# Pham 347576


1: Eesa_23
2: Chickaboom_22 + 1
3: Westrich_24 + 1
4: Gravel_24 + 3
5: KendraB23_24
6: Vulpecula_23
7: Jamun_23
8: Chicken_23 + 2
9: Brynnie_23
10: Ruchi_23 + 1
11: TaylorSipht_23
12: Shen_24
13: Colusalem_23 + 3
14: PhirstandPhine_24 + 4
15: Damocles_24 + 1
16: BadWillHunting_24
17: Zhulangyuan_24
18: GramZayde_23 + 3
19: Cygnet_23
20: Amelia_24 + 1
21: Kepler_23
22: Glotell_22 + 5
23: StuartMinion_22 + 1
24: Rattail_22 + 2
25: RedFox_22 + 1
26: Andrew_23
27: PhluffyCoco_22 + 2
28: Babushka_22
29: AdoptaAdorbs_22
30: Renna12_23
31: Oppalora_22 + 1
32: Camara_22
33: Exile_21
34: Soondubu_21
35: CocoCinnamon_26
36: LisoBros_23
37: GrimEater_21 + 1

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 347576 Report

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

Pham number 347576 has 70 members, 14 are drafts.

Phages represented in each track:
• Track 1 : Eesa_23
• Track 2 : Chickaboom_22, WileyE_22
• Track 3 : Westrich_24, Amanises_24
• Track 4 : Gravel_24, Toad24_24, Pelletreau_24, Orcanus_23
• Track 5 : KendraB23_24
• Track 6 : Vulpecula_23
• Track 7 : Jamun_23
• Track 8 : Chicken_23, Niblet_23, Zixiang_23
• Track 9 : Brynnie_23
• Track 10 : Ruchi_23, Basilisk_23
• Track 11 : TaylorSipht_23
• Track 12 : Shen_24
• Track 13 : Colusalem_23, Bedetta_24, OtsoOtso_23, Polka_23
• Track 14 : PhirstandPhine_24, Lunar_24, Daob_24, Melons_24, Cote_24
• Track 15 : Damocles_24, Pineda_24
• Track 16 : BadWillHunting_24
• Track 17 : Zhuangyuan_24
• Track 18 : GramZayde_23, Bibble12_24, Jerole_24, HannahPhantana_24
• Track 19 : Cygnet_23
• Track 20 : Amelia_24, Coral_23
• Track 21 : Kepler_23
• Track 22 : Glotell_22, KHumphrey_22, Amphitrite_22, Fingolfin_22, Juno112_22, Atlantica_22
• Track 23 : StuartMinion_22, AlexMinion_22
• Track 24 : Rattail_22, Azaz_22, Leona_22
• Track 25 : RedFox_22, DanHam62_22
• Track 26 : Andrew_23
• Track 27 : PhluffyCoco_22, Laphuphu24k_21, HamCheese_22
• Track 28 : Babushka_22
• Track 29 : AdoptaAdorbs_22
• Track 30 : Renna12_23
• Track 31 : Oppalora_22, AmiCi24_22
• Track 32 : Camara_22
• Track 33 : Exile_21
• Track 34 : Soondubu_21
• Track 35 : CocoCinnamon_26
• Track 36 : LisoBros_23

• Track 37 : GrimEater_21, Jankie_21

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

The start number called the most often in the published annotations is 19, it was called in 48 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AdoptaAdorbs_22, AlexMinion_22, Amanises_24, Amelia_24, AmiCi24_22, Amphitrite_22, Andrew_23, Atlantica_22, Babushka_22, BadWillHunting_24, Basilisk_23, Bedetta_24, Bibble12_24, Brynnie_23, Camara_22, Chickaboom_22, Chicken_23, CocoCinnamon_26, Colusalem_23, Coral_23, Cote_24, Damocles_24, DanHam62_22, Daob_24, Eesa_23, Fingolfin_22, Glotell_22, GramZayde_23, Gravel_24, HamCheese_22, HannahPhantana_24, Jamun_23, Jerole_24, Juno112_22, KHumphrey_22, KendraB23_24, Kepler_23, Laphuphu24k_21, Lunar_24, Melons_24, Niblet_23, Oppalora_22, Orcanus_23, OtsoOtso_23, Pelletreau_24, PhirstandPhine_24, PhluffyCoco_22, Pineda_24, Polka_23, RedFox_22, Renna12_23, Ruchi_23, StuartMinion_22, TaylorSipht_23, Toad24_24, Vulpecula_23, Westrich_24, WileyE_22, Zhuangyuan_24, Zixiang_23,

Genes that have the "Most Annotated" start but do not call it:
• Shen_24,

Genes that do not have the "Most Annotated" start:
• Azaz_22, Cygnet_23, Exile_21, GrimEater_21, Jankie_21, Leona_22, LisoBros_23, Rattail_22, Soondubu_21,

**Summary by start number:**

Start 17:
• Found in 5 of 70 ( 7.1% ) of genes in pham
• Manual Annotations of this start: 4 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Exile_21 (AZ6), GrimEater_21 (FP), Jankie_21 (FP), LisoBros_23 (FP), Soondubu_21 (AZ6),

Start 18:
• Found in 4 of 70 ( 5.7% ) of genes in pham
• Manual Annotations of this start: 3 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Azaz_22 (AS3), Cygnet_23 (AS2), Leona_22 (AS3), Rattail_22 (AS3),

Start 19:
• Found in 61 of 70 ( 87.1% ) of genes in pham
• Manual Annotations of this start: 48 of 56
• Called 98.4% of time when present
• Phage (with cluster) where this start called: AdoptaAdorbs_22 (AS3), AlexMinion_22 (AS3), Amanises_24 (AS1), Amelia_24 (AS2), AmiCi24_22 (AS3), Amphitrite_22 (AS3), Andrew_23 (AS3), Atlantica_22 (AS3), Babushka_22 (AS3),

BadWillHunting_24 (AS2), Basilisk_23 (AS1), Bedetta_24 (AS2), Bibble12_24 (AS2), Brynnie_23 (AS1), Camara_22 (AS3), Chickaboom_22 (AS1), Chicken_23 (AS1), CocoCinnamon_26 (FO), Colusalem_23 (AS2), Coral_23 (AS2), Cote_24 (AS2), Damocles_24 (AS2), DanHam62_22 (AS3), Daob_24 (AS2), Eesa_23 (AS1), Fingolfin_22 (AS3), Glotell_22 (AS3), GramZayde_23 (AS2), Gravel_24 (AS1), HamCheese_22 (AS3), HannahPhantana_24 (AS2), Jamun_23 (AS1), Jerole_24 (AS2), Juno112_22 (AS3), KHumphrey_22 (AS3), KendraB23_24 (AS1), Kepler_23 (AS2), Laphuphu24k_21 (AS3), Lunar_24 (AS2), Melons_24 (AS2), Niblet_23 (AS1), Oppalora_22 (AS3), Orcanus_23 (AS1), OtsoOtso_23 (AS2), Pelletreau_24 (AS1), PhirstandPhine_24 (AS2), PhluffyCoco_22 (AS3), Pineda_24 (AS2), Polka_23 (AS2), RedFox_22 (AS3), Renna12_23 (AS3), Ruchi_23 (AS1), StuartMinion_22 (AS3), TaylorSipht_23 (AS1), Toad24_24 (AS1), Vulpecula_23 (AS1), Westrich_24 (AS1), WileyE_22 (AS1), Zhuangyuan_24 (AS2), Zixiang_23 (AS1),

Start 22:
• Found in 59 of 70 ( 84.3% ) of genes in pham
• Manual Annotations of this start: 1 of 56
• Called 1.7% of time when present
• Phage (with cluster) where this start called: Shen_24 (AS1),

**Summary by clusters:**

There are 6 clusters represented in this pham: AS3, AS2, AS1, FP, AZ6, FO,

Info for manual annotations of cluster AS1:
•Start number 19 was manually annotated 15 times for cluster AS1.
•Start number 22 was manually annotated 1 time for cluster AS1.

Info for manual annotations of cluster AS2:
•Start number 18 was manually annotated 1 time for cluster AS2.
•Start number 19 was manually annotated 15 times for cluster AS2.

Info for manual annotations of cluster AS3:
•Start number 18 was manually annotated 2 times for cluster AS3.
•Start number 19 was manually annotated 17 times for cluster AS3.

Info for manual annotations of cluster AZ6:
•Start number 17 was manually annotated 1 time for cluster AZ6.

Info for manual annotations of cluster FO:
•Start number 19 was manually annotated 1 time for cluster FO.

Info for manual annotations of cluster FP:
•Start number 17 was manually annotated 3 times for cluster FP.

***Gene Information:***

Gene: AdoptaAdorbs_22 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for AdoptaAdorbs_22:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (33, 16777), (35, 16789), (36, 16810), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356),

(78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: AlexMinion_22 Start: 16606, Stop: 17655, Start Num: 19
Candidate Starts for AlexMinion_22:
(16, 16582), (Start: 19 @16606 has 48 MA's), (Start: 22 @16654 has 1 MA's), (23, 16657), (28, 16720), (30, 16777), (31, 16783), (35, 16831), (38, 16861), (44, 16951), (50, 17050), (54, 17134), (60, 17194), (65, 17251), (74, 17341), (77, 17389), (78, 17401), (81, 17434), (91, 17545), (96, 17581),

Gene: Amanises_24 Start: 18144, Stop: 19181, Start Num: 19
Candidate Starts for Amanises_24:
(Start: 19 @18144 has 48 MA's), (Start: 22 @18192 has 1 MA's), (26, 18243), (28, 18258), (31, 18324), (35, 18372), (44, 18492), (54, 18675), (63, 18747), (65, 18783), (68, 18816), (78, 18933), (80, 18963), (82, 18972), (89, 19062), (91, 19074), (93, 19086), (100, 19140),

Gene: Amelia_24 Start: 16976, Stop: 18043, Start Num: 19
Candidate Starts for Amelia_24:
(Start: 19 @16976 has 48 MA's), (Start: 22 @17024 has 1 MA's), (23, 17027), (28, 17090), (30, 17150), (31, 17156), (35, 17204), (42, 17294), (44, 17324), (50, 17423), (54, 17507), (60, 17573), (65, 17642), (70, 17699), (82, 17837), (89, 17927), (94, 17957), (96, 17972), (98, 17984), (99, 17999),

Gene: AmiCi24_22 Start: 16560, Stop: 17621, Start Num: 19
Candidate Starts for AmiCi24_22:
(16, 16536), (Start: 19 @16560 has 48 MA's), (Start: 22 @16608 has 1 MA's), (28, 16674), (30, 16734), (31, 16740), (35, 16788), (36, 16809), (44, 16908), (54, 17091), (65, 17217), (77, 17355), (78, 17367), (81, 17400), (91, 17511), (96, 17547),

Gene: Amphitrite_22 Start: 16559, Stop: 17620, Start Num: 19
Candidate Starts for Amphitrite_22:
(16, 16535), (Start: 19 @16559 has 48 MA's), (Start: 22 @16607 has 1 MA's), (28, 16673), (30, 16733), (31, 16739), (35, 16787), (36, 16808), (44, 16907), (54, 17090), (65, 17216), (74, 17306), (77, 17354), (78, 17366), (81, 17399), (91, 17510), (96, 17546),

Gene: Andrew_23 Start: 16999, Stop: 18045, Start Num: 19
Candidate Starts for Andrew_23:
(Start: 19 @16999 has 48 MA's), (Start: 22 @17047 has 1 MA's), (28, 17113), (31, 17179), (34, 17224), (35, 17227), (38, 17257), (42, 17317), (44, 17347), (54, 17530), (59, 17584), (61, 17608), (65, 17647), (68, 17680), (77, 17785), (78, 17797), (81, 17830), (88, 17923), (91, 17938),

Gene: Atlantica_22 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for Atlantica_22:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (31, 16741), (35, 16789), (36, 16810), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356), (78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: Azaz_22 Start: 16621, Stop: 17682, Start Num: 18
Candidate Starts for Azaz_22:
(Start: 18 @16621 has 3 MA's), (Start: 22 @16669 has 1 MA's), (28, 16735), (30, 16795), (31, 16801), (35, 16849), (36, 16870), (44, 16969), (54, 17152), (65, 17278), (77, 17416), (78, 17428), (81, 17461), (85, 17545), (91, 17572), (96, 17608),

Gene: Babushka_22 Start: 16615, Stop: 17682, Start Num: 19
Candidate Starts for Babushka_22:

(4, 16315), (5, 16333), (10, 16456), (14, 16564), (16, 16591), (Start: 19 @16615 has 48 MA's), (Start: 22 @16663 has 1 MA's), (28, 16729), (31, 16795), (32, 16819), (35, 16843), (36, 16864), (44, 16963), (50, 17062), (54, 17146), (65, 17281), (77, 17419), (78, 17431), (91, 17572), (97, 17611),

Gene: BadWillHunting_24 Start: 16977, Stop: 18044, Start Num: 19
Candidate Starts for BadWillHunting_24:
(Start: 19 @16977 has 48 MA's), (Start: 22 @17025 has 1 MA's), (23, 17028), (28, 17091), (31, 17157), (35, 17205), (36, 17226), (42, 17295), (44, 17325), (50, 17424), (54, 17508), (60, 17574), (65, 17643), (70, 17700), (82, 17838), (89, 17928), (94, 17958), (96, 17973), (98, 17985), (99, 18000),

Gene: Basilisk_23 Start: 18276, Stop: 19316, Start Num: 19
Candidate Starts for Basilisk_23:
(Start: 19 @18276 has 48 MA's), (20, 18291), (25, 18372), (31, 18456), (35, 18510), (36, 18531), (39, 18552), (44, 18630), (51, 18747), (54, 18813), (65, 18918), (77, 19056), (78, 19068), (81, 19101), (91, 19209), (102, 19308),

Gene: Bedetta_24 Start: 16980, Stop: 18047, Start Num: 19
Candidate Starts for Bedetta_24:
(Start: 19 @16980 has 48 MA's), (Start: 22 @17028 has 1 MA's), (23, 17031), (24, 17064), (28, 17094), (31, 17160), (35, 17208), (42, 17298), (43, 17316), (44, 17328), (54, 17511), (60, 17577), (65, 17646), (70, 17703), (82, 17841), (89, 17931), (90, 17934), (94, 17961), (96, 17976), (98, 17988), (99, 18003),

Gene: Bibble12_24 Start: 16979, Stop: 18034, Start Num: 19
Candidate Starts for Bibble12_24:
(Start: 19 @16979 has 48 MA's), (Start: 22 @17027 has 1 MA's), (23, 17030), (28, 17093), (31, 17159), (35, 17207), (36, 17228), (42, 17297), (43, 17315), (44, 17327), (46, 17363), (50, 17426), (54, 17510), (60, 17567), (65, 17636), (68, 17669), (78, 17786), (80, 17816), (82, 17825), (91, 17927), (100, 17993),

Gene: Brynnie_23 Start: 18087, Stop: 19124, Start Num: 19
Candidate Starts for Brynnie_23:
(Start: 19 @18087 has 48 MA's), (20, 18102), (25, 18183), (27, 18192), (31, 18267), (35, 18321), (36, 18342), (39, 18363), (44, 18441), (54, 18624), (65, 18726), (77, 18864), (78, 18876), (81, 18909), (91, 19017), (102, 19116),

Gene: Camara_22 Start: 16562, Stop: 17623, Start Num: 19
Candidate Starts for Camara_22:
(16, 16538), (Start: 19 @16562 has 48 MA's), (Start: 22 @16610 has 1 MA's), (28, 16676), (30, 16736), (31, 16742), (35, 16790), (36, 16811), (44, 16910), (54, 17093), (65, 17219), (74, 17309), (77, 17357), (78, 17369), (79, 17384), (81, 17402), (91, 17513), (96, 17549),

Gene: Chickaboom_22 Start: 17014, Stop: 18045, Start Num: 19
Candidate Starts for Chickaboom_22:
(Start: 19 @17014 has 48 MA's), (Start: 22 @17062 has 1 MA's), (28, 17128), (30, 17188), (31, 17194), (35, 17242), (38, 17272), (44, 17362), (54, 17545), (56, 17578), (65, 17647), (66, 17653), (77, 17785), (78, 17797), (82, 17836), (83, 17839), (92, 17944), (102, 18037),

Gene: Chicken_23 Start: 18013, Stop: 19050, Start Num: 19
Candidate Starts for Chicken_23:
(Start: 19 @18013 has 48 MA's), (20, 18028), (Start: 22 @18061 has 1 MA's), (28, 18127), (31, 18193), (35, 18241), (36, 18262), (42, 18331), (44, 18361), (54, 18544), (63, 18616), (65, 18652), (68, 18685), (78, 18802), (80, 18832), (82, 18841), (91, 18943), (100, 19009),

Gene: CocoCinnamon_26 Start: 18953, Stop: 20008, Start Num: 19

Candidate Starts for CocoCinnamon_26:
(13, 18836), (Start: 19 @18953 has 48 MA's), (25, 19064), (28, 19082), (31, 19148), (35, 19202), (37, 19229), (40, 19262), (42, 19292), (44, 19322), (48, 19412), (54, 19505), (65, 19610), (73, 19688), (95, 19928), (101, 19985),

Gene: Colusalem_23 Start: 16819, Stop: 17886, Start Num: 19
Candidate Starts for Colusalem_23:
(Start: 19 @16819 has 48 MA's), (Start: 22 @16867 has 1 MA's), (23, 16870), (24, 16903), (28, 16933), (31, 16999), (35, 17047), (42, 17137), (43, 17155), (44, 17167), (54, 17350), (60, 17416), (65, 17485), (70, 17542), (82, 17680), (89, 17770), (90, 17773), (94, 17800), (96, 17815), (98, 17827), (99, 17842),

Gene: Coral_23 Start: 16815, Stop: 17882, Start Num: 19
Candidate Starts for Coral_23:
(Start: 19 @16815 has 48 MA's), (Start: 22 @16863 has 1 MA's), (23, 16866), (28, 16929), (30, 16989), (31, 16995), (35, 17043), (42, 17133), (44, 17163), (50, 17262), (54, 17346), (60, 17412), (65, 17481), (70, 17538), (82, 17676), (89, 17766), (94, 17796), (96, 17811), (98, 17823), (99, 17838),

Gene: Cote_24 Start: 16976, Stop: 18034, Start Num: 19
Candidate Starts for Cote_24:
(Start: 19 @16976 has 48 MA's), (Start: 22 @17024 has 1 MA's), (23, 17027), (28, 17090), (31, 17156), (35, 17204), (36, 17225), (42, 17294), (43, 17312), (44, 17324), (50, 17423), (54, 17507), (60, 17564), (65, 17633), (70, 17690), (82, 17828), (89, 17918), (90, 17921), (96, 17963), (98, 17975), (99, 17990),

Gene: Cygnet_23 Start: 17632, Stop: 18687, Start Num: 18
Candidate Starts for Cygnet_23:
(Start: 18 @17632 has 3 MA's), (20, 17647), (21, 17653), (Start: 22 @17680 has 1 MA's), (28, 17746), (30, 17806), (31, 17812), (35, 17860), (44, 17980), (50, 18079), (52, 18127), (54, 18163), (65, 18283), (69, 18331), (71, 18343), (75, 18382), (76, 18388), (78, 18436), (81, 18469), (91, 18577), (96, 18613),

Gene: Damocles_24 Start: 16978, Stop: 18045, Start Num: 19
Candidate Starts for Damocles_24:
(Start: 19 @16978 has 48 MA's), (Start: 22 @17026 has 1 MA's), (23, 17029), (24, 17062), (28, 17092), (31, 17158), (35, 17206), (36, 17227), (42, 17296), (43, 17314), (44, 17326), (54, 17509), (60, 17575), (65, 17644), (70, 17701), (82, 17839), (89, 17929), (90, 17932), (94, 17959), (96, 17974), (98, 17986), (99, 18001),

Gene: DanHam62_22 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for DanHam62_22:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (35, 16789), (36, 16810), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356), (78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: Daob_24 Start: 16981, Stop: 18039, Start Num: 19
Candidate Starts for Daob_24:
(Start: 19 @16981 has 48 MA's), (Start: 22 @17029 has 1 MA's), (23, 17032), (28, 17095), (31, 17161), (35, 17209), (36, 17230), (42, 17299), (43, 17317), (44, 17329), (50, 17428), (54, 17512), (60, 17569), (65, 17638), (70, 17695), (82, 17833), (89, 17923), (90, 17926), (96, 17968), (98, 17980), (99, 17995),

Gene: Eesa_23 Start: 18236, Stop: 19273, Start Num: 19
Candidate Starts for Eesa_23:
(Start: 19 @18236 has 48 MA's), (Start: 22 @18284 has 1 MA's), (26, 18335), (28, 18350), (30, 18410), (31, 18416), (35, 18464), (36, 18485), (44, 18584), (54, 18767), (63, 18839), (65, 18875), (68, 18908), (78, 19025), (80, 19055), (82, 19064), (89, 19154), (91, 19166), (93, 19178), (100, 19232),

Gene: Exile_21 Start: 20646, Stop: 21581, Start Num: 17
Candidate Starts for Exile_21:
(Start: 17 @20646 has 4 MA's), (25, 20739), (37, 20886), (47, 21021), (54, 21147), (55, 21168), (62, 21222), (72, 21342), (86, 21525),

Gene: Fingolfin_22 Start: 16562, Stop: 17623, Start Num: 19
Candidate Starts for Fingolfin_22:
(16, 16538), (Start: 19 @16562 has 48 MA's), (Start: 22 @16610 has 1 MA's), (28, 16676), (30, 16736), (31, 16742), (35, 16790), (36, 16811), (44, 16910), (54, 17093), (65, 17219), (74, 17309), (77, 17357), (78, 17369), (81, 17402), (91, 17513), (96, 17549),

Gene: Glotell_22 Start: 16559, Stop: 17620, Start Num: 19
Candidate Starts for Glotell_22:
(16, 16535), (Start: 19 @16559 has 48 MA's), (Start: 22 @16607 has 1 MA's), (28, 16673), (30, 16733), (31, 16739), (35, 16787), (36, 16808), (44, 16907), (54, 17090), (65, 17216), (74, 17306), (77, 17354), (78, 17366), (81, 17399), (91, 17510), (96, 17546),

Gene: GramZayde_23 Start: 16815, Stop: 17870, Start Num: 19
Candidate Starts for GramZayde_23:
(Start: 19 @16815 has 48 MA's), (Start: 22 @16863 has 1 MA's), (23, 16866), (28, 16929), (31, 16995), (35, 17043), (36, 17064), (42, 17133), (43, 17151), (44, 17163), (46, 17199), (50, 17262), (54, 17346), (60, 17403), (65, 17472), (68, 17505), (78, 17622), (80, 17652), (82, 17661), (91, 17763), (100, 17829),

Gene: Gravel_24 Start: 18142, Stop: 19179, Start Num: 19
Candidate Starts for Gravel_24:
(Start: 19 @18142 has 48 MA's), (Start: 22 @18190 has 1 MA's), (26, 18241), (28, 18256), (31, 18322), (35, 18370), (36, 18391), (44, 18490), (54, 18673), (63, 18745), (65, 18781), (68, 18814), (78, 18931), (80, 18961), (82, 18970), (89, 19060), (91, 19072), (93, 19084), (100, 19138),

Gene: GrimEater_21 Start: 18277, Stop: 19182, Start Num: 17
Candidate Starts for GrimEater_21:
(Start: 17 @18277 has 4 MA's), (25, 18370), (27, 18379), (47, 18652), (53, 18763), (55, 18784), (60, 18820), (67, 18880), (72, 18940), (86, 19129),

Gene: HamCheese_22 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for HamCheese_22:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (31, 16741), (35, 16789), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356), (78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: HannahPhantana_24 Start: 16979, Stop: 18034, Start Num: 19
Candidate Starts for HannahPhantana_24:
(Start: 19 @16979 has 48 MA's), (Start: 22 @17027 has 1 MA's), (23, 17030), (28, 17093), (31, 17159), (35, 17207), (36, 17228), (42, 17297), (43, 17315), (44, 17327), (46, 17363), (50, 17426), (54, 17510), (60, 17567), (65, 17636), (68, 17669), (78, 17786), (80, 17816), (82, 17825), (91, 17927), (100, 17993),

Gene: Jamun_23 Start: 17682, Stop: 18722, Start Num: 19
Candidate Starts for Jamun_23:
(Start: 19 @17682 has 48 MA's), (20, 17697), (25, 17778), (31, 17862), (36, 17937), (39, 17958), (44, 18036), (54, 18219), (57, 18261), (65, 18324), (77, 18462), (78, 18474), (81, 18507), (91, 18615), (100, 18681), (102, 18714),

Gene: Jankie_21 Start: 18276, Stop: 19181, Start Num: 17
Candidate Starts for Jankie_21:
(Start: 17 @18276 has 4 MA's), (25, 18369), (27, 18378), (47, 18651), (53, 18762), (55, 18783), (60, 18819), (67, 18879), (72, 18939), (86, 19128),

Gene: Jerole_24 Start: 16976, Stop: 18031, Start Num: 19
Candidate Starts for Jerole_24:
(Start: 19 @16976 has 48 MA's), (Start: 22 @17024 has 1 MA's), (23, 17027), (28, 17090), (31, 17156), (35, 17204), (36, 17225), (42, 17294), (43, 17312), (44, 17324), (46, 17360), (50, 17423), (54, 17507), (60, 17564), (65, 17633), (68, 17666), (78, 17783), (80, 17813), (82, 17822), (91, 17924), (100, 17990),

Gene: Juno112_22 Start: 16562, Stop: 17629, Start Num: 19
Candidate Starts for Juno112_22:
(16, 16538), (Start: 19 @16562 has 48 MA's), (Start: 22 @16610 has 1 MA's), (28, 16676), (30, 16736), (31, 16742), (35, 16790), (36, 16811), (44, 16910), (54, 17093), (65, 17219), (74, 17309), (77, 17357), (78, 17369), (81, 17402), (91, 17513), (96, 17549),

Gene: KHumphrey_22 Start: 16559, Stop: 17620, Start Num: 19
Candidate Starts for KHumphrey_22:
(16, 16535), (Start: 19 @16559 has 48 MA's), (Start: 22 @16607 has 1 MA's), (28, 16673), (30, 16733), (31, 16739), (35, 16787), (36, 16808), (44, 16907), (54, 17090), (65, 17216), (74, 17306), (77, 17354), (78, 17366), (81, 17399), (91, 17510), (96, 17546),

Gene: KendraB23_24 Start: 18144, Stop: 19181, Start Num: 19
Candidate Starts for KendraB23_24:
(1, 17826), (6, 17865), (8, 17868), (9, 17901), (Start: 19 @18144 has 48 MA's), (Start: 22 @18192 has 1 MA's), (26, 18243), (28, 18258), (31, 18324), (35, 18372), (44, 18492), (54, 18675), (63, 18747), (65, 18783), (68, 18816), (78, 18933), (80, 18963), (82, 18972), (89, 19062), (91, 19074), (93, 19086), (100, 19140),

Gene: Kepler_23 Start: 16814, Stop: 17869, Start Num: 19
Candidate Starts for Kepler_23:
(Start: 19 @16814 has 48 MA's), (Start: 22 @16862 has 1 MA's), (23, 16865), (28, 16928), (31, 16994), (35, 17042), (36, 17063), (42, 17132), (44, 17162), (54, 17345), (60, 17402), (65, 17471), (68, 17504), (78, 17621), (80, 17651), (82, 17660), (91, 17762), (100, 17828),

Gene: Laphuphu24k_21 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for Laphuphu24k_21:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (31, 16741), (35, 16789), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356), (78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: Leona_22 Start: 16621, Stop: 17682, Start Num: 18
Candidate Starts for Leona_22:
(Start: 18 @16621 has 3 MA's), (Start: 22 @16669 has 1 MA's), (28, 16735), (30, 16795), (31, 16801), (35, 16849), (36, 16870), (44, 16969), (54, 17152), (65, 17278), (77, 17416), (78, 17428), (81, 17461), (85, 17545), (91, 17572), (96, 17608),

Gene: LisoBros_23 Start: 20284, Stop: 21207, Start Num: 17
Candidate Starts for LisoBros_23:
(12, 20134), (15, 20260), (Start: 17 @20284 has 4 MA's), (25, 20377), (47, 20659), (54, 20779), (55, 20800), (72, 20965), (86, 21154), (87, 21160),

Gene: Lunar_24 Start: 16976, Stop: 18034, Start Num: 19
Candidate Starts for Lunar_24:
(Start: 19 @16976 has 48 MA's), (Start: 22 @17024 has 1 MA's), (23, 17027), (28, 17090), (31, 17156), (35, 17204), (36, 17225), (42, 17294), (43, 17312), (44, 17324), (50, 17423), (54, 17507), (60, 17564), (65, 17633), (70, 17690), (82, 17828), (89, 17918), (90, 17921), (96, 17963), (98, 17975), (99, 17990),

Gene: Melons_24 Start: 16976, Stop: 18034, Start Num: 19
Candidate Starts for Melons_24:
(Start: 19 @16976 has 48 MA's), (Start: 22 @17024 has 1 MA's), (23, 17027), (28, 17090), (31, 17156), (35, 17204), (36, 17225), (42, 17294), (43, 17312), (44, 17324), (50, 17423), (54, 17507), (60, 17564), (65, 17633), (70, 17690), (82, 17828), (89, 17918), (90, 17921), (96, 17963), (98, 17975), (99, 17990),

Gene: Niblet_23 Start: 18013, Stop: 19050, Start Num: 19
Candidate Starts for Niblet_23:
(Start: 19 @18013 has 48 MA's), (20, 18028), (Start: 22 @18061 has 1 MA's), (28, 18127), (31, 18193), (35, 18241), (36, 18262), (42, 18331), (44, 18361), (54, 18544), (63, 18616), (65, 18652), (68, 18685), (78, 18802), (80, 18832), (82, 18841), (91, 18943), (100, 19009),

Gene: Oppalora_22 Start: 16560, Stop: 17621, Start Num: 19
Candidate Starts for Oppalora_22:
(16, 16536), (Start: 19 @16560 has 48 MA's), (Start: 22 @16608 has 1 MA's), (28, 16674), (30, 16734), (31, 16740), (35, 16788), (36, 16809), (44, 16908), (54, 17091), (65, 17217), (77, 17355), (78, 17367), (81, 17400), (91, 17511), (96, 17547),

Gene: Orcanus_23 Start: 17936, Stop: 18973, Start Num: 19
Candidate Starts for Orcanus_23:
(Start: 19 @17936 has 48 MA's), (Start: 22 @17984 has 1 MA's), (26, 18035), (28, 18050), (31, 18116), (35, 18164), (36, 18185), (44, 18284), (54, 18467), (63, 18539), (65, 18575), (68, 18608), (78, 18725), (80, 18755), (82, 18764), (89, 18854), (91, 18866), (93, 18878), (100, 18932),

Gene: OtsoOtso_23 Start: 16822, Stop: 17889, Start Num: 19
Candidate Starts for OtsoOtso_23:
(Start: 19 @16822 has 48 MA's), (Start: 22 @16870 has 1 MA's), (23, 16873), (24, 16906), (28, 16936), (31, 17002), (35, 17050), (42, 17140), (43, 17158), (44, 17170), (54, 17353), (60, 17419), (65, 17488), (70, 17545), (82, 17683), (89, 17773), (90, 17776), (94, 17803), (96, 17818), (98, 17830), (99, 17845),

Gene: Pelletreau_24 Start: 18142, Stop: 19179, Start Num: 19
Candidate Starts for Pelletreau_24:
(Start: 19 @18142 has 48 MA's), (Start: 22 @18190 has 1 MA's), (26, 18241), (28, 18256), (31, 18322), (35, 18370), (36, 18391), (44, 18490), (54, 18673), (63, 18745), (65, 18781), (68, 18814), (78, 18931), (80, 18961), (82, 18970), (89, 19060), (91, 19072), (93, 19084), (100, 19138),

Gene: PhirstandPhine_24 Start: 16976, Stop: 18034, Start Num: 19
Candidate Starts for PhirstandPhine_24:
(Start: 19 @16976 has 48 MA's), (Start: 22 @17024 has 1 MA's), (23, 17027), (28, 17090), (31, 17156), (35, 17204), (36, 17225), (42, 17294), (43, 17312), (44, 17324), (50, 17423), (54, 17507), (60, 17564), (65, 17633), (70, 17690), (82, 17828), (89, 17918), (90, 17921), (96, 17963), (98, 17975), (99, 17990),

Gene: PhluffyCoco_22 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for PhluffyCoco_22:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (31, 16741), (35, 16789), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356), (78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: Pineda_24 Start: 16978, Stop: 18045, Start Num: 19
Candidate Starts for Pineda_24:
(Start: 19 @16978 has 48 MA's), (Start: 22 @17026 has 1 MA's), (23, 17029), (24, 17062), (28, 17092), (31, 17158), (35, 17206), (36, 17227), (42, 17296), (43, 17314), (44, 17326), (54, 17509), (60, 17575), (65, 17644), (70, 17701), (82, 17839), (89, 17929), (90, 17932), (94, 17959), (96, 17974), (98, 17986), (99, 18001),

Gene: Polka_23 Start: 16822, Stop: 17889, Start Num: 19
Candidate Starts for Polka_23:
(Start: 19 @16822 has 48 MA's), (Start: 22 @16870 has 1 MA's), (23, 16873), (24, 16906), (28, 16936), (31, 17002), (35, 17050), (42, 17140), (43, 17158), (44, 17170), (54, 17353), (60, 17419), (65, 17488), (70, 17545), (82, 17683), (89, 17773), (90, 17776), (94, 17803), (96, 17818), (98, 17830), (99, 17845),

Gene: Rattail_22 Start: 16621, Stop: 17682, Start Num: 18
Candidate Starts for Rattail_22:
(Start: 18 @16621 has 3 MA's), (Start: 22 @16669 has 1 MA's), (28, 16735), (30, 16795), (31, 16801), (35, 16849), (36, 16870), (44, 16969), (54, 17152), (65, 17278), (77, 17416), (78, 17428), (81, 17461), (85, 17545), (91, 17572), (96, 17608),

Gene: RedFox_22 Start: 16561, Stop: 17622, Start Num: 19
Candidate Starts for RedFox_22:
(16, 16537), (Start: 19 @16561 has 48 MA's), (Start: 22 @16609 has 1 MA's), (28, 16675), (30, 16735), (35, 16789), (36, 16810), (44, 16909), (54, 17092), (65, 17218), (74, 17308), (77, 17356), (78, 17368), (81, 17401), (91, 17512), (96, 17548),

Gene: Renna12_23 Start: 16914, Stop: 17975, Start Num: 19
Candidate Starts for Renna12_23:
(16, 16890), (Start: 19 @16914 has 48 MA's), (Start: 22 @16962 has 1 MA's), (28, 17028), (30, 17088), (31, 17094), (35, 17142), (36, 17163), (44, 17262), (49, 17355), (50, 17361), (54, 17445), (65, 17571), (77, 17709), (78, 17721), (81, 17754), (91, 17865), (96, 17901),

Gene: Ruchi_23 Start: 18222, Stop: 19262, Start Num: 19
Candidate Starts for Ruchi_23:
(Start: 19 @18222 has 48 MA's), (20, 18237), (25, 18318), (31, 18402), (35, 18456), (36, 18477), (39, 18498), (44, 18576), (51, 18693), (54, 18759), (65, 18864), (77, 19002), (78, 19014), (81, 19047), (91, 19155), (102, 19254),

Gene: Shen_24 Start: 18191, Stop: 19180, Start Num: 22
Candidate Starts for Shen_24:
(Start: 19 @18143 has 48 MA's), (Start: 22 @18191 has 1 MA's), (26, 18242), (28, 18257), (31, 18323), (35, 18371), (44, 18491), (54, 18674), (63, 18746), (65, 18782), (68, 18815), (78, 18932), (80, 18962), (82, 18971), (89, 19061), (91, 19073), (93, 19085), (100, 19139),

Gene: Soondubu_21 Start: 20650, Stop: 21585, Start Num: 17
Candidate Starts for Soondubu_21:
(Start: 17 @20650 has 4 MA's), (25, 20743), (37, 20890), (39, 20905), (41, 20926), (45, 20995), (47, 21025), (54, 21151), (55, 21172), (62, 21226), (72, 21346), (86, 21529),

Gene: StuartMinion_22 Start: 16606, Stop: 17655, Start Num: 19
Candidate Starts for StuartMinion_22:
(16, 16582), (Start: 19 @16606 has 48 MA's), (Start: 22 @16654 has 1 MA's), (23, 16657), (28, 16720), (30, 16777), (31, 16783), (35, 16831), (38, 16861), (44, 16951), (50, 17050), (54, 17134), (60, 17194),

(65, 17251), (74, 17341), (77, 17389), (78, 17401), (81, 17434), (91, 17545), (96, 17581),

Gene: TaylorSipht_23 Start: 16956, Stop: 17999, Start Num: 19
Candidate Starts for TaylorSipht_23:
(Start: 19 @16956 has 48 MA's), (Start: 22 @17004 has 1 MA's), (30, 17130), (31, 17136), (35, 17184), (44, 17304), (51, 17421), (54, 17487), (58, 17532), (64, 17571), (65, 17604), (68, 17637), (77, 17742), (78, 17754), (84, 17805), (91, 17895), (102, 17994),

Gene: Toad24_24 Start: 18143, Stop: 19180, Start Num: 19
Candidate Starts for Toad24_24:
(Start: 19 @18143 has 48 MA's), (Start: 22 @18191 has 1 MA's), (26, 18242), (28, 18257), (31, 18323), (35, 18371), (36, 18392), (44, 18491), (54, 18674), (63, 18746), (65, 18782), (68, 18815), (78, 18932), (80, 18962), (82, 18971), (89, 19061), (91, 19073), (93, 19085), (100, 19139),

Gene: Vulpecula_23 Start: 17680, Stop: 18720, Start Num: 19
Candidate Starts for Vulpecula_23:
(Start: 19 @17680 has 48 MA's), (25, 17776), (31, 17860), (36, 17935), (39, 17956), (44, 18034), (54, 18217), (65, 18322), (68, 18355), (77, 18460), (78, 18472), (89, 18601), (102, 18712),

Gene: Westrich_24 Start: 18132, Stop: 19169, Start Num: 19
Candidate Starts for Westrich_24:
(Start: 19 @18132 has 48 MA's), (Start: 22 @18180 has 1 MA's), (26, 18231), (28, 18246), (31, 18312), (35, 18360), (44, 18480), (54, 18663), (63, 18735), (65, 18771), (68, 18804), (78, 18921), (80, 18951), (82, 18960), (89, 19050), (91, 19062), (93, 19074), (100, 19128),

Gene: WileyE_22 Start: 17014, Stop: 18045, Start Num: 19
Candidate Starts for WileyE_22:
(Start: 19 @17014 has 48 MA's), (Start: 22 @17062 has 1 MA's), (28, 17128), (30, 17188), (31, 17194), (35, 17242), (38, 17272), (44, 17362), (54, 17545), (56, 17578), (65, 17647), (66, 17653), (77, 17785), (78, 17797), (82, 17836), (83, 17839), (92, 17944), (102, 18037),

Gene: Zhuangyuan_24 Start: 17386, Stop: 18453, Start Num: 19
Candidate Starts for Zhuangyuan_24:
(2, 17080), (3, 17083), (7, 17116), (11, 17236), (Start: 19 @17386 has 48 MA's), (20, 17401), (Start: 22 @17434 has 1 MA's), (29, 17518), (30, 17575), (31, 17581), (33, 17617), (42, 17719), (44, 17749), (50, 17848), (54, 17932), (60, 17992), (65, 18052), (68, 18085), (78, 18202), (81, 18235), (91, 18346), (93, 18358),

Gene: Zixiang_23 Start: 18014, Stop: 19051, Start Num: 19
Candidate Starts for Zixiang_23:
(Start: 19 @18014 has 48 MA's), (20, 18029), (Start: 22 @18062 has 1 MA's), (28, 18128), (31, 18194), (35, 18242), (36, 18263), (42, 18332), (44, 18362), (54, 18545), (63, 18617), (65, 18653), (68, 18686), (78, 18803), (80, 18833), (82, 18842), (91, 18944), (100, 19010),