GLOBA In A Nutshell

GLOBA stands for “GLObal Robotic-Telescopes Intelligent Array” and will be the first free and open access network of robotic telescopes in the world. It will provide a Web 2.0 environment where users can do research in astronomy by observing with robotic telescopes, and/or by analyzing data that other users have acquired with GLOBA, or from other free access databases, such as the European Virtual Observatory.

Benefits of the Network

Users with no telescopes will have access to a large number of robotic instruments in the network with a dedicated web applications. During the three years of the project, at least 17 telescopes will be integrated into the network, with 12 of them currently operational.

Telescope owners will be able to use software tools provided by GLOBA to robotize their telescopes, to do observations and analyze the data. They will be also invited to join the network, dedicating some of their observation time for other users and gaining wider access to network resources.

All standards, software and documentation developed by GLOBA will be offered to the community under free licence to use, distribute and modify.

GAMMA-RAY BURST ALERTS

An important aspect of GLOBA’s operation will be the capability to respond autonomously to alerts regarding new astrophysical events such as supernovae and gamma-ray bursts. A standard Alert programming interface will be designed for GLOBA’s scheduler to allow the network to respond to these events. The message carrying the observational request is sent to one or more participating robotic telescopes to optimise the follow up observations by the network.

ONLINE EXPERIMENTS

GLOBA provides the mechanism for users to access and control the telescopes remotely and make observations. Web authoring tools will enable users to create their own online experiments.

Two types of experiments will be available:

- Interactive, with users getting direct remote control of the telescope functions.
- Batch, when users send requests for target observations via the web interface and the network performs them automatically.

Batch mode of operation results in much more effective usage of network resources. Dedicated Observation Time Scheduler will be developed to prepare optimal observation schedules for all telescopes in the network. This is a highly non-trivial task for a network of heterogeneous telescopes.

The TAD (Telescopial Administrativo de Diversificacio)n robotic telescope at Observatori del Teide in Tenerife (Canary Islands) was the first GLOBA telescope made available to users.


OFFLINE EXPERIMENTS

GLOBA’s archival and other public data-bases are used to carry out astronomical research by professional, amateur and citizen scientists.

GLOBA also offers a web environment for analysing meta-data similar to the European Virtual Observatory and Galaxy Zoo.

OUTREACH & EDUCATION

GLOBA is providing live web broadcasts of astronomical events and educational resources to engage students and public interest in astronomy.

Message to the future

About 500 photos from users all over the world collected in a Venus Transit outreach action

PLASMA LIGHT CURVES: IFI-7 (GREEN), CLASSICAL OPEN-LAP (BLUE), SLOW-LEAF TYPE, ALL OBSERVED AT THE SAME TIME.

To trigger light curve reconstruction, user has to specify position of the object in the sky as well as reference star selection and calibration parameters. As a response, server will send the light curve table with 3 columns: HJD, magnitude and estimated uncertainty. Uncertainty estimates can be used to remove bad quality measurements.

Types of Off-line Experiments

- Classification of variable stars
- Evolution of variable stars with time
- Optical transient searches
- Occurrences of stars by solar system objects

As well as online experiments, web authoring tools will allow users to create their own offline experiments.

GLORIA is funded by the EU under FP7, Grant Agreement No. 289673

for more information visit http://gloria-project.eu