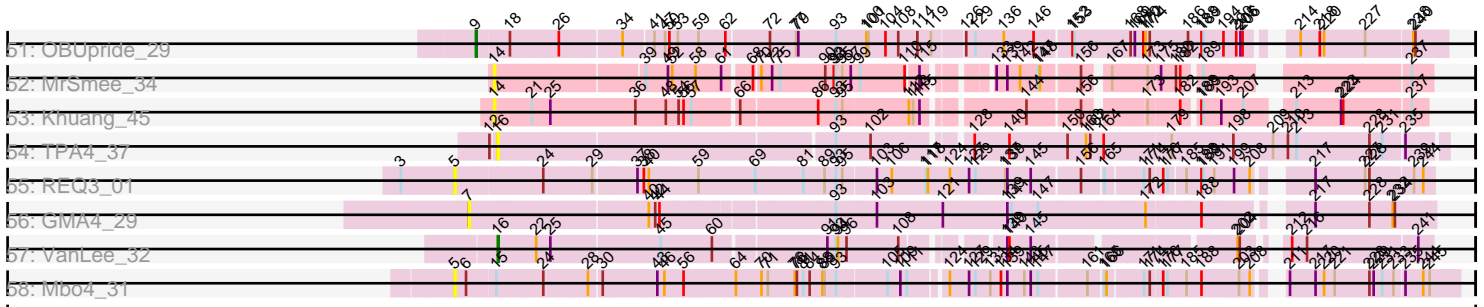


Pham 193894



Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

Pham 193894 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193894 has 100 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Ruchi_33, Vulpecula_33, Basilisk_34
- Track 2 : Galaxy_33
- Track 3 : TaylorSipht_34
- Track 4 : Orcanus_34
- Track 5 : Abidatro_34
- Track 6 : Jamun_33
- Track 7 : Brynnie_33
- Track 8 : Chickaboom_35
- Track 9 : Eesa_33
- Track 10 : Kepler_38
- Track 11 : Amelia_36, Daob_38, Colusalem_39
- Track 12 : Cote_38, Bedetta_40, Coral_36, HannahPhantana_37, Polka_36
- Track 13 : Melons_38
- Track 14 : Kuleana_37
- Track 15 : Lunar_38
- Track 16 : LittleTokyo_36
- Track 17 : PhluffyCoco_36
- Track 18 : RedFox_36, Camara_36, KHumphrey_36, Juno112_35
- Track 19 : Andrew_37
- Track 20 : Leona_35
- Track 21 : Renna12_35
- Track 22 : Ohgeesy_38, BaxterFox_37, PantheRoc_37
- Track 23 : Madeline_35
- Track 24 : Vasanti_37
- Track 25 : JCole_37
- Track 26 : Yeezy_36
- Track 27 : Suerte_34
- Track 28 : Powerball_37
- Track 29 : PhriskyACE_36
- Track 30 : Easley_35
- Track 31 : Sidious_37
- Track 32 : Parada_39, Hamood_39, Chop_39, Nadeem_39, WheatThin_39, Brylie_39, Ayotoya_39, GrandSlam_39, Mulch_39
- Track 33 : DelRio_40, Pimento_39
- Track 34 : NancyRae_39, BetterKatz_39
- Track 35 : Francois_38
- Track 36 : Bock_39

- Track 37 : DumpsterDude_40
- Track 38 : Ruthy_39
- Track 39 : Malibo_40
- Track 40 : ModicumRichard_35, Cafasso_35, Aleemily_34
- Track 41 : ObLaDi_35
- Track 42 : Morgana_35
- Track 43 : Pitbull_33
- Track 44 : Hum25_34
- Track 45 : Tortellini_32
- Track 46 : Xavia_34
- Track 47 : Dewey_29, LilHazelNut_29, Luke_29, Hail_29, Hadrien_29, DeepSoil15_29, Forge_29, Evanesce_29, Amymech_29, HH92_29, Wishmaker_29, Ubuntu_29, Kinbote_29, Webster2_29, Ein37_29, Giles_29, Luna22_29
- Track 48 : Amochick_29, Daegal_30
- Track 49 : Gravaillia_29
- Track 50 : Gancho_28
- Track 51 : OBUpride_29
- Track 52 : MrSmee_34
- Track 53 : Khuang_45
- Track 54 : TPA4_37
- Track 55 : REQ3_01
- Track 56 : GMA4_29
- Track 57 : VanLee_32
- Track 58 : Mbo4_31

Summary of Final Annotations (See graph section above for start numbers):

The start number called the most often in the published annotations is 15, it was called in 32 of the 87 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abidatro_34, Aleemily_34, Amelia_36, Andrew_37, Basilisk_34, Bedetta_40, Brynnie_33, Cafasso_35, Camara_36, Chickaboom_35, Colusalem_39, Coral_36, Cote_38, Daob_38, Eesa_33, Galaxy_33, HannahPhantana_37, Jamun_33, Juno112_35, KHumphrey_36, Kepler_38, Kuleana_37, Leona_35, LittleTokyo_36, Lunar_38, Melons_38, ModicumRichard_35, Morgana_35, ObLaDi_35, Orcanus_34, PhluffyCoco_36, Polka_36, RedFox_36, Renna12_35, Ruchi_33, TaylorSipt_34, Vulpecula_33,

Genes that have the "Most Annotated" start but do not call it:

- Mbo4_31,

Genes that do not have the "Most Annotated" start:

- Amochick_29, Amymech_29, Ayotoya_39, BaxterFox_37, BetterKatz_39, Bock_39, Brylie_39, Chop_39, Daegal_30, DeepSoil15_29, DelRio_40, Dewey_29, DumpsterDude_40, Easley_35, Ein37_29, Evanesce_29, Forge_29, Francois_38, GMA4_29, Gancho_28, Giles_29, GrandSlam_39, Gravaillia_29, HH92_29, Hadrien_29, Hail_29, Hamood_39, Hum25_34, JCole_37, Khuang_45, Kinbote_29, LilHazelNut_29, Luke_29, Luna22_29, Madeline_35, Malibo_40, MrSmee_34, Mulch_39, Nadeem_39, NancyRae_39, OBUpride_29, Ohgeesy_38, PantheRoc_37,

Parada_39, PhriskyACE_36, Pimento_39, Pitbull_33, Powerball_37, REQ3_01, Ruthy_39, Sidious_37, Suerte_34, TPA4_37, Tortellini_32, Ubuntu_29, VanLee_32, Vasanti_37, Webster2_29, WheatThin_39, Wishmaker_29, Xavia_34, Yeezy_36,

Summary by start number:

Start 5:

- Found in 2 of 100 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mbo4_31 (singleton), REQ3_01 (singleton),

Start 7:

- Found in 1 of 100 (1.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4_29 (singleton),

Start 9:

- Found in 22 of 100 (22.0%) of genes in pham
- Manual Annotations of this start: 2 of 87
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Gancho_28 (Q), OBUpride_29 (Q),

Start 10:

- Found in 2 of 100 (2.0%) of genes in pham
- Manual Annotations of this start: 2 of 87
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tortellini_32 (P2), Xavia_34 (P3),

Start 14:

- Found in 4 of 100 (4.0%) of genes in pham
- Manual Annotations of this start: 1 of 87
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Khuang_45 (UNK), MrSmee_34 (UNK), Pitbull_33 (FQ),

Start 15:

- Found in 38 of 100 (38.0%) of genes in pham
- Manual Annotations of this start: 32 of 87
- Called 97.4% of time when present
- Phage (with cluster) where this start called: Abidatro_34 (AS1), Aleemily_34 (DZ), Amelia_36 (AS2), Andrew_37 (AS3), Basilisk_34 (AS1), Bedetta_40 (AS2), Brynnie_33 (AS1), Cafasso_35 (DZ), Camara_36 (AS3), Chickaboom_35 (AS1), Colusalem_39 (AS2), Coral_36 (AS2), Cote_38 (AS2), Daob_38 (AS2), Eesa_33 (AS1), Galaxy_33 (AS1), HannahPhantana_37 (AS2), Jamun_33 (AS1), Juno112_35 (AS3), KHumphrey_36 (AS3), Kepler_38 (AS2), Kuleana_37 (AS2), Leona_35 (AS3), LittleTokyo_36 (AS2), Lunar_38 (AS2), Melons_38 (AS2), ModicumRichard_35 (DZ), Morgana_35 (DZ), ObLaDi_35 (DZ), Orcanus_34 (AS1), PhluffyCoco_36 (AS3), Polka_36 (AS2), RedFox_36 (AS3), Renna12_35 (AS3), Ruchi_33 (AS1), TaylorSipt_34 (AS1), Vulpecula_33 (AS1),

Start 16:

- Found in 32 of 100 (32.0%) of genes in pham
- Manual Annotations of this start: 29 of 87
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya_39 (DI), BaxterFox_37 (CZ3), BetterKatz_39 (DI), Bock_39 (DI), Brylie_39 (DI), Chop_39 (DI), DelRio_40 (DI), DumpsterDude_40 (DW), Easley_35 (CZ4), Francois_38 (DI), GrandSlam_39 (DI), Hamood_39 (DI), JCole_37 (CZ2), Madeline_35 (CZ1), Malibo_40 (DW), Mulch_39 (DI), Nadeem_39 (DI), NancyRae_39 (DI), Ohgeesy_38 (CZ), PantheRoc_37 (CZ3), Parada_39 (DI), PhriskyACE_36 (CZ4), Pimento_39 (DI), Powerball_37 (CZ4), Ruthy_39 (DW), Sidious_37 (CZ7), Suerte_34 (CZ4), TPA4_37 (singleton), VanLee_32 (singleton), Vasanti_37 (CZ2), WheatThin_39 (DI), Yeezy_36 (CZ3),

Start 18:

- Found in 22 of 100 (22.0%) of genes in pham
- Manual Annotations of this start: 20 of 87
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Amochick_29 (Q), Amymech_29 (Q), Daegal_30 (Q), DeepSoil15_29 (Q), Dewey_29 (Q), Ein37_29 (Q), Evanesce_29 (Q), Forge_29 (Q), Giles_29 (Q), Gravaillia_29 (Q), HH92_29 (Q), Hadrien_29 (Q), Hail_29 (Q), Kinbote_29 (Q), LilHazelNut_29 (Q), Luke_29 (Q), Luna22_29 (Q), Ubuntu_29 (Q), Webster2_29 (Q), Wishmaker_29 (Q),

Start 19:

- Found in 2 of 100 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 87
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hum25_34 (FQ),

Summary by clusters:

There are 18 clusters represented in this pham: AS3, AS2, singleton, P2, DI, CZ2, CZ3, P3, CZ1, FQ, AS1, CZ4, CZ7, Q, CZ, DZ, DW, UNK,

Info for manual annotations of cluster AS1:

- Start number 15 was manually annotated 11 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 15 was manually annotated 11 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 15 was manually annotated 6 times for cluster AS3.

Info for manual annotations of cluster CZ:

- Start number 16 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 16 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 16 was manually annotated 1 time for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 16 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 16 was manually annotated 3 times for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 16 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DI:

- Start number 16 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DW:

- Start number 16 was manually annotated 3 times for cluster DW.

Info for manual annotations of cluster DZ:

- Start number 15 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster FQ:

- Start number 14 was manually annotated 1 time for cluster FQ.
- Start number 19 was manually annotated 1 time for cluster FQ.

Info for manual annotations of cluster P2:

- Start number 10 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 10 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster Q:

- Start number 9 was manually annotated 2 times for cluster Q.
- Start number 18 was manually annotated 20 times for cluster Q.

Gene Information:

Gene: Abidatro_34 Start: 24278, Stop: 23067, Start Num: 15

Candidate Starts for Abidatro_34:

(Start: 15 @24278 has 32 MA's), (46, 24059), (54, 24041), (73, 23924), (91, 23849), (94, 23834), (151, 23540), (158, 23519), (167, 23492), (176, 23426), (179, 23414), (184, 23396), (217, 23252), (219, 23243),

Gene: Aleemily_34 Start: 29847, Stop: 28720, Start Num: 15

Candidate Starts for Aleemily_34:

(1, 30327), (Start: 15 @29847 has 32 MA's), (22, 29793), (32, 29688), (67, 29517), (87, 29427), (96, 29391), (123, 29277), (130, 29238), (140, 29214), (158, 29118), (189, 28986), (201, 28941), (217, 28869), (237, 28743),

Gene: Amelia_36 Start: 24019, Stop: 22832, Start Num: 15

Candidate Starts for Amelia_36:

(4, 24109), (Start: 15 @24019 has 32 MA's), (73, 23665), (91, 23590), (179, 23155), (213, 23020),

Gene: Amochick_29 Start: 26484, Stop: 25291, Start Num: 18

Candidate Starts for Amochick_29:

(Start: 9 @26526 has 2 MA's), (Start: 18 @26484 has 20 MA's), (26, 26418), (34, 26337), (41, 26298), (47, 26283), (50, 26277), (53, 26265), (59, 26238), (62, 26205), (72, 26148), (77, 26115), (79, 26112), (93, 26064), (100, 26022), (101, 26019), (104, 25995), (108, 25980), (114, 25956), (119, 25941), (126, 25902), (129, 25890), (136, 25851), (146, 25812), (152, 25764), (153, 25761), (168, 25689), (169, 25683), (170, 25671), (172, 25668), (174, 25662), (186, 25608), (188, 25590), (189, 25587), (194, 25560), (206, 25533), (214, 25491), (218, 25464), (220, 25458), (227, 25401), (238, 25338), (240, 25335),

Gene: Amymech_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Amymech_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Andrew_37 Start: 23839, Stop: 22646, Start Num: 15

Candidate Starts for Andrew_37:

(Start: 15 @23839 has 32 MA's), (20, 23794), (105, 23329), (151, 23101), (179, 22975), (182, 22963), (217, 22813), (242, 22675),

Gene: Ayotoya_39 Start: 32055, Stop: 30784, Start Num: 16

Candidate Starts for Ayotoya_39:

(Start: 16 @32055 has 29 MA's), (17, 32040), (27, 31938), (32, 31896), (35, 31884), (54, 31809), (63, 31734), (66, 31725), (68, 31707), (93, 31608), (94, 31605), (112, 31515), (139, 31410), (154, 31314), (157, 31308), (189, 31146), (215, 31005), (222, 30960), (230, 30909), (231, 30900), (232, 30885), (235, 30873), (239, 30861), (248, 30822),

Gene: Basilisk_34 Start: 24758, Stop: 23574, Start Num: 15

Candidate Starts for Basilisk_34:

(Start: 15 @24758 has 32 MA's), (46, 24539), (73, 24404), (91, 24329), (94, 24314), (133, 24113), (176, 23906), (179, 23894), (184, 23876), (187, 23861), (213, 23759), (217, 23732), (219, 23723),

Gene: BaxterFox_37 Start: 31379, Stop: 30117, Start Num: 16

Candidate Starts for BaxterFox_37:

(Start: 16 @31379 has 29 MA's), (31, 31223), (67, 31040), (74, 31004), (91, 30944), (93, 30932), (102, 30887), (107, 30854), (117, 30812), (154, 30644), (155, 30641), (171, 30566), (175, 30548), (176, 30545), (189, 30488), (210, 30371), (213, 30359), (222, 30302), (231, 30242), (232, 30227), (235, 30215), (237, 30206), (246, 30167),

Gene: Bedetta_40 Start: 24167, Stop: 22980, Start Num: 15

Candidate Starts for Bedetta_40:

(4, 24257), (Start: 15 @24167 has 32 MA's), (91, 23738), (179, 23303), (213, 23168),

Gene: BetterKatz_39 Start: 31582, Stop: 30311, Start Num: 16

Candidate Starts for BetterKatz_39:

(Start: 16 @31582 has 29 MA's), (17, 31567), (27, 31465), (32, 31423), (35, 31411), (54, 31336), (63, 31261), (66, 31252), (68, 31234), (93, 31135), (94, 31132), (112, 31042), (139, 30937), (157, 30835), (163, 30817), (189, 30673), (215, 30532), (222, 30487), (230, 30436), (231, 30427), (235, 30400), (239, 30388), (248, 30349),

Gene: Bock_39 Start: 31274, Stop: 30003, Start Num: 16

Candidate Starts for Bock_39:

(Start: 16 @31274 has 29 MA's), (17, 31259), (27, 31157), (32, 31115), (35, 31103), (54, 31028), (63, 30953), (66, 30944), (68, 30926), (93, 30827), (94, 30824), (112, 30734), (134, 30638), (139, 30629), (150, 30548), (157, 30527), (163, 30509), (174, 30434), (189, 30365), (215, 30224), (222, 30179), (230, 30128), (231, 30119), (235, 30092), (239, 30080), (248, 30041),

Gene: Brylie_39 Start: 31322, Stop: 30051, Start Num: 16

Candidate Starts for Brylie_39:

(Start: 16 @31322 has 29 MA's), (17, 31307), (27, 31205), (32, 31163), (35, 31151), (54, 31076), (63, 31001), (66, 30992), (68, 30974), (93, 30875), (94, 30872), (112, 30782), (139, 30677), (154, 30581), (157, 30575), (189, 30413), (215, 30272), (222, 30227), (230, 30176), (231, 30167), (232, 30152), (235, 30140), (239, 30128), (248, 30089),

Gene: Brynnie_33 Start: 24636, Stop: 23452, Start Num: 15

Candidate Starts for Brynnie_33:

(Start: 15 @24636 has 32 MA's), (46, 24417), (73, 24282), (91, 24207), (94, 24192), (133, 23991), (135, 23982), (176, 23784), (179, 23772), (184, 23754), (187, 23739), (213, 23637), (217, 23610), (219, 23601),

Gene: Cafasso_35 Start: 30421, Stop: 29294, Start Num: 15

Candidate Starts for Cafasso_35:

(1, 30901), (Start: 15 @30421 has 32 MA's), (22, 30367), (32, 30262), (67, 30091), (87, 30001), (96, 29965), (123, 29851), (130, 29812), (140, 29788), (158, 29692), (189, 29560), (201, 29515), (217, 29443), (237, 29317),

Gene: Camara_36 Start: 23916, Stop: 22723, Start Num: 15

Candidate Starts for Camara_36:

(Start: 15 @23916 has 32 MA's), (91, 23487), (102, 23430), (105, 23406), (151, 23178), (179, 23052), (182, 23040), (187, 23019), (219, 22881), (231, 22800), (242, 22752),

Gene: Chickaboom_35 Start: 24249, Stop: 23065, Start Num: 15

Candidate Starts for Chickaboom_35:

(Start: 15 @24249 has 32 MA's), (23, 24192), (46, 24030), (51, 24021), (73, 23895), (86, 23832), (91, 23820), (94, 23805), (112, 23715), (133, 23604), (151, 23511), (176, 23397), (179, 23385), (184, 23367), (217, 23223), (219, 23214),

Gene: Chop_39 Start: 31803, Stop: 30532, Start Num: 16

Candidate Starts for Chop_39:

(Start: 16 @31803 has 29 MA's), (17, 31788), (27, 31686), (32, 31644), (35, 31632), (54, 31557), (63, 31482), (66, 31473), (68, 31455), (93, 31356), (94, 31353), (112, 31263), (139, 31158), (154, 31062), (157, 31056), (189, 30894), (215, 30753), (222, 30708), (230, 30657), (231, 30648), (232, 30633), (235, 30621), (239, 30609), (248, 30570),

Gene: Colusalem_39 Start: 23996, Stop: 22809, Start Num: 15

Candidate Starts for Colusalem_39:

(4, 24086), (Start: 15 @23996 has 32 MA's), (73, 23642), (91, 23567), (179, 23132), (213, 22997),

Gene: Coral_36 Start: 23868, Stop: 22681, Start Num: 15

Candidate Starts for Coral_36:

(4, 23958), (Start: 15 @23868 has 32 MA's), (91, 23439), (179, 23004), (213, 22869),

Gene: Cote_38 Start: 24345, Stop: 23158, Start Num: 15

Candidate Starts for Cote_38:

(4, 24435), (Start: 15 @24345 has 32 MA's), (91, 23916), (179, 23481), (213, 23346),

Gene: Daegal_30 Start: 26772, Stop: 25579, Start Num: 18

Candidate Starts for Daegal_30:

(Start: 9 @26814 has 2 MA's), (Start: 18 @26772 has 20 MA's), (26, 26706), (34, 26625), (41, 26586), (47, 26571), (50, 26565), (53, 26553), (59, 26526), (62, 26493), (72, 26436), (77, 26403), (79, 26400), (93, 26352), (100, 26310), (101, 26307), (104, 26283), (108, 26268), (114, 26244), (119, 26229), (126, 26190), (129, 26178), (136, 26139), (146, 26100), (152, 26052), (153, 26049), (168, 25977), (169, 25971), (170, 25959), (172, 25956), (174, 25950), (186, 25896), (188, 25878), (189, 25875), (194, 25848), (206, 25821), (214, 25779), (218, 25752), (220, 25746), (227, 25689), (238, 25626), (240, 25623),

Gene: Daob_38 Start: 24353, Stop: 23166, Start Num: 15

Candidate Starts for Daob_38:

(4, 24443), (Start: 15 @24353 has 32 MA's), (73, 23999), (91, 23924), (179, 23489), (213, 23354),

Gene: DeepSoil15_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for DeepSoil15_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: DelRio_40 Start: 32511, Stop: 31240, Start Num: 16

Candidate Starts for DelRio_40:

(11, 32535), (Start: 16 @32511 has 29 MA's), (17, 32496), (27, 32394), (32, 32352), (35, 32340), (54, 32265), (63, 32190), (66, 32181), (68, 32163), (93, 32064), (94, 32061), (112, 31971), (134, 31875), (139, 31866), (154, 31770), (163, 31746), (189, 31602), (215, 31461), (222, 31416), (230, 31365), (231, 31356), (232, 31341), (235, 31329), (239, 31317), (248, 31278),

Gene: Dewey_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Dewey_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: DumpsterDude_40 Start: 35157, Stop: 33988, Start Num: 16

Candidate Starts for DumpsterDude_40:

(Start: 16 @35157 has 29 MA's), (31, 35001), (54, 34914), (65, 34833), (71, 34797), (83, 34743), (86, 34737), (91, 34725), (93, 34713), (112, 34620), (113, 34614), (123, 34584), (139, 34515), (140, 34512), (145, 34482), (146, 34479), (152, 34431), (171, 34359), (213, 34197), (215, 34185), (220, 34158), (228, 34098), (230, 34089), (237, 34044), (246, 34005),

Gene: Easley_35 Start: 28370, Stop: 27201, Start Num: 16

Candidate Starts for Easley_35:

(Start: 16 @28370 has 29 MA's), (54, 28127), (66, 28043), (71, 28010), (91, 27938), (93, 27926), (102, 27881), (112, 27833), (139, 27728), (140, 27725), (145, 27695), (147, 27686), (171, 27572), (188, 27500), (189, 27497), (192, 27473), (196, 27467), (198, 27455), (213, 27410), (215, 27398), (220, 27371), (232, 27278), (237, 27257), (246, 27218),

Gene: Eesa_33 Start: 25111, Stop: 23927, Start Num: 15

Candidate Starts for Eesa_33:

(Start: 15 @25111 has 32 MA's), (46, 24892), (54, 24874), (73, 24757), (94, 24667), (158, 24352), (176, 24259), (179, 24247), (184, 24229), (213, 24112), (219, 24076),

Gene: Ein37_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Ein37_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Evanesce_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Evanesce_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Forge_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Forge_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Francois_38 Start: 31405, Stop: 30134, Start Num: 16

Candidate Starts for Francois_38:

(Start: 16 @31405 has 29 MA's), (17, 31390), (27, 31288), (32, 31246), (54, 31159), (63, 31084), (66, 31075), (68, 31057), (93, 30958), (94, 30955), (112, 30865), (134, 30769), (154, 30664), (157, 30658), (189, 30496), (215, 30355), (222, 30310), (230, 30259), (232, 30235), (235, 30223), (239, 30211), (248, 30172),

Gene: GMA4_29 Start: 26449, Stop: 25217, Start Num: 7

Candidate Starts for GMA4_29:

(7, 26449), (40, 26212), (42, 26203), (44, 26197), (93, 25981), (103, 25924), (121, 25837), (139, 25753), (141, 25747), (147, 25711), (172, 25570), (188, 25498), (217, 25381), (228, 25309), (232, 25276), (234, 25273),

Gene: Galaxy_33 Start: 24046, Stop: 22862, Start Num: 15

Candidate Starts for Galaxy_33:

(Start: 15 @24046 has 32 MA's), (73, 23692), (91, 23617), (94, 23602), (151, 23308), (158, 23287), (167, 23260), (176, 23194), (179, 23182), (184, 23164), (217, 23020), (219, 23011),

Gene: Gancho_28 Start: 26243, Stop: 25008, Start Num: 9

Candidate Starts for Gancho_28:

(Start: 9 @26243 has 2 MA's), (Start: 18 @26201 has 20 MA's), (26, 26135), (31, 26066), (34, 26054), (41, 26015), (47, 26000), (50, 25994), (53, 25982), (62, 25922), (72, 25865), (77, 25832), (79, 25829), (80, 25826), (104, 25712), (108, 25697), (114, 25673), (119, 25658), (122, 25643), (126, 25619), (129, 25607), (136, 25568), (138, 25565), (146, 25529), (152, 25481), (153, 25478), (168, 25406), (169, 25400), (170, 25388), (172, 25385), (174, 25379), (186, 25325), (189, 25304), (194, 25277), (200, 25259), (205, 25253), (214, 25208), (218, 25181), (220, 25175), (225, 25145), (227, 25118), (238, 25055),

Gene: Giles_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Giles_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: GrandSlam_39 Start: 31803, Stop: 30532, Start Num: 16

Candidate Starts for GrandSlam_39:

(Start: 16 @31803 has 29 MA's), (17, 31788), (27, 31686), (32, 31644), (35, 31632), (54, 31557), (63, 31482), (66, 31473), (68, 31455), (93, 31356), (94, 31353), (112, 31263), (139, 31158), (154, 31062), (157, 31056), (189, 30894), (215, 30753), (222, 30708), (230, 30657), (231, 30648), (232, 30633), (235, 30621), (239, 30609), (248, 30570),

Gene: Gravaillia_29 Start: 26207, Stop: 25014, Start Num: 18

Candidate Starts for Gravaillia_29:

(Start: 9 @26249 has 2 MA's), (Start: 18 @26207 has 20 MA's), (26, 26141), (31, 26072), (34, 26060), (41, 26021), (47, 26006), (50, 26000), (53, 25988), (62, 25928), (72, 25871), (77, 25838), (79, 25835), (80, 25832), (104, 25718), (108, 25703), (114, 25679), (119, 25664), (122, 25649), (126, 25625), (129, 25613), (136, 25574), (138, 25571), (146, 25535), (152, 25487), (153, 25484), (168, 25412), (169, 25406), (170, 25394), (172, 25391), (174, 25385), (186, 25331), (189, 25310), (194, 25283), (200, 25265), (205, 25259), (214, 25214), (218, 25187), (220, 25181), (225, 25151), (227, 25124), (238, 25061),

Gene: HH92_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for HH92_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Hadrien_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Hadrien_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Hail_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Hail_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Hamood_39 Start: 31803, Stop: 30532, Start Num: 16

Candidate Starts for Hamood_39:

(Start: 16 @31803 has 29 MA's), (17, 31788), (27, 31686), (32, 31644), (35, 31632), (54, 31557), (63, 31482), (66, 31473), (68, 31455), (93, 31356), (94, 31353), (112, 31263), (139, 31158), (154, 31062), (157, 31056), (189, 30894), (215, 30753), (222, 30708), (230, 30657), (231, 30648), (232, 30633), (235, 30621), (239, 30609), (248, 30570),

Gene: HannahPhantana_37 Start: 24015, Stop: 22828, Start Num: 15

Candidate Starts for HannahPhantana_37:

(4, 24105), (Start: 15 @24015 has 32 MA's), (91, 23586), (179, 23151), (213, 23016),

Gene: Hum25_34 Start: 25182, Stop: 24091, Start Num: 19

Candidate Starts for Hum25_34:

(Start: 14 @25206 has 1 MA's), (Start: 19 @25182 has 1 MA's), (39, 25011), (48, 24984), (58, 24945), (68, 24876), (73, 24855), (75, 24846), (90, 24789), (92, 24777), (93, 24774), (95, 24765), (97, 24753), (108, 24693), (110, 24684), (115, 24669), (133, 24603), (142, 24570), (148, 24543), (158, 24489), (167, 24468), (173, 24420), (174, 24417), (175, 24405), (177, 24396), (182, 24378), (183, 24375), (185, 24369), (189, 24357), (197, 24324), (213, 24270), (217, 24243), (228, 24171), (237, 24117),

Gene: JCole_37 Start: 29060, Stop: 27801, Start Num: 16

Candidate Starts for JCole_37:

(Start: 16 @29060 has 29 MA's), (66, 28730), (74, 28685), (91, 28625), (93, 28613), (102, 28568), (117, 28496), (154, 28328), (155, 28325), (175, 28232), (189, 28172), (210, 28055), (213, 28043), (217, 28016), (222, 27986), (231, 27926), (232, 27911), (235, 27899), (237, 27890), (246, 27851),

Gene: Jamun_33 Start: 24299, Stop: 23115, Start Num: 15

Candidate Starts for Jamun_33:

(Start: 15 @24299 has 32 MA's), (46, 24080), (51, 24071), (73, 23945), (94, 23855), (176, 23447), (179, 23435), (184, 23417), (217, 23273), (219, 23264),

Gene: Juno112_35 Start: 23916, Stop: 22723, Start Num: 15

Candidate Starts for Juno112_35:

(Start: 15 @23916 has 32 MA's), (91, 23487), (102, 23430), (105, 23406), (151, 23178), (179, 23052), (182, 23040), (187, 23019), (219, 22881), (231, 22800), (242, 22752),

Gene: KHumphrey_36 Start: 23915, Stop: 22722, Start Num: 15

Candidate Starts for KHumphrey_36:

(Start: 15 @23915 has 32 MA's), (91, 23486), (102, 23429), (105, 23405), (151, 23177), (179, 23051), (182, 23039), (187, 23018), (219, 22880), (231, 22799), (242, 22751),

Gene: Kepler_38 Start: 24761, Stop: 23574, Start Num: 15

Candidate Starts for Kepler_38:

(4, 24851), (Start: 15 @24761 has 32 MA's), (73, 24407), (91, 24332), (179, 23897), (213, 23762), (236, 23612),

Gene: Khuang_45 Start: 28583, Stop: 27426, Start Num: 14

Candidate Starts for Khuang_45:

(Start: 14 @28583 has 1 MA's), (21, 28532), (25, 28508), (36, 28388), (48, 28349), (54, 28331), (56, 28325), (57, 28316), (66, 28259), (86, 28160), (93, 28136), (95, 28127), (112, 28037), (113, 28031), (115, 28022), (144, 27905), (156, 27836), (173, 27767), (182, 27725), (188, 27707), (189, 27704), (193, 27680), (207, 27650), (213, 27599), (223, 27539), (224, 27536), (237, 27446),

Gene: Kinbote_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Kinbote_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Kuleana_37 Start: 24189, Stop: 23008, Start Num: 15

Candidate Starts for Kuleana_37:

(Start: 15 @24189 has 32 MA's), (70, 23850), (179, 23325),

Gene: Leona_35 Start: 23984, Stop: 22791, Start Num: 15

Candidate Starts for Leona_35:

(Start: 15 @23984 has 32 MA's), (27, 23870), (91, 23555), (151, 23246), (179, 23120), (182, 23108), (187, 23087), (242, 22820),

Gene: LilHazelnut_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for LilHazelnut_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: LittleTokyo_36 Start: 23859, Stop: 22669, Start Num: 15

Candidate Starts for LittleTokyo_36:

(Start: 15 @23859 has 32 MA's), (91, 23427), (151, 23118), (179, 22992), (182, 22980), (239, 22701),

Gene: Luke_29 Start: 26433, Stop: 25240, Start Num: 18

Candidate Starts for Luke_29:

(Start: 9 @26475 has 2 MA's), (Start: 18 @26433 has 20 MA's), (26, 26367), (34, 26286), (41, 26247), (47, 26232), (50, 26226), (53, 26214), (59, 26187), (62, 26154), (72, 26097), (77, 26064), (79, 26061), (93, 26013), (100, 25971), (101, 25968), (104, 25944), (108, 25929), (114, 25905), (119, 25890), (126, 25851), (129, 25839), (136, 25800), (146, 25761), (152, 25713), (153, 25710), (168, 25638), (169, 25632), (170, 25620), (172, 25617), (174, 25611), (186, 25557), (188, 25539), (189, 25536), (194, 25509), (200, 25491), (205, 25485), (206, 25482), (214, 25440), (218, 25413), (220, 25407), (227, 25350), (238, 25287), (240, 25284),

Gene: Luna22_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Luna22_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Lunar_38 Start: 24679, Stop: 23492, Start Num: 15

Candidate Starts for Lunar_38:

(4, 24769), (Start: 15 @24679 has 32 MA's), (179, 23815), (213, 23680), (243, 23512),

Gene: Madeline_35 Start: 31541, Stop: 30279, Start Num: 16

Candidate Starts for Madeline_35:

(Start: 16 @31541 has 29 MA's), (31, 31385), (67, 31202), (74, 31166), (91, 31106), (93, 31094), (102, 31049), (107, 31016), (117, 30974), (145, 30860), (154, 30806), (155, 30803), (171, 30728), (175, 30710), (176, 30707), (189, 30650), (210, 30533), (213, 30521), (220, 30482), (222, 30464), (231, 30404), (232, 30389), (235, 30377), (237, 30368), (246, 30329), (249, 30299),

Gene: Malibo_40 Start: 32774, Stop: 31605, Start Num: 16

Candidate Starts for Malibo_40:

(Start: 16 @32774 has 29 MA's), (66, 32450), (68, 32432), (91, 32345), (93, 32333), (102, 32288), (112, 32240), (113, 32234), (116, 32219), (117, 32216), (123, 32204), (140, 32132), (152, 32051), (189, 31901), (196, 31871), (213, 31814), (215, 31802), (220, 31775), (232, 31682), (237, 31661), (246, 31622), (247, 31613),

Gene: Mbo4_31 Start: 29712, Stop: 28447, Start Num: 5

Candidate Starts for Mbo4_31:

(5, 29712), (6, 29697), (Start: 15 @29658 has 32 MA's), (24, 29595), (28, 29538), (30, 29523), (43, 29448), (46, 29439), (56, 29412), (64, 29346), (70, 29310), (71, 29301), (76, 29265), (78, 29262), (81, 29253), (84, 29244), (88, 29226), (89, 29223), (93, 29208), (105, 29142), (109, 29127), (111, 29121), (124, 29076), (127, 29052), (129, 29043), (131, 29022), (134, 29007), (139, 28998), (143, 28974), (145, 28965), (147, 28956), (161, 28893), (165, 28875), (166, 28872), (171, 28830), (174, 28824), (176, 28809), (177, 28803), (185, 28779), (188, 28758), (203, 28707), (208, 28692), (211, 28674), (217, 28638), (220, 28626), (221, 28611), (228, 28563), (229, 28557), (231, 28545), (233, 28530), (235, 28518), (244, 28494), (245, 28488),

Gene: Melons_38 Start: 24495, Stop: 23308, Start Num: 15

Candidate Starts for Melons_38:

(4, 24585), (Start: 15 @24495 has 32 MA's), (73, 24141), (86, 24078), (91, 24066), (179, 23631), (213, 23496), (215, 23484), (243, 23328),

Gene: ModicumRichard_35 Start: 30420, Stop: 29293, Start Num: 15

Candidate Starts for ModicumRichard_35:

(1, 30900), (Start: 15 @30420 has 32 MA's), (22, 30366), (32, 30261), (67, 30090), (87, 30000), (96, 29964), (123, 29850), (130, 29811), (140, 29787), (158, 29691), (189, 29559), (201, 29514), (217, 29442), (237, 29316),

Gene: Morgana_35 Start: 30175, Stop: 29048, Start Num: 15

Candidate Starts for Morgana_35:

(1, 30832), (2, 30778), (Start: 15 @30175 has 32 MA's), (22, 30121), (67, 29845), (87, 29755), (96, 29719), (123, 29605), (130, 29566), (140, 29542), (158, 29446), (189, 29314), (201, 29269), (217, 29197), (237, 29071),

Gene: MrSmee_34 Start: 25508, Stop: 24390, Start Num: 14

Candidate Starts for MrSmee_34:

(Start: 14 @25508 has 1 MA's), (39, 25313), (49, 25283), (52, 25277), (58, 25247), (61, 25211), (68, 25178), (70, 25172), (73, 25157), (75, 25148), (90, 25091), (92, 25079), (93, 25076), (95, 25067), (97, 25055), (99, 25046), (110, 24986), (115, 24971), (133, 24905), (139, 24890), (142, 24872), (147, 24848), (148, 24845), (156, 24794), (167, 24770), (173, 24722), (175, 24707), (180, 24686), (182, 24680), (189, 24659), (237, 24419),

Gene: Mulch_39 Start: 31322, Stop: 30051, Start Num: 16

Candidate Starts for Mulch_39:

(Start: 16 @31322 has 29 MA's), (17, 31307), (27, 31205), (32, 31163), (35, 31151), (54, 31076), (63, 31001), (66, 30992), (68, 30974), (93, 30875), (94, 30872), (112, 30782), (139, 30677), (154, 30581), (157, 30575), (189, 30413), (215, 30272), (222, 30227), (230, 30176), (231, 30167), (232, 30152), (235, 30140), (239, 30128), (248, 30089),

Gene: Nadeem_39 Start: 31322, Stop: 30051, Start Num: 16

Candidate Starts for Nadeem_39:

(Start: 16 @31322 has 29 MA's), (17, 31307), (27, 31205), (32, 31163), (35, 31151), (54, 31076), (63, 31001), (66, 30992), (68, 30974), (93, 30875), (94, 30872), (112, 30782), (139, 30677), (154, 30581), (157, 30575), (189, 30413), (215, 30272), (222, 30227), (230, 30176), (231, 30167), (232, 30152), (235, 30140), (239, 30128), (248, 30089),

Gene: NancyRae_39 Start: 31331, Stop: 30060, Start Num: 16

Candidate Starts for NancyRae_39:

(Start: 16 @31331 has 29 MA's), (17, 31316), (27, 31214), (32, 31172), (35, 31160), (54, 31085), (63, 31010), (66, 31001), (68, 30983), (93, 30884), (94, 30881), (112, 30791), (139, 30686), (157, 30584), (163, 30566), (189, 30422), (215, 30281), (222, 30236), (230, 30185), (231, 30176), (235, 30149), (239, 30137), (248, 30098),

Gene: OBUpride_29 Start: 26514, Stop: 25279, Start Num: 9

Candidate Starts for OBUpride_29:

(Start: 9 @26514 has 2 MA's), (Start: 18 @26472 has 20 MA's), (26, 26406), (34, 26325), (41, 26286), (47, 26271), (50, 26265), (53, 26253), (59, 26226), (62, 26193), (72, 26136), (77, 26103), (79, 26100), (93, 26052), (100, 26010), (101, 26007), (104, 25983), (108, 25968), (114, 25944), (119, 25929), (126, 25890), (129, 25878), (136, 25839), (146, 25800), (152, 25752), (153, 25749), (168, 25677), (169, 25671), (170, 25659), (172, 25656), (174, 25650), (186, 25596), (188, 25578), (189, 25575), (194, 25548), (200, 25530), (205, 25524), (206, 25521), (214, 25479), (218, 25452), (220, 25446), (227, 25389), (238, 25326), (240, 25323),

Gene: ObLaDi_35 Start: 30398, Stop: 29271, Start Num: 15

Candidate Starts for ObLaDi_35:

(Start: 15 @30398 has 32 MA's), (22, 30344), (32, 30239), (67, 30068), (87, 29978), (96, 29942), (130, 29789), (140, 29765), (158, 29669), (189, 29537), (201, 29492), (217, 29420), (237, 29294),

Gene: Ohgeesy_38 Start: 32336, Stop: 31074, Start Num: 16

Candidate Starts for Ohgeesy_38:

(Start: 16 @32336 has 29 MA's), (31, 32180), (67, 31997), (74, 31961), (91, 31901), (93, 31889), (102, 31844), (107, 31811), (117, 31769), (154, 31601), (155, 31598), (171, 31523), (175, 31505), (176, 31502), (189, 31445), (210, 31328), (213, 31316), (222, 31259), (231, 31199), (232, 31184), (235, 31172), (237, 31163), (246, 31124),

Gene: Orcanus_34 Start: 24639, Stop: 23455, Start Num: 15

Candidate Starts for Orcanus_34:

(Start: 15 @24639 has 32 MA's), (46, 24420), (54, 24402), (73, 24285), (91, 24210), (93, 24198), (158, 23880), (176, 23787), (179, 23775), (184, 23757), (213, 23640), (219, 23604),

Gene: PantheRoc_37 Start: 30354, Stop: 29092, Start Num: 16

Candidate Starts for PantheRoc_37:

(Start: 16 @30354 has 29 MA's), (31, 30198), (67, 30015), (74, 29979), (91, 29919), (93, 29907), (102, 29862), (107, 29829), (117, 29787), (154, 29619), (155, 29616), (171, 29541), (175, 29523), (176, 29520), (189, 29463), (210, 29346), (213, 29334), (222, 29277), (231, 29217), (232, 29202), (235, 29190), (237, 29181), (246, 29142),

Gene: Parada_39 Start: 31322, Stop: 30051, Start Num: 16

Candidate Starts for Parada_39:

(Start: 16 @31322 has 29 MA's), (17, 31307), (27, 31205), (32, 31163), (35, 31151), (54, 31076), (63, 31001), (66, 30992), (68, 30974), (93, 30875), (94, 30872), (112, 30782), (139, 30677), (154, 30581), (157, 30575), (189, 30413), (215, 30272), (222, 30227), (230, 30176), (231, 30167), (232, 30152), (235, 30140), (239, 30128), (248, 30089),

Gene: PhluffyCoco_36 Start: 23912, Stop: 22719, Start Num: 15

Candidate Starts for PhluffyCoco_36:

(Start: 15 @23912 has 32 MA's), (91, 23483), (102, 23426), (151, 23174), (179, 23048), (182, 23036), (219, 22877), (231, 22796), (242, 22748),

Gene: PhriskyACE_36 Start: 30974, Stop: 29805, Start Num: 16

Candidate Starts for PhriskyACE_36:

(Start: 16 @30974 has 29 MA's), (33, 30812), (66, 30650), (68, 30632), (82, 30566), (90, 30548), (91, 30545), (93, 30533), (102, 30488), (109, 30449), (112, 30440), (116, 30419), (117, 30416), (140, 30332), (141, 30329), (149, 30272), (181, 30137), (189, 30101), (196, 30071), (213, 30014), (215, 30002), (217, 29987), (231, 29897), (232, 29882), (237, 29861), (246, 29822), (247, 29813),

Gene: Pimento_39 Start: 30980, Stop: 29709, Start Num: 16

Candidate Starts for Pimento_39:

(11, 31004), (Start: 16 @30980 has 29 MA's), (17, 30965), (27, 30863), (32, 30821), (35, 30809), (54, 30734), (63, 30659), (66, 30650), (68, 30632), (93, 30533), (94, 30530), (112, 30440), (134, 30344), (139, 30335), (154, 30239), (163, 30215), (189, 30071), (215, 29930), (222, 29885), (230, 29834), (231, 29825), (232, 29810), (235, 29798), (239, 29786), (248, 29747),

Gene: Pitbull_33 Start: 24636, Stop: 23518, Start Num: 14

Candidate Starts for Pitbull_33:

(8, 24666), (13, 24639), (Start: 14 @24636 has 1 MA's), (Start: 19 @24612 has 1 MA's), (39, 24441), (48, 24414), (68, 24306), (73, 24285), (75, 24276), (84, 24237), (90, 24219), (92, 24207), (93, 24204),

(97, 24183), (108, 24123), (115, 24099), (133, 24033), (139, 24018), (147, 23976), (167, 23898), (173, 23850), (175, 23835), (180, 23814), (182, 23808), (189, 23787), (228, 23601), (237, 23547),

Gene: Polka_36 Start: 23869, Stop: 22682, Start Num: 15

Candidate Starts for Polka_36:

(4, 23959), (Start: 15 @23869 has 32 MA's), (91, 23440), (179, 23005), (213, 22870),

Gene: Powerball_37 Start: 30563, Stop: 29394, Start Num: 16

Candidate Starts for Powerball_37:

(Start: 16 @30563 has 29 MA's), (54, 30320), (71, 30203), (83, 30149), (86, 30143), (91, 30131), (93, 30119), (112, 30026), (113, 30020), (123, 29990), (139, 29921), (140, 29918), (145, 29888), (152, 29837), (171, 29765), (213, 29603), (215, 29591), (228, 29504), (230, 29495), (237, 29450), (246, 29411),

Gene: REQ3_01 Start: 1320, Stop: 82, Start Num: 5

Candidate Starts for REQ3_01:

(3, 1395), (5, 1320), (24, 1203), (29, 1137), (37, 1083), (38, 1074), (40, 1068), (59, 1002), (69, 927), (81, 861), (89, 831), (93, 816), (95, 807), (103, 765), (106, 747), (117, 702), (118, 699), (124, 669), (127, 642), (129, 633), (137, 591), (139, 588), (145, 555), (156, 492), (165, 465), (171, 423), (174, 417), (176, 402), (177, 396), (185, 378), (188, 360), (189, 357), (191, 342), (199, 315), (208, 294), (217, 240), (227, 171), (228, 165), (239, 108), (244, 96),

Gene: RedFox_36 Start: 23911, Stop: 22718, Start Num: 15

Candidate Starts for RedFox_36:

(Start: 15 @23911 has 32 MA's), (91, 23482), (102, 23425), (105, 23401), (151, 23173), (179, 23047), (182, 23035), (187, 23014), (219, 22876), (231, 22795), (242, 22747),

Gene: Renna12_35 Start: 23953, Stop: 22760, Start Num: 15

Candidate Starts for Renna12_35:

(Start: 15 @23953 has 32 MA's), (55, 23710), (91, 23524), (102, 23467), (105, 23443), (151, 23215), (179, 23089), (182, 23077), (242, 22789),

Gene: Ruchi_33 Start: 24704, Stop: 23520, Start Num: 15

Candidate Starts for Ruchi_33:

(Start: 15 @24704 has 32 MA's), (46, 24485), (73, 24350), (91, 24275), (94, 24260), (133, 24059), (176, 23852), (179, 23840), (184, 23822), (187, 23807), (213, 23705), (217, 23678), (219, 23669),

Gene: Ruthy_39 Start: 33142, Stop: 31883, Start Num: 16

Candidate Starts for Ruthy_39:

(Start: 16 @33142 has 29 MA's), (63, 32821), (91, 32707), (93, 32695), (112, 32602), (117, 32578), (154, 32410), (155, 32407), (175, 32314), (176, 32311), (189, 32254), (210, 32137), (213, 32125), (222, 32068), (232, 31993), (235, 31981), (246, 31933),

Gene: Sidious_37 Start: 31771, Stop: 30602, Start Num: 16

Candidate Starts for Sidious_37:

(Start: 16 @31771 has 29 MA's), (65, 31447), (71, 31411), (83, 31357), (86, 31351), (91, 31339), (93, 31327), (112, 31234), (113, 31228), (123, 31198), (139, 31129), (140, 31126), (145, 31096), (152, 31045), (171, 30973), (189, 30898), (213, 30811), (215, 30799), (228, 30712), (230, 30703), (237, 30658), (246, 30619),

Gene: Suerte_34 Start: 29564, Stop: 28395, Start Num: 16

Candidate Starts for Suerte_34:

(Start: 16 @29564 has 29 MA's), (33, 29402), (66, 29240), (68, 29222), (82, 29156), (90, 29138), (93, 29123), (102, 29078), (109, 29039), (112, 29030), (116, 29009), (117, 29006), (140, 28922), (178, 28739), (181, 28727), (189, 28691), (196, 28661), (213, 28604), (215, 28592), (217, 28577), (231, 28487), (237, 28451), (246, 28412), (247, 28403),

Gene: TPA4_37 Start: 32608, Stop: 31376, Start Num: 16

Candidate Starts for TPA4_37:

(12, 32614), (Start: 16 @32608 has 29 MA's), (93, 32161), (102, 32116), (128, 32005), (140, 31960), (150, 31879), (160, 31855), (162, 31849), (164, 31831), (179, 31741), (198, 31654), (209, 31603), (210, 31582), (213, 31570), (228, 31471), (231, 31453), (235, 31426),

Gene: TaylorSipht_34 Start: 24061, Stop: 22877, Start Num: 15

Candidate Starts for TaylorSipht_34:

(Start: 15 @24061 has 32 MA's), (73, 23707), (86, 23644), (91, 23632), (94, 23617), (125, 23464), (151, 23323), (158, 23302), (176, 23209), (179, 23197), (217, 23035), (219, 23026),

Gene: Tortellini_32 Start: 30878, Stop: 29682, Start Num: 10

Candidate Starts for Tortellini_32:

(Start: 10 @30878 has 2 MA's), (49, 30632), (58, 30599), (83, 30461), (85, 30455), (89, 30446), (93, 30434), (98, 30404), (120, 30305), (132, 30233), (139, 30212), (145, 30179), (151, 30128), (152, 30122), (173, 30029), (190, 29954), (195, 29933), (211, 29876), (213, 29867), (217, 29840), (220, 29828), (226, 29789), (232, 29735), (237, 29714),

Gene: Ubuntu_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Ubuntu_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: VanLee_32 Start: 27924, Stop: 26788, Start Num: 16

Candidate Starts for VanLee_32:

(Start: 16 @27924 has 29 MA's), (22, 27870), (25, 27852), (45, 27702), (60, 27630), (91, 27489), (93, 27477), (94, 27474), (96, 27462), (108, 27393), (139, 27291), (140, 27288), (145, 27258), (202, 27015), (204, 27012), (212, 26976), (216, 26955), (241, 26808),

Gene: Vasanti_37 Start: 29057, Stop: 27888, Start Num: 16

Candidate Starts for Vasanti_37:

(Start: 16 @29057 has 29 MA's), (54, 28814), (65, 28733), (71, 28697), (74, 28685), (83, 28643), (86, 28637), (91, 28625), (93, 28613), (109, 28529), (112, 28520), (113, 28514), (123, 28484), (139, 28415), (140, 28412), (145, 28382), (152, 28331), (171, 28259), (178, 28229), (213, 28097), (215, 28085), (228, 27998), (230, 27989), (237, 27944), (246, 27905),

Gene: Vulpecula_33 Start: 24379, Stop: 23195, Start Num: 15

Candidate Starts for Vulpecula_33:

(Start: 15 @24379 has 32 MA's), (46, 24160), (73, 24025), (91, 23950), (94, 23935), (133, 23734), (176, 23527), (179, 23515), (184, 23497), (187, 23482), (213, 23380), (217, 23353), (219, 23344),

Gene: Webster2_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Webster2_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: WheatThin_39 Start: 31322, Stop: 30051, Start Num: 16

Candidate Starts for WheatThin_39:

(Start: 16 @31322 has 29 MA's), (17, 31307), (27, 31205), (32, 31163), (35, 31151), (54, 31076), (63, 31001), (66, 30992), (68, 30974), (93, 30875), (94, 30872), (112, 30782), (139, 30677), (154, 30581), (157, 30575), (189, 30413), (215, 30272), (222, 30227), (230, 30176), (231, 30167), (232, 30152), (235, 30140), (239, 30128), (248, 30089),

Gene: Wishmaker_29 Start: 26478, Stop: 25285, Start Num: 18

Candidate Starts for Wishmaker_29:

(Start: 9 @26520 has 2 MA's), (Start: 18 @26478 has 20 MA's), (26, 26412), (34, 26331), (41, 26292), (47, 26277), (50, 26271), (53, 26259), (59, 26232), (62, 26199), (72, 26142), (77, 26109), (79, 26106), (93, 26058), (100, 26016), (101, 26013), (104, 25989), (108, 25974), (114, 25950), (119, 25935), (126, 25896), (129, 25884), (136, 25845), (146, 25806), (152, 25758), (153, 25755), (168, 25683), (169, 25677), (170, 25665), (172, 25662), (174, 25656), (186, 25602), (188, 25584), (189, 25581), (194, 25554), (200, 25536), (205, 25530), (206, 25527), (214, 25485), (218, 25458), (220, 25452), (227, 25395), (238, 25332), (240, 25329),

Gene: Xavia_34 Start: 31565, Stop: 30369, Start Num: 10

Candidate Starts for Xavia_34:

(Start: 10 @31565 has 2 MA's), (49, 31319), (58, 31286), (83, 31148), (85, 31142), (89, 31133), (93, 31121), (98, 31091), (120, 30992), (132, 30920), (145, 30866), (151, 30815), (152, 30809), (173, 30716), (177, 30692), (190, 30641), (195, 30620), (211, 30563), (213, 30554), (217, 30527), (220, 30515), (226, 30476), (232, 30422), (237, 30401),

Gene: Yeezy_36 Start: 30168, Stop: 28906, Start Num: 16

Candidate Starts for Yeezy_36:

(Start: 16 @30168 has 29 MA's), (31, 30012), (67, 29829), (74, 29793), (91, 29733), (93, 29721), (102, 29676), (107, 29643), (117, 29601), (154, 29433), (155, 29430), (159, 29424), (171, 29355), (175, 29337), (176, 29334), (189, 29277), (210, 29160), (213, 29148), (222, 29091), (231, 29031), (232, 29016), (235, 29004), (237, 28995), (246, 28956), (249, 28926),