Spektrale Vergleichbarkeit von geometrisch und radiometrisch unterschiedlichen hyperspektralen Sensoren (AISA, ROSIS, ASD FieldSpec)

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Unser Team

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ASD FieldSpec FR

- *Spectral Range:* 350 - 2500 nm
- *Spectral Resolution:* 3 nm at 700 nm , 10 nm at 1400/ 2100 nm
- *Sampling Interval:* 1.4 nm at 350 - 1050 nm, 2 nm at 1000 - 2500 nm
- *Scanning Time:* 100 milliseconds *Detectors:* one 512 element Si photodiode array 350 - 1000 nm two separate, TE cooled, graded index InGaAs photodiodes 1000 - 2500 nm
- *Optics:* 25° field of view
- www.asdi.com

Messtage und Messorte

Messtag	Wetter
26.06.08	Sub-optimal
27.06.08	Nicht geeignet
02.07.08	**optimal**

Messtage und Messorte

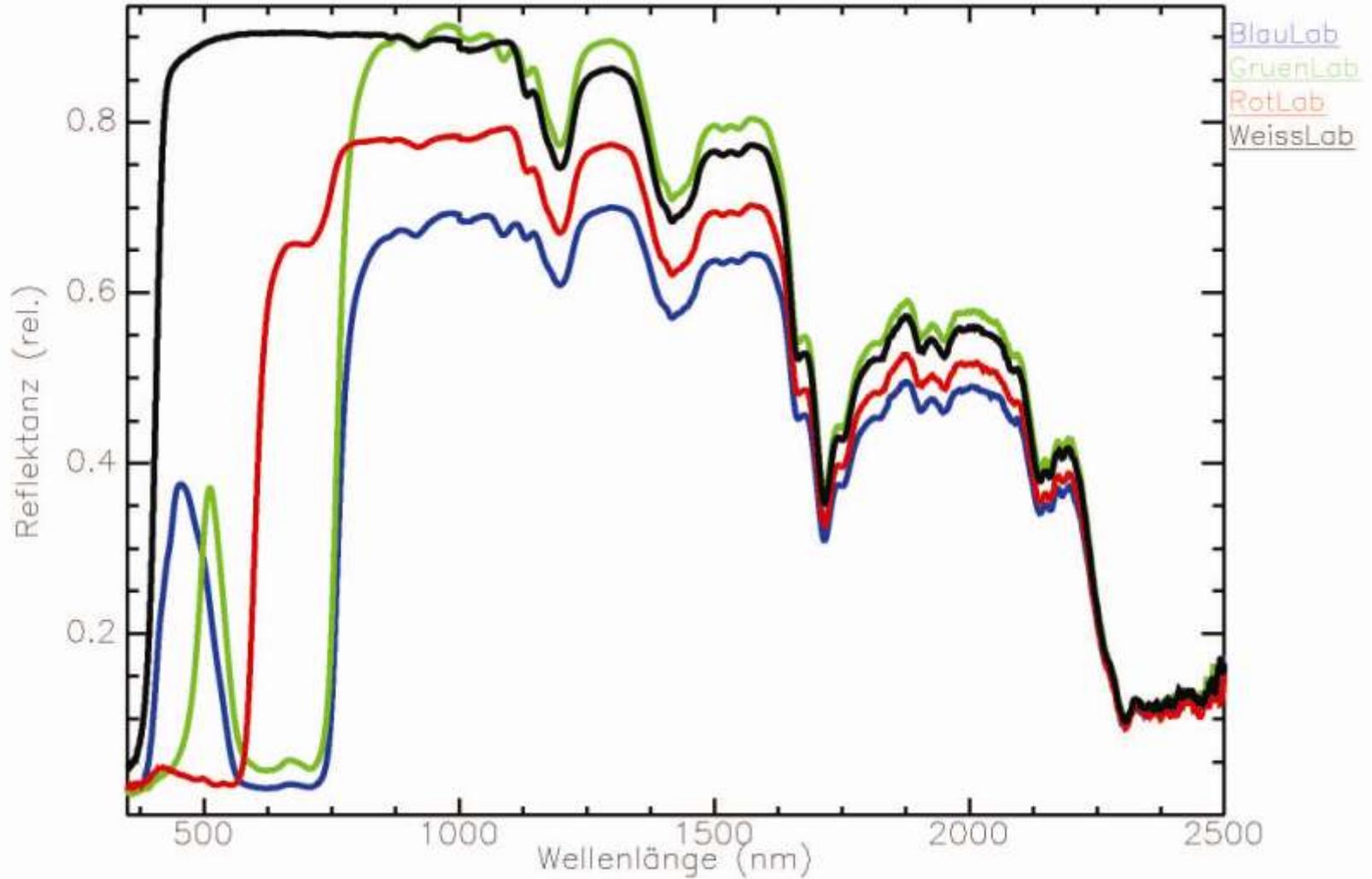| Messtag	Wetter
26.06.08	Sub-optimal
27.06.08	Nicht geeignet
02.07.08	**optimal**

- Farbveränderung)
  - **<u>Farbaufdruck auf LKW Planen (2 x 2 m)</u>**
  - Graukeil auf LKW Plane (2 x 4 m)
- Verfügbarkeit von Siemenssternen (Auflösungsvermögen)
  - Aufdruck auf 2 x 5 m LKW Plane
  - Aufdruck 8 x 8 m Plane

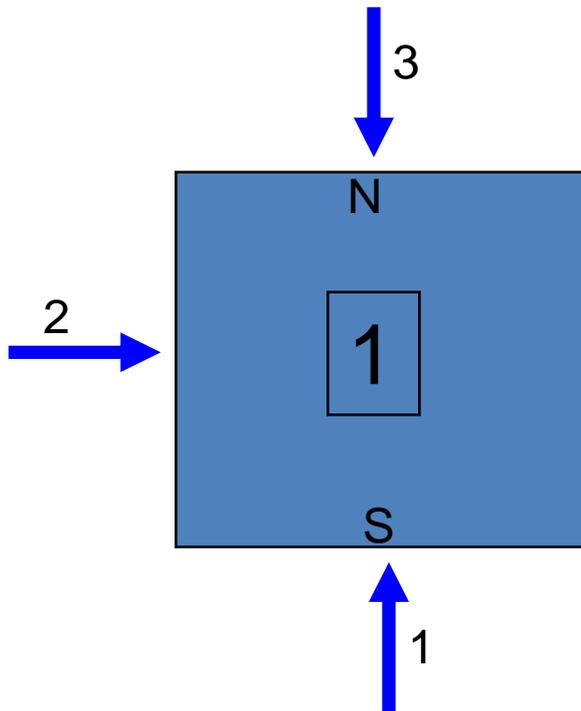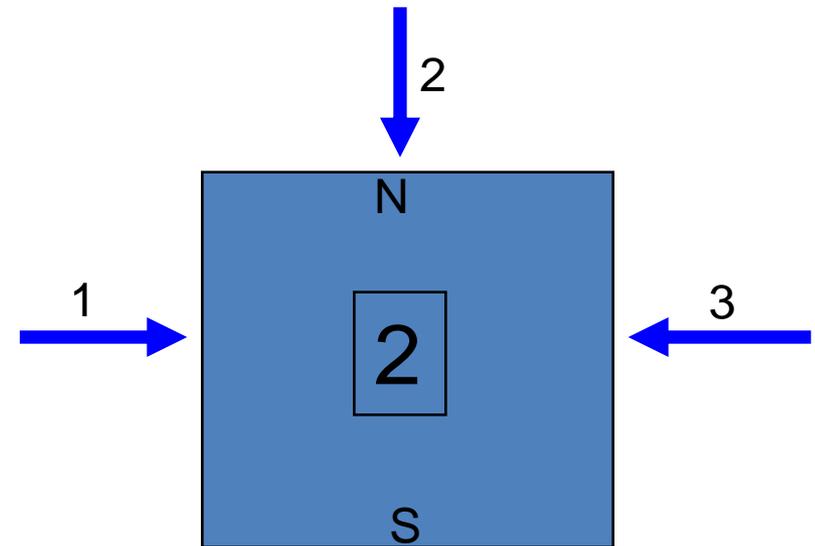# Wetter nicht optimal 26.06.2008
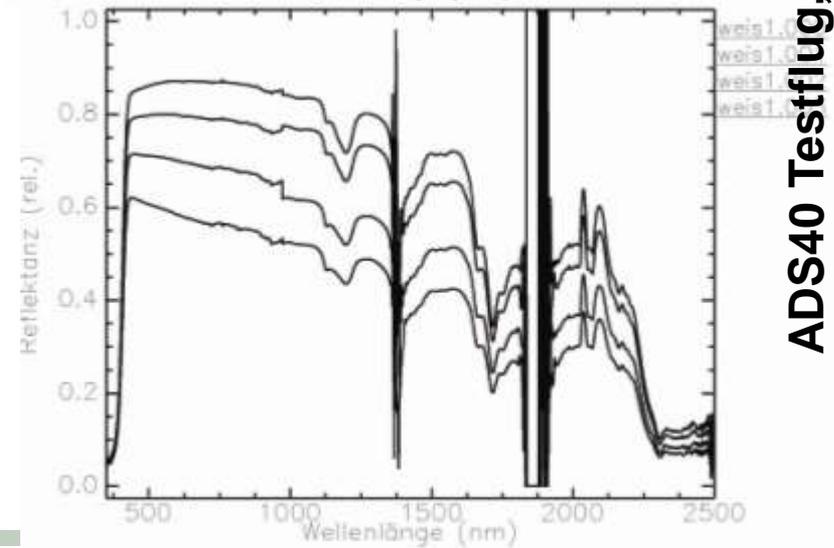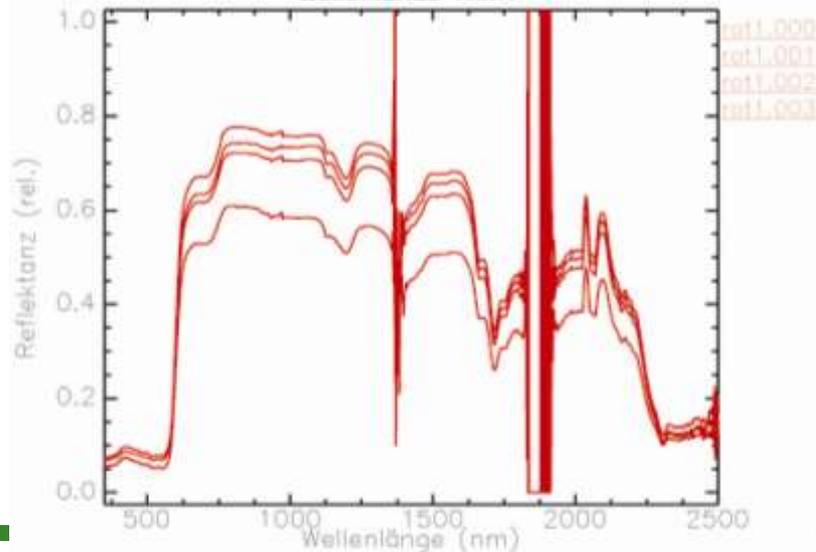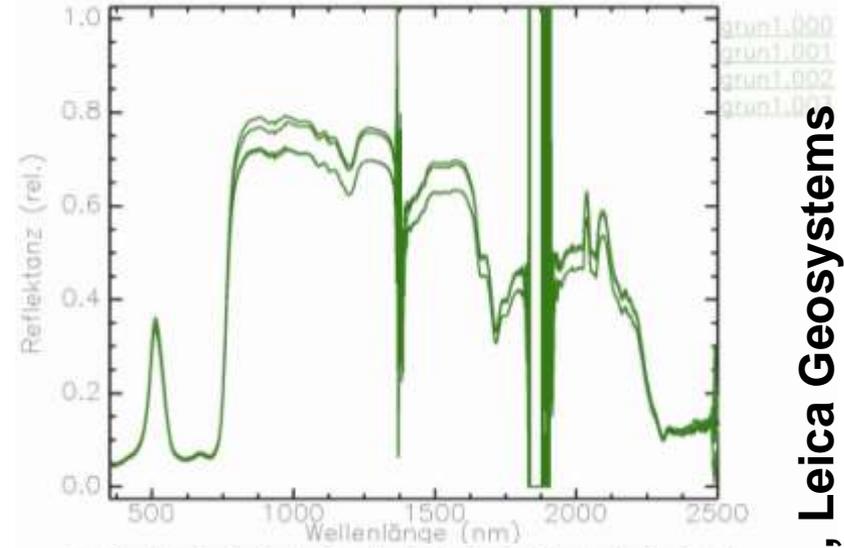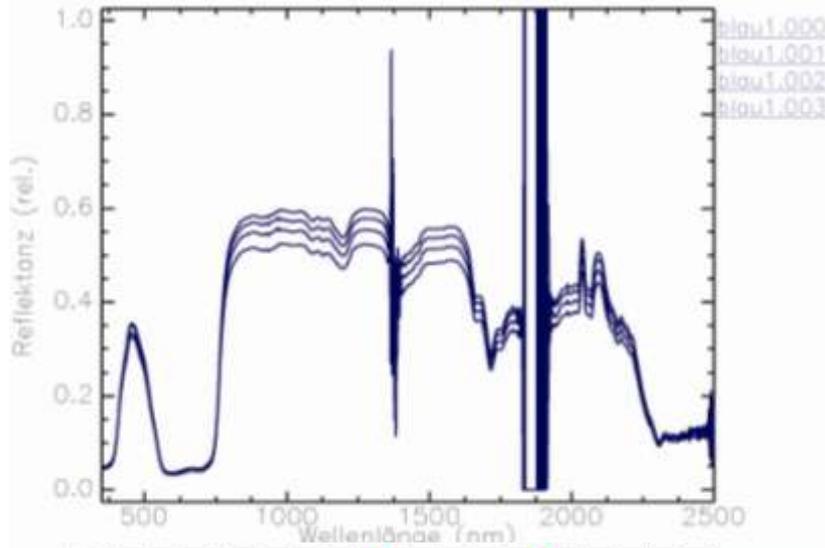
ADS40 Testflug, Leica Geosystems

Stellung 1

Stellung 2

2 Stunden später

Schönes Wetter
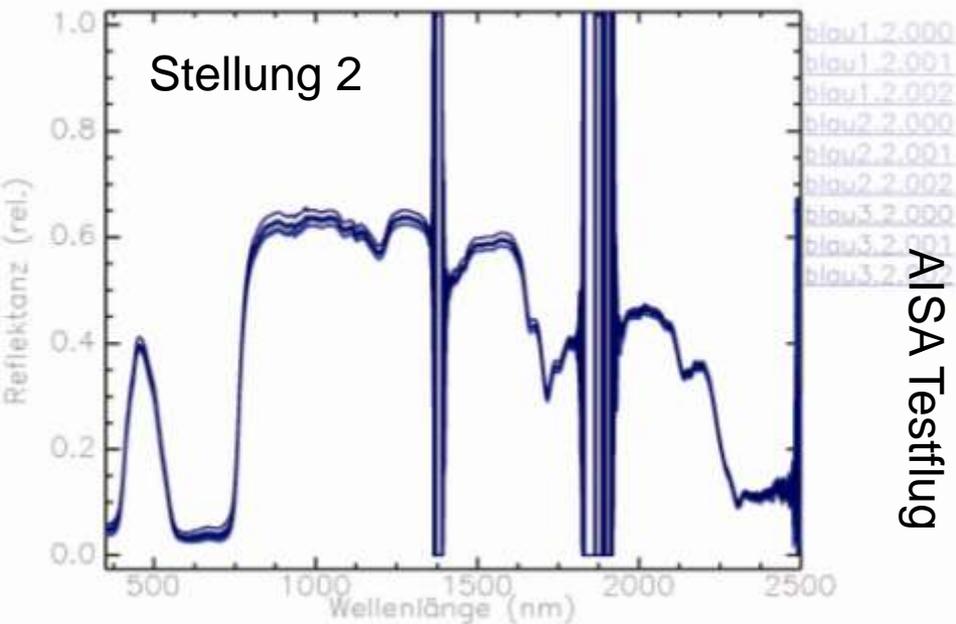
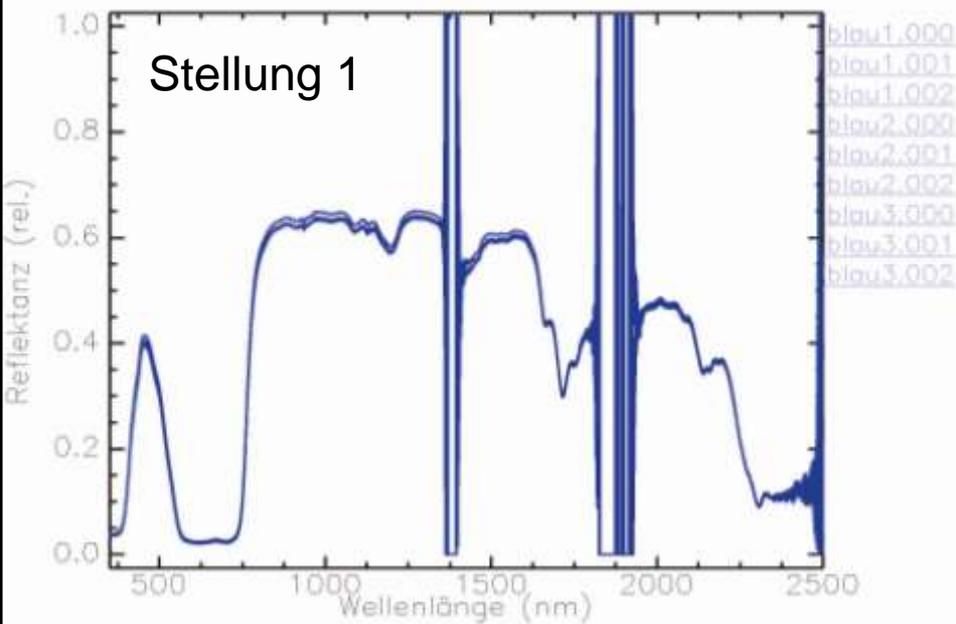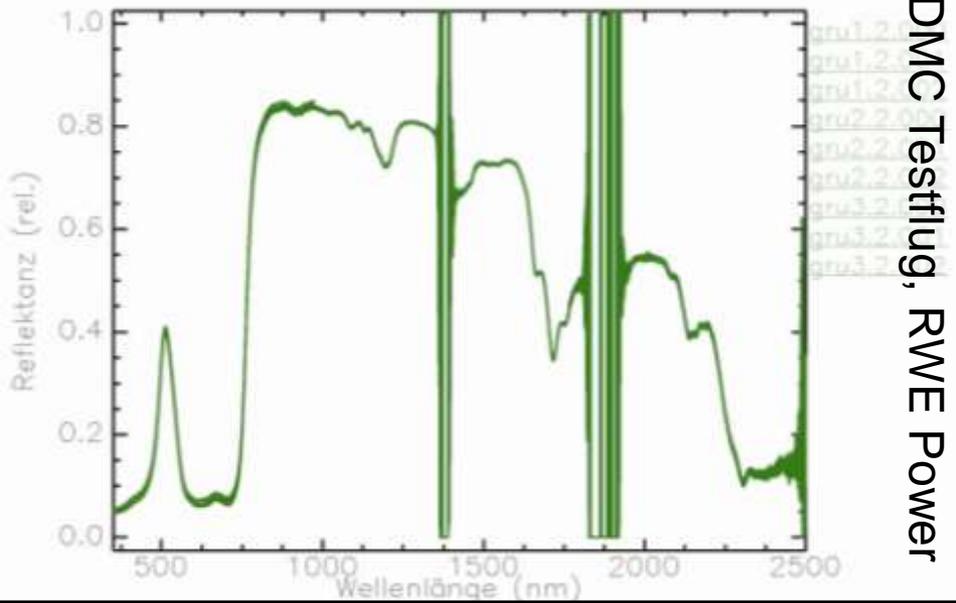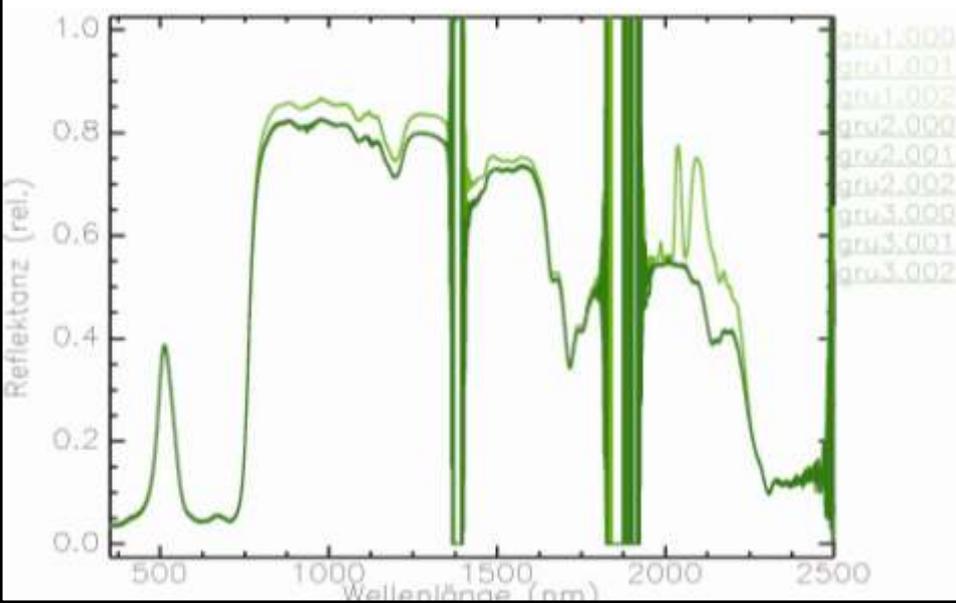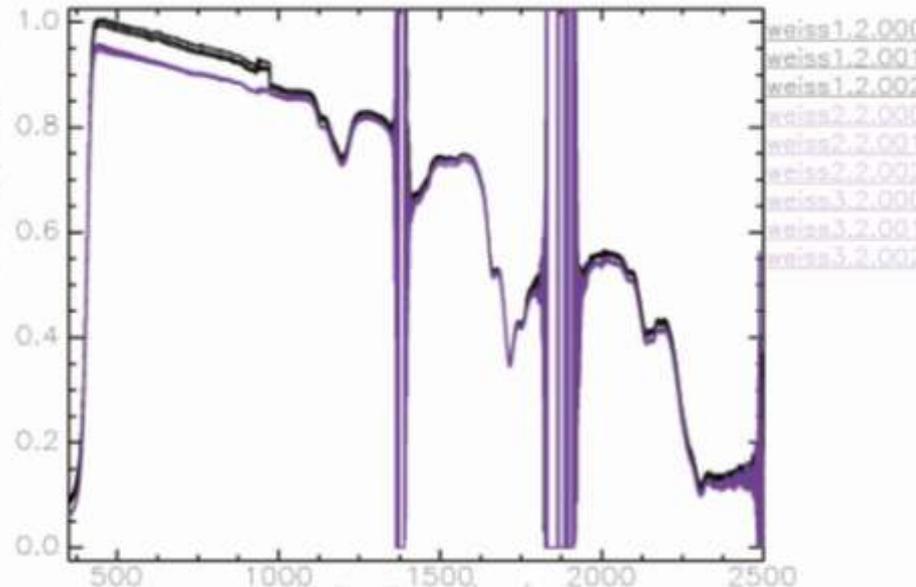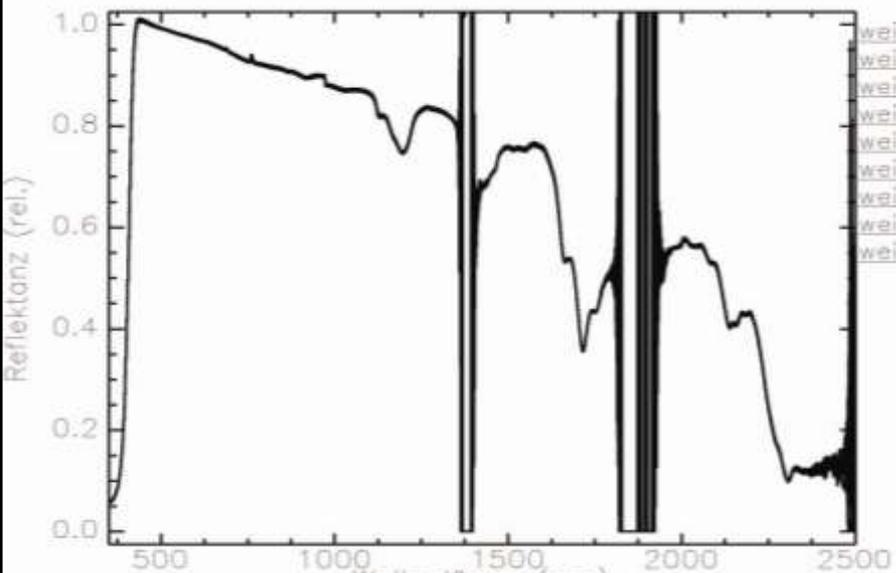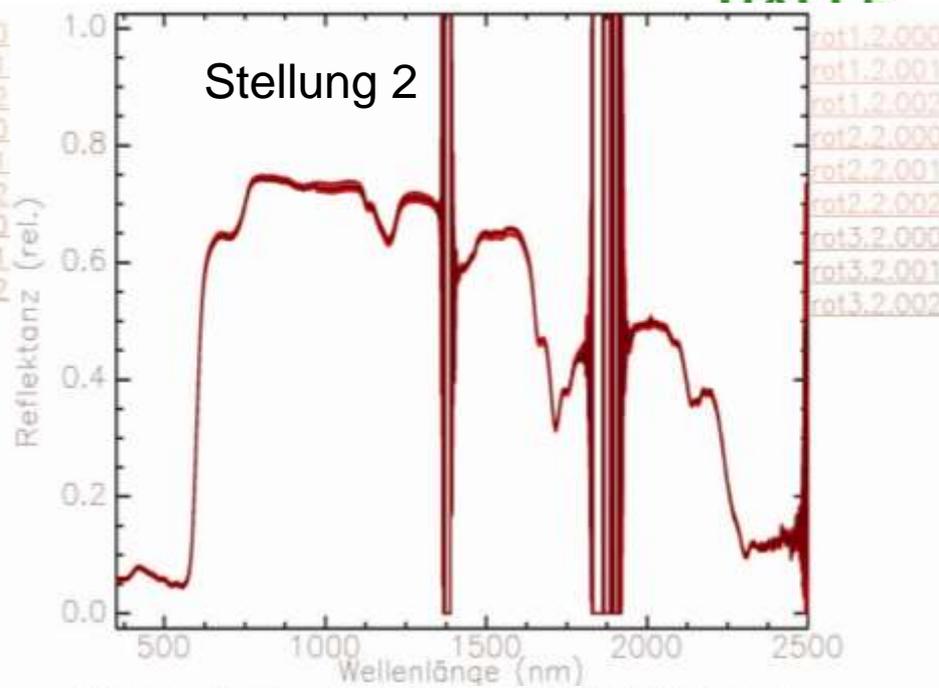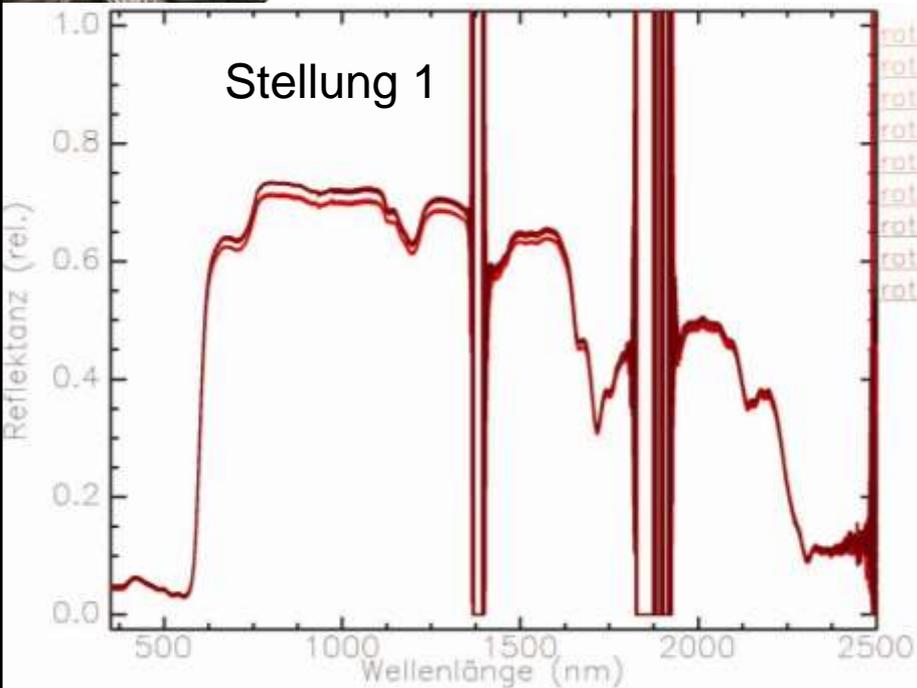# Vergleich der Messungen (DLR, 26.06.,02.07)

Messungen im Labor

	planewe	SAM	SFF	BE	planerot	SAM	SFF	BE	planegr	FFT	BE	planebl	SAM	FFT	BE
planeweiss005_Lab	3	1	1	1											
weis1.001_Feld2606	2,348	0,948	0,41	0,991											
weiss2.2.001_Feld0207	2,243	0,942	0,306	0,994											
weiss2.001_Feld0207	2,137	0,926	0,219	0,992											
planerot005_Lab					3	1	1	1							
rot1.001_Feld2606					2,144	0,928	0,25	0,966							
rot2.001_Feld0207					2,135	0,955	0,21	0,97							
rot2.2.001_Feld0207					2,357	0,959	0,402	0,996							
planegruen005_Lab									3	1	1				
grun1.001_Feld2606									1,914	0,015	0,977				
gru2.2.001_Feld0207									1,913	0	0,99				
gru2.001_Feld0207									1,879	0	0,994				
planeblau005_Lab												3	1	1	1
blau1.001_Feld2606												2,121	0,916	0,228	0,98
blau2.2.001_Feld0207												2,085	0,943	0,154	0,99
blau2.001_Feld0207												1,915	0,935	0	0,98

ROSIS und AISA Daten

- ROSIS-Luftaufnahme : 15.07.08

- AISA-Luftaufnahme: 02.07.08

- R: 650 nm

- G: 548 nm

- B: 449 nm

AISA

- Es wurden im Rahmen des DGPF-Projekts 12 Streifen aus einer mittleren Höhe von 1000 m mit 62 spektralen Kanälen zwischen 397 nm - 970 nm, Bandbreite zwischen 8.7 nm bis 9.6 nm, geflogen.

- Die Datenaufnahme betrug 60 Hz. Dies entspricht bei einer Fluggeschwindigkeit von 50 m/s - 66 m/s einer räumlichen Auflösung in Flugrichtung von ca. 0.83 m bis 1.1 m

ROSIS

Radiometric quantization	14 bit
Total field of view	± 8°
Instantaneous field of view	0.56 mrad
Pixel size at 3 km flight altitude	1.6 m x 1.6 m
Tilt capability along flight direction	± 20°
Spectral sampling interval	4.0 nm
Useful spectral range	430 - 837 nm
Useful / total number of spectral channels	102 / 115
Number of imaging elements	512

AISA Streifen (9 geliefert)

Von den insgesamt 12 Flugstreifen konnten 8 Flugstreifen georeferenziert
werden. Bei 4 Flugstreifen traten Probleme mit den Navigationsdaten auf.

Zwei Streifen wurden ausgewählt
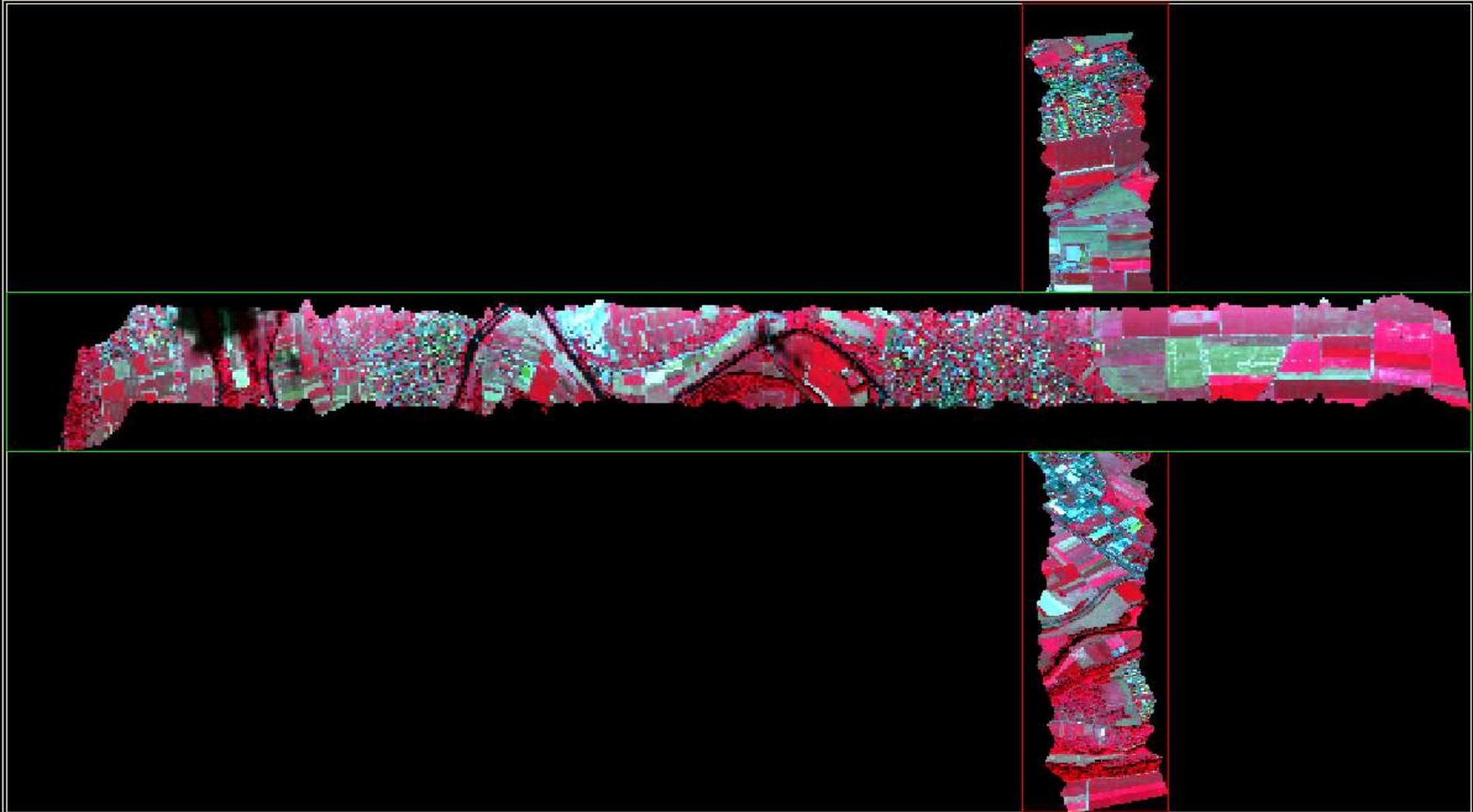
Zwei Streifen wurden ausgewählt
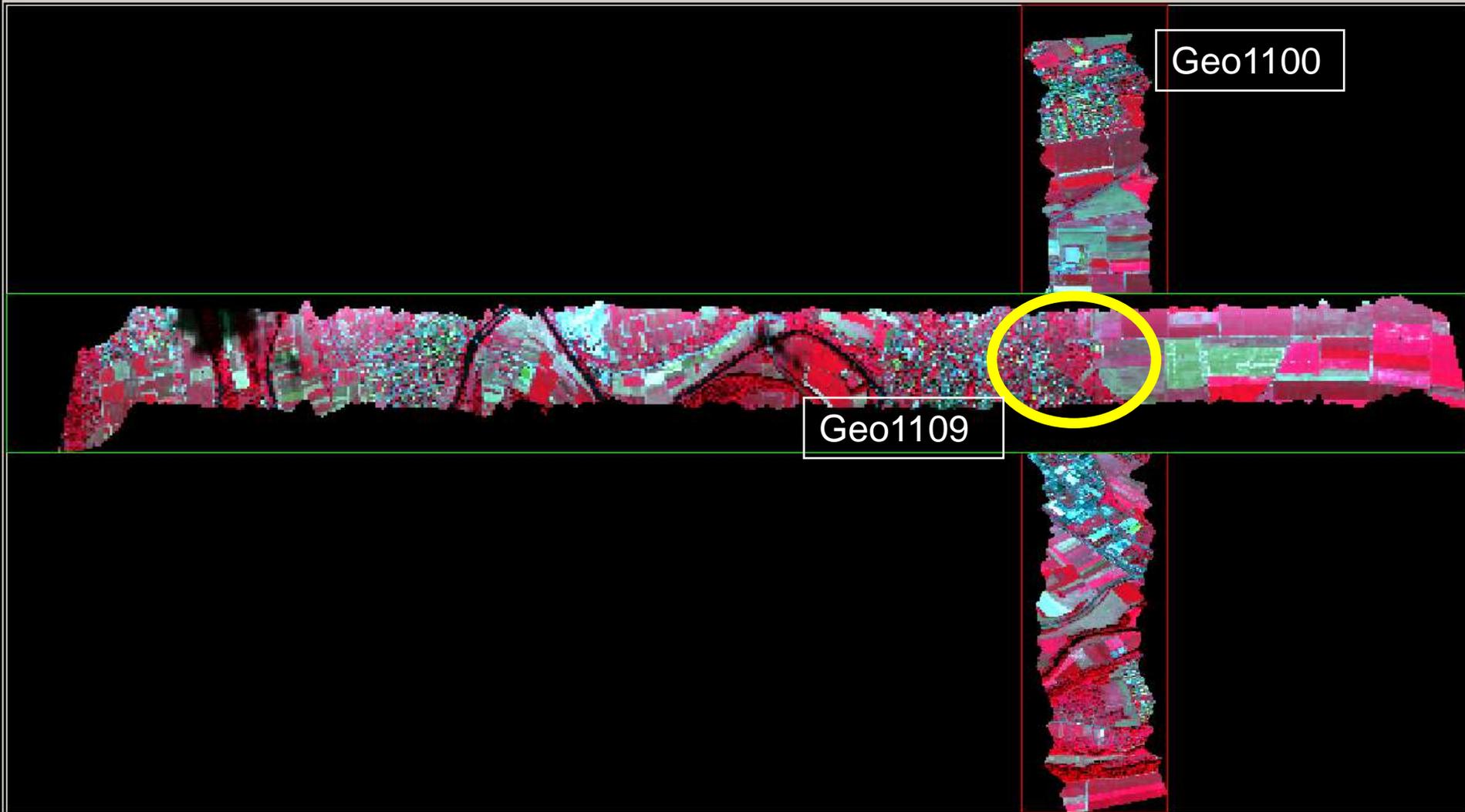
Geo1100

Geo1109

Unterschiedliche Datenquellen

Geo1109 Horizontal (W-S)

Geo1100 Vertikal (N-S)

Google Earth

UTM, WGS84

Das Testgebiet

Geo1109 Horisontal (W-S)

N↑

N↑

Geo1100 Vertical (N-S)

N↑
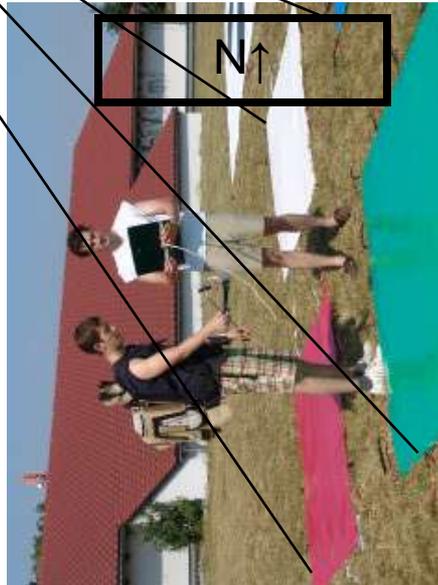
Die Planen lagen unterschiedlich an verschiedenen Tagen.

Geo1100

#1 Zoom [26x]

Spectral Profile
X:422 Y:2245
planerot005_Lab
rot2.001_Feld0207
rot1.001_Feld2606

Spectral Profile
X:423 Y:2245
planerot005_Lab
rot2.001_Feld0207
rot1.001_Feld2606

Spectral Profile
X:421 Y:2245
planerot005_Lab
rot2.001_Feld0207
rot1.001_Feld2606

Spectral Profile
X:422 Y:2247
planerot005_Lab
rot2.001_Feld0207
rot1.001_Feld2606

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AISA

vertical

Geo1100

1 2 3
4 5 6
7 8 9

#1 Zoom [26x]

```
Unknown:  1:X:421  Y:2245
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.497]
rot2.2.001_Feld0207     [1.495]
rot2.001_Feld0207       [1.484]
planerot005_Lab         [1.466]
planeweiss005_Lab       [1.138]
weis1.001_Feld2606      [1.074]
weiss2.2.001_Feld020    [0.909]
grun1.001_Feld2606      [0.832]
gru2.2.001_Feld0207     [0.805]
weiss2.001_Feld0207     [0.802]
planegruen005_Lab       [0.786]
gru2.001_Feld0207       [0.771]
blau1.001_Feld2606      [0.664]
planeblau005_Lab        [0.656]
blau2.2.001_Feld0207    [0.652]
blau2.001_Feld0207      [0.620]
```

```
Unknown:  2:X:422  Y:2245
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.497]
rot2.2.001_Feld0207     [1.495]
rot2.001_Feld0207       [1.484]
planerot005_Lab         [1.466]
planeweiss005_Lab       [1.138]
weis1.001_Feld2606      [1.074]
weiss2.2.001_Feld020    [0.909]
grun1.001_Feld2606      [0.832]
gru2.2.001_Feld0207     [0.805]
weiss2.001_Feld0207     [0.802]
planegruen005_Lab       [0.786]
gru2.001_Feld0207       [0.771]
blau1.001_Feld2606      [0.664]
planeblau005_Lab        [0.656]
blau2.2.001_Feld0207    [0.652]
blau2.001_Feld0207      [0.620]
```

```
Unknown:  3:X:423  Y:2245
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.503]
rot2.2.001_Feld0207     [1.500]
rot2.001_Feld0207       [1.489]
planerot005_Lab         [1.475]
planeweiss005_Lab       [1.100]
weis1.001_Feld2606      [1.035]
weiss2.2.001_Feld020    [0.871]
grun1.001_Feld2606      [0.870]
gru2.2.001_Feld0207     [0.842]
planegruen005_Lab       [0.826]
gru2.001_Feld0207       [0.810]
weiss2.001_Feld0207     [0.763]
blau1.001_Feld2606      [0.700]
planeblau005_Lab        [0.694]
blau2.2.001_Feld0207    [0.688]
blau2.001_Feld0207      [0.656]
```

```
Unknown:  4:X:421  Y:2246
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.403]
rot2.2.001_Feld0207     [1.401]
rot2.001_Feld0207       [1.389]
planerot005_Lab         [1.367]
planeweiss005_Lab       [1.220]
weis1.001_Feld2606      [1.190]
weiss2.2.001_Feld020    [1.026]
weiss2.001_Feld0207     [0.919]
grun1.001_Feld2606      [0.731]
gru2.2.001_Feld0207     [0.706]
planegruen005_Lab       [0.679]
gru2.001_Feld0207       [0.669]
blau1.001_Feld2606      [0.574]
blau2.2.001_Feld0207    [0.563]
planeblau005_Lab        [0.559]
blau2.001_Feld0207      [0.530]
```

```
Unknown:  5:X:422  Y:2246
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.490]
rot2.2.001_Feld0207     [1.487]
rot2.001_Feld0207       [1.476]
planerot005_Lab         [1.458]
planeweiss005_Lab       [1.146]
weis1.001_Feld2606      [1.082]
weiss2.2.001_Feld020    [0.918]
grun1.001_Feld2606      [0.842]
gru2.2.001_Feld0207     [0.816]
weiss2.001_Feld0207     [0.810]
planegruen005_Lab       [0.795]
gru2.001_Feld0207       [0.782]
blau1.001_Feld2606      [0.680]
planeblau005_Lab        [0.671]
blau2.2.001_Feld0207    [0.668]
blau2.001_Feld0207      [0.636]
```

```
Unknown:  6:X:423  Y:2246
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.480]
rot2.2.001_Feld0207     [1.477]
rot2.001_Feld0207       [1.466]
planerot005_Lab         [1.448]
planeweiss005_Lab       [1.155]
weis1.001_Feld2606      [1.092]
weiss2.2.001_Feld020    [0.927]
grun1.001_Feld2606      [0.832]
weiss2.001_Feld0207     [0.820]
gru2.2.001_Feld0207     [0.806]
planegruen005_Lab       [0.785]
gru2.001_Feld0207       [0.772]
blau1.001_Feld2606      [0.671]
planeblau005_Lab        [0.661]
blau2.2.001_Feld0207    [0.659]
blau2.001_Feld0207      [0.626]
```

```
Unknown:  7:X:421  Y:2247
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.300]
rot2.2.001_Feld0207     [1.296]
rot2.001_Feld0207       [1.282]
planeweiss005_Lab       [1.275]
planerot005_Lab         [1.263]
weis1.001_Feld2606      [1.246]
weiss2.2.001_Feld020    [1.113]
weiss2.001_Feld0207     [0.975]
grun1.001_Feld2606      [0.749]
gru2.2.001_Feld0207     [0.725]
planegruen005_Lab       [0.694]
gru2.001_Feld0207       [0.687]
blau1.001_Feld2606      [0.592]
blau2.2.001_Feld0207    [0.582]
planeblau005_Lab        [0.576]
blau2.001_Feld0207      [0.549]
```

```
Unknown:  8:X:422  Y:2247
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.420]
rot2.2.001_Feld0207     [1.418]
rot2.001_Feld0207       [1.407]
planerot005_Lab         [1.384]
planeweiss005_Lab       [1.208]
weis1.001_Feld2606      [1.179]
weiss2.2.001_Feld020    [1.014]
weiss2.001_Feld0207     [0.908]
grun1.001_Feld2606      [0.721]
gru2.2.001_Feld0207     [0.696]
planegruen005_Lab       [0.670]
gru2.001_Feld0207       [0.660]
blau1.001_Feld2606      [0.569]
blau2.2.001_Feld0207    [0.558]
planeblau005_Lab        [0.553]
blau2.001_Feld0207      [0.524]
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```
Unknown:  9:X:423  Y:2247
Library Spectrum        Score
_____     _____
rot1.001_Feld2606       [1.402]
rot2.2.001_Feld0207     [1.400]
rot2.001_Feld0207       [1.389]
planerot005_Lab         [1.365]
planeweiss005_Lab       [1.220]
weis1.001_Feld2606      [1.190]
weiss2.2.001_Feld020    [1.026]
weiss2.001_Feld0207     [0.920]
grun1.001_Feld2606      [0.715]
gru2.2.001_Feld0207     [0.690]
planegruen005_Lab       [0.663]
gru2.001_Feld0207       [0.653]
blau1.001_Feld2606      [0.561]
blau2.2.001_Feld0207    [0.550]
planeblau005_Lab        [0.545]
blau2.001_Feld0207      [0.516]
```
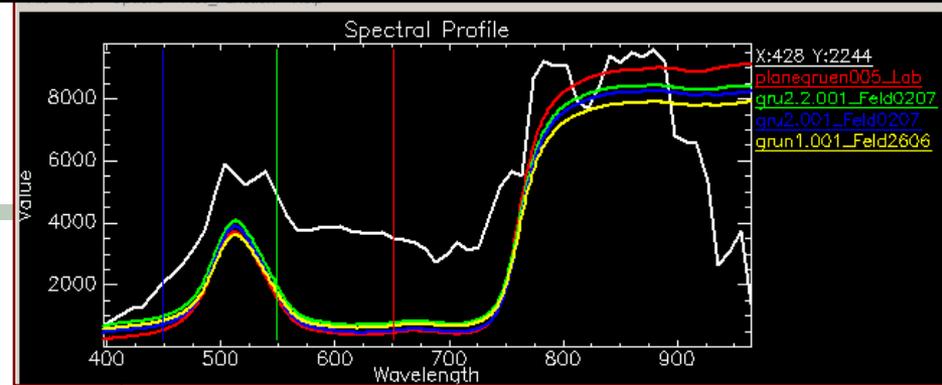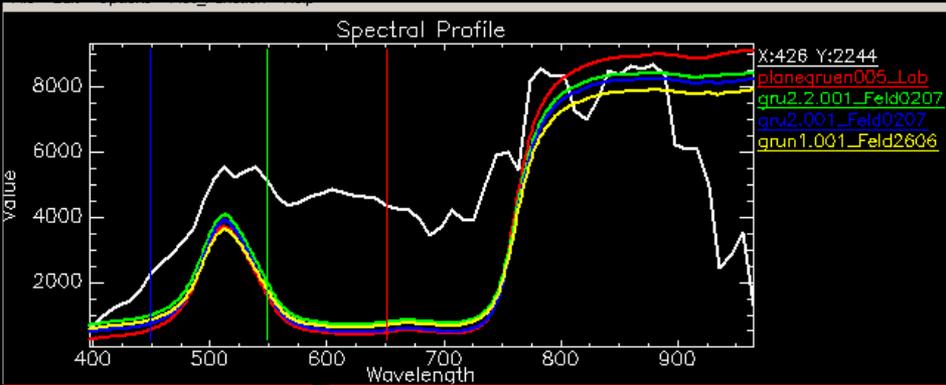
AISA

vertical

```
Unknown:  1:X:426 Y:2244
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.134]
gru2.001_Feld0207       [1.098]
grun1.001_Feld2606      [1.091]
planeweiss005_Lab       [1.083]
planegruen005_Lab       [1.035]
weis1.001_Feld2606      [1.023]
rot1.001_Feld2606       [1.008]
rot2.2.001_Feld0207     [1.002]
rot2.001_Feld0207       [0.987]
planerot005_Lab         [0.975]
blau1.001_Feld2606      [0.895]
blau2.2.001_Feld0207    [0.886]
planeblau005_Lab        [0.880]
weiss2.2.001_Feld020    [0.861]
blau2.001_Feld0207      [0.856]
weiss2.001_Feld0207     [0.755]
```

```
Unknown:  2:X:427 Y:2244
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.232]
gru2.001_Feld0207       [1.199]
grun1.001_Feld2606      [1.189]
planegruen005_Lab       [1.135]
blau1.001_Feld2606      [1.012]
blau2.2.001_Feld0207    [1.004]
planeweiss005_Lab       [0.989]
blau2.001_Feld0207      [0.976]
planeblau005_Lab        [0.971]
rot1.001_Feld2606       [0.942]
rot2.2.001_Feld0207     [0.935]
weis1.001_Feld2606      [0.929]
rot2.001_Feld0207       [0.920]
planerot005_Lab         [0.913]
weiss2.2.001_Feld020    [0.769]
weiss2.001_Feld0207     [0.662]
```

```
Unknown:  3:X:428 Y:2244
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.232]
gru2.001_Feld0207       [1.199]
grun1.001_Feld2606      [1.189]
planegruen005_Lab       [1.135]
blau1.001_Feld2606      [1.012]
blau2.2.001_Feld0207    [1.004]
planeweiss005_Lab       [0.989]
blau2.001_Feld0207      [0.976]
planeblau005_Lab        [0.971]
rot1.001_Feld2606       [0.942]
rot2.2.001_Feld0207     [0.935]
weis1.001_Feld2606      [0.929]
rot2.001_Feld0207       [0.920]
planerot005_Lab         [0.913]
weiss2.2.001_Feld020    [0.769]
weiss2.001_Feld0207     [0.662]
```

```
Unknown:  4:X:426 Y:2245
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.327]
grun1.001_Feld2606      [1.318]
gru2.001_Feld0207       [1.299]
planegruen005_Lab       [1.269]
blau1.001_Feld2606      [1.130]
blau2.2.001_Feld0207    [1.121]
planeblau005_Lab        [1.096]
blau2.001_Feld0207      [1.096]
rot1.001_Feld2606       [0.942]
rot2.2.001_Feld0207     [0.935]
rot2.001_Feld0207       [0.922]
planerot005_Lab         [0.919]
planeweiss005_Lab       [0.853]
weis1.001_Feld2606      [0.792]
weiss2.2.001_Feld020    [0.632]
weiss2.001_Feld0207     [0.526]
```

```
Unknown:  5:X:427 Y:2245
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.338]
grun1.001_Feld2606      [1.328]
gru2.001_Feld0207       [1.312]
planegruen005_Lab       [1.282]
blau1.001_Feld2606      [1.142]
blau2.2.001_Feld0207    [1.134]
planeblau005_Lab        [1.112]
blau2.001_Feld0207      [1.112]
rot1.001_Feld2606       [0.883]
rot2.2.001_Feld0207     [0.875]
rot2.001_Feld0207       [0.862]
planerot005_Lab         [0.861]
planeweiss005_Lab       [0.822]
weis1.001_Feld2606      [0.762]
weiss2.2.001_Feld020    [0.603]
weiss2.001_Feld0207     [0.496]
```

```
Unknown:  6:X:428 Y:2245
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.338]
grun1.001_Feld2606      [1.328]
gru2.001_Feld0207       [1.312]
planegruen005_Lab       [1.282]
blau1.001_Feld2606      [1.142]
blau2.2.001_Feld0207    [1.134]
planeblau005_Lab        [1.112]
blau2.001_Feld0207      [1.112]
rot1.001_Feld2606       [0.883]
rot2.2.001_Feld0207     [0.875]
rot2.001_Feld0207       [0.862]
planerot005_Lab         [0.861]
planeweiss005_Lab       [0.822]
weis1.001_Feld2606      [0.762]
weiss2.2.001_Feld020    [0.603]
weiss2.001_Feld0207     [0.496]
```

```
Unknown:  7:X:426 Y:2246
Library Spectrum        Score
_____        _____
rot1.001_Feld2606       [1.290]
rot2.2.001_Feld0207     [1.287]
rot2.001_Feld0207       [1.273]
planerot005_Lab         [1.255]
planeweiss005_Lab       [1.168]
weis1.001_Feld2606      [1.139]
weiss2.2.001_Feld020    [0.975]
grun1.001_Feld2606      [0.869]
weiss2.001_Feld0207     [0.868]
gru2.2.001_Feld0207     [0.846]
planegruen005_Lab       [0.816]
gru2.001_Feld0207       [0.810]
blau1.001_Feld2606      [0.706]
blau2.2.001_Feld0207    [0.696]
planeblau005_Lab        [0.690]
blau2.001_Feld0207      [0.663]
```
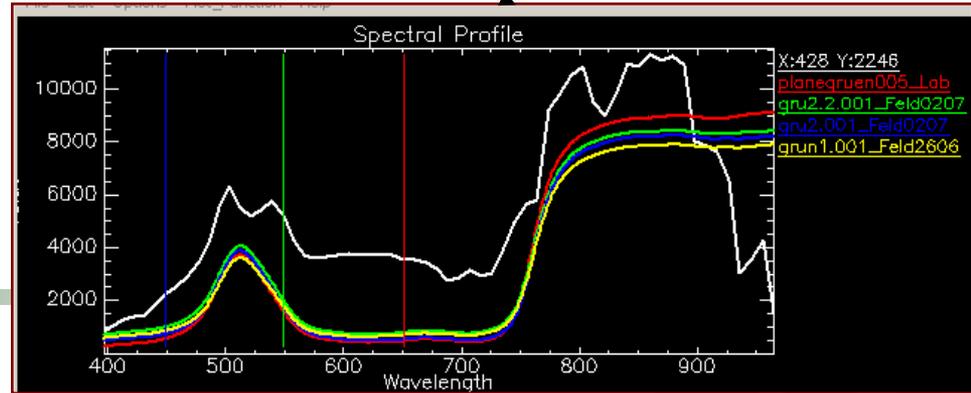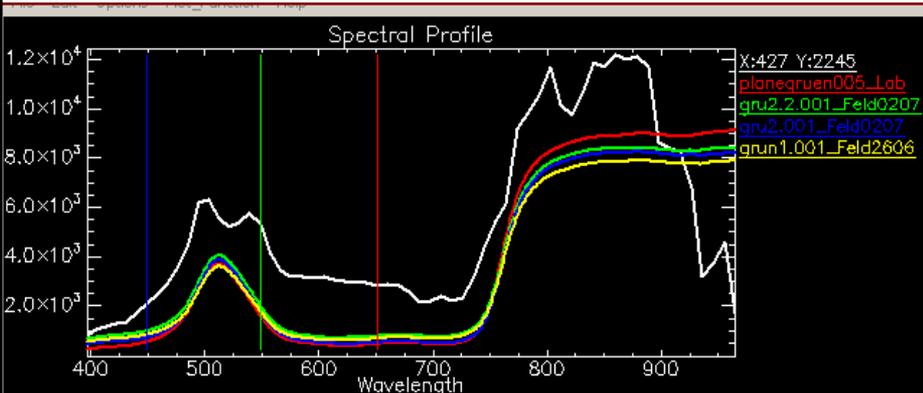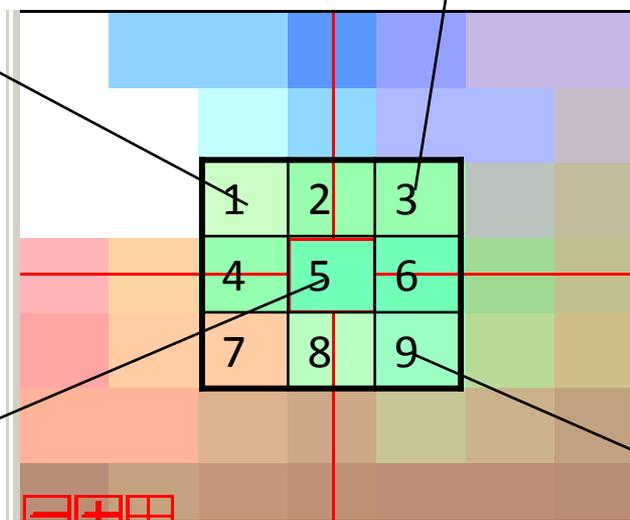
```
Unknown:  8:X:427 Y:2246
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.312]
grun1.001_Feld2606      [1.303]
gru2.001_Feld0207       [1.282]
planegruen005_Lab       [1.252]
blau1.001_Feld2606      [1.122]
blau2.2.001_Feld0207    [1.113]
blau2.001_Feld0207      [1.086]
planeblau005_Lab        [1.085]
rot1.001_Feld2606       [0.994]
rot2.2.001_Feld0207     [0.987]
rot2.001_Feld0207       [0.973]
planerot005_Lab         [0.968]
planeweiss005_Lab       [0.879]
weis1.001_Feld2606      [0.818]
weiss2.2.001_Feld020    [0.658]
weiss2.001_Feld0207     [0.551]
```

```
Unknown:  9:X:428 Y:2246
Library Spectrum        Score
_____        _____
gru2.2.001_Feld0207     [1.304]
grun1.001_Feld2606      [1.295]
gru2.001_Feld0207       [1.275]
planegruen005_Lab       [1.244]
blau1.001_Feld2606      [1.114]
blau2.2.001_Feld0207    [1.106]
blau2.001_Feld0207      [1.080]
planeblau005_Lab        [1.078]
rot1.001_Feld2606       [0.949]
rot2.2.001_Feld0207     [0.942]
rot2.001_Feld0207       [0.928]
planerot005_Lab         [0.924]
planeweiss005_Lab       [0.880]
weis1.001_Feld2606      [0.819]
weiss2.2.001_Feld020    [0.659]
weiss2.001_Feld0207     [0.553]
```
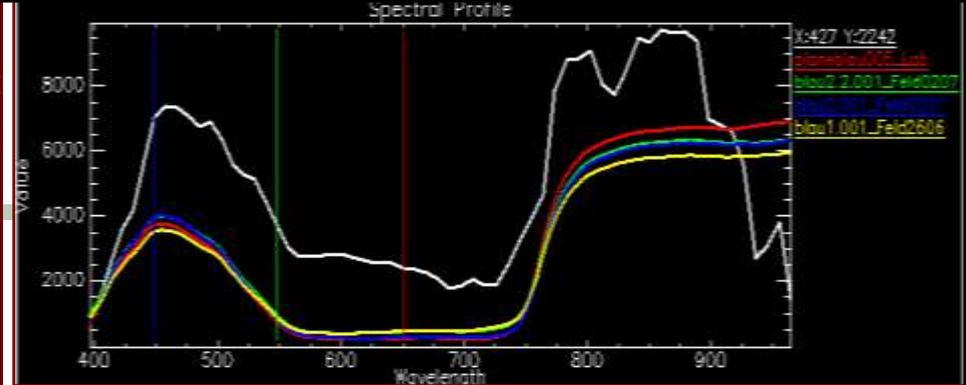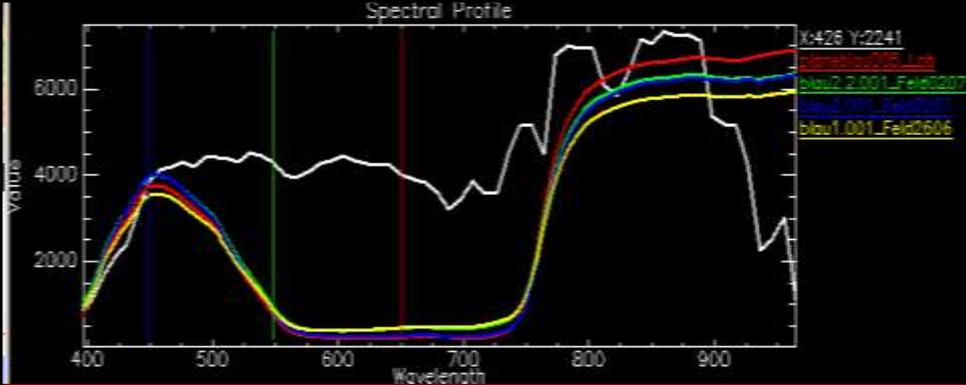
AISA

vertical
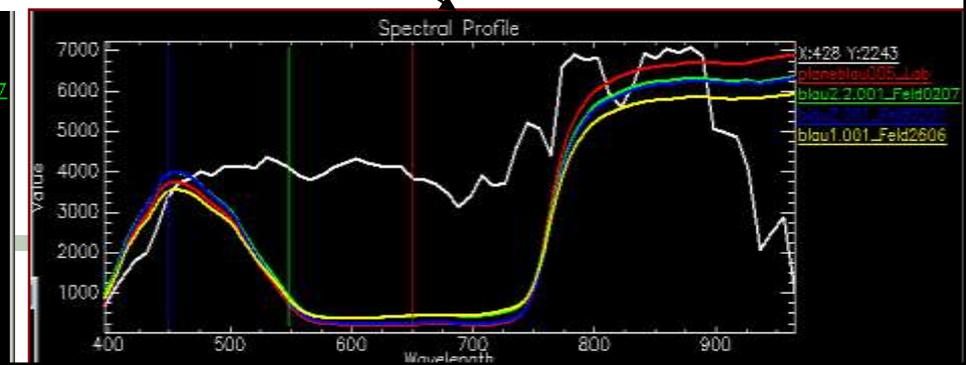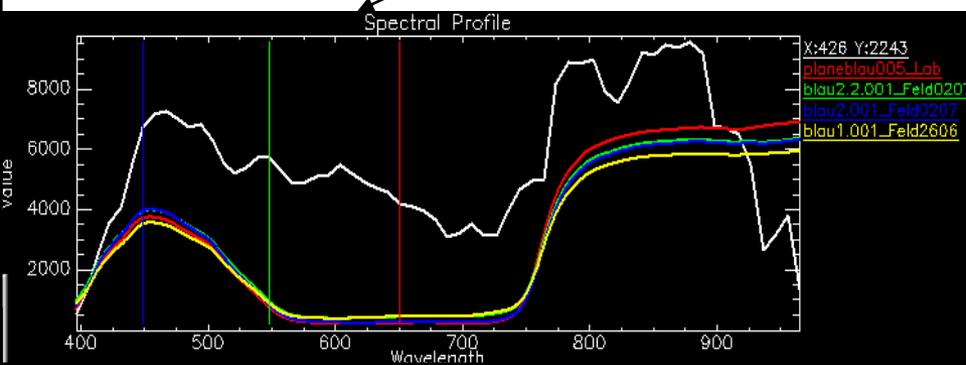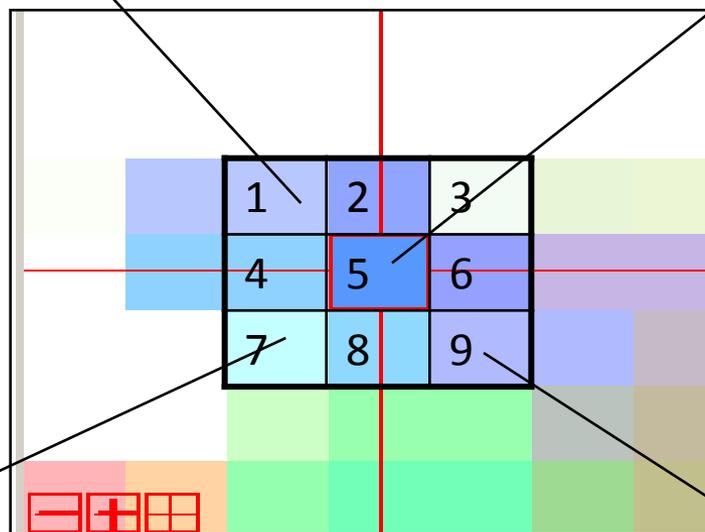
```
Unknown:  1: X:426 Y:2241
Library Spectrum        Score
_____        _____
planeweiss005_Lab       [1.117]
weiss1.001_Feld2606     [1.094]
grun1.001_Feld2606      [1.038]
gru2.2.001_Feld0207     [1.018]
rot1.001_Feld2606       [1.004]
rot2.2.001_Feld0207     [0.999]
rot2.001_Feld0207       [0.982]
gru2.001_Feld0207       [0.979]
planegruen005_Lab       [0.978]
planerot005_Lab         [0.966]
blau1.001_Feld2606      [0.947]
blau2.2.001_Feld0207    [0.942]
weiss2.2.001_Feld020    [0.936]
planeblau005_Lab        [0.924]
blau2.001_Feld0207      [0.911]
weiss2.001_Feld0207     [0.830]
```

```
Unknown:  2: X:427 Y:2241
Library Spectrum        Score
_____        _____
blau1.001_Feld2606      [1.198]
blau2.2.001_Feld0207    [1.195]
blau2.001_Feld0207      [1.166]
planeblau005_Lab        [1.143]
gru2.2.001_Feld0207     [1.107]
grun1.001_Feld2606      [1.094]
weiss1.001_Feld2606     [1.071]
gru2.001_Feld0207       [1.069]
planeweiss005_Lab       [1.060]
planegruen005_Lab       [1.034]
weiss2.2.001_Feld020    [0.916]
rot1.001_Feld2606       [0.845]
rot2.2.001_Feld0207     [0.839]
rot2.001_Feld0207       [0.822]
weiss2.001_Feld0207     [0.811]
planerot005_Lab         [0.809]
```

```
Unknown:  3: X:428 Y:2241
Library Spectrum        Score
_____        _____
planeweiss005_Lab       [1.379]
weiss1.001_Feld2606     [1.353]
weiss2.2.001_Feld020    [1.258]
rot1.001_Feld2606       [1.111]
rot2.2.001_Feld0207     [1.107]
rot2.001_Feld0207       [1.092]
weiss2.001_Feld0207     [1.085]
planerot005_Lab         [1.072]
grun1.001_Feld2606      [0.673]
gru2.2.001_Feld0207     [0.651]
planegruen005_Lab       [0.615]
gru2.001_Feld0207       [0.613]
blau1.001_Feld2606      [0.537]
blau2.2.001_Feld0207    [0.529]
planeblau005_Lab        [0.517]
blau2.001_Feld0207      [0.496]
```

```
Unknown:  4: X:426 Y:2242
Library Spectrum        Score
_____        _____
blau2.2.001_Feld0207    [1.229]
blau1.001_Feld2606      [1.229]
blau2.001_Feld0207      [1.203]
planeblau005_Lab        [1.173]
gru2.2.001_Feld0207     [1.103]
gru2.001_Feld0207       [1.068]
grun1.001_Feld2606      [1.058]
weiss1.001_Feld2606     [1.035]
planegruen005_Lab       [0.998]
planeweiss005_Lab       [0.989]
weiss2.2.001_Feld020    [0.885]
weiss2.001_Feld0207     [0.781]
rot1.001_Feld2606       [0.701]
rot2.2.001_Feld0207     [0.695]
rot2.001_Feld0207       [0.678]
planerot005_Lab         [0.666]
```

```
Unknown:  5: X:427 Y:2242
Library Spectrum        Score
_____        _____
blau2.2.001_Feld0207    [1.309]
blau1.001_Feld2606      [1.306]
blau2.001_Feld0207      [1.290]
planeblau005_Lab        [1.255]
gru2.2.001_Feld0207     [1.142]
gru2.001_Feld0207       [1.110]
grun1.001_Feld2606      [1.096]
planegruen005_Lab       [1.042]
weiss1.001_Feld2606     [0.916]
planeweiss005_Lab       [0.870]
weiss2.2.001_Feld020    [0.767]
weiss2.001_Feld0207     [0.665]
rot1.001_Feld2606       [0.632]
rot2.2.001_Feld0207     [0.626]
rot2.001_Feld0207       [0.609]
planerot005_Lab         [0.601]
```

```
Unknown:  6: X:428 Y:2242
Library Spectrum        Score
_____        _____
blau1.001_Feld2606      [1.144]
blau2.2.001_Feld0207    [1.139]
blau2.001_Feld0207      [1.110]
gru2.2.001_Feld0207     [1.101]
planeweiss005_Lab       [1.093]
planeblau005_Lab        [1.089]
grun1.001_Feld2606      [1.089]
weiss1.001_Feld2606     [1.070]
gru2.001_Feld0207       [1.064]
planegruen005_Lab       [1.029]
rot1.001_Feld2606       [0.918]
weiss2.2.001_Feld020    [0.914]
rot2.2.001_Feld0207     [0.912]
rot2.001_Feld0207       [0.895]
planerot005_Lab         [0.881]
weiss2.001_Feld0207     [0.808]
```

```
Unknown:  7: X:426 Y:2243
Library Spectrum        Score
_____        _____
blau1.001_Feld2606      [1.145]
blau2.2.001_Feld0207    [1.145]
blau2.001_Feld0207      [1.118]
planeblau005_Lab        [1.089]
weis1.001_Feld2606      [1.080]
planeweiss005_Lab       [1.033]
gru2.2.001_Feld0207     [0.995]
grun1.001_Feld2606      [0.982]
gru2.001_Feld0207       [0.957]
weiss2.2.001_Feld020    [0.929]
planegruen005_Lab       [0.921]
weiss2.001_Feld0207     [0.826]
rot1.001_Feld2606       [0.724]
rot2.2.001_Feld0207     [0.718]
rot2.001_Feld0207       [0.701]
planerot005_Lab         [0.686]
```

```
Unknown:  8: X:427 Y:2243
Library Spectrum        Score
_____        _____
blau1.001_Feld2606      [1.226]
blau2.2.001_Feld0207    [1.226]
blau2.001_Feld0207      [1.201]
planeblau005_Lab        [1.171]
gru2.2.001_Feld0207     [1.102]
gru2.001_Feld0207       [1.066]
grun1.001_Feld2606      [1.057]
weiss1.001_Feld2606     [1.034]
planegruen005_Lab       [0.997]
planeweiss005_Lab       [0.988]
weiss2.2.001_Feld020    [0.883]
weiss2.001_Feld0207     [0.780]
rot1.001_Feld2606       [0.704]
rot2.2.001_Feld0207     [0.698]
rot2.001_Feld0207       [0.681]
planerot005_Lab         [0.669]
```

```
Unknown:  9: X:428 Y:2243
Library Spectrum        Score
_____        _____
planeweiss005_Lab       [1.108]
weiss1.001_Feld2606     [1.083]
grun1.001_Feld2606      [1.035]
rot1.001_Feld2606       [1.021]
rot2.2.001_Feld0207     [1.015]
gru2.2.001_Feld0207     [1.015]
rot2.001_Feld0207       [0.999]
planerot005_Lab         [0.982]
gru2.001_Feld0207       [0.976]
planegruen005_Lab       [0.976]
blau1.001_Feld2606      [0.932]
blau2.2.001_Feld0207    [0.926]
weiss2.2.001_Feld020    [0.923]
planeblau005_Lab        [0.910]
blau2.001_Feld0207      [0.894]
weiss2.001_Feld0207     [0.818]
```
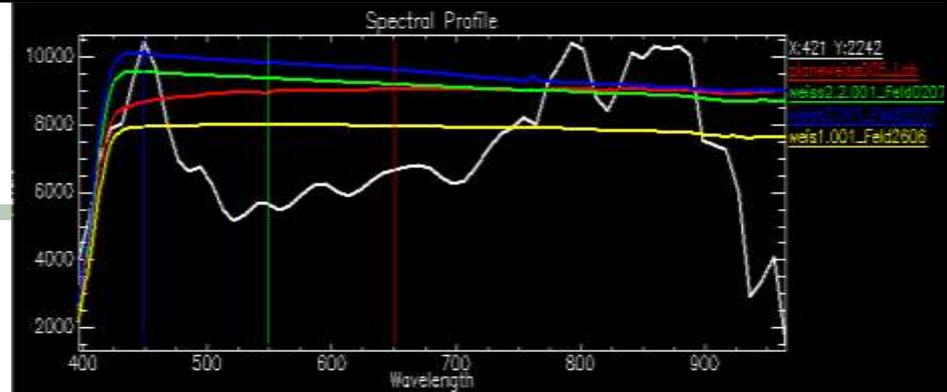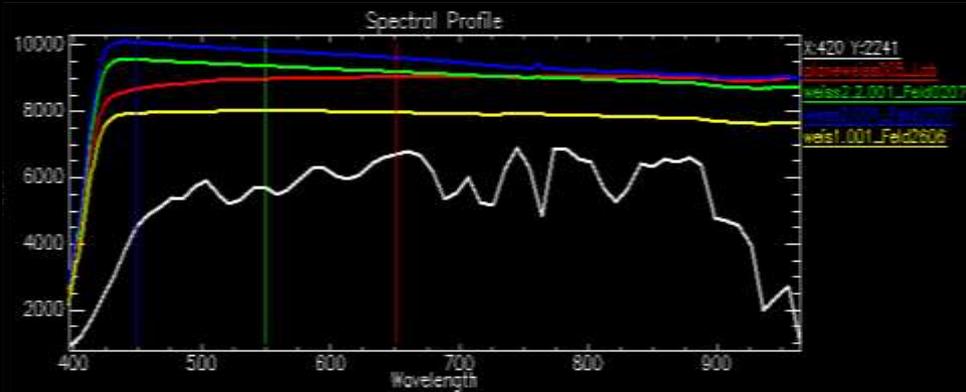
AISA

vertical
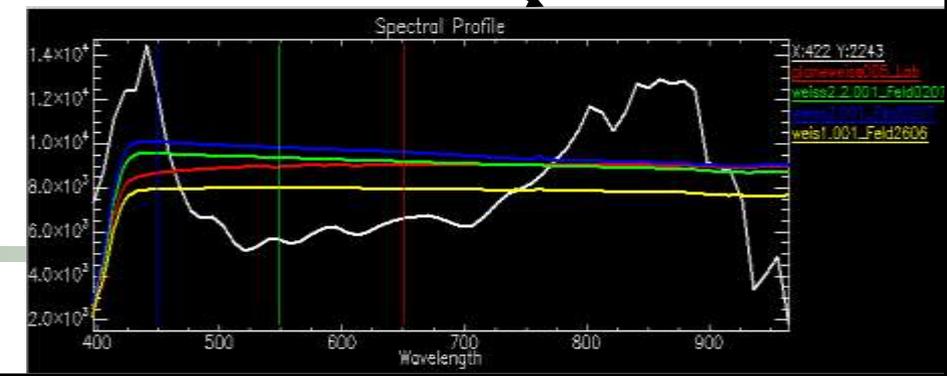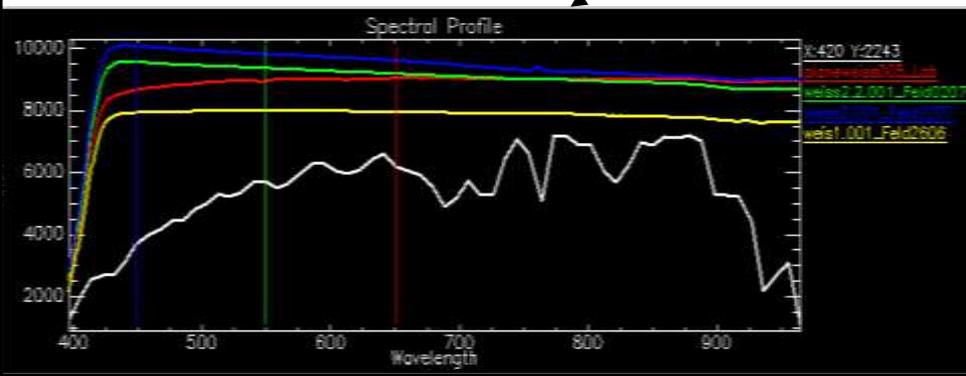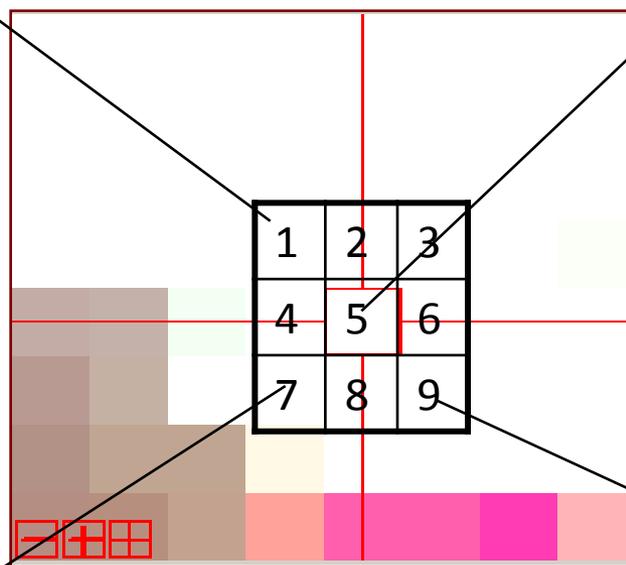
```
Unknown: 1: X:420 Y:2241
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.638]
weiss2.2.001_Feld020      [1.518]
planeweiss005_Lab         [1.506]
weiss2.001_Feld0207       [1.332]
rot1.001_Feld2606         [0.880]
rot2.2.001_Feld0207       [0.877]
rot2.001_Feld0207         [0.862]
planerot005_Lab           [0.838]
gru2.2.001_Feld0207       [0.414]
grun1.001_Feld2606        [0.403]
gru2.001_Feld0207         [0.403]
planegruen005_Lab         [0.403]
blau1.001_Feld2606        [0.381]
blau2.2.001_Feld0207      [0.376]
planeblau005_Lab          [0.355]
blau2.001_Feld0207        [0.355]
```

```
Unknown: 2: X:421 Y:2241
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.586]
weiss2.2.001_Feld020      [1.453]
planeweiss005_Lab         [1.438]
weiss2.001_Feld0207       [1.260]
rot1.001_Feld2606         [0.966]
rot2.2.001_Feld0207       [0.963]
rot2.001_Feld0207         [0.948]
planerot005_Lab           [0.925]
gru2.2.001_Feld0207       [0.495]
grun1.001_Feld2606        [0.483]
gru2.001_Feld0207         [0.455]
planegruen005_Lab         [0.452]
blau1.001_Feld2606        [0.345]
planeblau005_Lab          [0.339]
blau2.2.001_Feld0207      [0.338]
blau2.001_Feld0207        [0.306]
```

```
Unknown: 3: X:422 Y:2241
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.469]
planeweiss005_Lab         [1.390]
weiss2.2.001_Feld020      [1.347]
weiss2.001_Feld0207       [1.243]
rot1.001_Feld2606         [1.038]
rot2.2.001_Feld0207       [1.035]
rot2.001_Feld0207         [1.019]
planerot005_Lab           [0.995]
blau1.001_Feld2606        [0.644]
blau2.2.001_Feld0207      [0.640]
blau2.001_Feld0207        [0.608]
planeblau005_Lab          [0.584]
gru2.2.001_Feld0207       [0.558]
grun1.001_Feld2606        [0.546]
gru2.001_Feld0207         [0.516]
planegruen005_Lab         [0.484]
```

```
Unknown: 4: X:420 Y:2242
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.176]
weiss2.2.001_Feld020      [1.062]
planeweiss005_Lab         [1.061]
blau1.001_Feld2606        [1.009]
blau2.2.001_Feld0207      [1.008]
blau2.001_Feld0207        [0.977]
weiss2.001_Feld0207       [0.960]
planeblau005_Lab          [0.946]
rot1.001_Feld2606         [0.900]
rot2.2.001_Feld0207       [0.896]
rot2.001_Feld0207         [0.878]
planerot005_Lab           [0.856]
grun1.001_Feld2606        [0.843]
gru2.2.001_Feld0207       [0.823]
gru2.001_Feld0207         [0.781]
planegruen005_Lab         [0.780]
```

```
Unknown: 5: X:421 Y:2242
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.176]
weiss2.2.001_Feld020      [1.062]
planeweiss005_Lab         [1.061]
blau1.001_Feld2606        [1.009]
blau2.2.001_Feld0207      [1.008]
blau2.001_Feld0207        [0.977]
weiss2.001_Feld0207       [0.960]
planeblau005_Lab          [0.946]
rot1.001_Feld2606         [0.900]
rot2.2.001_Feld0207       [0.896]
rot2.001_Feld0207         [0.878]
planerot005_Lab           [0.856]
grun1.001_Feld2606        [0.843]
gru2.2.001_Feld0207       [0.823]
gru2.001_Feld0207         [0.781]
planegruen005_Lab         [0.780]
```

```
Unknown: 6: X:422 Y:2242
Library Spectrum          Score
_____          _____
blau2.2.001_Feld0207      [1.072]
blau1.001_Feld2606        [1.072]
weis1.001_Feld2606        [1.046]
blau2.001_Feld0207        [1.044]
planeblau005_Lab          [1.011]
weiss2.2.001_Feld020      [0.934]
planeweiss005_Lab         [0.931]
grun1.001_Feld2606        [0.881]
gru2.2.001_Feld0207       [0.861]
weiss2.001_Feld0207       [0.833]
gru2.001_Feld0207         [0.821]
rot1.001_Feld2606         [0.820]
planegruen005_Lab         [0.819]
rot2.2.001_Feld0207       [0.816]
rot2.001_Feld0207         [0.798]
planerot005_Lab           [0.778]
```

```
Unknown: 7: X:420 Y:2243
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.582]
planeweiss005_Lab         [1.434]
weiss2.2.001_Feld020      [1.413]
weiss2.001_Feld0207       [1.189]
rot1.001_Feld2606         [1.002]
rot2.2.001_Feld0207       [0.998]
rot2.001_Feld0207         [0.983]
planerot005_Lab           [0.960]
grun1.001_Feld2606        [0.597]
gru2.2.001_Feld0207       [0.577]
gru2.001_Feld0207         [0.536]
planegruen005_Lab         [0.536]
blau1.001_Feld2606        [0.460]
blau2.2.001_Feld0207      [0.453]
planeblau005_Lab          [0.434]
blau2.001_Feld0207        [0.420]
```

```
Unknown: 8: X:421 Y:2243
Library Spectrum          Score
_____          _____
weis1.001_Feld2606        [1.080]
blau2.2.001_Feld0207      [1.048]
blau1.001_Feld2606        [1.047]
blau2.001_Feld0207        [1.019]
planeblau005_Lab          [0.986]
weiss2.2.001_Feld020      [0.968]
planeweiss005_Lab         [0.965]
weiss2.001_Feld0207       [0.867]
grun1.001_Feld2606        [0.860]
rot1.001_Feld2606         [0.842]
gru2.2.001_Feld0207       [0.840]
rot2.2.001_Feld0207       [0.838]
rot2.001_Feld0207         [0.820]
gru2.001_Feld0207         [0.799]
planerot005_Lab           [0.799]
planegruen005_Lab         [0.798]
```

```
Unknown: 9: X:422 Y:2243
Library Spectrum          Score
_____          _____
blau2.2.001_Feld0207      [1.057]
blau1.001_Feld2606        [1.056]
blau2.001_Feld0207        [1.029]
planeblau005_Lab          [0.996]
weis1.001_Feld2606        [0.963]
grun1.001_Feld2606        [0.890]
gru2.2.001_Feld0207       [0.869]
weiss2.2.001_Feld020      [0.852]
planeweiss005_Lab         [0.849]
gru2.001_Feld0207         [0.830]
planegruen005_Lab         [0.829]
rot1.001_Feld2606         [0.781]
rot2.2.001_Feld0207       [0.777]
rot2.001_Feld0207         [0.760]
weiss2.001_Feld0207       [0.752]
planerot005_Lab           [0.739]
```

ROSIS
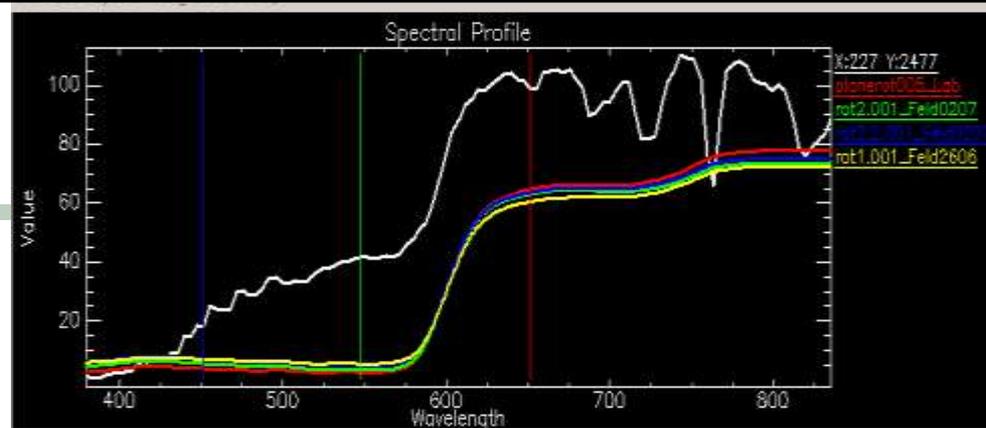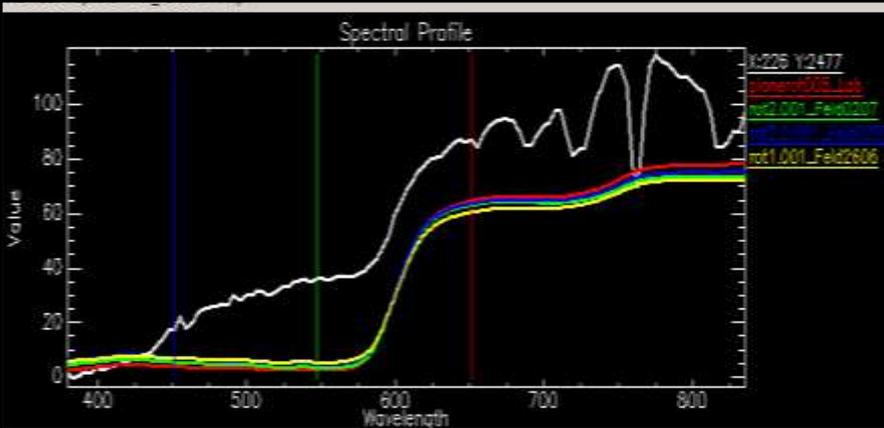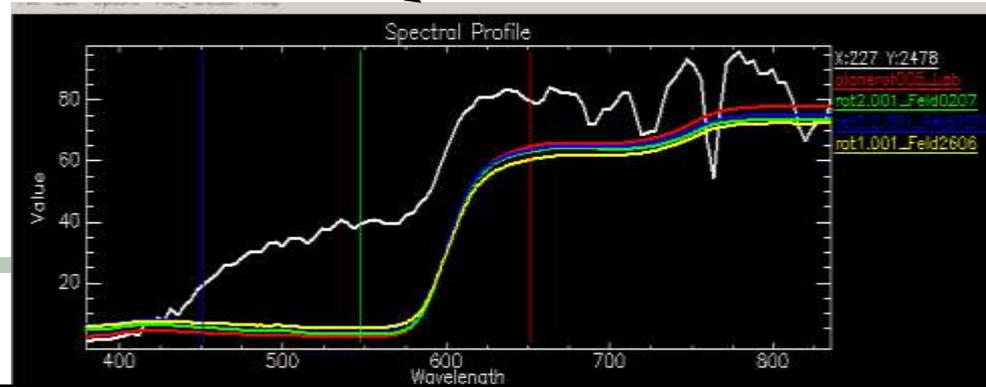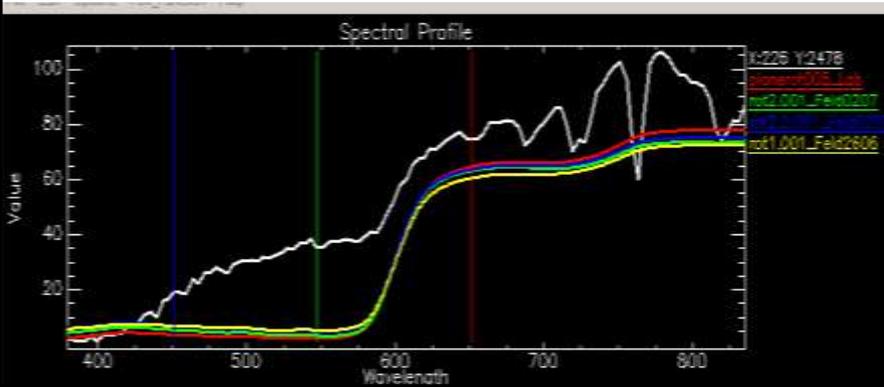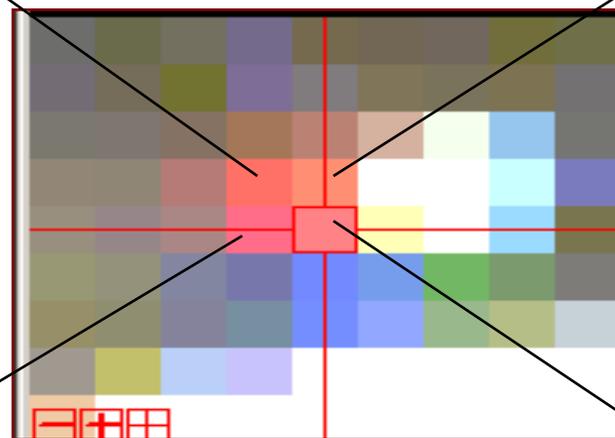
```
Unknown:  1:  X:226  Y:2477          Unknown:  2:  X:227  Y:2477
Library Spectrum       Score         Library Spectrum       Score
_____       _____         _____       _____
rot1.001_Feld2606      [1.714]:      rot1.001_Feld2606      [1.622]
rot2.2.001_Feld0207    [1.708]:      rot2.2.001_Feld0207    [1.618]
rot2.001_Feld0207      [1.691]:      rot2.001_Feld0207      [1.604]
planerot005_Lab        [1.675]:      planerot005_Lab        [1.584]
planeweiss005_Lab      [1.008]:      planeweiss005_Lab      [1.066]
weis1.001_Feld2606     [0.973]:      weis1.001_Feld2606     [1.032]
weiss2.2.001_Feld020   [0.951]:      weiss2.2.001_Feld020   [1.010]
weiss2.001_Feld0207    [0.932]:      weiss2.001_Feld0207    [0.992]
grun1.001_Feld2606     [0.629]:      planegruen005_Lab      [0.548]
gru2.2.001_Feld0207    [0.616]:      grun1.001_Feld2606     [0.548]
planegruen005_Lab      [0.565]:      gru2.2.001_Feld0207    [0.530]
gru2.001_Feld0207      [0.562]:      gru2.001_Feld0207      [0.530]
planeblau005_Lab       [0.435]:      planeblau005_Lab       [0.417]
blau1.001_Feld2606     [0.426]:      blau1.001_Feld2606     [0.409]
blau2.2.001_Feld0207   [0.417]:      blau2.2.001_Feld0207   [0.400]
blau2.001_Feld0207     [0.417]:      blau2.001_Feld0207     [0.400]

Unknown:  3:  X:226  Y:2478          Unknown:  4:  X:227  Y:2478
Library Spectrum       Score         Library Spectrum       Score
_____       _____         _____       _____
rot1.001_Feld2606      [1.674]:      rot1.001_Feld2606      [1.587]
rot2.2.001_Feld0207    [1.667]:      rot2.2.001_Feld0207    [1.582]
rot2.001_Feld0207      [1.648]:      rot2.001_Feld0207      [1.565]
planerot005_Lab        [1.633]:      planerot005_Lab        [1.546]
planeweiss005_Lab      [1.048]:      planeweiss005_Lab      [1.105]
weis1.001_Feld2606     [1.013]:      weis1.001_Feld2606     [1.070]
weiss2.2.001_Feld020   [0.990]:      weiss2.2.001_Feld020   [1.047]
weiss2.001_Feld0207    [0.971]:      weiss2.001_Feld0207    [1.029]
grun1.001_Feld2606     [0.649]:      grun1.001_Feld2606     [0.567]
gru2.2.001_Feld0207    [0.637]:      gru2.2.001_Feld0207    [0.558]
gru2.001_Feld0207      [0.581]:      planegruen005_Lab      [0.539]
planegruen005_Lab      [0.580]:      gru2.001_Feld0207      [0.522]
planeblau005_Lab       [0.435]:      planeblau005_Lab       [0.409]
blau1.001_Feld2606     [0.426]:      blau1.001_Feld2606     [0.400]
blau2.2.001_Feld0207   [0.417]:      blau2.2.001_Feld0207   [0.391]
blau2.001_Feld0207     [0.417]:      blau2.001_Feld0207     [0.391]
```
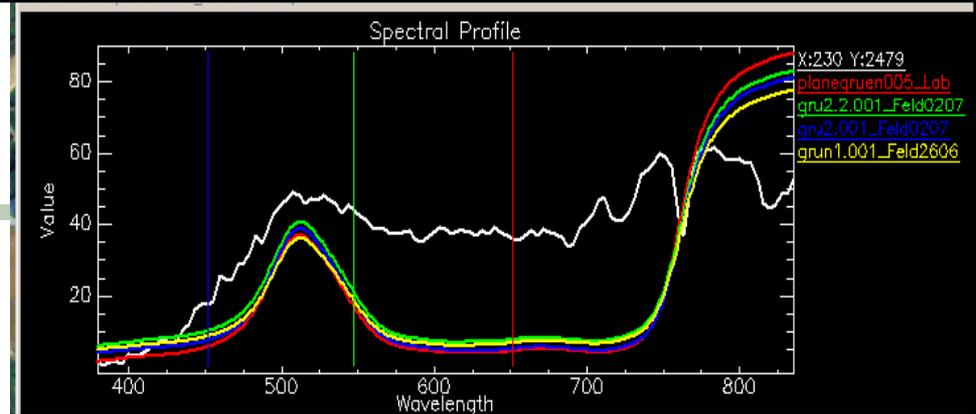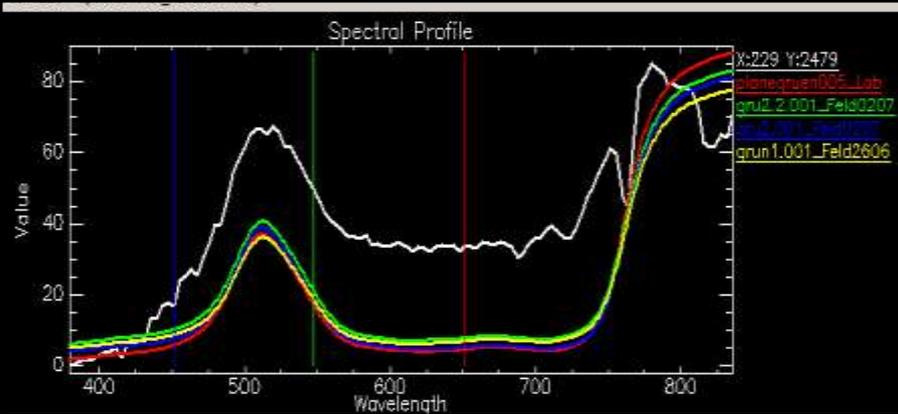
ROSIS
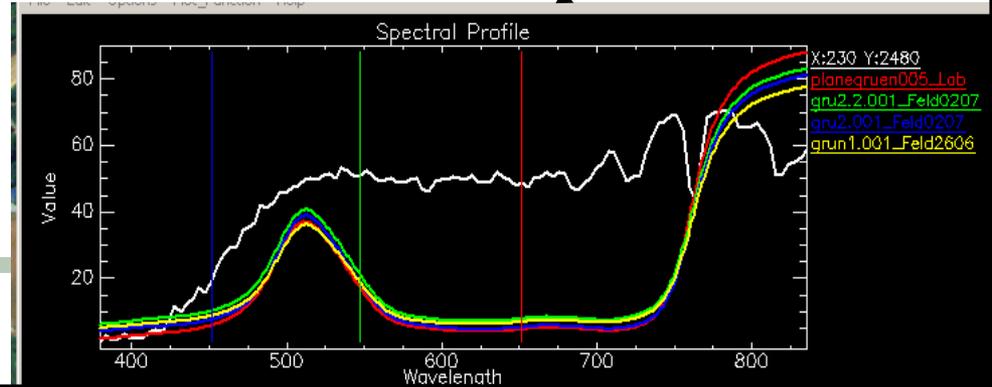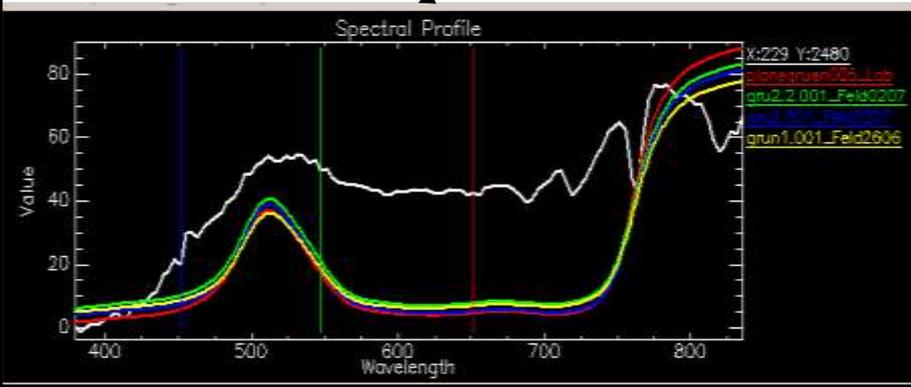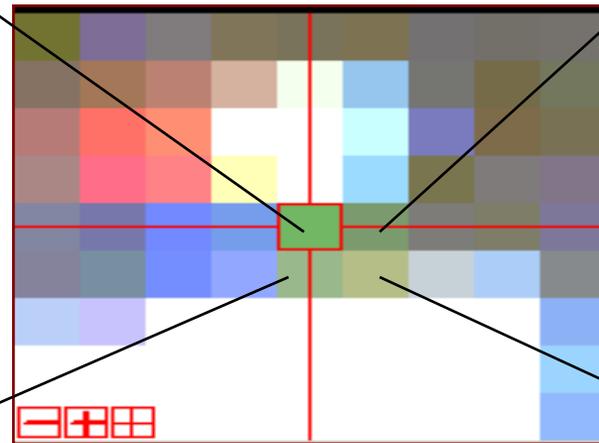
Unknown: 1: X:229 Y:2479

Library Spectrum	Score
gru2.2.001_Feld0207	[1.294]
grun1.001_Feld2606	[1.276]
gru2.001_Feld0207	[1.233]
planegruen005_Lab	[1.185]
planeweiss005_Lab	[0.987]
weis1.001_Feld2606	[0.959]
weiss2.2.001_Feld020	[0.944]
weiss2.001_Feld0207	[0.927]
blau1.001_Feld2606	[0.911]
blau2.2.001_Feld0207	[0.883]
planeblau005_Lab	[0.839]
blau2.001_Feld0207	[0.837]
rot1.001_Feld2606	[0.808]
rot2.2.001_Feld0207	[0.798]
rot2.001_Feld0207	[0.777]
planerot005_Lab	[0.767]

Unknown: 2: X:230 Y:2479

Library Spectrum	Score
planeweiss005_Lab	[1.386]
weis1.001_Feld2606	[1.355]
weiss2.2.001_Feld020	[1.335]
weiss2.001_Feld0207	[1.316]
rot1.001_Feld2606	[1.016]
rot2.2.001_Feld0207	[1.007]
rot2.001_Feld0207	[0.986]
planerot005_Lab	[0.970]
gru2.2.001_Feld0207	[0.812]
grun1.001_Feld2606	[0.796]
gru2.001_Feld0207	[0.748]
planegruen005_Lab	[0.705]
blau1.001_Feld2606	[0.482]
blau2.2.001_Feld0207	[0.453]
planeblau005_Lab	[0.409]
blau2.001_Feld0207	[0.409]

Unknown: 3: X:229 Y:2480

Library Spectrum	Score
planeweiss005_Lab	[1.355]
weis1.001_Feld2606	[1.323]
weiss2.2.001_Feld020	[1.303]
weiss2.001_Feld0207	[1.285]
rot1.001_Feld2606	[1.004]
rot2.2.001_Feld0207	[0.995]
rot2.001_Feld0207	[0.973]
planerot005_Lab	[0.959]
gru2.2.001_Feld0207	[0.883]
grun1.001_Feld2606	[0.867]
gru2.001_Feld0207	[0.820]
planegruen005_Lab	[0.777]
blau1.001_Feld2606	[0.527]
blau2.2.001_Feld0207	[0.498]
blau2.001_Feld0207	[0.448]
planeblau005_Lab	[0.447]

Unknown: 4: X:230 Y:2480

Library Spectrum	Score
planeweiss005_Lab	[1.478]
weis1.001_Feld2606	[1.445]
weiss2.2.001_Feld020	[1.423]
weiss2.001_Feld0207	[1.404]
rot1.001_Feld2606	[1.109]
rot2.2.001_Feld0207	[1.101]
rot2.001_Feld0207	[1.081]
planerot005_Lab	[1.064]
gru2.2.001_Feld0207	[0.652]
grun1.001_Feld2606	[0.637]
gru2.001_Feld0207	[0.589]
planegruen005_Lab	[0.549]
blau1.001_Feld2606	[0.309]
planeblau005_Lab	[0.296]
blau2.001_Feld0207	[0.296]
blau2.2.001_Feld0207	[0.296]

ROSIS
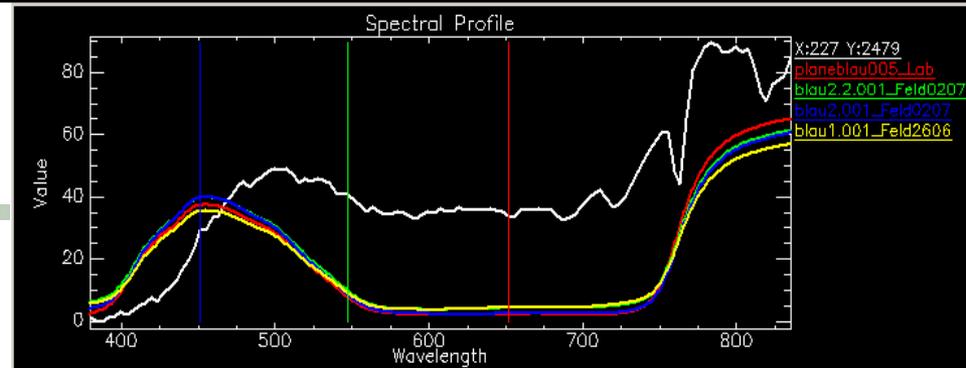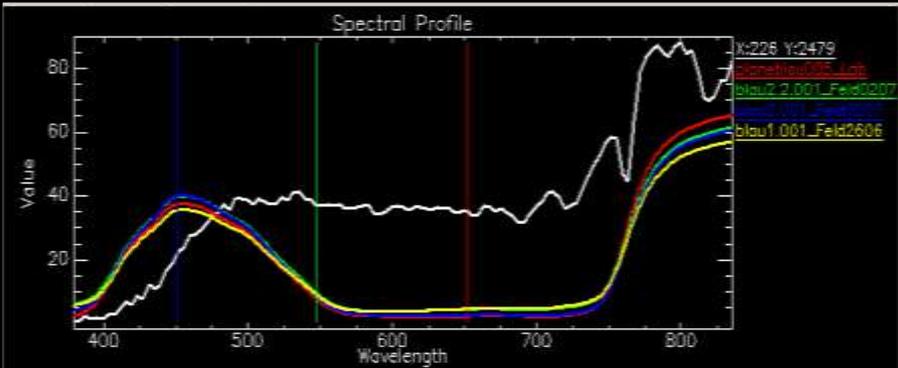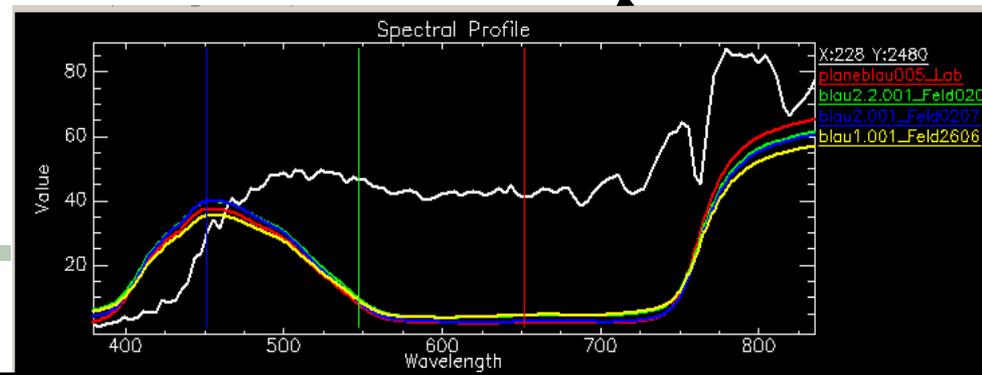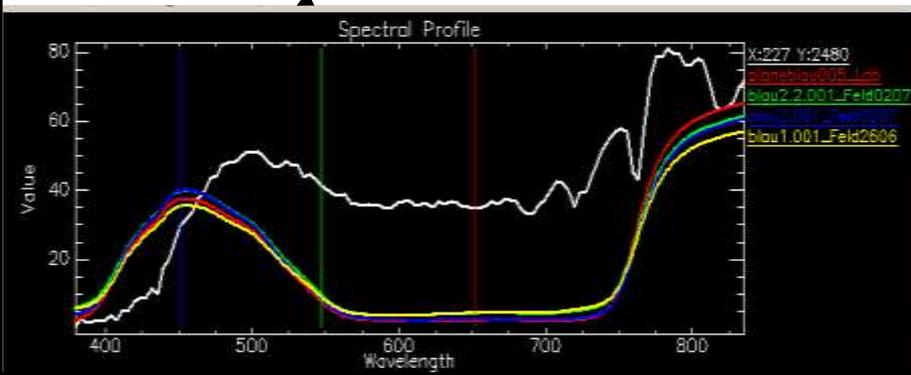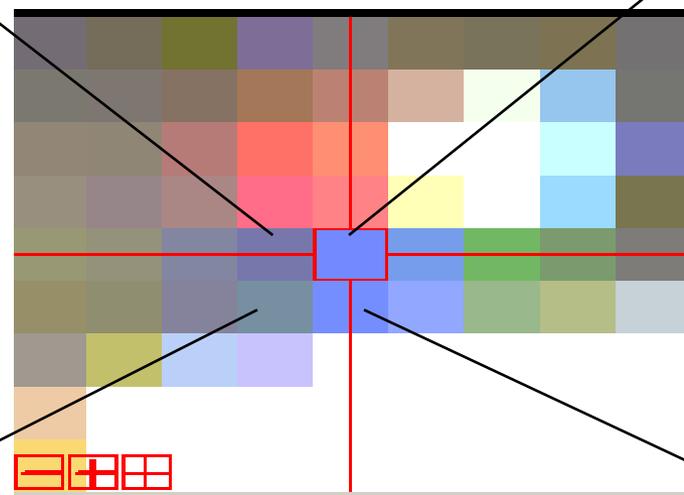
```
Unknown:  1:  X:226  Y:2479          Unknown:  2:  X:227  Y:2479
Library Spectrum      Score          Library Spectrum      Score
_____  _____       _____  _____
grun1.001_Feld2606    [1.253]        grun1.001_Feld2606    [1.322]:
gru2.2.001_Feld0207   [1.246]        gru2.2.001_Feld0207   [1.318]:
gru2.001_Feld0207     [1.185]        gru2.001_Feld0207     [1.255]:
planegruen005_Lab     [1.170]        planegruen005_Lab     [1.234]:
rot1.001_Feld2606     [1.118]        blau1.001_Feld2606    [1.062]:
rot2.2.001_Feld0207   [1.108]        blau2.2.001_Feld0207  [1.030]:
rot2.001_Feld0207     [1.087]        planeblau005_Lab      [0.992]:
planerot005_Lab       [1.080]        blau2.001_Feld0207    [0.982]:
blau1.001_Feld2606    [0.911]        planeweiss005_Lab     [0.971]:
blau2.2.001_Feld0207  [0.877]        weis1.001_Feld2606    [0.941]:
planeblau005_Lab      [0.863]        rot1.001_Feld2606     [0.940]:
planeweiss005_Lab     [0.859]        rot2.2.001_Feld0207   [0.930]:
blau2.001_Feld0207    [0.829]        weiss2.2.001_Feld020  [0.925]:
weiss1.001_Feld2606   [0.828]        rot2.001_Feld0207     [0.909]:
weiss2.2.001_Feld020  [0.809]        weiss2.001_Feld0207   [0.906]:
weiss2.001_Feld0207   [0.790]        planerot005_Lab       [0.901]:


Unknown:  3:  X:226  Y:2480          Unknown:  4:  X:227  Y:2480
Library Spectrum      Score          Library Spectrum      Score
_____  _____       _____  _____
grun1.001_Feld2606    [1.278]:       gru2.2.001_Feld0207   [1.233]
gru2.2.001_Feld0207   [1.272]:       grun1.001_Feld2606    [1.217]
gru2.001_Feld0207     [1.211]:       gru2.001_Feld0207     [1.169]
planegruen005_Lab     [1.194]:       planegruen005_Lab     [1.126]
rot1.001_Feld2606     [1.037]:       planeweiss005_Lab     [1.084]
rot2.2.001_Feld0207   [1.027]:       weis1.001_Feld2606    [1.055]
rot2.001_Feld0207     [1.006]:       weiss2.2.001_Feld020  [1.038]
planerot005_Lab       [0.998]:       weiss2.001_Feld0207   [1.020]
planeweiss005_Lab     [0.925]:       blau1.001_Feld2606    [0.992]
blau1.001_Feld2606    [0.903]:       blau2.2.001_Feld0207  [0.962]
weis1.001_Feld2606    [0.894]:       planeblau005_Lab      [0.914]
weiss2.2.001_Feld020  [0.876]:       blau2.001_Feld0207    [0.914]
blau2.2.001_Feld0207  [0.869]:       rot1.001_Feld2606     [0.886]
weiss2.001_Feld0207   [0.857]:       rot2.2.001_Feld0207   [0.877]
planeblau005_Lab      [0.853]:       rot2.001_Feld0207     [0.855]
blau2.001_Feld0207    [0.821]:
```

ROSIS
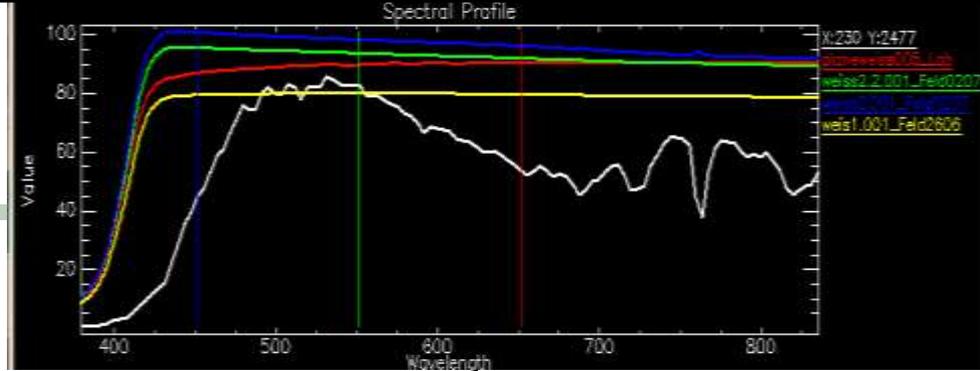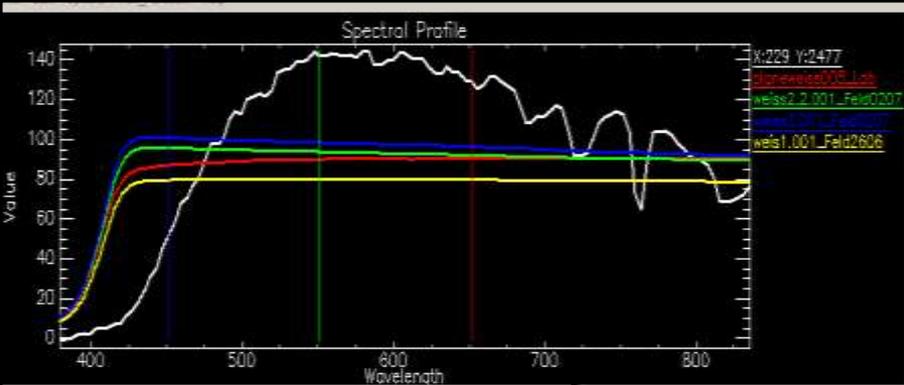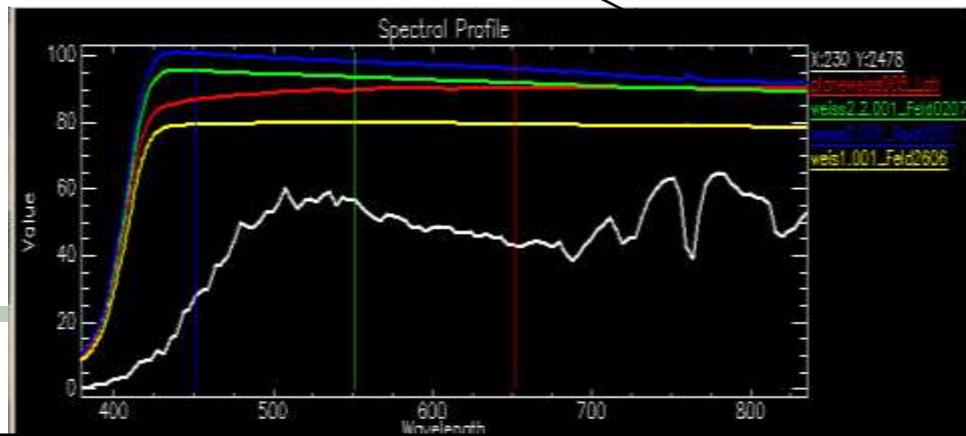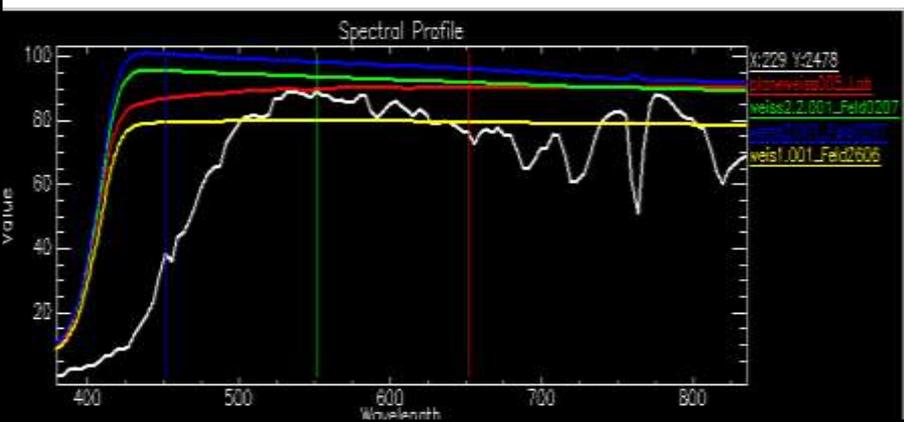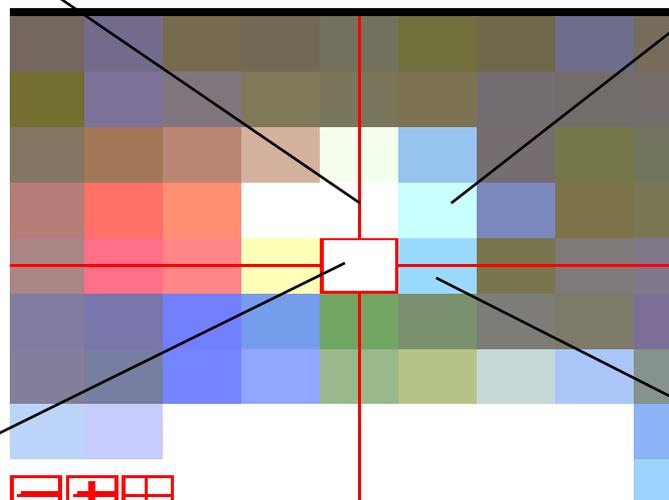
```
Unknown:  1:  X:229  Y:2477          Unknown:  2:  X:230  Y:2477
Library Spectrum        Score         Library Spectrum        Score
_____        _____         _____        _____
planeweiss005_Lab       [1.333]       planeweiss005_Lab       [1.339]
weis1.001_Feld2606      [1.309]       weis1.001_Feld2606      [1.320]
weiss2.2.001_Feld020    [1.297]       weiss2.2.001_Feld020    [1.314]
weiss2.001_Feld0207     [1.286]       weiss2.001_Feld0207     [1.304]
rot1.001_Feld2606       [0.684]       grun1.001_Feld2606      [0.548]
rot2.2.001_Feld0207     [0.679]       planegruen005_Lab       [0.548]
rot2.001_Feld0207       [0.661]       gru2.2.001_Feld0207     [0.548]
planerot005_Lab         [0.640]       gru2.001_Feld0207       [0.548]
gru2.2.001_Feld0207     [0.417]       rot1.001_Feld2606       [0.493]
gru2.001_Feld0207       [0.417]       rot2.2.001_Feld0207     [0.486]
grun1.001_Feld2606      [0.417]       rot2.001_Feld0207       [0.465]
planegruen005_Lab       [0.417]       planerot005_Lab         [0.452]
blau1.001_Feld2606      [0.243]       blau1.001_Feld2606      [0.443]
planeblau005_Lab        [0.235]       blau2.001_Feld0207      [0.435]
blau2.001_Feld0207      [0.235]       planeblau005_Lab        [0.435]
blau2.2.001_Feld0207    [0.235]       blau2.2.001_Feld0207    [0.435]

Unknown:  3:  X:229  Y:2478          Unknown:  4:  X:230  Y:2478
Library Spectrum        Score         Library Spectrum        Score
_____        _____         _____        _____
planeweiss005_Lab       [1.457]       planeweiss005_Lab       [1.489]
weis1.001_Feld2606      [1.429]       weis1.001_Feld2606      [1.460]
weiss2.2.001_Feld020    [1.412]       weiss2.2.001_Feld020    [1.443]
weiss2.001_Feld0207     [1.397]       weiss2.001_Feld0207     [1.427]
rot1.001_Feld2606       [0.860]       rot1.001_Feld2606       [0.856]
rot2.2.001_Feld0207     [0.853]       rot2.2.001_Feld0207     [0.848]
rot2.001_Feld0207       [0.834]       rot2.001_Feld0207       [0.827]
planerot005_Lab         [0.815]       planerot005_Lab         [0.809]
gru2.2.001_Feld0207     [0.544]       gru2.2.001_Feld0207     [0.675]
grun1.001_Feld2606      [0.527]       grun1.001_Feld2606      [0.657]
gru2.001_Feld0207       [0.522]       gru2.001_Feld0207       [0.610]
planegruen005_Lab       [0.522]       planegruen005_Lab       [0.565]
blau1.001_Feld2606      [0.330]       blau1.001_Feld2606      [0.438]
planeblau005_Lab        [0.322]       blau2.2.001_Feld0207    [0.413]
blau2.001_Feld0207      [0.322]       planeblau005_Lab        [0.400]
blau2.2.001_Feld0207    [0.322]       blau2.001_Feld0207      [0.400]
```

Geo1109 (O-W) und Geo1100 (N-S)

```
Unknown: 7: X:6535 Y:359:W1109
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
7: X:6535 Y:359:W110  [3.000]: {1.000} {1.000} {1.000}
1: X:420 Y:2241:W110  [2.624]: {0.930} {0.758} {0.935}
3:X:423 Y:2245:R1100  [1.345]: {0.530} {0.041} {0.774}
5: X:6537 Y:363:R110  [1.333]: {0.529} {0.030} {0.774}
5:X:427 Y:2245:G1100  [1.025]: {0.370} {0.058} {0.597}
5: X:6540 Y:362:G110  [0.975]: {0.360} {0.051} {0.565}
5: X:427 Y:2242:B110  [0.833]: {0.380} {0.033} {0.419}
2: X:6540 Y:357:B110  [0.793]: {0.365} {0.024} {0.403}
```

```
Unknown: 2: X:6540 Y:357:B1109
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
2: X:6540 Y:357:B110  [3.000]: {1.000} {1.000} {1.000}
5: X:427 Y:2242:B110  [2.808]: {0.962} {0.861} {0.984}
5: X:6540 Y:362:G110  [1.495]: {0.657} {0.000} {0.839}
5:X:427 Y:2245:G1100  [1.462]: {0.656} {0.000} {0.806}
3:X:423 Y:2245:R1100  [0.915]: {0.382} {0.000} {0.532}
5: X:6537 Y:363:R110  [0.913]: {0.381} {0.000} {0.532}
1: X:420 Y:2241:W110  [0.837]: {0.369} {0.000} {0.468}
7: X:6535 Y:359:W110  [0.769]: {0.365} {0.000} {0.403}
```

```
Unknown: 5: X:6540 Y:362:G1109
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
5: X:6540 Y:362:G110  [3.000]: {1.000} {1.000} {1.000}
5:X:427 Y:2245:G1100  [2.802]: {0.973} {0.861} {0.968}
2: X:6540 Y:357:B110  [1.495]: {0.657} {0.000} {0.839}
5: X:427 Y:2242:B110  [1.494]: {0.639} {0.000} {0.855}
3:X:423 Y:2245:R1100  [1.139]: {0.510} {0.000} {0.629}
5: X:6537 Y:363:R110  [1.134]: {0.505} {0.000} {0.629}
7: X:6535 Y:359:W110  [0.924]: {0.360} {0.000} {0.565}
1: X:420 Y:2241:W110  [0.861]: {0.329} {0.000} {0.532}
```

```
Unknown: 5: X:6537 Y:363:R1109
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
5: X:6537 Y:363:R110  [3.000]: {1.000} {1.000} {1.000}
3:X:423 Y:2245:R1100  [2.867]: {0.986} {0.881} {1.000}
7: X:6535 Y:359:W110  [1.303]: {0.529} {0.000} {0.774}
1: X:420 Y:2241:W110  [1.190]: {0.480} {0.000} {0.710}
5:X:427 Y:2245:G1100  [1.146]: {0.517} {0.000} {0.629}
5: X:6540 Y:362:G110  [1.134]: {0.505} {0.000} {0.629}
2: X:6540 Y:357:B110  [0.913]: {0.381} {0.000} {0.532}
5: X:427 Y:2242:B110  [0.888]: {0.372} {0.000} {0.516}
```

```
Unknown: 1: X:420 Y:2241:W1100
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
1: X:420 Y:2241:W110  [3.000]: {1.000} {1.000} {1.000}
7: X:6535 Y:359:W110  [2.617]: {0.930} {0.751} {0.935}
3:X:423 Y:2245:R1100  [1.201]: {0.480} {0.011} {0.710}
5: X:6537 Y:363:R110  [1.190]: {0.480} {0.000} {0.710}
5:X:427 Y:2245:G1100  [0.933]: {0.340} {0.029} {0.565}
5: X:427 Y:2242:B110  [0.891]: {0.386} {0.020} {0.484}
5: X:6540 Y:362:G110  [0.884]: {0.329} {0.023} {0.532}
2: X:6540 Y:357:B110  [0.845]: {0.369} {0.009} {0.468}
```

```
Unknown: 5: X:427 Y:2242:B1100
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
5: X:427 Y:2242:B110  [3.000]: {1.000} {1.000} {1.000}
2: X:6540 Y:357:B110  [2.809]: {0.962} {0.863} {0.984}
5: X:6540 Y:362:G110  [1.494]: {0.639} {0.000} {0.855}
5:X:427 Y:2245:G1100  [1.461]: {0.639} {0.000} {0.823}
3:X:423 Y:2245:R1100  [0.889]: {0.373} {0.000} {0.516}
5: X:6537 Y:363:R110  [0.888]: {0.372} {0.000} {0.516}
1: X:420 Y:2241:W110  [0.870]: {0.386} {0.000} {0.484}
7: X:6535 Y:359:W110  [0.800]: {0.380} {0.000} {0.419}
```

```
Unknown: 5:X:427 Y:2245:G1100
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
5:X:427 Y:2245:G1100  [3.000]: {1.000} {1.000} {1.000}
5: X:6540 Y:362:G110  [2.803]: {0.973} {0.863} {0.968}
2: X:6540 Y:357:B110  [1.462]: {0.656} {0.000} {0.806}
5: X:427 Y:2242:B110  [1.461]: {0.639} {0.000} {0.823}
3:X:423 Y:2245:R1100  [1.151]: {0.522} {0.000} {0.629}
5: X:6537 Y:363:R110  [1.146]: {0.517} {0.000} {0.629}
7: X:6535 Y:359:W110  [0.967]: {0.370} {0.000} {0.597}
1: X:420 Y:2241:W110  [0.904]: {0.340} {0.000} {0.565}
```

```
Unknown: 3:X:423 Y:2245:R1100
Library Spectrum      Score      SAM      SFF      BE
----------------      -------    -------  -------  -------
3:X:423 Y:2245:R1100  [3.000]: {1.000} {1.000} {1.000}
5: X:6537 Y:363:R110  [2.869]: {0.986} {0.882} {1.000}
7: X:6535 Y:359:W110  [1.304]: {0.530} {0.000} {0.774}
1: X:420 Y:2241:W110  [1.190]: {0.480} {0.000} {0.710}
5:X:427 Y:2245:G1100  [1.151]: {0.522} {0.000} {0.629}
5: X:6540 Y:362:G110  [1.139]: {0.510} {0.000} {0.629}
2: X:6540 Y:357:B110  [0.915]: {0.382} {0.000} {0.532}
5: X:427 Y:2242:B110  [0.889]: {0.373} {0.000} {0.516}
```

ROSIS verglichen mit AISA

```
Unknown: 4: X:230 Y:2478:W_rosis
Library Spectrum        Score       SAM       SFF       BE
_____        _____    _____   _____   _____

7: X:6535 Y:359:W110   [1.600]:   {0.816}   {0.000}   {0.784}
1: X:420 Y:2241:W110   [1.562]:   {0.796}   {0.000}   {0.766}
5:X:427 Y:2245:G1100   [1.094]:   {0.428}   {0.000}   {0.667}
5: X:6540 Y:362:G110   [1.080]:   {0.413}   {0.000}   {0.667}
3:X:423 Y:2245:R1100   [1.030]:   {0.436}   {0.000}   {0.595}
5: X:6537 Y:363:R110   [1.027]:   {0.432}   {0.000}   {0.595}
5: X:427 Y:2242:B110   [0.903]:   {0.362}   {0.000}   {0.541}
2: X:6540 Y:357:B110   [0.880]:   {0.348}   {0.000}   {0.532}
```

```
Unknown: 2: X:227 Y:2479:B_rosis
Library Spectrum        Score       SAM       SFF       BE
_____        _____    _____   _____   _____

5:X:427 Y:2245:G1100   [1.624]:   {0.723}   {0.000}   {0.901}
5: X:6540 Y:362:G110   [1.610]:   {0.709}   {0.000}   {0.901}
2: X:6540 Y:357:B110   [1.376]:   {0.538}   {0.000}   {0.838}
5: X:427 Y:2242:B110   [1.364]:   {0.535}   {0.000}   {0.829}
3:X:423 Y:2245:R1100   [1.110]:   {0.569}   {0.000}   {0.541}
5: X:6537 Y:363:R110   [1.105]:   {0.564}   {0.000}   {0.541}
1: X:420 Y:2241:W110   [1.068]:   {0.554}   {0.000}   {0.514}
7: X:6535 Y:359:W110   [1.058]:   {0.581}   {0.000}   {0.477}
```

```
Unknown: 1: X:229 Y:2479:G_rosis
Library Spectrum        Score       SAM       SFF       BE
_____        _____    _____   _____   _____

5:X:427 Y:2245:G1100   [1.637]:   {0.673}   {0.000}   {0.964}
5: X:6540 Y:362:G110   [1.630]:   {0.666}   {0.000}   {0.964}
5: X:427 Y:2242:B110   [1.266]:   {0.482}   {0.000}   {0.784}
2: X:6540 Y:357:B110   [1.254]:   {0.479}   {0.000}   {0.775}
1: X:420 Y:2241:W110   [1.138]:   {0.561}   {0.000}   {0.577}
7: X:6535 Y:359:W110   [1.128]:   {0.588}   {0.000}   {0.541}
3:X:423 Y:2245:R1100   [0.965]:   {0.451}   {0.000}   {0.514}
5: X:6537 Y:363:R110   [0.960]:   {0.446}   {0.000}   {0.514}
```

```
Unknown: 1: X:226 Y:2477:R_rosis
Library Spectrum        Score       SAM       SFF       BE
_____        _____    _____   _____   _____

3:X:423 Y:2245:R1100   [1.735]:   {0.762}   {0.000}   {0.973}
5: X:6537 Y:363:R110   [1.735]:   {0.762}   {0.000}   {0.973}
7: X:6535 Y:359:W110   [1.335]:   {0.551}   {0.000}   {0.784}
1: X:420 Y:2241:W110   [1.211]:   {0.500}   {0.000}   {0.712}
5:X:427 Y:2245:G1100   [0.819]:   {0.297}   {0.000}   {0.523}
5: X:6540 Y:362:G110   [0.804]:   {0.281}   {0.000}   {0.523}
2: X:6540 Y:357:B110   [0.528]:   {0.123}   {0.000}   {0.405}
5: X:427 Y:2242:B110   [0.517]:   {0.121}   {0.000}   {0.396}
```

Anmerkungen

Bei dem Vergleich:

- Keine Atmosphärische Korrektur

- AISA lag georeferenziert vor

- ROSIS nicht georeferenziert (je nach Wunsch)

- Für ROSIS bei Blau gab es Verschiebungen

- Messergebnisse für die Planen aus Labor, Bodensegment und aus der Luft waren gut vergleichbar (unter Bedingungen).

- Unterschiede in der spektralen Auflösung waren nicht destruktiv

- Spektral oder räumlich hochauflösend?

Vielen Dank für Ihre Aufmerksamkeit!