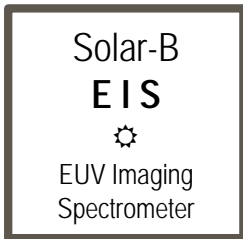


Consortium Meeting, June 99, BU
Recent Progress

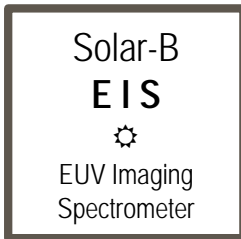
a Summary of Progress
during the last six months

Matthew Whyndham



Recent Progress

- Dec 98 US Partner Selection
- Jan 99 Consortium Meeting (NRL)
- Mar 99 Solar-B mission kick-off meeting (ISAS)
 - choice of EIS configuration
 - choice of wavelength ranges
- Apr, May 99 optical design evolution
- May 99 Engineering Meeting (NRL)



US Partner Selection

- All three Solar-B scientific payloads have US contributions
 - All instruments have Japanese PI's
- SOT - S. Tsuneta
 - FPIP : Alan Title - LMATC
- XRT - K. Shibasaki
 - Leon Golub - SAO
- EIS - T. Watanabe
 - Len Culhane - MSSSL/UCL, BU, RAL + science team
 - George Doschek - NRL, GSFC

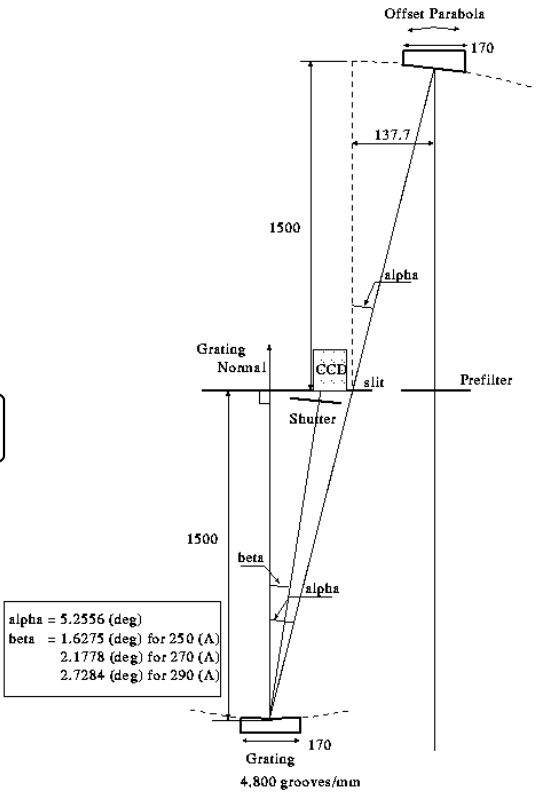
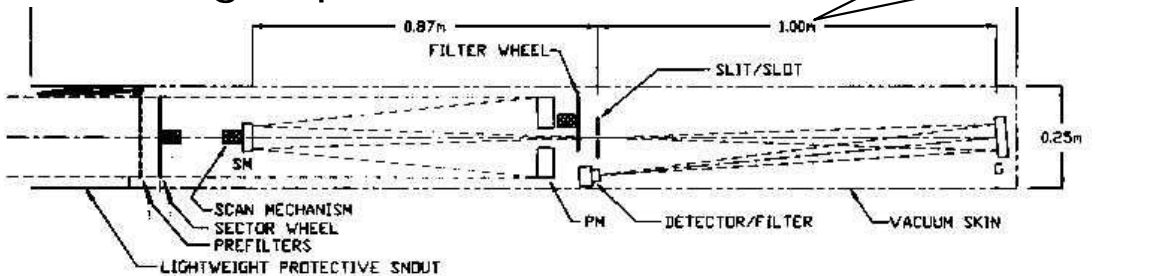
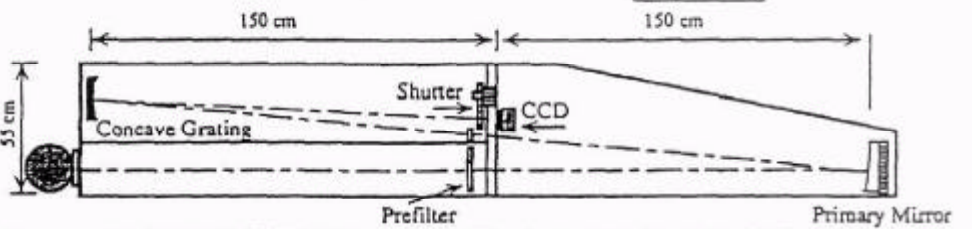
Mission Kick-Off Meeting

- Introduction of Solar-B main players :
ISAS, NAO, MELCO, instrument groups
- Concept of J-side PI/secretariat team
▶
- Mission philosophy, Master Schedule
▶
- Spacecraft Engineering Overview
- Instrument Team design sessions
- EIS Actions

✓ on the
web

Choice of configuration

- Strawman/baseline -
 - off-axis paraboloid
 - 1 reflection + grating
 - high throughput
 - excellent spectral resolution
- NRL proposal
 - Cassegrain
 - 2 reflections + grating
 - high spatial resolution



Choice of configuration (2)

- Cassegrain or OAP?
- Technical drivers
 - | feasibility, cost
 - | physical resources
 - | disturbance torque
 - | Structure, Optics, Detectors, Electronics
- Line lists + Effective areas = useful lines in QS, AR, Flare
- Consider relative value
 - | Spatial Resolution
 - | Count-rate/throughput
- Decision-making panel
ISAS, NAOJ, NASA, NRL, PPARC/MSSL
- Throughput (OAP) given priority

Choice of wavelength ranges

- | A large number of wavebands were thoroughly studied
 - wavelength reports on website (Solar-B EIS > documents > Science > Science Notes)
 - “EIS 400” - Transition region
 - use of novel Si/Sc multilayer
 - rejected at January meeting on grounds of technical immaturity of multilayer
 - Left with Baseline, NRL1, NRL2
- | At March meeting, decided to go with Baseline+NRL1
 - Short wavelength band: 170-210 Å
 - Long wavelength band: 250-290 Å
 - Bands are tuned to accept laboratory calibration lines
 - Consistent with ML bandpass
 - strong preference not to overlap in same space : prefer to have stacked spectra (à la SOHO-CDS)

✓ on
the web

Optical design evolution

- | NRL/GSFC - produce OAP design
 - | prioritize spectral resolution
 - | improve spatial resolution where possible
- | NRL/MSSL series of teleconferences some Minutes online
 - | discuss progress and direction of optical design
 - | need for engineer-level round-table interaction
 - NRL Opto-mechanical engineering meeting
- | Preferred design EIS-7T
 - details circulated by FTP 7 May 99 <ftp://tcrb.nrl.navy.mil/pub/eis/EIS7T>
 - | one of a series of optimisations
 - | small toroidal grating - low risk & more vendor choice
 - | grating *magnification* - short spectrometer section - add telescope length improve spatial resolution

✓ on the web

Meeting Objectives

- US, UK, J involvement
- review NRL/GSFC work to date
- approve the criteria and results (e.g. resolution)
- review subsystem technology & designs items connected with main instrument
- suggest ideal placement
- iterate before BU consortium meeting

Outputs

- NRL/GSFC - reduce length by 10 cm - issue new optical layout
- EIS7Tr "reduced"
<ftp://tcrb.nrl.navy.mil/pub/eis/EIS7TR/>
- BU/MSSL - iterate structural concept, use sectional construction - include radiator placement - camera update
- other actions A.66-A.90 see *EIS-meet-cons-9905mins*

✓ on the web