

Chapter 16

The Competition Among Stars: Case Studies of American–Russian– Chinese Rivalry in Space Exploration

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ABSTRACT

The creation of long-range missile technology in the late 1940s was a milestone where a new domain of activity – Earth orbit and outer space – emerged. These extremely expensive research and development programs were strictly limited only to a small club of the most developed and innovative countries, but even almost seven decades after the launch of the first satellite, only a few players could independently participate in the exploration of space. Three of them: the United States, the Russian Federation as political and technological heir of the Soviet Union, and the People’s Republic of China mastered all the most important milestones of space technology to take full part in both the Cold War- and the new space race. The aim of this chapter is to explain and understand the areas of competition between the three superpowers in space, what are the most important events where the competition-management was applied and what are the perspectives/consequences of the new countries joining the space competition area within the current decade.

INTRODUCTION: MORE SCIENCE, LESS FICTION

Space constitutes a source of hope for the world sinking in environmental and climate issues but also further problems as a field where crucial economic and strategic infrastructure can be located. With the growing dependence on satellite services, navigation and observation performed in orbit, Humanity reached a sufficient level of technology not only to perform astronomical science but also to use the space domain more comprehensively. The year 2023 – when the anniversary of the first Chinese manned spaceflight occurred – was a perfect time for the analysis of space programs in various fields (Xinhua, 2023). Space exploration is often portrayed as an engineering achievement, however, its implications and challenges in social science and security dimensions, order the analysis not only from the perspective

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of the history of physics. The strategic importance of space infrastructure and the purpose of devices in Earth orbit raise questions about political calculations, potential collisions of space programs continued by two or more countries, and, if such happened, methods of managing or solving potential conflicts. Currently, the seventy-six governmental and international space agencies are involved in more or less advanced space exploration projects. 102 member countries of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) form on the other hand fora for discussion, information and regulation of space development (COPUOS, 2023). COPUOS established in 1959 within the United Nations Organization (UN) is responsible for managing the utilization of outer space following the principles arising from its special status. The United Nations Office for Outer Space Affairs (UNOOSA) serves as the secretariat for COPUOS (UNOOSA, 2023).

What is obvious, the main difference between the programs established by countries and organizations is their level of independence in access to the space. That means possessing their own, space launch capabilities: the vehicles – rockets, the infrastructure to organize independent space launches and also the know-how to design, manufacture and control satellites, instruments and spacecrafts. As of today, only nine countries have their own complete capabilities: the United States, Russia, the People’s Republic of China – PRC, France (independently and also as a part of the European Space Agency – ESA), India, Iran, Israel, Japan, North Korea and South Korea. A few more participate institutionally with huge input including their programs, self-produced spaceships or own space staff: Argentina, Canada, Germany, Italy, Kenya, Sweden, Taiwan and the United Kingdom (Statista Daily Data, 2022).

The first space state was the Soviet Union (USSR) in 1957, whose infrastructure, technology and achievements were inherited after the decomposition by the largest of its republics – Russia. However, the current frictions between Russia and Kazakhstan, where key infrastructure (the launch centre in Baikonur) is located, and the change in Russia’s priorities with its involvement in aggression against Ukraine and the economic crisis caused by Western sanctions, position Russia rather as a descending space power. The United States of America, China, and, on a smaller scale, Europe and India, are the players whose influences in space conquest constantly grow, and their financing and future are not at risk. This chapter aims to present how the science-fiction-looking space exploration is seen through the lenses of political studies by addressing the research questions listed below:

RQ1. In what way do the main superpowers deal with their opposing interests when supporting the exploration of space?

RQ2. How the management of these conflict situations can be extrapolated for future rivalries?

In the next section, an overview of the conceptual approach underpinning the discussion in this chapter is briefed, based on a literature review and key term explanations (Section 3). In section 4, the historical background of space exploration is briefly highlighted. Having identified the three sites of the conflict context as the mechanisms influencing the aerospace development strategy, in the following section, the individual case studies of these conflict management are explained. Discussion and conclusions follow.

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