we find Sir William Herschel, in his investigations on the magnitude of the apparent diameters of Arcturus (0″·2 within the nebula) and of Vega Lyræ, using a power of 6500. Since the middle of the seventeenth century, constant attempts have been made to increase the focal length of the telescope. Christian Huygens, indeed, in 1655, discovered the first satellite of Saturn, Titan (the sixth in distance from the center of the planet), with a twelve-feet telescope; he subsequently, however, examined the heavens with instruments of a greater focal length, even of 122 feet; but the three object-glasses in the possession of the Royal Society of London, whose focal lengths are respectively 123, 170, and 210 feet, and which were constructed by Constantin Huygens, brother of the great astronomer, were only tested by the latter, as he expressly states,* upon terrestrial objects. Auzout, who in 1663 constructed colossal telescopes without tubes, and therefore without a solid connection between the object-glass and the eye-piece, completed an object-glass, which, with a focal length of 320 feet, magnified 600 times.† The most useful application of these object-glasses, mounted on poles, was that which led Dominic Cassini, between the years 1671 and 1684, to the successive discoveries of the eighth, fifth, fourth, and third satellites of Saturn. He made use of object-glasses that had been ground by Borelli, Campani, and Hartsoeker. Those of the latter had a focal length of 266 feet.

During the many years I passed at the Paris Observatory, I frequently had in my hands the instruments made by Campani, which were in such great repute during the reign of Louis XIV.; and when we consider the faint light of Saturn's satellites, and the difficulty of managing instruments, worked by strings only,‡ we can not sufficiently admire the skill and the untiring perseverance of the observer.

* The remarkable artistical skill of Constantin Huygens, who was private secretary to King William the Third, has only recently been presented in its proper light by Uytenbrock in the "Oratio de fratribus Christiano atque Constantino Hugenio, artis dioptricæ cultoribus," 1838; and by Prof. Kaiser, the learned director of the Observatory at Leyden (in Schumacher's *Astron. Nachr.*, No. 592, s. 246).

† See Arago, in the *Annuaire pour* 1844, p. 381.

‡ "Nous avons placé ces grands verres, tantôt sur un grand mât, tantôt sur la tour de bois venue de Marly; enfin nous les avons mis dans un tuyau monté sur un support en forme d'échelle à trois faces, ce qui a eu (dans la découverte des satellites de Saturne) le succés que nous en avions espéré." "We sometimes mounted these great instruments on a high pole," says Dominique Cassini, "and sometimes on the wood-