



Refractor of the Berlin Royal Observatory

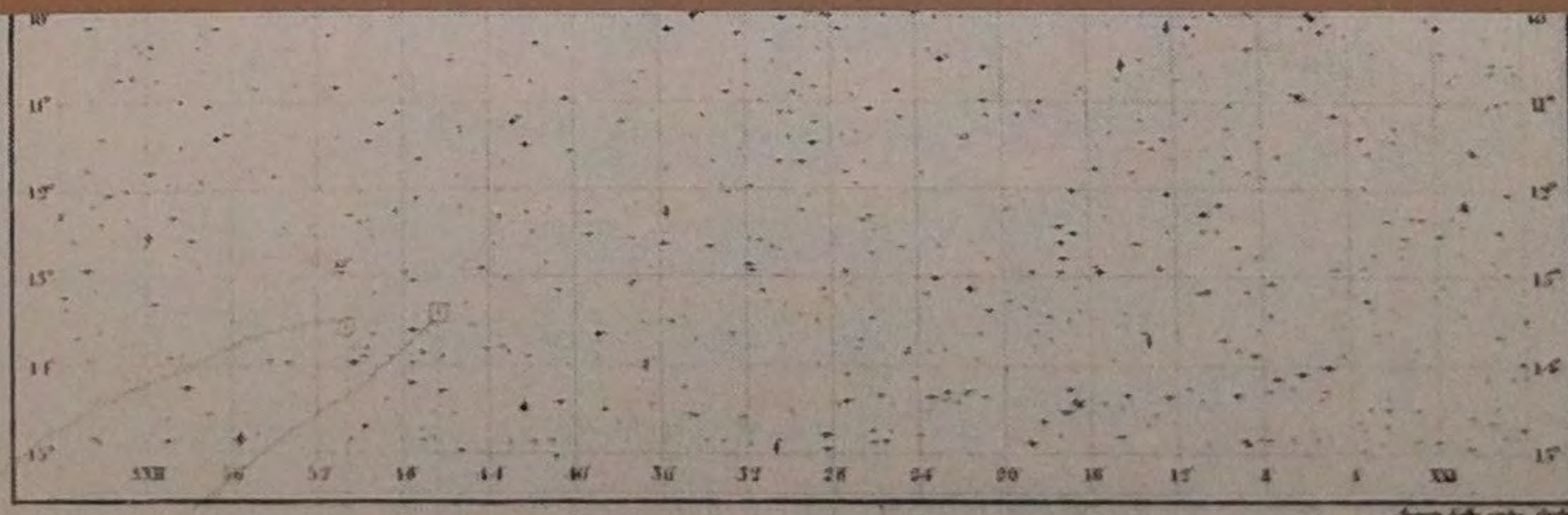
*built at Joseph von Fraunhofer's Optical Institute,
Munich 1828/29.*

The planet Neptune was discovered with it in 1846.

The refractor is an achromatic two-lens telescope (free refractor diameter 244 mm, focal length 4320 mm) and has a parallactic mounting to compensate for the rotation of the earth during observations: one of the two axes of rotation is oriented parallel to the earth's axis of rotation; the device is equipped with a weight-driven tracking mechanism.

Joseph von Fraunhofer (1787-1826) began development of the large and powerful refracting telescopes on a parallactic mounting in 1818. Fraunhofer's refractors were unequalled both in the size and lens quality, as well as in the precision of the mechanism's mounting.

At the instigation of Alexander von Humboldt (1791-1855), the new Berlin Royal Observatory acquired this second large refractor from the Fraunhofer Workshops in 1829, three years after Fraunhofer's death. Fraunhofer had delivered the first refractor to the Imperial Russian Observatory at Dorpat (now Tartu in Estonia) in 1824. Using the telescope in Berlin, Johann Gottfried Galle (1812-1910) succeeded in discovering the planet Neptune in 1846 on the basis of theoretical calculations of its position made by French astronomer Jean Joseph Le Verrier (1811-1877). Le Verrier had postulated the existence of an as yet undiscovered planet and calculated its position based on irregularities in the orbit of the planet Uranus.



*Theil der Himmelskarten XVI^{te} und XVII^{te} der ersten Aufsteigung und
25^{ten} südlicher bis 25^{ten} nördlicher Brechung für 1846 auf Veranlassung der*

KÖNIGLICHEN AKADEMIE DER WISSENSCHAFTEN IN BERLIN.

entworfen von Herrn Doctor C. Bremker in Berlin.