In [1]:

```
import numpy as np
import pandas as pd
import scipy.stats as stats
from scipy.interpolate import interp1d
import matplotlib.pyplot as plt

%matplotlib inline
```

In [ ]:

```

```

In [2]:

```
skookum_data_file = '2013 skookum2.xlsx'
skookum_data = pd.read_excel(skookum_data_file, skiprows = 4)
```

In [3]:

```
skookum_data.head(10)
```

Out[3]:

	Site Id	Date	Time	WTEQ.I-1 (in)	PREC	TOBS	TMAX	TMIN	TAVG	SNWD
0	912	2012-10-01	NaN	0.0	0.0	11.8	14.3	6.6	10.0	0.0
1	912	2012-10-02	NaN	0.0	0.0	8.7	18.5	8.7	13.4	0.0
2	912	2012-10-03	NaN	0.0	0.0	4.3	11.8	3.7	6.8	0.0
3	912	2012-10-04	NaN	0.0	0.0	6.7	12.6	3.9	8.3	0.0
4	912	2012-10-05	NaN	0.0	0.0	9.5	13.3	5.3	8.8	0.0
5	912	2012-10-06	NaN	0.0	0.0	10.9	14.0	6.1	10.1	0.0
6	912	2012-10-07	NaN	0.0	0.0	14.8	16.2	8.1	12.3	0.0
7	912	2012-10-08	NaN	0.0	0.0	13.5	19.4	12.2	14.6	0.0
8	912	2012-10-09	NaN	0.0	0.1	9.2	16.5	8.8	12.3	0.0
9	912	2012-10-10	NaN	0.0	0.1	12.1	15.8	8.2	11.2	0.0

fig, ax = plt.subplots()

data.plot(x='Date', y='SNWD', c='r', ax=ax, label='Snow') data.plot(x='Date', y='TAVG', c='b', ax=ax, label='Temp')

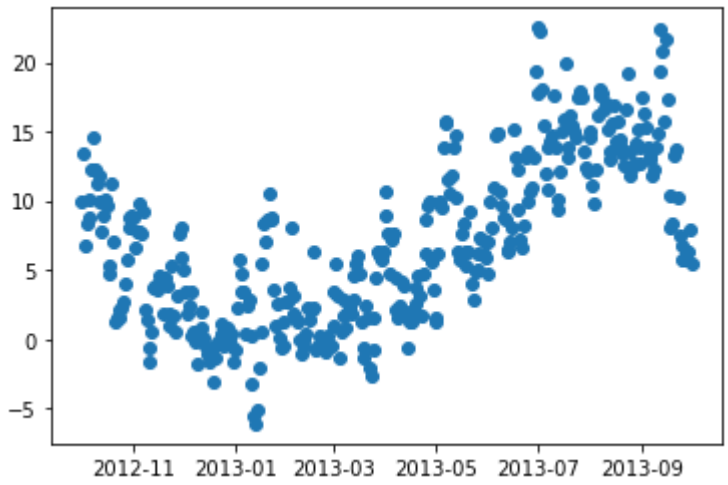
ax.set_title('Timeline of Peak Snow Water Equivalent and Temperature') ax.set_xlabel('Water Year') ax.set_ylabel('Comparison'); plt.legend(loc="best")

In [4]:

```
plt.plot(skookum_data['Date'], skookum_data['TAVG'],'o', label= 'ex')
```

Out[4]:

```
[<matplotlib.lines.Line2D at 0x7f49c2e04090>]
```

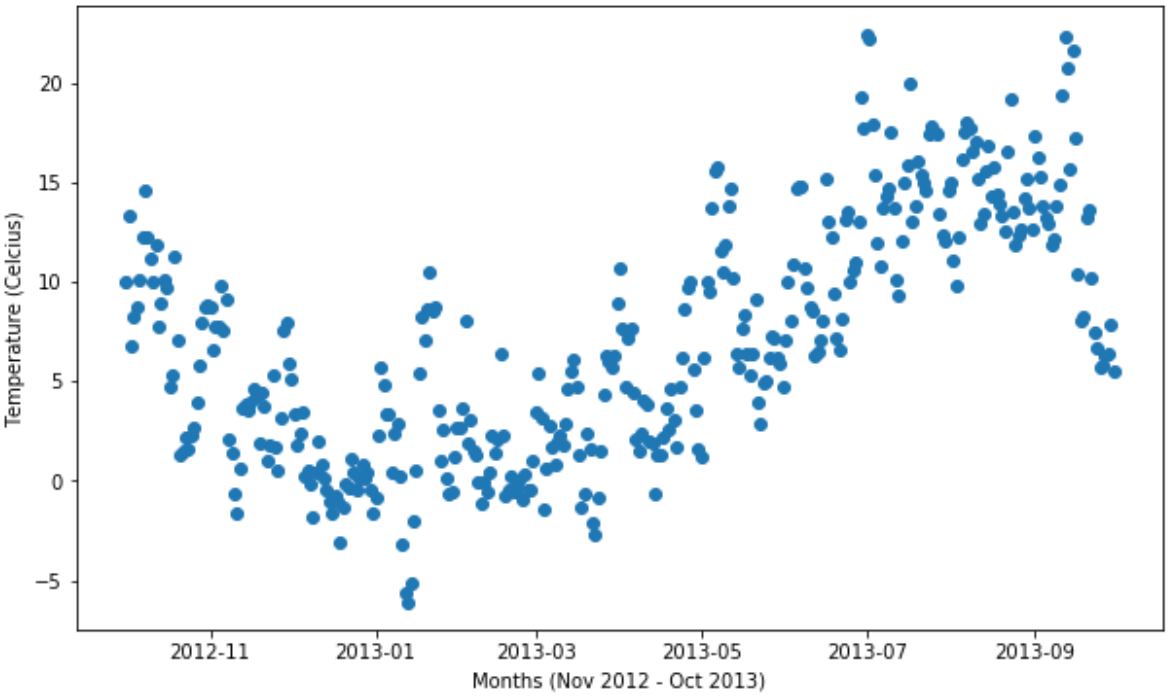


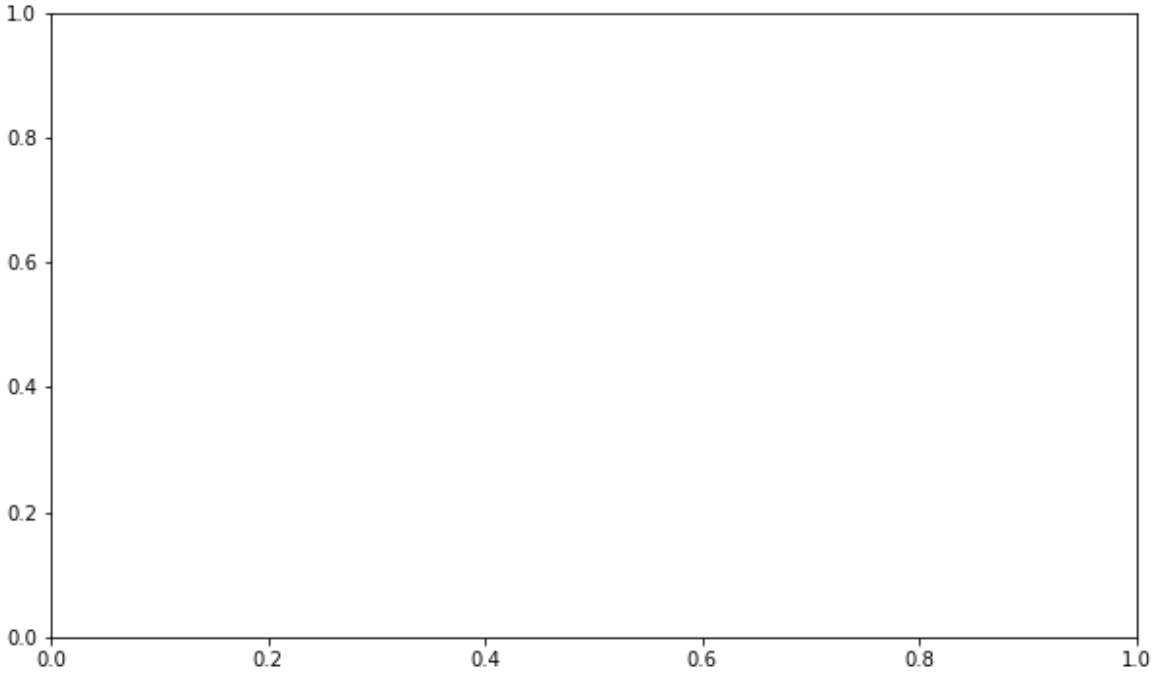
In [5]:

```
f, ax = plt.subplots(2,1,figsize=(10,13))
ax[0].plot(skookum_data['Date'], skookum_data['TAVG'],'o',label='constant (mean)')
ax[0].set_ylabel('Temperature (Celcius)')
ax[0].set_xlabel('Months (Nov 2012 - Oct 2013)')
```

Out[5]:

```
Text(0.5, 0, 'Months (Nov 2012 - Oct 2013)')
```


Temperature (Celcius)
20
15
10
5
0
−5
2012-11
2013-01
2013-03
2013-05
2013-07
2013-09
Months (Nov 2012 - Oct 2013)

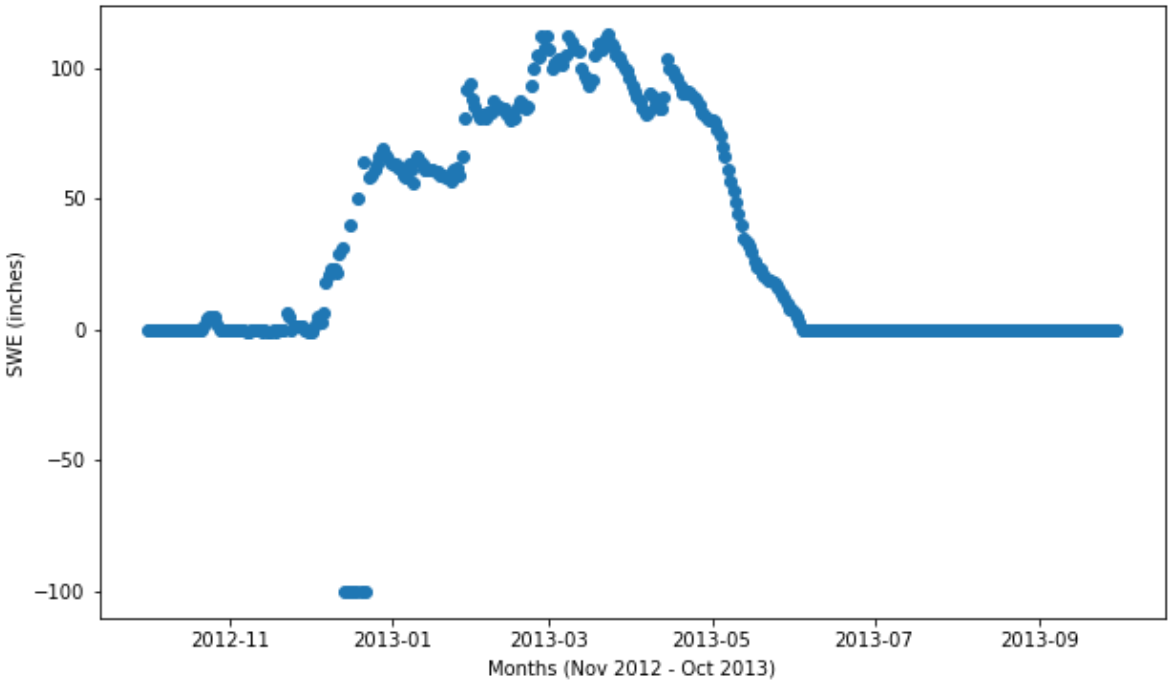

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

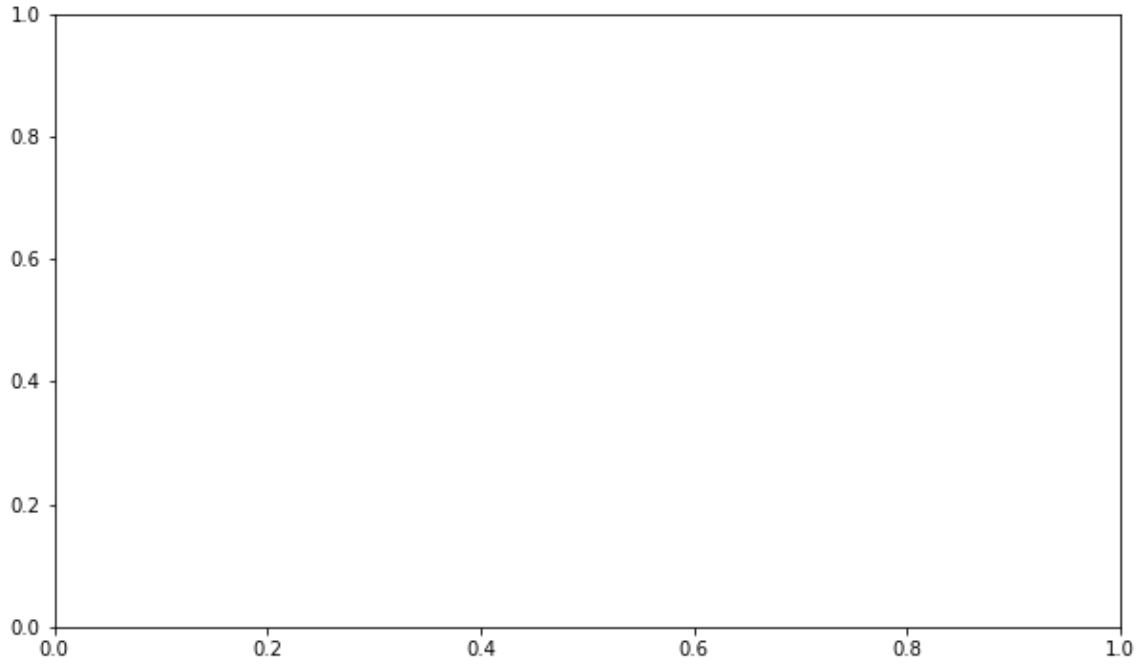
In [6]:

```
f, ax = plt.subplots(2,1,figsize=(10,13))
ax[0].plot(skookum_data['Date'], skookum_data['SNWD'],'o',label='constant (mean)')
ax[0].set_ylabel('SWE (inches)')
ax[0].set_xlabel('Months (Nov 2012 - Oct 2013)')
```

Out[6]:

```
Text(0.5, 0, 'Months (Nov 2012 - Oct 2013)')
```


100
50
0
−50
−100
SWE (inches)
2012-11
2013-01
2013-03
2013-05
2013-07
2013-09
Months (Nov 2012 - Oct 2013)

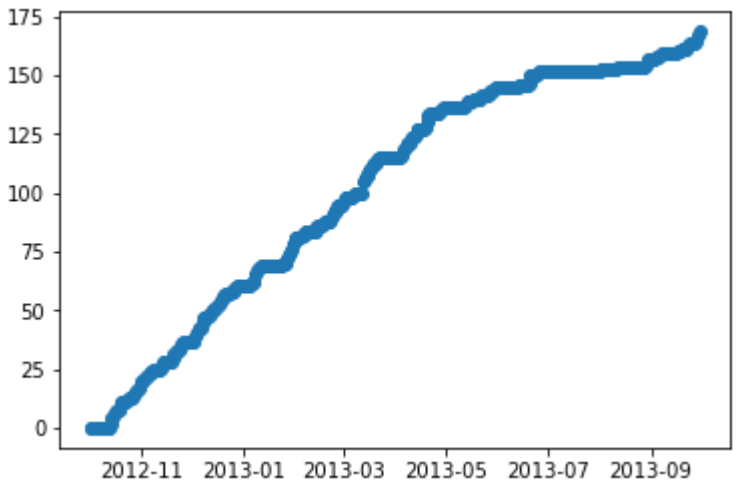

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

In [7]:

```
plt.plot(skookum_data['Date'], skookum_data['PREC'],'o', label= 'ex')
```

Out[7]:

```
[<matplotlib.lines.Line2D at 0x7f49c2a1ba90>]
```



In [ ]:

In [ ]: