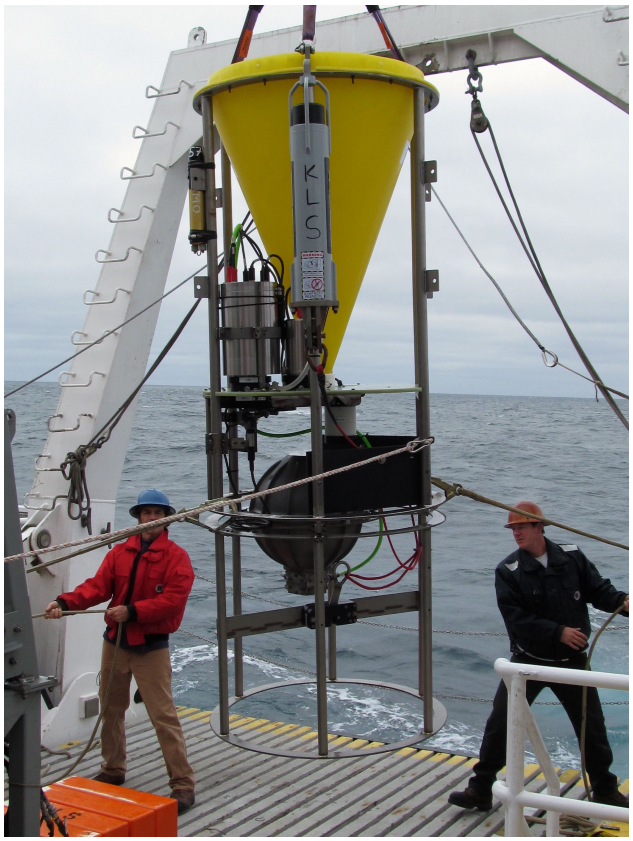
Sedimentation Event Sensor

The Monterey Bay Aquarium Research Institute's SES is a modified McLane PARFLUX Mark78H-21 sediment trap. The trap's 21 sample bottles are replaced with a translucent sample plate. A digital camera captures both front- and back-lit macro images of the sample plate, and a fluorometer measures the fluorescence of the sample at two wavelengths. Samples are discarded after they are processed. The instrument is self-contained, with the battery providing enough energy to process as many as 14 samples per day for one year. The sample interval is adjustable in software.



Depth Rating: 5000 m
Frame Height: 2.20 m
Frame Diameter: 0.85 m
Weight in Air / Water: 140 kg / 100 kg

Camera: Prosilica GC2450C, 5 megapixel
Sample Plate Diameter: 25 mm
Image Resolution: 72 pixels / mm
Lighting: Front- and back-side white LEDs
Fluorometer : 590 nm and 690 nm

Controller: 200 MHz ARM9 on PC/104
with custom low-power sleep circuit
Software: Linux running Ruby application code
Data Storage: 32 GB compact flash

Battery: 2.5 kWh alkaline (1300 samples)
or 9.8 kWh lithium (5200 samples)