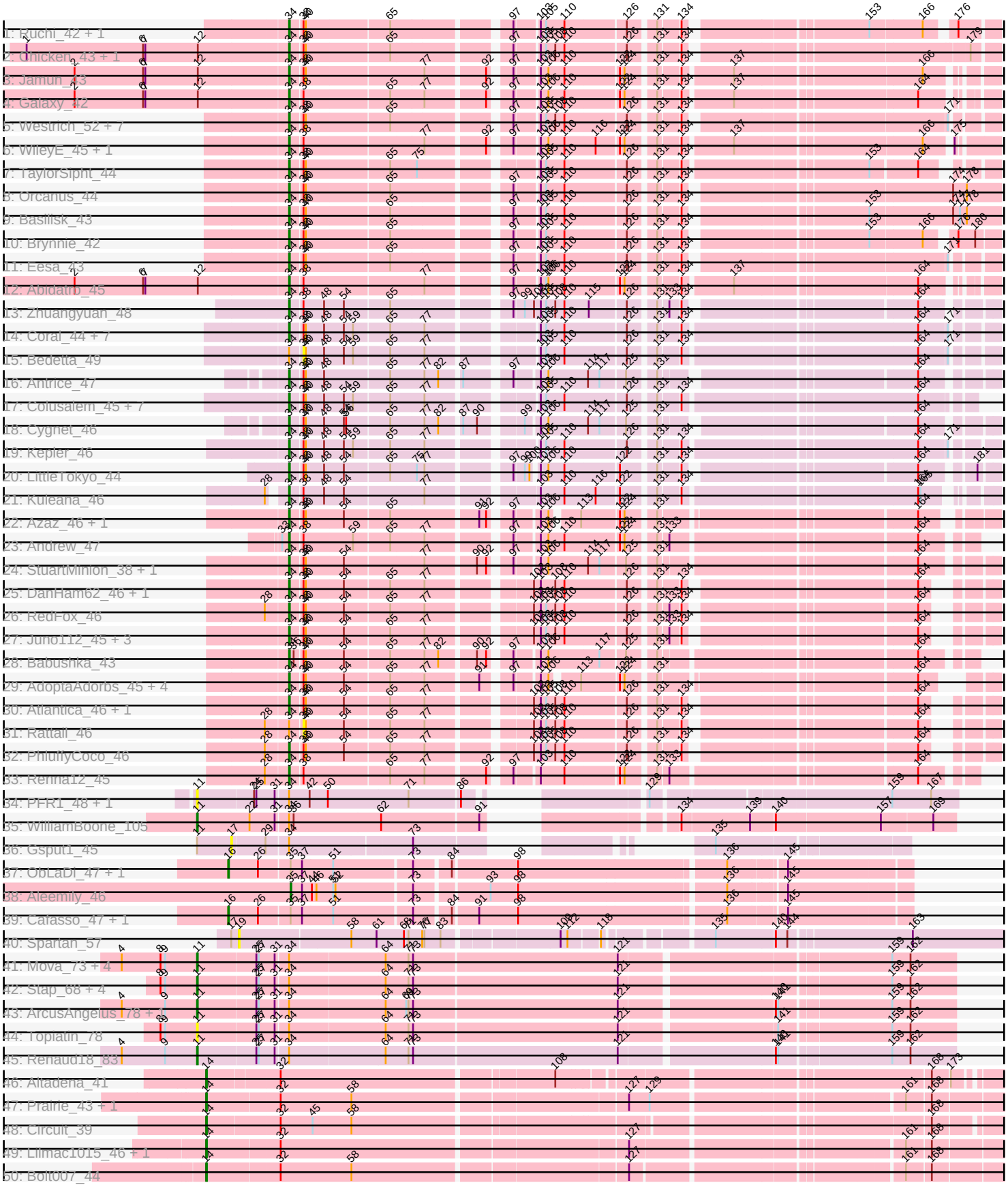
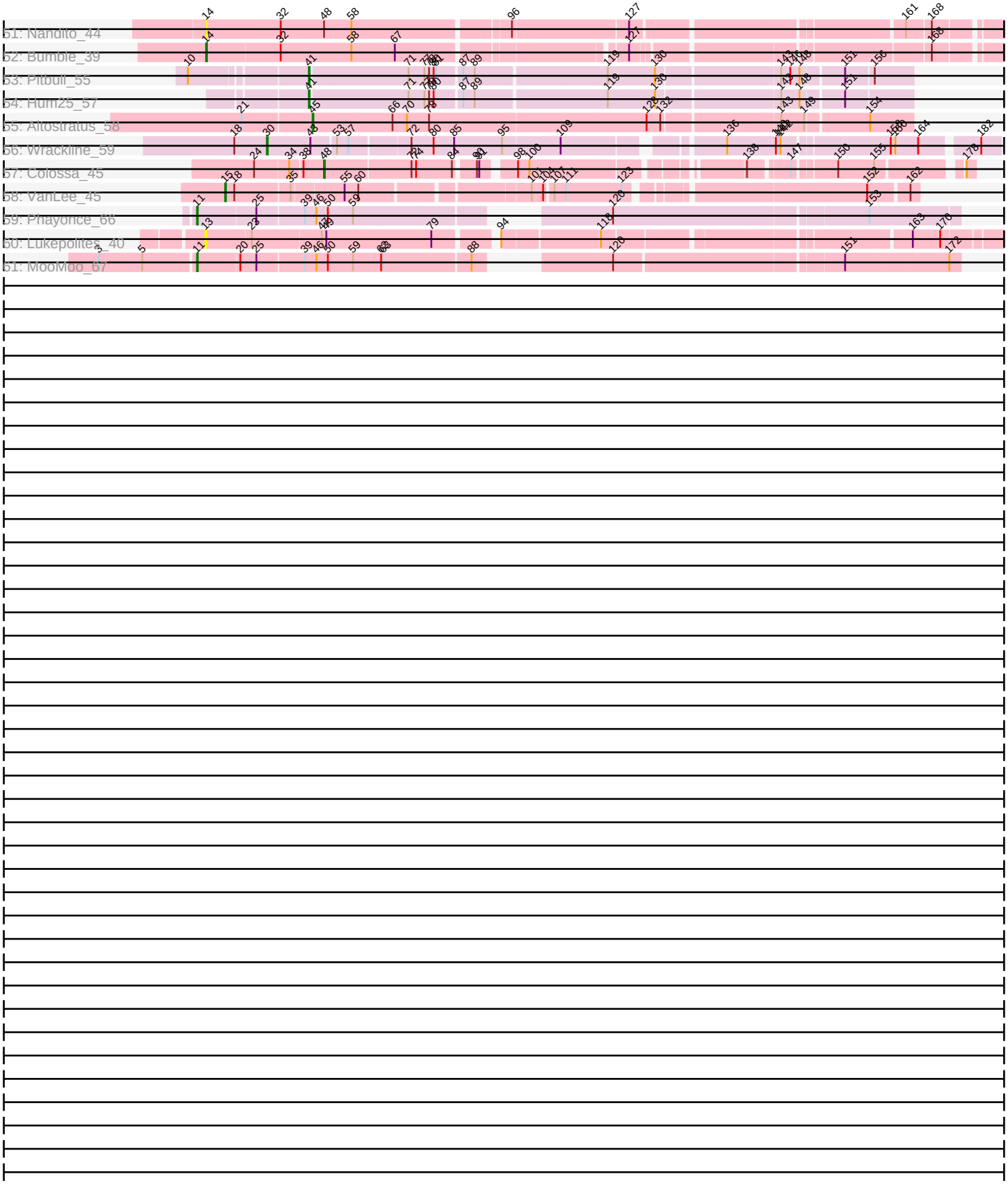
Pham 311404


1: Ruchi_42 + 1
2: Chicken_43 + 1
3: Jamun_43
4: Galaxy_42
5: Westrich_52 + 7
6: WileyE_45 + 1
7: TaylorSpht_44
8: Orcanus_44
9: Basilisk_43
10: Brynnie_42
11: Eesa_43
12: Abidatib_45
13: Zhuangyuan_48
14: Corai_44 + 7
15: Bedetta_49
16: Antrice_47
17: Colusalem_45 + 7
18: Cygnet_46
19: Kepler_46
20: LittleTokyo_44
21: Kuleana_46
22: Azaz_46 + 1
23: Andrew_47
24: StuartMinion_38 + 1
25: DanHam62_46 + 1
26: RedFox_46
27: Juno112_45 + 3
28: Babushka_43
29: AdoptaAdorbs_45 + 4
30: Atlantica_46 + 1
31: Rattail_46
32: PhunkyCoco_46
33: Renna12_45
34: PFR1_48 + 1
35: WilliamBoone_105
36: Gsput1_45
37: ObLaDi_47 + 1
38: Aleemily_46
39: Calasso_47 + 1
40: Spartan_57
41: Mova_73 + 4
42: Stap_68 + 4
43: ArcusAngelus_78 + 4
44: Toplatin_78
45: Renaud18_83
46: Altadena_41
47: Prairie_43 + 1
48: Circuit_39
49: Lilmac1015_46 + 1
50: Bolt007_44

Pham 311404


51: Nandito_44
52: Bumble_39
53: Pitbull_55
54: Hum25_57
55: Altostratus_58
56: Wrackline_59
57: Colossa_45
58: VanLee_45
59: Phayonce_66
60: Lukepolites_40
61: MooMoo_67

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 311404 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311404 has 110 members, 23 are drafts.

Phages represented in each track:
• Track 1 : Ruchi_42, Vulpecula_42
• Track 2 : Chicken_43, Niblet_43
• Track 3 : Jamun_43
• Track 4 : Galaxy_42
• Track 5 : Westrich_52, Pelletreau_53, KendraB23_54, Zixiang_43, Amanises_46, Toad24_46, Gravel_53, Shen_43
• Track 6 : WileyE_45, Chickaboom_45
• Track 7 : TaylorSipht_44
• Track 8 : Orcanus_44
• Track 9 : Basilisk_43
• Track 10 : Brynnie_42
• Track 11 : Eesa_43
• Track 12 : Abidatro_45
• Track 13 : Zhuangyuan_48
• Track 14 : Coral_44, GramZayde_46, Melons_46, Lunar_46, Pineda_46, Daob_46, PhirstandPhine_53, Cote_46
• Track 15 : Bedetta_49
• Track 16 : Antrice_47
• Track 17 : Colusalem_45, OtsoOtso_45, HannahPhantana_45, Damocles_48, Amelia_44, Jerole_45, Bibble12_48, Polka_44
• Track 18 : Cygnet_46
• Track 19 : Kepler_46
• Track 20 : LittleTokyo_44
• Track 21 : Kuleana_46
• Track 22 : Azaz_46, Leona_45
• Track 23 : Andrew_47
• Track 24 : StuartMinion_38, AlexMinion_48
• Track 25 : DanHam62_46, AmiCi24_45
• Track 26 : RedFox_46
• Track 27 : Juno112_45, Fingolfin_46, HamCheese_46, Laphuphu24k_44
• Track 28 : Babushka_43
• Track 29 : AdoptaAdorbs_45, Camara_46, Amphitrite_46, Glotell_47, KHumphrey_46
• Track 30 : Atlantica_46, Oppalora_45
• Track 31 : Rattail_46
• Track 32 : PhluffyCoco_46
• Track 33 : Renna12_45

• Track 34 : PFR1_48, PFR2_50
• Track 35 : WilliamBoone_105
• Track 36 : Gsput1_45
• Track 37 : ObLaDi_47, Morgana_47
• Track 38 : Aleemily_46
• Track 39 : Cafasso_47, ModicumRichard_47
• Track 40 : Spartan_57
• Track 41 : Mova_73, ShowerHandel_77, ByChance_67, Alexphander_75, Madiba_77
• Track 42 : Stap_68, Girr_70, Krakatau_68, Ruby_68, MisterCuddles_70
• Track 43 : ArcusAngelus_78, Chevrolet_80
• Track 44 : Topiatin_78
• Track 45 : Renaud18_83
• Track 46 : Altadena_41
• Track 47 : Prairie_43, Klevey_44
• Track 48 : Circuit_39
• Track 49 : Lilmac1015_46, CalWood4100_46
• Track 50 : Bolt007_44
• Track 51 : Nandito_44
• Track 52 : Bumble_39
• Track 53 : Pitbull_55
• Track 54 : Hum25_57
• Track 55 : Altostratus_58
• Track 56 : Wrackline_59
• Track 57 : Colossa_45
• Track 58 : VanLee_45
• Track 59 : Phayonce_66
• Track 60 : Lukepolites_40
• Track 61 : MooMoo_67

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

The start number called the most often in the published annotations is 34, it was called in 53 of the 87 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Abidatro_45, AdoptaAdorbs_45, AlexMinion_48, Amanises_46, Amelia_44, AmiCi24_45, Amphitrite_46, Andrew_47, Antrice_47, Atlantica_46, Azaz_46, Babushka_43, Basilisk_43, Bibble12_48, Brynnie_42, Camara_46, Chickaboom_45, Chicken_43, Colusalem_45, Coral_44, Cote_46, Cygnet_46, Damocles_48, DanHam62_46, Daob_46, Eesa_43, Fingolfin_46, Galaxy_42, Glotell_47, GramZayde_46, Gravel_53, HamCheese_46, HannahPhantana_45, Jamun_43, Jerole_45, Juno112_45, KHumphrey_46, KendraB23_54, Kepler_46, Kuleana_46, Laphuphu24k_44, Leona_45, LittleTokyo_44, Lunar_46, Melons_46, Niblet_43, Oppalora_45, Orcanus_44, OtsoOtso_45, Pelletreau_53, PhirstandPhine_53, PhluffyCoco_46, Pineda_46, Polka_44, RedFox_46, Renna12_45, Ruchi_42, Shen_43, StuartMinion_38, TaylorSipht_44, Toad24_46, Vulpecula_42, Westrich_52, WileyE_45, Zhuangyuan_48, Zixiang_43,

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

• Alexphander_75, ArcusAngelus_78, Bedetta_49, ByChance_67, Chevrolet_80, Colossa_45, Girr_70, Gsput1_45, Krakatau_68, Madiba_77, MisterCuddles_70, Mova_73, PFR1_48, PFR2_50, Rattail_46, Renaud18_83, Ruby_68, ShowerHandel_77, Stap_68, Topiatin_78, WilliamBoone_105,

Genes that do not have the "Most Annotated" start:
• Aleemily_46, Altadena_41, Altostratus_58, Bolt007_44, Bumble_39, Cafasso_47, CalWood4100_46, Circuit_39, Hum25_57, Klevey_44, Lilmac1015_46, Lukepolites_40, ModicumRichard_47, MooMoo_67, Morgana_47, Nandito_44, ObLaDi_47, Phayonce_66, Pitbull_55, Prairie_43, Spartan_57, VanLee_45, Wrackline_59,

Summary by start number:

Start 11:
• Found in 20 of 110 (18.2%) of genes in pham
• Manual Annotations of this start: 16 of 87
• Called 95.0% of time when present
• Phage (with cluster) where this start called: Alexphander_75 (F1), ArcusAngelus_78 (F1), ByChance_67 (F1), Chevrolet_80 (F1), Girr_70 (F1), Krakatau_68 (F1), Madiba_77 (F1), MisterCuddles_70 (F1), MooMoo_67 (singleton), Mova_73 (F1), PFR1_48 (BX), PFR2_50 (BX), Phayonce_66 (P5), Renaud18_83 (F4), Ruby_68 (F1), ShowerHandel_77 (F1), Stap_68 (F1), Topiatin_78 (F1), WilliamBoone_105 (CQ1),

Start 13:
• Found in 1 of 110 (0.9%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Lukepolites_40 (singleton),

Start 14:
• Found in 9 of 110 (8.2%) of genes in pham
• Manual Annotations of this start: 7 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Altadena_41 (FH), Bolt007_44 (FH), Bumble_39 (FH), CalWood4100_46 (FH), Circuit_39 (FH), Klevey_44 (FH), Lilmac1015_46 (FH), Nandito_44 (FH), Prairie_43 (FH),

Start 15:
• Found in 1 of 110 (0.9%) 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_45 (KA),

Start 16:
• Found in 4 of 110 (3.6%) of genes in pham
• Manual Annotations of this start: 4 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cafasso_47 (DZ), ModicumRichard_47 (DZ), Morgana_47 (DZ), ObLaDi_47 (DZ),

Start 17:

• Found in 2 of 110 (1.8%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Gsput1_45 (CU2),

Start 19:
• Found in 1 of 110 (0.9%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Spartan_57 (ES),

Start 30:
• Found in 1 of 110 (0.9%) 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: Wrackline_59 (GF),

Start 34:
• Found in 87 of 110 (79.1%) of genes in pham
• Manual Annotations of this start: 53 of 87
• Called 75.9% of time when present
• Phage (with cluster) where this start called: Abidatro_45 (AS1), AdoptaAdorbs_45 (AS3), AlexMinion_48 (AS3), Amanises_46 (AS1), Amelia_44 (AS2), AmiCi24_45 (AS3), Amphitrite_46 (AS3), Andrew_47 (AS3), Antrice_47 (AS2), Atlantica_46 (AS3), Azaz_46 (AS3), Babushka_43 (AS3), Basilisk_43 (AS1), Bibble12_48 (AS2), Brynnie_42 (AS1), Camara_46 (AS3), Chickaboom_45 (AS1), Chicken_43 (AS1), Colusalem_45 (AS2), Coral_44 (AS2), Cote_46 (AS2), Cygnet_46 (AS2), Damocles_48 (AS2), DanHam62_46 (AS3), Daob_46 (AS2), Eesa_43 (AS1), Fingolfin_46 (AS3), Galaxy_42 (AS1), Glotell_47 (AS3), GramZayde_46 (AS2), Gravel_53 (AS1), HamCheese_46 (AS3), HannahPhantana_45 (AS2), Jamun_43 (AS1), Jerole_45 (AS2), Juno112_45 (AS3), KHumphrey_46 (AS3), KendraB23_54 (AS1), Kepler_46 (AS2), Kuleana_46 (AS2), Laphuphu24k_44 (AS3), Leona_45 (AS3), LittleTokyo_44 (AS2), Lunar_46 (AS2), Melons_46 (AS2), Niblet_43 (AS1), Oppalora_45 (AS3), Orcanus_44 (AS1), OtsoOtso_45 (AS2), Pelletreau_53 (AS1), PhirstandPhine_53 (AS2), PhluffyCoco_46 (AS3), Pineda_46 (AS2), Polka_44 (AS2), RedFox_46 (AS3), Renna12_45 (AS3), Ruchi_42 (AS1), Shen_43 (AS1), StuartMinion_38 (AS3), TaylorSipht_44 (AS1), Toad24_46 (AS1), Vulpecula_42 (AS1), Westrich_52 (AS1), WileyE_45 (AS1), Zhuangyuan_48 (AS2), Zixiang_43 (AS1),

Start 35:
• Found in 6 of 110 (5.5%) of genes in pham
• Manual Annotations of this start: 1 of 87
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Aleemily_46 (DZ),

Start 38:
• Found in 69 of 110 (62.7%) of genes in pham
• No Manual Annotations of this start.
• Called 2.9% of time when present
• Phage (with cluster) where this start called: Bedetta_49 (AS2), Rattail_46 (AS3),

Start 41:

• Found in 2 of 110 (1.8%) 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: Hum25_57 (FQ1), Pitbull_55 (FQ1),

Start 45:
• Found in 2 of 110 (1.8%) of genes in pham
• Manual Annotations of this start: 1 of 87
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Altostratus_58 (FS),

Start 48:
• Found in 25 of 110 (22.7%) of genes in pham
• Manual Annotations of this start: 1 of 87
• Called 4.0% of time when present
• Phage (with cluster) where this start called: Colossa_45 (KA),

Summary by clusters:

There are 17 clusters represented in this pham: AS3, AS2, AS1, FS, F4, CU2, F1, P5, KA, singleton, GF, DZ, FH, CQ1, FQ1, BX, ES,

Info for manual annotations of cluster AS1:
•Start number 34 was manually annotated 17 times for cluster AS1.

Info for manual annotations of cluster AS2:
•Start number 34 was manually annotated 18 times for cluster AS2.

Info for manual annotations of cluster AS3:
•Start number 34 was manually annotated 18 times for cluster AS3.

Info for manual annotations of cluster CQ1:
•Start number 11 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster DZ:
•Start number 16 was manually annotated 4 times for cluster DZ.
•Start number 35 was manually annotated 1 time for cluster DZ.

Info for manual annotations of cluster F1:
•Start number 11 was manually annotated 12 times for cluster F1.

Info for manual annotations of cluster F4:
•Start number 11 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster FH:
•Start number 14 was manually annotated 7 times for cluster FH.

Info for manual annotations of cluster FQ1:
•Start number 41 was manually annotated 2 times for cluster FQ1.

Info for manual annotations of cluster FS:
•Start number 45 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster GF:
•Start number 30 was manually annotated 1 time for cluster GF.

Info for manual annotations of cluster KA:
•Start number 15 was manually annotated 1 time for cluster KA.
•Start number 48 was manually annotated 1 time for cluster KA.

Info for manual annotations of cluster P5:
•Start number 11 was manually annotated 1 time for cluster P5.

Gene Information:

Gene: Abidatro_45 Start: 29469, Stop: 30263, Start Num: 34
Candidate Starts for Abidatro_45:
(2, 29193), (6, 29283), (7, 29286), (12, 29355), (Start: 34 @29469 has 53 MA's), (38, 29484), (77, 29634), (97, 29727), (103, 29754), (105, 29760), (106, 29763), (110, 29784), (122, 29850), (124, 29856), (131, 29889), (134, 29913), (137, 29973), (164, 30192),

Gene: AdoptaAdorbs_45 Start: 28706, Stop: 29476, Start Num: 34
Candidate Starts for AdoptaAdorbs_45:
(Start: 34 @28706 has 53 MA's), (38, 28721), (40, 28724), (54, 28772), (65, 28829), (77, 28871), (91, 28934), (97, 28964), (103, 28991), (106, 29000), (113, 29030), (122, 29075), (124, 29081), (131, 29114), (164, 29414),

Gene: Aleemily_46 Start: 35741, Stop: 36493, Start Num: 35
Candidate Starts for Aleemily_46:
(Start: 35 @35741 has 1 MA's), (37, 35756), (44, 35768), (46, 35774), (51, 35795), (52, 35798), (73, 35894), (93, 35981), (98, 36014), (136, 36272), (145, 36338),

Gene: AlexMinion_48 Start: 28962, Stop: 29759, Start Num: 34
Candidate Starts for AlexMinion_48:
(Start: 34 @28962 has 53 MA's), (38, 28977), (40, 28980), (54, 29028), (77, 29127), (90, 29187), (92, 29199), (97, 29220), (103, 29247), (106, 29256), (114, 29304), (117, 29319), (125, 29349), (131, 29379), (164, 29679),

Gene: Alexphander_75 Start: 46658, Stop: 47605, Start Num: 11
Candidate Starts for Alexphander_75:
(4, 46559), (8, 46610), (9, 46616), (Start: 11 @46658 has 16 MA's), (25, 46733), (27, 46736), (31, 46757), (Start: 34 @46772 has 53 MA's), (64, 46895), (71, 46925), (73, 46931), (121, 47195), (159, 47522), (162, 47546),

Gene: Altadena_41 Start: 30127, Stop: 31071, Start Num: 14
Candidate Starts for Altadena_41:
(Start: 14 @30127 has 7 MA's), (32, 30217), (108, 30559), (168, 31000), (173, 31021),

Gene: Altostratus_58 Start: 33551, Stop: 34300, Start Num: 45
Candidate Starts for Altostratus_58:

(21, 33461), (Start: 45 @33551 has 1 MA's), (66, 33653), (70, 33671), (78, 33698), (128, 33977), (132, 33995), (143, 34139), (149, 34169), (154, 34244),

Gene: Amanises_46 Start: 30394, Stop: 31191, Start Num: 34
Candidate Starts for Amanises_46:
(Start: 34 @30394 has 53 MA's), (38, 30409), (40, 30412), (65, 30517), (97, 30652), (103, 30679), (105, 30685), (108, 30697), (110, 30709), (126, 30784), (131, 30814), (134, 30838), (171, 31144),

Gene: Amelia_44 Start: 27749, Stop: 28534, Start Num: 34
Candidate Starts for Amelia_44:
(Start: 34 @27749 has 53 MA's), (38, 27764), (40, 27767), (Start: 48 @27791 has 1 MA's), (54, 27815), (59, 27827), (65, 27872), (77, 27914), (103, 28034), (105, 28040), (110, 28064), (126, 28139), (131, 28169), (134, 28193), (164, 28475),

Gene: AmiCi24_45 Start: 28806, Stop: 29585, Start Num: 34
Candidate Starts for AmiCi24_45:
(Start: 34 @28806 has 53 MA's), (38, 28821), (40, 28824), (54, 28872), (65, 28929), (77, 28971), (102, 29088), (103, 29097), (108, 29115), (110, 29127), (126, 29202), (131, 29232), (134, 29256), (164, 29523),

Gene: Amphitrite_46 Start: 28705, Stop: 29475, Start Num: 34
Candidate Starts for Amphitrite_46:
(Start: 34 @28705 has 53 MA's), (38, 28720), (40, 28723), (54, 28771), (65, 28828), (77, 28870), (91, 28933), (97, 28963), (103, 28990), (106, 28999), (113, 29029), (122, 29074), (124, 29080), (131, 29113), (164, 29413),

Gene: Andrew_47 Start: 28685, Stop: 29464, Start Num: 34
Candidate Starts for Andrew_47:
(33, 28676), (Start: 34 @28685 has 53 MA's), (38, 28700), (59, 28763), (65, 28808), (77, 28850), (97, 28943), (103, 28970), (106, 28979), (110, 29000), (122, 29066), (124, 29072), (131, 29105), (133, 29117), (164, 29405),

Gene: Antrice_47 Start: 28916, Stop: 29704, Start Num: 34
Candidate Starts for Antrice_47:
(Start: 34 @28916 has 53 MA's), (38, 28931), (40, 28934), (Start: 48 @28958 has 1 MA's), (65, 29039), (77, 29081), (82, 29099), (87, 29123), (97, 29174), (103, 29201), (106, 29210), (114, 29258), (117, 29273), (125, 29303), (131, 29333), (164, 29624),

Gene: ArcusAngelus_78 Start: 47565, Stop: 48512, Start Num: 11
Candidate Starts for ArcusAngelus_78:
(4, 47466), (9, 47523), (Start: 11 @47565 has 16 MA's), (25, 47640), (27, 47643), (31, 47664), (Start: 34 @47679 has 53 MA's), (64, 47802), (69, 47829), (71, 47832), (73, 47838), (121, 48102), (140, 48291), (141, 48294), (159, 48429), (162, 48453),

Gene: Atlantica_46 Start: 28808, Stop: 29587, Start Num: 34
Candidate Starts for Atlantica_46:
(Start: 34 @28808 has 53 MA's), (38, 28823), (40, 28826), (54, 28874), (65, 28931), (77, 28973), (102, 29090), (103, 29099), (105, 29105), (108, 29117), (110, 29129), (126, 29204), (131, 29234), (134, 29258), (164, 29525),

Gene: Azaz_46 Start: 28886, Stop: 29668, Start Num: 34
Candidate Starts for Azaz_46:

(Start: 34 @28886 has 53 MA's), (38, 28901), (40, 28904), (54, 28952), (65, 29009), (91, 29114), (92, 29123), (97, 29144), (103, 29171), (106, 29180), (113, 29210), (122, 29255), (124, 29261), (131, 29294), (164, 29594),

Gene: Babushka_43 Start: 28633, Stop: 29409, Start Num: 34
Candidate Starts for Babushka_43:
(Start: 34 @28633 has 53 MA's), (36, 28639), (38, 28648), (40, 28651), (54, 28699), (65, 28756), (77, 28798), (82, 28816), (90, 28858), (92, 28870), (97, 28891), (103, 28918), (106, 28927), (117, 28990), (125, 29020), (131, 29050), (164, 29350),

Gene: Basilisk_43 Start: 28639, Stop: 29460, Start Num: 34
Candidate Starts for Basilisk_43:
(Start: 34 @28639 has 53 MA's), (38, 28654), (40, 28657), (65, 28762), (97, 28897), (103, 28924), (105, 28930), (110, 28954), (126, 29029), (131, 29059), (134, 29083), (153, 29293), (174, 29398), (177, 29407), (178, 29416),

Gene: Bedetta_49 Start: 27911, Stop: 28705, Start Num: 38
Candidate Starts for Bedetta_49:
(Start: 34 @27896 has 53 MA's), (38, 27911), (40, 27914), (Start: 48 @27938 has 1 MA's), (54, 27962), (59, 27974), (65, 28019), (77, 28061), (103, 28181), (105, 28187), (110, 28211), (126, 28286), (131, 28316), (134, 28340), (164, 28622), (171, 28658),

Gene: Bibble12_48 Start: 27744, Stop: 28529, Start Num: 34
Candidate Starts for Bibble12_48:
(Start: 34 @27744 has 53 MA's), (38, 27759), (40, 27762), (Start: 48 @27786 has 1 MA's), (54, 27810), (59, 27822), (65, 27867), (77, 27909), (103, 28029), (105, 28035), (110, 28059), (126, 28134), (131, 28164), (134, 28188), (164, 28470),

Gene: Bolt007_44 Start: 33103, Stop: 34071, Start Num: 14
Candidate Starts for Bolt007_44:
(Start: 14 @33103 has 7 MA's), (32, 33196), (58, 33289), (127, 33631), (161, 33952), (168, 33982),

Gene: Brynnie_42 Start: 28517, Stop: 29317, Start Num: 34
Candidate Starts for Brynnie_42:
(Start: 34 @28517 has 53 MA's), (38, 28532), (40, 28535), (65, 28640), (97, 28775), (103, 28802), (105, 28808), (110, 28832), (126, 28907), (131, 28937), (134, 28961), (153, 29171), (166, 29237), (176, 29267), (180, 29288),

Gene: Bumble_39 Start: 30198, Stop: 31136, Start Num: 14
Candidate Starts for Bumble_39:
(Start: 14 @30198 has 7 MA's), (32, 30291), (58, 30384), (67, 30441), (127, 30711), (168, 31059),

Gene: ByChance_67 Start: 42797, Stop: 43744, Start Num: 11
Candidate Starts for ByChance_67:
(4, 42698), (8, 42749), (9, 42755), (Start: 11 @42797 has 16 MA's), (25, 42872), (27, 42875), (31, 42896), (Start: 34 @42911 has 53 MA's), (64, 43034), (71, 43064), (73, 43070), (121, 43334), (159, 43661), (162, 43685),

Gene: Cafasso_47 Start: 36237, Stop: 37067, Start Num: 16
Candidate Starts for Cafasso_47:
(Start: 16 @36237 has 4 MA's), (26, 36276), (Start: 35 @36315 has 1 MA's), (37, 36330), (51, 36369), (73, 36468), (84, 36510), (91, 36540), (98, 36588), (136, 36846), (145, 36912),

Gene: CalWood4100_46 Start: 32593, Stop: 33564, Start Num: 14
Candidate Starts for CalWood4100_46:
(Start: 14 @32593 has 7 MA's), (32, 32686), (127, 33121), (161, 33445), (168, 33475),

Gene: Camara_46 Start: 28708, Stop: 29478, Start Num: 34
Candidate Starts for Camara_46:
(Start: 34 @28708 has 53 MA's), (38, 28723), (40, 28726), (54, 28774), (65, 28831), (77, 28873), (91, 28936), (97, 28966), (103, 28993), (106, 29002), (113, 29032), (122, 29077), (124, 29083), (131, 29116), (164, 29416),

Gene: Chevrolet_80 Start: 47566, Stop: 48513, Start Num: 11
Candidate Starts for Chevrolet_80:
(4, 47467), (9, 47524), (Start: 11 @47566 has 16 MA's), (25, 47641), (27, 47644), (31, 47665), (Start: 34 @47680 has 53 MA's), (64, 47803), (69, 47830), (71, 47833), (73, 47839), (121, 48103), (140, 48292), (141, 48295), (159, 48430), (162, 48454),

Gene: Chickaboom_45 Start: 29238, Stop: 30044, Start Num: 34
Candidate Starts for Chickaboom_45:
(Start: 34 @29238 has 53 MA's), (38, 29253), (77, 29403), (92, 29475), (97, 29496), (103, 29523), (106, 29532), (110, 29553), (116, 29592), (122, 29619), (124, 29625), (131, 29658), (134, 29682), (137, 29742), (166, 29967), (175, 29997),

Gene: Chicken_43 Start: 29695, Stop: 30501, Start Num: 34
Candidate Starts for Chicken_43:
(1, 29356), (6, 29509), (7, 29512), (12, 29581), (Start: 34 @29695 has 53 MA's), (38, 29710), (40, 29713), (65, 29818), (97, 29953), (103, 29980), (105, 29986), (108, 29998), (110, 30010), (126, 30085), (131, 30115), (134, 30139), (179, 30469),

Gene: Circuit_39 Start: 31166, Stop: 32122, Start Num: 14
Candidate Starts for Circuit_39:
(Start: 14 @31166 has 7 MA's), (32, 31259), (Start: 45 @31301 has 1 MA's), (58, 31352), (168, 32045),

Gene: Colossa_45 Start: 33891, Stop: 34607, Start Num: 48
Candidate Starts for Colossa_45:
(24, 33810), (Start: 34 @33849 has 53 MA's), (38, 33864), (Start: 48 @33891 has 1 MA's), (72, 33999), (74, 34005), (84, 34050), (90, 34074), (91, 34077), (98, 34110), (100, 34125), (138, 34365), (147, 34410), (150, 34455), (155, 34500), (178, 34596),

Gene: Colusalem_45 Start: 27726, Stop: 28511, Start Num: 34
Candidate Starts for Colusalem_45:
(Start: 34 @27726 has 53 MA's), (38, 27741), (40, 27744), (Start: 48 @27768 has 1 MA's), (54, 27792), (59, 27804), (65, 27849), (77, 27891), (103, 28011), (105, 28017), (110, 28041), (126, 28116), (131, 28146), (134, 28170), (164, 28452),

Gene: Coral_44 Start: 27597, Stop: 28406, Start Num: 34
Candidate Starts for Coral_44:
(Start: 34 @27597 has 53 MA's), (38, 27612), (40, 27615), (Start: 48 @27639 has 1 MA's), (54, 27663), (59, 27675), (65, 27720), (77, 27762), (103, 27882), (105, 27888), (110, 27912), (126, 27987), (131, 28017), (134, 28041), (164, 28323), (171, 28359),

Gene: Cote_46 Start: 28074, Stop: 28883, Start Num: 34
Candidate Starts for Cote_46:

(Start: 34 @28074 has 53 MA's), (38, 28089), (40, 28092), (Start: 48 @28116 has 1 MA's), (54, 28140), (59, 28152), (65, 28197), (77, 28239), (103, 28359), (105, 28365), (110, 28389), (126, 28464), (131, 28494), (134, 28518), (164, 28800), (171, 28836),

Gene: Cygnet_46 Start: 29526, Stop: 30314, Start Num: 34
Candidate Starts for Cygnet_46:
(Start: 34 @29526 has 53 MA's), (38, 29541), (40, 29544), (Start: 48 @29568 has 1 MA's), (54, 29592), (56, 29595), (65, 29649), (77, 29691), (82, 29709), (87, 29733), (90, 29751), (99, 29796), (103, 29811), (106, 29820), (114, 29868), (117, 29883), (125, 29913), (131, 29943), (164, 30234),

Gene: Damocles_48 Start: 27885, Stop: 28670, Start Num: 34
Candidate Starts for Damocles_48:
(Start: 34 @27885 has 53 MA's), (38, 27900), (40, 27903), (Start: 48 @27927 has 1 MA's), (54, 27951), (59, 27963), (65, 28008), (77, 28050), (103, 28170), (105, 28176), (110, 28200), (126, 28275), (131, 28305), (134, 28329), (164, 28611),

Gene: DanHam62_46 Start: 28807, Stop: 29586, Start Num: 34
Candidate Starts for DanHam62_46:
(Start: 34 @28807 has 53 MA's), (38, 28822), (40, 28825), (54, 28873), (65, 28930), (77, 28972), (102, 29089), (103, 29098), (108, 29116), (110, 29128), (126, 29203), (131, 29233), (134, 29257), (164, 29524),

Gene: Daob_46 Start: 28082, Stop: 28891, Start Num: 34
Candidate Starts for Daob_46:
(Start: 34 @28082 has 53 MA's), (38, 28097), (40, 28100), (Start: 48 @28124 has 1 MA's), (54, 28148), (59, 28160), (65, 28205), (77, 28247), (103, 28367), (105, 28373), (110, 28397), (126, 28472), (131, 28502), (134, 28526), (164, 28808), (171, 28844),

Gene: Eesa_43 Start: 30117, Stop: 30914, Start Num: 34
Candidate Starts for Eesa_43:
(Start: 34 @30117 has 53 MA's), (38, 30132), (40, 30135), (65, 30240), (97, 30375), (103, 30402), (105, 30408), (110, 30432), (126, 30507), (131, 30537), (134, 30561), (171, 30867),

Gene: Fingolfin_46 Start: 28810, Stop: 29589, Start Num: 34
Candidate Starts for Fingolfin_46:
(Start: 34 @28810 has 53 MA's), (38, 28825), (40, 28828), (54, 28876), (65, 28933), (77, 28975), (102, 29092), (103, 29101), (105, 29107), (108, 29119), (110, 29131), (126, 29206), (131, 29236), (133, 29248), (134, 29260), (164, 29527),

Gene: Galaxy_42 Start: 27889, Stop: 28683, Start Num: 34
Candidate Starts for Galaxy_42:
(2, 27613), (6, 27703), (7, 27706), (12, 27775), (Start: 34 @27889 has 53 MA's), (38, 27904), (65, 28012), (77, 28054), (92, 28126), (97, 28147), (103, 28174), (106, 28183), (110, 28204), (122, 28270), (124, 28276), (131, 28309), (134, 28333), (137, 28393), (164, 28612),

Gene: Girr_70 Start: 46136, Stop: 47083, Start Num: 11
Candidate Starts for Girr_70:
(8, 46088), (9, 46094), (Start: 11 @46136 has 16 MA's), (25, 46211), (27, 46214), (31, 46235), (Start: 34 @46250 has 53 MA's), (64, 46373), (71, 46403), (73, 46409), (121, 46673), (159, 47000), (162, 47024),

Gene: Glotell_47 Start: 28864, Stop: 29634, Start Num: 34
Candidate Starts for Glotell_47:

(Start: 34 @28864 has 53 MA's), (38, 28879), (40, 28882), (54, 28930), (65, 28987), (77, 29029), (91, 29092), (97, 29122), (103, 29149), (106, 29158), (113, 29188), (122, 29233), (124, 29239), (131, 29272), (164, 29572),

Gene: GramZayde_46 Start: 27910, Stop: 28719, Start Num: 34
Candidate Starts for GramZayde_46:
(Start: 34 @27910 has 53 MA's), (38, 27925), (40, 27928), (Start: 48 @27952 has 1 MA's), (54, 27976), (59, 27988), (65, 28033), (77, 28075), (103, 28195), (105, 28201), (110, 28225), (126, 28300), (131, 28330), (134, 28354), (164, 28636), (171, 28672),

Gene: Gravel_53 Start: 30207, Stop: 31004, Start Num: 34
Candidate Starts for Gravel_53:
(Start: 34 @30207 has 53 MA's), (38, 30222), (40, 30225), (65, 30330), (97, 30465), (103, 30492), (105, 30498), (108, 30510), (110, 30522), (126, 30597), (131, 30627), (134, 30651), (171, 30957),

Gene: Gsput1_45 Start: 32516, Stop: 33187, Start Num: 17
Candidate Starts for Gsput1_45:
(Start: 11 @32471 has 16 MA's), (17, 32516), (29, 32558), (Start: 34 @32585 has 53 MA's), (73, 32741), (135, 32957),

Gene: HamCheese_46 Start: 28794, Stop: 29573, Start Num: 34
Candidate Starts for HamCheese_46:
(Start: 34 @28794 has 53 MA's), (38, 28809), (40, 28812), (54, 28860), (65, 28917), (77, 28959), (102, 29076), (103, 29085), (105, 29091), (108, 29103), (110, 29115), (126, 29190), (131, 29220), (133, 29232), (134, 29244), (164, 29511),

Gene: HannahPhantana_45 Start: 27744, Stop: 28529, Start Num: 34
Candidate Starts for HannahPhantana_45:
(Start: 34 @27744 has 53 MA's), (38, 27759), (40, 27762), (Start: 48 @27786 has 1 MA's), (54, 27810), (59, 27822), (65, 27867), (77, 27909), (103, 28029), (105, 28035), (110, 28059), (126, 28134), (131, 28164), (134, 28188), (164, 28470),

Gene: Hum25_57 Start: 32602, Stop: 33336, Start Num: 41
Candidate Starts for Hum25_57:
(Start: 41 @32602 has 2 MA's), (71, 32725), (77, 32746), (78, 32752), (80, 32758), (87, 32791), (89, 32806), (119, 32968), (130, 33028), (143, 33178), (148, 33202), (151, 33253),

Gene: Jamun_43 Start: 29398, Stop: 30198, Start Num: 34
Candidate Starts for Jamun_43:
(2, 29122), (6, 29212), (7, 29215), (12, 29284), (Start: 34 @29398 has 53 MA's), (38, 29413), (40, 29416), (77, 29563), (92, 29635), (97, 29656), (103, 29683), (106, 29692), (110, 29713), (122, 29779), (124, 29785), (131, 29818), (134, 29842), (137, 29902), (166, 30127),

Gene: Jerole_45 Start: 27868, Stop: 28653, Start Num: 34
Candidate Starts for Jerole_45:
(Start: 34 @27868 has 53 MA's), (38, 27883), (40, 27886), (Start: 48 @27910 has 1 MA's), (54, 27934), (59, 27946), (65, 27991), (77, 28033), (103, 28153), (105, 28159), (110, 28183), (126, 28258), (131, 28288), (134, 28312), (164, 28594),

Gene: Juno112_45 Start: 28810, Stop: 29589, Start Num: 34
Candidate Starts for Juno112_45:
(Start: 34 @28810 has 53 MA's), (38, 28825), (40, 28828), (54, 28876), (65, 28933), (77, 28975), (102, 29092), (103, 29101), (105, 29107), (108, 29119), (110, 29131), (126, 29206), (131, 29236), (133,

29248), (134, 29260), (164, 29527),

Gene: KHumphrey_46 Start: 28707, Stop: 29477, Start Num: 34
Candidate Starts for KHumphrey_46:
(Start: 34 @28707 has 53 MA's), (38, 28722), (40, 28725), (54, 28773), (65, 28830), (77, 28872), (91, 28935), (97, 28965), (103, 28992), (106, 29001), (113, 29031), (122, 29076), (124, 29082), (131, 29115), (164, 29415),

Gene: KendraB23_54 Start: 30394, Stop: 31191, Start Num: 34
Candidate Starts for KendraB23_54:
(Start: 34 @30394 has 53 MA's), (38, 30409), (40, 30412), (65, 30517), (97, 30652), (103, 30679), (105, 30685), (108, 30697), (110, 30709), (126, 30784), (131, 30814), (134, 30838), (171, 31144),

Gene: Kepler_46 Start: 28492, Stop: 29301, Start Num: 34
Candidate Starts for Kepler_46:
(Start: 34 @28492 has 53 MA's), (38, 28507), (40, 28510), (Start: 48 @28534 has 1 MA's), (54, 28558), (59, 28570), (65, 28615), (77, 28657), (103, 28777), (105, 28783), (110, 28807), (126, 28882), (131, 28912), (134, 28936), (164, 29218), (171, 29254),

Gene: Klevey_44 Start: 32077, Stop: 33051, Start Num: 14
Candidate Starts for Klevey_44:
(Start: 14 @32077 has 7 MA's), (32, 32170), (58, 32263), (127, 32605), (129, 32632), (161, 32932), (168, 32962),

Gene: Krakatau_68 Start: 42516, Stop: 43463, Start Num: 11
Candidate Starts for Krakatau_68:
(8, 42468), (9, 42474), (Start: 11 @42516 has 16 MA's), (25, 42591), (27, 42594), (31, 42615), (Start: 34 @42630 has 53 MA's), (64, 42753), (71, 42783), (73, 42789), (121, 43053), (159, 43380), (162, 43404),

Gene: Kuleana_46 Start: 28067, Stop: 28864, Start Num: 34
Candidate Starts for Kuleana_46:
(28, 28052), (Start: 34 @28067 has 53 MA's), (38, 28082), (Start: 48 @28109 has 1 MA's), (54, 28133), (77, 28232), (103, 28355), (110, 28385), (116, 28424), (122, 28451), (131, 28490), (134, 28514), (164, 28796), (165, 28799),

Gene: Laphuphu24k_44 Start: 28794, Stop: 29573, Start Num: 34
Candidate Starts for Laphuphu24k_44:
(Start: 34 @28794 has 53 MA's), (38, 28809), (40, 28812), (54, 28860), (65, 28917), (77, 28959), (102, 29076), (103, 29085), (105, 29091), (108, 29103), (110, 29115), (126, 29190), (131, 29220), (133, 29232), (134, 29244), (164, 29511),

Gene: Leona_45 Start: 28887, Stop: 29669, Start Num: 34
Candidate Starts for Leona_45:
(Start: 34 @28887 has 53 MA's), (38, 28902), (40, 28905), (54, 28953), (65, 29010), (91, 29115), (92, 29124), (97, 29145), (103, 29172), (106, 29181), (113, 29211), (122, 29256), (124, 29262), (131, 29295), (164, 29595),

Gene: Lilmac1015_46 Start: 32593, Stop: 33564, Start Num: 14
Candidate Starts for Lilmac1015_46:
(Start: 14 @32593 has 7 MA's), (32, 32686), (127, 33121), (161, 33445), (168, 33475),

Gene: LittleTokyo_44 Start: 27580, Stop: 28368, Start Num: 34

Candidate Starts for LittleTokyo_44:
(Start: 34 @27580 has 53 MA's), (38, 27595), (40, 27598), (Start: 48 @27622 has 1 MA's), (54, 27646), (65, 27703), (75, 27736), (77, 27745), (97, 27838), (99, 27850), (100, 27856), (103, 27862), (106, 27871), (110, 27892), (122, 27958), (131, 27997), (134, 28021), (164, 28288), (181, 28345),

Gene: Lukepolites_40 Start: 31388, Stop: 32332, Start Num: 13
Candidate Starts for Lukepolites_40:
(13, 31388), (23, 31445), (47, 31532), (49, 31538), (79, 31676), (94, 31745), (118, 31865), (163, 32225), (170, 32261),

Gene: Lunar_46 Start: 28408, Stop: 29217, Start Num: 34
Candidate Starts for Lunar_46:
(Start: 34 @28408 has 53 MA's), (38, 28423), (40, 28426), (Start: 48 @28450 has 1 MA's), (54, 28474), (59, 28486), (65, 28531), (77, 28573), (103, 28693), (105, 28699), (110, 28723), (126, 28798), (131, 28828), (134, 28852), (164, 29134), (171, 29170),

Gene: Madiba_77 Start: 47713, Stop: 48660, Start Num: 11
Candidate Starts for Madiba_77:
(4, 47614), (8, 47665), (9, 47671), (Start: 11 @47713 has 16 MA's), (25, 47788), (27, 47791), (31, 47812), (Start: 34 @47827 has 53 MA's), (64, 47950), (71, 47980), (73, 47986), (121, 48250), (159, 48577), (162, 48601),

Gene: Melons_46 Start: 28222, Stop: 29031, Start Num: 34
Candidate Starts for Melons_46:
(Start: 34 @28222 has 53 MA's), (38, 28237), (40, 28240), (Start: 48 @28264 has 1 MA's), (54, 28288), (59, 28300), (65, 28345), (77, 28387), (103, 28507), (105, 28513), (110, 28537), (126, 28612), (131, 28642), (134, 28666), (164, 28948), (171, 28984),

Gene: MisterCuddles_70 Start: 46136, Stop: 47083, Start Num: 11
Candidate Starts for MisterCuddles_70:
(8, 46088), (9, 46094), (Start: 11 @46136 has 16 MA's), (25, 46211), (27, 46214), (31, 46235), (Start: 34 @46250 has 53 MA's), (64, 46373), (71, 46403), (73, 46409), (121, 46673), (159, 47000), (162, 47024),

Gene: ModicumRichard_47 Start: 36236, Stop: 37066, Start Num: 16
Candidate Starts for ModicumRichard_47:
(Start: 16 @36236 has 4 MA's), (26, 36275), (Start: 35 @36314 has 1 MA's), (37, 36329), (51, 36368), (73, 36467), (84, 36509), (91, 36539), (98, 36587), (136, 36845), (145, 36911),

Gene: MooMoo_67 Start: 43945, Stop: 44826, Start Num: 11
Candidate Starts for MooMoo_67:
(3, 43822), (5, 43879), (Start: 11 @43945 has 16 MA's), (20, 43999), (25, 44020), (39, 44080), (46, 44095), (50, 44110), (59, 44143), (62, 44179), (63, 44182), (88, 44293), (120, 44401), (151, 44683), (172, 44812),

Gene: Morgana_47 Start: 36190, Stop: 37020, Start Num: 16
Candidate Starts for Morgana_47:
(Start: 16 @36190 has 4 MA's), (26, 36229), (Start: 35 @36268 has 1 MA's), (37, 36283), (51, 36322), (73, 36421), (84, 36463), (98, 36541), (136, 36799), (145, 36865),

Gene: Mova_73 Start: 45137, Stop: 46084, Start Num: 11
Candidate Starts for Mova_73:

(4, 45038), (8, 45089), (9, 45095), (Start: 11 @45137 has 16 MA's), (25, 45212), (27, 45215), (31, 45236), (Start: 34 @45251 has 53 MA's), (64, 45374), (71, 45404), (73, 45410), (121, 45674), (159, 46001), (162, 46025),

Gene: Nandito_44 Start: 32292, Stop: 33257, Start Num: 14
Candidate Starts for Nandito_44:
(Start: 14 @32292 has 7 MA's), (32, 32388), (Start: 48 @32445 has 1 MA's), (58, 32481), (96, 32676), (127, 32823), (161, 33147), (168, 33177),

Gene: Niblet_43 Start: 29782, Stop: 30588, Start Num: 34
Candidate Starts for Niblet_43:
(1, 29443), (6, 29596), (7, 29599), (12, 29668), (Start: 34 @29782 has 53 MA's), (38, 29797), (40, 29800), (65, 29905), (97, 30040), (103, 30067), (105, 30073), (108, 30085), (110, 30097), (126, 30172), (131, 30202), (134, 30226), (179, 30556),

Gene: ObLaDi_47 Start: 36227, Stop: 37057, Start Num: 16
Candidate Starts for ObLaDi_47:
(Start: 16 @36227 has 4 MA's), (26, 36266), (Start: 35 @36305 has 1 MA's), (37, 36320), (51, 36359), (73, 36458), (84, 36500), (98, 36578), (136, 36836), (145, 36902),

Gene: Oppalora_45 Start: 28808, Stop: 29587, Start Num: 34
Candidate Starts for Oppalora_45:
(Start: 34 @28808 has 53 MA's), (38, 28823), (40, 28826), (54, 28874), (65, 28931), (77, 28973), (102, 29090), (103, 29099), (105, 29105), (108, 29117), (110, 29129), (126, 29204), (131, 29234), (134, 29258), (164, 29525),

Gene: Orcanus_44 Start: 29751, Stop: 30572, Start Num: 34
Candidate Starts for Orcanus_44:
(Start: 34 @29751 has 53 MA's), (38, 29766), (40, 29769), (65, 29874), (97, 30009), (103, 30036), (105, 30042), (110, 30066), (126, 30141), (131, 30171), (134, 30195), (174, 30510), (178, 30528),

Gene: OtsoOtso_45 Start: 27598, Stop: 28383, Start Num: 34
Candidate Starts for OtsoOtso_45:
(Start: 34 @27598 has 53 MA's), (38, 27613), (40, 27616), (Start: 48 @27640 has 1 MA's), (54, 27664), (59, 27676), (65, 27721), (77, 27763), (103, 27883), (105, 27889), (110, 27913), (126, 27988), (131, 28018), (134, 28042), (164, 28324),

Gene: PFR1_48 Start: 33401, Stop: 34246, Start Num: 11
Candidate Starts for PFR1_48:
(Start: 11 @33401 has 16 MA's), (24, 33473), (25, 33476), (31, 33500), (Start: 34 @33515 has 53 MA's), (42, 33542), (50, 33566), (71, 33671), (86, 33734), (129, 33878), (159, 34160), (167, 34211),

Gene: PFR2_50 Start: 34970, Stop: 35815, Start Num: 11
Candidate Starts for PFR2_50:
(Start: 11 @34970 has 16 MA's), (24, 35042), (25, 35045), (31, 35069), (Start: 34 @35084 has 53 MA's), (42, 35111), (50, 35135), (71, 35240), (86, 35303), (129, 35447), (159, 35729), (167, 35780),

Gene: Pelletreau_53 Start: 30207, Stop: 31004, Start Num: 34
Candidate Starts for Pelletreau_53:
(Start: 34 @30207 has 53 MA's), (38, 30222), (40, 30225), (65, 30330), (97, 30465), (103, 30492), (105, 30498), (108, 30510), (110, 30522), (126, 30597), (131, 30627), (134, 30651), (171, 30957),

Gene: Phayonce_66 Start: 43928, Stop: 44809, Start Num: 11

Candidate Starts for Phayonce_66:
(Start: 11 @43928 has 16 MA's), (25, 44003), (39, 44063), (46, 44078), (50, 44093), (59, 44126), (120, 44384), (153, 44702),

Gene: PhirstandPhine_53 Start: 28368, Stop: 29177, Start Num: 34
Candidate Starts for PhirstandPhine_53:
(Start: 34 @28368 has 53 MA's), (38, 28383), (40, 28386), (Start: 48 @28410 has 1 MA's), (54, 28434), (59, 28446), (65, 28491), (77, 28533), (103, 28653), (105, 28659), (110, 28683), (126, 28758), (131, 28788), (134, 28812), (164, 29094), (171, 29130),

Gene: PhluffyCoco_46 Start: 28908, Stop: 29687, Start Num: 34
Candidate Starts for PhluffyCoco_46:
(28, 28881), (Start: 34 @28908 has 53 MA's), (38, 28923), (40, 28926), (54, 28974), (65, 29031), (77, 29073), (102, 29190), (103, 29199), (105, 29205), (108, 29217), (110, 29229), (126, 29304), (131, 29334), (134, 29358), (164, 29625),

Gene: Pineda_46 Start: 27894, Stop: 28703, Start Num: 34
Candidate Starts for Pineda_46:
(Start: 34 @27894 has 53 MA's), (38, 27909), (40, 27912), (Start: 48 @27936 has 1 MA's), (54, 27960), (59, 27972), (65, 28017), (77, 28059), (103, 28179), (105, 28185), (110, 28209), (126, 28284), (131, 28314), (134, 28338), (164, 28620), (171, 28656),

Gene: Pitbull_55 Start: 31198, Stop: 31932, Start Num: 41
Candidate Starts for Pitbull_55:
(10, 31060), (Start: 41 @31198 has 2 MA's), (71, 31321), (77, 31342), (78, 31348), (80, 31354), (81, 31357), (87, 31387), (89, 31402), (119, 31564), (130, 31624), (143, 31774), (146, 31786), (148, 31798), (151, 31849), (156, 31882),

Gene: Polka_44 Start: 27598, Stop: 28383, Start Num: 34
Candidate Starts for Polka_44:
(Start: 34 @27598 has 53 MA's), (38, 27613), (40, 27616), (Start: 48 @27640 has 1 MA's), (54, 27664), (59, 27676), (65, 27721), (77, 27763), (103, 27883), (105, 27889), (110, 27913), (126, 27988), (131, 28018), (134, 28042), (164, 28324),

Gene: Prairie_43 Start: 31909, Stop: 32883, Start Num: 14
Candidate Starts for Prairie_43:
(Start: 14 @31909 has 7 MA's), (32, 32002), (58, 32095), (127, 32437), (129, 32464), (161, 32764), (168, 32794),

Gene: Rattail_46 Start: 29009, Stop: 29773, Start Num: 38
Candidate Starts for Rattail_46:
(28, 28967), (Start: 34 @28994 has 53 MA's), (38, 29009), (40, 29012), (54, 29060), (65, 29117), (77, 29159), (102, 29276), (103, 29285), (105, 29291), (108, 29303), (110, 29315), (126, 29390), (131, 29420), (134, 29444), (164, 29711),

Gene: RedFox_46 Start: 28907, Stop: 29686, Start Num: 34
Candidate Starts for RedFox_46:
(28, 28880), (Start: 34 @28907 has 53 MA's), (38, 28922), (40, 28925), (54, 28973), (65, 29030), (77, 29072), (102, 29189), (103, 29198), (105, 29204), (108, 29216), (110, 29228), (126, 29303), (131, 29333), (133, 29345), (134, 29357), (164, 29624),

Gene: Renaud18_83 Start: 47137, Stop: 48084, Start Num: 11
Candidate Starts for Renaud18_83:

(4, 47038), (9, 47095), (Start: 11 @47137 has 16 MA's), (25, 47212), (27, 47215), (31, 47236), (Start: 34 @47251 has 53 MA's), (64, 47374), (71, 47404), (73, 47410), (121, 47674), (140, 47863), (141, 47866), (159, 48001), (162, 48025),

Gene: Renna12_45 Start: 28764, Stop: 29543, Start Num: 34
Candidate Starts for Renna12_45:
(28, 28737), (Start: 34 @28764 has 53 MA's), (38, 28779), (65, 28887), (77, 28929), (92, 29001), (97, 29022), (103, 29049), (110, 29079), (122, 29145), (124, 29151), (131, 29184), (133, 29196), (164, 29484),

Gene: Ruby_68 Start: 46137, Stop: 47084, Start Num: 11
Candidate Starts for Ruby_68:
(8, 46089), (9, 46095), (Start: 11 @46137 has 16 MA's), (25, 46212), (27, 46215), (31, 46236), (Start: 34 @46251 has 53 MA's), (64, 46374), (71, 46404), (73, 46410), (121, 46674), (159, 47001), (162, 47025),

Gene: Ruchi_42 Start: 28585, Stop: 29382, Start Num: 34
Candidate Starts for Ruchi_42:
(Start: 34 @28585 has 53 MA's), (38, 28600), (40, 28603), (65, 28708), (97, 28843), (103, 28870), (105, 28876), (110, 28900), (126, 28975), (131, 29005), (134, 29029), (153, 29239), (166, 29305), (176, 29335),

Gene: Shen_43 Start: 28308, Stop: 29105, Start Num: 34
Candidate Starts for Shen_43:
(Start: 34 @28308 has 53 MA's), (38, 28323), (40, 28326), (65, 28431), (97, 28566), (103, 28593), (105, 28599), (108, 28611), (110, 28623), (126, 28698), (131, 28728), (134, 28752), (171, 29058),

Gene: ShowerHandel_77 Start: 46737, Stop: 47684, Start Num: 11
Candidate Starts for ShowerHandel_77:
(4, 46638), (8, 46689), (9, 46695), (Start: 11 @46737 has 16 MA's), (25, 46812), (27, 46815), (31, 46836), (Start: 34 @46851 has 53 MA's), (64, 46974), (71, 47004), (73, 47010), (121, 47274), (159, 47601), (162, 47625),

Gene: Spartan_57 Start: 41807, Stop: 42727, Start Num: 19
Candidate Starts for Spartan_57:
(17, 41798), (19, 41807), (58, 41945), (61, 41978), (68, 42014), (71, 42020), (76, 42038), (77, 42041), (83, 42062), (109, 42200), (112, 42209), (118, 42245), (135, 42365), (140, 42440), (144, 42455), (163, 42605),

Gene: Stap_68 Start: 43382, Stop: 44329, Start Num: 11
Candidate Starts for Stap_68:
(8, 43334), (9, 43340), (Start: 11 @43382 has 16 MA's), (25, 43457), (27, 43460), (31, 43481), (Start: 34 @43496 has 53 MA's), (64, 43619), (71, 43649), (73, 43655), (121, 43919), (159, 44246), (162, 44270),

Gene: StuartMinion_38 Start: 25861, Stop: 26658, Start Num: 34
Candidate Starts for StuartMinion_38:
(Start: 34 @25861 has 53 MA's), (38, 25876), (40, 25879), (54, 25927), (77, 26026), (90, 26086), (92, 26098), (97, 26119), (103, 26146), (106, 26155), (114, 26203), (117, 26218), (125, 26248), (131, 26278), (164, 26578),

Gene: TaylorSipht_44 Start: 29156, Stop: 29947, Start Num: 34
Candidate Starts for TaylorSipht_44:

(Start: 34 @29156 has 53 MA's), (38, 29171), (40, 29174), (65, 29279), (75, 29312), (103, 29441), (105, 29447), (110, 29471), (126, 29546), (131, 29576), (134, 29600), (153, 29819), (164, 29876),

Gene: Toad24_46 Start: 30447, Stop: 31244, Start Num: 34
Candidate Starts for Toad24_46:
(Start: 34 @30447 has 53 MA's), (38, 30462), (40, 30465), (65, 30570), (97, 30705), (103, 30732), (105, 30738), (108, 30750), (110, 30762), (126, 30837), (131, 30867), (134, 30891), (171, 31197),

Gene: Topiatin_78 Start: 46863, Stop: 47810, Start Num: 11
Candidate Starts for Topiatin_78:
(8, 46815), (9, 46821), (Start: 11 @46863 has 16 MA's), (25, 46938), (27, 46941), (31, 46962), (Start: 34 @46977 has 53 MA's), (64, 47100), (71, 47130), (73, 47136), (121, 47400), (141, 47592), (159, 47727), (162, 47751),

Gene: VanLee_45 Start: 33944, Stop: 34756, Start Num: 15
Candidate Starts for VanLee_45:
(Start: 15 @33944 has 1 MA's), (18, 33956), (Start: 35 @34025 has 1 MA's), (55, 34088), (60, 34106), (101, 34307), (104, 34322), (107, 34331), (111, 34346), (123, 34418), (152, 34697), (162, 34745),

Gene: Vulpecula_42 Start: 28262, Stop: 29059, Start Num: 34
Candidate Starts for Vulpecula_42:
(Start: 34 @28262 has 53 MA's), (38, 28277), (40, 28280), (65, 28385), (97, 28520), (103, 28547), (105, 28553), (110, 28577), (126, 28652), (131, 28682), (134, 28706), (153, 28916), (166, 28982), (176, 29012),

Gene: Westrich_52 Start: 30131, Stop: 30928, Start Num: 34
Candidate Starts for Westrich_52:
(Start: 34 @30131 has 53 MA's), (38, 30146), (40, 30149), (65, 30254), (97, 30389), (103, 30416), (105, 30422), (108, 30434), (110, 30446), (126, 30521), (131, 30551), (134, 30575), (171, 30881),

Gene: WileyE_45 Start: 29238, Stop: 30044, Start Num: 34
Candidate Starts for WileyE_45:
(Start: 34 @29238 has 53 MA's), (38, 29253), (77, 29403), (92, 29475), (97, 29496), (103, 29523), (106, 29532), (110, 29553), (116, 29592), (122, 29619), (124, 29625), (131, 29658), (134, 29682), (137, 29742), (166, 29967), (175, 29997),

Gene: WilliamBoone_105 Start: 60775, Stop: 61641, Start Num: 11
Candidate Starts for WilliamBoone_105:
(Start: 11 @60775 has 16 MA's), (22, 60844), (31, 60877), (Start: 34 @60892 has 53 MA's), (36, 60898), (62, 61012), (91, 61135), (134, 61300), (139, 61387), (140, 61417), (157, 61549), (169, 61612),

Gene: Wrackline_59 Start: 31583, Stop: 30711, Start Num: 30
Candidate Starts for Wrackline_59:
(18, 31625), (Start: 30 @31583 has 1 MA's), (43, 31526), (53, 31496), (57, 31481), (72, 31406), (80, 31379), (85, 31352), (95, 31289), (109, 31217), (136, 31037), (140, 30974), (141, 30971), (142, 30968), (158, 30839), (160, 30833), (164, 30803), (182, 30734),

Gene: Zhuangyuan_48 Start: 29358, Stop: 30155, Start Num: 34
Candidate Starts for Zhuangyuan_48:
(Start: 34 @29358 has 53 MA's), (38, 29373), (Start: 48 @29400 has 1 MA's), (54, 29424), (65, 29481), (97, 29616), (99, 29628), (102, 29640), (103, 29649), (105, 29655), (108, 29667), (110, 29679), (115, 29709), (126, 29754), (131, 29784), (133, 29796), (134, 29808), (164, 30075),

Gene: Zixiang_43 Start: 29812, Stop: 30609, Start Num: 34
Candidate Starts for Zixiang_43:
(Start: 34 @29812 has 53 MA's), (38, 29827), (40, 29830), (65, 29935), (97, 30070), (103, 30097), (105, 30103), (108, 30115), (110, 30127), (126, 30202), (131, 30232), (134, 30256), (171, 30562),