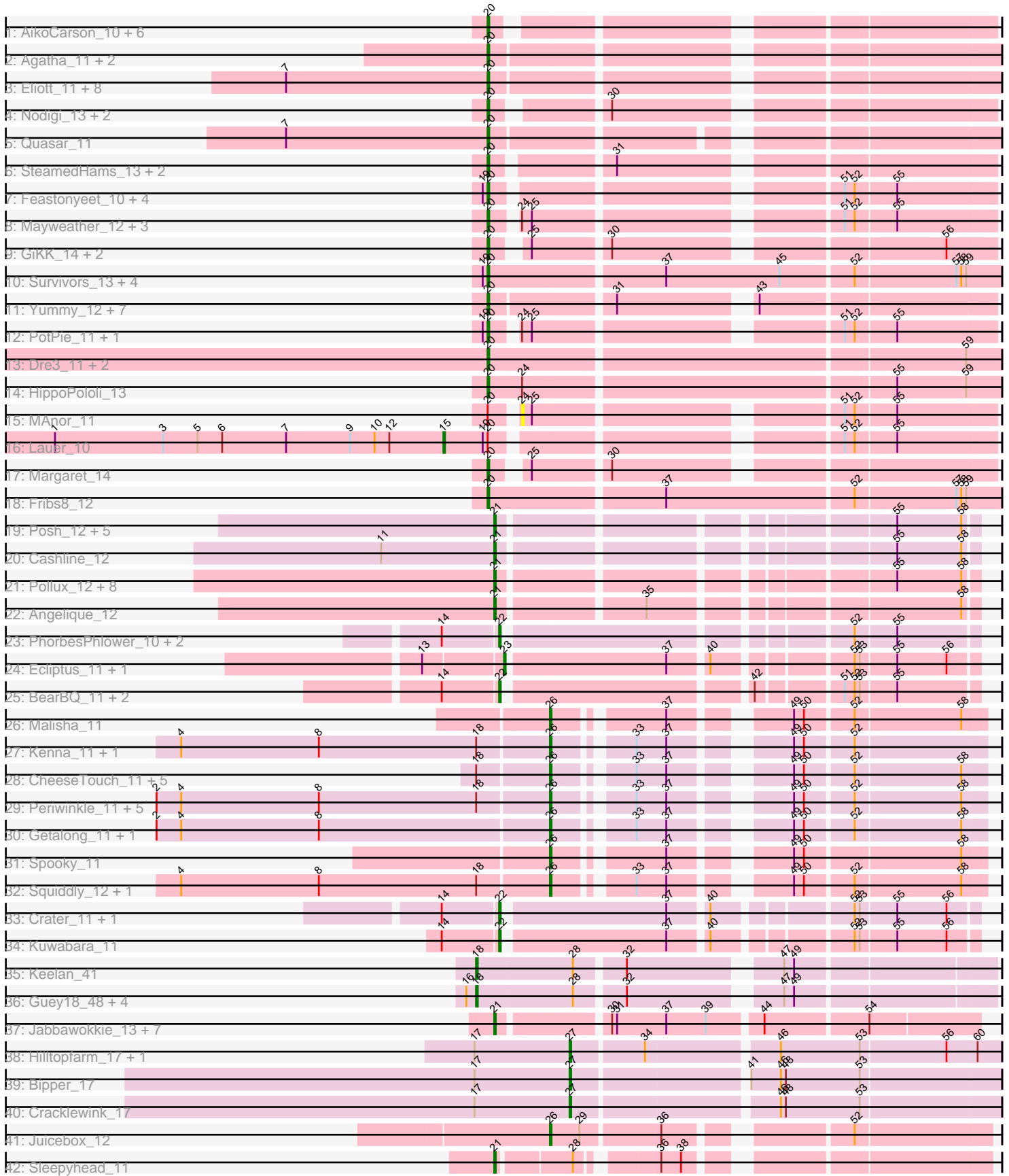


Pham 171287



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 171287 Report

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

Pham number 171287 has 129 members, 14 are drafts.

Phages represented in each track:

- Track 1 : AikoCarson_10, Amok_10, BillDoor_13, Emalyn_10, Yarn_10, Yakult_12, AndPeggy_10
- Track 2 : Agatha_11, GoldHunter_12, Burnsey_11
- Track 3 : Elliott_11, Cozz_11, Nina_12, PsychoKiller_11, Axym_11, MunkgeeRoachy_12, Typhonmarchy_12, Sopeopian_11, RedBaron_12
- Track 4 : Nodigi_13, Hexbug_13, Orla_13
- Track 5 : Quasar_11
- Track 6 : SteamedHams_13, Tolls_13, GTE2_09
- Track 7 : Feastonyeet_10, Vine_12, KayGee_10, BigChungus_10, Elinal_12
- Track 8 : Mayweather_12, CherryonLim_12, SheckWes_10, Pons_11
- Track 9 : GiKK_14, Jamzy_14, Button_12
- Track 10 : Survivors_13, Zareef_15, Nibbles_13, MaVan_13, Azira_13
- Track 11 : Yummy_12, Biskit_12, SweatNTears_13, Buttrmlkdreams_11, Troje_11, SketchMex_10, MScarn_13, Horseradish_12
- Track 12 : PotPie_11, SummitAcademy_10
- Track 13 : Dre3_11, Cleo_11, Gibbous_11
- Track 14 : HippoPololi_13
- Track 15 : MAnor_11
- Track 16 : Lauer_10
- Track 17 : Margaret_14
- Track 18 : Fribs8_12
- Track 19 : Posh_12, Wrigley_12, Pytheas_12, LonelyBoi_12, Jablanski_12, BeeGee_12
- Track 20 : Cashline_12
- Track 21 : Pollux_12, Lilas_12, Bradissa_12, Floral_12, BritBrat_12, EMSquaredA_12, Marteena_12, EnalisNailo_12, Confidence_12
- Track 22 : Angelique_12
- Track 23 : PhorbesPhlower_10, Morkie_10, Lucky10_10
- Track 24 : Ecliptus_11, ODay_11
- Track 25 : BearBQ_11, Birdsong_11, MortyNRick_11
- Track 26 : Malisha_11
- Track 27 : Kenna_11, Lutum_11
- Track 28 : CheeseTouch_11, Budski_11, LitninMcQueen_11, Kamaru_11, Holliday_11, Phabuloso_11
- Track 29 : Periwinkle_11, Leroy_11, BENtherdunthat_11, Horus_11, Frickyeah_11, Asapag_11
- Track 30 : Getalong_11, Whitney_11

- Track 31 : Spooky_11
- Track 32 : Squiddly_12, Phistory_11
- Track 33 : Crater_11, Apricot_11
- Track 34 : Kuwabara_11
- Track 35 : Keelan_41
- Track 36 : Guey18_48, Volt_45, Fryberger_43, Ronaldo_46, Ziko_46
- Track 37 : Jabbawokkie_13, Avani_12, Yoshi_12, Soul22_12, Che9d_12, Demsculpinboyz_12, Zapner_13, Blarby_13
- Track 38 : Hilltopfarm_17, Typha_17
- Track 39 : Bipper_17
- Track 40 : Cracklewink_17
- Track 41 : Juicebox_12
- Track 42 : Sleepyhead_11

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

The start number called the most often in the published annotations is 20, it was called in 49 of the 115 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha_11, AikoCarson_10, Amok_10, AndPeggy_10, Axym_11, Azira_13, BigChungus_10, BillDoor_13, Biskit_12, Burnsey_11, Button_12, Buttrmikedreams_11, CherryonLim_12, Cleo_11, Cozz_11, Dre3_11, Elinal_12, Elliott_11, Emalyn_10, Feastonyeet_10, Fribs8_12, GTE2_09, GiKK_14, Gibbous_11, GoldHunter_12, Hexbug_13, HippoPololi_13, Horseradish_12, Jamzy_14, KayGee_10, MScarn_13, MaVan_13, Margaret_14, Mayweather_12, MunkgeeRoachy_12, Nibbles_13, Nina_12, Nodigi_13, Orla_13, Pons_11, PotPie_11, PsychoKiller_11, Quasar_11, RedBaron_12, SheckWes_10, SketchMex_10, Sopespian_11, SteamedHams_13, SummitAcademy_10, Survivors_13, SweatNTears_13, Tolls_13, Troje_11, Typhonomachy_12, Vine_12, Yakult_12, Yarn_10, Yummy_12, Zareef_15,

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

- Lauer_10, MAnor_11,

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

- Angelique_12, Apricot_11, Asapag_11, Avani_12, BENtherdunthat_11, BearBQ_11, BeeGee_12, Bipper_17, Birdsong_11, Blarby_13, Bradissa_12, BritBrat_12, Budski_11, Cashline_12, Che9d_12, CheeseTouch_11, Confidence_12, Cracklewink_17, Crater_11, Demsculpinboyz_12, EMSquaredA_12, Ecliptus_11, EnalisNailo_12, Floral_12, Frickyeah_11, Fryberger_43, Getalong_11, Guey18_48, Hilltopfarm_17, Holliday_11, Horus_11, Jabbawokkie_13, Jablanski_12, Juicebox_12, Kamaru_11, Keelan_41, Kenna_11, Kuwabara_11, Leroy_11, Lilas_12, LitninMcQueen_11, LonelyBoi_12, Lucky10_10, Lutum_11, Malisha_11, Marteena_12, Morkie_10, MortyNRick_11, ODay_11, Periwinkle_11, Phabuloso_11, Phistory_11, PhorbesPhlower_10, Pollux_12, Posh_12, Pytheas_12, Ronaldo_46, Sleepyhead_11, Soul22_12, Spooky_11, Squiddly_12, Typha_17, Volt_45, Whitney_11, Wrigley_12, Yoshi_12, Zapner_13, Ziko_46,

Summary by start number:

Start 15:

- Found in 1 of 129 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lauer_10 (CT),

Start 18:

- Found in 22 of 129 (17.1%) of genes in pham
- Manual Annotations of this start: 6 of 115
- Called 27.3% of time when present
- Phage (with cluster) where this start called: Fryberger_43 (DP), Guey18_48 (DP), Keelan_41 (DP), Ronaldo_46 (DP), Volt_45 (DP), Ziko_46 (DP),

Start 20:

- Found in 61 of 129 (47.3%) of genes in pham
- Manual Annotations of this start: 49 of 115
- Called 96.7% of time when present
- Phage (with cluster) where this start called: Agatha_11 (CT), AikoCarson_10 (CT), Amok_10 (CT), AndPeggy_10 (CT), Axym_11 (CT), Azira_13 (CT), BigChungus_10 (CT), BillDoor_13 (CT), Biskit_12 (CT), Burnsey_11 (CT), Button_12 (CT), Buttrmlkdreams_11 (CT), CherryonLim_12 (CT), Cleo_11 (CT), Cozz_11 (CT), Dre3_11 (CT), Elinal_12 (CT), Elliott_11 (CT), Emalyn_10 (CT), Feastonyeet_10 (CT), Fribs8_12 (CT), GTE2_09 (CT), GiKK_14 (CT), Gibbous_11 (CT), GoldHunter_12 (CT), Hexbug_13 (CT), HippoPololi_13 (CT), Horseradish_12 (CT), Jamzy_14 (CT), KayGee_10 (CT), MScarn_13 (CT), MaVan_13 (CT), Margaret_14 (CT), Mayweather_12 (CT), MunkgeeRoachy_12 (CT), Nibbles_13 (CT), Nina_12 (CT), Nodigi_13 (CT), Orla_13 (CT), Pons_11 (CT), PotPie_11 (CT), PsychoKiller_11 (CT), Quasar_11 (CT), RedBaron_12 (CT), SheckWes_10 (CT), SketchMex_10 (CT), Sopespian_11 (CT), SteamedHams_13 (CT), SummitAcademy_10 (CT), Survivors_13 (CT), SweatNTears_13 (CT), Tolls_13 (CT), Troje_11 (CT), Typhonomachy_12 (CT), Vine_12 (CT), Yakult_12 (CT), Yarn_10 (CT), Yummy_12 (CT), Zareef_15 (CT),

Start 21:

- Found in 26 of 129 (20.2%) of genes in pham
- Manual Annotations of this start: 25 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angelique_12 (CY1), Avani_12 (F2), BeeGee_12 (CY), Blarby_13 (F), Bradissa_12 (CY1), BritBrat_12 (CY2), Cashline_12 (CY), Che9d_12 (F2), Confidence_12 (CY1), Demsculpinboyz_12 (F2), EMSquaredA_12 (CY1), EnalisNailo_12 (CY1), Floral_12 (CY1), Jabbawokkie_13 (F2), Jablanski_12 (CY), Lilas_12 (CY1), LonelyBoi_12 (CY), Marteena_12 (CY1), Pollux_12 (CY1), Posh_12 (CY), Pytheas_12 (CY), Sleepyhead_11 (singleton), Soul22_12 (F2), Wrigley_12 (CY), Yoshi_12 (F2), Zapner_13 (F2),

Start 22:

- Found in 9 of 129 (7.0%) of genes in pham
- Manual Annotations of this start: 8 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_11 (DN3), BearBQ_11 (DN), Birdsong_11 (DN), Crater_11 (DN3), Kuwabara_11 (DN4), Lucky10_10 (DH), Morkie_10 (DH), MortyNRick_11 (DN), PhorbesPhlower_10 (DH),

Start 23:

- Found in 2 of 129 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ecliptus_11 (DN), ODay_11 (DN),

Start 24:

- Found in 8 of 129 (6.2%) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: MAnor_11 (CT),

Start 26:

- Found in 21 of 129 (16.3%) of genes in pham
- Manual Annotations of this start: 20 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag_11 (DN1), BENtherdunthat_11 (DN1), Budski_11 (DN), CheeseTouch_11 (DN1), Frickyeah_11 (DN1), Getalong_11 (DN1), Holliday_11 (DN1), Horus_11 (DN1), Juicebox_12 (singleton), Kamaru_11 (DN1), Kenna_11 (DN1), Leroy_11 (DN1), LitninMcQueen_11 (DN1), Lutum_11 (DN1), Malisha_11 (DN), Periwinkle_11 (DN1), Phabuloso_11 (DN1), Phistory_11 (DN1), Spooky_11 (DN2), Squiddly_12 (DN2), Whitney_11 (DN1),

Start 27:

- Found in 4 of 129 (3.1%) of genes in pham
- Manual Annotations of this start: 4 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bipper_17 (Y), Cracklewink_17 (Y), Hilltopfarm_17 (Y), Typha_17 (Y),

Summary by clusters:

There are 15 clusters represented in this pham: DN, CY2, F2, DH, F, CY1, DN4, CY, DN1, DN3, DN2, Y, singleton, DP, CT,

Info for manual annotations of cluster CT:

- Start number 15 was manually annotated 1 time for cluster CT.
- Start number 20 was manually annotated 49 times for cluster CT.

Info for manual annotations of cluster CY:

- Start number 21 was manually annotated 7 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 21 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 21 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster DH:

- Start number 22 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:

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

- Start number 23 was manually annotated 2 times for cluster DN.
- Start number 26 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 26 was manually annotated 15 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 26 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 22 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 22 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DP:

- Start number 18 was manually annotated 6 times for cluster DP.

Info for manual annotations of cluster F2:

- Start number 21 was manually annotated 7 times for cluster F2.

Info for manual annotations of cluster Y:

- Start number 27 was manually annotated 4 times for cluster Y.

Gene Information:

Gene: Agatha_11 Start: 7257, Stop: 7538, Start Num: 20

Candidate Starts for Agatha_11:

(Start: 20 @7257 has 49 MA's),

Gene: AikoCarson_10 Start: 6987, Stop: 7256, Start Num: 20

Candidate Starts for AikoCarson_10:

(Start: 20 @6987 has 49 MA's),

Gene: Amok_10 Start: 6987, Stop: 7256, Start Num: 20

Candidate Starts for Amok_10:

(Start: 20 @6987 has 49 MA's),

Gene: AndPeggy_10 Start: 7275, Stop: 7547, Start Num: 20

Candidate Starts for AndPeggy_10:

(Start: 20 @7275 has 49 MA's),

Gene: Angelique_12 Start: 8007, Stop: 8264, Start Num: 21

Candidate Starts for Angelique_12:

(Start: 21 @8007 has 25 MA's), (35, 8088), (58, 8256),

Gene: Apricot_11 Start: 7129, Stop: 7386, Start Num: 22

Candidate Starts for Apricot_11:

(14, 7096), (Start: 22 @7129 has 8 MA's), (37, 7222), (40, 7243), (52, 7315), (53, 7318), (55, 7339), (56, 7369),

Gene: Asapag_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Asapag_11:

(2, 6587), (4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: Avani_12 Start: 6948, Stop: 7220, Start Num: 21

Candidate Starts for Avani_12:

(Start: 21 @6948 has 25 MA's), (30, 7008), (31, 7011), (37, 7041), (39, 7065), (44, 7095), (54, 7155),

Gene: Axym_11 Start: 7257, Stop: 7538, Start Num: 20

Candidate Starts for Axym_11:

(7, 7134), (Start: 20 @7257 has 49 MA's),

Gene: Azira_13 Start: 8163, Stop: 8462, Start Num: 20

Candidate Starts for Azira_13:

(19, 8160), (Start: 20 @8163 has 49 MA's), (37, 8265), (45, 8334), (52, 8376), (57, 8436), (58, 8439), (59, 8442),

Gene: BENtherdunthat_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for BENtherdunthat_11:

(2, 6587), (4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: BearBQ_11 Start: 7129, Stop: 7386, Start Num: 22

Candidate Starts for BearBQ_11:

(14, 7096), (Start: 22 @7129 has 8 MA's), (42, 7264), (51, 7309), (52, 7315), (53, 7318), (55, 7339),

Gene: BeeGee_12 Start: 8009, Stop: 8266, Start Num: 21

Candidate Starts for BeeGee_12:

(Start: 21 @8009 has 25 MA's), (55, 8219), (58, 8258),

Gene: BigChungus_10 Start: 7054, Stop: 7326, Start Num: 20

Candidate Starts for BigChungus_10:

(19, 7051), (Start: 20 @7054 has 49 MA's), (51, 7237), (52, 7243), (55, 7267),

Gene: BillDoor_13 Start: 7240, Stop: 7512, Start Num: 20

Candidate Starts for BillDoor_13:

(Start: 20 @7240 has 49 MA's),

Gene: Bipper_17 Start: 11835, Stop: 12083, Start Num: 27

Candidate Starts for Bipper_17:

(17, 11778), (Start: 27 @11835 has 4 MA's), (41, 11934), (46, 11952), (48, 11955), (53, 12000),

Gene: Birdsong_11 Start: 7129, Stop: 7386, Start Num: 22

Candidate Starts for Birdsong_11:

(14, 7096), (Start: 22 @7129 has 8 MA's), (42, 7264), (51, 7309), (52, 7315), (53, 7318), (55, 7339),

Gene: Biskit_12 Start: 7241, Stop: 7519, Start Num: 20

Candidate Starts for Biskit_12:

(Start: 20 @7241 has 49 MA's), (31, 7310), (43, 7382),

Gene: Blarby_13 Start: 7472, Stop: 7744, Start Num: 21

Candidate Starts for Blarby_13:

(Start: 21 @7472 has 25 MA's), (30, 7532), (31, 7535), (37, 7565), (39, 7589), (44, 7619), (54, 7679),

Gene: Bradissa_12 Start: 8013, Stop: 8270, Start Num: 21

Candidate Starts for Bradissa_12:

(Start: 21 @8013 has 25 MA's), (55, 8223), (58, 8262),

Gene: BritBrat_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for BritBrat_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: Budski_11 Start: 6829, Stop: 7053, Start Num: 26

Candidate Starts for Budski_11:

(Start: 18 @6787 has 6 MA's), (Start: 26 @6829 has 20 MA's), (33, 6868), (37, 6886), (49, 6943), (50, 6949), (52, 6976), (58, 7039),

Gene: Burnsey_11 Start: 7258, Stop: 7539, Start Num: 20

Candidate Starts for Burnsey_11:

(Start: 20 @7258 has 49 MA's),

Gene: Button_12 Start: 7274, Stop: 7543, Start Num: 20

Candidate Starts for Button_12:

(Start: 20 @7274 has 49 MA's), (25, 7289), (30, 7331), (56, 7514),

Gene: Buttrmlkdreams_11 Start: 7235, Stop: 7504, Start Num: 20

Candidate Starts for Buttrmlkdreams_11:

(Start: 20 @7235 has 49 MA's), (31, 7295), (43, 7367),

Gene: Cashline_12 Start: 7862, Stop: 8119, Start Num: 21

Candidate Starts for Cashline_12:

(11, 7793), (Start: 21 @7862 has 25 MA's), (55, 8072), (58, 8111),

Gene: Che9d_12 Start: 6957, Stop: 7229, Start Num: 21

Candidate Starts for Che9d_12:

(Start: 21 @6957 has 25 MA's), (30, 7017), (31, 7020), (37, 7050), (39, 7074), (44, 7104), (54, 7164),

Gene: CheeseTouch_11 Start: 6829, Stop: 7053, Start Num: 26

Candidate Starts for CheeseTouch_11:

(Start: 18 @6787 has 6 MA's), (Start: 26 @6829 has 20 MA's), (33, 6868), (37, 6886), (49, 6943), (50, 6949), (52, 6976), (58, 7039),

Gene: CherryonLim_12 Start: 7780, Stop: 8052, Start Num: 20

Candidate Starts for CherryonLim_12:

(Start: 20 @7780 has 49 MA's), (24, 7792), (25, 7798), (51, 7963), (52, 7969), (55, 7993),

Gene: Cleo_11 Start: 7463, Stop: 7762, Start Num: 20

Candidate Starts for Cleo_11:

(Start: 20 @7463 has 49 MA's), (59, 7742),

Gene: Confidence_12 Start: 8009, Stop: 8266, Start Num: 21

Candidate Starts for Confidence_12:

(Start: 21 @8009 has 25 MA's), (55, 8219), (58, 8258),

Gene: Cozz_11 Start: 7258, Stop: 7539, Start Num: 20

Candidate Starts for Cozz_11:

(7, 7135), (Start: 20 @7258 has 49 MA's),

Gene: Cracklewink_17 Start: 11835, Stop: 12083, Start Num: 27

Candidate Starts for Cracklewink_17:

(17, 11778), (Start: 27 @11835 has 4 MA's), (46, 11952), (48, 11955), (53, 12000),

Gene: Crater_11 Start: 7129, Stop: 7386, Start Num: 22

Candidate Starts for Crater_11:

(14, 7096), (Start: 22 @7129 has 8 MA's), (37, 7222), (40, 7243), (52, 7315), (53, 7318), (55, 7339), (56, 7369),

Gene: Demsculpinboyz_12 Start: 6948, Stop: 7220, Start Num: 21

Candidate Starts for Demsculpinboyz_12:

(Start: 21 @6948 has 25 MA's), (30, 7008), (31, 7011), (37, 7041), (39, 7065), (44, 7095), (54, 7155),

Gene: Dre3_11 Start: 7410, Stop: 7709, Start Num: 20

Candidate Starts for Dre3_11:

(Start: 20 @7410 has 49 MA's), (59, 7689),

Gene: EMSquaredA_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for EMSquaredA_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: Ecliptus_11 Start: 6857, Stop: 7114, Start Num: 23

Candidate Starts for Ecliptus_11:

(13, 6812), (Start: 23 @6857 has 2 MA's), (37, 6950), (40, 6971), (52, 7043), (53, 7046), (55, 7067), (56, 7097),

Gene: Elinal_12 Start: 7035, Stop: 7307, Start Num: 20

Candidate Starts for Elinal_12:

(19, 7032), (Start: 20 @7035 has 49 MA's), (51, 7218), (52, 7224), (55, 7248),

Gene: Elliott_11 Start: 7257, Stop: 7538, Start Num: 20

Candidate Starts for Elliott_11:

(7, 7134), (Start: 20 @7257 has 49 MA's),

Gene: Emalyn_10 Start: 6986, Stop: 7255, Start Num: 20

Candidate Starts for Emalyn_10:

(Start: 20 @6986 has 49 MA's),

Gene: EnalisNailo_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for EnalisNailo_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: Feastonyeet_10 Start: 7054, Stop: 7326, Start Num: 20

Candidate Starts for Feastonyeet_10:

(19, 7051), (Start: 20 @7054 has 49 MA's), (51, 7237), (52, 7243), (55, 7267),

Gene: Floral_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for Floral_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: Fribs8_12 Start: 7976, Stop: 8275, Start Num: 20

Candidate Starts for Fribs8_12:

(Start: 20 @7976 has 49 MA's), (37, 8078), (52, 8189), (57, 8249), (58, 8252), (59, 8255),

Gene: Frickyeah_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Frickyeah_11:

(2, 6587), (4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: Fryberger_43 Start: 16293, Stop: 16577, Start Num: 18

Candidate Starts for Fryberger_43:

(16, 16287), (Start: 18 @16293 has 6 MA's), (28, 16350), (32, 16377), (47, 16458), (49, 16464),

Gene: GTE2_09 Start: 6936, Stop: 7208, Start Num: 20

Candidate Starts for GTE2_09:

(Start: 20 @6936 has 49 MA's), (31, 6999),

Gene: Getalong_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Getalong_11:

(2, 6587), (4, 6602), (8, 6686), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: GiKK_14 Start: 7577, Stop: 7846, Start Num: 20

Candidate Starts for GiKK_14:

(Start: 20 @7577 has 49 MA's), (25, 7592), (30, 7634), (56, 7817),

Gene: Gibbous_11 Start: 7410, Stop: 7709, Start Num: 20

Candidate Starts for Gibbous_11:

(Start: 20 @7410 has 49 MA's), (59, 7689),

Gene: GoldHunter_12 Start: 7258, Stop: 7539, Start Num: 20

Candidate Starts for GoldHunter_12:

(Start: 20 @7258 has 49 MA's),

Gene: Guey18_48 Start: 17486, Stop: 17770, Start Num: 18

Candidate Starts for Guey18_48:

(16, 17480), (Start: 18 @17486 has 6 MA's), (28, 17543), (32, 17570), (47, 17651), (49, 17657),

Gene: Hexbug_13 Start: 8263, Stop: 8532, Start Num: 20

Candidate Starts for Hexbug_13:

(Start: 20 @8263 has 49 MA's), (30, 8320),

Gene: Hilltopfarm_17 Start: 11779, Stop: 12027, Start Num: 27

Candidate Starts for Hilltopfarm_17:

(17, 11722), (Start: 27 @11779 has 4 MA's), (34, 11821), (46, 11896), (53, 11944), (56, 11995), (60, 12013),

Gene: HippoPololi_13 Start: 8062, Stop: 8361, Start Num: 20

Candidate Starts for HippoPololi_13:

(Start: 20 @8062 has 49 MA's), (24, 8083), (55, 8299), (59, 8341),

Gene: Holliday_11 Start: 6829, Stop: 7053, Start Num: 26

Candidate Starts for Holliday_11:

(Start: 18 @6787 has 6 MA's), (Start: 26 @6829 has 20 MA's), (33, 6868), (37, 6886), (49, 6943), (50, 6949), (52, 6976), (58, 7039),

Gene: Horseradish_12 Start: 7139, Stop: 7417, Start Num: 20

Candidate Starts for Horseradish_12:

(Start: 20 @7139 has 49 MA's), (31, 7208), (43, 7280),

Gene: Horus_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Horus_11:

(2, 6587), (4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: Jabbawokkie_13 Start: 7471, Stop: 7743, Start Num: 21

Candidate Starts for Jabbawokkie_13:

(Start: 21 @7471 has 25 MA's), (30, 7531), (31, 7534), (37, 7564), (39, 7588), (44, 7618), (54, 7678),

Gene: Jablanski_12 Start: 7862, Stop: 8119, Start Num: 21

Candidate Starts for Jablanski_12:

(Start: 21 @7862 has 25 MA's), (55, 8072), (58, 8111),

Gene: Jamzy_14 Start: 7587, Stop: 7856, Start Num: 20

Candidate Starts for Jamzy_14:

(Start: 20 @7587 has 49 MA's), (25, 7602), (30, 7644), (56, 7827),

Gene: Juicebox_12 Start: 8597, Stop: 8833, Start Num: 26

Candidate Starts for Juicebox_12:

(Start: 26 @8597 has 20 MA's), (29, 8615), (36, 8660), (52, 8753),

Gene: Kamaru_11 Start: 6829, Stop: 7053, Start Num: 26

Candidate Starts for Kamaru_11:

(Start: 18 @6787 has 6 MA's), (Start: 26 @6829 has 20 MA's), (33, 6868), (37, 6886), (49, 6943), (50, 6949), (52, 6976), (58, 7039),

Gene: KayGee_10 Start: 7035, Stop: 7307, Start Num: 20

Candidate Starts for KayGee_10:

(19, 7032), (Start: 20 @7035 has 49 MA's), (51, 7218), (52, 7224), (55, 7248),

Gene: Keelan_41 Start: 16268, Stop: 16552, Start Num: 18

Candidate Starts for Keelan_41:

(Start: 18 @16268 has 6 MA's), (28, 16325), (32, 16352), (47, 16433), (49, 16439),

Gene: Kenna_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Kenna_11:

(4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971),

Gene: Kuwabara_11 Start: 7129, Stop: 7386, Start Num: 22

Candidate Starts for Kuwabara_11:

(14, 7096), (Start: 22 @7129 has 8 MA's), (37, 7222), (40, 7243), (52, 7315), (53, 7318), (55, 7339), (56, 7369),

Gene: Lauer_10 Start: 7057, Stop: 7356, Start Num: 15

Candidate Starts for Lauer_10:

(1, 6820), (3, 6886), (5, 6907), (6, 6922), (7, 6961), (9, 7000), (10, 7015), (12, 7024), (Start: 15 @7057 has 1 MA's), (19, 7081), (Start: 20 @7084 has 49 MA's), (51, 7267), (52, 7273), (55, 7297),

Gene: Leroy_11 Start: 6825, Stop: 7049, Start Num: 26

Candidate Starts for Leroy_11:

(2, 6588), (4, 6603), (8, 6687), (Start: 18 @6783 has 6 MA's), (Start: 26 @6825 has 20 MA's), (33, 6864), (37, 6882), (49, 6939), (50, 6945), (52, 6972), (58, 7035),

Gene: Lilas_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for Lilas_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: LitninMcQueen_11 Start: 6829, Stop: 7053, Start Num: 26

Candidate Starts for LitninMcQueen_11:

(Start: 18 @6787 has 6 MA's), (Start: 26 @6829 has 20 MA's), (33, 6868), (37, 6886), (49, 6943), (50, 6949), (52, 6976), (58, 7039),

Gene: LonelyBoi_12 Start: 7862, Stop: 8119, Start Num: 21

Candidate Starts for LonelyBoi_12:

(Start: 21 @7862 has 25 MA's), (55, 8072), (58, 8111),

Gene: Lucky10_10 Start: 6338, Stop: 6595, Start Num: 22

Candidate Starts for Lucky10_10:

(14, 6305), (Start: 22 @6338 has 8 MA's), (52, 6524), (55, 6548),

Gene: Lutum_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Lutum_11:

(4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971),

Gene: MAnor_11 Start: 7037, Stop: 7297, Start Num: 24

Candidate Starts for MAnor_11:

(Start: 20 @7025 has 49 MA's), (24, 7037), (25, 7043), (51, 7208), (52, 7214), (55, 7238),

Gene: MScarn_13 Start: 7235, Stop: 7504, Start Num: 20

Candidate Starts for MScarn_13:

(Start: 20 @7235 has 49 MA's), (31, 7295), (43, 7367),

Gene: MaVan_13 Start: 8163, Stop: 8462, Start Num: 20

Candidate Starts for MaVan_13:

(19, 8160), (Start: 20 @8163 has 49 MA's), (37, 8265), (45, 8334), (52, 8376), (57, 8436), (58, 8439), (59, 8442),

Gene: Malisha_11 Start: 7874, Stop: 8098, Start Num: 26

Candidate Starts for Malisha_11:

(Start: 26 @7874 has 20 MA's), (37, 7931), (49, 7988), (50, 7994), (52, 8021), (58, 8084),

Gene: Margaret_14 Start: 7972, Stop: 8241, Start Num: 20

Candidate Starts for Margaret_14:

(Start: 20 @7972 has 49 MA's), (25, 7987), (30, 8029),

Gene: Marteen_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for Marteena_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: Mayweather_12 Start: 7658, Stop: 7930, Start Num: 20

Candidate Starts for Mayweather_12:

(Start: 20 @7658 has 49 MA's), (24, 7670), (25, 7676), (51, 7841), (52, 7847), (55, 7871),

Gene: Morkie_10 Start: 6300, Stop: 6557, Start Num: 22

Candidate Starts for Morkie_10:

(14, 6267), (Start: 22 @6300 has 8 MA's), (52, 6486), (55, 6510),

Gene: MortyNRick_11 Start: 7129, Stop: 7386, Start Num: 22

Candidate Starts for MortyNRick_11:

(14, 7096), (Start: 22 @7129 has 8 MA's), (42, 7264), (51, 7309), (52, 7315), (53, 7318), (55, 7339),

Gene: MunkgeeRoachy_12 Start: 7305, Stop: 7586, Start Num: 20

Candidate Starts for MunkgeeRoachy_12:

(7, 7182), (Start: 20 @7305 has 49 MA's),

Gene: Nibbles_13 Start: 8163, Stop: 8462, Start Num: 20

Candidate Starts for Nibbles_13:

(19, 8160), (Start: 20 @8163 has 49 MA's), (37, 8265), (45, 8334), (52, 8376), (57, 8436), (58, 8439), (59, 8442),

Gene: Nina_12 Start: 8291, Stop: 8572, Start Num: 20

Candidate Starts for Nina_12:

(7, 8168), (Start: 20 @8291 has 49 MA's),

Gene: Nodigi_13 Start: 8256, Stop: 8525, Start Num: 20

Candidate Starts for Nodigi_13:

(Start: 20 @8256 has 49 MA's), (30, 8313),

Gene: ODay_11 Start: 6855, Stop: 7112, Start Num: 23

Candidate Starts for ODay_11:

(13, 6810), (Start: 23 @6855 has 2 MA's), (37, 6948), (40, 6969), (52, 7041), (53, 7044), (55, 7065), (56, 7095),

Gene: Orla_13 Start: 8260, Stop: 8529, Start Num: 20

Candidate Starts for Orla_13:

(Start: 20 @8260 has 49 MA's), (30, 8317),

Gene: Periwinkle_11 Start: 6824, Stop: 7048, Start Num: 26

Candidate Starts for Periwinkle_11:

(2, 6587), (4, 6602), (8, 6686), (Start: 18 @6782 has 6 MA's), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: Phabuloso_11 Start: 6829, Stop: 7053, Start Num: 26

Candidate Starts for Phabuloso_11:

(Start: 18 @6787 has 6 MA's), (Start: 26 @6829 has 20 MA's), (33, 6868), (37, 6886), (49, 6943), (50, 6949), (52, 6976), (58, 7039),

Gene: Phistory_11 Start: 6813, Stop: 7037, Start Num: 26

Candidate Starts for Phistory_11:

(4, 6591), (8, 6675), (Start: 18 @6771 has 6 MA's), (Start: 26 @6813 has 20 MA's), (33, 6852), (37, 6870), (49, 6927), (50, 6933), (52, 6960), (58, 7023),

Gene: PhorbesPhlower_10 Start: 6300, Stop: 6557, Start Num: 22

Candidate Starts for PhorbesPhlower_10:

(14, 6267), (Start: 22 @6300 has 8 MA's), (52, 6486), (55, 6510),

Gene: Pollux_12 Start: 8015, Stop: 8272, Start Num: 21

Candidate Starts for Pollux_12:

(Start: 21 @8015 has 25 MA's), (55, 8225), (58, 8264),

Gene: Pons_11 Start: 7037, Stop: 7309, Start Num: 20

Candidate Starts for Pons_11:

(Start: 20 @7037 has 49 MA's), (24, 7049), (25, 7055), (51, 7220), (52, 7226), (55, 7250),

Gene: Posh_12 Start: 8009, Stop: 8266, Start Num: 21

Candidate Starts for Posh_12:

(Start: 21 @8009 has 25 MA's), (55, 8219), (58, 8258),

Gene: PotPie_11 Start: 7888, Stop: 8160, Start Num: 20

Candidate Starts for PotPie_11:

(19, 7885), (Start: 20 @7888 has 49 MA's), (24, 7900), (25, 7906), (51, 8071), (52, 8077), (55, 8101),

Gene: PsychoKiller_11 Start: 7257, Stop: 7538, Start Num: 20

Candidate Starts for PsychoKiller_11:

(7, 7134), (Start: 20 @7257 has 49 MA's),

Gene: Pytheas_12 Start: 7862, Stop: 8119, Start Num: 21

Candidate Starts for Pytheas_12:

(Start: 21 @7862 has 25 MA's), (55, 8072), (58, 8111),

Gene: Quasar_11 Start: 7872, Stop: 8147, Start Num: 20

Candidate Starts for Quasar_11:

(7, 7749), (Start: 20 @7872 has 49 MA's),

Gene: RedBaron_12 Start: 7302, Stop: 7583, Start Num: 20

Candidate Starts for RedBaron_12:

(7, 7179), (Start: 20 @7302 has 49 MA's),

Gene: Ronaldo_46 Start: 17223, Stop: 17507, Start Num: 18

Candidate Starts for Ronaldo_46:

(16, 17217), (Start: 18 @17223 has 6 MA's), (28, 17280), (32, 17307), (47, 17388), (49, 17394),

Gene: SheckWes_10 Start: 7025, Stop: 7297, Start Num: 20

Candidate Starts for SheckWes_10:

(Start: 20 @7025 has 49 MA's), (24, 7037), (25, 7043), (51, 7208), (52, 7214), (55, 7238),

Gene: SketchMex_10 Start: 7241, Stop: 7519, Start Num: 20

Candidate Starts for SketchMex_10:

(Start: 20 @7241 has 49 MA's), (31, 7310), (43, 7382),

Gene: Sleepyhead_11 Start: 7625, Stop: 7879, Start Num: 21

Candidate Starts for Sleepyhead_11:

(Start: 21 @7625 has 25 MA's), (28, 7667), (36, 7706), (38, 7718),

Gene: Sopespian_11 Start: 7257, Stop: 7538, Start Num: 20

Candidate Starts for Sopespian_11:

(7, 7134), (Start: 20 @7257 has 49 MA's),

Gene: Soul22_12 Start: 6947, Stop: 7219, Start Num: 21

Candidate Starts for Soul22_12:

(Start: 21 @6947 has 25 MA's), (30, 7007), (31, 7010), (37, 7040), (39, 7064), (44, 7094), (54, 7154),

Gene: Spooky_11 Start: 6822, Stop: 7046, Start Num: 26

Candidate Starts for Spooky_11:

(Start: 26 @6822 has 20 MA's), (37, 6879), (49, 6936), (50, 6942), (58, 7032),

Gene: Squiddly_12 Start: 7509, Stop: 7733, Start Num: 26

Candidate Starts for Squiddly_12:

(4, 7287), (8, 7371), (Start: 18 @7467 has 6 MA's), (Start: 26 @7509 has 20 MA's), (33, 7548), (37, 7566), (49, 7623), (50, 7629), (52, 7656), (58, 7719),

Gene: SteamedHams_13 Start: 7276, Stop: 7548, Start Num: 20

Candidate Starts for SteamedHams_13:

(Start: 20 @7276 has 49 MA's), (31, 7339),

Gene: SummitAcademy_10 Start: 7103, Stop: 7375, Start Num: 20

Candidate Starts for SummitAcademy_10:

(19, 7100), (Start: 20 @7103 has 49 MA's), (24, 7115), (25, 7121), (51, 7286), (52, 7292), (55, 7316),

Gene: Survivors_13 Start: 8017, Stop: 8316, Start Num: 20

Candidate Starts for Survivors_13:

(19, 8014), (Start: 20 @8017 has 49 MA's), (37, 8119), (45, 8188), (52, 8230), (57, 8290), (58, 8293), (59, 8296),

Gene: SweatNTears_13 Start: 7761, Stop: 8030, Start Num: 20

Candidate Starts for SweatNTears_13:

(Start: 20 @7761 has 49 MA's), (31, 7821), (43, 7893),

Gene: Tolls_13 Start: 7279, Stop: 7551, Start Num: 20

Candidate Starts for Tolls_13:

(Start: 20 @7279 has 49 MA's), (31, 7342),

Gene: Troje_11 Start: 7235, Stop: 7504, Start Num: 20

Candidate Starts for Troje_11:

(Start: 20 @7235 has 49 MA's), (31, 7295), (43, 7367),

Gene: Typha_17 Start: 11749, Stop: 11997, Start Num: 27

Candidate Starts for Typha_17:

(17, 11692), (Start: 27 @11749 has 4 MA's), (34, 11791), (46, 11866), (53, 11914), (56, 11965), (60, 11983),

Gene: Typhonomachy_12 Start: 7257, Stop: 7538, Start Num: 20

Candidate Starts for Typhonomachy_12:

(7, 7134), (Start: 20 @7257 has 49 MA's),

Gene: Vine_12 Start: 8032, Stop: 8304, Start Num: 20
Candidate Starts for Vine_12:
(19, 8029), (Start: 20 @8032 has 49 MA's), (51, 8215), (52, 8221), (55, 8245),

Gene: Volt_45 Start: 17223, Stop: 17507, Start Num: 18
Candidate Starts for Volt_45:
(16, 17217), (Start: 18 @17223 has 6 MA's), (28, 17280), (32, 17307), (47, 17388), (49, 17394),

Gene: Whitney_11 Start: 6824, Stop: 7048, Start Num: 26
Candidate Starts for Whitney_11:
(2, 6587), (4, 6602), (8, 6686), (Start: 26 @6824 has 20 MA's), (33, 6863), (37, 6881), (49, 6938), (50, 6944), (52, 6971), (58, 7034),

Gene: Wrigley_12 Start: 7859, Stop: 8116, Start Num: 21
Candidate Starts for Wrigley_12:
(Start: 21 @7859 has 25 MA's), (55, 8069), (58, 8108),

Gene: Yakult_12 Start: 7168, Stop: 7437, Start Num: 20
Candidate Starts for Yakult_12:
(Start: 20 @7168 has 49 MA's),

Gene: Yarn_10 Start: 7269, Stop: 7541, Start Num: 20
Candidate Starts for Yarn_10:
(Start: 20 @7269 has 49 MA's),

Gene: Yoshi_12 Start: 6947, Stop: 7219, Start Num: 21
Candidate Starts for Yoshi_12:
(Start: 21 @6947 has 25 MA's), (30, 7007), (31, 7010), (37, 7040), (39, 7064), (44, 7094), (54, 7154),

Gene: Yummy_12 Start: 7139, Stop: 7417, Start Num: 20
Candidate Starts for Yummy_12:
(Start: 20 @7139 has 49 MA's), (31, 7208), (43, 7280),

Gene: Zapner_13 Start: 7472, Stop: 7744, Start Num: 21
Candidate Starts for Zapner_13:
(Start: 21 @7472 has 25 MA's), (30, 7532), (31, 7535), (37, 7565), (39, 7589), (44, 7619), (54, 7679),

Gene: Zareef_15 Start: 8164, Stop: 8463, Start Num: 20
Candidate Starts for Zareef_15:
(19, 8161), (Start: 20 @8164 has 49 MA's), (37, 8266), (45, 8335), (52, 8377), (57, 8437), (58, 8440), (59, 8443),

Gene: Ziko_46 Start: 17163, Stop: 17447, Start Num: 18
Candidate Starts for Ziko_46:
(16, 17157), (Start: 18 @17163 has 6 MA's), (28, 17220), (32, 17247), (47, 17328), (49, 17334),