

# Line identification in Specview

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# Specview



- Specview is a tool for 1-D spectral visualization
- It is written in Java, BSD-like licence, source code available on a cvs repository
- Main developer is Ivo Busko at Space Telescope Science Institute
- Specview supports :
  - a variety of FITS file formats
  - the Virtual Observatory SED format (XML only)
  - simple text format.
- Link : [http://www.stsci.edu/institute/software\\_hardware/specview](http://www.stsci.edu/institute/software_hardware/specview)

# Interoperability in Specview

- Search and download spectra by querying Simple Spectra Access services (using VO SSA protocol)

**VO Download**

Registry Help

Object

Name:  Resolve Resolver: SIMBAD Names via CADC

Search region

R.A. (hour):  Radius (arcmin): 10.0

Dec. (degree):

Additional parameters

Minimum wavelength (Angstroms):  Minimum time:

Maximum wavelength (Angstroms):  Maximum time:

Search

Servers

Name	Status	Description
6dF Spectra		6dF DR3 Simple Spectra Access (#Optical...
BeSS_SSAP		Be Star Spectra SSAP (#Radio#Millimete...
HST.FOS Spectra		Hubble Space Telescope Faint Object Sp...
ELODIEinterp		Spectrum interpolator for the ELODIE libr...
ELODIE		ELODIE archive
WUPPE		Wisconsin Ultraviolet Photo-Polarimeter E...
CENCOS-VVDS_DEEP		CENCOS-VVDS_DEEP SSA (VVDS Deep s...
HST.GHRs Spectra		Hubble Space Telescope Goddard High R...
HFA SSA		HyperLeda FITS Archive Simple Spectrum...
BoSS		Bo Star Spectra (#Optical#UV#)

Search results

6dF Spectra

# Interoperability in Specview



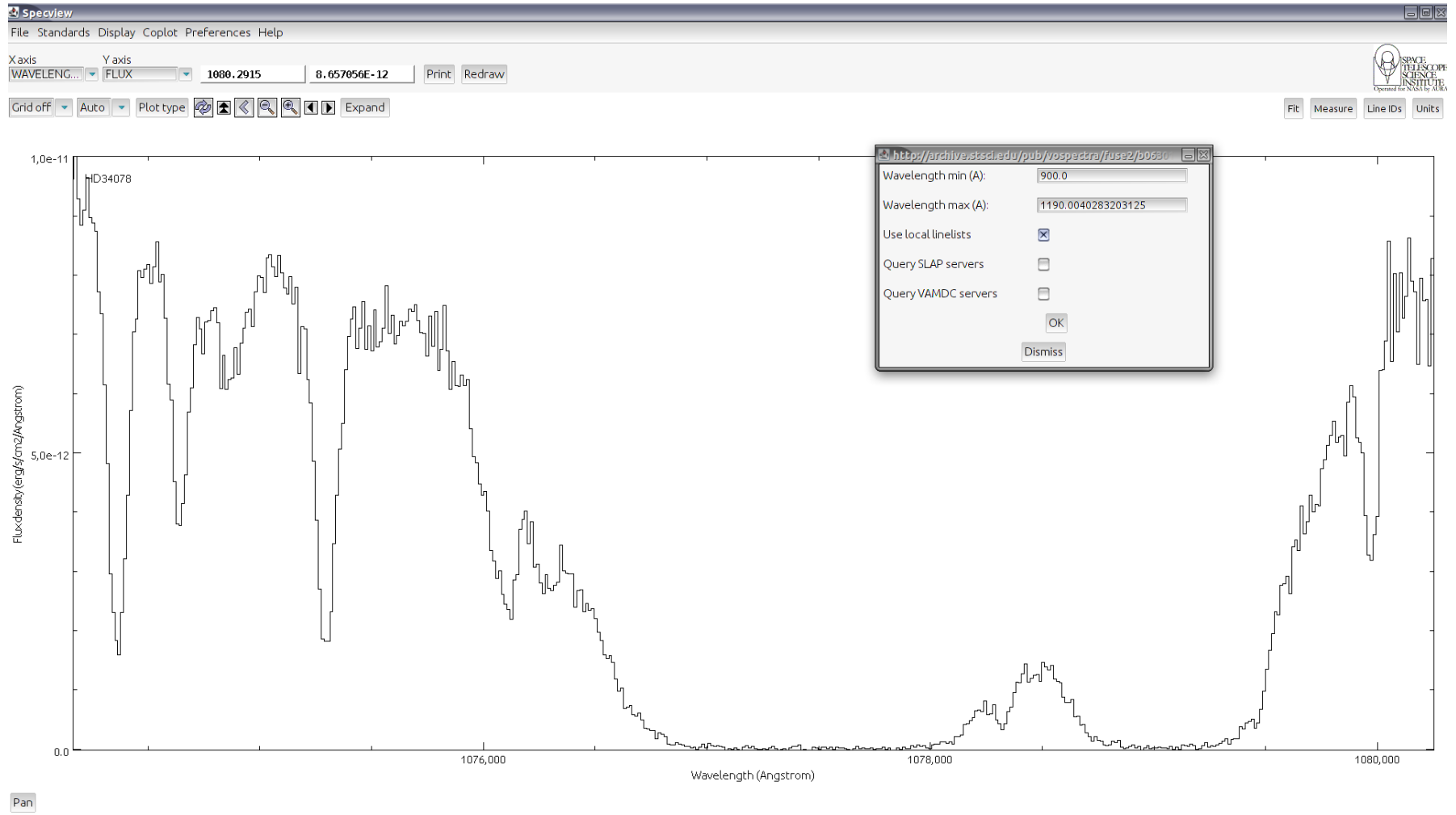
- Specview already implemented a line identification function :
  - by searching lines in local files
  - by using the VO Simple Line Access protocol to find lines in a range of wavelengths
- However SLAP services are scarce and quite limited
- This line identification functionality has been extended to handle VAMDC services
- It can now query VAMDC nodes

# Interoperability in Specview

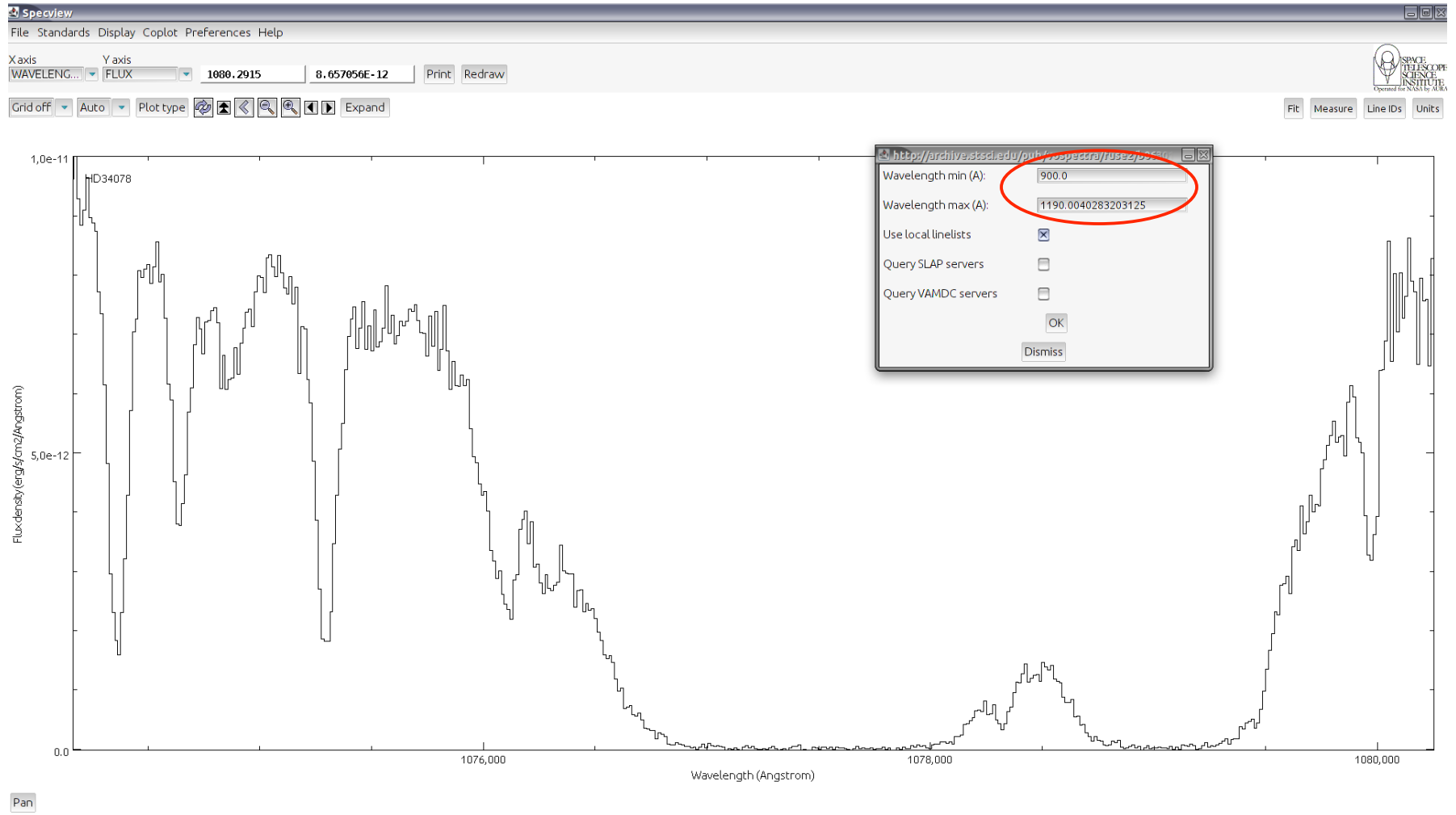


- Implementation has been done with Java APIs from M. Doronin to read XSAMS files
  - Xml file is transformed into java objects
  - They can be used as any other object in the code
- It has been integrated into the existing GUI
- List of queryable VAMDC nodes stored in a text file
- For now the query is only done on a range of wavelength (similar to SLAP)
- This functionality is available since the 2.16 version of Specview (current is 2.17)

# Query interface (1/2)

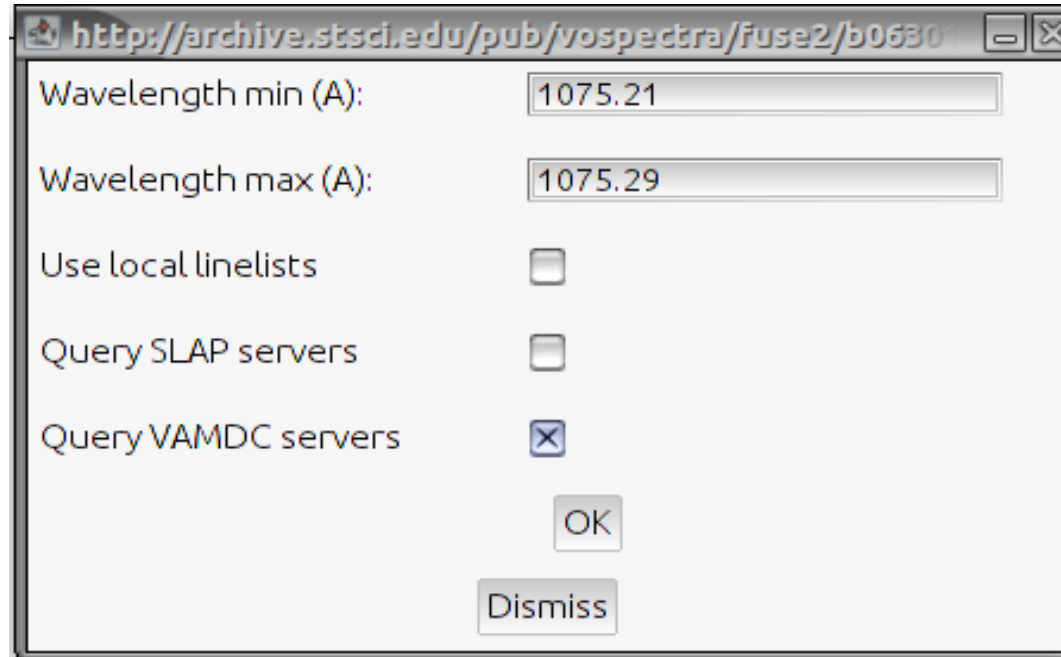


# Query interface (1/2)



Pan

## Query interface (2/2)



http://archive.stsci.edu/pub/yospectra/fuse2/b0630

Wavelength min (A): 1075.21

Wavelength max (A): 1075.29

Use local linelists

Query SLAP servers

Query VAMDC servers

OK

Dismiss

User chooses :

- an interval of wavelengths
- where to look for data



# Results

http://archive.stsci.edu/pub/vospectra/fuse2/b06301020000nvo4histfcal\_yo.fits

File

Molat

Line list

Molat Database (Test version)

Set 1

ID	Wavelength	Wavenumbers	Energies	Frequencies	All Wavelengths
HD	1075.26	theory: 93000.59 (1/cm)			1075.26 (A)
HD	1075.29	theory: 92997.81 (1/cm)			1075.29 (A)
HD	1075.24	theory: 93002.36 (1/cm)			1075.24 (A)
H2	1075.29	theory: 92997.85 (1/cm)			1075.29 (A)
H2	1075.24	theory: 93002.36 (1/cm)			1075.24 (A)
H2	1075.29	theory: 92998.52 (1/cm)			1075.29 (A)
H2	1075.29	theory: 92998.38 (1/cm)			1075.29 (A)
H2	1075.24	theory: 93002.78 (1/cm)			1075.24 (A)
H2	1075.29	theory: 92997.93 (1/cm)			1075.29 (A)
H2	1075.21	theory: 93005.43 (1/cm)			1075.21 (A)
D2	1075.23	theory: 93003.17 (1/cm)			1075.23 (A)
D2	1075.29	theory: 92997.99 (1/cm)			1075.29 (A)
D2	1075.28	theory: 92999.19 (1/cm)			1075.28 (A)
D2	1075.23	theory: 93002.96 (1/cm)			1075.23 (A)
D2	1075.29	theory: 92998.39 (1/cm)			1075.29 (A)
D2	1075.24	theory: 93002.1 (1/cm)			1075.24 (A)
D2	1075.25	theory: 93001.87 (1/cm)			1075.25 (A)
D2	1075.28	theory: 92998.75 (1/cm)			1075.28 (A)
D2	1075.27	theory: 93000.08 (1/cm)			1075.27 (A)
D2	1075.23	theory: 93003.22 (1/cm)			1075.23 (A)

Select all Unselect all Constant height

Add set

0 lines selected Draw Erase selection Erase all Dismiss

# Results

http://archive.stsci.edu/pub/vospectra/fuse2/b06301020000nvo4histfcal\_yo.fits

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Molat

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# Results

http://archive.stsci.edu/pub/vospectra/fuse2/b06301020000nvo4histfcal\_yo.fits

File

Molat

Line list

Molat Database (Test version)

Set 1

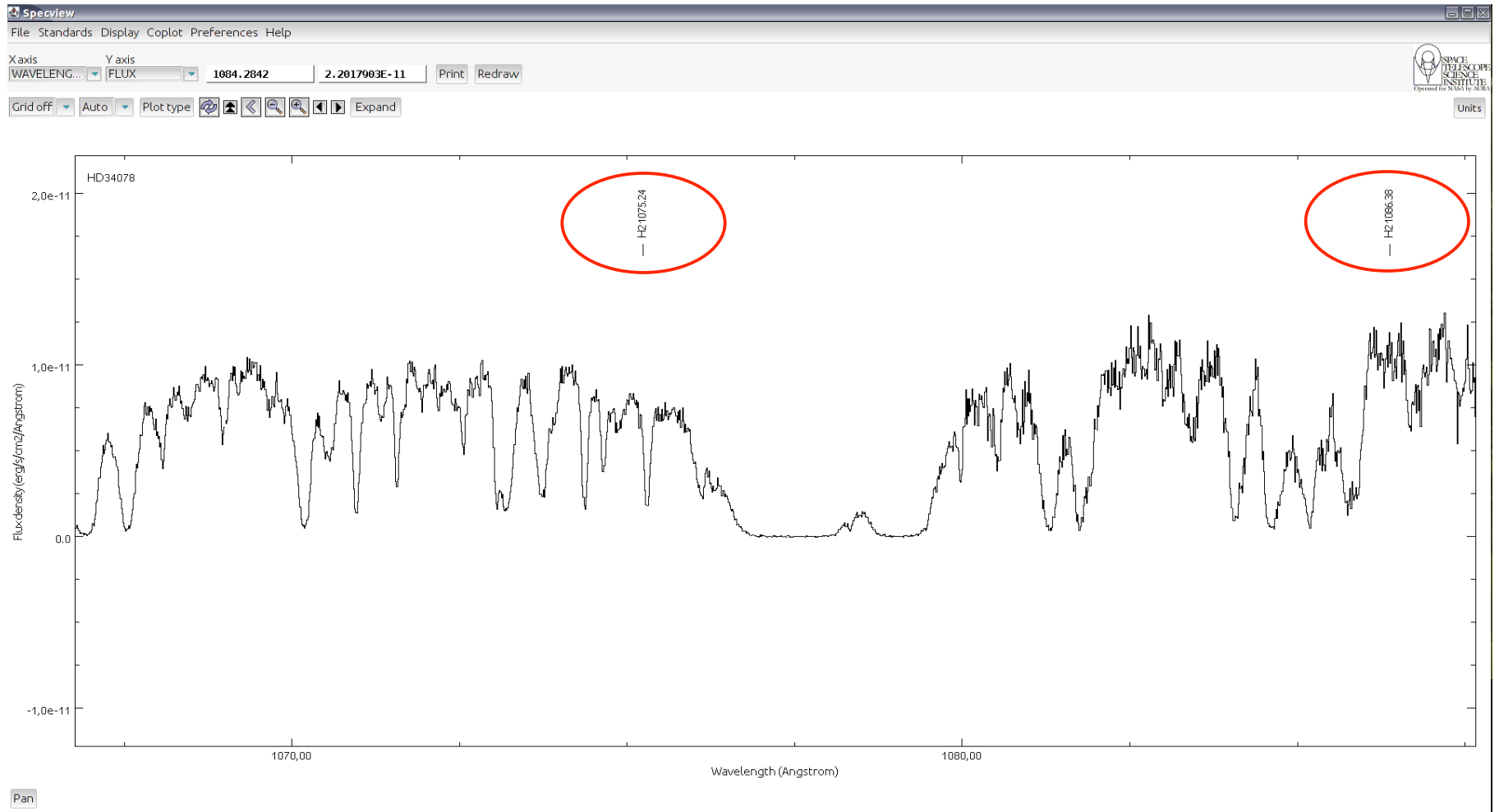
ID	Wavelength	Wavenumbers	Energies	Frequencies	All Wavelengths
HD	1075.26	theory: 93000.59 (1/cm)			1075.26 (A)
HD	1075.29	theory: 92997.81 (1/cm)			1075.29 (A)
HD	1075.24	theory: 93002.36 (1/cm)			1075.24 (A)
H2	1075.29	theory: 92997.85 (1/cm)			1075.29 (A)
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Select all Unselect all Constant height

Add set

0 lines selected Draw Erase selection Erase all Dismiss

# Plot



## Future evolutions

- More query parameters
- Handle request on large amount of data
- Search for services in registry instead of local file
- Displaying more detailed informations about each line
- Exporting data into customizable formatted files
- It implies to build a GUI dedicated to VAMDC data