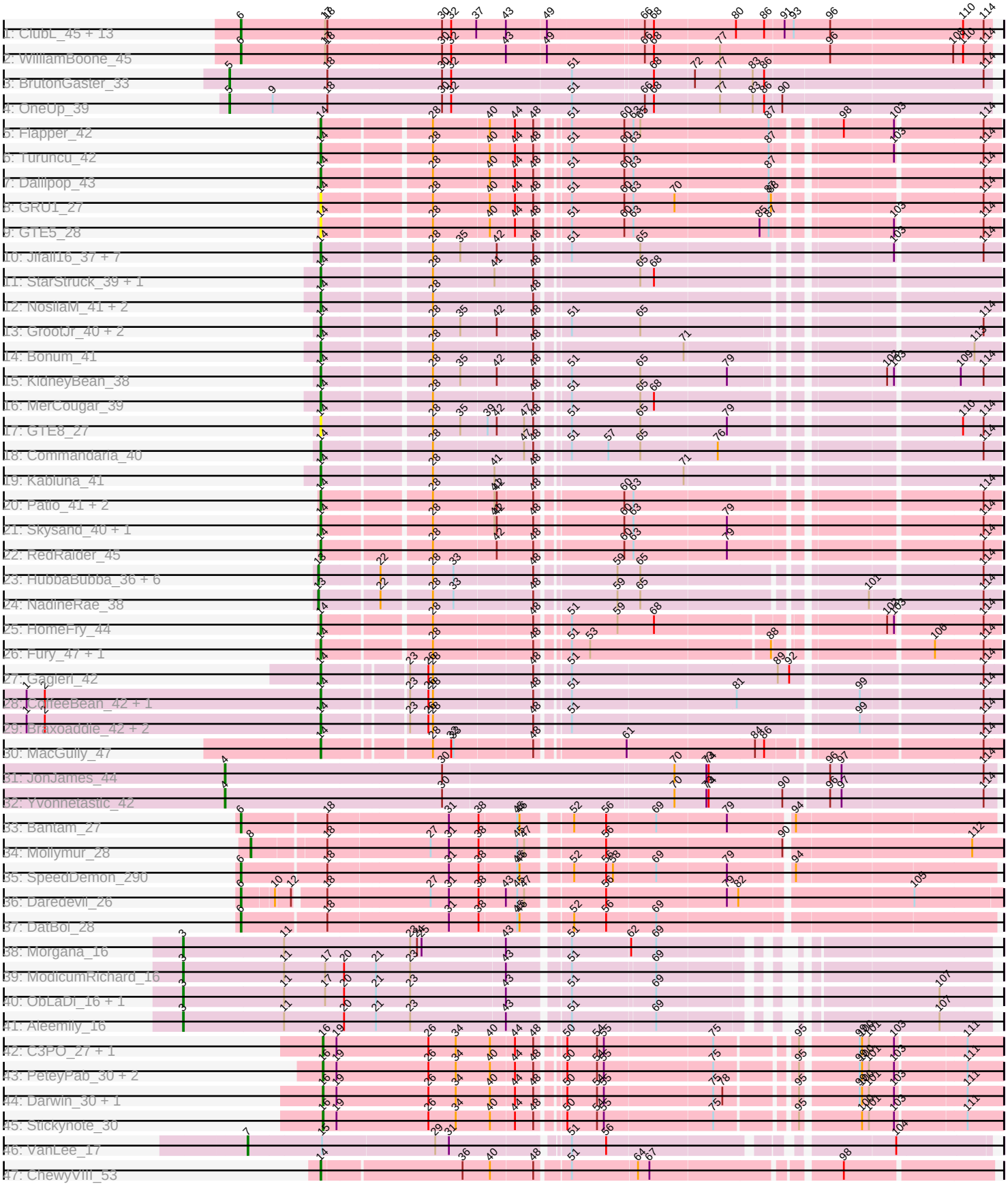
Pham 304907


1: ClubL_45 + 13
2: WilliamBoone_45
3: BrutonGaster_33
4: OneUp_39
5: Flapper_42
6: Turuncu_42
7: Dallipop_43
8: GRU1_27
9: GTE5_28
10: Jirafi16_37 + 7
11: StarStruck_39 + 1
12: NosilaM_41 + 2
13: GrootJr_40 + 2
14: Bonum_41
15: KidneyBean_38
16: MerCougar_39
17: GTE8_27
18: Commandaria_40
19: Kabluna_41
20: Patio_41 + 2
21: Skysand_40 + 1
22: RedRaider_45
23: HubbaBubba_36 + 6
24: NadineRae_38
25: HomeFry_44
26: Fury_47 + 1
27: Gaglieri_42
28: CoffeeBean_42 + 1
29: Braxoaddie_42 + 2
30: MacGully_47
31: JonJames_44
32: Yvonnetastic_42
33: Bantam_27
34: Mollymur_28
35: SpeedDemon_290
36: Daredevil_26
37: DatBoi_28
38: Morgana_16
39: ModicumRichard_16
40: ObLaDi_16 + 1
41: Aleemily_16
42: C3PO_27 + 1
43: PeteyPab_30 + 2
44: Darwin_30 + 1
45: Stickynote_30
46: VanLee_17
47: ChewyVIII_53

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 304907 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304907 has 90 members, 3 are drafts.

Phages represented in each track:
• Track 1 : ClubL_45, Dusty_44, Miskis_43, Bachita_47, Lozinak_45, Engineer_45, Abscondus_44, Toniann_45, Norvs_46, Smoothie_46, Cucurbita_47, Aphelion_45, Culver_45, PhinkBoden_45
• Track 2 : WilliamBoone_45
• Track 3 : BrutonGaster_33
• Track 4 : OneUp_39
• Track 5 : Flapper_42
• Track 6 : Turuncu_42
• Track 7 : Dalilpop_43
• Track 8 : GRU1_27
• Track 9 : GTE5_28
• Track 10 : Jifall16_37, Foxboro_39, NatB6_37, Tracker_38, Kurt_38, Phomeo_37, Emianna_38, Wheezy_38
• Track 11 : StarStruck_39, Outis_39
• Track 12 : NosilaM_41, Buggaboo_39, SuperSulley_39
• Track 13 : GrootJr_40, NovumRegina_38, Arti_38
• Track 14 : Bonum_41
• Track 15 : KidneyBean_38
• Track 16 : MerCougar_39
• Track 17 : GTE8_27
• Track 18 : Commandaria_40
• Track 19 : Kabluna_41
• Track 20 : Patio_41, Ennea_44, Lollipop1437_43
• Track 21 : Skysand_40, Float294_40
• Track 22 : RedRaider_45
• Track 23 : HubbaBubba_36, Yndexa_40, BiPauneto_41, WhoseManz_40, Sukkupi_40, IDyn_39, Marietta_40
• Track 24 : NadineRae_38
• Track 25 : HomeFry_44
• Track 26 : Fury_47, Pleakley_47
• Track 27 : Gagieri_42
• Track 28 : CoffeeBean_42, Maselop_42
• Track 29 : Braxoaddie_42, Polyyuki_42, Apiary_42
• Track 30 : MacGully_47
• Track 31 : JonJames_44
• Track 32 : Yvonnetastic_42
• Track 33 : Bantam_27

• Track 34 : Mollymur_28
• Track 35 : SpeedDemon_290
• Track 36 : Daredevil_26
• Track 37 : DatBoi_28
• Track 38 : Morgana_16
• Track 39 : ModicumRichard_16
• Track 40 : ObLaDi_16, Cafasso_16
• Track 41 : Aleemily_16
• Track 42 : C3PO_27, Cruella_28
• Track 43 : PeteyPab_30, PotatoChip_30, Zion_30
• Track 44 : Darwin_30, Kimchi1738_28
• Track 45 : Stickynote_30
• Track 46 : VanLee_17
• Track 47 : ChewyVIII_53

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

The start number called the most often in the published annotations is 14, it was called in 41 of the 87 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Apiary_42, Arti_38, Bonum_41, Braxoaddie_42, Buggaboo_39, ChewyVIII_53, CoffeeBean_42, Commandaria_40, Dalilpop_43, Emianna_38, Ennea_44, Flapper_42, Float294_40, Foxboro_39, Fury_47, GRU1_27, GTE5_28, GTE8_27, Gagieri_42, GrootJr_40, HomeFry_44, Jifall16_37, Kabluna_41, KidneyBean_38, Kurt_38, Lollipop1437_43, MacGully_47, Maselop_42, MerCougar_39, NatB6_37, NosilaM_41, NovumRegina_38, Outis_39, Patio_41, Phomeo_37, Pleakley_47, Polyyuki_42, RedRaider_45, Skysand_40, StarStruck_39, SuperSulley_39, Tracker_38, Turuncu_42, Wheezy_38,

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

Genes that do not have the "Most Annotated" start:
• Abscondus_44, Aleemily_16, Aphelion_45, Bachita_47, Bantam_27, BiPauneto_41, BrutonGaster_33, C3PO_27, Cafasso_16, ClubL_45, Cruella_28, Cucurbita_47, Culver_45, Daredevil_26, Darwin_30, DatBoi_28, Dusty_44, Engineer_45, HubbaBubba_36, IDyn_39, JonJames_44, Kimchi1738_28, Lozinak_45, Marietta_40, Miskis_43, ModicumRichard_16, Mollymur_28, Morgana_16, NadineRae_38, Norvs_46, ObLaDi_16, OneUp_39, PeteyPab_30, PhinkBoden_45, PotatoChip_30, Smoothie_46, SpeedDemon_290, Stickynote_30, Sukkupi_40, Toniann_45, VanLee_17, WhoseManz_40, WilliamBoone_45, Yndexa_40, Yvonnetastic_42, Zion_30,

Summary by start number:

Start 3:
• Found in 5 of 90 (5.6%) of genes in pham
• Manual Annotations of this start: 5 of 87
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Aleemily_16 (DZ), Cafasso_16 (DZ), ModicumRichard_16 (DZ), Morgana_16 (DZ), ObLaDi_16 (DZ),

Start 4:
• Found in 2 of 90 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: JonJames_44 (DD), Yvonnetastic_42 (DD),

Start 5:
• Found in 2 of 90 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BrutonGaster_33 (CQ2), OneUp_39 (CQ2),

Start 6:
• Found in 19 of 90 (21.1%) of genes in pham
• Manual Annotations of this start: 19 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Abscondus_44 (CQ1), Aphelion_45 (CQ1), Bachita_47 (CQ1), Bantam_27 (DL), ClubL_45 (CQ1), Cucurbita_47 (CQ1), Culver_45 (CQ1), Daredevil_26 (DL), DatBoi_28 (DL), Dusty_44 (CQ1), Engineer_45 (CQ1), Lozinak_45 (CQ1), Miskis_43 (CQ1), Norvs_46 (CQ1), PhinkBoden_45 (CQ1), Smoothie_46 (CQ1), SpeedDemon_290 (DL), Toniann_45 (CQ1), WilliamBoone_45 (CQ1),

Start 7:
• Found in 1 of 90 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: VanLee_17 (KA),

Start 8:
• Found in 1 of 90 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Mollymur_28 (DL),

Start 13:
• Found in 8 of 90 (8.9%) of genes in pham
• Manual Annotations of this start: 8 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BiPauneto_41 (CR4), HubbaBubba_36 (CR4), IDyn_39 (CR4), Marietta_40 (CR4), NadineRae_38 (CR4), Sukkupi_40 (CR4), WhoseManz_40 (CR4), Yndexa_40 (CR4),

Start 14:
• Found in 44 of 90 (48.9%) of genes in pham
• Manual Annotations of this start: 41 of 87
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Apiary_42 (CR6), Arti_38 (CR2), Bonum_41 (CR2), Braxoaddie_42 (CR6), Buggaboo_39 (CR2), ChewyVIII_53 (singleton), CoffeeBean_42 (CR6), Commandaria_40 (CR2), Dalilpop_43 (CR1), Emianna_38 (CR2), Ennea_44 (CR3), Flapper_42 (CR1), Float294_40 (CR3), Foxboro_39 (CR2), Fury_47 (CR5), GRU1_27 (CR1), GTE5_28 (CR1), GTE8_27 (CR2), Gagieri_42 (CR6), GrootJr_40 (CR2), HomeFry_44 (CR5), Jifall16_37 (CR2), Kabluna_41 (CR2), KidneyBean_38 (CR2), Kurt_38 (CR2), Lollipop1437_43 (CR3), MacGully_47 (CR7), Maselop_42 (CR6), MerCougar_39 (CR2), NatB6_37 (CR2), NosilaM_41 (CR2), NovumRegina_38 (CR2), Outis_39 (CR2), Patio_41 (CR3), Phomeo_37 (CR2), Pleakley_47 (CR5), Polyyuki_42 (CR6), RedRaider_45 (CR3), Skysand_40 (CR3), StarStruck_39 (CR2), SuperSulley_39 (CR2), Tracker_38 (CR2), Turuncu_42 (CR1), Wheezy_38 (CR2),

Start 16:
• Found in 8 of 90 (8.9%) of genes in pham
• Manual Annotations of this start: 8 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: C3PO_27 (EN), Cruella_28 (EN), Darwin_30 (EN), Kimchi1738_28 (EN), PeteyPab_30 (EN), PotatoChip_30 (EN), Stickynote_30 (EN), Zion_30 (EN),

Summary by clusters:

There are 15 clusters represented in this pham: CR2, CR3, KA, EN, CR6, CR7, CR4, CR5, DD, DL, singleton, CR1, DZ, CQ2, CQ1,

Info for manual annotations of cluster CQ1:
•Start number 6 was manually annotated 15 times for cluster CQ1.

Info for manual annotations of cluster CQ2:
•Start number 5 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CR1:
•Start number 14 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:
•Start number 14 was manually annotated 21 times for cluster CR2.

Info for manual annotations of cluster CR3:
•Start number 14 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 14 was manually annotated 3 times for cluster CR5.

Info for manual annotations of cluster CR6:
•Start number 14 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster CR7:
•Start number 14 was manually annotated 1 time for cluster CR7.

Info for manual annotations of cluster DD:
•Start number 4 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DL:
•Start number 6 was manually annotated 4 times for cluster DL.
•Start number 8 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster DZ:
•Start number 3 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster EN:
•Start number 16 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster KA:
•Start number 7 was manually annotated 1 time for cluster KA.

Gene Information:

Gene: Abscondus_44 Start: 18658, Stop: 19619, Start Num: 6
Candidate Starts for Abscondus_44:
(Start: 6 @18658 has 19 MA's), (17, 18769), (18, 18772), (30, 18919), (32, 18931), (37, 18964), (43, 19003), (49, 19054), (66, 19174), (68, 19186), (80, 19291), (86, 19327), (91, 19351), (93, 19363), (96, 19411), (110, 19582), (114, 19609),

Gene: Aleemily_16 Start: 9981, Stop: 10933, Start Num: 3
Candidate Starts for Aleemily_16:
(Start: 3 @9981 has 5 MA's), (11, 10113), (20, 10191), (21, 10233), (23, 10278), (43, 10401), (51, 10470), (69, 10575), (107, 10866),

Gene: Aphelion_45 Start: 18927, Stop: 19888, Start Num: 6
Candidate Starts for Aphelion_45:
(Start: 6 @18927 has 19 MA's), (17, 19038), (18, 19041), (30, 19188), (32, 19200), (37, 19233), (43, 19272), (49, 19323), (66, 19443), (68, 19455), (80, 19560), (86, 19596), (91, 19620), (93, 19632), (96, 19680), (110, 19851), (114, 19878),

Gene: Apiary_42 Start: 24321, Stop: 25141, Start Num: 14
Candidate Starts for Apiary_42:
(1, 23934), (2, 23958), (Start: 14 @24321 has 41 MA's), (23, 24420), (26, 24444), (28, 24450), (48, 24576), (51, 24609), (99, 24963), (114, 25116),

Gene: Arti_38 Start: 22581, Stop: 23383, Start Num: 14
Candidate Starts for Arti_38:
(Start: 14 @22581 has 41 MA's), (28, 22713), (35, 22749), (42, 22794), (48, 22839), (51, 22872), (65, 22962), (114, 23361),

Gene: Bachita_47 Start: 19360, Stop: 20321, Start Num: 6
Candidate Starts for Bachita_47:
(Start: 6 @19360 has 19 MA's), (17, 19471), (18, 19474), (30, 19621), (32, 19633), (37, 19666), (43, 19705), (49, 19756), (66, 19876), (68, 19888), (80, 19993), (86, 20029), (91, 20053), (93, 20065), (96, 20113), (110, 20284), (114, 20311),

Gene: Bantam_27 Start: 16393, Stop: 17321, Start Num: 6
Candidate Starts for Bantam_27:
(Start: 6 @16393 has 19 MA's), (18, 16501), (31, 16654), (38, 16693), (45, 16741), (46, 16744), (52, 16798), (56, 16840), (69, 16903), (79, 16993), (94, 17068),

Gene: BiPauneto_41 Start: 22337, Stop: 23145, Start Num: 13
Candidate Starts for BiPauneto_41:
(Start: 13 @22337 has 8 MA's), (22, 22412), (28, 22472), (33, 22499), (48, 22598), (59, 22691), (65, 22721), (114, 23123),

Gene: Bonum_41 Start: 22920, Stop: 23722, Start Num: 14
Candidate Starts for Bonum_41:
(Start: 14 @22920 has 41 MA's), (28, 23052), (48, 23178), (71, 23358), (113, 23688),

Gene: Braxoaddie_42 Start: 24310, Stop: 25130, Start Num: 14
Candidate Starts for Braxoaddie_42:
(1, 23923), (2, 23947), (Start: 14 @24310 has 41 MA's), (23, 24409), (26, 24433), (28, 24439), (48, 24565), (51, 24598), (99, 24952), (114, 25105),

Gene: BrutonGaster_33 Start: 15537, Stop: 16510, Start Num: 5
Candidate Starts for BrutonGaster_33:
(Start: 5 @15537 has 2 MA's), (18, 15666), (30, 15813), (32, 15825), (51, 15978), (68, 16080), (72, 16131), (77, 16164), (83, 16206), (86, 16221), (114, 16500),

Gene: Buggaboo_39 Start: 23405, Stop: 24210, Start Num: 14
Candidate Starts for Buggaboo_39:
(Start: 14 @23405 has 41 MA's), (28, 23537), (48, 23663),

Gene: C3PO_27 Start: 20302, Stop: 21122, Start Num: 16
Candidate Starts for C3PO_27:
(Start: 16 @20302 has 8 MA's), (19, 20320), (26, 20440), (34, 20476), (40, 20521), (44, 20551), (48, 20575), (50, 20602), (54, 20641), (55, 20650), (75, 20788), (95, 20878), (99, 20944), (100, 20947), (101, 20956), (103, 20989), (111, 21076),

Gene: Cafasso_16 Start: 9969, Stop: 10921, Start Num: 3
Candidate Starts for Cafasso_16:
(Start: 3 @9969 has 5 MA's), (11, 10101), (17, 10155), (20, 10179), (21, 10221), (23, 10266), (43, 10389), (51, 10458), (69, 10563), (107, 10854),

Gene: ChewyVIII_53 Start: 31497, Stop: 32314, Start Num: 14
Candidate Starts for ChewyVIII_53:
(Start: 14 @31497 has 41 MA's), (36, 31674), (40, 31710), (48, 31764), (51, 31803), (64, 31887), (67, 31902), (98, 32127),

Gene: ClubL_45 Start: 18849, Stop: 19810, Start Num: 6
Candidate Starts for ClubL_45:
(Start: 6 @18849 has 19 MA's), (17, 18960), (18, 18963), (30, 19110), (32, 19122), (37, 19155), (43, 19194), (49, 19245), (66, 19365), (68, 19377), (80, 19482), (86, 19518), (91, 19542), (93, 19554), (96, 19602), (110, 19773), (114, 19800),

Gene: CoffeeBean_42 Start: 24265, Stop: 25088, Start Num: 14
Candidate Starts for CoffeeBean_42:

(1, 23878), (2, 23902), (Start: 14 @24265 has 41 MA's), (23, 24364), (26, 24388), (28, 24394), (48, 24520), (51, 24553), (81, 24763), (99, 24910), (114, 25063),

Gene: Commandaria_40 Start: 23900, Stop: 24714, Start Num: 14
Candidate Starts for Commandaria_40:
(Start: 14 @23900 has 41 MA's), (28, 24032), (47, 24146), (48, 24158), (51, 24191), (57, 24239), (65, 24281), (76, 24380), (114, 24692),

Gene: Cruella_28 Start: 20302, Stop: 21122, Start Num: 16
Candidate Starts for Cruella_28:
(Start: 16 @20302 has 8 MA's), (19, 20320), (26, 20440), (34, 20476), (40, 20521), (44, 20551), (48, 20575), (50, 20602), (54, 20641), (55, 20650), (75, 20788), (95, 20878), (99, 20944), (100, 20947), (101, 20956), (103, 20989), (111, 21076),

Gene: Cucurbita_47 Start: 20219, Stop: 21180, Start Num: 6
Candidate Starts for Cucurbita_47:
(Start: 6 @20219 has 19 MA's), (17, 20330), (18, 20333), (30, 20480), (32, 20492), (37, 20525), (43, 20564), (49, 20615), (66, 20735), (68, 20747), (80, 20852), (86, 20888), (91, 20912), (93, 20924), (96, 20972), (110, 21143), (114, 21170),

Gene: Culver_45 Start: 18658, Stop: 19619, Start Num: 6
Candidate Starts for Culver_45:
(Start: 6 @18658 has 19 MA's), (17, 18769), (18, 18772), (30, 18919), (32, 18931), (37, 18964), (43, 19003), (49, 19054), (66, 19174), (68, 19186), (80, 19291), (86, 19327), (91, 19351), (93, 19363), (96, 19411), (110, 19582), (114, 19609),

Gene: Dalilpop_43 Start: 24905, Stop: 25716, Start Num: 14
Candidate Starts for Dalilpop_43:
(Start: 14 @24905 has 41 MA's), (28, 25037), (40, 25109), (44, 25139), (48, 25163), (51, 25196), (60, 25265), (63, 25277), (87, 25451), (114, 25694),

Gene: Daredevil_26 Start: 14796, Stop: 15721, Start Num: 6
Candidate Starts for Daredevil_26:
(Start: 6 @14796 has 19 MA's), (10, 14835), (12, 14853), (18, 14889), (27, 15018), (31, 15042), (38, 15081), (43, 15114), (45, 15129), (47, 15138), (56, 15228), (79, 15381), (82, 15396), (105, 15609),

Gene: Darwin_30 Start: 19987, Stop: 20807, Start Num: 16
Candidate Starts for Darwin_30:
(Start: 16 @19987 has 8 MA's), (19, 20005), (26, 20125), (34, 20161), (40, 20206), (44, 20236), (48, 20260), (50, 20287), (54, 20326), (55, 20335), (75, 20473), (78, 20485), (95, 20563), (99, 20629), (100, 20632), (101, 20641), (103, 20674), (111, 20761),

Gene: DatBoi_28 Start: 17182, Stop: 18110, Start Num: 6
Candidate Starts for DatBoi_28:
(Start: 6 @17182 has 19 MA's), (18, 17290), (31, 17443), (38, 17482), (45, 17530), (46, 17533), (52, 17587), (56, 17629), (69, 17692),

Gene: Dusty_44 Start: 18658, Stop: 19619, Start Num: 6
Candidate Starts for Dusty_44:
(Start: 6 @18658 has 19 MA's), (17, 18769), (18, 18772), (30, 18919), (32, 18931), (37, 18964), (43, 19003), (49, 19054), (66, 19174), (68, 19186), (80, 19291), (86, 19327), (91, 19351), (93, 19363), (96, 19411), (110, 19582), (114, 19609),

Gene: Emianna_38 Start: 23597, Stop: 24402, Start Num: 14
Candidate Starts for Emianna_38:
(Start: 14 @23597 has 41 MA's), (28, 23729), (35, 23765), (42, 23810), (48, 23855), (51, 23888), (65, 23978), (103, 24272), (114, 24380),

Gene: Engineer_45 Start: 18875, Stop: 19836, Start Num: 6
Candidate Starts for Engineer_45:
(Start: 6 @18875 has 19 MA's), (17, 18986), (18, 18989), (30, 19136), (32, 19148), (37, 19181), (43, 19220), (49, 19271), (66, 19391), (68, 19403), (80, 19508), (86, 19544), (91, 19568), (93, 19580), (96, 19628), (110, 19799), (114, 19826),

Gene: Ennea_44 Start: 24223, Stop: 25034, Start Num: 14
Candidate Starts for Ennea_44:
(Start: 14 @24223 has 41 MA's), (28, 24355), (41, 24433), (42, 24436), (48, 24481), (60, 24583), (63, 24595), (114, 25012),

Gene: Flapper_42 Start: 23966, Stop: 24777, Start Num: 14
Candidate Starts for Flapper_42:
(Start: 14 @23966 has 41 MA's), (28, 24098), (40, 24170), (44, 24200), (48, 24224), (51, 24257), (60, 24326), (63, 24338), (65, 24347), (87, 24512), (98, 24584), (103, 24647), (114, 24755),

Gene: Float294_40 Start: 23662, Stop: 24473, Start Num: 14
Candidate Starts for Float294_40:
(Start: 14 @23662 has 41 MA's), (28, 23794), (41, 23872), (42, 23875), (48, 23920), (60, 24022), (63, 24034), (79, 24154), (114, 24451),

Gene: Foxboro_39 Start: 24103, Stop: 24908, Start Num: 14
Candidate Starts for Foxboro_39:
(Start: 14 @24103 has 41 MA's), (28, 24235), (35, 24271), (42, 24316), (48, 24361), (51, 24394), (65, 24484), (103, 24778), (114, 24886),

Gene: Fury_47 Start: 23325, Stop: 24127, Start Num: 14
Candidate Starts for Fury_47:
(Start: 14 @23325 has 41 MA's), (28, 23457), (48, 23583), (51, 23616), (53, 23640), (88, 23868), (106, 24042), (114, 24105),

Gene: GRU1_27 Start: 15854, Stop: 16665, Start Num: 14
Candidate Starts for GRU1_27:
(Start: 14 @15854 has 41 MA's), (28, 15986), (40, 16058), (44, 16088), (48, 16112), (51, 16145), (60, 16214), (63, 16226), (70, 16280), (87, 16400), (88, 16403), (114, 16643),

Gene: GTE5_28 Start: 16818, Stop: 17629, Start Num: 14
Candidate Starts for GTE5_28:
(Start: 14 @16818 has 41 MA's), (28, 16950), (40, 17022), (44, 17052), (48, 17076), (51, 17109), (60, 17178), (63, 17190), (85, 17352), (87, 17364), (103, 17499), (114, 17607),

Gene: GTE8_27 Start: 16862, Stop: 17667, Start Num: 14
Candidate Starts for GTE8_27:
(Start: 14 @16862 has 41 MA's), (28, 16994), (35, 17030), (39, 17063), (42, 17075), (47, 17108), (48, 17120), (51, 17153), (65, 17243), (79, 17354), (110, 17618), (114, 17645),

Gene: Gagieri_42 Start: 24140, Stop: 24963, Start Num: 14
Candidate Starts for Gagieri_42:

(Start: 14 @24140 has 41 MA's), (23, 24239), (26, 24263), (28, 24269), (48, 24395), (51, 24428), (89, 24692), (92, 24707), (114, 24938),

Gene: GrootJr_40 Start: 22976, Stop: 23778, Start Num: 14
Candidate Starts for GrootJr_40:
(Start: 14 @22976 has 41 MA's), (28, 23108), (35, 23144), (42, 23189), (48, 23234), (51, 23267), (65, 23357), (114, 23756),

Gene: HomeFry_44 Start: 21951, Stop: 22753, Start Num: 14
Candidate Starts for HomeFry_44:
(Start: 14 @21951 has 41 MA's), (28, 22083), (48, 22209), (51, 22242), (59, 22302), (68, 22350), (102, 22614), (103, 22623), (114, 22731),

Gene: HubbaBubba_36 Start: 19355, Stop: 20163, Start Num: 13
Candidate Starts for HubbaBubba_36:
(Start: 13 @19355 has 8 MA's), (22, 19430), (28, 19490), (33, 19517), (48, 19616), (59, 19709), (65, 19739), (114, 20141),

Gene: IDyn_39 Start: 20751, Stop: 21559, Start Num: 13
Candidate Starts for IDyn_39:
(Start: 13 @20751 has 8 MA's), (22, 20826), (28, 20886), (33, 20913), (48, 21012), (59, 21105), (65, 21135), (114, 21537),

Gene: Jifall16_37 Start: 23251, Stop: 24056, Start Num: 14
Candidate Starts for Jifall16_37:
(Start: 14 @23251 has 41 MA's), (28, 23383), (35, 23419), (42, 23464), (48, 23509), (51, 23542), (65, 23632), (103, 23926), (114, 24034),

Gene: JonJames_44 Start: 22784, Stop: 23772, Start Num: 4
Candidate Starts for JonJames_44:
(Start: 4 @22784 has 2 MA's), (30, 23066), (70, 23363), (73, 23405), (74, 23408), (96, 23558), (97, 23573), (114, 23756),

Gene: Kabluna_41 Start: 22320, Stop: 23125, Start Num: 14
Candidate Starts for Kabluna_41:
(Start: 14 @22320 has 41 MA's), (28, 22452), (41, 22530), (48, 22578), (71, 22758),

Gene: KidneyBean_38 Start: 23375, Stop: 24177, Start Num: 14
Candidate Starts for KidneyBean_38:
(Start: 14 @23375 has 41 MA's), (28, 23507), (35, 23543), (42, 23588), (48, 23633), (51, 23666), (65, 23756), (79, 23867), (102, 24038), (103, 24047), (109, 24125), (114, 24155),

Gene: Kimchi1738_28 Start: 19390, Stop: 20210, Start Num: 16
Candidate Starts for Kimchi1738_28:
(Start: 16 @19390 has 8 MA's), (19, 19408), (26, 19528), (34, 19564), (40, 19609), (44, 19639), (48, 19663), (50, 19690), (54, 19729), (55, 19738), (75, 19876), (78, 19888), (95, 19966), (99, 20032), (100, 20035), (101, 20044), (103, 20077), (111, 20164),

Gene: Kurt_38 Start: 23612, Stop: 24417, Start Num: 14
Candidate Starts for Kurt_38:
(Start: 14 @23612 has 41 MA's), (28, 23744), (35, 23780), (42, 23825), (48, 23870), (51, 23903), (65, 23993), (103, 24287), (114, 24395),

Gene: Lollipop1437_43 Start: 24211, Stop: 25022, Start Num: 14
Candidate Starts for Lollipop1437_43:
(Start: 14 @24211 has 41 MA's), (28, 24343), (41, 24421), (42, 24424), (48, 24469), (60, 24571), (63, 24583), (114, 25000),

Gene: Lozinak_45 Start: 18930, Stop: 19891, Start Num: 6
Candidate Starts for Lozinak_45:
(Start: 6 @18930 has 19 MA's), (17, 19041), (18, 19044), (30, 19191), (32, 19203), (37, 19236), (43, 19275), (49, 19326), (66, 19446), (68, 19458), (80, 19563), (86, 19599), (91, 19623), (93, 19635), (96, 19683), (110, 19854), (114, 19881),

Gene: MacGully_47 Start: 24813, Stop: 25627, Start Num: 14
Candidate Starts for MacGully_47:
(Start: 14 @24813 has 41 MA's), (28, 24942), (32, 24966), (33, 24969), (48, 25068), (61, 25173), (84, 25335), (86, 25347), (114, 25602),

Gene: Marietta_40 Start: 20667, Stop: 21475, Start Num: 13
Candidate Starts for Marietta_40:
(Start: 13 @20667 has 8 MA's), (22, 20742), (28, 20802), (33, 20829), (48, 20928), (59, 21021), (65, 21051), (114, 21453),

Gene: Maselop_42 Start: 24341, Stop: 25164, Start Num: 14
Candidate Starts for Maselop_42:
(1, 23954), (2, 23978), (Start: 14 @24341 has 41 MA's), (23, 24440), (26, 24464), (28, 24470), (48, 24596), (51, 24629), (81, 24839), (99, 24986), (114, 25139),

Gene: MerCougar_39 Start: 23519, Stop: 24324, Start Num: 14
Candidate Starts for MerCougar_39:
(Start: 14 @23519 has 41 MA's), (28, 23651), (48, 23777), (51, 23810), (65, 23900), (68, 23918),

Gene: Miskis_43 Start: 18693, Stop: 19654, Start Num: 6
Candidate Starts for Miskis_43:
(Start: 6 @18693 has 19 MA's), (17, 18804), (18, 18807), (30, 18954), (32, 18966), (37, 18999), (43, 19038), (49, 19089), (66, 19209), (68, 19221), (80, 19326), (86, 19362), (91, 19386), (93, 19398), (96, 19446), (110, 19617), (114, 19644),

Gene: ModicumRichard_16 Start: 9969, Stop: 10921, Start Num: 3
Candidate Starts for ModicumRichard_16:
(Start: 3 @9969 has 5 MA's), (11, 10101), (17, 10155), (20, 10179), (21, 10221), (23, 10266), (43, 10389), (51, 10458), (69, 10563),

Gene: Mollymur_28 Start: 17282, Stop: 18201, Start Num: 8
Candidate Starts for Mollymur_28:
(Start: 8 @17282 has 1 MA's), (18, 17369), (27, 17498), (31, 17522), (38, 17561), (45, 17609), (47, 17618), (56, 17708), (90, 17930), (112, 18161),

Gene: Morgana_16 Start: 9973, Stop: 10925, Start Num: 3
Candidate Starts for Morgana_16:
(Start: 3 @9973 has 5 MA's), (11, 10105), (23, 10270), (24, 10279), (25, 10285), (43, 10393), (51, 10462), (62, 10537), (69, 10567),

Gene: NadineRae_38 Start: 19914, Stop: 20722, Start Num: 13
Candidate Starts for NadineRae_38:

(Start: 13 @19914 has 8 MA's), (22, 19989), (28, 20049), (33, 20076), (48, 20175), (59, 20268), (65, 20298), (101, 20562), (114, 20700),

Gene: NatB6_37 Start: 22648, Stop: 23453, Start Num: 14
Candidate Starts for NatB6_37:
(Start: 14 @22648 has 41 MA's), (28, 22780), (35, 22816), (42, 22861), (48, 22906), (51, 22939), (65, 23029), (103, 23323), (114, 23431),

Gene: Norvs_46 Start: 18932, Stop: 19893, Start Num: 6
Candidate Starts for Norvs_46:
(Start: 6 @18932 has 19 MA's), (17, 19043), (18, 19046), (30, 19193), (32, 19205), (37, 19238), (43, 19277), (49, 19328), (66, 19448), (68, 19460), (80, 19565), (86, 19601), (91, 19625), (93, 19637), (96, 19685), (110, 19856), (114, 19883),

Gene: NosilaM_41 Start: 23217, Stop: 24022, Start Num: 14
Candidate Starts for NosilaM_41:
(Start: 14 @23217 has 41 MA's), (28, 23349), (48, 23475),

Gene: NovumRegina_38 Start: 22975, Stop: 23777, Start Num: 14
Candidate Starts for NovumRegina_38:
(Start: 14 @22975 has 41 MA's), (28, 23107), (35, 23143), (42, 23188), (48, 23233), (51, 23266), (65, 23356), (114, 23755),

Gene: ObLaDi_16 Start: 9957, Stop: 10909, Start Num: 3
Candidate Starts for ObLaDi_16:
(Start: 3 @9957 has 5 MA's), (11, 10089), (17, 10143), (20, 10167), (21, 10209), (23, 10254), (43, 10377), (51, 10446), (69, 10551), (107, 10842),

Gene: OneUp_39 Start: 16642, Stop: 17615, Start Num: 5
Candidate Starts for OneUp_39:
(Start: 5 @16642 has 2 MA's), (9, 16699), (18, 16771), (30, 16918), (32, 16930), (51, 17083), (66, 17173), (68, 17185), (77, 17269), (83, 17311), (86, 17326), (90, 17347),

Gene: Outis_39 Start: 23207, Stop: 24012, Start Num: 14
Candidate Starts for Outis_39:
(Start: 14 @23207 has 41 MA's), (28, 23339), (41, 23417), (48, 23465), (65, 23588), (68, 23606),

Gene: Patio_41 Start: 23447, Stop: 24258, Start Num: 14
Candidate Starts for Patio_41:
(Start: 14 @23447 has 41 MA's), (28, 23579), (41, 23657), (42, 23660), (48, 23705), (60, 23807), (63, 23819), (114, 24236),

Gene: PeteyPab_30 Start: 21147, Stop: 21967, Start Num: 16
Candidate Starts for PeteyPab_30:
(Start: 16 @21147 has 8 MA's), (19, 21165), (26, 21285), (34, 21321), (40, 21366), (44, 21396), (48, 21420), (50, 21447), (54, 21486), (55, 21495), (75, 21633), (95, 21723), (99, 21789), (100, 21792), (101, 21801), (103, 21834), (111, 21921),

Gene: PhinkBoden_45 Start: 19313, Stop: 20274, Start Num: 6
Candidate Starts for PhinkBoden_45:
(Start: 6 @19313 has 19 MA's), (17, 19424), (18, 19427), (30, 19574), (32, 19586), (37, 19619), (43, 19658), (49, 19709), (66, 19829), (68, 19841), (80, 19946), (86, 19982), (91, 20006), (93, 20018), (96, 20066), (110, 20237), (114, 20264),

Gene: Phomeo_37 Start: 23247, Stop: 24052, Start Num: 14
Candidate Starts for Phomeo_37:
(Start: 14 @23247 has 41 MA's), (28, 23379), (35, 23415), (42, 23460), (48, 23505), (51, 23538), (65, 23628), (103, 23922), (114, 24030),

Gene: Pleakley_47 Start: 23326, Stop: 24128, Start Num: 14
Candidate Starts for Pleakley_47:
(Start: 14 @23326 has 41 MA's), (28, 23458), (48, 23584), (51, 23617), (53, 23641), (88, 23869), (106, 24043), (114, 24106),

Gene: Polyyuki_42 Start: 24333, Stop: 25153, Start Num: 14
Candidate Starts for Polyyuki_42:
(1, 23946), (2, 23970), (Start: 14 @24333 has 41 MA's), (23, 24432), (26, 24456), (28, 24462), (48, 24588), (51, 24621), (99, 24975), (114, 25128),

Gene: PotatoChip_30 Start: 21149, Stop: 21969, Start Num: 16
Candidate Starts for PotatoChip_30:
(Start: 16 @21149 has 8 MA's), (19, 21167), (26, 21287), (34, 21323), (40, 21368), (44, 21398), (48, 21422), (50, 21449), (54, 21488), (55, 21497), (75, 21635), (95, 21725), (99, 21791), (100, 21794), (101, 21803), (103, 21836), (111, 21923),

Gene: RedRaider_45 Start: 25472, Stop: 26283, Start Num: 14
Candidate Starts for RedRaider_45:
(Start: 14 @25472 has 41 MA's), (28, 25604), (42, 25685), (48, 25730), (60, 25832), (63, 25844), (79, 25964), (114, 26261),

Gene: Skysand_40 Start: 23664, Stop: 24475, Start Num: 14
Candidate Starts for Skysand_40:
(Start: 14 @23664 has 41 MA's), (28, 23796), (41, 23874), (42, 23877), (48, 23922), (60, 24024), (63, 24036), (79, 24156), (114, 24453),

Gene: Smoothie_46 Start: 18930, Stop: 19891, Start Num: 6
Candidate Starts for Smoothie_46:
(Start: 6 @18930 has 19 MA's), (17, 19041), (18, 19044), (30, 19191), (32, 19203), (37, 19236), (43, 19275), (49, 19326), (66, 19446), (68, 19458), (80, 19563), (86, 19599), (91, 19623), (93, 19635), (96, 19683), (110, 19854), (114, 19881),

Gene: SpeedDemon_290 Start: 18239, Stop: 19167, Start Num: 6
Candidate Starts for SpeedDemon_290:
(Start: 6 @18239 has 19 MA's), (18, 18347), (31, 18500), (38, 18539), (45, 18587), (46, 18590), (52, 18644), (56, 18686), (58, 18695), (69, 18749), (79, 18839), (94, 18914),

Gene: StarStruck_39 Start: 23207, Stop: 24012, Start Num: 14
Candidate Starts for StarStruck_39:
(Start: 14 @23207 has 41 MA's), (28, 23339), (41, 23417), (48, 23465), (65, 23588), (68, 23606),

Gene: Stickynote_30 Start: 20569, Stop: 21389, Start Num: 16
Candidate Starts for Stickynote_30:
(Start: 16 @20569 has 8 MA's), (19, 20587), (26, 20707), (34, 20743), (40, 20788), (44, 20818), (48, 20842), (50, 20869), (54, 20908), (55, 20917), (75, 21055), (95, 21145), (100, 21214), (101, 21223), (103, 21256), (111, 21343),

Gene: Sukkupi_40 Start: 22228, Stop: 23036, Start Num: 13
Candidate Starts for Sukkupi_40:
(Start: 13 @22228 has 8 MA's), (22, 22303), (28, 22363), (33, 22390), (48, 22489), (59, 22582), (65, 22612), (114, 23014),

Gene: SuperSulley_39 Start: 23405, Stop: 24210, Start Num: 14
Candidate Starts for SuperSulley_39:
(Start: 14 @23405 has 41 MA's), (28, 23537), (48, 23663),

Gene: Toniann_45 Start: 18875, Stop: 19836, Start Num: 6
Candidate Starts for Toniann_45:
(Start: 6 @18875 has 19 MA's), (17, 18986), (18, 18989), (30, 19136), (32, 19148), (37, 19181), (43, 19220), (49, 19271), (66, 19391), (68, 19403), (80, 19508), (86, 19544), (91, 19568), (93, 19580), (96, 19628), (110, 19799), (114, 19826),

Gene: Tracker_38 Start: 22375, Stop: 23180, Start Num: 14
Candidate Starts for Tracker_38:
(Start: 14 @22375 has 41 MA's), (28, 22507), (35, 22543), (42, 22588), (48, 22633), (51, 22666), (65, 22756), (103, 23050), (114, 23158),

Gene: Turuncu_42 Start: 23671, Stop: 24482, Start Num: 14
Candidate Starts for Turuncu_42:
(Start: 14 @23671 has 41 MA's), (28, 23803), (40, 23875), (44, 23905), (48, 23929), (51, 23962), (60, 24031), (63, 24043), (87, 24217), (103, 24352), (114, 24460),

Gene: VanLee_17 Start: 10020, Stop: 10897, Start Num: 7
Candidate Starts for VanLee_17:
(Start: 7 @10020 has 1 MA's), (15, 10116), (29, 10260), (31, 10278), (51, 10410), (56, 10455), (104, 10779),

Gene: Wheezy_38 Start: 22580, Stop: 23385, Start Num: 14
Candidate Starts for Wheezy_38:
(Start: 14 @22580 has 41 MA's), (28, 22712), (35, 22748), (42, 22793), (48, 22838), (51, 22871), (65, 22961), (103, 23255), (114, 23363),

Gene: WhoseManz_40 Start: 20280, Stop: 21088, Start Num: 13
Candidate Starts for WhoseManz_40:
(Start: 13 @20280 has 8 MA's), (22, 20355), (28, 20415), (33, 20442), (48, 20541), (59, 20634), (65, 20664), (114, 21066),

Gene: WilliamBoone_45 Start: 18239, Stop: 19200, Start Num: 6
Candidate Starts for WilliamBoone_45:
(Start: 6 @18239 has 19 MA's), (17, 18350), (18, 18353), (30, 18500), (32, 18512), (43, 18584), (49, 18635), (66, 18755), (68, 18767), (77, 18851), (96, 18992), (108, 19151), (110, 19163), (114, 19190),

Gene: Yndexa_40 Start: 22228, Stop: 23036, Start Num: 13
Candidate Starts for Yndexa_40:
(Start: 13 @22228 has 8 MA's), (22, 22303), (28, 22363), (33, 22390), (48, 22489), (59, 22582), (65, 22612), (114, 23014),

Gene: Yvonnetastic_42 Start: 20319, Stop: 21307, Start Num: 4
Candidate Starts for Yvonnetastic_42:

(Start: 4 @20319 has 2 MA's), (30, 20601), (70, 20898), (73, 20940), (74, 20943), (90, 21036), (96, 21093), (97, 21108), (114, 21291),

Gene: Zion_30 Start: 21147, Stop: 21967, Start Num: 16
Candidate Starts for Zion_30:
(Start: 16 @21147 has 8 MA's), (19, 21165), (26, 21285), (34, 21321), (40, 21366), (44, 21396), (48, 21420), (50, 21447), (54, 21486), (55, 21495), (75, 21633), (95, 21723), (99, 21789), (100, 21792), (101, 21801), (103, 21834), (111, 21921),