

The Virtual Telescope: Frequently Asked Questions (FAQ)

Here some general questions about the Virtual Telescope are answered. If this will not help, please submit your inquiries to: info@virtualtelescope.eu. Details should be found on the Virtual telescope website: <http://www.virtualtelescope.eu>

Last Revision: 22 Mar. 2009

Q. *What is the Virtual Telescope?*

A. The Virtual Telescope is a project of the Bellatrix Astronomical Observatory (Italy), created and managed by Dr. Gianluca Masi, PhD. It consists in a number of **robotic** telescopes, **remotely** accessible via the Internet for observing the skies, 24h/day. It is a single user facility: a given observer/team will be the owner of the instruments during the observing session. If necessary, more people can access the telescope at the same time, one of them being the conductor, the others being the "audience".

Q. *Where is the Virtual Telescope?*

A. The Virtual Telescope is located in Ceccano, Central Italy, about 90km south of Rome, at Bellatrix Astronomical Observatory.

Q. *Is the Virtual Telescope suitable for real-time observing?*

A. Yes. The Virtual Telescope makes possible true **real-time observing**, as the user has full control of everything, namely the telescope (which can be pointed by the user to the target of interest), the CCD camera (to capture images of the object observed) and accessories (filters, focuser and so on). So, the Virtual Telescope is definitely a service offering live observing.

Q. *How the users connect to the telescope?*

A. In order to provide full control of the system, a very simple, free software (VNC) is made available to replicate the Virtual Telescope PC on the user's computer. Once connected, the user will control both the telescope and detectors using a powerful, very intuitive graphic interface. This way, the user works like is she/he is onsite, at the observatory. A web interface is also available, but the previous one, being the most complete, is still available.

Q. *Which telescopes are available?*

A. A few different and excellent instruments are available:

1) a Celestron C14 (360mm, working at f/8.7) optical tube on a Software Bisque Paramount ME robotic equatorial mount, equipped with a SBIG ST-8XME, Class1, no anti-blooming CCD camera; a 10-positions filter wheel is included for true colour imaging, standard photometry (B,V,R and I) and narrow-band (H-alpha) imaging.

2) a Coronado SolarMaX 60 (H-alpha) telescope on a Vixen Super Polaris robotic mount, equipped with an Imaging Source CCD camera, for narrow-band solar observations.

Each of these instruments can be remotely used via the internet.

Q. *Which objects can be observed by the Virtual Telescope?*

A. Virtually, any astronomical object: the Sun, the Moon, the Planets, Comets, Asteroids, Stars, Star Clusters, Nebulae, Galaxies and more. Thanks to a

seeing often significantly better than 2", high resolution imaging is possible.

Q. *What is the typical seeing at the Virtual Telescope?*

A. The site where the Virtual Telescope is installed is blessed by very nice seeing, on average. Typical values are better than 2", with peaks at 1.4".

Q. *Are the object databases up-to-date?*

A. Databases are constantly updated to include recently discovered objects (like new asteroids and comets), so users can just point them with a mouse click, even the comet announced few minutes earlier.

Q. *What kind of observations can be done with the Virtual Telescope?*

A. A great variety, really! Users can just enjoy the heavens doing pretty pictures, even grabbing true color (LRGB or RGB) images. They can also do scientific grade work, like astrometry of comets and asteroids - including those crossing the Earth orbit (the so-called near-Earth objects, NEOs) - and photometry of asteroids and variable stars, even at standard wavelengths. Transient phenomena can be easily tracked with the Virtual Telescope. So, the project is very flexible.

Q. *Who is the typical user of the Virtual Telescope?*

A. We have astronomers, amateurs, students and curious people enjoying the Virtual Telescope, so the project can fit the needs of such a variegated community, thanks to its high technological grade and professional assistance.

Q. *How users are scheduled?*

A. Users are scheduled on "first come, first served" basis, against the available time on the telescope. Users have to book the observing session in order to remotely operate the telescope.

Q. *Scheduled users can enjoy the telescope for a time span defined "telescope time": what this telescope time is?*

A. "Telescope time" is the time the user spends on the telescope. It is calculated starting from the initial login to the final logout (but this is not the only option available, see next question). In order to use the telescope, users should have a credit of telescope time, which can be bought any time. Telescope time should be used within 2-years since purchase.

Q. *Is the live observing option the only one available?*

A. No. In order to fit any observing need, the Virtual Telescope offers a "service mode" option: in this case, the user submits an observing request to the staff and the latter will take care to perform the observations. The user will receive his/her images. The service mode is cheaper, as users are charged for the time really spent doing images, where real-time observing charges time no matter what the user is doing.

Another option is the "Assisted" one: it works like the live option, but users get full, real-time assistance at the scheduling, imaging and data processing time. This "Assisted Mode" is the standard for Schools, at a very special rates.

Q. *What about prices?*

A. Prices are kept at the lower possible level. Currently, the Virtual Telescope is the only, high-tech, real-time observing, single user facility which can be operated at fares as cheap as 10 Euros per hour (new user welcome rate).

Schools have amazingly low prices, including the full real-time assistance part of the assisted "Assisted" option. Prices can be checked on the Virtual Telescope website, while schools are invited to contact the staff.

Q. *What about the images collected by the users?*

A. The images the users grab during their observing sessions are made available to them in the official FITS format, assuring the maximum scientific/educational potential. Images are made available on the web for downloading.

For questions and details, please contact:

Dr. Gianluca Masi, PhD

Via Madonna de Loco, 47

03023 Ceccano (FR)

ITALY

Phone: +39 3349236690

Email: info@virtualtelescope.eu

Q. *What are the "Live Shows"?*

A. "Live Shows" are special events with a given topic where subscribers can enjoy 1.5/2 hours of observing, under the guide of an astronomer, who points the telescope, grabs images and places them on the web in real-time. Users can explore the wonders of the Universe starting from these images, discussing their astrophysical meaning and whatever they like with the staff. Check our website for more.

Q. *Who is the "father" and owner of the Virtual Telescope project?*

A. The Virtual Telescope project is an idea of Dr. Gianluca Masi, an Italian astrophysicist who earned a PhD in Astronomy. He is very active in astronomical research and also in education and public outreach, being one of the scientific curators of the Planetarium of Rome.

Q. *Where is the Virtual Telescope project website?*

A. The website can be found at <http://www.virtualtelescope.eu>

The Virtual Telescope



Enjoy the Universe from your Desktop