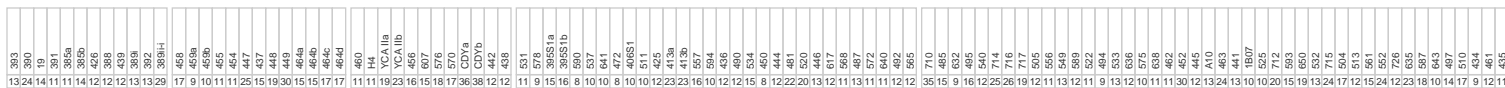
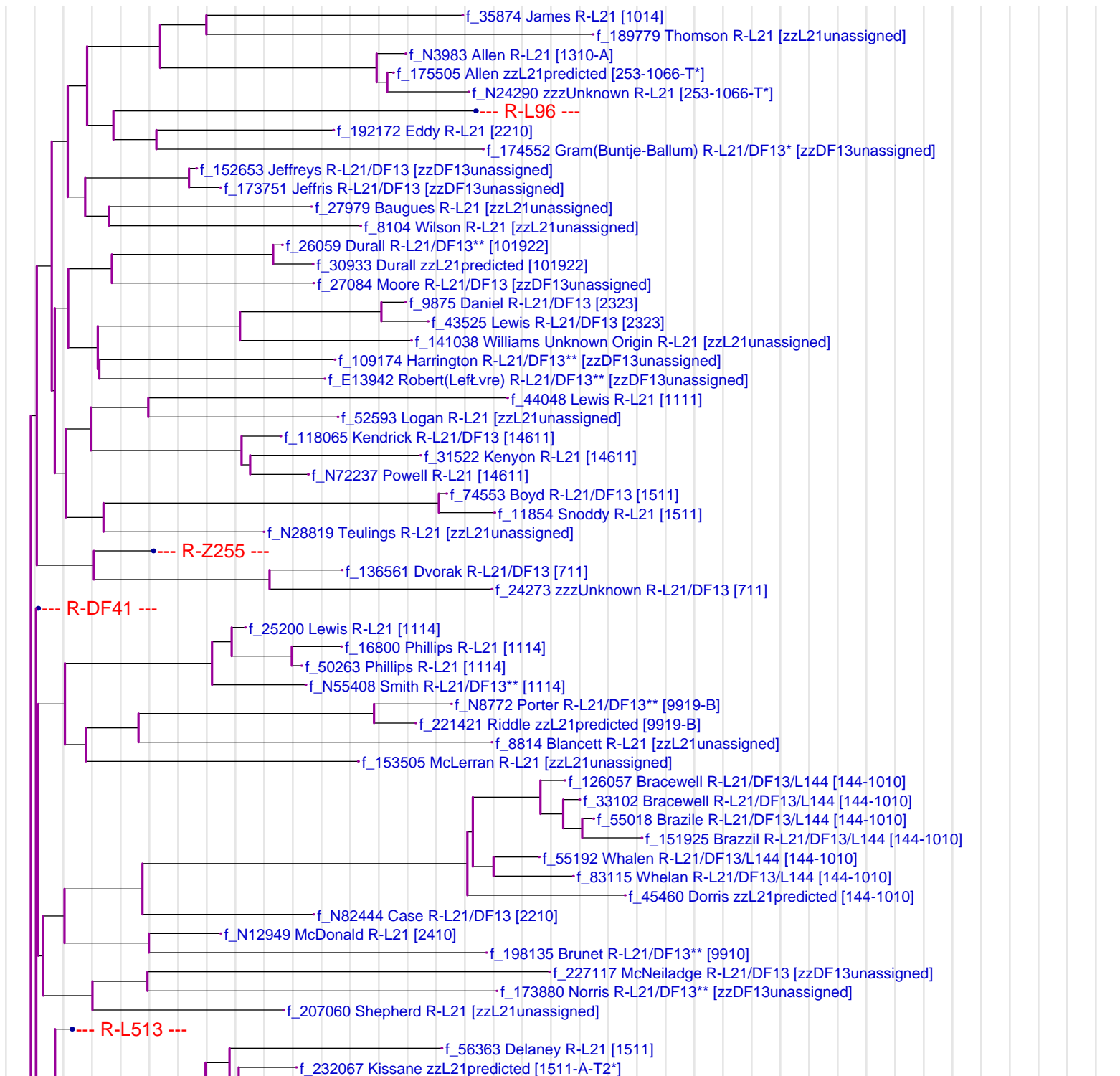
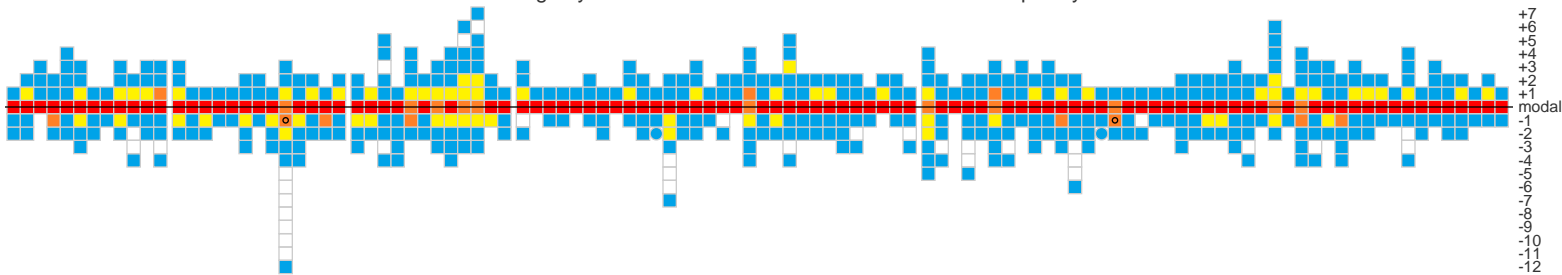


R-L21

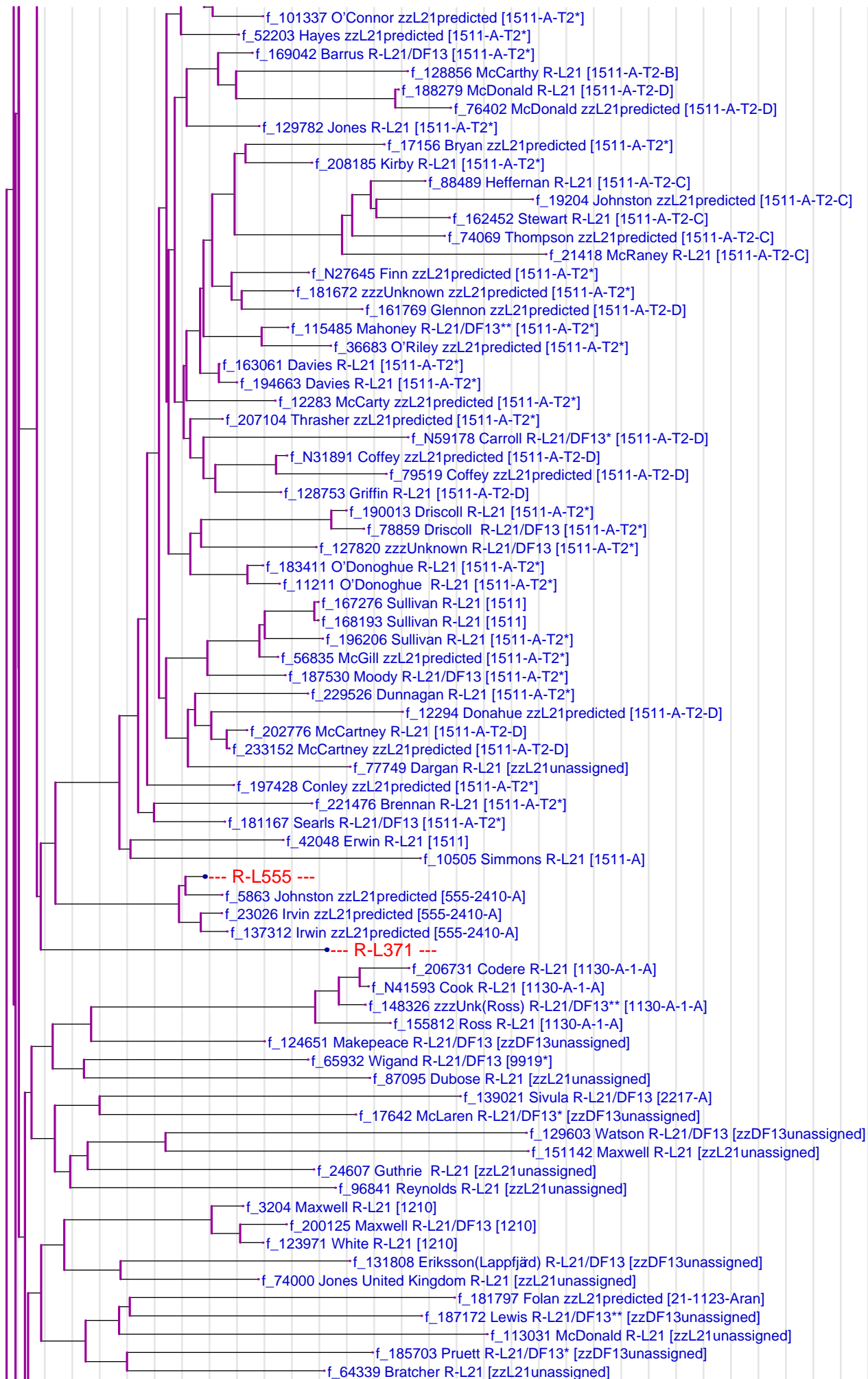
This is the modal haplotype for the whole tree including any subtrees.



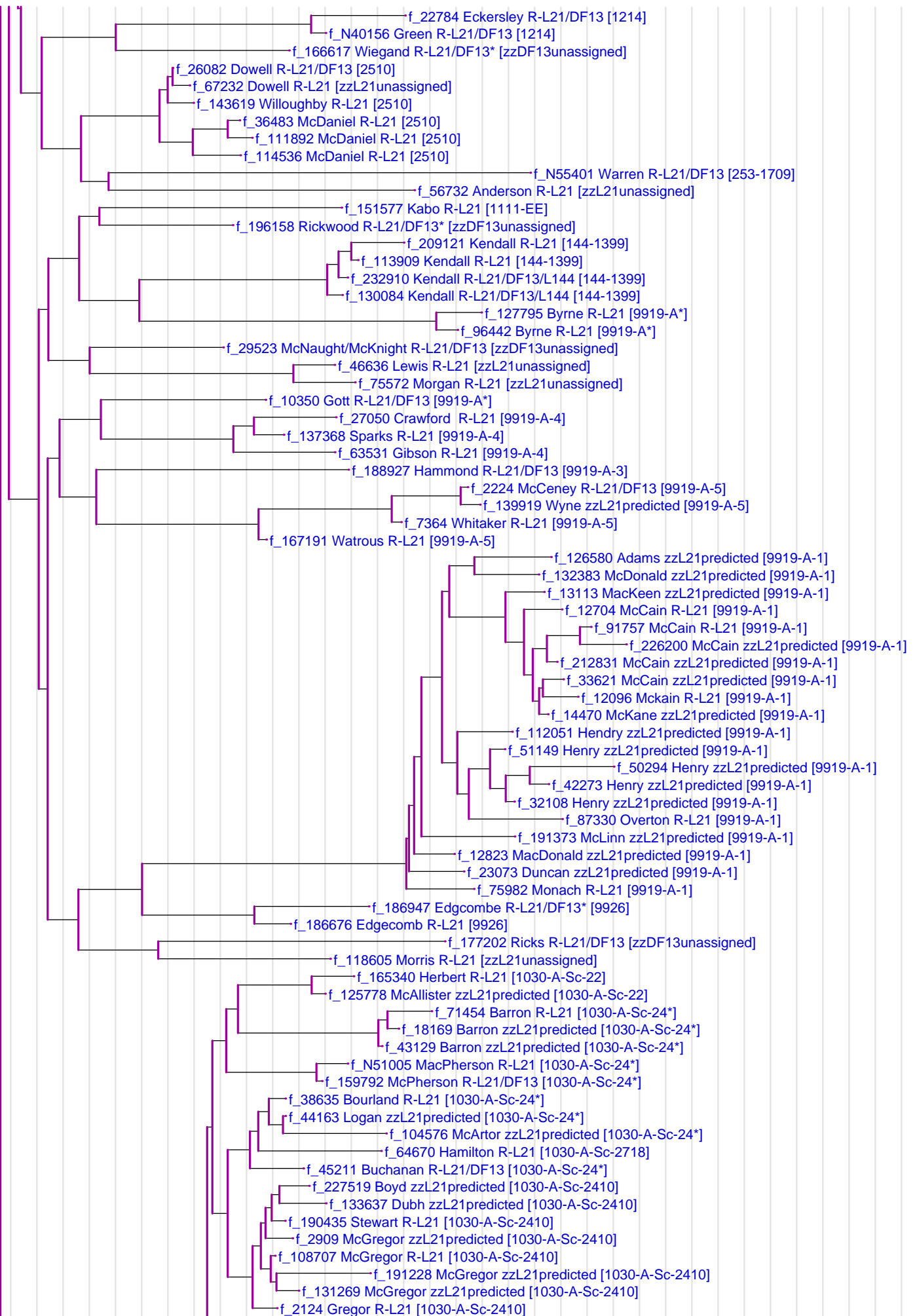
This is the marker distribution for the whole tree including any subtrees. The color indicates the relative frequency of the alleles.



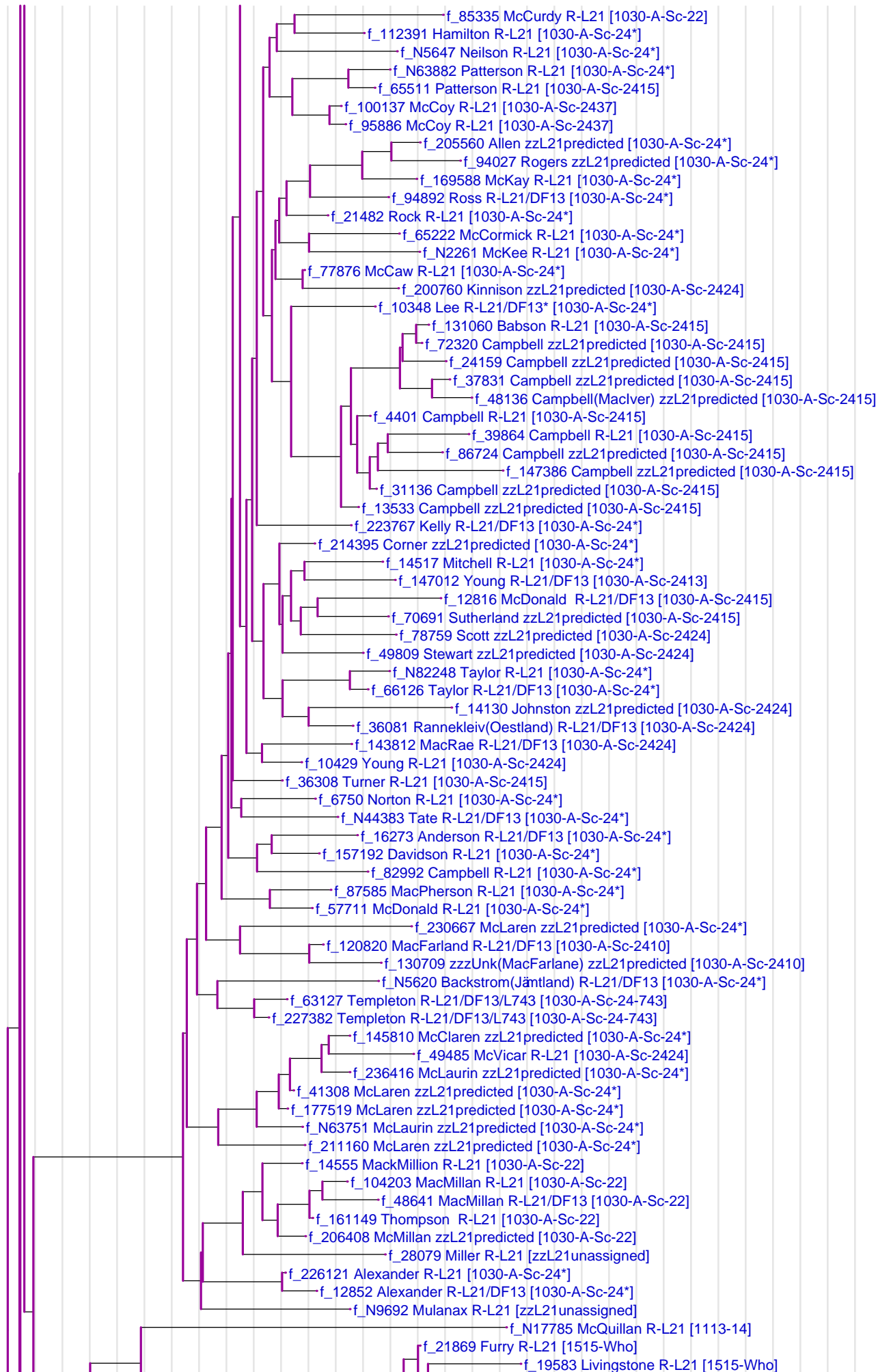
The vertical grey lines are separated 10 generations apart.



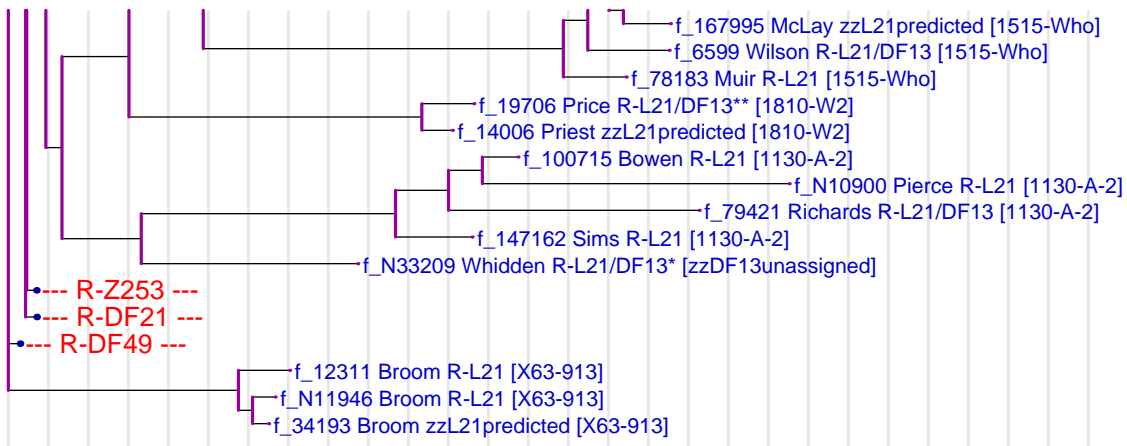
The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.



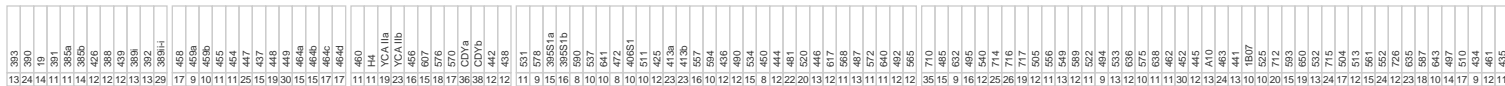
The vertical grey lines are separated 10 generations apart.



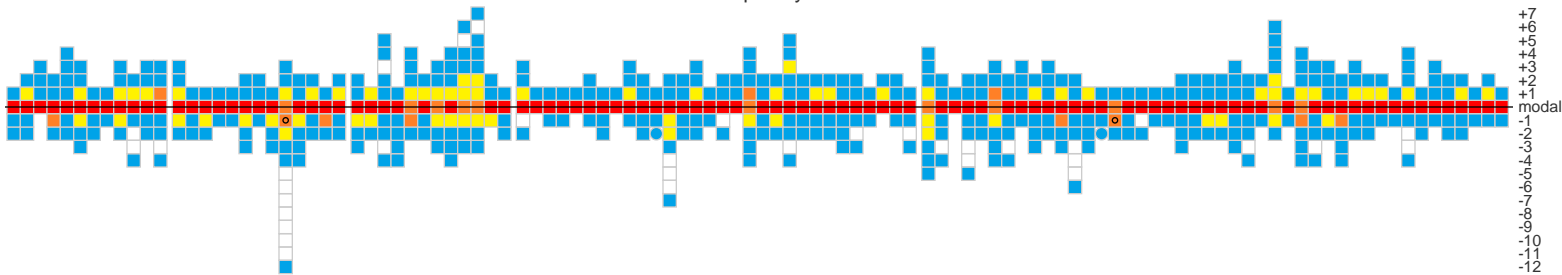
The vertical grey lines are separated 10 generations apart.

R-DF13

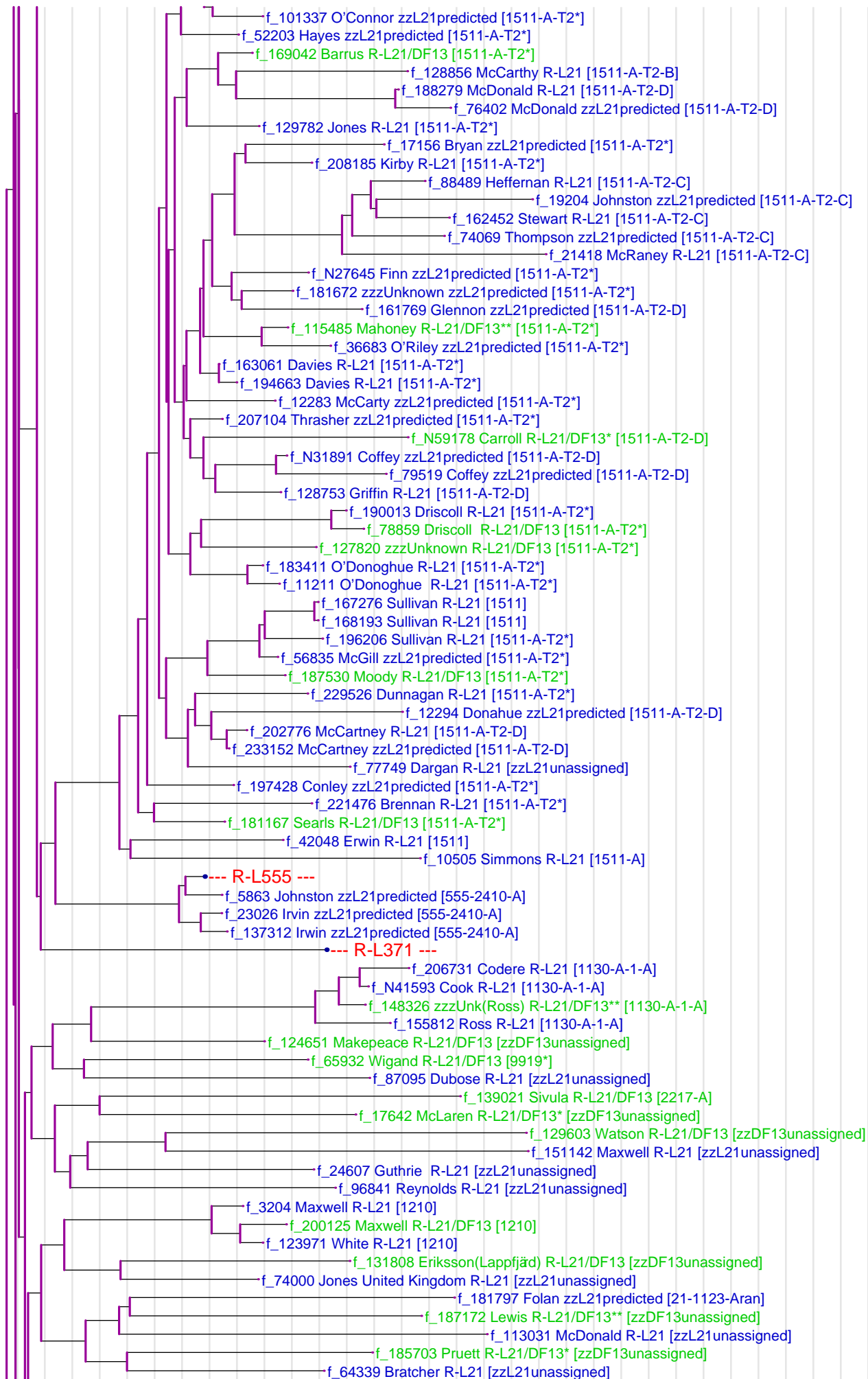
This is the modal haplotype for R-DF13. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-DF13. The color indicates the relative frequency of the alleles.



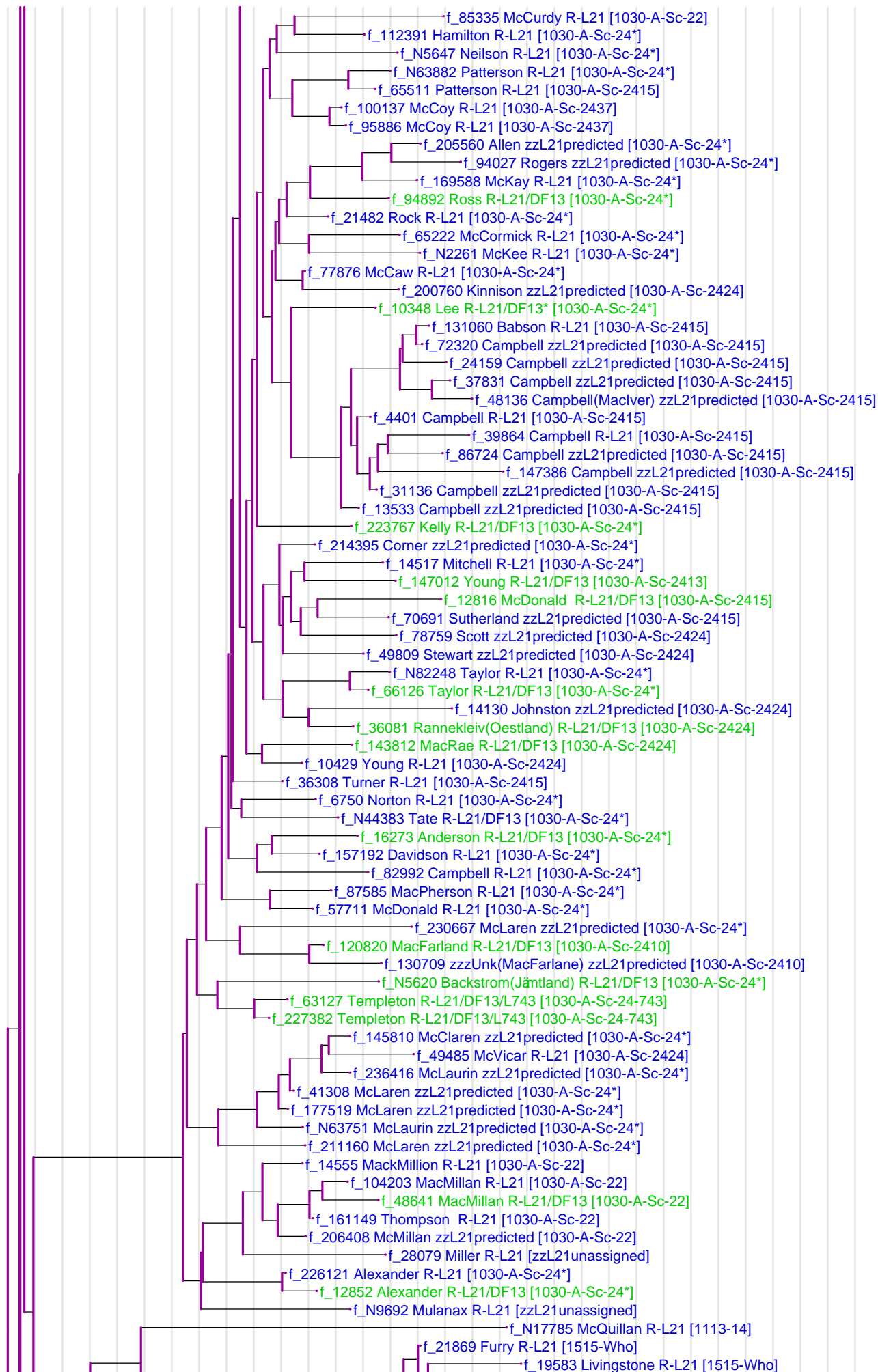
The vertical grey lines are separated 10 generations apart.



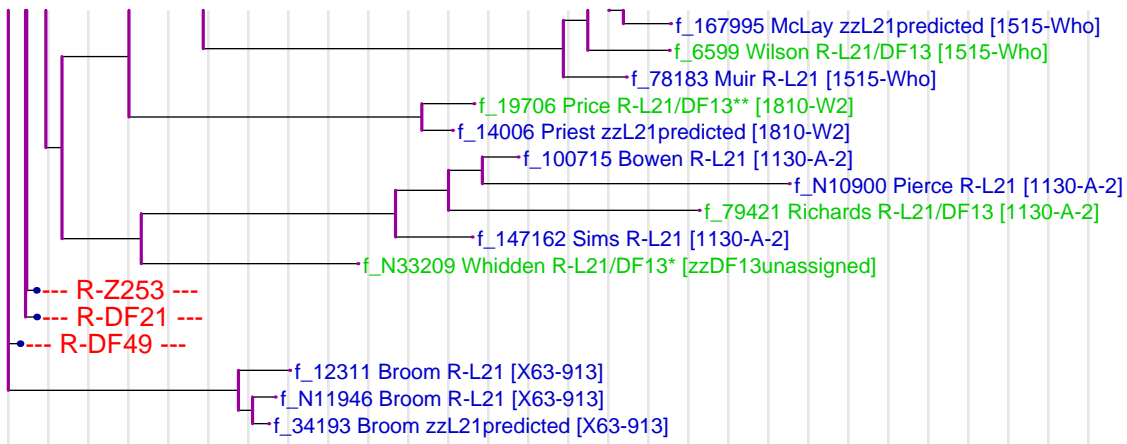
The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.



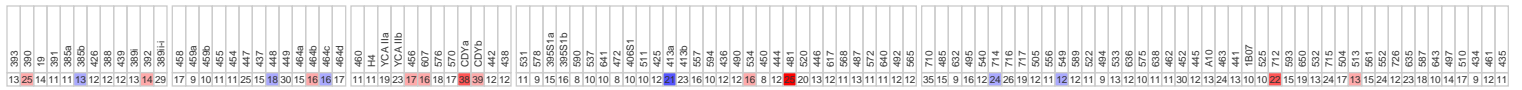
The vertical grey lines are separated 10 generations apart.



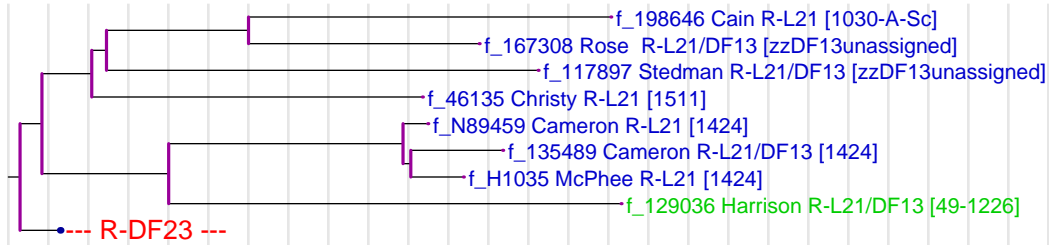
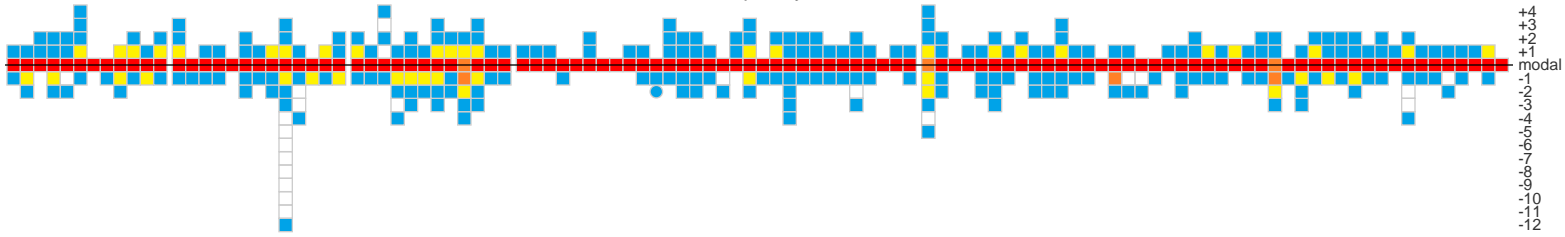
The vertical grey lines are separated 10 generations apart.

R-DF49

This is the modal haplotype for R-DF49. The coloration is with respect to the modal haplotype of the full tree.



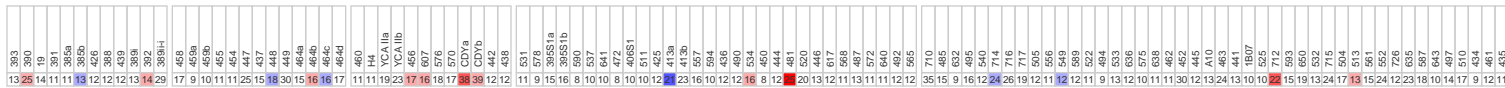
This is the marker distribution for R-DF49. The color indicates the relative frequency of the alleles.



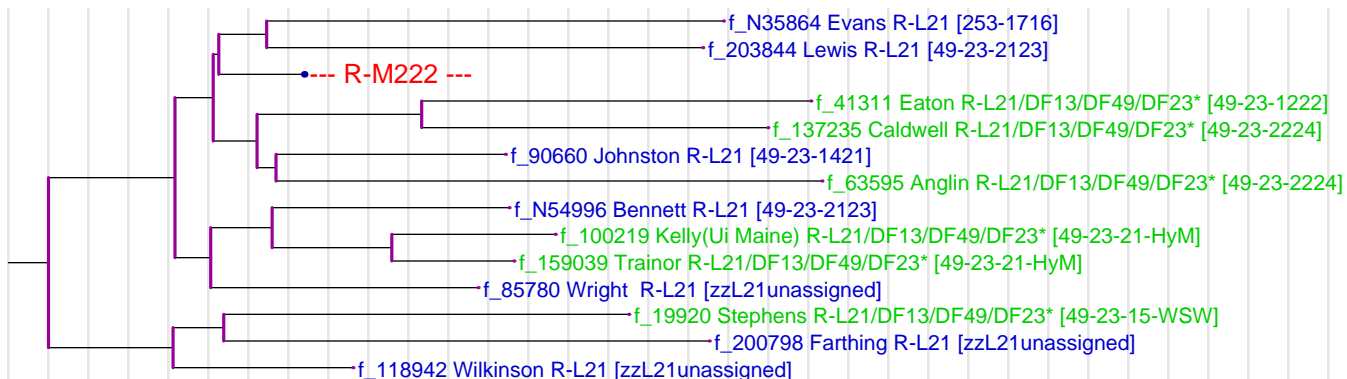
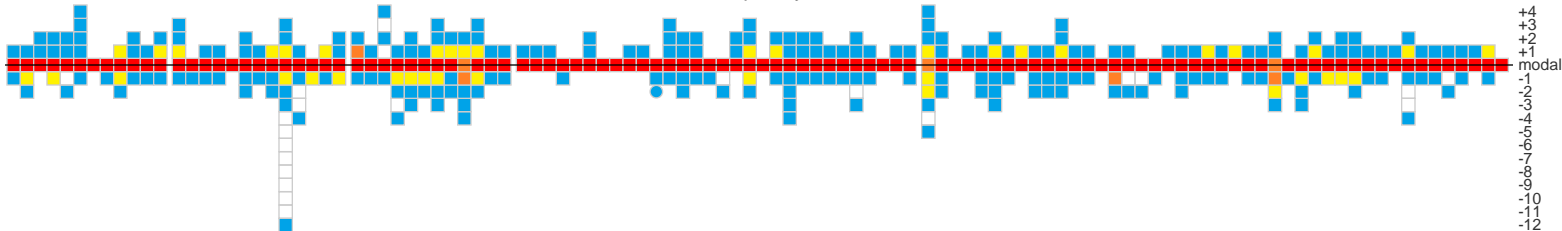
The vertical grey lines are separated 10 generations apart.

R-DF23

This is the modal haplotype for R-DF23. The coloration is with respect to the modal haplotype of the full tree.



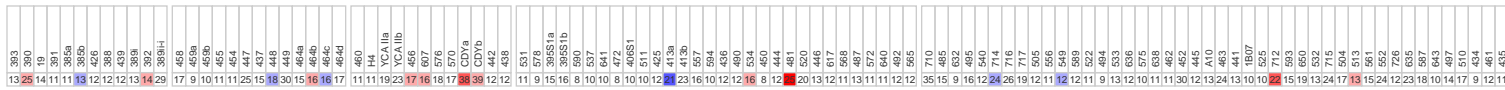
This is the marker distribution for R-DF23. The color indicates the relative frequency of the alleles.



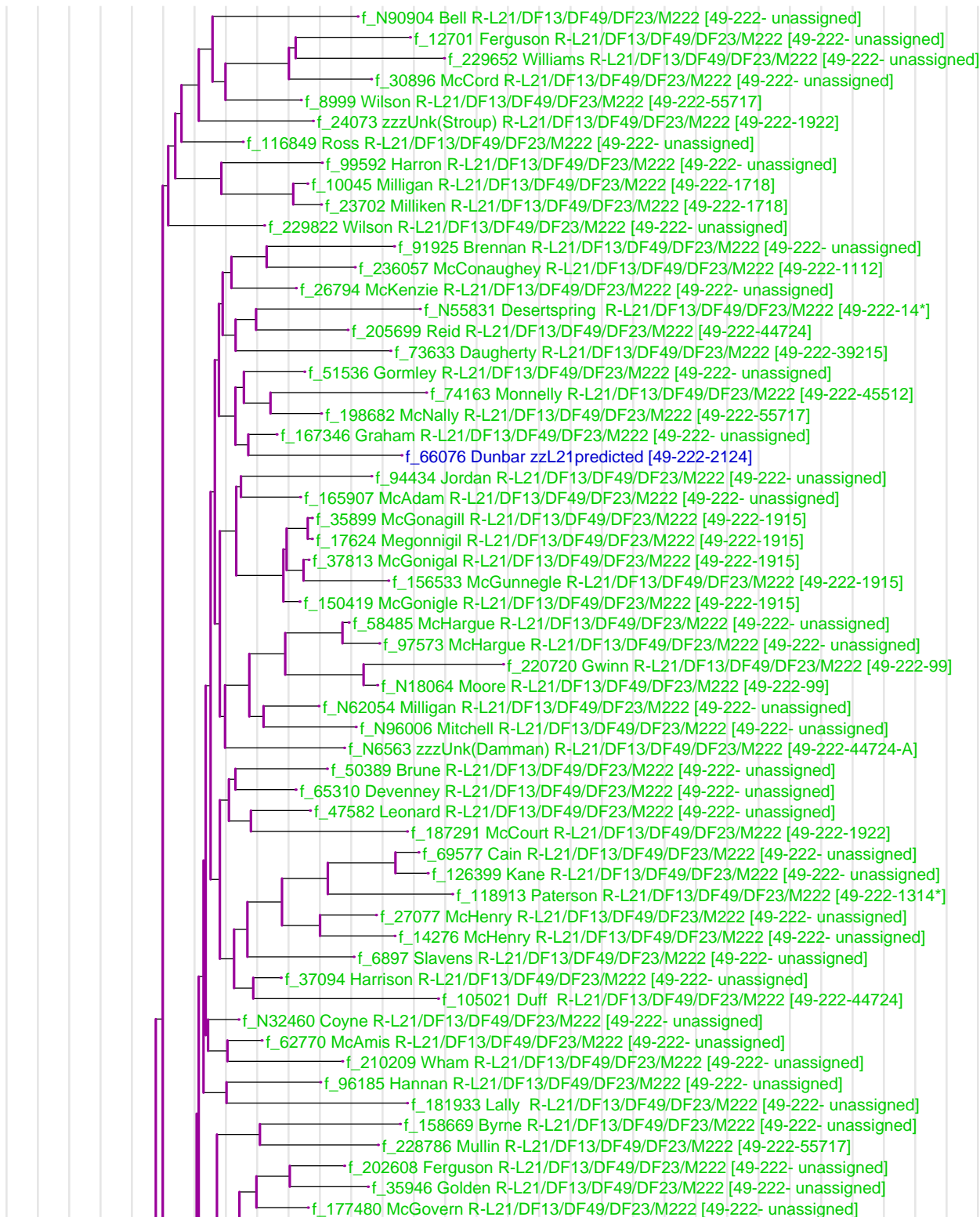
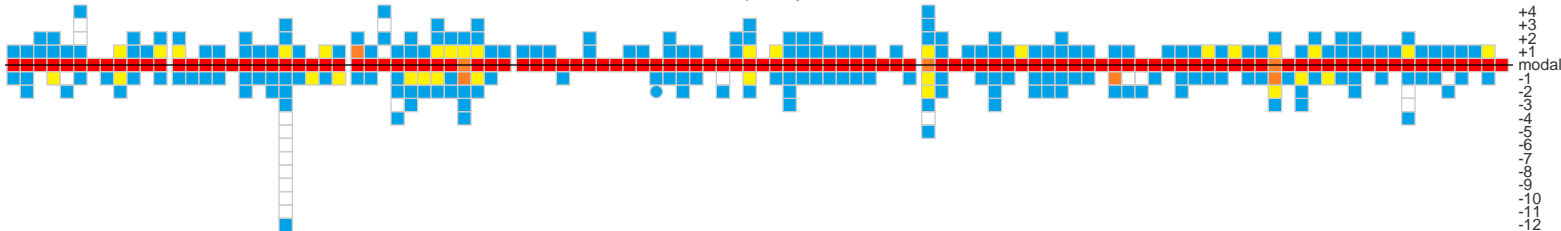
The vertical grey lines are separated 10 generations apart.

R-M222

This is the modal haplotype for R-M222. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-M222. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.



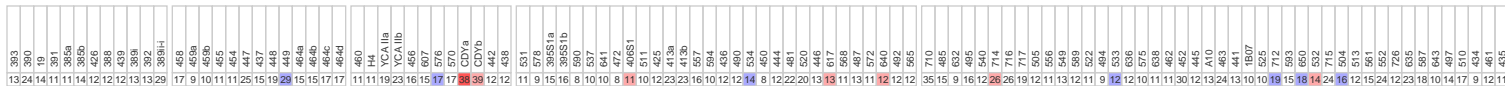
The vertical grey lines are separated 10 generations apart.



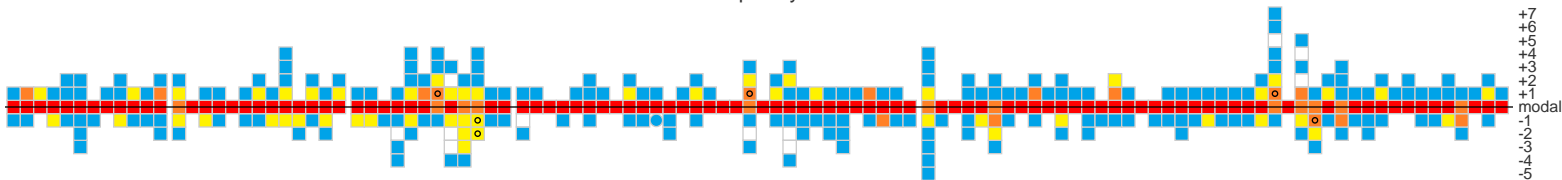
The vertical grey lines are separated 10 generations apart.

R-L513

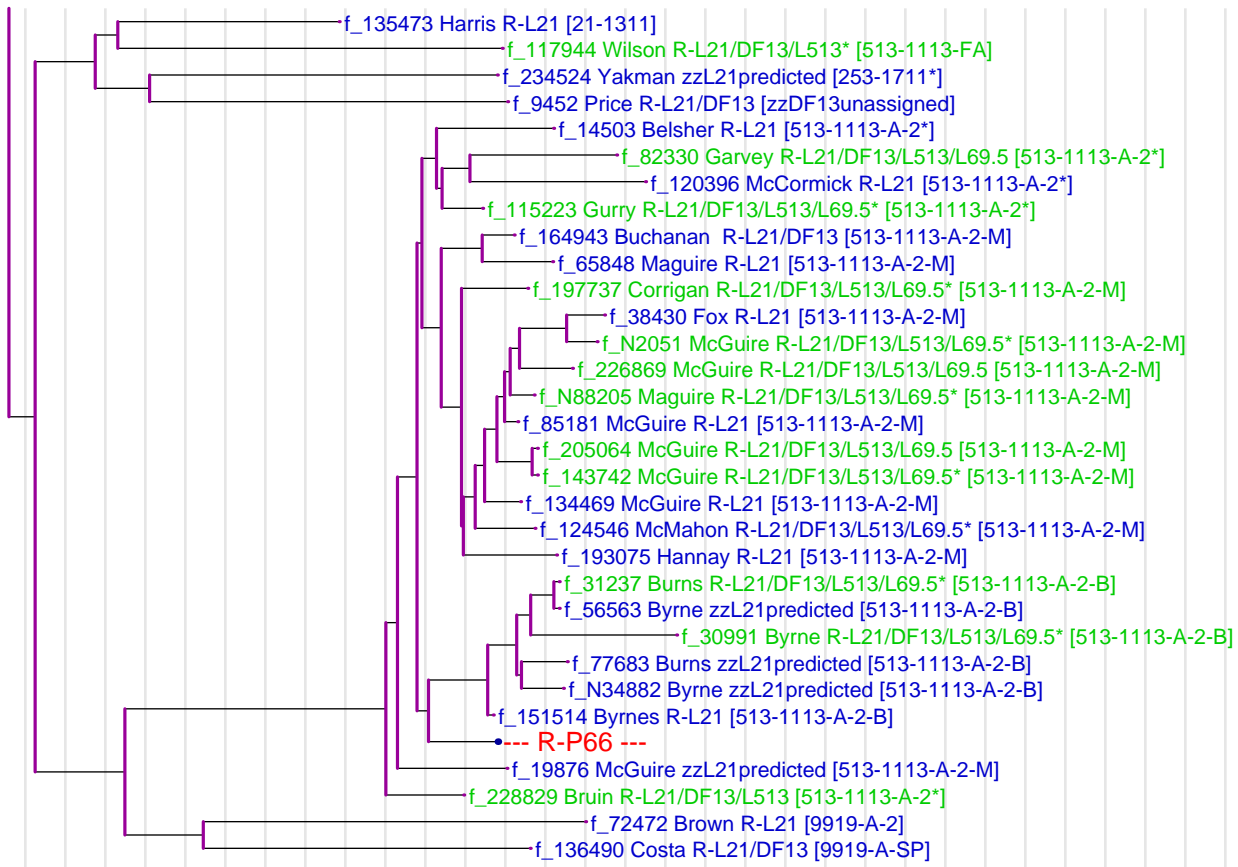
This is the modal haplotype for R-L513. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-L513. The color indicates the relative frequency of the alleles.



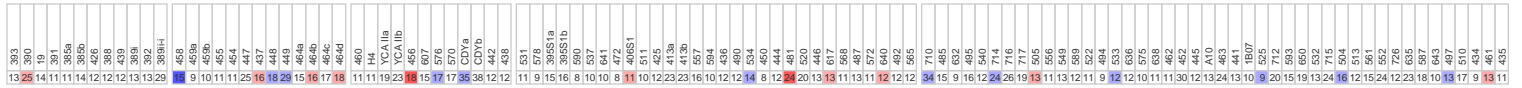
The vertical grey lines are separated 10 generations apart.



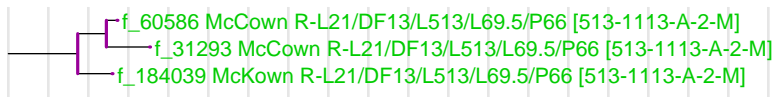
The vertical grey lines are separated 10 generations apart.

R-P66

This is the modal haplotype for R-P66. The coloration is with respect to the modal haplotype of the full tree.



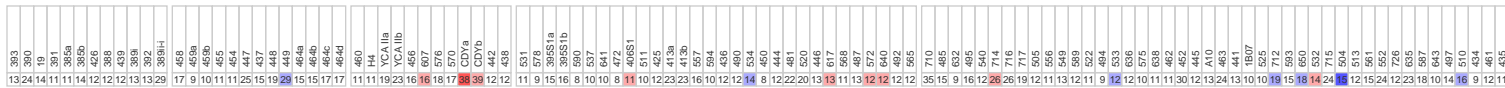
This is the marker distribution for R-P66. The color indicates the relative frequency of the alleles.



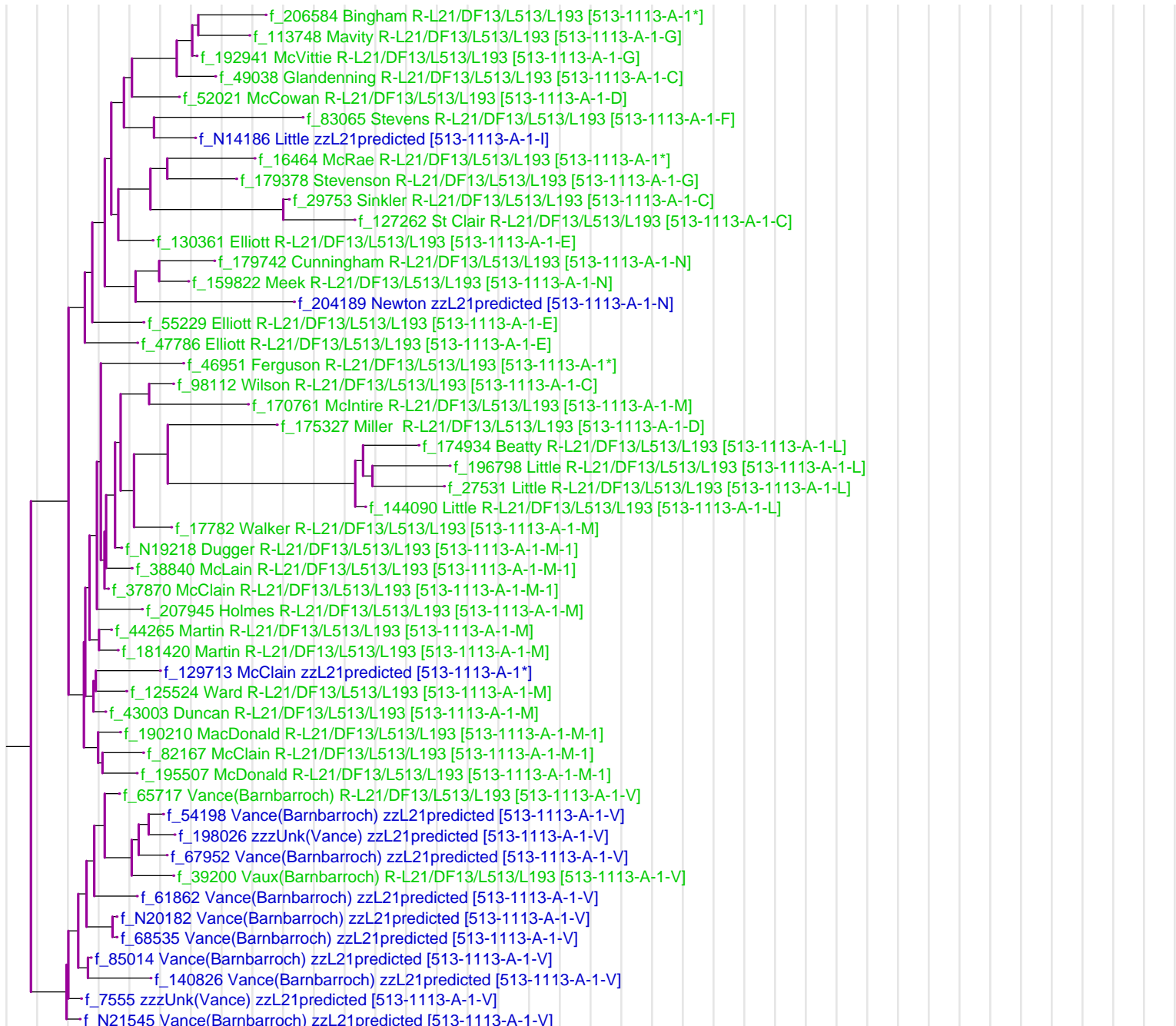
The vertical grey lines are separated 10 generations apart.

R-L193

This is the modal haplotype for R-L193. The coloration is with respect to the modal haplotype of the full tree.



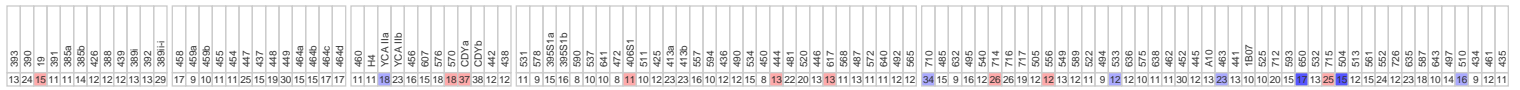
This is the marker distribution for R-L193. The color indicates the relative frequency of the alleles.



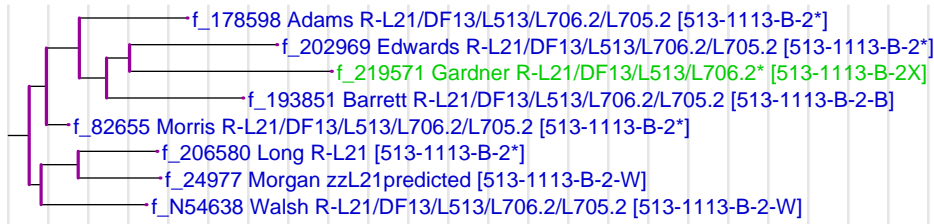
The vertical grey lines are separated 10 generations apart.

R-L706.2

This is the modal haplotype for R-L706.2. The coloration is with respect to the modal haplotype of the full tree.



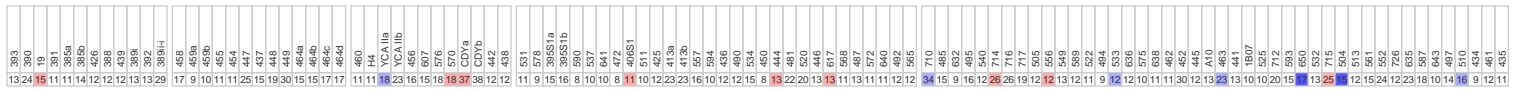
This is the marker distribution for R-L706.2. The color indicates the relative frequency of the alleles.



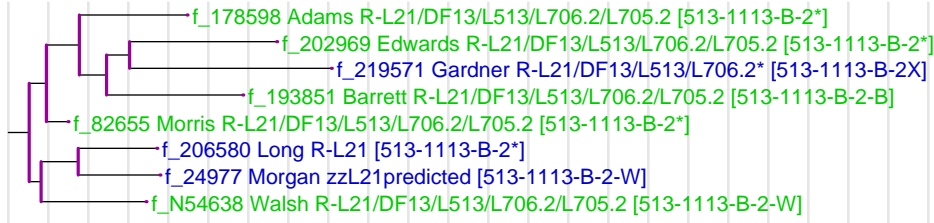
The vertical grey lines are separated 10 generations apart.

R-L705.2

This is the modal haplotype for R-L705.2. The coloration is with respect to the modal haplotype of the full tree.



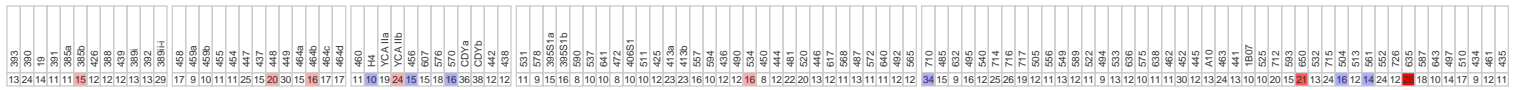
This is the marker distribution for R-L705.2. The color indicates the relative frequency of the alleles.



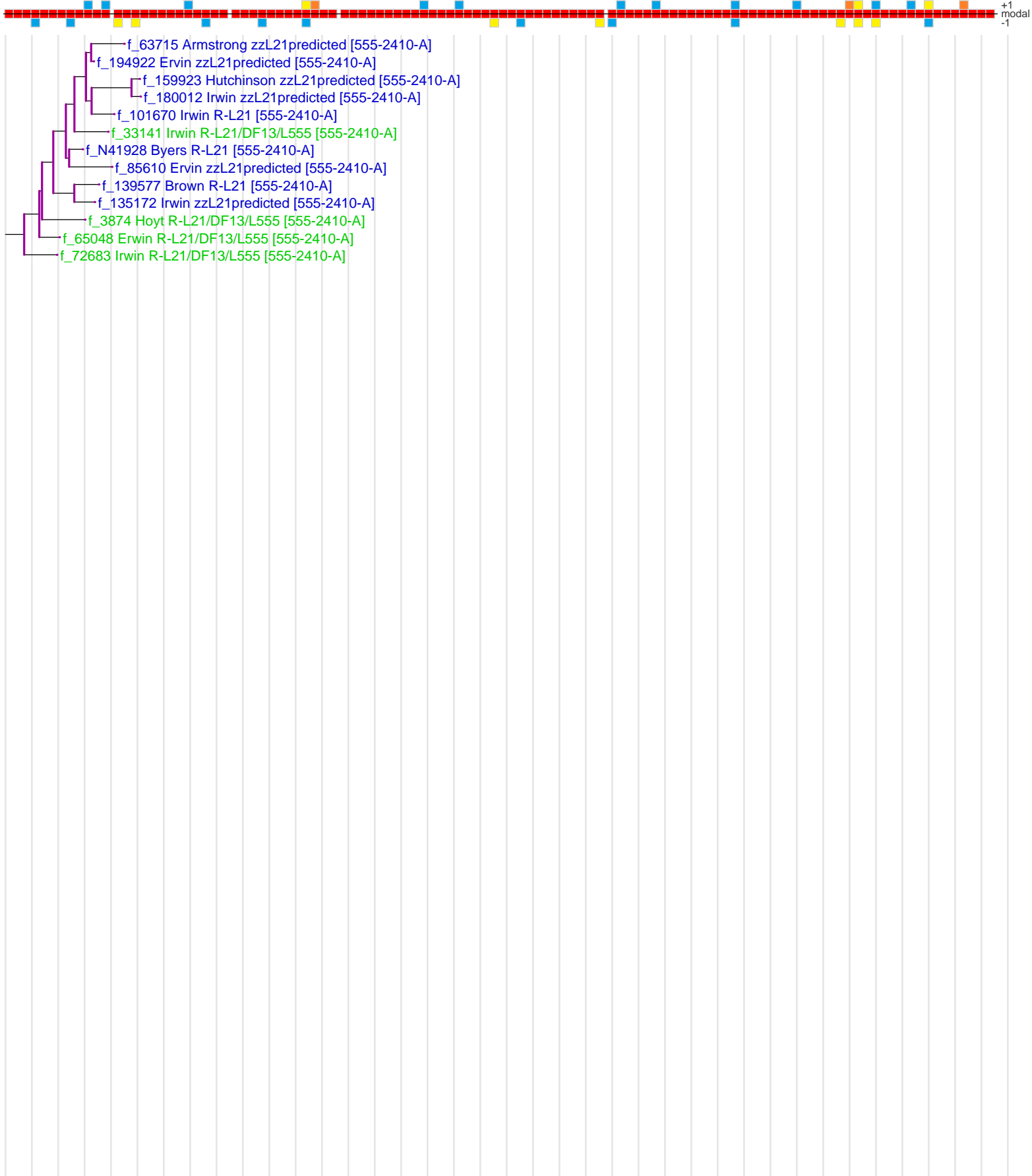
The vertical grey lines are separated 10 generations apart.

R-L555

This is the modal haplotype for R-L555. The coloration is with respect to the modal haplotype of the full tree.



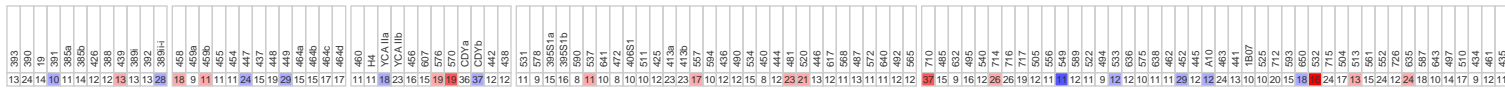
This is the marker distribution for R-L555. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

R-L96

This is the modal haplotype for R-L96. The coloration is with respect to the modal haplotype of the full tree.



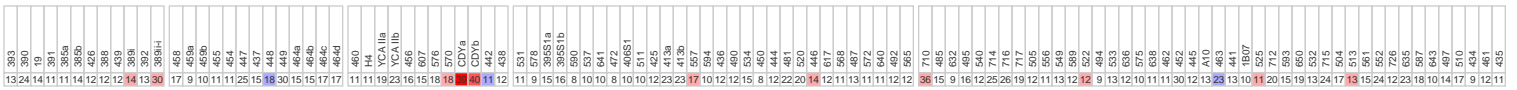
This is the marker distribution for R-L96. The color indicates the relative frequency of the alleles.



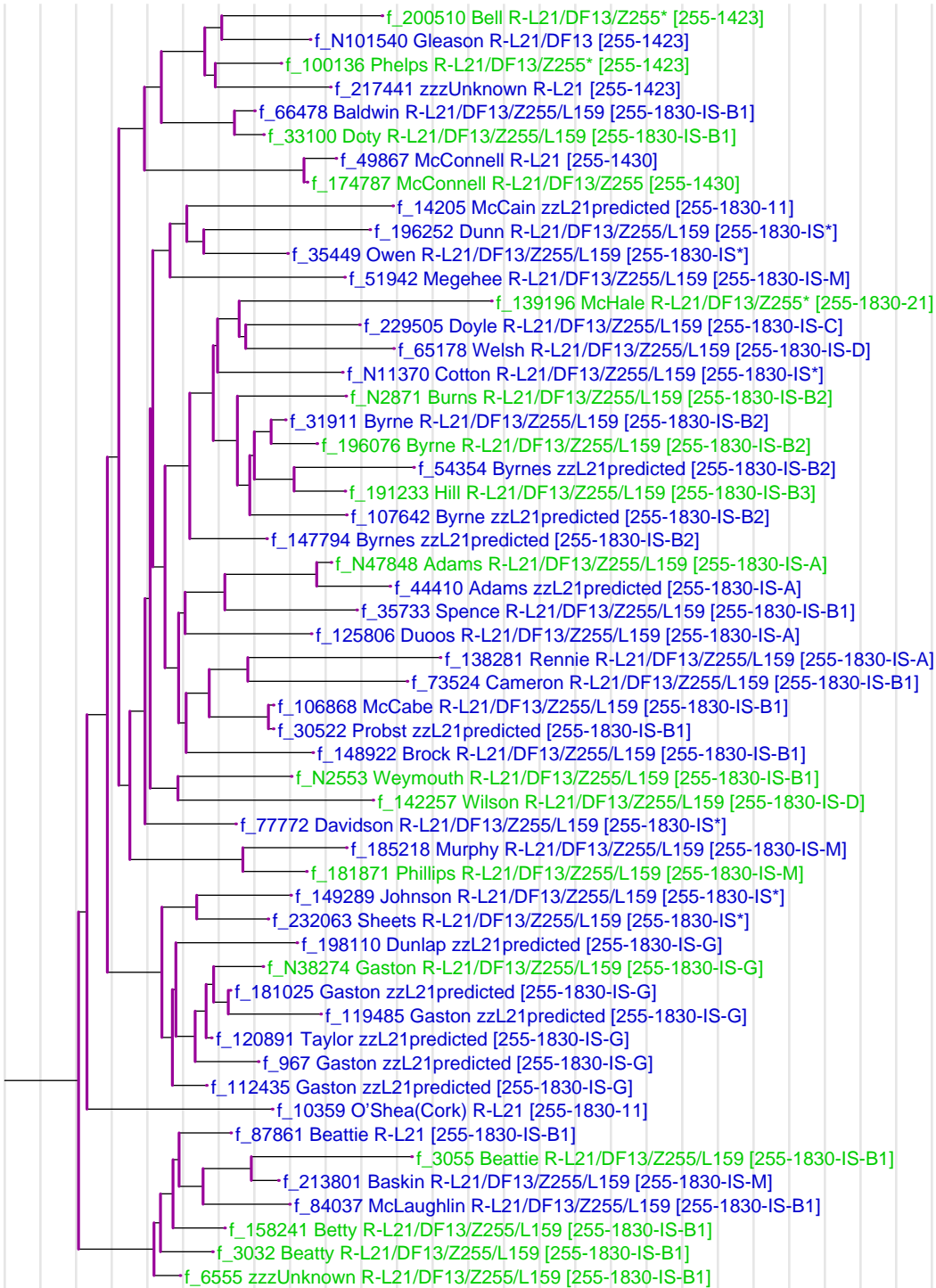
The vertical grey lines are separated 10 generations apart.

R-Z255

This is the modal haplotype for R-Z255. The coloration is with respect to the modal haplotype of the full tree.



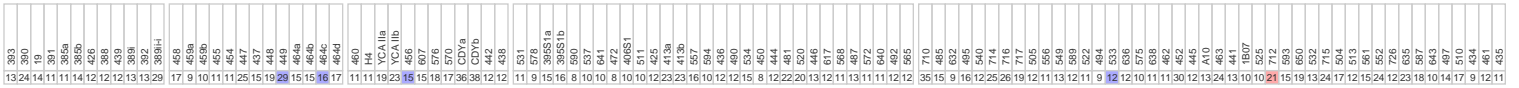
This is the marker distribution for R-Z255. The color indicates the relative frequency of the alleles.



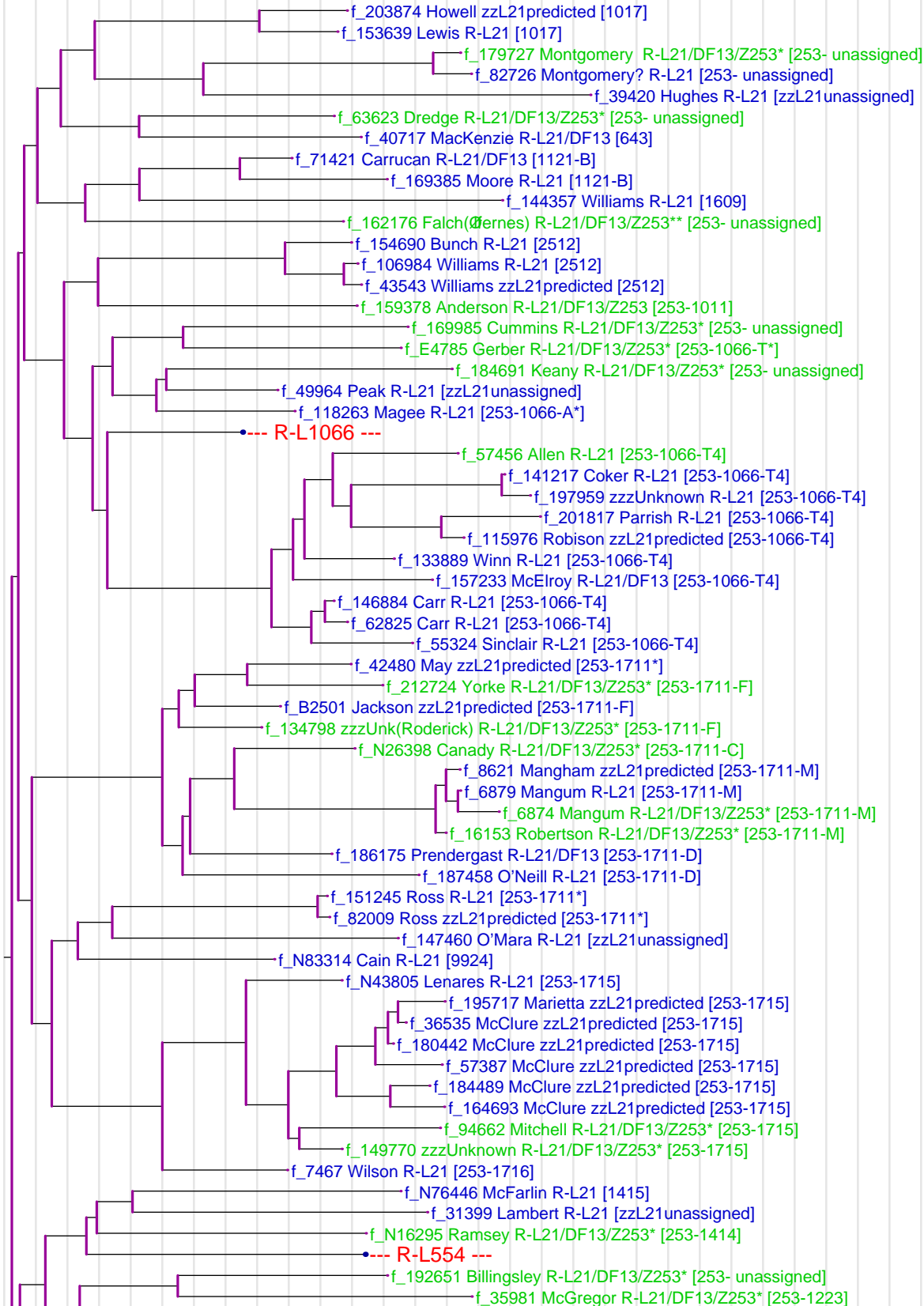
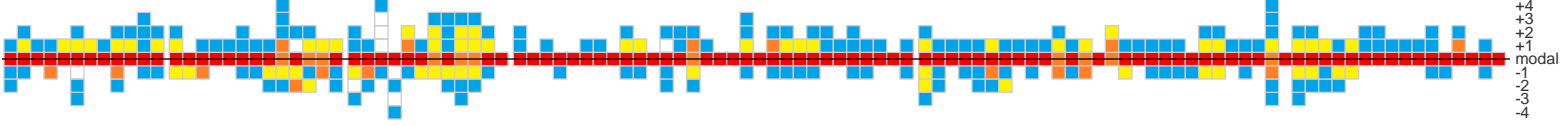
The vertical grey lines are separated 10 generations apart.

R-Z253

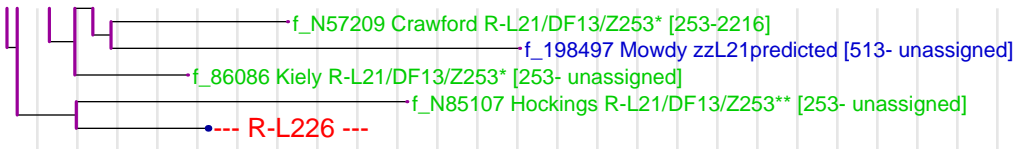
This is the modal haplotype for R-Z253. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-Z253. The color indicates the relative frequency of the alleles.



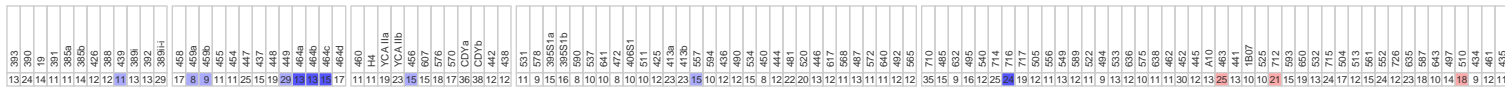
The vertical grey lines are separated 10 generations apart.



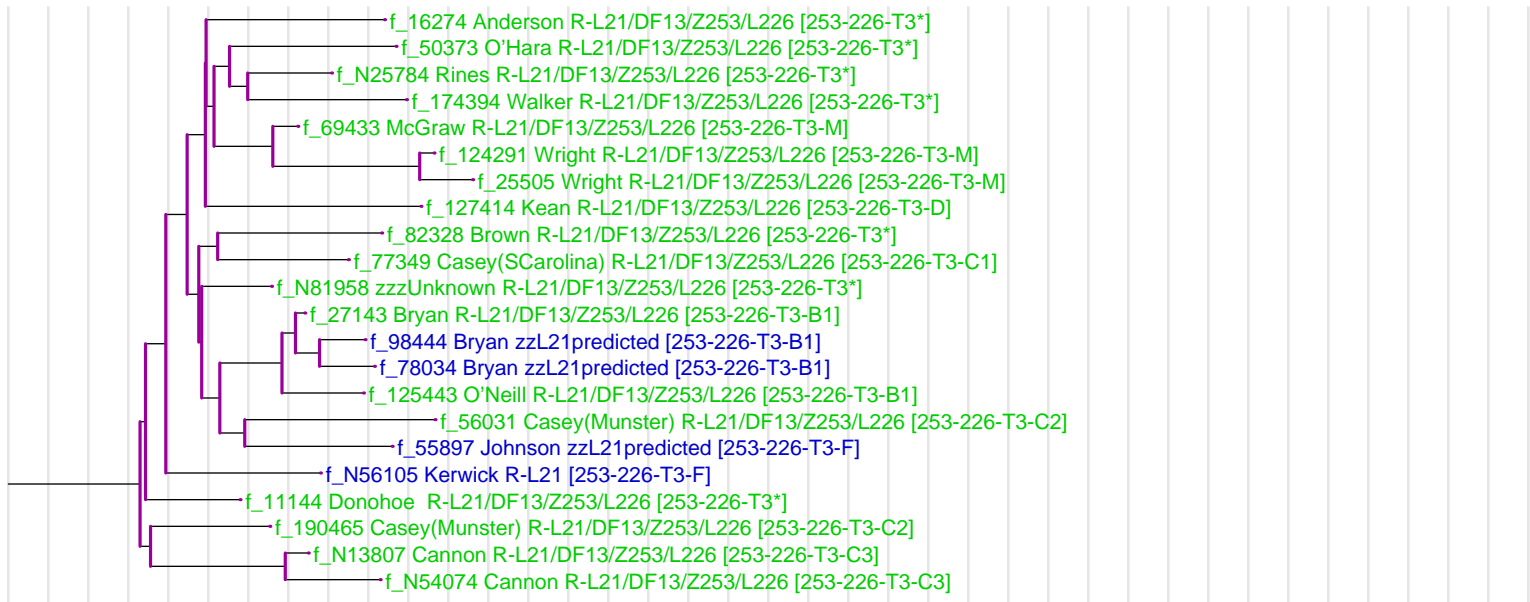
The vertical grey lines are separated 10 generations apart.

R-L226

This is the modal haplotype for R-L226. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-L226. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

R-L554

This is the modal haplotype for R-L554. The coloration is with respect to the modal haplotype of the full tree.

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| 13 | 29 | 14 | 11 | 11 | 11 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 | 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 | 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901 | 902 | 903 | 904 | 905 | 906 | 907 | 908 | 909 | 910 | 911 | 912 | 913 | 914 | 915 | 916 | 917 | 918 | 919 | 920 | 921 | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931 | 932 | 933 | 934 | 935 | 936 | 937 | 938 | 939 | 940 | 941 | 942 | 943 | 944 | 945 | 946 | 947 | 948 | 949 | 950 | 951 | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961 | 962 | 963 | 964 | 965 | 966 | 967 | 968 | 969 | 970 | 971 | 972 | 973 | 974 | 975 | 976 | 977 | 978 | 979 | 980 | 981 | 982 | 983 | 984 | 985 | 986 | 987 | 988 | 989 | 990 | 991 | 992 | 993 | 994 | 995 | 996 | 997 | 998 | 999 | 1000 |
|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|

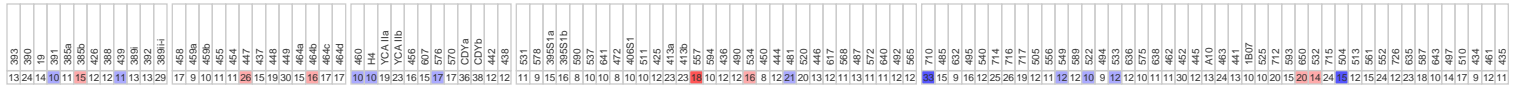
This is the marker distribution for R-L554. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

R-L1066

This is the modal haplotype for R-L1066. The coloration is with respect to the modal haplotype of the full tree.



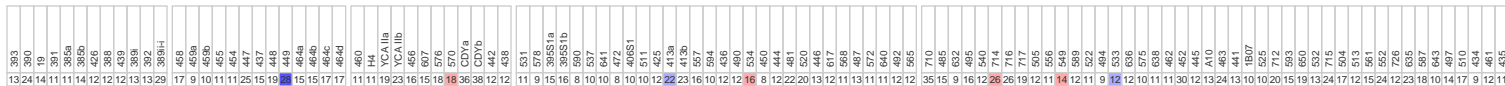
This is the marker distribution for R-L1066. The color indicates the relative frequency of the alleles.



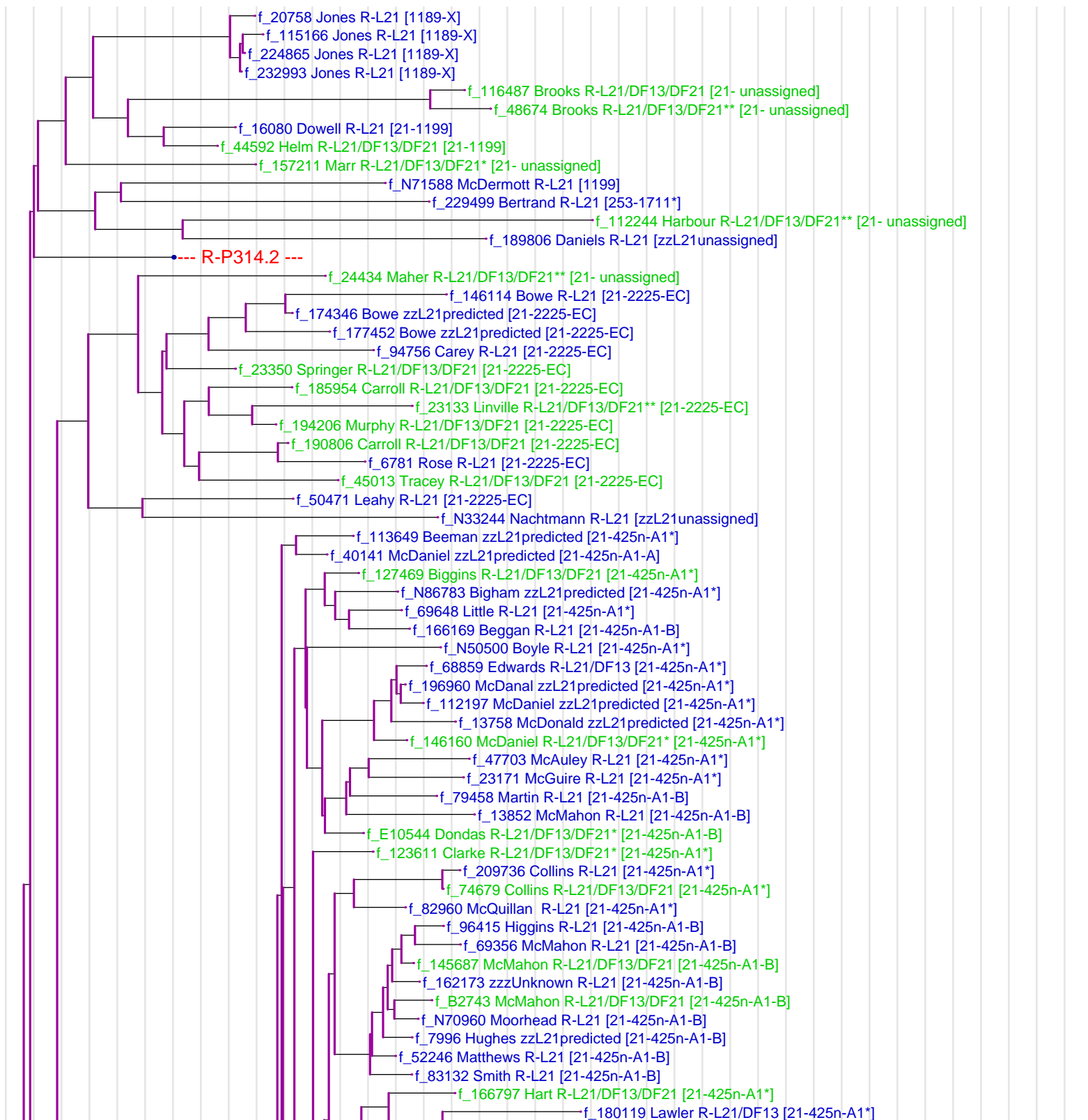
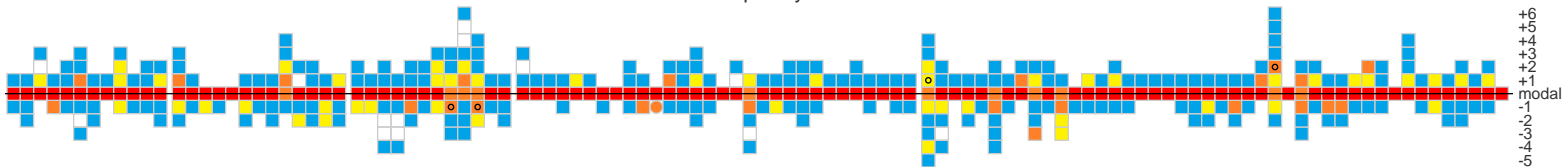
The vertical grey lines are separated 10 generations apart.

R-DF21

This is the modal haplotype for R-DF21. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-DF21. The color indicates the relative frequency of the alleles.



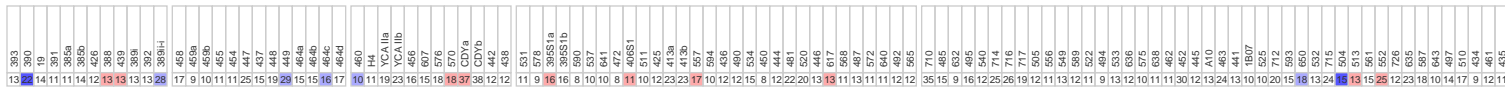
The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.

R-P314.2

This is the modal haplotype for R-P314.2. The coloration is with respect to the modal haplotype of the full tree.



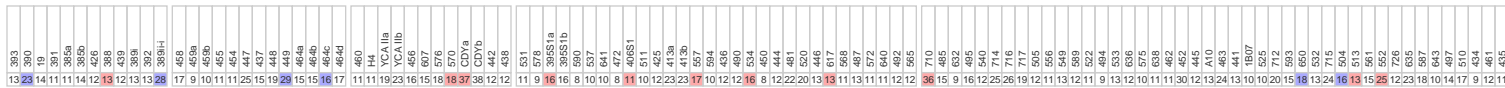
This is the marker distribution for R-P314.2. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

R-L362

This is the modal haplotype for R-L362. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-L362. The color indicates the relative frequency of the alleles.

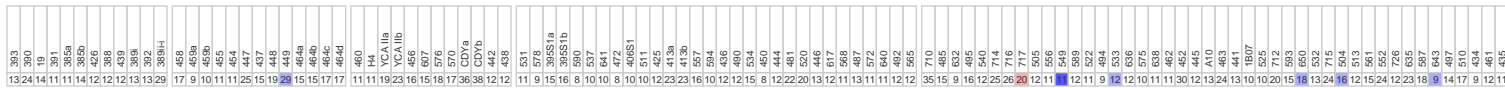


- f_13771 Mahoney R-L21/DF13/DF21/P314 [21-314-P13-A]
- f_80166 Sullivan R-L21/DF13/DF21/P314/L362 [21-314-P13-A]
- f_211478 McCarthy R-L21 [21-314-P13-A]
- f_177666 McCarthy R-L21/DF13/DF21/P314/L362 [21-314-P13-A]

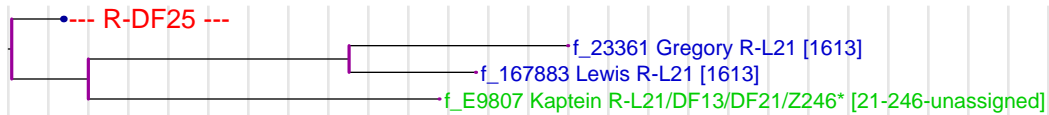
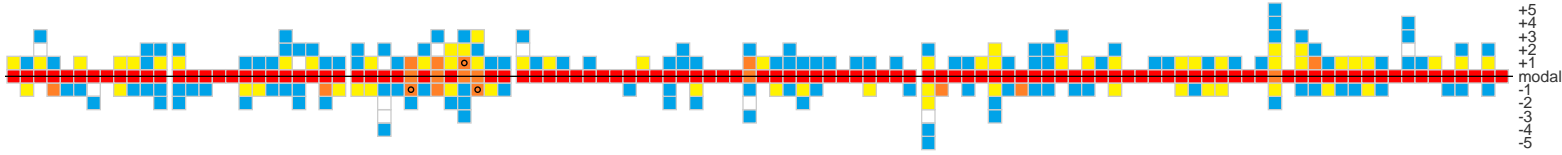
The vertical grey lines are separated 10 generations apart.

R-Z246

This is the modal haplotype for R-Z246. The coloration is with respect to the modal haplotype of the full tree.



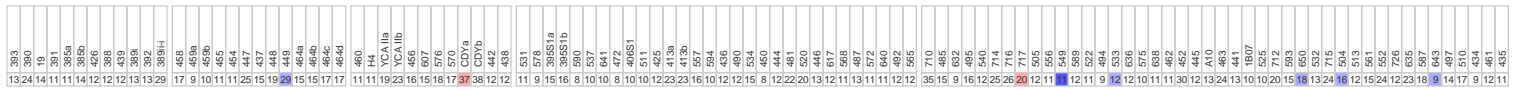
This is the marker distribution for R-Z246. The color indicates the relative frequency of the alleles.



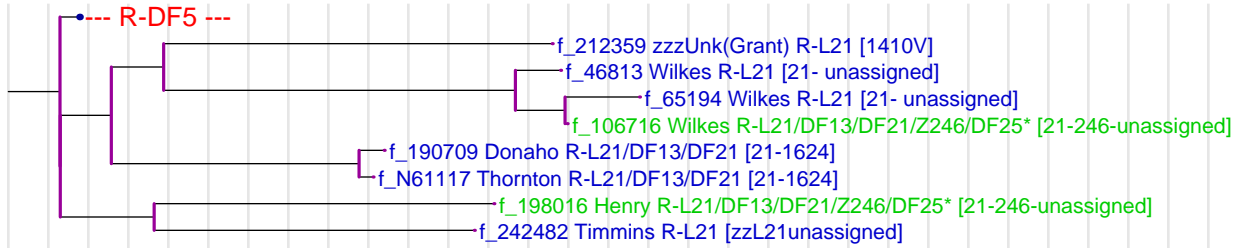
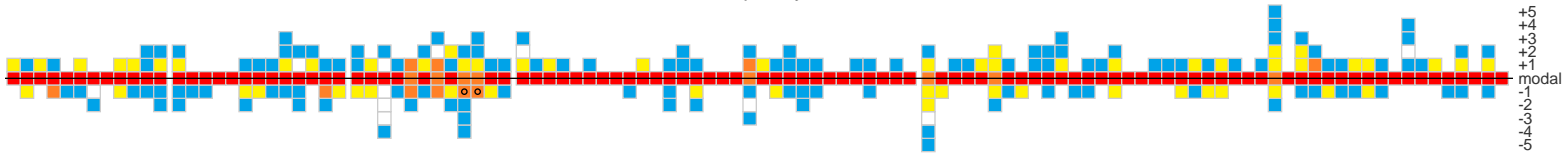
The vertical grey lines are separated 10 generations apart.

R-DF25

This is the modal haplotype for R-DF25. The coloration is with respect to the modal haplotype of the full tree.



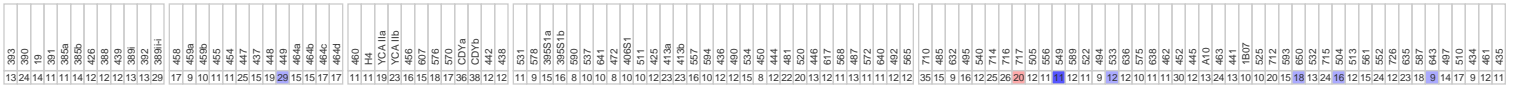
This is the marker distribution for R-DF25. The color indicates the relative frequency of the alleles.



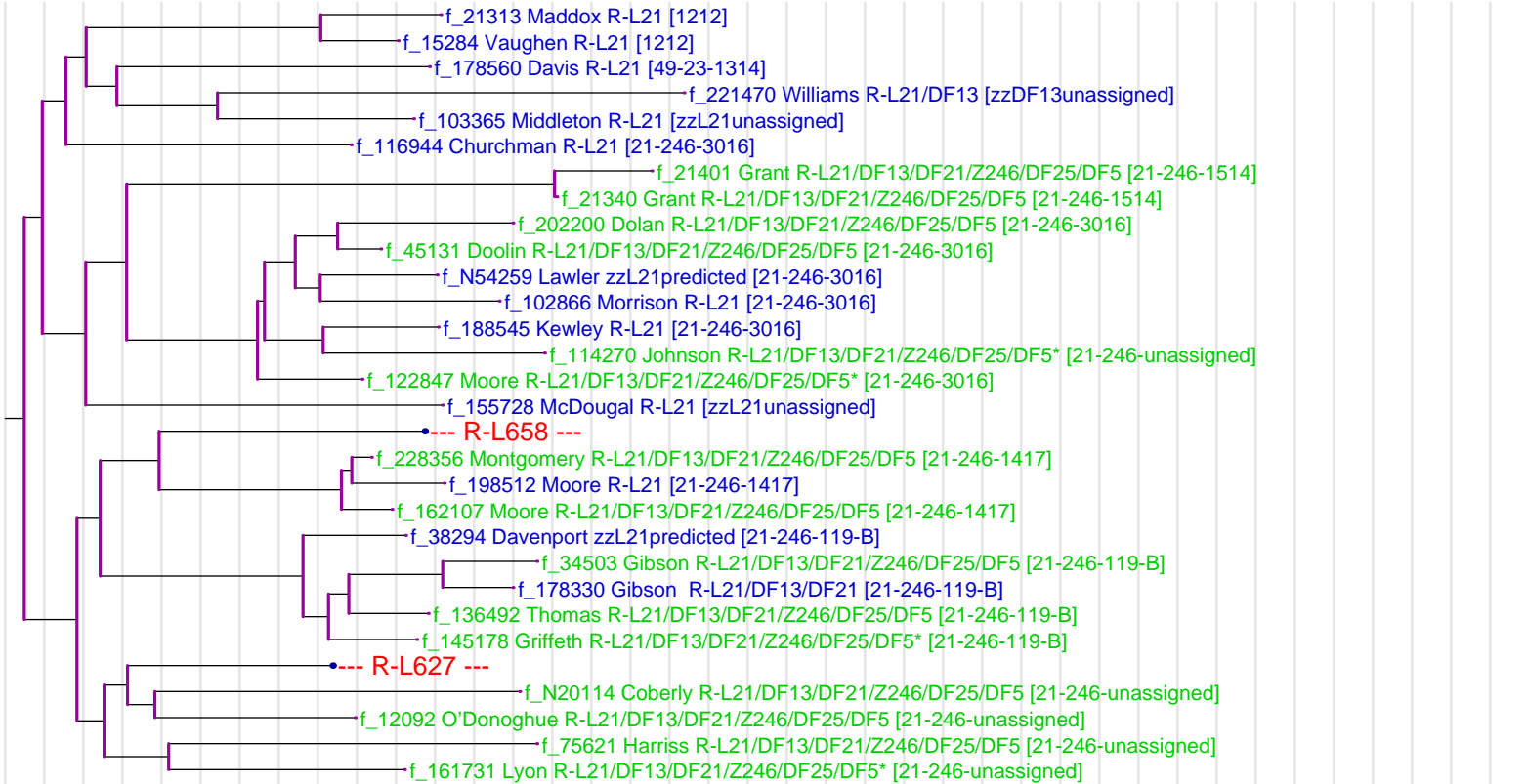
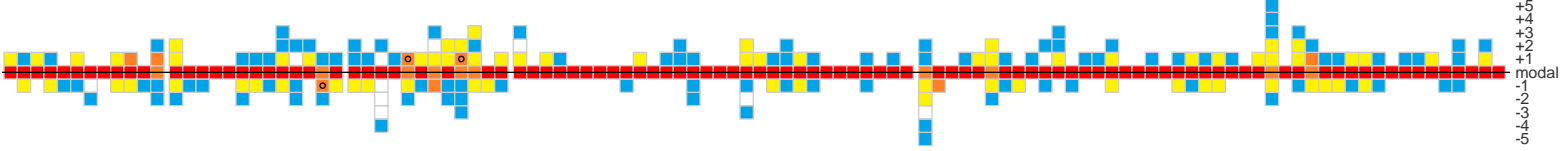
The vertical grey lines are separated 10 generations apart.

R-DF5

This is the modal haplotype for R-DF5. The coloration is with respect to the modal haplotype of the full tree.



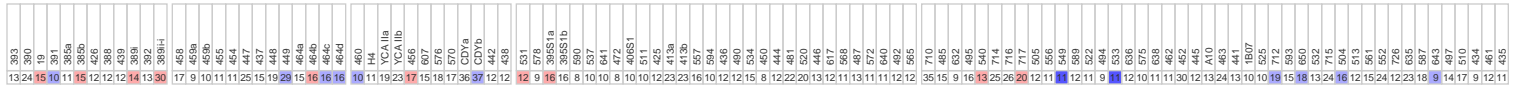
This is the marker distribution for R-DF5. The color indicates the relative frequency of the alleles.



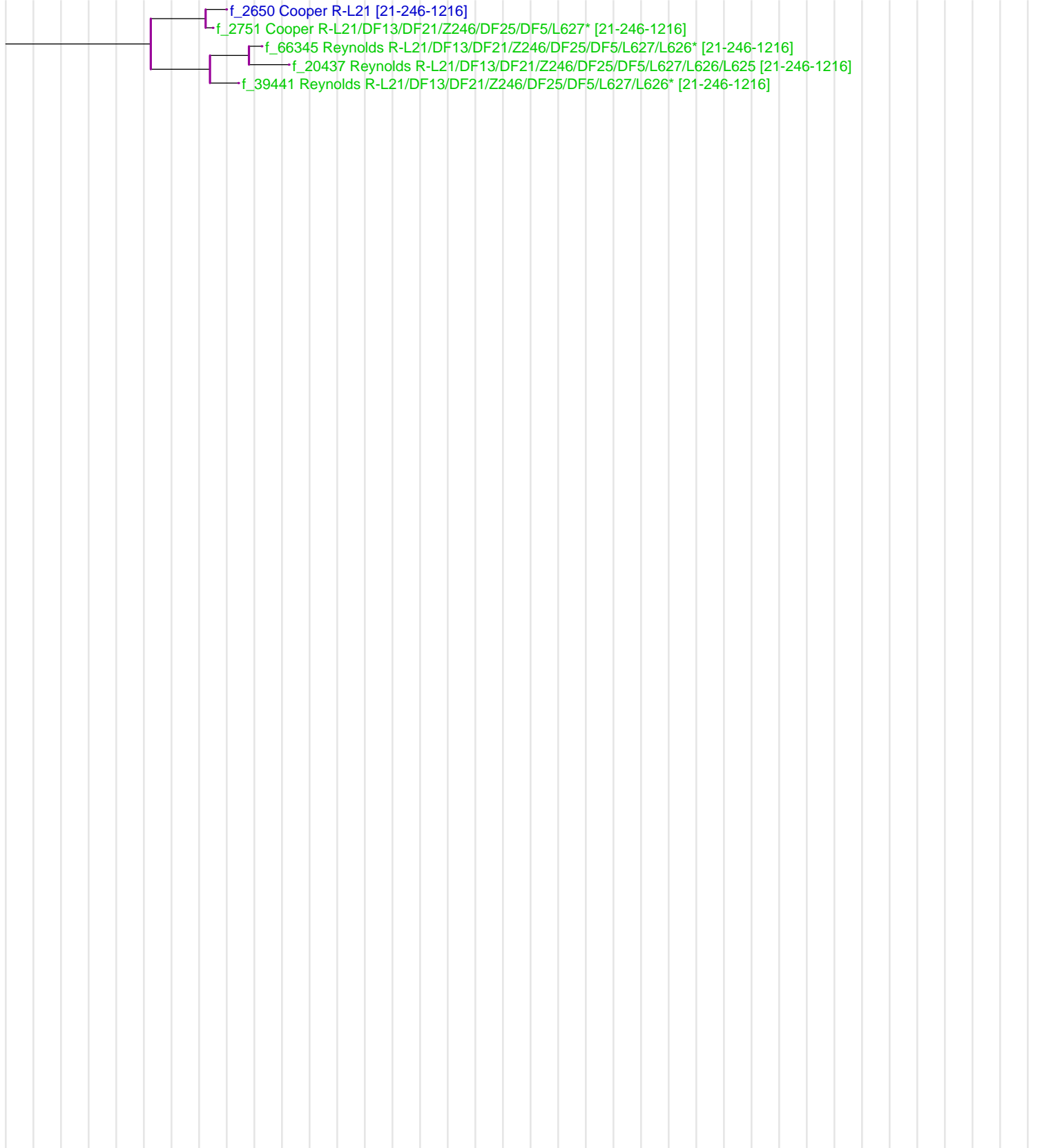
The vertical grey lines are separated 10 generations apart.

R-L627

This is the modal haplotype for R-L627. The coloration is with respect to the modal haplotype of the full tree.



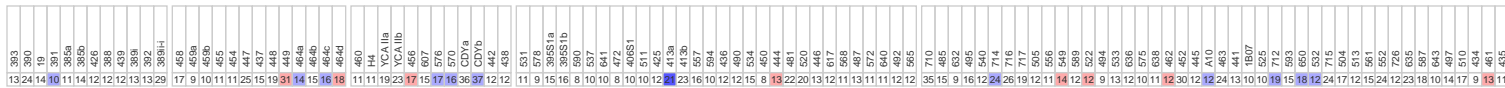
This is the marker distribution for R-L627. The color indicates the relative frequency of the alleles.



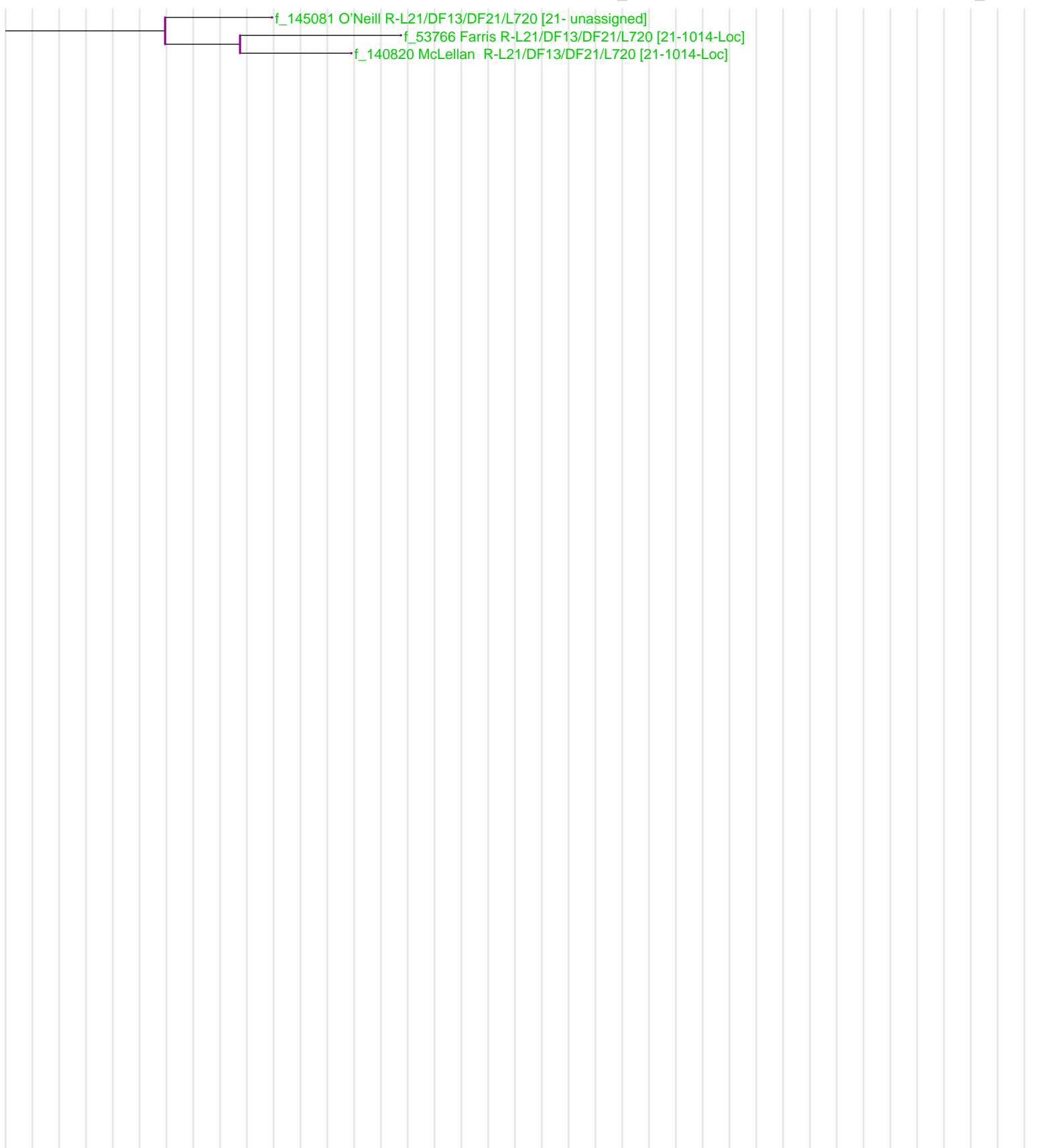
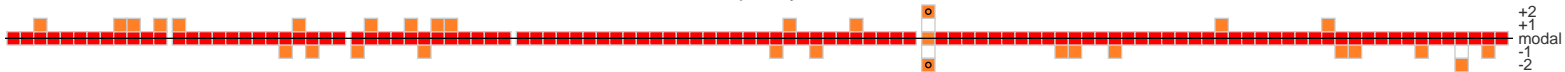
The vertical grey lines are separated 10 generations apart.

R-L720

This is the modal haplotype for R-L720. The coloration is with respect to the modal haplotype of the full tree.



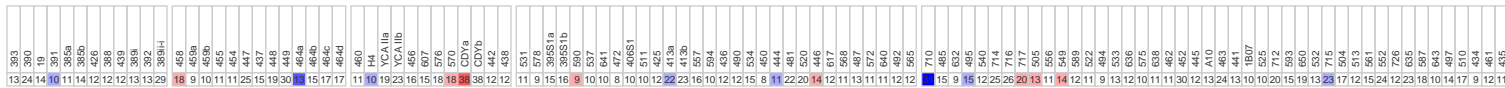
This is the marker distribution for R-L720. The color indicates the relative frequency of the alleles.



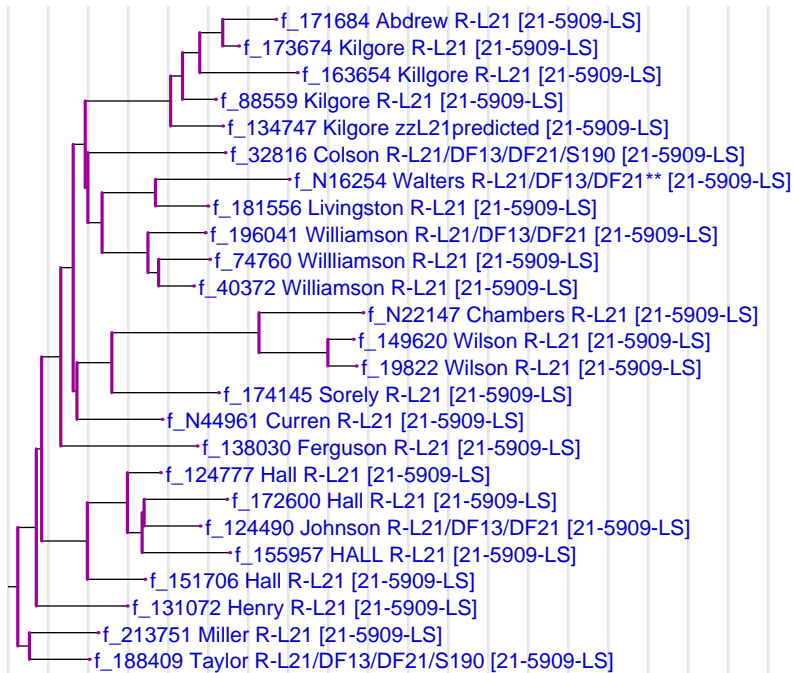
The vertical grey lines are separated 10 generations apart.

R-S424

This is the modal haplotype for R-S424. The coloration is with respect to the modal haplotype of the full tree.



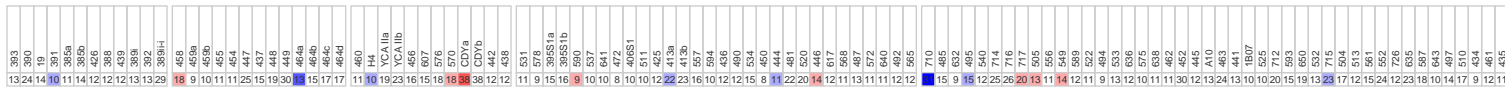
This is the marker distribution for R-S424. The color indicates the relative frequency of the alleles.



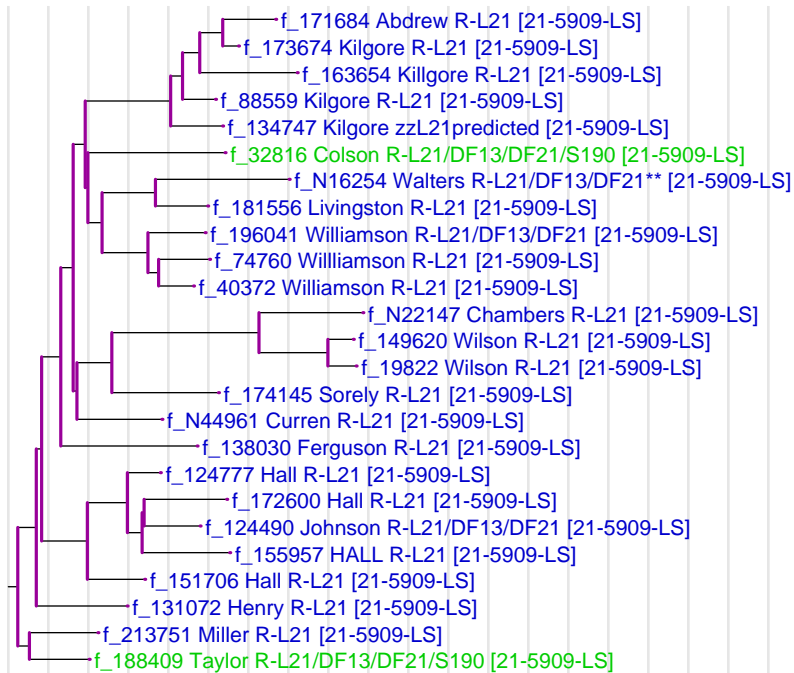
The vertical grey lines are separated 10 generations apart.

R-S190

This is the modal haplotype for R-S190. The coloration is with respect to the modal haplotype of the full tree.

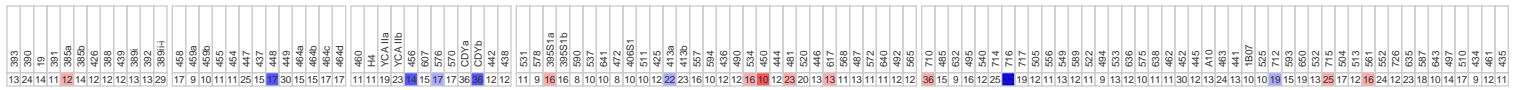


This is the marker distribution for R-S190. The color indicates the relative frequency of the alleles.

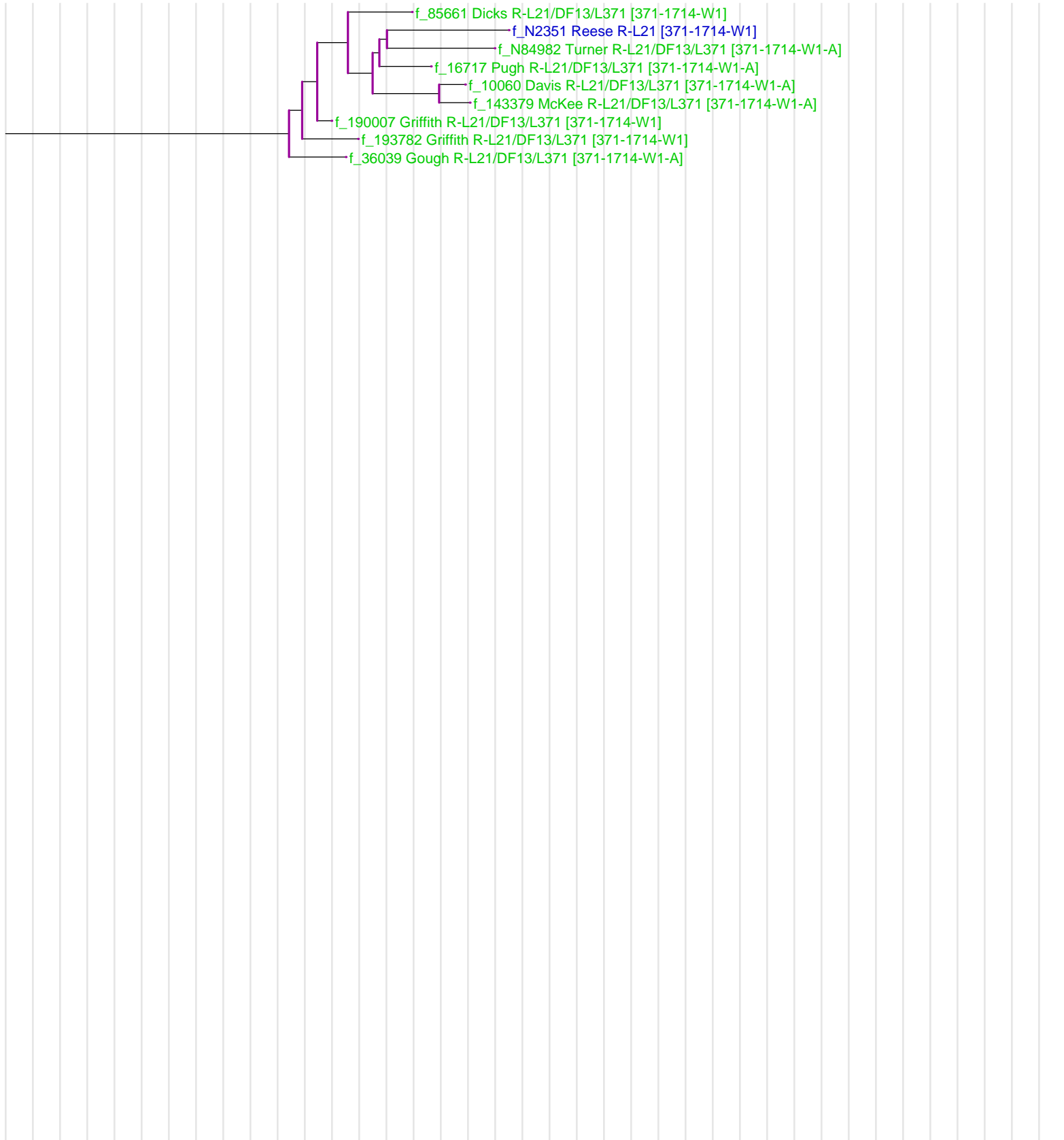


R-L371

This is the modal haplotype for R-L371. The coloration is with respect to the modal haplotype of the full tree.



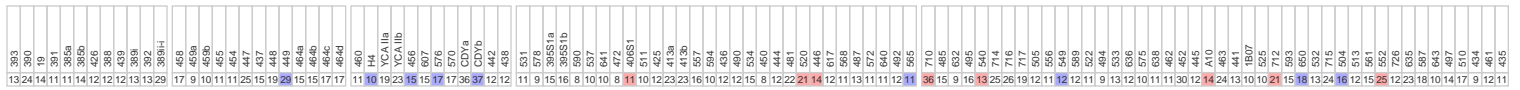
This is the marker distribution for R-L371. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

R-DF41

This is the modal haplotype for R-DF41. The coloration is with respect to the modal haplotype of the full tree.



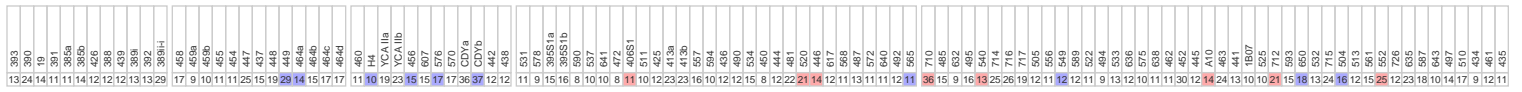
This is the marker distribution for R-DF41. The color indicates the relative frequency of the alleles.



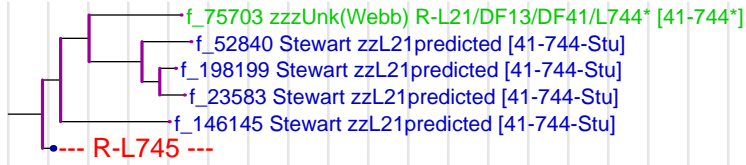
The vertical grey lines are separated 10 generations apart.

R-L744

This is the modal haplotype for R-L744. The coloration is with respect to the modal haplotype of the full tree.



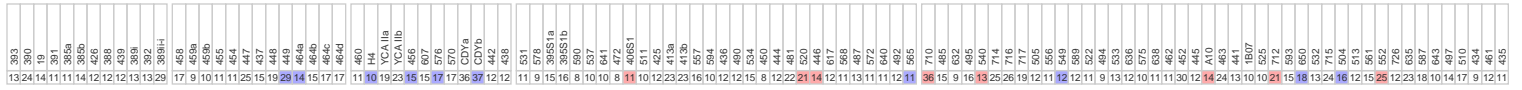
This is the marker distribution for R-L744. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

R-L745

This is the modal haplotype for R-L745. The coloration is with respect to the modal haplotype of the full tree.



This is the marker distribution for R-L745. The color indicates the relative frequency of the alleles.



The vertical grey lines are separated 10 generations apart.

Cluster Modals

Full Tree (R-L21)

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 393 | 390 | 391 | 381 | 385b | 385a | 386 | 388 | 389 | 380 | 383 | 384 | 633 | 639 | 639b | 639c | 639d | 639e | 639f | 639g | 639h | 639i | 639j | 639k | 639l | 639m | 639n | 639o | 639p | 639q | 639r | 639s | 639t | 639u | 639v | 639w | 639x | 639y | 639z | 639aa | 639ab | 639ac | 639ad | 639ae | 639af | 639ag | 639ah | 639ai | 639aj | 639ak | 639al | 639am | 639an | 639ao | 639ap | 639aq | 639ar | 639as | 639at | 639au | 639av | 639aw | 639ax | 639ay | 639az | 639ba | 639bb | 639bc | 639bd | 639be | 639bf | 639bg | 639bh | 639bi | 639bj | 639bk | 639bl | 639bm | 639bn | 639bo | 639bp | 639bq | 639br | 639bs | 639bt | 639bu | 639bv | 639bw | 639bx | 639by | 639bz | 639ca | 639cb | 639cc | 639cd | 639ce | 639cf | 639cg | 639ch | 639ci | 639cj | 639ck | 639cl | 639cm | 639cn | 639co | 639cp | 639cq | 639cr | 639cs | 639ct | 639cu | 639cv | 639cw | 639cx | 639cy | 639cz | 639da | 639db | 639dc | 639dd | 639de | 639df | 639dg | 639dh | 639di | 639dj | 639dk | 639dl | 639dm | 639dn | 639do | 639dp | 639dq | 639dr | 639ds | 639dt | 639du | 639dv | 639dw | 639dx | 639dy | 639dz | 639ea | 639eb | 639ec | 639ed | 639ee | 639ef | 639eg | 639eh | 639ei | 639ej | 639ek | 639el | 639em | 639en | 639eo | 639ep | 639eq | 639er | 639es | 639et | 639eu | 639ev | 639ew | 639ex | 639ey | 639ez | 639fa | 639fb | 639fc | 639fd | 639fe | 639ff | 639fg | 639fh | 639fi | 639fj | 639fk | 639fl | 639fm | 639fn | 639fo | 639fp | 639fq | 639fr | 639fs | 639ft | 639fu | 639fv | 639fw | 639fx | 639fy | 639fz | 639ga | 639gb | 639gc | 639gd | 639ge | 639gf | 639gg | 639gh | 639gi | 639gj | 639gk | 639gl | 639gm | 639gn | 639go | 639gp | 639gq | 639gr | 639gs | 639gt | 639gu | 639gv | 639gw | 639gx | 639gy | 639gz | 639ha | 639hb | 639hc | 639hd | 639he | 639hf | 639hg | 639hh | 639hi | 639hj | 639hk | 639hl | 639hm | 639hn | 639ho | 639hp | 639hq | 639hr | 639hs | 639ht | 639hu | 639hv | 639hw | 639hx | 639hy | 639hz | 639ia | 639ib | 639ic | 639id | 639ie | 639if | 639ig | 639ih | 639ii | 639ij | 639ik | 639il | 639im | 639in | 639io | 639ip | 639iq | 639ir | 639is | 639it | 639iu | 639iv | 639iw | 639ix | 639iy | 639iz | 639ja | 639jb | 639jc | 639jd | 639je | 639jf | 639jg | 639jh | 639ji | 639jj | 639jk | 639jl | 639jm | 639jn | 639jo | 639jp | 639jq | 639jr | 639js | 639jt | 639ju | 639jv | 639jw | 639jx | 639jy | 639jz | 639ka | 639kb | 639kc | 639kd | 639ke | 639kf | 639kg | 639kh | 639ki | 639kj | 639kk | 639kl | 639km | 639kn | 639ko | 639kp | 639kq | 639kr | 639ks | 639kt | 639ku | 639kv | 639kw | 639kx | 639ky | 639kz | 639la | 639lb | 639lc | 639ld | 639le | 639lf | 639lg | 639lh | 639li | 639lj | 639lk | 639ll | 639lm | 639ln | 639lo | 639lp | 639lq | 639lr | 639ls | 639lt | 639lu | 639lv | 639lw | 639lx | 639ly | 639lz | 639ma | 639mb | 639mc | 639md | 639me | 639mf | 639mg | 639mh | 639mi | 639mj | 639mk | 639ml | 639mm | 639mn | 639mo | 639mp | 639mq | 639mr | 639ms | 639mt | 639mu | 639mv | 639mw | 639mx | 639my | 639mz | 639na | 639nb | 639nc | 639nd | 639ne | 639nf | 639ng | 639nh | 639ni | 639nj | 639nk | 639nl | 639nm | 639nn | 639no | 639np | 639nq | 639nr | 639ns | 639nt | 639nu | 639nv | 639nw | 639nx | 639ny | 639nz | 639oa | 639ob | 639oc | 639od | 639oe | 639of | 639og | 639oh | 639oi | 639oj | 639ok | 639ol | 639om | 639on | 639oo | 639op | 639oq | 639or | 639os | 639ot | 639ou | 639ov | 639ow | 639ox | 639oy | 639oz | 639pa | 639pb | 639pc | 639pd | 639pe | 639pf | 639pg | 639ph | 639pi | 639pj | 639pk | 639pl | 639pm | 639pn | 639po | 639pp | 639pq | 639pr | 639ps | 639pt | 639pu | 639pv | 639pw | 639px | 639py | 639pz | 639qa | 639qb | 639qc | 639qd | 639qe | 639qf | 639qg | 639qh | 639qi | 639qj | 639qk | 639ql | 639qm | 639qn | 639qo | 639qp | 639qq | 639qr | 639qs | 639qt | 639qu | 639qv | 639qw | 639qx | 639qy | 639qz | 639ra | 639rb | 639rc | 639rd | 639re | 639rf | 639rg | 639rh | 639ri | 639rj | 639rk | 639rl | 639rm | 639rn | 639ro | 639rp | 639rq | 639rr | 639rs | 639rt | 639ru | 639rv | 639rw | 639rx | 639ry | 639rz | 639sa | 639sb | 639sc | 639sd | 639se | 639sf | 639sg | 639sh | 639si | 639sj | 639sk | 639sl | 639sm | 639sn | 639so | 639sp | 639sq | 639sr | 639ss | 639st | 639su | 639sv | 639sw | 639sx | 639sy | 639sz | 639ta | 639tb | 639tc | 639td | 639te | 639tf | 639tg | 639th | 639ti | 639tj | 639tk | 639tl | 639tm | 639tn | 639to | 639tp | 639tq | 639tr | 639ts | 639tt | 639tu | 639tv | 639tw | 639tx | 639ty | 639tz | 639ua | 639ub | 639uc | 639ud | 639ue | 639uf | 639ug | 639uh | 639ui | 639uj | 639uk | 639ul | 639um | 639un | 639uo | 639up | 639uq | 639ur | 639us | 639ut | 639uu | 639uv | 639uw | 639ux | 639uy | 639uz | 639va | 639vb | 639vc | 639vd | 639ve | 639vf | 639vg | 639vh | 639vi | 639vj | 639vk | 639vl | 639vm | 639vn | 639vo | 639vp | 639vq | 639vr | 639vs | 639vt | 639vu | 639vv | 639vw | 639vx | 639vy | 639vz | 639wa | 639wb | 639wc | 639wd | 639we | 639wf | 639wg | 639wh | 639wi | 639wj | 639wk | 639wl | 639wm | 639wn | 639wo | 639wp | 639wq | 639wr | 639ws | 639wt | 639wu | 639wv | 639ww | 639wx | 639wy | 639wz | 639xa | 639xb | 639xc | 639xd | 639xe | 639xf | 639xg | 639xh | 639xi | 639xj | 639xk | 639xl | 639xm | 639xn | 639xo | 639xp | 639xq | 639xr | 639xs | 639xt | 639xu | 639xv | 639xw | 639xx | 639xy | 639xz | 639ya | 639yb | 639yc | 639yd | 639ye | 639yf | 639yg | 639yh | 639yi | 639yj | 639yk | 639yl | 639ym | 639yn | 639yo | 639yp | 639yq | 639yr | 639ys | 639yt | 639yu | 639yv | 639yw | 639yx | 639yy | 639yz | 639za | 639zb | 639zc | 639zd | 639ze | 639zf | 639zg | 639zh | 639zi | 639zj | 639zk | 639zl | 639zm | 639zn | 639zo | 639zp | 639zq | 639zr | 639zs | 639zt | 639zu | 639zv | 639zw | 639zx | 639zy | 639zz |
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R-DF13

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| 13 | 24 | 14 | 11 | 11 | 14 | 12 | 12 | 13 | 13 | 29 | 17 | 9 | 10 | 11 | 11 | 25 | 15 | 19 | 30 | 15 | 15 | 17 | 17 | 11 | 11 | 19 | 23 | 16 | 15 | 18 | 17 | 36 | 38 | 12 | 12 | 11 | 9 | 15 | 16 | 8 | 10 | 10 | 8 | 10 | 10 | 12 | 23 | 23 | 16 | 10 | 12 | 12 | 15 | 8 | 12 | 22 | 20 | 13 | 12 | 11 | 13 | 11 | 11 | 12 | 12 | 35 | 15 | 9 | 16 | 12 | 25 | 26 | 19 | 12 | 11 | 13 | 12 | 11 | 9 | 13 | 12 | 10 | 11 | 11 | 30 | 12 | 13 | 24 | 13 | 10 | 10 | 20 | 15 | 19 | 13 | 24 | 17 | 12 | 15 | 24 | 12 | 23 | 18 | 10 | 14 | 17 | 9 | 12 | 11 |
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|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|---|----|----|---|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|

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| 13 | 24 | 14 | 11 | 11 | 14 | 12 | 12 | 13 | 13 | 29 | 17 | 9 | 10 | 11 | 11 | 25 | 15 | 19 | 30 | 15 | 15 | 17 | 17 | 11 | 11 | 19 | 23 | 16 | 15 | 18 | 17 | 38 | 39 | 12 | 12 | 11 | 9 | 15 | 16 | 8 | 10 | 10 | 8 | 11 | 10 | 12 | 23 | 23 | 16 | 10 | 12 | 12 | 14 | 8 | 12 | 22 | 20 | 13 | 13 | 11 | 13 | 11 | 11 | 12 | 12 | 35 | 15 | 9 | 16 | 12 | 26 | 26 | 19 | 12 | 11 | 13 | 12 | 11 | 9 | 12 | 12 | 10 | 11 | 11 | 30 | 12 | 13 | 24 | 13 | 10 | 10 | 19 | 15 | 18 | 14 | 24 | 16 | 12 | 15 | 24 |
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Notes

The Tree

The tree was generated using a custom neighbor-joining algorithm which takes into account constraints imposed by SNP results. The STR data came from the 2012-08-24 version of Mike Walsh's Excel spreadsheet, while the SNP data came primarily from the L21+, Scottish, and Irish FTDNA projects. Only members with 111 FTDNA markers, and who were supposedly L21+ were used.

Only those SNPs which appear on the ISOGG tree have been included in the analysis. Those men whose entries are colored green have tested positive for the SNP corresponding to the branch on which they're located. Those men whose names are blue are positioned only by virtue of their STR results.

Modal Values

For the calculation of the modal haplotypes, in the event of a tie for a particular marker, with two or more different allele values having the same count of haplotypes, the allele closest to the R-L21 modal haplotype was chosen. This was done so that the modal haplotype would more closely resemble what might be the ancestral haplotype for the cluster.

Allele Distribution Diagram

The allele distribution plot attempts to display relative frequency information of the various allele values for each marker. For each possible allele value of each marker, a different coloured box is used to represent the fraction of haplotypes, with that particular allele value. A red box indicates that more than 50% of the haplotypes have that particular value, an orange box indicates more than 33% have that particular value, yellow for more than 25%, and blue indicates that the fraction is simply greater than 0.

If the fraction for an allele is within 5% of what it is for the modal value, I have indicated that allele with a small circle. The idea here, is that if the other allele value is so close, then if you were to use different sample data, you could potentially end up with a different modal value.

- - greater than 0% of haplotypes
- - greater than 25% of haplotypes
- - greater than 33% of haplotypes
- - greater than 50% of haplotypes

Consider the following example of DYS 464c for the whole of R-L21. We look at what fraction of the people in this cluster have a particular allele value. The modal value is clearly 17, but 16 is not far behind. As 16 is within 5% of the modal value, I have indicated that close relationship with a small circle.

| Allele | Count | Fraction | Colour |
|--------|-------|----------|--------|
| 19 | 0 | 0.00% | |
| 18 | 14 | 0.94% | ■ |
| 17 | 694 | 46.80% | ■ |
| 16 | 626 | 42.21% | ■ |
| 15 | 145 | 9.78% | ■ |
| 14 | 2 | 0.13% | ■ |
| 13 | 2 | 0.13% | ■ |
| 12 | 0 | 0.00% | |

