

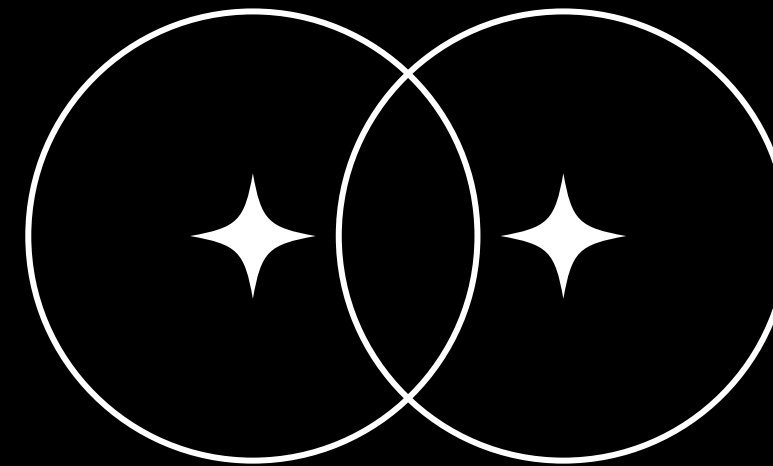
NOTUS AEROSPACE

**THE INFRASTRUCTURE OF
THE STRATOSPHERE.**



BREAKING THE WORLD RECORD FOR
ENDURANCE TO PROVIDE THE WORLD'S
FIRST PERMANENT, LOW-COST "SATELLITE"
NETWORK.

[illegible]



OUR SOLUTION (The Record-Breaker)

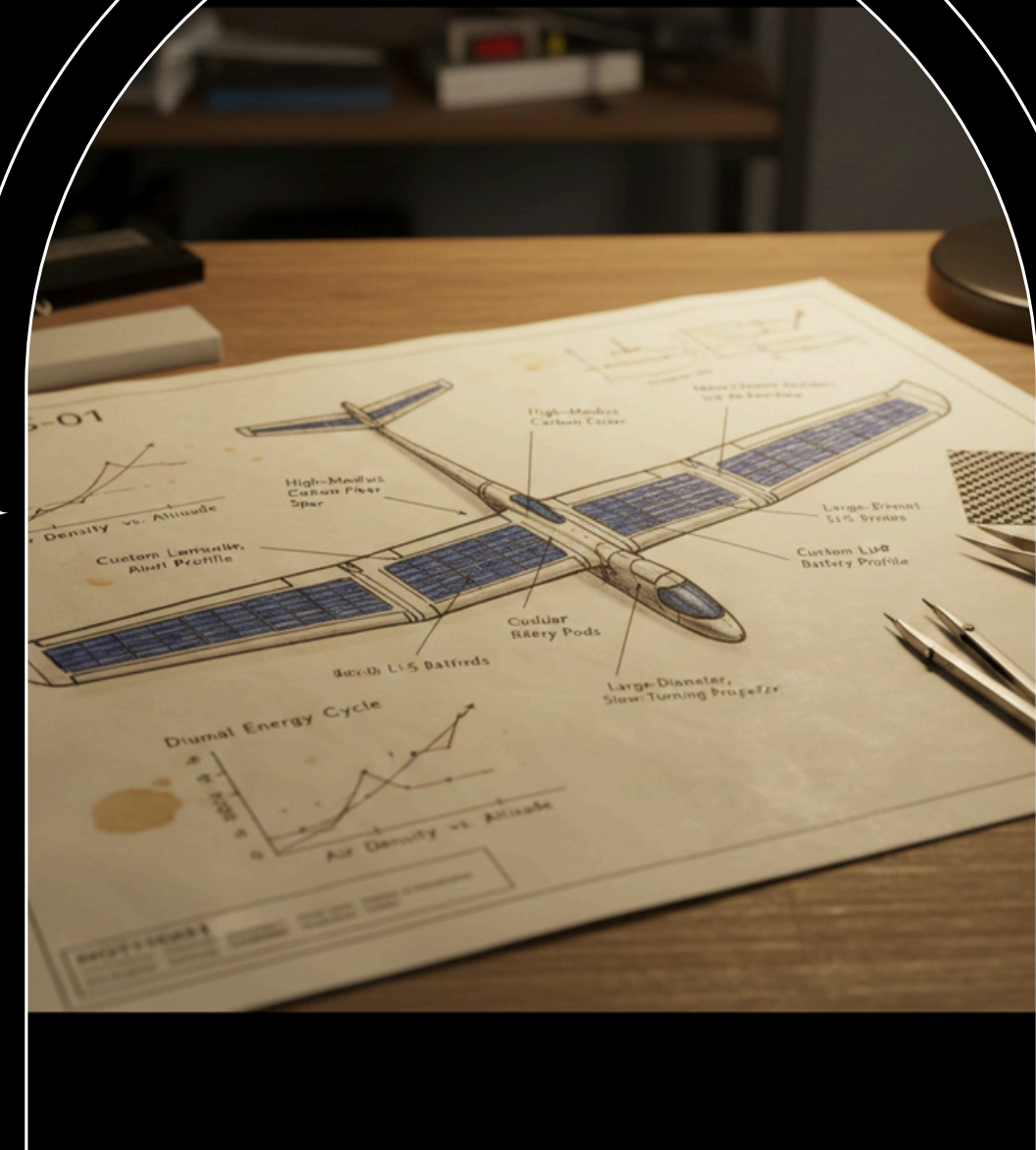
- KEY SPECS: SOLAR-POWERED, ZERO-EMISSION, STAYS ALOFT FOR 90+ DAYS.
- WE AREN'T JUST BUILDING A PLANE; WE ARE BUILDING A HIGH-ALTITUDE PLATFORM STATION (HAPS) THAT FUNCTIONS AS A 20KM-TALL CELL TOWER.

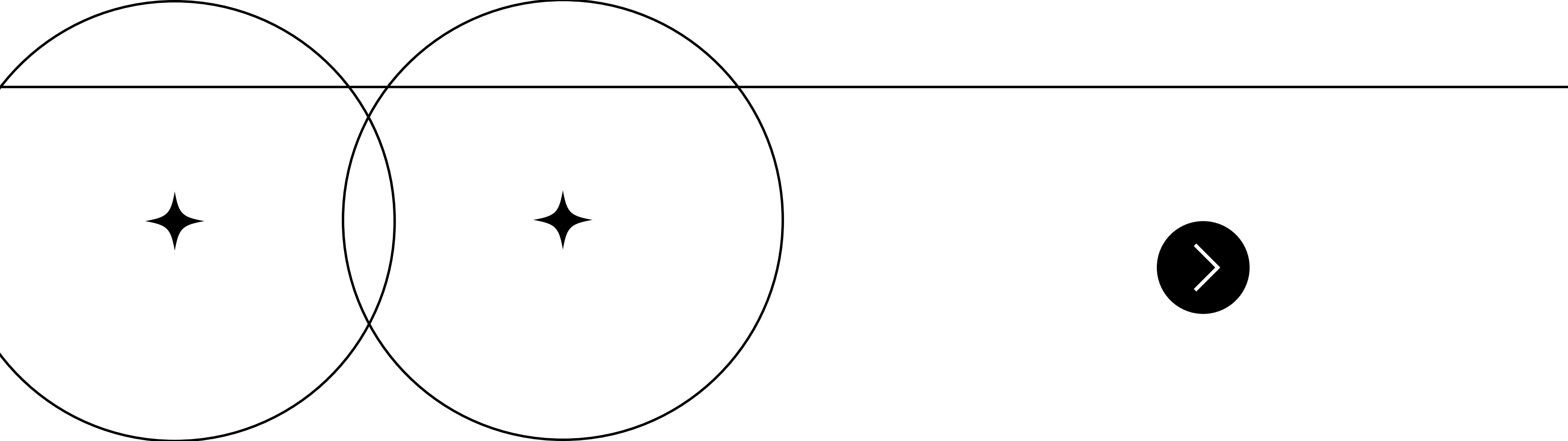


THE RECORD AS VALIDATION

- THE GOAL: BREAKING THE WORLD RECORD FOR CONTINUOUS FLIGHT.
- IT PROVES OUR THERMAL, ENERGY, AND STRUCTURAL RELIABILITY.

NOTUS-01





- BREAKING THE 60-DAY RECORD ISN'T ABOUT BRAGGING RIGHTS; IT'S ABOUT PROVING MISSION RELIABILITY.
-
- A 60-DAY FLIGHT VALIDATES THAT OUR HARDWARE SURVIVES 1,440 CONSECUTIVE THERMAL CYCLES (-70°C TO +15°C)
- WE ARE REPLACING \$200M SATELLITES WITH A \$1M REUSABLE PLATFORM.

THE RECORD AS VALIDATION

LONGEST ENDURANCE

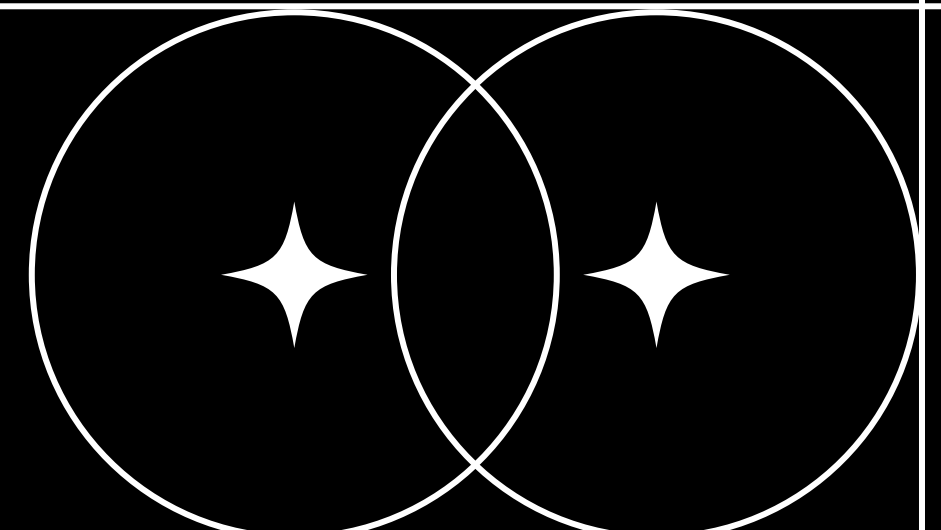
STRATOSPHERIC FLIGHT

- Continuous Flight Record: The Airbus Zephyr solar-powered UAV broke records for endurance, staying in the stratosphere for over 67 days in 2025.



DUAL-USE MONETIZATION

- COMMERCIAL (CIVILIAN): RURAL 5G, WILDFIRE DETECTION, PRECISION AG-MONITORING.
- DEFENSE (SECURITY): "UNBLINKING" BORDER ISR (INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE) AND RESILIENT BACKUP COMMS.



Phase 1: The "Paper Plane"

Mass & Power Budget.

- Appoint the "Weight Dictator" **Weight is the only currency.**
- The Convergence Simulation- run a "Diurnal Cycle" simulation.

Can the wing area hold enough solar panels to charge the batteries enough to keep the motors running through a 12-hour winter night at 65,000ft?

- Airfoil Selection: The **Low-Re Specialist** must select an airfoil designed specifically for $Re \approx 50,000 - 150,000$. **Standard NACA airfoils will likely fail here.**

Phase 2

Minimize "Unknown Unknowns."

- Thermal Vacuum (TVAC) Testing Avionics and Battery cells
- Structural Testing: create sample and break them. You need real-world data on when your wing spar will snap, not just the CAD estimate.
- Avionics Run the Flight Software, check for memory leaks or sensor drift.

Phase 3- Project ALPHA

The "Sub-Scale" Prototype/ **Test the Autonomy and Launch/Recovery logic.**

- Build a 1/4 Scale Model: Use the exact same Avionics & Control Logic.
- Flight Campaign 1 (Low Altitude): Test the "Hand-off" between manual take-off and autonomous loitering.
- The "Stall & Recovery" stall the aircraft to see if the Stability & Control Analyst's math holds up.
- Focus: Aerodynamics and Control Systems.
- Notes: ALPHA is a sub-scale low-altitude version. It doesn't need to reach 70,000ft.
- The Goal: Prove your GNC (Guidance, Navigation, and Control) algorithms. Loiter autonomously in a 3-mile circle for 24 hours at low altitude,
- Key Milestone: First successful autonomous "Gate-to-Gate" flight (Takeoff → Loiter → Land).

Phase 4: The Build

Full-scale integration.

- Clean Room Assembly: High-efficiency solar cells are incredibly fragile. You need a dedicated, dust-free space for the Solar Integration Engineer to bond the cells to the wing skin.
- Ground Vibration Testing (GVT): Shake the full-scale wings to find their **"natural frequency."** This prevents Flutter, the first reason long-span HAPS break apart in mid-air.
- The "Hangar Rollout": Full system integration check. Every team (Comms, Propulsion, AI) must sign off on a **"Flight Readiness Review" (FRR).**
- **BETA TEST**
- Focus: Extreme Environments (-70°C and 7% Air Density).
- Notes: full-scale "Thin-Air" airframe.
- The Goal: Reach the Armstrong Line (approx. 60,000ft). At this altitude, water boils at body temperature and the air is too thin for conventional cooling.
- Key Milestone: The "Night-One" success. Charging fully by day and maintaining altitude through the 12-hour dark cycle using your high-energy batteries.

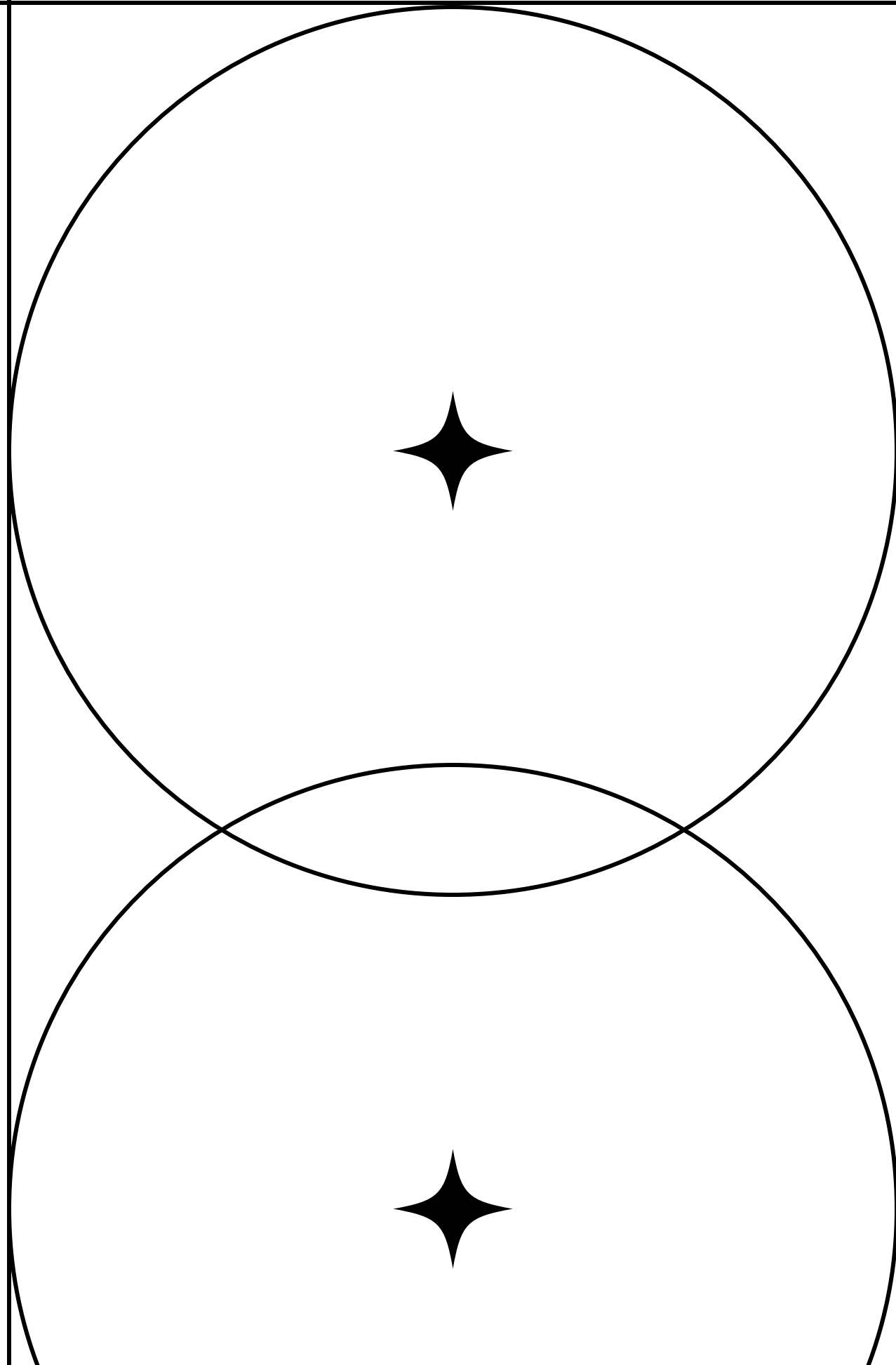
Phase 5: The Record Attempt

- Flight A: Reach 20,000ft and land.
- Flight B: Reach 60,000ft and stay for 1 hour.
- The Record Window: The Flight Ops Team identifies a "Weather Window" with minimum stratospheric wind shear.
- The Mission: Launch at dawn to maximize the first day's "Soak" (charging).
- Surpass the 67-day mark.
- To check: Silicon Anode batteries (like the Amprius cells used by Zephyr) to hit the energy density required to stay up for 2+ months.

Notus-01/ TEAM

1. Systems & Ops
 - Project Manager / Chief Architect - keep the timeline, manage the budget, and own the Mass & Power Spreadsheet.
 - Operations & Regulatory - contacting aviation authorities, scouting launch sites, and weather tracking.
2. Aero & Structures Department (3 People)
 - Aero Lead: CFD (Fluid Dynamics) and wing shape.
 - Structures Lead: CAD and the carbon fiber spar design.
 - Manufacturing Specialist: The person who loves the workshop.
3. Power & Propulsion Department (2 People)
 - Energy Lead: Solar and battery packs.
 - Propulsion Specialist: motor efficiency and custom propeller design for thin air.
4. Avionics & Software Department (3 People)
 - Software Lead (GNC):
 - Hardware/Avionics Specialist: Builds the physical circuit boards, wiring, and sensor mounts.
 - Comms & Data Specialist: Handles the radio links and the "Ground Station" dashboard

Problem	The Scientific Reality
THE COLD	-70°C ambient. At this temp, standard soldering becomes brittle (cracks), and batteries lose 80% of their capacity.
THE VACUUM	7% Air Density. Standard propellers have nothing to "bite." Air is so thin it fails to carry heat away (no convection).
THE SUN	UV Radiation. Without the troposphere's filter, UV rays "cook" standard resins and foams, making wings brittle in days.



JOIN US FOR THE RECORD STAY FOR THE INFRASTRUCTURE.

HAPS CAN BE LANDED, UPGRADED, AND
RELAUNCHED, SATELLITES CANNOT. THIS IS
THE BIGGEST COMPETITIVE ADVANTAGE.