

# AN ANTARCTIC DATA SET: PALMER LTER PRR DATA 1998-2008

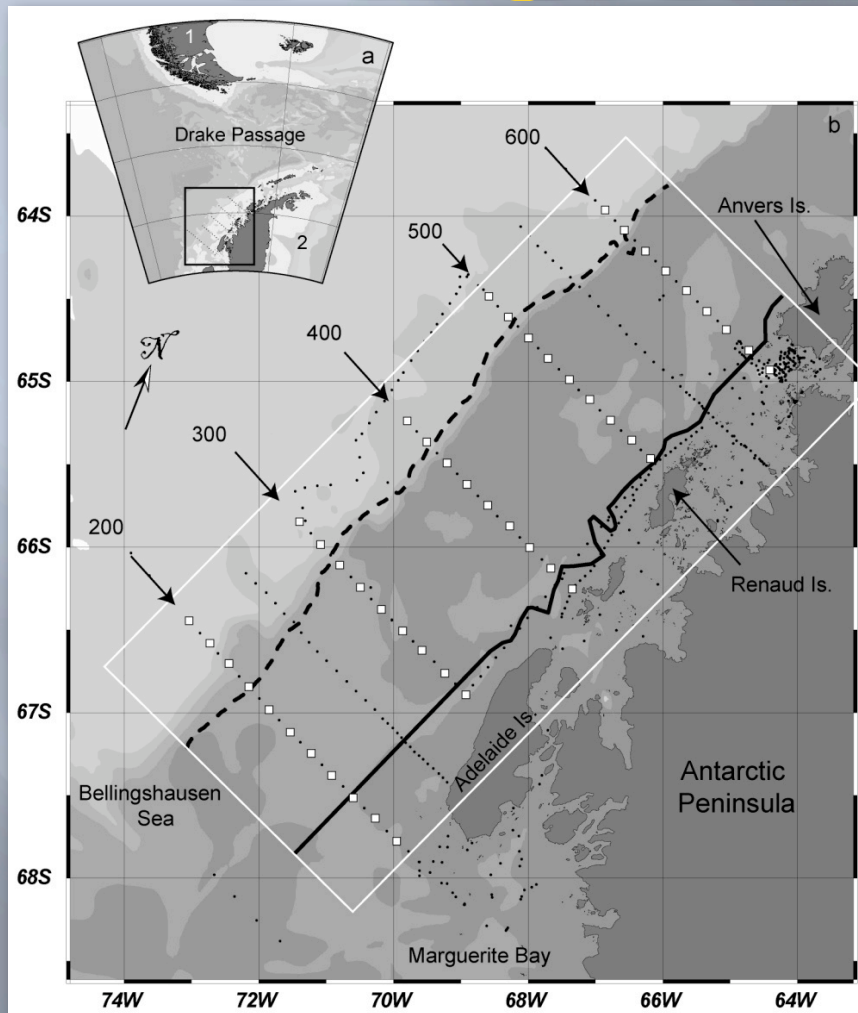
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Maria Vernet

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Scripps Institution of Oceanography  
La Jolla, CA



# Data Collection: Location

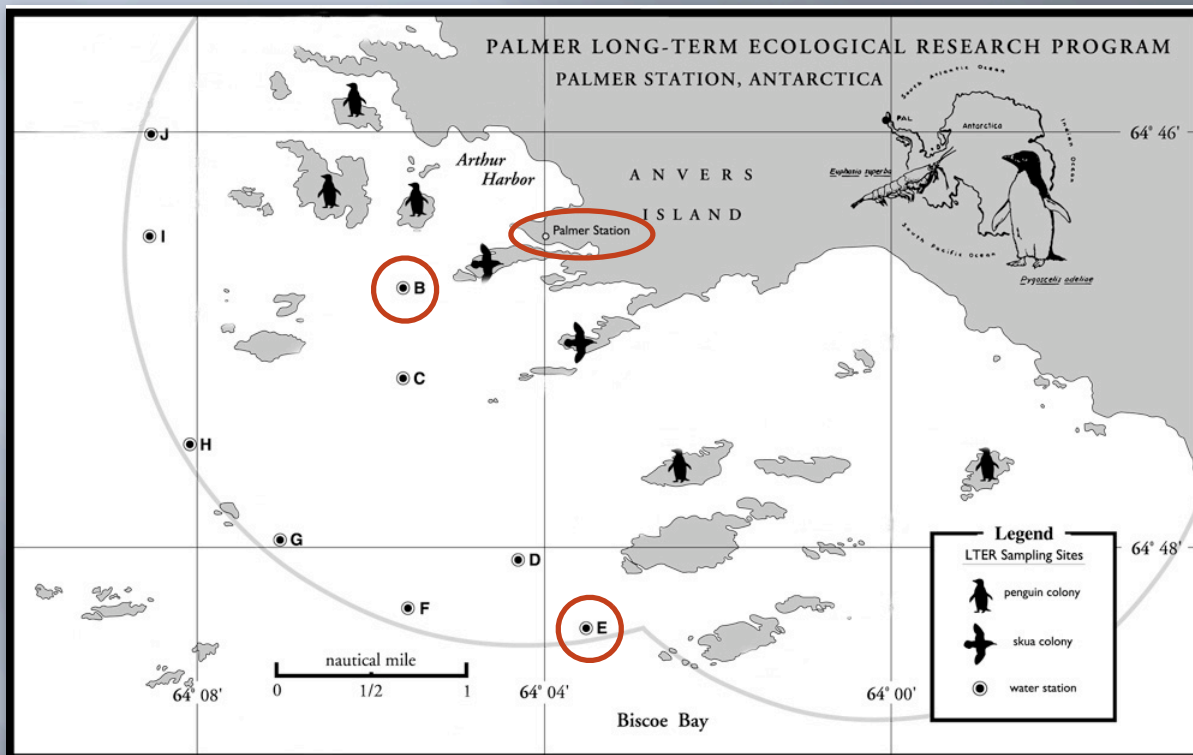
## I. Large Scale Annual Grid



- Western Antarctic Peninsula
- Austral summer cruises (Jan-Feb)
- 1998-2008
- 0 – 200 km offshore, 20 km interval
- 400 km range, 100 km interval N – S
- ~ 50 annual stations

# Data Collection: Location

## II. Coastal Seasonal Sampling



- Western Antarctic Peninsula
- Austral summer (October - March)
- 1998-2007
- Coastal (50-120m)



# Data Collection: Instrumentation

## I. 1998-2003

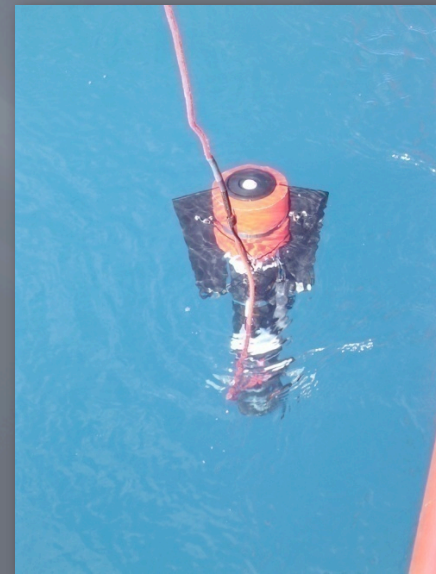
- Modified Biospherical Instruments PRR600/610
- Ray Smith / Dave Menzies (UCSB)
- $E_0$ ,  $E_z$  (305, 320, 340, 380, 412, 443, 490, 510, 555, 656nm, PAR)
- $L_u$  (412, 443, 490, 510, 555, 656, 683nm)



# Data Collection: Instrumentation

## I. 2004-2008

- Biospherical Instruments PRR800/810
- Ray Smith / Maria Vernet
- $Ed_0$ ,  $Ed_z$ ,  $Lu_z$  (313, 320, 340, 380, 395, 412, 443, 490, 510, 520, 532, 555, 625, 665, 670nm, dual PAR/ $Lu_{chl}$ )





# Data Collection: Deployment Methods

## COASTAL SEASONAL SAMPLING

- Zodiac-based



## LARGE SCALE ANNUAL GRID

- Research vessel-based

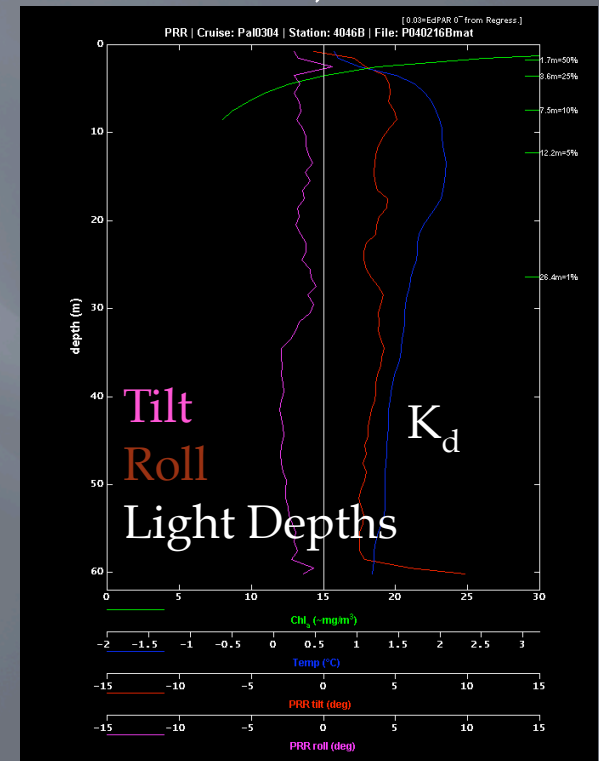
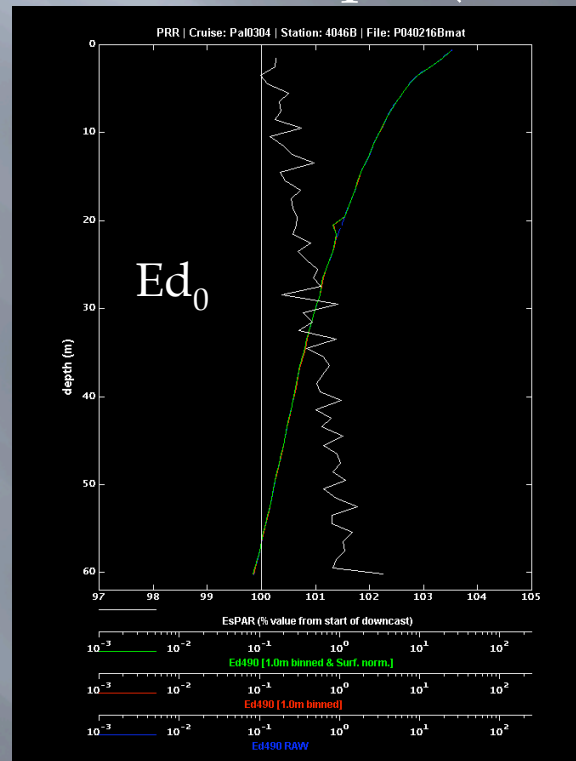
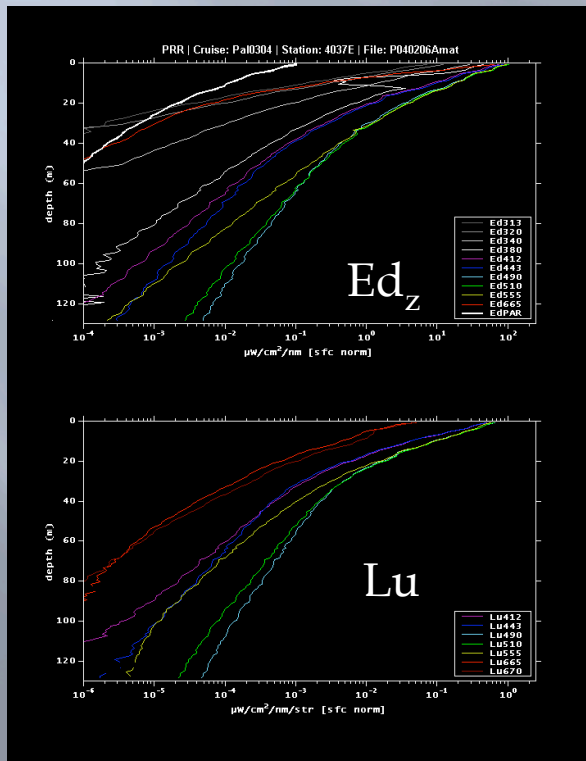


### \* Metadata \*

- ✓ Sea/Sky state
- ✓ Deployment conditions

# Data Handling: Field Processing

- Real-Time Observation · Profiler Software
- On-site Processing
  - CSV to Matlab-based scripts (K. Ireson, UCSB)



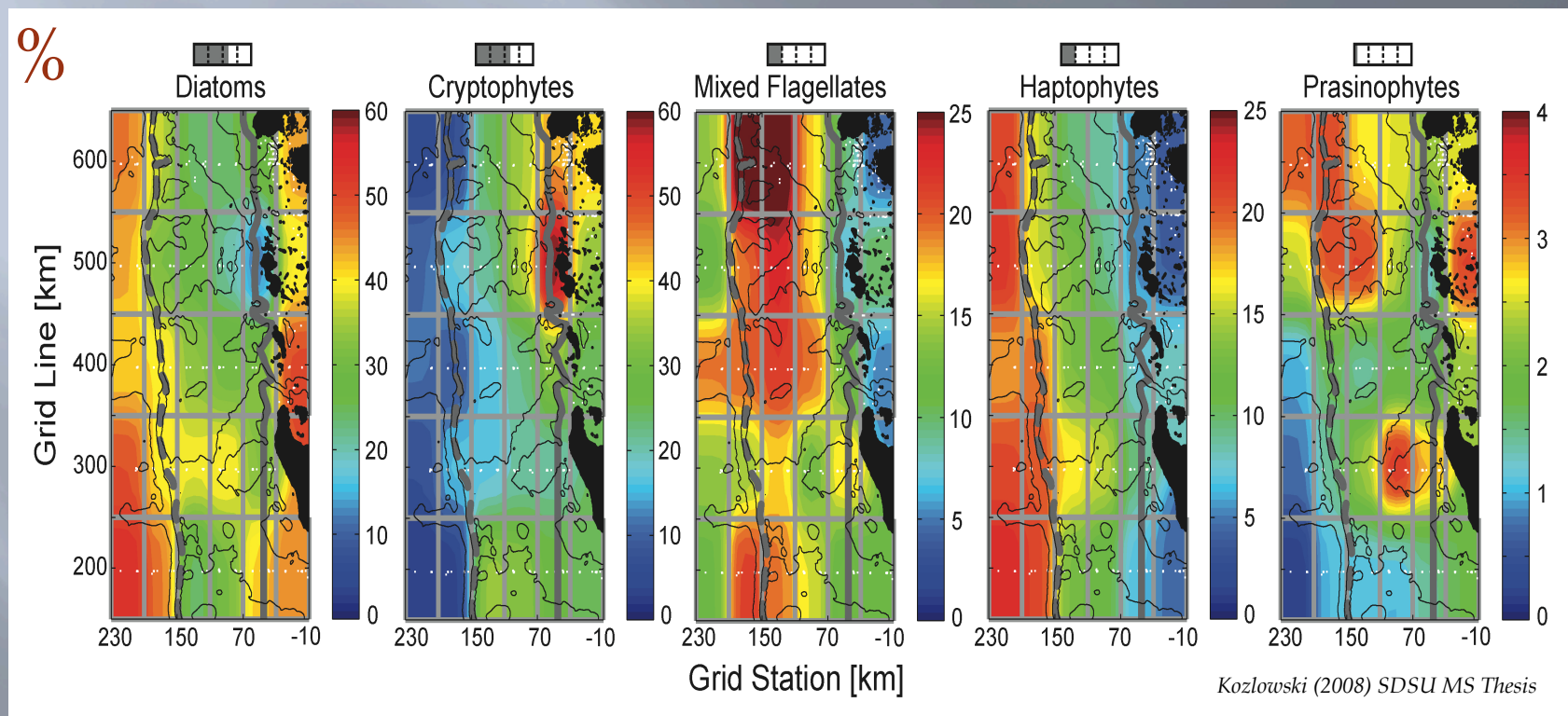
# Data Handling: Reprocessing Methods

- Martin Montes-Hugo, SIO Postdoc
- Microsoft Access & Matlab
- 1998-2007 Inshore and Large-Scale Grid Stations
- $E_d$ , 100, 50, 25, 10, 5, 1, 0.5, 0.1% light level depths,  $K_d(\lambda)$ ,  $K_{PAR}$ ,  $R_{rs}$



# AOP Data: Research Objectives

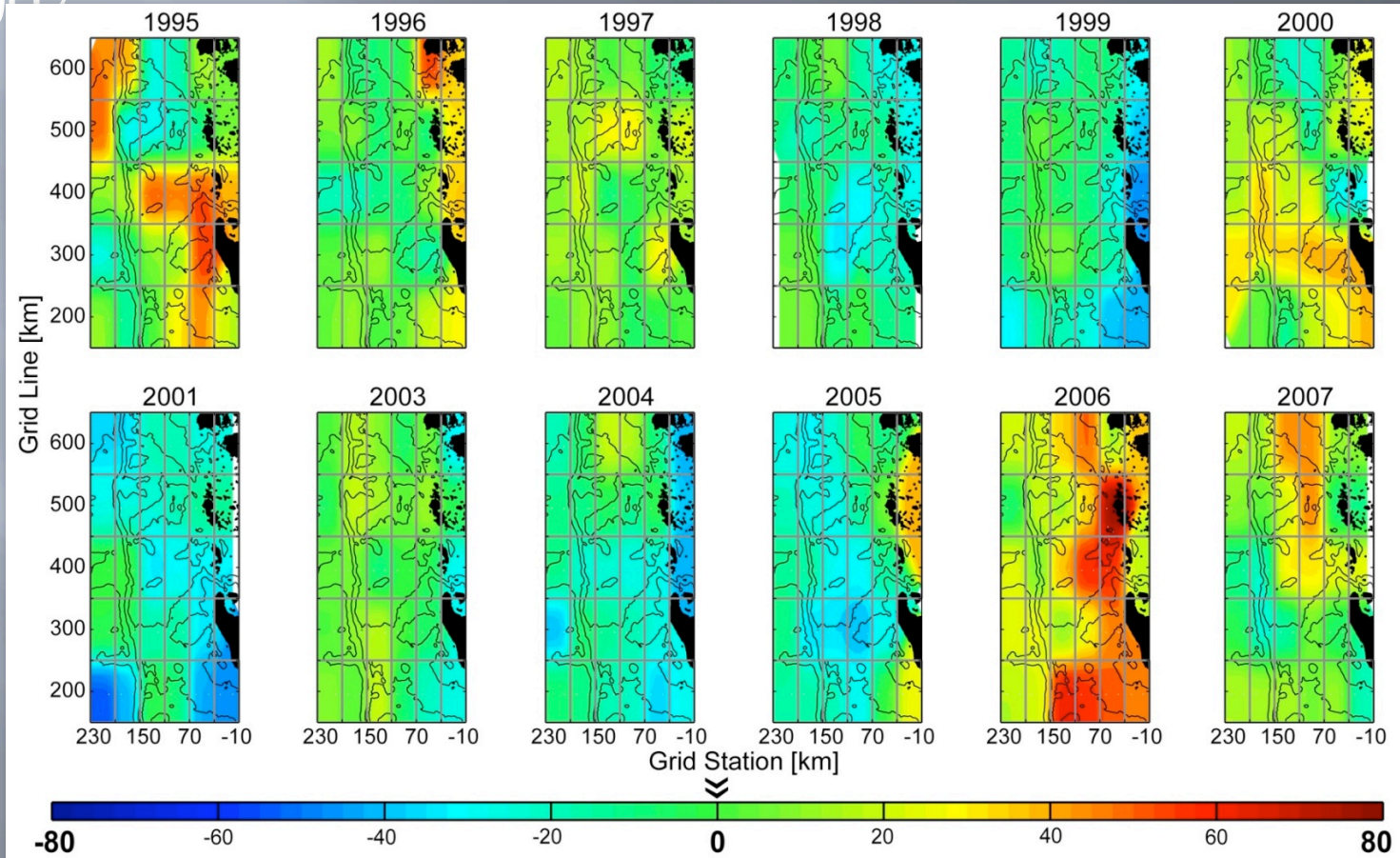
➤ Climatologies of pigment-based (HPLC/CHEMTAX) phytoplankton community, 1995-2007



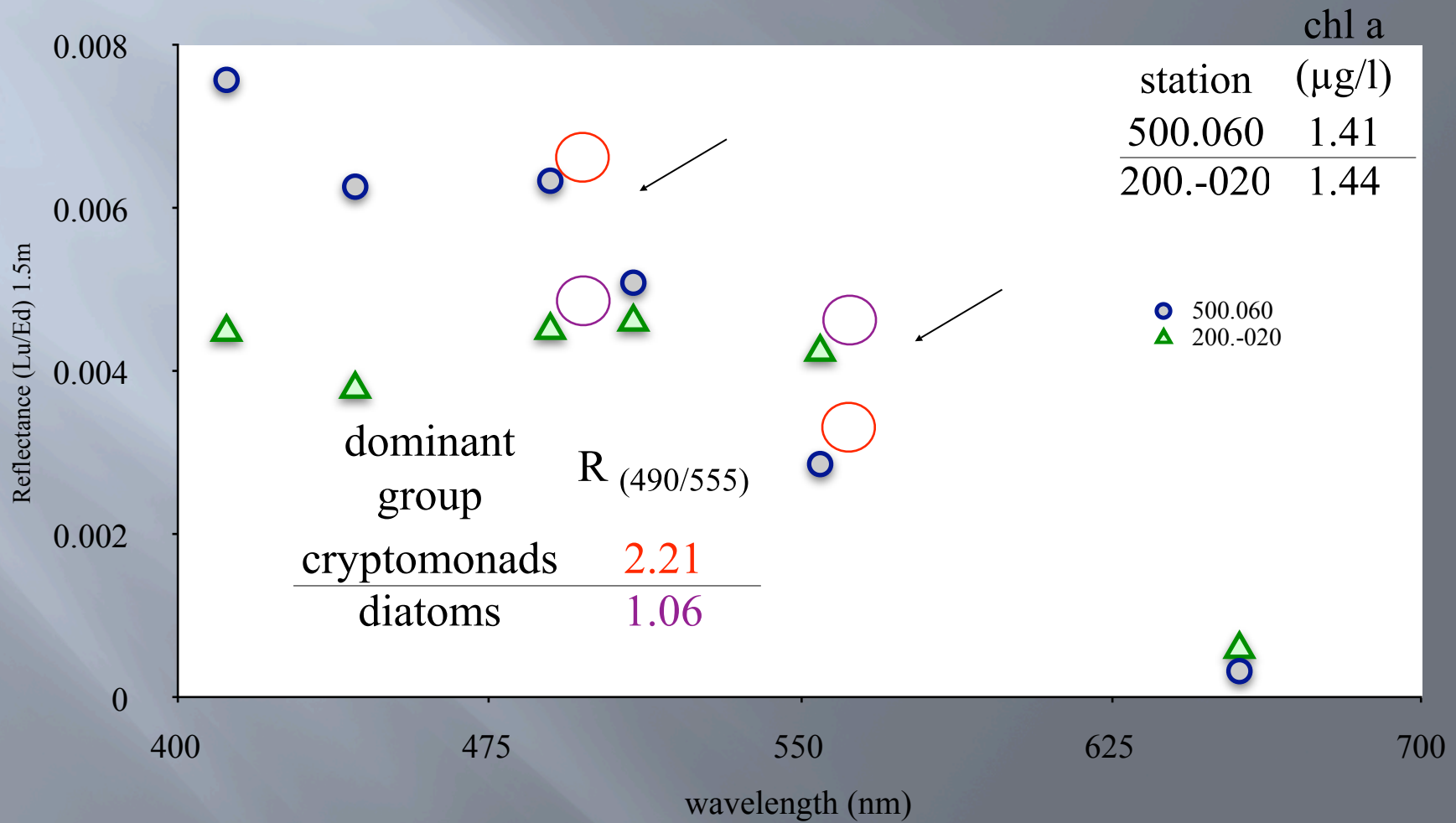
# AOP Data: Research Objectives

- Anomalies of phytoplankton community, 1995-2007

Diatoms  
%

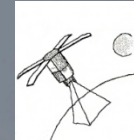
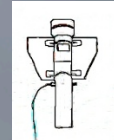
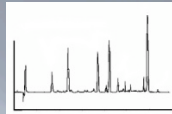


# AOP Data: Research Objectives





# AOP Data: Research Objectives



Year	HPLC Casts	PRR Casts	SeaWiFS Swaths
1998	41	50	7
1999	53	89	13
2000	51	54	10
2001	45	51	10
2002	51	52	9
2004	54	62	14

- Composition → In-water Optics →  $L_w / R_{rs}$
- Data management / Data storage & archival