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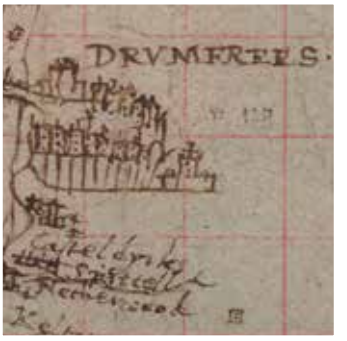
ARTICLES



REGULAR ITEMS

Front cover Ignace Gaston Pardies, detail from star map, Plate 2: 'Cetus, Aquarius, Andromeda and other constellations', second edition, 1693. David Rumsey Historical Map Collection.

Fig. 3 Weigel/Köhler, Plate 1: 'Ursa Major, Ursa Minor, Perseus and other constellations', unnumbered page from *Schul- und Reisen-Atlas, c.* 1725. Pardies' explanatory text has been removed. It appears as standalone text preceding the maps.
Photographer: Raffaella Losito /Reproduced by kind permission of the Syndics of Cambridge University Library. Hanson 61.bb

A lucky purchase

As far as we know square globes made at the time when Pardies, Weigel and Doppelmayr were producing square star maps are no longer to be found, but the maps designed to construct them are. Early nineteenth-century catalogues from the Weimar publisher Friedrich Justin Bertuch list an *Erdcubus*, an example of a terrestrial cube designed by Christian Gottlieb Reichard (1758–1837). It comprised 'six charts mounted on an 18-inch (45.7 cm) *cube*, with pedestal and explanatory notes.'[3] A surviving example is yet to be found.

Your author considers himself lucky, in recently buying a square globe (Fig. 5). It is, however, an early twentieth-century hybrid, comprising six original early celestial maps which have been encased between sheets of modern Perspex. The maps are those from the Weigel/Köhler atlas. The globe cube is fitted with a sturdy loop of copper wire on one of its corners, allowing it to be hung, resulting in an oblique presentation of the maps but also permitting viewing from all sides, as no map is obscured by putting the cube on a surface. The cube measures 37 cm square, which is the inside measurement.

My cube came with an envelope containing an explanatory eleven-page leaflet: *Himmelskugel in sechs Karten abgebildet, aus dem Lateinischen, zum Gebrauch der Schuliugend* [Schuljugend] *um die Astrognosie ze erlernen* [Celestial globe illustrated in six maps from Latin for schoolchildren to learn Astronomy] (Fig. 6). It was published in 1789 in Nuremberg by Chr[istoph] Weigel and A[dam]. G[ottlieb]. Schneider. Professor of Geography Dr Georg Friedrich Kordenbusch wrote the preface and provided a translation of the Latin text which accompanied Pardies' maps. The German translation was to facilitate understanding the then current editions of the *Schul- und Reisen-Atlas.* The atlas was not aimed at the scientific audience but rather for classrooms and general readers with an interest in astronomy.

In the Preface, Kordenbusch relates how the original star maps were made by Pater Ignaz Gaston

Fig. 5 The square globe using Weigel/Köhler maps inside a Perspex casing, showing Plates 1 (top) and 4 (facing). The maps have been copied from Pardies' celestial maps, cf. Figs 1a and 1d. Interior measurement 37 x 37 cm. HEK Collection MCR 347


Pater Ignaz Gaston Pardies,

Himmelskugel

in

sechs Karten abgebildet,

aus dem Lateinischen,

zum Gebrauch der Schuljugend

um

die Astrognosie zu erlernen

übersetzet

durch

D. Georg Friederich Kordenbusch,

Nürnberg,

bey Chr. Weigel und J. C. Schneider.

MCR 340B

Fig 6 Title page of Georg Friedrich Kordenbusch's 1789 leaflet *Himmelskugel in sechs Karten abgebildet* explaining the background and potential use of celestial maps in Köhler/Weigel's *Bequemer Schul- und Reisen-Atlas*. Translation of original Pardies text by Kordenbusch. HEK Collection MCR 340B

Pardies in Paris in 1673; that his maps were well received by Cassini de Thury, Abt [De la] Caille and Monsieur De la Lande, the best experts in astronomy at the time in France; and that the maps had been in use in Jesuit scientific circles for many years.

Kordenbusch explains the benefits of working with a square globe: it is easier to understand the constellations and measure a flat map than a curve. He notes that the maps now contain 65 star constellations and 1,465 stars in total. The last page of the leaflet lists all the constellations included and their coordinates for locating them on the square globe. Certain stars are reported to appear in more than one constellation.

Köhler/Weigel maps in Perspex casing

Weigel's maps, contrary to those by Doppelmayr in Homann's 1730 edition, feature a margin defined by an innermost red border, representing the finished map size (32 x 32 cm) and a solid black border (Fig. 7). This marginal area represents the overlap to create a seamless transition between the maps required for assembling the square globe. The 32 x 32 cm area is clearly marked by the innermost red borderline. The map's paper sheet has been cut-off slightly outside a third solid black borderline (36 x 34.5 cm), where some constellations continue until the paper cut-off. The maps also feature a second borderline (33 x 33 cm) in between the black and the red. It is spaced equally all around from the red line, but not from the third border.

The maps have been laid down on larger cardboard sheets (which we are unable to date). They are visible above and below the maps, such that the inside frame of the Perspex measuring 37 x 37 cm is accommodated, again a perfect square, albeit well outside the planned 'official' red borderline. Retaining the overlap was obviously considered preferable to losing the map fit at 32 x 32 cm for a perfect square globe.

Constructing the paper cube

Looking at the Rumsey cube (Fig. 2) we see that the overlaps have been removed giving a seamless transition from map to map. This is easy to achieve in a digital compilation where the cube needs no construction to support and protect it or keep it together. However, it makes sense to retain the overlaps for two reasons. Firstly, it will keep the original maps unscathed and secondly, they are useful in 'building' a square cube that will stay firm and self-supporting. Perspex was not available before the twentieth century and no other transparent material was readily available to readers eager to construct a celestial cube. Glass was expensive, extremely vulnerable and moreover never completely flat or homogeneously coloured or transparent. Gluing maps to the outside of a square wooden box would, over time, cause the glue to work itself into the paper and fail to protect the map's surface, barring an application of a thick layer of varnish, which would eventually yellow. It seems therefore more practical to fold the overlap away from the map at the red borderline (folding over 135 degrees), glue the overlaps together in that position for four continuous maps, then add the remaining two maps in the same way as a kind of bottom and lid to the cube. The folded areas could be clamped together for better adhesion after the glue was applied. To stiffen the construction, the longest