

Fact-Checking AI

The author put artificial intelligence to the test by asking it questions about iconic Greek coinage.

This article was motivated by curiosity about what might be the first coin depicting Athena, a warrior goddess who is usually shown on coinage wearing a soldier's helmet and breast plate and often carrying a weapon. Figure 1 is a 5th-century *lekythos* (oil vessel) showing Athena receiving infant Erichthonios, a future Athenian king, from Gaia, the earth. In order to discover when Athena first appeared on coinage, why not ask AI, specifically ChatGPT? To investigate this idea, I asked ChatGPT for the "earliest coin depicting Athena." ChatGPT responded:

The earliest coins depicting Athena are generally attributed to the city of Athens and date back to around 600 BCE.

Key Examples:

Aegina Tetradrachms: Some of the very first coins from the region, minted in Aegina around 600 BCE, feature the goddess Athena. While the most famous Athenian coins came later, these earlier pieces reflect the significance of the goddess in the region.

Athenian Tetradrachms: The more recognized Athenian tetradrachms emerged around 550-500 BCE, prominently featuring Athena on the obverse. These coins usually depict her in a helmet and sometimes include other symbols associated with her, such as the owl on the reverse.

According to Charles Seltman in the 1924 *Athens/Its History and Coinage Before the Persian Invasion*, coins with an Athena obverse and owl reverse ("owls") were first minted in 561-556 B.C. during the reign of the tyrant Pisistratus (600-527 B.C.). In the 1976 *Archaic and Classical Greek Coins*, Colin Kraay revised owl dating downward to 525-500 B.C., roughly within the reign of the tyrant Hippias (527-510 B.C.).

The later dating was confirmed by Ross Holloway in the 1999 *Revue Belge de Numismatique*. One of the early owls is shown in Figure 2.

In Samuel Milbank's 1924 monograph *The Coinage of Aegina*, he writes that the largest denomination Aeginetan coins were *didrachms* (*staters*). The *staters* always had a sea

turtle obverse at least from their inception until 456 B.C., when Athens's aggression against Aegina increased, eventually culminating in war and the relocation of the Aeginetans.

As with Seltman's book, later literature revised the date. In his 1976 book, Kraay based his third quarter 6th century estimate on the discovery of a Aeginetan sea turtle stater in the Persepolis foundation deposit, a carved stone box that archaeologists had unearthed in 1933.

The deposit's burial in 511 B.C. led Kraay to estimate that the Aeginetan coinage must have begun well before 511 B.C. to have risen in significance to be one of the few coins important enough to be chosen for an honored burial. To give Milbank credit, the archaeological evidence had surfaced well after he had written his monograph. Later, in the 1998 *Coinage in the Greek World*, Ian Carradice and Martin Price narrowed the inception of Aeginetan coinage to 550-525 B.C. Figure 3 shows an Aeginetan turtle stater.

As a check, I posed the question "earliest coins from aegina" to Google, which offered a response from its own AI:

The earliest coins from Aegina, an island in Greece, were minted around 600 BC:

Design

The front of the coins featured a sea turtle, often with a smooth or dotted shell. The back had a punch mark, which was common on coins at the time.

FIGURE 1. This c. 420-410 B.C. red-figure squat vessel shows Athena and the birth of Erichthonios.



FIGURE 2. This c. 484-80 B.C. Athenian tetradrachm pictures an owl on the reverse.

Actual Size: 21.2mm

PHOTOS: CLEVELAND ART MUSEUM (LEKYTHOS) & JOHN NEBEL



Material

The earliest coins were made of electrum, a mixture of gold and silver. However, most Aeginetan coins were made of pure silver, which may be because the island had easier access to silver than gold.

However, according to Milbank, “none of the Aeginetan coins, even the earliest, are anything but pure silver.” Milbank knew of a unique electrum stater with a *tortoise* obverse in the Bibliothèque Nationale in Paris but ruled it out as Aeginetan because the coin was of a much different style and did not show a sea turtle.

ChatGPT made several errors. The earliest Athenian owls, which were dated by AI first as 600 B.C., then 550-500 B.C., were actually from c. 527-510 B.C. Additionally, the denomination of the largest Aeginetan coin was listed as a *tetradrachm* rather than a stater. The date of the inception of Aeginetan coinage was given as 600 B.C. rather than post 550 B.C. And finally, the obverse of

the earliest Aeginetan coinage did not picture a goddess but a sea turtle. Effectively, AI had confusingly stated that Athens’ Athena coinage was struck both before and after the non-existent Aeginetan Athena coinage.

Google also made a couple of mistakes. One was the date of the inception of Aeginetan coinage, a mistake similar to ChatGPT’s. Also, it identified the early Aeginetan coinage as struck on electrum planchets rather than silver.

When these AI questions and answers were posted to a numismatic email list, well-respected numismatist Kenneth Bressett responded, “Where is this information coming from? Or is it just a joke or gag? No coins of Aegina show the image of Athena, and none are made of electrum.”

Curiosity about the veracity of AI answers, and whether it is an accurate numismatic tool, prompted another attempt. This time, I inquired about another iconic Greek coin, the Naxos, Sicily, tetradrachm. Inferring from surviving coins, there are three distinct portraits of Dionysus on three obverse Naxos tetradrachm dies and seven reverse dies with three different portraits of Silenus among them. These are all illustrated in H.A. Cahn’s *Die Münzen der Sizilischen Stadt Naxos*. Essentially confirming Cahn and providing larger images, the three obverse Naxos tetradrachm types are shown in CoinArchives among 35 lots in separate auctions. Six of the seven reverse dies are also represented. I asked ChatGPT about “naxos sicily tetradrachms,” to which the AI responded:

Naxos tetradrachms from Sicily are notable ancient Greek coins that reflect the rich history and culture of the island. Here’s an overview of their key characteristics and significance:

Key Features

1. **Material:** Primarily made of silver, these tetradrachms are a significant denomination in ancient Greek currency.

2. **Obverse Design:**

- Most commonly features Dionysus, the god of wine, depicted with various attributes such as an ivy wreath, grapevines, or a thyrsus (staff).

- Some variations may show other motifs, such as a lion’s head.

3. **Reverse Design:**

- Often depicts a bunch of grapes or a vine, emphasizing Naxos’s prominence in viticulture.

- Some coins may include simple geometric patterns or symbols.

4. **Inscriptions:**

- The inscriptions typically indicate the city of Naxos (often “NAK”), and can vary based on the minting period.

Varieties

- **Dionysus Types:** Different representations of Dionysus, including variations in attire and attributes.

- **Lion Types:** Features a lion’s head, symbolizing strength and possibly linking to local mythology.

- **Grape and Vine Motifs:** Variations in the depiction of grapes and vines on the reverse, reflecting local agricultural significance.

In summary, ChatGPT made some critical mistakes. To begin, Naxos tetradrachms are not primarily silver— all are silver. Dionysus is not shown with a staff in any of the three obverse dies. Additionally, the reverse design is a naked Silenus, who is prominent on every reverse die. All the Naxos tetradrachms have the inscription NAXION, never NAK. All obverse portraits are busts; attire beyond that is not shown. Finally, lions are not shown on either obverse or reverse of Naxos tetradrachms.

At this point in time, AI does not appear to be an accurate numismatic research tool. And in the face of the errors and discrepancies shown, one can’t assume the AI errors outlined in this article are unique to these few numismatic inquiries, but instead are universal. ♦

PHOTOS: JOHN NEBEL



↑ **FIGURE 3.** A turtle appears on the obverse of this c. 480-57 B.C. stater of Aegina.

Actual Size: 20.5mm



↑ **FIGURE 4.** This Naxos tetradrachm struck in 461 B.C. pictures Dionysus on the obverse.

Actual Size: 26.2mm