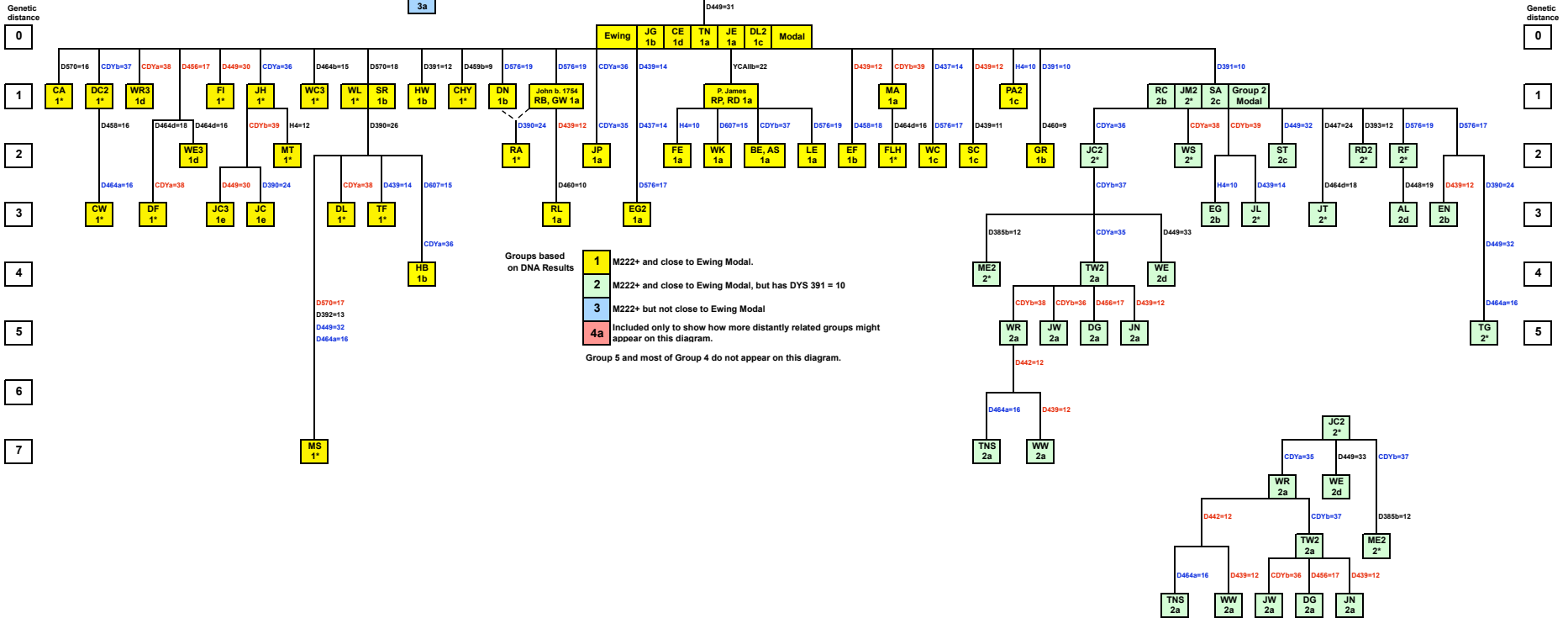


	13	24	14	11	11	14	12	12	13	29	17	9	10	11	11	29	18	19	29	18	18	17	37	38	12	12
R1b																										
Group 4a	13	24	14	11	11	14	12	12	13	29	17	9	10	11	11	29	18	19	29	18	18	17	37	38	12	12
M222+	13	24	14	11	11	13	12	12	13	29	18	9	10	11	11	29	18	19	29	18	18	17	38	38	12	12
Ewing*	13	25	15	11	11	13	12	12	13	14	29	17	9	10	11	25	15	18	18	16	16	17	37	38	11	12
Group 2	13	25	15	10	11	13	12	12	13	14	29	17	9	10	11	25	15	18	18	16	16	17	37	38	11	12

*Reference row for mutation colorization is the Ewing modal haplotype

In the chart, mutations are shown to the right of the line they occurred on.
 Back Mutations are shown in red.
 Parallel Mutations are shown in blue.
 "Unique" Mutations are shown in black.

Note: Below the Ewing modal haplotype (so not including Group 3) there are 76 mutations shown in this chart, of which 15 are back mutations (8 of them at CDY), 39 are parallel mutations (10 of them at CDY) and only 22 are unique mutations.



Discussion

Superficially, this diagram looks like a genealogic descendancy chart, but it is important to remember that this is not what it is. Rather, it is a way to display the results of genetic testing that highlights differences between project participants and makes hypotheses about how these might have come to be. The haplotypes of each participant on the chart is completely characterized on the chart to arrive at the haplotype of a participant, start with the Ewing modal haplotype, and then change marker values to match those you come to as you trace the line to the participant of interest.

We have put lines leading to participants in our various Groups close together, but the horizontal position of a branch on the chart has no significance, and could be moved around on the chart without changing its meaning.

There are many alternative ways a chart like this could be configured that do have significance. We could put any of these individuals on any branch of the chart by using a suitable combination of parallel mutations and back mutations.