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# “Bright Water” Targets

Whitecaps &  
Foam

Sea Ice

Floating  
Vegetation

Floating  
Plastics

Bubbles

Dense blooms

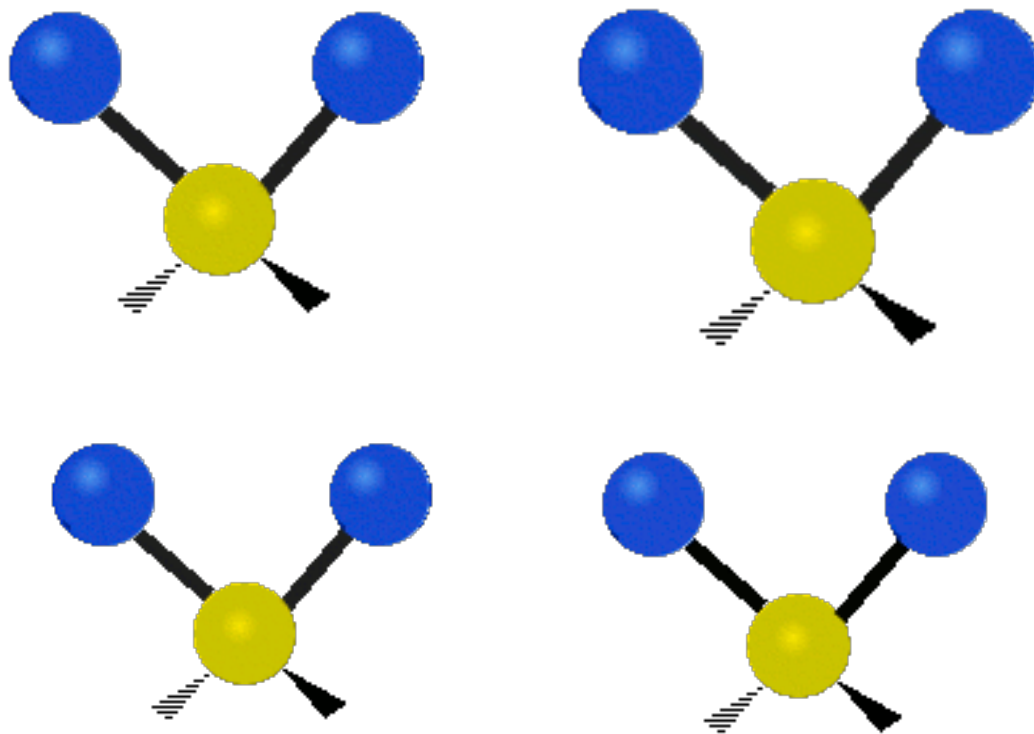
Calcite

Sediment  
(turbid water)

Seafloor  
(Optically Shallow)

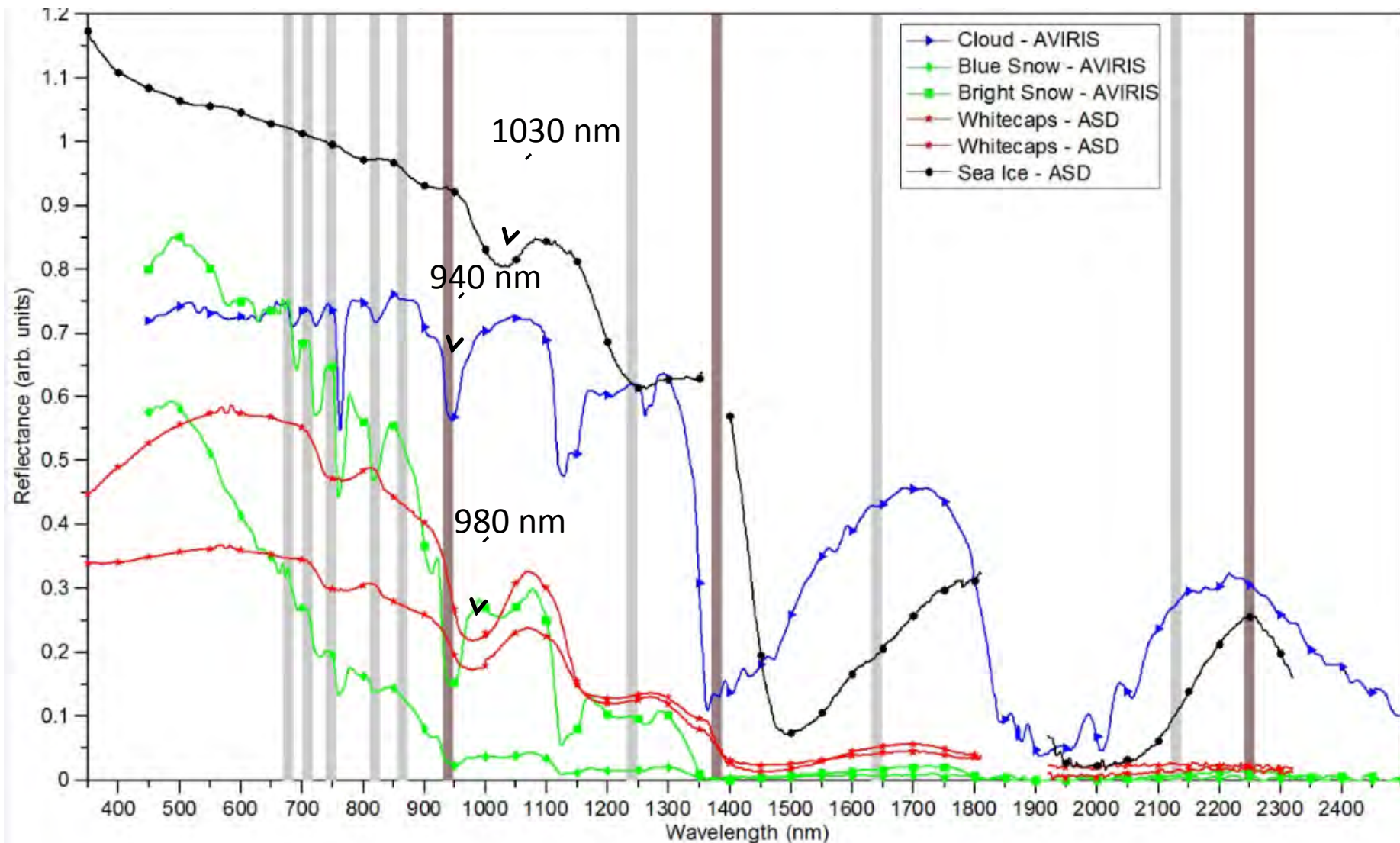


# Absorption bands in the IR





Given atmospheric absorption, would this whitecap feature at 980 nm be observable at Top of Atmosphere (TOA)?

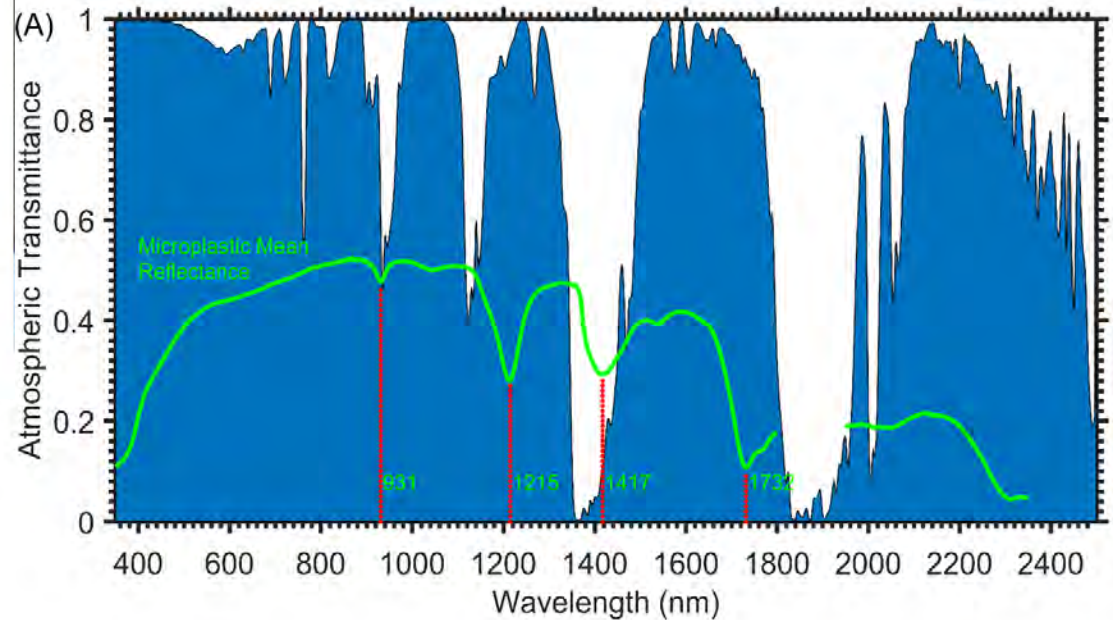


=[940 1378 2250] nm OCI+

=[678 710 748 820 865 1240 1640 2130] nm

# Unique absorption peaks related to floating plastics

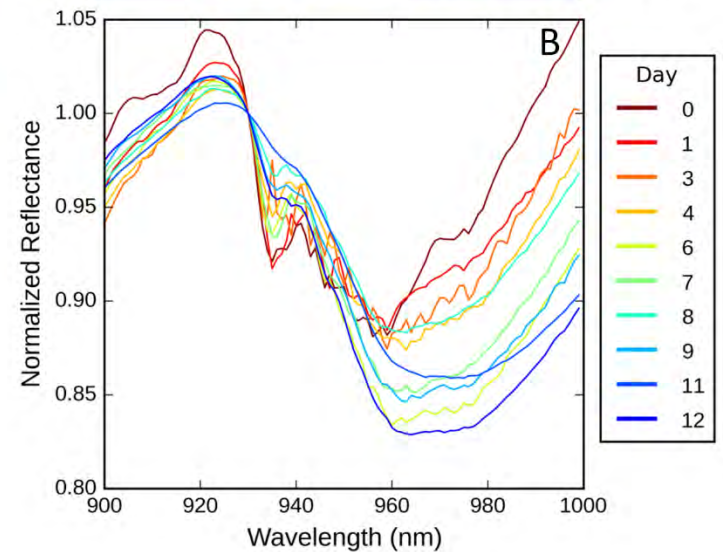
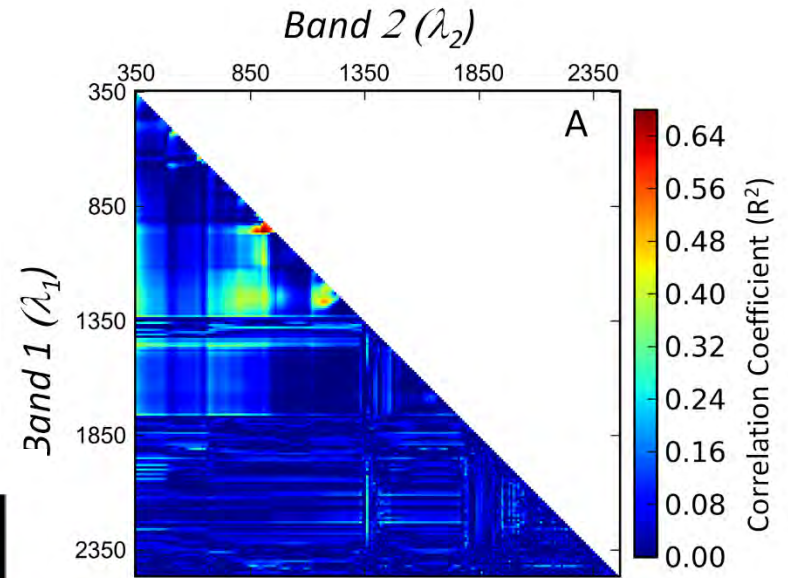
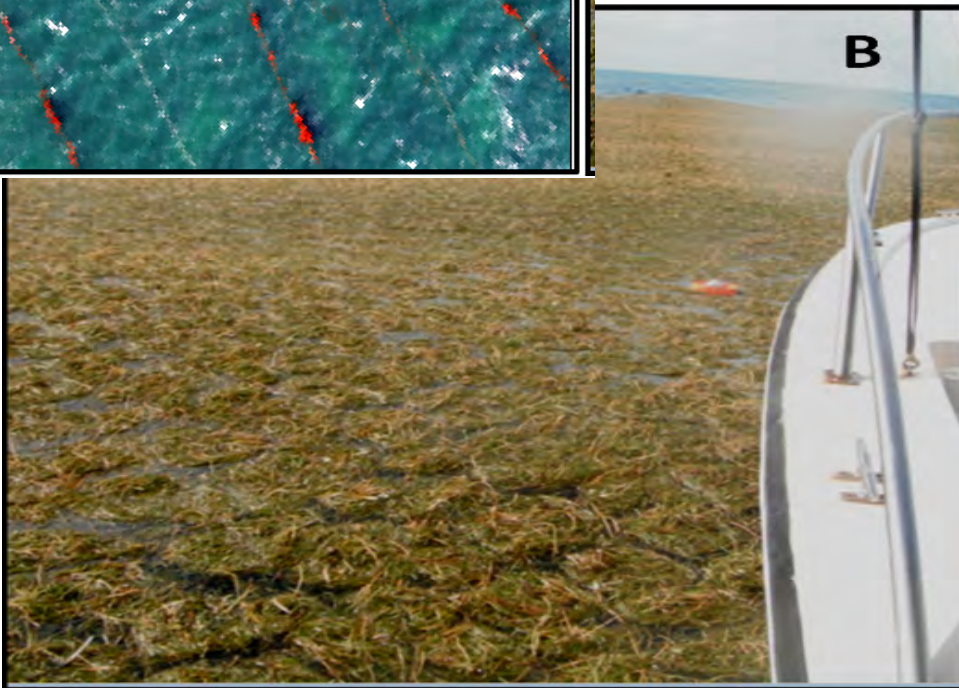
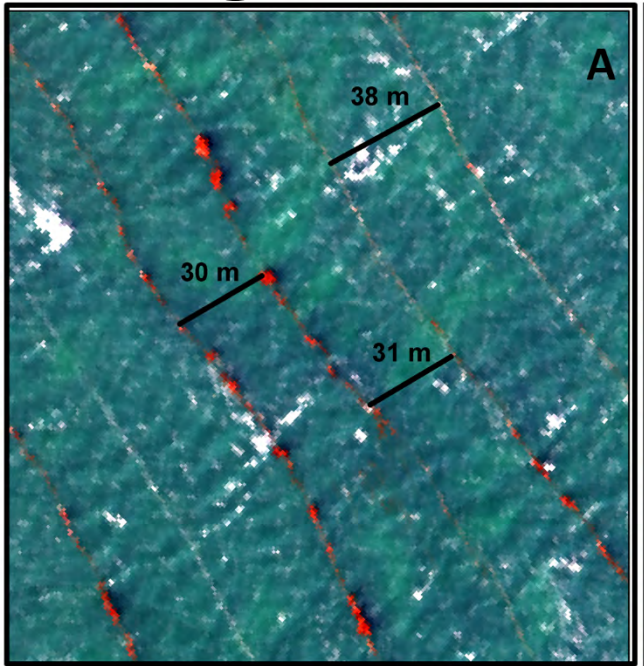
1.68 mm – 2.00 mm



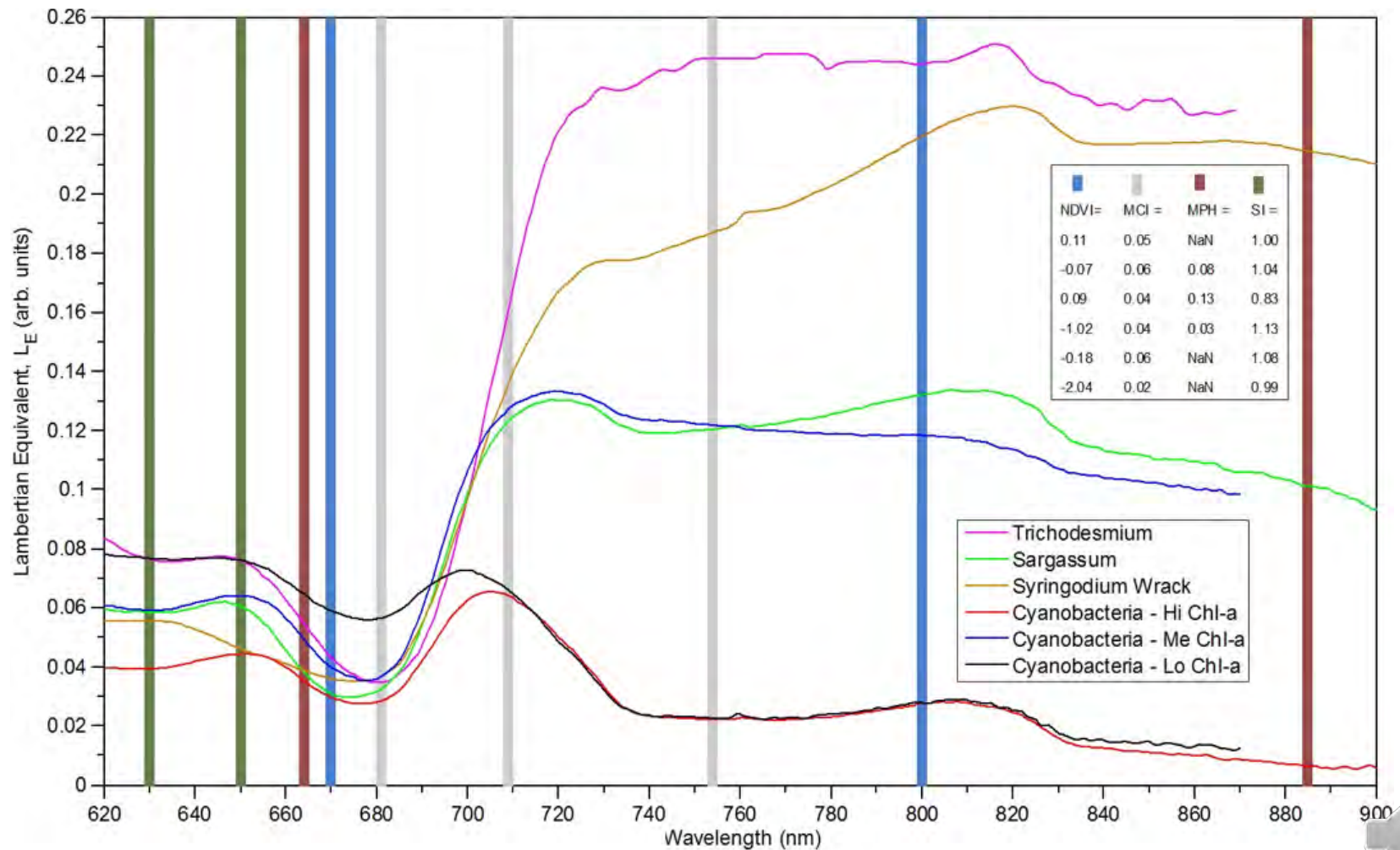
Garaba and Dierssen submitted RSE



# Age of Floating Seagrass Wrack



# Red Edge Algorithms for Algal Blooms





# Amount of coral bleaching dependent on type of symbionts

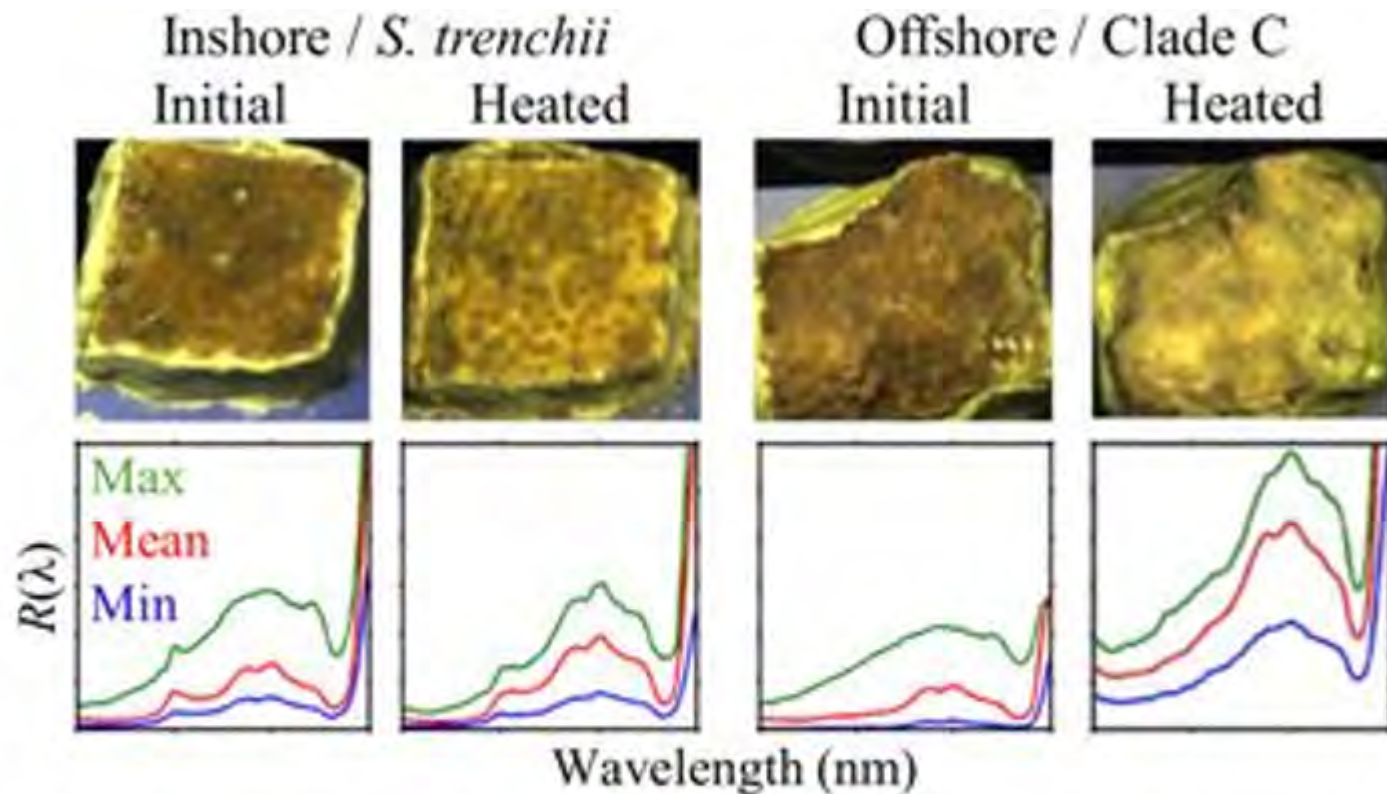






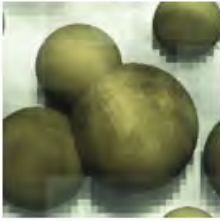










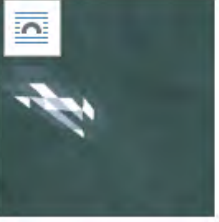

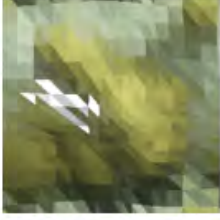






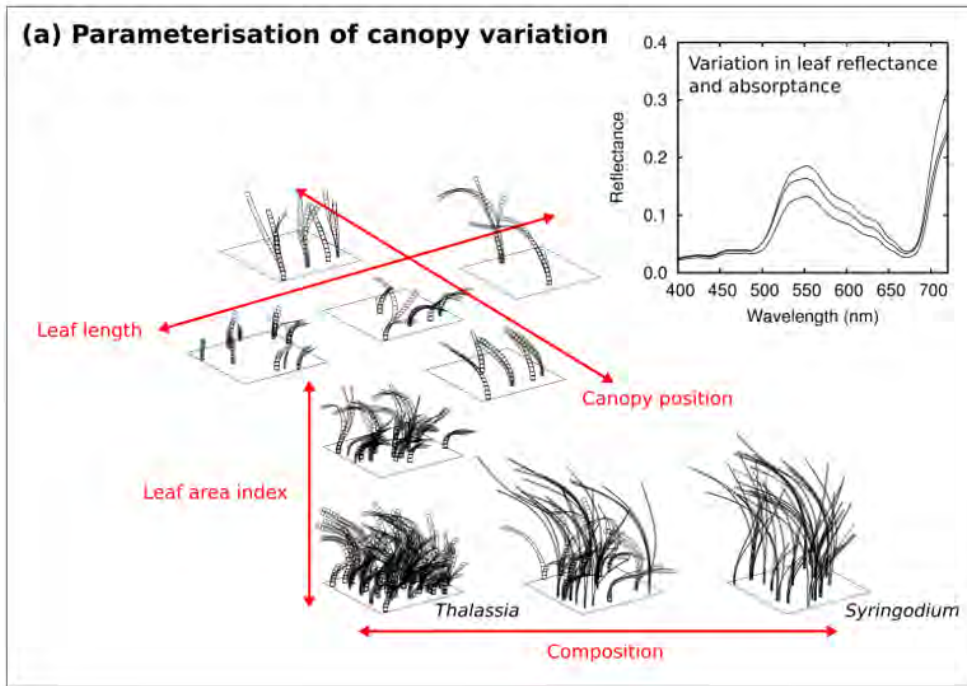
Fig. 1. Hyperspectral imagery revealed that thermally tolerant *Symbiodinium trenchii* and Clade C *Symbiodinium* produce similar reflectance but differential response to heating.



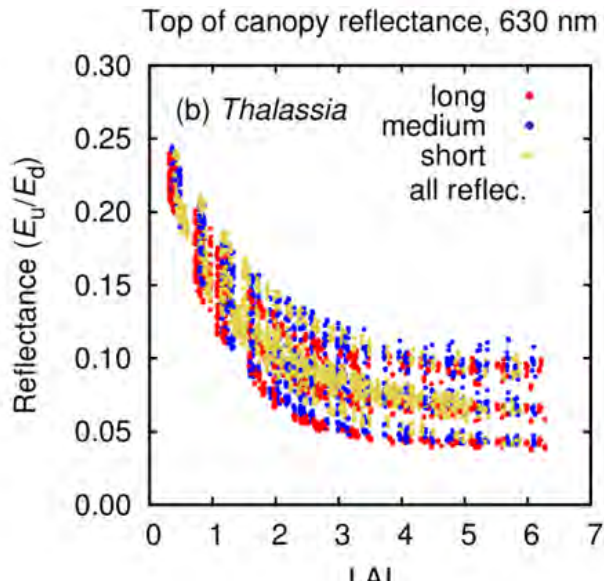
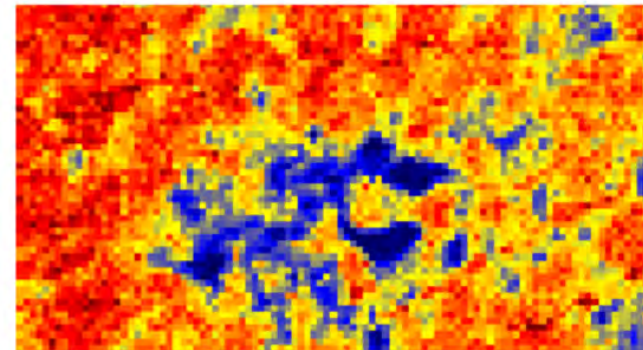
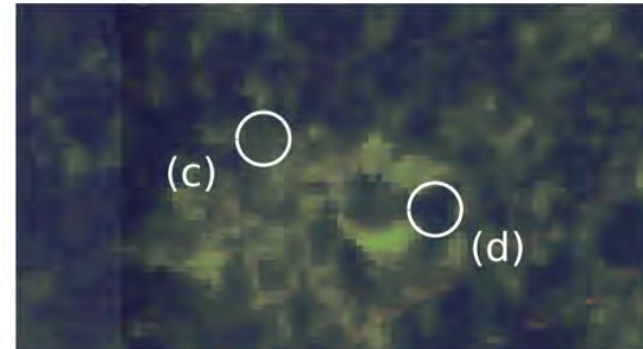
	1 m depth		2 m depth		5 m depth	
	Lu (subsurface)	Lu (air)	Lu (subsurface)	Lu (air)	Lu (subsurface)	Lu (air)
cover 40%						
cover 65%						
cover 40% <u>blchd</u>						
cover 65% <u>blchd</u>						



# Hyperspectral mapping of seagrass leaf area index --- Hedley et al. 2016 & in prep



*Syringodium* dominated





# Yellow fluorescence

