Two-coloured woodcuts in red and black, hand colouring on both charts, mounted on scrolls.

## THE FIRST CHINESE STAR CHARTS USING ARABIC NUMERALS

**《黄道中西合图》Chinese-Western maps of the stars relative to the ecliptic.**

**Author**
徐朝俊 XU Chaojun

**Publication date**
1807

**Publisher**

**Publication place**

**Physical description**
Two-coloured woodcuts in red and black, hand colouring on both charts, mounted on scrolls.

**Dimensions**
980 by 730mm. (38.5 by 28.75 inches).

**Notes**
The first Chinese star charts to use Arabic numbers.

One of the most accurate astronomical documents made during early Qing dynasty, the present stars charts record a comprehensive observation of star positions, with additional details from Western astronomy. In particular, this pair of celestial charts was the first to include Arabic numerals to indicate newly added stars.

The current example was made in 1807, and drew on one of the first European-influenced Chinese star charts, the ‘Huangdao zongxing tu’ ‘黄道总星图’ (The ecliptic planispheres) made by Ignaz Kögler (1680-1746), who was a German Jesuit missionary in Qing China.

Similar to Kögler’s chart, the present charts depict polar stereographic projections from the south and north ecliptic pole, to the ecliptic or huangdao 黄道 (ecliptic) that is hand coloured in yellow with 360 small graticules. Enclosing the ecliptic is a calendrical ring containing twenty-four Chinese solar terms to represent particular astronomical events or natural phenomena. Each solar term comprises three hou 候 (pentad: a unit of five days), which are marked both in Chinese and Arabic numbers of ‘一候, 二候’ and ’10, 20′.

However, unique to this pair of star charts are the Arabic numerals that also appear below or to the left of the stars introduced by European Jesuits, in addition to the equivalent Chinese numerals. A legend of the matching Chinese and Arabic numerals is given in the colophon above the southern hemisphere. These numerals are used to indicate the seven xingdeng 星等 (Ptolemaic stellar magnitudes) of the stars. The combination of both Chinese and Arabic numerals best exemplifies ancient Chinese and Western scientific and technological exchanges.

At the end of the colophon are the author’s name Xu Zhaojun 徐朝俊 and the date of publication, being 1807 during Emperor Jiaqing’s reign. Xu Zhaojun was a famous horologist of Qing dynasty, specialising in natural science and horology; he published an important book about astronomy, geography and scientific instruments. Xu is also the descendent of the renowned Ming scholar official Xu Guangqi (1562 –1633), who was a colleague and collaborator of the Italian Jesuits Matteo Ricci and Sabatino de Ursis and assisted their translation of several classic Western texts into Chinese, including part of Euclid’s Elements.

**Bibliography**

Star Charts and Maps’ – ‘星图’ – ‘Chinese Astronomy ‘– 中国天文学, Hua.umf.maine.edu.

**Provenance**

**Price:** £30000

**Inventory reference:** 17645