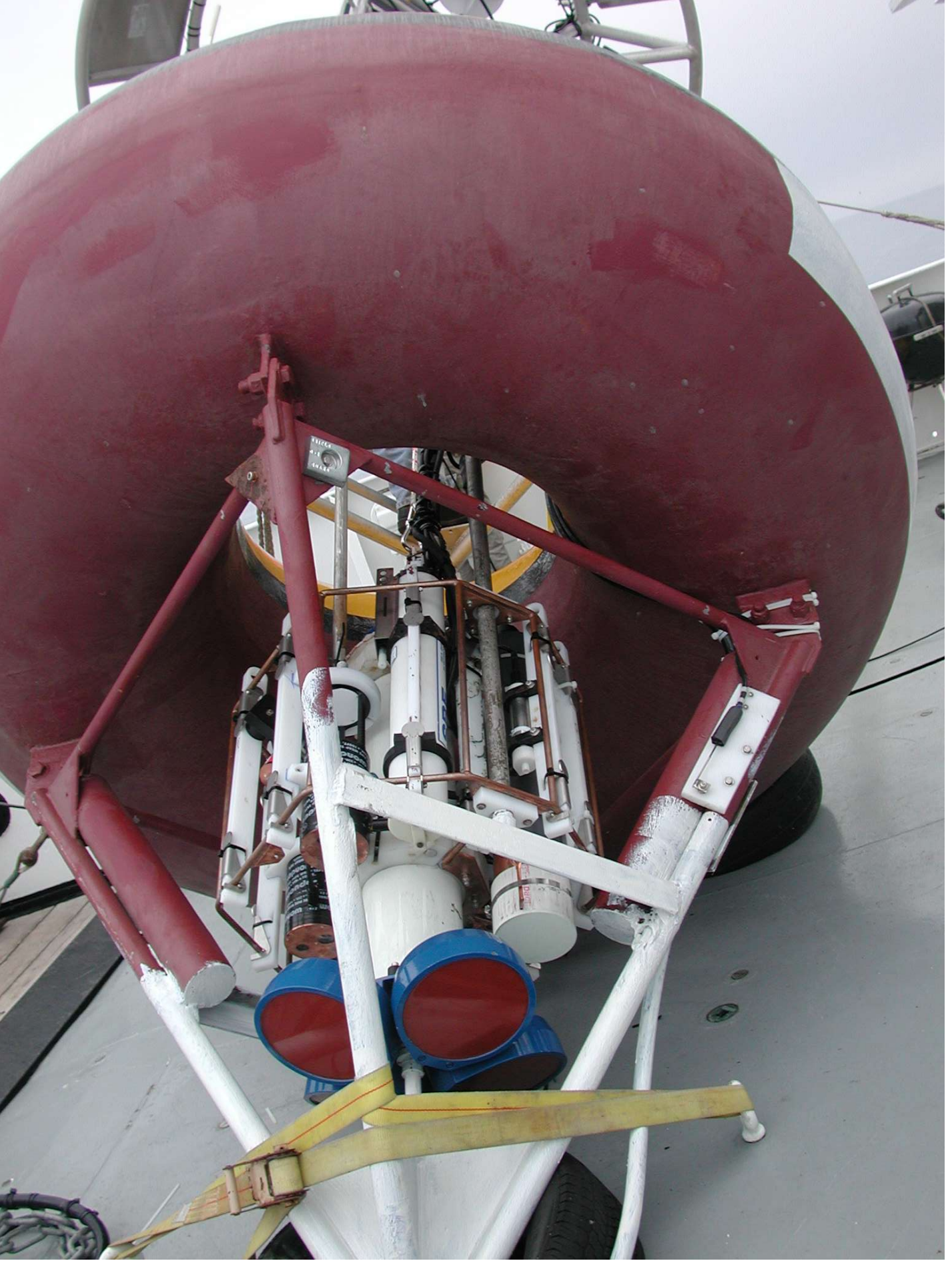
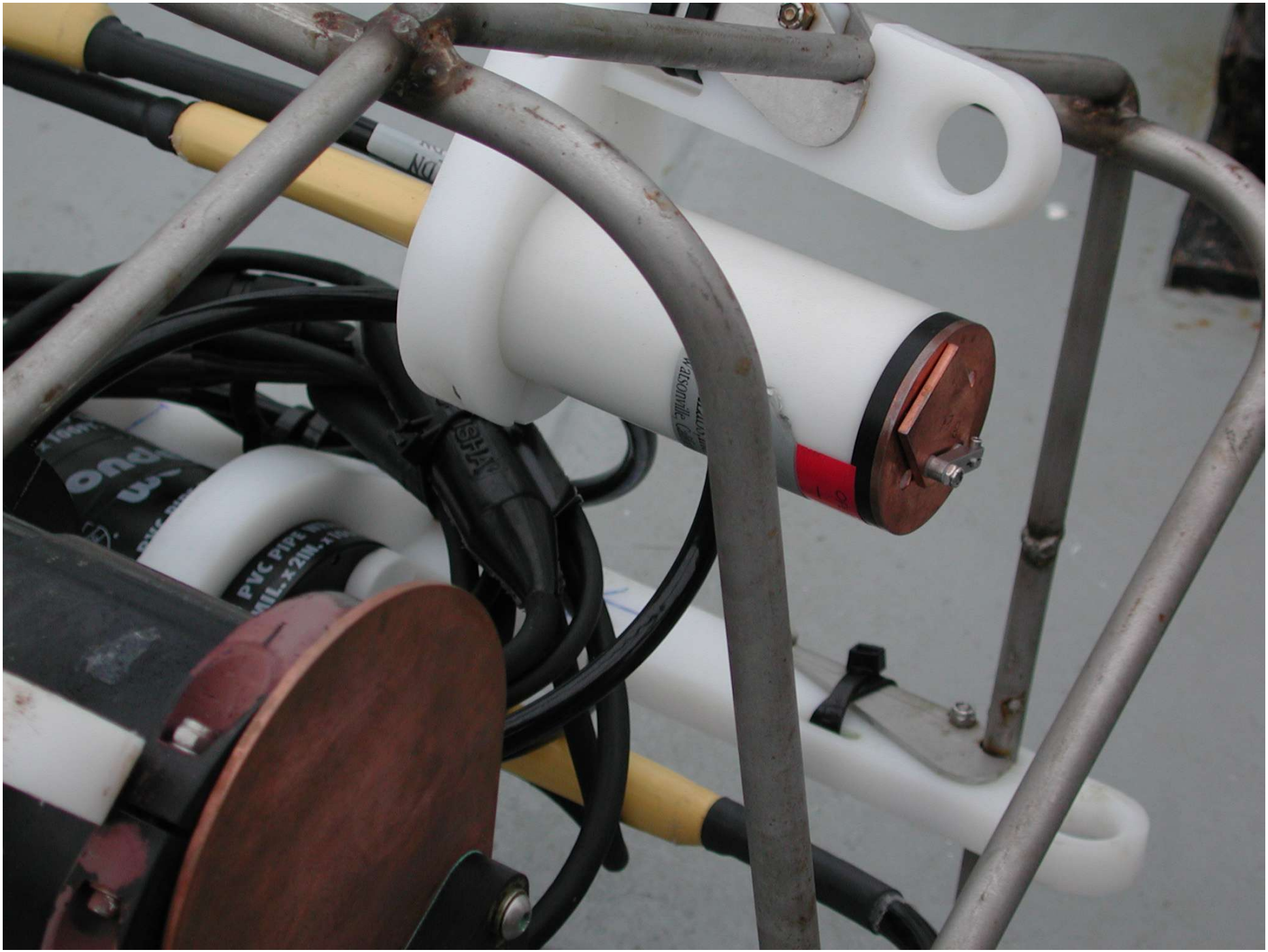
Day 3

- Platforms
- Biological sensors
- Chemical sensors

Bio (optical) instruments

- Fluorometers
- Transmissometers
- Backscatter sensors
- Absorption meters
- Radiance sensors
- Irradiance sensors
- Fast repetition rate fluorometer (bacteria)
- Molecular probes





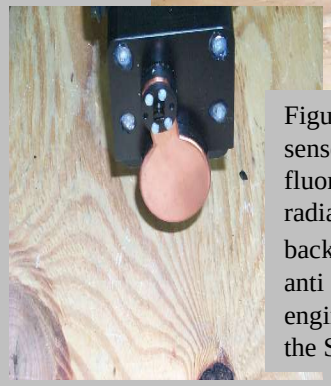
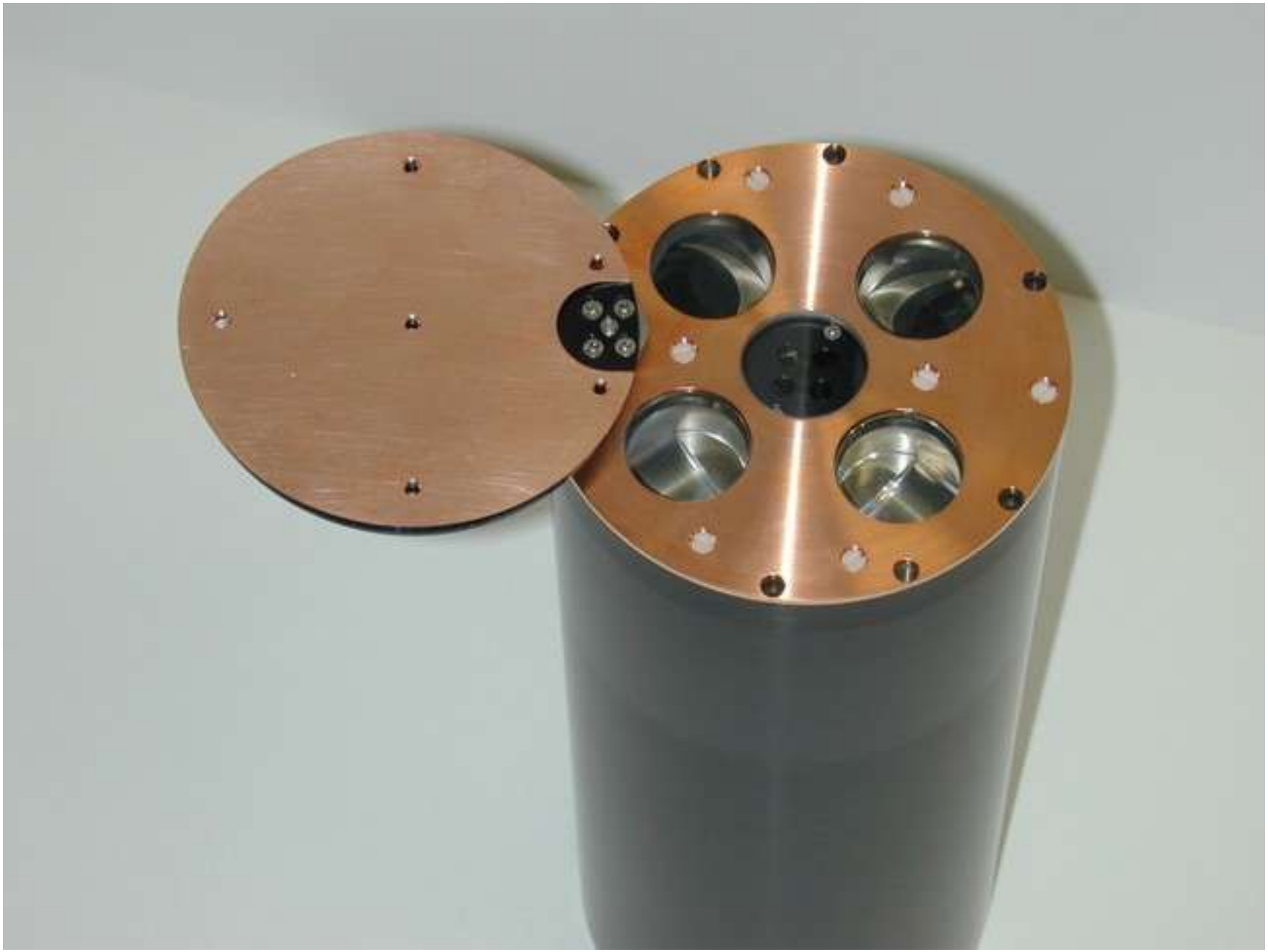
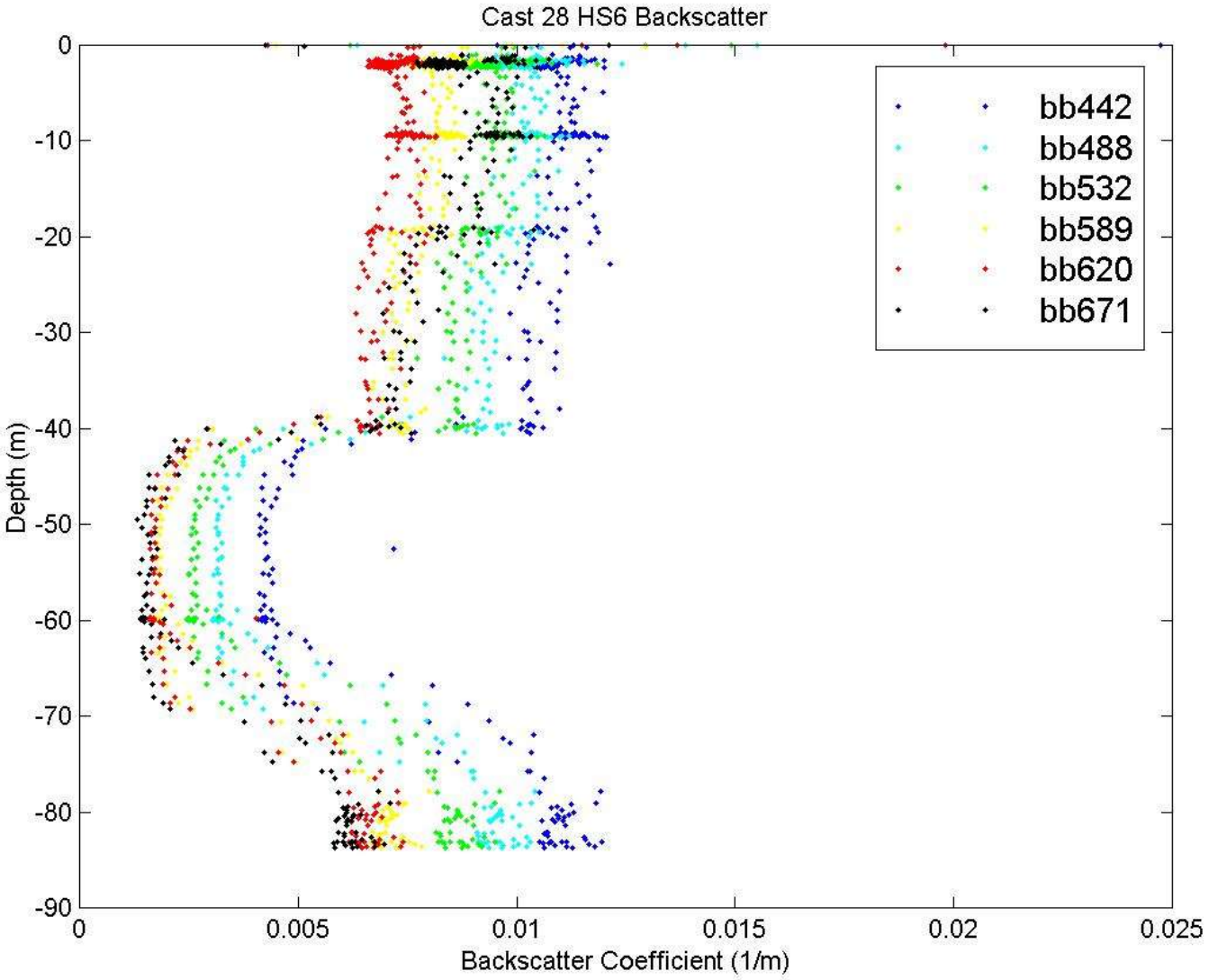


Figure 2. (Above) the UCSB BLOOMS-II mooring package included sensors for determination of optical backscattering, chlorophyll fluorescence, downwelling irradiance (4 wavelengths) , and upwelling radiance (4 wavelengths). (Upper right) The WET Labs backscattering and fluorescence sensors incorporated newly designed anti -fouling shutters developed for this project (Lower left). UCSB engineers developed an external shutter module for incorporation with the Satlantic downwelling and upwelling optical sensors.

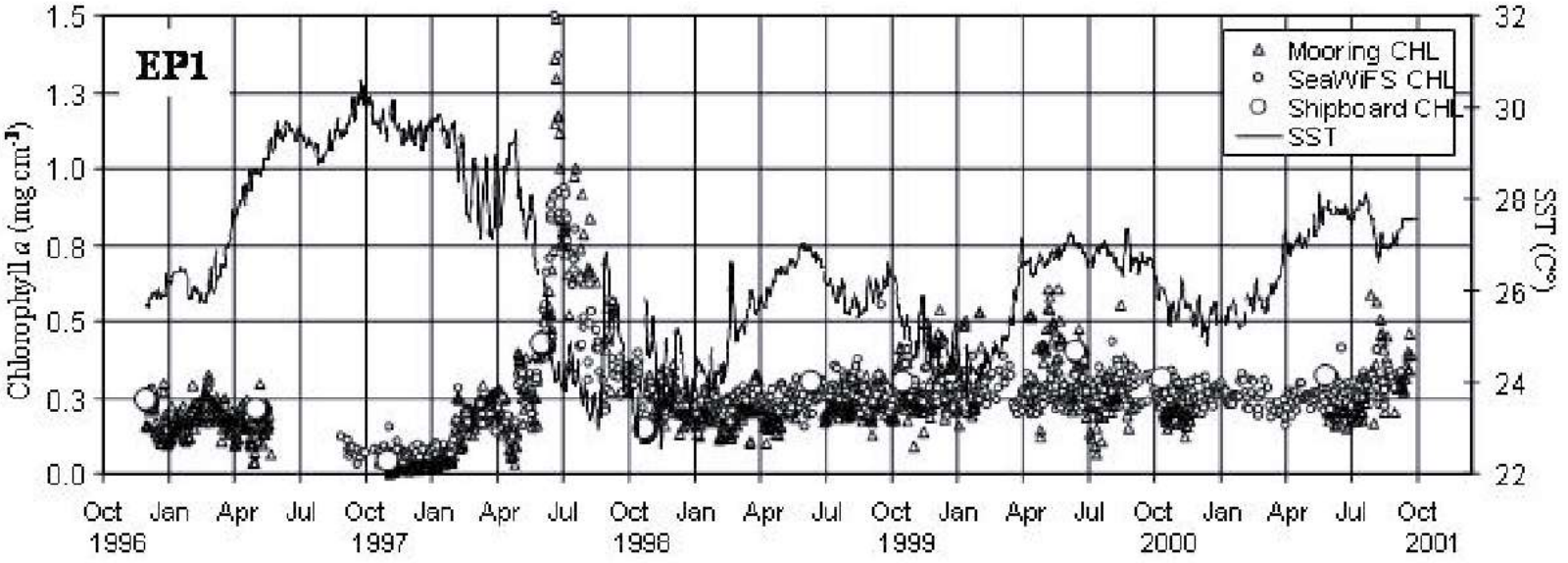
Partially opened shutter after deployment.

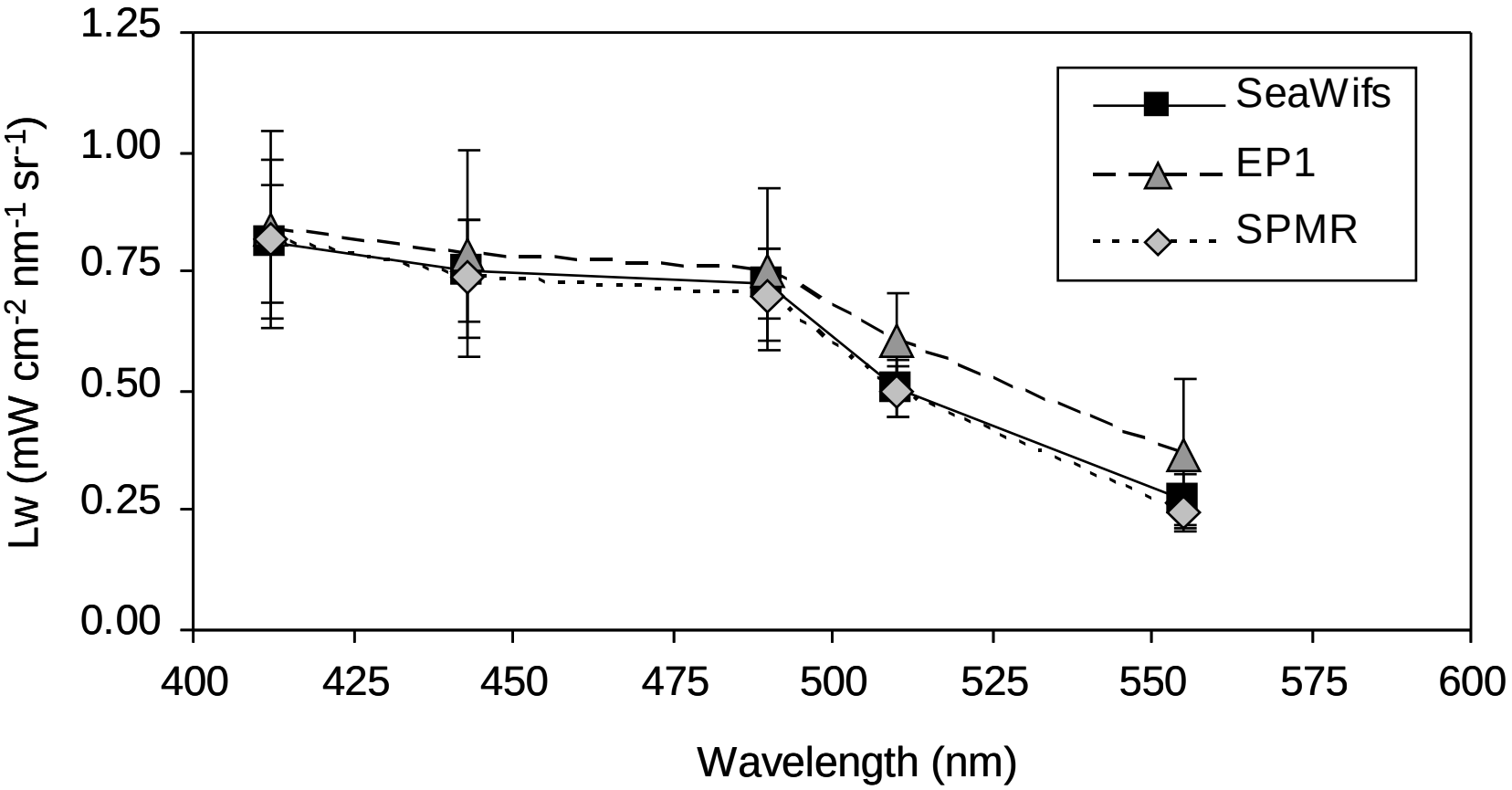
Figure 3. Fouling remains one of the foremost challenges in deploying instruments over longer time periods. The above photographs show the UCSB/ WET Labs' optical packages after a 4-month deployment. Note that while the instrument packages are heavily fouled, optical surfaces remained in tact.




Cast 28 HS6 Backscatter
Depth (m)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
0
0.005
0.01
0.015
0.02
0.025
Backscatter Coefficient (1/m)
bb442
bb488
bb532
bb589
bb620
bb671

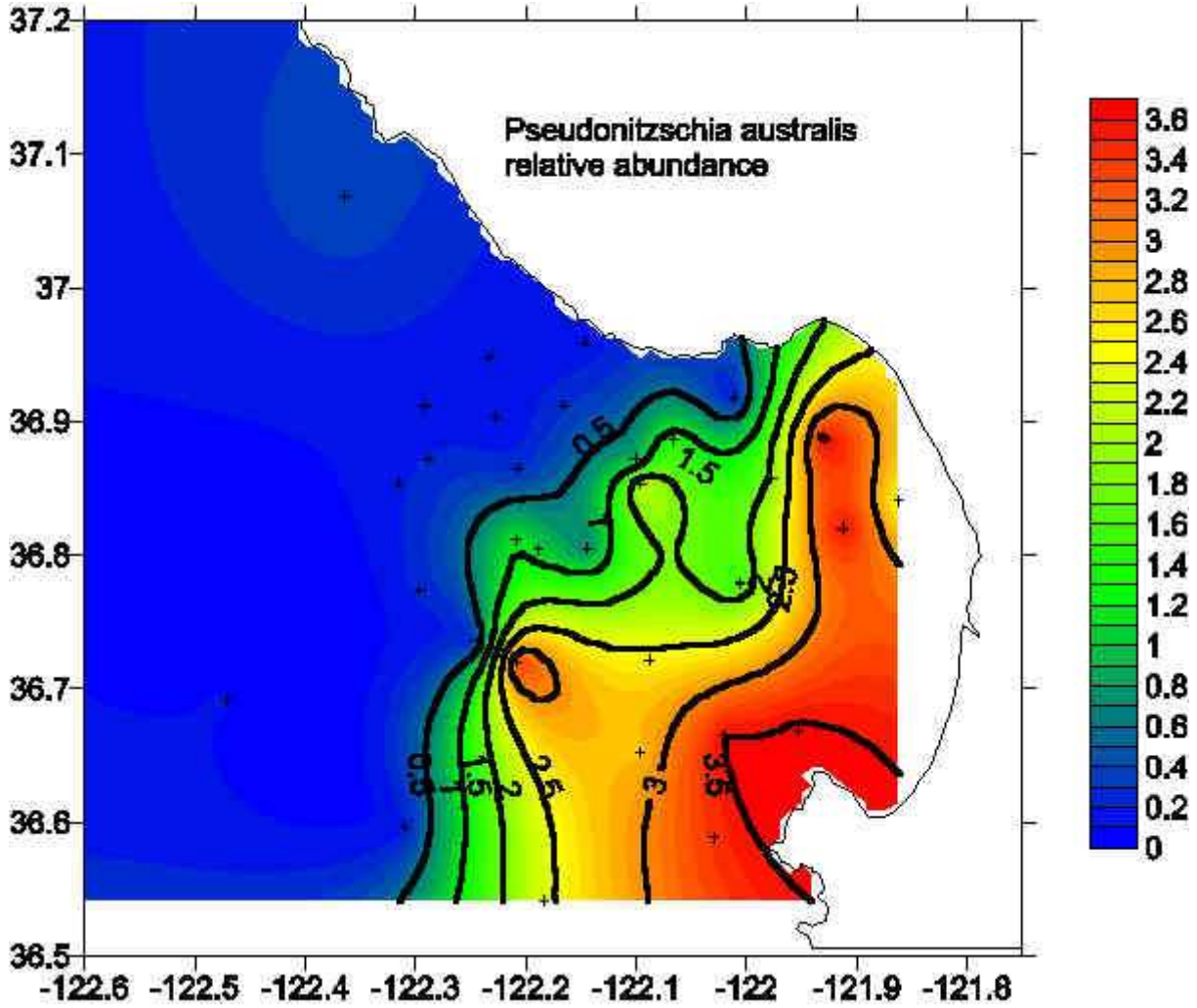

3
CHAVEZ EXPRESS


EP1
Mooring CHL
SeaWiFS CHL
Shipboard CHL
SST
Chlorophyll a (mg cm-3)
SST (C°)
1.5
1.3
1.0
0.8
0.5
0.3
0.0
32
30
28
26
24
22
Oct 1996
Jan
Apr
Jul
Oct 1997
Jan
Apr
Jul
Oct 1998
Jan
Apr
Jul
Oct 1999
Jan
Apr
Jul
Oct 2000
Jan
Apr
Jul
Oct 2001


1.25
1.00
0.75
0.50
0.25
0.00
Lw (mW cm-2 nm-1 sr-1)
400
425
450
475
500
525
550
575
600
Wavelength (nm)
SeaWifs
EP1
SPMR


Quantix
technology


FIRE
540


Pseudonitzschia australis
relative abundance
37.2
37.1
37
36.9
36.8
36.7
36.6
36.5
-122.6
-122.5
-122.4
-122.3
-122.2
-122.1
-122
-121.9
-121.8
0.5
1.5
2.5
3
3.5
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0