



One of the Chinese charts found in an abandoned 4th-century Buddhist temple depicting what appears to be the Orion constellation

Charting the heavens from a Chinese perspective

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IN 1907 archaeologist Aurel Stein set off from China to London, carrying with him 7,000 manuscripts in a wooden box on the back of a camel. He was unwittingly beginning the journey that would reveal the oldest known link between modern and ancient astronomy.

Details of Stein's find and the subsequent discovery of what that box contained are described in a talk this evening at Dunsink Observatory, Dublin, by astrophysicist Dr Jean-Marc Bonnet-Bidaud.

Stein had removed the papers from the Mogao Caves, at the site of an abandoned 4th century Buddhist temple. The caves were sealed in the 11th century, before a Taoist priest rediscovered them 900 years later. Dr Bonnet-Bidaud explained in advance of tonight's talk.

Remarkably one of the caves contained more than 40,000

manuscripts in near-perfect condition, having been preserved in the dry air of the cave.

Among them was one measuring 4m by 25cm that seemed to be a representation of the stars. With its beauty it carried an extreme complexity and while Stein admired it he did not realise its importance, nor could he understand the Chinese script. It was soon forgotten.

That is until 2004, when Dr Bonnet-Bidaud saw a picture of the star chart, and was fascinated by what he saw.

"Ancient Chinese astronomers were watching the sky differently from Europeans. The Chinese recorded everything, each unexpected thing, like a supernova," says Dr Bonnet-Bidaud working at the astrophysical department of the French Atomic Energy Commission.

The first two metres of the chart illustrate different cloud formations and the rest is split

into panels showing the position of the sun and the stars throughout the year.

Dr Bonnet-Bidaud was determined to find out everything that was known about the chart. He searched modern and ancient literature, but got nowhere.

Finally he decided to check the accuracy of the map himself, asking whether it was "really a map or just a beautiful piece of art". More than 1,300 stars are shown on the chart, and to his amazement he found that the

positions of the stars on the chart were placed with exceptional accuracy.

Mapping the sky is a difficult task because it is a sphere and the map is rectangular. The modern method of projection, still used today, was invented in Europe in the 16th century.

Dr Bonnet-Bidaud said he was astounded to see the Chinese were using the same projection on this star chart, which was made many centuries before Europeans had learned the method. Importantly,

he also worked out the age of the manuscript. He found three pieces of evidence from astronomic, historic and cultural links, all of which point to a date between AD650-680. This makes the chart the oldest known graphical star atlas.

The chart is on display at the British Library. This evening's talk is a public lecture organised by the Dublin Institute for Advanced Studies. Due to "huge public interest" no more tickets are available, the institute said.

