**05: INTRODUCTION TO NUMPY AND MATPLOTLIB**

**1: Why should you use an np.array () instead of a list for arrays of numbers?**

Arrays should be used when integer or float data is in question because they are much faster to run through than lists. Operations can be added to each element of an array simultaneously, whilst in a list, you must iterate through each element and perform the operation on each one individually. Also, since arrays can be multi-dimensional (and can be easily reshaped), they are very useful when dealing with vectors or linear algebra in general.

**2:** **Explore doing basic math operations on a numpy array. What do you notice?**

It is very fast; much faster than doing those same operations on each element in a list.

**3: How do statistics functions work with multidimensional arrays? What arguments can you pass through them to make them work differently?**

Unless an axis is specified, the statistics functions (such as numpy.mean () and numpy.std ()) operate on all elements in the array (treats the multi-dimensional array as a flattened array). By setting the keyword argument ‘axis’ equal to an integer value corresponding to the axis along which the function should operate. When axis = 0, the functions display the mean/standard deviation of the numbers in each column; when axis = 1, the functions operate on the elements in each row separately.

**4: Using the example data (sunspots.tsv), create a histogram of the values. Include axis labels and adjust the default setting to make the plot look better.**

See day\_5\_sunspots.py.