

**A Tribute to**

**Neil Gehrels**

**His Leadership and Scientific Contributions**

**and**

**50 years in**

**Gamma-Ray Astronomy**

**Jerry Fishman**

**NASA-MSFC (Emeritus)**

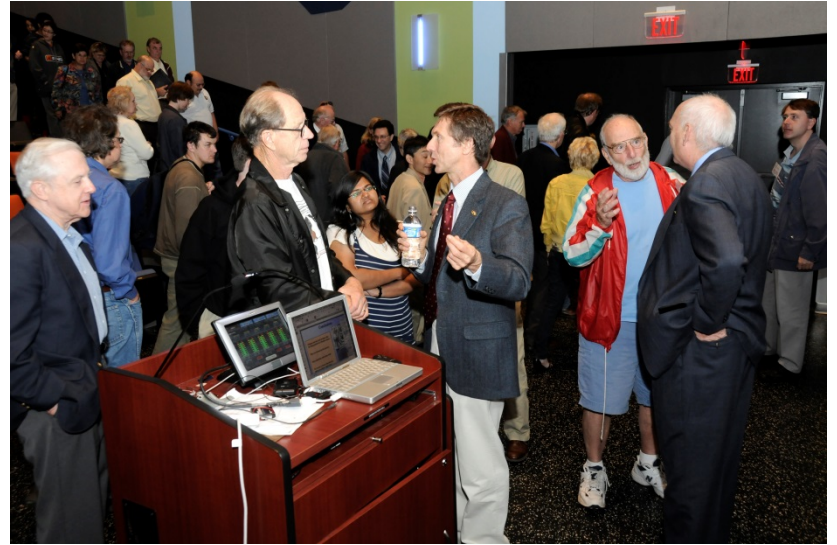
**Huntsville, Ala., USA**

# Neil Gehrels

Public Lecture at the  
U. S. Space & Rocket Center  
Huntsville, Ala.

October 20, 2008







# Neil Gehrels

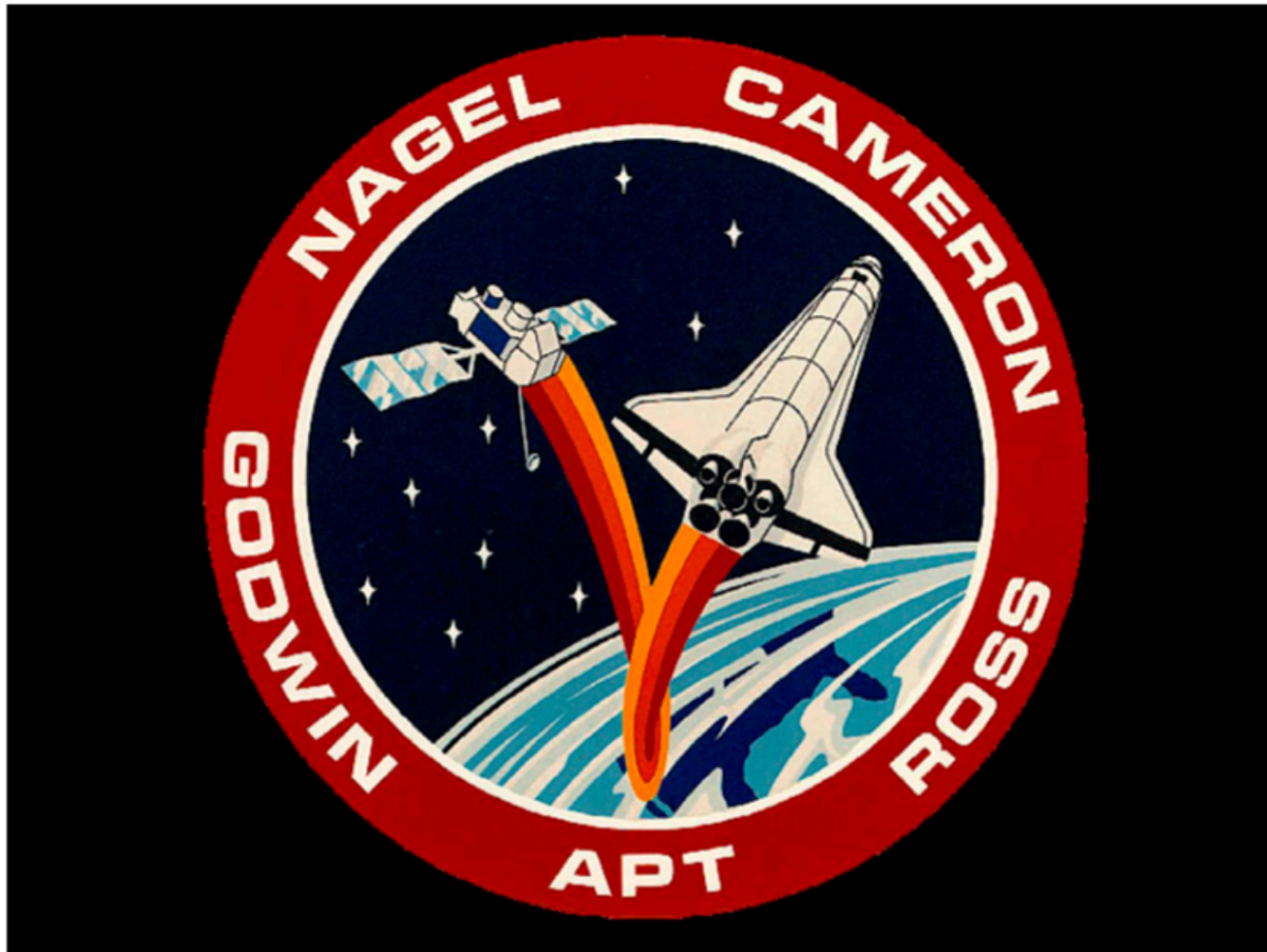
## CGRO Mission Scientist

**“Best Mission Scientist Ever”**  
J. Fishman



# Space Shuttle

Mission #37  
(Mission Patch)

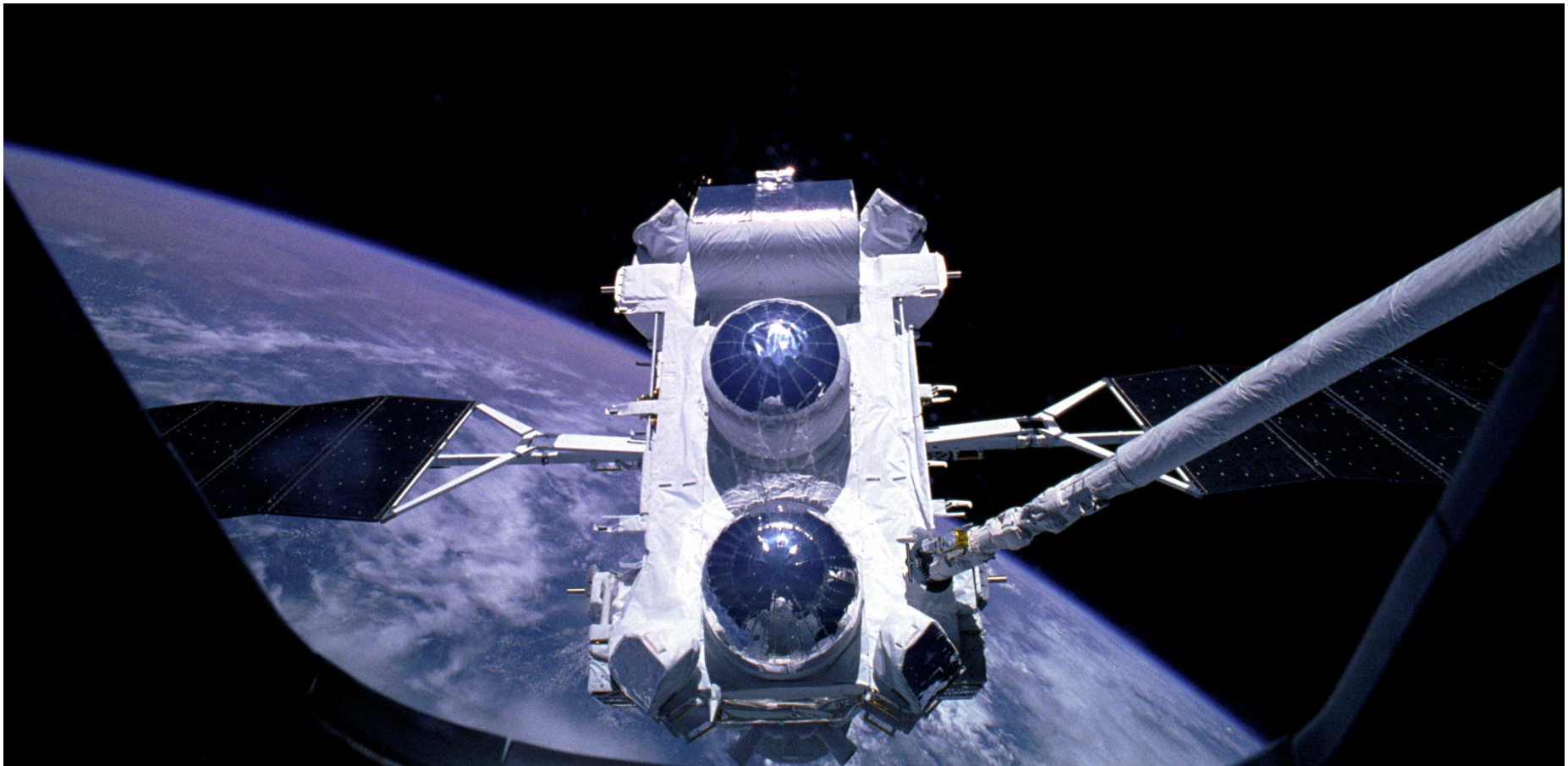




# STS-37 Flight Crew

After GRO Deployment In Orbit





**GRO Spacecraft**  
**Deployment from Space Shuttle**  
**April 1991**



**J. Fishman – Grad. Student**  
***Rice University***

**A small university in Houston, Texas**  
**1965 - 1969**

**Prof. R. C. Haymes**  
**First Observations**  
**in Nuclear Gamma-Ray Astronomy)**  
**(Nuclear Region: ~0.5- 3 MeV**

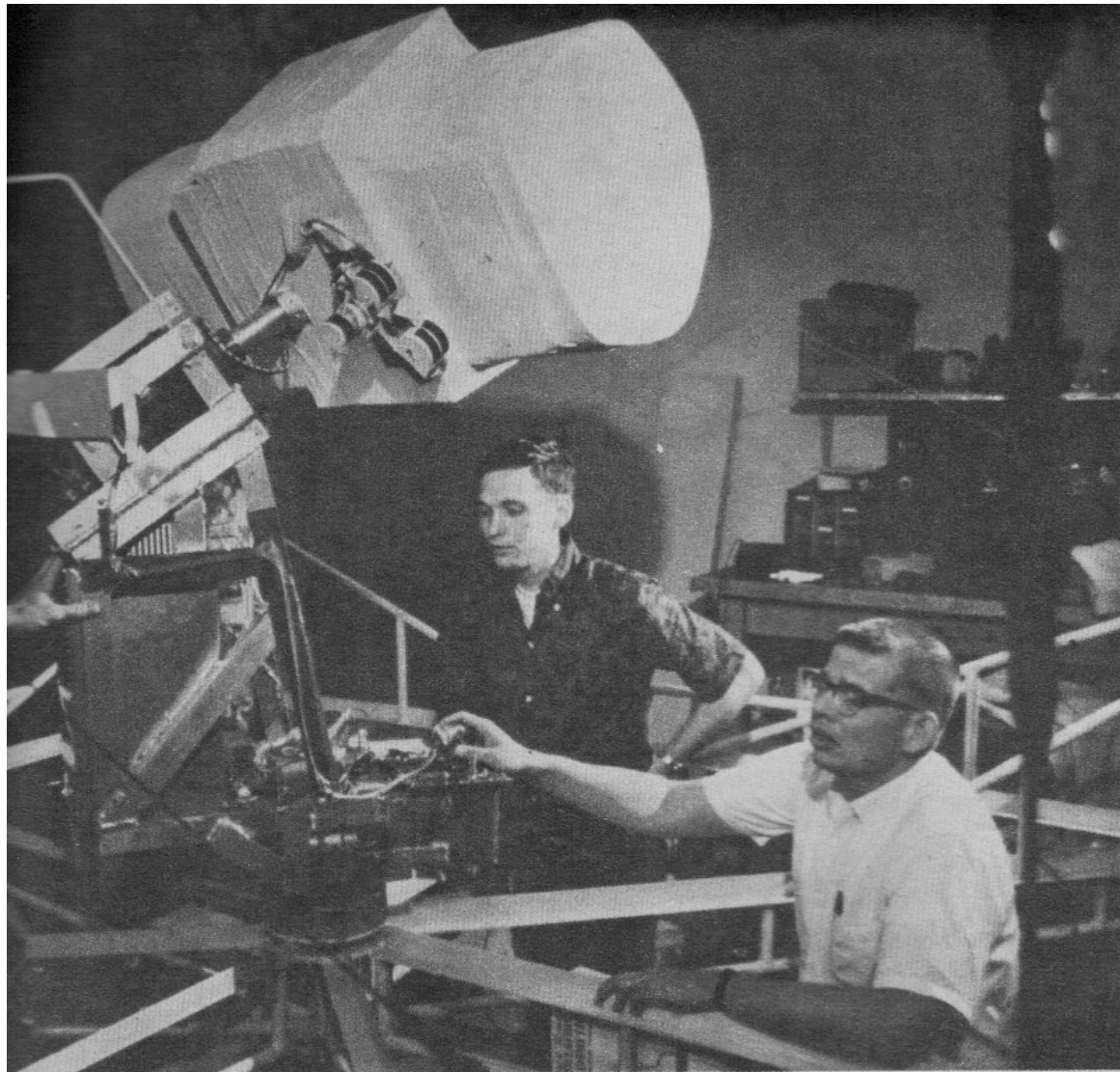
**Balloon Flights from Palestine, Texas**

# Gamma-ray Astronomy - Balloon Flights, Rice Univ.



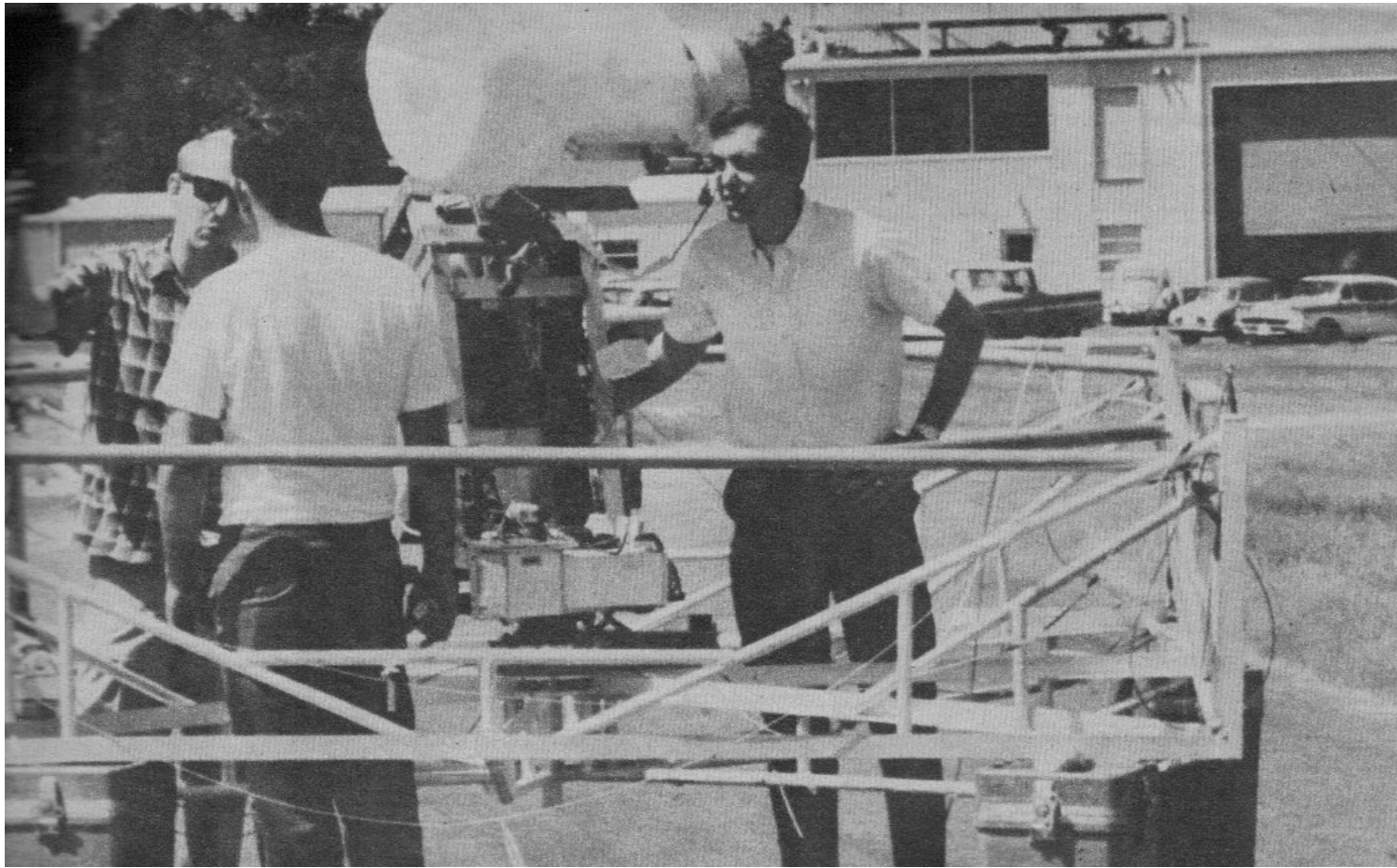
**Robert C. Haymes      Donald D. Clayton**

**~1966**



**J. Fishman    R. Haymes**

**~1967**



## **J. Fishman**

**(not shown – *Rick Harnden, Neil Johnson, J. Kurfess*)**

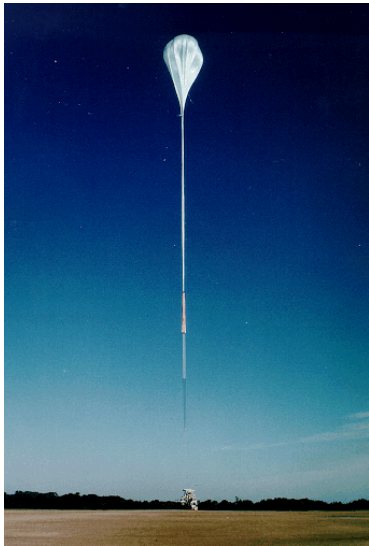


1

# Balloon Flight Sequence



2



3



4



5

# “Polarimetry from High-Altitude Balloons”

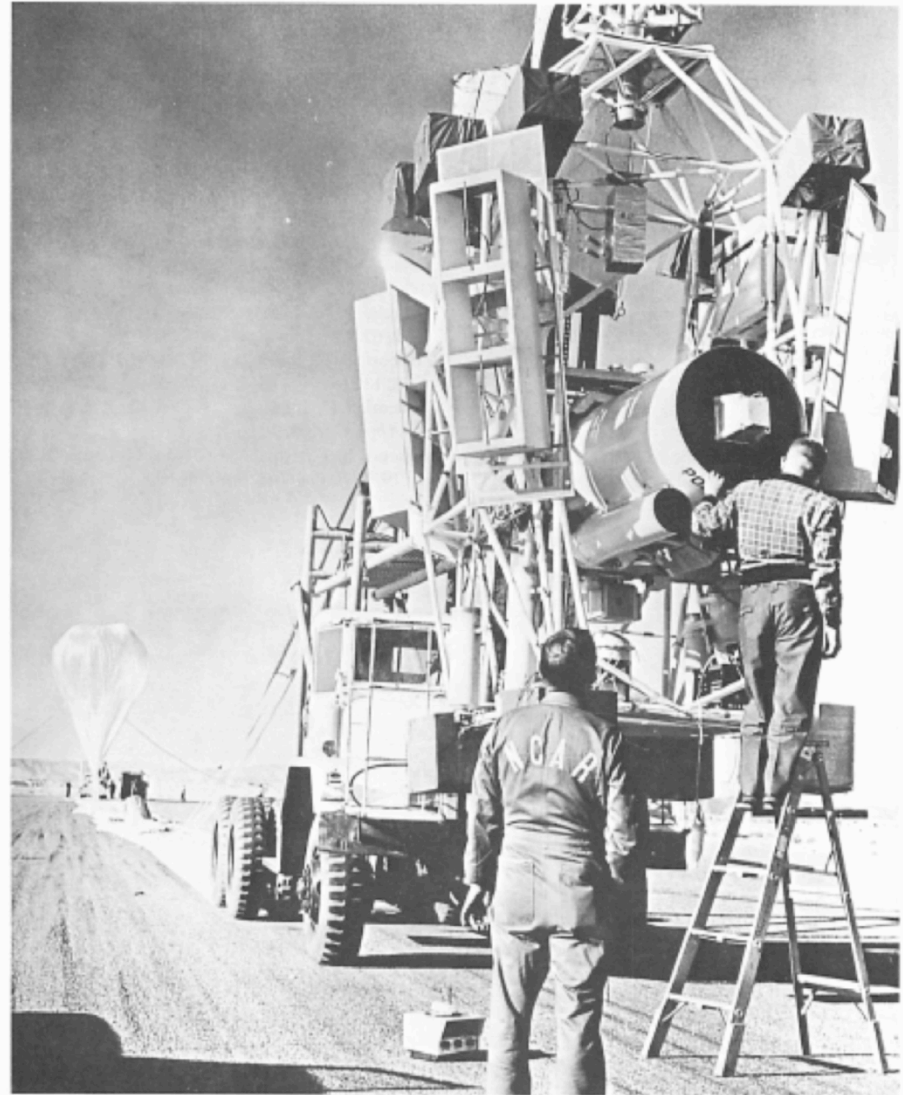
## Tom Gehrels

*Univ. Arizona*



~2005

> *J.F. met Dr. T. Gehrels in Palestine, Texas – 1965 !*



*Fig. 4* Balloon telescope mounted in its gondola and suspended from a launch truck of the National Center for Atmospheric Research (NCAR) at Page, Arizona, March 1967.

# Neil Gehrels 1<sup>st</sup> Journal Publication (with his father)

***“Minor planets and Related Objects:  
Magnitudes for the Numbered Asteroids”***

Tom Gehrels and Neil Gehrels  
The University of Arizona, Tucson, Arizona

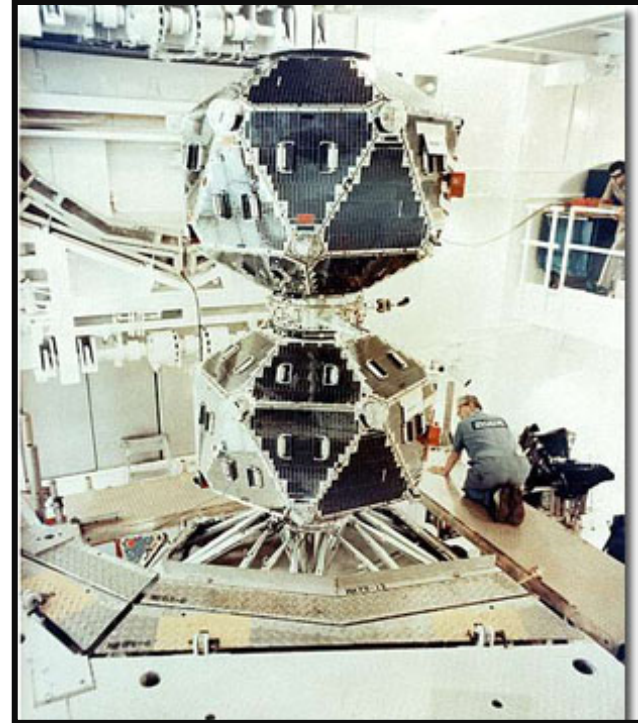
THE ASTRONOMICAL JOURNAL  
VOLUME 83, NUMBER 12  
DECEMBER **1978**

## ABSTRACT

A new compilation is made of absolute magnitudes  $B(1,0)$  from photoelectric observations, supplemented where necessary by photographic observations from the Yerkes-McDonald, Palomar-Leiden, and Indiana Surveys ...

# Vela Spacecraft

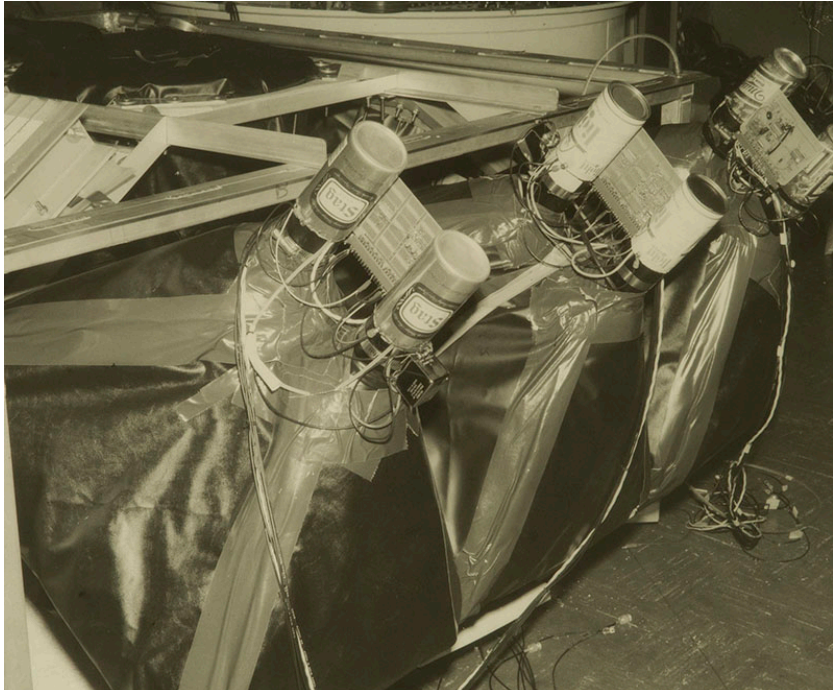
## Nuclear Bomb Detectors in Space



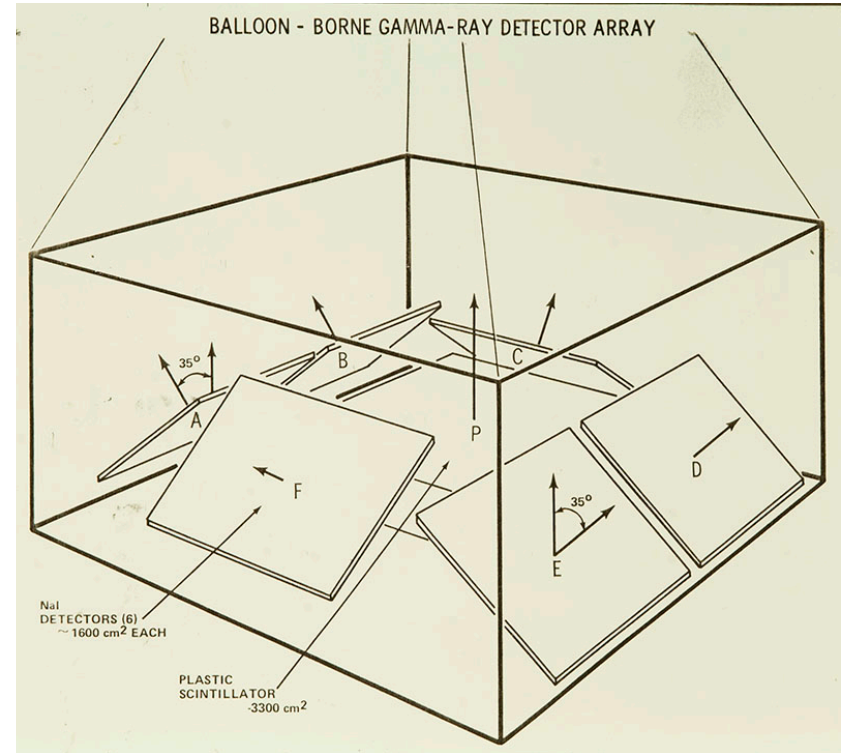
## Gamma-ray Bursts (GRBs)

> Discovered in 1967 <  
(Not Announced to Public until 1973)





**Three Detectors on the Gondola**



**Six Detectors Viewing Different Directions**

# **Balloon-borne Gondola for GRB Obs.**

**NASA/MSFC ~1976 - 1980**

# **BATSE Proposal - 1977**

**for the**

**Gamma-ray Observatory (GRO)**

**Inspired by**

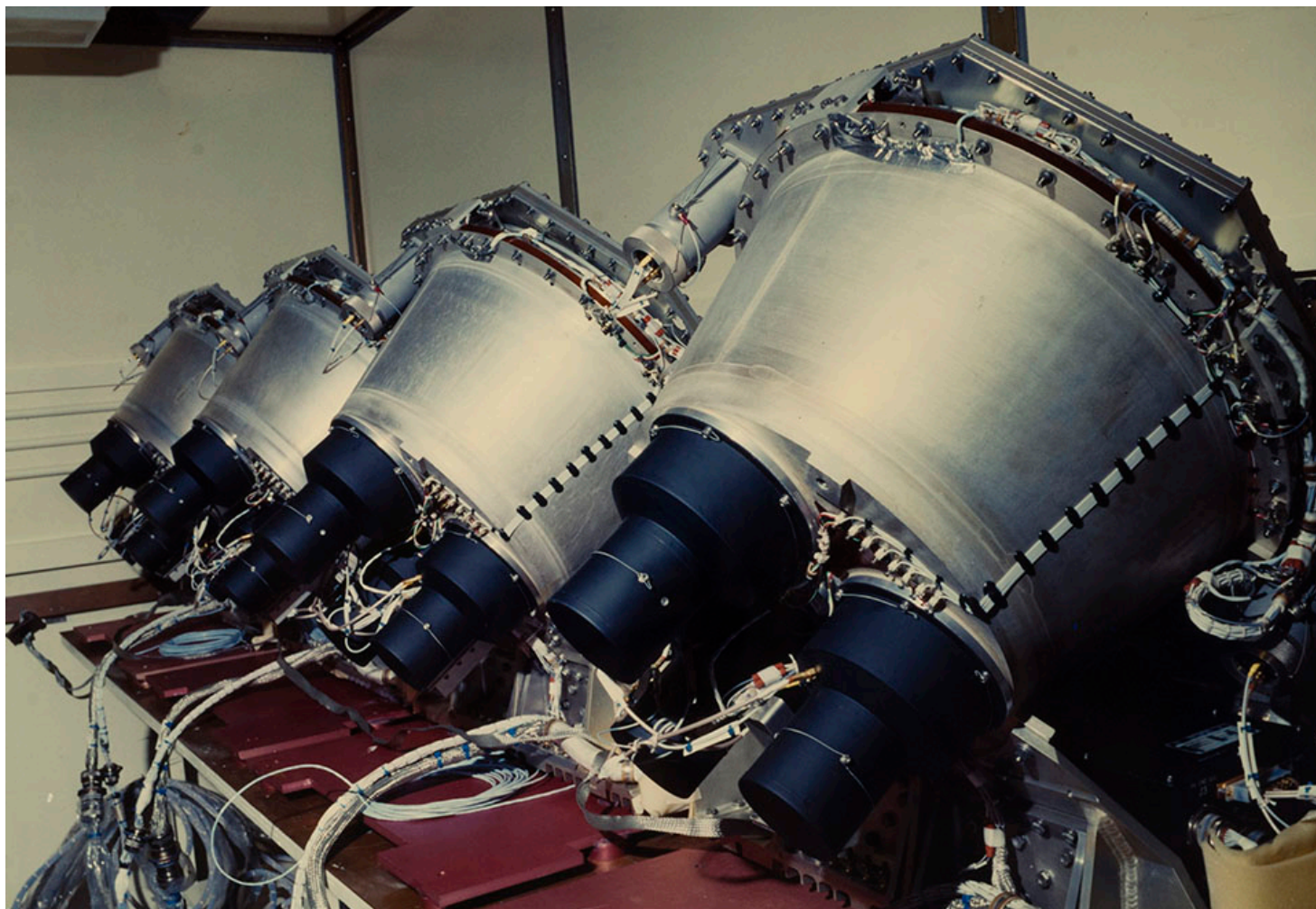
**Tom Cline - GSFC**

**[ Original Title: GRB Monitor for the GRO ]**

**> Full-sky; Large-area Detectors <**

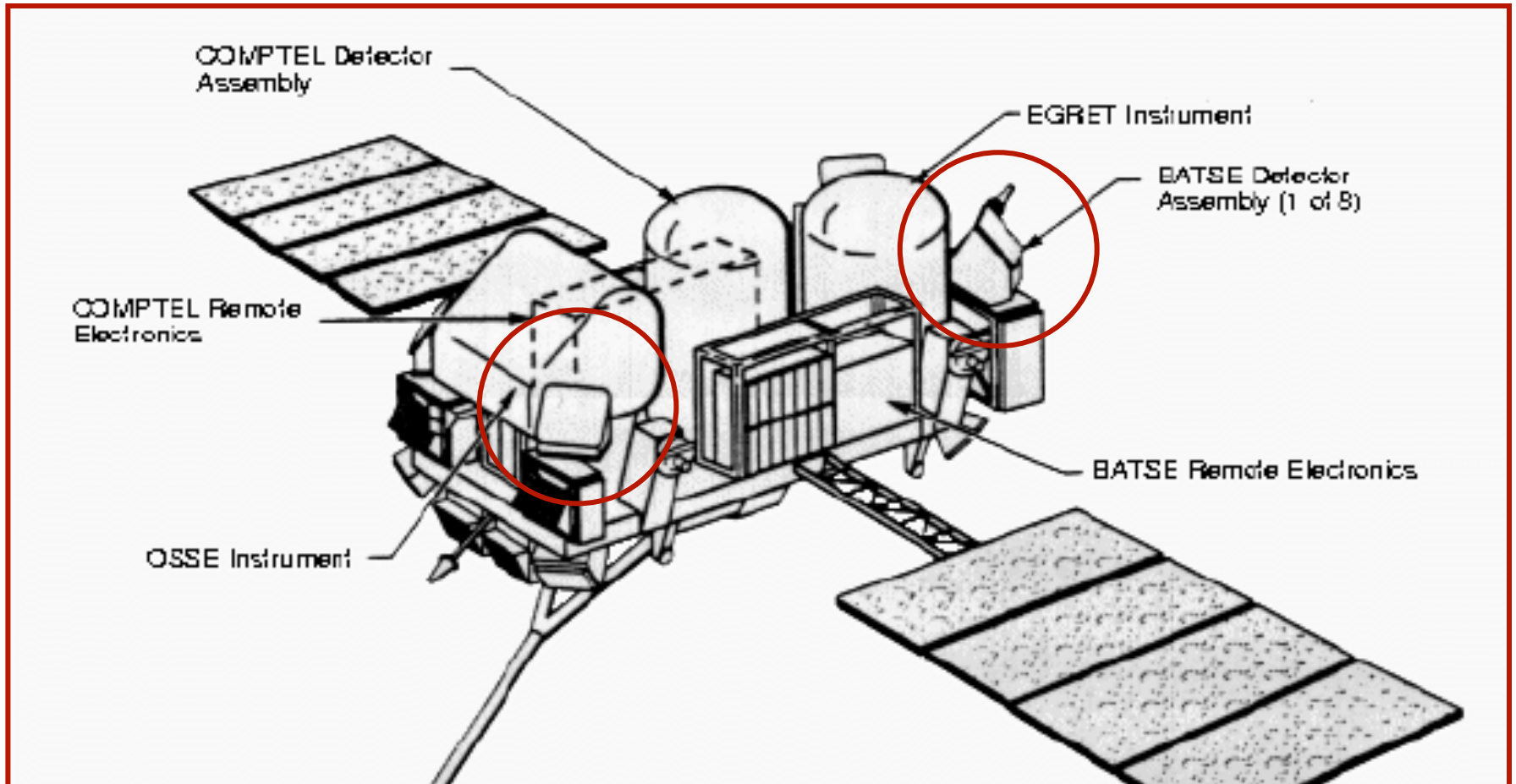
**“The First Large Experiment  
Designed for GRB Studies”**

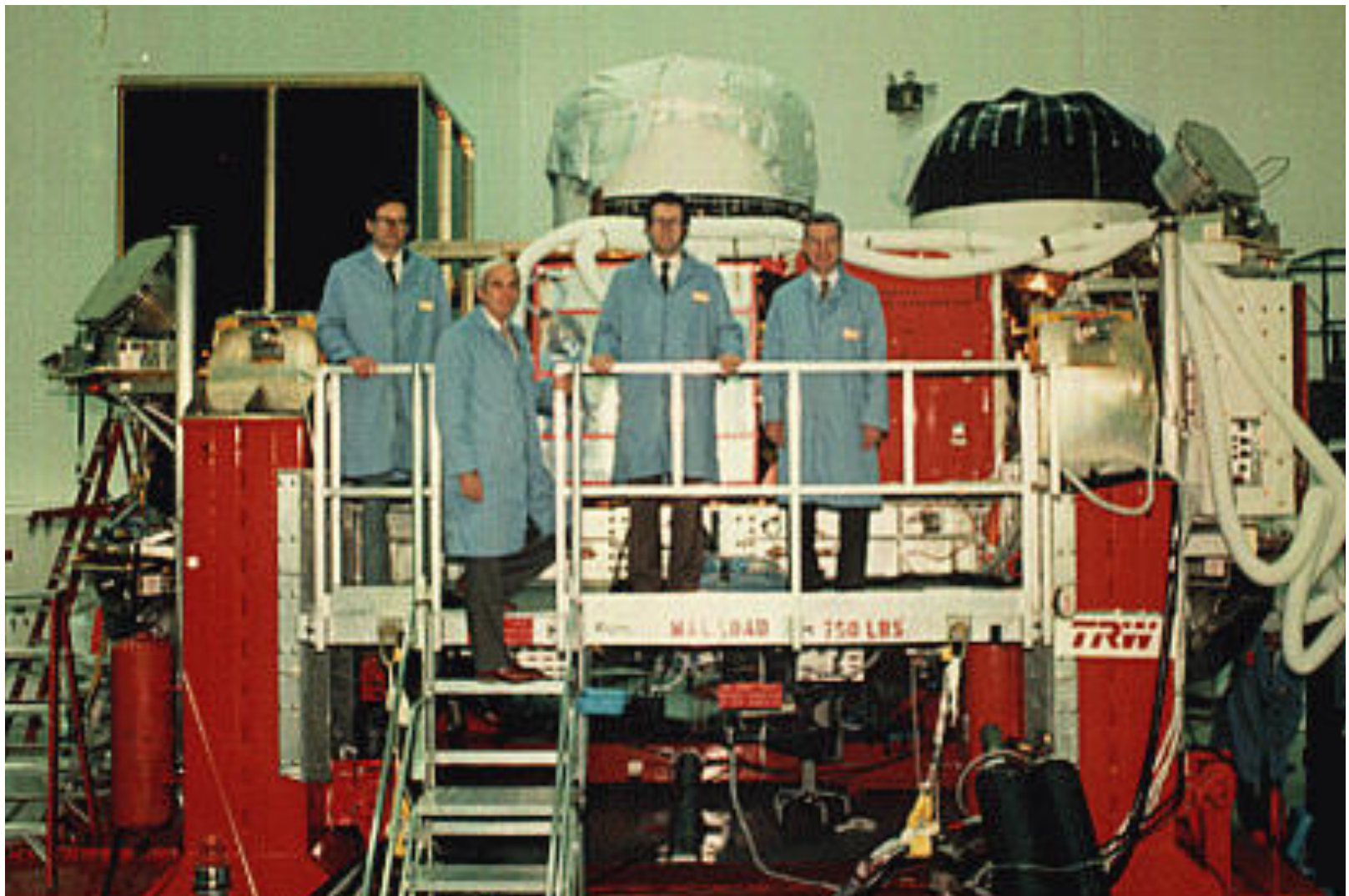
**1982 - 1988**



**BATSE Design, Fabrication, Testing & Calibration  
NASA-MSFC**

# Burst and Transient Source Experiment (BATSE) on GRO

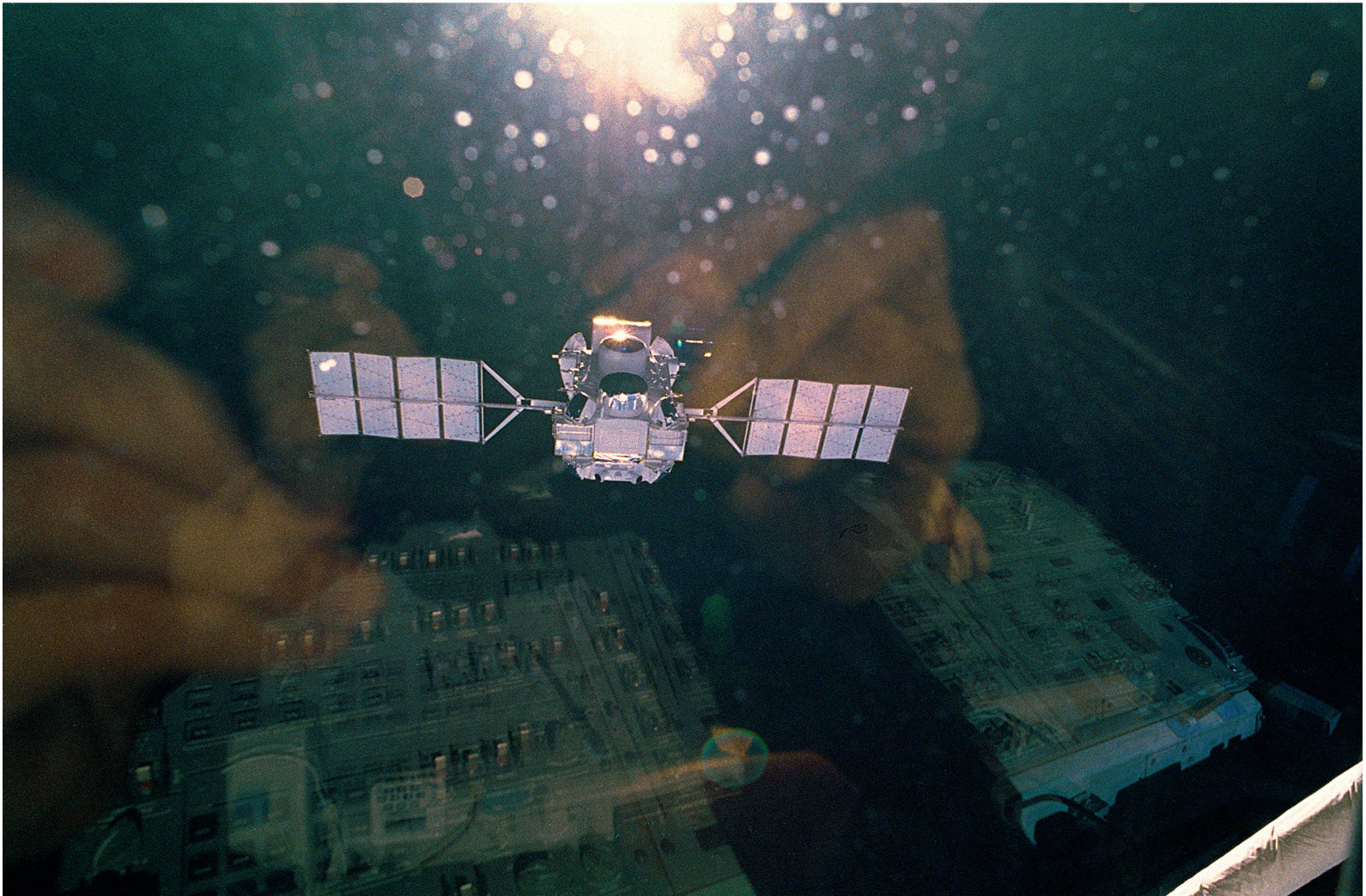




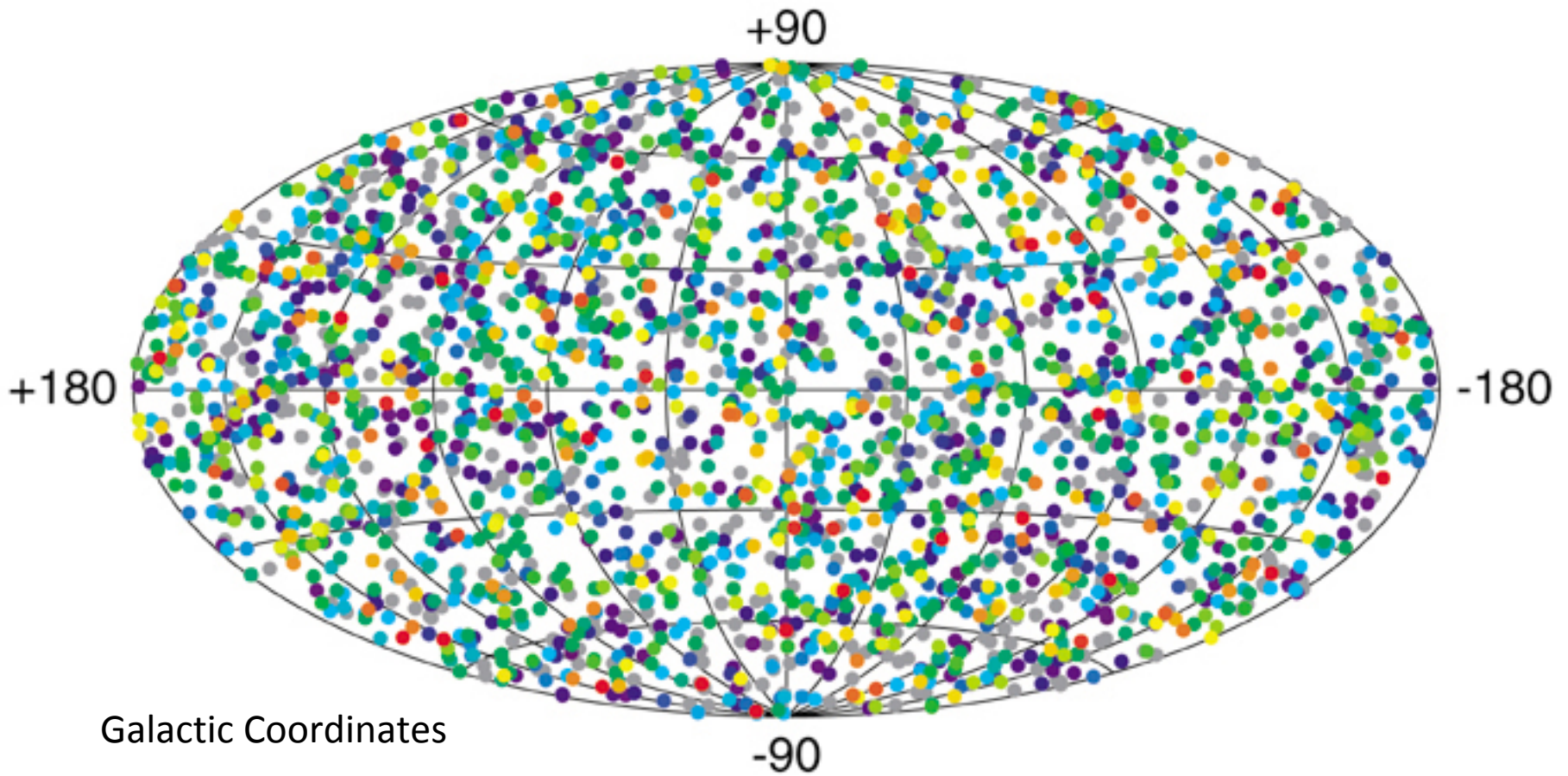
## **Gamma-Ray Observatory (GRO) Spacecraft**

**Four P.I.s – TRW, Redondo Beach Calif.  
1989**

# GRO Spacecraft Drifting Away



# 2704 BATSE Gamma-Ray Bursts



Apr. 1991 – May 2000

# GRO on Cover of *Nature*, Jan. 9, 1992





# Ray Klebesadel – Vela

“The person who Discovered GRBs”



C. K.

Ray

Neil



**GRB Conference, Washington, DC**  
*Passing the “BAT” from BATSE to Swift*



C. K. **N. Gehrels** R. Narayan G. J. F.

**National Academy of Sciences**

**Washington, D.C.**

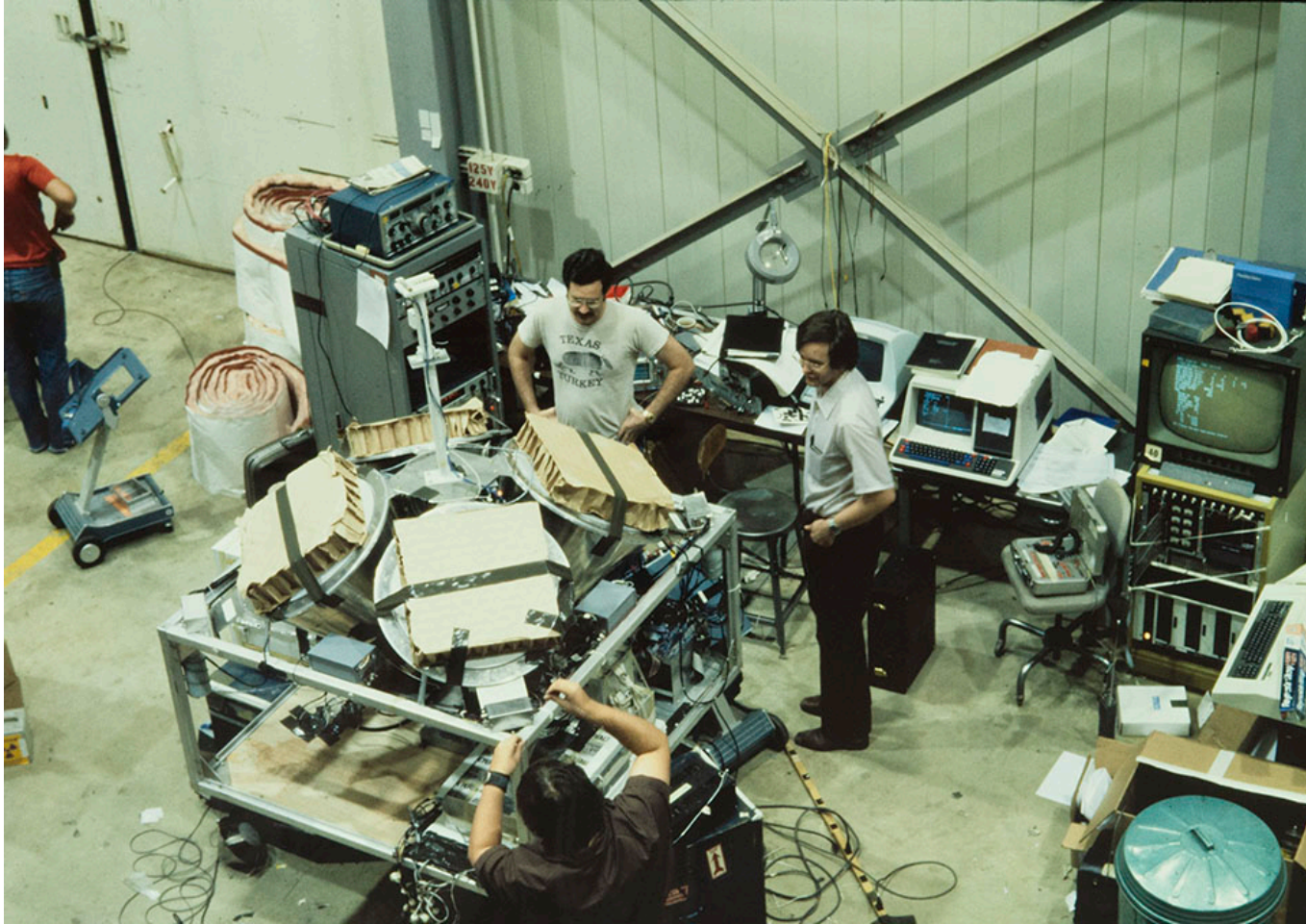
**2013 ?**

**End**





# GRB Experiment Proposed & Accepted for the Gamma-ray Observatory (GRO) 1978



**Four Prototype Detectors (BATSE/GRO)  
for a Balloon Flight**



**NASA-MSFC Balloon-flight Gondola  
Ready for Launch**





C. K. **N. Gehrels** R. Narayan G. J. F.

**National Academy of Sciences**

**Washington, D.C.**

**2013 ?**



## **The Life of Tom Gehrels**

**Presented by: Neil Gehrels, George Gehrels,  
Jo-Ann Gehrels and Gehrels, Aleida**

Cambridge University Press, 2015, p.5; May 2015 ISBN: 978-1-107-04390-9  
[2015psps.book....5G](#)