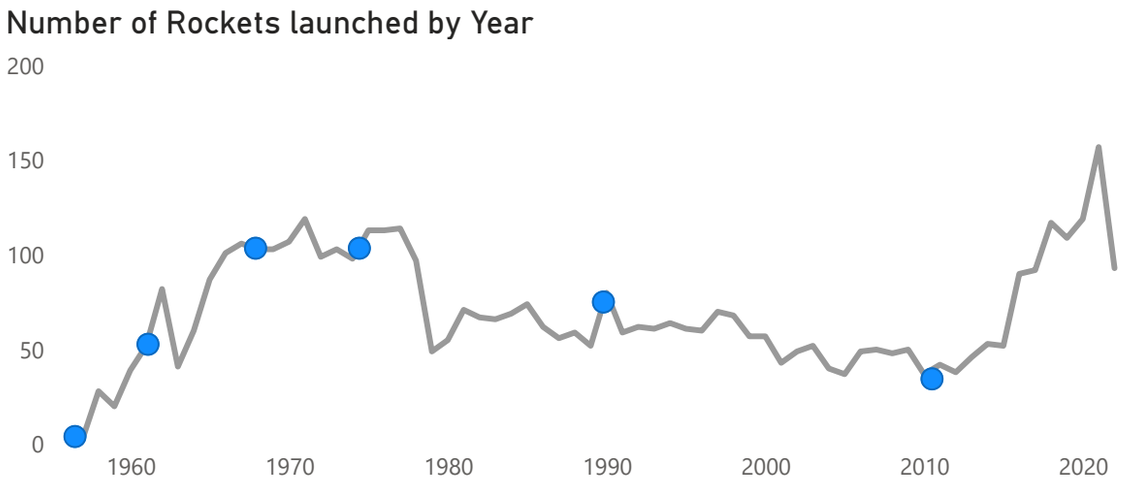
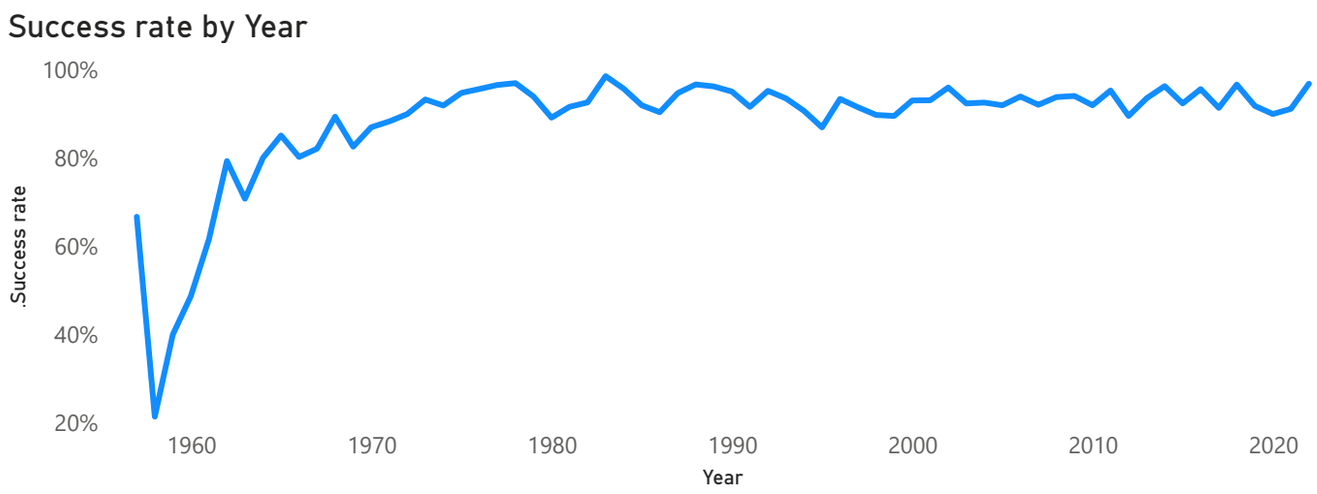
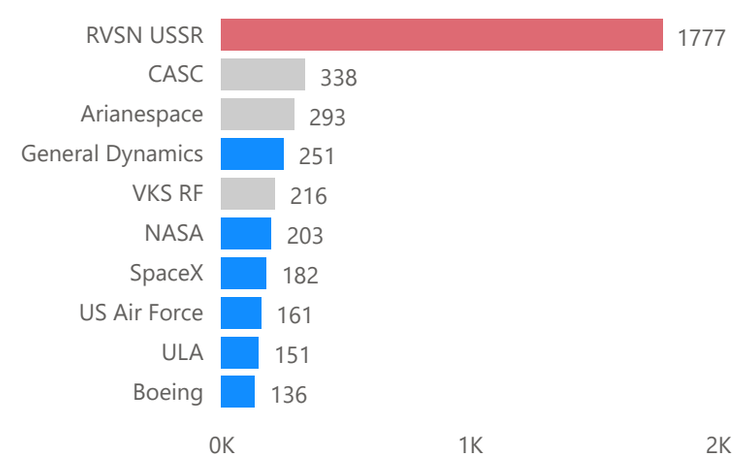
A BRIEF HISTORY OF SPACE EXPLORATION



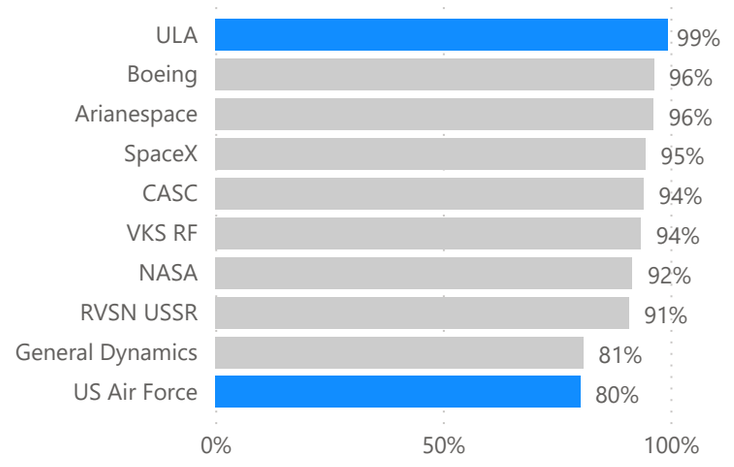
- Space exploration began in **1957** with the launch of the Sputnik 1 satellite.
- The **Space Race** between the **US** and the **USSR** intensified. Two major highlights were the **first human in space** in **1961** (Soviet's **Yuri Gagarin**) and the **first human on Moon** in **1969** (US's **Neil Armstrong**).
- The Space Race ended in **1975**, causing **sharp drop** in missions per years shortly after.
- From **1990**, the **dissolution** of the **USSR** and **budget cut** of **NASA** gradually diminished the annual rocket launches.
- **2010** marked the year **private organisations** started to heavily invest in space travel, with the launch of **SpaceX's Falcon 9**.

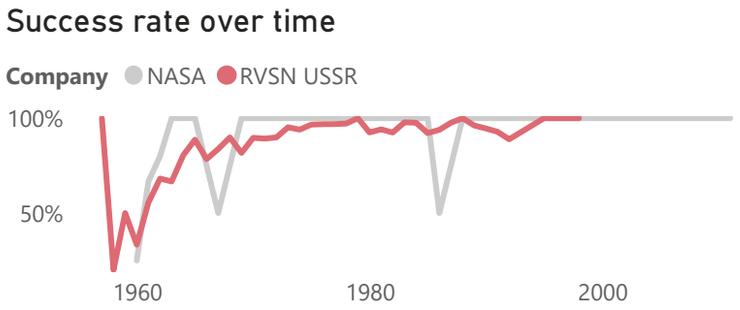
- The **USSR** made **2 successful launches** in **1957** (Sputnik 1 and Sputnik 2). The **US failed 1** mission in the same year.
- The following year, **1958**, in an effort to catch up in the Space Race, the **US attempted 23 launches** but only **5 were successful**.
- **NASA** was **found** in **1958** to coordinate the US space programs.
- The **global success rate** reached **80%** in **1962** and has not fallen below that since 1964.

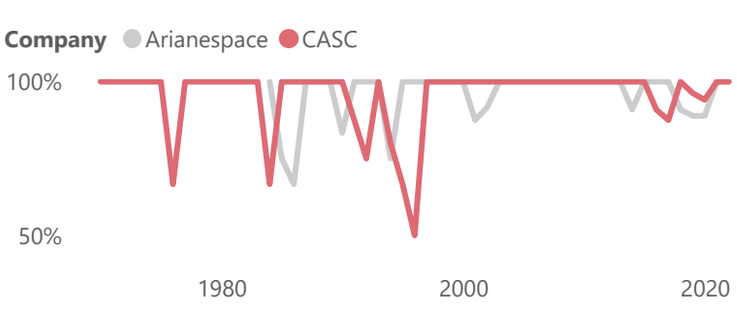


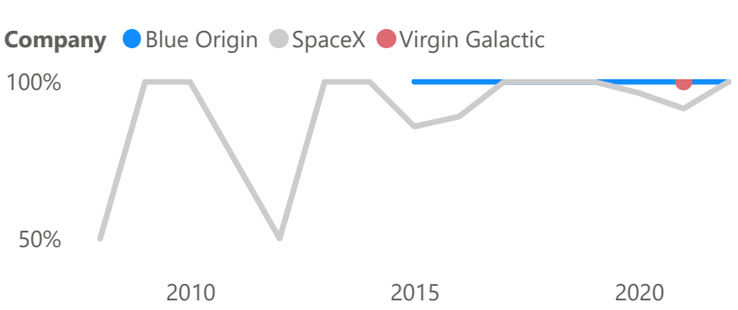


- **RVSN USSR** stood out as the company with the **most rockets launched** (1,777), way above the next two contenders (CASC of **China** and Arianespce of **France**).
- The **US** has always been a major player in space travel with **5 companies in the top 10.**
- All top 10 companies have **at least 80% success rate**, with ULA achieves an outstanding 99% success rate.

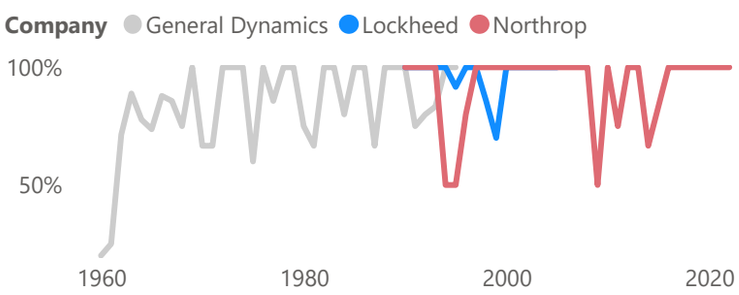


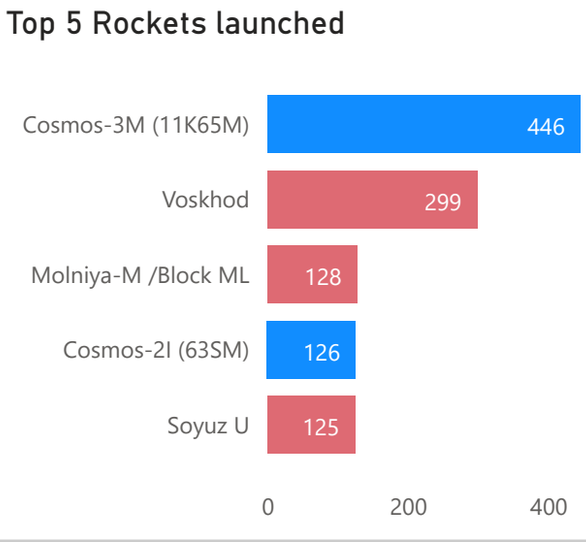




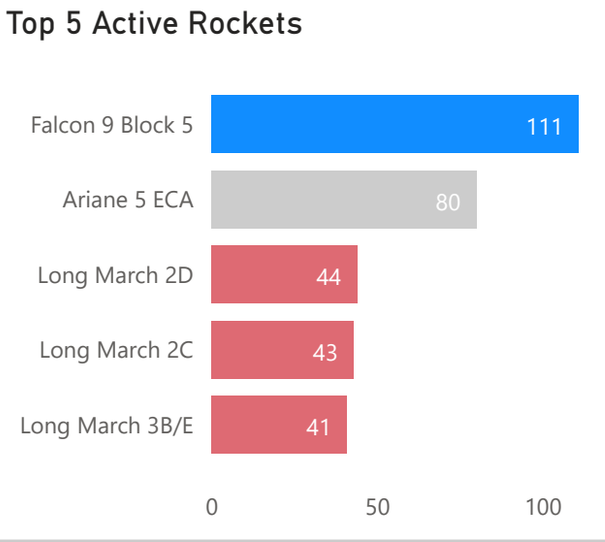


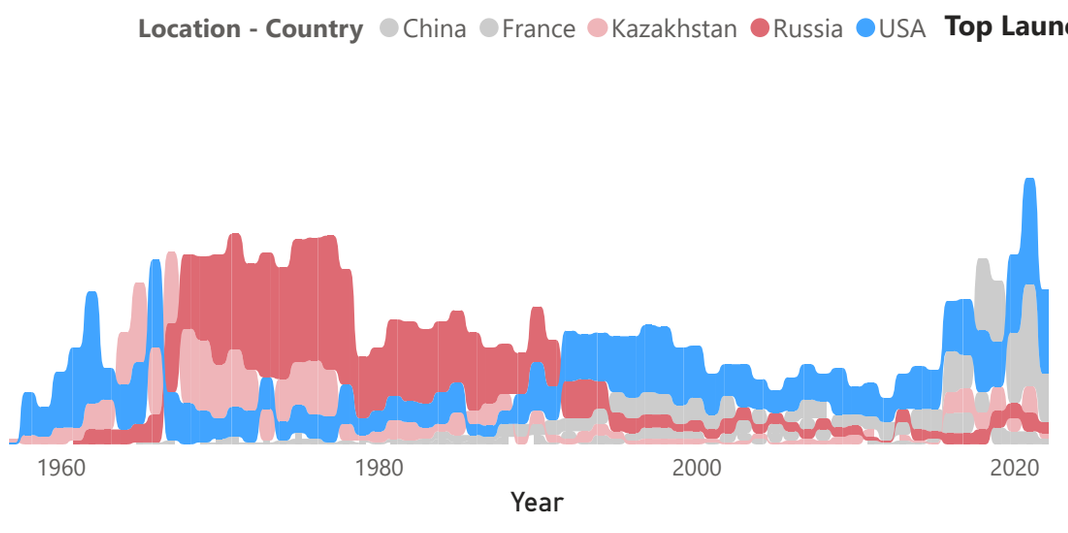
- **RVSN USSR** appeared to achieve high success rate **slower** and was **unable maintain** over sustained periods, in comparison with NASA.
- **Arianespace** (France) and **CASC** (China) both had rough start but seemed to stable after the year 2000.
- **Blue Origin** and **Virgin Galactic** have exceptional success rate, but only launched their **first rocket in the last decade**. More **time** is needed to evaluate their long-term performance. US's **Defence-linked companies** are also experiencing **fluctuated success rates**.



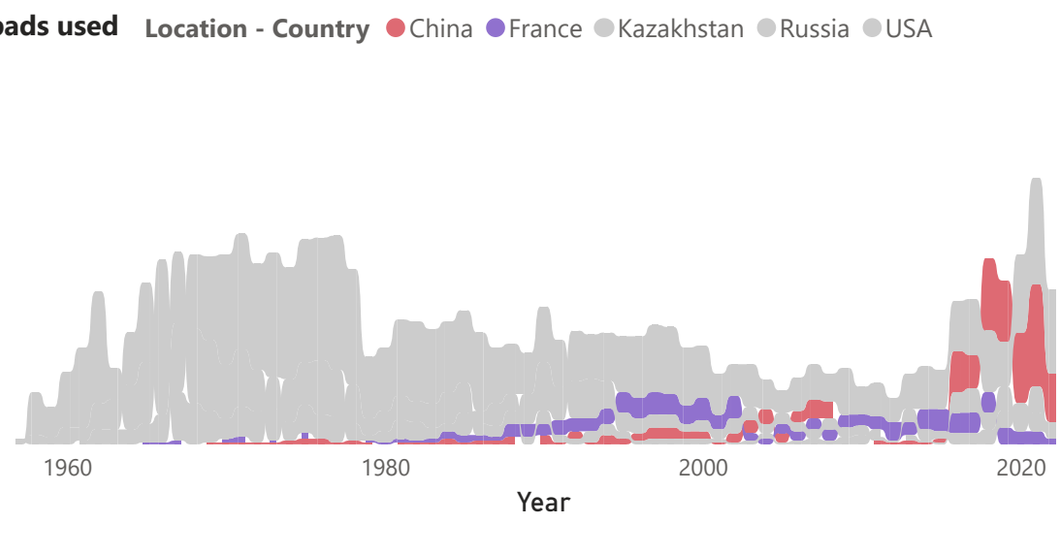


- Throughout the history of space exploration, the **US** and the **USSR/Russia** launched the **most rockets**.
- However, most of these rockets have been **retired** and **new players emerged**.
- **China** is **replacing Russia** as a prominent player, with the Long March rockets.
- In the US, **private organisations** like Space X are taking the stage with promising cheaper and reusable rockets like the Falcon 9.





- The downfall of the USSR in **1991** was a clear **turning point**. The **USA led** in the number of rockets launched **after this event**. In contrast, the use of launchpads in Russia and Kazakhstan (both **formerly Soviet**) **never recovers** to its prime during the 70s and 80s.



- **China** has made **great progress** in space exploration **recently**, currently standing at number 2 in the world on launchpad usage.
- **France** has **gradual development**, without any great leap.