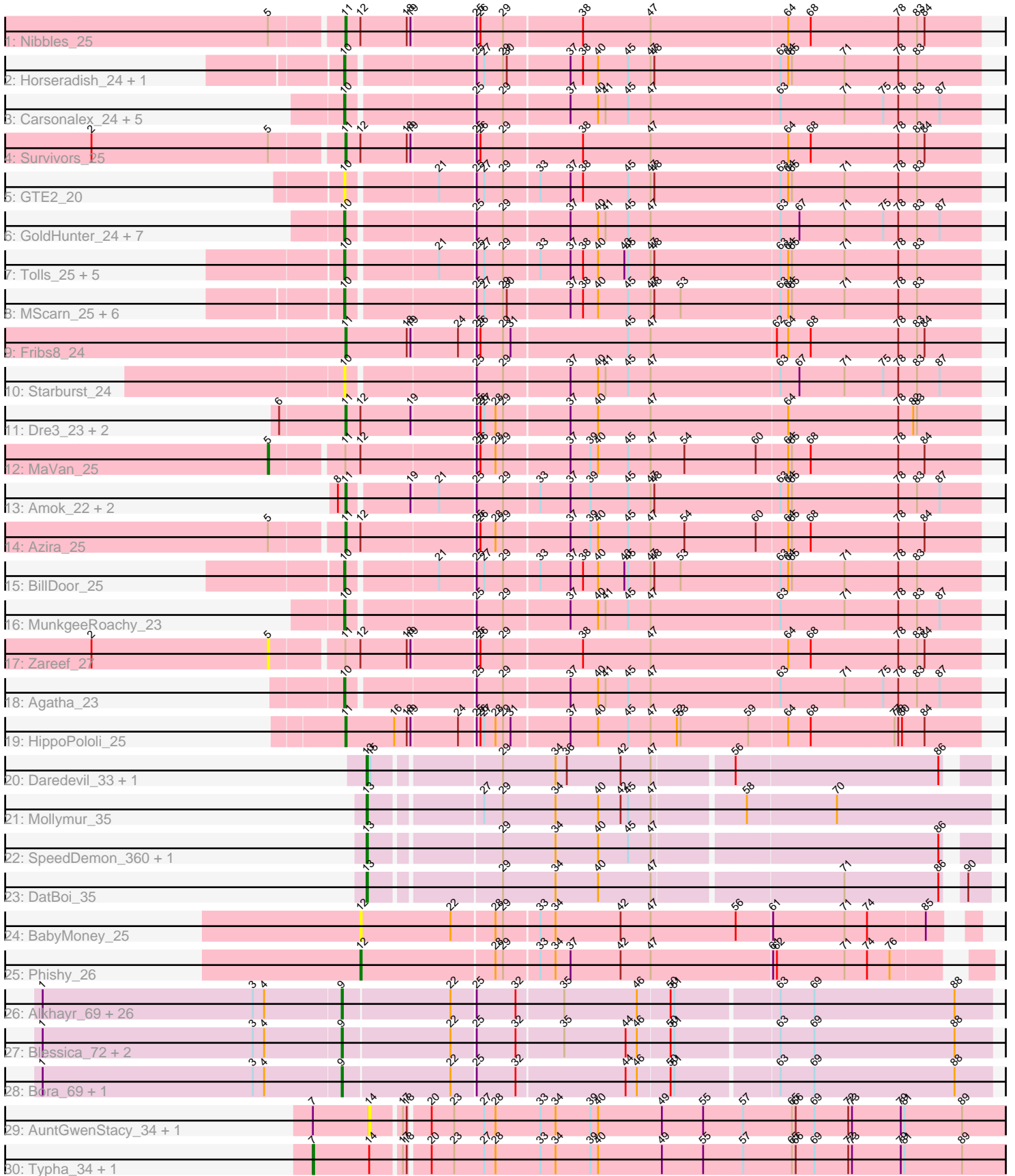


Pham 212503



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 212503 Report

This analysis was run 02/22/25 on database version 588.

Pham number 212503 has 91 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Nibbles_25
- Track 2 : Horseradish_24, Yummy_24
- Track 3 : Carsonalex_24, Nina_24, Typhonomachy_24, Burnsey_23, Cozz_23, Quasar_23
- Track 4 : Survivors_25
- Track 5 : GTE2_20
- Track 6 : GoldHunter_24, Axym_23, Sopespian_23, ChickenTender_25, RedBaron_24, Socotra_24, PsychoKiller_23, Elliott_23
- Track 7 : Tolls_25, AndPeggy_22, CanesSauce_23, Yarn_22, SteamedHams_25, ChocoMunchkin_23
- Track 8 : MScarn_25, Blondies_23, Biskit_24, Buttrmlkdreams_23, Troje_23, SketchMex_22, SweatNTears_25
- Track 9 : Fribs8_24
- Track 10 : Starburst_24
- Track 11 : Dre3_23, Gibbous_23, Cleo_23
- Track 12 : MaVan_25
- Track 13 : Amok_22, Emalyn_22, AikoCarson_22
- Track 14 : Azira_25
- Track 15 : BillDoor_25
- Track 16 : MunkgeeRoachy_23
- Track 17 : Zareef_27
- Track 18 : Agatha_23
- Track 19 : HippoPololi_25
- Track 20 : Daredevil_33, Towmatter_33
- Track 21 : Mollymur_35
- Track 22 : SpeedDemon_360, Bantam_34
- Track 23 : DatBoi_35
- Track 24 : BabyMoney_25
- Track 25 : Phishy_26
- Track 26 : Alkhayr_69, Wogge42_70, Smooch_74, Winget_72, Shida_71, SchoolBus_71, KingPhillip3_70, Catdawg_71, Schuy_72, Krili_70, JangDynasty_71, TelAviv_68, YungJamal_76, Dylan_71, Vagabond_71, Corndog_74, Wildflower_71, Vorrrps_71, Mori_71, NiebruSaylor_70, Ashwin_73, Firecracker_73, Familton_72, Zakhe101_70, FoulBall_71, Idergollasper_71, Zebo_70
- Track 27 : Blessica_72, Ryadel_75, MadKillah_72
- Track 28 : Bora_69, Murai_72
- Track 29 : AuntGwenStacy_34, Faiyaz_34

- Track 30 : Typha_34, Hilltopfarm_34

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

The start number called the most often in the published annotations is 9, it was called in 28 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alkhayr_69, Ashwin_73, Blessica_72, Bora_69, Catdawg_71, Corndog_74, Dylan_71, Familton_72, Firecracker_73, FoulBall_71, Idergollasper_71, JangDynasty_71, KingPhillip3_70, Krili_70, MadKillah_72, Mori_71, Murai_72, NiebruSaylor_70, Ryadel_75, SchoolBus_71, Schuy_72, Shida_71, Smooch_74, TelAviv_68, Vagabond_71, Vorrrps_71, Wildflower_71, Winget_72, Wogge42_70, YungJamal_76, Zakhe101_70, Zebo_70,

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

-

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

- Agatha_23, AikoCarson_22, Amok_22, AndPeggy_22, AuntGwenStacy_34, Axym_23, Azira_25, BabyMoney_25, Bantam_34, BillDoor_25, Biskit_24, Blondies_23, Burnsey_23, Buttrmilkdreams_23, CanesSauce_23, Carsonalex_24, ChickenTender_25, ChocoMunchkin_23, Cleo_23, Cozz_23, Daredevil_33, DatBoi_35, Dre3_23, Elliott_23, Emalyn_22, Faiyaz_34, Fribs8_24, GTE2_20, Gibbous_23, GoldHunter_24, Hilltopfarm_34, HippoPololi_25, Horseradish_24, MScarn_25, MaVan_25, Mollymur_35, MunkgeeRoachy_23, Nibbles_25, Nina_24, Phishy_26, PsychoKiller_23, Quasar_23, RedBaron_24, SketchMex_22, Socotra_24, Sopespian_23, SpeedDemon_360, Starburst_24, SteamedHams_25, Survivors_25, SweatNTears_25, Tolls_25, Towmatter_33, Troje_23, Typha_34, Typhonomachy_24, Yarn_22, Yummy_24, Zareef_27,

Summary by start number:

Start 5:

- Found in 5 of 91 (5.5%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 40.0% of time when present
- Phage (with cluster) where this start called: MaVan_25 (CT), Zareef_27 (CT),

Start 7:

- Found in 4 of 91 (4.4%) of genes in pham
- Manual Annotations of this start: 2 of 68
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hilltopfarm_34 (Y), Typha_34 (Y),

Start 9:

- Found in 32 of 91 (35.2%) of genes in pham
- Manual Annotations of this start: 28 of 68
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Alkhayr_69 (O), Ashwin_73 (O), Blessica_72 (O), Bora_69 (O), Catdawg_71 (O), Corndog_74 (O), Dylan_71 (O), Familton_72 (O), Firecracker_73 (O), FoulBall_71 (O), Idergollasper_71 (O), JangDynasty_71 (O), KingPhillip3_70 (O), Krili_70 (O), MadKillah_72 (O), Mori_71 (O), Murai_72 (O), NiebruSaylor_70 (O), Ryadel_75 (O), SchoolBus_71 (O), Schuy_72 (O), Shida_71 (O), Smooch_74 (O), TelAviv_68 (O), Vagabond_71 (O), Vorrrps_71 (O), Wildflower_71 (O), Winget_72 (O), Wogge42_70 (O), YungJamal_76 (O), Zakhe101_70 (O), Zebo_70 (O),

Start 10:

- Found in 34 of 91 (37.4%) of genes in pham
- Manual Annotations of this start: 20 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agatha_23 (CT), AndPeggy_22 (CT), Axym_23 (CT), BillDoor_25 (CT), Biskit_24 (CT), Blondies_23 (CT), Burnsey_23 (CT), Buttrmlkdreams_23 (CT), CanesSauce_23 (CT), Carsonalex_24 (CT), ChickenTender_25 (CT), ChocoMunchkin_23 (CT), Cozz_23 (CT), Elliott_23 (CT), GTE2_20 (CT), GoldHunter_24 (CT), Horseradish_24 (CT), MScarn_25 (CT), MunkgeeRoachy_23 (CT), Nina_24 (CT), PsychoKiller_23 (CT), Quasar_23 (CT), RedBaron_24 (CT), SketchMex_22 (CT), Socotra_24 (CT), Sopespian_23 (CT), Starburst_24 (CT), SteamedHams_25 (CT), SweatNTears_25 (CT), Tolls_25 (CT), Troje_23 (CT), Typhonmarchy_24 (CT), Yarn_22 (CT), Yummy_24 (CT),

Start 11:

- Found in 13 of 91 (14.3%) of genes in pham
- Manual Annotations of this start: 11 of 68
- Called 84.6% of time when present
- Phage (with cluster) where this start called: AikoCarson_22 (CT), Amok_22 (CT), Azira_25 (CT), Cleo_23 (CT), Dre3_23 (CT), Emalyn_22 (CT), Fribs8_24 (CT), Gibbous_23 (CT), HippoPololi_25 (CT), Nibbles_25 (CT), Survivors_25 (CT),

Start 12:

- Found in 10 of 91 (11.0%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 20.0% of time when present
- Phage (with cluster) where this start called: BabyMoney_25 (DT), Phishy_26 (DT),

Start 13:

- Found in 6 of 91 (6.6%) of genes in pham
- Manual Annotations of this start: 5 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bantam_34 (DL), Daredevil_33 (DL), DatBoi_35 (DL), Mollymur_35 (DL), SpeedDemon_360 (DL), Towmatter_33 (DL),

Start 14:

- Found in 4 of 91 (4.4%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: AuntGwenStacy_34 (Y), Faiyaz_34 (Y),

Summary by clusters:

There are 5 clusters represented in this pham: Y, DL, DT, O, CT,

Info for manual annotations of cluster CT:

- Start number 5 was manually annotated 1 time for cluster CT.
- Start number 10 was manually annotated 20 times for cluster CT.
- Start number 11 was manually annotated 11 times for cluster CT.

Info for manual annotations of cluster DL:

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

Info for manual annotations of cluster DT:

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

Info for manual annotations of cluster O:

- Start number 9 was manually annotated 28 times for cluster O.

Info for manual annotations of cluster Y:

- Start number 7 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: Agatha_23 Start: 19719, Stop: 20207, Start Num: 10

Candidate Starts for Agatha_23:

(Start: 10 @19719 has 20 MA's), (25, 19812), (29, 19833), (37, 19884), (40, 19905), (41, 19911), (45, 19929), (47, 19947), (63, 20049), (71, 20100), (75, 20130), (78, 20142), (83, 20157), (87, 20175),

Gene: AikoCarson_22 Start: 18977, Stop: 19465, Start Num: 11

Candidate Starts for AikoCarson_22:

(8, 18971), (Start: 11 @18977 has 11 MA's), (19, 19022), (21, 19043), (25, 19070), (29, 19091), (33, 19118), (37, 19142), (39, 19157), (45, 19187), (47, 19205), (48, 19208), (63, 19307), (64, 19313), (65, 19316), (78, 19400), (83, 19415), (87, 19433),

Gene: Alkhayr_69 Start: 45256, Stop: 45753, Start Num: 9

Candidate Starts for Alkhayr_69:

(1, 45019), (3, 45187), (4, 45196), (Start: 9 @45256 has 28 MA's), (22, 45340), (25, 45358), (32, 45388), (35, 45424), (46, 45481), (50, 45505), (51, 45508), (63, 45586), (69, 45613), (88, 45724),

Gene: Amok_22 Start: 18974, Stop: 19462, Start Num: 11

Candidate Starts for Amok_22:

(8, 18968), (Start: 11 @18974 has 11 MA's), (19, 19019), (21, 19040), (25, 19067), (29, 19088), (33, 19115), (37, 19139), (39, 19154), (45, 19184), (47, 19202), (48, 19205), (63, 19304), (64, 19310), (65, 19313), (78, 19397), (83, 19412), (87, 19430),

Gene: AndPeggy_22 Start: 19379, Stop: 19867, Start Num: 10

Candidate Starts for AndPeggy_22:

(Start: 10 @19379 has 20 MA's), (21, 19445), (25, 19472), (27, 19478), (29, 19493), (33, 19520), (37, 19544), (38, 19553), (40, 19565), (43, 19586), (45, 19589), (47, 19607), (48, 19610), (63, 19709), (64, 19715), (65, 19718), (71, 19760), (78, 19802), (83, 19817),

Gene: Ashwin_73 Start: 46026, Stop: 46523, Start Num: 9

Candidate Starts for Ashwin_73:

(1, 45789), (3, 45957), (4, 45966), (Start: 9 @46026 has 28 MA's), (22, 46110), (25, 46128), (32, 46158), (35, 46194), (46, 46251), (50, 46275), (51, 46278), (63, 46356), (69, 46383), (88, 46494),

Gene: AuntGwenStacy_34 Start: 30733, Stop: 31254, Start Num: 14

Candidate Starts for AuntGwenStacy_34:

(Start: 7 @30688 has 2 MA's), (14, 30733), (17, 30754), (18, 30757), (20, 30772), (23, 30790), (27, 30814), (28, 30823), (33, 30859), (34, 30871), (39, 30898), (40, 30904), (49, 30955), (55, 30988), (57, 31018), (65, 31057), (66, 31060), (69, 31075), (72, 31102), (73, 31105), (79, 31144), (81, 31147), (89, 31192),

Gene: Axym_23 Start: 19719, Stop: 20207, Start Num: 10

Candidate Starts for Axym_23:

(Start: 10 @19719 has 20 MA's), (25, 19812), (29, 19833), (37, 19884), (40, 19905), (41, 19911), (45, 19929), (47, 19947), (63, 20049), (67, 20064), (71, 20100), (75, 20130), (78, 20142), (83, 20157), (87, 20175),

Gene: Azira_25 Start: 20672, Stop: 21166, Start Num: 11

Candidate Starts for Azira_25:

(Start: 5 @20618 has 1 MA's), (Start: 11 @20672 has 11 MA's), (Start: 12 @20684 has 1 MA's), (25, 20771), (26, 20774), (28, 20786), (29, 20792), (37, 20843), (39, 20858), (40, 20864), (45, 20888), (47, 20906), (54, 20933), (60, 20990), (64, 21014), (65, 21017), (68, 21032), (78, 21101), (84, 21122),

Gene: BabyMoney_25 Start: 21466, Stop: 21930, Start Num: 12

Candidate Starts for BabyMoney_25:

(Start: 12 @21466 has 1 MA's), (22, 21538), (28, 21571), (29, 21577), (33, 21604), (34, 21616), (42, 21667), (47, 21691), (56, 21757), (61, 21784), (71, 21841), (74, 21859), (85, 21904),

Gene: Bantam_34 Start: 30999, Stop: 31454, Start Num: 13

Candidate Starts for Bantam_34:

(Start: 13 @30999 has 5 MA's), (29, 31095), (34, 31137), (40, 31170), (45, 31194), (47, 31212), (86, 31428),

Gene: BillDoor_25 Start: 19347, Stop: 19835, Start Num: 10

Candidate Starts for BillDoor_25:

(Start: 10 @19347 has 20 MA's), (21, 19413), (25, 19440), (27, 19446), (29, 19461), (33, 19488), (37, 19512), (38, 19521), (40, 19533), (43, 19554), (45, 19557), (47, 19575), (48, 19578), (53, 19599), (63, 19677), (64, 19683), (65, 19686), (71, 19728), (78, 19770), (83, 19785),

Gene: Biskit_24 Start: 19367, Stop: 19855, Start Num: 10

Candidate Starts for Biskit_24:

(Start: 10 @19367 has 20 MA's), (25, 19460), (27, 19466), (29, 19481), (30, 19484), (37, 19532), (38, 19541), (40, 19553), (45, 19577), (47, 19595), (48, 19598), (53, 19619), (63, 19697), (64, 19703), (65, 19706), (71, 19748), (78, 19790), (83, 19805),

Gene: Blessica_72 Start: 45855, Stop: 46352, Start Num: 9

Candidate Starts for Blessica_72:

(1, 45618), (3, 45786), (4, 45795), (Start: 9 @45855 has 28 MA's), (22, 45939), (25, 45957), (32, 45987), (35, 46023), (44, 46071), (46, 46080), (50, 46104), (51, 46107), (63, 46185), (69, 46212), (88, 46323),

Gene: Blondies_23 Start: 19350, Stop: 19838, Start Num: 10

Candidate Starts for Blondies_23:

(Start: 10 @19350 has 20 MA's), (25, 19443), (27, 19449), (29, 19464), (30, 19467), (37, 19515), (38, 19524), (40, 19536), (45, 19560), (47, 19578), (48, 19581), (53, 19602), (63, 19680), (64, 19686), (65, 19689), (71, 19731), (78, 19773), (83, 19788),

Gene: Bora_69 Start: 45236, Stop: 45733, Start Num: 9

Candidate Starts for Bora_69:

(1, 44999), (3, 45167), (4, 45176), (Start: 9 @45236 has 28 MA's), (22, 45320), (25, 45338), (32, 45368), (44, 45452), (46, 45461), (50, 45485), (51, 45488), (63, 45566), (69, 45593), (88, 45704),

Gene: Burnsey_23 Start: 19720, Stop: 20208, Start Num: 10

Candidate Starts for Burnsey_23:

(Start: 10 @19720 has 20 MA's), (25, 19813), (29, 19834), (37, 19885), (40, 19906), (41, 19912), (45, 19930), (47, 19948), (63, 20050), (71, 20101), (75, 20131), (78, 20143), (83, 20158), (87, 20176),

Gene: Buttrmlkdreams_23 Start: 19349, Stop: 19837, Start Num: 10

Candidate Starts for Buttrmlkdreams_23:

(Start: 10 @19349 has 20 MA's), (25, 19442), (27, 19448), (29, 19463), (30, 19466), (37, 19514), (38, 19523), (40, 19535), (45, 19559), (47, 19577), (48, 19580), (53, 19601), (63, 19679), (64, 19685), (65, 19688), (71, 19730), (78, 19772), (83, 19787),

Gene: CanesSauce_23 Start: 19380, Stop: 19868, Start Num: 10

Candidate Starts for CanesSauce_23:

(Start: 10 @19380 has 20 MA's), (21, 19446), (25, 19473), (27, 19479), (29, 19494), (33, 19521), (37, 19545), (38, 19554), (40, 19566), (43, 19587), (45, 19590), (47, 19608), (48, 19611), (63, 19710), (64, 19716), (65, 19719), (71, 19761), (78, 19803), (83, 19818),

Gene: Carsonalex_24 Start: 19777, Stop: 20265, Start Num: 10

Candidate Starts for Carsonalex_24:

(Start: 10 @19777 has 20 MA's), (25, 19870), (29, 19891), (37, 19942), (40, 19963), (41, 19969), (45, 19987), (47, 20005), (63, 20107), (71, 20158), (75, 20188), (78, 20200), (83, 20215), (87, 20233),

Gene: Catdawg_71 Start: 45591, Stop: 46088, Start Num: 9

Candidate Starts for Catdawg_71:

(1, 45354), (3, 45522), (4, 45531), (Start: 9 @45591 has 28 MA's), (22, 45675), (25, 45693), (32, 45723), (35, 45759), (46, 45816), (50, 45840), (51, 45843), (63, 45921), (69, 45948), (88, 46059),

Gene: ChickenTender_25 Start: 19781, Stop: 20269, Start Num: 10

Candidate Starts for ChickenTender_25:

(Start: 10 @19781 has 20 MA's), (25, 19874), (29, 19895), (37, 19946), (40, 19967), (41, 19973), (45, 19991), (47, 20009), (63, 20111), (67, 20126), (71, 20162), (75, 20192), (78, 20204), (83, 20219), (87, 20237),

Gene: ChocoMunchkin_23 Start: 19380, Stop: 19868, Start Num: 10

Candidate Starts for ChocoMunchkin_23:

(Start: 10 @19380 has 20 MA's), (21, 19446), (25, 19473), (27, 19479), (29, 19494), (33, 19521), (37, 19545), (38, 19554), (40, 19566), (43, 19587), (45, 19590), (47, 19608), (48, 19611), (63, 19710), (64, 19716), (65, 19719), (71, 19761), (78, 19803), (83, 19818),

Gene: Cleo_23 Start: 20016, Stop: 20510, Start Num: 11

Candidate Starts for Cleo_23:

(6, 19965), (Start: 11 @20016 has 11 MA's), (Start: 12 @20028 has 1 MA's), (19, 20067), (25, 20115), (26, 20118), (27, 20121), (28, 20130), (29, 20136), (37, 20187), (40, 20208), (47, 20250), (64, 20358), (78, 20445), (82, 20457), (83, 20460),

Gene: Corndog_74 Start: 46585, Stop: 47082, Start Num: 9

Candidate Starts for Corndog_74:

(1, 46348), (3, 46516), (4, 46525), (Start: 9 @46585 has 28 MA's), (22, 46669), (25, 46687), (32, 46717), (35, 46753), (46, 46810), (50, 46834), (51, 46837), (63, 46915), (69, 46942), (88, 47053),

Gene: Cozz_23 Start: 19720, Stop: 20208, Start Num: 10

Candidate Starts for Cozz_23:

(Start: 10 @19720 has 20 MA's), (25, 19813), (29, 19834), (37, 19885), (40, 19906), (41, 19912), (45, 19930), (47, 19948), (63, 20050), (71, 20101), (75, 20131), (78, 20143), (83, 20158), (87, 20176),

Gene: Daredevil_33 Start: 29513, Stop: 29968, Start Num: 13

Candidate Starts for Daredevil_33:

(Start: 13 @29513 has 5 MA's), (15, 29516), (29, 29609), (34, 29651), (36, 29660), (42, 29702), (47, 29726), (56, 29783), (86, 29942),

Gene: DatBoi_35 Start: 31729, Stop: 32184, Start Num: 13

Candidate Starts for DatBoi_35:

(Start: 13 @31729 has 5 MA's), (29, 31825), (34, 31867), (40, 31900), (47, 31942), (71, 32083), (86, 32158), (90, 32167),

Gene: Dre3_23 Start: 19942, Stop: 20436, Start Num: 11

Candidate Starts for Dre3_23:

(6, 19891), (Start: 11 @19942 has 11 MA's), (Start: 12 @19954 has 1 MA's), (19, 19993), (25, 20041), (26, 20044), (27, 20047), (28, 20056), (29, 20062), (37, 20113), (40, 20134), (47, 20176), (64, 20284), (78, 20371), (82, 20383), (83, 20386),

Gene: Dylan_71 Start: 45638, Stop: 46135, Start Num: 9

Candidate Starts for Dylan_71:

(1, 45401), (3, 45569), (4, 45578), (Start: 9 @45638 has 28 MA's), (22, 45722), (25, 45740), (32, 45770), (35, 45806), (46, 45863), (50, 45887), (51, 45890), (63, 45968), (69, 45995), (88, 46106),

Gene: Elliott_23 Start: 19719, Stop: 20207, Start Num: 10

Candidate Starts for Elliott_23:

(Start: 10 @19719 has 20 MA's), (25, 19812), (29, 19833), (37, 19884), (40, 19905), (41, 19911), (45, 19929), (47, 19947), (63, 20049), (67, 20064), (71, 20100), (75, 20130), (78, 20142), (83, 20157), (87, 20175),

Gene: Emalyn_22 Start: 18976, Stop: 19464, Start Num: 11

Candidate Starts for Emalyn_22:

(8, 18970), (Start: 11 @18976 has 11 MA's), (19, 19021), (21, 19042), (25, 19069), (29, 19090), (33, 19117), (37, 19141), (39, 19156), (45, 19186), (47, 19204), (48, 19207), (63, 19306), (64, 19312), (65, 19315), (78, 19399), (83, 19414), (87, 19432),

Gene: Faiyaz_34 Start: 30733, Stop: 31254, Start Num: 14

Candidate Starts for Faiyaz_34:

(Start: 7 @30688 has 2 MA's), (14, 30733), (17, 30754), (18, 30757), (20, 30772), (23, 30790), (27, 30814), (28, 30823), (33, 30859), (34, 30871), (39, 30898), (40, 30904), (49, 30955), (55, 30988), (57, 31018), (65, 31057), (66, 31060), (69, 31075), (72, 31102), (73, 31105), (79, 31144), (81, 31147), (89, 31192),

Gene: Familton_72 Start: 45548, Stop: 46045, Start Num: 9

Candidate Starts for Familton_72:

(1, 45311), (3, 45479), (4, 45488), (Start: 9 @45548 has 28 MA's), (22, 45632), (25, 45650), (32, 45680), (35, 45716), (46, 45773), (50, 45797), (51, 45800), (63, 45878), (69, 45905), (88, 46016),

Gene: Firecracker_73 Start: 45938, Stop: 46435, Start Num: 9

Candidate Starts for Firecracker_73:

(1, 45701), (3, 45869), (4, 45878), (Start: 9 @45938 has 28 MA's), (22, 46022), (25, 46040), (32, 46070), (35, 46106), (46, 46163), (50, 46187), (51, 46190), (63, 46268), (69, 46295), (88, 46406),

Gene: FoulBall_71 Start: 45542, Stop: 46039, Start Num: 9

Candidate Starts for FoulBall_71:

(1, 45305), (3, 45473), (4, 45482), (Start: 9 @45542 has 28 MA's), (22, 45626), (25, 45644), (32, 45674), (35, 45710), (46, 45767), (50, 45791), (51, 45794), (63, 45872), (69, 45899), (88, 46010),

Gene: Fribs8_24 Start: 20525, Stop: 21019, Start Num: 11

Candidate Starts for Fribs8_24:

(Start: 11 @20525 has 11 MA's), (18, 20573), (19, 20576), (24, 20612), (25, 20624), (26, 20627), (29, 20645), (31, 20651), (45, 20741), (47, 20759), (62, 20858), (64, 20867), (68, 20885), (78, 20954), (83, 20969), (84, 20975),

Gene: GTE2_20 Start: 19052, Stop: 19540, Start Num: 10

Candidate Starts for GTE2_20:

(Start: 10 @19052 has 20 MA's), (21, 19118), (25, 19145), (27, 19151), (29, 19166), (33, 19193), (37, 19217), (38, 19226), (45, 19262), (47, 19280), (48, 19283), (63, 19382), (64, 19388), (65, 19391), (71, 19433), (78, 19475), (83, 19490),

Gene: Gibbous_23 Start: 19942, Stop: 20436, Start Num: 11

Candidate Starts for Gibbous_23:

(6, 19891), (Start: 11 @19942 has 11 MA's), (Start: 12 @19954 has 1 MA's), (19, 19993), (25, 20041), (26, 20044), (27, 20047), (28, 20056), (29, 20062), (37, 20113), (40, 20134), (47, 20176), (64, 20284), (78, 20371), (82, 20383), (83, 20386),

Gene: GoldHunter_24 Start: 19720, Stop: 20208, Start Num: 10

Candidate Starts for GoldHunter_24:

(Start: 10 @19720 has 20 MA's), (25, 19813), (29, 19834), (37, 19885), (40, 19906), (41, 19912), (45, 19930), (47, 19948), (63, 20050), (67, 20065), (71, 20101), (75, 20131), (78, 20143), (83, 20158), (87, 20176),

Gene: Hilltopfarm_34 Start: 30718, Stop: 31284, Start Num: 7

Candidate Starts for Hilltopfarm_34:

(Start: 7 @30718 has 2 MA's), (14, 30763), (17, 30784), (18, 30787), (20, 30802), (23, 30820), (27, 30844), (28, 30853), (33, 30889), (34, 30901), (39, 30928), (40, 30934), (49, 30985), (55, 31018), (57, 31048), (65, 31087), (66, 31090), (69, 31105), (72, 31132), (73, 31135), (79, 31174), (81, 31177), (89, 31222),

Gene: HippoPololi_25 Start: 20591, Stop: 21085, Start Num: 11

Candidate Starts for HippoPololi_25:

(Start: 11 @20591 has 11 MA's), (16, 20630), (18, 20639), (19, 20642), (24, 20678), (25, 20690), (26, 20693), (27, 20696), (28, 20705), (29, 20711), (31, 20717), (37, 20762), (40, 20783), (45, 20807), (47, 20825), (52, 20846), (53, 20849), (59, 20903), (64, 20933), (68, 20951), (77, 21017), (78, 21020), (80, 21023), (84, 21041),

Gene: Horseradish_24 Start: 19263, Stop: 19751, Start Num: 10

Candidate Starts for Horseradish_24:

(Start: 10 @19263 has 20 MA's), (25, 19356), (27, 19362), (29, 19377), (30, 19380), (37, 19428), (38, 19437), (40, 19449), (45, 19473), (47, 19491), (48, 19494), (63, 19593), (64, 19599), (65, 19602), (71, 19644), (78, 19686), (83, 19701),

Gene: Idergollasper_71 Start: 45542, Stop: 46039, Start Num: 9

Candidate Starts for Idergollasper_71:

(1, 45305), (3, 45473), (4, 45482), (Start: 9 @45542 has 28 MA's), (22, 45626), (25, 45644), (32, 45674), (35, 45710), (46, 45767), (50, 45791), (51, 45794), (63, 45872), (69, 45899), (88, 46010),

Gene: JangDynasty_71 Start: 45628, Stop: 46125, Start Num: 9

Candidate Starts for JangDynasty_71:

(1, 45391), (3, 45559), (4, 45568), (Start: 9 @45628 has 28 MA's), (22, 45712), (25, 45730), (32, 45760), (35, 45796), (46, 45853), (50, 45877), (51, 45880), (63, 45958), (69, 45985), (88, 46096),

Gene: KingPhillip3_70 Start: 45557, Stop: 46054, Start Num: 9

Candidate Starts for KingPhillip3_70:

(1, 45320), (3, 45488), (4, 45497), (Start: 9 @45557 has 28 MA's), (22, 45641), (25, 45659), (32, 45689), (35, 45725), (46, 45782), (50, 45806), (51, 45809), (63, 45887), (69, 45914), (88, 46025),

Gene: Krili_70 Start: 45052, Stop: 45549, Start Num: 9

Candidate Starts for Krili_70:

(1, 44815), (3, 44983), (4, 44992), (Start: 9 @45052 has 28 MA's), (22, 45136), (25, 45154), (32, 45184), (35, 45220), (46, 45277), (50, 45301), (51, 45304), (63, 45382), (69, 45409), (88, 45520),

Gene: MScarn_25 Start: 19352, Stop: 19840, Start Num: 10

Candidate Starts for MScarn_25:

(Start: 10 @19352 has 20 MA's), (25, 19445), (27, 19451), (29, 19466), (30, 19469), (37, 19517), (38, 19526), (40, 19538), (45, 19562), (47, 19580), (48, 19583), (53, 19604), (63, 19682), (64, 19688), (65, 19691), (71, 19733), (78, 19775), (83, 19790),

Gene: MaVan_25 Start: 20618, Stop: 21166, Start Num: 5

Candidate Starts for MaVan_25:

(Start: 5 @20618 has 1 MA's), (Start: 11 @20672 has 11 MA's), (Start: 12 @20684 has 1 MA's), (25, 20771), (26, 20774), (28, 20786), (29, 20792), (37, 20843), (39, 20858), (40, 20864), (45, 20888), (47, 20906), (54, 20933), (60, 20990), (64, 21014), (65, 21017), (68, 21032), (78, 21101), (84, 21122),

Gene: MadKillah_72 Start: 45321, Stop: 45818, Start Num: 9

Candidate Starts for MadKillah_72:

(1, 45084), (3, 45252), (4, 45261), (Start: 9 @45321 has 28 MA's), (22, 45405), (25, 45423), (32, 45453), (35, 45489), (44, 45537), (46, 45546), (50, 45570), (51, 45573), (63, 45651), (69, 45678), (88, 45789),

Gene: Mollymur_35 Start: 32198, Stop: 32668, Start Num: 13

Candidate Starts for Mollymur_35:

(Start: 13 @32198 has 5 MA's), (27, 32279), (29, 32294), (34, 32336), (40, 32369), (42, 32387), (45, 32393), (47, 32411), (58, 32477), (70, 32546),

Gene: Mori_71 Start: 45583, Stop: 46080, Start Num: 9

Candidate Starts for Mori_71:

(1, 45346), (3, 45514), (4, 45523), (Start: 9 @45583 has 28 MA's), (22, 45667), (25, 45685), (32, 45715), (35, 45751), (46, 45808), (50, 45832), (51, 45835), (63, 45913), (69, 45940), (88, 46051),

Gene: MunkgeeRoachy_23 Start: 19767, Stop: 20255, Start Num: 10

Candidate Starts for MunkgeeRoachy_23:

(Start: 10 @19767 has 20 MA's), (25, 19860), (29, 19881), (37, 19932), (40, 19953), (41, 19959), (45, 19977), (47, 19995), (63, 20097), (71, 20148), (78, 20190), (83, 20205), (87, 20223),

Gene: Murai_72 Start: 45764, Stop: 46261, Start Num: 9

Candidate Starts for Murai_72:

(1, 45527), (3, 45695), (4, 45704), (Start: 9 @45764 has 28 MA's), (22, 45848), (25, 45866), (32, 45896), (44, 45980), (46, 45989), (50, 46013), (51, 46016), (63, 46094), (69, 46121), (88, 46232),

Gene: Nibbles_25 Start: 20672, Stop: 21166, Start Num: 11

Candidate Starts for Nibbles_25:

(Start: 5 @20618 has 1 MA's), (Start: 11 @20672 has 11 MA's), (Start: 12 @20684 has 1 MA's), (18, 20720), (19, 20723), (25, 20771), (26, 20774), (29, 20792), (38, 20852), (47, 20906), (64, 21014), (68, 21032), (78, 21101), (83, 21116), (84, 21122),

Gene: NiebruSaylor_70 Start: 44971, Stop: 45468, Start Num: 9

Candidate Starts for NiebruSaylor_70:

(1, 44734), (3, 44902), (4, 44911), (Start: 9 @44971 has 28 MA's), (22, 45055), (25, 45073), (32, 45103), (35, 45139), (46, 45196), (50, 45220), (51, 45223), (63, 45301), (69, 45328), (88, 45439),

Gene: Nina_24 Start: 20762, Stop: 21250, Start Num: 10

Candidate Starts for Nina_24:

(Start: 10 @20762 has 20 MA's), (25, 20855), (29, 20876), (37, 20927), (40, 20948), (41, 20954), (45, 20972), (47, 20990), (63, 21092), (71, 21143), (75, 21173), (78, 21185), (83, 21200), (87, 21218),

Gene: Phishy_26 Start: 22279, Stop: 22749, Start Num: 12

Candidate Starts for Phishy_26:

(Start: 12 @22279 has 1 MA's), (28, 22384), (29, 22390), (33, 22417), (34, 22429), (37, 22441), (42, 22480), (47, 22504), (61, 22597), (62, 22600), (71, 22654), (74, 22672), (76, 22690),

Gene: PsychoKiller_23 Start: 19719, Stop: 20207, Start Num: 10

Candidate Starts for PsychoKiller_23:

(Start: 10 @19719 has 20 MA's), (25, 19812), (29, 19833), (37, 19884), (40, 19905), (41, 19911), (45, 19929), (47, 19947), (63, 20049), (67, 20064), (71, 20100), (75, 20130), (78, 20142), (83, 20157), (87, 20175),

Gene: Quasar_23 Start: 20328, Stop: 20816, Start Num: 10

Candidate Starts for Quasar_23:

(Start: 10 @20328 has 20 MA's), (25, 20421), (29, 20442), (37, 20493), (40, 20514), (41, 20520), (45, 20538), (47, 20556), (63, 20658), (71, 20709), (75, 20739), (78, 20751), (83, 20766), (87, 20784),

Gene: RedBaron_24 Start: 19763, Stop: 20251, Start Num: 10

Candidate Starts for RedBaron_24:

(Start: 10 @19763 has 20 MA's), (25, 19856), (29, 19877), (37, 19928), (40, 19949), (41, 19955), (45, 19973), (47, 19991), (63, 20093), (67, 20108), (71, 20144), (75, 20174), (78, 20186), (83, 20201), (87, 20219),

Gene: Ryadel_75 Start: 46376, Stop: 46873, Start Num: 9

Candidate Starts for Ryadel_75:

(1, 46139), (3, 46307), (4, 46316), (Start: 9 @46376 has 28 MA's), (22, 46460), (25, 46478), (32, 46508), (35, 46544), (44, 46592), (46, 46601), (50, 46625), (51, 46628), (63, 46706), (69, 46733), (88, 46844),

Gene: SchoolBus_71 Start: 45524, Stop: 46021, Start Num: 9

Candidate Starts for SchoolBus_71:

(1, 45287), (3, 45455), (4, 45464), (Start: 9 @45524 has 28 MA's), (22, 45608), (25, 45626), (32, 45656), (35, 45692), (46, 45749), (50, 45773), (51, 45776), (63, 45854), (69, 45881), (88, 45992),

Gene: Schuy_72 Start: 45327, Stop: 45824, Start Num: 9

Candidate Starts for Schuy_72:

(1, 45090), (3, 45258), (4, 45267), (Start: 9 @45327 has 28 MA's), (22, 45411), (25, 45429), (32, 45459), (35, 45495), (46, 45552), (50, 45576), (51, 45579), (63, 45657), (69, 45684), (88, 45795),

Gene: Shida_71 Start: 45234, Stop: 45731, Start Num: 9

Candidate Starts for Shida_71:

(1, 44997), (3, 45165), (4, 45174), (Start: 9 @45234 has 28 MA's), (22, 45318), (25, 45336), (32, 45366), (35, 45402), (46, 45459), (50, 45483), (51, 45486), (63, 45564), (69, 45591), (88, 45702),

Gene: SketchMex_22 Start: 19367, Stop: 19855, Start Num: 10

Candidate Starts for SketchMex_22:

(Start: 10 @19367 has 20 MA's), (25, 19460), (27, 19466), (29, 19481), (30, 19484), (37, 19532), (38, 19541), (40, 19553), (45, 19577), (47, 19595), (48, 19598), (53, 19619), (63, 19697), (64, 19703), (65, 19706), (71, 19748), (78, 19790), (83, 19805),

Gene: Smooch_74 Start: 47280, Stop: 47777, Start Num: 9

Candidate Starts for Smooch_74:

(1, 47043), (3, 47211), (4, 47220), (Start: 9 @47280 has 28 MA's), (22, 47364), (25, 47382), (32, 47412), (35, 47448), (46, 47505), (50, 47529), (51, 47532), (63, 47610), (69, 47637), (88, 47748),

Gene: Socotra_24 Start: 19719, Stop: 20207, Start Num: 10

Candidate Starts for Socotra_24:

(Start: 10 @19719 has 20 MA's), (25, 19812), (29, 19833), (37, 19884), (40, 19905), (41, 19911), (45, 19929), (47, 19947), (63, 20049), (67, 20064), (71, 20100), (75, 20130), (78, 20142), (83, 20157), (87, 20175),

Gene: Sopespian_23 Start: 19720, Stop: 20208, Start Num: 10

Candidate Starts for Sopespian_23:

(Start: 10 @19720 has 20 MA's), (25, 19813), (29, 19834), (37, 19885), (40, 19906), (41, 19912), (45, 19930), (47, 19948), (63, 20050), (67, 20065), (71, 20101), (75, 20131), (78, 20143), (83, 20158), (87, 20176),

Gene: SpeedDemon_360 Start: 32848, Stop: 33303, Start Num: 13

Candidate Starts for SpeedDemon_360:

(Start: 13 @32848 has 5 MA's), (29, 32944), (34, 32986), (40, 33019), (45, 33043), (47, 33061), (86, 33277),

Gene: Starburst_24 Start: 19720, Stop: 20208, Start Num: 10

Candidate Starts for Starburst_24:

(Start: 10 @19720 has 20 MA's), (25, 19813), (29, 19834), (37, 19885), (40, 19906), (41, 19912), (45, 19930), (47, 19948), (63, 20050), (67, 20065), (71, 20101), (75, 20131), (78, 20143), (83, 20158), (87, 20176),

Gene: SteamedHams_25 Start: 19380, Stop: 19868, Start Num: 10

Candidate Starts for SteamedHams_25:

(Start: 10 @19380 has 20 MA's), (21, 19446), (25, 19473), (27, 19479), (29, 19494), (33, 19521), (37, 19545), (38, 19554), (40, 19566), (43, 19587), (45, 19590), (47, 19608), (48, 19611), (63, 19710), (64,

19716), (65, 19719), (71, 19761), (78, 19803), (83, 19818),

Gene: Survivors_25 Start: 20521, Stop: 21015, Start Num: 11

Candidate Starts for Survivors_25:

(2, 20326), (Start: 5 @20467 has 1 MA's), (Start: 11 @20521 has 11 MA's), (Start: 12 @20533 has 1 MA's), (18, 20569), (19, 20572), (25, 20620), (26, 20623), (29, 20641), (38, 20701), (47, 20755), (64, 20863), (68, 20881), (78, 20950), (83, 20965), (84, 20971),

Gene: SweatNTears_25 Start: 19878, Stop: 20366, Start Num: 10

Candidate Starts for SweatNTears_25:

(Start: 10 @19878 has 20 MA's), (25, 19971), (27, 19977), (29, 19992), (30, 19995), (37, 20043), (38, 20052), (40, 20064), (45, 20088), (47, 20106), (48, 20109), (53, 20130), (63, 20208), (64, 20214), (65, 20217), (71, 20259), (78, 20301), (83, 20316),

Gene: TelAviv_68 Start: 45509, Stop: 46006, Start Num: 9

Candidate Starts for TelAviv_68:

(1, 45272), (3, 45440), (4, 45449), (Start: 9 @45509 has 28 MA's), (22, 45593), (25, 45611), (32, 45641), (35, 45677), (46, 45734), (50, 45758), (51, 45761), (63, 45839), (69, 45866), (88, 45977),

Gene: Tolls_25 Start: 19383, Stop: 19871, Start Num: 10

Candidate Starts for Tolls_25:

(Start: 10 @19383 has 20 MA's), (21, 19449), (25, 19476), (27, 19482), (29, 19497), (33, 19524), (37, 19548), (38, 19557), (40, 19569), (43, 19590), (45, 19593), (47, 19611), (48, 19614), (63, 19713), (64, 19719), (65, 19722), (71, 19764), (78, 19806), (83, 19821),

Gene: Towmatter_33 Start: 29350, Stop: 29805, Start Num: 13

Candidate Starts for Towmatter_33:

(Start: 13 @29350 has 5 MA's), (15, 29353), (29, 29446), (34, 29488), (36, 29497), (42, 29539), (47, 29563), (56, 29620), (86, 29779),

Gene: Troje_23 Start: 19349, Stop: 19837, Start Num: 10

Candidate Starts for Troje_23:

(Start: 10 @19349 has 20 MA's), (25, 19442), (27, 19448), (29, 19463), (30, 19466), (37, 19514), (38, 19523), (40, 19535), (45, 19559), (47, 19577), (48, 19580), (53, 19601), (63, 19679), (64, 19685), (65, 19688), (71, 19730), (78, 19772), (83, 19787),

Gene: Typha_34 Start: 30688, Stop: 31254, Start Num: 7

Candidate Starts for Typha_34:

(Start: 7 @30688 has 2 MA's), (14, 30733), (17, 30754), (18, 30757), (20, 30772), (23, 30790), (27, 30814), (28, 30823), (33, 30859), (34, 30871), (39, 30898), (40, 30904), (49, 30955), (55, 30988), (57, 31018), (65, 31057), (66, 31060), (69, 31075), (72, 31102), (73, 31105), (79, 31144), (81, 31147), (89, 31192),

Gene: Typhonomachy_24 Start: 19719, Stop: 20207, Start Num: 10

Candidate Starts for Typhonomachy_24:

(Start: 10 @19719 has 20 MA's), (25, 19812), (29, 19833), (37, 19884), (40, 19905), (41, 19911), (45, 19929), (47, 19947), (63, 20049), (71, 20100), (75, 20130), (78, 20142), (83, 20157), (87, 20175),

Gene: Vagabond_71 Start: 45372, Stop: 45869, Start Num: 9

Candidate Starts for Vagabond_71:

(1, 45135), (3, 45303), (4, 45312), (Start: 9 @45372 has 28 MA's), (22, 45456), (25, 45474), (32, 45504), (35, 45540), (46, 45597), (50, 45621), (51, 45624), (63, 45702), (69, 45729), (88, 45840),

Gene: Vorrps_71 Start: 45584, Stop: 46081, Start Num: 9

Candidate Starts for Vorrps_71:

(1, 45347), (3, 45515), (4, 45524), (Start: 9 @45584 has 28 MA's), (22, 45668), (25, 45686), (32, 45716), (35, 45752), (46, 45809), (50, 45833), (51, 45836), (63, 45914), (69, 45941), (88, 46052),

Gene: Wildflower_71 Start: 45096, Stop: 45593, Start Num: 9

Candidate Starts for Wildflower_71:

(1, 44859), (3, 45027), (4, 45036), (Start: 9 @45096 has 28 MA's), (22, 45180), (25, 45198), (32, 45228), (35, 45264), (46, 45321), (50, 45345), (51, 45348), (63, 45426), (69, 45453), (88, 45564),

Gene: Winget_72 Start: 45802, Stop: 46299, Start Num: 9

Candidate Starts for Winget_72:

(1, 45565), (3, 45733), (4, 45742), (Start: 9 @45802 has 28 MA's), (22, 45886), (25, 45904), (32, 45934), (35, 45970), (46, 46027), (50, 46051), (51, 46054), (63, 46132), (69, 46159), (88, 46270),

Gene: Wogge42_70 Start: 45243, Stop: 45740, Start Num: 9

Candidate Starts for Wogge42_70:

(1, 45006), (3, 45174), (4, 45183), (Start: 9 @45243 has 28 MA's), (22, 45327), (25, 45345), (32, 45375), (35, 45411), (46, 45468), (50, 45492), (51, 45495), (63, 45573), (69, 45600), (88, 45711),

Gene: Yarn_22 Start: 19373, Stop: 19861, Start Num: 10

Candidate Starts for Yarn_22:

(Start: 10 @19373 has 20 MA's), (21, 19439), (25, 19466), (27, 19472), (29, 19487), (33, 19514), (37, 19538), (38, 19547), (40, 19559), (43, 19580), (45, 19583), (47, 19601), (48, 19604), (63, 19703), (64, 19709), (65, 19712), (71, 19754), (78, 19796), (83, 19811),

Gene: Yummy_24 Start: 19263, Stop: 19751, Start Num: 10

Candidate Starts for Yummy_24:

(Start: 10 @19263 has 20 MA's), (25, 19356), (27, 19362), (29, 19377), (30, 19380), (37, 19428), (38, 19437), (40, 19449), (45, 19473), (47, 19491), (48, 19494), (63, 19593), (64, 19599), (65, 19602), (71, 19644), (78, 19686), (83, 19701),

Gene: YungJamal_76 Start: 46994, Stop: 47491, Start Num: 9

Candidate Starts for YungJamal_76:

(1, 46757), (3, 46925), (4, 46934), (Start: 9 @46994 has 28 MA's), (22, 47078), (25, 47096), (32, 47126), (35, 47162), (46, 47219), (50, 47243), (51, 47246), (63, 47324), (69, 47351), (88, 47462),

Gene: Zakhe101_70 Start: 45642, Stop: 46139, Start Num: 9

Candidate Starts for Zakhe101_70:

(1, 45405), (3, 45573), (4, 45582), (Start: 9 @45642 has 28 MA's), (22, 45726), (25, 45744), (32, 45774), (35, 45810), (46, 45867), (50, 45891), (51, 45894), (63, 45972), (69, 45999), (88, 46110),

Gene: Zareef_27 Start: 20619, Stop: 21167, Start Num: 5

Candidate Starts for Zareef_27:

(2, 20478), (Start: 5 @20619 has 1 MA's), (Start: 11 @20673 has 11 MA's), (Start: 12 @20685 has 1 MA's), (18, 20721), (19, 20724), (25, 20772), (26, 20775), (29, 20793), (38, 20853), (47, 20907), (64, 21015), (68, 21033), (78, 21102), (83, 21117), (84, 21123),

Gene: Zebo_70 Start: 45533, Stop: 46030, Start Num: 9

Candidate Starts for Zebo_70:

(1, 45296), (3, 45464), (4, 45473), (Start: 9 @45533 has 28 MA's), (22, 45617), (25, 45635), (32, 45665), (35, 45701), (46, 45758), (50, 45782), (51, 45785), (63, 45863), (69, 45890), (88, 46001),