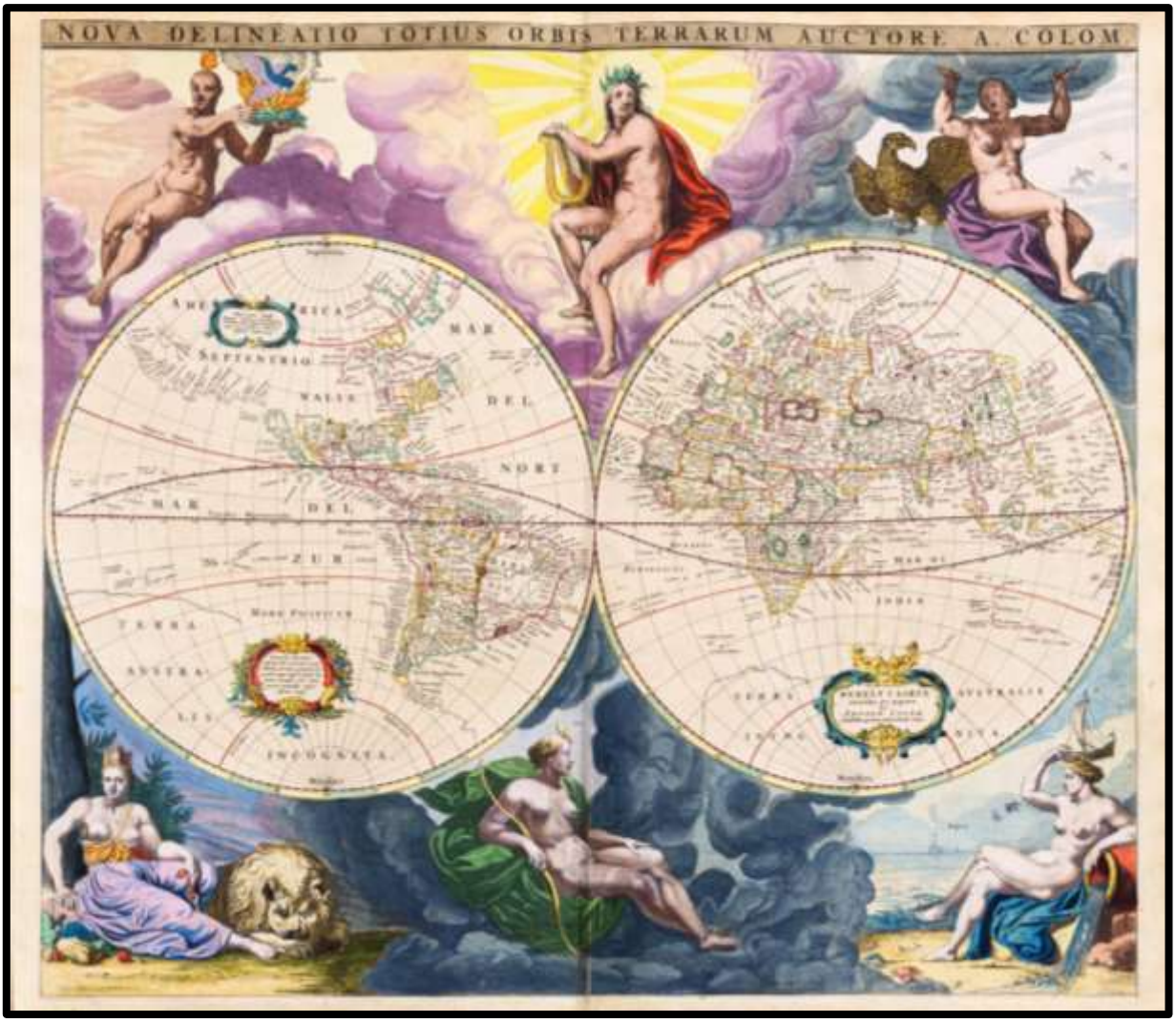
The Power of Maps

Exhibition 2024

Royal Geographical Society of South Australia



World Map from Colom Zee Atlas, [RGS 912.C718 d], 1658, Arnold Colom

Visit the Royal Geographical Society

Tuesday to Friday 10am to 1pm

(and Sunday 1pm to 4pm during May 2024)

Level 2, South Mortlock Wing, State Library of SA,
North Terrace, Adelaide

Library @rgssa.org.au ***Phone: 08 7424 6312***

Introduction

This exhibition showcases rare atlases and maps from the Library of the Royal Geographical Society of South Australia. Maps are representations of geographical space that help us understand our world and navigate through it. They encode both geographical and cultural knowledge and old maps present snapshots from history that reveal the course of discoveries and place-naming.

A map need not be a physical object but may be a mental picture or understanding to orient ourselves in geographic space. Many cultures famed for their travel and navigational skills did not use physical maps as we know them today. For example, the Vikings sailed the Atlantic without any drawn maps, as did the Polynesians in the Pacific, instead using their knowledge of astronomy and environmental cues for navigational guidance. Australian Aboriginal songlines encoded detailed geographical and astronomical knowledge in intricate oral stories that serve simultaneously as navigational guides, cultural maps and repositories of ecological and spiritual knowledge.

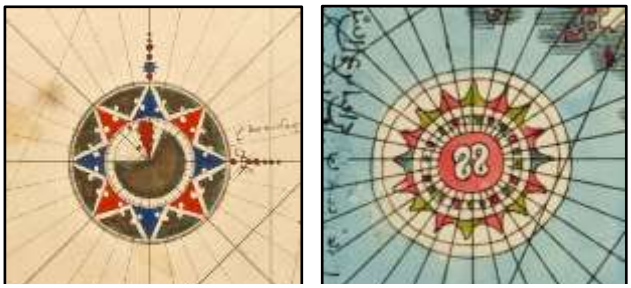
Cartography

Cartography is the art and science of making physical maps. Maps are spatial representations of places and it is the role of the cartographer to portray the geographic space with relevant knowledge in a graphical form that the user of the map can understand.

Symbolic and thematic maps rarely need precise geographical detail to tell their stories. Whereas, accurate geographical detail can be of critical importance in navigational maps. In the past, maps designed for navigating on land were quite different in design and detail to those used at sea. Maps for terrestrial areas needed landmarks for orientation and typically showed roads and other recognisable features of the landscape. The true horizon is not often visible on land, so astrolabes and sextants can't be used to calculate latitudes and directions.

By contrast, at sea, landmarks are only available near coastlines so the use of directional information is necessary. Navigational charts in the past were augmented with wind roses and rhumb lines as directional aids for charting courses, and knowledge of astronomy by mariners was essential for identifying where they were at sea.

Improvements in navigational technologies and geographic knowledge of the world over the past centuries are reflected in the evolution of cartography and observable in the maps.



Wind roses with rhumb lines from Jomard's Atlas

History of cartography

Maps are fragile objects that can be damaged or lost. When this happens, the knowledge embodied by the map may completely disappear. The fire that destroyed the Library of Alexandria in 48 BC destroyed untold numbers of manuscripts, including maps, and contributed to the loss to European science, for more than a millennium, of the sophisticated knowledge of astronomy, geography and cartography acquired by the Ancient Greeks. The maps we have today are only those maps that have survived history.

Human culture is indebted to the map makers and copiers of maps throughout the ages who have contributed to the preservation of the geographical, historical and cultural knowledge from maps. The first major publications on the history of cartography were printed in Paris in the mid-1800s - two large facsimile historical map collections commonly referred to as *Jomard's Atlas* and the *Viscount of Santarém's world atlas*. For his atlas, the Viscount of Santarém (1791-1856) compiled lithographic reproductions of early European maps and navigational charts, primarily focussing on the Age of Discovery and the Portuguese role in it.

Map by Mohammed Ebn-Aly Ebn-Ahmed al Charfy of Sfax, c.1600

From Jomard's *Les monuments de la géographie*, published 1842 - 1867

Edme François Jomard (1777-1862) was curator of geography and maps at the Bibliothèque Royale in Paris. To facilitate study of the history of cartography he searched for early maps and arranged for their reproduction as full-sized facsimiles that could be published and used for research. His collection, entitled *Monuments de la géographie* or "Monuments of geography" was published between 1842 and 1867, and included 30 maps, among which are the Hereford Mappa Mundi (c. 1300), Mercator's world map of 1569 and early maps of the Americas (16th century).

RGSSA Library collections

The Library of the Royal Geographical Society of South Australia has one of the most significant collections of rare geographical books and maps in Australia. The oldest book in the library is a beautifully bound version of Ptolemy's Geographia published in 1482. Other treasures include two Ortelius atlases (1571 and 1598), two Colom atlases (1658 and 1670), Mercator's atlas (1635), and an 1872 facsimile of the Peutinger scroll. Significantly, the Library has an edition of the Jomard Atlas which contains faithful renditions of some of the world's most historically significant maps.

All roads lead to Rome

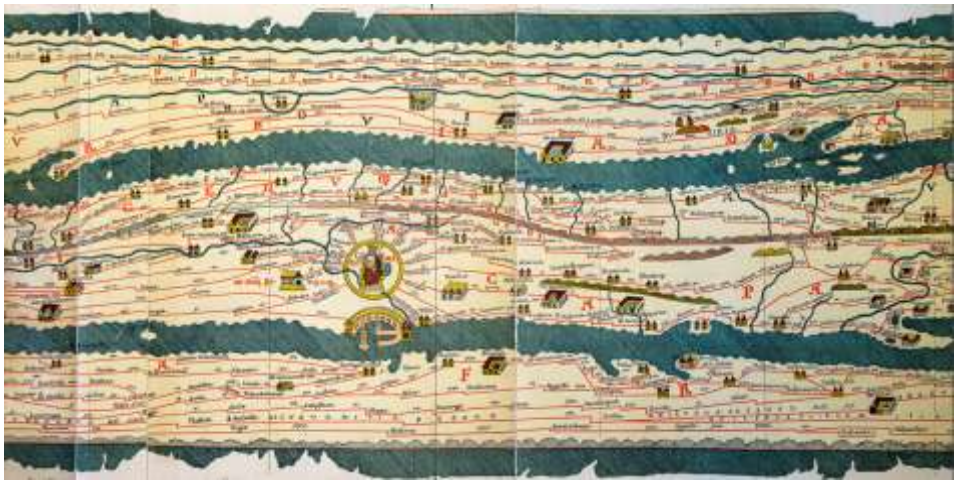
Roman roads were vital physical infrastructure for the Roman Empire. Major roads were laid along accurately surveyed courses, often cut through hills and using bridgework to cross rivers and ravines. Milestones allowed distances to be known and recorded exactly. The modern word "mile" derives from the Latin *milia passuum* meaning "one thousand paces".

The road network was documented using *itineraria*. An itinerarium was a list of cities and towns along a given road and the distances between them. The Roman government would periodically produce a master road list. The first master list was commissioned in 44 BC by Julius Caesar and Mark Antony and took 25 years to complete. Schematic road network maps could be produced from the master lists, and parts copied and sold on the streets as route-planners.

None of these maps, nor any other Roman maps, have survived from this time.

Peutinger Tabula

The only surviving map of the Roman road network is a scroll, 6.74m long and 34cm high, thought to have been created in 1265 by a monk in Colmar, France, from a 4th century Roman map. Discovered in 1494, it was bequeathed to Konrad Puetinger in 1508. A copy made for cartographer Abraham Ortelius was printed in 1598, and another made in 1872 by German professor Konrad Miller was printed by several publishers.



Peutinger Tabula, 1872 facsimile

Section showing from the top: Dalmatia, Adriatic Sea, Rome and central Italy, and north African coast.

Detail above.

See: https://upload.wikimedia.org/wikipedia/commons/5/50/TabulaPeutingeriana.jpg

Medieval mapping

Religious mapping

The largest medieval map known to exist is the **Hereford Mappa Mundi** dating from around 1300 and still displayed at Hereford Cathedral. The map was drawn on a single sheet of vellum and shows the geography of the known world illustrated with images of peoples, flora and fauna, and from Biblical history.

Hereford Mappa Mundi, c. 1300

1.58 m x 1.33 m

Wikimedia Commons

World maps in medieval times were referred to as *mappa mundi,* from the Latin *mappa* meaning “napkin” or “cloth” and *mundi* meaning “the world” - the modern word "map" derives from this term. Early Christian mappa mundi used the T-O map layout of the world and were often richly decorated with inscriptions and symbolic imagery.

T-O maps were circular maps of the known world showing Europe, Asia, and Africa. The simple design used a **T** to show the separation of the continents by the Mediterranean Sea and the Nile and the Don rivers, and the oceans flowed around the continents forming the **O**. East was at the top of the map and Jerusalem was at the centre.

Wikimedia Commons

Psalter maps gave a visual narrative for Bible stories and presented the world in miniature to illustrate the Book of Psalms.

Psalter World Map
c. 1260

17 cm x 12.5 cm

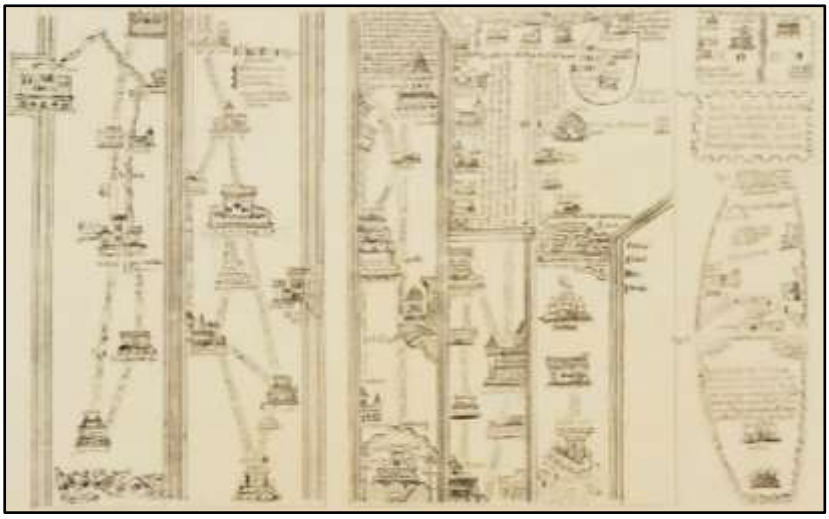
The Red Sea is coloured red and the parting of the sea during Exodus is shown.

British Library

Wikimedia Commons

Pilgrimage and journey maps

Pilgrimage maps began to appear in the 1200s. These were map itineraries formulated as strip maps identifying the roads and rest stops along the route.



From the *Chronicle of Matthieu Paris,* showing the map itinerary of a pilgrimage from London to Jerusalem

c. 1250

From Jomard's *Les monuments de la géographie*, published 1842-1867

Portolan charts

Portolan charts (from the Italian *portolano*, meaning "related to ports or harbors") were navigational sea maps dating from the early 1300s. Navigational *rhumb lines* radiating from a *wind rose* (later *compass rose*) show paths with constant bearing relative to true north and were used by pilots to lay courses from one harbour to another. Coastlines remain clearly visible on these charts as placenames are positioned inland and perpendicular to the coast.

14th century Sea map reputed to have belonged to a merchant family from Pisa - detail showing the Iberian Peninsula.

From Jomard's *Les monuments de la géographie*, published 1842-1867

Portolan charts in the Italian style are austere, showing coast lines only. Portolan maps in the Catalan style, produced by the Majorcan cartographic school, were often highly decorative – see example from 1500 on page 9.

Pictorial landscape maps

Medieval terrestrial maps provided recognisable interpretations of landscapes that show features of significance, rather than precise geographical details. As the magnetic compass was not yet in wide use these maps do not show bearings and there is no convention about map orientation. Rivers were usually mapped with greater accuracy than other features, and bird's-eye views of buildings, mountains and landmarks were added, often with great decorative effect.

Coastal and riverine maps from a manuscript of the poem of *La Sfera* (The Sphere) by Leonardo Dati, c.1465.

After an 18th century Florentine reproduction.

From Jomard's *Les monuments de la géographie*, published 1842-1867

Perspective maps emerged in the early Renaissance and combined measurement and painting to depict geographical features in a realistic manner. The intricate renditions of buildings and natural features added to their realism and aesthetic appeal. The map illustrated is a political map; however this style of map was often used for detailed city maps.

Italian perspective map of the 15th century.

Shows state of conquests by the Turks shortly before the fall of Constantinople in 1453. Crescent flags indicate Ottoman control.

From Jomard's *Les monuments de la géographie*, published 1842-1867

Age of Discovery

Ptolemy maps

The ancient Greeks had established that the world was spherical. Eratosthenes accurately calculated its circumference and Crates of Mallos created the first known globe. The Greek astronomer Hipparchus, in about 190BC, developed the work of Eratosthenes by establishing the method of dividing the world into meridians of latitude and longitude, enabling meaningful maps to be drawn.

The Greco-Egyptian astronomer and geographer Claudius Ptolemaeus (Ptolemy c75-153 AD) produced a map of the known world by calculating the latitude and longitude of 8,000 places. He devised various ways of depicting the spherical surface of the globe on a flat sheet including the conical and trapezoidal projections. His work *Geographica* provided a treatise on cartography as a map maker's manual that embodied the geographic knowledge of the Greco-Roman world.

No maps have survived from Ancient Greece but the European geographers, during the 1400s, were able to reconstruct them using the coordinates left in the Ptolemaic texts. The first edition of *Geographica* illustrated with maps was a Latin translation, published in Bologna 1477.

World map from Francesco Berlinghieri's 15th century paraphrase in Italian verse of Ptolemy's *Geographia*, printed by Nicolaus Todescho and published in Florence in 1482.

31 maps engraved on copper exemplifying the skill of early printers in the arts of typography and engraving.

Ptolemy's maps were regarded as authoritative until well into the 16th Century and had inspired Christopher Columbus. Unfortunately, Ptolemy had rejected the more accurate calculations of Eratosthenes as to the size of the Earth, and had joined the east coast of Africa and the land-mass of Asia to a hypothesised southern continent later designated Terra Australis Incognita.

The New World

Although the maps of Ptolemy were realistic for Mediterranean regions, the voyage of Bartholomeu Dias, that sailed around the southern tip of Africa in 1488, proved that the Ptolemy world map was wrong. Following this, the voyage of Christopher Columbus in 1492 to the New World encountered new lands previously unimagined.

Spanish cartographer Juan de la Cosa travelled with Christopher Columbus and produced the first world map depicting both North and South America. The portolan map contained accurate depictions of the coastlines, but the land masses are decorated with symbolic illustrations reminiscent of Medieval maps.

Juan de la Cosa's world map, 1500

The oldest known European map that shows the New World.

Coloured lithographic copy of Cosa's original map from Jomard's *Les monuments de la géographie*, published 1842-1867

Magellan's voyage to circumnavigate the globe in 1519-1522 opened up vast new areas for exploration in the Pacific and the maps produced after this time increasingly resemble the world we are familiar with.

Dieppe maps

The Dieppe school of cartographers in France produced a series of beautiful world maps and atlases during the 1540s to 1560s. These were large hand-produced works for wealthy and royal patrons, including Henry II of France and Henry VIII of England.

Dauphin Map, 1542

2.4m x 1.2m

Facsimile from Jomard's *Les monuments de la géographie*, published between 1842 and 1867

The Dauphin Map (a gift from Francis I of France to his son) can be oriented with either north or south at the top of the map. There was no consistent convention of north at the top of maps until the use of the magnetic compass became widespread, and many Dieppe maps show south at the top.

A large land mass south of Indonesia named *'Java la* Grande' is depicted on most Dieppe world maps. The use of Portuguese placenames in this area has fuelled speculation about possible Portuguese exploration of Australia's coasts in the 1520s.

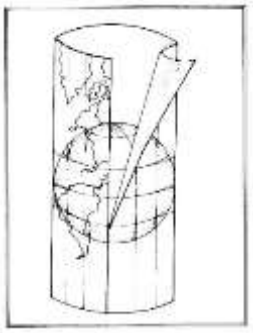
Mappemonde by Nicholas Desliens of Dieppe, 1566

450cm x 270cm

Hand-drawn and coloured copy by Henri Delachaux in 1884.

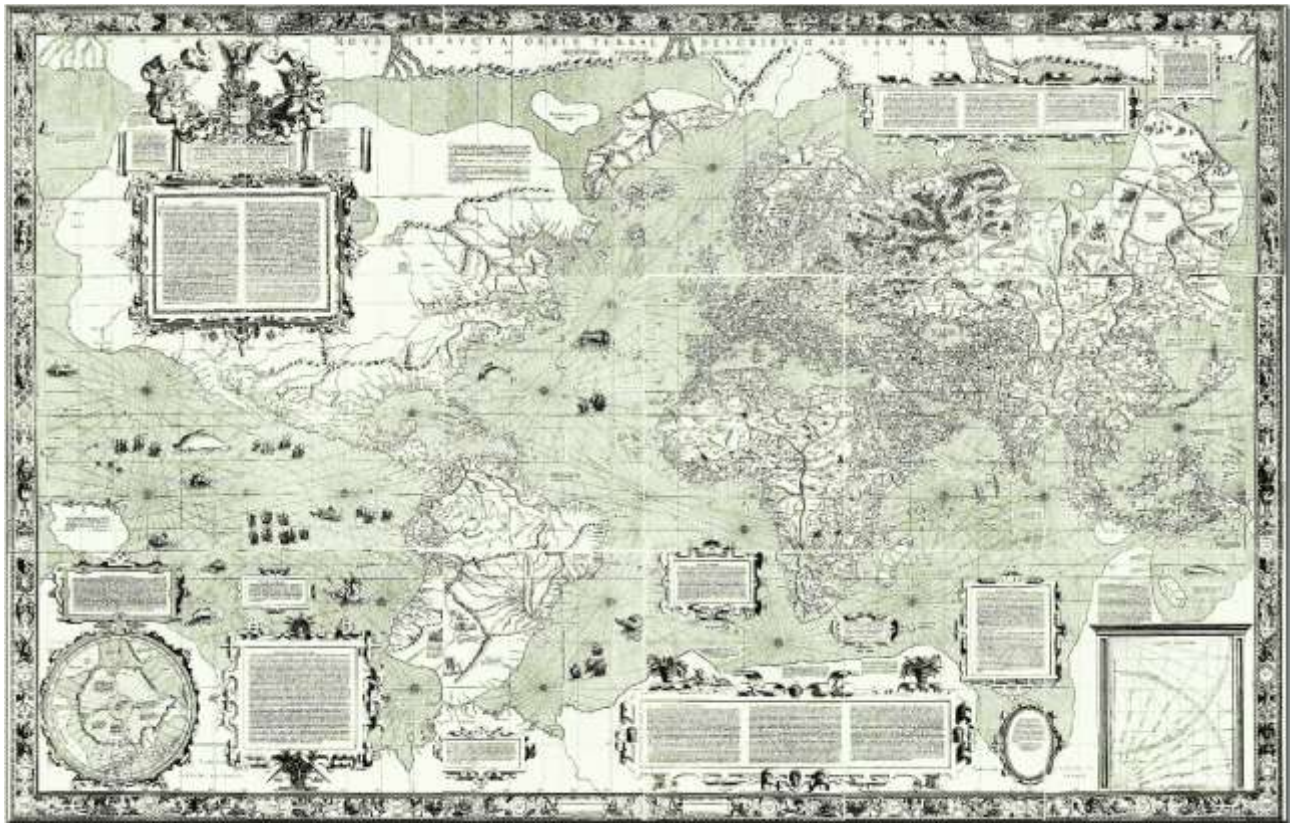
Mercator's projection and world map

Gerardus Mercator was a Flemish geographer, engraver and mathematician who is best known for his work in cartography. The *Mercator projection* is a method for representing the Earth on a flat surface using a cylindrical projection that allows straight lines of constant compass bearing to be represented as straight lines on the map. Maps using this projection became valuable tools for sailors and navigators and are still in common use today (Google Maps uses the *Web Mercator* projection).



Source: Harvard University

Mercator's most famous map: *Nova et Aucta Orbis Terrae Descriptio ad Usum Navigantium Emendate Accommodata,* or "A new and more complete representation of the terrestrial globe properly adapted for use in navigation" was published in 1569.



The 1569 Mercator map of the world – Wikimedia Commons

The map was printed in eighteen separate sheets from copper plates engraved by Mercator himself, with the complete map measuring 2.02m × 1.24m. Mercator acknowledged the contribution to the map content of recent portolan charts prepared by Portuguese and Spanish navigators, and added speculative coastlines for regions still unexplored.

Early atlases

The first printed books of maps were editions of the Ptolemy maps. From the mid-1500s composite books of maps were being produced in mixtures of formats and geographical coverages. However, these would not be recognised as atlases today.

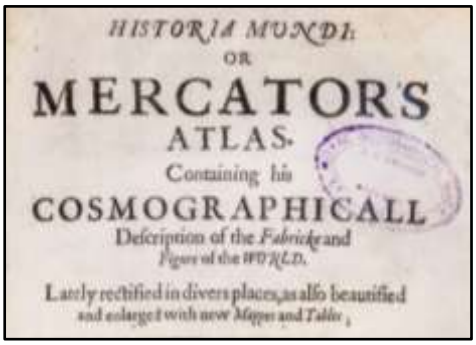
The creation of the first modern atlas is credited to the Flemish cartographer **Abraham Ortelius** (1527–1598) who, in 1570, published his *Theatrum Orbis Terrarum* (Theatre of the World) containing 70 maps of countries and continents.

Theatrum Orbis Terrarum (Theatre of World) by Abraham Ortelius, 1571.

World map (left), Denmark (above)

The *Theatrum* represents a landmark in cartography. It was the world's first regularly produced atlas and was an immediate critical and commercial success. Sir Francis Drake had a copy with him on his voyage of circumnavigation (1577 -1580).

The first appearance of the word "atlas" to refer to a book of maps was by **Gerardus Mercator** (1512-1594) in his *Mercator's Atlas,* first published posthumously in 1595. Mercator's inspiration for the term was twofold: the Titan Atlas of Greek mythology condemned to hold up the sky; and a mythical King of Mauretania - philosopher, mathematician and astronomer, who supposedly made the first celestial globe.


HISTORIA MUNDI:
OR
MERCATORS
ATLAS.
Containing his
COSMOGRAPHICALL
Description of the *Fabricke* and
Figure of the WORLD.
Lastly rectified in divers places, as also beautified
and enlarged with new *Mappes* and *Tables*.

Mercator's Atlas – 1635 edition

In English, published in London

The Dutch Golden Age

The Dutch Golden Age of the late 1500s and the 1600s was a period of exploration, navigation, and colonization. Schools of cartography flourished during this period and the maps and atlases produced by Dutch artists were highly decorative, often featuring elaborate borders and illustrations (see cover image).

The Dutch East India Company (VOC) was founded in 1602 and had the Dutch monopoly on Asian trade. It had a hydrographic office (employing renowned cartographers such as the Blaeu family) in Amsterdam to provide charts for outward-bound vessels, and a similar workshop in Batavia (Jakarta) producing charts for Asian waters.

"Colom - Sea atlas of the water world: containing a brief description of all known sea coasts of the earth. Newly published 1658"

Arnold Colom, Amsterdam

56.5cm x 34.3 cm – double page maps

Left: Map of East Indies - one of the earliest published maps to show part of the south coast of Australia discovered by Thijssen in 1627.

Cover: World map - decorative art attributed to the school of Peter Paul Rubens.

The first recorded European sightings of the Australian mainland were by VOC explorers: **Willem Janszoon** of Cape York in 1606; **Dirk Hartog** at Shark Bay in 1616; and **François Thijssen** along the south coast in 1627.

Later, the VOC sponsored several explorations of southern lands, including **Abel Tasman**'s voyages in 1642 and 1644, and **Willem de Vlamingh**'s survey of the west coast and Swan River in 1697.

Atlas Minor Geographia Orbis Terrarum, 1690

Nicolaes Visscher, Amsterdam

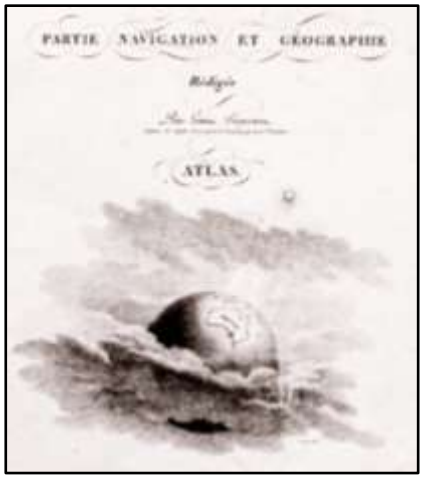
Includes details from Abel Tasman's voyages charting parts of Van Diemans's Land, New Zealand and the Pacific (1642-43), and the northern coastline of New Holland (1644).

Australia is revealed

The late 17th century saw the founding of scientific societies such as the Royal Society, founded in London in 1660, and its French equivalent, Académie des Sciences, created in 1666. The navigational problem of identifying longitude at sea was solved during the 1700s by the invention of maritime clocks, making sea travel safer and mapping more accurate. By the mid-18th century both Britain and France were active in commissioning exploratory and scientific expeditions to document the geography, geology, biology and anthropology of lands encountered.

James Cook's extraordinary voyage of 1768-1771, during which he circumnavigated New Zealand and charted the east coast of Australia, was a combined Royal Navy and Royal Society expedition to the south Pacific.

The French King Louis XVI was inspired by Cook's voyages and in 1785 appointed **Jean-Francois de Lapérouse** to lead a scientific expedition around the world. This expedition notably encountered the First Fleet at Botany Bay on 24th January 1788.



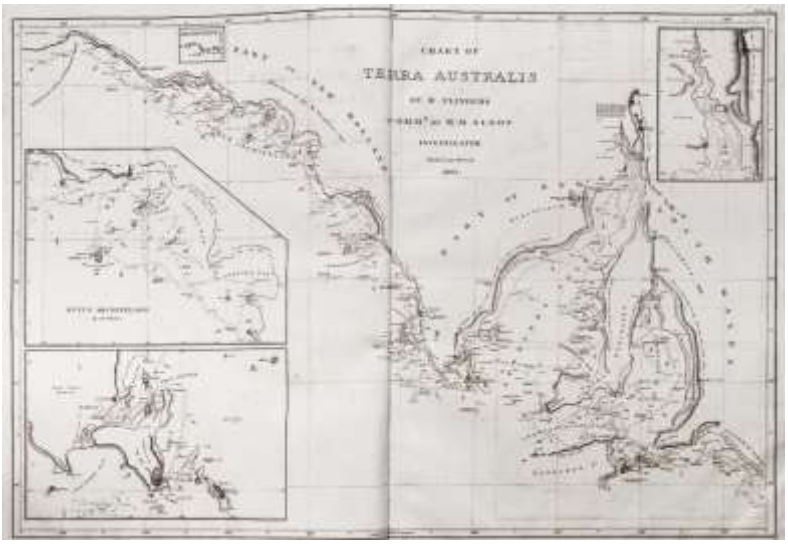
In 1800, Napoléon Bonaparte approved the expedition of **Nicolas Baudin** to the coasts of New Holland for the purpose of "observation and research relating to Geography and Natural History." The expedition's two ships, *Géographe* and *Naturaliste* arrived in May 1801, and famously crossed paths with Matthew Flinders in April 1802 at Encounter Bay. A third ship, *Casuarina*, acquired in Sydney, was placed under the command of **Louis de Freycinet** who was later appointed the expedition's cartographer. After Baudin's death in 1803, the zoologist **François Péron** was appointed to write the official account and published the first volume in 1807. Péron died in 1810 and the project (three scientific volumes and an atlas) was completed in 1816 by Freycinet. The atlas of 14 voyage charts was published in 1811.

Voyage de Découvertes aux Terres Australes (Voyage of discoveries to southern lands), *Atlas*, 1811, Paris

Left: the Freycinet map of Australia - the first published map to show the whole coastline of Australia.

Above: detail from the Atlas cover.

Matthew Flinders, in the company of George Bass, had circumnavigated Van Diemen's Land in 1798. During 1801-02, Flinders surveyed the entire southern coast of the mainland, and then completed a circumnavigation of the continent during 1802-03 that included close surveying of Arnhem Land and the Gulf of Carpentaria. Flinders' maps, together with Cook's maps of the east coast and the Dutch maps of the west coast, (almost) completed the map of the coastline.



Matthew Flinders' map of the "*South Coast*", 1802

Left side labelled "*Part of New Holland*"; right side labelled "*Part of New South Wales*"

Flinders was detained at Mauritius on his way back to Britain in 1803, and remained imprisoned there until 1810. In November 1804 Flinders was able to send to England his first chart (Y46/1) of the continent he named "*Australia*". The account of his voyages and atlas of maps were published in London in 1814; a revised version of the *General Chart* was published in 1822 with the final sections of coastline completed.

Just as Cook's charts had precipitated settlement on the east coast, so the maps of Flinders and the information from the Baudin expedition triggered further settlement on the south coast - including the founding of South Australia in 1836.

Surveyor General Colonel William Light's first map of South Australia, 1836.

Shows coast from Rapid Bay to Port Adelaide.

With colonisation came systematic surveying and mapping of the whole continent. Mapping expeditions were conducted to explore and map the interior, and government survey agencies were created to produce detailed topographic and geological maps. Later, aerial photography, geodetic surveying and satellite imagery, together with geographical information systems enabled the production of accurate and detailed continental maps to support diverse applications.

Maps have been pivotal to shaping the history of Australia and the world, and they continue to shape the future. Such is the enduring power of maps.

We need your help!

The Royal Geographical Society of S.A. Inc. is a charitable not for profit association shaping the geography of South Australia.

You can be a part of this Society, located among the State's cultural institutions by volunteering 3 – 4 hours per week, in the library, providing advice on publications, education, membership support or events and lectures.

More tangible assistance may be provided though cash donations to our Adopt a Book program (conservation), library or scholarship funds.

Contact the Society for more information.