Hidden in the Dust



An imaginative MWSS111 mission story. The Casimir membrane and candidate wormhole are fictional story elements.

Beyond the tangled dust cloud, a fierce orange glow flickered through gaps in the gas. Vanguard-6 approached slowly. What had looked like one crowded mass began to resolve into distinct layers: a star, a clear region, and a shimmering boundary.

LORETTA: Althea, bring us past the cloud. I want a clear view of what is hidden inside.

ALTHEA: Approach steady, Captain. We are entering the clear region.

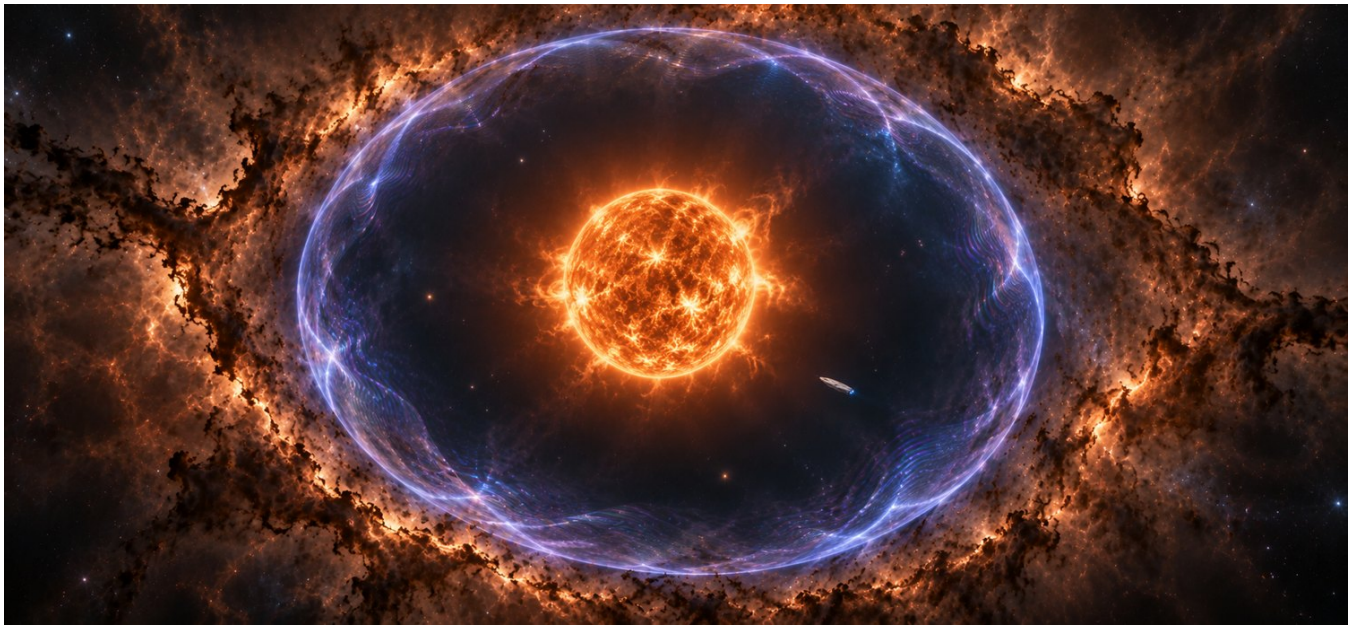
INA: There is an unexpectedly clean space between the star and the surrounding material.

LORETTA: GMTO, map the boundary. JIM, monitor our shield. Let us see what separates the star from all that dust.

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A star inside a boundary



The elevated overview revealed the whole star. A blue-violet membrane surrounded a broad cavity, with turbulent gas and dust beyond its rim.

LORETTA: GMTO, why is the activity so intense along this boundary? What is keeping the gas outside?

GMTO: The strongest distortion follows the membrane. I can map its shape, but I have not established what sustains it.

LORETTA: JIM, are we feeling that pressure?

JIM: Small fluctuations across our shield. They increase as we approach the rim, but remain within tolerance.

LORETTA: INA, is the star driving this, or is the membrane doing something of its own?

INA: Possibly both. One section is responding differently. Look at the five-o-clock position.

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The vibrating pocket



INA: That pocket expands and contracts. It repeats while the surrounding turbulence changes.

LORETTA: A bubble of trapped gas?

INA: Perhaps. Or a local oscillation in the membrane. We need to determine whether matter is moving or only the boundary.

LORETTA: GMTO, does each vibration travel anywhere?

GMTO: A faint ripple follows the rim after each contraction. A longer observation will help establish its direction.

INA: Recommend ALBA-310 observe from inside the clear region. Compare the pocket's motion with its spectrum over several cycles.

LORETTA: Approved. Keep the probe on this side. Focus on one question: what changes first, the gas or the membrane?

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ALBA-310 launches



The launch bay opened. ALBA-310 cleared its cradle and slipped into the dark cavity, its blue lights visible against the star's reflected glow.

ALTHEA: Launch bay clear. ALBA-310 is away.

GMTO: Tracking the probe toward sector five o-clock.

JIM: Probe protection stable. Holding the approach within the clear region.

INA: Passive instruments recording. Keep the approach slow enough to separate motion from changing light.

LORETTA: Bring its telemetry onto the bridge viewscreen. We observe first.

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An apparent opening



From behind ALBA-310, the pocket appeared to deepen. A luminous rim surrounded distorted points of light. The probe stopped short of the opening.

INA: Captain, that vibrating pocket appears to be a wormhole. Look at the distortion inside the rim!

LORETTA: Now that is a discovery. GMTO, lock our instruments onto it.

GMTO: Tracking lock established. Recording its position and mapping the geometry.

LORETTA: JIM, hold ALBA-310 at this distance.

JIM: Position maintained.

LORETTA: Log it as a candidate wormhole, sector five o-clock. We are here to study it. ALBA-310 stays on this side.

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The first mapping sequence



On the bridge viewscreen, sampling points traced the rim. A partial contour mesh grew across the display. The progress indicator reached twelve percent.

INA: Beginning the first mapping sequence. We will compare each pulse with changes in the rim.

LORETTA: How could a wormhole exist inside this Casimir region? Is the membrane creating it or containing it?

GMTO: There is more than one possible explanation.

JIM: The opening and the membrane may be coupled. We need to establish which changes first.

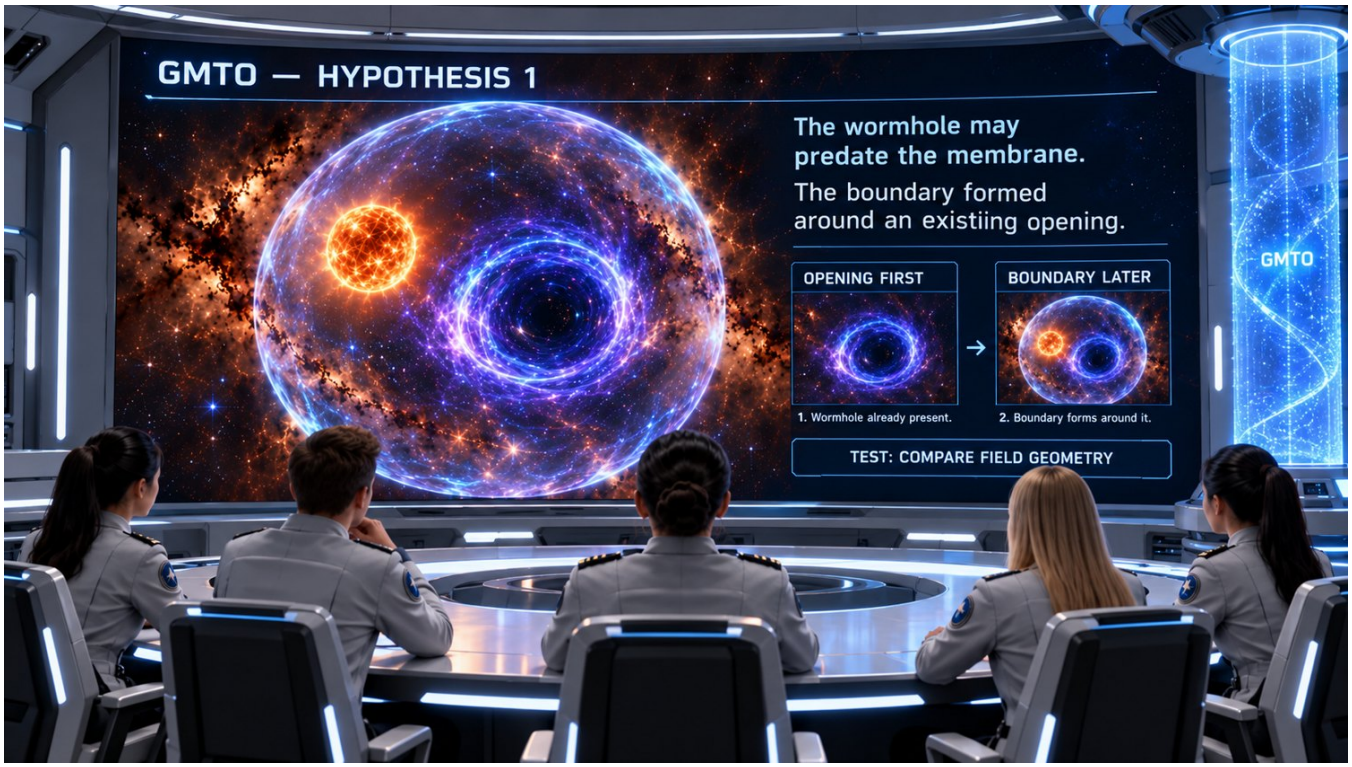
INA: And we must test whether this is an opening at all.

LORETTA: Bring the three models to the briefing room. Preserve the recordings. I want the reasoning and a test for each explanation.

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GMTO: an older opening



The crew gathered around the circular table. GMTO projected an opening followed by a boundary forming around it.

GMTO: First possibility: the wormhole existed before the boundary formed. The membrane developed around it.

LORETTA: So the boundary may have enclosed something already there.

GMTO: Yes. We should compare the opening's geometry with the surrounding field for evidence of a distinct structure.

INA: That would support an independent origin, but we should not assign an age from appearance alone.

LORETTA: Keep it as a hypothesis. Record what would support it and what would contradict it.

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JIM: a membrane-supported opening



JIM's projection replaced the first model with energy concentrated along a fold in the boundary. Two illustrative waveforms showed a membrane pulse followed by an opening response.

JIM: Second possibility: the boundary sustains the opening. Energy concentrated at the vibrating pocket may maintain a local fold in space.

LORETTA: What would distinguish that from GMTO's explanation?

JIM: Changes in the membrane should consistently precede changes in the opening.

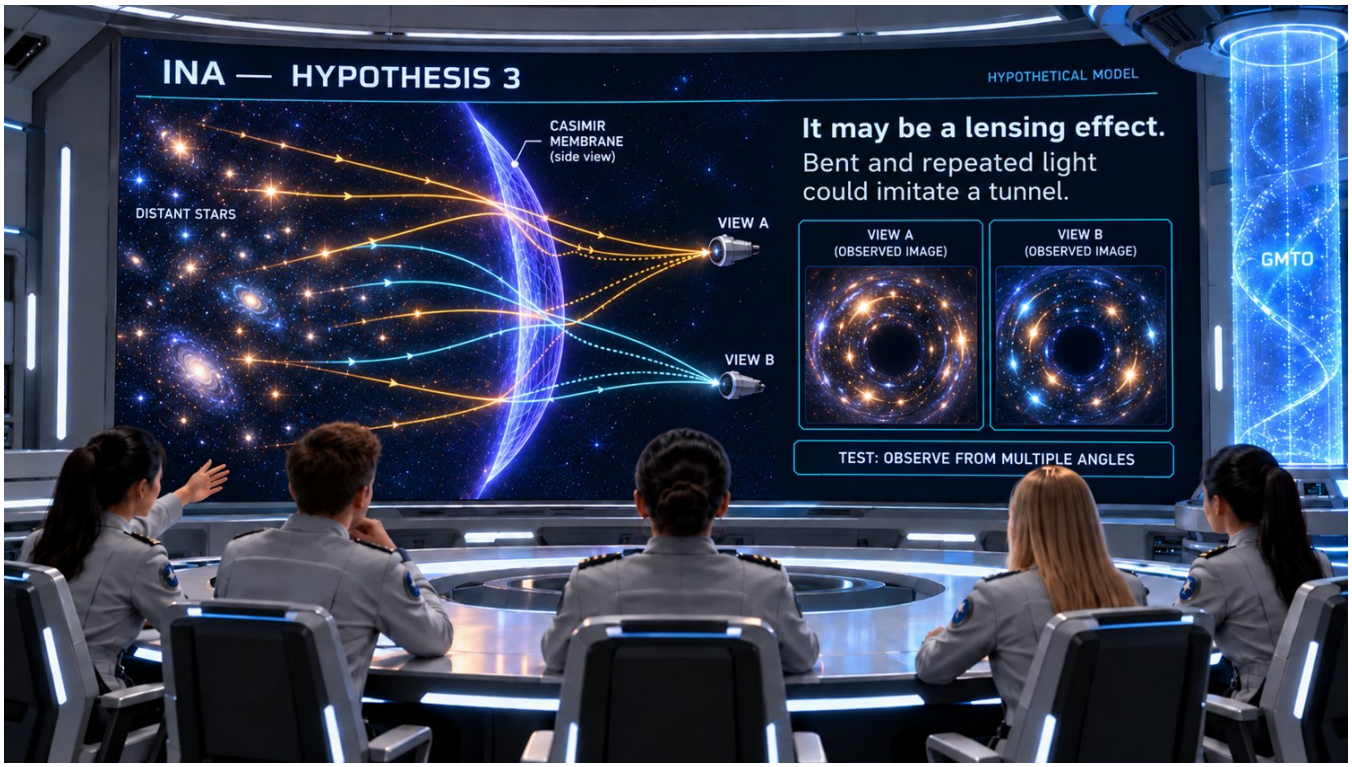
INA: We can test that timing over repeated cycles. The waveforms here illustrate the prediction; they are not a result yet.

LORETTA: Good. Compare the timing before we decide that the membrane is the source.

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INA: a tunnel made of light



INA projected light paths bending across the membrane. Two viewing positions produced different apparent images.

INA: Third possibility: it only looks like a wormhole. The membrane could bend and repeat background light, creating the appearance of a tunnel.

LORETTA: Then we have not established that it connects anywhere.

INA: Correct. ALBA-310 can observe from several positions on this side. We will compare how the apparent interior shifts, map the rim, and time the pulses.

GMTO: That tests a persistent spatial structure against an optical distortion.

LORETTA: Three hypotheses. Keep all three in the log. Let the measurements tell us which explanation survives.

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An urgent classified transmission



Before the briefing ended, a priority transmission replaced the scientific projections. Captain Larry appeared beside an image of Neptune Station under construction.

LARRY: Captain Loretta, Vanguard-6 is required at Neptune Station. This is an urgent assignment. The mission is classified. We need you there as early as possible.

LORETTA: Understood, Captain. We will secure our survey and prepare to depart.

LARRY: Further instructions will follow through the secure channel.

LORETTA: INA, preserve the incomplete map and all three hypotheses. GMTO, log the location for a return visit. Recall ALBA-310.

INA: Survey archived as incomplete. The candidate opening remains unconfirmed.

The crew returned to their stations. ALBA-310 was recovered before departure.

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The turn toward open space



ALTHEA: ALBA-310 secured. Launch bay closed. Departure course ready.

LORETTA: Bring us out of the Lagrange holding area. Execute the one-hundred-eighty-degree turn.

JIM: Shield stable through the maneuver.

GMTO: Observation coordinates and survey records secured.

INA: Three explanations remain open. We have enough recorded material to continue the analysis underway.

LORETTA: Then we take the questions with us. Althea, proceed.

Maneuvering thrusters fired. Vanguard-6 swung away from the glowing boundary and pointed into open space. The star and membrane receded behind the ship. Neptune Station lay ahead on their course, beyond the view.

End of Episode 12. The classified assignment continues in the next episode.

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