

# The Kunstmann III Chart of the Atlantic Ocean: The Oldest Known Chart of Latitudes?

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An unsigned and undated Portuguese manuscript chart of the Atlantic Ocean and the surrounding lands, usually known as Kunstmann III and usually dated around 1503–1506, was lost in the bombing of Munich during the Second World War. Fortunately, however, hand-drawn and photographic reproductions had been made so that the map, though lost, can still be studied. The style of the drawing is significantly different from the other contemporary Portuguese charts, such as, the Pedro Reinel (Bordeaux) chart (c. 1485), the Cantino planisphere (1502), and the undated Pedro Reinel (Kunstmann I) chart (early 16<sup>th</sup> century). The geometry of the southwestern coast of Africa, revealed by cartometric analysis, is typical of a portolan-type model, based on magnetic courses and estimated distances only. This indicates that the representation of the region may have been compiled from a source previous to the Cantino planisphere.

The analysis of the toponymy and comparison with other contemporary charts, combined with the results of a detailed cartometric analysis, permit the conclusion that the Kunstmann III was drawn in at least four different stages:

1. Before 1499 to late-1501: drawing of Europe, Africa, Greenland, and most of Newfoundland, following the return of Miguel Corte-Real from Newfoundland in October 1501 (third Corte-Real expedition). While Europe appears to be based upon a typical portolan chart, and the southwestern coast of Africa appears to be compiled from dead reckoning recorded in a portolan-type model of the end of the 15<sup>th</sup> century, the northwestern coast of Africa is depicted according to astronomically observed latitudes.
2. September or October 1502: drawing of the remaining part of Newfoundland (Avalon Peninsula) upon the return of the fourth Corte-Real expedition.
3. After 1505: drawing of Brazil following the return of the expeditions sent by king D. Manuel I in the period 1501–1505.

Our findings demonstrate an unsuspected historical prominence of this chart, when compared with the contemporary nautical cartography. If our suggested dating is correct, the Kunstmann III will be considered not only as the earliest extant latitude chart and the oldest showing a scale of latitudes, but also as the most primitive Portuguese representation of the coast of Africa, Greenland, and Newfoundland.

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