Obszervatórium adatai

Noao => observatory

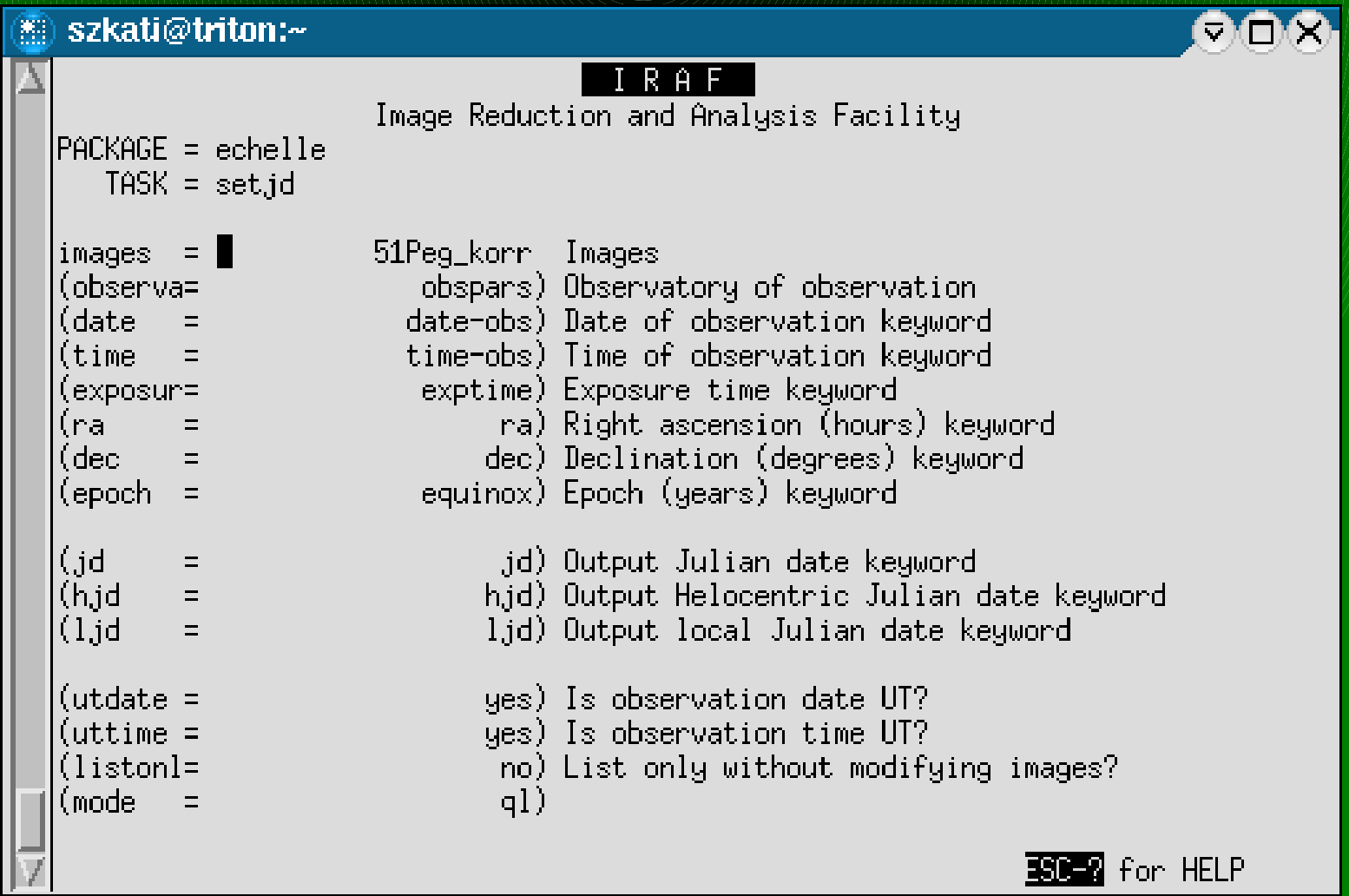
```
szkati@triton:~
                                   I R A F
                    Image Reduction and Analysis Facility
PACKAGE = noao
   TASK = observatory

command =                  set  Command (set|list|images)
obsid   =                    ?  Observatory to set, list, or image default
images  =                       List of images
(verbose=                  no) Verbose output?

(observa=             obspars) Observatory identification
(name   =                 ddo) Observatory name
(longitu=            79.42167) Observatory longitude (degrees)
(latitud=             43.8633) Observatory latitude (degrees)
(altitud=                244.) Observatory altitude (meters)
(timezon=                  5.) Observatory time zone
override=              obspars  Observatory identification
(mode   =                  ql)

                                                              ESC-? for HELP
```

Obszervatórium adatai

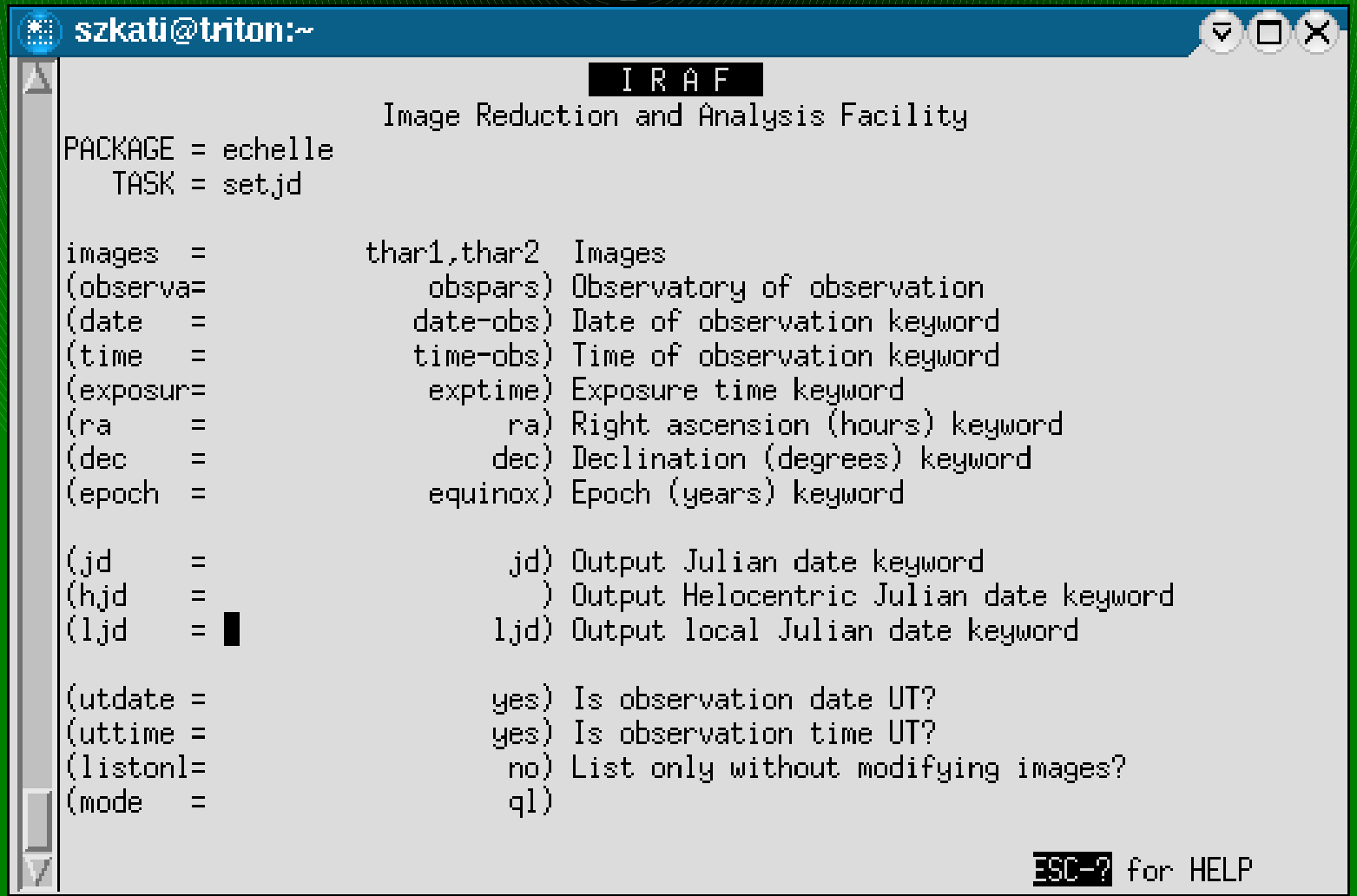
```
szkati@triton:~
  lna: Laboratorio Nacional de Astrofisica - Brazil
  saao: South African Astronomical Observatory
  casleo: Complejo Astronomico El Leoncito, San Juan
  bosque: Estacion Astrofisica Bosque Alegre, Cordoba
  rozhen: National Astronomical Observatory Rozhen - Bulgaria
  irtf: NASA Infrared Telescope Facility
  bgsuo: Bowling Green State Univ Observatory
  DSAZ: Deutsch-Spanisches Observatorium Calar Alto - Spain
  ca: Calar Alto Observatory
  holi: Observatorium Hoher List (Universitaet Bonn) - Germany
  lmo: Leander McCormick Observatory
  fmo: Fan Mountain Observatory
  whitin: Whitin Observatory, Wellesley College
  osn: Observatorio de Sierra Nevada
  gemini-north: Gemini North Observatory
  gemini-south: Gemini South Observatory
  lasilla: European Southern Observatory: La Silla
  paranal: European Southern Observatory: Paranal
  esontt: European Southern Observatory, NTT, La Silla
  eso36m: European Southern Observatory, 3.6m Telescope, La Silla
  esovlt: European Southern Observatory, VLT, Paranal
  obspars:  Use parameters from OBSERVATORY task

Observatory identification (obspars): obspars
```

```
szkati@triton:~
  ca: Calar Alto Observatory
  holi: Observatorium Hoher List (Universitaet Bonn) - Germany
  lmo: Leander McCormick Observatory
  fmo: Fan Mountain Observatory
  whitin: Whitin Observatory, Wellesley College
  osn: Observatorio de Sierra Nevada
  gemini-north: Gemini North Observatory
  gemini-south: Gemini South Observatory
  lasilla: European Southern Observatory: La Silla
  paranal: European Southern Observatory: Paranal
  esontt: European Southern Observatory, NTT, La Silla
  eso36m: European Southern Observatory, 3.6m Telescope, La Silla
  esovlt: European Southern Observatory, VLT, Paranal
  obspars:  Use parameters from OBSERVATORY task

Observatory identification (obspars): obspars
# Observatory parameters for ddo
        observatory = obspars
        timezone = 5.
        altitude = 244.
        latitude = 43.8633
        longitude = 79.42166999999999
        name = ddo
cc>
```

Fejléc szerkesztése



Fejléc szerkesztése



Fejléc

szkati@triton:~ - Parancsértelmező - 2. - Konsole

Munkafolyamat Szerkesztés Nézet Beállítások Segítség

```
Fájl: 51Peg_korr.fits   Oszl 0            2105280 bájt                    0%
SIMPLE  =                    T / Fits standard
BITPIX  =                  -32 / Bits per pixel
NAXIS   =                    2 / Number of axes
NAXIS1  =                  512 / Axis length
NAXIS2  =                 1024 / Axis length
EXTEND  =                    F / File may contain extensions
ORIGIN  = 'NOAO-IRAF FITS Image Kernel December 2001' / FITS file originator
DATE    = '2003-11-10T12:05:33'
IRAF-TLM= '13:05:33 (10/11/2003)'
CCDSEG  = '[1:1024,1:1024]'             / Frame format
FILE    = 'E0000354.FTS'                / File name
OBJECT  = 'HD217014'                    / Image name
IMAGETYP= 'object  '                    / Type of observation
OBSERVER= 'Vnk/Frg/Tn/DeB'              / Name(s) or ID(s)
DATE-OBS= '2001-08-29'                  / Date of start of observation in UTC
TIME-OBS= '04:49:50'                    / start Universal time
ENDTIME = '05:19:51'                    / End time of exposure
RA      = '22:52:33'                    / Right Ascension, hh:mm:ss
DEC     = '20:13:57'                    / Declination, +/-dd:mm:ss
HA      = '        '                    / Actual position of telescope
EQUINOX =                 1900          / Equinox
EXPTIME =                 1801          / Exposure time in seconds
1Súgó 2NSorTö 3Kilép 4Hex 5Sor 6KifKer 7Keres 8Nyers 9NForm 10Kilép
```

Új | Parancsértelmező | Parancsértelmező - 2. | Parancsértelmező - 3.

szkati@triton:~ - Parancsértelmező - 2. - Konsole

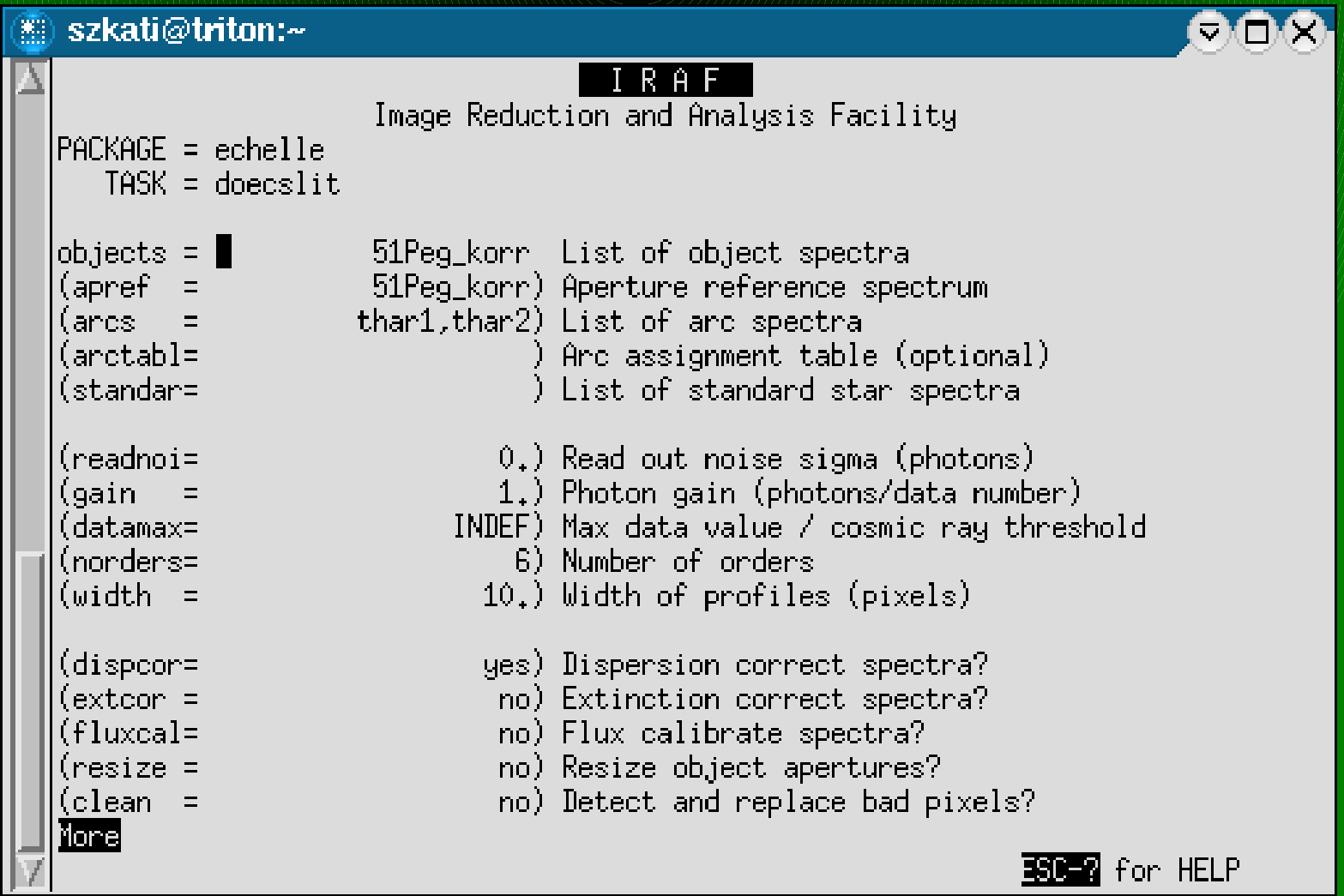
Munkafolyamat Szerkesztés Nézet Beállítások Segítség

```
Fájl: 51Peg_korr.fits   Oszl 0            2105280 bájt                    0%
TEMP-CS1=                               / temperature: deg C, Cass: CCD-Bridge
TEMP-CS2=                               / temperature: deg C, Cass, position2
TEMP-EC1=                  19.0         / temperature: deg C, Eche, position1
TEMP-EC2=                  18.7         / temperature: deg C, Eche, position2
TEMP-TUB=                               / temperature: deg C, telescope tube
TEMP-CEL=                               / temperature: deg C, mirror cell
CRCOR   = 'Threshold= 25.0, fluxratio=  4.89, removed=409'
WCSDIM  =                    2
LTM1_1  =                   1.
LTM2_2  =                   1.
WAT0_001= 'system=physical'
WAT1_001= 'wtype=linear'
WAT2_001= 'wtype=linear'
FLATCOR = 'Nov 10 13:05 Flat field image is Flat with scale=1.'
CCDSEC  = '[1:512,1:1024]'
CCDPROC = 'Nov 10 13:05 CCD processing done'
JD      =      2452150.7116956
HJD     =     2452150.71670028
LJD     =            2452150.


END
1Súgó 2NSorTö 3Kilép 4Hex 5Sor 6KifKer 7Keres 8Nyers 9NForm 10Kilép
```

Új | Parancsértelmező | Parancsértelmező - 2. | Parancsértelmező - 3.

Apertúra követés és hullámhossz-kalibrálás

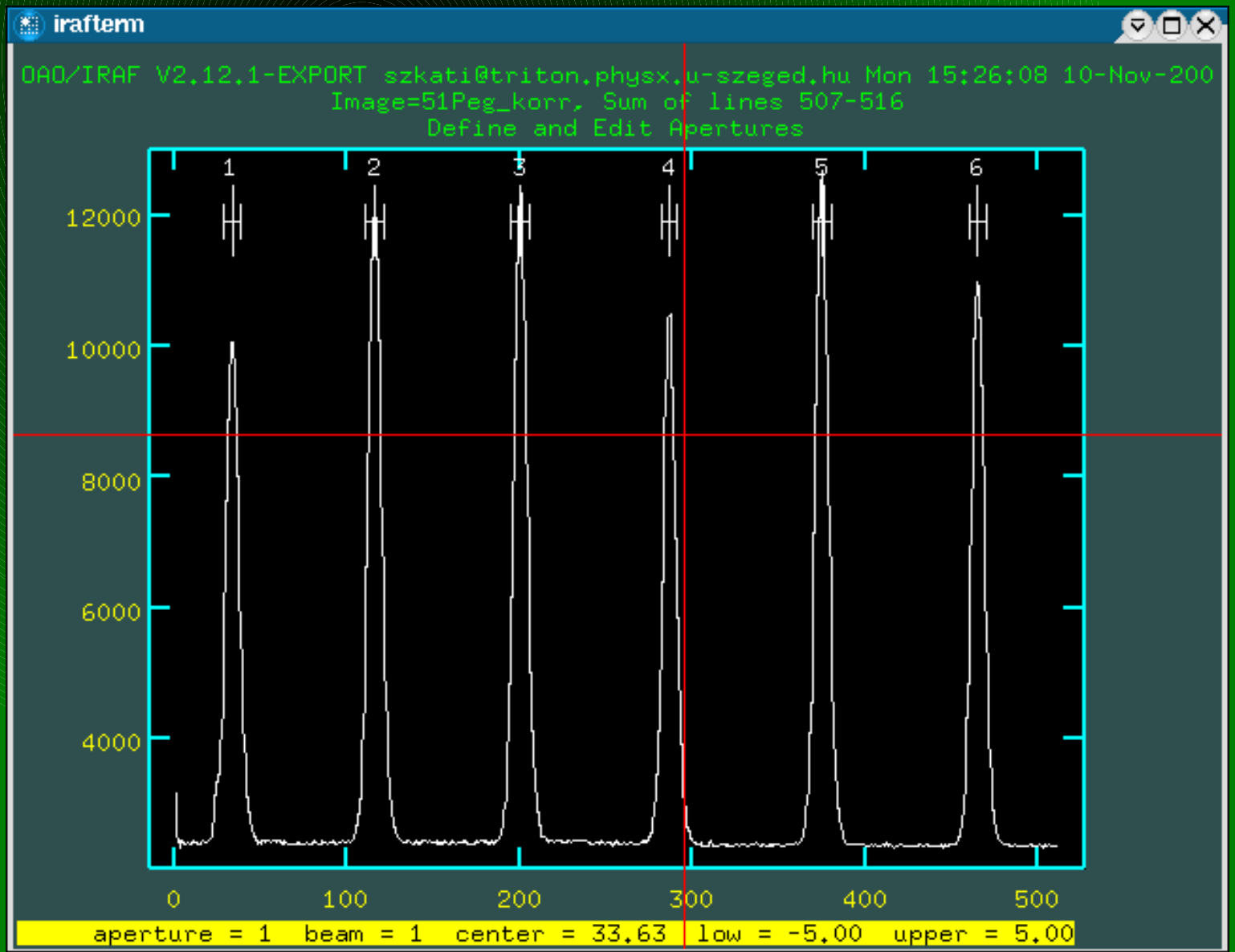
noao/imred/echelle/doecslit



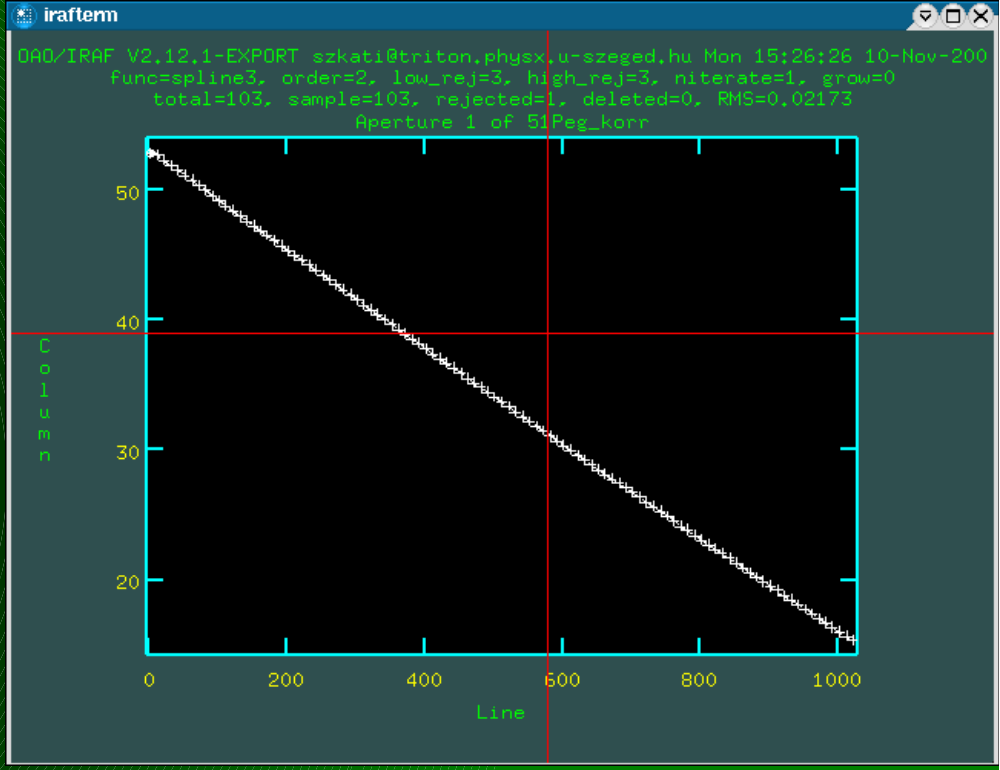
Apertúra követés és hullámhossz-kalibrálás

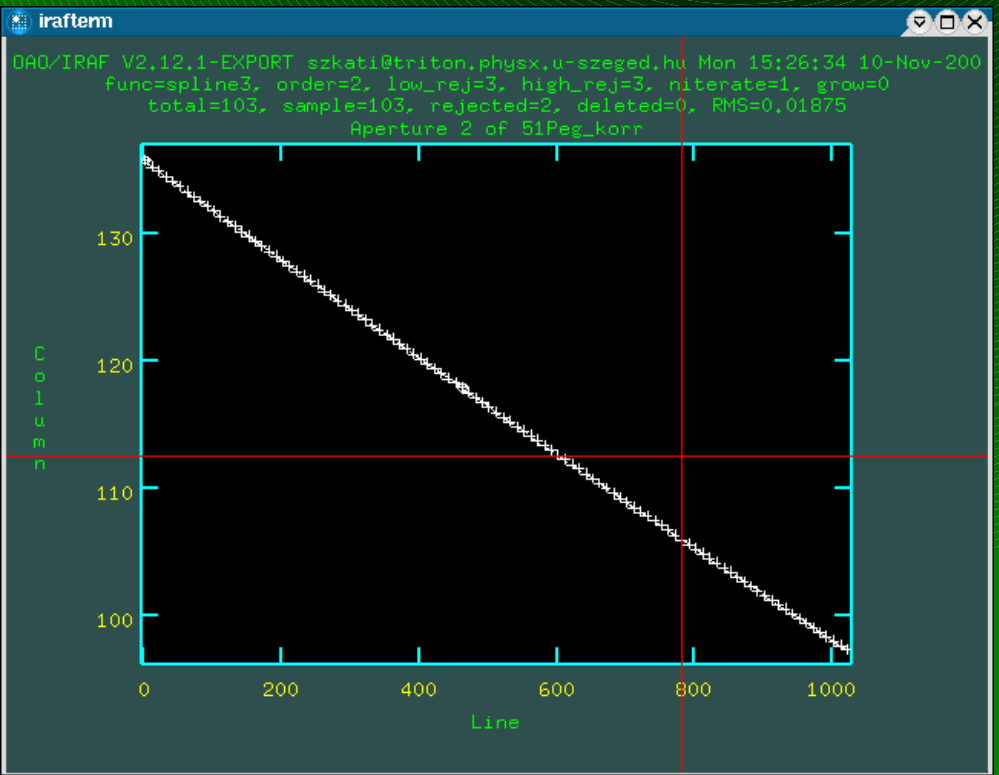
```
szkati@triton:~
                                  I R A F
                    Image Reduction and Analysis Facility
PACKAGE = echelle
   TASK = doecslit
More
(trace  =                        yes) Trace object spectra?
(backgro=                        fit) Background to subtract
(splot  =                        yes) Plot the final spectra?
(redo   =                         no) Redo operations if previously done?
(update =                         no) Update spectra if cal data changes?
(quicklo=                         no) Approximate quicklook reductions?
(batch  =                         no) Extract objects in batch?
(listonl=                         no) List steps but don't process?

(sparams=                           ) Algorithm parameters
(mode   =                         ql)

                                                           ESC-? for HELP
```

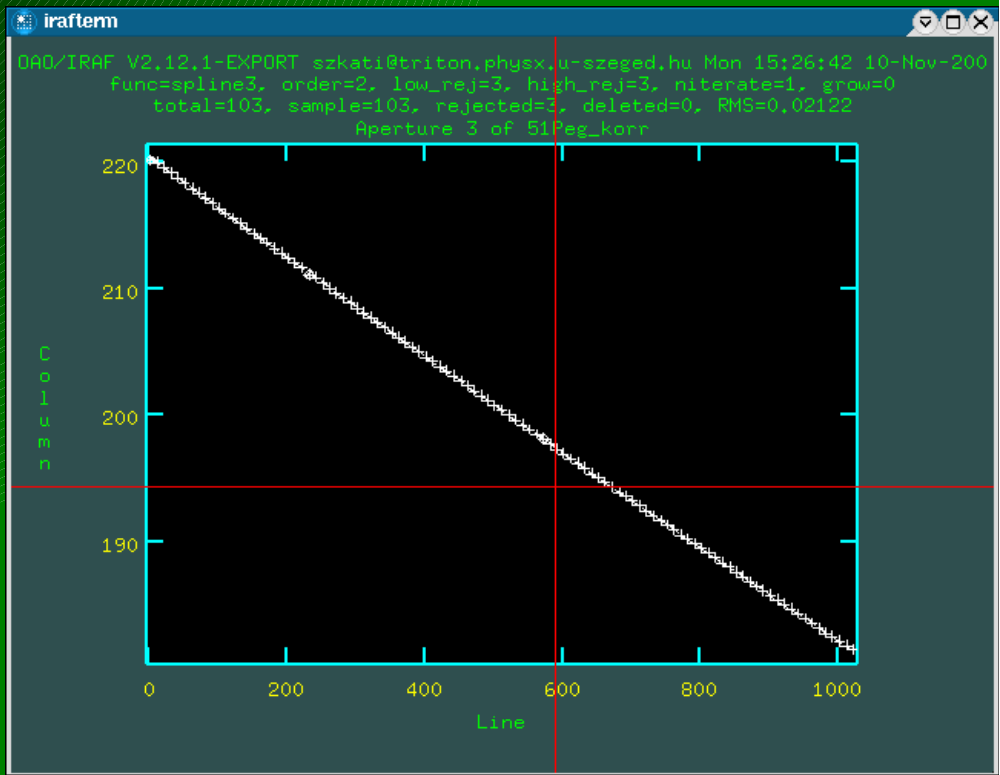
Apertúra


irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:26:08 10-Nov-200
Image=51Peg_korr, Sum of lines 507-516
Define and Edit Apertures
1
2
3
4
5
6
12000
10000
8000
6000
4000
0
100
200
300
400
500
aperture = 1 beam = 1 center = 33.63 low = -5.00 upper = 5.00

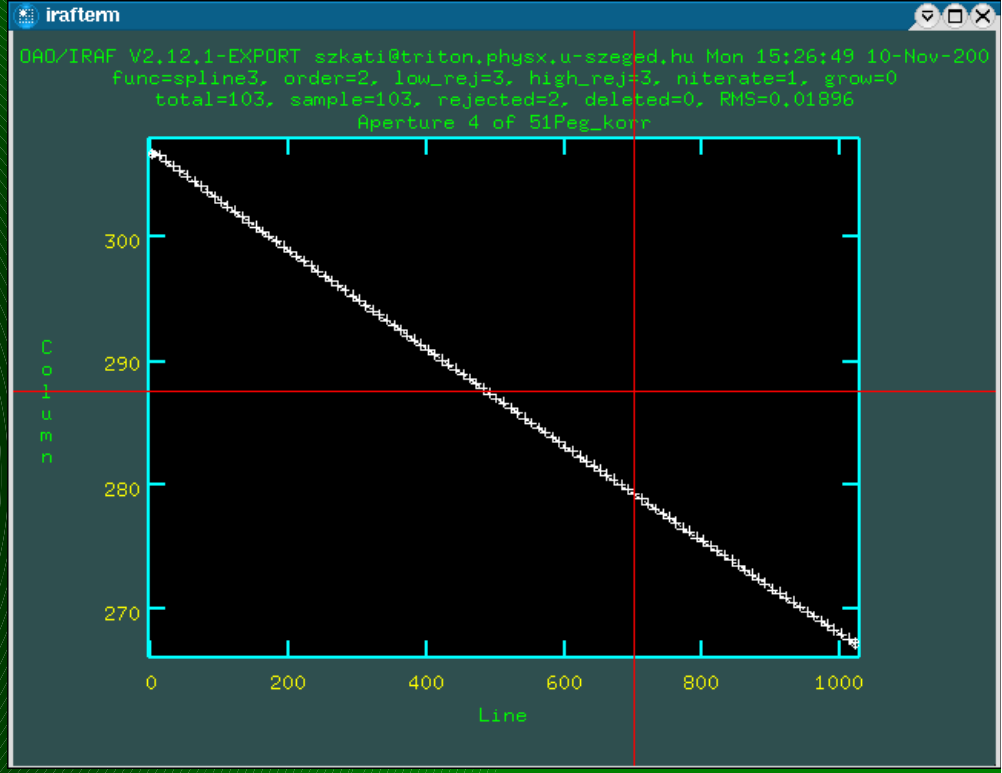
Apertúra

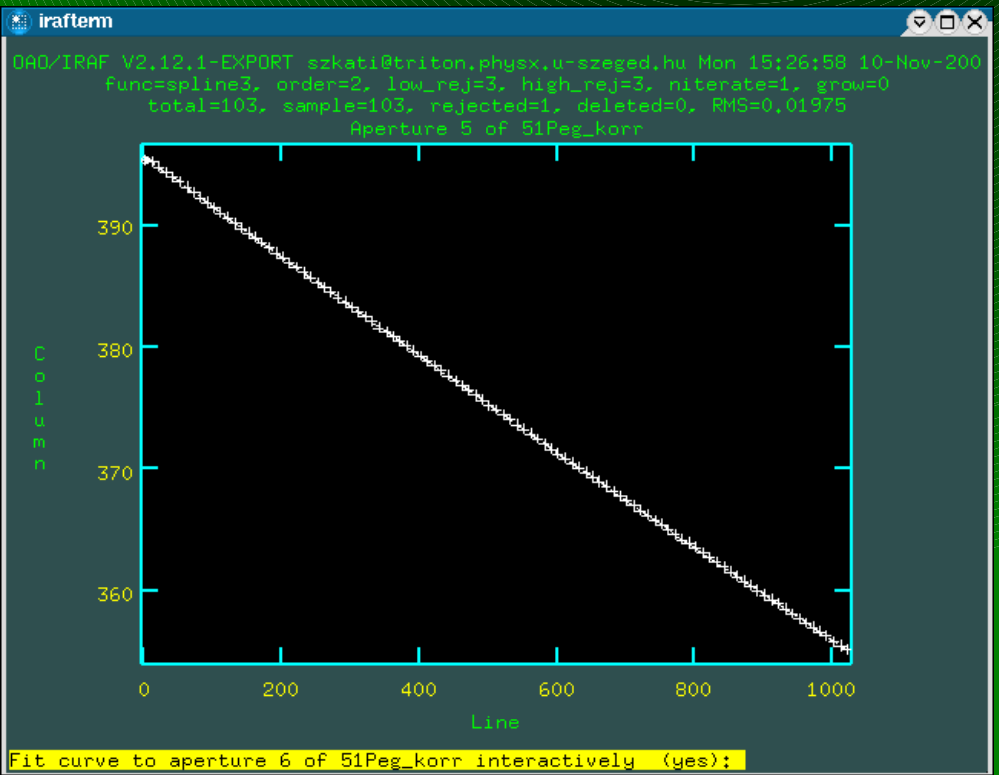

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:26:26 10-Nov-200
func=spline3, order=2, low_rej=3, high_rej=3, niterate=1, grow=0
total=103, sample=103, rejected=1, deleted=0, RMS=0.02173
Aperture 1 of 51Peg_korr
Column
Line
50
40
30
20
0
200
400
600
800
1000

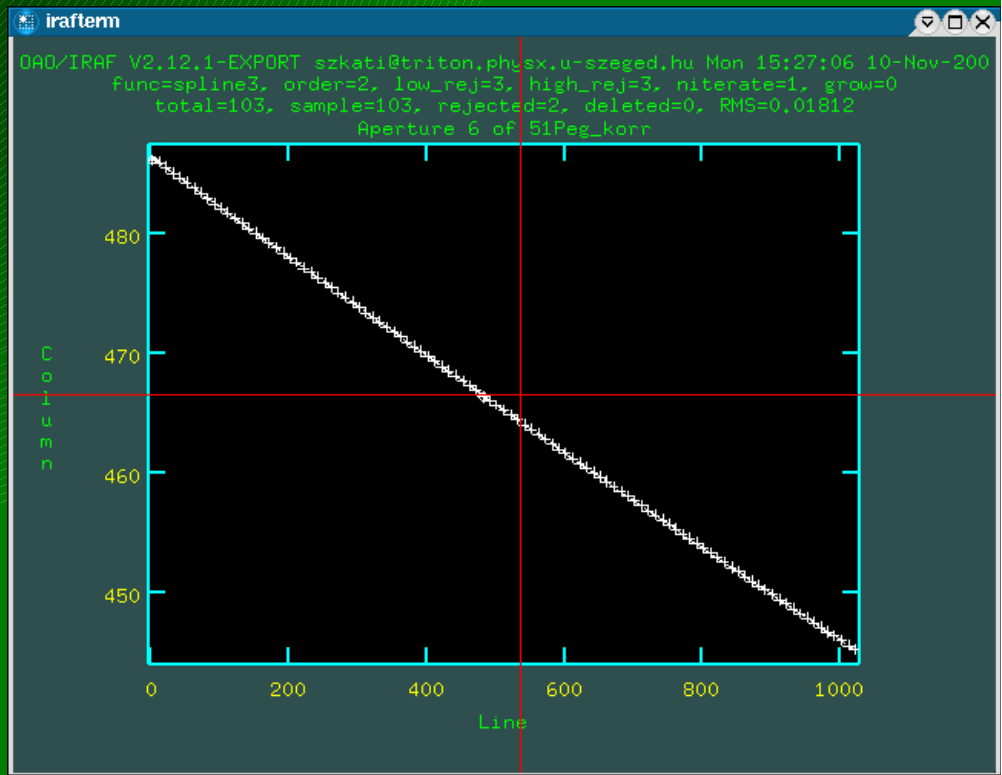

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:26:34 10-Nov-200
func=spline3, order=2, low_rej=3, high_rej=3, niterate=1, grow=0
total=103, sample=103, rejected=2, deleted=0, RMS=0.01875
Aperture 2 of 51Peg_korr
Column
Line
130
120
110
100
0
200
400
600
800
1000

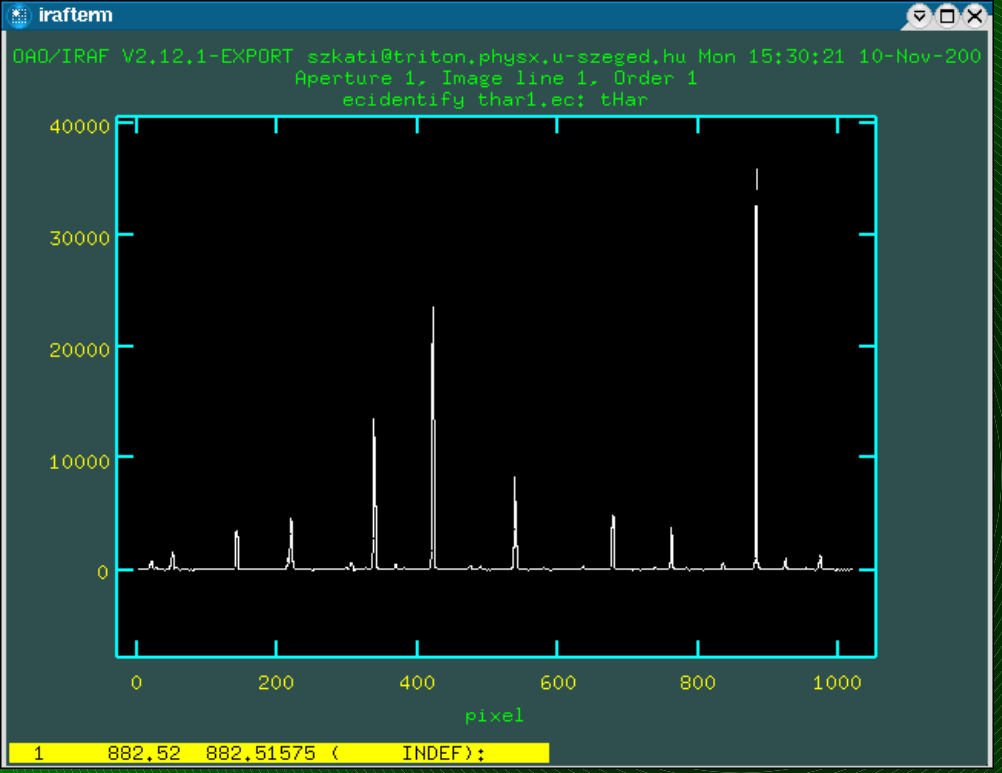

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:26:42 10-Nov-200
func=spline3, order=2, low_rej=3, high_rej=3, niterate=1, grow=0
total=103, sample=103, rejected=3, deleted=0, RMS=0.02122
Aperture 3 of 51Peg_korr
Column
Line
220
210
200
190
0
200
400
600
800
1000

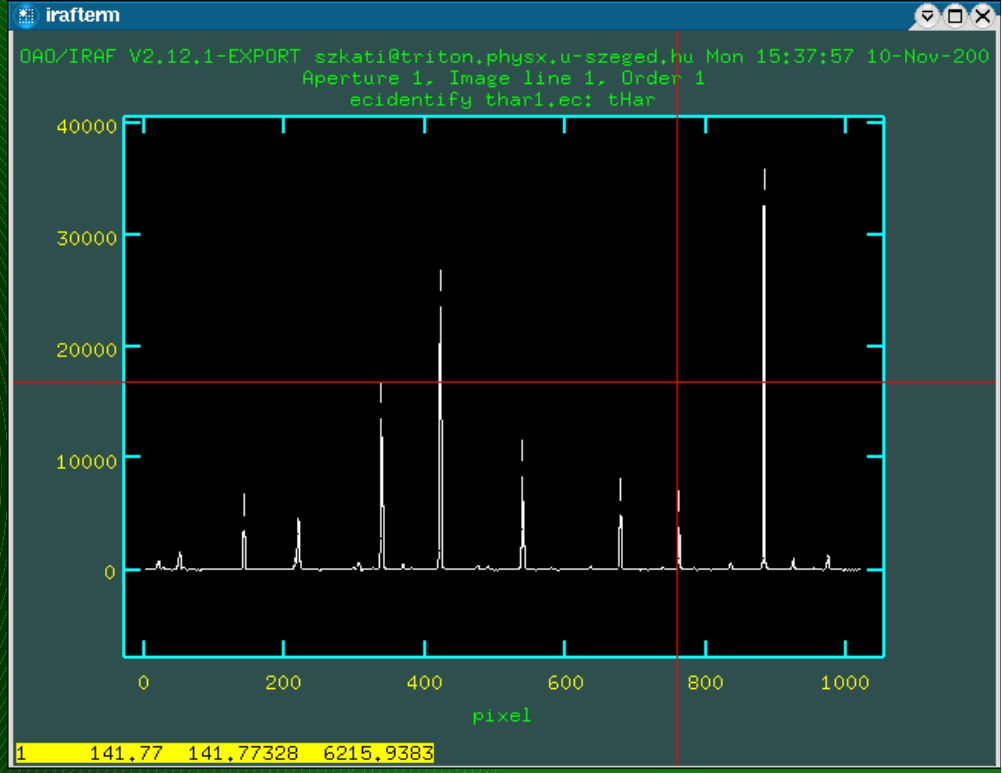
Apertúra

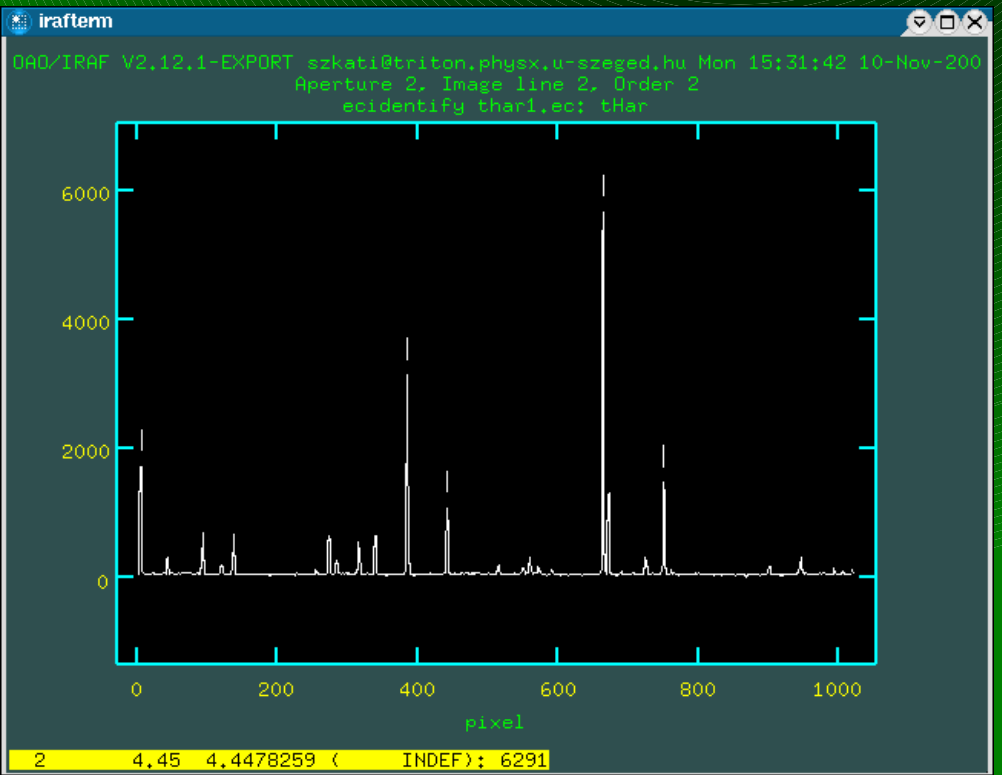

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:26:49 10-Nov-200
func=spline3, order=2, low_rej=3, high_rej=3, niterate=1, grow=0
total=103, sample=103, rejected=2, deleted=0, RMS=0.01896
Aperture 4 of 51Peg_korr
300
290
280
270
Column
0
200
400
600
800
1000
Line

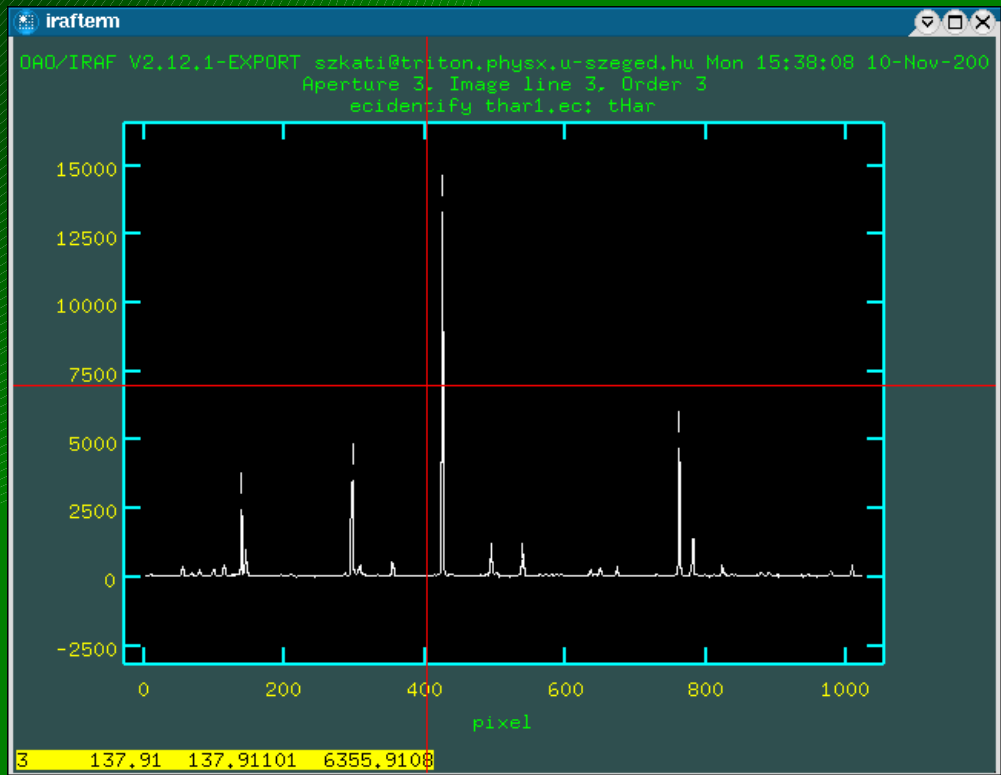

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:26:58 10-Nov-200
func=spline3, order=2, low_rej=3, high_rej=3, niterate=1, grow=0
total=103, sample=103, rejected=1, deleted=0, RMS=0.01975
Aperture 5 of 51Peg_korr
390
380
370
360
Column
0
200
400
600
800
1000
Line
Fit curve to aperture 6 of 51Peg_korr interactively (yes):


irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:27:06 10-Nov-200
func=spline3, order=2, low_rej=3, high_rej=3, niterate=1, grow=0
total=103, sample=103, rejected=2, deleted=0, RMS=0.01812
Aperture 6 of 51Peg_korr
480
470
460
450
Column
0
200
400
600
800
1000
Line

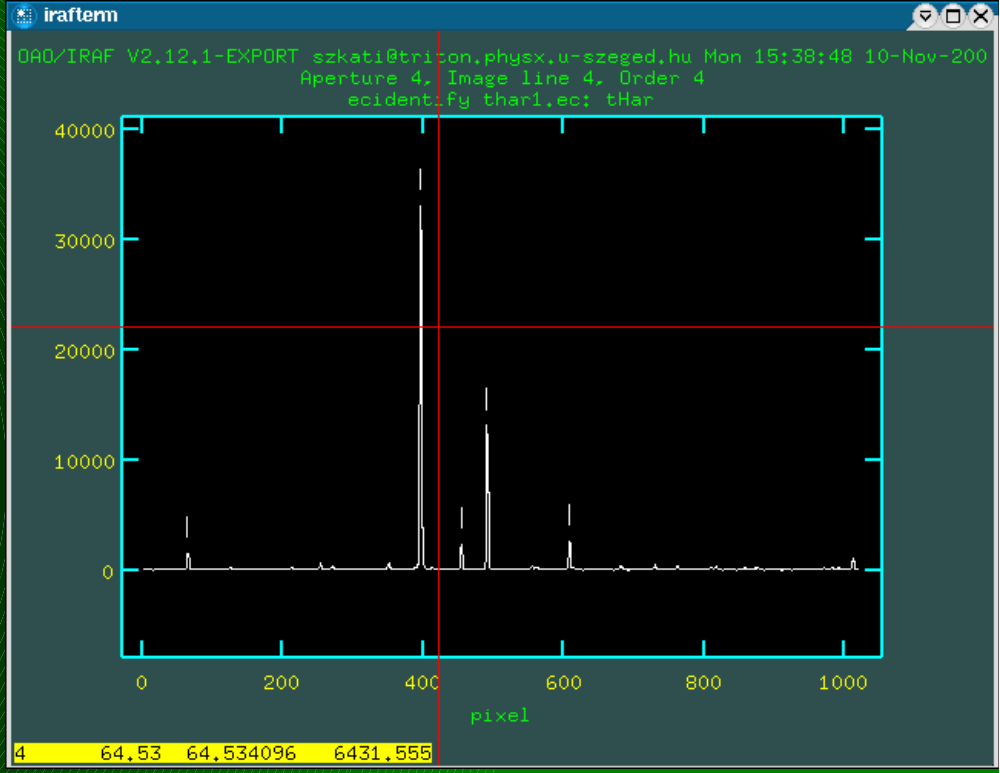

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:30:21 10-Nov-200
Aperture 1, Image line 1, Order 1
ecidentify thar1.ec: tHar
40000
30000
20000
10000
0
0
200
400
600
800
1000
pixel
1 882.52 882.51575 (INDEF):

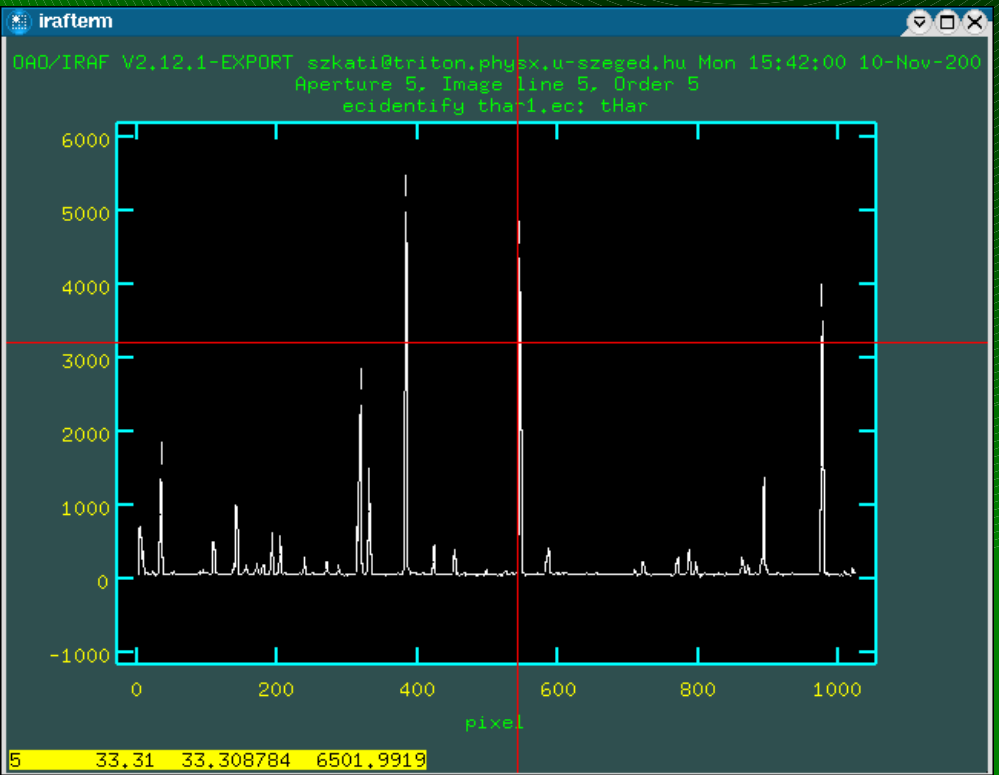

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:37:57 10-Nov-200
Aperture 1, Image line 1, Order 1
ecidentify thar1.ec: tHar
40000
30000
20000
10000
0
0
200
400
600
800
1000
pixel
1 141.77 141.77328 6215.9383

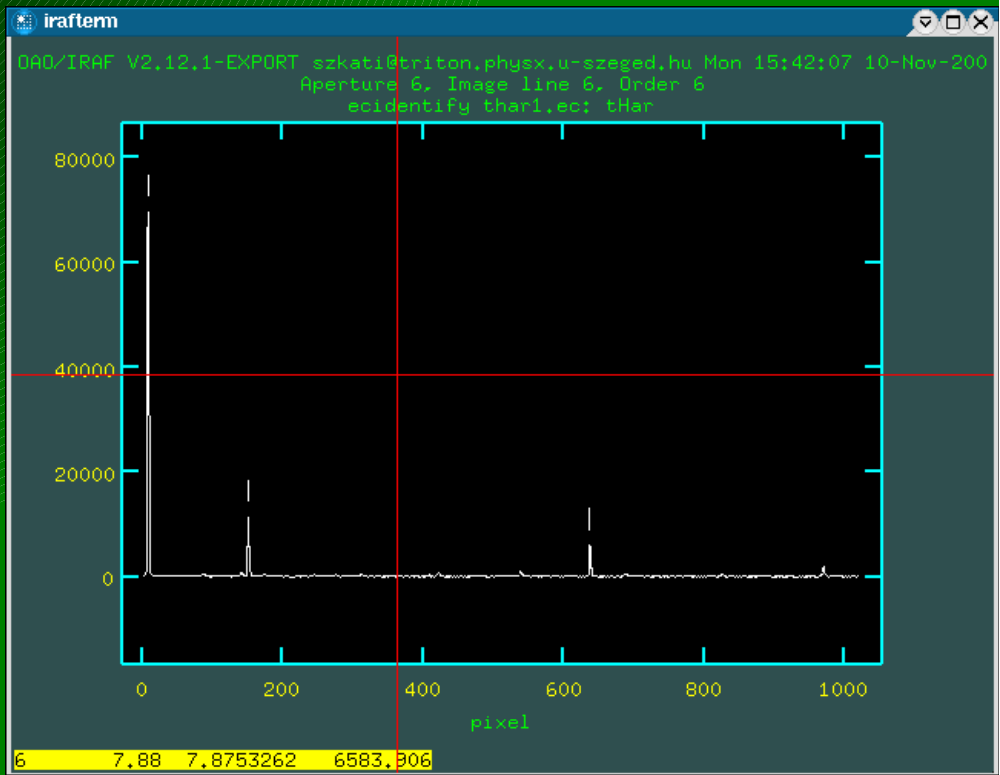

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:31:42 10-Nov-200
Aperture 2, Image line 2, Order 2
ecidentify thar1.ec: tHar
6000
4000
2000
0
0
200
400
600
800
1000
pixel
2 4.45 4.4478259 (INDEF): 6291


irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:38:08 10-Nov-200
Aperture 3, Image line 3, Order 3
ecidentify thar1.ec: tHar
15000
12500
10000
7500
5000
2500
0
-2500
0
200
400
600
800
1000
pixel
3 137.91 137.91101 6355.9108

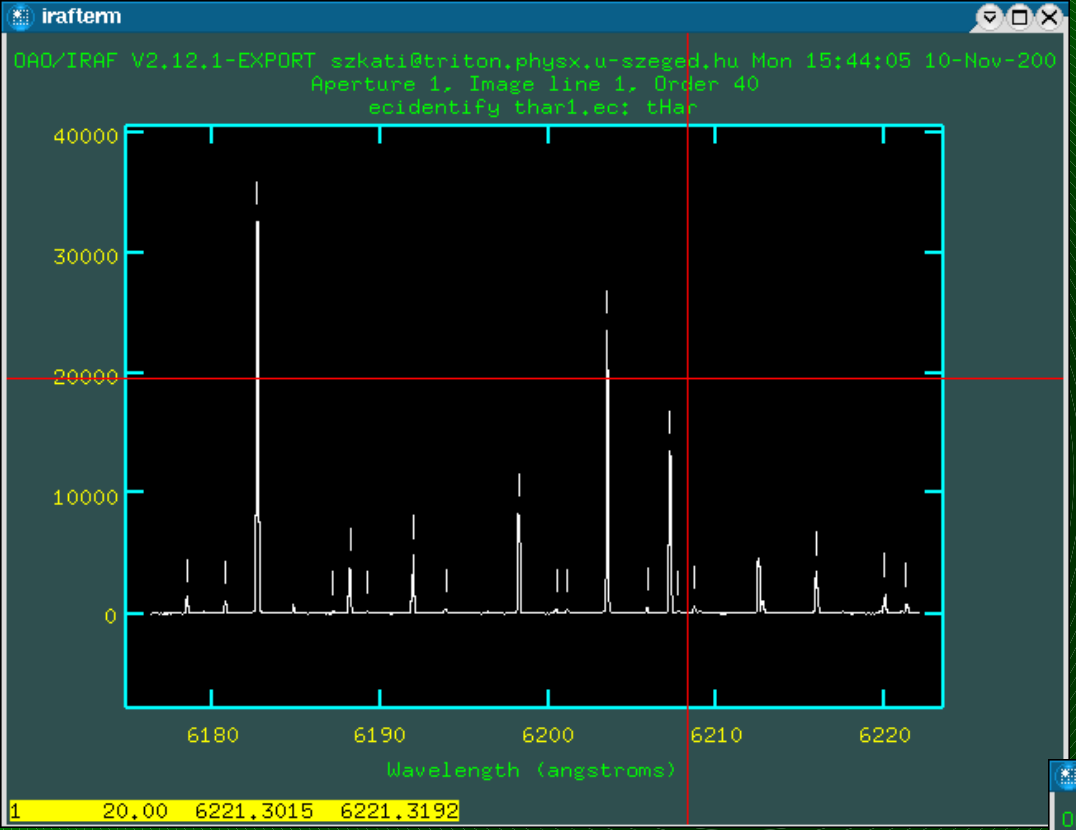
Spektrállámpa

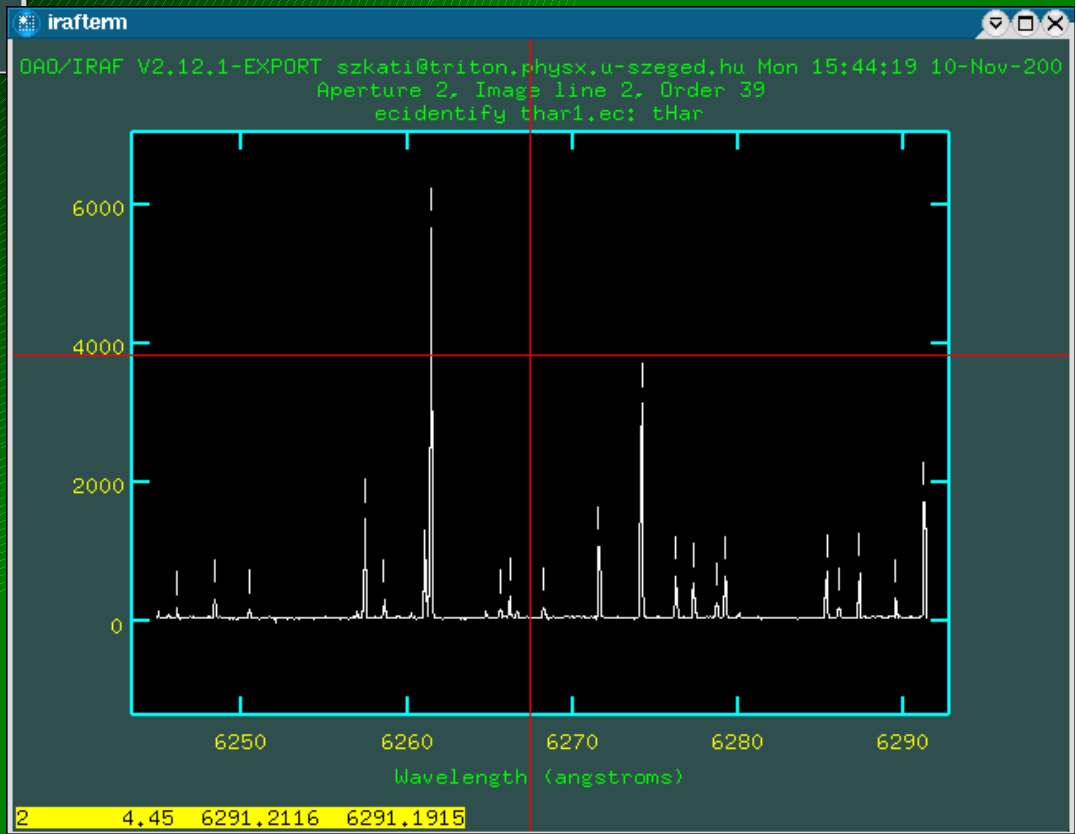




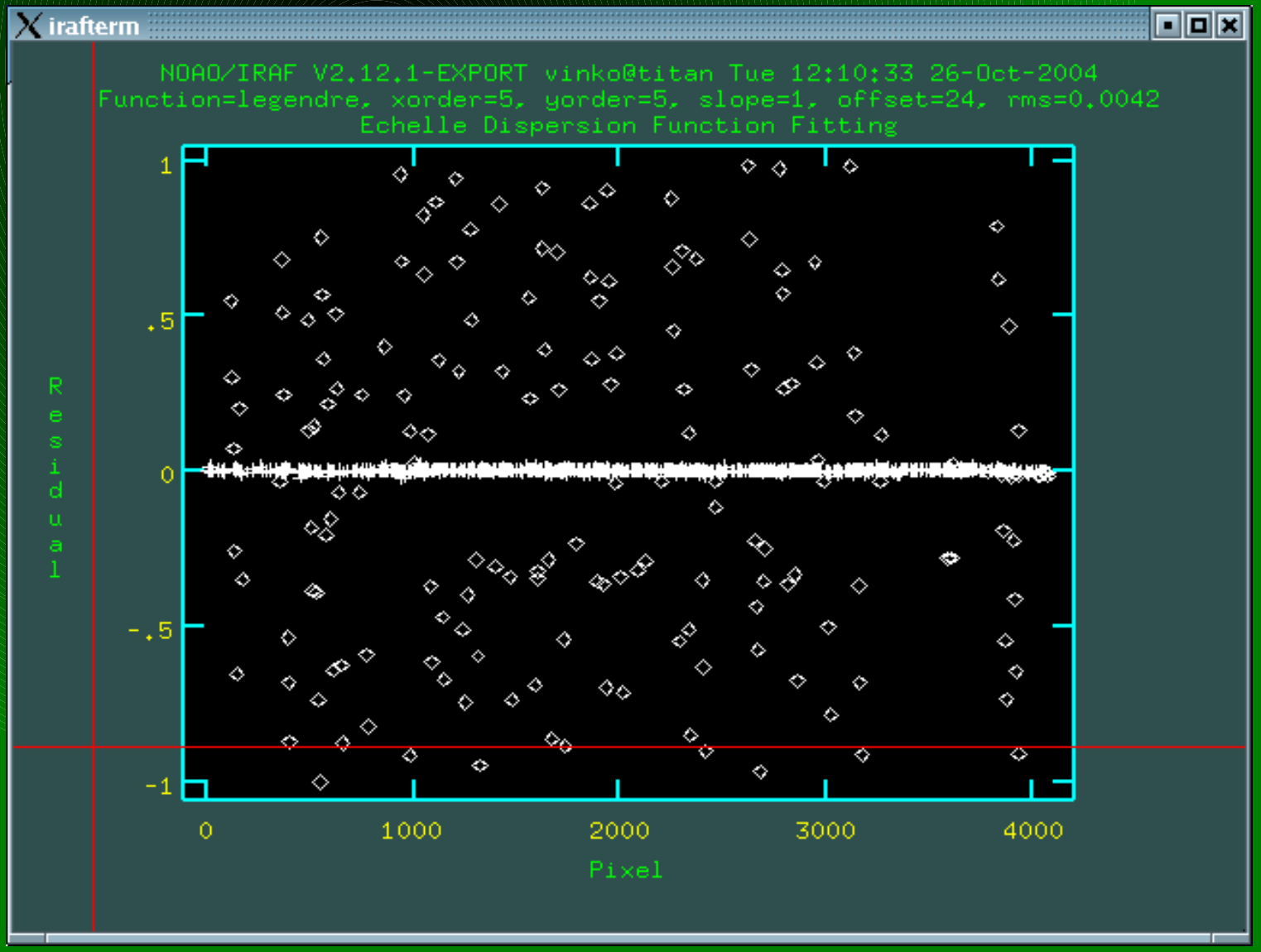


Spektrállámpa

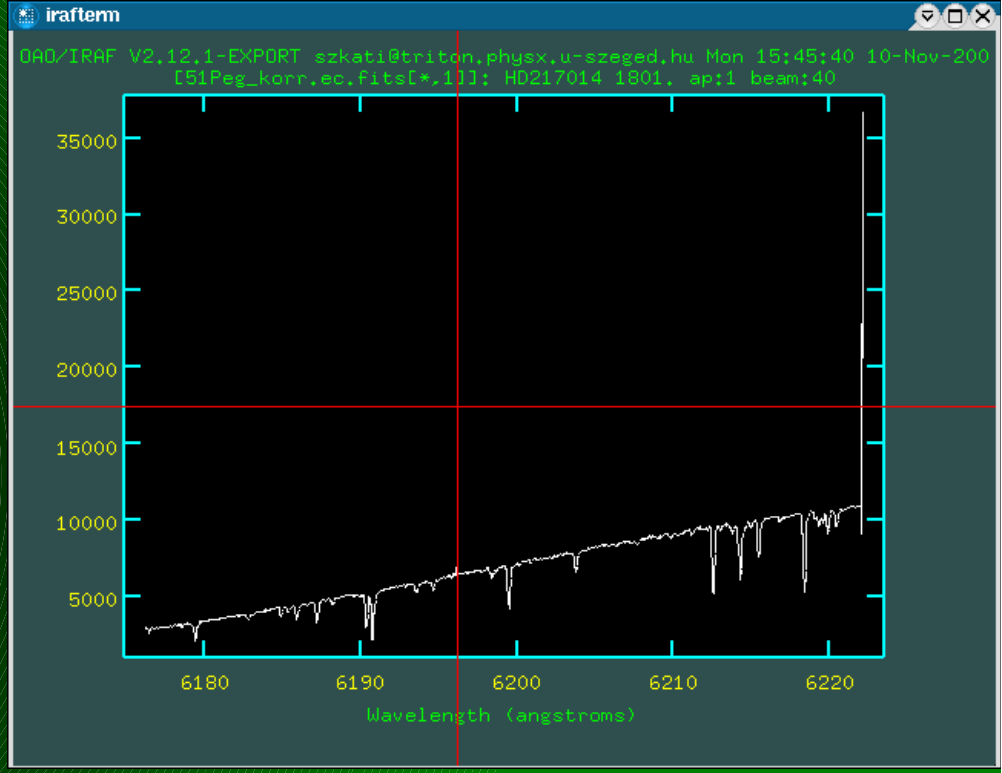


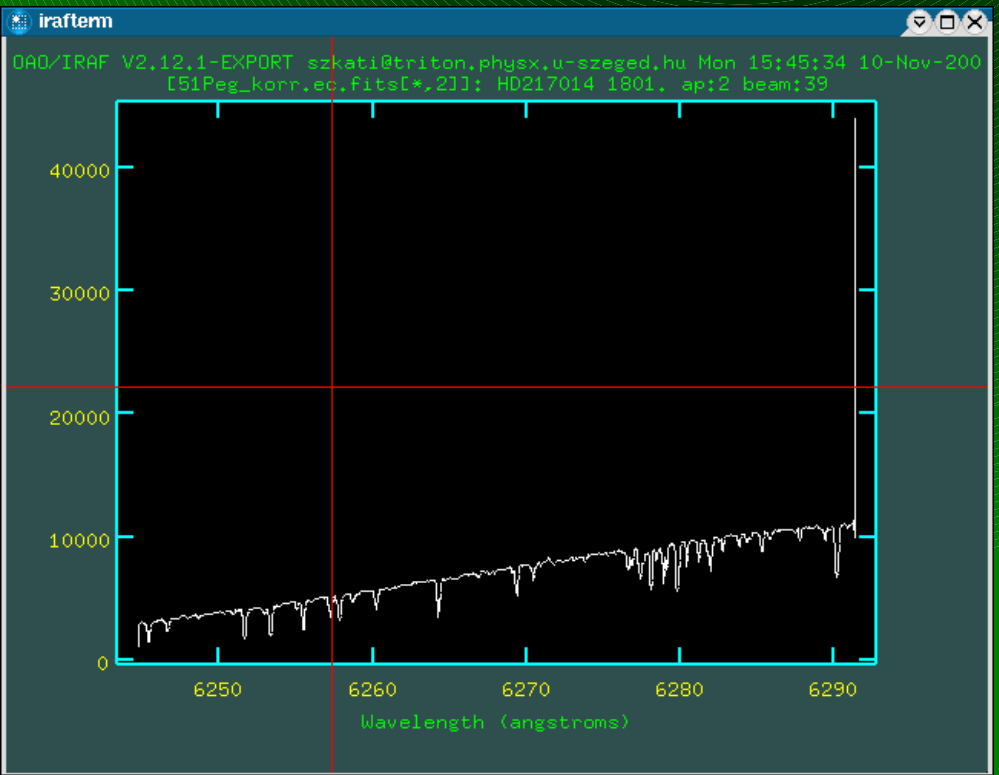


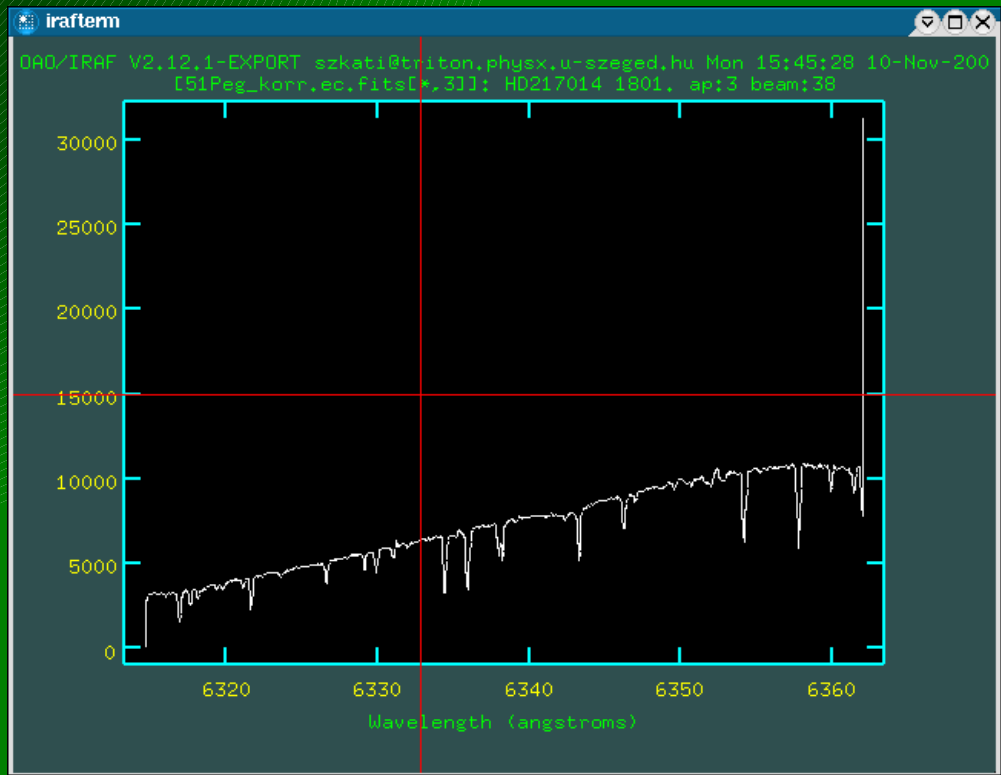
Echelle diszp. függvény illesztése



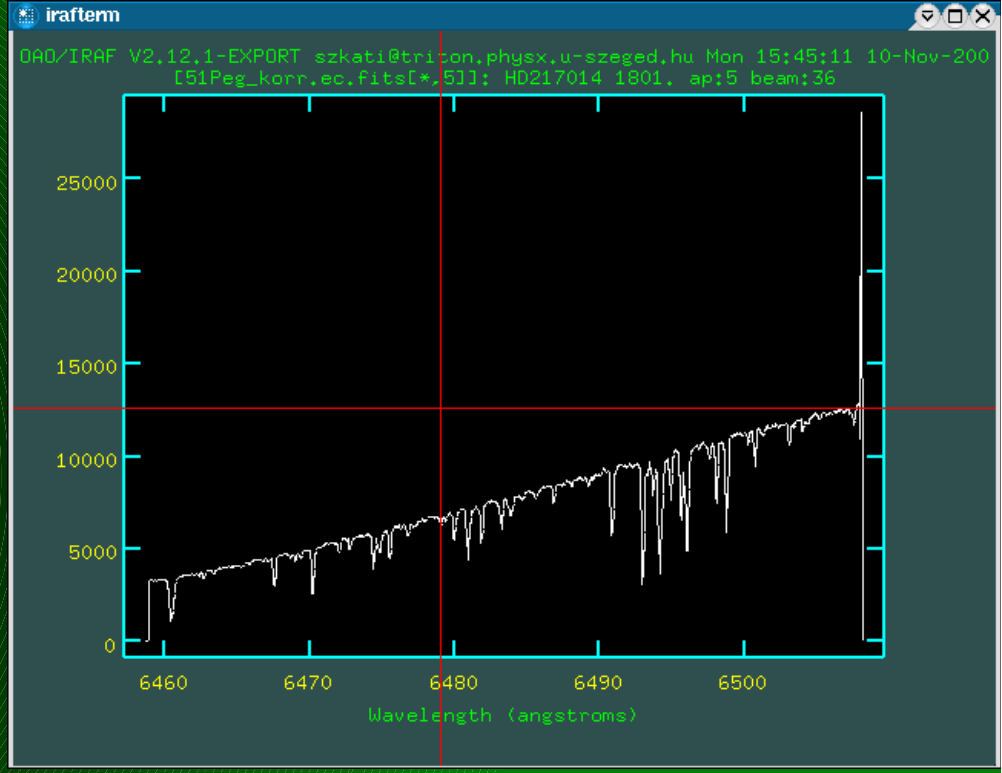
Hullámhossz-kalibrált spektrum

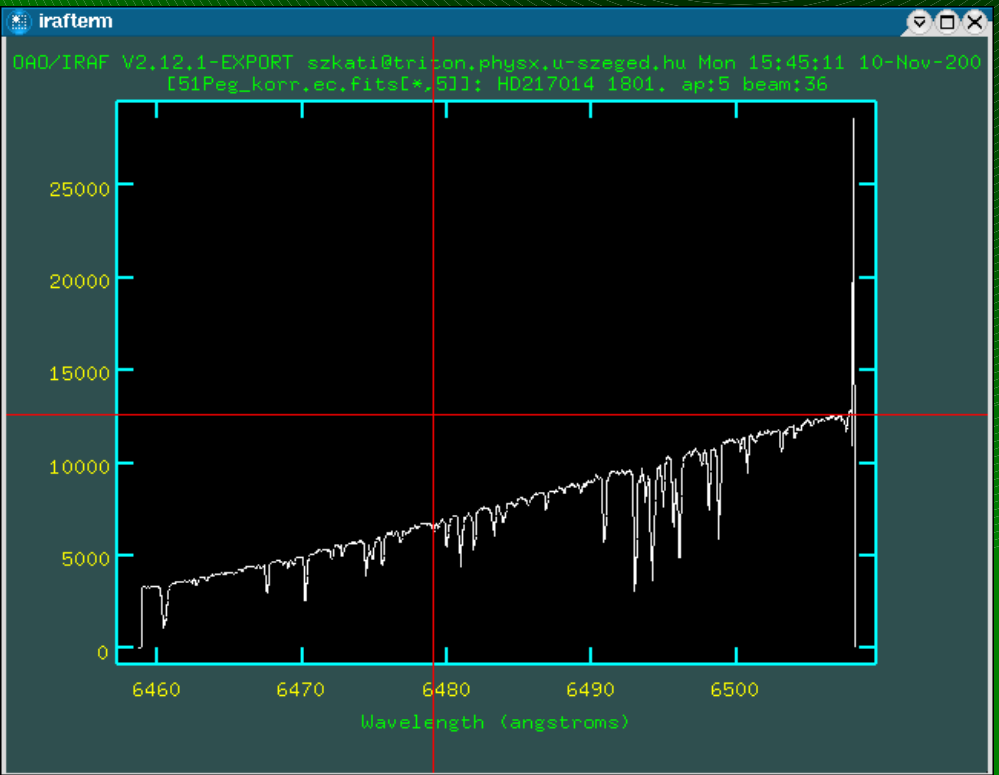


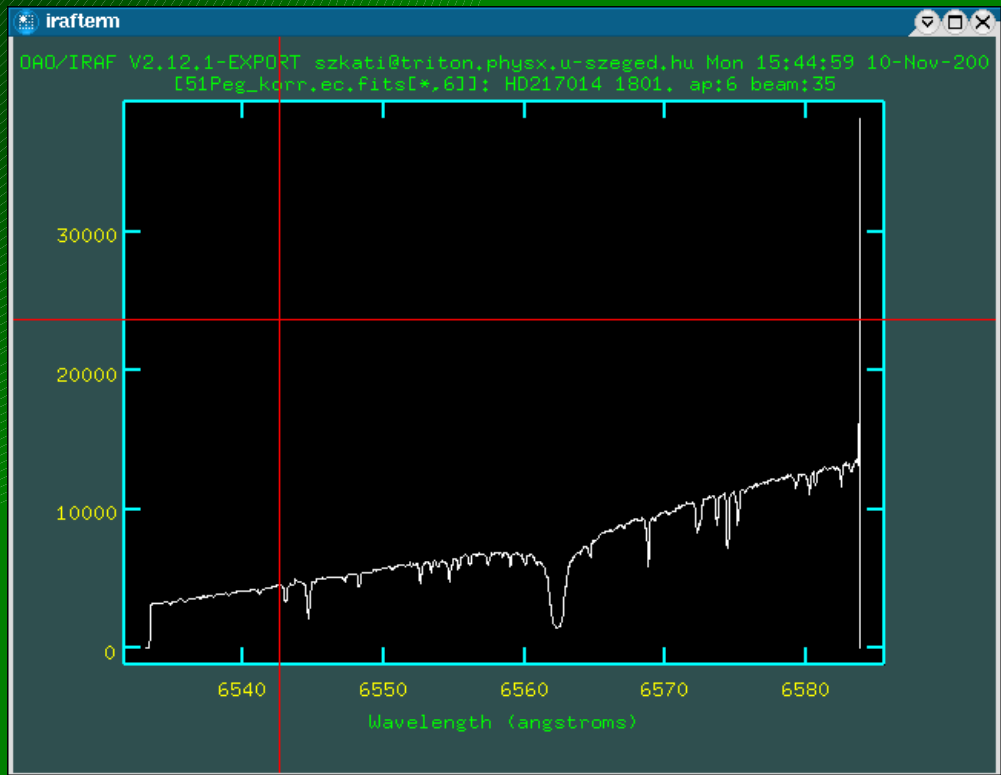




Hullámhossz-kalibrált spektrum

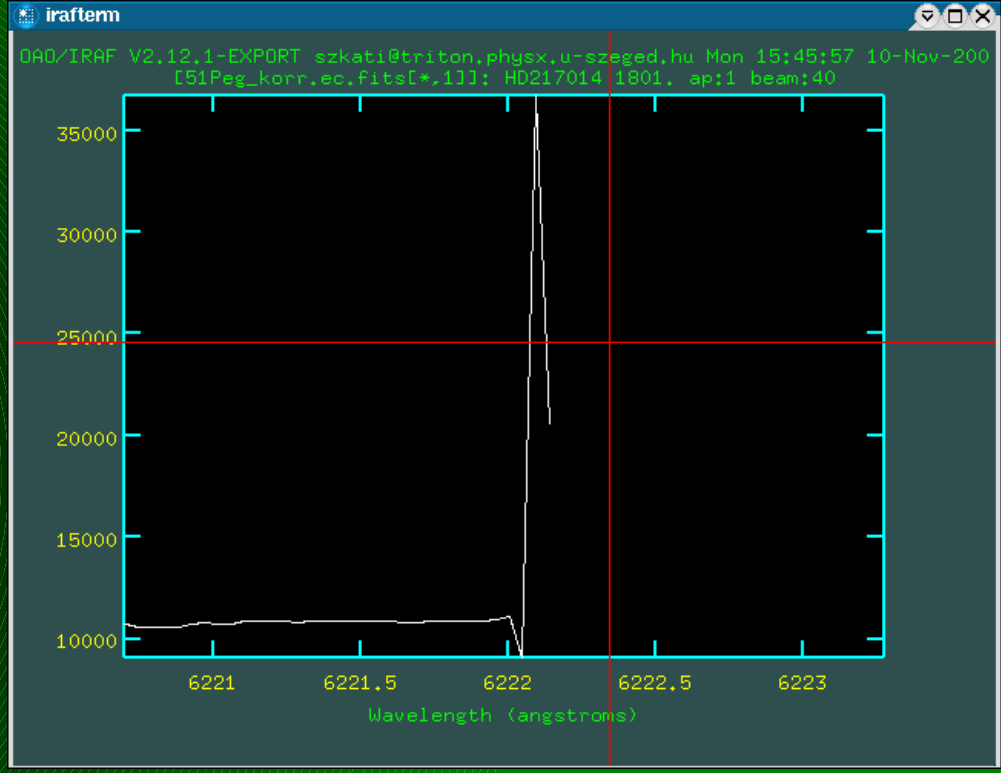


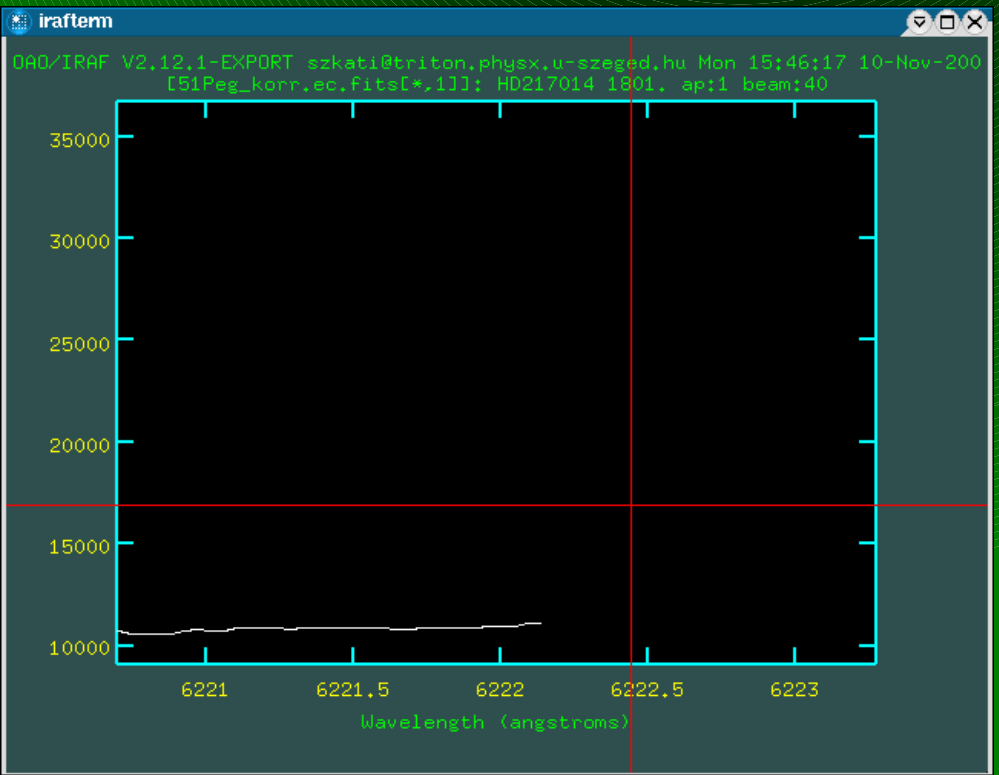


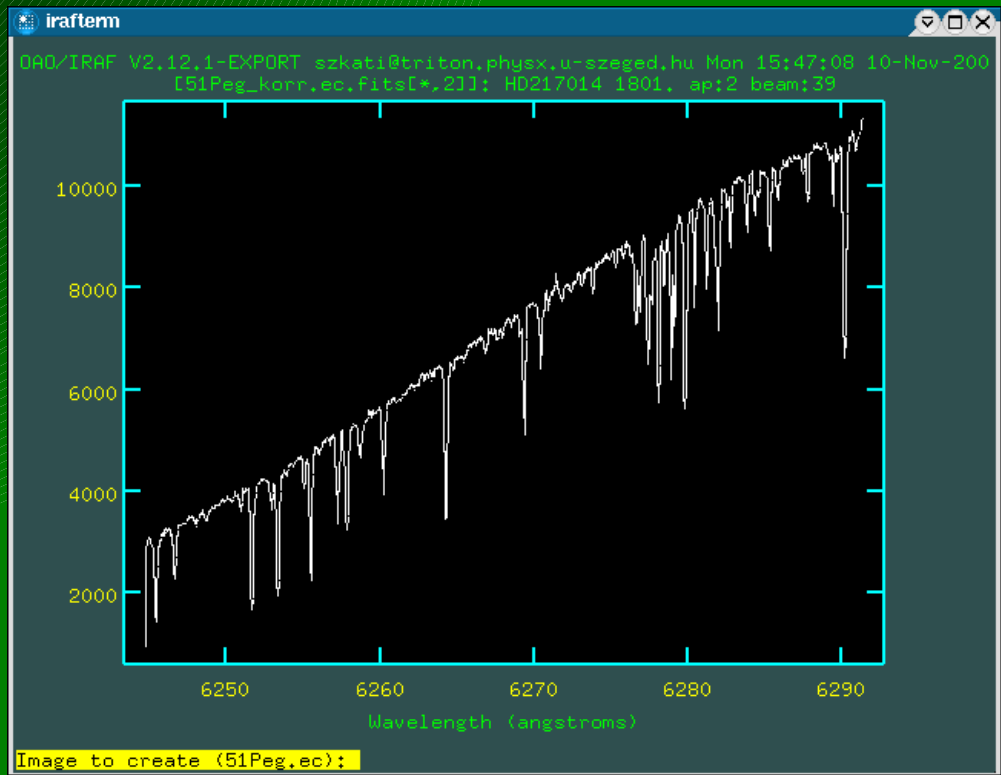


"Javítás"

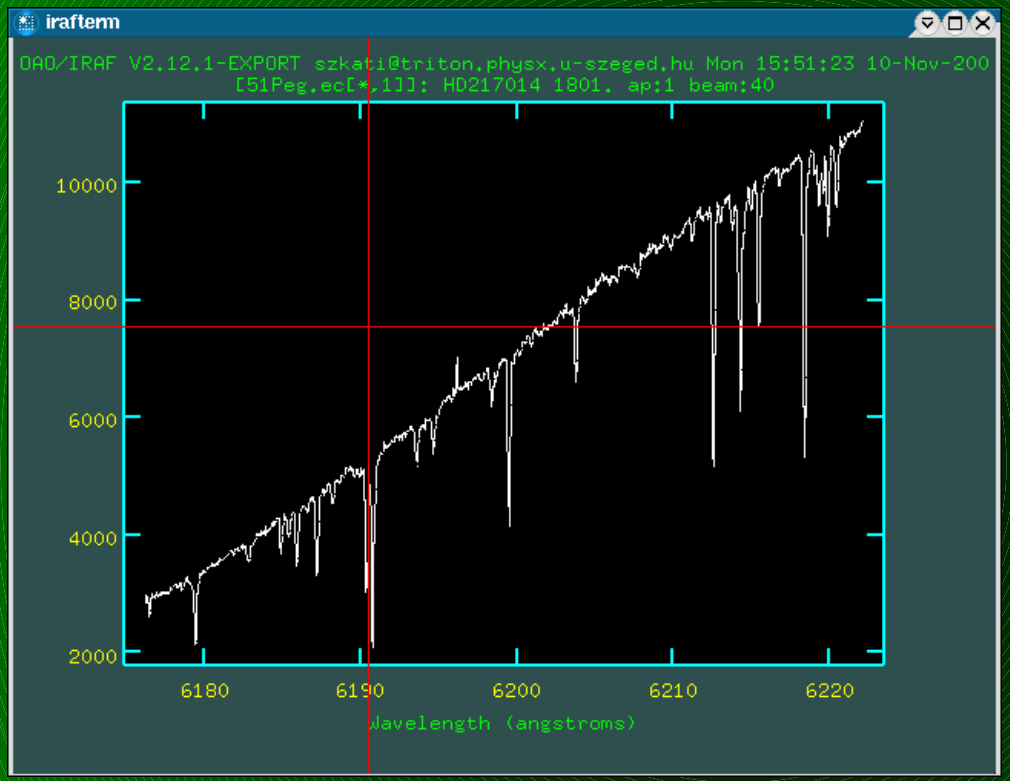
2 x a : nagyítás
j: korrigálás
i: elmentés

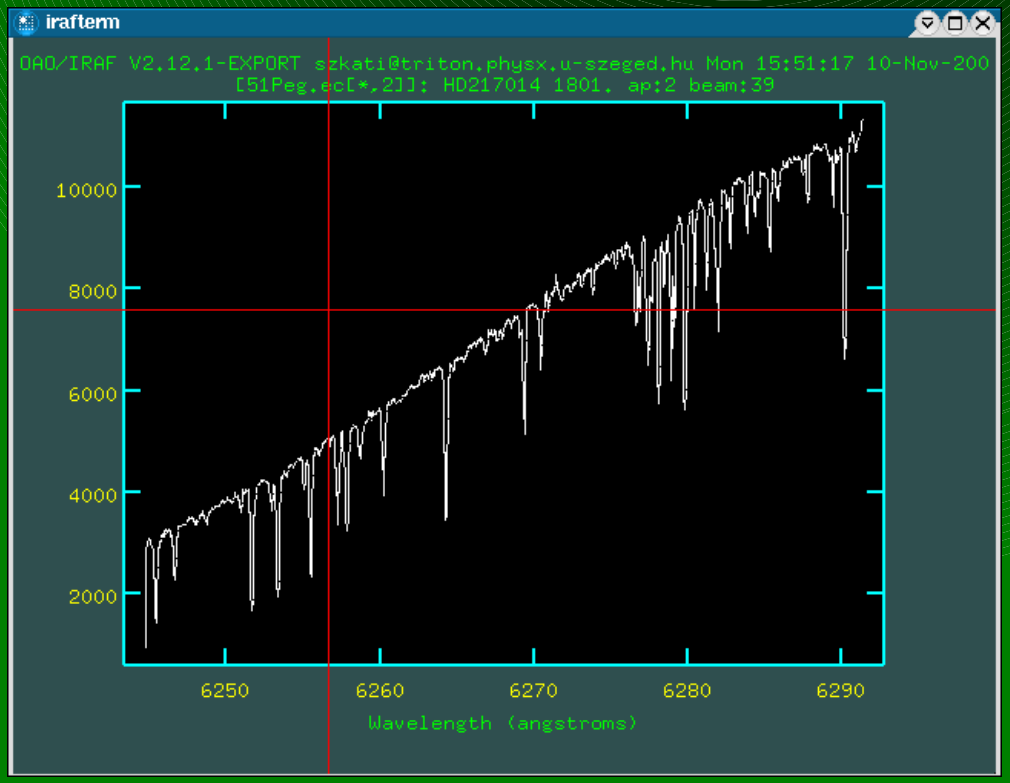


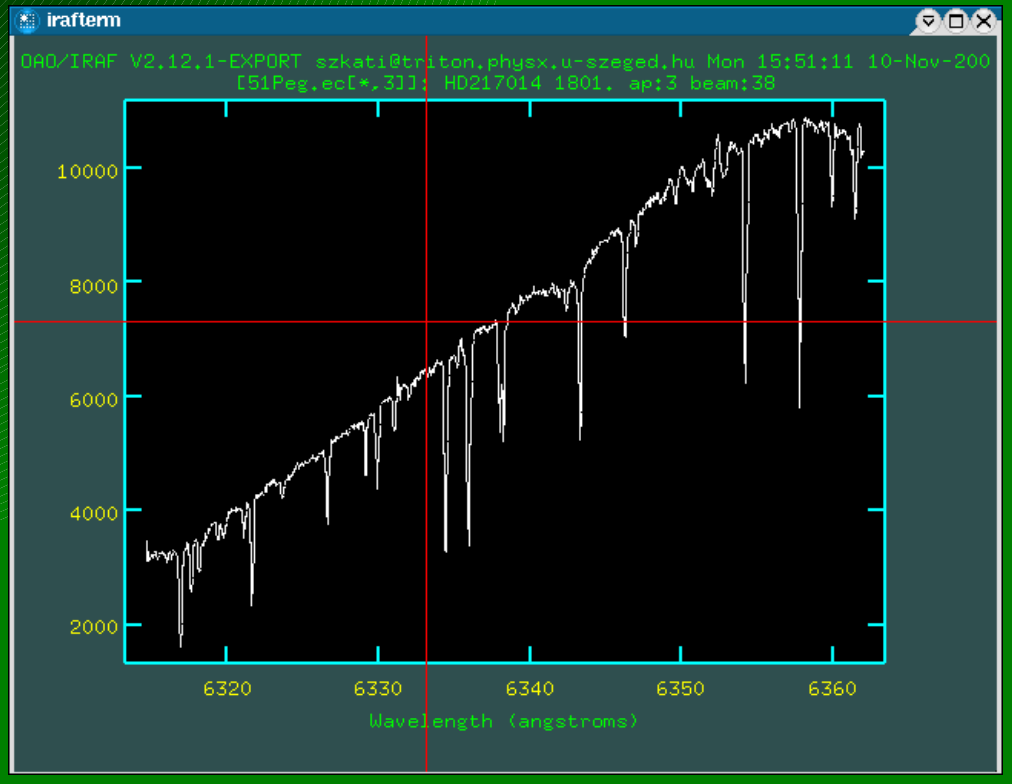




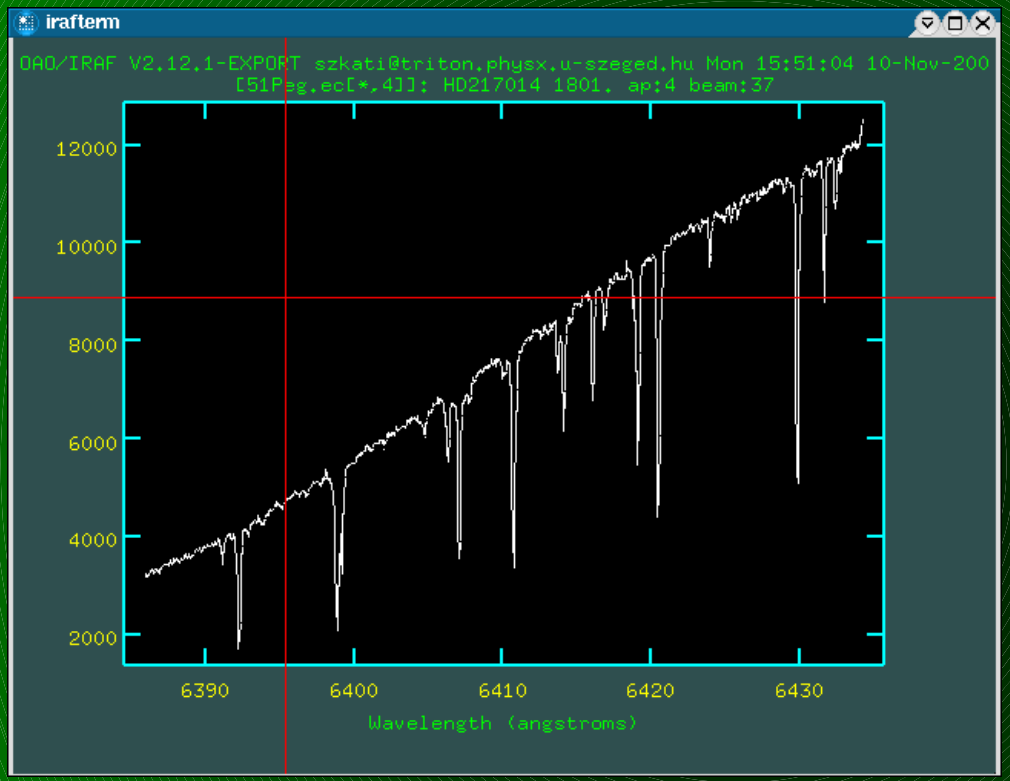
Javított spektrum

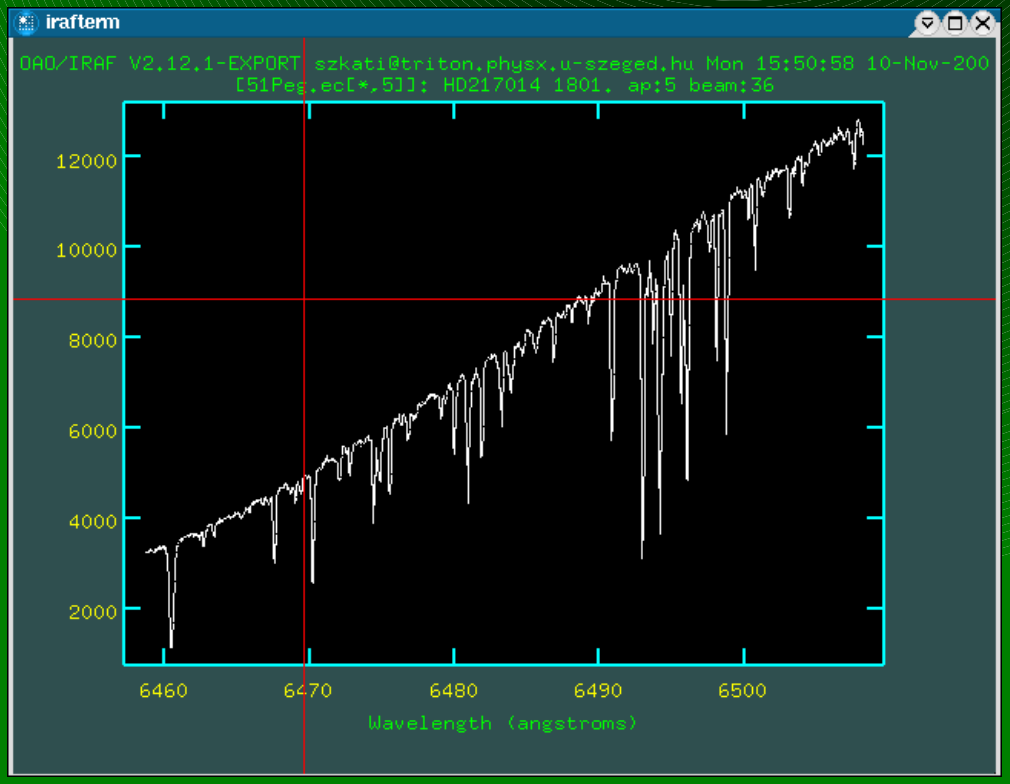


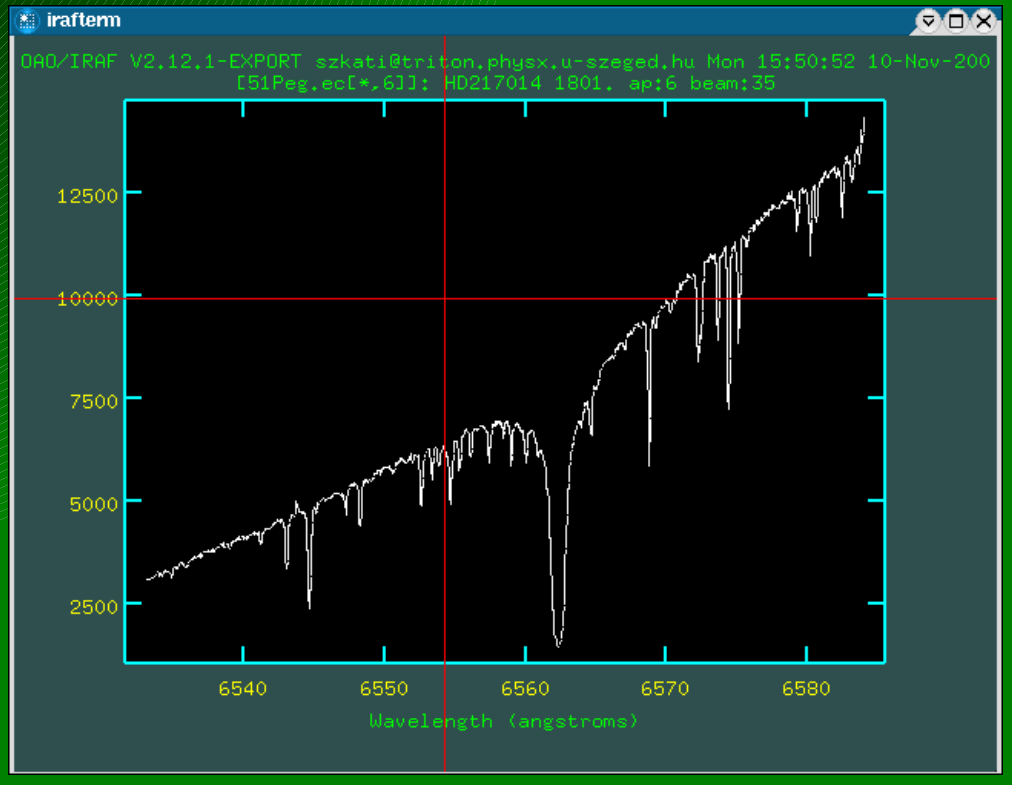




Javított spektrum







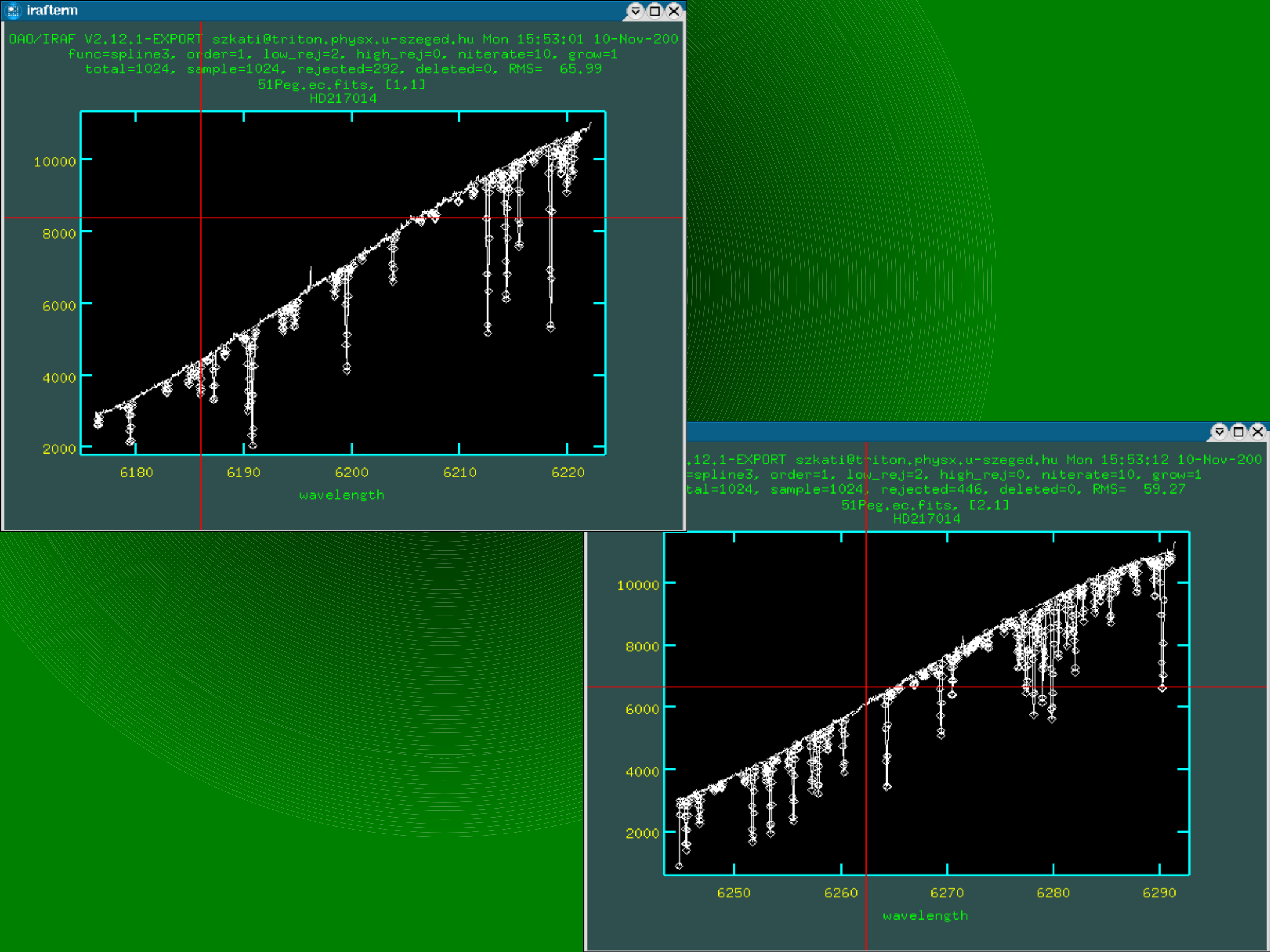
Kontinum normálás

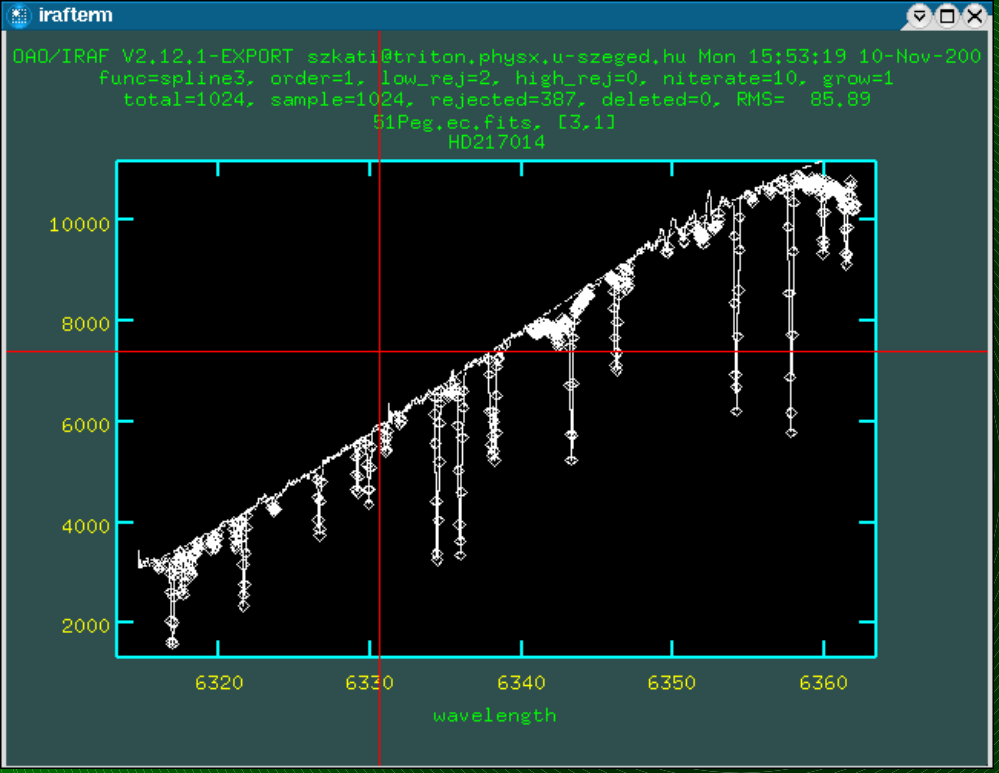
```
szkati@triton:~
                                    I R A F
                    Image Reduction and Analysis Facility
PACKAGE = echelle
   TASK = continuum

input   =              51Peg.ec  Input images
output  =             51Peg.nor  Output images
(lines  =                     *) Image lines to be fit
(bands  =                     1) Image bands to be fit
(type   =                 ratio) Type of output
(replace=                    no) Replace rejected points by fit?
(wavesca=                   yes) Scale the X axis with wavelength?
(logscal=                    no) Take the log (base 10) of both axes?
(overrid=                    no) Override previously fit lines?
(listonl=                    no) List fit but don't modify any images?
(logfile=               logfile) List of log files
(interac=                   yes) Set fitting parameters interactively?
(sample =                     *) Sample points to use in fit
(naverag=                     1) Number of points in sample averaging
(functio=               spline3) Fitting function
(order  =                     1) Order of fitting function
(low_rej=                    2.) Low rejection in sigma of fit
More
                                                         ESC-? for HELP
```

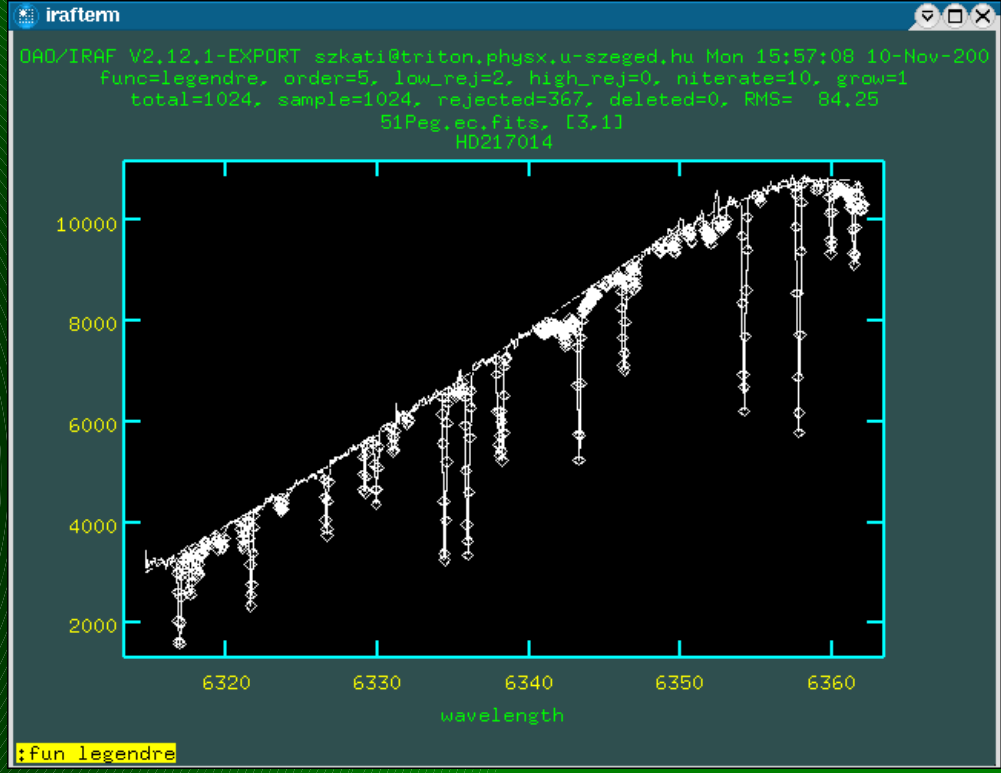
Kontinum normálás

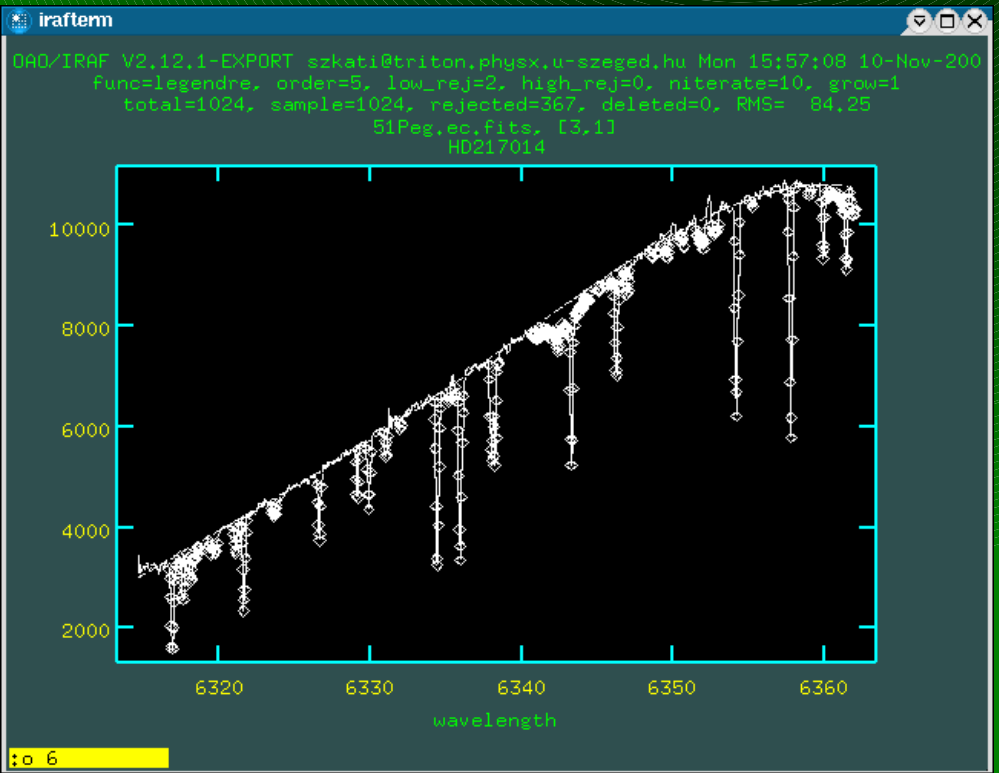
```
szkati@triton:~
                                   I R A F
                    Image Reduction and Analysis Facility
PACKAGE = echelle
   TASK = continuum
More
(high_re=                  0.) High rejection in sigma of fit
(niterat=                  10) Number of rejection iterations
(grow   =                  1.) Rejection growing radius in pixels
(markrej=                 yes) Mark rejected points?
(graphic=            stdgraph) Graphics output device
(cursor =                    ) Graphics cursor input
ask     =                 yes
(mode   =                  ql)

                                                         ESC-? for HELP
```

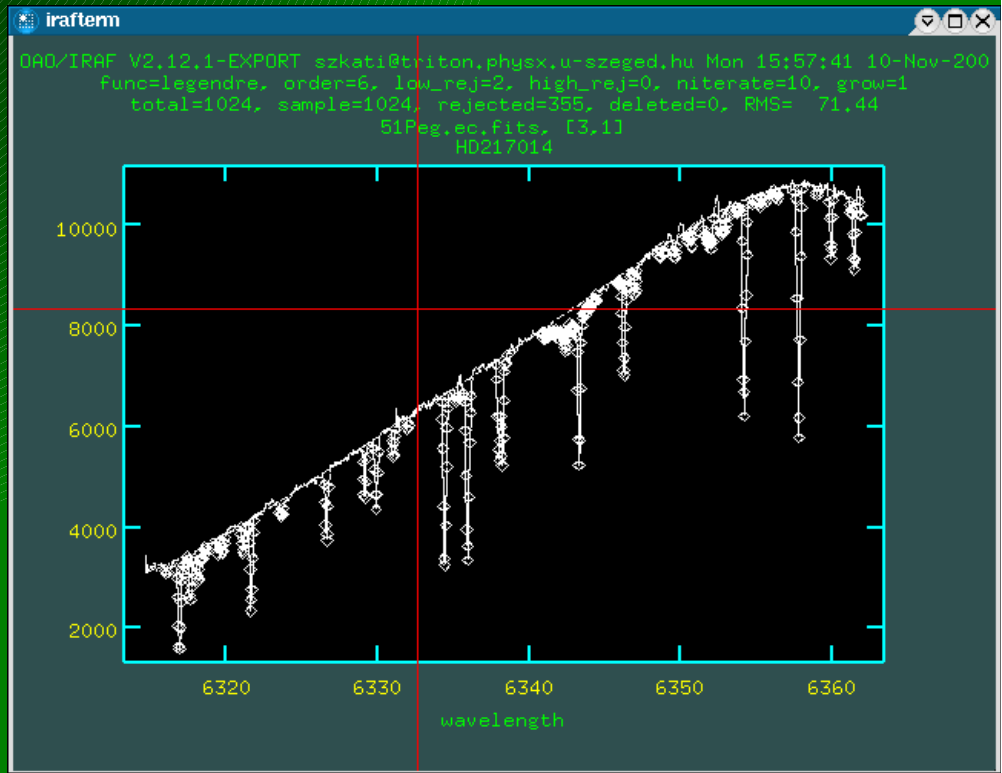
iraftenn
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:53:01 10-Nov-200
func=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=292, deleted=0, RMS= 65.99
51Peg.ec.fits, [1,1]
HD217014
10000
8000
6000
4000
2000
6180
6190
6200
6210
6220
wavelength


.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:53:12 10-Nov-200
=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
tal=1024, sample=1024, rejected=446, deleted=0, RMS= 59.27
51Peg.ec.fits, [2,1]
HD217014
10000
8000
6000
4000
2000
6250
6260
6270
6280
6290
wavelength


irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:53:19 10-Nov-200
func=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=387, deleted=0, RMS= 85.89
51Peg.ec.fits, [3,1]
HD217014
10000
8000
6000
4000
2000
6320
6330
6340
6350
6360
wavelength

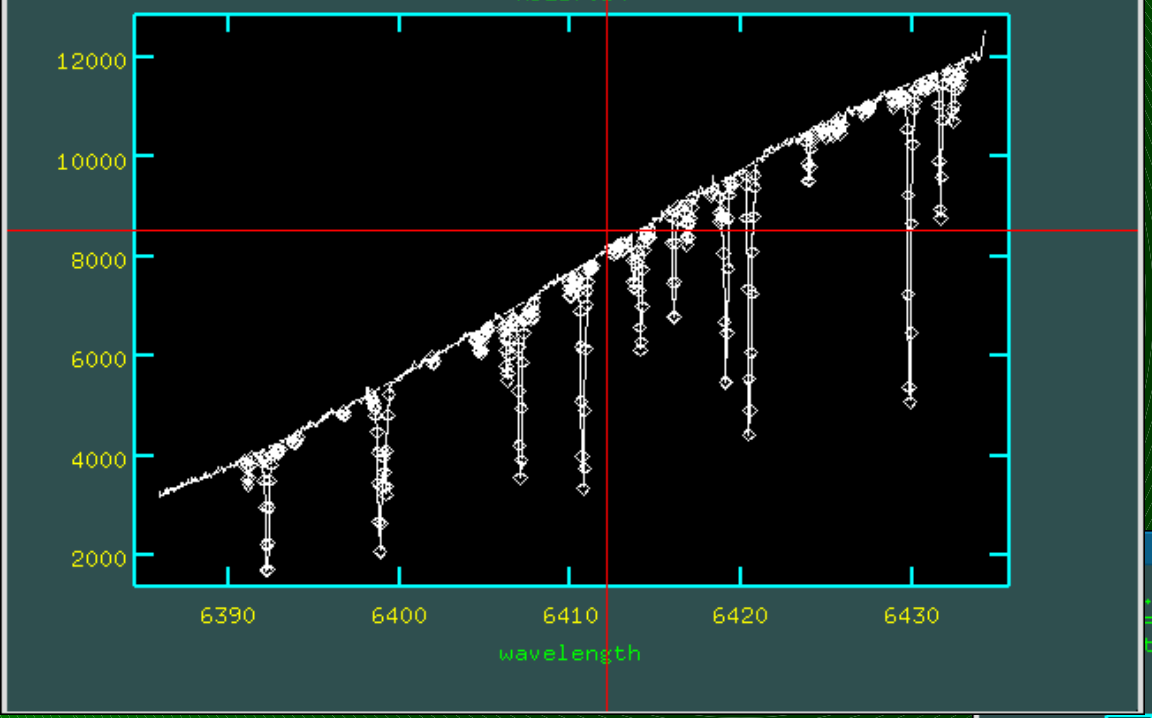

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:57:08 10-Nov-200
func=legendre, order=5, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=367, deleted=0, RMS= 84.25
51Peg.ec.fits, [3,1]
HD217014
10000
8000
6000
4000
2000
6320
6330
6340
6350
6360
wavelength
:fun legendre


irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:57:08 10-Nov-200
func=legendre, order=5, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=367, deleted=0, RMS= 84.25
51Peg.ec.fits, [3,1]
HD217014
10000
8000
6000
4000
2000
6320
6330
6340
6350
6360
wavelength
:o 6

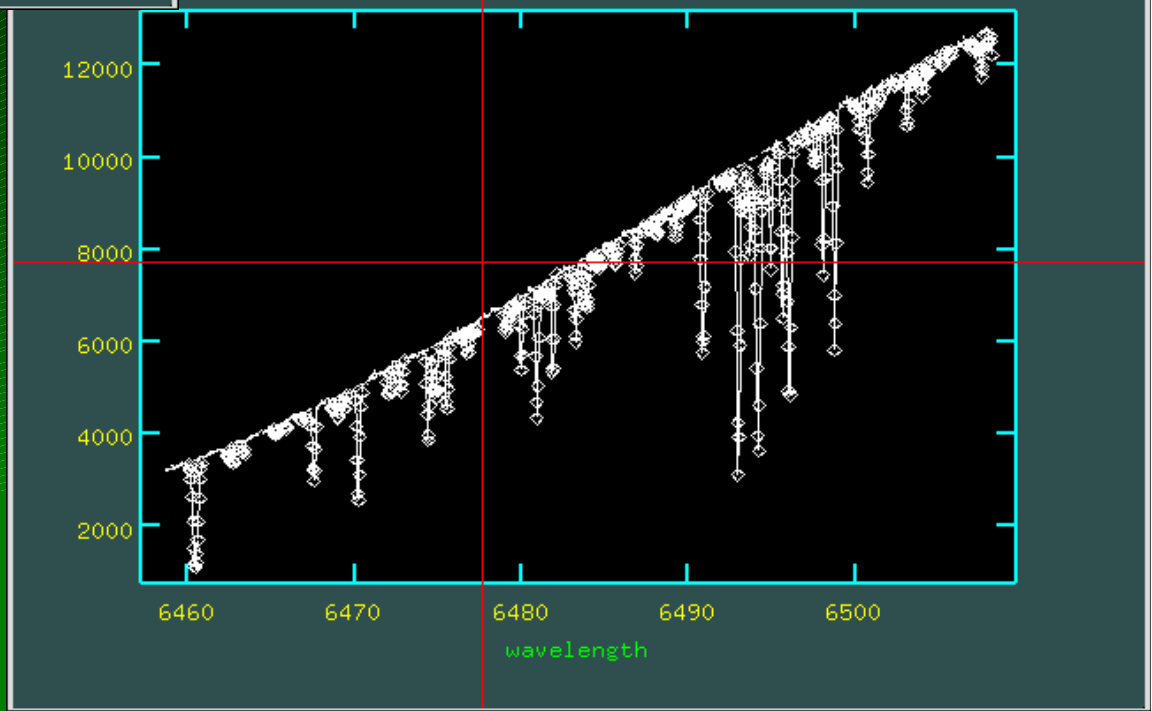

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:57:41 10-Nov-200
func=legendre, order=6, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=355, deleted=0, RMS= 71.44
51Peg.ec.fits, [3,1]
HD217014
10000
8000
6000
4000
2000
6320
6330
6340
6350
6360
wavelength

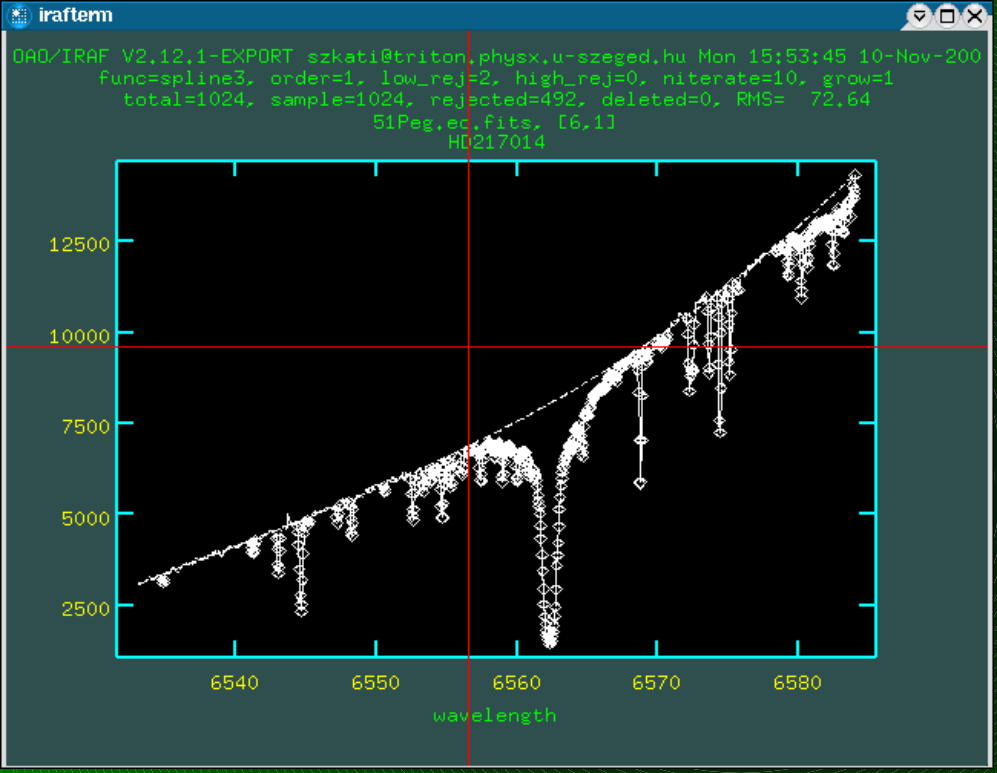
iraftenn

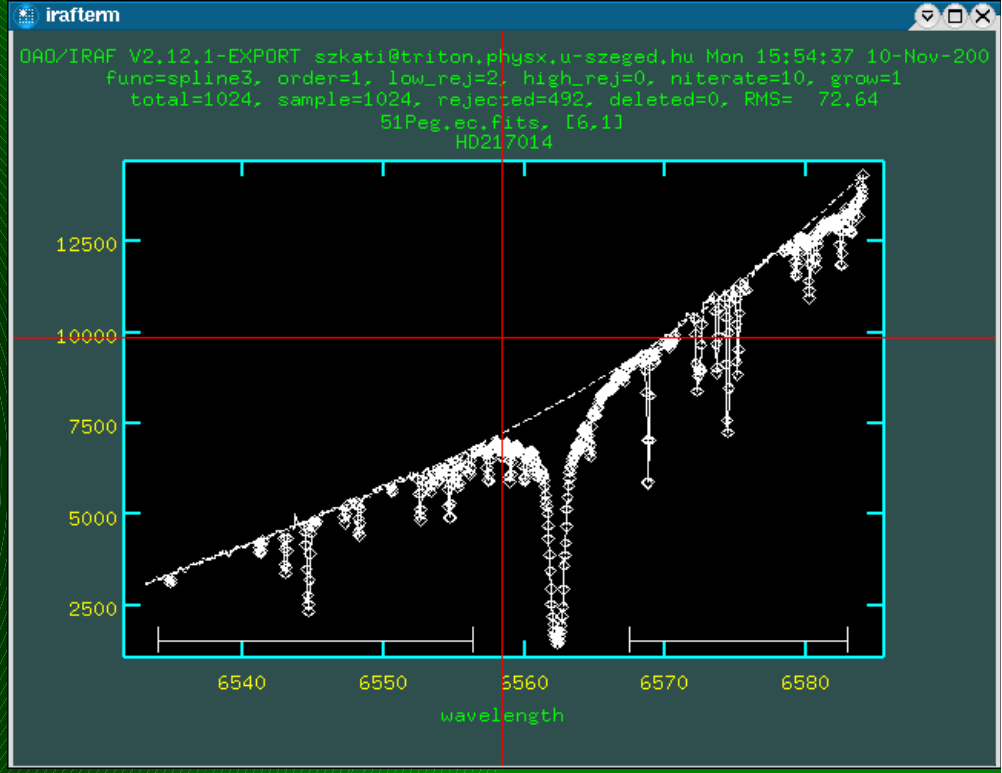
```
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:53:32 10-Nov-200
      func=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
       total=1024, sample=1024, rejected=319, deleted=0, RMS=  62.11
                          51Peg.ec.fits, [4,1]
                              HD217014
```

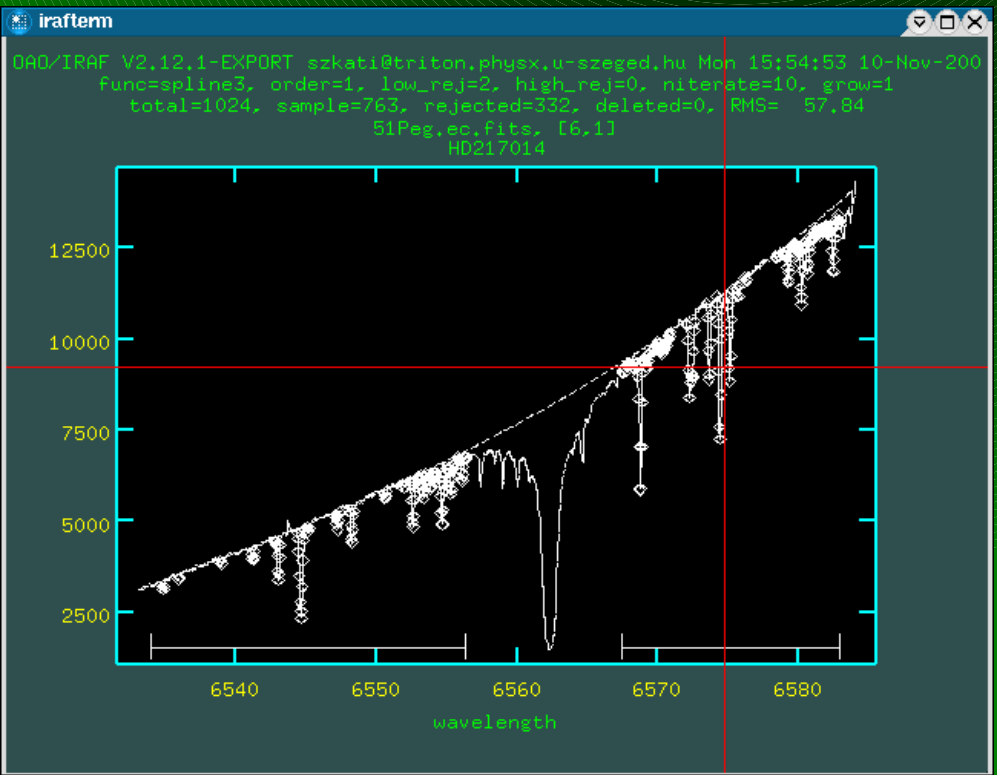


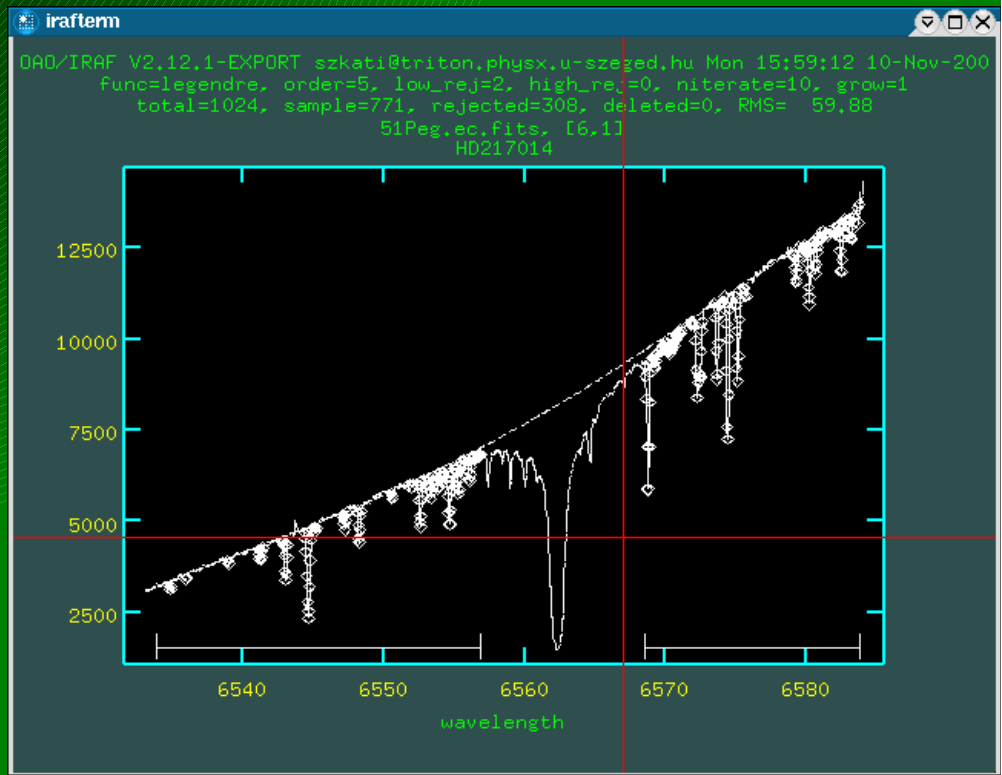

```
.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:53:38 10-Nov-200
=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
tal=1024, sample=1024, rejected=489, deleted=0, RMS=  55.09
                          51Peg.ec.fits, [5,1]
                              HD217014
```



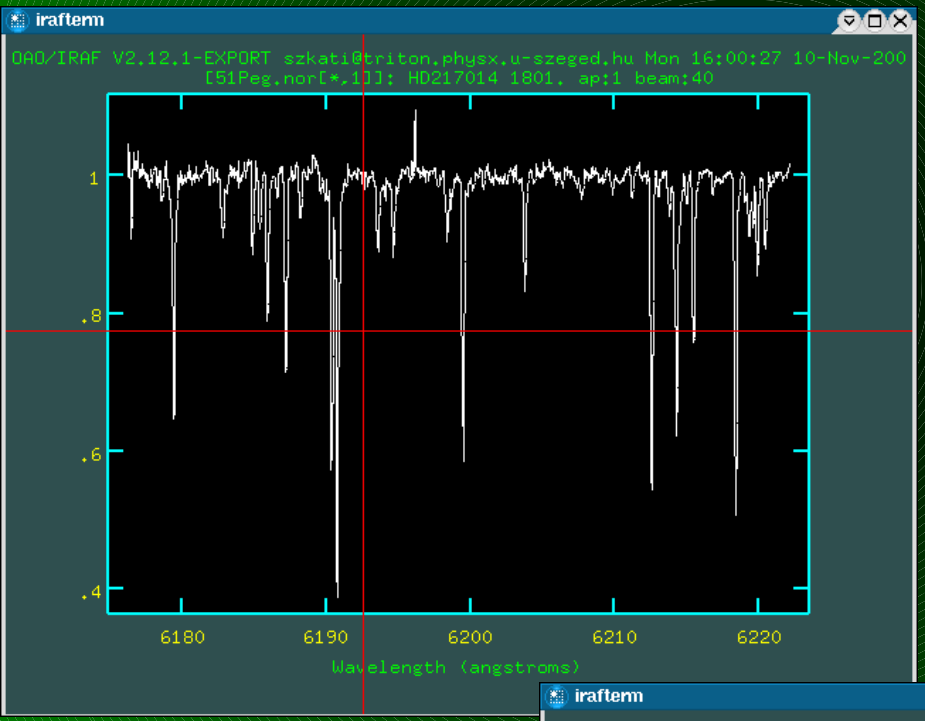

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:53:45 10-Nov-200
func=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=492, deleted=0, RMS= 72.64
51Peg.ec.fits, [6,1]
HD217014
12500
10000
7500
5000
2500
6540
6550
6560
6570
6580
wavelength

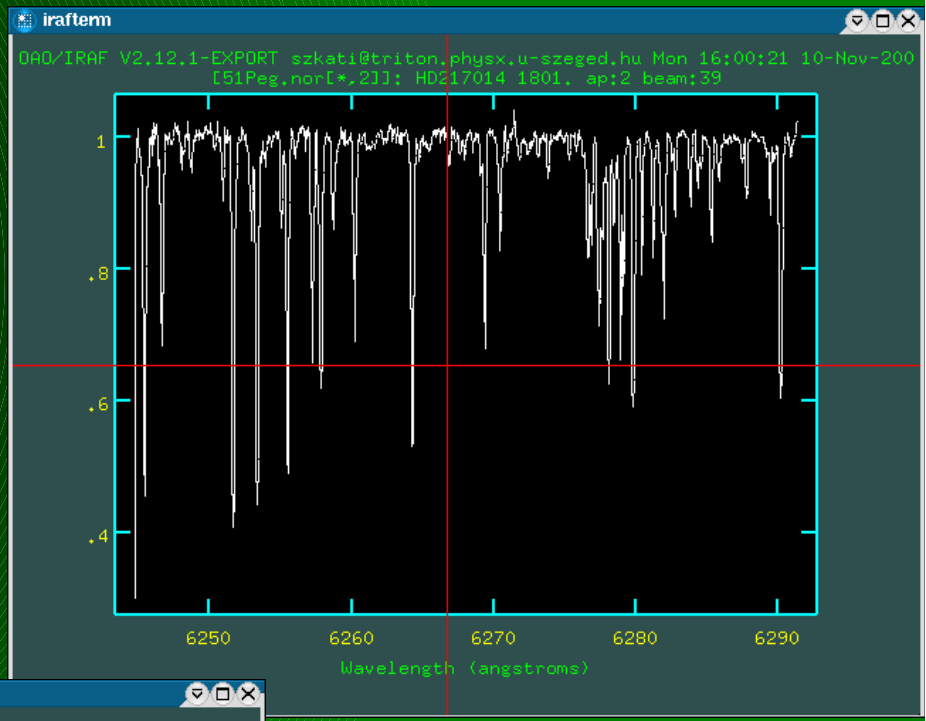

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:54:37 10-Nov-200
func=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=1024, rejected=492, deleted=0, RMS= 72.64
51Peg.ec.fits, [6,1]
HD217014
12500
10000
7500
5000
2500
6540
6550
6560
6570
6580
wavelength

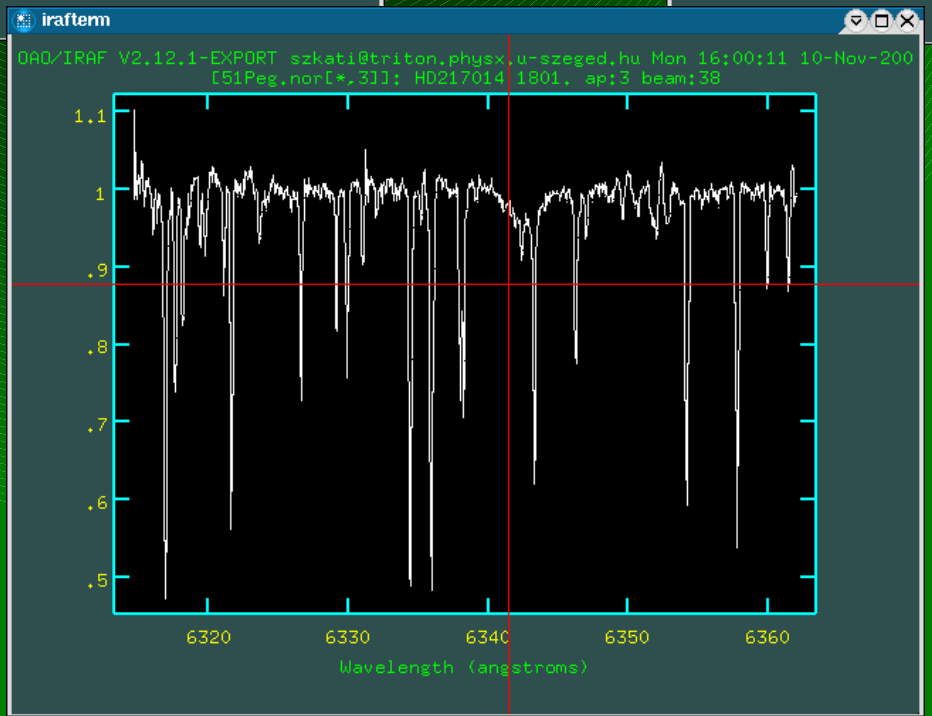

irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:54:53 10-Nov-200
func=spline3, order=1, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=763, rejected=332, deleted=0, RMS= 57.84
51Peg.ec.fits, [6,1]
HD217014
12500
10000
7500
5000
2500
6540
6550
6560
6570
6580
wavelength


irafterm
OAO/IRAF V2.12.1-EXPORT szkati@triton.physx.u-szeged.hu Mon 15:59:12 10-Nov-200
func=legendre, order=5, low_rej=2, high_rej=0, niterate=10, grow=1
total=1024, sample=771, rejected=308, deleted=0, RMS= 59.88
51Peg.ec.fits, [6,1]
HD217014
12500
10000
7500
5000
2500
6540
6550
6560
6570
6580
wavelength

Kontinum normálás







Kontinum normálás