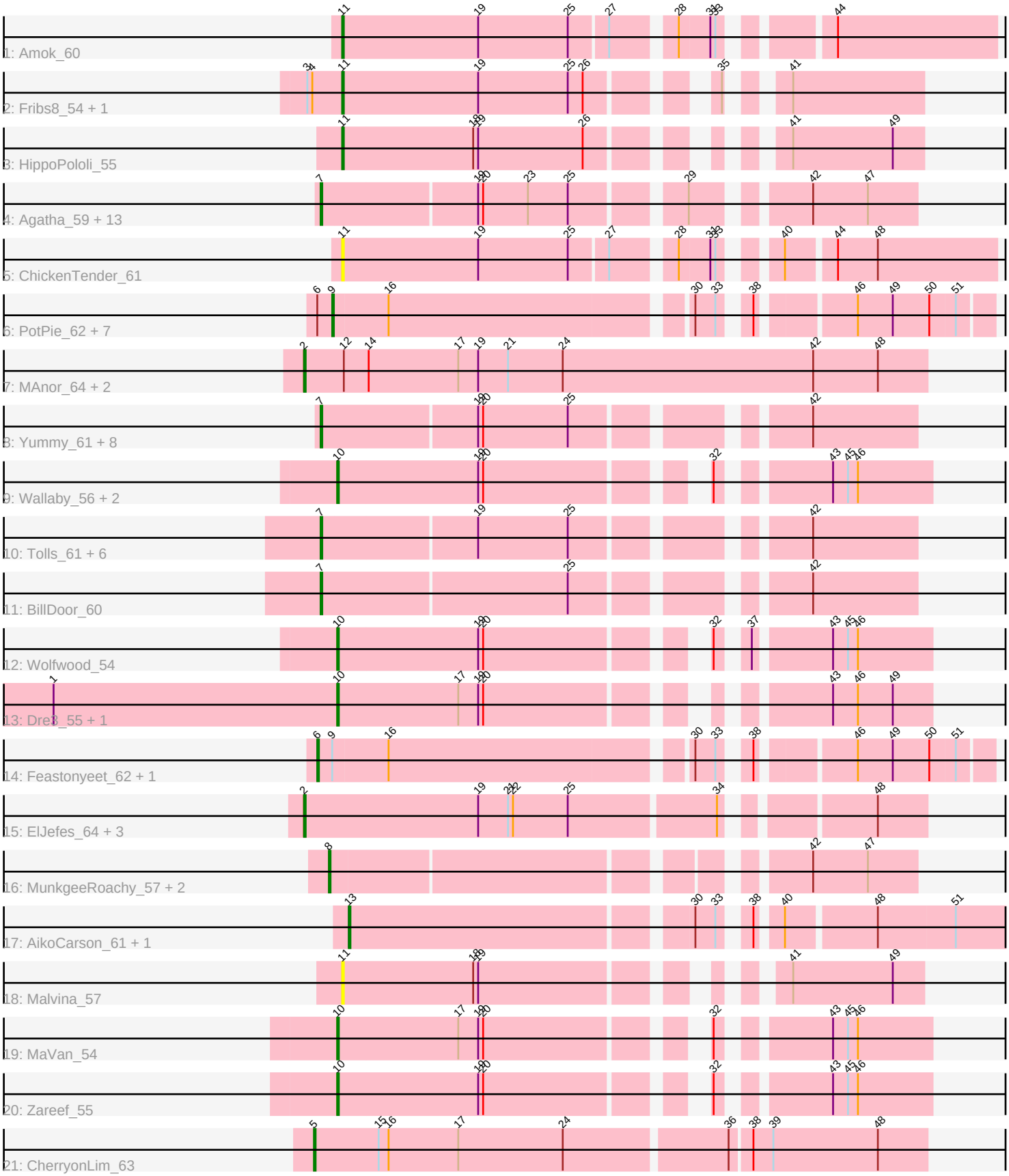
Pham 347587


1: Amok_60
2: Fribs8_54 + 1
3: HippoPololi_55
4: Agatha_59 + 13
5: ChickenTender_61
6: PotPie_62 + 7
7: MAnor_64 + 2
8: Yummy_61 + 8
9: Wallaby_56 + 2
10: Tolls_61 + 6
11: BillDoor_60
12: Wolfwood_54
13: Dre3_55 + 1
14: Feastonyeet_62 + 1
15: ElJefes_64 + 3
16: MunkgeeRoachy_57 + 2
17: AikoCarson_61 + 1
18: Malvina_57
19: MaVan_54
20: Zareef_55
21: CherryonLim_63

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 347587 Report

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

Pham number 347587 has 68 members, 14 are drafts.

Phages represented in each track:
• Track 1 : Amok_60
• Track 2 : Fribs8_54, Nibbles_53
• Track 3 : HippoPololi_55
• Track 4 : Agatha_59, Starburst_59, Quasar_59, Cozz_58, Nina_59, RADical_60, PsychoKiller_58, Axym_58, Bubble_58, GoldHunter_59, Sopespian_57, Burnsey_59, RSchmailzl_60, Eliott_59
• Track 5 : ChickenTender_61
• Track 6 : PotPie_62, Tarnish_62, Bavilard_61, CocoaPuff_62, Vine_65, Yucky_65, SummitAcademy_62, Balloona_61
• Track 7 : MAnor_64, SheckWes_66, Lauer_57
• Track 8 : Yummy_61, SketchMex_59, Buttrmlkdreams_61, MScarn_63, Troje_61, Blondies_63, Horseradish_61, SweatNTears_61, Biskit_61
• Track 9 : Wallaby_56, Azira_54, Survivors_55
• Track 10 : Tolls_61, Yarn_57, CanesSauce_59, CaramelLatte_59, ChocoMunchkin_59, AndPeggy_56, SteamedHams_61
• Track 11 : BillDoor_60
• Track 12 : Wolfwood_54
• Track 13 : Dre3_55, Gibbous_55
• Track 14 : Feastonyeet_62, BigChungus_62
• Track 15 : ElJefes_64, Pons_64, McDazzle_64, Mayweather_66
• Track 16 : MunkgeeRoachy_57, Typhonomachy_58, Socotra_60
• Track 17 : AikoCarson_61, Emalyn_59
• Track 18 : Malvina_57
• Track 19 : MaVan_54
• Track 20 : Zareef_55
• Track 21 : CherryonLim_63

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

The start number called the most often in the published annotations is 7, it was called in 24 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Agatha_59, AndPeggy_56, Axym_58, BillDoor_60, Biskit_61, Blondies_63, Bubble_58, Burnsey_59, Buttrmlkdreams_61, CanesSauce_59, CaramelLatte_59, ChocoMunchkin_59, Cozz_58, Eliott_59, GoldHunter_59, Horseradish_61, MScarn_63, Nina_59, PsychoKiller_58, Quasar_59, RADical_60, RSchmailzl_60, SketchMex_59, Sopespian_57, Starburst_59, SteamedHams_61, SweatNTears_61, Tolls_61, Troje_61, Yarn_57, Yummy_61,

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

Genes that do not have the "Most Annotated" start:
• AikoCarson_61, Amok_60, Azira_54, Balloona_61, Bavilard_61, BigChungus_62, CherryonLim_63, ChickenTender_61, CocoaPuff_62, Dre3_55, ElJefes_64, Emalyn_59, Feastonyeet_62, Fribs8_54, Gibbous_55, HippoPololi_55, Lauer_57, MAnor_64, MaVan_54, Malvina_57, Mayweather_66, McDazzle_64, MunkgeeRoachy_57, Nibbles_53, Pons_64, PotPie_62, SheckWes_66, Socotra_60, SummitAcademy_62, Survivors_55, Tarnish_62, Typhonomachy_58, Vine_65, Wallaby_56, Wolfwood_54, Yucky_65, Zareef_55,

Summary by start number:

Start 2:
• Found in 7 of 68 (10.3%) of genes in pham
• Manual Annotations of this start: 5 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ElJefes_64 (CT), Lauer_57 (CT), MAnor_64 (CT), Mayweather_66 (CT), McDazzle_64 (CT), Pons_64 (CT), SheckWes_66 (CT),

Start 5:
• Found in 1 of 68 (1.5%) of genes in pham
• Manual Annotations of this start: 1 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CherryonLim_63 (CT),

Start 6:
• Found in 10 of 68 (14.7%) of genes in pham
• Manual Annotations of this start: 2 of 54
• Called 20.0% of time when present
• Phage (with cluster) where this start called: BigChungus_62 (CT), Feastonyeet_62 (CT),

Start 7:
• Found in 31 of 68 (45.6%) of genes in pham
• Manual Annotations of this start: 24 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Agatha_59 (CT), AndPeggy_56 (CT), Axym_58 (CT), BillDoor_60 (CT), Biskit_61 (CT), Blondies_63 (CT), Bubble_58 (CT), Burnsey_59 (CT), Buttrmlkdreams_61 (CT), CanesSauce_59 (CT), CaramelLatte_59 (CT), ChocoMunchkin_59 (CT), Cozz_58 (CT), Eliott_59 (CT), GoldHunter_59 (CT), Horseradish_61 (CT), MScarn_63 (CT), Nina_59 (CT), PsychoKiller_58 (CT), Quasar_59 (CT), RADical_60 (CT), RSchmailzl_60 (CT), SketchMex_59 (CT), Sopespian_57 (CT), Starburst_59 (CT), SteamedHams_61 (CT), SweatNTears_61

(CT), Tolls_61 (CT), Troje_61 (CT), Yarn_57 (CT), Yummy_61 (CT),

Start 8:
• Found in 3 of 68 (4.4%) of genes in pham
• Manual Annotations of this start: 3 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: MunkgeeRoachy_57 (CT), Socotra_60 (CT), Typhonomachy_58 (CT),

Start 9:
• Found in 10 of 68 (14.7%) of genes in pham
• Manual Annotations of this start: 6 of 54
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Balloona_61 (CT), Bavilard_61 (CT), CocoaPuff_62 (CT), PotPie_62 (CT), SummitAcademy_62 (CT), Tarnish_62 (CT), Vine_65 (CT), Yucky_65 (CT),

Start 10:
• Found in 8 of 68 (11.8%) of genes in pham
• Manual Annotations of this start: 7 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Azira_54 (CT), Dre3_55 (CT), Gibbous_55 (CT), MaVan_54 (CT), Survivors_55 (CT), Wallaby_56 (CT), Wolfwood_54 (CT), Zareef_55 (CT),

Start 11:
• Found in 6 of 68 (8.8%) of genes in pham
• Manual Annotations of this start: 4 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amok_60 (CT), ChickenTender_61 (CT), Fribs8_54 (CT), HippoPololi_55 (CT), Malvina_57 (CT), Nibbles_53 (CT),

Start 13:
• Found in 2 of 68 (2.9%) of genes in pham
• Manual Annotations of this start: 2 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AikoCarson_61 (CT), Emalyn_59 (CT),

Summary by clusters:

There is one cluster represented in this pham: CT

Info for manual annotations of cluster CT:
•Start number 2 was manually annotated 5 times for cluster CT.
•Start number 5 was manually annotated 1 time for cluster CT.
•Start number 6 was manually annotated 2 times for cluster CT.
•Start number 7 was manually annotated 24 times for cluster CT.
•Start number 8 was manually annotated 3 times for cluster CT.
•Start number 9 was manually annotated 6 times for cluster CT.
•Start number 10 was manually annotated 7 times for cluster CT.
•Start number 11 was manually annotated 4 times for cluster CT.
•Start number 13 was manually annotated 2 times for cluster CT.

Gene Information:

Gene: Agatha_59 Start: 42204, Stop: 42527, Start Num: 7
Candidate Starts for Agatha_59:
(Start: 7 @42204 has 24 MA's), (19, 42294), (20, 42297), (23, 42324), (25, 42348), (29, 42408), (42, 42465), (47, 42498),

Gene: AikoCarson_61 Start: 42385, Stop: 42780, Start Num: 13
Candidate Starts for AikoCarson_61:
(Start: 13 @42385 has 2 MA's), (30, 42580), (33, 42592), (38, 42604), (40, 42616), (48, 42667), (51, 42712),

Gene: Amok_60 Start: 42320, Stop: 42676, Start Num: 11
Candidate Starts for Amok_60:
(Start: 11 @42320 has 4 MA's), (19, 42401), (25, 42455), (27, 42476), (28, 42509), (31, 42527), (33, 42530), (44, 42581),

Gene: AndPeggy_56 Start: 41621, Stop: 41944, Start Num: 7
Candidate Starts for AndPeggy_56:
(Start: 7 @41621 has 24 MA's), (19, 41711), (25, 41765), (42, 41882),

Gene: Axym_58 Start: 42100, Stop: 42423, Start Num: 7
Candidate Starts for Axym_58:
(Start: 7 @42100 has 24 MA's), (19, 42190), (20, 42193), (23, 42220), (25, 42244), (29, 42304), (42, 42361), (47, 42394),

Gene: Azira_54 Start: 41184, Stop: 41495, Start Num: 10
Candidate Starts for Azira_54:
(Start: 10 @41184 has 7 MA's), (19, 41268), (20, 41271), (32, 41382), (43, 41436), (45, 41445), (46, 41451),

Gene: Balloona_61 Start: 44265, Stop: 44651, Start Num: 9
Candidate Starts for Balloona_61:
(Start: 6 @44256 has 2 MA's), (Start: 9 @44265 has 6 MA's), (16, 44298), (30, 44469), (33, 44481), (38, 44493), (46, 44544), (49, 44565), (50, 44586), (51, 44601),

Gene: Bavilard_61 Start: 43275, Stop: 43661, Start Num: 9
Candidate Starts for Bavilard_61:
(Start: 6 @43266 has 2 MA's), (Start: 9 @43275 has 6 MA's), (16, 43308), (30, 43479), (33, 43491), (38, 43503), (46, 43554), (49, 43575), (50, 43596), (51, 43611),

Gene: BigChungus_62 Start: 43797, Stop: 44192, Start Num: 6
Candidate Starts for BigChungus_62:
(Start: 6 @43797 has 2 MA's), (Start: 9 @43806 has 6 MA's), (16, 43839), (30, 44010), (33, 44022), (38, 44034), (46, 44085), (49, 44106), (50, 44127), (51, 44142),

Gene: BillDoor_60 Start: 41297, Stop: 41620, Start Num: 7
Candidate Starts for BillDoor_60:
(Start: 7 @41297 has 24 MA's), (25, 41441), (42, 41558),

Gene: Biskit_61 Start: 42259, Stop: 42582, Start Num: 7

Candidate Starts for Biskit_61:
(Start: 7 @42259 has 24 MA's), (19, 42349), (20, 42352), (25, 42403), (42, 42520),

Gene: Blondies_63 Start: 42576, Stop: 42899, Start Num: 7
Candidate Starts for Blondies_63:
(Start: 7 @42576 has 24 MA's), (19, 42666), (20, 42669), (25, 42720), (42, 42837),

Gene: Bubble_58 Start: 42209, Stop: 42532, Start Num: 7
Candidate Starts for Bubble_58:
(Start: 7 @42209 has 24 MA's), (19, 42299), (20, 42302), (23, 42329), (25, 42353), (29, 42413), (42, 42470), (47, 42503),

Gene: Burnsey_59 Start: 42194, Stop: 42517, Start Num: 7
Candidate Starts for Burnsey_59:
(Start: 7 @42194 has 24 MA's), (19, 42284), (20, 42287), (23, 42314), (25, 42338), (29, 42398), (42, 42455), (47, 42488),

Gene: Buttrmlkdreams_61 Start: 42437, Stop: 42760, Start Num: 7
Candidate Starts for Buttrmlkdreams_61:
(Start: 7 @42437 has 24 MA's), (19, 42527), (20, 42530), (25, 42581), (42, 42698),

Gene: CanesSauce_59 Start: 41782, Stop: 42105, Start Num: 7
Candidate Starts for CanesSauce_59:
(Start: 7 @41782 has 24 MA's), (19, 41872), (25, 41926), (42, 42043),

Gene: CaramelLatte_59 Start: 41782, Stop: 42105, Start Num: 7
Candidate Starts for CaramelLatte_59:
(Start: 7 @41782 has 24 MA's), (19, 41872), (25, 41926), (42, 42043),

Gene: CherryonLim_63 Start: 45325, Stop: 45684, Start Num: 5
Candidate Starts for CherryonLim_63:
(Start: 5 @45325 has 1 MA's), (15, 45364), (16, 45370), (17, 45412), (24, 45475), (36, 45568), (38, 45580), (39, 45592), (48, 45655),

Gene: ChickenTender_61 Start: 41767, Stop: 42123, Start Num: 11
Candidate Starts for ChickenTender_61:
(Start: 11 @41767 has 4 MA's), (19, 41848), (25, 41902), (27, 41923), (28, 41956), (31, 41974), (33, 41977), (40, 42001), (44, 42028), (48, 42052),

Gene: ChocoMunchkin_59 Start: 41782, Stop: 42105, Start Num: 7
Candidate Starts for ChocoMunchkin_59:
(Start: 7 @41782 has 24 MA's), (19, 41872), (25, 41926), (42, 42043),

Gene: CocoaPuff_62 Start: 43811, Stop: 44197, Start Num: 9
Candidate Starts for CocoaPuff_62:
(Start: 6 @43802 has 2 MA's), (Start: 9 @43811 has 6 MA's), (16, 43844), (30, 44015), (33, 44027), (38, 44039), (46, 44090), (49, 44111), (50, 44132), (51, 44147),

Gene: Cozz_58 Start: 42212, Stop: 42535, Start Num: 7
Candidate Starts for Cozz_58:
(Start: 7 @42212 has 24 MA's), (19, 42302), (20, 42305), (23, 42332), (25, 42356), (29, 42416), (42, 42473), (47, 42506),

Gene: Dre3_55 Start: 41790, Stop: 42101, Start Num: 10
Candidate Starts for Dre3_55:
(1, 41619), (Start: 10 @41790 has 7 MA's), (17, 41862), (19, 41874), (20, 41877), (43, 42042), (46, 42057), (49, 42078),

Gene: ElJefes_64 Start: 44324, Stop: 44671, Start Num: 2
Candidate Starts for ElJefes_64:
(Start: 2 @44324 has 5 MA's), (19, 44429), (21, 44447), (22, 44450), (25, 44483), (34, 44567), (48, 44642),

Gene: Eliott_59 Start: 42087, Stop: 42410, Start Num: 7
Candidate Starts for Eliott_59:
(Start: 7 @42087 has 24 MA's), (19, 42177), (20, 42180), (23, 42207), (25, 42231), (29, 42291), (42, 42348), (47, 42381),

Gene: Emalyn_59 Start: 41105, Stop: 41500, Start Num: 13
Candidate Starts for Emalyn_59:
(Start: 13 @41105 has 2 MA's), (30, 41300), (33, 41312), (38, 41324), (40, 41336), (48, 41387), (51, 41432),

Gene: Feastonyeet_62 Start: 43797, Stop: 44192, Start Num: 6
Candidate Starts for Feastonyeet_62:
(Start: 6 @43797 has 2 MA's), (Start: 9 @43806 has 6 MA's), (16, 43839), (30, 44010), (33, 44022), (38, 44034), (46, 44085), (49, 44106), (50, 44127), (51, 44142),

Gene: Fribs8_54 Start: 41872, Stop: 42171, Start Num: 11
Candidate Starts for Fribs8_54:
(3, 41851), (4, 41854), (Start: 11 @41872 has 4 MA's), (19, 41953), (25, 42007), (26, 42016), (35, 42073), (41, 42094),

Gene: Gibbous_55 Start: 41790, Stop: 42101, Start Num: 10
Candidate Starts for Gibbous_55:
(1, 41619), (Start: 10 @41790 has 7 MA's), (17, 41862), (19, 41874), (20, 41877), (43, 42042), (46, 42057), (49, 42078),

Gene: GoldHunter_59 Start: 42204, Stop: 42527, Start Num: 7
Candidate Starts for GoldHunter_59:
(Start: 7 @42204 has 24 MA's), (19, 42294), (20, 42297), (23, 42324), (25, 42348), (29, 42408), (42, 42465), (47, 42498),

Gene: HippoPololi_55 Start: 41098, Stop: 41397, Start Num: 11
Candidate Starts for HippoPololi_55:
(Start: 11 @41098 has 4 MA's), (18, 41176), (19, 41179), (26, 41242), (41, 41320), (49, 41380),

Gene: Horseradish_61 Start: 42192, Stop: 42515, Start Num: 7
Candidate Starts for Horseradish_61:
(Start: 7 @42192 has 24 MA's), (19, 42282), (20, 42285), (25, 42336), (42, 42453),

Gene: Lauer_57 Start: 44774, Stop: 45148, Start Num: 2
Candidate Starts for Lauer_57:
(Start: 2 @44774 has 5 MA's), (12, 44798), (14, 44813), (17, 44867), (19, 44879), (21, 44897), (24, 44930), (42, 45080), (48, 45119),

Gene: MAnor_64 Start: 44728, Stop: 45102, Start Num: 2
Candidate Starts for MAnor_64:
(Start: 2 @44728 has 5 MA's), (12, 44752), (14, 44767), (17, 44821), (19, 44833), (21, 44851), (24, 44884), (42, 45034), (48, 45073),

Gene: MScarn_63 Start: 42105, Stop: 42428, Start Num: 7
Candidate Starts for MScarn_63:
(Start: 7 @42105 has 24 MA's), (19, 42195), (20, 42198), (25, 42249), (42, 42366),

Gene: MaVan_54 Start: 41214, Stop: 41525, Start Num: 10
Candidate Starts for MaVan_54:
(Start: 10 @41214 has 7 MA's), (17, 41286), (19, 41298), (20, 41301), (32, 41412), (43, 41466), (45, 41475), (46, 41481),

Gene: Malvina_57 Start: 41096, Stop: 41395, Start Num: 11
Candidate Starts for Malvina_57:
(Start: 11 @41096 has 4 MA's), (18, 41174), (19, 41177), (41, 41318), (49, 41378),

Gene: Mayweather_66 Start: 44991, Stop: 45338, Start Num: 2
Candidate Starts for Mayweather_66:
(Start: 2 @44991 has 5 MA's), (19, 45096), (21, 45114), (22, 45117), (25, 45150), (34, 45234), (48, 45309),

Gene: McDazzle_64 Start: 44318, Stop: 44665, Start Num: 2
Candidate Starts for McDazzle_64:
(Start: 2 @44318 has 5 MA's), (19, 44423), (21, 44441), (22, 44444), (25, 44477), (34, 44561), (48, 44636),

Gene: MunkgeeRoachy_57 Start: 41547, Stop: 41861, Start Num: 8
Candidate Starts for MunkgeeRoachy_57:
(Start: 8 @41547 has 3 MA's), (42, 41799), (47, 41832),

Gene: Nibbles_53 Start: 40904, Stop: 41203, Start Num: 11
Candidate Starts for Nibbles_53:
(3, 40883), (4, 40886), (Start: 11 @40904 has 4 MA's), (19, 40985), (25, 41039), (26, 41048), (35, 41105), (41, 41126),

Gene: Nina_59 Start: 42690, Stop: 43013, Start Num: 7
Candidate Starts for Nina_59:
(Start: 7 @42690 has 24 MA's), (19, 42780), (20, 42783), (23, 42810), (25, 42834), (29, 42894), (42, 42951), (47, 42984),

Gene: Pons_64 Start: 44333, Stop: 44680, Start Num: 2
Candidate Starts for Pons_64:
(Start: 2 @44333 has 5 MA's), (19, 44438), (21, 44456), (22, 44459), (25, 44492), (34, 44576), (48, 44651),

Gene: PotPie_62 Start: 44841, Stop: 45227, Start Num: 9
Candidate Starts for PotPie_62:
(Start: 6 @44832 has 2 MA's), (Start: 9 @44841 has 6 MA's), (16, 44874), (30, 45045), (33, 45057), (38, 45069), (46, 45120), (49, 45141), (50, 45162), (51, 45177),

Gene: PsychoKiller_58 Start: 42088, Stop: 42411, Start Num: 7

Candidate Starts for PsychoKiller_58:
(Start: 7 @42088 has 24 MA's), (19, 42178), (20, 42181), (23, 42208), (25, 42232), (29, 42292), (42, 42349), (47, 42382),

Gene: Quasar_59 Start: 42793, Stop: 43116, Start Num: 7
Candidate Starts for Quasar_59:
(Start: 7 @42793 has 24 MA's), (19, 42883), (20, 42886), (23, 42913), (25, 42937), (29, 42997), (42, 43054), (47, 43087),

Gene: RADical_60 Start: 42082, Stop: 42405, Start Num: 7
Candidate Starts for RADical_60:
(Start: 7 @42082 has 24 MA's), (19, 42172), (20, 42175), (23, 42202), (25, 42226), (29, 42286), (42, 42343), (47, 42376),

Gene: RSchmailzl_60 Start: 42516, Stop: 42839, Start Num: 7
Candidate Starts for RSchmailzl_60:
(Start: 7 @42516 has 24 MA's), (19, 42606), (20, 42609), (23, 42636), (25, 42660), (29, 42720), (42, 42777), (47, 42810),

Gene: SheckWes_66 Start: 43864, Stop: 44238, Start Num: 2
Candidate Starts for SheckWes_66:
(Start: 2 @43864 has 5 MA's), (12, 43888), (14, 43903), (17, 43957), (19, 43969), (21, 43987), (24, 44020), (42, 44170), (48, 44209),

Gene: SketchMex_59 Start: 42259, Stop: 42582, Start Num: 7
Candidate Starts for SketchMex_59:
(Start: 7 @42259 has 24 MA's), (19, 42349), (20, 42352), (25, 42403), (42, 42520),

Gene: Socotra_60 Start: 42197, Stop: 42511, Start Num: 8
Candidate Starts for Socotra_60:
(Start: 8 @42197 has 3 MA's), (42, 42449), (47, 42482),

Gene: Sopespian_57 Start: 42089, Stop: 42412, Start Num: 7
Candidate Starts for Sopespian_57:
(Start: 7 @42089 has 24 MA's), (19, 42179), (20, 42182), (23, 42209), (25, 42233), (29, 42293), (42, 42350), (47, 42383),

Gene: Starburst_59 Start: 42084, Stop: 42407, Start Num: 7
Candidate Starts for Starburst_59:
(Start: 7 @42084 has 24 MA's), (19, 42174), (20, 42177), (23, 42204), (25, 42228), (29, 42288), (42, 42345), (47, 42378),

Gene: SteamedHams_61 Start: 41598, Stop: 41921, Start Num: 7
Candidate Starts for SteamedHams_61:
(Start: 7 @41598 has 24 MA's), (19, 41688), (25, 41742), (42, 41859),

Gene: SummitAcademy_62 Start: 43984, Stop: 44370, Start Num: 9
Candidate Starts for SummitAcademy_62:
(Start: 6 @43975 has 2 MA's), (Start: 9 @43984 has 6 MA's), (16, 44017), (30, 44188), (33, 44200), (38, 44212), (46, 44263), (49, 44284), (50, 44305), (51, 44320),

Gene: Survivors_55 Start: 41106, Stop: 41417, Start Num: 10
Candidate Starts for Survivors_55:

(Start: 10 @41106 has 7 MA's), (19, 41190), (20, 41193), (32, 41304), (43, 41358), (45, 41367), (46, 41373),

Gene: SweatNTears_61 Start: 42333, Stop: 42656, Start Num: 7
Candidate Starts for SweatNTears_61:
(Start: 7 @42333 has 24 MA's), (19, 42423), (20, 42426), (25, 42477), (42, 42594),

Gene: Tarnish_62 Start: 44165, Stop: 44551, Start Num: 9
Candidate Starts for Tarnish_62:
(Start: 6 @44156 has 2 MA's), (Start: 9 @44165 has 6 MA's), (16, 44198), (30, 44369), (33, 44381), (38, 44393), (46, 44444), (49, 44465), (50, 44486), (51, 44501),

Gene: Tolls_61 Start: 41869, Stop: 42192, Start Num: 7
Candidate Starts for Tolls_61:
(Start: 7 @41869 has 24 MA's), (19, 41959), (25, 42013), (42, 42130),

Gene: Troje_61 Start: 42328, Stop: 42651, Start Num: 7
Candidate Starts for Troje_61:
(Start: 7 @42328 has 24 MA's), (19, 42418), (20, 42421), (25, 42472), (42, 42589),

Gene: Typhonomachy_58 Start: 41910, Stop: 42224, Start Num: 8
Candidate Starts for Typhonomachy_58:
(Start: 8 @41910 has 3 MA's), (42, 42162), (47, 42195),

Gene: Vine_65 Start: 44607, Stop: 44993, Start Num: 9
Candidate Starts for Vine_65:
(Start: 6 @44598 has 2 MA's), (Start: 9 @44607 has 6 MA's), (16, 44640), (30, 44811), (33, 44823), (38, 44835), (46, 44886), (49, 44907), (50, 44928), (51, 44943),

Gene: Wallaby_56 Start: 41207, Stop: 41518, Start Num: 10
Candidate Starts for Wallaby_56:
(Start: 10 @41207 has 7 MA's), (19, 41291), (20, 41294), (32, 41405), (43, 41459), (45, 41468), (46, 41474),

Gene: Wolfwood_54 Start: 41181, Stop: 41492, Start Num: 10
Candidate Starts for Wolfwood_54:
(Start: 10 @41181 has 7 MA's), (19, 41265), (20, 41268), (32, 41379), (37, 41391), (43, 41433), (45, 41442), (46, 41448),

Gene: Yarn_57 Start: 41626, Stop: 41949, Start Num: 7
Candidate Starts for Yarn_57:
(Start: 7 @41626 has 24 MA's), (19, 41716), (25, 41770), (42, 41887),

Gene: Yucky_65 Start: 44399, Stop: 44785, Start Num: 9
Candidate Starts for Yucky_65:
(Start: 6 @44390 has 2 MA's), (Start: 9 @44399 has 6 MA's), (16, 44432), (30, 44603), (33, 44615), (38, 44627), (46, 44678), (49, 44699), (50, 44720), (51, 44735),

Gene: Yummy_61 Start: 42306, Stop: 42629, Start Num: 7
Candidate Starts for Yummy_61:
(Start: 7 @42306 has 24 MA's), (19, 42396), (20, 42399), (25, 42450), (42, 42567),

Gene: Zareef_55 Start: 41204, Stop: 41515, Start Num: 10

Candidate Starts for Zareef_55:
(Start: 10 @41204 has 7 MA's), (19, 41288), (20, 41291), (32, 41402), (43, 41456), (45, 41465), (46, 41471),