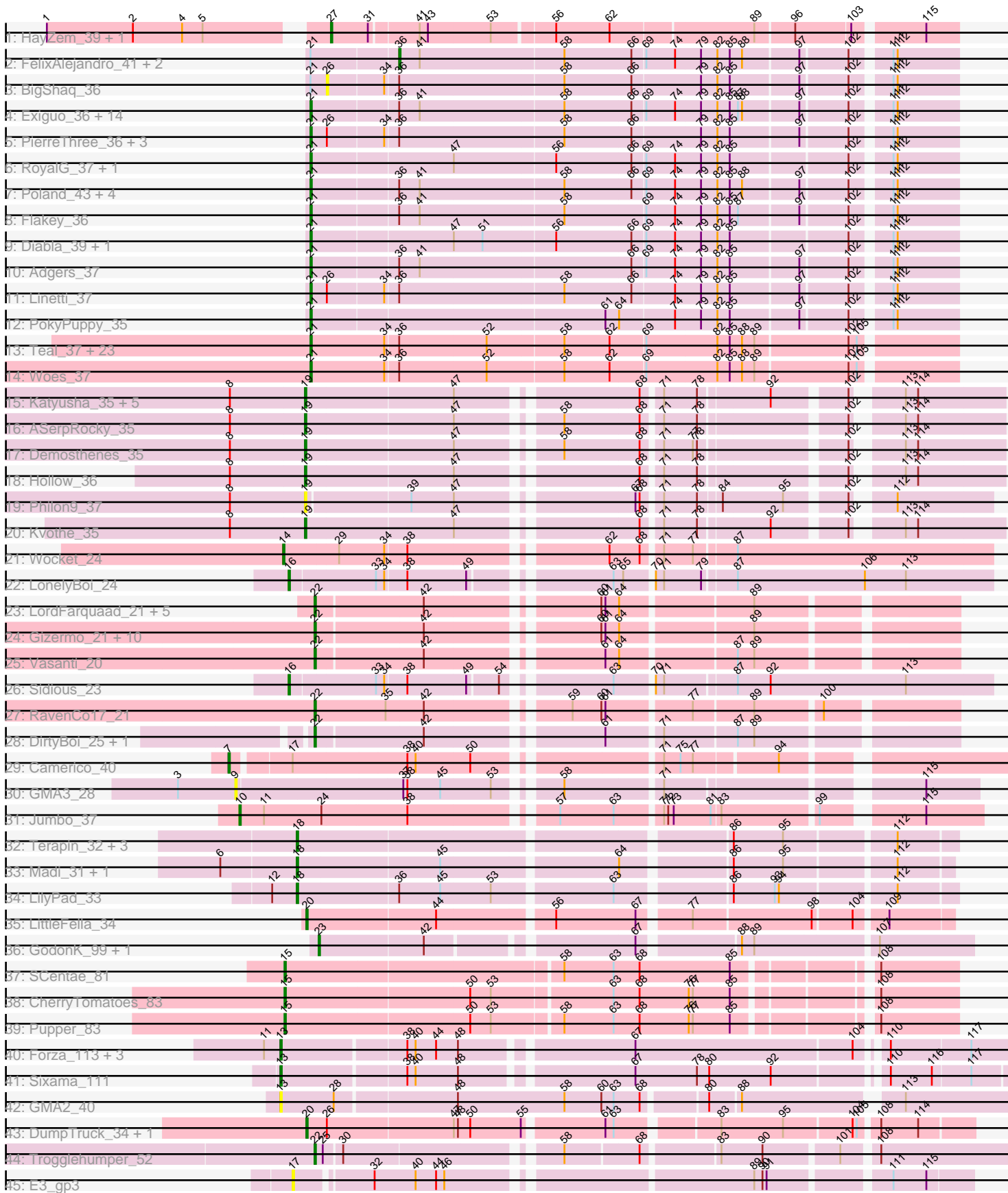


Pham 171296



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 171296 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171296 has 124 members, 15 are drafts.

Phages represented in each track:

- Track 1 : HayZem_39, Amore2_40
- Track 2 : FelixAlejandro_41, Msay19_41, Butterball_40
- Track 3 : BigShaq_36
- Track 4 : Exiguo_36, Jellybones_40, John316_40, Beaver_40, Squibbles_35, Ekhein_37, RemRem_37, Lizzo_36, Hotorobo_36, Breezic_36, CathyBurgh_35, Sam12_36, GourdThymes_36, Gorko_36, Monty_35
- Track 5 : PierreThree_36, Chelms_36, BenoitCattle_37, Dakiti_36
- Track 6 : RoyalG_37, SteveFrench_36
- Track 7 : Poland_43, Boneham_40, Sombrero_36, BirksAndSocks_40, Barbochs_36
- Track 8 : Flakey_36
- Track 9 : Diabla_39, Eggsie_36
- Track 10 : Adgers_37
- Track 11 : Linetti_37
- Track 12 : PokyPuppy_35
- Track 13 : Teal_37, Jams_37, Guillaume_37, Luker_38, Sticker17_37, Nimi13_37, Minos_38, Shelley_37, Hail2Pitt_37, Harambe_37, Lahirium_37, Anamika_37, Neevie_37, GalacticEye_37, Hello_37, Berries_37, Charianelly_37, Bianmat_37, Damp_37, MrWormie_37, Jormungandr_37, Newt_38, Kaseim_38, Lidong_37
- Track 14 : Woes_37
- Track 15 : Katyusha_35, Tredge_35, Teatealatte_35, Benczkowski14_35, Niagara_35, Teech_35
- Track 16 : ASerpRocky_35
- Track 17 : Demosthenes_35
- Track 18 : Hollow_36
- Track 19 : Philon9_37
- Track 20 : Kvothe_35
- Track 21 : Wocket_24
- Track 22 : LonelyBoi_24
- Track 23 : LordFarquaad_21, Sahara_20, Attis_21, Bjanes7_21, Yeet412_21, SoilAssassin_21
- Track 24 : Gizermo_21, Savage_21, Haley23_21, GemG_21, Cynthia_21, Ebert_21, Sproutie_21, Whiteclaw_21, Mocha12_21, Clap_21, TuertoX_21
- Track 25 : Vasanti_20
- Track 26 : Sidious_23
- Track 27 : RavenCo17_21
- Track 28 : DirtyBoi_25, Hedwig_25

- Track 29 : Camerico_40
- Track 30 : GMA3_28
- Track 31 : Jumbo_37
- Track 32 : Terapin_32, Beyoncage_31, Djokovic_31, BiteSize_31
- Track 33 : Madi_31, Sienna_31
- Track 34 : LilyPad_33
- Track 35 : LittleFella_34
- Track 36 : GodonK_99, Phendrix_95
- Track 37 : SCentae_81
- Track 38 : CherryTomatoes_83
- Track 39 : Pupper_83
- Track 40 : Forza_113, BlueNGold_112, Boopy_113, Mareelih_111
- Track 41 : Sixama_111
- Track 42 : GMA2_40
- Track 43 : DumpTruck_34, Xenia2_31
- Track 44 : Trogglehumper_52
- Track 45 : E3_gp3

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

The start number called the most often in the published annotations is 21, it was called in 49 of the 109 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adgers_37, Anamika_37, Barbochs_36, Beaver_40, BenoitCattle_37, Berries_37, Bianmat_37, BirksAndSocks_40, Boneham_40, Breezic_36, CathyBurgh_35, Charianelly_37, Chelms_36, Dakiti_36, Damp_37, Diabla_39, Eggsie_36, Ekhein_37, Exiguo_36, Flakey_36, GalacticEye_37, Gorko_36, GourdThymes_36, Guillaume_37, Hail2Pitt_37, Harambe_37, Hello_37, Hotorobo_36, Jams_37, Jellybones_40, John316_40, Jormungandr_37, Kaseim_38, Lahirium_37, Lidong_37, Linetti_37, Lizzo_36, Luker_38, Minos_38, Monty_35, MrWormie_37, Neoevie_37, Newt_38, Nimi13_37, PierreThree_36, PokyPuppy_35, Poland_43, RemRem_37, RoyalG_37, Sam12_36, Shelley_37, Sombrero_36, Squibbles_35, SteveFrench_36, Sticker17_37, Teal_37, Woes_37,

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

- BigShaq_36, Butterball_40, FelixAlejandro_41, Msay19_41,

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

- ASerpRocky_35, Amore2_40, Attis_21, Benczkowski14_35, Beyoncage_31, BiteSize_31, Bjaness7_21, BlueNGold_112, Boopy_113, Camerico_40, CherryTomatoes_83, Clap_21, Cynthia_21, Demosthenes_35, DirtyBoi_25, Djokovic_31, DumpTruck_34, E3_gp3, Ebert_21, Forza_113, GMA2_40, GMA3_28, GemG_21, Gizermo_21, GodonK_99, Haley23_21, HayZem_39, Hedwig_25, Hollow_36, Jumbo_37, Katyusha_35, Kvothe_35, LilyPad_33, LittleFella_34, LonelyBoi_24, LordFarquaad_21, Madi_31, Mareelih_111, Mocha12_21, Niagara_35, Phendrix_95, Philon9_37, Pupper_83, RavenCo17_21, SCentae_81, Sahara_20, Savage_21, Sidious_23, Sienna_31, Sixama_111, SoilAssassin_21, Sproutie_21, Teatealatte_35, Teech_35, Terapin_32, Tredge_35, Trogglehumper_52, TuertoX_21, Vasanti_20, Whiteclaw_21, Wocket_24, Xenia2_31, Yeet412_21,

Summary by start number:

Start 7:

- Found in 1 of 124 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Camerico_40 (DF),

Start 9:

- Found in 1 of 124 (0.8%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA3_28 (DF2),

Start 10:

- Found in 1 of 124 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jumbo_37 (DF3),

Start 13:

- Found in 6 of 124 (4.8%) of genes in pham
- Manual Annotations of this start: 5 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold_112 (DS), Boopy_113 (DS), Forza_113 (DS), GMA2_40 (DS), Mareelih_111 (DS), Sixama_111 (DS),

Start 14:

- Found in 1 of 124 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wocket_24 (CV),

Start 15:

- Found in 3 of 124 (2.4%) of genes in pham
- Manual Annotations of this start: 3 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryTomatoes_83 (DO), Pupper_83 (DO), SCentae_81 (DO),

Start 16:

- Found in 2 of 124 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LonelyBoi_24 (CY), Sidious_23 (CZ7),

Start 17:

- Found in 2 of 124 (1.6%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: E3_gp3 (singleton),

Start 18:

- Found in 7 of 124 (5.6%) of genes in pham
- Manual Annotations of this start: 7 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beyoncage_31 (DG1), BiteSize_31 (DG1), Djokovic_31 (DG1), LilyPad_33 (DG1), Madi_31 (DG1), Sienna_31 (DG1), Terapin_32 (DG1),

Start 19:

- Found in 11 of 124 (8.9%) of genes in pham
- Manual Annotations of this start: 9 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky_35 (CS4), Benczkowski14_35 (CS4), Demosthenes_35 (CS4), Hollow_36 (CS4), Katyusha_35 (CS4), Kvothe_35 (CS4), Niagara_35 (CS4), Philon9_37 (CS4), Teatealatte_35 (CS4), Teech_35 (CS4), Tredge_35 (CS4),

Start 20:

- Found in 3 of 124 (2.4%) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DumpTruck_34 (DV), LittleFella_34 (DG2), Xenia2_31 (DV),

Start 21:

- Found in 61 of 124 (49.2%) of genes in pham
- Manual Annotations of this start: 49 of 109
- Called 93.4% of time when present
- Phage (with cluster) where this start called: Adgers_37 (CS2), Anamika_37 (CS3), Barbochs_36 (CS2), Beaver_40 (CS2), BenoitCattle_37 (CS2), Berries_37 (CS3), Bianmat_37 (CS3), BirksAndSocks_40 (CS2), Boneham_40 (CS2), Breezic_36 (CS2), CathyBurgh_35 (CS2), Charianelly_37 (CS3), Chelms_36 (CS2), Dakiti_36 (CS2), Damp_37 (CS3), Diabla_39 (CS2), Eggsie_36 (CS2), Ekhein_37 (CS2), Exiguo_36 (CS2), Flakey_36 (CS2), GalacticEye_37 (CS3), Gorko_36 (CS2), GourdThymes_36 (CS2), Guillaume_37 (CS3), Hail2Pitt_37 (CS3), Harambe_37 (CS3), Hello_37 (CS3), Hotorobo_36 (CS2), Jams_37 (CS3), Jellybones_40 (CS2), John316_40 (CS2), Jormungandr_37 (CS3), Kaseim_38 (CS3), Lahirium_37 (CS3), Lidong_37 (CS3), Linetti_37 (CS2), Lizzo_36 (CS2), Luker_38 (CS3), Minos_38 (CS3), Monty_35 (CS2), MrWormie_37 (CS3), Neoevie_37 (CS3), Newt_38 (CS3), Nimi13_37 (CS3), PierreThree_36 (CS2), PokyPuppy_35 (CS2), Poland_43 (CS2), RemRem_37 (CS2), RoyalG_37 (CS2), Sam12_36 (CS2), Shelley_37 (CS3), Sombrero_36 (CS2), Squibbles_35 (CS2), SteveFrench_36 (CS2), Sticker17_37 (CS3), Teal_37 (CS3), Woes_37 (CS3),

Start 22:

- Found in 22 of 124 (17.7%) of genes in pham
- Manual Annotations of this start: 22 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Attis_21 (CZ2), Bjanes7_21 (CZ2), Clap_21 (CZ2), Cynthia_21 (CZ2), DirtyBoi_25 (DB), Ebert_21 (CZ2), GemG_21 (CZ2), Gizermo_21 (CZ2), Haley23_21 (CZ2), Hedwig_25 (DB), LordFarquaad_21 (CZ2), Mocha12_21 (CZ2), RavenCo17_21 (CZ8), Sahara_20 (CZ2), Savage_21 (CZ2), SoilAssassin_21 (CZ2), Sproutie_21 (CZ2), Trogglehumper_52 (singleton),

TuertoX_21 (CZ2), Vasanti_20 (CZ2), Whiteclaw_21 (CZ2), Yeet412_21 (CZ2),

Start 23:

- Found in 2 of 124 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GodonK_99 (DK), Phendrix_95 (DK),

Start 26:

- Found in 8 of 124 (6.5%) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: BigShaq_36 (CS2),

Start 27:

- Found in 2 of 124 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amore2_40 (CS1), HayZem_39 (CS1),

Start 36:

- Found in 57 of 124 (46.0%) of genes in pham
- Manual Annotations of this start: 3 of 109
- Called 5.3% of time when present
- Phage (with cluster) where this start called: Butterball_40 (CS2), FelixAlejandro_41 (CS2), Msay19_41 (CS2),

Summary by clusters:

There are 20 clusters represented in this pham: DO, singleton, DK, CZ2, DB, CZ7, DF3, CV, DG2, DF, CY, DG1, CZ8, DV, CS4, DF2, CS1, DS, CS3, CS2,

Info for manual annotations of cluster CS1:

- Start number 27 was manually annotated 2 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 21 was manually annotated 26 times for cluster CS2.
- Start number 36 was manually annotated 3 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 21 was manually annotated 23 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 19 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CV:

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

Info for manual annotations of cluster CY:

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

Info for manual annotations of cluster CZ2:

- Start number 22 was manually annotated 18 times for cluster CZ2.

Info for manual annotations of cluster CZ7:

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

Info for manual annotations of cluster CZ8:

- Start number 22 was manually annotated 1 time for cluster CZ8.

Info for manual annotations of cluster DB:

- Start number 22 was manually annotated 2 times for cluster DB.

Info for manual annotations of cluster DF:

- Start number 7 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:

- Start number 10 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DG1:

- Start number 18 was manually annotated 7 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 20 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DK:

- Start number 23 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster DO:

- Start number 15 was manually annotated 3 times for cluster DO.

Info for manual annotations of cluster DS:

- Start number 13 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster DV:

- Start number 20 was manually annotated 1 time for cluster DV.

Gene Information:

Gene: ASerpRocky_35 Start: 41389, Stop: 41841, Start Num: 19

Candidate Starts for ASerpRocky_35:

(8, 41335), (Start: 19 @41389 has 9 MA's), (47, 41494), (58, 41557), (68, 41611), (71, 41623), (78, 41647), (102, 41743), (113, 41770), (114, 41779),

Gene: Adgers_37 Start: 39896, Stop: 40342, Start Num: 21

Candidate Starts for Adgers_37:

(Start: 21 @39896 has 49 MA's), (Start: 36 @39956 has 3 MA's), (41, 39971), (66, 40121), (69, 40130), (74, 40151), (79, 40169), (82, 40181), (85, 40190), (97, 40238), (102, 40271), (111, 40295), (112, 40298),

Gene: Amore2_40 Start: 40418, Stop: 40843, Start Num: 27

Candidate Starts for Amore2_40:

(1, 40229), (2, 40292), (4, 40328), (5, 40343), (Start: 27 @40418 has 2 MA's), (31, 40445), (41, 40478), (43, 40484), (53, 40529), (56, 40571), (62, 40610), (89, 40709), (96, 40736), (103, 40775), (115, 40820),

Gene: Anamika_37 Start: 42271, Stop: 42723, Start Num: 21

Candidate Starts for Anamika_37:

(Start: 21 @42271 has 49 MA's), (34, 42325), (Start: 36 @42334 has 3 MA's), (52, 42397), (58, 42451), (62, 42484), (69, 42508), (82, 42559), (85, 42568), (88, 42577), (89, 42586), (102, 42652), (105, 42658),

Gene: Attis_21 Start: 18545, Stop: 18967, Start Num: 22

Candidate Starts for Attis_21:

(Start: 22 @18545 has 22 MA's), (42, 18620), (60, 18731), (61, 18734), (64, 18743), (89, 18833),

Gene: Barbochs_36 Start: 39735, Stop: 40181, Start Num: 21

Candidate Starts for Barbochs_36:

(Start: 21 @39735 has 49 MA's), (Start: 36 @39795 has 3 MA's), (41, 39810), (58, 39912), (66, 39960), (69, 39969), (74, 39990), (79, 40008), (82, 40020), (85, 40029), (88, 40038), (97, 40077), (102, 40110), (111, 40134), (112, 40137),

Gene: Beaver_40 Start: 41782, Stop: 42228, Start Num: 21

Candidate Starts for Beaver_40:

(Start: 21 @41782 has 49 MA's), (Start: 36 @41842 has 3 MA's), (41, 41857), (58, 41959), (66, 42007), (69, 42016), (74, 42037), (79, 42055), (82, 42067), (85, 42076), (87, 42082), (88, 42085), (97, 42124), (102, 42157), (111, 42181), (112, 42184),

Gene: Benczkowski14_35 Start: 41422, Stop: 41874, Start Num: 19

Candidate Starts for Benczkowski14_35:

(8, 41368), (Start: 19 @41422 has 9 MA's), (47, 41527), (68, 41644), (71, 41656), (78, 41680), (92, 41728), (102, 41776), (113, 41803), (114, 41812),

Gene: BenoitCattle_37 Start: 39840, Stop: 40286, Start Num: 21

Candidate Starts for BenoitCattle_37:

(Start: 21 @39840 has 49 MA's), (26, 39852), (34, 39891), (Start: 36 @39900 has 3 MA's), (58, 40017), (66, 40065), (79, 40113), (82, 40125), (85, 40134), (97, 40182), (102, 40215), (111, 40239), (112, 40242),

Gene: Berries_37 Start: 42242, Stop: 42694, Start Num: 21

Candidate Starts for Berries_37:

(Start: 21 @42242 has 49 MA's), (34, 42296), (Start: 36 @42305 has 3 MA's), (52, 42368), (58, 42422), (62, 42455), (69, 42479), (82, 42530), (85, 42539), (88, 42548), (89, 42557), (102, 42623), (105, 42629),

Gene: Beyoncage_31 Start: 27530, Stop: 27976, Start Num: 18

Candidate Starts for Beyoncage_31:

(Start: 18 @27530 has 7 MA's), (86, 27824), (95, 27860), (112, 27935),

Gene: Bianmat_37 Start: 42282, Stop: 42734, Start Num: 21

Candidate Starts for Bianmat_37:

(Start: 21 @42282 has 49 MA's), (34, 42336), (Start: 36 @42345 has 3 MA's), (52, 42408), (58, 42462), (62, 42495), (69, 42519), (82, 42570), (85, 42579), (88, 42588), (89, 42597), (102, 42663), (105, 42669),

Gene: BigShaq_36 Start: 39857, Stop: 40291, Start Num: 26

Candidate Starts for BigShaq_36:

(Start: 21 @39845 has 49 MA's), (26, 39857), (34, 39896), (Start: 36 @39905 has 3 MA's), (58, 40022), (66, 40070), (79, 40118), (82, 40130), (85, 40139), (97, 40187), (102, 40220), (111, 40244), (112, 40247),

Gene: BirksAndSocks_40 Start: 41760, Stop: 42206, Start Num: 21

Candidate Starts for BirksAndSocks_40:

(Start: 21 @41760 has 49 MA's), (Start: 36 @41820 has 3 MA's), (41, 41835), (58, 41937), (66, 41985), (69, 41994), (74, 42015), (79, 42033), (82, 42045), (85, 42054), (88, 42063), (97, 42102), (102, 42135), (111, 42159), (112, 42162),

Gene: BiteSize_31 Start: 27530, Stop: 27976, Start Num: 18

Candidate Starts for BiteSize_31:

(Start: 18 @27530 has 7 MA's), (86, 27824), (95, 27860), (112, 27935),

Gene: Bjaner7_21 Start: 18545, Stop: 18967, Start Num: 22

Candidate Starts for Bjaner7_21:

(Start: 22 @18545 has 22 MA's), (42, 18620), (60, 18731), (61, 18734), (64, 18743), (89, 18833),

Gene: BlueNGold_112 Start: 69605, Stop: 70102, Start Num: 13

Candidate Starts for BlueNGold_112:

(11, 69593), (Start: 13 @69605 has 5 MA's), (38, 69692), (40, 69698), (44, 69713), (48, 69728), (67, 69842), (104, 69998), (110, 70013), (117, 70070),

Gene: Boneham_40 Start: 41759, Stop: 42205, Start Num: 21

Candidate Starts for Boneham_40:

(Start: 21 @41759 has 49 MA's), (Start: 36 @41819 has 3 MA's), (41, 41834), (58, 41936), (66, 41984), (69, 41993), (74, 42014), (79, 42032), (82, 42044), (85, 42053), (88, 42062), (97, 42101), (102, 42134), (111, 42158), (112, 42161),

Gene: Boopy_113 Start: 69617, Stop: 70114, Start Num: 13

Candidate Starts for Boopy_113:

(11, 69605), (Start: 13 @69617 has 5 MA's), (38, 69704), (40, 69710), (44, 69725), (48, 69740), (67, 69854), (104, 70010), (110, 70025), (117, 70082),

Gene: Breezic_36 Start: 39748, Stop: 40194, Start Num: 21

Candidate Starts for Breezic_36:

(Start: 21 @39748 has 49 MA's), (Start: 36 @39808 has 3 MA's), (41, 39823), (58, 39925), (66, 39973), (69, 39982), (74, 40003), (79, 40021), (82, 40033), (85, 40042), (87, 40048), (88, 40051), (97, 40090), (102, 40123), (111, 40147), (112, 40150),

Gene: Butterball_40 Start: 41819, Stop: 42205, Start Num: 36

Candidate Starts for Butterball_40:

(Start: 21 @41759 has 49 MA's), (Start: 36 @41819 has 3 MA's), (41, 41834), (58, 41936), (66, 41984), (69, 41993), (74, 42014), (79, 42032), (82, 42044), (85, 42053), (88, 42062), (97, 42101), (102, 42134), (111, 42158), (112, 42161),

Gene: Camerico_40 Start: 43256, Stop: 43774, Start Num: 7

Candidate Starts for Camerico_40:

(Start: 7 @43256 has 1 MA's), (17, 43295), (38, 43376), (40, 43382), (50, 43421), (71, 43538), (75, 43550), (77, 43559), (94, 43616),

Gene: CathyBurgh_35 Start: 40602, Stop: 41048, Start Num: 21

Candidate Starts for CathyBurgh_35:

(Start: 21 @40602 has 49 MA's), (Start: 36 @40662 has 3 MA's), (41, 40677), (58, 40779), (66, 40827), (69, 40836), (74, 40857), (79, 40875), (82, 40887), (85, 40896), (87, 40902), (88, 40905), (97, 40944), (102, 40977), (111, 41001), (112, 41004),

Gene: Charianelly_37 Start: 41992, Stop: 42444, Start Num: 21

Candidate Starts for Charianelly_37:

(Start: 21 @41992 has 49 MA's), (34, 42046), (Start: 36 @42055 has 3 MA's), (52, 42118), (58, 42172), (62, 42205), (69, 42229), (82, 42280), (85, 42289), (88, 42298), (89, 42307), (102, 42373), (105, 42379),

Gene: Chelms_36 Start: 39848, Stop: 40294, Start Num: 21

Candidate Starts for Chelms_36:

(Start: 21 @39848 has 49 MA's), (26, 39860), (34, 39899), (Start: 36 @39908 has 3 MA's), (58, 40025), (66, 40073), (79, 40121), (82, 40133), (85, 40142), (97, 40190), (102, 40223), (111, 40247), (112, 40250),

Gene: CherryTomatoes_83 Start: 31959, Stop: 32417, Start Num: 15

Candidate Starts for CherryTomatoes_83:

(Start: 15 @31959 has 3 MA's), (50, 32091), (53, 32106), (63, 32190), (68, 32208), (76, 32244), (77, 32247), (85, 32274), (108, 32361),

Gene: Clap_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Clap_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Cynthia_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Cynthia_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Dakiti_36 Start: 40716, Stop: 41162, Start Num: 21

Candidate Starts for Dakiti_36:

(Start: 21 @40716 has 49 MA's), (26, 40728), (34, 40767), (Start: 36 @40776 has 3 MA's), (58, 40893), (66, 40941), (79, 40989), (82, 41001), (85, 41010), (97, 41058), (102, 41091), (111, 41115), (112, 41118),

Gene: Damp_37 Start: 41156, Stop: 41608, Start Num: 21

Candidate Starts for Damp_37:

(Start: 21 @41156 has 49 MA's), (34, 41210), (Start: 36 @41219 has 3 MA's), (52, 41282), (58, 41336), (62, 41369), (69, 41393), (82, 41444), (85, 41453), (88, 41462), (89, 41471), (102, 41537), (105, 41543),

Gene: Demosthenes_35 Start: 41362, Stop: 41814, Start Num: 19

Candidate Starts for Demosthenes_35:

(8, 41308), (Start: 19 @41362 has 9 MA's), (47, 41467), (58, 41530), (68, 41584), (71, 41596), (77, 41617), (78, 41620), (102, 41716), (113, 41743), (114, 41752),

Gene: Diabla_39 Start: 41597, Stop: 42043, Start Num: 21

Candidate Starts for Diabla_39:

(Start: 21 @41597 has 49 MA's), (47, 41696), (51, 41717), (56, 41768), (66, 41822), (69, 41831), (74, 41852), (79, 41870), (82, 41882), (85, 41891), (102, 41972), (111, 41996), (112, 41999),

Gene: DirtyBoi_25 Start: 21195, Stop: 21617, Start Num: 22

Candidate Starts for DirtyBoi_25:

(Start: 22 @21195 has 22 MA's), (42, 21270), (61, 21384), (71, 21420), (87, 21471), (89, 21483),

Gene: Djokovic_31 Start: 27529, Stop: 27975, Start Num: 18

Candidate Starts for Djokovic_31:

(Start: 18 @27529 has 7 MA's), (86, 27823), (95, 27859), (112, 27934),

Gene: DumpTruck_34 Start: 29956, Stop: 30408, Start Num: 20

Candidate Starts for DumpTruck_34:

(Start: 20 @29956 has 2 MA's), (26, 29971), (47, 30061), (48, 30064), (50, 30073), (55, 30109), (61, 30163), (63, 30169), (83, 30235), (95, 30280), (104, 30328), (105, 30331), (108, 30343), (114, 30370),

Gene: E3_gp3 Start: 798, Stop: 1244, Start Num: 17

Candidate Starts for E3_gp3:

(17, 798), (32, 849), (40, 879), (44, 894), (46, 900), (89, 1101), (90, 1107), (91, 1110), (111, 1188), (115, 1212),

Gene: Ebert_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Ebert_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Eggsie_36 Start: 39866, Stop: 40312, Start Num: 21

Candidate Starts for Eggsie_36:

(Start: 21 @39866 has 49 MA's), (47, 39965), (51, 39986), (56, 40037), (66, 40091), (69, 40100), (74, 40121), (79, 40139), (82, 40151), (85, 40160), (102, 40241), (111, 40265), (112, 40268),

Gene: Ekhein_37 Start: 39730, Stop: 40176, Start Num: 21

Candidate Starts for Ekhein_37:

(Start: 21 @39730 has 49 MA's), (Start: 36 @39790 has 3 MA's), (41, 39805), (58, 39907), (66, 39955), (69, 39964), (74, 39985), (79, 40003), (82, 40015), (85, 40024), (87, 40030), (88, 40033), (97, 40072), (102, 40105), (111, 40129), (112, 40132),

Gene: Exiguo_36 Start: 39742, Stop: 40188, Start Num: 21

Candidate Starts for Exiguo_36:

(Start: 21 @39742 has 49 MA's), (Start: 36 @39802 has 3 MA's), (41, 39817), (58, 39919), (66, 39967), (69, 39976), (74, 39997), (79, 40015), (82, 40027), (85, 40036), (87, 40042), (88, 40045), (97, 40084), (102, 40117), (111, 40141), (112, 40144),

Gene: FelixAlejandro_41 Start: 42017, Stop: 42403, Start Num: 36

Candidate Starts for FelixAlejandro_41:

(Start: 21 @41957 has 49 MA's), (Start: 36 @42017 has 3 MA's), (41, 42032), (58, 42134), (66, 42182), (69, 42191), (74, 42212), (79, 42230), (82, 42242), (85, 42251), (88, 42260), (97, 42299), (102, 42332), (111, 42356), (112, 42359),

Gene: Flakey_36 Start: 40606, Stop: 41052, Start Num: 21

Candidate Starts for Flakey_36:

(Start: 21 @40606 has 49 MA's), (Start: 36 @40666 has 3 MA's), (41, 40681), (58, 40783), (69, 40840), (74, 40861), (79, 40879), (82, 40891), (85, 40900), (87, 40906), (97, 40948), (102, 40981), (111, 41005), (112, 41008),

Gene: Forza_113 Start: 69533, Stop: 70030, Start Num: 13

Candidate Starts for Forza_113:

(11, 69521), (Start: 13 @69533 has 5 MA's), (38, 69620), (40, 69626), (44, 69641), (48, 69656), (67, 69770), (104, 69926), (110, 69941), (117, 69998),

Gene: GMA2_40 Start: 42184, Stop: 42681, Start Num: 13

Candidate Starts for GMA2_40:

(Start: 13 @42184 has 5 MA's), (28, 42223), (48, 42307), (58, 42385), (60, 42412), (63, 42421), (68, 42439), (80, 42481), (88, 42502), (113, 42607),

Gene: GMA3_28 Start: 36944, Stop: 37429, Start Num: 9

Candidate Starts for GMA3_28:

(3, 36902), (9, 36944), (37, 37061), (38, 37064), (45, 37088), (53, 37124), (58, 37160), (71, 37226), (115, 37391),

Gene: GalacticEye_37 Start: 41954, Stop: 42406, Start Num: 21

Candidate Starts for GalacticEye_37:

(Start: 21 @41954 has 49 MA's), (34, 42008), (Start: 36 @42017 has 3 MA's), (52, 42080), (58, 42134), (62, 42167), (69, 42191), (82, 42242), (85, 42251), (88, 42260), (89, 42269), (102, 42335), (105, 42341),

Gene: GemG_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for GemG_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Gizermo_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Gizermo_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: GodonK_99 Start: 60239, Stop: 60676, Start Num: 23

Candidate Starts for GodonK_99:

(Start: 23 @60239 has 2 MA's), (42, 60314), (67, 60449), (88, 60515), (89, 60524), (107, 60608),

Gene: Gorko_36 Start: 39734, Stop: 40180, Start Num: 21

Candidate Starts for Gorko_36:

(Start: 21 @39734 has 49 MA's), (Start: 36 @39794 has 3 MA's), (41, 39809), (58, 39911), (66, 39959), (69, 39968), (74, 39989), (79, 40007), (82, 40019), (85, 40028), (87, 40034), (88, 40037), (97, 40076), (102, 40109), (111, 40133), (112, 40136),

Gene: GourdThymes_36 Start: 40608, Stop: 41054, Start Num: 21

Candidate Starts for GourdThymes_36:

(Start: 21 @40608 has 49 MA's), (Start: 36 @40668 has 3 MA's), (41, 40683), (58, 40785), (66, 40833), (69, 40842), (74, 40863), (79, 40881), (82, 40893), (85, 40902), (87, 40908), (88, 40911), (97, 40950), (102, 40983), (111, 41007), (112, 41010),

Gene: Guillaume_37 Start: 42004, Stop: 42456, Start Num: 21

Candidate Starts for Guillaume_37:

(Start: 21 @42004 has 49 MA's), (34, 42058), (Start: 36 @42067 has 3 MA's), (52, 42130), (58, 42184), (62, 42217), (69, 42241), (82, 42292), (85, 42301), (88, 42310), (89, 42319), (102, 42385), (105, 42391),

Gene: Hail2Pitt_37 Start: 42480, Stop: 42932, Start Num: 21

Candidate Starts for Hail2Pitt_37:

(Start: 21 @42480 has 49 MA's), (34, 42534), (Start: 36 @42543 has 3 MA's), (52, 42606), (58, 42660), (62, 42693), (69, 42717), (82, 42768), (85, 42777), (88, 42786), (89, 42795), (102, 42861),

(105, 42867),

Gene: Haley23_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Haley23_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Harambe_37 Start: 42271, Stop: 42723, Start Num: 21

Candidate Starts for Harambe_37:

(Start: 21 @42271 has 49 MA's), (34, 42325), (Start: 36 @42334 has 3 MA's), (52, 42397), (58, 42451), (62, 42484), (69, 42508), (82, 42559), (85, 42568), (88, 42577), (89, 42586), (102, 42652), (105, 42658),

Gene: HayZem_39 Start: 40415, Stop: 40840, Start Num: 27

Candidate Starts for HayZem_39:

(1, 40226), (2, 40289), (4, 40325), (5, 40340), (Start: 27 @40415 has 2 MA's), (31, 40442), (41, 40475), (43, 40481), (53, 40526), (56, 40568), (62, 40607), (89, 40706), (96, 40733), (103, 40772), (115, 40817),

Gene: Hedwig_25 Start: 21191, Stop: 21613, Start Num: 22

Candidate Starts for Hedwig_25:

(Start: 22 @21191 has 22 MA's), (42, 21266), (61, 21380), (71, 21416), (87, 21467), (89, 21479),

Gene: Hello_37 Start: 42233, Stop: 42685, Start Num: 21

Candidate Starts for Hello_37:

(Start: 21 @42233 has 49 MA's), (34, 42287), (Start: 36 @42296 has 3 MA's), (52, 42359), (58, 42413), (62, 42446), (69, 42470), (82, 42521), (85, 42530), (88, 42539), (89, 42548), (102, 42614), (105, 42620),

Gene: Hollow_36 Start: 41768, Stop: 42220, Start Num: 19

Candidate Starts for Hollow_36:

(8, 41714), (Start: 19 @41768 has 9 MA's), (47, 41873), (68, 41990), (71, 42002), (78, 42026), (102, 42122), (113, 42149), (114, 42158),

Gene: Hotorobo_36 Start: 40613, Stop: 41059, Start Num: 21

Candidate Starts for Hotorobo_36:

(Start: 21 @40613 has 49 MA's), (Start: 36 @40673 has 3 MA's), (41, 40688), (58, 40790), (66, 40838), (69, 40847), (74, 40868), (79, 40886), (82, 40898), (85, 40907), (87, 40913), (88, 40916), (97, 40955), (102, 40988), (111, 41012), (112, 41015),

Gene: Jams_37 Start: 41442, Stop: 41894, Start Num: 21

Candidate Starts for Jams_37:

(Start: 21 @41442 has 49 MA's), (34, 41496), (Start: 36 @41505 has 3 MA's), (52, 41568), (58, 41622), (62, 41655), (69, 41679), (82, 41730), (85, 41739), (88, 41748), (89, 41757), (102, 41823), (105, 41829),

Gene: Jellybones_40 Start: 41818, Stop: 42264, Start Num: 21

Candidate Starts for Jellybones_40:

(Start: 21 @41818 has 49 MA's), (Start: 36 @41878 has 3 MA's), (41, 41893), (58, 41995), (66, 42043), (69, 42052), (74, 42073), (79, 42091), (82, 42103), (85, 42112), (87, 42118), (88, 42121), (97, 42160), (102, 42193), (111, 42217), (112, 42220),

Gene: John316_40 Start: 41771, Stop: 42217, Start Num: 21

Candidate Starts for John316_40:

(Start: 21 @41771 has 49 MA's), (Start: 36 @41831 has 3 MA's), (41, 41846), (58, 41948), (66, 41996), (69, 42005), (74, 42026), (79, 42044), (82, 42056), (85, 42065), (87, 42071), (88, 42074), (97, 42113), (102, 42146), (111, 42170), (112, 42173),

Gene: Jormungandr_37 Start: 41986, Stop: 42438, Start Num: 21

Candidate Starts for Jormungandr_37:

(Start: 21 @41986 has 49 MA's), (34, 42040), (Start: 36 @42049 has 3 MA's), (52, 42112), (58, 42166), (62, 42199), (69, 42223), (82, 42274), (85, 42283), (88, 42292), (89, 42301), (102, 42367), (105, 42373),

Gene: Jumbo_37 Start: 42278, Stop: 42769, Start Num: 10

Candidate Starts for Jumbo_37:

(Start: 10 @42278 has 1 MA's), (11, 42296), (24, 42338), (38, 42398), (57, 42491), (63, 42530), (71, 42560), (72, 42563), (73, 42566), (81, 42593), (83, 42599), (99, 42665), (115, 42728),

Gene: Kaseim_38 Start: 41427, Stop: 41879, Start Num: 21

Candidate Starts for Kaseim_38:

(Start: 21 @41427 has 49 MA's), (34, 41481), (Start: 36 @41490 has 3 MA's), (52, 41553), (58, 41607), (62, 41640), (69, 41664), (82, 41715), (85, 41724), (88, 41733), (89, 41742), (102, 41808), (105, 41814),

Gene: Katyusha_35 Start: 41422, Stop: 41874, Start Num: 19

Candidate Starts for Katyusha_35:

(8, 41368), (Start: 19 @41422 has 9 MA's), (47, 41527), (68, 41644), (71, 41656), (78, 41680), (92, 41728), (102, 41776), (113, 41803), (114, 41812),

Gene: Kvothe_35 Start: 41321, Stop: 41773, Start Num: 19

Candidate Starts for Kvothe_35:

(8, 41267), (Start: 19 @41321 has 9 MA's), (47, 41426), (68, 41543), (71, 41555), (78, 41579), (92, 41627), (102, 41675), (113, 41702), (114, 41711),

Gene: Lahirium_37 Start: 42508, Stop: 42960, Start Num: 21

Candidate Starts for Lahirium_37:

(Start: 21 @42508 has 49 MA's), (34, 42562), (Start: 36 @42571 has 3 MA's), (52, 42634), (58, 42688), (62, 42721), (69, 42745), (82, 42796), (85, 42805), (88, 42814), (89, 42823), (102, 42889), (105, 42895),

Gene: Lidong_37 Start: 42242, Stop: 42694, Start Num: 21

Candidate Starts for Lidong_37:

(Start: 21 @42242 has 49 MA's), (34, 42296), (Start: 36 @42305 has 3 MA's), (52, 42368), (58, 42422), (62, 42455), (69, 42479), (82, 42530), (85, 42539), (88, 42548), (89, 42557), (102, 42623), (105, 42629),

Gene: LilyPad_33 Start: 28336, Stop: 28782, Start Num: 18

Candidate Starts for LilyPad_33:

(12, 28318), (Start: 18 @28336 has 7 MA's), (Start: 36 @28408 has 3 MA's), (45, 28438), (53, 28474), (63, 28555), (86, 28630), (93, 28660), (94, 28663), (112, 28741),

Gene: Linetti_37 Start: 40842, Stop: 41288, Start Num: 21

Candidate Starts for Linetti_37:

(Start: 21 @40842 has 49 MA's), (26, 40854), (34, 40893), (Start: 36 @40902 has 3 MA's), (58, 41019), (66, 41067), (74, 41097), (79, 41115), (82, 41127), (85, 41136), (97, 41184), (102, 41217), (111, 41241), (112, 41244),

Gene: LittleFella_34 Start: 30149, Stop: 30583, Start Num: 20

Candidate Starts for LittleFella_34:

(Start: 20 @30149 has 2 MA's), (44, 30239), (56, 30317), (67, 30374), (77, 30407), (98, 30491), (104, 30518), (109, 30539),

Gene: Lizzo_36 Start: 40602, Stop: 41048, Start Num: 21

Candidate Starts for Lizzo_36:

(Start: 21 @40602 has 49 MA's), (Start: 36 @40662 has 3 MA's), (41, 40677), (58, 40779), (66, 40827), (69, 40836), (74, 40857), (79, 40875), (82, 40887), (85, 40896), (87, 40902), (88, 40905), (97, 40944), (102, 40977), (111, 41001), (112, 41004),

Gene: LonelyBoi_24 Start: 21255, Stop: 21728, Start Num: 16

Candidate Starts for LonelyBoi_24:

(Start: 16 @21255 has 2 MA's), (33, 21315), (34, 21321), (38, 21336), (49, 21378), (63, 21465), (65, 21471), (70, 21489), (71, 21495), (79, 21522), (87, 21543), (106, 21636), (113, 21666),

Gene: LordFarquaad_21 Start: 18545, Stop: 18967, Start Num: 22

Candidate Starts for LordFarquaad_21:

(Start: 22 @18545 has 22 MA's), (42, 18620), (60, 18731), (61, 18734), (64, 18743), (89, 18833),

Gene: Luker_38 Start: 42461, Stop: 42913, Start Num: 21

Candidate Starts for Luker_38:

(Start: 21 @42461 has 49 MA's), (34, 42515), (Start: 36 @42524 has 3 MA's), (52, 42587), (58, 42641), (62, 42674), (69, 42698), (82, 42749), (85, 42758), (88, 42767), (89, 42776), (102, 42842), (105, 42848),

Gene: Madi_31 Start: 27530, Stop: 27973, Start Num: 18

Candidate Starts for Madi_31:

(6, 27476), (Start: 18 @27530 has 7 MA's), (45, 27632), (64, 27752), (86, 27824), (95, 27860), (112, 27935),

Gene: Mareelih_111 Start: 69035, Stop: 69532, Start Num: 13

Candidate Starts for Mareelih_111:

(11, 69023), (Start: 13 @69035 has 5 MA's), (38, 69122), (40, 69128), (44, 69143), (48, 69158), (67, 69272), (104, 69428), (110, 69443), (117, 69500),

Gene: Minos_38 Start: 41984, Stop: 42436, Start Num: 21

Candidate Starts for Minos_38:

(Start: 21 @41984 has 49 MA's), (34, 42038), (Start: 36 @42047 has 3 MA's), (52, 42110), (58, 42164), (62, 42197), (69, 42221), (82, 42272), (85, 42281), (88, 42290), (89, 42299), (102, 42365), (105, 42371),

Gene: Mocha12_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Mocha12_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Monty_35 Start: 39752, Stop: 40198, Start Num: 21

Candidate Starts for Monty_35:

(Start: 21 @39752 has 49 MA's), (Start: 36 @39812 has 3 MA's), (41, 39827), (58, 39929), (66, 39977), (69, 39986), (74, 40007), (79, 40025), (82, 40037), (85, 40046), (87, 40052), (88, 40055), (97, 40094), (102, 40127), (111, 40151), (112, 40154),

Gene: MrWormie_37 Start: 41145, Stop: 41597, Start Num: 21

Candidate Starts for MrWormie_37:

(Start: 21 @41145 has 49 MA's), (34, 41199), (Start: 36 @41208 has 3 MA's), (52, 41271), (58, 41325), (62, 41358), (69, 41382), (82, 41433), (85, 41442), (88, 41451), (89, 41460), (102, 41526), (105, 41532),

Gene: Msay19_41 Start: 42008, Stop: 42394, Start Num: 36

Candidate Starts for Msay19_41:

(Start: 21 @41948 has 49 MA's), (Start: 36 @42008 has 3 MA's), (41, 42023), (58, 42125), (66, 42173), (69, 42182), (74, 42203), (79, 42221), (82, 42233), (85, 42242), (88, 42251), (97, 42290), (102, 42323), (111, 42347), (112, 42350),

Gene: Neoevie_37 Start: 42247, Stop: 42699, Start Num: 21

Candidate Starts for Neoevie_37:

(Start: 21 @42247 has 49 MA's), (34, 42301), (Start: 36 @42310 has 3 MA's), (52, 42373), (58, 42427), (62, 42460), (69, 42484), (82, 42535), (85, 42544), (88, 42553), (89, 42562), (102, 42628), (105, 42634),

Gene: Newt_38 Start: 42475, Stop: 42927, Start Num: 21

Candidate Starts for Newt_38:

(Start: 21 @42475 has 49 MA's), (34, 42529), (Start: 36 @42538 has 3 MA's), (52, 42601), (58, 42655), (62, 42688), (69, 42712), (82, 42763), (85, 42772), (88, 42781), (89, 42790), (102, 42856), (105, 42862),

Gene: Niagara_35 Start: 41379, Stop: 41831, Start Num: 19

Candidate Starts for Niagara_35:

(8, 41325), (Start: 19 @41379 has 9 MA's), (47, 41484), (68, 41601), (71, 41613), (78, 41637), (92, 41685), (102, 41733), (113, 41760), (114, 41769),

Gene: Nimi13_37 Start: 41993, Stop: 42445, Start Num: 21

Candidate Starts for Nimi13_37:

(Start: 21 @41993 has 49 MA's), (34, 42047), (Start: 36 @42056 has 3 MA's), (52, 42119), (58, 42173), (62, 42206), (69, 42230), (82, 42281), (85, 42290), (88, 42299), (89, 42308), (102, 42374), (105, 42380),

Gene: Phendrix_95 Start: 60482, Stop: 60919, Start Num: 23

Candidate Starts for Phendrix_95:

(Start: 23 @60482 has 2 MA's), (42, 60557), (67, 60692), (88, 60758), (89, 60767), (107, 60851),

Gene: Philon9_37 Start: 42589, Stop: 43029, Start Num: 19

Candidate Starts for Philon9_37:

(8, 42535), (Start: 19 @42589 has 9 MA's), (39, 42661), (47, 42691), (67, 42805), (68, 42808), (71, 42820), (78, 42844), (84, 42859), (95, 42901), (102, 42940), (112, 42961),

Gene: PierreThree_36 Start: 40713, Stop: 41159, Start Num: 21

Candidate Starts for PierreThree_36:

(Start: 21 @40713 has 49 MA's), (26, 40725), (34, 40764), (Start: 36 @40773 has 3 MA's), (58, 40890), (66, 40938), (79, 40986), (82, 40998), (85, 41007), (97, 41055), (102, 41088), (111, 41112), (112, 41115),

Gene: PokyPuppy_35 Start: 40656, Stop: 41102, Start Num: 21

Candidate Starts for PokyPuppy_35:

(Start: 21 @40656 has 49 MA's), (61, 40863), (64, 40872), (74, 40911), (79, 40929), (82, 40941), (85, 40950), (97, 40998), (102, 41031), (111, 41055), (112, 41058),

Gene: Poland_43 Start: 41927, Stop: 42373, Start Num: 21

Candidate Starts for Poland_43:

(Start: 21 @41927 has 49 MA's), (Start: 36 @41987 has 3 MA's), (41, 42002), (58, 42104), (66, 42152), (69, 42161), (74, 42182), (79, 42200), (82, 42212), (85, 42221), (88, 42230), (97, 42269), (102, 42302), (111, 42326), (112, 42329),

Gene: Pupper_83 Start: 32143, Stop: 32601, Start Num: 15

Candidate Starts for Pupper_83:

(Start: 15 @32143 has 3 MA's), (50, 32275), (53, 32290), (58, 32338), (63, 32374), (68, 32392), (76, 32428), (77, 32431), (85, 32458), (108, 32545),

Gene: RavenCo17_21 Start: 19444, Stop: 19869, Start Num: 22

Candidate Starts for RavenCo17_21:

(Start: 22 @19444 has 22 MA's), (35, 19495), (42, 19522), (59, 19612), (60, 19633), (61, 19636), (77, 19693), (89, 19735), (100, 19780),

Gene: RemRem_37 Start: 39742, Stop: 40188, Start Num: 21

Candidate Starts for RemRem_37:

(Start: 21 @39742 has 49 MA's), (Start: 36 @39802 has 3 MA's), (41, 39817), (58, 39919), (66, 39967), (69, 39976), (74, 39997), (79, 40015), (82, 40027), (85, 40036), (87, 40042), (88, 40045), (97, 40084), (102, 40117), (111, 40141), (112, 40144),

Gene: RoyalG_37 Start: 40209, Stop: 40655, Start Num: 21

Candidate Starts for RoyalG_37:

(Start: 21 @40209 has 49 MA's), (47, 40308), (56, 40380), (66, 40434), (69, 40443), (74, 40464), (79, 40482), (82, 40494), (85, 40503), (102, 40584), (111, 40608), (112, 40611),

Gene: SCentae_81 Start: 31817, Stop: 32275, Start Num: 15

Candidate Starts for SCentae_81:

(Start: 15 @31817 has 3 MA's), (58, 32012), (63, 32048), (68, 32066), (85, 32132), (108, 32219),

Gene: Sahara_20 Start: 18224, Stop: 18646, Start Num: 22

Candidate Starts for Sahara_20:

(Start: 22 @18224 has 22 MA's), (42, 18299), (60, 18410), (61, 18413), (64, 18422), (89, 18512),

Gene: Sam12_36 Start: 39742, Stop: 40188, Start Num: 21

Candidate Starts for Sam12_36:

(Start: 21 @39742 has 49 MA's), (Start: 36 @39802 has 3 MA's), (41, 39817), (58, 39919), (66, 39967), (69, 39976), (74, 39997), (79, 40015), (82, 40027), (85, 40036), (87, 40042), (88, 40045), (97, 40084), (102, 40117), (111, 40141), (112, 40144),

Gene: Savage_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Savage_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Shelley_37 Start: 41469, Stop: 41921, Start Num: 21

Candidate Starts for Shelley_37:

(Start: 21 @41469 has 49 MA's), (34, 41523), (Start: 36 @41532 has 3 MA's), (52, 41595), (58, 41649), (62, 41682), (69, 41706), (82, 41757), (85, 41766), (88, 41775), (89, 41784), (102, 41850), (105, 41856),

Gene: Sidious_23 Start: 20906, Stop: 21379, Start Num: 16

Candidate Starts for Sidious_23:

(Start: 16 @20906 has 2 MA's), (33, 20966), (34, 20972), (38, 20987), (49, 21029), (54, 21050), (63, 21116), (70, 21140), (71, 21146), (87, 21194), (92, 21218), (113, 21317),

Gene: Sienna_31 Start: 27530, Stop: 27973, Start Num: 18

Candidate Starts for Sienna_31:

(6, 27476), (Start: 18 @27530 has 7 MA's), (45, 27632), (64, 27752), (86, 27824), (95, 27860), (112, 27935),

Gene: Sixama_111 Start: 69070, Stop: 69564, Start Num: 13

Candidate Starts for Sixama_111:

(Start: 13 @69070 has 5 MA's), (38, 69157), (40, 69163), (48, 69193), (67, 69307), (78, 69352), (80, 69361), (92, 69406), (110, 69478), (116, 69508), (117, 69535),

Gene: SoilAssassin_21 Start: 18545, Stop: 18967, Start Num: 22

Candidate Starts for SoilAssassin_21:

(Start: 22 @18545 has 22 MA's), (42, 18620), (60, 18731), (61, 18734), (64, 18743), (89, 18833),

Gene: Sombrero_36 Start: 39744, Stop: 40190, Start Num: 21

Candidate Starts for Sombrero_36:

(Start: 21 @39744 has 49 MA's), (Start: 36 @39804 has 3 MA's), (41, 39819), (58, 39921), (66, 39969), (69, 39978), (74, 39999), (79, 40017), (82, 40029), (85, 40038), (88, 40047), (97, 40086), (102, 40119), (111, 40143), (112, 40146),

Gene: Sproutie_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Sproutie_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Squibbles_35 Start: 40605, Stop: 41051, Start Num: 21

Candidate Starts for Squibbles_35:

(Start: 21 @40605 has 49 MA's), (Start: 36 @40665 has 3 MA's), (41, 40680), (58, 40782), (66, 40830), (69, 40839), (74, 40860), (79, 40878), (82, 40890), (85, 40899), (87, 40905), (88, 40908), (97, 40947), (102, 40980), (111, 41004), (112, 41007),

Gene: SteveFrench_36 Start: 40449, Stop: 40895, Start Num: 21

Candidate Starts for SteveFrench_36:

(Start: 21 @40449 has 49 MA's), (47, 40548), (56, 40620), (66, 40674), (69, 40683), (74, 40704), (79, 40722), (82, 40734), (85, 40743), (102, 40824), (111, 40848), (112, 40851),

Gene: Sticker17_37 Start: 41984, Stop: 42436, Start Num: 21

Candidate Starts for Sticker17_37:

(Start: 21 @41984 has 49 MA's), (34, 42038), (Start: 36 @42047 has 3 MA's), (52, 42110), (58, 42164), (62, 42197), (69, 42221), (82, 42272), (85, 42281), (88, 42290), (89, 42299), (102, 42365), (105, 42371),

Gene: Teal_37 Start: 42452, Stop: 42904, Start Num: 21

Candidate Starts for Teal_37:

(Start: 21 @42452 has 49 MA's), (34, 42506), (Start: 36 @42515 has 3 MA's), (52, 42578), (58, 42632), (62, 42665), (69, 42689), (82, 42740), (85, 42749), (88, 42758), (89, 42767), (102, 42833), (105, 42839),

Gene: Teatealatte_35 Start: 41324, Stop: 41776, Start Num: 19

Candidate Starts for Teatealatte_35:

(8, 41270), (Start: 19 @41324 has 9 MA's), (47, 41429), (68, 41546), (71, 41558), (78, 41582), (92, 41630), (102, 41678), (113, 41705), (114, 41714),

Gene: Teech_35 Start: 41125, Stop: 41577, Start Num: 19

Candidate Starts for Teech_35:

(8, 41071), (Start: 19 @41125 has 9 MA's), (47, 41230), (68, 41347), (71, 41359), (78, 41383), (92, 41431), (102, 41479), (113, 41506), (114, 41515),

Gene: Terapin_32 Start: 27531, Stop: 27977, Start Num: 18

Candidate Starts for Terapin_32:

(Start: 18 @27531 has 7 MA's), (86, 27825), (95, 27861), (112, 27936),

Gene: Tredge_35 Start: 41324, Stop: 41776, Start Num: 19

Candidate Starts for Tredge_35:

(8, 41270), (Start: 19 @41324 has 9 MA's), (47, 41429), (68, 41546), (71, 41558), (78, 41582), (92, 41630), (102, 41678), (113, 41705), (114, 41714),

Gene: Trogglehumper_52 Start: 46526, Stop: 47011, Start Num: 22

Candidate Starts for Trogglehumper_52:

(Start: 22 @46526 has 22 MA's), (25, 46532), (30, 46544), (58, 46685), (68, 46736), (83, 46787), (90, 46817), (101, 46868), (108, 46889),

Gene: TuertoX_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for TuertoX_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Vasanti_20 Start: 18106, Stop: 18528, Start Num: 22

Candidate Starts for Vasanti_20:

(Start: 22 @18106 has 22 MA's), (42, 18181), (61, 18295), (64, 18304), (87, 18382), (89, 18394),

Gene: Whiteclaw_21 Start: 18552, Stop: 18974, Start Num: 22

Candidate Starts for Whiteclaw_21:

(Start: 22 @18552 has 22 MA's), (42, 18627), (60, 18738), (61, 18741), (64, 18750), (89, 18840),

Gene: Wocket_24 Start: 20570, Stop: 21052, Start Num: 14

Candidate Starts for Wocket_24:

(Start: 14 @20570 has 1 MA's), (29, 20609), (34, 20642), (38, 20657), (62, 20786), (68, 20807), (71, 20819), (77, 20840), (87, 20867),

Gene: Woes_37 Start: 42503, Stop: 42955, Start Num: 21

Candidate Starts for Woes_37:

(Start: 21 @42503 has 49 MA's), (34, 42557), (Start: 36 @42566 has 3 MA's), (52, 42629), (58, 42683), (62, 42716), (69, 42740), (82, 42791), (85, 42800), (88, 42809), (89, 42818), (102, 42884), (105, 42890),

Gene: Xenia2_31 Start: 30001, Stop: 30453, Start Num: 20

Candidate Starts for Xenia2_31:

(Start: 20 @30001 has 2 MA's), (26, 30016), (47, 30106), (48, 30109), (50, 30118), (55, 30154), (61, 30208), (63, 30214), (83, 30280), (95, 30325), (104, 30373), (105, 30376), (108, 30388), (114, 30415),

Gene: Yeet412_21 Start: 18545, Stop: 18967, Start Num: 22

Candidate Starts for Yeet412_21:

(Start: 22 @18545 has 22 MA's), (42, 18620), (60, 18731), (61, 18734), (64, 18743), (89, 18833),