

Science thriller solved: The Nebra Sky Disc dates from the Early Bronze Age

The Nebra Sky Disc is considered to be the oldest concrete astronomical depiction in the world. For a long time the experts agreed that the find can be assigned to the Bronze Age. This year, two German prehistorians claimed that the disc came from the Iron Age, sparking controversy. However, new investigations published in the periodical “Archaeologia Austriaca” by the Austrian Academy of Sciences give the all-clear: the Sky Disc definitely dates to the Bronze Age.

In the summer of 1999 two treasure hunters found a hoard from the Early Bronze Age (approx. 1600 BC) on the Mittelberg hill near Nebra, Germany, which consisted of the so-called Nebra Sky Disc, two swords, two axes, two arm spirals, and a chisel. The Sky Disc, which in 2013 was included in the UNESCO Memory of the World Register, measures approx. 32 cm in diameter and shows the oldest concrete astronomical depictions in the world.

Since its spectacular seizure by the Swiss police in 2002, the Nebra Sky Disc and its cultural environment are the subject of intensive research, which makes it one of the best examined archaeological finds in recent decades. In an article published in 2020, however, the prehistorians Rupert Gebhard and Rüdiger Krause doubt the dating of the Sky Disc as generally accepted in the professional world. In their paper “Critical comments on the find complex of the so-called Nebra Sky Disc” (Archäologische Informationen 43), they claim that the hoard does not represent a “closed find”, that the Sky Disc may even not come from the determined location, and thus as a single find without context should be dated to the Iron Age (approx. 800 to 50 BC).

This assumption has now been refuted by a 13-strong research team in the periodical “Archaeologia Austriaca” published by the Institute for Oriental and European Archaeology of the Austrian Academy of Sciences (ÖAW). The authors of

the study show that Gebhard and Krause argue with incomplete and sometimes incorrect or falsely reproduced data.

Court statements and soil samples: No doubt about the Mittelberg site

It already starts with the place of discovery: the authenticity of the site, the Mittelberg near Nebra, has long been unequivocally verified, the researchers write. This is confirmed not only by the judicial statements made by the treasure hunters and one dealer in stolen goods, but also by the follow-up investigations by the State Office for Heritage Management and Archaeology of Saxony-Anhalt. Markings in the terrain, a water bottle discarded by one of the looters, the traces of the pickaxe they used, as well as increased gold and copper concentrations in the sediment, which can be explained by the extended burial of the Sky Disc, can be used to precisely localise the site. Also the correspondence of the soil samples from the findspot with sediment adhering to the Sky Disc and to one of the accompanying swords as well as adherences on a bronze axe, ultimately speak for an origin from the Mittelberg.

Copper and Gold: Salzburg region and Cornwall as ore deposits of the Bronze Age

In their publication the researchers also see the unity of the finds proven through the analysis of the copper of the Sky Disc and the accompanying finds. As trace elements and lead isotope ratios show, the copper for both comes from the same ore deposit in the Salzburg region. The production of this eastern Alpine copper begins in the Early Bronze Age (18th century BC) and ends in the 9th century BC - one century before the beginning of the Iron Age.

The gold used comes from the area of the Carnon River in Cornwall, where for the 17/16th century BC exploitation is verified. And finally, the composition of the Nebra hoard follows a pattern that is limited to the Early Bronze Age.

According to the researchers, already with the proof of the place of discovery and the unity of the finds two key assumptions of the critics, namely that the Nebra Sky Disc is a single find and can therefore only be classified stylistically, collapse as prerequisite for an Iron Age dating.

Chemistry and Archaeology: Radiocarbon dates and the representation of boats unknown to the Iron Age

Further chemical and archaeological findings speak against classifying the finds to the Iron Age: The tin and lead isotope ratios of the finds from the Nebra hoard correlate with numerous other objects from the Early Bronze Age. The manufacturing and decoration technique also speak against an Iron Age date, in particular the depiction of a boat on the Sky Disc is a typical motif for the Bronze Age and unknown in the Iron Age.

In order to date the Sky Disc to the Bronze Age, the researchers were finally helped by radiocarbon dates, which could be obtained from organic remains in one of the swords and date back to around 1600 BC. The affiliation of the Sky Disc with the accompanying finds is, in turn, confirmed by their similar chemical composition and the corresponding soil adhesions.

According to the authors of the study, there is no doubt that the Nebra Sky Disc was in use over a longer period, as can be deduced from several redesign phases. By the end of the Early Bronze Age, however, it was committed to the ground with the accompanying finds. At the beginning of the Iron Age it had already been buried for quite a long time.

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Scientific contacts:

Prof. Dr. Ernst Pernicka

Curt-Engelhorn-Zentrum Archäometrie gGmbH

D6, 3

D-68159 Mannheim

Telephone: +49 621 293 8946

Mobile phone: +491628704712

E-Mail: ernst.pernicka@ceza.de

Prof. Dr. Barbara Horejs

Editor-in-Chief of Archaeologia Austriaca and Director OREA

Institute for Oriental and European Archaeology

Austrian Academy of Sciences

Hollandstrasse 11-13

A-1020 Vienna

Telephone: +43 1 51581-6122

E-Mail: barbara.horejs@oeaw.ac.at

Press contacts:

Dipl.-Soz. Sven Hartwig

Public Relations & Communication

Austrian Academy of Sciences

Dr. Ignaz Seipel-Platz 2

A-1010 Vienna

Telephone: +43 1 51581-1331

E-Mail: sven.hartwig@oeaw.ac.at

Dr. Alfred Reichenberger

State Office for Heritage Management and Archaeology of Saxony-Anhalt

- State Museum of Prehistory -

Richard-Wagner-Straße 9

D-06114 Halle (Saale)

Telephone: +49 345 5247-312

E-Mail: areichenberger@lda.stk.sachsen-anhalt.de