**Supplementary Materials**

**Supplementary Materials\_1**. BLAST results for Bdhn4 and Bdhn5 after manual curation of the original sequences.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variety** | **BDHN** | **Location** | **% identity** | **Align len** | **Strands** | **Target from** | **Target to** | **Bitscore** | **# identical** |
| ABR2 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/+ | 21107895 | 21108383 | 791,162 | 473 |
| ABR2 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/+ | 21106163 | 21106698 | 843.46 | 513 |
| ABR3 | Bdhn4 | pseudomolecule\_4 | 96 | 423 | +/- | 20641618 | 20641198 | 677.55 | 405 |
| ABR3 | Bdhn5 | pseudomolecule\_4 | 96 | 423 | +/- | 20639924 | 20639505 | 677.55 | 405 |
| ABR4 | Bdhn4 | pseudomolecule\_3 | 100 | 435 | +/- | 19329768 | 19329334 | 785,752 | 435 |
| ABR4 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 19331564 | 19331021 | 982,319 | 544 |
| ABR5 | Bdhn4 | pseudomolecule\_3 | 100 | 435 | +/- | 18704044 | 18703610 | 785,752 | 435 |
| ABR5 | Bdhn5 | pseudomolecule\_3 | 100 | 435 | +/- | 18704044 | 18703610 | 785,752 | 435 |
| ABR6 | Bdhn4 | pseudomolecule\_8 | 100 | 435 | +/+ | 29945020 | 29945454 | 785.752 | 435 |
| ABR6 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 23110805 | 23110262 | 982.319 | 544 |
| ABR7 | Bdhn4 | pseudomolecule\_3 | 100 | 435 | +/- | 21081433 | 21080999 | 785,752 | 435 |
| ABR7 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 21083229 | 21082686 | 982,319 | 544 |
| ABR8 | Bdhn4 | pseudomolecule\_8 | 100 | 432 | +/+ | 54933510 | 54933941 | 780,342 | 432 |
| ABR8 | Bdhn5 | pseudomolecule\_8 | 100 | 544 | +/+ | 54931705 | 54932248 | 982,319 | 544 |
| ABR9 | Bdhn4 | pseudomolecule\_3 | 100 | 432 | +/- | 21723159 | 21722728 | 780,342 | 432 |
| ABR9 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 21724964 | 21724421 | 982,319 | 544 |
| Adi-10 | Bdhn4 | pseudomolecule\_3 | 100 | 435 | +/- | 10831396 | 10830962 | 785,752 | 435 |
| Adi-10 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 10833192 | 10832649 | 982,319 | 544 |
| Adi-12 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 14671241 | 14670753 | 791,162 | 473 |
| Adi-12 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 14669556 | 14669021 | 843.46 | 513 |
| Adi-2 | Bdhn4 | pseudomolecule\_3 | 100 | 435 | +/- | 18208306 | 18207872 | 785,752 | 435 |
| Adi-2 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 18210102 | 18209559 | 982,319 | 544 |
| Arn1 | Bdhn4 | pseudomolecule\_3 | 100 | 432 | +/- | 21541017 | 21540586 | 780,342 | 432 |
| Arn1 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 21542822 | 21542279 | 982,319 | 544 |
| Bd18-1 | Bdhn4 | pseudomolecule\_4 | 95 | 426 | +/- | 25722056 | 25721634 | 672,139 | 406 |
| Bd18-1 | Bdhn5 | pseudomolecule\_4 | 100 | 629 | +/- | 25723949 | 25723321 | 1135.61 | 629 |
| Bd21-3 | Bdhn4 | pseudomolecule\_4 | 100 | 379 | +/- | 20822271 | 20821893 | 684,763 | 379 |
| Bd21-3 | Bdhn5 | pseudomolecule\_4 | 100 | 435 | +/- | 20820640 | 20820206 | 785,752 | 435 |
| Bd2-3 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 14370920 | 14370432 | 791,162 | 473 |
| Bd2-3 | Bfhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 14369235 | 14368700 | 843.46 | 513 |
| Bd29-1 | Bdhn4 | pseudomolecule\_3 | 100 | 432 | +/- | 13503849 | 13503418 | 780,342 | 432 |
| Bd29-1 | Bdhn5 | pseudomolecule\_3 | 100 | 544 | +/- | 13505654 | 13505111 | 982,319 | 544 |
| BdTR11a | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 12991466 | 12990978 | 791,162 | 473 |
| BdTR11a | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 12989781 | 12989246 | 843.46 | 513 |
| BdTR11g | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 17897188 | 17896700 | 791,162 | 473 |
| BdTR11g | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 17895503 | 17894968 | 843.46 | 513 |
| BdTR12c | Bdhn4 | pseudomolecule\_3 | 100 | 435 | +/- | 13785224 | 13784790 | 785,752 | 435 |
| BdTR12c | Bdhn5 | pseudomolecule\_3 | 100 | 437 | +/- | 13785931 | 13785495 | 789,358 | 437 |
| BdTR13a | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 22341144 | 22340656 | 791,162 | 473 |
| BdTR13a | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 22339459 | 22338924 | 843.46 | 513 |
| BdTR13c | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 13768291 | 13767803 | 791,162 | 473 |
| BdTR13c | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 13766606 | 13766071 | 843.46 | 513 |
| BdTR1i | Bdhn4 | pseudomolecule\_4 | 96 | 494 | +/- | 22473688 | 22473200 | 791,162 | 473 |
| BdTR1i | Bdhn5 | pseudomolecule\_4 | 95 | 540 | +/- | 22472003 | 22471468 | 843.46 | 513 |
| BdTR2b | Bdhn4 | pseudomolecule\_4 | 96 | 494 | +/- | 15389921 | 15389433 | 791,162 | 473 |
| BdTR2b | Bdhn5 | pseudomolecule\_4 | 95 | 540 | +/- | 15388236 | 15387701 | 843.46 | 513 |
| BdTR2g | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 13205201 | 13204713 | 791,162 | 473 |
| BdTR2g | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 13203516 | 13202981 | 843.46 | 513 |
| BdTR5i | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 12824085 | 12823597 | 791,162 | 473 |
| BdTR5i | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 12824085 | 12823597 | 791,162 | 473 |
| BdTR5i | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 12822400 | 12821865 | 843.46 | 513 |
| BdTR5i | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 12822400 | 12821865 | 843.46 | 513 |
| BdTR7a | Bdhn4 | pseudomolecule\_3 | 100 | 432 | +/- | 19078503 | 19078072 | 780,342 | 432 |
| BdTR7a | Bdhn5 | pseudomolecule\_3 | 94 | 547 | +/- | 19078491 | 19077959 | 825,426 | 512 |
| BdTR8i | Bdhn4 | pseudomolecule\_4 | 96 | 423 | +/- | 18828134 | 18827714 | 673,943 | 404 |
| BdTR8i | Bdhn5 | pseudomolecule\_4 | 96 | 423 | +/- | 18826440 | 18826021 | 673,943 | 404 |
| BdTR9k | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 13048836 | 13048348 | 791,162 | 473 |
| BdTR9k | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 13047151 | 13046616 | 843.46 | 513 |
| Bis-1 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 15209617 | 15209129 | 785,752 | 472 |
| Bis-1 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 15207932 | 15207397 | 838,049 | 512 |
| Foz1 | Bdhn4a | pseudomolecule\_4 | 100 | 423 | +/- | 17367198 | 17366776 | 764.111 | 423 |
| Foz1 | Bdhn4b | pseudomolecule\_4 | 100 | 435 | +/- | 17380499 | 17380065 | 785.752 | 435 |
| Jer1 | Bdhn4 | pseudomolecule\_3 | 96 | 423 | +/- | 15415773 | 15415356 | 691,977 | 408 |
| Jer1 | Bdhn5 | pseudomolecule\_3 | 94 | 547 | +/- | 15414082 | 15413547 | 839,853 | 515 |
| Kah-1 | Bdhn4 | pseudomolecule\_7 | 100 | 435 | +/- | 73209957 | 73209523 | 785.752 | 435 |
| Kah-1 | Bdhn5 | pseudomolecule\_7 | 100 | 544 | +/- | 66459104 | 66458561 | 982.319 | 544 |
| Kah-5 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 17918740 | 17918252 | 791,162 | 473 |
| Kah-5 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 17917055 | 17916520 | 843.46 | 513 |
| Koz-1 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 18855091 | 18854603 | 791,162 | 473 |
| Koz-1 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 18853406 | 18852871 | 843.46 | 513 |
| Luc1 | Bdhn4 | pseudomolecule\_4 | 100 | 432 | +/- | 20923424 | 20922993 | 780.342 | 432 |
| Luc1 | Bdhn5 | pseudomolecule\_4 | 100 | 629 | +/- | 20925314 | 20924686 | 1135.61 | 629 |
| Mig3 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 19262494 | 19262006 | 791,162 | 473 |
| Mig3 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 19260809 | 19260274 | 843.46 | 513 |
| Mur1 | Bdhn4 | pseudomolecule\_8 | 97 | 434 | +/+ | 62525719 | 62526149 | 710.01 | 419 |
| Mur1 | Bdhn5 | pseudomolecule\_8 | 98 | 539 | +/+ | 62527300 | 62527835 | 913,791 | 527 |
| Sig2 | Bdhn4a | pseudomolecule\_3 | 100 | 435 | +/- | 17897303 | 17896869 | 785,752 | 435 |
| Sig2 | Bdhn4b | pseudomolecule\_3 | 100 | 435 | +/- | 17895616 | 17895182 | 780,342 | 434 |
| Sig2 | Bdhn5 | pseudomolecule\_3 | 99 | 934 | +/- | 17896001 | 17895069 | 1645.96 | 926 |
| Uni2 | Bdhn4 | pseudomolecule\_3 | 96 | 494 | +/- | 15702075 | 15701587 | 791,162 | 473 |
| Uni2 | Bdhn5 | pseudomolecule\_3 | 95 | 540 | +/- | 15700390 | 15699855 | 843.46 | 513 |

**Supplementary Materials\_2**. Values of 12 drought-response phenotypic traits [leaf\_rwc (relative water content in leaf); leaf\_wc (water content in leaf); lma (leaf mass per área); pro (leaf proline content); abvrgd (above ground biomass); blwgrd (below ground biomass); ttlmass (total mass); rmr (root mass ratio); delta13c (carbon isotope, a proxy for lifetime integrated WUE); leafc (leaf carbon content); leafn (leaf nitrogen content); cn (leaf carbon/nitrogen ratio)] assessed in 32 *Brachypodium distachyon* ecotypes under watered (W) and drought (D) conditions, and hot (H) and cold (C) conditions (Des Marais et al. 2017)

Watered:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ecotype | leaf\_rwc | leaf\_wc | lma | pro | abvrgd | blwgrd | ttlmass | rmr | delta13c | leafc | leafn | cn |
| BA053\_HW\_ABR2 | ABR2 | 99,153 | 308,91 | 28,068 | 20,0352 | 98,05 | 45,15 | 143,2 | 31,0668 | -31,559 | 397,29 | 41,3905 | 9,6409 |
| BA085\_HW\_ABR2 | ABR2 | 99,153 | 308,91 | 28,068 | 20,0352 | 98,05 | 45,15 | 143,2 | 31,0668 | -31,559 | 397,29 | 41,3905 | 9,6409 |
| BA403\_CW\_ABR2 | ABR2 | 99,0252 | 345,9 | 26,0716 | 14,9916 | 67,6 | 34,725 | 102,32 | 35,8975 | -31,0204 | 391,14 | 37,0268 | 10,8998 |
| BA447\_CW\_ABR2 | ABR2 | 99,0252 | 345,9 | 26,0716 | 14,9916 | 67,6 | 34,725 | 102,32 | 35,8975 | -31,0204 | 391,14 | 37,0268 | 10,8998 |
| BA096\_HW\_ABR3 | ABR3 | 99,1544 | 334,96 | 24,1441 | 5,3975 | 138,53 | 68,175 | 206,7 | 33,0524 | -30,9512 | 392,31 | 37,6329 | 10,5542 |
| BA413\_CW\_ABR3 | ABR3 | 99,2622 | 344,45 | 22,9499 | 11,1867 | 100,68 | 44,675 | 145,35 | 30,4608 | -31,7756 | 388,03 | 43,64 | 8,9042 |
| BA419\_CW\_ABR3 | ABR3 | 99,2622 | 344,45 | 22,9499 | 11,1867 | 100,68 | 44,675 | 145,35 | 30,4608 | -31,7756 | 388,03 | 43,64 | 8,9042 |
| BA040\_HW\_ABR4 | ABR4 | 98,0294 | 348,33 | 27,9507 | 11,581 | 63,725 | 29,85 | 93,575 | 31,6254 | -31,4833 | 405,79 | 42,1945 | 9,6571 |
| BA043\_HW\_ABR4 | ABR4 | 98,0294 | 348,33 | 27,9507 | 11,581 | 63,725 | 29,85 | 93,575 | 31,6254 | -31,4833 | 405,79 | 42,1945 | 9,6571 |
| BA477\_CW\_ABR4 | ABR4 | 100,85 | 367,39 | 26,4197 | 5,9426 | 63,9332 | 28,836 | 92,6436 | 31,2371 | -31,8883 | 389,73 | 42,6503 | 9,1625 |
| BA508\_CW\_ABR4 | ABR4 | 100,85 | 367,39 | 26,4197 | 5,9426 | 63,9332 | 28,836 | 92,6436 | 31,2371 | -31,8883 | 389,73 | 42,6503 | 9,1625 |
| BA161\_HW\_ABR5 | ABR5 | 100,35 | 326,17 | 26,828 | 5,4634 | 103,47 | 47,075 | 150,55 | 31,0022 | -32,0899 | 388,94 | 40,7959 | 9,5684 |
| BA479\_CW\_ABR5 | ABR5 | 100,04 | 369,42 | 22,095 | 8,7886 | 74,425 | 26,425 | 100,85 | 26,1643 | -32,0318 | 390,46 | 44,5742 | 8,8093 |
| BA502\_CW\_ABR5 | ABR5 | 100,04 | 369,42 | 22,095 | 8,7886 | 74,425 | 26,425 | 100,85 | 26,1643 | -32,0318 | 390,46 | 44,5742 | 8,8093 |
| BA153\_HW\_ABR6 | ABR6 | 99,7671 | 341,87 | 25,7345 | 12,5268 | 84,875 | 34,05 | 118,93 | 28,3888 | -31,6356 | 394,87 | 41,1856 | 9,6499 |
| BA437\_CW\_ABR6 | ABR6 | 99,7067 | 330,68 | 25,8882 | 8,9714 | 77,6 | 29,4 | 107 | 26,7787 | -32,0715 | 386,89 | 42,6801 | 9,0705 |
| BA452\_CW\_ABR6 | ABR6 | 99,7067 | 330,68 | 25,8882 | 8,9714 | 77,6 | 29,4 | 107 | 26,7787 | -32,0715 | 386,89 | 42,6801 | 9,0705 |
| BA008\_HW\_ABR8 | ABR8 | 98,3205 | 348,4 | 27,9114 | 8,9252 | 201,2 | 46,475 | 247,68 | 19,0137 | -31,1487 | 384,03 | 30,6539 | 12,5536 |
| BA360\_CW\_ABR8 | ABR8 | 99,4822 | 365,28 | 27,9182 | 7,53 | 158,13 | 38,15 | 196,27 | 19,5398 | -31,7883 | 382,51 | 35,7896 | 10,8115 |
| BA517\_CW\_ABR8 | ABR8 | 99,4822 | 365,28 | 27,9182 | 7,53 | 158,13 | 38,15 | 196,27 | 19,5398 | -31,7883 | 382,51 | 35,7896 | 10,8115 |
| BA105\_HW\_Adi10 | Adi10 | 99,5952 | 368,16 | 24,5397 | 11,9688 | 222,53 | 73,6296 | 294,77 | 24,8531 | -31,5077 | 389,82 | 31,0325 | 12,6508 |
| BA428\_CW\_Adi10 | Adi10 | 99,4321 | 375,27 | 24,2527 | 10,4201 | 227,2 | 84,275 | 311,48 | 27,1766 | -31,6098 | 387,13 | 33,1554 | 11,9649 |
| BA520\_CW\_Adi10 | Adi10 | 99,4321 | 375,27 | 24,2527 | 10,4201 | 227,2 | 84,275 | 311,48 | 27,1766 | -31,6098 | 387,13 | 33,1554 | 11,9649 |
| BA041\_HW\_Adi12 | Adi12 | 99,6679 | 309,95 | 27,7541 | 11,0422 | 176,3 | 59,45 | 235,75 | 24,9133 | -31,0063 | 390,76 | 36,9663 | 10,6362 |
| BA044\_HW\_Adi12 | Adi12 | 99,6679 | 309,95 | 27,7541 | 11,0422 | 176,3 | 59,45 | 235,75 | 24,9133 | -31,0063 | 390,76 | 36,9663 | 10,6362 |
| BA407\_CW\_Adi12 | Adi12 | 99,1611 | 335,81 | 25,6211 | 9,891 | 161,4 | 56,125 | 217,52 | 24,964 | -31,5626 | 391,09 | 40,6269 | 9,6303 |
| BA423\_CW\_Adi12 | Adi12 | 99,1611 | 335,81 | 25,6211 | 9,891 | 161,4 | 56,125 | 217,52 | 24,964 | -31,5626 | 391,09 | 40,6269 | 9,6303 |
| BA176\_HW\_Adi2 | Adi2 | 98,717 | 301,12 | 26,5199 | 7,0812 | 157,53 | 52,625 | 210,15 | 24,545 | -31,4804 | 390,68 | 33,8382 | 11,6383 |
| BA357\_CW\_Adi2 | Adi2 | 97,504 | 310,82 | 25,2906 | 9,3671 | 163,35 | 48,675 | 212,02 | 23,2089 | -31,165 | 388,99 | 35,112 | 11,2449 |
| BA468\_CW\_Adi2 | Adi2 | 97,504 | 310,82 | 25,2906 | 9,3671 | 163,35 | 48,675 | 212,02 | 23,2089 | -31,165 | 388,99 | 35,112 | 11,2449 |
| BA354\_CW\_Bd1.1 | Bd1.1 | 99,4871 | 340,96 | 26,0514 | 8,6774 | 70,85 | 28,025 | 98,875 | 28,2736 | -31,6875 | 386,51 | 43,3848 | 8,9165 |
| BA496\_CW\_Bd1.1 | Bd1.1 | 99,4871 | 340,96 | 26,0514 | 8,6774 | 70,85 | 28,025 | 98,875 | 28,2736 | -31,6875 | 386,51 | 43,3848 | 8,9165 |
| BA060\_HW\_Bd18.1 | Bd18.1 | 98,0056 | 330,2 | 26,3515 | 9,0038 | 166,53 | 52,55 | 219,08 | 23,6441 | -31,8404 | 397,53 | 36,541 | 11,1618 |
| BA063\_HW\_Bd18.1 | Bd18.1 | 98,0056 | 330,2 | 26,3515 | 9,0038 | 166,53 | 52,55 | 219,08 | 23,6441 | -31,8404 | 397,53 | 36,541 | 11,1618 |
| BA375\_CW\_Bd18.1 | Bd18.1 | 99,3363 | 359,22 | 26,0987 | 6,3918 | 175,23 | 75,775 | 251 | 29,9302 | -31,5193 | 392,79 | 39,0647 | 10,1452 |
| BA446\_CW\_Bd18.1 | Bd18.1 | 99,3363 | 359,22 | 26,0987 | 6,3918 | 175,23 | 75,775 | 251 | 29,9302 | -31,5193 | 392,79 | 39,0647 | 10,1452 |
| BA086\_HW\_Bd2.3 | Bd2.3 | 98,93 | 312,26 | 27,7804 | 4,9665 | 150,93 | 57,825 | 208,75 | 27,4164 | -30,7961 | 384,77 | 34,4474 | 11,3351 |
| BA114\_HW\_Bd2.3 | Bd2.3 | 98,93 | 312,26 | 27,7804 | 4,9665 | 150,93 | 57,825 | 208,75 | 27,4164 | -30,7961 | 384,77 | 34,4474 | 11,3351 |
| BA487\_CW\_Bd2.3 | Bd2.3 | 100,14 | 334,18 | 27,1921 | 9,3872 | 134,68 | 39,55 | 174,23 | 23,4222 | -31,737 | 379 | 38,5101 | 9,953 |
| BA492\_CW\_Bd2.3 | Bd2.3 | 100,14 | 334,18 | 27,1921 | 9,3872 | 134,68 | 39,55 | 174,23 | 23,4222 | -31,737 | 379 | 38,5101 | 9,953 |
| BA069\_HW\_Bd21 | Bd21 | 98,5239 | 362,35 | 30,453 | 7,6058 | 111,7 | 36,875 | 148,58 | 24,381 | -31,4144 | 395,78 | 39,9974 | 9,8958 |
| BA112\_HW\_Bd21 | Bd21 | 98,5239 | 362,35 | 30,453 | 7,6058 | 111,7 | 36,875 | 148,58 | 24,381 | -31,4144 | 395,78 | 39,9974 | 9,8958 |
| BA386\_CW\_Bd21 | Bd21 | 98,5417 | 379,23 | 25,9302 | 7,9891 | 98,175 | 32,925 | 131,1 | 27,3518 | -31,4395 | 381,6 | 39,2661 | 9,7509 |
| BA456\_CW\_Bd21 | Bd21 | 98,5417 | 379,23 | 25,9302 | 7,9891 | 98,175 | 32,925 | 131,1 | 27,3518 | -31,4395 | 381,6 | 39,2661 | 9,7509 |
| BA054\_HW\_Bd21.3 | Bd21.3 | 100,05 | 332,87 | 29,2984 | 7,2565 | 163,6 | 60,5 | 224,1 | 26,8571 | -32,0124 | 391,3 | 35,0021 | 11,1932 |
| BA171\_HW\_Bd21.3 | Bd21.3 | 100,05 | 332,87 | 29,2984 | 7,2565 | 163,6 | 60,5 | 224,1 | 26,8571 | -32,0124 | 391,3 | 35,0021 | 11,1932 |
| BA458\_CW\_Bd21.3 | Bd21.3 | 99,7714 | 333,71 | 30,3696 | 9,4632 | 172,53 | 51,775 | 224,3 | 21,8706 | -31,7525 | 386,84 | 35,5076 | 10,928 |
| BA007\_HW\_Bd3.1 | Bd3.1 | 98,874 | 332,27 | 27,1868 | 13,1448 | 212,03 | 75,775 | 287,8 | 26,7347 | -31,8078 | 389,5 | 36,0408 | 10,8927 |
| BA012\_HW\_Bd3.1 | Bd3.1 | 98,874 | 332,27 | 27,1868 | 13,1448 | 212,03 | 75,775 | 287,8 | 26,7347 | -31,8078 | 389,5 | 36,0408 | 10,8927 |
| BA429\_CW\_Bd3.1 | Bd3.1 | 99,0539 | 374,33 | 25,8342 | 7,8476 | 182,28 | 49,1 | 231,38 | 21,25 | -32,6372 | 383,12 | 36,6662 | 10,4676 |
| BA434\_CW\_Bd3.1 | Bd3.1 | 99,0539 | 374,33 | 25,8342 | 7,8476 | 182,28 | 49,1 | 231,38 | 21,25 | -32,6372 | 383,12 | 36,6662 | 10,4676 |
| BA005\_HW\_Bd30.1 | Bd30.1 | 98,4703 | 359,5 | 23,884 | 8,8716 | 153,97 | 68,45 | 222,43 | 31,0447 | -31,6055 | 375,12 | 36,2257 | 10,3997 |
| BA018\_HW\_Bd30.1 | Bd30.1 | 98,4703 | 359,5 | 23,884 | 8,8716 | 153,97 | 68,45 | 222,43 | 31,0447 | -31,6055 | 375,12 | 36,2257 | 10,3997 |
| BA417\_CW\_Bd30.1 | Bd30.1 | 99,0166 | 362,25 | 24,4767 | 7,6702 | 146,13 | 72,575 | 218,7 | 33,5068 | -32,6119 | 377,51 | 38,9337 | 9,7014 |
| BA474\_CW\_Bd30.1 | Bd30.1 | 99,0166 | 362,25 | 24,4767 | 7,6702 | 146,13 | 72,575 | 218,7 | 33,5068 | -32,6119 | 377,51 | 38,9337 | 9,7014 |
| BA384\_CW\_BdTR10c | BdTR10c | 99,8547 | 346,45 | 24,4013 | 9,2635 | 179,83 | 78,85 | 258,67 | 30,1185 | -31,6498 | 390,6 | 34,091 | 11,4878 |
| BA436\_CW\_BdTR10c | BdTR10c | 99,8547 | 346,45 | 24,4013 | 9,2635 | 179,83 | 78,85 | 258,67 | 30,1185 | -31,6498 | 390,6 | 34,091 | 11,4878 |
| BA021\_HW\_BdTR11g | BdTR11g | 99,1281 | 342,14 | 28,9609 | 6,3157 | 170,22 | 60,925 | 231,15 | 26,2552 | -31,9907 | 390,9 | 33,0382 | 12,0813 |
| BA032\_HW\_BdTR11g | BdTR11g | 99,1281 | 342,14 | 28,9609 | 6,3157 | 170,22 | 60,925 | 231,15 | 26,2552 | -31,9907 | 390,9 | 33,0382 | 12,0813 |
| BA406\_CW\_BdTR11g | BdTR11g | 99,2126 | 355,56 | 28,0629 | 6,6034 | 154,58 | 58,075 | 212,65 | 27,246 | -32,1586 | 391,45 | 36,1167 | 10,867 |
| BA493\_CW\_BdTR11g | BdTR11g | 99,2126 | 355,56 | 28,0629 | 6,6034 | 154,58 | 58,075 | 212,65 | 27,246 | -32,1586 | 391,45 | 36,1167 | 10,867 |
| BA042\_HW\_BdTR11i | BdTR11i | 99,1827 | 340,06 | 27,1923 | 7,462 | 187,9 | 68,55 | 256,45 | 26,5132 | -31,4161 | 392,72 | 31,2194 | 12,9344 |
| BA377\_CW\_BdTR11i | BdTR11i | 98,712 | 364,69 | 26,6228 | 7,9247 | 133,58 | 51,275 | 184,85 | 27,554 | -32,162 | 380,52 | 38,5626 | 9,9428 |
| BA526\_CW\_BdTR11i | BdTR11i | 98,712 | 364,69 | 26,6228 | 7,9247 | 133,58 | 51,275 | 184,85 | 27,554 | -32,162 | 380,52 | 38,5626 | 9,9428 |
| BA022\_HW\_BdTR13a | BdTR13a | 98,952 | 312,12 | 29,7385 | 9,0134 | 132,82 | 50,4 | 183,23 | 27,7306 | -32,1181 | 385,73 | 36,5552 | 10,5869 |
| BA174\_HW\_BdTR13a | BdTR13a | 98,952 | 312,12 | 29,7385 | 9,0134 | 132,82 | 50,4 | 183,23 | 27,7306 | -32,1181 | 385,73 | 36,5552 | 10,5869 |
| BA371\_CW\_BdTR13a | BdTR13a | 99,2984 | 358,92 | 26,589 | 6,1106 | 127,58 | 47,95 | 175,53 | 27,1558 | -32,0346 | 401,71 | 39,5929 | 10,1458 |
| BA405\_CW\_BdTR13a | BdTR13a | 99,2984 | 358,92 | 26,589 | 6,1106 | 127,58 | 47,95 | 175,53 | 27,1558 | -32,0346 | 401,71 | 39,5929 | 10,1458 |
| BA070\_HW\_BdTR1i | BdTR1i | 98,5431 | 310,66 | 24,9114 | 10,1893 | 147,75 | 54,4 | 202,15 | 25,0125 | -30,7296 | 396,33 | 33,834 | 11,7319 |
| BA155\_HW\_BdTR1i | BdTR1i | 98,5431 | 310,66 | 24,9114 | 10,1893 | 147,75 | 54,4 | 202,15 | 25,0125 | -30,7296 | 396,33 | 33,834 | 11,7319 |
| BA469\_CW\_BdTR1i | BdTR1i | 98,4507 | 310,13 | 26,3632 | 12,4554 | 196,35 | 77,3 | 273,65 | 28,3002 | -31,4978 | 383,39 | 37,4971 | 10,2676 |
| BA486\_CW\_BdTR1i | BdTR1i | 98,4507 | 310,13 | 26,3632 | 12,4554 | 196,35 | 77,3 | 273,65 | 28,3002 | -31,4978 | 383,39 | 37,4971 | 10,2676 |
| BA378\_CW\_BdTR2b | BdTR2b | 99,1642 | 334,79 | 25,5897 | 9,0804 | 184,43 | 74,325 | 258,75 | 28,4258 | -31,974 | 396,22 | 40,6959 | 9,8107 |
| BA503\_CW\_BdTR2b | BdTR2b | 99,1642 | 334,79 | 25,5897 | 9,0804 | 184,43 | 74,325 | 258,75 | 28,4258 | -31,974 | 396,22 | 40,6959 | 9,8107 |
| BA107\_HW\_BdTR2g | BdTR2g | 98,915 | 322,42 | 25,504 | 9,6107 | 205,55 | 75,675 | 281,23 | 26,9508 | -30,797 | 390,86 | 29,8763 | 13,2668 |
| BA167\_HW\_BdTR2g | BdTR2g | 98,915 | 322,42 | 25,504 | 9,6107 | 205,55 | 75,675 | 281,23 | 26,9508 | -30,797 | 390,86 | 29,8763 | 13,2668 |
| BA445\_CW\_BdTR2g | BdTR2g | 99,141 | 321,23 | 26,0647 | 11,9884 | 98,575 | 36,125 | 134,7 | 27,1502 | -31,3031 | 394,67 | 36,8124 | 10,8874 |
| BA527\_CW\_BdTR2g | BdTR2g | 99,141 | 321,23 | 26,0647 | 11,9884 | 98,575 | 36,125 | 134,7 | 27,1502 | -31,3031 | 394,67 | 36,8124 | 10,8874 |
| BA071\_HW\_BdTR3c | BdTR3c | 99,8607 | 313,18 | 26,5389 | 11,8327 | 173,03 | 64,825 | 237,85 | 27,34 | -32,1045 | 391,97 | 32,472 | 12,0845 |
| BA362\_CW\_BdTR3c | BdTR3c | 99,8703 | 346,56 | 24,0444 | 6,7756 | 175,03 | 51,075 | 226,1 | 22,5456 | -31,5366 | 393,11 | 34,2062 | 11,5274 |
| BA427\_CW\_BdTR3c | BdTR3c | 99,8703 | 346,56 | 24,0444 | 6,7756 | 175,03 | 51,075 | 226,1 | 22,5456 | -31,5366 | 393,11 | 34,2062 | 11,5274 |
| BA160\_HW\_BdTR5i | BdTR5i | 99,7791 | 320,7 | 25,8099 | 6,1914 | 134,38 | 55,975 | 190,35 | 27,948 | -32,0524 | 385,3 | 36,6785 | 10,646 |
| BA372\_CW\_BdTR5i | BdTR5i | 98,1287 | 326,87 | 27,244 | 10,9901 | 144,7 | 68,275 | 212,98 | 31,5617 | -31,8874 | 392,29 | 38,8932 | 10,1175 |
| BA464\_CW\_BdTR5i | BdTR5i | 98,1287 | 326,87 | 27,244 | 10,9901 | 144,7 | 68,275 | 212,98 | 31,5617 | -31,8874 | 392,29 | 38,8932 | 10,1175 |
| BA125\_HW\_BdTR9k | BdTR9k | 99,7491 | 303,76 | 28,6036 | 17,2965 | 142,33 | 40,2 | 182,53 | 22,0741 | -31,5799 | 391,38 | 36,5103 | 10,7677 |
| BA383\_CW\_BdTR9k | BdTR9k | 98,5867 | 321,85 | 27,9127 | 13,0488 | 156,5 | 56,85 | 213,35 | 26,5012 | -31,8205 | 382,92 | 39,3275 | 9,7471 |
| BA515\_CW\_BdTR9k | BdTR9k | 98,5867 | 321,85 | 27,9127 | 13,0488 | 156,5 | 56,85 | 213,35 | 26,5012 | -31,8205 | 382,92 | 39,3275 | 9,7471 |
| BA156\_HW\_Bis1 | Bis1 | 98,3617 | 327,15 | 23,8597 | 4,6496 | 117 | 38,625 | 155,63 | 26,3028 | -32,2874 | 390,43 | 37,3066 | 10,5286 |
| BA385\_CW\_Bis1 | Bis1 | 98,4401 | 329,93 | 26,5137 | 9,2391 | 111,93 | 43,575 | 155,5 | 28,3158 | -32,284 | 392,75 | 38,7511 | 10,1582 |
| BA390\_CW\_Bis1 | Bis1 | 98,4401 | 329,93 | 26,5137 | 9,2391 | 111,93 | 43,575 | 155,5 | 28,3158 | -32,284 | 392,75 | 38,7511 | 10,1582 |
| BA169\_HW\_Kah1 | Kah1 | 99,8647 | 295,11 | 32,0676 | 7,8515 | 124,48 | 39 | 163,48 | 23,3447 | -31,9871 | 395,11 | 38,6626 | 10,2481 |
| BA356\_CW\_Kah1 | Kah1 | 98,9119 | 354,35 | 26,2315 | 10,063 | 142,6 | 53,875 | 196,48 | 27,3753 | -31,6866 | 388,89 | 40,3501 | 9,6491 |
| BA420\_CW\_Kah1 | Kah1 | 98,9119 | 354,35 | 26,2315 | 10,063 | 142,6 | 53,875 | 196,48 | 27,3753 | -31,6866 | 388,89 | 40,3501 | 9,6491 |
| BA047\_HW\_Kah5 | Kah5 | 98,5779 | 328,12 | 27,4317 | 8,0542 | 156,68 | 46,025 | 202,7 | 22,9428 | -31,0487 | 391,78 | 36,9904 | 10,6068 |
| BA158\_HW\_Kah5 | Kah5 | 98,5779 | 328,12 | 27,4317 | 8,0542 | 156,68 | 46,025 | 202,7 | 22,9428 | -31,0487 | 391,78 | 36,9904 | 10,6068 |
| BA399\_CW\_Kah5 | Kah5 | 99,1395 | 358,79 | 25,6867 | 6,6676 | 166,13 | 54,575 | 220,7 | 24,1437 | -31,4011 | 394,39 | 37,4447 | 10,5928 |
| BA482\_CW\_Kah5 | Kah5 | 99,1395 | 358,79 | 25,6867 | 6,6676 | 166,13 | 54,575 | 220,7 | 24,1437 | -31,4011 | 394,39 | 37,4447 | 10,5928 |
| BA157\_HW\_Koz1 | Koz1 | 100,34 | 346,18 | 24,6393 | 5,522 | 111,05 | 37,025 | 148,08 | 24,9715 | -31,3085 | 399,44 | 37,1463 | 10,8321 |
| BA501\_CW\_Koz1 | Koz1 | 99,1951 | 330,62 | 27,2562 | 8,2662 | 148,05 | 51,025 | 199,08 | 25,7406 | -31,9008 | 396,07 | 36,3917 | 10,9175 |
| BA511\_CW\_Koz1 | Koz1 | 99,1951 | 330,62 | 27,2562 | 8,2662 | 148,05 | 51,025 | 199,08 | 25,7406 | -31,9008 | 396,07 | 36,3917 | 10,9175 |
| BA057\_HW\_Koz3 | Koz3 | 100,34 | 346,18 | 24,6393 | 5,522 | 111,05 | 37,025 | 148,08 | 24,9715 | -31,3085 | 399,44 | 37,1463 | 10,8321 |
| BA074\_HW\_Koz3 | Koz3 | 99,2253 | 381,63 | 21,3916 | 3,8404 | 163,05 | 57,1 | 220,15 | 26,1094 | -31,6468 | 394,63 | 34,0051 | 11,7823 |
| BA411\_CW\_Koz3 | Koz3 | 99,4638 | 369,31 | 23,8853 | 6,3061 | 197,3 | 66,325 | 263,62 | 24,9763 | -32,1301 | 389,47 | 34,9537 | 11,1881 |
| BA484\_CW\_Koz3 | Koz3 | 99,4638 | 369,31 | 23,8853 | 6,3061 | 197,3 | 66,325 | 263,62 | 24,9763 | -32,1301 | 389,47 | 34,9537 | 11,1881 |
| BA026\_HW\_Ron2 | Ron2 | 99,478618 | 362,4171 | 24,399536 | 7,125719 | 137,53043 | 65,785677 | 202,9648 | 31,672994 | -31,23899 | 397,85106 | 38,796531 | 10,323291 |
| BA151\_HW\_Ron2 | Ron2 | 99,478618 | 362,4171 | 24,399536 | 7,125719 | 137,53043 | 65,785677 | 202,9648 | 31,672994 | -31,23899 | 397,85106 | 38,796531 | 10,323291 |
| BA409\_CW\_Ron2 | Ron2 | 99,540782 | 374,22254 | 24,769726 | 9,395806 | 125,2623 | 55,360467 | 181,36405 | 30,77086 | -31,47118 | 392,49618 | 41,641172 | 9,437255 |
| BA431\_CW\_Ron2 | Ron2 | 99,540782 | 374,22254 | 24,769726 | 9,395806 | 125,2623 | 55,360467 | 181,36405 | 30,77086 | -31,47118 | 392,49618 | 41,641172 | 9,437255 |

Drought:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ecotype | leaf\_rwc | leaf\_wc | lma | pro | abvrgd | blwgrd | ttlmass | rmr | delta13c | leafc | leafn | cn |
| BA030\_HD\_ABR2 | ABR2 | 95,5672 | 275,21 | 32,1891 | 40,0867 | 88,4 | 64,925 | 153,32 | 41,368 | -30,9942 | 402,01 | 35,3526 | 11,415 |
| BA101\_HD\_ABR2 | ABR2 | 95,5672 | 275,21 | 32,1891 | 40,0867 | 88,4 | 64,925 | 153,32 | 41,368 | -30,9942 | 402,01 | 35,3526 | 11,415 |
| BA366\_CD\_ABR2 | ABR2 | 96,27 | 275,61 | 29,9968 | 38,994 | 76,375 | 44,475 | 120,85 | 36,4106 | -31,0081 | 392,34 | 34,9823 | 11,23 |
| BA439\_CD\_ABR2 | ABR2 | 96,27 | 275,61 | 29,9968 | 38,994 | 76,375 | 44,475 | 120,85 | 36,4106 | -31,0081 | 392,34 | 34,9823 | 11,23 |
| BA006\_HD\_ABR3 | ABR3 | 94,1465 | 296,47 | 26,5479 | 20,5059 | 101,18 | 62,475 | 163,65 | 38,0076 | -30,9528 | 400,56 | 32,8802 | 12,1867 |
| BA103\_HD\_ABR3 | ABR3 | 94,1465 | 296,47 | 26,5479 | 20,5059 | 101,18 | 62,475 | 163,65 | 38,0076 | -30,9528 | 400,56 | 32,8802 | 12,1867 |
| BA418\_CD\_ABR3 | ABR3 | 97,6832 | 354,52 | 23,1046 | 16,4585 | 87,375 | 52,4 | 139,78 | 37,0066 | -30,3755 | 401,97 | 34,0628 | 11,8359 |
| BA465\_CD\_ABR3 | ABR3 | 97,6832 | 354,52 | 23,1046 | 16,4585 | 87,375 | 52,4 | 139,78 | 37,0066 | -30,3755 | 401,97 | 34,0628 | 11,8359 |
| BA038\_HD\_ABR4 | ABR4 | 95,6684 | 299,6 | 30,4712 | 17,7323 | 59,125 | 33,625 | 92,75 | 36,419 | -30,9893 | 406,96 | 34,8378 | 11,7046 |
| BA170\_HD\_ABR4 | ABR4 | 95,6684 | 299,6 | 30,4712 | 17,7323 | 59,125 | 33,625 | 92,75 | 36,419 | -30,9893 | 406,96 | 34,8378 | 11,7046 |
| BA368\_CD\_ABR4 | ABR4 | 97,5747 | 326,08 | 27,4177 | 13,1446 | 48,725 | 30,75 | 79,475 | 39,3827 | -30,98 | 397,56 | 36,1803 | 11,0352 |
| BA521\_CD\_ABR4 | ABR4 | 97,5747 | 326,08 | 27,4177 | 13,1446 | 48,725 | 30,75 | 79,475 | 39,3827 | -30,98 | 397,56 | 36,1803 | 11,0352 |
| BA024\_HD\_ABR5 | ABR5 | 93,9699 | 301,28 | 28,602 | 15,5567 | 88,5 | 59,475 | 147,97 | 39,6646 | -31,2665 | 403,55 | 37,5765 | 10,8271 |
| BA104\_HD\_ABR5 | ABR5 | 93,9699 | 301,28 | 28,602 | 15,5567 | 88,5 | 59,475 | 147,97 | 39,6646 | -31,2665 | 403,55 | 37,5765 | 10,8271 |
| BA454\_CD\_ABR5 | ABR5 | 97,8872 | 326,65 | 25,3111 | 7,2641 | 72,297 | 46,4 | 118,49 | 39,1138 | -31,0825 | 386,6 | 35,9327 | 10,7333 |
| BA522\_CD\_ABR5 | ABR5 | 97,8872 | 326,65 | 25,3111 | 7,2641 | 72,297 | 46,4 | 118,49 | 39,1138 | -31,0825 | 386,6 | 35,9327 | 10,7333 |
| BA037\_HD\_ABR6 | ABR6 | 94,3688 | 291,38 | 28,1391 | 31,3657 | 81,25 | 41,45 | 122,7 | 33,747 | -31,3617 | 401,51 | 35,7275 | 11,2734 |
| BA099\_HD\_ABR6 | ABR6 | 94,3688 | 291,38 | 28,1391 | 31,3657 | 81,25 | 41,45 | 122,7 | 33,747 | -31,3617 | 401,51 | 35,7275 | 11,2734 |
| BA416\_CD\_ABR6 | ABR6 | 95,7619 | 309,23 | 27,7202 | 17,3763 | 64,675 | 39,5 | 104,18 | 37,3018 | -31,2286 | 407,43 | 33,2924 | 12,275 |
| BA523\_CD\_ABR6 | ABR6 | 95,7619 | 309,23 | 27,7202 | 17,3763 | 64,675 | 39,5 | 104,18 | 37,3018 | -31,2286 | 407,43 | 33,2924 | 12,275 |
| BA100\_HD\_ABR8 | ABR8 | 92,1823 | 307,46 | 32,7175 | 37,0386 | 129,1 | 33,25 | 162,35 | 20,5232 | -31,3316 | 392,46 | 32,4176 | 12,2406 |
| BA143\_HD\_ABR8 | ABR8 | 92,1823 | 307,46 | 32,7175 | 37,0386 | 129,1 | 33,25 | 162,35 | 20,5232 | -31,3316 | 392,46 | 32,4176 | 12,2406 |
| BA415\_CD\_ABR8 | ABR8 | 95,8411 | 348,43 | 29,1515 | 13,8568 | 95,75 | 33,2 | 128,95 | 26,3473 | -31,325 | 393,59 | 31,1215 | 12,7443 |
| BA506\_CD\_ABR8 | ABR8 | 95,8411 | 348,43 | 29,1515 | 13,8568 | 95,75 | 33,2 | 128,95 | 26,3473 | -31,325 | 393,59 | 31,1215 | 12,7443 |
| BA049\_HD\_Adi10 | Adi10 | 91,5314 | 335,69 | 28,3401 | 83,7468 | 138,23 | 60,8 | 199,02 | 30,4882 | -30,8597 | 396,7 | 31,5821 | 12,5705 |
| BA052\_HD\_Adi10 | Adi10 | 91,5314 | 335,69 | 28,3401 | 83,7468 | 138,23 | 60,8 | 199,02 | 30,4882 | -30,8597 | 396,7 | 31,5821 | 12,5705 |
| BA478\_CD\_Adi10 | Adi10 | 93,4741 | 330,73 | 29,3769 | 25,8306 | 129,5 | 74,5 | 204 | 36,3975 | -30,8103 | 398,07 | 31,8895 | 12,499 |
| BA513\_CD\_Adi10 | Adi10 | 93,4741 | 330,73 | 29,3769 | 25,8306 | 129,5 | 74,5 | 204 | 36,3975 | -30,8103 | 398,07 | 31,8895 | 12,499 |
| BA036\_HD\_Adi12 | Adi12 | 92,6729 | 290,48 | 29,3319 | 37,4857 | 158,68 | 75,7 | 234,37 | 32,3829 | -30,3287 | 399,63 | 32,1182 | 12,5141 |
| BA140\_HD\_Adi12 | Adi12 | 92,6729 | 290,48 | 29,3319 | 37,4857 | 158,68 | 75,7 | 234,37 | 32,3829 | -30,3287 | 399,63 | 32,1182 | 12,5141 |
| BA455\_CD\_Adi12 | Adi12 | 91,5266 | 291,54 | 29,3439 | 22,6328 | 124,07 | 65,375 | 189,45 | 34,5262 | -30,3494 | 401,56 | 32,3216 | 12,4274 |
| BA525\_CD\_Adi12 | Adi12 | 91,5266 | 291,54 | 29,3439 | 22,6328 | 124,07 | 65,375 | 189,45 | 34,5262 | -30,3494 | 401,56 | 32,3216 | 12,4274 |
| BA050\_HD\_Adi2 | Adi2 | 94,7074 | 280,35 | 29,122 | 44,1721 | 106,6 | 50,6 | 157,2 | 32,0808 | -30,4593 | 397,18 | 30,3205 | 13,1419 |
| BA094\_HD\_Adi2 | Adi2 | 94,7074 | 280,35 | 29,122 | 44,1721 | 106,6 | 50,6 | 157,2 | 32,0808 | -30,4593 | 397,18 | 30,3205 | 13,1419 |
| BA500\_CD\_Adi2 | Adi2 | 95,5478 | 286,92 | 28,7405 | 33,3583 | 95,05 | 64,975 | 160,03 | 40,5204 | -30,9863 | 394,32 | 32,8584 | 12,1132 |
| BA509\_CD\_Adi2 | Adi2 | 95,5478 | 286,92 | 28,7405 | 33,3583 | 95,05 | 64,975 | 160,03 | 40,5204 | -30,9863 | 394,32 | 32,8584 | 12,1132 |
| BA025\_HD\_Bd1.1 | Bd1.1 | 96,6513 | 318,06 | 27,8895 | 22,4793 | 69,95 | 32,675 | 102,62 | 32,6184 | -30,7095 | 396,41 | 32,6329 | 12,2739 |
| BA051\_HD\_Bd1.1 | Bd1.1 | 96,6513 | 318,06 | 27,8895 | 22,4793 | 69,95 | 32,675 | 102,62 | 32,6184 | -30,7095 | 396,41 | 32,6329 | 12,2739 |
| BA442\_CD\_Bd1.1 | Bd1.1 | 97,5714 | 338,57 | 26,4631 | 9,8706 | 72,9 | 34,675 | 107,58 | 31,9464 | -30,8879 | 396,28 | 29,2359 | 13,6961 |
| BA475\_CD\_Bd1.1 | Bd1.1 | 97,5714 | 338,57 | 26,4631 | 9,8706 | 72,9 | 34,675 | 107,58 | 31,9464 | -30,8879 | 396,28 | 29,2359 | 13,6961 |
| BA093\_HD\_Bd18.1 | Bd18.1 | 89,0917 | 287,91 | 32,5382 | 40,6435 | 132,28 | 54,4 | 186,67 | 29,1314 | -30,5819 | 405,25 | 33,6488 | 12,0622 |
| BA453\_CD\_Bd18.1 | Bd18.1 | 95,8214 | 323,02 | 25,8254 | 12,4704 | 122,7 | 66,6 | 189,51 | 34,814 | -30,5654 | 410,32 | 32,0128 | 12,8275 |
| BA023\_HD\_Bd2.3 | Bd2.3 | 92,9477 | 290,3 | 30,6912 | 32,8335 | 115,75 | 55,225 | 170,97 | 32,1404 | -30,4738 | 397 | 29,9625 | 13,2597 |
| BA088\_HD\_Bd2.3 | Bd2.3 | 92,9477 | 290,3 | 30,6912 | 32,8335 | 115,75 | 55,225 | 170,97 | 32,1404 | -30,4738 | 397 | 29,9625 | 13,2597 |
| BA353\_CD\_Bd2.3 | Bd2.3 | 96,4096 | 313,1 | 27,9172 | 16,2772 | 103,6 | 49,8667 | 153,26 | 32,3381 | -30,9876 | 391,61 | 32,8971 | 11,9916 |
| BA494\_CD\_Bd2.3 | Bd2.3 | 96,4096 | 313,1 | 27,9172 | 16,2772 | 103,6 | 49,8667 | 153,26 | 32,3381 | -30,9876 | 391,61 | 32,8971 | 11,9916 |
| BA056\_HD\_Bd21 | Bd21 | 92,1978 | 329,74 | 31,3491 | 19,6817 | 112,55 | 45,45 | 158 | 28,7482 | -30,0903 | 404,42 | 32,2814 | 12,6108 |
| BA163\_HD\_Bd21 | Bd21 | 92,1978 | 329,74 | 31,3491 | 19,6817 | 112,55 | 45,45 | 158 | 28,7482 | -30,0903 | 404,42 | 32,2814 | 12,6108 |
| BA459\_CD\_Bd21 | Bd21 | 97,234 | 367,57 | 28,5431 | 14,0697 | 96,7 | 52,45 | 149,15 | 35,0758 | -30,3526 | 403,03 | 32,3337 | 12,5448 |
| BA499\_CD\_Bd21 | Bd21 | 97,234 | 367,57 | 28,5431 | 14,0697 | 96,7 | 52,45 | 149,15 | 35,0758 | -30,3526 | 403,03 | 32,3337 | 12,5448 |
| BA097\_HD\_Bd21.3 | Bd21.3 | 86,9049 | 295,54 | 35,8918 | 58,7702 | 131,23 | 79,325 | 210,55 | 35,7497 | -31,192 | 394,95 | 34,5557 | 11,4413 |
| BA111\_HD\_Bd21.3 | Bd21.3 | 86,9049 | 295,54 | 35,8918 | 58,7702 | 131,23 | 79,325 | 210,55 | 35,7497 | -31,192 | 394,95 | 34,5557 | 11,4413 |
| BA430\_CD\_Bd21.3 | Bd21.3 | 90,9053 | 311,26 | 31,4101 | 20,4713 | 136,3 | 69,35 | 205,65 | 33,7667 | -30,7154 | 398,97 | 33,7282 | 11,8389 |
| BA512\_CD\_Bd21.3 | Bd21.3 | 90,9053 | 311,26 | 31,4101 | 20,4713 | 136,3 | 69,35 | 205,65 | 33,7667 | -30,7154 | 398,97 | 33,7282 | 11,8389 |
| BA166\_HD\_Bd3.1 | Bd3.1 | 90,2132 | 299,88 | 29,9041 | 29,8525 | 124,08 | 60,5 | 184,57 | 33,1324 | -30,6968 | 402,3 | 32,1438 | 12,552 |
| BA398\_CD\_Bd3.1 | Bd3.1 | 86,8178 | 321,96 | 30,5611 | 44,2785 | 158,58 | 66,425 | 225 | 29,9478 | -30,6395 | 391,02 | 28,8347 | 13,5893 |
| BA422\_CD\_Bd3.1 | Bd3.1 | 86,8178 | 321,96 | 30,5611 | 44,2785 | 158,58 | 66,425 | 225 | 29,9478 | -30,6395 | 391,02 | 28,8347 | 13,5893 |
| BA079\_HD\_Bd30.1 | Bd30.1 | 90,7217 | 272,28 | 32,0642 | 49,0163 | 128,28 | 60,325 | 188,6 | 32,1573 | -31,1346 | 387,86 | 34,6917 | 11,3551 |
| BA162\_HD\_Bd30.1 | Bd30.1 | 90,7217 | 272,28 | 32,0642 | 49,0163 | 128,28 | 60,325 | 188,6 | 32,1573 | -31,1346 | 387,86 | 34,6917 | 11,3551 |
| BA425\_CD\_Bd30.1 | Bd30.1 | 93,1622 | 309,6 | 27,8919 | 30,0273 | 88,65 | 51,325 | 139,98 | 36,8631 | -31,1783 | 385,03 | 35,2732 | 10,9211 |
| BA481\_CD\_Bd30.1 | Bd30.1 | 93,1622 | 309,6 | 27,8919 | 30,0273 | 88,65 | 51,325 | 139,98 | 36,8631 | -31,1783 | 385,03 | 35,2732 | 10,9211 |
| BA121\_HD\_BdTR10c | BdTR10c | 93,1128 | 277,44 | 29,1343 | 61,7782 | 131,55 | 52,475 | 184,02 | 28,5702 | -30,7721 | 403,39 | 29,1462 | 14,0575 |
| BA173\_HD\_BdTR10c | BdTR10c | 93,1128 | 277,44 | 29,1343 | 61,7782 | 131,55 | 52,475 | 184,02 | 28,5702 | -30,7721 | 403,39 | 29,1462 | 14,0575 |
| BA421\_CD\_BdTR10c | BdTR10c | 91,2539 | 307,27 | 27,9445 | 62,4874 | 114,12 | 57,2 | 171,33 | 33,5289 | -30,65 | 402,13 | 31,7225 | 12,7066 |
| BA440\_CD\_BdTR10c | BdTR10c | 91,2539 | 307,27 | 27,9445 | 62,4874 | 114,12 | 57,2 | 171,33 | 33,5289 | -30,65 | 402,13 | 31,7225 | 12,7066 |
| BA059\_HD\_BdTR11g | BdTR11g | 89,9507 | 294,07 | 31,8587 | 37,5698 | 120,03 | 60,225 | 180,25 | 33,1338 | -31,1966 | 402,96 | 31,3896 | 12,8764 |
| BA090\_HD\_BdTR11g | BdTR11g | 89,9507 | 294,07 | 31,8587 | 37,5698 | 120,03 | 60,225 | 180,25 | 33,1338 | -31,1966 | 402,96 | 31,3896 | 12,8764 |
| BA397\_CD\_BdTR11g | BdTR11g | 95,3823 | 312,72 | 28,7297 | 15,1499 | 116,6 | 57,7 | 174,3 | 33,1039 | -31,4914 | 400,42 | 34,3049 | 11,7522 |
| BA510\_CD\_BdTR11g | BdTR11g | 95,3823 | 312,72 | 28,7297 | 15,1499 | 116,6 | 57,7 | 174,3 | 33,1039 | -31,4914 | 400,42 | 34,3049 | 11,7522 |
| BA102\_HD\_BdTR11i | BdTR11i | 89,3787 | 295,88 | 32,3145 | 63,7474 | 126,55 | 57,3 | 183,85 | 31,4774 | -31,1197 | 399,71 | 30,9229 | 12,9344 |
| BA128\_HD\_BdTR11i | BdTR11i | 89,3787 | 295,88 | 32,3145 | 63,7474 | 126,55 | 57,3 | 183,85 | 31,4774 | -31,1197 | 399,71 | 30,9229 | 12,9344 |
| BA408\_CD\_BdTR11i | BdTR11i | 94,9355 | 306,93 | 30,6664 | 24,7061 | 121,07 | 52,35 | 173,43 | 30,7026 | -31,104 | 399,6 | 33,201 | 12,1142 |
| BA450\_CD\_BdTR11i | BdTR11i | 94,9355 | 306,93 | 30,6664 | 24,7061 | 121,07 | 52,35 | 173,43 | 30,7026 | -31,104 | 399,6 | 33,201 | 12,1142 |
| BA361\_CD\_BdtR12c | BdtR12c | 95,5726 | 328,56 | 25,4422 | 24,1003 | 105,52 | 53,1 | 158,63 | 33,6257 | -31,4268 | 396,58 | 33,3719 | 11,8987 |
| BA061\_HD\_BdTR13a | BdTR13a | 92,1344 | 297,05 | 30,5101 | 27,5649 | 104,93 | 44,75 | 149,67 | 30,0713 | -31,4933 | 394,35 | 35,1597 | 11,2545 |
| BA394\_CD\_BdTR13a | BdTR13a | 94,9504 | 299,69 | 29,8083 | 16,802 | 99,975 | 54 | 153,98 | 34,9891 | -31,1377 | 402,13 | 33,0339 | 12,2083 |
| BA460\_CD\_BdTR13a | BdTR13a | 94,9504 | 299,69 | 29,8083 | 16,802 | 99,975 | 54 | 153,98 | 34,9891 | -31,1377 | 402,13 | 33,0339 | 12,2083 |
| BA108\_HD\_BdTR1i | BdTR1i | 90,9792 | 285,17 | 28,2368 | 54,0095 | 128,2 | 55,85 | 184,05 | 29,9311 | -30,355 | 401,84 | 30,8815 | 13,0362 |
| BA134\_HD\_BdTR1i | BdTR1i | 90,9792 | 285,17 | 28,2368 | 54,0095 | 128,2 | 55,85 | 184,05 | 29,9311 | -30,355 | 401,84 | 30,8815 | 13,0362 |
| BA457\_CD\_BdTR1i | BdTR1i | 92,2691 | 298,73 | 27,4487 | 30,9165 | 137,37 | 79,3 | 216,68 | 36,5266 | -30,3089 | 401,02 | 31,1322 | 12,9409 |
| BA480\_CD\_BdTR1i | BdTR1i | 92,2691 | 298,73 | 27,4487 | 30,9165 | 137,37 | 79,3 | 216,68 | 36,5266 | -30,3089 | 401,02 | 31,1322 | 12,9409 |
| BA003\_HD\_BdTR2b | BdTR2b | 88,3067 | 275,41 | 30,6612 | 46,3035 | 142,63 | 62,4602 | 205,23 | 30,4213 | -30,4491 | 401,48 | 32,0488 | 12,6043 |
| BA091\_HD\_BdTR2b | BdTR2b | 88,3067 | 275,41 | 30,6612 | 46,3035 | 142,63 | 62,4602 | 205,23 | 30,4213 | -30,4491 | 401,48 | 32,0488 | 12,6043 |
| BA389\_CD\_BdTR2b | BdTR2b | 92,8529 | 297,14 | 29,4203 | 18,8064 | 128,22 | 76,15 | 204,38 | 36,9819 | -30,4727 | 403,21 | 33,3256 | 12,1192 |
| BA472\_CD\_BdTR2b | BdTR2b | 92,8529 | 297,14 | 29,4203 | 18,8064 | 128,22 | 76,15 | 204,38 | 36,9819 | -30,4727 | 403,21 | 33,3256 | 12,1192 |
| BA124\_HD\_BdTR2g | BdTR2g | 83,6304 | 255,64 | 30,6727 | 80,7185 | 141,48 | 74,775 | 216,25 | 34,4993 | -30,5584 | 388,58 | 30,9619 | 12,6063 |
| BA165\_HD\_BdTR2g | BdTR2g | 83,6304 | 255,64 | 30,6727 | 80,7185 | 141,48 | 74,775 | 216,25 | 34,4993 | -30,5584 | 388,58 | 30,9619 | 12,6063 |
| BA364\_CD\_BdTR2g | BdTR2g | 92,8345 | 295,51 | 29,707 | 28,9141 | 140,7 | 82,275 | 222,98 | 36,2953 | -30,2991 | 406,68 | 32,9221 | 12,4293 |
| BA369\_CD\_BdTR2g | BdTR2g | 92,8345 | 295,51 | 29,707 | 28,9141 | 140,7 | 82,275 | 222,98 | 36,2953 | -30,2991 | 406,68 | 32,9221 | 12,4293 |
| BA073\_HD\_BdTR3c | BdTR3c | 87,8504 | 267,87 | 30,6517 | 44,774 | 103,1 | 53,15 | 156,25 | 34,0107 | -30,8192 | 409,45 | 28,5468 | 14,4109 |
| BA172\_HD\_BdTR3c | BdTR3c | 87,8504 | 267,87 | 30,6517 | 44,774 | 103,1 | 53,15 | 156,25 | 34,0107 | -30,8192 | 409,45 | 28,5468 | 14,4109 |
| BA370\_CD\_BdTR3c | BdTR3c | 94,1643 | 307,36 | 27,969 | 14,2319 | 109,42 | 63,775 | 173,2 | 36,8347 | -30,8598 | 398,76 | 29,8799 | 13,3589 |
| BA424\_CD\_BdTR3c | BdTR3c | 94,1643 | 307,36 | 27,969 | 14,2319 | 109,42 | 63,775 | 173,2 | 36,8347 | -30,8598 | 398,76 | 29,8799 | 13,3589 |
| BA065\_HD\_BdTR5i | BdTR5i | 91,8255 | 282,44 | 32,7004 | 53,7029 | 100,55 | 65,95 | 166,5 | 38,6272 | -31,1833 | 399,66 | 33,8388 | 11,906 |
| BA082\_HD\_BdTR5i | BdTR5i | 91,8255 | 282,44 | 32,7004 | 53,7029 | 100,55 | 65,95 | 166,5 | 38,6272 | -31,1833 | 399,66 | 33,8388 | 11,906 |
| BA470\_CD\_BdTR5i | BdTR5i | 94,8835 | 312 | 29,218 | 19,9079 | 90,6 | 55,7 | 146,3 | 37,1162 | -30,8629 | 401,42 | 32,836 | 12,3188 |
| BA473\_CD\_BdTR5i | BdTR5i | 94,8835 | 312 | 29,218 | 19,9079 | 90,6 | 55,7 | 146,3 | 37,1162 | -30,8629 | 401,42 | 32,836 | 12,3188 |
| BA002\_HD\_BdTR9k | BdTR9k | 95,6189 | 297,03 | 28,4399 | 17,6973 | 143,73 | 65,025 | 208,75 | 32,7704 | -30,5734 | 409,21 | 32,5471 | 12,7073 |
| BA033\_HD\_BdTR9k | BdTR9k | 95,6189 | 297,03 | 28,4399 | 17,6973 | 143,73 | 65,025 | 208,75 | 32,7704 | -30,5734 | 409,21 | 32,5471 | 12,7073 |
| BA363\_CD\_BdTR9k | BdTR9k | 94,807 | 309,37 | 26,8249 | 21,5214 | 122,8 | 51,775 | 174,58 | 29,77 | -30,9229 | 401,68 | 33,5643 | 12,0002 |
| BA410\_CD\_BdTR9k | BdTR9k | 94,807 | 309,37 | 26,8249 | 21,5214 | 122,8 | 51,775 | 174,58 | 29,77 | -30,9229 | 401,68 | 33,5643 | 12,0002 |
| BA110\_HD\_Bis1 | Bis1 | 91,5204 | 276,88 | 34,1313 | 34,8535 | 117,17 | 54,9398 | 171,97 | 32,1238 | -31,0275 | 399,55 | 32,1223 | 12,4379 |
| BA373\_CD\_Bis1 | Bis1 | 94,8878 | 312,91 | 26,9505 | 14,4399 | 87,15 | 41,475 | 128,63 | 33,8045 | -31,4936 | 401,23 | 33,1728 | 12,1146 |
| BA519\_CD\_Bis1 | Bis1 | 94,8878 | 312,91 | 26,9505 | 14,4399 | 87,15 | 41,475 | 128,63 | 33,8045 | -31,4936 | 401,23 | 33,1728 | 12,1146 |
| BA046\_HD\_Kah1 | Kah1 | 93,0147 | 310,34 | 29,7299 | 39,7369 | 110,85 | 55,575 | 166,42 | 33,7495 | -30,7397 | 402,08 | 30,9699 | 13,0816 |
| BA168\_HD\_Kah1 | Kah1 | 93,0147 | 310,34 | 29,7299 | 39,7369 | 110,85 | 55,575 | 166,42 | 33,7495 | -30,7397 | 402,08 | 30,9699 | 13,0816 |
| BA382\_CD\_Kah1 | Kah1 | 95,019 | 320,6 | 28,6329 | 22,407 | 107,22 | 55,45 | 162,68 | 33,7389 | -31,0315 | 403,87 | 31,9183 | 12,7028 |
| BA495\_CD\_Kah1 | Kah1 | 95,019 | 320,6 | 28,6329 | 22,407 | 107,22 | 55,45 | 162,68 | 33,7389 | -31,0315 | 403,87 | 31,9183 | 12,7028 |
| BA048\_HD\_Kah5 | Kah5 | 91,6097 | 292,11 | 29,2052 | 46,3743 | 122,93 | 48,325 | 171,25 | 28,4994 | -30,3344 | 404,2 | 31,2071 | 12,9653 |
| BA095\_HD\_Kah5 | Kah5 | 91,6097 | 292,11 | 29,2052 | 46,3743 | 122,93 | 48,325 | 171,25 | 28,4994 | -30,3344 | 404,2 | 31,2071 | 12,9653 |
| BA401\_CD\_Kah5 | Kah5 | 94,604 | 331,21 | 26,7106 | 20,6909 | 121,47 | 48,75 | 170,23 | 28,6406 | -30,663 | 402,6 | 33,2662 | 12,1173 |
| BA489\_CD\_Kah5 | Kah5 | 94,604 | 331,21 | 26,7106 | 20,6909 | 121,47 | 48,75 | 170,23 | 28,6406 | -30,663 | 402,6 | 33,2662 | 12,1173 |
| BA089\_HD\_Koz.3 | Koz.3 | 82,1711 | 293,25 | 34,5124 | 67,5646 | 103,62 | 43,625 | 147,25 | 29,6711 | -30,9751 | 406,79 | 29,9398 | 13,6053 |
| BA395\_CD\_Koz1 | Koz1 | 95,9543 | 332,48 | 26,6403 | 16,1547 | 82,2 | 56,775 | 138,98 | 40,0757 | -31,2827 | 404,89 | 32,4497 | 12,5778 |
| BA507\_CD\_Koz1 | Koz1 | 95,9543 | 332,48 | 26,6403 | 16,1547 | 82,2 | 56,775 | 138,98 | 40,0757 | -31,2827 | 404,89 | 32,4497 | 12,5778 |
| BA081\_HD\_Koz3 | Koz3 | 82,1711 | 293,25 | 34,5124 | 67,5646 | 103,62 | 43,625 | 147,25 | 29,6711 | -30,9751 | 406,79 | 29,9398 | 13,6053 |
| BA388\_CD\_Koz3 | Koz3 | 88,6229 | 328 | 25,7217 | 20,9671 | 141,17 | 80,425 | 221,6 | 36,4373 | -30,5143 | 403,35 | 31,5167 | 12,7978 |
| BA467\_CD\_Koz3 | Koz3 | 88,6229 | 328 | 25,7217 | 20,9671 | 141,17 | 80,425 | 221,6 | 36,4373 | -30,5143 | 403,35 | 31,5167 | 12,7978 |
| BA035\_HD\_Ron2 | Ron2 | 92,82645 | 327,96356 | 28,296603 | 46,865344 | 97,16903 | 67,562792 | 164,90518 | 38,5043 | -30,60872 | 404,18678 | 34,5693 | 12,098827 |
| BA379\_D\_Ron2 | Ron2 | 95,496932 | 339,58655 | 26,694638 | 22,464309 | 91,12377 | 61,060894 | 153,78871 | 39,112 | -30,60334 | 404,29112 | 35,929524 | 11,507316 |
| BA432\_D\_Ron2 | Ron2 | 95,496932 | 339,58655 | 26,694638 | 22,464309 | 91,12377 | 61,060894 | 153,78871 | 39,112 | -30,60334 | 404,29112 | 35,929524 | 11,507316 |