

Discovery Group

ASTS Successfully Deploys BlueWalker 3 Array; First Cellular-to-Satellite Call Expected in 1Q23

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STOCK DATA	
Market Cap (mil)	1,461.9
52-Week Range	\$4.84–\$14.27
3-Month ADTV	1,739,194
Shares Outstanding (mil)	183.0
Float (%)	67.7
Short Interest	12,987,598
Enterprise Val. (mil)	1,276.8
Fiscal Year-End	December

FINANCIAL DATA			
Rev. (mil)	2022E	2023E	2024E
1Q	\$2.4A	\$0.0	-
2Q	\$7.3A	\$0.0	-
3Q	\$4.2A	\$0.0	-
Prior 3Q	\$0.0	-	-
4Q	\$0.0	\$1.0	-
FY	\$13.8	\$1.0	\$23.9
Prior FY	\$9.7	-	-

FY	2022E	2023E	2024E
EBITDA (mil)	\$(133.6)	\$(158.8)	\$(146.3)
Prior	\$(131.2)	\$(157.2)	\$(152.2)
EV/Revenue	94.1x	1,516.5x	74.9x
Prior	49.1x	1,193.3x	61.9x
EV/EBITDA	(9.9)x	(9.8)x	(12.6)x
Prior	(7.5)x	(7.8)x	(10.0)x

BALANCE SHEET DATA	
	3Q22
Cash & Equivalents	199.5
Accounts Receivable	\$0.0
Accounts Payable	20.4
Total Debt	\$4.8
Shareholders' Equity	\$296.7
<i>\$ in millions.</i>	

Summary and Recommendation

Buy-rated AST SpaceMobile (ASTS; \$15 PT) reported 3Q22 results, including \$(37M) EBITDA and \$12M capex, vs. our \$(39M)/\$23M, projections, ending the period with \$200M net cash. Total operating expenses of \$42M were consistent with our \$40M projections, given ASTS also recorded \$4M of GAAP revenue related to its divested NanoAvionics business, which we had modeled as a discontinued operation (and thus as contributing zero GAAP revenue). The big news, however, is that over the weekend ASTS successfully unfurled its BlueWalker 3 (BW3) test satellite—the largest-ever commercial communications array to be deployed in low Earth orbit (LEO)—reaching another significant milestone and dispelling concerns surrounding the company’s ability to remotely deploy such a large structure in space. Given ASTS’ Block 1 commercial BlueBird (BB) satellites are being developed with the same architecture and software as BW3, we view this as a significant de-risking event on the company’s path to a commercial rollout of its SpaceMobile service. In contrast, we believe the 26% of float that remains short will find this successful satellite deployment as a significant risk-increasing development relative to a thesis that the company will not be able to achieve its ambitions to connect the billions of people currently unable to access broadband, as well as the billions of existing mobile subscribers moving in and out of cellular coverage zones. ASTS will now begin calibration of BW3, followed by in-orbit testing of its technology. Recall, to a degree ASTS has already demonstrated that it can create a successful cellular-to-satellite link from space, albeit in reverse. In April 2019, ASTS successfully linked its first test satellite, BlueWalker 1, which served as an orbiting endpoint, with a satellite prototype that remained on the ground, BlueWalker 2. The challenge now is to show that this network can work as designed, with the phased array hurtling through space, overcoming Doppler shift and other connectivity challenges to establish and maintain links with standard handsets.

Key Points

- **Soaring ambitions.** We believe ASTS’ cellular-to-satellite connectivity ambition soars far beyond others’ to provide not just emergency or sporadic connectivity but full mobile voice and data services from space, in conjunction with mobile network operator (MNO) partners led by Rakuten and Vodafone, each which participated in multiple funding rounds and which participate in corporate governance given board representation. ASTS will begin testing its technology, now supported by over 2,600 patent and patent-pending claims, with said MNO partners over the next several months, we believe with news of the first successful phone call facilitated by the company’s satellite network architecture coming in 1Q23. ASTS has an experimental license with the FCC to begin testing with AT&T in the U.S. in Texas and Hawaii, and the company, in parallel, will be working with Rakuten in Japan, Vodafone in Europe and Africa, and seven other MNO partners across the globe to test on all six inhabited continents.
- **Options open.** ASTS continues to plan to launch its first batch of BB satellites in 2H23 yet is keeping its options open regarding quantity and cadence of subsequent deployment. In this regard, we expect the company to optimize liquidity by tapping its existing ATM sporadically, as seen with 2.3M shares issued raising \$17M in 3Q22. Still, that successful BW3 demonstration will be a catalyst to move ASTS shares higher before the company considers meaningful additional capital sources, allocation, and rate of constellation build. We do know the company expects to be ready to reach production capacity of six satellites per month in 2024 across its two facilities in Midland, TX. Still, we believe a somewhat slower rollout is more likely as ASTS scales to what currently remains envisioned as a 168-satellite constellation. By the time ASTS has 20 commercial BBs in orbit, we believe in early 2025,

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ASTS expects to be able to deliver service to 49 countries along the equator, addressing an ~1.6B population. The company expects a 110-satellite constellation to be sufficient to enable full global mobile coverage for its roster of major MNO partners (e.g., Vodafone, Rakuten, Telefonica, AT&T, Orange, MTN, Globe, Smart, Indosat, Tigo, etc.) with robust multiple input, multiple output (MIMO) functionality enabled following the launch of a final 58-satellite batch, bringing the constellation size to 168 BBs.

Valuation

We initiate coverage of ASTS with a Buy rating and a \$15 PT, representing a \$3.0B EV at the end of FY23e for the company, which aims to launch its SpaceMobile service, capable of connecting the billions of people currently unable to access broadband, as well as the billions of existing mobile subscribers moving in and out of cellular coverage zones.

Risks

History of operating losses. ASTS has a history of operating losses. Although the company is focused on achieving profitability, there are no assurances that it will meet its goals or be able to sustain profitability in future periods.

Capital-intensive business. The company expects to incur significant expenses and capital expenditures in the future to execute its business plan and develop its constellation of satellites, and it may not be able to raise the requisite capital and/or adequately control those expenses, which would likely negatively affect the business.

Third-party launch providers. ASTS is dependent on third-party launch vehicles to launch its satellites into space, and any delays or price increases from these third parties could negatively impact the company's business and profitability.

SpaceMobile service development. The company's SpaceMobile service is in development and not yet being commercialized. If the company is unable to complete development on time or at all, the business could be negatively impacted.

Capital access. The company needs to raise additional funds to fully implement the planned SpaceMobile Service. If the company cannot raise additional funds on favorable terms, or at all, when needed, the business could be negatively affected.

Regulation. The company's business is subject to extensive government regulation, which mandates how it may operate its business, may reduce or eliminate its business, and may increase business costs and prevent expansion into new markets.

Regulatory approvals. ASTS has not yet applied for, and may not receive, certain regulatory approvals that are necessary to its business plans. The failure to obtain these approvals may impact its ability to provide certain goods and services.

Reliance on third-party MNOs. The company will need to reach cooperative agreements with MNOs under which they will agree to provide the company with access to licensed spectrum, and there are no assurances that ASTS will be able to reach such agreements on favorable terms.

Revenue generation is dependent on indirect relationships. ASTS will rely on MNO partners to market and sell its products and services to end users and, as a result, will be dependent on the performance of its commercial partners to generate most of its revenue.

Third-party suppliers. The company relies on third parties for a supply of equipment, satellites, and other components. Any future delays in delivery could adversely affect the business.

Industry change. The satellite communications industry is subject to rapid change and innovation, and an inability to adapt in a timely manner could negatively affect the business.

Competition. ASTS may face increased competition from new competitors, new technologies, or new equipment, including new LEO constellations and expansion of existing geostationary satellite systems that could eliminate the need for a satellite system.

Currency exchange risk. Upon launch of the SpaceMobile Service, the company anticipates generating a significant portion of revenue from international MNO agreements. As a result, business operations will be highly sensitive to currency exchange risks.

AST SpaceMobile, Inc. Model -- ASTS
B. Riley Securities

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	FY20a	FY21a	Q1a	Q2a	Q3a	Q4e	FY22e	Mar	Jun	Sep	Dec	FY23e	FY24e
								Q1e	Q2e	Q3e	Q4e		
Revenues	5,967	12,405	2,394	7,264	4,168	0	13,826	0	0	0	1,000	1,000	23,925
Cost of sales	3,025	7,563	1,986	2,202	2,525	2,747	9,460	2,969	3,191	3,413	3,635	13,208	16,760
Gross profit	2,942	4,842	408	5,062	1,643	(2,747)	4,366	(2,969)	(3,191)	(3,413)	(2,635)	(12,208)	7,165
Engineering services	13,081	29,599	11,740	11,999	14,492	14,603	52,834	14,803	15,003	15,103	15,303	60,212	64,212
G&A	12,320	35,636	11,619	13,075	12,916	13,027	50,637	13,327	13,627	13,927	14,227	55,108	60,908
R&D	1,011	23,440	8,281	9,145	13,543	13,000	43,969	13,111	9,611	9,061	8,961	40,744	37,844
D&A	887	2,913	1,100	1,185	1,172	4,111	7,568	11,111	11,111	14,111	16,111	52,444	114,444
EBIT	(24,357)	(86,746)	(32,332)	(30,342)	(40,480)	(47,488)	(150,642)	(55,321)	(52,543)	(55,615)	(57,237)	(220,716)	(270,243)
Nonrecurring, noncash, or unusual items	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating income	(24,357)	(86,746)	(32,332)	(30,342)	(40,480)	(47,488)	(150,642)	(55,321)	(52,543)	(55,615)	(57,237)	(220,716)	(270,243)
Interest income	67	-	-	-	-	-	-	-	-	-	-	-	-
Interest expense	(9)	-	-	-	-	96	96	96	96	96	96	386	10,386
Loss (Gain) in fair value warrant exp; transaction expense	-	(15,766)	5,482	(23,049)	15,897	-	(1,670)	-	-	-	-	-	-
Other income (expense)	83	(1,950)	15	(679)	24,875	-	24,211	-	-	-	-	-	-
Income before provision for income taxes	(24,198)	(72,930)	(37,799)	(7,972)	(31,502)	(47,584)	(124,857)	(55,417)	(52,639)	(55,711)	(57,333)	(221,102)	(280,629)
Income tax expense	131	331	104	96	550	(10,469)	(9,719)	(12,192)	(11,581)	(12,257)	(12,613)	(48,642)	(61,738)
Income from continuing operations	(24,329)	(73,261)	(37,903)	(8,068)	(32,052)	(37,116)	(115,139)	(43,226)	(41,059)	(43,455)	(44,720)	(172,459)	(218,890)
Net (income) loss attributable to noncontrolling interest	344	42,708	27,182	5,144	22,286	-	54,612	-	-	-	-	-	-
Net income	(23,985)	(30,553)	(10,721)	(2,924)	(9,766)	(37,116)	(60,527)	(43,226)	(41,059)	(43,455)	(44,720)	(172,459)	(218,890)
Suppl Disc: Pro-forma pre-tax income	(24,198)	(72,930)	(37,799)	(7,972)	(31,502)	(47,584)	(124,857)	(55,417)	(52,639)	(55,711)	(57,333)	(221,102)	(280,629)
Earnings per share:													
Pro-forma EPS	(0.14)	(0.30)	(0.16)	(0.03)	(0.13)	(0.19)	(0.51)	(0.22)	(0.20)	(0.21)	(0.21)	(0.85)	(1.00)
GAAP	(0.18)	(0.17)	(0.06)	(0.02)	(0.05)	(0.20)	(0.33)	(0.23)	(0.21)	(0.22)	(0.22)	(0.89)	(1.04)
Diluted shares outstanding	129,800	181,531	181,582	181,746	184,169	186,319	183,454	189,469	192,619	196,269	200,419	194,694	209,794
Common Size:													
Gross margin	49.3%	39.0%	17.0%	69.7%	39.4%	#DIV/0!	31.6%	#DIV/0!	#DIV/0!	#DIV/0!	-263.5%	-1220.8%	29.9%
EBITDA margin	-393.3%	-675.8%	-1210.4%	-367.8%	-885.6%	#DIV/0!	-966.4%	#DIV/0!	#DIV/0!	#DIV/0!	-3876.2%	-15881.5%	-611.7%
Tax rate	-0.5%	-0.5%	-0.3%	-1.2%	-1.7%	22.0%	7.8%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Pro-forma tax rate	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Growth Y/Y													
Revenues	322.0%	107.9%	151.7%	162.0%	70.1%	-100.0%	11.5%	-100.0%	-100.0%	-100.0%	#DIV/0!	-92.8%	2292.5%
EBITDA	119.9%	257.2%	161.3%	18.1%	79.2%	59.1%	59.4%	44.4%	46.2%	6.0%	-5.5%	18.9%	-7.9%
FCF	282.3%	117.1%	210.0%	-61.5%	2478.8%	122.7%	41.5%	-21.3%	81.3%	171.7%	35.7%	46.2%	17.2%
Net income	118.4%	201.1%	213.6%	-87.6%	-290.7%	189.9%	57.2%	14.0%	408.9%	35.6%	20.5%	49.8%	26.9%
EPS	111.9%	115.5%	123.5%	-87.8%	-284.6%	269.6%	69.4%	40.5%	523.0%	65.9%	12.0%	66.9%	17.8%
Selected Financial Information													
Price	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99	\$ 7.99
Market cap	1,037,102	1,450,433	1,450,840	1,452,151	1,471,510	1,488,689	1,465,797	1,513,857	1,539,026	1,568,189	1,601,348	1,555,605	1,676,254
Cash & investments	42,777	321,787	253,731	202,371	199,529	169,889	169,889	147,638	120,982	72,596	43,970	43,970	88,946
Debt, short and long-term	-	5,000	4,940	4,880	4,820	4,820	4,820	4,820	4,820	4,820	4,820	4,820	204,820
Enterprise value	994,325	1,133,646	1,202,049	1,254,660	1,276,801	1,323,620	1,300,729	1,371,039	1,422,864	1,500,413	1,562,197	1,516,455	1,792,128
Depreciation & Amortization	887	2,913	1,100	1,185	1,172	4,111	7,568	11,111	11,111	14,111	16,111	52,444	114,444
Share-based compensation	283	3,736	2,254	2,441	2,398	2,364	9,457	2,364	2,364	2,364	2,364	9,457	9,457
EBITDA	(23,470)	(83,833)	(28,978)	(26,716)	(36,910)	(41,013)	(133,617)	(41,846)	(39,068)	(39,140)	(38,762)	(158,815)	(146,342)
EBITDA (LTM)	(23,470)	(80,092)	(97,981)	(102,071)	(118,384)	(133,617)	(133,617)	(146,484)	(158,836)	(161,066)	(158,815)	(158,815)	(146,342)
EV/EBITDA (LTM) ratio	(36.9)	(14.2)	(12.3)	(12.3)	(10.8)	(9.9)	(9.9)	(9.4)	(9.0)	(9.3)	(9.8)	(9.8)	(12.6)
Capital expenditures	30,381	54,792	21,567	12,033	12,250	17,000	62,850	20,500	27,073	53,906	38,492	139,971	189,524
A/R	2,081	2,173	2,593	3,569	-	-	-	-	-	-	889	889	10,400
DSOs, (A/R*90 / Qrev)	69	-	97	44	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	80	80	80
Inventory, prepaid, and other current assets	6,074	9,093	15,226	26,986	25,777	25,777	25,777	27,777	29,777	31,777	33,777	33,777	41,777
PP&E, net (including satellites under construction)	37,070	95,942	114,850	124,309	135,637	139,137	139,137	149,137	169,137	189,137	209,137	209,137	289,137
Accounts payable & accruals	9,212	14,107	14,212	13,827	20,383	20,383	20,383	23,383	26,383	29,383	32,383	32,383	44,383
Deferred revenue, short and long-term	3,401	6,636	7,800	7,490	-	-	-	-	-	500	1,500	1,500	5,500
Free cash flow	(55,085)	(119,615)	(62,564)	(29,596)	(29,398)	(47,640)	(169,198)	(49,250)	(53,656)	(79,886)	(64,626)	(247,418)	(290,024)
FCF (LTM)	(55,085)	(119,615)	(161,995)	(114,693)	(142,951)	(169,198)	(169,198)	(155,885)	(179,945)	(230,433)	(247,418)	(247,418)	(290,024)
EV/FCF (LTM) ratio	(18.1)	(9.5)	(7.4)	(10.9)	(8.9)	(7.8)	(7.7)	(8.8)	(7.9)	(6.5)	(6.3)	(6.1)	(6.2)
Shareholders' equity	79,987	351,972	315,878	310,274	296,677	259,561	259,561	216,336	175,277	131,822	87,102	87,102	(131,788)
Price/book	13.0	4.1	4.6	4.7	5.0	5.7	5.6	7.0	8.8	11.9	18.4	17.9	(12.7)
Book value per share	\$ 0.62	\$ 1.94	\$ 1.74	\$ 1.71	\$ 1.61	\$ 1.39	\$ 1.39	\$ 1.14	\$ 0.91	\$ 0.67	\$ 0.43	\$ 0.43	\$ (0.61)
P/E	(57.1)	(26.5)	(19.6)	(46.6)	(21.6)	(12.2)	(15.7)	(14.0)	(10.7)	(9.6)	(7.0)	(9.4)	(8.0)

*Closing price of last trading day immediately prior to the date of this publication unless otherwise indicated.

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Rating	B. Riley Securities, Inc. Research Distribution ¹	B. Riley Securities, Inc. Banking Services in the past 12 months ¹
BUY [Buy]	78.18%	47.70%
HOLD [Neutral]	21.82%	31.65%
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(1) As of midnight on the business day immediately prior to the date of this publication.

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