

Draconid 2011 outburst observations from Slovenia



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Preparations before the outburst

- **Predictions (2011 October 8):**

Vaubailon ZHR~600 @ 19h57m UT

Sato&Watanabe ZHR~500 @ 20h36m UT

Cooke&Moser ZHR~750 @ 19h52m UT

Maslov ZHR~50 @ 20h13m UT

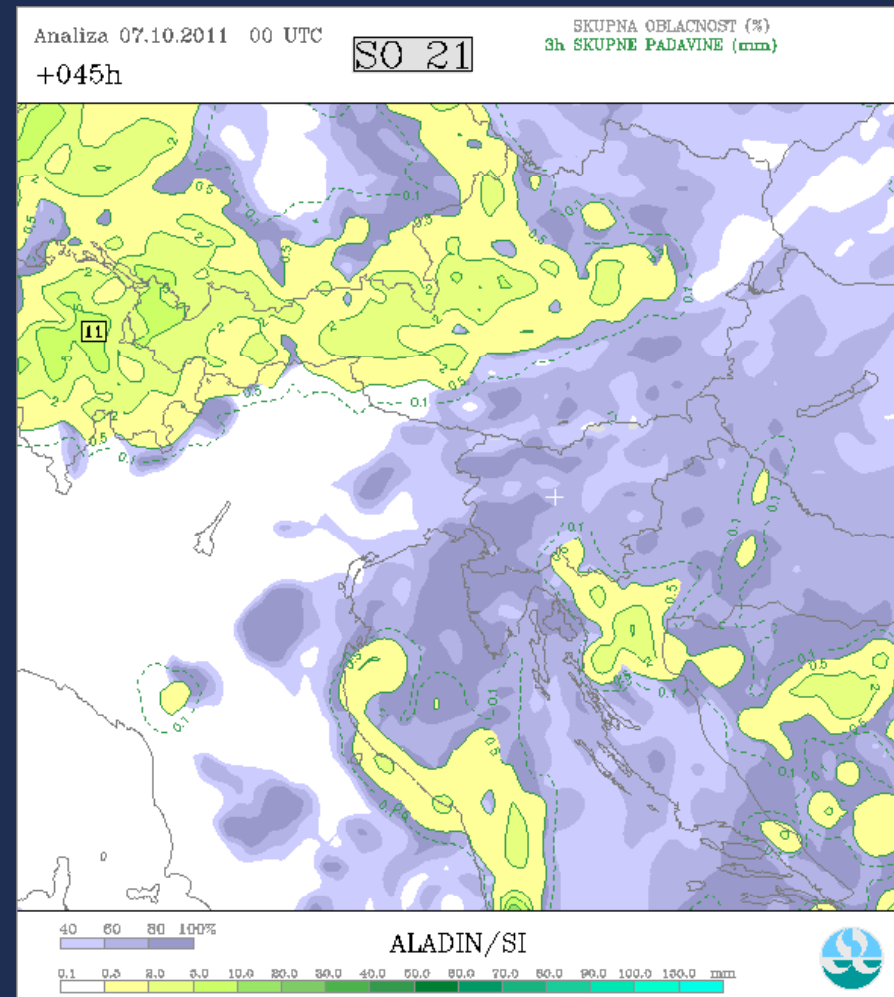
- **Weather forecast**

unstable forecast, potential locations chosen in W Slovenia and N Italy

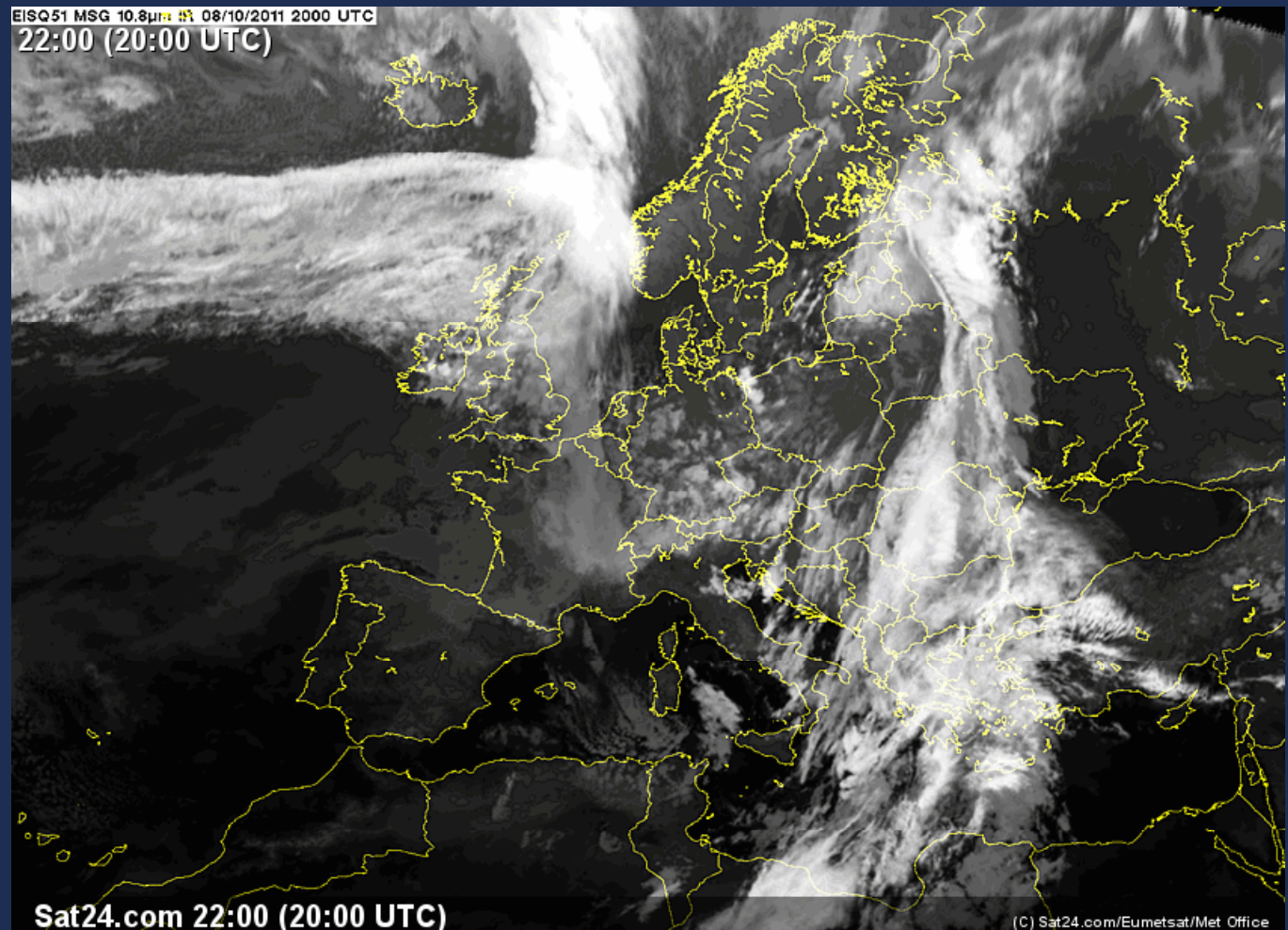


Preparations before the outburst

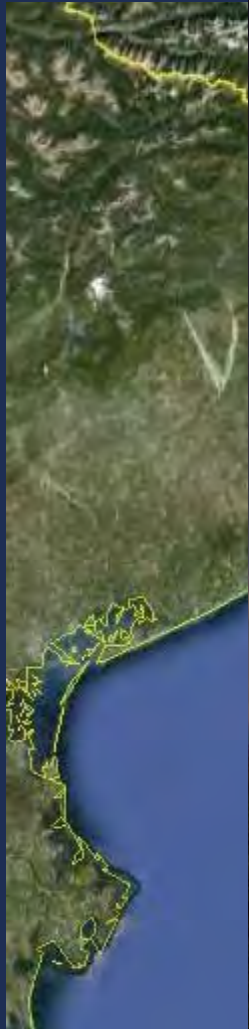
- Video camera installation and calibration (day-1)
- Headquarters in SW Slovenia, last minute relocation to observing site



Choosing the observing site



Choosing the observing site



T. Čadež

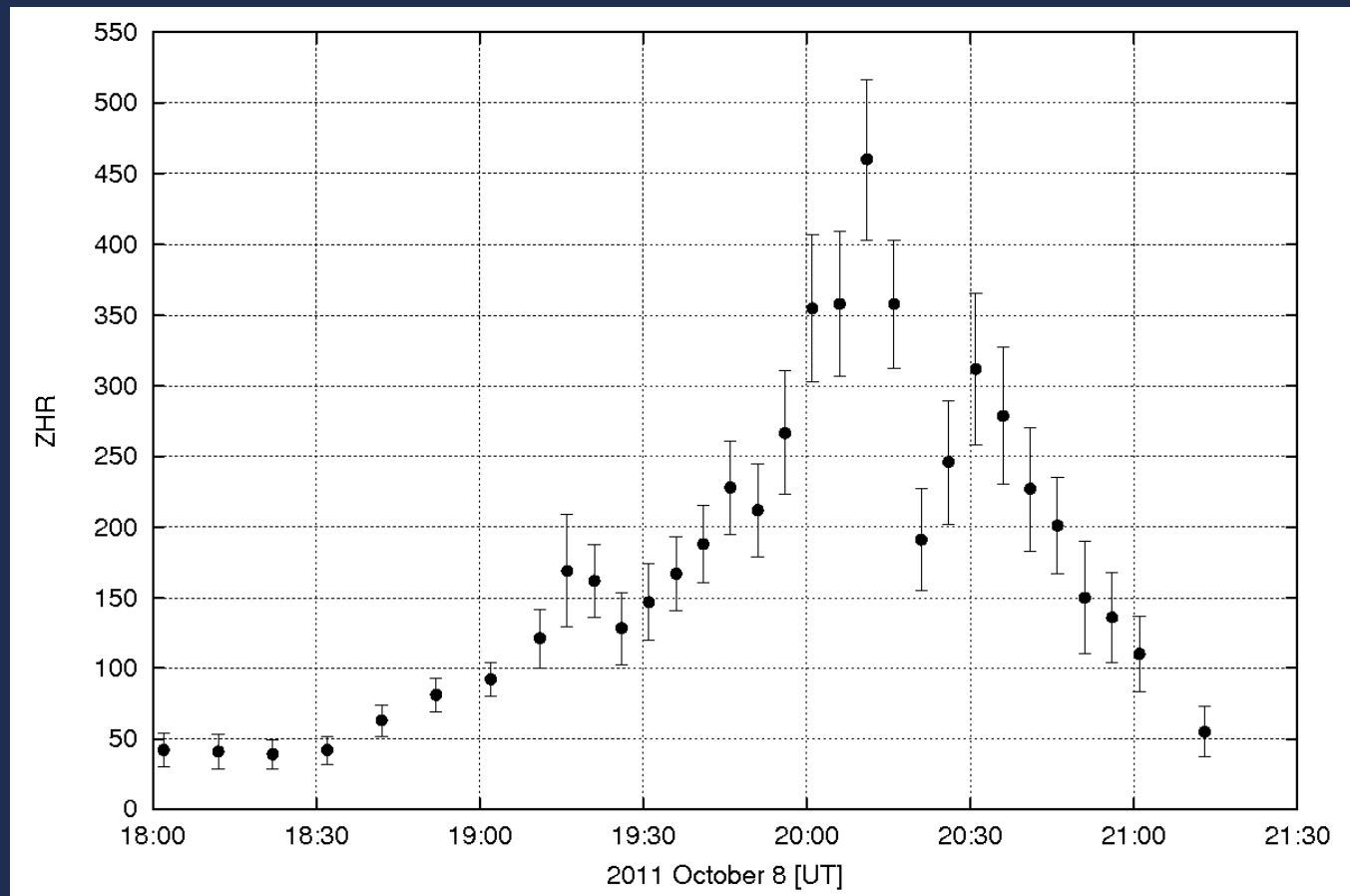
Visual observations

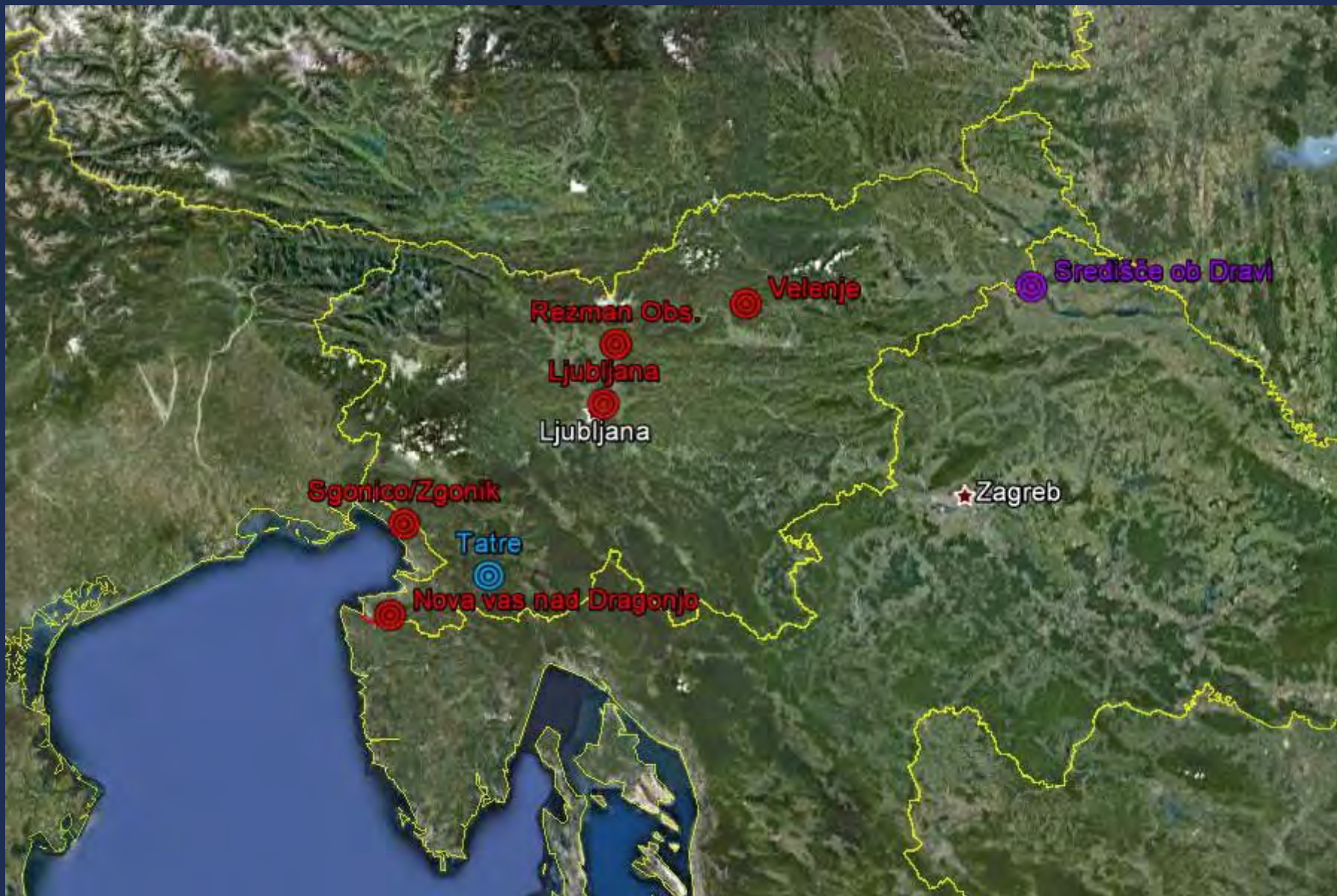
- 5 visual observers

	teff	DRA	DAU	STA	SPO
ATAJU	3.346	238	/	2	15
GOVMI	1.000	46	1	/	19
KACJA	3.571	137	0	0	10
KOSJN	2.747	167	/	/	22
PUCRC	1.798	46	/	/	5
totals	12.462	634	1	2	71

Visual observations - results

- $r = 2.6 \pm 0.1$ (N=634, 17^h47^m–21^h28^m UT)
- $ZHR_{\max} = 460 \pm 60$
- $t_{\max} = 20^{\text{h}}11^{\text{m}}$ UT





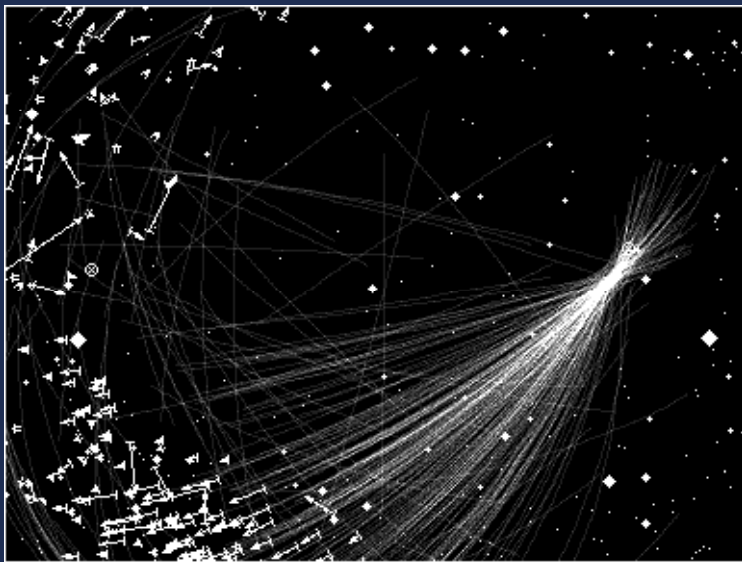
Video observations

Camera	Site	DRA	total
MOBCAM1	Nova vas nad Dragonjo	178	305
ORION1	Ljubljana	31	38
ORION2	Središče ob Dravi	76	116
SRAKA	Velenje	15	32
NN	Sgonico/Zgonik	192	294



Video observations – radiant

- Radiant plot from MetRec



- RadFind (N=796):
 $\alpha=262.2^\circ$, $\delta=56.0^\circ$ ($\pm 1.3^\circ$)
 $v_g=21.0\pm 0.5$ km/s

IMO working list:

- $\alpha=262^\circ$, $\delta=+54^\circ$
 $v_g=20$ km/s



Video observations – flux

- **Data selection:**

LM ≥ 4.0

≥ 20 Draconids / bin

bin length 10'–60'

- **Cameras used:**

Sgonico/Zgonik

Mobcam1 / Nova vas

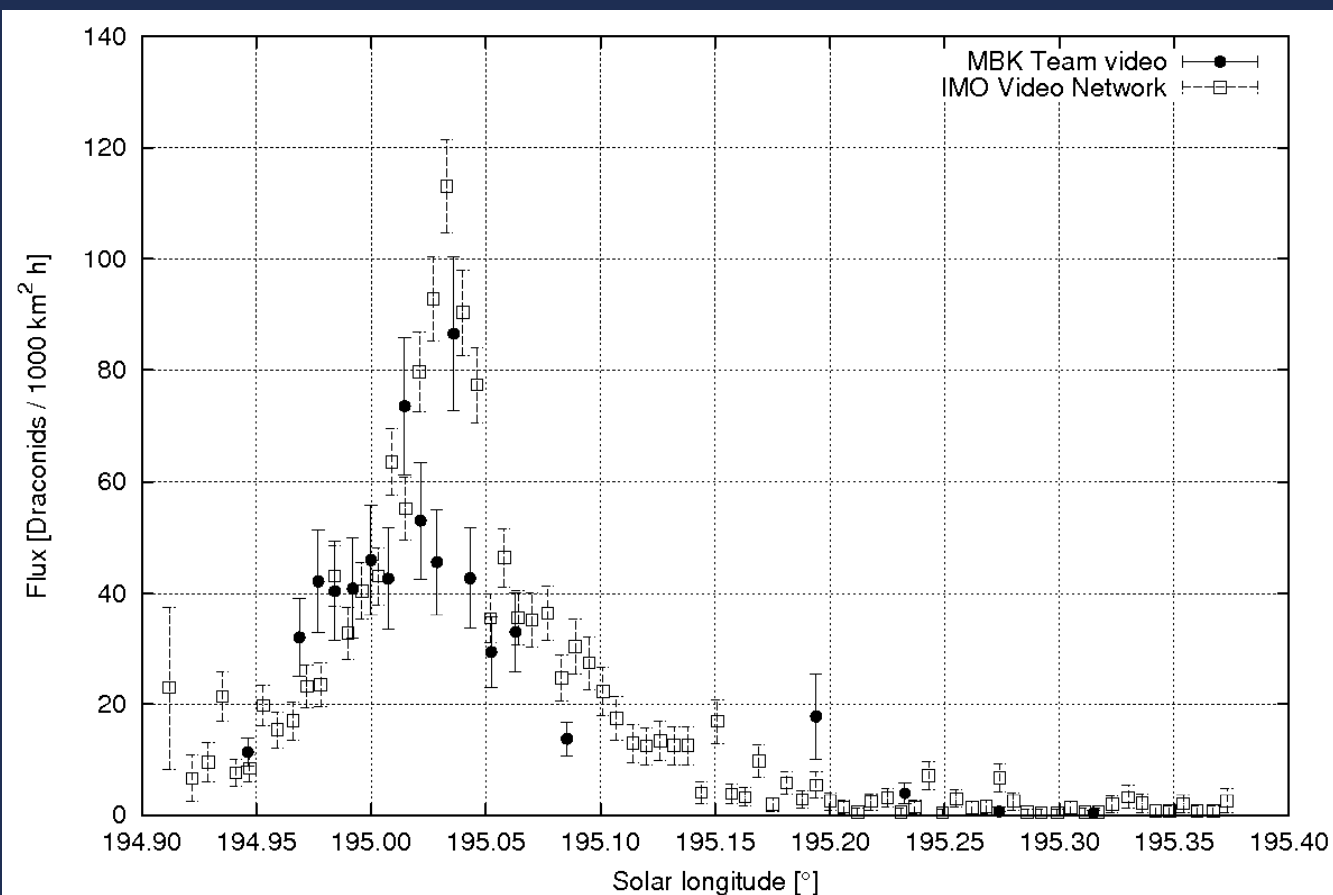
Orion1 / Ljubljana

Orion2 / Središče



Video observations – flux

- Flux profile based on 358 Draconids
- $t_{\max 1} = 19^{\text{h}}52^{\text{m}}$ UT
- $t_{\max 2} = 20^{\text{h}}15^{\text{m}}$ UT



Photographic observations

- Gallery only, measurements in progress



N. Smrekar 20:40 UT

Video recording from Sgonico/Zgonik

