Space and Aerospace — Investment Research Deep Dive v1

Investment Research

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Contents

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Photoncap-style coverage of 22 listed names across pure-plays, defense primes, adjacent suppliers, and hedge ETFs. May 22, 2026.

Investment Research · Project: Space Deep Dive v1 · Author note: Shrewd hedge-fund analyst persona, locked Photoncap 10-section template, 22 deep dives across 5 buckets, price-discipline gate run, dashboard contract written.

What this is

This document is the locked v1 research deliverable on the Space & Aerospace theme. Twenty-two listed names — eleven pure-play Space pure-plays, four aerospace/defense primes and structures suppliers, six adjacent/cross-theme names, and four hedge ETFs — written in the Photoncap 10-section format. Each name carries a 27-field YAML front-matter that writes directly into `_Dashboards/coverage.json`.

The deep dives sit downstream of four parallel sub-agent batches:

- **Batch A (BUYs):** Planet Labs (PL), BlackSky (BKSY), Ducommun (DCO) — ~10,300 words.
- **Batch B (WATCH):** Rocket Lab (RKLB), AST SpaceMobile (ASTS), Firefly (FLY), EchoStar (SATS), Filtronic (FTC) — ~10,500 words.
- **Batch C/D (SKIP / MISSED):** Intuitive Machines (LUNR), Voyager Technologies (VOYG), Satellogic (SATL), Destiny Tech100 (DXYZ), RTX, Lockheed Martin (LMT), STMicroelectronics (STM), Syntec Optics (OPTX), Redwire (RDW), Fundrise Innovation Fund (VCX) — ~12,400 words.
- **Batch E (Hedge ETFs):** UFO, ARKX, NASA (Tema), ITA — ~7,600 words.

~40,800 total words. Every price anchored to the May 22 19:45 UTC+4 scanner print. Web search was used only for fundamentals, customer-mix data, ETF

AUM/holdings, and the five names not yet in the local scanner (STM, SATS, ARKX, NASA, FTC).

The full deep dives follow below this intro. Read the conviction map and "what changed" sections first, then jump to the names you care about.

Conviction map — entire universe at a glance

Ticker	Name	Bucket	Conviction	Price	RSI	vs 50MA	Entry zone	Stop	Sizing
DCO	Ducommun	**A**	8/10	$143.54	52.9	+2.5%	$136.36–$150.72	$130.51	175bps
PL	Planet Labs	**A**	7/10	$44.58	64.7	+17.1%	$42.35–$46.81	$38.08	150bps
BKSY	BlackSky Technology	**A**	7/10	$48.03	64.8	+27.4%	$45.63–$50.43	$37.71	100bps
RKLB	Rocket Lab	B	8/10	$137.47	69.3	+36.7%	$130–$144 (chase)	$100.55	50bps starter
ASTS	AST SpaceMobile	B	7/10	$106.58	68.3	+27.7%	$101–$112	$83.43	100bps
FTC	Filtronic plc (LSE)	B	7/10	364p	n/a	n/a	346p–382p (pullback)	290p	100bps
SATS	EchoStar	B	6/10	$135.67	n/a	n/a	$125–$135.67 (pullback)	$118.27	75bps
FLY	Firefly Aerospace	B	5/10	$48.49	67.8	+28.9%	$46–$51	$37.62	50bps
UFO	Procure Space ETF	**E**	6/10	$61.70	71.7	+14.8%	wait $58–$60 (50MA)	$53.73	core hedge
ARKX	ARK Space ETF	E	5/10	$34.46	n/a	n/a	secondary use only	n/a	n/a
NASA	Tema Space ETF	E	5/10	$36.52	n/a	n/a	1-2% satellite	n/a	n/a

Ticker	Name	Bucket	Conviction	Price	RSI	vs 50MA	Entry zone	Stop	Sizing
ITA	iShares Aerospace & Def ETF	E	4/10	$224.95	53.4	+0.8%	NOT a space ETF	n/a	n/a
LUNR	Intuitive Machines	C	3/10	$38.01	69.9	+32.6%	re-engage $22-25	–	0
VOYG	Voyager Technologies	C	3/10	$42.97	73.8	+34.8%	re-engage $30-33	–	0
SATL	Satellogic	C	2/10	$10.34	70.3	+35.5%	SKIP — PL/BKSY cleaner	–	0
DXYZ	Destiny Tech100	C	2/10	$65.93	68.1	+54.0%	SKIP — 4× NAV premium	–	0
RTX	RTX Corporation	C	3/10	$176.08	43.0	-2.9%	STRONG_EXIT — capital rotating out	–	0
LMT	Lockheed Martin	C	3/10	$527.24	43.4	-3.2%	STRONG_EXIT	–	0
STM	STMicroelectronics	C	3/10	$65.66	n/a	n/a	SKIP — auto-cycle dominates	–	0
OPTX	Syntec Optics	C	2/10	$10.45	60.6	+25.9%	SKIP — sub-scale	–	0
RDW	Redwire Corporation	**D**	3/10	$17.59	**79.0**	**+51.6%**	re-engage 50MA $11.60-$13.20	–	0

Ticker	Name	Bucket	Conviction	Price	RSI	vs 50MA	Entry zone	Stop	Sizing
VCX	Fundrise Innovation Fund	**D**	2/10	$285.65	70.7	+62.7%	re-engage 50MA $175.57	–	0

Bucket distribution: 3A / 5B / 8C / 2D / 4E = 22 names. Total deployable capital across A+B if all triggered = ~700bps risk capital (8 names × ~87bps avg).

Marquee trades — what to actually do this week

1. DCO (Ducommun) — Bucket A, conviction 8. The cleanest setup in the universe today. Tier-2 aerospace structures supplier with RSI 52.9, sitting just above the 50MA ($140.01), while RTX and LMT are in STRONG_EXIT below their 50MAs. Boeing 737 MAX rate ramp from 28 to 50/month adds ~$48M of content revenue. Space-content revenue line moving $90M → $200M+ over 24 months. Operating margin inflection from 8.4% → 12%+. Entry $136.36-$150.72, stop $130.50, sizing 175bps. Q2 2026 earnings July 30 is the catalyst. **Initiate now.**

2. PL (Planet Labs) — Bucket A, conviction 7. Lowest RSI of any pure-play Space name (64.7). The defence-mix inflection (NRO/NGA contracts moving from ~25% to ~35% of revenue) plus the Pelican-1 launch in Q4 2026 plus non-GAAP op-margin breakeven this fiscal year is a three-pronged catalyst stack. Entry $42.35-$46.81, stop $38.08, sizing 150bps. Q1 FY27 earnings June 9. **Initiate now.**

3. BKSY (BlackSky) — Bucket A, conviction 7. Levered catch-up trade to PL on the same NRO/NGA customer. Lower conviction than PL because of cash runway (4-5 quarters; capital raise probable). But Gen-3 fleet + Spectra-AI software-attach gives sharper upside if the raise prices cleanly. Entry $45.63-$50.43, stop $37.71, sizing 100bps. **Initiate now but size smaller; raise overhang is real.**

4. FTC (Filtronic plc) — Bucket B, conviction 7. Today's -13.65% pullback creates the entry. Pure-play SpaceX supplier on LSE — structural scarcity for UK-listed Space exposure. Entry 346p-382p, stop 290p, sizing 100bps. July 15 2026 interim print with SpaceX backlog extension is the catalyst. **Initiate on this pullback.**

5. RKLB (Rocket Lab) — Bucket B, conviction 8. Best-in-class small-lift launcher

with Neutron coming H2 2026 — and the highest "wish I had bought it lower" risk in the basket. +37% vs 50MA, RSI 69.3, EXIT_WARN scanner flag. Don't chase the full position. **Starter 50bps now, reserve 50bps for $100-110 retest.** Stop at the 50MA ($100.57). The thesis is right; the entry is hot.

6. ASTS — Bucket B, conviction 7. Same melt-up dynamics as RKLB but the BlueBird-2 satellite cadence in Q2-Q3 plus AT&T commercial tariff launch is a more dated catalyst. Initiate 100bps with discipline; do not chase above $112. Stop $83.43.

Anti-marquee — what to SELL or AVOID:

- **RDW (Redwire)** — RSI 79, +51.6% vs 50MA, +14.59% on the day. Most parabolic in the basket. Re-engage only if it retraces to the 50MA in the $11.60-$13.20 range. **If you own it, trim 30-50% now into the strength.**
- **RTX and LMT** — Both STRONG_EXIT below their 50MAs. Capital is rotating OUT of defense primes INTO pure-play Space. Don't try to catch the falling knife.
- **DXYZ** — Trading at ~4× premium to NAV per published estimates. Wait for SpaceX direct (or trim to a meaningful satellite position only).

What changed since the last Space write-up

The `Theme -- Space Aerospace/_Theme Overview/cycle-position.md` file (Apr 2026 vintage) called this an "early stage, capital-raising phase" with venture funding slowing. **That framing is now stale.** Here's what shifted in the 6 weeks since:

1. **Pure-play melt-up.** RKLB doubled ($68 → $137). RDW nearly doubled ($9.29 → $17.59). DXYZ went $28 → $65.93. ASTS $94.90 → $106.58. The whole pure-play basket is up 30-100% in six weeks while RTX/LMT are *down* 5-10%. **Capital is rotating from defense primes into Space pure-plays.** Not the other way around.
2. **Two new IPOs / spin-outs joined the watchlist.** VOYG (Voyager Technologies) IPO'd at $29.78 and ran to $42.97 (RSI 73.8). FLY (Firefly Aerospace) IPO ran to $48.49. Both are in melt-up phase — don't chase, but track.
3. **Starlink IPO is now the dominant macro overhang.** Every Space ETF (UFO, ARKX, NASA) has mechanical Starlink Fast-Track inclusion language that will trigger on the first SpaceX equity listing. NASA ETF has direct private SpaceX exposure (~17-18% of NAV). This shifts the optionality calculus on the ETFs.
4. **SATS gapped down -9.4% on May 21 on T-Mobile spectrum deal questions.** Only name in the basket with a near-term bearish setup. Now $135.67, with TD

Cowen $155 PT keeping the upside framing alive. Binary on H2 2026 T-Mobile mid-band deal.

5. **Filtronic (FTC.L) emerged as the cleanest UK-listed Space pure-play.** RF/microwave components, sole-source SpaceX supplier on multiple components, 364p today (-13.65% on profit-taking) — pullback creates the entry that wasn't there a month ago.
6. **Defense primes structurally lagging.** RTX, LMT in STRONG_EXIT below 50MA, RSI low 40s. F-35 production plateau looming; capital is voting "old aerospace" vs. "Space pure-play." This is not a buy-the-dip; this is a structural rotation.

Sources rigor

Every price in this document is anchored to one of two verified sources:

- **Local scanner (Macro/daily-briefings/scan-full-AMEX-NASDAQ-NYSE-TSX-20260522-1945.md):** 17 names — RKLB, ASTS, PL, LUNR, SATL, BKSY, VOYG, RDW, FLY, UFO, DXYZ, VCX, RTX, LMT, DCO, ITA, OPTX. These are the authoritative prints.
- **Targeted web search (Yahoo Finance / TradingView / Investing.com / LSE / Morningstar) with explicit May 22 2026 date constraint:** STM ($65.66), SATS ($135.67), ARKX ($34.46), NASA Tema ($36.52), FTC (364p).

Fundamentals, customer-mix data, ETF AUM/holdings, and earnings dates were sourced from: Bernstein research notes (March 24, 2026), TD Cowen, Citi, Cowen, Q1 2026 prints from each company's investor relations site, ETF.com, iShares fact sheets, BlackRock product pages, Tema ETFs site, ARK Invest daily holdings, ProcureAM, S-Network Global Indexes (via VettaFi), and SEC NPORT-P filings (May 2026). Inline citations appear throughout the deep dives.

Reproducibility check: All four sub-agent batches read from the same locked price-scan file. The 27-field YAML frontmatter on every name writes directly into `_Dashboards/coverage.json` — dashboards rebuild from one source of truth.

How to read what follows

The four batches are stacked below in bucket order: A → B → C/D → E. Each batch starts with a batch YAML header (theme, bucket, names) then each individual name's deep dive starts with its own 27-field YAML frontmatter and Photoncap-style header.

Section structure inside each deep dive: 1. What [Company] physically does 2. Product roadmap 3. The financial print 4. Customer mix today 5. What's actually happening at [key customer] 6. The competitive threat 7. The terminal risk 8. Bull / Gap / Optionality (Photoncap framing) 9. The trade (entry zone, stop, catalyst, sizing, conviction)

The trade paragraph at the bottom of each name is the executable summary.

BATCH A — Bucket A Buys

Lead names: PL, BKSY, DCO

Space & Aerospace — Bucket A Buys

Lead names of the v1 Space deep dive. Three deep dives stacked: PL, BKSY, DCO.

Investment Research · Photoncap-style deep dives · Bucket A · 2026-05-22

Planet Labs PBC (PL)

Daily-revisit Earth-observation incumbent re-rating from speculative growth to ratable subscription compounder as defence mix and Pelican replacement converge in 2026.

Investment Research · Photoncap-style deep dive · v1 of Planet Labs · 2026-05-22

What Planet physically does

Planet operates the largest commercial Earth-observation constellation in orbit — more than 200 active satellites flying in coordinated sun-synchronous planes that collectively re-image the planet's entire land mass at 3-5 metre resolution every single day. The architecture is the thesis: instead of a small fleet of large bespoke satellites costing several hundred million dollars apiece, Planet built a fleet of "Dove" 3U cubesats — each about the size of a loaf of bread, manufactured on an iPhone-style production line in San Francisco for well under $1m fully-loaded including launch. The fleet is deliberately disposable; satellites are replaced in tranches every 18-24 months as sensor and bus technology improves. The result is a "scan-line-of-Earth" dataset that no government or commercial operator can replicate — daily 3m multispectral pixels covering every inhabited square kilometre on Earth, every day, under approximately consistent solar-illumination geometry.

Sitting alongside the SuperDove daily-revisit layer is a smaller SkySat tasked-imagery fleet (21 satellites at 50cm resolution acquired with Terra Bella from Google in 2017) and a single Tanager-1 hyperspectral satellite launched August 2024 that images in more than 400 contiguous spectral bands. The three sensor modalities are deliberately stacked: Doves answer "what changed across this 1,000km² patch overnight," SkySats answer "zoom into this specific airfield right now at half-metre," Tanager answers "what molecular species are being emitted from this oil-and-gas facility." The binding constraint Planet solves is temporal cadence, not resolution. For pattern-of-life monitoring, change detection, agricultural-yield forecasting, port-and-supply-chain monitoring,

methane-plume detection, and tropical-deforestation reporting, the question that matters is “what is different today versus yesterday,” and Planet is the only commercial operator delivering that data globally on a true daily-revisit basis.

The economics are subscription, not transactional. Customers pay an annual licence to access the Planet Insights Platform — a web-plus-API delivery layer — with tier pricing on geographic-coverage scope, sensor mix, refresh cadence, and analytics-attach. Approximately 30 terabytes of raw imagery downlinks per day through roughly 40 ground stations, gets orthorectified and atmospherically-corrected through Planet’s proprietary processing pipeline, and is delivered to customers either as raw scenes or as analytics-ready data products. The revenue is ratable, sticky, and structurally different from the launch-services and bespoke-satellite revenue streams that dominate the rest of the public space-economy comparable set. That is the distinguishing characteristic — Planet is the only public space stock that prints a software-company revenue profile.

Product roadmap

The current daily-revisit workhorse is the SuperDove (Planet product designation PS2.SD), deployed in batches across 2020-2024, delivering 8-band multispectral 3m imagery. The next-generation Dove (sometimes referred to internally as “Dove-R+”) is expected to enter production in 2027 with improved on-board compression and store-and-forward capability. The SkySat fleet (21 satellites currently active) is a generation behind — these satellites date to 2013-2018 hardware and most are operating beyond their original design life, which creates a fleet-replacement urgency that the company has been telegraphing for two years.

The replacement programme is Pelican, a 30cm-class tasked-imagery satellite manufactured by Planet in San Francisco at a 6-8 satellites-per-year cadence. Pelican-1 is currently manifested on a Falcon 9 rideshare in Q4 2026 (reporting basis; confirmed in the Q4 FY26 print March 19, 2026). Pelican adds three meaningful capabilities versus SkySat: roughly 3x improvement in revisit-on-target through persistent-stare orbits, onboard-AI pre-processing that compresses downlink bandwidth requirements by 5-10x and enables near-real-time analytics, and improved geolocation accuracy. The full Pelican fleet target is 32 satellites by end-2028 (reporting basis), which would replace SkySat plus add genuine high-resolution tasking depth.

The third sensor modality is Tanager, the hyperspectral platform with Tanager-1 already on-orbit and operational since mid-2025. Tanager-2 and Tanager-3 are planned for 2026-2027 launches (reporting basis). The commercial use case driving Tanager economics is regulatory-mandated methane-emission monitoring — the EPA’s methane-emissions

reporting requirements effective 2024 for petroleum and natural-gas operators, the EU Corporate Sustainability Reporting Directive (CSRD), and the Oil & Gas Methane Partnership 2.0 voluntary commitments collectively create a regulator-driven monitoring TAM that Bernstein estimates at over $200m annually by 2028. Planet has a multi-quarter first-mover advantage in commercial hyperspectral. The competitive perimeter Planet deliberately does not contend in: synthetic-aperture radar (Capella, ICEYE, Umbra contend that segment), full-motion-video EO (BlackSky's Gen-3 fleet contends that segment), and sub-30cm ultra-high-resolution (Maxar dominates with WorldView-Legion). The discipline is intentional — Planet chose to be the highest-cadence-of-revisit player, not the highest-resolution player.

The financial print

Planet reported FY2026 revenue (ended January 2026, released March 19, 2026) of $283.4m, up 16% year-on-year, with non-GAAP operating loss narrowing to $(28)m from $(56)m the prior year — a 28-point margin improvement against the company's stated guide to non-GAAP operating-margin breakeven on a quarterly basis by end-CY2026. FY2027 (ending Jan 2027) consensus sits at approximately $340-360m revenue, with Bernstein at $355m (March 24, 2026 note), Morgan Stanley at $342m, Goldman Sachs at $361m on the strength of the NRO contract scaling, and Canaccord Genuity at $348m. Cash and short-term investments at end-Q4 FY26 were $222m against quarterly free-cash burn now running sub-$10m — runway is comfortable for 22+ quarters absent any incremental capex acceleration. The 1-year stock return through May 22, 2026 close at $44.58 is approximately +98%, with the bulk of the move printed in the November-January window after the NRO Commercial Imagery Strategy renewal announcement.

The binary is the Q1 FY27 print scheduled June 9, 2026 (reporting basis from company IR calendar). The focal lines for that print: (1) defence-and-intelligence revenue mix — does it cross 35% as the trajectory implies, (2) Pelican-1 launch readiness commentary — does the Q4 2026 schedule hold or slip, and (3) full-year FY27 guidance — does management raise the high-end above current consensus of $360m. A defence-mix print above 37%, Pelican-1 confirmation, and a guidance range above $360m would together justify the multiple expansion the equity needs to clear the next leg.

Customer mix today

In FY2024 — the last clean baseline before the defence-mix inflection — Planet's revenue was roughly 50% civil-government (USDA, NOAA, EU Copernicus, Norway's NICFI tropical-forest programme, India's ISRO, the Brazilian government), 20% defence and intelligence (NRO, NGA, USSF, allied IC agencies), 25% commercial enterprise (agriculture-supply-chain customers like Cargill/Bunge/ADM, insurance, energy, finance), and 5% mapping (Esri, Google as licensees). By Q4 FY26 (March 19, 2026 print) the mix had decisively flipped: defence-and-intelligence is approximately 32-35% and growing >40% annually, civil-government has dropped to roughly 40% and growing 5-8%, commercial enterprise has flattened around 22%, mapping holds around 3%. The shift is the story.

Within defence-and-intelligence the named customer-wins are the NRO Commercial Imagery Strategy multi-year framework (the largest single award, approximately $230m over 5 years confirmed in mid-2024 and expanded in late-2025 commentary), the National Geospatial-Intelligence Agency LUNO-A ground-moving-target indicator pilot (multi-year IDIQ, BlackSky and Maxar co-providers), NATO BICES, the German BND, the UK Ministry of Defence, the Australian Defence Force, and several Five-Eyes country agencies. The European Union Defence Agency was added in January 2026 per management commentary at the Goldman TMT Conference. Within civil-government, Copernicus and NICFI are the largest single contracts; NICFI specifically (Norway-funded tropical-forest monitoring, supplied free to every developing-country government that opts in) is approaching $40m annual run-rate. Within commercial enterprise, agriculture dominates — ESG-reporting requirements for ag-supply-chain customers are driving sticky multi-year licences. Customer concentration is reasonable: top 5 customers represent approximately 25-30% of revenue, no single customer above 12% on the FY26 print.

What's actually happening at the NRO and NGA

The NRO Commercial Imagery Strategy is the operational tell. The NRO has structured a multi-vendor commercial-data framework with Maxar, Planet, and BlackSky each holding a slot — Maxar feeds high-resolution tasked imagery from WorldView-Legion, BlackSky feeds high-cadence tasked imagery from Gen-3, and Planet feeds the daily wide-area-monitoring layer from the Dove constellation. The Planet slot was awarded in mid-2024 at approximately $230m over 5 years, and expanded in late-2025 per the Q3 FY26 commentary. Critically, the wide-area-monitoring requirement is scaling materially with sustained Ukraine-conflict demand plus Indo-Pacific contingency planning — the IC needs daily-revisit at 3m more than it needs weekly-revisit at 30cm for the pattern-of-life mon-

itoring it actually does most of the time. Per Bernstein's March 2026 note, the realistic upside on the next renewal cycle (Q3 2026 / Q1 2027) is $50-100m incremental annual revenue.

NGA's LUNO-A programme — $290m IDIQ ground-moving-target-indication framework awarded in 2023 with BlackSky/Planet/Maxar as primary EO providers plus Capella/ICEYE/Umbra as SAR providers — has Planet as the daily-revisit EO contributor. The Planet portion is in the $50-100m range over the programme life, with revenue scaling as the analytics integration deepens. The Luno-B follow-on programme (2026 award expected, extending the framework to maritime applications) is the more meaningful binary — the combined contract value could exceed $300m over 5 years across all primary providers, with Planet's EO portion in the $80-120m range. The mechanism of share gain is structural and durable. Daily revisit beats weekly resolution in change-detection applications, and the entire IC-GEOINT pipeline is shifting toward higher-cadence-lower-resolution as machine-learning analytics make resolution-deficits compensatable while cadence-deficits are not. That is the moat — not the satellites themselves, but the unique daily-pixel dataset that only Planet can supply.

The competitive threat / Maxar (private), BlackSky (public)

Maxar is the named competitor at the high-resolution segment but has been slower to scale daily revisit. The WorldView-Legion fleet deployed in 2024 added 6 high-resolution satellites — that closes the resolution gap versus Planet at the tasked level but does not match Planet's 200+ daily-revisit satellites at the wide-area-monitoring level. Maxar was taken private by Advent International in 2023 for $6.4 billion, which removed it as a public-equity comparable but did not change the competitive dynamic; private ownership has, if anything, reduced Maxar's aggressiveness on commercial-enterprise pricing as the PE owner focuses on margin discipline. Maxar's reported 2025 revenue was approximately $1.9 billion (per Advent disclosures) — meaningfully larger than Planet but growing slower and weighted toward bespoke government contracts rather than ratable subscriptions.

BlackSky (covered in detail in the next deep dive in this batch) is closer to Planet in business model — subscription EO with an intelligence-customer focus — but materially smaller, with 16 active satellites versus Planet's 200+, and approximately $130-150m FY25 revenue versus Planet's $283m. BlackSky's Gen-3 fleet at 35cm resolution targets the tasked-imagery middle ground, while Planet targets the daily-revisit layer; the two are complementary in the IC procurement framework rather than direct substitutes.

The most aggressive emerging threat is state-backed Chinese commercial-EO providers

— CHASC subsidiaries, MingChiTaiKong, and the Jilin-1 constellation operator are scaling rapidly and pricing aggressively in non-aligned geographies. These are excluded from Western government markets by procurement rules but compete in Latin American, African and Southeast Asian commercial markets — Planet's commercial-enterprise revenue stream is the most exposed. Albedo Space, a US startup targeting sub-meter resolution at LEO altitudes, is a high-resolution entrant but small-scale. IP-litigation status is benign across the EO sector — no major active patent disputes affecting Planet's product lines as of the May 2026 10-K filing.

The terminal risk

The structural risk is the secular EO-pricing-deflation curve. More commercial operators flying more satellites with better sensors are driving price-per-square-kilometre down by approximately 12-15% per year on the public benchmark (Northern Sky Research 2025 update). If pricing deflation runs faster than Planet's volume growth, revenue stalls and the breakeven date slips. The mitigant is the analytics-up-stack — the Planet Insights Platform extracts higher-margin software revenue from the same imagery, and a successful platform-attach materially improves revenue quality and pricing resilience. The execution on the up-stack has been slower than management originally guided three years ago, but the FY26 print showed analytics-attached customers growing more than 30% year-on-year (vs. 12% for imagery-only customers), which is a positive directional signal.

The secondary terminal risk is generative-AI-imagery commoditisation. As foundation models become capable of synthesising realistic surface imagery from sparse measurements, the value of "real" imagery declines for non-evidentiary use cases where customers just need to visualise an area rather than verify what was there at a specific timestamp. For evidentiary use cases — defence pattern-of-life, insurance damage claims, regulatory compliance monitoring — synthesised imagery is unacceptable, so the high-margin regulated-customer segment is durably moated. But the long-tail commercial-enterprise segment is exposed.

The tertiary risk is Pelican deployment slippage that pushes the high-resolution fleet replacement into 2027 or beyond. The quaternary risk is geopolitical — a major Trump-administration shift in NGA budget priorities away from commercial-imagery procurement toward in-house IC capabilities would impair the defence-mix inflection. None of these are imminent thesis-killers, but each constrains the multiple Planet can durably trade at.

Bull / Gap / Optionality (Photoncap framing)

Bull

1. NRO Commercial Imagery Strategy renewal expansion. The multi-vendor framework renews 2026-2027 and Planet's slot is highly likely to expand as wide-area-monitoring requirements scale with sustained Ukraine-conflict-plus-Indo-Pacific-contingency demand. Bernstein's March 24, 2026 note has the realistic upside at $50-100m incremental annual revenue. Against a $283m FY26 base, that is 18-35% incremental revenue from one contract line, structurally ratable for five years.

2. European defence-EO budget expansion. NATO's collective EO procurement is rising; the EU Space Strategy 2024 explicitly funds commercial-EO procurement with a target of $1bn annual commercial EO budget by 2027. Per Bernstein's December 2025 European Space note, European defence-EO spend is rising 20%+ annually with Planet a primary beneficiary alongside Airbus DS. The EUDA contract added January 2026 is the leading-edge data point.

3. Pelican fleet replacement cycle inflects high-resolution revenue. SkySat is aging out as Pelican replaces it with materially better resolution, tasking responsiveness, and onboard-AI processing. High-resolution revenue has been flat at roughly $60m for three years; a successful Pelican-1 launch in Q4 2026 plus 6-8 satellites by end-2027 should re-inflect that line. Conservative $40-80m incremental annual revenue against the SkySat baseline by FY28.

4. Tanager-1 commercialisation on regulator-mandated methane monitoring. Hyperspectral imagery for methane-emission detection is increasingly a regulatory mandate — EPA in the US, CSRD in the EU, OGMP 2.0 globally. The methane-monitoring TAM alone is estimated at $200m+ annually by Bernstein and Planet has a multi-quarter first-mover commercial-availability advantage. Even 10-15% TAM capture is $20-30m incremental high-margin revenue by FY28.

5. Operating-margin breakeven inflection drives multiple re-rate. Non-GAAP operating-margin breakeven on a quarterly basis is guided for end-CY2026. If delivered, the multiple re-rate from "speculative growth" to "compounding subscription business" is meaningful — plausibly 50% higher EV/Revenue. The equity story converts from story-stock to ratable-compounder, and Planet should trade in line with other 16-20% growth ratable-revenue software businesses (currently 6-8x EV/Sales) rather than in line with space-sector speculatives (3-4x EV/Sales).

Gap

1. Defence-customer concentration and Trump-administration budget risk. Defence and intelligence is now 35% of revenue and rising. A single Trump-administration defence-budget pivot or Continuing Resolution slip materially impacts the NRO/NGA revenue ramp in CY2026 and CY2027. The Mars-priority-versus-Moon debate inside NASA also has spillover into NRO budget allocations, and the early Trump-administration commentary on "in-house IC capabilities" creates a tail risk on commercial-imagery procurement. Magnitude: a 25% NGA-budget cut applied to commercial-imagery line items would impair $30-50m of Planet annual revenue.

2. Secular EO-pricing-deflation outrunning volume growth. EO price-per-square-kilometre declined approximately 14% in 2025 per Northern Sky Research; if competitors flood the market faster than Planet's volume scaling, the revenue-per-customer curve compresses materially. Pricing pressure is most acute in commercial enterprise where customers can substitute among providers more easily than government customers can. Magnitude: 5-point gross-margin compression per year if pricing falls 15% and unit volume only rises 10%.

3. Pelican-1 launch and commissioning risk. First Pelican launch is scheduled Q4 2026 on Falcon 9. Any slip — satellite-fab delays, launch-manifest competition with Starlink and SDA payloads, on-orbit commissioning failures — pushes the high-resolution fleet inflection into 2027 and dents the FY27 high-resolution revenue line. Magnitude: a 6-month slip pushes $30-50m revenue from FY27 into FY28 and impairs the breakeven crossing schedule.

4. Analytics-up-stack execution remains slow. Management has been guiding to "data + insights" revenue mix for three years and delivery has been below the original trajectory. Analytics revenue is approximately 14% of total revenue per FY26 commentary versus an earlier ambition of 20% by FY26. If analytics revenue does not exceed 18% of total by FY27 and 25% by FY28, the platform-business multiple re-rate doesn't fully materialise and Planet remains tagged as an imagery-services business at the lower multiple.

Optionality

Event	Date / window	Direction
Q1 FY27 earnings + defence-mix print	June 9, 2026	Bull if D/I mix prints >37%, bear if <32%
NRO Commercial Imagery Strategy renewal expansion	Q3 2026 - Q1 2027	Bull if contract expanded, bear if reduced or flat

Event	Date / window	Direction
First Pelican launch + commissioning	Q4 2026	Bull if commissioned on schedule, bear if slip >6 months
NGA Luno-B award	Q1-Q2 2027	Bull if Planet retains EO portion, bear if eliminated
Tanager commercial-revenue inflection	H1 2027	Bull if methane contracts material, bear if uptake slow
Non-GAAP operating-margin breakeven	End CY2026	Bull if confirmed quarter, bear if slip into 2027

The trade

Entry zone $42.35-$46.81 against the May 22 close of $44.58 (Bucket A — current ±5% in the locked melt-up tape, RSI 64.7 is the lowest in the pure-play Space basket which makes the entry less chase-prone than RKLB/RDW). Initial sizing 150bps starter, scalable to 250bps on a confirmed defence-mix print >35% at the June 9 Q1 FY27 earnings drop. Stop on close below $38.08 (the 50-day moving average, which also coincides with the 34/50 EMA cloud lower bound) — that invalidates the operating-margin-breakeven trajectory and the defence-mix inflection. The named binary catalyst is Q1 FY27 earnings June 9, 2026, with secondary catalysts being NRO renewal expansion in Q3 2026 and first Pelican launch in Q4 2026. If the thesis is right but you want a higher-beta expression of the same NRO/NGA mechanism, BlackSky (BKSY, next in this batch) is the levered tasked-imagery catch-up trade; PL is the cleaner ratable-subscription compounder and should be the anchor space-EO position. **Conviction: 7/10.**

BlackSky Technology Inc. (BKSY)

Tasked-imaging plus Spectra-AI software platform with a clean NGA Luno-A franchise — the levered Gen-3-cadence catch-up trade behind Planet on the same IC customer.

Investment Research · Photoncap-style deep dive · v1 of BlackSky · 2026-05-22

What BlackSky physically does

BlackSky operates a small constellation — roughly 16 active satellites at present — built around point-and-shoot tasked imaging rather than wide-area daily mapping. The fleet is split between a maturing Gen-2 cohort (about 1m resolution, deployed 2018-2022 and now operating beyond original design life on most spacecraft) and the new Gen-3 satellites at 35cm-class resolution, deployed in tranches starting February 2024 and continuing through end-2026. The differentiating physical capability is high-cadence-of-revisit on a specific target: for any given low-latitude point of interest, BlackSky can deliver multiple imagery refreshes per day, materially faster than Maxar's WorldView-Legion at the same resolution band. The Gen-3 architecture also introduces a "video-from-orbit" mode — 15-second 30fps clips at approximately 1m resolution — which is a unique capability for tactical intelligence customers. Watching a vehicle convoy traverse a stretch of road from orbit, in motion, is operationally valuable in a way that a series of still frames is not.

The strategic differentiator above the satellite layer is the Spectra AI software platform. Spectra is a cloud-native imagery-analytics offering that ingests EO data from BlackSky's own fleet plus third-party sources, applies trained ML models for object detection, change detection, vessel tracking, ground-moving-target indication, and behavioural pattern-of-life monitoring, and delivers analytic products through an analyst workflow toolset. The architectural bet is explicit: raw EO data is commoditising; EO-derived-analytics-as-software is not. Spectra AI captures the up-stack value. The mechanism is positionally analogous to Palantir's Foundry-on-government-data approach — own the

data-ingestion pipeline, own the model catalogue, own the analyst workflow, and customers pay for the integrated solution rather than the raw bytes. The Spectra-AI-attach rate is therefore the quality-of-revenue metric that matters most for the equity. Software revenue carries 70%+ gross margin versus 40-50% for imagery-services, and a successful platform-attach materially uplifts the blended multiple.

The physical-plus-software stack is the binding answer to the question of how a small constellation competes against Planet's far-larger fleet and Maxar's far-deeper balance sheet. BlackSky cannot win on raw imagery breadth and cannot win on resolution against Maxar's 30cm WorldView-Legion. It can win on time-sensitive-tasking-plus-integrated-analytics for tactical-intelligence customers who care more about "what is moving on this airfield in the next hour" than "what does the entire province look like in the next 24 hours." That is the operating slot.

Product roadmap

The current operational fleet is approximately 16 satellites: ~12 Gen-2 satellites still operational (originally 15, with 3 retired) and 4 Gen-3 satellites deployed through early 2026 (Gen-3-1 in February 2024, Gen-3-2 in October 2024, Gen-3-3 in early 2025, Gen-3-4 in mid-2025). The Gen-2 fleet is the working horse of current revenue but is materially aged. The Gen-3 fleet — 12 satellites scheduled for full deployment by end-2026 (reporting basis from the Q1 2026 print May 8, 2026) — adds 35cm resolution, video-from-orbit capability, improved on-board processing, and significantly faster tasking responsiveness through optimised pointing systems. Gen-3-5 through Gen-3-12 are manifested across 2026 on Rocket Lab Electron and Falcon 9 rideshare missions; Gen-3-5 launched on Electron from Mahia in March 2026, Gen-3-6 through Gen-3-8 are scheduled across Q2-Q3 2026, and the remaining four are slated for Q4 2026 (reporting basis).

The Gen-3 satellites are built by LeoStella, BlackSky's satellite-manufacturing JV originally formed with Thales Alenia Space and now wholly-owned by BlackSky as of 2024. The vertical integration matters — LeoStella controls satellite production cadence and unit economics, which is a structural advantage versus EO peers who depend on third-party satellite manufacturers (Planet builds its own Doves and Pelicans, Maxar builds its own WorldView, but smaller EO startups buy from contract manufacturers and suffer the schedule risk).

Beyond Gen-3, the Gen-4 architecture is in early design with a step-up in resolution toward 25cm and additional multispectral bands; first launch is targeted 2028 (reporting basis only — no manifest yet). On the software side, Spectra AI has a quarterly product-release cadence: the vessel-tracking module shipped 2024, ground-moving-

target-detection 2025, behavioural-pattern-detection in early 2026, and a wide-area-search analytics module is planned for 2027. The competitive perimeter BlackSky deliberately does not contend in: daily-revisit wide-area-monitoring (Planet's domain), synthetic-aperture radar (Capella, ICEYE, Umbra), and ultra-high-resolution 15cm-class imagery (Maxar's domain). The discipline of staying focused on tasked-medium-high-resolution-EO-plus-software-up-stack is the strategic identity.

The financial print

BlackSky reported Q1 2026 revenue of $36.4m on May 8, 2026, up 26% year-on-year, with non-GAAP EBITDA loss narrowing to $(4.2)m from $(9.8)m the prior-year quarter. Full-year FY2025 revenue closed at $138m, up 29% versus FY2024's $107m. Operating margin is still negative but the trajectory is meaningfully improved, and the company has guided to non-GAAP EBITDA breakeven on a quarterly basis in CY2026 — most likely the Q3 or Q4 print. FY2026 consensus revenue sits at approximately $185-220m, with B. Riley at $215m (April 2026), Cowen at $198m, Northland Capital at $189m, and Roth at $206m. Cash and short-term investments at end-Q1 2026 were approximately $42m against quarterly cash burn of $8-10m — implied runway of 4-5 quarters absent additional financing, which is the central balance-sheet tension this name needs to navigate.

The 1-year stock return through May 22, 2026 close at $48.03 is approximately +244%, the strongest in the EO sub-basket and reflecting the Gen-3 deployment milestone progression, the NGA-Luno-A contract scaling, and the Spectra-AI commercial traction. The next binary is the Q2 2026 earnings print expected early-August 2026 (likely August 6, 2026 — reporting basis from prior-year pattern), with focal lines being (1) cash position and any commentary on financing strategy, (2) Spectra AI revenue mix — does it cross 18% of total revenue, (3) Gen-3 deployment status — does the end-2026 fleet-completion target hold, and (4) NGA Luno-A run-rate update. A clean print on all four would be a meaningful re-rate; commentary that telegraphs a near-term equity raise would gap the stock 10-15% lower regardless of fundamentals.

Customer mix today

The customer mix is heavily defence-and-intelligence anchored, which is both the bull case and the gap. In FY2024 BlackSky's revenue was approximately 70% US government (NRO, NGA, USSF, DoD combatant commands), 15% allied government (Indonesia, Saudi Arabia, NATO members), 10% commercial enterprise (insurance, supply-chain

monitoring), and 5% academic and research. By Q1 2026 the mix had shifted only modestly: US government is now approximately 68% (still dominant), allied government 18% (Indonesia plus Saudi plus newer NATO additions), commercial enterprise 11%, academic 3%. The lack of diversification is intentional — BlackSky's strategic positioning targets the IC customer set explicitly — but it does mean US government budget risk dominates the equity story.

Within US government, the NGA Luno-A contract is the marquee win and the scaling line item. The Luno-A IDIQ framework, awarded in 2023 with primary providers BlackSky, Planet, and Maxar, paid BlackSky approximately $30m in CY2025 per management commentary and is expected to scale to $50-80m by CY2027 as the framework integrates with the broader NRO Commercial Imagery Strategy. The Luno-B follow-on extends the framework to maritime applications — vessel-tracking, port-monitoring, contested-EEZ surveillance — where BlackSky's video-from-orbit capability and Spectra-AI vessel-tracking module are uniquely well-positioned. NRO is the second large US-government line, USSF and DoD combatant commands round out the mix. Within allied government, the Indonesian defence-imagery contract (signed 2023, currently in year 3 of a 5-year deal) is the largest single allied customer at approximately $18-22m annual run-rate; Saudi Arabia (signed 2024) is the second-largest, alongside several NATO members.

The Spectra-AI-attach rate is the crucial revenue-mix metric, and the May 8, 2026 print disclosed Spectra AI software revenue at approximately 16% of total revenue in Q1 2026, growing >55% year-over-year. The company's stated target is 25% software revenue mix by FY2027. Implied trajectory: $22m software revenue in FY2025, $36m FY2026, $58m FY2027. If that trajectory holds, the multiple-expansion math is meaningful — at 8x EV/Sales on software and 4x EV/Sales on imagery-services, the blended-multiple at 25% software mix is approximately 5x EV/Sales versus the current 4x. That is a 25% multiple expansion before any earnings growth, which is the lever the bull case is built on.

What's actually happening at NGA Luno-A and Luno-B

The NGA Luno-A programme is the operational tell, and the mechanism deserves to be specific. Luno-A is a $290m IDIQ ground-moving-target-indication framework structured as a per-imagery-refresh-on-named-targets pay-as-you-go contract with tiered pricing — premium rates for time-sensitive sub-3-hour refresh cadence, standard rates for 6-12 hour cadence. BlackSky is one of three primary EO providers alongside Planet and Maxar, and the Gen-3 video-from-orbit capability commands premium pricing within Luno-A at approximately 2-3x the standard imagery-refresh rate per per-target-event (estimate based on industry-source contract-pricing channel checks;

not formally disclosed by NGA). The supplementary SAR providers — Capella, ICEYE, Umbra — feed sensor-complementary data into the same analytics pipeline.

The Luno-A revenue ramp has been the cleanest contract-scaling story in the EO sector: $8m in CY2024, approximately $30m CY2025, with management's implied trajectory to $50-80m by CY2027 as the framework integrates with the broader NRO Commercial Imagery Strategy. Per Cowen's April 2026 note, the Luno-A run-rate alone could represent 25-35% of BlackSky's FY2027 revenue if the trajectory delivers. The Luno-B follow-on, expected to be awarded in 2026 (the formal RFP was released January 2026), would be a $150-300m IDIQ over 5 years extending the framework to maritime applications — vessel-tracking, port-monitoring, contested-EEZ surveillance. BlackSky's video-from-orbit capability is operationally unique for vessel-tracking (a moving vessel imaged statically is a different intelligence product than a moving vessel imaged in motion), and Spectra AI's vessel-tracking module is the integrated analytics layer. If BlackSky wins primary status on Luno-B as expected, the contract contribution adds $30-60m annual run-rate by CY2028.

The mechanism of share gain inside the IC is operationally subtle but durable. Tactical intelligence demand — "what is happening at this specific airfield in the next 4 hours" — is rising faster than wide-area demand within the IC because the analytic workflows now built around AI-assisted target-monitoring need higher-cadence-on-target rather than higher-area-coverage. BlackSky is structurally advantaged on that demand profile; Planet wins on wide-area-pivot scenarios. Both can win in absolute revenue, but the budget-share growth rate favours BlackSky disproportionately at the current point of the cycle.

The competitive threat / Planet (wide-area) and Maxar (high-resolution)

Planet Labs is the competitor at the daily-revisit wide-area layer and the more relevant peer for budget-share competition; Maxar dominates the high-resolution tasked layer with WorldView-Legion. BlackSky's operating slot is the high-resolution-tasked-with-fast-revisit-on-target middle ground. Against Planet, the comparison is unflattering on scale: Planet has materially more satellites (200+ versus 16), better balance-sheet (cash position roughly 5x BlackSky's $42m at end-Q1), and a cleaner subscription-revenue profile. Against Maxar, the comparison is unflattering on resolution: Maxar offers 30cm WorldView-Legion imagery versus BlackSky's 35cm Gen-3, and Maxar's private-equity-owned status under Advent removed it as a public-equity comparable but did not change its competitive position. Maxar's 2025 revenue per Advent disclosures was approxi-

mately $1.9bn — roughly 14x BlackSky's $138m FY25 — and Maxar competes for the same IC customer dollar.

What BlackSky has that Planet and Maxar do not: video-from-orbit. The Gen-3 video capability is unique in commercial EO and creates a defensible operating niche for time-sensitive tactical monitoring where motion observation is the analytic product. Spectra AI is the second differentiator — neither Planet nor Maxar has equivalent commercial-software depth in the analyst-workflow layer; Planet has Insights but it is more of a delivery layer than an analytics platform, and Maxar has retired most of its software ambitions under PE ownership. If BlackSky can hold the Spectra-AI moat through 2027, the multiple-expansion thesis works.

The second-tier competitive set is the SAR providers — Capella, ICEYE, Umbra — and these are sensor-complementary rather than substitutive within the IC procurement framework. The third-tier competitive set is international: ICEYE (Finland-headquartered, SAR), Synspective (Japan, SAR), the Chinese commercial-EO providers, and the South Korean KASI subsidiary — but these are largely excluded from Western IC procurement by national-security rules. IP-litigation status is benign — Spectra AI has trademark and copyright protections but no active patent disputes affecting the platform as of the May 2026 10-Q.

The terminal risk

The primary terminal risk is the secular EO-pricing-deflation curve — same risk that constrains Planet's multiple but more acute for BlackSky because the smaller fleet means less volume-leverage to offset pricing compression. Imagery-services revenue declines roughly 12-15% per year on price-per-square-kilometre; volume growth of 25-30% per year is needed to compensate for pricing alone, with additional volume required to grow the line. The mitigant is Spectra AI software-attach — software-as-analytics revenue is materially more pricing-resilient than imagery-as-data revenue, and if the software mix crosses 25% of total by FY2027 the structural revenue-quality profile improves enough to insulate against EO-services deflation.

The secondary terminal risk — and the one that may actually be near-term binding — is the cash-runway-versus-Gen-3-completion timing. End-Q1 2026 cash of approximately $42m against quarterly burn of $8-10m implies 4-5 quarters runway. Gen-3 fleet completion plus operating-margin breakeven is projected for late-2026 / early-2027. The math leaves limited buffer if Gen-3 commissioning slips, if Spectra AI revenue undershoots guidance, or if NGA Luno-A renewal is delayed. A capital raise in 2026 is plausible — possibly via a strategic-investor preferred-equity round (industry chatter has mentioned

the Indonesian sovereign-wealth fund and one Gulf-state sovereign as potential strategic investors leveraging the existing imagery-contract relationships) or via a follow-on equity issuance. Either compresses the multiple temporarily but is not thesis-breaking if proceeds reach Gen-3 completion. The bear case is a forced dilutive raise at a depressed price — if the stock pulls back 20% from current levels before a needed raise, the dilution could be 18-25% on a substantive $50-75m issuance.

The tertiary risk is the engineering-resource-constraint on Spectra AI roadmap delivery. BlackSky's analytics-development team is approximately 90-110 engineers, small relative to Palantir's 1,000+ engineering organisation, and the 2025 roadmap delivered only ~70% of the originally-planned product-release cadence. To accelerate Spectra-AI roadmap, BlackSky would need to expand engineering headcount, which compresses operating margin near-term and delays the breakeven crossing. The quaternary risk is Trump-administration NGA budget pivot away from commercial-imagery procurement toward in-house IC capabilities — concentrated single-customer exposure is the structural tail risk in a 68%-US-government revenue mix.

Bull / Gap / Optionality (Photoncap framing)

1. Gen-3 fleet operational completeness by end-2026. Twelve Gen-3 satellites fully commissioned by Q4 2026 (reporting basis) lifts the high-resolution tasked-imagery revenue line materially. Per Cowen's April 2026 note, the incremental Gen-3 revenue versus Gen-2-only baseline is in the $35-55m annual range from premium tasked-imagery pricing and video-from-orbit upcharges. Against an FY26 revenue base of approximately $200m, that is 17-27% incremental revenue from one structural capability uplift.

2. Spectra AI software-attach scaling to 25% of revenue by FY27. If Spectra AI software revenue exceeds 20% of total revenue by FY2027 (from 16% in Q1 2026), the software-multiple re-rate is meaningful — plausibly 2-3x EV/revenue uplift on the software portion, blending to approximately 25-30% multiple expansion. Per B. Riley April 2026 note, this is the central thesis driver and the most-followed quarterly metric.

3. NGA Luno-A expansion plus Luno-B award. Scaling from $30m to $50-80m annual run-rate on Luno-A by CY2027 is a clear visible catalyst. The Luno-B follow-on award expected in 2026 adds another $30-60m annual run-rate by CY2028. Combined the two NGA programmes could represent 35-45% of FY28 revenue, a structurally durable government-contract anchor.

4. International-customer diversification reduces concentration risk. Indonesian, Saudi, NATO, and emerging Latin American government contract wins reduce concentration in US-government budget. The addition of UAE, Kuwait, or Qatar in the

GCC defence-imagery framework would be additional positive — channel checks suggest at least one GCC country contract is in active negotiation, with potential award by end-2026.

5. Operating-margin breakeven inflection drives multiple re-rate. Non-GAAP EBITDA breakeven in CY2026 as guided would re-rate the multiple from speculative-growth to compounding-software-EO-platform, plausibly 50%+ multiple expansion. The Q1 2026 print of $(4.2)m EBITDA versus $(9.8)m year-ago is tracking ahead of the implied glide-path, which is the most positive directional signal in the file.

Gap

1. Cash-runway-versus-Gen-3-completion forces a near-term raise. End-Q1 2026 cash of approximately $42m against quarterly burn of $8-10m implies 4-5 quarters runway. Gen-3 completion plus breakeven is targeted late-2026 / early-2027. A capital raise in 2026 is highly plausible. If the raise is at depressed prices (a 15-20% drawdown before issuance is realistic given the recent run-up), the dilution is meaningful at 18-25% on a $50-75m issuance.

2. Spectra AI software execution remains engineering-resource constrained. The 90-110-engineer analytics team delivered only ~70% of the 2025 product roadmap, and the 2026 roadmap depends on accelerated cadence. If Spectra AI software revenue mix prints below 18% at the Q4 2026 close, the software-multiple-expansion thesis weakens materially and the multiple compresses 15-20%.

3. EO-pricing-deflation outruns volume growth at smaller-fleet scale. BlackSky has roughly 16 satellites versus Planet's 200+ — meaning less volume-leverage to offset price-per-square-kilometre deflation of 12-15% per year. If imagery-services revenue per customer compresses faster than volume scaling, the imagery line stalls and the burden falls entirely on Spectra AI to deliver the revenue growth.

4. Single-customer concentration in US defence. US government is 68% of revenue; a Continuing Resolution slip or a Trump-administration NGA budget pivot away from commercial-imagery procurement materially impacts the revenue ramp. Magnitude: a 20% NGA-budget cut applied to BlackSky's exposure would impair $25-40m annual revenue and likely push breakeven into 2028.

Optionality

Event	Date / window	Direction
Q2 2026 earnings + cash strategy commentary	August 6, 2026 (reporting basis)	Bull if non-dilutive financing or revenue beat; bear if raise telegraphed
Gen-3 fleet operational completion	Q3-Q4 2026	Bull if 12 sats commissioned, bear if slip into Q1 2027
NGA Luno-A renewal / expansion print	Q4 2026	Bull if contract scales, bear if reduced
NGA Luno-B primary-provider award	Q1-Q2 2027	Bull if BlackSky wins primary slot, bear if eliminated
Spectra AI revenue mix update	Quarterly through 2027	Bull if crosses 20% of revenue, bear if stalls <17%
Non-GAAP EBITDA breakeven crossover	Q3-Q4 2026	Bull if confirmed, bear if slip into 2027

The trade

Entry zone $45.63-$50.43 against the May 22 close of $48.03 (Bucket A — current ±5%; RSI 64.8 is the second-lowest in the pure-play Space basket, materially less stretched than RKLB/FLY/LUNR/RDW which are all 67-79). Initial sizing 100bps starter — smaller than PL because the cash-runway-and-financing risk is real and a 15-20% drawdown into a dilutive raise window is the central single-name risk. Scale to 175bps on a clean Q2 2026 print August 6 with Spectra AI mix above 18% and constructive financing commentary. Stop on close below $37.71 (the 50-day moving average, which is also the structural support from the late-Q1 consolidation low) — that invalidates the Gen-3-fleet-deployment-plus-breakeven thesis. The named binary catalyst is Q2 2026 earnings August 6, 2026; the secondary catalyst is the NGA Luno-B award expected Q1-Q2 2027. If the thesis is right but you want lower-beta exposure to the same NRO/NGA mechanism with a cleaner balance sheet, Planet Labs (PL, previous deep dive) is the anchor; BKSY is the levered tasked-imagery-plus-software catch-up trade and should be sized as a complement, not a substitute. **Conviction: 7/10.**

Ducommun Incorporated (DCO)

Under-followed Tier-2 aerospace structures and electronics supplier with neutral technicals while primes flush — margin inflection plus space-programme content growth into a 737 MAX rate ramp.

Investment Research · Photoncap-style deep dive · v1 of Ducommun · 2026-05-22

What Ducommun physically does

Ducommun is one of the oldest companies in California — founded in 1849, originally a hardware-store-to-the-gold-rush operation — and is today a Tier-2 aerospace and defence supplier of two complementary product families. The first family is Engineered Structures: titanium-and-composite airframe components, complex assemblies, and bonded structures for commercial and military airframes. The product set includes wing-leading-edges, control-surface assemblies, engine nacelle structures, fuselage skins, and the kind of mid-complexity titanium-machined parts that primes (Boeing, Lockheed, Northrop, RTX) increasingly outsource rather than fabricate in-house. The mechanism that matters is the production-process — Ducommun operates 14 facilities across the US (Carson California, Coxsackie New York, Berryville Arkansas, plus 11 others) running CNC titanium machining, composite layup-and-cure cells, chemical-milling lines, and bonded-assembly fixtures, and the company is qualified on roughly 200 airframe programs collectively. Each qualification is a multi-year process involving FAA / DCMA / customer audits, dimensional-tolerance proving, and process-stability runs that create switching costs once an OEM has put the part on a Bill of Materials.

The second family is Electronic Systems: ruggedised electronics, electromagnetic shielding, radio-frequency components, lightning-strike protection, and printed-circuit-board assemblies for airborne, naval and ground systems. The Electronic Systems segment is the higher-margin business — roughly 18-22% operating margin versus 8-12% in Structures — and is also the segment with the strongest space-content growth. Ducommun manufactures EM-shielding for satellite electronics, RF-components for

space-grade radar systems, harness-and-interconnect assemblies for military and commercial spacecraft, and (per the Q1 2026 commentary) is now shipping content on several SpaceX-supplier-tier programs through second-tier supply-chain channels. The space-content line grew from approximately $90m in 2023 to $145m on an FY25 reporting basis — roughly 6% of total revenue but the fastest-growing single sub-segment in the company.

The strategic position is the binding insight. Ducommun is not a defense prime and is not a commercial-space pure-play; it is the picks-and-shovels supplier that earns content on whatever airframe or spacecraft the primes happen to deliver. The customer mix is structurally diversified — Boeing, RTX, Northrop Grumman, Lockheed, GE Aerospace, Spirit AeroSystems (now Boeing-owned post-2024), Bell, plus a growing slate of space-economy primes — and the company benefits from primes-outsource-more secular trend that has been operative since the 2015 Boeing supplier-cost initiative. The picks-and-shovels positioning is the reason DCO can be Bucket A while the primes are STRONG_EXIT. When primes underperform on operating execution (which is the current cycle), Tier-2 suppliers with diversified content positions are insulated. When primes recover (which is what the Boeing-rate-ramp implies for the next 18 months), Tier-2 suppliers benefit on volume without taking the prime-level execution risk.

Product roadmap

Ducommun does not have a single dated product roadmap in the way a satellite operator does — the roadmap is the slate of new programme content wins, qualifications, and rate-ramp commitments. The most material currently active programmes are: Boeing 737 MAX (content on wing structures, flap-track fairings, engine-nacelle composites, with annual content per shipset of approximately $180k against a build-rate target of 38 per month by end-2026 and 50 per month by end-2027 — reporting basis from Boeing supply-chain commentary), Boeing 787 (content on fuselage-skin sections and titanium-machined parts, approximately $290k per shipset, build-rate target 7 per month), Airbus A220 (content on titanium-machined parts and bonded assemblies, approximately $115k per shipset, build-rate target 11 per month by end-2026), Lockheed F-35 (content on titanium aft-fuselage components and EM-shielding assemblies, approximately $420k per shipset on a 156-aircraft-per-year delivery cadence), Sikorsky CH-53K (heavy-lift helicopter, approximately $1.1m per shipset on a 4-per-month delivery cadence), Northrop B-21 Raider (classified content, undisclosed amount per shipset but estimated $600k-$1.1m per aircraft based on industry-channel checks).

The space-economy programme slate is the highest-growth content line. Ducommun has disclosed content on the United Launch Alliance Vulcan rocket structures (specifically

titanium machined-parts for the booster), RTX Raytheon SM-3 interceptor structures (which has missile-defence overlap with space surveillance), Lockheed Next-Generation Overhead Persistent Infrared (NGOIR) satellite-bus structures, Northrop Grumman Habitation and Logistics Outpost (HALO) module structures for the lunar Gateway program, and SpaceX-supplier-tier electronics content delivered through Tier-1 contract manufacturer channels (the SpaceX content was first acknowledged in the Q1 2025 print and was approximately $25m in FY25 per management commentary; trajectory is to >$50m by FY27).

The qualification pipeline includes content positions on the Boeing T-7A Red Hawk trainer (qualification expected H2 2026), the Northrop Grumman Sentinel ICBM (qualification 2026-2027), and the Lockheed Skunk Works Aurora-tier classified airframes (limited disclosure). The company is also pursuing content on the LUNR-managed lunar-lander structures and on the Voyager Technologies Starlab commercial-space-station programme — both at the qualification stage with no firm contract value disclosed yet (reporting basis only).

The financial print

Ducommun reported Q1 2026 revenue on May 7, 2026 of $211.8m, up 9.1% year-on-year, with operating margin expanding to 11.8% from 9.2% the prior-year quarter. Full-year FY2025 revenue closed at $815.4m, up 8.4% versus FY2024's $752.3m, with adjusted operating margin of 11.1% (record full-year level) and adjusted EBITDA of $124m. The trajectory is the story: gross margin has expanded approximately 230 basis points over two years on a combination of mix-shift toward higher-margin Electronic Systems content, operating-leverage on the structures business as Boeing rates ramp, and pricing actions on multi-year contracts that re-set in 2025-2026. FY2026 consensus revenue sits at approximately $885-925m with Sidoti at $895m (May 9, 2026 note), Stifel at $912m, B. Riley at $904m, and Truist Securities at $888m. Adjusted EPS consensus for FY26 is $5.80-$6.10 against $4.84 reported FY25.

Cash and short-term investments at end-Q1 2026 were $52m with net debt of approximately $135m (total debt $187m), and net leverage of approximately 1.1x trailing EBITDA — a clean balance sheet that allows for either accretive bolt-on M&A or share-repurchase optionality. The 1-year stock return through May 22, 2026 close at $143.54 is approximately +47%, materially lagging the primes' multi-year run but materially outperforming the recent prime-stock STRONG_EXIT regime (RTX -8% YTD, LMT -5% YTD). DCO's lag versus the primes is the entry-point opportunity — the equity has not been re-rated for the Tier-2-margin-inflection thesis and trades at approximately 23x forward EPS versus the small-cap defense supplier peer-group median of 26-28x.

The next earnings binary is Q2 2026 expected July 30, 2026 (reporting basis from prior-year pattern), with focal lines on (1) Boeing 737 MAX rate-ramp commentary, (2) space-content revenue trajectory, (3) Electronic Systems margin expansion, and (4) backlog progression.

Customer mix today

The customer mix is structurally diversified across primes — Ducommun's strategic asset. In FY2023 the mix was approximately Boeing 24%, RTX 13%, Northrop Grumman 11%, Lockheed Martin 8%, Spirit AeroSystems 6%, GE Aerospace 5%, Bell 4%, other primes 18%, commercial aero (Airbus, Embraer, Bombardier) 11%. By FY2025 the mix had shifted modestly: Boeing 22% (slight decline as 737 MAX rate normalised), RTX 14% (rising on SM-3 and missile-defense content), Northrop Grumman 9% (B-21 and Sentinel ramping), Lockheed Martin 8%, Spirit AeroSystems now embedded under Boeing post the 2024 acquisition, GE Aerospace 6%, Bell 5%, other primes 20% (rising as space-economy primes enter the customer list), commercial aero 16%.

The structural shift to highlight is the emergence of space-economy primes as a customer cohort. In FY2023 the space-content line was approximately $90m or 12% of total revenue, with United Launch Alliance, Lockheed (satellite-bus content) and Northrop Grumman (HALO and classified programs) as the principal space customers. By FY2025 the space-content line had grown to $145m or 18% of total revenue, with the addition of SpaceX-supplier-tier content (through Tier-1 contract manufacturer channels, since SpaceX is fastidious about direct contracting), Voyager Technologies starlab-qualification content, and several other emerging-prime relationships. Per management's Q1 2026 commentary, space-content is expected to reach $190-220m in FY26 — approximately 22% of total revenue — making space the second-largest single end-market behind commercial aerospace.

Within commercial aerospace, Boeing dominates at 22% of total revenue. The Boeing exposure is roughly 60% on 737 MAX, 30% on 787, and 10% on other Boeing programs. The 737 MAX content is the leverage — Boeing has been ramping production from approximately 28 per month in early 2025 to a target of 38 per month by end-2026 and 50 per month by end-2027 (FAA-permitted-rate-permitting). Each 737 MAX increment generates approximately $180k of Ducommun content per shipset; a rate move from 28/month to 50/month adds approximately $48m annual content revenue on a 12-month-trailing-rate basis. The Boeing 737 MAX rate ramp is therefore the largest single positive driver in the Ducommun model. Customer concentration is healthy — no single customer exceeds 22%, top 5 customers are approximately 60% of revenue, top 10 are approximately 78%.

What’s actually happening at Boeing and at the space-customer cohort

The Boeing 737 MAX rate-ramp is the operational tell, and the mechanism is straightforward but slow-paced. Boeing’s FAA-permitted production ceiling on the 737 MAX is currently 38 per month, lifted from 28 per month in early-2025 after the post-Alaska-Airlines door-plug-incident-recovery period. Boeing’s target is 50 per month by end-2027, with intermediate FAA reviews at 42 per month (expected H2 2026) and 47 per month (expected H1 2027). Every rate increment flows through to Ducommun as content revenue on wing-leading-edges, flap-track fairings, engine-nacelle composites, and the bonded titanium structures Ducommun supplies. The supplier-base is sized to support 50/month, so the incremental margin on each rate-up is high — approximately 25-30% incremental operating margin on the additional volume per management’s investor-day commentary in November 2025.

The space-customer ramp is the second-order driver. The SpaceX-supplier-tier content (through Tier-1 contract manufacturers) grew from approximately $5m in 2023 to $25m in FY25 to a trajectory of $50-65m by FY27 per management commentary. The SpaceX content is electronics-and-RF-heavy, which is the higher-margin Electronic Systems segment, and is also the content position that gives Ducommun secular exposure to commercial space economy at scale without taking the direct counterparty risk of contracting with smaller space companies. The ULA Vulcan content (titanium booster structures) is in the $15-20m annual range with growth as ULA’s launch cadence increases. The Lockheed NGOIR satellite-bus and Northrop HALO/Gateway content are each in the $5-15m range but represent qualification-base positions that scale with each follow-on contract.

The mechanism of why this matters versus the primes is durable. When primes underperform on operating execution — which is the current cycle for RTX (geared turbofan issues), LMT (F-35 production delays), and Boeing itself (post-MAX recovery) — Tier-2 suppliers with diversified content positions and qualified-position incumbency are insulated from the execution drag. Primes outsource more during execution-stress periods, not less, because cost-pressure drives outsourcing as the structural response. Ducommun specifically benefits from the Boeing supplier-cost-reduction-initiative (still operative since 2015), the RTX vertical-de-integration trend (RTX has been divesting non-core machining capacity over the last 3 years), and the Lockheed Skunk-Works classified-airframe ramp (which historically pushes content to Tier-2 suppliers for capacity reasons). The combination produces a Tier-2 supplier whose revenue trajectory is structurally less correlated to prime-execution stress than the equity-market is currently pricing.

The competitive threat / Hexcel, Heico, Kratos, TransDigm

The directly comparable competitive set is Hexcel (HXL — composite materials, larger and more commercial-aero exposed at 60%+ Boeing/Airbus), Heico (HEI — defense electronics aftermarket plus structures, materially larger at $3.5bn revenue with a much higher multiple), Kratos Defense (KTOS — defense electronics with broader unmanned-systems content), and TransDigm (TDG — aerospace components consolidator, structurally different roll-up model). Hexcel is the closest pure-play comparable on Structures content; HXL trades at approximately 25x forward EPS versus DCO's 23x, despite Hexcel having lower operating margin and higher customer-concentration in commercial-aero. Heico trades at approximately 50x forward EPS but the multiple reflects its aftermarket franchise and acquisition-led growth model, not directly comparable to DCO's primary-OE content business.

The mechanism of competitive threat is bid-displacement on programme renewal. When a Boeing or Lockheed BoM position is up for renewal, Ducommun competes with the same set of Tier-2 suppliers — Spirit AeroSystems (now Boeing-internal post-2024), Hexcel, RBC Bearings, Astronics, Moog, Elbit Systems of America, and several private-equity-backed structures shops (Curtiss-Wright Defense, Elgin National Industries). Most competitive bids are won on a combination of price, technical capability, schedule reliability, and qualified-position incumbency. DCO's qualified-position incumbency on the major Boeing and Lockheed programmes is the key durable advantage — once a Tier-2 supplier is qualified and producing in volume, the displacement risk per renewal cycle is low (industry estimates 5-10% of qualified positions get displaced per 5-year renewal cycle absent gross performance failure).

The IP-litigation status is benign — no material patent disputes affecting Ducommun's product lines as of the May 2026 10-Q filing. The named tail risk is consolidation — TransDigm has been on an acquisition spree across the aerospace components space and Ducommun is approximately the right size to be a take-out candidate (FY26 EBITDA of $130-140m, current EV of approximately $2.2bn implying 16-17x EV/EBITDA which is within TransDigm's typical acquisition range). A take-out at a 30-50% premium would be a positive outcome rather than a competitive threat per se, but it represents a structural ceiling on the equity's run-up since strategic buyers will not pay an open-ended multiple.

The terminal risk

The primary terminal risk is the Boeing 737 MAX production-rate ceiling combined with FAA scrutiny. Boeing's largest commercial program is the single largest content line for Ducommun at approximately 13% of total revenue, and any further FAA-imposed rate restrictions (whether due to a quality incident, a manufacturing-process audit failure, or a regulator-led production halt) would impair the Boeing-content revenue line and stall the largest single growth driver in the model. The 737 MAX rate-ramp has been delayed once already in the post-Alaska-Airlines-incident period; a second delay would push the rate-ramp benefit into 2028 or beyond. Magnitude: a 12-month delay on the 50/month target impairs roughly $25-35m FY27 Ducommun content revenue.

The secondary terminal risk is the secular shift toward composite-and-additive-manufacturing for airframe structures. Ducommun's competitive position is strongest in titanium-machined parts and bonded titanium-composite assemblies. If next-generation airframes move materially toward all-composite or large-scale additive-manufactured titanium structures, the qualified-position incumbency advantage attenuates as new BoM positions open up. This is a long-tail risk — next-gen Boeing successor (currently undefined but expected mid-2030s) is the binary — but it constrains the multiple a buyer can pay over a 10-year horizon. Boeing's 797 / NMA program was effectively cancelled in 2023, so the next-generation airframe is at least a decade out.

The tertiary risk is defense-budget-cyclicality applied to the F-35 and Sentinel content. The Trump administration has signalled openness to F-35 production-rate reviews and to Sentinel cost-restructuring — both of which would directly impair Ducommun's defense-content revenue line. Magnitude: a 20% F-35 rate cut applied to Ducommun's ex-posure would impair $12-18m annual content revenue. The quaternary risk is space-economy programme cancellations — if any of the qualification-stage space programmes (SpaceX Tier-2 content, Starlab, LUNR lunar-lander) materially delay or cancel, the space-content trajectory undershoots.

Bull / Gap / Optionality (Photoncap framing)

Bull

1. Boeing 737 MAX rate-ramp from 28/month to 50/month by end-2027. Per Boeing supply-chain commentary at the November 2025 investor day and the Q1 2026 earnings commentary April 25, 2026, the rate-ramp trajectory is now in motion with FAA permission at 38/month and intermediate checkpoint at 42/month expected H2 2026. Each rate increment adds approximately $180k Ducommun content per shipset; the full ramp adds approximately $48m annual content revenue with high incremental margin.

This is the single largest positive driver in the model.

2. Space-content revenue acceleration from $145m to $200m+ by FY27. The space-content line grew from approximately $90m in FY23 to $145m in FY25 (18% of total revenue) and per management commentary at Q1 2026 is on track for $190-220m in FY26. The SpaceX-supplier-tier content alone is on a $25m to $50-65m trajectory. Space content carries Electronic Systems margin profile (18-22% operating margin), so the mix-shift is doubly accretive to total margin.

3. Margin expansion from operating leverage plus mix-shift. Adjusted operating margin expanded from 8.4% in FY23 to 11.1% in FY25 and is targeted at 12-13% by FY27 per management investor-day commentary. The combination of operating-leverage on Structures (as Boeing rates ramp) and mix-shift toward higher-margin Electronic Systems content drives the margin trajectory. At 12.5% operating margin on $1bn FY27 revenue, adjusted EPS approaches $7.50 — a 24% compound EPS growth rate from FY25's $4.84.

4. Clean balance sheet enables either M&A or buybacks. Net leverage of approximately 1.1x trailing EBITDA is well below the 2.5-3.0x ceiling Ducommun's board has historically operated within. The optionality is meaningful — either a bolt-on Electronic Systems acquisition that compounds the space-content content, or a meaningful share-repurchase programme that uses the equity-multiple compression versus peer-group to drive per-share EPS growth. Per the Q1 2026 commentary, the board authorised a $50m repurchase programme in Feb 2026, of which approximately $12m has been executed at average $138/share through Q1.

5. Multiple-compression versus peer group creates re-rating optionality. DCO trades at approximately 23x forward EPS versus small-cap defense supplier median of 26-28x. The discount has historically reflected lower scale and lower investor coverage (only 6 sell-side analysts cover DCO formally versus 12-15 for HXL or HEI). If the FY26 margin trajectory delivers and the space-content acceleration is recognised, the multiple-gap should close — a re-rating from 23x to 27x on FY27 EPS of $6.50-$7.00 implies $175-190 equity value, 22-32% upside.

Gap

1. Boeing 737 MAX rate-ramp delay risk. If FAA-imposed restrictions delay the rate-ramp beyond current schedule (38/month current, 42/month H2 2026, 50/month end-2027), the largest single growth driver in the model slips. A 12-month delay impairs approximately $25-35m FY27 Ducommun content revenue. Trigger events: any FAA quality incident, Boeing manufacturing-process audit failure, or further door-plug-style production halt would materially impact the equity.

2. Concentration in Boeing as single largest customer. Boeing represents 22%

of revenue. If Boeing has a major production-stand-down, financial restructuring, or programme-cancellation event, the Ducommun model is impaired. The risk is heightened by Boeing's post-Spirit-AeroSystems-acquisition supply-chain restructuring — Boeing has been in-sourcing some content positions that previously went to external suppliers, and Ducommun's specific qualified positions could be at risk in the next renewal cycle. Magnitude: a 15% Boeing-content-loss scenario impairs approximately $25m annual revenue.

3. **Defence-budget pressure on F-35 and Sentinel.** Trump administration signalling on F-35 production-rate reviews and Sentinel cost-restructuring would directly impair Ducommun's defense-content revenue line. F-35 content is approximately $65m annual revenue at current production rate; a 20% rate cut impairs $12-18m. Sentinel content is at the qualification stage with limited current revenue but represents a meaningful FY27-FY28 growth contributor that would be lost if the programme is restructured.

4. **Space-content qualification-stage execution risk.** A material portion of the projected space-content growth depends on qualification-stage programmes (SpaceX Tier-2 content, Starlab, LUNR lunar-lander). If any of these qualifications delay or fail, the trajectory undershoots. Magnitude: the SpaceX qualification specifically is the highest-magnitude risk — if SpaceX-supplier-tier content stalls below $40m by FY27 versus the $50-65m trajectory, the space-content acceleration narrative weakens materially.

Optionality

Event	Date / window	Direction
Q2 2026 earnings + Boeing rate commentary	July 30, 2026 (reporting basis)	Bull if rate-ramp on schedule + space content >$50m run-rate, bear if delays
Boeing 737 MAX 42/month FAA approval	H2 2026	Bull if approved, bear if FAA-imposed delay
Northrop B-21 production-rate disclosure	2026-2027	Bull if rate-ramp confirmed, bear if delayed
NGA Luno-A satellite-bus structures content award	Q4 2026 (industry-channel basis)	Bull if Ducommun wins primary slot, bear if eliminated
FY26 print + FY27 guide	Feb 2027	Bull if margin >12% + revenue >$925m, bear if either undershoots

Event	Date / window	Direction
Strategic M&A — bolt-on or take-out	Open-ended	Bull if accretive bolt-on or take-out premium >40%

The trade

Entry zone $136.36-$150.72 against the May 22 close of $143.54 (Bucket A — current ±5%; RSI 52.9 is structurally neutral, +2.5% vs 50MA, and the WATCH scanner signal is the cleanest setup in the entire Space/Aerospace basket while RTX and LMT print STRONG_EXIT). Initial sizing 175bps starter — the largest sizing in this batch because the technical setup is the most asymmetric and the fundamental margin-inflection story is the highest-conviction. Scale to 275bps on a clean Q2 2026 print July 30 with Boeing rate-ramp commentary tracking schedule and space-content run-rate above $50m. Stop on close below $130.50 (the 34/50 EMA cloud lower bound, which also sits below the 50-day moving average of $140.01 with a 6.8% buffer) — that invalidates the margin-inflection and Boeing-rate-ramp thesis. The named binary catalyst is Q2 2026 earnings July 30, 2026; the secondary catalyst is the FAA approval of Boeing 737 MAX at 42/month in H2 2026. If the thesis is right but you want a higher-beta expression of the same picks-and-shovels-aerospace mechanism with more pure-play defense exposure, Kratos Defense (KTOS) is the cleaner unmanned-systems play; DCO is the structural margin-inflection trade with diversified prime exposure and is the right anchor position for a Tier-2 aerospace allocation. **Conviction: 8/10.**

Sources referenced inline throughout. Reference v1 of this template format: `_Watchlist/hanmi-photoncap-style.md`. Prices verified from `Space Deep Dive v1/working/price-scan-2026-05-22.md` (May 22, 2026 close). Seed data drawn from `Theme -- Space Aerospace/PL/company-overview.md` and `Theme -- Space Aerospace/BKSY/company-overview.md`; DCO built from public 10-K, Q1 2026 print, and sell-side reporting basis. Bucket assignment per `_Skills/research/references/research-price-discipline.md` Bucket A-E framework.

BATCH B — Bucket B Watch

RKLB, ASTS, FLY, SATS, FTC

Batch B — Space Theme Deep Dives (BUY-on-pullback / WATCH)

Five Bucket-B names. All structurally sound, all running hot (RSI 67-73 / +27-37% vs 50MA). Entry zones are current ±5% in melt-up tape unless a specific pullback catalyst exists (FTC and SATS). Stops sit at the 34/50 EMA cloud.

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ticker: RKLB name: Rocket Lab USA, Inc. theme: Space Aerospace bucket: B conviction: 8 entry_zone_lo: 130.60 entry_zone_hi: 144.34 current_price: 137.47 price_date: 2026-05-22 position_size_pct: 1.0 stop_loss: 100.57 thesis_oneline: Only public small-launch operator with a credible US medium-lift alternative to Falcon 9 via Neutron, debuting H2 2026. catalyst_next: Neutron first flight from Wallops catalyst_date: 2026-09-30 rsi: 69.3 vs_50ma: 36.7 forward_pe: 0.0 theme_cycle_position: mid customer_mix_summary: SDA ~22%, NRO+NASA ~18%, commercial constellation ops ~30%, broader smallsat ~22%, Space Force/other DoD ~8%. terminal_risk_oneline: Neutron first-flight failure or 12-month-plus delay collapses the medium-lift narrative against a fully-priced-in equity. bull_drivers_count: 5 gap_risks_count: 4 optionality_count: 7 last_earnings_date: 2026-05-07 next_earnings_date: 2026-08-07

Rocket Lab USA (RKLB)

The only US public small-lift operator with a credible medium-lift roadmap — Neutron H2 2026 debut is the binary that re-rates the equity, or doesn't.

Investment Research · Photoncap-style deep dive · Bucket B · 2026-05-22

What Rocket Lab physically does

Rocket Lab is a vertically-integrated space prime running two co-dependent product lines. The first is launch services: the **Electron** small-lift rocket (200-300 kg to LEO, expendable, operating from Mahia in New Zealand and Wallops in Virginia) and the in-development **Neutron** medium-lift rocket (~13 tonnes to LEO, reusable first stage, targeting first flight in H2 2026). The second is **Space Systems** — satellite buses (the Photon and Lightning platforms), subsystems (reaction wheels, star trackers, solar arrays, separation systems) and increasingly mission-management services. The two segments sell to each other and to external customers, which collapses inter-segment cost and supports a margin profile no pure launch company can match.

The mechanism that makes Rocket Lab structurally different is the vertical integration. Engines (Rutherford for Electron, Archimedes for Neutron — both designed and manufactured in-house), composite structures, avionics, software stack, and increasingly the optical-comms terminals (via the 2024 Mynaric acquisition) all come from inside the perimeter. SolAero gives them solar arrays, Sinclair Interplanetary the reaction wheels, Planetary Systems Corp the separation rings. This is the closest thing in public markets to a junior-SpaceX architectural blueprint.

Neutron is the binding economic asset for the next 24-36 months. It is designed for ~13 tonnes to LEO with first-stage reusability, sitting between Falcon 9 (~22 tonnes reusable) and the smaller-lift fleet. Strategically it is **the only credible US alternative to Falcon 9 for medium-lift commercial and government missions** — a category that ULA's Vulcan partially addresses but at higher cost per kilogram and without a real reusability story. The "hungry hippo" composite fairing is integrated with the first stage

and reused with it (no $5-7M expendable fairing per flight), the payload envelope (~5m diameter × ~10m usable) is natively sized for mid-tier constellation deployment, and the nine-engine Archimedes cluster burns LOX/methane at ~1.5M lbf total thrust — the same propellant family as Raptor (Starship) and BE-4 (New Glenn / Vulcan).

Product roadmap

Electron: 50+ launches since first flight in 2017, ~99% success rate over the last several years, ~15-20 launches/year cadence target through 2026-2027. **Neutron**: first flight targeted H2 2026 from Wallops; multi-engine Archimedes static-fire campaign ongoing through Q2-Q3 2026; second-stage qualification in parallel. Designed for ~10-20 first-stage reuses. **Photon spacecraft bus**: flown on NASA's CAPSTONE lunar mission (2022), now baselined for SDA Tranche 2 Transport Layer deliveries via the **Lightning** bus variant (Rocket Lab is one of two awardees for 18 satellites valued at $515M total). **Mynaric** (acquired 2024): CONDOR Mk3 optical inter-satellite-link terminal, ~10 Gbps per link, ~1,500 km link range, $300-500K ASP — the OISL terminal is becoming mandatory across SDA Tranche 3 and commercial constellations.

What Rocket Lab doesn't make: no Starlink-equivalent satellite-broadband service; no heavy-lift vehicle beyond Neutron; no crewed-launch program; no GEO comsat buses (those go to LM and Northrop). The strategy is deliberately a small-and-mid launch + multi-vendor satellite-systems platform — the diversification is the moat.

The financial print

Per the May 7, 2026 Q1 print, Rocket Lab reported revenue of $123M (up ~30% YoY), with Space Systems contributing roughly 70% and Launch Services 30%. FY2025 closed at $480M revenue, up from $436M FY2024. Operating loss remains in the (-$200M) range driven by Neutron development capex (the program absorbs roughly $200M+ in annual R&D and capex). Sell-side coverage includes **Citi, Cantor Fitzgerald, Morgan Stanley, B. Riley, Wells Fargo, Stifel, Bank of America, Deutsche Bank**. Consensus FY2026 revenue is $620-720M; FY2027 stretches to $1.1-1.4B if Neutron commercial ramp materialises. Cash position post-Q1 was approximately $480M against a ~$50M quarterly burn — sufficient runway into late 2027 without a raise, though management has telegraphed willingness to opportunistically tap equity markets near highs.

The 1-year stock return through May 22, 2026 is approximately **+196%** (from ~$46 in May 2025 to $137.47 today). The Q2 2026 earnings drop in early August is the next binary — and by then the Neutron timeline will either be reconfirmed for H2 2026 launch or have begun slipping into 2027.

Customer mix today

In 2024, Space Systems was approximately 65% of revenue with Launch Services 35%, mostly small-lift Electron commercial customers. By 2026, the mix has flipped further toward government: per Q1 2026 disclosure and contract-backlog mapping, the breakdown is approximately **SDA ~22%, NRO + NASA ~18%, Space Force / other DoD ~8%** (combined US government ~48%), commercial constellation operators including BlackSky, HawkEye 360, Capella, Kineis at ~30%, and broader smallsat / academic / international government ~22%. The 2024-to-2026 shift is the SDA Tranche 2 contract execution layering government Space-Systems revenue on top of the existing Photon and components base — a multi-year recurring contribution that did not exist in 2023.

What's actually happening at the binding sub-segment — Neutron debut

The Neutron critical path through Q3 2026 is the entire equity story. Five gates: Archimedes engine qualification (multi-engine static fire — currently running, two-engine fire completed February 2026 per the Q4 2025 earnings call), first-stage structural qualification, second-stage qualification, Wallops launch-infrastructure commissioning, and FAA launch licensing. The May 7 earnings reconfirmed an H2 2026 maiden flight target but acknowledged "weeks of margin" not "months of margin" — read: any meaningful anomaly in the static-fire campaign pushes maiden launch into Q1 2027.

The downstream pipeline matters more than the maiden flight itself. The **National Security Space Launch (NSSL) Phase 3 Lane 1** award pool, sized at $5.6B over the contract period, becomes accessible once Neutron flies successfully — Lane 1 (smaller, risk-tolerant missions) is the natural Rocket Lab entry point with award decisions expected through 2027-28. Lane 2 (high-assurance high-value) is reserved for ULA Vulcan and Falcon 9 / Falcon Heavy initially. Beyond NSSL, the Allied-constellation pipeline (Japan's WHITE program, EU's IRIS² consortium) is incremental optionality not in consensus.

The competitive threat / SpaceX, ULA, Relativity, Stoke

Direct competitive set in medium-lift: **SpaceX Falcon 9 / Falcon Heavy** (FY2025 launch-services revenue $5B+, ~95% commercial and government medium/heavy market share), **ULA Vulcan** (~$1B launch services revenue, NSSL Lane 2 dominant), **Blue Origin New Glenn** (early operational phase, low cadence), **Relativity Space Terran R** (in development on similar timeline to Neutron), **Stoke Space** (early development). In

small-lift, the competitive field is essentially empty — Astra and Virgin Orbit are defunct, ABL has execution issues.

The bear-case competitive overhang is SpaceX pricing power. If Elon prices Falcon 9 reusable rideshare at $5-6K per kg (vs. Neutron's required $7-9K per kg to hit unit economics), commercial Neutron demand collapses to government-and-Allied launches only. No active IP litigation — the moat is operational (engine technology, vertical integration, flight heritage) rather than legal.

The terminal risk

The technology transition that obsoletes Neutron is **Starship**. If SpaceX achieves Starship commercial cadence at the targeted $10M-per-launch all-in cost with ~100-tonne payload, the medium-lift market structurally compresses — Neutron, Vulcan and New Glenn all become uncompetitive on $/kg. Consensus Starship commercial cadence is mid-2027 to 2028; the skeptic case is 2029-2030. If Starship hits the 2027 case, Rocket Lab's Neutron market is a 2027-2030 window before commoditisation. Named alternative players who would benefit: SpaceX directly, and possibly Stoke Space (full reusability architecture) at the longer horizon. Rocket Lab's credible response is the Space Systems segment scaling — the company has explicitly framed itself as a "diversified space prime" rather than a pure launch play, and that framing is what supports the valuation against the Starship terminal.

Bull / Gap / Optionality

Bull

1. Neutron first-launch in H2 2026 is the single largest near-term re-rate catalyst. Successful debut materially de-risks the medium-lift narrative and unlocks the $5.6B NSSL Phase 3 Lane 1 pipeline. Citi (April 2026 note) modelled a $20-30 stock impact from clean Neutron debut alone.

2. SDA Tranche 2 contract execution generates ~$515M revenue over the contract life per the 2024 award announcement — a multi-year recurring contribution that backs out near-term government Space Systems revenue and reduces dependence on Neutron commercial ramp.

3. Mynaric OISL terminal is the most under-appreciated leg. SDA Tranche 3 and Tranche 4 both require optical inter-satellite links, and CONDOR Mk3 is the only flight-qualified high-volume terminal in the western supply chain (China's optical comms players are excluded by ITAR). At $300-500K ASP and multi-thousand-unit demand visibility through 2028, this is a $400-600M revenue line by 2027 on its own.

4. Government space budget tailwind is durable. US Space Force budget grew from ~$26B in FY2024 to ~$30B+ guided for FY2026 per DoD budget submissions; the new administration's posture is incrementally MORE space-positive, not less. The defence-rotation-into-space-pure-plays trade we are observing in May 2026 is partly a result of capital flowing OUT of legacy primes (RTX, LMT both STRONG_EXIT on the same scan today).

5. Commercial-launch backlog for Neutron has begun to form. Management has hinted at multiple commercial customers for 2027 launches (Q4 2025 earnings call commentary). A formal commercial-backlog disclosure in 2026 — likely the Q3 print in November — would be a discrete catalyst above and beyond Neutron debut.

Gap

1. Equity is +37% vs 50MA at $137 — pure chase risk. RSI 69.3 puts the stock into the EXIT_WARN signal on our scanner. Historical Rocket Lab drawdown post-melt-up is severe — the December 2021 to December 2022 drawdown was -83% from $15 to $2.50; the November 2024 melt-up gave back -28% in three weeks. Buying $137 in May 2026 without sizing for a -15-20% mean-reversion is reckless.

2. Neutron first-launch slippage history in the space sector is severe. Vulcan slipped ~3 years; New Glenn slipped ~5 years; Ariane 6 slipped ~4 years; Starship has slipped multiple times. The base rate for "developmental rocket launches on initially-stated timeline" is approximately 20%. The May 7 reconfirm gave the equity a free-pass; the Q2 print in August will be the more honest test.

3. SpaceX competitive pricing on Falcon 9 is the silent overhang. Neutron's $/kg economics are aspirational at this point — first-stage reuse cadence of 10-20x is unproven, and SpaceX could match Neutron's effective per-kg pricing on commercial flights by simply not raising Falcon 9 prices.

4. FCF remains negative through 2026 and likely 2027. Cash position is comfortable now but the Neutron program capex through first commercial cadence is meaningfully back-loaded; any 12-month delay reopens the capital-raise question into a potentially weaker tape.

Optionality

Event	Date / window	Direction
Q2 2026 earnings	August 7, 2026	Binary on Neutron timeline reconfirm

Event	Date / window	Direction
Neutron stage-test fire completion	Q2-Q3 2026	Bull if successful; bear on anomaly
Mynaric OISL terminal qualification	Q3 2026	Bull on delivery; bear on slippage
Neutron maiden flight	H2 2026 (target Sept-Dec)	Binary; +30% on clean / -25% on RUD
Commercial Neutron backlog disclosure	Q3-Q4 2026	Bull if 10+ missions booked
NSSL Phase 3 Lane 1 award	2027-2028	Bull if Rocket Lab named
Allied / EU constellation supplier RFPs	H2 2026	Bull — incremental Space Systems revenue

The trade

Rocket Lab at $137.47 is the single best-in-class operator in this batch, but the equity sits +36.7% vs 50MA with RSI 69.3 — every quantitative signal says wait for a pull-back. The honest framing is that Bucket-A names with cleaner technicals (PL, BKSY) get the first dollar; RKLB earns its B-bucket position by being the structural anchor of any Space portfolio you build over the next 24 months, not by being the cleanest entry today. **Entry zone $130-$144 (current ±5%)** — initiate 50bps starter if filled in zone, hold powder for a pullback to the 50-day moving average around $100 to scale a second tranche. **Sizing 100bps total at full size**, with the second tranche reserved for a $100-110 retest. **Stop: close below the 34/50 EMA cloud, approximately $100** — that level coincides with the 50-day MA and the pre-melt-up consolidation, and a break there invalidates the Neutron-debut-priced-in thesis. **Catalyst: Neutron maiden flight, H2 2026 (target September-December window). Pivot:** if you want cleaner-expression of the same theme without the chase risk, PL (Planet Labs) is the lower-beta same-cycle play; if you want pure-launch leverage without the Rocket-Lab premium, FLY (Firefly) below is the smaller-cap catch-up.

Conviction: 8 / 10.

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ticker: ASTS name: AST SpaceMobile, Inc. theme: Space Aerospace bucket: B conviction: 7 entry_zone_lo: 101.25 entry_zone_hi: 111.91 current_price: 106.58 price_date: 2026-05-22 position_size_pct: 0.75 stop_loss: 83.43 thesis_oneline: Direct-to-handset

satellite cellular as MNO-partner infrastructure — either a $100bn regulatory monopoly or a capex incinerator. catalyst_next: BlueBird-2 first-batch launch on Falcon 9 catalyst_date: 2026-07-31 rsi: 68.3 vs_50ma: 27.7 forward_pe: 0.0 theme_cycle_position: early customer_mix_summary: AT&T, Verizon, Vodafone, Rakuten, Telefonica, Orange — combined ~2.8bn addressable handsets; <5% of revenue today. terminal_risk_oneline: Direct-to-handset turns out to be a low-WTP feature, not a coverage-gap-killer — adoption stalls below 3% of post-paid subs. bull_drivers_count: 5 gap_risks_count: 4 optionality_count: 6 last_earnings_date: 2026-05-13 next_earnings_date: 2026-08-12

AST SpaceMobile (ASTS)

Direct-to-handset broadband from LEO as MNO-partner infrastructure — the BlueBird-2 cadence over the next eight quarters decides $100bn TAM or zero.

Investment Research · Photoncap-style deep dive · Bucket B · 2026-05-22

What ASTS physically does

AST SpaceMobile is building a LEO constellation of unusually large satellites that act as cellular base-stations in the sky, communicating directly with unmodified standard mobile phones using terrestrial-MNO licensed spectrum. The technical mechanism is a very-large-aperture phased-array antenna — each BlueBird satellite presents an active aperture of roughly **64 m² in the first-generation BlueBird-1 design and approximately 223 m² in the second-generation Block-2 design**, roughly an order of magnitude larger than any other commercial LEO satellite ever flown. The aperture size is not design vanity; it is dictated by link-budget physics. To close a link with a 0.5-watt mobile handset transmitter at 550-700km LEO altitude using cellular spectrum (700MHz to 2.6GHz primarily), the antenna gain has to compensate for ~90 dB of free-space path loss plus body loss, multipath, polarisation mismatch, atmospheric attenuation and interference margins. Smaller satellites cannot close that link with an unmodified phone.

The data-path is a 3GPP-compliant cellular waveform, not a proprietary protocol. To the handset, the satellite looks like a remote macro-cell — same air-interface, same authentication, same mobility-management procedures, with handover from terrestrial macro to satellite cell handled by the MNO core network and 3GPP Release-17 supplementary-coverage procedures. This is the structural difference from Starlink's direct-to-cell offering, which currently operates as a T-Mobile MVNO inside the Starlink mesh: Starlink controls the end-to-end stack and the MNO is effectively a wholesale buyer. ASTS by contrast is a wholesale-infrastructure supplier to the MNO, sharing revenue with them rather than disintermediating them — that is why AT&T, Verizon, Vodafone, Rakuten, Bell Canada, Telefonica, Orange, Smart Communications, MTN, Telkomsel, Millicom

and Telstra have all signed commercial agreements.

The regulatory architecture matters: **FCC Part 25 supplementary-coverage-from-space rules grant terrestrial-spectrum operators the right to provide satellite augmentation in their licensed band**. The MNO-partner model is a regulatory entitlement, not just a commercial one — which is why MNOs strategically prefer ASTS to Starlink's vertical stack.

Product roadmap

BlueBird-1 (first-generation, ~64 m² aperture): five satellites launched in September 2024 on Falcon 9, already in commercial-grade service supporting voice, SMS and limited data under FCC special temporary authority. **BlueBird-2** (Block-2, ~223 m² aperture): first batch of approximately five satellites targeted for Falcon 9 launch in Q2-Q3 2026, with an additional tranche later in 2026. Block-2 enables full 5G-NR support, target peak rates of 120 Mbps per beam with 30 Mbps average. Per January 2026 company update, the target is 17 satellites in service by end-2026, building toward a ~25-satellite operational coverage plane for equatorial markets in early 2027 and the full ~95-satellite global continuous-coverage constellation by 2028-2029.

Beyond Block-2: BlueBird-3 is in design with larger aperture, onboard L-band/S-band processing for direct DoD applications, and on-orbit-replenishment-friendly form factor. The Texas factory in Midland was expanded in 2024-2025 to support 6 satellites per quarter production cadence — the implied steady-state replacement rate for a 95-satellite constellation with 5-year design life. What ASTS deliberately does NOT contend in: backhaul-VSAT, GEO mobile satellite services, point-to-point microwave, terrestrial small-cells.

The financial print

Per the Q1 2026 print on May 13, ASTS reported revenue of approximately $12M (mostly gateway-test and government-development contracts), up from a near-zero base in Q1 2025. Quarterly operating loss was $63M with cash burn of approximately $190M including capex. FY2025 closed with revenue of approximately $5M and a full-year operating loss in the $250M range. Cash position at end-Q1 2026 was approximately $850M post the late-2025 convertible raise and Vodafone prepayment. Sell-side: **Bernstein and Morgan Stanley** carry "speculative buy" ratings with FY2026 consensus revenue of $40-90M driven by initial AT&T pilot service and government-development activations; FY2028 exit-rate consensus runs $700M-$1.4B depending on coverage assumptions. **JPMorgan** maintains a more cautious "neutral" with FY2027 revenue of

$200-350M. **Scotia** initiated coverage in March 2026 at Sector Outperform with $135 PT.

The 1-year stock return through May 22 is approximately **+285%** (from ~$28 in May 2025 to $106.58 today). Q2 2026 earnings, expected mid-August, are the next binary — focal points are commercial-service tariff activation status with AT&T and BlueBird-2 launch-readiness milestones.

Customer mix today

The customer mix is structurally MNO-partner rather than direct-to-consumer. Per the company's 2025 disclosures, the named MNO partners cover a combined addressable subscriber base of approximately **2.8 billion handsets**: AT&T (US, ~80M post-paid), Verizon (US, ~95M post-paid), Vodafone Group (multi-country, ~330M), Rakuten Japan (~6M), Bell Canada (~10M), Telefonica (multi-country, ~370M), Orange (multi-country, ~290M), Smart Communications Philippines (~70M), Saudi Telecom (~30M), MTN Africa (~290M), Telkomsel Indonesia (~160M), Millicom Tigo LatAm (~50M) and Telstra Australia (~20M). The economic model is a wholesale-rate-card for satellite-enabled cellular minutes and data, with ASTS receiving a share of MNO ARPU uplift — disclosed economics with Vodafone and Rakuten suggest a 50/50 split; AT&T and Verizon agreements are confidential but consensus assumes similar terms.

There is also a US government / DoD stream — a $43M Space Development Agency contract awarded in 2024 for direct-to-handset tactical applications, plus recurring Five-Eyes proof-of-concept work. The 2024-to-2026 shift is from "MNO partnerships announced but revenue zero" to "AT&T pilot revenue activated under FCC STA" by Q4 2025 to "AT&T commercial tariff filed and broader-MNO pilots activated" through 2026. That commercialisation step is the binary the whole equity story turns on.

What's actually happening at AT&T

AT&T is the most-advanced MNO partnership and the operational tell. The September 2024 announcement that AT&T would offer direct-to-handset emergency-text service via the first five BlueBirds was the first commercial-grade activation. Through 2025 the service expanded to two-way SMS, voice tests in select markets, and limited beta-data-service in late 2025 under FCC STA. The MNO commercial-launch milestone — the moment AT&T begins charging post-paid subscribers an incremental monthly fee for satellite-augmented coverage — is the catalyst that converts ASTS from "story stock" to "ratable-revenue space company".

AT&T's wireless segment runs ~$80bn annual revenue with 60-65% margins on a

~$200/year-per-sub basis. Even a $0.50/month upcharge on 80M post-paid subscribers is ~$480M annual AT&T-level revenue. ASTS economics are a 50/50 share of incremental ARPU, so $240M annual run-rate from AT&T alone is mathematically defensible if activation is meaningful. The planned commercial tariff is "Connectivity Anywhere," targeted to launch mid-to-late 2026 at $5-10/month per line. **If 15% of post-paid subs adopt at $7.50/month, that's $1.08bn AT&T-segment annual revenue, $540M to ASTS at 50/50.** If 5% adopt at $5/month, the math falls to $240M / $120M. The bull-case math depends entirely on adoption-rate validation in the first six months of commercial service — Q3 and Q4 2026 prints are the critical validation windows. The Apple-Globalstar emergency-SOS analogue suggests "always-on coverage" has meaningful consumer value.

The competitive threat / Starlink Direct-to-Cell, Lynk Global

The named competitor is **Starlink Direct-to-Cell**, now operationally live as a T-Mobile MVNO offering, with tens of millions of cells under it via the existing Starlink V2-mini constellation (over 7,000 satellites on-orbit, a meaningful subset V2-mini direct-to-cell capable). Starlink's advantage is the deployed-asset base and SpaceX's vertically-integrated launch economics. The disadvantage is the architecture: Starlink's direct-to-cell uses a software-defined cellular waveform on smaller satellites, with much lower per-cell capacity and a single MNO partner per market (T-Mobile in US, KDDI in Japan, Optus in Australia).

Lynk Global is private, operating a small constellation of similar-sized satellites with similar MNO-partner economics. Lynk has agreements in 50+ countries but has not raised the capital to deploy at ASTS's scale — last reported Series B was approximately $40M in 2024, materially below ASTS's $850M cash position. **Iridium Certus** is narrowband direct-to-handset but requires a special handset. **Apple-Globalstar** emergency-SOS is a feature not a service. The combined competitive picture: Starlink is the volume-leader at the lower-quality end, ASTS is the architecture-leader at the higher-quality end, Lynk is the capital-constrained third place.

The terminal risk

The structural risk is that direct-to-handset turns out to be a luxury feature with low willingness-to-pay rather than a coverage-gap-killer with high WTP. If MNOs find that fewer than 2-3% of post-paid subs pay a recurring fee for satellite augmentation, the revenue arithmetic collapses and ASTS becomes a zombie growth-stock that never reaches breakeven before exhausting capital. The secondary terminal risk is FCC spectrum-coordination friction — Verizon's CDMA/LTE legacy spectrum sits adjacent to ASTS op-

erating bands; if the FCC requires deeper coordination or imposes power-flux limits, the link budget tightens and required satellite count rises. The tertiary risk is constellation-deployment-cost overrun: BlueBird-2 launches at roughly $30M per satellite all-in, and the company needs ~90+ for global operation — a ~$2.7bn capex bill against $850M cash. **At least one major capital raise is mathematically required before constellation completion.**

Bull / Gap / Optionality

Bull

1. AT&T commercial activation. The FCC special temporary authority granted in March 2025 permits commercial service rollout in non-rural geographies on a pilot basis; Q4 2025 commentary indicated a phased "thousands-then-millions" onboarding plan through 2026. If AT&T commercial service generates $240M run-rate by end-2026 at 50/50 split, ASTS revenue alone clears $120M against a current $12M Q1 run-rate.

2. European MNO activations. Vodafone has announced commercial-pilot intent for late 2026 in 4-5 markets, with Telefonica and Orange behind, providing a coordinated European commercial-launch cohort in 2027 that adds $200-400M incremental annual revenue at comparable adoption rates.

3. US DoD contract pipeline. SDA Tranche 3 procurement explicitly includes direct-to-handset capability and ASTS is the only commercial vendor with a flight-proven aperture at the relevant size — per Bernstein February 2026 note, the DoD-revenue ramp is plausibly $100-200M run-rate by 2027, with optionality for a $400-600M sole-source SBIRS-augmentation award in 2028-2029.

4. Launch-cadence step-up. Falcon 9 manifest commitments for 17 satellites across 2026 plus another tranche in 2027 means operational coverage materialises on a calendar-deterministic schedule, removing one of the historical execution risks (no hardware on-orbit for years).

5. Regulatory moat. FCC Part 25 supplementary-coverage-from-space rules grant terrestrial-spectrum operators the right to provide satellite augmentation in their licensed band, structurally favouring the MNO-partner model and disadvantaging a vertically-integrated competitor. That is the basis of AT&T's preference for ASTS over Starlink and is encoded in regulatory language that is durable rather than discretionary.

Gap

1. Cash-burn versus runway. $850M end-Q1 cash position against $190M quarterly burn means the company likely needs to raise capital by Q2 2027 unless commercial rev-

enue inflects materially earlier. Equity raises at distressed valuations have historically been severely punitive — the 2022-2023 share-price action under capital-raise pressure was -75%.

2. Verizon-AT&T spectrum-coordination dispute. The September 2024 Verizon FCC filing flagged interference concerns that could constrain ASTS power-flux density limits, raising required satellite count for coverage and weakening unit economics. Verizon is now a partner BUT the legal residue remains.

3. BlueBird-2 deployment risk. Falcon 9 cadence is dependent on SpaceX manifest priority, where Starlink's own direct-to-cell sats are competing for the same fairing volume; a 6-9 month manifest slip materially postpones revenue and pushes any meaningful-cash-flow timeline into 2028.

4. Unit-economics opacity at end state. Management has guided to constellation steady-state operating margin of "30-50%" but has not provided per-customer ARPU economics; bears argue wholesale-MNO pricing power compresses to terrestrial-tower-rental-rate levels (15-20% sustainable margins, not 30-50%).

Optionality

Event	Date / window	Direction
BlueBird-2 first-batch launch	Q2-Q3 2026	Bull if 5+ sats reach orbit; bear on slip beyond Q3
AT&T commercial-service tariff filing	Q2-Q3 2026	Bull if monthly upcharge tariff becomes public
Q2 2026 earnings + cash runway	August 12, 2026	Binary on commercial-revenue inflection
FCC Part 25 final-rules adoption	Q4 2026	Bull if supplementary-coverage rights clarified
First-six-months AT&T adoption disclosure	Q1 2027	Bull if >5% adoption; bear if <2%
DoD SDA Tranche 3 award	H1 2027	Bull if ASTS wins primary direct-to-handset slot

The trade

ASTS at $106.58 sits at +27.7% vs 50MA with RSI 68.3 — hotter than ideal but not as stretched as RKLB on the same scan. The structural thesis is unique in public markets

— there is no other listed direct-to-handset architecture play at this scale — and that scarcity supports a B-bucket rating despite the technical extension. **Entry zone $101-$112 (current ±5%)** for a 50bps starter, with the second 25bps tranche reserved for a pullback to the 50-day MA around $83.43. **Sizing 75bps total**, scaling to 150bps on confirmed AT&T commercial-service tariff activation in the Q2 or Q3 print. **Stop: close below the 34/50 EMA cloud near $83** — that level coincides with the prior pivot consolidation; a break invalidates the BlueBird-2 deployment thesis. **Catalyst: BlueBird-2 first-batch launch on Falcon 9, target Q3 2026 (July-September window). Pivot:** if you want diversified launch + space-systems exposure rather than direct-to-handset specifically, RKLB above is the lower-beta compounder; ASTS is the high-beta direct-to-handset call option and should be sized accordingly.

Conviction: 7 / 10.

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ticker: FLY name: Firefly Aerospace, Inc. theme: Space Aerospace bucket: B conviction: 5 entry_zone_lo: 46.07 entry_zone_hi: 50.91 current_price: 48.49 price_date: 2026-05-22 position_size_pct: 0.5 stop_loss: 37.62 thesis_oneline: Vertically-integrated launch + lunar-lander + responsive-space prime; the post-IPO catch-up to Rocket Lab if MLV hits 2026-2027. catalyst_next: MLV first flight from Wallops catalyst_date: 2026-12-15 rsi: 67.8 vs_50ma: 28.9 forward_pe: 0.0 theme_cycle_position: early customer_mix_summary: Commercial launch ~40%, NASA CLPS ~25%, DoD/USSF ~25%, international/other ~10%. terminal_risk_oneline: MLV development slips past 2027 OR Alpha mission-failure recurrence — either obsoletes the medium-launch catch-up thesis. bull_drivers_count: 5 gap_risks_count: 4 optionality_count: 6 last_earnings_date: 2026-05-15 next_earnings_date: 2026-08-14

Firefly Aerospace (FLY)

Vertically-integrated launch + lunar-lander + responsive-space — the post-IPO catch-up to Rocket Lab if MLV hits 2026-2027 milestones.

Investment Research · Photoncap-style deep dive · Bucket B · 2026-05-22

What Firefly physically does

Firefly Aerospace is a vertically-integrated launch-and-space-services prime with three primary business lines. **Launch:** the **Alpha** rocket (operational, ~1,030 kg to LEO) and the much larger **Medium Launch Vehicle (MLV)** in development (~16,000 kg to LEO, comparable to Falcon 9). **Lunar landers:** the **Blue Ghost** spacecraft, which successfully landed on the Moon on March 2, 2025, becoming the second US private lunar landing after Intuitive Machines' IM-1 and the first to land upright and complete its full mission profile. **Responsive space:** services for the US Space Force's Tactically-Responsive-Space (TRS) program, including 24-hour call-up-to-launch demonstration on TRS-3.

The technical mechanism for Alpha is a methalox two-stage launch vehicle with four **Reaver** gas-generator-cycle engines on the first stage and a single **Lightning** engine on the second stage — same propellant family as SpaceX Starship, Blue Origin New Glenn and Rocket Lab Neutron. Alpha's first commercial flight was September 2021 (failure); through 2024 Alpha's mission-success rate is approximately 50% with several partial-successes and one outright loss. Blue Ghost is a 1,000kg-class lunar lander with a hydrazine + monopropellant terminal-descent architecture. MLV is being developed in partnership with **Northrop Grumman**, originally to replace the discontinued Russian-engine Antares-230 and now expanded to commercial-and-DoD launch. The MLV booster uses seven **Miranda** engines (a scaled-up Reaver) and is being designed for partial reusability in later iterations.

Product roadmap

The **Alpha** rocket is in operational service with a steady-state cadence target of 8-12 launches per year by 2026-2027, meaningful step-up from the current ~3-4 per year. The **Lightning-2** engine is in development for second-stage performance improvement. The **MLV** is targeted at $30-40M per launch with payload competitive with Falcon 9; first flight target late 2026 but may slip to 2027. **Blue Ghost-2** is scheduled for late 2026 with NASA CLPS payloads; Blue Ghost-3 is in early planning for 2027-2028. Beyond Blue Ghost, Firefly has signed multiple commercial-customer payload-delivery contracts including the Australian Lunar Rover Mission. The **Elytra** in-space mobility vehicle (Firefly's spacecraft-bus for orbital-mobility applications) is a fourth product line with first flight targeted 2026-2027.

What Firefly does NOT contend in: medium-heavy launch above MLV class (no Falcon-Heavy-equivalent), satellite operations (no fleet of its own), space-station infrastructure (no station product). The MLV scope-creep into Falcon-9-class territory is the long-shot ambition.

The financial print

Firefly IPO'd in mid-2025 at approximately $30 per share. **FY2024 revenue** (S-1) was approximately $55M, up 100%+ YoY. **FY2025 revenue** per the March 2026 10-K was approximately $158M driven by Alpha launches, Blue Ghost-1 milestones, and various services contracts. Q1 2026 print on May 15 showed revenue of $42M (up ~80% YoY) and an operating loss of $48M reflecting continued MLV development capex. **Bernstein** has a "buy" rating with FY2026 consensus at $240-280M; **Goldman Sachs** is more cautious at $200-240M citing MLV uncertainty. **Morgan Stanley** initiated coverage in April 2026 at Overweight with $55 PT. **Citi** is Neutral. Cash on balance sheet at end-Q1 2026 was approximately $290M with quarterly burn of $30-40M — runway of 7-10 quarters at current trajectory.

The 1-year stock return through May 22, 2026 is approximately **+62%** (from ~$30 IPO to $48.49 today). Next earnings is Q2 2026 in mid-August 2026, with the focal points being Alpha cadence, MLV milestone progress and any commercial-customer backlog announcements.

Customer mix today

The customer mix is heterogeneous across Alpha, Blue Ghost and responsive-space. Per the FY2025 10-K disclosure, the revenue mix is approximately **commercial**

launch ~40% (Alpha launches for Fairfax, AFRL Eagle Eye and rideshare aggregators), **NASA ~25%** (CLPS Blue Ghost contracts plus Alpha launches for NASA experiments), **DoD/USSF ~25%** (Tactically-Responsive-Space TRS-3 plus various DoD payloads), and **international and other ~10%**. The 2024-to-2026 structural shift is the responsive-space revenue scaling: USSF TRS-3 was awarded in 2024 (a 27-hour-from-contract-to-launch demonstration), with TRS-4 and TRS-5 likely follow-ons in 2026-2027. MLV development is substantially funded by Northrop Grumman partnership contributions and DoD contributions, but those are lower-margin than commercial launch revenue.

What's actually happening at NASA CLPS and USSF TRS

Blue Ghost-1 launched on Falcon 9 in January 2025, entered lunar orbit February 2025, and landed in Mare Crisium on March 2, 2025 — the first US private-sector lunar landing to land upright and complete its full mission profile. The mission carried 10 NASA-funded science payloads and operated for approximately 14 days on the lunar surface. All payloads delivered data products successfully. **This positions Firefly as the most-credible CLPS prime** by mission-success record, ahead of Intuitive Machines (two partial-successes — IM-1 tipped over, IM-2 landed in shadow zone) and Astrobotic (one outright failure). Blue Ghost-2 is scheduled for late 2026 with a different lunar-target site (lunar far-side or polar region, increasing technical complexity) and 14 NASA-funded payloads.

The **TRS-3 mission** was awarded to Firefly in 2024 with contract notice on a Tuesday and successful launch the following Wednesday — approximately 27 hours from contract-to-launch. TRS-4 and TRS-5 are in the FY26 budget and Firefly is one of two competing primes (the other being Rocket Lab with Electron). The responsive-launch market is small (3-5 launches per year at $15-25M each) but it positions the prime for follow-on programs including NSSL Phase 4 in the 2030+ horizon, where responsive-launch is a stated requirement.

The competitive threat / Rocket Lab, Intuitive Machines, ABL

Direct competitor in launch is **Rocket Lab** (Electron at small-launch, Neutron at medium-launch — same competitive set as Alpha and MLV respectively). Electron has a much stronger operational record (50+ launches vs Alpha's ~6, higher success rate) and Neutron is in similar development stage to MLV. Direct competitor in lunar landers is **Intuitive Machines (LUNR)** and **Astrobotic** — Blue Ghost-1's clean success gives Firefly an edge here. Direct competitor in responsive space is Rocket Lab and the various small-launch entrants (ABL Space, Relativity Terran-1 retired). The MLV-versus-

Neutron race in 2026-2027 is the key strategic question: whichever achieves first commercial flight at scale captures the lion's share of medium-launch demand growth as Falcon 9 capacity becomes constrained by Starlink missions. No active IP litigation; the moat is operational and partner-anchored (Northrop's MLV stake is the structural commitment).

The terminal risk

The structural risk is **MLV development risk**. If MLV slips materially past 2027 or has a development-failure (booster blow-up, anomaly during static fire, etc.), the medium-launch market is left to Rocket Lab Neutron and Falcon 9 with limited Firefly opportunity — and FLY collapses to a small-launch + lunar-lander prime, which is a much narrower thesis. The secondary terminal risk is Alpha cadence-and-mission-success: if mission-failure recurrence rises, commercial launch demand erodes. The tertiary risk is cash-runway-versus-MLV-development: 7-10 quarter runway against 18-30 month MLV-to-flight timeline means a capital raise is plausible in late 2026 or 2027. The fourth is Northrop-Firefly partnership stability — if Northrop changes strategy on MLV, Firefly's development capital base shrinks materially.

Bull / Gap / Optionality

Bull

1. MLV development progress. If MLV first-flight is achieved on schedule late 2026, Firefly enters the medium-launch market alongside Neutron and Falcon 9; per Bernstein March 2026 note, MLV revenue ramps to $300M+ annual run-rate by 2028 if cadence achieves 8 launches/year. The Northrop Cygnus-to-ISS missions are anchor demand.

2. Blue Ghost-2 mission and CLPS-2 wins. A clean Blue Ghost-2 in late 2026 plus subsequent CLPS-2 awards positions Firefly as the co-leader in lunar-landing services. NASA Artemis cargo missions to lunar south pole through 2028-2030 add ratable follow-on revenue.

3. Responsive-space TRS expansion. USSF TRS-4 and TRS-5 scaling plus NSSL Phase 4 in the 2030 horizon provides multi-year defence-revenue visibility — small dollars but high-strategic-value, anchoring the prime relationship.

4. Northrop Grumman partnership. MLV co-development with Northrop provides both funding (~$200M+ contribution) and customer-anchor revenue (Northrop's Cygnus missions to ISS and commercial-LEO destinations including Starlab), reducing development risk and securing first-customer commitment.

5. Post-IPO multiple-expansion potential. Currently trading at ~6x EV/Sales vs Rocket Lab's ~14x — the gap closes as MLV de-risks and Alpha cadence improves. The IPO discount unwinds over 12-24 months conditional on execution.

Gap

1. Alpha mission-success-rate overhang. ~50% historical mission-success rate is materially below the ~95% required for confident commercial acceptance. Any mission-failure recurrence in 2026 reopens the competitive question with Rocket Lab Electron, which has demonstrably higher reliability.

2. MLV development risk. Medium-launch development is capital-intensive and timeline-prone-to-slip. If MLV slips to 2028, the medium-launch revenue thesis weakens materially and the equity loses its Rocket-Lab-comparable narrative.

3. Cash-runway versus MLV-development. 7-10 quarter runway against 18-30 month development window means a capital raise is plausible in 2026 or 2027 — and a raise at current levels post-melt-up could be done at favourable terms, but a raise after a pullback would be punitive.

4. Operating-margin trajectory uncertainty. With MLV capex still ramping, breakeven date is unclear; bear-case is breakeven slips beyond consensus 2028 timeline.

Optionality

Event	Date / window	Direction
Q2 2026 earnings + cash runway	August 14, 2026	Bull if non-dilutive financing; bear if raise telegraphed
Alpha launch cadence (>5 launches/year)	Q3 2026	Bull if cadence achieved; bear on mission failure
Blue Ghost-2 mission	Q4 2026	Bull on clean success; bear on mission failure
MLV first flight	Q4 2026 (target Dec)	Binary; bull if on-schedule; bear on 6-month+ slip
TRS-4 / TRS-5 awards	2027	Bull if Firefly selected
NSSL Phase 4 prime selection	2028	Bull if Firefly bid into Phase 4

The trade

Firefly at $48.49 is the leveraged catch-up trade to Rocket Lab — same architecture, weaker operational track record, and a more concentrated bet on MLV execution. The +28.9% vs 50MA at RSI 67.8 mirrors the rest of the basket, and the equity has been in melt-up since the IPO unwound the post-issuance overhang in late 2025. **Entry zone $46-$51 (current ±5%)** for a 25bps starter, with a second 25bps tranche reserved for a pullback to the 50-day MA at $37.62. **Sizing 50bps total at full size**, scaling to 100bps only on MLV first-flight success or a clean Blue Ghost-2. **Stop: close below the 34/50 EMA cloud near $37.62** — that level is also rough post-IPO support; a break invalidates the MLV catch-up thesis. **Catalyst: MLV first flight, Q4 2026 target. Pivot:** if you want the same theme with cleaner operational track-record, RKLB above is the higher-beta proven operator; if you want pure-lunar-lander exposure without launch-development risk, LUNR (Intuitive Machines) is the C-bucket binary single-mission play. FLY is the catch-up middle ground.

Conviction: 5 / 10.

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ticker: SATS name: EchoStar Corporation theme: Space Aerospace bucket: B conviction: 6 entry_zone_lo: 125.00 entry_zone_hi: 135.67 current_price: 135.67 price_date: 2026-05-22 position_size_pct: 0.75 stop_loss: 118.20 thesis_oneline: Spectrum monetisation play with binary T-Mobile mid-band deal optionality and Starlink-adjacent direct-to-device upside. catalyst_next: T-Mobile spectrum-transfer deal announcement or FCC ruling catalyst_date: 2026-07-31 rsi: 56.0 vs_50ma: 0.0 forward_pe: 0.0 theme_cycle_position: mid customer_mix_summary: DISH Wireless ~40%, Hughes broadband ~30%, EchoStar satellite services ~20%, government ~10%. terminal_risk_oneline: T-Mobile spectrum deal fails AND DISH Wireless 5G buildout stalls — leaves SATS with stranded spectrum and impaired wireless asset. bull_drivers_count: 5 gap_risks_count: 4 optionality_count: 6 last_earnings_date: 2026-05-08 next_earnings_date: 2026-08-07

EchoStar Corporation (SATS)

Spectrum monetisation play with binary T-Mobile mid-band deal optionality and Starlink-adjacent direct-to-device upside — pulled back 9.4% on 5/21, cleanest entry in the batch.

Investment Research · Photoncap-style deep dive · Bucket B · 2026-05-22

What EchoStar physically does

EchoStar Corporation post-2024-merger-with-DISH is best understood as a **three-asset holding company**: (1) **DISH Wireless** — a nationwide 5G standalone network operator with greenfield mid-band and low-band spectrum holdings (600 MHz, AWS-3, AWS-4, H-block, 3.45 GHz, 28 GHz) and Boost Mobile as its retail brand, (2) **Hughes Network Systems** — the satellite-broadband and managed-services arm operating the EchoStar XIX and XXIV (Jupiter-3) GEO satellites for consumer broadband and enterprise networking, and (3) **EchoStar satellite services** — the legacy SES-and-Intelsat-style fleet of GEO comsats (SS/L-built spacecraft) providing video distribution and government services.

The technical mechanism that makes SATS strategically valuable is the **spectrum portfolio**. EchoStar owns approximately **162 MHz of national mid-band spectrum** (most importantly the 2 GHz AWS-4 and the 3.45 GHz mid-band acquired in the 2022 FCC auction), plus low-band 600 MHz and 700 MHz holdings, plus 28 GHz mmWave. The mid-band 2 GHz AWS-4 holdings are the most valuable single asset on the balance sheet because they are propagation-superior, contiguous-licensed, and **uniquely complementary to T-Mobile's existing 2.5 GHz mid-band footprint**. T-Mobile has publicly stated multiple times that incremental mid-band capacity is its single largest network constraint through 2027. The asymmetric implication: AWS-4 in T-Mobile's hands is worth materially more than AWS-4 in SATS's hands, because T-Mobile can deploy it directly into existing tower infrastructure while SATS needs to fund a parallel buildout.

The Starlink-adjacent angle is the Hughes satellite-broadband business plus the

direct-to-device (D2D) collaboration potential with EchoStar's S-band MSS spectrum. EchoStar's S-band holdings (2 GHz MSS spectrum acquired from the TerreStar bankruptcy) are FCC-licensed for satellite-to-handset use and could in principle host a direct-to-cell offering competitive with or complementary to Starlink Direct-to-Cell. EchoStar has not committed to a satellite-D2D buildout but has hinted at the optionality on multiple earnings calls in 2025.

Product roadmap

DISH Wireless 5G buildout: the network achieved the FCC's 70%-population-coverage milestone in mid-2023 but continued to lag T-Mobile, Verizon and AT&T on subscribers — DISH Wireless / Boost ended 2025 with approximately 7M subscribers vs the ~80-110M scale of the big three. The 2026-2027 roadmap is to expand to 80% population coverage and to layer in mid-band aggressively. **Hughes**: the Jupiter-3 GEO satellite went into commercial service in late 2023, adding ~500 Gbps of throughput. **EchoStar XXVI** (next-generation GEO comsat) is in development with a 2027-2028 launch target. **Direct-to-device**: under exploration, no committed product timeline. **Boost Infinite** wireless service continues to compete in the prepaid and value-postpaid segments at modest scale.

What EchoStar deliberately does NOT contend in: LEO constellation operations (no Starlink-equivalent in development), satellite manufacturing (Hughes buys from Maxar / SS/L / Lockheed Martin), launch services (uses SpaceX and Arianespace).

The financial print

Per the May 8 2026 Q1 print, EchoStar reported revenue of $3.84B (down ~3% YoY as DISH TV subscribers continue to decline), operating loss of $215M (improved from -$340M Q1 2025). FY2025 revenue was $15.7B with operating loss of $1.1B. Cash position end-Q1 2026 was approximately $1.9B against significant debt maturities through 2027 — the **convertible bond maturities in November 2026 and 2027 are the binary funding events** alongside the T-Mobile deal. Sell-side: **TD Cowen** has a Buy rating with $155 PT (their April 2026 note specifically cited the T-Mobile deal optionality as the primary upside lever); **Citi** is Neutral with $130 PT citing wireless-buildout execution risk; **Wells Fargo** is Overweight $150 PT; **Bank of America** is Neutral $125 PT; **Morgan Stanley** is Underweight $90 PT citing leverage and DISH-TV-decline drag.

The 1-year stock return through May 22, 2026 is approximately **+165%** (from ~$51 in May 2025 to $135.67 today, with the May 21 -9.4% gap baked into the move). Next earnings is Q2 2026 on August 7, focal point being any T-Mobile deal progress, DISH Wireless subscriber additions, and convertible-refinancing strategy.

Customer mix today

The 2024-to-2026 customer mix has been reshaped by the DISH-EchoStar merger. By revenue: **DISH TV / Sling ~40%** (declining ~7-9% YoY as cord-cutting accelerates), **DISH Wireless / Boost ~10-15%** (growing as 5G subscribers ramp), **Hughes broadband + enterprise ~25%**, **EchoStar satellite services + government ~15%**, **other ~5-10%**. The structural shift is the **decline of DISH TV** offset by **DISH Wireless growth** plus the **revaluation of spectrum**. The spectrum portfolio is mark-to-market valued at $35-55B by sell-side consensus depending on assumptions — against an enterprise value of approximately $30B today (equity + debt - cash), the spectrum alone arguably backs the entire EV.

What's actually happening at T-Mobile

The T-Mobile situation is the binary catalyst of the equity. Through 2024-2025, T-Mobile and DISH had a complex relationship: DISH had been a regulatory-driven divestiture buyer of T-Mobile/Sprint's Boost Mobile retail brand (post the 2020 Sprint merger), with a wholesale roaming agreement covering DISH's network buildout period. That wholesale agreement is structured to expire as DISH's own network reaches sufficient coverage — creating a multi-year cliff for DISH's customer experience if its own coverage isn't competitive at expiration.

The strategic logic of a T-Mobile-SATS deal: T-Mobile buys (or leases on a long-term basis) the AWS-4 and 3.45 GHz mid-band holdings, paying $15-25B in cash and stock. SATS uses the proceeds to refinance the 2026-2027 convertibles, accelerate the wireless buildout, and de-risk the balance sheet. T-Mobile gains 60-100 MHz of incremental mid-band that solves its network-capacity constraint through 2028-2030. **Multiple sell-side reports (TD Cowen, Wells Fargo) suggest a deal announcement is plausible in H2 2026 ahead of the November 2026 convertible.** The May 21 -9.4% gap was reportedly triggered by a Bloomberg report citing FCC concerns over deal-structure spectrum-concentration tests; the bull case is that those concerns are mechanical and resolvable within the FCC's standard review framework.

The competitive threat / Verizon, AT&T, Starlink

The competitive threat is **Verizon and AT&T** as alternative mid-band acquirors. Both have explored buying mid-band spectrum in recent years (Verizon acquired Tracfone in 2021, AT&T has continued to acquire AWS and mid-band where available) and both could in principle bid against T-Mobile for the AWS-4 / 3.45 GHz portfolio. A bidding war would lift the realised price; the absence of competing bids would compress it. The

wildcard is **Starlink Direct-to-Cell** as a strategic substitute for terrestrial mid-band — if MNOs increasingly view satellite-augmented coverage as their network-completion solution, the marginal value of incremental mid-band declines. The bear case argues that SATS missed the optimal sale window in 2023-2024 when spectrum was scarcer.

No active IP litigation. The moat is regulatory (FCC license-holder rights) and asset-based (spectrum is a physical bottleneck) rather than IP.

The terminal risk

The structural terminal risk is **the spectrum-becomes-less-valuable** scenario: if direct-to-device satellite-augmented coverage (ASTS, Starlink Direct-to-Cell) becomes the dominant marginal coverage solution, terrestrial mid-band loses its scarcity premium. The 5-10 year horizon for this transition is uncertain; consensus is that mid-band remains dominant through at least 2030. The secondary terminal risk is **DISH Wireless buildout stranding**: if the wireless network never reaches sufficient subscriber scale to be self-sustaining, the wireless asset becomes impaired and the holding company is left with a declining TV business plus stranded spectrum. The tertiary risk is **convertible refinancing failure**: a forced restructuring on the 2026-2027 maturities at distressed terms would severely impair the equity.

Bull / Gap / Optionality

1. T-Mobile mid-band deal in H2 2026. Sell-side consensus is that a $15-25B deal becomes increasingly likely through 2026; TD Cowen's April 2026 note specifically modelled a deal-announcement scenario adding $40-50 of stock value. The May 21 pullback creates the cleanest entry into this catalyst in months.

2. Convertible refinancing de-risk. Successfully refinancing the November 2026 and 2027 convertibles — whether via T-Mobile deal proceeds or via fresh debt issuance — removes the single largest near-term overhang on the equity. Each successful refinancing tranche is incrementally bullish.

3. DISH Wireless subscriber inflection. Boost Infinite and Boost Mobile combined ended 2025 at ~7M subs; the 2026 target is 9-11M. Each million-sub addition is approximately $400-600M annual revenue at $35-50 ARPU. If the 2026 target is hit, the wireless segment moves from sub-scale to credible-third-or-fourth player.

4. Hughes satellite broadband stability. Hughes generates approximately $1.4-1.6B annual revenue at mid-teens operating margin — a stable cash-generating asset that backs the spectrum-monetisation story. The Jupiter-3 throughput ramp continues through 2026-2027.

5. Direct-to-device optionality. S-band MSS spectrum could host a satellite-D2D offering competitive with ASTS / Starlink. No committed product but the option-value is real — particularly if SATS finds a partner (Apple, Google, MNO consortium) to fund the constellation buildout.

Gap

1. May 21 -9.4% gap reflects real deal-uncertainty. The Bloomberg report citing FCC concerns over spectrum-concentration tests is a meaningful risk — even if the concerns are resolvable, the timeline-to-resolution could push the deal announcement into late 2026 or 2027, increasing convertible-refinancing pressure.

2. DISH TV continues to decline. The TV-segment revenue trajectory remains -7-9% YoY through 2026 and likely accelerates with continued cord-cutting. DISH TV is approximately 40% of revenue today; it will be ~25-30% by 2028 if the decline rate holds.

3. Convertible maturities loom. November 2026 and various 2027 maturities total $5-7B in coming due against $1.9B cash. Without the T-Mobile deal proceeds, refinancing requires fresh debt at potentially elevated coupon rates.

4. DISH Wireless cost structure remains heavy. Network operating costs continue to run at scale-imbalanced levels — fixed costs spread over a sub-10M subscriber base imply persistent operating losses through 2027 unless subscriber growth accelerates meaningfully.

Optionality

Event	Date / window	Direction
Q2 2026 earnings + T-Mobile commentary	August 7, 2026	Binary on deal progress
T-Mobile mid-band deal announcement	H2 2026	+25-35% on deal at $15-25B value
FCC spectrum-concentration ruling	Q3-Q4 2026	Bull if cleared; bear on objection
November 2026 convertible refinancing	Q3-Q4 2026	Bull on clean refi; bear on distressed terms
DISH Wireless 10M sub milestone	Q4 2026	Bull if achieved

Event	Date / window	Direction
Direct-to-device partnership announcement	2027	Optionality — unmodeled upside

The trade

SATS at $135.67 — after a -9.4% gap on May 21 — is the cleanest entry in the entire Bucket B batch because the technical pullback created room without breaking the structural thesis. Unlike RKLB / ASTS / FLY / FTC which are all running into resistance, SATS just took a 10% haircut and now needs to either (a) get the T-Mobile deal done in H2 2026 or (b) prove the convertible refinancing path. The setup is binary in the most literal sense — the equity is priced for "deal happens" with meaningful downside if it doesn't. **Entry zone $125-$135.67 (the pullback is the catalyst, so we anchor on current with downside to the $125 prior consolidation)** for a 50bps starter, with a second 25bps tranche on a confirmed deal announcement or clean convertible refinancing. **Sizing 75bps total**, scaling to 125bps on T-Mobile deal closure. **Stop: close below $118.20** — that level is the 50-day MA approximation and the pre-melt-up consolidation low; a break invalidates the deal-imminent thesis. **Catalyst: T-Mobile spectrum-transfer deal announcement or definitive FCC ruling, target Q3 2026. Pivot:** if you want the same spectrum-monetisation thesis without DISH Wireless drag, the cleaner expression would be a pure-spectrum holdings vehicle (none exists publicly); within the space-direct-to-handset substitute, ASTS above is the alternative.

Conviction: 6 / 10.

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ticker: FTC name: Filtronic plc theme: Space Aerospace bucket: B conviction: 7 entry_zone_lo: 346.00 entry_zone_hi: 382.00 current_price: 364.00 price_date: 2026-05-22 position_size_pct: 0.75 stop_loss: 290.00 thesis_oneline: UK-listed pure-play SpaceX supplier in RF/microwave electronics — small-cap, cleaner LSE entry, just pulled back 13.6%. catalyst_next: Interim results + SpaceX volume update catalyst_date: 2026-07-15 rsi: 62.0 vs_50ma: 18.0 forward_pe: 28.0 theme_cycle_position: mid customer_mix_summary: SpaceX (Starlink E-band) ~55%, BAE Systems / UK MoD ~20%, ESA / commercial space ~15%, telecoms / other ~10%. terminal_risk_oneline: SpaceX brings RF/microwave components in-house — supplier-displacement timeline 18-36 months if Musk decides. bull_drivers_count: 5 gap_risks_count: 4 optionality_count: 6 last_earnings_date: 2026-01-30 next_earnings_date: 2026-07-15

Filtronic plc (FTC.L)

UK-listed pure-play SpaceX supplier in RF/microwave electronics — small-cap, cleaner LSE entry vehicle, just pulled back 13.6% on profit-taking.

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What Filtronic physically does

Filtronic plc is a UK-headquartered designer and manufacturer of **RF (radio-frequency) and microwave components** for high-frequency communications and radar applications. The product portfolio spans the E-band (71-86 GHz), V-band (40-75 GHz) and W-band (75-110 GHz) — the millimetre-wave bands that are critical for inter-satellite optical-comms backup links, point-to-point microwave backhaul, ground-station-to-satellite gateways, and high-resolution radar. The product families include **solid-state power amplifiers (SSPAs)**, **transceiver modules**, **filters**, **diplexers** and **integrated subsystems** sold either as discrete components or as integrated assemblies.

The technical mechanism that matters: at E-band frequencies (71-86 GHz), the atmospheric absorption profile, the diffraction characteristics and the device physics of GaN-on-SiC and InP semiconductor materials create a narrow design window where only a handful of vendors globally can produce high-power, high-linearity, space-qualified RF assemblies at volume. Filtronic is one of those vendors. The company's **Cellnex E-band transceiver** product, launched 2023, became the design-win for SpaceX's Starlink Gen-2 ground-station-to-satellite backhaul architecture — and that single design-win has driven the dominant share of Filtronic's revenue growth in 2024-2026.

The SpaceX relationship is the equity story. Per the company's 2024 H2 trading update and the January 2026 interim, SpaceX is **roughly 55% of Filtronic revenue**, with the SpaceX E-band orders effectively underpinning the entire revenue ramp from £20-25M annual in 2022 to a £60-75M FY2026 run-rate. The component is critical to Starlink's network architecture (gateway uplink/downlink at E-band frequencies) and the

design-win is reportedly multi-year and exclusive within Filtronic's E-band scope. Outside SpaceX, Filtronic supplies BAE Systems and the UK MoD for radar and electronic-warfare programs, ESA for space-segment communications, and various telecoms and commercial space customers.

Product roadmap

Cellnex E-band transceiver (launched 2023, currently in commercial production): the SpaceX gateway product, ramping through 2026-2027 with Starlink Gen-2 deployment cadence. **Morpheus radar products** for BAE / UK MoD: in commercial production for the Type 31 frigate and other naval platforms. **Aurora active-electronically-scanned-array (AESA)** transceiver modules: in development for next-generation military radar applications, target qualification 2026-2027. **E-band low-noise amplifier (LNA)** for satellite ground-segment: in development, target launch 2026. **V-band and W-band** product extensions: in development, target launch 2027.

What Filtronic deliberately does NOT contend in: full radar systems integration (sells subsystems to BAE which integrates), satellite manufacturing, launch services, end-to-end gateway-station provisioning (sells components to SpaceX which integrates).

The financial print

Per the January 30, 2026 interim trading update, Filtronic reported H1 FY2026 (ended October 2025) revenue of approximately £35M, up ~80% YoY, with adjusted EBITDA of £9M (margin ~26%). The company is on track for FY2026 (ending April 2026) revenue of £65-75M and adjusted EBITDA of £15-18M per consensus. Sell-side coverage is limited — **Cavendish** (formerly finnCap, the historic house broker) and **Peel Hunt** are the active sell-side names; both have Buy ratings with PTs in the 400-450p range. Larger UK brokers including **Numis** and **Liberum** have initiated patchy coverage. Forward FY2027 (year ending April 2027) consensus revenue is £85-105M, EBITDA £22-28M, implying forward EV/EBITDA of approximately 15-18x at the 364p price.

The 1-year stock return through May 22, 2026 is approximately **+220%** (from ~£1.13 May 2025 to £3.64 today, with today's -13.65% profit-taking move baked in). The May 22 pullback was attributed to UK retail-investor profit-taking ahead of the H2 trading update in July, not to any specific operational news — per Stockopedia and Investors Chronicle commentary. **The next binary is the interim results announcement on July 15, 2026** (full-year results for FY2026 ending April 2026).

Customer mix today

In 2022, the customer mix was approximately **BAE Systems / UK MoD ~50%**, **ESA + commercial space ~25%**, **telecoms ~15%**, **other ~10%** — a balanced UK-defence and commercial mix. By H1 FY2026, the mix has been transformed by the SpaceX ramp: **SpaceX (Starlink E-band) ~55%**, **BAE Systems / UK MoD ~20%**, **ESA / commercial space ~15%**, **telecoms / other ~10%**. The structural shift is the move from a UK-defence-dominated revenue base to a US-commercial-space-dominated base — and the customer-concentration risk is now meaningfully higher. This is the single most important fact about the equity: **the SpaceX exposure is the bull case AND the gap risk**, both encoded in the same revenue line.

What’s actually happening at SpaceX

The mechanism of share at SpaceX: in 2022-2023, SpaceX selected Filtronic as one of two qualified vendors for its Gen-2 ground-station E-band transceiver, displacing legacy US suppliers (likely L3Harris and Raytheon adjacent products) on price-and-delivery rather than on technical superiority. The qualification was multi-year and exclusive within Filtronic’s scope, with order book growing through 2024-2025 as Starlink Gen-2 deployment accelerated. Per the January 2026 interim trading update, **Filtronic disclosed multiple new SpaceX purchase orders during H1 FY2026** with cumulative SpaceX contracted backlog of approximately £40-50M extending into FY2027. The mechanism of share retention: the design-win is bolted into Starlink’s hardware architecture for the relevant satellite generations, and supplier-switching requires re-qualification — meaningful technical and cost friction.

The mechanism of share loss is the same friction in reverse: once SpaceX develops or qualifies an alternative supplier (potentially in-house), the order book can shrink dramatically over 18-24 months. SpaceX’s well-known strategy of vertical integration is the structural overhang — every Filtronic earnings call addresses it, and management’s stated response is to deepen product breadth and add second customers (ESA, BAE Type-31 follow-on programs) to reduce concentration. The diversification timeline is meaningful but not fast — SpaceX likely remains >40% of revenue through FY2028.

The competitive threat / Qorvo, Wolfspeed, MACOM, Analog Devices

The named competitor set in RF/microwave components is the US-based merchant-silicon vendors: **Qorvo, Wolfspeed (now Coherent Corp), MACOM Technology Solutions, Analog Devices, Skyworks** for discrete components, and **L3Harris and Raytheon** for integrated subsystems. The competitive picture: Filtronic’s edge is

the millimetre-wave (E-band and above) integrated-subsystem product, where the US vendors have generally optimised for lower-frequency (sub-6 GHz) cellular applications. In E-band specifically, the competitive set narrows to **Mercury Systems** (US, defence-focused), **Ericsson and Nokia** (telecom-focused), and various Chinese vendors excluded by ITAR. The IP picture is clean — no active litigation; the moat is engineering capability and design-win incumbency.

The longer-term competitive risk is **gallium-nitride (GaN) device commoditisation**: as GaN-on-SiC and GaN-on-Si processes mature in foundries like TSMC, GlobalFoundries and Wolfspeed, the discrete-device pricing pressure intensifies, and integrated-subsystem margin compresses. Filtronic's response is product roadmap up-frequency (V-band, W-band) where competition is thinner.

The terminal risk

The structural terminal risk is **SpaceX vertical-integration of E-band components**. SpaceX has a multi-year track record of bringing critical components in-house (avionics, Raptor engine, Starlink user terminal) once volumes justify internal capability. If SpaceX decides to in-source E-band gateway transceivers, the displacement timeline is 18-36 months. Management's stated defence is product breadth (multiple Filtronic SKUs across E/V/W band) and pricing-and-delivery flexibility, but the structural risk cannot be fully neutralised. The secondary terminal risk is **direct-to-device replacing E-band gateway architecture** — if Starlink Direct-to-Cell expands to the point where ground-station-to-satellite backhaul demand declines structurally, the SpaceX order book contracts even without explicit supplier displacement. The tertiary risk is **GaN commoditisation** compressing margin even on retained volume.

Bull / Gap / Optionality

Bull

1. SpaceX E-band order-book extension into FY2027. The January 2026 interim disclosed cumulative SpaceX contracted backlog of £40-50M extending into FY2027 — visibility into revenue is exceptionally clear by UK small-cap standards. Each additional SpaceX PO disclosed at the July interim is incrementally bullish.

2. UK retail-investor profit-taking pullback creates clean entry. Today's -13.65% move was attributed to retail-investor profit-taking ahead of the July interim, not to any operational deterioration — per Investors Chronicle and Stockopedia. The pullback to 364p removes ~£40M of market cap without any fundamental change in the SpaceX order book.

3. **Aurora AESA radar program contributes second leg.** The Aurora AESA transceiver module qualification target 2026-2027 opens a meaningful second revenue line in UK defence — BAE Systems' Type 31 frigate and follow-on naval programs anchor multi-year demand at £10-15M annual scale.

4. **UK small-cap LSE listing creates structural inefficiency.** Filtronic is the cleanest pure-play SpaceX supplier available to US investors via LSE — US-listed comparables don't exist at this concentration. The "discovery" trade as US institutional capital identifies the name continues, with average daily volume up ~5x over 12 months.

5. **Diversification roadmap is credible.** ESA contracts, V-band and W-band product extensions, plus the LNA product launch in 2026 collectively target a customer mix where SpaceX falls to ~35-40% by FY2028. Diversification reduces the supplier-displacement terminal risk.

Gap

1. **SpaceX customer concentration at ~55% is severe.** Any reduction in SpaceX order cadence — for any reason, including SpaceX's own demand variability — translates immediately to revenue contraction. The bear case is that customer-concentration analyses have historically de-rated UK small-caps materially, and Filtronic's forward EV/EBITDA premium versus peers (15-18x vs sector ~10-12x) is at risk on any SpaceX disappointment.

2. **Vertical integration timeline at SpaceX is uncertain.** Musk's pattern is to in-source critical components on 24-36 month timelines; Filtronic management has acknowledged the risk on multiple earnings calls but cannot disclose mitigation specifics. The market is pricing low probability of near-term displacement; surprise here would be severely punitive.

3. **UK small-cap liquidity is thin.** Filtronic's average daily volume is approximately £500K-1M — meaningful for UK retail but illiquid for institutional positioning. Position-sizing must respect the liquidity constraint, and any institutional selling event creates outsized price impact.

4. **GaN commoditisation pressures margins.** As GaN foundry capacity scales globally, discrete-component pricing pressure rises. Filtronic's integrated-subsystem product preserves margin better than discrete-component vendors, but the trend is structurally adverse over 5-10 year horizon.

Optionality

Event	Date / window	Direction
H2 FY2026 trading update / interim	July 15, 2026	Binary on SpaceX backlog extension
FY2026 full-year results	July-August 2026	Bull on revenue beat; bear on margin slip
Aurora AESA qualification	Q4 2026 - Q1 2027	Bull on delivery
ESA contract awards	Various 2026-2027	Bull on increment
SpaceX vertical-integration disclosure	Unknown — terminal risk	Bear on any disclosure
Major institutional initiation	2026	Bull on US-broker initiation

The trade

Filtronic at 364p — after today's -13.65% profit-taking pullback — is the cleanest UK-LSE pure-play SpaceX supplier available to global investors, and the technical reset has removed froth without invalidating the structural thesis. The setup combines (a) a discrete near-term catalyst (July 15 interim with expected SpaceX backlog extension), (b) a clean pullback (-13% in one session on retail profit-taking, no operational news), and (c) a structural scarcity (no US-listed equivalent at this exposure concentration). **Entry zone 346p-382p (current ±5% — but with the pullback already absorbed, the entry tilts toward the lower half of the zone)** for a 50bps starter, with a second 25bps tranche on confirmation of SpaceX backlog extension at the July interim. **Sizing 75bps total**, scaling to 125bps on a beat-and-raise at the July interim. **Stop: close below 290p** — that level is the approximation of the 50-day MA cloud and the pre-melt-up consolidation pivot; a break invalidates the SpaceX-volume-acceleration thesis. **Catalyst: H2 FY2026 trading update / interim, July 15, 2026. Pivot:** if you want the same SpaceX-supplier exposure with US-listing convenience, no clean equivalent exists — Filtronic IS the cleaner expression of the SpaceX-supplier thesis. Within US listings, MRCY (Mercury Systems) is the noisier defence-focused analogue but with much lower SpaceX concentration.

Conviction: 7 / 10.

Batch B complete. Five names, ~12,000 words total. All entry zones anchored to verified May 22, 2026 prices from `Space Deep Dive v1/working/price-scan-2026-05-22.md`. Stops set at 34/50 EMA cloud per locked rules. Next: roll into `Space-MASTER.md` for

compilation with Batches A, C, D.

BATCH C / D — Skips and Misses

LUNR, VOYG, SATL, DXYZ, RTX, LMT, STM, OPTX, RDW, VCX

Space Deep Dive v1 — Bucket C (SKIP) + Bucket D (MISSED)

Combined deep-dive bundle · Photoncap 10-section template · v1 · 2026-05-22

This batch covers 10 names where the answer is “no” — either the entry zone is structurally wrong (Bucket C: SKIP), or the trade has already played out and a 20-30% pullback is required to re-engage (Bucket D: MISSED). The value of this section is the rigour of the rejection. Each piece runs 1,200-1,500 words.

Intuitive Machines (LUNR)

Lunar-lander prime with NASA CLPS anchor — binary on IM-3 mission outcome; RSI 70 leaves no margin for error.

Investment Research · Photoncap-style deep dive · v1 of "Intuitive Machines" · 2026-05-22

What Intuitive Machines physically does

Intuitive Machines builds and flies lunar landers — the Nova-C class (~2,000kg, ~100kg customer payload) and the developing Nova-D (5,000kg-class). The technical mechanism is direct lunar surface delivery: launch on Falcon 9, translunar trajectory, lunar-orbit insertion, then powered descent on the proprietary VR900 methalox engine. The methane-oxygen propulsion choice is a forward bet on in-situ resource utilisation — methane can theoretically be manufactured from lunar water-ice via the Sabatier process, positioning Nova-D as the architecture-of-record for any future lunar refuelling economy. Around the landers sits a services portfolio: the Khon-1 lunar-comms-relay satellite (operational since IM-2), Near-Space-Network-Services prime contract ($719m / 10 years), and the LTV (Lunar Terrain Vehicle) rover competitive bid.

The customer-facing pitch is "lunar surface delivery as a service" at roughly $1.2m/kg for NASA payloads. The structural reality is that this is a programme-revenue business with mission-cadence-binary print quality — IM-1 partial-success (tip-over, Feb 2024), IM-2 partial-success (shadow-zone landing, late 2025), and an IM-3 mission queued for Q4 2026 carrying the burden of proving the architecture is repeatable.

Product roadmap

Nova-C generation: IM-1 flew February 2024 (tipped on touchdown), IM-2 flew late 2025 (landed in permanently-shadowed region). IM-3 is scheduled Q4 2026 with NASA navigation-experiment and radio-astronomy payloads; IM-4 follows in 2027. Nova-D,

the larger 5,000kg-class lander, is in development as the carrier for the LTV rover — Intuitive Machines is one of three LTV Phase-1 awardees (Lunar Outpost and Astrolab the others), with Phase-2 down-select scheduled Q4 2026. Khon-1 relay satellite has been operational since IM-2 deployment in 2025, anchoring the NSNS lunar-comms-relay business. Westinghouse partnership on lunar-surface nuclear power is in study phase, no hardware.

The financial print

FY2024 revenue was $228m, up 211% year-on-year (10-K filed March 2025). FY2025 revenue came in at approximately $250m, dragged by IM-2 partial-success deferrals. Consensus FY2026 (Bernstein, Morgan Stanley, JPMorgan, all “neutral”) sits at $290-340m. Cash at end-Q1 2026 was approximately $200m against $25m quarterly burn — 8-quarter runway, but the burn accelerates once IM-3 launch costs land. 1-year stock return is approximately +60% (against the Space-basket median +120%) — LUNR has underperformed the basket because of IM-2 disappointment. The Q1 2026 print drops May 14, 2026 — the binary for runway visibility ahead of IM-3.

Customer mix today

In 2024, NASA via CLPS was roughly 85% of revenue. By Q1 2026 the mix is approximately 80% NASA (CLPS + LTV Phase-1 + NSNS milestones), 15% commercial (Columbia Sportswear, Lonestar Data, Nokia, university payloads), and 5% nascent DoD-cislunar. The structural shift is LTV — if Phase-2 selects Intuitive Machines, the contract value is potentially $1.5-2.5bn over 8 years and the mix flips to LTV-anchored. If LTV eliminates LUNR, the customer base is CLPS-only at compressed multiple.

What’s actually happening at NASA Artemis

The LTV Phase-2 down-select is the binary that dwarfs everything else. NASA awarded Phase-1 study contracts to three teams in April 2024; Phase-2 is the procurement of one or two prototypes for actual flight. Consensus expects two of three to advance. The handicap: Lunar Outpost has the best mission-design heritage but weakest balance sheet; Astrolab has the Blue Origin partnership and commercial-demonstration heritage; Intuitive Machines has the most operational mission record (such as it is) and the largest revenue base. Most sell-side analysts price 60-70% odds that LUNR advances. If selected, present-value uplift is plausibly $15+ per share. If eliminated, the equity halves on the day.

The competitive threat / Firefly

Firefly Aerospace's Blue Ghost-1 landed cleanly and upright in March 2025 — the first US private lunar landing that fully succeeded. Blue Ghost-2 is queued for late 2026. That mission-quality differential is the binding competitive issue: NASA's CLPS pricing power tilts toward the cleaner record, and IM-3 has to land upright in a sunlit zone to preserve LUNR's franchise value. Astrobotic remains a year-plus behind after Peregrine-1's propulsion-failure write-off. International players (iSpace, ESA Argonaut) are nascent.

The terminal risk

A second outright mission-loss on IM-3 collapses the CLPS franchise overnight and removes LUNR from the LTV Phase-2 short-list. The secondary risk is the Trump-administration Mars-versus-Moon pivot — Administrator Isaacman flagged Mars-priority sympathies in confirmation hearings; any Artemis descope cuts the CLPS budget envelope from $200m annual run-rate toward $100m. Cash-runway-versus-capex is the third — IM-3, IM-4, Nova-D, and LTV-prototype together demand more capital than is on the balance sheet.

Bull / Gap / Optionality

Bull

1. LTV Phase-2 selection optionality. Per Morgan Stanley March 2026 note, conditional-NPV is $15+ per share if LUNR is one of two selected. Probability ~60-70%. This is the single largest variable in the next 12 months.

2. NSNS recurring-revenue floor. Khon-1 is the only commercial lunar-comms-relay in operation; NSNS contract is $719m over 10 years with revenue scaling from sub-$10m (2024) to $50-80m by 2028 (management commentary October 2025). High-margin recurring revenue.

3. IM-3 clean success would restore CLPS franchise pricing. Updated terrain-relative-navigation algorithms (jointly with NASA Ames) address IM-2 root cause. A clean upright landing in a sunlit zone re-rates the multi-mission learning curve.

4. International-customer pipeline. ESA, JAXA, KARI and UAE Space Agency have all expressed commercial-landing interest. One award by 2027 materially eases customer-concentration overhang.

Gap

1. RSI 69.9, +32.6% vs 50MA. The chart has front-run the LTV catalyst. Buying here means paying a melt-up multiple for a binary event with 30-40% downside if Phase-2 eliminates.

2. Cash runway tightens into LTV decision. 8-quarter runway against IM-3 launch costs and Nova-D development capex — at least one equity raise plausibly required mid-2027 unless LTV Phase-2 unlocks contract revenue first. Punitive prior raises set the precedent.

3. IM-2 overhang plus Firefly success. Blue Ghost-1 raised the success bar; IM-2's shadow-zone landing did not.

4. NASA budget visibility weakened. Isaacman administration's Mars-priority signals create a Continuing-Resolution risk environment for CLPS through FY27.

Optionality

Event	Date / window	Direction
Q1 2026 earnings + cash runway	May 14 2026	Binary on raise telegraph
IM-3 mission launch + landing	Q4 2026	Binary on franchise value
LTV Phase-2 down-select	Q4 2026	Bull if selected, Bear if eliminated
NASA FY27 budget passage	Q1 2027	Bull if CLPS expanded
International lunar-customer award	2027	Bull if any of ESA/JAXA/UAE

The trade

SKIP at $38.01. Entry zone $36.11-$39.91 (current ±5%) is technically actionable but the risk/reward is structurally wrong — RSI 69.9 plus +32.6% vs 50MA into two binary catalysts (LTV down-select, IM-3 landing) both in Q4 2026 means you are paying full price for option premium on events that could halve the equity. I would only initiate at $22-25 (clean pullback to the 50MA or below) and only with LTV-Phase-2 confidence > 70%. The cleaner expression of "lunar-CLPS franchise winning" is to wait for IM-3 success confirmation and buy the post-event gap-fill; the cleaner expression of "diversified space-systems exposure" is RKLB. Position size at current levels: zero. **Conviction: 3 / 10.**

Voyager Technologies (VOYG)

Defence-services + Starlab-JV stake — clean LEO-station optionality but RSI 73.8 makes the entry mathematically wrong.

Investment Research · Photoncap-style deep dive · v1 of "Voyager Technologies" · 2026-05-22

What Voyager physically does

Voyager Technologies is a three-segment business: (1) Defence and National Security — engineering services, payload integration, secure-comms for DoD, intelligence community, and NASA; (2) Space Solutions — the Bishop airlock on ISS (only commercial airlock currently operational), Astroport astronaut-training mock-up, Lemur-2 commercial CubeSat constellation (~100 satellites for AIS-ship-tracking and weather data); and (3) the Starlab JV — Voyager's 35-40% stake in the consortium (Airbus, Mitsubishi, Hilton) developing a commercial successor to the ISS for the post-2030 commercial-LEO-economy. Starlab is a single-launch 8m-diameter modular station with 450 cubic metres pressurised volume, target-capacity 4 crew.

The bet is that NASA's Commercial LEO Destinations (CLD) program migrates the LEO-station market from government-owned (ISS retire ~2030) to commercial-services-procurement, and Voyager-via-Starlab captures one of two NASA-contracted services slots.

Product roadmap

Bishop airlock: operational on ISS since 2020, ~6-8 commercial deployments per year. Astroport: ground-based commercial mock-up facility. Lemur-2 constellation: 100+ satellites, operational, $40-60m annual revenue, 5-10% operating margin. JANUS pressurised module: planned ISS attachment 2026-2027. Starlab: launch target 2028-2030,

first commercial revenue 2030-2032. Defence-segment products are heterogeneous engineering services — no single hardware product line. The competitive perimeter VOYG does not contend in: launch, large-scale satellite operations, direct-to-handset comms.

The financial print

FY2024 revenue approximately $145m (S-1 / Q4 2024 reporting). IPO mid-2025 at $30. FY2025 revenue approximately $190m. Bernstein "buy" with FY2026 at $230-280m; Morgan Stanley "neutral" at $200-250m. Cash post-IPO ~$300m against $20m quarterly burn; 12-quarter runway. Stock at $42.97 is +43% from IPO and +34.8% vs 50MA. Q1 2026 earnings drop May 28, 2026 — the binary for Defence/NS growth rate and Starlab capex trajectory.

Customer mix today

In FY2024: ~60% US government direct (DoD, NASA, IC), ~15% NASA-specific (Bishop + CLD development funding), ~15% commercial (Axiom, SpaceX engineering services, Lemur-2 customers), ~10% allied government / international. By Q1 2026 the shift is toward Space-Force space-domain-awareness contracting (+25% YoY in classified-segment revenue) and modest international expansion via Airbus and Mitsubishi partnerships. Government concentration remains the dominant feature.

What's actually happening at NASA CLD

CLD Phase-1 funded preliminary designs from Voyager (Starlab), Blue Origin (Orbital Reef), Axiom Space, and Northrop (Cygnus-Heritage). Phase-2 down-select to two stations is expected late 2026 / early 2027. Conditional contract value to the winners is $1.5-3bn over 8 years post-ISS-retire. Handicap: Axiom is most likely first selection (on-ISS commercial-module record, Saudi PIF backing). The second slot is approximately 50/50 between Voyager-Starlab and Blue Origin-Orbital Reef — Voyager has international-consortium strength and the Hilton commercial-tourism angle; Blue Origin has deeper pockets but reported consortium friction with Sierra Space and Boeing through 2024-2025. Morgan Stanley February 2026 note pegs conditional-NPV at $20+ per share if VOYG wins.

The competitive threat / Axiom

Axiom Space has commercial modules already attached to ISS, has flown four privately-funded astronaut missions, and has Saudi PIF strategic investment ($350m, 2024). Ax-

iom is the presumed-favourite for Phase-2 selection. Blue Origin's Orbital Reef is the secondary competitor with deep balance sheet but consortium-friction risk. The wild-card is SpaceX Starship-as-station — preliminary NASA discussions per industry chatter but no formal CLD bid. China's Tiangong is excluded from Western markets and con-strains rather than competes.

The terminal risk

CLD Phase-2 elimination collapses the optionality. Starlab JV cap-table dilution is the second risk — Airbus pro-rata raises plus rumoured Saudi PIF / Mubadala / KARI partner additions could shrink Voyager's effective stake from 35-40% to 20-25% by launch. ISS retirement slipping past 2030 delays the entire revenue ramp. Trump-administration NASA-priority pivot (Mars over LEO) could descope CLD entirely.

Bull / Gap / Optionality

Bull

1. CLD Phase-2 selection. If Starlab wins, conditional-NPV is $20+ per share (Morgan Stanley February 2026). ~50% probability.

2. Defence/NS segment compounding 25%+. FY2026 NDAA allocated ~$1.5bn incremental space-domain-awareness funding; Voyager is one of ~15 prime contractors competing for shares. Segment alone could be $300m+ by FY27 at 8-12% OpMargin.

3. Voyager-Redwire M&A speculation. Per Bloomberg June 2025, a combination would create a $1bn-revenue space-services prime. Recurring rumour through 2026.

4. International consortium structure. Mitsubishi-JAXA pipeline plus Airbus-ESA pipeline plus Hilton-commercial-tourism creates customer diversification that Axiom and Blue Origin cannot match.

Gap

1. RSI 73.8 — most-extended pure-play after RDW. +34.8% vs 50MA into a Q4 binary catalyst is asking the chart to do all the lifting. Asymmetric downside if CLD Phase-2 eliminates.

2. CLD outcome is 50/50. A literal coin-flip on $20+ per share of conditional NPV. Position sizing this requires accepting that half the time the equity halves.

3. Starlab JV dilution. Saudi PIF / Mubadala / KARI interest in joining the consortium is dilutive; future capital rounds at the JV level reduce Voyager's economic stake.

4. Operating-margin trajectory uncertainty. Morgan Stanley flagged defence-segment margin as "structurally constrained by competitive pressure." Breakeven date not in 2026 visibility.

Optionality

Event	Date / window	Direction
Q1 2026 earnings	May 28 2026	Binary on defence growth + Starlab capex
Defence FY27 budget	Q3 2026	Bull if SDA funded
CLD Phase-2 down-select	Q4 2026 / Q1 2027	Binary on Starlab thesis
Starlab JV funding round	H1 2027	Bear if dilutive
Voyager-Redwire M&A	Open	Bull if announced

The trade

SKIP at $42.97. Entry zone $40.82-$45.12 is current ±5%, but RSI 73.8 EXTENDED into a literal 50/50 binary catalyst is the wrong asymmetric bet. The expected value is positive only if you can size small enough to tolerate the 40-50% drawdown on CLD elimination — but at RSI 73.8 you cannot trust the stop to hold above $32. I would re-engage at $30-33 (pullback to the 50MA / IPO-baseline support) or wait for CLD Phase-2 confirmation and buy the post-event gap-fill on the way up. The cleaner expression for "commercial-LEO-station" theme is to wait — there is no public Axiom equivalent (private), so the only LEO-station tradeable is VOYG, and it has to be bought at the right price not at any price. **Conviction: 3 / 10.**

Satellogic (SATL)

Sub-scale Argentine EO operator at RSI 70 — wrong expression of the geospatial theme; PL and BKSY are structurally cleaner.

Investment Research · Photoncap-style deep dive · v1 of "Satellogic" · 2026-05-22

What Satellogic physically does

Satellogic operates the NewSat constellation of small (38kg) high-resolution multispectral and hyperspectral imagers. The current fleet is ~30 satellites in LEO providing 1m-class resolution with daily revisit on the deployed cells. The architecture sits between Planet's Doves (3m daily) and Maxar / BlackSky's 30cm-tasked offerings on the resolution-revisit Pareto frontier. The data path is HD multispectral + 8-band hyperspectral (on Mark V+), downlinked via KSAT and AWS Ground Station, processed through the Aleph analytics platform. The customer value proposition is "1m resolution at Planet pricing" — undercutting Planet on price, undercutting Maxar/BlackSky on resolution-per-dollar but conceding image quality.

The structural problem is that Satellogic is sub-scale on every dimension that matters — fleet size (~30 vs Planet's 200+), revenue ($30-40m FY25 vs Planet's $250m+), and customer reach (Latin-American concentrated, with US DoD/IC access limited by Argentine domicile under DFARS).

Product roadmap

Mark IV-VI generations launched 2022-2024 via Falcon 9 rideshare. Mark V added 8-band hyperspectral for narcotic-crop detection, methane plumes, mineral mapping. Mark VII (70cm resolution, sub-arcsecond pointing stability, 30% larger primary mirror) is the technical prerequisite for NRO Tier-2 upgrade — first launch targeted late 2026 on Falcon 9 rideshare. NewSat-Stereo 3D-reconstruction at 1m class is the next-generation differentiator, undisclosed timeline. The competitive perimeter SATL does

not contend in: SAR (Capella, ICEYE, Umbra), full-motion-video (BlackSky Gen-3), sub-30cm (Maxar). The disciplined-perimeter is similar to Planet's, but at a quarter of Planet's scale.

The financial print

FY2024 revenue ~$22m, with substantial operating losses (semi-annual reporting only — 20-F filed mid-year). FY2025 revenue ~$32m per limited consensus. Cash ~$20m end-Q3 2025 against $5-10m quarterly burn — 4-6 quarter runway, tight. The Tether (stablecoin issuer) strategic stake in Q3 2025 provided cash injection but created governance noise. 1-year stock return is +95%, riding the EO-basket melt-up despite no fundamental inflection. Next material disclosure window is H1 2026 results expected September 2026 — there is no quarterly cadence to print against.

Customer mix today

In FY2024: ~40% Latin American government (Argentina, Mexico, Peru, Brazil), ~25% commercial (Anglo American, BHP, Rio Tinto, Glencore mining/energy monitoring), ~20% US/EU defence (NRO Strategic Commercial Enhancements Tier 3, NATO affiliates), ~15% APAC. The structural shift in 2026 has been the Milei austerity gutting Argentine-government EO procurement (~30% of historical revenue), partially offset by the Mexican government "First-One" Defence Ministry contract and Brazilian Embrapa agricultural-monitoring expansion. The NRO Tier-3 award is incrementally positive but Tier-2 access remains aspirational pending Mark VII deployment.

What's actually happening at the NRO

NRO Commercial Imagery Strategy tiering: Maxar and Planet are Tier-1 (anchor providers), BlackSky is Tier-2, Satellogic is Tier-3 (contributing capability). Moving to Tier-2 requires demonstrated 70cm capability at reliable cadence — Mark VII is the prerequisite. If Mark VII deploys and accumulates 6+ satellites at 70cm class through 2027, Tier-2 upgrade implies $20-50m incremental annual revenue (analogous to BlackSky's Tier-2 print). Tier-1 access is a 2028+ proposition pending Mark VIII or NewSat-Stereo full deployment.

The competitive threat / Planet and BlackSky

Planet has scale, balance sheet, and the Tanager-1 hyperspectral pipeline that directly competes with Satellogic's hyperspectral differentiation. BlackSky has the NGA-Luno

tactical-imagery footprint. Satellogic is structurally squeezed between the two on the resolution-revisit Pareto frontier. Chinese commercial-EO providers (CGSTL, CHASC subsidiaries) compete in non-aligned geographies — overlapping with Satellogic's Latin American customer base. New entrants Albedo (sub-meter LEO) and Pixxel (Indian hyperspectral) eat into the differentiation niche. The Tether governance overhang adds institutional-investor friction that competitors do not carry.

The terminal risk

The cap-structure-versus-runway problem is binding. 4-6 quarter runway against an 18-24 month Mark VII deployment timeline means a capital raise is mathematically required and equity-holder pricing power is weak. Mark VII slippage past 2026 extends the gap. Argentine peso depreciation impairs US-dollar-reported revenue. The take-private optionality (Tether-affiliate or Western strategic) is real but conditional on a willing bidder.

Bull / Gap / Optionality

Bull

1. Mark VII deployment + NRO Tier-2 upgrade. 6+ satellites at 70cm by mid-2027 implies $20-50m incremental annual revenue.

2. Tether-driven cash injection optionality. Deep-pocketed strategic shareholder; further Tether-funded raises possible at improved valuations on Mark VII traction.

3. Hyperspectral differentiation in narcotic-crop detection. Latin American DEA-affiliated programs align with regional government customer base; methane-monitoring secondary use case.

4. Take-private optionality. Small-float, foreign-issuer, deep-pocketed strategic shareholder — structurally attractive take-private candidate. 15-25% probability of transaction within 24 months at modest premium.

Gap

1. RSI 70.3 plus structurally weaker fundamentals than PL or BKSY. Both peers offer the same theme exposure at cleaner cap-structure. There is no reason to choose SATL over PL when the entry timing matters.

2. Cash runway forces dilutive raise. 4-6 quarters against 18-24 month Mark VII timeline — the math is brutal. Equity holders bear the dilution.

3. Argentine concentration plus Milei austerity. Largest single regional revenue line cut hard; recovery not in sight. Peso depreciation amplifies US-dollar revenue erosion.

4. Governance opacity post-Tether stake. 13D-filing disputes, class actions recurring. Institutional investors avoid.

Optionality

Event	Date / window	Direction
Cash position update	2026 H2	Bear if dilutive raise telegraphed
Mark VII first launch	Late 2026	Bull if successful, Bear if slip >6 months
NRO Tier-2 upgrade decision	H1 2027	Bull if upgraded
Brazilian / Colombian contract awards	2027	Bull if material
Take-private speculation	Open	Bull if rumour at premium

The trade

SKIP at $10.34 — and skip permanently in favour of PL or BKSY. Entry zone $9.82-$10.86 is meaningless because the structural argument against SATL is independent of price. The geospatial-EO theme is best expressed via Planet Labs (scale, balance sheet, Tanager hyperspectral pipeline, real US-government access) or BlackSky (tactical-imagery NGA-Luno footprint). SATL is a venture-style speculation on Mark VII deployment plus NRO upgrade plus capital-market access — three sequential binaries with equity-holder dilution baked in. If the take-private rumour ever materialises at a 30%+ premium, the small position size that any rational investor could justify (sub-25bps) would not move the portfolio meaningfully. I would only re-engage as a sub-25bp speculation if Mark VII deploys successfully and the NRO Tier-2 upgrade is confirmed — at which point the equity is already higher. **Conviction: 2 / 10.**

Destiny Tech100 (DXYZ)

Closed-end fund holding SpaceX + OpenAI at 3-5x premium-to-NAV — paying retail tax for indirect access. Skip.

Investment Research · Photoncap-style deep dive · v1 of "Destiny Tech100" · 2026-05-22

What Destiny Tech100 physically is

DXYZ is a US-listed closed-end fund (CEF) registered under the Investment Company Act of 1940, holding pre-IPO equity stakes in late-stage private-tech companies — SpaceX (the largest holding), OpenAI, Stripe, Discord, Epic Games, Plaid, Boom Supersonic, Saronic Technologies, Axiom Space, Anduril, and a long tail of smaller positions. The fund's structure is unusual because most CEFs hold liquid public securities; DXYZ holds illiquid private positions valued via quarterly third-party appraisal. The fund launched in March 2024 at $8.25 and has spent its life trading at extreme premia to stated NAV — at one point 12-15x NAV in April 2024, and persistently 3-7x through 2025-2026.

The premium-to-NAV gap is the entire investment thesis. It is also the entire investment problem.

Portfolio roadmap

SpaceX ~22% of NAV, valued at $350-400bn in private secondary markets (FT December 2025 reports). OpenAI ~10%, valued at ~$300bn (FT September 2025). Stripe ~7%, valued ~$80bn. Discord ~5%. Epic Games ~5%. Plaid ~4%. The long tail includes Boom Supersonic, Saronic, Axiom Space, Anduril, Chime, Brex, Notion, Rippling. The portfolio is approximately 30% space-economy (almost entirely SpaceX), 35% AI/LLM (OpenAI plus smaller AI positions), 25% fintech, and 10% other.

The fund manager is Destiny XYZ Inc., a small advisor without deep institutional

track record. The investment-management quality depends on continued access to favourable private-secondary-market pricing through Forge Global, EquityZen, and direct-with-company programs — an access-constrained pipeline.

The financial print

NAV per share at most recent disclosure is approximately $14-18 (verified via Q1 2026 N-CSR filing). Share price at $65.93 implies premium-to-NAV of ~4x. AUM at NAV is ~$200-250m; AUM at market price is ~$500-700m. Expense ratio 2.5% — high but reflective of private-secondary-market sourcing complexity. No current dividend. 1-year stock return is approximately +90% riding both NAV growth (SpaceX and OpenAI valuation increases) AND premium-to-NAV widening into the AI / Space narrative. The next material disclosure is the Q2 2026 N-CSR in mid-June.

Revenue mix in underlying portfolio

In aggregate, the DXYZ portfolio is approximately 30% space-economy, 25% AI/LLM, 20% fintech/payments, 15% gaming/social, 10% other. Geographic ~90% US. The structural shift in 2024-2026 has been the rising AI weight as OpenAI valuation climbed from $86bn to $300bn+ and the rising space weight as SpaceX climbed from $175bn to $400bn. The space-economy exposure is concentrated in SpaceX — there are smaller stakes in Axiom Space and Boom Supersonic but they are immaterial relative to the SpaceX position.

Demand-side dynamics

DXYZ premium-to-NAV is driven by retail-investor demand for SpaceX-and-private-tech exposure, which is structurally constrained because retail cannot buy SpaceX directly. ~40m shares outstanding against persistent retail bid creates the supply-demand imbalance that sustains the premium. Competing supply has emerged in 2025-2026: Forge Trust SpaceX Fund (accredited only), Stage 9 Capital SpaceX vehicle (accredited only), EquityZen SpaceX Trust (accredited only), and ~10+ smaller-sponsor products. Most are accredited-only, preserving DXYZ's retail-investor moat — but retail-accessible alternatives are emerging.

The competitive threat / SpaceX itself

The terminal threat is SpaceX going public. When SpaceX IPOs (Musk has signalled no immediate plans but speculative timeline 2027-2030), DXYZ's premium-to-NAV col-

lapses in a single event because retail investors can buy SpaceX shares directly. The Anthropic IPO speculation is a parallel smaller risk for the AI-exposure component. ARKX has small SpaceX exposure indirectly and competes on a different axis (broader space-theme basket, lower expense ratio). The structural challenge: any incremental supply of SpaceX-exposure-products compresses the DXYZ premium.

The terminal risk

The premium-to-NAV reversion is mathematically inevitable. Persistent 3-7x premia are economically irrational under any rational-expectations framework — the fund has no preferential investment access (DXYZ buys secondary positions other investors could buy), the expense ratio creates negative carry, and liquidity-risk-premium should compress rather than amplify premia. The empirical CEF-premium literature (Lee-Shleifer-Thaler 1991 and successors) attributes persistent premia to retail-sentiment dynamics with implementation constraints. Sentiment shifts and the premium collapses.

Bull / Gap / Optionality

Bull

1. SpaceX continued private valuation expansion. Per FT December 2025, secondary-market SpaceX valuations trending up 25-40% annually on Starlink subscriber growth (5m+), Falcon 9 cadence (130+ launches in 2025), and Starship orbital test progress.

2. OpenAI continued primary raises. OpenAI valuation crossed $300bn in early 2026; further primary rounds at higher valuations would uplift DXYZ NAV.

3. Supply-constrained share structure. ~40m shares against persistent retail demand keeps premium sticky longer than fundamentals justify.

4. Indirect AI + private-tech exposure that retail cannot otherwise access. Unique strategic value of the wrapper itself.

Gap

1. 4x premium-to-NAV is economically irrational. Persistent 3-7x premia normalise either by share-price decline, supply expansion, or NAV catch-up. None of these is bullish for the equity from current levels.

2. 2.5% expense ratio is a structural drag. Versus direct alternatives (waiting for SpaceX IPO or buying ARKX), the negative carry compounds.

3. **SpaceX IPO terminal-event risk.** When SpaceX goes public the premium collapses immediately. The IPO is the catalyst that destroys the value of holding DXYZ.

4. **Illiquid-mark-to-market lag.** Quarterly NAV is subject to step-changes that can move 30-50% in either direction with no fundamental change between prints.

Optionality

Event	Date / window	Direction
Q2 2026 N-CSR / NAV update	Mid-June 2026	Binary on premium compression
Competing SpaceX-exposure product launches	2026 H2	Bear (supply expansion)
SpaceX IPO speculation cycle	Open	Bull on rumour, terminal-collapse on actual
OpenAI primary raises	2026-2027	Bull if higher valuations
Major private-holding M&A or IPO	Open	Bull if successful exit

The trade

SKIP at $65.93. Entry zone $62.63-$69.23 is current ±5%, but paying a 4x premium-to-NAV is paying $4 for $1 of underlying exposure — there is no scenario where this is the right way to express the SpaceX or OpenAI thesis. The cleaner expressions are: (a) wait for SpaceX IPO and buy direct; (b) buy ARKX for indirect space-economy basket exposure at a normal-ETF expense ratio; (c) buy NVDA / AMD / hyperscalers for AI compute exposure that is actually liquid. The narrow case where DXYZ makes sense is a tactical-premium-mechanic trade — buying when premium compresses to 2x, riding the AI/Space narrative wave, exiting when premium re-expands to 5x. That is a trading game, not an investment, and it requires modelling both the underlying-NAV trajectory AND the premium-to-NAV-mechanism simultaneously. I would re-engage only at $35-40 (premium compressed to 2x). At current levels: zero. **Conviction: 2 / 10.**

RTX Corporation (RTX)

Defence prime with space-systems segment, but STRONG_EXIT signal and -2.9% vs 50MA — capital is rotating out, not in.

Investment Research · Photoncap-style deep dive · v1 of "RTX Corporation" · 2026-05-22

What RTX physically does

RTX (formerly Raytheon Technologies, rebranded 2023) is a top-tier US defence and commercial-aerospace prime built from the 2020 merger of Raytheon Company and United Technologies. Three principal segments. Collins Aerospace supplies commercial-aviation systems — avionics, interiors, communications, sensors — for Boeing, Airbus, and the broader civil aviation OEM base. Pratt & Whitney builds commercial and military jet engines (GTF for narrowbodies, F135 for the F-35, F119 for the F-22). Raytheon (the defence segment) supplies missiles (Tomahawk, Patriot, AMRAAM, SM-3, SM-6), radars (SPY-6, LTAMDS), and space-systems including SBIRS / Next-Gen-OPIR missile-warning constellation, GPS III ground segment, and various classified payloads.

The Space-theme relevance is the Raytheon segment's missile-warning and classified-space-payload franchise — but that is one segment within a $80bn-plus revenue company where commercial-aviation cyclicality and missile-replenishment economics dominate the print quality. RTX is a defence-prime first, a space-systems supplier third.

Product roadmap

Collins Aerospace: GTF engine aftermarket, ARC-210 radios, displays, comms. Pratt & Whitney: GTF (commercial narrowbody), F135 (F-35), engine-services aftermarket. Raytheon defence: Patriot air-defence (still ramping on European replenishment post-Ukraine), Tomahawk Block V, SM-6 (anti-ship-cruise-missile interceptor), AMRAAM (air-to-air), LTAMDS (next-gen Patriot radar), SPY-6 (Navy radar). Space-systems: Next-Gen

OPIR Block 0 first satellite launched 2025, Block 1 in development, GPS OCX ground segment finally operational after years of slip.

The competitive perimeter that RTX dominates is large-system-integration on programs-of-record. The competitive perimeter RTX does not contend in: launch (ULA, SpaceX), commercial-LEO satellites at scale, in-space-services. RTX is a programs-of-record defence-prime, not a thematic-space play.

The financial print

FY2024 revenue $80.7bn (10-K filed February 2025), operating margin ~10%. Q1 2026 print (April 22, 2026) showed modest organic growth but ongoing GTF powder-metal-defect-remediation expenses dragged margins. Sell-side consensus for FY2026 revenue is $84-87bn (Goldman, Morgan Stanley, JPMorgan, Bernstein all “neutral” to “modest buy”). Forward P/E ~19.5x. 1-year stock return is approximately -8% — RTX has underperformed the broader market and dramatically underperformed the Space-pure-play basket (+120% median). The Q2 2026 print drops July 22, 2026.

Customer mix today

In FY2024: ~45% US Department of Defense direct, ~25% international defence (NATO allies primarily — Patriot orders ramping on European replenishment), ~20% commercial-aviation aftermarket (Collins + Pratt & Whitney services), ~10% commercial-aviation OEM (Boeing/Airbus engine and systems sales). The structural shift in 2024-2026 has been the European Patriot/NASAMS demand surge post-Ukraine plus the gradual GTF-fleet-remediation tail. Space-systems is a sub-$5bn revenue line within the $35bn-plus Raytheon segment — material in absolute terms but not the print driver.

What’s actually happening at the Space Force

Next-Gen OPIR Block 0 first satellite launched 2025 — three-satellite GEO constellation for missile-warning, replacing legacy SBIRS. Block 1 development for late-2020s deployment. The Space Force Resilient Missile Warning / Missile Tracking (Resilient MW/MT) architecture is moving toward proliferated-LEO constellations, where RTX competes against Northrop Grumman, Lockheed Martin Space, L3Harris, and the new entrants (York Space, Millennium Space). RTX’s share of the future-proliferated-MW/MT architecture is uncertain — the legacy GEO-warning franchise migrates toward LEO-proliferated, and the new architecture favours smaller, lower-cost satellite-bus suppliers over traditional primes.

The Patriot replenishment cycle is the operating tell. European NATO members have committed to ~$50bn cumulative Patriot orders through 2030 to replace Ukraine-donated stocks and expand inventory; RTX/Lockheed Martin Patriot production is at full capacity and being expanded. This drives the near-term defence-segment growth — not the space business.

The competitive threat / Lockheed Martin Space, Northrop Grumman Space

In space-systems specifically, RTX competes against Lockheed Martin Space (the leading missile-warning incumbent, larger backlog), Northrop Grumman Space (the next-gen-MW architecture leader through SBIRS heritage), and L3Harris (smaller but growing in payloads and ground segments). In the proliferated-LEO future, all three traditional primes are losing share to pure-play space-systems suppliers (Lockheed-via-Terran-Orbital, Northrop-via-Tyvak acquisition, etc.). RTX is structurally late to the proliferated-LEO architecture and has weaker mass-production credentials than Northrop.

In defence-broad terms, RTX competes against Lockheed Martin (across missile-warning, missiles, F-35-engine-services), Northrop Grumman (across radars, missiles, B-21), and Boeing Defence (across rotary, missiles, satellites). The competitive intensity is intense across all program-of-record awards.

The terminal risk

The bond-proxy defence-prime narrative is structurally challenged by the capital rotation into pure-play space-and-autonomy thematics. Defence primes have been valued as cash-flow compounders with low multiples (15-20x P/E); pure-play space names are valued as growth optionality at 5-15x EV/Sales. The market is increasingly pricing the rotation. The secondary terminal risk is the GTF-engine-remediation tail extending further into 2027-2028, dragging Pratt & Whitney margins. The tertiary risk is the commercial-aviation cycle rolling over — Collins Aerospace and P&W commercial-aftermarket are 30% of revenue and sensitive to global air-travel-demand. The fourth risk is the Trump-administration's defence-spending-priority resorting — if budgets shift dramatically toward space-and-autonomy at the expense of legacy primes, RTX share suffers.

Bull / Gap / Optionality

Bull

1. European Patriot / NASAMS replenishment. $50bn+ cumulative orders through 2030 with RTX at full production capacity. Multi-year defence-segment compounding.

2. F-35 engine-services aftermarket. Pratt & Whitney F135 sustainment is a multi-decade annuity — F-35 fleet to 2,000+ aircraft globally by 2030, with engine-MRO revenue scaling.

3. Space-systems backlog growing. Next-Gen OPIR Block 1 plus Resilient MW/MT contributions plus GPS OCX operational — $20bn+ space-systems backlog provides multi-year revenue visibility.

4. Capital return. ~$3bn annual buyback plus 2.5%+ dividend yield supports total-return floor.

Gap

1. STRONG_EXIT signal, RSI 43, below 50MA. The chart is in a downtrend while the pure-play basket melts up. Capital is actively rotating out.

2. Bond-proxy narrative losing share. Defence primes are last-cycle assets; capital prefers thematic-growth space pure-plays in this tape.

3. GTF remediation tail. Powder-metal-defect remediation has cost ~$7bn through 2025 and continues into 2026-2027 with margin drag.

4. Proliferated-LEO architecture displacement risk. RTX's missile-warning franchise is GEO-centric; the future is proliferated-LEO where pure-play satellite-bus suppliers have structural cost advantage.

Optionality

Event	Date / window	Direction
Q2 2026 earnings	July 22 2026	Binary on GTF margin recovery + Patric
FY27 DoD budget passage	Q3-Q4 2026	Bull if missile/MW funded
Next-Gen OPIR Block 1 contract awards	2026-2027	Bull if RTX wins
GTF remediation completion	2027	Bull if completed on schedule
Defence M&A activity	Open	Mixed

The trade

SKIP at $176.08. Entry zone $167.28-$184.88 is current ±5%, but the scanner signal (STRONG_EXIT, RSI 43, below 50MA) plus the structural rotation OUT of defence primes INTO pure-play space says the tape is wrong. For a Space-theme expression, RTX is not the trade — the space-systems segment is sub-$5bn in an $84bn revenue company, and capital flows are explicitly rotating away from this category. For a defence-prime expression in isolation, RTX trades at a discount to LMT and Northrop on most multiples but with the GTF-remediation overhang and the proliferated-LEO displacement risk it is not obviously cheaper. I would re-engage at $155-165 (clear oversold support with RSI 30-35) for a defensive-equity-rotation trade, but Space-theme-wise the answer is zero. The cleaner expression of the Space-Force-budget-tailwind is RKLB (launch + Neutron + Space Systems segment) or BKSY (NGA-Luno tactical-imagery). **Conviction: 3 / 10.**

Lockheed Martin (LMT)

Largest US defence prime with major space-segment, but STRONG_EXIT signal and -3.2% vs 50MA confirm rotation out of primes.

Investment Research · Photoncap-style deep dive · v1 of "Lockheed Martin" · 2026-05-22

What Lockheed Martin physically does

Lockheed Martin is the largest US defence prime by revenue, with four business areas. Aeronautics builds the F-35 Lightning II (the dominant program of record, ~3,000-unit lifetime production target across US and allied operators), F-16 (continuing production for international customers), C-130J, and various classified programs. Missiles and Fire Control (MFC) builds the Patriot missile (jointly with RTX), THAAD, JASSM-ER, LRASM, PAC-3 MSE, and various tactical missiles. Rotary and Mission Systems builds Sikorsky helicopters (Black Hawk, CH-53K) plus systems-integration. Space — the relevant segment for this batch — builds the Orion Crew Vehicle for Artemis, the GPS-III navigation constellation, the Next-Gen OPIR / SBIRS missile-warning satellites, classified national-security space payloads, the Trident-II D5 strategic deterrent, and various commercial-satellite work.

The Space segment is approximately $13bn of LMT's $73bn FY2025 revenue (~18%) — materially larger than RTX's space exposure but still secondary to the F-35 franchise that dominates the print quality.

Product roadmap

F-35 production: ~150 aircraft/year through 2030 nominal, with sustainment/aftermarket scaling as fleet matures. F-16 international production through 2026-2027. THAAD and Patriot production at near-full capacity on Ukraine-replenishment demand. Orion Crew Vehicle delivered for Artemis II (lunar flyby, 2026); Artemis III (lunar landing, 2027 nominal — Starship-HLS dependent); Artemis IV onwards. GPS-III SV-10 in production;

GPS-IIIF in development. Next-Gen OPIR Block 0 ground-segment contributions; Block 1 prime competition. Various classified national-security space programs continue to ramp.

What LMT does not contend in: launch (ULA is partly-owned with Boeing but ULA is a separate JV), commercial-LEO satellites at scale, small-sat-bus mass-production (acquired Terran Orbital in 2024 for $450m partly to address this gap, but Terran Orbital is sub-scale relative to pure-plays).

The financial print

FY2025 revenue $73bn (10-K filed February 2026), operating margin ~11%. Q1 2026 print (April 22, 2026) showed F-35 production milestones on schedule but classified-program revenue lumpy. Sell-side consensus for FY2026 is $75-78bn (Goldman, Morgan Stanley, JPMorgan, Bernstein). Forward P/E ~17.8x. Dividend yield ~3%. 1-year stock return is approximately -5% — LMT has underperformed the market and dramatically underperformed Space-pure-plays. Q2 2026 print July 22, 2026.

Customer mix today

In FY2025: ~70% US DoD direct (F-35 dominant, then THAAD/Patriot, then space programs), ~25% international (F-35 international partners + Patriot international + Sikorsky international), ~5% civil/commercial (Orion for NASA is technically a NASA civil contract, GPS-IIIF, certain commercial-satellite work). The structural shift in 2024-2026 has been the European Patriot order surge plus F-35 international expansion (Germany, Israel, Korea, Poland orders) plus the Orion ramp. Space-segment revenue is approximately $13bn split across Orion, GPS, Next-Gen OPIR, and classified — solid base but not growing as fast as pure-play space.

What’s actually happening at the Space Force / NASA

Next-Gen OPIR Block 0 first satellites launched 2025-2026; LMT is the GEO-segment prime (Northrop is the polar-orbit segment prime). Block 1 awards in 2026-2027 are the key competition — proliferated-LEO architecture favours smaller-satellite-bus suppliers, and LMT’s Terran Orbital acquisition addresses but does not solve this. Resilient MW/MT contracting awards in late-2026 will allocate proliferated-LEO production between LMT (via Terran), Northrop (via Tyvak), and pure-plays (York Space, Millennium, Lockheed’s own internal small-sat-bus). Orion is on schedule for Artemis II (2026); Artemis III is gated by SpaceX Starship-HLS readiness which is the binding constraint, not LMT execution.

The competitive threat / Northrop Grumman, Boeing, RTX

In space, LMT competes against Northrop Grumman (next-gen OPIR polar segment, B-21, Antares), Boeing Defence (Starliner, classified-satellite work), and RTX (Raytheon missile-warning). In the proliferated-LEO architecture LMT acquired Terran Orbital to compete with Northrop-Tyvak and pure-play satellite-bus suppliers, but Terran is sub-scale. In F-35 the competitive perimeter is essentially closed — F-35 is the program; the only F-35 competitor is the (much smaller) 6th-gen NGAD which is also LMT/Northrop. The biggest competitive risk is allies cancelling F-35 orders — Germany hedging with Eurofighter, Canada wavering historically, etc.

The terminal risk

F-35 program plateau is the dominant terminal-risk. F-35 production peaks ~2027-2030 and then transitions to sustainment-dominant economics; if NGAD doesn't ramp on schedule, LMT's largest revenue line stops growing. Proliferated-LEO architecture displacement is the space-segment-specific risk — LMT's GEO-centric missile-warning franchise migrates toward LEO-proliferated where pure-plays have cost advantage. The third risk is the bond-proxy defence-prime narrative losing capital share to pure-play space-and-autonomy thematics — the same problem as RTX, structurally. The fourth risk is the Trump administration's defence-priority resorting — F-35 international sales sensitive to foreign-policy turbulence; international F-35 cancellations directly impair the largest revenue line.

Bull / Gap / Optionality

Bull

1. F-35 sustainment annuity. ~3,000-aircraft lifetime fleet at $500-700k/year sustainment-per-aircraft creates a $1.5-2bn/year sustainment-only revenue stream — multi-decade annuity.

2. European Patriot / THAAD demand. $40bn+ cumulative orders through 2030 split with RTX; LMT is at full production capacity.

3. Orion Artemis franchise. Orion-spacecraft revenue scales as Artemis cadence rises (assuming Mars-pivot does not descope Artemis); each Orion vehicle is ~$1bn revenue.

4. Capital return discipline. ~$5bn annual buyback plus 3%+ dividend yield supports total-return floor.

Gap

1. STRONG_EXIT, RSI 43.4, below 50MA. Same chart picture as RTX — capital rotating out of defence primes into pure-play space.

2. F-35 plateau approaches. Production peaks 2027-2030; the multi-decade growth story transitions to sustainment-economics.

3. Proliferated-LEO displacement. GEO-centric missile-warning franchise loses share to small-sat-pure-plays; Terran Orbital acquisition is partial mitigation but sub-scale.

4. Bond-proxy narrative losing capital share. Same structural issue as RTX. The space-segment growth at LMT is real but is dwarfed in the print by Aeronautics and MFC cyclicality.

Optionality

Event	Date / window	Direction
Q2 2026 earnings	July 22 2026	Binary on F-35 + classified-program timing
FY27 DoD budget	Q3-Q4 2026	Bull if F-35 + missile-warning funded
Next-Gen OPIR Block 1 contract awards	2026-2027	Bull if LMT wins GEO + LEO contribution
F-35 international orders	Ongoing	Bull if Germany / Korea ramp orders
Artemis II launch + Orion	2026	Bull if successful, neutral baseline

The trade

SKIP at $527.24. Entry zone $500.88-$553.60 is current ±5%, but identical structural problem as RTX — STRONG_EXIT signal, RSI 43.4, below 50MA, in a tape where capital is rotating out of defence primes and into pure-play space. The Space-segment is larger and better-positioned than RTX's (~$13bn vs ~$5bn revenue, with Orion and Next-Gen OPIR franchises) but it is still ~18% of revenue inside an 80%-defence-prime-aerospace business with F-35 plateau approaching. For Space-theme expression, the answer is RKLB (launch + Neutron) or BKSY (tactical imagery). For a defence-prime expression, LMT trades at a slight discount to Northrop on space exposure but with F-35 concentration risk; not obviously cheaper. I would re-engage at $480-500 (clear oversold with

RSI 30-35) for a defensive-rotation trade. At current levels for Space-thematic exposure: zero. **Conviction: 3 / 10.**

STMicroelectronics (STM)

European semi major with space-rated chips, but auto-cycle dominates print — too thin a space angle to be the Space expression.

Investment Research · Photoncap-style deep dive · v1 of "STMicroelectronics" · 2026-05-22

What STMicroelectronics physically does

STMicroelectronics is a French-Italian semiconductor company with broad product portfolio spanning microcontrollers (STM32 family — dominant in industrial and IoT applications), analog and power devices (silicon-carbide MOSFETs for EV inverters, silicon power devices), MEMS sensors (motion, environmental, fingerprint — large iPhone supplier), automotive ICs (radar SoCs, ADAS chips, infotainment processors), and a smaller but visible space-rated/rad-hard chip line (used in commercial-satellite avionics, ESA-spec parts, certain DoD-classified-rad-hard applications).

The product mix is dominated by automotive and industrial. The space-rated chip line is real but small — sub-3% of revenue per analyst estimates, primarily ESA-qualified rad-hard microcontrollers and power devices for commercial-LEO and GEO satellite manufacturers. The Space-theme relevance is the rising commercial-LEO satellite-production ramp pulling rad-hard-chip demand higher, but the leverage is materially diluted by the much-larger auto and industrial segments where the cycle is the dominant driver.

Product roadmap

STM32 microcontroller family — dominant in industrial-automation, IoT, white-goods. Continues to gain share. Silicon-carbide MOSFETs for EV inverters — the strategic growth bet through 2023-2025, partly with Tesla as anchor customer, now in a deceleration phase as EV-demand growth has slowed. STMicro is one of three SiC MOSFET

majors (alongside Wolfspeed and Infineon). MEMS sensors — Apple iPhone is the dominant customer; the iPhone-supplier-base churn cycle materially affects STM revenue. Automotive ICs — radar, ADAS, infotainment, EV powertrain — full portfolio with major German and Japanese auto OEM customers. Space-rated chips — ESA-Class-1 / Class-2 rad-hard microcontrollers, power devices, ADC/DACs for commercial satellite avionics.

The financial print

FY2024 revenue $13.3bn, declining 23% from FY2023's $17.3bn cyclical peak, with operating margin compressed to ~13% from prior ~25%. FY2025 revenue ~$13.8bn per consensus (Bernstein, Citi, BofA). Q1 2026 print (April 24, 2026) showed sequential improvement on auto-segment stabilisation but SiC pricing pressure continues. Sell-side consensus FY2026 is $15.5-16.5bn with operating margin recovering to ~15%. Forward P/E ~21x. 1-year stock return ~+15%, well below the broader semi sector and below the Space pure-play basket. Q2 2026 print July 24, 2026.

Customer mix today

In FY2024: ~40% automotive (Tier-1s and OEMs — German, Japanese, Chinese), ~30% industrial (broad customer base in factory automation, energy, infrastructure), ~20% personal electronics (Apple dominant, plus Samsung, others), ~10% communications + space (terrestrial communications dominant, space sub-3%). The structural shift in 2024-2026 has been the SiC-automotive ramp deceleration plus the inventory-correction in industrial; auto-segment revenue declined ~15% in FY2024. Space-rated chips have been growing 20-30% year-over-year — meaningful in growth rate but immaterial in absolute terms.

What's actually happening at automotive customers

The auto-cycle is the binding issue. EV-demand growth has decelerated globally — Tesla volume growth has slowed from 50%+ to flat-to-modest-growth, European EV-OEM ramp has been slower than expected (Stellantis, Volkswagen Group), Chinese EV-OEM competition has intensified margin pressure. STMicro's SiC-MOSFET volume has plateaued in 2025 as EV-inverter design-wins ramp slower than the initial 2022-2023 sell-side projections. Wolfspeed and Infineon have similar dynamics. The SiC-pricing-pressure plus volume-deceleration has driven gross-margin compression for STM in the auto segment. The auto-cycle bottoming is the more material catalyst for STM revenue than any space-related theme.

The competitive threat / Wolfspeed, Infineon

In SiC specifically, Wolfspeed has been the most aggressive on capacity expansion (200mm SiC wafer ramp) but the weakest financially — Wolfspeed effectively went into restructuring in 2024-2025. Infineon is the more financially-stable SiC competitor and has been gaining share at European auto-OEMs. The SiC competitive landscape is intense with rapidly-improving 200mm-wafer cost-economics that favour scale players. In space-rated chips, STM competes against Texas Instruments (rad-hard-by-design parts), BAE Systems' microelectronics business, Microchip Technology, and several smaller European players (Cobham, e2v Teledyne, etc.).

The terminal risk

The SiC automotive ramp deceleration is the binding terminal-risk for STM's near-term print. If EV-demand-growth remains anaemic through 2026-2027, the SiC franchise that was projected to be the dominant growth driver underperforms expectations materially. The secondary terminal risk is the Apple-iPhone-supplier-rotation — STM has been a significant MEMS supplier to Apple for years but Apple has been progressively in-sourcing or rotating suppliers. The tertiary risk is broader semi-cycle pressure from US-China trade restrictions affecting STM's European customer base. The fourth risk is the technology-transition in MEMS — newer-generation MEMS architectures may displace STM's incumbent designs.

Bull / Gap / Optionality

Bull

1. **Auto-cycle bottoming.** Q1 2026 print showed sequential stabilisation; FY26 revenue +12% per consensus.

2. **SiC market positioning despite slowdown.** STM is one of three SiC majors with vertically-integrated 200mm wafer manufacturing; structural cost advantage when EV demand recovers.

3. **STM32 microcontroller dominance.** Industrial / IoT MCU market share continues to compound; high-margin business with low cyclical exposure.

4. **Space-rated chip growth.** Sub-3% of revenue but growing 20-30%; commercial-LEO satellite production ramp pulls rad-hard chip demand higher.

Gap

1. Space exposure is too thin to be the Space expression. Sub-3% of revenue does not justify owning the equity for Space-theme purpose; the auto-cycle dominates the print.

2. SiC pricing pressure continuing. Wolfspeed-restructuring-driven inventory dumping plus weaker-than-expected EV demand drives pricing degradation.

3. Apple MEMS rotation risk. Apple has been progressively in-sourcing or rotating MEMS suppliers; loss of significant socket would be material.

4. European semi-policy uncertainty. STM is a French-Italian dual-headquartered company subject to both national policy frameworks; M&A or strategic-restructuring discussions persistent.

Optionality

Event	Date / window	Direction
Q2 2026 earnings	July 24 2026	Binary on auto-segment + SiC
EV-demand recovery signals	Ongoing 2026	Bull if European EV pickup
Apple iPhone supplier-rotation news	Ongoing	Bear if MEMS rotation
ESA-Class-1 design wins on commercial-LEO	2026-2027	Bull marginal
French/Italian government strategic intervention	Open	Mixed

The trade

SKIP at $65.66. Entry zone $62.38-$68.94 is current ±5%, near 52-week highs ($65 — pretty much at the top end of $21-$66 range). For Space-theme exposure the equity is the wrong vehicle — sub-3% space-revenue means a doubling of space-rated chip demand (from $400m to $800m) moves total revenue by ~3% and earnings perhaps 4-5% at higher segment margins. That’s not how you express the Space theme. For a semi-cycle recovery trade, STM is one of several auto-semi recovery names competing against Infineon, NXP, and onsemi — none of which are obviously cheaper, but all of which would be picked on auto-cycle merits, not Space merits. The cleaner expression of “space-rated chips growing” is to wait for a pure-play (the closest current public proxy is OPTX for photonics, but it has similar dilution issues). I would only initiate STM on the auto-recovery thesis at $52-58 with strong EV-demand-pickup confirmation. For Space-theme: zero. **Conviction: 3 / 10.**

Syntec Optics (OPTX)

Tiny precision-optics supplier with cross-theme Space + Photonics tags — too thin and sub-scale to justify ownership.

Investment Research · Photoncap-style deep dive · v1 of "Syntec Optics" · 2026-05-22

What Syntec Optics physically does

Syntec Optics is a small-cap precision-optics manufacturer based in Rochester, New York. The product portfolio spans precision-molded polymer optics (injection-molded lenses, prisms, and assemblies for high-volume applications), diamond-turned metal optics (single-point-diamond-turning for IR optics, mirrors, beam-expanders), and optical assemblies (multi-component optical systems for defence, medical, and industrial customers). The customer base spans defence/aerospace (IR sensors, sighting systems, satellite optical payloads on smaller commercial-satellite buses), medical/biophotonics (endoscope optics, surgical-tool optics, ophthalmic-instrumentation optics), industrial (machine-vision lenses, laser-processing optics), and a smaller consumer-optics line (AR/VR headset optical components, automotive LiDAR optics).

The Space-theme relevance is the defence/aerospace optics segment supplying optical-assemblies for commercial-satellite payloads and some classified defence customers. The Photonics-theme relevance is the broader optical-components portfolio including the laser-processing and medical-biophotonics lines. The company is cross-listed in the user's thematic frameworks because of these dual exposures.

Product roadmap

Precision-molded polymer optics: high-volume production of polymer-injection-molded lenses for consumer-electronics, automotive-LiDAR, and industrial applications. Diamond-turned metal optics: low-volume specialty production for IR-imaging, defence-optical-systems, and certain satellite-payload optical components. Optical assemblies:

multi-component systems integration for defence customers, medical-device OEMs, and industrial machine-vision OEMs. No singular flagship product — the business is a high-mix precision-optics-manufacturing services model with hundreds of customer engagements.

The competitive perimeter OPTX does not contend in: large-volume glass-lens production (Schott, Hoya, Asahi Glass dominate), large-volume polymer-lens (Largan, GeniusOptics dominate consumer), large optical-systems integration (Northrop Grumman, L3Harris, BAE in defence). OPTX is a tier-2/tier-3 contract-manufacturer in precision optics — niche capability supplier, not category leader.

The financial print

FY2024 revenue approximately $13-15m (sub-scale, 10-K filed June 2025), operating margin variable around break-even. FY2025 revenue ~$17-19m per limited consensus visibility. The company went public via SPAC in 2023 and has had small-cap volatility throughout. Cash position is approximately $5-8m end-Q1 2026; quarterly burn is small but the absolute cash position is tight. 1-year stock return is approximately +50% riding small-cap photonics / space narrative inflows. Forward P/E is not meaningful (variable around break-even). Next print is Q2 2026 in mid-August 2026.

Customer mix today

In FY2024: ~40% defence/aerospace optics (mix of direct DoD via primes and commercial-satellite OEMs), ~30% medical/biophotonics (endoscope, surgical-tool, ophthalmic-instrument OEMs), ~20% industrial (machine-vision, laser-processing OEMs), ~10% consumer optics (AR/VR, automotive-LiDAR-OEM engagements). The customer base is fragmented across hundreds of engagements — no single customer represents more than ~10% of revenue. The 2024-2026 structural shift has been incremental rotation toward defence/aerospace as satellite-payload-optics demand has scaled with commercial-LEO production ramp.

What’s actually happening at customer base

The fragmented customer base means there is no single “key customer” mechanism to discuss. Defence-customer engagements are heavily channelled through primes (Northrop Grumman, L3Harris, BAE Systems via their internal optical-systems integration work). Medical/biophotonics customers are direct OEM relationships (Olympus, Stryker, Karl Storz, B. Braun on the endoscope-and-surgical-tool side; Alcon, Bausch & Lomb on the ophthalmic-instrumentation side). Industrial customers are direct OEM

relationships (Cognex, Keyence, Trumpf on machine-vision and laser-processing). The space-payload-optics customer base is smaller satellite OEMs (Terran Orbital, certain SpaceX-supply-chain engagements via primes, and various small-sat OEMs). None of these are individually material; the aggregate is the only relevant measure.

The competitive threat / II-VI/Coherent, Jenoptik, Edmund Optics

II-VI Incorporated (now rebranded Coherent following the Coherent acquisition) is the dominant US precision-optics supplier with multi-billion-dollar revenue and full vertical-integration across diamond-turning, polymer-molding, and glass-grinding. Jenoptik (German) is the European competitor at similar scale. Edmund Optics is the catalog-supplier-of-record for precision optics with substantial own-brand production. Asphericon, Crystallum, and dozens of smaller specialty-optics manufacturers compete in various niches. OPTX is structurally sub-scale relative to these — competing on agility, customer-service-customisation, and niche-technology-specialisation rather than cost or category-leadership.

The terminal risk

The sub-scale issue is the binding terminal-risk. In precision-optics-manufacturing, scale provides better wafer-of-photons material-sourcing economics, better diamond-turning-tool-capital-utilisation, and stronger customer-engagement-pricing-power. OPTX competes against multi-billion-dollar precision-optics primes from a $15-20m revenue base — the structural cost-disadvantage compounds over time. The secondary risk is the customer-fragmentation-without-anchor — no single customer relationship provides multi-year revenue visibility. The tertiary risk is the working-capital intensity of high-mix precision-manufacturing — cash conversion is poor and growth requires working-capital expansion. The fourth risk is the small-cap / micro-cap volatility — equity holders bear meaningful liquidity-discount and small-cap-volatility independent of fundamental performance.

Bull / Gap / Optionality

Bull

1. Cross-theme thematic relevance. Both Space (satellite-payload optics) and Photonics (broader laser/optical-components) themes can drive narrative-flow into the equity.

2. Commercial-LEO satellite-payload optics demand. Sub-segment growing 25-30% on broader satellite-production ramp.

3. Medical/biophotonics secular growth. Endoscope, surgical-tool, and ophthalmic-instrument markets growing 5-8% annually with reliable OEM customer demand.

4. M&A consolidation candidate. Sub-scale precision-optics suppliers are structural consolidation targets for II-VI/Coherent or Jenoptik; any acquisition at premium would benefit equity holders.

Gap

1. Sub-scale in a scale-driven category. $15-20m revenue against multi-billion competitors. Cost structure structurally disadvantaged.

2. Customer fragmentation = no anchor visibility. Hundreds of engagements with no single anchor customer means quarterly revenue is lumpy and forecasting visibility is poor.

3. Small-cap liquidity discount. Equity is thinly-traded with persistent liquidity-discount; institutional ownership is minimal.

4. Cross-theme dilution kills the pure-play angle. OPTX is neither a pure-play Space name nor a pure-play Photonics name; it is a precision-optics supplier with thematic-relevance to both. For Space-theme expression the leverage is too diluted.

Optionality

Event	Date / window	Direction
Q2 2026 earnings	August 15 2026	Binary on margin recovery + revenue print
Commercial-LEO design wins	Ongoing 2026	Bull marginal
Medical-OEM customer expansion	Ongoing	Bull marginal
M&A speculation	Open	Bull if acquisition at premium
Small-cap secondary offering	Open	Bear if dilutive raise

The trade

SKIP at $10.45. Entry zone $9.93-$10.97 is current ±5%, but OPTX is the wrong vehicle for any thematic expression. For Space-theme exposure, satellite-payload optics is sub-25% of OPTX revenue and the leverage to commercial-LEO ramp is too diluted. For Photonics-theme exposure, the broader optical-components portfolio is more relevant

but still sub-scale relative to II-VI/Coherent or Jenoptik. For a small-cap M&A speculation, the take-out probability exists but is non-trivially below 25% within 24 months. The cleaner Space expressions are RKLB, BKSY, or PL. The cleaner Photonics expression is COHR (II-VI/Coherent) or LITE for fibre-laser-and-component exposure. I would only consider OPTX as a sub-25bp speculation on confirmed M&A rumour, at which point the equity is already higher. **Conviction: 2 / 10.**

Redwire Corporation (RDW)

Space-infrastructure roll-up with strong franchise — but RSI 79 and +51.6% vs 50MA say "MISSED" not "buy."

Investment Research · Photoncap-style deep dive · v1 of "Redwire Corporation" · 2026-05-22

What Redwire physically does

Redwire is a space-infrastructure components and services prime assembled through the 2020-2023 roll-up of multiple smaller space-engineering firms — Adcole Space, Made In Space, Roccor, Deployable Space Systems, Deep Space Systems, Techshot, Oakman Aerospace, and others. The product portfolio spans seven primary categories: deployable solar arrays (the ROSA roll-out solar array used on Cygnus, Dream Chaser, Gateway PPE, and various DoD-classified payloads), payload-integration and avionics (Hera, Roman Space Telescope, Artemis modules), in-space manufacturing (BFF-3D printer, PIL-BOX bioprinter, OASIS thin-film optical manufacturing), camera and sensor systems, deployable structures (booms, masts, antennas), digital-engineering services, and the SabreSat responsive-satellite-bus in development.

The technical mechanism is heterogeneous Tier-1 space-components-supplier to NASA, DoD, and commercial-space primes (Northrop, Lockheed, Sierra, Blue Origin, Boeing, SpaceX). The strategic differentiator is the in-space-manufacturing portfolio — PIL-BOX produced the first-ever-printed tissue in microgravity (proof-of-principle, 2025); OASIS produced superior-optical-fibre in microgravity demonstrating the in-space-materials thesis at experiment-scale.

Product roadmap

ROSA solar arrays: multiple launches per year, ~$80-120m annual revenue growing 25%+. Hera (launched October 2024): in cruise to Didymos-Dimorphos asteroid sys-

tem, arrival 2026. Roman Space Telescope: launching 2027, ~$80-120m total Redwire contract value over FY25-27. Artemis II, III, Gateway PPE module: $40-60m annual revenue. BFF-3D, PIL-BOX, OASIS: experiment-scale on ISS, commercial-scale ambitions on Starlab and Axiom post-2030. SabreSat satellite-bus: in development, competing for Tactically-Responsive-Space (TRS) mission awards in 2026. The competitive perimeter Redwire does not contend in: launch, satellite-operations-at-scale, full-station-infrastructure.

The financial print

FY2024 revenue $304m, up 25% year-on-year (10-K filed March 2025). FY2025 revenue ~$385m per consensus. Bernstein “buy” with FY2026 at $440-490m; Morgan Stanley “neutral” at $410-450m. Cash at end-Q3 2025 was approximately $35m against $10-15m quarterly burn — 3-4 quarter runway, tight. The Q1 2026 print on May 14, 2026 showed cash holding up better than expected on milestone-revenue timing plus a small non-dilutive line-of-credit expansion. 1-year stock return is approximately +180% — RDW has been the most aggressive performer in the Space basket. Next print is Q2 2026 in mid-August 2026.

Customer mix today

In FY2024: ~50% NASA + NASA primes (Northrop, Lockheed, Boeing as integrators), ~25% direct DoD and DoD primes (USSF, Northrop, L3Harris), ~15% commercial space (Sierra, Blue Origin, SpaceX supply), ~10% international (ESA, Airbus). The structural shift in 2024-2026 has been the rising SpaceX customer share (now ~$30-50m annual run-rate, largest single commercial customer) plus the migration toward direct DoD via SabreSat-Tactically-Responsive-Space positioning.

What’s actually happening at NASA Roman + Artemis

Hera launched October 2024 carrying Redwire avionics and payload-integration — a high-profile science-mission reference. Roman Space Telescope is the major near-term integration milestone, launching 2027 with $80-120m total Redwire contract value over FY25-27. Artemis II is on schedule for 2026 lunar-flyby; Artemis III (lunar landing) is gated by SpaceX Starship-HLS readiness. Total Artemis-segment revenue is ~$40-60m annually and growing. The mechanism of revenue recognition is milestone-based and quarter-to-quarter lumpy.

The competitive threat / Northrop, Astranis, Terran Orbital

In solar arrays, Northrop Grumman's heritage solar-array business is the named competitor; ROSA has been winning incremental design slots from Northrop heritage. In payload integration, Northrop, Lockheed, and Boeing in-house capabilities compete. In in-space manufacturing, Redwire is essentially alone at commercial scale — a strength (no direct competitor) and a weakness (no validated commercial demand). In SabreSat, Astranis (well-capitalised with $250m+ in 2024 funding), Terran Orbital (Lockheed strategic), and several emerging entrants compete for TRS mission awards.

The terminal risk

The parabolic move has front-run any plausible catalyst. RSI 79 + +51.6% vs 50MA + +14.6% on day is textbook melt-up exhaustion. The structural risks remain: tight cash runway (3-4 quarters at recent burn), customer-concentration in NASA/DoD primes, in-space-manufacturing commercial-demand uncertainty (real investment, unproven commercial customer pipeline), and small-float governance overhang from the roll-up cap-structure complexity.

Bull / Gap / Optionality

Bull

1. Voyager-Redwire merger speculation. Per Bloomberg June 2025 ongoing, combination creates a ~$1bn-revenue space-services prime with cap-structure to weather to breakeven. Rumour-driven multiple expansion of 30%+ if announced.

2. Roman + Artemis revenue ramp. 2026-2027 milestones tied to these programs worth $80-150m incremental revenue.

3. SabreSat TRS win. If Redwire wins one or more TRS missions, SabreSat becomes $50m+ annual revenue line by 2027.

4. In-space-manufacturing inflection. If a commercial pharma customer (Pfizer, Merck) signs in 2026 for PIL-BOX, segment goes from cost-centre to revenue-line — potential $50-200m annual revenue by 2030 at scale.

Gap

1. RSI 79 + +51.6% vs 50MA + +14.6% on day. Most parabolic in basket. Mean-reversion to 50MA implies 34% downside.

2. Cash runway tight. 3-4 quarters against milestone-revenue-timing creates dilutive-raise risk in 2026.

3. Customer concentration in NASA/DoD primes. Single budget reallocation impacts revenue.

4. In-space-manufacturing commercial demand unproven. BFF-3D and PIL-BOX have demonstrated technical capability; no commercial customer pipeline beyond NASA-funded R&D.

Optionality

Event	Date / window	Direction
Q2 2026 earnings	August 12 2026	Binary on margin + cash trajectory
TRS mission award	Q4 2026	Bull if SabreSat wins
Voyager-Redwire merger	Open	Bull if at premium
Roman Space Telescope launch	2027	Bull if milestone hit
In-space manufacturing customer signing	2027-2028	Bull if pharma/biotech signs

The trade

MISSED at $17.59. This was a Bucket A or B name three to four weeks ago at $11-12. The parabolic move from $11.60 (50MA) to $17.59 (+51.6%) with RSI 79 and +14.6% on day has front-run every plausible catalyst — Voyager-merger rumour pricing, in-space-manufacturing commercial-signing speculation, SabreSat-TRS-win optimism are all in the price. I would re-engage at $11.60-$13.20 (pullback to the 50MA cloud — the 34% retracement that historically resolves blow-off-top moves in this RSI range) for a 50bp starter, scalable to 100bps on confirmed Voyager merger announcement or PIL-BOX commercial signing. Stop on close below $10 (the prior consolidation breakout). The cleaner expression of "diversified space-systems" while RDW resets is RKLB at any pull-back. **Conviction at current price: 3 / 10 (would be 6/10 at the 50MA).**

Fundrise Innovation Fund (VCX)

Private-tech interval fund at +62.7% vs 50MA — illiquid, redemption-gated, and structurally wrong vehicle for tactical entry.

Investment Research · Photoncap-style deep dive · v1 of "Fundrise Innovation Fund" · 2026-05-22

What VCX physically is

VCX (the Fundrise Innovation Fund) is a non-traded interval fund managed by Fundrise, structured under the Investment Company Act of 1940. The fund holds equity stakes in late-stage private-tech companies — Anthropic (largest holding), Databricks, ServiceTitan (now public post-2024 IPO), Canva, Vanta, Mercury, Ramp, Fanatics, and a long tail of smaller positions. Subscriptions and redemptions occur on a quarterly basis at the fund's stated NAV, with redemptions subject to a 5% quarterly cap. The fund is not exchange-listed in the continuous-trading sense; the "price" investors see is the quarterly NAV. The "$285.65" in the watchlist is the most-recently-disclosed NAV per share, not a tradable market price.

The structural distinction from DXYZ (the closed-end-fund alternative) is that there is no premium-to-NAV problem in VCX because there is no continuous market — but there is a redemption-gating problem. The 5% quarterly redemption cap means investors cannot freely exit. The space-theme inclusion of VCX in this batch is essentially because some users hold it as a SpaceX-adjacent private-tech wrapper — but the fund's actual SpaceX exposure is small to nonexistent; the dominant holdings are AI (Anthropic, Databricks) and fintech (Mercury, Ramp, Stripe-small-stake).

Portfolio roadmap

The fund launched in 2022 with $10 minimum-investment (deliberately retail-accessible). Top holdings as of most recent quarterly report (Q1 2026): Anthropic

~17% (rising on Anthropic's valuation expansion to $60bn+), Databricks ~10% (with 2026-2027 stated IPO commitment), ServiceTitan ~7% (now public post-2024 IPO, may be monetised), Canva ~6%, Vanta ~4%, Mercury ~4%, Ramp ~3%, Fanatics ~3%. Long tail includes Notion, Brex, Stripe (smaller stake than DXYZ), and several SaaS/AI companies. Cash and near-cash ~30% of NAV.

Portfolio composition is approximately 50% AI/SaaS, 25% fintech, 15% consumer/marketplace, 10% other. There is essentially no space-economy exposure in VCX — no SpaceX, no space-companies in the core holdings.

The financial print

NAV per share at most recent disclosure is $285.65 (May 2026 watchlist reference). AUM is approximately $350-450m. Expense ratio 1.85% per Fundrise prospectus. No current dividend. Total return is via NAV appreciation. The fund is in continuous capital-raise mode with quarterly subscriptions accepted. Redemption requests subject to 5% quarterly cap. NAV has roughly doubled from inception to May 2026 driven by Anthropic and Databricks valuation growth. 1-year NAV return is approximately +75%, riding AI-valuation expansion.

The Q2 2026 NAV update drops mid-August 2026 — the next binary for NAV-mark-to-market.

Revenue mix in underlying portfolio

Aggregate portfolio: ~50% AI/SaaS (Anthropic, Databricks, Vanta, Notion), ~25% fintech (Mercury, Ramp, Stripe small stake), ~15% consumer/marketplace (Canva, Fanatics), ~10% other. Geographic ~80% US, ~10% Australian (Canva), ~10% other. The 2024-2026 structural shift has been the rising AI weight as Anthropic moved from $4-5bn (2023) to $60bn+ (2026 secondary-market valuations).

Demand-side dynamics

VCX flows are driven by retail-investor demand for private-tech exposure channelled through Fundrise's broader investor platform (2m+ investors). Structural demand driver is retail-investor inability to directly access Anthropic, Databricks, OpenAI, etc. Subscriptions have grown materially in 2024-2026 on AI-narrative inflows. Redemptions have been managed via the 5% quarterly cap — which has worked in normal conditions but was tested in the 2022 SaaS-correction (redemptions exceeded 5% cap, triggering pro-rata redemption).

The competitive threat / ARK Venture, ARK Innovation Funds, DXYZ

Competitors for retail-accessible private-tech exposure include ARK Venture Fund (similar pre-IPO holdings, retail-accessible), Fundrise's own real-estate funds (cross-product competition for investor allocation), and the public-CEFs including DXYZ. The competitive landscape for retail-accessible private-tech has broadened rapidly in 2024-2026. VCX advantages: no premium-to-NAV problem, $10 minimum, established Fundrise platform brand. VCX disadvantages: redemption-gating risk that DXYZ doesn't carry.

The terminal risk

Redemption-gating is the structural risk that defines VCX. In any sustained downturn, the 5% quarterly cap creates investor-lock-up. Investors who need liquidity discover they cannot redeem fully. The 2022 SaaS-correction proved this — redemption requests reached ~8-12% of AUM and triggered pro-rata redemption (~60% of requested-redemption-honoured). Generated retail-investor frustration and litigation-risk. The secondary terminal risk is the underlying-private-company-valuation-decline: AI valuations have run hard, and any down-round at Anthropic or Databricks would mark the NAV down. The tertiary risk is the Fundrise platform business-model — if Fundrise itself encounters business-model issues, the fund's structure could be impaired.

Bull / Gap / Optionality

Bull

1. AI/SaaS continued private-valuation expansion. Anthropic crossed $60bn, Databricks crossed $90bn (FT March 2026). NAV uplift compounding.

2. Multiple IPO catalysts in 2026-2028. Anthropic, Databricks, Canva all plausible IPO candidates. ServiceTitan precedent succeeded.

3. Retail-accessibility moat. Fundrise has built brand and distribution among retail private-tech investors; competing products struggle to replicate the $10 minimum.

4. No premium-to-NAV problem (advantage over DXYZ). Quarterly third-party-appraisal NAV is more rigorous than continuous-trading CEF premium mechanism.

Gap

1. +62.7% vs 50MA — most-extended in basket. This is not a tactical entry. The 50MA at $175.57 is the "would re-engage at" level, implying ~39% downside to a clean re-entry.

2. Redemption-gating creates investor lock-up in any downturn. 2022 episode shows the mechanism can fail under stress.

3. AI-valuation correction risk. Anthropic and Databricks valuations have moved aggressively; any down-round marks NAV down.

4. 1.85% expense ratio drag. Structural cost versus direct alternatives.

Optionality

Event	Date / window	Direction
Q2 2026 NAV update	Mid-August 2026	Binary on step-change NAV
Anthropic next primary raise	2026	Bull if higher valuation
Databricks IPO	2026-2027	Bull on IPO event
Canva IPO	2026-2027	Bull on IPO event
Sustained-downturn redemption-gate	Open	Bear if cap triggered

The trade

MISSED at $285.65. Entry zone is essentially "wait for the next quarterly NAV at a materially lower level" — current ±5% does not apply because VCX does not trade continuously. The +62.7% vs 50MA is the binding signal: the 50MA at $175.57 is the level at which I would consider re-engaging, and that implies a ~39% drawdown to re-entry. For tactical-traders, VCX is structurally wrong — quarterly NAV transactability means you cannot enter or exit on intraday opportunity, and the redemption-gating in any sustained downturn means even quarterly exit is uncertain. For long-duration allocators, VCX is structurally fine but the entry timing is wrong here — adding to the fund at current NAV after a 75%+ run is paying full price for AI-valuation-momentum that will mean-revert. The cleaner expression of "AI exposure with liquidity" is direct holdings of public AI proxies (NVDA, AMD, hyperscalers) plus waiting for Anthropic / Databricks IPO directly. For Space-theme expression, VCX has essentially no SpaceX exposure — it is in this batch as a thematic placeholder, not as a real Space-thematic vehicle. **Conviction: 2 / 10 (re-engagement at 50MA only).**

End of Bucket C + Bucket D batch. 10 names, ~13,500 words. House style: Photoncap 10-section template, brutal-honesty mode. Sources referenced inline throughout (Bernstein, Morgan Stanley, Goldman, JPMorgan, FT secondary-market data, Bloomberg, sell-side notes, scanner output 2026-05-22).

BATCH E — Hedge ETFs

UFO, ARKX, NASA, ITA

Procure Space ETF (UFO)

The broadest pure-play space ETF — 80% of weight in companies deriving the majority of revenue from space. The cleanest single-ticker theme hedge, but stretched on every momentum read today.

Investment Research · Photoncap-style deep dive · Bucket E v1 · 2026-05-22

What this ETF tracks

UFO is a passive index ETF that tracks the S-Network Space Index (SPACE), a modified capitalization-weighted, free-float- and space-revenue-percentage-adjusted equity index developed by S-Network Global Indexes. The "space revenue percentage adjustment" is the design choice that matters: each constituent's weight is scaled down if less than 100% of its revenue comes from space. So Sirius XM (satellite radio, ~4.5% weight) sits in the index because its revenue is technically satellite-delivered, but it does not dominate the way a naive market-cap weighting would suggest. The index reconstitutes and rebalances semi-annually, with a quarterly float-share adjustment for changes greater than 5%.

The "pure-play" rule is the load-bearing piece: at least 80% of index weight must sit in companies that derive a majority of annual revenue from space-related activities — and in practice "majority" usually means 100%. That gives UFO a structurally cleaner exposure than ITA (which is dominated by aerospace primes whose space exposure is a single-digit fraction of revenue), and a broader exposure than ARKX (which is active and concentrated, with the manager picking 33 names instead of 54). The S-Network index also runs a "Fast-Track Inclusion" rule that lets the index add newly public space companies without waiting through traditional waiting periods — designed explicitly so that a Starlink IPO, a Voyager, or an Axiom Space could enter the index within days of listing rather than at the next semi-annual rebalance. That fast-track rule is the single biggest reason UFO is the institutional default hedge: any new-issue catalyst gets reflected mechanically.

The ETF is run by ProcureAM, structured under the Procure ETF Trust II. NASDAQ-listed. Launched April 2019. As of mid-May 2026 it holds 54 names with top-10 concentration at 49.55%.

Index methodology / rebalance

Semi-annual reconstitution in mid-June and mid-December — these are the dates that matter for any inclusion/exclusion trade. The June 2026 rebalance is the next binary; with the Fast-Track rule active, a Starlink listing (rumored Q3 2026) could trigger an off-cycle inclusion. Float-share adjustments quarterly if any constituent's float moves more than 5%.

Cap-weighted at the index level but the space-revenue-percentage adjustment functions as a soft cap on non-pure-play names. There is no hard single-name cap inside UFO the way ITA caps at 22.5%, but in practice the largest position has been bounded in the 6-8% range by the revenue adjustment. The fund uses full replication rather than sampling, so tracking error is structurally low — historically inside 5 bps annualized excluding fees.

Notable structural quirk: UFO holds international space names (MDA Space, the Canadian satellite company, currently 4.71%) without an ADR wrapper, taking on FX exposure directly. That makes UFO a slightly broader-than-US bet relative to ARKX (88.8% US) and ITA (effectively 100% US).

AUM, expense ratio, daily volume

AUM sits at approximately $889M as of May 18, 2026 — up from roughly $745M six days earlier, a 19% AUM jump driven by both performance and inflows. That's a critical liquidity threshold; below $500M UFO trades with materially wider spreads and creation/redemption is sluggish. Expense ratio is 0.75% (75 bps) — the same as ARKX and NASA, materially higher than ITA's 0.40%. Average daily volume is now in the 250-400K share range, up from sub-100K in 2023. The fund pays a small distribution (quarterly) — yield ~0.4%, immaterial.

Bid-ask spread typically 5-8 bps intraday. Premium/discount to NAV stays inside ±10 bps in normal tape, can widen to 30-40 bps during melt-ups (today is one of those days). Use limit orders.

Top 10 holdings + concentration

Top 10 as of May 18, 2026: Rocket Lab (RKLB) 7.37%, Planet Labs (PL) 6.41%, ViaSat (VSAT) 5.91%, EchoStar (SATS) 4.86%, Globalstar (GSAT) 4.84%, MDA Space (MDA) 4.71%, Iridium (IRDM) 4.62%, Firefly Aerospace (FLY) 4.54%, SiriusXM (SIRI) 4.51%, Intuitive Machines (LUNR) 4.23%. Top 10 = 49.55% of fund. The other 44 names split the remaining 50.45%, which keeps the long tail meaningful — UFO is genuinely diversified across the universe in a way ARKX is not.

The composition tells you the tradeoff: RKLB, PL, FLY, LUNR are the high-beta new-space names you actually want (combined ~22.6% of fund). VSAT, GSAT, IRDM, SIRI are the legacy satcom drag (combined ~19.9%). MDA and SATS are the in-between. So you're paying for the new-space exposure but eating the legacy weight as a tax — that's the structural compromise of going passive.

What's happening at largest holding (RKLB)

Rocket Lab at 7.37% is the fund's largest single exposure, up from ~5% at the start of 2026 — driven by RKLB's parabolic run (now $137.47, +37% above its 50MA, RSI 69.3, scanner flagged EXIT_WARN). That means UFO's near-term beta is increasingly a derivative of one name. If RKLB rolls over from these levels, UFO loses ~8% of its weight to whatever drawdown RKLB takes. RKLB next catalyst is Q2 2026 earnings (early August, exact date TBC) and the first commercial Neutron flight, currently scheduled for late Q3 2026. Both binary events flow through UFO at full weight until the next semi-annual rebalance trims them.

The deeper read: RKLB went from 5% → 7.37% inside six months because the space-revenue-percentage adjustment doesn't reweight intra-period — only at rebalance. So UFO is currently more concentrated in RKLB than its methodology intends.

Alternative ETFs: UFO vs ARKX vs NASA vs ITA — when to use which

UFO is the right choice when you want broad passive exposure to the full space universe and you trust index discipline to handle re-weighting. It captures both pure-plays (RKLB, PL, FLY) and the satcom legacy tail (IRDM, VSAT, SIRI). Cheapest beta to "space melt-up" as a single ticker — but you eat ~20% legacy-satcom drag.

ARKX is the right choice when you want active management and don't mind paying for stockpicking risk. Ark concentrates (top 10 = 57%, only 33 names), tilts heavily toward defense crossover (LHX 9.6%, KTOS 7.8%), and explicitly chases the "innovation" thesis. Best when you trust Cathie Wood's team to rotate as the cycle matures — worst when you don't, since fees are the same as UFO but turnover is higher.

NASA is the right choice when you specifically want SpaceX exposure inside an ETF wrapper. It holds 89,771 SpaceX share-equivalents worth ~$59M (implying a ~$1.56T SpaceX mark) and that single position is the structural alpha — no other listed ETF gives you SpaceX directly today. Newer (launched 2024), smaller ($333M AUM), narrower (20-40 names), and you take some private-mark NAV opacity in exchange for pre-IPO optionality.

ITA is NOT a space ETF. It's an aerospace and defense ETF where the top 4 (GE Aerospace 19%, RTX 14.7%, BA 10%, HII ~5%) account for ~50% of the fund and the space exposure is reduced to RKLB at 5.12% plus a smattering of crossover names. Use ITA only when you want defense-prime exposure with a space tilt — which is the opposite trade from what you'd build with UFO/ARKX/NASA.

Decision tree: passive broad → UFO; active concentrated → ARKX; SpaceX wrapper → NASA; defense-prime sleeve → ITA.

Structural risk: index methodology, liquidity, tracking error

Methodology risk: the S-Network Space Index's "majority of revenue from space" rule is self-classified, with limited independent audit. SiriusXM at 4.51% is the obvious test case — does satellite-radio revenue belong in a space ETF? S-Network says yes. A reasonable investor might say no. If S-Network ever tightens its definition (as the index trustees have hinted they will at the 2026 methodology review), UFO could see a forced rotation of 15-20% of fund weight, which is a one-time event risk.

Liquidity risk: at $889M AUM the fund is now liquid enough for retail and small-institutional use, but creation/redemption arbitrage can break in fast melt-ups — premium-to-NAV can spike to 40-60 bps intraday during high-volatility prints. The underlying holds illiquid names (MDA Space trades thin on TSX; FLY is post-IPO with limited float), so APs cannot always hedge cleanly.

Tracking error: structurally low (under 10 bps annualized) due to full replication, but during semi-annual rebalances UFO has historically dragged the index by 30-50 bps over the rebalance window because the fund cannot front-run inclusion trades.

Bull / Gap / Optionality

Bull

1. Starlink IPO Fast-Track inclusion. The S-Network index revised methodology in 2025 to allow rapid inclusion of newly public companies — Starlink, if it IPOs in Q3 2026 as rumored, would be added off-cycle. Even at conservative free-float assumptions, Starlink would enter UFO at 8-10% weight day one, the new top position. That's a mechanical bid into UFO from every ETF AP and indexer on listing day.

2. AUM scaling unlocks institutional flows. UFO crossed $500M AUM in late 2025 and $889M today; the next thresholds ($1B, then $2.5B) unlock pension and insurance allocations that are currently size-blocked. Each threshold has historically driven 6-12 weeks of sustained inflows.

3. Broadest single-ticker beta to a space melt-up. UFO has rallied alongside the pure-plays (+14.8% above 50MA, RSI 71.7) but with materially less single-name idiosyncratic risk than RKLB or RDW individually. For an allocator who wants to add space without owning the single-name drawdown risk, UFO is the default vehicle.

4. Pure-play floor at 80% of weight. Unlike ITA where space exposure is <10% of fund, UFO is guaranteed by methodology to keep ≥80% of weight in space-revenue-majority names. That's a structural protection against fund drift as the index sponsor adds adjacencies.

Gap

1. RSI 71.7 / +14.8% vs 50MA — already extended. UFO is in the same melt-up tape as its underlyings. Buying here means buying after a 15% rally on the 50MA basis; a normal mean-reversion would take UFO to $53-55 (the 50MA), a 10-13% drawdown.

2. ~20% of weight is legacy satcom drag. SIRI, VSAT, IRDM, GSAT combined ~19.7% of fund. These names do NOT participate in space-launch / new-space rallies — they trade off satellite-radio subscribers and legacy ground-station bookings. So UFO underperforms ARKX during pure-play melt-ups and only catches up in broad rotation.

3. RKLB concentration drift. RKLB now 7.37% vs ~5% target at last rebalance. Single-name RKLB drawdown of 30% (plausible given RSI 69 + scanner EXIT_WARN) takes ~2.2% off UFO directly before any sympathy moves in the rest of the basket.

4. Premium-to-NAV widening in fast tape. Today UFO is likely trading 20-40 bps premium to NAV due to flow imbalance. Buying the premium means giving back that drag on any cool-off in volatility.

Optionality

Event	Date / window	Direction
June 2026 semi-annual rebalance	Mid-June 2026	Binary (rebalance trims overweight RKLB)
Starlink IPO listing	Q3 2026 (rumored)	Bull (Fast-Track inclusion mechanical bid)
S-Network methodology review	H2 2026	Binary (SIRI/VSAT inclusion debate)
AUM crosses $1B threshold	Q3 2026	Bull (institutional flow gate)

The trade

UFO is the right primary hedge ETF for the Space theme — broadest pure-play exposure, lowest single-name idio risk, mechanical inclusion of Starlink whenever it lists — but the entry is wrong today. RSI 71.7 and +14.8% vs 50MA means you're chasing. The trade is to wait for one of two setups: either (a) a pullback to $58-60 area (within ±5% of current and just above 50MA $53.73), or (b) a confirmed close above $63 on a Starlink IPO catalyst with volume expansion. **Entry zone: $58.62-$64.79** (current ±5%). **Sizing: 2.5% of risk capital** as a hedge sleeve, can scale to 4% if used as a substitute for individual single-name positions. **Stop: $53.73** (50MA, ~13% below current — wide because this is a hedge, not a thesis trade). **Catalyst: June 2026 semi-annual rebalance + Starlink IPO Fast-Track window**. **Pivot:** if you want a cleaner expression of just the new-space melt-up without the satcom legacy drag, ARKX is more concentrated in the names that actually move; if you specifically want SpaceX exposure, NASA is the only listed ETF that gives it to you.

Conviction: 6 / 10. The vehicle is right; the entry needs to come to you.

ARK Space Exploration & Innovation ETF (ARKX)

Active-managed concentrated space ETF — Cathie Wood's team picks 33 names with a heavy defense crossover tilt. Higher single-name idio risk than UFO, but materially purer exposure to the names that actually move.

Investment Research · Photoncap-style deep dive · Bucket E v1 · 2026-05-22

What this ETF tracks

ARKX is actively managed — there is no index. Ark Invest's research team selects 30-40 companies they classify into four buckets: orbital aerospace (launchers, satellites), suborbital aerospace (drones, eVTOL), enabling technologies (3D printing, AI, robotics), and aerospace beneficiaries (consumer of space services). The fund rebalances daily — positions can shift materially week-to-week based on Ark's conviction. That's the key structural distinction from UFO: UFO is rule-bound, ARKX is judgment-bound.

The current portfolio reads as a "defense-tech crossover" fund more than a pure space fund. Top holding L3Harris (LHX) at 9.62% is a defense prime with space and electronic warfare exposure. Kratos (KTOS) at 7.77% builds unmanned systems and defense space subsystems. Teradyne (TER) at 6.68% makes semiconductor test equipment that is only space-adjacent. Deere (DE) at 6.39% is in the fund because Ark believes precision-ag uses satellite imagery — a loose interpretation. So ARKX in 2026 is materially less "pure space" than its name suggests, and the manager has been transparent about this drift.

The fund was launched March 2021 at the peak of the SPAC-space cycle, fell ~70% from launch to 2023 trough, and has rallied back as the broader theme reignited. It's now a flagship Ark product alongside ARKK.

Index methodology / rebalance

No index — daily active rebalancing. Ark publishes its holdings every trading day after the close, which is unusually transparent and means tracking error vs. self is zero by definition but tracking error vs. theme is whatever Ark wants it to be.

Turnover is high: ARKX has run 40-60% annual turnover historically, vs. UFO at <15%. That means you're paying the 0.75% expense ratio AND eating internal trading costs (estimated 15-25 bps annualized). Active management is expensive even when the manager doesn't admit it.

Rebalance triggers tend to cluster around earnings prints and major contract awards. Ark has a documented pattern of adding to winners and trimming losers (momentum-tilted), which works in the cycle phase we're in but reverses brutally in drawdowns.

AUM, expense ratio, daily volume

AUM is approximately $929.6M as of May 21, 2026 — slightly larger than UFO ($889M), which is striking because ARKX was a perennial outflow story from 2021-2024. The 2026 rally has driven a 40%+ AUM recovery. Expense ratio 0.75%, identical to UFO and NASA. Daily volume runs 600K-1M shares — meaningfully more liquid than UFO on a share-volume basis.

Bid-ask spreads tight (3-5 bps). Premium/discount to NAV is generally inside ±15 bps, but because Ark publishes holdings daily, AP arbitrage is highly efficient and prem/disc rarely sustains.

Top 10 holdings + concentration

Top 10 as of early 2026: L3Harris (LHX) 9.62%, Kratos (KTOS) 7.77%, Rocket Lab (RKLB) 7.21%, Teradyne (TER) 6.68%, Deere (DE) 6.39%, plus five more for a top-10 = 57.02% of fund. Only 33 total holdings, meaning the bottom 23 names share just 43% of weight. That's materially more concentrated than UFO (top-10 49.55% across 54 names).

The composition is the story: of the top 5, only RKLB is a pure-play space name. LHX and KTOS are defense primes/subs with significant but not majority space exposure. TER is a semiconductor capital-equipment name. DE is industrial machinery. So ARKX is roughly half-defense, quarter-space-pure-play, quarter-adjacencies. If you want clean

exposure to RKLB, ASTS, PL, FLY in an ETF wrapper, ARKX is NOT it — UFO or NASA are.

Geographic mix is 88.8% US, vs. UFO's roughly 75% US.

What's happening at largest holding (LHX)

L3Harris at 9.62% is the largest single bet. LHX is a defense prime ($25B revenue, $50B market cap) with growing space exposure through its Mission Networks and Space Systems segments — roughly 25-30% of LHX revenue is now space-classified, primarily Space Force ground control, missile-warning satellite buses, and resilient comms. LHX has been a recent contract winner under the FY26 defense budget — the Space Development Agency's Tranche 2 Tracking Layer award in March 2026 was an estimated $400M to the LHX-Rocket Lab consortium. RSI on LHX is 53 — neutral. It has not melted up the way the pure-plays have.

The implication for ARKX: with 9.62% in LHX, the fund's beta to "defense budget continuation" is materially higher than UFO's. Any FY27 budget skirmish (continuing resolutions, sequestration risk) flows through LHX → ARKX directly.

Alternative ETFs: UFO vs ARKX vs NASA vs ITA — when to use which

ARKX's lane is: "actively managed defense-tech crossover ETF marketed as space." Use it when you specifically want concentrated exposure to LHX + KTOS + RKLB as a basket and you trust Ark to rotate the long tail. Avoid it when you want pure-play space exposure (UFO is broader, NASA is more SpaceX-tilted) or when you want low-fee defense-prime exposure (ITA is 35 bps cheaper for similar large-cap defense names).

Versus UFO: more concentrated, more defense-tilted, daily active, same fee. Wins when defense names lead; loses when pure-play new-space leads.

Versus NASA: missing SpaceX entirely. NASA gives you the SpaceX private mark; ARKX doesn't.

Versus ITA: ARKX top-5 overlap with ITA is meaningful (LHX is in ITA at 4-5%, RTX is in ITA at 14.7% but absent from ARKX). ARKX gives you defense-tech innovation tilt; ITA gives you cap-weighted defense primes. ARKX is the more aggressive expression, ITA is the more conservative one.

Structural risk: index methodology, liquidity, tracking error

Manager risk is the dominant structural risk. Ark has a public track record of (a) concentrating heavily, (b) doubling down in drawdowns, (c) and rotating themes aggressively. ARKX could plausibly be 40% AI-robotics-adjacent and 30% defense-tech by 2027 if Ark decides the space narrative is exhausted. There is no methodology constraint to prevent this.

Thesis drift risk is the related concern: the fund name says “Space Exploration & Innovation” but Ark has interpreted “innovation” loosely enough to include Deere and Teradyne. If you are buying ARKX as a “space” wrapper, you are not getting what’s on the label.

Daily-rebalance friction is the third risk: 40-60% annual turnover plus a flowing AP creation/redemption book means ARKX accumulates implicit trading costs that the headline 0.75% fee doesn’t show.

Concentration risk is meaningful: top 10 = 57% means a single-name blow-up at LHX, KTOS, or RKLB would drag the fund disproportionately. RKLB at 7.21% has RSI 69 and is in melt-up territory — single-name mean reversion is the near-term risk.

Bull / Gap / Optionality

Bull

1. Defense budget tailwind via LHX + KTOS overweight. FY26 defense budget is set, FY27 is in mark-up, both trending up. Combined LHX + KTOS weight (17.39%) gives ARKX direct mechanical beta to budget continuation that UFO doesn’t have.

2. Active rotation flexibility in late-cycle tape. UFO is forced to hold SIRI and VSAT at index weight regardless of fundamentals. ARKX can trim or exit. In a topping market that flexibility is structural alpha — assuming Ark uses it.

3. AUM momentum has flipped positive after 3-year drought. ARKX saw net inflows for 12 of the last 16 weeks per ETF.com data. Once Ark’s flow narrative reverses (post-2023 trough), self-reinforcing inflows tend to persist.

4. Tighter portfolio means cleaner upside in pure-play rallies. Only 33 names vs. UFO’s 54 means each pure-play winner pulls more weight. RKLB at 7.21% in ARKX

contributes more to NAV than RKLB at 7.37% in UFO simply because ARKX has fewer dilutive long-tail names.

Gap

1. Half the fund is not space. LHX, TER, DE, plus several mid-cap industrials add up to ~40% of weight in names where space is a minority of revenue. If you wanted defense, you should be in ITA at 0.40% fees. If you wanted broad industrials, in VIS at 0.10%. Paying 0.75% for an actively-managed defense-tech basket marketed as space is structurally overpaying.

2. RSI ~65 and +12% vs 50MA — late. Same melt-up tape as UFO; entry is chasing.

3. Manager turnover / thesis drift risk. Ark's portfolio composition has shifted materially in past cycles. There's no constraint on the manager rotating out of space entirely if they see better innovation elsewhere — and the fee stays the same regardless.

4. Daily holdings disclosure invites front-running. Ark publishes daily — every other fast-money desk knows what Ark holds and when they adjust. That has historically driven ~25-50 bps of annual drag from APs/HFs pre-positioning ahead of Ark trades.

Optionality

Event	Date / window	Direction
LHX SDA Tranche 3 award	Q3 2026	Bull
KTOS Valkyrie unmanned production contract	H2 2026	Bull
RKLB Neutron first commercial flight	Q3 2026	Binary
Ark thematic rebalance (rumored AI rotation)	H2 2026	Bear (thesis drift)

The trade

ARKX is a more concentrated, more defense-tilted, actively-managed alternative to UFO with identical fees. The use case is: you want space-theme exposure with a defense kicker and you trust Ark's stockpicking. **Entry zone: $32.74-$36.18** (current ±5%). **Sizing: 1.5% of risk capital** — smaller than UFO because the active risk is opaque. Treat as a satellite position to UFO, not a substitute. **Stop: $30.50** (just below 50MA, structural support). **Catalyst: LHX SDA Tranche 3 award + Q3 2026 RKLB Neutron flight**. **Pivot:** if you want the same defense-tilt with lower fees and cap-weighted

discipline, ITA at 0.40% gets you most of the LHX + RTX exposure for half the cost; if you want pure space without the defense overlap, UFO is broader and NASA is purer.

Conviction: 5 / 10. Good vehicle for a specific use case; mispriced as a “space ETF” because half of it isn’t.

Tema Space Innovators ETF (NASA)

The only listed ETF that holds SpaceX directly. Newer entrant ($333M AUM), narrower portfolio (~20-40 names), structurally higher NAV opacity but unique private-mark optionality.

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What this ETF tracks

NASA is an actively managed ETF run by Tema ETFs (a UK-founded thematic specialist that launched on NYSE Arca in 2024). The mandate is "actively managed exposure to the emerging space economy through a portfolio of both publicly listed companies and a limited selection of high-conviction, pre-IPO companies, including space exploration, rockets and propulsion systems, and satellite technology." That parenthetical is the entire reason this ETF exists: NASA holds private SpaceX shares directly inside a '40 Act mutual-fund-style wrapper.

As of May 20, 2026, NASA holds 89,771.84 common-share-equivalents of SpaceX, marked at a total value of $58,912,771 — which implies a SpaceX market-cap mark of approximately $1.56 trillion. The SpaceX position is roughly 17-18% of fund NAV. No other listed ETF gives you that exposure. ARKX did briefly hold SpaceX through the ARKVX private fund, but ARKX itself (the public ETF) does not. So NASA is the only liquid way to get SpaceX inside an ETF.

The remaining 80-83% of the fund is invested across roughly 20-40 publicly listed space economy names — overlap with UFO and ARKX in the obvious places (RKLB, PL, ASTS, IRDM, RDW, LUNR, FLY) and some idiosyncratic names that Tema's PMs add (Reaction Engines, Sidus Space, BlackSky).

The ticker "NASA" is licensed marketing — there is no relationship with the National

Aeronautics and Space Administration.

Index methodology / rebalance

No index. Active management with discretionary rebalance — Tema does not publish a fixed rebalance schedule. SpaceX share count was unchanged from Q1 2026 to Q2 2026; the mark moves with the latest tender-offer-implied valuation. Tema discloses holdings monthly (not daily like Ark), which means there is a meaningful information lag.

Methodology around the SpaceX mark: Tema marks private positions using a combination of (a) most recent primary or tender round, (b) third-party valuation report, and (c) independent fair-value committee. This is standard '40 Act practice but the inputs are inherently judgmental. SpaceX's most recent reported tender was at approximately $1.4 trillion (Dec 2025); NASA's current $1.56T mark embeds a ~12% premium to that, presumably based on later secondary trades.

The 20-40 name public sleeve is concentrated by design — Tema is explicit about wanting only "high-conviction" names. Turnover is moderate, ~25-35% annually.

AUM, expense ratio, daily volume

AUM is approximately $333M as of May 12, 2026 — meaningfully smaller than UFO ($889M) or ARKX ($930M). The fund crossed $1B briefly in late 2025 then saw outflows during the early-2026 chop; current AUM has recovered as the SpaceX mark moved higher. Expense ratio 0.75%, same as UFO and ARKX — but note Tema also charges underlying administrative fees on the private SpaceX position (~10-15 bps additional), which doesn't appear in the headline number.

Daily volume is 80K-200K shares — by far the lowest of the four ETFs in this section. Bid-ask spreads 10-15 bps, can widen to 25-40 bps in fast tape. Use limit orders aggressively.

Premium/discount to NAV is the structurally tricky part: because the SpaceX mark only updates monthly (and roughly), NASA can trade meaningful premium to stale NAV when SpaceX news hits. The Dec 2025 tender at $1.4T drove a 4-day NASA premium of +180 bps before NAV adjusted. Expect similar dislocations around any SpaceX news.

Top 10 holdings + concentration

SpaceX 17-18% (largest), then a tail of public space names. Public-side top holdings overlap heavily with UFO: RKLB, PL, IRDM, ASTS, LUNR, FLY, RDW, BKSY are all in the top 15. Top 10 estimated at 58-62% concentration (Tema does not publish exact weights for top 10 monthly).

The composition tells you the structural bet: 17-18% in SpaceX private, ~40% in the new-space pure-plays (RKLB et al), ~20% in satcom (IRDM, GSAT, MDA, SATS), and ~22% in cash/adjacent names. So NASA is structurally a "SpaceX + new-space concentrated" play with less legacy-satcom drag than UFO and less defense-tech drift than ARKX.

What's happening at largest holding (SpaceX private)

SpaceX is in the middle of a critical 18-month window: Starlink IPO is rumored for Q3-Q4 2026, Starship orbital reuse cadence is ramping (last reported launch cadence of 1 every 14 days, target every 7), and the Department of Defense Golden Dome contract awards are flowing — SpaceX was named the prime integrator in March 2026 with an estimated $2.5B initial obligation. All of this flows into NASA's NAV mark whenever Tema updates it.

The next likely mark-up trigger is a Starlink S-1 filing (if it happens in summer 2026). At that point the publicly disclosed Starlink financials would force a transparent mark, and SpaceX-parent could re-rate up or down depending on what the standalone Starlink numbers show. NASA is the cleanest ETF expression of that binary.

The downside is the inverse: if Starship slips again or the Golden Dome integration shows execution friction, the SpaceX mark would face downward pressure at the next valuation committee — and that hit lands on NASA before any other holder can react.

Alternative ETFs: UFO vs ARKX vs NASA vs ITA — when to use which

NASA's lane is unique: "I want SpaceX exposure inside an ETF wrapper, and I am willing to accept private-mark NAV opacity to get it." There is no substitute among the four. Destiny Tech100 (DXYZ) is the only other listed vehicle with material SpaceX exposure, and it trades as a closed-end fund with persistent premiums (currently +60-100% premium to NAV).

Versus UFO: NASA is more concentrated, narrower (20-40 vs 54 names), and adds SpaceX. Less liquidity, higher prem/disc risk. Same fee.

Versus ARKX: NASA has less defense crossover (no LHX/KTOS overweight) and more pure-play space concentration. Both active, same fee, NASA has SpaceX while ARKX does not.

Versus ITA: completely different exposure. ITA is defense primes; NASA is new-space + SpaceX.

The right use case for NASA is as a 1-2% sleeve specifically targeting SpaceX optionality — paired with a larger UFO position for the broader theme.

Structural risk: index methodology, liquidity, tracking error

Private-mark NAV risk is the dominant structural risk. The SpaceX position is marked subjectively. If the fair-value committee writes down SpaceX by 20% in any single update (which has happened in past private holdings during downturns), NASA NAV drops ~3-4% in a single day with no warning and no public catalyst.

Liquidity risk: $333M AUM with 80-200K daily shares is the lowest in the group. In a fast drawdown NASA could see widening prem/disc spreads of 100-150 bps before APs can rebalance.

Tema operational risk: smaller fund sponsor than ProcureAM (which runs UFO) or Ark (which runs ARKX) or iShares (which runs ITA). Operational and counterparty risk is materially higher. Tema has done well in its short history but the firm is roughly 4 years old.

Marketing/ticker risk: the “NASA” ticker is provocative. The actual NASA (the agency) has not challenged it but reserves the right. Probability of forced rename low but non-zero.

Bull / Gap / Optionality

Bull

1. SpaceX is the single biggest binary in the theme. Starlink IPO + Starship cadence + Golden Dome integration combine into the highest-impact catalyst cluster in

the space sector — and NASA is the only ETF expressing it directly. If SpaceX prints a $2T mark on a Starlink S-1, NASA NAV moves 4-5% mechanically.

2. Smaller AUM = nimbler portfolio. $333M is small enough that Tema can rotate without market impact, exit losers cleanly, and concentrate on conviction. UFO and ARKX cannot move at this size.

3. Less satcom drag than UFO. ~20% legacy satcom vs. UFO's ~20% but Tema actively underweights the slowest names (no SIRI, light VSAT). This makes NASA structurally better correlated to the pure-play rally.

4. Underowned by institutions. At $333M AUM most institutional allocators haven't sized in yet — NASA is below the threshold for pension and large endowment use. As that threshold ($500M-$1B) is crossed, structural flow tailwind.

Gap

1. SpaceX mark could re-rate down. Private valuations are sticky on the way up and sticky on the way down — but if Starlink S-1 reveals weaker Starlink unit economics than market embeds, the SpaceX-parent mark catches a downward revision. NASA NAV directly exposed.

2. Liquidity is structurally thin. 80-200K daily volume vs UFO's 400K+ means in a sharp drawdown spreads widen sooner. For position sizes above $5M this matters.

3. NAV is opaque. Public sleeve marks daily; private SpaceX marks monthly with judgment. That means NASA price action between updates is partly speculation about what the next mark will be. Not a clean signal.

4. Tema concentration risk. With only 20-40 names, NASA has top-10 concentration likely 60%+. Single-name blow-up in RKLB, ASTS, or PL drags more than in UFO.

Optionality

Event	Date / window	Direction
Starlink S-1 filing	Q3-Q4 2026	Bull (forced transparent mark)
Next SpaceX tender offer	H2 2026	Binary
Starship orbital reuse demo	Q3 2026	Bull
Tema crosses $500M AUM	H2 2026	Bull (institutional flow gate)

The trade

NASA is the right vehicle if you want SpaceX exposure inside an ETF wrapper — and only if that's specifically what you want. Otherwise UFO is broader and more liquid for the same fee. **Entry zone: $34.69-$38.35** (current ±5%). **Sizing: 1.5% of risk capital** as a satellite to a larger UFO position, NOT as a primary hedge. **Stop: $32.00** (~12% below current, wider stop because thin liquidity creates noise). **Catalyst: Starlink S-1 filing window (Q3-Q4 2026)**. **Pivot:** if you want SpaceX exposure with higher conviction but accept closed-end-fund premium volatility, DXYZ (Destiny Tech100) gives you concentrated SpaceX-plus-private-AI exposure but trades at structurally large premium to NAV.

Conviction: 5 / 10. Unique exposure, real liquidity tax, structurally interesting only as a 1-2% sleeve.

iShares U.S. Aerospace & Defense ETF (ITA)

Cap-weighted defense-prime ETF — the largest and cheapest aerospace/defense fund, but the space exposure is a rounding error. Include only when defense-prime exposure is the goal, not as a space hedge.

Investment Research · Photoncap-style deep dive · Bucket E v1 · 2026-05-22

What this ETF tracks

ITA tracks the Dow Jones U.S. Select Aerospace & Defense Index, a modified cap-weighted index of US aerospace and defense companies. Constituents are drawn from the Dow Jones U.S. Broad Stock Market Index and filtered for industry classification. The index holds 37 companies, ITA uses representative sampling and holds 48. Single-name cap is 22.5%, applied at quarterly rebalance. Index rebalanced quarterly (March, June, September, December).

The "cap-weighted" decision is the entire story for the space thesis. GE Aerospace is 19.04% of fund. RTX is 14.68%. Boeing is 10.00%. Howmet Aerospace is 5.18%. Those four alone are 49% of fund — and none of them is a meaningful space-economy player. GE Aerospace makes commercial aircraft engines (CFM/LEAP, GE9X); RTX has Pratt & Whitney engines plus Collins Avionics plus Raytheon missiles; Boeing makes 737s and 787s; Howmet makes aerospace fasteners and engine forgings.

The space exposure inside ITA shows up only at position 5 — Rocket Lab at 5.12% — and then trickles down in a handful of crossover names (Northrop Grumman has space systems, L3Harris has space systems, Lockheed has commercial space and ULA). But cap-weighted means the legacy primes dominate. ITA's space exposure on a revenue-weighted basis is probably 8-12% — meaningfully less than UFO (≥80% by design), ARKX (~50-60%), or NASA (~70-80%).

iShares (BlackRock) is the sponsor. NYSE Arca-listed. Launched May 2006 — by far the oldest ETF in this group. Massive AUM.

Index methodology / rebalance

Quarterly rebalance using the Dow Jones methodology — float-adjusted cap weighting with a 22.5% single-name cap to comply with RIC diversification rules under the Internal Revenue Code. GE Aerospace has tested the 22.5% cap before; if it exceeds at rebalance, weight is redistributed proportionally to other constituents.

Representative sampling means ITA does not hold all 37 index components — it holds 48 names that map the index's risk and return characteristics. Tracking error has historically been tight (under 10 bps annualized) but during sector dislocations (e.g., Boeing's MAX grounding 2019-2020) tracking error widened to 30-50 bps.

The methodology has one quirk relevant to the space thesis: "Aerospace & Defense" is interpreted broadly, so pure-play space companies (RKLB) are included once they meet the size and liquidity filters. RKLB entered the index in 2024 and has grown to 5.12% — which makes ITA an indirect way to access RKLB via an institutional wrapper.

AUM, expense ratio, daily volume

AUM is approximately $13.80 billion as of May 14, 2026 — vastly larger than UFO ($889M), ARKX ($930M), and NASA ($333M) combined. ITA is the institutional default vehicle for sector exposure and that AUM is structurally sticky.

Expense ratio is 0.40% (40 bps) — 35 bps cheaper than the three actively-or-space-pure-play alternatives. Over a 5-year hold the fee differential compounds to roughly 1.7-1.8% of total return. For a hedge position this matters less; for a core allocation it matters a lot.

Daily volume is 1.5-3 million shares — by far the most liquid in the group. Bid-ask spreads 1-3 bps, premium/discount inside ±5 bps in all but the most extreme tape.

Top 10 holdings + concentration

GE Aerospace 19.04%, RTX 14.68%, Boeing 10.00%, Howmet Aerospace 5.18%, Rocket Lab 5.12%, plus five more (typically Lockheed Martin ~5%, Northrop Grumman ~5%, TransDigm ~4%, Axon ~4%, L3Harris ~4%). Top 10 = 74.58% of fund. This is the highest concentration of any of the four ETFs in this section by a wide margin.

The reading: of the top 10, only RKLB is a pure-play space name. LMT, NOC, LHX have meaningful but minority space exposure (15-30% of their revenue). The rest are pure commercial aerospace or pure defense primes. So ITA's pure-space weight is realistically ~5-8% (RKLB + a fraction of LMT/NOC/LHX).

What's happening at largest holding (GE Aerospace)

GE Aerospace at 19.04% is the structural driver of ITA. GE is in the middle of a strong commercial-aircraft up-cycle (LEAP engine deliveries ramping, 9X for 777X starting volume production) plus a recovering defense engine franchise (F110 for F-15EX, T901 for the new Army helicopter). Revenue is growing high-single-digits, margins expanding. GE Aerospace reports Q2 2026 on July 22.

But GE Aerospace is not a space story. The link to the space theme is zero — GE Aerospace explicitly has no commercial space business. So ITA's largest position contributes nothing to the space thesis. It contributes to the defense thesis (modestly, through military aviation) and to the commercial aerospace cycle (heavily).

For an investor trying to express a space view, GE Aerospace at 19% is dead weight.

Alternative ETFs: UFO vs ARKX vs NASA vs ITA — when to use which

ITA's lane is defense and aerospace primes — period. It is NOT a space ETF and should not be substituted for UFO, ARKX, or NASA in any space-thematic allocation.

Use ITA when: you want diversified, low-cost, cap-weighted exposure to large-cap US aerospace and defense names (GE, RTX, BA, LMT, NOC, LHX). It's the right tool for a core 3-5% defense sleeve in a multi-theme portfolio.

Do not use ITA when: you want exposure to the new-space economy. The 5.12% RKLB position is washed out by the 49% in non-space primes. You'd pay $1 for $0.10 of space exposure.

Versus UFO: opposite trades. UFO is 80%+ pure space; ITA is ~5-10% space. They should be paired (UFO for theme, ITA for prime exposure), not substituted.

Versus ARKX: ITA is more concentrated in fewer pure-defense primes; ARKX has space + defense-tech tilt. ITA is cheaper (0.40% vs 0.75%), bigger, more liquid.

Versus NASA: completely different exposure. NASA gives you SpaceX; ITA gives you Boeing and RTX.

For our space deep-dive: ITA is the "anti-position" — useful to discuss because investors sometimes mistakenly use it as a space proxy and lose the thesis.

Structural risk: index methodology, liquidity, tracking error

Concentration risk is the major structural feature. Top 10 = 74.58% and top 4 = ~49%. Any single-name event at GE, RTX, BA, or HWM drags the fund disproportionately. Boeing's MAX grounding in 2019-2020 took ITA down materially relative to peers; another Boeing operational hit would do the same.

Sector-mix risk: ITA is structurally a bet on US defense + commercial aerospace as a combined sleeve. If the defense budget contracts (low probability in current environment but non-zero on a 5-year horizon) and the commercial aircraft cycle peaks (which historically takes 7-10 years from trough), both halves of ITA roll over together. ITA cannot rotate out.

Tracking error is structurally low (under 10 bps), but during quarterly rebalances the fund can drag the index by 5-15 bps over the rebalance window.

Methodology risk is low: Dow Jones is a mature, transparent index provider with predictable rules. Single-name cap at 22.5% provides at least a soft ceiling on GE concentration.

Bull / Gap / Optionality

Bull

1. Defense budget tailwind via top-10 prime concentration. GE, RTX, BA, LMT, NOC, LHX combined ~70% of fund. FY26 budget set, FY27 in mark-up, FY28 forecast continuing. Mechanical beta to defense budget continuation is the highest of the four ETFs here.

2. Lowest fee in the category at 0.40%. Over a multi-year hold the fee gap vs UFO/ARKX/NASA compounds to 1.5-2% of total return. For core allocators this matters.

3. Largest, most liquid vehicle. $13.8B AUM, 1.5-3M daily volume, 1-3 bp spreads. Can be sized in size without market impact.

4. Commercial aerospace cycle is mid-cycle, not late. Boeing + Howmet + RTX commercial exposure (~30-40% of fund) benefits from the multi-year aircraft delivery ramp. This is a real, separate cycle from defense — diversification within the fund.

Gap

1. Almost no space exposure. 5.12% RKLB plus fractional space weight inside LMT/NOC/LHX. If you are buying ITA expecting space-theme upside, you will be disappointed. ITA is the wrong vehicle.

2. Cap-weighted toward underperformers. RTX and LMT both show STRONG_EXIT signals on the scanner today (RSI 43, below 50MA). They sit at 14.7% and ~5% of fund respectively. Cap weight means ITA is mechanically dragged by names that are underperforming.

3. Boeing single-name risk. 10% in BA. Any operational, regulatory, or safety incident hits ITA 10%+. Boeing has a documented history of single-name dislocations.

4. Limited active rotation. Quarterly rebalance with fixed methodology means ITA cannot exit deteriorating names quickly. If a defense prime hits a sustained downcycle, ITA holds the position until the index methodology removes it — which can take quarters.

Optionality

Event	Date / window	Direction
GE Aerospace Q2 2026 earnings	2026-07-22	Binary
Boeing 737 MAX 7/10 certification	Q3 2026	Bull
FY27 defense budget mark-up	H2 2026	Bull
Quarterly rebalance (Sept 2026)	2026-09-30	Neutral (RKLB weight may grow if RKLB outperforms)

The trade

ITA is the cheapest, most liquid US aerospace & defense ETF — but it is not a space ETF and should not be used as one. The right use case is a 2-3% core defense sleeve paired with a separate UFO/NASA position for space-theme exposure. **Entry zone: $213.70-$236.20** (current ±5%). **Sizing: 2.0% of risk capital** as a defense-prime sleeve. **Stop: $210.00** (just below 50MA $223.16 and recent support). **Catalyst: GE Aerospace Q2 2026 earnings July 22, FY27 budget mark-up H2 2026**. **Pivot:** if you want defense-prime exposure with a stronger space tilt, ARKX is more concentrated in LHX + KTOS + RKLB but costs 35 bps more and is less liquid; if you want pure space without the prime drag, UFO is the answer and they pair well together at roughly 2:1 ITA:UFO sizing.

Conviction: 4 / 10. Excellent vehicle for what it is; wrong vehicle for the space theme it is sometimes mistaken for.

Sources referenced inline throughout. Reference v1 of this template format: `_Watchlist/hanmi-photoncap-style.md`. ETF data current as of May 14-21, 2026 per ETF.com, iShares fact sheets, Tema ETFs disclosures, ARK Invest daily holdings reports, and ProcureAM. Prices locked from `price-scan-2026-05-22.md`.

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