

THE US NATIONAL VIRTUAL OBSERVATORY

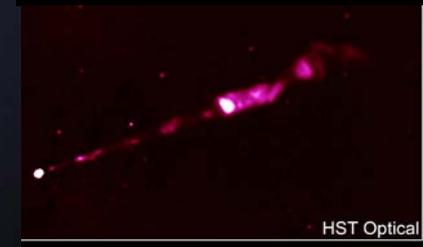
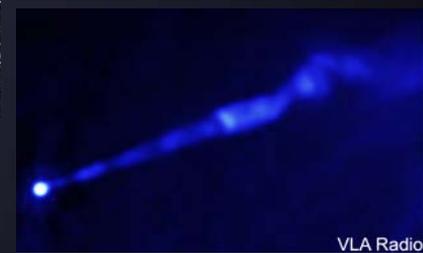
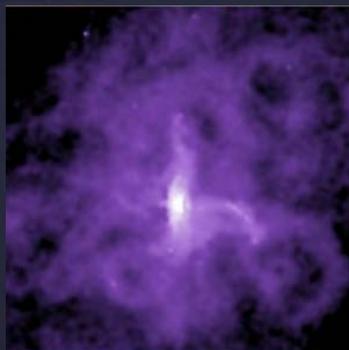
The National Virtual Observatory and HST

Robert Hanisch
US National Virtual Observatory
Project
Space Telescope Science Institute
Baltimore, Maryland

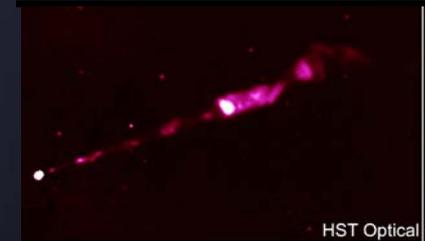
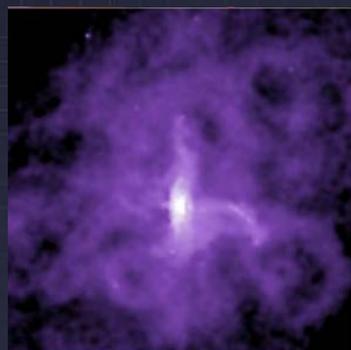


Toward a “new astronomy”

- The Virtual Observatory is a collection of interoperating data archives and software tools that utilize the Internet to provide an environment for research in astronomy.



Toward a “new astronomy”



- The primary goal of the VO is to enable correlative studies of large, distributed data collections.

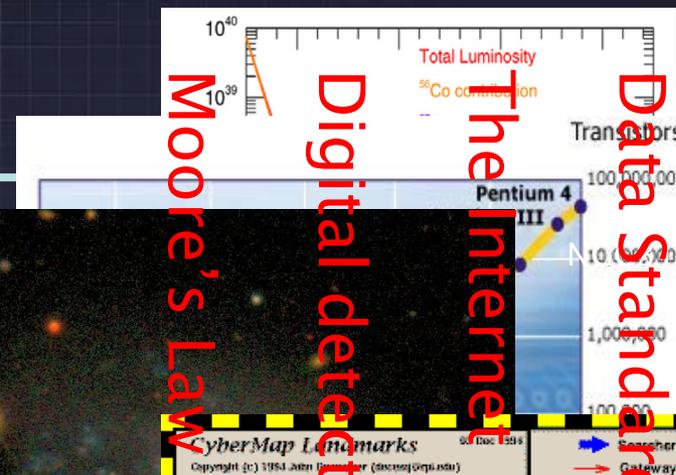
Threads of the the VO fabric

Multiwavelength
astrophysics

Archival Research

Survey astronomy

Temporal astronomy



CyberMap Landmarks

Starlink Treeview

File View Tree Help

- votable
 - cover.xml
 - DEFINITIONS
 - RESOURCE
 - TABLE (9x20)
 - fitsjob.xml
 - <IDOCYTE VOTABLE>
 - VOTABLE
 - <DESCRIPTION> "Test VOTable using FITS encoding"
 - <RESOURCE>
 - vizier.xml.gz

Overview	XML content	Columns	Parameters	Table data
1	3	205.5	28.402	
2	40	185.599899	58.079979	Double Star WNC4
3	85	186.309998	18.199989	
4	51	202.429993	47.21999	Whirlpool Galaxy
5	53	198.179993	18.18	
6	63	198.910004	42.054001	Sunflower Galaxy
7	64	194.130005	21.699989	Black Eye Galaxy
8	88	187.929993	14.43	

Visible nodes: 12 Total nodes: 12

VO data access and HST



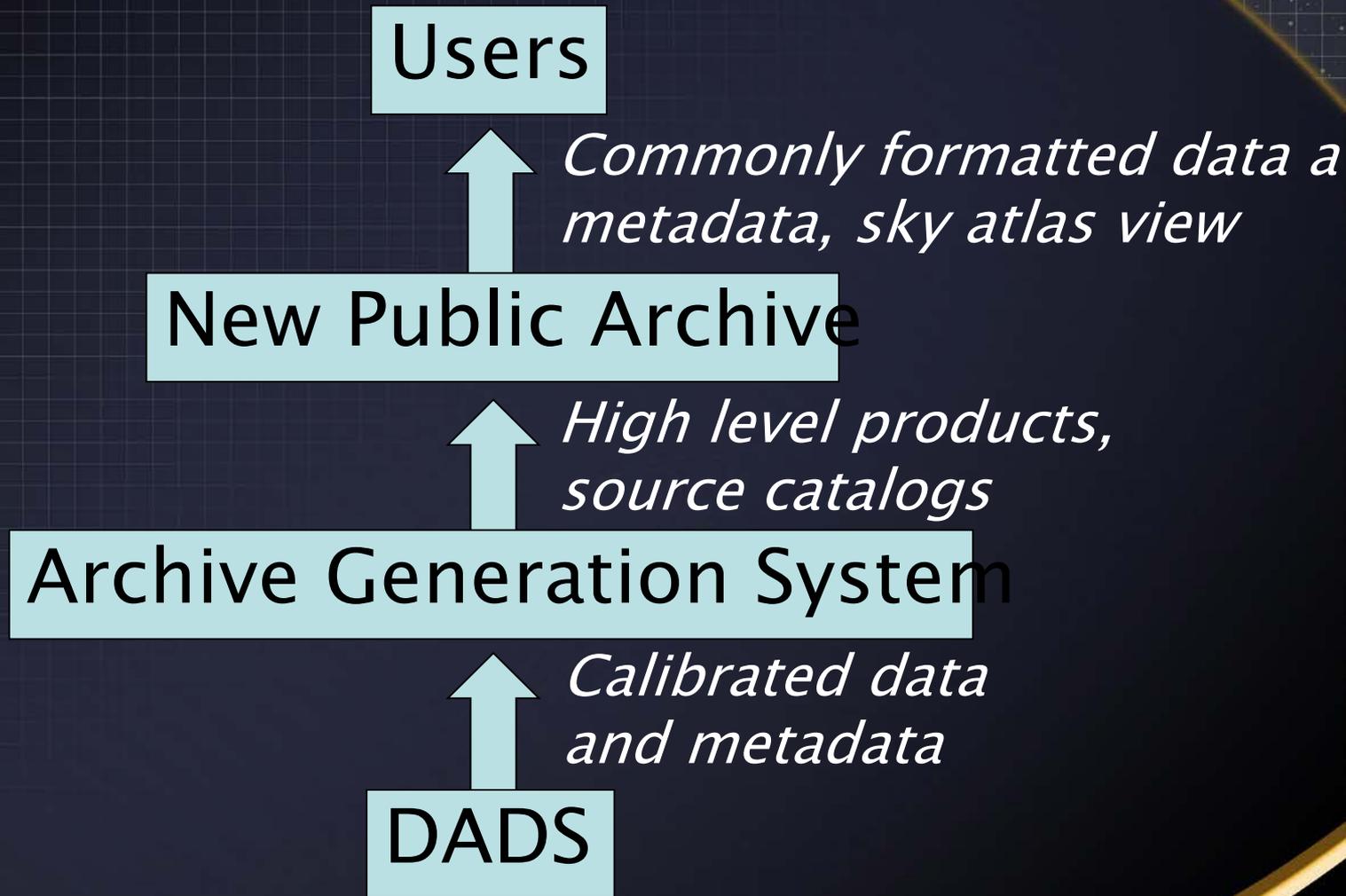
- Cone Search for observation catalog
- Simple Image Access Protocol for quick-look images and legacy programs
- Simple Spectral Access Protocol for spectrographs and SEDs
- SkyNodes for databases of object catalogs (HDF, UDF, GOODS, et al.)



HST legacy archive and VO

- Immediate access to calibrated data
 - Associations, visit-based
 - No latency
 - Data recalibrated as necessary, in advance of requests
 - Support for cut-outs, thumbnails
 - Transform user's view of HST archive to sky atlas
- Improved astrometry to simplify data comparison
- Footprint services (precise sky coverage)
- Object catalogs with links to spectrum
- Find moving targets given ephemeris

Tiered system



Features, benefits

- DADS is unchanged
- VO compatibility is almost automatic
- Data access is more efficient
- Lower potential barrier for use of HST data
- Expert mode of access remains available

Summary

- NVO infrastructure now quite mature
- HST legacy archive plans focus on improved data quality, high level products, and ease of access
- HST legacy archive provides VO compatibility at minimal cost