DEEP TIME: RADIOACTIVE DECAY

Uranium 235 - Lead 207 Decay......

<table>
<thead>
<tr>
<th>TIME</th>
<th>U 235 ---&gt;</th>
<th>Pb 207</th>
<th>Pb 204</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystallized</td>
<td>100 g</td>
<td>0 g</td>
<td>10 g</td>
</tr>
<tr>
<td>1 half-life</td>
<td>50 g</td>
<td>50 g</td>
<td>10 g</td>
</tr>
<tr>
<td>2 half-lives</td>
<td>25 g</td>
<td>75 g</td>
<td>10 g</td>
</tr>
<tr>
<td>3 half-lives</td>
<td>12.5 g</td>
<td>87.5 g</td>
<td>10 g</td>
</tr>
</tbody>
</table>

Rubidium 87 - Strontium 87 Decay....

<table>
<thead>
<tr>
<th>TIME</th>
<th>Rb 87 ---&gt;</th>
<th>Sr 87</th>
<th>Sr 86</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystallized</td>
<td>8 g</td>
<td>0 g</td>
<td>3 g</td>
</tr>
<tr>
<td>1 half-life</td>
<td>4 g</td>
<td>4 g</td>
<td>3 g</td>
</tr>
<tr>
<td>2 half-lives</td>
<td>2 g</td>
<td>6 g</td>
<td>3 g</td>
</tr>
<tr>
<td>3 half-lives</td>
<td>1 g</td>
<td>7 g</td>
<td>3 g</td>
</tr>
</tbody>
</table>
Isochrons for Rubidium-Strontium Isotopes

Fig. 1. Rubidium - strontium ratios in four different minerals (A,B,C,D), plotted as they might appear in a newly formed rock. The line through the four plots is the isochron. Figures adapted from Miller, 1999

Fig. 2. Rubidium - strontium ratios as time passes. The plots of the four minerals shift upwards and to the left, proportional to their original amounts. The sloping angle of the resulting alignment a,b,c,d (isochron) can be used to calculate the age of the sample.