Astro Spectroscopy Association Switzerland

First Meteor Spectrum at OHP 2017: M20170723_221240_OHP

by Martin Dubs

Hi everybody,

when everybody was packing up last night, the automatic meteor camera picked up the following spectrum of a fast, bright meteor through the clouds. A correct magnitude estimation was not possible because no stars were visible, but the appparent magnitude was about -4m, without clouds probably about -8m and very short (0.2 sec). Enough to process the spectra according to the log file:

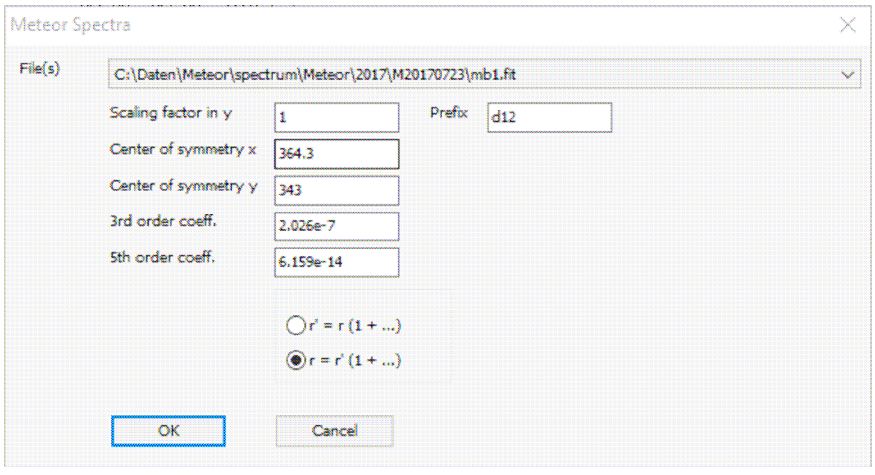
- extraction of single images with VirtualDub
- preprocessing with IRIS (thanks Christian for this still very valuable software)
- image transformation to orthographic projection with ImageTools (P. Schlatter)
- further processing with IRIS, extraction of spectrum
- linear calibration with SpectroTools
- plotting with ISIS

Visible in the spectrum are lines of
- Na 589 nm
- Mg 517 nm
- Fe around 420 to 450 and 520 to 550 nm
- plus lines of N2 and O2

The processing in detail:

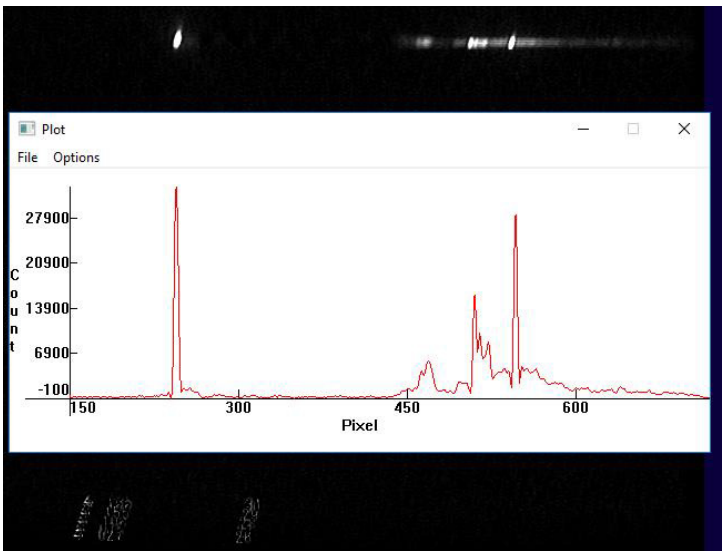
Preprocessing with IRIS:
>loadbmp24bw m_25
>RUN M_BACK m_ back 20 0.05
>visu 50 0
>savejpg back 2
>RUN M_DARK m_ back mb 25 10
>add2 mb 10
>visu 100 0
>savejpg madd10 2

Transformation to orthographic projection with ImageTools (P. Schlatter proprietary software):



Registering and stacking in IRIS, extraction of raw spectrum:

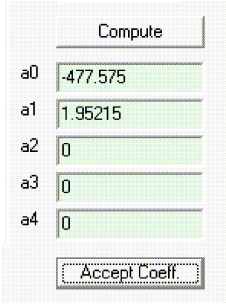
>LOAD D12_mb1
>register d12_mb r 10
>add2 r 6
>save addr6
>slant 470 -10
>load addr6
>save addr6s
>l_add 462 472
>l_plot

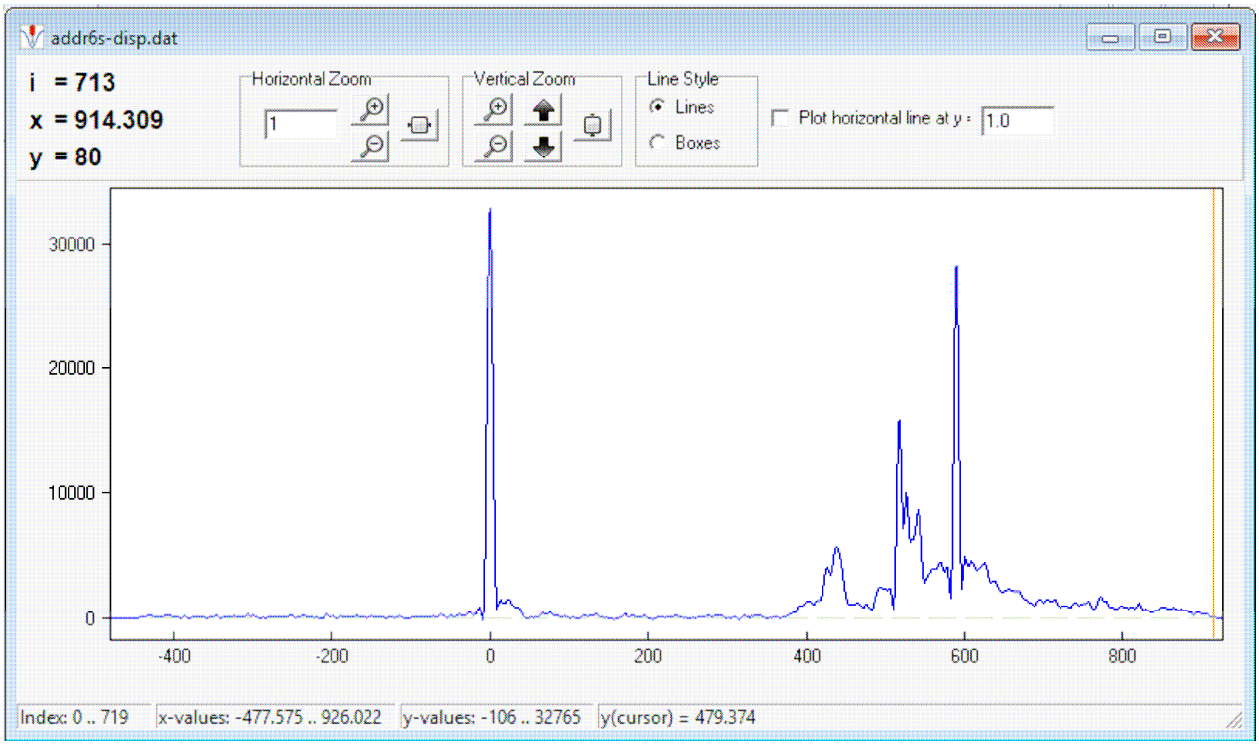


Linear fit with SpectroTools:

Residuals

x-values	y-values	y-resid.	x-resid.	dy/dx
244.6620	0.0000	-0.0424	-0.0217	1.9522
509.7080	517.8000	0.3476	0.1781	1.9522
546.5150	589.0000	-0.3052	-0.1564	1.9522





Spectrum plotted with ISIS: