

# **HPLC Phytoplankton Pigment Measurements: Continuation of Climate Quality Data Records (CQDR) in Support of NASA's Earth Science Enterprise (ESE)**

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# HPLC Phytoplankton Pigment Protocols

(Bidigare *et al.*, 2003; NASA/TM-2003-211621/Rev 5 - Vol. V)

MODIS Data Products Program ~ 4,800 samples/yr

## Method Comparison

### Co-elution of mono- and divinyl Chl *a*

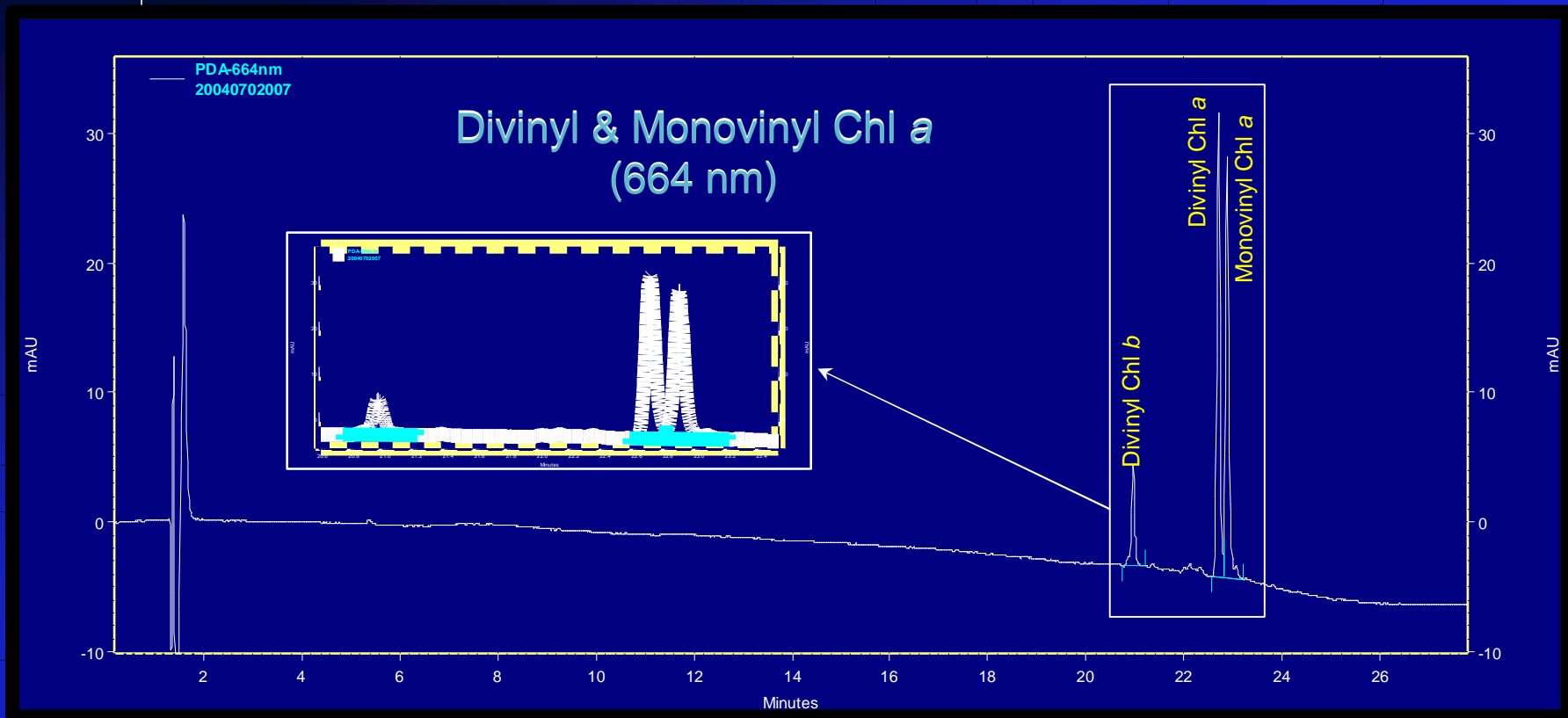
1. Wright *et al.* (1991) C<sub>18</sub> Method (SIMBIOS)

Channels ratio (436 & 450nm)

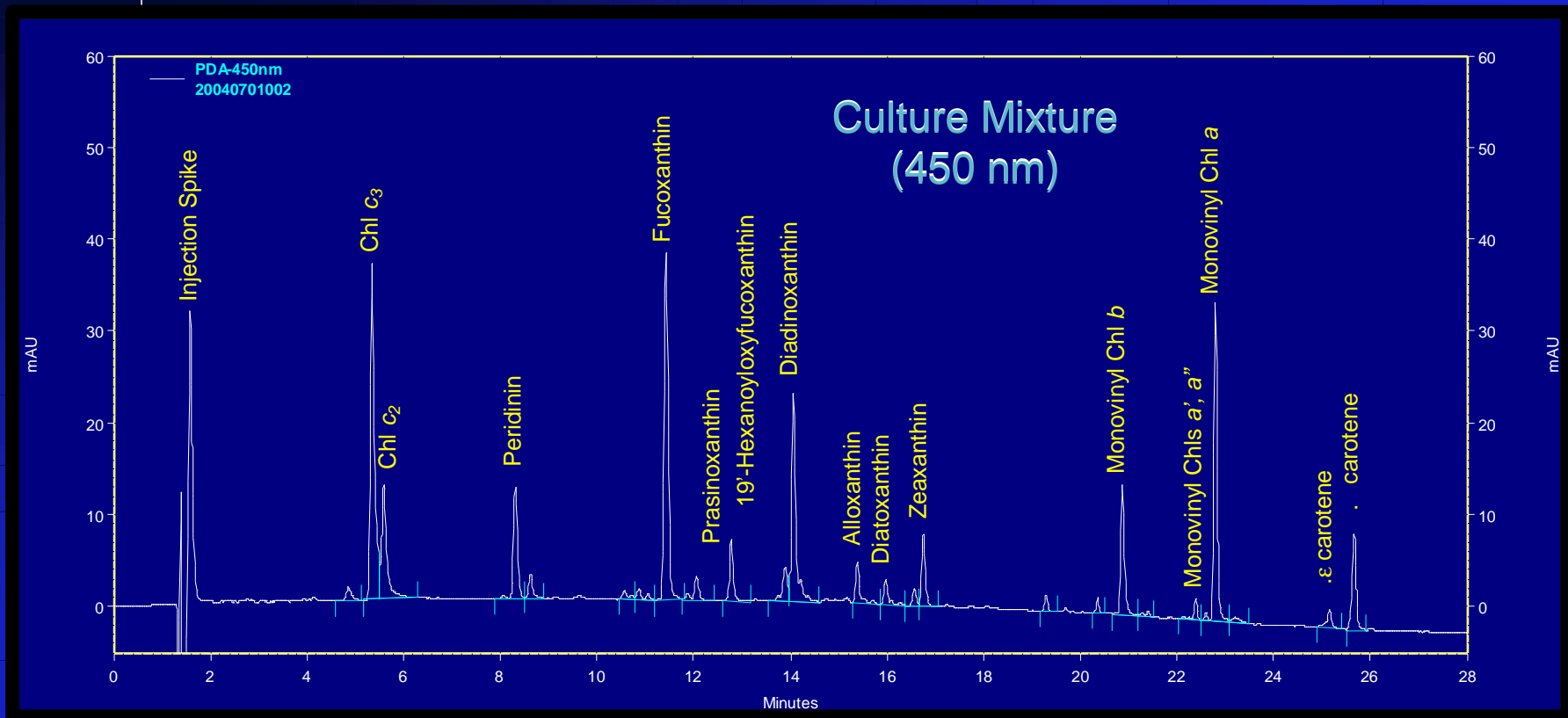
### Physical separation of mono- and divinyl chl *a*

1. Goericke and Repeta (1993) C<sub>8</sub> Method
2. \*\*Van Heukelem and Thomas (2001) C<sub>8</sub> with column heater Method

# Divinyl and Monovinyl Chl a Separation



# Mixture of Pigments from Cultures

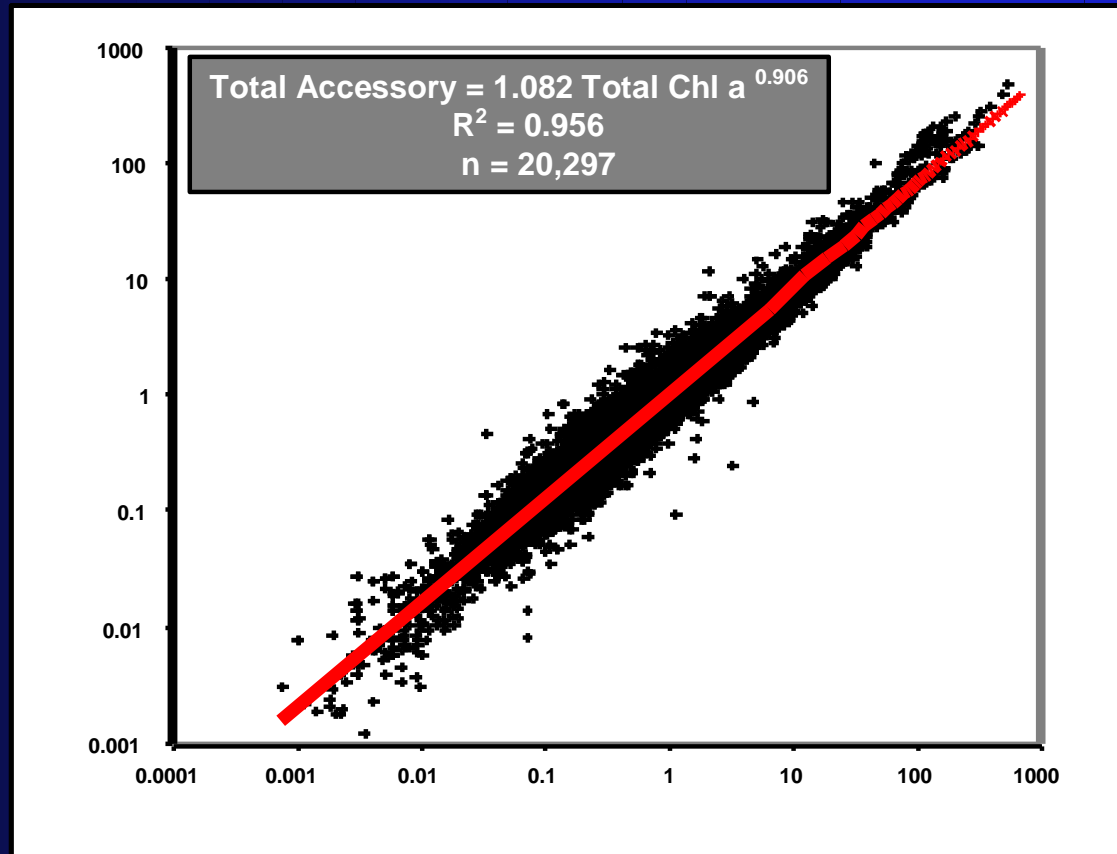


# HPLC Samples Processed/Submitted

Investigators	Agency/Program	Cruise Name	HPLC Samples Processed	HPLC Samples at CHORS
Campbell	NASA MODIS	Intercal/Dowell's Grant	0	0
Carder	NASA MODIS	HAB's	0	0
Clark	NASA MODIS	MOBY	333	0
Cota	NASA MODIS	Polar Work	285	0
Dierssen	NASA MODIS	Ackleson/ Rhode Island	0	50??
Gould	NASA MODIS	Coastal Optical Cruises	0	0
Hooker	NASA MODIS	SeaHARRE-3 (1st yr) & Cr.	0	0
Letelier	NASA MODIS	GLOBEC (previous cruises)	210	0
Marra	NASA MODIS	Ship of Opportunity	0	0
Muller-Karger	NASA MODIS	Cariaco Basin	184	0
Nelson	NASA MODIS	BBOP	0	0
Siegel/McGuillicuddy	NASA MODIS	Plumes & Blooms	1,030	460
Stramski	NASA MODIS	Carbon/High Latitude	0	50
Stumpf	NASA MODIS	Estuarine and Coastal	0	0
<b>MODIS EOS Total</b>			<b>2,042</b>	<b>510</b>
Chavez	NASA (3 grants)		405	250
Lorenzen	NASA Ecohab	Gulf of Mexico	0	0
Mannino	NASA IDS		0	0
Mannino	NASA NIP		0	99
Mitchell	NASA Ecohab	Gulf of Mexico/California	173	230
Moline	NASA NIP		359	0
Siegel and Nelson	NASA Core	Repeat Survey CDOM	0	0
Sosik	NASA IDS	North Atlantic Bight	0	0
Subramaniam	NASA Core		0	100
<b>Other NASA Total</b>			<b>937</b>	<b>679</b>
<b>TOTAL</b>			<b>2,979</b>	<b>1,189</b>

# CHORS Pigment Database

Total Accessory Pigments ( $\text{mg m}^{-3}$ )



Total Chl *a* ( $\text{mg m}^{-3}$ )