

Las Cumbres Observatory: Building a global telescope network from the ground up

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Abstract. Las Cumbres Observatory Global Telescope Network (LCOGT) are building a global network of telescopes which will be available to both professional scientists and the science curious public. This telescope network will be global and so will the community, therefore all aspects of the endeavour must be online and self-sustaining - from the observing software to the analysis tools. During 2012 LCOGT have deployed the first 1-meter telescopes, and launched a citizen science project using LCOGT data, Agent Exoplanet, as well as many other online resources for anyone to use as they explore astronomy.

1. Building a global telescope network

One of the primary missions of LCOGT is to “*inspire critical thinking by pursuing scientific investigations with robotic telescopes*”. During 2012-2015 LCOGT will create a homogeneous network of over 30 telescopes which will be used by professional scientists and the general public. To ensure this network can be accessed as widely as possible all observing tools will be available through an online web portal.

Whilst the majority of time available on the network will be for scientific use, a large fraction will also be available for informal or citizen science projects. At full deployment LCOGT hopes to be able to offer up to 100 hours of observing time each day on the 0.4-meter network of telescopes for citizen science. LCOGT will run and support a small number of projects leaving the rest of the time available for the community to propose projects. Key to the success of a these proposals will be how well supported the user-base will be while they follow the project.

As the telescope network is being deployed a diverse range of tools and resources have been developed for astronomy education and engagement. All are available online at the LCOGT website (<http://lcogt.net>). Some examples are:

- Virtual Sky - A customisable planetarium which can be embedded into any webpage. VirtualSky shows the positions of planets, meteor showers, the Moon and Sun, constellations, as well as many different sky projections. <http://lcogt.net/virtualsky>
- Observation Archive - The full archive of data from 2004 to the present, is available to browse and query. All images and data may be used under a Creative Commons licence. <http://lcogt.net/observations>
- SpaceBook - An online textbook of astronomy, written by LCOGT containing hundreds of pages on a wide variety of astronomical topics. <http://lcogt.net/spacebook>
- Agent Exoplanet - Explore extra-solar planet data using the transit detection method. All the data analysis and graphing tools are built into this online citizen science investigation. <http://portal.lcogt.net/agentexoplanet>