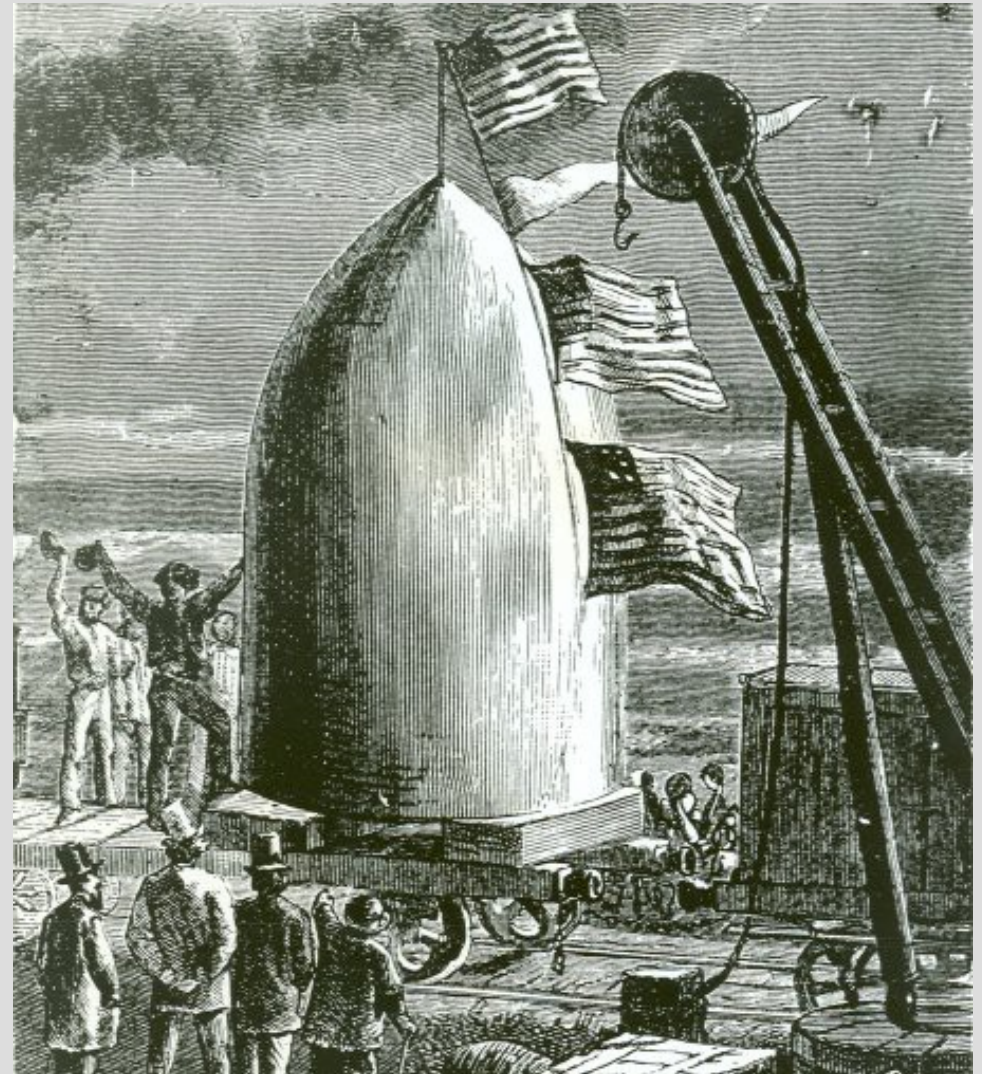
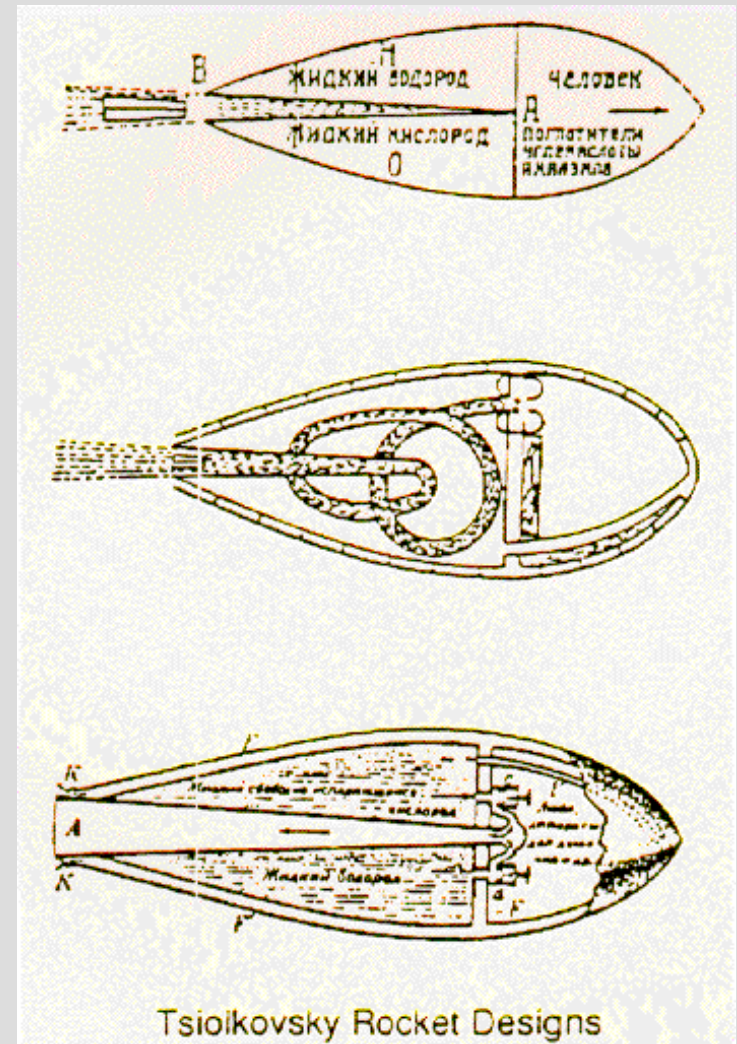
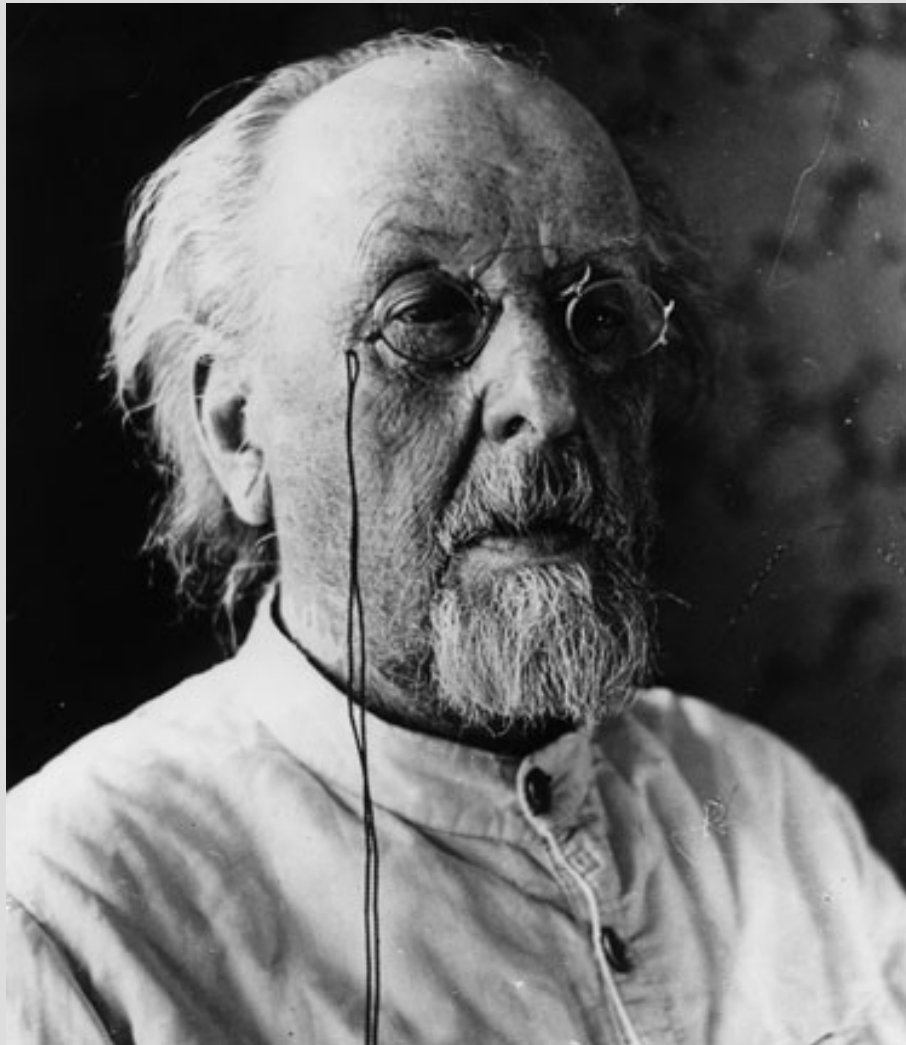


Jules Verne (1828 – 1905)
De la Terre à la Lune (1865); Autour de la Lune (1870);
Les Cinq cents millions de la Béguin (1879)



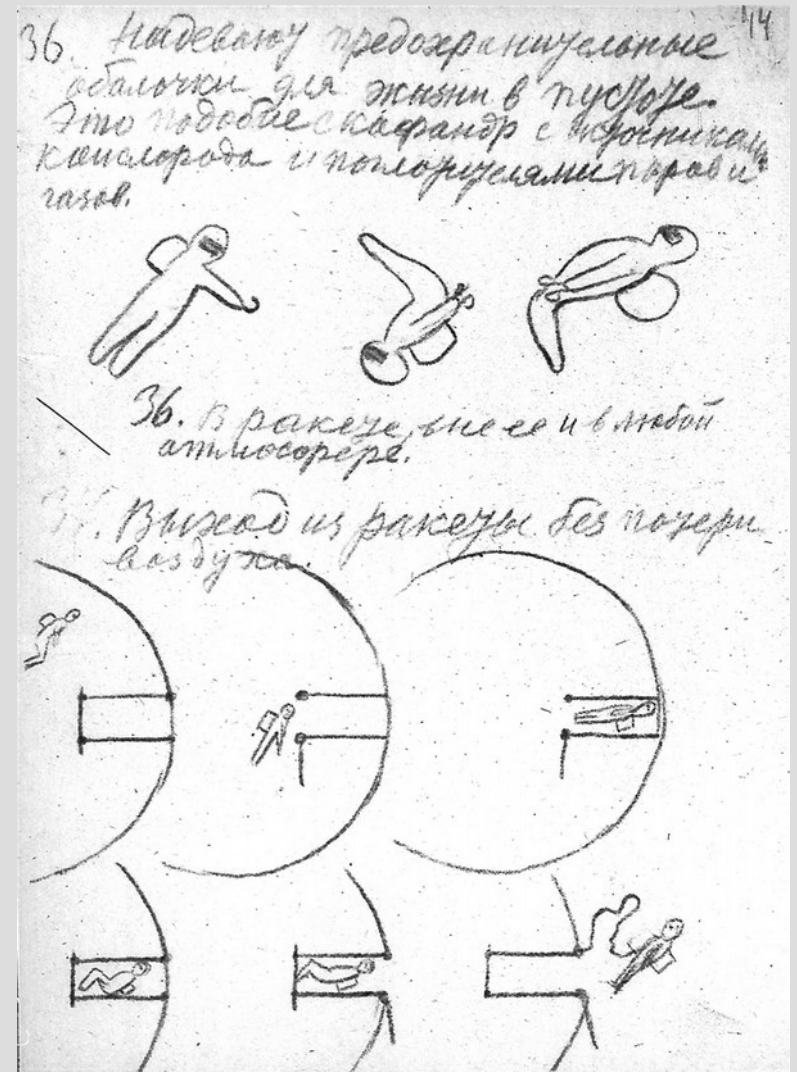
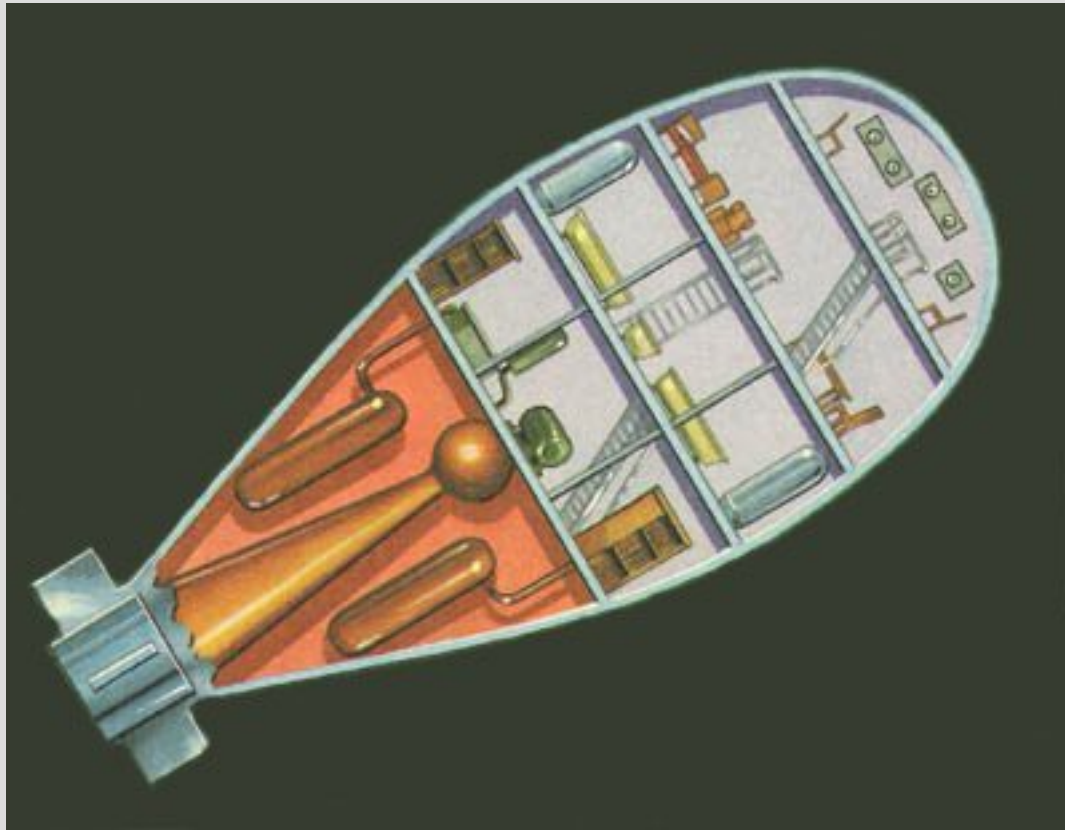
Konstantin Eduardovic Ciolkovskij (1857-1935)

L'esplorazione dello Spazio cosmico per mezzo di motori a reazione (1903)



Tsiolkovsky Rocket Designs

Dai disegni di Ciolkovskij

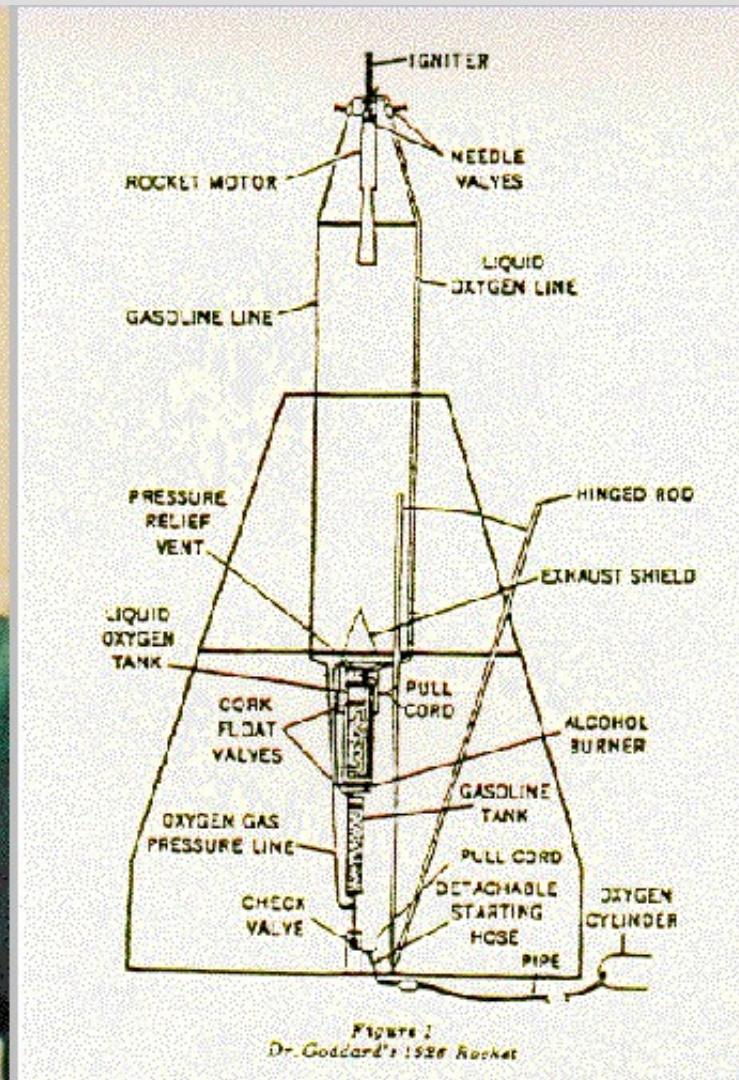
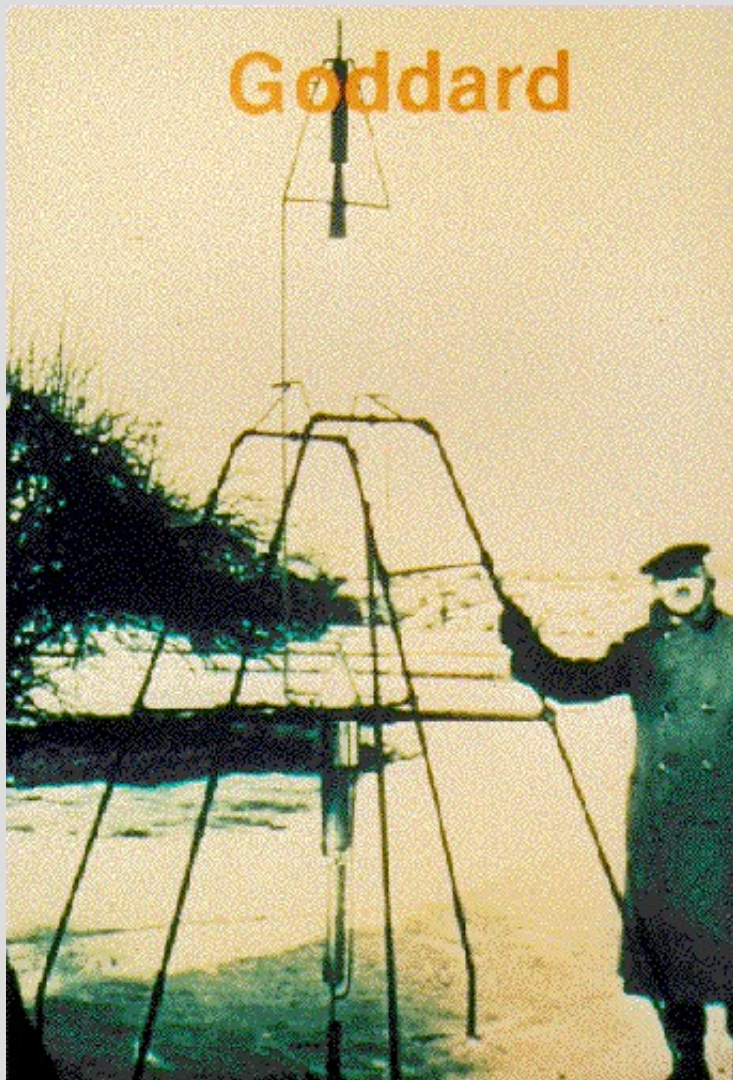


Robert Hutchings Goddard (1882-1945)

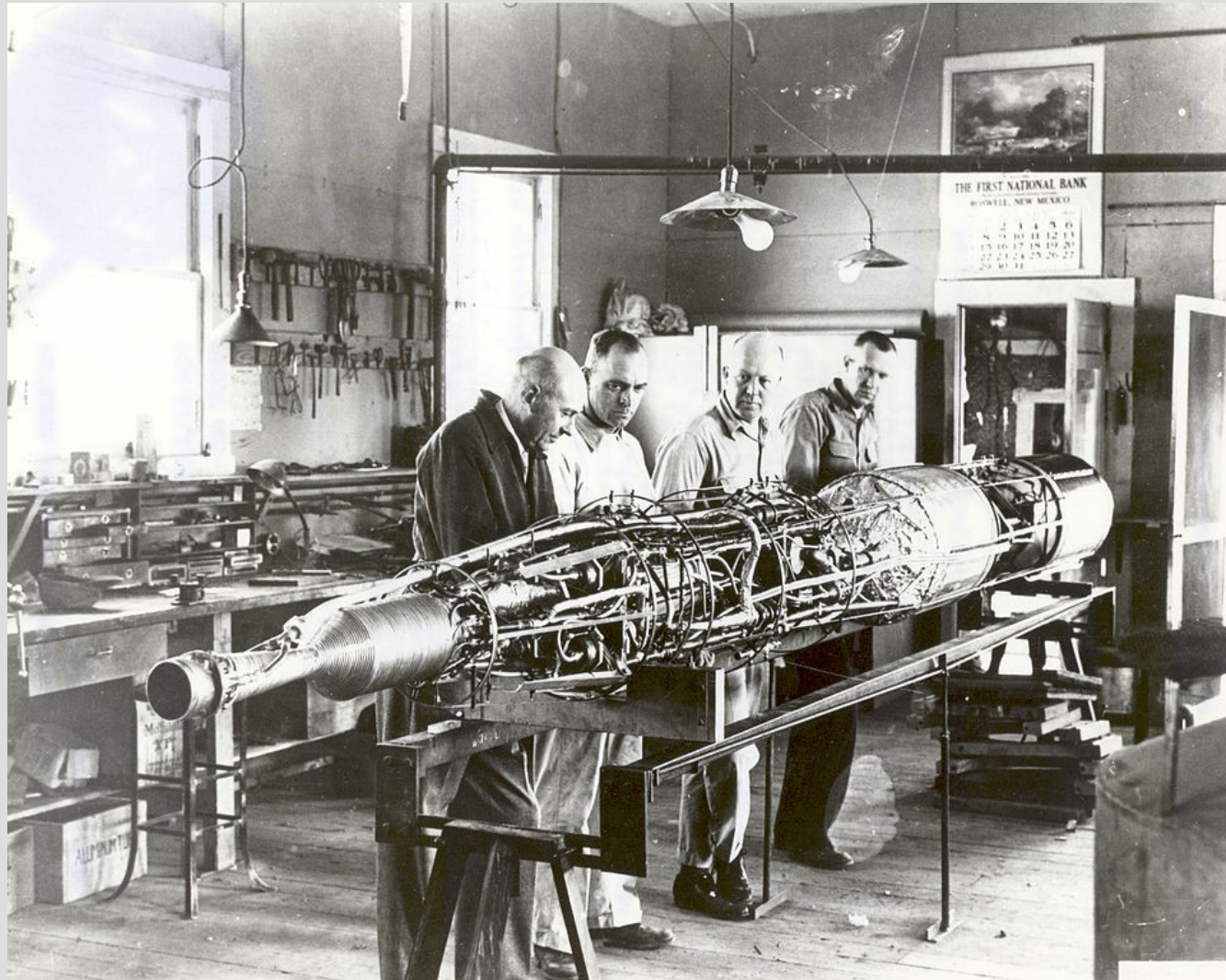
Un metodo per raggiungere estreme altitudini (1919)



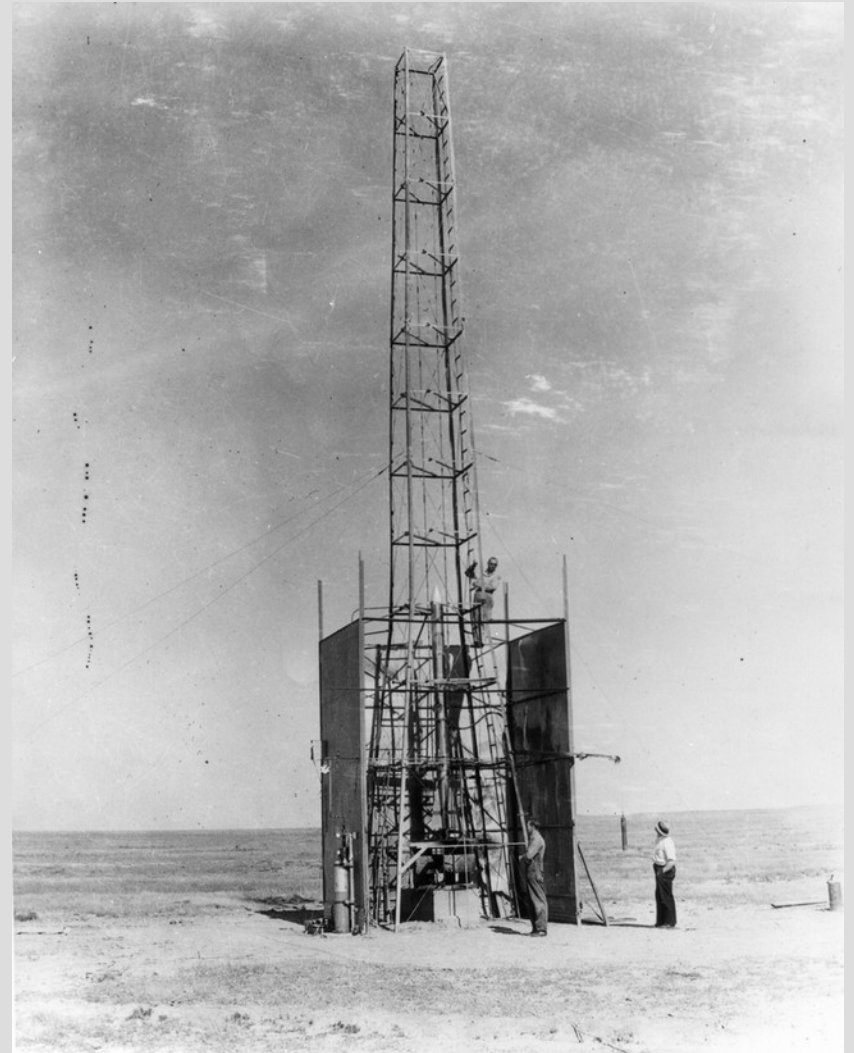
Il primo razzo a propellente liquido (1924)



Pompe a turbina per i propellenti



Roswell, non solo UFO...



Timoni aerodinamici e deflettori per il controllo del getto



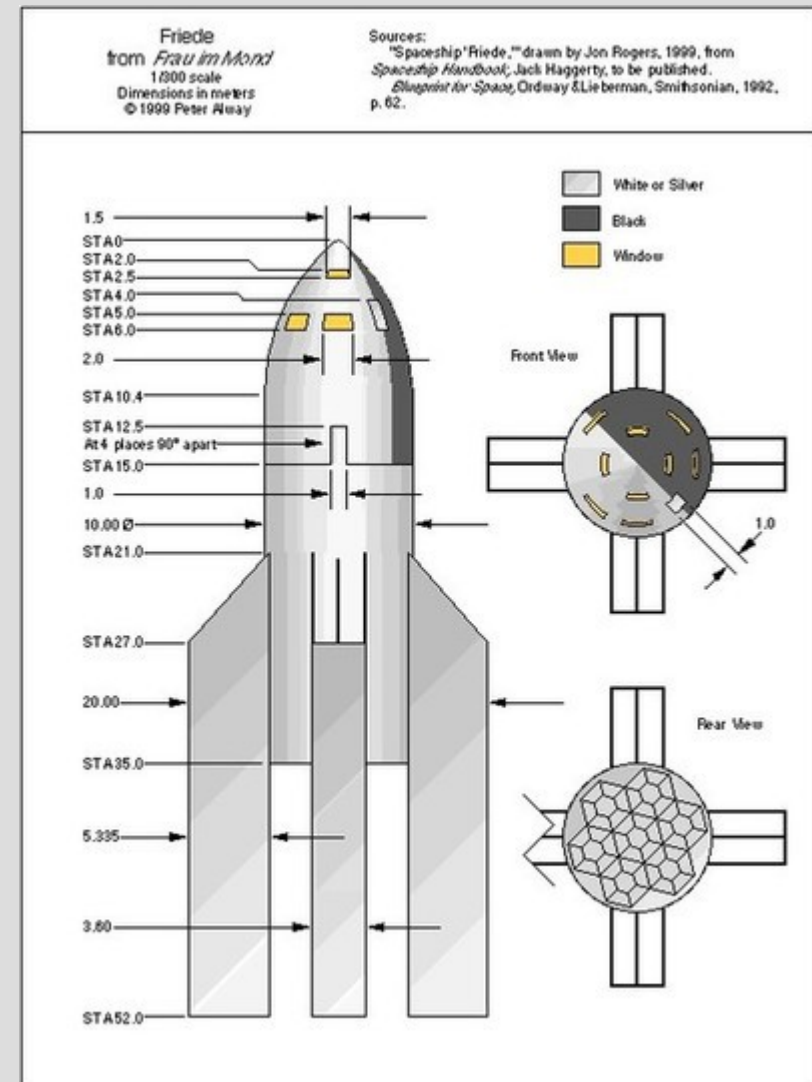
Il crawler transporter di Goddard



Hermann Julius Oberth (1894-1989)



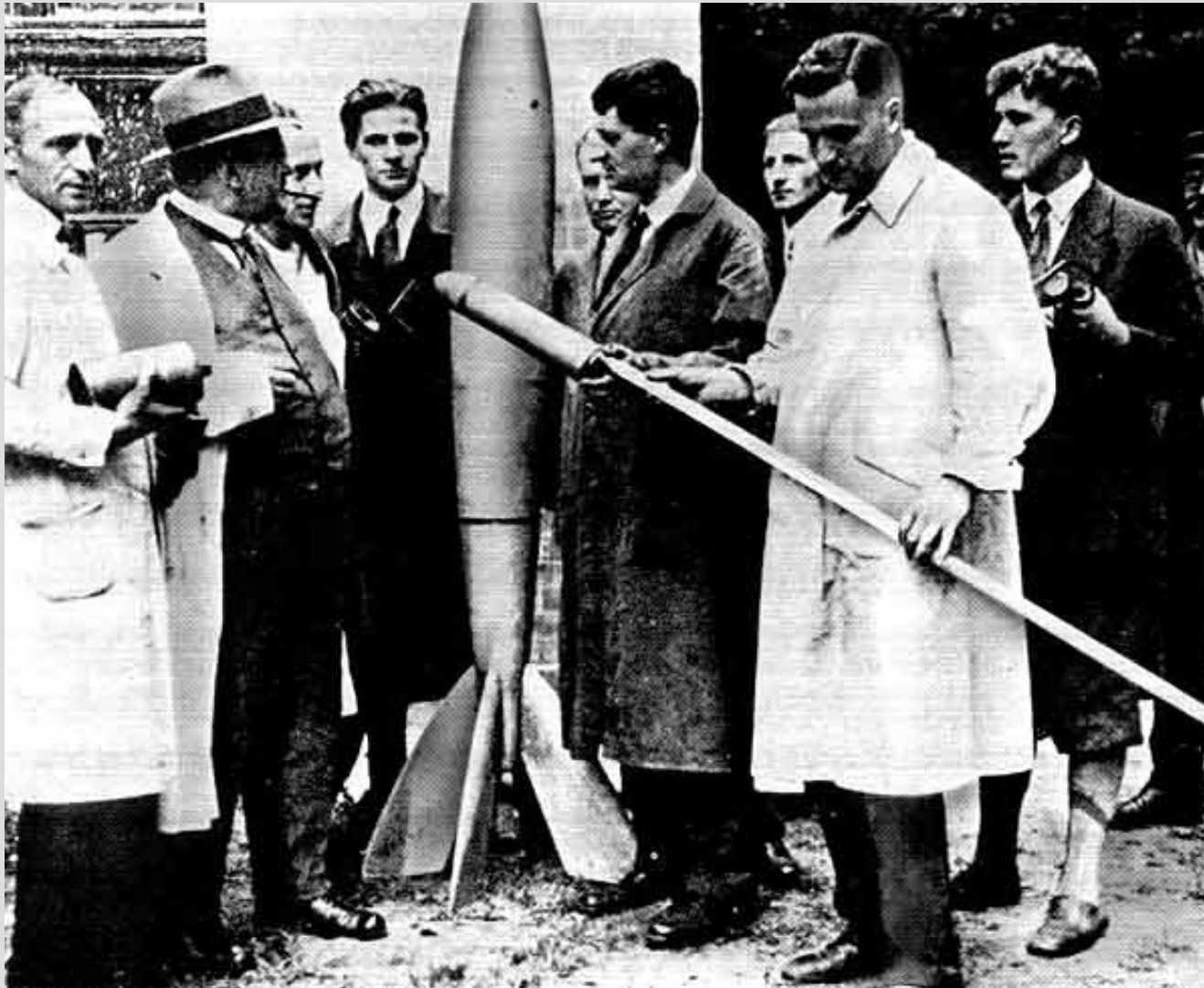
Frau im Mond (1929)



Oberth e Von Braun



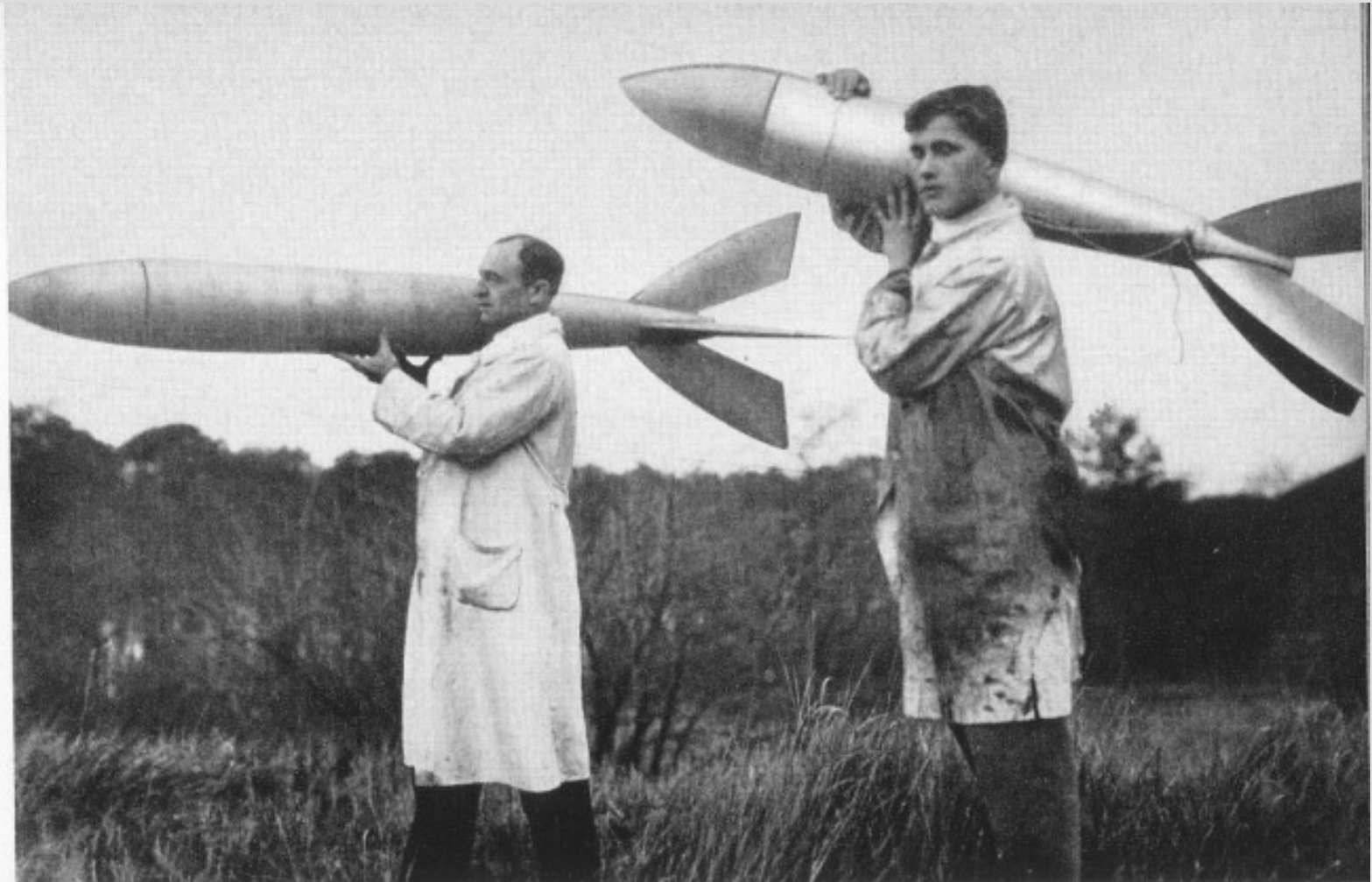
La “kegelduse”



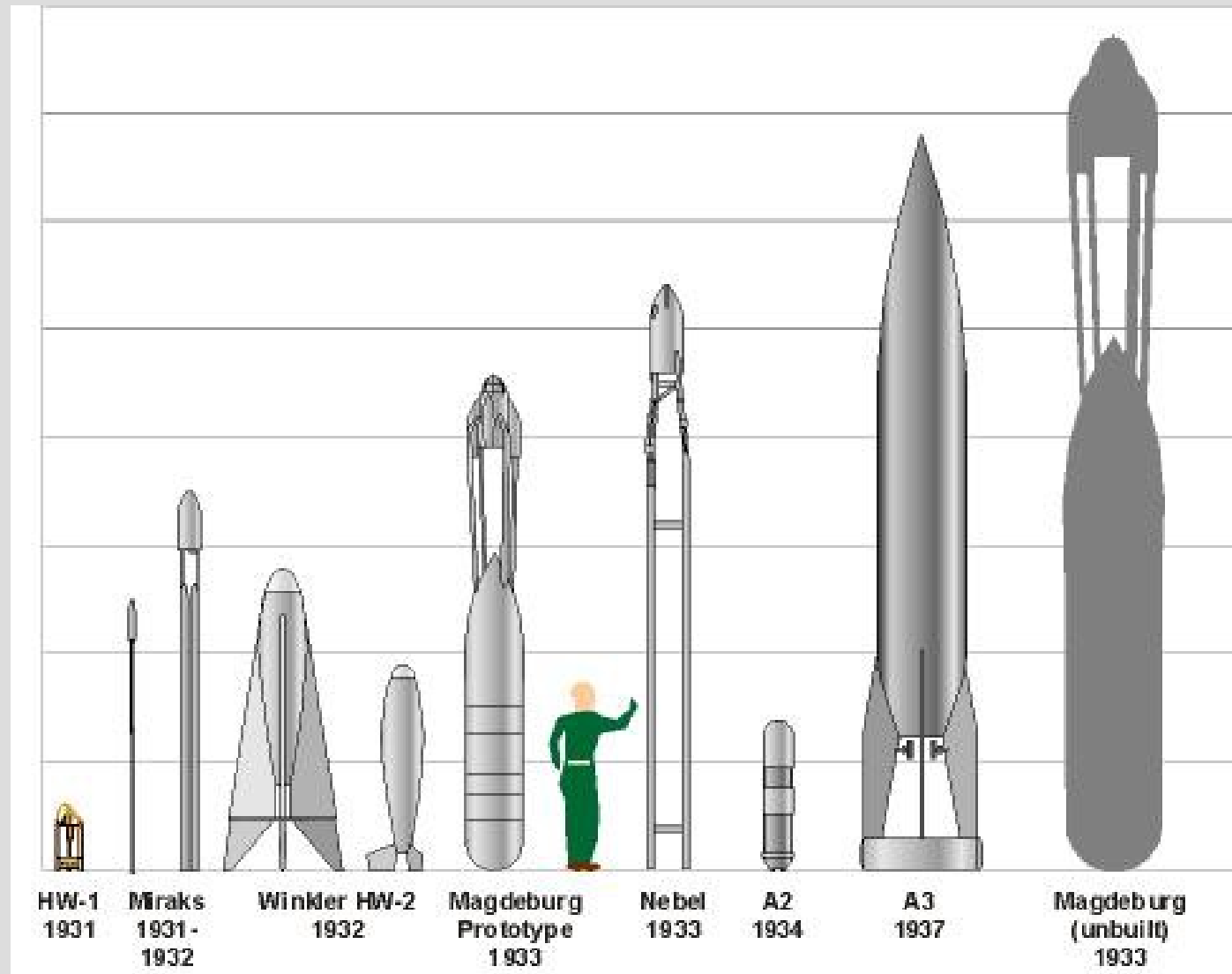
La Verein fur Raumschiffahrt

Rudolf Nebel
und der 18jährige
Wernher von Braun
(rechts) mit
Raketenmodellen
auf dem
Raketenflugplatz
Berlin. (1930) ▶

Auf dem Prüfstand
des Raketenflug-
platzes Berlin 1933,
wo ein sogenannter
Vierstab-Repulsor
versuchsbereit
aufgestellt ist. ▶



I primi razzi tedeschi



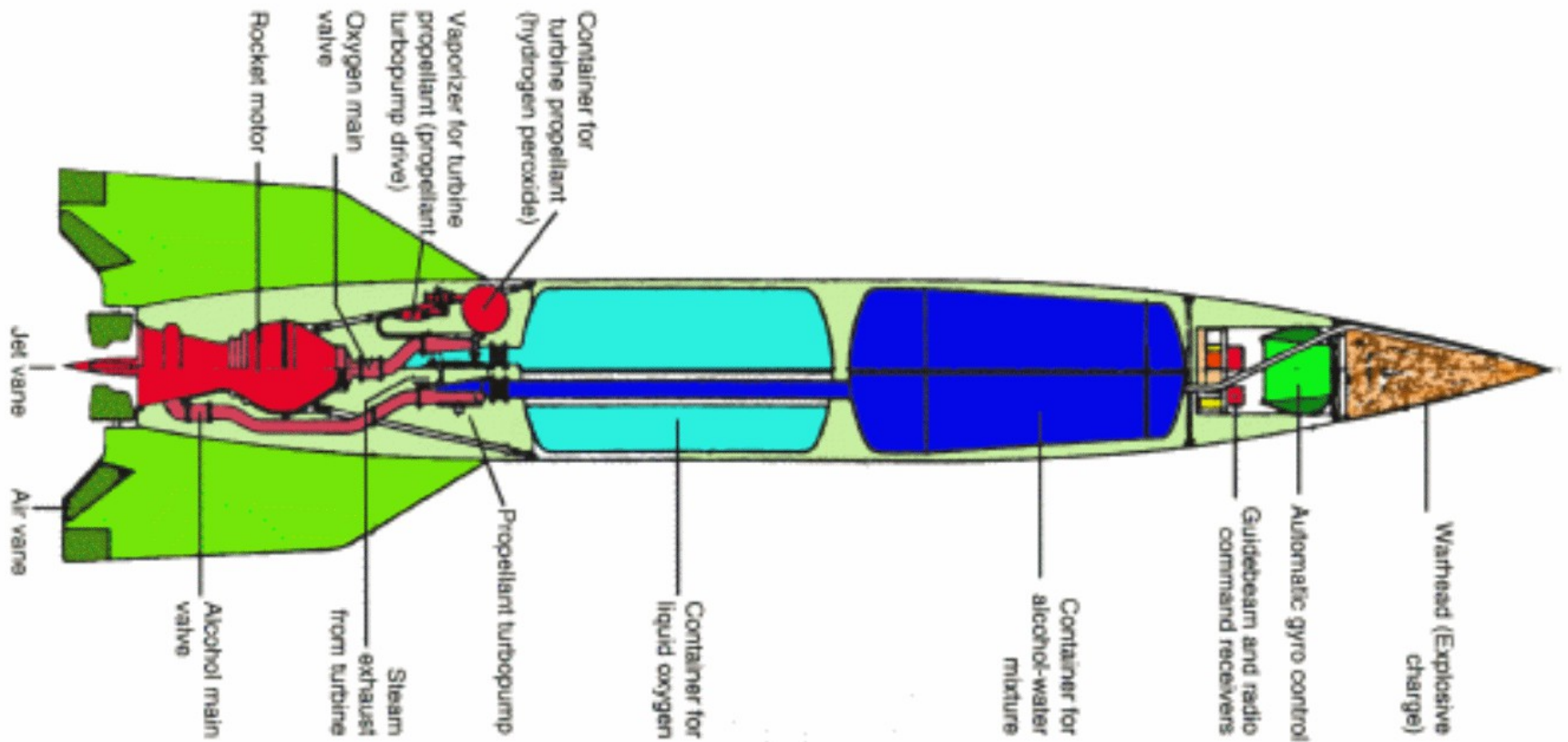
Peenemunde



Il razzo A-4

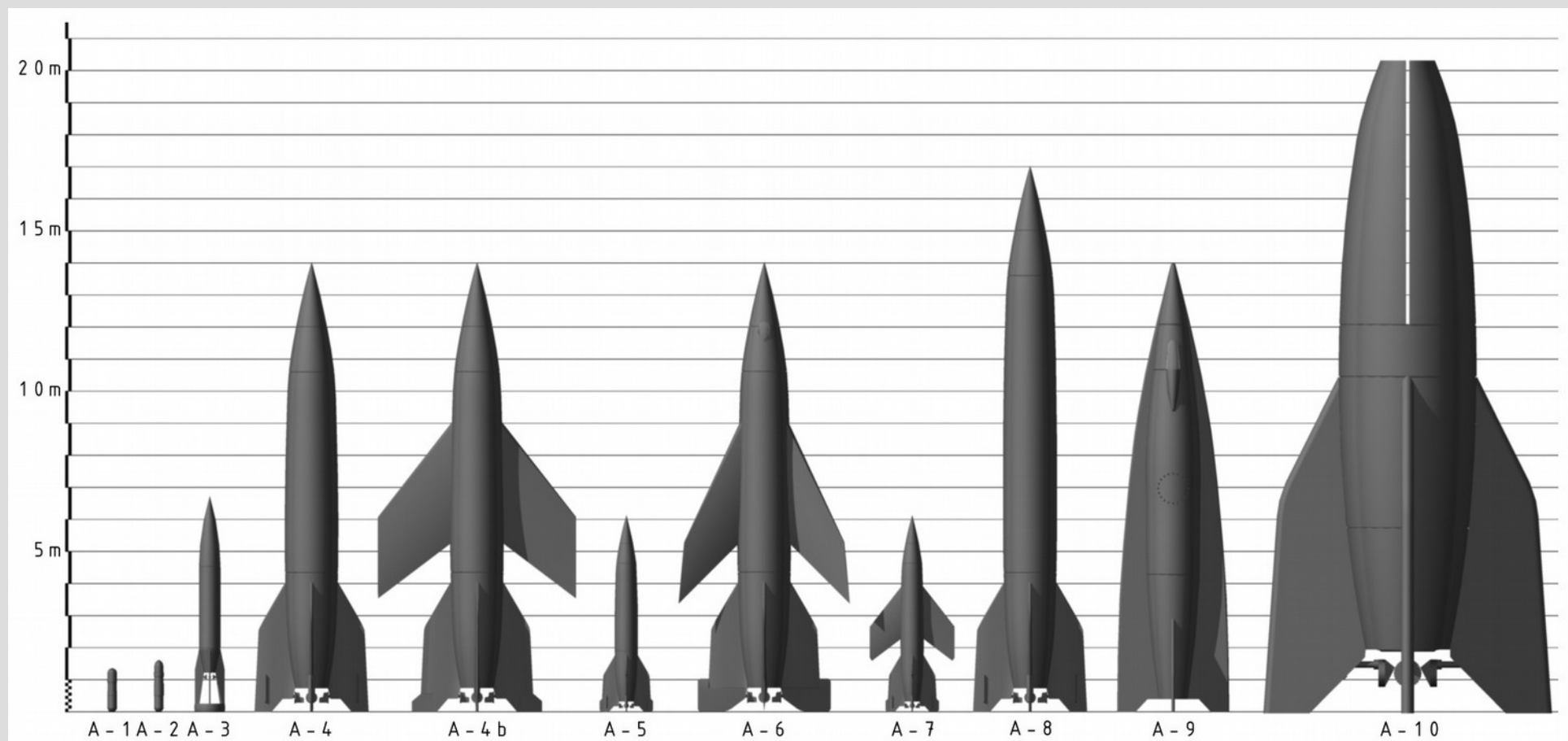


Spaccato della V-2



German V-2 (A-4) Missile

La famiglia dei razzi “A”



Il primo aereo a razzo: l'Ente (1929)



L'Heinkel He 112 a razzo

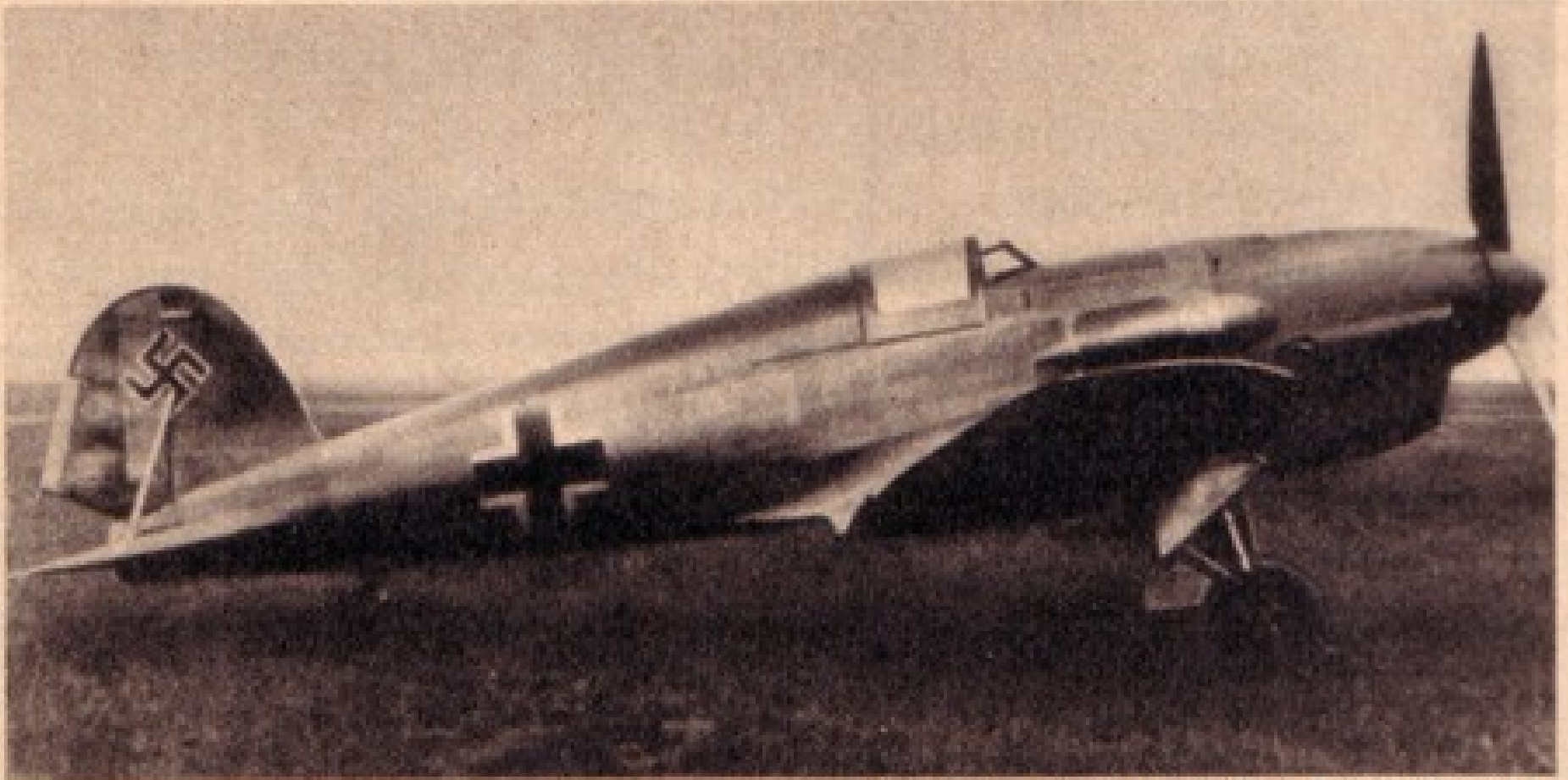
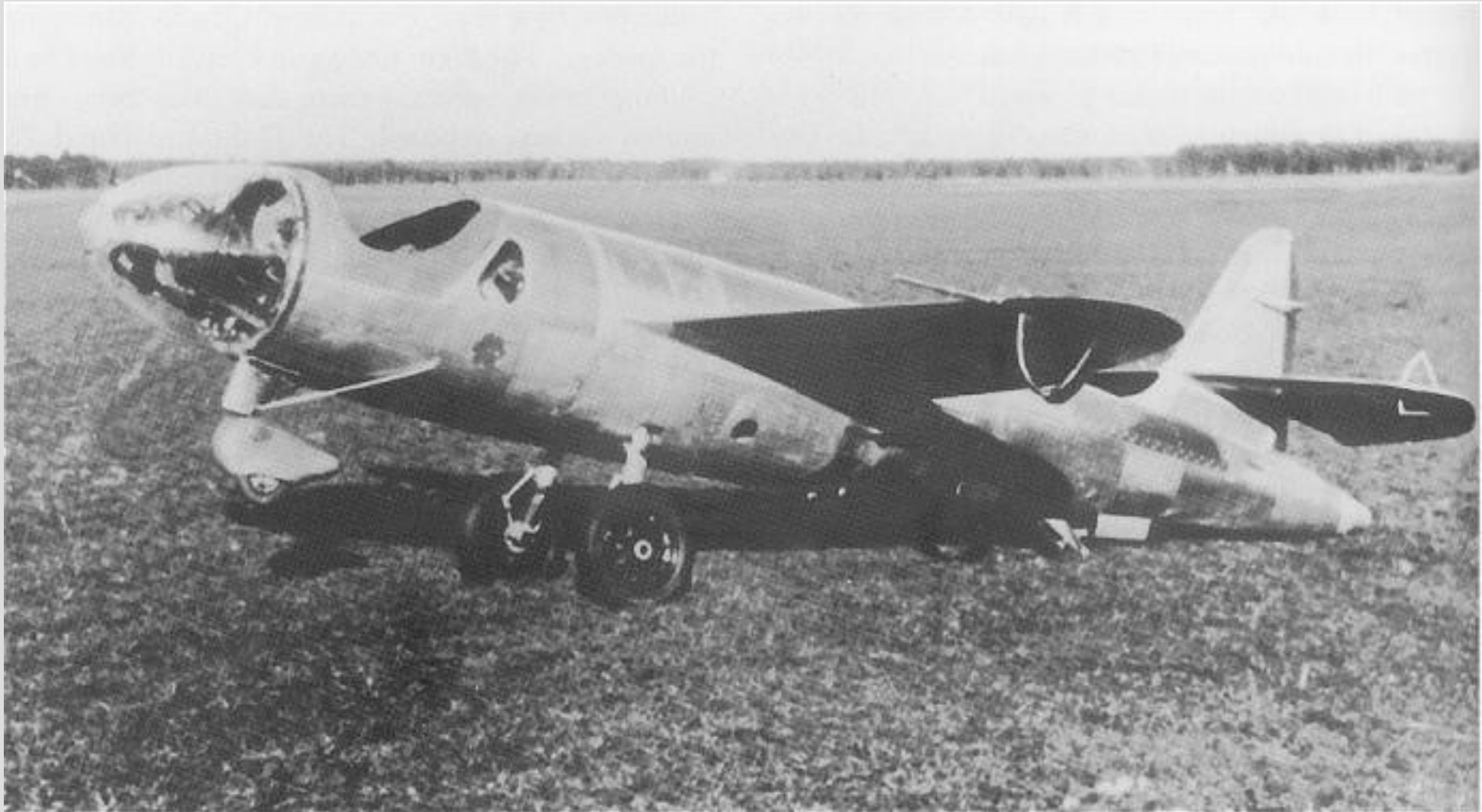
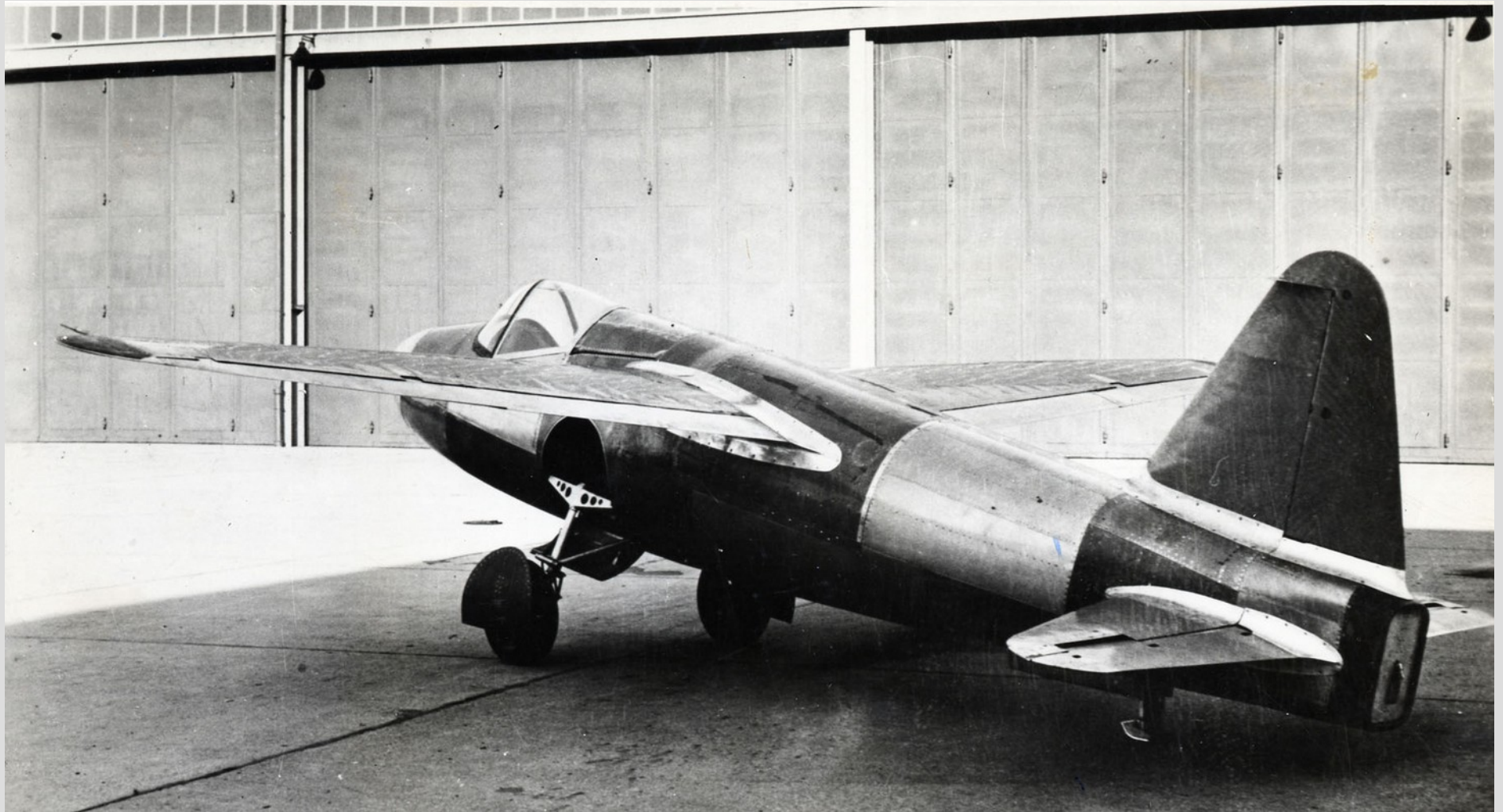


Image courtesy of Karl-Ernst Heinkel

Il primo aereo a razzo: l'Heinkel He 176



Il primo aereo a reazione: l'Heinkel He 178



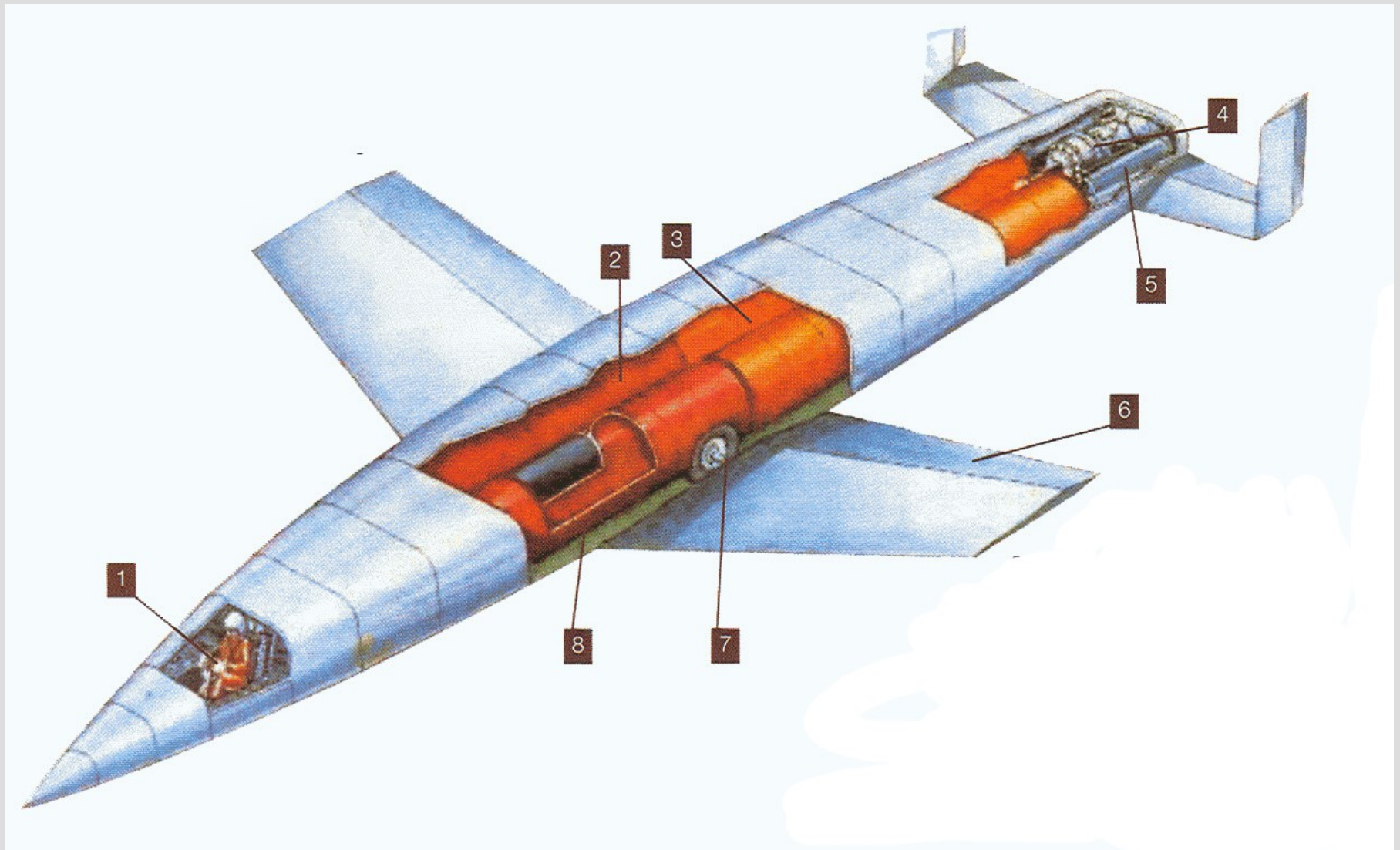
Messerschmitt Me 163B: 1000 km//h



Eugen Sanger (1905-1964)



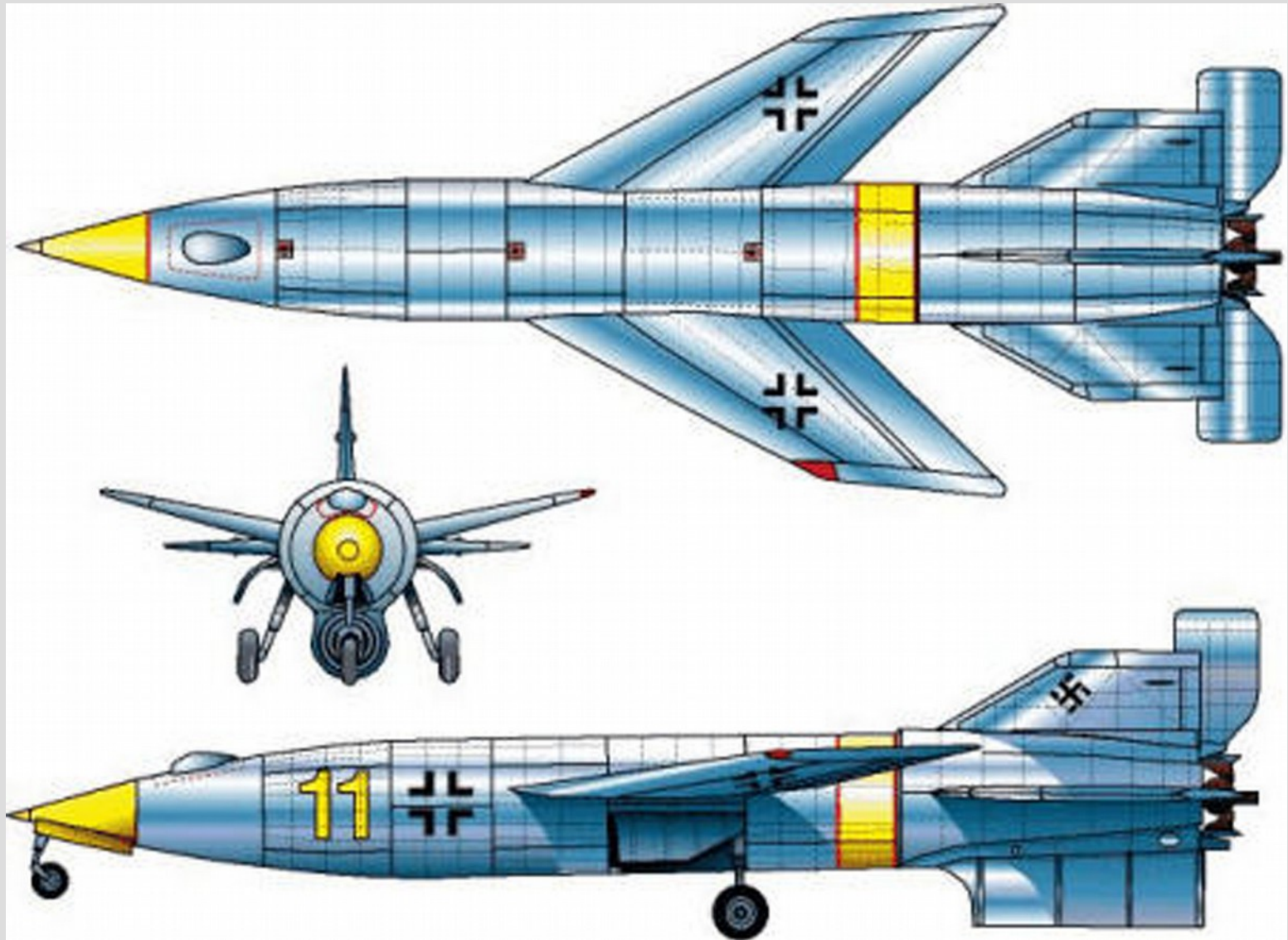
Il Silbervogel



L'A-4b: una V-2 con le ali



L'A-6 pilotato: razzo più statoreattore



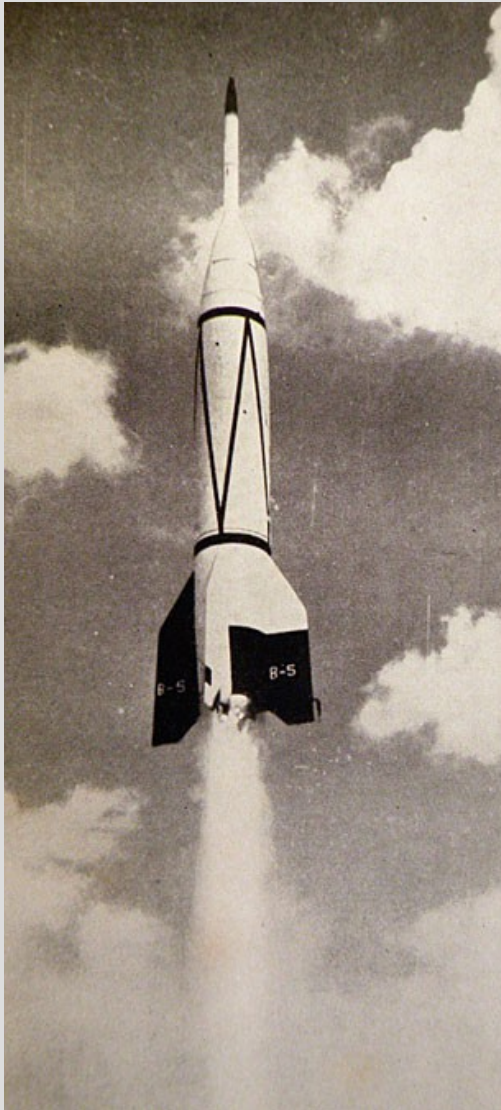
Operation “Paperclip”



La V-2 a White Sands (1946)

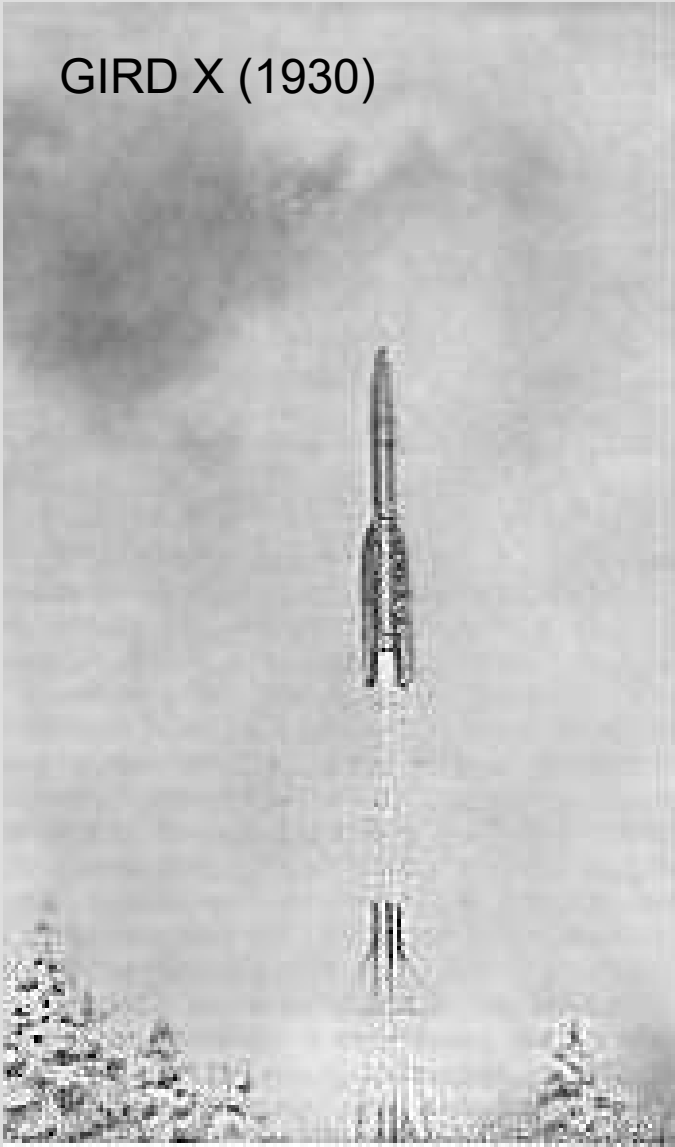


Bumper-WAC 1949: 393 km



E i russi?

GIRD X (1930)



Serguei Korolev e Valentin
Glushko

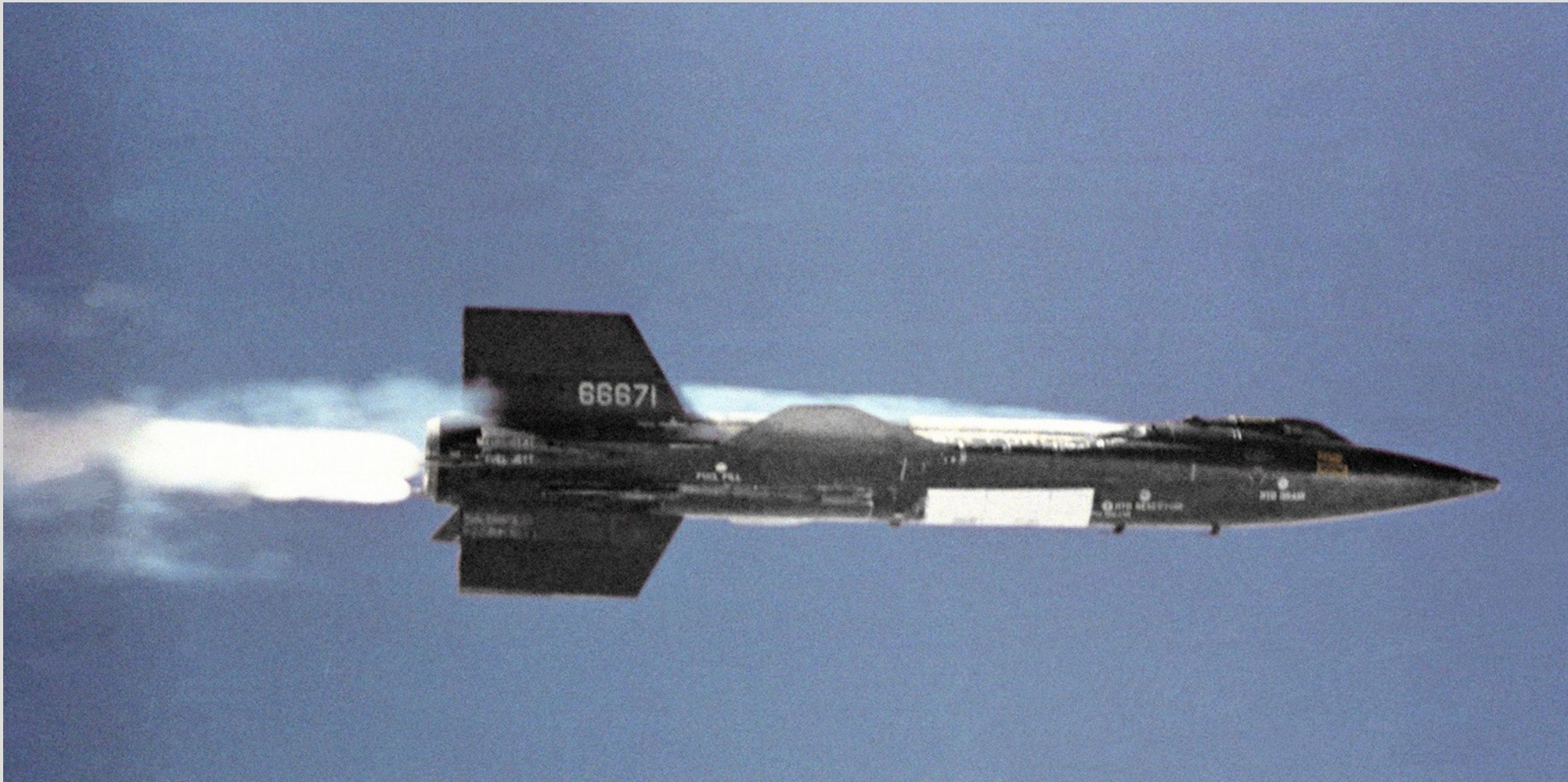
L'X-1 oltre la barriera del suono (1947)



L'X-2 a mach 3,2 (1956)



X-15: 108 km (1963) e 7272 km/h (1967)



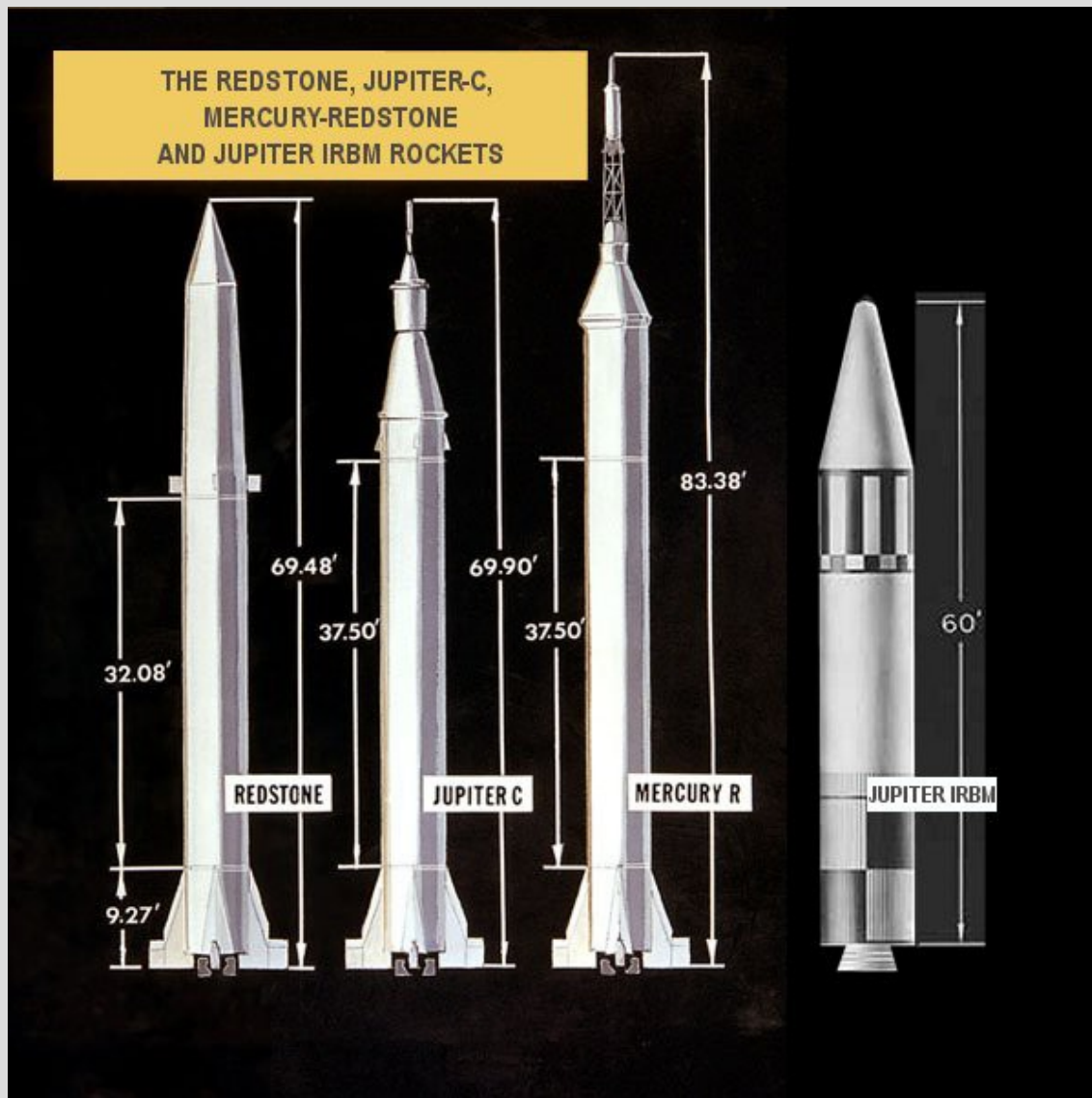
X-20: un'occasione sprecata



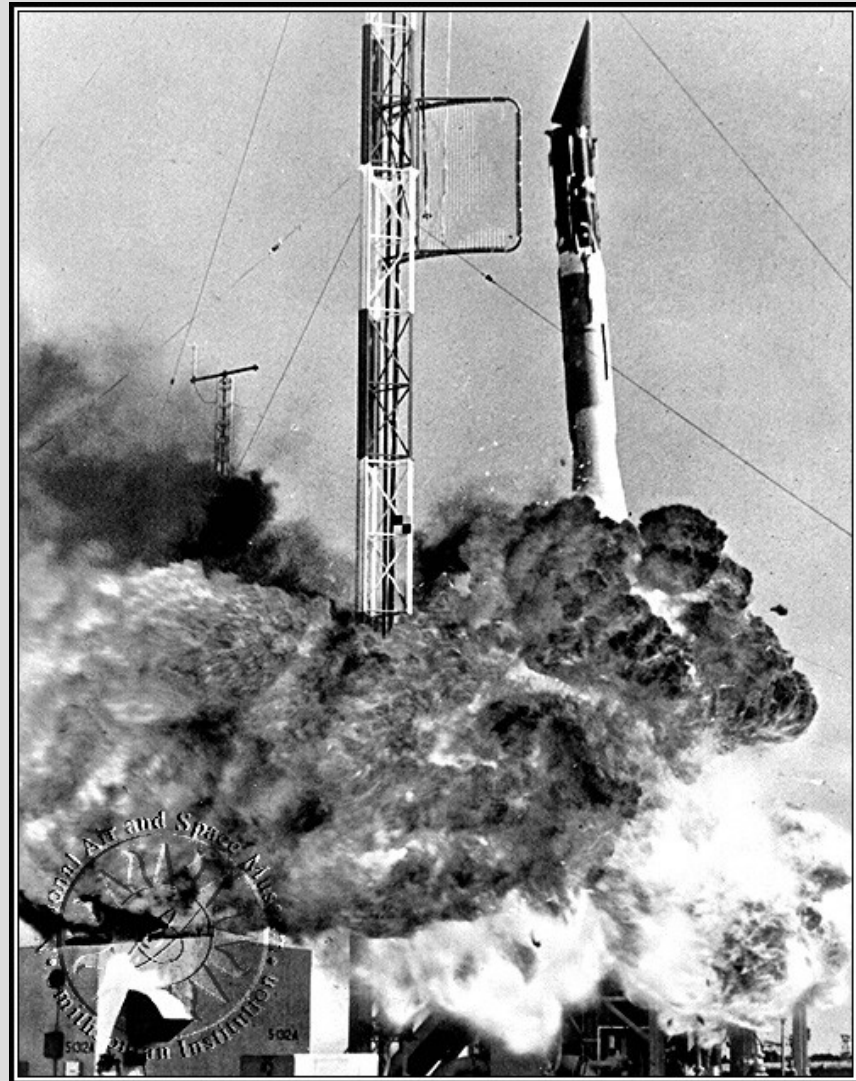
Von Braun dopo la V-2: il Redstone



Lo Jupiter-C: un satellite USA nel 1956?



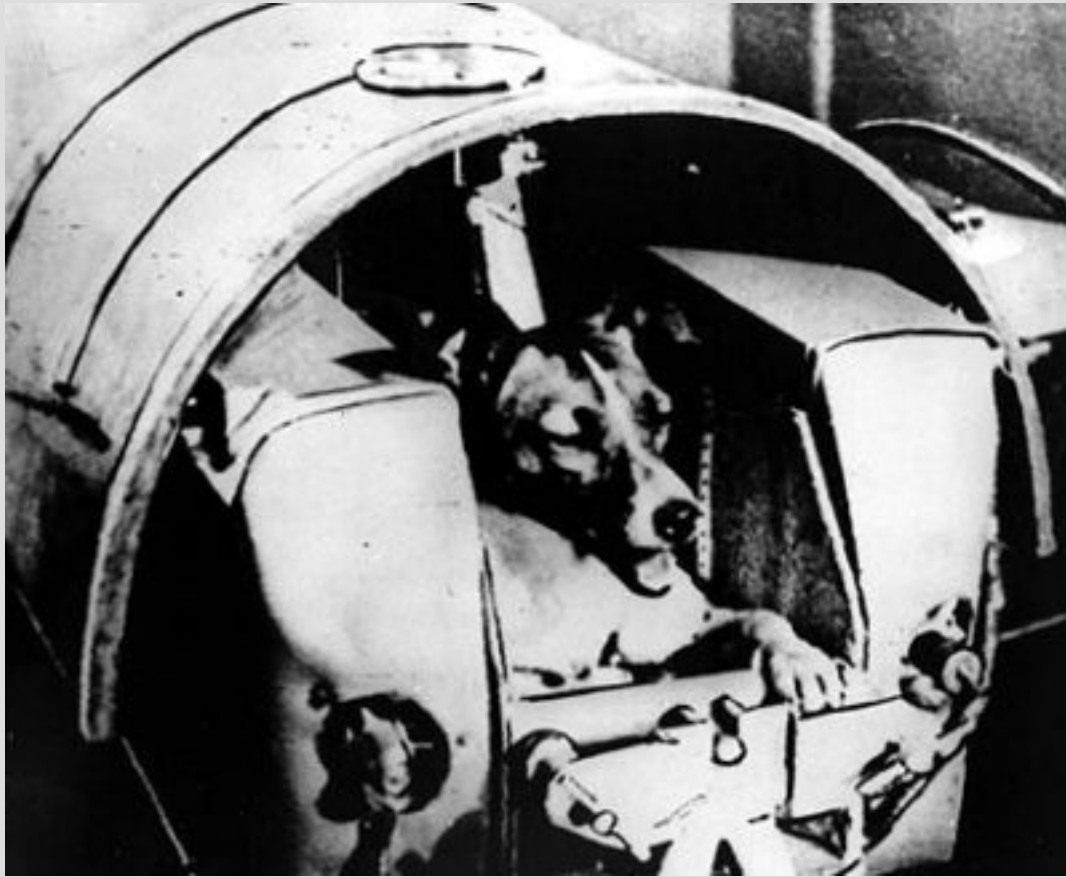
Vanguard: il “flopnik”



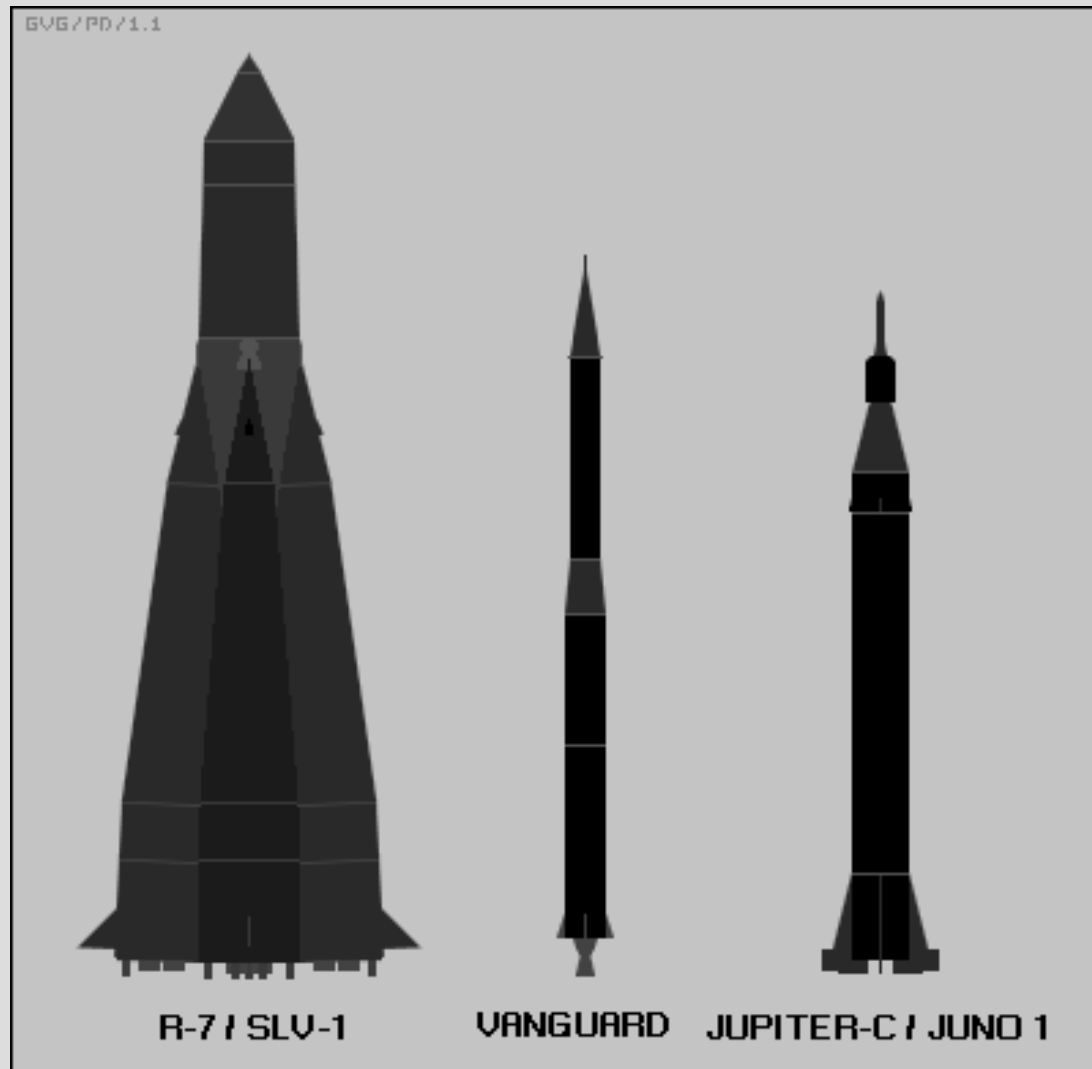
Lo Sputnik 1 (4 ottobre 1957)



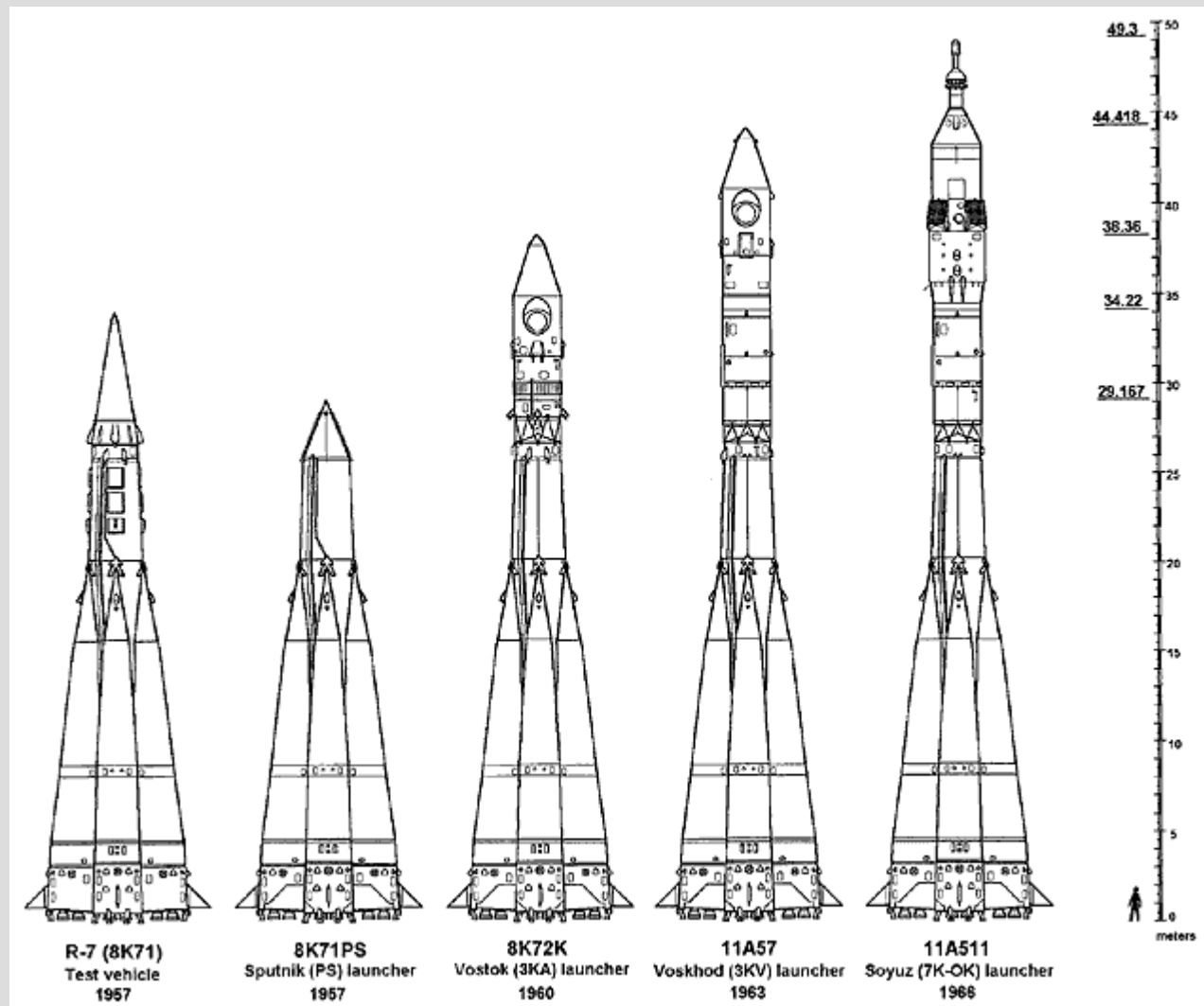
Laika e lo Sputnik 2



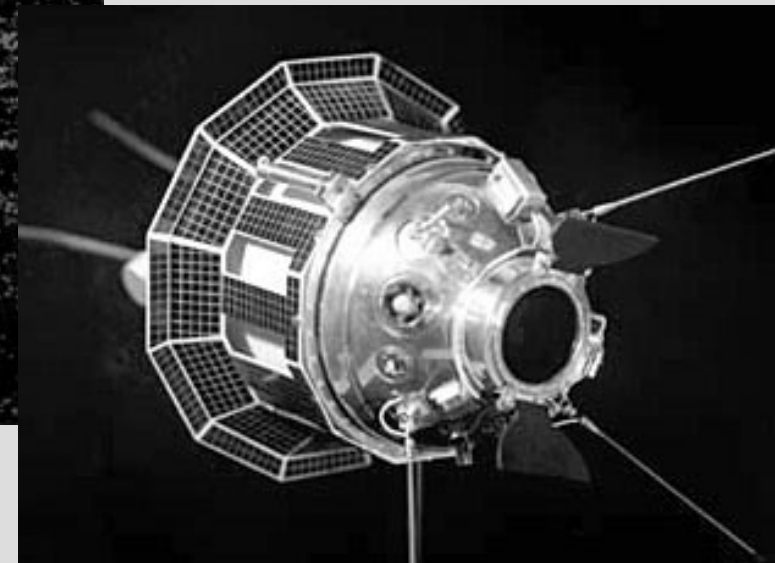
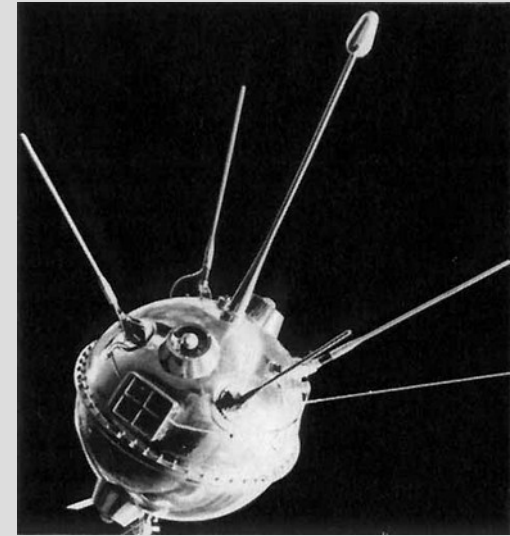
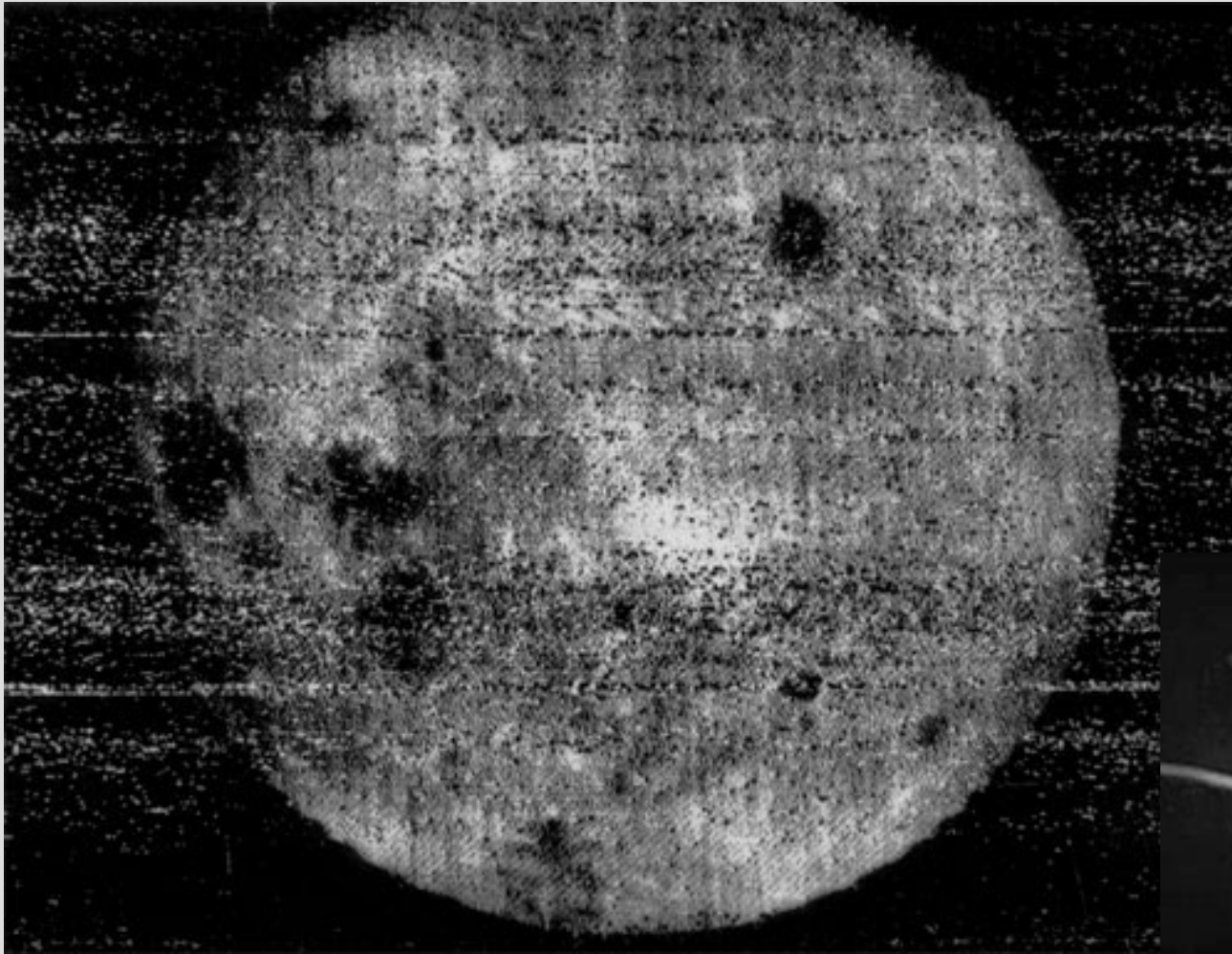
Perché i russi per primi? (I)



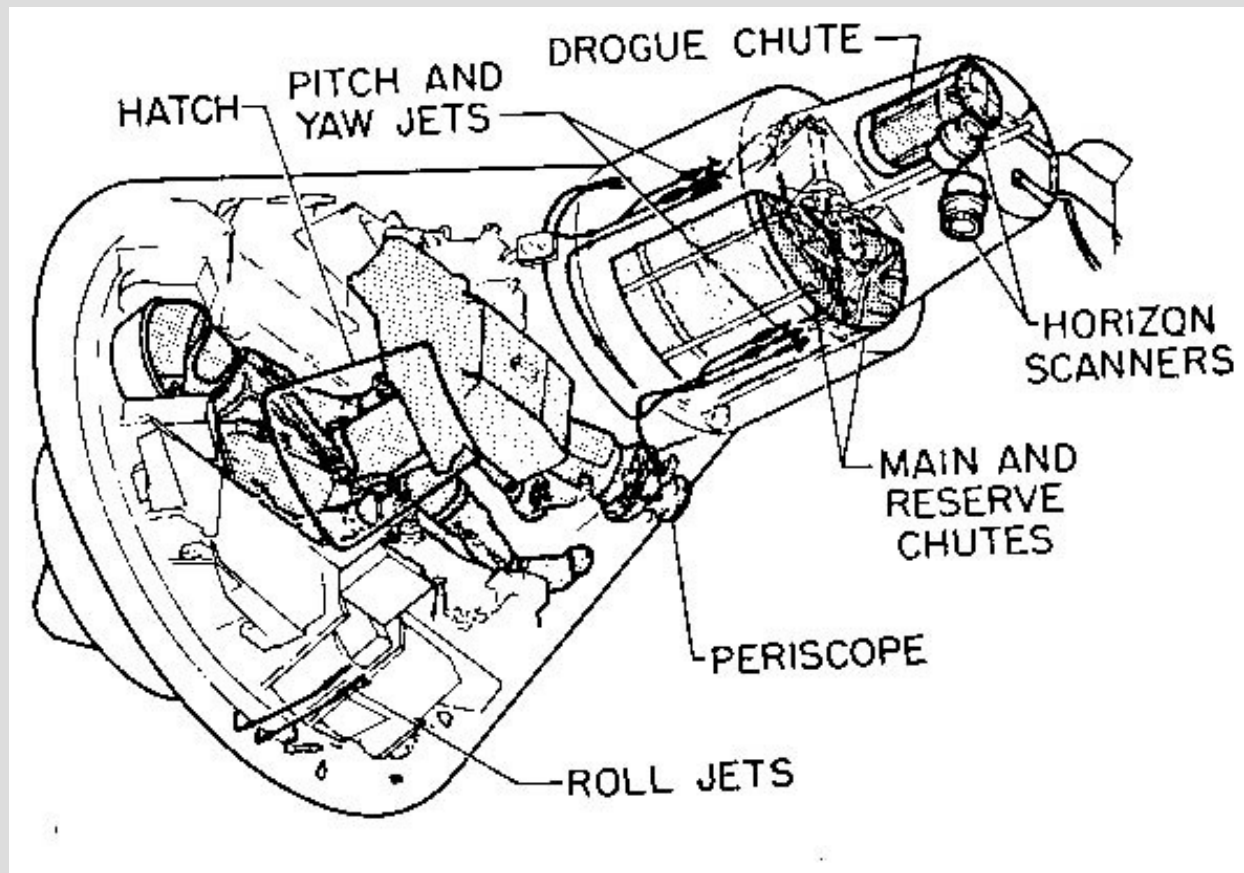
Perché i russi per primi? (II)



Luna: le prime sonde (1959)



Mercury: la riscossa americana?



1 “Mercury Seven”



Un'altra sconfitta: Juri Gagarin



Il primo americano nello spazio



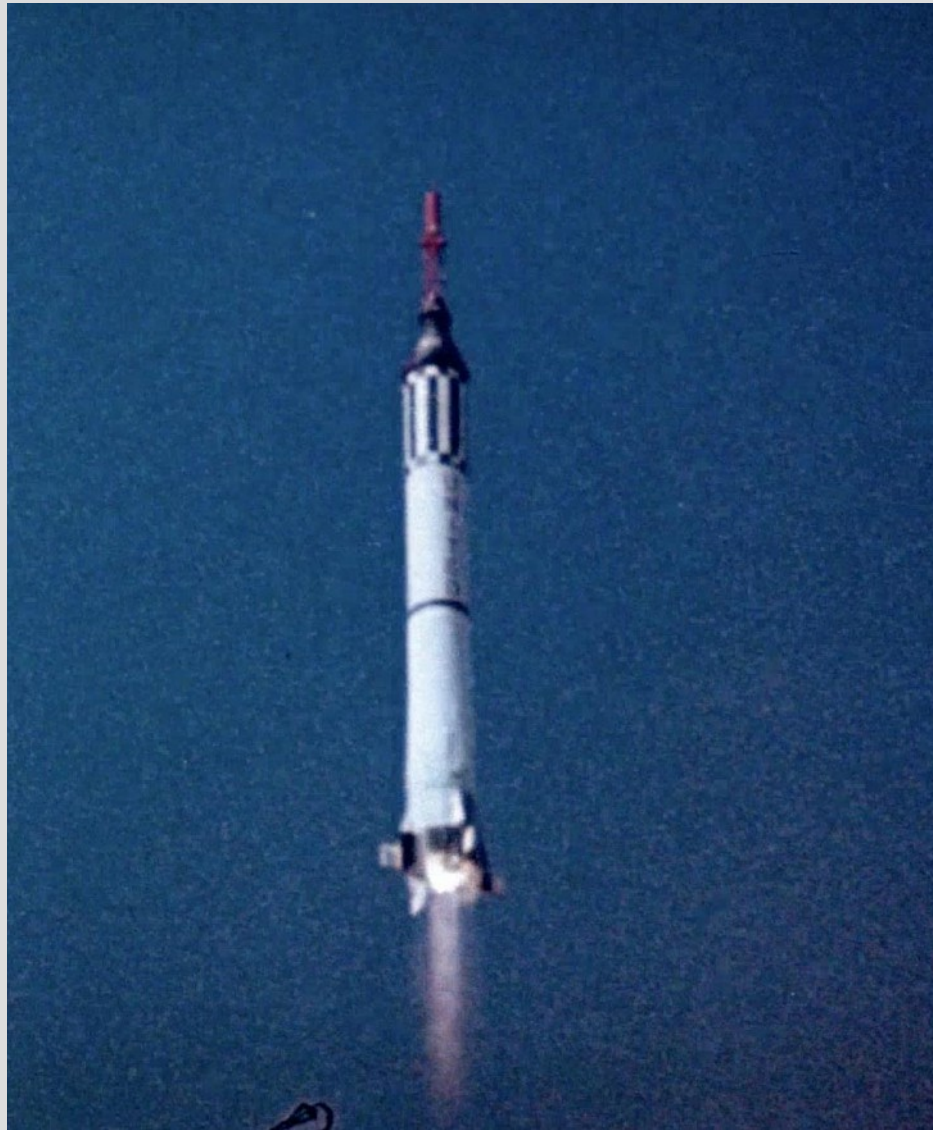
Kennedy e la corsa alla Luna



Il primo americano in orbita



Dal Redstone all'Atlas



La prima donna

