

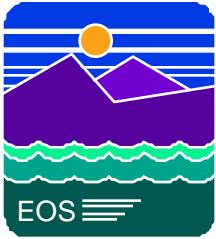


Other PFM Instrument Characteristics

Spectral
Spatial
Polarization



Spectral Performance



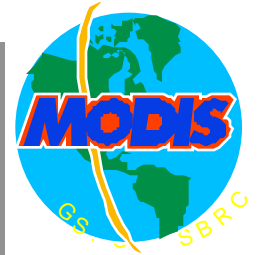
VIS, NIR and SWIR RSRs Summary



- SpMA Out-of-plane aberration wavelength correction applied to all bands and channels
 - achieves improved agreement with filter 5 spot RSR measurements
- Slight Air-to Vacuum wavelength shift detected for all bands (< 0.89 nm for all VIS/NIR Bands)
- Band average RSRs generated for all bands
- Out-of-Band (OOB) - Non Dispersive measurements indicate negligible OOB Response for all VIS and NIR Bands
 - there is a significant OOB for SWIR Bands
- Integration of OOB-Dispersive measurements with In-Band RSRs pending SBRS clarification of proper normalization between data sets



VIS, NIR and SWIR In-Band RSRs Available



- All Channels / Band + Band Average
- Graphs of VIS, NIR and SWIR band groupings logarithmic scales
- Data available on anonymous ftp at:
ringmaster.gsfc.nasa.gov
in **/pub/MCST/PFM_L1B_LUT/Reflective**
 - Channel dependent RSRs Bands 1-19,26
 - Band Averaged RSRs Bands 1-19,26
 - Band metrics : CWL BW 50%pts 1%pts

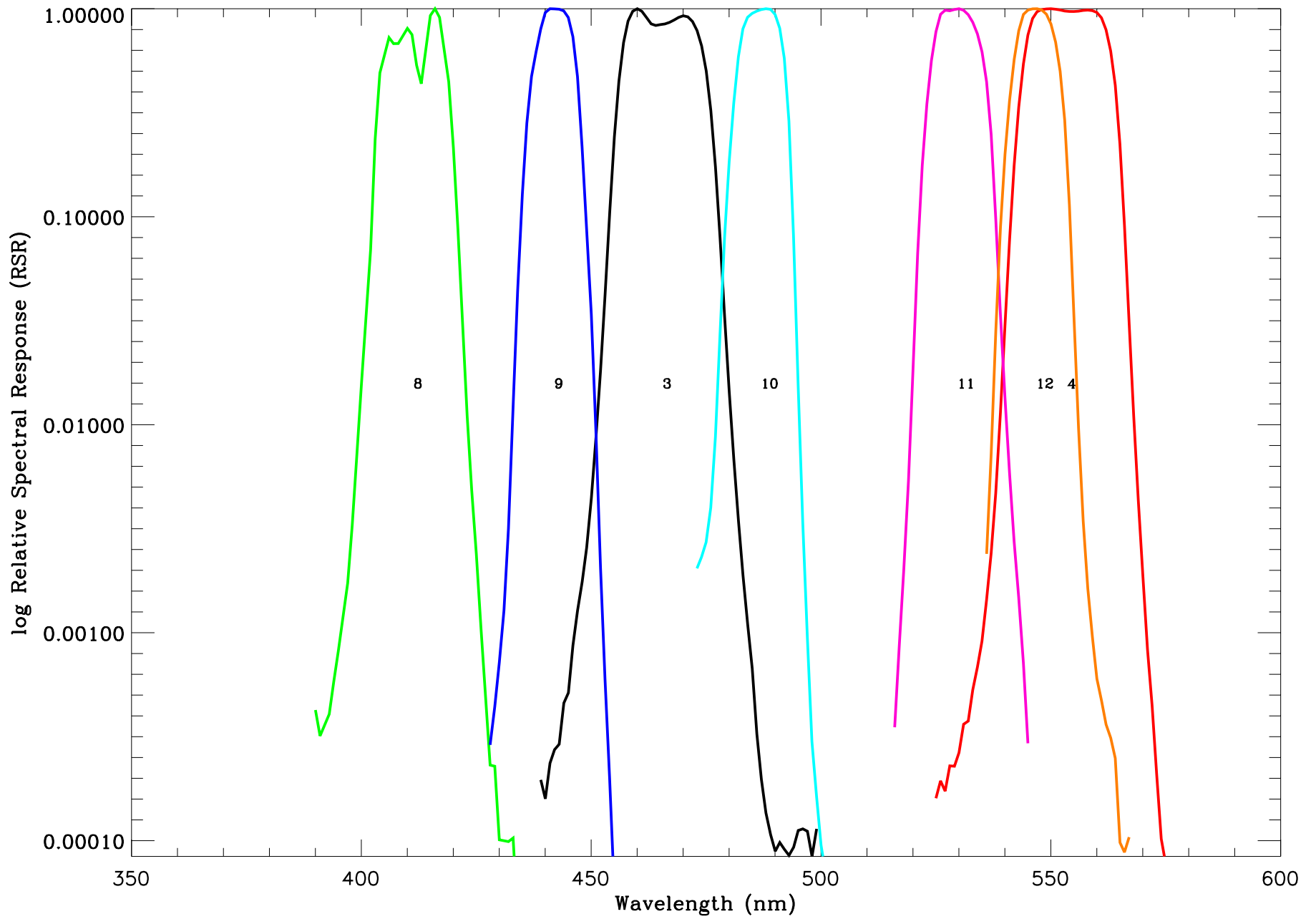


RSR Center Wavelength Air-to-Vacuum Shift

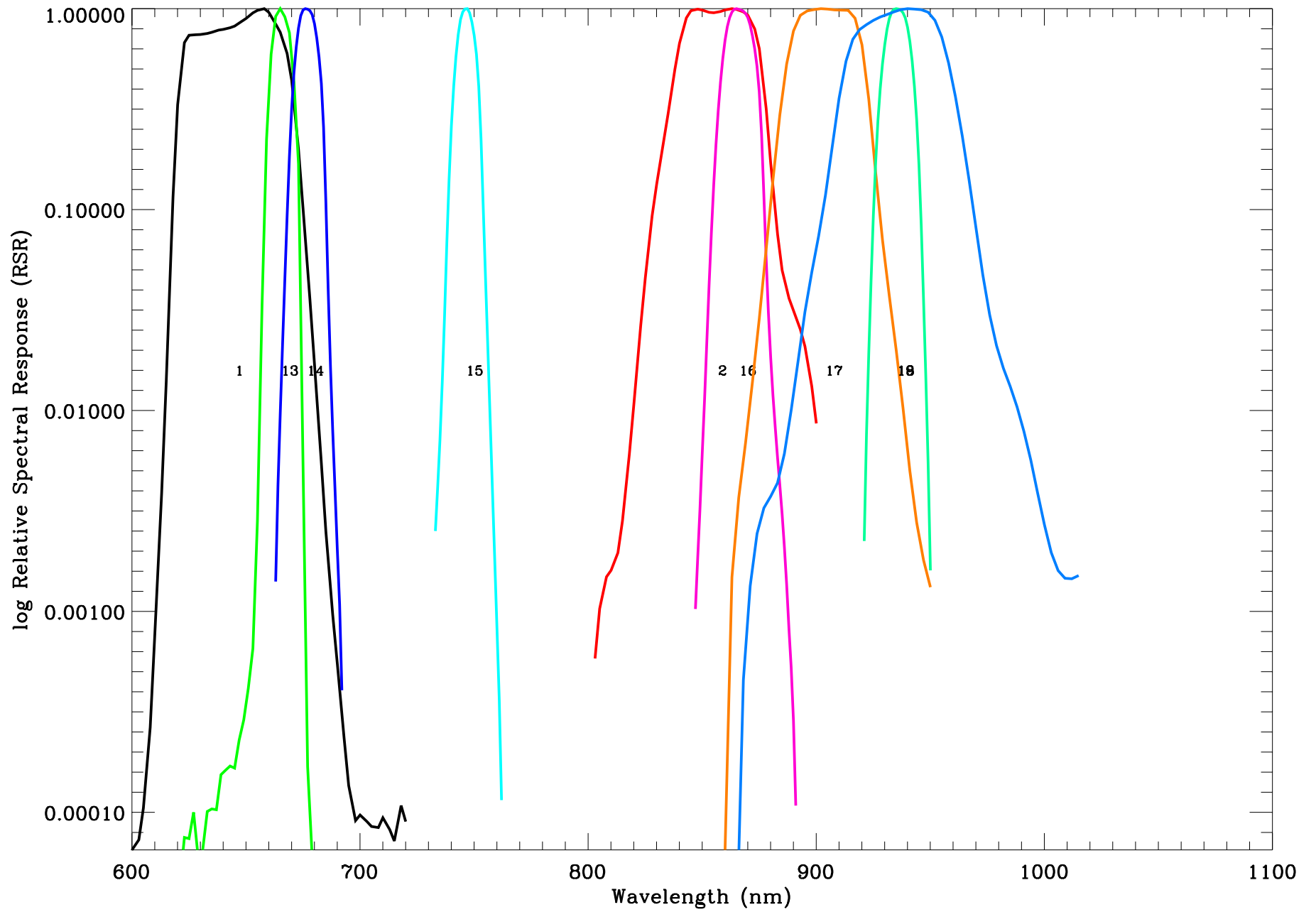


Band	CWL_amb nm	CWL_tv nm	Shift nm	Delta/CWL_tv (%)
1	646.94	646.29	0.65	0.10
2	856.69	856.43	0.26	0.03
3	466.02	465.74	0.28	0.06
4	553.67	553.73	-0.06	-0.01
5	1241.94	1242.11	-0.17	-0.01
6	1629.46	1629.39	0.07	0.00
7	2115.32	2115.00	0.32	0.02
8	412.26	411.88	0.38	0.09
9	442.18	442.11	0.08	0.02
10	487.10	486.98	0.12	0.03
11	529.87	529.73	0.14	0.03
12	547.77	546.89	0.88	0.16
13	665.78	665.76	0.02	0.00
14	677.06	676.97	0.09	0.01
15	746.64	746.62	0.02	0.00
16	866.69	866.36	0.33	0.04
17	904.33	904.26	0.07	0.01
18	935.89	935.69	0.19	0.02
19	936.26	936.27	-0.01	0.00
26	1382.27	1382.21	0.06	0.00

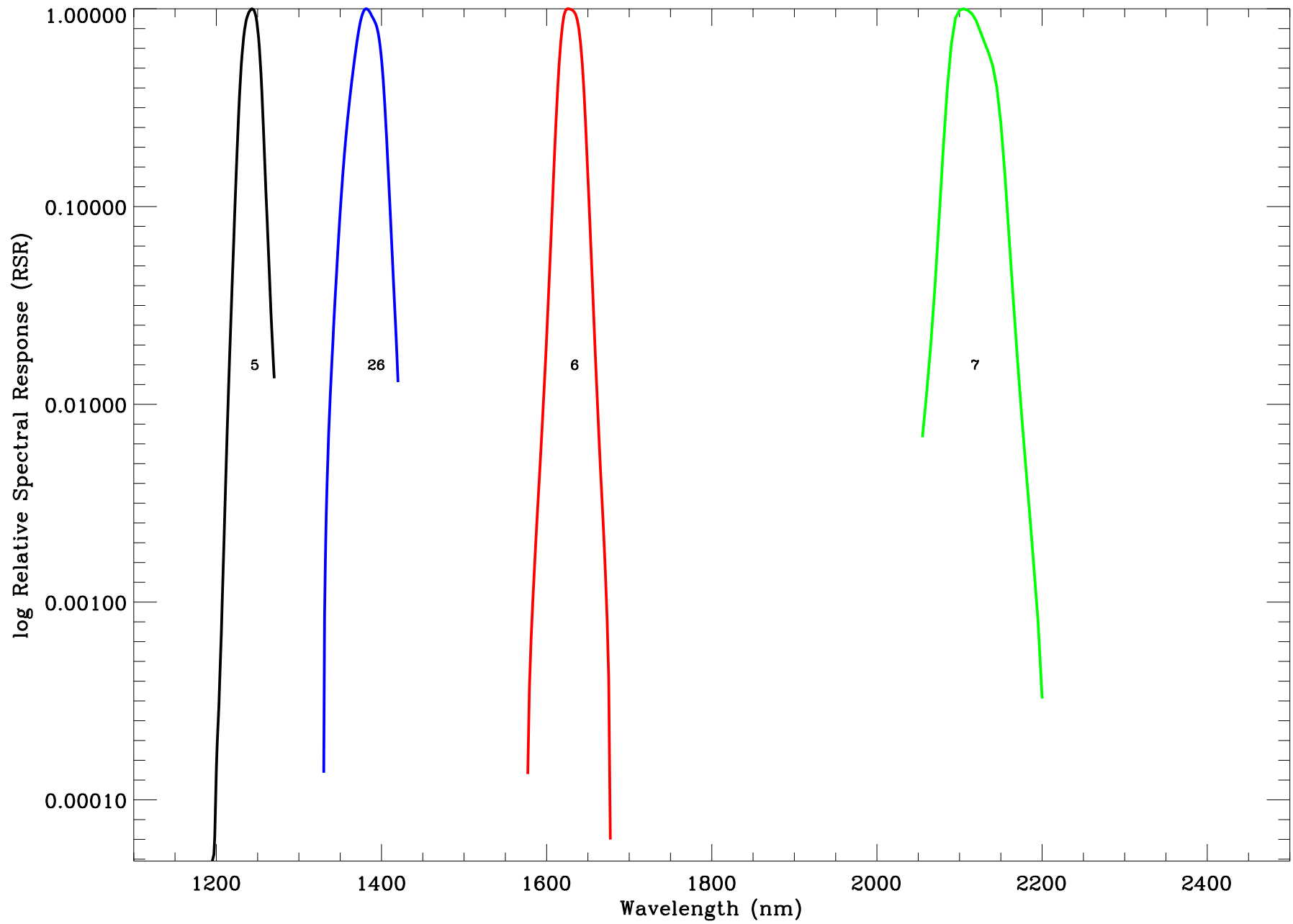
PFM VIS Bands Corrected RSRs
Band Average



PFM NIR Bands Corrected RSRs
Band Average



PFM SWIR Bands Corrected RSRs
Band Average





Spatial Performance

IFOV Results by F. Adimi

MTF Results from SBRS Pre-Ship Review

Co-registration from Sept. 19, 1997 Tuscon
briefing on SRCA results



IFOVs



Track IFOVs

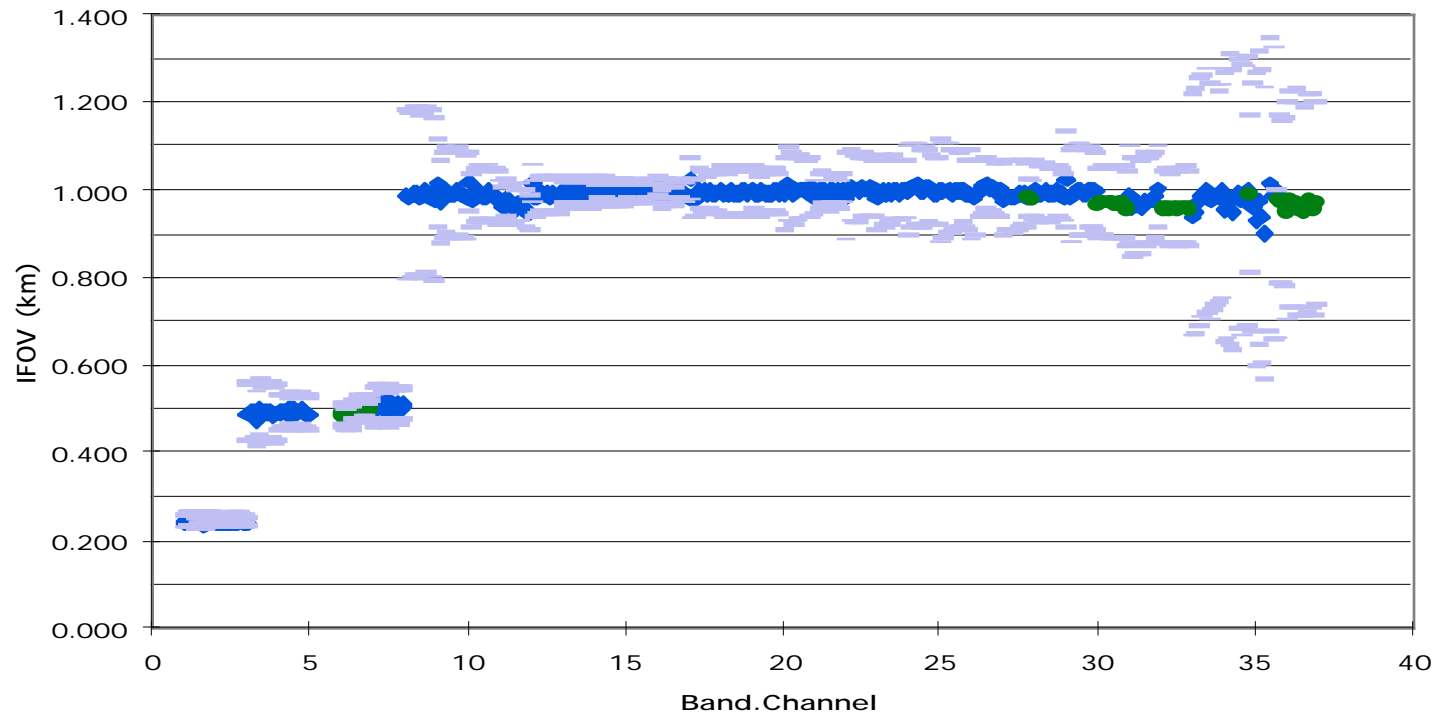
- Compiled from OBA (Optical Bench Assembly) data; where possible, otherwise AOA (Aft Optics Assembly) data was used.
- Bands/channels 5/all and 32/1 are not available.
- Errors computed from scan direction information.

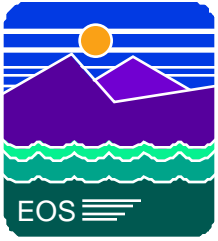
Scan IFOVs

- Compiled from PC02 data (system level); where possible, otherwise AOA (Aft Optics Assembly) data was used (scaled to PC02).
- Band 5 extracted from SRCA (preliminary).
- Scan IFOVs are higher than expected due to the finite slit size (est. 10%, not yet corrected).

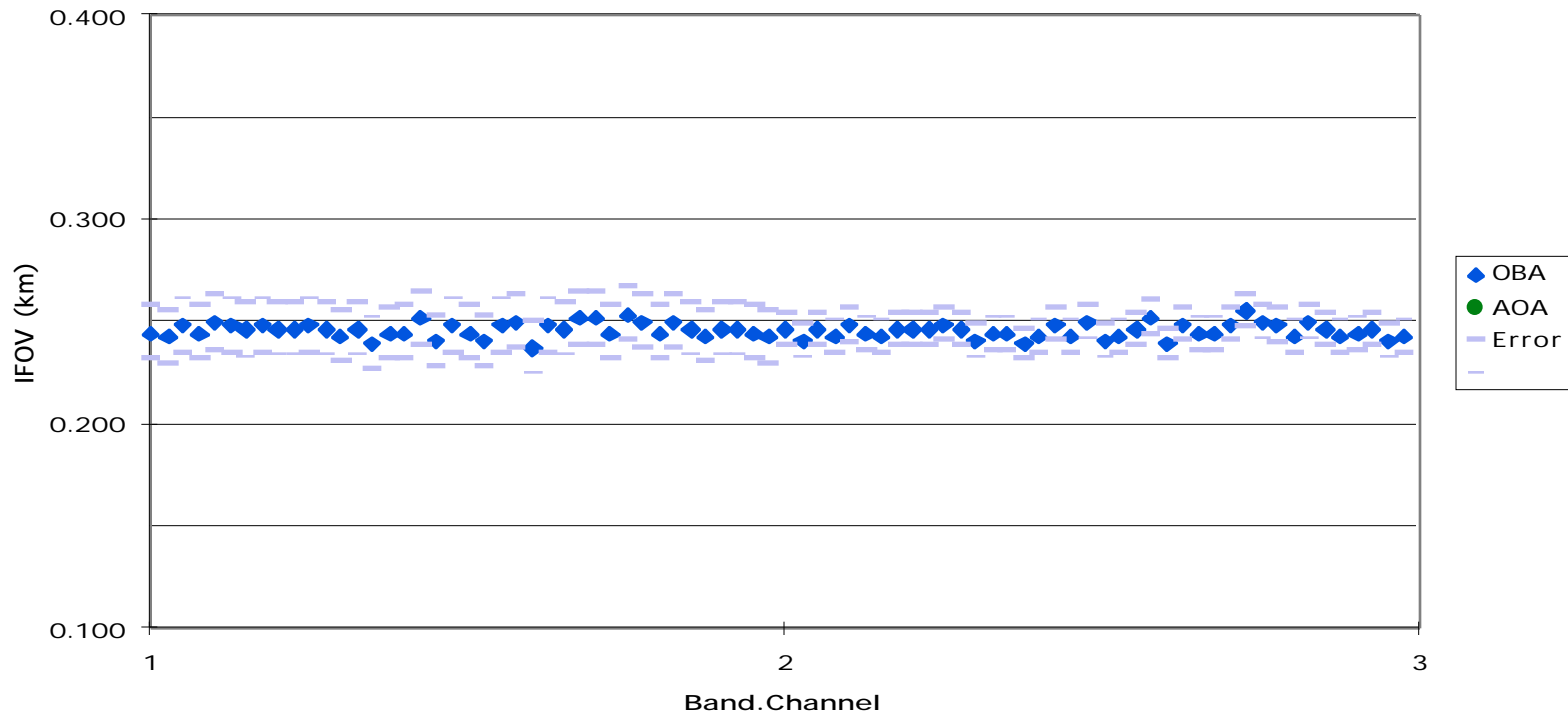


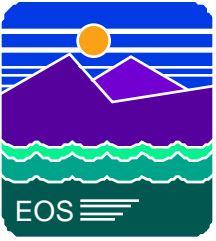
Track IFOVs



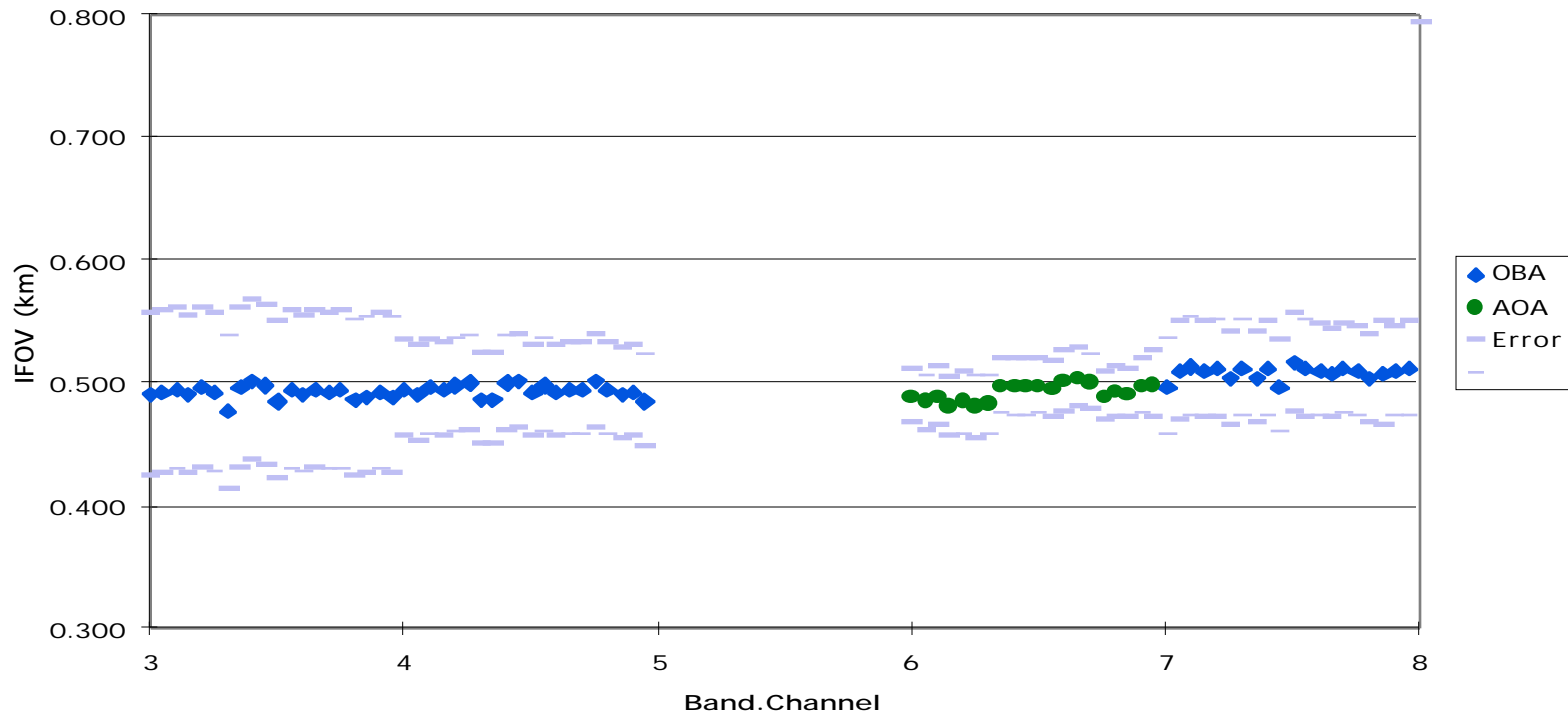


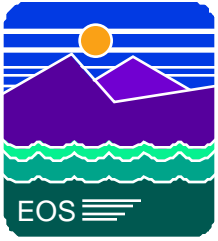
Track IFOVs (250m bands)



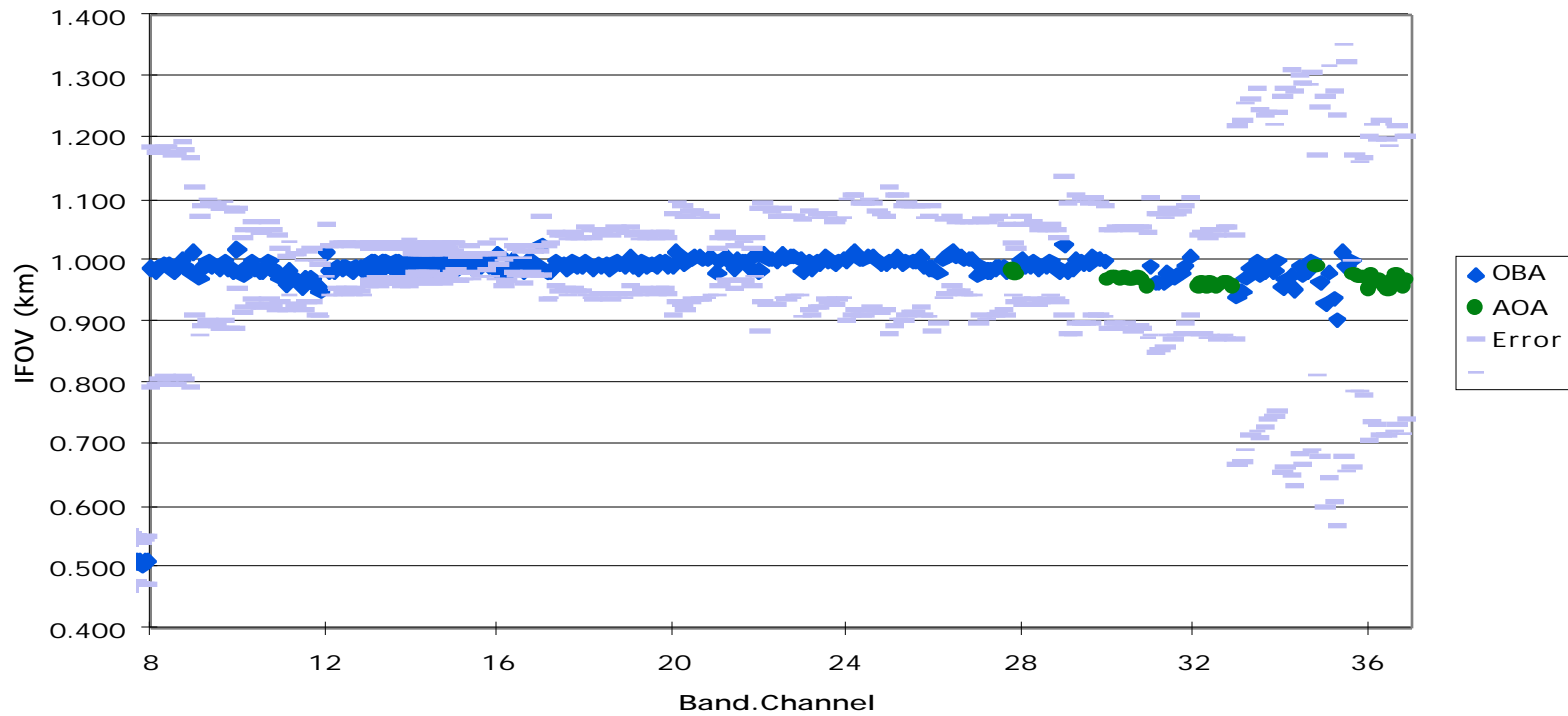


Track IFOVs (500m bands)



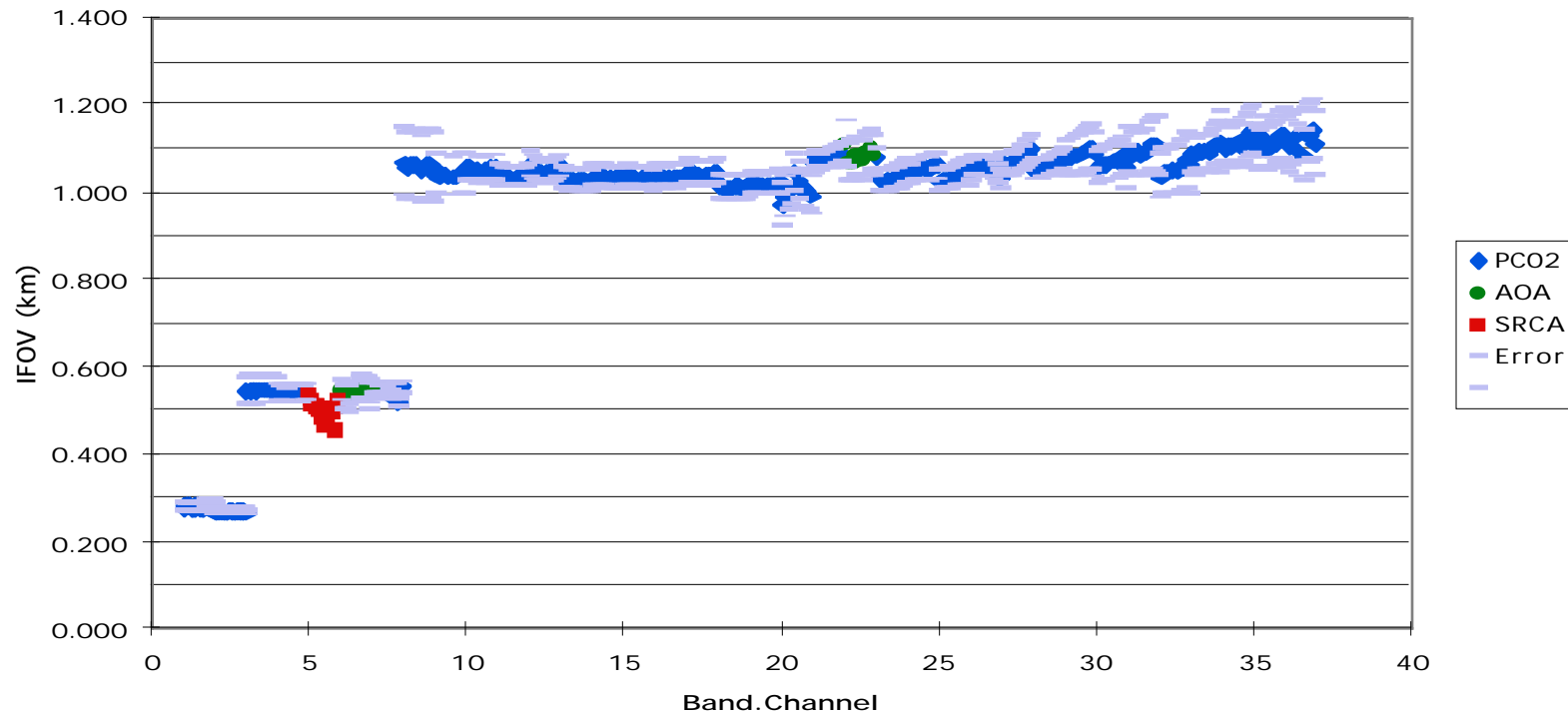


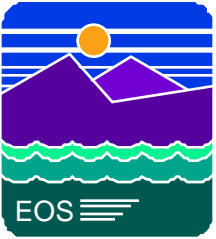
Track IFOVs (1000m bands)



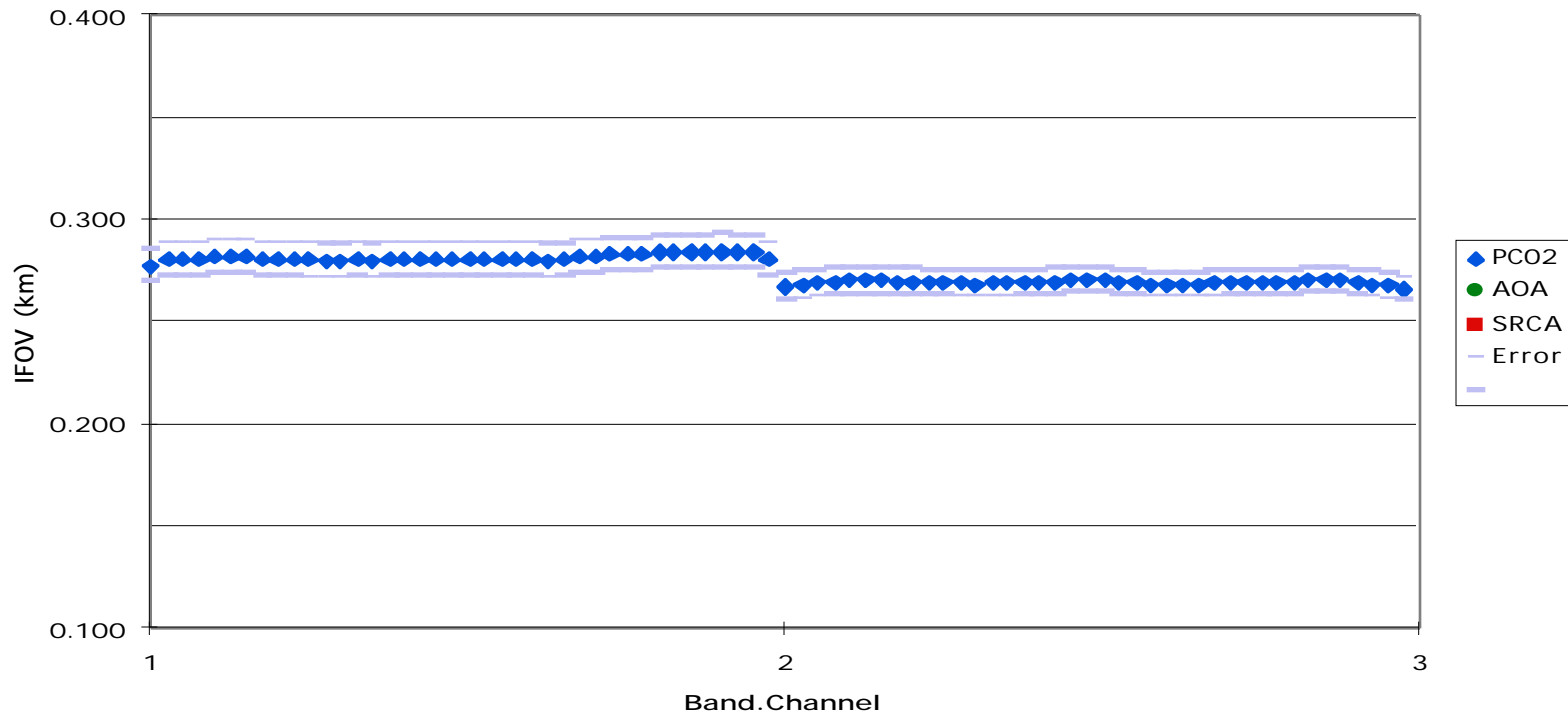


Scan IFOVs



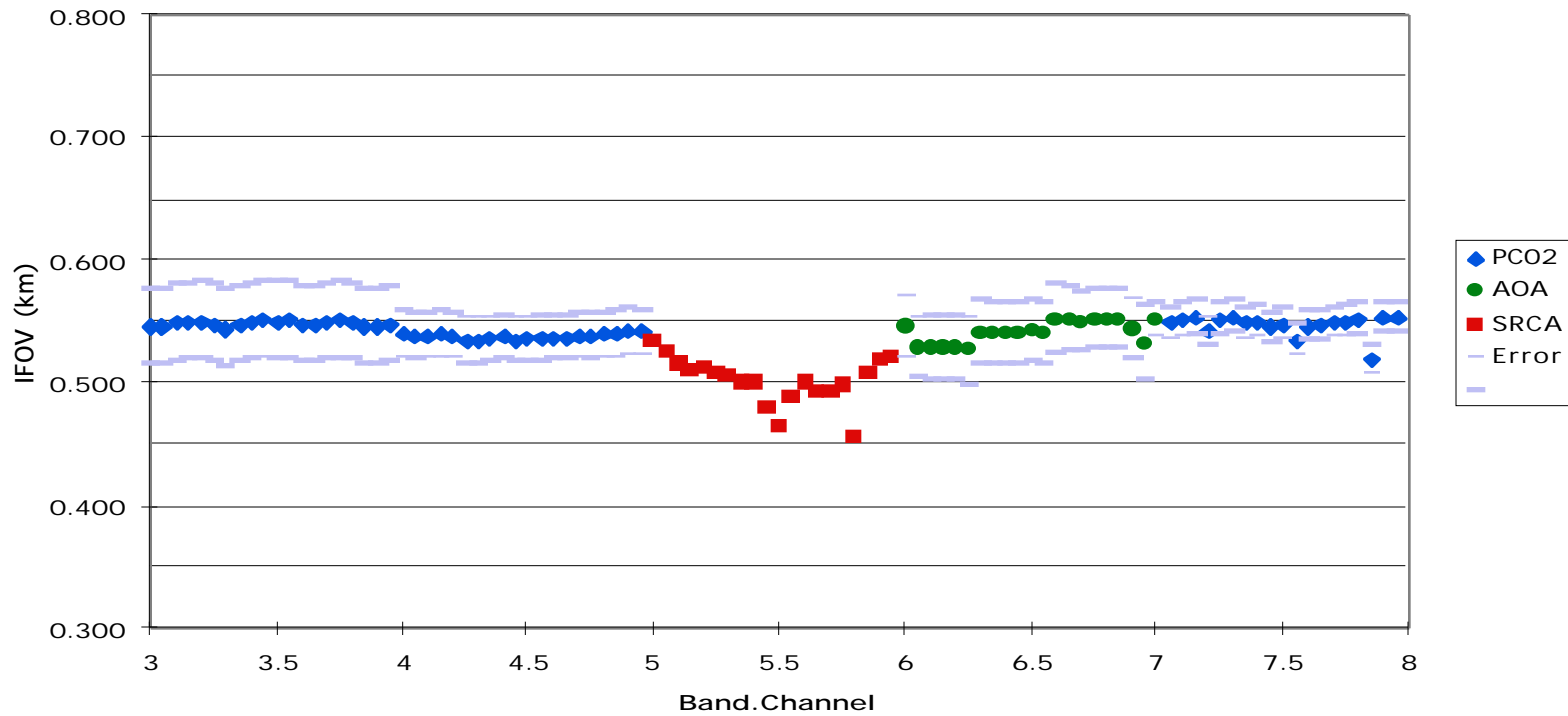


Scan IFOVs (250m bands)



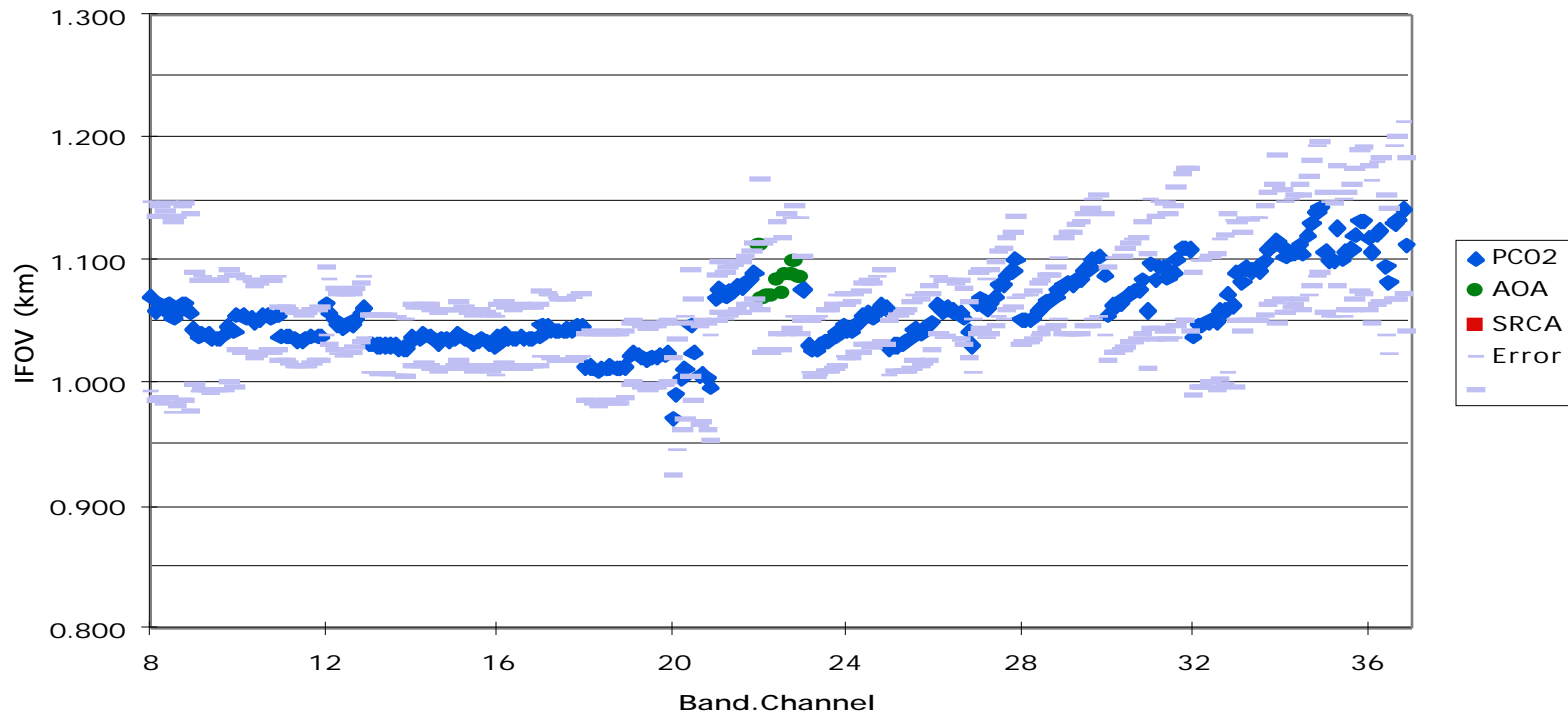


Scan IFOVs (500m bands)





Scan IFOVs (1000m bands)

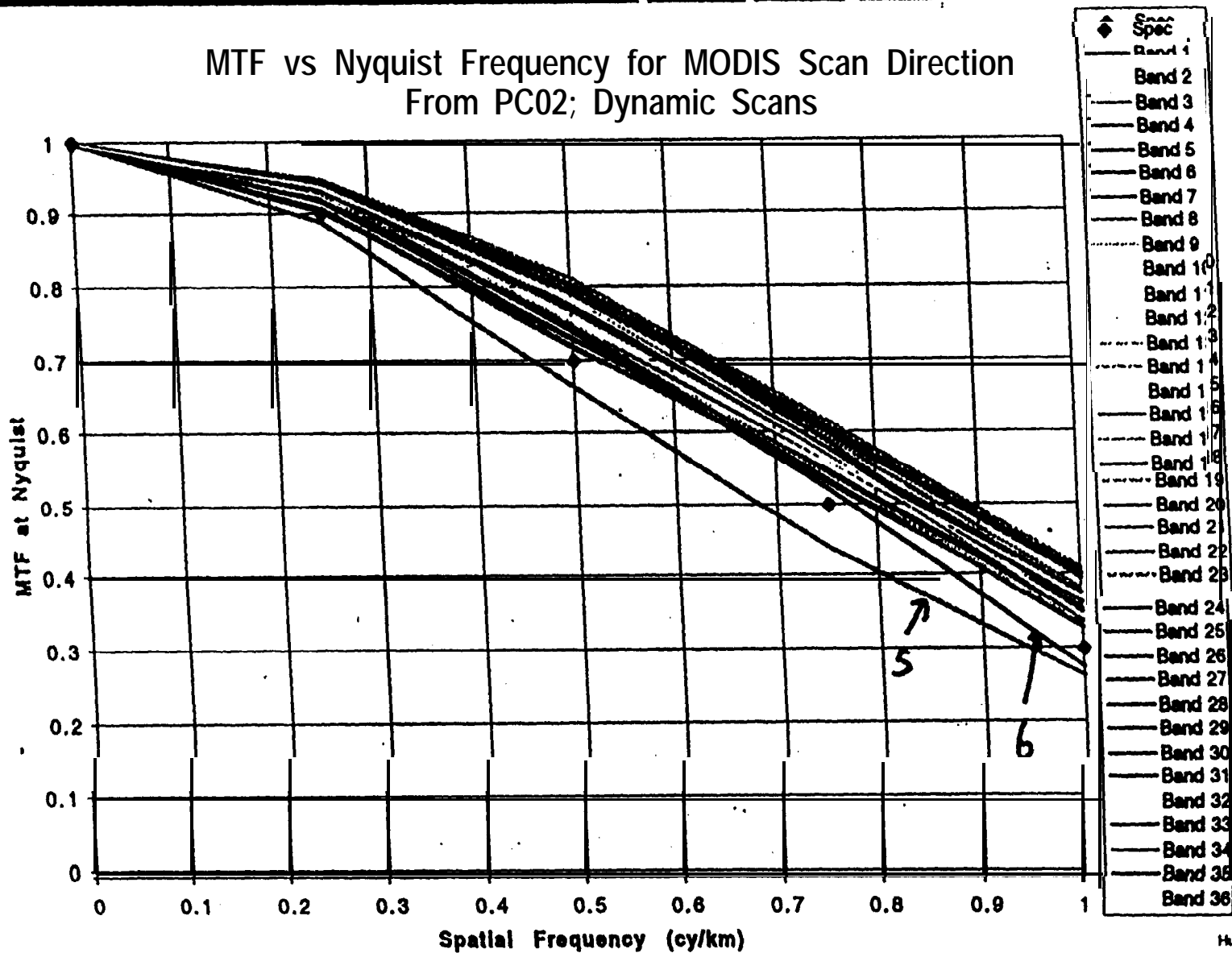




Scan MTF Compliant For Most Bands



MTF vs Nyquist Frequency for MODIS Scan Direction
From PC02; Dynamic Scans





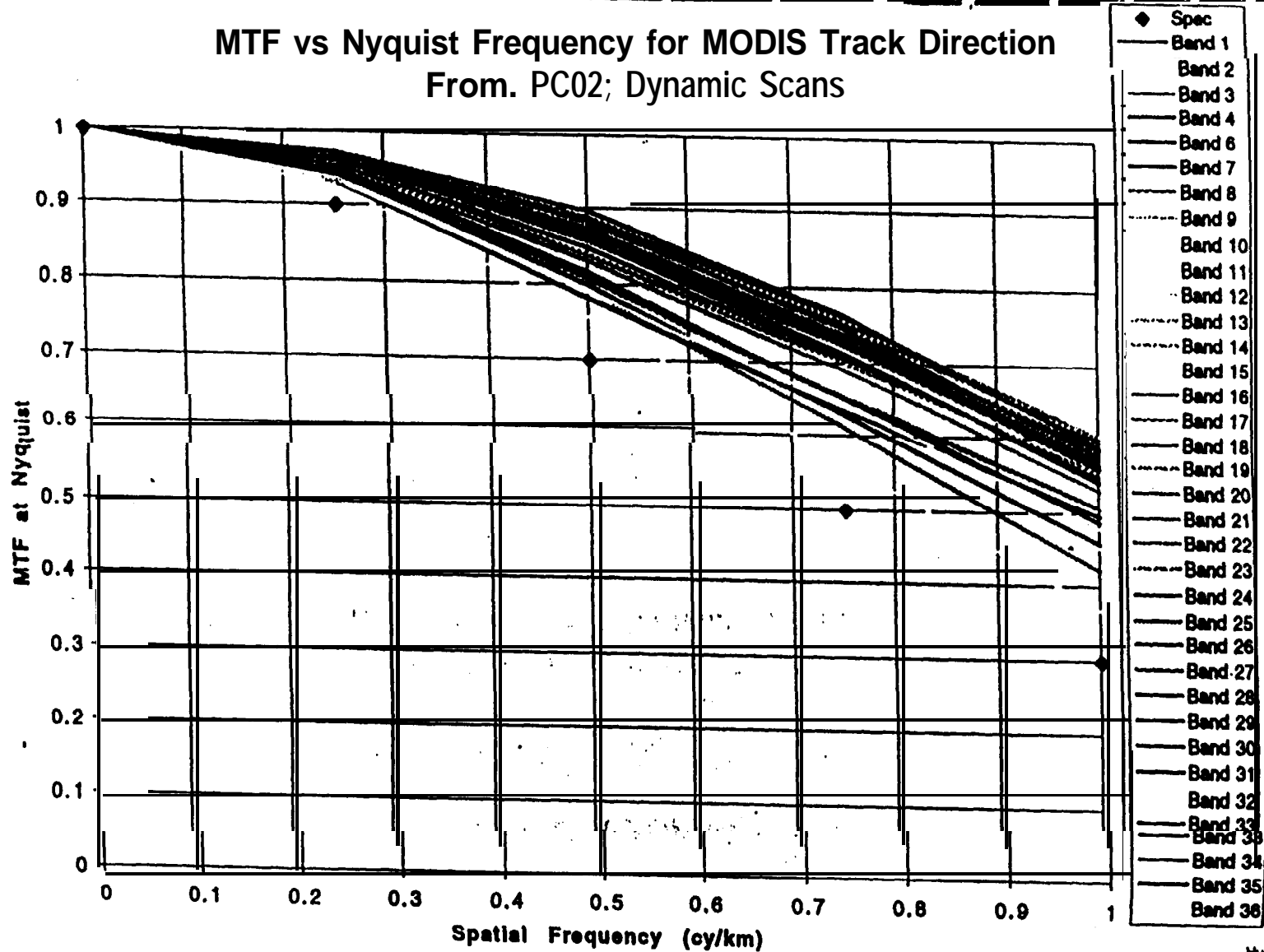
Track MTF Compliant For Most Bands

SANTA BARBARA
REMOTE
SENSING



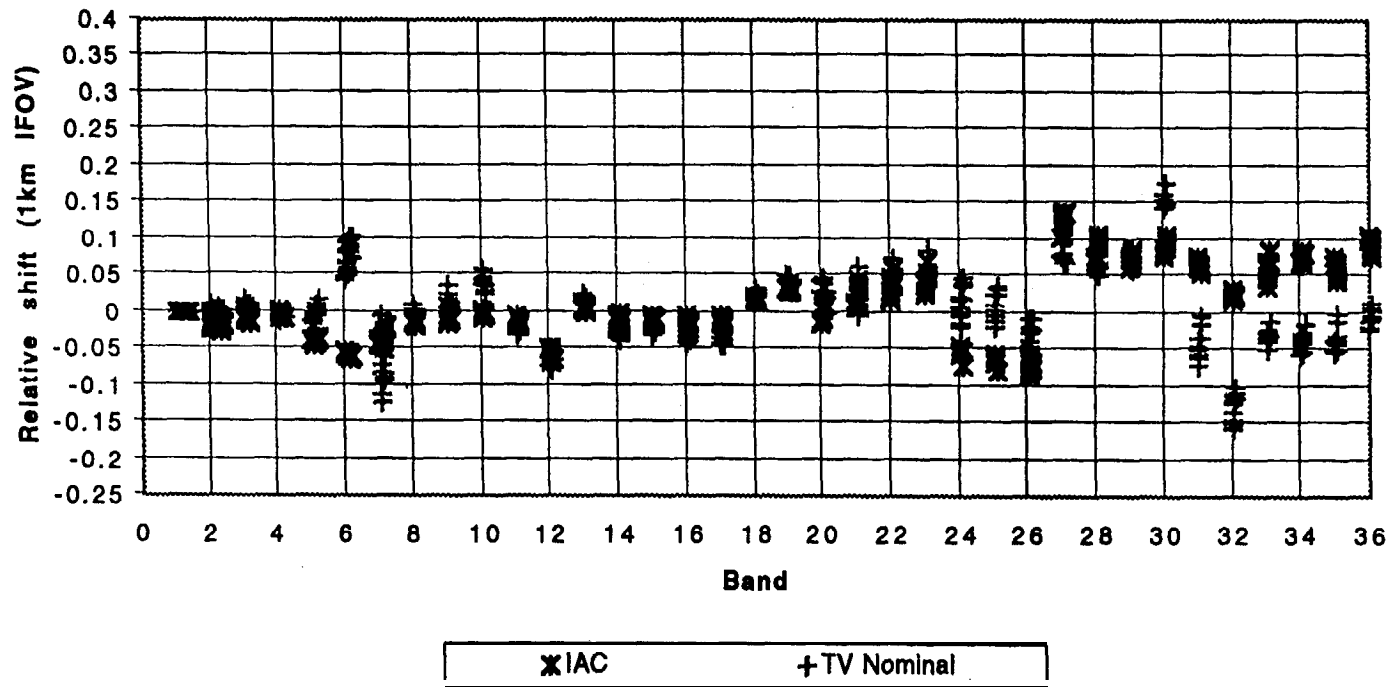
A HUGHES ELECTRONICS COMPANY

MTF vs Nyquist Frequency for MODIS Track Direction
From. PC02; Dynamic Scans



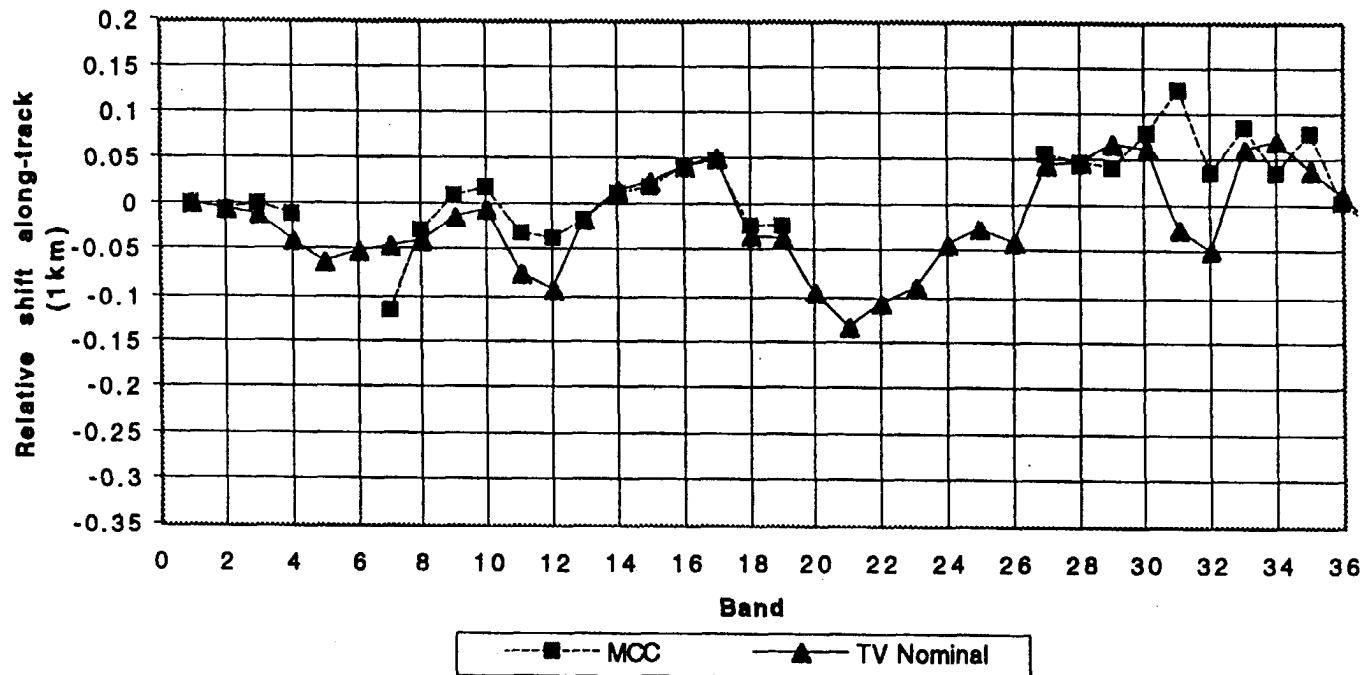
Along-scan spatial calibration results (3) (Comparison IAC with TV at Nominal plateau) (all shifts relative to band 1)

Comparison of along-scan relative co-registration
between IAC and TV at Nominal plateau



Along-track spatial calibration results (2) (Comparison of ambient MCC and TV at Nominal plateau) (all shifts relative to band 1)

Comparison of along-track band centroid co-registration
between MCC and TV at Nominal plateau





Polarization Performance



PFM Performance Polarization Response



- Status
 - July '96 Polarization data error bars determined for 0° scan angle
 - April '97 Polarization re-test data reduction completed
 - Effort delayed due to need to complete Valley Forge STR's and simulated orbits
- Key Issues
 - No valid data for Band 5; Band 6 is marginal; Band 2 data valid at 0° scan angle only
 - Not yet established how to fill in data for end channels

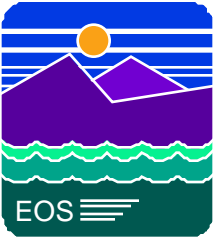


PFM Performance

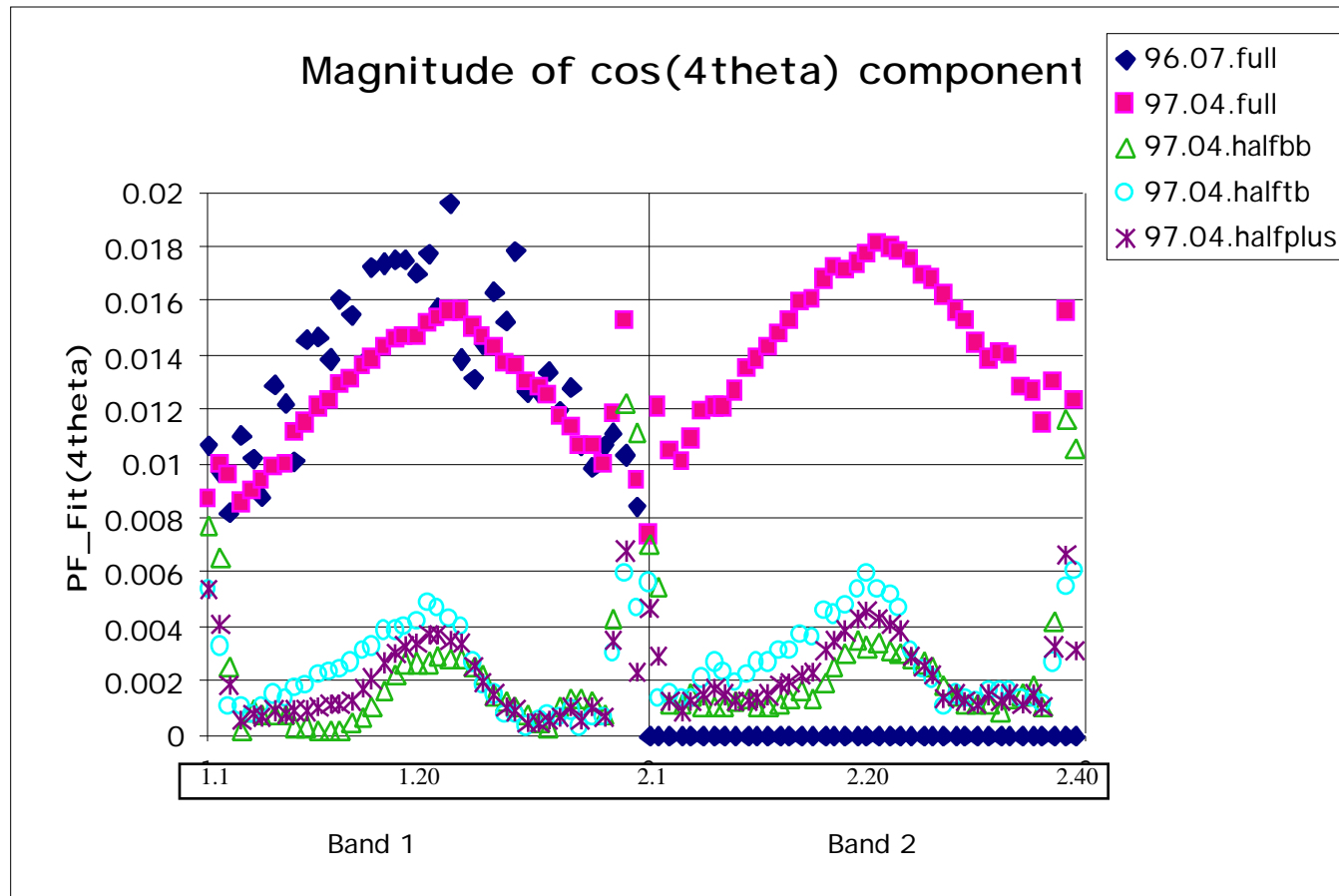
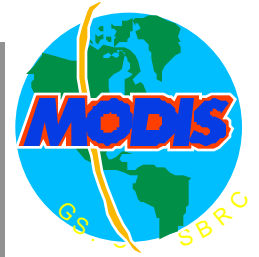
Polarization Half Aperture results



- Re-test Data Collections
 - 0° Scan angle only
 - No SWIR data
 - One PSA alignment centered on channels 20/21 of Band 1
 - Full aperture illuminated
 - Bottom half of aperture illuminated
 - Top half of aperture illuminated
- Re-test Results
 - 4theta components were smaller in the half aperture results, confirming retro-reflection as source for 4theta behavior
 - 2theta PFs from full aperture re-test match 2theta PFs from '96 test to within error bars, confirming repeatability



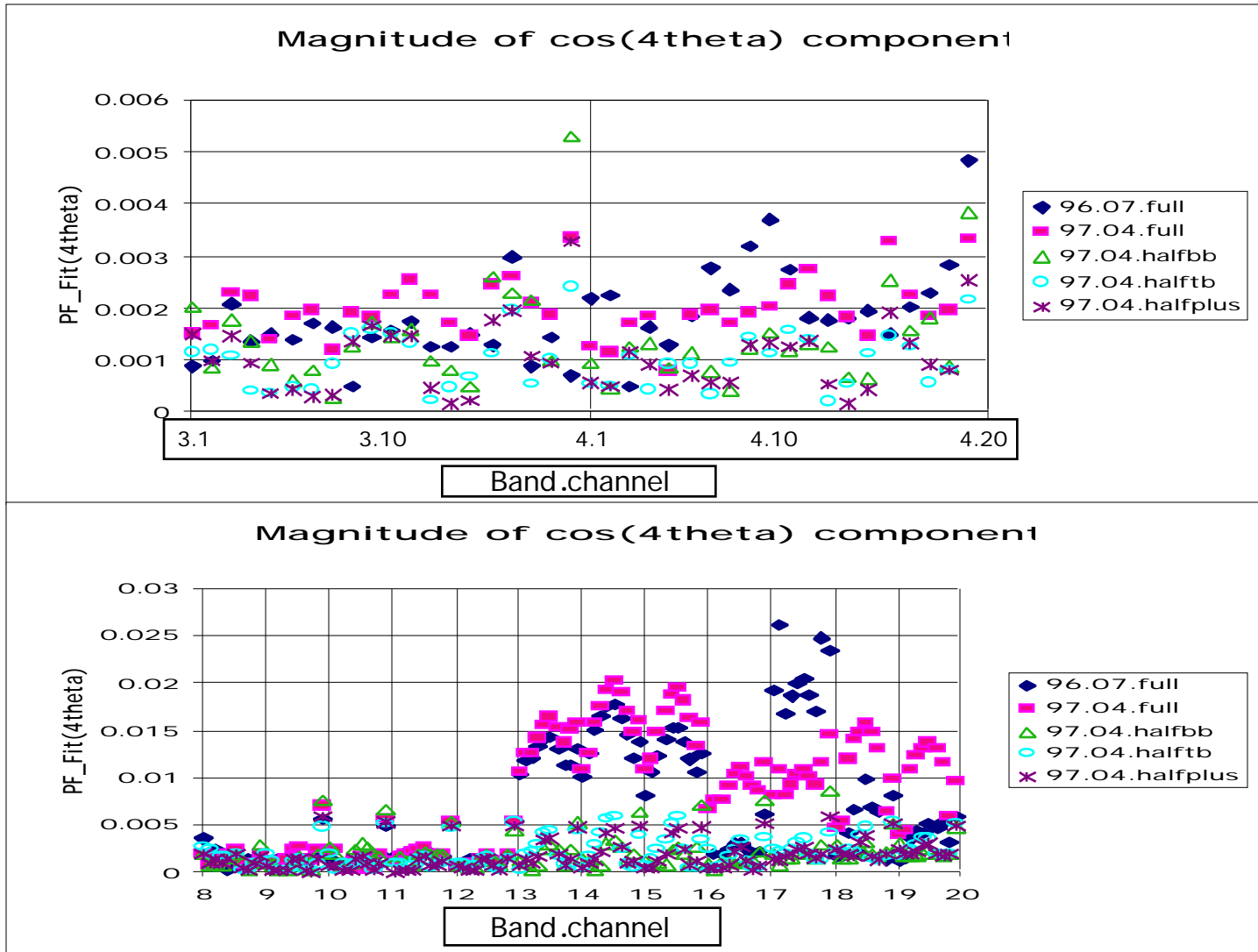
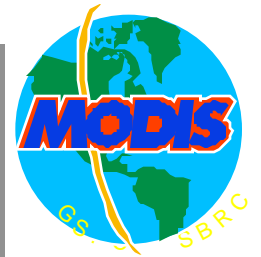
PFM Performance Polarization Reponse

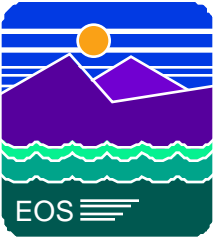


Band.channel

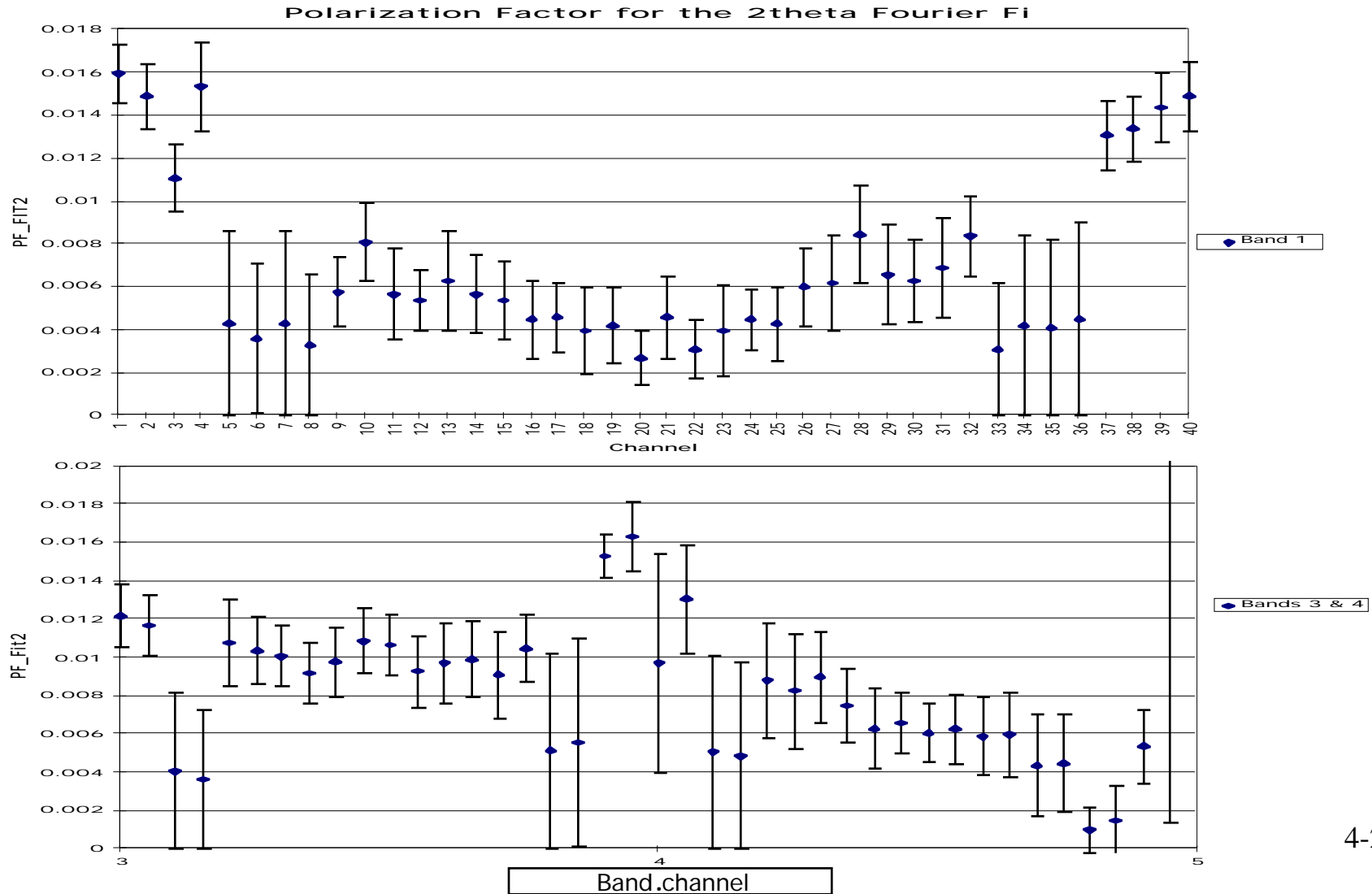
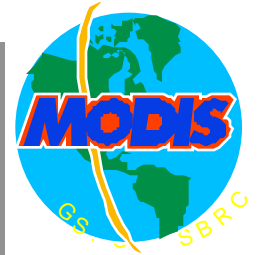


PFM Performance Polarization Response



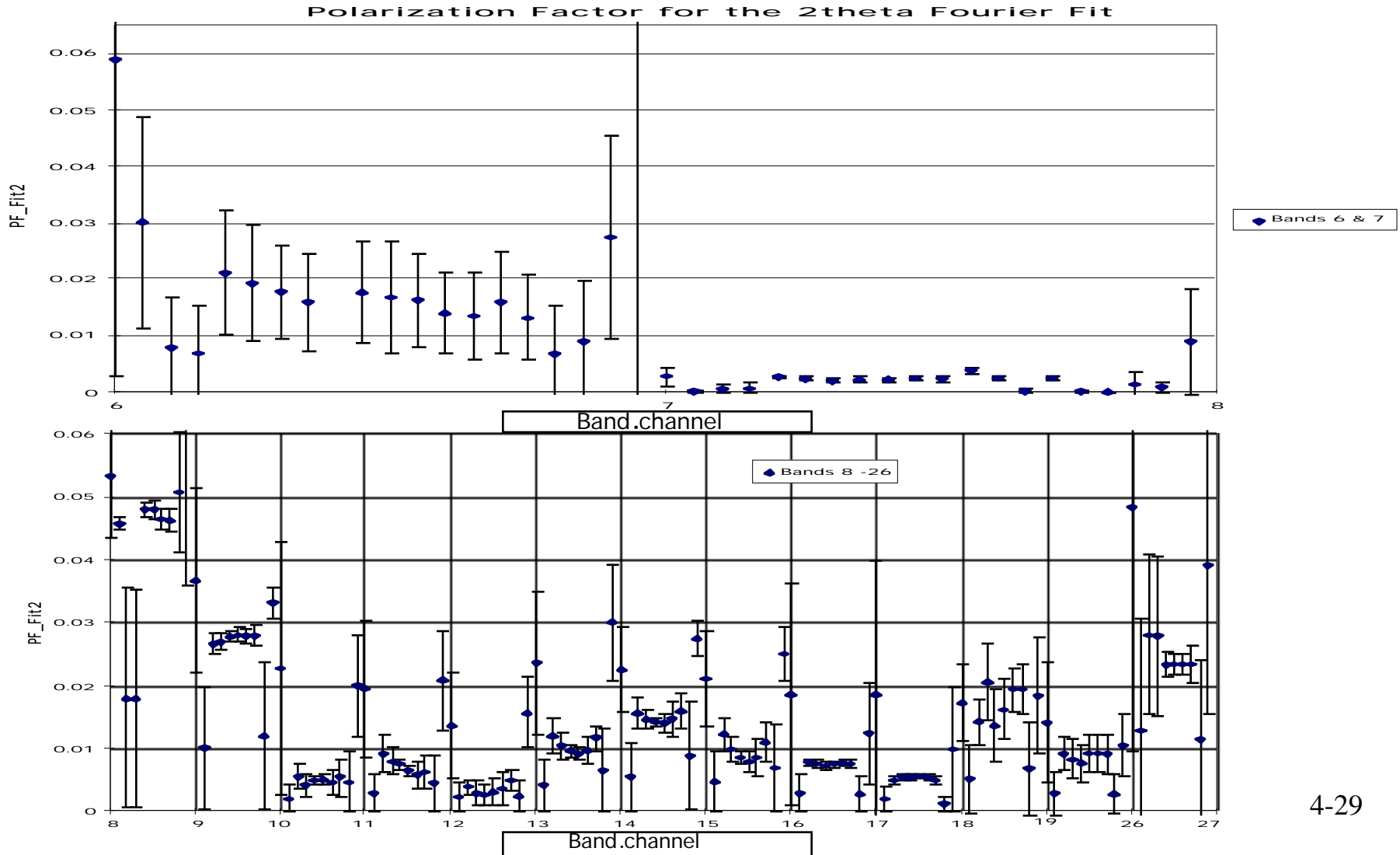


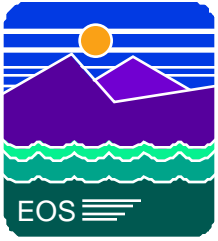
PFM Performance Polarization Response





PFM Performance Polarization Response

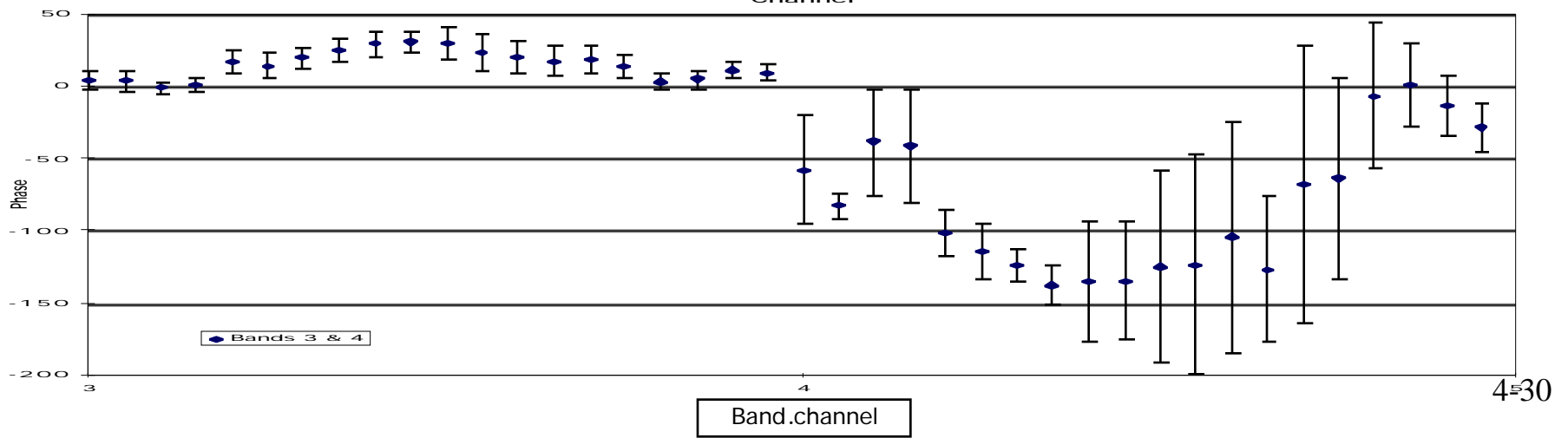
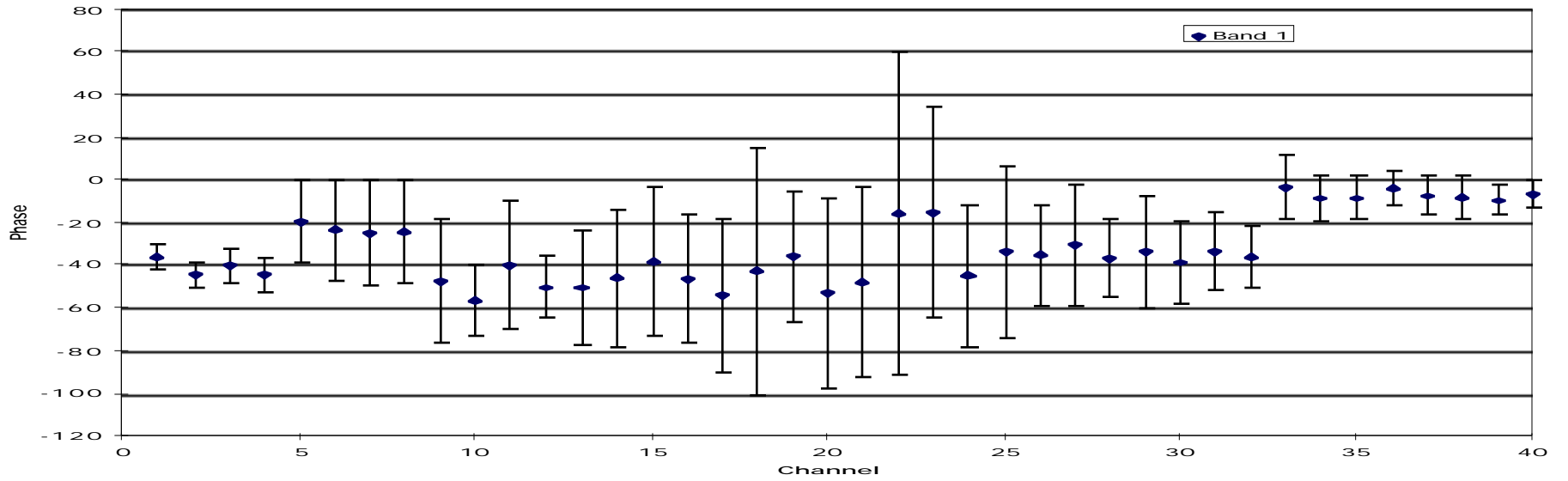


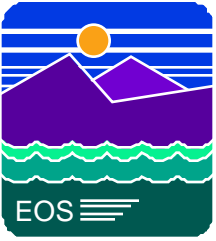


PFM Performance Polarization Response



Phase for the 2theta Fourier Fit





PFM Performance Polarization Response

