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AFRICAN SPACE PROGRAMS: VIEWING THE PAST

Abstract

The African continent is poised for a great leap ahead in space during the decade of the 2020s. Indigenous programs, some quite strong, the existence of a space directorate within the African Union, and the extensive utilization of remote-sensing data stand to lead the continent forward. Truly, space operations on the African continent will be all but unrecognizable by the end of the decade. An overly bold forecast? Only if the past is not understood. Projecting this growth does not make sense except in light of the history of the programs leading to this point. This study brings this history to light and presents the base for the leap ahead.

Two relevant histories are involved: histories of countries with significant, existing space programs (e.g., Nigeria, Egypt, and South Africa) and the stories of nations without major space operations but which utilize satellite data in significant ways. This study presents the direct relevance of both.

One can see an example of the first relevant history by examining the evolution of differences between indigenous space programs, e.g., Egypt's, Nigeria's, and South Africa's. Egypt's space program dates to 1971 and the establishment of the Remote Sensing Center in 1972. The program has functioned with significant direction from the top and with two foci, a defense-oriented program and a civilian program focused on remote sensing. The current NARSS is an outgrowth of that early beginning. In contrast, Nigeria has operated without central direction but has long been involved in space. The Regional Center of the African Remote Sensing Program was established in Ile-Ife in 1977, and the National Center for Remote Sensing was approved in 1988. Finally, South Africa, working with Israel, developed two dual use rockets in 1989 and 1990 which were launched from a purpose-built base on South Africa's coast.

The second relevant history is the varied manners in which countries without formal space programs utilize remote sensing data, e.g., the center for resource mapping and environmental management located in Kenya. It is important to note that building from this historical base, African nations, in cooperation with launch operators, have launched 41 satellites, 38 by 11 countries and three by multilateral groups. Eight of these satellites were launched by five countries in 2019 alone, demonstrating an often unacknowledged level of activity.

Once the history of space in Africa is clear, the path ahead becomes much more obvious. This study assesses that history.