



NEWS RELEASE
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News release:

First Light for the ASTROVIRTEL Project

12-Apr-2000: **Astronomical data archives increasingly resemble virtual gold mines of information. A new project, known as ASTROVIRTEL aims to exploit these astronomical treasure troves by allowing scientists to use the archives as virtual telescopes.**

The competition for observing time on large space- and ground-based observatories such as the ESA/NASA Hubble Space Telescope and the ESO Very Large Telescope (VLT) is intense. On average, less than a quarter of applications for observing time are successful.

The fortunate scientist who obtains observing time usually has one year of so-called proprietary time to work with the data before they are made publicly accessible and can be used by other astronomers. Precious data from these large research facilities retain their value far beyond their first birthday and may still be useful decades after they were first collected.

The enormous quantity of valuable astronomical data now stored in the archives of the European Southern Observatory (ESO) and the Space Telescope-European Coordinating Facility (ST-ECF) is increasingly attracting the attention of astronomers. Scientists are aware that one set of observations can serve many different scientific purposes, including some that were not considered at all when the observations were first made.

Data archives as 'gold mines' for research

Astronomical data archives increasingly resemble virtual gold mines of information. A new project, known as ASTROVIRTEL or 'Accessing Astronomical Archives as Virtual Telescopes' aims to exploit these astronomical treasure troves. It is supported by the European Commission (EC) within the 'Access to Research Infrastructures' action under the 'Improving Human Potential & the Socio-economic Knowledge Base' of the EC Fifth Framework Programme.

ASTROVIRTEL has been established on behalf of the European Space Agency (ESA) and the European Southern Observatory (ESO) in response to rapid developments currently taking place in the fields of telescope and detector construction, computer hardware, data processing, archiving, and telescope operation. Nowadays astronomical telescopes can image increasingly large areas of the sky. They use more and more different instruments and are equipped with ever-larger detectors. The quantity of astronomical data collected is rising dramatically, generating a corresponding increase in potentially interesting research projects.

These large collections of valuable data have led to the useful concept of 'data mining',

whereby large astronomical databases are exploited to support original research. However, it has become obvious that scientists need additional support to cope efficiently with the massive amounts of data available and so to exploit the true potential of the databases.

The strengths of ASTROVIRTEL

ASTROVIRTEL is the first virtual astronomical telescope dedicated to data mining. It is currently being established at the joint ESO/Space Telescope-European Coordinating Facility Archive in Garching (Germany). Scientists from EC member countries and associated states will be able to apply for support for a scientific project based on access to and analysis of data from the Hubble Space Telescope (HST), Very Large Telescope (VLT), New Technology Telescope (NTT), and Wide Field Imager (WFI) archives, as well as a number of other related archives, including the Infrared Space Observatory (ISO) archive.

Scientists will be able to visit the archive site and collaborate with the archive specialists there. Special software tools that incorporate advanced methods for exploring the enormous quantities of information available will be developed.

Statements

The project co-ordinator, Piero Benvenuti, Head of ST-ECF, elaborates on the advantages of ASTROVIRTEL: *"The observations by the ESA/NASA Hubble Space Telescope and, more recently, by the ESO Very Large Telescope, have already been made available on-line to the astronomical community, once the proprietary period of one year has elapsed. ASTROVIRTEL is different, in that astronomers are now invited to regard the archive as an 'observatory' in its own right: a facility that, when properly used, may provide an answer to their specific scientific questions. The architecture of the archives as well as their suite of software tools may have to evolve to respond to the new demand. ASTROVIRTEL will try to drive this evolution on the basis of the scientific needs of its users."*

Peter Quinn, the Head of ESO's Data Management and Operations Division, is of the same opinion: *"The ESO/HST Archive Facility at ESO Headquarters in Garching is currently the most rapidly growing astronomical archive resource in the world. This archive is projected to contain more than 100 Terabytes (100,000,000,000,000 bytes) of data within the next four years. The software and hardware technologies for the archive will be jointly developed and operated by ESA and ESO staff and will be common to both HST and ESO data archives. The ASTROVIRTEL project will provide us with real examples of scientific research programs that will push the capabilities of the archive and allow us to identify and develop new software tools for data mining. The growing archive facility will provide the European astronomical community with new digital windows on the Universe."*

Additional information

More information about ASTROVIRTEL can be found at the dedicated website at:
<http://www.stecf.org/astrovirtel>

The European Southern Observatory (ESO) is an intergovernmental organisation, supported by eight European countries: Belgium, Denmark, France, Germany, Italy, The Netherlands, Sweden and Switzerland.

The European Space Agency is an intergovernmental organisation supported by 15 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Space Telescope European Coordinating Facility (ST-ECF) is a co-operation between European Space Agency and European Southern Observatory.

The Hubble Space Telescope (HST) is a project of international co-operation between NASA and ESA.

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Notes for editors

This is a joint Press Release by the Space Telescope European Coordinating Facility (ST-ECF) and the European Southern Observatory (ESO).

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