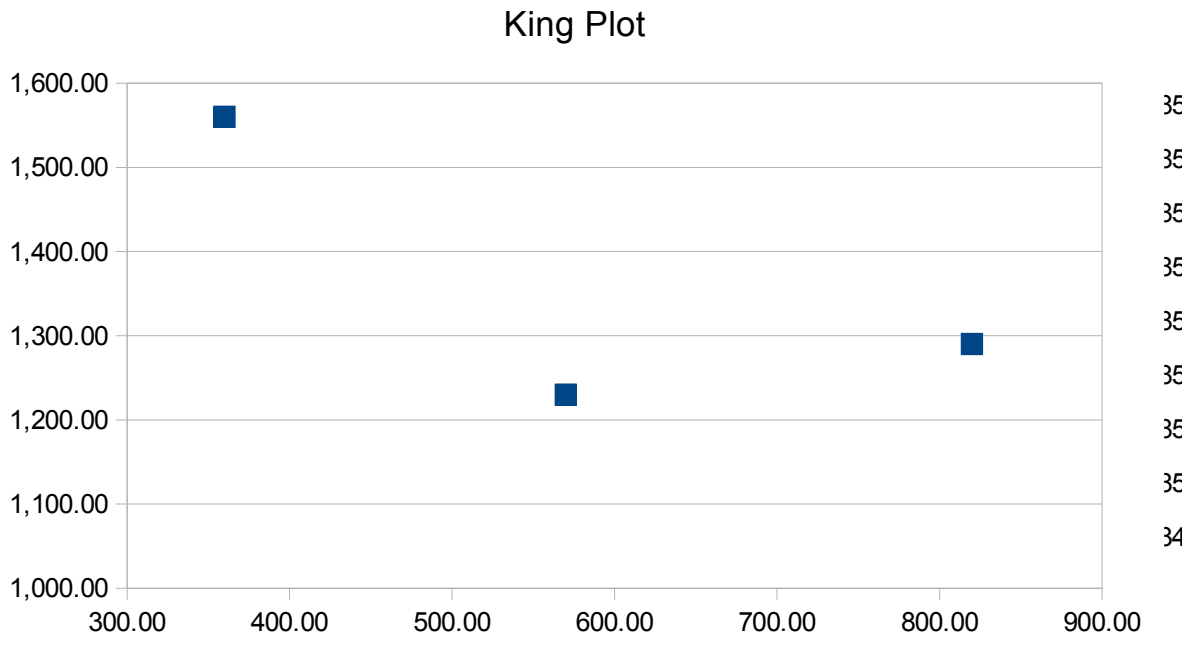
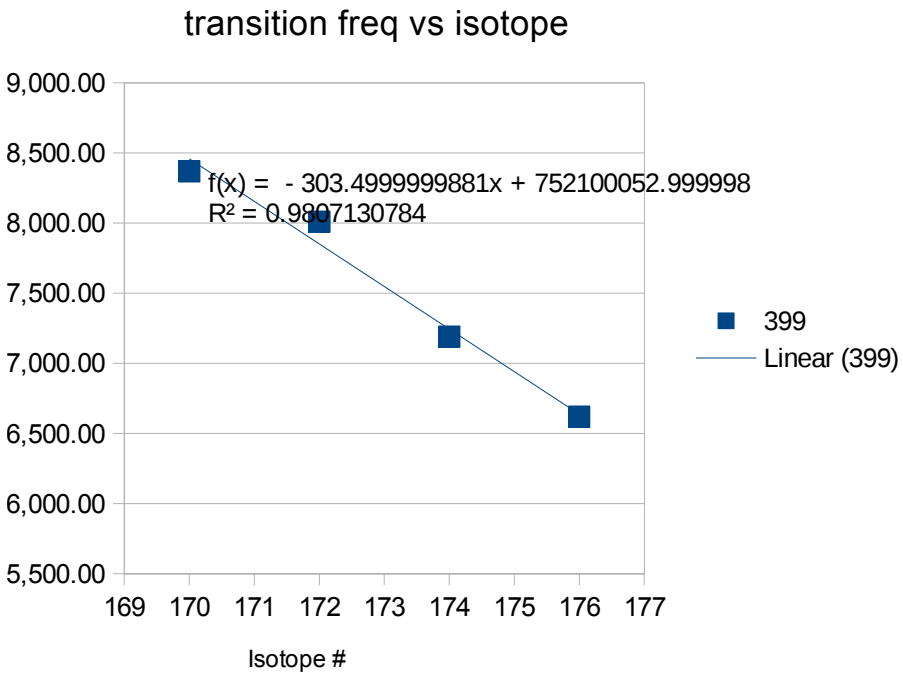
| Isotope | | 399 | 369 | 411 | 435 | 467 |
|---|---|---|---|---|---|---|
| | | | | '2S1/2 2D5/2 | '2S1/2 2D3/2 | '2S |
| | MHz | | | | | |
| | 170 | **752,048,370.00** | **811,856,040.00** | 729,498,690.00 | | |
| | 171 | | | **729,487,779.57** | | **6** |
| | 172 | **752,048,010.00** | **811,854,480.00** | **729,476,869.13** | | **6** |
| | 173 | | | 729,465,958.69 | **688,358,979.31** | |
| | 174 | **752,047,190.00** | **811,853,190.00** | 729,455,048.26 | | |
| | 175 | | | 729,444,137.82 | | |
| | 176 | **752,046,620.00** | **811,851,960.00** | 729,433,227.39 | | |
| | 177 | | | 729,422,316.95 | | |
| | 178 | | | 729,411,406.51 | | |
| Average Isotope Shift (MHz / amu) | | -303.50 | -676.50 | -10,910.44 | | |
| King Plot | | 360.00 | 1,560.00 | 21,820.87 | | |
| | | 820.00 | 1,290.00 | 21,820.87 | | |
| | | 570.00 | 1,230.00 | 21,820.87 | | |

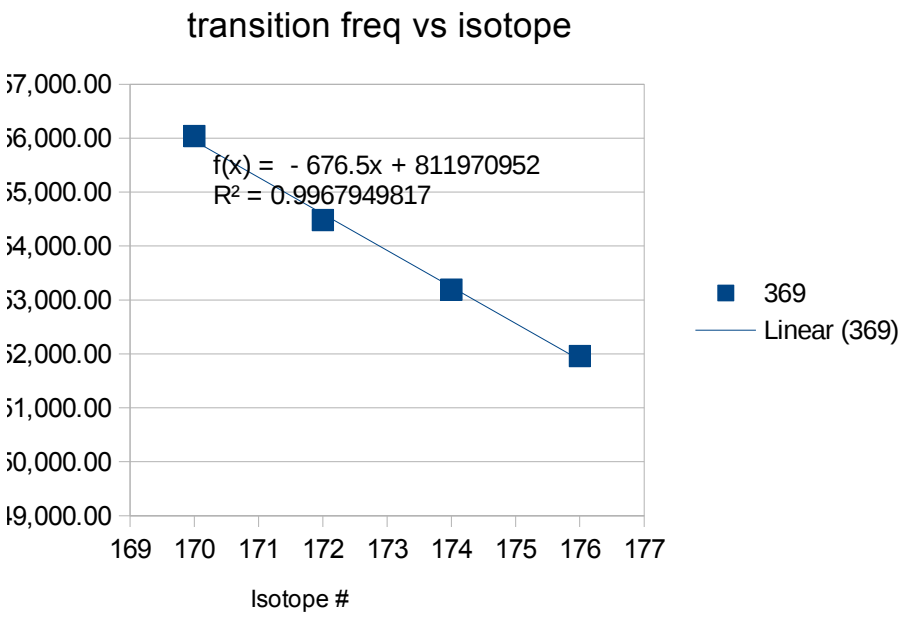
**BOLD** means real data
NONBOLD means linear extrapolation

Freq (MHz)

752,04
752,04
752,04
752,04
752,04
752,04
752,04
752,04




transition freq vs isotope
9,000.00
8,500.00
8,000.00
7,500.00
7,000.00
6,500.00
6,000.00
5,500.00
169 170 171 172 173 174 175 176 177
Isotope #
f(x) = - 303.4999999881x + 752100052.999998
R² = 0.9807130784
399
Linear (399)


transition freq vs isotope
7,000.00
6,000.00
5,000.00
4,000.00
3,000.00
2,000.00
1,000.00
0,000.00
9,000.00
169 170 171 172 173 174 175 176 177
Isotope #
f(x) = - 676.5x + 811970952
R² = 0.9967949817
369
Linear (369)

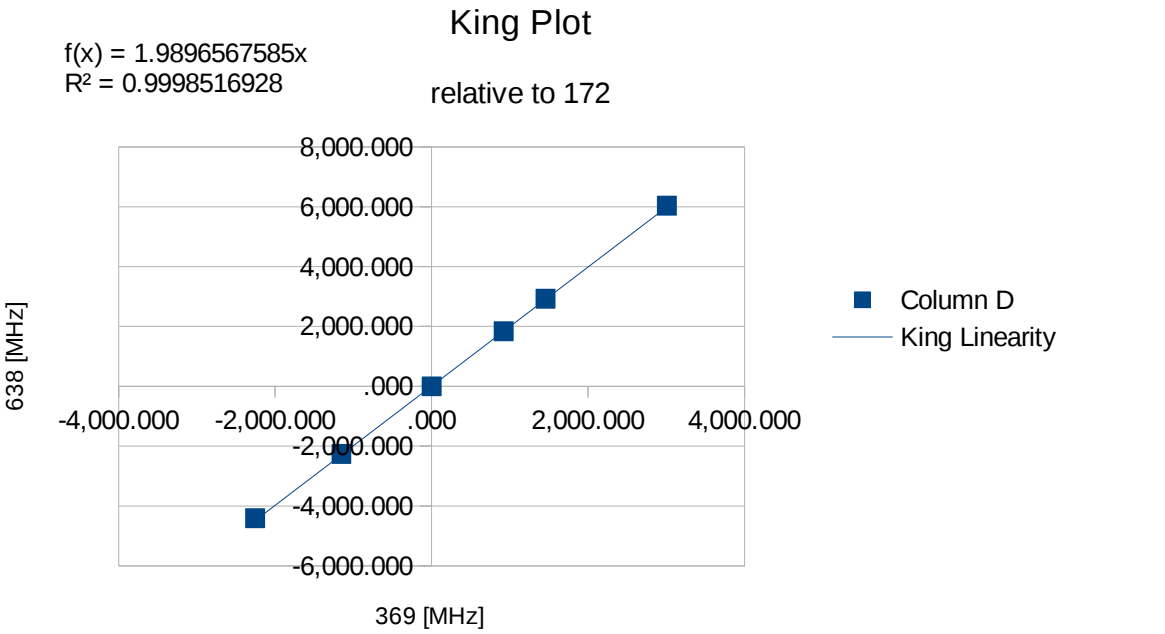
King Plots **Bold:data** unbold:fitted

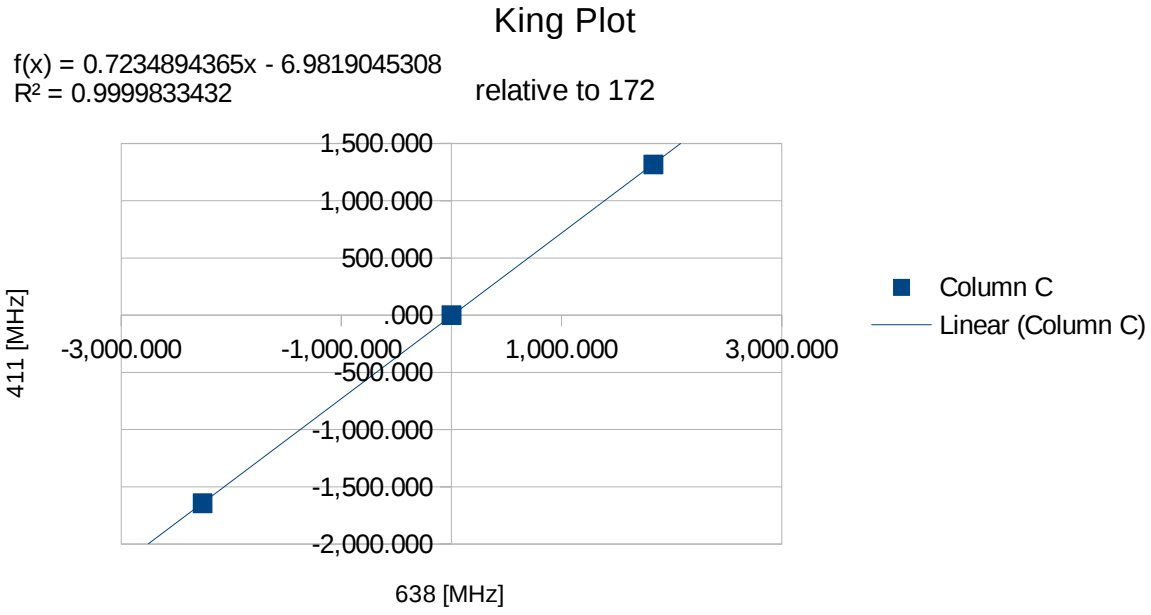
| | 369 | 411 | 635 | |
|---|---|---|---|---|
| | 2P3/2 (MHz) | 2D5/2 | D[5/2] (MHz) | absolute freq (MHz) |
| error | +/- 30 MHz | +/- ~2 MHz | +/-20 MHz | (+/- 2MHz) |
| 168 | **3,007.800** | | **6,040.000** | |
| 170 | **1,457.900** | | **2,930.000** | 729,486,462.466 |
| 171 | **922.500** | **1,317.100** | 1,835.458 | 729,487,779.566 |
| 172 | **.000** | **.000** | .000 | 729,486,462.466 |
| 174 | **-1,152.300** | -1,645.197 | **-2,260.000** | 729,484,817.269 |
| 176 | **-2,254.800** | | **-4,410.000** | |

https://journals.a https://journals https://journals.aps.org/pra/pdf/10.11

| slope relative | slope relative to 2P3/2 |
|---|---|
| 1.427750678 | 1.989656759 |

172 2D5/2 transition frequency: (+/- 150 kHz)
729 487 779 566
https://journals.aps.org/pra/abstract/10.1103/PhysRevA.60.2867


King Plot
f(x) = 1.9896567585x
R² = 0.9998516928
relative to 172
8,000.000
6,000.000
4,000.000
2,000.000
.000
-2,000.000
-4,000.000
-6,000.000
-4,000.000
-2,000.000
.000
2,000.000
4,000.000
638 [MHz]
369 [MHz]
Column D
King Linearity


King Plot
f(x) = 0.7234894365x - 6.9819045308
R² = 0.9999833432
relative to 172
1,500.000
1,000.000
500.000
.000
-500.000
-1,000.000
-1,500.000
-2,000.000
-3,000.000
-1,000.000
1,000.000
3,000.000
411 [MHz]
638 [MHz]
Column C
Linear (Column C)