Building the Observatory 1991-1999

Martin C. Weisskopf
NASA/Marshall Space Flight Center
1991 to 1999 - Outline

• The Congressional challenge
  – Prove it to me (Verification Engineering Test Article aka VETA)
  – Build that facility!
• Building of the Observatory
• Calibrating the Observatory
• Launch, deployment & first light!
THE XRCF
(X-ray Calibration Facility)
XRCF - “Guide” Tube
XRCF – X-ray Sources
X-Ray Detection System (XDA)
The X-ray Calibration Facility (XRCF) at MSFC
VETA
(Verification Engineering Test Article)
VETA 1991

- P1/H1 – uncoated & uncut
- Needed Test Facility at least one year earlier than scheduled
Estimated Mirror Performance on Orbit
Facility Effects Removed Using Lucy Deconvolution of 19 x 19 Scan

Energy: 1.49 keV

FWHM = 0.19 arcsec
Restructuring

• Servicing Disappears
  – Assured by new orbit for AXAF-I
  – But benefits
    • Higher observing efficiency
    • Fewer earth occultations
    • Use of iridium to enhance reflectivity

• But loss of two mirrors

• Ultimately “loss” of AXAF-S
  – Cancelled in the fall of 1993
INSTRUMENTS
Gratings
CALIBRATION
Life at the XRCF
TO THE CAPE AND LAUNCH
On to the Cape – Feb 4 1999
Include the Upper Stage in the Shuttle

The longest and heaviest payload ever launched by the Shuttle
Notables at the Launch

- Hillary Clinton
- The women’s soccer team
- Mrs. Chandrasekhar
- The male model Fabio
Three Launch Attempts

- Mon/Tue July 19/20
  - Sensor spike --- hydrogen in the engine

- Wed/Thurs July 21/22
  - Lightening in the vicinity

- Thurs/Fri July 22/23
  - Third time is a charm
Beyond the Sky
Words and Music by Judy Collins
And we will fly beyond the sky
Beyond the stars beyond the heavens
Beyond the dawn we'll carry on
Until our dreams have all come true
To those who fly - we sing to you
Door Openings

• August 11 – HRMA aft cover
• August 12 – HRMA forward cover
Unofficial First Light - LEON X-1
Official First Light — Cassiopeia A

Was ist das?

1 arcminute