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AD ASTRA ROCKET COMPANY IS SELECTED FOR PHASE II NASA CONTRACT FOR ADVANCING THE DEVELOPMENT OF A CRITICAL ELEMENT OF THE VASIMR[®] ENGINE

[Webster, Texas – for immediate release] – Ad Astra Rocket Company (Ad Astra) and the National Aeronautics and Space Administration (NASA) have signed a Phase II contract, valued at \$850,000, to advance the technology of a critical element of the VASIMR[®] rocket engine, a high-power plasma propulsion system, under development by Ad Astra.

The element, referred to as the Generation 4 (Gen-4) “Rhino Horn,” is a major component of the engine’s architecture, efficiently delivering high radiofrequency (RF) power to the engine’s core, and enabling the plasma to be heated to millions of degrees.

The Phase II award follows an earlier \$150,000 Phase I contract successfully completed last February where Ad Astra developed and tested a small-scale version of the Gen-4 Rhino Horn to build technical confidence on the validity of its new design.

Three generations of Rhino Horns have preceded the present design, each improving over its predecessor. Ad Astra expects Gen-4 to follow that trend. The Gen-3 design, in use today, successfully supported the 88-hr endurance test, a company record, conducted in July of 2021. Studies conducted in Phase I indicate that the Gen-4 Rhino Horn will enable steady-state operation of the engine at >100 kW whereas the Gen-3 design would tend to overheat. These studies also predict a significant reduction in weight, and improvements in Gen-4’s ease of manufacturing and assembly. The new contract enables the company to proceed to full-scale manufacturing and integrated testing of the Gen-4 hardware in the VASIMR[®] VX-200SS[™] laboratory prototype.

“It is exciting to see the incredible amount of innovation of our team in continuously improving the VASIMR[®] engine from the inside out,” said Dr. Franklin Chang Díaz, Ad Astra CEO; “I am proud of their awesome creativity and hard work in bringing technical concepts like this quickly to reality,” he added.

These system improvements are designed to increase the robustness and ultimate power of the VASIMR[®] engine and set the stage for advancing the engine’s technology readiness to TRL-6; namely, a system capable of being field tested in space.

ABOUT THE TECHNOLOGY

Short for Variable Specific Impulse Magnetoplasma Rocket, VASIMR[®] works with plasma, an electrically charged gas that can be heated to extreme temperatures by radio waves and controlled and guided by strong magnetic fields. The magnetic field also insulates nearby structures so exhaust temperatures well beyond the melting point of materials can be achieved. In rocket propulsion, the higher the temperature of the exhaust gases, the higher their velocity and the higher the fuel efficiency. Plasma rockets feature exhaust velocities far above those achievable by their chemical cousins, so their fuel consumption is extremely low.

ABOUT AD ASTRA

A US Delaware corporation established in 2005, Ad Astra Rocket Company is the developer of the VASIMR[®] engine, an advanced plasma space propulsion system aimed at the emerging in-space transportation market. Ad Astra also owns and operates supporting research and development subsidiaries in the US and Costa Rica. Through its subsidiaries, the company also develops earthbound high technology applications in renewable energy, green hydrogen, advanced manufacturing and applied physics. Ad Astra has its main laboratory and corporate headquarters at 141 W. Bay Area Boulevard in Webster, Texas, USA, about four miles from the NASA Johnson Space Center.