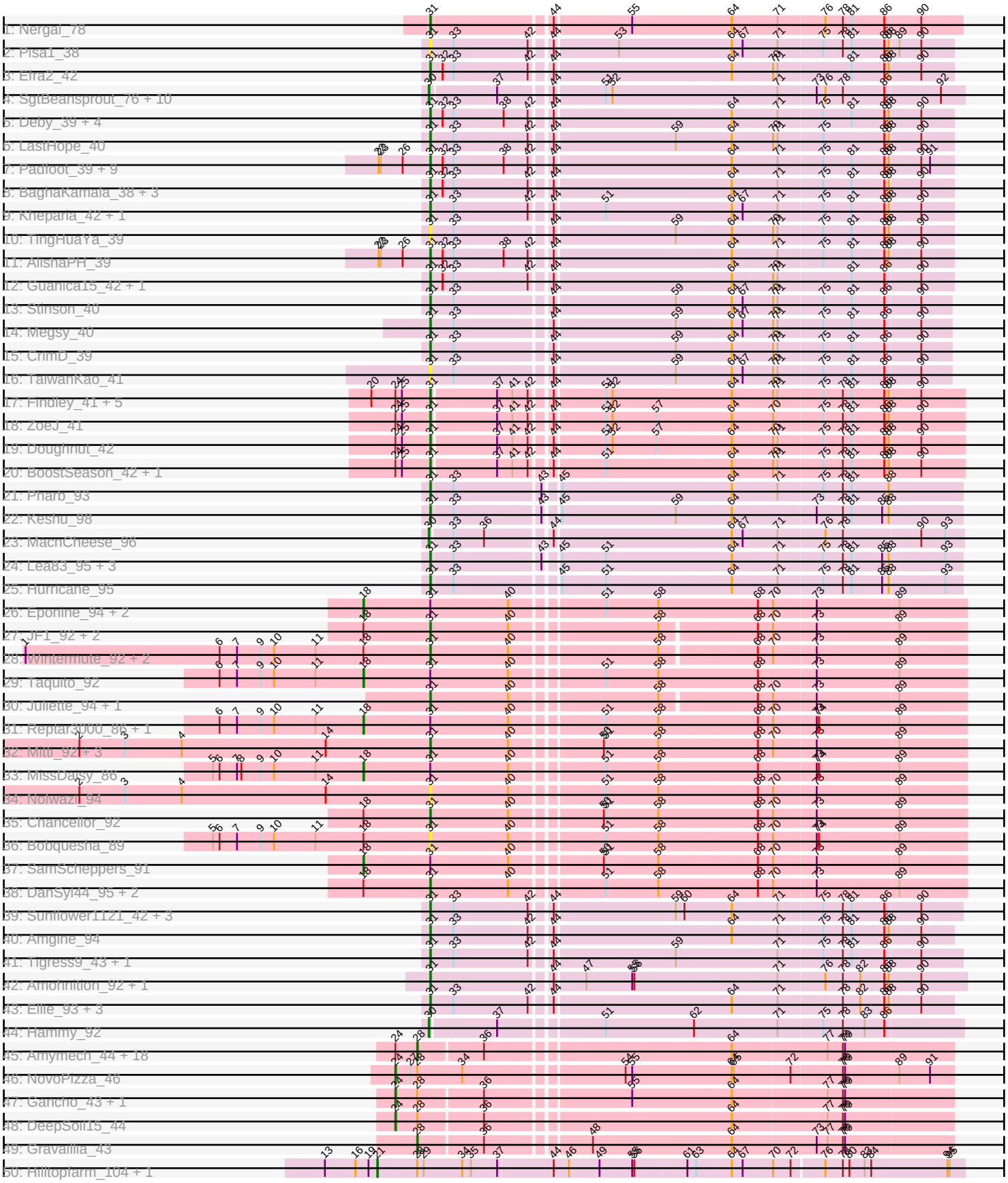
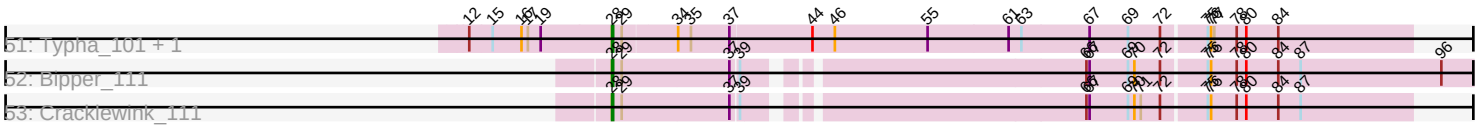
Pham 343758


1: Nergal_78
2: Pisa1_38
3: Elra2_42
4: SgtBeansprout_76 + 10
5: Deby_39 + 4
6: LastHope_40
7: Padfoot_39 + 9
8: BaghaKamala_38 + 3
9: Khepana_42 + 1
10: TingHuaYa_39
11: AlishaPH_39
12: Guanica15_42 + 1
13: Stinson_40
14: Megsy_40
15: ChimD_39
16: TaiwanKao_41
17: Findley_41 + 5
18: ZoeJ_41
19: Doughnut_42
20: BoostSeason_42 + 1
21: Pharo_93
22: Keshu_98
23: MacnCheese_96
24: Lea83_95 + 3
25: Hurricane_95
26: Eponine_94 + 2
27: JF1_92 + 2
28: Winternute_92 + 2
29: Taquito_92
30: Juliette_94 + 1
31: Reptar3000_86 + 1
32: Mitti_92 + 3
33: MissDaisy_86
34: Nolwazi_94
35: Chancellor_92
36: Bobquesha_89
37: SamScheppers_91
38: DanSyl44_95 + 2
39: Sunflower1121_42 + 3
40: Amgine_94
41: Tigress9_43 + 1
42: Amohnition_92 + 1
43: Ellie_93 + 3
44: Hammy_92
45: Amymech_44 + 18
46: NovoPizza_46
47: Gancho_43 + 1
48: DeepSoil15_44
49: Gravalilla_43
50: Hilltopfarm_104 + 1

Pham 343758



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 343758 Report

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

Pham number 343758 has 132 members, 10 are drafts.

Phages represented in each track:
- Track 1 : Nergal_78
- Track 2 : Pisa1_38
- Track 3 : Efra2_42
- Track 4 : SgtBeansprout_76, Nikao_78, Torres_78, LilPharaoh_76, Nutello_75, Teejan_77, Trice_75, Enkosi_77, Mdavu_76, Amelie_75, Biglebops_75
- Track 5 : Deby_39, QuincyRose_38, Sulley_39, Angelica_39, Ganymede_40
- Track 6 : LastHope_40
- Track 7 : Padfoot_39, Piatt_39, BEEST_39, Asayake_39, Boiiii_39, CaseJules_40, Blizzard_39, Durfee_39, Hyperbowlee_39, ShiaSurprise_40
- Track 8 : BaghaKamala_38, Tiri_40, CheetoDust_38, Adonis_39
- Track 9 : Kheparia_42, Bern_41
- Track 10 : TingHuaYa_39
- Track 11 : AlishaPH_39
- Track 12 : Guanica15_42, Yunkel11_42
- Track 13 : Stinson_40
- Track 14 : Megsy_40
- Track 15 : CrimD_39
- Track 16 : TaiwanKao_41
- Track 17 : Findley_41, Strobilo_41, DismalStressor_41, Milly_41, Marcoliusprime_41, DismalFunk_41
- Track 18 : ZoeJ_41
- Track 19 : Doughnut_42
- Track 20 : BoostSeason_42, Mufasa_42
- Track 21 : Pharb_93
- Track 22 : Keshu_98
- Track 23 : MacnCheese_96
- Track 24 : Lea83_95, ShedlockHolmes_97, TBond007_93, Pixie_96
- Track 25 : Hurricane_95
- Track 26 : Eponine_94, OmniCritical_92, Lebo14_91
- Track 27 : JF1_92, Y2_88, Y10_88
- Track 28 : Wintermute_92, Malthus_93, Kraw_92
- Track 29 : Taquito_92
- Track 30 : Juliette_94, Ruthiejr_94
- Track 31 : Reptar3000_86, Patt_85
- Track 32 : Mitti_92, Qhanda_92, Cheetobro_90, Slarp_90
- Track 33 : MissDaisy_86
- Track 34 : Nolwazi_94

• Track 35 : Chancellor_92
• Track 36 : Bobquesha_89
• Track 37 : SamScheppers_91
• Track 38 : DanSyl44_95, Fionnbharth_92, YasnayaPolyana_91
• Track 39 : Sunflower1121_42, Syra333_43, Ximenita_44, Shadow1_42
• Track 40 : Amgine_94
• Track 41 : Tigress9_43, Krueger_43
• Track 42 : Amohnition_92, DarthP_92
• Track 43 : Ellie_93, Applecrisp_92, Lavahound_93, Fefferhead_95
• Track 44 : Hammy_92
• Track 45 : Amymech_44, LilHazelnut_44, Giles_42, Ein37_44, Luke_44, Luna22_42, BloominB_43, Hadrien_44, Wishmaker_42, OBUpride_44, Forge_42, Kinbote_44, Ubuntu_44, Evanesce_43, Dewey_42, HH92_43, Amochick_44, Hail_42, Webster2_44
• Track 46 : NovoPizza_46
• Track 47 : Gancho_43, Daegal_46
• Track 48 : DeepSoil15_44
• Track 49 : Gravaillia_43
• Track 50 : Hilltopfarm_104, Faiyaz_102
• Track 51 : Typha_101, AuntGwenStacy_102
• Track 52 : Bipper_111
• Track 53 : Cracklewink_111

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

The start number called the most often in the published annotations is 31, it was called in 73 of the 122 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Adonis_39, AlishaPH_39, Amgine_94, Amohnition_92, Angelica_39, Applecrisp_92, Asayake_39, BEEST_39, BaghaKamala_38, Bern_41, Blizzard_39, Bobquesha_89, Boiiii_39, BoostSeason_42, CaseJules_40, Chancellor_92, CheetoDust_38, Cheetobro_90, CrimD_39, DanSyl44_95, DarthP_92, Deby_39, DismalFunk_41, DismalStressor_41, Doughnut_42, Durfee_39, Efra2_42, Ellie_93, Fefferhead_95, Findley_41, Fionnbharth_92, Ganymede_40, Guanica15_42, Hurricane_95, Hyperbowlee_39, JF1_92, Juliette_94, Keshu_98, Kheparia_42, Kraw_92, Krueger_43, LastHope_40, Lavahound_93, Lea83_95, Malthus_93, Marcoliusprime_41, Megsy_40, Milly_41, Mitti_92, Mufasa_42, Nergal_78, Nolwazi_94, Padfoot_39, Pharb_93, Piatt_39, Pisa1_38, Pixie_96, Qhanda_92, QuincyRose_38, Ruthiejr_94, Shadow1_42, ShedlockHolmes_97, ShiaSurprise_40, Slarp_90, Stinson_40, Strobilo_41, Sulley_39, Sunflower1121_42, Syra333_43, TBond007_93, TaiwanKao_41, Tigress9_43, TingHuaYa_39, Tiri_40, Wintermute_92, Ximenita_44, Y10_88, Y2_88, YasnayaPolyana_91, Yunkel11_42, ZoeJ_41,

Genes that have the "Most Annotated" start but do not call it:
• Eponine_94, Lebo14_91, MissDaisy_86, OmniCritical_92, Patt_85, Reptar3000_86, SamScheppers_91, Taquito_92,

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

• Amelie_75, Amochick_44, Amymech_44, AuntGwenStacy_102, Biglebops_75, Bipper_111, BloominB_43, Cracklewink_111, Daegal_46, DeepSoil15_44, Dewey_42, Ein37_44, Enkosi_77, Evanesce_43, Faiyaz_102, Forge_42, Gancho_43, Giles_42, Gravaillia_43, HH92_43, Hadrien_44, Hail_42, Hammy_92, Hilltopfarm_104, Kinbote_44, LilHazelnut_44, LilPharaoh_76, Luke_44, Luna22_42, MacnCheese_96, Mdavu_76, Nikao_78, NovoPizza_46, Nutello_75, OBUpride_44, SgtBeansprout_76, Teejan_77, Torres_78, Trice_75, Typha_101, Ubuntu_44, Webster2_44, Wishmaker_42,

Summary by start number:

Start 18:
• Found in 19 of 132 (14.4%) of genes in pham
• Manual Annotations of this start: 8 of 122
• Called 42.1% of time when present
• Phage (with cluster) where this start called: Eponine_94 (K4), Lebo14_91 (K4), MissDaisy_86 (K4), OmniCritical_92 (K4), Patt_85 (K4), Reptar3000_86 (K4), SamScheppers_91 (K4), Taquito_92 (K4),

Start 21:
• Found in 2 of 132 (1.5%) of genes in pham
• Manual Annotations of this start: 2 of 122
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Faiyaz_102 (Y), Hilltopfarm_104 (Y),

Start 24:
• Found in 33 of 132 (25.0%) of genes in pham
• Manual Annotations of this start: 4 of 122
• Called 12.1% of time when present
• Phage (with cluster) where this start called: Daegal_46 (Q), DeepSoil15_44 (Q), Gancho_43 (Q), NovoPizza_46 (Q),

Start 28:
• Found in 30 of 132 (22.7%) of genes in pham
• Manual Annotations of this start: 24 of 122
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Amochick_44 (Q), Amymech_44 (Q), AuntGwenStacy_102 (Y), Bipper_111 (Y), BloominB_43 (Q), Cracklewink_111 (Y), Dewey_42 (Q), Ein37_44 (Q), Evanesce_43 (Q), Forge_42 (Q), Giles_42 (Q), Gravaillia_43 (Q), HH92_43 (Q), Hadrien_44 (Q), Hail_42 (Q), Kinbote_44 (Q), LilHazelnut_44 (Q), Luke_44 (Q), Luna22_42 (Q), OBUpride_44 (Q), Typha_101 (Y), Ubuntu_44 (Q), Webster2_44 (Q), Wishmaker_42 (Q),

Start 30:
• Found in 13 of 132 (9.8%) of genes in pham
• Manual Annotations of this start: 11 of 122
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amelie_75 (K1), Biglebops_75 (K1), Enkosi_77 (K1), Hammy_92 (K6), LilPharaoh_76 (K1), MacnCheese_96 (K3), Mdavu_76 (K1), Nikao_78 (K1), Nutello_75 (K1), SgtBeansprout_76 (K1), Teejan_77 (K1), Torres_78 (K1), Trice_75 (K1),

Start 31:

• Found in 89 of 132 (67.4%) of genes in pham
• Manual Annotations of this start: 73 of 122
• Called 91.0% of time when present
• Phage (with cluster) where this start called: Adonis_39 (K1), AlishaPH_39 (K1), Amgine_94 (K6), Amohnition_92 (K6), Angelica_39 (K1), Applecrisp_92 (K6), Asayake_39 (K1), BEEST_39 (K1), BaghaKamala_38 (K1), Bern_41 (K1), Blizzard_39 (K1), Bobquesha_89 (K4), Boiiii_39 (K1), BoostSeason_42 (K2), CaseJules_40 (K1), Chancellor_92 (K4), CheetoDust_38 (K1), Cheetobro_90 (K4), CrimD_39 (K1), DanSyl44_95 (K4), DarthP_92 (K6), Deby_39 (K1), DismalFunk_41 (K2), DismalStressor_41 (K2), Doughnut_42 (K2), Durfee_39 (K1), Efra2_42 (K1), Ellie_93 (K6), Fefferhead_95 (K6), Findley_41 (K2), Fionnbharth_92 (K4), Ganymede_40 (K1), Guanica15_42 (K1), Hurricane_95 (K3), Hyperbowlee_39 (K1), JF1_92 (K4), Juliette_94 (K4), Keshu_98 (K3), Kheparia_42 (K1), Kraw_92 (K4), Krueger_43 (K6), LastHope_40 (K1), Lavahound_93 (K6), Lea83_95 (K3), Malthus_93 (K4), Marcoliusprime_41 (K2), Megsy_40 (K1), Milly_41 (K2), Mitti_92 (K4), Mufasa_42 (K2), Nergal_78 (AG), Nolwazi_94 (K4), Padfoot_39 (K1), Pharb_93 (K3), Piatt_39 (K1), Pisa1_38 (K1), Pixie_96 (K3), Qhanda_92 (K4), QuincyRose_38 (K1), Ruthiejr_94 (K4), Shadow1_42 (K6), ShedlockHolmes_97 (K3), ShiaSurprise_40 (K1), Slarp_90 (K4), Stinson_40 (K1), Strobilo_41 (K2), Sulley_39 (K1), Sunflower1121_42 (K6), Syra333_43 (K6), TBond007_93 (K3), TaiwanKao_41 (K1), Tigress9_43 (K6), TingHuaYa_39 (K1), Tiri_40 (K1), Wintermute_92 (K4), Ximenita_44 (K6), Y10_88 (K4), Y2_88 (K4), YasnayaPolyana_91 (K4), Yunkel11_42 (K1), ZoeJ_41 (K2),

Summary by clusters:

There are 8 clusters represented in this pham: Q, AG, K3, K2, K1, K6, K4, Y,

Info for manual annotations of cluster AG:
•Start number 31 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:
•Start number 30 was manually annotated 9 times for cluster K1.
•Start number 31 was manually annotated 28 times for cluster K1.

Info for manual annotations of cluster K2:
•Start number 31 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:
•Start number 30 was manually annotated 1 time for cluster K3.
•Start number 31 was manually annotated 7 times for cluster K3.

Info for manual annotations of cluster K4:
•Start number 18 was manually annotated 8 times for cluster K4.
•Start number 31 was manually annotated 14 times for cluster K4.

Info for manual annotations of cluster K6:
•Start number 30 was manually annotated 1 time for cluster K6.
•Start number 31 was manually annotated 13 times for cluster K6.

Info for manual annotations of cluster Q:
•Start number 24 was manually annotated 4 times for cluster Q.
•Start number 28 was manually annotated 20 times for cluster Q.

Info for manual annotations of cluster Y:
•Start number 21 was manually annotated 2 times for cluster Y.
•Start number 28 was manually annotated 4 times for cluster Y.

Gene Information:

Gene: Adonis_39 Start: 31362, Stop: 32051, Start Num: 31
Candidate Starts for Adonis_39:
(Start: 31 @31362 has 73 MA's), (32, 31377), (33, 31392), (42, 31494), (44, 31515), (64, 31752), (71, 31815), (75, 31875), (81, 31914), (86, 31959), (88, 31965), (90, 32007),

Gene: AlishaPH_39 Start: 31339, Stop: 32028, Start Num: 31
Candidate Starts for AlishaPH_39:
(22, 31270), (23, 31273), (26, 31303), (Start: 31 @31339 has 73 MA's), (32, 31354), (33, 31369), (38, 31438), (42, 31471), (44, 31492), (64, 31729), (71, 31792), (75, 31852), (81, 31891), (86, 31936), (88, 31942), (90, 31984),

Gene: Amelie_75 Start: 54769, Stop: 55470, Start Num: 30
Candidate Starts for Amelie_75:
(Start: 30 @54769 has 11 MA's), (37, 54856), (44, 54919), (51, 54985), (52, 54994), (71, 55219), (73, 55270), (76, 55282), (78, 55306), (86, 55363), (92, 55438),

Gene: Amgine_94 Start: 60238, Stop: 60927, Start Num: 31
Candidate Starts for Amgine_94:
(Start: 31 @60238 has 73 MA's), (33, 60268), (42, 60370), (44, 60391), (64, 60628), (71, 60691), (75, 60751), (78, 60778), (81, 60790), (86, 60835), (88, 60841), (90, 60883),

Gene: Amochick_44 Start: 34132, Stop: 33431, Start Num: 28
Candidate Starts for Amochick_44:
(Start: 24 @34162 has 4 MA's), (Start: 28 @34132 has 24 MA's), (36, 34048), (64, 33730), (77, 33601), (78, 33580), (79, 33577),

Gene: Amohnition_92 Start: 59731, Stop: 60438, Start Num: 31
Candidate Starts for Amohnition_92:
(Start: 31 @59731 has 73 MA's), (44, 59884), (47, 59923), (55, 59986), (56, 59989), (71, 60184), (76, 60247), (78, 60271), (82, 60295), (86, 60328), (88, 60334), (90, 60376),

Gene: Amymech_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Amymech_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Angelica_39 Start: 31296, Stop: 31985, Start Num: 31
Candidate Starts for Angelica_39:
(Start: 31 @31296 has 73 MA's), (32, 31311), (33, 31326), (38, 31395), (42, 31428), (44, 31449), (64, 31686), (71, 31749), (75, 31809), (81, 31848), (86, 31893), (88, 31899), (90, 31941),

Gene: Applecrisp_92 Start: 59957, Stop: 60646, Start Num: 31
Candidate Starts for Applecrisp_92:

(Start: 31 @59957 has 73 MA's), (33, 59987), (42, 60089), (44, 60110), (64, 60347), (71, 60410), (78, 60497), (82, 60521), (86, 60554), (88, 60560), (90, 60602),

Gene: Asayake_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for Asayake_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: AuntGwenStacy_102 Start: 63239, Stop: 63973, Start Num: 28
Candidate Starts for AuntGwenStacy_102:
(12, 63107), (15, 63128), (16, 63155), (17, 63161), (19, 63173), (Start: 28 @63239 has 24 MA's), (29, 63248), (34, 63296), (35, 63308), (37, 63344), (44, 63419), (46, 63440), (55, 63527), (61, 63602), (63, 63614), (67, 63677), (69, 63713), (72, 63743), (75, 63782), (76, 63785), (77, 63788), (78, 63809), (80, 63818), (84, 63848),

Gene: BEEST_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for BEEST_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: BaghaKamala_38 Start: 30505, Stop: 31194, Start Num: 31
Candidate Starts for BaghaKamala_38:
(Start: 31 @30505 has 73 MA's), (32, 30520), (33, 30535), (42, 30637), (44, 30658), (64, 30895), (71, 30958), (75, 31018), (81, 31057), (86, 31102), (88, 31108), (90, 31150),

Gene: Bern_41 Start: 31642, Stop: 32331, Start Num: 31
Candidate Starts for Bern_41:
(Start: 31 @31642 has 73 MA's), (33, 31672), (42, 31774), (44, 31795), (51, 31861), (64, 32032), (67, 32047), (71, 32095), (75, 32155), (81, 32194), (86, 32239), (88, 32245), (90, 32287),

Gene: Biglebops_75 Start: 54784, Stop: 55485, Start Num: 30
Candidate Starts for Biglebops_75:
(Start: 30 @54784 has 11 MA's), (37, 54871), (44, 54934), (51, 55000), (52, 55009), (71, 55234), (73, 55285), (76, 55297), (78, 55321), (86, 55378), (92, 55453),

Gene: Bipper_111 Start: 66961, Stop: 67743, Start Num: 28
Candidate Starts for Bipper_111:
(Start: 28 @66961 has 24 MA's), (29, 66970), (37, 67069), (39, 67075), (66, 67363), (67, 67366), (69, 67402), (70, 67408), (72, 67432), (75, 67471), (76, 67474), (78, 67498), (80, 67507), (84, 67537), (87, 67558), (96, 67690),

Gene: Blizzard_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for Blizzard_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: BloominB_43 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for BloominB_43:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Bobquesha_89 Start: 53116, Stop: 53823, Start Num: 31
Candidate Starts for Bobquesha_89:
(5, 52819), (6, 52828), (7, 52852), (9, 52885), (10, 52903), (11, 52960), (Start: 18 @53026 has 8 MA's), (Start: 31 @53116 has 73 MA's), (40, 53221), (51, 53335), (58, 53407), (68, 53542), (70, 53563), (73, 53620), (74, 53623), (89, 53731),

Gene: Boiiii_39 Start: 31382, Stop: 32071, Start Num: 31
Candidate Starts for Boiiii_39:
(22, 31313), (23, 31316), (26, 31346), (Start: 31 @31382 has 73 MA's), (32, 31397), (33, 31412), (38, 31481), (42, 31514), (44, 31535), (64, 31772), (71, 31835), (75, 31895), (81, 31934), (86, 31979), (88, 31985), (90, 32027), (91, 32039),

Gene: BoostSeason_42 Start: 32103, Stop: 32801, Start Num: 31
Candidate Starts for BoostSeason_42:
(Start: 24 @32055 has 4 MA's), (25, 32064), (Start: 31 @32103 has 73 MA's), (37, 32187), (41, 32208), (42, 32229), (44, 32250), (51, 32316), (64, 32487), (70, 32544), (71, 32550), (75, 32610), (78, 32637), (81, 32649), (86, 32694), (88, 32700), (90, 32742),

Gene: CaseJules_40 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for CaseJules_40:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: Chancellor_92 Start: 55691, Stop: 56398, Start Num: 31
Candidate Starts for Chancellor_92:
(Start: 18 @55601 has 8 MA's), (Start: 31 @55691 has 73 MA's), (40, 55796), (50, 55907), (51, 55910), (58, 55982), (68, 56117), (70, 56138), (73, 56195), (89, 56306),

Gene: CheetoDust_38 Start: 30553, Stop: 31242, Start Num: 31
Candidate Starts for CheetoDust_38:
(Start: 31 @30553 has 73 MA's), (32, 30568), (33, 30583), (42, 30685), (44, 30706), (64, 30943), (71, 31006), (75, 31066), (81, 31105), (86, 31150), (88, 31156), (90, 31198),

Gene: Cheetobro_90 Start: 55247, Stop: 55954, Start Num: 31
Candidate Starts for Cheetobro_90:
(2, 54764), (3, 54827), (4, 54905), (14, 55103), (Start: 31 @55247 has 73 MA's), (40, 55352), (50, 55463), (51, 55466), (58, 55538), (68, 55673), (70, 55694), (73, 55751), (89, 55862),

Gene: Cracklewink_111 Start: 66196, Stop: 66897, Start Num: 28
Candidate Starts for Cracklewink_111:
(Start: 28 @66196 has 24 MA's), (29, 66205), (37, 66304), (39, 66310), (66, 66598), (67, 66601), (69, 66637), (70, 66643), (71, 66649), (72, 66667), (75, 66706), (76, 66709), (78, 66733), (80, 66742), (84, 66772), (87, 66793),

Gene: CrimD_39 Start: 31313, Stop: 31999, Start Num: 31
Candidate Starts for CrimD_39:
(Start: 31 @31313 has 73 MA's), (33, 31343), (44, 31466), (59, 31628), (64, 31703), (70, 31760), (71, 31766), (75, 31826), (81, 31865), (86, 31910), (90, 31958),

Gene: Daegal_46 Start: 34740, Stop: 34009, Start Num: 24
Candidate Starts for Daegal_46:

(Start: 24 @34740 has 4 MA's), (Start: 28 @34710 has 24 MA's), (36, 34626), (55, 34443), (64, 34308), (77, 34179), (78, 34158), (79, 34155),

Gene: DanSyl44_95 Start: 57077, Stop: 57784, Start Num: 31
Candidate Starts for DanSyl44_95:
(Start: 18 @56987 has 8 MA's), (Start: 31 @57077 has 73 MA's), (40, 57182), (51, 57296), (58, 57368), (68, 57503), (70, 57524), (73, 57581), (89, 57692),

Gene: DarthP_92 Start: 59564, Stop: 60271, Start Num: 31
Candidate Starts for DarthP_92:
(Start: 31 @59564 has 73 MA's), (44, 59717), (47, 59756), (55, 59819), (56, 59822), (71, 60017), (76, 60080), (78, 60104), (82, 60128), (86, 60161), (88, 60167), (90, 60209),

Gene: Deby_39 Start: 31314, Stop: 32003, Start Num: 31
Candidate Starts for Deby_39:
(Start: 31 @31314 has 73 MA's), (32, 31329), (33, 31344), (38, 31413), (42, 31446), (44, 31467), (64, 31704), (71, 31767), (75, 31827), (81, 31866), (86, 31911), (88, 31917), (90, 31959),

Gene: DeepSoil15_44 Start: 34156, Stop: 33425, Start Num: 24
Candidate Starts for DeepSoil15_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Dewey_42 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Dewey_42:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: DismalFunk_41 Start: 32195, Stop: 32893, Start Num: 31
Candidate Starts for DismalFunk_41:
(20, 32114), (Start: 24 @32147 has 4 MA's), (25, 32156), (Start: 31 @32195 has 73 MA's), (37, 32279), (41, 32300), (42, 32321), (44, 32342), (51, 32408), (52, 32417), (64, 32579), (70, 32636), (71, 32642), (75, 32702), (78, 32729), (81, 32741), (86, 32786), (88, 32792), (90, 32834),

Gene: DismalStressor_41 Start: 32195, Stop: 32893, Start Num: 31
Candidate Starts for DismalStressor_41:
(20, 32114), (Start: 24 @32147 has 4 MA's), (25, 32156), (Start: 31 @32195 has 73 MA's), (37, 32279), (41, 32300), (42, 32321), (44, 32342), (51, 32408), (52, 32417), (64, 32579), (70, 32636), (71, 32642), (75, 32702), (78, 32729), (81, 32741), (86, 32786), (88, 32792), (90, 32834),

Gene: Doughnut_42 Start: 32090, Stop: 32788, Start Num: 31
Candidate Starts for Doughnut_42:
(Start: 24 @32042 has 4 MA's), (25, 32051), (Start: 31 @32090 has 73 MA's), (37, 32174), (41, 32195), (42, 32216), (44, 32237), (51, 32303), (52, 32312), (57, 32372), (64, 32474), (70, 32531), (71, 32537), (75, 32597), (78, 32624), (81, 32636), (86, 32681), (88, 32687), (90, 32729),

Gene: Durfee_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for Durfee_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: Efra2_42 Start: 31156, Stop: 31845, Start Num: 31

Candidate Starts for Efra2_42:
(Start: 31 @31156 has 73 MA's), (32, 31171), (33, 31186), (42, 31288), (44, 31309), (64, 31546), (70, 31603), (71, 31609), (81, 31708), (86, 31753), (88, 31759), (90, 31801),

Gene: Ein37_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Ein37_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Ellie_93 Start: 59948, Stop: 60637, Start Num: 31
Candidate Starts for Ellie_93:
(Start: 31 @59948 has 73 MA's), (33, 59978), (42, 60080), (44, 60101), (64, 60338), (71, 60401), (78, 60488), (82, 60512), (86, 60545), (88, 60551), (90, 60593),

Gene: Enkosi_77 Start: 57382, Stop: 58083, Start Num: 30
Candidate Starts for Enkosi_77:
(Start: 30 @57382 has 11 MA's), (37, 57469), (44, 57532), (51, 57598), (52, 57607), (71, 57832), (73, 57883), (76, 57895), (78, 57919), (86, 57976), (92, 58051),

Gene: Eponine_94 Start: 56581, Stop: 57378, Start Num: 18
Candidate Starts for Eponine_94:
(Start: 18 @56581 has 8 MA's), (Start: 31 @56671 has 73 MA's), (40, 56776), (51, 56890), (58, 56962), (68, 57097), (70, 57118), (73, 57175), (89, 57286),

Gene: Evanesce_43 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Evanesce_43:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Faiyaz_102 Start: 63140, Stop: 63934, Start Num: 21
Candidate Starts for Faiyaz_102:
(13, 63068), (16, 63110), (19, 63128), (Start: 21 @63140 has 2 MA's), (Start: 28 @63194 has 24 MA's), (29, 63203), (34, 63254), (35, 63266), (37, 63302), (44, 63377), (46, 63398), (49, 63440), (55, 63485), (56, 63488), (61, 63560), (63, 63572), (64, 63620), (67, 63635), (70, 63677), (72, 63701), (76, 63743), (78, 63767), (80, 63776), (83, 63797), (84, 63806), (94, 63911), (95, 63914),

Gene: Fefferhead_95 Start: 59369, Stop: 60058, Start Num: 31
Candidate Starts for Fefferhead_95:
(Start: 31 @59369 has 73 MA's), (33, 59399), (42, 59501), (44, 59522), (64, 59759), (71, 59822), (78, 59909), (82, 59933), (86, 59966), (88, 59972), (90, 60014),

Gene: Findley_41 Start: 32188, Stop: 32886, Start Num: 31
Candidate Starts for Findley_41:
(20, 32107), (Start: 24 @32140 has 4 MA's), (25, 32149), (Start: 31 @32188 has 73 MA's), (37, 32272), (41, 32293), (42, 32314), (44, 32335), (51, 32401), (52, 32410), (64, 32572), (70, 32629), (71, 32635), (75, 32695), (78, 32722), (81, 32734), (86, 32779), (88, 32785), (90, 32827),

Gene: Fionnbharth_92 Start: 56069, Stop: 56776, Start Num: 31
Candidate Starts for Fionnbharth_92:
(Start: 18 @55979 has 8 MA's), (Start: 31 @56069 has 73 MA's), (40, 56174), (51, 56288), (58, 56360), (68, 56495), (70, 56516), (73, 56573), (89, 56684),

Gene: Forge_42 Start: 34126, Stop: 33425, Start Num: 28

Candidate Starts for Forge_42:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Gancho_43 Start: 33879, Stop: 33148, Start Num: 24
Candidate Starts for Gancho_43:
(Start: 24 @33879 has 4 MA's), (Start: 28 @33849 has 24 MA's), (36, 33765), (55, 33582), (64, 33447), (77, 33318), (78, 33297), (79, 33294),

Gene: Ganymede_40 Start: 31369, Stop: 32058, Start Num: 31
Candidate Starts for Ganymede_40:
(Start: 31 @31369 has 73 MA's), (32, 31384), (33, 31399), (38, 31468), (42, 31501), (44, 31522), (64, 31759), (71, 31822), (75, 31882), (81, 31921), (86, 31966), (88, 31972), (90, 32014),

Gene: Giles_42 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Giles_42:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Gravaillia_43 Start: 34169, Stop: 33468, Start Num: 28
Candidate Starts for Gravaillia_43:
(Start: 28 @34169 has 24 MA's), (36, 34085), (48, 33956), (64, 33767), (73, 33653), (77, 33638), (78, 33617), (79, 33614),

Gene: Guanica15_42 Start: 31112, Stop: 31801, Start Num: 31
Candidate Starts for Guanica15_42:
(Start: 31 @31112 has 73 MA's), (32, 31127), (33, 31142), (42, 31244), (44, 31265), (64, 31502), (70, 31559), (71, 31565), (81, 31664), (86, 31709), (90, 31757),

Gene: HH92_43 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for HH92_43:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Hadrien_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Hadrien_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Hail_42 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Hail_42:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Hammy_92 Start: 59794, Stop: 60492, Start Num: 30
Candidate Starts for Hammy_92:
(Start: 30 @59794 has 11 MA's), (37, 59881), (51, 60010), (62, 60130), (71, 60244), (75, 60304), (78, 60331), (83, 60361), (86, 60388),

Gene: Hilltopfarm_104 Start: 63963, Stop: 64757, Start Num: 21
Candidate Starts for Hilltopfarm_104:
(13, 63891), (16, 63933), (19, 63951), (Start: 21 @63963 has 2 MA's), (Start: 28 @64017 has 24 MA's), (29, 64026), (34, 64077), (35, 64089), (37, 64125), (44, 64200), (46, 64221), (49, 64263), (55, 64308),

(56, 64311), (61, 64383), (63, 64395), (64, 64443), (67, 64458), (70, 64500), (72, 64524), (76, 64566), (78, 64590), (80, 64599), (83, 64620), (84, 64629), (94, 64734), (95, 64737),

Gene: Hurricane_95 Start: 59141, Stop: 59839, Start Num: 31
Candidate Starts for Hurricane_95:
(Start: 31 @59141 has 73 MA's), (33, 59168), (45, 59297), (51, 59357), (64, 59528), (71, 59591), (75, 59651), (78, 59678), (81, 59690), (85, 59732), (88, 59741), (93, 59816),

Gene: Hyperbowlee_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for Hyperbowlee_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: JF1_92 Start: 55993, Stop: 56691, Start Num: 31
Candidate Starts for JF1_92:
(Start: 18 @55903 has 8 MA's), (Start: 31 @55993 has 73 MA's), (40, 56098), (58, 56284), (68, 56410), (70, 56431), (73, 56488), (89, 56599),

Gene: Juliette_94 Start: 56074, Stop: 56772, Start Num: 31
Candidate Starts for Juliette_94:
(Start: 31 @56074 has 73 MA's), (40, 56179), (58, 56365), (68, 56491), (70, 56512), (73, 56569), (89, 56680),

Gene: Keshu_98 Start: 59072, Stop: 59770, Start Num: 31
Candidate Starts for Keshu_98:
(Start: 31 @59072 has 73 MA's), (33, 59099), (43, 59213), (45, 59228), (59, 59384), (64, 59459), (73, 59573), (78, 59609), (81, 59621), (85, 59663), (88, 59672),

Gene: Kheparia_42 Start: 31642, Stop: 32331, Start Num: 31
Candidate Starts for Kheparia_42:
(Start: 31 @31642 has 73 MA's), (33, 31672), (42, 31774), (44, 31795), (51, 31861), (64, 32032), (67, 32047), (71, 32095), (75, 32155), (81, 32194), (86, 32239), (88, 32245), (90, 32287),

Gene: Kinbote_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Kinbote_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Kraw_92 Start: 55800, Stop: 56507, Start Num: 31
Candidate Starts for Kraw_92:
(1, 55245), (6, 55512), (7, 55536), (9, 55569), (10, 55587), (11, 55644), (Start: 18 @55710 has 8 MA's), (Start: 31 @55800 has 73 MA's), (40, 55905), (58, 56091), (68, 56226), (70, 56247), (73, 56304), (89, 56415),

Gene: Krueger_43 Start: 31392, Stop: 32093, Start Num: 31
Candidate Starts for Krueger_43:
(Start: 31 @31392 has 73 MA's), (33, 31422), (42, 31524), (44, 31545), (59, 31707), (71, 31845), (75, 31905), (78, 31932), (81, 31944), (86, 31989), (90, 32037),

Gene: LastHope_40 Start: 30142, Stop: 30828, Start Num: 31
Candidate Starts for LastHope_40:

(Start: 31 @30142 has 73 MA's), (33, 30169), (42, 30271), (44, 30292), (59, 30454), (64, 30529), (70, 30586), (71, 30592), (75, 30652), (86, 30736), (88, 30742), (90, 30784),

Gene: Lavahound_93 Start: 60369, Stop: 61058, Start Num: 31
Candidate Starts for Lavahound_93:
(Start: 31 @60369 has 73 MA's), (33, 60399), (42, 60501), (44, 60522), (64, 60759), (71, 60822), (78, 60909), (82, 60933), (86, 60966), (88, 60972), (90, 61014),

Gene: Lea83_95 Start: 58899, Stop: 59597, Start Num: 31
Candidate Starts for Lea83_95:
(Start: 31 @58899 has 73 MA's), (33, 58926), (43, 59040), (45, 59055), (51, 59115), (64, 59286), (71, 59349), (75, 59409), (78, 59436), (81, 59448), (85, 59490), (88, 59499), (93, 59574),

Gene: Lebo14_91 Start: 56133, Stop: 56930, Start Num: 18
Candidate Starts for Lebo14_91:
(Start: 18 @56133 has 8 MA's), (Start: 31 @56223 has 73 MA's), (40, 56328), (51, 56442), (58, 56514), (68, 56649), (70, 56670), (73, 56727), (89, 56838),

Gene: LilHazelnut_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for LilHazelnut_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: LilPharaoh_76 Start: 54497, Stop: 55198, Start Num: 30
Candidate Starts for LilPharaoh_76:
(Start: 30 @54497 has 11 MA's), (37, 54584), (44, 54647), (51, 54713), (52, 54722), (71, 54947), (73, 54998), (76, 55010), (78, 55034), (86, 55091), (92, 55166),

Gene: Luke_44 Start: 34081, Stop: 33380, Start Num: 28
Candidate Starts for Luke_44:
(Start: 24 @34111 has 4 MA's), (Start: 28 @34081 has 24 MA's), (36, 33997), (64, 33679), (77, 33550), (78, 33529), (79, 33526),

Gene: Luna22_42 Start: 34110, Stop: 33463, Start Num: 28
Candidate Starts for Luna22_42:
(Start: 24 @34140 has 4 MA's), (Start: 28 @34110 has 24 MA's), (36, 34026), (64, 33708), (77, 33579), (78, 33558), (79, 33555),

Gene: MacnCheese_96 Start: 59356, Stop: 60054, Start Num: 30
Candidate Starts for MacnCheese_96:
(Start: 30 @59356 has 11 MA's), (33, 59383), (36, 59425), (44, 59506), (64, 59743), (67, 59758), (71, 59806), (76, 59869), (78, 59893), (90, 59998), (93, 60031),

Gene: Malthus_93 Start: 55794, Stop: 56501, Start Num: 31
Candidate Starts for Malthus_93:
(1, 55239), (6, 55506), (7, 55530), (9, 55563), (10, 55581), (11, 55638), (Start: 18 @55704 has 8 MA's), (Start: 31 @55794 has 73 MA's), (40, 55899), (58, 56085), (68, 56220), (70, 56241), (73, 56298), (89, 56409),

Gene: Marcoliusprime_41 Start: 32195, Stop: 32893, Start Num: 31
Candidate Starts for Marcoliusprime_41:
(20, 32114), (Start: 24 @32147 has 4 MA's), (25, 32156), (Start: 31 @32195 has 73 MA's), (37, 32279), (41, 32300), (42, 32321), (44, 32342), (51, 32408), (52, 32417), (64, 32579), (70, 32636), (71, 32642),

(75, 32702), (78, 32729), (81, 32741), (86, 32786), (88, 32792), (90, 32834),

Gene: Mdavu_76 Start: 54773, Stop: 55474, Start Num: 30
Candidate Starts for Mdavu_76:
(Start: 30 @54773 has 11 MA's), (37, 54860), (44, 54923), (51, 54989), (52, 54998), (71, 55223), (73, 55274), (76, 55286), (78, 55310), (86, 55367), (92, 55442),

Gene: Megsy_40 Start: 31313, Stop: 31999, Start Num: 31
Candidate Starts for Megsy_40:
(Start: 31 @31313 has 73 MA's), (33, 31343), (44, 31466), (59, 31628), (64, 31703), (67, 31718), (70, 31760), (71, 31766), (75, 31826), (81, 31865), (86, 31910), (90, 31958),

Gene: Milly_41 Start: 32168, Stop: 32866, Start Num: 31
Candidate Starts for Milly_41:
(20, 32087), (Start: 24 @32120 has 4 MA's), (25, 32129), (Start: 31 @32168 has 73 MA's), (37, 32252), (41, 32273), (42, 32294), (44, 32315), (51, 32381), (52, 32390), (64, 32552), (70, 32609), (71, 32615), (75, 32675), (78, 32702), (81, 32714), (86, 32759), (88, 32765), (90, 32807),

Gene: MissDaisy_86 Start: 52298, Stop: 53095, Start Num: 18
Candidate Starts for MissDaisy_86:
(5, 52091), (6, 52100), (7, 52124), (8, 52130), (9, 52157), (10, 52175), (11, 52232), (Start: 18 @52298 has 8 MA's), (Start: 31 @52388 has 73 MA's), (40, 52493), (51, 52607), (58, 52679), (68, 52814), (73, 52892), (74, 52895), (89, 53003),

Gene: Mitti_92 Start: 55889, Stop: 56596, Start Num: 31
Candidate Starts for Mitti_92:
(2, 55406), (3, 55469), (4, 55547), (14, 55745), (Start: 31 @55889 has 73 MA's), (40, 55994), (50, 56105), (51, 56108), (58, 56180), (68, 56315), (70, 56336), (73, 56393), (89, 56504),

Gene: Mufasa_42 Start: 32093, Stop: 32791, Start Num: 31
Candidate Starts for Mufasa_42:
(Start: 24 @32045 has 4 MA's), (25, 32054), (Start: 31 @32093 has 73 MA's), (37, 32177), (41, 32198), (42, 32219), (44, 32240), (51, 32306), (64, 32477), (70, 32534), (71, 32540), (75, 32600), (78, 32627), (81, 32639), (86, 32684), (88, 32690), (90, 32732),

Gene: Nergal_78 Start: 52735, Stop: 53433, Start Num: 31
Candidate Starts for Nergal_78:
(Start: 31 @52735 has 73 MA's), (44, 52885), (55, 52987), (64, 53122), (71, 53185), (76, 53248), (78, 53272), (81, 53284), (86, 53329), (90, 53377),

Gene: Nikao_78 Start: 57382, Stop: 58083, Start Num: 30
Candidate Starts for Nikao_78:
(Start: 30 @57382 has 11 MA's), (37, 57469), (44, 57532), (51, 57598), (52, 57607), (71, 57832), (73, 57883), (76, 57895), (78, 57919), (86, 57976), (92, 58051),

Gene: Nolwazi_94 Start: 56026, Stop: 56733, Start Num: 31
Candidate Starts for Nolwazi_94:
(2, 55543), (3, 55606), (4, 55684), (14, 55882), (Start: 31 @56026 has 73 MA's), (40, 56131), (51, 56245), (58, 56317), (68, 56452), (70, 56473), (73, 56530), (89, 56641),

Gene: NovoPizza_46 Start: 36084, Stop: 35350, Start Num: 24
Candidate Starts for NovoPizza_46:

(Start: 24 @36084 has 4 MA's), (27, 36063), (Start: 28 @36054 has 24 MA's), (34, 35994), (54, 35790), (55, 35781), (64, 35646), (65, 35643), (72, 35568), (78, 35499), (79, 35496), (89, 35424), (91, 35382),

Gene: Nutello_75 Start: 54769, Stop: 55470, Start Num: 30
Candidate Starts for Nutello_75:
(Start: 30 @54769 has 11 MA's), (37, 54856), (44, 54919), (51, 54985), (52, 54994), (71, 55219), (73, 55270), (76, 55282), (78, 55306), (86, 55363), (92, 55438),

Gene: OBUpride_44 Start: 34120, Stop: 33419, Start Num: 28
Candidate Starts for OBUpride_44:
(Start: 24 @34150 has 4 MA's), (Start: 28 @34120 has 24 MA's), (36, 34036), (64, 33718), (77, 33589), (78, 33568), (79, 33565),

Gene: OmniCritical_92 Start: 55877, Stop: 56674, Start Num: 18
Candidate Starts for OmniCritical_92:
(Start: 18 @55877 has 8 MA's), (Start: 31 @55967 has 73 MA's), (40, 56072), (51, 56186), (58, 56258), (68, 56393), (70, 56414), (73, 56471), (89, 56582),

Gene: Padfoot_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for Padfoot_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: Patt_85 Start: 52445, Stop: 53242, Start Num: 18
Candidate Starts for Patt_85:
(6, 52247), (7, 52271), (9, 52304), (10, 52322), (11, 52379), (Start: 18 @52445 has 8 MA's), (Start: 31 @52535 has 73 MA's), (40, 52640), (51, 52754), (58, 52826), (68, 52961), (70, 52982), (73, 53039), (74, 53042), (89, 53150),

Gene: Pharb_93 Start: 58357, Stop: 59055, Start Num: 31
Candidate Starts for Pharb_93:
(Start: 31 @58357 has 73 MA's), (33, 58384), (43, 58498), (45, 58513), (64, 58744), (71, 58807), (75, 58867), (78, 58894), (81, 58906), (88, 58957),

Gene: Piatt_39 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for Piatt_39:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: Pisa1_38 Start: 31390, Stop: 32079, Start Num: 31
Candidate Starts for Pisa1_38:
(Start: 31 @31390 has 73 MA's), (33, 31420), (42, 31522), (44, 31543), (53, 31627), (64, 31780), (67, 31795), (71, 31843), (75, 31903), (78, 31930), (81, 31942), (86, 31987), (88, 31993), (89, 32005), (90, 32035),

Gene: Pixie_96 Start: 58971, Stop: 59669, Start Num: 31
Candidate Starts for Pixie_96:
(Start: 31 @58971 has 73 MA's), (33, 58998), (43, 59112), (45, 59127), (51, 59187), (64, 59358), (71, 59421), (75, 59481), (78, 59508), (81, 59520), (85, 59562), (88, 59571), (93, 59646),

Gene: Qhanda_92 Start: 55247, Stop: 55954, Start Num: 31

Candidate Starts for Qhanda_92:
(2, 54764), (3, 54827), (4, 54905), (14, 55103), (Start: 31 @55247 has 73 MA's), (40, 55352), (50, 55463), (51, 55466), (58, 55538), (68, 55673), (70, 55694), (73, 55751), (89, 55862),

Gene: QuincyRose_38 Start: 31369, Stop: 32058, Start Num: 31
Candidate Starts for QuincyRose_38:
(Start: 31 @31369 has 73 MA's), (32, 31384), (33, 31399), (38, 31468), (42, 31501), (44, 31522), (64, 31759), (71, 31822), (75, 31882), (81, 31921), (86, 31966), (88, 31972), (90, 32014),

Gene: Reptar3000_86 Start: 52435, Stop: 53232, Start Num: 18
Candidate Starts for Reptar3000_86:
(6, 52237), (7, 52261), (9, 52294), (10, 52312), (11, 52369), (Start: 18 @52435 has 8 MA's), (Start: 31 @52525 has 73 MA's), (40, 52630), (51, 52744), (58, 52816), (68, 52951), (70, 52972), (73, 53029), (74, 53032), (89, 53140),

Gene: Ruthiejr_94 Start: 55861, Stop: 56559, Start Num: 31
Candidate Starts for Ruthiejr_94:
(Start: 31 @55861 has 73 MA's), (40, 55966), (58, 56152), (68, 56278), (70, 56299), (73, 56356), (89, 56467),

Gene: SamScheppers_91 Start: 56255, Stop: 57052, Start Num: 18
Candidate Starts for SamScheppers_91:
(Start: 18 @56255 has 8 MA's), (Start: 31 @56345 has 73 MA's), (40, 56450), (50, 56561), (51, 56564), (58, 56636), (68, 56771), (70, 56792), (73, 56849), (89, 56960),

Gene: SgtBeansprout_76 Start: 54769, Stop: 55470, Start Num: 30
Candidate Starts for SgtBeansprout_76:
(Start: 30 @54769 has 11 MA's), (37, 54856), (44, 54919), (51, 54985), (52, 54994), (71, 55219), (73, 55270), (76, 55282), (78, 55306), (86, 55363), (92, 55438),

Gene: Shadow1_42 Start: 31293, Stop: 31994, Start Num: 31
Candidate Starts for Shadow1_42:
(Start: 31 @31293 has 73 MA's), (33, 31323), (42, 31425), (44, 31446), (59, 31608), (60, 31620), (64, 31683), (71, 31746), (75, 31806), (78, 31833), (81, 31845), (86, 31890), (90, 31938),

Gene: ShedlockHolmes_97 Start: 58904, Stop: 59602, Start Num: 31
Candidate Starts for ShedlockHolmes_97:
(Start: 31 @58904 has 73 MA's), (33, 58931), (43, 59045), (45, 59060), (51, 59120), (64, 59291), (71, 59354), (75, 59414), (78, 59441), (81, 59453), (85, 59495), (88, 59504), (93, 59579),

Gene: ShiaSurprise_40 Start: 31380, Stop: 32069, Start Num: 31
Candidate Starts for ShiaSurprise_40:
(22, 31311), (23, 31314), (26, 31344), (Start: 31 @31380 has 73 MA's), (32, 31395), (33, 31410), (38, 31479), (42, 31512), (44, 31533), (64, 31770), (71, 31833), (75, 31893), (81, 31932), (86, 31977), (88, 31983), (90, 32025), (91, 32037),

Gene: Slarp_90 Start: 55250, Stop: 55957, Start Num: 31
Candidate Starts for Slarp_90:
(2, 54767), (3, 54830), (4, 54908), (14, 55106), (Start: 31 @55250 has 73 MA's), (40, 55355), (50, 55466), (51, 55469), (58, 55541), (68, 55676), (70, 55697), (73, 55754), (89, 55865),

Gene: Stinson_40 Start: 31579, Stop: 32265, Start Num: 31
Candidate Starts for Stinson_40:

(Start: 31 @31579 has 73 MA's), (33, 31609), (44, 31732), (59, 31894), (64, 31969), (67, 31984), (70, 32026), (71, 32032), (75, 32092), (81, 32131), (86, 32176), (90, 32224),

Gene: Strobilo_41 Start: 32169, Stop: 32867, Start Num: 31
Candidate Starts for Strobilo_41:
(20, 32088), (Start: 24 @32121 has 4 MA's), (25, 32130), (Start: 31 @32169 has 73 MA's), (37, 32253), (41, 32274), (42, 32295), (44, 32316), (51, 32382), (52, 32391), (64, 32553), (70, 32610), (71, 32616), (75, 32676), (78, 32703), (81, 32715), (86, 32760), (88, 32766), (90, 32808),

Gene: Sulley_39 Start: 31313, Stop: 32002, Start Num: 31
Candidate Starts for Sulley_39:
(Start: 31 @31313 has 73 MA's), (32, 31328), (33, 31343), (38, 31412), (42, 31445), (44, 31466), (64, 31703), (71, 31766), (75, 31826), (81, 31865), (86, 31910), (88, 31916), (90, 31958),

Gene: Sunflower1121_42 Start: 31388, Stop: 32089, Start Num: 31
Candidate Starts for Sunflower1121_42:
(Start: 31 @31388 has 73 MA's), (33, 31418), (42, 31520), (44, 31541), (59, 31703), (60, 31715), (64, 31778), (71, 31841), (75, 31901), (78, 31928), (81, 31940), (86, 31985), (90, 32033),

Gene: Syra333_43 Start: 31311, Stop: 32012, Start Num: 31
Candidate Starts for Syra333_43:
(Start: 31 @31311 has 73 MA's), (33, 31341), (42, 31443), (44, 31464), (59, 31626), (60, 31638), (64, 31701), (71, 31764), (75, 31824), (78, 31851), (81, 31863), (86, 31908), (90, 31956),

Gene: TBond007_93 Start: 58969, Stop: 59667, Start Num: 31
Candidate Starts for TBond007_93:
(Start: 31 @58969 has 73 MA's), (33, 58996), (43, 59110), (45, 59125), (51, 59185), (64, 59356), (71, 59419), (75, 59479), (78, 59506), (81, 59518), (85, 59560), (88, 59569), (93, 59644),

Gene: TaiwanKao_41 Start: 31310, Stop: 31996, Start Num: 31
Candidate Starts for TaiwanKao_41:
(Start: 31 @31310 has 73 MA's), (33, 31340), (44, 31463), (59, 31625), (64, 31700), (67, 31715), (70, 31757), (71, 31763), (75, 31823), (81, 31862), (86, 31907), (90, 31955),

Gene: Taquito_92 Start: 56224, Stop: 57021, Start Num: 18
Candidate Starts for Taquito_92:
(6, 56026), (7, 56050), (9, 56083), (10, 56101), (11, 56158), (Start: 18 @56224 has 8 MA's), (Start: 31 @56314 has 73 MA's), (40, 56419), (51, 56533), (58, 56605), (68, 56740), (73, 56818), (89, 56929),

Gene: Teejan_77 Start: 57382, Stop: 58083, Start Num: 30
Candidate Starts for Teejan_77:
(Start: 30 @57382 has 11 MA's), (37, 57469), (44, 57532), (51, 57598), (52, 57607), (71, 57832), (73, 57883), (76, 57895), (78, 57919), (86, 57976), (92, 58051),

Gene: Tigress9_43 Start: 31392, Stop: 32093, Start Num: 31
Candidate Starts for Tigress9_43:
(Start: 31 @31392 has 73 MA's), (33, 31422), (42, 31524), (44, 31545), (59, 31707), (71, 31845), (75, 31905), (78, 31932), (81, 31944), (86, 31989), (90, 32037),

Gene: TingHuaYa_39 Start: 29921, Stop: 30610, Start Num: 31
Candidate Starts for TingHuaYa_39:
(Start: 31 @29921 has 73 MA's), (33, 29951), (44, 30074), (59, 30236), (64, 30311), (70, 30368), (71, 30374), (75, 30434), (81, 30473), (86, 30518), (88, 30524), (90, 30566),

Gene: Tiri_40 Start: 31359, Stop: 32048, Start Num: 31
Candidate Starts for Tiri_40:
(Start: 31 @31359 has 73 MA's), (32, 31374), (33, 31389), (42, 31491), (44, 31512), (64, 31749), (71, 31812), (75, 31872), (81, 31911), (86, 31956), (88, 31962), (90, 32004),

Gene: Torres_78 Start: 57383, Stop: 58084, Start Num: 30
Candidate Starts for Torres_78:
(Start: 30 @57383 has 11 MA's), (37, 57470), (44, 57533), (51, 57599), (52, 57608), (71, 57833), (73, 57884), (76, 57896), (78, 57920), (86, 57977), (92, 58052),

Gene: Trice_75 Start: 54770, Stop: 55471, Start Num: 30
Candidate Starts for Trice_75:
(Start: 30 @54770 has 11 MA's), (37, 54857), (44, 54920), (51, 54986), (52, 54995), (71, 55220), (73, 55271), (76, 55283), (78, 55307), (86, 55364), (92, 55439),

Gene: Typha_101 Start: 63240, Stop: 63974, Start Num: 28
Candidate Starts for Typha_101:
(12, 63108), (15, 63129), (16, 63156), (17, 63162), (19, 63174), (Start: 28 @63240 has 24 MA's), (29, 63249), (34, 63297), (35, 63309), (37, 63345), (44, 63420), (46, 63441), (55, 63528), (61, 63603), (63, 63615), (67, 63678), (69, 63714), (72, 63744), (75, 63783), (76, 63786), (77, 63789), (78, 63810), (80, 63819), (84, 63849),

Gene: Ubuntu_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Ubuntu_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Webster2_44 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Webster2_44:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Wintermute_92 Start: 56049, Stop: 56747, Start Num: 31
Candidate Starts for Wintermute_92:
(1, 55494), (6, 55761), (7, 55785), (9, 55818), (10, 55836), (11, 55893), (Start: 18 @55959 has 8 MA's), (Start: 31 @56049 has 73 MA's), (40, 56154), (58, 56340), (68, 56466), (70, 56487), (73, 56544), (89, 56655),

Gene: Wishmaker_42 Start: 34126, Stop: 33425, Start Num: 28
Candidate Starts for Wishmaker_42:
(Start: 24 @34156 has 4 MA's), (Start: 28 @34126 has 24 MA's), (36, 34042), (64, 33724), (77, 33595), (78, 33574), (79, 33571),

Gene: Ximenita_44 Start: 31496, Stop: 32197, Start Num: 31
Candidate Starts for Ximenita_44:
(Start: 31 @31496 has 73 MA's), (33, 31526), (42, 31628), (44, 31649), (59, 31811), (60, 31823), (64, 31886), (71, 31949), (75, 32009), (78, 32036), (81, 32048), (86, 32093), (90, 32141),

Gene: Y10_88 Start: 55993, Stop: 56691, Start Num: 31
Candidate Starts for Y10_88:
(Start: 18 @55903 has 8 MA's), (Start: 31 @55993 has 73 MA's), (40, 56098), (58, 56284), (68, 56410), (70, 56431), (73, 56488), (89, 56599),

Gene: Y2_88 Start: 55993, Stop: 56691, Start Num: 31
Candidate Starts for Y2_88:
(Start: 18 @55903 has 8 MA's), (Start: 31 @55993 has 73 MA's), (40, 56098), (58, 56284), (68, 56410), (70, 56431), (73, 56488), (89, 56599),

Gene: YasnayaPolyana_91 Start: 55973, Stop: 56680, Start Num: 31
Candidate Starts for YasnayaPolyana_91:
(Start: 18 @55883 has 8 MA's), (Start: 31 @55973 has 73 MA's), (40, 56078), (51, 56192), (58, 56264), (68, 56399), (70, 56420), (73, 56477), (89, 56588),

Gene: Yunkel11_42 Start: 31111, Stop: 31800, Start Num: 31
Candidate Starts for Yunkel11_42:
(Start: 31 @31111 has 73 MA's), (32, 31126), (33, 31141), (42, 31243), (44, 31264), (64, 31501), (70, 31558), (71, 31564), (81, 31663), (86, 31708), (90, 31756),

Gene: ZoeJ_41 Start: 31857, Stop: 32555, Start Num: 31
Candidate Starts for ZoeJ_41:
(Start: 24 @31809 has 4 MA's), (25, 31818), (Start: 31 @31857 has 73 MA's), (37, 31941), (41, 31962), (42, 31983), (44, 32004), (51, 32070), (52, 32079), (57, 32139), (64, 32241), (70, 32298), (75, 32364), (78, 32391), (81, 32403), (86, 32448), (88, 32454), (90, 32496),