

# Water turbidity retrieval from a geostationary meteorological satellite

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RBINS/DO Nature

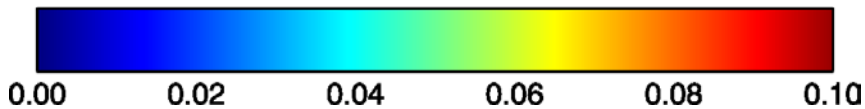
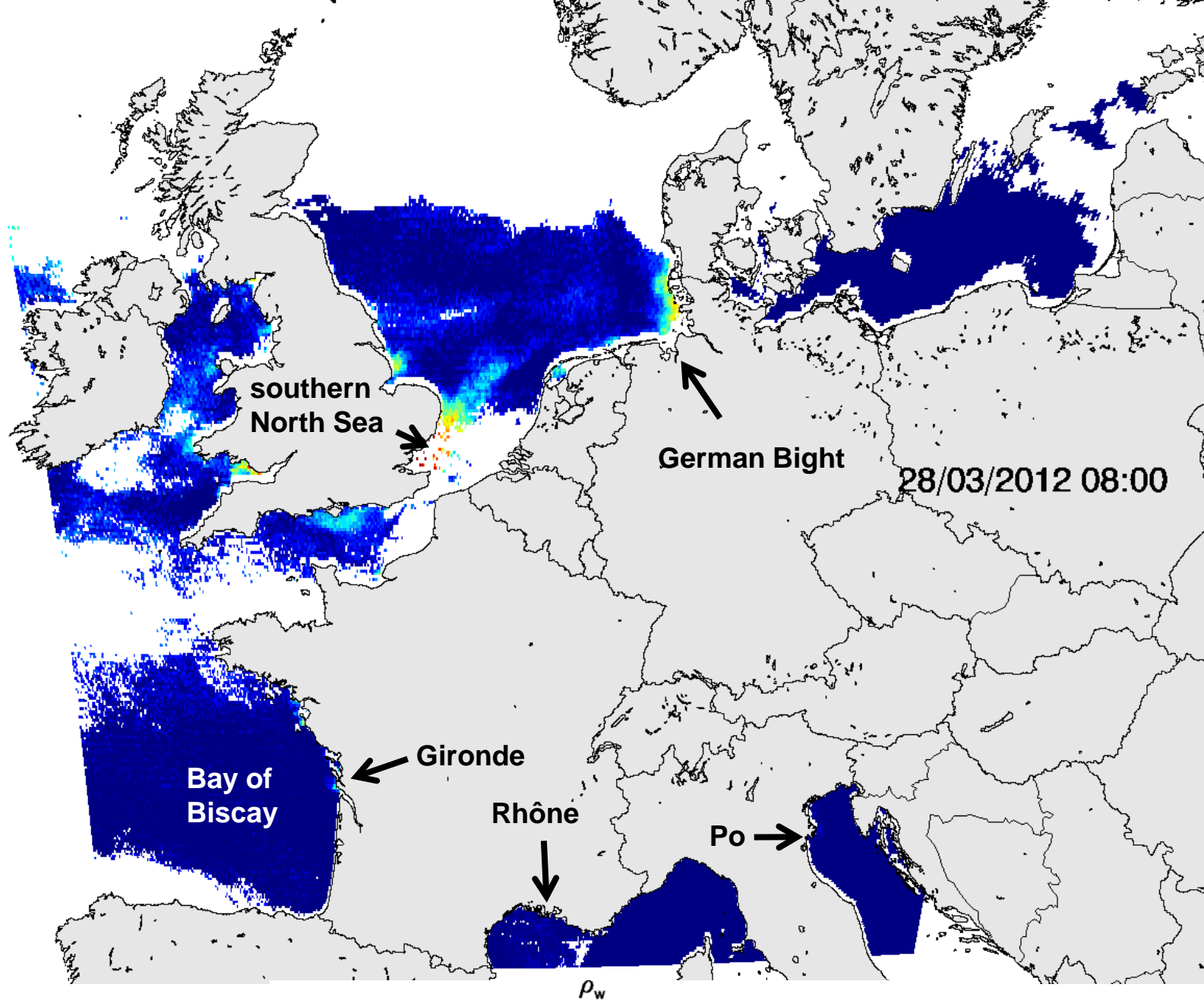
Presented at IOCS 16 June 2015



**SEVIRI is a geostationary meteo sensor – not designed for water!**

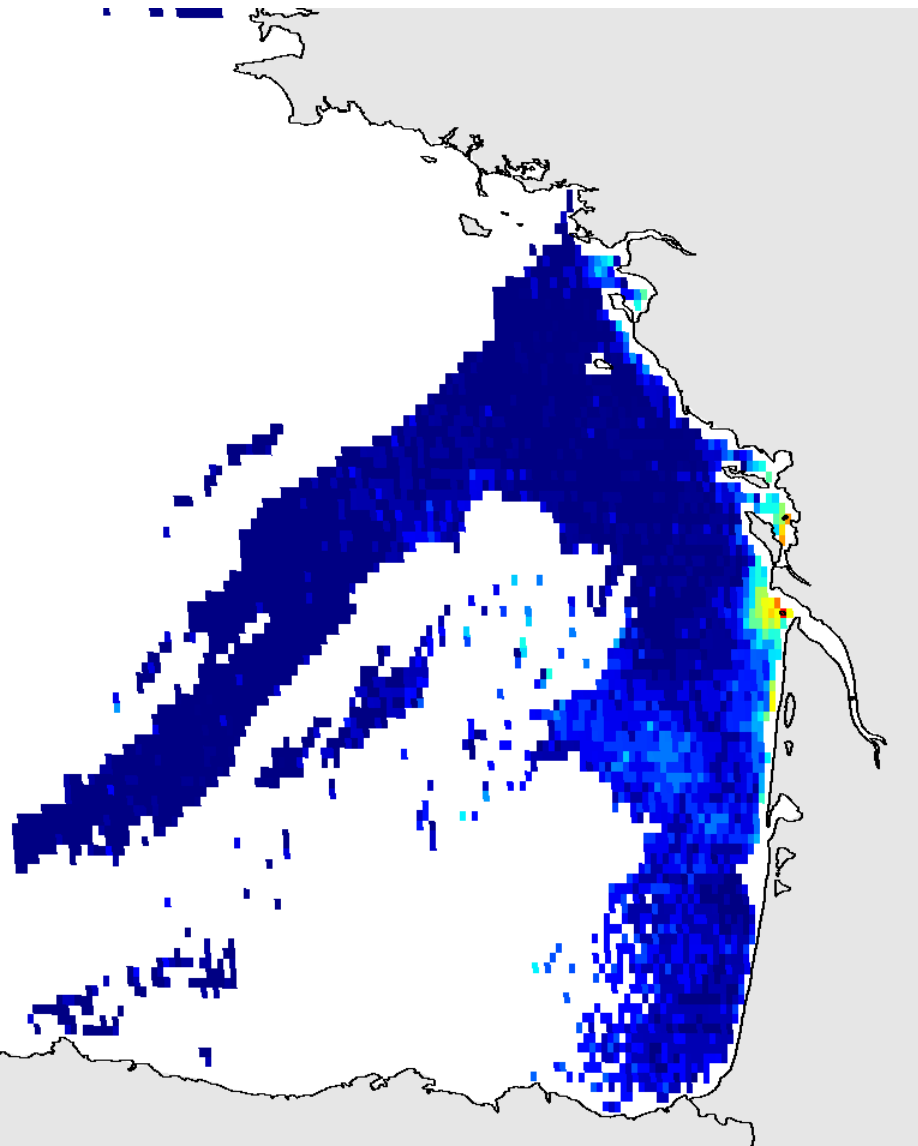
**“full disk” image every 15’, GSD 3x3 km at nadir, ~3x6km at 50°N**

**two broad bands: VIS06 = 570 – 710 nm, VIS08 = 740 – 880 nm**

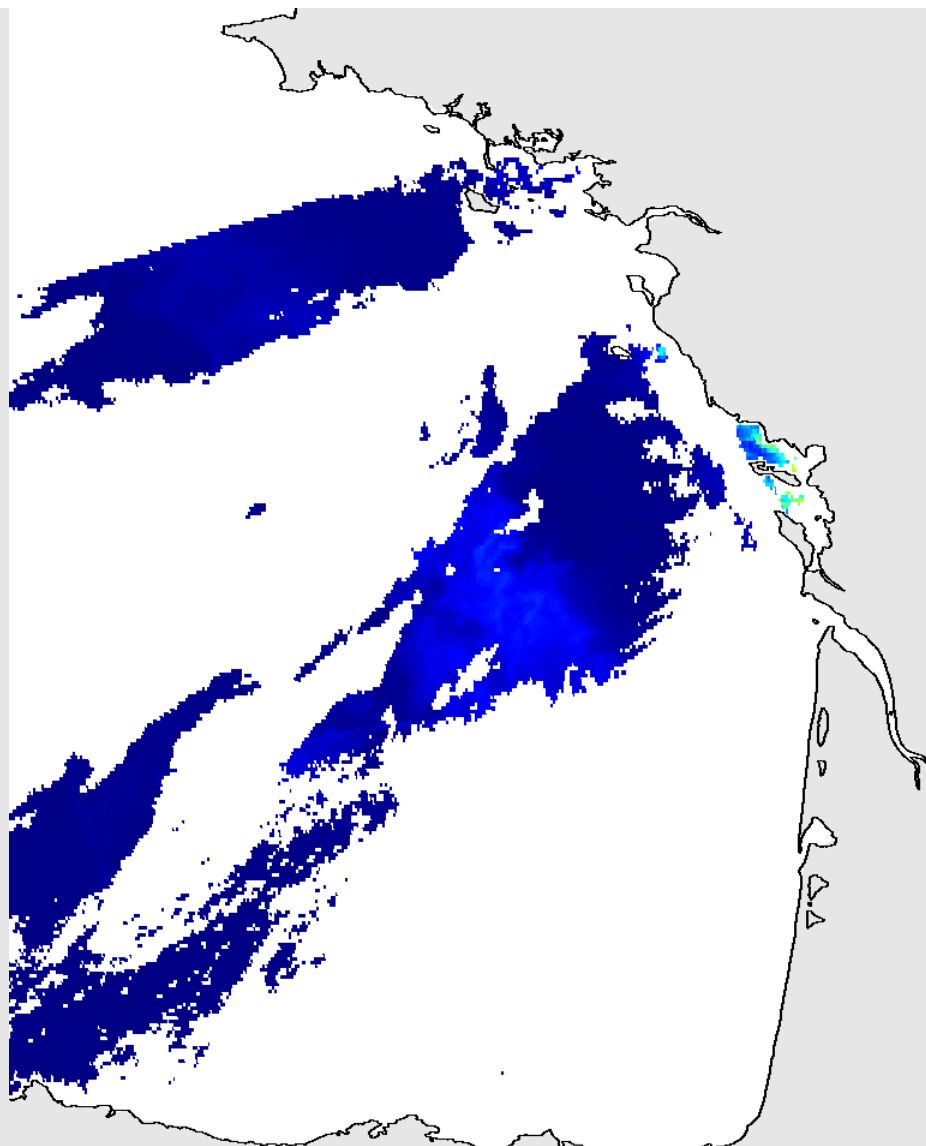


# Bay of Biscay 29 April 2013

## coccolithophore bloom



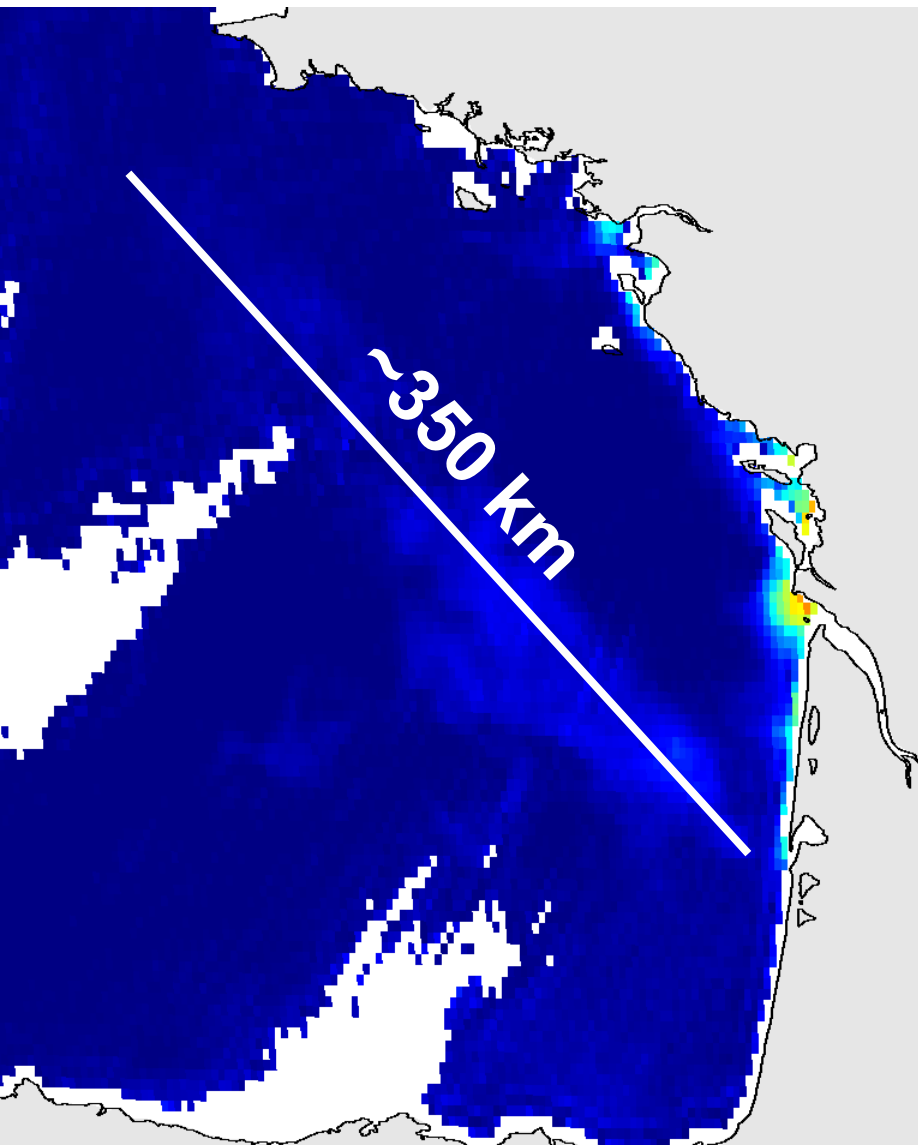
**SEVIRI/MSG3**



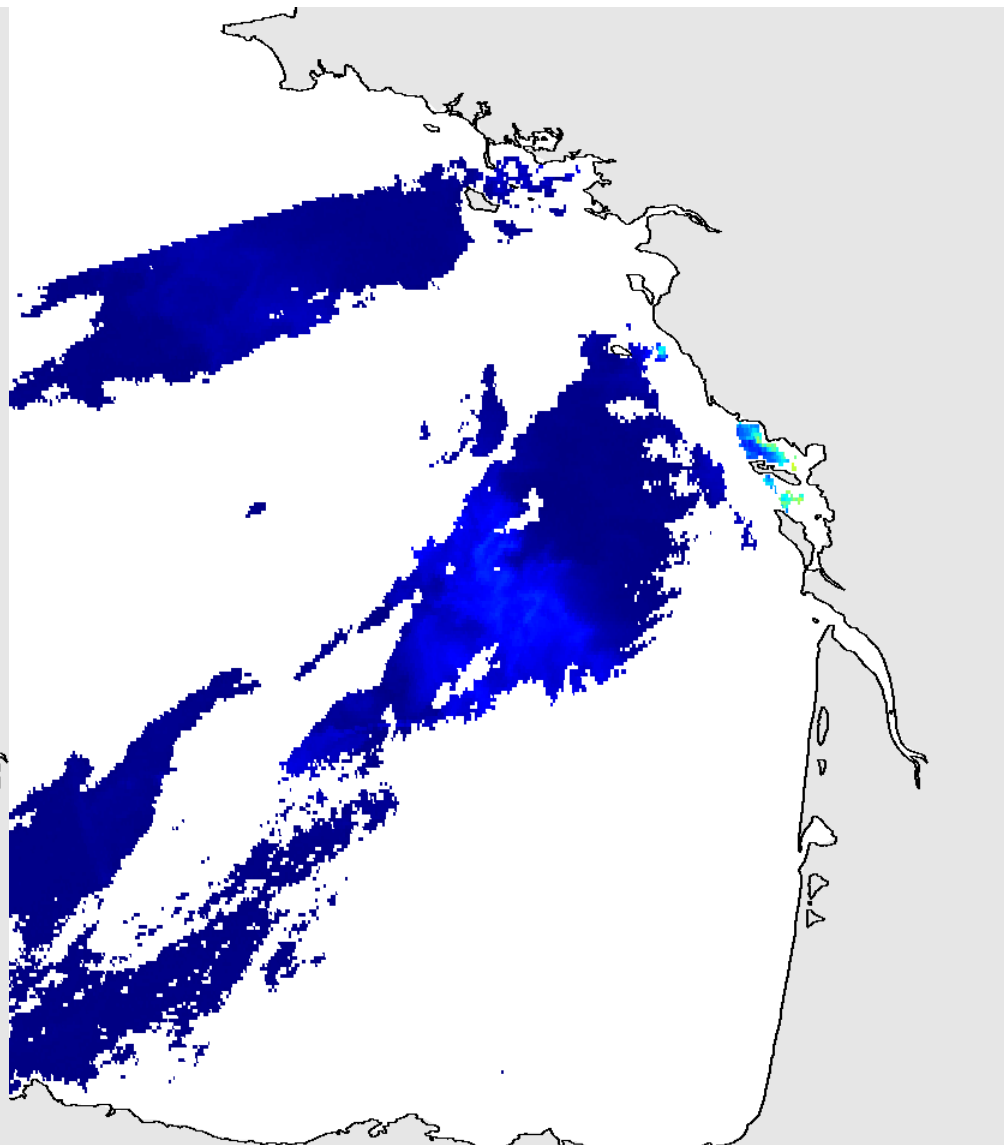
**MODIS/Aqua**

# Bay of Biscay 29 April 2013

## coccolithophore bloom



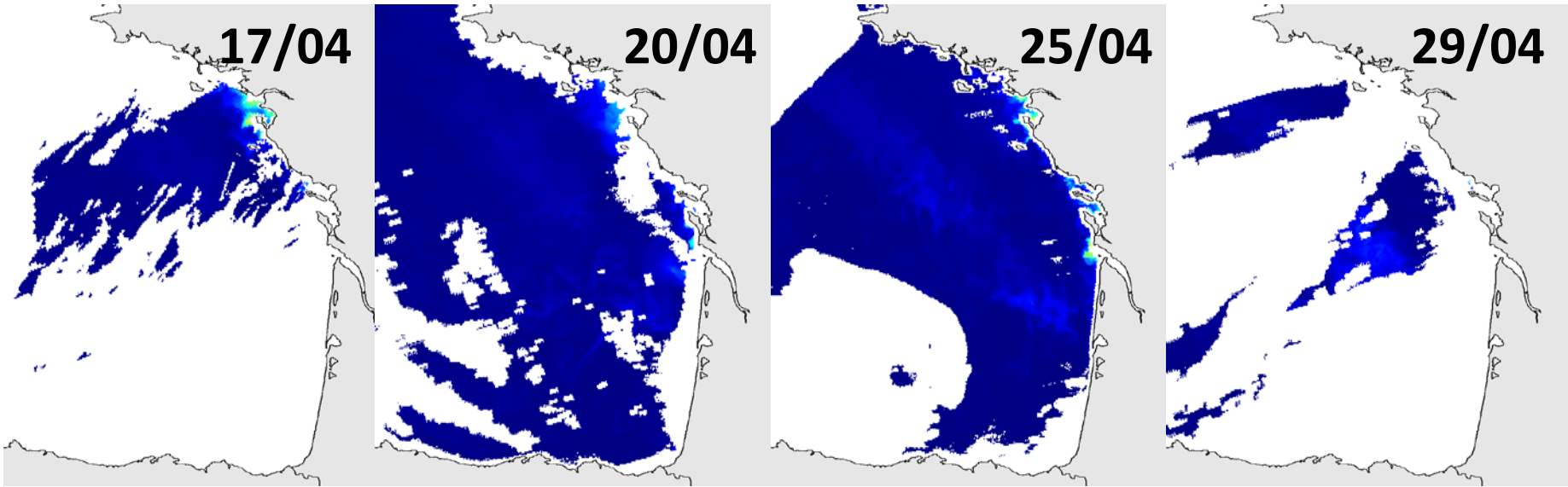
**SEVIRI/MSG3 (mean)**



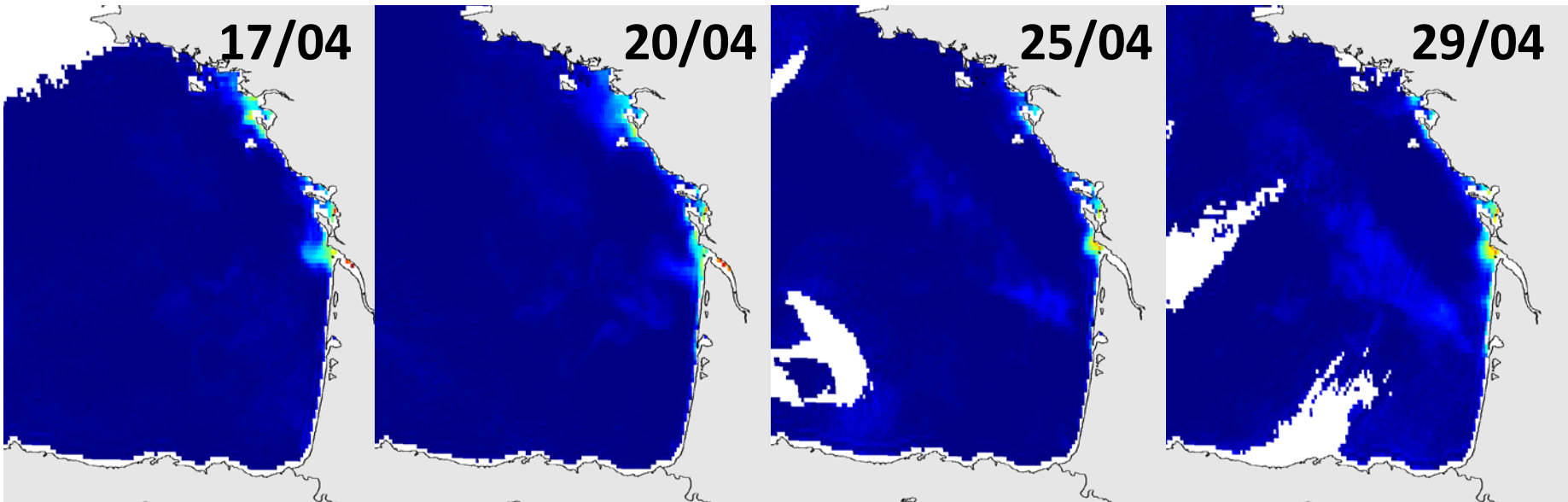
**MODIS/Aqua**

# Bay of Biscay April 2013

MODIS-Aqua

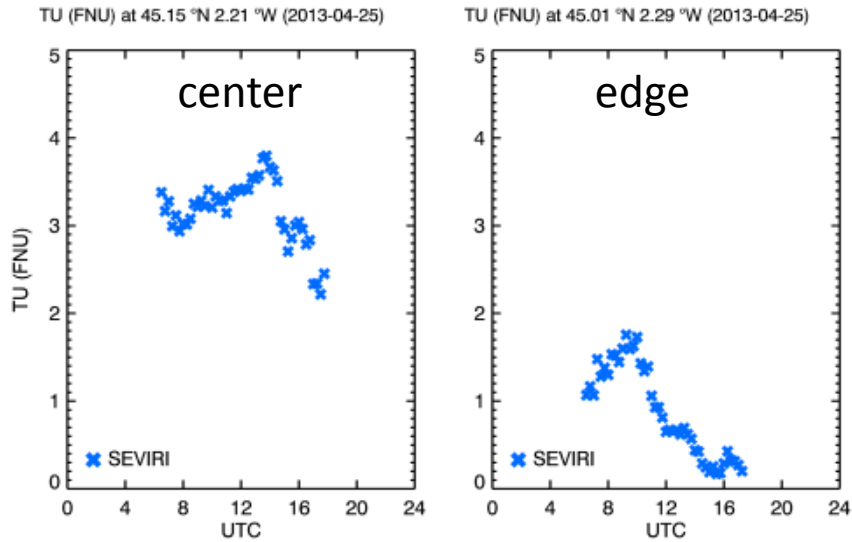


SEVIRI-MSG3 (daily mean)



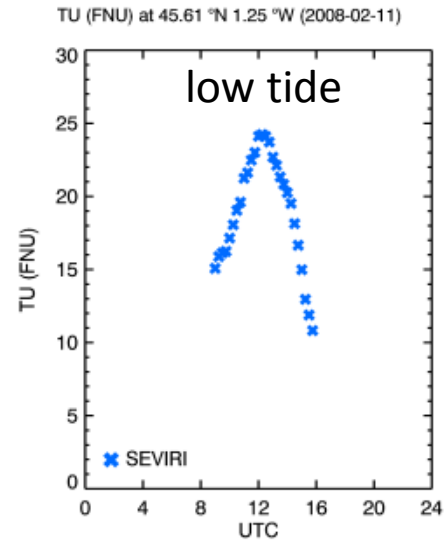
# coccolithophore bloom

2013-04-25

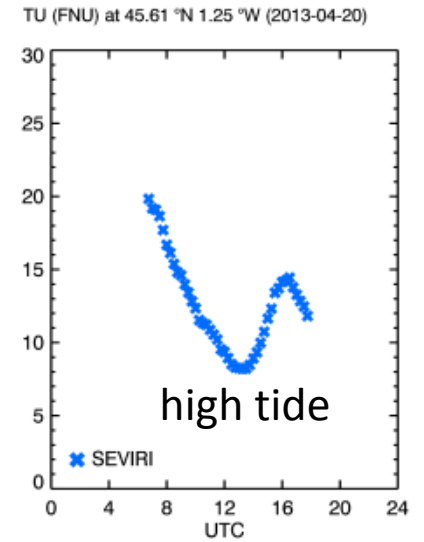


# Gironde plume

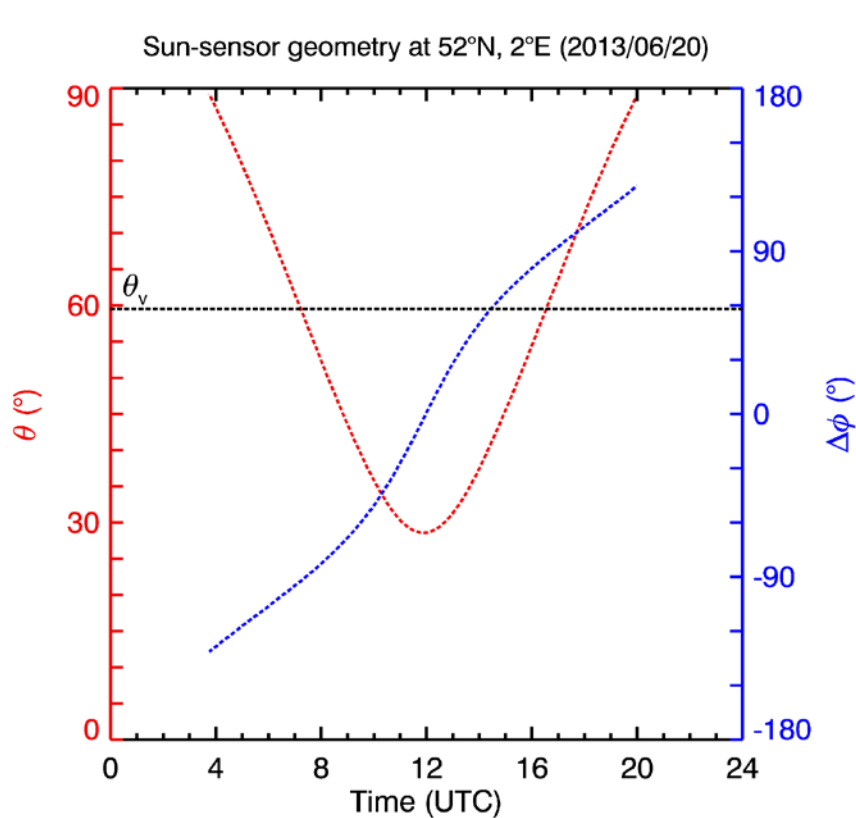
2008-02-11



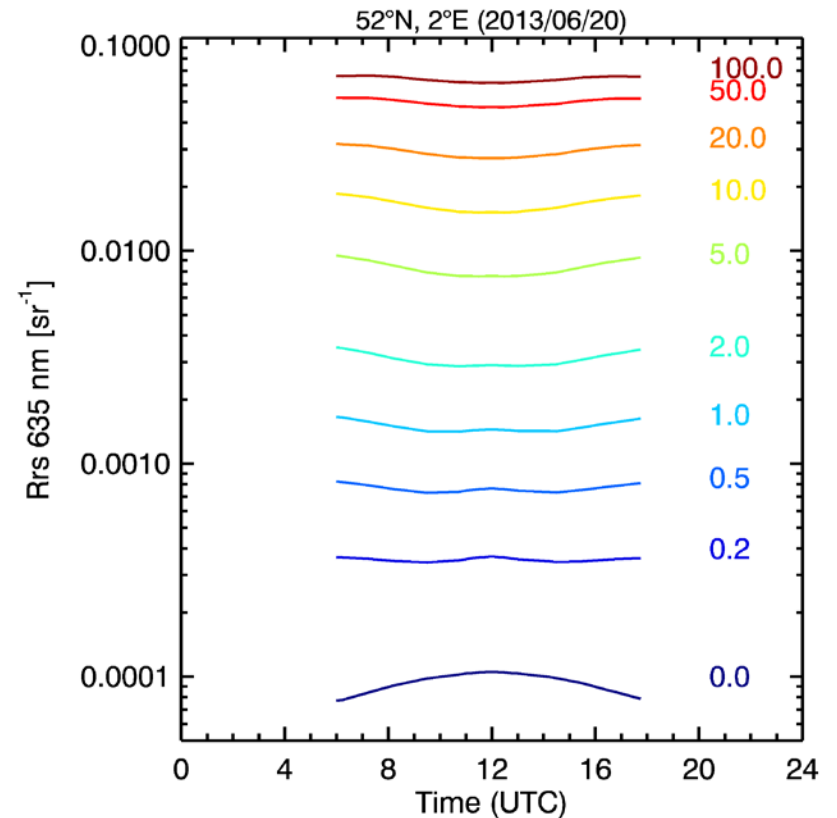
2013-04-20



# Marine BRDF at 52°N 2°E for an observer at 0°N 0°E



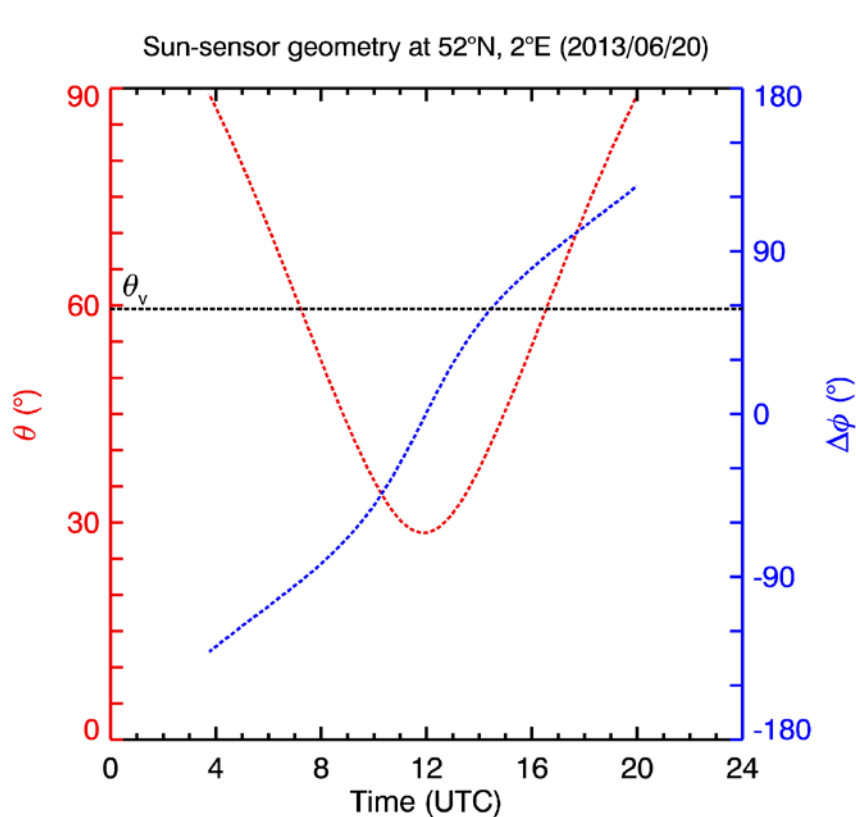
Sun path



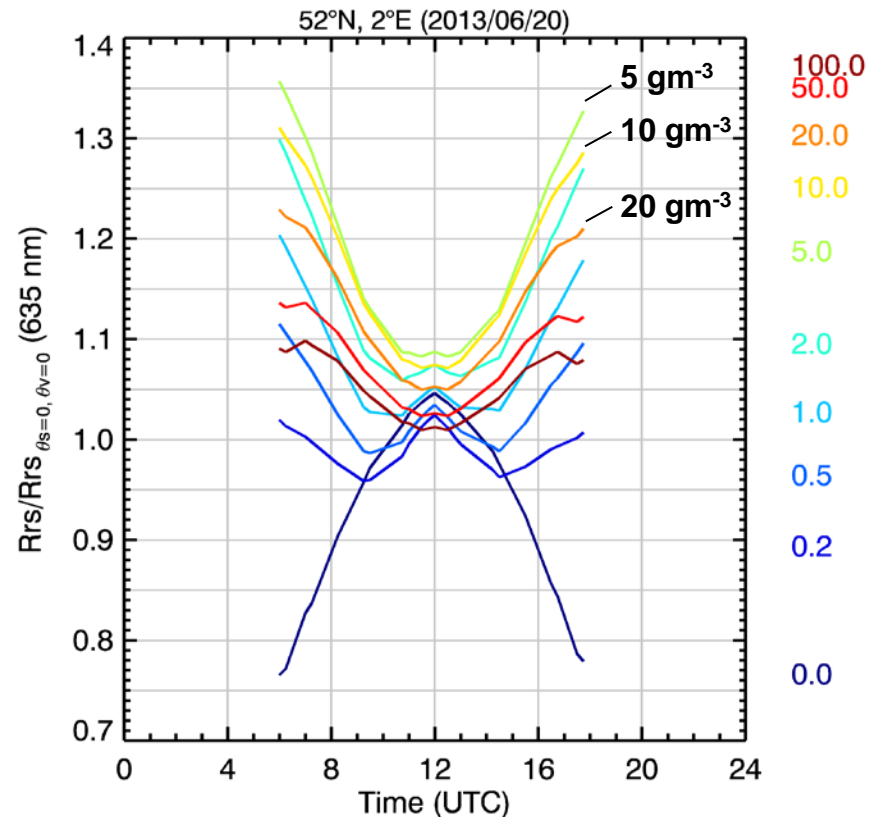
HL5 simulated reflectance for different mineral particle concentrations



# Marine BRDF at 52°N 2°E for an observer at 0°N 0°E

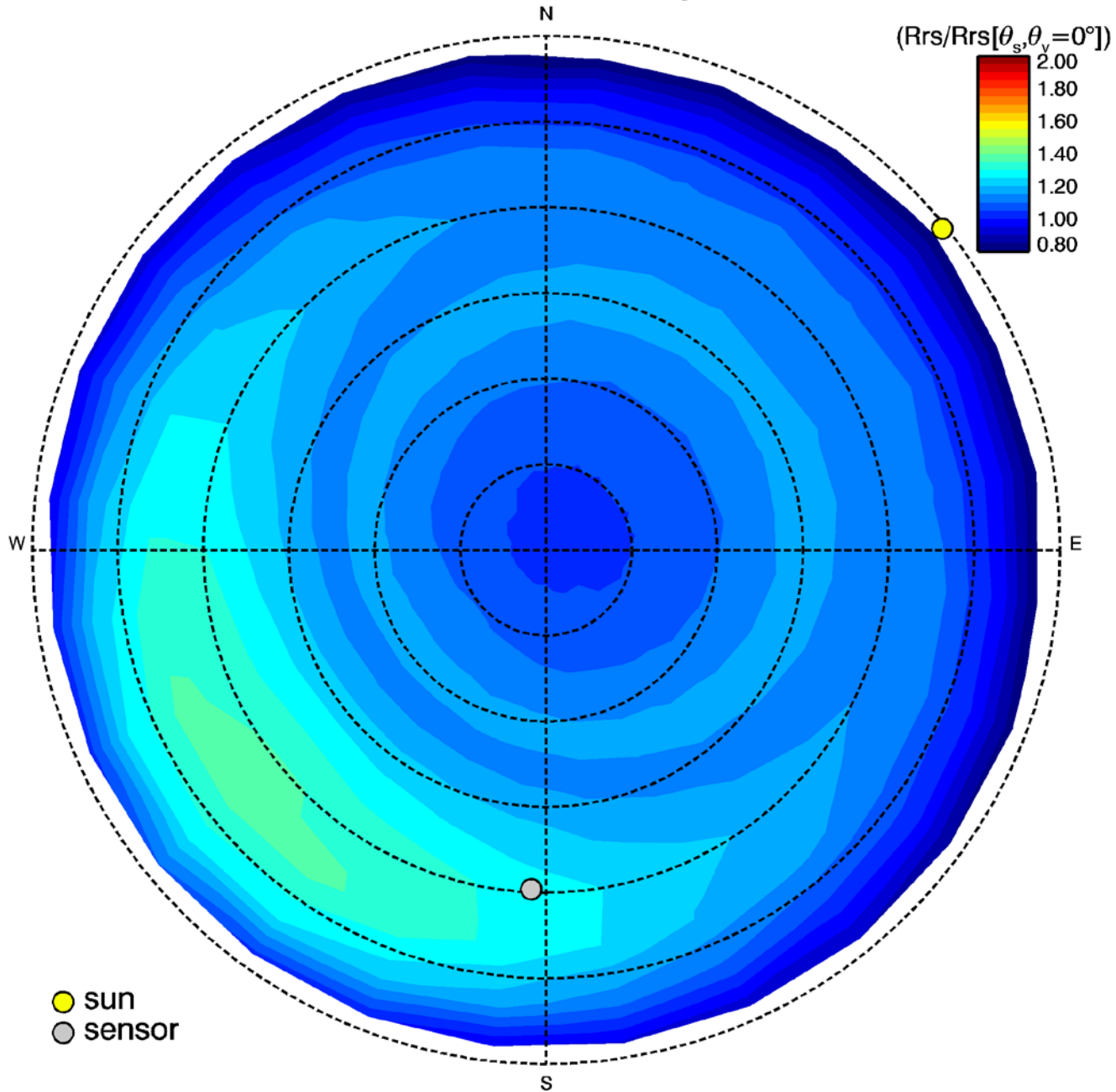


Sun path

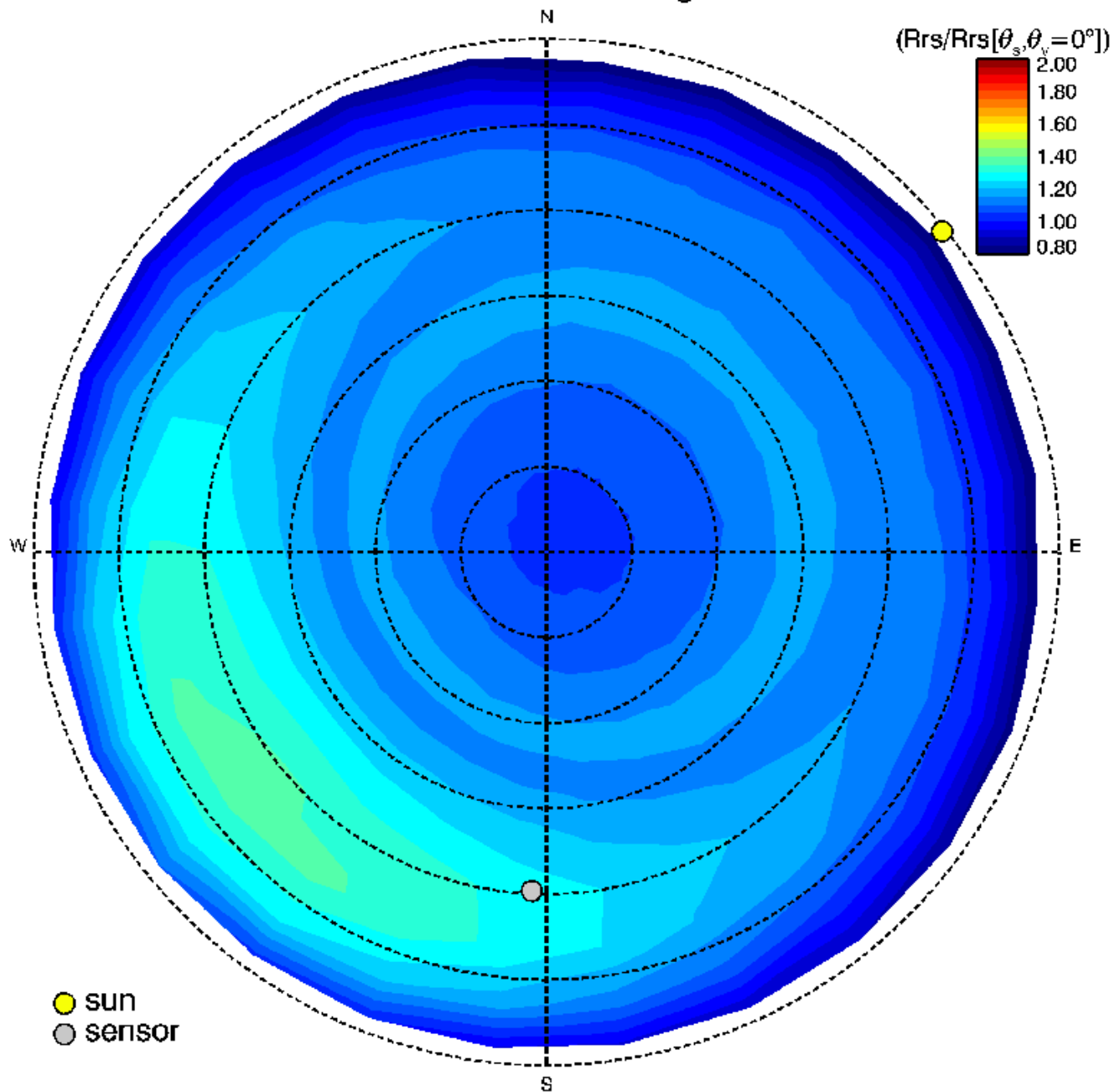


Reflectance normalized to:  
nadir viewing  
zenith sun

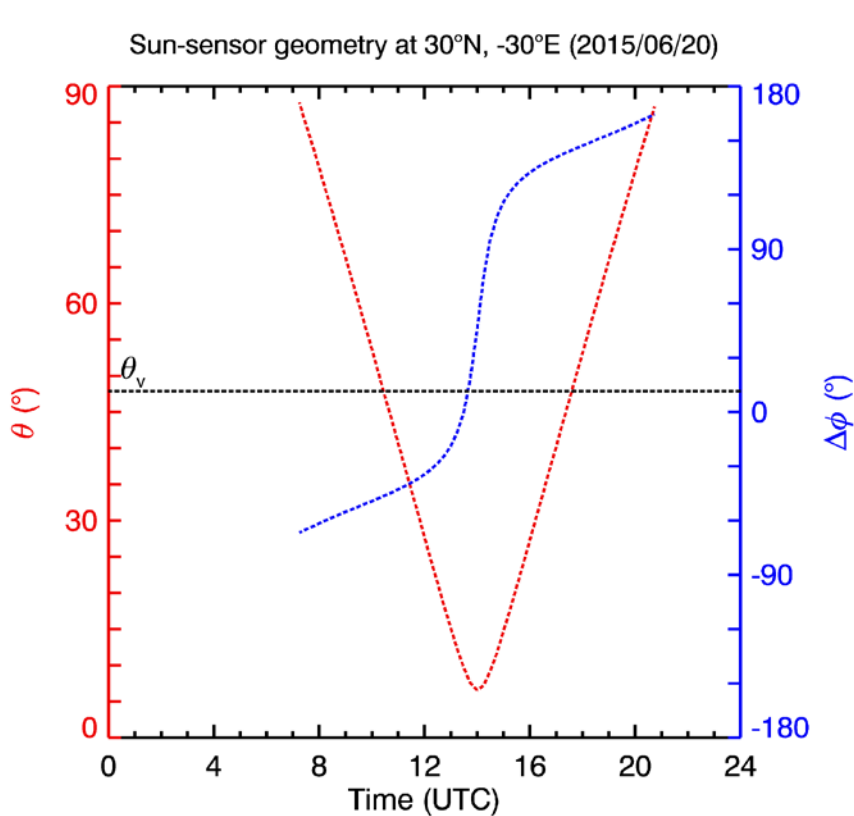
2013/06/20 03:45 ( $\theta_s$  89.26°)



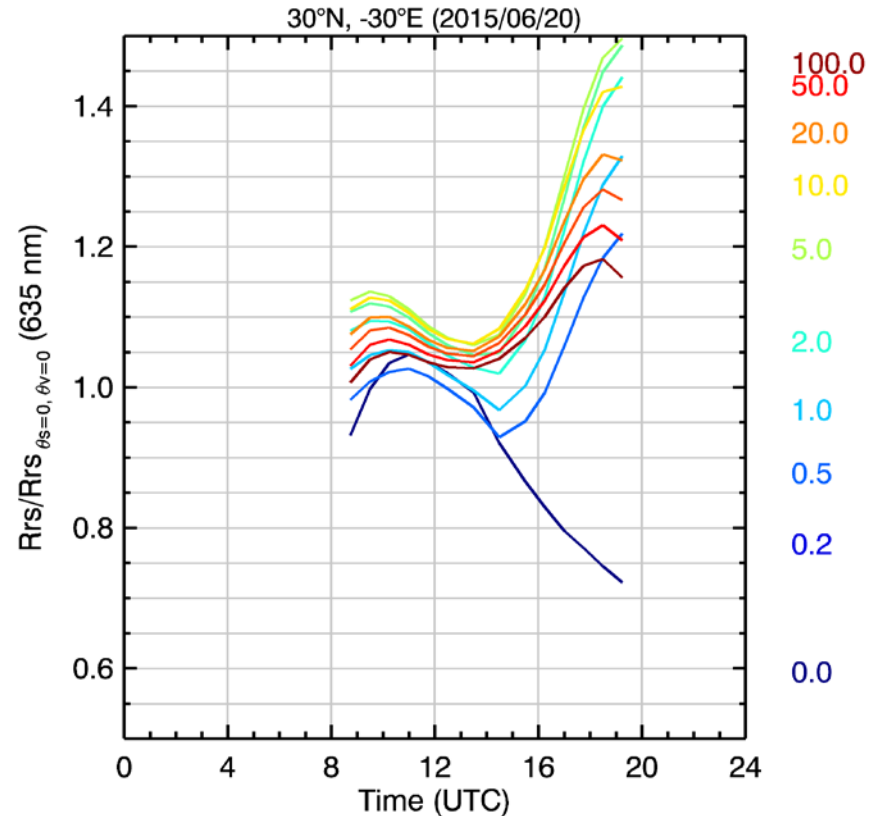
2013/06/20 03:45 ( $\theta_s$  89.26°)



# Marine BRDF at 30°N 30°W for an observer at 0°N 0°E

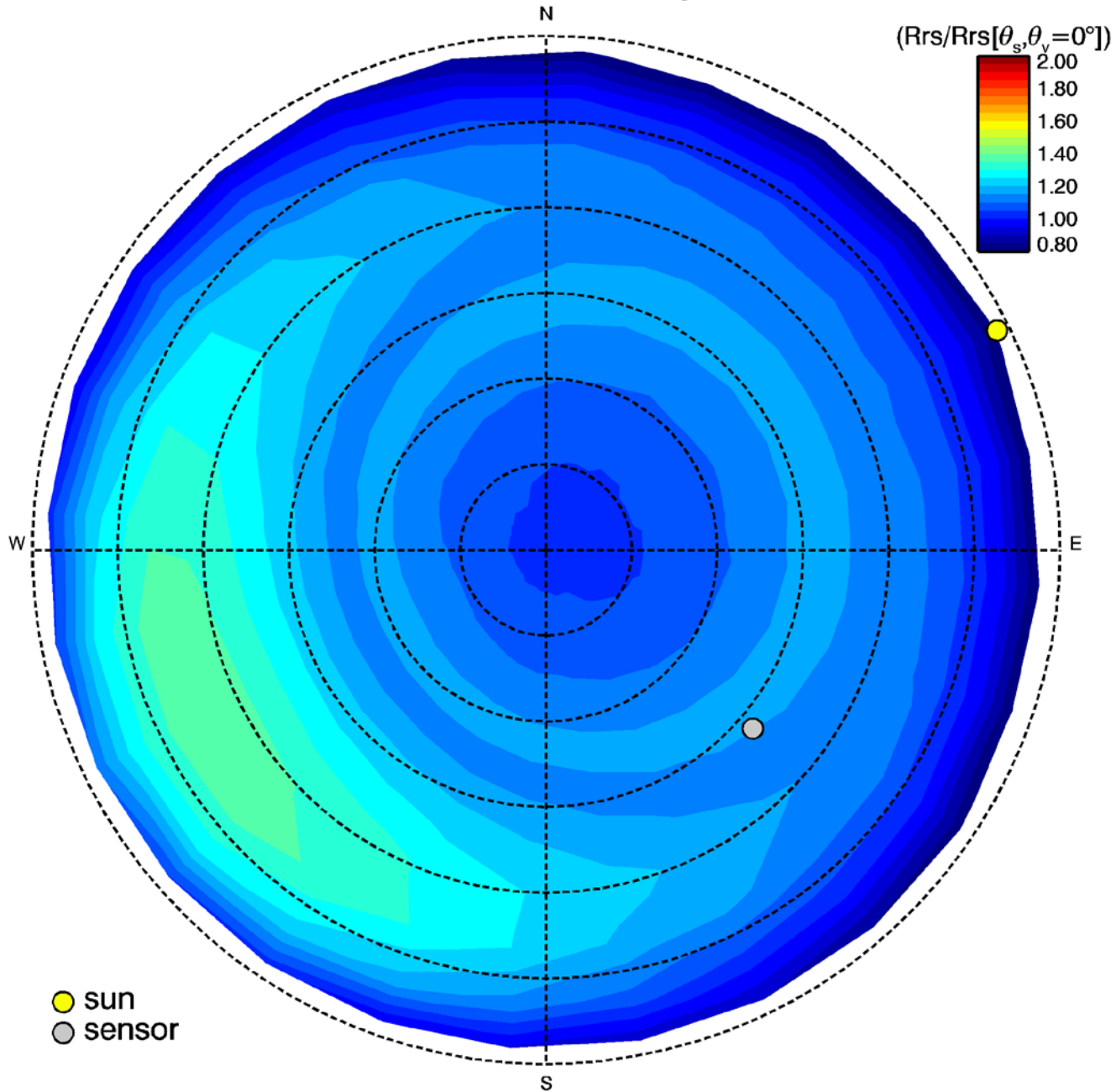


Sun path



Reflectance normalized to:  
nadir viewing  
zenith sun

2015/06/20 07:15 ( $\theta_s$  87.78°)



2015/06/20 07:15 ( $\theta_s$  87.78°)

