

Supporting Information

Generated by R (version 3.1.1)

Metamorphic Province (non-Motagua Valley) and Volcanic Highlands excluded due to each having only 4 and 5 data points, respectively.

Key:

centroid = average of all points in a group

SS = Sum of Squares (between_SS/total_SS = 100% is perfect fit)

Northern Lowlands:

$^{207}\text{Pb}/^{206}\text{Pb}$:

K-Means Report:

Centroids = 2

Cluster means:

	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{207}\text{Pb}/^{204}\text{Pb}$
1	22.39229	15.79460
2	19.09218	15.66569

Within cluster sum of squares by cluster:

1.346978, 1.049611

(between_SS/total_SS = 89.4%)

$^{208}\text{Pb}/^{206}\text{Pb}$:

K-Means Report:

Centroids = 2

Cluster means:

	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{208}\text{Pb}/^{204}\text{Pb}$
1	22.39229	38.66207
2	19.09218	38.78843

Within cluster sum of squares by cluster:

1.358936, 1.280167

(between_SS/total_SS = 88.4 %)

Southern Lowlands:

$^{207}\text{Pb}/^{206}\text{Pb}$:

K-Means Report:

Centroids = 3

Cluster means:

	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{207}\text{Pb}/^{204}\text{Pb}$
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1	45.62330	16.94360
2	28.24225	16.00115
3	20.44843	15.69600

Within cluster sum of squares by cluster:
 0.00000, 14.90283, 17.94353
 (between_SS /total_SS = 95.2%)

$^{208}\text{Pb}/^{206}\text{Pb}$:

K-Means Report:

Centroids = 3

Cluster means:

	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{208}\text{Pb}/^{204}\text{Pb}$
1	20.44843	38.65338
2	28.24225	38.65780
3	45.62330	38.85490

Within cluster sum of squares by cluster:
 18.16371, 14.85656, 0.00000
 (between_SS /total_SS = 95.2%)

Motagua Valley:

$^{207}\text{Pb}/^{206}\text{Pb}$:

K-Means Report:

Centroids = 2

Cluster means:

	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{207}\text{Pb}/^{204}\text{Pb}$
1	20.46376	15.76137
2	18.70488	15.61996

Within cluster sum of squares by cluster:
 0.0000000, 0.2554385
 (between_SS/total_SS = 91.4 %)

$^{208}\text{Pb}/^{206}\text{Pb}$:

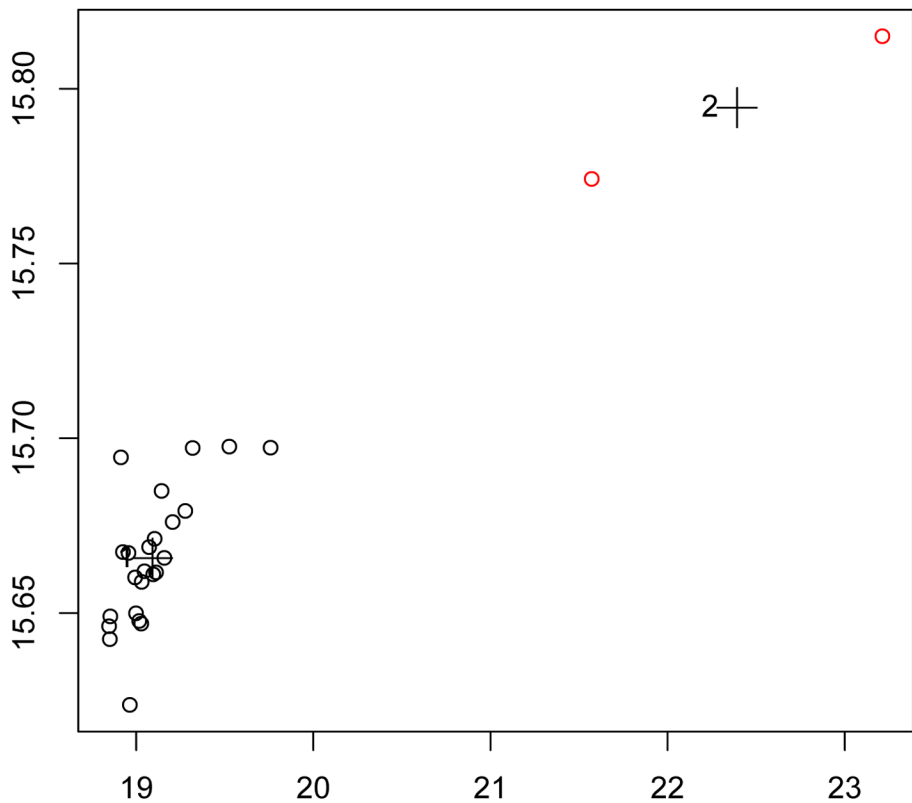
K-Means Report:

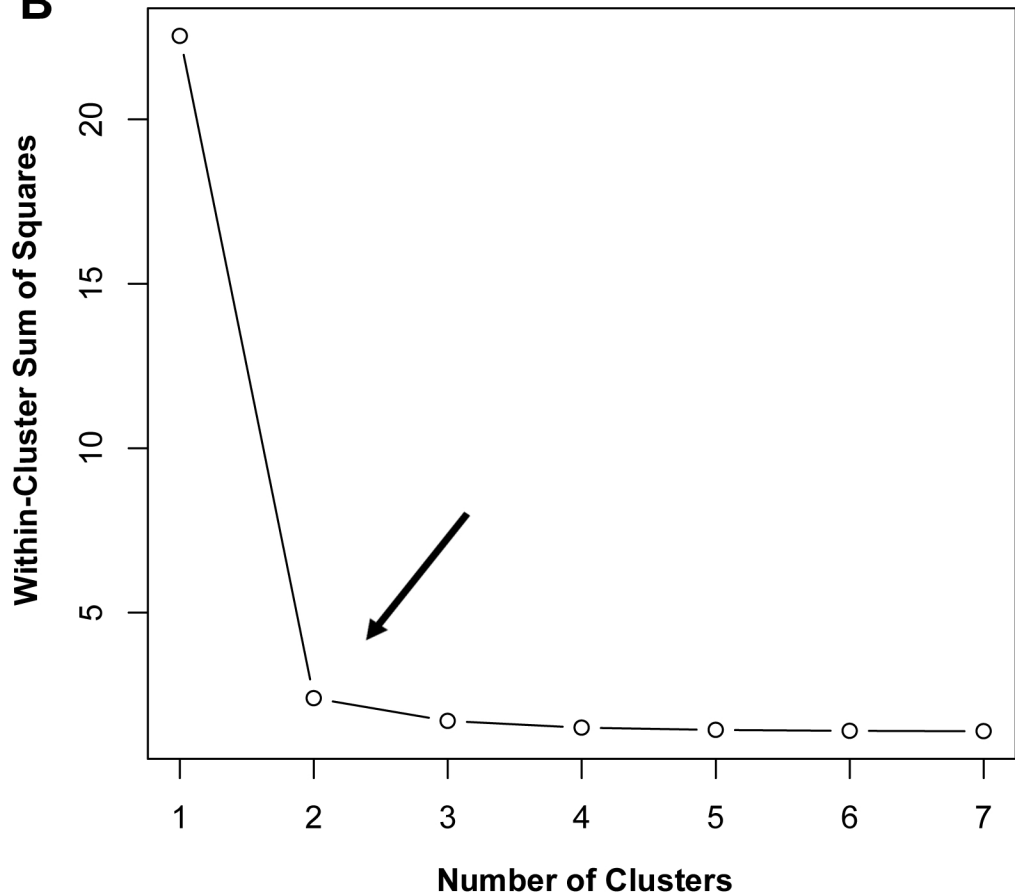
Centroids = 3

Cluster means:

	$^{206}\text{Pb}/^{204}\text{Pb}$	$^{208}\text{Pb}/^{204}\text{Pb}$
1	18.47330	37.99805
2	18.79751	38.62367
3	20.46376	39.37748

Within cluster sum of squares by cluster:
 0.13116280, 0.09497238, 0.00000000
 (between_SS/total_SS = 94.9 %)

A $^{207}\text{Pb}/^{204}\text{Pb}$  $^{206}\text{Pb}/^{204}\text{Pb}$

B

C $^{208}\text{Pb}/^{204}\text{Pb}$ 38.6
38.7
38.8
38.9

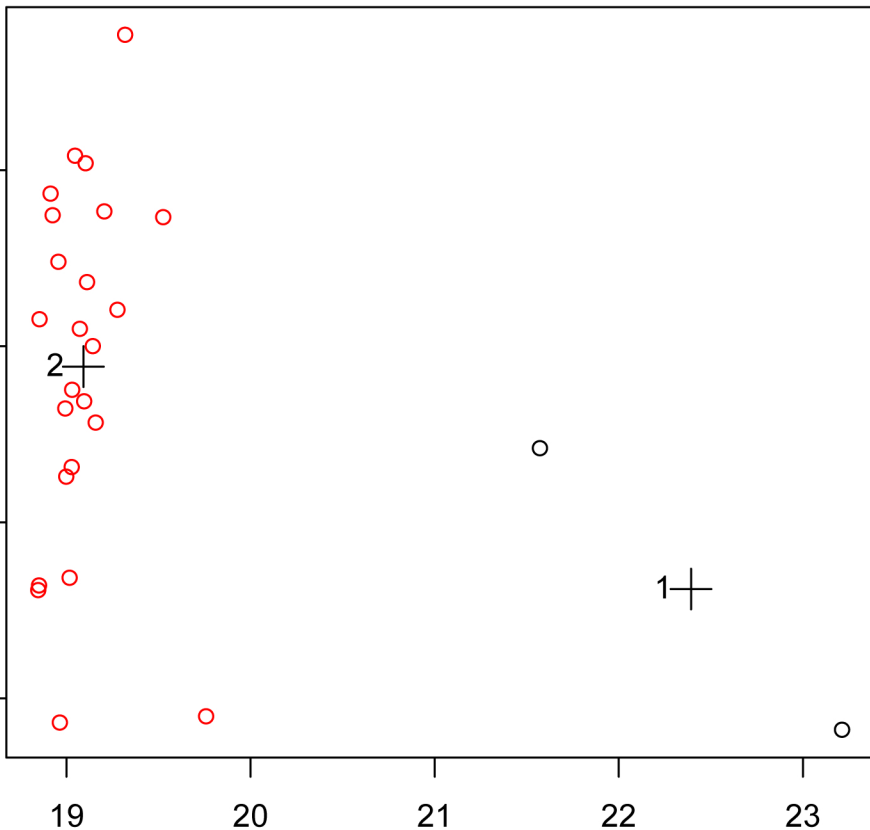
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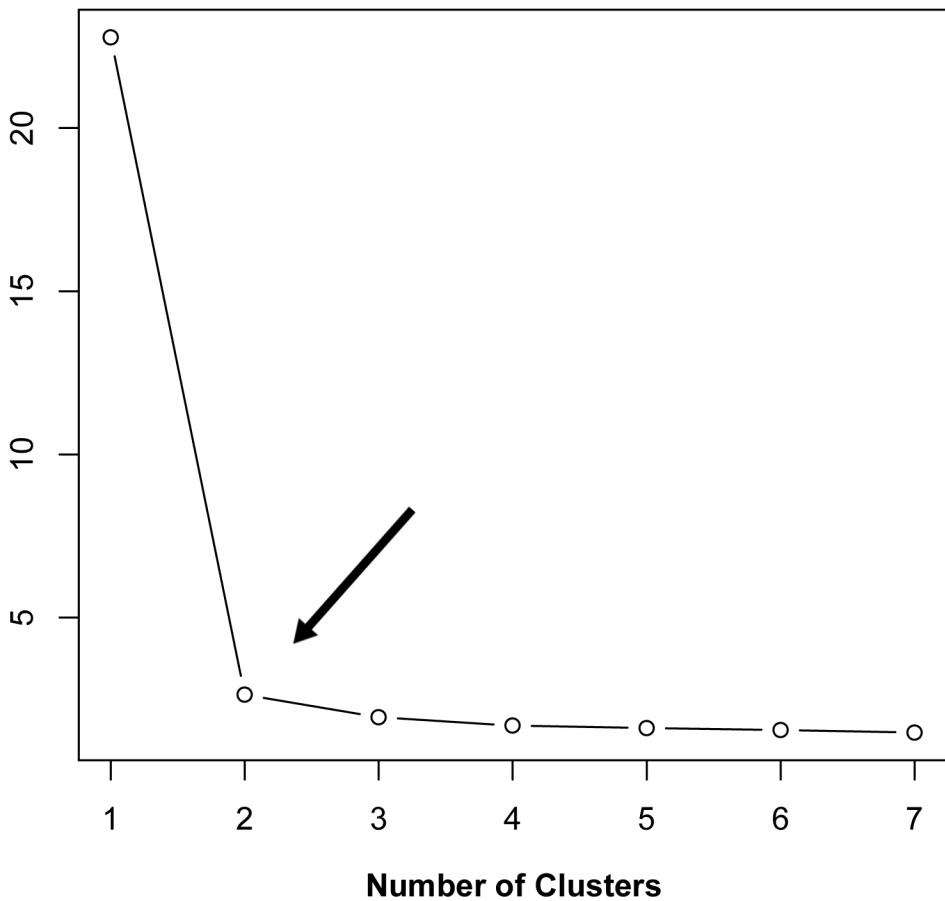
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21

22

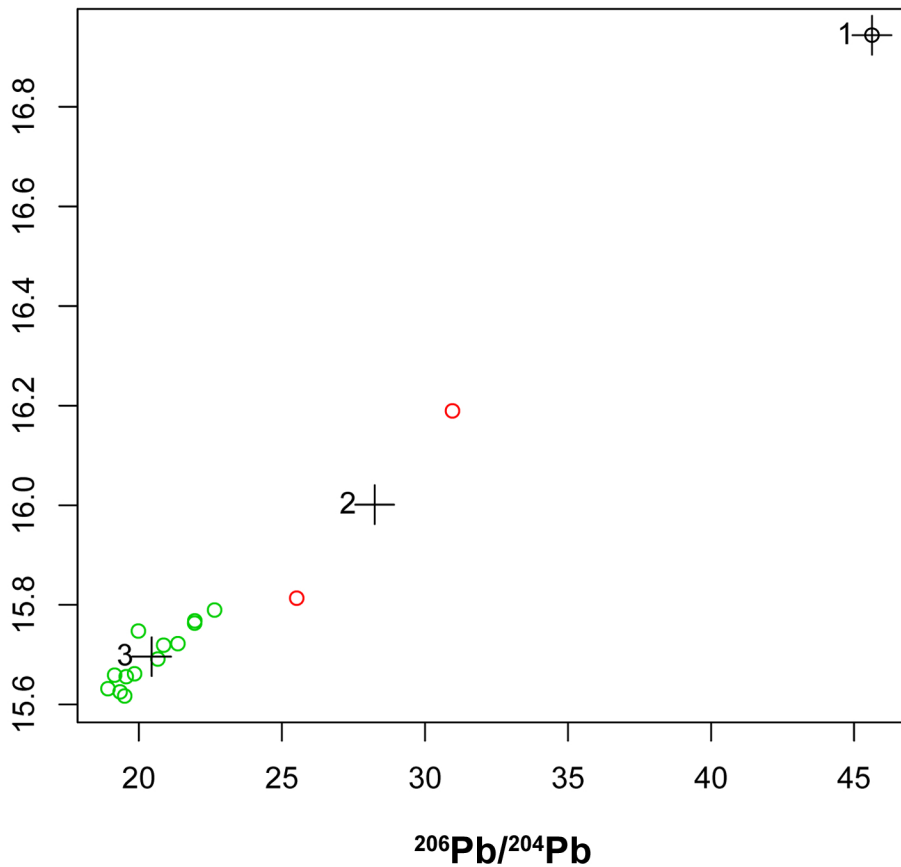
23

 $^{206}\text{Pb}/^{204}\text{Pb}$ 

D**Within-Cluster Sum of Squares**

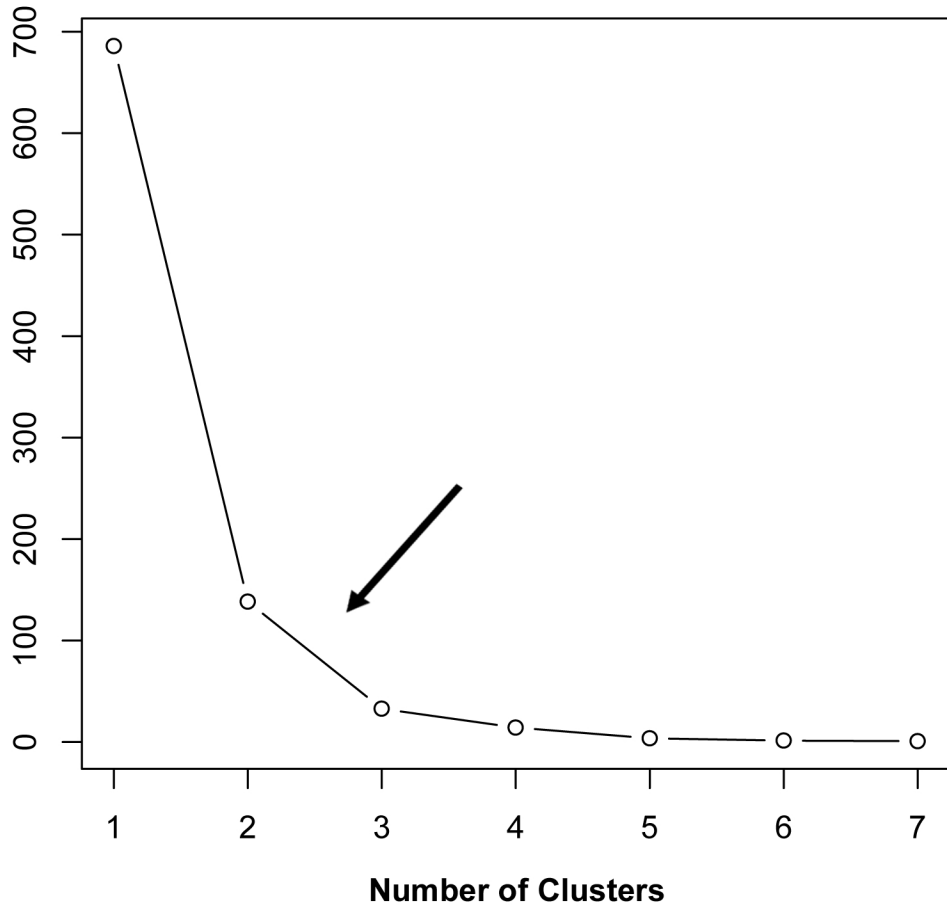
m

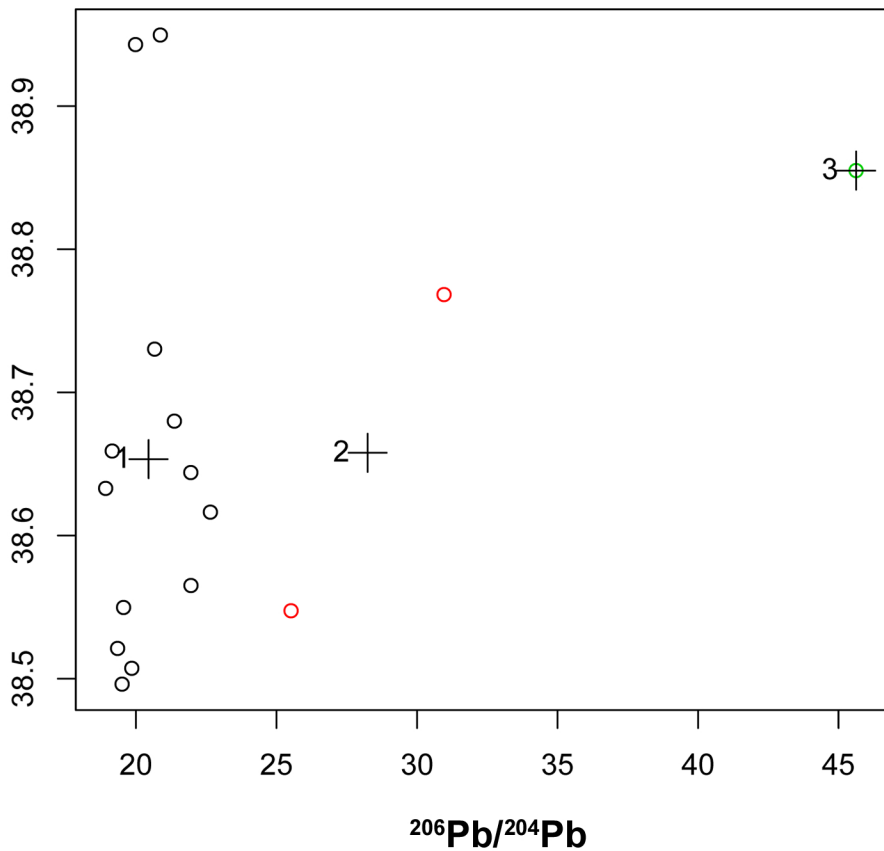
$^{207}\text{Pb}/^{204}\text{Pb}$

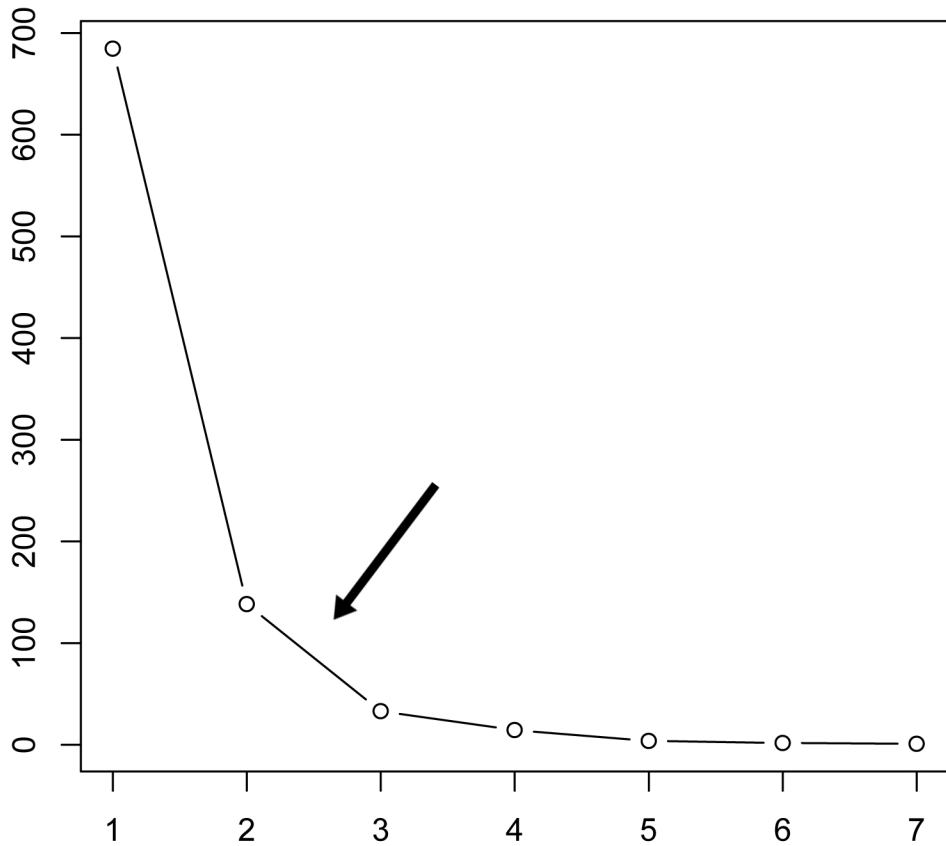


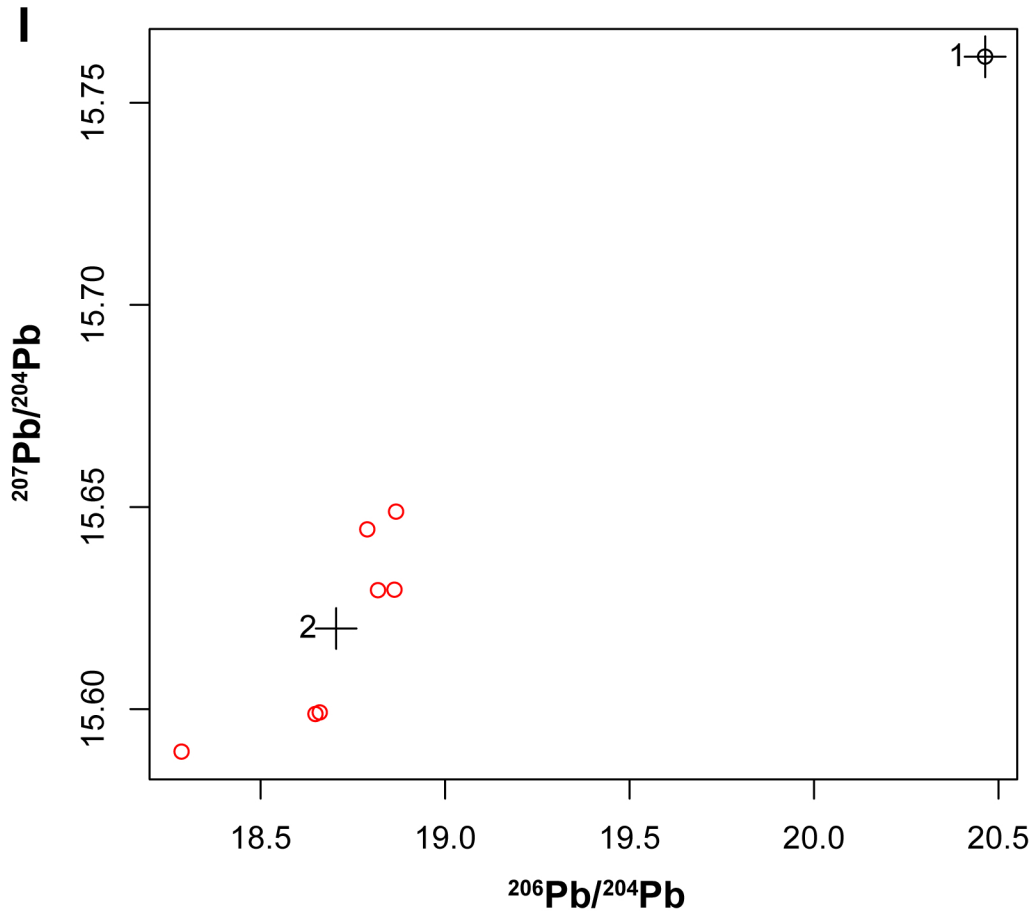
π

Within-Cluster Sum of Squares



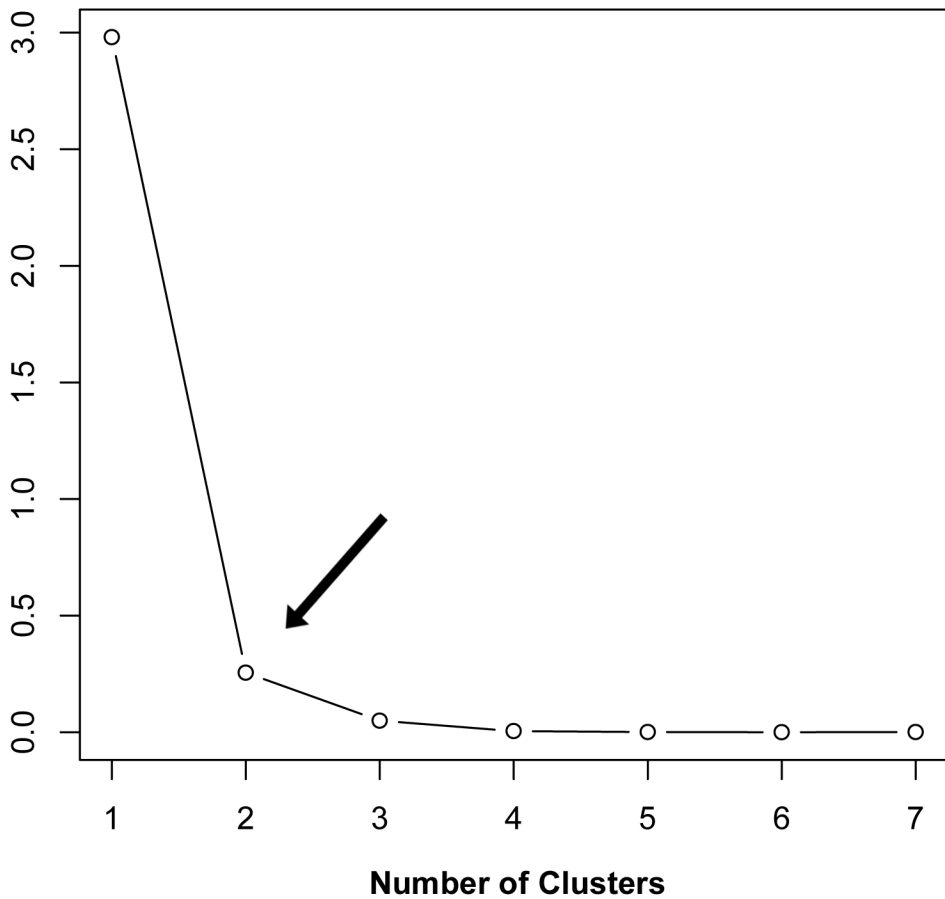
G $^{208}\text{Pb}/^{204}\text{Pb}$ 

H**Within-Cluster Sum of Squares****Number of Clusters**



Within-Cluster Sum of Squares

U



K **$^{208}\text{Pb}/^{204}\text{Pb}$** 39.0
38.5
38.0

18.5

19.0

19.5

20.0

20.5

 $^{206}\text{Pb}/^{204}\text{Pb}$ 