

A photograph of a beach at sunset. The sun is low on the horizon, creating a warm orange glow. Several people are in the shallow surf. On the left, a person stands next to a tall, dark metal structure with equipment on top, likely used for oceanographic measurements. Other people are wading or standing in the water, some holding poles or equipment.

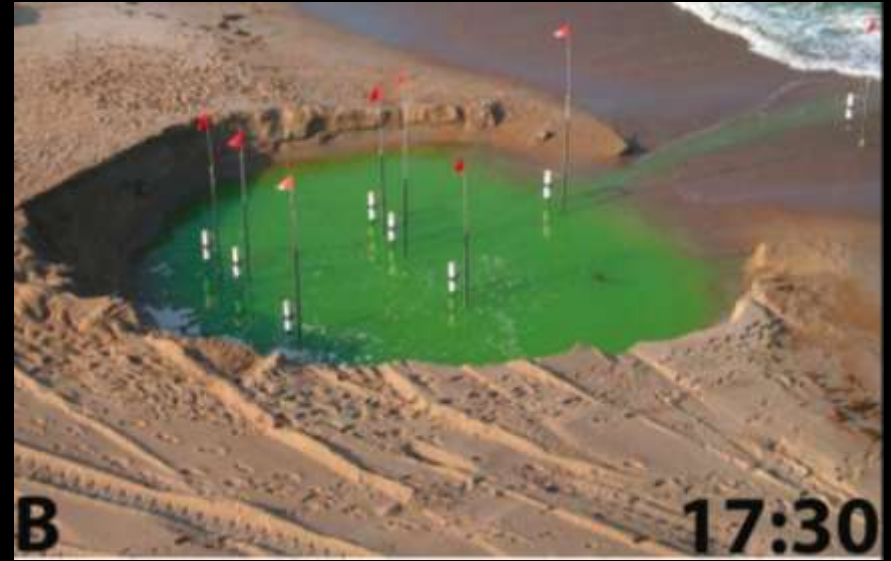
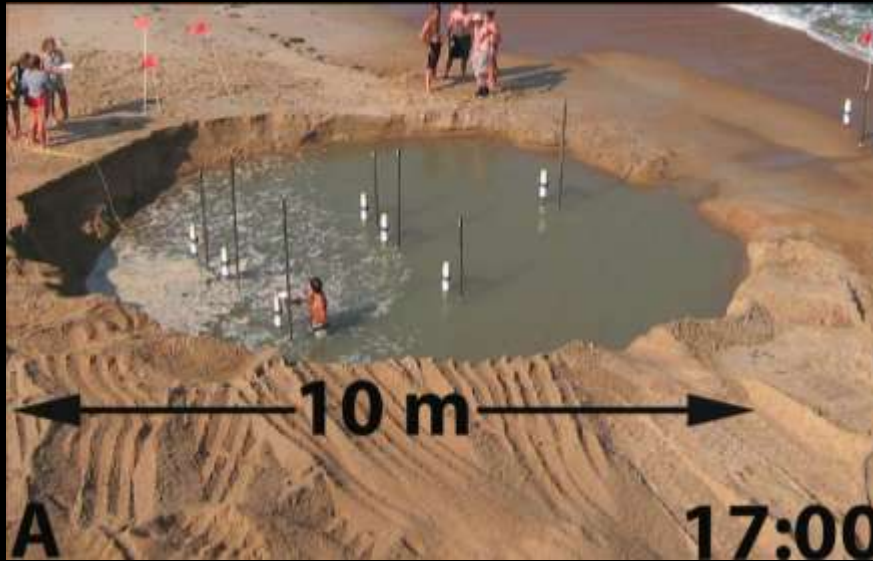
Aquadopp measurements of circulation and accretion in man-made holes in the surf zone

(photo: E. Williams)

- S. Kilgallin, M. Moulton, S. Elgar, and B. Raubenheimer



“Swashzone Holes Fill Rapidly”



(photos: J. Thomson)



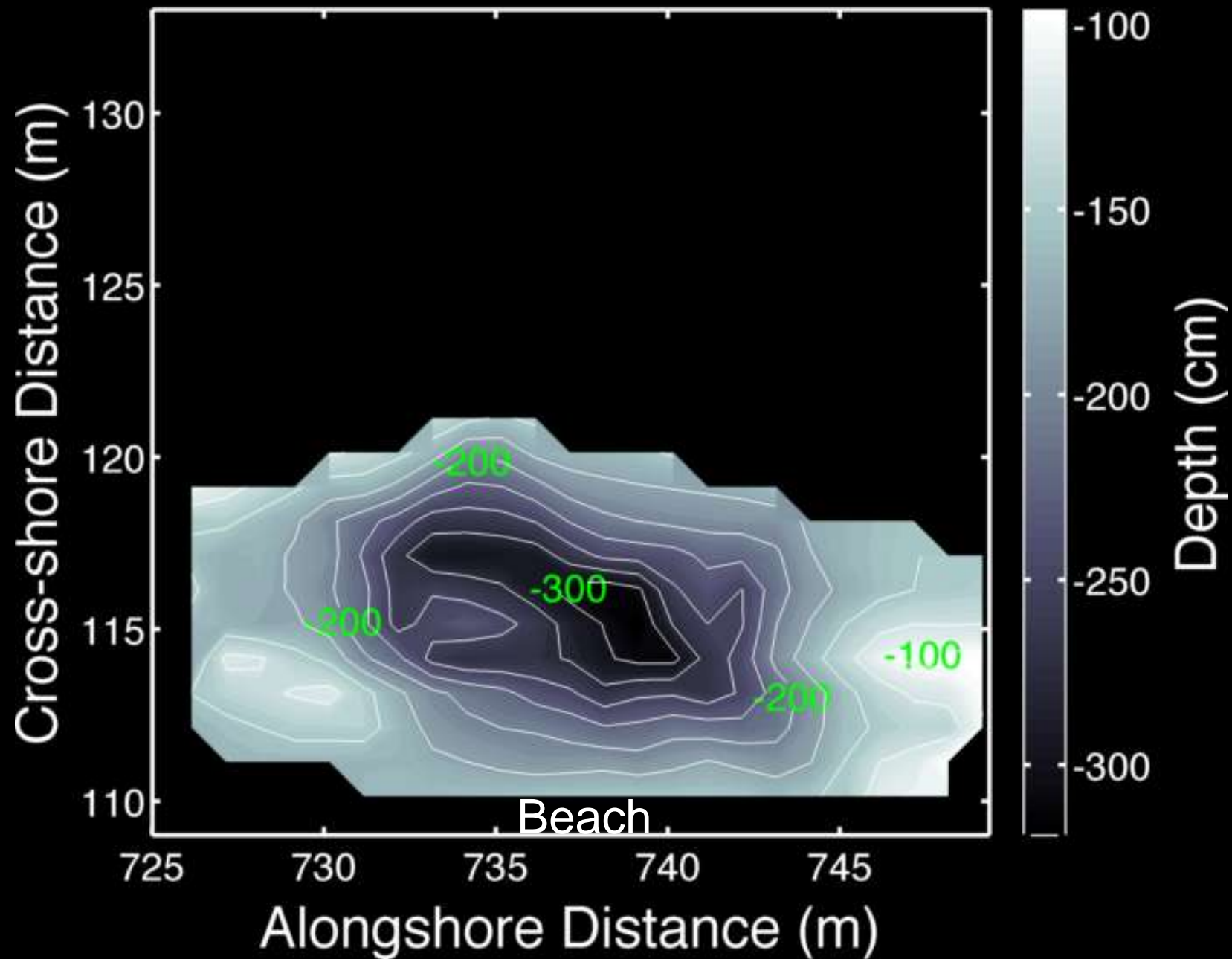
(photo: M. Moulton)



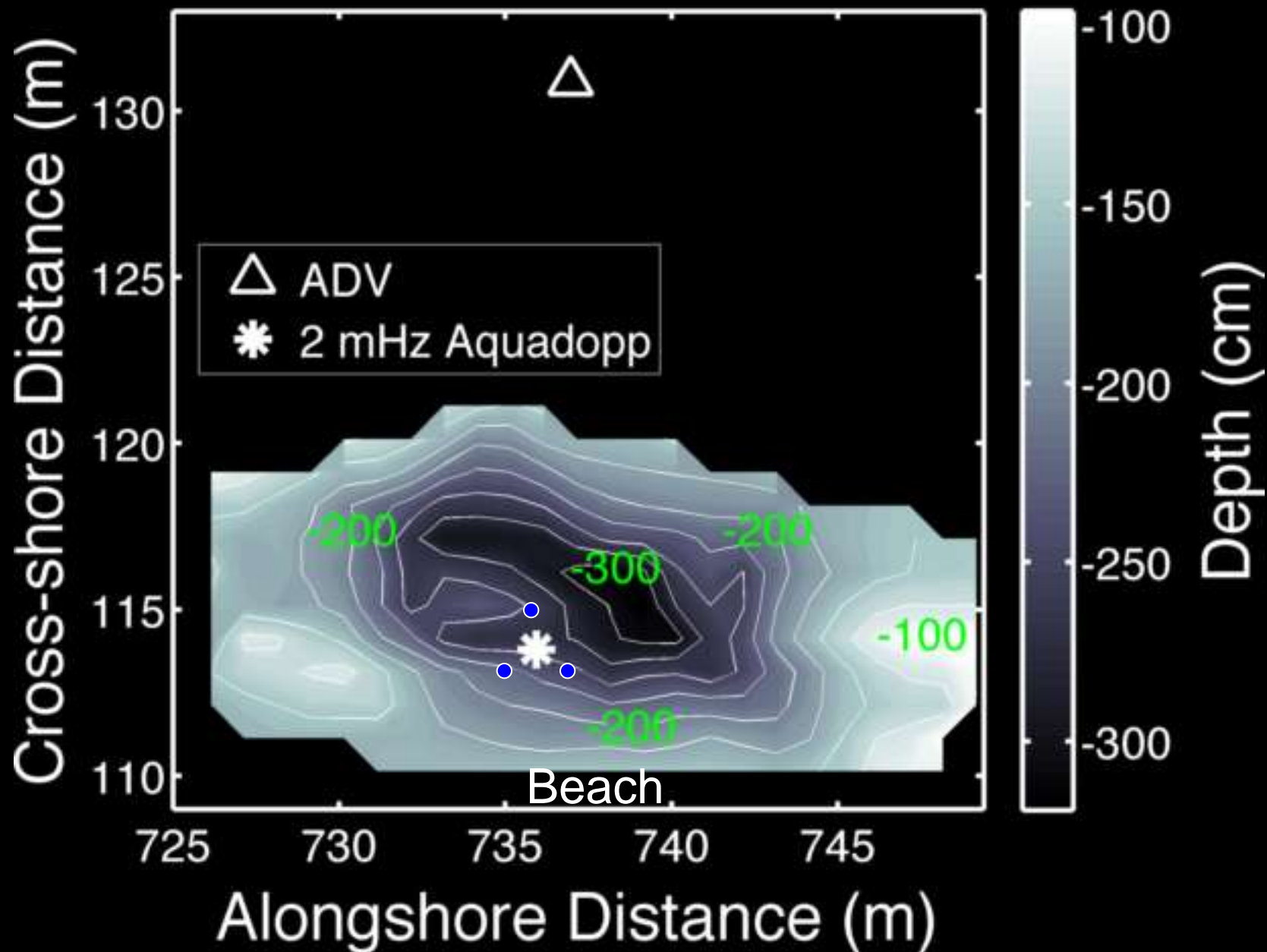
~ 100 m³



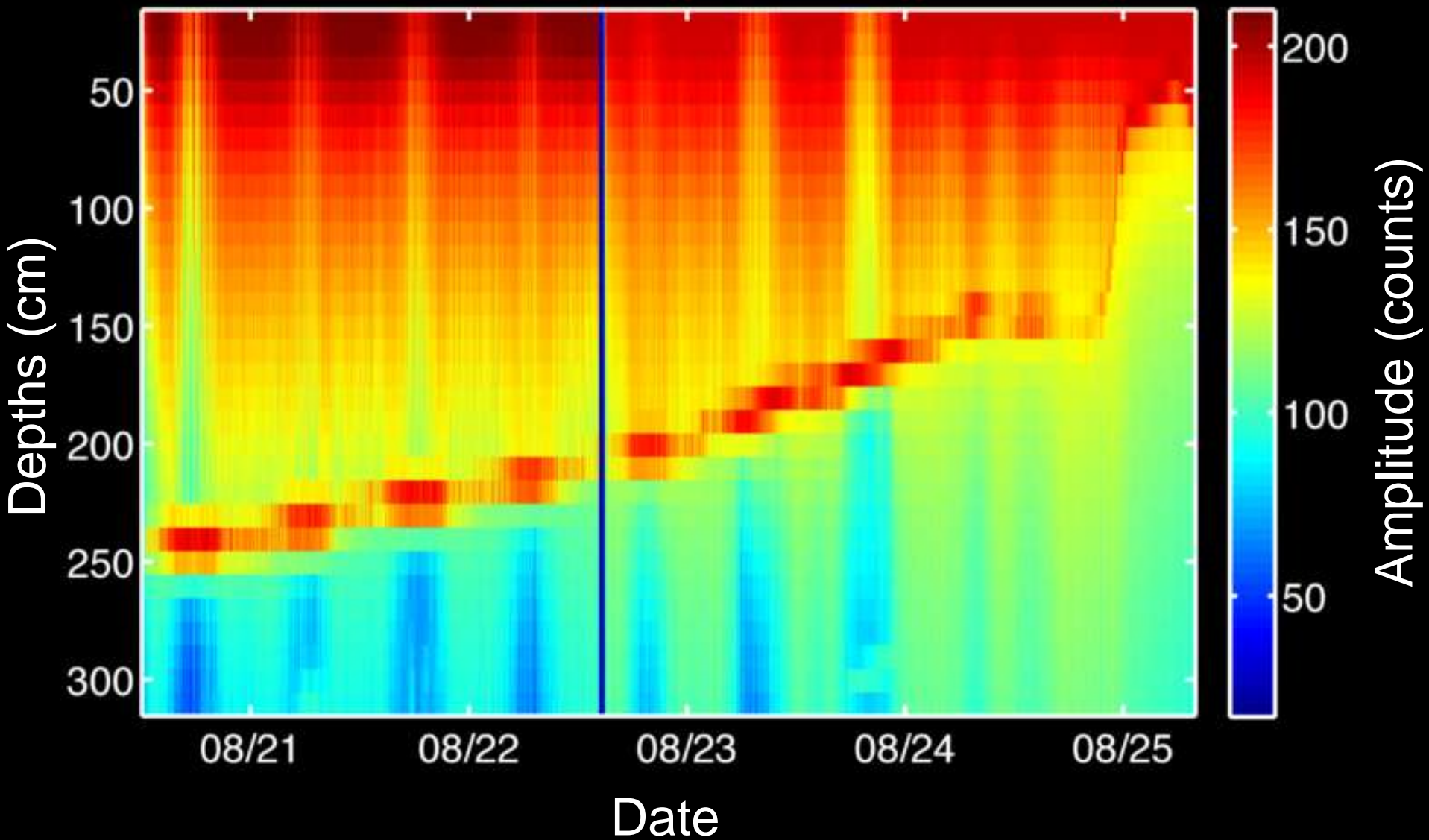
Pole Survey



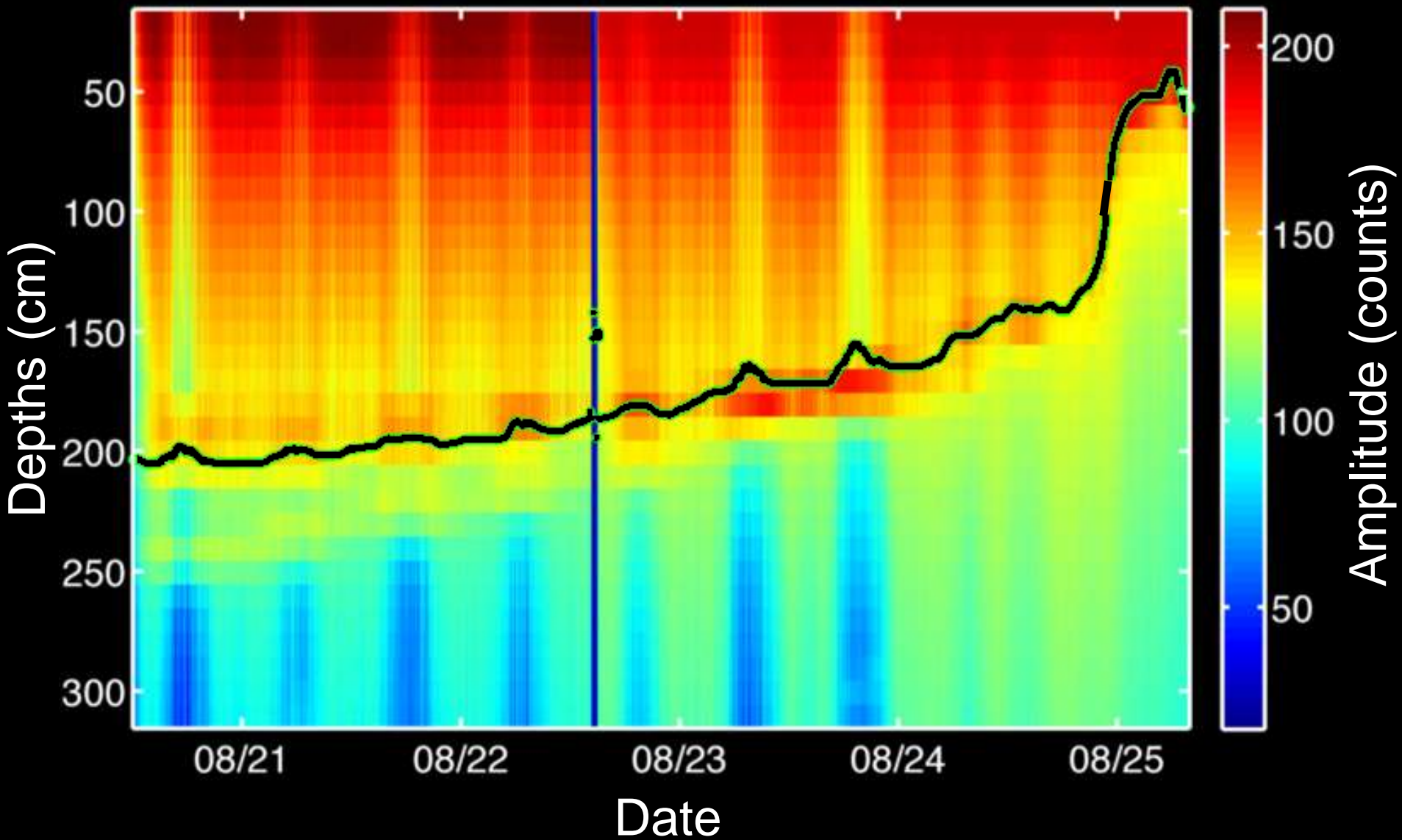
Pole Survey



Beam 1



Average of all 3 beams

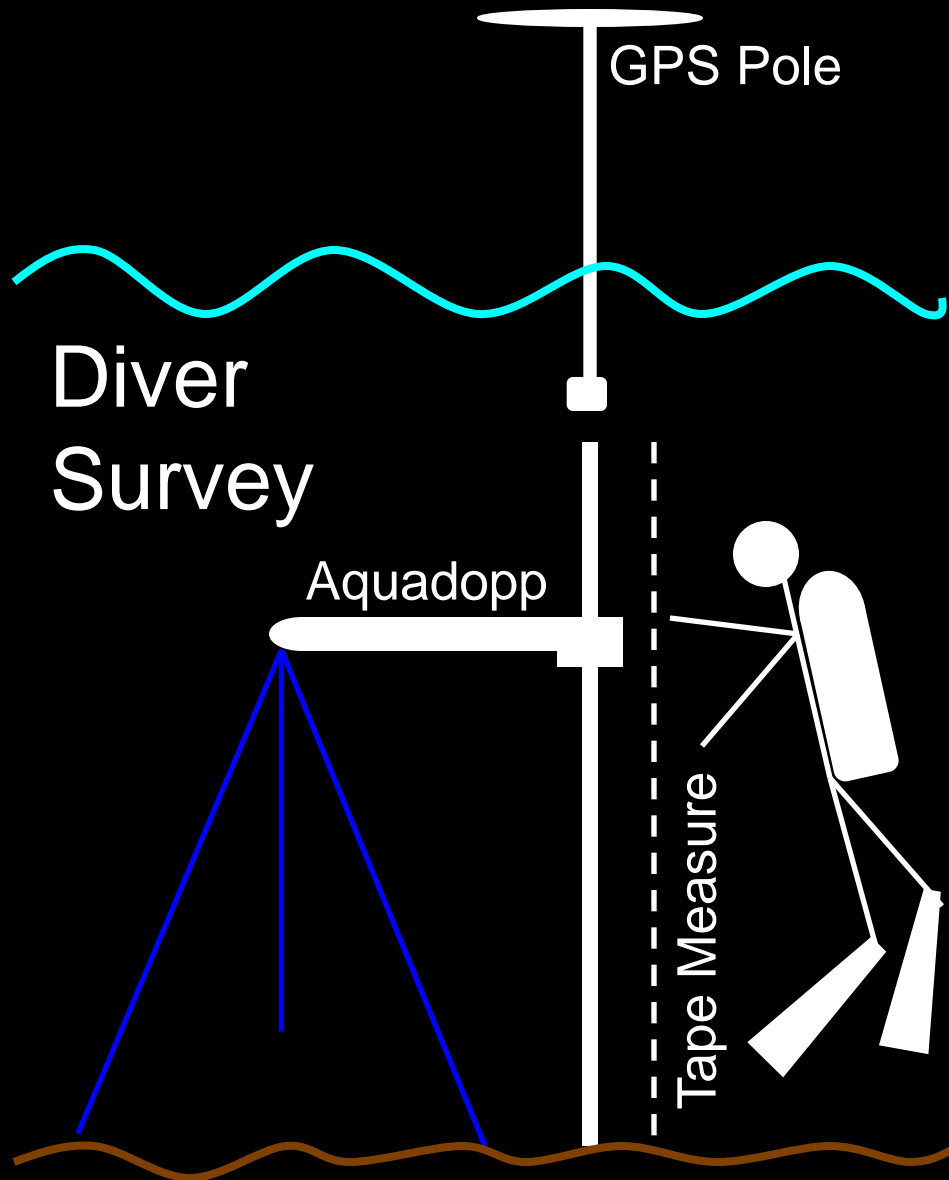


Survey Techniques

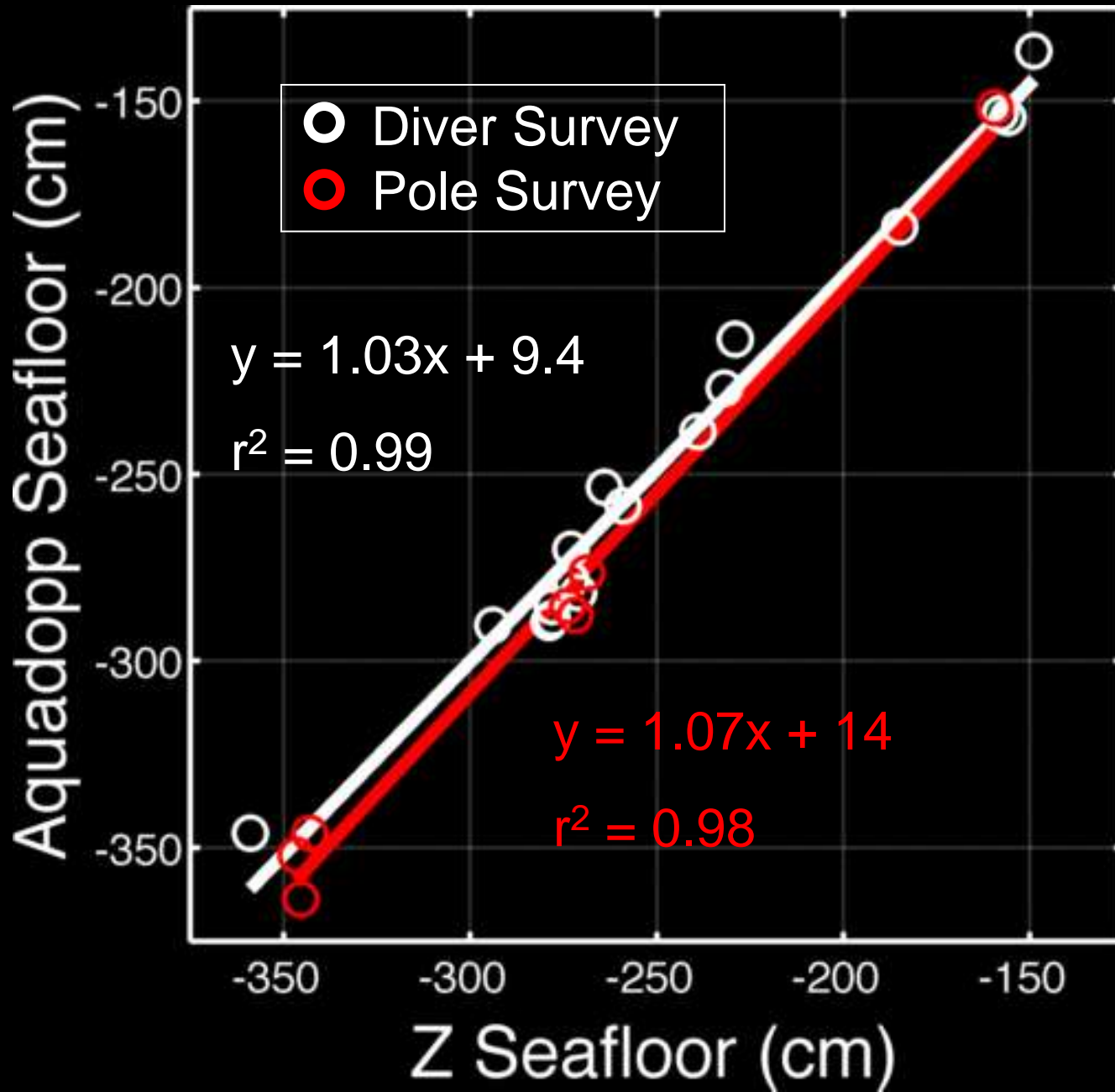
Pole Survey

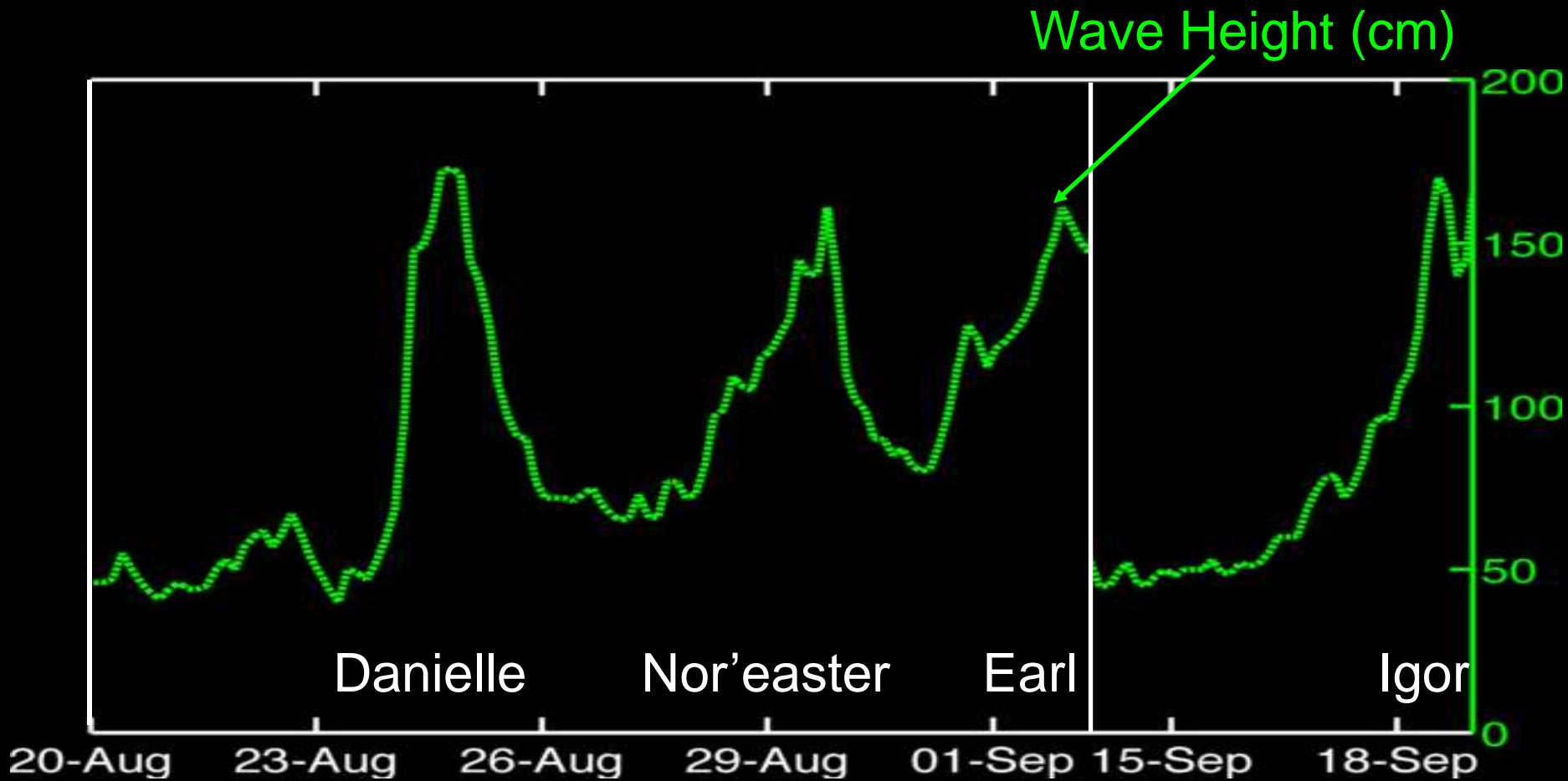


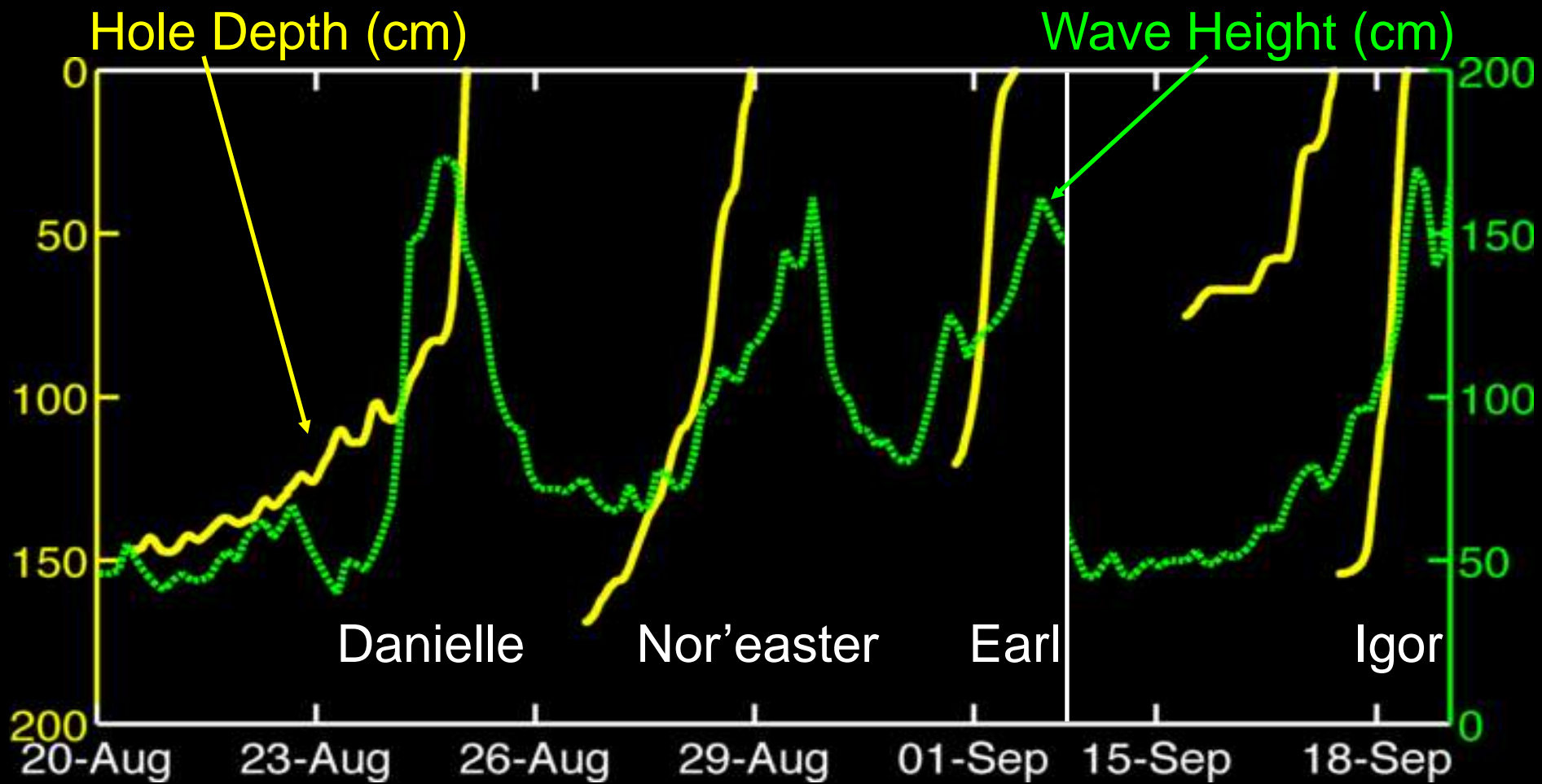
(photos: R. Yopak)

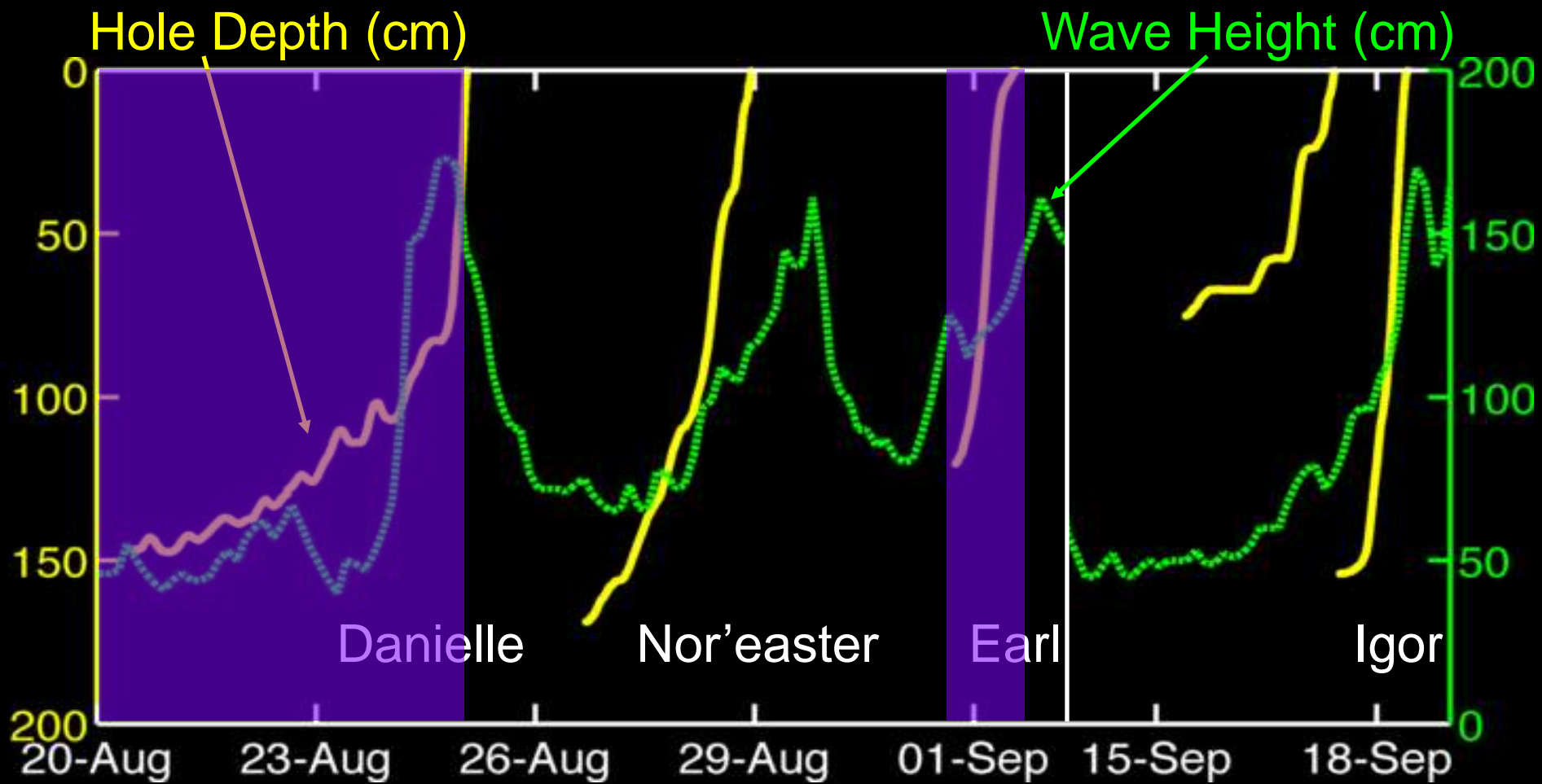


Seafloor Comparison

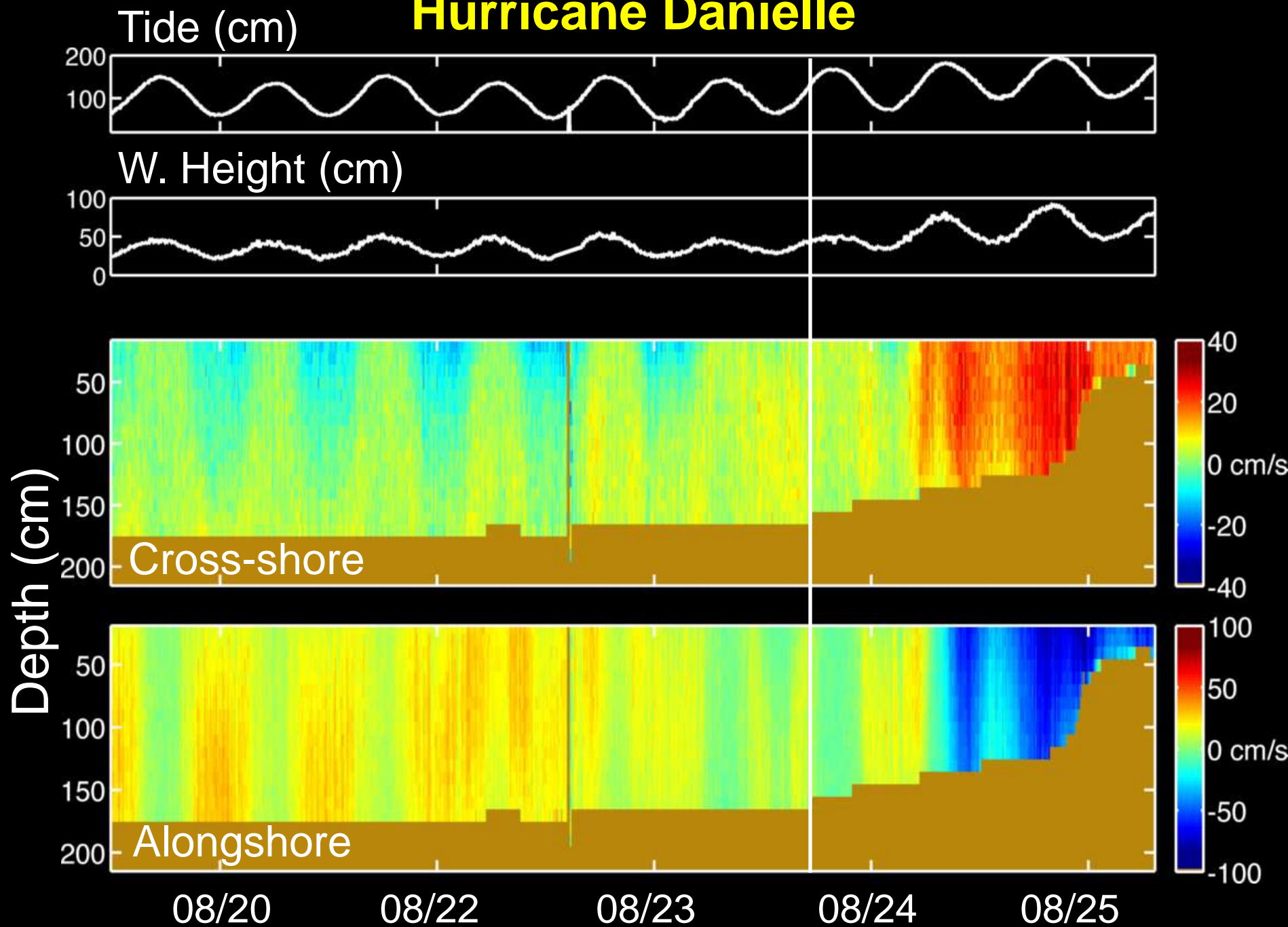




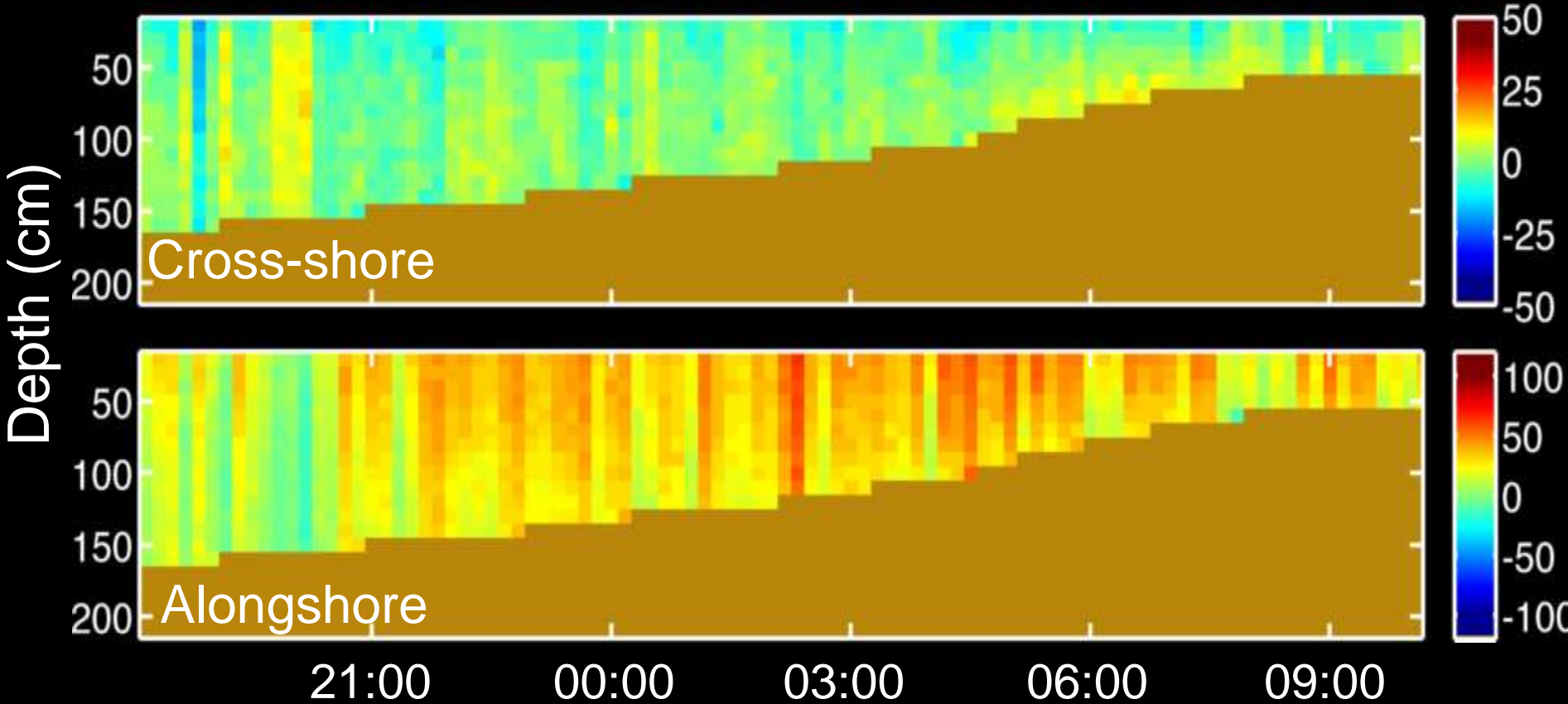




Hurricane Danielle



Hurricane Earl



Conclusions

- Amplitude signal determines depth accurately
- Holes fill slower in surf than in swash
- Rate of filling is proportional to wave height

Future Work:

- Compare transport estimates with observations
- Examine hole's effect on waves and circulation

Holes fill fast in swash

Aquadopp measures the bed

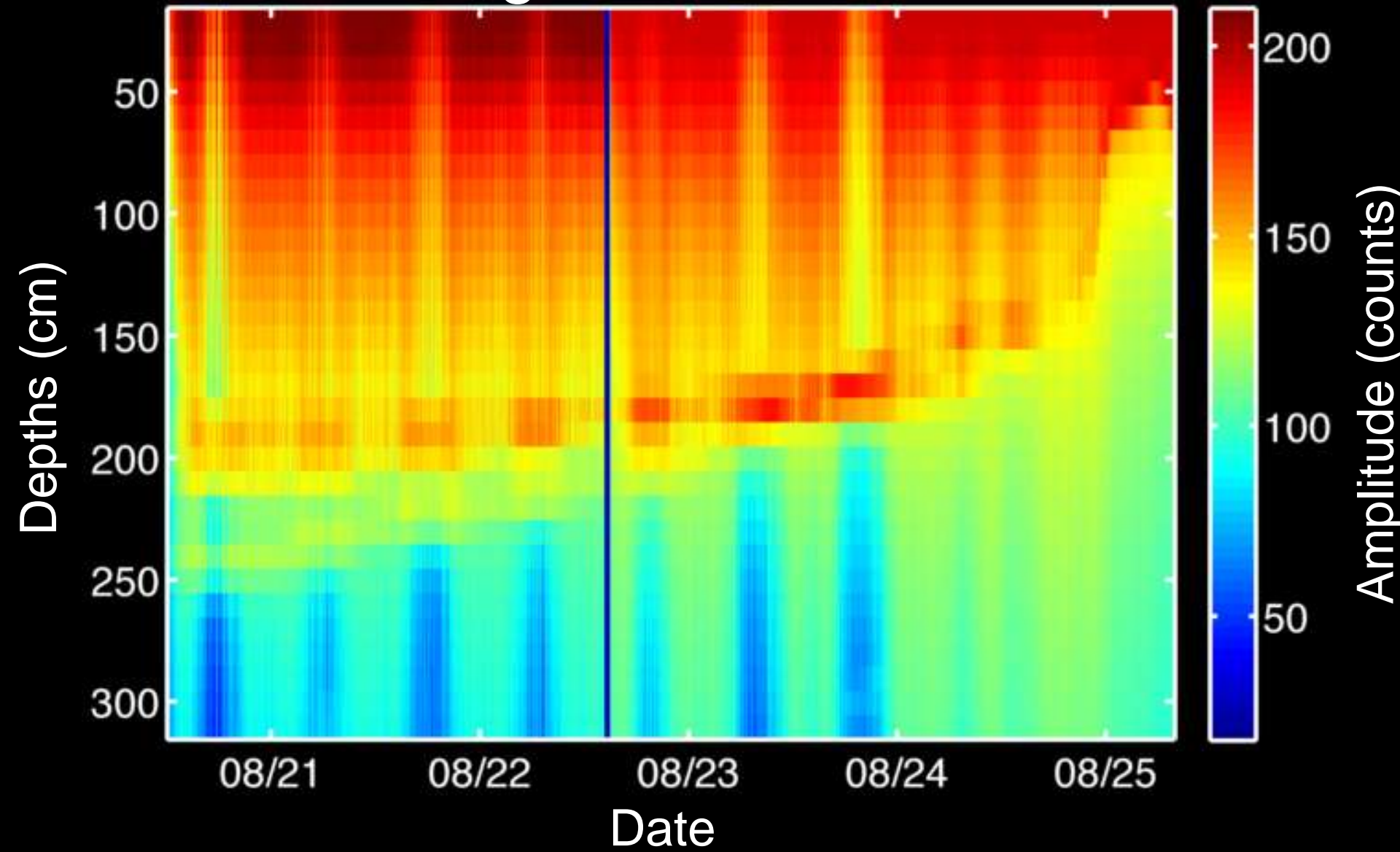
Holes fill slow in surf

-V. Pavel

Extra Slides

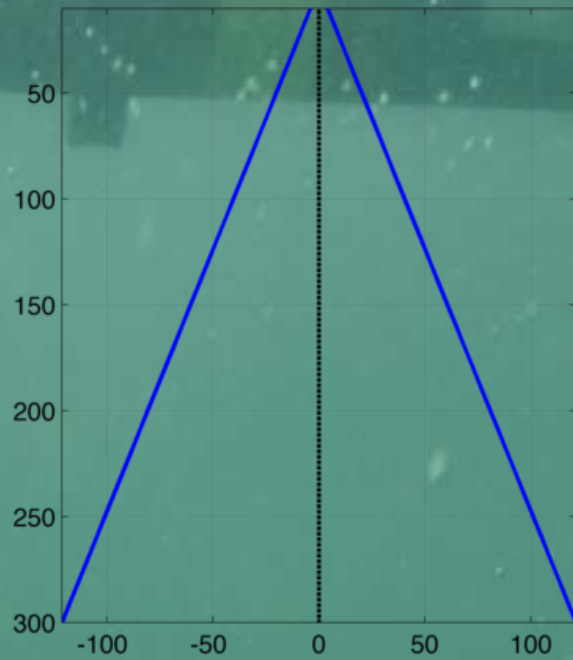
- Video of hourly profiles
- Hand Measure vs. Pole Survey
- Triton vs. Extrapolation
- Hole 2 U mass estimate
- ???

Average of all 3 beams

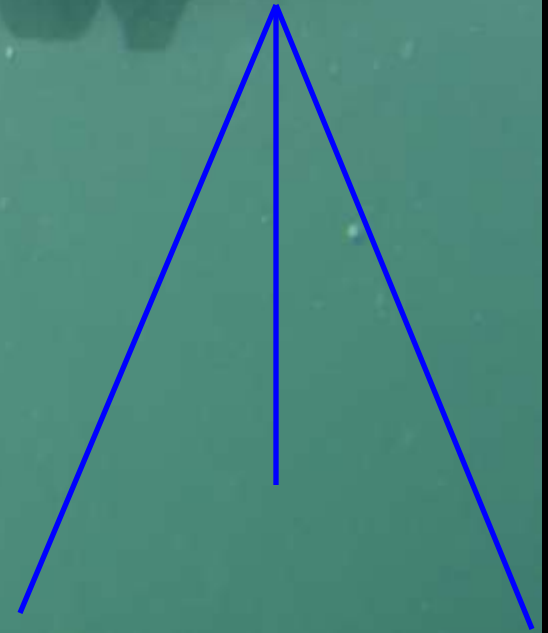


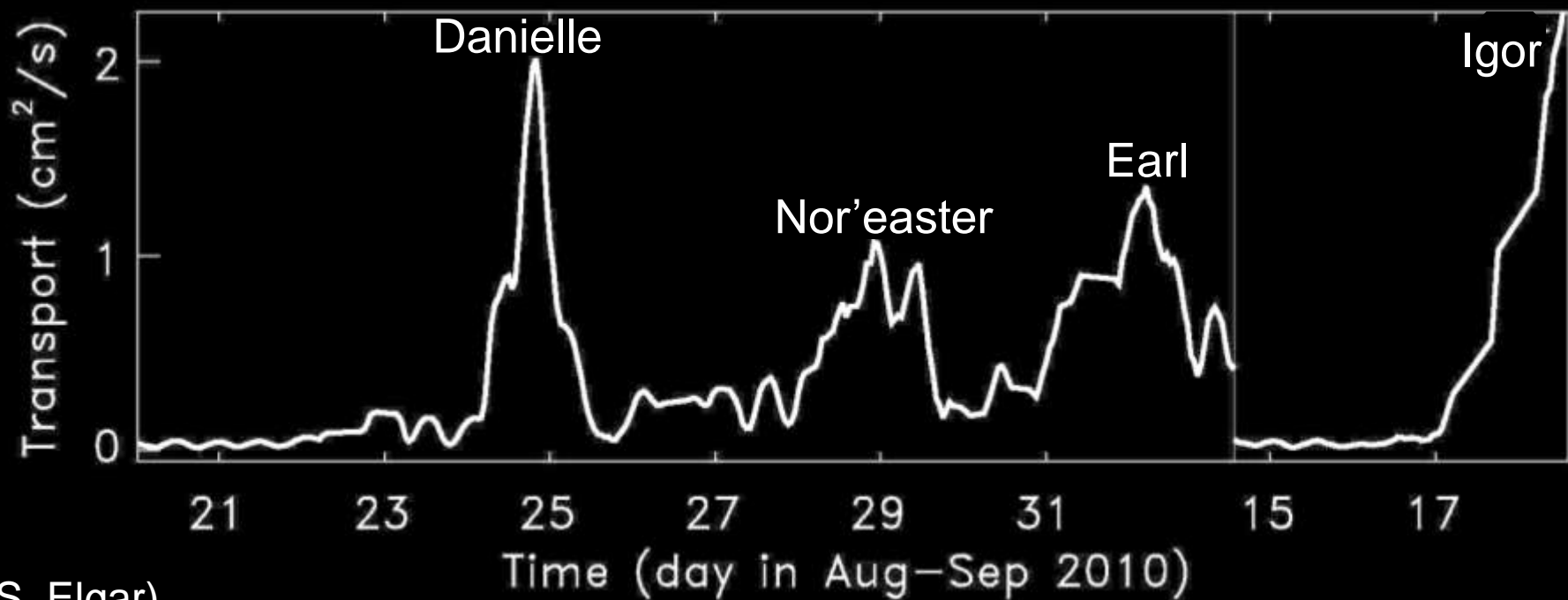
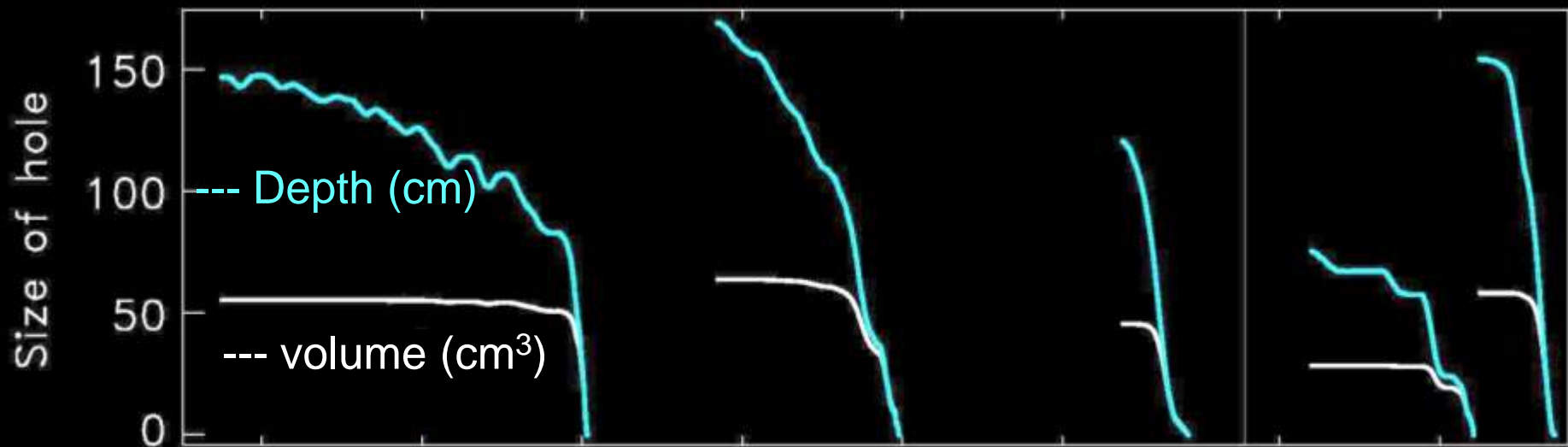
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Nortek Aquadopp Profiler



Instruments





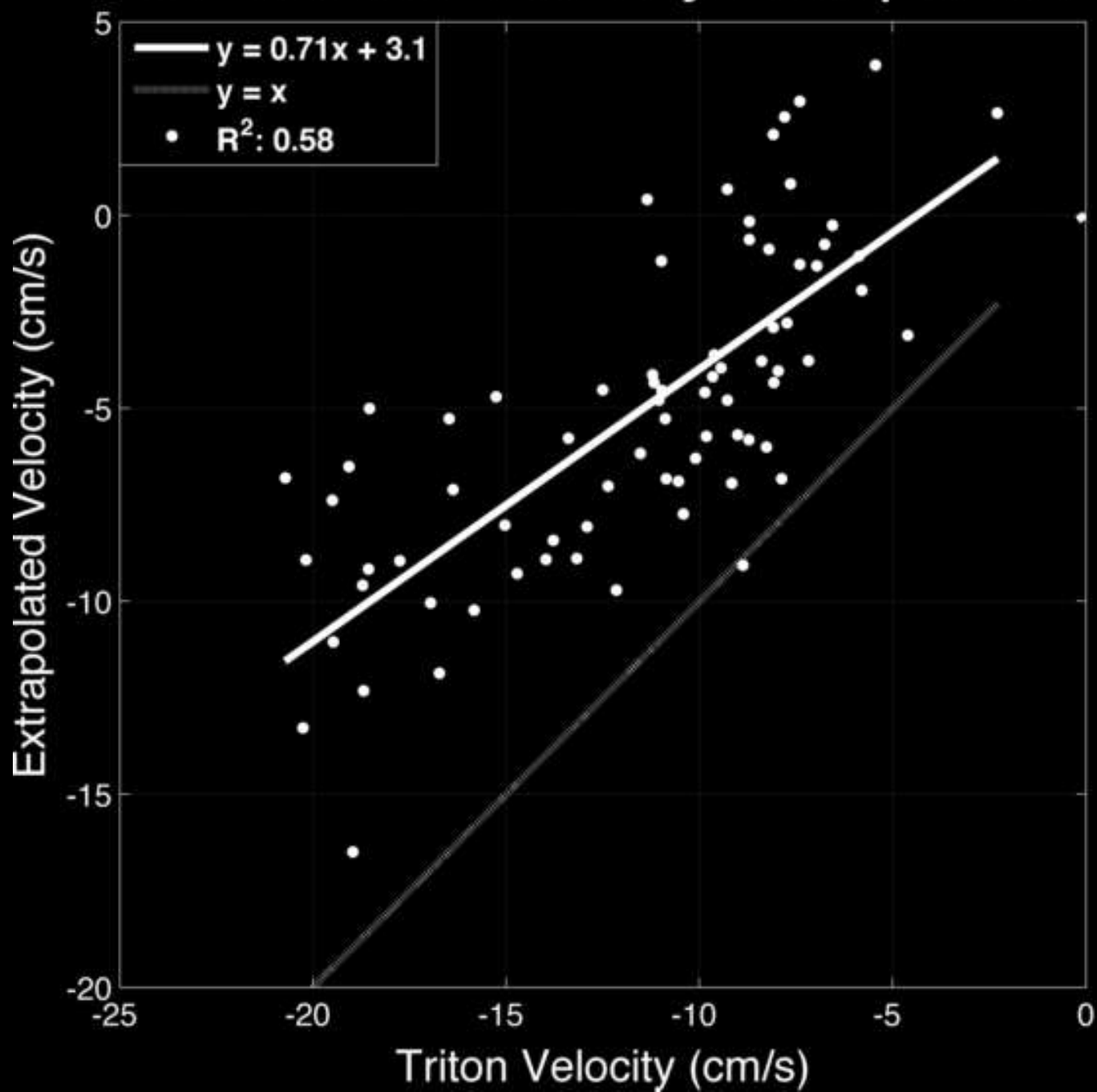
(S. Elgar)

Hand Measure vs. Pole Survey

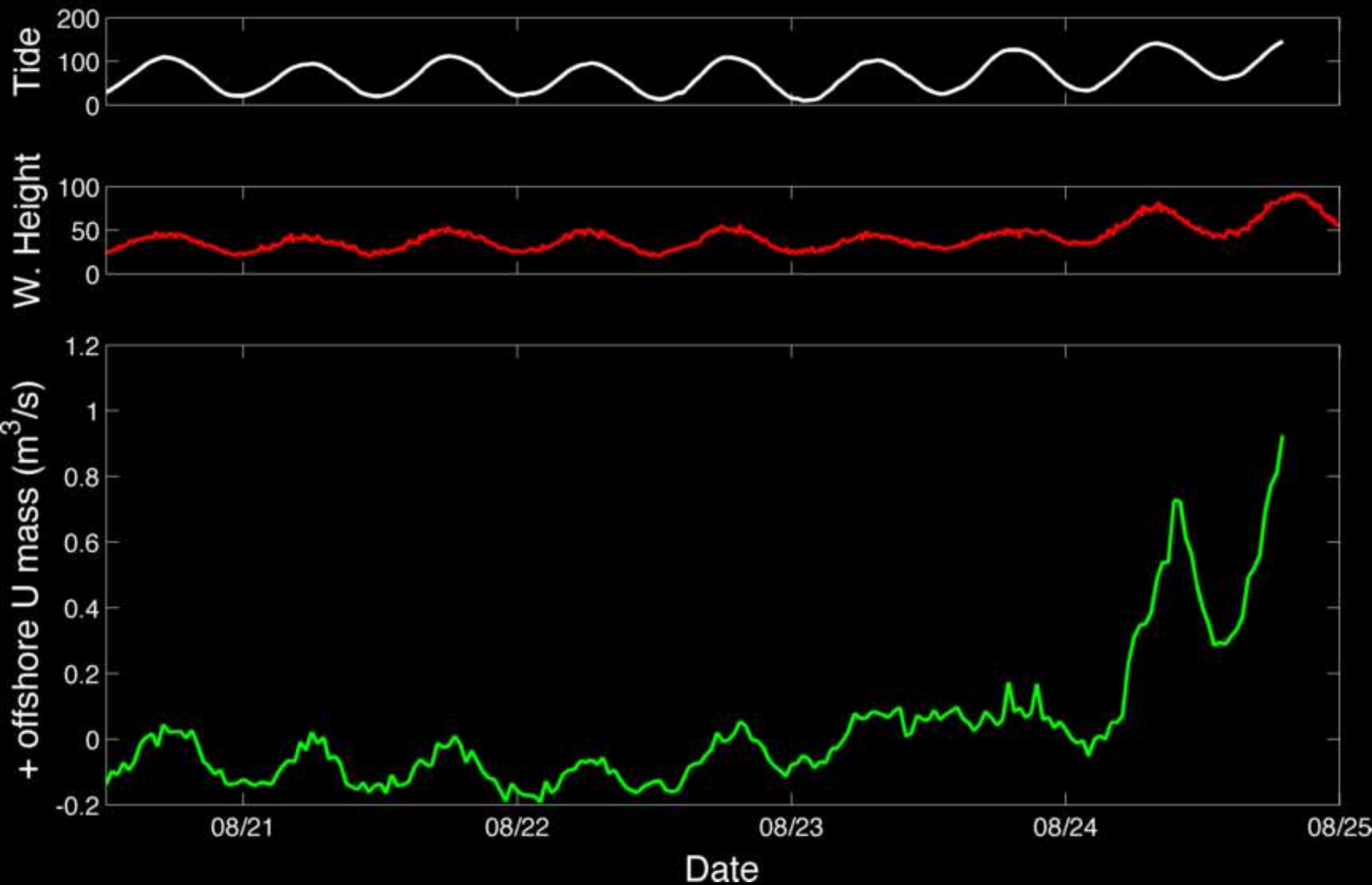
HM	PS	H-P
-279	-274	-5
-278	-272	-6
-273	-269	-4
-158	-159	1
-355	-353	-2
-311	-312	0
-359	-343	-16

difference: -5

CrossShore Velocity Comparison



CrossShore U Mass Estimate



Hole dug 08/20