# Dating Lake and Eastlick Big Y SNP Branches

Wesley Johnston, 7 July 2021

The recent Big Y-700 results of George Lake, whose relationship to existing Big Y-700 tester Robert Lake allowed us to compare the dates of various estimation methods, and only one of those methods (Rob Pearson's SNP Tracker) was in the right ballpark. So, this paper uses that method to explore the dating of the other Lake and Eastlick Big Y-700 kits.

The Lake and Eastlick Kits in the Big Y Block Tree: R-FT272260

Here is the Big Y Block Tree of the relevant kits, viewed from Marshall Lake's kit.
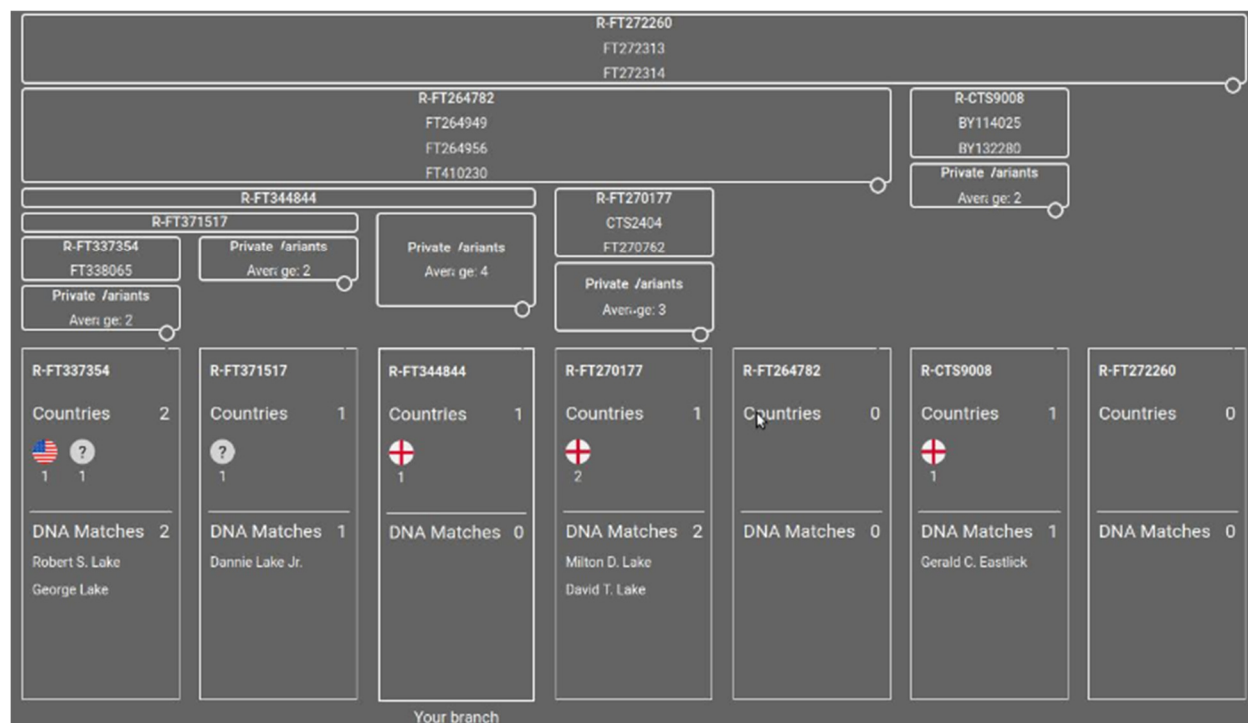
All the kits are positive for SNP R-FT272260. The Eastlick kit branches off from that with R-CTS9008, while the Lake kits all branch off with R-FT264782.

Dating Methods Considered

The methods considered were:

1. assignment of some number of years to the intervals on the Big Y Block Tree
2. Bill Wood's method of 60 + (144 * the number of public and private variants)
3. Rob Pearson's Scaledinnovations.com SNP Tracker

Not yet considered was David Vance's SAPP, which I do intend to consider at some point.

Also considered but not included, since it is STR-only, was Bill Howard's RCC (Revised Correlation Coefficient) phylogenetic trees. However, the similarity of this method's estimate for the Lake-Eastlick branch split to that of Rob Pearson's SNP Tracker is very significant.

The assignment of numbers I have seen (ranging from 40 to 83) for the years /interval of the Big Y Block Tree were way off. The actual number of years/interval for the George-Robert branch is about 25.

Bill Wood's method estimated a 637-year-old branching for an actual branching of just 100 years. His method is clearly calibrated to his Wood family, so that recalibration to the Georrge-Robert case would use 10 instead of 144 for the calculation.

Rob Pearson's method is opaque to me at the moment. I do not understand how he arrived at 1800 for the George-Robert connection. But it is easily visible without any computation by just entering their shared terminal SNP in the SNP Tracker.

The Lake-Eastlick Branch Split: Eastlick R-CTS9008

Here is Rob Pearson's SNP Tracker estimated year for the branching of the CTS9008 SNP that characterizes Gerald Eastlick' R-CTS9008 SNP splitting off from the earlier R-FT272260 SNP that characterizes all of the Lake and Eastlick kits.

SNP	years before present	95% CL	BCE/CE	era	number of descendants
R-A14182	2,100	52%	160 BCE	🟩	10
R-FT272260	2,100	52%	160 BCE	🟩	7
R-CTS9008	350	130%	1600 CE	🟥	1

So, the SNP Tracker estimates the Lake-Eastlick branch split at about the year 1600. This is at 130% confidence that it is at the 95% confidence level (if I read Rob Pearson's "95% CL" column accurately). So, it is very high confidence. And this is very much in the same ballpark of Bill Howard's STR-only RCC method which estimates the split at the year 1550.

The Further Branching of the Lake Kits: Lake R-FT264782

We have only one Eastlick Big Y-700 test result, so that we cannot explore the further branching of the Eastlick kits. But we have five Lake Big Y-700 results who have shared their information. So, we can examine the additional branching of the Lake kits, all of which are characterized by SNP R-FT264782.

R-A14182	2,100	52%	160 BCE	🟩	10
R-FT272260	2,100	52%	160 BCE	🟩	7
R-FT264782	2,100	52%	160 BCE	🟩	6

So, apparently, there is one kit that has tested that has not made their results public – or else there is a place holder for that SNP and no one else really has tested and landed on that terminal SNP. We know this by the "6" for R-FT264782.

Here is the branching for Milton and David who both are positive for R-FT270177. There is high confidence that this mutation they share happened about 1800. **I need to add the chart of their relationship to each other to see when their common Y-ancestor was born.**

R-A14182	2,100	52%	160 BCE		10
R-FT272260	2,100	52%	160 BCE		7
R-FT264782	2,100	52%	160 BCE		6
R-FT270177	180	180%	1800 CE		2

Here is the branching for the R-FT371517 SNP that Dannie, Robert and George all share. This continues the 160 BCE date, so that it cannot yet be distinguished from the prior SNPs. I am not sure how to interpret that genealogically. The key here is that the higher R-FT334844 has 4 kits (or very possibly 3 kits and a placeholder) while R-FT271517 has only the 3 kits (Dannie, Robert, George). So we know that the 6th kit is R-FT344844, which makes me suspect it is a place holder and not another person who has tested and not made their results public.

R-A14182	2,100	52%	160 BCE		10
R-FT272260	2,100	52%	160 BCE		7
R-FT264782	2,100	52%	160 BCE		6
R-FT344844	2,100	52%	160 BCE		4
R-FT371517	2,100	52%	160 BCE		3