



United Kingdom Meteor Observation Network

**Using CCTV to monitor meteors over
United Kingdom**

An Invitation to Join UKMON

- A collaborative project create network of video based meteor observing stations
- Sharing of data and analysis across UK & Europe
- Acquisition of data of value to the science community
- A fantastic opportunity for individuals, societies, schools and colleges

... and all for less than the cost of a PST!

Data Capture

- Motion sensing video to capture trajectory
- Calculate the position of the moving object.
- Automatic distortion compensation by comparison with star map.
- Calculate co-ordinates, angular velocity, direction, linearity, magnitude, light curve
- Classify the meteors to a possible shower
- Draw trail map of meteors to find their radiant

UFO Capture Software

1KPFXML read P save P save A

lid M_Zach_2 sid K2 observe KOUJA intlc

can PF131HR lens GADN cap bbf

lng 17.3831 lat 49.2893 alt 222 tz 0

tme 1.0 memo step 000.10C

fovh 74.9480 yx 0.9174 atc 58.3

k4 0.0530 k3 -0.1493 k2 0.0724

dx -42.50 dy 4.68 rot -0.7213

az 74.8689 ev 47.0452 move < >

adj pos all ddpix linc mask 208 link 187

A pos 3 0.00001 dpix avr 0.521 max 6.373

J ddeg avr 0.056 max 0.675

U I 2012/02/20

S levH 255 magL 2.5175

T mag levL 65 magL 4.0000 bvf 0.30

analyze m=-2.50*log(L)+8.53

retry ddl 5 leap 50 f1 -1 f2 -1

click1 click2 mod h add a obj delete a obj delete a cip

class	m	sec	mag	cdeg	dr	dv	Vo	av
clip_name	o	class	mag	sec				
M20120220_200931_KM_Zach_2...	0		0.0	0.0				
M20120220_210335_KM_Zach_2...	0		0.0	0.0				
M20120220_230949_KM_Zach_2...	0		0.0	0.0				
M20120220_234958_KM_Zach_2...	0		0.0	0.0				
M20120221_000311_KM_Zach_2...	0		0.0	0.0				
M20120221_001754_KM_Zach_2...	0		0.0	0.0				
M20120221_002929_KM_Zach_2...	0		0.0	0.0				
M20120221_002954_KM_Zach_2...	0		0.0	0.0				
M20120221_004030_KM_Zach_2...	0		0.0	0.0				
M20120221_004208_KM_Zach_2...	0		0.0	0.0				
M20120221_010200_KM_Zach_2...	0		0.0	0.0				

View Mask Editor Trail Map Ground Map

prev edit auto link clear link lim 7 mg r saveN save x 0689 y 0301

next auto < SD L- 5 R- 5 az 129.2342 ev 33.6425

link manual link U- 5 D- 5 qm smag del ra 150.0743 dc 04.4463

Why a UK network?

- Combine data from more than one station:
 - Find simultaneous events
 - Calculate orbital elements of meteors
 - Draw trails on star map or ground map.
 - Draw the orbit in star map
- Several networks exist across Europe but not the UK
- Cumulative data is being requested by variety of professional organisations
 - ASU Ondrejov (Czech republic Academy of science)
 - AGO Modra (Faculty of maths, physics & informatics , Slovakia).
 - Armagh Observatory (Ireland)

Building a monitoring station

- CCTV camera: KPF 131 HR £60
- 12V PSU £10 - £15
- Fujinon Lens £45
YV2.8x2.8LA-SA2 1/3" 2.8-8mm / F1.4, Auto Iris/Focus*
- PUSB decoder Dazzle DVC 101 £40-50
- CCTV Enclosure with heater £25
- UFO Capture software program £150
- Modest spec. Pentium 4 HT computer £50

*When camera powers down, IRIS shuts protecting CCD from sunlight.

Monitoring station #1



Building a community

- UKMon website in development
- Coming soon:
 - Forum, tutorials, help
 - Central server for sharing of data
 - Live stream from all contributing UK stations
 - Building a database
 - “Pairing up” available stations

Want to join?

Or if you just want more information:

- Contact Richard Kacerek

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