

Abstract

At the end of the Twenties the 5 m telescope on Mount Palomar was planning, with great difficulties involved in the optical workmanship of large surfaces made by single blocks of glass, regardless of the costs.

Guido Horn-d'Arturo – Director of the University Astronomical Observatory in Bologna from 1921 to 1954, with an interruption because of racial persecution due to his Jewish background – had the brilliant idea to build a telescope mirror made up of small mirrors (tasselli), instead of a large and heavy monolithic mirror. After a prototype of 1 m diameter made in the Thirties, Horn assembled a 1.8 m compound telescope in 1952, inside the astronomical tower in Bologna. This telescope was made up of 61 hexagonal mirrors with converging foci in the same focal plane, so as to obtain a stellar image by bringing together the images from each individual mirror, using three screws under each mirror to adjust it: a pioneering active optics. In about five years Horn exposed more than 17.000 photographic plates, discovering new variable stars.

In 1979, the MMT was built up in Arizona: it was the first of a series of multi-mirror telescopes, till the E-ELT, planned for 2024 in Chile, with 798 hexagonal mirrors for a total aperture of 39.3 m, and the James Webb Space Telescope, with 18 mirrors for an aperture of 6.5 m, whose launch is planned for 2018.

The Horn's tessellated telescope undoubtedly was the forefather of the new generation multi-mirror telescopes with active optics, although the astronomical community has not yet recognised his merit.