



NRC-CNRC

*Herzberg Institute
of Astrophysics*

The Canadian Virtual Observatory

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John Ouellette, Russell Redman, David Schade**



National Research
Council Canada

Conseil national
de recherches Canada

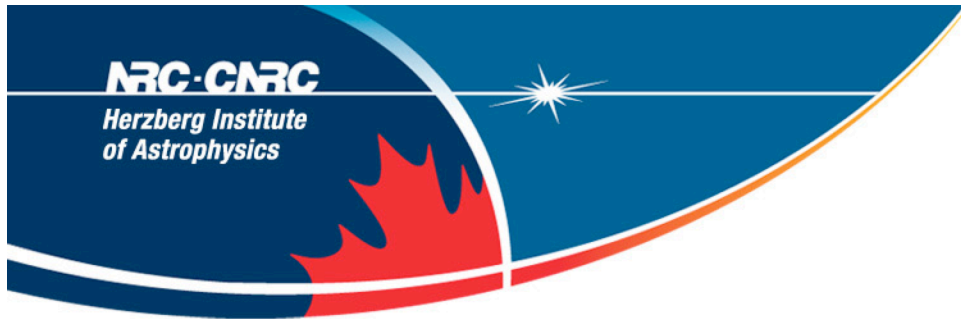
Canada



- Goals
- Services
- Collections
- Usage statistics
- Recent efforts
- Future directions

Canadian Virtual Observatory

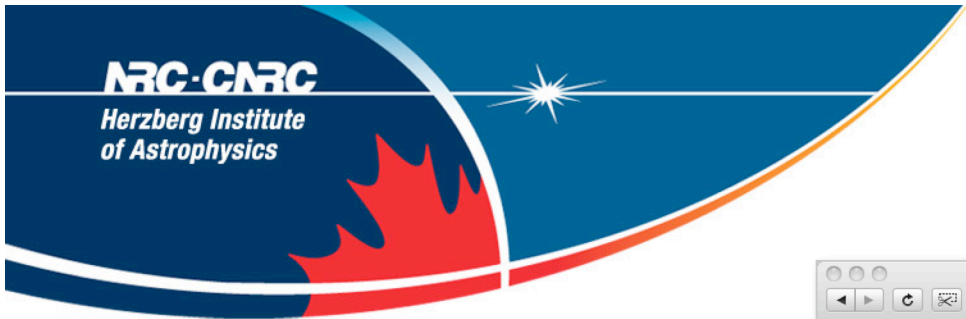
A screenshot of the Canadian Virtual Observatory (CVO) website. The browser address bar shows the URL: http://www1.cadc-ccda.hia-ihp.nrc-cnrc.gc.ca/cvo/. The website header includes the CVO logo (a stylized orange maple leaf) and the text "Canadian Virtual Observatory". Below the header, there is a navigation menu with "CVO | Community | Reports | Links". The main content area contains an acknowledgment section, a section for "Observation Catalog Exploration Tools (Octet)" with a "Launch Octet" button and "details" link, a "System Requirements" section listing "Java Runtime Environment (JRE) version 1.4 or later" and "Java Webstart", a "NOTE" about certificates, a "Help" section, and a section for "IVOA Standard Services" with "details" and "specification" links. The footer includes the CADCC/CCDA logo, the text "HERZBERG INSTITUTE OF ASTROPHYSICS" and "INSTITUT HERZBERG D'ASTROPHYSIQUE", and the Canadian flag with "National Research Council Canada" and "Conseil national de recherches Canada".



CVO

- Developed and hosted at CADC
- Goals
 - Publish data from nationally hosted collections
 - Contribute to IVOA development
- Activities
 - Operate VO services
 - Develop and implement data models and protocols
 - Transform and publish data collections
 - Participate in working groups and Exec
- Funding
 - Long-Range Plan for Astronomy in Canada
 - Canadian Space Agency
 - Herzberg Institute for Astrophysics





CVO Services

- 8 SIA services
- 5 Data Collections
- 1 Application

VOTable Viewer

http://nvo.stsci.edu/vor10/index.aspx#Table/filterText%3D%7C1%3A*images%7C2%3A/ Google

NVO Registry
National Virtual Observatory

Portal Home Search Publish Developers Help Contact Us

Hosted By
Space Telescope Science Institute

Find Astronomical Data Resources

ivo://cadc [Advanced](#)

[Search](#) [Reset](#)

Examples: HEASARC, GALEX, redshift, Optical, far ultraviolet, M51

ivo://cadc

Save All Results as CSV [Save](#) Next, Send Results to [Send](#)

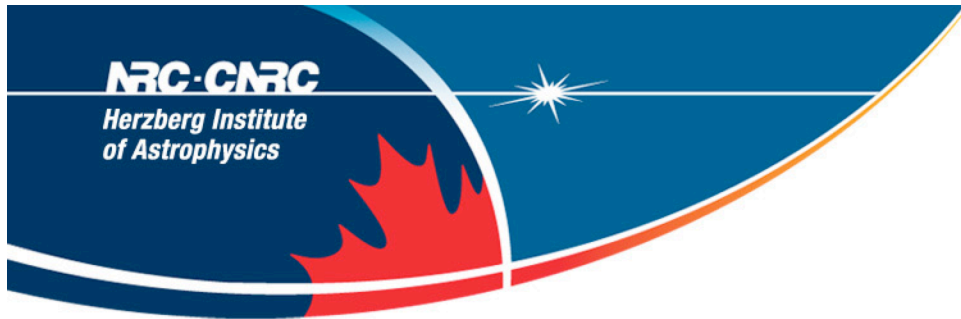
Results 1-8 of 8 (27 before filtering) sorted by tags Show 50 results per page

Click column heading to sort list - Click checkbox to select [Reset selection](#)

Text boxes under columns select matching rows [Apply Filter](#) [Clear Filter](#)

select	browse / query	categories	shortName	title	description
		images	cadc		
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/CGPS	CADC/CGPS Image Search	Image search and retrieval for Canadian Galactic Plane Survey (CGPS) HI continuum images.
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/GEMINI	CADC/GEMINI Image Search	Image Search and retrieval for Gemini imaging data. This service is quite new and contains a modest amount of content.
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/JCMT	CADC/JCMT Image Search	Image search and retrieval of JCMT images. The collection currently contains SCUBA products at 450 and 850um.
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/HST	CADC/HST Image Search	Image search and retrieval for HST imaging data. The collection currently includes calibrated ACS observations and stacks (associations) and stacks from the WFPC2 Association project.
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC	CADC Image Search	Image search and retrieval for all calibrated CADC images and advanced products. This service is based on the same content as the archive-specific image search services provided by CADC.
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/CFHT	CADC/CFHT Image Search	Image search and retrieval for CFHT imaging data. The current collection includes calibrated public data from CFHTLS and PI observing programs.
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/IRIS	CADC/IRIS Image Search	The Improved Reprocessing of the IRAS Survey (IRIS) enhances significantly the general quality of the ISSA plates in the four bands (12, 25, 60 and 100 microns). This new generation of IRAS images, called ... (more)
<input type="checkbox"/>	Full Record More Info Search Me	Images	CADC/MACHO	CADC/MACHO Image Search	Image search and retrieval for MACHO imaging data.

Results 1-8 of 8 (27 before filtering) sorted by tags Show 50 results per page



CVO SIA Collections

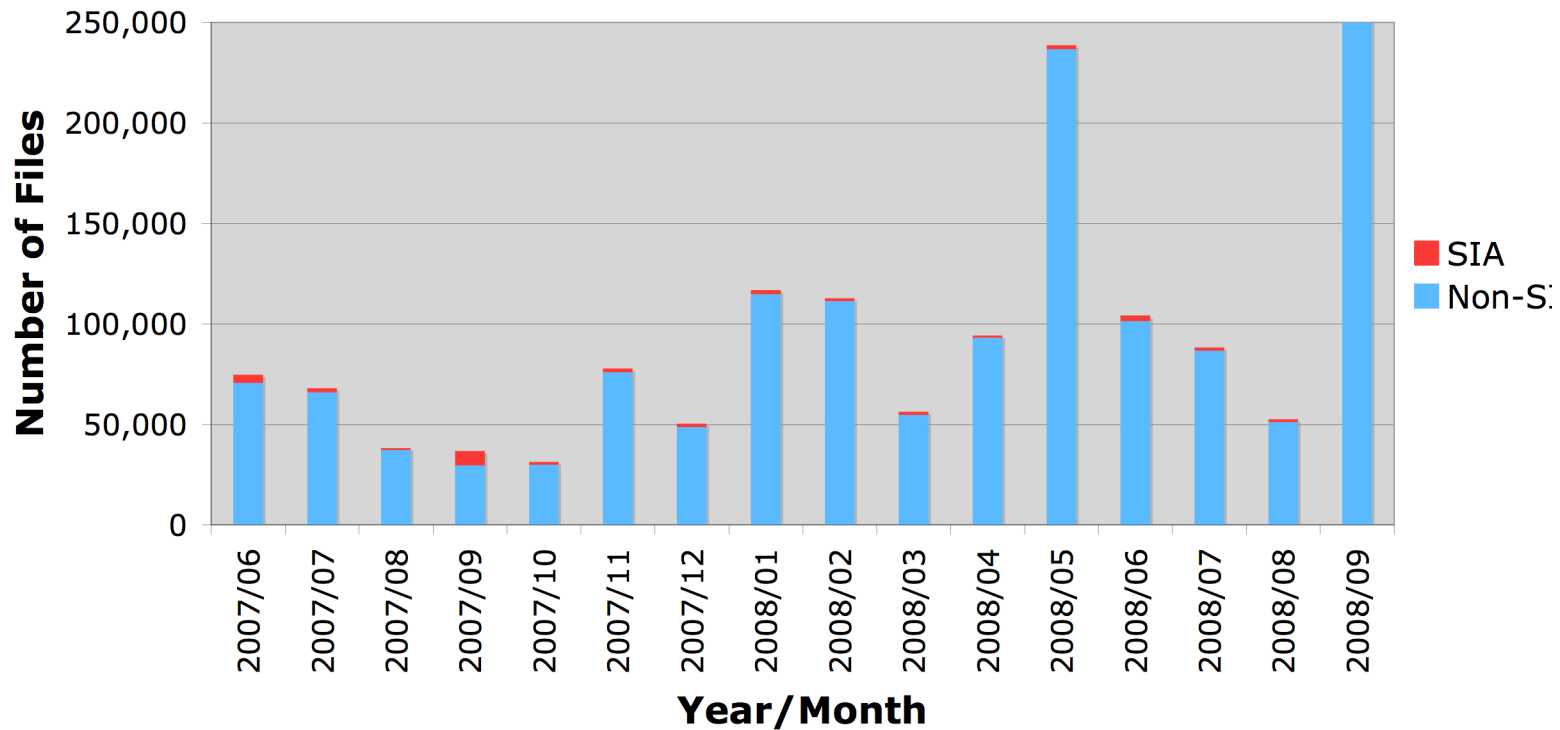
	<i>Observations</i>	<i>SIA Images</i>	<i>Gigabytes</i>
CFHT	46,195	1,214,202	25,830
CGPS	166	166	1
Gemini	1,072	1,072	32
HST	61,055	135,551	5,707
IRIS	1,720	1,720	2
JCMT	4,571	8,797	3
MACHO	114,826	1,695,586	7,654
	229,605	3,057,094	39,230

- All fully calibrated data products

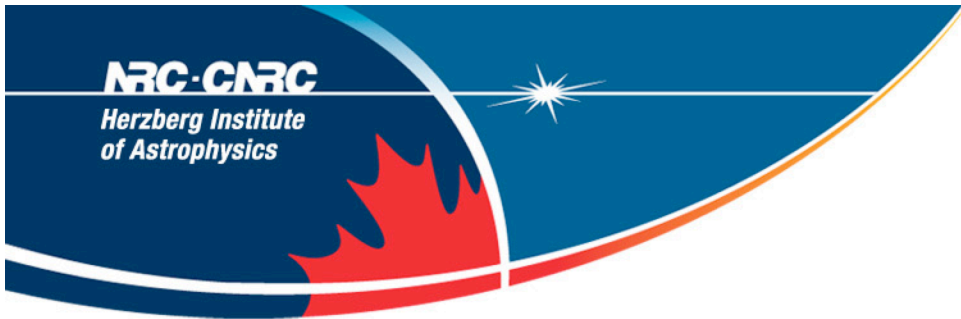


SIA Usage

Public Files Retrieved

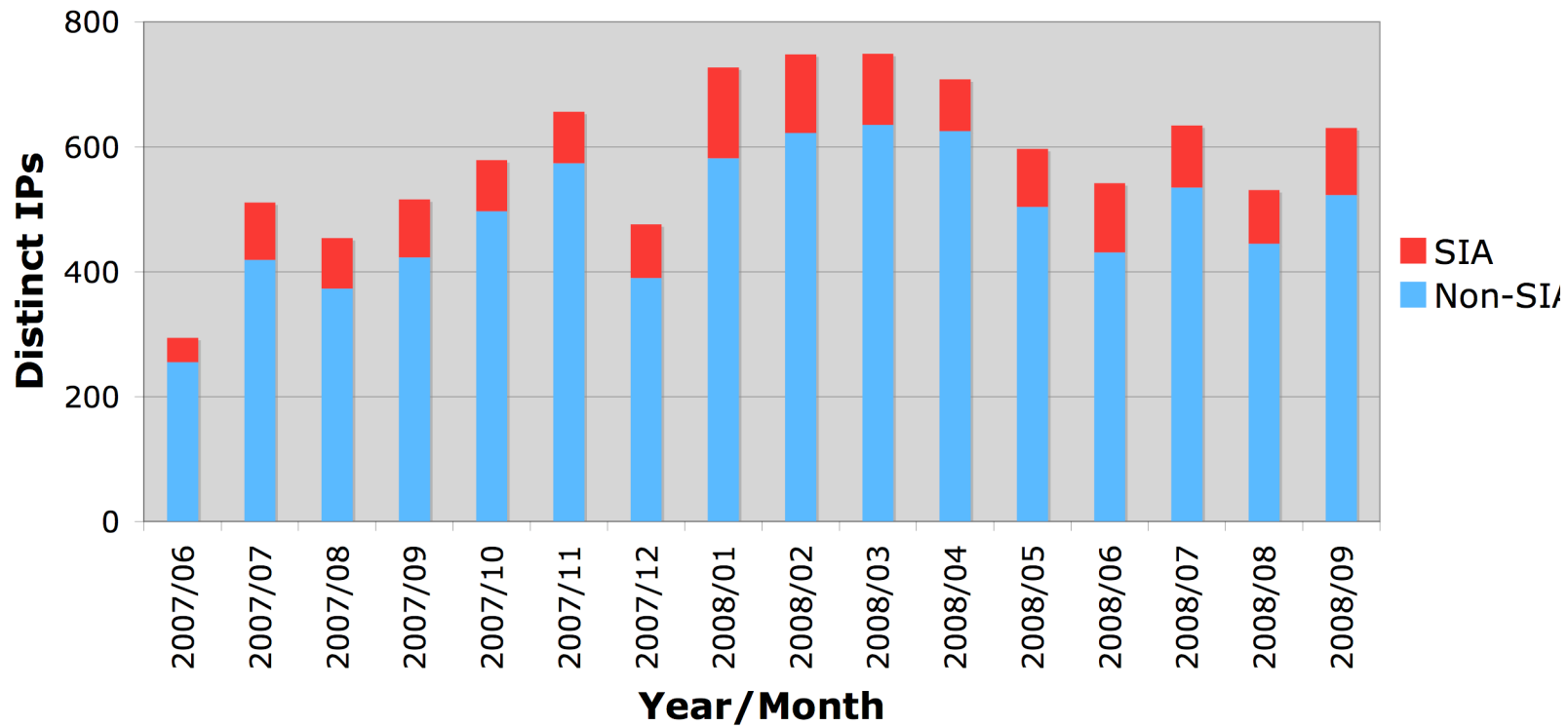


- 16 months: 34,290 files, 343 GB
- Average 2% of public files, 0.7% of volume



SIA Usage

Public File Destinations

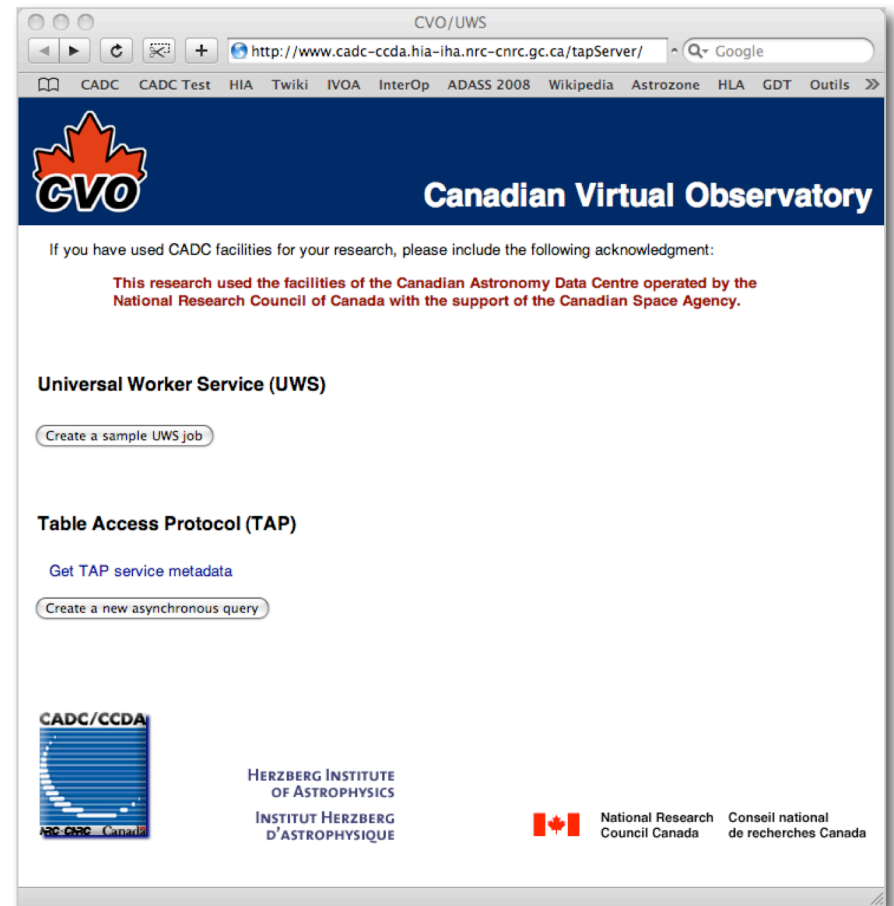


- 1,311 distinct IP address
- 20% of all public file destinations



Recent Activities

- VOQL
 - TEG participation (PD)
- TAP/QL Prototype
 - ADQL, UWS (PD)
- Data Modeling (PD, JB, DJ, team)
 - Ingestion tool development
 - Query interface development
 - 2 collections transformed
 - Other collections started



<http://www.cadc.hia.nrc.gc.ca/tapServer/>



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A screenshot of a web browser displaying the Canadian Virtual Observatory (CVO) website. The browser address bar shows the URL <http://www.cadc-ccda.hia-ihp.nrc-cnrc.gc.ca/tapServer/>. The website header includes the CVO logo and the text "Canadian Virtual Observatory". Below the header, there is a section for "Table Access Protocol (TAP) Service Metadata" which lists two tables: "observation.plane" and "observation.spatial". Each table is shown with its column names, data types, units, and UCD values.

If you have used CADC facilities for your research, please include the following acknowledgment:

This research used the facilities of the Canadian Astronomy Data Centre operated by the National Research Council of Canada with the support of the Canadian Space Agency.

Table Access Protocol (TAP) Service Metadata

Table: observation.plane

column name	datatype	units	UCD
obsID	int	null	TODO
collection	string	null	TODO
collectionID	string	null	TODO
project	string	null	TODO
instrument	string	null	TODO
shape	polygon	deg	TODO

Table: observation.spatial

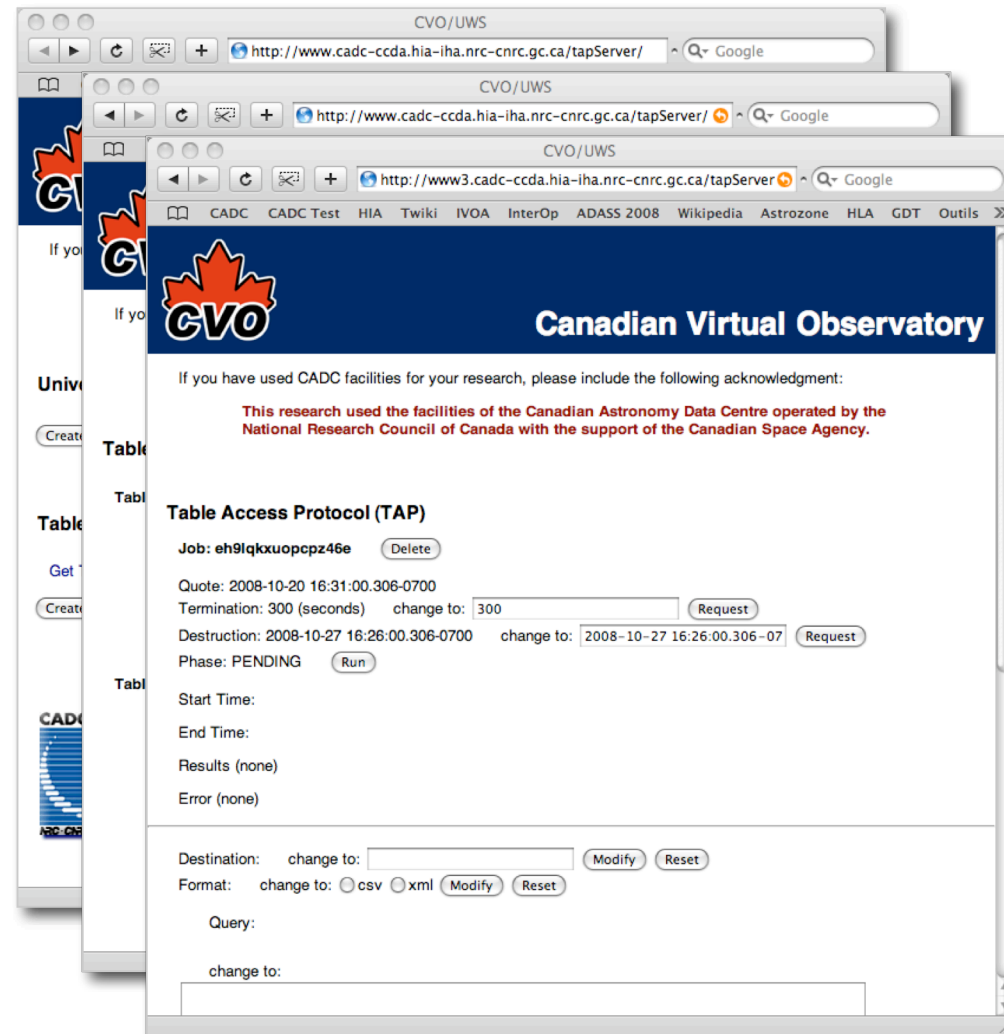
column name	datatype	units	UCD
obsID	int	null	TODO
ctype1	string	null	TODO
ctype2	string	null	TODO
naxis1	int	null	TODO
naxis2	int	null	TODO
crpix1	double	null	TODO
crpix2	double	null	TODO
crval1	double	null	TODO
crval2	double	null	TODO
cd1_1	double	null	TODO
cd1_2	double	null	TODO
cd2_1	double	null	TODO
cd2_2	double	null	TODO

<http://www.cadc.hia.nrc.gc.ca/tapServer/>

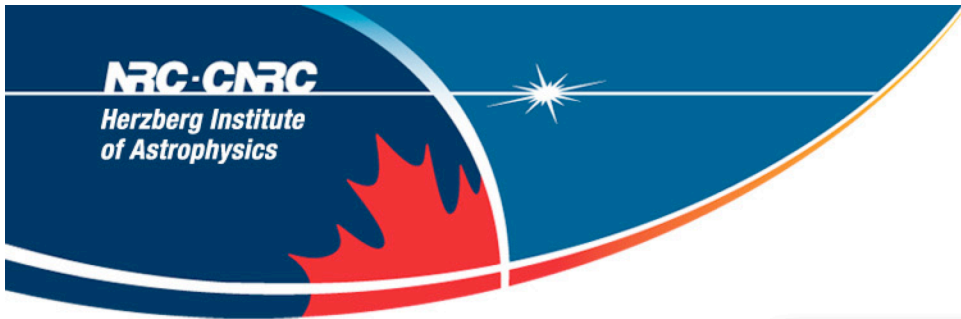


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<http://www.cadc.hia.nrc.gc.ca/tapServer/>



Future Activities

- On-going
 - Complete migration of collections
 - Porting to a new database
 - Query interface
- New
 - Cube data
 - Catalogues
 - SSA
 - TAP
 - CANFAR

Search Results: CADC Advanced Search
 http://test.cadc-ccda.hia-ihp.nrc-cnrc.gc.ca/AdvancedSearch/find

GVO Canadian Virtual Observatory

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Data Source

Collection	Project	Instrument	Filter
All (8 Collections) CFHT CFHTSG CGPS GEMINI HST IRIS JCMT	All (1 Project) null	All (2 Instruments) GMOS-N GMOS-S	g g_G0325 i i_G0327 r r_G0326 u u_G0332

Position
 Target:
 RA: DEC: radius:

Energy
 Energy From: To: Tolerance:

Time
 Observation Date

27 observations found

download	collection	collectionID	RA	DEC	area (sq.deg)	pixel size (arcsec)	filter name	wavelength (m)	date (MJD)	exptime (s)
<input type="checkbox"/>	GEMINI	MRGS20040716S0129_ADD	03:38:52.3	-35:22:20.1	1.175E-2	0.1462	g	4.75E-7	53202.39	125
<input type="checkbox"/>	GEMINI	MRGS20040717S0033_ADD	10:44:58.6	-59:42:55.6	1.175E-2	0.1462	g	4.75E-7	53203.02	2
<input type="checkbox"/>	GEMINI	MRGS20040720S0169_ADD	20:17:17.3	-70:45:37.4	1.175E-2	0.1462	g	4.75E-7	53206.42	150
<input type="checkbox"/>	GEMINI	MRGS20040720S0173_ADD	20:16:42.0	-70:46:51.1	1.176E-2	0.1462	g	4.75E-7	53206.43	150
<input type="checkbox"/>	GEMINI	MRGS20040824S0102_ADD	01:14:43.8	-31:40:31.6	1.175E-2	0.1462	g	4.75E-7	53241.30	300



CANFAR

- Canadian Advanced Network for Astronomical Research
- Enable leading-edge scientific discovery
- Turning Grid resources into a Cloud for astronomy
 - Deliver a network-enabled platform for the delivery, processing, storage, analysis and distribution of large astronomical datasets
- Support the changing sociology of science
 - Survey/project teams
- 2½ year project; 24.5 FTE
- 4-6 survey projects
- IVOA technologies core to the design



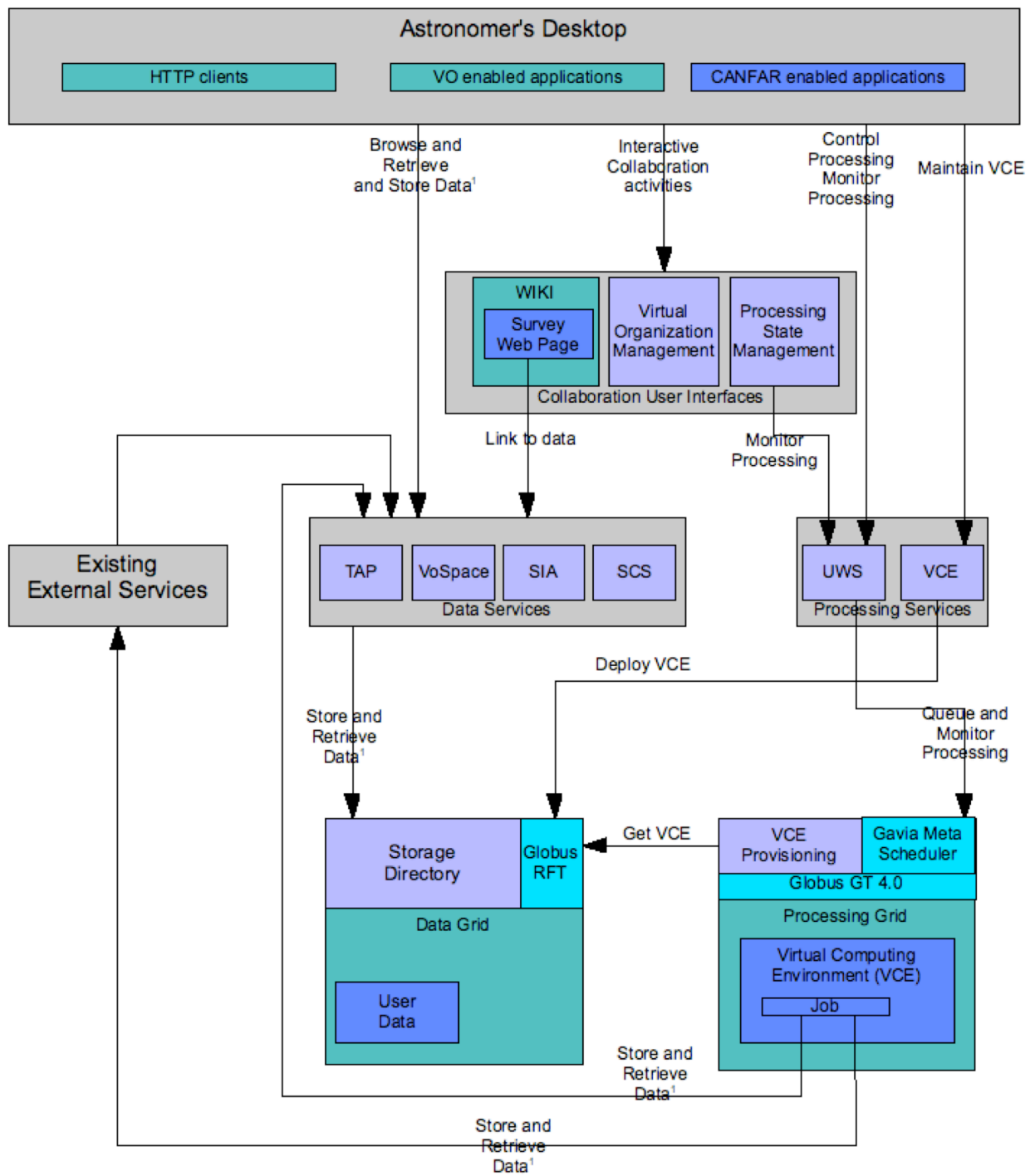
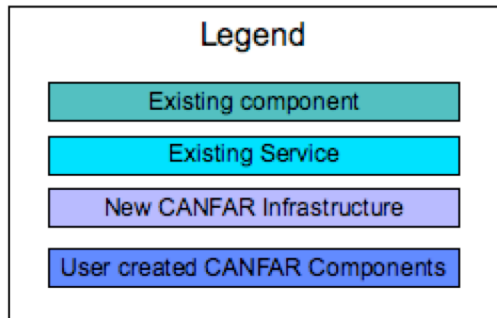
University
of Victoria

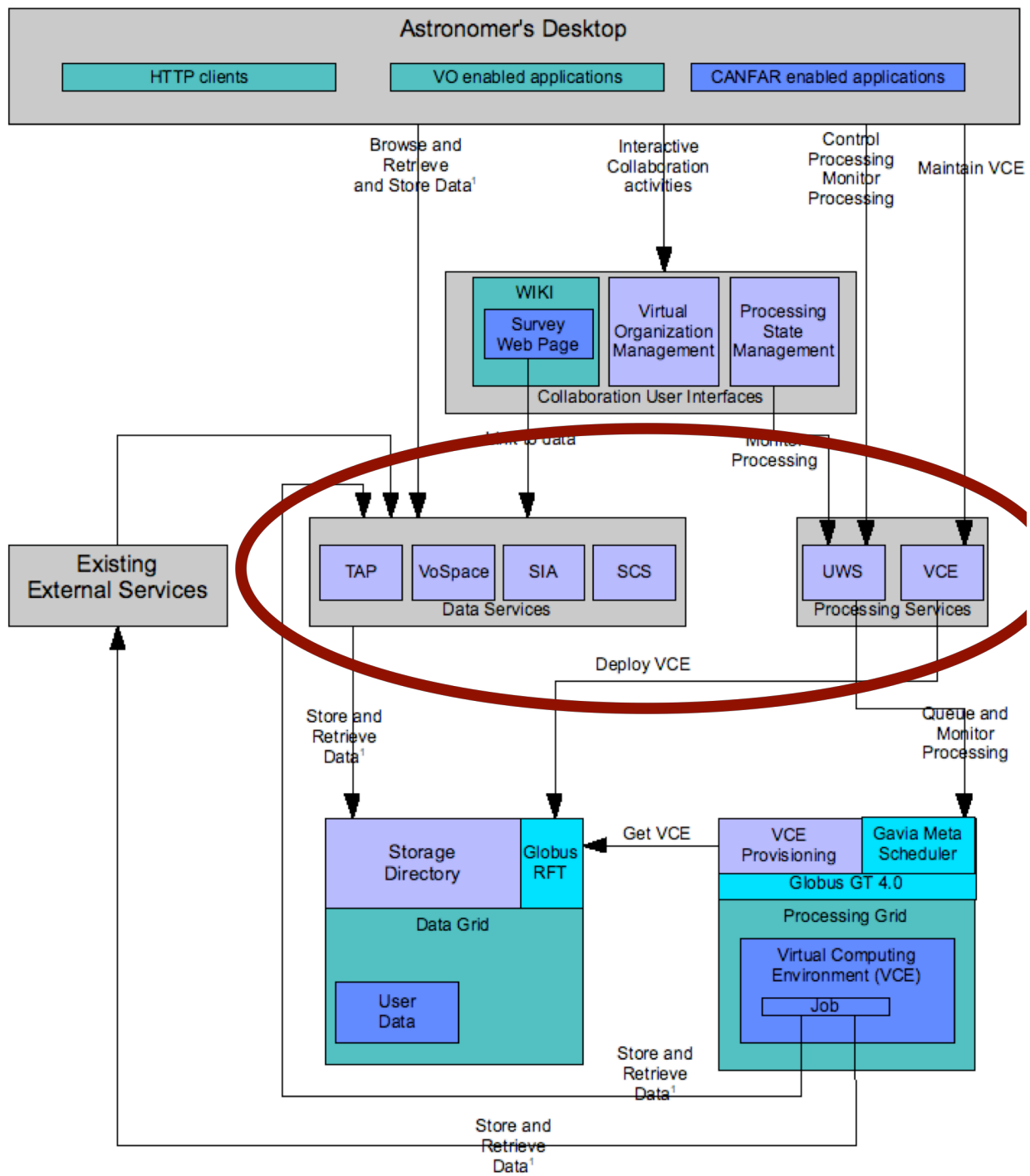
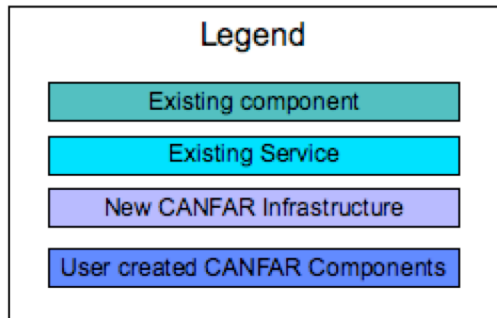


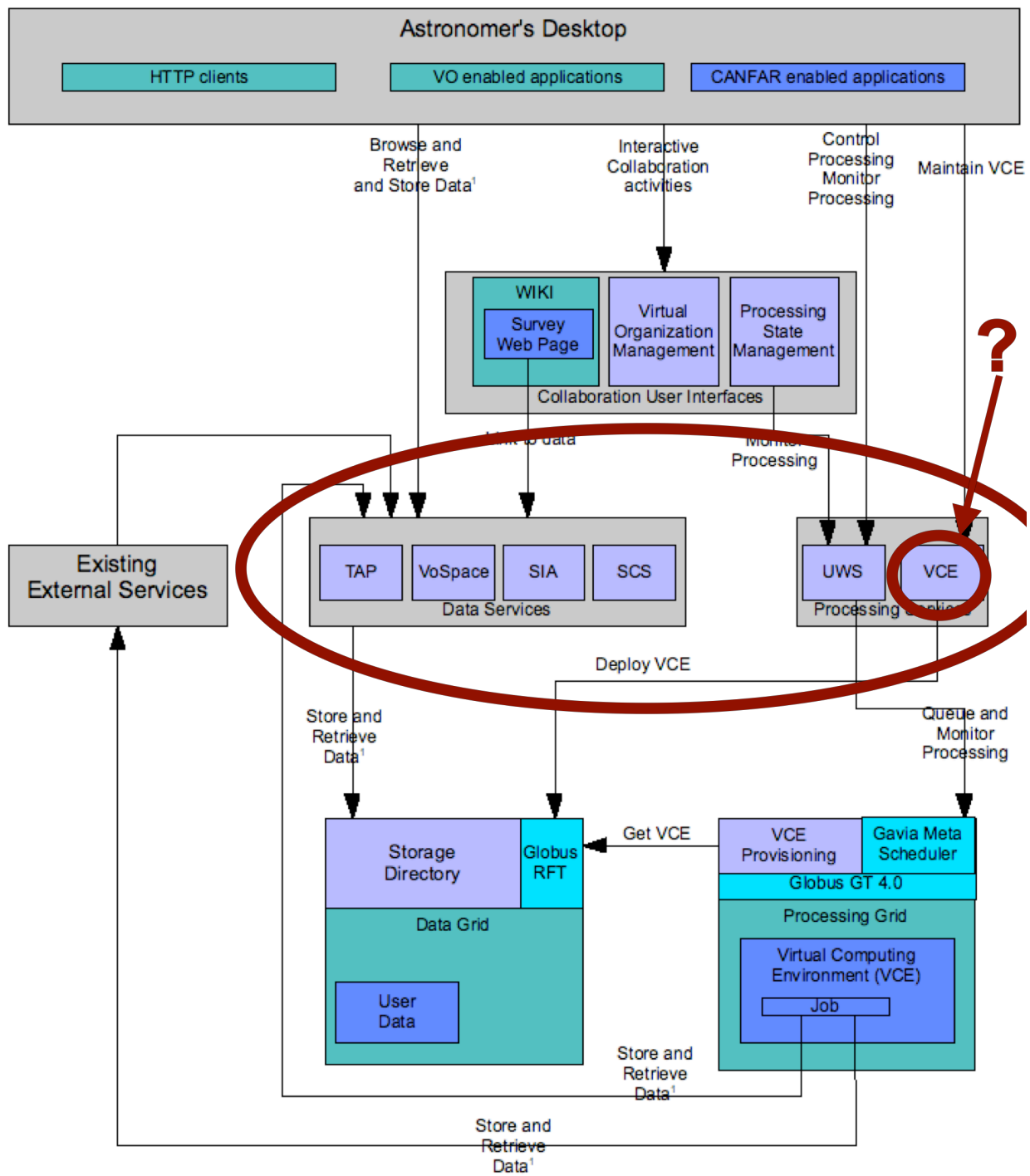
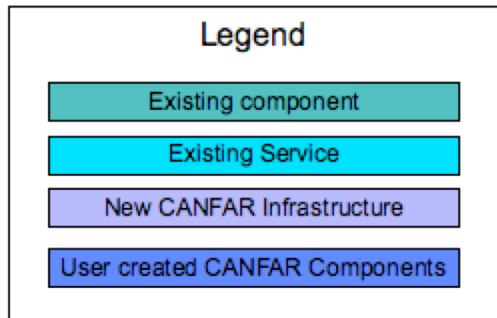
University of
British Columbia



CANARIE
Canada's Advanced Network  Le réseau évolué du Canada









www.cadc.hia.nrc.gc.ca