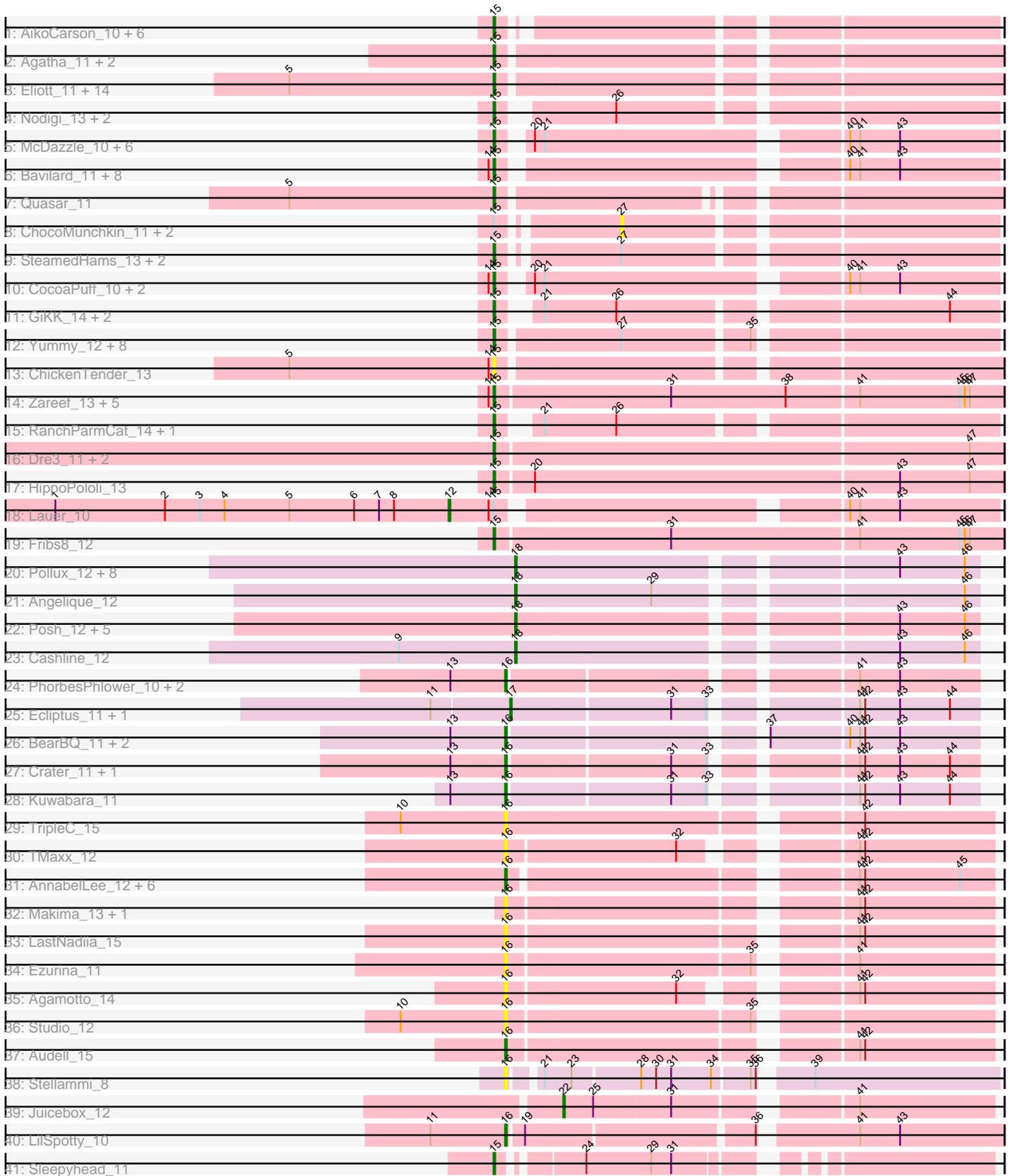# Pham 290960

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 290960 Report

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

Pham number 290960 has 129 members, 37 are drafts.

Phages represented in each track:
• Track 1 : AikoCarson_10, Emalyn_10, Amok_10, BillDoor_13, Yarn_10, Yakult_12, AndPeggy_10
• Track 2 : Agatha_11, GoldHunter_12, Burnsey_11
• Track 3 : Eliott_11, Cozz_11, Nina_12, PsychoKiller_11, RSchmailzl_12, Starburst_12, Carsonalex_12, MunkgeeRoachy_11, Typhonomachy_11, Sopespian_11, Bubble_11, RADical_12, RedBaron_12, Socotra_12, Axym_11
• Track 4 : Nodigi_13, Orla_13, Hexbug_13
• Track 5 : McDazzle_10, Mayweather_12, ElJefes_10, CherryonLim_12, SheckWes_10, MAnor_11, Pons_11
• Track 6 : Bavilard_11, Feastonyeet_10, Vine_12, Tarnish_10, KayGee_11, Balloona_10, BigChungus_10, Elinal_12, Yucky_11
• Track 7 : Quasar_11
• Track 8 : ChocoMunchkin_11, CanesSauce_11, CaramelLatte_11
• Track 9 : SteamedHams_13, Tolls_13, GTE2_09
• Track 10 : CocoaPuff_10, PotPie_11, SummitAcademy_10
• Track 11 : GiKK_14, Jamzy_14, Button_12
• Track 12 : Yummy_12, Biskit_12, SweatNTears_13, Buttrmlkdreams_11, Troje_11, SketchMex_10, MScarn_13, Horseradish_12, Blondies_12
• Track 13 : ChickenTender_13
• Track 14 : Zareef_13, Wolfwood_15, Survivors_13, Nibbles_13, MaVan_13, Azira_13
• Track 15 : RanchParmCat_14, Margaret_14
• Track 16 : Dre3_11, Cleo_11, Gibbous_11
• Track 17 : HippoPololi_13
• Track 18 : Lauer_10
• Track 19 : Fribs8_12
• Track 20 : Pollux_12, Lilas_12, Bradissa_12, Floral_12, BritBrat_12, EMsquaredA_12, Marteena_12, EnalisNailo_12, Confidence_12
• Track 21 : Angelique_12
• Track 22 : Posh_12, Wrigley_12, Pytheas_12, LonelyBoi_12, Jablanski_12, BeeGee_12
• Track 23 : Cashline_12
• Track 24 : PhorbesPhlower_10, Morkie_10, Lucky10_10
• Track 25 : Ecliptus_11, ODay_11
• Track 26 : BearBQ_11, MortyNRick_11, Birdsong_11
• Track 27 : Crater_11, Apricot_11
• Track 28 : Kuwabara_11

• Track 29 : TripleC_15
• Track 30 : TMaxx_12
• Track 31 : AnnabelLee_12, ChamoyPickle_12, Roberts_12, Gerri43_12, Neuvillette_12, CardboardBox_12, ChipsNGuac_12
• Track 32 : Makima_13, Mireles_12
• Track 33 : LastNadiia_15
• Track 34 : Ezurina_11
• Track 35 : Agamotto_14
• Track 36 : Studio_12
• Track 37 : Audell_15
• Track 38 : Stellammi_8
• Track 39 : Juicebox_12
• Track 40 : LilSpotty_10
• Track 41 : Sleepyhead_11

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 59 of the 92 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agatha_11, AikoCarson_10, Amok_10, AndPeggy_10, Axym_11, Azira_13, Balloona_10, Bavilard_11, BigChungus_10, BillDoor_13, Biskit_12, Blondies_12, Bubble_11, Burnsey_11, Button_12, Buttrmlkdreams_11, Carsonalex_12, CherryonLim_12, ChickenTender_13, Cleo_11, CocoaPuff_10, Cozz_11, Dre3_11, ElJefes_10, Elinal_12, Eliott_11, Emalyn_10, Feastonyeet_10, Fribs8_12, GTE2_09, GiKK_14, Gibbous_11, GoldHunter_12, Hexbug_13, HippoPololi_13, Horseradish_12, Jamzy_14, KayGee_11, MAnor_11, MScarn_13, MaVan_13, Margaret_14, Mayweather_12, McDazzle_10, MunkgeeRoachy_11, Nibbles_13, Nina_12, Nodigi_13, Orla_13, Pons_11, PotPie_11, PsychoKiller_11, Quasar_11, RADical_12, RSchmailzl_12, RanchParmCat_14, RedBaron_12, SheckWes_10, SketchMex_10, Sleepyhead_11, Socotra_12, Sopespian_11, Starburst_12, SteamedHams_13, SummitAcademy_10, Survivors_13, SweatNTears_13, Tarnish_10, Tolls_13, Troje_11, Typhonomachy_11, Vine_12, Wolfwood_15, Yakult_12, Yarn_10, Yucky_11, Yummy_12, Zareef_13,

Genes that have the "Most Annotated" start but do not call it:
• CanesSauce_11, CaramelLatte_11, ChocoMunchkin_11, Lauer_10,

Genes that do not have the "Most Annotated" start:
• Agamotto_14, Angelique_12, AnnabelLee_12, Apricot_11, Audell_15, BearBQ_11, BeeGee_12, Birdsong_11, Bradissa_12, BritBrat_12, CardboardBox_12, Cashline_12, ChamoyPickle_12, ChipsNGuac_12, Confidence_12, Crater_11, EMsquaredA_12, Ecliptus_11, EnalisNailo_12, Ezurina_11, Floral_12, Gerri43_12, Jablanski_12, Juicebox_12, Kuwabara_11, LastNadiia_15, LilSpotty_10, Lilas_12, LonelyBoi_12, Lucky10_10, Makima_13, Marteena_12, Mireles_12, Morkie_10, MortyNRick_11, Neuvillette_12, ODay_11, PhorbesPhlower_10, Pollux_12, Posh_12, Pytheas_12, Roberts_12, Stellammi_8, Studio_12, TMaxx_12, TripleC_15, Wrigley_12,

Summary by start number:

Start 12:
- Found in 1 of 129 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lauer_10 (CT),

Start 15:
- Found in 82 of 129 (63.6%) of genes in pham
- Manual Annotations of this start: 59 of 92
- Called 95.1% of time when present
- Phage (with cluster) where this start called: Agatha_11 (CT), AikoCarson_10 (CT), Amok_10 (CT), AndPeggy_10 (CT), Axym_11 (CT), Azira_13 (CT), Balloona_10 (CT), Bavilard_11 (CT), BigChungus_10 (CT), BillDoor_13 (CT), Biskit_12 (CT), Blondies_12 (CT), Bubble_11 (CT), Burnsey_11 (CT), Button_12 (CT), Buttrmlkdreams_11 (CT), Carsonalex_12 (CT), CherryonLim_12 (CT), ChickenTender_13 (CT), Cleo_11 (CT), CocoaPuff_10 (CT), Cozz_11 (CT), Dre3_11 (CT), ElJefes_10 (CT), Elinal_12 (CT), Eliott_11 (CT), Emalyn_10 (CT), Feastonyeet_10 (CT), Fribs8_12 (CT), GTE2_09 (CT), GiKK_14 (CT), Gibbous_11 (CT), GoldHunter_12 (CT), Hexbug_13 (CT), HippoPololi_13 (CT), Horseradish_12 (CT), Jamzy_14 (CT), KayGee_11 (CT), MAnor_11 (CT), MScarn_13 (CT), MaVan_13 (CT), Margaret_14 (CT), Mayweather_12 (CT), McDazzle_10 (CT), MunkgeeRoachy_11 (CT), Nibbles_13 (CT), Nina_12 (CT), Nodigi_13 (CT), Orla_13 (CT), Pons_11 (CT), PotPie_11 (CT), PsychoKiller_11 (CT), Quasar_11 (CT), RADical_12 (CT), RSchmailzl_12 (CT), RanchParmCat_14 (CT), RedBaron_12 (CT), SheckWes_10 (CT), SketchMex_10 (CT), Sleepyhead_11 (singleton), Socotra_12 (CT), Sopespian_11 (CT), Starburst_12 (CT), SteamedHams_13 (CT), SummitAcademy_10 (CT), Survivors_13 (CT), SweatNTears_13 (CT), Tarnish_10 (CT), Tolls_13 (CT), Troje_11 (CT), Typhonomachy_11 (CT), Vine_12 (CT), Wolfwood_15 (CT), Yakult_12 (CT), Yarn_10 (CT), Yucky_11 (CT), Yummy_12 (CT), Zareef_13 (CT),

Start 16:
- Found in 27 of 129 (20.9%) of genes in pham
- Manual Annotations of this start: 12 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agamotto_14 (FR), AnnabelLee_12 (FR), Apricot_11 (DN3), Audell_15 (FR), BearBQ_11 (DN), Birdsong_11 (DN), CardboardBox_12 (FR), ChamoyPickle_12 (FR), ChipsNGuac_12 (FR), Crater_11 (DN3), Ezurina_11 (FR), Gerri43_12 (FR), Kuwabara_11 (DN4), LastNadiia_15 (FR), LilSpotty_10 (singleton), Lucky10_10 (DH), Makima_13 (FR), Mireles_12 (FR), Morkie_10 (DH), MortyNRick_11 (DN), Neuvillette_12 (FR), PhorbesPhlower_10 (DH), Roberts_12 (FR), Stellammi_8 (UNK), Studio_12 (FR), TMaxx_12 (FR), TripleC_15 (FR),

Start 17:
- Found in 2 of 129 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ecliptus_11 (DN), ODay_11 (DN),

Start 18:

• Found in 17 of 129 (13.2%) of genes in pham
• Manual Annotations of this start: 17 of 92
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Angelique_12 (CY1), BeeGee_12 (CY5), Bradissa_12 (CY1), BritBrat_12 (CY2), Cashline_12 (CY6), Confidence_12 (CY1), EMsquaredA_12 (CY1), EnalisNailo_12 (CY1), Floral_12 (CY1), Jablanski_12 (CY3), Lilas_12 (CY1), LonelyBoi_12 (CY7), Marteena_12 (CY1), Pollux_12 (CY1), Posh_12 (CY4), Pytheas_12 (CY3), Wrigley_12 (CY4),

Start 22:
• Found in 1 of 129 (0.8%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Juicebox_12 (singleton),

Start 27:
• Found in 15 of 129 (11.6%) of genes in pham
• No Manual Annotations of this start.
• Called 20.0% of time when present
• Phage (with cluster) where this start called: CanesSauce_11 (CT), CaramelLatte_11 (CT), ChocoMunchkin_11 (CT),

Summary by clusters:

There are 15 clusters represented in this pham: DN, CY3, FR, UNK, CY7, CY6, DH, CY4, CY1, DN4, DN3, CY5, singleton, CY2, CT,

Info for manual annotations of cluster CT:
•Start number 12 was manually annotated 1 time for cluster CT.
•Start number 15 was manually annotated 58 times for cluster CT.

Info for manual annotations of cluster CY1:
•Start number 18 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:
•Start number 18 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:
•Start number 18 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:
•Start number 18 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CY5:
•Start number 18 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:
•Start number 18 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:
•Start number 18 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster DH:

•Start number 16 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:
•Start number 16 was manually annotated 3 times for cluster DN.
•Start number 17 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN3:
•Start number 16 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:
•Start number 16 was manually annotated 1 time for cluster DN4.

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

Gene Information:

Gene: Agamotto_14 Start: 10531, Stop: 10791, Start Num: 16
Candidate Starts for Agamotto_14:
(Start: 16 @10531 has 12 MA's), (32, 10630), (41, 10711), (42, 10714),

Gene: Agatha_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Agatha_11:
(Start: 15 @7257 has 59 MA's),

Gene: AikoCarson_10 Start: 6987, Stop: 7256, Start Num: 15
Candidate Starts for AikoCarson_10:
(Start: 15 @6987 has 59 MA's),

Gene: Amok_10 Start: 6987, Stop: 7256, Start Num: 15
Candidate Starts for Amok_10:
(Start: 15 @6987 has 59 MA's),

Gene: AndPeggy_10 Start: 7275, Stop: 7547, Start Num: 15
Candidate Starts for AndPeggy_10:
(Start: 15 @7275 has 59 MA's),

Gene: Angelique_12 Start: 8007, Stop: 8264, Start Num: 18
Candidate Starts for Angelique_12:
(Start: 18 @8007 has 17 MA's), (29, 8088), (46, 8256),

Gene: AnnabelLee_12 Start: 7464, Stop: 7730, Start Num: 16
Candidate Starts for AnnabelLee_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: Apricot_11 Start: 7129, Stop: 7386, Start Num: 16
Candidate Starts for Apricot_11:
(13, 7096), (Start: 16 @7129 has 12 MA's), (31, 7222), (33, 7243), (41, 7315), (42, 7318), (43, 7339), (44, 7369),

Gene: Audell_15 Start: 10801, Stop: 11070, Start Num: 16
Candidate Starts for Audell_15:
(Start: 16 @10801 has 12 MA's), (41, 10990), (42, 10993),

Gene: Axym_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Axym_11:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Azira_13 Start: 8163, Stop: 8462, Start Num: 15
Candidate Starts for Azira_13:
(14, 8160), (Start: 15 @8163 has 59 MA's), (31, 8265), (38, 8334), (41, 8376), (45, 8436), (46, 8439),
(47, 8442),

Gene: Balloona_10 Start: 7029, Stop: 7301, Start Num: 15
Candidate Starts for Balloona_10:
(14, 7026), (Start: 15 @7029 has 59 MA's), (40, 7212), (41, 7218), (43, 7242),

Gene: Bavilard_11 Start: 7809, Stop: 8081, Start Num: 15
Candidate Starts for Bavilard_11:
(14, 7806), (Start: 15 @7809 has 59 MA's), (40, 7992), (41, 7998), (43, 8022),

Gene: BearBQ_11 Start: 7129, Stop: 7386, Start Num: 16
Candidate Starts for BearBQ_11:
(13, 7096), (Start: 16 @7129 has 12 MA's), (37, 7264), (40, 7309), (41, 7315), (42, 7318), (43, 7339),

Gene: BeeGee_12 Start: 8009, Stop: 8266, Start Num: 18
Candidate Starts for BeeGee_12:
(Start: 18 @8009 has 17 MA's), (43, 8219), (46, 8258),

Gene: BigChungus_10 Start: 7054, Stop: 7326, Start Num: 15
Candidate Starts for BigChungus_10:
(14, 7051), (Start: 15 @7054 has 59 MA's), (40, 7237), (41, 7243), (43, 7267),

Gene: BillDoor_13 Start: 7240, Stop: 7512, Start Num: 15
Candidate Starts for BillDoor_13:
(Start: 15 @7240 has 59 MA's),

Gene: Birdsong_11 Start: 7129, Stop: 7386, Start Num: 16
Candidate Starts for Birdsong_11:
(13, 7096), (Start: 16 @7129 has 12 MA's), (37, 7264), (40, 7309), (41, 7315), (42, 7318), (43, 7339),

Gene: Biskit_12 Start: 7241, Stop: 7519, Start Num: 15
Candidate Starts for Biskit_12:
(Start: 15 @7241 has 59 MA's), (27, 7310), (35, 7382),

Gene: Blondies_12 Start: 7236, Stop: 7505, Start Num: 15
Candidate Starts for Blondies_12:
(Start: 15 @7236 has 59 MA's), (27, 7296), (35, 7368),

Gene: Bradissa_12 Start: 8013, Stop: 8270, Start Num: 18
Candidate Starts for Bradissa_12:
(Start: 18 @8013 has 17 MA's), (43, 8223), (46, 8262),

Gene: BritBrat_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for BritBrat_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: Bubble_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Bubble_11:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Burnsey_11 Start: 7258, Stop: 7539, Start Num: 15
Candidate Starts for Burnsey_11:
(Start: 15 @7258 has 59 MA's),

Gene: Button_12 Start: 7274, Stop: 7543, Start Num: 15
Candidate Starts for Button_12:
(Start: 15 @7274 has 59 MA's), (21, 7289), (26, 7331), (44, 7514),

Gene: Buttrmlkdreams_11 Start: 7235, Stop: 7504, Start Num: 15
Candidate Starts for Buttrmlkdreams_11:
(Start: 15 @7235 has 59 MA's), (27, 7295), (35, 7367),

Gene: CanesSauce_11 Start: 7339, Stop: 7548, Start Num: 27
Candidate Starts for CanesSauce_11:
(Start: 15 @7276 has 59 MA's), (27, 7339),

Gene: CaramelLatte_11 Start: 7339, Stop: 7548, Start Num: 27
Candidate Starts for CaramelLatte_11:
(Start: 15 @7276 has 59 MA's), (27, 7339),

Gene: CardboardBox_12 Start: 7464, Stop: 7730, Start Num: 16
Candidate Starts for CardboardBox_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: Carsonalex_12 Start: 7314, Stop: 7595, Start Num: 15
Candidate Starts for Carsonalex_12:
(5, 7191), (Start: 15 @7314 has 59 MA's),

Gene: Cashline_12 Start: 7862, Stop: 8119, Start Num: 18
Candidate Starts for Cashline_12:
(9, 7793), (Start: 18 @7862 has 17 MA's), (43, 8072), (46, 8111),

Gene: ChamoyPickle_12 Start: 7464, Stop: 7730, Start Num: 16
Candidate Starts for ChamoyPickle_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: CherryonLim_12 Start: 7780, Stop: 8052, Start Num: 15
Candidate Starts for CherryonLim_12:
(Start: 15 @7780 has 59 MA's), (20, 7792), (21, 7798), (40, 7963), (41, 7969), (43, 7993),

Gene: ChickenTender_13 Start: 7300, Stop: 7581, Start Num: 15
Candidate Starts for ChickenTender_13:
(5, 7177), (14, 7297), (Start: 15 @7300 has 59 MA's),

Gene: ChipsNGuac_12 Start: 7464, Stop: 7730, Start Num: 16

Candidate Starts for ChipsNGuac_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: ChocoMunchkin_11 Start: 7339, Stop: 7548, Start Num: 27
Candidate Starts for ChocoMunchkin_11:
(Start: 15 @7276 has 59 MA's), (27, 7339),

Gene: Cleo_11 Start: 7463, Stop: 7762, Start Num: 15
Candidate Starts for Cleo_11:
(Start: 15 @7463 has 59 MA's), (47, 7742),

Gene: CocoaPuff_10 Start: 7029, Stop: 7301, Start Num: 15
Candidate Starts for CocoaPuff_10:
(14, 7026), (Start: 15 @7029 has 59 MA's), (20, 7041), (21, 7047), (40, 7212), (41, 7218), (43, 7242),

Gene: Confidence_12 Start: 8009, Stop: 8266, Start Num: 18
Candidate Starts for Confidence_12:
(Start: 18 @8009 has 17 MA's), (43, 8219), (46, 8258),

Gene: Cozz_11 Start: 7258, Stop: 7539, Start Num: 15
Candidate Starts for Cozz_11:
(5, 7135), (Start: 15 @7258 has 59 MA's),

Gene: Crater_11 Start: 7129, Stop: 7386, Start Num: 16
Candidate Starts for Crater_11:
(13, 7096), (Start: 16 @7129 has 12 MA's), (31, 7222), (33, 7243), (41, 7315), (42, 7318), (43, 7339),
(44, 7369),

Gene: Dre3_11 Start: 7410, Stop: 7709, Start Num: 15
Candidate Starts for Dre3_11:
(Start: 15 @7410 has 59 MA's), (47, 7689),

Gene: EMsquaredA_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for EMsquaredA_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: Ecliptus_11 Start: 6857, Stop: 7114, Start Num: 17
Candidate Starts for Ecliptus_11:
(11, 6812), (Start: 17 @6857 has 2 MA's), (31, 6950), (33, 6971), (41, 7043), (42, 7046), (43, 7067),
(44, 7097),

Gene: ElJefes_10 Start: 7506, Stop: 7778, Start Num: 15
Candidate Starts for ElJefes_10:
(Start: 15 @7506 has 59 MA's), (20, 7518), (21, 7524), (40, 7689), (41, 7695), (43, 7719),

Gene: Elinal_12 Start: 7035, Stop: 7307, Start Num: 15
Candidate Starts for Elinal_12:
(14, 7032), (Start: 15 @7035 has 59 MA's), (40, 7218), (41, 7224), (43, 7248),

Gene: Eliott_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Eliott_11:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Emalyn_10 Start: 6986, Stop: 7255, Start Num: 15
Candidate Starts for Emalyn_10:
(Start: 15 @6986 has 59 MA's),

Gene: EnalisNailo_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for EnalisNailo_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: Ezurina_11 Start: 7029, Stop: 7298, Start Num: 16
Candidate Starts for Ezurina_11:
(Start: 16 @7029 has 12 MA's), (35, 7170), (41, 7218),

Gene: Feastonyeet_10 Start: 7054, Stop: 7326, Start Num: 15
Candidate Starts for Feastonyeet_10:
(14, 7051), (Start: 15 @7054 has 59 MA's), (40, 7237), (41, 7243), (43, 7267),

Gene: Floral_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for Floral_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: Fribs8_12 Start: 7976, Stop: 8275, Start Num: 15
Candidate Starts for Fribs8_12:
(Start: 15 @7976 has 59 MA's), (31, 8078), (41, 8189), (45, 8249), (46, 8252), (47, 8255),

Gene: GTE2_09 Start: 6936, Stop: 7208, Start Num: 15
Candidate Starts for GTE2_09:
(Start: 15 @6936 has 59 MA's), (27, 6999),

Gene: Gerri43_12 Start: 7464, Stop: 7730, Start Num: 16
Candidate Starts for Gerri43_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: GiKK_14 Start: 7577, Stop: 7846, Start Num: 15
Candidate Starts for GiKK_14:
(Start: 15 @7577 has 59 MA's), (21, 7592), (26, 7634), (44, 7817),

Gene: Gibbous_11 Start: 7410, Stop: 7709, Start Num: 15
Candidate Starts for Gibbous_11:
(Start: 15 @7410 has 59 MA's), (47, 7689),

Gene: GoldHunter_12 Start: 7258, Stop: 7539, Start Num: 15
Candidate Starts for GoldHunter_12:
(Start: 15 @7258 has 59 MA's),

Gene: Hexbug_13 Start: 8263, Stop: 8532, Start Num: 15
Candidate Starts for Hexbug_13:
(Start: 15 @8263 has 59 MA's), (26, 8320),

Gene: HippoPololi_13 Start: 8062, Stop: 8361, Start Num: 15
Candidate Starts for HippoPololi_13:
(Start: 15 @8062 has 59 MA's), (20, 8083), (43, 8299), (47, 8341),

Gene: Horseradish_12 Start: 7139, Stop: 7417, Start Num: 15

Candidate Starts for Horseradish_12:
(Start: 15 @7139 has 59 MA's), (27, 7208), (35, 7280),

Gene: Jablanski_12 Start: 7862, Stop: 8119, Start Num: 18
Candidate Starts for Jablanski_12:
(Start: 18 @7862 has 17 MA's), (43, 8072), (46, 8111),

Gene: Jamzy_14 Start: 7587, Stop: 7856, Start Num: 15
Candidate Starts for Jamzy_14:
(Start: 15 @7587 has 59 MA's), (21, 7602), (26, 7644), (44, 7827),

Gene: Juicebox_12 Start: 8597, Stop: 8833, Start Num: 22
Candidate Starts for Juicebox_12:
(Start: 22 @8597 has 1 MA's), (25, 8615), (31, 8660), (41, 8753),

Gene: KayGee_11 Start: 7035, Stop: 7307, Start Num: 15
Candidate Starts for KayGee_11:
(14, 7032), (Start: 15 @7035 has 59 MA's), (40, 7218), (41, 7224), (43, 7248),

Gene: Kuwabara_11 Start: 7129, Stop: 7386, Start Num: 16
Candidate Starts for Kuwabara_11:
(13, 7096), (Start: 16 @7129 has 12 MA's), (31, 7222), (33, 7243), (41, 7315), (42, 7318), (43, 7339),
(44, 7369),

Gene: LastNadiia_15 Start: 9753, Stop: 10022, Start Num: 16
Candidate Starts for LastNadiia_15:
(Start: 16 @9753 has 12 MA's), (41, 9942), (42, 9945),

Gene: Lauer_10 Start: 7057, Stop: 7356, Start Num: 12
Candidate Starts for Lauer_10:
(1, 6820), (2, 6886), (3, 6907), (4, 6922), (5, 6961), (6, 7000), (7, 7015), (8, 7024), (Start: 12 @7057
has 1 MA's), (14, 7081), (Start: 15 @7084 has 59 MA's), (40, 7267), (41, 7273), (43, 7297),

Gene: LilSpotty_10 Start: 6830, Stop: 7105, Start Num: 16
Candidate Starts for LilSpotty_10:
(11, 6785), (Start: 16 @6830 has 12 MA's), (19, 6839), (36, 6968), (41, 7019), (43, 7043),

Gene: Lilas_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for Lilas_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: LonelyBoi_12 Start: 7862, Stop: 8119, Start Num: 18
Candidate Starts for LonelyBoi_12:
(Start: 18 @7862 has 17 MA's), (43, 8072), (46, 8111),

Gene: Lucky10_10 Start: 6338, Stop: 6595, Start Num: 16
Candidate Starts for Lucky10_10:
(13, 6305), (Start: 16 @6338 has 12 MA's), (41, 6524), (43, 6548),

Gene: MAnor_11 Start: 7025, Stop: 7297, Start Num: 15
Candidate Starts for MAnor_11:
(Start: 15 @7025 has 59 MA's), (20, 7037), (21, 7043), (40, 7208), (41, 7214), (43, 7238),

Gene: MScarn_13 Start: 7235, Stop: 7504, Start Num: 15
Candidate Starts for MScarn_13:
(Start: 15 @7235 has 59 MA's), (27, 7295), (35, 7367),

Gene: MaVan_13 Start: 8163, Stop: 8462, Start Num: 15
Candidate Starts for MaVan_13:
(14, 8160), (Start: 15 @8163 has 59 MA's), (31, 8265), (38, 8334), (41, 8376), (45, 8436), (46, 8439),
(47, 8442),

Gene: Makima_13 Start: 8837, Stop: 9106, Start Num: 16
Candidate Starts for Makima_13:
(Start: 16 @8837 has 12 MA's), (41, 9026), (42, 9029),

Gene: Margaret_14 Start: 7972, Stop: 8241, Start Num: 15
Candidate Starts for Margaret_14:
(Start: 15 @7972 has 59 MA's), (21, 7987), (26, 8029),

Gene: Marteena_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for Marteena_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: Mayweather_12 Start: 7658, Stop: 7930, Start Num: 15
Candidate Starts for Mayweather_12:
(Start: 15 @7658 has 59 MA's), (20, 7670), (21, 7676), (40, 7841), (41, 7847), (43, 7871),

Gene: McDazzle_10 Start: 7500, Stop: 7772, Start Num: 15
Candidate Starts for McDazzle_10:
(Start: 15 @7500 has 59 MA's), (20, 7512), (21, 7518), (40, 7683), (41, 7689), (43, 7713),

Gene: Mireles_12 Start: 7233, Stop: 7502, Start Num: 16
Candidate Starts for Mireles_12:
(Start: 16 @7233 has 12 MA's), (41, 7422), (42, 7425),

Gene: Morkie_10 Start: 6300, Stop: 6557, Start Num: 16
Candidate Starts for Morkie_10:
(13, 6267), (Start: 16 @6300 has 12 MA's), (41, 6486), (43, 6510),

Gene: MortyNRick_11 Start: 7129, Stop: 7386, Start Num: 16
Candidate Starts for MortyNRick_11:
(13, 7096), (Start: 16 @7129 has 12 MA's), (37, 7264), (40, 7309), (41, 7315), (42, 7318), (43, 7339),

Gene: MunkgeeRoachy_11 Start: 7305, Stop: 7586, Start Num: 15
Candidate Starts for MunkgeeRoachy_11:
(5, 7182), (Start: 15 @7305 has 59 MA's),

Gene: Neuvillette_12 Start: 7464, Stop: 7730, Start Num: 16
Candidate Starts for Neuvillette_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: Nibbles_13 Start: 8163, Stop: 8462, Start Num: 15
Candidate Starts for Nibbles_13:
(14, 8160), (Start: 15 @8163 has 59 MA's), (31, 8265), (38, 8334), (41, 8376), (45, 8436), (46, 8439),
(47, 8442),

Gene: Nina_12 Start: 8291, Stop: 8572, Start Num: 15
Candidate Starts for Nina_12:
(5, 8168), (Start: 15 @8291 has 59 MA's),

Gene: Nodigi_13 Start: 8256, Stop: 8525, Start Num: 15
Candidate Starts for Nodigi_13:
(Start: 15 @8256 has 59 MA's), (26, 8313),

Gene: ODay_11 Start: 6855, Stop: 7112, Start Num: 17
Candidate Starts for ODay_11:
(11, 6810), (Start: 17 @6855 has 2 MA's), (31, 6948), (33, 6969), (41, 7041), (42, 7044), (43, 7065),
(44, 7095),

Gene: Orla_13 Start: 8260, Stop: 8529, Start Num: 15
Candidate Starts for Orla_13:
(Start: 15 @8260 has 59 MA's), (26, 8317),

Gene: PhorbesPhlower_10 Start: 6300, Stop: 6557, Start Num: 16
Candidate Starts for PhorbesPhlower_10:
(13, 6267), (Start: 16 @6300 has 12 MA's), (41, 6486), (43, 6510),

Gene: Pollux_12 Start: 8015, Stop: 8272, Start Num: 18
Candidate Starts for Pollux_12:
(Start: 18 @8015 has 17 MA's), (43, 8225), (46, 8264),

Gene: Pons_11 Start: 7037, Stop: 7309, Start Num: 15
Candidate Starts for Pons_11:
(Start: 15 @7037 has 59 MA's), (20, 7049), (21, 7055), (40, 7220), (41, 7226), (43, 7250),

Gene: Posh_12 Start: 8009, Stop: 8266, Start Num: 18
Candidate Starts for Posh_12:
(Start: 18 @8009 has 17 MA's), (43, 8219), (46, 8258),

Gene: PotPie_11 Start: 7888, Stop: 8160, Start Num: 15
Candidate Starts for PotPie_11:
(14, 7885), (Start: 15 @7888 has 59 MA's), (20, 7900), (21, 7906), (40, 8071), (41, 8077), (43, 8101),

Gene: PsychoKiller_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for PsychoKiller_11:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Pytheas_12 Start: 7862, Stop: 8119, Start Num: 18
Candidate Starts for Pytheas_12:
(Start: 18 @7862 has 17 MA's), (43, 8072), (46, 8111),

Gene: Quasar_11 Start: 7872, Stop: 8147, Start Num: 15
Candidate Starts for Quasar_11:
(5, 7749), (Start: 15 @7872 has 59 MA's),

Gene: RADical_12 Start: 7258, Stop: 7539, Start Num: 15
Candidate Starts for RADical_12:
(5, 7135), (Start: 15 @7258 has 59 MA's),

Gene: RSchmailzl_12 Start: 7398, Stop: 7679, Start Num: 15
Candidate Starts for RSchmailzl_12:
(5, 7275), (Start: 15 @7398 has 59 MA's),

Gene: RanchParmCat_14 Start: 7972, Stop: 8241, Start Num: 15
Candidate Starts for RanchParmCat_14:
(Start: 15 @7972 has 59 MA's), (21, 7987), (26, 8029),

Gene: RedBaron_12 Start: 7302, Stop: 7583, Start Num: 15
Candidate Starts for RedBaron_12:
(5, 7179), (Start: 15 @7302 has 59 MA's),

Gene: Roberts_12 Start: 7464, Stop: 7730, Start Num: 16
Candidate Starts for Roberts_12:
(Start: 16 @7464 has 12 MA's), (41, 7650), (42, 7653), (45, 7710),

Gene: SheckWes_10 Start: 7025, Stop: 7297, Start Num: 15
Candidate Starts for SheckWes_10:
(Start: 15 @7025 has 59 MA's), (20, 7037), (21, 7043), (40, 7208), (41, 7214), (43, 7238),

Gene: SketchMex_10 Start: 7241, Stop: 7519, Start Num: 15
Candidate Starts for SketchMex_10:
(Start: 15 @7241 has 59 MA's), (27, 7310), (35, 7382),

Gene: Sleepyhead_11 Start: 7625, Stop: 7879, Start Num: 15
Candidate Starts for Sleepyhead_11:
(Start: 15 @7625 has 59 MA's), (24, 7667), (29, 7706), (31, 7718),

Gene: Socotra_12 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Socotra_12:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Sopespian_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Sopespian_11:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Starburst_12 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Starburst_12:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: SteamedHams_13 Start: 7276, Stop: 7548, Start Num: 15
Candidate Starts for SteamedHams_13:
(Start: 15 @7276 has 59 MA's), (27, 7339),

Gene: Stellammi_8 Start: 6263, Stop: 6532, Start Num: 16
Candidate Starts for Stellammi_8:
(Start: 16 @6263 has 12 MA's), (21, 6278), (23, 6293), (28, 6332), (30, 6341), (31, 6350), (34, 6374), (35, 6395), (36, 6398), (39, 6422),

Gene: Studio_12 Start: 7220, Stop: 7489, Start Num: 16
Candidate Starts for Studio_12:
(10, 7157), (Start: 16 @7220 has 12 MA's), (35, 7361),

Gene: SummitAcademy_10 Start: 7103, Stop: 7375, Start Num: 15
Candidate Starts for SummitAcademy_10:
(14, 7100), (Start: 15 @7103 has 59 MA's), (20, 7115), (21, 7121), (40, 7286), (41, 7292), (43, 7316),

Gene: Survivors_13 Start: 8017, Stop: 8316, Start Num: 15
Candidate Starts for Survivors_13:
(14, 8014), (Start: 15 @8017 has 59 MA's), (31, 8119), (38, 8188), (41, 8230), (45, 8290), (46, 8293),
(47, 8296),

Gene: SweatNTears_13 Start: 7761, Stop: 8030, Start Num: 15
Candidate Starts for SweatNTears_13:
(Start: 15 @7761 has 59 MA's), (27, 7821), (35, 7893),

Gene: TMaxx_12 Start: 7340, Stop: 7600, Start Num: 16
Candidate Starts for TMaxx_12:
(Start: 16 @7340 has 12 MA's), (32, 7439), (41, 7520), (42, 7523),

Gene: Tarnish_10 Start: 7402, Stop: 7674, Start Num: 15
Candidate Starts for Tarnish_10:
(14, 7399), (Start: 15 @7402 has 59 MA's), (40, 7585), (41, 7591), (43, 7615),

Gene: Tolls_13 Start: 7279, Stop: 7551, Start Num: 15
Candidate Starts for Tolls_13:
(Start: 15 @7279 has 59 MA's), (27, 7342),

Gene: TripleC_15 Start: 10834, Stop: 11106, Start Num: 16
Candidate Starts for TripleC_15:
(10, 10771), (Start: 16 @10834 has 12 MA's), (42, 11029),

Gene: Troje_11 Start: 7235, Stop: 7504, Start Num: 15
Candidate Starts for Troje_11:
(Start: 15 @7235 has 59 MA's), (27, 7295), (35, 7367),

Gene: Typhonomachy_11 Start: 7257, Stop: 7538, Start Num: 15
Candidate Starts for Typhonomachy_11:
(5, 7134), (Start: 15 @7257 has 59 MA's),

Gene: Vine_12 Start: 8032, Stop: 8304, Start Num: 15
Candidate Starts for Vine_12:
(14, 8029), (Start: 15 @8032 has 59 MA's), (40, 8215), (41, 8221), (43, 8245),

Gene: Wolfwood_15 Start: 8162, Stop: 8461, Start Num: 15
Candidate Starts for Wolfwood_15:
(14, 8159), (Start: 15 @8162 has 59 MA's), (31, 8264), (38, 8333), (41, 8375), (45, 8435), (46, 8438),
(47, 8441),

Gene: Wrigley_12 Start: 7859, Stop: 8116, Start Num: 18
Candidate Starts for Wrigley_12:
(Start: 18 @7859 has 17 MA's), (43, 8069), (46, 8108),

Gene: Yakult_12 Start: 7168, Stop: 7437, Start Num: 15
Candidate Starts for Yakult_12:

(Start: 15 @7168 has 59 MA's),

Gene: Yarn_10 Start: 7269, Stop: 7541, Start Num: 15
Candidate Starts for Yarn_10:
(Start: 15 @7269 has 59 MA's),

Gene: Yucky_11 Start: 7892, Stop: 8164, Start Num: 15
Candidate Starts for Yucky_11:
(14, 7889), (Start: 15 @7892 has 59 MA's), (40, 8075), (41, 8081), (43, 8105),

Gene: Yummy_12 Start: 7139, Stop: 7417, Start Num: 15
Candidate Starts for Yummy_12:
(Start: 15 @7139 has 59 MA's), (27, 7208), (35, 7280),

Gene: Zareef_13 Start: 8164, Stop: 8463, Start Num: 15
Candidate Starts for Zareef_13:
(14, 8161), (Start: 15 @8164 has 59 MA's), (31, 8266), (38, 8335), (41, 8377), (45, 8437), (46, 8440), (47, 8443),