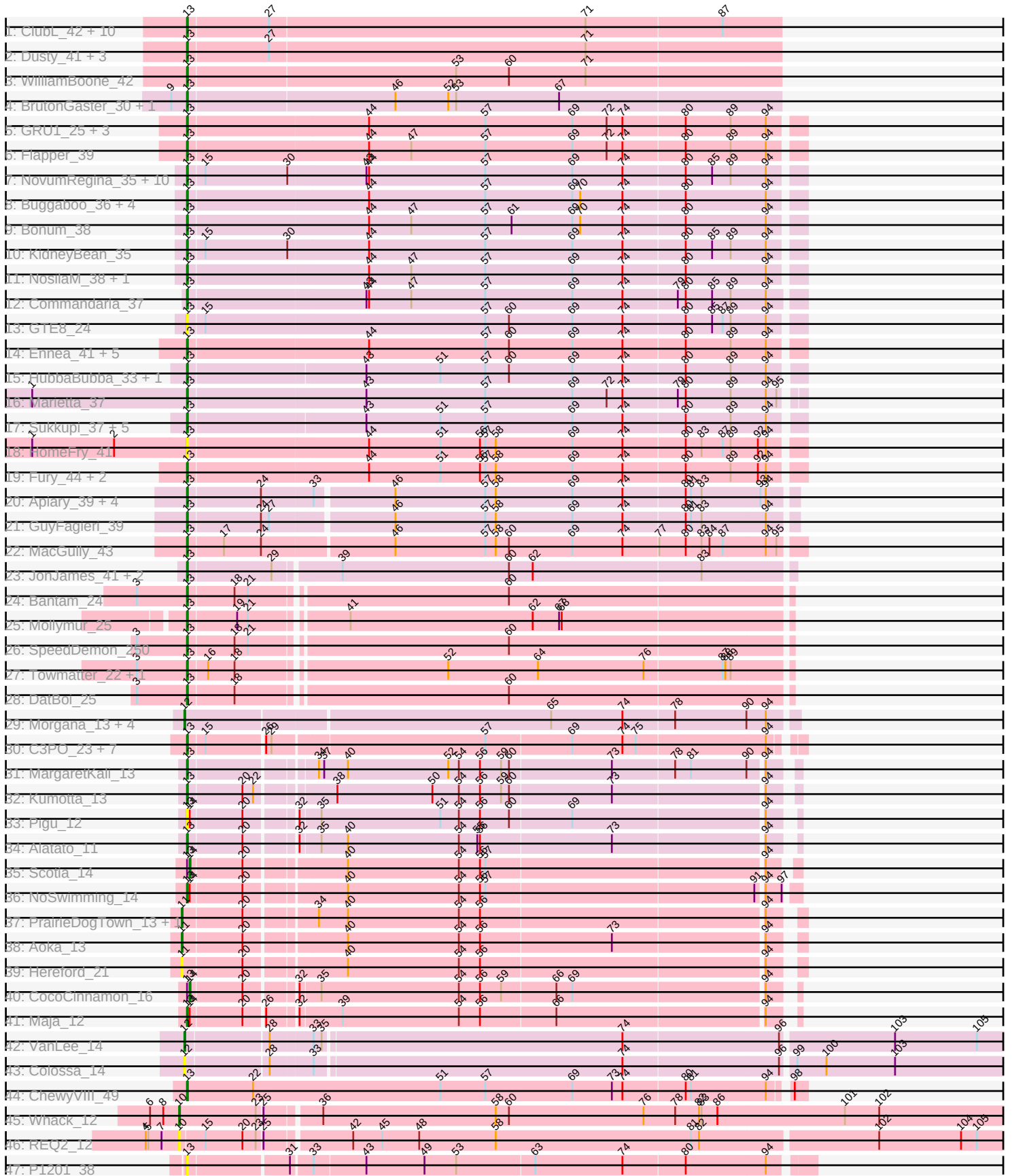


Pham 280253



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 280253 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280253 has 111 members, 14 are drafts.

Phages represented in each track:

- Track 1 : ClubL_42, Geeche_41, Lozinak_42, Engineer_43, Toniann_42, Bachita_44, Norvs_43, Smoothie_43, Cucurbita_44, Aphelion_42, PhinkBoden_42
- Track 2 : Dusty_41, Miskis_40, Abscondus_41, Culver_42
- Track 3 : WilliamBoone_42
- Track 4 : BrutonGaster_30, OneUp_36
- Track 5 : GRU1_25, Dalilpop_40, Turuncu_39, GTE5_26
- Track 6 : Flapper_39
- Track 7 : NovumRegina_35, GrootJr_37, Jifall16_34, Foxboro_36, NatB6_35, Kurt_35, Wheezy_35, Tracker_35, Arti_35, Phomeo_34, Emianna_35
- Track 8 : Buggaboo_36, StarStruck_36, MerCougar_36, Outis_36, SuperSulley_36
- Track 9 : Bonum_38
- Track 10 : KidneyBean_35
- Track 11 : NosilaM_38, Kabluna_38
- Track 12 : Commandaria_37
- Track 13 : GTE8_24
- Track 14 : Ennea_41, Patio_38, Lollipop1437_40, RedRaider_42, Float294_37, Skysand_37
- Track 15 : HubbaBubba_33, WhoseManz_37
- Track 16 : Marietta_37
- Track 17 : Sukkupi_37, Pemberton_38, NadineRae_35, BiPauneto_38, Yndexa_37, IDyn_36
- Track 18 : HomeFry_41
- Track 19 : Fury_44, Pleakley_44, Scuba_44
- Track 20 : Apiary_39, Polyuyuki_39, Maselop_39, CoffeeBean_39, Braxoaddie_39
- Track 21 : GuyFagieri_39
- Track 22 : MacGully_43
- Track 23 : JonJames_41, Cardigan_41, Yvonnetastic_39
- Track 24 : Bantam_24
- Track 25 : Mollymur_25
- Track 26 : SpeedDemon_250
- Track 27 : Towmatter_22, Daredevil_23
- Track 28 : DatBoi_25
- Track 29 : Morgana_13, ModicumRichard_13, ObLaDi_13, Cafasso_13, Aleemily_13
- Track 30 : C3PO_23, Cruella_23, Darwin_26, PotatoChip_23, Kimchi1738_23, Stickynote_25, Zion_23, PeteyPab_22
- Track 31 : MargaretKali_13

- Track 32 : Kumotta_13
- Track 33 : Pigu_12
- Track 34 : Alatato_11
- Track 35 : Scotia_14
- Track 36 : NoSwimming_14
- Track 37 : PrairieDogTown_13, EvenBluerMoon_13
- Track 38 : Aoka_13
- Track 39 : Hereford_21
- Track 40 : CocoCinnamon_16
- Track 41 : Maja_12
- Track 42 : VanLee_14
- Track 43 : Colossa_14
- Track 44 : ChewyVIII_49
- Track 45 : Whack_12
- Track 46 : REQ2_12
- Track 47 : P1201_38

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

The start number called the most often in the published annotations is 13, it was called in 86 of the 97 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Abscondus_41, Alatato_11, Aphelion_42, Apiary_39, Arti_35, Bachita_44, Bantam_24, BiPauneto_38, Bonum_38, Braxoaddie_39, BrutonGaster_30, Buggaboo_36, C3PO_23, Cardigan_41, ChewyVIII_49, ClubL_42, CoffeeBean_39, Commandaria_37, Cruella_23, Cucurbita_44, Culver_42, Dalilpop_40, Daredevil_23, Darwin_26, DatBoi_25, Dusty_41, Emianna_35, Engineer_43, Ennea_41, Flapper_39, Float294_37, Foxboro_36, Fury_44, GRU1_25, GTE5_26, GTE8_24, Geeche_41, GrootJr_37, GuyFagieri_39, HomeFry_41, HubbaBubba_33, IDyn_36, Jifall16_34, JonJames_41, Kabluna_38, KidneyBean_35, Kimchi1738_23, Kumotta_13, Kurt_35, Lollipop1437_40, Lozinak_42, MacGully_43, Maja_12, MargaretKali_13, Marietta_37, Maselop_39, MerCougar_36, Miskis_40, Mollymur_25, NadineRae_35, NatB6_35, NoSwimming_14, Norvs_43, NosilaM_38, NovumRegina_35, OneUp_36, Outis_36, P1201_38, Patio_38, Pemberton_38, PeteyPab_22, PhinkBoden_42, Phomeo_34, Pigu_12, Pleakley_44, Polyuyuki_39, PotatoChip_23, RedRaider_42, Scuba_44, Skysand_37, Smoothie_43, SpeedDemon_250, StarStruck_36, Stickynote_25, Sukkupi_37, SuperSulley_36, Toniann_42, Towmatter_22, Tracker_35, Turuncu_39, Wheezy_35, WhoseManz_37, WilliamBoone_42, Yndexa_37, Yvonnestic_39, Zion_23,

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

- CocoCinnamon_16, Scotia_14,

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

• Aleemily_13, Aoka_13, Cafasso_13, Colossa_14, EvenBluerMoon_13, Hereford_21, ModicumRichard_13, Morgana_13, ObLaDi_13, PrairieDogTown_13, REQ2_12, VanLee_14, Whack_12,

Summary by start number:

Start 10:

- Found in 2 of 111 (1.8%) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ2_12 (singleton), Whack_12 (singleton),

Start 11:

- Found in 4 of 111 (3.6%) of genes in pham
- Manual Annotations of this start: 3 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aoka_13 (FO), EvenBluerMoon_13 (FO), Hereford_21 (FO), PrairieDogTown_13 (FO),

Start 12:

- Found in 7 of 111 (6.3%) of genes in pham
- Manual Annotations of this start: 5 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily_13 (DZ), Cafasso_13 (DZ), Colossa_14 (KA), ModicumRichard_13 (DZ), Morgana_13 (DZ), ObLaDi_13 (DZ), VanLee_14 (KA),

Start 13:

- Found in 98 of 111 (88.3%) of genes in pham
- Manual Annotations of this start: 86 of 97
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Abscondus_41 (CQ1), Alatato_11 (FB), Aphelion_42 (CQ1), Apiary_39 (CR6), Arti_35 (CR2), Bachita_44 (CQ1), Bantam_24 (DL), BiPauneto_38 (CR4), Bonum_38 (CR2), Braxoaddie_39 (CR6), BrutonGaster_30 (CQ2), Buggaboo_36 (CR2), C3PO_23 (EN), Cardigan_41 (DD), ChewyVIII_49 (singleton), ClubL_42 (CQ1), CoffeeBean_39 (CR6), Commandaria_37 (CR2), Cruella_23 (EN), Cucurbita_44 (CQ1), Culver_42 (CQ1), Dalilpop_40 (CR1), Daredevil_23 (DL), Darwin_26 (EN), DatBoi_25 (DL), Dusty_41 (CQ1), Emianna_35 (CR2), Engineer_43 (CQ1), Ennea_41 (CR3), Flapper_39 (CR1), Float294_37 (CR3), Foxboro_36 (CR2), Fury_44 (CR5), GRU1_25 (CR1), GTE5_26 (CR1), GTE8_24 (CR2), Geeche_41 (CQ1), GrootJr_37 (CR2), GuyFagieri_39 (CR6), HomeFry_41 (CR5), HubbaBubba_33 (CR4), IDyn_36 (CR4), Jifall16_34 (CR2), JonJames_41 (DD), Kabluna_38 (CR2), KidneyBean_35 (CR2), Kimchi1738_23 (EN), Kumotta_13 (FB), Kurt_35 (CR2), Lollipop1437_40 (CR3), Lozinak_42 (CQ1), MacGully_43 (CR7), Maja_12 (FO), MargaretKali_13 (FB), Marietta_37 (CR4), Maselop_39 (CR6), MerCougar_36 (CR2), Miskis_40 (CQ1), Mollymur_25 (DL), NadineRae_35 (CR4), NatB6_35 (CR2), NoSwimming_14 (FO), Norvs_43 (CQ1), NosilaM_38 (CR2), NovumRegina_35 (CR2), OneUp_36 (CQ2), Outis_36 (CR2), P1201_38 (singleton), Patio_38 (CR3), Pemberton_38 (CR4), PeteyPab_22 (EN), PhinkBoden_42 (CQ1), Phomeo_34 (CR2), Pigu_12 (FB), Pleakley_44 (CR5), Polyyuki_39 (CR6), PotatoChip_23 (EN), RedRaider_42 (CR3), Scuba_44 (CR5), Skysand_37 (CR3), Smoothie_43 (CQ1), SpeedDemon_250 (DL), StarStruck_36 (CR2), Stickynote_25 (EN), Sukkupi_37 (CR4), SuperSulley_36 (CR2), Toniann_42 (CQ1), Towmatter_22 (DL), Tracker_35 (CR2), Turuncu_39 (CR1), Wheezy_35 (CR2), WhoseManz_37 (CR4), WilliamBoone_42 (CQ1), Yndexa_37 (CR4), Yvonnetastic_39 (DD), Zion_23 (EN),

Start 14:

- Found in 5 of 111 (4.5%) of genes in pham
- Manual Annotations of this start: 2 of 97
- Called 40.0% of time when present
- Phage (with cluster) where this start called: CocoCinnamon_16 (FO), Scotia_14 (FO),

Summary by clusters:

There are 17 clusters represented in this pham: CR2, CR3, KA, EN, CR6, CR7, CR4, CR5, DD, singleton, FB, CR1, DZ, CQ2, CQ1, DL, FO,

Info for manual annotations of cluster CQ1:

- Start number 13 was manually annotated 15 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 13 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CR1:

- Start number 13 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 13 was manually annotated 21 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 13 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 13 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 13 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:

- Start number 13 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster CR7:

- Start number 13 was manually annotated 1 time for cluster CR7.

Info for manual annotations of cluster DD:

- Start number 13 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DL:

- Start number 13 was manually annotated 6 times for cluster DL.

Info for manual annotations of cluster DZ:

- Start number 12 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster EN:

- Start number 13 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster FB:

- Start number 13 was manually annotated 3 times for cluster FB.

Info for manual annotations of cluster FO:

- Start number 11 was manually annotated 3 times for cluster FO.
- Start number 13 was manually annotated 2 times for cluster FO.
- Start number 14 was manually annotated 2 times for cluster FO.

Info for manual annotations of cluster KA:

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

Gene Information:

Gene: Abscondus_41 Start: 17642, Stop: 18307, Start Num: 13

Candidate Starts for Abscondus_41:

(Start: 13 @17642 has 86 MA's), (27, 17732), (71, 18089),

Gene: Alatato_11 Start: 7604, Stop: 8251, Start Num: 13

Candidate Starts for Alatato_11:

(Start: 13 @7604 has 86 MA's), (20, 7664), (32, 7715), (35, 7736), (40, 7766), (54, 7892), (55, 7913), (56, 7916), (73, 8063), (94, 8228),

Gene: Aleemily_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for Aleemily_13:

(Start: 12 @8905 has 5 MA's), (65, 9307), (74, 9388), (78, 9445), (90, 9526), (94, 9547),

Gene: Aoka_13 Start: 9111, Stop: 9773, Start Num: 11

Candidate Starts for Aoka_13:

(Start: 11 @9111 has 3 MA's), (20, 9177), (40, 9282), (54, 9408), (56, 9432), (73, 9579), (94, 9744),

Gene: Aphelion_42 Start: 17911, Stop: 18576, Start Num: 13

Candidate Starts for Aphelion_42:

(Start: 13 @17911 has 86 MA's), (27, 18001), (71, 18358), (87, 18511),

Gene: Apiary_39 Start: 23228, Stop: 23896, Start Num: 13

Candidate Starts for Apiary_39:

(Start: 13 @23228 has 86 MA's), (24, 23309), (33, 23366), (46, 23450), (57, 23552), (58, 23564), (69, 23651), (74, 23708), (80, 23777), (81, 23783), (83, 23795), (93, 23861), (94, 23867),

Gene: Arti_35 Start: 21382, Stop: 22065, Start Num: 13

Candidate Starts for Arti_35:

(Start: 13 @21382 has 86 MA's), (15, 21400), (30, 21493), (43, 21580), (44, 21583), (57, 21715), (69, 21814), (74, 21871), (80, 21940), (85, 21970), (89, 21991), (94, 22030),

Gene: Bachita_44 Start: 18344, Stop: 19009, Start Num: 13

Candidate Starts for Bachita_44:

(Start: 13 @18344 has 86 MA's), (27, 18434), (71, 18791), (87, 18944),

Gene: Bantam_24 Start: 15333, Stop: 15989, Start Num: 13

Candidate Starts for Bantam_24:

(3, 15276), (Start: 13 @15333 has 86 MA's), (18, 15384), (21, 15399), (60, 15678),

Gene: BiPauneto_38 Start: 21225, Stop: 21905, Start Num: 13

Candidate Starts for BiPauneto_38:

(Start: 13 @21225 has 86 MA's), (43, 21420), (51, 21504), (57, 21555), (69, 21654), (74, 21711), (80, 21780), (89, 21831), (94, 21870),

Gene: Bonum_38 Start: 21700, Stop: 22383, Start Num: 13

Candidate Starts for Bonum_38:

(Start: 13 @21700 has 86 MA's), (44, 21901), (47, 21949), (57, 22033), (61, 22063), (69, 22132), (70, 22141), (74, 22189), (80, 22258), (94, 22348),

Gene: Braxoaddie_39 Start: 23217, Stop: 23885, Start Num: 13

Candidate Starts for Braxoaddie_39:

(Start: 13 @23217 has 86 MA's), (24, 23298), (33, 23355), (46, 23439), (57, 23541), (58, 23553), (69, 23640), (74, 23697), (80, 23766), (81, 23772), (83, 23784), (93, 23850), (94, 23856),

Gene: BrutonGaster_30 Start: 14524, Stop: 15189, Start Num: 13

Candidate Starts for BrutonGaster_30:

(9, 14506), (Start: 13 @14524 has 86 MA's), (46, 14755), (52, 14815), (53, 14824), (67, 14941),

Gene: Buggaboo_36 Start: 22185, Stop: 22868, Start Num: 13

Candidate Starts for Buggaboo_36:

(Start: 13 @22185 has 86 MA's), (44, 22386), (57, 22518), (69, 22617), (70, 22626), (74, 22674), (80, 22743), (94, 22833),

Gene: C3PO_23 Start: 15961, Stop: 16623, Start Num: 13

Candidate Starts for C3PO_23:

(Start: 13 @15961 has 86 MA's), (15, 15979), (26, 16042), (29, 16048), (57, 16282), (69, 16378), (74, 16435), (75, 16450), (94, 16594),

Gene: Cafasso_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for Cafasso_13:

(Start: 12 @8905 has 5 MA's), (65, 9307), (74, 9388), (78, 9445), (90, 9526), (94, 9547),

Gene: Cardigan_41 Start: 19485, Stop: 20150, Start Num: 13

Candidate Starts for Cardigan_41:

(Start: 13 @19485 has 86 MA's), (29, 19578), (39, 19647), (60, 19836), (62, 19863), (83, 20052),

Gene: ChewyVIII_49 Start: 28800, Stop: 29486, Start Num: 13

Candidate Starts for ChewyVIII_49:

(Start: 13 @28800 has 86 MA's), (22, 28875), (51, 29088), (57, 29139), (69, 29238), (73, 29283), (74, 29295), (80, 29364), (81, 29370), (94, 29454), (98, 29472),

Gene: ClubL_42 Start: 17833, Stop: 18498, Start Num: 13

Candidate Starts for ClubL_42:

(Start: 13 @17833 has 86 MA's), (27, 17923), (71, 18280), (87, 18433),

Gene: CocoCinnamon_16 Start: 9349, Stop: 9993, Start Num: 14

Candidate Starts for CocoCinnamon_16:

(Start: 13 @9346 has 86 MA's), (Start: 14 @9349 has 2 MA's), (20, 9406), (32, 9457), (35, 9478), (54, 9634), (56, 9658), (59, 9682), (66, 9742), (69, 9760), (94, 9970),

Gene: CoffeeBean_39 Start: 23172, Stop: 23840, Start Num: 13

Candidate Starts for CoffeeBean_39:

(Start: 13 @23172 has 86 MA's), (24, 23253), (33, 23310), (46, 23394), (57, 23496), (58, 23508), (69, 23595), (74, 23652), (80, 23721), (81, 23727), (83, 23739), (93, 23805), (94, 23811),

Gene: Colossa_14 Start: 8718, Stop: 9617, Start Num: 12

Candidate Starts for Colossa_14:

(Start: 12 @8718 has 5 MA's), (28, 8808), (33, 8853), (74, 9195), (96, 9369), (99, 9381), (100, 9414), (103, 9492),

Gene: Commandaria_37 Start: 22702, Stop: 23388, Start Num: 13

Candidate Starts for Commandaria_37:

(Start: 13 @22702 has 86 MA's), (43, 22900), (44, 22903), (47, 22951), (57, 23035), (69, 23134), (74, 23191), (79, 23251), (80, 23260), (85, 23290), (89, 23311), (94, 23350),

Gene: Cruella_23 Start: 15961, Stop: 16623, Start Num: 13

Candidate Starts for Cruella_23:

(Start: 13 @15961 has 86 MA's), (15, 15979), (26, 16042), (29, 16048), (57, 16282), (69, 16378), (74, 16435), (75, 16450), (94, 16594),

Gene: Cucurbita_44 Start: 19203, Stop: 19868, Start Num: 13

Candidate Starts for Cucurbita_44:

(Start: 13 @19203 has 86 MA's), (27, 19293), (71, 19650), (87, 19803),

Gene: Culver_42 Start: 17642, Stop: 18307, Start Num: 13

Candidate Starts for Culver_42:

(Start: 13 @17642 has 86 MA's), (27, 17732), (71, 18089),

Gene: Dalilpop_40 Start: 23693, Stop: 24376, Start Num: 13

Candidate Starts for Dalilpop_40:

(Start: 13 @23693 has 86 MA's), (44, 23894), (57, 24026), (69, 24125), (72, 24164), (74, 24182), (80, 24251), (89, 24302), (94, 24341),

Gene: Daredevil_23 Start: 13726, Stop: 14382, Start Num: 13

Candidate Starts for Daredevil_23:

(3, 13669), (Start: 13 @13726 has 86 MA's), (16, 13747), (18, 13777), (52, 14002), (64, 14104), (76, 14224), (87, 14311), (88, 14314), (89, 14320),

Gene: Darwin_26 Start: 16706, Stop: 17368, Start Num: 13

Candidate Starts for Darwin_26:

(Start: 13 @16706 has 86 MA's), (15, 16724), (26, 16787), (29, 16793), (57, 17027), (69, 17123), (74, 17180), (75, 17195), (94, 17339),

Gene: DatBoi_25 Start: 16122, Stop: 16778, Start Num: 13

Candidate Starts for DatBoi_25:

(3, 16065), (Start: 13 @16122 has 86 MA's), (18, 16173), (60, 16467),

Gene: Dusty_41 Start: 17642, Stop: 18307, Start Num: 13

Candidate Starts for Dusty_41:

(Start: 13 @17642 has 86 MA's), (27, 17732), (71, 18089),

Gene: Emianna_35 Start: 22419, Stop: 23102, Start Num: 13

Candidate Starts for Emianna_35:

(Start: 13 @22419 has 86 MA's), (15, 22437), (30, 22530), (43, 22617), (44, 22620), (57, 22752), (69, 22851), (74, 22908), (80, 22977), (85, 23007), (89, 23028), (94, 23067),

Gene: Engineer_43 Start: 17859, Stop: 18524, Start Num: 13
Candidate Starts for Engineer_43:
(Start: 13 @17859 has 86 MA's), (27, 17949), (71, 18306), (87, 18459),

Gene: Ennea_41 Start: 23023, Stop: 23706, Start Num: 13
Candidate Starts for Ennea_41:
(Start: 13 @23023 has 86 MA's), (44, 23224), (57, 23356), (60, 23383), (69, 23455), (74, 23512), (80, 23581), (89, 23632), (94, 23671),

Gene: EvenBluerMoon_13 Start: 9146, Stop: 9808, Start Num: 11
Candidate Starts for EvenBluerMoon_13:
(Start: 11 @9146 has 3 MA's), (20, 9212), (34, 9284), (40, 9317), (54, 9443), (56, 9467), (94, 9779),

Gene: Flapper_39 Start: 22775, Stop: 23458, Start Num: 13
Candidate Starts for Flapper_39:
(Start: 13 @22775 has 86 MA's), (44, 22976), (47, 23024), (57, 23108), (69, 23207), (72, 23246), (74, 23264), (80, 23333), (89, 23384), (94, 23423),

Gene: Float294_37 Start: 22462, Stop: 23145, Start Num: 13
Candidate Starts for Float294_37:
(Start: 13 @22462 has 86 MA's), (44, 22663), (57, 22795), (60, 22822), (69, 22894), (74, 22951), (80, 23020), (89, 23071), (94, 23110),

Gene: Foxboro_36 Start: 22925, Stop: 23608, Start Num: 13
Candidate Starts for Foxboro_36:
(Start: 13 @22925 has 86 MA's), (15, 22943), (30, 23036), (43, 23123), (44, 23126), (57, 23258), (69, 23357), (74, 23414), (80, 23483), (85, 23513), (89, 23534), (94, 23573),

Gene: Fury_44 Start: 22072, Stop: 22755, Start Num: 13
Candidate Starts for Fury_44:
(Start: 13 @22072 has 86 MA's), (44, 22273), (51, 22354), (56, 22399), (57, 22405), (58, 22417), (69, 22504), (74, 22561), (80, 22630), (89, 22681), (92, 22711), (94, 22720),

Gene: GRU1_25 Start: 14660, Stop: 15343, Start Num: 13
Candidate Starts for GRU1_25:
(Start: 13 @14660 has 86 MA's), (44, 14861), (57, 14993), (69, 15092), (72, 15131), (74, 15149), (80, 15218), (89, 15269), (94, 15308),

Gene: GTE5_26 Start: 15663, Stop: 16346, Start Num: 13
Candidate Starts for GTE5_26:
(Start: 13 @15663 has 86 MA's), (44, 15864), (57, 15996), (69, 16095), (72, 16134), (74, 16152), (80, 16221), (89, 16272), (94, 16311),

Gene: GTE8_24 Start: 15678, Stop: 16361, Start Num: 13
Candidate Starts for GTE8_24:
(Start: 13 @15678 has 86 MA's), (15, 15696), (57, 16011), (60, 16038), (69, 16110), (74, 16167), (80, 16236), (85, 16266), (87, 16278), (89, 16287), (94, 16326),

Gene: Geeche_41 Start: 17733, Stop: 18398, Start Num: 13
Candidate Starts for Geeche_41:
(Start: 13 @17733 has 86 MA's), (27, 17823), (71, 18180), (87, 18333),

Gene: GrootJr_37 Start: 21777, Stop: 22460, Start Num: 13

Candidate Starts for GrootJr_37:

(Start: 13 @21777 has 86 MA's), (15, 21795), (30, 21888), (43, 21975), (44, 21978), (57, 22110), (69, 22209), (74, 22266), (80, 22335), (85, 22365), (89, 22386), (94, 22425),

Gene: GuyFagieri_39 Start: 23053, Stop: 23721, Start Num: 13

Candidate Starts for GuyFagieri_39:

(Start: 13 @23053 has 86 MA's), (24, 23134), (27, 23143), (46, 23275), (57, 23377), (58, 23389), (69, 23476), (74, 23533), (80, 23602), (81, 23608), (83, 23620), (94, 23692),

Gene: Hereford_21 Start: 9291, Stop: 9953, Start Num: 11

Candidate Starts for Hereford_21:

(Start: 11 @9291 has 3 MA's), (20, 9357), (40, 9462), (54, 9588), (56, 9612), (94, 9924),

Gene: HomeFry_41 Start: 20719, Stop: 21402, Start Num: 13

Candidate Starts for HomeFry_41:

(1, 20545), (2, 20638), (Start: 13 @20719 has 86 MA's), (44, 20920), (51, 21001), (56, 21046), (57, 21052), (58, 21064), (69, 21151), (74, 21208), (80, 21277), (83, 21295), (87, 21319), (89, 21328), (92, 21358), (94, 21367),

Gene: HubbaBubba_33 Start: 18243, Stop: 18923, Start Num: 13

Candidate Starts for HubbaBubba_33:

(Start: 13 @18243 has 86 MA's), (43, 18438), (51, 18522), (57, 18573), (60, 18600), (69, 18672), (74, 18729), (80, 18798), (89, 18849), (94, 18888),

Gene: IDyn_36 Start: 19639, Stop: 20319, Start Num: 13

Candidate Starts for IDyn_36:

(Start: 13 @19639 has 86 MA's), (43, 19834), (51, 19918), (57, 19969), (69, 20068), (74, 20125), (80, 20194), (89, 20245), (94, 20284),

Gene: Jifall16_34 Start: 22046, Stop: 22729, Start Num: 13

Candidate Starts for Jifall16_34:

(Start: 13 @22046 has 86 MA's), (15, 22064), (30, 22157), (43, 22244), (44, 22247), (57, 22379), (69, 22478), (74, 22535), (80, 22604), (85, 22634), (89, 22655), (94, 22694),

Gene: JonJames_41 Start: 21700, Stop: 22365, Start Num: 13

Candidate Starts for JonJames_41:

(Start: 13 @21700 has 86 MA's), (29, 21793), (39, 21862), (60, 22051), (62, 22078), (83, 22267),

Gene: Kabluna_38 Start: 21100, Stop: 21783, Start Num: 13

Candidate Starts for Kabluna_38:

(Start: 13 @21100 has 86 MA's), (44, 21301), (47, 21349), (57, 21433), (69, 21532), (74, 21589), (80, 21658), (94, 21748),

Gene: KidneyBean_35 Start: 22194, Stop: 22877, Start Num: 13

Candidate Starts for KidneyBean_35:

(Start: 13 @22194 has 86 MA's), (15, 22212), (30, 22305), (44, 22395), (57, 22527), (69, 22626), (74, 22683), (80, 22752), (85, 22782), (89, 22803), (94, 22842),

Gene: Kimchi1738_23 Start: 15559, Stop: 16221, Start Num: 13

Candidate Starts for Kimchi1738_23:

(Start: 13 @15559 has 86 MA's), (15, 15577), (26, 15640), (29, 15646), (57, 15880), (69, 15976), (74, 16033), (75, 16048), (94, 16192),

Gene: Kumotta_13 Start: 8849, Stop: 9499, Start Num: 13

Candidate Starts for Kumotta_13:

(Start: 13 @8849 has 86 MA's), (20, 8909), (22, 8921), (38, 8999), (50, 9107), (54, 9137), (56, 9161), (59, 9185), (60, 9194), (73, 9308), (94, 9473),

Gene: Kurt_35 Start: 22434, Stop: 23117, Start Num: 13

Candidate Starts for Kurt_35:

(Start: 13 @22434 has 86 MA's), (15, 22452), (30, 22545), (43, 22632), (44, 22635), (57, 22767), (69, 22866), (74, 22923), (80, 22992), (85, 23022), (89, 23043), (94, 23082),

Gene: Lollipop1437_40 Start: 23011, Stop: 23694, Start Num: 13

Candidate Starts for Lollipop1437_40:

(Start: 13 @23011 has 86 MA's), (44, 23212), (57, 23344), (60, 23371), (69, 23443), (74, 23500), (80, 23569), (89, 23620), (94, 23659),

Gene: Lozinak_42 Start: 17914, Stop: 18579, Start Num: 13

Candidate Starts for Lozinak_42:

(Start: 13 @17914 has 86 MA's), (27, 18004), (71, 18361), (87, 18514),

Gene: MacGully_43 Start: 23224, Stop: 23904, Start Num: 13

Candidate Starts for MacGully_43:

(Start: 13 @23224 has 86 MA's), (17, 23263), (24, 23305), (46, 23449), (57, 23551), (58, 23563), (60, 23578), (69, 23650), (74, 23707), (77, 23746), (80, 23776), (83, 23794), (84, 23803), (87, 23818), (94, 23866), (95, 23878),

Gene: Maja_12 Start: 8474, Stop: 9121, Start Num: 13

Candidate Starts for Maja_12:

(Start: 13 @8474 has 86 MA's), (Start: 14 @8477 has 2 MA's), (20, 8534), (26, 8555), (32, 8585), (39, 8630), (54, 8762), (56, 8786), (66, 8870), (94, 9098),

Gene: MargaretKali_13 Start: 8484, Stop: 9134, Start Num: 13

Candidate Starts for MargaretKali_13:

(Start: 13 @8484 has 86 MA's), (34, 8613), (37, 8619), (40, 8646), (52, 8760), (54, 8772), (56, 8796), (59, 8820), (60, 8829), (73, 8943), (78, 9012), (81, 9030), (90, 9093), (94, 9108),

Gene: Marietta_37 Start: 19554, Stop: 20234, Start Num: 13

Candidate Starts for Marietta_37:

(1, 19380), (Start: 13 @19554 has 86 MA's), (43, 19752), (57, 19887), (69, 19986), (72, 20025), (74, 20043), (79, 20103), (80, 20112), (89, 20163), (94, 20202), (95, 20214),

Gene: Maselop_39 Start: 23248, Stop: 23916, Start Num: 13

Candidate Starts for Maselop_39:

(Start: 13 @23248 has 86 MA's), (24, 23329), (33, 23386), (46, 23470), (57, 23572), (58, 23584), (69, 23671), (74, 23728), (80, 23797), (81, 23803), (83, 23815), (93, 23881), (94, 23887),

Gene: MerCougar_36 Start: 22307, Stop: 22990, Start Num: 13

Candidate Starts for MerCougar_36:

(Start: 13 @22307 has 86 MA's), (44, 22508), (57, 22640), (69, 22739), (70, 22748), (74, 22796), (80, 22865), (94, 22955),

Gene: Miskis_40 Start: 17677, Stop: 18342, Start Num: 13

Candidate Starts for Miskis_40:

(Start: 13 @17677 has 86 MA's), (27, 17767), (71, 18124),

Gene: ModicumRichard_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for ModicumRichard_13:

(Start: 12 @8905 has 5 MA's), (65, 9307), (74, 9388), (78, 9445), (90, 9526), (94, 9547),

Gene: Mollymur_25 Start: 16148, Stop: 16804, Start Num: 13

Candidate Starts for Mollymur_25:

(Start: 13 @16148 has 86 MA's), (19, 16202), (21, 16214), (41, 16313), (62, 16520), (67, 16550), (68, 16553),

Gene: Morgana_13 Start: 8909, Stop: 9580, Start Num: 12

Candidate Starts for Morgana_13:

(Start: 12 @8909 has 5 MA's), (65, 9311), (74, 9392), (78, 9449), (90, 9530), (94, 9551),

Gene: NadineRae_35 Start: 18802, Stop: 19482, Start Num: 13

Candidate Starts for NadineRae_35:

(Start: 13 @18802 has 86 MA's), (43, 18997), (51, 19081), (57, 19132), (69, 19231), (74, 19288), (80, 19357), (89, 19408), (94, 19447),

Gene: NatB6_35 Start: 21443, Stop: 22126, Start Num: 13

Candidate Starts for NatB6_35:

(Start: 13 @21443 has 86 MA's), (15, 21461), (30, 21554), (43, 21641), (44, 21644), (57, 21776), (69, 21875), (74, 21932), (80, 22001), (85, 22031), (89, 22052), (94, 22091),

Gene: NoSwimming_14 Start: 10095, Stop: 10754, Start Num: 13

Candidate Starts for NoSwimming_14:

(Start: 13 @10095 has 86 MA's), (Start: 14 @10098 has 2 MA's), (20, 10155), (40, 10260), (54, 10386), (56, 10410), (57, 10416), (91, 10716), (94, 10722), (97, 10740),

Gene: Norvs_43 Start: 17916, Stop: 18581, Start Num: 13

Candidate Starts for Norvs_43:

(Start: 13 @17916 has 86 MA's), (27, 18006), (71, 18363), (87, 18516),

Gene: NosilaM_38 Start: 21997, Stop: 22680, Start Num: 13

Candidate Starts for NosilaM_38:

(Start: 13 @21997 has 86 MA's), (44, 22198), (47, 22246), (57, 22330), (69, 22429), (74, 22486), (80, 22555), (94, 22645),

Gene: NovumRegina_35 Start: 21776, Stop: 22459, Start Num: 13

Candidate Starts for NovumRegina_35:

(Start: 13 @21776 has 86 MA's), (15, 21794), (30, 21887), (43, 21974), (44, 21977), (57, 22109), (69, 22208), (74, 22265), (80, 22334), (85, 22364), (89, 22385), (94, 22424),

Gene: ObLaDi_13 Start: 8905, Stop: 9573, Start Num: 12

Candidate Starts for ObLaDi_13:

(Start: 12 @8905 has 5 MA's), (65, 9307), (74, 9388), (78, 9445), (90, 9526), (94, 9547),

Gene: OneUp_36 Start: 15613, Stop: 16278, Start Num: 13

Candidate Starts for OneUp_36:

(9, 15595), (Start: 13 @15613 has 86 MA's), (46, 15844), (52, 15904), (53, 15913), (67, 16030),

Gene: Outis_36 Start: 22001, Stop: 22684, Start Num: 13

Candidate Starts for Outis_36:

(Start: 13 @22001 has 86 MA's), (44, 22202), (57, 22334), (69, 22433), (70, 22442), (74, 22490), (80, 22559), (94, 22649),

Gene: P1201_38 Start: 22813, Stop: 23490, Start Num: 13

Candidate Starts for P1201_38:

(Start: 13 @22813 has 86 MA's), (31, 22921), (33, 22942), (43, 22999), (49, 23065), (53, 23101), (63, 23188), (74, 23287), (80, 23356), (94, 23446),

Gene: Patio_38 Start: 22247, Stop: 22930, Start Num: 13

Candidate Starts for Patio_38:

(Start: 13 @22247 has 86 MA's), (44, 22448), (57, 22580), (60, 22607), (69, 22679), (74, 22736), (80, 22805), (89, 22856), (94, 22895),

Gene: Pemberton_38 Start: 19542, Stop: 20222, Start Num: 13

Candidate Starts for Pemberton_38:

(Start: 13 @19542 has 86 MA's), (43, 19737), (51, 19821), (57, 19872), (69, 19971), (74, 20028), (80, 20097), (89, 20148), (94, 20187),

Gene: PeteyPab_22 Start: 15926, Stop: 16588, Start Num: 13

Candidate Starts for PeteyPab_22:

(Start: 13 @15926 has 86 MA's), (15, 15944), (26, 16007), (29, 16013), (57, 16247), (69, 16343), (74, 16400), (75, 16415), (94, 16559),

Gene: PhinkBoden_42 Start: 18297, Stop: 18962, Start Num: 13

Candidate Starts for PhinkBoden_42:

(Start: 13 @18297 has 86 MA's), (27, 18387), (71, 18744), (87, 18897),

Gene: Phomeo_34 Start: 22069, Stop: 22752, Start Num: 13

Candidate Starts for Phomeo_34:

(Start: 13 @22069 has 86 MA's), (15, 22087), (30, 22180), (43, 22267), (44, 22270), (57, 22402), (69, 22501), (74, 22558), (80, 22627), (85, 22657), (89, 22678), (94, 22717),

Gene: Pigu_12 Start: 7560, Stop: 8207, Start Num: 13

Candidate Starts for Pigu_12:

(Start: 13 @7560 has 86 MA's), (Start: 14 @7563 has 2 MA's), (20, 7620), (32, 7671), (35, 7692), (51, 7827), (54, 7848), (56, 7872), (60, 7905), (69, 7974), (94, 8184),

Gene: Pleakley_44 Start: 22073, Stop: 22756, Start Num: 13

Candidate Starts for Pleakley_44:

(Start: 13 @22073 has 86 MA's), (44, 22274), (51, 22355), (56, 22400), (57, 22406), (58, 22418), (69, 22505), (74, 22562), (80, 22631), (89, 22682), (92, 22712), (94, 22721),

Gene: Polyuyki_39 Start: 23240, Stop: 23908, Start Num: 13

Candidate Starts for Polyuyki_39:

(Start: 13 @23240 has 86 MA's), (24, 23321), (33, 23378), (46, 23462), (57, 23564), (58, 23576), (69, 23663), (74, 23720), (80, 23789), (81, 23795), (83, 23807), (93, 23873), (94, 23879),

Gene: PotatoChip_23 Start: 15928, Stop: 16590, Start Num: 13

Candidate Starts for PotatoChip_23:

(Start: 13 @15928 has 86 MA's), (15, 15946), (26, 16009), (29, 16015), (57, 16249), (69, 16345), (74, 16402), (75, 16417), (94, 16561),

Gene: PrairieDogTown_13 Start: 9148, Stop: 9810, Start Num: 11

Candidate Starts for PrairieDogTown_13:

(Start: 11 @9148 has 3 MA's), (20, 9214), (34, 9286), (40, 9319), (54, 9445), (56, 9469), (94, 9781),

Gene: REQ2_12 Start: 7795, Stop: 8721, Start Num: 10

Candidate Starts for REQ2_12:

(4, 7759), (5, 7762), (7, 7777), (Start: 10 @7795 has 1 MA's), (15, 7822), (20, 7864), (23, 7879), (25, 7885), (42, 7975), (45, 8008), (48, 8050), (58, 8137), (81, 8359), (82, 8368), (102, 8563), (104, 8656), (105, 8674),

Gene: RedRaider_42 Start: 24251, Stop: 24934, Start Num: 13

Candidate Starts for RedRaider_42:

(Start: 13 @24251 has 86 MA's), (44, 24452), (57, 24584), (60, 24611), (69, 24683), (74, 24740), (80, 24809), (89, 24860), (94, 24899),

Gene: Scotia_14 Start: 10104, Stop: 10754, Start Num: 14

Candidate Starts for Scotia_14:

(Start: 13 @10101 has 86 MA's), (Start: 14 @10104 has 2 MA's), (20, 10161), (40, 10266), (54, 10392), (56, 10416), (57, 10422), (94, 10728),

Gene: Scuba_44 Start: 22163, Stop: 22846, Start Num: 13

Candidate Starts for Scuba_44:

(Start: 13 @22163 has 86 MA's), (44, 22364), (51, 22445), (56, 22490), (57, 22496), (58, 22508), (69, 22595), (74, 22652), (80, 22721), (89, 22772), (92, 22802), (94, 22811),

Gene: Skysand_37 Start: 22464, Stop: 23147, Start Num: 13

Candidate Starts for Skysand_37:

(Start: 13 @22464 has 86 MA's), (44, 22665), (57, 22797), (60, 22824), (69, 22896), (74, 22953), (80, 23022), (89, 23073), (94, 23112),

Gene: Smoothie_43 Start: 17914, Stop: 18579, Start Num: 13

Candidate Starts for Smoothie_43:

(Start: 13 @17914 has 86 MA's), (27, 18004), (71, 18361), (87, 18514),

Gene: SpeedDemon_250 Start: 15649, Stop: 16305, Start Num: 13

Candidate Starts for SpeedDemon_250:

(3, 15592), (Start: 13 @15649 has 86 MA's), (18, 15700), (21, 15715), (60, 15994),

Gene: StarStruck_36 Start: 22001, Stop: 22684, Start Num: 13

Candidate Starts for StarStruck_36:

(Start: 13 @22001 has 86 MA's), (44, 22202), (57, 22334), (69, 22433), (70, 22442), (74, 22490), (80, 22559), (94, 22649),

Gene: Stickynote_25 Start: 16738, Stop: 17400, Start Num: 13

Candidate Starts for Stickynote_25:

(Start: 13 @16738 has 86 MA's), (15, 16756), (26, 16819), (29, 16825), (57, 17059), (69, 17155), (74, 17212), (75, 17227), (94, 17371),

Gene: Sukkupi_37 Start: 21116, Stop: 21796, Start Num: 13

Candidate Starts for Sukkupi_37:

(Start: 13 @21116 has 86 MA's), (43, 21311), (51, 21395), (57, 21446), (69, 21545), (74, 21602), (80, 21671), (89, 21722), (94, 21761),

Gene: SuperSulley_36 Start: 22185, Stop: 22868, Start Num: 13

Candidate Starts for SuperSulley_36:

(Start: 13 @22185 has 86 MA's), (44, 22386), (57, 22518), (69, 22617), (70, 22626), (74, 22674), (80, 22743), (94, 22833),

Gene: Toniann_42 Start: 17859, Stop: 18524, Start Num: 13

Candidate Starts for Toniann_42:

(Start: 13 @17859 has 86 MA's), (27, 17949), (71, 18306), (87, 18459),

Gene: Towmatter_22 Start: 13548, Stop: 14204, Start Num: 13

Candidate Starts for Towmatter_22:

(3, 13491), (Start: 13 @13548 has 86 MA's), (16, 13569), (18, 13599), (52, 13824), (64, 13926), (76, 14046), (87, 14133), (88, 14136), (89, 14142),

Gene: Tracker_35 Start: 21197, Stop: 21880, Start Num: 13

Candidate Starts for Tracker_35:

(Start: 13 @21197 has 86 MA's), (15, 21215), (30, 21308), (43, 21395), (44, 21398), (57, 21530), (69, 21629), (74, 21686), (80, 21755), (85, 21785), (89, 21806), (94, 21845),

Gene: Turuncu_39 Start: 22468, Stop: 23151, Start Num: 13

Candidate Starts for Turuncu_39:

(Start: 13 @22468 has 86 MA's), (44, 22669), (57, 22801), (69, 22900), (72, 22939), (74, 22957), (80, 23026), (89, 23077), (94, 23116),

Gene: VanLee_14 Start: 8706, Stop: 9605, Start Num: 12

Candidate Starts for VanLee_14:

(Start: 12 @8706 has 5 MA's), (28, 8796), (33, 8841), (35, 8850), (74, 9183), (96, 9357), (103, 9480), (105, 9573),

Gene: Whack_12 Start: 7754, Stop: 8692, Start Num: 10

Candidate Starts for Whack_12:

(6, 7721), (8, 7736), (Start: 10 @7754 has 1 MA's), (23, 7841), (25, 7847), (36, 7904), (58, 8099), (60, 8114), (76, 8267), (78, 8303), (82, 8330), (83, 8333), (86, 8351), (101, 8495), (102, 8534),

Gene: Wheezy_35 Start: 21402, Stop: 22085, Start Num: 13

Candidate Starts for Wheezy_35:

(Start: 13 @21402 has 86 MA's), (15, 21420), (30, 21513), (43, 21600), (44, 21603), (57, 21735), (69, 21834), (74, 21891), (80, 21960), (85, 21990), (89, 22011), (94, 22050),

Gene: WhoseManz_37 Start: 19168, Stop: 19848, Start Num: 13

Candidate Starts for WhoseManz_37:

(Start: 13 @19168 has 86 MA's), (43, 19363), (51, 19447), (57, 19498), (60, 19525), (69, 19597), (74, 19654), (80, 19723), (89, 19774), (94, 19813),

Gene: WilliamBoone_42 Start: 17223, Stop: 17888, Start Num: 13

Candidate Starts for WilliamBoone_42:

(Start: 13 @17223 has 86 MA's), (53, 17523), (60, 17583), (71, 17670),

Gene: Yndexa_37 Start: 21116, Stop: 21796, Start Num: 13

Candidate Starts for Yndexa_37:

(Start: 13 @21116 has 86 MA's), (43, 21311), (51, 21395), (57, 21446), (69, 21545), (74, 21602), (80, 21671), (89, 21722), (94, 21761),

Gene: Yvonnetastic_39 Start: 19249, Stop: 19914, Start Num: 13

Candidate Starts for Yvonnetastic_39:

(Start: 13 @19249 has 86 MA's), (29, 19342), (39, 19411), (60, 19600), (62, 19627), (83, 19816),

Gene: Zion_23 Start: 15926, Stop: 16588, Start Num: 13

Candidate Starts for Zion_23:

(Start: 13 @15926 has 86 MA's), (15, 15944), (26, 16007), (29, 16013), (57, 16247), (69, 16343), (74, 16400), (75, 16415), (94, 16559),