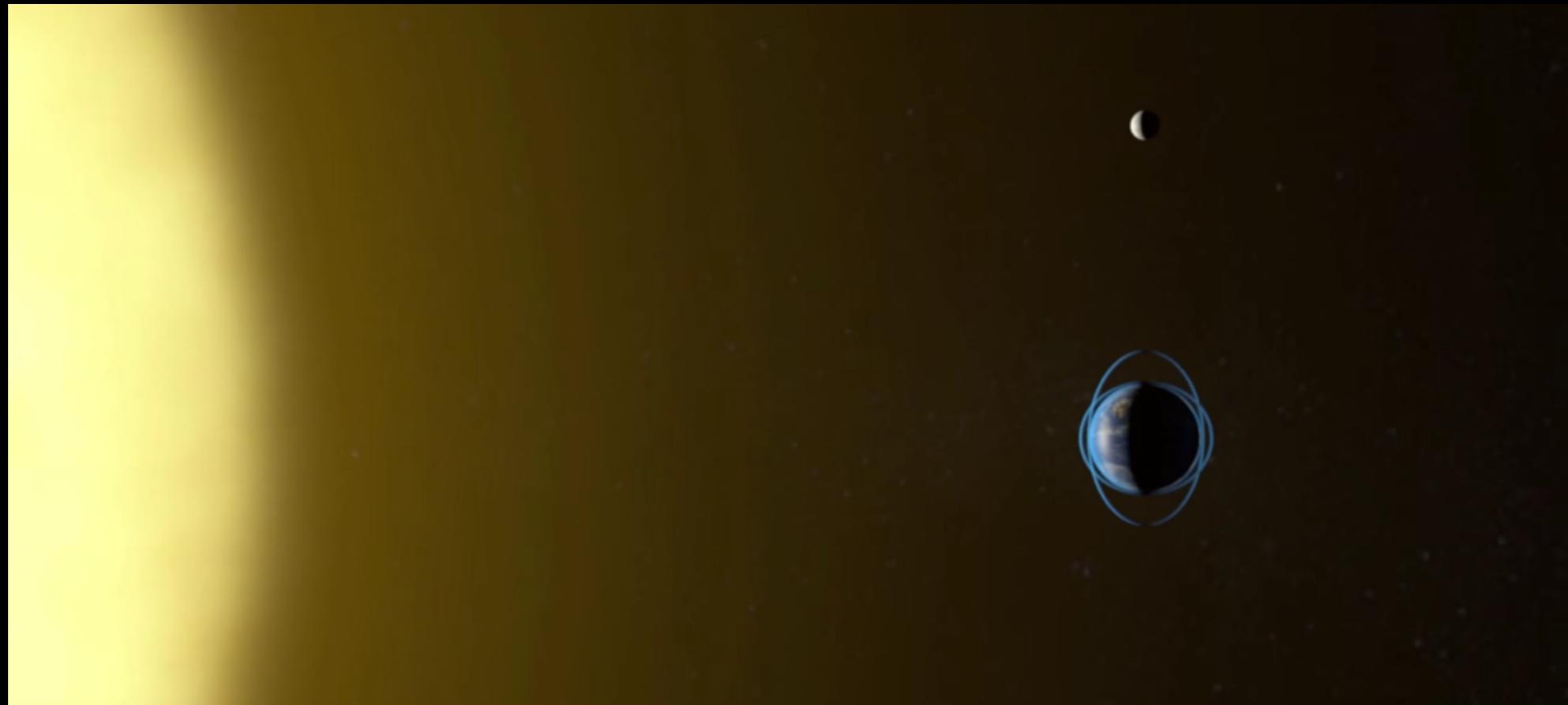
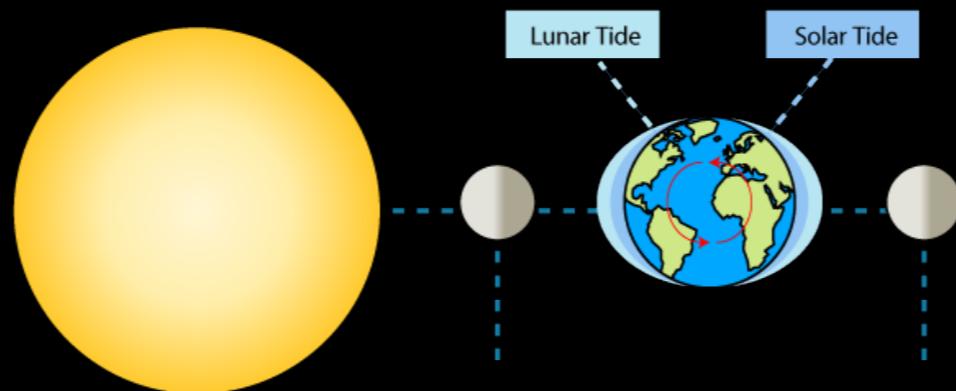


Earth orbits Sun - Moon orbits Earth

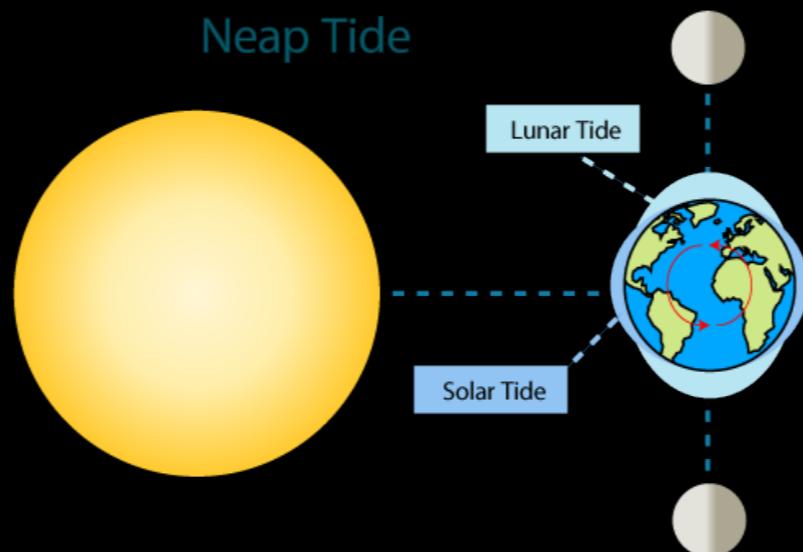


# Tides

Spring Tide



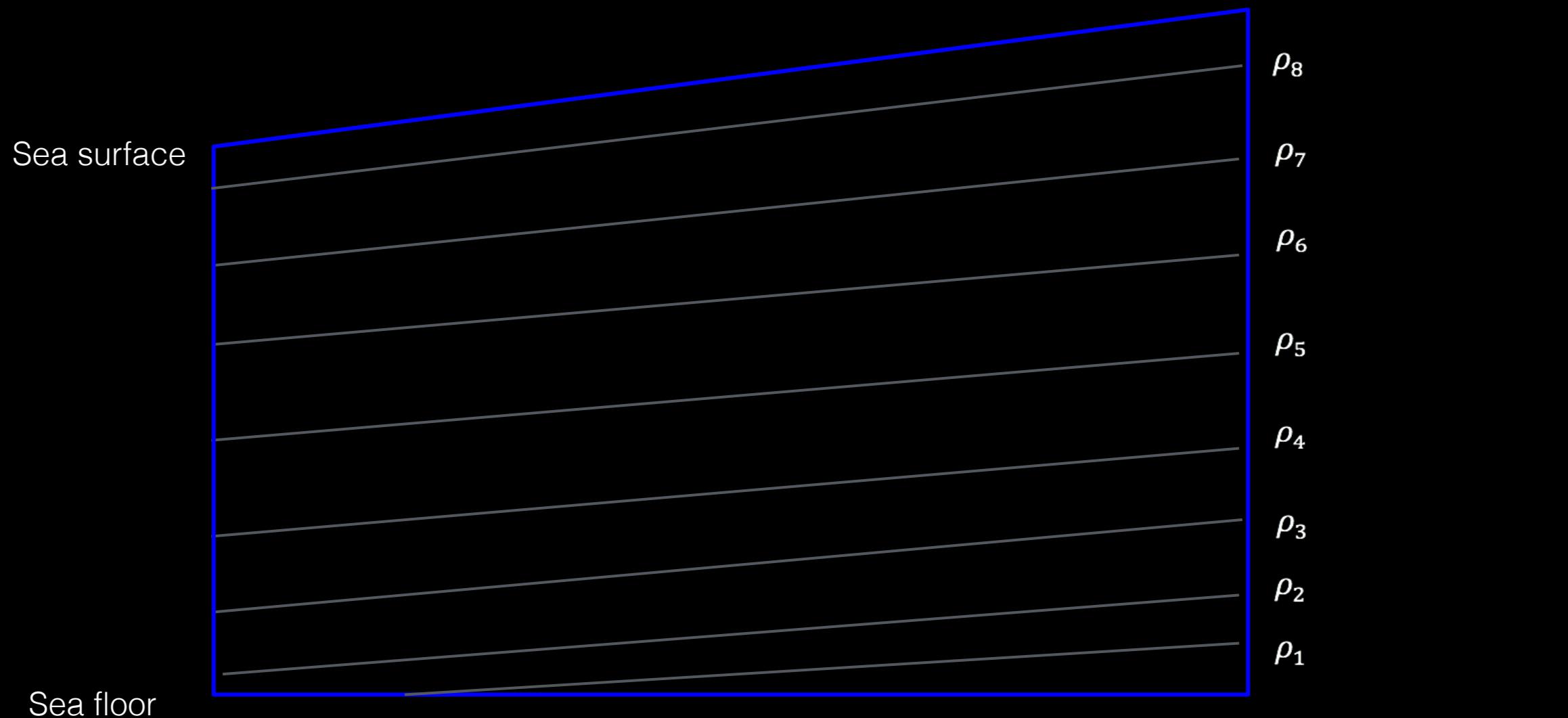
Neap Tide



# Changes in pressure due to water weight

Low tide

High tide



$\rho$  = lines of constant pressure

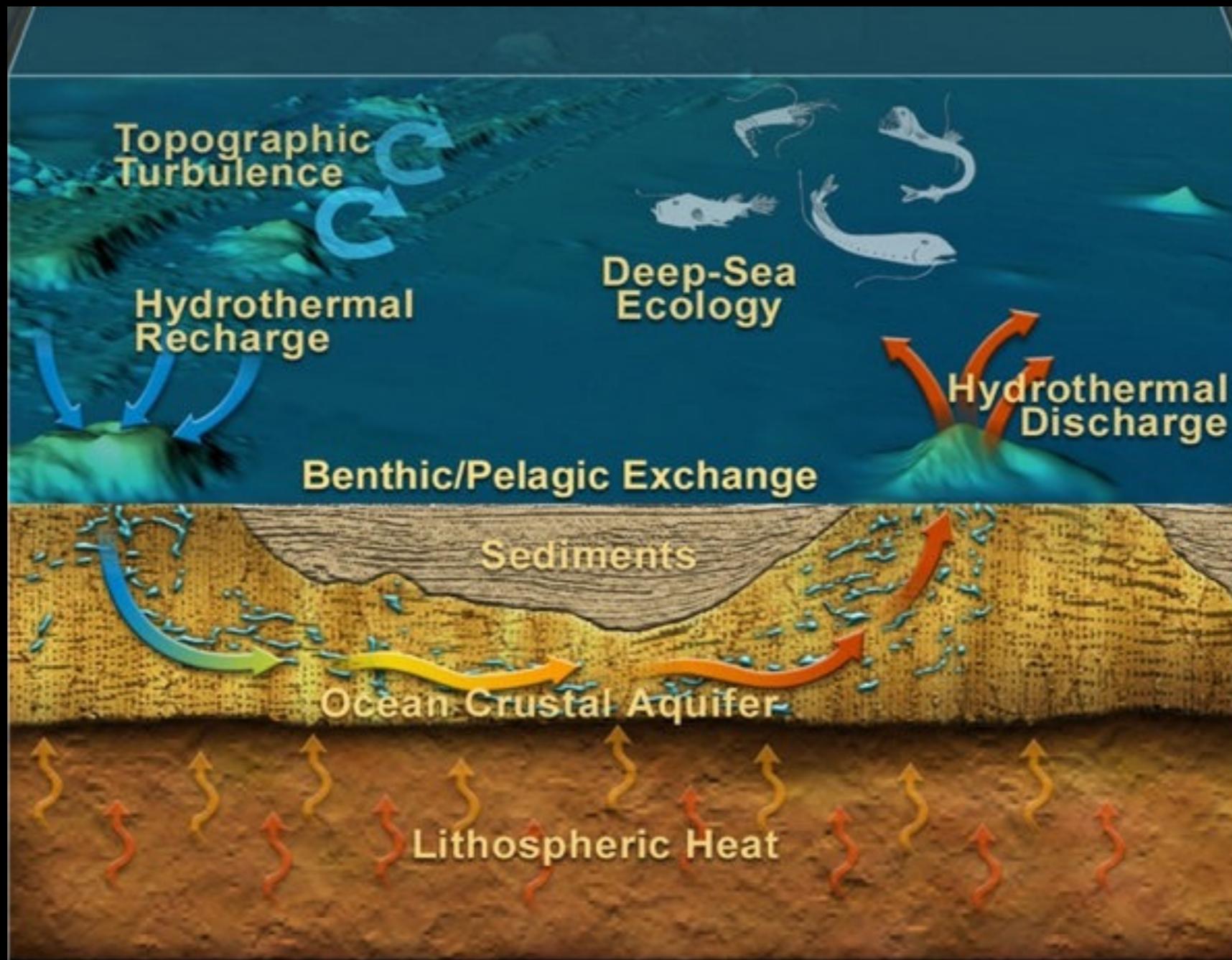
# Changes in hydrothermal vent fluid flow



Mark Stoermer

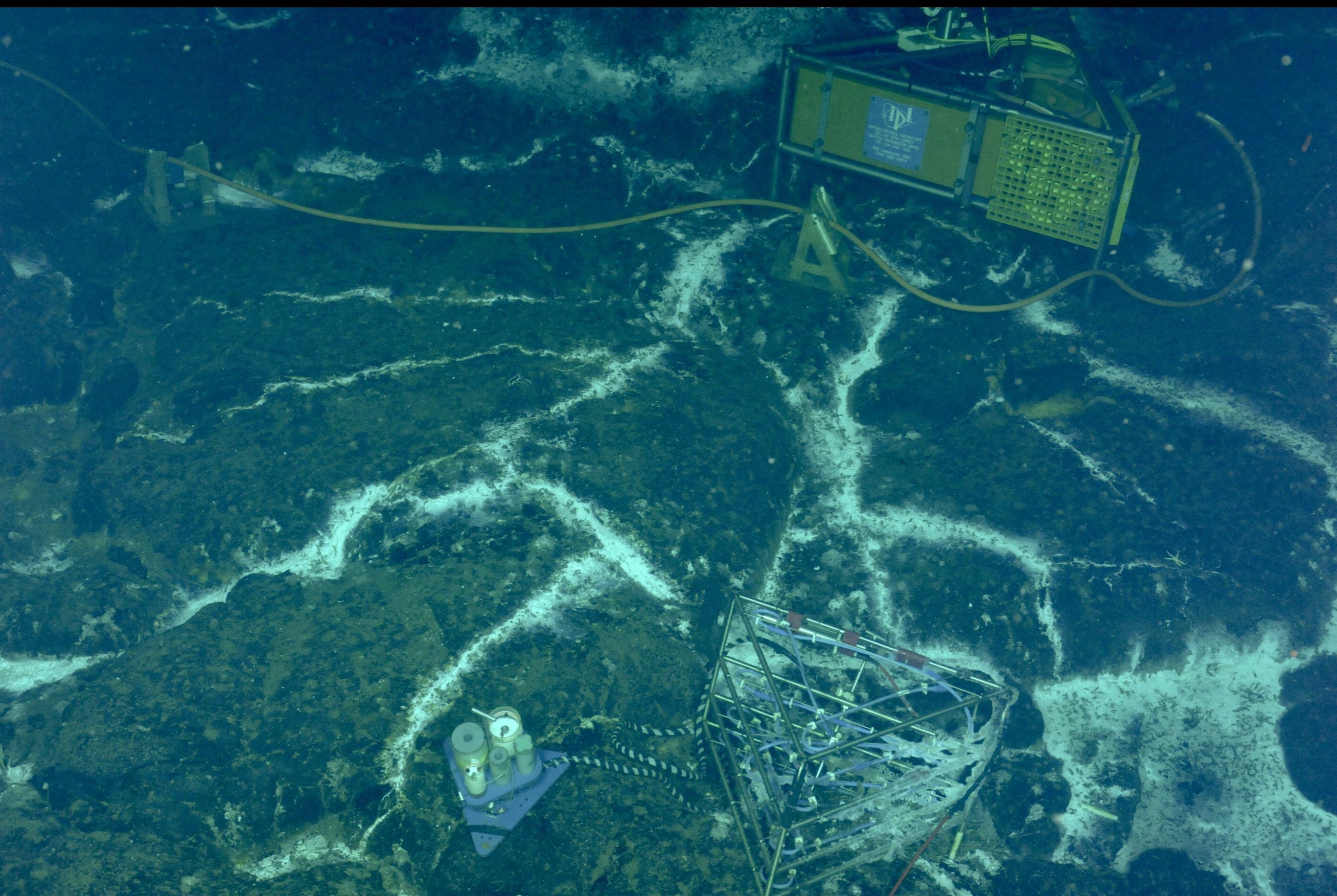


# Changes in hydrothermal vent fluid flow

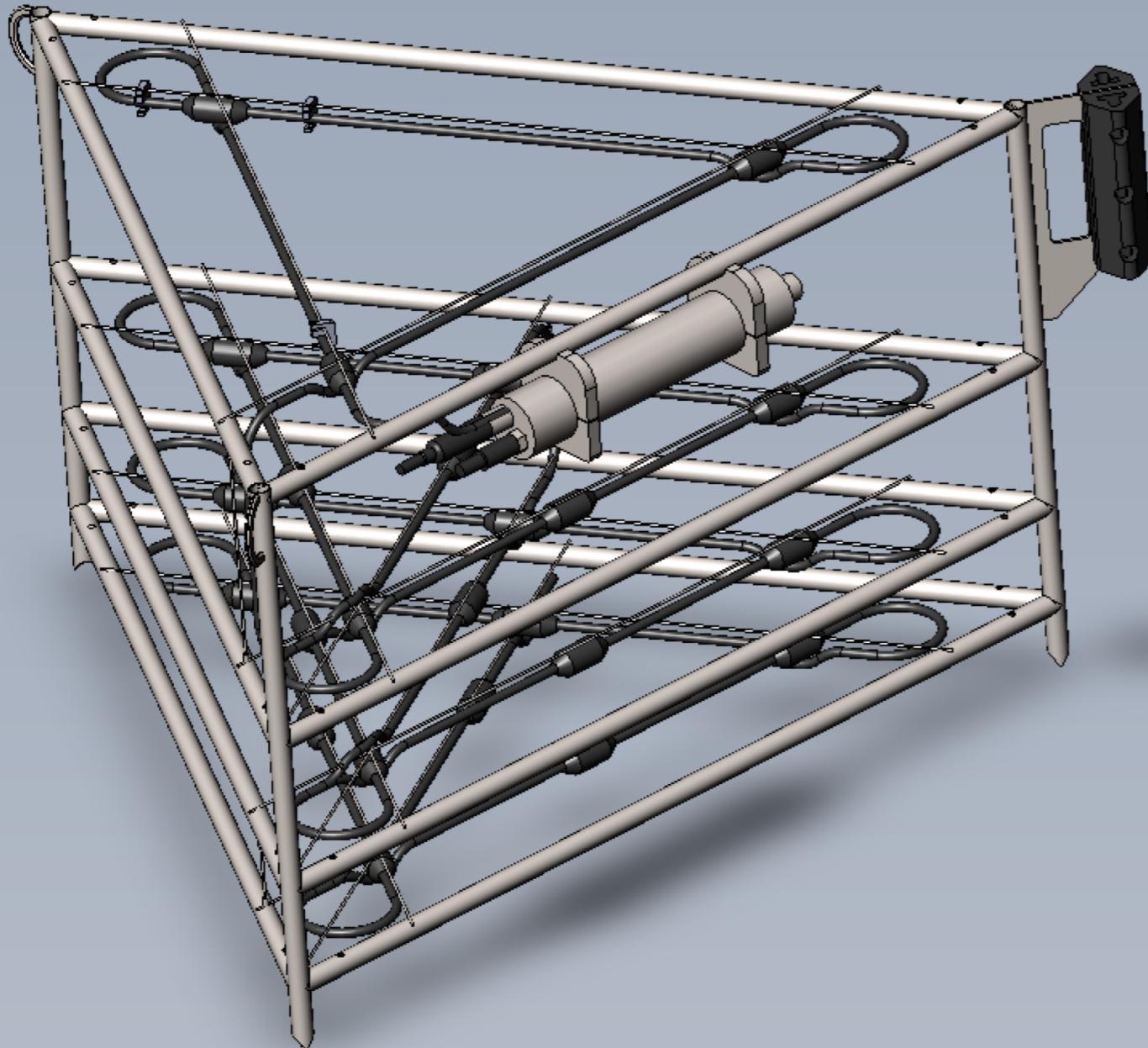


Mark Stoermer

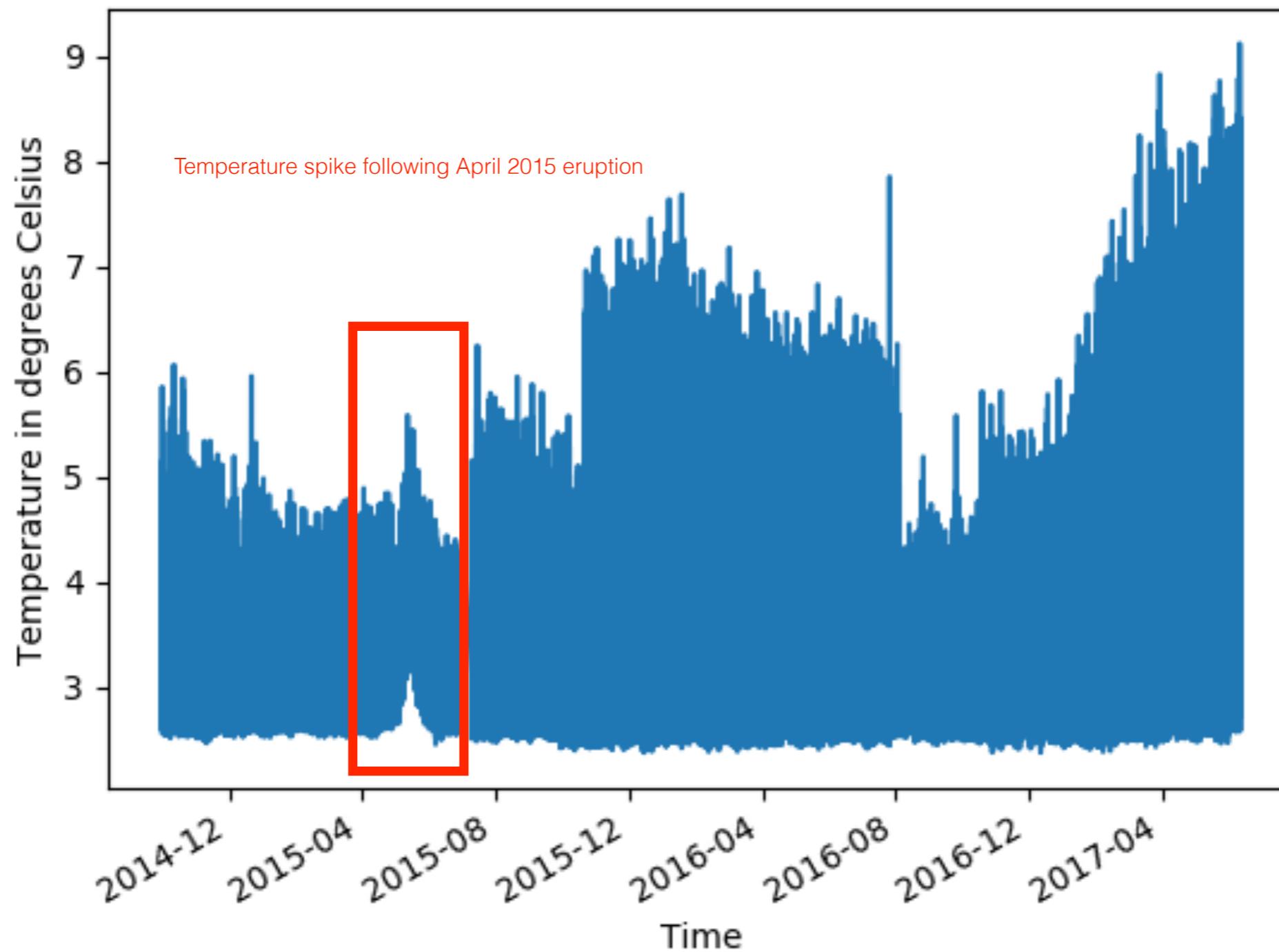
# 3D Temperature Array (TMPSF)



# 3D Temperature Array (TMPSF)



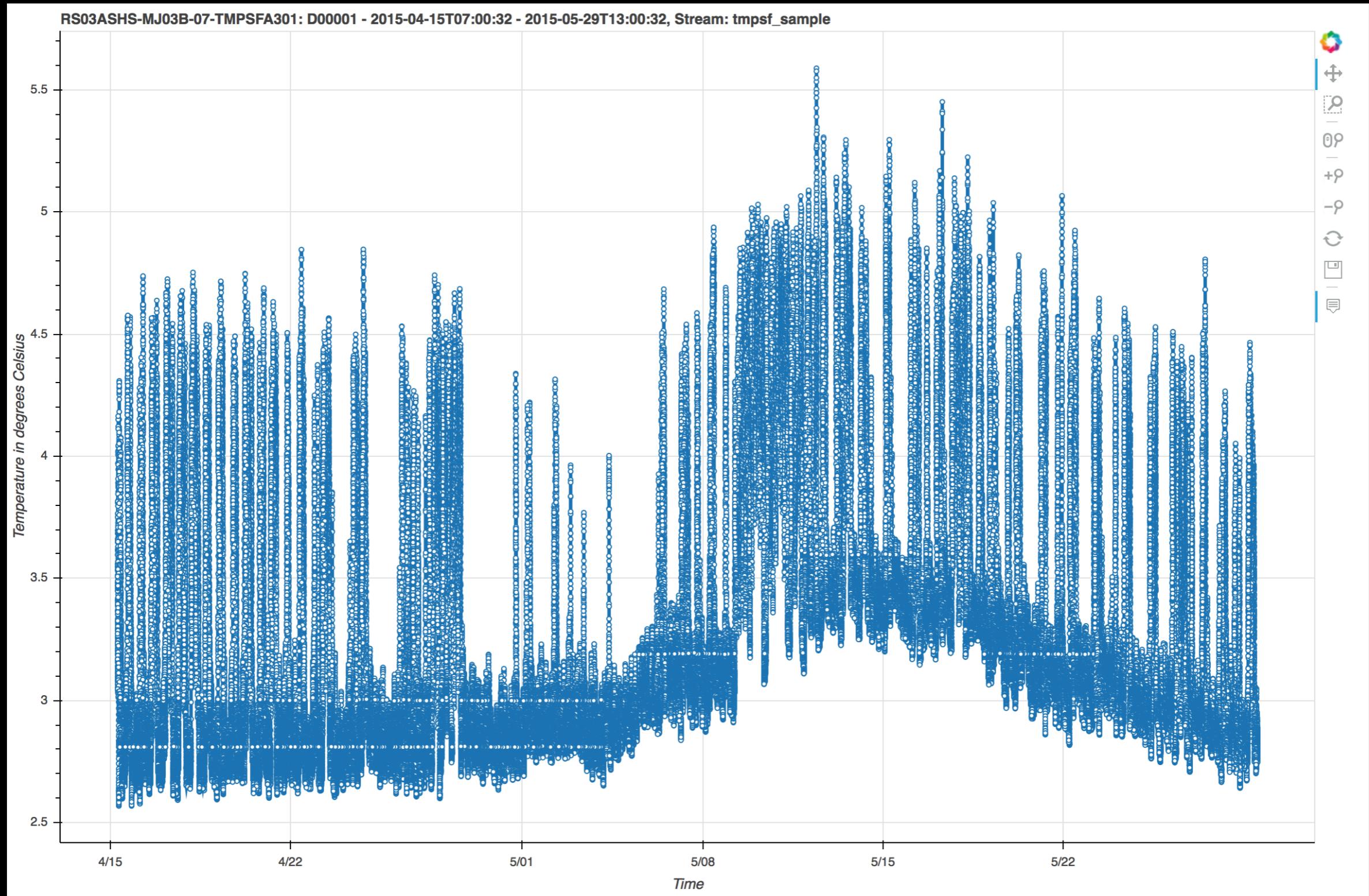
Thermistor	X (cm)	y (cm)	Z (cm)
t1	14.7	25.4	5.1
t2	0.0	0.0	5.1
t3	22.0	12.7	5.1
t4	44.0	25.4	5.1
t5	22.0	38.1	5.1
t6	0.0	50.8	5.1
t7	0.0	25.4	5.1
t8	0.0	25.4	17.8
t9	0.0	25.4	17.8
t10	0.0	50.8	17.8
t11	22.0	38.1	17.8
t12	44.0	25.4	17.8
t13	22.0	12.7	17.8
t14	0.0	0.0	17.8
t15	14.7	25.4	43.2
t16	0.0	0.0	43.2
t17	22.0	12.7	43.2
t18	44.0	25.4	43.2
t19	22.0	38.1	43.2
t20	0.0	50.8	43.2
t21	0.0	25.4	43.2
t22	0.0	50.8	81.3
t23	44.0	25.4	81.3
t24	0.0	0.0	81.3



## **Zoom in on April 2015 eruption.**

**Notice that the entire baseline shifted upwards.**

**May be measuring ambient temperature instead of fluid temperature, which continues to fluctuate with the diurnal signal.**



## Diurnal temperature signal.

