



Recent Developments

IVOA Standards & NVO Applications



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Outline

- ✿ Data Access in the VO
 - ▣ First VO standards (simple and not so simple)
- ✿ NVO Applications at AAS
 - ▣ A major milestone...
- ✿ NVO Summer School
 - ▣ Student experiences and projects



Data Access in VO

Images

- Simple Image Access
- Returns FITS

Catalogs

- Open SkyNode, SkyQuery
- Returns VOTable

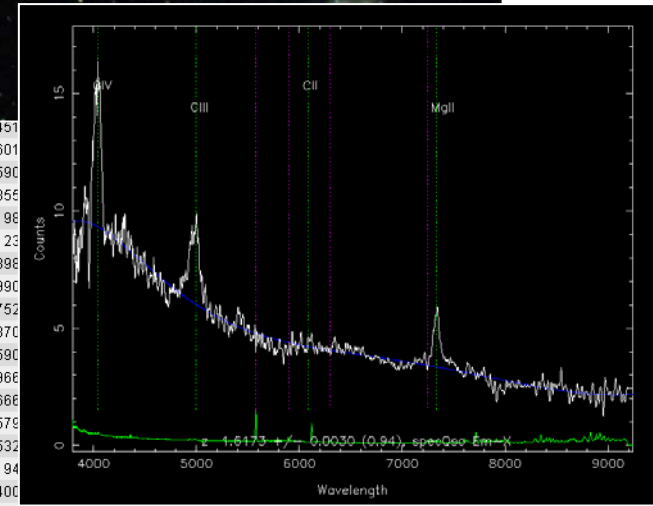
Spectra

- NEED DATA MODEL!**



o_objid

582093499				
582093499				
582093499				
58209349939094718	189.9451			
58209349939094767	189.9601			
58209349939094768	189.9590			
582093483283906791	189.8855			
58209349939029068	189.8196			
58209349939029064	189.8123			
58209349939029257	189.8396			
58209349939029156	189.7990			
58209349939094662	189.8752			
58209349939094758	189.8870			
58209349939029197	189.8590			
58209349939094681	189.8966			
58209349939029140	189.7666			
58209349939029135	189.7579			
58209349939029223	189.7532			
58209349939094762	189.9194			
582093483283906759	189.8400			
58209349939094708	189.937764625325	17.99017	3	232184522 0.0264 189.93776 -0.52891
58209349939094707	189.937946265898	18.56216	3	232184522 0.1675 189.93795 -0.52832
58209349939094707	189.937946265898	18.56216	3	232184518 0.0283 189.93795 -0.52832
58209349939094708	189.937764625325	17.99017	3	232184518 0.5195 189.93777 -0.52891





AAS – January 2005

- ✦ VO Registry
- ✦ DataScope
- ✦ Open SkyQuery
- ✦ SExtractor WS
- ✦ Spectrum Services
- ✦ Documentation
 - ✦ Data publishing
 - ✦ 3D Visualization





VO Registry

- ➊ Searchable (fast)
- ➋ Various resources
- ➌ OAI harvesting
- ➍ Web site and
- ➎ Web services

NVO National Virtual Observatory Searchable Registry

Home | Insert SIAP | Insert CONE | Insert SkyNode | Insert Resource | Update | Query | Delete | Summary | Help

Keyword

[Advanced Search](#)

Web Service	OAI	Clients										
The forms and OAI interface are built on SOAP services: <ul style="list-style-type: none">SEARCH servicesADMIN servicesOAI SOAP services	We implement an OAI interface and Harvest these OAI repositories. Listed from registry: <table border="1"><thead><tr><th>Last Harvest</th><th>Title</th></tr></thead><tbody><tr><td>12/1/2004 7:15:09 PM</td><td>NCSA</td></tr><tr><td>12/1/2004 7:15:12 PM</td><td>JHU</td></tr><tr><td>12/1/2004 7:15:12 PM</td><td>VIZIER_REG</td></tr><tr><td>12/1/2004 7:15:16 PM</td><td>Astrogrid</td></tr></tbody></table>	Last Harvest	Title	12/1/2004 7:15:09 PM	NCSA	12/1/2004 7:15:12 PM	JHU	12/1/2004 7:15:12 PM	VIZIER_REG	12/1/2004 7:15:16 PM	Astrogrid	The following clients access this Registry and can be found at these links <ul style="list-style-type: none">Data Inventory ServiceSkyQueryMirageDownload Manager
Last Harvest	Title											
12/1/2004 7:15:09 PM	NCSA											
12/1/2004 7:15:12 PM	JHU											
12/1/2004 7:15:12 PM	VIZIER_REG											
12/1/2004 7:15:16 PM	Astrogrid											

Alternate Mirror location for this registry is STSCI. Last replication 11/15/2004 3:06:50 PM.



DataScope

- ➊ Gather & organize
 - ☒ Uses the VO registry
- ➋ Image and catalog
 - ☒ Integrated visualization
- ➌ Transient events
 - ☒ Monitoring

NVO National Virtual Observatory DataScope

- DataScope Help -

National Virtual Observatory --- Hosted at NASA/HEASARC

What do we know about a region of the sky? Use the Virtual Observatory DataScope to gather and organize information from astronomy archives and data centers around the world.

Enter a position(or name) and the maximum size of the region of sky you are interested in.

Object Name or J2000 Position: (3c273 or 12 29 06, +2 3 8.6 or 187.27, 2.05)

Region size (degrees):

Bypass cache. DataScope will issue a fresh request even if an identical request is in the cache.

Recent transient events and requests: (Click on View to see cached results.)

View m16 [18 ^h 18 ^m 48.17 ^s -13° 48'26.0"] (0.100°)	View cen a [13 ^h 25 ^m 27.62 ^s - 43°01'08.8"] (0.250°)	View m16 [18 ^h 18 ^m 48.17 ^s - 13°48'26.0"] (0.010°)
View 23 ^h 50 ^m 00.00 ^s -10° 30'00.0" (0.250°)	View 11 ^h 46 ^m 33.84 ^s +58° 20'13.2" (0.250°)	View 11 ^h 46 ^m 33.84 ^s +58° 20'13.2" (0.050°)



Open SkyQuery

☉ SkyNode interface to archives

- ☒ Implements ADQL returns VOTable
- ☒ Basic node understands “REGION”
- ☒ Full node understands “XMATCH”

☉ SkyQuery portal

- ☒ Knows the SkyNodes from Registry
- ☒ Understands federated query

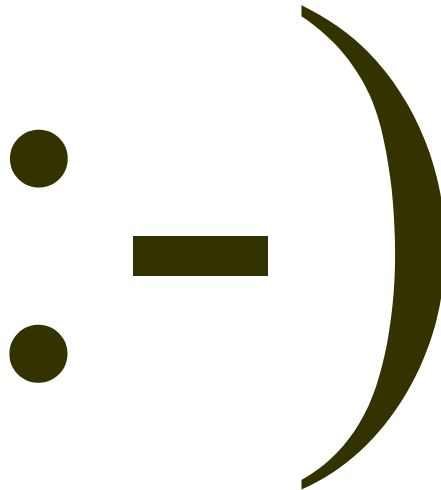
<http://openskyquery.net>

Nodes	
Rosat	⊖ ⊕ ⊗
GALEX	⊖ ⊕ ⊗
DLs	⊖ ⊕ ⊗
RC3	⊖ ⊕ ⊗
SDSS	⊖ ⊕ ⊗
TwoDf	⊖ ⊕ ⊗
Twoqz	⊖ ⊕ ⊗
USNOB	⊖ ⊕ ⊗
GOODS	⊖ ⊕ ⊗
HDFN	⊖ ⊕ ⊗
HDFS	⊖ ⊕ ⊗
UDF	⊖ ⊕ ⊗
TWOMASS	⊖ ⊕ ⊗
IRAS	⊖ ⊕ ⊗
PSCz	⊖ ⊕ ⊗
ADIL	⊖
AGC	⊖ ⊕ ⊗
FIRST	⊖ ⊕ ⊗
NVSS	⊖ ⊕ ⊗
NVORegistry	⊖



SExtractor Services

- See Andy Connolly's talk





Spectrum Services

Public repository

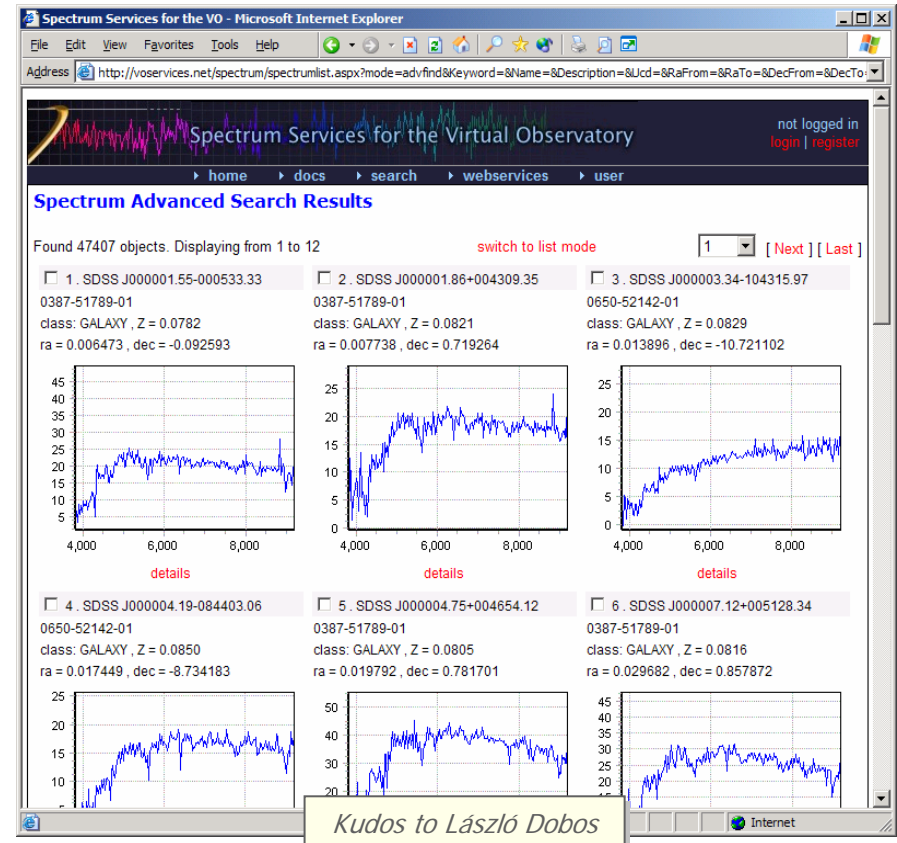
- 500,000 spectra (2B row)
- Spatial search and more
- Register & submit yours

Web site

- On-the-fly plotting
- Building composites

Web services

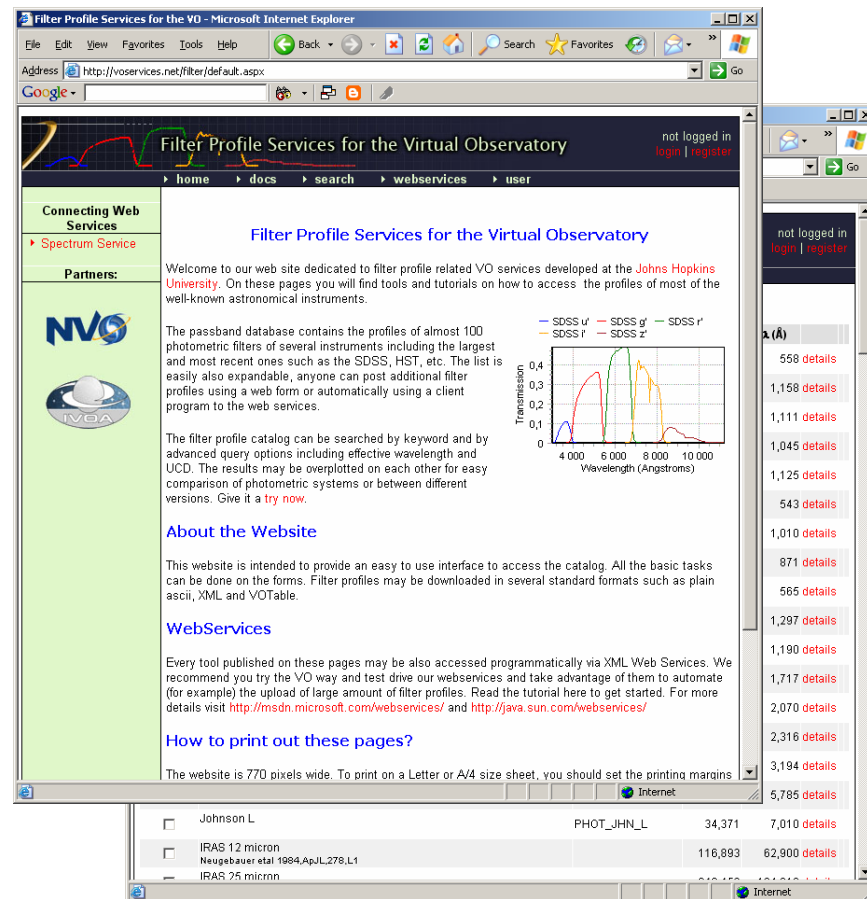
- More options and tools





Bandpass Services

- Public repository
 - Search by keyword or λ_{eff}
 - Extract in various formats
 - Register & submit yours
- Web site
 - On-the-fly plotting
 - Easy access to all
- Web services
 - To code against





NVO Summer School

☉ Aspen, Colorado

☐ 13-17 September 2004

☉ Full house

☐ ~40 “students”





NVO Summer School

☉ All possible OS

- ☒ Real test of interop
- ☒ Challenging to teach

☉ Learning curve

- ☒ Depending on backgr

☉ Winning projects

- ☒ C. Miller & S. Krughoff
Extinction map service
- ☒ R. Lucas et al.
VLA science project

☉ Questionnaire

- ☒ **Very good scores !!!**
- ☒ Needs to be longer (10d)
- ☒ Great software package

☉ Proceedings

- ☒ On the Web

HERE



Where to go

✚ Links in the talk

- ✚ <http://voservices.net/spectrum/>
- ✚ <http://openskyquery.net/>
- ✚ <http://nvo.stsci.edu/>

✚ Other relevant links

- ✚ <http://us-vo.org/>
- ✚ <http://voservices.org/>
- ✚ <http://www.ivoa.net/>

