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Aethera™ Technologies Limited Makes Equity Investment in Ad Astra Rocket Company

[Halifax, NS, Canada, and Webster, Texas USA] – For Immediate Release – Aethera™ Technologies Limited, a Canadian company specializing in the provision of radio frequency (RF) engineering hardware, software, and services has made an undisclosed minority equity investment in Ad Astra Rocket Company. Aethera™ Technologies is the manufacturer of the RF power processing units that drive Ad Astra's VASIMR® engine.

The investment cements a long relationship between the two companies, built on years of collaboration on RF power technology applications in electric space propulsion. In June of 2021, Aethera's co-founder, Charles Schue, joined the Board of Directors of Ad Astra Rocket Company.

The VASIMR® is a powerful electric rocket that relies on high-power, efficient, and lightweight RF equipment to generate a plasma – an electrically charged gas (typically argon) – and heat it to extreme temperatures. The plasma is accelerated in a magnetic nozzle to provide useful thrust at a high specific impulse. Two RF power processing units (PPUs) are needed for the engine's first and second stages. Other critical elements of the rocket involve advanced materials and manufacturing, superconducting technology, and thermal engineering. These, along with the RF equipment, are integrated in a high power-density engine package, weighing ~3-4 kg/kW.

In January 2020, a 120 kW Aethera™ RF power processing unit (PPU) successfully demonstrated full power operation in vacuum, at technology readiness level (TRL) of 5, and in July 2021, that unit drove the second stage of the VX-200SS™ VASIMR® engine prototype to its record-setting 88-hour, 80 kW endurance demonstration at Ad Astra's Texas vacuum facility. A second TRL-5 RF PPU is presently in manufacturing by Aethera™ for subsequent integration into the first stage of the VX-200SS™ system. Ad Astra's near-term objective is to bring the VX-200SS™ system to a sustained power level of 100 kW. Beyond this objective, both companies are working to bring the VASIMR® engine to flight readiness and commercialization in support of the anticipated space logistics market in cis-lunar and deep space.

"We are honored to receive this equity investment from an outstanding company and are excited to welcome Aethera™ to our investor family," said Franklin Chang Díaz, Ad Astra CEO. "We are also proud to be working with Canada and thankful for the support that nation has provided to make this technology possible," he added.

Kirk Zwicker, Aethera's President, said, "This investment increases our commitment to the development of technologies that support domain awareness, logistics, platform persistence, satellite servicing, and transportation for low-earth and deep-space missions. VASIMR provides the high power necessary to move objects with large mass in cis-lunar space, and beyond, something no other electric propulsion technology can deliver."

ABOUT AD ASTRA

A 2005 US Delaware corporation headquartered in Texas, Ad Astra Rocket Company is the developer of the VASIMR® engine, an advanced plasma propulsion system for the emerging in-space transportation market. Ad Astra also owns and operates an R&D subsidiary in Costa Rica developing renewable energy applications and hydrogen-based fuel-cell electric transportation and power generation.

ABOUT AETHERA™

Located in Halifax, Nova Scotia, Aethera™ Technologies Limited is a forward-thinking electronics engineering firm focused on improving the success of its clients. Aethera™ develops and manufactures a revolutionary high-power, solid-state Aethera™ RF Power Generator (APG™). The APG™ technology can be found in a wide range of industries, including aerospace; fusion energy solutions; wireless communications; manufacturing; food, food byproducts, oil, and gas; materials transformation; and industrial products for drying, heating, and curing.