



AI FRONTIER SERIES · APRIL 2026

SOURCE MATERIAL BY ASHISH DHAWAN

SVP AND CHIEF REVENUE OFFICER @ NETAPP

# AI

# Leaves

# Earth

The **\$1.25T** race to put compute in orbit

# Earth ran out of room

# 4.4%

## US Grid Consumed

By data centers in 2023 alone

# 10yr

## Grid Wait Time

Interconnection queue in major US markets

# 300GW

## AI Compute Demand

Projected by 2030 — exceeds any single US application

# \$400B

## Hyperscaler Spend

Data center capex in 2026 alone



The grid cannot keep pace. The next frontier for compute is not on the ground.

# Space changes the math

# 8X

## Solar Efficiency

Sun-synchronous orbit vs. ground-based generation

# \$100/ kg

## Starship Target

Down from \$1,000/kg on Falcon Heavy today

## 100 kW Heat Rejected

With only **1.5 kW input** — ISS demonstrates cooling ratios physically impossible on Earth

## \$200/kg Break-Even

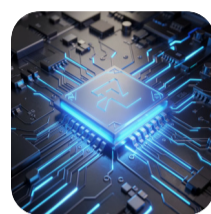
The launch cost threshold at which orbital data centers become economically viable

# Six players, one frontier



## SpaceX + xAI

**\$1.25T entity** ·  
Filed for 1M  
satellites ·  
\$250B merger



## Google Suncatcher

TPU  
constellation ·  
Prototype 2027  
with Planet Labs



## Axiom Space

First **2**  
**operational**  
orbital data  
center nodes ·  
Jan 2026



## Starcloud

H100 GPU live in  
orbit · Filed for  
**88,000**  
**satellites**



## China Three-Body

12 sats · 10 AI  
models · **8B-**  
**parameter**  
models live



## Amazon Kuiper

3,236-sat LEO +  
AWS Ground  
Station · **18**  
**regions**

# It is already happening



## Mars Drives

First AI-planned drives — NASA Perseverance, Dec 2025



## 118 New Planets

Found by AI in archived TESS data via RAVEN



## 99% Accuracy

Gamma-ray burst classification — running in orbit



## 189 km<sup>2</sup> Mapped

Through heavy snow cover by China's 8B-parameter model

# But the constraints are real

# 4.5x

## Cost Premium

Orbital compute vs.  
terrestrial today

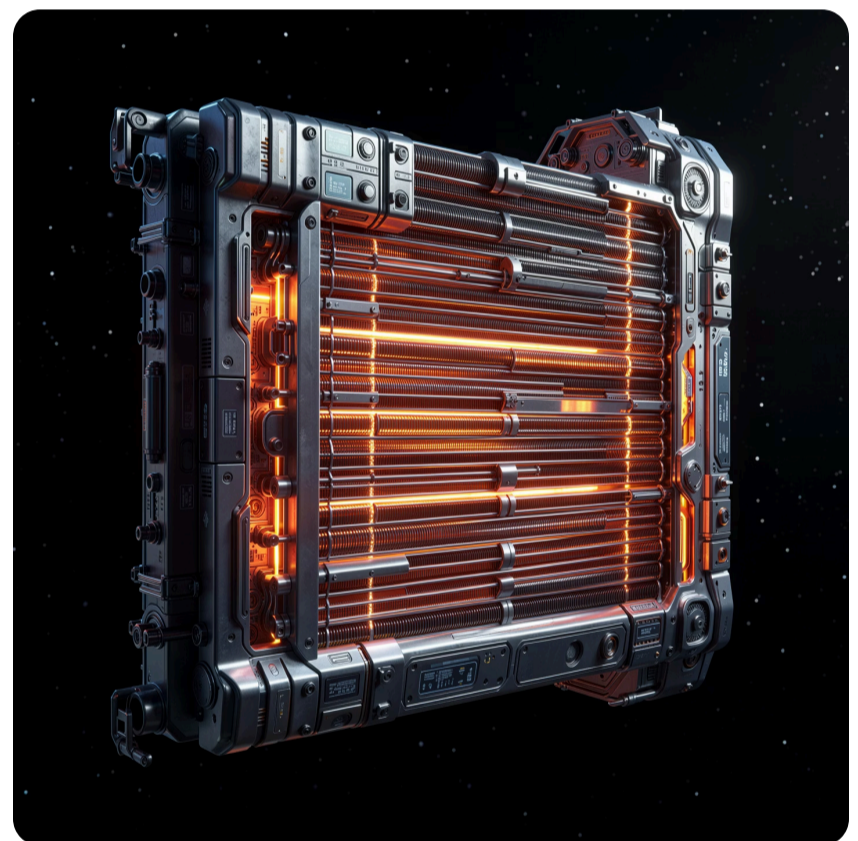
"There aren't enough rockets available to launch enough satellites yet."

— **Matt Garman,**  
**AWS CEO**

# 1.18k...

## Radiator Surface

Required per gigawatt of  
orbital compute



## Radiation Hazards

Bit flips · Latch-ups  
· Hardware  
degradation in LEO

# Schmidt + Amazon = the missing halves

## Eric Schmidt

Relativity Space ·  
Lumen Orbit · Rad-  
hardened chips

## Amazon

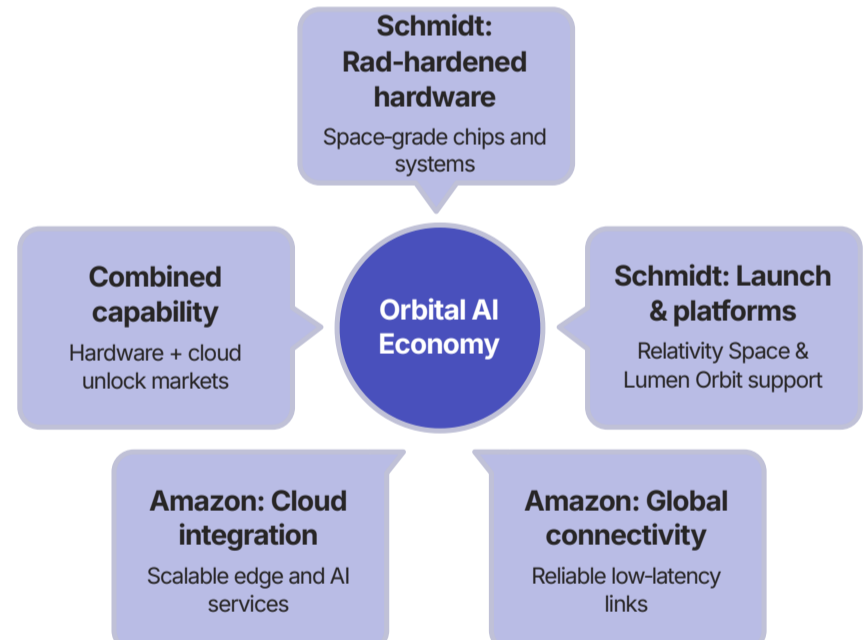
Connectivity +  
cloud integration  
layer at global  
scale

## 5–8 Year Window

Before orbital  
economics flip to  
competitive parity

"The constraint isn't intelligence. It's energy and geography."

— Eric Schmidt



# The orbital decade has started

→ **Sovereign AI is 24 months away**

Procurement decisions are already being made without you

→ **Energy constraints = your constraints**

Interconnect queues mean years of delay on terrestrial builds

→ **Watch Kuiper + AWS by 2027**

The connectivity layer is the strategic moat to monitor

→ **Don't bet capex on orbital pre-2030**

Economics don't flip until the launch cost curve breaks

**i The Bottom Line**

**Don't commit capex to orbital before 2030.** Do design architecture that won't foreclose it.

**\$1.25T**

Entity already in motion

**2030**

Economics inflection point

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