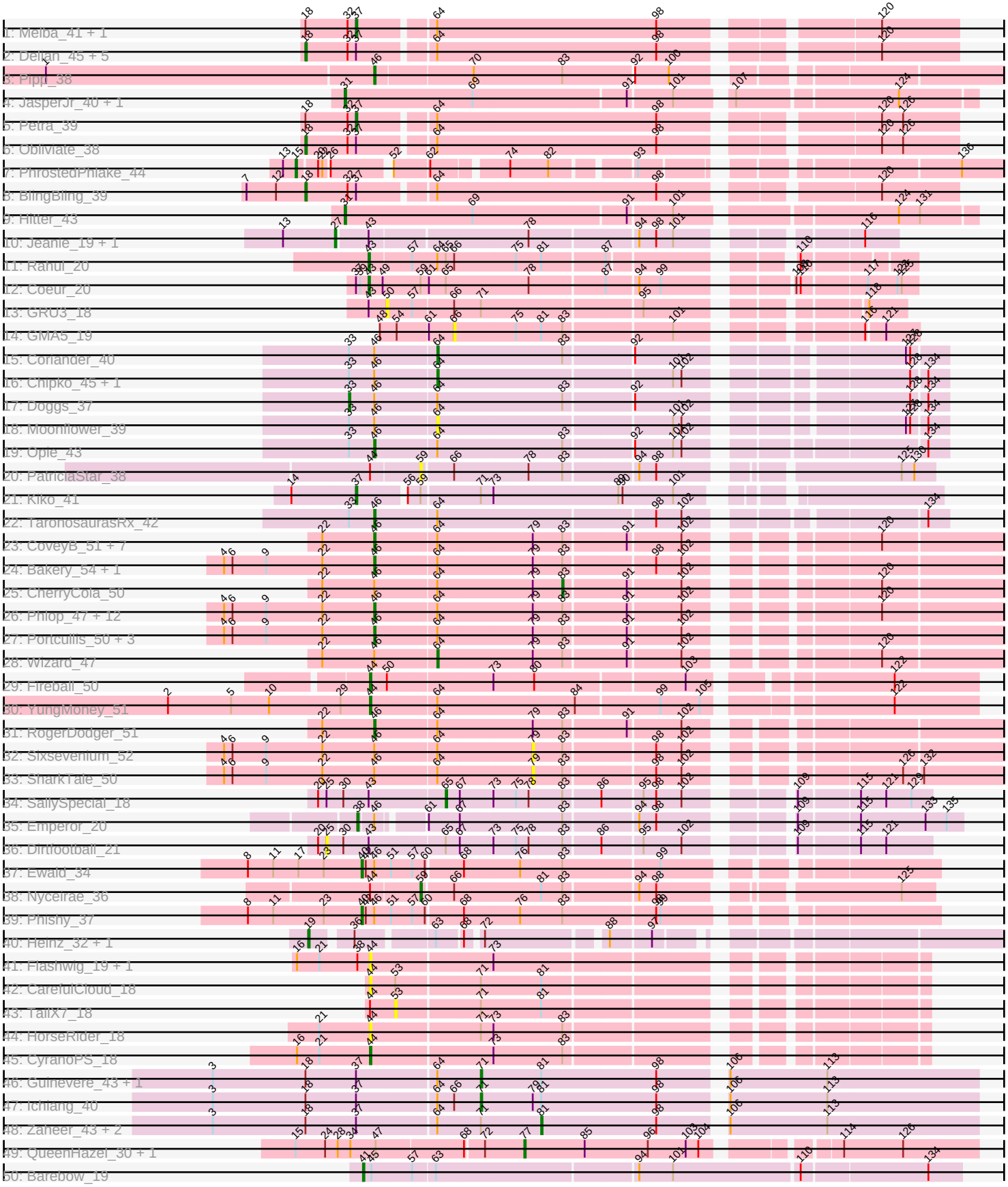
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1: Melba_41 + 1
2: Delian_45 + 5
3: Pippi_38
4: JasperJr_40 + 1
5: Petra_39
6: Obliviate_38
7: PhrostedPhlake_44
8: BlingBling_39
9: Hitter_43
10: Jeanie_19 + 1
11: Rahul_20
12: Coeur_20
13: GRU3_18
14: GMA5_19
15: Coriander_40
16: Chipko_45 + 1
17: Doggs_37
18: Moonflower_39
19: Opie_43
20: PatriciaStar_38
21: Kiko_41
22: TaronosaurasRx_42
23: CoveyB_51 + 7
24: Bakery_54 + 1
25: CherryCola_50
26: Phlop_47 + 12
27: Portcullis_50 + 3
28: Wizard_47
29: Fireball_50
30: YungMoney_51
31: RogerDodger_51
32: Sixsevenium_52
33: SharkTale_50
34: SallySpecial_18
35: Emperor_20
36: Dirtfootball_21
37: Ewald_34
38: Nycelrae_36
39: Phishy_37
40: Heinz_32 + 1
41: Flashwig_19 + 1
42: CarefulCloud_18
43: TallX7_18
44: HorseRider_18
45: CyranoPS_18
46: Guinevere_43 + 1
47: Ichiang_40
48: Zaheer_43 + 2
49: QueenHazel_30 + 1
50: Barebow_19

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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 347487 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347487 has 89 members, 14 are drafts.

Phages represented in each track:
• Track 1 : Melba_41, Barco_40
• Track 2 : Delian_45, CaptainKirk2_42, Zarbodnamra_41, Archis_45, MintFen_42, Zilla_40
• Track 3 : Pipp_38
• Track 4 : JasperJr_40, Guacamole_40
• Track 5 : Petra_39
• Track 6 : Obliviate_38
• Track 7 : PhrostedPhlake_44
• Track 8 : BlingBling_39
• Track 9 : Hitter_43
• Track 10 : Jeanie_19, McGonagall_19
• Track 11 : Rahul_20
• Track 12 : Coeur_20
• Track 13 : GRU3_18
• Track 14 : GMA5_19
• Track 15 : Coriander_40
• Track 16 : Chipko_45, Dmitri_40
• Track 17 : Doggs_37
• Track 18 : Moonflower_39
• Track 19 : Opie_43
• Track 20 : PatriciaStar_38
• Track 21 : Kiko_41
• Track 22 : TaronosaurasRx_42
• Track 23 : CoveyB_51, Valary_50, Mutzi_48, Jambalaya_48, Halo3_49, VanDeWege_51, Savbucketdawg_48, Gezellig_47
• Track 24 : Bakery_54, Arri_51
• Track 25 : CherryCola_50
• Track 26 : Phlop_47, Egi03_48, KimmyK_49, Evamon_47, Togo_47, Fugax_51, Salvador_47, Barb_50, ClamChowder_50, PullumCavea_47, SmokingBunny_48, PinkCoffee_50, Nubi_48
• Track 27 : Portcullis_50, JohnPork_51, Danyall_50, Twister6_50
• Track 28 : Wizard_47
• Track 29 : Fireball_50
• Track 30 : YungMoney_51
• Track 31 : RogerDodger_51
• Track 32 : Sixsevenium_52
• Track 33 : SharkTale_50

• Track 34 : SallySpecial_18
• Track 35 : Emperor_20
• Track 36 : Dirtfootball_21
• Track 37 : Ewald_34
• Track 38 : Nyceirae_36
• Track 39 : Phishy_37
• Track 40 : Heinz_32, Hibiscus_33
• Track 41 : Flashwig_19, Jalloh_18
• Track 42 : CarefulCloud_18
• Track 43 : TailX7_18
• Track 44 : HorseRider_18
• Track 45 : CyranoPS_18
• Track 46 : Guinevere_43, Halloweekend_38
• Track 47 : Ichiang_40
• Track 48 : Zaheer_43, Schism_45, Cole_40
• Track 49 : QueenHazel_30, Xula_29
• Track 50 : Barebow_19
• Track 51 : PensacolaC28_20

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

The start number called the most often in the published annotations is 46, it was called in 30 of the 75 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Arri_51, Bakery_54, Barb_50, ClamChowder_50, CoveyB_51, Danyall_50, Egi03_48, Evamon_47, Fugax_51, Gezellig_47, Halo3_49, Jambalaya_48, JohnPork_51, KimmyK_49, Mutzi_48, Nubi_48, Opie_43, Phlop_47, PinkCoffee_50, Pipp_38, Portcullis_50, PullumCavea_47, RogerDodger_51, Salvador_47, Savbucketdawg_48, SmokingBunny_48, TaronosaurasRx_42, Togo_47, Twister6_50, Valary_50, VanDeWege_51,

Genes that have the "Most Annotated" start but do not call it:
• CherryCola_50, Chipko_45, Coriander_40, Dmitri_40, Doggs_37, Emperor_20, Ewald_34, Moonflower_39, Phishy_37, SharkTale_50, Sixsevenium_52, Wizard_47,

Genes that do not have the "Most Annotated" start:
• Archis_45, Barco_40, Barebow_19, BlingBling_39, CaptainKirk2_42, CarefulCloud_18, Coeur_20, Cole_40, CyranoPS_18, Delian_45, Dirtfootball_21, Fireball_50, Flashwig_19, GMA5_19, GRU3_18, Guacamole_40, Guinevere_43, Halloweekend_38, Heinz_32, Hibiscus_33, Hitter_43, HorseRider_18, Ichiang_40, Jalloh_18, JasperJr_40, Jeanie_19, Kiko_41, McGonagall_19, Melba_41, MintFen_42, Nyceirae_36, Obliviate_38, PatriciaStar_38, PensacolaC28_20, Petra_39, PhrostedPhlake_44, QueenHazel_30, Rahul_20, SallySpecial_18, Schism_45, TailX7_18, Xula_29, YungMoney_51, Zaheer_43, Zarbodnamra_41, Zilla_40,

Summary by start number:

Start 15:

• Found in 3 of 89 (3.4%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 33.3% of time when present
• Phage (with cluster) where this start called: PhrostedPhlake_44 (CV),

Start 18:
• Found in 17 of 89 (19.1%) of genes in pham
• Manual Annotations of this start: 8 of 75
• Called 47.1% of time when present
• Phage (with cluster) where this start called: Archis_45 (CV), BlingBling_39 (CV), CaptainKirk2_42 (CV), Delian_45 (CV), MintFen_42 (CV), Obliviate_38 (CV), Zarbodnamra_41 (CV), Zilla_40 (CV),

Start 19:
• Found in 2 of 89 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Heinz_32 (DY), Hibiscus_33 (DY),

Start 25:
• Found in 2 of 89 (2.2%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Dirtfootball_21 (DM),

Start 27:
• Found in 2 of 89 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jeanie_19 (CW1), McGonagall_19 (CW1),

Start 31:
• Found in 3 of 89 (3.4%) of genes in pham
• Manual Annotations of this start: 3 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Guacamole_40 (CV), Hitter_43 (CV), JasperJr_40 (CV),

Start 33:
• Found in 7 of 89 (7.9%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Doggs_37 (DB),

Start 37:
• Found in 19 of 89 (21.3%) of genes in pham
• Manual Annotations of this start: 4 of 75
• Called 21.1% of time when present
• Phage (with cluster) where this start called: Barco_40 (CV), Kiko_41 (DB), Melba_41 (CV), Petra_39 (CV),

Start 38:

• Found in 3 of 89 (3.4%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Emperor_20 (DM),

Start 40:
• Found in 2 of 89 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Ewald_34 (DT), Phishy_37 (DT),

Start 41:
• Found in 1 of 89 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Barebow_19 (singleton),

Start 43:
• Found in 7 of 89 (7.9%) of genes in pham
• Manual Annotations of this start: 2 of 75
• Called 28.6% of time when present
• Phage (with cluster) where this start called: Coeur_20 (CW2), Rahul_20 (CW2),

Start 44:
• Found in 10 of 89 (11.2%) of genes in pham
• Manual Annotations of this start: 3 of 75
• Called 70.0% of time when present
• Phage (with cluster) where this start called: CarefulCloud_18 (ER), CyranoPS_18 (ER), Fireball_50 (DC1), Flashwig_19 (ER), HorseRider_18 (ER), Jalloh_18 (ER), YungMoney_51 (DC1),

Start 46:
• Found in 43 of 89 (48.3%) of genes in pham
• Manual Annotations of this start: 30 of 75
• Called 72.1% of time when present
• Phage (with cluster) where this start called: Arri_51 (DC1), Bakery_54 (DC1), Barb_50 (DC1), ClamChowder_50 (DC1), CoveyB_51 (DC1), Danyall_50 (DC1), Egi03_48 (DC1), Evamon_47 (DC1), Fugax_51 (DC1), Gezellig_47 (DC1), Halo3_49 (DC1), Jambalaya_48 (DC1), JohnPork_51 (DC1), KimmyK_49 (DC1), Mutzi_48 (DC1), Nubi_48 (DC1), Opie_43 (DB), Phlop_47 (DC1), PinkCoffee_50 (DC1), Pipp_38 (CV), Portcullis_50 (DC1), PullumCavea_47 (DC1), RogerDodger_51 (DC1), Salvador_47 (DC1), Savbucketdawg_48 (DC1), SmokingBunny_48 (DC1), TaronosaurasRx_42 (DB), Togo_47 (DC1), Twister6_50 (DC1), Valary_50 (DC1), VanDeWege_51 (DC1),

Start 50:
• Found in 2 of 89 (2.2%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: GRU3_18 (CW2),

Start 53:
• Found in 2 of 89 (2.2%) of genes in pham

• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: TailX7_18 (ER),

Start 55:
• Found in 1 of 89 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: PensacolaC28_20 (singleton),

Start 59:
• Found in 4 of 89 (4.5%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Nyceirae_36 (DT), PatriciaStar_38 (DB),

Start 64:
• Found in 58 of 89 (65.2%) of genes in pham
• Manual Annotations of this start: 3 of 75
• Called 8.6% of time when present
• Phage (with cluster) where this start called: Chipko_45 (DB), Coriander_40 (DB), Dmitri_40 (DB), Moonflower_39 (DB), Wizard_47 (DC1),

Start 65:
• Found in 4 of 89 (4.5%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 25.0% of time when present
• Phage (with cluster) where this start called: SallySpecial_18 (DM),

Start 66:
• Found in 6 of 89 (6.7%) of genes in pham
• No Manual Annotations of this start.
• Called 16.7% of time when present
• Phage (with cluster) where this start called: GMA5_19 (CW2),

Start 71:
• Found in 11 of 89 (12.4%) of genes in pham
• Manual Annotations of this start: 3 of 75
• Called 27.3% of time when present
• Phage (with cluster) where this start called: Guinevere_43 (FF), Halloweekend_38 (FF), Ichiang_40 (FF),

Start 77:
• Found in 2 of 89 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: QueenHazel_30 (I1), Xula_29 (I1),

Start 79:
• Found in 33 of 89 (37.1%) of genes in pham
• No Manual Annotations of this start.
• Called 6.1% of time when present

• Phage (with cluster) where this start called: SharkTale_50 (DC1), Sixsevenium_52 (DC1),

Start 81:
• Found in 11 of 89 (12.4%) of genes in pham
• Manual Annotations of this start: 3 of 75
• Called 27.3% of time when present
• Phage (with cluster) where this start called: Cole_40 (FF), Schism_45 (FF), Zaheer_43 (FF),

Start 83:
• Found in 46 of 89 (51.7%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 2.2% of time when present
• Phage (with cluster) where this start called: CherryCola_50 (DC1),

Summary by clusters:

There are 12 clusters represented in this pham: singleton, DM, CW1, CW2, DB, I1, FF, DY, DT, DC1, CV, ER,

Info for manual annotations of cluster CV:
•Start number 15 was manually annotated 1 time for cluster CV.
•Start number 18 was manually annotated 8 times for cluster CV.
•Start number 31 was manually annotated 3 times for cluster CV.
•Start number 37 was manually annotated 3 times for cluster CV.
•Start number 46 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CW1:
•Start number 27 was manually annotated 2 times for cluster CW1.

Info for manual annotations of cluster CW2:
•Start number 43 was manually annotated 2 times for cluster CW2.

Info for manual annotations of cluster DB:
•Start number 33 was manually annotated 1 time for cluster DB.
•Start number 37 was manually annotated 1 time for cluster DB.
•Start number 46 was manually annotated 2 times for cluster DB.
•Start number 64 was manually annotated 2 times for cluster DB.

Info for manual annotations of cluster DC1:
•Start number 44 was manually annotated 2 times for cluster DC1.
•Start number 46 was manually annotated 27 times for cluster DC1.
•Start number 64 was manually annotated 1 time for cluster DC1.
•Start number 83 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DM:
•Start number 38 was manually annotated 1 time for cluster DM.
•Start number 65 was manually annotated 1 time for cluster DM.

Info for manual annotations of cluster DT:
•Start number 40 was manually annotated 2 times for cluster DT.
•Start number 59 was manually annotated 1 time for cluster DT.

Info for manual annotations of cluster DY:
•Start number 19 was manually annotated 2 times for cluster DY.

Info for manual annotations of cluster ER:
•Start number 44 was manually annotated 1 time for cluster ER.

Info for manual annotations of cluster FF:
•Start number 71 was manually annotated 3 times for cluster FF.
•Start number 81 was manually annotated 3 times for cluster FF.

Info for manual annotations of cluster I1:
•Start number 77 was manually annotated 2 times for cluster I1.

Gene Information:

Gene: Archis_45 Start: 33058, Stop: 32636, Start Num: 18
Candidate Starts for Archis_45:
(Start: 18 @33058 has 8 MA's), (32, 33028), (Start: 37 @33022 has 4 MA's), (Start: 64 @32974 has 3 MA's), (98, 32821), (120, 32689),

Gene: Arri_51 Start: 39948, Stop: 39535, Start Num: 46
Candidate Starts for Arri_51:
(4, 40053), (6, 40047), (9, 40023), (22, 39984), (Start: 46 @39948 has 30 MA's), (Start: 64 @39906 has 3 MA's), (79, 39840), (Start: 83 @39819 has 1 MA's), (98, 39759), (102, 39741),

Gene: Bakery_54 Start: 41089, Stop: 40676, Start Num: 46
Candidate Starts for Bakery_54:
(4, 41194), (6, 41188), (9, 41164), (22, 41125), (Start: 46 @41089 has 30 MA's), (Start: 64 @41047 has 3 MA's), (79, 40981), (Start: 83 @40960 has 1 MA's), (98, 40900), (102, 40882),

Gene: Barb_50 Start: 40067, Stop: 39654, Start Num: 46
Candidate Starts for Barb_50:
(4, 40172), (6, 40166), (9, 40142), (22, 40103), (Start: 46 @40067 has 30 MA's), (Start: 64 @40025 has 3 MA's), (79, 39959), (Start: 83 @39938 has 1 MA's), (91, 39896), (102, 39860), (120, 39752),

Gene: Barco_40 Start: 32072, Stop: 31686, Start Num: 37
Candidate Starts for Barco_40:
(Start: 18 @32108 has 8 MA's), (32, 32078), (Start: 37 @32072 has 4 MA's), (Start: 64 @32024 has 3 MA's), (98, 31871), (120, 31739),

Gene: Barebow_19 Start: 15697, Stop: 15296, Start Num: 41
Candidate Starts for Barebow_19:
(Start: 41 @15697 has 1 MA's), (45, 15691), (57, 15664), (63, 15649), (94, 15514), (101, 15490), (110, 15403), (134, 15319),

Gene: BlingBling_39 Start: 33071, Stop: 32649, Start Num: 18
Candidate Starts for BlingBling_39:
(7, 33113), (12, 33092), (Start: 18 @33071 has 8 MA's), (32, 33041), (Start: 37 @33035 has 4 MA's), (Start: 64 @32987 has 3 MA's), (98, 32834), (120, 32702),

Gene: CaptainKirk2_42 Start: 32356, Stop: 31934, Start Num: 18
Candidate Starts for CaptainKirk2_42:
(Start: 18 @32356 has 8 MA's), (32, 32326), (Start: 37 @32320 has 4 MA's), (Start: 64 @32272 has 3 MA's), (98, 32119), (120, 31987),

Gene: CarefulCloud_18 Start: 12700, Stop: 12353, Start Num: 44
Candidate Starts for CarefulCloud_18:
(Start: 44 @12700 has 3 MA's), (53, 12682), (Start: 71 @12625 has 3 MA's), (Start: 81 @12583 has 3 MA's),

Gene: CherryCola_50 Start: 40592, Stop: 40308, Start Num: 83
Candidate Starts for CherryCola_50:
(22, 40757), (Start: 46 @40721 has 30 MA's), (Start: 64 @40679 has 3 MA's), (79, 40613), (Start: 83 @40592 has 1 MA's), (91, 40550), (102, 40514), (120, 40406),

Gene: Chipko_45 Start: 34209, Stop: 33889, Start Num: 64
Candidate Starts for Chipko_45:
(Start: 33 @34269 has 1 MA's), (Start: 46 @34251 has 30 MA's), (Start: 64 @34209 has 3 MA's), (101, 34050), (102, 34044), (128, 33912), (134, 33903),

Gene: ClamChowder_50 Start: 40067, Stop: 39654, Start Num: 46
Candidate Starts for ClamChowder_50:
(4, 40172), (6, 40166), (9, 40142), (22, 40103), (Start: 46 @40067 has 30 MA's), (Start: 64 @40025 has 3 MA's), (79, 39959), (Start: 83 @39938 has 1 MA's), (91, 39896), (102, 39860), (120, 39752),

Gene: Coeur_20 Start: 14347, Stop: 13994, Start Num: 43
Candidate Starts for Coeur_20:
(Start: 37 @14356 has 4 MA's), (39, 14353), (Start: 43 @14347 has 2 MA's), (49, 14338), (Start: 59 @14311 has 1 MA's), (61, 14305), (Start: 65 @14293 has 1 MA's), (78, 14236), (87, 14185), (94, 14164), (99, 14149), (108, 14074), (110, 14071), (117, 14029), (123, 14008), (125, 14005),

Gene: Cole_40 Start: 29705, Stop: 29412, Start Num: 81
Candidate Starts for Cole_40:
(3, 29933), (Start: 18 @29867 has 8 MA's), (Start: 37 @29831 has 4 MA's), (Start: 64 @29777 has 3 MA's), (Start: 71 @29747 has 3 MA's), (Start: 81 @29705 has 3 MA's), (98, 29624), (106, 29585), (113, 29516),

Gene: Coriander_40 Start: 31779, Stop: 31459, Start Num: 64
Candidate Starts for Coriander_40:
(Start: 33 @31839 has 1 MA's), (Start: 46 @31821 has 30 MA's), (Start: 64 @31779 has 3 MA's), (Start: 83 @31692 has 1 MA's), (92, 31647), (127, 31485), (128, 31482),

Gene: CoveyB_51 Start: 39766, Stop: 39353, Start Num: 46
Candidate Starts for CoveyB_51:
(22, 39802), (Start: 46 @39766 has 30 MA's), (Start: 64 @39724 has 3 MA's), (79, 39658), (Start: 83 @39637 has 1 MA's), (91, 39595), (102, 39559), (120, 39451),

Gene: CyranoPS_18 Start: 12709, Stop: 12362, Start Num: 44
Candidate Starts for CyranoPS_18:
(16, 12760), (21, 12745), (Start: 44 @12709 has 3 MA's), (73, 12625), (Start: 83 @12577 has 1 MA's),

Gene: Danyall_50 Start: 39768, Stop: 39355, Start Num: 46
Candidate Starts for Danyall_50:

(4, 39873), (6, 39867), (9, 39843), (22, 39804), (Start: 46 @39768 has 30 MA's), (Start: 64 @39726 has 3 MA's), (79, 39660), (Start: 83 @39639 has 1 MA's), (91, 39597), (102, 39561),

Gene: Delian_45 Start: 32354, Stop: 31932, Start Num: 18
Candidate Starts for Delian_45:
(Start: 18 @32354 has 8 MA's), (32, 32324), (Start: 37 @32318 has 4 MA's), (Start: 64 @32270 has 3 MA's), (98, 32117), (120, 31985),

Gene: Dirtfootball_21 Start: 14352, Stop: 13966, Start Num: 25
Candidate Starts for Dirtfootball_21:
(20, 14358), (25, 14352), (30, 14340), (Start: 43 @14322 has 2 MA's), (Start: 65 @14271 has 1 MA's), (67, 14262), (73, 14238), (75, 14223), (78, 14214), (Start: 83 @14190 has 1 MA's), (86, 14166), (95, 14139), (102, 14112), (109, 14055), (115, 14016), (121, 13998),

Gene: Dmitri_40 Start: 33369, Stop: 33049, Start Num: 64
Candidate Starts for Dmitri_40:
(Start: 33 @33429 has 1 MA's), (Start: 46 @33411 has 30 MA's), (Start: 64 @33369 has 3 MA's), (101, 33210), (102, 33204), (128, 33072), (134, 33063),

Gene: Doggs_37 Start: 32568, Stop: 32188, Start Num: 33
Candidate Starts for Doggs_37:
(Start: 33 @32568 has 1 MA's), (Start: 46 @32550 has 30 MA's), (Start: 64 @32508 has 3 MA's), (Start: 83 @32421 has 1 MA's), (92, 32376), (128, 32211), (134, 32202),

Gene: Egi03_48 Start: 39548, Stop: 39135, Start Num: 46
Candidate Starts for Egi03_48:
(4, 39653), (6, 39647), (9, 39623), (22, 39584), (Start: 46 @39548 has 30 MA's), (Start: 64 @39506 has 3 MA's), (79, 39440), (Start: 83 @39419 has 1 MA's), (91, 39377), (102, 39341), (120, 39233),

Gene: Emperor_20 Start: 14847, Stop: 14473, Start Num: 38
Candidate Starts for Emperor_20:
(Start: 38 @14847 has 1 MA's), (Start: 46 @14838 has 30 MA's), (61, 14811), (67, 14790), (Start: 83 @14718 has 1 MA's), (94, 14670), (98, 14658), (109, 14583), (115, 14544), (133, 14499), (135, 14484),

Gene: Evamon_47 Start: 39787, Stop: 39374, Start Num: 46
Candidate Starts for Evamon_47:
(4, 39892), (6, 39886), (9, 39862), (22, 39823), (Start: 46 @39787 has 30 MA's), (Start: 64 @39745 has 3 MA's), (79, 39679), (Start: 83 @39658 has 1 MA's), (91, 39616), (102, 39580), (120, 39472),

Gene: Ewald_34 Start: 29912, Stop: 29541, Start Num: 40
Candidate Starts for Ewald_34:
(8, 29993), (11, 29975), (17, 29957), (23, 29939), (Start: 40 @29912 has 2 MA's), (42, 29909), (Start: 46 @29903 has 30 MA's), (51, 29891), (57, 29876), (60, 29867), (68, 29843), (76, 29804), (Start: 83 @29774 has 1 MA's), (99, 29708),

Gene: Fireball_50 Start: 40315, Stop: 39920, Start Num: 44
Candidate Starts for Fireball_50:
(Start: 44 @40315 has 3 MA's), (50, 40303), (73, 40231), (80, 40204), (103, 40102), (122, 39979),

Gene: Flashwig_19 Start: 13296, Stop: 12949, Start Num: 44
Candidate Starts for Flashwig_19:
(16, 13347), (21, 13332), (Start: 38 @13305 has 1 MA's), (Start: 44 @13296 has 3 MA's), (73, 13212),

Gene: Fugax_51 Start: 40059, Stop: 39646, Start Num: 46
Candidate Starts for Fugax_51:
(4, 40164), (6, 40158), (9, 40134), (22, 40095), (Start: 46 @40059 has 30 MA's), (Start: 64 @40017 has 3 MA's), (79, 39951), (Start: 83 @39930 has 1 MA's), (91, 39888), (102, 39852), (120, 39744),

Gene: GMA5_19 Start: 14633, Stop: 14346, Start Num: 66
Candidate Starts for GMA5_19:
(48, 14684), (54, 14672), (61, 14651), (66, 14633), (75, 14591), (Start: 81 @14573 has 3 MA's), (Start: 83 @14558 has 1 MA's), (101, 14486), (116, 14381), (121, 14369),

Gene: GRU3_18 Start: 14485, Stop: 14162, Start Num: 50
Candidate Starts for GRU3_18:
(Start: 43 @14497 has 2 MA's), (50, 14485), (57, 14467), (66, 14440), (Start: 71 @14422 has 3 MA's), (95, 14314), (118, 14188),

Gene: Gezellig_47 Start: 39919, Stop: 39506, Start Num: 46
Candidate Starts for Gezellig_47:
(22, 39955), (Start: 46 @39919 has 30 MA's), (Start: 64 @39877 has 3 MA's), (79, 39811), (Start: 83 @39790 has 1 MA's), (91, 39748), (102, 39712), (120, 39604),

Gene: Guacamole_40 Start: 32920, Stop: 32501, Start Num: 31
Candidate Starts for Guacamole_40:
(Start: 31 @32920 has 3 MA's), (69, 32830), (91, 32725), (101, 32695), (107, 32662), (124, 32554),

Gene: Guinevere_43 Start: 29972, Stop: 29637, Start Num: 71
Candidate Starts for Guinevere_43:
(3, 30158), (Start: 18 @30092 has 8 MA's), (Start: 37 @30056 has 4 MA's), (Start: 64 @30002 has 3 MA's), (Start: 71 @29972 has 3 MA's), (Start: 81 @29930 has 3 MA's), (98, 29849), (106, 29810), (113, 29741),

Gene: Halloweekend_38 Start: 29380, Stop: 29045, Start Num: 71
Candidate Starts for Halloweekend_38:
(3, 29566), (Start: 18 @29500 has 8 MA's), (Start: 37 @29464 has 4 MA's), (Start: 64 @29410 has 3 MA's), (Start: 71 @29380 has 3 MA's), (Start: 81 @29338 has 3 MA's), (98, 29257), (106, 29218), (113, 29149),

Gene: Halo3_49 Start: 40504, Stop: 40091, Start Num: 46
Candidate Starts for Halo3_49:
(22, 40540), (Start: 46 @40504 has 30 MA's), (Start: 64 @40462 has 3 MA's), (79, 40396), (Start: 83 @40375 has 1 MA's), (91, 40333), (102, 40297), (120, 40189),

Gene: Heinz_32 Start: 25504, Stop: 25082, Start Num: 19
Candidate Starts for Heinz_32:
(Start: 19 @25504 has 2 MA's), (36, 25480), (63, 25432), (68, 25417), (72, 25408), (88, 25330), (97, 25303),

Gene: Hibiscus_33 Start: 25453, Stop: 25031, Start Num: 19
Candidate Starts for Hibiscus_33:
(Start: 19 @25453 has 2 MA's), (36, 25429), (63, 25381), (68, 25366), (72, 25357), (88, 25279), (97, 25252),

Gene: Hitter_43 Start: 32564, Stop: 32145, Start Num: 31

Candidate Starts for Hitter_43:
(Start: 31 @32564 has 3 MA's), (69, 32474), (91, 32369), (101, 32339), (124, 32198), (131, 32183),

Gene: HorseRider_18 Start: 12756, Stop: 12409, Start Num: 44
Candidate Starts for HorseRider_18:
(21, 12792), (Start: 44 @12756 has 3 MA's), (Start: 71 @12681 has 3 MA's), (73, 12672), (Start: 83 @12624 has 1 MA's),

Gene: Ichiang_40 Start: 29399, Stop: 29064, Start Num: 71
Candidate Starts for Ichiang_40:
(3, 29585), (Start: 18 @29519 has 8 MA's), (Start: 37 @29483 has 4 MA's), (Start: 64 @29429 has 3 MA's), (66, 29417), (Start: 71 @29399 has 3 MA's), (79, 29363), (Start: 81 @29357 has 3 MA's), (98, 29276), (106, 29237), (113, 29168),

Gene: Jalloh_18 Start: 12552, Stop: 12205, Start Num: 44
Candidate Starts for Jalloh_18:
(16, 12603), (21, 12588), (Start: 38 @12561 has 1 MA's), (Start: 44 @12552 has 3 MA's), (73, 12468),

Gene: Jambalaya_48 Start: 39566, Stop: 39153, Start Num: 46
Candidate Starts for Jambalaya_48:
(22, 39602), (Start: 46 @39566 has 30 MA's), (Start: 64 @39524 has 3 MA's), (79, 39458), (Start: 83 @39437 has 1 MA's), (91, 39395), (102, 39359), (120, 39251),

Gene: JasperJr_40 Start: 32920, Stop: 32501, Start Num: 31
Candidate Starts for JasperJr_40:
(Start: 31 @32920 has 3 MA's), (69, 32830), (91, 32725), (101, 32695), (107, 32662), (124, 32554),

Gene: Jeanie_19 Start: 13938, Stop: 13588, Start Num: 27
Candidate Starts for Jeanie_19:
(13, 13974), (Start: 27 @13938 has 2 MA's), (Start: 43 @13917 has 2 MA's), (78, 13812), (94, 13740), (98, 13728), (101, 13716), (116, 13611),

Gene: JohnPork_51 Start: 39579, Stop: 39166, Start Num: 46
Candidate Starts for JohnPork_51:
(4, 39684), (6, 39678), (9, 39654), (22, 39615), (Start: 46 @39579 has 30 MA's), (Start: 64 @39537 has 3 MA's), (79, 39471), (Start: 83 @39450 has 1 MA's), (91, 39408), (102, 39372),

Gene: Kiko_41 Start: 32143, Stop: 31775, Start Num: 37
Candidate Starts for Kiko_41:
(14, 32188), (Start: 37 @32143 has 4 MA's), (56, 32113), (Start: 59 @32104 has 1 MA's), (Start: 71 @32065 has 3 MA's), (73, 32056), (89, 31969), (90, 31966), (101, 31930),

Gene: KimmyK_49 Start: 40501, Stop: 40088, Start Num: 46
Candidate Starts for KimmyK_49:
(4, 40606), (6, 40600), (9, 40576), (22, 40537), (Start: 46 @40501 has 30 MA's), (Start: 64 @40459 has 3 MA's), (79, 40393), (Start: 83 @40372 has 1 MA's), (91, 40330), (102, 40294), (120, 40186),

Gene: McGonagall_19 Start: 13938, Stop: 13588, Start Num: 27
Candidate Starts for McGonagall_19:
(13, 13974), (Start: 27 @13938 has 2 MA's), (Start: 43 @13917 has 2 MA's), (78, 13812), (94, 13740), (98, 13728), (101, 13716), (116, 13611),

Gene: Melba_41 Start: 32860, Stop: 32474, Start Num: 37

Candidate Starts for Melba_41:
(Start: 18 @32896 has 8 MA's), (32, 32866), (Start: 37 @32860 has 4 MA's), (Start: 64 @32812 has 3 MA's), (98, 32659), (120, 32527),

Gene: MintFen_42 Start: 32970, Stop: 32548, Start Num: 18
Candidate Starts for MintFen_42:
(Start: 18 @32970 has 8 MA's), (32, 32940), (Start: 37 @32934 has 4 MA's), (Start: 64 @32886 has 3 MA's), (98, 32733), (120, 32601),

Gene: Moonflower_39 Start: 33232, Stop: 32912, Start Num: 64
Candidate Starts for Moonflower_39:
(Start: 33 @33292 has 1 MA's), (Start: 46 @33274 has 30 MA's), (Start: 64 @33232 has 3 MA's), (101, 33073), (102, 33067), (127, 32938), (128, 32935), (134, 32926),

Gene: Mutzi_48 Start: 40895, Stop: 40482, Start Num: 46
Candidate Starts for Mutzi_48:
(22, 40931), (Start: 46 @40895 has 30 MA's), (Start: 64 @40853 has 3 MA's), (79, 40787), (Start: 83 @40766 has 1 MA's), (91, 40724), (102, 40688), (120, 40580),

Gene: Nubi_48 Start: 39892, Stop: 39479, Start Num: 46
Candidate Starts for Nubi_48:
(4, 39997), (6, 39991), (9, 39967), (22, 39928), (Start: 46 @39892 has 30 MA's), (Start: 64 @39850 has 3 MA's), (79, 39784), (Start: 83 @39763 has 1 MA's), (91, 39721), (102, 39685), (120, 39577),

Gene: Nyceirae_36 Start: 30000, Stop: 29677, Start Num: 59
Candidate Starts for Nyceirae_36:
(Start: 44 @30033 has 3 MA's), (Start: 59 @30000 has 1 MA's), (66, 29979), (Start: 81 @29919 has 3 MA's), (Start: 83 @29904 has 1 MA's), (94, 29856), (98, 29844), (125, 29700),

Gene: Obliviate_38 Start: 31257, Stop: 30835, Start Num: 18
Candidate Starts for Obliviate_38:
(Start: 18 @31257 has 8 MA's), (32, 31227), (Start: 37 @31221 has 4 MA's), (Start: 64 @31173 has 3 MA's), (98, 31020), (120, 30888), (126, 30873),

Gene: Opie_43 Start: 33208, Stop: 32843, Start Num: 46
Candidate Starts for Opie_43:
(Start: 33 @33226 has 1 MA's), (Start: 46 @33208 has 30 MA's), (Start: 64 @33166 has 3 MA's), (Start: 83 @33079 has 1 MA's), (92, 33034), (101, 33007), (102, 33001), (134, 32857),

Gene: PatriciaStar_38 Start: 32187, Stop: 31864, Start Num: 59
Candidate Starts for PatriciaStar_38:
(Start: 44 @32220 has 3 MA's), (Start: 59 @32187 has 1 MA's), (66, 32166), (78, 32115), (Start: 83 @32091 has 1 MA's), (94, 32043), (98, 32031), (125, 31887), (130, 31878),

Gene: PensacolaC28_20 Start: 14728, Stop: 14315, Start Num: 55
Candidate Starts for PensacolaC28_20:
(35, 14761), (Start: 55 @14728 has 1 MA's), (56, 14722), (57, 14719), (58, 14716), (101, 14545), (111, 14461), (112, 14458), (119, 14413),

Gene: Petra_39 Start: 31580, Stop: 31194, Start Num: 37
Candidate Starts for Petra_39:
(Start: 18 @31616 has 8 MA's), (32, 31586), (Start: 37 @31580 has 4 MA's), (Start: 64 @31532 has 3 MA's), (98, 31379), (120, 31247), (126, 31232),

Gene: Phishy_37 Start: 31530, Stop: 31159, Start Num: 40
Candidate Starts for Phishy_37:
(8, 31611), (11, 31593), (23, 31557), (Start: 40 @31530 has 2 MA's), (42, 31527), (Start: 46 @31521 has 30 MA's), (51, 31509), (57, 31494), (60, 31485), (68, 31461), (76, 31422), (Start: 83 @31392 has 1 MA's), (98, 31329), (99, 31326),

Gene: Phlop_47 Start: 39973, Stop: 39560, Start Num: 46
Candidate Starts for Phlop_47:
(4, 40078), (6, 40072), (9, 40048), (22, 40009), (Start: 46 @39973 has 30 MA's), (Start: 64 @39931 has 3 MA's), (79, 39865), (Start: 83 @39844 has 1 MA's), (91, 39802), (102, 39766), (120, 39658),

Gene: PhrostedPhlake_44 Start: 32850, Stop: 32413, Start Num: 15
Candidate Starts for PhrostedPhlake_44:
(13, 32859), (Start: 15 @32850 has 1 MA's), (20, 32838), (22, 32835), (26, 32832), (52, 32796), (62, 32772), (74, 32724), (82, 32697), (93, 32646), (136, 32457),

Gene: PinkCoffee_50 Start: 40076, Stop: 39663, Start Num: 46
Candidate Starts for PinkCoffee_50:
(4, 40181), (6, 40175), (9, 40151), (22, 40112), (Start: 46 @40076 has 30 MA's), (Start: 64 @40034 has 3 MA's), (79, 39968), (Start: 83 @39947 has 1 MA's), (91, 39905), (102, 39869), (120, 39761),

Gene: Pipp_38 Start: 31416, Stop: 30997, Start Num: 46
Candidate Starts for Pipp_38:
(1, 31644), (Start: 46 @31416 has 30 MA's), (70, 31350), (Start: 83 @31287 has 1 MA's), (92, 31239), (100, 31215),

Gene: Portcullis_50 Start: 39579, Stop: 39166, Start Num: 46
Candidate Starts for Portcullis_50:
(4, 39684), (6, 39678), (9, 39654), (22, 39615), (Start: 46 @39579 has 30 MA's), (Start: 64 @39537 has 3 MA's), (79, 39471), (Start: 83 @39450 has 1 MA's), (91, 39408), (102, 39372),

Gene: PullumCavea_47 Start: 39973, Stop: 39560, Start Num: 46
Candidate Starts for PullumCavea_47:
(4, 40078), (6, 40072), (9, 40048), (22, 40009), (Start: 46 @39973 has 30 MA's), (Start: 64 @39931 has 3 MA's), (79, 39865), (Start: 83 @39844 has 1 MA's), (91, 39802), (102, 39766), (120, 39658),

Gene: QueenHazel_30 Start: 27405, Stop: 27109, Start Num: 77
Candidate Starts for QueenHazel_30:
(Start: 15 @27561 has 1 MA's), (24, 27540), (28, 27531), (34, 27522), (47, 27504), (68, 27444), (72, 27432), (Start: 77 @27405 has 2 MA's), (85, 27363), (96, 27318), (103, 27291), (104, 27282), (114, 27204), (126, 27162),

Gene: Rahul_20 Start: 14354, Stop: 14019, Start Num: 43
Candidate Starts for Rahul_20:
(Start: 43 @14354 has 2 MA's), (57, 14327), (Start: 64 @14309 has 3 MA's), (Start: 65 @14303 has 1 MA's), (66, 14297), (75, 14255), (Start: 81 @14237 has 3 MA's), (87, 14195), (110, 14090),

Gene: RogerDodger_51 Start: 40116, Stop: 39703, Start Num: 46
Candidate Starts for RogerDodger_51:
(22, 40152), (Start: 46 @40116 has 30 MA's), (Start: 64 @40074 has 3 MA's), (79, 40008), (Start: 83 @39987 has 1 MA's), (91, 39945), (102, 39909),

Gene: SallySpecial_18 Start: 14300, Stop: 13995, Start Num: 65
Candidate Starts for SallySpecial_18:
(20, 14387), (25, 14381), (30, 14369), (Start: 43 @14351 has 2 MA's), (Start: 65 @14300 has 1 MA's), (67, 14291), (73, 14267), (75, 14252), (78, 14243), (Start: 83 @14219 has 1 MA's), (86, 14195), (95, 14168), (98, 14159), (102, 14141), (109, 14084), (115, 14045), (121, 14027), (129, 14009),

Gene: Salvador_47 Start: 39785, Stop: 39372, Start Num: 46
Candidate Starts for Salvador_47:
(4, 39890), (6, 39884), (9, 39860), (22, 39821), (Start: 46 @39785 has 30 MA's), (Start: 64 @39743 has 3 MA's), (79, 39677), (Start: 83 @39656 has 1 MA's), (91, 39614), (102, 39578), (120, 39470),

Gene: Savbucketdawg_48 Start: 39566, Stop: 39153, Start Num: 46
Candidate Starts for Savbucketdawg_48:
(22, 39602), (Start: 46 @39566 has 30 MA's), (Start: 64 @39524 has 3 MA's), (79, 39458), (Start: 83 @39437 has 1 MA's), (91, 39395), (102, 39359), (120, 39251),

Gene: Schism_45 Start: 30719, Stop: 30426, Start Num: 81
Candidate Starts for Schism_45:
(3, 30947), (Start: 18 @30881 has 8 MA's), (Start: 37 @30845 has 4 MA's), (Start: 64 @30791 has 3 MA's), (Start: 71 @30761 has 3 MA's), (Start: 81 @30719 has 3 MA's), (98, 30638), (106, 30599), (113, 30530),

Gene: SharkTale_50 Start: 40799, Stop: 40494, Start Num: 79
Candidate Starts for SharkTale_50:
(4, 41012), (6, 41006), (9, 40982), (22, 40943), (Start: 46 @40907 has 30 MA's), (Start: 64 @40865 has 3 MA's), (79, 40799), (Start: 83 @40778 has 1 MA's), (98, 40718), (102, 40700), (126, 40577), (132, 40565),

Gene: Sixsevenium_52 Start: 40210, Stop: 39905, Start Num: 79
Candidate Starts for Sixsevenium_52:
(4, 40423), (6, 40417), (9, 40393), (22, 40354), (Start: 46 @40318 has 30 MA's), (Start: 64 @40276 has 3 MA's), (79, 40210), (Start: 83 @40189 has 1 MA's), (98, 40129), (102, 40111),

Gene: SmokingBunny_48 Start: 39878, Stop: 39465, Start Num: 46
Candidate Starts for SmokingBunny_48:
(4, 39983), (6, 39977), (9, 39953), (22, 39914), (Start: 46 @39878 has 30 MA's), (Start: 64 @39836 has 3 MA's), (79, 39770), (Start: 83 @39749 has 1 MA's), (91, 39707), (102, 39671), (120, 39563),

Gene: TailX7_18 Start: 12830, Stop: 12501, Start Num: 53
Candidate Starts for TailX7_18:
(Start: 44 @12848 has 3 MA's), (53, 12830), (Start: 71 @12773 has 3 MA's), (Start: 81 @12731 has 3 MA's),

Gene: TaronosaurasRx_42 Start: 31610, Stop: 31248, Start Num: 46
Candidate Starts for TaronosaurasRx_42:
(Start: 33 @31628 has 1 MA's), (Start: 46 @31610 has 30 MA's), (Start: 64 @31568 has 3 MA's), (98, 31421), (102, 31403), (134, 31262),

Gene: Togo_47 Start: 39878, Stop: 39465, Start Num: 46
Candidate Starts for Togo_47:
(4, 39983), (6, 39977), (9, 39953), (22, 39914), (Start: 46 @39878 has 30 MA's), (Start: 64 @39836 has 3 MA's), (79, 39770), (Start: 83 @39749 has 1 MA's), (91, 39707), (102, 39671), (120, 39563),

Gene: Twister6_50 Start: 39679, Stop: 39266, Start Num: 46
Candidate Starts for Twister6_50:
(4, 39784), (6, 39778), (9, 39754), (22, 39715), (Start: 46 @39679 has 30 MA's), (Start: 64 @39637 has 3 MA's), (79, 39571), (Start: 83 @39550 has 1 MA's), (91, 39508), (102, 39472),

Gene: Valary_50 Start: 40721, Stop: 40308, Start Num: 46
Candidate Starts for Valary_50:
(22, 40757), (Start: 46 @40721 has 30 MA's), (Start: 64 @40679 has 3 MA's), (79, 40613), (Start: 83 @40592 has 1 MA's), (91, 40550), (102, 40514), (120, 40406),

Gene: VanDeWege_51 Start: 40013, Stop: 39600, Start Num: 46
Candidate Starts for VanDeWege_51:
(22, 40049), (Start: 46 @40013 has 30 MA's), (Start: 64 @39971 has 3 MA's), (79, 39905), (Start: 83 @39884 has 1 MA's), (91, 39842), (102, 39806), (120, 39698),

Gene: Wizard_47 Start: 39877, Stop: 39506, Start Num: 64
Candidate Starts for Wizard_47:
(22, 39955), (Start: 46 @39919 has 30 MA's), (Start: 64 @39877 has 3 MA's), (79, 39811), (Start: 83 @39790 has 1 MA's), (91, 39748), (102, 39712), (120, 39604),

Gene: Xula_29 Start: 26929, Stop: 26633, Start Num: 77
Candidate Starts for Xula_29:
(Start: 15 @27085 has 1 MA's), (24, 27064), (28, 27055), (34, 27046), (47, 27028), (68, 26968), (72, 26956), (Start: 77 @26929 has 2 MA's), (85, 26887), (96, 26842), (103, 26815), (104, 26806), (114, 26728), (126, 26686),

Gene: YungMoney_51 Start: 42233, Stop: 41832, Start Num: 44
Candidate Starts for YungMoney_51:
(2, 42377), (5, 42332), (10, 42305), (29, 42254), (Start: 44 @42233 has 3 MA's), (Start: 64 @42188 has 3 MA's), (84, 42092), (99, 42035), (105, 42008), (122, 41891),

Gene: Zaheer_43 Start: 31154, Stop: 30861, Start Num: 81
Candidate Starts for Zaheer_43:
(3, 31382), (Start: 18 @31316 has 8 MA's), (Start: 37 @31280 has 4 MA's), (Start: 64 @31226 has 3 MA's), (Start: 71 @31196 has 3 MA's), (Start: 81 @31154 has 3 MA's), (98, 31073), (106, 31034), (113, 30965),

Gene: Zarbodnamra_41 Start: 32378, Stop: 31956, Start Num: 18
Candidate Starts for Zarbodnamra_41:
(Start: 18 @32378 has 8 MA's), (32, 32348), (Start: 37 @32342 has 4 MA's), (Start: 64 @32294 has 3 MA's), (98, 32141), (120, 32009),

Gene: Zilla_40 Start: 32125, Stop: 31703, Start Num: 18
Candidate Starts for Zilla_40:
(Start: 18 @32125 has 8 MA's), (32, 32095), (Start: 37 @32089 has 4 MA's), (Start: 64 @32041 has 3 MA's), (98, 31888), (120, 31756),