COIN EXAMINATION REPORT

China, 1 Yuan ("Junk dollar"; without sun and birds), 1934

Y#345, Kann#623, L&M#109 · Numista #16370 · 1933–1949



Obverse — Bust of Sun Yat-sen facing left with Chinese ideograms above. Photograph, even light. Badge: the grade estimate, provisional and uncalibrated (method in the last section).



Reverse — Two-masted ship (a junk) sailing right with one Chinese ideogram on either side. Photograph, even light. Badge: the grade estimate, provisional and uncalibrated (method in the last section).

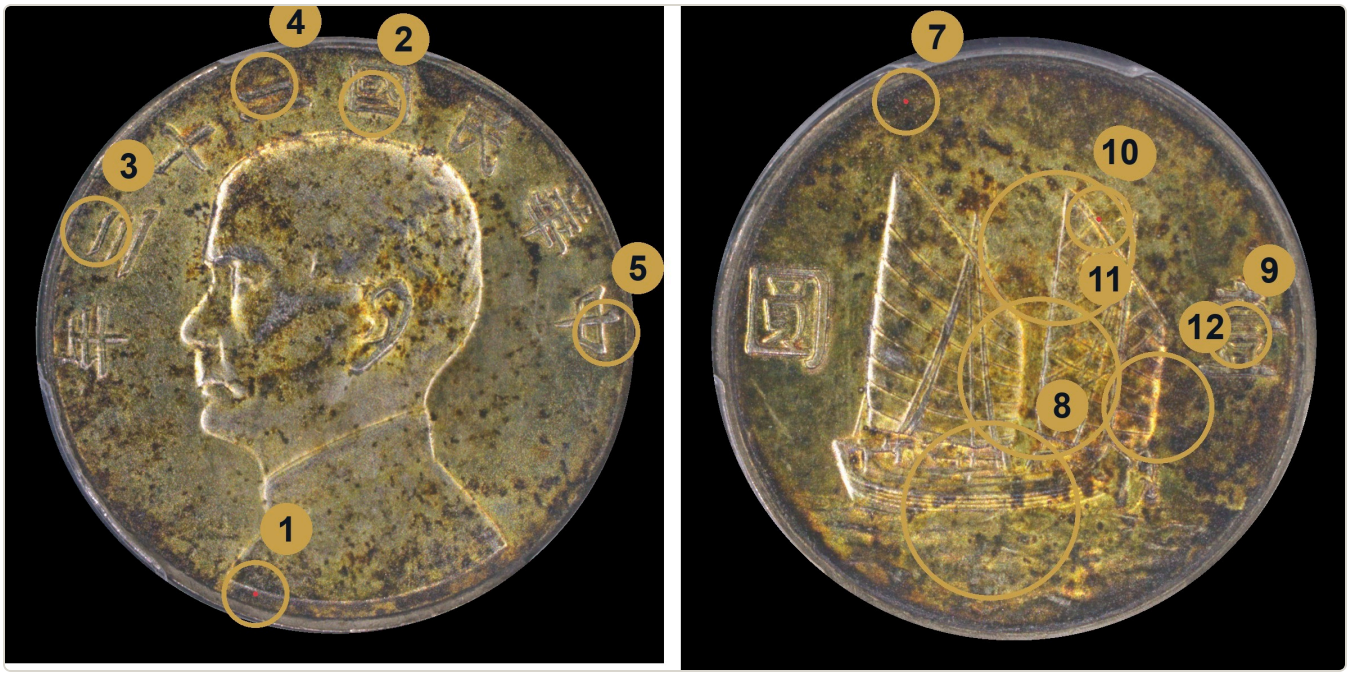
CONDITION	DIAMETER	WEIGHT	FIELD DEPRESSIONS	RELIEF
≈ MS61	39.0 mm	—	1 · 2	214 µm
an AI reading of the photographs, not a certified grade	the catalogue figure, used as the image scale: not measured	not weighed: sealed in a grading holder	obverse · reverse, in the open field (§04)	the obverse's central design above its field

IDENTITY — Catalogue reference: 1 Yuan ("Junk dollar"; without sun and birds) (Y#345, Kann#623, L&M#109), 1933–1949; what was read on the coin is in §02.

SURFACES — Depressions detected in the open fields: 1 on the obverse and 2 on the reverse, at the thresholds stated in §04.

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 and the longest cuts, scratches and hairlines on each face. Close-ups follow.



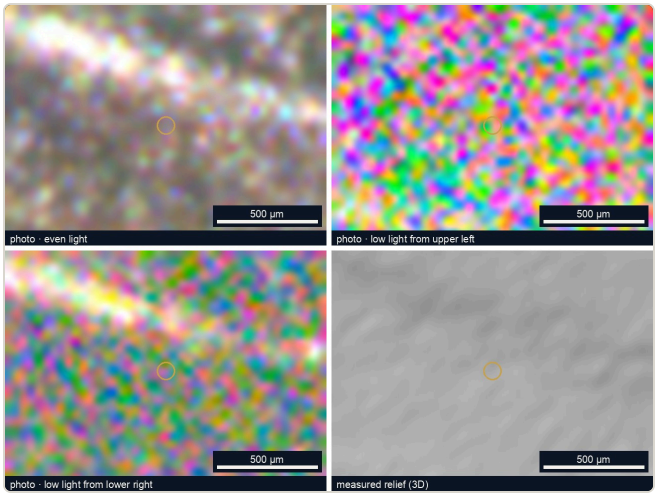
Obverse (left) and reverse (right), upright, at matching scale.

NO.	FACE	LOCATION	FINDING	MEASURED
1	Obverse	6 o'clock	Pit in the open field	0.11 mm across and 9 µm deep
2	Obverse	1 o'clock	Hairline scratch in the field	1.85 mm long, 19 µm deep
3	Obverse	10 o'clock	Linear mark in the field (a cut or scratch)	2.66 mm long, 0.39 mm wide, 20 µm below the field
4	Obverse	12 o'clock	Linear mark in the field (a cut or scratch)	2.31 mm long, 0.40 mm wide, 20 µm below the field
5	Obverse	3 o'clock	Linear mark in the field (a cut or scratch)	1.78 mm long, 0.45 mm wide, 24 µm below the field
6	Reverse	1 o'clock	Pit in the open field	0.12 mm across and 8 µm deep
7	Reverse	12 o'clock	Pit in the open field	0.12 mm across and 7 µm deep
8	Reverse	6 o'clock	Hairline scratch in the field	8.50 mm long, 12 µm deep
9	Reverse	3 o'clock	Hairline scratch in the field	2.41 mm long, 22 µm deep
10	Reverse	1 o'clock	Linear mark in the field (a cut or scratch)	7.24 mm long, 0.30 mm wide, 25 µm below the field

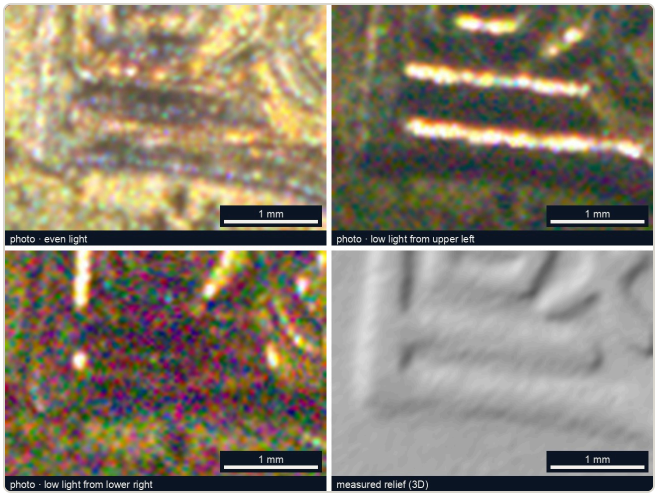
NO.	FACE	LOCATION	FINDING	MEASURED
11	Reverse	4 o’clock	Linear mark in the field (a cut or scratch)	7.63 mm long, 0.40 mm wide, 23 µm below the field
12	Reverse	4 o’clock	Linear mark in the field (a cut or scratch)	4.84 mm long, 0.35 mm wide, 22 µm below the field

CLOSE-UPS IN CAPTURED LIGHT

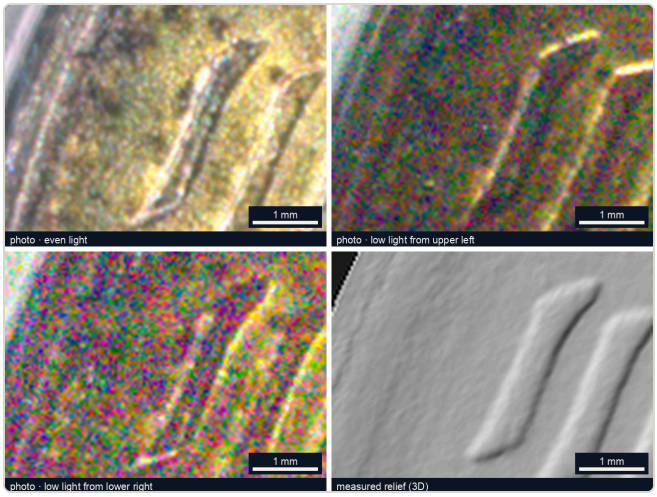
Each item four ways: a photograph in even light, photographs lit low from opposite sides (relief casts shadows, a pit shows a dark and a bright wall), and the measured relief. The photographs are captured frames from this examination, not retouched; each tile carries a scale bar.



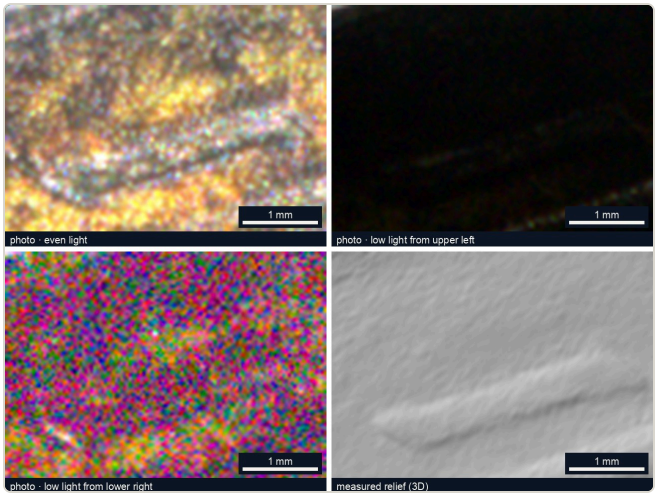
ITEM 1 Pit, obverse field at 6 o’clock (circled).



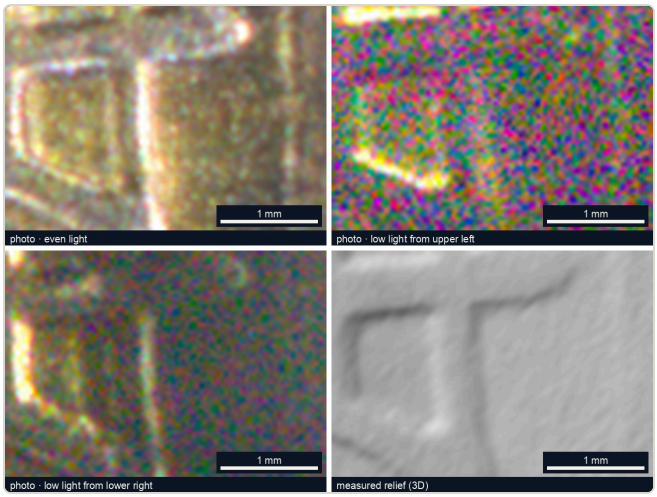
ITEM 2 Hairline scratch, obverse field at 1 o’clock (boxed).



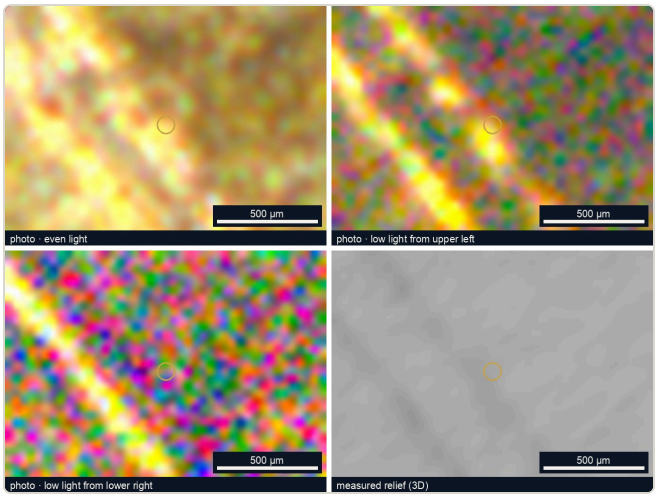
ITEM 3 Linear mark, obverse field at 10 o’clock (boxed).



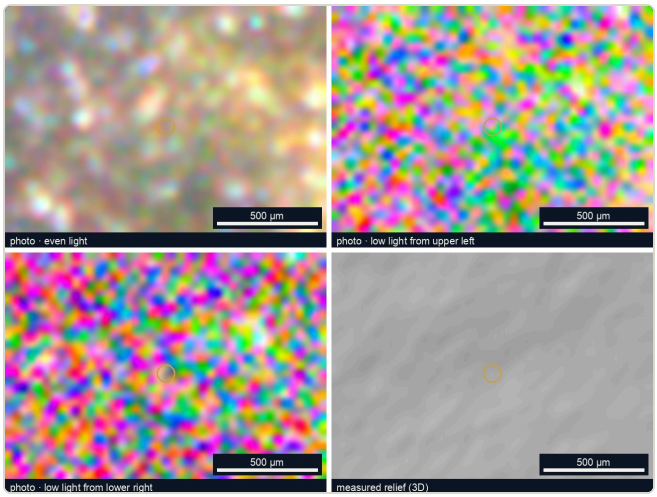
ITEM 4 Linear mark, obverse field at 12 o’clock (boxed).



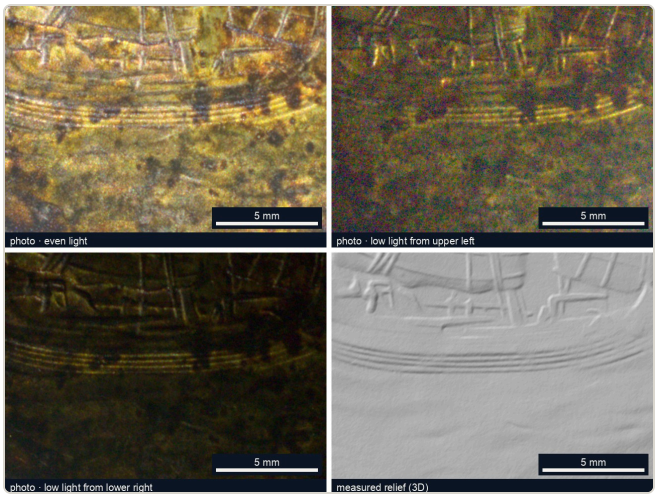
ITEM 5 Linear mark, obverse field at 3 o'clock (boxed).



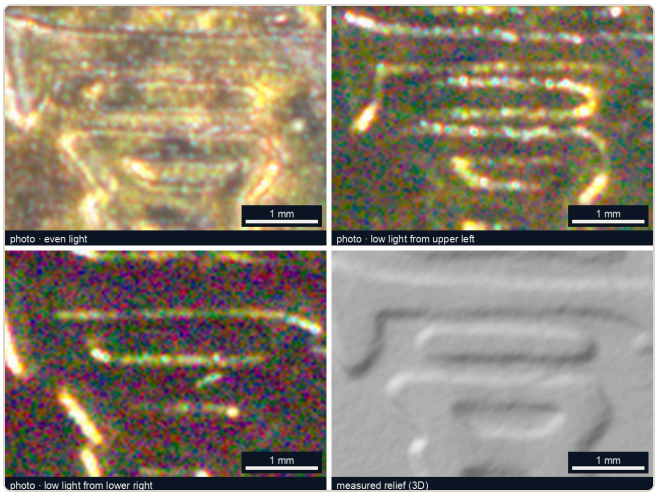
ITEM 6 Pit, reverse field at 1 o'clock (circled).



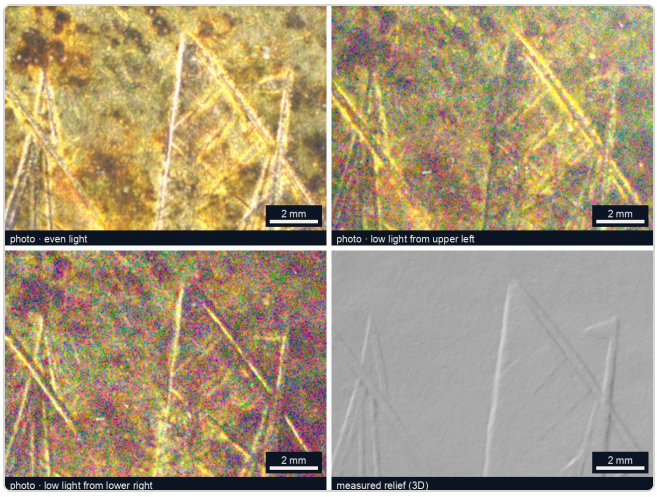
ITEM 7 Pit, reverse field at 12 o'clock (circled).



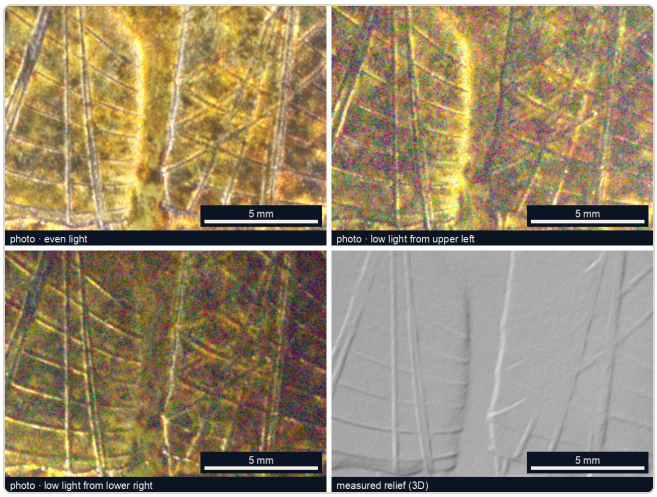
ITEM 8 Hairline scratch, reverse field at 6 o'clock (boxed).



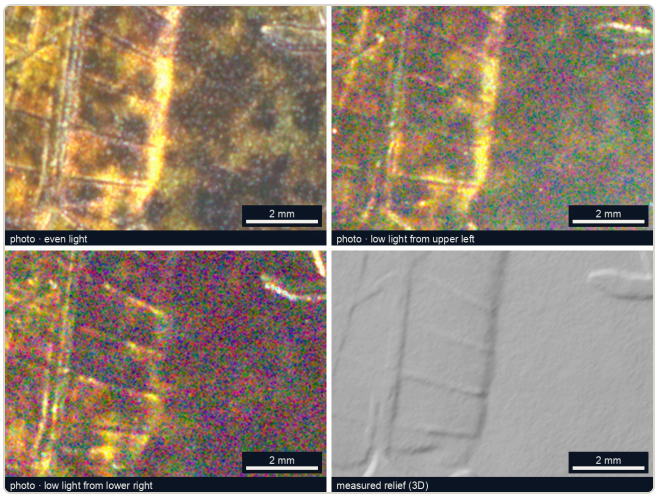
ITEM 9 Hairline scratch, reverse field at 3 o'clock (boxed).



ITEM 10 Linear mark, reverse field at 1 o'clock (boxed).



ITEM 11 Linear mark, reverse field at 4 o'clock (boxed).



ITEM 12 Linear mark, reverse field at 4 o'clock (boxed).

02 Identification

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

ELEMENT	READ ON THE COIN	CATALOGUE (NUMISTA #16370)
Obverse legend	中華民國二十三年	≠ 年二十二國民華中
Reverse legend	壹圓	≠ 圓壹

The legends and types read on the coin agree with the catalogue type **Y#345, Kann#623, L&M#109** (Numista #16370, 1933–1949).

PHYSICAL

MEASURE	THIS COIN	TYPE STANDARD	Δ
Composition	—	Silver (.880) (Cu .120)	—

03 Condition

ELEMENT	DETAIL VISIBLE	SOFTER AREAS
Portrait (obverse)	the hairline, ear, eye, moustache and collar edges stand crisp; no flat area is seen on the cheek or the ear	rub finer than the photographs resolve (about 37 µm per pixel) is not excluded
Junk and waves (reverse)	the sail battens, rigging lines, hull planks and the waves stand crisp	—
Dark spots, both faces	many small dark spots scattered over both faces, in the fields and on the devices	whether they are toning, corrosion or residue is not decided through the holder's plastic

ASSESSMENT

Detail comparable to Mint State (MS61), provisional

Detail comparable to Mint State (MS61), provisional: No wear is seen on the high points: the cheek, ear and collar on the obverse and the sail tops and hull on the reverse keep their edges. Many small dark spots over both faces hold the reading low in the mint-state range. Read from the per-light photographs; the holder's label was not seen. Relief of the central designs above the field around them: 214 µm on the obverse and 145 µm on the reverse. Recorded for comparison with later scans; not calibrated against graded coins.

Surfaces. Depressions in the open fields: 1 on the obverse and 2 on the reverse (§04). Their cause is not decided by the detector.

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.

Grade estimate. Grade estimate MS61 (band MS60 to MS70): tier MS (Mint State) from the reading of the photographs, checked against the measured crest flat share 0.131 / 0.226 (outside the heavy-wear band); mark load heavy (obverse 0.59 weighted marks per cm², reverse 1.74 weighted marks per cm²). Confidence very low; uncalibrated: no certified coin of this type has been measured on this instrument. What a grading service would add: no designation found in the record. Note: Mint State steps are decided by marks, luster and eye appeal; the mark detectors read a prooflike surface's artefacts as marks and luster is not a grade input (LM-1 is recorded, uncalibrated), so the range spans the Mint State scale. Not measured: cleaning (whether a service gives a number: a cleaned coin gets a Details designation; the hairline counts are inputs, but raised or incuse, their direction and a cleaned reference are needed to call it); strike (a weak strike is not wear: a soft centre read as wear lowers the tier; in Mint State a full strike moves the grade up one to two steps); eye appeal and toning (one to two points within a tier, and the services' plus and star designations); capture repeatability (how far the wear and mark figures move between two seatings of the coin). Luster: the LM-1 cartwheel measure is printed in the surfaces section (provisional, uncalibrated, no boundaries) and is not used in the grade; luster decides the AU / MS boundary and each Mint State step (MS-60 to MS-70 is decided by luster, marks and eye appeal), and traces of luster separate XF-45 from AU-50.

04 Surfaces: depressions

The depressions the instrument detected in the open fields: where they are, how large, how deep, and — where the measurements are comparable — how they compare with other coins.

PITS IN THE OPEN FIELD

	OBVERSE	REVERSE
Pits found	1	2
Open field examined	430 mm²	467 mm²
Density	0.2 per cm²	0.4 per cm²
Size across (median · p90 · max)	0.11 · 0.11 · 0.11 mm	0.12 · 0.12 · 0.12 mm
Depth (median · p90 · max)	9 · 9 · 9 µm	8 · 8 · 8 µm
Nearest-pit distance (median)	— mm	— mm
Nearest-neighbour ratio (descriptive)	—	—
Pits on the raised design (less reliable)	5	24

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	0.2	0.4	9–8 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.

Hairlines. Thin straight scratches found in the curvature of the measured surface: 12 in the open field of the obverse (16.8 mm together) and 10 of the reverse (21.5 mm); the longest are numbered on the condition map (§01). Lines on the design are counted separately: an engraved line and a scratch across it are not told apart by shape alone.

Resolution. This run used the standard solve at 27 pixels per mm; depressions narrower than about a tenth of a millimetre are not resolved, so the counts are lower bounds.

Appearance. Silver-grey with many small dark spots on both faces, photographed through the holder's plastic (grey-card colour balance; cover) (photographs with grey-card colour balance; cover). Hairlines and reflectivity are not systematically assessed.

SURFACE: LM-1 CARTWHEEL MEASURE (PROVISIONAL)

LM-1 v2 · provisional · uncalibrated · no boundaries · not used in the grade. Values are observed within one capture of each face.

FACE · RING	STRENGTH CW [BLOCK-ROTATION CONTROL]	ORDER [BLOCK-ROTATION CONTROL; ONE RIG DIRECTION]	FIELD	LIGHTS	SOURCE
Obverse · high ring (primary)	−0.166 [0.055]	0.545 [0.196; 0.181]	180.7 mm²	15, one in 4 LEDs	lm1-v2-coin21-a-164253 · raw frames
primary ring; single seat: coin and rig not separated; holder not recorded: plastic in the light path not ruled out; rig-term leak bound ±0.048; α_iso 0.5 (cross-validated); holder control beside the coin cw −0.470 [0.127].					
Obverse · low ring	−0.096 [0.032]	0.647 [0.197; 0.167]	206.3 mm²	15, one in 4 LEDs	lm1-v2-coin21-a-164253 · raw frames
single seat: coin and rig not separated; holder not recorded: plastic in the light path not ruled out; rig-term leak bound ±0.017; α_iso 0.2 (cross-validated); at α_iso 0.5 cw −0.160; no holder control on this ring.					
Reverse · high ring (primary)	−0.058 [0.022]	0.278 [0.133; 0.071]	401.2 mm²	15, one in 4 LEDs	lm1-v2-coin21-b-165040 · raw frames
primary ring; single seat: coin and rig not separated; holder not recorded: plastic in the light path not ruled out; rig-term leak bound ±0.008; α_iso 0.15 (cross-validated); at α_iso 0.5 cw −0.134; holder control beside the coin cw −0.470 [0.253].					
Reverse · low ring	−0.079 [0.017]	0.599 [0.135; 0.034]	389.7 mm²	15, one in 4 LEDs	lm1-v2-coin21-b-165040 · raw frames
single seat: coin and rig not separated; holder not recorded: plastic in the light path not ruled out; rig-term leak bound ±0.002; α_iso 0.2 (cross-validated); at α_iso 0.5 cw −0.125; no holder control on this ring.					

LM-1 v2 is a provisional, uncalibrated measure. On the flat open field of a face (slope under 5°, at least 0.5 mm from the design and 1.6 mm inside the rim) it takes the part of each pixel's brightness that changes twice per turn of the light around the coin and is left over by a smooth reflection model. Strength (cw) is the share of that term lying across the radius from the coin's outline centre, the direction a cartwheel pattern would take, as a fraction of the pixel's own brightness: positive across the radius, negative along it. Order (0 to 1) is how consistently its axis keeps one angle to the radius. Beside each value is its block-rotation control: the 95th percentile of the same statistic with the field's 2 mm blocks turned at random; beside the order, also the order one fixed rig direction would give on the same field. A value near its control is uninformative, not an absence. The control is not the instrument's floor: on the stationary holder beside a coin the same statistic has read up to about four times its own control. Limits: no boundaries or classes are set and no value here is a verdict on the coin's surface; boundaries will be fitted later from coins with known grades. A value from one seating does not separate the coin from the instrument. A value read through a holder's plastic includes the plastic's reflections and is not comparable with a bare coin's. LM-1 is not used in the grade estimate. NO DATA is printed with its reason.

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 could be made with the data available.

CHECK	MEASURED	REFERENCE	READING
Specific gravity	—	about 10.3 for silver of this fineness	not tested

No reference coin. No coin of this type has been measured on this instrument; the figures are reported for the record and for the next coin of the series.

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 (27.2 pixels per mm).



FIG 1 The obverse: the bust left inside the legend; the hairline, ear and collar edges stand crisp, and small dark spots are scattered over the field and the portrait.

REVERSE

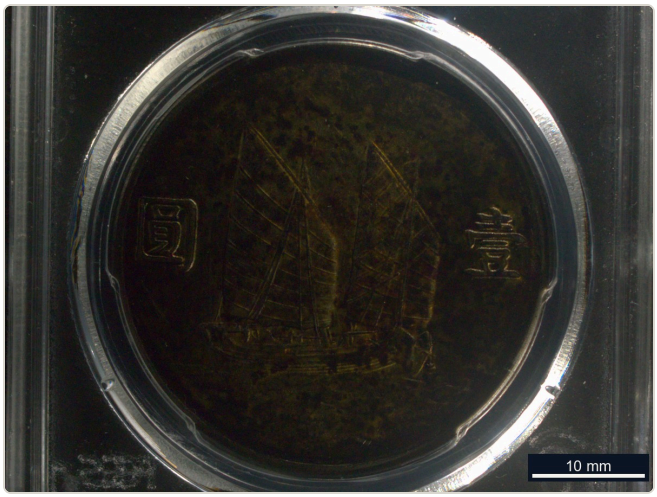


FIG 2 The reverse: the junk under sail over the waves, the denomination either side; the sail battens and rigging lines stand crisp, with dark spots over the field.

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 (obverse) — identified design elements



DESIGN ELEMENTS

- Central design

Reverse (reverse) — identified design elements



DESIGN ELEMENTS

- Central design

08 Method and limitations

METHOD	Each face was photographed 30 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 27.2 pixels per mm (about 37 µm per pixel), on which depressions, relief and design elements are measured. Design elements were 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.
ORIENTATION	Each face was turned upright by registering it against the catalogue's photograph of the type: the design's edges compared over the whole face through a full turn, refined to a quarter of a degree, the photograph and the measured relief agreeing. The die axis rests on these uprights.
SCALE	Set from the coin: the catalogue diameter (39.0 mm) over the outline measured in pixels sets the image scale, so the photographed outline is not a second measurement of it. Lateral lengths rest on that figure. Provisional: the instrument's relief scale is not yet validated against reference heights on this rig.
NOT DECIDED	Capture repeatability of the figures: not characterised — one capture per face in this run. It would be settled by a re-seated repeat capture of each face.
NOT SYSTEMATICALLY ASSESSED	Hairlines (noted only where a close-up shows them), reflectivity and lustre; the edge.
NOT A CERTIFICATION	This is an instrument-based examination, not a third-party grading service opinion (NGC, PCGS).
GRADE ESTIMATE	The number MS61 is the examiner's reading of the photographs; the band beside it is the instrument's own range for the tier. The tier is the reading of the photographs; the measured crest flattening checks it (a disagreement widens the range one step toward the measure). The range is the Sheldon steps the grading services define for the tier, narrowed only by the measured mark load: linear marks weigh 1, hairlines a quarter, a mark inside half the flan radius counts double; per cm² of face, heavy keeps the tier's lower half, moderate drops its top step. Designations are what the services would add, read from the record. The estimate is not fitted to certified coins; certified coins of each type across grades are the calibration it waits for.
UNCERTAINTY	Lateral lengths rest on the scale stated under Scale above; where that scale is provisional, so are they. 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; this solve corrects the LEDs' emission lobe with the fit measured for silver, which a flat target showed removes most of the instrument's bowl. A saddle fixed in the camera frame, measured on a flat target, is not corrected and is part of that long-

range uncertainty. The solve grid is a sampling grid, not a demonstrated optical resolution.

DIGITAL SUPPLEMENT

In the delivery bundle AZR-COIN21-revA-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-COIN21-REVA-OBVERSE.JPG	The obverse, photographed in even light, without annotations.
AZR-COIN21-REVA-REVERSE.JPG	The reverse, photographed in even light, without annotations.
AZR-COIN21-REVA-OBVERSE_LIGHT_SWEEP.GIF	The whole obverse under each of the 15 low lights in turn.
AZR-COIN21-REVA-REVERSE_LIGHT_SWEEP.GIF	The whole reverse under each of the 15 low lights in turn.

REFERENCES

Numista #16370 (Y#345, Kann#623, L&M#109).

PREPARED BY

Anton Zalutsky
Principal Examiner · AZ Robotics LLC

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

REPORT

AZR-COIN21
Issued 20 October 2026, 5:22 PM EDT · Rev A

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.