MODIS - STRAY LIGHT

May 93

BAND	WAVELENGTH (nm)	Ltypical(*)	Lmax(*)	Lcloud(*)	1% Lbig / Ltyp
1	645	21.8	685	457	0.314
2	858	24.7	285	293	0.119
3	469	35.3	593	570	0.168
4	555	29.0	518	559	0.193
5	1240	5.4	110	138	0.256
6	1640	7.3	70	68	0.096
7	2130	1.0	22	27	0.270
8	412	44.9	175	573	0.128
9	443	41.9	133	585	0.140
10	448	32.1	101	539	0.168
11	531	27.9	82	538	0.193
12	551	21.0	64	528	0.251
13	667	9.5	32	471	0.496
14	678	8.7	31	440	0.506
15	748	10.2	26	373	0.366
16	869	6.2	16	286	0.461
17	905	10.0	185	252	0.252
18	936	3.6	256	267	0.742
19	940	15.0	189	244	0.163
26	1375	6.0	89.9	113	0.188

* = Watts/m^2/um/sr

VIRS, NIR, AND SWIR FPA's - 440 Rays/Bin

LWIR FPA - 599 Rays/Bin

Attach #1
Tech Team mtg - 5/6/93

MODIS - STRAY LIGHT (cont'd)

BAND	WAVELENGTH (nm)	Ltypical(*)	Lmax(*)	Lcloud	1% Lbig / Ltyp
20	3750	0.45	1.71	0.45	0.038
21	3959	2.38	86.00	0.67	0.361
22	3959	0.67	1.89	0.67	0.028
23	4050	0.79	2.16	0.79	0.027
24	4465	0.17	0.34	1.44	0.084
25	4515	0.59	0.88	1.53	0.026
27	6715	1.16	3.21	6.87	0.059
28	7325	2.18	4.46	8.10	0.037
29	8550	9.58	14.54	9.58	0.015
30	9730	3.69	6.34	9.92	0.027
31	11030	9.55	13.25	9.55	0.014
31hi	11030	29.1	29.08	9.55	0.010
32	12020	8.94	12.10	8.94	0.014
32hi	12020	25.1	25.07	8.94	0.010
33	13335	4.52	6.56	7.94	0.018
34	13635	3.76	5.02	7.71	0.021
35	13935	3.11	4.42	7.48	0.024
36	14235	2.08	2.96	7.25	0.035

* = Watts/m^2/um/sr

VIRS, NIR, and SWIR FPA's - 440 Rays/Bin

LWIR FPA - 599 Rays/Bin

Table 1

Relative intensities in the four focal planes.

vis - cell1010.xyz

1.440	0.800	0.740	0.920	0.780	0.440	0.920	0.900	0.980	1.000
0.660	0.440	0.260	0.560	0.360	0.480	0.480	0.480	0.480	0.420
115.560	102.380	98.040	126.900	88.740	116.540	111.640	104.520	101.360	74.720
468.500	394.260	447.820	446.780	427.620	426.360	430.160	402.120	407.520	378.760
454.620	440.520	402.380	457.920	453.980	385.240	425.660	441.340	433.260	390.620
19.740	22.620	20.180	26.260	17.260	21.720	18.620	15.360	15.080	15.620
1.140	0.300	0.360	0.360	0.480	0.500	0.500	0.340	0.520	0.460
0.840	0.460	0.460	0.260	0.480	0.340	0.460	0.440	0.380	0.420
0.780	0.500	0.460	0.340	0.760	0.560	0.520	0.540	0.380	0.420
0.940	0.540	0.400	0.460	0.480	0.380	0.420	0.420	0.520	0.300

nir - cell1010.xyz

0.540	0.220	0.240	0.180	0.220	0.120	0.240	0.200	0.180	0.180
0.660	0.260	0.540	0.400	0.420	0.340	0.320	0.320	0.320	0.260
117.920	106.640	103.280	130.900	90.420	120.120	110.860	109.700	102.620	77.120
476.580	398.700	457.140	448.760	431.640	433.580	436.420	411.680	406.840	385.500
470.100	451.960	398.220	460.100	459.020	384.680	434.520	451.540	440.720	405.100
20.360	22.260	20.520	27.580	18.640	19.500	20.380	14.440	15.180	16.200
3.240	1.440	1.640	1.420	1.740	1.160	1.640	1.560	1.500	1.700
3.320	1.320	2.180	1.520	1.780	1.620	1.720	1.980	1.460	1.400
2.980	1.720	1.920	1.460	1.480	1.400	1.480	1.540	1.560	1.420
1.980	1.140	1.560	1.460	1.660	1.280	1.360	1.240	1.160	0.980

swir - cell1010.xyz

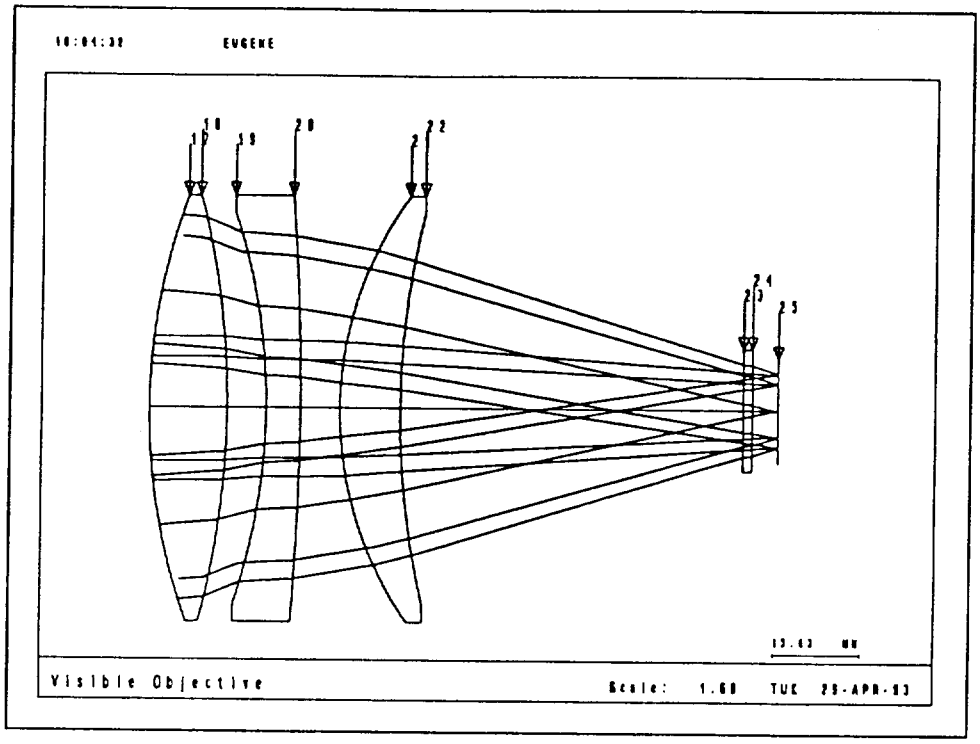
5.540	3.400	3.260	3.100	3.200	3.000	2.680	3.400	2.840	2.900
5.580	2.700	3.340	3.160	3.400	3.100	3.400	3.400	2.820	2.980
7.340	3.840	4.520	5.060	4.700	4.840	5.260	5.140	4.720	3.980
9.220	5.720	6.580	6.640	6.580	6.680	7.080	6.320	6.260	5.640
25.700	19.720	20.820	26.520	27.820	24.820	33.960	25.200	27.080	20.560
391.940	437.460	457.640	445.760	384.880	469.480	469.340	412.400	462.500	402.960
365.740	411.020	413.900	433.020	445.080	431.300	462.180	452.780	394.980	395.720
72.500	102.920	99.120	107.680	115.500	83.580	116.920	95.920	100.380	94.780
6.060	3.280	3.400	3.700	3.580	3.880	3.220	3.600	2.940	2.960
4.120	2.220	2.540	2.740	2.460	2.160	2.500	2.280	1.860	2.020

lwir - cell1010.xyz

6.940	4.080	4.340	4.260	3.600	4.480	3.900	3.760	4.360	4.000
5.320	2.800	3.320	3.360	2.900	2.780	3.200	2.600	3.140	2.640
6.920	3.440	3.980	3.560	4.480	4.140	3.620	3.680	3.620	3.500
8.900	4.520	4.320	4.960	4.980	4.540	5.420	4.440	4.660	4.560
34.760	30.220	34.260	41.040	47.320	41.740	43.240	39.380	47.180	29.200
458.000	576.480	614.920	586.800	545.940	628.800	627.740	585.080	601.340	552.400
246.980	353.180	338.780	376.880	378.440	338.580	388.760	377.800	321.220	316.060
8.340	4.800	4.780	5.780	4.720	5.160	5.460	5.080	4.920	4.740
6.160	2.880	3.320	3.720	3.800	3.220	3.500	3.300	3.600	3.220
3.800	1.880	2.080	1.880	2.000	2.320	1.820	2.340	2.140	2.060

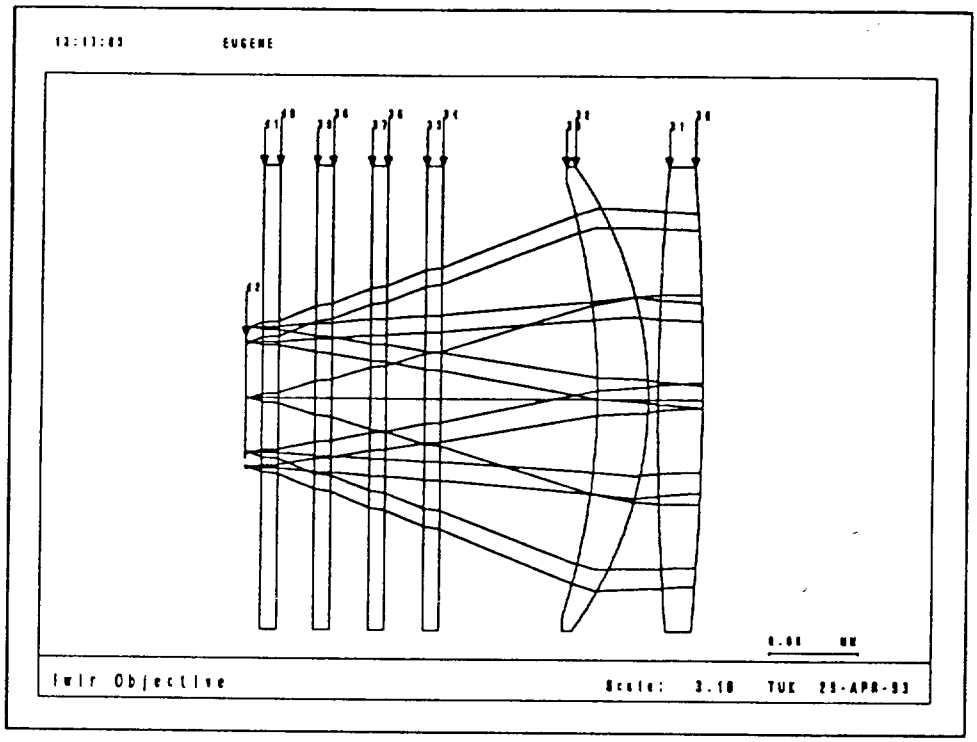
Appendix A

Visible Objective



Appendix D

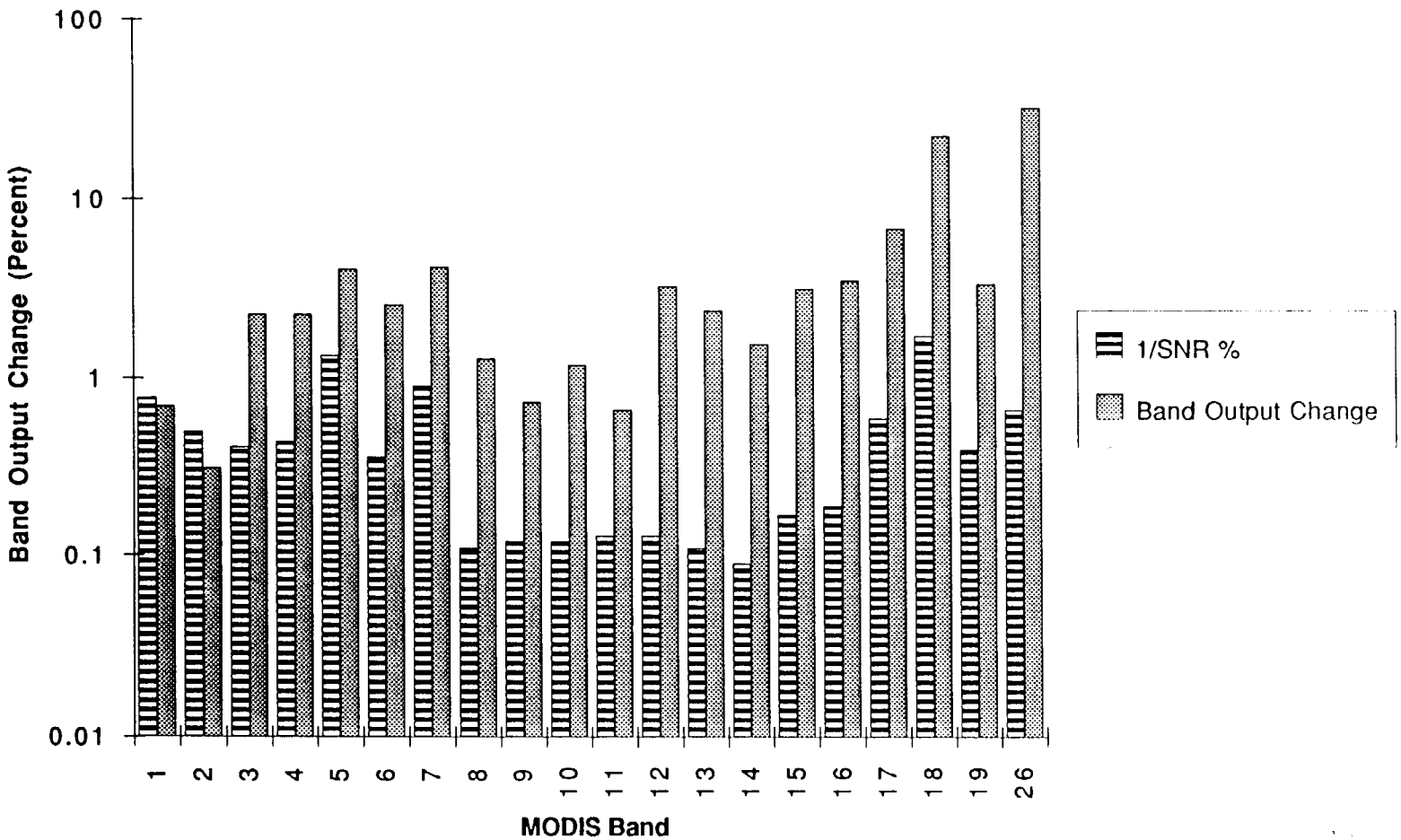
LWIR Objective



5/6/93

Band Error.wSNR.Plot

MODIS Spectral Band Output Change due to Shift in Center Wavelength
(Plotted Value is Max. Abs. Change in the CW Tolerance Range)



TOA Spectral Radiances Covering SeaWiFS Bands
John L.Barker /NASA/GSFC/925/MODIS Characterization Support Team (MCST) Page - 1 -

at MODIS Technical Team Meeting, 16/242 @3 p.m. 6May. 93
File: Band Error.wSNR.Plot 1:07 PM 5/6/93

Attach #2

6/93

		Change in MODIS Band Output due to Shift in Filter Center Wavelength											
			Table Entries in Percent										
			Current MODIS Specification										
			TOA Spectral Radiance Input (Kurucz solar spectrum, 1 cm water vapor, nominal vegetation reflectance)									Band CW Shift	Error Values
												Tolerance nm	Selected/Interp
				Center Wavelength Shift (nm)									Plot
MODIS Band	-10	-5	-2	-1	0	1	2	5	10	1/SNR in %	MODIS Band		
1	2.54	0.92	0.27	0.12		-0.08	-0.03	0.15	1.72	0.78	1	4	0.7
2	-2.33	-0.61	-0.29	-0.16		0.18	0.22	1.32	1.97	0.5	2	2.2	0.31
3	6.73	2.93	1.11	0.53		-0.50	-0.54	-2.88	-6.79	0.41	3	4	2.3
4	5.22	2.54	1.13	0.58		-0.61	-0.60	-3.14	-6.07	0.44	4	4	2.3
5	5.85	3.42	1.47	0.75		-0.78	-1.59	-4.06	-7.91	1.35	5	5	4.1
6	1.54	1.19	0.57	0.30		-0.32	-0.34	-1.78	-3.80	0.36	6	7	2.6
7	1.76	1.12	0.52	0.27		-0.30	-0.33	-1.97	-5.75	0.91	7	8	4.2
8	No data	No data	1.3	0.63		-0.51	-0.76	-2.3	-7.3	0.11	8	2	1.3
9	-7.77	-2.55	-0.74	-0.53		0.74	1.7	2.66	2.55	0.12	9	1.1	0.74
10	12.26	5.8	2.02	0.94		-0.67	-0.94	-0.4	-3.36	0.12	10	1.2	1.2
11	1.17	1.51	0.67	0.17		-0.17	-0.5	-2.84	-5.52	0.13	11	2	0.67
12	4.05	2.21	0.92	0.55		-1.1	-2.21	-3.3	-6.26	0.13	12	5	3.3
13	-11.3	-6.18	-2.42	-1.34		1.34	2.96	8.33	17.2	0.11	13	1, -2	2.42
14	-14.9	-7.87	-2.93	-1.58		1.13	2.25	2.48	-2.48	0.09	14	1	1.58
15	-16.8	-8.91	-3.2	-1.54		1.1	1.6	0.33	22.5	0.17	15	2	3.2
16	-6.23	-2.22	-0.64	-0.35		0.44	1.09	3.56	6.08	0.19	16	5	3.56
17	38.1	18.6	6.92	3.37		-4.05	-6.05	-13.8	-26.3	0.6	17	2.3	6.92
18	304	110	22.7	7.8		-2.83	-2.83	5.67	11.3	1.75	18	2.3	22.7
19	21.6	8.04	2.74	1.34		-1.02	-1.91	-3.06	-3.7	0.4	19	2.4	3.4
26	88.8	18.5	3.7	0		0	0	-3.7	-22.2	0.67	26	6	32.6