sum						31	1549.5	6256

2. Observing Times (h)

January	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BENOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	-	-	0.7	-	7.2	1.0	-	-	-	-	-	3.2	-	-	-
CASFL	1.6	8.6	5.5	-	0.3	0.9	-	-	-	2.4	-	-	0.8	1.7	4.1
	-	-	-	-	-	-	-	-	-	3.8	-	-	2.5	5.2	8.1
CRIST	-	-	-	1.0	5.8	7.7	-	3.8	-	-	-	-	-	0.5	9.4
	3.0	7.4	-	-	-	6.1	-	-	-	-	-	-	-	-	1.8
ELTMA	-	-	5.8	-	-	-	-	-	-	1.5	-	-	-	-	-
GONRU	-	-	-	-	-	-	9.7	11.6	2.1	-	-	-	-	-	-
	1.2	-	-	-	-	-	6.0	8.7	-	-	-	-	-	-	-
GOVMI	-	3.8	13.7	-	-	-	-	-	-	-	-	-	-	-	-
HERCA	3.2	3.4	5.0	4.4	3.5	-	-	-	3.5	1.7	4.5	-	-	-	-
	-	-	3.2	6.0	4.0	6.5	3.4	8.5	3.5	2.7	3.9	7.4	4.5	1.4	5.5

HINWO	-	-	-	7.8	-	-	-	-	-	-	-	-	-	-	-	
IGAAN	-	-	9.5	-	-	0.9	-	0.7	-	2.3	-	-	-	-	-	
JOBKL	-	-	8.4	-	-	-	13.1	3.1	-	-	-	-	-	5.4	-	
KACJA	-	-	10.0	-	-	-	-	-	-	-	-	-	-	-	-	
	-	2.3	7.1	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	6.6	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	12.6	-	-	-	-	-	-	-	-	-	-	-	-	
KERST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
KOSDE	-	-	-	-	-	0.2	-	7.5	-	-	-	-	-	2.8	-	
	-	-	-	-	-	-	0.5	0.7	-	-	-	-	-	0.7	-	
LUNRO	8.1	6.5	10.1	8.6	7.1	7.2	8.0	7.0	9.7	-	9.5	9.6	1.6	6.5	6.8	
MOLSI	-	-	-	-	-	-	-	-	-	-	-	5.3	-	-	-	
	-	5.0	0.8	3.4	-	0.3	0.1	-	-	-	-	4.0	-	-	-	
	-	-	-	-	1.1	-	4.0	-	-	-	-	-	-	-	-	
OCHPA	3.0	11.2	10.1	-	-	-	-	-	-	-	-	-	-	-	1.6	
OTTMI	-	8.0	8.3	7.1	6.6	7.6	-	-	6.0	7.7	2.2	4.3	2.4	4.1	0.8	
ROTEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SCHHA	2.7	-	4.1	-	1.4	-	-	-	-	-	-	4.1	-	0.7	-	
SLAST	-	-	9.4	-	-	-	-	-	-	-	-	-	-	-	-	
STOEN	-	7.1	7.6	-	-	-	-	-	-	4.1	-	-	-	-	10.1	
	-	8.8	8.7	-	-	-	-	-	-	5.0	-	-	-	-	10.2	
STRJO	-	-	-	-	-	-	-	-	-	-	1.0	2.9	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	10.6	-	-	-	
TEPIS	-	-	4.6	-	-	-	-	-	-	-	-	-	-	-	-	
YRJIL	4.4	6.7	-	0.5	6.0	-	-	2.9	5.9	6.3	-	-	-	-	-	
Sum	27.2	78.8	151.8	38.8	43.0	38.4	44.8	54.5	30.7	37.5	21.1	57.0	11.8	29.0	58.4	

January	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BENOR	4.1	3.4	1.9	3.1	4.3	3.5	-	-	-	2.3	-	-	-	-	-	-
	2.5	0.7	1.0	1.0	-	1.1	-	-	-	0.7	-	-	-	-	-	-
BRIBE	-	-	-	3.3	-	-	0.7	-	-	-	1.1	-	-	1.0	0.5	-
CASFL	-	6.7	5.0	7.2	5.7	5.5	2.3	5.3	2.7	2.7	6.1	1.0	5.8	-	-	7.6
	0.6	8.7	10.2	9.9	5.2	-	2.5	8.7	2.3	2.1	3.9	0.3	5.1	-	0.3	9.5
CRIST	-	9.6	10.9	1.4	2.9	9.1	9.7	1.0	-	3.9	0.7	4.4	2.1	2.3	2.6	7.3
	-	0.5	9.4	2.1	0.8	5.9	-	1.0	-	-	1.8	4.3	3.8	-	3.8	-
ELTMA	-	6.0	-	-	-	-	5.5	2.4	-	-	-	-	-	-	-	-
GONRU	-	-	-	-	3.2	-	-	-	6.7	7.7	9.0	6.6	3.9	-	-	2.6
	-	-	-	0.3	2.1	-	-	-	6.4	8.9	5.8	5.0	5.2	-	2.8	1.3
GOVMI	-	-	1.8	-	1.2	-	-	-	-	1.7	1.0	4.4	1.8	-	-	4.7
HERCA	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.2	3.4	0.5	-	-	-	-	-	5.2	5.5	0.7	0.3	-	-	1.5	3.4
HINWO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IGAAN	1.7	-	-	-	-	-	-	-	2.9	1.5	-	-	1.7	-	-	-
JOBKL	-	6.6	-	1.8	-	-	-	-	-	3.4	6.7	-	-	-	-	-
KACJA	1.6	-	-	-	0.5	-	-	-	-	-	-	2.9	-	-	-	1.4
	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-
	-	-	-	-	6.7	-	-	-	-	-	-	-	1.5	-	-	-
KERST	-	5.7	5.3	6.3	6.7	6.8	4.1	-	-	-	6.2	6.8	-	-	-	-
KOSDE	-	3.4	-	-	0.2	-	-	-	-	2.7	9.5	0.3	-	0.5	0.6	1.9
	-	1.9	-	-	-	-	-	-	-	-	2.2	-	-	-	0.6	1.1
LUNRO	-	-	-	-	-	-	-	-	-	9.9	6.7	-	5.8	4.6	5.6	0.3
MOLSI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	1.0	-	1.8	-	-	-	-	-	-	5.9	-	-	-	-	-
	0.3	-	-	-	-	-	0.7	-	1.0	2.5	2.8	-	-	-	1.7	-
OCHPA	-	2.5	5.2	10.9	5.4	9.1	2.0	4.3	-	-	7.9	1.8	4.6	-	-	10.2
OTTMI	-	-	-	0.3	5.4	-	-	-	-	-	-	8.0	4.1	1.8	-	1.1
ROTEC	0.8	-	2.0	-	-	-	0.6	1.5	1.6	3.3	5.1	-	-	-	0.3	-
SCHHA	-	0.3	-	1.2	-	-	-	-	-	-	-	0.9	-	0.3	-	-
SLAST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STOEN	-	10.0	1.3	-	-	6.2	9.4	3.6	-	-	5.0	-	5.7	-	-	7.2
	-	9.2	-	-	-	6.1	10.4	2.9	-	-	6.7	-	10.6	-	-	10.2
STRJO	-	-	-	-	-	-	-	-	-	1.0	0.5	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	0.5	1.5	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TEPIS	-	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-
YRJIL	-	-	4.8	6.3	7.9	10.4	8.6	1.8	-	1.8	3.5	-	-	-	-	-
Sum	12.8	81.8	59.3	56.9	58.2	63.7	56.5	32.5	32.1	62.1	100.7	47.0	62.5	10.5	20.3	69.8

3. Results (Meteors)

January	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
BENOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRIBE	-	-	4	-	18	1	-	-	-	-	-	9	-	-	-
CASFL	3	29	21	-	1	3	-	-	-	8	-	-	3	4	15
	-	-	-	-	-	-	-	-	-	17	-	-	4	23	20
CRIST	-	-	-	2	25	28	-	12	-	-	-	-	-	3	33
	9	21	-	-	-	11	-	-	-	-	-	-	-	-	3
ELTMA	-	-	36	-	-	-	-	-	-	3	-	-	-	-	-
GONRU	-	-	-	-	-	-	65	62	5	-	-	-	-	-	-
	4	-	-	-	-	-	30	30	-	-	-	-	-	-	-
GOVMI	-	23	99	-	-	-	-	-	-	-	-	-	-	-	-
HERCA	8	6	18	13	11	-	-	-	5	3	14	-	-	-	-
	-	-	12	19	13	17	13	18	12	5	8	22	14	6	15
HINWO	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-
IGAAN	-	-	64	-	-	4	-	1	-	8	-	-	-	-	-
JOBKL	-	-	52	-	-	-	93	8	-	-	-	-	-	25	-
KACJA	-	-	37	-	-	-	-	-	-	-	-	-	-	-	-
	-	12	33	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	91	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	81	-	-	-	-	-	-	-	-	-	-	-	-
KERST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KOSDE	-	-	-	-	-	3	-	61	-	-	-	-	-	11	-
	-	-	-	-	-	-	2	4	-	-	-	-	-	1	-
LUNRO	39	20	75	34	51	36	51	20	46	-	49	53	4	29	33
MOLSI	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-
	-	29	3	8	-	1	1	-	-	-	-	16	-	-	-
	-	-	-	-	2	-	17	-	-	-	-	-	-	-	-
OCHPA	9	53	59	-	-	-	-	-	-	-	-	-	-	-	2
OTTMI	-	25	31	27	31	23	-	-	32	18	9	10	12	12	2
ROTEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCHHA	6	-	27	-	3	-	-	-	-	-	-	12	-	2	-
SLAST	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-
STOEN	-	33	58	-	-	-	-	-	-	11	-	-	-	-	58
	-	71	120	-	-	-	-	-	-	11	-	-	-	-	50
STRJO	-	-	-	-	-	-	-	-	-	-	2	15	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-
TEPIS	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-
YRJIL	9	33	-	3	26	-	-	10	16	16	-	-	-	-	-
Sum	87	355	976	126	181	127	272	226	116	100	82	225	37	116	231

January	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BENOR	15	8	7	9	13	9	-	-	-	6	-	-	-	-	-	-
	3	2	3	1	-	3	-	-	-	1	-	-	-	-	-	-
BRIBE	-	-	-	15	-	-	2	-	-	-	4	-	-	4	1	-
CASFL	-	23	17	20	14	17	8	15	7	8	18	4	18	-	-	23
	1	25	33	31	18	-	9	23	7	5	14	1	13	-	1	25
CRIST	-	43	45	4	14	39	26	2	-	18	2	16	6	8	9	32
	-	1	23	4	4	13	-	1	-	-	7	15	15	-	8	-
ELTMA	-	21	-	-	-	-	16	5	-	-	-	-	-	-	-	-
GONRU	-	-	-	-	8	-	-	-	35	33	38	37	15	-	-	7
	-	-	-	1	4	-	-	-	28	22	22	25	16	-	8	3
GOVMI	-	-	5	-	1	-	-	-	-	6	3	10	4	-	-	11
HERCA	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	10	1	-	-	-	-	-	14	14	2	2	-	-	4	8
HINWO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IGAAN	6	-	-	-	-	-	-	-	8	5	-	-	7	-	-	-
JOBKL	-	50	-	4	-	-	-	-	-	10	28	-	-	-	-	-
KACJA	2	-	-	-	1	-	-	-	-	-	-	4	-	-	-	3

	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
	-	-	-	-	9	-	-	-	-	-	-	-	2	-	-	-
KERST	-	39	24	53	43	67	26	-	-	-	54	47	-	-	-	-
KOSDE	-	25	-	-	4	-	-	-	-	20	32	1	-	4	7	5
	-	5	-	-	-	-	-	-	-	-	4	-	-	-	2	3
LUNRO	-	-	-	-	-	-	-	-	-	45	33	-	21	11	13	1
MOLSI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	3	-	4	-	-	-	-	-	-	38	-	-	-	-	-
	1	-	-	-	-	-	3	-	4	6	11	-	-	-	5	-
OCHPA	-	9	14	37	19	31	4	20	-	-	23	5	14	-	-	28
OTTMI	-	-	-	1	12	-	-	-	-	-	-	19	11	7	-	3
ROTEC	2	-	2	-	-	-	1	5	5	9	9	-	-	-	1	-
SCHHA	-	1	-	3	-	-	-	-	-	-	-	2	-	1	-	-
SLAST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STOEN	-	40	2	-	-	35	31	9	-	-	30	-	17	-	-	35
	-	46	-	-	-	25	43	7	-	-	24	-	32	-	-	52
STRJO	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEPIS	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-
YRJIL	-	-	10	18	16	38	44	4	-	4	9	-	-	-	-	-
Sum	33	356	186	205	180	277	213	91	116	215	414	188	192	35	59	239

For a number of observers (including myself) January 2010 presented the worst weather conditions since the start of the camera network more than 10 years ago. I can't remember that we ever had a series of almost completely overcasted skies that lasted for seven weeks from late December to mid-February. Some of our most active observers in central Europe collected less than ten observing nights. Only our American and two Italian observers obtained more than 20 nights in January.

However, the nice thing about the IMO network is its large size. Even under such poor conditions, we collected more than 6,000 meteors within 1,500 hours of effective observing time – the second best January result ever. And the IMO network continues to grow! I am particulary delighted to welcome two new observers this month: With Mike Otte, we have the third American in our midst. Mike is observing from a site neaby Pearl City in Illinois with a Watec LCL-902K camera and different c-mount lenses. Even farther south is Steve Kerr, observing from Glenlee in Queensland, Australia. Steve is our first southern hemisphere observer since 2003 which makes his data particularly valuable. He operates a standard setup with GSTAR-EX camera (which is identical to the Mintron) and a Computar 3.8 mm f/0.8 lens. The camera ARMEFA from public Archenhold Observatory Berlin is now maintained by Eckehard Rothenberg.

With respect to meteor showers, the Quadrantids are the last highlight for northern hemisphere observers before the sping minimum starts with a significantly reduced meteor activity. This year, the maximum was expected for the early evening of January 3 (UT) together with a waning gibbous moon, so the observing conditions were not perfect. Still, a number of observers took advantage of the relatively good weather conditions that night and recorded the descending activity branch. Figure 1 shows the number of Quadrantids per half hour interval averaged over seven cameras with mainly cloud-free skies, and corrected by the radiant altitude. There is an activity gap between 01:00 and 01:30 UT on January 4, and after 2:30 the rates decrease significantly.

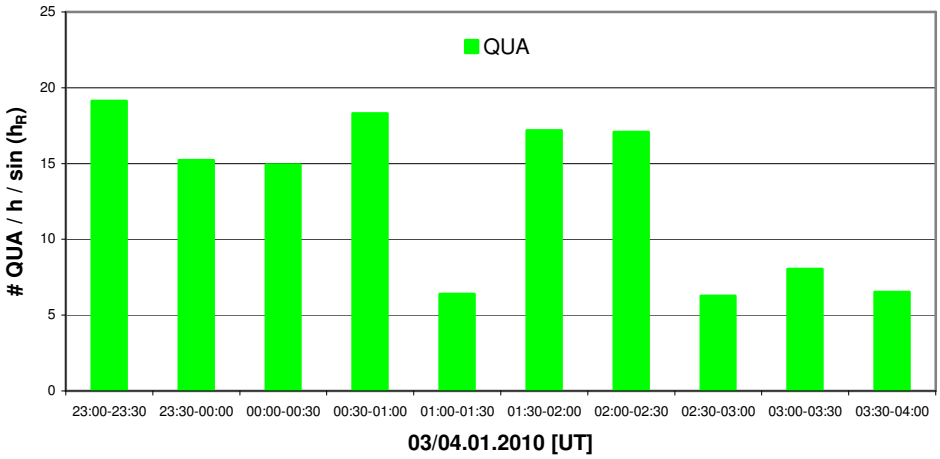

Figure 1: Relative Quadrantid activity on January 3/4, 2010.

The Quadrantids are well-know for their extremely short activity period. Just one day away from the maximum, their activity has practically vanished. A detailed profile of the maximum was not obtained from video data so far, because at an interval length of two degrees as in the previous analyses, the maximum fills just one bin. Similar to the October Camelopardalids, I now created a high resolution activity profile with non-overlapping bins of 0.1° length from all IMO network data between 1993 and 2010. The data set contains a total of 3,800 Quadrantids. The result is given in figure 2.
Interestingly, the profile is not symmetric – the ascending branch is steeper than the descending branch. The full width at half maximum (FWHM) is 0.7°. For comparison: The FWHM of the October Camelopardalids was about 0.2°. Half maximum occurs at roughly 282.8° and 283.5°. The center value of 283.15° matches perfectly to the activity maximum given in the IMO handbook (283.16°) and to the values obtained from visual observations in 2008 (283.3°) and 2009 (283.2°). Due to the asymmetric shape, the highest video rate occurs slightly earlier at 283.0° solar longitude. For comparison, the high resolution visual profile printed in the IMO handbook is given as a red line. That profile is asymmetric, too, but shifted by 0.1° in solar longitude.

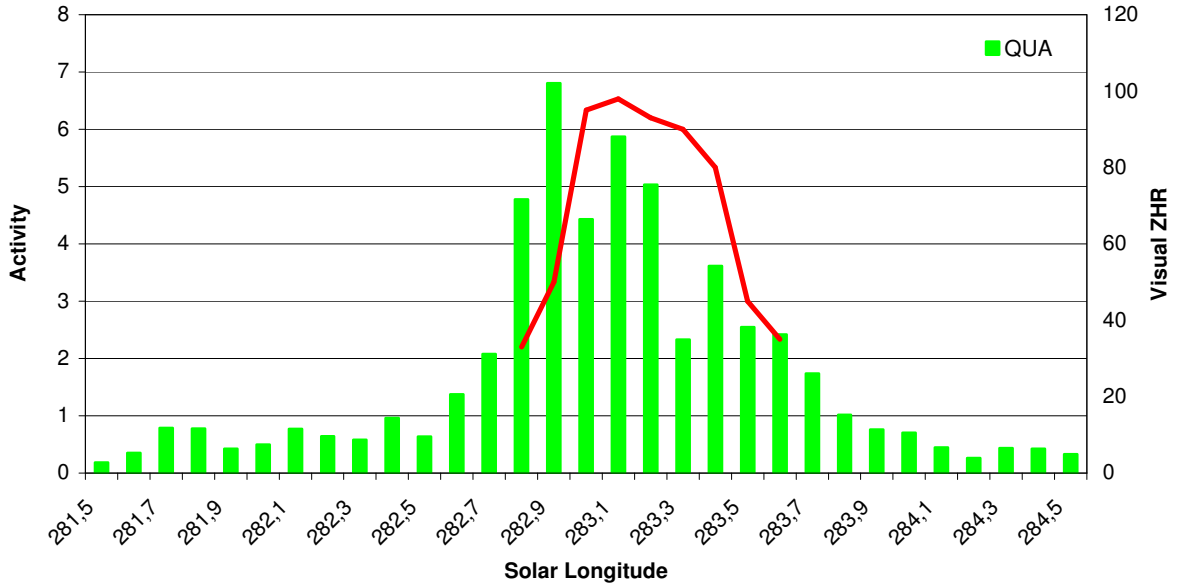

Figure 2: High-resolution long-term activity profile of the Quadrantids from video observations between 1993 and 2010. The red line represents the long-term average from visual observations.