ATM Announcement

Stock Performance Study

Forward equity returns after at-the-market
offering announcements, 2020–2026

2,214 ATM events • 1,176 distinct issuers
median 63-day return: -11.1%
median excess vs sector: -13.9%

Built from SEC EDGAR full-text search + Yahoo Finance.
All artefacts in atm-study/exports/ and atm-study/data/.

Generated 2026-05-23

Executive summary

1. The market punishes ATM dilution — strongly.

Median 63-day return after ATM = −11.1% (n=1,710). Mean excess vs SPY: −13.2%; vs sector: −12.5%. Only 34% of ATMs had positive 3-month returns.

2. Size is the single biggest signal.

Small ATMs (<$50M, n=529): median ret_63d −23%, 22% positive. Large ATMs (≥$500M, n=187): +1.5%, 55% positive. Small = distress signal; large = routine financing.

3. Sector divergence is striking.

REITs (n=272) and Utilities (n=45) essentially neutral (median ≈ 0%, 50%+ positive). Healthcare (n=646), Tech (n=212), Industrials (n=139) hammered (median −19% to −30%, ~25% positive).

4. 2020 was the only positive-mean year.

Pandemic-era stimulus rewarded raises (median +1.7%, 53% positive). Every year since has been a punishment regime; 2022 and 2025 worst (median −15%).

5. Delisting risk is meaningful.

15–17% of 2022–23 ATM issuers had delisted within 2 years. ~28% of pre-2024 ATM issuers are gone by 2026.

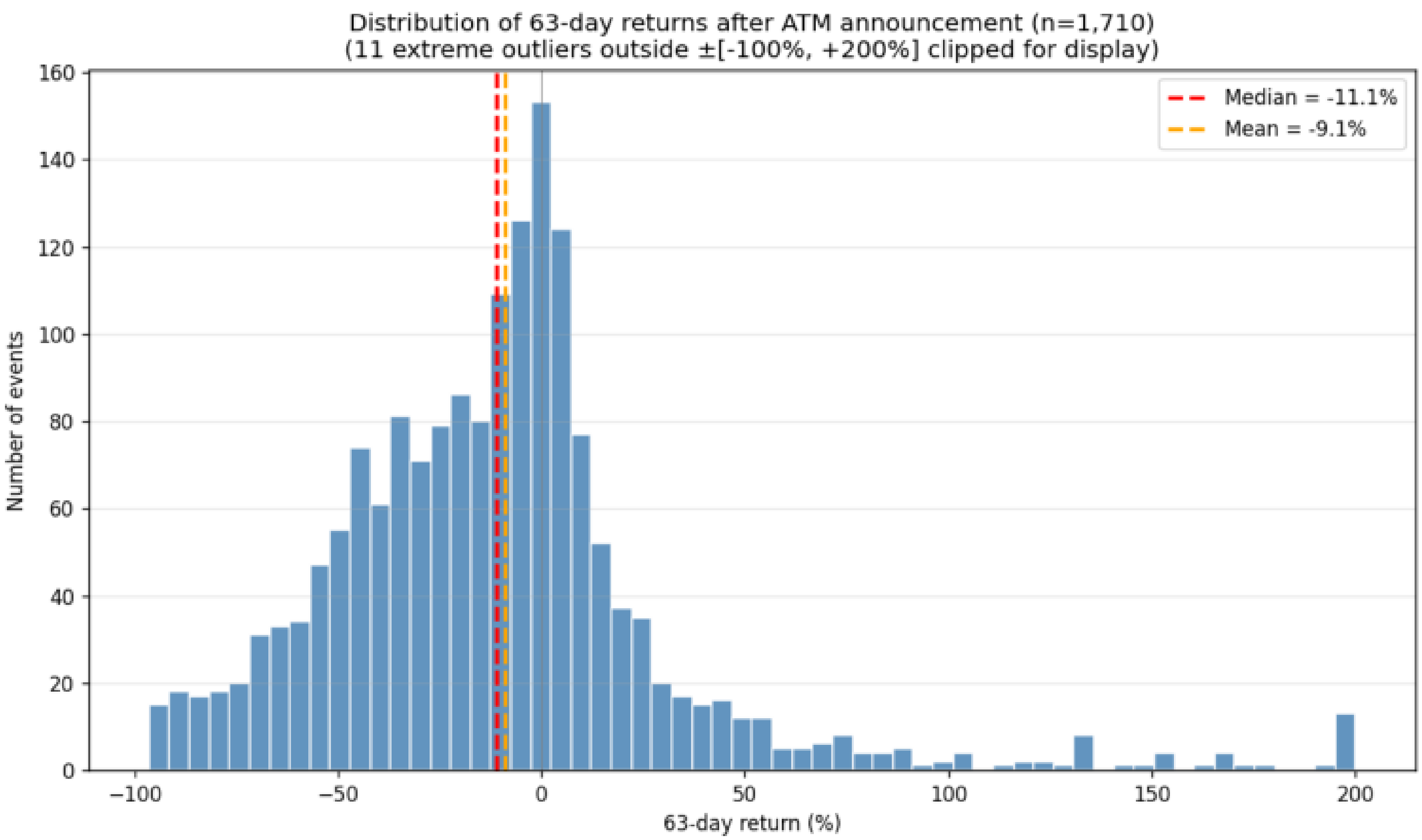
6. The data captures GameStop.

Top outlier by excess-vs-sector is GME's December 8, 2020 ATM at +1,434% in 63 days — they raised right before the meme squeeze. That single event drags the overall mean upward; the median (−11%) is the honest read.

Overall distribution of 63-day returns

Half of ATMs lose more than 11% in 3 months. Long-left-tail distribution.

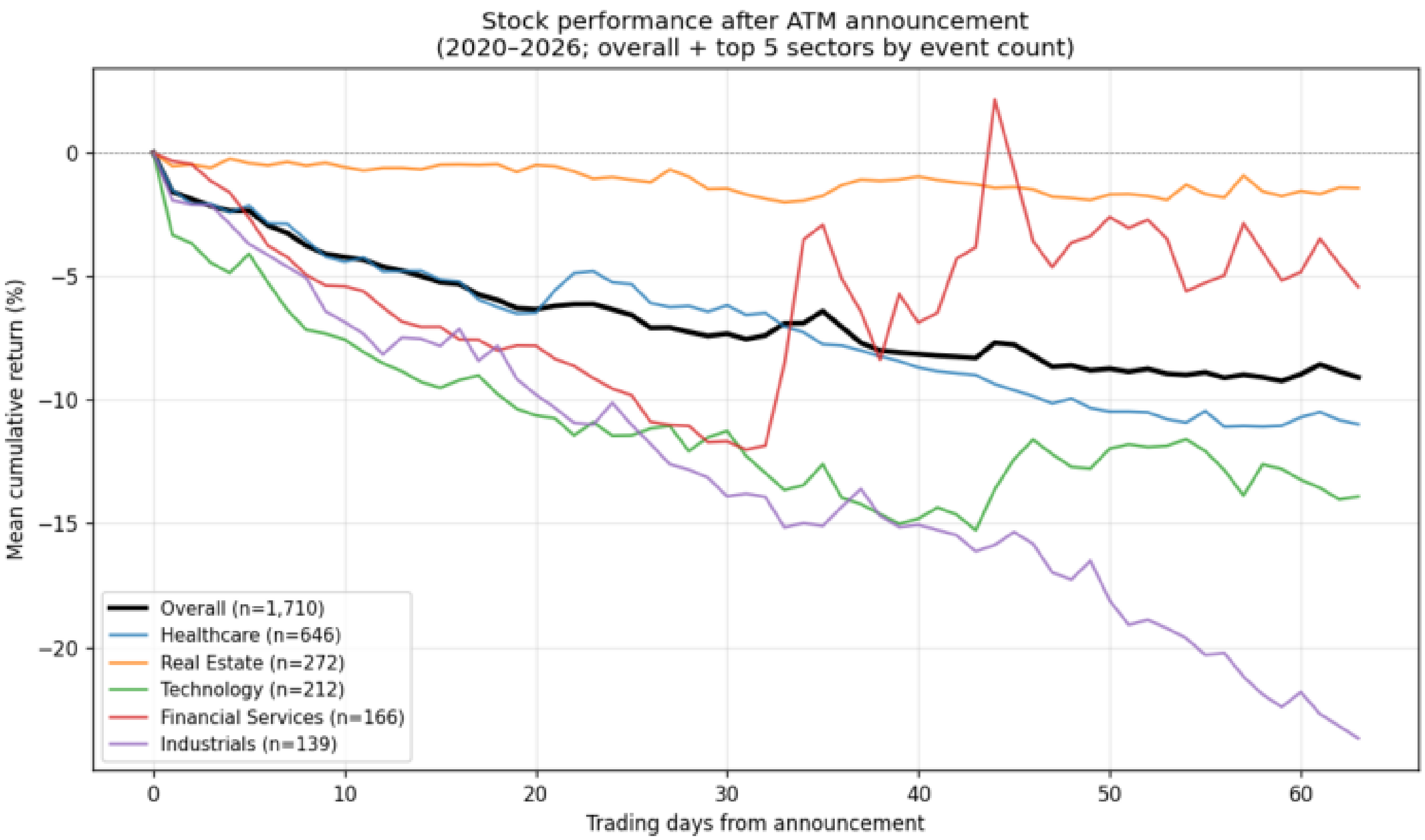
metric	n	mean	median	min	max	% pos
ret_1d	1,890	-1.6%	-0.9%	-59.6%	+123.0%	+38%
ret_5d	1,877	-1.7%	-1.9%	-76.5%	+853.2%	+37%
ret_21d	1,837	-5.9%	-4.9%	-99.0%	+233.9%	+36%
ret_63d	1,710	-9.1%	-11.1%	-96.4%	+1434.8%	+34%
excess_vs_spy_63d	1,710	-13.2%	-15.2%	-104.5%	+1428.1%	+27%
excess_vs_sector_63d	1,702	-12.5%	-13.9%	-116.1%	+1429.0%	+29%



Performance by GICS sector

REITs and Utilities are essentially neutral; Industrials, Tech, Healthcare are crushed.

sector	ETF	n	median	mean	% pos	med vs sec	mean vs sec
Utilities	XLU	45	+1.8%	-0.3%	62%	-2.4%	-3.8%
Real Estate	XLRE	272	+0.4%	-1.4%	53%	-2.3%	-4.0%
Energy	XLE	42	-4.4%	+9.7%	43%	-6.2%	+3.8%
Financial Services	XLF	166	-5.7%	-5.4%	37%	-8.6%	-8.8%
Basic Materials	XLB	47	-7.3%	-3.8%	36%	-9.7%	-7.7%
Healthcare	XLV	646	-18.9%	-11.0%	28%	-19.4%	-13.2%
Technology	XLK	212	-23.2%	-13.9%	25%	-30.1%	-19.4%
Consumer Cyclical	XLY	60	-23.9%	-3.5%	32%	-25.8%	-6.5%
Communication Services	XLC	42	-25.8%	-14.4%	24%	-29.2%	-18.8%
Consumer Defensive	XLP	31	-27.7%	-17.5%	32%	-25.7%	-18.7%
Industrials	XLI	139	-30.0%	-23.7%	23%	-36.2%	-28.3%



Performance by raise size & year

Small (<$50M) raises lose 23%; large (≥$500M) raises are flat.

BY RAISE SIZE

bucket	n	median	mean	% pos	med vs sec
small (<$50M)	529	-23.3%	-21.0%	22%	-25.7%
mid ($50M-$500M)	589	-5.1%	+0.2%	41%	-8.0%
large (≥$500M)	187	+1.5%	-2.0%	55%	-1.1%
unknown size	405	-16.0%	-10.3%	29%	-18.9%

BY EVENT YEAR

year	n	median	mean	% pos	med vs sec	med vs spy
2020	135	+1.7%	+21.9%	53%	-2.8%	-5.1%
2021	277	-8.9%	-9.0%	34%	-13.6%	-13.8%
2022	223	-15.0%	-15.0%	31%	-12.7%	-8.5%
2023	247	-11.4%	-10.3%	32%	-13.8%	-17.9%
2024	328	-12.3%	-15.3%	34%	-14.8%	-16.5%
2025	457	-14.6%	-11.1%	30%	-18.8%	-21.0%
2026	43	-9.5%	-0.5%	42%	-20.8%	-15.6%

DELISTING RATE BY EVENT YEAR

year	n_events	% delisted ≤2y	% delisted evernote	
2020	181	4.4%	26.5%	
2021	379	7.7%	29.0%	
2022	299	15.1%	29.1%	
2023	306	16.7%	19.6%	
2024	388	9.5%	9.5%	
2025	475	1.7%	1.7%	incomplete: <2y elapsed
2026	183	0.0%	0.0%	incomplete: <2y elapsed

Top 10 EVENTS by excess return vs sector

Single-event winners; GME's Dec 2020 ATM is the +14x meme-squeeze outlier.

#	ticker	sector	filing	size	ret_63d	vs sector	vs spy
1	GME	Consumer Cyclical	2020-12-08	$ 100M	+1434.8%	+1429.0%	+1428.1%
2	ASST	Financial Services	2025-03-20	–	+958.0%	+956.2%	+952.3%
3	STEX	Financial Services	2025-03-05	$ 4M	+556.0%	+554.5%	+553.5%
4	QUCY	Healthcare	2026-02-17	–	+388.9%	+395.9%	+380.4%
5	CATX	Healthcare	2020-10-19	–	+333.3%	+321.3%	+320.6%
6	AISP	Technology	2023-12-28	$ 25M	+317.5%	+309.2%	+307.6%
7	DVLT	Technology	2025-08-04	$ 6M	+314.3%	+299.5%	+305.9%
8	PRAX	Healthcare	2025-09-05	$ 250M	+305.5%	+293.4%	+299.5%
9	SENS	Healthcare	2024-10-28	$ 55M	+215.9%	+216.5%	+211.4%
10	IBIO	Healthcare	2022-12-08	–	+198.4%	+208.4%	+200.7%

Bottom 10 EVENTS by excess return vs sector

Single-event losers; all very small caps that essentially went to zero.

#	ticker	sector	filing	size	ret_63d	vs sector	vs spy
1	INHD	Basic Materials	2025-11-13	$ 50M	-95.1%	-116.1%	-97.0%
2	PRPH	Healthcare	2025-10-15	–	-96.4%	-107.0%	-100.8%
3	GPUS	Industrials	2023-11-07	$ 50M	-86.7%	-102.8%	-101.2%
4	GCTK	Healthcare	2024-12-17	$ 8M	-93.9%	-99.7%	-87.9%
5	TRNR	Consumer Cyclical	2024-05-24	$ 2M	-92.7%	-99.2%	-99.0%
6	JTAI	Technology	2026-01-15	$ 10M	-92.2%	-98.4%	-95.1%
7	WINT	Healthcare	2025-07-24	–	-90.2%	-98.2%	-95.7%
8	BINI	Consumer Cyclical	2024-05-24	–	-91.7%	-98.2%	-98.0%
9	TRNR	Consumer Cyclical	2024-05-22	$ 2M	-92.9%	-97.5%	-98.2%
10	GRI	Healthcare	2024-05-20	–	-91.2%	-97.4%	-97.0%

Top 10 COMPANIES by median excess vs sector

Aggregated per ticker; requires ≥2 ATMs with ret_63d (n=397 qualifying companies).

```
 1. PRAX    Healthcare                n=2  med_ret=+250.4%  med_vs_sec=+238.5%  med_vs_spy=+241.3%
    2023-12-07   size= $    75M  ret= +195.2% vs_sec= +183.7%  vs_spy= +183.2%
    2025-09-05   size= $   250M  ret= +305.5% vs_sec= +293.4%  vs_spy= +299.5%

 2. QUCY    Healthcare                n=2  med_ret=+162.4%  med_vs_sec=+168.8%  med_vs_spy=+154.7%
    2026-02-10   size= $     2M  ret=  -64.1% vs_sec=  -58.4%  vs_spy=  -71.0%
    2026-02-17   size=    —      ret= +388.9% vs_sec= +395.9%  vs_spy= +380.4%

 3. CRVS    Healthcare                n=2  med_ret=+147.3%  med_vs_sec=+141.5%  med_vs_spy=+138.1%
    2023-03-29   size= $    50M  ret= +208.9% vs_sec= +205.3%  vs_spy= +199.3%
    2024-05-01   size= $    90M  ret=  +85.7% vs_sec=  +77.8%  vs_spy=  +76.8%

 4. BBIO    Healthcare                n=2  med_ret= +91.6%  med_vs_sec= +89.5%  med_vs_spy= +81.2%
    2023-05-04   size= $   450M  ret= +131.5% vs_sec= +131.1%  vs_spy= +120.8%
    2023-09-25   size=    —      ret=  +51.6% vs_sec=  +48.0%  vs_spy=  +41.6%

 5. ZDGE    Communication Services    n=2  med_ret= +96.0%  med_vs_sec= +87.1%  med_vs_spy= +88.3%
    2020-12-09   size=    —      ret= +151.7% vs_sec= +139.2%  vs_spy= +143.8%
    2021-03-16   size=    —      ret=  +40.3% vs_sec=  +35.0%  vs_spy=  +32.7%

 6. VIR     Healthcare                n=2  med_ret= +90.6%  med_vs_sec= +81.3%  med_vs_spy= +78.1%
    2020-11-10   size= $   300M  ret= +178.5% vs_sec= +173.5%  vs_spy= +167.7%
    2023-11-03   size= $   300M  ret=   +2.6% vs_sec=  -10.9%  vs_spy=  -11.5%

 7. UUUU    Energy                    n=2  med_ret= +69.2%  med_vs_sec= +69.3%  med_vs_spy= +61.1%
    2024-03-25   size=    —      ret=   -7.5% vs_sec=   -6.4%  vs_spy=  -12.6%
    2025-06-13   size= $   300M  ret= +145.9% vs_sec= +144.9%  vs_spy= +134.9%

 8. FATE    Healthcare                n=2  med_ret= +67.6%  med_vs_sec= +61.7%  med_vs_spy= +61.8%
    2021-11-04   size= $   350M  ret=  -34.8% vs_sec=  -33.6%  vs_spy=  -31.2%
    2023-11-08   size= $   100M  ret= +170.0% vs_sec= +157.1%  vs_spy= +154.9%

 9. AIFF    Technology                n=2  med_ret= +68.0%  med_vs_sec= +60.2%  med_vs_spy= +67.0%
    2022-07-11   size=    —      ret=  -18.0% vs_sec=  -10.4%  vs_spy=  -12.8%
    2026-02-04   size= $     7M  ret= +153.9% vs_sec= +130.7%  vs_spy= +146.7%

10. LEU     Energy                    n=2  med_ret= +66.8%  med_vs_sec= +54.0%  med_vs_spy= +58.3%
    2025-05-09   size= $   100M  ret= +134.1% vs_sec= +131.0%  vs_spy= +121.1%
    2025-11-06   size= $  1000M  ret=   -0.6% vs_sec=  -23.1%  vs_spy=   -4.4%
```

Bottom 10 COMPANIES by median excess vs sector

Six of these had every single one of their ATMs end negative — death-spiral financing.

1. TRNR   Consumer Cyclical   n=2 med_ret= -92.8% med_vs_sec= -98.3% med_vs_spy= -98.6%

```
2024-05-22   size= $     2M  ret=  -92.9% vs_sec=  -97.5%  vs_spy=  -98.2%
2024-05-24   size= $     2M  ret=  -92.7% vs_sec=  -99.2%  vs_spy=  -99.0%
```

2. JTAI   Technology   n=3 med_ret= -92.2% med_vs_sec= -91.0% med_vs_spy= -94.7%

```
2024-10-28   size= $     5M  ret=  -82.9% vs_sec=  -83.9%  vs_spy=  -87.4%
2025-11-28   size= $    10M  ret=  -94.8% vs_sec=  -91.0%  vs_spy=  -94.7%
2026-01-15   size= $    10M  ret=  -92.2% vs_sec=  -98.4%  vs_spy=  -95.1%
```

3. BOXL   Technology   n=2 med_ret= -86.3% med_vs_sec= -90.1% med_vs_spy= -91.0%

```
2025-09-24   size= $     4M  ret=  -85.0% vs_sec=  -90.0%  vs_spy=  -89.4%
2025-10-16   size= $     5M  ret=  -87.7% vs_sec=  -90.2%  vs_spy=  -92.7%
```

4. ORBS   Consumer Cyclical   n=3 med_ret= -88.1% med_vs_sec= -89.6% med_vs_spy= -93.2%

```
2024-04-25   size= $     2M  ret=  -32.8% vs_sec=  -37.7%  vs_spy=  -41.2%
2025-09-10   size= $  2700M  ret=  -88.1% vs_sec=  -89.6%  vs_spy=  -93.2%
2025-09-10   size= $  1000M  ret=  -88.1% vs_sec=  -89.6%  vs_spy=  -93.2%
```

5. HURA   Healthcare   n=3 med_ret= -82.0% med_vs_sec= -89.2% med_vs_spy= -82.7%

```
2022-08-03   size=    —      ret=  -55.9% vs_sec=  -56.8%  vs_spy=  -49.1%
2023-09-19   size= $     3M  ret=  -94.8% vs_sec=  -97.0%  vs_spy= -101.9%
2025-11-04   size= $    50M  ret=  -82.0% vs_sec=  -89.2%  vs_spy=  -82.7%
```

6. ASTI   Technology   n=6 med_ret= -76.5% med_vs_sec= -81.8% med_vs_spy= -82.0%

```
2022-12-20   size= $     2M  ret=  -76.6% vs_sec=  -92.8%  vs_spy=  -80.4%
2024-05-16   size= $     4M  ret=  -79.0% vs_sec=  -83.4%  vs_spy=  -84.1%
2024-05-23   size= $     4M  ret=  -78.5% vs_sec=  -83.6%  vs_spy=  -85.7%
2024-05-30   size= $     4M  ret=  -76.4% vs_sec=  -80.3%  vs_spy=  -83.6%
2025-08-20   size= $     4M  ret=  -28.0% vs_sec=  -35.5%  vs_spy=  -31.7%
2026-01-26   size= $     9M  ret=  -18.5% vs_sec=  -28.5%  vs_spy=  -22.0%
```

7. ARTL   Healthcare   n=3 med_ret= -73.2% med_vs_sec= -81.6% med_vs_spy= -76.7%

```
2025-07-18   size=    —      ret=  -73.2% vs_sec=  -81.6%  vs_spy=  -78.7%
2025-09-05   size=    —      ret=  -54.3% vs_sec=  -66.4%  vs_spy=  -60.4%
2025-10-01   size=    —      ret=  -74.4% vs_sec=  -82.7%  vs_spy=  -76.7%
```

8. WINT   Healthcare   n=3 med_ret= -74.4% med_vs_sec= -77.8% med_vs_spy= -80.2%

```
2024-07-01   size=    —      ret=  -25.3% vs_sec=  -32.0%  vs_spy=  -30.8%
2024-07-22   size= $    13M  ret=  -74.4% vs_sec=  -77.8%  vs_spy=  -80.2%
2025-07-24   size=    —      ret=  -90.2% vs_sec=  -98.2%  vs_spy=  -95.7%
```

9. BLNE   Financial Services   n=2 med_ret= -70.1% med_vs_sec= -75.2% med_vs_spy= -76.1%

```
2025-03-10   size= $    10M  ret=  -88.7% vs_sec=  -95.3%  vs_spy=  -96.0%
2025-09-26   size= $     5M  ret=  -51.5% vs_sec=  -55.1%  vs_spy=  -56.1%
```

10. GMBL   Consumer Cyclical   n=2 med_ret= -67.3% med_vs_sec= -74.6% med_vs_spy= -70.7%

```
2021-09-03   size= $    20M  ret=  -51.6% vs_sec=  -60.6%  vs_spy=  -52.0%
2023-09-18   size= $     7M  ret=  -83.0% vs_sec=  -88.7%  vs_spy=  -89.3%
```

Healthcare — top & bottom 10 events

n=646 • ETF=XLV • median ret_63d=-18.9% • median vs sector=-19.4% • 28% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	QUCY	2026-02-17	–	+388.9%	+395.9%	+380.4%
2	CATX	2020-10-19	–	+333.3%	+321.3%	+320.6%
3	PRAX	2025-09-05	$ 250M	+305.5%	+293.4%	+299.5%
4	SENS	2024-10-28	$ 55M	+215.9%	+216.5%	+211.4%
5	IBIO	2022-12-08	–	+198.4%	+208.4%	+200.7%
6	CRVS	2023-03-29	$ 50M	+208.9%	+205.3%	+199.3%
7	ATOS	2021-03-23	–	+193.7%	+184.1%	+184.7%
8	PRAX	2023-12-07	$ 75M	+195.2%	+183.7%	+183.2%
9	VIR	2020-11-10	$ 300M	+178.5%	+173.5%	+167.7%
10	WGS	2024-04-29	$ 75M	+173.9%	+166.5%	+167.3%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	PRPH	2025-10-15	–	-96.4%	-107.0%	-100.8%
2	GCTK	2024-12-17	$ 8M	-93.9%	-99.7%	-87.9%
3	WINT	2025-07-24	–	-90.2%	-98.2%	-95.7%
4	GRI	2024-05-20	–	-91.2%	-97.4%	-97.0%
5	HURA	2023-09-19	$ 3M	-94.8%	-97.0%	-101.9%
6	FOXO	2022-09-21	–	-86.6%	-96.6%	-87.9%
7	AVTX	2023-05-04	$ 9M	-93.8%	-94.2%	-104.5%
8	HYPD	2024-12-30	$ 50M	-86.9%	-92.5%	-83.2%
9	CERO	2024-11-12	$ 25M	-92.3%	-91.1%	-94.8%
10	ELAB	2025-09-29	–	-74.2%	-89.4%	-78.2%

Real Estate — top & bottom 10 events

n=272 • ETF=XLRE • median ret_63d=+0.4% • median vs sector=-2.3% • 53% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	MAC	2021-03-26	$ 500M	+53.0%	+40.3%	+44.9%
2	IIPR	2020-11-06	$ 500M	+40.1%	+31.5%	+28.2%
3	ORC	2023-10-26	$ 80M	+49.4%	+30.2%	+29.8%
4	ORC	2022-04-28	$ 149M	+17.2%	+26.0%	+20.5%
5	AHT	2022-04-11	$ 100M	+8.0%	+24.2%	+21.6%
6	BHR	2020-08-12	$ 50M	+25.7%	+23.5%	+20.4%
7	IVR	2020-11-30	$ 49M	+23.3%	+21.5%	+17.5%
8	GNL	2025-11-07	$ 300M	+25.9%	+21.0%	+22.5%
9	TWO	2025-09-19	–	+18.3%	+20.9%	+16.4%
10	MFA	2022-09-27	$ 250M	+23.9%	+19.7%	+18.4%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	LRHC	2025-09-19	$ 1000M	-89.3%	-86.8%	-91.2%
2	AHT	2021-06-21	–	-73.0%	-76.6%	-76.5%
3	AIRE	2025-04-02	$ 8M	-74.3%	-74.5%	-85.4%
4	AHT	2021-05-18	–	-58.2%	-70.4%	-66.4%
5	OPAD	2025-08-28	$ 100M	-69.2%	-68.5%	-74.2%
6	AIRE	2025-04-07	–	-54.7%	-64.6%	-78.8%
7	AHT	2020-08-06	$ 100M	-62.8%	-62.4%	-66.0%
8	AHT	2021-07-02	–	-60.1%	-61.2%	-60.6%
9	AIRE	2025-01-31	$ 14M	-56.3%	-58.2%	-50.8%
10	MKZR	2025-01-15	$ 20M	-56.0%	-55.7%	-45.0%

Technology — top & bottom 10 events

n=212 • ETF=XLK • median ret_63d=-23.2% • median vs sector=-30.1% • 25% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	AISP	2023-12-28	$ 25M	+317.5%	+309.2%	+307.6%
2	DVLT	2025-08-04	$ 6M	+314.3%	+299.5%	+305.9%
3	NVTS	2025-03-20	$ 50M	+200.9%	+187.9%	+195.1%
4	MSTR	2023-11-30	$ 750M	+167.7%	+153.6%	+155.0%
5	AIFF	2026-02-04	$ 7M	+153.9%	+130.7%	+146.7%
6	AAOI	2024-08-06	$ 60M	+125.0%	+113.2%	+115.5%
7	TONX	2023-12-15	—	+118.1%	+109.5%	+107.9%
8	AAOI	2023-09-13	$ 70M	+103.7%	+92.6%	+99.4%
9	AAOI	2023-03-24	$ 35M	+92.9%	+78.0%	+83.5%
10	UAVS	2020-06-26	—	+89.3%	+76.8%	+79.3%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	JTAI	2026-01-15	$ 10M	-92.2%	-98.4%	-95.1%
2	ASTI	2022-12-20	$ 2M	-76.6%	-92.8%	-80.4%
3	JTAI	2025-11-28	$ 10M	-94.8%	-91.0%	-94.7%
4	TGL	2024-10-01	$ 3M	-85.2%	-91.0%	-88.7%
5	BOXL	2025-10-16	$ 5M	-87.7%	-90.2%	-92.7%
6	TONX	2025-08-08	$ 1000M	-81.2%	-90.1%	-86.7%
7	BOXL	2025-09-24	$ 4M	-85.0%	-90.0%	-89.4%
8	DVLT	2022-11-21	$ 4M	-82.0%	-88.4%	-84.0%
9	FRMM	2025-08-14	$ 500M	-77.6%	-87.6%	-83.9%
10	FTCI	2023-08-10	$ 100M	-80.9%	-85.7%	-79.3%

Financial Services — top & bottom 10 events

n=166 • ETF=XLF • median ret_63d=-5.7% • median vs sector=-8.6% • 37% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	ASST	2025-03-20	–	+958.0%	+956.2%	+952.3%
2	STEX	2025-03-05	$ 4M	+556.0%	+554.5%	+553.5%
3	HSDT	2025-07-07	$ 25M	+71.9%	+69.5%	+63.7%
4	COHN	2020-12-02	$ 75M	+67.1%	+48.7%	+62.1%
5	ATLC	2024-08-26	$ 100M	+58.7%	+44.5%	+52.2%
6	RIOT	2024-08-09	$ 750M	+53.7%	+38.3%	+41.6%
7	FGNX	2022-11-03	$ 3M	+44.1%	+33.6%	+33.2%
8	CBAN	2025-11-07	$ 40M	+29.2%	+27.4%	+25.7%
9	CSWC	2020-10-30	$ 50M	+46.1%	+19.5%	+28.8%
10	CLSK	2022-12-14	$ 500M	+7.5%	+17.5%	+9.0%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	BLNE	2025-03-10	$ 10M	-88.7%	-95.3%	-96.0%
2	SDEV	2026-01-20	$ 100M	-95.8%	-94.6%	-99.9%
3	BGDE	2025-10-17	$ 10M	-86.9%	-89.2%	-89.2%
4	FGNX	2025-08-08	$ 193M	-83.1%	-84.5%	-88.6%
5	HSDT	2025-09-15	$ 93M	-81.6%	-84.3%	-85.0%
6	CWD	2025-09-17	$ 16M	-77.7%	-79.0%	-80.9%
7	BNBX	2025-11-04	$ 8M	-74.8%	-76.8%	-75.4%
8	NCPL	2023-05-25	$ 2M	-68.2%	-75.4%	-74.7%
9	ZSTK	2025-09-23	$ 150M	-68.6%	-71.8%	-72.1%
10	ASST	2024-09-30	–	-64.6%	-71.6%	-67.5%

Industrials — top & bottom 10 events

n=139 • ETF=XLI • median ret_63d=-30.0% • median vs sector=-36.2% • 23% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	BW	2024-04-10	$ 50M	+89.8%	+90.0%	+81.2%
2	CAR	2021-02-17	–	+99.6%	+84.8%	+94.2%
3	BW	2025-11-05	$ 200M	+97.9%	+84.5%	+95.7%
4	OPTT	2020-11-20	$ 100M	+86.3%	+78.2%	+75.6%
5	GPUS	2020-10-02	$ 9M	+85.4%	+73.6%	+74.5%
6	AIRT	2021-06-08	$ 8M	+66.6%	+68.2%	+59.3%
7	AIRT	2021-05-14	$ 8M	+51.4%	+50.9%	+44.1%
8	CLIR	2025-07-18	$ 10M	+50.0%	+49.5%	+44.4%
9	PLUG	2025-08-15	$ 1000M	+46.5%	+45.0%	+41.7%
10	RKLB	2025-03-11	$ 500M	+52.4%	+41.2%	+43.6%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	GPUS	2023-11-07	$ 50M	-86.7%	-102.8%	-101.2%
2	GPUS	2023-05-02	$ 40M	-86.2%	-96.8%	-96.2%
3	GPUS	2023-11-15	$ 22M	-83.6%	-96.7%	-95.2%
4	ZCAR	2024-01-04	$ 15M	-82.1%	-95.4%	-93.4%
5	GPUS	2023-06-09	$ 10M	-88.9%	-92.5%	-93.6%
6	ZONE	2025-09-02	–	-91.1%	-92.1%	-97.7%
7	GPUS	2023-09-08	$ 20M	-88.9%	-92.1%	-92.1%
8	GPUS	2023-07-13	$ 10M	-94.9%	-90.3%	-92.2%
9	XTIA	2024-05-31	–	-77.4%	-84.2%	-84.7%
10	XTIA	2024-05-29	–	-76.4%	-83.4%	-82.9%

Consumer Cyclical — top & bottom 10 events

n=60 • ETF=XLY • median ret_63d=-23.9% • median vs sector=-25.8% • 32% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	GME	2020-12-08	$ 100M	+1434.8%	+1429.0%	+1428.1%
2	DBGI	2025-09-26	–	+36.8%	+34.8%	+32.2%
3	CCL	2020-09-15	$ 1000M	+31.4%	+26.0%	+23.8%
4	DBGI	2023-12-28	–	+25.3%	+23.6%	+15.4%
5	PLBY	2024-08-08	$ 15M	+42.7%	+21.9%	+31.0%
6	BJRI	2021-01-22	$ 30M	+26.1%	+21.4%	+16.9%
7	BJRI	2021-01-22	$ 25M	+26.1%	+21.4%	+16.9%
8	BJRI	2021-01-22	$ 25M	+26.1%	+21.4%	+16.9%
9	CCL	2020-10-08	$ 1000M	+31.1%	+19.7%	+19.8%
10	TSLA	2020-09-01	$ 5000M	+23.1%	+18.4%	+18.9%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	TRNR	2024-05-24	$ 2M	-92.7%	-99.2%	-99.0%
2	BINI	2024-05-24	–	-91.7%	-98.2%	-98.0%
3	TRNR	2024-05-22	$ 2M	-92.9%	-97.5%	-98.2%
4	IVPR	2023-12-06	–	-88.3%	-94.0%	-101.3%
5	ORBS	2025-09-10	$ 2700M	-88.1%	-89.6%	-93.2%
6	ORBS	2025-09-10	$ 1000M	-88.1%	-89.6%	-93.2%
7	GMBL	2023-09-18	$ 7M	-83.0%	-88.7%	-89.3%
8	NVVE	2025-07-15	–	-74.5%	-81.5%	-81.4%
9	FWDI	2025-09-17	$ 4000M	-78.7%	-79.8%	-81.9%
10	IPW	2025-12-23	$ 2M	-85.1%	-74.3%	-79.1%

Basic Materials — top & bottom 10 events

n=47 • ETF=XLB • median ret_63d=-7.3% • median vs sector=-9.7% • 36% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	NB	2025-07-18	–	+162.2%	+164.2%	+156.7%
2	AMTX	2021-01-27	–	+134.7%	+116.5%	+122.9%
3	LWLG	2021-10-05	–	+77.4%	+64.7%	+66.7%
4	DC	2024-12-10	$ 50M	+39.5%	+44.4%	+45.8%
5	ALTO	2020-08-13	–	+54.4%	+43.1%	+48.1%
6	TMC	2022-12-22	$ 30M	+39.5%	+39.8%	+34.9%
7	LOOP	2025-07-03	–	+32.5%	+33.9%	+25.2%
8	TMC	2023-12-21	$ 30M	+40.9%	+33.1%	+30.6%
9	IDR	2025-10-02	$ 20M	+18.4%	+15.0%	+16.0%
10	CDE	2023-02-23	–	+4.3%	+9.5%	+1.3%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	INHD	2025-11-13	$ 50M	-95.1%	-116.1%	-97.0%
2	CRKN	2023-07-24	$ 20M	-94.4%	-84.5%	-87.5%
3	SNES	2024-06-20	$ 2M	-64.1%	-70.3%	-68.9%
4	NGLD	2024-10-04	$ 25M	-69.6%	-58.0%	-73.8%
5	STAL	2023-03-22	–	-44.1%	-49.9%	-55.9%
6	CTGO	2023-06-09	$ 40M	-44.9%	-49.4%	-49.6%
7	AMTX	2020-10-01	–	-32.7%	-48.7%	-44.1%
8	NB	2025-10-15	–	-34.4%	-45.3%	-38.7%
9	LAC	2025-10-08	$ 120M	-29.9%	-36.1%	-32.6%
10	ALOY	2025-01-22	$ 2M	-42.4%	-34.6%	-30.9%

Utilities — top & bottom 10 events

n=45 • ETF=XLU • median ret_63d=+1.8% • median vs sector=-2.4% • 62% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	CPK	2020-08-18	$ 75M	+30.0%	+17.9%	+22.5%
2	AWR	2026-02-20	$ 200M	+6.0%	+8.2%	-2.0%
3	D	2025-10-31	$ 1800M	+5.9%	+8.1%	+4.5%
4	AEP	2023-11-17	$ 1700M	+7.9%	+7.4%	-2.8%
5	NI	2025-10-31	—	+5.1%	+7.3%	+3.7%
6	ATO	2023-03-31	$ 1000M	+5.1%	+6.9%	-3.7%
7	TXNM	2022-11-10	$ 200M	+5.4%	+5.6%	+0.3%
8	ATO	2024-12-03	$ 1700M	+2.4%	+5.5%	+6.7%
9	DUK	2022-11-10	—	+4.1%	+4.3%	-1.0%
10	ETR	2021-01-11	$ 1000M	+10.7%	+3.5%	+1.3%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	OKLO	2025-12-04	$ 1500M	-44.7%	-52.7%	-44.1%
2	NXXT	2023-02-17	$ 2M	-27.8%	-25.1%	-31.0%
3	PCG	2021-04-30	$ 400M	-22.3%	-22.0%	-27.8%
4	UTL	2025-06-04	$ 50M	-12.6%	-16.8%	-21.9%
5	AWR	2024-02-27	$ 200M	+1.0%	-15.4%	-3.8%
6	SPH	2025-02-21	$ 100M	-12.1%	-12.6%	-9.6%
7	EXC	2025-05-02	$ 2500M	-2.0%	-12.2%	-13.6%
8	POR	2024-07-26	$ 400M	+4.0%	-11.4%	-2.7%
9	AEP	2020-11-06	$ 1000M	-10.6%	-10.0%	-22.6%
10	ATO	2021-06-30	$ 1000M	-6.9%	-9.5%	-8.7%

Communication Services — top & bottom 10 events

n=42 • ETF=XLC • median ret_63d=-25.8% • median vs sector=-29.2% • 24% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	ZDGE	2020-12-09	–	+151.7%	+139.2%	+143.8%
2	GDC	2025-02-10	$ 10M	+134.6%	+138.2%	+137.9%
3	FLNT	2025-12-31	–	+39.6%	+44.4%	+43.1%
4	FNGR	2024-12-23	$ 4M	+42.0%	+41.2%	+46.3%
5	ZDGE	2021-03-16	–	+40.3%	+35.0%	+32.7%
6	AMC	2024-03-28	$ 250M	+33.9%	+28.7%	+29.5%
7	AMC	2026-02-09	$ 150M	+5.2%	+6.0%	-1.6%
8	SALM	2021-04-16	$ 15M	+4.3%	-1.1%	+0.6%
9	SNAL	2025-08-07	–	+2.0%	-4.1%	-5.5%
10	UONE	2020-10-08	$ 25M	+6.2%	-6.5%	-5.1%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	CNVS	2020-07-06	$ 30M	-72.6%	-77.7%	-78.3%
2	GAME	2025-07-09	–	-62.5%	-71.3%	-70.1%
3	UPXI	2025-04-24	–	-54.8%	-69.9%	-71.7%
4	AMC	2023-11-09	$ 350M	-47.6%	-65.8%	-63.6%
5	GAME	2025-07-18	–	-55.7%	-63.5%	-61.2%
6	IZEA	2020-06-12	$ 10M	-44.9%	-55.6%	-55.2%
7	TBH	2025-12-10	–	-55.8%	-53.9%	-52.4%
8	BZFD	2023-06-20	–	-46.3%	-51.4%	-48.0%
9	CNVS	2021-10-12	–	-51.1%	-48.6%	-59.8%
10	SURG	2026-01-22	$ 2M	-45.7%	-47.0%	-48.8%

Energy — top & bottom 10 events

n=42 • ETF=XLE • median ret_63d=-4.4% • median vs sector=-6.2% • 43% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	UUUU	2025-06-13	$ 300M	+145.9%	+144.9%	+134.9%
2	LEU	2025-05-09	$ 100M	+134.1%	+131.0%	+121.1%
3	BTU	2021-06-04	—	+106.1%	+117.5%	+98.6%
4	SKYQ	2026-01-12	—	+129.1%	+107.6%	+128.9%
5	PROP	2023-05-04	$ 30M	+117.4%	+105.1%	+106.7%
6	BTU	2021-12-17	—	+134.1%	+90.9%	+137.2%
7	ET	2021-02-17	$ 25M	+52.9%	+36.6%	+47.6%
8	WTI	2022-03-18	$ 100M	+28.3%	+27.9%	+45.6%
9	OKE	2020-07-24	$ 1000M	+10.3%	+27.6%	+2.5%
10	ANNA	2023-08-11	$ 25M	+0.7%	+8.2%	+3.0%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	TPET	2024-09-27	$ 5M	-69.9%	-67.7%	-74.4%
2	TPET	2026-01-09	$ 4M	-37.5%	-60.7%	-36.7%
3	HNRG	2023-12-18	—	-43.0%	-53.2%	-53.6%
4	BTU	2021-09-17	—	-33.7%	-47.6%	-39.4%
5	ENSV	2024-06-13	—	-43.6%	-40.9%	-47.5%
6	ENSV	2020-09-28	—	-13.9%	-38.2%	-25.7%
7	ENSV	2023-02-28	—	-41.5%	-35.6%	-47.9%
8	KLXE	2025-03-14	$ 50M	-33.5%	-32.4%	-39.9%
9	UEC	2021-11-26	$ 100M	-3.6%	-32.3%	+0.9%
10	KLXE	2021-06-14	$ 50M	-40.4%	-30.5%	-45.8%

Consumer Defensive — top & bottom 10 events

n=31 • ETF=XLP • median ret_63d=-27.7% • median vs sector=-25.7% • 32% positive

Top 10 — biggest outperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	CLNN	2025-07-03	$ 25M	+105.4%	+109.9%	+98.1%
2	CLNN	2022-04-14	$ 50M	+57.8%	+65.5%	+70.2%
3	BOF	2026-01-27	$ 2M	+19.8%	+19.3%	+17.2%
4	BOF	2024-10-23	$ 3M	+16.6%	+18.1%	+12.5%
5	TPB	2025-11-05	–	+28.6%	+11.8%	+26.3%
6	BGS	2021-08-23	–	+9.4%	+9.5%	+4.2%
7	CLNN	2025-04-28	$ 25M	+10.9%	+9.4%	-4.8%
8	CLNN	2025-09-05	$ 25M	+4.3%	+6.6%	-1.7%
9	BOF	2025-07-29	$ 3M	+2.3%	+4.1%	-5.9%
10	XAGE	2025-04-14	$ 2M	-5.6%	-4.6%	-21.7%

Bottom 10 — biggest underperformers vs sector ETF

#	ticker	filing	size	ret_63d	vs sector	vs spy
1	XXII	2025-11-04	$ 25M	-70.7%	-86.0%	-71.3%
2	EDBL	2025-01-31	$ 3M	-66.4%	-70.2%	-60.9%
3	GNLN	2026-01-13	$ 5M	-64.2%	-64.7%	-65.3%
4	RKDA	2022-08-16	–	-66.0%	-61.2%	-58.3%
5	EDBL	2024-02-07	$ 1M	-47.8%	-52.2%	-51.9%
6	BSFC	2024-05-08	$ 2M	-46.8%	-50.9%	-49.7%
7	CLNN	2025-10-17	$ 25M	-44.4%	-48.5%	-46.6%
8	EDBL	2024-05-29	–	-35.0%	-44.2%	-41.5%
9	BYND	2025-02-10	$ 200M	-41.7%	-43.7%	-38.3%
10	SDOT	2025-07-25	$ 2M	-43.6%	-41.6%	-49.3%

Space-sector ATM activity

The Phase 5 thesis in miniature: scaled-up names rewarded; struggling ones punished.

tkr	name	sector	events	w/ret	median ret_63d
RKLB	Rocket Lab Corp	Industrials	3	1	+52.4%
BKSY	BlackSky Technology Inc.	Industrials	3	2	+6.6%
RDW	Redwire Corp	Industrials	2	2	+1.7%
ASTS	AST SpaceMobile, Inc.	Technology	8	8	+0.5%
SPIR	Spire Global, Inc.	Industrials	1	1	-6.7%
LUNR	Intuitive Machines, Inc.	Industrials	2	2	-33.9%
SPCE	Virgin Galactic Holdings, Inc	Industrials	2	2	-34.4%
SIDU	Sidus Space Inc.	Industrials	2	1	-51.7%
MNTS	Momentus Inc.	Industrials	3	3	-68.4%
ASTR	Astra Space, Inc.		2	0	–
LLAP	Terran Orbital Corp		2	0	–

Notable space-sector trajectories

RKLB Mar 2025 ATM (+52% in 63d)

Rocket Lab's stock 7.5x'd from $17.83 (Mar 2025 anchor) to $134.28 (May 2026), which is why the May 2026 ATM upsized to $3B.

ASTS — 8 ATMs, story-arc winner

First 4 ATMs (2022–24) lost money. From mid-2025 (post-AT&T/Verizon deals), 5 of 5 subsequent ATMs landed positive (+18% to +88%). Market eventually rewarded the bull case.

LUNR, SPCE — consistent ~−34% losers

Both companies, both ATMs each, all near −34%. Investors price in the dilution and the slow-burn story.

MNTS — 3 ATMs all near zero

Median ret_63d −68%. Tiny $7M raises in 2025 = death-spiral dilution.

ASTR, LLAP — delisted

Astra Space went private/delisted in 2024; Terran Orbital was acquired by Lockheed in 2024. No Yahoo history for either.

Methodology, caveats & how to reproduce

Data sources

- SEC EDGAR full-text search (efts.sec.gov) for 8-K filings mentioning 'equity distribution agreement', 'at-the-market offering', or 'ATM program' in the 2020-05 to 2026-05 window.
- yfinance for ticker prices, sector ETFs (SPY + 11 SPDR Select sectors), and company sector classification.
- Wayback Machine (web.archive.org CDX server) for historical SEC ticker snapshots, used to build a point-in-time universe (2021–2026).

Pipeline

1. Universe snapshots (yearly, 2021–2026) — for survivorship-bias visibility.
2. EDGAR full-text search → 8,264 candidate 8-Ks.
3. Per-filing validation (ATM phrase + sales agent + offering size / Rule 415) → 2,214 confirmed ATM events.
4. Dedupe to 1,858 primary events + 356 re-announcements (180-day window).
5. Fetch price windows (anchor − 5d to anchor + 95d), all SPDR sector ETFs.
6. Compute T+1/5/21/63 trading-day returns vs the ticker, SPY, and matched sector.
7. Exports + this PDF.

Caveats

- 215 of 1,176 distinct event tickers (18%) have no Yahoo price history because they delisted or were acquired (BLUE, NKLA, IMGN, REV, HTZ, etc.). Their events are excluded from performance — biases the sample toward survivors. True mean return is likely more negative than the −9.1% reported.
- Delisting metric uses ticker-absence in the 2026 snapshot, which conflates true delistings with ticker changes / SPAC renames. A CIK-continuity refinement is pending.
- 23% of offering sizes are NULL (regex extraction didn't catch the phrasing). LLM-assisted extraction for the long tail is deferred.
- T+0 anchor falls back to filing_date for after-hours filings (acceptance_datetime not fetched).

Reproduce from scratch

1. cd atm-study && pip install -r requirements.txt
2. echo SEC_USER_AGENT="Your Name your@email.com" > .env
3. python src/universe.py --build (~3 min)
4. python src/discover.py --discover (~30 min)
5. python src/prices.py --all (~45–75 min)
6. python src/performance.py --all (<1 min)
7. python src/analysis.py --all (<30 sec)
8. python src/report_pdf.py (<30 sec)