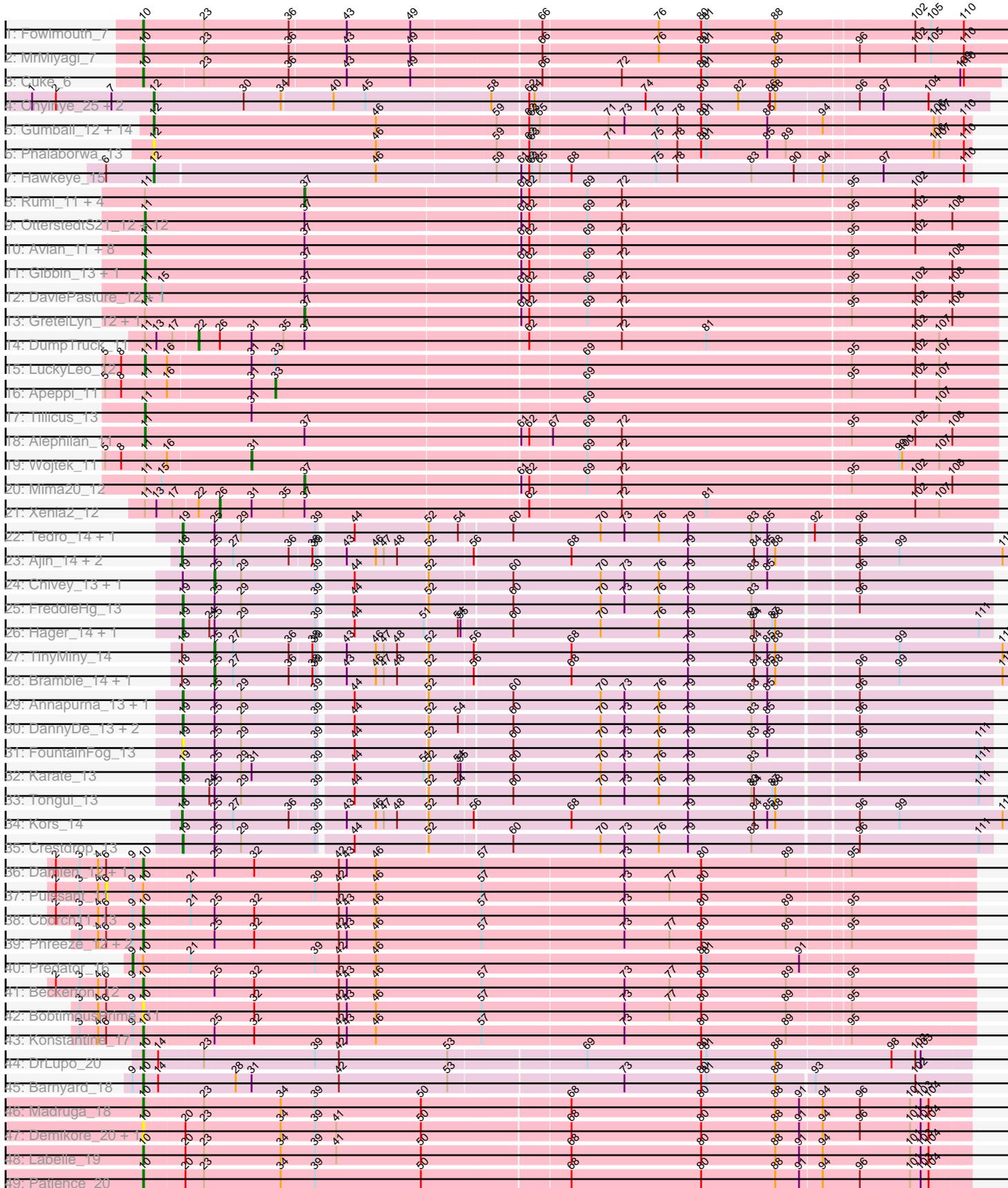


Pham 291009



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 291009 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291009 has 105 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_7
- Track 2 : MrMiyagi_7
- Track 3 : Cuke_6
- Track 4 : Onyinye_25, Leopard_24, Aikoy_24
- Track 5 : Gumball_12, KandZ_13, SirHarley_12, Delton_13, Thoth_13, Nova_13, BigMama_11, Prager_13, Penelope2018_13, Troll4_13, Visconti_13, Giuseppe_13, Erk16_13, Mopey_13, Butterscotch_13
- Track 6 : Phalaborwa_13
- Track 7 : Hawkeye_15
- Track 8 : Rumi_11, Charminar_11, Stormer_11, Riduram_11, Jamemuya19_11
- Track 9 : OtterstedtS21_12, Fulcrum_13, Ranch_12, Lila22_13, Sampudon_13, Patos_13, DoobyDoo_11, Sadboi_12, MoiGyank_14, Yikes_13, NorManre_13, GOATification_13, Rukungu_13
- Track 10 : Avian_11, Astralis_11, Alyssamiracle_11, Genamy16_11, Lambo_12, LavAbarElk_11, NovaSharks_11, RazorC_11, Erutan_12
- Track 11 : Gibbin_13, BirthdayBoy_13
- Track 12 : DaviePasture_12, Zany_12
- Track 13 : GretelLyn_12, Rota_12
- Track 14 : DumpTruck_11
- Track 15 : LuckyLeo_12
- Track 16 : Apeppi_11
- Track 17 : Tillicus_13
- Track 18 : Alephilan_11
- Track 19 : Wojtek_11
- Track 20 : Mima20_12
- Track 21 : Xenia2_12
- Track 22 : Tedro_14, Haunter_14
- Track 23 : Ajin_14, RikSengupta_14, Sparcetus_14
- Track 24 : Chivey_13, Hiddenleaf_13
- Track 25 : FreddieHg_13
- Track 26 : Hager_14, Rie18_14
- Track 27 : TinyMiny_14
- Track 28 : Bramble_14, LordBart_14
- Track 29 : Annapurna_13, JingleBells_13
- Track 30 : DannyDe_13, Snakehole_15, SilentWarrior_13
- Track 31 : FountainFog_13
- Track 32 : Karate_13

- Track 33 : Tongui_13
- Track 34 : Kors_14
- Track 35 : Crestdrop_13
- Track 36 : Damien_12, Megatron06_14
- Track 37 : Puissant_11
- Track 38 : Cborch11_13
- Track 39 : Phreeze_12, Thumb_12, Oaker_12
- Track 40 : Predator_16
- Track 41 : Beckerton_12
- Track 42 : BobtimousPrime_11
- Track 43 : Konstantine_17
- Track 44 : DrLupo_20
- Track 45 : Barnyard_18
- Track 46 : Madruga_18
- Track 47 : Demikore_20, SuperSonics_19
- Track 48 : Labelle_19
- Track 49 : Patience_20

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

The start number called the most often in the published annotations is 11, it was called in 27 of the 92 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alephilan_11, Alyssamiracle_11, Astralis_11, Avian_11, BirthdayBoy_13, DaviePasture_12, DoobyDoo_11, Erutan_12, Fulcrum_13, GOATification_13, Genamy16_11, Gibbin_13, Lambo_12, LavAbarElk_11, Lila22_13, LuckyLeo_12, MoiGyank_14, NorManre_13, NovaSharks_11, OtterstedtS21_12, Patos_13, Ranch_12, RazorC_11, Rukungu_13, Sadboi_12, Sampudon_13, Tillicus_13, Yikes_13, Zany_12,

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

- Apeppi_11, Charminar_11, DumpTruck_11, GretelLyn_12, Jamemuya19_11, Mima20_12, Riduram_11, Rota_12, Rumi_11, Stormer_11, Wojtek_11, Xenia2_12,

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

- Aikoy_24, Ajin_14, Annapurna_13, Barnyard_18, Beckerton_12, BigMama_11, BobtimousPrime_11, Bramble_14, Butterscotch_13, Cborch11_13, Chivey_13, Crestdrop_13, Cuke_6, Damien_12, DannyDe_13, Delton_13, Demikore_20, DrLupo_20, Erk16_13, FountainFog_13, Fowlmouth_7, FreddieHg_13, Giuseppe_13, Gumball_12, Hager_14, Haunter_14, Hawkeye_15, Hiddenleaf_13, JingleBells_13, KandZ_13, Karate_13, Konstantine_17, Kors_14, Labelle_19, Leopard_24, LordBart_14, Madruga_18, Megatron06_14, Mopey_13, MrMiyagi_7, Nova_13, Oaker_12, Onyinye_25, Patience_20, Penelope2018_13, Phalaborwa_13, Phreeze_12, Prager_13, Predator_16, Puissant_11, Rie18_14, RikSengupta_14, SilentWarrior_13, SirHarley_12, Snakehole_15, Sparcetus_14, SuperSonics_19, Tedro_14, Thoth_13, Thumb_12, TinyMiny_14, Tongui_13, Troll4_13, Visconti_13,

Summary by start number:

Start 6:

- Found in 11 of 105 (10.5%) of genes in pham
- No Manual Annotations of this start.
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Puissant_11 (H1),

Start 9:

- Found in 12 of 105 (11.4%) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Predator_16 (H1),

Start 10:

- Found in 21 of 105 (20.0%) of genes in pham
- Manual Annotations of this start: 16 of 92
- Called 90.5% of time when present
- Phage (with cluster) where this start called: Barnyard_18 (H2), Beckerton_12 (H1), BobtimousPrime_11 (H1), Cborch11_13 (H1), Cuke_6 (AC), Damien_12 (H1), Demikore_20 (U), DrLupo_20 (H2), Fowlmouth_7 (AC), Konstantine_17 (H1), Labelle_19 (U), Madruga_18 (U), Megatron06_14 (H1), MrMiyagi_7 (AC), Oaker_12 (H1), Patience_20 (U), Phreeze_12 (H1), SuperSonics_19 (U), Thumb_12 (H1),

Start 11:

- Found in 41 of 105 (39.0%) of genes in pham
- Manual Annotations of this start: 27 of 92
- Called 70.7% of time when present
- Phage (with cluster) where this start called: Alephilan_11 (DV), Alyssamiracle_11 (DV), Astralis_11 (DV), Avian_11 (DV), BirthdayBoy_13 (DV), DaviePasture_12 (DV), DoobyDoo_11 (DV), Erutan_12 (DV), Fulcrum_13 (DV), GOATification_13 (DV), Genamy16_11 (DV), Gibbin_13 (DV), Lambo_12 (DV), LavAbarElk_11 (DV), Lila22_13 (DV), LuckyLeo_12 (DV), MoiGyank_14 (DV), NorManre_13 (DV), NovaSharks_11 (DV), OtterstedtS21_12 (DV), Patos_13 (DV), Ranch_12 (DV), RazorC_11 (DV), Rukungu_13 (DV), Sadboi_12 (DV), Sampudon_13 (DV), Tillicus_13 (DV), Yikes_13 (DV), Zany_12 (DV),

Start 12:

- Found in 20 of 105 (19.0%) of genes in pham
- Manual Annotations of this start: 19 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy_24 (AE), BigMama_11 (D1), Butterscotch_13 (D1), Delton_13 (D1), Erk16_13 (D1), Giuseppe_13 (D1), Gumball_12 (D1), Hawkeye_15 (D2), KandZ_13 (D1), Leopard_24 (AE), Mopey_13 (D1), Nova_13 (D1), Onyinye_25 (AE), Penelope2018_13 (D1), Phalaborwa_13 (D1), Prager_13 (D1), SirHarley_12 (D1), Thoth_13 (D1), Troll4_13 (D1), Visconti_13 (D1),

Start 18:

- Found in 7 of 105 (6.7%) of genes in pham
- Manual Annotations of this start: 4 of 92
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Ajin_14 (EF), Kors_14 (EF), RikSengupta_14 (EF), Sparcetus_14 (EF),

Start 19:

- Found in 16 of 105 (15.2%) of genes in pham
- Manual Annotations of this start: 12 of 92
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Annapurna_13 (EF), Crestdrop_13 (EF), DannyDe_13 (EF), FountainFog_13 (EF), FreddieHg_13 (EF), Hager_14 (EF), Haunter_14 (EF), JingleBells_13 (EF), Karate_13 (EF), Rie18_14 (EF), SilentWarrior_13 (EF), Snakehole_15 (EF), Tedro_14 (EF), Tongui_13 (EF),

Start 22:

- Found in 2 of 105 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DumpTruck_11 (DV),

Start 25:

- Found in 31 of 105 (29.5%) of genes in pham
- Manual Annotations of this start: 5 of 92
- Called 16.1% of time when present
- Phage (with cluster) where this start called: Bramble_14 (EF), Chivey_13 (EF), Hiddenleaf_13 (EF), LordBart_14 (EF), TinyMiny_14 (EF),

Start 26:

- Found in 2 of 105 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Xenia2_12 (DV),

Start 31:

- Found in 8 of 105 (7.6%) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Wojtek_11 (DV),

Start 33:

- Found in 2 of 105 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Apeppi_11 (DV),

Start 37:

- Found in 37 of 105 (35.2%) of genes in pham
- Manual Annotations of this start: 4 of 92
- Called 21.6% of time when present
- Phage (with cluster) where this start called: Charminar_11 (DV), GretelLyn_12 (DV), Jamemuya19_11 (DV), Mima20_12 (DV), Riduram_11 (DV), Rota_12 (DV), Rumi_11 (DV), Stormer_11 (DV),

Summary by clusters:

There are 9 clusters represented in this pham: AC, H1, AE, H2, EF, U, DV, D2, D1,

Info for manual annotations of cluster AC:

- Start number 10 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 12 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster D1:

- Start number 12 was manually annotated 15 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 12 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DV:

- Start number 11 was manually annotated 27 times for cluster DV.
- Start number 22 was manually annotated 1 time for cluster DV.
- Start number 26 was manually annotated 1 time for cluster DV.
- Start number 31 was manually annotated 1 time for cluster DV.
- Start number 33 was manually annotated 1 time for cluster DV.
- Start number 37 was manually annotated 4 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 18 was manually annotated 4 times for cluster EF.
- Start number 19 was manually annotated 12 times for cluster EF.
- Start number 25 was manually annotated 5 times for cluster EF.

Info for manual annotations of cluster H1:

- Start number 9 was manually annotated 1 time for cluster H1.
- Start number 10 was manually annotated 8 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 10 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster U:

- Start number 10 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Aikoy_24 Start: 14575, Stop: 15495, Start Num: 12

Candidate Starts for Aikoy_24:

(1, 14437), (2, 14464), (7, 14527), (Start: 12 @14575 has 19 MA's), (30, 14674), (34, 14716), (40, 14773), (45, 14809), (58, 14947), (62, 14986), (64, 14992), (74, 15115), (80, 15178), (82, 15220), (86, 15256), (88, 15262), (96, 15349), (97, 15376), (104, 15427),

Gene: Ajin_14 Start: 6294, Stop: 7199, Start Num: 18

Candidate Starts for Ajin_14:

(Start: 18 @6294 has 4 MA's), (Start: 25 @6330 has 5 MA's), (27, 6351), (36, 6414), (38, 6438), (39, 6441), (43, 6468), (46, 6501), (47, 6510), (48, 6525), (52, 6558), (56, 6606), (68, 6711), (79, 6843), (84, 6918), (85, 6933), (88, 6942), (96, 7026), (99, 7071), (112, 7188),

Gene: Alephilan_11 Start: 8969, Stop: 9916, Start Num: 11

Candidate Starts for Alephilan_11:

(Start: 11 @8969 has 27 MA's), (Start: 37 @9149 has 4 MA's), (61, 9386), (62, 9395), (67, 9419), (69, 9458), (72, 9497), (95, 9752), (102, 9824), (108, 9866),

Gene: Alyssamiracle_11 Start: 7442, Stop: 8389, Start Num: 11

Candidate Starts for Alyssamiracle_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Annapurna_13 Start: 6189, Stop: 7073, Start Num: 19

Candidate Starts for Annapurna_13:

(Start: 19 @6189 has 12 MA's), (Start: 25 @6225 has 5 MA's), (29, 6255), (39, 6339), (44, 6375), (52, 6456), (60, 6543), (70, 6642), (73, 6669), (76, 6708), (79, 6741), (83, 6813), (85, 6831), (96, 6924),

Gene: Apeppi_11 Start: 9296, Stop: 10096, Start Num: 33

Candidate Starts for Apeppi_11:

(5, 9107), (8, 9125), (Start: 11 @9152 has 27 MA's), (16, 9176), (Start: 31 @9269 has 1 MA's), (Start: 33 @9296 has 1 MA's), (69, 9638), (95, 9932), (102, 10004), (107, 10031),

Gene: Astralis_11 Start: 7442, Stop: 8389, Start Num: 11

Candidate Starts for Astralis_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Avian_11 Start: 7442, Stop: 8389, Start Num: 11

Candidate Starts for Avian_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Barnyard_18 Start: 9413, Stop: 10318, Start Num: 10

Candidate Starts for Barnyard_18:

(Start: 9 @9401 has 1 MA's), (Start: 10 @9413 has 16 MA's), (14, 9425), (28, 9509), (Start: 31 @9527 has 1 MA's), (42, 9626), (53, 9749), (73, 9938), (80, 10025), (81, 10031), (88, 10109), (93, 10148), (102, 10259),

Gene: Beckerton_12 Start: 8502, Stop: 9422, Start Num: 10

Candidate Starts for Beckerton_12:

(2, 8403), (3, 8430), (4, 8451), (6, 8460), (Start: 9 @8490 has 1 MA's), (Start: 10 @8502 has 16 MA's), (Start: 25 @8574 has 5 MA's), (32, 8619), (42, 8715), (43, 8724), (46, 8757), (57, 8877), (73, 9036), (77, 9087), (80, 9123), (89, 9219), (95, 9285),

Gene: BigMama_11 Start: 8804, Stop: 9709, Start Num: 12

Candidate Starts for BigMama_11:

(Start: 12 @8804 has 19 MA's), (46, 9056), (59, 9188), (62, 9221), (63, 9224), (65, 9233), (71, 9308), (73, 9326), (75, 9362), (78, 9386), (80, 9413), (81, 9419), (85, 9488), (94, 9548), (106, 9668), (107, 9674), (110, 9701),

Gene: BirthdayBoy_13 Start: 9888, Stop: 10835, Start Num: 11

Candidate Starts for BirthdayBoy_13:

(Start: 11 @9888 has 27 MA's), (Start: 37 @10068 has 4 MA's), (61, 10305), (62, 10314), (69, 10377), (72, 10416), (95, 10671), (108, 10785),

Gene: BobtimousPrime_11 Start: 8422, Stop: 9342, Start Num: 10

Candidate Starts for BobtimousPrime_11:

(3, 8350), (4, 8371), (6, 8380), (Start: 9 @8410 has 1 MA's), (Start: 10 @8422 has 16 MA's), (32, 8539), (42, 8635), (43, 8644), (46, 8677), (57, 8797), (73, 8956), (77, 9007), (80, 9043), (89, 9139), (95,

9205),

Gene: Bramble_14 Start: 6297, Stop: 7166, Start Num: 25

Candidate Starts for Bramble_14:

(Start: 18 @6261 has 4 MA's), (Start: 25 @6297 has 5 MA's), (27, 6318), (36, 6381), (38, 6405), (39, 6408), (43, 6435), (46, 6468), (47, 6477), (48, 6492), (52, 6525), (56, 6573), (68, 6678), (79, 6810), (84, 6885), (85, 6900), (88, 6909), (96, 6993), (99, 7038), (112, 7155),

Gene: Butterscotch_13 Start: 8791, Stop: 9696, Start Num: 12

Candidate Starts for Butterscotch_13:

(Start: 12 @8791 has 19 MA's), (46, 9043), (59, 9175), (62, 9208), (63, 9211), (65, 9220), (71, 9295), (73, 9313), (75, 9349), (78, 9373), (80, 9400), (81, 9406), (85, 9475), (94, 9535), (106, 9655), (107, 9661), (110, 9688),

Gene: Cborch11_13 Start: 7967, Stop: 8887, Start Num: 10

Candidate Starts for Cborch11_13:

(2, 7868), (3, 7895), (4, 7916), (6, 7925), (Start: 9 @7955 has 1 MA's), (Start: 10 @7967 has 16 MA's), (21, 8012), (Start: 25 @8039 has 5 MA's), (32, 8084), (42, 8180), (43, 8189), (46, 8222), (57, 8342), (73, 8501), (80, 8588), (89, 8684), (95, 8750),

Gene: Charminar_11 Start: 7622, Stop: 8389, Start Num: 37

Candidate Starts for Charminar_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Chivey_13 Start: 6218, Stop: 7066, Start Num: 25

Candidate Starts for Chivey_13:

(Start: 19 @6182 has 12 MA's), (Start: 25 @6218 has 5 MA's), (29, 6248), (39, 6332), (44, 6368), (52, 6449), (60, 6536), (70, 6635), (73, 6662), (76, 6701), (79, 6734), (83, 6806), (85, 6824), (96, 6917),

Gene: Crestdrop_13 Start: 6055, Stop: 6939, Start Num: 19

Candidate Starts for Crestdrop_13:

(Start: 19 @6055 has 12 MA's), (Start: 25 @6091 has 5 MA's), (29, 6121), (39, 6205), (44, 6241), (52, 6322), (60, 6409), (70, 6508), (73, 6535), (76, 6574), (79, 6607), (83, 6679), (96, 6790), (111, 6925),

Gene: Cuke_6 Start: 4018, Stop: 4962, Start Num: 10

Candidate Starts for Cuke_6:

(Start: 10 @4018 has 16 MA's), (23, 4081), (36, 4177), (43, 4240), (49, 4312), (66, 4453), (72, 4540), (80, 4630), (81, 4636), (88, 4714), (109, 4918), (110, 4921),

Gene: Damien_12 Start: 7967, Stop: 8887, Start Num: 10

Candidate Starts for Damien_12:

(2, 7868), (3, 7895), (4, 7916), (6, 7925), (Start: 9 @7955 has 1 MA's), (Start: 10 @7967 has 16 MA's), (Start: 25 @8039 has 5 MA's), (32, 8084), (42, 8180), (43, 8189), (46, 8222), (57, 8342), (73, 8501), (80, 8588), (89, 8684), (95, 8750),

Gene: DannyDe_13 Start: 6173, Stop: 7057, Start Num: 19

Candidate Starts for DannyDe_13:

(Start: 19 @6173 has 12 MA's), (Start: 25 @6209 has 5 MA's), (29, 6239), (39, 6323), (44, 6359), (52, 6440), (54, 6473), (60, 6527), (70, 6626), (73, 6653), (76, 6692), (79, 6725), (83, 6797), (85, 6815), (96, 6908),

Gene: DaviePasture_12 Start: 9645, Stop: 10592, Start Num: 11

Candidate Starts for DaviePasture_12:

(Start: 11 @9645 has 27 MA's), (15, 9663), (Start: 37 @9825 has 4 MA's), (61, 10062), (62, 10071), (69, 10134), (72, 10173), (95, 10428), (102, 10500), (108, 10542),

Gene: Delton_13 Start: 8800, Stop: 9705, Start Num: 12

Candidate Starts for Delton_13:

(Start: 12 @8800 has 19 MA's), (46, 9052), (59, 9184), (62, 9217), (63, 9220), (65, 9229), (71, 9304), (73, 9322), (75, 9358), (78, 9382), (80, 9409), (81, 9415), (85, 9484), (94, 9544), (106, 9664), (107, 9670), (110, 9697),

Gene: Demikore_20 Start: 10951, Stop: 11865, Start Num: 10

Candidate Starts for Demikore_20:

(Start: 10 @10951 has 16 MA's), (20, 10990), (23, 11011), (34, 11098), (39, 11137), (41, 11161), (50, 11257), (68, 11419), (80, 11566), (88, 11650), (91, 11677), (94, 11701), (96, 11743), (101, 11800), (103, 11812), (104, 11821),

Gene: DoobyDoo_11 Start: 8822, Stop: 9769, Start Num: 11

Candidate Starts for DoobyDoo_11:

(Start: 11 @8822 has 27 MA's), (Start: 37 @9002 has 4 MA's), (61, 9239), (62, 9248), (69, 9311), (72, 9350), (95, 9605), (102, 9677), (108, 9719),

Gene: DrLupo_20 Start: 9845, Stop: 10753, Start Num: 10

Candidate Starts for DrLupo_20:

(Start: 10 @9845 has 16 MA's), (14, 9857), (23, 9905), (39, 10031), (42, 10058), (53, 10181), (69, 10328), (80, 10457), (81, 10463), (88, 10541), (98, 10667), (102, 10694), (103, 10700),

Gene: DumpTruck_11 Start: 9142, Stop: 10029, Start Num: 22

Candidate Starts for DumpTruck_11:

(Start: 11 @9085 has 27 MA's), (13, 9097), (17, 9115), (Start: 22 @9142 has 1 MA's), (Start: 26 @9166 has 1 MA's), (Start: 31 @9202 has 1 MA's), (35, 9238), (Start: 37 @9262 has 4 MA's), (62, 9508), (72, 9610), (81, 9706), (102, 9937), (107, 9964),

Gene: Erk16_13 Start: 8794, Stop: 9699, Start Num: 12

Candidate Starts for Erk16_13:

(Start: 12 @8794 has 19 MA's), (46, 9046), (59, 9178), (62, 9211), (63, 9214), (65, 9223), (71, 9298), (73, 9316), (75, 9352), (78, 9376), (80, 9403), (81, 9409), (85, 9478), (94, 9538), (106, 9658), (107, 9664), (110, 9691),

Gene: Erutan_12 Start: 9335, Stop: 10282, Start Num: 11

Candidate Starts for Erutan_12:

(Start: 11 @9335 has 27 MA's), (Start: 37 @9515 has 4 MA's), (61, 9752), (62, 9761), (69, 9824), (72, 9863), (95, 10118), (102, 10190),

Gene: FountainFog_13 Start: 6181, Stop: 7065, Start Num: 19

Candidate Starts for FountainFog_13:

(Start: 19 @6181 has 12 MA's), (Start: 25 @6217 has 5 MA's), (29, 6247), (39, 6331), (44, 6367), (52, 6448), (60, 6535), (70, 6634), (73, 6661), (76, 6700), (79, 6733), (83, 6805), (85, 6823), (96, 6916), (111, 7051),

Gene: Fowlmouth_7 Start: 4184, Stop: 5143, Start Num: 10

Candidate Starts for Fowlmouth_7:

(Start: 10 @4184 has 16 MA's), (23, 4250), (36, 4346), (43, 4409), (49, 4481), (66, 4622), (76, 4751), (80, 4799), (81, 4805), (88, 4883), (102, 5036), (105, 5054), (110, 5090),

Gene: FreddieHg_13 Start: 6195, Stop: 7079, Start Num: 19

Candidate Starts for FreddieHg_13:

(Start: 19 @6195 has 12 MA's), (Start: 25 @6231 has 5 MA's), (29, 6261), (39, 6345), (44, 6381), (52, 6462), (60, 6549), (70, 6648), (73, 6675), (76, 6714), (79, 6747), (83, 6819), (96, 6930),

Gene: Fulcrum_13 Start: 9868, Stop: 10815, Start Num: 11

Candidate Starts for Fulcrum_13:

(Start: 11 @9868 has 27 MA's), (Start: 37 @10048 has 4 MA's), (61, 10285), (62, 10294), (69, 10357), (72, 10396), (95, 10651), (102, 10723), (108, 10765),

Gene: GOATification_13 Start: 9868, Stop: 10815, Start Num: 11

Candidate Starts for GOATification_13:

(Start: 11 @9868 has 27 MA's), (Start: 37 @10048 has 4 MA's), (61, 10285), (62, 10294), (69, 10357), (72, 10396), (95, 10651), (102, 10723), (108, 10765),

Gene: Genamy16_11 Start: 7442, Stop: 8389, Start Num: 11

Candidate Starts for Genamy16_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Gibbin_13 Start: 9928, Stop: 10875, Start Num: 11

Candidate Starts for Gibbin_13:

(Start: 11 @9928 has 27 MA's), (Start: 37 @10108 has 4 MA's), (61, 10345), (62, 10354), (69, 10417), (72, 10456), (95, 10711), (108, 10825),

Gene: Giuseppe_13 Start: 8783, Stop: 9688, Start Num: 12

Candidate Starts for Giuseppe_13:

(Start: 12 @8783 has 19 MA's), (46, 9035), (59, 9167), (62, 9200), (63, 9203), (65, 9212), (71, 9287), (73, 9305), (75, 9341), (78, 9365), (80, 9392), (81, 9398), (85, 9467), (94, 9527), (106, 9647), (107, 9653), (110, 9680),

Gene: Gretellyn_12 Start: 10382, Stop: 11149, Start Num: 37

Candidate Starts for Gretellyn_12:

(Start: 11 @10202 has 27 MA's), (Start: 37 @10382 has 4 MA's), (61, 10619), (62, 10628), (69, 10691), (72, 10730), (95, 10985), (102, 11057), (108, 11099),

Gene: Gumball_12 Start: 8738, Stop: 9643, Start Num: 12

Candidate Starts for Gumball_12:

(Start: 12 @8738 has 19 MA's), (46, 8990), (59, 9122), (62, 9155), (63, 9158), (65, 9167), (71, 9242), (73, 9260), (75, 9296), (78, 9320), (80, 9347), (81, 9353), (85, 9422), (94, 9482), (106, 9602), (107, 9608), (110, 9635),

Gene: Hager_14 Start: 6443, Stop: 7327, Start Num: 19

Candidate Starts for Hager_14:

(Start: 19 @6443 has 12 MA's), (24, 6473), (Start: 25 @6479 has 5 MA's), (29, 6509), (39, 6593), (44, 6629), (51, 6707), (54, 6743), (55, 6746), (60, 6797), (70, 6896), (76, 6962), (79, 6995), (83, 7067), (84, 7070), (87, 7091), (88, 7094), (111, 7313),

Gene: Haunter_14 Start: 6398, Stop: 7282, Start Num: 19

Candidate Starts for Haunter_14:

(Start: 19 @6398 has 12 MA's), (Start: 25 @6434 has 5 MA's), (29, 6464), (39, 6548), (44, 6584), (52, 6665), (54, 6698), (60, 6752), (70, 6851), (73, 6878), (76, 6917), (79, 6950), (83, 7022), (85, 7040), (92,

7088), (96, 7133),

Gene: Hawkeye_15 Start: 8736, Stop: 9635, Start Num: 12

Candidate Starts for Hawkeye_15:

(6, 8682), (Start: 12 @8736 has 19 MA's), (46, 8982), (59, 9114), (61, 9138), (62, 9147), (63, 9150), (65, 9159), (68, 9192), (75, 9288), (78, 9312), (83, 9396), (90, 9444), (94, 9474), (97, 9537), (110, 9627),

Gene: Hiddenleaf_13 Start: 6218, Stop: 7066, Start Num: 25

Candidate Starts for Hiddenleaf_13:

(Start: 19 @6182 has 12 MA's), (Start: 25 @6218 has 5 MA's), (29, 6248), (39, 6332), (44, 6368), (52, 6449), (60, 6536), (70, 6635), (73, 6662), (76, 6701), (79, 6734), (83, 6806), (85, 6824), (96, 6917),

Gene: Jamemuya19_11 Start: 7622, Stop: 8389, Start Num: 37

Candidate Starts for Jamemuya19_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: JingleBells_13 Start: 6251, Stop: 7135, Start Num: 19

Candidate Starts for JingleBells_13:

(Start: 19 @6251 has 12 MA's), (Start: 25 @6287 has 5 MA's), (29, 6317), (39, 6401), (44, 6437), (52, 6518), (60, 6605), (70, 6704), (73, 6731), (76, 6770), (79, 6803), (83, 6875), (85, 6893), (96, 6986),

Gene: KandZ_13 Start: 8888, Stop: 9793, Start Num: 12

Candidate Starts for KandZ_13:

(Start: 12 @8888 has 19 MA's), (46, 9140), (59, 9272), (62, 9305), (63, 9308), (65, 9317), (71, 9392), (73, 9410), (75, 9446), (78, 9470), (80, 9497), (81, 9503), (85, 9572), (94, 9632), (106, 9752), (107, 9758), (110, 9785),

Gene: Karate_13 Start: 6403, Stop: 7287, Start Num: 19

Candidate Starts for Karate_13:

(Start: 19 @6403 has 12 MA's), (Start: 25 @6439 has 5 MA's), (29, 6469), (Start: 31 @6481 has 1 MA's), (39, 6553), (44, 6589), (51, 6667), (52, 6670), (54, 6703), (55, 6706), (60, 6757), (70, 6856), (73, 6883), (76, 6922), (79, 6955), (83, 7027), (96, 7138), (111, 7273),

Gene: Konstantine_17 Start: 9166, Stop: 10086, Start Num: 10

Candidate Starts for Konstantine_17:

(3, 9094), (4, 9115), (6, 9124), (Start: 9 @9154 has 1 MA's), (Start: 10 @9166 has 16 MA's), (Start: 25 @9238 has 5 MA's), (32, 9283), (42, 9379), (43, 9388), (46, 9421), (57, 9541), (73, 9700), (80, 9787), (89, 9883), (95, 9949),

Gene: Kors_14 Start: 6327, Stop: 7232, Start Num: 18

Candidate Starts for Kors_14:

(Start: 18 @6327 has 4 MA's), (Start: 25 @6363 has 5 MA's), (27, 6384), (36, 6447), (39, 6474), (43, 6501), (46, 6534), (47, 6543), (48, 6558), (52, 6591), (56, 6639), (68, 6744), (79, 6876), (84, 6951), (85, 6966), (88, 6975), (96, 7059), (99, 7104), (112, 7221),

Gene: Labelle_19 Start: 10953, Stop: 11867, Start Num: 10

Candidate Starts for Labelle_19:

(Start: 10 @10953 has 16 MA's), (20, 10992), (23, 11013), (34, 11100), (39, 11139), (41, 11163), (50, 11259), (68, 11421), (80, 11568), (88, 11652), (91, 11679), (94, 11703), (101, 11802), (103, 11814), (104, 11823),

Gene: Lambo_12 Start: 9872, Stop: 10819, Start Num: 11

Candidate Starts for Lambo_12:

(Start: 11 @9872 has 27 MA's), (Start: 37 @10052 has 4 MA's), (61, 10289), (62, 10298), (69, 10361), (72, 10400), (95, 10655), (102, 10727),

Gene: LavAbarElk_11 Start: 8305, Stop: 9252, Start Num: 11

Candidate Starts for LavAbarElk_11:

(Start: 11 @8305 has 27 MA's), (Start: 37 @8485 has 4 MA's), (61, 8722), (62, 8731), (69, 8794), (72, 8833), (95, 9088), (102, 9160),

Gene: Leopard_24 Start: 14860, Stop: 15780, Start Num: 12

Candidate Starts for Leopard_24:

(1, 14722), (2, 14749), (7, 14812), (Start: 12 @14860 has 19 MA's), (30, 14959), (34, 15001), (40, 15058), (45, 15094), (58, 15232), (62, 15271), (64, 15277), (74, 15400), (80, 15463), (82, 15505), (86, 15541), (88, 15547), (96, 15634), (97, 15661), (104, 15712),

Gene: Lila22_13 Start: 9823, Stop: 10770, Start Num: 11

Candidate Starts for Lila22_13:

(Start: 11 @9823 has 27 MA's), (Start: 37 @10003 has 4 MA's), (61, 10240), (62, 10249), (69, 10312), (72, 10351), (95, 10606), (102, 10678), (108, 10720),

Gene: LordBart_14 Start: 6336, Stop: 7205, Start Num: 25

Candidate Starts for LordBart_14:

(Start: 18 @6300 has 4 MA's), (Start: 25 @6336 has 5 MA's), (27, 6357), (36, 6420), (38, 6444), (39, 6447), (43, 6474), (46, 6507), (47, 6516), (48, 6531), (52, 6564), (56, 6612), (68, 6717), (79, 6849), (84, 6924), (85, 6939), (88, 6948), (96, 7032), (99, 7077), (112, 7194),

Gene: LuckyLeo_12 Start: 9152, Stop: 10096, Start Num: 11

Candidate Starts for LuckyLeo_12:

(5, 9107), (8, 9125), (Start: 11 @9152 has 27 MA's), (16, 9176), (Start: 31 @9269 has 1 MA's), (Start: 33 @9296 has 1 MA's), (69, 9638), (95, 9932), (102, 10004), (107, 10031),

Gene: Madruga_18 Start: 10621, Stop: 11535, Start Num: 10

Candidate Starts for Madruga_18:

(Start: 10 @10621 has 16 MA's), (23, 10681), (34, 10768), (39, 10807), (50, 10927), (68, 11089), (80, 11236), (88, 11320), (91, 11347), (94, 11371), (96, 11413), (101, 11470), (103, 11482), (104, 11491),

Gene: Megatron06_14 Start: 8502, Stop: 9422, Start Num: 10

Candidate Starts for Megatron06_14:

(2, 8403), (3, 8430), (4, 8451), (6, 8460), (Start: 9 @8490 has 1 MA's), (Start: 10 @8502 has 16 MA's), (Start: 25 @8574 has 5 MA's), (32, 8619), (42, 8715), (43, 8724), (46, 8757), (57, 8877), (73, 9036), (80, 9123), (89, 9219), (95, 9285),

Gene: Mima20_12 Start: 9732, Stop: 10499, Start Num: 37

Candidate Starts for Mima20_12:

(Start: 11 @9552 has 27 MA's), (15, 9570), (Start: 37 @9732 has 4 MA's), (61, 9969), (62, 9978), (69, 10041), (72, 10080), (95, 10335), (102, 10407), (108, 10449),

Gene: MoiGyank_14 Start: 10239, Stop: 11186, Start Num: 11

Candidate Starts for MoiGyank_14:

(Start: 11 @10239 has 27 MA's), (Start: 37 @10419 has 4 MA's), (61, 10656), (62, 10665), (69, 10728), (72, 10767), (95, 11022), (102, 11094), (108, 11136),

Gene: Mopey_13 Start: 8791, Stop: 9696, Start Num: 12

Candidate Starts for Mopey_13:

(Start: 12 @8791 has 19 MA's), (46, 9043), (59, 9175), (62, 9208), (63, 9211), (65, 9220), (71, 9295), (73, 9313), (75, 9349), (78, 9373), (80, 9400), (81, 9406), (85, 9475), (94, 9535), (106, 9655), (107, 9661), (110, 9688),

Gene: MrMiyagi_7 Start: 4184, Stop: 5143, Start Num: 10

Candidate Starts for MrMiyagi_7:

(Start: 10 @4184 has 16 MA's), (23, 4250), (36, 4346), (43, 4409), (49, 4481), (66, 4622), (76, 4751), (80, 4799), (81, 4805), (88, 4883), (96, 4973), (102, 5036), (105, 5054), (110, 5090),

Gene: NorManre_13 Start: 9434, Stop: 10381, Start Num: 11

Candidate Starts for NorManre_13:

(Start: 11 @9434 has 27 MA's), (Start: 37 @9614 has 4 MA's), (61, 9851), (62, 9860), (69, 9923), (72, 9962), (95, 10217), (102, 10289), (108, 10331),

Gene: Nova_13 Start: 9215, Stop: 10120, Start Num: 12

Candidate Starts for Nova_13:

(Start: 12 @9215 has 19 MA's), (46, 9467), (59, 9599), (62, 9632), (63, 9635), (65, 9644), (71, 9719), (73, 9737), (75, 9773), (78, 9797), (80, 9824), (81, 9830), (85, 9899), (94, 9959), (106, 10079), (107, 10085), (110, 10112),

Gene: NovaSharks_11 Start: 7442, Stop: 8389, Start Num: 11

Candidate Starts for NovaSharks_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Oaker_12 Start: 8223, Stop: 9143, Start Num: 10

Candidate Starts for Oaker_12:

(3, 8151), (4, 8172), (6, 8181), (Start: 9 @8211 has 1 MA's), (Start: 10 @8223 has 16 MA's), (Start: 25 @8295 has 5 MA's), (32, 8340), (42, 8436), (43, 8445), (46, 8478), (57, 8598), (73, 8757), (77, 8808), (80, 8844), (89, 8940), (95, 9006),

Gene: Onyinye_25 Start: 14741, Stop: 15661, Start Num: 12

Candidate Starts for Onyinye_25:

(1, 14603), (2, 14630), (7, 14693), (Start: 12 @14741 has 19 MA's), (30, 14840), (34, 14882), (40, 14939), (45, 14975), (58, 15113), (62, 15152), (64, 15158), (74, 15281), (80, 15344), (82, 15386), (86, 15422), (88, 15428), (96, 15515), (97, 15542), (104, 15593),

Gene: OtterstedtS21_12 Start: 9524, Stop: 10471, Start Num: 11

Candidate Starts for OtterstedtS21_12:

(Start: 11 @9524 has 27 MA's), (Start: 37 @9704 has 4 MA's), (61, 9941), (62, 9950), (69, 10013), (72, 10052), (95, 10307), (102, 10379), (108, 10421),

Gene: Patience_20 Start: 11512, Stop: 12426, Start Num: 10

Candidate Starts for Patience_20:

(Start: 10 @11512 has 16 MA's), (20, 11551), (23, 11572), (34, 11659), (39, 11698), (50, 11818), (68, 11980), (80, 12127), (88, 12211), (91, 12238), (94, 12262), (96, 12304), (101, 12361), (103, 12373), (104, 12382),

Gene: Patos_13 Start: 9434, Stop: 10381, Start Num: 11

Candidate Starts for Patos_13:

(Start: 11 @9434 has 27 MA's), (Start: 37 @9614 has 4 MA's), (61, 9851), (62, 9860), (69, 9923), (72, 9962), (95, 10217), (102, 10289), (108, 10331),

Gene: Penelope2018_13 Start: 8791, Stop: 9696, Start Num: 12

Candidate Starts for Penelope2018_13:

(Start: 12 @8791 has 19 MA's), (46, 9043), (59, 9175), (62, 9208), (63, 9211), (65, 9220), (71, 9295), (73, 9313), (75, 9349), (78, 9373), (80, 9400), (81, 9406), (85, 9475), (94, 9535), (106, 9655), (107, 9661), (110, 9688),

Gene: Phalaborwa_13 Start: 8833, Stop: 9738, Start Num: 12

Candidate Starts for Phalaborwa_13:

(Start: 12 @8833 has 19 MA's), (46, 9085), (59, 9217), (62, 9250), (63, 9253), (71, 9337), (75, 9391), (78, 9415), (80, 9442), (81, 9448), (85, 9517), (89, 9538), (106, 9697), (107, 9703), (110, 9730),

Gene: Phreeze_12 Start: 7967, Stop: 8887, Start Num: 10

Candidate Starts for Phreeze_12:

(3, 7895), (4, 7916), (6, 7925), (Start: 9 @7955 has 1 MA's), (Start: 10 @7967 has 16 MA's), (Start: 25 @8039 has 5 MA's), (32, 8084), (42, 8180), (43, 8189), (46, 8222), (57, 8342), (73, 8501), (77, 8552), (80, 8588), (89, 8684), (95, 8750),

Gene: Prager_13 Start: 8800, Stop: 9705, Start Num: 12

Candidate Starts for Prager_13:

(Start: 12 @8800 has 19 MA's), (46, 9052), (59, 9184), (62, 9217), (63, 9220), (65, 9229), (71, 9304), (73, 9322), (75, 9358), (78, 9382), (80, 9409), (81, 9415), (85, 9484), (94, 9544), (106, 9664), (107, 9670), (110, 9697),

Gene: Predator_16 Start: 9457, Stop: 10386, Start Num: 9

Candidate Starts for Predator_16:

(Start: 9 @9457 has 1 MA's), (Start: 10 @9469 has 16 MA's), (21, 9514), (39, 9655), (42, 9682), (46, 9724), (80, 10090), (81, 10096), (91, 10201),

Gene: Puissant_11 Start: 8343, Stop: 9305, Start Num: 6

Candidate Starts for Puissant_11:

(2, 8286), (3, 8313), (4, 8334), (6, 8343), (Start: 9 @8373 has 1 MA's), (Start: 10 @8385 has 16 MA's), (21, 8430), (39, 8571), (42, 8598), (46, 8640), (57, 8760), (73, 8919), (77, 8970), (80, 9006),

Gene: Ranch_12 Start: 8375, Stop: 9322, Start Num: 11

Candidate Starts for Ranch_12:

(Start: 11 @8375 has 27 MA's), (Start: 37 @8555 has 4 MA's), (61, 8792), (62, 8801), (69, 8864), (72, 8903), (95, 9158), (102, 9230), (108, 9272),

Gene: RazorC_11 Start: 7442, Stop: 8389, Start Num: 11

Candidate Starts for RazorC_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Riduram_11 Start: 7592, Stop: 8359, Start Num: 37

Candidate Starts for Riduram_11:

(Start: 11 @7412 has 27 MA's), (Start: 37 @7592 has 4 MA's), (61, 7829), (62, 7838), (69, 7901), (72, 7940), (95, 8195), (102, 8267),

Gene: Rie18_14 Start: 6338, Stop: 7222, Start Num: 19

Candidate Starts for Rie18_14:

(Start: 19 @6338 has 12 MA's), (24, 6368), (Start: 25 @6374 has 5 MA's), (29, 6404), (39, 6488), (44, 6524), (51, 6602), (54, 6638), (55, 6641), (60, 6692), (70, 6791), (76, 6857), (79, 6890), (83, 6962), (84, 6965), (87, 6986), (88, 6989), (111, 7208),

Gene: RikSengupta_14 Start: 6397, Stop: 7302, Start Num: 18

Candidate Starts for RikSengupta_14:

(Start: 18 @6397 has 4 MA's), (Start: 25 @6433 has 5 MA's), (27, 6454), (36, 6517), (38, 6541), (39, 6544), (43, 6571), (46, 6604), (47, 6613), (48, 6628), (52, 6661), (56, 6709), (68, 6814), (79, 6946), (84, 7021), (85, 7036), (88, 7045), (96, 7129), (99, 7174), (112, 7291),

Gene: Rota_12 Start: 9513, Stop: 10280, Start Num: 37

Candidate Starts for Rota_12:

(Start: 11 @9333 has 27 MA's), (Start: 37 @9513 has 4 MA's), (61, 9750), (62, 9759), (69, 9822), (72, 9861), (95, 10116), (102, 10188), (108, 10230),

Gene: Rukungu_13 Start: 10071, Stop: 11018, Start Num: 11

Candidate Starts for Rukungu_13:

(Start: 11 @10071 has 27 MA's), (Start: 37 @10251 has 4 MA's), (61, 10488), (62, 10497), (69, 10560), (72, 10599), (95, 10854), (102, 10926), (108, 10968),

Gene: Rumi_11 Start: 7622, Stop: 8389, Start Num: 37

Candidate Starts for Rumi_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: Sadboi_12 Start: 10202, Stop: 11149, Start Num: 11

Candidate Starts for Sadboi_12:

(Start: 11 @10202 has 27 MA's), (Start: 37 @10382 has 4 MA's), (61, 10619), (62, 10628), (69, 10691), (72, 10730), (95, 10985), (102, 11057), (108, 11099),

Gene: Sampudon_13 Start: 10378, Stop: 11325, Start Num: 11

Candidate Starts for Sampudon_13:

(Start: 11 @10378 has 27 MA's), (Start: 37 @10558 has 4 MA's), (61, 10795), (62, 10804), (69, 10867), (72, 10906), (95, 11161), (102, 11233), (108, 11275),

Gene: SilentWarrior_13 Start: 6189, Stop: 7073, Start Num: 19

Candidate Starts for SilentWarrior_13:

(Start: 19 @6189 has 12 MA's), (Start: 25 @6225 has 5 MA's), (29, 6255), (39, 6339), (44, 6375), (52, 6456), (54, 6489), (60, 6543), (70, 6642), (73, 6669), (76, 6708), (79, 6741), (83, 6813), (85, 6831), (96, 6924),

Gene: SirHarley_12 Start: 8720, Stop: 9625, Start Num: 12

Candidate Starts for SirHarley_12:

(Start: 12 @8720 has 19 MA's), (46, 8972), (59, 9104), (62, 9137), (63, 9140), (65, 9149), (71, 9224), (73, 9242), (75, 9278), (78, 9302), (80, 9329), (81, 9335), (85, 9404), (94, 9464), (106, 9584), (107, 9590), (110, 9617),

Gene: Snakehole_15 Start: 6277, Stop: 7161, Start Num: 19

Candidate Starts for Snakehole_15:

(Start: 19 @6277 has 12 MA's), (Start: 25 @6313 has 5 MA's), (29, 6343), (39, 6427), (44, 6463), (52, 6544), (54, 6577), (60, 6631), (70, 6730), (73, 6757), (76, 6796), (79, 6829), (83, 6901), (85, 6919), (96, 7012),

Gene: Sparcetus_14 Start: 6276, Stop: 7181, Start Num: 18

Candidate Starts for Sparcetus_14:

(Start: 18 @6276 has 4 MA's), (Start: 25 @6312 has 5 MA's), (27, 6333), (36, 6396), (38, 6420), (39, 6423), (43, 6450), (46, 6483), (47, 6492), (48, 6507), (52, 6540), (56, 6588), (68, 6693), (79, 6825), (84, 6900), (85, 6915), (88, 6924), (96, 7008), (99, 7053), (112, 7170),

Gene: Stormer_11 Start: 7622, Stop: 8389, Start Num: 37

Candidate Starts for Stormer_11:

(Start: 11 @7442 has 27 MA's), (Start: 37 @7622 has 4 MA's), (61, 7859), (62, 7868), (69, 7931), (72, 7970), (95, 8225), (102, 8297),

Gene: SuperSonics_19 Start: 10679, Stop: 11593, Start Num: 10

Candidate Starts for SuperSonics_19:

(Start: 10 @10679 has 16 MA's), (20, 10718), (23, 10739), (34, 10826), (39, 10865), (41, 10889), (50, 10985), (68, 11147), (80, 11294), (88, 11378), (91, 11405), (94, 11429), (96, 11471), (101, 11528), (103, 11540), (104, 11549),

Gene: Tedro_14 Start: 6454, Stop: 7338, Start Num: 19

Candidate Starts for Tedro_14:

(Start: 19 @6454 has 12 MA's), (Start: 25 @6490 has 5 MA's), (29, 6520), (39, 6604), (44, 6640), (52, 6721), (54, 6754), (60, 6808), (70, 6907), (73, 6934), (76, 6973), (79, 7006), (83, 7078), (85, 7096), (92, 7144), (96, 7189),

Gene: Thoth_13 Start: 8788, Stop: 9693, Start Num: 12

Candidate Starts for Thoth_13:

(Start: 12 @8788 has 19 MA's), (46, 9040), (59, 9172), (62, 9205), (63, 9208), (65, 9217), (71, 9292), (73, 9310), (75, 9346), (78, 9370), (80, 9397), (81, 9403), (85, 9472), (94, 9532), (106, 9652), (107, 9658), (110, 9685),

Gene: Thumb_12 Start: 7968, Stop: 8888, Start Num: 10

Candidate Starts for Thumb_12:

(3, 7896), (4, 7917), (6, 7926), (Start: 9 @7956 has 1 MA's), (Start: 10 @7968 has 16 MA's), (Start: 25 @8040 has 5 MA's), (32, 8085), (42, 8181), (43, 8190), (46, 8223), (57, 8343), (73, 8502), (77, 8553), (80, 8589), (89, 8685), (95, 8751),

Gene: Tillicus_13 Start: 8741, Stop: 9688, Start Num: 11

Candidate Starts for Tillicus_13:

(Start: 11 @8741 has 27 MA's), (Start: 31 @8861 has 1 MA's), (69, 9230), (107, 9623),

Gene: TinyMiny_14 Start: 6310, Stop: 7179, Start Num: 25

Candidate Starts for TinyMiny_14:

(Start: 18 @6274 has 4 MA's), (Start: 25 @6310 has 5 MA's), (27, 6331), (36, 6394), (38, 6418), (39, 6421), (43, 6448), (46, 6481), (47, 6490), (48, 6505), (52, 6538), (56, 6586), (68, 6691), (79, 6823), (84, 6898), (85, 6913), (88, 6922), (99, 7051), (112, 7168),

Gene: Tongui_13 Start: 6286, Stop: 7170, Start Num: 19

Candidate Starts for Tongui_13:

(Start: 19 @6286 has 12 MA's), (24, 6316), (Start: 25 @6322 has 5 MA's), (29, 6352), (39, 6436), (44, 6472), (52, 6553), (54, 6586), (60, 6640), (70, 6739), (73, 6766), (76, 6805), (79, 6838), (83, 6910), (84, 6913), (87, 6934), (88, 6937), (111, 7156),

Gene: Troll4_13 Start: 8792, Stop: 9697, Start Num: 12

Candidate Starts for Troll4_13:

(Start: 12 @8792 has 19 MA's), (46, 9044), (59, 9176), (62, 9209), (63, 9212), (65, 9221), (71, 9296), (73, 9314), (75, 9350), (78, 9374), (80, 9401), (81, 9407), (85, 9476), (94, 9536), (106, 9656), (107, 9662), (110, 9689),

Gene: Visconti_13 Start: 8801, Stop: 9706, Start Num: 12

Candidate Starts for Visconti_13:

(Start: 12 @8801 has 19 MA's), (46, 9053), (59, 9185), (62, 9218), (63, 9221), (65, 9230), (71, 9305), (73, 9323), (75, 9359), (78, 9383), (80, 9410), (81, 9416), (85, 9485), (94, 9545), (106, 9665), (107, 9671), (110, 9698),

Gene: Wojtek_11 Start: 9185, Stop: 10012, Start Num: 31

Candidate Starts for Wojtek_11:

(5, 9023), (8, 9041), (Start: 11 @9068 has 27 MA's), (16, 9092), (Start: 31 @9185 has 1 MA's), (69, 9554), (72, 9593), (99, 9902), (100, 9905), (107, 9947),

Gene: Xenia2_12 Start: 9205, Stop: 10068, Start Num: 26

Candidate Starts for Xenia2_12:

(Start: 11 @9124 has 27 MA's), (13, 9136), (17, 9154), (Start: 22 @9181 has 1 MA's), (Start: 26 @9205 has 1 MA's), (Start: 31 @9241 has 1 MA's), (35, 9277), (Start: 37 @9301 has 4 MA's), (62, 9547), (72, 9649), (81, 9745), (102, 9976), (107, 10003),

Gene: Yikes_13 Start: 10466, Stop: 11413, Start Num: 11

Candidate Starts for Yikes_13:

(Start: 11 @10466 has 27 MA's), (Start: 37 @10646 has 4 MA's), (61, 10883), (62, 10892), (69, 10955), (72, 10994), (95, 11249), (102, 11321), (108, 11363),

Gene: Zany_12 Start: 9592, Stop: 10539, Start Num: 11

Candidate Starts for Zany_12:

(Start: 11 @9592 has 27 MA's), (15, 9610), (Start: 37 @9772 has 4 MA's), (61, 10009), (62, 10018), (69, 10081), (72, 10120), (95, 10375), (102, 10447), (108, 10489),