

The Napoleon Series

Maps and Mapmakers of the Napoleonic Wars: Dutch Cartography and Geography

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In the sixteenth and seventeenth century Holland was a powerful nation in overseas trade. In 1581 the Dutch became independent from the Spanish king. In an atmosphere free of religious suppression Antwerp and Amsterdam became centres for the arts and science - the printing houses of Amsterdam and Antwerp thus came to dominate commercial map production in Europe.

The following is from [List of Dutch Inventions and Innovations: Cartography and Geography](#)

Method for Determining Longitude Using a Clock (1530)

The Dutch-Frisian geographer Gemma Frisius was the first to propose the use of a chronometer to determine longitude in 1530. In his book *On the Principles of Astronomy and Cosmography* (1530), Frisius explains for the first time how to use a very accurate clock to determine longitude. The problem was that in Frisius' day, no clock was sufficiently precise to use his method. In 1761, the British clock-builder John Harrison constructed the first marine chronometer, which allowed the method developed by Frisius.

Triangulation as a Surveying Method (Foundations of Modern Surveying) (1533 & 1615)

Triangulation had first emerged as a map-making method in the mid sixteenth century when the Dutch-Frisian mathematician Gemma Frisius set out the idea in his *Libellus de locorum describendorum ratione* (*Booklet concerning a way of describing places*). Dutch cartographer Jacob van Deventer was among the first to make systematic use of triangulation, the technique whose theory was described by Gemma Frisius in his 1533 book.

The modern systematic use of triangulation networks stems from the work of the Dutch mathematician Willebrord Snell (born Willebrord Snel van Royen), who in 1615 surveyed the distance from Alkmaar to Bergen op Zoom, approximately 70 miles (110 kilometres), using a chain of quadrangles containing 33 triangles in all. The two towns were separated by one degree on the meridian, so from his measurement he was able to calculate a value for the circumference of the earth – a feat celebrated in the title of his book *Eratosthenes Batavus* (*The Dutch Eratosthenes*), published in 1617. Snell's methods were taken up by Jean Picard who in 1669–70 surveyed one degree of latitude along the Paris Meridian using a chain of thirteen triangles stretching north from Paris to the clocktower of Sourdon, near Amiens.

In the 1670s, Cassini began work on a project to create a topographic map of France, using Gemma Frisius's technique of triangulation.

Mercator Projection (1569)

The Mercator projection is a cylindrical map projection presented by the Flemish geographer and cartographer Gerardus Mercator in 1569. It became the standard map projection for nautical purposes because of its ability to represent lines of constant course, known as rhumb lines or loxodromes, as straight segments which conserve the angles with the meridians.

First true (Modern) Atlas (1570)

World map *Theatrum Orbis Terrarum* by Ortelius (1570). The period of late 16th and much of the 17th century (approximately 1570-1672) has been called the Golden Age of Dutch Cartography. The cartographers/publishers of Antwerp and Amsterdam, especially, were leaders in supplying maps and charts for all of Western Europe.

Flemish geographer and cartographer Abraham Ortelius generally recognized as the creator of the world's first modern atlas, the *Theatrum Orbis Terrarum (Theatre of the World)*. *Ortelius's Theatrum Orbis Terrarum* is considered the first true atlas in the modern sense: a collection of uniform map sheets and sustaining text bound to form a book for which copper printing plates were specifically engraved. It is sometimes referred to as the summary of sixteenth-century cartography.

First Printed Atlas of Nautical Charts (1584)

Portugal by Waghenaer (1584). The publication of *Waghenaer's De Spieghel der Zeevaerdt* (1584) is widely considered as one of the most important developments in the history of nautical cartography.

The first printed atlas of nautical charts (*De Spieghel der Zeevaerdt or The Mirror of Navigation / The Mariner's Mirror*) was produced by Lucas Janszoon Waghenaer in Leiden. This atlas was the first attempt to systematically codify nautical maps. This chart-book combined an atlas of nautical charts and sailing directions with instructions for navigation on the western and north-western coastal waters of Europe. It was the first of its kind in the history of maritime cartography, and was an immediate success. The English translation of Waghenaer's work was published in 1588 and became so popular that any volume of sea charts soon became known as a "waggoner", the Anglicized form of Waghenaer's surname.

Concept of Atlas (1595)

Gerardus Mercator was the first to coin the word atlas to describe a bound collection of maps through his own collection entitled *Atlas sive Cosmographicae meditationes de fabrica mvndi et fabricati figvra*. He coined this name after the Greek god who held the earth in his arms.

First Systematic Charting of the Far Southern Skies (Southern Constellations) (1595-97)

In the golden age of Dutch cartography and exploration (approximately 1570–1722), the Dutch-speaking peoples made the seminal contributions to the natural history, cartography, geography and ethnography. Flanders-based cartographers such as Gerardus Mercator and Abraham Ortelius helped lay the foundations for the modern cartography. In the area of celestial cartography, the Dutch Republic's explorers and cartographers like Pieter Dirkszoon Keyser, Frederick de Houtman, Petrus Plancius and Jodocus Hondius were the

pioneers in first systematic charting/mapping of largely unknown southern hemisphere skies in the late 16th century.

The constellations around the South Pole were not observable from north of the equator, by Babylonians, Greeks, Chinese or Arabs. The modern constellations in this region were defined during the Age of Exploration, notably by Dutch navigators Pieter Dirkszoon Keyser and Frederick de Houtman at the end of sixteenth century. These twelve Dutch-created southern constellations represented flora and fauna of the East Indies and Madagascar. They were depicted by Johann Bayer in his star atlas *Uranometria* of 1603. Several more were created by Nicolas Louis de Lacaille in his star catalogue, published in 1756. By the end of the Ming Dynasty, Xu Guangqi introduced 23 asterisms of the southern sky based on the knowledge of western star charts. These asterisms have since been incorporated into the traditional Chinese star maps. Among the IAU's 88 modern constellations, there are 15 Dutch-created constellations (including Apus, Camelopardalis, Chamaeleon, Columba, Dorado, Grus, Hydrus, Indus, Monoceros, Musca, Pavo, Phoenix, Triangulum Australe, Tucana and Volans).

Dutch Cartographers

Whilst in the seventeenth century, cartography in the Netherlands flourished and Dutch cartographers dominated almost the entire European market, by the time of the Napoleonic wars there are only two names listed as 'Important Dutch Map makers' :

Jan Barend Elwe¹ fl. 1785-09. A bookseller and publisher who reproduced a small number of maps copied from his predecessors.

Philippe M. G. Vandermaelen² 1795-1869. A Belgian publisher who produced one of the first atlases printed by lithography

Placed on the Napoleon Series: January 2020

¹ [Jan Barend Elwe](#)

² [Philippe M. G. Vandermaelen](#)