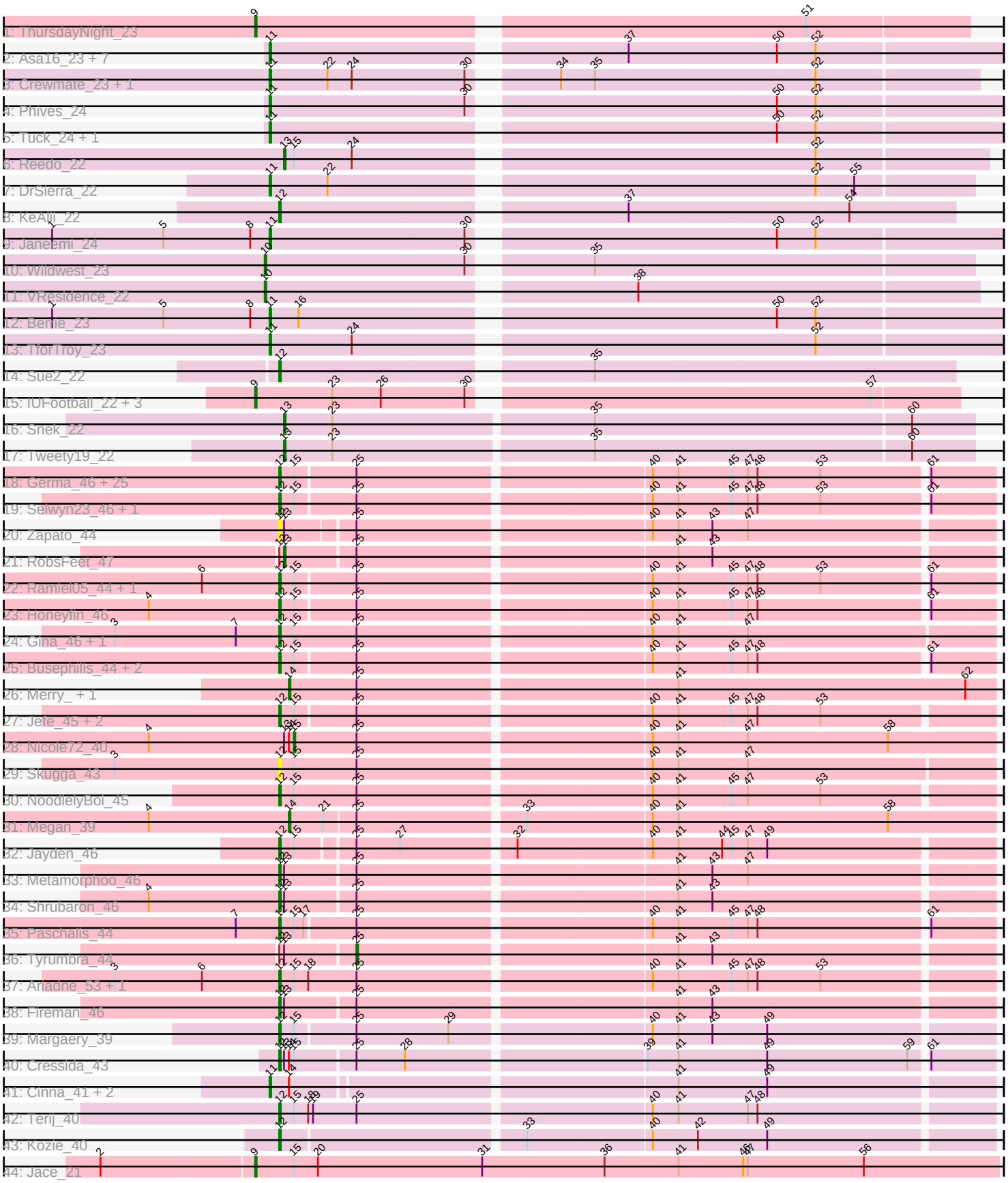
Pham 345603


1: ThursdayNight_23
2: Asa16_23 + 7
3: Crewmate_23 + 1
4: Phives_24
5: Tuck_24 + 1
6: Reedo_22
7: DrSierra_22
8: KeAlli_22
9: Janeemi_24
10: Wildwest_23
11: VResidence_22
12: Bertie_23
13: TforTroy_23
14: Sue2_22
15: IUFootball_22 + 3
16: Snek_22
17: Tweety19_22
18: Germa_46 + 25
19: Selwyn23_46 + 1
20: Zapato_44
21: RobsFeet_47
22: Ramiel05_44 + 1
23: Honeyfin_46
24: Gina_46 + 1
25: Busephilis_44 + 2
26: Merry_ + 1
27: Jefe_45 + 2
28: Nicole72_40
29: Skugga_43
30: NoodlelyBoi_45
31: Megan_39
32: Jayden_46
33: Metamorphoo_46
34: Shrubaron_46
35: Paschalis_44
36: Tyrumbra_44
37: Ariadne_53 + 1
38: Fireman_46
39: Margaery_39
40: Cressida_43
41: Cinna_41 + 2
42: Terij_40
43: Kozie_40
44: Jace_21

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 345603 Report

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

Pham number 345603 has 92 members, 9 are drafts.

Phages represented in each track:
• Track 1 : ThursdayNight_23
• Track 2 : Asa16_23, London_23, Subaru_23, Jstan_24, Niobe_23, Elezi_23, Eraser_23, Skelbel_24
• Track 3 : Crewmate_23, ObiToo_22
• Track 4 : Phives_24
• Track 5 : Tuck_24, Community_23
• Track 6 : Reedo_22
• Track 7 : DrSierra_22
• Track 8 : KeAlii_22
• Track 9 : Janeemi_24
• Track 10 : Wildwest_23
• Track 11 : VResidence_22
• Track 12 : Berrie_23
• Track 13 : TforTroy_23
• Track 14 : Sue2_22
• Track 15 : IUFootball_22, Maureen_22, Liebe_22, MaGuCo_22
• Track 16 : Snek_22
• Track 17 : Tweety19_22
• Track 18 : Germa_46, CrazyRich_44, Lucretia_45, ClearAsMud_47, SirFrank_44, Hermeonysus_44, PierreOrion_45, Ganandorf_44, BeagleBug_44, Cranjis_46, Antares_45, KaiHaiDragon_45, EarickHC_45, Phorgeous_44, Onika_44, Pulchra_46, Phrancesco_45, Shotgun_44, BrazzalePHS_44, Rockwell_44, PhedwardCullen_44, Savannah_44, Scumberland_46, Jollipop_45, LittleFortune_46, PiperSansNom_45
• Track 19 : Selwyn23_46, Glorp_46
• Track 20 : Zapato_44
• Track 21 : RobsFeet_47
• Track 22 : Ramiel05_44, Kowalski_44
• Track 23 : Honeyfin_46
• Track 24 : Gina_46, Teamocil_46
• Track 25 : Busephilis_44, Crisis_46, Quhwah_48
• Track 26 : Merry_, Sunny_
• Track 27 : Jefe_45, Piperis_45, Yeti_45
• Track 28 : Nicole72_40
• Track 29 : Skugga_43
• Track 30 : NoodlelyBoi_45
• Track 31 : Megan_39
• Track 32 : Jayden_46

• Track 33 : Metamorphoo_46
• Track 34 : Shrubaron_46
• Track 35 : Paschalis_44
• Track 36 : Tyrumbra_44
• Track 37 : Ariadne_53, Smarties_53
• Track 38 : Fireman_46
• Track 39 : Margaery_39
• Track 40 : Cressida_43
• Track 41 : Cinna_41, Matzah_42, MementoMori_42
• Track 42 : Terij_40
• Track 43 : Kozie_40
• Track 44 : Jace_21

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

The start number called the most often in the published annotations is 12, it was called in 49 of the 83 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Antares_45, Ariadne_53, BeagleBug_44, BrazzalePHS_44, Busephilis_44, ClearAsMud_47, Cranjis_46, CrazyRich_44, Cressida_43, Crisis_46, EarickHC_45, Fireman_46, Ganandorf_44, Germa_46, Gina_46, Glorp_46, Hermeonysus_44, Honeyfin_46, Jayden_46, Jefe_45, Jollipop_45, KaiHaiDragon_45, KeAlii_22, Kowalski_44, Kozie_40, LittleFortune_46, Lucretia_45, Margaery_39, Metamorphoo_46, NoodlelyBoi_45, Onika_44, Paschalis_44, PhedwardCullen_44, Phorgeous_44, Phrancesco_45, PierreOrion_45, PiperSansNom_45, Piperis_45, Pulchra_46, Quhwah_48, Ramiel05_44, Rockwell_44, Savannah_44, Scumberland_46, Selwyn23_46, Shotgun_44, Shrubaron_46, SirFrank_44, Skugga_43, Smarties_53, Sue2_22, Teamocil_46, Terij_40, Yeti_45, Zapato_44,

Genes that have the "Most Annotated" start but do not call it:
• RobsFeet_47, Tyrumbra_44,

Genes that do not have the "Most Annotated" start:
• Asa16_23, Berrie_23, Cinna_41, Community_23, Crewmate_23, DrSierra_22, Elezi_23, Eraser_23, IUFootball_22, Jace_21, Janeemi_24, Jstan_24, Liebe_22, London_23, MaGuCo_22, Matzah_42, Maureen_22, Megan_39, MementoMori_42, Merry_, Nicole72_40, Niobe_23, ObiToo_22, Phives_24, Reedo_22, Skelbel_24, Snek_22, Subaru_23, Sunny_, TforTroy_23, ThursdayNight_23, Tuck_24, Tweety19_22, VResidence_22, Wildwest_23,

Summary by start number:

Start 9:
• Found in 6 of 92 (6.5%) of genes in pham
• Manual Annotations of this start: 6 of 83
• Called 100.0% of time when present
• Phage (with cluster) where this start called: IUFootball_22 (AZ2), Jace_21 (singleton), Liebe_22 (AZ2), MaGuCo_22 (AZ2), Maureen_22 (AZ2), ThursdayNight_23 (AZ),

Start 10:
• Found in 2 of 92 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 83
• Called 100.0% of time when present
• Phage (with cluster) where this start called: VResidence_22 (AZ1), Wildwest_23 (AZ1),

Start 11:
• Found in 20 of 92 (21.7%) of genes in pham
• Manual Annotations of this start: 17 of 83
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Asa16_23 (AZ1), Berrie_23 (AZ1), Cinna_41 (EI), Community_23 (AZ1), Crewmate_23 (AZ1), DrSierra_22 (AZ1), Elezi_23 (AZ1), Eraser_23 (AZ1), Janeemi_24 (AZ1), Jstan_24 (AZ1), London_23 (AZ1), Matzah_42 (EI), MementoMori_42 (EI), Niobe_23 (AZ1), ObiToo_22 (AZ1), Phives_24 (AZ1), Skelbel_24 (AZ1), Subaru_23 (AZ1), TforTroy_23 (AZ1), Tuck_24 (AZ1),

Start 12:
• Found in 57 of 92 (62.0%) of genes in pham
• Manual Annotations of this start: 49 of 83
• Called 96.5% of time when present
• Phage (with cluster) where this start called: Antares_45 (EC), Ariadne_53 (EC), BeagleBug_44 (EC), BrazzalePHS_44 (EC), Busephilis_44 (EC), ClearAsMud_47 (EC), Cranjis_46 (EC), CrazyRich_44 (EC), Cressida_43 (EI), Crisis_46 (EC), EarickHC_45 (EC), Fireman_46 (EC), Ganandorf_44 (EC), Germa_46 (EC), Gina_46 (EC), Glorp_46 (EC), Hermeonysus_44 (EC), Honeyfin_46 (EC), Jayden_46 (EC), Jefe_45 (EC), Jollipop_45 (EC), KaiHaiDragon_45 (EC), KeAlii_22 (AZ1), Kowalski_44 (EC), Kozie_40 (EI), LittleFortune_46 (EC), Lucretia_45 (EC), Margaery_39 (EI), Metamorphoo_46 (EC), NoodlelyBoi_45 (EC), Onika_44 (EC), Paschalis_44 (EC), PhedwardCullen_44 (EC), Phorgeous_44 (EC), Phrancesco_45 (EC), PierreOrion_45 (EC), PiperSansNom_45 (EC), Piperis_45 (EC), Pulchra_46 (EC), Quhwah_48 (EC), Ramiel05_44 (EC), Rockwell_44 (EC), Savannah_44 (EC), Scumberland_46 (EC), Selwyn23_46 (EC), Shotgun_44 (EC), Shrubaron_46 (EC), SirFrank_44 (EC), Skugga_43 (EC), Smarties_53 (EC), Sue2_22 (AZ1), Teamocil_46 (EC), Terij_40 (EI), Yeti_45 (EC), Zapato_44 (EC),

Start 13:
• Found in 11 of 92 (12.0%) of genes in pham
• Manual Annotations of this start: 4 of 83
• Called 36.4% of time when present
• Phage (with cluster) where this start called: Reedo_22 (AZ1), RobsFeet_47 (EC), Snek_22 (AZ3), Tweety19_22 (AZ3),

Start 14:
• Found in 8 of 92 (8.7%) of genes in pham
• Manual Annotations of this start: 3 of 83
• Called 37.5% of time when present
• Phage (with cluster) where this start called: Megan_39 (EC), Merry_ (EC), Sunny_ (EC),

Start 15:

• Found in 51 of 92 (55.4%) of genes in pham
• Manual Annotations of this start: 1 of 83
• Called 2.0% of time when present
• Phage (with cluster) where this start called: Nicole72_40 (EC),

Start 25:
• Found in 58 of 92 (63.0%) of genes in pham
• Manual Annotations of this start: 1 of 83
• Called 1.7% of time when present
• Phage (with cluster) where this start called: Tyrumbra_44 (EC),

Summary by clusters:

There are 7 clusters represented in this pham: singleton, AZ, EI, EC, AZ1, AZ2, AZ3,

Info for manual annotations of cluster AZ:
•Start number 9 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:
•Start number 10 was manually annotated 2 times for cluster AZ1.
•Start number 11 was manually annotated 14 times for cluster AZ1.
•Start number 12 was manually annotated 2 times for cluster AZ1.
•Start number 13 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster AZ2:
•Start number 9 was manually annotated 4 times for cluster AZ2.

Info for manual annotations of cluster AZ3:
•Start number 13 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster EC:
•Start number 12 was manually annotated 43 times for cluster EC.
•Start number 13 was manually annotated 1 time for cluster EC.
•Start number 14 was manually annotated 3 times for cluster EC.
•Start number 15 was manually annotated 1 time for cluster EC.
•Start number 25 was manually annotated 1 time for cluster EC.

Info for manual annotations of cluster EI:
•Start number 11 was manually annotated 3 times for cluster EI.
•Start number 12 was manually annotated 4 times for cluster EI.

Gene Information:

Gene: Antares_45 Start: 31580, Stop: 32002, Start Num: 12
Candidate Starts for Antares_45:
(Start: 12 @31580 has 49 MA's), (Start: 15 @31589 has 1 MA's), (Start: 25 @31625 has 1 MA's), (40, 31799), (41, 31814), (45, 31847), (47, 31856), (48, 31862), (53, 31901), (61, 31964),

Gene: Ariadne_53 Start: 33197, Stop: 33622, Start Num: 12
Candidate Starts for Ariadne_53:

(3, 33095), (6, 33149), (Start: 12 @33197 has 49 MA's), (Start: 15 @33206 has 1 MA's), (18, 33215), (Start: 25 @33245 has 1 MA's), (40, 33419), (41, 33434), (45, 33467), (47, 33476), (48, 33482), (53, 33521),

Gene: Asa16_23 Start: 19751, Stop: 20182, Start Num: 11
Candidate Starts for Asa16_23:
(Start: 11 @19751 has 17 MA's), (37, 19955), (50, 20045), (52, 20069),

Gene: BeagleBug_44 Start: 31361, Stop: 31783, Start Num: 12
Candidate Starts for BeagleBug_44:
(Start: 12 @31361 has 49 MA's), (Start: 15 @31370 has 1 MA's), (Start: 25 @31406 has 1 MA's), (40, 31580), (41, 31595), (45, 31628), (47, 31637), (48, 31643), (53, 31682), (61, 31745),

Gene: Berrie_23 Start: 20305, Stop: 20736, Start Num: 11
Candidate Starts for Berrie_23:
(1, 20170), (5, 20239), (8, 20293), (Start: 11 @20305 has 17 MA's), (16, 20323), (50, 20599), (52, 20623),

Gene: BrazzalePHS_44 Start: 31375, Stop: 31797, Start Num: 12
Candidate Starts for BrazzalePHS_44:
(Start: 12 @31375 has 49 MA's), (Start: 15 @31384 has 1 MA's), (Start: 25 @31420 has 1 MA's), (40, 31594), (41, 31609), (45, 31642), (47, 31651), (48, 31657), (53, 31696), (61, 31759),

Gene: Busephilis_44 Start: 31316, Stop: 31738, Start Num: 12
Candidate Starts for Busephilis_44:
(Start: 12 @31316 has 49 MA's), (Start: 15 @31325 has 1 MA's), (Start: 25 @31361 has 1 MA's), (40, 31535), (41, 31550), (45, 31583), (47, 31592), (48, 31598), (61, 31700),

Gene: Cinna_41 Start: 31628, Stop: 32053, Start Num: 11
Candidate Starts for Cinna_41:
(Start: 11 @31628 has 17 MA's), (Start: 14 @31640 has 3 MA's), (41, 31865), (49, 31919),

Gene: ClearAsMud_47 Start: 31456, Stop: 31878, Start Num: 12
Candidate Starts for ClearAsMud_47:
(Start: 12 @31456 has 49 MA's), (Start: 15 @31465 has 1 MA's), (Start: 25 @31501 has 1 MA's), (40, 31675), (41, 31690), (45, 31723), (47, 31732), (48, 31738), (53, 31777), (61, 31840),

Gene: Community_23 Start: 21391, Stop: 21822, Start Num: 11
Candidate Starts for Community_23:
(Start: 11 @21391 has 17 MA's), (50, 21685), (52, 21709),

Gene: Cranjis_46 Start: 31535, Stop: 31957, Start Num: 12
Candidate Starts for Cranjis_46:
(Start: 12 @31535 has 49 MA's), (Start: 15 @31544 has 1 MA's), (Start: 25 @31580 has 1 MA's), (40, 31754), (41, 31769), (45, 31802), (47, 31811), (48, 31817), (53, 31856), (61, 31919),

Gene: CrazyRich_44 Start: 31344, Stop: 31766, Start Num: 12
Candidate Starts for CrazyRich_44:
(Start: 12 @31344 has 49 MA's), (Start: 15 @31353 has 1 MA's), (Start: 25 @31389 has 1 MA's), (40, 31563), (41, 31578), (45, 31611), (47, 31620), (48, 31626), (53, 31665), (61, 31728),

Gene: Cressida_43 Start: 31098, Stop: 31520, Start Num: 12
Candidate Starts for Cressida_43:

(Start: 12 @31098 has 49 MA's), (Start: 13 @31101 has 4 MA's), (Start: 14 @31104 has 3 MA's), (Start: 15 @31107 has 1 MA's), (Start: 25 @31143 has 1 MA's), (28, 31173), (39, 31314), (41, 31332), (49, 31386), (59, 31473), (61, 31482),

Gene: Crewmate_23 Start: 18201, Stop: 18617, Start Num: 11
Candidate Starts for Crewmate_23:
(Start: 11 @18201 has 17 MA's), (22, 18237), (24, 18252), (30, 18321), (34, 18363), (35, 18384), (52, 18519),

Gene: Crisis_46 Start: 31335, Stop: 31757, Start Num: 12
Candidate Starts for Crisis_46:
(Start: 12 @31335 has 49 MA's), (Start: 15 @31344 has 1 MA's), (Start: 25 @31380 has 1 MA's), (40, 31554), (41, 31569), (45, 31602), (47, 31611), (48, 31617), (61, 31719),

Gene: DrSierra_22 Start: 18261, Stop: 18674, Start Num: 11
Candidate Starts for DrSierra_22:
(Start: 11 @18261 has 17 MA's), (22, 18297), (52, 18579), (55, 18603),

Gene: EarickHC_45 Start: 31258, Stop: 31680, Start Num: 12
Candidate Starts for EarickHC_45:
(Start: 12 @31258 has 49 MA's), (Start: 15 @31267 has 1 MA's), (Start: 25 @31303 has 1 MA's), (40, 31477), (41, 31492), (45, 31525), (47, 31534), (48, 31540), (53, 31579), (61, 31642),

Gene: Elezi_23 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for Elezi_23:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: Eraser_23 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for Eraser_23:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: Fireman_46 Start: 32867, Stop: 33289, Start Num: 12
Candidate Starts for Fireman_46:
(Start: 12 @32867 has 49 MA's), (Start: 13 @32870 has 4 MA's), (Start: 25 @32912 has 1 MA's), (41, 33101), (43, 33122),

Gene: Ganandorf_44 Start: 31397, Stop: 31819, Start Num: 12
Candidate Starts for Ganandorf_44:
(Start: 12 @31397 has 49 MA's), (Start: 15 @31406 has 1 MA's), (Start: 25 @31442 has 1 MA's), (40, 31616), (41, 31631), (45, 31664), (47, 31673), (48, 31679), (53, 31718), (61, 31781),

Gene: Germa_46 Start: 31226, Stop: 31648, Start Num: 12
Candidate Starts for Germa_46:
(Start: 12 @31226 has 49 MA's), (Start: 15 @31235 has 1 MA's), (Start: 25 @31271 has 1 MA's), (40, 31445), (41, 31460), (45, 31493), (47, 31502), (48, 31508), (53, 31547), (61, 31610),

Gene: Gina_46 Start: 30994, Stop: 31422, Start Num: 12
Candidate Starts for Gina_46:
(3, 30892), (7, 30967), (Start: 12 @30994 has 49 MA's), (Start: 15 @31003 has 1 MA's), (Start: 25 @31042 has 1 MA's), (40, 31216), (41, 31231), (47, 31273),

Gene: Glorp_46 Start: 31398, Stop: 31820, Start Num: 12
Candidate Starts for Glorp_46:

(Start: 12 @31398 has 49 MA's), (Start: 15 @31407 has 1 MA's), (Start: 25 @31443 has 1 MA's), (40, 31617), (41, 31632), (45, 31665), (47, 31674), (48, 31680), (53, 31719), (61, 31782),

Gene: Hermeonysus_44 Start: 31264, Stop: 31686, Start Num: 12
Candidate Starts for Hermeonysus_44:
(Start: 12 @31264 has 49 MA's), (Start: 15 @31273 has 1 MA's), (Start: 25 @31309 has 1 MA's), (40, 31483), (41, 31498), (45, 31531), (47, 31540), (48, 31546), (53, 31585), (61, 31648),

Gene: Honeyfin_46 Start: 31585, Stop: 32007, Start Num: 12
Candidate Starts for Honeyfin_46:
(4, 31504), (Start: 12 @31585 has 49 MA's), (Start: 15 @31594 has 1 MA's), (Start: 25 @31630 has 1 MA's), (40, 31804), (41, 31819), (45, 31852), (47, 31861), (48, 31867), (61, 31969),

Gene: IUFootball_22 Start: 19203, Stop: 19616, Start Num: 9
Candidate Starts for IUFootball_22:
(Start: 9 @19203 has 6 MA's), (23, 19251), (26, 19281), (30, 19332), (57, 19563),

Gene: Jace_21 Start: 17774, Stop: 18232, Start Num: 9
Candidate Starts for Jace_21:
(2, 17681), (Start: 9 @17774 has 6 MA's), (Start: 15 @17798 has 1 MA's), (20, 17813), (31, 17915), (36, 17990), (41, 18035), (46, 18074), (47, 18077), (56, 18149),

Gene: Janeemi_24 Start: 21398, Stop: 21829, Start Num: 11
Candidate Starts for Janeemi_24:
(1, 21263), (5, 21332), (8, 21386), (Start: 11 @21398 has 17 MA's), (30, 21518), (50, 21692), (52, 21716),

Gene: Jayden_46 Start: 31710, Stop: 32129, Start Num: 12
Candidate Starts for Jayden_46:
(Start: 12 @31710 has 49 MA's), (Start: 15 @31719 has 1 MA's), (Start: 25 @31752 has 1 MA's), (27, 31779), (32, 31845), (40, 31926), (41, 31941), (44, 31968), (45, 31974), (47, 31983), (49, 31995),

Gene: Jefe_45 Start: 31322, Stop: 31744, Start Num: 12
Candidate Starts for Jefe_45:
(Start: 12 @31322 has 49 MA's), (Start: 15 @31331 has 1 MA's), (Start: 25 @31367 has 1 MA's), (40, 31541), (41, 31556), (45, 31589), (47, 31598), (48, 31604), (53, 31643),

Gene: Jollipop_45 Start: 31661, Stop: 32083, Start Num: 12
Candidate Starts for Jollipop_45:
(Start: 12 @31661 has 49 MA's), (Start: 15 @31670 has 1 MA's), (Start: 25 @31706 has 1 MA's), (40, 31880), (41, 31895), (45, 31928), (47, 31937), (48, 31943), (53, 31982), (61, 32045),

Gene: Jstan_24 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for Jstan_24:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: KaiHaiDragon_45 Start: 31258, Stop: 31680, Start Num: 12
Candidate Starts for KaiHaiDragon_45:
(Start: 12 @31258 has 49 MA's), (Start: 15 @31267 has 1 MA's), (Start: 25 @31303 has 1 MA's), (40, 31477), (41, 31492), (45, 31525), (47, 31534), (48, 31540), (53, 31579), (61, 31642),

Gene: KeAlii_22 Start: 17765, Stop: 18163, Start Num: 12
Candidate Starts for KeAlii_22:

(Start: 12 @17765 has 49 MA's), (37, 17963), (54, 18098),

Gene: Kowalski_44 Start: 31371, Stop: 31793, Start Num: 12
Candidate Starts for Kowalski_44:
(6, 31323), (Start: 12 @31371 has 49 MA's), (Start: 15 @31380 has 1 MA's), (Start: 25 @31416 has 1 MA's), (40, 31590), (41, 31605), (45, 31638), (47, 31647), (48, 31653), (53, 31692), (61, 31755),

Gene: Kozie_40 Start: 30705, Stop: 31127, Start Num: 12
Candidate Starts for Kozie_40:
(Start: 12 @30705 has 49 MA's), (33, 30849), (40, 30924), (42, 30951), (49, 30993),

Gene: Liebe_22 Start: 19203, Stop: 19616, Start Num: 9
Candidate Starts for Liebe_22:
(Start: 9 @19203 has 6 MA's), (23, 19251), (26, 19281), (30, 19332), (57, 19563),

Gene: LittleFortune_46 Start: 31627, Stop: 32049, Start Num: 12
Candidate Starts for LittleFortune_46:
(Start: 12 @31627 has 49 MA's), (Start: 15 @31636 has 1 MA's), (Start: 25 @31672 has 1 MA's), (40, 31846), (41, 31861), (45, 31894), (47, 31903), (48, 31909), (53, 31948), (61, 32011),

Gene: London_23 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for London_23:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: Lucretia_45 Start: 31314, Stop: 31736, Start Num: 12
Candidate Starts for Lucretia_45:
(Start: 12 @31314 has 49 MA's), (Start: 15 @31323 has 1 MA's), (Start: 25 @31359 has 1 MA's), (40, 31533), (41, 31548), (45, 31581), (47, 31590), (48, 31596), (53, 31635), (61, 31698),

Gene: MaGuCo_22 Start: 19136, Stop: 19549, Start Num: 9
Candidate Starts for MaGuCo_22:
(Start: 9 @19136 has 6 MA's), (23, 19184), (26, 19214), (30, 19265), (57, 19496),

Gene: Margaery_39 Start: 30479, Stop: 30901, Start Num: 12
Candidate Starts for Margaery_39:
(Start: 12 @30479 has 49 MA's), (Start: 15 @30488 has 1 MA's), (Start: 25 @30524 has 1 MA's), (29, 30581), (40, 30698), (41, 30713), (43, 30734), (49, 30767),

Gene: Matzah_42 Start: 31568, Stop: 31993, Start Num: 11
Candidate Starts for Matzah_42:
(Start: 11 @31568 has 17 MA's), (Start: 14 @31580 has 3 MA's), (41, 31805), (49, 31859),

Gene: Maureen_22 Start: 19203, Stop: 19616, Start Num: 9
Candidate Starts for Maureen_22:
(Start: 9 @19203 has 6 MA's), (23, 19251), (26, 19281), (30, 19332), (57, 19563),

Gene: Megan_39 Start: 32143, Stop: 32565, Start Num: 14
Candidate Starts for Megan_39:
(4, 32056), (Start: 14 @32143 has 3 MA's), (21, 32164), (Start: 25 @32182 has 1 MA's), (33, 32281), (40, 32356), (41, 32371), (58, 32500),

Gene: MementoMori_42 Start: 31316, Stop: 31741, Start Num: 11
Candidate Starts for MementoMori_42:

(Start: 11 @31316 has 17 MA's), (Start: 14 @31328 has 3 MA's), (41, 31553), (49, 31607),

Gene: Merry_ Start: 32911, Stop: 33336, Start Num: 14
Candidate Starts for Merry_:
(Start: 14 @32911 has 3 MA's), (Start: 25 @32953 has 1 MA's), (41, 33142), (62, 33319),

Gene: Metamorphoo_46 Start: 32129, Stop: 32551, Start Num: 12
Candidate Starts for Metamorphoo_46:
(Start: 12 @32129 has 49 MA's), (Start: 13 @32132 has 4 MA's), (Start: 25 @32174 has 1 MA's), (41, 32363), (43, 32384), (47, 32405),

Gene: Nicole72_40 Start: 32990, Stop: 33412, Start Num: 15
Candidate Starts for Nicole72_40:
(4, 32900), (Start: 13 @32984 has 4 MA's), (Start: 14 @32987 has 3 MA's), (Start: 15 @32990 has 1 MA's), (Start: 25 @33029 has 1 MA's), (40, 33203), (41, 33218), (47, 33260), (58, 33347),

Gene: Niobe_23 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for Niobe_23:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: NoodlelyBoi_45 Start: 31666, Stop: 32091, Start Num: 12
Candidate Starts for NoodlelyBoi_45:
(Start: 12 @31666 has 49 MA's), (Start: 15 @31675 has 1 MA's), (Start: 25 @31714 has 1 MA's), (40, 31888), (41, 31903), (45, 31936), (47, 31945), (53, 31990),

Gene: ObiToo_22 Start: 17938, Stop: 18354, Start Num: 11
Candidate Starts for ObiToo_22:
(Start: 11 @17938 has 17 MA's), (22, 17974), (24, 17989), (30, 18058), (34, 18100), (35, 18121), (52, 18256),

Gene: Onika_44 Start: 31346, Stop: 31768, Start Num: 12
Candidate Starts for Onika_44:
(Start: 12 @31346 has 49 MA's), (Start: 15 @31355 has 1 MA's), (Start: 25 @31391 has 1 MA's), (40, 31565), (41, 31580), (45, 31613), (47, 31622), (48, 31628), (53, 31667), (61, 31730),

Gene: Paschalis_44 Start: 31353, Stop: 31775, Start Num: 12
Candidate Starts for Paschalis_44:
(7, 31326), (Start: 12 @31353 has 49 MA's), (Start: 15 @31362 has 1 MA's), (17, 31368), (Start: 25 @31398 has 1 MA's), (40, 31572), (41, 31587), (45, 31620), (47, 31629), (48, 31635), (61, 31737),

Gene: PhedwardCullen_44 Start: 31104, Stop: 31526, Start Num: 12
Candidate Starts for PhedwardCullen_44:
(Start: 12 @31104 has 49 MA's), (Start: 15 @31113 has 1 MA's), (Start: 25 @31149 has 1 MA's), (40, 31323), (41, 31338), (45, 31371), (47, 31380), (48, 31386), (53, 31425), (61, 31488),

Gene: Phives_24 Start: 21228, Stop: 21659, Start Num: 11
Candidate Starts for Phives_24:
(Start: 11 @21228 has 17 MA's), (30, 21348), (50, 21522), (52, 21546),

Gene: Phorgeous_44 Start: 31216, Stop: 31638, Start Num: 12
Candidate Starts for Phorgeous_44:
(Start: 12 @31216 has 49 MA's), (Start: 15 @31225 has 1 MA's), (Start: 25 @31261 has 1 MA's), (40, 31435), (41, 31450), (45, 31483), (47, 31492), (48, 31498), (53, 31537), (61, 31600),

Gene: Phrancesco_45 Start: 31506, Stop: 31928, Start Num: 12
Candidate Starts for Phrancesco_45:
(Start: 12 @31506 has 49 MA's), (Start: 15 @31515 has 1 MA's), (Start: 25 @31551 has 1 MA's), (40, 31725), (41, 31740), (45, 31773), (47, 31782), (48, 31788), (53, 31827), (61, 31890),

Gene: PierreOrion_45 Start: 31520, Stop: 31942, Start Num: 12
Candidate Starts for PierreOrion_45:
(Start: 12 @31520 has 49 MA's), (Start: 15 @31529 has 1 MA's), (Start: 25 @31565 has 1 MA's), (40, 31739), (41, 31754), (45, 31787), (47, 31796), (48, 31802), (53, 31841), (61, 31904),

Gene: PiperSansNom_45 Start: 31660, Stop: 32082, Start Num: 12
Candidate Starts for PiperSansNom_45:
(Start: 12 @31660 has 49 MA's), (Start: 15 @31669 has 1 MA's), (Start: 25 @31705 has 1 MA's), (40, 31879), (41, 31894), (45, 31927), (47, 31936), (48, 31942), (53, 31981), (61, 32044),

Gene: Piperis_45 Start: 31339, Stop: 31761, Start Num: 12
Candidate Starts for Piperis_45:
(Start: 12 @31339 has 49 MA's), (Start: 15 @31348 has 1 MA's), (Start: 25 @31384 has 1 MA's), (40, 31558), (41, 31573), (45, 31606), (47, 31615), (48, 31621), (53, 31660),

Gene: Pulchra_46 Start: 31736, Stop: 32158, Start Num: 12
Candidate Starts for Pulchra_46:
(Start: 12 @31736 has 49 MA's), (Start: 15 @31745 has 1 MA's), (Start: 25 @31781 has 1 MA's), (40, 31955), (41, 31970), (45, 32003), (47, 32012), (48, 32018), (53, 32057), (61, 32120),

Gene: Quhwah_48 Start: 31968, Stop: 32390, Start Num: 12
Candidate Starts for Quhwah_48:
(Start: 12 @31968 has 49 MA's), (Start: 15 @31977 has 1 MA's), (Start: 25 @32013 has 1 MA's), (40, 32187), (41, 32202), (45, 32235), (47, 32244), (48, 32250), (61, 32352),

Gene: Ramiel05_44 Start: 31371, Stop: 31793, Start Num: 12
Candidate Starts for Ramiel05_44:
(6, 31323), (Start: 12 @31371 has 49 MA's), (Start: 15 @31380 has 1 MA's), (Start: 25 @31416 has 1 MA's), (40, 31590), (41, 31605), (45, 31638), (47, 31647), (48, 31653), (53, 31692), (61, 31755),

Gene: Reedo_22 Start: 17777, Stop: 18190, Start Num: 13
Candidate Starts for Reedo_22:
(Start: 13 @17777 has 4 MA's), (Start: 15 @17783 has 1 MA's), (24, 17819), (52, 18086),

Gene: RobsFeet_47 Start: 32413, Stop: 32832, Start Num: 13
Candidate Starts for RobsFeet_47:
(Start: 12 @32410 has 49 MA's), (Start: 13 @32413 has 4 MA's), (Start: 25 @32455 has 1 MA's), (41, 32644), (43, 32665),

Gene: Rockwell_44 Start: 31371, Stop: 31793, Start Num: 12
Candidate Starts for Rockwell_44:
(Start: 12 @31371 has 49 MA's), (Start: 15 @31380 has 1 MA's), (Start: 25 @31416 has 1 MA's), (40, 31590), (41, 31605), (45, 31638), (47, 31647), (48, 31653), (53, 31692), (61, 31755),

Gene: Savannah_44 Start: 31398, Stop: 31820, Start Num: 12
Candidate Starts for Savannah_44:

(Start: 12 @31398 has 49 MA's), (Start: 15 @31407 has 1 MA's), (Start: 25 @31443 has 1 MA's), (40, 31617), (41, 31632), (45, 31665), (47, 31674), (48, 31680), (53, 31719), (61, 31782),

Gene: Scumberland_46 Start: 31593, Stop: 32015, Start Num: 12
Candidate Starts for Scumberland_46:
(Start: 12 @31593 has 49 MA's), (Start: 15 @31602 has 1 MA's), (Start: 25 @31638 has 1 MA's), (40, 31812), (41, 31827), (45, 31860), (47, 31869), (48, 31875), (53, 31914), (61, 31977),

Gene: Selwyn23_46 Start: 31570, Stop: 31992, Start Num: 12
Candidate Starts for Selwyn23_46:
(Start: 12 @31570 has 49 MA's), (Start: 15 @31579 has 1 MA's), (Start: 25 @31615 has 1 MA's), (40, 31789), (41, 31804), (45, 31837), (47, 31846), (48, 31852), (53, 31891), (61, 31954),

Gene: Shotgun_44 Start: 31197, Stop: 31619, Start Num: 12
Candidate Starts for Shotgun_44:
(Start: 12 @31197 has 49 MA's), (Start: 15 @31206 has 1 MA's), (Start: 25 @31242 has 1 MA's), (40, 31416), (41, 31431), (45, 31464), (47, 31473), (48, 31479), (53, 31518), (61, 31581),

Gene: Shrubaron_46 Start: 32044, Stop: 32466, Start Num: 12
Candidate Starts for Shrubaron_46:
(4, 31966), (Start: 12 @32044 has 49 MA's), (Start: 13 @32047 has 4 MA's), (Start: 25 @32089 has 1 MA's), (41, 32278), (43, 32299),

Gene: SirFrank_44 Start: 31239, Stop: 31661, Start Num: 12
Candidate Starts for SirFrank_44:
(Start: 12 @31239 has 49 MA's), (Start: 15 @31248 has 1 MA's), (Start: 25 @31284 has 1 MA's), (40, 31458), (41, 31473), (45, 31506), (47, 31515), (48, 31521), (53, 31560), (61, 31623),

Gene: Skelbel_24 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for Skelbel_24:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: Skugga_43 Start: 31010, Stop: 31438, Start Num: 12
Candidate Starts for Skugga_43:
(3, 30908), (Start: 12 @31010 has 49 MA's), (Start: 15 @31019 has 1 MA's), (Start: 25 @31058 has 1 MA's), (40, 31232), (41, 31247), (47, 31289),

Gene: Smarties_53 Start: 33197, Stop: 33622, Start Num: 12
Candidate Starts for Smarties_53:
(3, 33095), (6, 33149), (Start: 12 @33197 has 49 MA's), (Start: 15 @33206 has 1 MA's), (18, 33215), (Start: 25 @33245 has 1 MA's), (40, 33419), (41, 33434), (45, 33467), (47, 33476), (48, 33482), (53, 33521),

Gene: Snek_22 Start: 16814, Stop: 17230, Start Num: 13
Candidate Starts for Snek_22:
(Start: 13 @16814 has 4 MA's), (23, 16844), (35, 17000), (60, 17192),

Gene: Subaru_23 Start: 19752, Stop: 20183, Start Num: 11
Candidate Starts for Subaru_23:
(Start: 11 @19752 has 17 MA's), (37, 19956), (50, 20046), (52, 20070),

Gene: Sue2_22 Start: 18425, Stop: 18823, Start Num: 12
Candidate Starts for Sue2_22:

(Start: 12 @18425 has 49 MA's), (35, 18602),

Gene: Sunny_ Start: 32913, Stop: 33338, Start Num: 14
Candidate Starts for Sunny_:
(Start: 14 @32913 has 3 MA's), (Start: 25 @32955 has 1 MA's), (41, 33144), (62, 33321),

Gene: Teamocil_46 Start: 31093, Stop: 31521, Start Num: 12
Candidate Starts for Teamocil_46:
(3, 30991), (7, 31066), (Start: 12 @31093 has 49 MA's), (Start: 15 @31102 has 1 MA's), (Start: 25 @31141 has 1 MA's), (40, 31315), (41, 31330), (47, 31372),

Gene: Terij_40 Start: 29923, Stop: 30348, Start Num: 12
Candidate Starts for Terij_40:
(Start: 12 @29923 has 49 MA's), (Start: 15 @29932 has 1 MA's), (18, 29941), (19, 29944), (Start: 25 @29971 has 1 MA's), (40, 30145), (41, 30160), (47, 30202), (48, 30208),

Gene: TforTroy_23 Start: 19887, Stop: 20318, Start Num: 11
Candidate Starts for TforTroy_23:
(Start: 11 @19887 has 17 MA's), (24, 19938), (52, 20205),

Gene: ThursdayNight_23 Start: 19070, Stop: 19489, Start Num: 9
Candidate Starts for ThursdayNight_23:
(Start: 9 @19070 has 6 MA's), (51, 19391),

Gene: Tuck_24 Start: 21371, Stop: 21802, Start Num: 11
Candidate Starts for Tuck_24:
(Start: 11 @21371 has 17 MA's), (50, 21665), (52, 21689),

Gene: Tweety19_22 Start: 16813, Stop: 17229, Start Num: 13
Candidate Starts for Tweety19_22:
(Start: 13 @16813 has 4 MA's), (23, 16843), (35, 16999), (60, 17191),

Gene: Tyrumbra_44 Start: 32255, Stop: 32632, Start Num: 25
Candidate Starts for Tyrumbra_44:
(Start: 12 @32210 has 49 MA's), (Start: 13 @32213 has 4 MA's), (Start: 25 @32255 has 1 MA's), (41, 32444), (43, 32465),

Gene: VResidence_22 Start: 17838, Stop: 18257, Start Num: 10
Candidate Starts for VResidence_22:
(Start: 10 @17838 has 2 MA's), (38, 18051),

Gene: Wildwest_23 Start: 19187, Stop: 19603, Start Num: 10
Candidate Starts for Wildwest_23:
(Start: 10 @19187 has 2 MA's), (30, 19310), (35, 19373),

Gene: Yeti_45 Start: 31372, Stop: 31794, Start Num: 12
Candidate Starts for Yeti_45:
(Start: 12 @31372 has 49 MA's), (Start: 15 @31381 has 1 MA's), (Start: 25 @31417 has 1 MA's), (40, 31591), (41, 31606), (45, 31639), (47, 31648), (48, 31654), (53, 31693),

Gene: Zapato_44 Start: 31522, Stop: 31941, Start Num: 12
Candidate Starts for Zapato_44:

(Start: 12 @31522 has 49 MA's), (Start: 13 @31525 has 4 MA's), (Start: 25 @31564 has 1 MA's), (40, 31738), (41, 31753), (43, 31774), (47, 31795),