

History of the 20cm Telescope

The Origins of the main instrument

The telescope was owned by an influential French gentleman, M.L. Pallacchi, who lived in the 14th district of Paris (28 Avenue de l' Observatoire, to be exact) at the time. Pallacchi had obtained the telescope hoping to fulfil his wish of leaving his mark on history by discovering a new comet. To this end, he had positioned the instrument in a small wooden observatory at his St. Rémy outhouse, 26km south of Paris.

Several parts of the telescope, including the casing, viewfinder, and mounting were constructed by Maurice Manent (1884-1961) at La Croix de Berny in Seine, France. The telescope, fitted with a synchronous drive based on a pendulum clock, was originally mounted upon a wooden tripod. Pointing the telescope had to be done manually and involved the use of a cable control and dividing-circles that enabled one to achieve a pointing precision of one arc-second.

The telescope's objective was an achromatic doublet based upon the Von Littrow design, with an effective aperture of 20 cm and a focal length of 208 cm (f/10,4). The objective was built as lens number 82, and verified by Dr. Andre Couder (1897-1979), who signed its test data on July 16, 1932.

The viewfinder, which could also be used without the main instrument, has an objective diameter of 6cm, and a focal length of 70cm. In order to incorporate several different eyepieces, the viewfinder was also equipped with a focusing device.

Additionally, Pallacchi had a special 120mm eyepiece made. Using this eyepiece, Pallacchi achieved a magnification of 17.3, which is particularly suitable for observing comets. The telescope came with a further plethora of eyepieces and other accessories, all of which are still present in the current set-up. All eyepieces of the main instrument also fit in the viewfinder.

Interestingly, the telescope's owner never managed to discover a comet, which may have contributed to the fact that it is now set-up in Nijmegen. Unfortunately, nothing is known about further astronomical activities of Mr. Pallacchi.

The Nijmegen era

In 1962, Mr. Pallacchi put the telescope up for sale for the sum of 12,000 Francs in a French astronomical journal, along with all its accessories. As fate would have it, the French domestic mail delivery service was on strike at the time, and the telescope was still available for purchase when the journal reached Nijmegen. Having talked to Mr. Pallacchi on the phone, a small group traveled to France to meet with him on July 22, 1962. The group consisted of the following people:

- Dr. J.J. de Kort, head of the Astronomy department and user of the telescope.
- Dr. J. Borgman from the University of Groningen, expert on astronomical instruments.
- F. Ribot, who handled both the financial aspect of the purchase, as well as the formalities relating to importing the instrument into the Netherlands.
- J. van Wesel, driver of the faculty's micro-bus.

A few days after arriving, dr Borgman and dr De Kort tested and reviewed the telescope intensively, by projecting the Sun and studying a sunspot, amongst other things. The telescope passed their scrutiny, and was sold to the university for 9.000 Francs. The group returned to Nijmegen with the telescope the very same day.

However, construction of the “Universeel Laboratorium”, where the telescope was to be placed, had not yet been completed. In July 1963, the then board of design commissioned the construction of the new set-up, which was completed quickly. In 1964, construction of the dome atop the Universeel Laboratorium was completed, and the telescope was placed inside. Electrical drive and controls of the instrument were put up early in 1965. From that moment the telescope was fully operational.

Shortly afterwards (either in 1965 or 1966), the telescope was fitted with an astrograph. The purpose of this instrument was to photograph large parts of the sky at once, and to perform astrometry. The astrograph, which is a type Tessar, was fabricated by Carl Zeiss Jena and has a focal length of 700mm, and an objective diameter of 140mm. The instrument's objective is a triplet, designed for a flat field of view of 18x13cm (!), was to be used with wet film. Since the projected image is flat, it is not colour-corrected.

In 1967, the entire instrument was transferred to the then main building, to a larger and better dome atop elevator shaft A1-A2. The telescope was in use again from early in 1968. That same year, however, a pressure vessel safety in a room directly below the dome failed. The resulting release of steam caused short circuiting of the electrical systems, which nearly led to the shaft catching fire. After the necessary repairs and cleaning, the telescope was once again in use several months later. The same accident reoccurred in either 1983 or 1984, but this time quick action prevented major damage.

Halfway through 1967, the telescope was outfitted to be used for solar studies. A diaphragm was installed before the lens, and a facility that enabled projection of the Sun at a size of 150mm was constructed. This set-up was improved in 1980 with the addition of a H-Alpha (wavelength of 6562,8 Å) filter. From that time onwards, the telescope was used to optically observe the Sun on a daily basis.

The telescope remained atop the old main building up to february 2004. Thereafter, it was deconstructed and moved in parts to TeCe. The telescope and its mounting were revised and adapted to their new placement in the high dome atop the Huygensgebouw in just one month time. The shaft and axles were lifted in to place in one piece in august 2004.

In august 2012, the 20cm refractor, a 10 micron GM4000, was installed on the current mount. This instrument enables observers to control the instrument from a computer in the same way as is possible for the 35cm telescope.

In 1985, revision of the focusing device uncovered the signature of the original maker of the telescope, along with the year of construction: 1905.

Despite its old age (113 years as of 2018), the instrument is in excellent condition. It is still used to project the Sun for observations on a nearly daily basis, and it is used to educate students on the principles of telescopes. Of course the telescope is also active at night, and still regularly photographs parts of the night sky.