

20 EURO SILVER COIN

# THE BLACK HOLE



Series	The uncharted Universe
Face Value	€ 20
Date of Issue	11 May 2022
Coin Design	H. Andexlinger
Diameter	34 mm
Quality	Proof
Mintage	30,000
Alloy	Silver Ag 925
Fine Weight	2/3 oz (20,74 g)
Total Weight	22.42 g
Edge	plain



Recommended initial issue price: € 69,60 (incl. 20% VAT)

*Comes in a case complete with a numbered certificate of authenticity and protective slipcase.*

## THE DARK SIDE OF THE UNIVERSE

A unique coin for a unique phenomenon. Concave on one side and convex on the other, *The Black Hole* illustrates the funnel shape of these regions of spacetime where gravity is so strong that nothing can escape from them. One way of envisaging a black hole is as a vortex that draws in everything in its immediate proximity. Once beyond the point of no return – known as the ‘event horizon’ – the ‘singularity’ awaits at the centre. Stephen Hawking and Roger Penrose showed that this is a place where space-time curvature is infinite.

The interpretation of the black hole as a region of space from which nothing can escape was first published by American physics professor David Finkelstein in 1958. But it was not until 1971 that Cygnus X-1 became the first black hole to be named as such, having been identified by several researchers working independently.

Although storing vast amounts of energy, black holes do not emit light. For this reason, the first photograph of a black hole was not published until 2019 and, even then, only as an indirect image of the shadow it casts. No wonder that so much remains unclear about black holes. Among the most complex objects possible in our or any other universe, they are not only a challenge experimentally but also raise a multitude of fundamental questions about space and time.

## COIN MOTIF

The black hole vortex phenomenon is illustrated on the coin’s reverse in the shape a funnel decorated with a colour-printed spiral. On the coin’s obverse, a cone rises from the flat silver surface, representing the curvature of space-time. ‘Cygnus X-1’, the name of the first black hole to be named as such, is written to the right under ‘15 M’, the solar mass of this black hole. In German, ‘Event horizon’ marks the boundary between the observable and the unobservable in space-time, while ‘Singularity’ points to the location of maximum space-time curvature.



Price: € 65,40 (incl. 20% VAT)  
Collector Case, coins not included

### THE UNCHARTED UNIVERS COLLECTOR CASE

The universe in your living room. Black both inside and out, the collector case echoes the vastness of the sky at night. This is how the astronomical phenomena presented on the coins come into their own.

The lid is attached with magnets and can be removed. The inlay can be set up in such a way that the case can be easily turned into a mini exhibition about the universe, in which the phenomena on the coins can be explored from both sides.

Infinite expanses encapsulated in a stylish collector case.

### SERIES OVERVIEW



The Milky Way



The Black Hole



The Neutron Star

2021

2022

2023

P.P./Proof Silver Ag 925