

**MOBY OBSERVATIONS
for
INITIALIZATION and VICARIOUS
CALIBRATION - OCTS, SeaWiFS, OCI &
MODIS**

**DENNIS CLARK
MODIS Science Team Meeting
December 15-17, 1998**



MOBY ENHANCEMENTS

- ❑ **ADDING A BASIC METEOROLOGICAL OBSERVATION SYSTEM TO THE MAIN MOORING BUOY. DEPLOYMENT SCHEDULED FOR FEBRUARY 1999.**

OBSERVATIONS : WIND SPEED/DIRECTION , ATMOSPHERIC PRESSURE, HUMIDITY , AND TEMPERATURE

- ❑ **DEVELOPING A MONOCHROMATIC RADIANCE DISTRIBUTION VIDEO CAMERA SYSTEM. DEPLOYMENT SCHEDULED FOR JUNE 1999.**

OBSERVATIONS : RADIANCE DISTRIBUTION (440 NM) 0° TO 45° IN WATER (75° IN AIR), INCLINATION , & MAGNETIC HEADING.

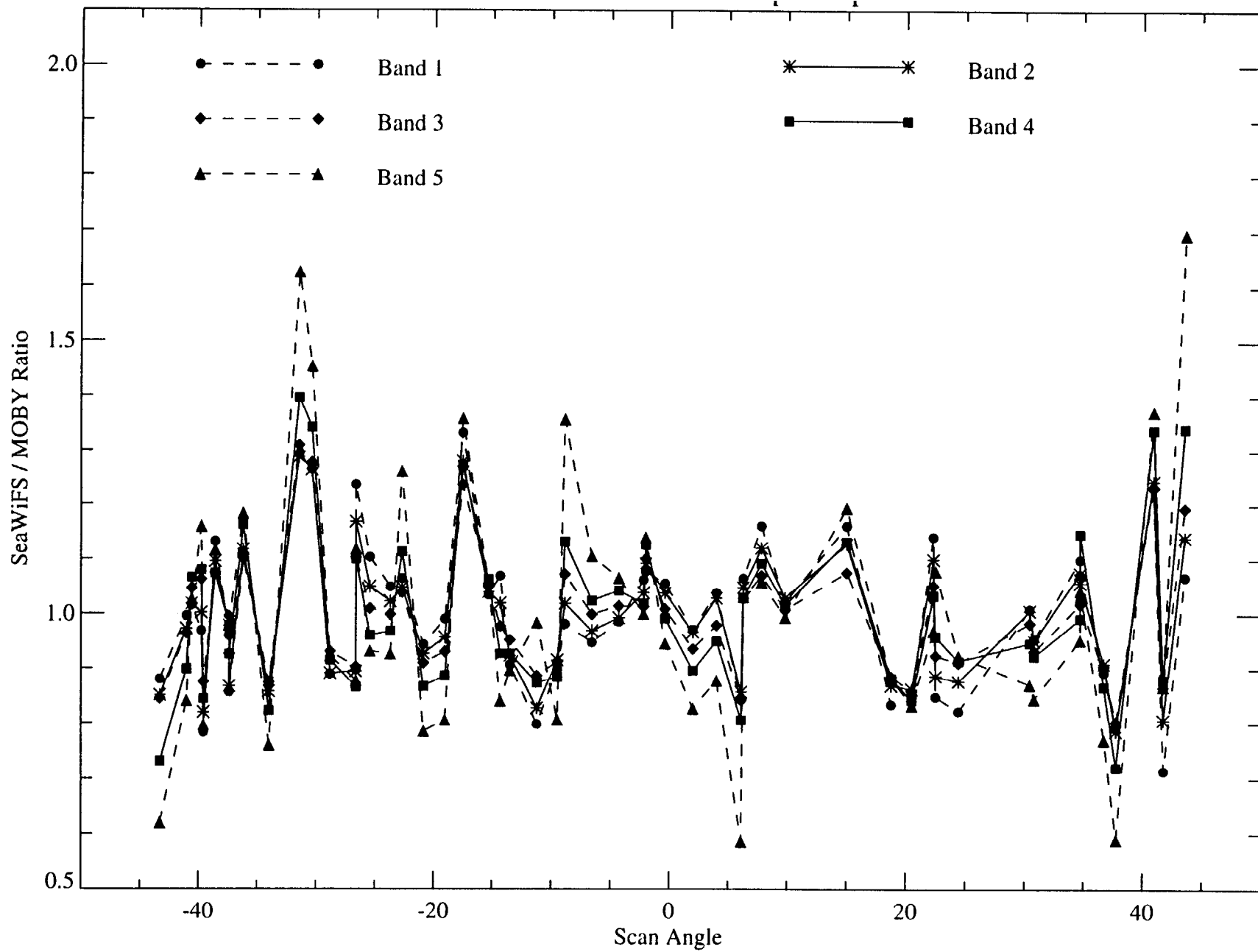
- ❑ **INSTALL BAFFLES TO REDUCE STRAY LIGHT IN NIR SPECTROGRAPH - JANUARY 1999.**

Results of SeaWiFS Vicarious Calibration

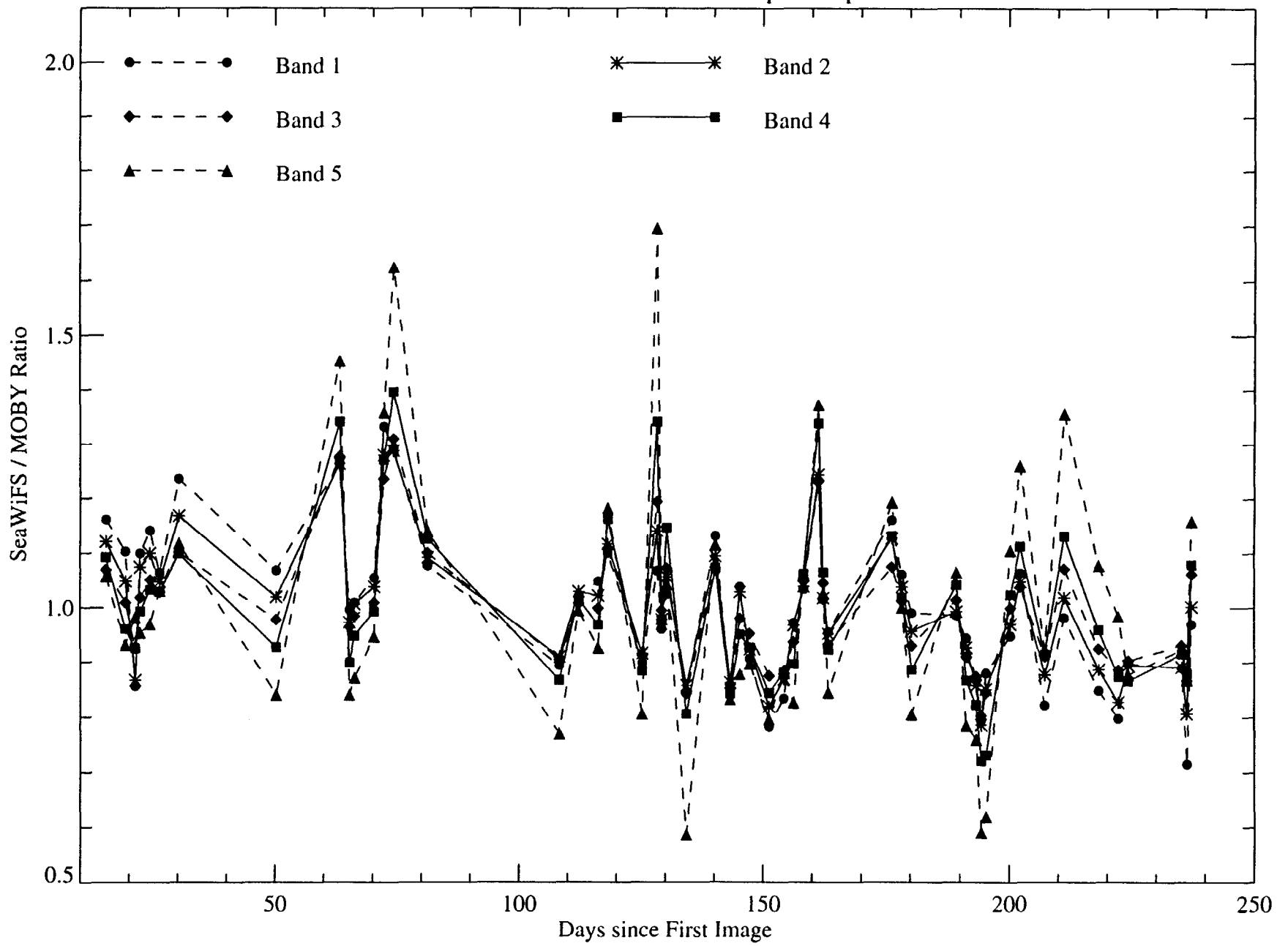
Band (nm)	Mean MOBY Radiance (Lw)	Mean SeaWiFS Radiance (Lw)	Ratio (SeaWiFS/MOBY)	Vicarious Gains
412	1.3095849	1.2986257	1.0000283	1.01368
443	1.2135283	1.2034007	1.0000361	1.00025
490	0.87369812	0.86736901	1.0000014	0.96978
510	0.51790766	0.51291737	1.0000490	0.99041
555	0.21932075	0.21673867	0.99993147	1.00032
670	0.013301887	0.013309628	1.0002464	0.96779
765				0.956
865				1.000
Chlorophyll a		0.0919280		
Epsilon		1.07883		
Aerosol Optical Depth		0.0925318		

Calibration based on 53 matchups spanning 222 days (19 Sep 1997 - 29 Apr 1998)

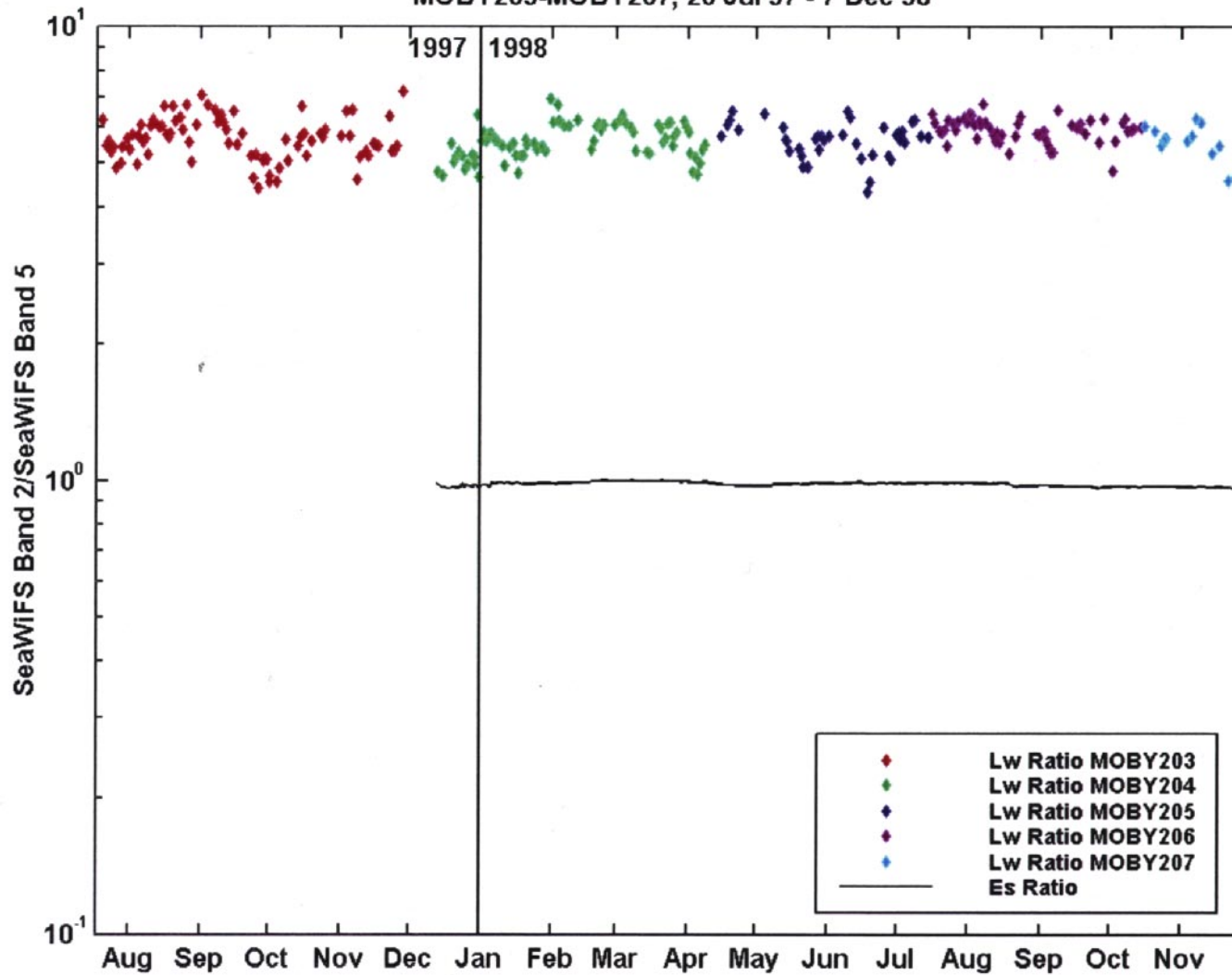
SeaWiFS / MOBY Lw Matchup Comparison



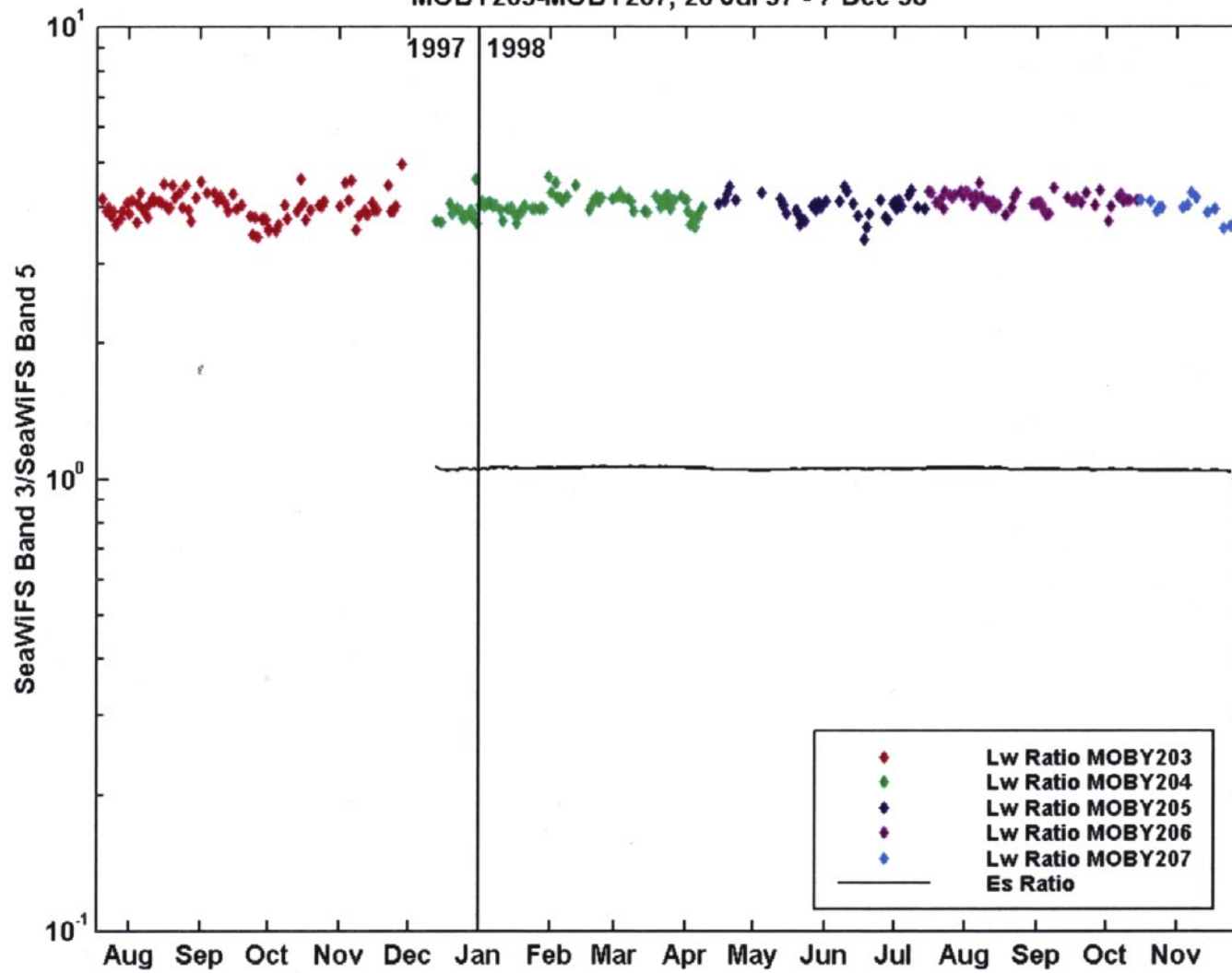
SeaWiFS / MOBY Lw Matchup Comparison



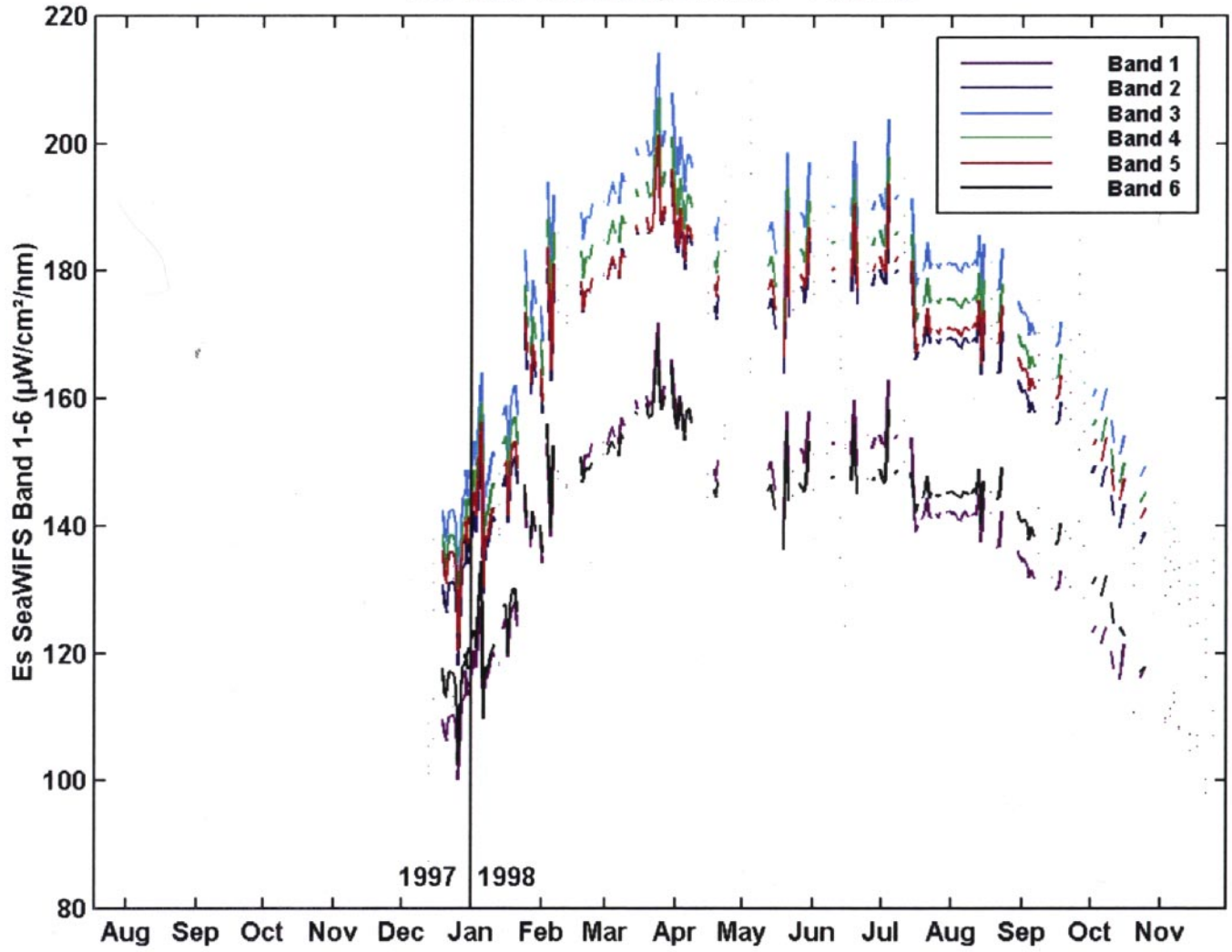
MOBY203-MOBY207, 20 Jul 97 - 7 Dec 98



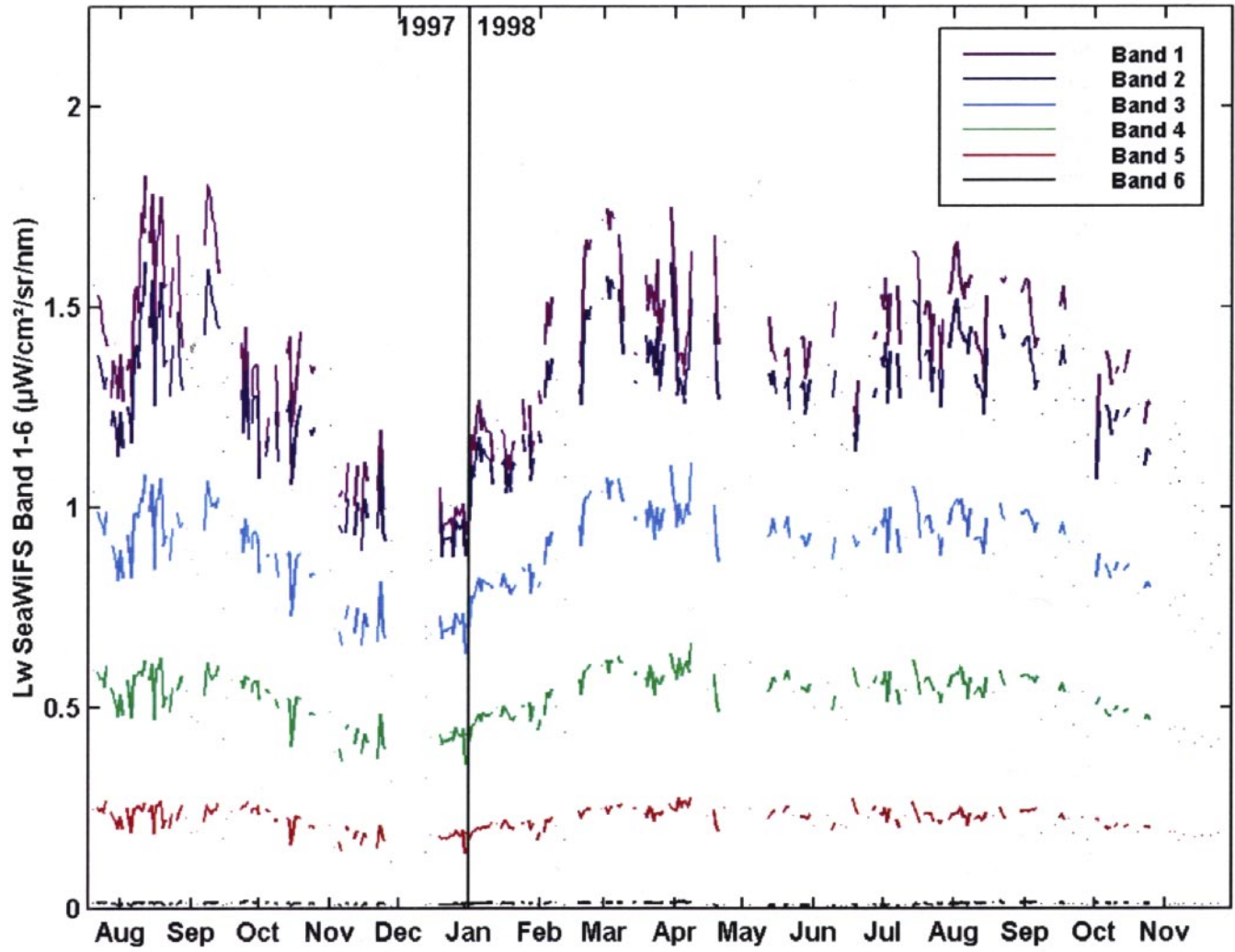
MOBY203-MOBY207, 20 Jul 97 - 7 Dec 98



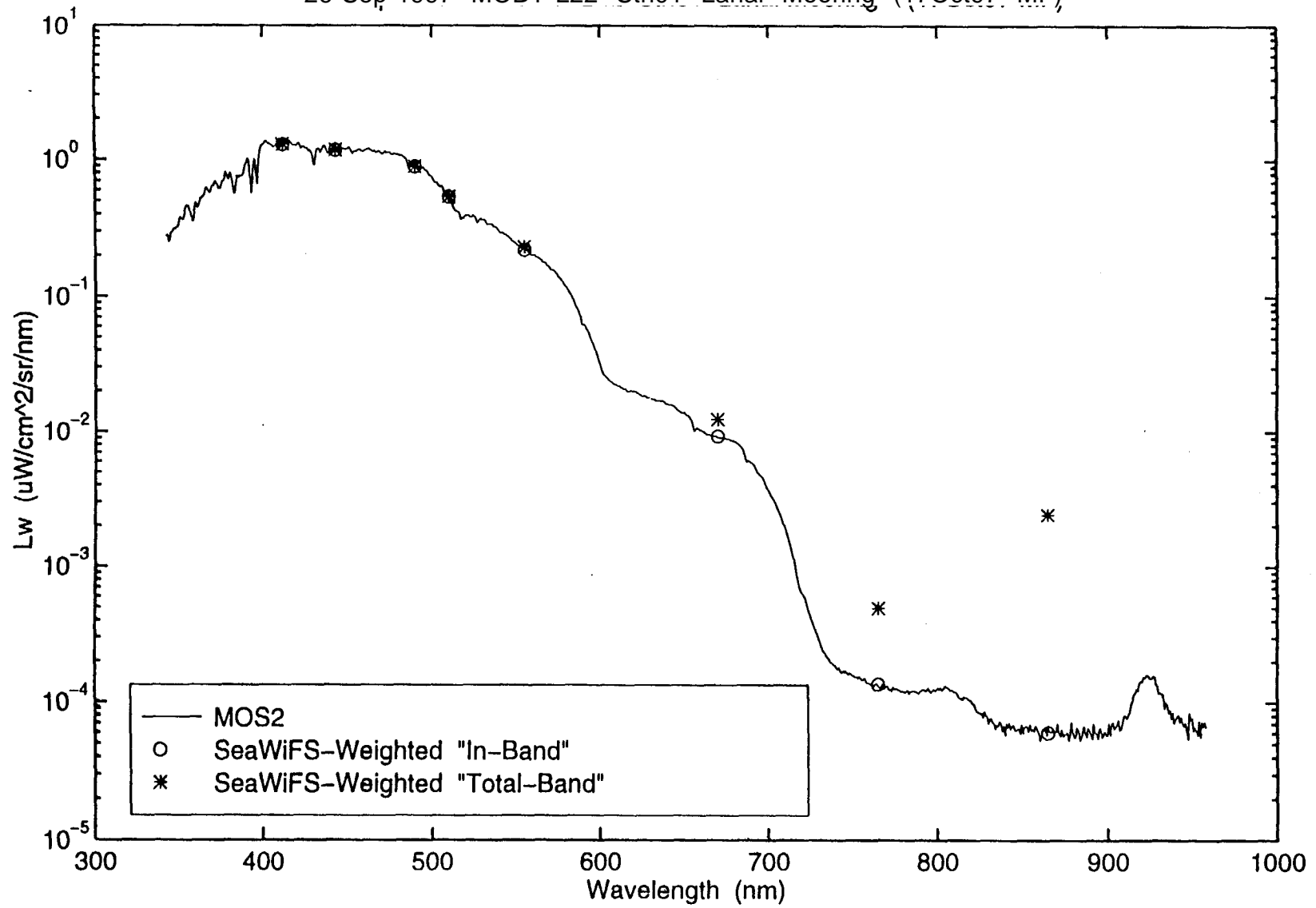
MOBY203-MOBY207, 20 Jul 97 - 7 Dec 98



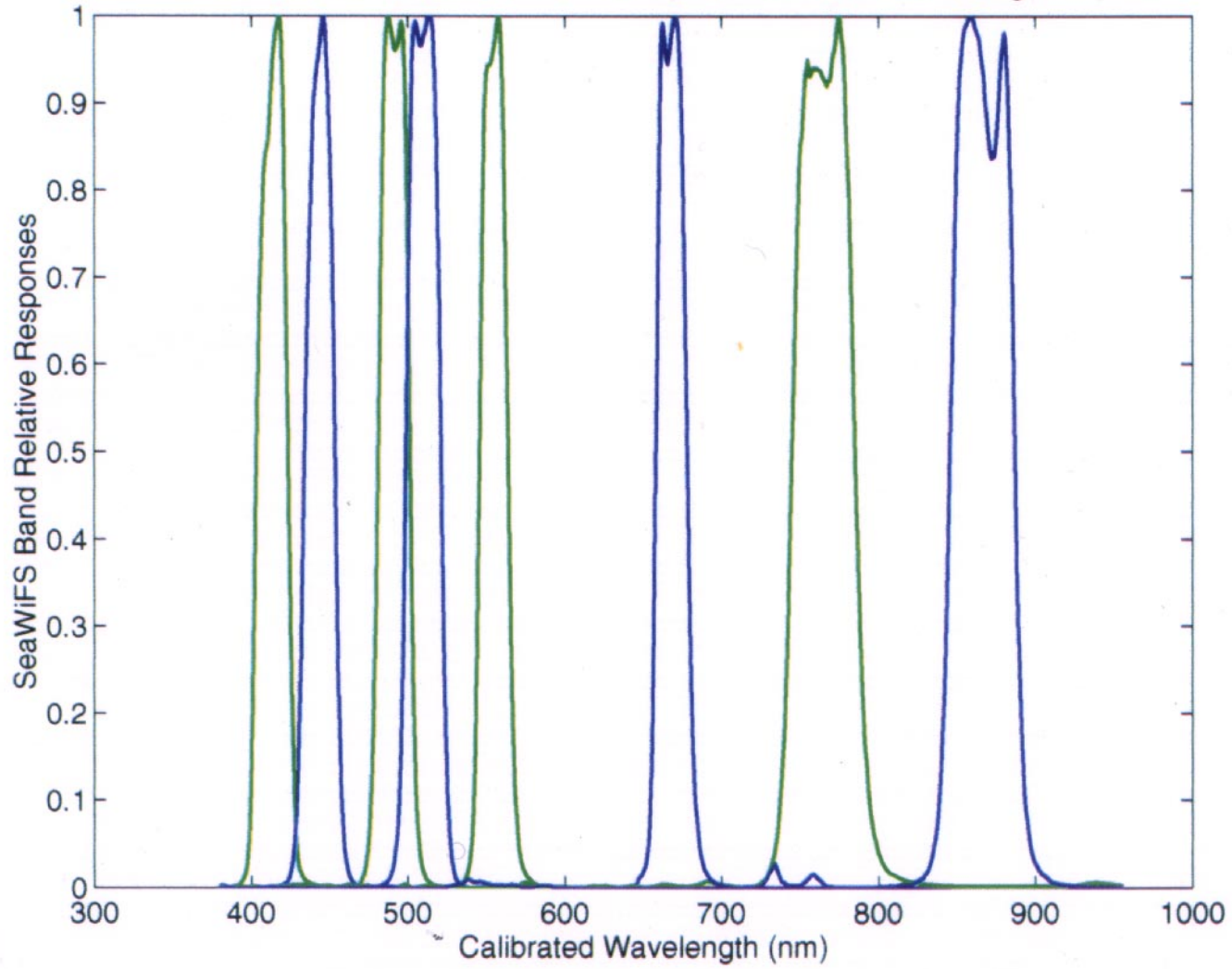
MOBY203-MOBY207, 20 Jul 97 - 7 Dec 98



26-Sep-1997 MOBY-L22 Stn01 Lanai Mooring (17Oct97 MF)



SeaWiFS Total Band Relative Responses at MOBY wavelengths

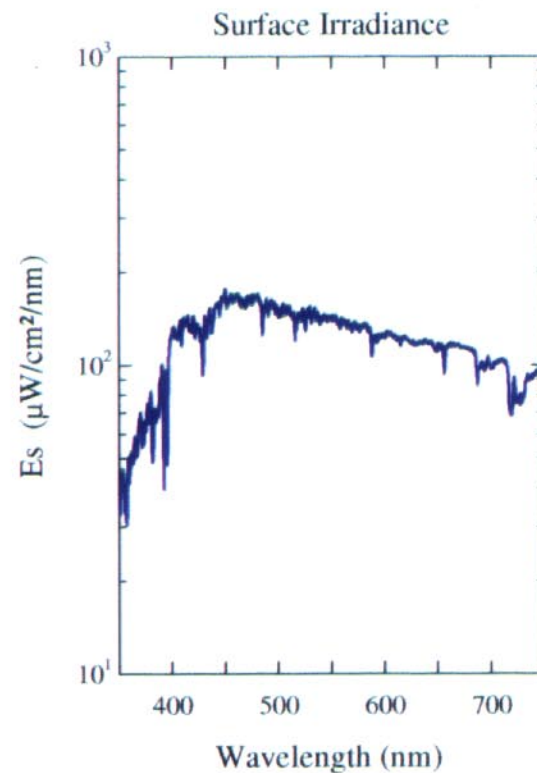
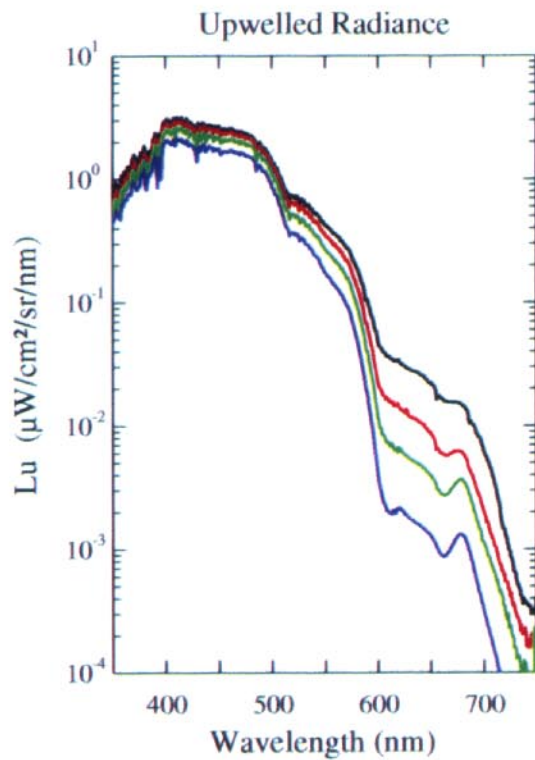
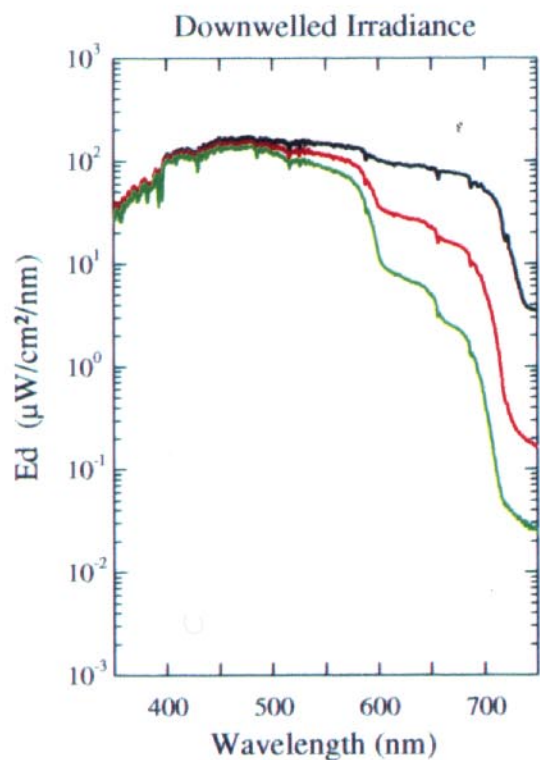


MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 03 CONFIG: 00
STATION: Lanai Mooring

TOP 1 m —
MID 5 m —
BOT 9 m —
MOS 11 m —

POSITION: 20° 49.4' N 157° 11.7' W
DATE: 22:11 (GMT) 17 Aug 1997



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 03 CONFIG: 00

STATION: Lanai Mooring

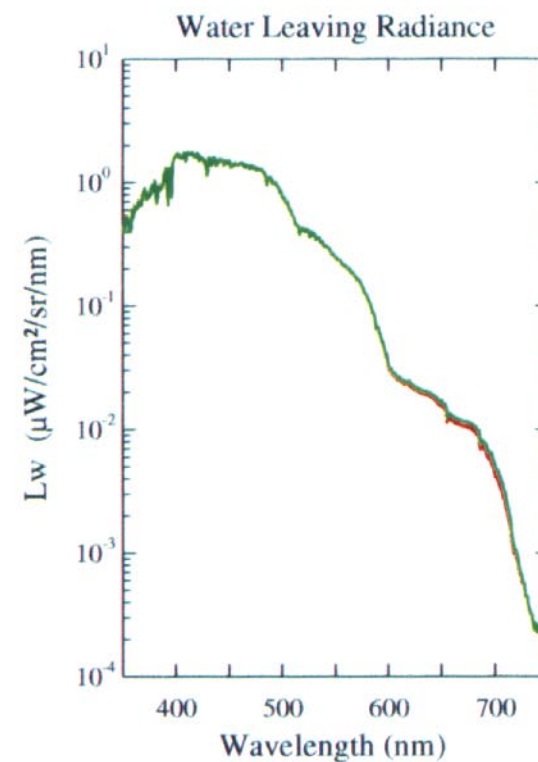
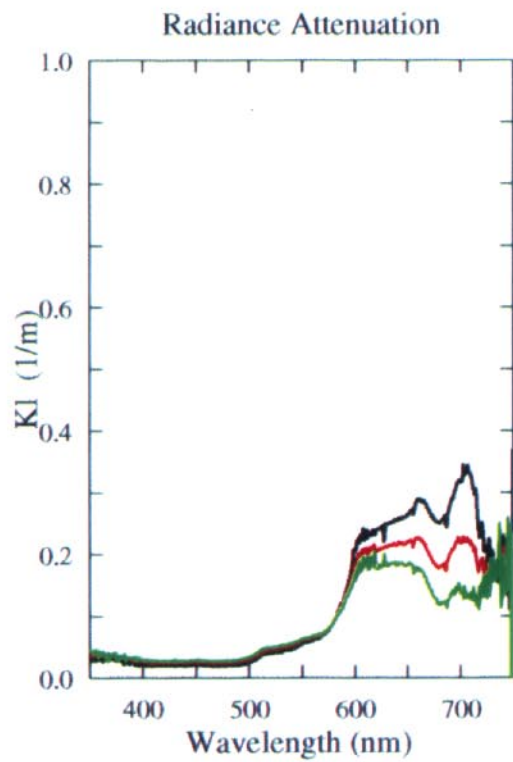
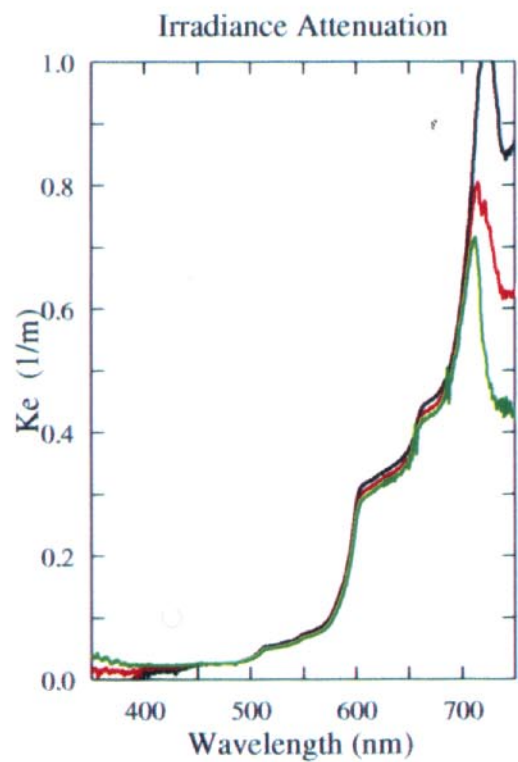
T-M 1 to 5 m

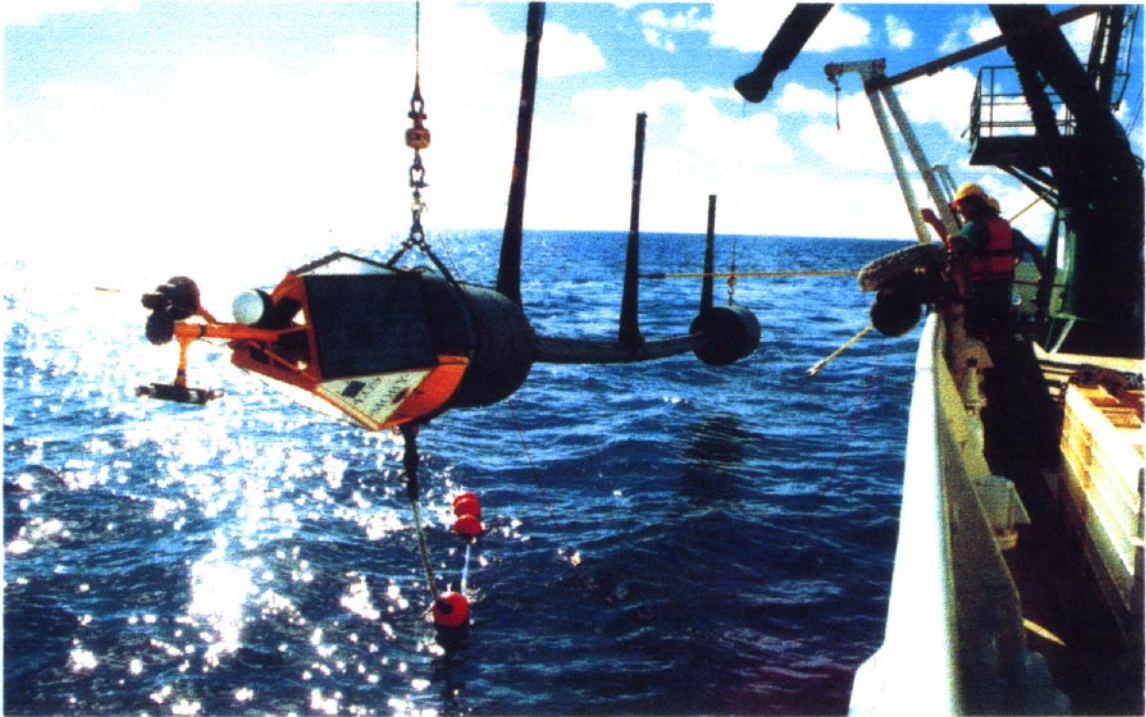
T-B 1 to 9 m

M-B 5 to 9 m

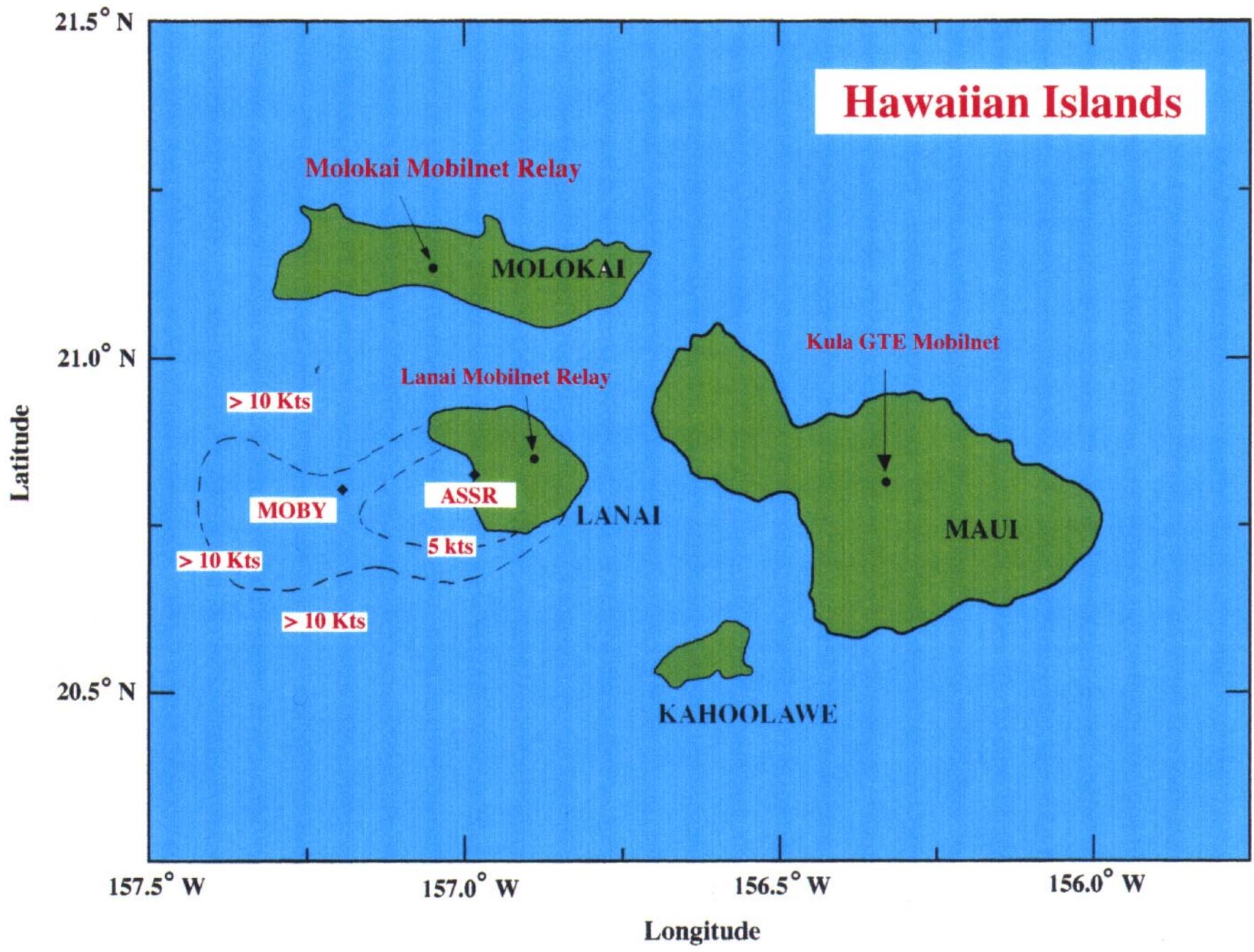
POSITION: 20° 49.4' N 157°11.7' W

DATE: 22:11 (GMT) 17 Aug 1997

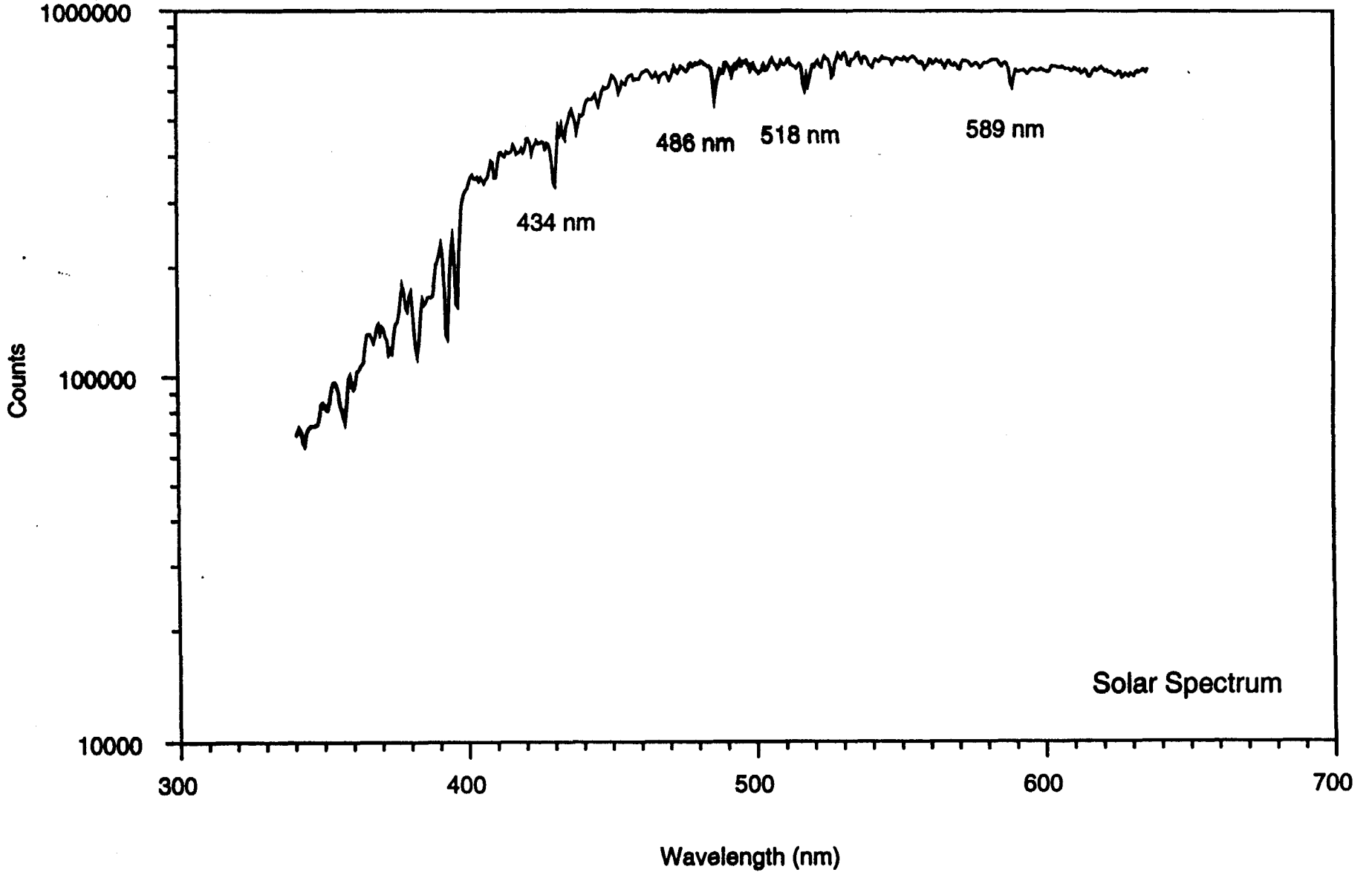




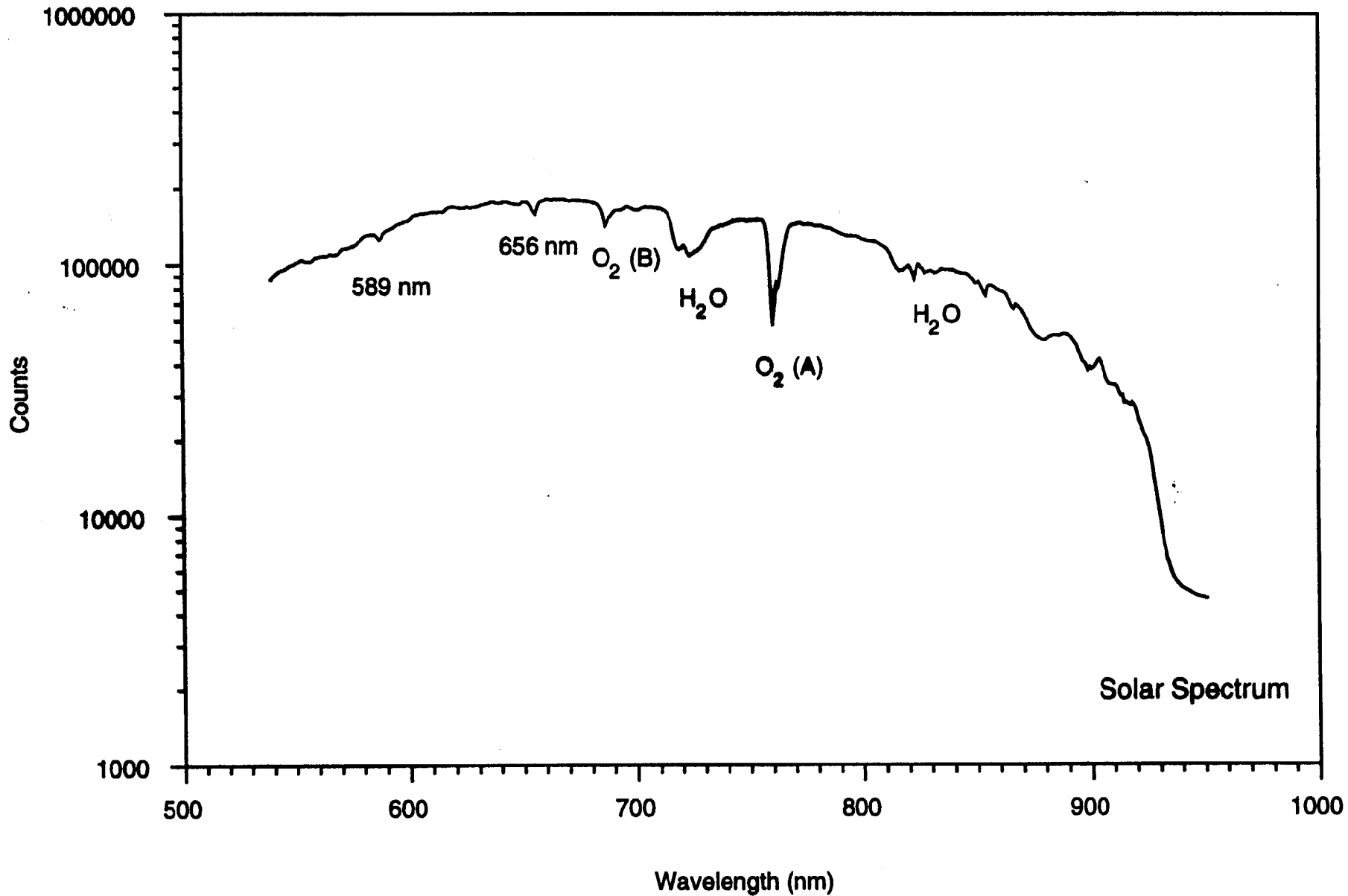




MOBY II Visible Spectrometer



MOBY II Near-IR Spectrometer



DICHROIC "WATER MIRROR"

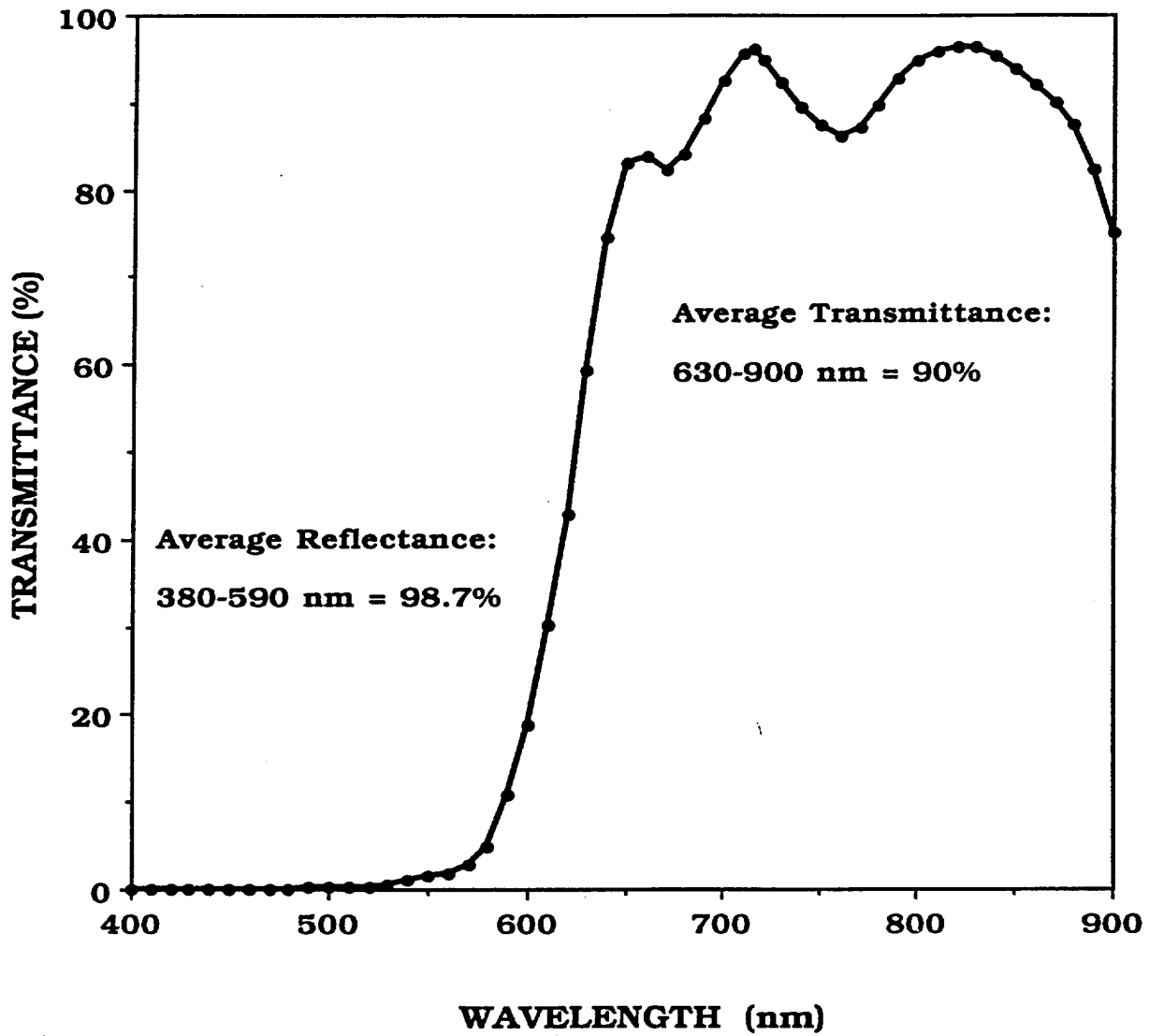
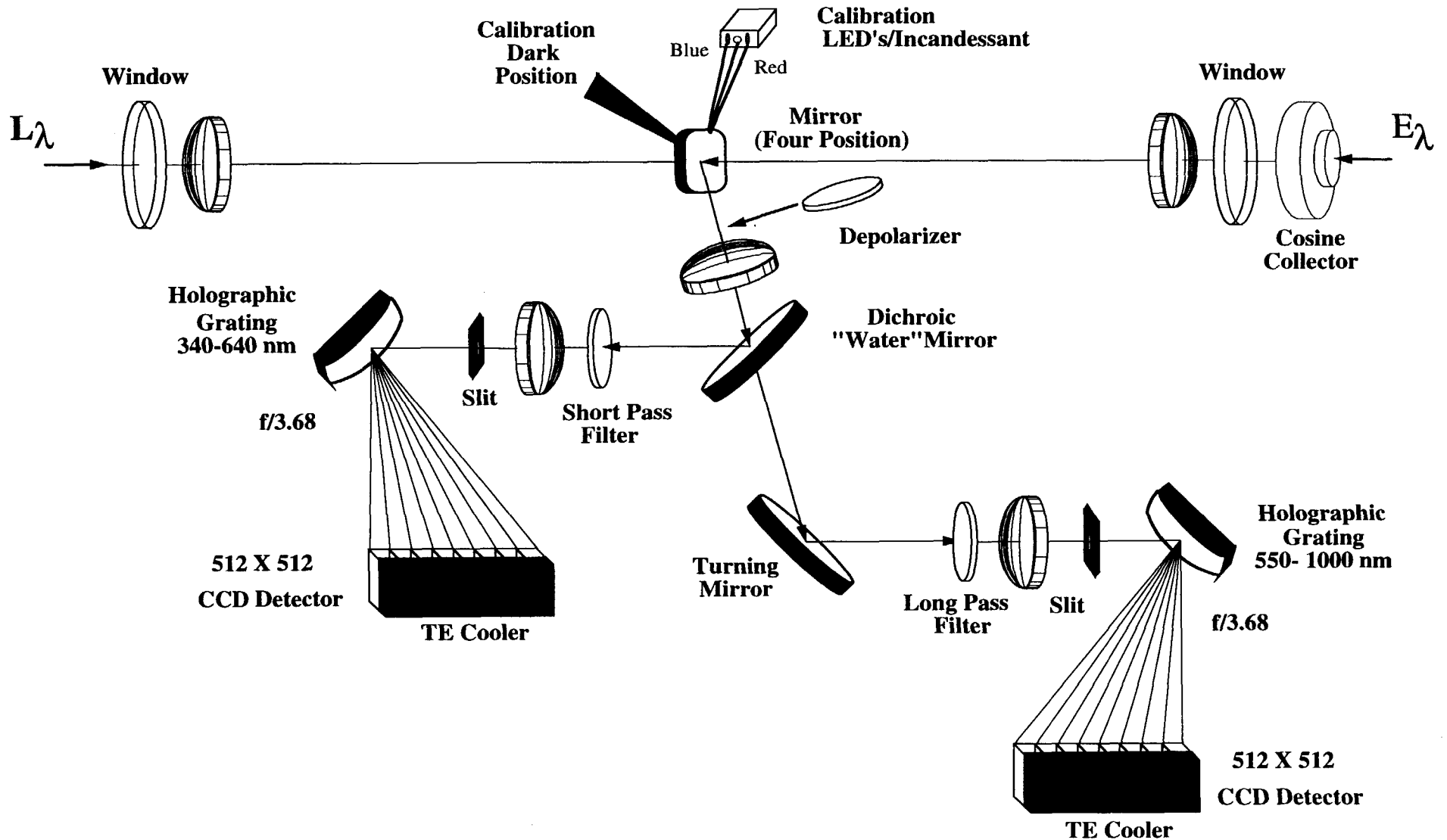
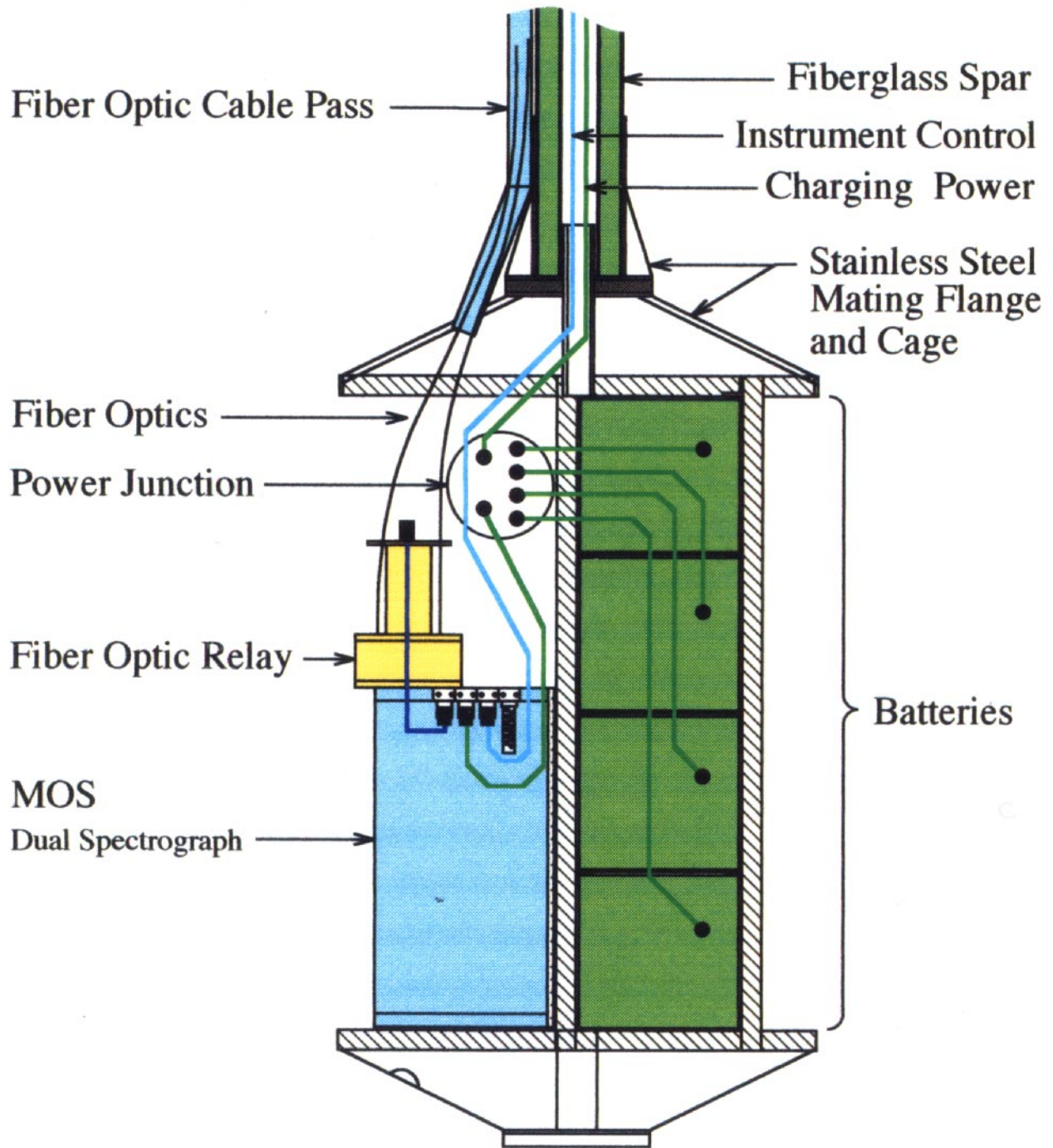


FIGURE 1

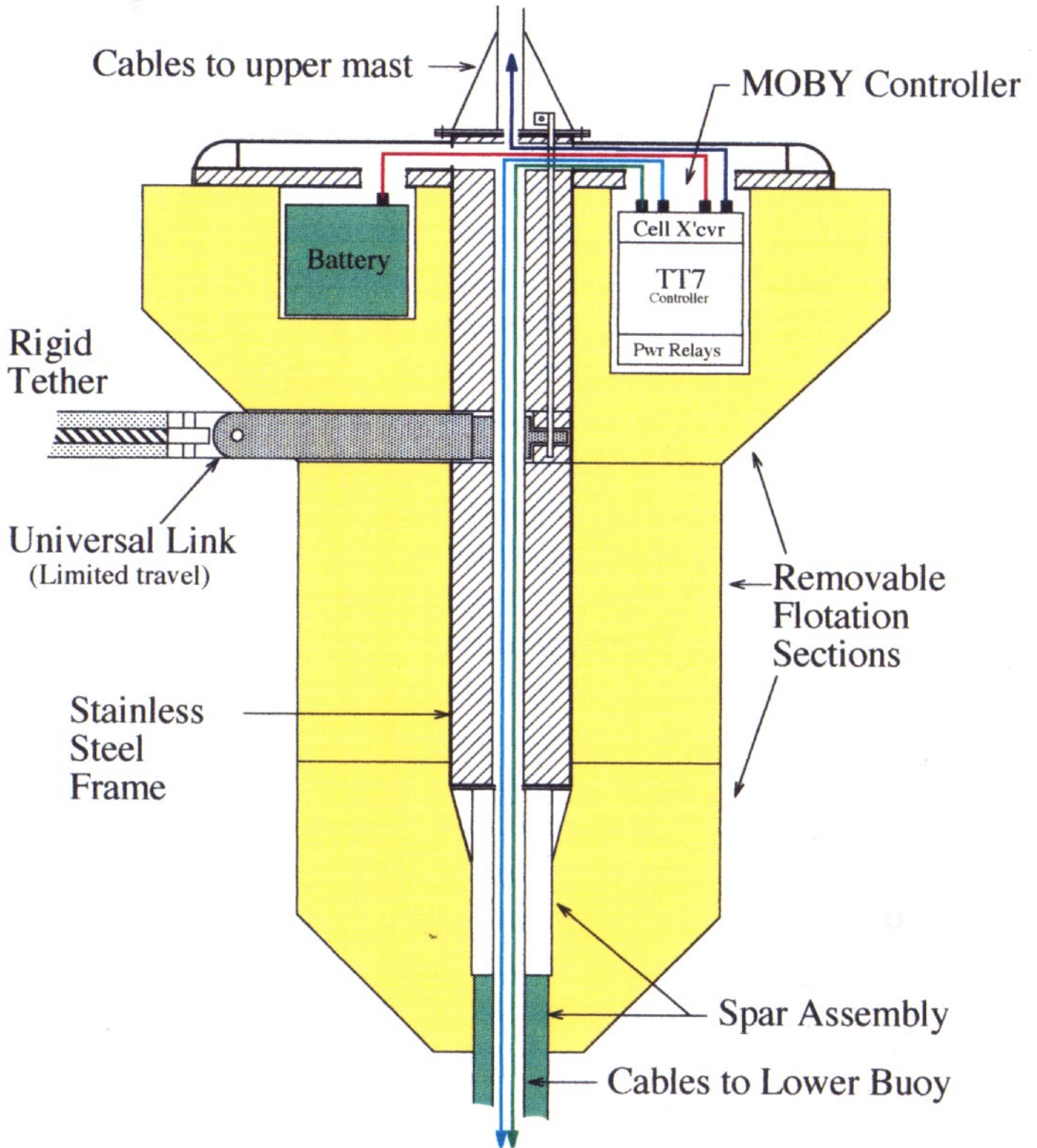
Marine Optical System - Dual Spectrographs



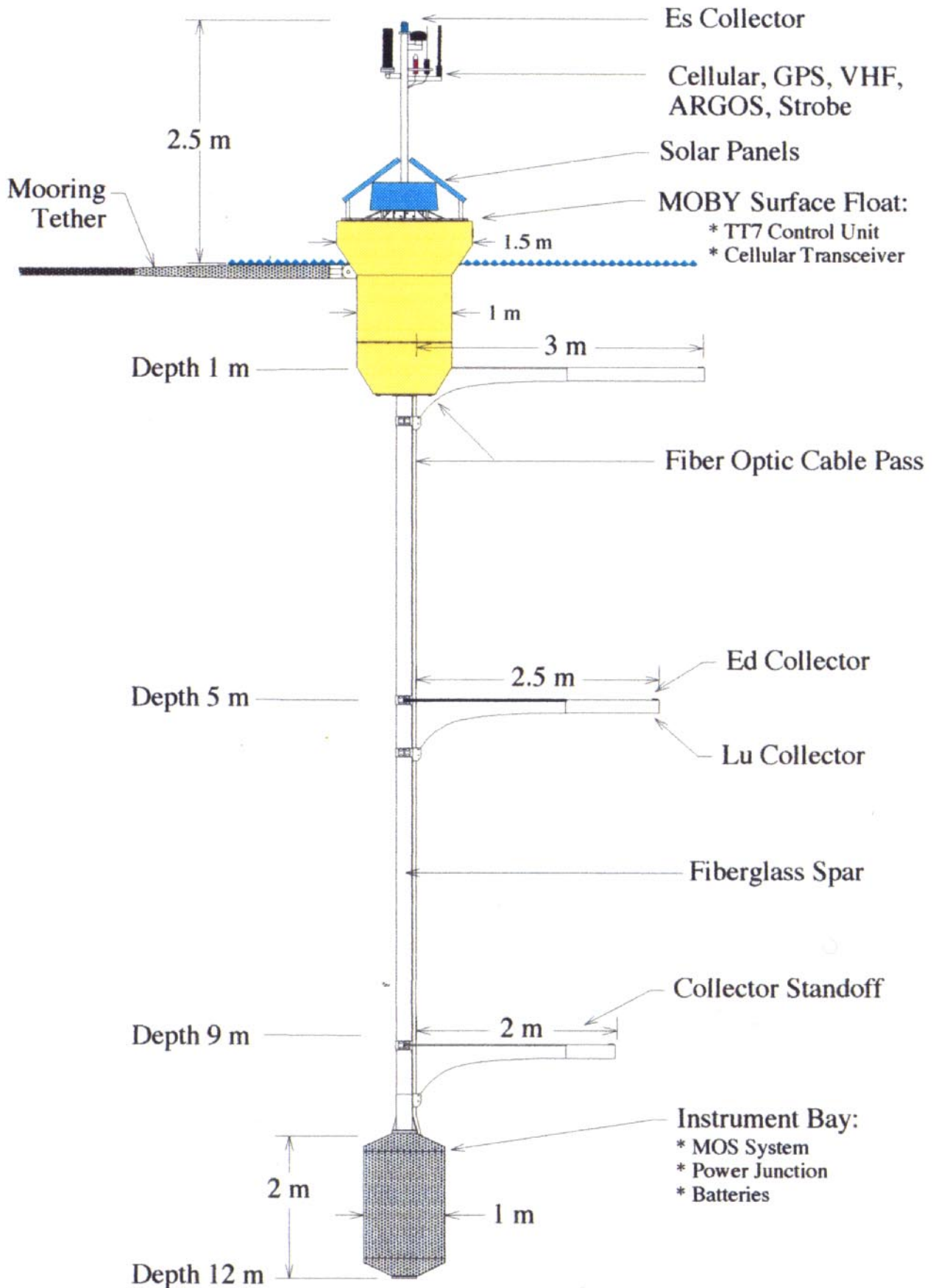
MOBY Subsurface Instrument Bay



MOBY Upper Buoy



MOBY

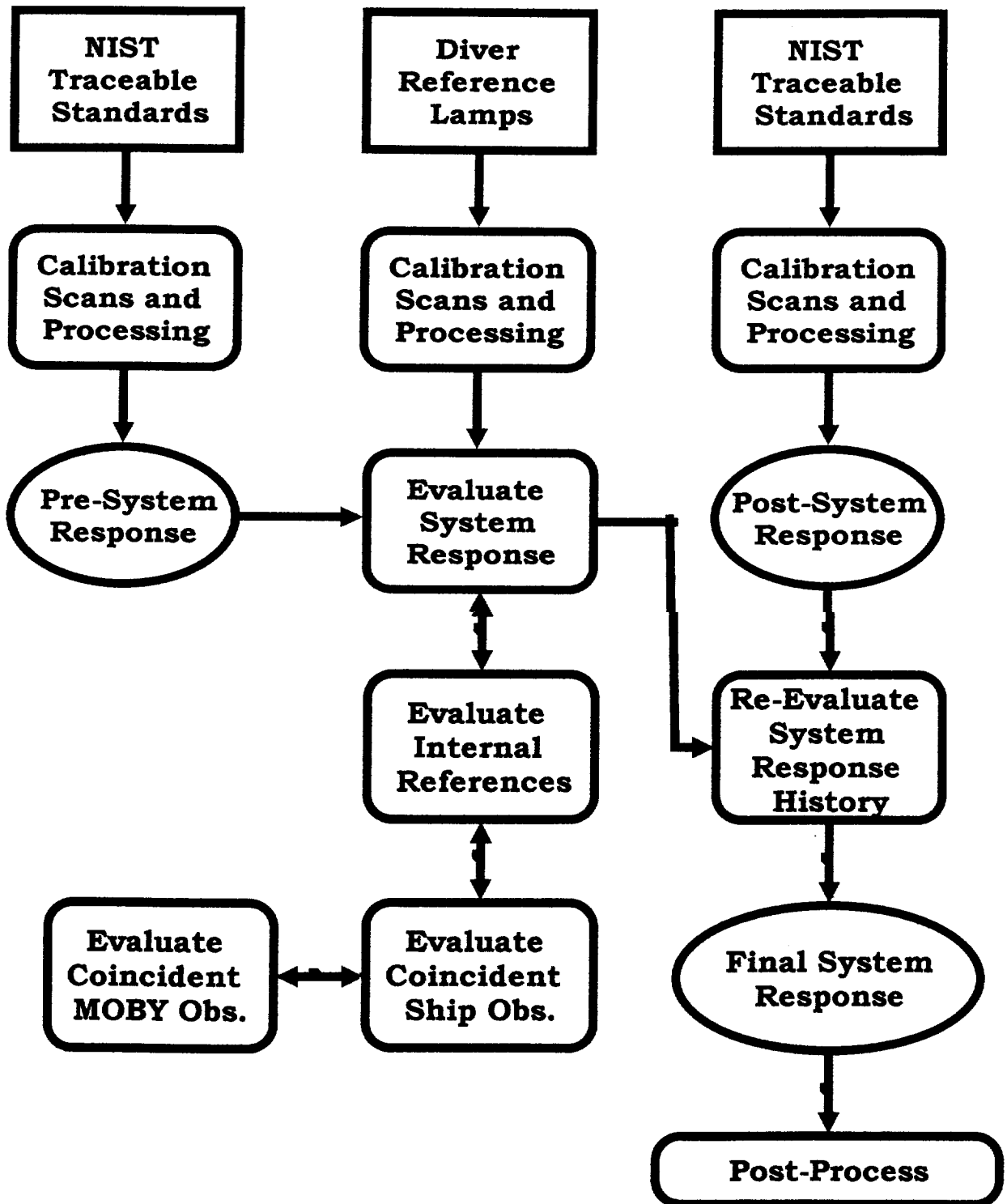


MOBY Calibration

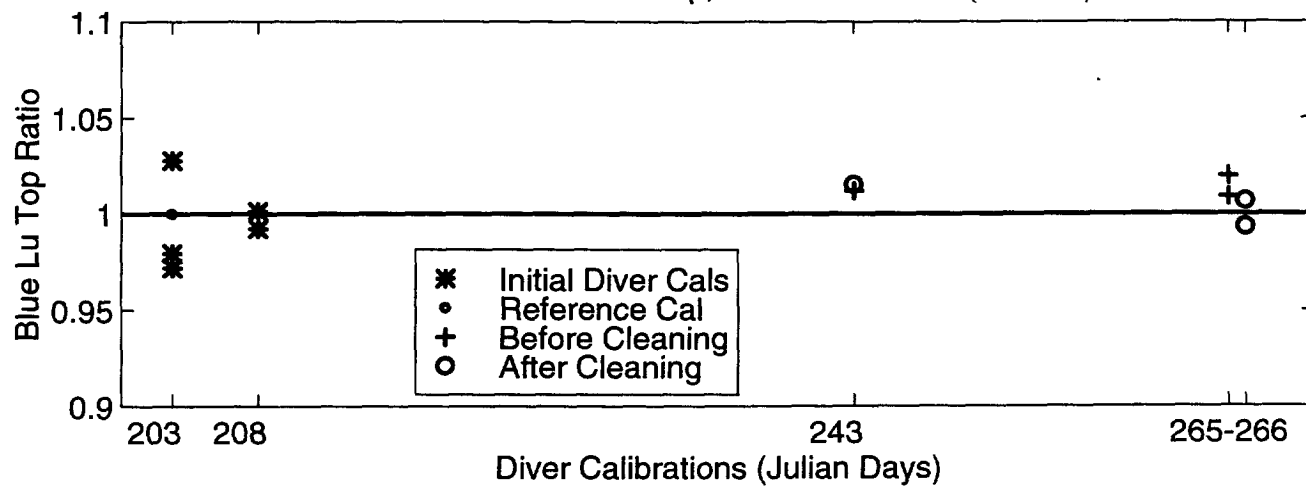
Pre-Deployment

During Deployment

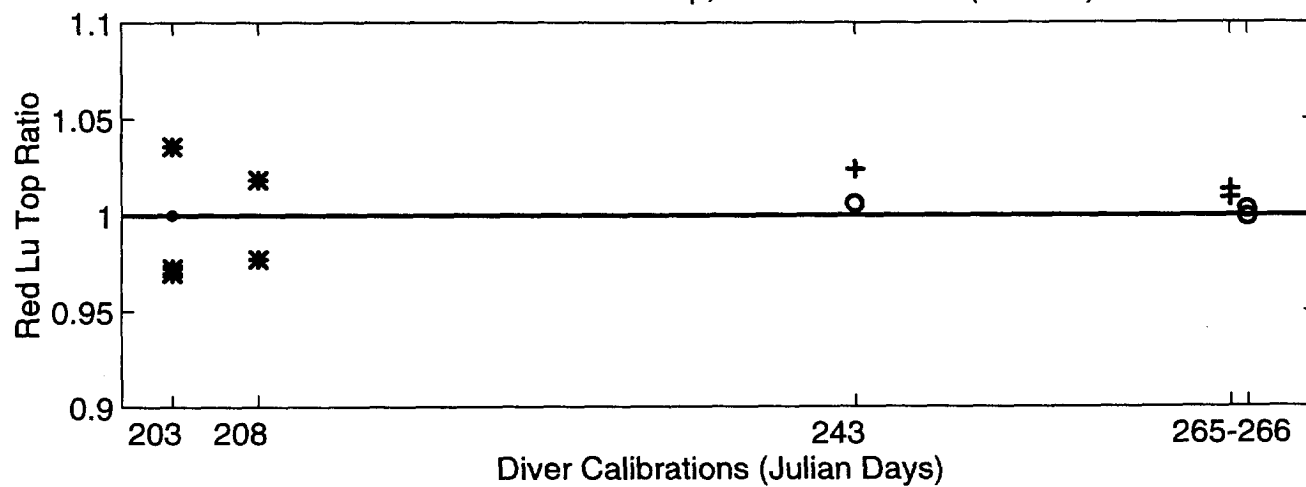
Post-Deployment



Diver Calibration - Lu Top, SeaWiFS Band 2 (443 nm)

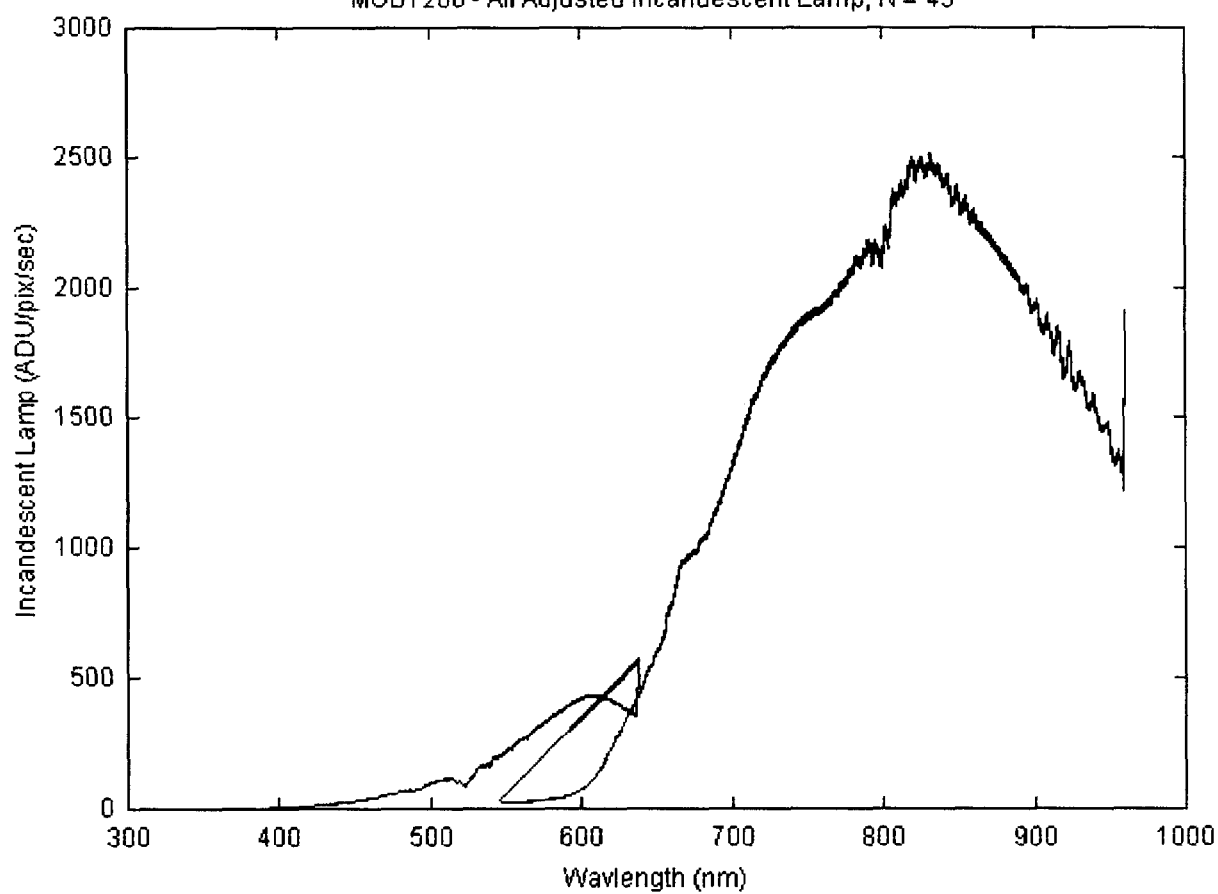


Diver Calibration - Lu Top, SeaWiFS Band 6 (670 nm)

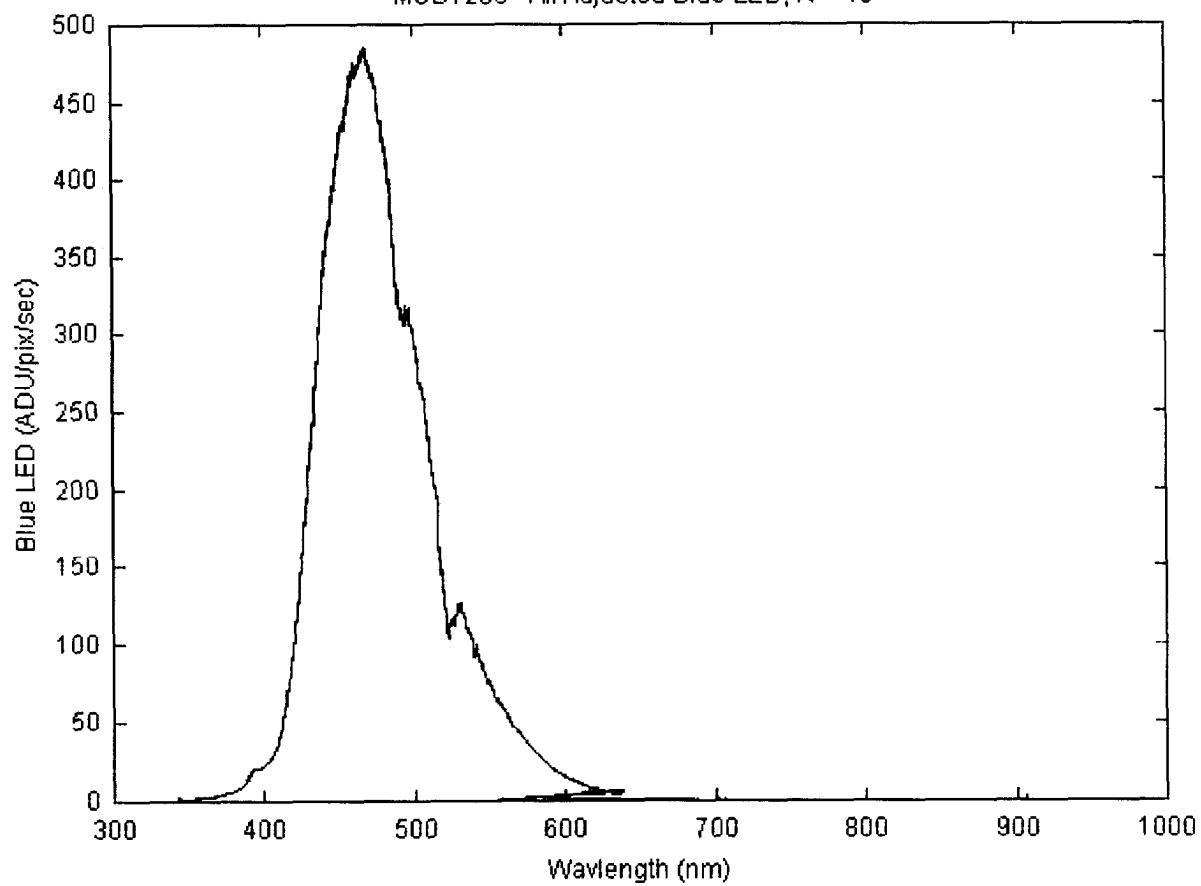


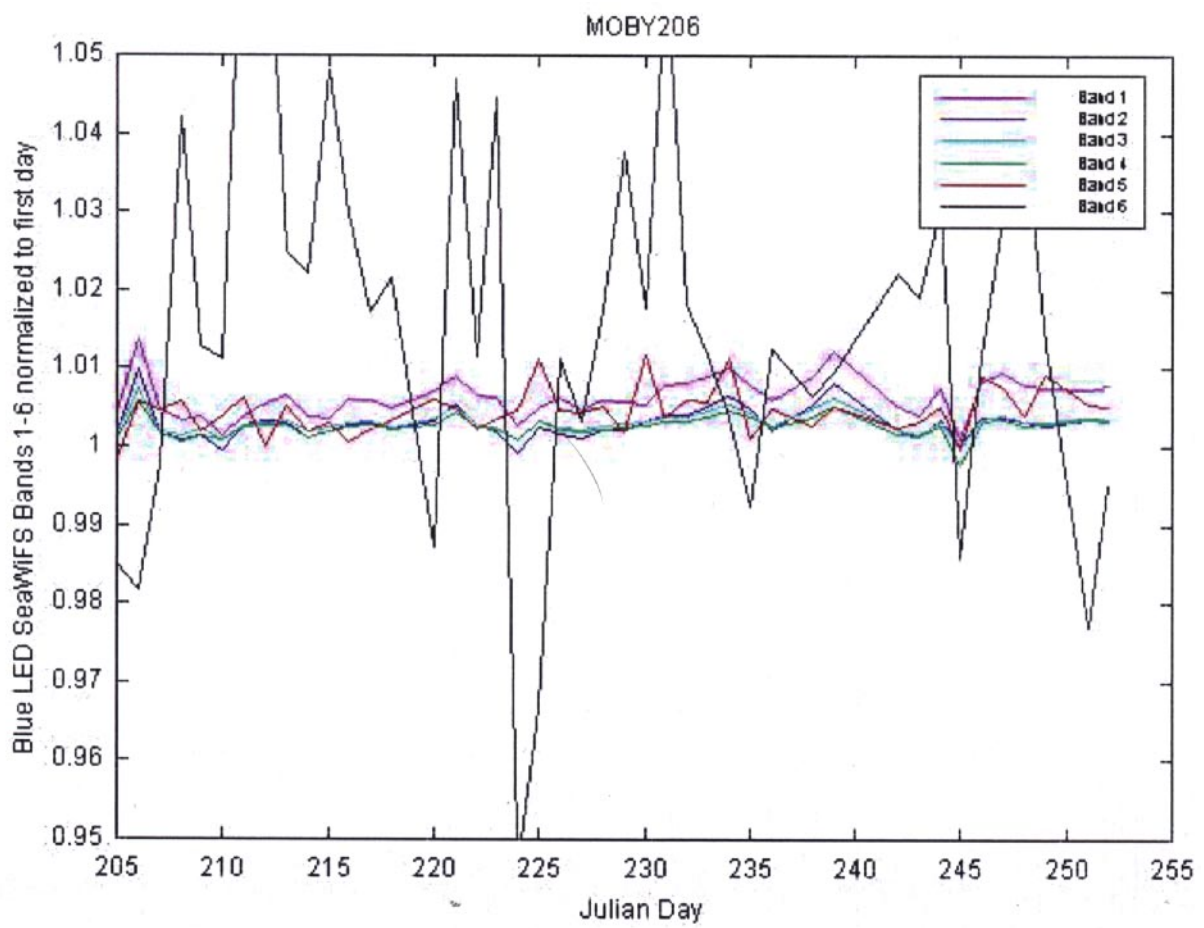


MOBY206 - All Adjusted Incandescent Lamp; N = 45

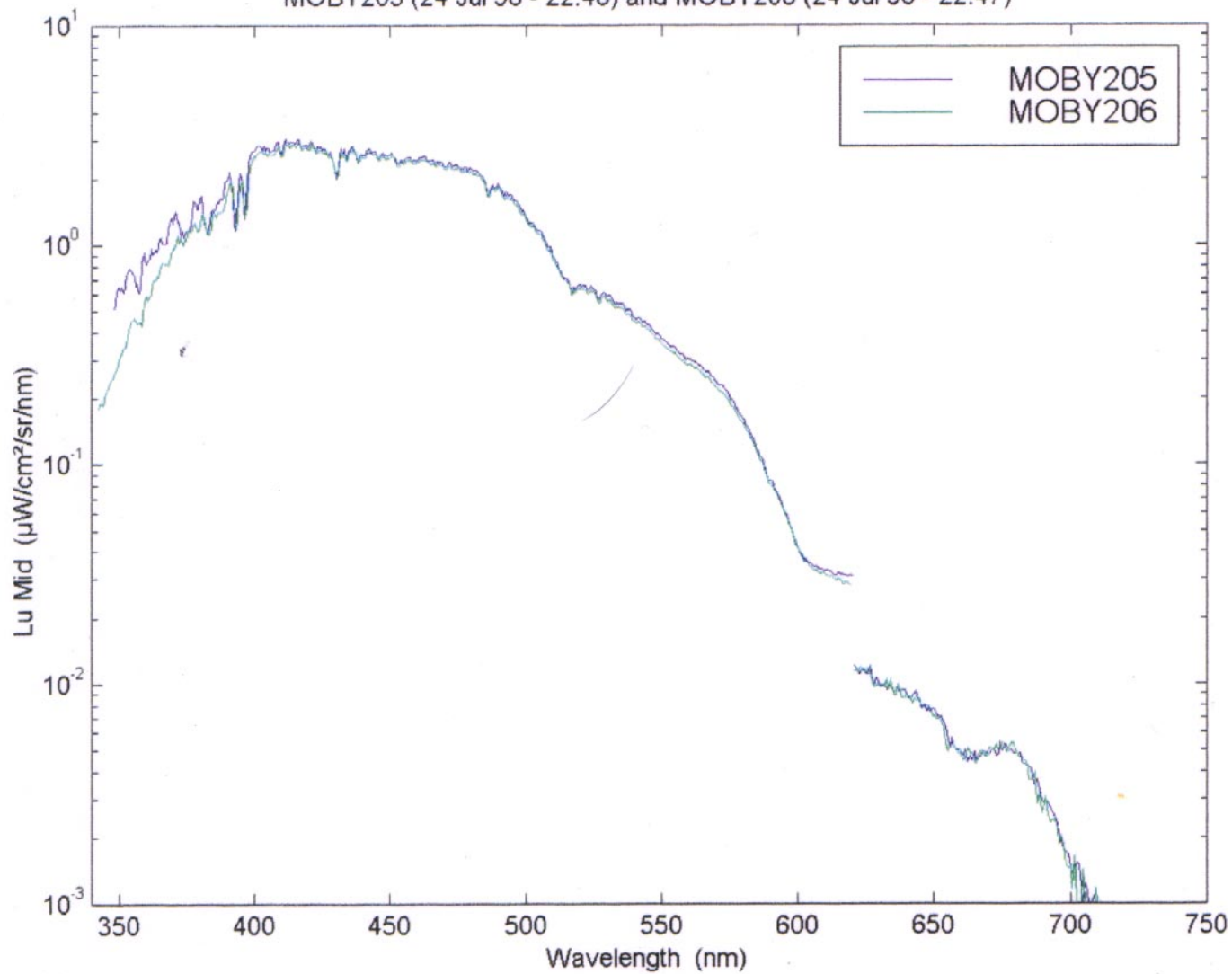


MOBY206 - All Adjusted Blue LED; N = 46

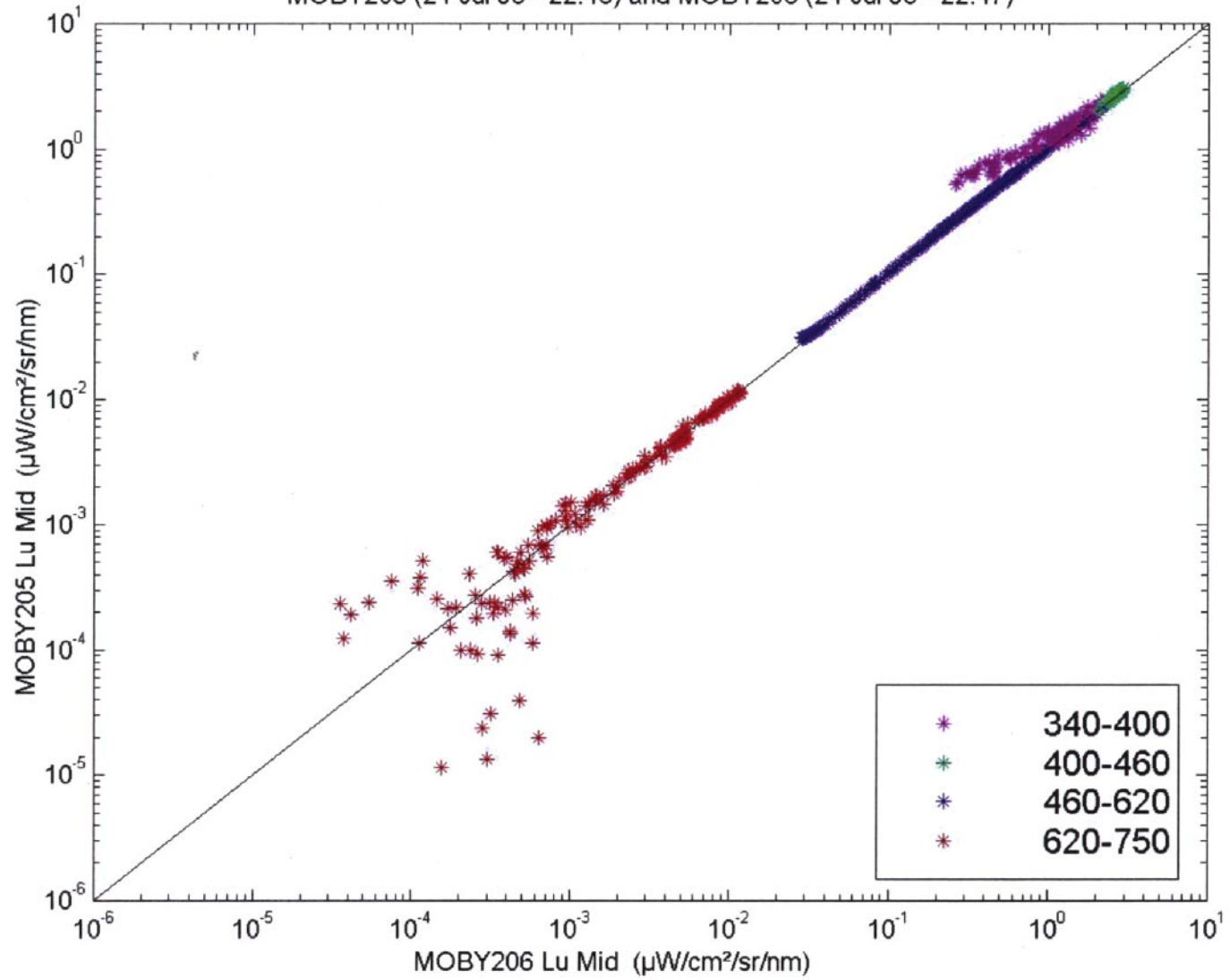




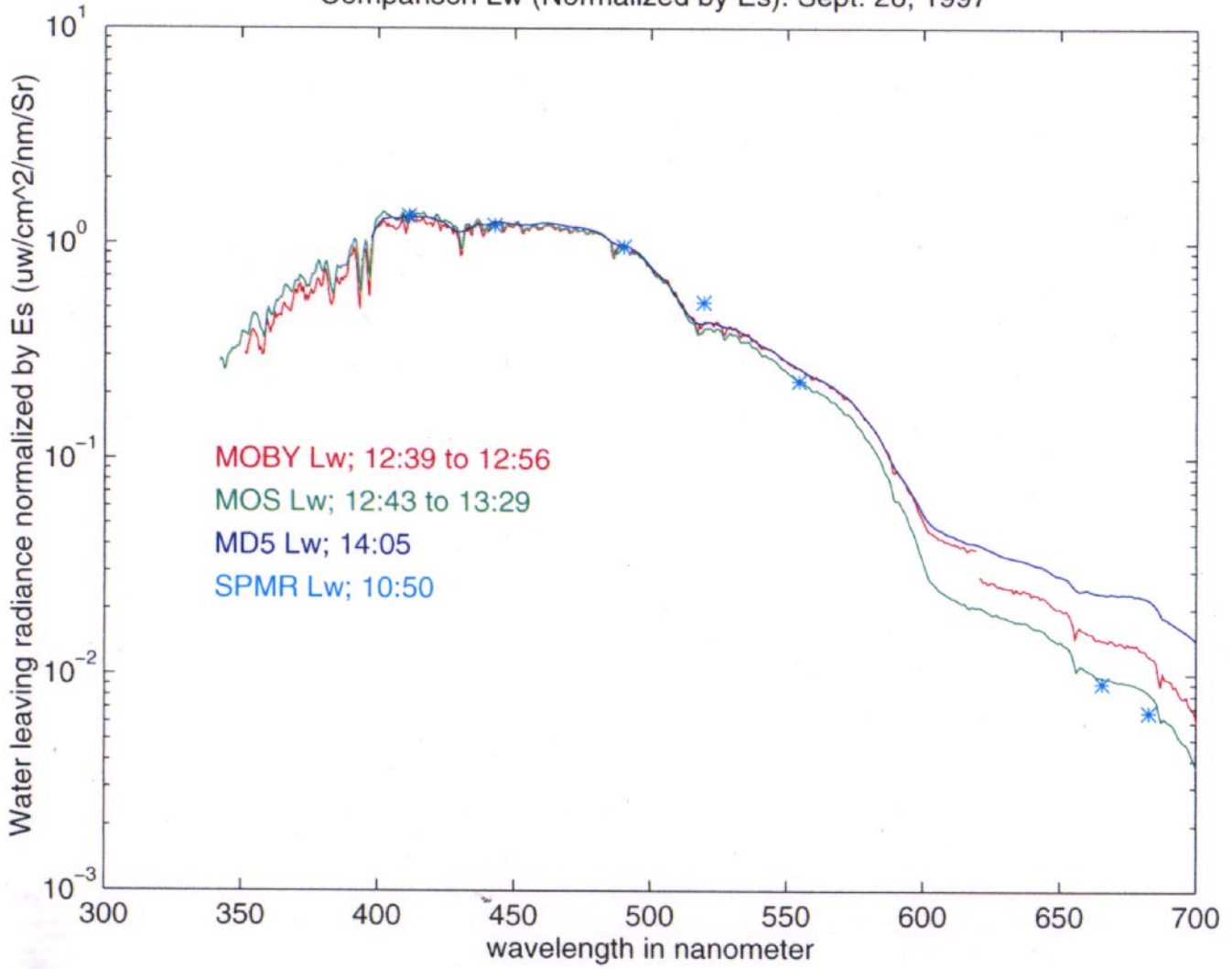
MOBY205 (24 Jul 98 - 22:48) and MOBY206 (24 Jul 98 - 22:47)



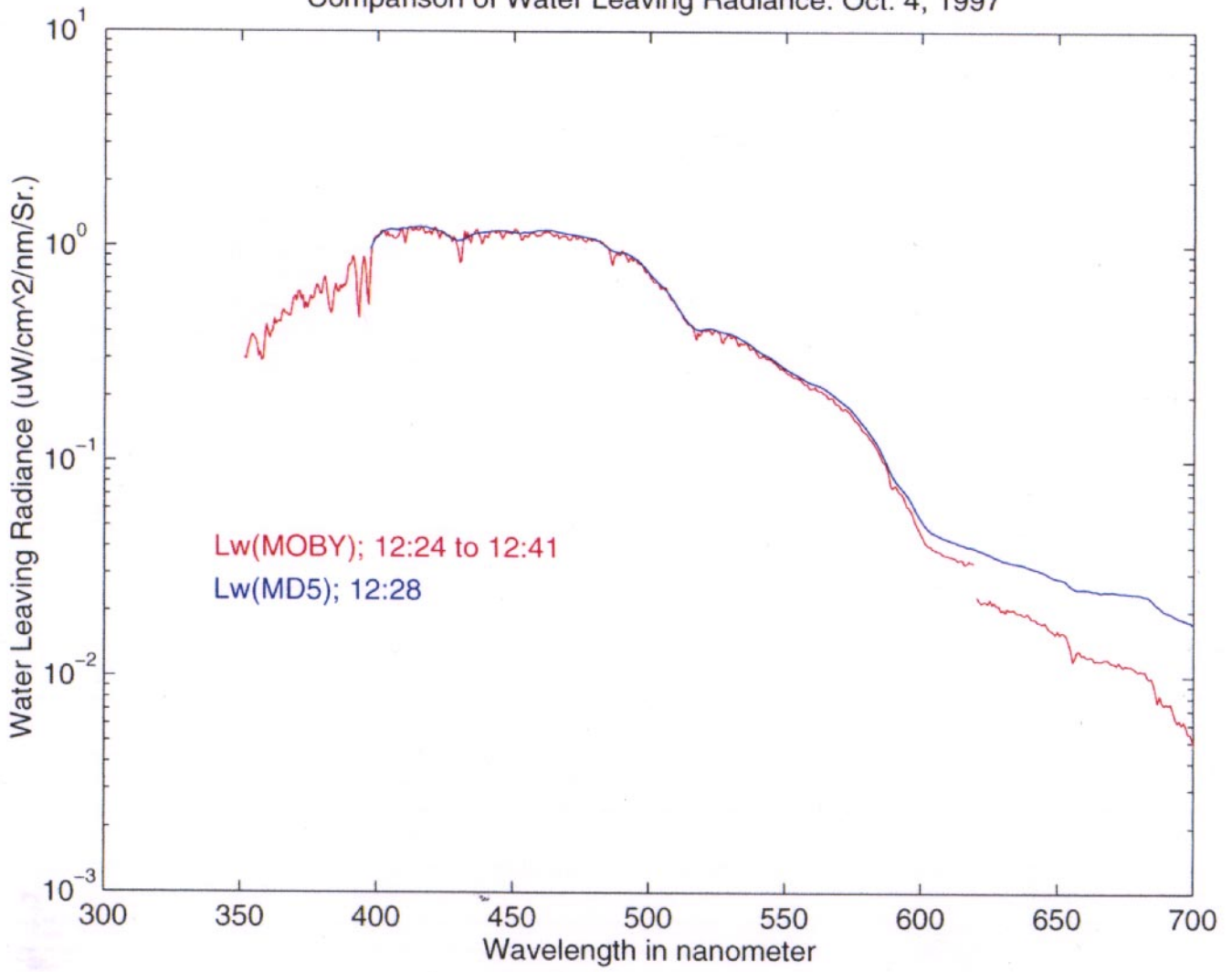
MOBY205 (24 Jul 98 - 22:48) and MOBY206 (24 Jul 98 - 22:47)



Comparison Lw (Normalized by Es): Sept. 26, 1997



Comparison of Water Leaving Radiance: Oct. 4, 1997



10/4/1997; MOBY and MD5 data comparison; Data are acquired at the same time

Wavelength	Lw(Md5)	Lw(MOBY)	%Diff
411.8927	1.2173	1.2134	0.320381
443.628	1.1765	1.1726	0.331492
489.7883	0.9365	0.9365	0
520.0811	0.4122	0.4086	0.873362
554.7113	0.2505	0.2453	2.075848
610.9592	0.04361	0.03637	16.6017