

Zpracování pozorování Jak na to?

Efektivně!
Rychle!
Přesně!



**PROGRAM
CEZHRANIČNEJ
SPOLUPRÁCE**

SLOVENSKÁ REPUBLIKA
ČESKÁ REPUBLIKA



**EURÓPSKA ÚNIA
EURÓPSKY FOND
REGIONÁLNEHO ROZVOJA**

SPOLOČNE BEZ HRANÍC



FOND MIKROPROJEKTŮ

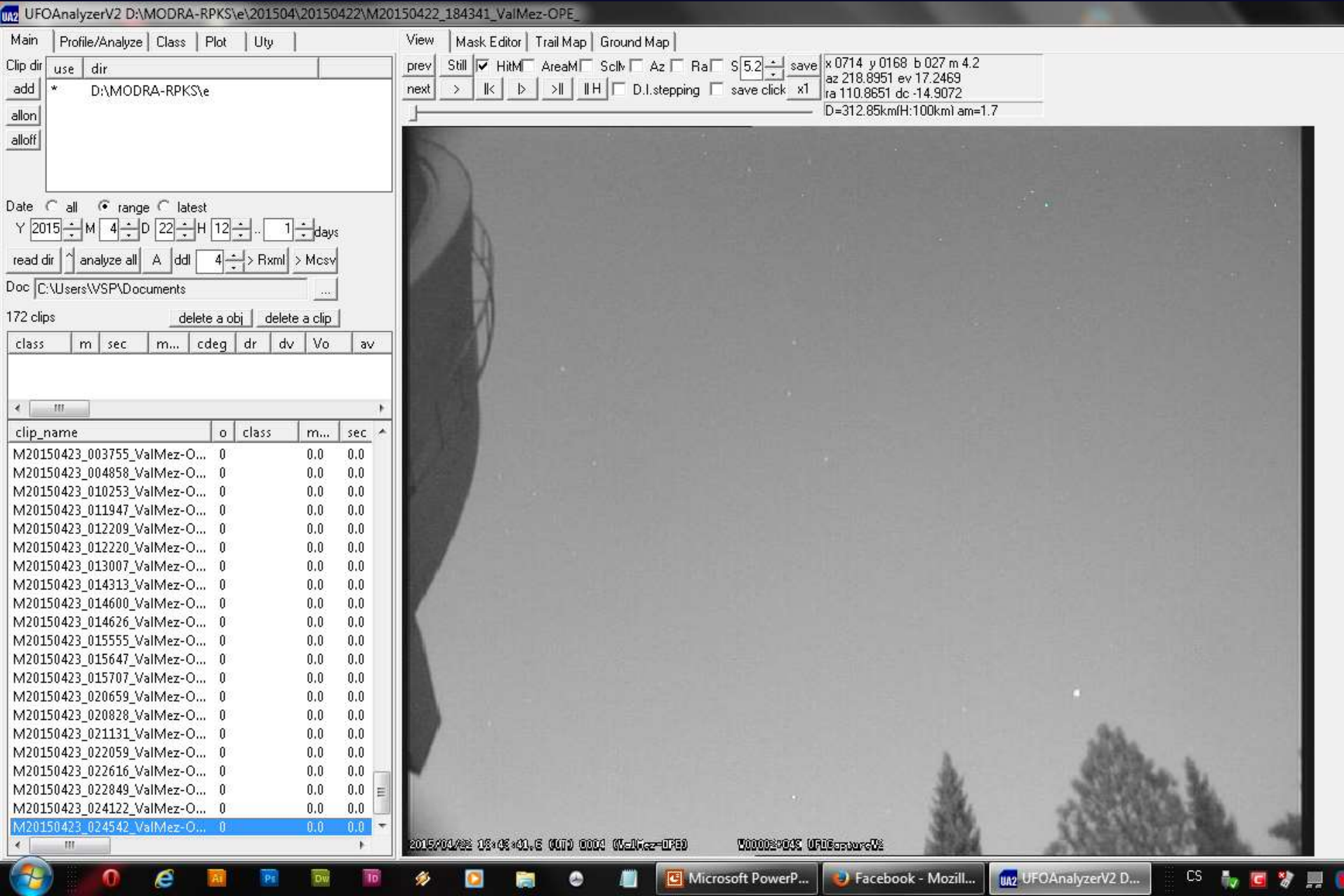
Ukázkový materiál

- Hvězdárna Val. Mez.
- Watec 902H2 Ult.
- Tokina 2.8-8 mm, f/0,98

Napozorovaná data

- 22./23. dubna 2015
- maximum Lyrid
- 172 záznamů
- 1/3 meteory
- kosmiky, družice, odlesky

Napozorovaná data



The screenshot shows the UFOAnalyzerV2 software interface. The top menu bar includes Main, Profile/Analyze, Class, Plot, Uty, View, Mask Editor, Trail Map, and Ground Map. The left sidebar contains various input fields for object identification (lid, can, lng, tme, fovt, k4, dx, az, etc.) and a list of clips. The main window displays a dark image with a bright, elongated object. The bottom status bar shows the date and time: 2015/04/23 01:22:09.2 (UT) 0039 (ValMez-OPE).

Main	Profile/Analyze	Class	Plot	Uty
			read P	save P
			save A	
lid	/alMez-OPE	sid	observer	HVM
				☒ intl
can	Watec	lens	Tokina	cap
				☐ bbf
lng	17.9735	lat	49.4633	alt
		337	tz	0
tme	1.0	memo		
		step	000.100	
☒ fovr	79.4120	☒ yx	0.9187	☐ atc
				58.3
☒ k4	-0.0087	☒ k3	-0.0084	☒ k2
				-0.0069
☒ dx	-2.38	☒ dy	16.53	☒ rot
				0.5203
☒ az	74.0998	☒ ev	42.9410	move
				◀ ▶
adj pos all		ddip lin	mask 0 link 0	
A D J U S T	pos 3	0.000010		
	levH	255	magH	1.7253
	mag levL	218	magL	1.8906
			bvf	-0.30
analyze		m=-2.50*log(L)+7.74		
☐ retry	ddl	4	leap	200
		f1	-1	f2
				-1
click1	click2	mod h	add a obj	delete a obj
				delete a cip
class	m	sec	m...	cdeg
		dr	dv	V0
				av

View Mask Editor Trail Map Ground Map
 prev Still ☒ HitM AreaM ScM Az Ra S 5.2 save x 0570 y 0305 b 047 m 3.6
 next > ||< >|| IIH ☐ D.I.stepping ☐ save click x1
 D=160.30km(H:100km) am=2.5



clip_name	o	class	m...
M20150423_003714_ValMez-OPE_	0		0.0
M20150423_003755_ValMez-OPE_	0		0.0
M20150423_004648_ValMez-OPE_	0		0.0
M20150423_004858_ValMez-OPE_	0		0.0
M20150423_005138_ValMez-OPE_	0		0.0
M20150423_010253_ValMez-OPE_	0		0.0
M20150423_010544_ValMez-OPE_	0		0.0
M20150423_011757_ValMez-OPE_	0		0.0
M20150423_011947_ValMez-OPE_	0		0.0
M20150423_012209_ValMez-OPE_	0		0.0
M20150423_012220_ValMez-OPE_	0		0.0
M20150423_012223_ValMez-OPE_	0		0.0

Kontrola masky – oops!

UFOAnalyzerV2 D:\MODRA-RPKS\ve\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty View Mask Editor Trail Map Ground Map

read P save P save A

lid /alMez-OPE sid observe HVM intlc

can Watec lens Tokina cap bbf

lng 17.9735 lat 49.4633 alt 337 tz 0

tme 1.0 memo step 000.10C

fovH 79.4120 yx 0.9187 atc 58.3

k4 -0.0087 k3 -0.0084 k2 -0.0069

dx -2.38 dy 16.53 rot 0.5203

az 74.0998 ev 42.9410 move

adj pos all ddpix lin mask 0 link 0

A D J U S T

pos 3 0.00001

levH 255 magH 1.7253

mag levL 218 magL 1.8906 bvf -0.30

m=-2.50*log(L)+7.74

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
...								

clip_name o class m...

M20150423_003714_ValMez-OPE_	0	0.0
M20150423_003755_ValMez-OPE_	0	0.0
M20150423_004648_ValMez-OPE_	0	0.0
M20150423_004858_ValMez-OPE_	0	0.0
M20150423_005138_ValMez-OPE_	0	0.0
M20150423_010253_ValMez-OPE_	0	0.0
M20150423_010544_ValMez-OPE_	0	0.0
M20150423_011757_ValMez-OPE_	0	0.0
M20150423_011947_ValMez-OPE_	0	0.0
M20150423_012209_ValMez-OPE_	0	0.0
M20150423_012220_ValMez-OPE_	0	0.0
M20150423_012207_ValMez-OPE_	0	0.0

prev edit auto link clear link lim 6

next auto < SD L- 5 R- 5

link manual link U- 5 D- 5

mg r [save] save x 0515 y 0357

lin 5.2 reload x1 az 201.0900 ev 45.3831

qm smag del ra 234.3631 dc 06.6568

Úprava masky - manuální

UFOAnalyzerV2 D:\MODRA-RPKS\el\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty View Mask Editor Trail Map Ground Map

read P save P save A

lid /alMez-OPE sid observer HVM intlc
can Watec lens Tokina cap bbf

lng 17.9735 lat 49.4633 alt 337 tz 0
tme 1.0 memo step 000.10C

☒ fovr 79.4120 ☒ yx 0.9187 atc 58.3
☒ k4 -0.0087 ☒ k3 -0.0084 ☒ k2 -0.0069
☒ dx -2.38 ☒ dy 16.53 ☒ rot 0.5203
☒ az 71.8000 ☒ ev 52.2410 move

adj pos all ddpix lin mask 0 link 0

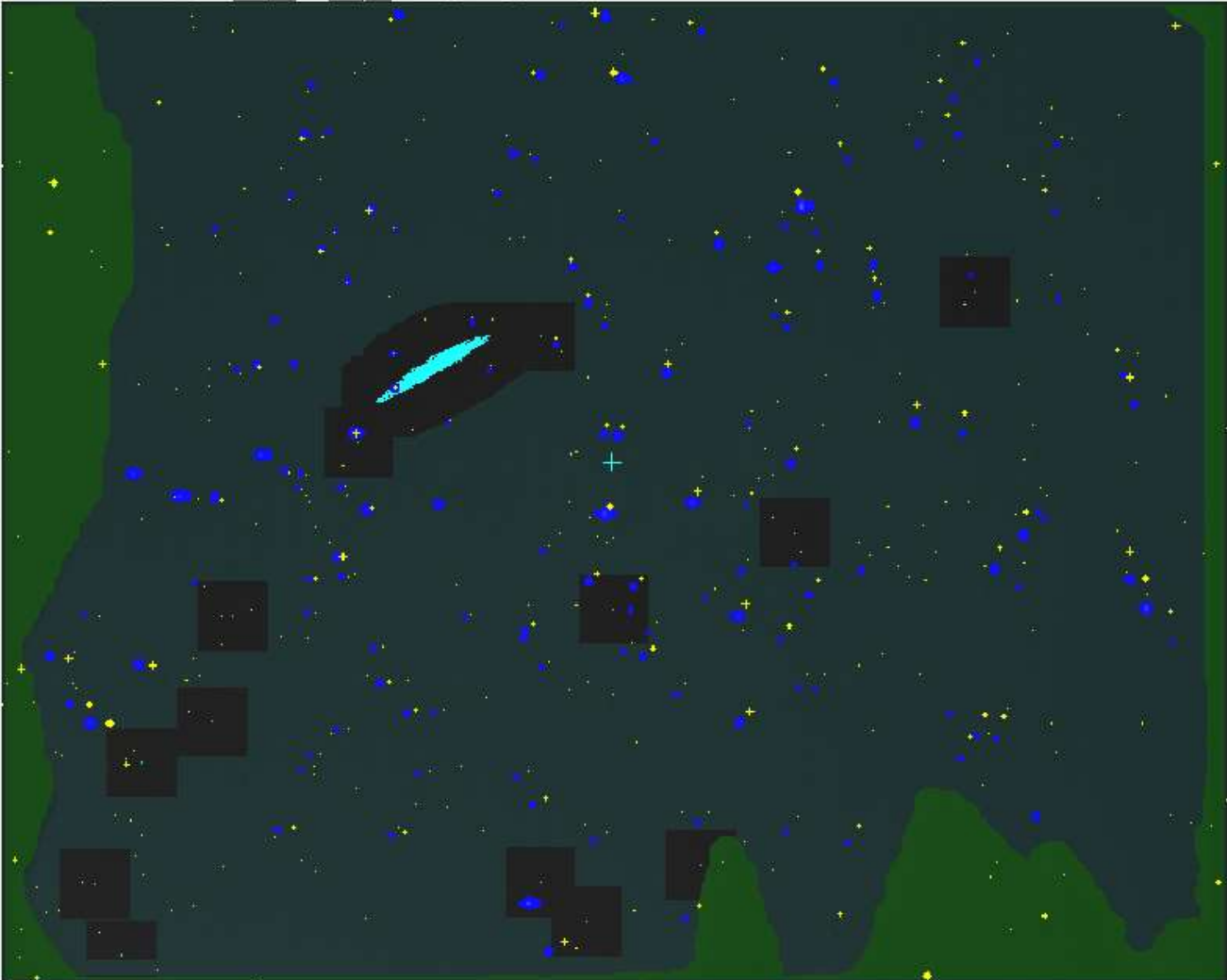
A D J U S T
pos 3 0.00001
levH 255 magH 1.7253
mag levL 218 magL 1.8906 bvf -0.30
analyze m=-2.50*log(L)+7.74

☐ retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
...								
clip_name	o	class	m...					
M20150423_003714_ValMez-OPE_	0		0.0					
M20150423_003755_ValMez-OPE_	0		0.0					
M20150423_004648_ValMez-OPE_	0		0.0					
M20150423_004858_ValMez-OPE_	0		0.0					
M20150423_005138_ValMez-OPE_	0		0.0					
M20150423_010253_ValMez-OPE_	0		0.0					
M20150423_010544_ValMez-OPE_	0		0.0					
M20150423_011757_ValMez-OPE_	0		0.0					
M20150423_011947_ValMez-OPE_	0		0.0					
M20150423_012209_ValMez-OPE_	0		0.0					
M20150423_012220_ValMez-OPE_	0		0.0					
M20150423_012207_ValMez-OPE_	0		0.0					

prev edit auto link clear link lim 6 mg r ☒ save x 0712 y 0343
next auto < SD L- 5 R- 5 az 131.3114 ev 38.0907
link manual link U- 5 D- 5 qm smag reload x1 ra 285.7121 dc 07.5135



Microsoft PowerP... Facebook - Mozill... UA2 UFOAnalyzerV2 D... CS

Úprava masky – auto link

UFOAnalyzerV2 D:\MODRA-RPKS\el\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty View Mask Editor Trail Map Ground Map

read P save P save A

lid /alMez-OPE sid observer HVM intlc
can Watec lens Tokina cap bbf
lng 17.9735 lat 49.4633 alt 337 tz 0
tme 1.0 memo step 000.10C
fovH 79.4120 yx 0.9187 atc 58.3
k4 -0.0087 k3 -0.0084 k2 -0.0069
dx -2.38 dy 16.53 rot 0.5203
ev 1.2410 move
adj pos all dr pix lin mask 141 link 55
pos 0.00001 dpix avr 3.607 max 5.542
3 ddeg avr 0.407 max 0.621
2015/04/23
levH 255 levL 218 magL 1.8906 bvf -0.30
mag
analyze m=-2.50*log(L)+7.74
retry ddl 4 leap 200 f1 -1 f2 -1
click1 click2 mod h add a obj delete a obj delete a clip
class m sec m... cdeg dr dv Vo av

prev edit auto link clear link lim 6
next auto SD L- 5 R- 5
link manual link U- 5 D- 5 qm smag del

x 0085 y 0574
az 348.4529 ev 58.7381
ra 217.7979 dc 78.6179

clip_name o class m...
M20150423_003714_ValMez-OPE_ 0 0.0
M20150423_003755_ValMez-OPE_ 0 0.0
M20150423_004648_ValMez-OPE_ 0 0.0
M20150423_004858_ValMez-OPE_ 0 0.0
M20150423_005138_ValMez-OPE_ 0 0.0
M20150423_010253_ValMez-OPE_ 0 0.0
M20150423_010544_ValMez-OPE_ 0 0.0
M20150423_011757_ValMez-OPE_ 0 0.0
M20150423_011947_ValMez-OPE_ 0 0.0
M20150423_012209_ValMez-OPE_ 0 0.0
M20150423_012220_ValMez-OPE_ 0 0.0
M20150423_012207_ValMez-OPE_ 0 0.0

Úprava masky – auto link #2

UFOAnalyzerV2 D:\MODRA-RPKS\201504\20150422\M20150423_012209_ValMez-OPE_

UFOAnalyzerV2 interface showing the Mask Editor and Ground Map.

Mask Editor:

- Buttons: prev, edit, **auto link** (highlighted with a red arrow), clear link, lim.
- Fields: L- 5, R- 5, U- 5, D- 5.
- Buttons: link, manual link, qm, smag, del.
- Fields: mg, r, saveN, save, x1.
- Fields: x 0689, y 0337, az 128.8805, ev 41.2550, ra 285.7387, dc 11.1891, dpix 0.0983, ddeg 0.0101, mag 3.0.

Ground Map:

- Star field with various colored stars (blue, green, yellow, red, purple).
- Dark, irregular shapes representing masks.
- A red arrow points from the 'auto link' button to the map.

Left Panel (Parameters):

- Buttons: read P, save P, save A.
- Fields: lid /alMez-OPE, sid, observer HVM, intlc, can Watec, lens Tokina, cap, bbf.
- Fields: lng 17.9735, lat 49.4633, alt 337, tz 0.
- Fields: tme 1.0, memo, step 000.10C.
- Fields: fovr 77.9883, yx 0.9186, atc 58.3.
- Fields: k4 0.0037, k3 -0.0044, k2 0.0009.
- Fields: dx 11.45, dy 0.95, rot 1.1789.
- Fields: ev 1.9422, move.
- Fields: mask 141, link 128, dpix avr 0.299, max 2.860, ddeg avr 0.033, max 0.311, (2015/04/23).
- Fields: levH 255, levL 218, magL 1.8906, bvf -0.30.
- Fields: m=-2.50*log(L)+7.74.
- Buttons: analyze, retry, ddl 4, leap 200, f1 -1, f2 -1.
- Buttons: click1, click2, mod h, add a obj, delete a obj, delete a clip.
- Table with columns: class, m, sec, m..., cdeg, dr, dv, Vo, av.

Bottom Panel (List):

clip_name	o	class	m...
M20150423_003714_ValMez-OPE_	0		0.0
M20150423_003755_ValMez-OPE_	0		0.0
M20150423_004648_ValMez-OPE_	0		0.0
M20150423_004858_ValMez-OPE_	0		0.0
M20150423_005138_ValMez-OPE_	0		0.0
M20150423_010253_ValMez-OPE_	0		0.0
M20150423_010544_ValMez-OPE_	0		0.0
M20150423_011757_ValMez-OPE_	0		0.0
M20150423_011947_ValMez-OPE_	0		0.0
M20150423_012209_ValMez-OPE_	0		0.0
M20150423_012220_ValMez-OPE_	0		0.0
M20150423_012207_ValMez-OPE_	0		0.0

Úprava masky – auto link #2

UA2 UFOAnalyzerV2 D:\MODRA-RPKS\el\201504\20150422\M20150423_012209_ValMez-OPE_

UFOAnalyzerV2 interface showing the Mask Editor and Ground Map.

Mask Editor:

- Buttons: prev, edit, clear link, lim, 5, R-, 5, D-, 5
- Buttons: next, to, < SD, L, 5, R-, 5, D-, 5
- Buttons: link, mask link, U-, 5, D-, 5
- Buttons: mg, r, saveN, save, x1, 5.2, reload, qm, smag, del

Ground Map:

- Coordinates: x 0689, y 0337, az 128.8805, ev 41.2550, ra 285.7387, dc 11.1891, dpix 0.0983, ddeg 0.0101, mag 3.0
- Map showing a dark field with numerous colorful stars and a central bright cyan object.

Left Panel:

- Buttons: read P, save P, save A
- Buttons: lid, /alMez-OPE, sid, observe, HVM, intlc, can, Watec, lens, Tokina, cap, bbf
- Buttons: lng, 17.9735, lat, 49.4633, alt, 337, tz, 0, tme, 1.0, memo, step, 000.100
- Buttons: fovr, 77.9883, yx, 0.9186, atc, 58.3, k4, 0.0037, k3, -0.0044, k2, 0.0009, dx, 11.45, dy, 0.95, rot, 1.1789, az, 74.8422, ev, 51.0085, move, analyze
- Buttons: add pos all, ddpix, lin, mask, 141, link, 128, dpix, avr, 0.299, max, 2.860, ddeg, avr, 0.033, max, 0.311, r2015/04/23, levH, 255, magH, 1.7253, levL, 218, magL, 1.8906, bvf, -0.30, m=-2.50*log(L)+7.74
- Buttons: retry, ddl, 4, leap, 200, f1, -1, f2, -1
- Buttons: click1, click2, mod h, add a obj, delete a obj, delete a cip
- Buttons: class, m, sec, m..., cdeg, dr, dv, Vo, av

Table:

clip_name	o	class	m...
M20150423_003714_ValMez-OPE_	0		0.0
M20150423_003755_ValMez-OPE_	0		0.0
M20150423_004648_ValMez-OPE_	0		0.0
M20150423_004858_ValMez-OPE_	0		0.0
M20150423_005138_ValMez-OPE_	0		0.0
M20150423_010253_ValMez-OPE_	0		0.0
M20150423_010544_ValMez-OPE_	0		0.0
M20150423_011757_ValMez-OPE_	0		0.0
M20150423_011947_ValMez-OPE_	0		0.0
M20150423_012209_ValMez-OPE_	0		0.0
M20150423_012220_ValMez-OPE_	0		0.0
M20150423_012209_ValMez-OPE_	0		0.0

Úprava masky – < SD

UA2 UFOAnalyzerV2 D:\MODRA-RPKS\el\201504\20150422\M20150423_012209_ValMez-OPE_

UA2 UFOAnalyzerV2 D:\MODRA-RPKS\el\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty View Mask Editor Trail Map Ground Map

read P save P save A

lid /alMez-OPE sid observer HVM intlc

can Watec lens Tokina cap bbf

lng 17.9735 lat 49.4633 alt 337 tz 0

tme 1.0 memo step 000.10C

fov 77.9883 yx 0.9186 atc 58.3

k4 0.0037 k3 -0.0044 k2 0.0009

dx 11.45 dy 0.95 rot 1.1789

az 74.8422 ev 51.0085 move

adj pos all ddpix lin mask 141 link 86

pos 0.00001 dpix avr 0.185 max 0.397

levH 255 magH 1.7253

mag levL 218 magL 1.8906 bvf -0.30

m=2.50*log(L)+7.74

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
...								
clip_name	o	class	m...					
M20150423_003714_ValMez-OPE_	0		0.0					
M20150423_003755_ValMez-OPE_	0		0.0					
M20150423_004648_ValMez-OPE_	0		0.0					
M20150423_004858_ValMez-OPE_	0		0.0					
M20150423_005138_ValMez-OPE_	0		0.0					
M20150423_010253_ValMez-OPE_	0		0.0					
M20150423_010544_ValMez-OPE_	0		0.0					
M20150423_011757_ValMez-OPE_	0		0.0					
M20150423_011947_ValMez-OPE_	0		0.0					
M20150423_012209_ValMez-OPE_	0		0.0					
M20150423_012220_ValMez-OPE_	0		0.0					
M20150423_012209_ValMez-OPE_	0		0.0					

prev edit clear link lim 6

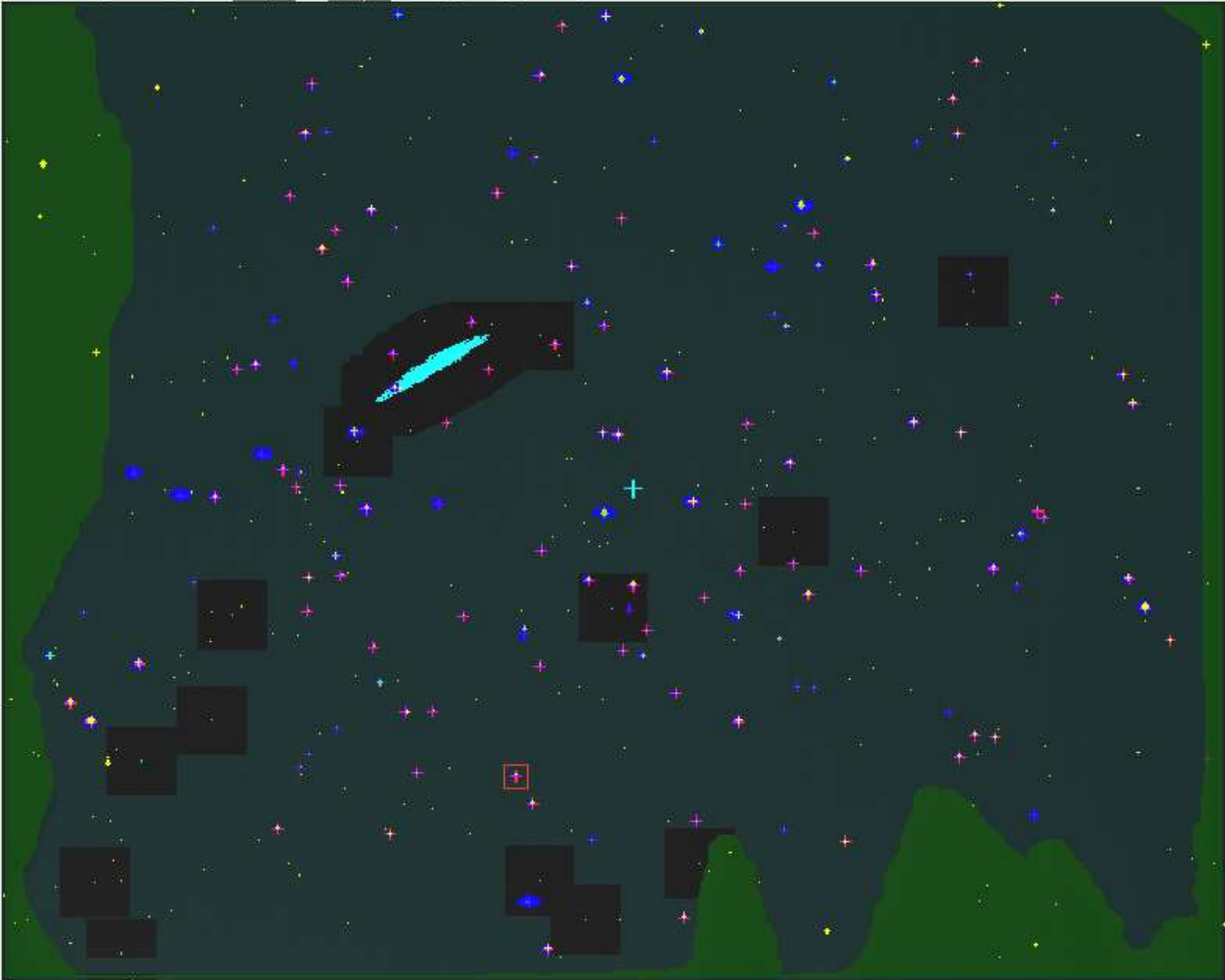
next to CS L 5 R 5

link mask link U 5 D 5

mg r saveN save x 0704 y 0403

lin 5.2 reload x1 az 137.2489 ev 44.5386

qm smag del ra 278.6558 dc 11.1076



Microsoft PowerP... Stránky - Mozilla ... UA2 UFOAnalyzerV2 D... CS

Úprava masky – uložení profilu

UFOAnalyzerV2 D:\MODRA-RPKS\el\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot **Mask Editor** Trail Map Ground Map

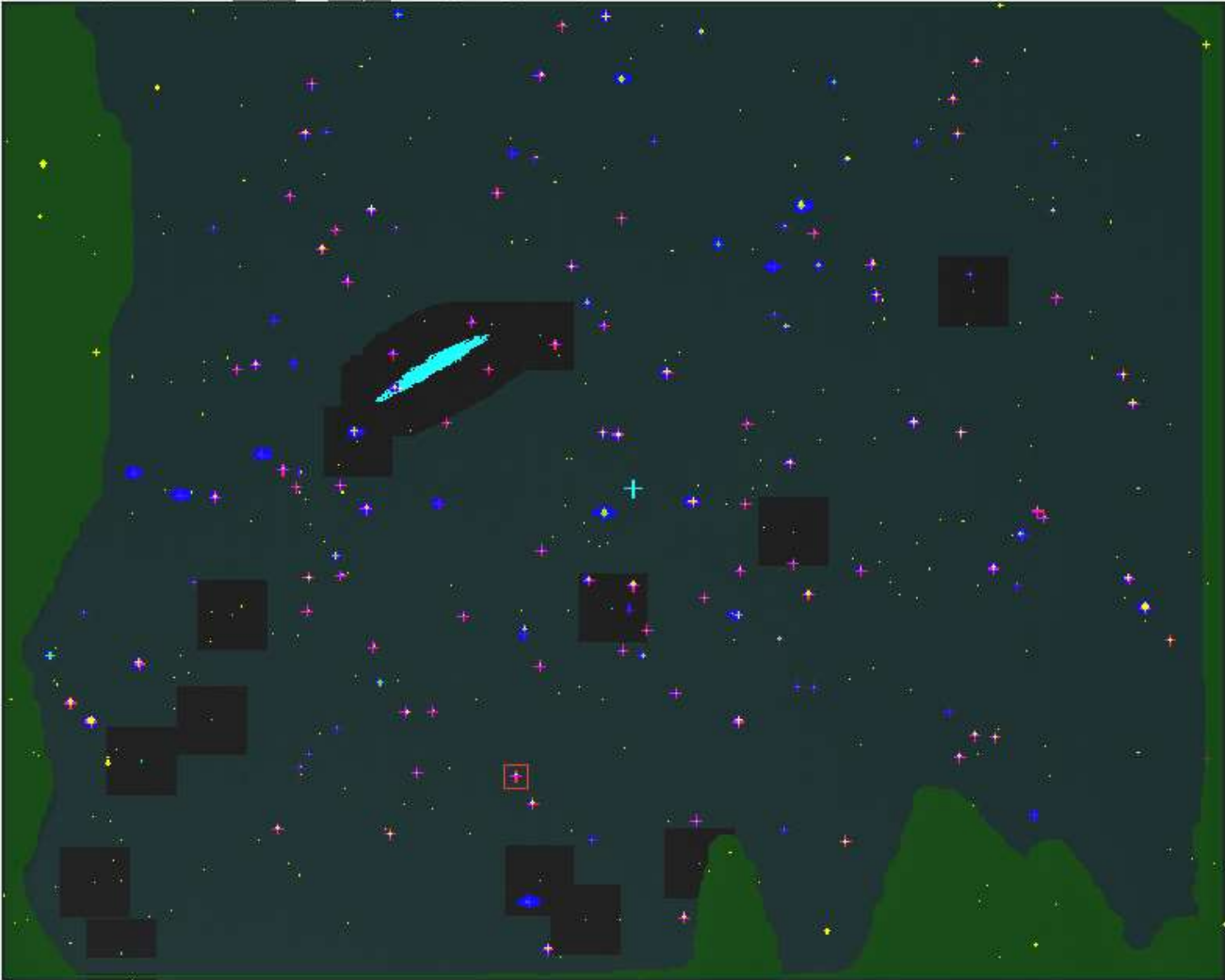
ad P save P save

lid /alMez-OPE sid observer HVM intlc
can Watec lens Tokina cap bbf
lng 17.9735 lat 49.4633 alt 337 tz 0
tme 1.0 memo step 000.10C
fovH 77.9883 yx 0.9186 atc 58.3
k4 0.0037 k3 -0.0044 k2 0.0009
dx 11.45 dy 0.95 rot 1.1789
az 74.8422 ev 51.0085 move
adj pos all ddpix lin mask 141 link 86
dpix avr 0.185 max 0.397
ddeg avr 0.021 max 0.046
r2015/04/23
A D J U S T
mag levH 255 magH 1.7253
mag levL 218 magL 1.8906 bvf -0.30
analyze m=-2.50*log(L)+7.74
retry ddl 4 leap 200 f1 -1 f2 -1
click1 click2 mod h add a obj delete a obj delete a clip
class m sec m... cdeg dr dv Vo av

clip_name	o	class	m...
M20150423_003714_ValMez-OPE_	0		0.0
M20150423_003755_ValMez-OPE_	0		0.0
M20150423_004648_ValMez-OPE_	0		0.0
M20150423_004858_ValMez-OPE_	0		0.0
M20150423_005138_ValMez-OPE_	0		0.0
M20150423_010253_ValMez-OPE_	0		0.0
M20150423_010544_ValMez-OPE_	0		0.0
M20150423_011757_ValMez-OPE_	0		0.0
M20150423_011947_ValMez-OPE_	0		0.0
M20150423_012209_ValMez-OPE_	0		0.0
M20150423_012220_ValMez-OPE_	0		0.0
M20150423_012207_ValMez-OPE_	0		0.0

View Mask Editor Trail Map Ground Map

prev edit auto link clear link lim 6
next auto CSD L- 5 R- 5
link manual link U- 5 D- 5
mg r saveN save x 0704 y 0403
lin 5.2 reload x1 az 137.2489 ev 44.5386
qm smag del ra 278.6558 dc 11.1076



Microsoft PowerP... Stránky - Mozilla ... UA2 UFOAnalyzerV2 D... CS

Úprava masky – < SD

UFOAnalyzerV2 D:\videometry\VM-OPE\2015\201504\20150422\M20150422_193612_ValMez-OPE_

Main | Profile/Analyze | Class | Plot | Uty | View | Mask Editor | Trail Map | Ground Map |

Clip dir use dir
add * D:\videometry\VM-OPE\2015
allon
alloff

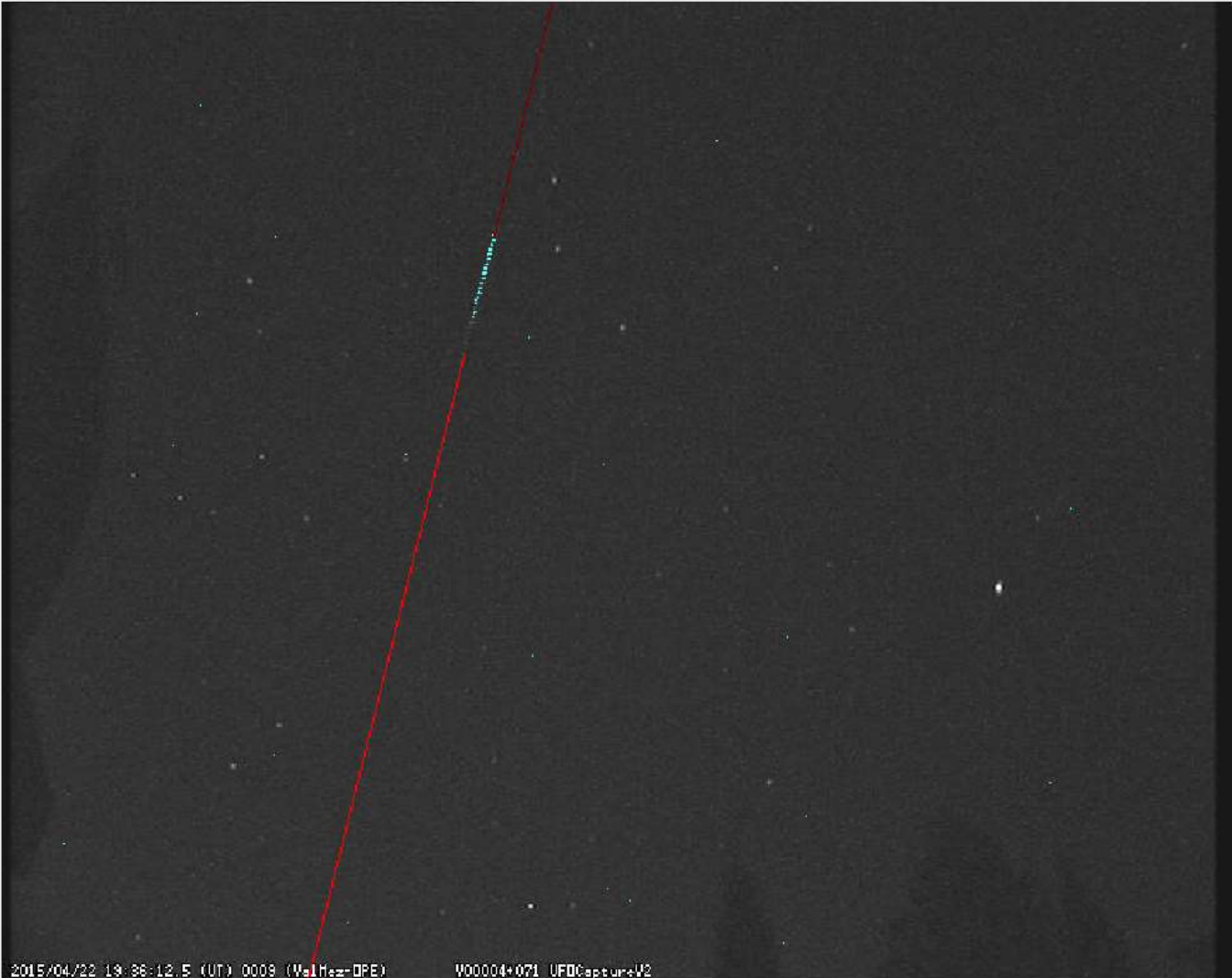
Date all range latest
X 2015 M 4 D 22 H 12 1 days
read dir analyze all A ddl 4 Rxml > Mcsv
D:\videometry\VM-OPE\2015\201504\20150422 ...

48 clips delete a obj delete a clip

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.400	0.53	0.008	0.0	20	57.5	18.91	

clip_name	o	class	m...	sec
M20150422_193612_ValMez-O...	1	J5_Lyr	0.5	0.4
M20150422_195007_ValMez-O...	1	J5_Lyr	-1.9	0.9
M20150422_200322_ValMez-O...	1	J5_Lyr	-0.2	0.7
M20150422_200415_ValMez-O...	1	sm_010	1.3	0.8
M20150422_203924_ValMez-O...	1	spo	1.3	1.6
M20150422_204753_ValMez-O...	1	J5_Lyr	-1.9	0.3
M20150422_205743_ValMez-O...	1	J5_Lyr	0.9	0.3
M20150422_212256_ValMez-O...	1	spo	1.2	0.1
M20150422_212350_ValMez-O...	1	J5_Lyr	1.0	0.6
M20150422_212946_ValMez-O...	1	J5_Lyr	-1.5	0.8
M20150422_213508_ValMez-O...	1	J5_Lyr	-0.8	0.5
M20150422_214036_ValMez-O...	1	Ie_AVB	0.7	0.5
M20150422_214503_ValMez-O...	1	J5_Lyr	0.9	0.2
M20150422_215725_ValMez-O...	1	J5_Lyr	-0.2	0.2
M20150422_215933_ValMez-O...	1	J5_Lyr	0.2	0.3
M20150422_220003_ValMez-O...	1	spo	0.9	0.3
M20150422_221258_ValMez-O...	1	J5_Lyr	-0.3	0.3
M20150422_221402_ValMez-O...	1	spo	0.2	0.3
M20150422_225922_ValMez-O...	1	sm_010	1.0	0.2
M20150422_231146_ValMez-O...	1	spo	-1.8	0.4
M20150422_231350_ValMez-O...	1	spo	-0.3	0.7
M20150422_232257_ValMez-O...	1	Iw_LVI	1.4	0.3
M20150422_232638_ValMez-O...	1	J5_Lyr	0.9	0.2
M20150422_235217_ValMez-O...	1	Iw_XLI	-0.9	0.3
M20150422_235936_ValMez-O...	1	Iw_XLI	-1.4	0.2
M20150423_000435_ValMez-O...	1	J5_Lyr	0.9	0.1
M20150423_002443_ValMez-O...	1	spo	0.8	1.3
M20150423_003524_ValMez-O...	1	J5_Lyr	0.2	0.2
M20150423_003755_ValMez-O...	1	J5_Lyr	1.0	1.7
M20150423_004858_ValMez-O...	1	J5_Lyr	0.4	0.4
M20150423_010253_ValMez-O...	1	J5_Lyr	-0.8	0.7

prev Still ☒ HitM ☐ AreaM ☐ SclM ☐ Az ☐ Ra ☐ S 5.2 save x 0700 y 0318 b 050 m 3.6
next > ||< > ||> || H ☐ D.I.stepping ☐ save click x1 az 128.6167 ev 38.9779
ra 200.3723 dc 09.4445
D=156.62km(H:100km) am=2.6



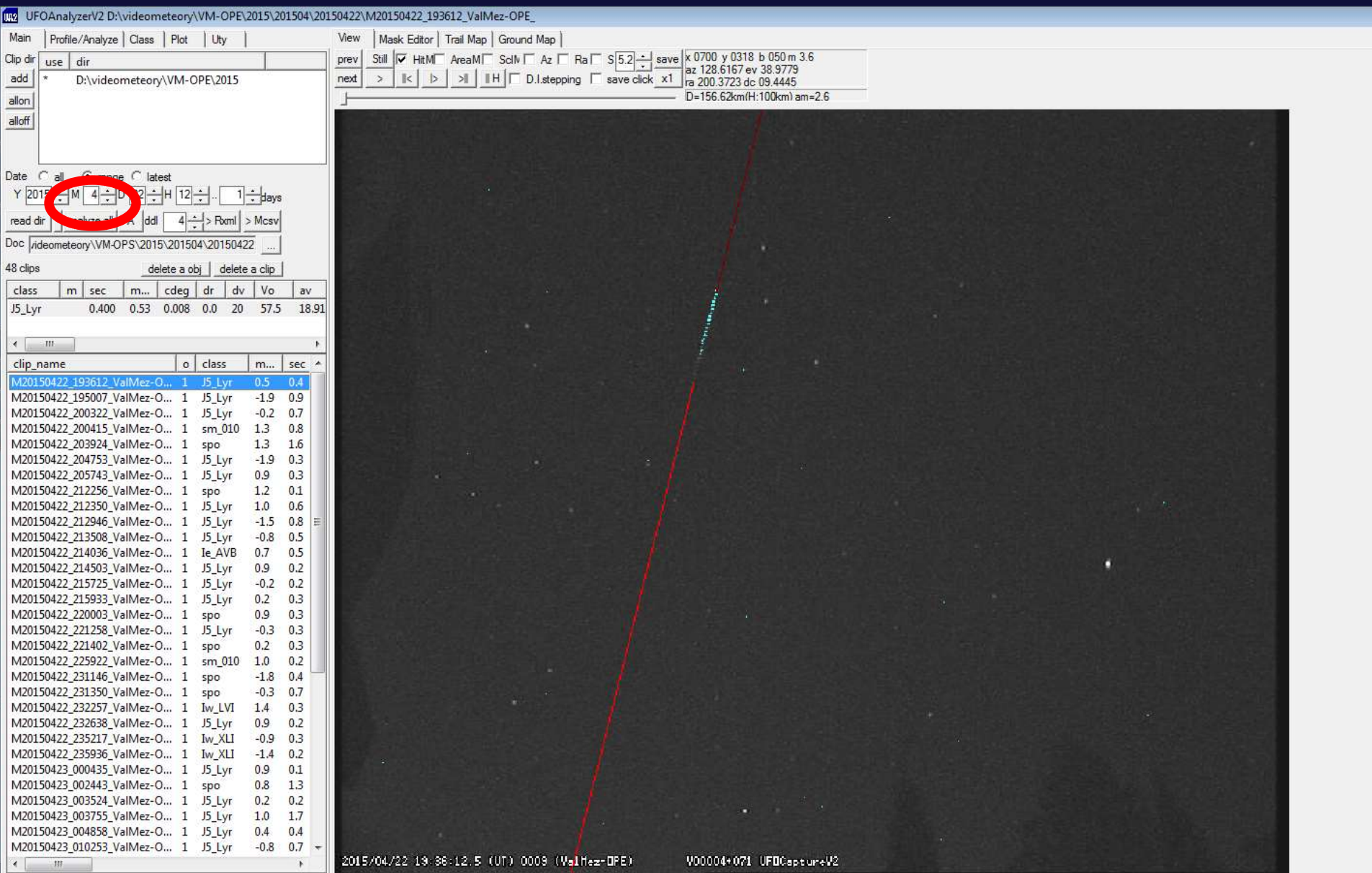
2015/04/22 19:36:12.5 (UT) 0009 (ValMez-OPE) V00004+071 UFOcaptureV2

Automatická analýza

- pro správně vytvořenou masku
- pro běžné systémy sítě CEMENT (se zorným polem 70° - 80°)
- pro meteory jasností -1 mag až 1 mag

FUNGUJE DOATATEČNĚ PŘESNĚ

Úprava masky – < SD



Automatická analýza

- Ale:
- řada meteorů zůstane nedetekována (hodnocena jako noise)
 - jasné meteory (s vysokou pravděpodobností více-staničního pozorování) si zaslouží vyšší přesnost
 - v některých případech neproběhne analýza korektně (šum)

Manuální analýza

Práce s maskou hvězd

(zpřesnění pro konkrétní meteor)

Práce s maskou meteoru

(ruční zúžení oblasti zájmu)

Práce s parametry ddl, f1

Manuální analýza - autolink

UFOAnalyzerV2 D:\videometeor\VM-OPE\2015\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty

M20150423_012209_ValMez-OPE read P save P save A

lid /alMez-OPE sid observer HVM intlc

can Watec lens Tokina cap bbf

lng 17.9735 lat 49.4633 alt 337 tz 0

tme 1.0 memo step 000.100

fovH 78.0050 yx 0.9188 atc 58.3

k4 0.0063 k3 -0.0089 k2 0.0029

dx 11.47 dy 1.06 rot 361.1795

az 74.8485 ev 0.215 move

adj pos all ddpix link mask 141 link 128

A D J pos 3 ddpix avr 0.301 max 2.847

A U S T mag evH 250 magH 1.8727

mag evL 250 magL 1.8906 bvf 0.00

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.820	-2....	0.033	0.3	-2	47.2	13.49	

clip_name o class m...

M20150422_214503_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_215725_ValMez-OPE_	1	J5_Lyr	-0.2
M20150422_215933_ValMez-OPE_	1	J5_Lyr	0.2
M20150422_220003_ValMez-OPE_	1	spo	0.9
M20150422_221258_ValMez-OPE_	1	J5_Lyr	-0.3
M20150422_221402_ValMez-OPE_	1	spo	0.2
M20150422_225922_ValMez-OPE_	1	sm_010	1.0
M20150422_231146_ValMez-OPE_	1	spo	-1.8
M20150422_231350_ValMez-OPE_	1	spo	-0.3
M20150422_232257_ValMez-OPE_	1	Iw_LVI	1.4
M20150422_232638_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_235217_ValMez-OPE_	1	Iw_XLI	-0.9
M20150422_235936_ValMez-OPE_	1	Iw_XLI	-1.4
M20150423_000435_ValMez-OPE_	1	J5_Lyr	0.9
M20150423_002443_ValMez-OPE_	1	spo	0.8
M20150423_003524_ValMez-OPE_	1	J5_Lyr	0.2
M20150423_003755_ValMez-OPE_	1	J5_Lyr	1.0
M20150423_004858_ValMez-OPE_	1	J5_Lyr	0.4
M20150423_010253_ValMez-OPE_	1	J5_Lyr	-0.8
M20150423_011947_ValMez-OPE_	1	J5_Lyr	0.8
M20150423_012209_ValMez-OPE_	1	J5_Lyr	-2.2
M20150423_012220_ValMez-OPE_	1	Iw_SIF	0.0

View Mask Editor Trail Map Ground Map

prev edit auto link clear link lim 6 mg r saveN save x 0692 y 0201

next auto < SD L- 5 R- 5 lin 5.2 reload x1 az 119.2554 ev 29.9934

link manual link U- 5 D- 5 qm smag del dpix 0.2289 ddeg 0.0264 mag 3.5

ra 298.5489 dc 05.9765

Manuální analýza - < SD

UFOAnalyzerV2 D:\videometeor\VM-OPE\2015\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty

M20150423_012209_ValMez-OPE read P save P save A

lid /alMez-OPE sid observer HVM intlc

can Watec lens Tokina cap bbf

lng 17.9735 lat 49.4633 alt 337 tz 0

tme 1.0 memo step 000.100

fovH 78.0050 yx 0.9188 atc 58.3

k4 0.0063 k3 -0.0089 k2 0.0029

dx 11.47 dy 1.061 ddeg 161.1795

az 74.8485 51.0215 move

adj pos all mask 141 link 79

pos 0.000 dpx avr 0.174 max 0.371

ddeg avr 0.019 max 0.043

2015/04/23

evH 250 magH 1.8727

magL 250 magL 1.8727

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.820	-2....	0.033	0.3	-2	47.2	13.49	

clip_name o class m...

M20150422_214503_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_215725_ValMez-OPE_	1	J5_Lyr	-0.2
M20150422_215933_ValMez-OPE_	1	J5_Lyr	0.2
M20150422_220003_ValMez-OPE_	1	spo	0.9
M20150422_221258_ValMez-OPE_	1	J5_Lyr	-0.3
M20150422_221402_ValMez-OPE_	1	spo	0.2
M20150422_225922_ValMez-OPE_	1	sm_010	1.0
M20150422_231146_ValMez-OPE_	1	spo	-1.8
M20150422_231350_ValMez-OPE_	1	spo	-0.3
M20150422_232257_ValMez-OPE_	1	Iw_LVI	1.4
M20150422_232638_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_235217_ValMez-OPE_	1	Iw_XLI	-0.9
M20150422_235936_ValMez-OPE_	1	Iw_XLI	-1.4
M20150423_000435_ValMez-OPE_	1	J5_Lyr	0.9
M20150423_002443_ValMez-OPE_	1	spo	0.8
M20150423_003524_ValMez-OPE_	1	J5_Lyr	0.2
M20150423_003755_ValMez-OPE_	1	J5_Lyr	1.0
M20150423_004858_ValMez-OPE_	1	J5_Lyr	0.4
M20150423_010253_ValMez-OPE_	1	J5_Lyr	-0.8
M20150423_011947_ValMez-OPE_	1	J5_Lyr	0.8
M20150423_012209_ValMez-OPE_	1	J5_Lyr	-2.2
M20150423_012220_ValMez-OPE_	1	Iw_SIF	0.0

View Mask Editor Trail Map Ground Map

prev edit auto link clear link lim 6

next auto <SD> L- 5 R- 5

link manual link U- 5 D- 5

mg r saveN save x 0692 y 0213

lin 5.2 reload x1 az 119.9539 ev 31.0050

ra 297.4731 dc 06.4680

qsm smag del dpx 0.2289 ddeg 0.0264 mag 3.5



Mask Editor, Area Mask

UFOAnalyzerV2 D:\videometry\VM-OPE\2015\201504\20150422\20150422_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty

M20150423_012209_ValMez-OPE read P save P save A

lid /alMez-OPE sid observer HVM intlc

car Waterc lens Tokina cap bbf

Ing 17.9735 lat 49.4633 alt 337 tz 0

me 1.0 memo step 000.100

☒ fovh 78.0050 ☒ yx 0.9188 atc 58.3

☒ k4 0.0063 ☒ k3 -0.0089 ☒ k2 0.0029

☒ dx 11.47 ☒ dy 1.06 ☒ rot 361.7795

☒ az 74.8485 ☒ ev 51.0215 move

adj pos all ddpix lim mask 141 link 79

A D J U S T

pos 0.00001

deg avr 0.174 max 0.371

ddeg avr 0.019 max 0.043

2015/04/23

levH 255 magH 1.8727

mag levL 250 magL 1.8906 bvf -0.30

analyze

☐ retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.820	-2....	0.033	0.3	-2	47.2	13.49	

Mask Editor Trail Map Sound Map

edit dot opt-mask size1 2 mg r tsaveN save x 0672 y 0330

auto line area-mask size2 4 lin 5.2 reload x1 az 126.2617 ev 42.0375

link fill clr d-area size3 8 qm smag del ra 287.0206 dc 12.8832



clip_name	o	class	m...
M20150422_214503_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_215725_ValMez-OPE_	1	J5_Lyr	-0.2
M20150422_215933_ValMez-OPE_	1	J5_Lyr	0.2
M20150422_220003_ValMez-OPE_	1	spo	0.9
M20150422_221258_ValMez-OPE_	1	J5_Lyr	-0.3
M20150422_221402_ValMez-OPE_	1	spo	0.2
M20150422_225922_ValMez-OPE_	1	sm_010	1.0
M20150422_231146_ValMez-OPE_	1	spo	-1.8
M20150422_231350_ValMez-OPE_	1	spo	-0.3
M20150422_232257_ValMez-OPE_	1	Iw_LVI	1.4
M20150422_232638_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_235217_ValMez-OPE_	1	Iw_XLI	-0.9
M20150422_235936_ValMez-OPE_	1	Iw_XLI	-1.4
M20150423_000435_ValMez-OPE_	1	J5_Lyr	0.9
M20150423_002443_ValMez-OPE_	1	spo	0.8
M20150423_003524_ValMez-OPE_	1	J5_Lyr	0.2
M20150423_003755_ValMez-OPE_	1	J5_Lyr	1.0
M20150423_004858_ValMez-OPE_	1	J5_Lyr	0.4
M20150423_010253_ValMez-OPE_	1	J5_Lyr	-0.8
M20150423_011947_ValMez-OPE_	1	J5_Lyr	0.8
M20150423_012209_ValMez-OPE_	1	J5_Lyr	-2.2
M20150423_012209_ValMez-OPE_	1	Iw_SIF	0.0

Mask Editor, Area Mask

UFOAnalyzerV2 D:\videometry\VM-OPE\2015\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty

M20150423_012209_ValMez-OPE read P save P save A

lid /alMez-OPE sid observer HVM intlc

car Waterc lens Tokina cap bbf

ing 17.9735 lat 49.4633 alt 337 tz 0

time 1.0 memo step 000.100

fovH 78.0050 yx 0.9188 atc 58.3

k4 0.0063 k3 -0.0089 k2 0.0029

dx 11.47 dy 1.06 rot 361.7795

az 74.8485 ev 51.0215 move

adj pos all ddpix lim mask 141 link 79

A D J U S T

pos 0.00001

evH 255 magH 1.8727

magL 250 magL 1.8906 bvf -0.30

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.820	-2....	0.033	0.3	-2	47.2	13.49	

clip_name o class m...

M20150422_214503_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_215725_ValMez-OPE_	1	J5_Lyr	-0.2
M20150422_215933_ValMez-OPE_	1	J5_Lyr	0.2
M20150422_220003_ValMez-OPE_	1	spo	0.9
M20150422_221258_ValMez-OPE_	1	J5_Lyr	-0.3
M20150422_221402_ValMez-OPE_	1	spo	0.2
M20150422_225922_ValMez-OPE_	1	sm_010	1.0
M20150422_231146_ValMez-OPE_	1	spo	-1.8
M20150422_231350_ValMez-OPE_	1	spo	-0.3
M20150422_232257_ValMez-OPE_	1	Iw_LVI	1.4
M20150422_232638_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_235217_ValMez-OPE_	1	Iw_XLI	-0.9
M20150422_235936_ValMez-OPE_	1	Iw_XLI	-1.4
M20150423_000435_ValMez-OPE_	1	J5_Lyr	0.9
M20150423_002443_ValMez-OPE_	1	spo	0.8
M20150423_003524_ValMez-OPE_	1	J5_Lyr	0.2
M20150423_003755_ValMez-OPE_	1	J5_Lyr	1.0
M20150423_004858_ValMez-OPE_	1	J5_Lyr	0.4
M20150423_010253_ValMez-OPE_	1	J5_Lyr	-0.8
M20150423_011947_ValMez-OPE_	1	J5_Lyr	0.8
M20150423_012209_ValMez-OPE_	1	J5_Lyr	-2.2
M20150423_012209_ValMez-OPE_	1	Iw_SIF	0.0

View Mask Editor Trail Map Ground Map

prev edit dot opt-mask size1 2 mg r tsaveN save x 0672 y 0330

next auto line area mask size2 4 lin 5.2 reload x1 az 126.2617 ev 42.0375

link fill clr d sch mask size3 8 qm smag del ra 287.0206 dc 12.8832

Mask Editor, Area Mask

UFOAnalyzerV2 D:\videometry\VM-OPE\2015\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty

M20150423_012209_ValMez-OPE read P save P save A

lid /alMez-OPE sid observer HVM intlc

car Waterc lens Tokina cap bbf

Ing 17.9735 lat 49.4633 alt 337 tz 0

me 1.0 memo step 000.100

fovH 78.0050 yx 0.9188 atc 58.3

k4 0.0063 k3 -0.0089 k2 0.0029

dx 11.47 dy 1.06 rot 361.1795

az 74.8485 ev 51.0215 move

adj pos all ddpix lim mask 141 link 79

A D J U S T

pos 0.00001

evH 255 magH 1.8727

magL 250 magL 1.8906 bvf -0.30

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.820	-2....	0.033	0.3	-2	47.2	13.49	

clip_name o class m...

M20150422_214503_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_215725_ValMez-OPE_	1	J5_Lyr	-0.2
M20150422_215933_ValMez-OPE_	1	J5_Lyr	0.2
M20150422_220003_ValMez-OPE_	1	spo	0.9
M20150422_221258_ValMez-OPE_	1	J5_Lyr	-0.3
M20150422_221402_ValMez-OPE_	1	spo	0.2
M20150422_225922_ValMez-OPE_	1	sm_010	1.0
M20150422_231146_ValMez-OPE_	1	spo	-1.8
M20150422_231350_ValMez-OPE_	1	spo	-0.3
M20150422_232257_ValMez-OPE_	1	Iw_LVI	1.4
M20150422_232638_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_235217_ValMez-OPE_	1	Iw_XLI	-0.9
M20150422_235936_ValMez-OPE_	1	Iw_XLI	-1.4
M20150423_000435_ValMez-OPE_	1	J5_Lyr	0.9
M20150423_002443_ValMez-OPE_	1	spo	0.8
M20150423_003524_ValMez-OPE_	1	J5_Lyr	0.2
M20150423_003755_ValMez-OPE_	1	J5_Lyr	1.0
M20150423_004858_ValMez-OPE_	1	J5_Lyr	0.4
M20150423_010253_ValMez-OPE_	1	J5_Lyr	-0.8
M20150423_011947_ValMez-OPE_	1	J5_Lyr	0.8
M20150423_012209_ValMez-OPE_	1	J5_Lyr	-2.2
M20150423_012209_ValMez-OPE_	1	Iw_SLE	0.0

View Mask Editor Trail Map Ground Map

prev edit dot opt-mask size1 2 mg r saveN save x 0713 y 0209

next auto line area-mask size2 4 lin 5.2 reload x1 az 122.0747 ev 29.2600

link rect scl-mask d-area size3 8 qm smag del ra 296.9233 dc 03.9964

Mask Editor, Area Mask

UFOAnalyzerV2 D:\videometry\VM-OPE\2015\201504\20150422\M20150423_012209_ValMez-OPE_

Main Profile/Analyze Class Plot Uty

M20150423_012209_ValMez-OPE read P save P save A

lid /alMez-OPE sid observer HVM intlc

car Waterc lens Tokina cap bbf

Ing 17.9735 lat 49.4633 alt 337 tz 0

time 1.0 memo step 000.100

fovH 78.0050 yx 0.9188 atc 58.3

k4 0.0063 k3 -0.0089 k2 0.0029

dx 11.47 dy 1.06 rot 361.1795

az 74.8485 ev 51.0215 move

adj pos all ddpix lim mask 141 link 79

A D J U S T

pos 0.00001 ddpix avr 0.174 max 0.371

magH 255 magL 1.8727 ddeg avr 0.019 max 0.043

magL 250 magL 1.8906 bvf -0.30

analyze

retry ddl 4 leap 200 f1 -1 f2 -1

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

class	m	sec	m...	cdeg	dr	dv	Vo	av
J5_Lyr	0.820	-2....	0.033	0.3	-2	47.2	13.49	

clip_name o class m...

M20150422_214503_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_215725_ValMez-OPE_	1	J5_Lyr	-0.2
M20150422_215933_ValMez-OPE_	1	J5_Lyr	0.2
M20150422_220003_ValMez-OPE_	1	spo	0.9
M20150422_221258_ValMez-OPE_	1	J5_Lyr	-0.3
M20150422_221402_ValMez-OPE_	1	spo	0.2
M20150422_225922_ValMez-OPE_	1	sm_010	1.0
M20150422_231146_ValMez-OPE_	1	spo	-1.8
M20150422_231350_ValMez-OPE_	1	spo	-0.3
M20150422_232257_ValMez-OPE_	1	Iw_LVI	1.4
M20150422_232638_ValMez-OPE_	1	J5_Lyr	0.9
M20150422_235217_ValMez-OPE_	1	Iw_XLI	-0.9
M20150422_235936_ValMez-OPE_	1	Iw_XLI	-1.4
M20150423_000435_ValMez-OPE_	1	J5_Lyr	0.9
M20150423_002443_ValMez-OPE_	1	spo	0.8
M20150423_003524_ValMez-OPE_	1	J5_Lyr	0.2
M20150423_003755_ValMez-OPE_	1	J5_Lyr	1.0
M20150423_004858_ValMez-OPE_	1	J5_Lyr	0.4
M20150423_010253_ValMez-OPE_	1	J5_Lyr	-0.8
M20150423_011947_ValMez-OPE_	1	J5_Lyr	0.8
M20150423_012209_ValMez-OPE_	1	J5_Lyr	-2.2
M20150423_012209_ValMez-OPE_	1	Iw_SLE	0.0

View Mask Editor Trail Map Ground Map

prev edit dot opt-mask size1 2 mg r saveN save x 0711 y 0284

next auto line area-mask size2 4 lin 5.2 reload x1 az 126.9652 ev 35.5361

link fill id-area size3 8 qm smag del ra 290.0405 dc 07.0755

Zpracování pozorování. Dotazy?



**PROGRAM
CEZHRANIČNEJ
SPOLUPRÁCE**
SLOVENSKÁ REPUBLIKA
ČESKÁ REPUBLIKA



**EURÓPSKA ÚNIA
EURÓPSKY FOND
REGIONÁLNEHO ROZVOJA**
SPOLOČNE BEZ HRANÍC



FOND MIKROPROJEKTŮ