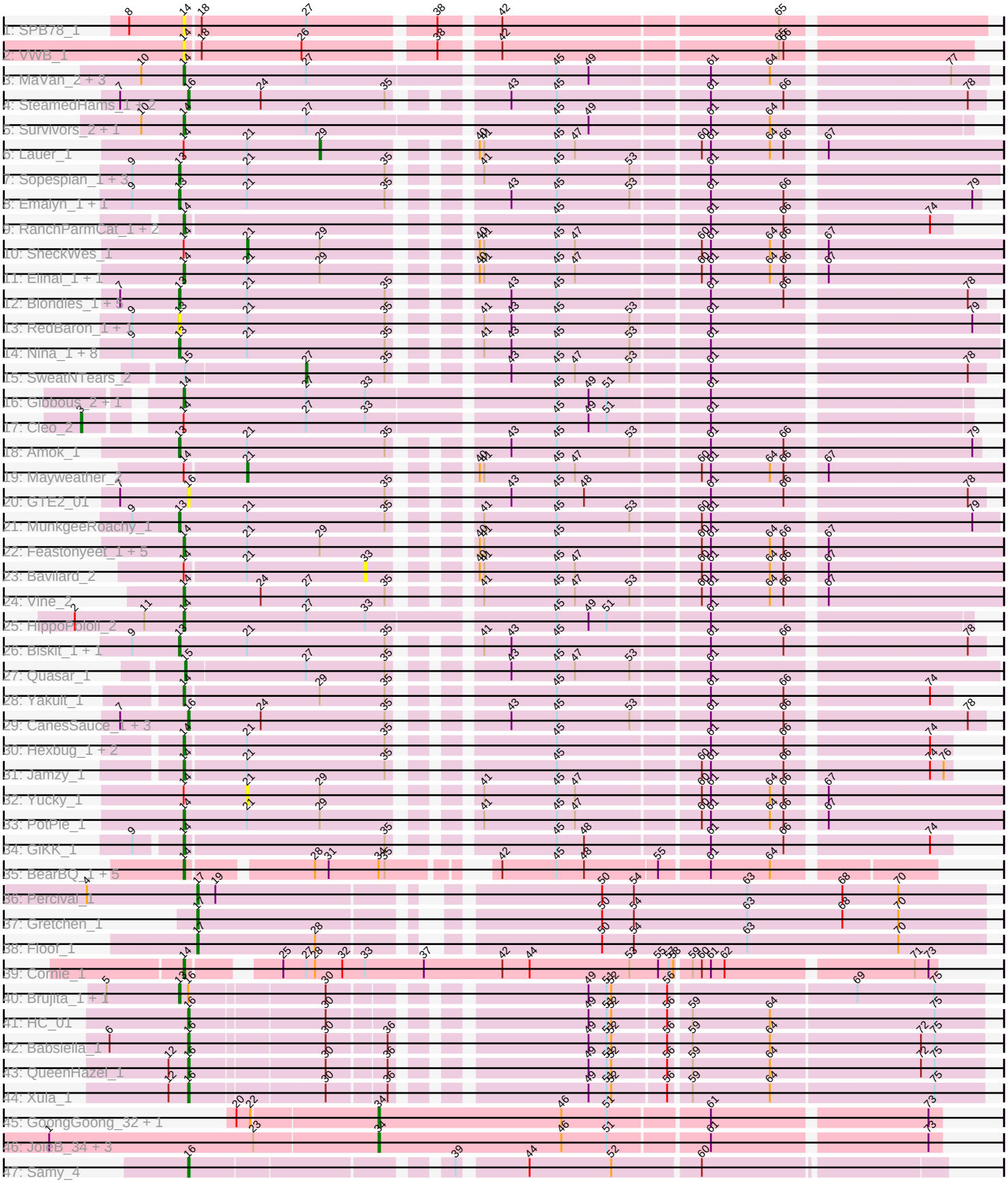
Pham 216043


1: SPB78_1
2: VWB_1
3: MaVan_2 + 3
4: SteamedHams_1 + 2
5: Survivors_2 + 1
6: Lauer_1
7: Sopespian_1 + 3
8: Emalyn_1 + 1
9: RanchParmCat_1 + 2
10: SneckWes_1
11: Elinai_1 + 1
12: Blondies_1 + 3
13: RedBaron_1 + 1
14: Nina_1 + 8
15: SweatNTears_2
16: Gibbous_2 + 1
17: Cleo_2
18: Amok_1
19: Mayweather_2
20: GTE2_01
21: MunkgeeRoachy_1
22: Feastonyeet_1 + 5
23: Bavilard_2
24: Vine_2
25: HippoPbioii_2
26: Biskit_1 + 1
27: Quasar_1
28: Yakult_1
29: CanesSauce_1 + 3
30: Hexbug_1 + 2
31: Jamzy_1
32: Yucky_1
33: PotPie_1
34: GiKK_1
35: BearBQ_1 + 5
36: Percival_1
37: Gretchen_1
38: Floof_1
39: Connie_1
40: Brujita_1 + 1
41: HC_01
42: Babsiella_1
43: QueenHazel_1
44: Xula_1
45: GoongGoong_32 + 1
46: JoeB_34 + 3
47: Samy_4

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 216043 Report

This analysis was run 02/22/25 on database version 588.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 216043 has 96 members, 21 are drafts.

Phages represented in each track:
- Track 1 : SPB78_1
- Track 2 : VWB_1
- Track 3 : MaVan_2, Zareef_2, Azira_2, Nibbles_2
- Track 4 : SteamedHams_1, AndPeggy_1, BillDoor_1
- Track 5 : Survivors_2, Fribs8_2
- Track 6 : Lauer_1
- Track 7 : Sopespian_1, PsychoKiller_1, Burnsey_1, Eliott_1
- Track 8 : Emalyn_1, AikoCarson_1
- Track 9 : RanchParmCat_1, Button_1, Margaret_1
- Track 10 : SheckWes_1
- Track 11 : Elinal_1, KayGee_1
- Track 12 : Blondies_1, Horseradish_1, Troje_1, MScarn_1, Buttrmlkdreams_1, Yummy_1
- Track 13 : RedBaron_1, Carsonalex_1
- Track 14 : Nina_1, Cozz_1, ChickenTender_1, Agatha_1, Typhonomachy_1, GoldHunter_1, Socotra_1, Starburst_1, Axym_1
- Track 15 : SweatNTears_2
- Track 16 : Gibbous_2, Dre3_2
- Track 17 : Cleo_2
- Track 18 : Amok_1
- Track 19 : Mayweather_2
- Track 20 : GTE2_01
- Track 21 : MunkgeeRoachy_1
- Track 22 : Feastonyeet_1, BigChungus_1, SummitAcademy_1, Pons_1, CherryonLim_1, MAnor_1
- Track 23 : Bavilard_2
- Track 24 : Vine_2
- Track 25 : HippoPololi_2
- Track 26 : Biskit_1, SketchMex_1
- Track 27 : Quasar_1
- Track 28 : Yakult_1
- Track 29 : CanesSauce_1, Tolls_1, ChocoMunchkin_1, Yarn_1
- Track 30 : Hexbug_1, Orla_1, Nodigi_1

• Track 31 : Jamzy_1
• Track 32 : Yucky_1
• Track 33 : PotPie_1
• Track 34 : GiKK_1
• Track 35 : BearBQ_1, MortyNRick_1, Kuwabara_1, Crater_1, Apricot_1, Birdsong_1
• Track 36 : Percival_1
• Track 37 : Gretchen_1
• Track 38 : Floof_1
• Track 39 : Cornie_1
• Track 40 : Brujita_1, Island3_1
• Track 41 : HC_01
• Track 42 : Babsiella_1
• Track 43 : QueenHazel_1
• Track 44 : Xula_1
• Track 45 : GoongGoong_32, Poise_33
• Track 46 : JoieB_34, Marvin_31, MosMoris_31, Beelzebub_37
• Track 47 : Samy_4

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

The start number called the most often in the published annotations is 14, it was called in 33 of the 75 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Apricot_1, Azira_2, BearBQ_1, BigChungus_1, Birdsong_1, Button_1, CherryonLim_1, Cornie_1, Crater_1, Dre3_2, Elinal_1, Feastonyeet_1, Fribs8_2, GiKK_1, Gibbous_2, Hexbug_1, HippoPololi_2, Jamzy_1, KayGee_1, Kuwabara_1, MAnor_1, MaVan_2, Margaret_1, MortyNRick_1, Nibbles_2, Nodigi_1, Orla_1, Pons_1, PotPie_1, RanchParmCat_1, SPB78_1, SummitAcademy_1, Survivors_2, VWB_1, Vine_2, Yakult_1, Zareef_2,

Genes that have the "Most Annotated" start but do not call it:
• Bavilard_2, Cleo_2, Lauer_1, Mayweather_2, SheckWes_1, Yucky_1,

Genes that do not have the "Most Annotated" start:
• Agatha_1, AikoCarson_1, Amok_1, AndPeggy_1, Axym_1, Babsiella_1, Beelzebub_37, BillDoor_1, Biskit_1, Blondies_1, Brujita_1, Burnsey_1, Buttrmlkdreams_1, CanesSauce_1, Carsonalex_1, ChickenTender_1, ChocoMunchkin_1, Cozz_1, Eliott_1, Emalyn_1, Floof_1, GTE2_01, GoldHunter_1, GoongGoong_32, Gretchen_1, HC_01, Horseradish_1, Island3_1, JoieB_34, MScarn_1, Marvin_31, MosMoris_31, MunkgeeRoachy_1, Nina_1, Percival_1, Poise_33, PsychoKiller_1, Quasar_1, QueenHazel_1, RedBaron_1, Samy_4, SketchMex_1, Socotra_1, Sopespian_1, Starburst_1, SteamedHams_1, SweatNTears_2, Tolls_1, Troje_1, Typhonomachy_1, Xula_1, Yarn_1, Yummy_1,

Summary by start number:

Start 3:
• Found in 1 of 96 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 75

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cleo_2 (CT),

Start 13:
• Found in 29 of 96 (30.2%) of genes in pham
• Manual Annotations of this start: 18 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Agatha_1 (CT), AikoCarson_1 (CT), Amok_1 (CT), Axym_1 (CT), Biskit_1 (CT), Blondies_1 (CT), Brujita_1 (I1), Burnsey_1 (CT), Buttrmlkdreams_1 (CT), Carsonalex_1 (CT), ChickenTender_1 (CT), Cozz_1 (CT), Eliott_1 (CT), Emalyn_1 (CT), GoldHunter_1 (CT), Horseradish_1 (CT), Island3_1 (I1), MScarn_1 (CT), MunkgeeRoachy_1 (CT), Nina_1 (CT), PsychoKiller_1 (CT), RedBaron_1 (CT), SketchMex_1 (CT), Socotra_1 (CT), Sopespian_1 (CT), Starburst_1 (CT), Troje_1 (CT), Typhonomachy_1 (CT), Yummy_1 (CT),

Start 14:
• Found in 43 of 96 (44.8%) of genes in pham
• Manual Annotations of this start: 33 of 75
• Called 86.0% of time when present
• Phage (with cluster) where this start called: Apricot_1 (DN3), Azira_2 (CT), BearBQ_1 (DN), BigChungus_1 (CT), Birdsong_1 (DN), Button_1 (CT), CherryonLim_1 (CT), Cornie_1 (F5), Crater_1 (DN3), Dre3_2 (CT), Elinal_1 (CT), Feastonyeet_1 (CT), Fribs8_2 (CT), GiKK_1 (CT), Gibbous_2 (CT), Hexbug_1 (CT), HippoPololi_2 (CT), Jamzy_1 (CT), KayGee_1 (CT), Kuwabara_1 (DN4), MAnor_1 (CT), MaVan_2 (CT), Margaret_1 (CT), MortyNRick_1 (DN), Nibbles_2 (CT), Nodigi_1 (CT), Orla_1 (CT), Pons_1 (CT), PotPie_1 (CT), RanchParmCat_1 (CT), SPB78_1 (BA), SummitAcademy_1 (CT), Survivors_2 (CT), VWB_1 (BA), Vine_2 (CT), Yakult_1 (CT), Zareef_2 (CT),

Start 15:
• Found in 2 of 96 (2.1%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Quasar_1 (CT),

Start 16:
• Found in 15 of 96 (15.6%) of genes in pham
• Manual Annotations of this start: 10 of 75
• Called 86.7% of time when present
• Phage (with cluster) where this start called: AndPeggy_1 (CT), Babsiella_1 (I1), BillDoor_1 (CT), CanesSauce_1 (CT), ChocoMunchkin_1 (CT), GTE2_01 (CT), HC_01 (I1), QueenHazel_1 (I1), Samy_4 (singleton), SteamedHams_1 (CT), Tolls_1 (CT), Xula_1 (I1), Yarn_1 (CT),

Start 17:
• Found in 3 of 96 (3.1%) of genes in pham
• Manual Annotations of this start: 3 of 75
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Floof_1 (EH), Gretchen_1 (EH), Percival_1 (EH),

Start 21:

• Found in 45 of 96 (46.9%) of genes in pham
• Manual Annotations of this start: 2 of 75
• Called 6.7% of time when present
• Phage (with cluster) where this start called: Mayweather_2 (CT), SheckWes_1 (CT), Yucky_1 (CT),

Start 27:
• Found in 15 of 96 (15.6%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 6.7% of time when present
• Phage (with cluster) where this start called: SweatNTears_2 (CT),

Start 29:
• Found in 13 of 96 (13.5%) of genes in pham
• Manual Annotations of this start: 1 of 75
• Called 7.7% of time when present
• Phage (with cluster) where this start called: Lauer_1 (CT),

Start 33:
• Found in 6 of 96 (6.2%) of genes in pham
• No Manual Annotations of this start.
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Bavilard_2 (CT),

Start 34:
• Found in 12 of 96 (12.5%) of genes in pham
• Manual Annotations of this start: 5 of 75
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Beelzebub_37 (S), GoongGoong_32 (S), JoieB_34 (S), Marvin_31 (S), MosMoris_31 (S), Poise_33 (S),

Summary by clusters:

There are 10 clusters represented in this pham: DN, singleton, EH, F5, I1, DN4, S, DN3, CT, BA,

Info for manual annotations of cluster CT:
•Start number 3 was manually annotated 1 time for cluster CT.
•Start number 13 was manually annotated 16 times for cluster CT.
•Start number 14 was manually annotated 27 times for cluster CT.
•Start number 15 was manually annotated 1 time for cluster CT.
•Start number 16 was manually annotated 5 times for cluster CT.
•Start number 21 was manually annotated 2 times for cluster CT.
•Start number 27 was manually annotated 1 time for cluster CT.
•Start number 29 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster DN:
•Start number 14 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN3:
•Start number 14 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:
•Start number 14 was manually annotated 1 time for cluster DN4.

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

Info for manual annotations of cluster F5:
•Start number 14 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster I1:
•Start number 13 was manually annotated 2 times for cluster I1.
•Start number 16 was manually annotated 4 times for cluster I1.

Info for manual annotations of cluster S:
•Start number 34 was manually annotated 5 times for cluster S.

Gene Information:

Gene: Agatha_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Agatha_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: AikoCarson_1 Start: 52, Stop: 531, Start Num: 13
Candidate Starts for AikoCarson_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (43, 241), (45, 271), (53, 319), (61, 364), (66, 412), (79, 526),

Gene: Amok_1 Start: 53, Stop: 532, Start Num: 13
Candidate Starts for Amok_1:
(Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (53, 320), (61, 365), (66, 413), (79, 527),

Gene: AndPeggy_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for AndPeggy_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: Apricot_1 Start: 50, Stop: 484, Start Num: 14
Candidate Starts for Apricot_1:
(Start: 14 @50 has 33 MA's), (28, 125), (31, 134), (Start: 34 @167 has 5 MA's), (35, 170), (42, 218), (45, 254), (48, 272), (55, 317), (61, 347), (64, 386),

Gene: Axym_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Axym_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: Azira_2 Start: 425, Stop: 922, Start Num: 14
Candidate Starts for Azira_2:

(10, 398), (Start: 14 @425 has 33 MA's), (Start: 27 @506 has 1 MA's), (45, 659), (49, 680), (61, 752), (64, 791), (77, 899),

Gene: Babsiella_1 Start: 67, Stop: 540, Start Num: 16
Candidate Starts for Babsiella_1:
(6, 16), (Start: 16 @67 has 10 MA's), (30, 151), (36, 187), (49, 292), (51, 304), (52, 307), (56, 340), (59, 352), (64, 403), (72, 499), (75, 508),

Gene: Bavilard_2 Start: 592, Stop: 963, Start Num: 33
Candidate Starts for Bavilard_2:
(Start: 14 @475 has 33 MA's), (Start: 21 @514 has 2 MA's), (33, 592), (40, 637), (41, 640), (45, 688), (47, 700), (60, 775), (61, 781), (64, 820), (66, 829), (67, 850),

Gene: BearBQ_1 Start: 50, Stop: 484, Start Num: 14
Candidate Starts for BearBQ_1:
(Start: 14 @50 has 33 MA's), (28, 125), (31, 134), (Start: 34 @167 has 5 MA's), (35, 170), (42, 218), (45, 254), (48, 272), (55, 317), (61, 347), (64, 386),

Gene: Beelzebub_37 Start: 10803, Stop: 11156, Start Num: 34
Candidate Starts for Beelzebub_37:
(1, 10587), (23, 10722), (Start: 34 @10803 has 5 MA's), (46, 10923), (51, 10953), (61, 11013), (73, 11148),

Gene: BigChungus_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for BigChungus_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: BillDoor_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for BillDoor_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: Birdsong_1 Start: 50, Stop: 484, Start Num: 14
Candidate Starts for Birdsong_1:
(Start: 14 @50 has 33 MA's), (28, 125), (31, 134), (Start: 34 @167 has 5 MA's), (35, 170), (42, 218), (45, 254), (48, 272), (55, 317), (61, 347), (64, 386),

Gene: Biskit_1 Start: 52, Stop: 534, Start Num: 13
Candidate Starts for Biskit_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (61, 364), (66, 412), (78, 523),

Gene: Blondies_1 Start: 53, Stop: 535, Start Num: 13
Candidate Starts for Blondies_1:
(7, 14), (Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: Brujita_1 Start: 62, Stop: 541, Start Num: 13
Candidate Starts for Brujita_1:
(5, 14), (Start: 13 @62 has 18 MA's), (Start: 16 @68 has 10 MA's), (30, 152), (49, 293), (51, 305), (52, 308), (56, 341), (69, 458), (75, 509),

Gene: Burnsey_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Burnsey_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (45, 271), (53, 319), (61, 364),

Gene: Button_1 Start: 50, Stop: 505, Start Num: 14
Candidate Starts for Button_1:
(Start: 14 @50 has 33 MA's), (45, 263), (61, 356), (66, 404), (74, 491),

Gene: Buttrmlkdreams_1 Start: 53, Stop: 535, Start Num: 13
Candidate Starts for Buttrmlkdreams_1:
(7, 14), (Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: CanesSauce_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for CanesSauce_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (53, 320), (61, 365), (66, 413), (78, 524),

Gene: Carsonalex_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Carsonalex_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364), (79, 526),

Gene: CherryonLim_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for CherryonLim_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: ChickenTender_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for ChickenTender_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: ChocoMunchkin_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for ChocoMunchkin_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (53, 320), (61, 365), (66, 413), (78, 524),

Gene: Cleo_2 Start: 447, Stop: 983, Start Num: 3
Candidate Starts for Cleo_2:
(Start: 3 @447 has 1 MA's), (Start: 14 @498 has 33 MA's), (Start: 27 @579 has 1 MA's), (33, 618), (45, 732), (49, 753), (51, 765), (61, 825),

Gene: Cornie_1 Start: 85, Stop: 549, Start Num: 14
Candidate Starts for Cornie_1:
(Start: 14 @85 has 33 MA's), (25, 133), (Start: 27 @148 has 1 MA's), (28, 154), (32, 172), (33, 187), (37, 226), (42, 277), (44, 295), (53, 361), (55, 379), (57, 385), (58, 388), (59, 397), (60, 403), (61, 409), (62, 418), (71, 535), (73, 544),

Gene: Cozz_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Cozz_1:

(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: Crater_1 Start: 50, Stop: 484, Start Num: 14
Candidate Starts for Crater_1:
(Start: 14 @50 has 33 MA's), (28, 125), (31, 134), (Start: 34 @167 has 5 MA's), (35, 170), (42, 218), (45, 254), (48, 272), (55, 317), (61, 347), (64, 386),

Gene: Dre3_2 Start: 442, Stop: 927, Start Num: 14
Candidate Starts for Dre3_2:
(Start: 14 @442 has 33 MA's), (Start: 27 @523 has 1 MA's), (33, 562), (45, 676), (49, 697), (51, 709), (61, 769),

Gene: Elinal_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for Elinal_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (47, 284), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: Eliott_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Eliott_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (45, 271), (53, 319), (61, 364),

Gene: Emalyn_1 Start: 52, Stop: 531, Start Num: 13
Candidate Starts for Emalyn_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (43, 241), (45, 271), (53, 319), (61, 364), (66, 412), (79, 526),

Gene: Feastonyeet_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for Feastonyeet_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: Floof_1 Start: 122, Stop: 601, Start Num: 17
Candidate Starts for Floof_1:
(Start: 17 @122 has 3 MA's), (28, 200), (50, 350), (54, 371), (63, 446), (70, 545),

Gene: Fribs8_2 Start: 426, Stop: 911, Start Num: 14
Candidate Starts for Fribs8_2:
(10, 399), (Start: 14 @426 has 33 MA's), (Start: 27 @507 has 1 MA's), (45, 660), (49, 681), (61, 753), (64, 792),

Gene: GTE2_01 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for GTE2_01:
(7, 14), (Start: 16 @59 has 10 MA's), (35, 188), (43, 242), (45, 272), (48, 290), (61, 365), (66, 413), (78, 524),

Gene: GiKK_1 Start: 49, Stop: 504, Start Num: 14
Candidate Starts for GiKK_1:
(9, 22), (Start: 14 @49 has 33 MA's), (35, 178), (45, 262), (48, 280), (61, 355), (66, 403), (74, 490),

Gene: Gibbous_2 Start: 442, Stop: 927, Start Num: 14
Candidate Starts for Gibbous_2:

(Start: 14 @442 has 33 MA's), (Start: 27 @523 has 1 MA's), (33, 562), (45, 676), (49, 697), (51, 709), (61, 769),

Gene: GoldHunter_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for GoldHunter_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: GoongGoong_32 Start: 9724, Stop: 10077, Start Num: 34
Candidate Starts for GoongGoong_32:
(20, 9634), (22, 9643), (Start: 34 @9724 has 5 MA's), (46, 9844), (51, 9874), (61, 9934), (73, 10069),

Gene: Gretchen_1 Start: 128, Stop: 607, Start Num: 17
Candidate Starts for Gretchen_1:
(Start: 17 @128 has 3 MA's), (50, 356), (54, 377), (63, 452), (68, 515), (70, 551),

Gene: HC_01 Start: 67, Stop: 540, Start Num: 16
Candidate Starts for HC_01:
(Start: 16 @67 has 10 MA's), (30, 151), (49, 292), (51, 304), (52, 307), (56, 340), (59, 352), (64, 403), (75, 508),

Gene: Hexbug_1 Start: 50, Stop: 505, Start Num: 14
Candidate Starts for Hexbug_1:
(Start: 14 @50 has 33 MA's), (Start: 21 @89 has 2 MA's), (35, 179), (45, 263), (61, 356), (66, 404), (74, 491),

Gene: HippoPololi_2 Start: 449, Stop: 934, Start Num: 14
Candidate Starts for HippoPololi_2:
(2, 380), (11, 425), (Start: 14 @449 has 33 MA's), (Start: 27 @530 has 1 MA's), (33, 569), (45, 683), (49, 704), (51, 716), (61, 776),

Gene: Horseradish_1 Start: 53, Stop: 535, Start Num: 13
Candidate Starts for Horseradish_1:
(7, 14), (Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: Island3_1 Start: 62, Stop: 541, Start Num: 13
Candidate Starts for Island3_1:
(5, 14), (Start: 13 @62 has 18 MA's), (Start: 16 @68 has 10 MA's), (30, 152), (49, 293), (51, 305), (52, 308), (56, 341), (69, 458), (75, 509),

Gene: Jamzy_1 Start: 49, Stop: 504, Start Num: 14
Candidate Starts for Jamzy_1:
(Start: 14 @49 has 33 MA's), (Start: 21 @88 has 2 MA's), (35, 178), (45, 262), (60, 349), (61, 355), (66, 403), (74, 490), (76, 499),

Gene: JoieB_34 Start: 10528, Stop: 10881, Start Num: 34
Candidate Starts for JoieB_34:
(1, 10312), (23, 10447), (Start: 34 @10528 has 5 MA's), (46, 10648), (51, 10678), (61, 10738), (73, 10873),

Gene: KayGee_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for KayGee_1:

(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (47, 284), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: Kuwabara_1 Start: 50, Stop: 484, Start Num: 14
Candidate Starts for Kuwabara_1:
(Start: 14 @50 has 33 MA's), (28, 125), (31, 134), (Start: 34 @167 has 5 MA's), (35, 170), (42, 218), (45, 254), (48, 272), (55, 317), (61, 347), (64, 386),

Gene: Lauer_1 Start: 146, Stop: 547, Start Num: 29
Candidate Starts for Lauer_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (47, 284), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: MAnor_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for MAnor_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: MScarn_1 Start: 53, Stop: 535, Start Num: 13
Candidate Starts for MScarn_1:
(7, 14), (Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: MaVan_2 Start: 426, Stop: 923, Start Num: 14
Candidate Starts for MaVan_2:
(10, 399), (Start: 14 @426 has 33 MA's), (Start: 27 @507 has 1 MA's), (45, 660), (49, 681), (61, 753), (64, 792), (77, 900),

Gene: Margaret_1 Start: 49, Stop: 504, Start Num: 14
Candidate Starts for Margaret_1:
(Start: 14 @49 has 33 MA's), (45, 262), (61, 355), (66, 403), (74, 490),

Gene: Marvin_31 Start: 10504, Stop: 10857, Start Num: 34
Candidate Starts for Marvin_31:
(1, 10288), (23, 10423), (Start: 34 @10504 has 5 MA's), (46, 10624), (51, 10654), (61, 10714), (73, 10849),

Gene: Mayweather_2 Start: 513, Stop: 962, Start Num: 21
Candidate Starts for Mayweather_2:
(Start: 14 @474 has 33 MA's), (Start: 21 @513 has 2 MA's), (40, 636), (41, 639), (45, 687), (47, 699), (60, 774), (61, 780), (64, 819), (66, 828), (67, 849),

Gene: MortyNRick_1 Start: 50, Stop: 484, Start Num: 14
Candidate Starts for MortyNRick_1:
(Start: 14 @50 has 33 MA's), (28, 125), (31, 134), (Start: 34 @167 has 5 MA's), (35, 170), (42, 218), (45, 254), (48, 272), (55, 317), (61, 347), (64, 386),

Gene: MosMoris_31 Start: 9684, Stop: 10037, Start Num: 34
Candidate Starts for MosMoris_31:
(1, 9468), (23, 9603), (Start: 34 @9684 has 5 MA's), (46, 9804), (51, 9834), (61, 9894), (73, 10029),

Gene: MunkgeeRoachy_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for MunkgeeRoachy_1:

(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (45, 271), (53, 319), (60, 358), (61, 364), (79, 526),

Gene: Nibbles_2 Start: 426, Stop: 923, Start Num: 14
Candidate Starts for Nibbles_2:
(10, 399), (Start: 14 @426 has 33 MA's), (Start: 27 @507 has 1 MA's), (45, 660), (49, 681), (61, 753), (64, 792), (77, 900),

Gene: Nina_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Nina_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: Nodigi_1 Start: 50, Stop: 505, Start Num: 14
Candidate Starts for Nodigi_1:
(Start: 14 @50 has 33 MA's), (Start: 21 @89 has 2 MA's), (35, 179), (45, 263), (61, 356), (66, 404), (74, 491),

Gene: Orla_1 Start: 49, Stop: 504, Start Num: 14
Candidate Starts for Orla_1:
(Start: 14 @49 has 33 MA's), (Start: 21 @88 has 2 MA's), (35, 178), (45, 262), (61, 355), (66, 403), (74, 490),

Gene: Percival_1 Start: 128, Stop: 607, Start Num: 17
Candidate Starts for Percival_1:
(4, 56), (Start: 17 @128 has 3 MA's), (19, 140), (50, 356), (54, 377), (63, 452), (68, 515), (70, 551),

Gene: Poise_33 Start: 9822, Stop: 10175, Start Num: 34
Candidate Starts for Poise_33:
(20, 9732), (22, 9741), (Start: 34 @9822 has 5 MA's), (46, 9942), (51, 9972), (61, 10032), (73, 10167),

Gene: Pons_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for Pons_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: PotPie_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for PotPie_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (41, 224), (45, 272), (47, 284), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: PsychoKiller_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for PsychoKiller_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (45, 271), (53, 319), (61, 364),

Gene: Quasar_1 Start: 679, Stop: 1164, Start Num: 15
Candidate Starts for Quasar_1:
(Start: 15 @679 has 1 MA's), (Start: 27 @757 has 1 MA's), (35, 808), (43, 862), (45, 892), (47, 904), (53, 940), (61, 985),

Gene: QueenHazel_1 Start: 67, Stop: 540, Start Num: 16
Candidate Starts for QueenHazel_1:

(12, 55), (Start: 16 @67 has 10 MA's), (30, 151), (36, 187), (49, 292), (51, 304), (52, 307), (56, 340), (59, 352), (64, 403), (72, 499), (75, 508),

Gene: RanchParmCat_1 Start: 49, Stop: 504, Start Num: 14
Candidate Starts for RanchParmCat_1:
(Start: 14 @49 has 33 MA's), (45, 262), (61, 355), (66, 403), (74, 490),

Gene: RedBaron_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for RedBaron_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364), (79, 526),

Gene: SPB78_1 Start: 51220, Stop: 426, Start Num: 14
Candidate Starts for SPB78_1:
(8, 51184), (Start: 14 @51220 has 33 MA's), (18, 51229), (Start: 27 @51298 has 1 MA's), (38, 51373), (42, 51406), (65, 51580),

Gene: Samy_4 Start: 1334, Stop: 1780, Start Num: 16
Candidate Starts for Samy_4:
(Start: 16 @1334 has 10 MA's), (39, 1484), (44, 1523), (52, 1577), (60, 1631),

Gene: SheckWes_1 Start: 98, Stop: 547, Start Num: 21
Candidate Starts for SheckWes_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (47, 284), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: SketchMex_1 Start: 52, Stop: 534, Start Num: 13
Candidate Starts for SketchMex_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (61, 364), (66, 412), (78, 523),

Gene: Socotra_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Socotra_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: Sopespian_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Sopespian_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (45, 271), (53, 319), (61, 364),

Gene: Starburst_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Starburst_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: SteamedHams_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for SteamedHams_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: SummitAcademy_1 Start: 56, Stop: 547, Start Num: 14
Candidate Starts for SummitAcademy_1:

(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (40, 221), (41, 224), (45, 272), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: Survivors_2 Start: 426, Stop: 911, Start Num: 14
Candidate Starts for Survivors_2:
(10, 399), (Start: 14 @426 has 33 MA's), (Start: 27 @507 has 1 MA's), (45, 660), (49, 681), (61, 753), (64, 792),

Gene: SweatNTears_2 Start: 757, Stop: 1155, Start Num: 27
Candidate Starts for SweatNTears_2:
(Start: 15 @679 has 1 MA's), (Start: 27 @757 has 1 MA's), (35, 808), (43, 862), (45, 892), (47, 904), (53, 940), (61, 985), (78, 1144),

Gene: Tolls_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for Tolls_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (53, 320), (61, 365), (66, 413), (78, 524),

Gene: Troje_1 Start: 53, Stop: 535, Start Num: 13
Candidate Starts for Troje_1:
(7, 14), (Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: Typhonomachy_1 Start: 52, Stop: 543, Start Num: 13
Candidate Starts for Typhonomachy_1:
(9, 22), (Start: 13 @52 has 18 MA's), (Start: 21 @97 has 2 MA's), (35, 187), (41, 223), (43, 241), (45, 271), (53, 319), (61, 364),

Gene: VWB_1 Start: 1, Stop: 480, Start Num: 14
Candidate Starts for VWB_1:
(Start: 14 @1 has 33 MA's), (18, 10), (26, 76), (38, 154), (42, 187), (65, 361), (66, 364),

Gene: Vine_2 Start: 681, Stop: 1172, Start Num: 14
Candidate Starts for Vine_2:
(Start: 14 @681 has 33 MA's), (24, 732), (Start: 27 @762 has 1 MA's), (35, 813), (41, 849), (45, 897), (47, 909), (53, 945), (60, 984), (61, 990), (64, 1029), (66, 1038), (67, 1059),

Gene: Xula_1 Start: 67, Stop: 540, Start Num: 16
Candidate Starts for Xula_1:
(12, 55), (Start: 16 @67 has 10 MA's), (30, 151), (36, 187), (49, 292), (51, 304), (52, 307), (56, 340), (59, 352), (64, 403), (75, 508),

Gene: Yakult_1 Start: 48, Stop: 503, Start Num: 14
Candidate Starts for Yakult_1:
(Start: 14 @48 has 33 MA's), (Start: 29 @135 has 1 MA's), (35, 177), (45, 261), (61, 354), (66, 402), (74, 489),

Gene: Yarn_1 Start: 59, Stop: 535, Start Num: 16
Candidate Starts for Yarn_1:
(7, 14), (Start: 16 @59 has 10 MA's), (24, 107), (35, 188), (43, 242), (45, 272), (53, 320), (61, 365), (66, 413), (78, 524),

Gene: Yucky_1 Start: 98, Stop: 547, Start Num: 21

Candidate Starts for Yucky_1:
(Start: 14 @56 has 33 MA's), (Start: 21 @98 has 2 MA's), (Start: 29 @146 has 1 MA's), (41, 224), (45, 272), (47, 284), (60, 359), (61, 365), (64, 404), (66, 413), (67, 434),

Gene: Yummy_1 Start: 53, Stop: 535, Start Num: 13
Candidate Starts for Yummy_1:
(7, 14), (Start: 13 @53 has 18 MA's), (Start: 21 @98 has 2 MA's), (35, 188), (43, 242), (45, 272), (61, 365), (66, 413), (78, 524),

Gene: Zareef_2 Start: 426, Stop: 923, Start Num: 14
Candidate Starts for Zareef_2:
(10, 399), (Start: 14 @426 has 33 MA's), (Start: 27 @507 has 1 MA's), (45, 660), (49, 681), (61, 753), (64, 792), (77, 900),