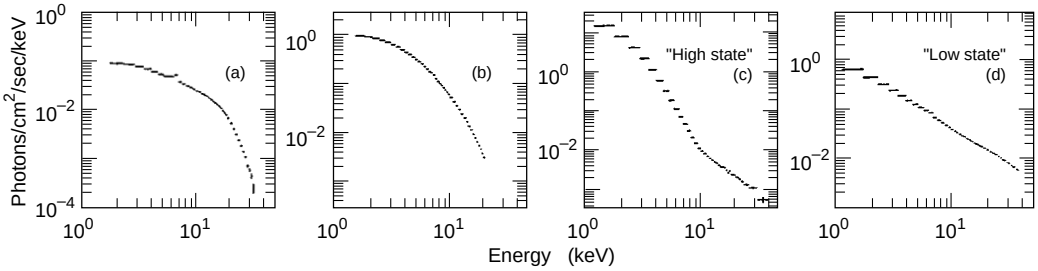
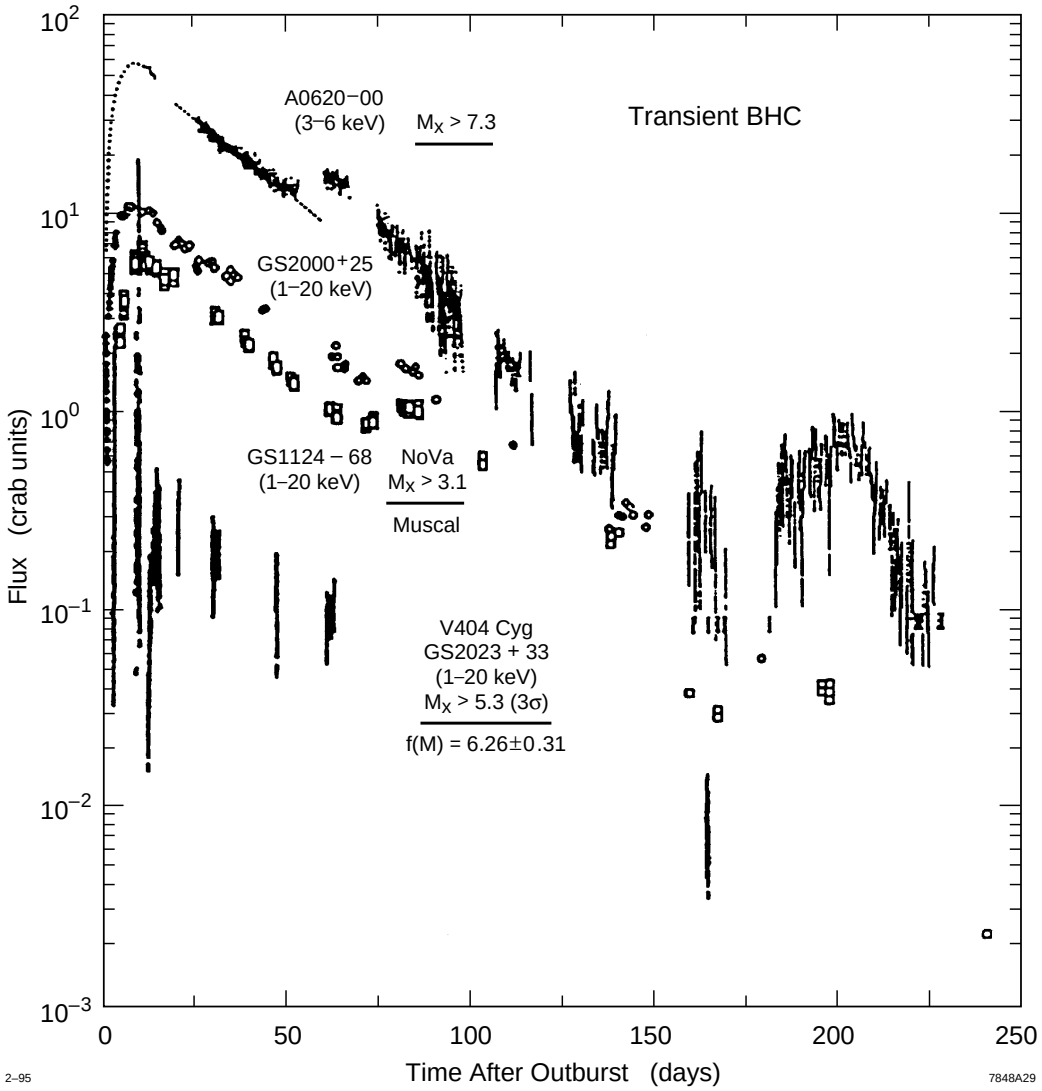
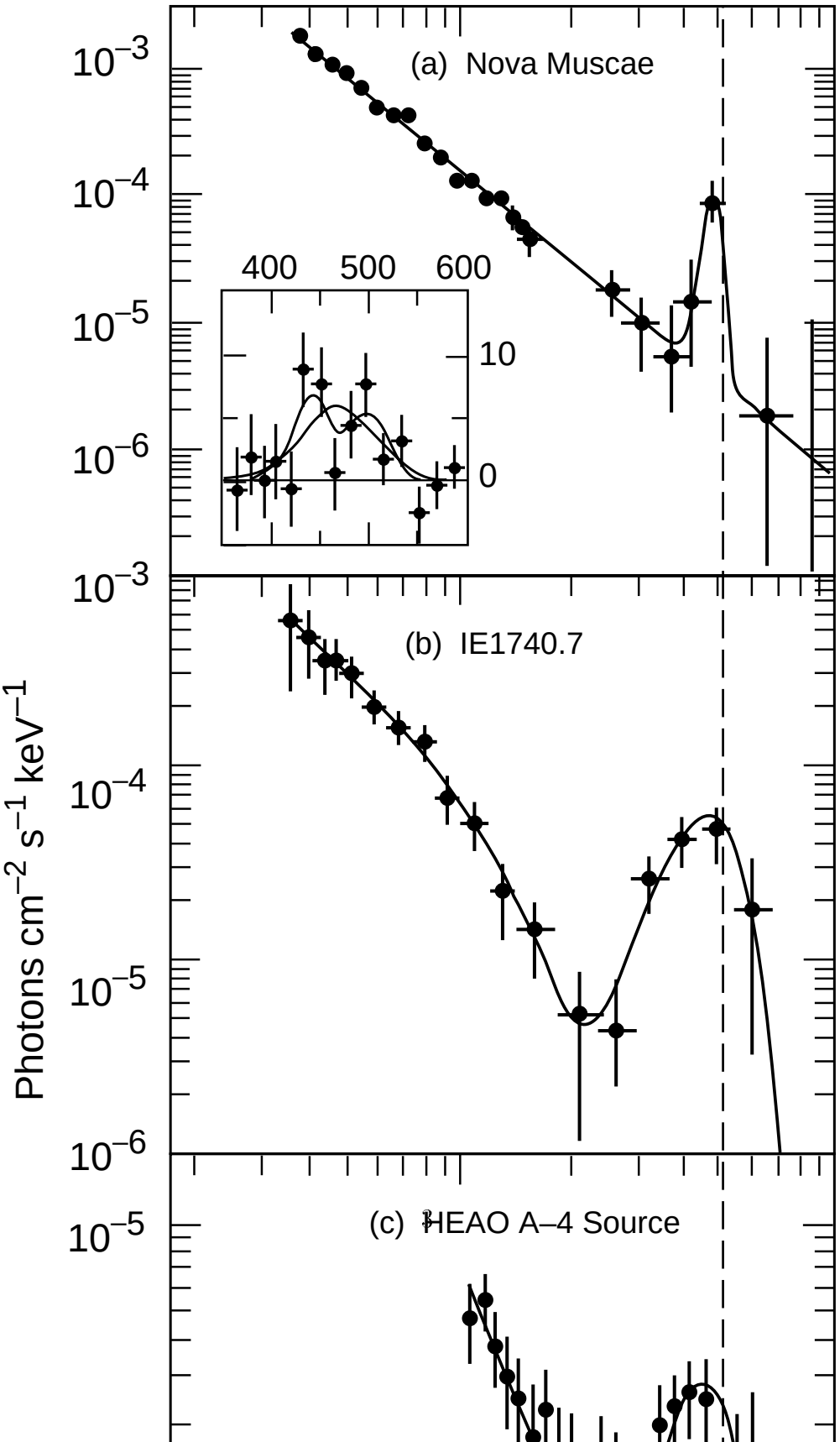


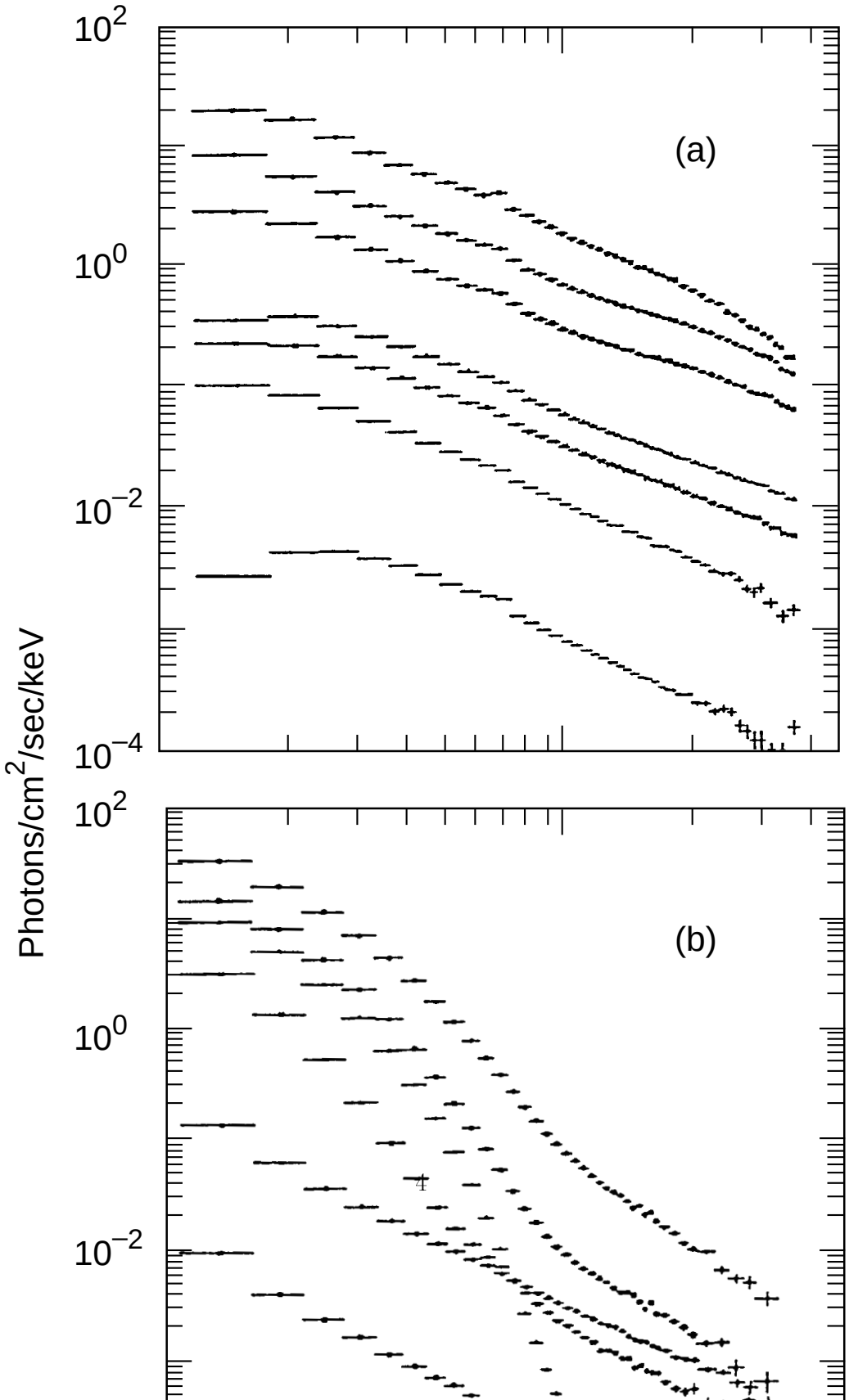

| | | | | |
|---|---|---|---|---|
| Energy | • Power law<br>• Sharp cutoff<br>Cyclotron lines | • X–ray bursts<br>• Thermal brems.<br>• Spectral shape | • Ultra soft<br>• Hard power law tail | • Single power law |
| Timing | • Regular pulsations (pulsar) | • Aperiodic variability<br>• QPOs<br>• Small amplitude at rapid time scales | • Large time variability of hard power law tail | • Large variability at all time scales <1sec<br>• Considerable amplitude at ms time scales |
| Result | • Compact object is a neutron star, $B \approx 10^8$ T | • Compact object is a neutron star, $B \approx 10^4$ T | • Compact object is a Black hole candidate | • Compact object is a Black hole candidate |

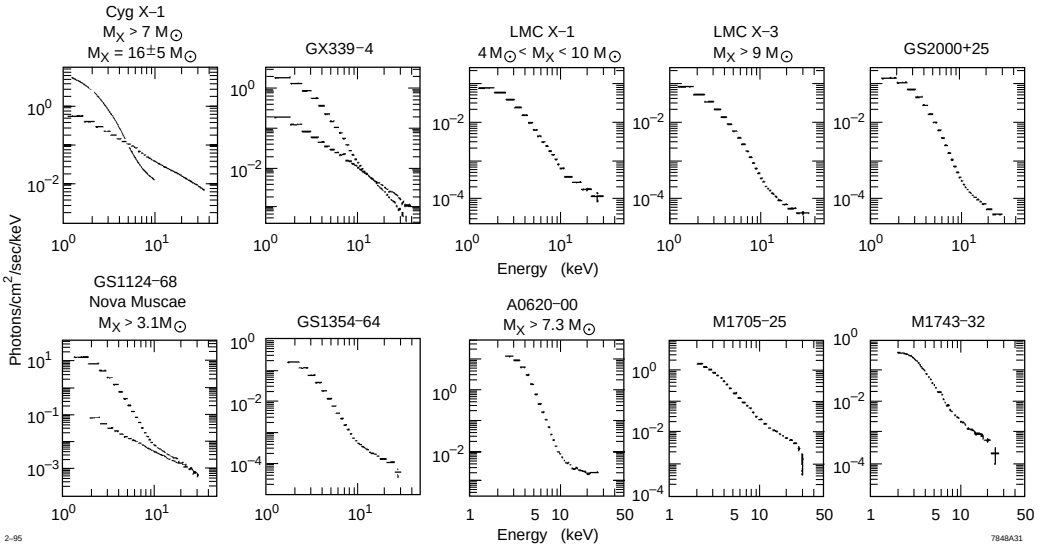
6–95

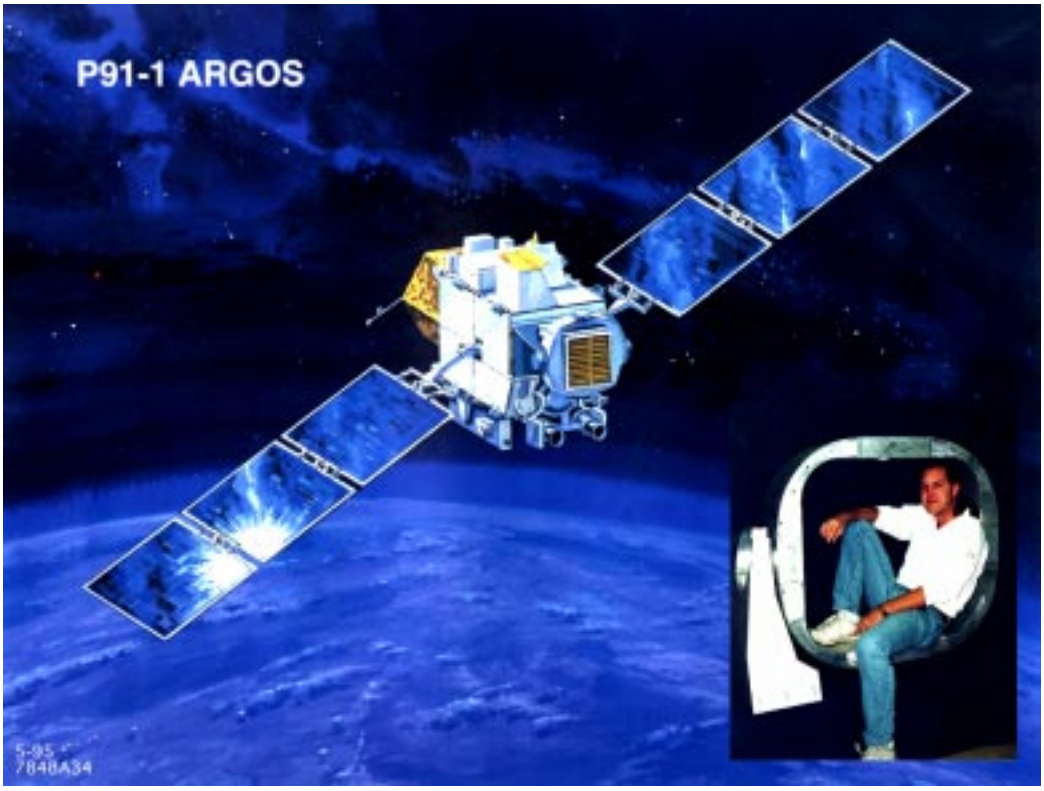
7848A28


Transient BHC
A0620−00
(3−6 keV)
$M_X > 7.3$
GS2000+25
(1−20 keV)
GS1124 − 68
(1−20 keV)
NoVa
$M_X > 3.1$
Muscal
V404 Cyg
GS2023 + 33
(1−20 keV)
$M_X > 5.3$ (3σ)
f(M) = 6.26±0.31
Flux (crab units)
Time After Outburst (days)
$10^2$
$10^1$
$10^0$
$10^{-1}$
$10^{-2}$
$10^{-3}$
0
50
100
150
200
250
2–95
7848A29


(a) Nova Muscae
400
500
600
10
0
(b) IE1740.7
(c) HEAO A–4 Source
Photons cm$^{-2}$ s$^{-1}$ keV$^{-1}$
$10^{-3}$
$10^{-4}$
$10^{-5}$
$10^{-6}$

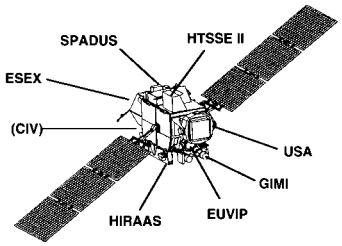

Photons/cm$^2$/sec/keV
$10^2$
$10^0$
$10^{-2}$
$10^{-4}$
(a)
$10^2$
$10^0$
$10^{-2}$
(b)


Cyg X−1
$M_X > 7\ M_\odot$
$M_X = 16 \pm 5\ M_\odot$
GX339−4
LMC X−1
$4\ M_\odot < M_X < 10\ M_\odot$
LMC X−3
$M_X > 9\ M_\odot$
GS2000+25
GS1124−68
Nova Muscae
$M_X > 3.1 M_\odot$
GS1354−64
A0620−00
$M_X > 7.3\ M_\odot$
M1705−25
M1743−32
Photons/cm$^2$/sec/keV
Energy (keV)
2-95
7848A31


P91-1 ARGOS
5-95
7848A34

# Program Overview

**ARGOS**

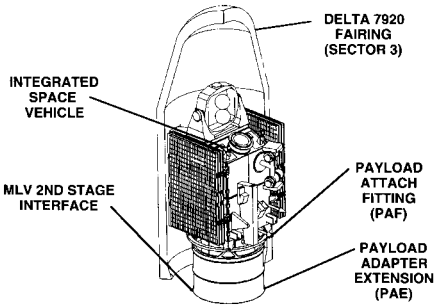



## EXPERIMENTS

| | | |
|---|---|---|
| 1. CIV | AFPL | Critical Ionization Velocity |
| 2. ESEX | AFPL | Arcjet Propulsion Engine |
| 3. EUVIP | ARMY | UV Imager |
| 4. GIMI | NRL | UV Camera |
| 5. HIRAAS | NRL | UV Spectroradiometer |
| 6. HTSSE II | NRL | High Temperature Superconductivity Space Experiment |
| 7. SPADUS | ONR | Space Dust Experiment |
| 8. USA | NRL | Unconv. Stellar (X-Ray) |

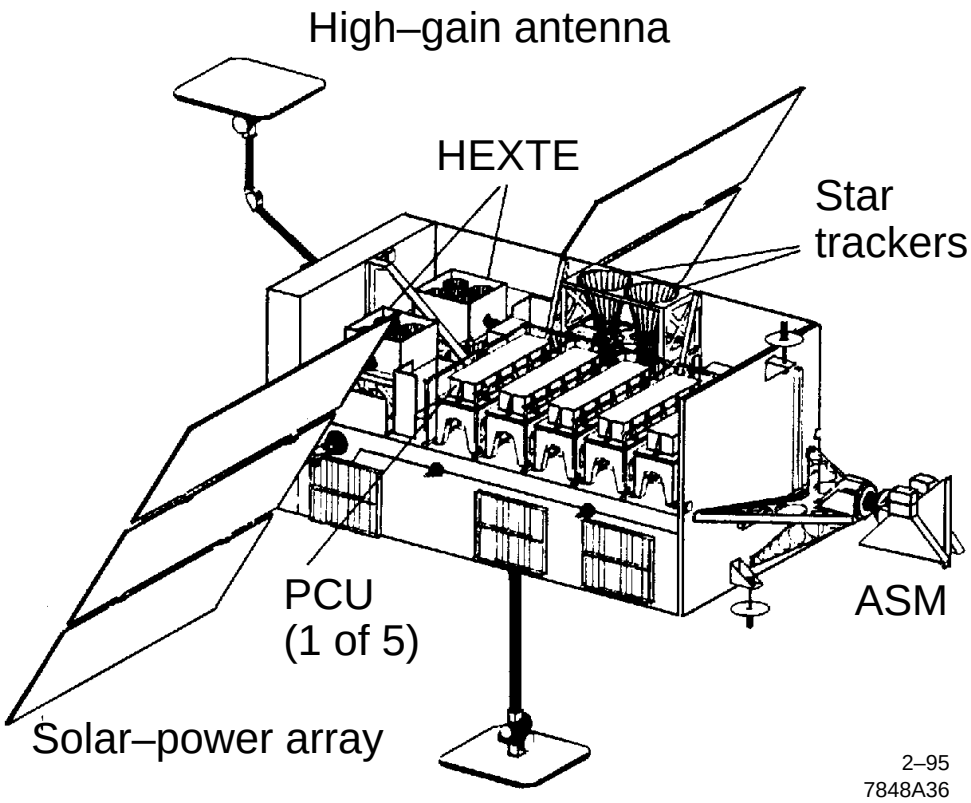
## SPACE VEHICLE SYSTEM

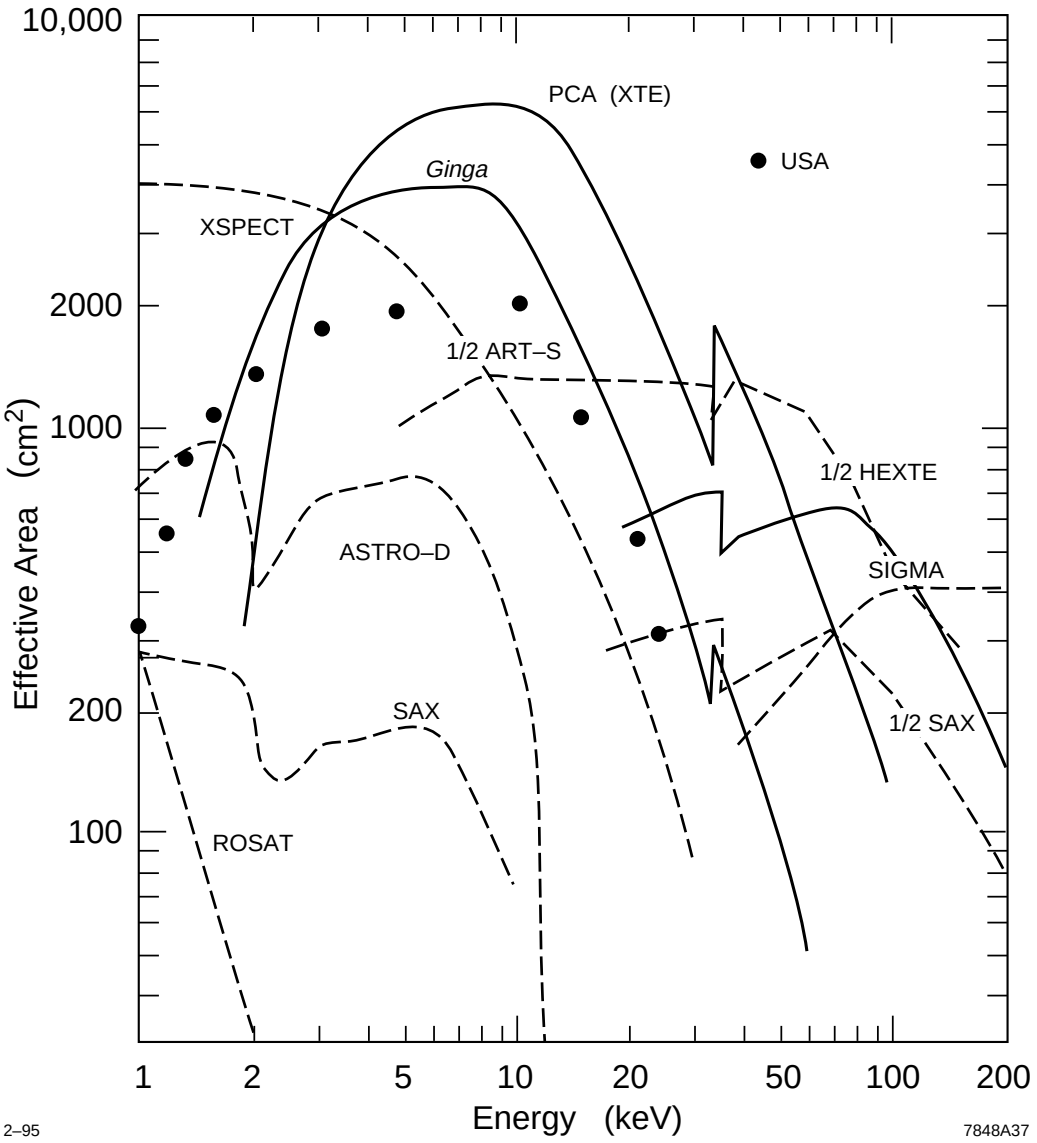
| | | |
|---|---|---|
| • Mass | - Capability | 6000 lbs |
| • Power | - Average | 1000 W |
| • Orbit | - Altitude | 450 n.mi. |
| | - Inclination | 98.7° |
| • Launch Vehicle | - MLV Class | Delta II |
| • Downlink Rate | - Carrier I | 4 K or 128 Kbps |
| | - Carrier II | 1, 4, or 5 Mbps |
| • Uplink | | 2000 bps |
| • Data storage | | 2.4 Gbits |
| • Mission Life | | 3 years |
| • Reliability | | 0.9 for 1 year |
| • Altitude Pointing | - Control | 0.3° |
| | - Knowledge | 0.1° |




4–95

7848A56


High–gain antenna
HEXTE
Star
trackers
PCU
(1 of 5)
ASM
Solar–power array
2–95
7848A36


10,000
2000
1000
200
100
Effective Area (cm$^2$)
1
2
5
10
20
50
100
200
Energy (keV)
PCA (XTE)
USA
Ginga
XSPECT
1/2 ART–S
1/2 HEXTE
ASTRO–D
SIGMA
SAX
1/2 SAX
ROSAT
2–95
7848A37