

Critical-Angle Transmission Grating Spectrometer (CAT-GS)

- Based on Chandra TGS heritage
- Similar to Chandra: Low weight, relaxed alignment tolerances
- Improvements:
 - Blazed transmission gratings -> use of higher orders -> higher spectral resolution
 - Broadband high-efficiency gratings -> large effective area
 - Sub-aperturing -> higher spectral resolution

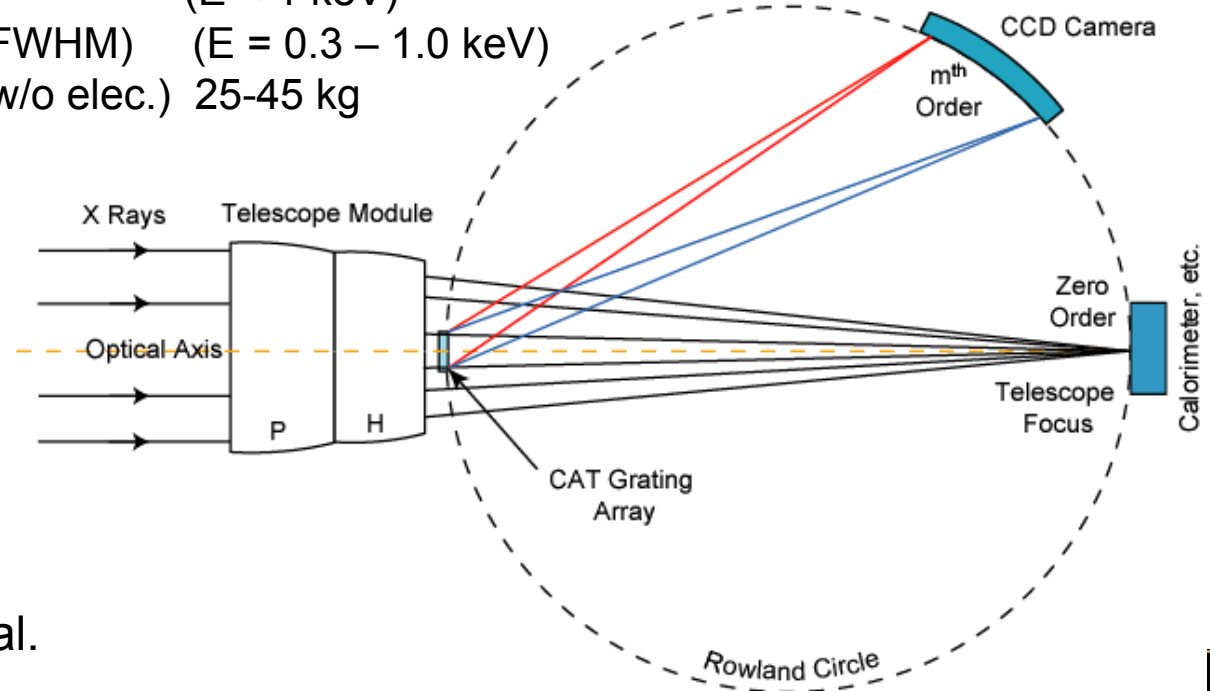
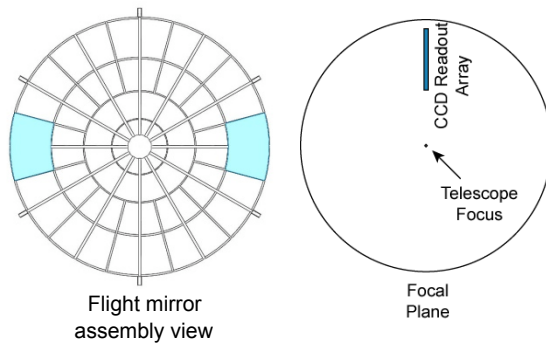
Strawman configuration:

Cover two opposing pairs of outer mirror modules ($2 \times 30^\circ$)

Effective area $> 1,000 \text{ cm}^2$ ($E < 1 \text{ keV}$)

Resolution $E/\Delta E > 4500$ (FWHM) ($E = 0.3 - 1.0 \text{ keV}$)

Mass (gratings + camera w/o elec.) 25-45 kg



Ralf Heilmann et al.