

## Supplements.

**Table S1:** The six UK coastal regions and associated NTSFL tide gauge locations.

South	East	West	Scotland	Wales	N. Ireland
Avonmouth	Cromer	Heysham	Aberdeen	Barmouth	Bangor
Bournemouth	Harwich	Liverpool	Kinlochbervie	Fishguard	Portrush
Dover	Immingham	Workington	Leith	Holyhead	
Hinkley	Lowestoft	Port Erin	Lerwick	Llandudno	
Ilfracombe	N Shields		Millport	Milford Haven	
Newhaven	Sheerness		Moray Firth	Mumbles	
Newlyn	Whitby		Port Ellen	Newport	
Plymouth			Port Patrick		
Portbury			Stornoway		
Portsmouth			Tobermory		
St Marys			Ullapool		
Weymouth			Wick		

**Table S2:** Locations and times of 5 December 2013 storm surge and meteotsunami.

Location	Meteotsunami time	Meteotsunami Wm (m)	Storm surge time	Storm surge Wm (m)	Time difference (h)
North Shields	10.15	0.21	16.15	1.15	6
Whitby	11.00	0.3	17.15	1.23	6.15
Llandudno	12.00	0.1	12.00	0.7	0
Ullapool	12.45	0.31	07.15	0.81	4.5
Lowestoft	15.15	0.27	22.30	1.9	7.15
Portsmouth	17.45	0.1	01.00 (6 <sup>th</sup> )	0.69	7.15

### Extract S1.

Full extract from a letter from Robert Blight of Penzance dated 24th May and published in the Cornwall Royal Gazette on Friday 28 May. Long (2015, p26).

“Whilst standing on the beach at Newlyn, on Sunday evening last, about half-past five o’clock, I was surprised at observing a sudden rush of the sea, towards the shore, and also its immediate return. Judging by a boat which lay aground near the beach, the rise was about 18 inches. The water became foul in an instant, owing to the nature of the beach. There was no appearance of a large wave, but a ripple near the shore, and a rushing noise at the time. It was then about low water, wind westerly, sky clouds, threatening rain.... Many persons witnessed this irregular motion of the sea on Sunday, and I have since been informed by a Mousehole fisherman that the sea continued to flow and ebb alternately until near nine o’clock, and that it sometimes rose as much as eight feet. The changes in the atmosphere during the day were very remarkable. In the morning, about six o’clock, we had a breeze from the southeast; by eight, it was a perfect calm; between ten o’clock and two, the mercury sunk several degrees; about three in the afternoon a breeze sprung up suddenly from the west, and the sky, as suddenly, became overcast; by eight o’clock it was again calm; but at eleven, the wind again rose suddenly and whistled along as it does in November. It is very probable that all these changes, and even the agitation of the sea, were produced by electricity; for if we suppose that the irregular motion of the water was occasioned by a distant earthquake, which might have occurred about that time, still the electric field might have been the most potent agent.”