

French Video Meteor Network

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IMC 2011 – Sibiu



Outline

- A brief history ...
- Presentation of the network
- Tool of the network
- Some results
- Conclusions

A brief History...

- REFORME network (Pro am Collaboration)
Contact : Karl Antier
- Need to develop a specific database for the network
- In 2009 august , the birth of the BOAM
dataBase of **A**mateurs **O**bservers of **M**eteors
- Mid 2011 New website and mailing list for
REFORME



The Network

The Map

"FOV" of video stations:

<http://www.boam.fr/post.php?lang=en>

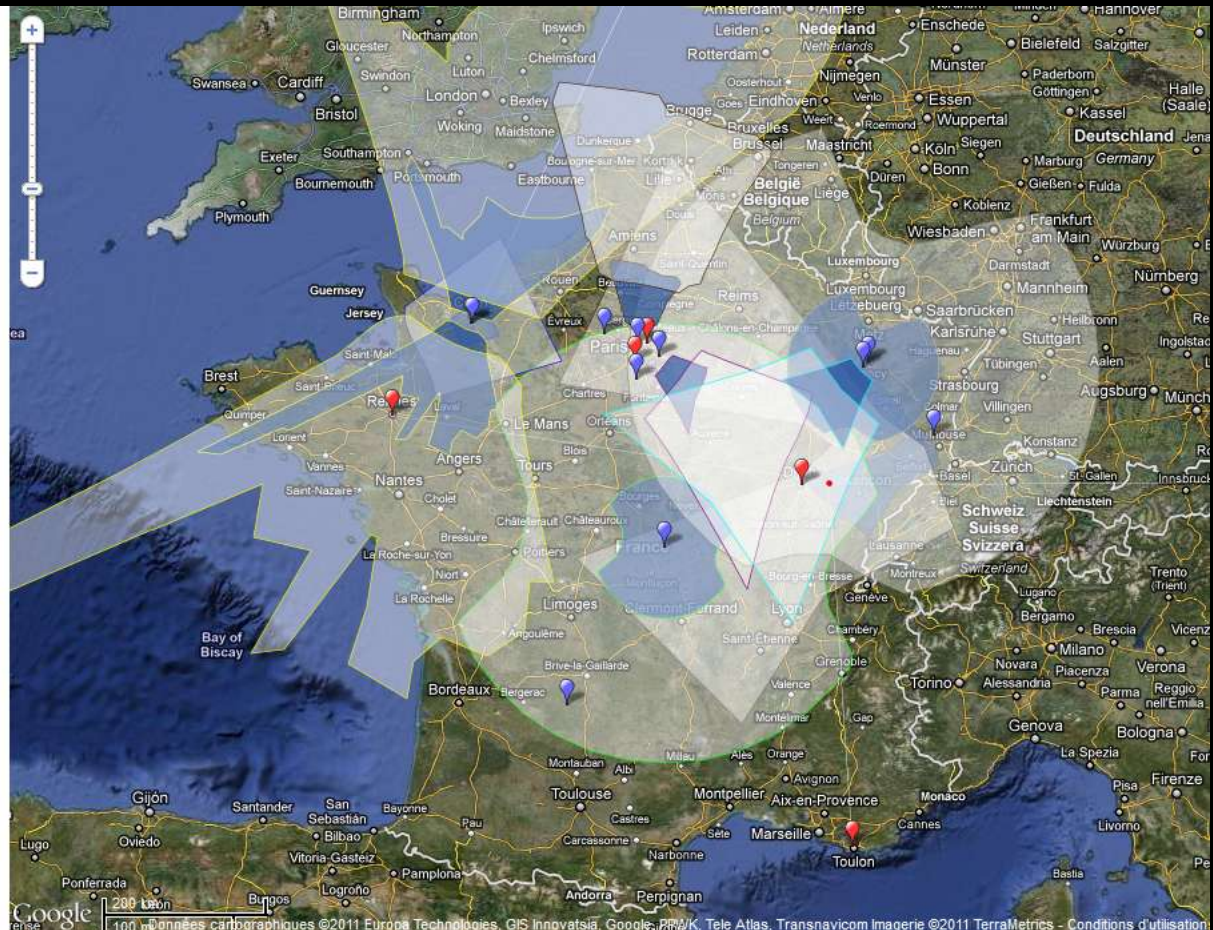
- Bollwiller
- Cérilly
- Chaligny
- Fontenay-le-Marmion
- Gretz-Armainvilliers
- May-sur-Orne
- May-sur-Orne
- Nancy
- Paris



all sky camera

tight field of view

- radio station
- video station
- radio & video station
- FOV at 30km (altitude)
- FOV at 100km (altitude)



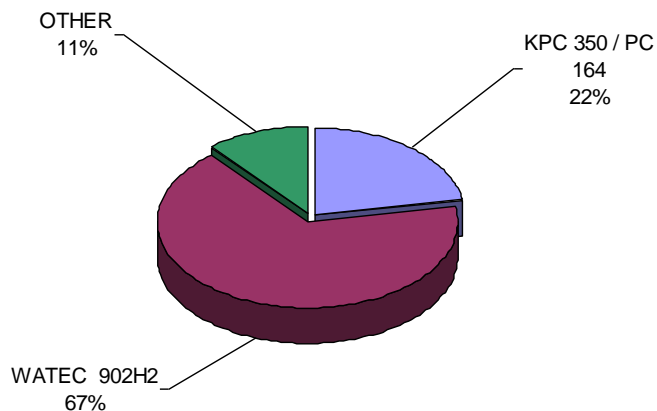
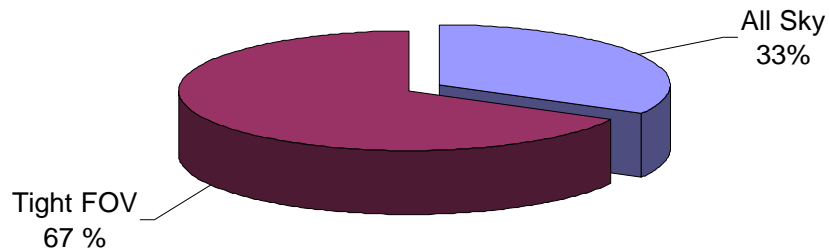
Nearly 70 % of the French territory is covered with 9 cameras



The Network

Type of Camera Strategy

Network Camera Type



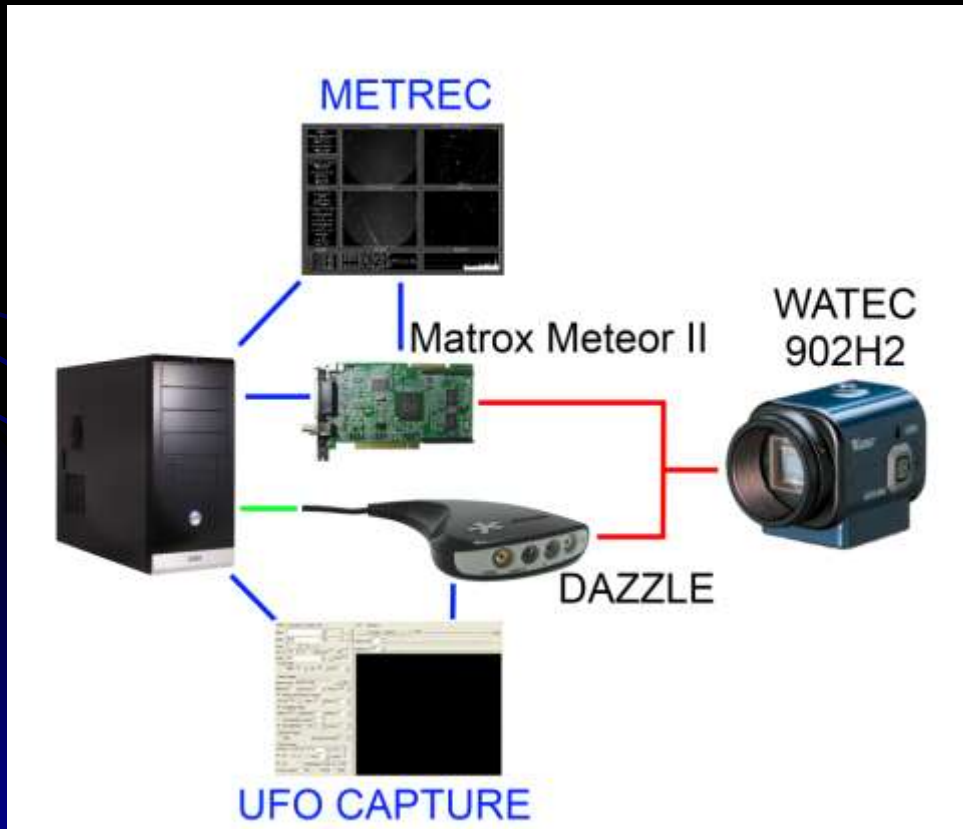
■ KPC 350 / PC 164 ■ WATEC 902H2 ■ OTHER

Model of Cameras

Uranoscope Station



- One camera but two softwares to detect meteors



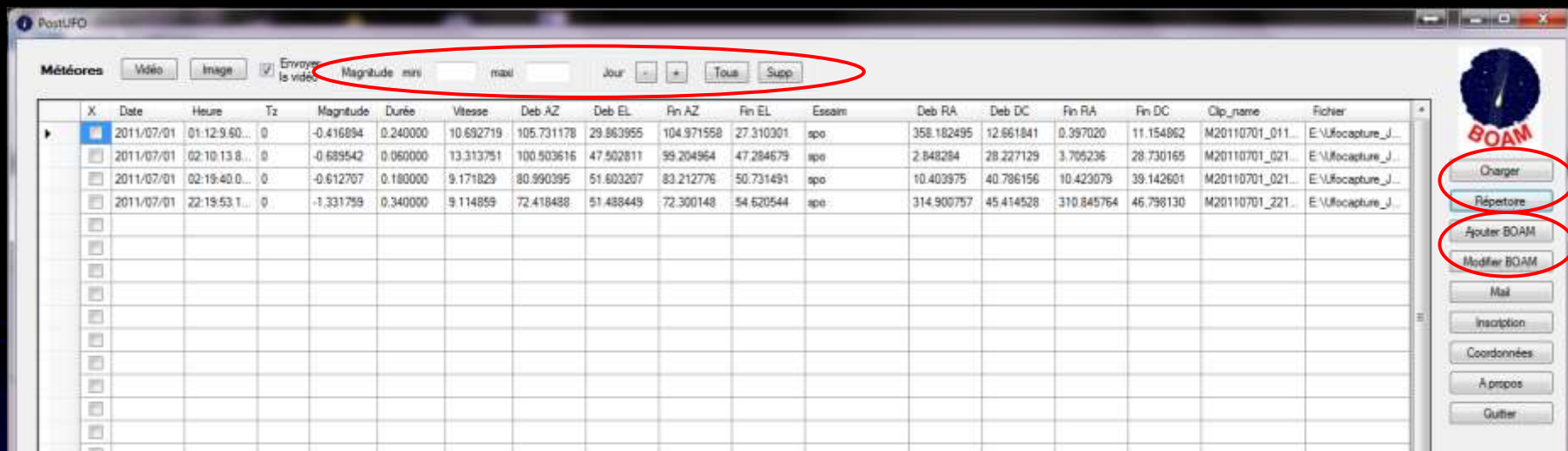
Tools used in the network

- SonotaCo software suite
- Developement of two specifics softwares
PostUfo & GraphBoam

Tools used in the network

How to send data to the database

- Post Ufo



The screenshot shows the PostUFO application window. At the top, there are buttons for 'Météores', 'Vidéo', 'Image', and 'Envoyer la vidéo'. Below these are input fields for 'Magnitude min', 'max', and 'Jour', along with 'Tous' and 'Supp.' buttons. A red circle highlights the 'Envoyer la vidéo' button and the input fields. The main area contains a table with columns: X, Date, Heure, Tz, Magnitude, Durée, Vitesse, Deb AZ, Deb EL, Fin AZ, Fin EL, Essaim, Deb RA, Deb DC, Fin RA, Fin DC, Clip_name, and Fichier. The table lists several meteor events from 2011/07/01. On the right sidebar, there is a 'BOAM' logo and buttons for 'Charger', 'Répertoire', 'Ajouter BOAM', 'Modifier BOAM', 'Mail', 'Inscription', 'Coordonnées', 'A propos', and 'Gutter'. The 'Charger', 'Ajouter BOAM', and 'Modifier BOAM' buttons are circled in red.

X	Date	Heure	Tz	Magnitude	Durée	Vitesse	Deb AZ	Deb EL	Fin AZ	Fin EL	Essaim	Deb RA	Deb DC	Fin RA	Fin DC	Clip_name	Fichier
▶	2011/07/01	01:12:9.60...	0	-0.416894	0.240000	10.692719	105.731178	29.863955	104.971558	27.310301	spo	358.182495	12.861841	0.397020	11.154862	M20110701_011...	E:\focapture_J...
	2011/07/01	02:10:13.8...	0	-0.689542	0.060000	13.313751	100.503616	47.502811	99.204964	47.284679	spo	2.848284	28.227129	3.706236	28.730165	M20110701_021...	E:\focapture_J...
	2011/07/01	02:19:40.0...	0	-0.612707	0.180000	9.171829	80.990395	51.603207	83.212776	50.731491	spo	10.403975	40.786156	10.423079	39.142601	M20110701_021...	E:\focapture_J...
	2011/07/01	22:19:53.1...	0	-1.331799	0.340000	9.114859	72.418488	51.488449	72.300148	54.620544	spo	314.900757	45.414528	310.845764	46.798130	M20110701_221...	E:\focapture_J...

Tools used in the network

The database on the website

<http://www.boam.fr/post.php?lang=en>

Files	Date	Time (UT)	shower	camera	duration (s)	velocity (°/s)	mag	az st	ev st	az end	ev end	ra st	dc st	ra end	dc end
...	08/20/11	01:36:59	SPO	GRAT9	0.180	10.51	-1.3	41.14	40.18	44.60	39.06	79.70	66.66	79.67	63.05
...	08/20/11	01:37:22	PER	GRAT9	0.080	11.06	0.8	98.61	60.98	100.39	60.77	32.18	37.54	31.77	36.71
...	08/20/11	01:51:11	PER	GRAT9	0.180	16.71	-0.1	109.38	56.47	113.87	55.61	26.55	30.37	25.20	28.00
...	08/20/11	00:54:39	SPO	GRAT9	0.540	17.44	0.0	115.55	47.26	120.18	42.30	25.33	25.03	25.80	15.10
...	08/19/11	23:53:46	SPO	GRAT9	0.100	7.29	1.1	68.19	40.73	68.05	41.41	41.71	42.54	41.02	43.00
...	08/19/11	23:47:42	PER	GRAT9	0.260	11.13	-0.2	63.56	55.72	67.43	57.43	22.21	51.85	18.49	50.32
...	08/19/11	23:41:50	BPI	GRAT9	0.380	7.96	-0.8	114.63	50.80	109.33	51.34	5.00	24.12	7.32	26.77
...	08/19/11	23:09:01	BPI	GRAT9	0.080	7.78	0.7	56.37	32.35	95.57	32.20	21.00	19.90	21.64	20.26
...	08/19/11	22:50:50	PER	GRAT9	0.220	12.02	0.3	77.33	43.30	81.02	43.25	18.12	38.37	16.21	36.15
...	08/19/11	23:34:52	SPO	GRAT9	0.100	17.10	0.8	93.75	32.78	95.81	32.71	358.76	21.76	357.49	20.48
...	08/19/11	02:39:22	SPO	GRAT9	0.100	12.75	0.2	97.29	49.03	98.75	48.20	48.75	30.84	58.75	29.57
...	08/19/11	21:18:12	PER	GRAT9	0.360	18.01	0.0	80.24	44.67	89.44	45.03	350.98	37.44	345.85	32.43
...	08/19/11	21:00:16	SPO	GRAT9	0.240	7.85	0.0	59.47	55.09	57.84	53.50	341.32	53.91	344.38	54.39
...	08/18/11	02:21:02	SPO	GRAT9	0.120	18.77	0.1	129.19	61.17	133.48	62.16	28.78	27.22	26.27	26.92
...	08/18/11	02:09:39	SPO	GRAT9	0.100	17.10	0.1	118.17	65.32	118.86	66.21	28.35	34.46	28.30	34.01
...	08/18/11	02:08:48	SPO	GRAT9	0.120	18.54	0.6	63.82	39.55	61.54	40.47	77.51	44.66	77.76	46.63
...	08/17/11	23:34:00	CAP	GRAT9	1.860	8.27	-0.9	110.99	35.12	95.12	27.31	13.91	13.83	28.80	17.01
...	08/17/11	22:34:50	SPO	GRAT9	0.100	25.03	0.9	122.47	49.37	125.74	49.11	342.96	19.87	341.28	18.42
...	08/17/11	22:15:36	SPO	GRAT9	0.460	20.72	0.0	117.46	56.56	128.33	44.47	340.59	22.78	338.06	13.57



xml ufoanalyzer file



meteor image



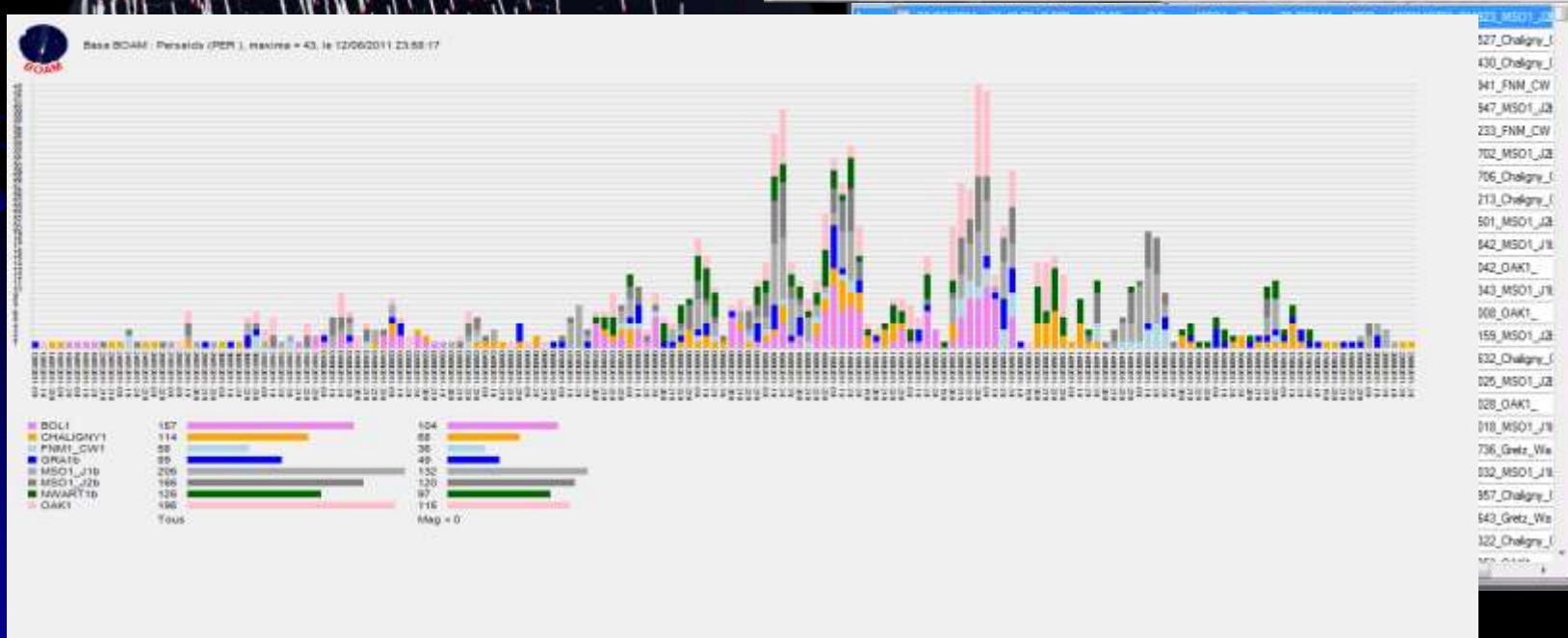
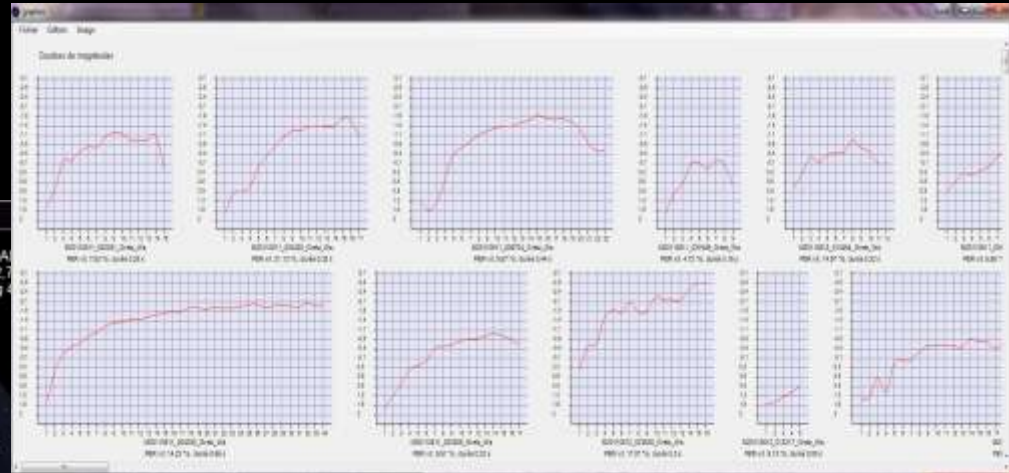
compressed video



Tools used in the network

How to visualize the data

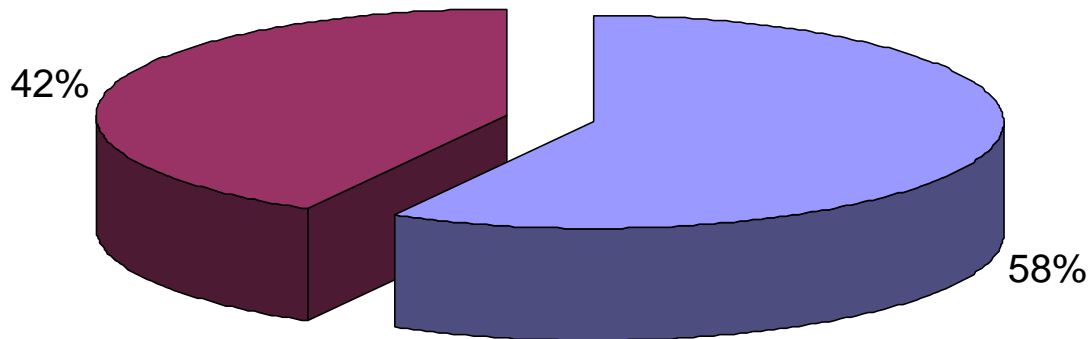
- Graph Boam




Some Results

At this time nearly 12 000 meteors in the database

BOAM Meteors Detections 2010 Results

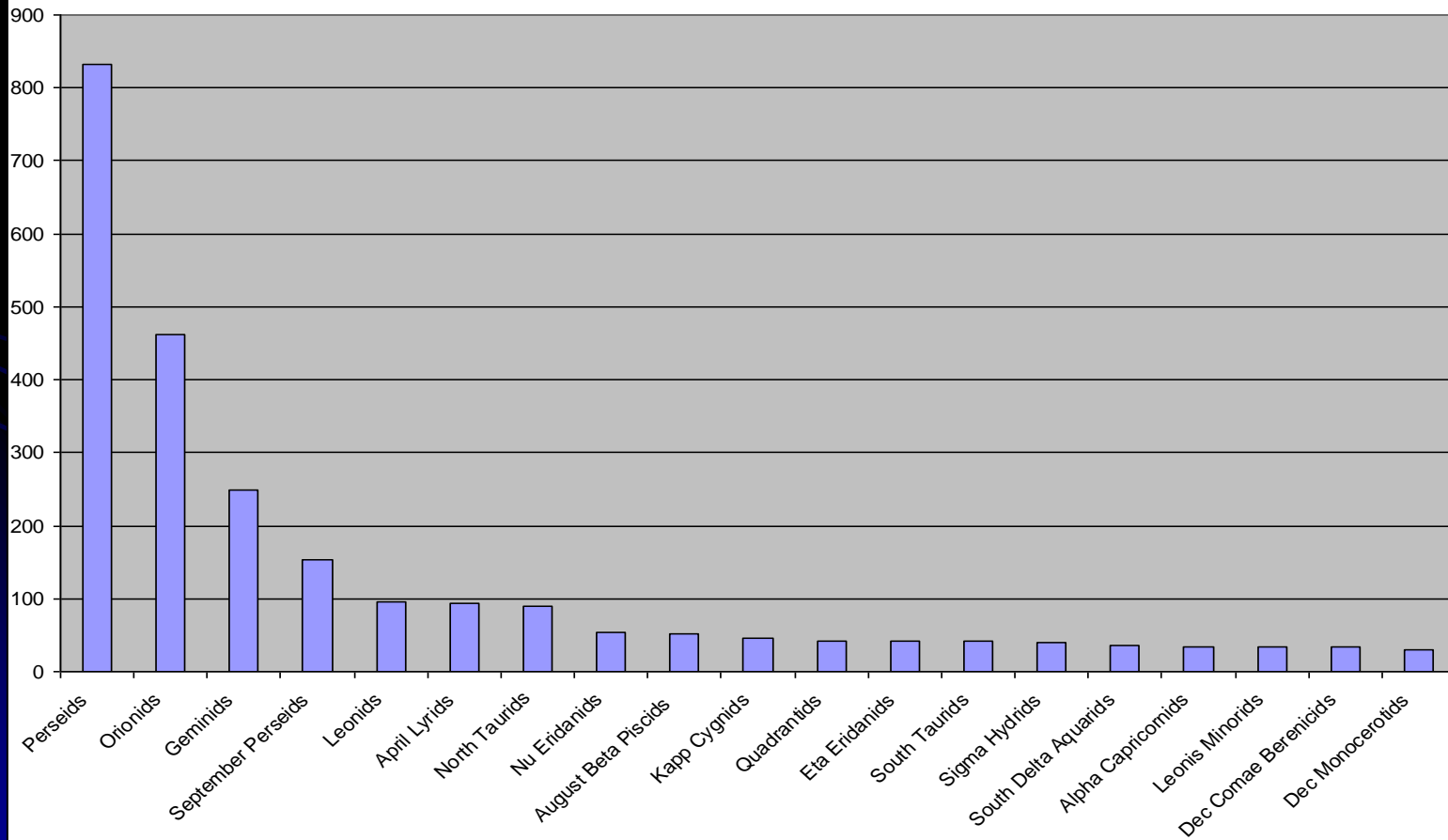


Nearly approx. 6400 meteors

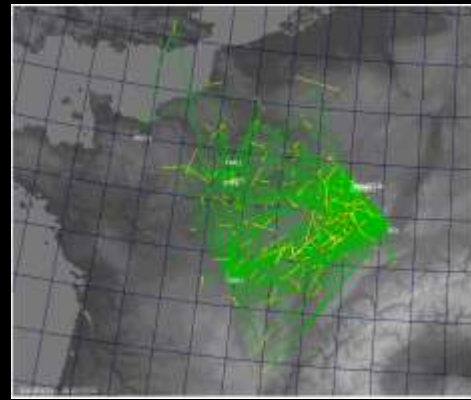
-  Sporadics
-  Meteors Showers

Some Results

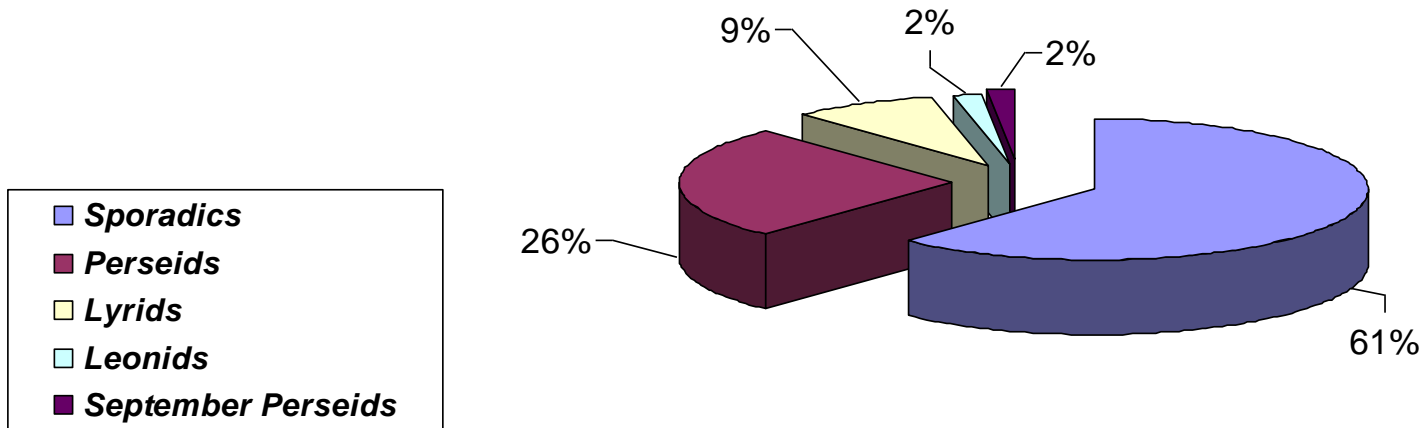
BOAM Meteors Showers Detections 2010 Results



Some Results



BOAM Meteors multi station detections 2010 Results



Nearly 200 meteors multi station detections

Some Results

- Focus on perseids double detections

Computations with Ufoorbit , with Q2 quality parameter

The Inclinaison (i)

111° to 116°

Ascendant longitude node Ω

139,9° to 141°

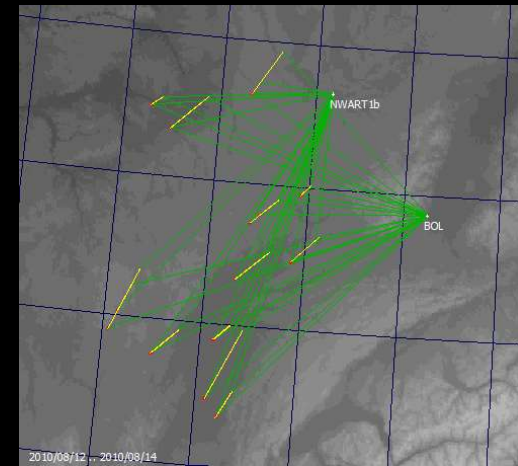
Perihelion argument ω

148,9° to 156,6°

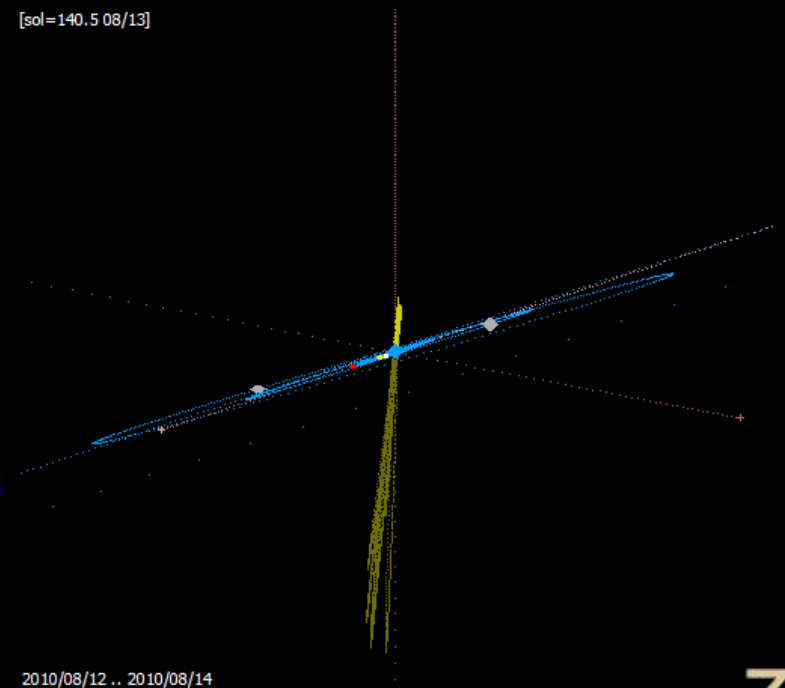
→ Close to Swift Tuttle comet orbit parameters

109P/Swift-Tuttle

(i) 113.4 (Ω)139.44 (ω)153.0



[sol=140.5 08/13]



Conclusions

- Network growing with camera uniformity
- Contribute to IMO video meteors survey
- Support on specific observation campaign
 - Educationnal project with the public
 - Collaboration with the Paris Observatory meteor team

Thank for your attention

Any Questions ????

Acknowledgments

- IMCCE Paris Observatory : J.Vaubailon , S.Bouley, L.Maquet & F.Colas
- Uranoscope members (local astronomy club)

Some Links

<http://www.boam.fr/post.php?lang=en>

<http://reforme-meteor.net/indexen.htm>

<http://www.imcce.fr/langues/en/ephemerides/phenomenes/meteor/observation.php>

