

The Australian Region GLI Validation Program

presented on behalf of

Assoc Professor Mervyn J Lynch

Senior Principal Investigator

School of Physical Sciences

Curtin University of Technology

Perth Western Australia

AUSTRALIA

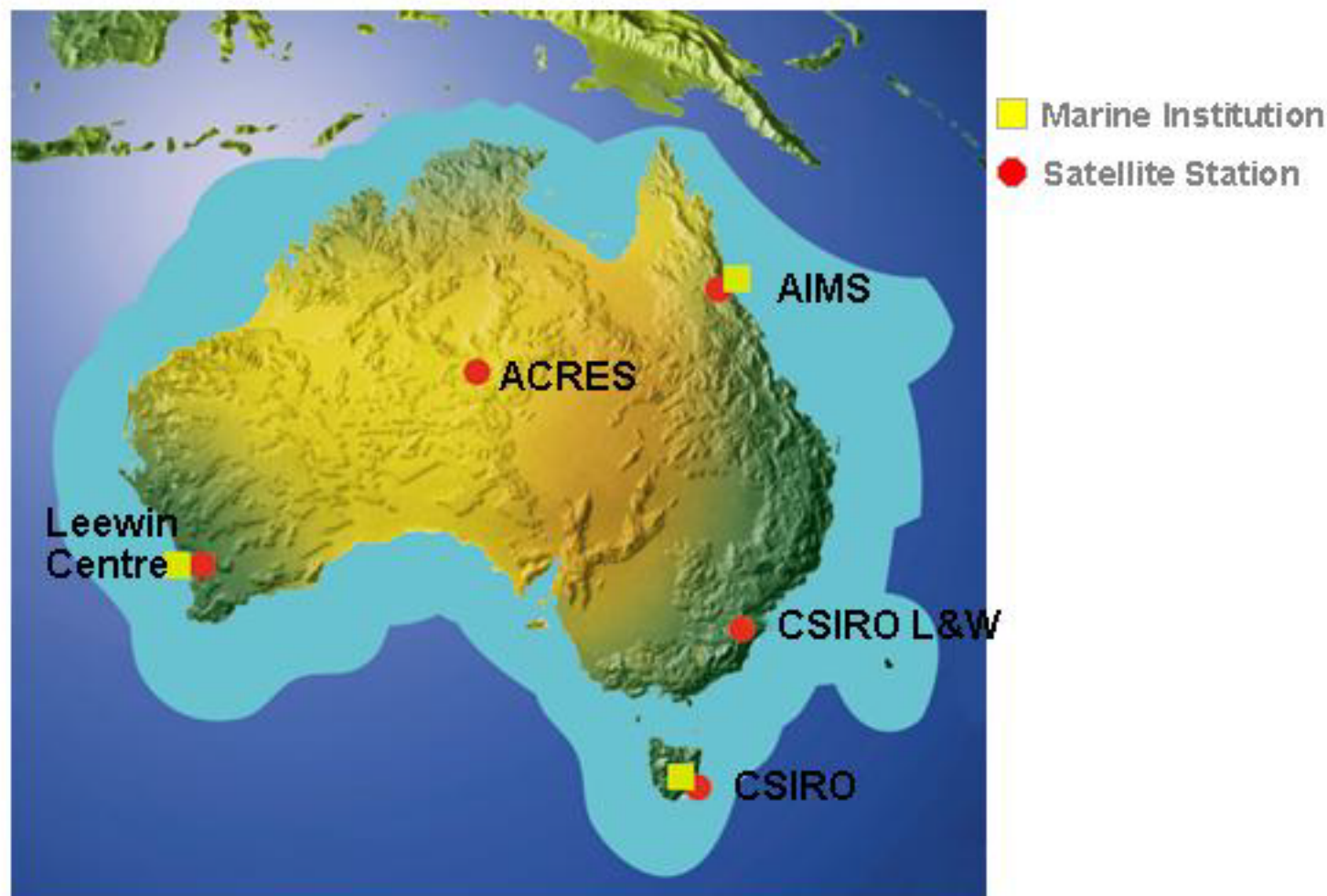
tel (+618) 9266-7540 / 7192

fax (+618) 9266-2377

email <tlynchmj@cc.curtin.edu.au>

<<http://www.curtin.edu.au/curtin/dept/phys-sci/rssrg/research/research.html>>

Major Marine Remote Sensing Facilities in Australia



GLI Ocean Colour Plans

- GLI data for Australian sites
- In-situ validation activities
- Algorithm development
- Aerosol correction - AERONET
- Sediment studies
- Hyperspectral sensing
- Offshore buoy for validation (planned)

Cruise Program for Satellite Validation

- Perth-Singapore cruise (fortnightly)
- Great Barrier Reef cruise program
- Western Australian - several transects
- Antarctic cruise program
- In-situ and underway pigment measurements
- HPLC
- Spectrophotometry
- In-situ radiometers

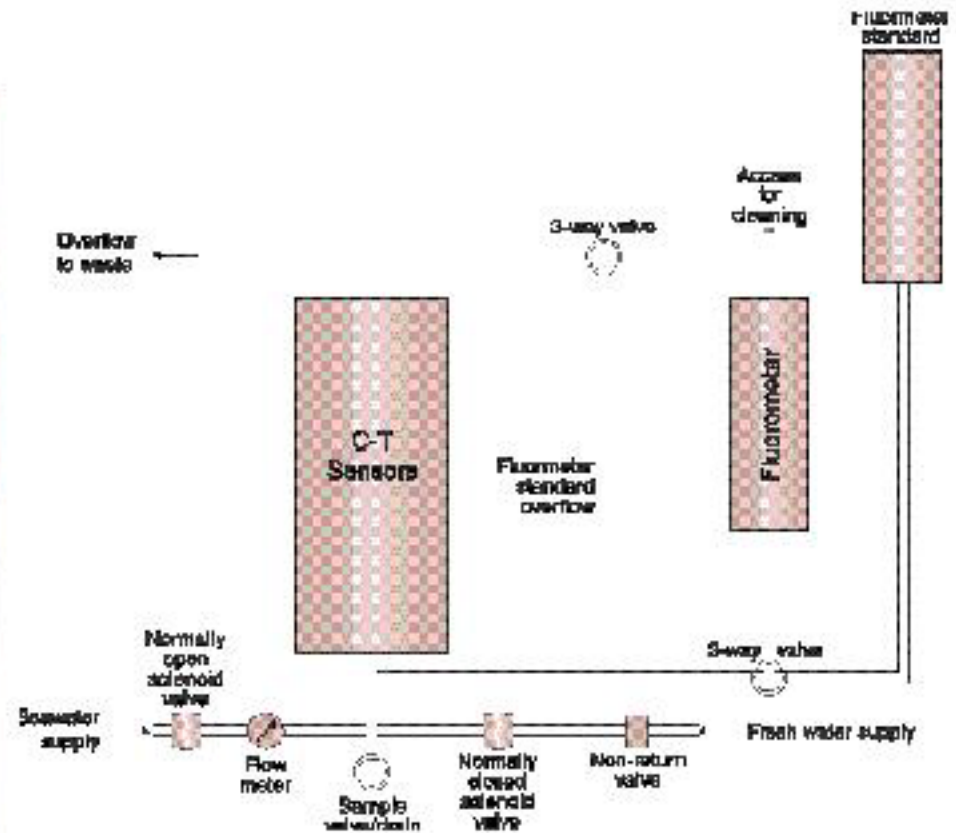
Marine Calibration Validation Program



INSTRUMENTATION

- Dual Zeiss spectrometer
- HobiLabs HydroRad spectrometer
- SIMBAD
- Biospherical profiling radiometer
- HPLC
- Spectrophotometry
- CTD
- Underway fluorescence

Automated Underway T/S₁ Fluorometer



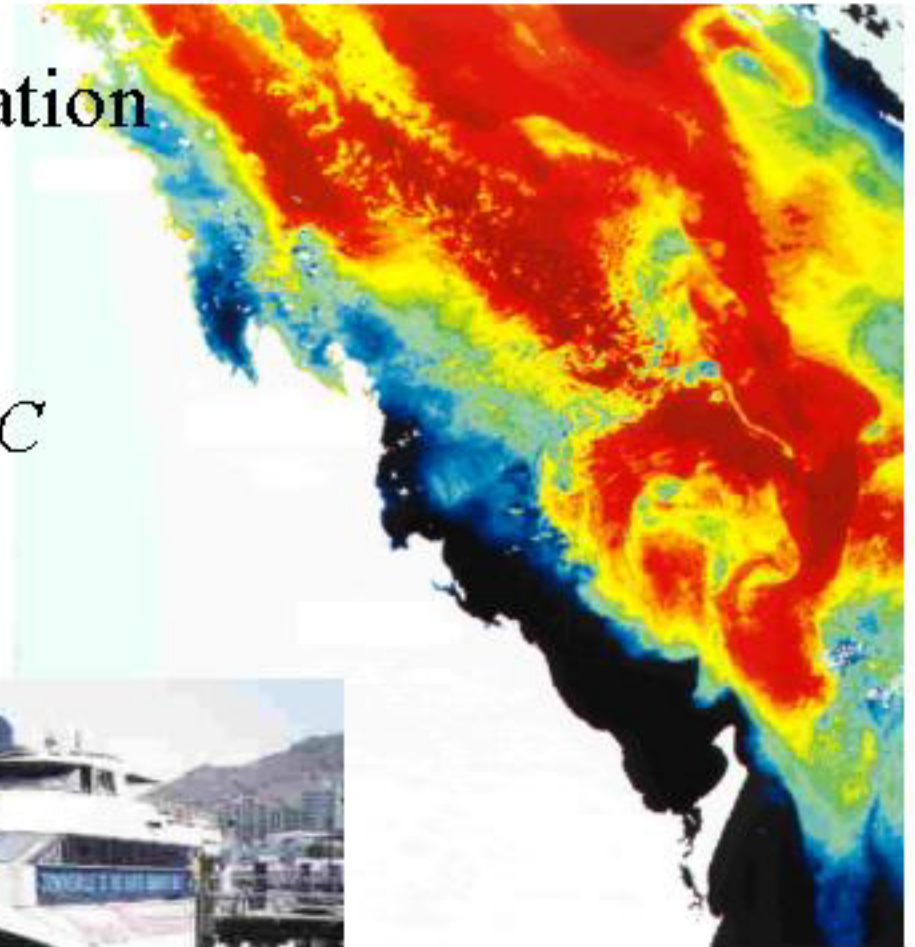
Two main tropical activities

Townsville, Queensland

- Remote sensing of shelf waters - specifically the Great Barrier Reef
- Remote sensing of coral reefs - monitoring coral bleaching

Sea surface temperature

- Calibration & Validation
 - Tropics - *AIMS*
 - Temperate - *CSIRO*
 - Polar - *Antarctic CRC*



Coral bleaching collaboration

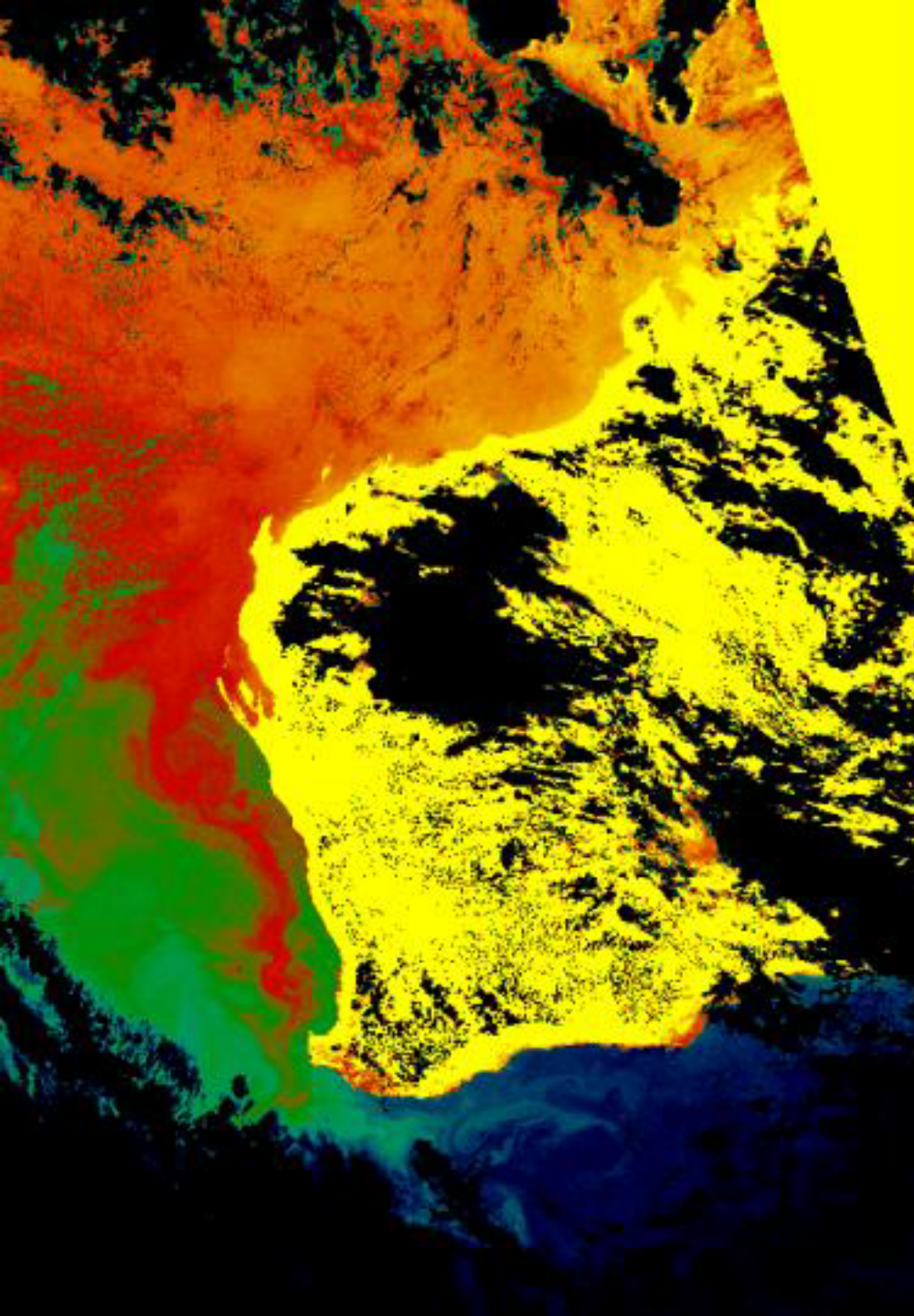
- AIMS
- NOAA
- GBRMPA

Hot

Cool

Bleaching

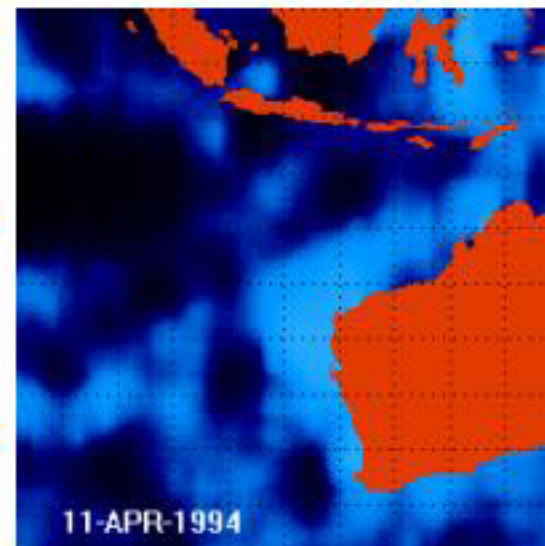
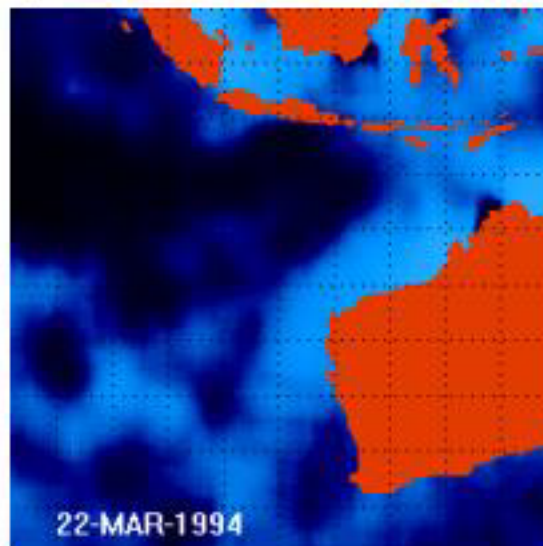
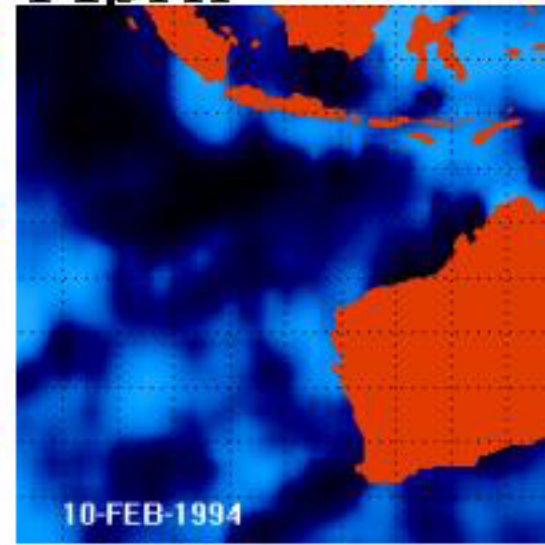
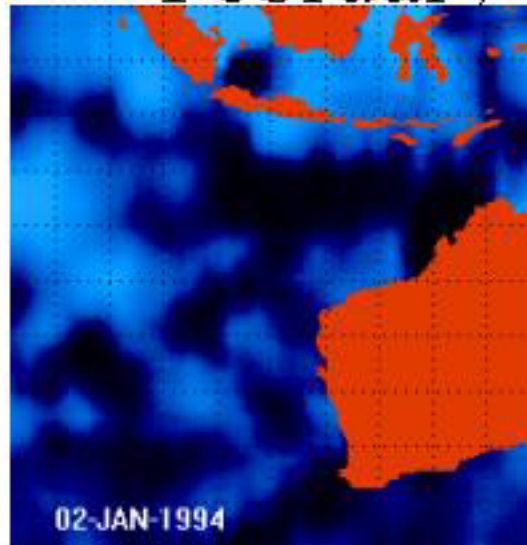




N14-SST

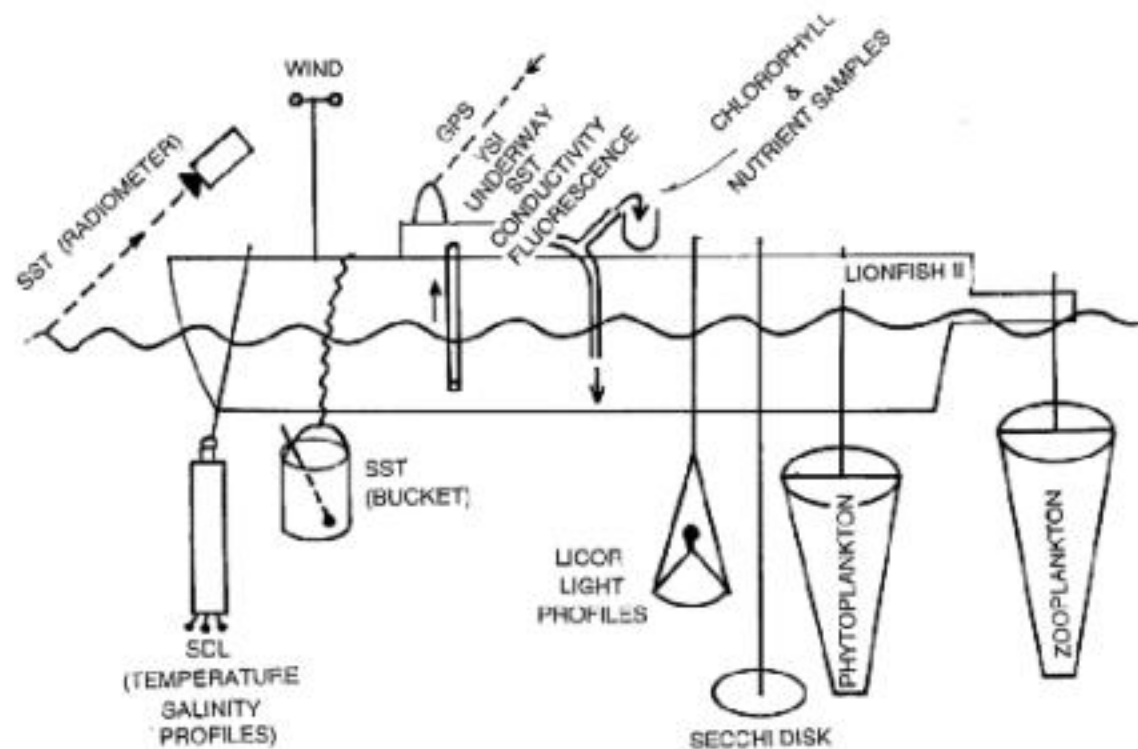
7th January 2000

Indonesian Throughflow in February - April



Hillarys Transect, Perth, Western Australia





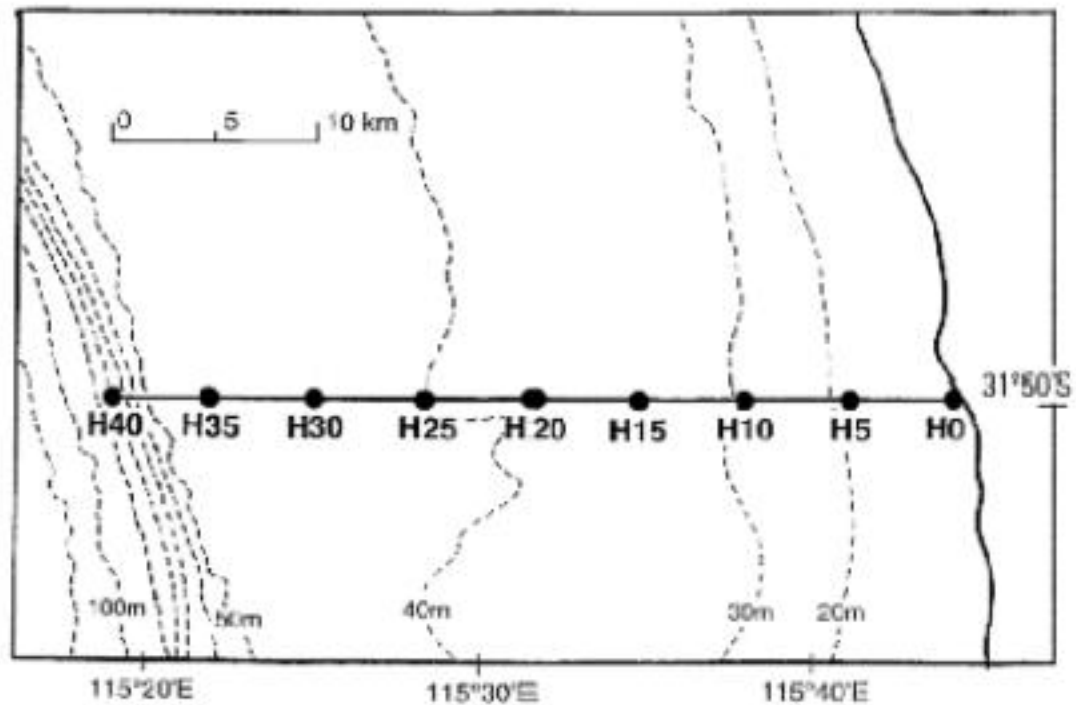
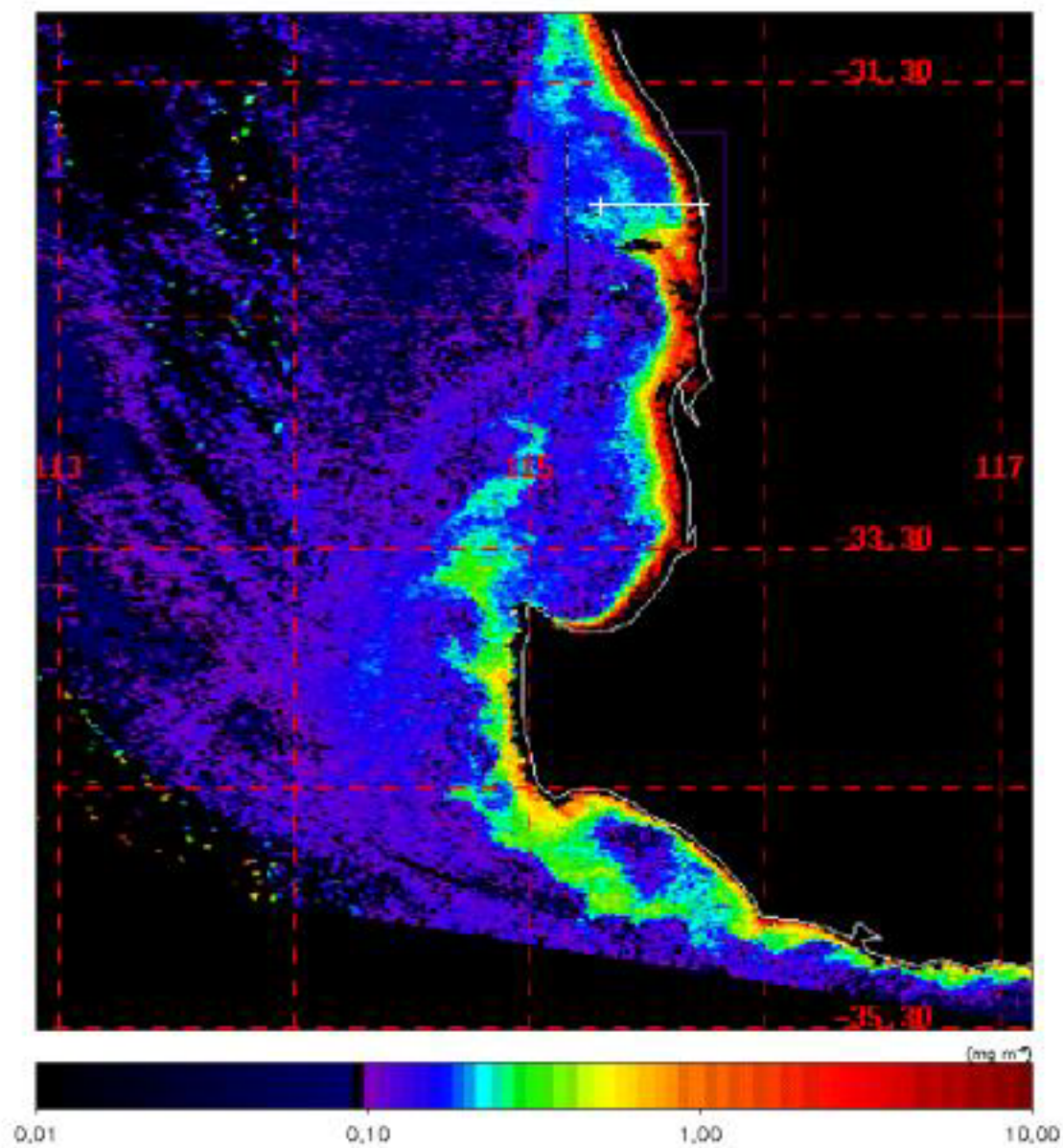


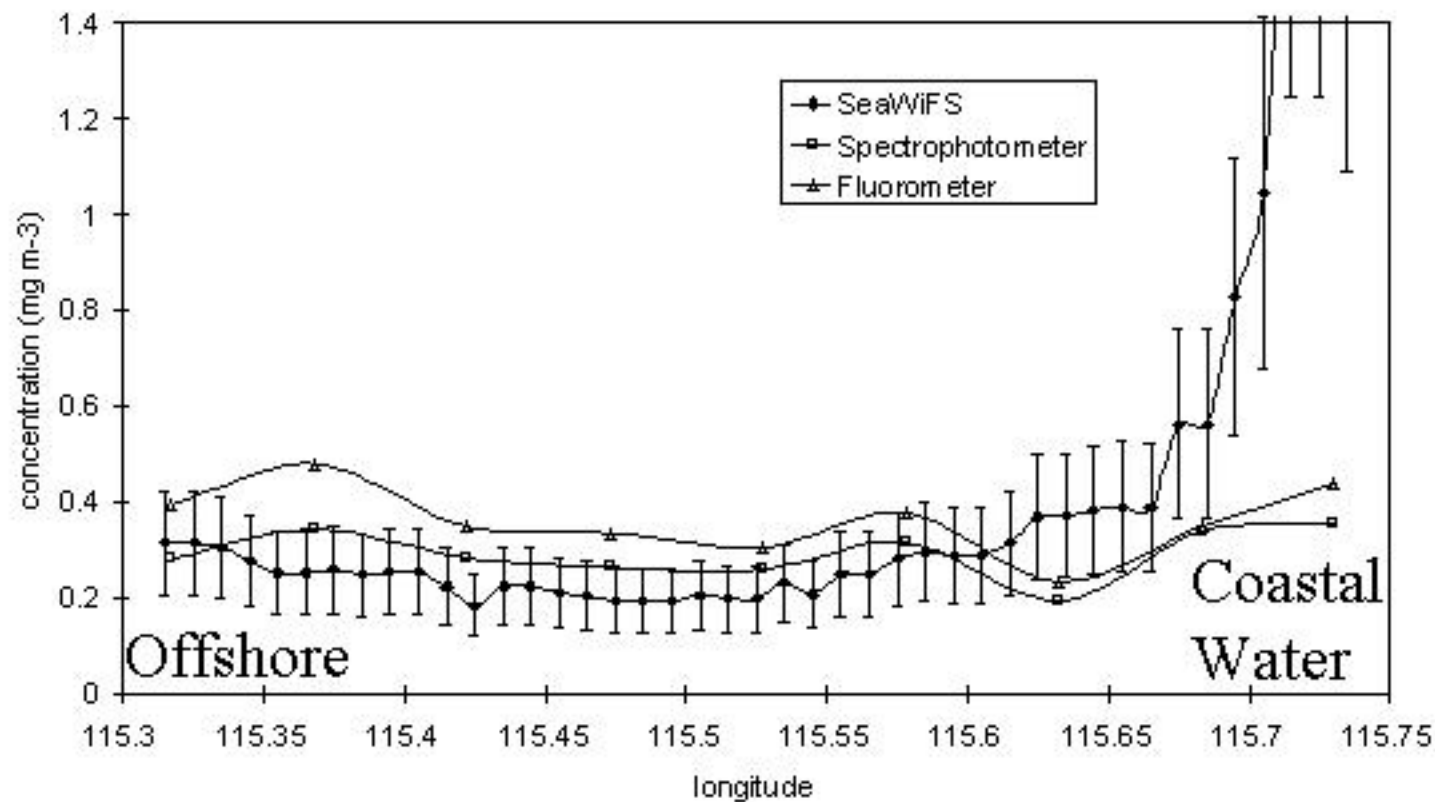
Figure 1: Chart showing the Hillarys transect and station positions, with the main features of the bathymetry.

SeaWiFS chlor_a for March 17, 1998

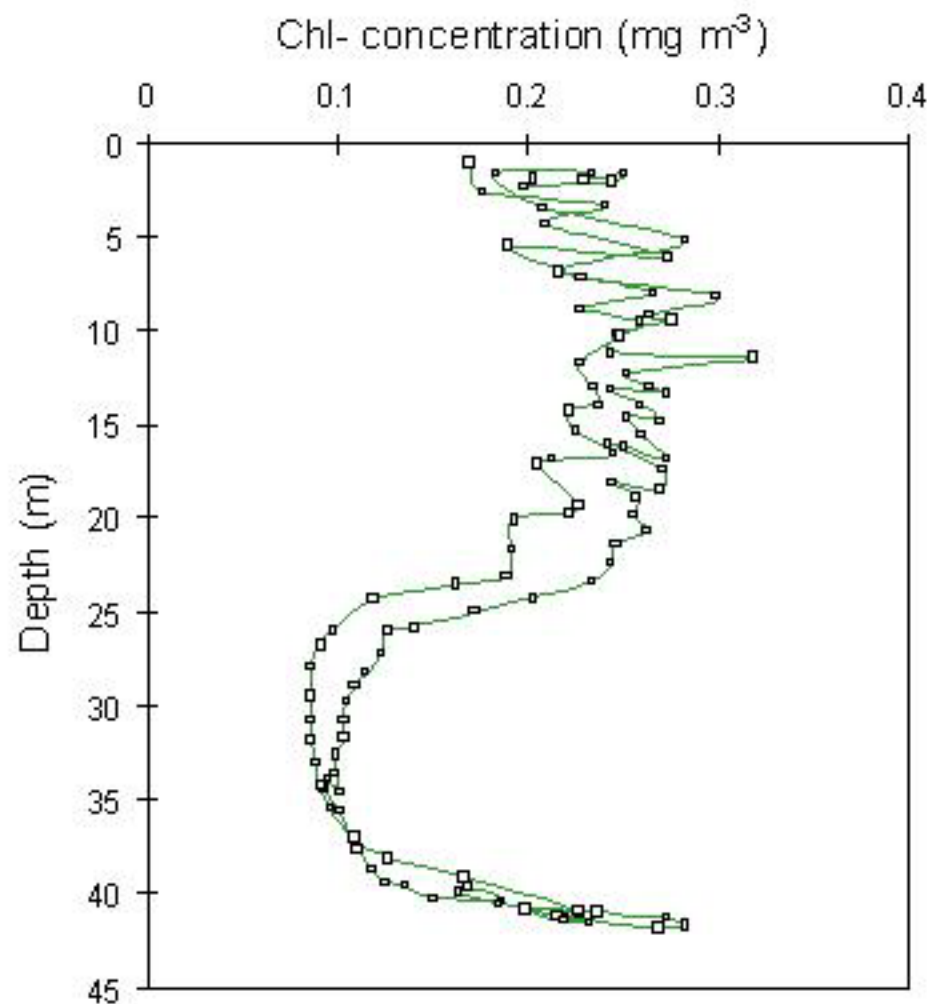


In-situ and SeaWiFS chlorophyll data

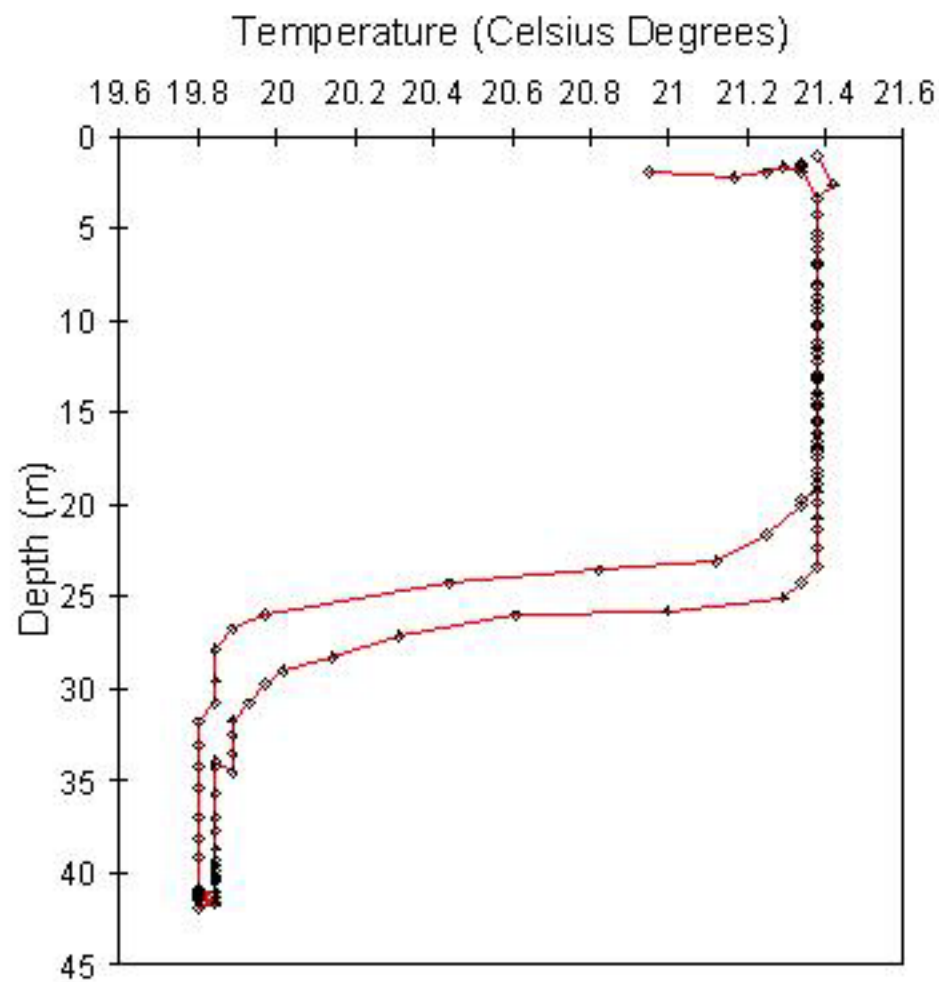
Hillarys Transect 20th October 1998
Chlorophyll data



Biospherical INF300:
Chlorophyll-a Profile
Hillarys transect: 23 June 1998
25 km station

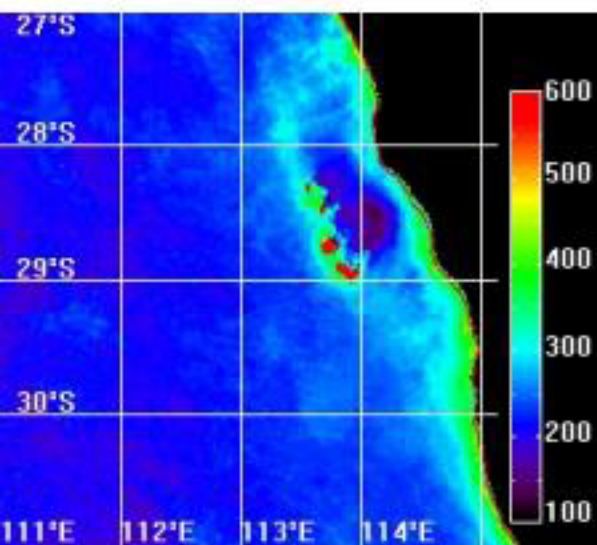


Biospherical INF300:
Temperature Profile
Hillarys transect: 23 June 1998
25 km station

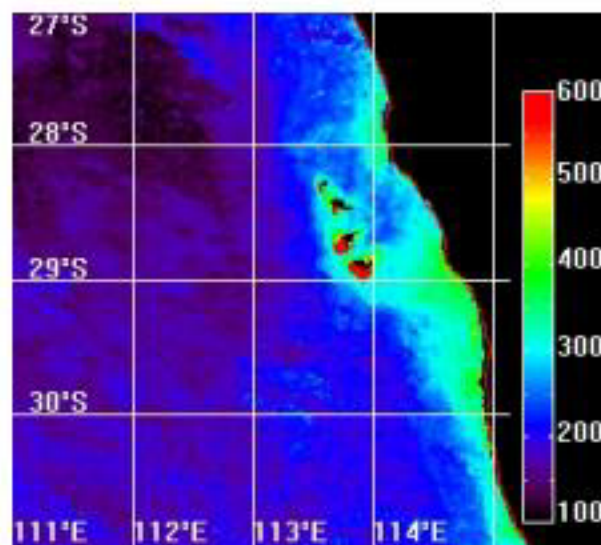


Primary Productivity

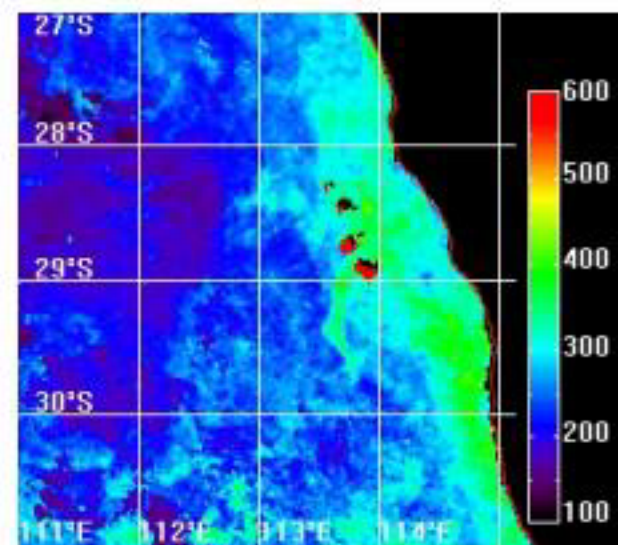
Units: $\text{mg C} / \text{m}^2 / \text{day}$



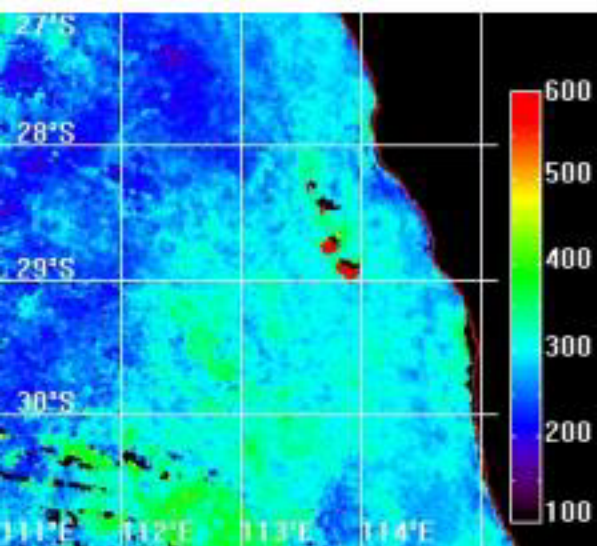
A. January / February 1998



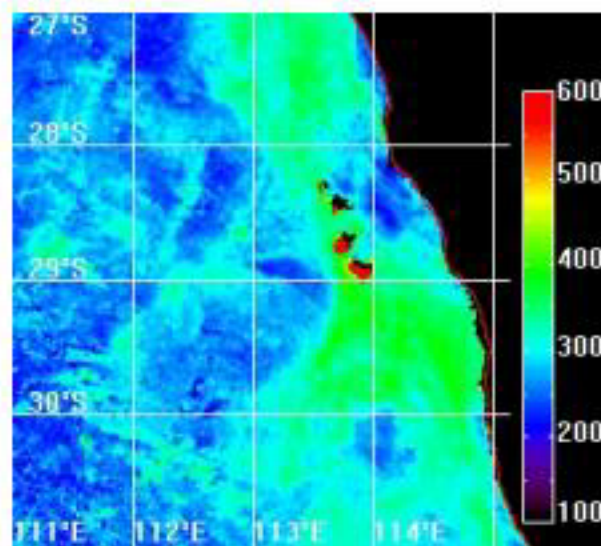
B. March / April 1998



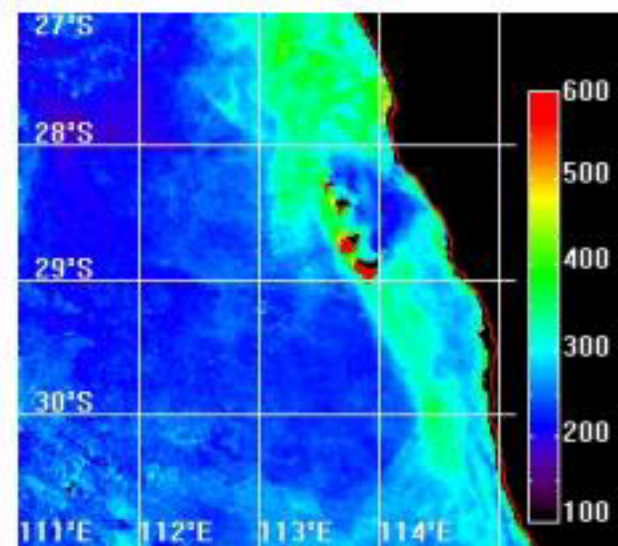
C. May / June 1998



D. July / August 1998

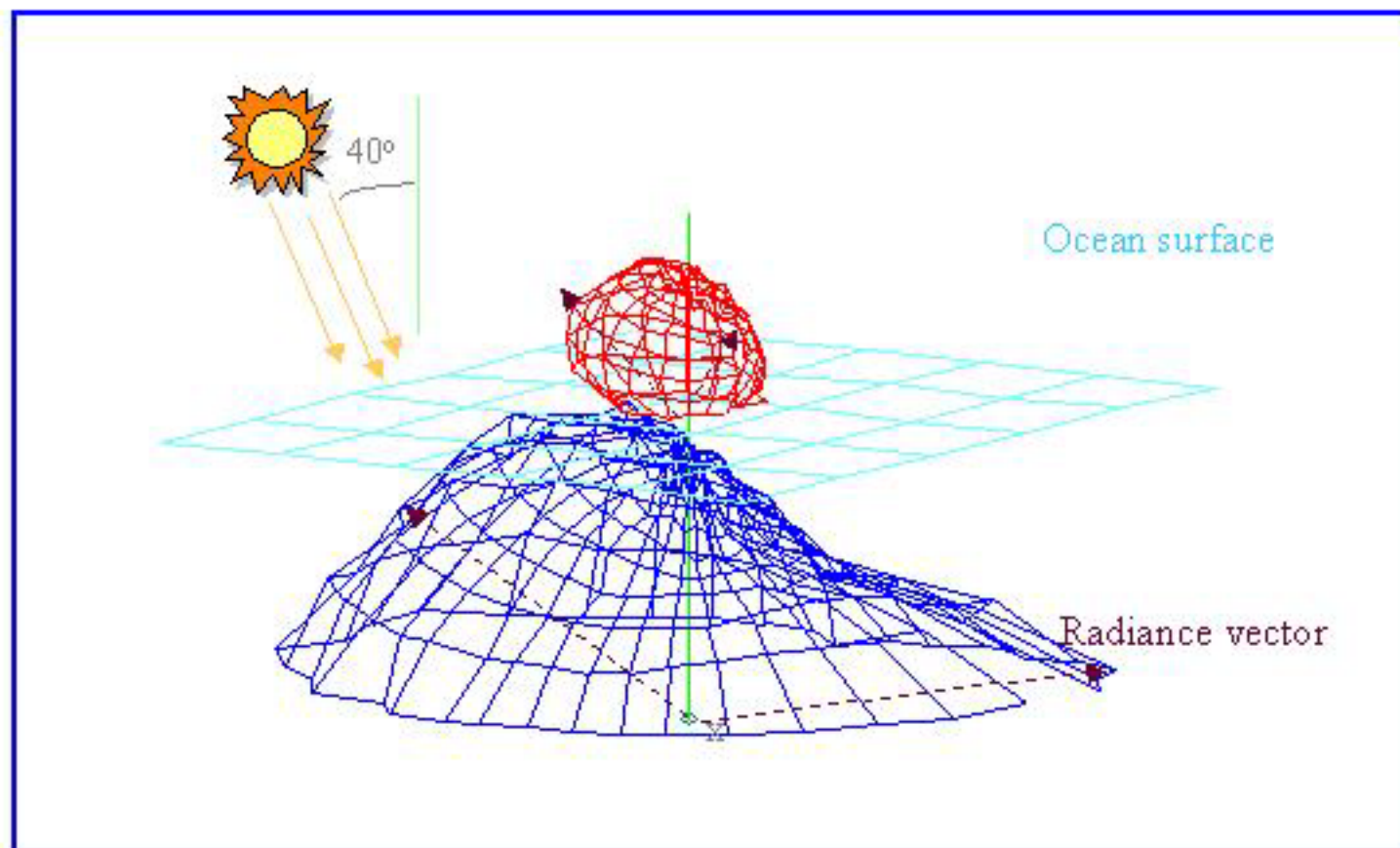


E. September / October 1998

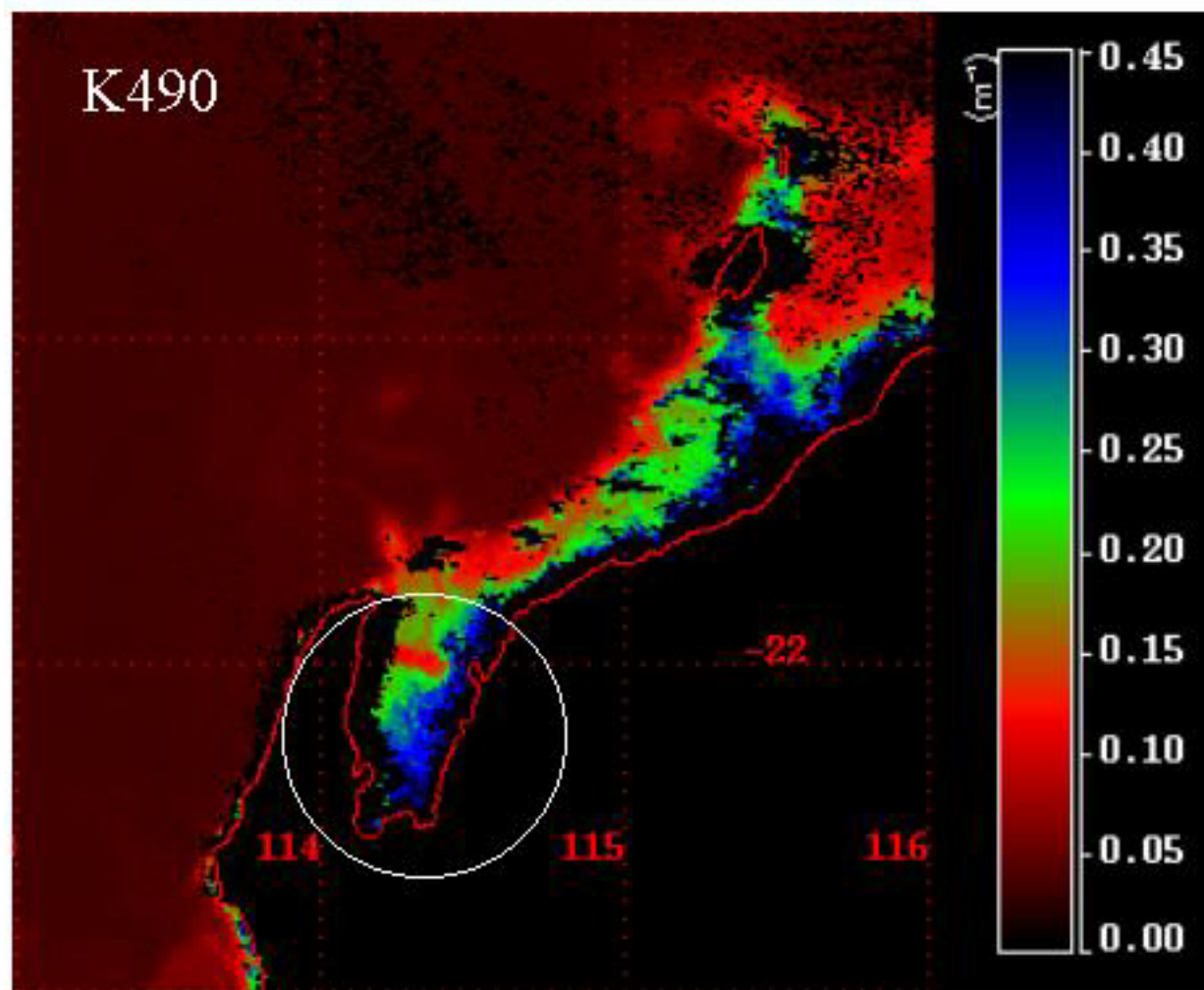


F. November / December 1998

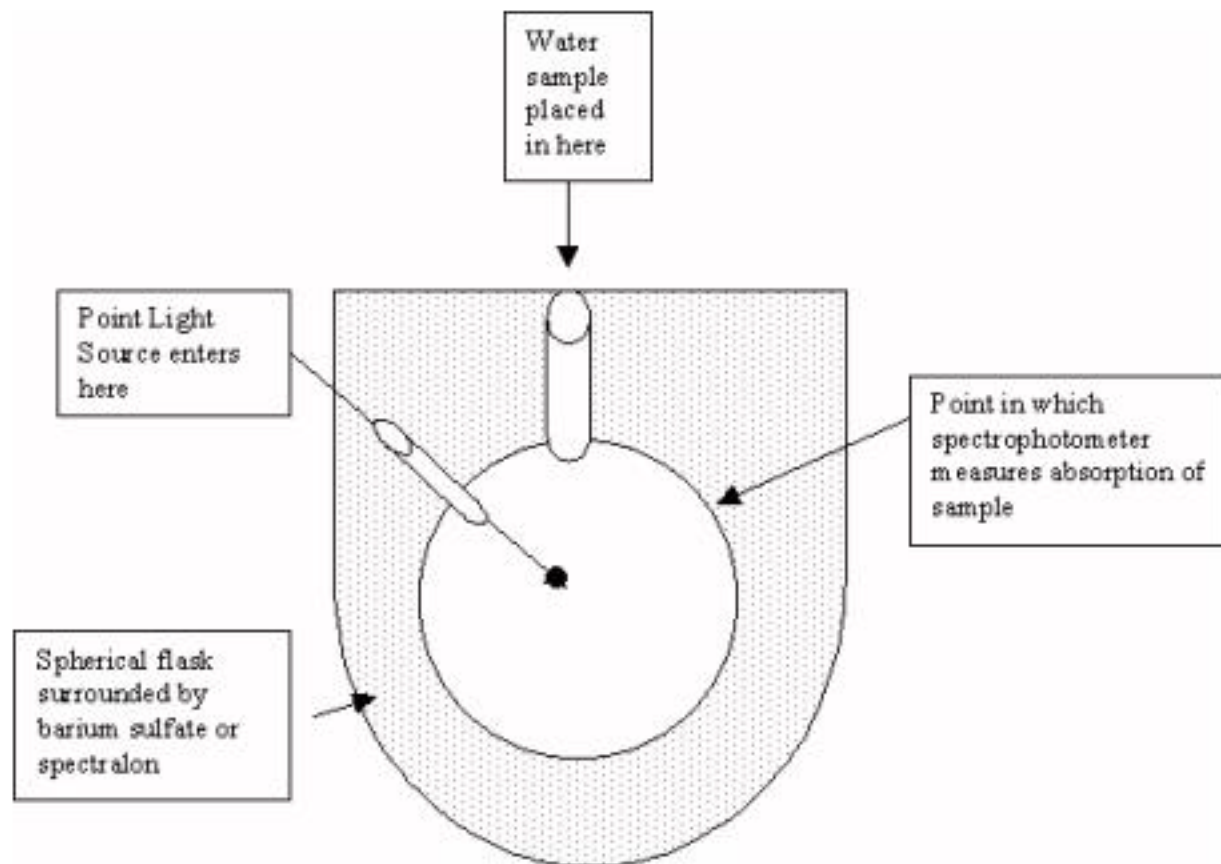
Monte Carlo modelling



North West Shelf Turbidity Project



Point Source Integrating Cavity Absorption Meter (PSICAM)



Measuring Water Absorption (CSIRO)



Sea Surface Temperature

- Algorithm development/atmospheric correction (AVHRR, GLI)
 - seasonal algorithms
 - robust geographically
 - field campaigns
- Validation (radiometry, in situ)
 - dual BB calibrated IR radiometer

Seasonal SST Algorithms

