



US National Virtual Observatory

An Introductory Overview of the National Virtual Observatory & How It Might Benefit the AAVSO

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American Association of Variable Star Observers

Astronomy – Its All About... Communication.



Astronomy – Its All About... Sharing.



This Has Led To...

- Faster and Faster Communications
- More and More Data to Share
- This Means...

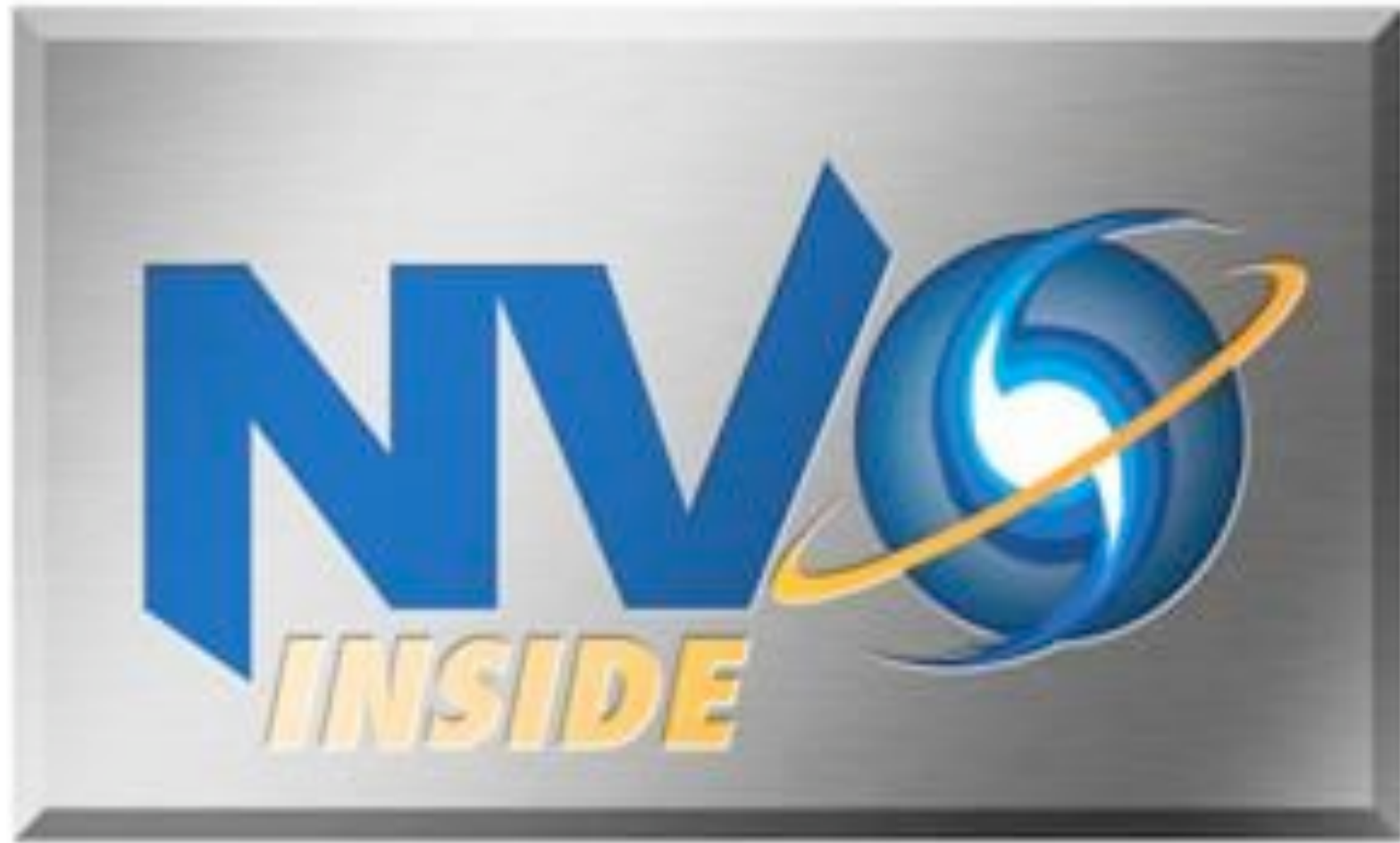
Drinking from the Data Firehose?



Or Drowning In a Burst Dam of Data Flow.



One Solution: The National Virtual Observatory



The National Virtual Observatory

- What is it?
- How Can It Help Astronomy?
- Why Should You Care?
- How is the AAVSO Planning on Participating?

The NVO – What Is it?

- An expandable collection of distributed databases.
 - Data sets are owned & maintained by their individual institutions.
 - They are published to the VO (using the VO Registry) and made available to the public using standardized methods (ADQL).

The NVO – What Is It?

- A Research testbed to develop new ways of processing and delivering data.
 - VOEvents
 - ADLQ
 - Distributed & Grid Computing

The NVO – What Is It?

- A new paradigm & infrastructure that allows us to look at new ways of processing data.
 - Old: Looking at individual data points in isolated data sets.
 - New: Statistically looking at *petabytes* of data using different datasets in multiple wavelengths, using hundreds of processors/computers across the internet to detect trends.

The NVO – How Does It Help?

- Allows ready access to different datasets for searching in ways not foreseen by the data's original takers.
- Allows statistical analysis of multiple, large datasets.
- New datasets coming in (LSST) are so large that more people/more processors are needed to look at them. The NVO standardizes access and protocols to enable this.

The NVO – How Does It Help?

- The new datasets will also need to be enabled by multiple processors. The NVO has been working on “grid computing” methods to allow this.
- The NVO can foster a sense of community.
- The NVO can provide an environment needed for both supervised and unsupervised learning and research.

The NVO – Why You Should Care

- Research astronomy, in its mainstream, is moving away from individual data points in individual data sets. It is moving toward statistical analysis of large, multiple wavelength datasets. Utilizing the NVO is a way for AAVSO members to keep up with current research trends.
- It can give *you* statistical access to data that you could never get yourself.

The NVO – Why You Should Care

- The NVO allows us the means and environment to train the next generation of both professional and amateur astronomers by using the tools they'll need to be effective with the flood of data that threatens to overwhelm us.

The NVO & the AAVSO

- Virtual Observatory Projects at AAVSO
 - Publish Alert Notices as VOEvents
 - Publish Special Notices as VOEvents
 - Publish the AAVSO International Database to the Virtual Observatory
 - Look at the possibility of having the AAVSONet of Robotic Telescopes accept VOEvents as part of their input.

Questions?

