

SCENARIO EXPLORATION · HOW IT WAS MADE

Celestial Orrery

Atelier edition · a handmade model of the heavens

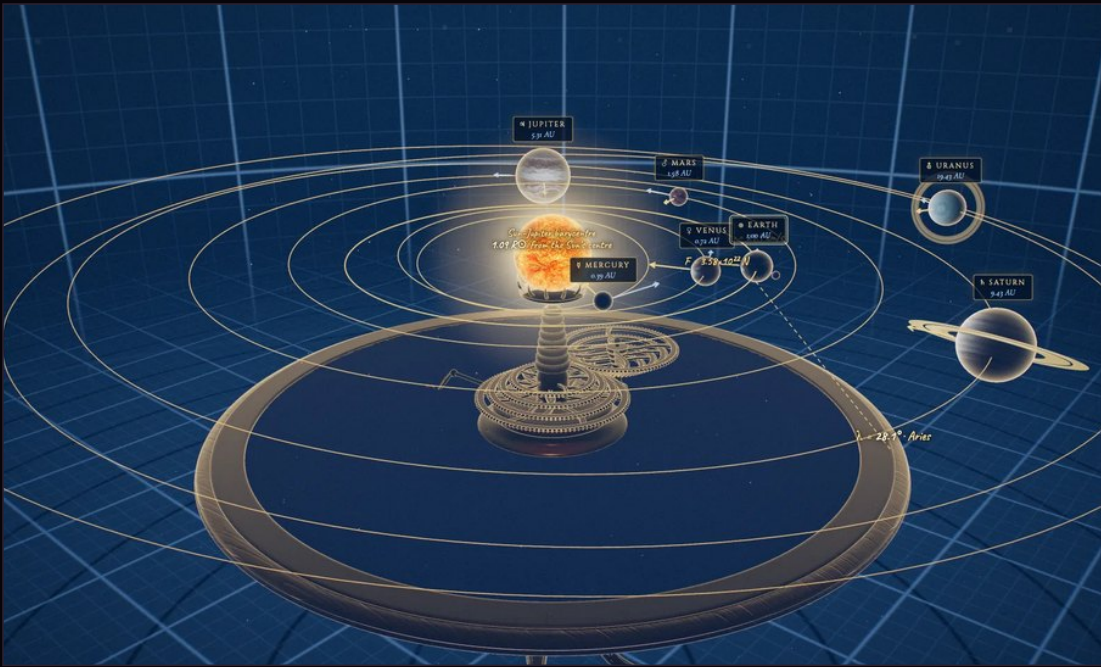
An interactive Three.js orrery of the real solar system: crewel-embroidered planets ride brass rails around a walnut clockwork, inside an engraved astronomer's library. Claude Code wrote the engine and drove Blender headless. Scenario generated the planet maps, PBR materials, skies, the carved pedestal, the ambient score and the key sound effects, all through Scenario MCP.



An orrery, not a game

The brief, given in a single Claude Code session, asked for a Three.js experience with stunning visuals, hyper-realistic reflections and wood, metal and bronze materials. Assets were to come from Scenario 3D models, with Tripo P2 named as a candidate and a comparison to find the best-looking and lightest one, or from scratch in Blender. GPT image models on Scenario would make the textures, and Seedance with music models the trailer. One rule stood out: “No primitive geometry at all.” A follow-up ruled out another game. It should be interactive, with gears, sliders and buttons, and worth sharing on social media.

Three rounds of ideas narrowed to one: the Sun, Earth, Moon and planets as a diorama, with a layer of mathematical arrows and numbers. GPT Image 2.5 Flare rendered three style concepts, Museum Orrery, Living Blueprint and Photoreal Space, and the choice was the museum orrery with a blueprint toggle.



Blueprint mode in the finished build: the toggle chosen at the concept stage.

25 SEP

1 MUSEUM EDITION

A realistic orrery in a candlelit gallery, built and published on the first day.

25-26 SEP

2 FEEDBACK ROUNDS

Cracked PBR wood, toys, an eclipse theatre and a birthday-sky card.

26 SEP

3 RESTYLE

A fork of the project, fifteen new style concepts and a felt toy-box pass.

26 SEP

4 ATELIER EDITION

Embroidered planets, brass rails, an engraved library. This edition ships.

26 & 28 SEP

5 TRAILER

Three cuts, down to 41.7 seconds.

A clockwork turned in code

No Blender MCP bridge was connected, so every Blender step ran as a headless Python script in Blender 5.2.1. `build_orrery.py` models the mechanism procedurally: Catmull-Rom lathe profiles for the hub, sleeves and moldings; a gear function that cuts teeth and spokes for a meshing gear train; a blued-steel arbor; a tulip sun cup with twelve petals; planet cradles with prongs, counterweights and a crank. Bevels and weighted normals keep the edges soft under reflections, and `review.py` renders EEVEE hero, close-up and full views for checking.

189,286

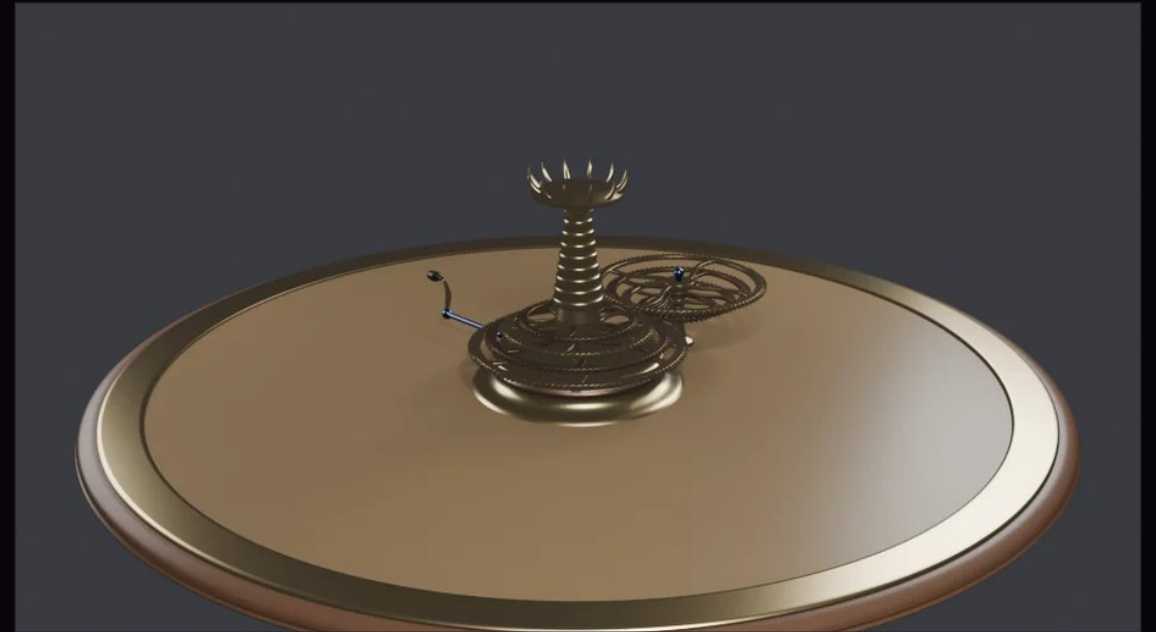
faces in 45 objects, 10.9 MB at the first export

154,756

faces in 39 objects, 1.97 MB with Draco, after that rework



The same gear train from above in the finished Atelier edition.



EEVEE review render of the procedural mechanism, before the pedestal.

ROUND WHERE IT MUST BE

The gear train, cups, cradles and table rims are modelled forms, and the carved pedestal comes from image-to-3D. The planets, rivets and sky dome remain spheres.

REWORKED FOR THE PEDESTAL

Once the carved pedestal existed, `build_orrery.py` dropped its own turned column and legs and gained prongs on the planet cradles.

Three models, one carved pedestal

The table needed a carved Georgian tripod stand, a shape better generated than modelled. Scenario MCP's recommend tool ranked the image-to-3D models, and GPT Image 2.5 Flare produced one isolated product shot on white. That single image went to Tripo P2, Hunyuan 3D 3.1 Pro and Tripo 3.1 in parallel, each with PBR textures, and a Blender script rendered the three results side by side.

Hunyuan 3D 3.1 Pro gave the crispest carving and the only convincing metallic gilt; both Tripo results lost the metal. Its 150,000-face, 48.7 MB mesh was joined, decimated at a ratio of 0.42 to 62,999 faces, given 2048-pixel textures and exported as a 3.17 MB GLB.

MODEL	FACES	GLB	JOB	RESULT
Tripo P2	52,888	12.8 MB	189 s	Ranked first; lost the metal
Hunyuan 3D 3.1 Pro	150,000	48.7 MB	186 s	Carving and gilt · chosen
Tripo 3.1	84,194	13.2 MB	137 s	Lost the metal

THE PEDESTAL CONCEPT PROMPT, VERBATIM

Product photograph of a single antique Georgian tripod pedestal stand (the stand only, NO tabletop, flat round top plate), isolated and centered on a plain pure white background, three-quarter view from slightly above, full object in frame. Rich polished figured black walnut: a baluster-turned central column with a carved acanthus leaf collar and fluted urn, three elegant cabriole legs with carved acanthus scroll knees sweeping outward, ending in cast gilt-bronze lion paw feet. Gilt-bronze ormolu mounts and a beaded brass ring on the column. Museum quality craftsmanship, crisp detail, soft even studio lighting, no shadows on the background, no text.

GPT IMAGE 2.5 FLARE · 1024 × 1536 · QUALITY HIGH



The same concept, left to right: Tripo P2, Hunyuan 3D 3.1 Pro, Tripo 3.1.



Closer: Hunyuan's gilt paw feet in the centre, the two Tripo results at the edges.

Maps, marble, marquetry and a museum sky

GPT IMAGE 2.5

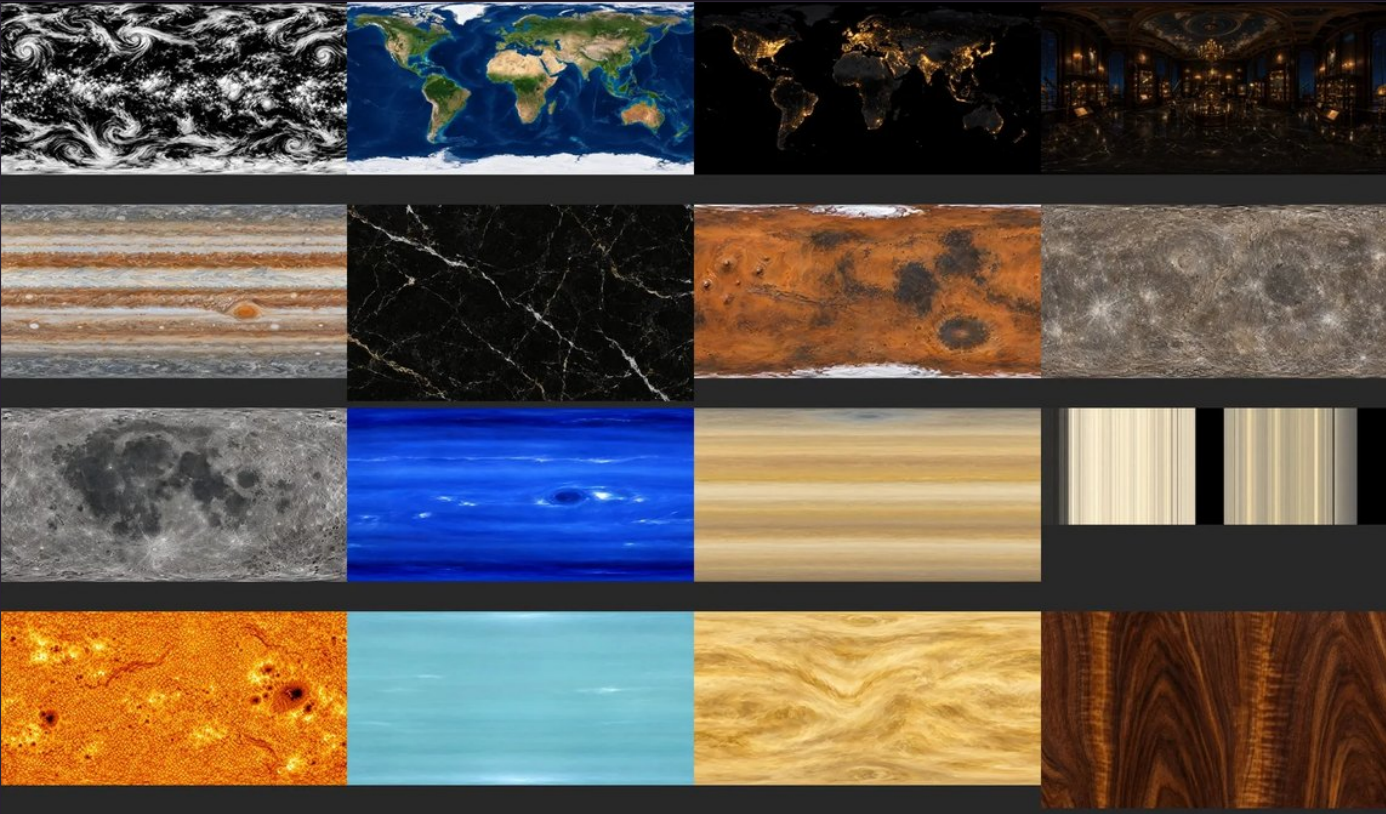
Sunburst painted Earth's day and night maps. Flare painted the clouds, Sun, Moon, seven planets and a Saturn ring strip as flat 2:1 maps, plus walnut and Nero Marquina marble tiles and a zodiac marquetry tabletop. Python blended the seams and derived an ocean mask, bump maps and ring alpha.

SKYBOX GPT

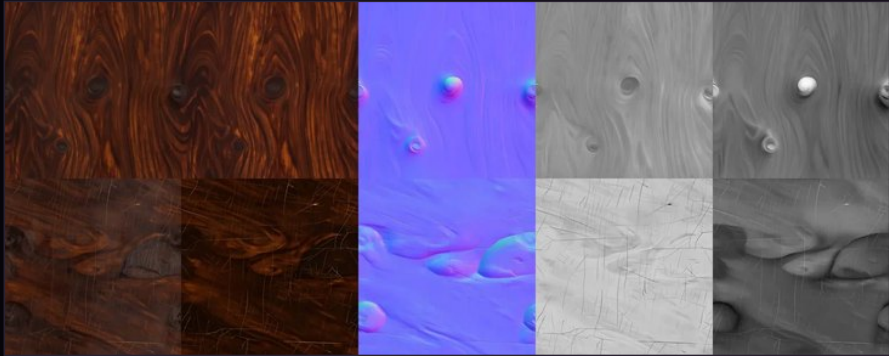
A 3840 × 1920 panorama of a dark 18th-century astronomy gallery at night surrounds the museum edition.

PATINA MATERIAL

Feedback called the wood too flat and shiny. The recommend tool pointed to PATINA as the model that returns a full PBR set, and it produced cracked walnut, crackled lacquer and aged brass, each as colour, normal, roughness and height maps.



Museum-edition maps: clouds, Earth by day and night, the gallery sky, planets, marble, ring strip, walnut.



PATINA walnut and lacquer: colour, normal, roughness and height.

ONE MODERATION RETRY

The first marquetry prompt, which named zodiac emblems, was flagged as a moderation false positive. Describing “astrological glyph symbols” instead passed.

GPT IMAGE 2.5 FLARE · 2048 × 2048 TABLETOP

Real orbits under candlelight

ENGINE

Three.js r186 with Vite. Positions come from JPL Keplerian elements and a Meeus lunar series. Overlays draw ink orbits, gravity and velocity vectors, Kepler's equal-area wedges and third-law table, a tilt protractor, tides, shadow cones and the barycentre. A planar mirror reflects the scene in the lacquered table and a cube camera feeds the brass.

SOUND

ElevenLabs Music v2.5 wrote a celesta-and-strings museum loop and a minimalist blueprint loop; the first blueprint prompt named composers and was rejected, so it was rewritten without them. ffmpeg crossfaded the museum loop's tail into its head so it repeats seamlessly. Sound Effects 2 made a tick, a whoosh and a chime; the continuous tick was cut after the first review.

FIRST TRAILER

Seedance 2.5 animated four uploaded stills in three clips: a dolly toward the Sun, a first-and-last-frame morph from museum to blueprint, and a macro of the gears. With ten recorded app shots and a 55-second ElevenLabs cue, ffmpeg assembled a 55.7-second film.

Review rounds then added a compact planet panel with a "More" drawer, an eclipse hunter with an Eclipse Theatre view, a comet slingshot, a birthday-sky card and Web Audio notes in place of the tick.



The museum edition: the gallery, the mechanism and the top view.



Frames from the three Seedance 2.5 clips, used only in this edition's trailer.

Fifteen styles, one felt toy box

The project was copied to a new folder so the museum edition stayed intact, and the restyle began with concepts, not code. Two moodboards set the direction, with the note to make it “more lively, more creative”. GPT Image 2.5 Flare rendered three rounds: Jewel Box, Toy Box and Storybook; then risograph, papercut, ink comic, stained glass, claymation and atomic age; then paper clay, riso papercraft, wooden toy, felt and embroidery, gouache and soft clay. The pick was felt and embroidery mixed with the Toy Box frame, and a synthesis prompt produced the target look.

PATINA made maple, walnut, wool felt, linen and navy-paint sets; maple and navy came back as planks and were regenerated as a “single continuous solid piece”. Flare stitched ten needle-felted planet maps, Skybox GPT made a felt night sky with the synthesis concept as a reference image, and ElevenLabs wrote two lullabies. Star-studded rails, sparkle trails and a stitched interface followed.



Felt-pass planet maps, Sun to Neptune.

Published for review, the pass was judged “way too childish”, from the graphics and skybox to the buttons, with a request for something between it and the museum edition.

PUBLISHED 09:55 UTC · REVIEWED 11:07 UTC · 26 SEPTEMBER



The third round, J to O; M, felt and embroidery, was picked.



Synthesis concept: M mixed with Toy Box.



The felt toy-box pass in the app, rejected.

Between the toy box and the museum

CREWEL-EMBROIDERED PLANETS

Flare wove ten new maps in “fine wool crewel embroidery” with a naturalistic palette, “not cartoon”. The first Saturn arrived with rings stitched into the map and was regenerated with “Absolutely NO rings, no ring shadow”.

AN ENGRAVED LIBRARY

A photoreal candlelit atelier from Skybox GPT came first and read as low in quality. The next request was a graphic illustration, darker and in browns and purples, so Skybox GPT drew two engraved panoramas at 3840 × 1920; the dim astronomer’s library ships.

BRASS AND RESTRAINT

Thin brass rails with round rivets follow each true orbit, trailed by gold dust. The glass panels of the museum edition returned, the wool bump dropped to about a third, Blueprint hides the rails and arms, and the original ambient score plays.

GRADED IN THE SHADER

The dome shader, not the image, sets the room’s tone: it pulls the panorama toward plum and umber, and a texture LOD bias of 1.1 slightly blurs the engraving so its resolution never shows.



The ten shipped crewel maps, Sun to Neptune, after seam blending.



The shipped engraved panorama from Skybox GPT; a second design was not used.



Before: the photoreal atelier sky.



After: the engraved library behind Earth, Moon and Uranus.

From generated maps to a working sky

PLANET SHADER

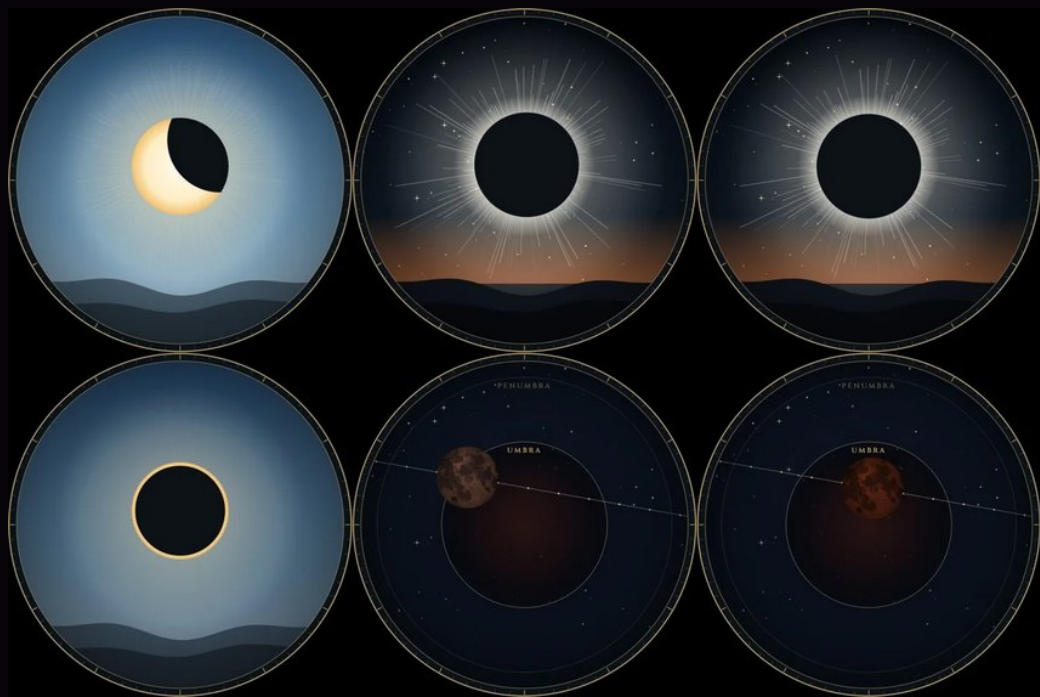
A custom GLSL shader wraps each embroidered map on a sphere and adds wool fibres from the PATINA felt scan by triplanar sampling, so nothing pinches at the poles. The terminator is softened the way cloth scatters light. Planets darken inside a moving umbra and penumbra, so eclipses and Saturn's ring shadow fall where the geometry puts them.

BLOOM THAT HOLDS

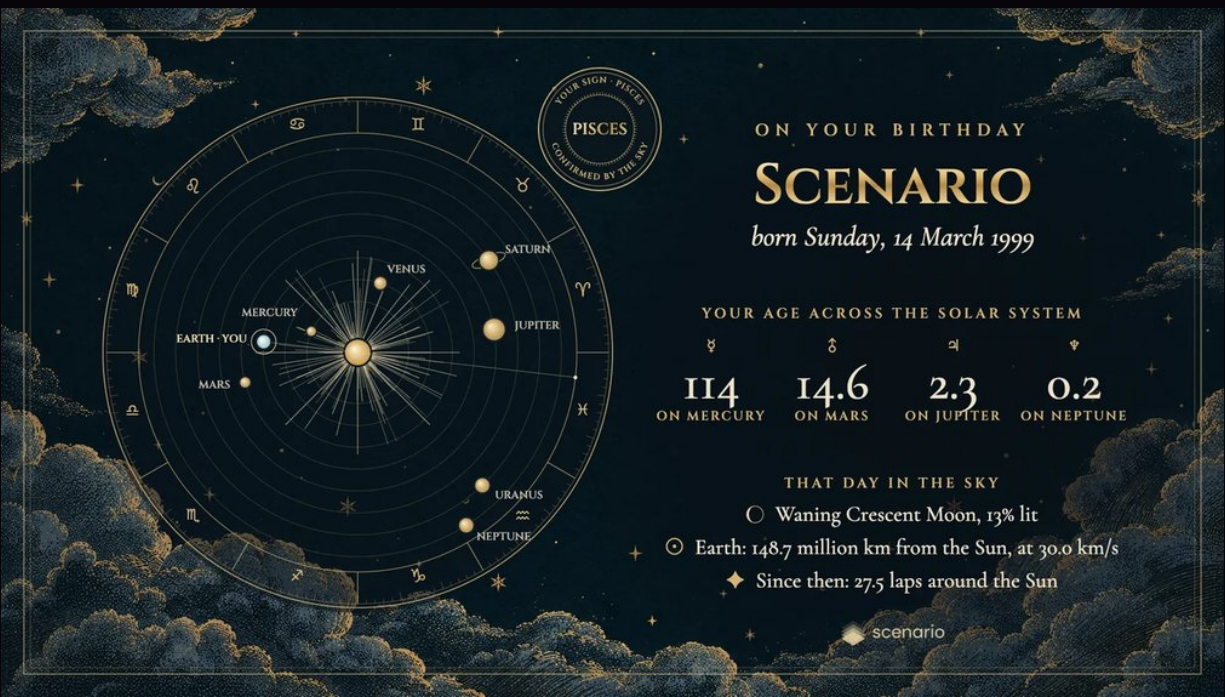
One NaN pixel, from reversed smoothstep arguments, was smeared by the bloom mip chain into black blocks. A sanitize pass now replaces NaN and infinite values and clamps highlights before UnrealBloom, and a grade pass adds the warm or cool mode tint, vignette and grain.

ECLIPSES AND BIRTHDAYS

The Eclipse Theatre draws what an observer in the path would see, from the same ephemeris and a hand-entered catalogue of greatest-eclipse times. The birthday card charts each planet's real heliocentric longitude in gold over engraved night skies from Flare, one per format, with the official Scenario logo.



Eclipse Theatre insets: partial, total and annular solar eclipses, and the Moon crossing Earth's shadow.



The wide birthday-sky card, rendered for the name "Scenario".

Three cuts and a clay time-lapse

The Atelier trailer went through three versions. A 74-second first cut used the ambient score. A 44-second cut added a new ElevenLabs Music v2.5 track, prompted at 124 BPM and measured at about 123, a comet striking Jupiter and the total solar eclipse of 2 August 2027 over Egypt. The 41.7-second final cut uses short beat-centred crossfades. Its making-of section is built from the real generated assets, and a Blender time-lapse flies the parts in, completes the scene with film-only planets and rails, then dissolves a clay pass into an Eevee material render.

The Atelier trailers contain no Seedance footage; Seedance appears only in the museum edition's trailer.

SUCCESSFUL SCENARIO GENERATIONS ACROSS BOTH EDITIONS AND THEIR TRAILERS

62

images

3

image-to-3D

10

PBR materials

5

skyboxes

6

music

3

sound effects

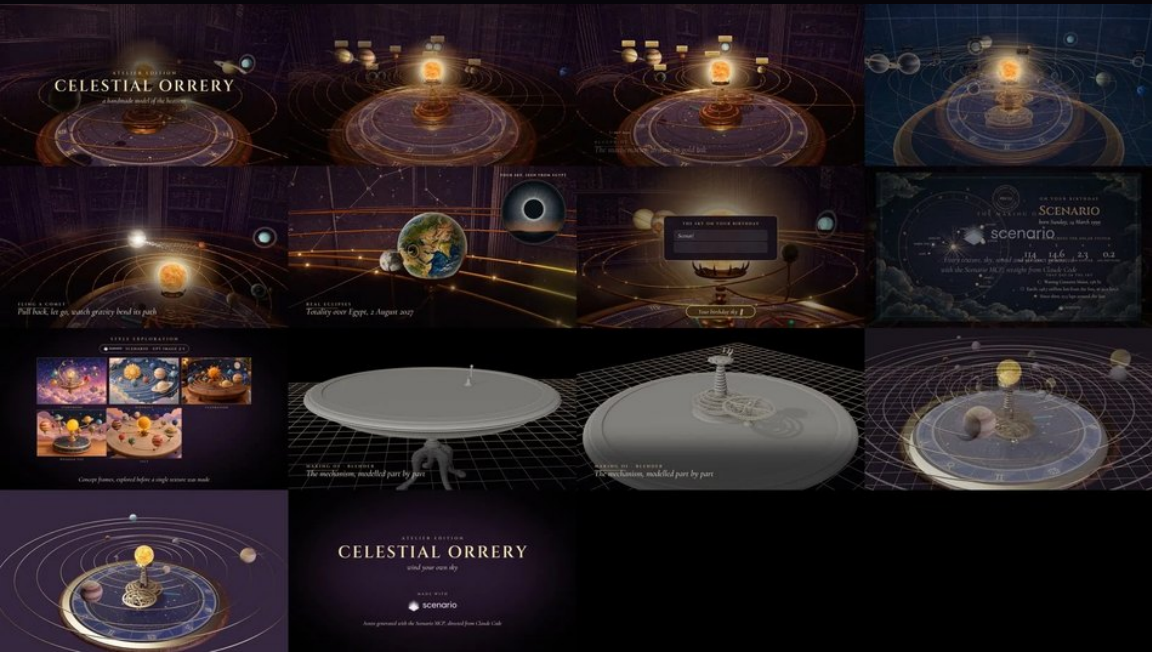
3

video

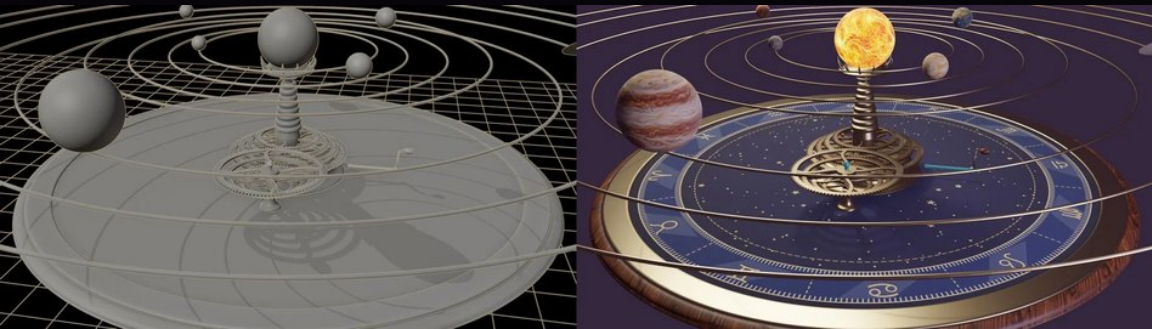
MAKE YOUR OWN

Scenario MCP connects Claude Code and other agents to Scenario's image, 3D, material, skybox and audio models.

Scenario MCP Scenario



Frames from the final 41.7-second cut.



The same moment of the Blender time-lapse, clay and material passes.