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In [59]: import pandas as pd
import numpy as np
import os
from glob import glob
%matplotlib notebook
from matplotlib import pyplot as plt
from matplotlib.ticker import (MultipleLocator, FormatStrFormatter,
                               AutoMinorLocator)
from scipy.signal import find_peaks
```

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In [3]: # os.listdir('RGAdata/')
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In [32]: df = pd.read_csv('RGAdata/rga1_Nov_16_2019_02-16-17_PM_ASCII.txt/Nov_16_
2019__02-17-40_PM.txt',
                        header=18, names=['m', 'p', 'col3'], sep=',')
```

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In [73]: find_peaks(df['p'], threshold=1e-10)
```

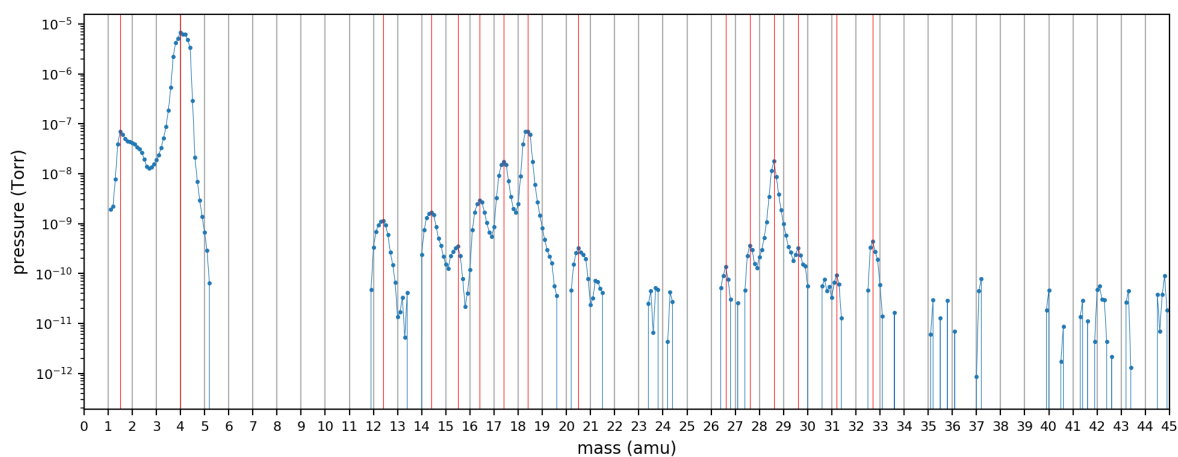
```
Out[73]: (array([ 4, 29, 153, 163, 173, 275, 316]),
 {'left_thresholds': array([3.17e-08, 1.62e-06, 4.50e-10, 2.10e-09, 1.2
0e-09, 6.40e-09,
1.07e-10]),
 'right_thresholds': array([1.02e-08, 5.10e-07, 1.90e-10, 2.00e-09, 1.
08e-08, 9.02e-09,
1.69e-10])})
```

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In [105]: idx_peaks = find_peaks(df['p'], height=9e-11)
m_peaks = np.array(df['m'][idx_peaks[0]])
print m_peaks
print idx_peaks[1]
```

```
[ 1.5   4.   12.4  14.4  15.5  16.4  17.4  18.4  20.5  26.6  27.6  28.
6
 29.6  31.2  32.7  85.3  94.   98.1  98.5 113.3 117.8 129.6 134.3 135.
7
150.9 155.3 156.8 188.5]
{'peak_heights': array([7.07e-08, 6.80e-06, 1.13e-09, 1.69e-09, 3.49e-1
0, 2.90e-09,
1.73e-08, 7.11e-08, 3.28e-10, 1.38e-10, 3.67e-10, 1.78e-08,
3.24e-10, 9.19e-11, 4.41e-10, 1.17e-10, 1.33e-10, 1.79e-10,
1.38e-10, 9.62e-11, 1.09e-10, 9.97e-11, 9.27e-11, 1.29e-10,
9.58e-11, 9.40e-11, 1.14e-10, 9.62e-11])})
```

```
In [106]: fig, ax = plt.subplots(1, figsize=(10,4))
# ax.plot(df.m, df.p, '-.-')
ax.xaxis.grid(True, which='both')
ax.xaxis.grid(True, which='minor', ls='--')
ax.xaxis.set_major_locator(MultipleLocator(1))
ax.plot(df['m'], df['p'], '-.-', lw=.4, markersize=3)

for mi in m_peaks:
    ax.axvline(mi, lw=.4, c='r')
ax.set_xlim(0,45)
ax.set_yscale('log')
ax.set_xlabel('mass (amu)', fontsize=10)
ax.set_ylabel('pressure (Torr)', fontsize=10)
plt.tick_params(axis='both', which='major', labelsize=8)
fig.tight_layout()
```



In []:

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