

## 14. Gateways to Heaven

M. Gruntman,  
*Blazing the Trail. The Early History of Spacecraft and Rocketry,*  
AIAA, Reston, Va., 2004 p. 320-321

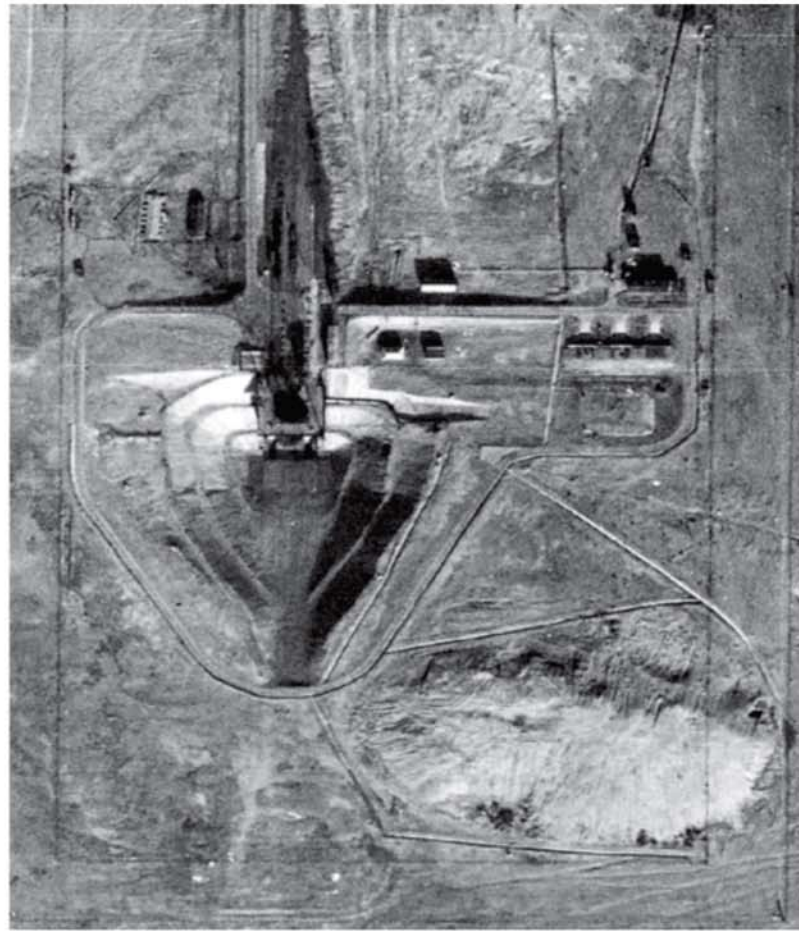
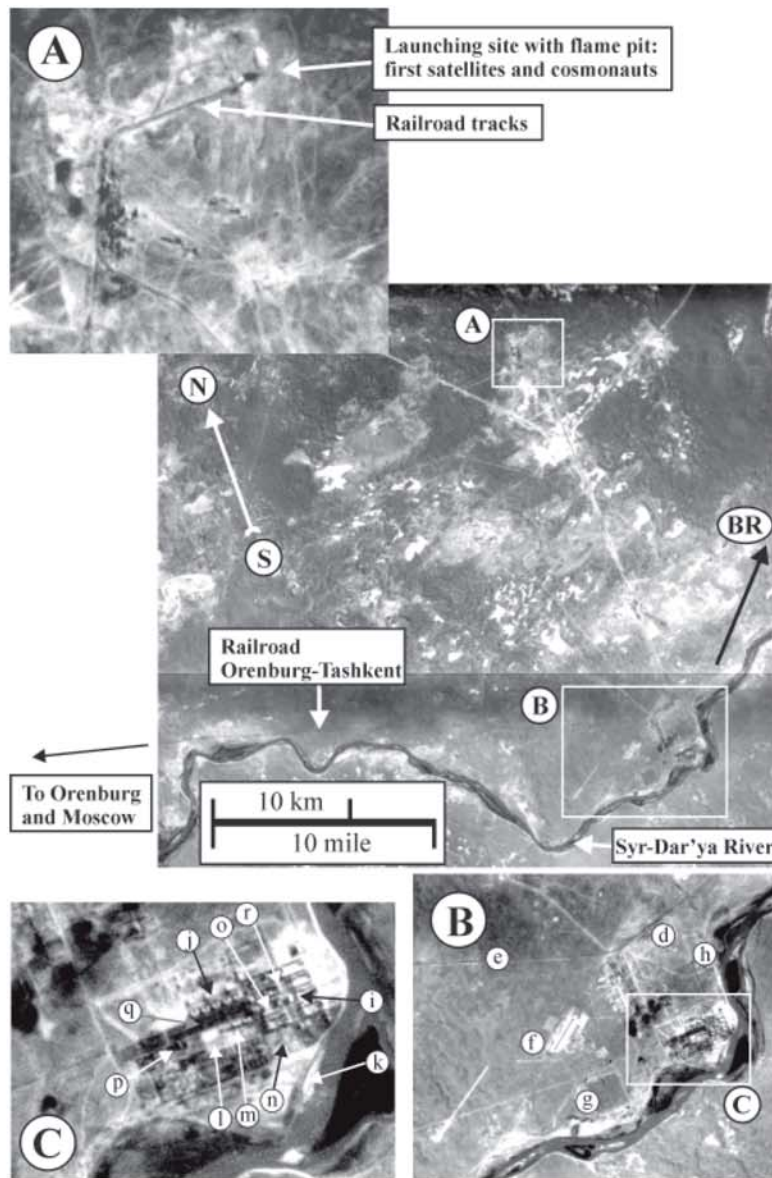


Fig. 14.21. Top: one of the first U-2 photographs of the Tyuratam launching pad in 1950s. The first ICBM, the first satellite, and the first cosmonaut were launched from this site. Bottom: sketch of this launching site in 1961 based on U-2 and Corona satellite photographs. Figures courtesy of Central Intelligence Agency.



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**Sprawling  
Tyuratam  
Complex  
in 1962**

Fig. 14.22. Composite satellite image (center) of the Tyuratam launch complex, the cosmodrome, obtained by Corona (Mission 9035) on 30 May 1962. A) First space launching pad; B) and C) settlement, later called *Leninsk*; arrow "BR" shows the direction toward Baikonur 320 km (200 mile) away; d) Tyuratam railroad station; e) railroad Orenburg-Tashkent; f) temporary airstrip (airfield *Krainii* under construction 3 km to the west); g) agricultural farm organized by the military to supplement rations; h) water pumping station; i) garrison cultural center; j) military barracks; k) river beach; l) stadium; m) hospital; n) *Soldatskii* (soldiers') Park; o) school; p) headquarters of the Construction Engineering Directorate and the summer movie theater; q) park; r) headquarters of the commander of the test range and rocket units. Courtesy of Mike Gruntman.

# Blazing the Trail

## The Early History of Spacecraft and Rocketry

**Mike Gruntman**

**AIAA, Reston, Va., 2004**

ISBN 156347705X; 978-1563477058

**505 pages with 340 figures**

**Index: 2750+ entries, including 650 individuals**

This book presents the fascinating story of the events that paved the way to space. It introduces the reader to the history of early rocketry and the subsequent developments which led into the space age. People of various nations and from various lands contributed to the breakthrough to space, and the book takes the reader to far away places on five continents.

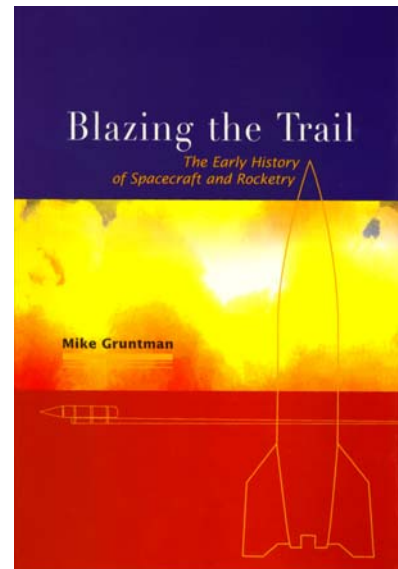
This world-encompassing view of the realization of the space age reflects the author's truly unique personal experience, a life journey from a child growing on the Tyuratam launch base in the 1950s and early 1960s, to an accomplished space physicist and engineer to the founding director of a major U.S. nationally recognized program in space engineering in the heart of the American space industry.

Most publications on the topic either target narrow aspects of rocket and spacecraft history or are popular books that scratch the surface, with minimal and sometimes inaccurate technical details.

This book bridges the gap. It is a one-stop source of numerous technical details usually unavailable in popular publications. The details are not overbearing and anyone interested in rocketry and space exploration will navigate through the book without difficulty. The book also includes many quotes to give readers a flavor of how the participants viewed the developments. There are 340 figures and photographs, many appearing for the first time.

### Table of contents

- Preface
- Foreword
- Humble Beginnings
- Rocket Proliferation – The First Wave
- Under Rocket Fire in India
- The Congreve Rocket
- Rockets Come to America
- First American Rockets
- Rocket Proliferation – The Second Wave
- Public Imagination on Fire
- Great Pioneers
- The First Modern Rocket
- JATO and Beyond
- Building the Foundation
- Road to Sputnik
- Gateways to Heaven
- The Breakthrough
- Opening the Skies
- Joining the Club
- The First Thousand Years



Book details (including **index** and **reviews**) at: <http://astronauticsnow.com/blazingthetrail/>

About the author. Dr. Mike Gruntman is professor of astronautics at the University of Southern California. Accomplished physicist, Mike is actively involved in research and development programs in space science and space technology. He has authored and co-authored nearly 300 publications, including 4 books.