Solution to the exercises of the book "Introduction to Rocket Science and Engineering"

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Abstract

This document contains the solution to the exercises of each chapter of the book "Introduction to Rocket Science and Engineering" by Travis S. Taylor. Solving the exercises is a project proposed in the blog https://www.argonur.com.
To visit the website of the project:
https://argonur.com/solucion-introduction-to-rocket-science-and-engineering/.

1 Exercises of Chapter 1

1. **Discuss the relevance of the *aelopile* to rocket science and why it was considered the first demonstration of the principle of rocketry.**

2. **What are the main components of the gun powder?**

3. **What was *Principia* and why is it relevant to rocket science?**

4. **Why were William Hale's rockets "better" than William Congreve's?**

5. **Compare and contrast the contributions to the development of rocketry by Konstantin Tsiolkovsky and Robert Goddard. Which one could be considered the "father of rocket science" and which one the "father of rocket engineering"?**

6. **Who was known as the Chief Designer and why?**

7. **Who was the Chief Designer's counterpart in the American space program?**

8. **What is the oldest spacecraft still in orbit?**

9. **What is UDMH? What is it used for? What is NTO?**

10. **Draw a simple liquid fuel rocket and label all the major subcomponents.**

References

[1] Travis S. Taylor, *Introduction to Rocket Science and Engineering.* CRC Press, 2009.