

S-MODE Field Experiment Report 2021-05-10

Summary: The initial plan was to collect airborne data over the ONR TFO site. However, the region was covered by a heavy marine layer and observations at the R/V Revelle showed that operations below the cloud deck were unlikely due to a solid cloud deck. In the meantime, the situation over the Catalina Island site had improved significantly over the morning and at 11 am it was decided to attempt to collect data over the WHOI wave glider between Catalina and San Clemente Islands. AFRC and the TOI team rose to the challenge of the sudden change and procured airspace, including operations in a warning area. Data collections started at around 2 pm and continued to before 4 pm, when the cloud deck dropped, as did the wind speed, and the aircraft returned home. DopplerScatt collected about 2 hours of good data, while MASS collected good data for about 1 hour. Due to the cloud conditions, MOSES was unable to collect useful data. The team is evaluating the possibilities for additional data collections given the prospect of low winds and clouds for most of the week.



Fig 1: Cloud deck seen from the R/V Roger Revelle. No entry points for MASS.

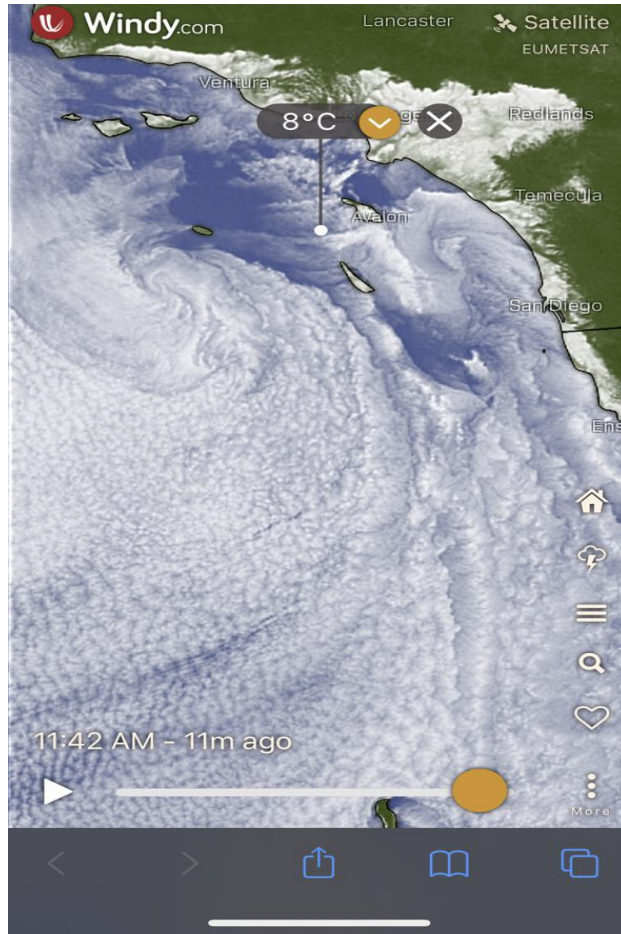


Fig 2: Clearing conditions between Catalina and San Nicolas. (Image windy.com)



Fig 3: Conditions on arrival of the B200 to Catalina. Scattered clouds with holes to descend below the cloud deck. (Image H. Posada, AFRC)



Fig 4: Worsening cloud conditions from the B200 (Image F. Nicaise, JPL)



Fig 5: Visibility is dropping for MASS in the Twin Otter (Image N. Statom, SIO)

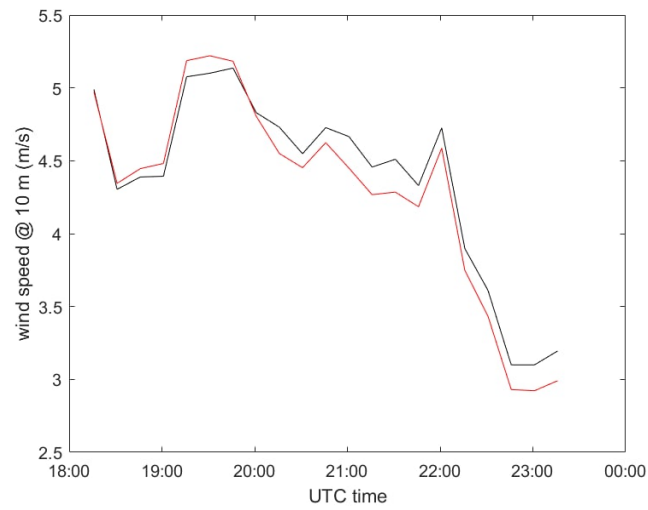


Fig 6: The wind speed also dropped suddenly as seen from the WHOI wave glider.
(Image, L. Lenain, SIO)

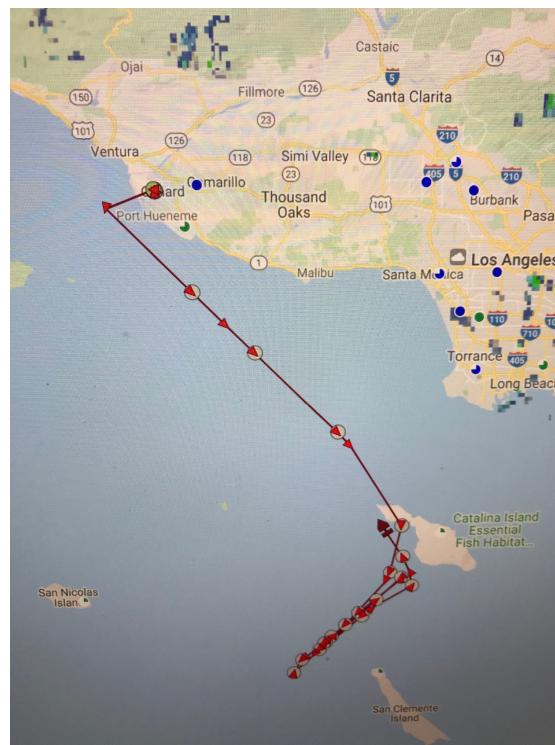


Fig 7: Tracks collected by MASS on the Twin Otter

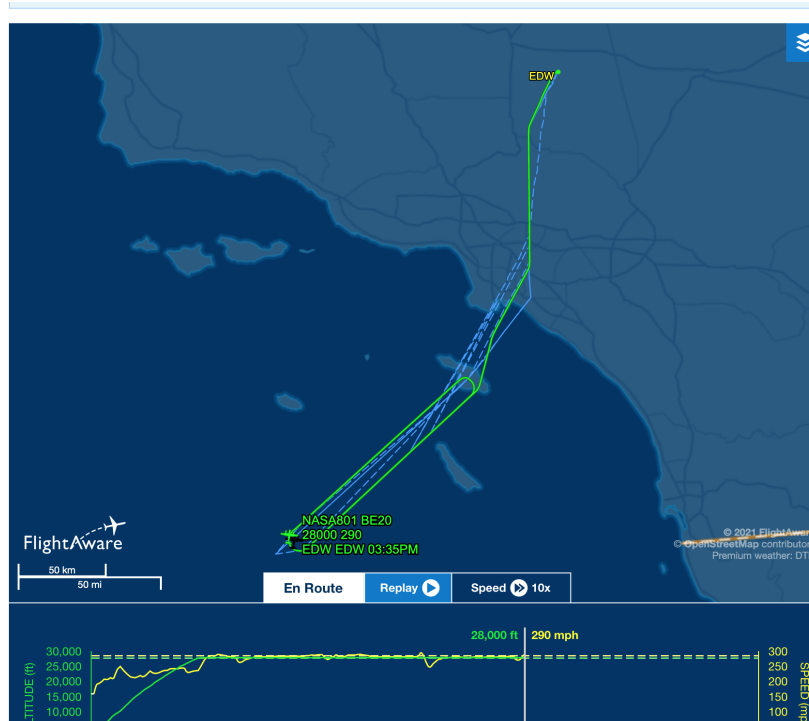


Fig 8: Tracks collected by the NASA 801 B200 with DopplerScatt and MOSES