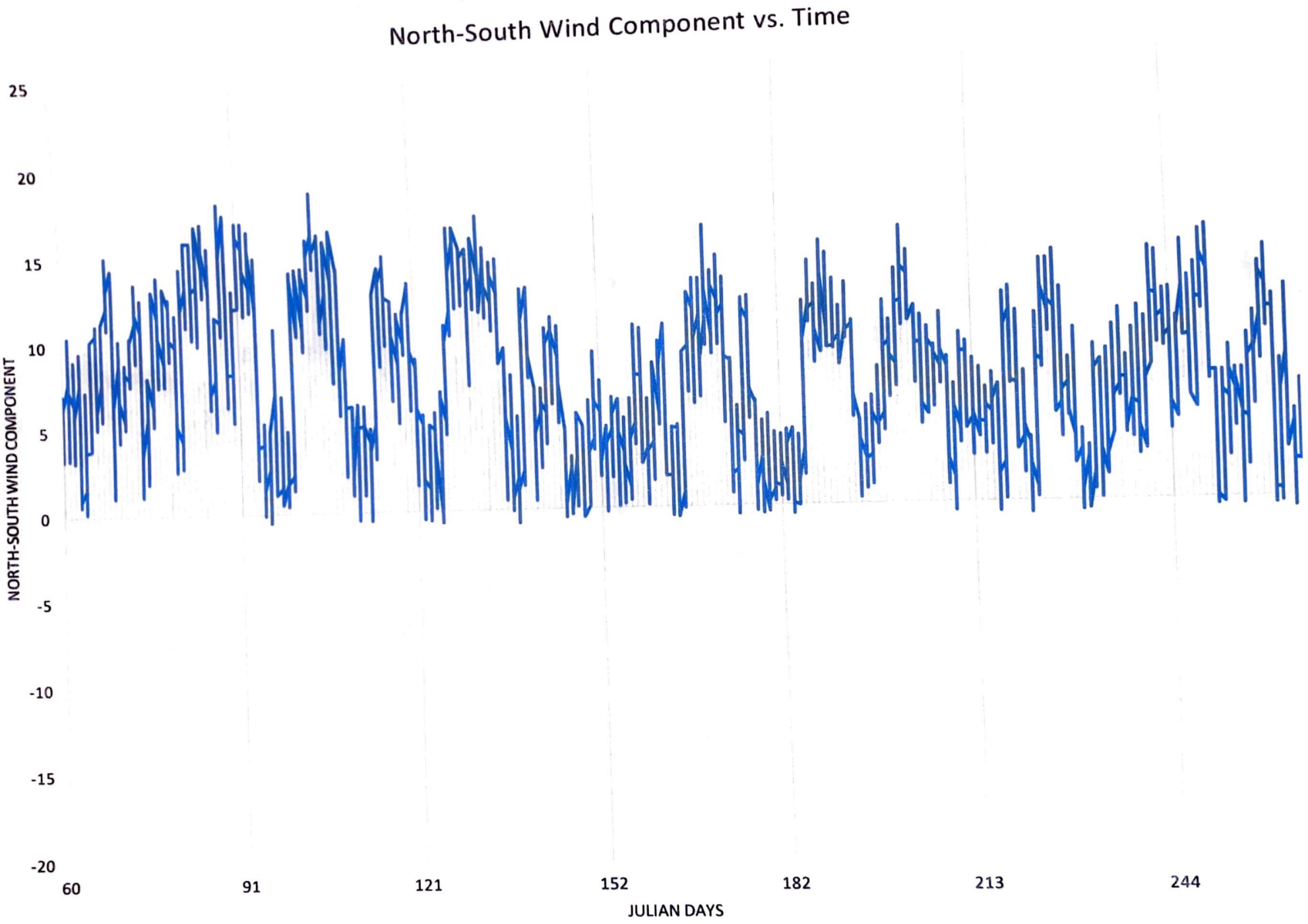
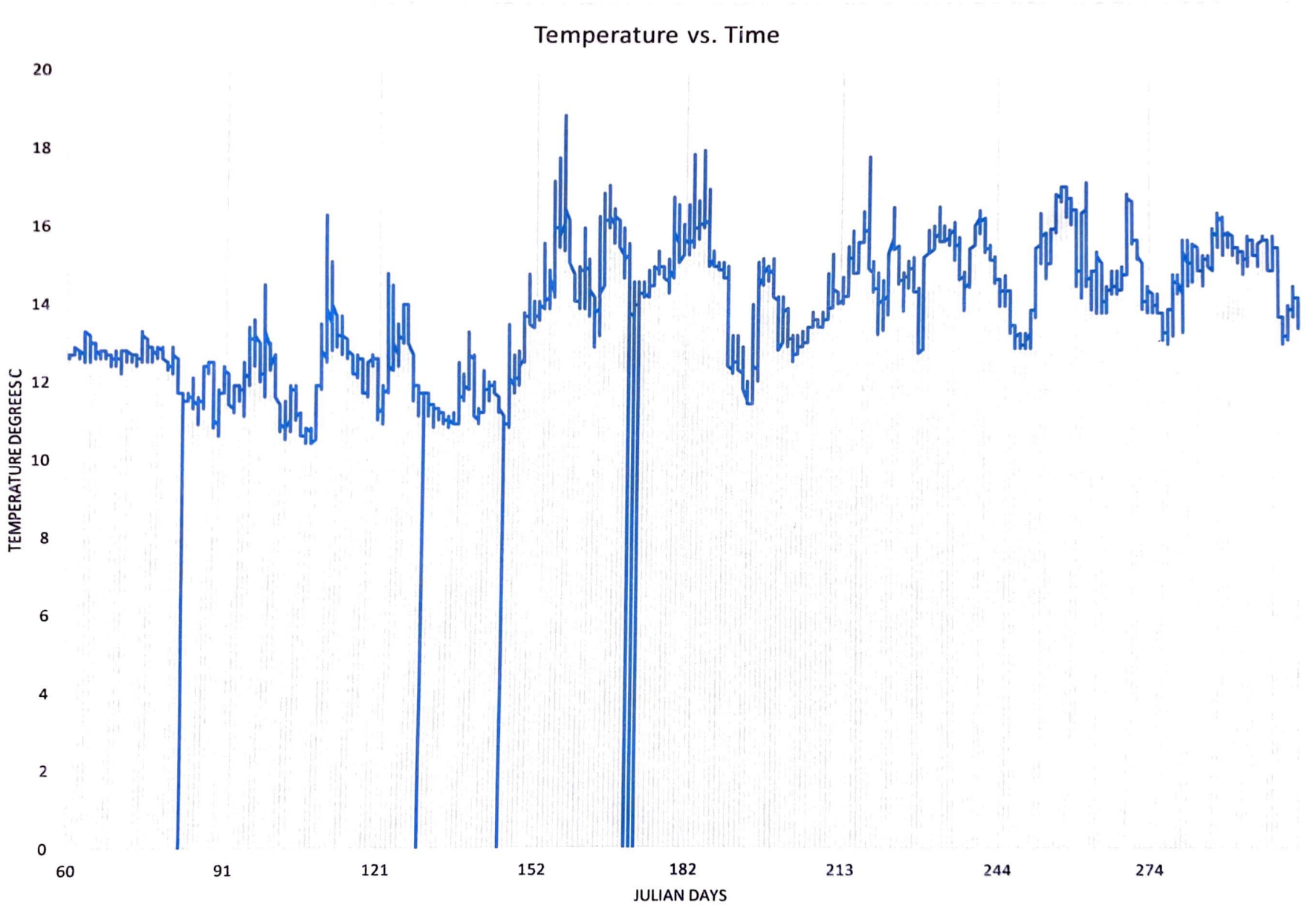

North-South Wind Component vs. Time
25
20
15
10
5
0
-5
-10
-15
-20
NORTH-SOUTH WIND COMPONENT
60
91
121
152
182
213
244
JULIAN DAYS


Temperature vs. Time
TEMPERATURE DEGREES C
20
18
16
14
12
10
8
6
4
2
0
60
91
121
152
182
213
244
274
JULIAN DAYS

Alex Howell

$Q = cm\Delta t$

$Q = 250\ J/sec\ m^2 (30)(12)(60)(60) = 3.24 \times 10^8\ J/m^2$

$c = 4.186\ J/g/°C$

$m =$

$\Delta t =$

$A = lw = 310\ km\ (70\ km) = 21700\ km$

$(2.17 \times 10^4) 10^6\ m^2 = 2.17 \times 10^{10}\ m^2$

Energy recieved

$= 3.24 \times 10^8\ J/m^2 (2.17 \times 10^{10}\ m^2) = 7.03 \times 10^{18}\ J$

$7.03 \times 10^{18}\ J\ (.25) = 1.7577 \times 10^{18}\ J$ absorbed

Volume = a (depth)

$= 2.17 \times 10^{10}\ m^2 (10\ m) = 2.17 \times 10^{11}\ m^3$

mass of water in continental shelf

$m = v(density) = 2.17 \times 10^{11}\ m^3 (1025\ kg/m^3) = 2.22 \times 10^{14}\ kg\ (10^3)$

$= 2.22 \times 10^{17}\ g$

$Q = cm\Delta t$

$\Delta t = \frac{Q}{cm} = \frac{1.76 \times 10^{18}\ J}{4.186\ J/g/°C\ (2.22 \times 10^{17}\ g)} = 1.8939°C \Rightarrow 1.89°C$

2) Part 1

b) The wind is blowing from the North much more frequently. 99.3% of the time.

c) The wind blowing from the north is much stronger than the wind blowing from the south. the North wind is 99.3% stronger.

d) When the wind comes from the north causing surface water to migrate west (away from the coast) which allows for coastal upwelling & temps to drop. When the wind comes from the south, the surface water flows East (towards the coast) which limits/stops coastal upwelling allowing temps to rise.

Part 2

b) Mid-March through May displays the average coldest temp. observed.

c) The wind is mainly blowing from the North during the average coldest observed temps.

d) Yes this is consistent with wind-driven upwelling since when the wind is blowing from the North

then the surface water would be blown West leading to colder water upwelling to take its place.