

PACE-PAX research flight report 2024/09/05

Compiled by Samuel LeBlanc, 2025/08/29

Summary: UCSB only outing – high chlorophyll

ER-2

No flight

Twin Otter

No flight

R/V UCSB

Creator: Stéphane Maritorena, Reviewed by Samuel LeBlanc

Cruise ID: RF0905-SB

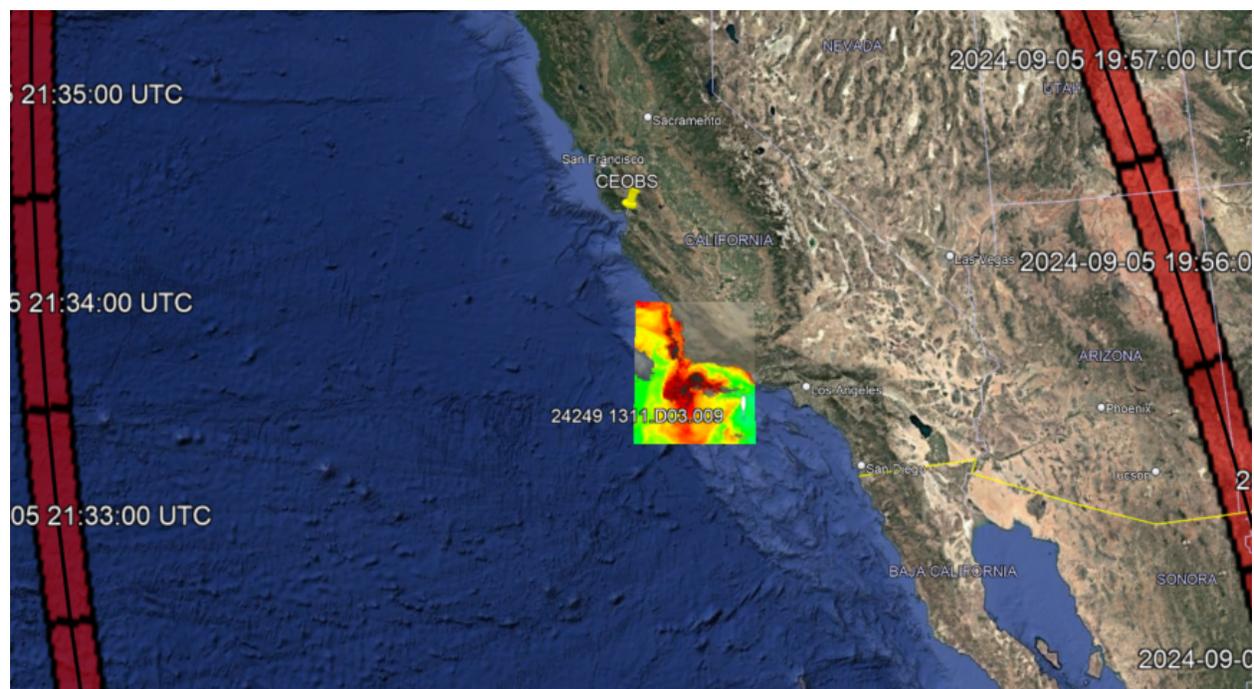
Sailed out: 1050 PDT / 1750 UTM

Back in port: 1415 1515 PDT / 2115 2215 UTM

PACE

Overpass: 19:55, 21:32

Orbit track over Nevada and west offshore



All times are in UTC, VTM elements in **black** satisfied, **blue** partially satisfied and **red** not satisfied.

Time	Platform	VTM	
17:50	UCSB		Departs, UCSB Aeronet AOD=0.09
18:45	UCSB		First station
19:55	PACE,UCSB	1b	PACE overpass (first)
20:05	UCSB		End of first station
20:35	UCSB		Start of second station
21:32	UCSB,PACE	1b	PACE overpass (2 nd)
21:55	UCSB		End of second station
22:15	UCSB		return

SPP: Solar Principal Plane

Assessment:

- 4.8% of objectives satisfied. Not bad for a check flight!

PACE-PAX progress tracking														29-Aug			
Validation objectives	ID	Measurement objectives	Importance w	Observation time, h (hours)	Total observed (hours)	Fractional success %/2/3	Fractional success %/3	Fractional success %/4	Fractional success %/5	Fractional success %/6	Fractional success %/7	Fractional success %/8	Total success	Remaining score	Flight details		
															time	completeness	success
1. Validate new retrieval properties	a	Land surface parameters	8	2.0	0.5	20.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.1%	6.4	0.5	0.9	1.6
	b	Ocean radiometric parameters	10	8.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0	0.0	1.0	0.0
	c	Aerosol parameters over the ocean	12	8.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.0	0.0	1.0	0.0
	d	Aerosol parameters over land	12	8.0	3.0	31.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.3%	8.2	3.0	1.0	3.8
	e	Cloud parameters	12	8.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.0	0.0	1.0	0.0
	f	Ocean surface parameters	1	8.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0	0.0	1.0	0.0
3. Validate in a narrow swath	a	Aerosol parameters over the ocean (PACE)	10	8.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0	0.0	1.0	0.0
	b	Aerosol parameters over land (PPAC)	10	8.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0	0.0	1.0	0.0
	c	Cloud parameters (PACE)	5	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0	0.0	1.0	0.0
	d	Aerosol parameters (EarthCARE)	8	4.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0	0.0	1.0	0.0
4. Validate radiometric and polarimetric properties	e	Cloud parameters (EarthCARE)	8	4.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0	0.0	1.0	0.0
	a	Validate large reflectances	6	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0	0.0	1.0	0.0
	b	Validate large reflectances with high polarization	6	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0	0.0	1.0	0.0
	c	Validate large reflectances with low polarization	6	2.0	0.5	22.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.1%	4.7	0.5	1.0	1.3
	d	Diversity vicarious calibration sites	6	4.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0	0.0	1.0	0.0
	a	High aerosol loads over land	4	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0	0.0	1.0	0.0
6. Focus on specific processes or phenomena	b	High aerosol loads over ocean	4	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0	0.0	1.0	0.0
	c	Multiple aerosol layers	1	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0	0.0	1.0	0.0
	d	Aerosol under thin cirrus	2	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0	0.0	1.0	0.0
	e	Aerosol above liquid phase cloud	4	2.0	0.5	11.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	3.5	0.5	0.5	0.5
	f	Broken clouds with complex structure	4	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0	0.0	1.0	0.0
	g	Dust aerosols over ocean	4	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0	0.0	1.0	0.0
	h	Aerosol and ocean parameters over turbid waters	2	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0	0.0	1.0	0.0
	i	Aerosol and ocean parameters over biologically productive waters	4	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0	0.0	1.0	0.0
	j	Aerosol over ocean	1	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0	0.0	1.0	0.0
	k	Smoke aerosols over ocean	1	2.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0	0.0	1.0	0.0
	total:			150	98	4.5	4.8%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	total	Accomplished		
				ER-2 flight hours	2.8	0	0	0	0	0	0	0	2.8				
				YO flight hours	2.5	0	0	0	0	0	0	0	2.5				
				Shearwater days	0	0	0	0	0	0	0	0	0				
PACE-PAX overall objectives satisfied: 4.8%																	

UCSB station picture:



Cruise ID: RF0905-SB

Sailed out: 1050 PDT / 1750 UTM AOD~0.09 at UCSB AERONET

Back in port: 1515 PDT / 2215 UTM

Radiometry data and water samples for HPLC pigments analysis were collected at 2 stations.

Station 1: 34.3094 -119.7701 1845 – 2005 UTM – PACE Overpass at 19:55 UTM

Cloud-free sky, wind ~8-10 m/s, waves/swell: 1-2 m

Deployed a HyperPro radiometer as a buoy. Also did one profile with the HyperPro to test the pressure sensor. Pressure sensor is not working (not a problem for deployments as a float).

Deployed a C-OPS radiometer and did 2 profiles.

Collected 3 water samples at the surface for HPLC pigments analysis.

Station 2: 34.3395 -119.701 2035-2155 UTM -- 2nd PACE Overpass at 21:32 UTM

Cloud-free sky, wind ~10 m/s, waves/swell: 1-2 m

Did 2 casts with the C-OPS radiometer.

Collected 3 water samples at the surface for HPLC pigments analysis.

Did not deploy the HyperPro at station 2 as sea and wind conditions were worsening with the boat drifting significantly.

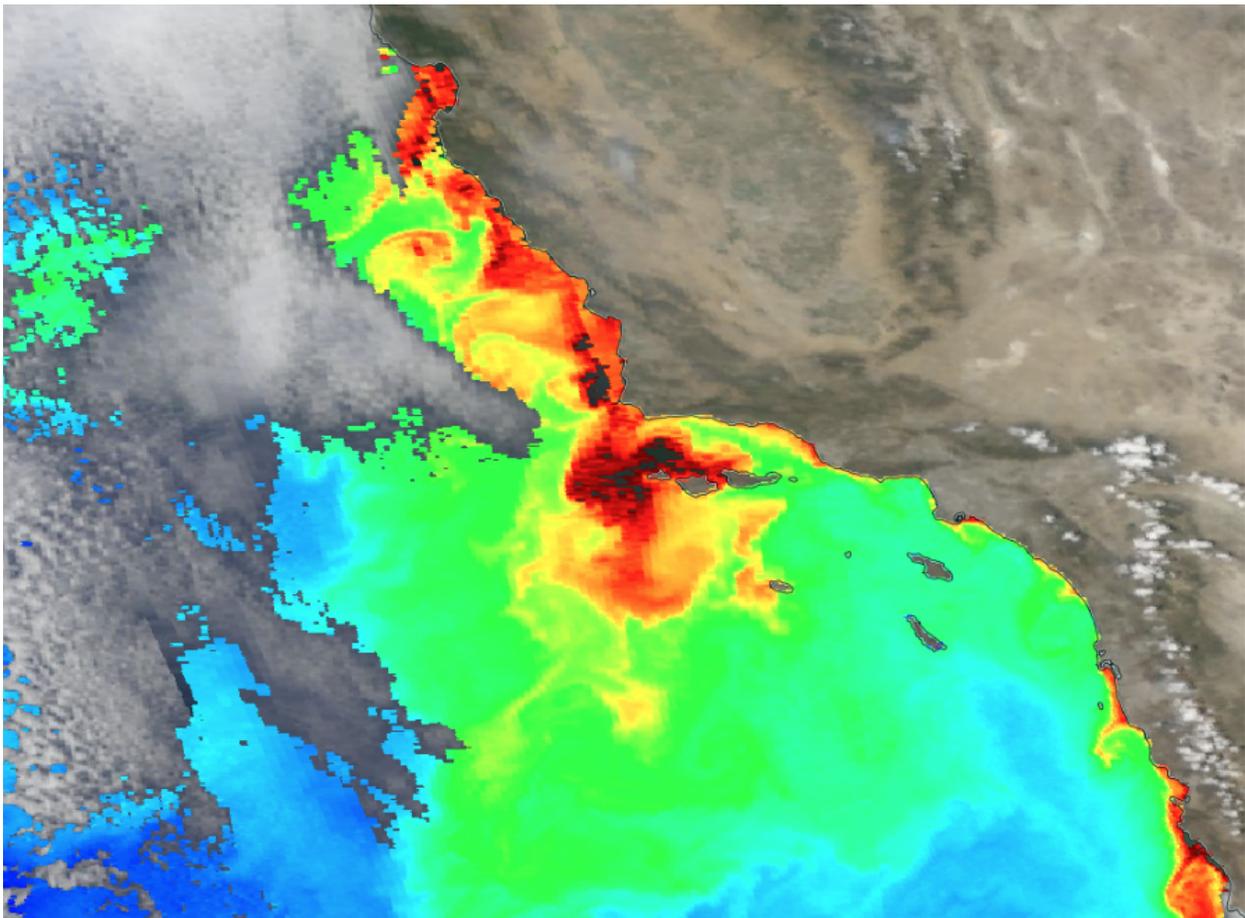
After the cruise, back at UCSB, water samples were filtered and stored in liquid nitrogen.

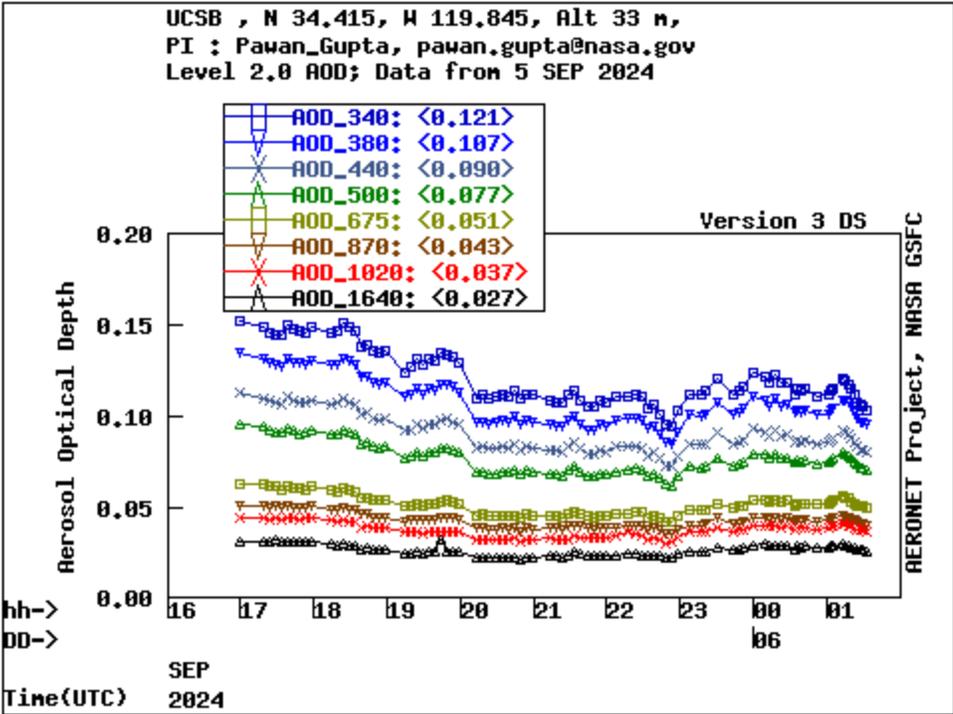
Ship plans for the coming days

Tentative days are scheduled for September 10, 12, 17, 19, 24 and 26. Go/No Go for these dates will depend on sky and weather conditions, predicted PACE overpass and scheduled PACE-PAX overflights.

System Status

The pressure sensor on the HyperPro is not working. In agreement with the PACE Validation team, the instrument has been sent back to the manufacturer for repair.





PACE satellite quicklooks