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# MARINUS VERTREGT (1897-1963) – SPACE FLIGHT PIONEER

**Abstract**

In 2019, it was 60 years since Vertregt's book "Principles of Astronautics" was first published. Good reason to commemorate this special event and the man behind it.

From early age onwards Marinus Vertregt had an interest in science and especially astronomy. Soon after his repatriation in 1950 as a General Manager from a large sugar estate and refinery in Ethiopia, following an eminent career in the sugar industry in Indonesia, he became interested in spaceflight. In 1953 he became a member, and later on a fellow, of the British Interplanetary Society (BIS) and the Nederlandse Vereniging voor Ruimtevaart (NVR), the Netherlands Space Society. He was a board member from 1954 to 1968, including two years as vice-chairman.

When in 1954 S.F. Singer published "Studies of a Minimum Orbital Unmanned Satellite of the Earth (MOUSE)" at a conference in the U.S., it instantly drew Vertregt's attention. The proposal concerned an Earth satellite in a 300 km orbit. Vertregt immediately undertook to study the proposal and improved it by showing that with a few percent extra energy the orbit could be increased to 500 km, which would make the satellite last much longer before ending up in the atmosphere. In October 1954 he sent his design to members of the International Astronautical Federation, calling it a"provisional sketch".

In 1959 he published his book 'Beginselen van de Ruimtevaart', followed in 1960 by the English translation 'Principles of Astronautics', published by Elsevier. In 1965 a much extended second edition was published, of which a Russian translation was published in 1969.

In 1959 this book was the first to treat the whole field of astronautics in a succinct though scientific manner. Vertregt's goal was to enable the reader to understand the developments in astronautics and its future potential. He furthermore published many articles in the Journal of the BIS, the British periodical 'Spaceflight', Astronautica Acta, the NVR magazine 'Ruimtevaart' and several other Dutch periodicals. These covered subjects such as the trajectory of interplanetary spacecraft, optimal design of rocket stages, and spacecraft operating under low thrust. Several newspapers referred to his work; Vertregt did not speak to astronautics professionals only, but to the general public as well.

In this paper we will provide biographical memoirs of Marius Vertregt, who has made original contributions to the development & application of astronautics and rocketry.