Gloria In A Nutshell

GLORIA 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 GLORIA, or from other free access databases, such as the European Virtual Observatory.

The user community will not only generate content, but will also be able to control telescopes around the world, either directly, in 'teleoperation' mode, or via scheduled observations. The community will also make decisions about the network behaviour and priorities, that will give "intelligence" to GLORIA, while the drudge work (such as creating telescope schedules to satisfy various constraints) will be done by algorithms developed for the purpose.

Live Broadcasting of Astronomical Events

Transit of Venus , June 6, 2012
Total Solar Eclipse, November 13, 2012
Total Solar Eclipse, November 3, 2013
Total Lunar Eclipse, April 15, 2014

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Benefits of the Network

Users who do not have telescopes in the network will have access to an arbitrary number of robotic telescopes via a web portal.

During the three years of the project , at least 17 telescopes will be integrated into the network, with 12 of them currently operational.

All the standards, software and documentation will be offered to the community under free license to use, distribute and modify.

GAMMA-RAY BURST ALERTS

An important aspect of GLORIA'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 GLORIA'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.

OUTREACH & EDUCATION

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

GLORIA
GLObal Robotic-Telescope Intelligent Array

OPEN ACCESS

GLORIA project will define free standards, protocols and methodologies to allow citizen and professional scientists to incorporate their telescopes and all related instrumentation (cameras, filter wheels, domes etc) into the network.

Global Scheduler

GLORIA is not only a network of telescopes, it is a network of heterogeneous telescopes. GLORIA 's scheduler accepts telescope-neutral Observing Plans as input. It outputs a schedule for each, corresponding to their available time and capabilities.
The technical approach to implementing the scheduler, takes it from RTS2 (based on the NSGA-2 genetic algorithm) and adapts it for the extra degrees of freedom - multiple, heterogeneous instruments.

http://rts2.org

ONLINE EXPERIMENTS

GLORIA 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.

When will the experiments be run?

Fixed
At a time chosen by the *user*

Scheduled
At a time chosen by the *system*

Alert
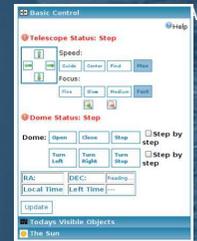When triggered by *an external event eg. a GRB*

How will the experiments be carried out?

Interactive
Direct remote control of the telescope functions

Batch
The telescope receives a script and executes it autonomously

Teleoperation

The direct remote control of a robotic telescope will be possible via a web interface, for example with the Ciclope software package.

http://om.fi.upm.es/Ciclope

OFFLINE EXPERIMENTS

GLORIA's archival and other public databases are used to carry out astronomical research by professional, amateur and citizen scientists.
GLORIA also offers a web environment for analysing meta-data similar to the European Virtual Observatory and Galaxy Zoo.

Types of Offline Experiments

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

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

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

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