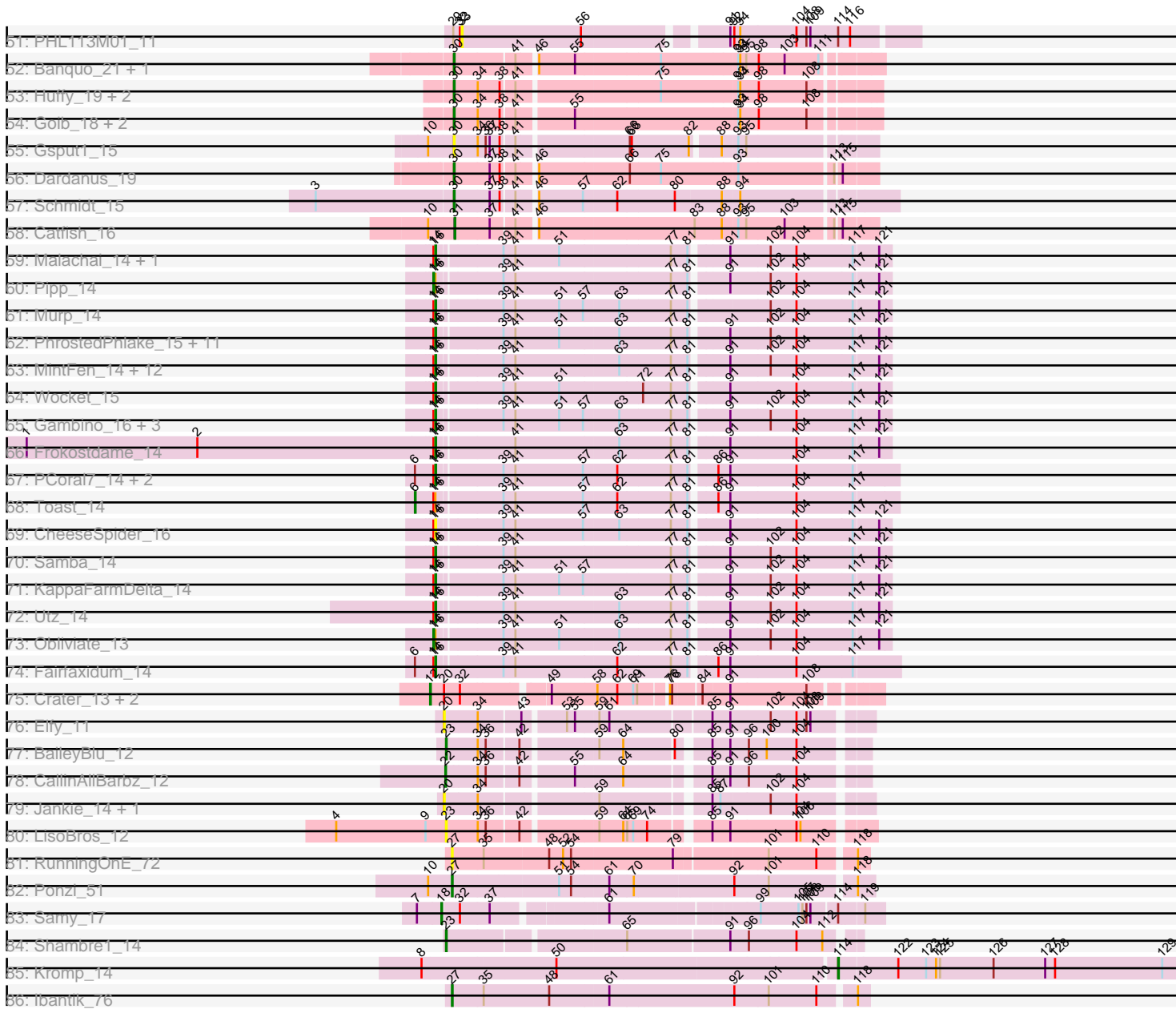


Pham 294528



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 294528 Report

This analysis was run 04/18/26 on database version 643.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 294528 has 132 members, 21 are drafts.

Phages represented in each track:

- Track 1 : Spooks_57
- Track 2 : Success_58
- Track 3 : Bimmel_56
- Track 4 : Kubed_11
- Track 5 : Keiki_11
- Track 6 : P106M_11, P106C_11, P106L_11, P106I_11, P106A_11
- Track 7 : Attacne_11
- Track 8 : PHL010M04_11
- Track 9 : MEAK_11
- Track 10 : LilBandit_11
- Track 11 : Solid_11, P107C_11
- Track 12 : Ouroboros_11
- Track 13 : Cota_11, MrAK_11
- Track 14 : P14.4_11
- Track 15 : Procrass1_11
- Track 16 : PAS50_11
- Track 17 : PHL114L00_11
- Track 18 : Rileysaurus_11
- Track 19 : P100A_11
- Track 20 : ATCC29399BT_11
- Track 21 : PA6_11, Wizzo_11
- Track 22 : DrParker_11
- Track 23 : P9.1_11
- Track 24 : PHL037M02_11
- Track 25 : Enoki_11
- Track 26 : ATCC29399BC_11
- Track 27 : Leviosa_11
- Track 28 : P104B_11
- Track 29 : PHL060L00_11
- Track 30 : BruceLethal_11
- Track 31 : SKKY_11
- Track 32 : PHL111M01_11
- Track 33 : P100.1_11

- Track 34 : Moyashi_11
- Track 35 : P108C_11, Pirate_11, Enochoraptor_11
- Track 36 : P105_11
- Track 37 : QueenBey_11
- Track 38 : Aquarius_11
- Track 39 : PHL112N00_11
- Track 40 : PHL071N05_11
- Track 41 : Supernova_11
- Track 42 : P107A_11
- Track 43 : Lauchelly_11
- Track 44 : PHL067M10_11
- Track 45 : P101A_11
- Track 46 : P100D_11
- Track 47 : P1.1_11
- Track 48 : Stormborn_11
- Track 49 : PAD20_11
- Track 50 : P104A_11
- Track 51 : PHL113M01_11
- Track 52 : Banquo_21, TinaLin_20
- Track 53 : Huffy_19, TZGordon_19, DinoDaryn_19
- Track 54 : Goib_18, Vendetta_17, Splinter_17
- Track 55 : Gspu1_15
- Track 56 : Dardanus_19
- Track 57 : Schmidt_15
- Track 58 : Catfish_16
- Track 59 : Malachai_14, Begonia_14
- Track 60 : Pipp_14
- Track 61 : Murp_14
- Track 62 : PhrostedPhlake_15, Wisp_13, Mellie_13, Petra_16, CarolAnn_14, ZiggyZoo_13, Blino_14, Jalammah_15, Walrus_15, Zilla_14, Hitter_14, Lysidious_14
- Track 63 : MintFen_14, CaptainKirk2_14, Delian_14, Melba_14, Archis_15, BlingBling_14, Barco_14, Guacamole_14, JasperJr_14, Fenry_13, JuJu_14, Zarbodnamra_14, UmaThurman_14
- Track 64 : Wocket_15
- Track 65 : Gambino_16, Azula_16, Blueberry_16, MissRona_16
- Track 66 : Frokostdame_14
- Track 67 : PCoral7_14, PrincePatrick_14, William_14
- Track 68 : Toast_14
- Track 69 : CheeseSpider_16
- Track 70 : Samba_14
- Track 71 : KappaFarmDelta_14
- Track 72 : Utz_14
- Track 73 : Obliviate_13
- Track 74 : Fairfaxidum_14
- Track 75 : Crater_13, Kuwabara_13, Apricot_13
- Track 76 : Elfy_11
- Track 77 : BaileyBlu_12
- Track 78 : CallinAllBarbz_12
- Track 79 : Jankie_14, GrimEater_13
- Track 80 : LisoBros_12
- Track 81 : RunningOnE_72
- Track 82 : Ponzi_51
- Track 83 : Samy_17

- Track 84 : Shambre1_14
- Track 85 : Kromp_14
- Track 86 : Ibantik_76

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

The start number called the most often in the published annotations is 16, it was called in 39 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archis_15, Azula_16, Barco_14, Begonia_14, BlingBling_14, Blino_14, Blueberry_16, CaptainKirk2_14, CarolAnn_14, CheeseSpider_16, Delian_14, Fairfaxidum_14, Fenry_13, Frokostdame_14, Gambino_16, Guacamole_14, Hitter_14, Jalammah_15, JasperJr_14, JuJu_14, KappaFarmDelta_14, Lysidious_14, Malachai_14, Melba_14, Mellie_13, MintFen_14, MissRona_16, Murp_14, PCoral7_14, Petra_16, PhrostedPhlake_15, PrincePatrick_14, Samba_14, UmaThurman_14, Utz_14, Walrus_15, William_14, Wisp_13, Wocket_15, Zarbodnamra_14, ZiggyZoo_13, Zilla_14,

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

- Oblivate_13, Pipp_14, Toast_14,

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

- ATCC29399BC_11, ATCC29399BT_11, Apricot_13, Aquarius_11, Attacne_11, BaileyBlu_12, Banquo_21, Bimmel_56, BruceLethal_11, CallinAllBarbz_12, Catfish_16, Cota_11, Crater_13, Dardanus_19, DinoDaryn_19, DrParker_11, Elfy_11, Enochoraptor_11, Enoki_11, Goib_18, GrimEater_13, Gspu1_15, Huffy_19, Ibantik_76, Jankie_14, Keiki_11, Kromp_14, Kubed_11, Kuwabara_13, Lauchelly_11, Leviosa_11, LilBandit_11, LisoBros_12, MEAK_11, Moyashi_11, MrAK_11, Ouroboros_11, P1.1_11, P100.1_11, P100A_11, P100D_11, P101A_11, P104A_11, P104B_11, P105_11, P106A_11, P106C_11, P106I_11, P106L_11, P106M_11, P107A_11, P107C_11, P108C_11, P14.4_11, P9.1_11, PA6_11, PAD20_11, PAS50_11, PHL010M04_11, PHL037M02_11, PHL060L00_11, PHL067M10_11, PHL071N05_11, PHL111M01_11, PHL112N00_11, PHL113M01_11, PHL114L00_11, Pirate_11, Ponzi_51, Procrass1_11, QueenBey_11, Rileysaurus_11, RunningOnE_72, SKKY_11, Samy_17, Schmidt_15, Shambre1_14, Solid_11, Splinter_17, Spooks_57, Stormborn_11, Success_58, Supernova_11, TZGordon_19, TinaLin_20, Vendetta_17, Wizzo_11,

Summary by start number:

Start 6:

- Found in 5 of 132 (3.8%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Toast_14 (CV),

Start 11:

- Found in 5 of 132 (3.8%) of genes in pham
- Manual Annotations of this start: 1 of 111

- Called 20.0% of time when present
- Phage (with cluster) where this start called: P14.4_11 (BU),

Start 12:

- Found in 3 of 132 (2.3%) of genes in pham
- Manual Annotations of this start: 3 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_13 (DN3), Crater_13 (DN3), Kuwabara_13 (DN4),

Start 14:

- Found in 45 of 132 (34.1%) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 4.4% of time when present
- Phage (with cluster) where this start called: Obliviate_13 (CV), Pipp_14 (CV),

Start 16:

- Found in 45 of 132 (34.1%) of genes in pham
- Manual Annotations of this start: 39 of 111
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Archis_15 (CV), Azula_16 (CV), Barco_14 (CV), Begonia_14 (CV), BlingBling_14 (CV), Blino_14 (CV), Blueberry_16 (CV), CaptainKirk2_14 (CV), CarolAnn_14 (CV), CheeseSpider_16 (CV), Delian_14 (CV), Fairfaxidum_14 (CV), Fenry_13 (CV), Frokostdame_14 (CV), Gambino_16 (CV), Guacamole_14 (CV), Hitter_14 (CV), Jalammah_15 (CV), JasperJr_14 (CV), JuJu_14 (CV), KappaFarmDelta_14 (CV), Lysidious_14 (CV), Malachai_14 (CV), Melba_14 (CV), Mellie_13 (CV), MintFen_14 (CV), MissRona_16 (CV), Murp_14 (CV), PCoral7_14 (CV), Petra_16 (CV), PhrostedPhlake_15 (CV), PrincePatrick_14 (CV), Samba_14 (CV), UmaThurman_14 (CV), Utz_14 (CV), Walrus_15 (CV), William_14 (CV), Wisp_13 (CV), Wocket_15 (CV), Z̄arbodnamra_14 (CV), ZiggyZoo_13 (CV), Zilla_14 (CV),

Start 18:

- Found in 1 of 132 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy_17 (singleton),

Start 20:

- Found in 6 of 132 (4.5%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Elfy_11 (FP), GrimEater_13 (FP), Jankie_14 (FP),

Start 22:

- Found in 1 of 132 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CallinAllBarbz_12 (FP),

Start 23:

- Found in 3 of 132 (2.3%) of genes in pham

- Manual Annotations of this start: 2 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BaileyBlu_12 (FP), LisoBros_12 (UNK), Shambre1_14 (singleton),

Start 27:

- Found in 6 of 132 (4.5%) of genes in pham
- Manual Annotations of this start: 5 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bimmel_56 (BT), Ibantik_76 (singleton), Ponzi_51 (singleton), RunningOnE_72 (UNK), Spooks_57 (BT), Success_58 (BT),

Start 28:

- Found in 19 of 132 (14.4%) of genes in pham
- Manual Annotations of this start: 3 of 111
- Called 15.8% of time when present
- Phage (with cluster) where this start called: ATCC29399BT_11 (BU), P100.1_11 (BU), P105_11 (BU),

Start 29:

- Found in 37 of 132 (28.0%) of genes in pham
- Manual Annotations of this start: 12 of 111
- Called 32.4% of time when present
- Phage (with cluster) where this start called: ATCC29399BC_11 (BU), P1.1_11 (BU), P100A_11 (BU), P100D_11 (BU), P101A_11 (BU), P104A_11 (BU), P106A_11 (BU), P106C_11 (BU), P106I_11 (BU), P106L_11 (BU), P106M_11 (BU), P9.1_11 (BU),

Start 30:

- Found in 12 of 132 (9.1%) of genes in pham
- Manual Annotations of this start: 10 of 111
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Banquo_21 (CU1), Dardanus_19 (CU3), DinoDaryn_19 (CU1), Goib_18 (CU1), Gsput1_15 (CU2), Huff_19 (CU1), Schmidt_15 (CU4), Splinter_17 (CU1), TZGordon_19 (CU1), TinaLin_20 (CU1), Vendetta_17 (CU1),

Start 31:

- Found in 1 of 132 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Catfish_16 (CU5),

Start 33:

- Found in 57 of 132 (43.2%) of genes in pham
- Manual Annotations of this start: 29 of 111
- Called 71.9% of time when present
- Phage (with cluster) where this start called: Aquarius_11 (BU), Attacne_11 (BU), BruceLethal_11 (BU), Cota_11 (BU), DrParker_11 (BU), Enochoraptor_11 (BU), Enoki_11 (BU), Keiki_11 (BU), Kubed_11 (BU), Lauchelly_11 (BU), Leviosa_11 (BU), LilBandit_11 (BU), MEAK_11 (BU), Moyashi_11 (BU), MrAK_11 (BU), Ouroboros_11 (BU), P104B_11 (BU), P107A_11 (BU), P107C_11 (BU), P108C_11 (BU), PA6_11 (BU), PAD20_11 (BU), PAS50_11 (BU), PHL010M04_11 (BU), PHL037M02_11 (BU), PHL060L00_11 (BU), PHL067M10_11 (BU), PHL071N05_11 (BU), PHL111M01_11

(BU), PHL112N00_11 (BU), PHL113M01_11 (BU), PHL114L00_11 (BU), Pirate_11 (BU), Procrass1_11 (BU), QueenBey_11 (BU), Rileysaurus_11 (BU), SKKY_11 (BU), Solid_11 (BU), Stormborn_11 (BU), Supernova_11 (BU), Wizzo_11 (BU),

Start 114:

- Found in 59 of 132 (44.7%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 1.7% of time when present
- Phage (with cluster) where this start called: Kromp_14 (singleton),

Summary by clusters:

There are 13 clusters represented in this pham: FP, CU5, CU4, CU3, CU2, CU1, DN4, singleton, BT, BU, DN3, UNK, CV,

Info for manual annotations of cluster BT:

- Start number 27 was manually annotated 3 times for cluster BT.

Info for manual annotations of cluster BU:

- Start number 11 was manually annotated 1 time for cluster BU.
- Start number 28 was manually annotated 3 times for cluster BU.
- Start number 29 was manually annotated 12 times for cluster BU.
- Start number 33 was manually annotated 29 times for cluster BU.

Info for manual annotations of cluster CU1:

- Start number 30 was manually annotated 8 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 30 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:

- Start number 30 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster CU5:

- Start number 31 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster CV:

- Start number 6 was manually annotated 1 time for cluster CV.
- Start number 14 was manually annotated 2 times for cluster CV.
- Start number 16 was manually annotated 39 times for cluster CV.

Info for manual annotations of cluster DN3:

- Start number 12 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 12 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster FP:

- Start number 22 was manually annotated 1 time for cluster FP.
- Start number 23 was manually annotated 1 time for cluster FP.

Gene Information:

Gene: ATCC29399BC_11 Start: 7150, Stop: 7785, Start Num: 29

Candidate Starts for ATCC29399BC_11:

(Start: 29 @7150 has 12 MA's), (32, 7159), (Start: 33 @7162 has 29 MA's), (44, 7255), (56, 7342), (91, 7531), (92, 7534), (94, 7543), (104, 7627), (108, 7642), (109, 7648), (Start: 114 @7690 has 1 MA's), (116, 7708),

Gene: ATCC29399BT_11 Start: 7147, Stop: 7782, Start Num: 28

Candidate Starts for ATCC29399BT_11:

(25, 7141), (Start: 28 @7147 has 3 MA's), (32, 7156), (Start: 33 @7159 has 29 MA's), (48, 7291), (56, 7339), (59, 7363), (91, 7528), (92, 7531), (104, 7624), (108, 7639), (109, 7645), (Start: 114 @7687 has 1 MA's), (116, 7705),

Gene: Apricot_13 Start: 7836, Stop: 8429, Start Num: 12

Candidate Starts for Apricot_13:

(Start: 12 @7836 has 3 MA's), (20, 7857), (32, 7881), (49, 7995), (58, 8055), (62, 8085), (69, 8109), (71, 8115), (76, 8151), (78, 8154), (84, 8190), (91, 8229), (108, 8340),

Gene: Aquarius_11 Start: 7160, Stop: 7801, Start Num: 33

Candidate Starts for Aquarius_11:

(5, 7076), (9, 7106), (19, 7130), (Start: 30 @7148 has 10 MA's), (32, 7157), (Start: 33 @7160 has 29 MA's), (44, 7253), (56, 7340), (60, 7376), (67, 7412), (90, 7526), (91, 7529), (92, 7532), (104, 7625), (108, 7640), (109, 7646), (Start: 114 @7688 has 1 MA's), (116, 7706),

Gene: Archis_15 Start: 8891, Stop: 9529, Start Num: 16

Candidate Starts for Archis_15:

(Start: 14 @8888 has 2 MA's), (Start: 16 @8891 has 39 MA's), (39, 8981), (41, 8996), (63, 9149), (77, 9224), (81, 9248), (91, 9296), (102, 9353), (104, 9392), (117, 9476), (121, 9512),

Gene: Attacne_11 Start: 7163, Stop: 7786, Start Num: 33

Candidate Starts for Attacne_11:

(Start: 29 @7151 has 12 MA's), (32, 7160), (Start: 33 @7163 has 29 MA's), (44, 7256), (56, 7343), (60, 7379), (91, 7532), (92, 7535), (104, 7628), (108, 7643), (109, 7649), (Start: 114 @7691 has 1 MA's), (116, 7709),

Gene: Azula_16 Start: 9023, Stop: 9661, Start Num: 16

Candidate Starts for Azula_16:

(Start: 14 @9020 has 2 MA's), (Start: 16 @9023 has 39 MA's), (39, 9113), (41, 9128), (51, 9194), (57, 9230), (63, 9281), (77, 9356), (81, 9380), (91, 9428), (102, 9485), (104, 9524), (117, 9608), (121, 9644),

Gene: BaileyBlu_12 Start: 7191, Stop: 7754, Start Num: 23

Candidate Starts for BaileyBlu_12:

(Start: 23 @7191 has 2 MA's), (34, 7236), (36, 7248), (42, 7293), (59, 7398), (64, 7434), (80, 7500), (85, 7539), (91, 7566), (96, 7590), (100, 7617), (104, 7662),

Gene: Banquo_21 Start: 11777, Stop: 12373, Start Num: 30

Candidate Starts for Banquo_21:

(Start: 30 @11777 has 10 MA's), (41, 11861), (46, 11885), (55, 11939), (75, 12062), (93, 12173), (94, 12176), (95, 12185), (98, 12203), (103, 12242), (111, 12293),

Gene: Barco_14 Start: 8679, Stop: 9317, Start Num: 16

Candidate Starts for Barco_14:

(Start: 14 @8676 has 2 MA's), (Start: 16 @8679 has 39 MA's), (39, 8769), (41, 8784), (63, 8937), (77, 9012), (81, 9036), (91, 9084), (102, 9141), (104, 9180), (117, 9264), (121, 9300),

Gene: Begonia_14 Start: 8682, Stop: 9320, Start Num: 16

Candidate Starts for Begonia_14:

(Start: 14 @8679 has 2 MA's), (Start: 16 @8682 has 39 MA's), (39, 8772), (41, 8787), (51, 8853), (77, 9015), (81, 9039), (91, 9087), (102, 9144), (104, 9183), (117, 9267), (121, 9303),

Gene: Bimmel_56 Start: 31804, Stop: 32394, Start Num: 27

Candidate Starts for Bimmel_56:

(17, 31786), (Start: 27 @31804 has 5 MA's), (48, 31942), (61, 32029), (64, 32050), (79, 32122), (92, 32209), (97, 32242), (98, 32245), (101, 32260),

Gene: BlingBling_14 Start: 8679, Stop: 9317, Start Num: 16

Candidate Starts for BlingBling_14:

(Start: 14 @8676 has 2 MA's), (Start: 16 @8679 has 39 MA's), (39, 8769), (41, 8784), (63, 8937), (77, 9012), (81, 9036), (91, 9084), (102, 9141), (104, 9180), (117, 9264), (121, 9300),

Gene: Blino_14 Start: 8579, Stop: 9217, Start Num: 16

Candidate Starts for Blino_14:

(Start: 14 @8576 has 2 MA's), (Start: 16 @8579 has 39 MA's), (39, 8669), (41, 8684), (51, 8750), (63, 8837), (77, 8912), (81, 8936), (91, 8984), (102, 9041), (104, 9080), (117, 9164), (121, 9200),

Gene: Blueberry_16 Start: 9023, Stop: 9661, Start Num: 16

Candidate Starts for Blueberry_16:

(Start: 14 @9020 has 2 MA's), (Start: 16 @9023 has 39 MA's), (39, 9113), (41, 9128), (51, 9194), (57, 9230), (63, 9281), (77, 9356), (81, 9380), (91, 9428), (102, 9485), (104, 9524), (117, 9608), (121, 9644),

Gene: BruceLethal_11 Start: 7160, Stop: 7792, Start Num: 33

Candidate Starts for BruceLethal_11:

(Start: 29 @7148 has 12 MA's), (32, 7157), (Start: 33 @7160 has 29 MA's), (44, 7253), (56, 7340), (60, 7376), (91, 7529), (92, 7532), (104, 7625), (108, 7640), (109, 7646), (Start: 114 @7688 has 1 MA's), (116, 7706),

Gene: CallinAllBarbz_12 Start: 7199, Stop: 7762, Start Num: 22

Candidate Starts for CallinAllBarbz_12:

(Start: 22 @7199 has 1 MA's), (34, 7244), (36, 7256), (42, 7301), (55, 7373), (64, 7442), (85, 7547), (91, 7574), (96, 7598), (104, 7670),

Gene: CaptainKirk2_14 Start: 8682, Stop: 9320, Start Num: 16

Candidate Starts for CaptainKirk2_14:

(Start: 14 @8679 has 2 MA's), (Start: 16 @8682 has 39 MA's), (39, 8772), (41, 8787), (63, 8940), (77, 9015), (81, 9039), (91, 9087), (102, 9144), (104, 9183), (117, 9267), (121, 9303),

Gene: CarolAnn_14 Start: 8578, Stop: 9216, Start Num: 16

Candidate Starts for CarolAnn_14:

(Start: 14 @8575 has 2 MA's), (Start: 16 @8578 has 39 MA's), (39, 8668), (41, 8683), (51, 8749), (63, 8836), (77, 8911), (81, 8935), (91, 8983), (102, 9040), (104, 9079), (117, 9163), (121, 9199),

Gene: Catfish_16 Start: 9760, Stop: 10344, Start Num: 31

Candidate Starts for Catfish_16:

(10, 9721), (Start: 31 @9760 has 1 MA's), (37, 9811), (41, 9844), (46, 9868), (83, 10096), (88, 10135), (93, 10156), (95, 10168), (103, 10225), (113, 10291), (115, 10297),

Gene: CheeseSpider_16 Start: 9022, Stop: 9660, Start Num: 16

Candidate Starts for CheeseSpider_16:

(Start: 14 @9019 has 2 MA's), (Start: 16 @9022 has 39 MA's), (39, 9112), (41, 9127), (57, 9229), (63, 9280), (77, 9355), (81, 9379), (91, 9427), (104, 9523), (117, 9607), (121, 9643),

Gene: Cota_11 Start: 7170, Stop: 7796, Start Num: 33

Candidate Starts for Cota_11:

(Start: 29 @7158 has 12 MA's), (32, 7167), (Start: 33 @7170 has 29 MA's), (44, 7263), (56, 7350), (60, 7386), (91, 7539), (92, 7542), (102, 7596), (104, 7635), (108, 7650), (109, 7656), (Start: 114 @7698 has 1 MA's), (116, 7716),

Gene: Crater_13 Start: 7836, Stop: 8429, Start Num: 12

Candidate Starts for Crater_13:

(Start: 12 @7836 has 3 MA's), (20, 7857), (32, 7881), (49, 7995), (58, 8055), (62, 8085), (69, 8109), (71, 8115), (76, 8151), (78, 8154), (84, 8190), (91, 8229), (108, 8340),

Gene: Dardanus_19 Start: 10822, Stop: 11409, Start Num: 30

Candidate Starts for Dardanus_19:

(Start: 30 @10822 has 10 MA's), (37, 10873), (38, 10888), (41, 10906), (46, 10930), (66, 11062), (75, 11107), (93, 11218), (113, 11353), (115, 11359),

Gene: Delian_14 Start: 8682, Stop: 9320, Start Num: 16

Candidate Starts for Delian_14:

(Start: 14 @8679 has 2 MA's), (Start: 16 @8682 has 39 MA's), (39, 8772), (41, 8787), (63, 8940), (77, 9015), (81, 9039), (91, 9087), (102, 9144), (104, 9183), (117, 9267), (121, 9303),

Gene: DinoDaryn_19 Start: 10919, Stop: 11509, Start Num: 30

Candidate Starts for DinoDaryn_19:

(Start: 30 @10919 has 10 MA's), (34, 10952), (38, 10985), (41, 11003), (75, 11204), (93, 11315), (94, 11318), (98, 11345), (108, 11417),

Gene: DrParker_11 Start: 7185, Stop: 7826, Start Num: 33

Candidate Starts for DrParker_11:

(Start: 29 @7173 has 12 MA's), (32, 7182), (Start: 33 @7185 has 29 MA's), (44, 7278), (56, 7365), (60, 7401), (89, 7542), (92, 7557), (102, 7611), (104, 7650), (108, 7665), (109, 7671), (Start: 114 @7713 has 1 MA's), (116, 7731),

Gene: Elfy_11 Start: 7126, Stop: 7710, Start Num: 20

Candidate Starts for Elfy_11:

(20, 7126), (34, 7174), (43, 7234), (53, 7291), (55, 7303), (59, 7336), (61, 7351), (85, 7489), (91, 7516), (102, 7573), (104, 7612), (108, 7627), (109, 7633),

Gene: Enochoraptor_11 Start: 7174, Stop: 7800, Start Num: 33

Candidate Starts for Enochoraptor_11:

(Start: 29 @7162 has 12 MA's), (32, 7171), (Start: 33 @7174 has 29 MA's), (44, 7267), (56, 7354), (89, 7531), (92, 7546), (104, 7639), (108, 7654), (109, 7660), (Start: 114 @7702 has 1 MA's), (116, 7720),

Gene: Enoki_11 Start: 7161, Stop: 7781, Start Num: 33

Candidate Starts for Enoki_11:

(Start: 29 @7149 has 12 MA's), (32, 7158), (Start: 33 @7161 has 29 MA's), (44, 7254), (56, 7341), (60, 7377), (67, 7413), (89, 7518), (90, 7527), (91, 7530), (92, 7533), (104, 7626), (108, 7641), (109, 7647), (Start: 114 @7689 has 1 MA's), (116, 7707),

Gene: Fairfaxidum_14 Start: 8713, Stop: 9366, Start Num: 16

Candidate Starts for Fairfaxidum_14:

(Start: 6 @8683 has 1 MA's), (Start: 14 @8710 has 2 MA's), (Start: 16 @8713 has 39 MA's), (39, 8803), (41, 8818), (62, 8968), (77, 9046), (81, 9070), (86, 9100), (91, 9118), (104, 9214), (117, 9298),

Gene: Fenry_13 Start: 8428, Stop: 9066, Start Num: 16

Candidate Starts for Fenry_13:

(Start: 14 @8425 has 2 MA's), (Start: 16 @8428 has 39 MA's), (39, 8518), (41, 8533), (63, 8686), (77, 8761), (81, 8785), (91, 8833), (102, 8890), (104, 8929), (117, 9013), (121, 9049),

Gene: Frokostdame_14 Start: 8673, Stop: 9311, Start Num: 16

Candidate Starts for Frokostdame_14:

(1, 8058), (2, 8316), (Start: 14 @8670 has 2 MA's), (Start: 16 @8673 has 39 MA's), (41, 8778), (63, 8931), (77, 9006), (81, 9030), (91, 9078), (104, 9174), (117, 9258), (121, 9294),

Gene: Gambino_16 Start: 9023, Stop: 9661, Start Num: 16

Candidate Starts for Gambino_16:

(Start: 14 @9020 has 2 MA's), (Start: 16 @9023 has 39 MA's), (39, 9113), (41, 9128), (51, 9194), (57, 9230), (63, 9281), (77, 9356), (81, 9380), (91, 9428), (102, 9485), (104, 9524), (117, 9608), (121, 9644),

Gene: Goib_18 Start: 10694, Stop: 11284, Start Num: 30

Candidate Starts for Goib_18:

(Start: 30 @10694 has 10 MA's), (34, 10727), (38, 10760), (41, 10778), (55, 10856), (93, 11090), (94, 11093), (98, 11120), (108, 11192),

Gene: GrimEater_13 Start: 7199, Stop: 7771, Start Num: 20

Candidate Starts for GrimEater_13:

(20, 7199), (34, 7247), (59, 7409), (85, 7550), (87, 7562), (102, 7634), (104, 7673),

Gene: Gspu1_15 Start: 9141, Stop: 9716, Start Num: 30

Candidate Starts for Gspu1_15:

(10, 9105), (Start: 30 @9141 has 10 MA's), (34, 9174), (36, 9186), (37, 9192), (38, 9207), (41, 9225), (66, 9381), (68, 9384), (82, 9468), (88, 9504), (93, 9525), (95, 9537),

Gene: Guacamole_14 Start: 8683, Stop: 9321, Start Num: 16

Candidate Starts for Guacamole_14:

(Start: 14 @8680 has 2 MA's), (Start: 16 @8683 has 39 MA's), (39, 8773), (41, 8788), (63, 8941), (77, 9016), (81, 9040), (91, 9088), (102, 9145), (104, 9184), (117, 9268), (121, 9304),

Gene: Hitter_14 Start: 8679, Stop: 9317, Start Num: 16

Candidate Starts for Hitter_14:

(Start: 14 @8676 has 2 MA's), (Start: 16 @8679 has 39 MA's), (39, 8769), (41, 8784), (51, 8850), (63, 8937), (77, 9012), (81, 9036), (91, 9084), (102, 9141), (104, 9180), (117, 9264), (121, 9300),

Gene: Huff_19 Start: 10919, Stop: 11509, Start Num: 30

Candidate Starts for Huff_19:

(Start: 30 @10919 has 10 MA's), (34, 10952), (38, 10985), (41, 11003), (75, 11204), (93, 11315), (94, 11318), (98, 11345), (108, 11417),

Gene: lbantik_76 Start: 35791, Stop: 36390, Start Num: 27

Candidate Starts for lbantik_76:

(Start: 27 @35791 has 5 MA's), (35, 35836), (48, 35935), (61, 36022), (92, 36205), (101, 36256), (110, 36328), (118, 36373),

Gene: Jalammah_15 Start: 8950, Stop: 9588, Start Num: 16

Candidate Starts for Jalammah_15:

(Start: 14 @8947 has 2 MA's), (Start: 16 @8950 has 39 MA's), (39, 9040), (41, 9055), (51, 9121), (63, 9208), (77, 9283), (81, 9307), (91, 9355), (102, 9412), (104, 9451), (117, 9535), (121, 9571),

Gene: Jankie_14 Start: 7198, Stop: 7770, Start Num: 20

Candidate Starts for Jankie_14:

(20, 7198), (34, 7246), (59, 7408), (85, 7549), (87, 7561), (102, 7633), (104, 7672),

Gene: JasperJr_14 Start: 8683, Stop: 9321, Start Num: 16

Candidate Starts for JasperJr_14:

(Start: 14 @8680 has 2 MA's), (Start: 16 @8683 has 39 MA's), (39, 8773), (41, 8788), (63, 8941), (77, 9016), (81, 9040), (91, 9088), (102, 9145), (104, 9184), (117, 9268), (121, 9304),

Gene: JuJu_14 Start: 8607, Stop: 9245, Start Num: 16

Candidate Starts for JuJu_14:

(Start: 14 @8604 has 2 MA's), (Start: 16 @8607 has 39 MA's), (39, 8697), (41, 8712), (63, 8865), (77, 8940), (81, 8964), (91, 9012), (102, 9069), (104, 9108), (117, 9192), (121, 9228),

Gene: KappaFarmDelta_14 Start: 8832, Stop: 9470, Start Num: 16

Candidate Starts for KappaFarmDelta_14:

(Start: 14 @8829 has 2 MA's), (Start: 16 @8832 has 39 MA's), (39, 8922), (41, 8937), (51, 9003), (57, 9039), (77, 9165), (81, 9189), (91, 9237), (102, 9294), (104, 9333), (117, 9417), (121, 9453),

Gene: Keiki_11 Start: 7170, Stop: 7796, Start Num: 33

Candidate Starts for Keiki_11:

(Start: 29 @7158 has 12 MA's), (32, 7167), (Start: 33 @7170 has 29 MA's), (44, 7263), (56, 7350), (60, 7386), (91, 7539), (92, 7542), (102, 7596), (104, 7635), (109, 7656), (Start: 114 @7698 has 1 MA's), (116, 7716),

Gene: Kromp_14 Start: 9809, Stop: 10375, Start Num: 114

Candidate Starts for Kromp_14:

(8, 9206), (50, 9401), (Start: 114 @9809 has 1 MA's), (122, 9893), (123, 9935), (124, 9950), (125, 9956), (126, 10037), (127, 10115), (128, 10130), (129, 10292),

Gene: Kubed_11 Start: 7161, Stop: 7790, Start Num: 33

Candidate Starts for Kubed_11:

(Start: 28 @7149 has 3 MA's), (32, 7158), (Start: 33 @7161 has 29 MA's), (47, 7284), (56, 7341), (91, 7530), (92, 7533), (104, 7626), (108, 7641), (109, 7647), (Start: 114 @7689 has 1 MA's), (116, 7707),

Gene: Kuwabara_13 Start: 7836, Stop: 8429, Start Num: 12

Candidate Starts for Kuwabara_13:

(Start: 12 @7836 has 3 MA's), (20, 7857), (32, 7881), (49, 7995), (58, 8055), (62, 8085), (69, 8109), (71, 8115), (76, 8151), (78, 8154), (84, 8190), (91, 8229), (108, 8340),

Gene: Lauchelly_11 Start: 7156, Stop: 7794, Start Num: 33

Candidate Starts for Lauchelly_11:

(Start: 28 @7144 has 3 MA's), (32, 7153), (Start: 33 @7156 has 29 MA's), (56, 7336), (60, 7372), (91, 7525), (92, 7528), (94, 7537), (108, 7636), (109, 7642), (Start: 114 @7684 has 1 MA's), (116, 7702),

Gene: Leviosa_11 Start: 7181, Stop: 7813, Start Num: 33

Candidate Starts for Leviosa_11:

(Start: 29 @7169 has 12 MA's), (32, 7178), (Start: 33 @7181 has 29 MA's), (56, 7361), (91, 7550), (92, 7553), (94, 7562), (104, 7646), (108, 7661), (109, 7667), (Start: 114 @7709 has 1 MA's), (116, 7727),

Gene: LilBandit_11 Start: 7167, Stop: 7796, Start Num: 33

Candidate Starts for LilBandit_11:

(Start: 11 @7119 has 1 MA's), (13, 7125), (15, 7128), (21, 7143), (25, 7149), (Start: 28 @7155 has 3 MA's), (32, 7164), (Start: 33 @7167 has 29 MA's), (44, 7260), (56, 7347), (91, 7536), (92, 7539), (94, 7548), (104, 7632), (108, 7647), (109, 7653), (Start: 114 @7695 has 1 MA's), (116, 7713),

Gene: LisoBros_12 Start: 7473, Stop: 8045, Start Num: 23

Candidate Starts for LisoBros_12:

(4, 7308), (9, 7443), (Start: 23 @7473 has 2 MA's), (34, 7518), (36, 7530), (42, 7575), (59, 7680), (64, 7716), (65, 7722), (69, 7731), (74, 7749), (85, 7821), (91, 7848), (104, 7944), (106, 7950),

Gene: Lysidious_14 Start: 8679, Stop: 9317, Start Num: 16

Candidate Starts for Lysidious_14:

(Start: 14 @8676 has 2 MA's), (Start: 16 @8679 has 39 MA's), (39, 8769), (41, 8784), (51, 8850), (63, 8937), (77, 9012), (81, 9036), (91, 9084), (102, 9141), (104, 9180), (117, 9264), (121, 9300),

Gene: MEAK_11 Start: 7162, Stop: 7782, Start Num: 33

Candidate Starts for MEAK_11:

(Start: 29 @7150 has 12 MA's), (32, 7159), (Start: 33 @7162 has 29 MA's), (44, 7255), (56, 7342), (67, 7414), (89, 7519), (92, 7534), (104, 7627), (108, 7642), (109, 7648), (Start: 114 @7690 has 1 MA's), (116, 7708),

Gene: Malachai_14 Start: 8682, Stop: 9320, Start Num: 16

Candidate Starts for Malachai_14:

(Start: 14 @8679 has 2 MA's), (Start: 16 @8682 has 39 MA's), (39, 8772), (41, 8787), (51, 8853), (77, 9015), (81, 9039), (91, 9087), (102, 9144), (104, 9183), (117, 9267), (121, 9303),

Gene: Melba_14 Start: 8679, Stop: 9317, Start Num: 16

Candidate Starts for Melba_14:

(Start: 14 @8676 has 2 MA's), (Start: 16 @8679 has 39 MA's), (39, 8769), (41, 8784), (63, 8937), (77, 9012), (81, 9036), (91, 9084), (102, 9141), (104, 9180), (117, 9264), (121, 9300),

Gene: Mellie_13 Start: 8419, Stop: 9057, Start Num: 16

Candidate Starts for Mellie_13:

(Start: 14 @8416 has 2 MA's), (Start: 16 @8419 has 39 MA's), (39, 8509), (41, 8524), (51, 8590), (63, 8677), (77, 8752), (81, 8776), (91, 8824), (102, 8881), (104, 8920), (117, 9004), (121, 9040),

Gene: MintFen_14 Start: 8679, Stop: 9317, Start Num: 16

Candidate Starts for MintFen_14:

(Start: 14 @8676 has 2 MA's), (Start: 16 @8679 has 39 MA's), (39, 8769), (41, 8784), (63, 8937), (77, 9012), (81, 9036), (91, 9084), (102, 9141), (104, 9180), (117, 9264), (121, 9300),

Gene: MissRona_16 Start: 9023, Stop: 9661, Start Num: 16

Candidate Starts for MissRona_16:

(Start: 14 @9020 has 2 MA's), (Start: 16 @9023 has 39 MA's), (39, 9113), (41, 9128), (51, 9194), (57, 9230), (63, 9281), (77, 9356), (81, 9380), (91, 9428), (102, 9485), (104, 9524), (117, 9608), (121, 9644),

Gene: Moyashi_11 Start: 7180, Stop: 7824, Start Num: 33

Candidate Starts for Moyashi_11:

(Start: 29 @7168 has 12 MA's), (32, 7177), (Start: 33 @7180 has 29 MA's), (44, 7273), (56, 7360), (60, 7396), (89, 7537), (92, 7552), (102, 7606), (104, 7645), (108, 7660), (109, 7666), (Start: 114 @7708 has 1 MA's), (116, 7726),

Gene: MrAK_11 Start: 7192, Stop: 7836, Start Num: 33

Candidate Starts for MrAK_11:

(Start: 29 @7180 has 12 MA's), (32, 7189), (Start: 33 @7192 has 29 MA's), (44, 7285), (56, 7372), (60, 7408), (91, 7561), (92, 7564), (102, 7618), (104, 7657), (108, 7672), (109, 7678), (Start: 114 @7720 has 1 MA's), (116, 7738),

Gene: Murp_14 Start: 8672, Stop: 9310, Start Num: 16

Candidate Starts for Murp_14:

(Start: 14 @8669 has 2 MA's), (Start: 16 @8672 has 39 MA's), (39, 8762), (41, 8777), (51, 8843), (57, 8879), (63, 8930), (77, 9005), (81, 9029), (102, 9134), (104, 9173), (117, 9257), (121, 9293),

Gene: Obliviate_13 Start: 8445, Stop: 9086, Start Num: 14

Candidate Starts for Obliviate_13:

(Start: 14 @8445 has 2 MA's), (Start: 16 @8448 has 39 MA's), (39, 8538), (41, 8553), (51, 8619), (63, 8706), (77, 8781), (81, 8805), (91, 8853), (102, 8910), (104, 8949), (117, 9033), (121, 9069),

Gene: Ouroboros_11 Start: 7164, Stop: 7787, Start Num: 33

Candidate Starts for Ouroboros_11:

(25, 7146), (Start: 28 @7152 has 3 MA's), (32, 7161), (Start: 33 @7164 has 29 MA's), (47, 7287), (48, 7296), (56, 7344), (91, 7533), (92, 7536), (108, 7644), (109, 7650), (Start: 114 @7692 has 1 MA's), (116, 7710),

Gene: P1.1_11 Start: 7152, Stop: 7793, Start Num: 29

Candidate Starts for P1.1_11:

(Start: 29 @7152 has 12 MA's), (32, 7161), (Start: 33 @7164 has 29 MA's), (44, 7257), (56, 7344), (60, 7380), (90, 7530), (91, 7533), (92, 7536), (102, 7590), (104, 7629), (108, 7644), (109, 7650), (Start: 114 @7692 has 1 MA's), (116, 7710),

Gene: P100.1_11 Start: 7148, Stop: 7801, Start Num: 28

Candidate Starts for P100.1_11:

(25, 7142), (Start: 28 @7148 has 3 MA's), (32, 7157), (Start: 33 @7160 has 29 MA's), (44, 7253), (56, 7340), (60, 7376), (89, 7517), (92, 7532), (102, 7586), (104, 7625), (108, 7640), (109, 7646), (Start: 114 @7688 has 1 MA's), (116, 7706),

Gene: P100A_11 Start: 7160, Stop: 7795, Start Num: 29

Candidate Starts for P100A_11:

(26, 7154), (Start: 29 @7160 has 12 MA's), (32, 7169), (Start: 33 @7172 has 29 MA's), (44, 7265), (48, 7304), (56, 7352), (60, 7388), (92, 7544), (94, 7553), (108, 7652), (109, 7658), (Start: 114 @7700 has 1 MA's), (116, 7718),

Gene: P100D_11 Start: 7145, Stop: 7798, Start Num: 29

Candidate Starts for P100D_11:

(Start: 29 @7145 has 12 MA's), (32, 7154), (Start: 33 @7157 has 29 MA's), (44, 7250), (56, 7337), (89, 7514), (90, 7523), (91, 7526), (92, 7529), (102, 7583), (104, 7622), (108, 7637), (109, 7643), (Start: 114 @7685 has 1 MA's), (116, 7703),

Gene: P101A_11 Start: 7152, Stop: 7808, Start Num: 29

Candidate Starts for P101A_11:

(Start: 29 @7152 has 12 MA's), (32, 7161), (Start: 33 @7164 has 29 MA's), (44, 7257), (56, 7344), (60, 7380), (89, 7521), (92, 7536), (102, 7590), (104, 7629), (108, 7644), (109, 7650), (Start: 114 @7692 has 1 MA's), (116, 7710),

Gene: P104A_11 Start: 7149, Stop: 7781, Start Num: 29

Candidate Starts for P104A_11:

(Start: 29 @7149 has 12 MA's), (32, 7158), (Start: 33 @7161 has 29 MA's), (44, 7254), (56, 7341), (89, 7518), (92, 7533), (102, 7587), (104, 7626), (108, 7641), (109, 7647), (Start: 114 @7689 has 1 MA's), (116, 7707),

Gene: P104B_11 Start: 7169, Stop: 7798, Start Num: 33

Candidate Starts for P104B_11:

(Start: 11 @7121 has 1 MA's), (13, 7127), (15, 7130), (21, 7145), (25, 7151), (Start: 28 @7157 has 3 MA's), (32, 7166), (Start: 33 @7169 has 29 MA's), (44, 7262), (45, 7283), (56, 7349), (91, 7538), (92, 7541), (102, 7595), (104, 7634), (108, 7649), (109, 7655), (Start: 114 @7697 has 1 MA's), (116, 7715),

Gene: P105_11 Start: 7140, Stop: 7781, Start Num: 28

Candidate Starts for P105_11:

(Start: 28 @7140 has 3 MA's), (32, 7149), (Start: 33 @7152 has 29 MA's), (44, 7245), (56, 7332), (60, 7368), (91, 7521), (92, 7524), (104, 7617), (108, 7632), (109, 7638), (Start: 114 @7680 has 1 MA's), (116, 7698),

Gene: P106A_11 Start: 7168, Stop: 7824, Start Num: 29

Candidate Starts for P106A_11:

(Start: 29 @7168 has 12 MA's), (32, 7177), (Start: 33 @7180 has 29 MA's), (44, 7273), (56, 7360), (60, 7396), (89, 7537), (91, 7549), (92, 7552), (102, 7606), (104, 7645), (108, 7660), (109, 7666), (Start: 114 @7708 has 1 MA's), (116, 7726),

Gene: P106C_11 Start: 7168, Stop: 7824, Start Num: 29

Candidate Starts for P106C_11:

(Start: 29 @7168 has 12 MA's), (32, 7177), (Start: 33 @7180 has 29 MA's), (44, 7273), (56, 7360), (60, 7396), (89, 7537), (91, 7549), (92, 7552), (102, 7606), (104, 7645), (108, 7660), (109, 7666), (Start: 114 @7708 has 1 MA's), (116, 7726),

Gene: P106I_11 Start: 7168, Stop: 7824, Start Num: 29

Candidate Starts for P106I_11:

(Start: 29 @7168 has 12 MA's), (32, 7177), (Start: 33 @7180 has 29 MA's), (44, 7273), (56, 7360), (60, 7396), (89, 7537), (91, 7549), (92, 7552), (102, 7606), (104, 7645), (108, 7660), (109, 7666), (Start: 114 @7708 has 1 MA's), (116, 7726),

Gene: P106L_11 Start: 7168, Stop: 7824, Start Num: 29

Candidate Starts for P106L_11:

(Start: 29 @7168 has 12 MA's), (32, 7177), (Start: 33 @7180 has 29 MA's), (44, 7273), (56, 7360), (60, 7396), (89, 7537), (91, 7549), (92, 7552), (102, 7606), (104, 7645), (108, 7660), (109, 7666), (Start: 114 @7708 has 1 MA's), (116, 7726),

Gene: P106M_11 Start: 7168, Stop: 7824, Start Num: 29

Candidate Starts for P106M_11:

(Start: 29 @7168 has 12 MA's), (32, 7177), (Start: 33 @7180 has 29 MA's), (44, 7273), (56, 7360), (60, 7396), (89, 7537), (91, 7549), (92, 7552), (102, 7606), (104, 7645), (108, 7660), (109, 7666), (Start: 114 @7708 has 1 MA's), (116, 7726),

Gene: P107A_11 Start: 7168, Stop: 7800, Start Num: 33

Candidate Starts for P107A_11:

(Start: 28 @7156 has 3 MA's), (32, 7165), (Start: 33 @7168 has 29 MA's), (56, 7348), (60, 7384), (89, 7525), (90, 7534), (91, 7537), (92, 7540), (94, 7549), (104, 7633), (108, 7648), (109, 7654), (Start: 114 @7696 has 1 MA's), (116, 7714),

Gene: P107C_11 Start: 7162, Stop: 7785, Start Num: 33

Candidate Starts for P107C_11:

(Start: 29 @7150 has 12 MA's), (32, 7159), (Start: 33 @7162 has 29 MA's), (44, 7255), (56, 7342), (91, 7531), (92, 7534), (94, 7543), (104, 7627), (108, 7642), (109, 7648), (Start: 114 @7690 has 1 MA's), (116, 7708),

Gene: P108C_11 Start: 7167, Stop: 7793, Start Num: 33

Candidate Starts for P108C_11:

(Start: 29 @7155 has 12 MA's), (32, 7164), (Start: 33 @7167 has 29 MA's), (44, 7260), (56, 7347), (89, 7524), (92, 7539), (104, 7632), (108, 7647), (109, 7653), (Start: 114 @7695 has 1 MA's), (116, 7713),

Gene: P14.4_11 Start: 7116, Stop: 7793, Start Num: 11

Candidate Starts for P14.4_11:

(Start: 11 @7116 has 1 MA's), (13, 7122), (15, 7125), (21, 7140), (25, 7146), (Start: 28 @7152 has 3 MA's), (32, 7161), (Start: 33 @7164 has 29 MA's), (44, 7257), (45, 7278), (56, 7344), (60, 7380), (89, 7521), (90, 7530), (91, 7533), (92, 7536), (104, 7629), (108, 7644), (109, 7650), (Start: 114 @7692 has 1 MA's), (116, 7710),

Gene: P9.1_11 Start: 7144, Stop: 7788, Start Num: 29

Candidate Starts for P9.1_11:

(Start: 29 @7144 has 12 MA's), (32, 7153), (Start: 33 @7156 has 29 MA's), (44, 7249), (56, 7336), (60, 7372), (89, 7513), (92, 7528), (104, 7621), (108, 7636), (109, 7642), (Start: 114 @7684 has 1 MA's), (116, 7702), (120, 7732),

Gene: PA6_11 Start: 7172, Stop: 7813, Start Num: 33

Candidate Starts for PA6_11:

(Start: 11 @7124 has 1 MA's), (13, 7130), (15, 7133), (21, 7148), (25, 7154), (Start: 28 @7160 has 3 MA's), (32, 7169), (Start: 33 @7172 has 29 MA's), (44, 7265), (56, 7352), (60, 7388), (91, 7541), (92, 7544), (102, 7598), (104, 7637), (108, 7652), (109, 7658), (Start: 114 @7700 has 1 MA's), (116, 7718),

Gene: PAD20_11 Start: 7164, Stop: 7793, Start Num: 33

Candidate Starts for PAD20_11:

(Start: 29 @7152 has 12 MA's), (32, 7161), (Start: 33 @7164 has 29 MA's), (44, 7257), (56, 7344), (91, 7533), (92, 7536), (94, 7545), (102, 7590), (104, 7629), (108, 7644), (109, 7650), (Start: 114 @7692 has 1 MA's), (116, 7710),

Gene: PAS50_11 Start: 7161, Stop: 7799, Start Num: 33

Candidate Starts for PAS50_11:

(Start: 29 @7149 has 12 MA's), (32, 7158), (Start: 33 @7161 has 29 MA's), (44, 7254), (47, 7284), (56, 7341), (60, 7377), (89, 7518), (91, 7530), (92, 7533), (102, 7587), (104, 7626), (108, 7641), (109, 7647), (Start: 114 @7689 has 1 MA's), (116, 7707),

Gene: PCoral7_14 Start: 8656, Stop: 9306, Start Num: 16

Candidate Starts for PCoral7_14:

(Start: 6 @8626 has 1 MA's), (Start: 14 @8653 has 2 MA's), (Start: 16 @8656 has 39 MA's), (39, 8746), (41, 8761), (57, 8863), (62, 8911), (77, 8989), (81, 9013), (86, 9043), (91, 9061), (104, 9157), (117, 9241),

Gene: PHL010M04_11 Start: 7155, Stop: 7787, Start Num: 33

Candidate Starts for PHL010M04_11:

(Start: 28 @7143 has 3 MA's), (32, 7152), (Start: 33 @7155 has 29 MA's), (56, 7335), (60, 7371), (91, 7524), (92, 7527), (104, 7620), (Start: 114 @7683 has 1 MA's), (116, 7701),

Gene: PHL037M02_11 Start: 7161, Stop: 7802, Start Num: 33

Candidate Starts for PHL037M02_11:

(Start: 28 @7149 has 3 MA's), (32, 7158), (Start: 33 @7161 has 29 MA's), (44, 7254), (56, 7341), (60, 7377), (91, 7530), (92, 7533), (102, 7587), (104, 7626), (108, 7641), (109, 7647), (Start: 114 @7689 has 1 MA's), (116, 7707),

Gene: PHL060L00_11 Start: 7151, Stop: 7804, Start Num: 33

Candidate Starts for PHL060L00_11:

(Start: 29 @7139 has 12 MA's), (32, 7148), (Start: 33 @7151 has 29 MA's), (44, 7244), (56, 7331), (60, 7367), (91, 7520), (92, 7523), (94, 7532), (104, 7616), (108, 7631), (109, 7637), (Start: 114 @7679 has 1 MA's), (116, 7697),

Gene: PHL067M10_11 Start: 7157, Stop: 7771, Start Num: 33

Candidate Starts for PHL067M10_11:

(Start: 29 @7145 has 12 MA's), (32, 7154), (Start: 33 @7157 has 29 MA's), (44, 7250), (48, 7289), (56, 7337), (89, 7514), (90, 7523), (91, 7526), (92, 7529), (104, 7622), (108, 7637), (109, 7643), (Start: 114 @7685 has 1 MA's), (116, 7703),

Gene: PHL071N05_11 Start: 7159, Stop: 7797, Start Num: 33

Candidate Starts for PHL071N05_11:

(Start: 29 @7147 has 12 MA's), (32, 7156), (Start: 33 @7159 has 29 MA's), (44, 7252), (56, 7339), (91, 7528), (92, 7531), (104, 7624), (108, 7639), (109, 7645), (Start: 114 @7687 has 1 MA's), (116, 7705),

Gene: PHL111M01_11 Start: 7168, Stop: 7788, Start Num: 33

Candidate Starts for PHL111M01_11:

(Start: 29 @7156 has 12 MA's), (32, 7165), (Start: 33 @7168 has 29 MA's), (44, 7261), (56, 7348), (60, 7384), (89, 7525), (91, 7537), (92, 7540), (102, 7594), (104, 7633), (108, 7648), (109, 7654), (Start: 114 @7696 has 1 MA's), (116, 7714),

Gene: PHL112N00_11 Start: 7164, Stop: 7784, Start Num: 33

Candidate Starts for PHL112N00_11:

(Start: 29 @7152 has 12 MA's), (32, 7161), (Start: 33 @7164 has 29 MA's), (44, 7257), (45, 7278), (56, 7344), (60, 7380), (91, 7533), (92, 7536), (104, 7629), (108, 7644), (109, 7650), (Start: 114 @7692 has 1 MA's), (116, 7710),

Gene: PHL113M01_11 Start: 7172, Stop: 7813, Start Num: 33

Candidate Starts for PHL113M01_11:

(Start: 29 @7160 has 12 MA's), (32, 7169), (Start: 33 @7172 has 29 MA's), (56, 7352), (91, 7541), (92, 7544), (94, 7553), (104, 7637), (108, 7652), (109, 7658), (Start: 114 @7700 has 1 MA's), (116, 7718),

Gene: PHL114L00_11 Start: 7168, Stop: 7791, Start Num: 33

Candidate Starts for PHL114L00_11:

(21, 7144), (25, 7150), (Start: 28 @7156 has 3 MA's), (32, 7165), (Start: 33 @7168 has 29 MA's), (56, 7348), (92, 7540), (108, 7648), (109, 7654), (Start: 114 @7696 has 1 MA's), (116, 7714),

Gene: Petra_16 Start: 9059, Stop: 9697, Start Num: 16

Candidate Starts for Petra_16:

(Start: 14 @9056 has 2 MA's), (Start: 16 @9059 has 39 MA's), (39, 9149), (41, 9164), (51, 9230), (63, 9317), (77, 9392), (81, 9416), (91, 9464), (102, 9521), (104, 9560), (117, 9644), (121, 9680),

Gene: PhrostedPhlake_15 Start: 9037, Stop: 9675, Start Num: 16

Candidate Starts for PhrostedPhlake_15:

(Start: 14 @9034 has 2 MA's), (Start: 16 @9037 has 39 MA's), (39, 9127), (41, 9142), (51, 9208), (63, 9295), (77, 9370), (81, 9394), (91, 9442), (102, 9499), (104, 9538), (117, 9622), (121, 9658),

Gene: Pipp_14 Start: 8651, Stop: 9292, Start Num: 14

Candidate Starts for Pipp_14:

(Start: 14 @8651 has 2 MA's), (Start: 16 @8654 has 39 MA's), (39, 8744), (41, 8759), (77, 8987), (81, 9011), (91, 9059), (102, 9116), (104, 9155), (117, 9239), (121, 9275),

Gene: Pirate_11 Start: 7156, Stop: 7782, Start Num: 33

Candidate Starts for Pirate_11:

(Start: 29 @7144 has 12 MA's), (32, 7153), (Start: 33 @7156 has 29 MA's), (44, 7249), (56, 7336), (89, 7513), (92, 7528), (104, 7621), (108, 7636), (109, 7642), (Start: 114 @7684 has 1 MA's), (116, 7702),

Gene: Ponzi_51 Start: 29147, Stop: 29737, Start Num: 27

Candidate Starts for Ponzi_51:

(10, 29111), (Start: 27 @29147 has 5 MA's), (51, 29300), (54, 29318), (61, 29372), (70, 29408), (92, 29546), (101, 29597), (118, 29714),

Gene: PrincePatrick_14 Start: 8714, Stop: 9367, Start Num: 16

Candidate Starts for PrincePatrick_14:

(Start: 6 @8684 has 1 MA's), (Start: 14 @8711 has 2 MA's), (Start: 16 @8714 has 39 MA's), (39, 8804), (41, 8819), (57, 8921), (62, 8969), (77, 9047), (81, 9071), (86, 9101), (91, 9119), (104, 9215), (117, 9299),

Gene: Procrass1_11 Start: 7169, Stop: 7795, Start Num: 33

Candidate Starts for Procrass1_11:

(Start: 29 @7157 has 12 MA's), (32, 7166), (Start: 33 @7169 has 29 MA's), (44, 7262), (56, 7349), (89, 7526), (92, 7541), (104, 7634), (108, 7649), (109, 7655), (Start: 114 @7697 has 1 MA's), (116, 7715),

Gene: QueenBey_11 Start: 7157, Stop: 7789, Start Num: 33

Candidate Starts for QueenBey_11:

(Start: 28 @7145 has 3 MA's), (32, 7154), (Start: 33 @7157 has 29 MA's), (56, 7337), (60, 7373), (67, 7409), (91, 7526), (92, 7529), (108, 7637), (109, 7643), (Start: 114 @7685 has 1 MA's), (116, 7703),

Gene: Rileysaurus_11 Start: 7153, Stop: 7785, Start Num: 33

Candidate Starts for Rileysaurus_11:

(Start: 28 @7141 has 3 MA's), (32, 7150), (Start: 33 @7153 has 29 MA's), (44, 7246), (47, 7276), (56, 7333), (92, 7525), (94, 7534), (104, 7618), (Start: 114 @7681 has 1 MA's), (116, 7699),

Gene: RunningOnE_72 Start: 34517, Stop: 35101, Start Num: 27

Candidate Starts for RunningOnE_72:

(Start: 27 @34517 has 5 MA's), (35, 34562), (48, 34658), (52, 34679), (54, 34691), (79, 34835), (101, 34967), (110, 35039), (118, 35084),

Gene: SKKY_11 Start: 7186, Stop: 7830, Start Num: 33

Candidate Starts for SKKY_11:

(24, 7165), (Start: 28 @7174 has 3 MA's), (32, 7183), (Start: 33 @7186 has 29 MA's), (44, 7279), (56, 7366), (60, 7402), (89, 7543), (91, 7555), (92, 7558), (102, 7612), (104, 7651), (108, 7666), (109, 7672), (Start: 114 @7714 has 1 MA's), (116, 7732),

Gene: Samba_14 Start: 8787, Stop: 9425, Start Num: 16

Candidate Starts for Samba_14:

(Start: 14 @8784 has 2 MA's), (Start: 16 @8787 has 39 MA's), (39, 8877), (41, 8892), (77, 9120), (81, 9144), (91, 9192), (102, 9249), (104, 9288), (117, 9372), (121, 9408),

Gene: Samy_17 Start: 9940, Stop: 10539, Start Num: 18

Candidate Starts for Samy_17:

(7, 9904), (Start: 18 @9940 has 1 MA's), (32, 9964), (37, 10006), (61, 10156), (99, 10366), (105, 10423), (107, 10429), (108, 10435), (109, 10441), (Start: 114 @10477 has 1 MA's), (119, 10510),

Gene: Schmidt_15 Start: 9115, Stop: 9729, Start Num: 30

Candidate Starts for Schmidt_15:

(3, 8911), (Start: 30 @9115 has 10 MA's), (37, 9166), (38, 9181), (41, 9199), (46, 9223), (57, 9289), (62, 9337), (80, 9421), (88, 9487), (94, 9511),

Gene: Shambre1_14 Start: 9456, Stop: 10025, Start Num: 23

Candidate Starts for Shambre1_14:

(Start: 23 @9456 has 2 MA's), (65, 9705), (91, 9849), (96, 9873), (104, 9945), (112, 9984),

Gene: Solid_11 Start: 7163, Stop: 7783, Start Num: 33

Candidate Starts for Solid_11:

(Start: 29 @7151 has 12 MA's), (32, 7160), (Start: 33 @7163 has 29 MA's), (44, 7256), (56, 7343), (91, 7532), (92, 7535), (94, 7544), (104, 7628), (108, 7643), (109, 7649), (Start: 114 @7691 has 1 MA's), (116, 7709),

Gene: Splinter_17 Start: 10694, Stop: 11284, Start Num: 30

Candidate Starts for Splinter_17:

(Start: 30 @10694 has 10 MA's), (34, 10727), (38, 10760), (41, 10778), (55, 10856), (93, 11090), (94, 11093), (98, 11120), (108, 11192),

Gene: Spooks_57 Start: 33105, Stop: 33695, Start Num: 27

Candidate Starts for Spooks_57:

(17, 33087), (Start: 27 @33105 has 5 MA's), (40, 33183), (56, 33291), (61, 33330), (64, 33351), (73, 33381), (79, 33423), (92, 33510), (97, 33543), (98, 33546), (101, 33561),

Gene: Stormborn_11 Start: 7159, Stop: 7797, Start Num: 33

Candidate Starts for Stormborn_11:

(Start: 28 @7147 has 3 MA's), (32, 7156), (Start: 33 @7159 has 29 MA's), (56, 7339), (91, 7528), (92, 7531), (102, 7585), (104, 7624), (108, 7639), (109, 7645), (Start: 114 @7687 has 1 MA's), (116, 7705),

Gene: Success_58 Start: 32224, Stop: 32814, Start Num: 27

Candidate Starts for Success_58:

(17, 32206), (Start: 27 @32224 has 5 MA's), (48, 32362), (61, 32449), (64, 32470), (79, 32542), (82, 32563), (92, 32629), (97, 32662), (98, 32665), (101, 32680),

Gene: Supernova_11 Start: 7163, Stop: 7804, Start Num: 33

Candidate Starts for Supernova_11:

(Start: 29 @7151 has 12 MA's), (32, 7160), (Start: 33 @7163 has 29 MA's), (44, 7256), (47, 7286), (56, 7343), (60, 7379), (91, 7532), (92, 7535), (102, 7589), (104, 7628), (108, 7643), (109, 7649), (Start: 114 @7691 has 1 MA's), (116, 7709),

Gene: TZGordon_19 Start: 10836, Stop: 11426, Start Num: 30

Candidate Starts for TZGordon_19:

(Start: 30 @10836 has 10 MA's), (34, 10869), (38, 10902), (41, 10920), (75, 11121), (93, 11232), (94, 11235), (98, 11262), (108, 11334),

Gene: TinaLin_20 Start: 11401, Stop: 11997, Start Num: 30

Candidate Starts for TinaLin_20:

(Start: 30 @11401 has 10 MA's), (41, 11485), (46, 11509), (55, 11563), (75, 11686), (93, 11797), (94, 11800), (95, 11809), (98, 11827), (103, 11866), (111, 11917),

Gene: Toast_14 Start: 8626, Stop: 9306, Start Num: 6

Candidate Starts for Toast_14:

(Start: 6 @8626 has 1 MA's), (Start: 14 @8653 has 2 MA's), (Start: 16 @8656 has 39 MA's), (39, 8746), (41, 8761), (57, 8863), (62, 8911), (77, 8989), (81, 9013), (86, 9043), (91, 9061), (104, 9157), (117, 9241),

Gene: UmaThurman_14 Start: 8786, Stop: 9424, Start Num: 16

Candidate Starts for UmaThurman_14:

(Start: 14 @8783 has 2 MA's), (Start: 16 @8786 has 39 MA's), (39, 8876), (41, 8891), (63, 9044), (77, 9119), (81, 9143), (91, 9191), (102, 9248), (104, 9287), (117, 9371), (121, 9407),

Gene: Utz_14 Start: 8653, Stop: 9291, Start Num: 16

Candidate Starts for Utz_14:

(Start: 14 @8650 has 2 MA's), (Start: 16 @8653 has 39 MA's), (39, 8743), (41, 8758), (63, 8911), (77, 8986), (81, 9010), (91, 9058), (102, 9115), (104, 9154), (117, 9238), (121, 9274),

Gene: Vendetta_17 Start: 10694, Stop: 11284, Start Num: 30

Candidate Starts for Vendetta_17:

(Start: 30 @10694 has 10 MA's), (34, 10727), (38, 10760), (41, 10778), (55, 10856), (93, 11090), (94, 11093), (98, 11120), (108, 11192),

Gene: Walrus_15 Start: 8881, Stop: 9519, Start Num: 16

Candidate Starts for Walrus_15:

(Start: 14 @8878 has 2 MA's), (Start: 16 @8881 has 39 MA's), (39, 8971), (41, 8986), (51, 9052), (63, 9139), (77, 9214), (81, 9238), (91, 9286), (102, 9343), (104, 9382), (117, 9466), (121, 9502),

Gene: William_14 Start: 8602, Stop: 9252, Start Num: 16

Candidate Starts for William_14:

(Start: 6 @8572 has 1 MA's), (Start: 14 @8599 has 2 MA's), (Start: 16 @8602 has 39 MA's), (39, 8692), (41, 8707), (57, 8809), (62, 8857), (77, 8935), (81, 8959), (86, 8989), (91, 9007), (104, 9103), (117, 9187),

Gene: Wisp_13 Start: 8419, Stop: 9057, Start Num: 16

Candidate Starts for Wisp_13:

(Start: 14 @8416 has 2 MA's), (Start: 16 @8419 has 39 MA's), (39, 8509), (41, 8524), (51, 8590), (63, 8677), (77, 8752), (81, 8776), (91, 8824), (102, 8881), (104, 8920), (117, 9004), (121, 9040),

Gene: Wizzo_11 Start: 7174, Stop: 7815, Start Num: 33

Candidate Starts for Wizzo_11:

(Start: 11 @7126 has 1 MA's), (13, 7132), (15, 7135), (21, 7150), (25, 7156), (Start: 28 @7162 has 3 MA's), (32, 7171), (Start: 33 @7174 has 29 MA's), (44, 7267), (56, 7354), (60, 7390), (91, 7543), (92, 7546), (102, 7600), (104, 7639), (108, 7654), (109, 7660), (Start: 114 @7702 has 1 MA's), (116, 7720),

Gene: Wocket_15 Start: 8904, Stop: 9542, Start Num: 16

Candidate Starts for Wocket_15:

(Start: 14 @8901 has 2 MA's), (Start: 16 @8904 has 39 MA's), (39, 8994), (41, 9009), (51, 9075), (72, 9195), (77, 9237), (81, 9261), (91, 9309), (104, 9405), (117, 9489), (121, 9525),

Gene: Zarbodnamra_14 Start: 8678, Stop: 9316, Start Num: 16

Candidate Starts for Zarbodnamra_14:

(Start: 14 @8675 has 2 MA's), (Start: 16 @8678 has 39 MA's), (39, 8768), (41, 8783), (63, 8936), (77, 9011), (81, 9035), (91, 9083), (102, 9140), (104, 9179), (117, 9263), (121, 9299),

Gene: ZiggyZoo_13 Start: 8448, Stop: 9086, Start Num: 16

Candidate Starts for ZiggyZoo_13:

(Start: 14 @8445 has 2 MA's), (Start: 16 @8448 has 39 MA's), (39, 8538), (41, 8553), (51, 8619), (63, 8706), (77, 8781), (81, 8805), (91, 8853), (102, 8910), (104, 8949), (117, 9033), (121, 9069),

Gene: Zilla_14 Start: 8728, Stop: 9366, Start Num: 16

Candidate Starts for Zilla_14:

(Start: 14 @8725 has 2 MA's), (Start: 16 @8728 has 39 MA's), (39, 8818), (41, 8833), (51, 8899), (63, 8986), (77, 9061), (81, 9085), (91, 9133), (102, 9190), (104, 9229), (117, 9313), (121, 9349),