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NEW PERSPECTIVES FOR ROCKET LAUNCHING IN BRAZIL: THE RISE OF ALCÂNTARA

Abstract

Currently, Brazil has two rocket launch centers, they are the "Barreira do Inferno" Launch Center, in the state of Rio Grande do Norte and the Alcântara Launch Center (CLA), in the state of Maranhão. The first to be built was the Barreira do Inferno Launch Center, founded in 1965, located on Rota do Sol, in the municipality of Parnamirim, 12 km from Natal, capital of the Brazilian state of Rio Grande do Norte, where small and medium-sized rocket launch operations are concentrated. The second and no less important was the Alcântara Launch Center, a spaceport of the Brazilian Space Agency that launched its first rocket in 1990 and which recently launched itself in the international space transport market. This work aims to present the advantages of rocket launches in Brazilian launch centers, and their potential to be a prominent launching site to the world. The Alcântara Launch Center is the great Brazilian bet in terms of launching rockets, as it has several advantages of launching rockets: due to its geographical aspect, located in a region close to the equator, less propellant is spent for geostationary orbit positioning, there is no change in orbit after launch and there is a gain in momentum; geological aspect, there are no instabilities near the launch center, such as volcanoes; climatic advantage, since there are only occasional rains and no other climatic varieties; aeronautical advantage: it is far from major centers, so there is no significant air traffic volume in the place, which allows a considerable amount of launches without putting local air traffic at risk; demographic advantage: as it is a sparsely populated region, launches from that location do not put the general population at risk. CLA's operational sites extend to other regions of the state of Maranhão: Sítio de Alcântara, Sítio de São Luiz, Sítio da Raposa, Ilha de Santana. The Alcântara Site is specifically the point used for rocket launches, it is divided into the following sectors: command and control; preparation and launch; satellite control; support sector; residential and hotel sector. Regarding the CLA, the main launch operations carried out will also be addressed; the mission of the CLA; the Alcântara Space Center Project and its respective companies in the world aerospace market. Alcantara launching center can therefore become one of the best sites in the world for commercial or strategic rocket launches.