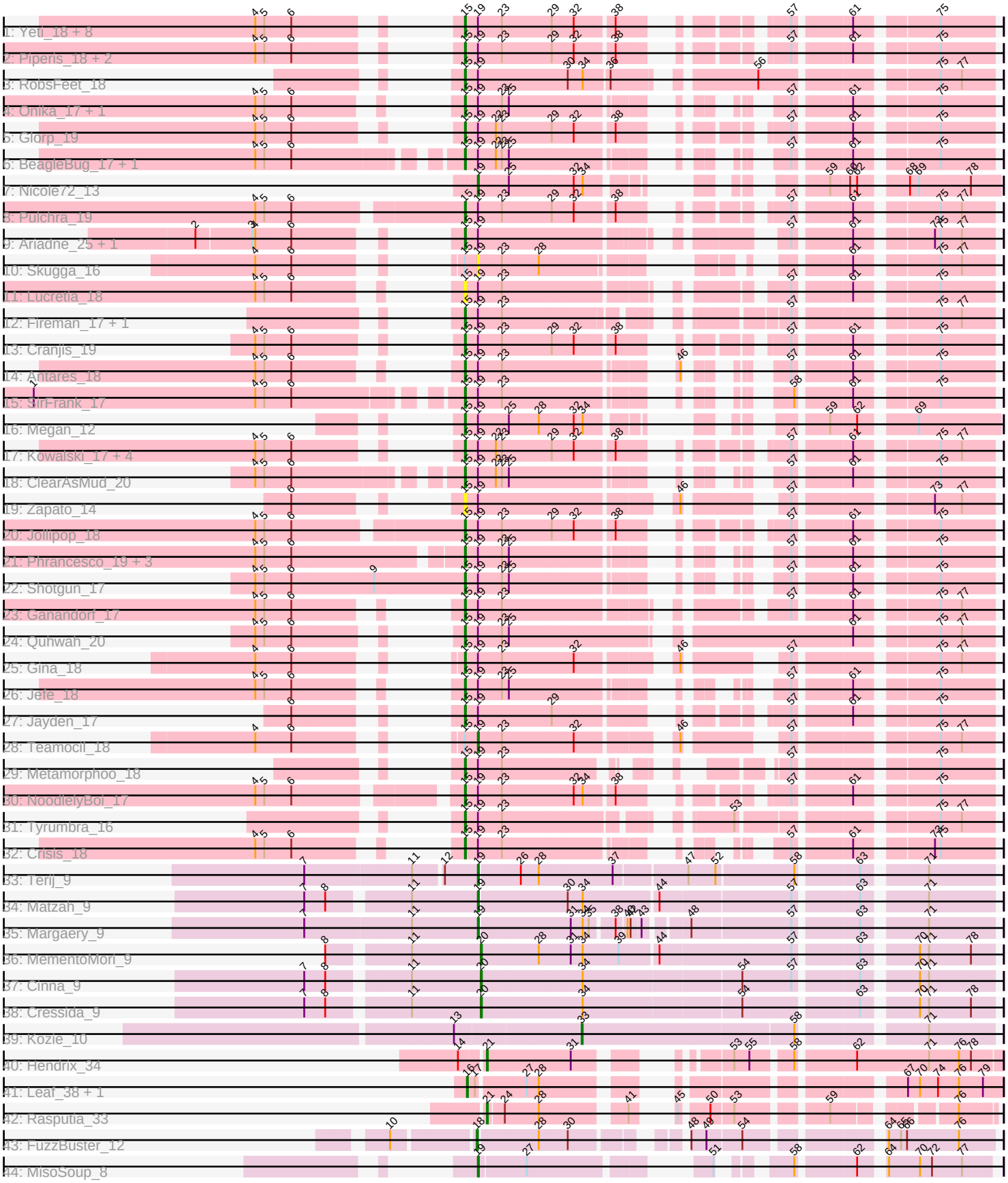
Pham 341001


1: Yeti_18 + 8
2: Piperis_18 + 2
3: RobsFeet_18
4: Onika_17 + 1
5: Glorp_19
6: BeagleBug_17 + 1
7: Nicole72_13
8: Pulchra_19
9: Ariadne_25 + 1
10: Skugga_16
11: Lucretia_18
12: Fireman_17 + 1
13: Cranjis_19
14: Antares_18
15: SirFrank_17
16: Megan_12
17: Kowalski_17 + 4
18: ClearAsMud_20
19: Zapato_14
20: Jollipop_18
21: Phrancesco_19 + 3
22: Shotgun_17
23: Ganandorf_17
24: Quhwah_20
25: Gina_18
26: Jefe_18
27: Jayden_17
28: Teamocil_18
29: Metamorphoo_18
30: NoodlelyBoi_17
31: Tyrumbra_16
32: Crisis_18
33: Terj_9
34: Matzah_9
35: Margaery_9
36: MementoMori_9
37: Cinna_9
38: Cressida_9
39: Kozie_10
40: Hendrix_34
41: Leaf_38 + 1
42: Rasputia_33
43: FuzzBuster_12
44: MisoSoup_8

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 341001 Report

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

Pham number 341001 has 66 members, 6 are drafts.

Phages represented in each track:
• Track 1 : Yeti_18, Paschalis_17, PiperSansNom_18, Scumberland_19, PierreOrion_18, LittleFortune_19, Honeyfin_19, Selwyn23_19, Phorgeous_17
• Track 2 : Piperis_18, Germa_19, Busephilis_18
• Track 3 : RobsFeet_18
• Track 4 : Onika_17, CrazyRich_17
• Track 5 : Glorp_19
• Track 6 : BeagleBug_17, Hermeonysus_17
• Track 7 : Nicole72_13
• Track 8 : Pulchra_19
• Track 9 : Ariadne_25, Smarties_25
• Track 10 : Skugga_16
• Track 11 : Lucretia_18
• Track 12 : Fireman_17, Shrubaron_18
• Track 13 : Cranjis_19
• Track 14 : Antares_18
• Track 15 : SirFrank_17
• Track 16 : Megan_12
• Track 17 : Kowalski_17, Rockwell_17, Ramiel05_17, Savannah_17, BrazzalePHS_17
• Track 18 : ClearAsMud_20
• Track 19 : Zapato_14
• Track 20 : Jollipop_18
• Track 21 : Phrancesco_19, EarickHC_18, PhedwardCullen_17, KaiHaiDragon_18
• Track 22 : Shotgun_17
• Track 23 : Ganandorf_17
• Track 24 : Quhwah_20
• Track 25 : Gina_18
• Track 26 : Jefe_18
• Track 27 : Jayden_17
• Track 28 : Teamocil_18
• Track 29 : Metamorphoo_18
• Track 30 : NoodlelyBoi_17
• Track 31 : Tyrumbra_16
• Track 32 : Crisis_18
• Track 33 : Terij_9
• Track 34 : Matzah_9
• Track 35 : Margaery_9

• Track 36 : MementoMori_9
• Track 37 : Cinna_9
• Track 38 : Cressida_9
• Track 39 : Kozie_10
• Track 40 : Hendrix_34
• Track 41 : Leaf_38, Dewdrop_38
• Track 42 : Rasputia_33
• Track 43 : FuzzBuster_12
• Track 44 : MisoSoup_8

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

The start number called the most often in the published annotations is 15, it was called in 45 of the 60 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Antares_18, Ariadne_25, BeagleBug_17, BrazzalePHS_17, Busephilis_18, ClearAsMud_20, Cranjis_19, CrazyRich_17, Crisis_18, EarickHC_18, Fireman_17, Ganandorf_17, Germa_19, Gina_18, Glorp_19, Hermeonysus_17, Honeyfin_19, Jayden_17, Jefe_18, Jollipop_18, KaiHaiDragon_18, Kowalski_17, LittleFortune_19, Lucretia_18, Megan_12, Metamorphoo_18, NoodlelyBoi_17, Onika_17, Paschalis_17, PhedwardCullen_17, Phorgeous_17, Phrancesco_19, PierreOrion_18, PiperSansNom_18, Piperis_18, Pulchra_19, Quhwah_20, Ramiel05_17, RobsFeet_18, Rockwell_17, Savannah_17, Scumberland_19, Selwyn23_19, Shotgun_17, Shrubaron_18, SirFrank_17, Smarties_25, Tyrumbra_16, Yeti_18, Zapato_14,

Genes that have the "Most Annotated" start but do not call it:
• Skugga_16, Teamocil_18,

Genes that do not have the "Most Annotated" start:
• Cinna_9, Cressida_9, Dewdrop_38, FuzzBuster_12, Hendrix_34, Kozie_10, Leaf_38, Margaery_9, Matzah_9, MementoMori_9, MisoSoup_8, Nicole72_13, Rasputia_33, Terij_9,

Summary by start number:

Start 15:
• Found in 52 of 66 (78.8%) of genes in pham
• Manual Annotations of this start: 45 of 60
• Called 96.2% of time when present
• Phage (with cluster) where this start called: Antares_18 (EC), Ariadne_25 (EC), BeagleBug_17 (EC), BrazzalePHS_17 (EC), Busephilis_18 (EC), ClearAsMud_20 (EC), Cranjis_19 (EC), CrazyRich_17 (EC), Crisis_18 (EC), EarickHC_18 (EC), Fireman_17 (EC), Ganandorf_17 (EC), Germa_19 (EC), Gina_18 (EC), Glorp_19 (EC), Hermeonysus_17 (EC), Honeyfin_19 (EC), Jayden_17 (EC), Jefe_18 (EC), Jollipop_18 (EC), KaiHaiDragon_18 (EC), Kowalski_17 (EC), LittleFortune_19 (EC), Lucretia_18 (EC), Megan_12 (EC), Metamorphoo_18 (EC), NoodlelyBoi_17 (EC), Onika_17 (EC), Paschalis_17 (EC), PhedwardCullen_17 (EC), Phorgeous_17 (EC), Phrancesco_19 (EC), PierreOrion_18 (EC), PiperSansNom_18 (EC), Piperis_18

(EC), Pulchra_19 (EC), Quhwah_20 (EC), Ramiel05_17 (EC), RobsFeet_18 (EC), Rockwell_17 (EC), Savannah_17 (EC), Scumberland_19 (EC), Selwyn23_19 (EC), Shotgun_17 (EC), Shrubaron_18 (EC), SirFrank_17 (EC), Smarties_25 (EC), Tyrumbra_16 (EC), Yeti_18 (EC), Zapato_14 (EC),

Start 16:
• Found in 2 of 66 (3.0%) of genes in pham
• Manual Annotations of this start: 2 of 60
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Dewdrop_38 (GC), Leaf_38 (GC),

Start 18:
• Found in 1 of 66 (1.5%) of genes in pham
• Manual Annotations of this start: 1 of 60
• Called 100.0% of time when present
• Phage (with cluster) where this start called: FuzzBuster_12 (GM),

Start 19:
• Found in 57 of 66 (86.4%) of genes in pham
• Manual Annotations of this start: 6 of 60
• Called 12.3% of time when present
• Phage (with cluster) where this start called: Margaery_9 (EI), Matzah_9 (EI), MisoSoup_8 (GM), Nicole72_13 (EC), Skugga_16 (EC), Teamocil_18 (EC), Terij_9 (EI),

Start 20:
• Found in 3 of 66 (4.5%) of genes in pham
• Manual Annotations of this start: 3 of 60
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cinna_9 (EI), Cressida_9 (EI), MementoMori_9 (EI),

Start 21:
• Found in 2 of 66 (3.0%) of genes in pham
• Manual Annotations of this start: 2 of 60
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Hendrix_34 (GC), Rasputia_33 (GC),

Start 33:
• Found in 1 of 66 (1.5%) of genes in pham
• Manual Annotations of this start: 1 of 60
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kozie_10 (EI),

Summary by clusters:

There are 4 clusters represented in this pham: GC, GM, EI, EC,

Info for manual annotations of cluster EC:
•Start number 15 was manually annotated 45 times for cluster EC.
•Start number 19 was manually annotated 2 times for cluster EC.

Info for manual annotations of cluster EI:

•Start number 19 was manually annotated 3 times for cluster EI.
•Start number 20 was manually annotated 3 times for cluster EI.
•Start number 33 was manually annotated 1 time for cluster EI.

Info for manual annotations of cluster GC:
•Start number 16 was manually annotated 2 times for cluster GC.
•Start number 21 was manually annotated 2 times for cluster GC.

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

Gene Information:

Gene: Antares_18 Start: 7816, Stop: 8208, Start Num: 15
Candidate Starts for Antares_18:
(4, 7696), (5, 7705), (6, 7732), (Start: 15 @7816 has 45 MA's), (Start: 19 @7828 has 6 MA's), (23, 7852), (46, 7987), (57, 8035), (61, 8086), (75, 8155),

Gene: Ariadne_25 Start: 8959, Stop: 9381, Start Num: 15
Candidate Starts for Ariadne_25:
(2, 8782), (3, 8836), (4, 8839), (6, 8875), (Start: 15 @8959 has 45 MA's), (Start: 19 @8971 has 6 MA's), (57, 9208), (61, 9259), (73, 9322), (75, 9328), (77, 9349),

Gene: BeagleBug_17 Start: 7563, Stop: 7955, Start Num: 15
Candidate Starts for BeagleBug_17:
(4, 7386), (5, 7395), (6, 7422), (Start: 15 @7563 has 45 MA's), (Start: 19 @7575 has 6 MA's), (22, 7593), (23, 7599), (25, 7605), (57, 7782), (61, 7833), (75, 7902),

Gene: BrazzalePHS_17 Start: 7604, Stop: 8023, Start Num: 15
Candidate Starts for BrazzalePHS_17:
(4, 7484), (5, 7493), (6, 7520), (Start: 15 @7604 has 45 MA's), (Start: 19 @7616 has 6 MA's), (22, 7634), (23, 7640), (29, 7688), (32, 7709), (38, 7745), (57, 7850), (61, 7901), (75, 7970), (77, 7991),

Gene: Busephilis_18 Start: 7491, Stop: 7910, Start Num: 15
Candidate Starts for Busephilis_18:
(4, 7371), (5, 7380), (6, 7407), (Start: 15 @7491 has 45 MA's), (Start: 19 @7503 has 6 MA's), (23, 7527), (29, 7575), (32, 7596), (38, 7632), (57, 7737), (61, 7788), (75, 7857),

Gene: Cinna_9 Start: 4969, Stop: 5445, Start Num: 20
Candidate Starts for Cinna_9:
(7, 4807), (8, 4828), (11, 4900), (Start: 20 @4969 has 3 MA's), (34, 5068), (54, 5221), (57, 5269), (63, 5326), (70, 5371), (71, 5380),

Gene: ClearAsMud_20 Start: 8334, Stop: 8726, Start Num: 15
Candidate Starts for ClearAsMud_20:
(4, 8157), (5, 8166), (6, 8193), (Start: 15 @8334 has 45 MA's), (Start: 19 @8346 has 6 MA's), (22, 8364), (23, 8370), (25, 8376), (57, 8553), (61, 8604), (75, 8673),

Gene: Cranjis_19 Start: 7770, Stop: 8189, Start Num: 15
Candidate Starts for Cranjis_19:

(4, 7650), (5, 7659), (6, 7686), (Start: 15 @7770 has 45 MA's), (Start: 19 @7782 has 6 MA's), (23, 7806), (29, 7854), (32, 7875), (38, 7911), (57, 8016), (61, 8067), (75, 8136),

Gene: CrazyRich_17 Start: 7604, Stop: 7996, Start Num: 15
Candidate Starts for CrazyRich_17:
(4, 7484), (5, 7493), (6, 7520), (Start: 15 @7604 has 45 MA's), (Start: 19 @7616 has 6 MA's), (23, 7640), (25, 7646), (57, 7823), (61, 7874), (75, 7943),

Gene: Cressida_9 Start: 5064, Stop: 5540, Start Num: 20
Candidate Starts for Cressida_9:
(7, 4902), (8, 4923), (11, 4995), (Start: 20 @5064 has 3 MA's), (34, 5163), (54, 5316), (63, 5421), (70, 5466), (71, 5475), (78, 5517),

Gene: Crisis_18 Start: 7443, Stop: 7835, Start Num: 15
Candidate Starts for Crisis_18:
(4, 7323), (5, 7332), (6, 7359), (Start: 15 @7443 has 45 MA's), (Start: 19 @7455 has 6 MA's), (23, 7479), (57, 7662), (61, 7713), (73, 7776), (75, 7782),

Gene: Dewdrop_38 Start: 14259, Stop: 14684, Start Num: 16
Candidate Starts for Dewdrop_38:
(Start: 16 @14259 has 2 MA's), (17, 14265), (27, 14310), (28, 14322), (67, 14589), (70, 14601), (74, 14619), (76, 14640), (79, 14664),

Gene: EarickHC_18 Start: 7509, Stop: 7901, Start Num: 15
Candidate Starts for EarickHC_18:
(4, 7317), (5, 7326), (6, 7353), (Start: 15 @7509 has 45 MA's), (Start: 19 @7521 has 6 MA's), (23, 7545), (25, 7551), (57, 7728), (61, 7779), (75, 7848),

Gene: Fireman_17 Start: 7049, Stop: 7480, Start Num: 15
Candidate Starts for Fireman_17:
(Start: 15 @7049 has 45 MA's), (Start: 19 @7061 has 6 MA's), (23, 7085), (57, 7307), (75, 7427), (77, 7448),

Gene: FuzzBuster_12 Start: 5297, Stop: 5725, Start Num: 18
Candidate Starts for FuzzBuster_12:
(10, 5222), (Start: 18 @5297 has 1 MA's), (28, 5354), (30, 5381), (48, 5462), (49, 5477), (54, 5510), (64, 5621), (65, 5633), (66, 5639), (76, 5690),

Gene: Ganandorf_17 Start: 7618, Stop: 8049, Start Num: 15
Candidate Starts for Ganandorf_17:
(4, 7498), (5, 7507), (6, 7534), (Start: 15 @7618 has 45 MA's), (Start: 19 @7630 has 6 MA's), (23, 7654), (57, 7876), (61, 7927), (75, 7996), (77, 8017),

Gene: Germa_19 Start: 7506, Stop: 7925, Start Num: 15
Candidate Starts for Germa_19:
(4, 7386), (5, 7395), (6, 7422), (Start: 15 @7506 has 45 MA's), (Start: 19 @7518 has 6 MA's), (23, 7542), (29, 7590), (32, 7611), (38, 7647), (57, 7752), (61, 7803), (75, 7872),

Gene: Gina_18 Start: 6724, Stop: 7152, Start Num: 15
Candidate Starts for Gina_18:
(4, 6607), (6, 6643), (Start: 15 @6724 has 45 MA's), (Start: 19 @6736 has 6 MA's), (23, 6760), (32, 6829), (46, 6907), (57, 6979), (75, 7099), (77, 7120),

Gene: Glorp_19 Start: 7676, Stop: 8095, Start Num: 15
Candidate Starts for Glorp_19:
(4, 7556), (5, 7565), (6, 7592), (Start: 15 @7676 has 45 MA's), (Start: 19 @7688 has 6 MA's), (22, 7706), (23, 7712), (29, 7760), (32, 7781), (38, 7817), (57, 7922), (61, 7973), (75, 8042),

Gene: Hendrix_34 Start: 14476, Stop: 14898, Start Num: 21
Candidate Starts for Hendrix_34:
(14, 14455), (Start: 21 @14476 has 2 MA's), (31, 14557), (53, 14650), (55, 14665), (58, 14701), (62, 14755), (71, 14827), (76, 14857), (78, 14869),

Gene: Hermeonysus_17 Start: 7469, Stop: 7861, Start Num: 15
Candidate Starts for Hermeonysus_17:
(4, 7292), (5, 7301), (6, 7328), (Start: 15 @7469 has 45 MA's), (Start: 19 @7481 has 6 MA's), (22, 7499), (23, 7505), (25, 7511), (57, 7688), (61, 7739), (75, 7808),

Gene: Honeyfin_19 Start: 7785, Stop: 8204, Start Num: 15
Candidate Starts for Honeyfin_19:
(4, 7665), (5, 7674), (6, 7701), (Start: 15 @7785 has 45 MA's), (Start: 19 @7797 has 6 MA's), (23, 7821), (29, 7869), (32, 7890), (38, 7926), (57, 8031), (61, 8082), (75, 8151),

Gene: Jayden_17 Start: 7233, Stop: 7652, Start Num: 15
Candidate Starts for Jayden_17:
(6, 7149), (Start: 15 @7233 has 45 MA's), (Start: 19 @7245 has 6 MA's), (29, 7317), (57, 7479), (61, 7530), (75, 7599),

Gene: Jefe_18 Start: 7624, Stop: 8016, Start Num: 15
Candidate Starts for Jefe_18:
(4, 7504), (5, 7513), (6, 7540), (Start: 15 @7624 has 45 MA's), (Start: 19 @7636 has 6 MA's), (23, 7660), (25, 7666), (57, 7843), (61, 7894), (75, 7963),

Gene: Jollipop_18 Start: 7915, Stop: 8334, Start Num: 15
Candidate Starts for Jollipop_18:
(4, 7723), (5, 7732), (6, 7759), (Start: 15 @7915 has 45 MA's), (Start: 19 @7927 has 6 MA's), (23, 7951), (29, 7999), (32, 8020), (38, 8056), (57, 8161), (61, 8212), (75, 8281),

Gene: KaiHaiDragon_18 Start: 7509, Stop: 7901, Start Num: 15
Candidate Starts for KaiHaiDragon_18:
(4, 7317), (5, 7326), (6, 7353), (Start: 15 @7509 has 45 MA's), (Start: 19 @7521 has 6 MA's), (23, 7545), (25, 7551), (57, 7728), (61, 7779), (75, 7848),

Gene: Kowalski_17 Start: 7604, Stop: 8023, Start Num: 15
Candidate Starts for Kowalski_17:
(4, 7484), (5, 7493), (6, 7520), (Start: 15 @7604 has 45 MA's), (Start: 19 @7616 has 6 MA's), (22, 7634), (23, 7640), (29, 7688), (32, 7709), (38, 7745), (57, 7850), (61, 7901), (75, 7970), (77, 7991),

Gene: Kozie_10 Start: 5903, Stop: 6283, Start Num: 33
Candidate Starts for Kozie_10:
(13, 5780), (Start: 33 @5903 has 1 MA's), (58, 6110), (71, 6218),

Gene: Leaf_38 Start: 14259, Stop: 14684, Start Num: 16
Candidate Starts for Leaf_38:
(Start: 16 @14259 has 2 MA's), (17, 14265), (27, 14310), (28, 14322), (67, 14589), (70, 14601), (74, 14619), (76, 14640), (79, 14664),

Gene: LittleFortune_19 Start: 7827, Stop: 8246, Start Num: 15
Candidate Starts for LittleFortune_19:
(4, 7707), (5, 7716), (6, 7743), (Start: 15 @7827 has 45 MA's), (Start: 19 @7839 has 6 MA's), (23, 7863), (29, 7911), (32, 7932), (38, 7968), (57, 8073), (61, 8124), (75, 8193),

Gene: Lucretia_18 Start: 7585, Stop: 8016, Start Num: 15
Candidate Starts for Lucretia_18:
(4, 7465), (5, 7474), (6, 7501), (Start: 15 @7585 has 45 MA's), (Start: 19 @7597 has 6 MA's), (23, 7621), (57, 7843), (61, 7894), (75, 7963),

Gene: Margaery_9 Start: 5047, Stop: 5502, Start Num: 19
Candidate Starts for Margaery_9:
(7, 4876), (11, 4981), (Start: 19 @5047 has 6 MA's), (31, 5134), (34, 5146), (35, 5152), (38, 5173), (40, 5182), (42, 5185), (43, 5194), (48, 5230), (57, 5326), (63, 5383), (71, 5437),

Gene: Matzah_9 Start: 4954, Stop: 5427, Start Num: 19
Candidate Starts for Matzah_9:
(7, 4795), (8, 4816), (11, 4888), (Start: 19 @4954 has 6 MA's), (30, 5038), (34, 5053), (44, 5125), (57, 5251), (63, 5308), (71, 5362),

Gene: Megan_12 Start: 8240, Stop: 8635, Start Num: 15
Candidate Starts for Megan_12:
(Start: 15 @8240 has 45 MA's), (Start: 19 @8252 has 6 MA's), (25, 8282), (28, 8312), (32, 8345), (34, 8354), (59, 8483), (62, 8507), (69, 8555),

Gene: MementoMori_9 Start: 4963, Stop: 5439, Start Num: 20
Candidate Starts for MementoMori_9:
(8, 4822), (11, 4894), (Start: 20 @4963 has 3 MA's), (28, 5020), (31, 5050), (34, 5062), (39, 5098), (44, 5134), (57, 5263), (63, 5320), (70, 5365), (71, 5374), (78, 5416),

Gene: Metamorphoo_18 Start: 7222, Stop: 7614, Start Num: 15
Candidate Starts for Metamorphoo_18:
(Start: 15 @7222 has 45 MA's), (Start: 19 @7234 has 6 MA's), (23, 7258), (57, 7441), (75, 7561),

Gene: MisoSoup_8 Start: 3450, Stop: 3833, Start Num: 19
Candidate Starts for MisoSoup_8:
(Start: 19 @3450 has 6 MA's), (27, 3495), (51, 3621), (58, 3663), (62, 3714), (64, 3732), (70, 3762), (72, 3774), (77, 3804),

Gene: Nicole72_13 Start: 8509, Stop: 8892, Start Num: 19
Candidate Starts for Nicole72_13:
(Start: 19 @8509 has 6 MA's), (25, 8539), (32, 8602), (34, 8611), (59, 8740), (60, 8758), (62, 8764), (68, 8803), (69, 8812), (78, 8863),

Gene: NoodlelyBoi_17 Start: 7670, Stop: 8089, Start Num: 15
Candidate Starts for NoodlelyBoi_17:
(4, 7493), (5, 7502), (6, 7529), (Start: 15 @7670 has 45 MA's), (Start: 19 @7682 has 6 MA's), (23, 7706), (32, 7775), (34, 7784), (38, 7811), (57, 7916), (61, 7967), (75, 8036),

Gene: Onika_17 Start: 7604, Stop: 7996, Start Num: 15
Candidate Starts for Onika_17:

(4, 7484), (5, 7493), (6, 7520), (Start: 15 @7604 has 45 MA's), (Start: 19 @7616 has 6 MA's), (23, 7640), (25, 7646), (57, 7823), (61, 7874), (75, 7943),

Gene: Paschalis_17 Start: 7613, Stop: 8032, Start Num: 15
Candidate Starts for Paschalis_17:
(4, 7493), (5, 7502), (6, 7529), (Start: 15 @7613 has 45 MA's), (Start: 19 @7625 has 6 MA's), (23, 7649), (29, 7697), (32, 7718), (38, 7754), (57, 7859), (61, 7910), (75, 7979),

Gene: PhedwardCullen_17 Start: 7373, Stop: 7765, Start Num: 15
Candidate Starts for PhedwardCullen_17:
(4, 7181), (5, 7190), (6, 7217), (Start: 15 @7373 has 45 MA's), (Start: 19 @7385 has 6 MA's), (23, 7409), (25, 7415), (57, 7592), (61, 7643), (75, 7712),

Gene: Phorgeous_17 Start: 7421, Stop: 7840, Start Num: 15
Candidate Starts for Phorgeous_17:
(4, 7301), (5, 7310), (6, 7337), (Start: 15 @7421 has 45 MA's), (Start: 19 @7433 has 6 MA's), (23, 7457), (29, 7505), (32, 7526), (38, 7562), (57, 7667), (61, 7718), (75, 7787),

Gene: Phrancesco_19 Start: 7727, Stop: 8119, Start Num: 15
Candidate Starts for Phrancesco_19:
(4, 7535), (5, 7544), (6, 7571), (Start: 15 @7727 has 45 MA's), (Start: 19 @7739 has 6 MA's), (23, 7763), (25, 7769), (57, 7946), (61, 7997), (75, 8066),

Gene: PierreOrion_18 Start: 7768, Stop: 8187, Start Num: 15
Candidate Starts for PierreOrion_18:
(4, 7648), (5, 7657), (6, 7684), (Start: 15 @7768 has 45 MA's), (Start: 19 @7780 has 6 MA's), (23, 7804), (29, 7852), (32, 7873), (38, 7909), (57, 8014), (61, 8065), (75, 8134),

Gene: PiperSansNom_18 Start: 7917, Stop: 8336, Start Num: 15
Candidate Starts for PiperSansNom_18:
(4, 7797), (5, 7806), (6, 7833), (Start: 15 @7917 has 45 MA's), (Start: 19 @7929 has 6 MA's), (23, 7953), (29, 8001), (32, 8022), (38, 8058), (57, 8163), (61, 8214), (75, 8283),

Gene: Piperis_18 Start: 7576, Stop: 7995, Start Num: 15
Candidate Starts for Piperis_18:
(4, 7456), (5, 7465), (6, 7492), (Start: 15 @7576 has 45 MA's), (Start: 19 @7588 has 6 MA's), (23, 7612), (29, 7660), (32, 7681), (38, 7717), (57, 7822), (61, 7873), (75, 7942),

Gene: Pulchra_19 Start: 7978, Stop: 8397, Start Num: 15
Candidate Starts for Pulchra_19:
(4, 7786), (5, 7795), (6, 7822), (Start: 15 @7978 has 45 MA's), (Start: 19 @7990 has 6 MA's), (23, 8014), (29, 8062), (32, 8083), (38, 8119), (57, 8224), (61, 8275), (75, 8344), (77, 8365),

Gene: Quhwah_20 Start: 7876, Stop: 8343, Start Num: 15
Candidate Starts for Quhwah_20:
(4, 7756), (5, 7765), (6, 7792), (Start: 15 @7876 has 45 MA's), (Start: 19 @7888 has 6 MA's), (23, 7912), (25, 7918), (61, 8221), (75, 8290), (77, 8311),

Gene: Ramiel05_17 Start: 7604, Stop: 8023, Start Num: 15
Candidate Starts for Ramiel05_17:
(4, 7484), (5, 7493), (6, 7520), (Start: 15 @7604 has 45 MA's), (Start: 19 @7616 has 6 MA's), (22, 7634), (23, 7640), (29, 7688), (32, 7709), (38, 7745), (57, 7850), (61, 7901), (75, 7970), (77, 7991),

Gene: Rasputia_33 Start: 13842, Stop: 14231, Start Num: 21
Candidate Starts for Rasputia_33:
(Start: 21 @13842 has 2 MA's), (24, 13857), (28, 13890), (41, 13962), (45, 13974), (50, 13998), (53, 14019), (59, 14097), (76, 14196),

Gene: RobsFeet_18 Start: 7064, Stop: 7522, Start Num: 15
Candidate Starts for RobsFeet_18:
(Start: 15 @7064 has 45 MA's), (Start: 19 @7076 has 6 MA's), (30, 7163), (34, 7178), (36, 7202), (56, 7316), (75, 7469), (77, 7490),

Gene: Rockwell_17 Start: 7604, Stop: 8023, Start Num: 15
Candidate Starts for Rockwell_17:
(4, 7484), (5, 7493), (6, 7520), (Start: 15 @7604 has 45 MA's), (Start: 19 @7616 has 6 MA's), (22, 7634), (23, 7640), (29, 7688), (32, 7709), (38, 7745), (57, 7850), (61, 7901), (75, 7970), (77, 7991),

Gene: Savannah_17 Start: 7628, Stop: 8047, Start Num: 15
Candidate Starts for Savannah_17:
(4, 7508), (5, 7517), (6, 7544), (Start: 15 @7628 has 45 MA's), (Start: 19 @7640 has 6 MA's), (22, 7658), (23, 7664), (29, 7712), (32, 7733), (38, 7769), (57, 7874), (61, 7925), (75, 7994), (77, 8015),

Gene: Scumberland_19 Start: 7794, Stop: 8213, Start Num: 15
Candidate Starts for Scumberland_19:
(4, 7674), (5, 7683), (6, 7710), (Start: 15 @7794 has 45 MA's), (Start: 19 @7806 has 6 MA's), (23, 7830), (29, 7878), (32, 7899), (38, 7935), (57, 8040), (61, 8091), (75, 8160),

Gene: Selwyn23_19 Start: 7806, Stop: 8225, Start Num: 15
Candidate Starts for Selwyn23_19:
(4, 7686), (5, 7695), (6, 7722), (Start: 15 @7806 has 45 MA's), (Start: 19 @7818 has 6 MA's), (23, 7842), (29, 7890), (32, 7911), (38, 7947), (57, 8052), (61, 8103), (75, 8172),

Gene: Shotgun_17 Start: 7453, Stop: 7845, Start Num: 15
Candidate Starts for Shotgun_17:
(4, 7246), (5, 7255), (6, 7282), (9, 7363), (Start: 15 @7453 has 45 MA's), (Start: 19 @7465 has 6 MA's), (23, 7489), (25, 7495), (57, 7672), (61, 7723), (75, 7792),

Gene: Shrubaron_18 Start: 7111, Stop: 7530, Start Num: 15
Candidate Starts for Shrubaron_18:
(Start: 15 @7111 has 45 MA's), (Start: 19 @7123 has 6 MA's), (23, 7147), (57, 7357), (75, 7477), (77, 7498),

Gene: SirFrank_17 Start: 7544, Stop: 7936, Start Num: 15
Candidate Starts for SirFrank_17:
(1, 7145), (4, 7367), (5, 7376), (6, 7403), (Start: 15 @7544 has 45 MA's), (Start: 19 @7556 has 6 MA's), (23, 7580), (58, 7766), (61, 7814), (75, 7883),

Gene: Skugga_16 Start: 6463, Stop: 6843, Start Num: 19
Candidate Starts for Skugga_16:
(4, 6334), (6, 6370), (Start: 15 @6451 has 45 MA's), (Start: 19 @6463 has 6 MA's), (23, 6487), (28, 6523), (61, 6721), (75, 6790), (77, 6811),

Gene: Smarties_25 Start: 8959, Stop: 9381, Start Num: 15
Candidate Starts for Smarties_25:

(2, 8782), (3, 8836), (4, 8839), (6, 8875), (Start: 15 @8959 has 45 MA's), (Start: 19 @8971 has 6 MA's), (57, 9208), (61, 9259), (73, 9322), (75, 9328), (77, 9349),

Gene: Teamocil_18 Start: 6736, Stop: 7152, Start Num: 19
Candidate Starts for Teamocil_18:
(4, 6607), (6, 6643), (Start: 15 @6724 has 45 MA's), (Start: 19 @6736 has 6 MA's), (23, 6760), (32, 6829), (46, 6907), (57, 6979), (75, 7099), (77, 7120),

Gene: Terij_9 Start: 4954, Stop: 5427, Start Num: 19
Candidate Starts for Terij_9:
(7, 4789), (11, 4894), (12, 4921), (Start: 19 @4954 has 6 MA's), (26, 4993), (28, 5011), (37, 5083), (47, 5152), (52, 5179), (58, 5254), (63, 5308), (71, 5362),

Gene: Tyrumbra_16 Start: 6540, Stop: 6977, Start Num: 15
Candidate Starts for Tyrumbra_16:
(Start: 15 @6540 has 45 MA's), (Start: 19 @6552 has 6 MA's), (23, 6576), (53, 6756), (75, 6924), (77, 6945),

Gene: Yeti_18 Start: 7576, Stop: 7995, Start Num: 15
Candidate Starts for Yeti_18:
(4, 7456), (5, 7465), (6, 7492), (Start: 15 @7576 has 45 MA's), (Start: 19 @7588 has 6 MA's), (23, 7612), (29, 7660), (32, 7681), (38, 7717), (57, 7822), (61, 7873), (75, 7942),

Gene: Zapato_14 Start: 6691, Stop: 7119, Start Num: 15
Candidate Starts for Zapato_14:
(6, 6607), (Start: 15 @6691 has 45 MA's), (Start: 19 @6703 has 6 MA's), (46, 6874), (57, 6946), (73, 7060), (77, 7087),