

NASA Engineering and Safety Center (NESC)

Guidance Navigation and Control

A series of GN&C technical developments “sea and space stories”
(Lesson Learned)

Six Decades Guns to Satellites

1940's

- WWII Search Radar (SCR-270)
- Mechanical Fuses
- VT Fuses
- Werner von Braun – wind tunnels from Peenemunde

1950's

- Angled Arrow Projectile/Gun Launched Guided Missile (AAP/GLGM)
- SUBROC Development Testing
 - Proof of Concept
 - Air Launched testing
 - Underwater Tube-Launched Testing
 - Final Sub-Launched Testing
- Explorer I (1/31/58)
- Holy Grail of Satellite Dynamics
 - Conservation of Momentum Must Hold

1960's

- Orbiting Geophysical Observatory (OGO-4) (7/28/67)
- Orbiting Astronomical Observatory (OAO-2) (12/7/68)

1970's

- Small Scientific Satellite (SSS) (11/15/71)
- Radio Astronomy Explorer (RAE) – B (6/10/73)
- International Ultraviolet Explorer (IUE) (1/26/78)
- Solar Maximum Mission (SMM) (2/14/80)

1980's

- Tracking and Data Relay Satellite (TDRS)-1 (4/5/83)
- SMM Servicing (4/84)
- COsmic Background Explorer COBE (11/18/89)
- Ulysses (10/6/90)

1990's

- Geostationary Operational Environmental Satellites (GOES) (4/13/94)
- Solar and Heliospheric Observatory (SOHO) (12/2/95)