

Put every ejection in flight
on the Sun-Earth line.

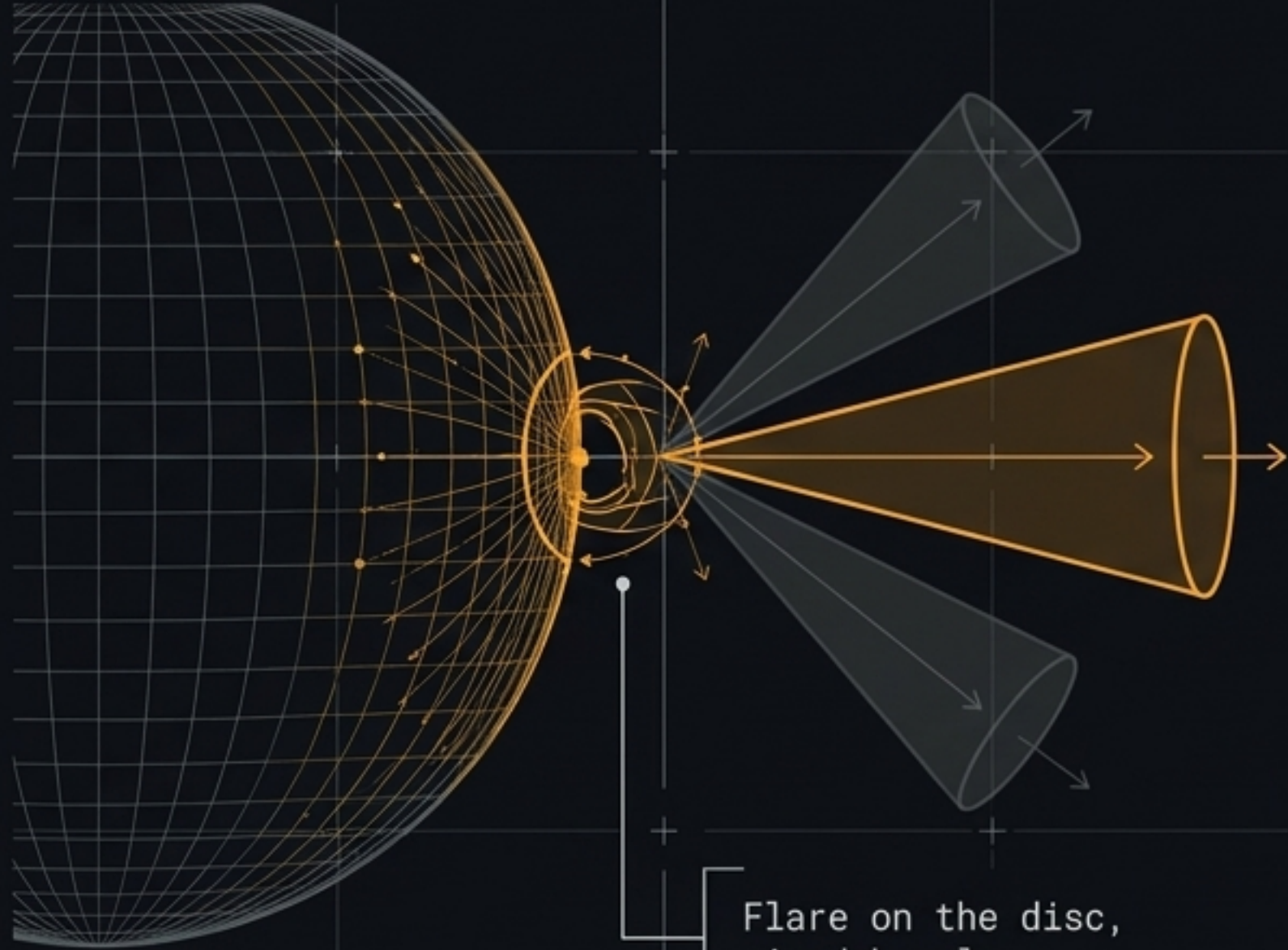
Shape Earth's magnetic shield with the solar wind actually measured.

Keep every forecast run as its own distinct issuance.

Seal each call with exactly
what the instruments showed.

One Ejection. Four Forecasts.

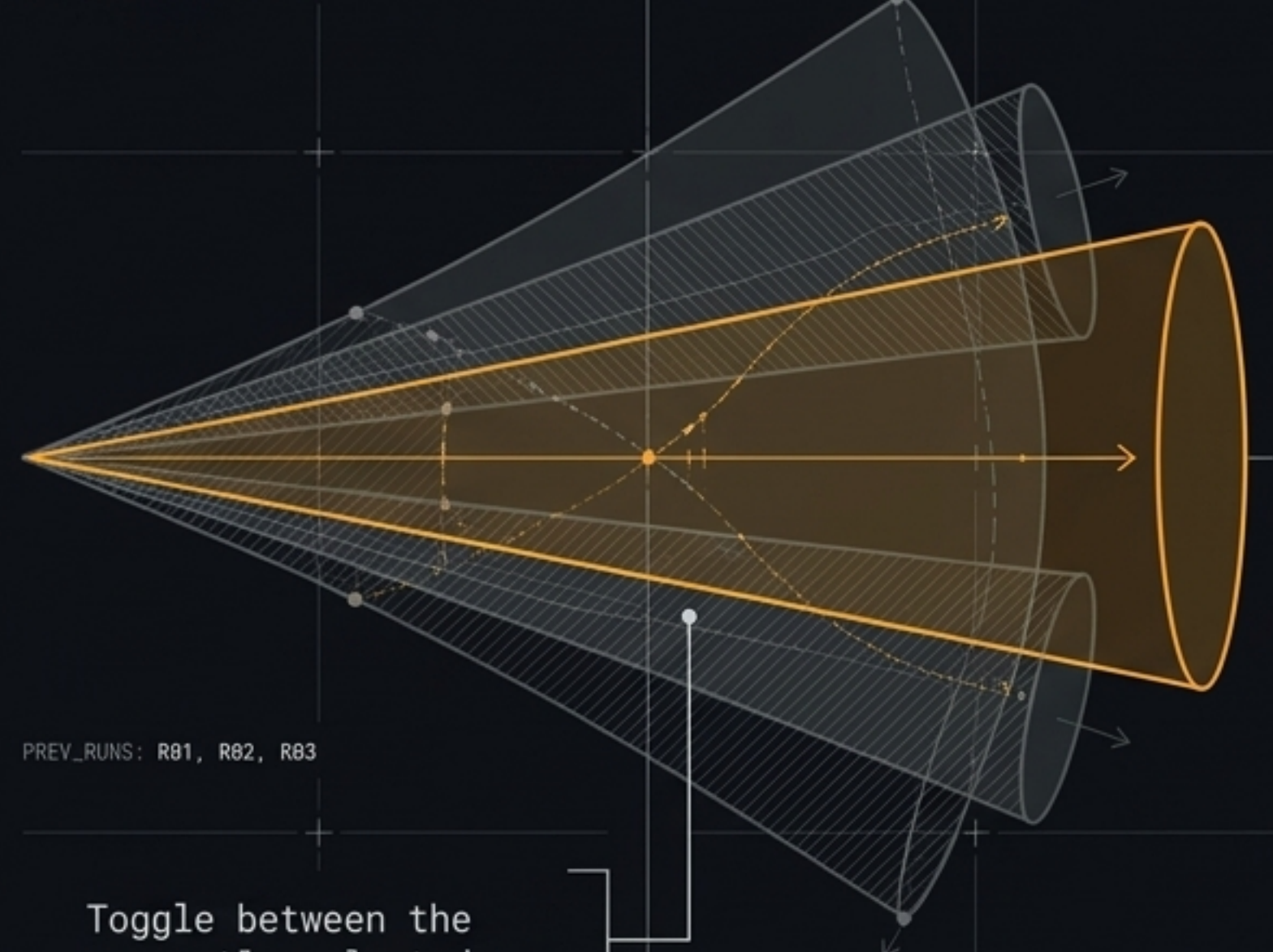
FLARE_CLASS: X2.1
START_TIME: 2024-10-27T14:38:00Z
LAT/LON: N15W22
TRAJ_CONE_ID: C001_PRIM



TRAJ_CONE_ID: C001_PRIM

Flare on the disc,
sized by class.

RUN_ID: MSA-ENLIL-20241027-04
EARTH_IMPACT_PROB: 85%
ARRIVAL_TIME: 2024-10-30T12:00:00Z
PREV_RUNS: R01, R02, R03

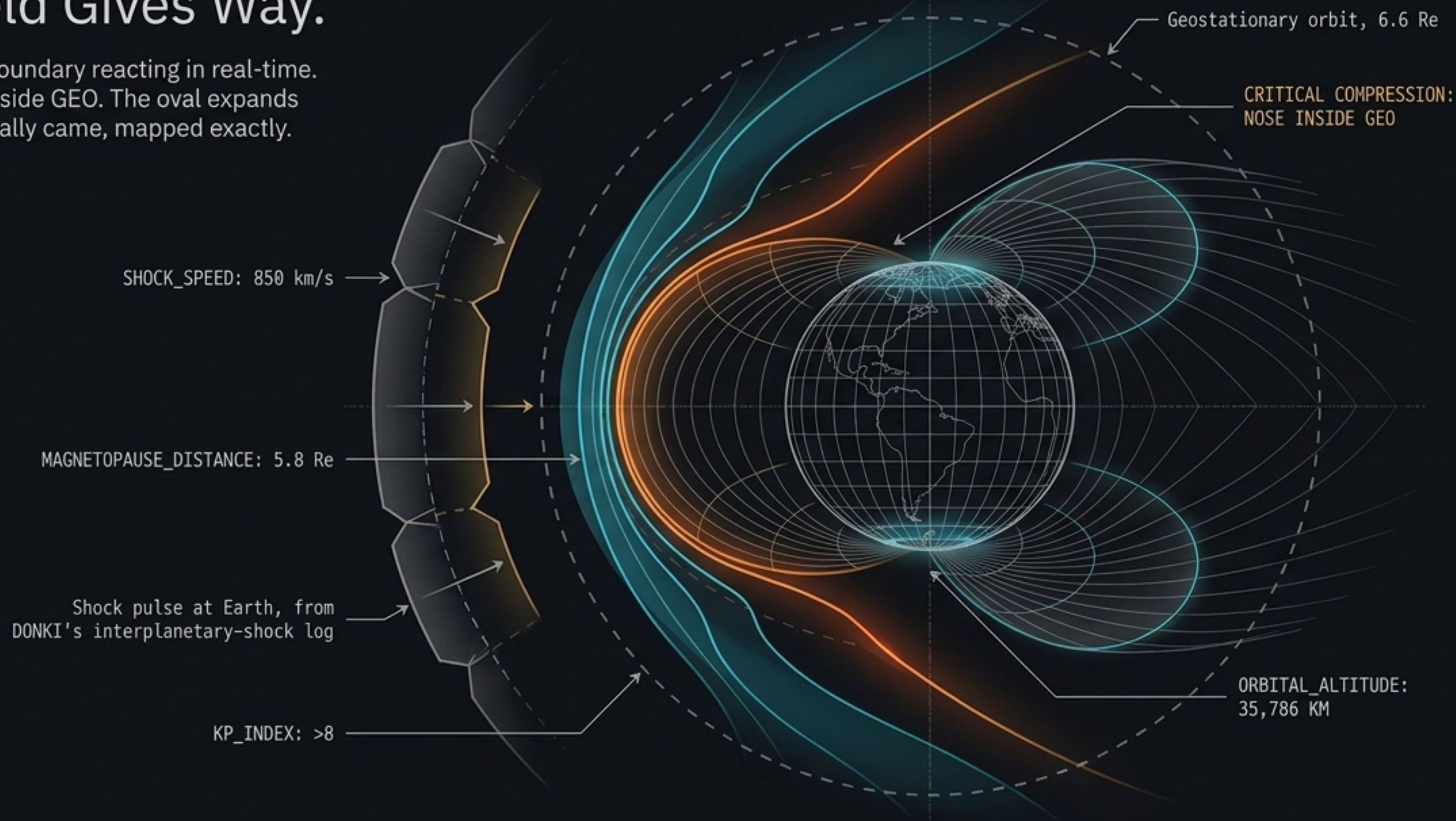


PREV_RUNS: R01, R02, R03

Toggle between the
currently selected run
and earlier runs of the
exact same ejection.

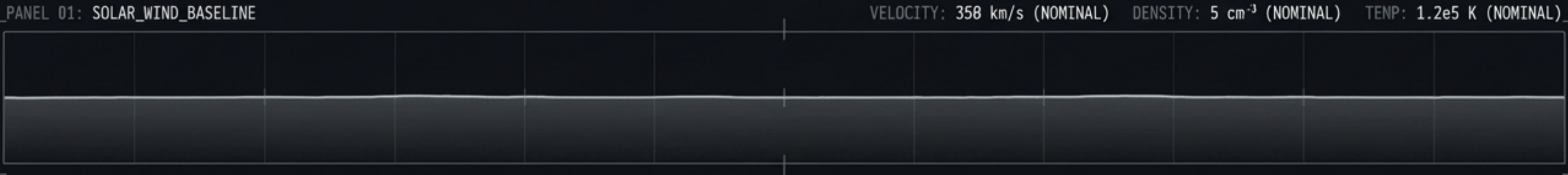
The Shield Gives Way.

Earth's defensive boundary reacting in real-time.
The nose pushes inside GEO. The oval expands
from Kp. What actually came, mapped exactly.



A Quiet Sun, for the Moment.

Binnacle monitors the baseline continuously.
Readiness is forged before the flare.



TRACKING: UNINTERRUPTED

TIME.UTC: [2024-10-31T00:00:00Z] --- [T01:00:00Z] --- [T02:00:00Z] --- [T03:00:00Z] --- [T04:00:00Z] --- [T05:00:00Z] --- [T07:00:00Z] --- [T08:00:00Z] --- [T09:00:00Z] --- [T10:00:00Z] --- [T11:00:00Z] --- [T12:00:00Z]

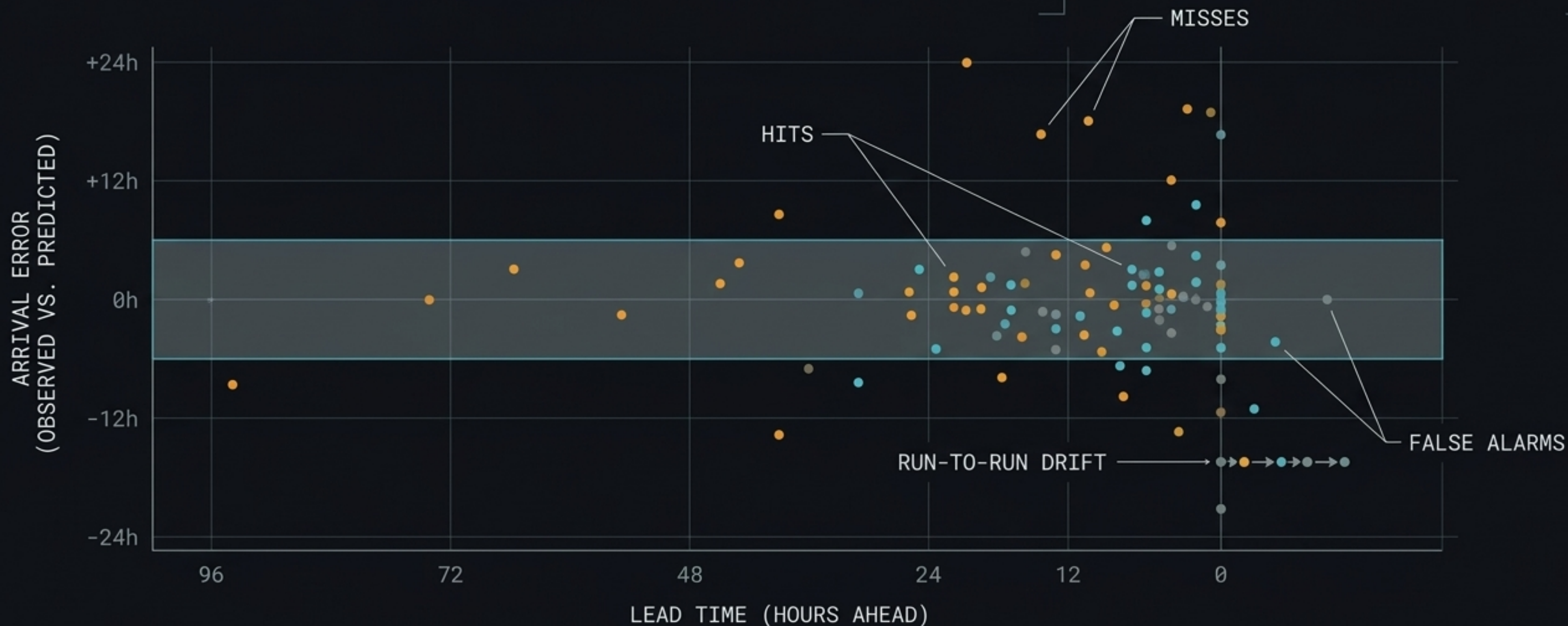
Four Public Records. One Instrument.

Data Type	Source Agency	Specific Catalog	Function in Binnacle
Ejections, Runs, Flares & Shocks	NASA	DONKI	Event Origins & Validation
Geomagnetic Record	GFZ	Potsdam	Historical Shield Impact
Solar Wind & Dst	NASA	OMNI Merge	Real-Time Boundary Inputs
Operational Scales & L1 Wind	NOAA	SWPC	Ground Truth Baseline

Public observations and published models are kept distinct.
Where a gap is bridged by inference, the readout explicitly says so.

Scoring the Runs Against L1 Truth

Every run predicting Earth arrival is graded against DONKI's logged shock.
Built-in validation before you trust the glass.





NO JUDGEMENT INVENTED AT THREE IN THE MORNING.



Operational scale requires hard rules.
When the magnetosphere compresses, actions must
be deterministic, predefined, and absolute.



Your Assets. Exposed and Tracked.

1 Transmission Substation

Vulnerability:
Under the expanding
Auroral Oval



2 Polar Air Route

Vulnerability:
High Frequency (HF)
communication loss



3 Svalbard Downlink

Vulnerability:
Orbital connection
interference



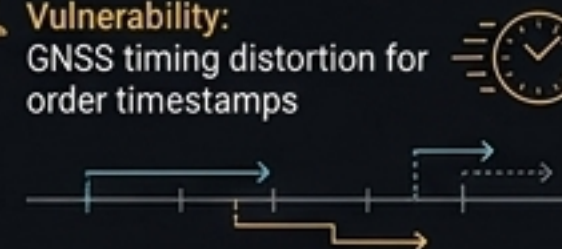
4 Survey Vessel

Vulnerability:
RTK positioning drift



5 Exchange Colocation

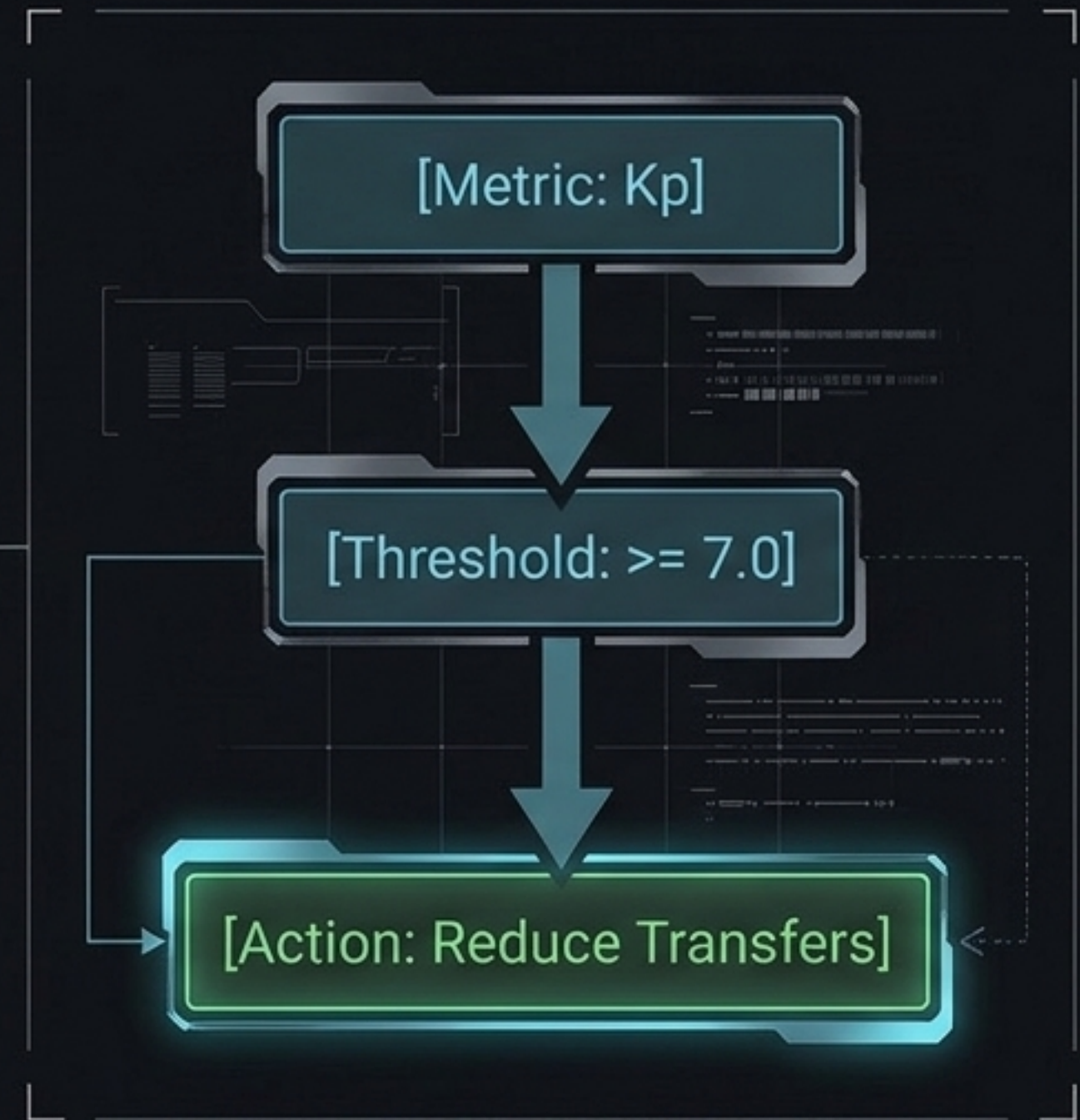
Vulnerability:
GNSS timing distortion for
order timestamps



One Asset. One Metric. One Rule.

Define your synthetic assets in a few lines of JSON. Each carries one operating rule on one metric and the action that follows.

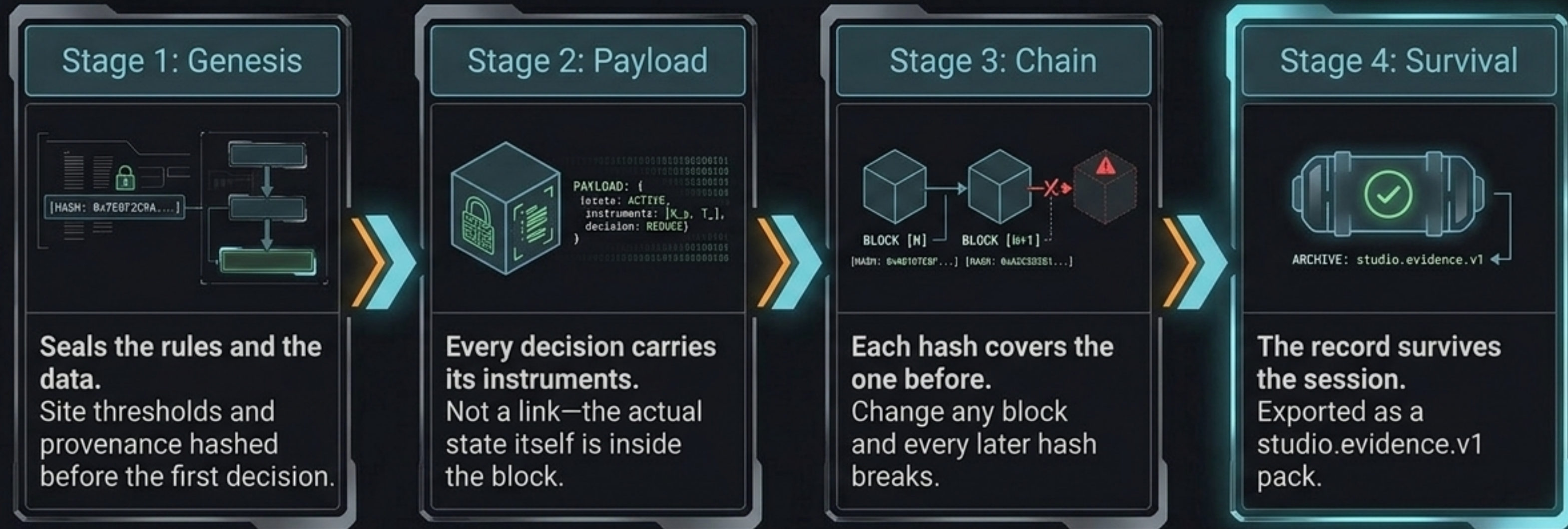
```
{  
  "asset": "North Atlantic",  
  "metric": "Kp",  
  "threshold": ">= 7.0",  
  "action": "Reduce Transfers"  
}
```



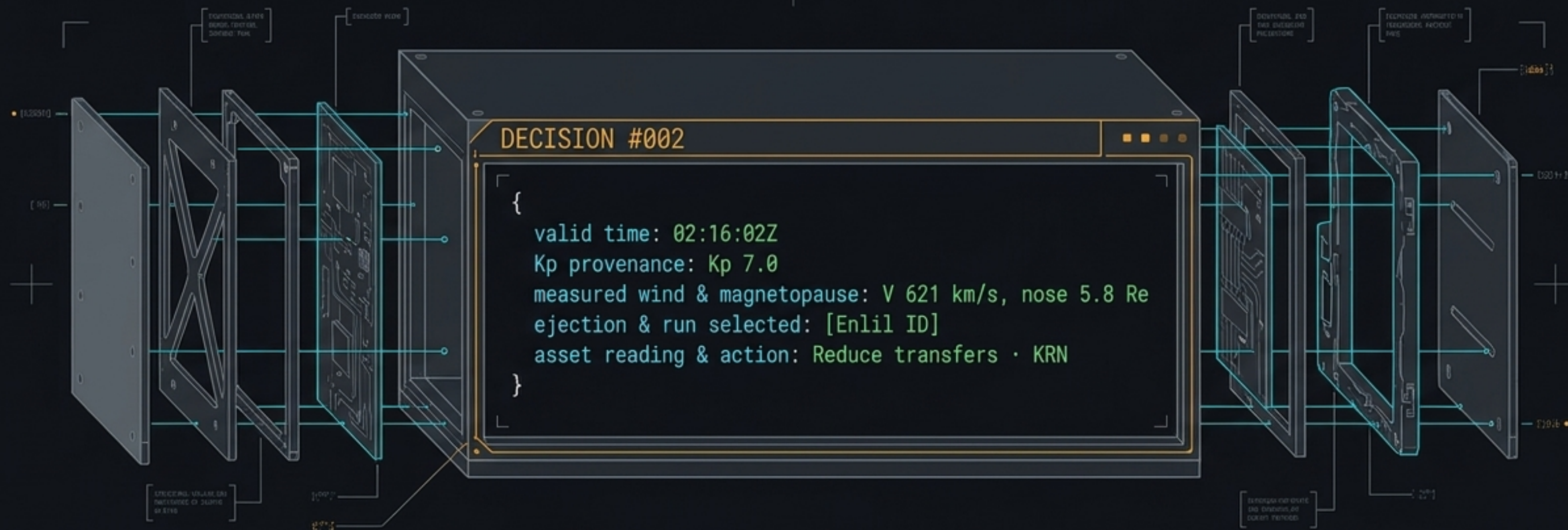


**Can you prove what the
model said, why you acted,
and who decided?**

The Evidence Protocol.



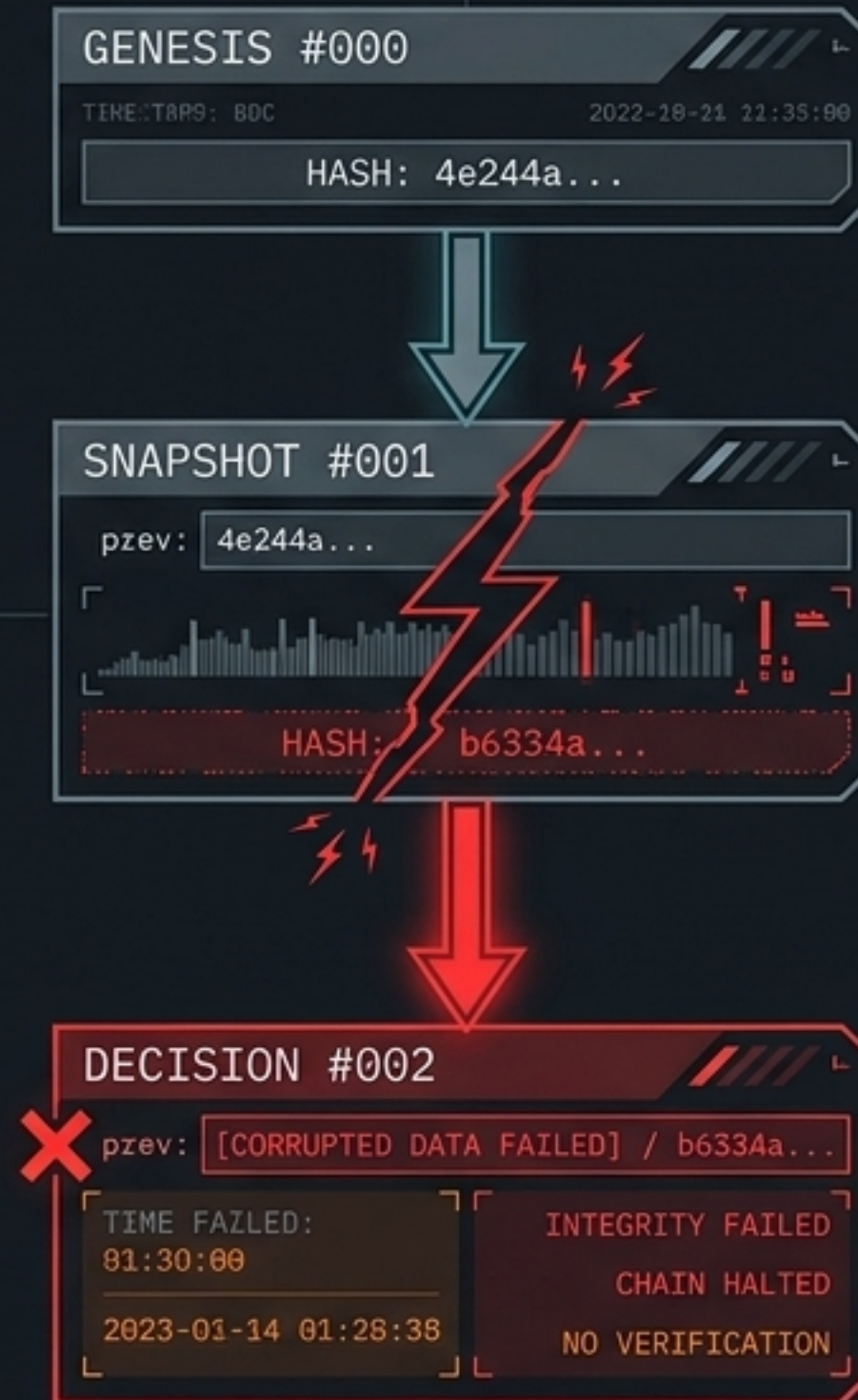
Anatomy of the Payload.



```
canonical = sorted keys · no whitespace · numbers to 6 dp
```

A Tamper-Proof Operation.

Recompute every hash from genesis.
Verify the chain on the spot.
Tampering stops the seals.



Zero Backend to Babysit.

Single HTML file.

Contains the 3D engine, snapshot, and hash chain.

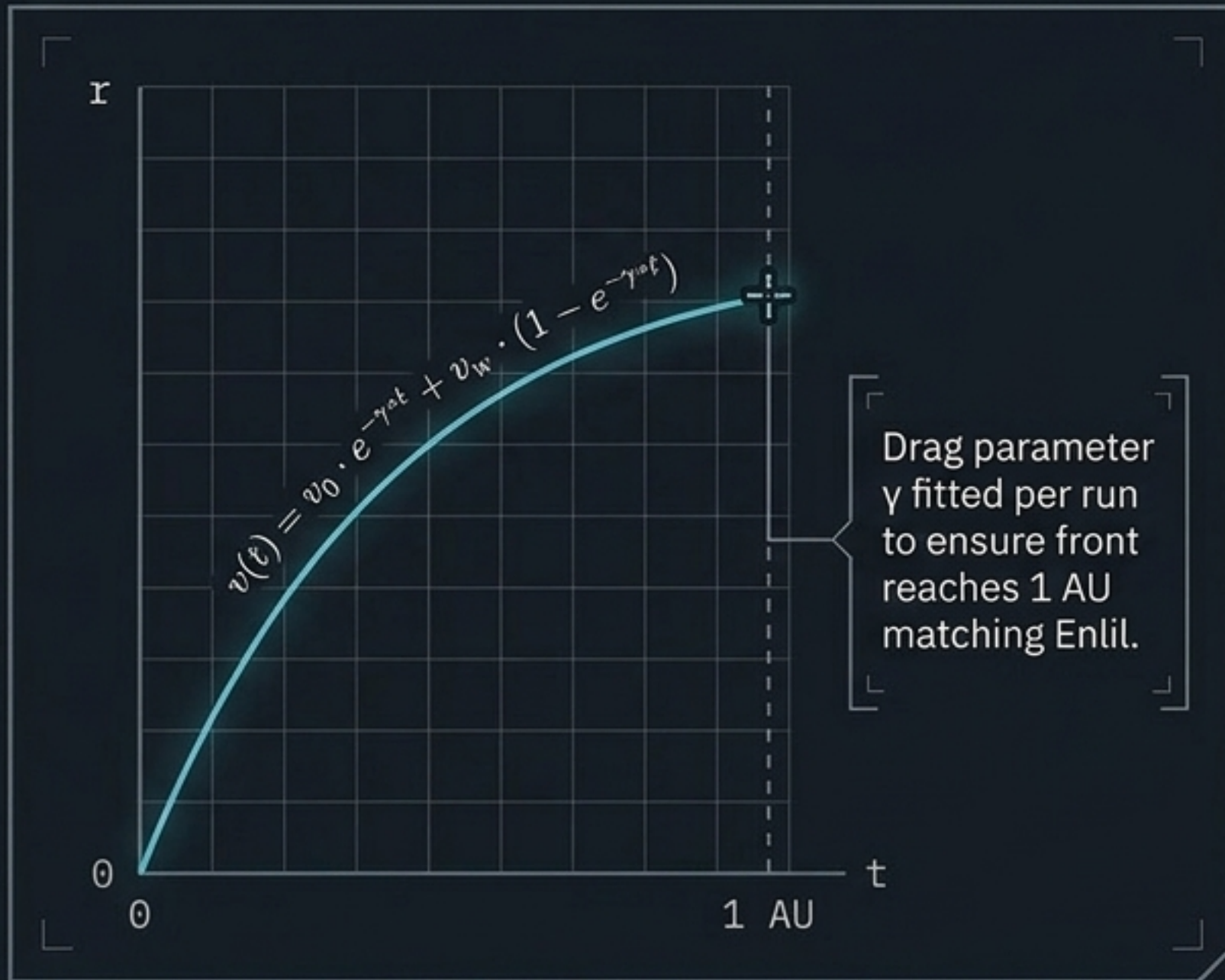


Built-in snapshot supports replay.

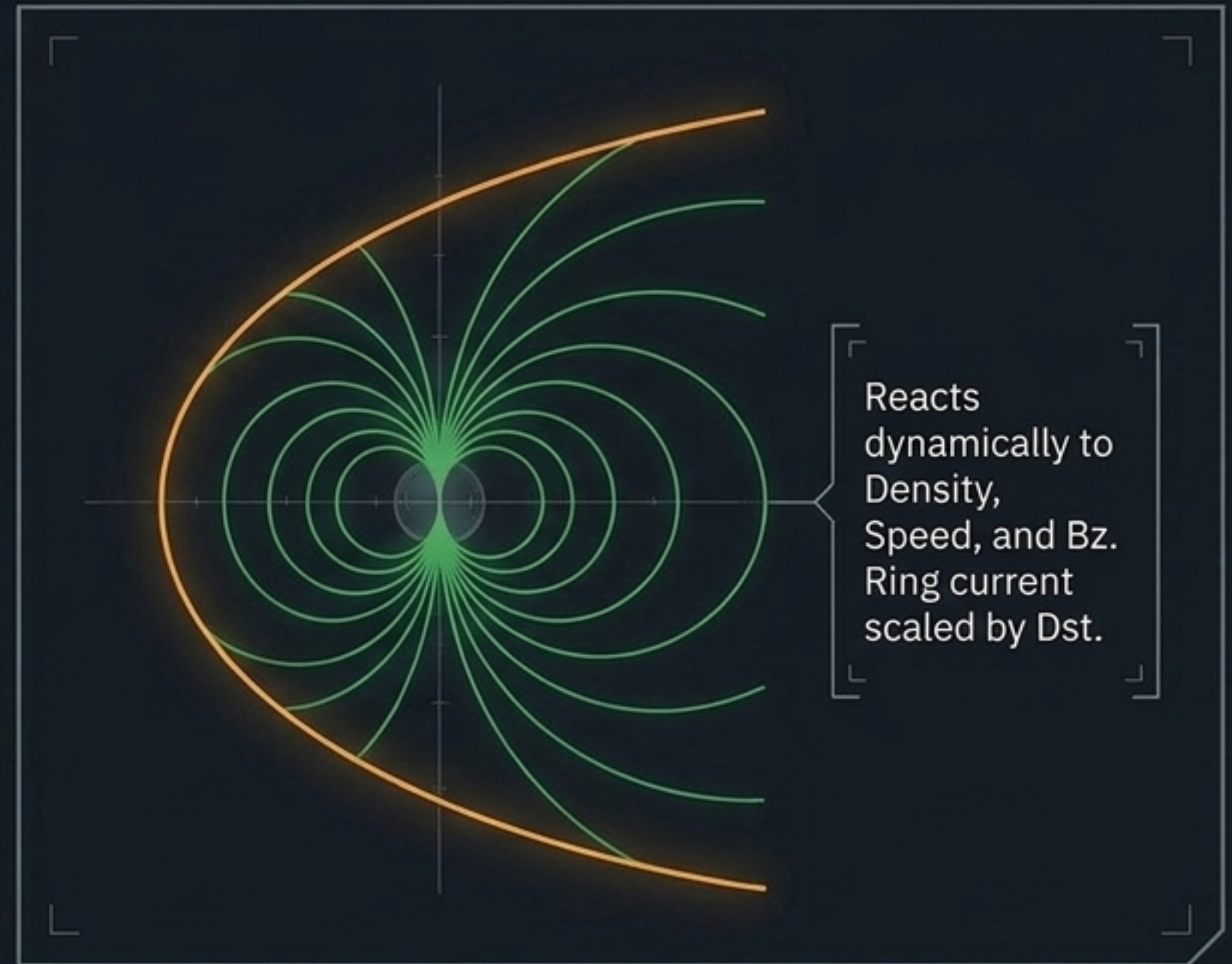
Direct public feeds refresh where available via Vercel proxy functions.

Published Physics Models.

A Vršnak et al. (2013) Drag-Based Model



B Shue et al. (1998) Magnetopause Boundary



Drop and Deploy.

- > 1. Drop the folder on Vercel.
- > 2. `index.html` is the page, `app/` is the desk, `api/` turns on the live feed.
- > 3. Add a free `NASA_API_KEY`.

Open the desk. Scrub the storm. **Seal a call.**



Decision Rehearsal and Record

Not a forecast product. Binnacle runs on real public data and published models to enable deterministic action. Official watches and warnings come strictly from NOAA SWPC.

THE BINNACLE / The Studio • nautical line