Pham 291035

1: Indlulamithi_3
2: Sejanus_1 + 2
3: SteamedHams_4 + 1
4: CocoaPuff_2 + 3
5: Fribs8_3
6: Horseradish_3 + 3
7: Sopespian_3 + 9
8: Emalyn_2 + 2
9: RanchParmCat_4
10: RedBaron_4 + 1
11: Button_3
12: Margaret_4
13: Pons_2 + 1
14: Azira_4 + 3
15: Carsonalex_3
16: Jamzy_4
17: Zareef_4
18: Yucky_3 + 1
19: BillDoor_4
20: GiKK_4
21: PLot_10 + 22
22: Cborch11_7 + 6
23: Barnyard_9
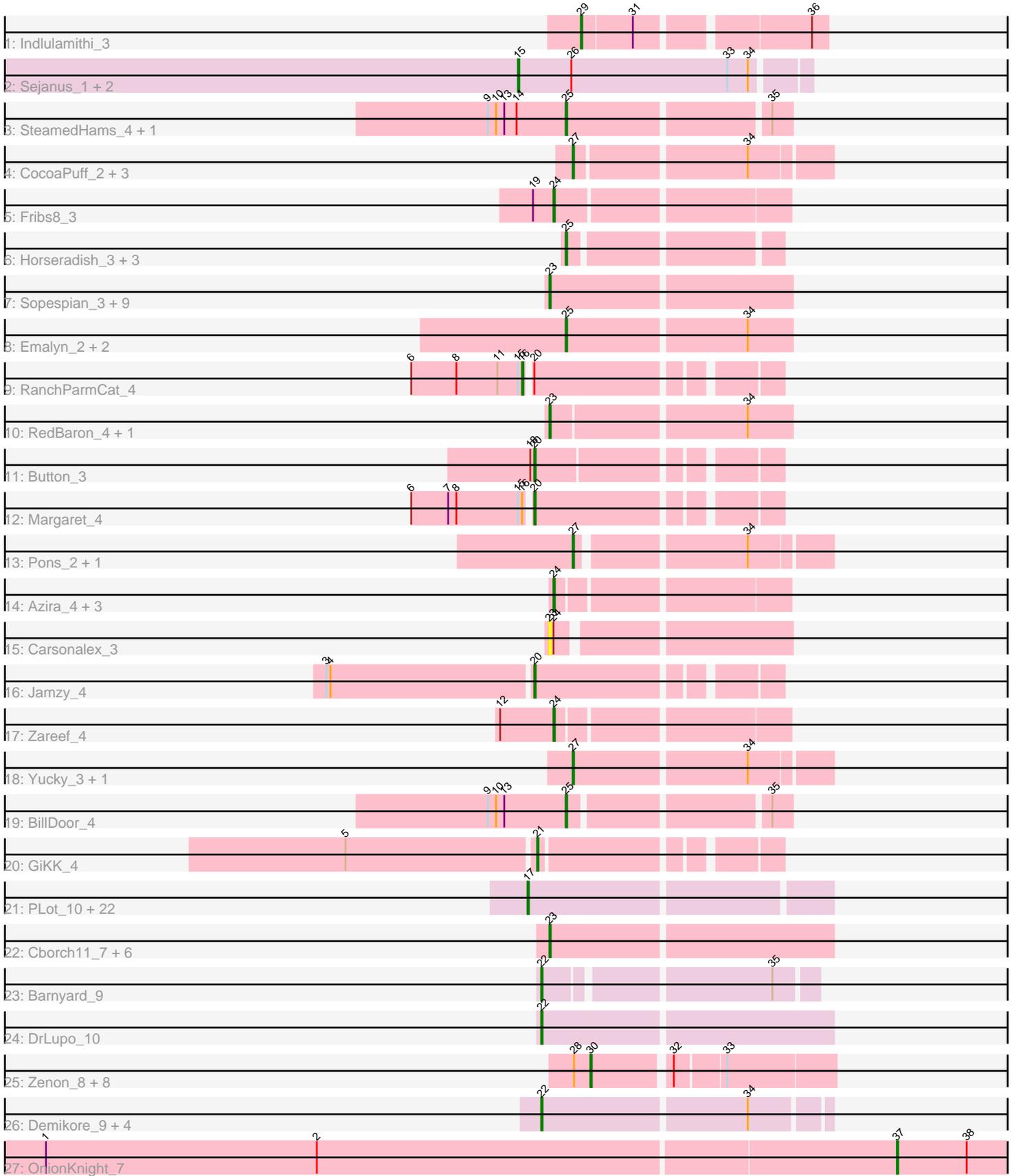24: DrLupo_10
25: Zenon_8 + 8
26: Demikore_9 + 4
27: OrionKnight_7

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 291035 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291035 has 93 members, 19 are drafts.

Phages represented in each track:
• Track 1 : Indlulamithi_3
• Track 2 : Sejanus_1, Mao1_1, Mask_1
• Track 3 : SteamedHams_4, Tolls_4
• Track 4 : CocoaPuff_2, Elinal_3, KayGee_2, Balloona_2
• Track 5 : Fribs8_3
• Track 6 : Horseradish_3, SweatNTears_4, MScarn_4, Yummy_3
• Track 7 : Sopespian_3, RSchmailzl_4, ChickenTender_4, Eliott_3, RADical_3, GoldHunter_3, Socotra_3, Starburst_3, PsychoKiller_3, Burnsey_3
• Track 8 : Emalyn_2, Amok_2, AikoCarson_2
• Track 9 : RanchParmCat_4
• Track 10 : RedBaron_4, MunkgeeRoachy_3
• Track 11 : Button_3
• Track 12 : Margaret_4
• Track 13 : Pons_2, MAnor_2
• Track 14 : Azira_4, Wolfwood_5, MaVan_4, Nibbles_4
• Track 15 : Carsonalex_3
• Track 16 : Jamzy_4
• Track 17 : Zareef_4
• Track 18 : Yucky_3, PotPie_3
• Track 19 : BillDoor_4
• Track 20 : GiKK_4
• Track 21 : PLot_10, SirHarley_9, Visconti_10, WaldoWhy_10, KandZ_10, Helpful_10, Delton_10, Thoth_10, Nova_10, Prager_10, Chill_10, SuperheroCarly_10, Penelope2018_10, BigMama_9, Troll4_10, Erk16_10, Giuseppe_10, Adjutor_10, Mopey_10, Phalaborwa_10, PBI1_10, Butterscotch_10, Gumball_9
• Track 22 : Cborch11_7, Thumb_7, Phreeze_7, Oaker_7, Damien_6, Beckerton_7, Megatron06_8
• Track 23 : Barnyard_9
• Track 24 : DrLupo_10
• Track 25 : Zenon_8, Send513_7, Candle_7, Nilo_8, Riparian_7, Papyrus_8, MontyDev_8, Weiss13_7, Yelo_7
• Track 26 : Demikore_9, Madruga_8, Patience_10, Labelle_10, SuperSonics_10
• Track 27 : OnionKnight_7

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

The start number called the most often in the published annotations is 17, it was called in 21 of the 74 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Adjutor_10, BigMama_9, Butterscotch_10, Chill_10, Delton_10, Erk16_10, Giuseppe_10, Gumball_9, Helpful_10, KandZ_10, Mopey_10, Nova_10, PBI1_10, PLot_10, Penelope2018_10, Phalaborwa_10, Prager_10, SirHarley_9, SuperheroCarly_10, Thoth_10, Troll4_10, Visconti_10, WaldoWhy_10,

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

Genes that do not have the "Most Annotated" start:
• AikoCarson_2, Amok_2, Azira_4, Balloona_2, Barnyard_9, Beckerton_7, BillDoor_4, Burnsey_3, Button_3, Candle_7, Carsonalex_3, Cborch11_7, ChickenTender_4, CocoaPuff_2, Damien_6, Demikore_9, DrLupo_10, Elinal_3, Eliott_3, Emalyn_2, Fribs8_3, GiKK_4, GoldHunter_3, Horseradish_3, Indlulamithi_3, Jamzy_4, KayGee_2, Labelle_10, MAnor_2, MScarn_4, MaVan_4, Madruga_8, Mao1_1, Margaret_4, Mask_1, Megatron06_8, MontyDev_8, MunkgeeRoachy_3, Nibbles_4, Nilo_8, Oaker_7, OnionKnight_7, Papyrus_8, Patience_10, Phreeze_7, Pons_2, PotPie_3, PsychoKiller_3, RADical_3, RSchmailzl_4, RanchParmCat_4, RedBaron_4, Riparian_7, Sejanus_1, Send513_7, Socotra_3, Sopespian_3, Starburst_3, SteamedHams_4, SuperSonics_10, SweatNTears_4, Thumb_7, Tolls_4, Weiss13_7, Wolfwood_5, Yelo_7, Yucky_3, Yummy_3, Zareef_4, Zenon_8,

Summary by start number:

Start 15:
• Found in 5 of 93 (5.4%) of genes in pham
• Manual Annotations of this start: 3 of 74
• Called 60.0% of time when present
• Phage (with cluster) where this start called: Mao1_1 (AD), Mask_1 (AD), Sejanus_1 (AD),

Start 16:
• Found in 2 of 93 (2.2%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 50.0% of time when present
• Phage (with cluster) where this start called: RanchParmCat_4 (CT),

Start 17:
• Found in 23 of 93 (24.7%) of genes in pham
• Manual Annotations of this start: 21 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Adjutor_10 (D1), BigMama_9 (D1), Butterscotch_10 (D1), Chill_10 (D1), Delton_10 (D1), Erk16_10 (D1), Giuseppe_10 (D1), Gumball_9 (D1), Helpful_10 (D1), KandZ_10 (D1), Mopey_10 (D1), Nova_10 (D1), PBI1_10 (D1), PLot_10 (D1), Penelope2018_10 (D1), Phalaborwa_10 (D1), Prager_10 (D1), SirHarley_9 (D1), SuperheroCarly_10 (D1), Thoth_10 (D1), Troll4_10 (D1), Visconti_10 (D1), WaldoWhy_10 (D1),

Start 20:
• Found in 4 of 93 (4.3%) of genes in pham
• Manual Annotations of this start: 3 of 74
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Button_3 (CT), Jamzy_4 (CT), Margaret_4 (CT),

Start 21:
• Found in 1 of 93 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GiKK_4 (CT),

Start 22:
• Found in 7 of 93 (7.5%) of genes in pham
• Manual Annotations of this start: 5 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Barnyard_9 (H2), Demikore_9 (U), DrLupo_10 (H2), Labelle_10 (U), Madruga_8 (U), Patience_10 (U), SuperSonics_10 (U),

Start 23:
• Found in 20 of 93 (21.5%) of genes in pham
• Manual Annotations of this start: 9 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Beckerton_7 (H1), Burnsey_3 (CT), Carsonalex_3 (CT), Cborch11_7 (H1), ChickenTender_4 (CT), Damien_6 (H1), Eliott_3 (CT), GoldHunter_3 (CT), Megatron06_8 (H1), MunkgeeRoachy_3 (CT), Oaker_7 (H1), Phreeze_7 (H1), PsychoKiller_3 (CT), RADical_3 (CT), RSchmailzl_4 (CT), RedBaron_4 (CT), Socotra_3 (CT), Sopespian_3 (CT), Starburst_3 (CT), Thumb_7 (H1),

Start 24:
• Found in 7 of 93 (7.5%) of genes in pham
• Manual Annotations of this start: 5 of 74
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Azira_4 (CT), Fribs8_3 (CT), MaVan_4 (CT), Nibbles_4 (CT), Wolfwood_5 (CT), Zareef_4 (CT),

Start 25:
• Found in 10 of 93 (10.8%) of genes in pham
• Manual Annotations of this start: 10 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AikoCarson_2 (CT), Amok_2 (CT), BillDoor_4 (CT), Emalyn_2 (CT), Horseradish_3 (CT), MScarn_4 (CT), SteamedHams_4 (CT), SweatNTears_4 (CT), Tolls_4 (CT), Yummy_3 (CT),

Start 27:
• Found in 8 of 93 (8.6%) of genes in pham
• Manual Annotations of this start: 6 of 74
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Balloona_2 (CT), CocoaPuff_2 (CT), Elinal_3 (CT), KayGee_2 (CT), MAnor_2 (CT), Pons_2 (CT), PotPie_3 (CT), Yucky_3 (CT),

Start 29:
• Found in 1 of 93 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Indlulamithi_3 (AC),

Start 30:
• Found in 9 of 93 (9.7%) of genes in pham
• Manual Annotations of this start: 8 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Candle_7 (R), MontyDev_8 (R), Nilo_8 (R), Papyrus_8 (R), Riparian_7 (R), Send513_7 (R), Weiss13_7 (R), Yelo_7 (R), Zenon_8 (R),

Start 37:
• Found in 1 of 93 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: OnionKnight_7 (singleton),

Summary by clusters:

There are 9 clusters represented in this pham: singleton, AD, H2, H1, AC, R, U, D1, CT,

Info for manual annotations of cluster AC:
•Start number 29 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AD:
•Start number 15 was manually annotated 3 times for cluster AD.

Info for manual annotations of cluster CT:
•Start number 16 was manually annotated 1 time for cluster CT.
•Start number 20 was manually annotated 3 times for cluster CT.
•Start number 21 was manually annotated 1 time for cluster CT.
•Start number 23 was manually annotated 2 times for cluster CT.
•Start number 24 was manually annotated 5 times for cluster CT.
•Start number 25 was manually annotated 10 times for cluster CT.
•Start number 27 was manually annotated 6 times for cluster CT.

Info for manual annotations of cluster D1:
•Start number 17 was manually annotated 21 times for cluster D1.

Info for manual annotations of cluster H1:
•Start number 23 was manually annotated 7 times for cluster H1.

Info for manual annotations of cluster H2:
•Start number 22 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:
•Start number 30 was manually annotated 8 times for cluster R.

Info for manual annotations of cluster U:
•Start number 22 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Adjutor_10 Start: 7925, Stop: 8137, Start Num: 17
Candidate Starts for Adjutor_10:
(Start: 17 @7925 has 21 MA's),

Gene: AikoCarson_2 Start: 534, Stop: 692, Start Num: 25
Candidate Starts for AikoCarson_2:
(Start: 25 @534 has 10 MA's), (34, 660),

Gene: Amok_2 Start: 535, Stop: 693, Start Num: 25
Candidate Starts for Amok_2:
(Start: 25 @535 has 10 MA's), (34, 661),

Gene: Azira_4 Start: 1179, Stop: 1337, Start Num: 24
Candidate Starts for Azira_4:
(Start: 24 @1179 has 5 MA's),

Gene: Balloona_2 Start: 643, Stop: 816, Start Num: 27
Candidate Starts for Balloona_2:
(Start: 27 @643 has 6 MA's), (34, 760),

Gene: Barnyard_9 Start: 6285, Stop: 6467, Start Num: 22
Candidate Starts for Barnyard_9:
(Start: 22 @6285 has 5 MA's), (35, 6438),

Gene: Beckerton_7 Start: 6251, Stop: 6451, Start Num: 23
Candidate Starts for Beckerton_7:
(Start: 23 @6251 has 9 MA's),

Gene: BigMama_9 Start: 7998, Stop: 8210, Start Num: 17
Candidate Starts for BigMama_9:
(Start: 17 @7998 has 21 MA's),

Gene: BillDoor_4 Start: 852, Stop: 998, Start Num: 25
Candidate Starts for BillDoor_4:
(9, 795), (10, 801), (13, 807), (Start: 25 @852 has 10 MA's), (35, 984),

Gene: Burnsey_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for Burnsey_3:
(Start: 23 @829 has 9 MA's),

Gene: Butterscotch_10 Start: 7985, Stop: 8197, Start Num: 17
Candidate Starts for Butterscotch_10:
(Start: 17 @7985 has 21 MA's),

Gene: Button_3 Start: 752, Stop: 910, Start Num: 20
Candidate Starts for Button_3:
(18, 749), (Start: 20 @752 has 3 MA's),

Gene: Candle_7 Start: 5193, Stop: 5354, Start Num: 30
Candidate Starts for Candle_7:
(28, 5181), (Start: 30 @5193 has 8 MA's), (32, 5244), (33, 5277),

Gene: Carsonalex_3 Start: 894, Stop: 1055, Start Num: 23
Candidate Starts for Carsonalex_3:
(Start: 23 @894 has 9 MA's), (Start: 24 @897 has 5 MA's),

Gene: Cborch11_7 Start: 5716, Stop: 5916, Start Num: 23
Candidate Starts for Cborch11_7:
(Start: 23 @5716 has 9 MA's),

Gene: ChickenTender_4 Start: 877, Stop: 1047, Start Num: 23
Candidate Starts for ChickenTender_4:
(Start: 23 @877 has 9 MA's),

Gene: Chill_10 Start: 7988, Stop: 8200, Start Num: 17
Candidate Starts for Chill_10:
(Start: 17 @7988 has 21 MA's),

Gene: CocoaPuff_2 Start: 643, Stop: 816, Start Num: 27
Candidate Starts for CocoaPuff_2:
(Start: 27 @643 has 6 MA's), (34, 760),

Gene: Damien_6 Start: 5716, Stop: 5916, Start Num: 23
Candidate Starts for Damien_6:
(Start: 23 @5716 has 9 MA's),

Gene: Delton_10 Start: 7994, Stop: 8206, Start Num: 17
Candidate Starts for Delton_10:
(Start: 17 @7994 has 21 MA's),

Gene: Demikore_9 Start: 6173, Stop: 6370, Start Num: 22
Candidate Starts for Demikore_9:
(Start: 22 @6173 has 5 MA's), (34, 6317),

Gene: DrLupo_10 Start: 6204, Stop: 6410, Start Num: 22
Candidate Starts for DrLupo_10:
(Start: 22 @6204 has 5 MA's),

Gene: Elinal_3 Start: 643, Stop: 819, Start Num: 27
Candidate Starts for Elinal_3:
(Start: 27 @643 has 6 MA's), (34, 763),

Gene: Eliott_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for Eliott_3:
(Start: 23 @829 has 9 MA's),

Gene: Emalyn_2 Start: 534, Stop: 692, Start Num: 25
Candidate Starts for Emalyn_2:
(Start: 25 @534 has 10 MA's), (34, 660),

Gene: Erk16_10 Start: 7994, Stop: 8200, Start Num: 17
Candidate Starts for Erk16_10:
(Start: 17 @7994 has 21 MA's),

Gene: Fribs8_3 Start: 954, Stop: 1115, Start Num: 24
Candidate Starts for Fribs8_3:
(19, 939), (Start: 24 @954 has 5 MA's),

Gene: GiKK_4 Start: 1010, Stop: 1165, Start Num: 21
Candidate Starts for GiKK_4:
(5, 875), (Start: 21 @1010 has 1 MA's),

Gene: Giuseppe_10 Start: 7977, Stop: 8189, Start Num: 17
Candidate Starts for Giuseppe_10:
(Start: 17 @7977 has 21 MA's),

Gene: GoldHunter_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for GoldHunter_3:
(Start: 23 @829 has 9 MA's),

Gene: Gumball_9 Start: 7932, Stop: 8144, Start Num: 17
Candidate Starts for Gumball_9:
(Start: 17 @7932 has 21 MA's),

Gene: Helpful_10 Start: 7985, Stop: 8197, Start Num: 17
Candidate Starts for Helpful_10:
(Start: 17 @7985 has 21 MA's),

Gene: Horseradish_3 Start: 758, Stop: 898, Start Num: 25
Candidate Starts for Horseradish_3:
(Start: 25 @758 has 10 MA's),

Gene: Indlulamithi_3 Start: 3257, Stop: 3418, Start Num: 29
Candidate Starts for Indlulamithi_3:
(Start: 29 @3257 has 1 MA's), (31, 3293), (36, 3407),

Gene: Jamzy_4 Start: 1014, Stop: 1175, Start Num: 20
Candidate Starts for Jamzy_4:
(3, 867), (4, 870), (Start: 20 @1014 has 3 MA's),

Gene: KandZ_10 Start: 8082, Stop: 8294, Start Num: 17
Candidate Starts for KandZ_10:
(Start: 17 @8082 has 21 MA's),

Gene: KayGee_2 Start: 643, Stop: 819, Start Num: 27
Candidate Starts for KayGee_2:
(Start: 27 @643 has 6 MA's), (34, 763),

Gene: Labelle_10 Start: 6572, Stop: 6769, Start Num: 22

Candidate Starts for Labelle_10:
(Start: 22 @6572 has 5 MA's), (34, 6716),

Gene: MAnor_2 Start: 640, Stop: 810, Start Num: 27
Candidate Starts for MAnor_2:
(Start: 27 @640 has 6 MA's), (34, 754),

Gene: MScarn_4 Start: 852, Stop: 992, Start Num: 25
Candidate Starts for MScarn_4:
(Start: 25 @852 has 10 MA's),

Gene: MaVan_4 Start: 1180, Stop: 1338, Start Num: 24
Candidate Starts for MaVan_4:
(Start: 24 @1180 has 5 MA's),

Gene: Madruga_8 Start: 6176, Stop: 6373, Start Num: 22
Candidate Starts for Madruga_8:
(Start: 22 @6176 has 5 MA's), (34, 6320),

Gene: Mao1_1 Start: 1, Stop: 207, Start Num: 15
Candidate Starts for Mao1_1:
(Start: 15 @1 has 3 MA's), (26, 40), (33, 154), (34, 169),

Gene: Margaret_4 Start: 1387, Stop: 1548, Start Num: 20
Candidate Starts for Margaret_4:
(6, 1303), (7, 1330), (8, 1336), (Start: 15 @1381 has 3 MA's), (Start: 16 @1384 has 1 MA's), (Start: 20 @1387 has 3 MA's),

Gene: Mask_1 Start: 1, Stop: 207, Start Num: 15
Candidate Starts for Mask_1:
(Start: 15 @1 has 3 MA's), (26, 40), (33, 154), (34, 169),

Gene: Megatron06_8 Start: 6251, Stop: 6451, Start Num: 23
Candidate Starts for Megatron06_8:
(Start: 23 @6251 has 9 MA's),

Gene: MontyDev_8 Start: 5192, Stop: 5353, Start Num: 30
Candidate Starts for MontyDev_8:
(28, 5180), (Start: 30 @5192 has 8 MA's), (32, 5243), (33, 5276),

Gene: Mopey_10 Start: 7985, Stop: 8197, Start Num: 17
Candidate Starts for Mopey_10:
(Start: 17 @7985 has 21 MA's),

Gene: MunkgeeRoachy_3 Start: 877, Stop: 1047, Start Num: 23
Candidate Starts for MunkgeeRoachy_3:
(Start: 23 @877 has 9 MA's), (34, 1015),

Gene: Nibbles_4 Start: 1180, Stop: 1338, Start Num: 24
Candidate Starts for Nibbles_4:
(Start: 24 @1180 has 5 MA's),

Gene: Nilo_8 Start: 5193, Stop: 5354, Start Num: 30

Candidate Starts for Nilo_8:
(28, 5181), (Start: 30 @5193 has 8 MA's), (32, 5244), (33, 5277),

Gene: Nova_10 Start: 8409, Stop: 8621, Start Num: 17
Candidate Starts for Nova_10:
(Start: 17 @8409 has 21 MA's),

Gene: Oaker_7 Start: 5972, Stop: 6172, Start Num: 23
Candidate Starts for Oaker_7:
(Start: 23 @5972 has 9 MA's),

Gene: OnionKnight_7 Start: 5413, Stop: 5559, Start Num: 37
Candidate Starts for OnionKnight_7:
(1, 4798), (2, 4996), (Start: 37 @5413 has 1 MA's), (38, 5464),

Gene: PBI1_10 Start: 7922, Stop: 8128, Start Num: 17
Candidate Starts for PBI1_10:
(Start: 17 @7922 has 21 MA's),

Gene: PLot_10 Start: 7994, Stop: 8200, Start Num: 17
Candidate Starts for PLot_10:
(Start: 17 @7994 has 21 MA's),

Gene: Papyrus_8 Start: 5193, Stop: 5354, Start Num: 30
Candidate Starts for Papyrus_8:
(28, 5181), (Start: 30 @5193 has 8 MA's), (32, 5244), (33, 5277),

Gene: Patience_10 Start: 7102, Stop: 7299, Start Num: 22
Candidate Starts for Patience_10:
(Start: 22 @7102 has 5 MA's), (34, 7246),

Gene: Penelope2018_10 Start: 7985, Stop: 8197, Start Num: 17
Candidate Starts for Penelope2018_10:
(Start: 17 @7985 has 21 MA's),

Gene: Phalaborwa_10 Start: 8027, Stop: 8239, Start Num: 17
Candidate Starts for Phalaborwa_10:
(Start: 17 @8027 has 21 MA's),

Gene: Phreeze_7 Start: 5716, Stop: 5916, Start Num: 23
Candidate Starts for Phreeze_7:
(Start: 23 @5716 has 9 MA's),

Gene: Pons_2 Start: 640, Stop: 810, Start Num: 27
Candidate Starts for Pons_2:
(Start: 27 @640 has 6 MA's), (34, 754),

Gene: PotPie_3 Start: 1499, Stop: 1675, Start Num: 27
Candidate Starts for PotPie_3:
(Start: 27 @1499 has 6 MA's), (34, 1619),

Gene: Prager_10 Start: 7994, Stop: 8206, Start Num: 17
Candidate Starts for Prager_10:

(Start: 17 @7994 has 21 MA's),

Gene: PsychoKiller_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for PsychoKiller_3:
(Start: 23 @829 has 9 MA's),

Gene: RADical_3 Start: 830, Stop: 1000, Start Num: 23
Candidate Starts for RADical_3:
(Start: 23 @830 has 9 MA's),

Gene: RSchmailzl_4 Start: 877, Stop: 1047, Start Num: 23
Candidate Starts for RSchmailzl_4:
(Start: 23 @877 has 9 MA's),

Gene: RanchParmCat_4 Start: 1384, Stop: 1548, Start Num: 16
Candidate Starts for RanchParmCat_4:
(6, 1303), (8, 1336), (11, 1366), (Start: 15 @1381 has 3 MA's), (Start: 16 @1384 has 1 MA's), (Start: 20 @1387 has 3 MA's),

Gene: RedBaron_4 Start: 877, Stop: 1044, Start Num: 23
Candidate Starts for RedBaron_4:
(Start: 23 @877 has 9 MA's), (34, 1012),

Gene: Riparian_7 Start: 4890, Stop: 5051, Start Num: 30
Candidate Starts for Riparian_7:
(28, 4878), (Start: 30 @4890 has 8 MA's), (32, 4941), (33, 4974),

Gene: Sejanus_1 Start: 1, Stop: 207, Start Num: 15
Candidate Starts for Sejanus_1:
(Start: 15 @1 has 3 MA's), (26, 40), (33, 154), (34, 169),

Gene: Send513_7 Start: 5193, Stop: 5354, Start Num: 30
Candidate Starts for Send513_7:
(28, 5181), (Start: 30 @5193 has 8 MA's), (32, 5244), (33, 5277),

Gene: SirHarley_9 Start: 7914, Stop: 8126, Start Num: 17
Candidate Starts for SirHarley_9:
(Start: 17 @7914 has 21 MA's),

Gene: Socotra_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for Socotra_3:
(Start: 23 @829 has 9 MA's),

Gene: Sopespian_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for Sopespian_3:
(Start: 23 @829 has 9 MA's),

Gene: Starburst_3 Start: 829, Stop: 999, Start Num: 23
Candidate Starts for Starburst_3:
(Start: 23 @829 has 9 MA's),

Gene: SteamedHams_4 Start: 852, Stop: 1004, Start Num: 25
Candidate Starts for SteamedHams_4:

(9, 795), (10, 801), (13, 807), (14, 816), (Start: 25 @852 has 10 MA's), (35, 990),

Gene: SuperSonics_10 Start: 6314, Stop: 6511, Start Num: 22
Candidate Starts for SuperSonics_10:
(Start: 22 @6314 has 5 MA's), (34, 6458),

Gene: SuperheroCarly_10 Start: 7847, Stop: 8059, Start Num: 17
Candidate Starts for SuperheroCarly_10:
(Start: 17 @7847 has 21 MA's),

Gene: SweatNTears_4 Start: 1378, Stop: 1518, Start Num: 25
Candidate Starts for SweatNTears_4:
(Start: 25 @1378 has 10 MA's),

Gene: Thoth_10 Start: 7982, Stop: 8194, Start Num: 17
Candidate Starts for Thoth_10:
(Start: 17 @7982 has 21 MA's),

Gene: Thumb_7 Start: 5717, Stop: 5917, Start Num: 23
Candidate Starts for Thumb_7:
(Start: 23 @5717 has 9 MA's),

Gene: Tolls_4 Start: 852, Stop: 1004, Start Num: 25
Candidate Starts for Tolls_4:
(9, 795), (10, 801), (13, 807), (14, 816), (Start: 25 @852 has 10 MA's), (35, 990),

Gene: Troll4_10 Start: 7986, Stop: 8198, Start Num: 17
Candidate Starts for Troll4_10:
(Start: 17 @7986 has 21 MA's),

Gene: Visconti_10 Start: 7995, Stop: 8207, Start Num: 17
Candidate Starts for Visconti_10:
(Start: 17 @7995 has 21 MA's),

Gene: WaldoWhy_10 Start: 7988, Stop: 8200, Start Num: 17
Candidate Starts for WaldoWhy_10:
(Start: 17 @7988 has 21 MA's),

Gene: Weiss13_7 Start: 4881, Stop: 5042, Start Num: 30
Candidate Starts for Weiss13_7:
(28, 4869), (Start: 30 @4881 has 8 MA's), (32, 4932), (33, 4965),

Gene: Wolfwood_5 Start: 1179, Stop: 1337, Start Num: 24
Candidate Starts for Wolfwood_5:
(Start: 24 @1179 has 5 MA's),

Gene: Yelo_7 Start: 5193, Stop: 5354, Start Num: 30
Candidate Starts for Yelo_7:
(28, 5181), (Start: 30 @5193 has 8 MA's), (32, 5244), (33, 5277),

Gene: Yucky_3 Start: 1499, Stop: 1675, Start Num: 27
Candidate Starts for Yucky_3:
(Start: 27 @1499 has 6 MA's), (34, 1619),

Gene: Yummy_3 Start: 758, Stop: 898, Start Num: 25
Candidate Starts for Yummy_3:
(Start: 25 @758 has 10 MA's),

Gene: Zareef_4 Start: 1180, Stop: 1338, Start Num: 24
Candidate Starts for Zareef_4:
(12, 1141), (Start: 24 @1180 has 5 MA's),

Gene: Zenon_8 Start: 5193, Stop: 5354, Start Num: 30
Candidate Starts for Zenon_8:
(28, 5181), (Start: 30 @5193 has 8 MA's), (32, 5244), (33, 5277),