All-sky TV meteor observation from Modra

Juraj Tóth, Štefan Gajdoš, Leonard Kornoš,
Dušan Kalmančok, Pavol Zigo, Jozef Világi

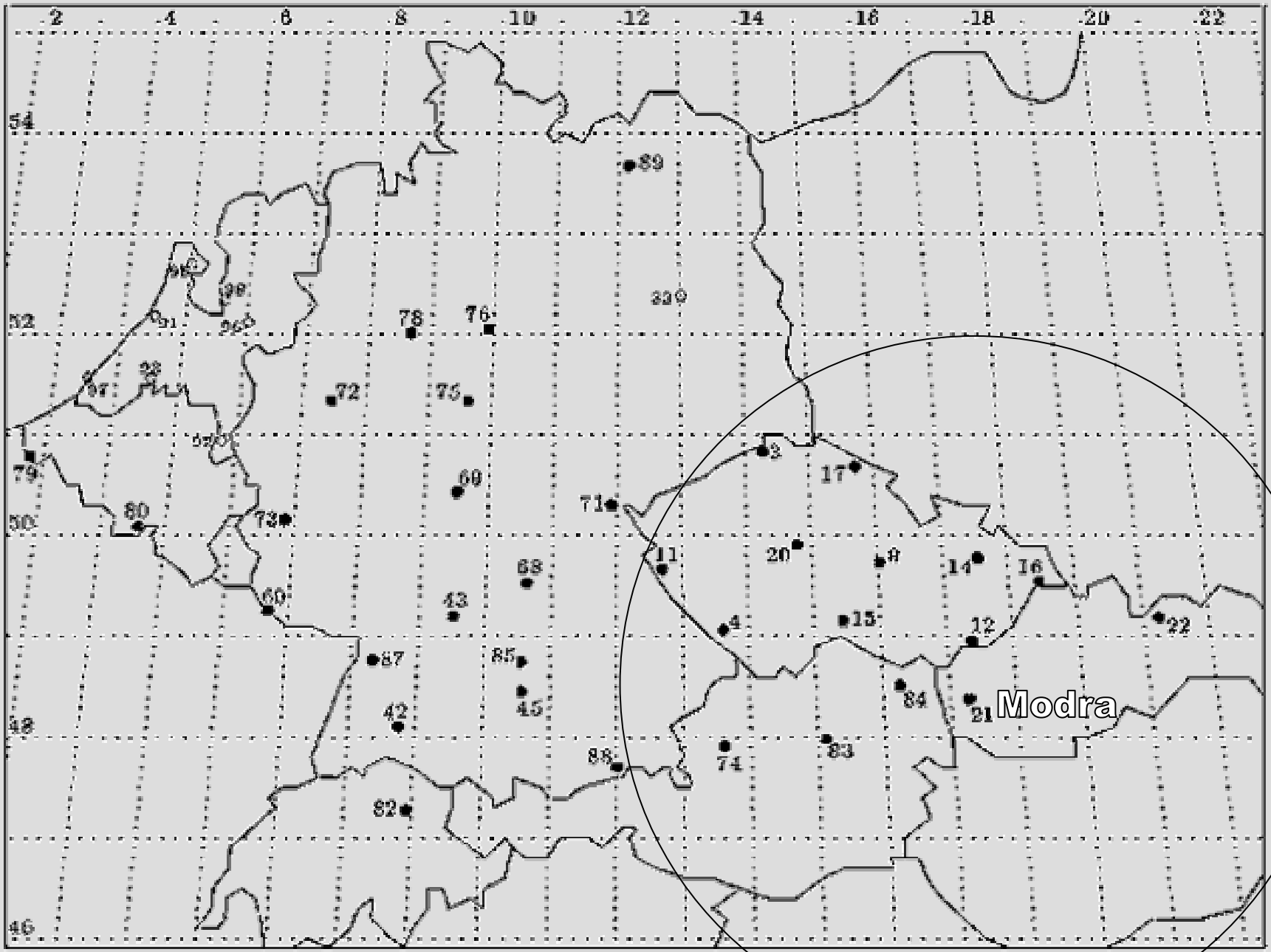
Department of Astronomy, Physics of the Earth and Meteorology
Faculty of Mathematics, Physics and Informatics
Comenius University in Bratislava
Slovak Republic

Content of the talk

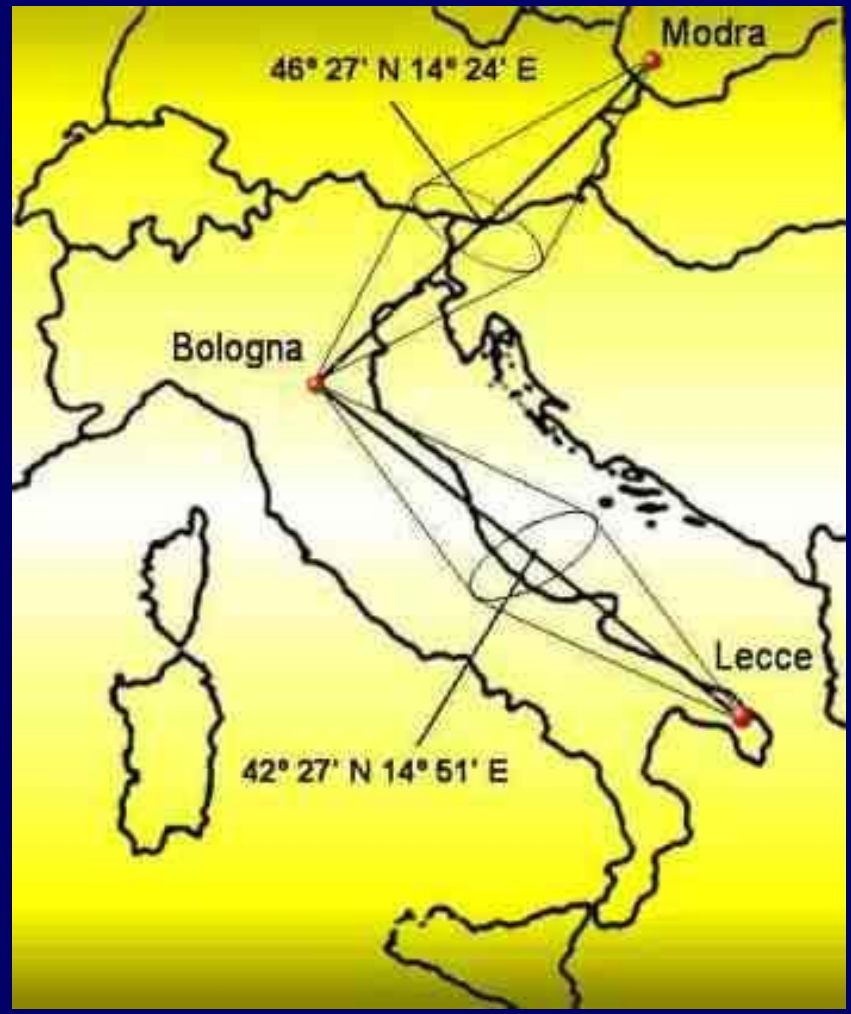
- Astronomical and Geophysical Observatory in Modra
- Fish-eye photographic meteor observations in Modra
- TV fish-eye setup
- Meteors in April 2007
- Lyrids 2007
- Fireballs by TV system

Astronomical and Geophysical Observatory Modra
Comenius University Bratislava

European Fireball Network



Forward scatter radio system Bologna-Modra-Lecce for meteor observation
frequency 42.7 MHz (CNR, Italy) Porubčan, Zigo



TV fish-eye setup

- Canon 2.4/15mm fish-eye lens
- Mullard X1332 image intensifier, Ø 50mm
- Meopta 1.9/16mm lens
- Watec 120 N TV CCD camera

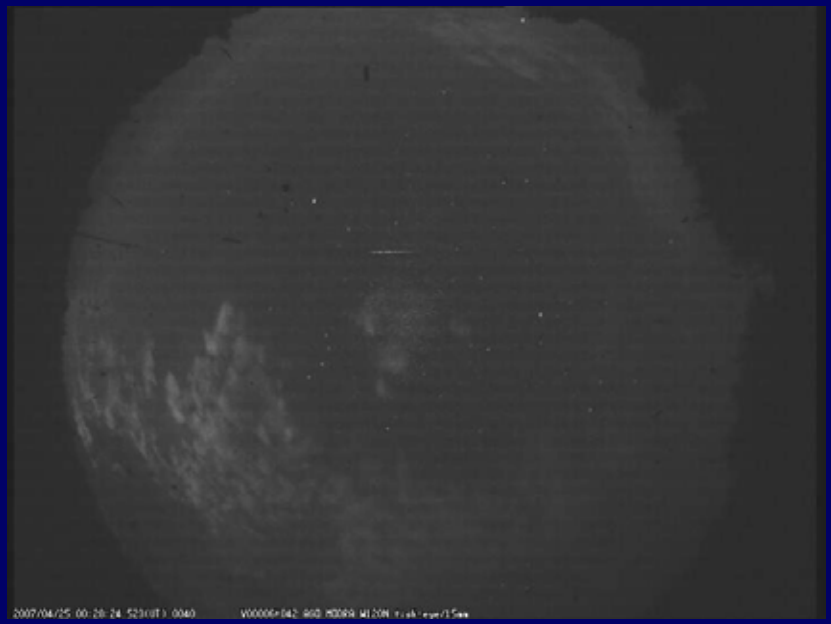
+

PC 3 GHz, 1GB RAM, Pinnacle digit. Card

+

UFOCapture software

TV fish-eye setup



- noncompressed .avi files with moving objects are stored
- 720 x 540 pixels
- resolution ~ 15 arcmin/pixel
- field of view 170° x 140°
- limiting stellar magnitude ~ +4.5
- faintest meteors ~ +3.0 mag.

Meteors in April 2007

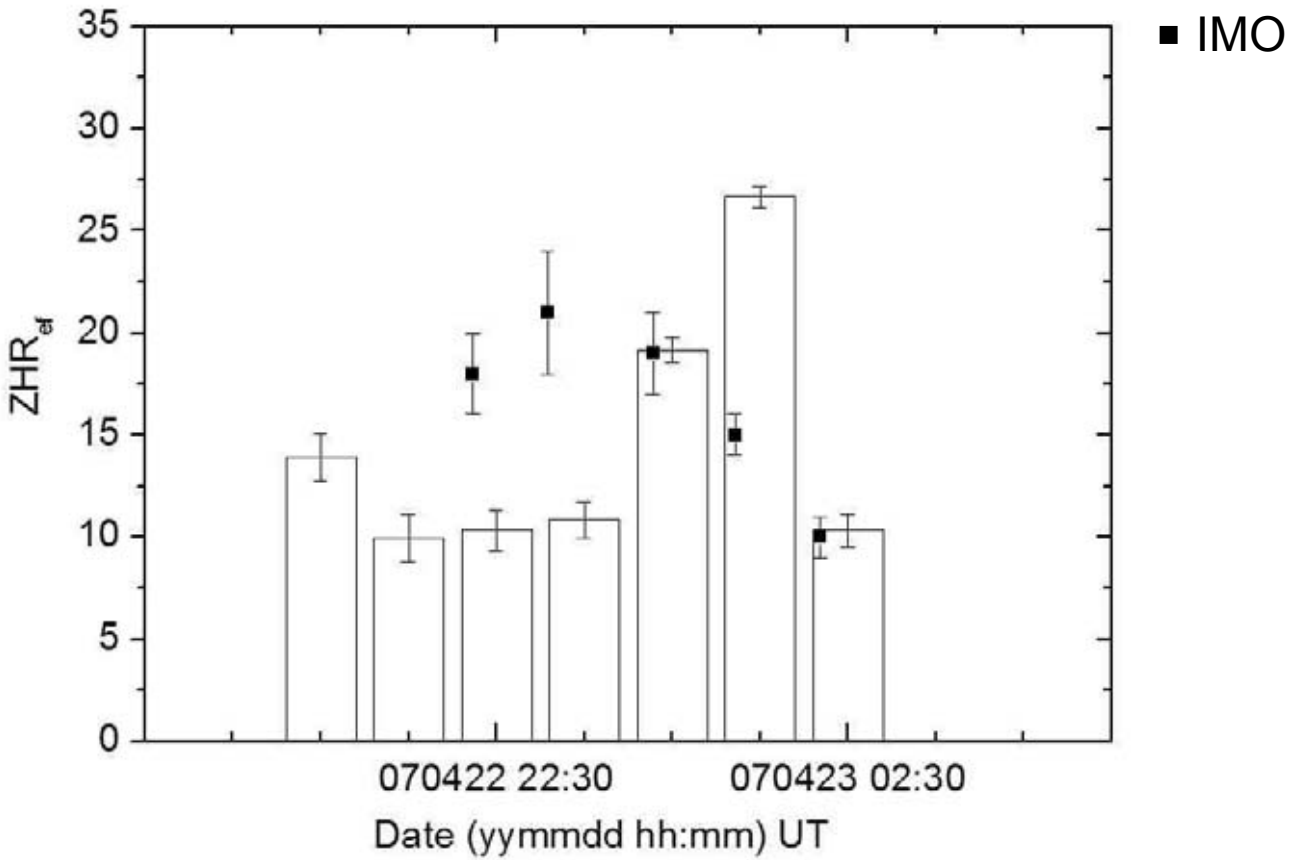
- 27 nights (199 hours) during April including Moonlight nights
- 300 meteors were detected
- 74 Lyrids (assumed radiant position and angular velocity
- sporadic frequency was in the range 0.5-3 meteors per hour, depending on Moon phase

	SPO	LYR	ANT	dDr (helion s.)	others	total
APRIL	172	74	24	10	20	**300**

Lyrids 2007

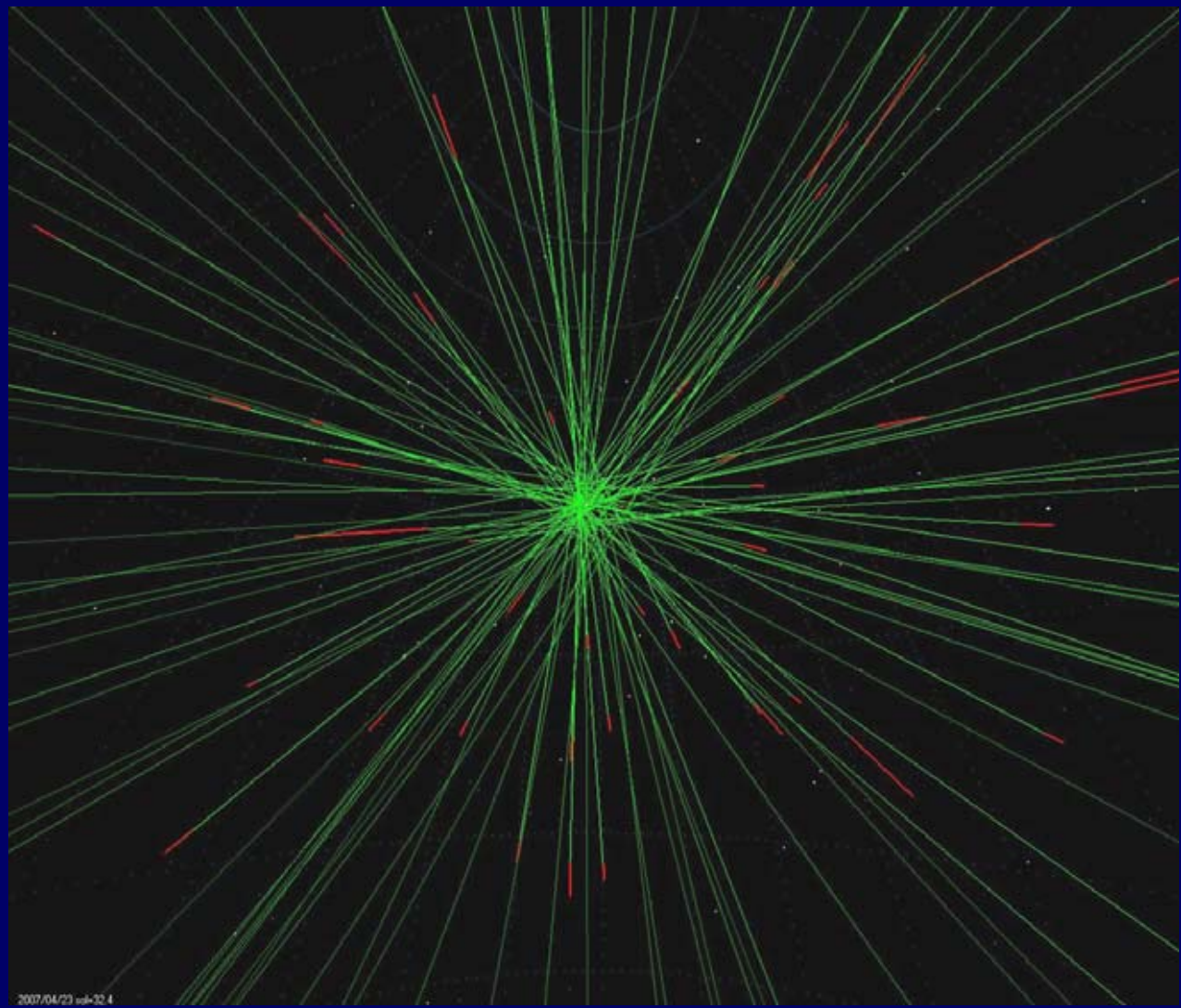
- activity in April 10-26
- 74 Lyrids were recorded
- the brightest one -6th magnitude
- activity profile corrected to the radiant position and scale factor (~ 2)
- single station radiant position

Lyrids 2007



Barentsen, G.: 2007, http://www.imo.net/live/geminids2006

Lyrids 2007



Fireballs by TV system

- 8 fireballs simultaneously observed
  by TV and photographic fish-eye cameras

- brightest one about -10th magnitude

Fireballs by TV system

W

N