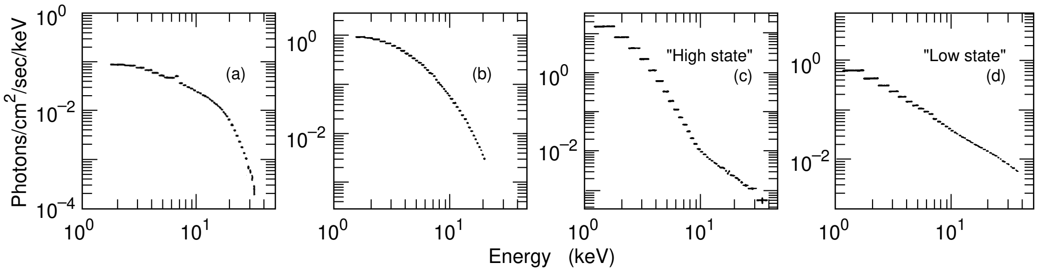
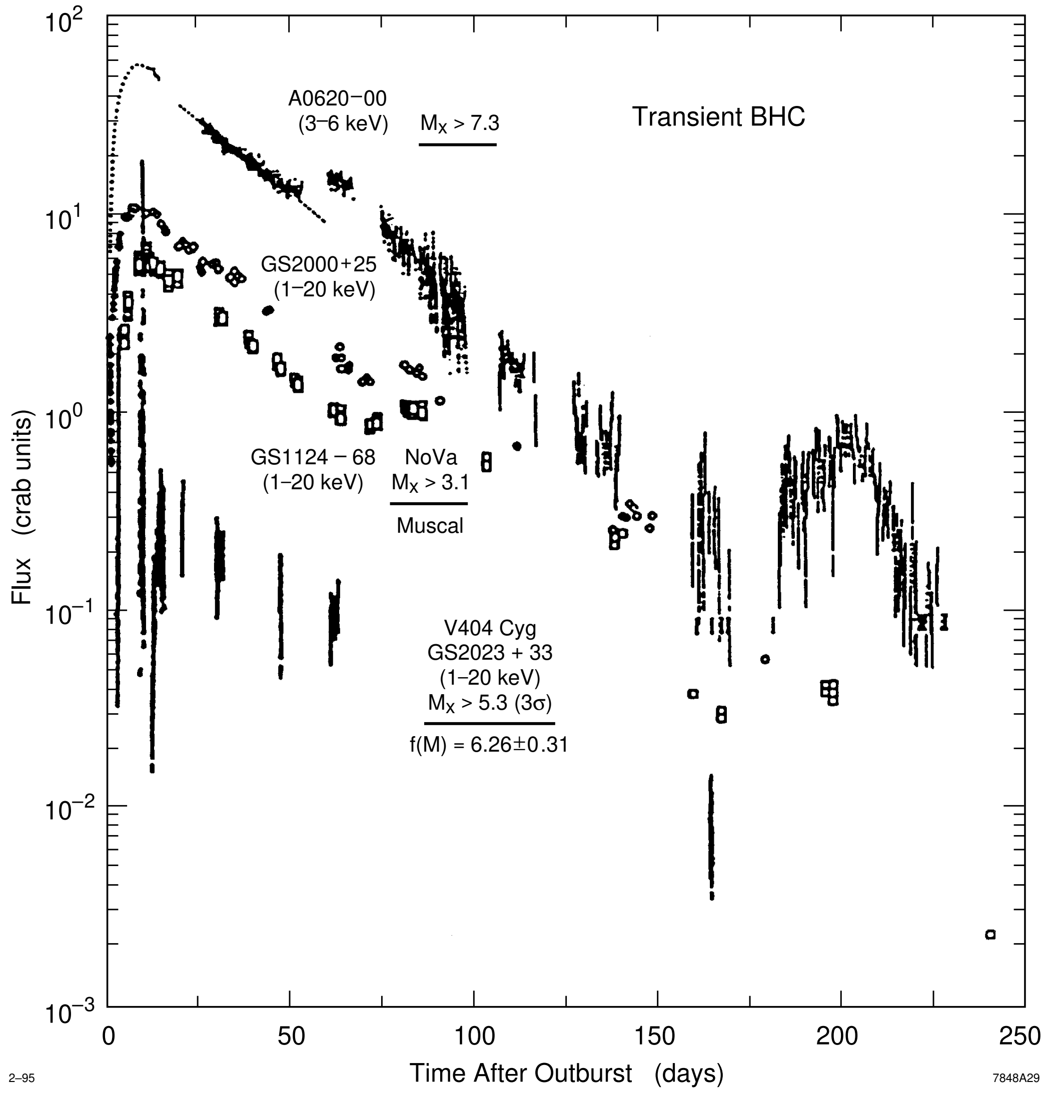
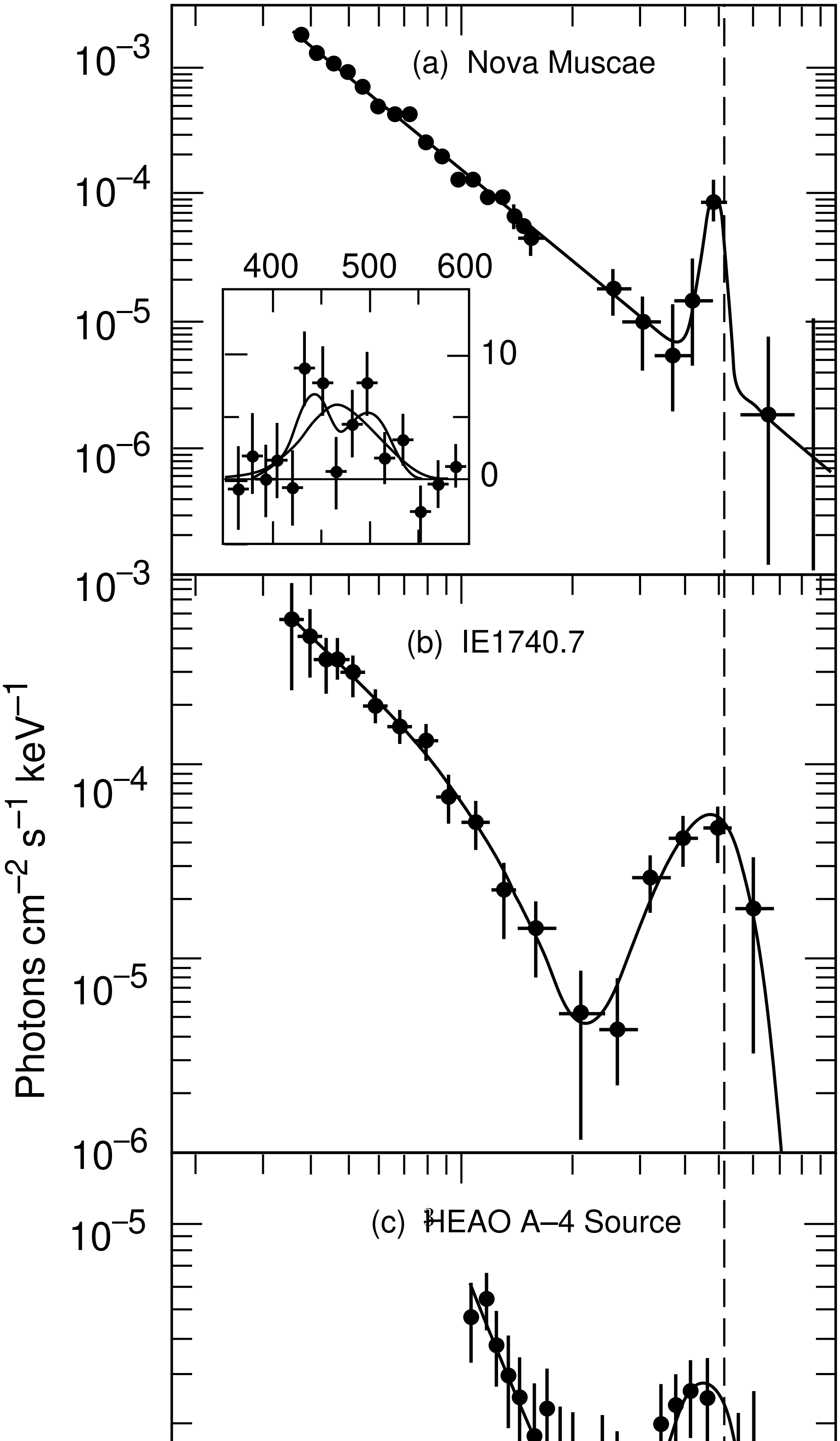


Energy	• Power law • Sharp cutoff Cyclotron lines	• X–ray bursts • Thermal brems. • Spectral shape	• Ultra soft • Hard power law tail	• Single power law
Timing	• Regular pulsations (pulsar)	• Aperiodic variability • QPOs • Small amplitude at rapid time scales	• Large time variability of hard power law tail	• Large variability at all time scales <1sec • 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

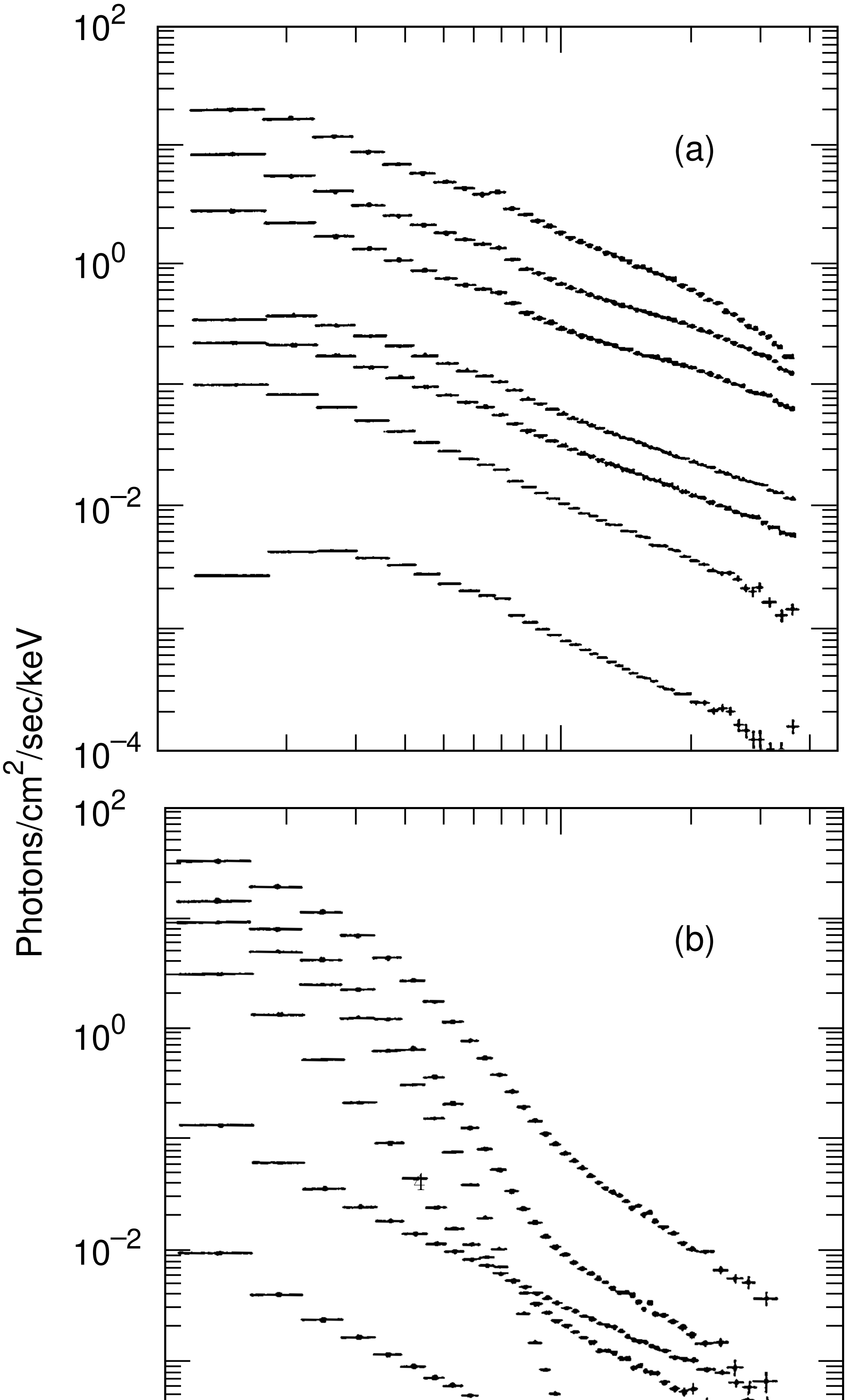
6–95 7848A28



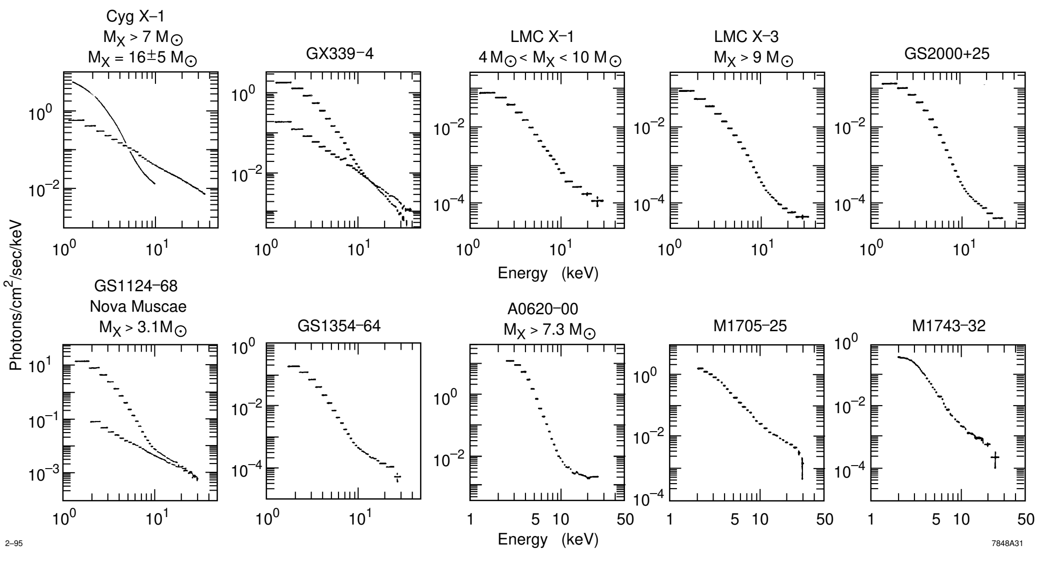
A0620−00
(3–6 keV)
M_X > 7.3
Transient BHC
GS2000+25
(1–20 keV)
GS1124 − 68
(1–20 keV)
NoVa
M_X > 3.1
Muscal
V404 Cyg
GS2023 + 33
(1–20 keV)
M_X > 5.3 (3σ)
f(M) = 6.26±0.31
Flux (crab units)
Time After Outburst (days)
2–95
7848A29

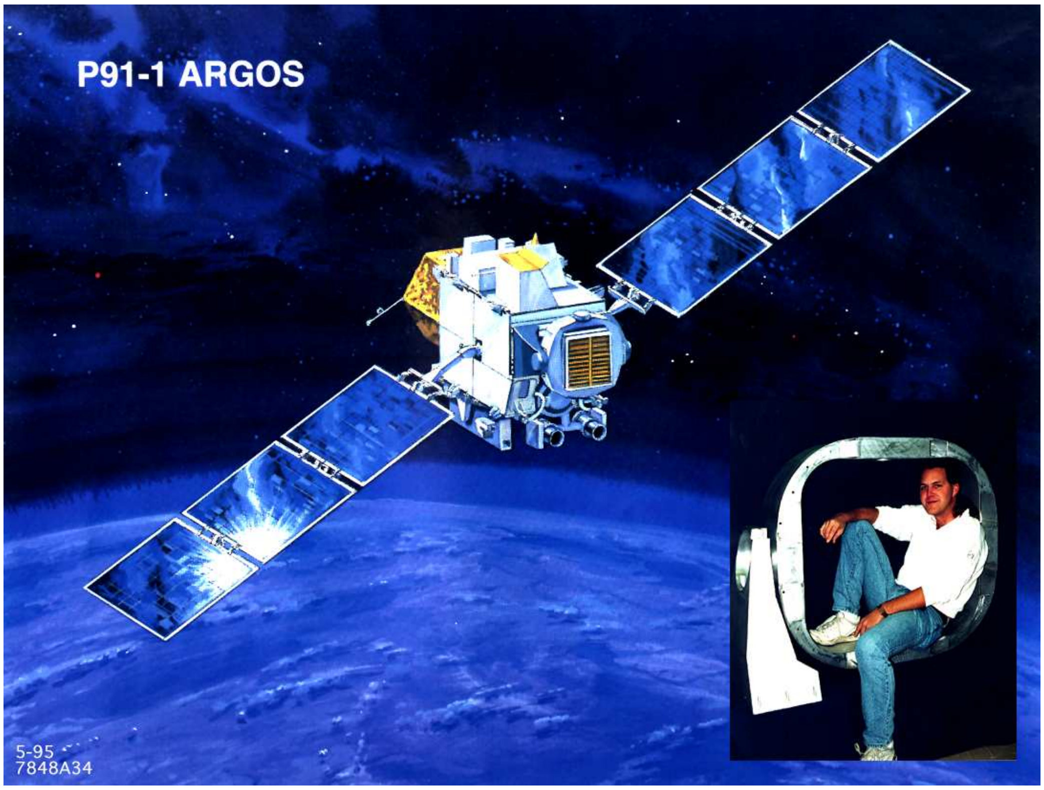


(a) Nova Muscae
(b) IE1740.7
(c) HEAO A–4 Source
Photons cm^{-2} s^{-1} keV^{-1}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
400
500
600
10
0



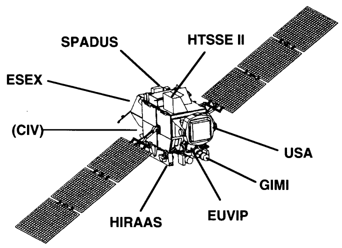
(a)
(b)
Photons/cm^2/sec/keV
10^2
10^0
10^{-2}
10^{-4}


Cyg X–1
M_X > 7 M_⊙
M_X = 16±5 M_⊙
GX339–4
LMC X–1
4 M_⊙ < M_X < 10 M_⊙
LMC X–3
M_X > 9 M_⊙
GS2000+25
GS1124–68
Nova Muscae
M_X > 3.1M_⊙
GS1354–64
A0620–00
M_X > 7.3 M_⊙
M1705–25
M1743–32
Photons/cm²/sec/keV
Energy (keV)
Energy (keV)
2–95
7848A31


P91-1 ARGOS
5-95
7848A34

Program Overview

ARGOS

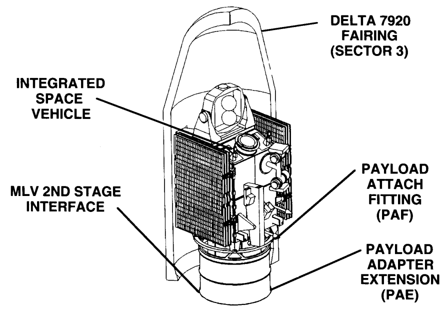


EXPERIMENTS

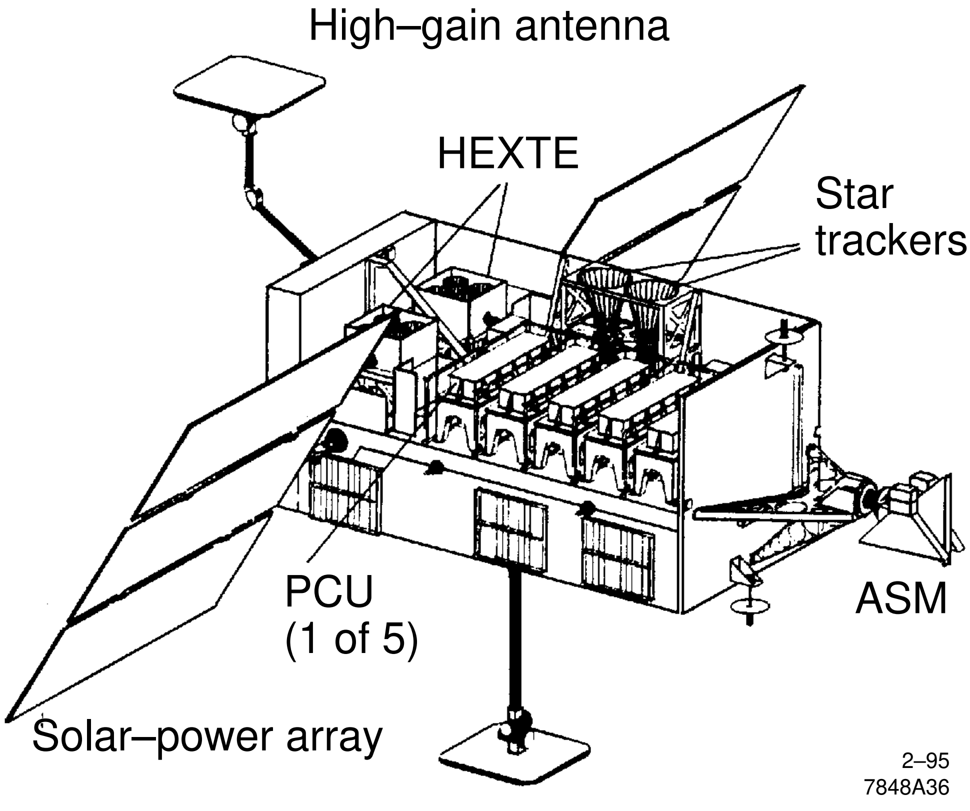
1. CIV	AFPL	Critical Ionization Velocity
2. ESEX	AFPL	Arcjet Propulsion Engine
3. EUVIP	ARMY	UV Imager
4. GIMI	NRL	UV Camera
5. HIRAAS	NRL	UV Spectroradiometer
6. HTSSE II	NRL	High Temperature Superconductivity Space Experiment
7. SPADUS	ONR	Space Dust Experiment
8. USA	NRL	Unconv. Stellar (X-Ray)

SPACE VEHICLE SYSTEM

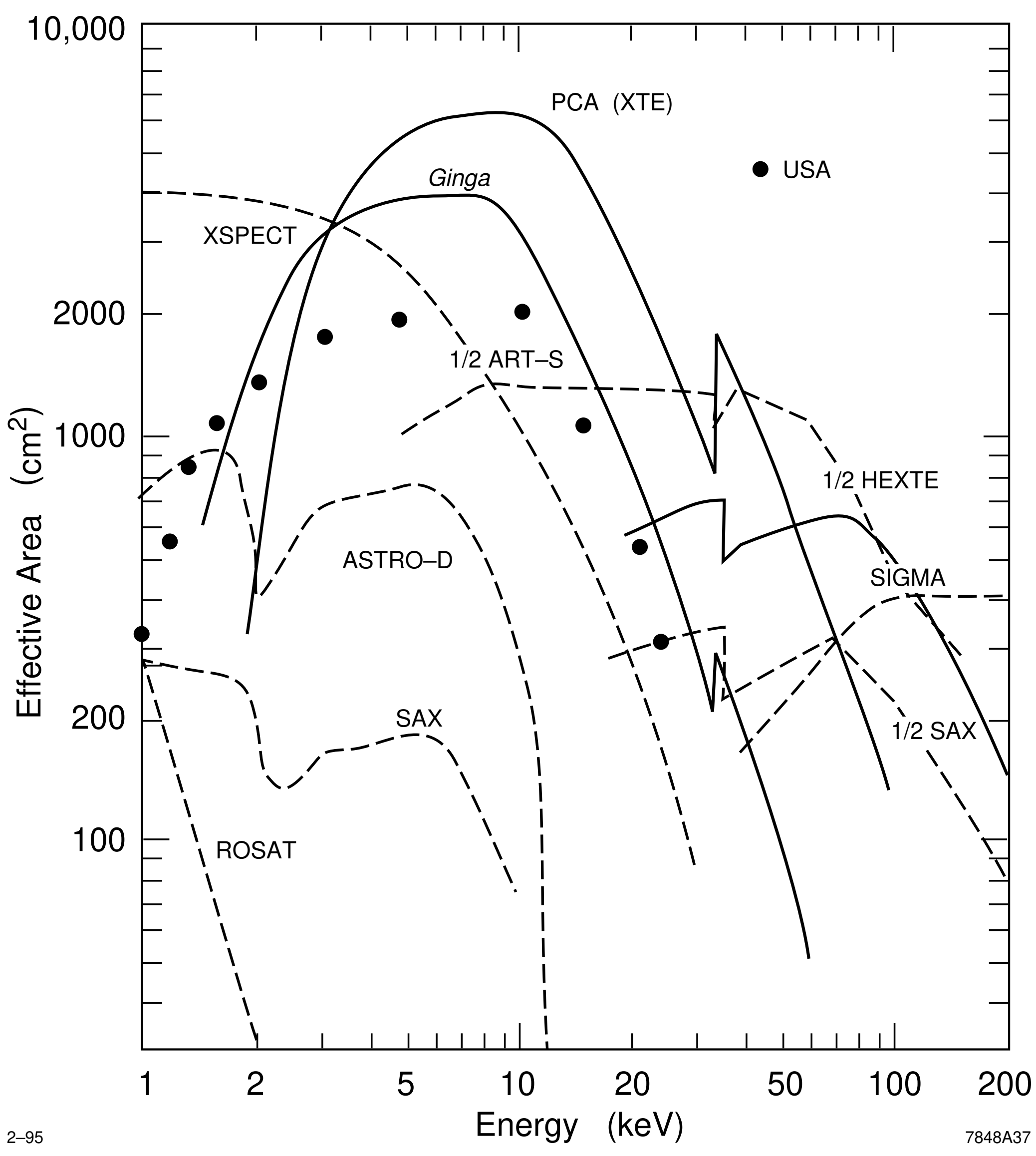
• Mass	- Capability	6000 lbs
• Power	- Average	1000 W
• Orbit	- Altitude - Inclination	450 n.mi. 98.7°
• Launch Vehicle	- MLV Class	Delta II
• Downlink Rate	- Carrier I - Carrier II	4 K or 128 Kbps 1, 4, or 5 Mbps
• Uplink		2000 bps
• Data storage		2.4 Gbits
• Mission Life		3 years
• Reliability		0.9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