Data Access Layer
Working Group

Spectrum Access Demo

A Prototype Implementation by AVO

M. Dolensky, ESO

Interoperability Workshop, Cambridge, Mass. 25-May-2004

Metadata Mode

```
<!DOCTYPE VOTABLE (View Source for full doctype...)>
- <VOTABLE version="1.0">
  - <RESOURCE type="results">
      <DESCRIPTION>Description of the Simple Spectrum Access (SSA) interface to a collection of VLT/FORS1 and VLT/FORS2
        spectra. All spectra were extracted from 2d grism images and converted to 1d spectra. Many thanks to S. P. Szokoly et
        al. who granted access to calibrated FORS spectra and who are in the process of publishing their work in APjSuppl (status
        Jan. 2004). Many thanks also to the Great Observatories Origins Deep Survey (GOODS) team who provided a collection of
        FORS spectra covering Hubble Deep Field North and Chandra Deep Field South.</DESCRIPTION>
      <INFO name="QUERY_STATUS" value="OK">Successful metadata query</INFO>
    - <RESOURCE name="VERB:0" type="results">
        <DESCRIPTION>Parameters belonging to verbosity level 0: Minimum input and output parameters.</DESCRIPTION>
      - <PARAM name="INPUT:POS" value="0,0" datatype="double" arraysize="2">
          <DESCRIPTION>Region of Interest: Search coordinates rightascension and declination in decimal
            degrees.</DESCRIPTION>
        </PARAM>
      - <PARAM name="INPUT:SIZE" value="0.1" datatype="double" arraysize="*">
          <DESCRIPTION>The radius of the ciruclar region of interest in decimal degrees. A special case is SIZE=0. It will cause
            a search in a service define default sized region. The default radius of this service is 0.1 degrees resulting in a
            patch of 0.01*pi sq.deg.</DESCRIPTION>
        </PARAM>
      - <PARAM name="INPUT:FORMAT" value="application/octet-stream" datatype="char" arraysize="*">
          <DESCRIPTION>The requested format of the returned data. By default it is a FITS file. Note: The exact description of
            the output format (binary table or 1d image, definition of axes) is outside the scope of the access protocol. Below
            format values are treated case INsensitive.</DESCRIPTION>
        - <VALUES type="legal" invalid="no">
            <OPTION value="ALL" />
            <OPTION value="application/octet-stream" />
            <OPTION value="METADATA" />
          </VALUES>
        </PARAM>
      - <PARAM name="OUTPUT:ACREF" datatype="char" arraysize="*">
          <DESCRIPTION>Access Metadata: A URI to retrieve the actual spectrum.</DESCRIPTION>
        </PARAM>
      - <PARAM name="OUTPUT:Title" datatype="char" arraysize="*">
          <DESCRIPTION>Observation Metadata: A description enabling a human user to distinguish individual spectra in a
            list.</DESCRIPTION>
        </PARAM>
      </RESOURCE>
```

Note:
This is an example reflecting the status of the discussion in Oct. 03

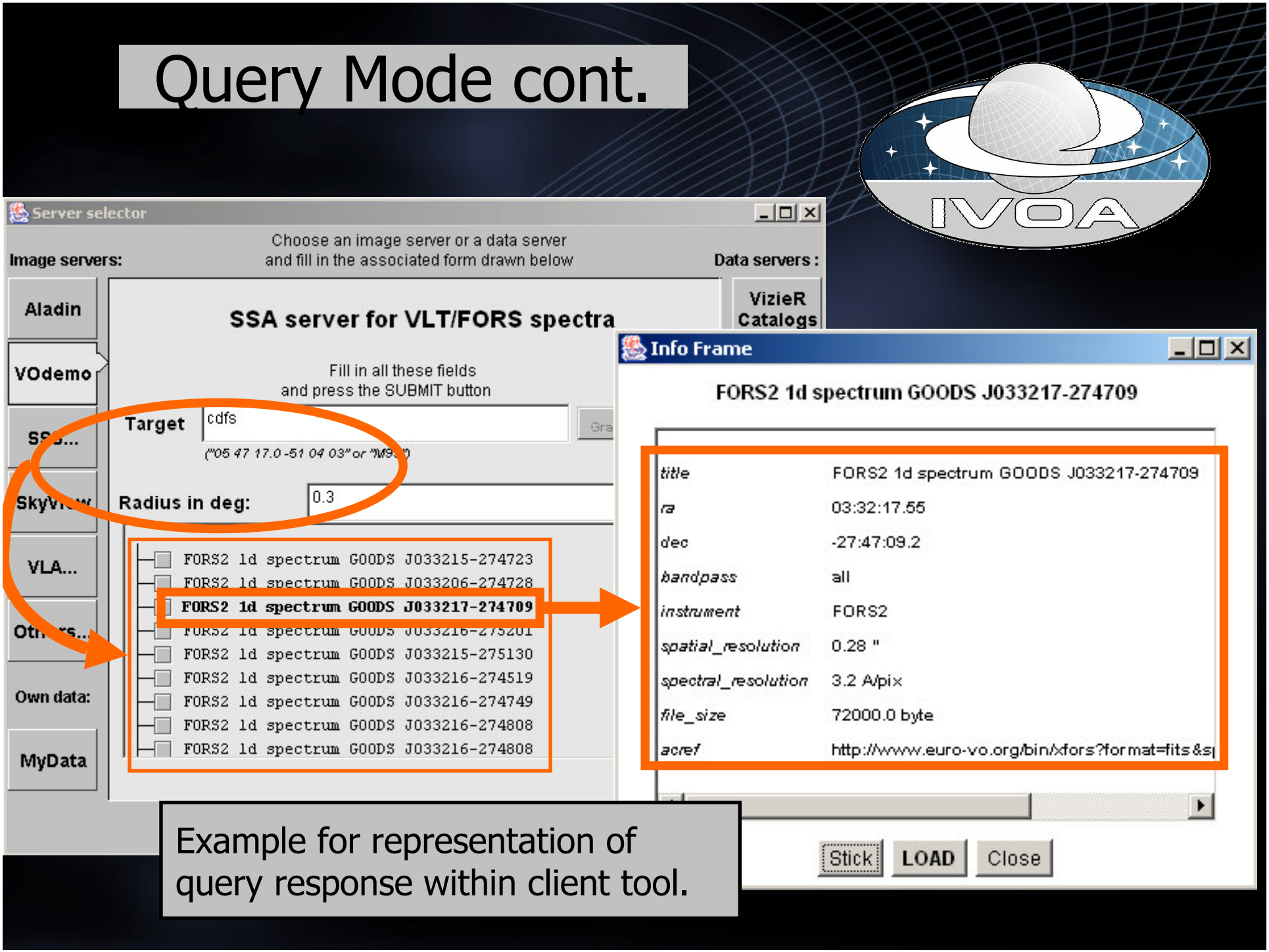
Query Mode

```
<?xml version="1.0" ?>
<!DOCTYPE VOTABLE (View Source for full doctype...)>
- <VOTABLE version="1.0">
  <DESCRIPTION>This document was generated by the Astrophysical Virtual Observatory in response to a Simple Spectrum
    Access query. www.euro-vo.org - Sat May 22 2004 22:49:30 MET DST</DESCRIPTION>
  - <RESOURCE type="results">
    <INFO name="QUERY_STATUS" value="OK">Successful Search</INFO>
    - <TABLE>
      + <FIELD ucd="CLASS_MISC" datatype="double" type="hidden" name="score">
      + <FIELD arraysize="32*" ucd="OBS_ID" datatype="char" name="title">
      + <FIELD ucd="POS_EQ_RA_MAIN" unit="deg" datatype="double" name="ra">
      + <FIELD ucd="POS_EQ_DEC_MAIN" unit="deg" datatype="double" name="dec">
      + <FIELD arraysize="16*" ucd="OBS_BAND" datatype="char" name="bandpass">
      + <FIELD arraysize="20" ucd="OBS_START_DATE" datatype="char" name="start_time">
      + <FIELD arraysize="8*" ucd="INST_ID" datatype="char" name="instrument">
      + <FIELD unit="arcsec" datatype="double" name="spatial_resolution">
      + <FIELD ucd="SPECT_RESOLUTION" unit="A/pix" datatype="int" name="spectral_resolution">
      + <FIELD ucd="OBS_PARAM" unit="deg" datatype="double" type="hidden" name="Position Angle">
      + <FIELD arraysize="24*" ucd="DATA_TYPE" datatype="char" type="hidden" name="format">
      + <FIELD unit="byte" datatype="int" name="file_size">
      + <FIELD arraysize="255*" ucd="DATA_LINK" datatype="char" name="acref">
      - <DATA>
        - <TABLEDATA>
          - <TR>
              <TD>1</TD>
              <TD>FORS2 1d spectrum GOODS J033234-2
              <TD>53.1418777777778</TD>
              <TD>-27.8271630555556</TD>
              <TD>optical,infrared</TD>
              <TD />
              <TD>FORS2</TD>
              <TD>0.28</TD>
              <TD>3.195</TD>
              <TD>50</TD>
              <TD>spectrum/fits</TD>
              <TD>72000</TD>
              <TD>http://www.euro-vo.org/bin/xfors?format=fits&specid=GDS_J033234-274937</TD>
```

obsolete encoding elements:
- VOTable 1.0 => 1.1 with GROUPS
- UCD + name attrib. pairs => UTYPE
- bandpass will be numeric
- score => rank
- file size no longer standard param.

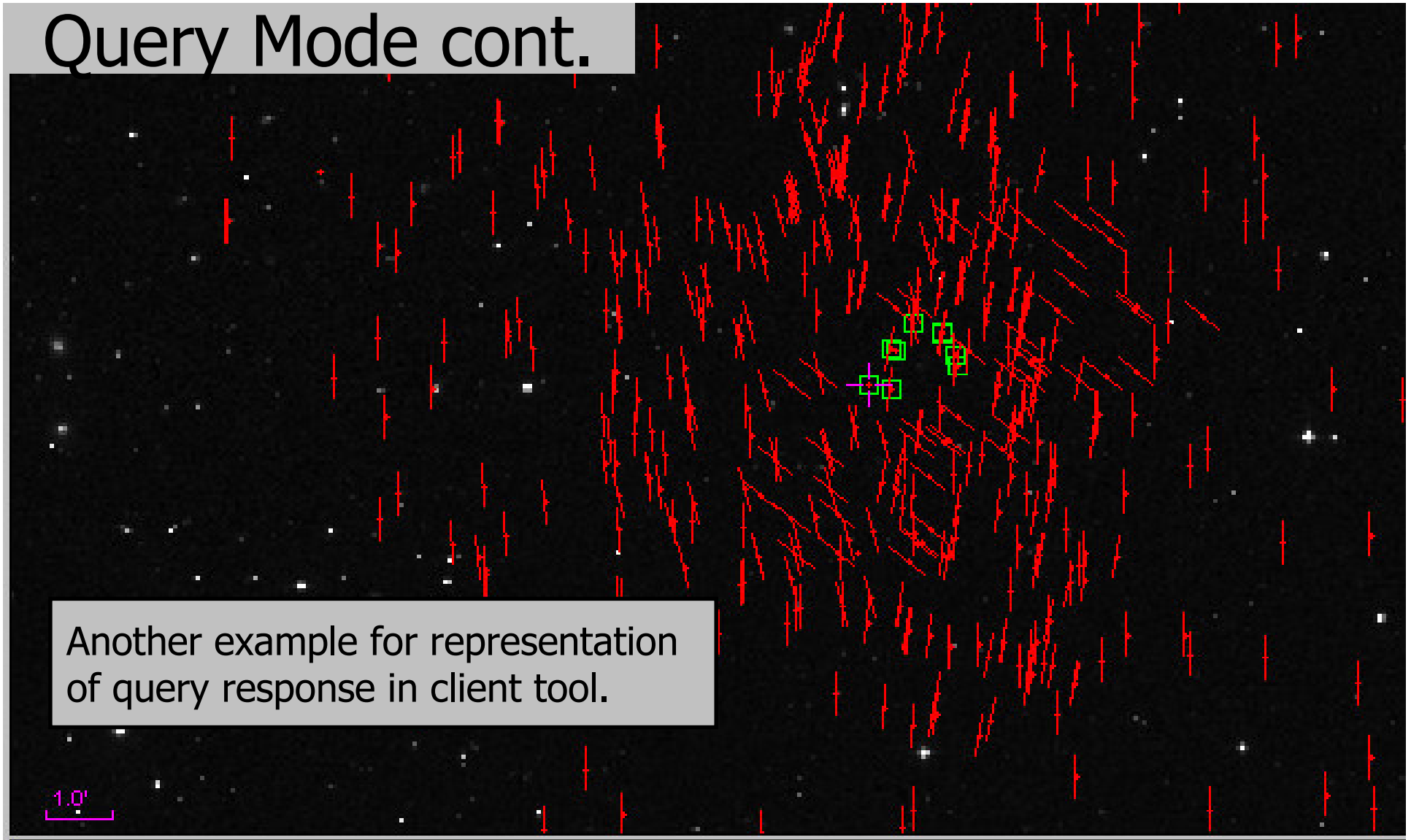
...

Query Mode cont.



Example for representation of query response within client tool.

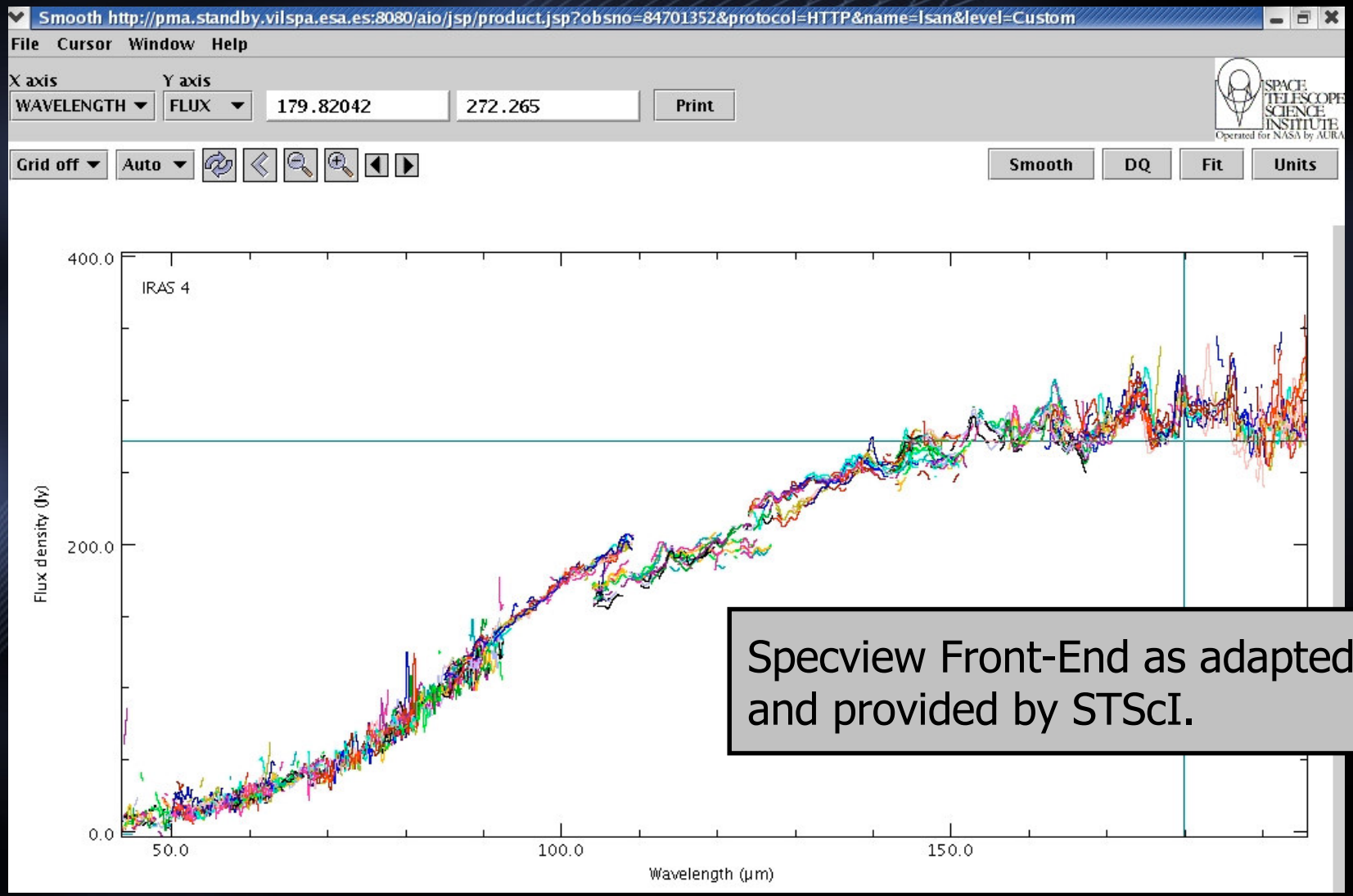
Query Mode cont.



Another example for representation of query response in client tool.

Spectrum	FORS2 ld spectrum GOODS J033223-274744	53.0970013888889	-27.7957330555556	
Spectrum	FORS2 ld spectrum GOODS J033225-274735	53.1049663888889	-27.7931380555556	
Spectrum	FORS2 ld spectrum GOODS J033226-274758	53.1111052777778	-27.7996461111111	
Spectrum	FORS2 ld spectrum GOODS J033226-274834	53.1111372222222	-27.809655	
Spectrum	FORS2 ld spectrum GOODS J033225-274735	53.1049663888889	-27.7931380555556	

Retrieval Mode



Specview Front-End as adapted and provided by STScI.

more ...

more ...
AVO Demo by Mark Allen
at today's afternoon session
of Application Interest Group

S/W Download:
http://www.euro-vo.org/twiki/bin/view/Avo/SwgDownload