

History of Rocketry and Astronautics

**Proceedings of the Thirty-First History Symposium of
the International Academy of Astronautics**

Turin, Italy, 1997

**Donald C. Elder and George S. James
Volume Editors**

Donald C. Elder, Series Editor

AAS History Series, Volume 26

A Supplement to Advances in the Astronautical Sciences

IAA History Symposia, Volume 17

Copyright 2005

by

AMERICAN ASTRONAUTICAL SOCIETY

AAS Publications Office
P.O. Box 28130
San Diego, California 92198

Affiliated with the American Association for the Advancement of Science
Member of the International Astronautical Federation

First Printing 2005

ISSN 0730-3564

ISBN 0-87703-518-0 (Hard Cover)
ISBN 0-87703-519-9 (Soft Cover)

Published for the American Astronautical Society
by Univelt, Incorporated, P.O. Box 28130, San Diego, California 92198
Web Site: <http://www.univelt.com>

Printed and Bound in the U.S.A.

Contents

	Page
Foreword	vii
Preface	ix
A Tribute to Bill Hilton	xi
PART I	
The Pioneers of the Space Age	
Chapter 1. Tsiolkovsky’s “Album of Space Voyages:” Visions of a Space Theorist Turned Film Consultant, Ben Finney, Vladimir Lytkin and Liudmila Alepko	3
Chapter 2. Konstantin Tsiolkovski and the Origin of the Space Elevator, Jerome Pearson	17
Chapter 3. Wernher von Braun’s Doctoral Thesis: A Scientific Basis for the Type ‘A’ Rocket (Aggregate) Program Florin Zăgănescu and George Popa	25
Chapter 4. Viacheslav Kovtunenko: His Life and His Place in the History of Astronautics, Vladimir Prisniakov, Evgeni Abramovsky and Sergei Kavelin	37
Chapter 5. Le Prieur and the First Air Launched Rockets, Hervé Moulin and Philippe Jung	41

	Page
PART II	
Rocketry and Astronautics: Program Overviews	
Chapter 6. Rocketdyne—A Giant Pioneer in Rocket Technology: The Earliest Years, 1945-1955, Frank H. Winter	65
Chapter 7. Dusting Off the Roots of Consistency: British Space Policy 1957-1959, Douglas Millard	95
Chapter 8. Birth of the Sun-Synchronous Satellite, R. Genty and G. Pignolet	101
Chapter 9. Japanese Liquid Rockets in World War II, Yasunori Matogawa	111
Chapter 10. Soviet Work on Ramjets From 1929 Until Now, Christian Lardier	127
Chapter 11. Fire in the Sky: U.S. Space Laser Development From 1968, Lt. Col. John R. London III and Dr. H. Alan Pike.	165
Chapter 12. 50 Years of Rocket Propulsion in Vernon, Christophe Rothmund	175
PART III	
Developments During The Space Age	
Chapter 13. Mitchell R. Sharpe, Jr. Aerospace Historian, Konrad K. Dannenberg and Donald Tarter.	195
Chapter 14. The Contribution of Ju. V. Kondratjuk to the Foundation of the Theory of Space Flight, B. V. Rauschenbach and V. N. Sokolsky .	205
Chapter 15. Korolev's "Circus Act:" Voskhod, James Harford	211
Chapter 16. TM-3: A Joint Soviet-Syrian Space Mission, M. A. Fares and G. Edelby	225
Chapter 17. Sputnik Technology—40 Years Ago, Vladimir Syromiatnikov and Guy Pignolet.	231
Chapter 18. 1947-1997, Rocket Mail and High Priority Cargo Delivery by Rocket: 50 Years of Research by the Rocket Research Institute— Part I, George S. James	239

	Page
Chapter 19. The U.S. Space & Rocket Center: A Dream Realized, Thad Mauldin	303
Chapter 20. The X 422: The First Cruise Missile in History, Philippe Jung	313
Chapter 21. Doctrine and Dyna-Soar: Origins of USAF Manned Military Spacecraft, R. F. Houchin	355
Chapter 22. The History and Formation of Kapustin Yar, the First Soviet Cosmodrome, D. V. Shatalov	367
Chapter 23. The U.S. Navy's HYDRA Project, and Other Floating-Launch Programs, John E. Draim	371
Chapter 24. 80 Years of the Khrunichev Space Center—From Cars to Space Vehicles, Anatoly I. Kiselev, Alexander A. Medvedev, Vladimir K. Karrask and Oleg A. Sokolov	389
Chapter 25. Organization and Initial Period of Activity of the Enterprise to Develop Liquid Propellant Rocket Engines in the Russian Federation, V. F. Rakhmanin and V. S. Sudakov	395
Index	407