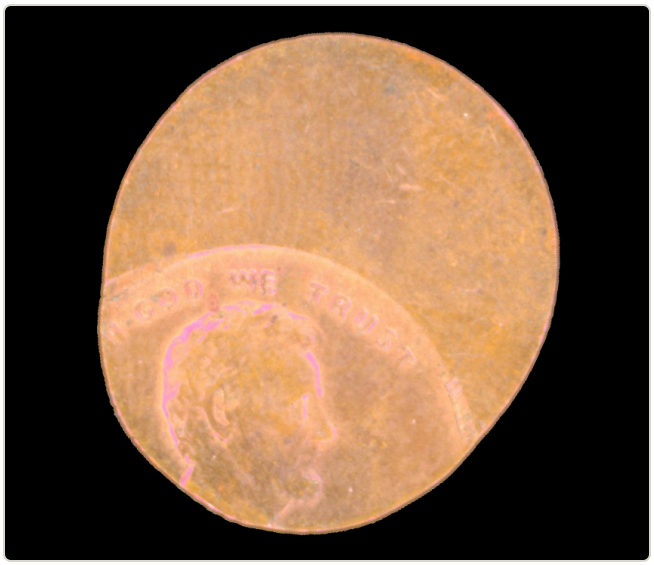
COIN EXAMINATION REPORT

United States, Lincoln Memorial cent, struck off-centre

Bronze · KM#201, Schön#202 · Numista #42 · 1959–1982 · date not on the planchet



Obverse — IN GOD WE TRUST and the crown of Lincoln's head, struck off-centre. Photograph, even light.



Reverse — the Memorial's columns and E CENT, struck off-centre. Photograph, even light.

CONDITION	OFF-CENTRE	STRUCK	WEIGHT	PLANCHET
≈ XF	45 % of Ø	44 % of the planchet	3.03 g	21.4 × 19.0 mm
off-centre strike; an AI reading of the photographs, not a certified grade	distance from the die's centre to the planchet's centre, as a share of the type's diameter; 8.5 mm (obverse) · 8.8 mm (reverse)	share of the planchet's AREA inside the die's edge · reverse 41 %	customer's balance · std 3.11 g (−2.6 %)	long axis 2° from the strike's offset · type Ø 19.00 mm

IDENTITY	1 Cent "Lincoln Memorial Cent" (Bronze), 1959–1982: the Memorial reverse and the bronze weight place it; the date and mint mark lie off the planchet.
THE STRIKE	The dies landed 8.5 mm (obverse) and 8.8 mm (reverse) from the planchet's centre; no die touched 56 % of the obverse planchet.
DIE AXIS	The two faces' offsets differ by 0.32 mm and their directions fit coin alignment to 7°, as one pair of coaxial dies would.

01 Condition map

Both faces photographed in even light. **Red circles**: each pit the detector found in the open field (away from the design; method in §04). **Numbered circles**: the densest pitting, the deepest pits on each face. Close-ups follow.

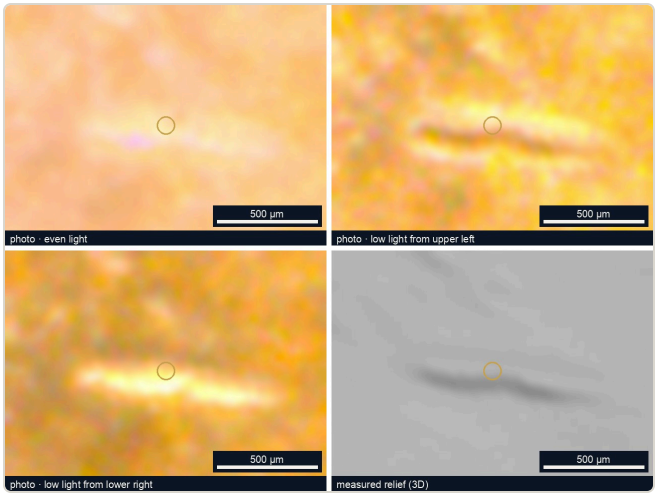


Obverse (left) and reverse (right), upright, at matching scale.

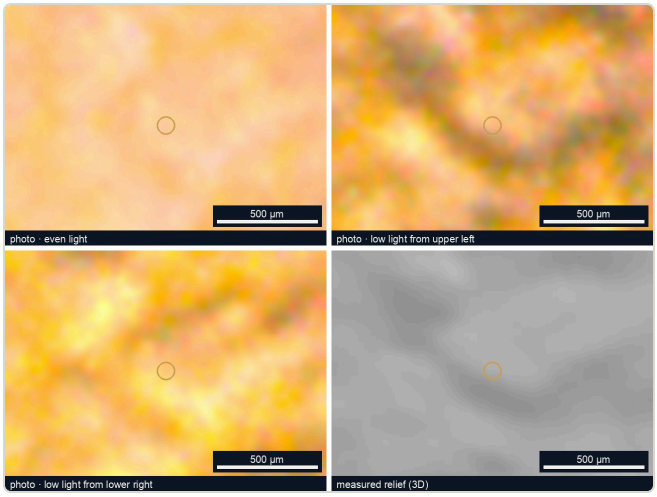
NO.	FACE	LOCATION	FINDING	MEASURED
1	Obverse	11 o’clock	Pit in the open field	0.25 mm across and 9 µm deep
2	Obverse	8 o’clock	Pit in the open field	0.19 mm across and 8 µm deep
3	Reverse	5 o’clock	Pit in the open field	0.20 mm across and 10 µm deep
4	Reverse	9 o’clock	Pit in the open field	0.18 mm across and 8 µm deep

CLOSE-UPS IN CAPTURED LIGHT

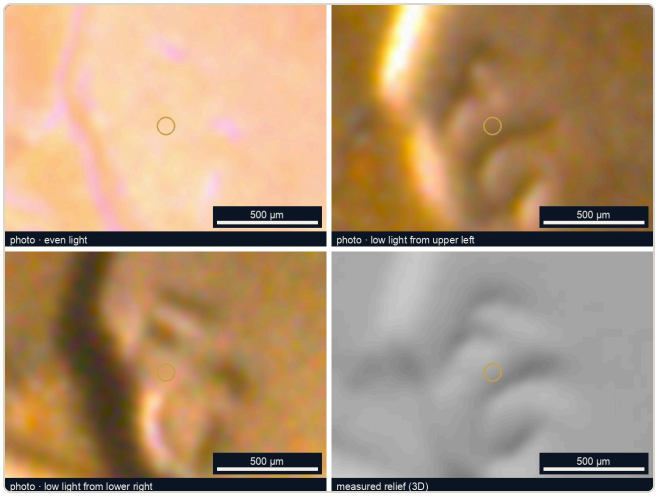
Each item four ways: a photograph in even light, photographs lit low from opposite sides (relief casts shadows, a pit shows a dark and a bright wall), and the measured relief. The photographs are captured frames from this examination, not retouched; each tile carries a scale bar.



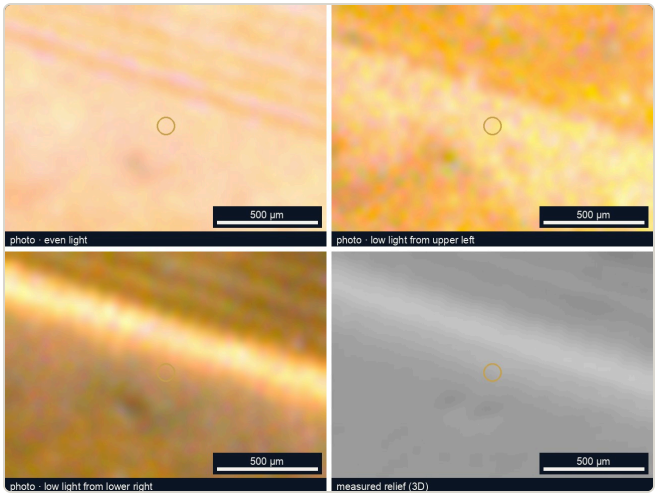
ITEM 1 Pit, obverse field at 11 o'clock (circled).



ITEM 2 Pit, obverse field at 8 o'clock (circled).



ITEM 3 Pit, reverse field at 5 o'clock (circled).



ITEM 4 Pit, reverse field at 9 o'clock (circled).

02 Identification

Legends, marks and dimensions read from the measured surface, compared against the catalogue type.

ELEMENT	READ ON THE COIN	CATALOGUE (NUMISTA #42)
Obverse legend	IN GOD WE TRUST	✓ IN GOD WE TRUST
LIBERTY	— (off the planchet)	LIBERTY
Date	— (off the planchet)	issued 1959–1982 (the type's range; the catalogue's example dates are not this coin's)
Reverse legend	…A (only the final letter on the planchet)	✓ UNITED STATES oF AMERICA
Denomination	…E CENT (the O and N off the planchet)	✓ ONE CENT

The legend IN GOD WE TRUST, the crown of the portrait, the Memorial's columns and ONE CENT agree with **KM#201, Schön#202** (Numista #42, 1959–1982). The date, the mint mark and LIBERTY lie on the part of the die that missed the planchet. The weight (3.03 g against 3.11 g) is the bronze planchet of these years, not the lighter zinc planchet that followed.

PHYSICAL

MEASURE	THIS COIN	TYPE STANDARD	Δ
Planchet	21.36 × 18.95 mm (obverse outline) · 21.34 × 19.07 mm (reverse)	19.00 mm, collar-struck	—
Die edge	18.57 mm (obverse) · 18.23 mm (reverse)	19.00 mm	−2.5 % · −4.3 %
Weight	3.03 g (customer's balance)	3.11 g	−2.6 %
Composition	—	Bronze (95% copper, 5% zinc)	—

03 Condition

ELEMENT	DETAIL VISIBLE	SOFTER AREAS
Motto	The four words of the motto, sharp, with the die's edge running just outside them.	—
Portrait	The crown of the head and the hair down to the forehead; the face, the date and the word at the left lie off the planchet.	—
Memorial and denomination	The columns, the entablature and the steps of the Memorial, the last four letters of the denomination, and the final letter of the country's name.	—

ELEMENT	DETAIL VISIBLE	SOFTER AREAS
Untouched planchet	The unstruck metal keeps the planchet's own surface with scattered contact marks; no design reached it.	—

ASSESSMENT

Detail comparable to Extremely Fine, provisional

Detail comparable to Extremely Fine, provisional: The struck part of the design is sharp, with light wear on its highest points; the untouched planchet carries contact marks. Relief of the struck design above its field: 224 µm on the obverse, 88 µm on the reverse. The struck field lies 151 µm below the untouched planchet on the obverse and 118 µm on the reverse: the dies thinned the metal they reached. Recorded for comparison with later scans; not calibrated against graded coins.

Surfaces. Depressions in the open field: 3 on the obverse and 4 on the reverse (§04). On this coin the open field is mostly the untouched planchet, so these are the planchet's marks, not the strike's.

Weight. 3.03 g against the 3.11 g standard (−2.6 %).

Scope. The table is an AI reading of the photographs and close-ups (§01, §06) for the elements listed; elements not listed were not individually inspected.

04 Surfaces: pitting

The depressions the instrument measured in the open field — on this coin mostly the untouched planchet: where they are, how large, how deep, and how they compare with other coins measured the same way.

PITS IN THE OPEN FIELD

	OBVERSE	REVERSE
Pits found	3	4
Open field examined	180 mm²	205 mm²
Density	1.7 per cm²	2.0 per cm²
Size across (median · p90 · max)	0.19 · 0.24 · 0.25 mm	0.19 · 0.20 · 0.20 mm
Depth (median · p90 · max)	8 · 9 · 9 µm	8 · 10 · 10 µm
Nearest-pit distance (median)	— mm	— mm
Nearest-neighbour ratio (descriptive)	—	—
Pits on the raised design (less reliable)	0	0

Face: the coin inside its own outline (the framecheck's min-over-lights outline). Open field: field pixels at least 0.2 mm from raised design, outside the holes the design encloses (letter counters, windows) and away from the rim band. A counted depression is at least 6 µm on the obverse and 6 µm on the reverse below its filled surroundings (each face's own threshold: the larger of a fixed floor and four robust sigmas of its field) and at least 0.006 mm² in area. These are detected depressions; their cause (corrosion, porosity, a strike or planchet flaw) is not decided by the detector.

OTHER COINS MEASURED WITH THE SAME CODE (PITS PER CM² OF OPEN FIELD, WHERE COMPARABLE)

COIN	OBVERSE	REVERSE	MEDIAN DEPTH
This coin	1.7	2.0	8 µm
8 reales, chopmarked, circulated	not comparable: 69 px/mm sampling	not comparable: 69 px/mm sampling	—
Reference specimen: Silver Eagle 2001, uncirculated (one coin)	—	not comparable: 67 px/mm sampling	—

The comparison coins are examples, not a population baseline.

Resolution. This run used the standard solve at 31 pixels per mm; pits narrower than about a tenth of a millimetre are not resolved, so the densities are lower bounds.

Appearance. Brown copper, lighter on the high points; the untouched planchet a shade duller. (photographs with grey-card colour balance; cover). Hairlines and reflectivity are not systematically assessed.

05 Consistency checks

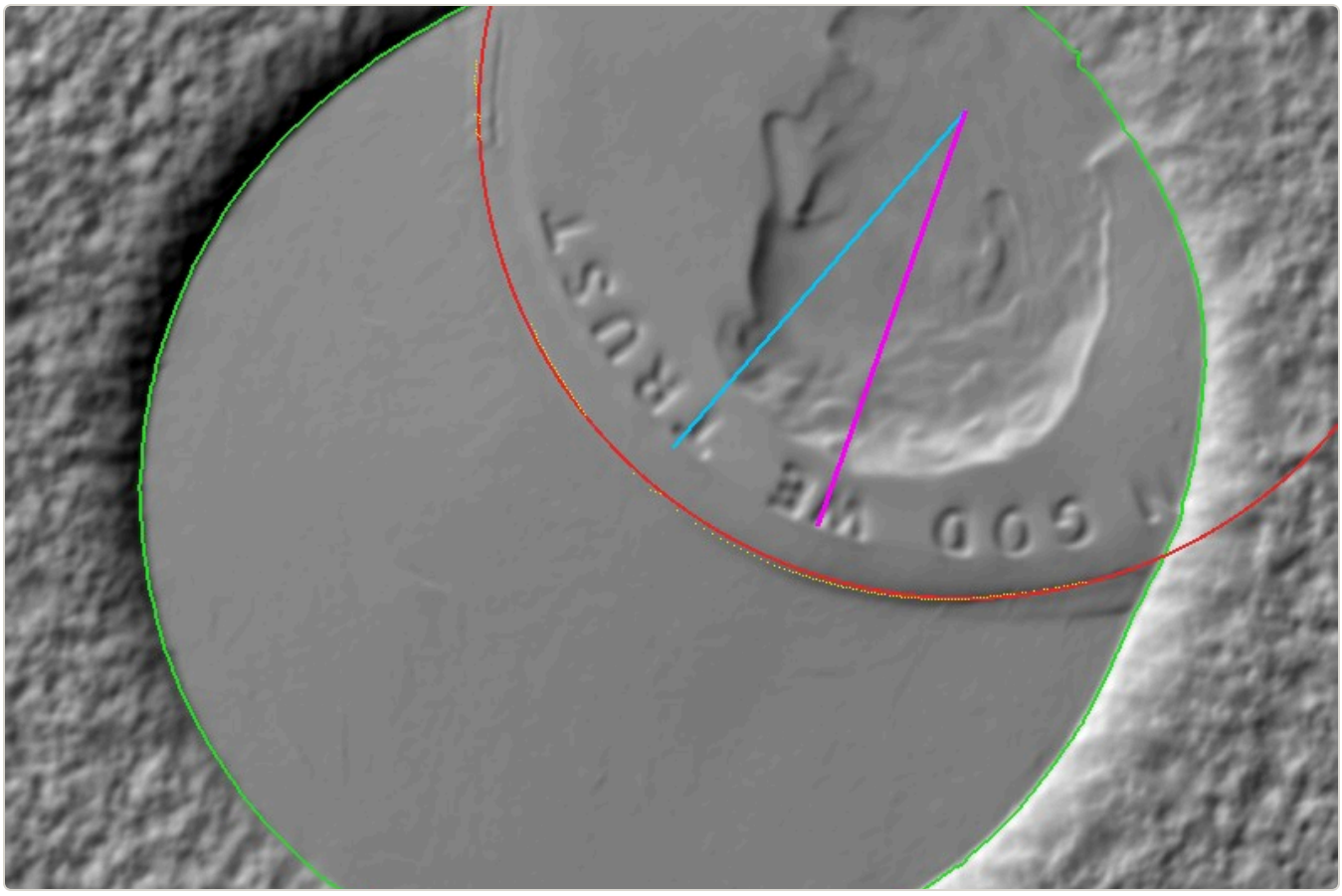
Each measured fact set beside the catalogue's nominal or a working tolerance chosen for this examination. These checks can raise questions; they cannot establish authenticity, and no score is formed.

INDICATORS

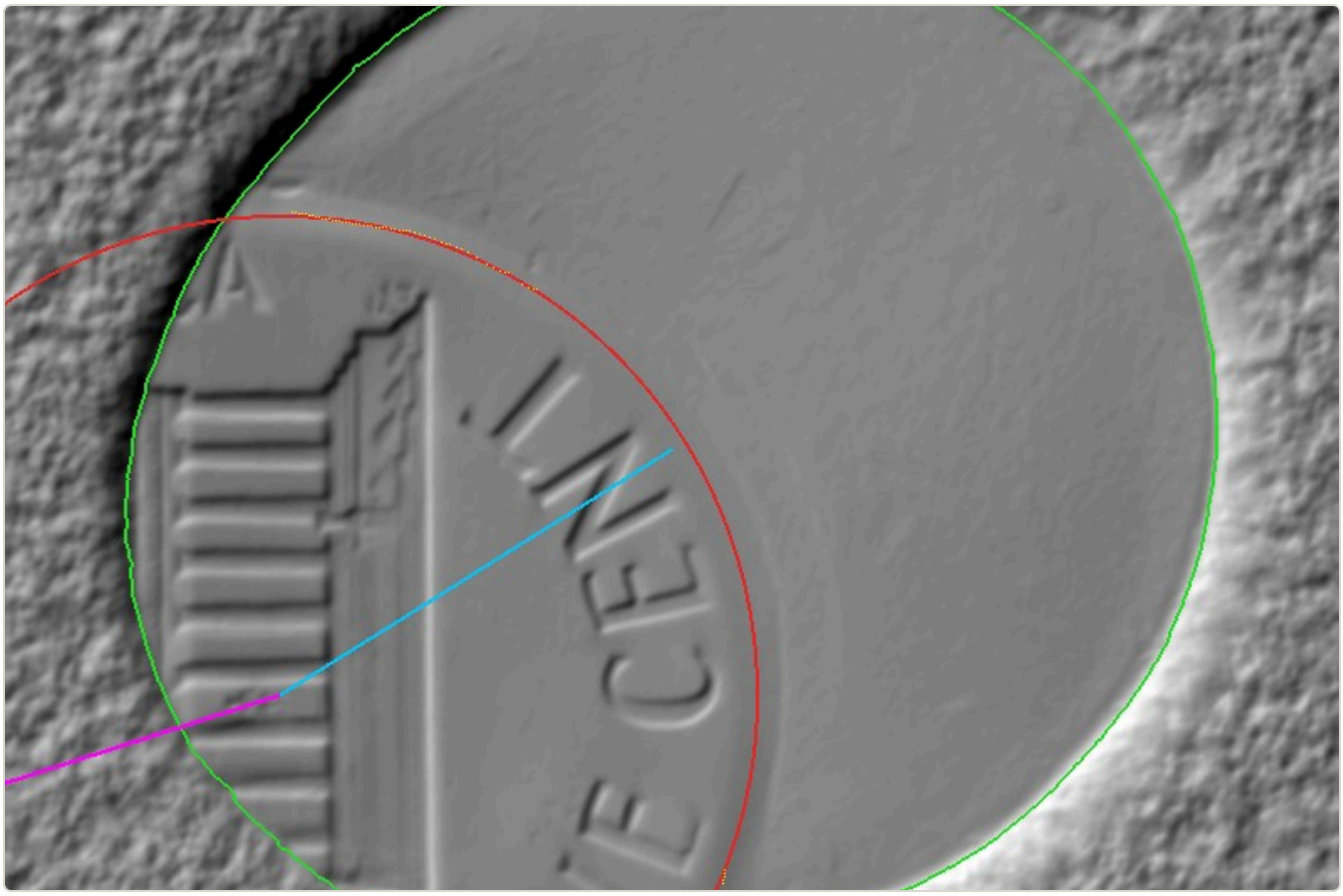
No check fell outside its working tolerance. These checks can raise questions; they cannot establish authenticity.

CHECK	MEASURED	REFERENCE	READING
Weight against the type's nominal	3.03 g (−2.6 %)	3.11	within the working tolerance
Diameter	20.32 mm	19	not tested
Specific gravity	—	about 8.8 for bronze (95 % copper)	not tested
Die edge diameter (obverse)	18.57 mm (−2.5 %)	19.05	within the working tolerance
Die edge diameter (reverse)	18.23 mm (−4.3 %)	19.05	within the working tolerance

CHECK	MEASURED	REFERENCE	READING
Die axis, obverse against reverse	7.20 ° from coin alignment	within 20° (working tolerance; medal alignment would be 172.8° away)	within the working tolerance
Offset, obverse against reverse	0.32 mm apart	within 1.0 mm (working tolerance)	within the working tolerance



Obverse, the measured surface: the planchet's outline in green, the fitted die edge in red with the step pixels that fixed it in yellow, the offset from the planchet's centre in blue, the design's up in magenta.



Reverse, drawn the same way.

Reference. No coin of this type has been measured on this instrument; the die’s edge is compared with the type’s diameter and the two faces with each other.

Next measurement. A specific-gravity measurement is the recommended next test; it constrains the alloy but cannot by itself establish identity or authenticity.

06 Detail evidence

Photographs from this examination: the coin lit low from the upper left (three captured frames averaged), shown upright, colour balanced against a grey card, each with a scale bar. Crops are at instrument resolution (31.4 pixels per mm).



FIG 1 The struck part of the obverse: IN GOD WE TRUST and the crown of the head, the die's edge beyond the legend.

REVERSE — STRUCK DESIGN

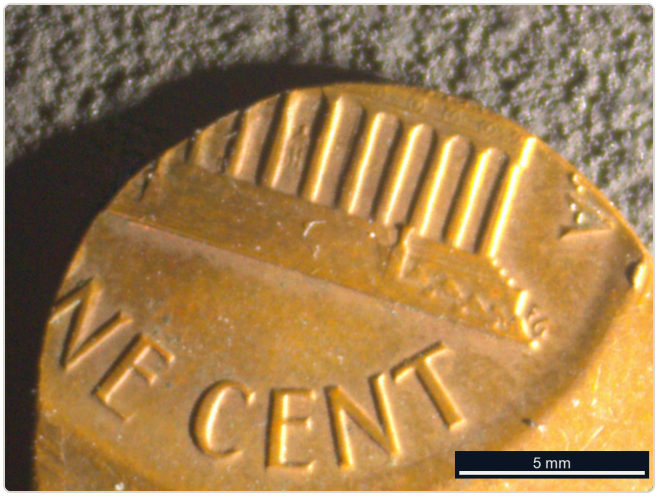


FIG 2 The struck part of the reverse: the Memorial's columns and steps, E CENT, and the final A of AMERICA.

07 Design element maps

The design elements identified on the measured surface, shown in colour on the photograph. The outer rim lies outside the measured surface and is shown uncoloured.

Obverse (struck obverse) — identified design elements



DESIGN ELEMENTS

- Struck design

Reverse (struck reverse) — identified design elements



DESIGN ELEMENTS

- Struck design

08 Method and limitations

METHOD	Each face was photographed 120 times, each frame lit by one light from a known direction; the photographs here are those frames, colour balanced against a grey card. The same frames were reconstructed by photometric stereo into a measured surface at 31.4 pixels per mm (about 32 µm per pixel), on which pits, relief, the planchet and the die's edge are measured. The struck design was segmented automatically from the measured surface; readings and the condition assessment are AI-assisted and checked against the catalogue; the figures are generated from the examination record.
OFF-CENTRE GEOMETRY	The planchet's outline comes from the min-over-lights picture taken before each sweep. The die's edge is the step where the struck, thinned field meets the untouched planchet, fitted as a circle on each face; the offset is the distance from that circle's centre to the planchet's centre, and the struck share is the part of the planchet inside the circle. The design's up on each face was set by the examiner; the two faces are compared through the direction of the offset in each design's frame, which one pair of coaxial dies fixes.
SCALE	Set by the instrument: the rig's optics are calibrated to 31.38 pixels per mm on the sensor, checked against a calipered coin. The planchet's circle-fit outline measures 20.32 mm (obverse) and 20.33 mm (reverse) at that scale; the type's 19.00 mm applies to a collar-struck piece, which this is not. Lateral lengths carry about ±1 % (see Uncertainty). Provisional: the comparison coins' scales rest on diameters whose source is not recorded.
NOT DECIDED	Capture repeatability of the figures: not characterised — one capture per face in this run (the thirty-minute budget). It would be settled by a re-seated repeat capture of each face. Date and mint mark: not on the coin — the part of the die that carries them missed the planchet.
NOT SYSTEMATICALLY ASSESSED	Hairlines (noted only where a close-up shows them), reflectivity and lustre; the edge, which on this coin would show whether a collar was present.
NOT A CERTIFICATION	This is an instrument-based examination, not a third-party grading service opinion (NGC, PCGS).
UNCERTAINTY	Lateral lengths (diameters, offsets, areas) rest on the rig's scale, calibrated against a calipered coin: about ±1 %. Heights — relief, depression depths, steps — are relative measurements within one capture, referred to the surface around each feature; their repeatability between captures has been measured on one coin only, and absolute height accuracy is not certified. The long-range shape of a face (bowing, warp) is known less well than local relief. The solve grid is a sampling grid, not a demonstrated optical resolution.

DIGITAL SUPPLEMENT

In the delivery bundle AZR-1C-OFFCENTRE-revB-bundle.zip, beside this PDF: the clean face photographs and animations of the captured frames (one light at a time, going round the coin).

AZR-1C-OFFCENTRE-REVB-OBVERSE.JPG	The obverse, photographed in even light, without annotations.
AZR-1C-OFFCENTRE-REVB-REVERSE.JPG	The reverse, photographed in even light, without annotations.
AZR-1C-OFFCENTRE-REVB-OBVERSE_LIGHT_SWEEP.GIF	The whole obverse under each of the 60 low lights in turn.
AZR-1C-OFFCENTRE-REVB-REVERSE_LIGHT_SWEEP.GIF	The whole reverse under each of the 60 low lights in turn.

REFERENCES

Numista #42 (KM#201, Schön#202).

PREPARED BY

Anton Zalutsky
Principal Examiner · AZ Robotics LLC

Automated examination; no reviewer sign-off is recorded for this revision.

REPORT

AZR-1C-OFFCENTRE
Issued 26 September 2026, 12:08 PM EDT · Rev B

This report is complete only with all pages present.

This report describes the surface of the specimen as measured on the date of issue. It is not a guarantee of authenticity, grade or value, and is not transferable to any other specimen. Findings depend on the instrument, method and reference material described above. © AZ Robotics LLC. Reproduction in part is not permitted without the complete report.