

Trans-Ocean Buoy Network (TAO/TRITON) array to recognize the introduction of TRITON mooring array (<http://www.jamstec.go.jp/jamstec/TRITON/>) of buoys in the western Pacific by the Japan Marine Science and Technology Center (JAMSTEC); these moorings replaced 12 ATLAS buoys along 137°E, 147°E, and 156°E in 1999.

**EqPac:** The first moored bio-optical measurements in the equatorial Pacific (0°, 140° W) were conducted by the UCSB (formerly USC) during JGOFS in 1991-1993 (Foley *et al.*, 1998). More recently, two selected ATLAS buoys in the equatorial Pacific were modified by MBARI to accommodate robust instrument packages for open-ocean bio-optical and biogeochemical measurements as part of SIMBIOS ocean color validation (Figure 3.5). The designs of the two moorings, commonly referred to by MBARI as EP1 (0°, 155°W) and EP2 (2°S, 170°W), are TAO ATLAS buoys modified to host optical and chemical instruments with the objectives:

1. To obtain near real-time moored bio-optical measurements, including  $L_{WN}$ , at two locations in the equatorial Pacific for calibration-validation of satellite ocean color sensors.
2. To obtain optical profiles at up to 30 stations per year in the equatorial Pacific, including derivation of  $L_{WN}$ , for calibration-validation of satellite ocean color sensors.
3. To use hyperspectral optical data from Monterey Bay and the equatorial Pacific, in conjunction with *in situ* biogeochemical sampling and satellite data, to contribute to bio-optical algorithm development.
4. To determine the spatio-temporal variability in phytoplankton biomass, primary production, carbon dioxide and nutrient distributions, as a result of physical perturbations.

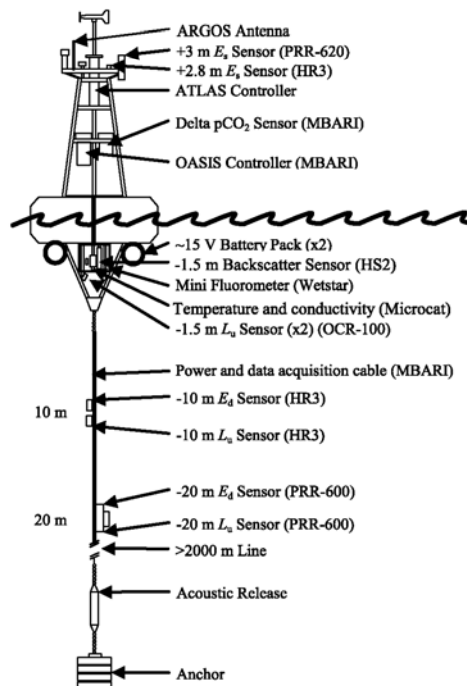


Figure 3.5 Conceptual drawing of the modified ATLAS mooring platform located in the equatorial Pacific (EP1: 0°, 155°W, EP2: 2°S, 170°W). Each optical mooring is equipped with radiance and irradiance sensors, and other equipments labeled above.

**PIRATA:** The project PIRATA (Pilot Research Moored Array in the Tropical Atlantic) maintains a string of moorings in the Equatorial Atlantic Ocean that is equivalent to the Pacific TAO array (Servain *et al.* 1998). PIRATA is a multinational pilot experiment in operational oceanography, with the participation of Brazil, France and the USA. The PIRATA network consists of 12 ATLAS moorings, extending along the equator and two meridional lines. This geographic configuration is designed to monitor persistently strong wind forcing over the