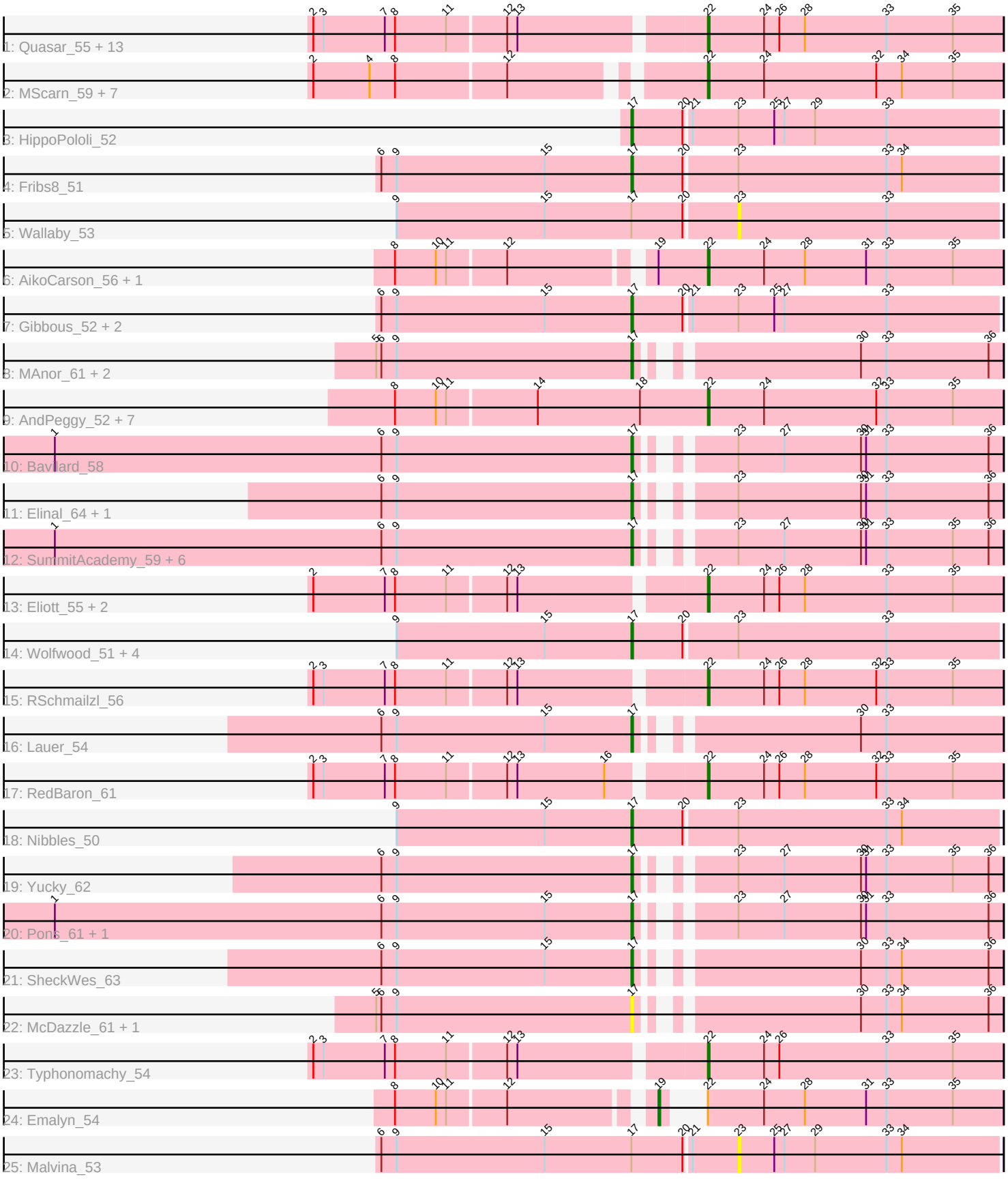
Pham 347569


1: Quasar_55 + 13
2: MScarn_59 + 7
3: HippoPololi_52
4: Fribs8_51
5: Wallaby_53
6: AikoCarson_56 + 1
7: Gibbous_52 + 2
8: MAnor_61 + 2
9: AndPeggy_52 + 7
10: Bavilard_58
11: Elinal_64 + 1
12: SummitAcademy_59 + 6
13: Eliott_55 + 2
14: Wolfwood_51 + 4
15: RSchmailzl_56
16: Lauer_54
17: RedBaron_61
18: Nibbles_50
19: Yucky_62
20: Pons_61 + 1
21: SheckWes_63
22: McDazzle_61 + 1
23: Typhonomachy_54
24: Emalyn_54
25: Malvina_53

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 347569 Report

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

Pham number 347569 has 72 members, 14 are drafts.

Phages represented in each track:
• Track 1 : Quasar_55, Agatha_55, Nina_55, Cozz_53, Socotra_56, MunkgeeRoachy_53, Starburst_55, Axym_54, GoldHunter_55, Carsonalex_58, RADical_56, Burnsey_55, SweatNTears_57, Bubble_53
• Track 2 : MScarn_59, Biskit_57, Buttrmlkdreams_57, SketchMex_55, Troje_57, Yummy_57, Horseradish_57, Blondies_58
• Track 3 : HippoPololi_52
• Track 4 : Fribs8_51
• Track 5 : Wallaby_53
• Track 6 : AikoCarson_56, Amok_56
• Track 7 : Gibbous_52, Cleo_49, Dre3_52
• Track 8 : MAnor_61, CherryonLim_60, Mayweather_63
• Track 9 : AndPeggy_52, Yarn_52, CanesSauce_54, SteamedHams_56, CaramelLatte_54, BillDoor_55, Tolls_56, ChocoMunchkin_54
• Track 10 : Bavilard_58
• Track 11 : Elinal_64, KayGee_62
• Track 12 : SummitAcademy_59, Vine_62, BigChungus_59, Feastonyeet_59, PotPie_59, CocoaPuff_59, Balloona_58
• Track 13 : Eliott_55, PsychoKiller_54, Sopespian_53
• Track 14 : Wolfwood_51, Survivors_51, Azira_51, MaVan_51, Zareef_51
• Track 15 : RSchmailzl_56
• Track 16 : Lauer_54
• Track 17 : RedBaron_61
• Track 18 : Nibbles_50
• Track 19 : Yucky_62
• Track 20 : Pons_61, Tarnish_59
• Track 21 : SheckWes_63
• Track 22 : McDazzle_61, ElJefes_61
• Track 23 : Typhonomachy_54
• Track 24 : Emalyn_54
• Track 25 : Malvina_53

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

The start number called the most often in the published annotations is 22, it was called in 30 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agatha_55, AikoCarson_56, Amok_56, AndPeggy_52, Axym_54, BillDoor_55, Biskit_57, Blondies_58, Bubble_53, Burnsey_55, Buttrmlkdreams_57, CanesSauce_54, CaramelLatte_54, Carsonalex_58, ChocoMunchkin_54, Cozz_53, Eliott_55, GoldHunter_55, Horseradish_57, MScarn_59, MunkgeeRoachy_53, Nina_55, PsychoKiller_54, Quasar_55, RADical_56, RSchmailzl_56, RedBaron_61, SketchMex_55, Socotra_56, Sopespian_53, Starburst_55, SteamedHams_56, SweatNTears_57, Tolls_56, Troje_57, Typhonomachy_54, Yarn_52, Yummy_57,

Genes that have the "Most Annotated" start but do not call it:
• Emalyn_54,

Genes that do not have the "Most Annotated" start:
• Azira_51, Balloona_58, Bavilard_58, BigChungus_59, CherryonLim_60, Cleo_49, CocoaPuff_59, Dre3_52, ElJefes_61, Elinal_64, Feastonyeet_59, Fribs8_51, Gibbous_52, HippoPololi_52, KayGee_62, Lauer_54, MAnor_61, MaVan_51, Malvina_53, Mayweather_63, McDazzle_61, Nibbles_50, Pons_61, PotPie_59, SheckWes_63, SummitAcademy_59, Survivors_51, Tarnish_59, Vine_62, Wallaby_53, Wolfwood_51, Yucky_62, Zareef_51,

Summary by start number:

Start 17:
• Found in 33 of 72 (45.8%) of genes in pham
• Manual Annotations of this start: 27 of 58
• Called 93.9% of time when present
• Phage (with cluster) where this start called: Azira_51 (CT), Balloona_58 (CT), Bavilard_58 (CT), BigChungus_59 (CT), CherryonLim_60 (CT), Cleo_49 (CT), CocoaPuff_59 (CT), Dre3_52 (CT), ElJefes_61 (CT), Elinal_64 (CT), Feastonyeet_59 (CT), Fribs8_51 (CT), Gibbous_52 (CT), HippoPololi_52 (CT), KayGee_62 (CT), Lauer_54 (CT), MAnor_61 (CT), MaVan_51 (CT), Mayweather_63 (CT), McDazzle_61 (CT), Nibbles_50 (CT), Pons_61 (CT), PotPie_59 (CT), SheckWes_63 (CT), SummitAcademy_59 (CT), Survivors_51 (CT), Tarnish_59 (CT), Vine_62 (CT), Wolfwood_51 (CT), Yucky_62 (CT), Zareef_51 (CT),

Start 19:
• Found in 3 of 72 (4.2%) of genes in pham
• Manual Annotations of this start: 1 of 58
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Emalyn_54 (CT),

Start 22:
• Found in 39 of 72 (54.2%) of genes in pham
• Manual Annotations of this start: 30 of 58
• Called 97.4% of time when present
• Phage (with cluster) where this start called: Agatha_55 (CT), AikoCarson_56 (CT), Amok_56 (CT), AndPeggy_52 (CT), Axym_54 (CT), BillDoor_55 (CT), Biskit_57 (CT), Blondies_58 (CT), Bubble_53 (CT), Burnsey_55 (CT), Buttrmlkdreams_57 (CT), CanesSauce_54 (CT), CaramelLatte_54 (CT), Carsonalex_58 (CT), ChocoMunchkin_54 (CT), Cozz_53 (CT), Eliott_55 (CT), GoldHunter_55 (CT),

Horseradish_57 (CT), MScarn_59 (CT), MunkgeeRoachy_53 (CT), Nina_55 (CT), PsychoKiller_54 (CT), Quasar_55 (CT), RADical_56 (CT), RSchmailzl_56 (CT), RedBaron_61 (CT), SketchMex_55 (CT), Socotra_56 (CT), Sopespian_53 (CT), Starburst_55 (CT), SteamedHams_56 (CT), SweatNTears_57 (CT), Tolls_56 (CT), Troje_57 (CT), Typhonomachy_54 (CT), Yarn_52 (CT), Yummy_57 (CT),

Start 23:
• Found in 26 of 72 (36.1%) of genes in pham
• No Manual Annotations of this start.
• Called 7.7% of time when present
• Phage (with cluster) where this start called: Malvina_53 (CT), Wallaby_53 (CT),

Summary by clusters:

There is one cluster represented in this pham: CT

Info for manual annotations of cluster CT:
•Start number 17 was manually annotated 27 times for cluster CT.
•Start number 19 was manually annotated 1 time for cluster CT.
•Start number 22 was manually annotated 30 times for cluster CT.

Gene Information:

Gene: Agatha_55 Start: 39281, Stop: 39108, Start Num: 22
Candidate Starts for Agatha_55:
(2, 39500), (3, 39494), (7, 39458), (8, 39452), (11, 39422), (12, 39389), (13, 39383), (Start: 22 @39281 has 30 MA's), (24, 39248), (26, 39239), (28, 39224), (33, 39176), (35, 39137),

Gene: AikoCarson_56 Start: 39495, Stop: 39322, Start Num: 22
Candidate Starts for AikoCarson_56:
(8, 39639), (10, 39615), (11, 39609), (12, 39576), (Start: 19 @39501 has 1 MA's), (Start: 22 @39495 has 30 MA's), (24, 39462), (28, 39438), (31, 39402), (33, 39390), (35, 39351),

Gene: Amok_56 Start: 39423, Stop: 39250, Start Num: 22
Candidate Starts for Amok_56:
(8, 39567), (10, 39543), (11, 39537), (12, 39504), (Start: 19 @39429 has 1 MA's), (Start: 22 @39423 has 30 MA's), (24, 39390), (28, 39366), (31, 39330), (33, 39318), (35, 39279),

Gene: AndPeggy_52 Start: 38688, Stop: 38515, Start Num: 22
Candidate Starts for AndPeggy_52:
(8, 38868), (10, 38844), (11, 38838), (14, 38787), (18, 38727), (Start: 22 @38688 has 30 MA's), (24, 38655), (32, 38589), (33, 38583), (35, 38544),

Gene: Axym_54 Start: 39178, Stop: 39005, Start Num: 22
Candidate Starts for Axym_54:
(2, 39397), (3, 39391), (7, 39355), (8, 39349), (11, 39319), (12, 39286), (13, 39280), (Start: 22 @39178 has 30 MA's), (24, 39145), (26, 39136), (28, 39121), (33, 39073), (35, 39034),

Gene: Azira_51 Start: 38488, Stop: 38276, Start Num: 17
Candidate Starts for Azira_51:
(9, 38626), (15, 38539), (Start: 17 @38488 has 27 MA's), (20, 38458), (23, 38428), (33, 38341),

Gene: Balloona_58 Start: 41534, Stop: 41340, Start Num: 17
Candidate Starts for Balloona_58:
(1, 41873), (6, 41681), (9, 41672), (Start: 17 @41534 has 27 MA's), (23, 41495), (27, 41468), (30, 41423), (31, 41420), (33, 41408), (35, 41369), (36, 41348),

Gene: Bavilard_58 Start: 40544, Stop: 40350, Start Num: 17
Candidate Starts for Bavilard_58:
(1, 40883), (6, 40691), (9, 40682), (Start: 17 @40544 has 27 MA's), (23, 40505), (27, 40478), (30, 40433), (31, 40430), (33, 40418), (36, 40358),

Gene: BigChungus_59 Start: 41075, Stop: 40881, Start Num: 17
Candidate Starts for BigChungus_59:
(1, 41414), (6, 41222), (9, 41213), (Start: 17 @41075 has 27 MA's), (23, 41036), (27, 41009), (30, 40964), (31, 40961), (33, 40949), (35, 40910), (36, 40889),

Gene: BillDoor_55 Start: 38364, Stop: 38191, Start Num: 22
Candidate Starts for BillDoor_55:
(8, 38544), (10, 38520), (11, 38514), (14, 38463), (18, 38403), (Start: 22 @38364 has 30 MA's), (24, 38331), (32, 38265), (33, 38259), (35, 38220),

Gene: Biskit_57 Start: 39090, Stop: 38917, Start Num: 22
Candidate Starts for Biskit_57:
(2, 39282), (4, 39249), (8, 39234), (12, 39171), (Start: 22 @39090 has 30 MA's), (24, 39057), (32, 38991), (34, 38976), (35, 38946),

Gene: Blondies_58 Start: 39407, Stop: 39234, Start Num: 22
Candidate Starts for Blondies_58:
(2, 39599), (4, 39566), (8, 39551), (12, 39488), (Start: 22 @39407 has 30 MA's), (24, 39374), (32, 39308), (34, 39293), (35, 39263),

Gene: Bubble_53 Start: 38866, Stop: 38693, Start Num: 22
Candidate Starts for Bubble_53:
(2, 39085), (3, 39079), (7, 39043), (8, 39037), (11, 39007), (12, 38974), (13, 38968), (Start: 22 @38866 has 30 MA's), (24, 38833), (26, 38824), (28, 38809), (33, 38761), (35, 38722),

Gene: Burnsey_55 Start: 39272, Stop: 39099, Start Num: 22
Candidate Starts for Burnsey_55:
(2, 39491), (3, 39485), (7, 39449), (8, 39443), (11, 39413), (12, 39380), (13, 39374), (Start: 22 @39272 has 30 MA's), (24, 39239), (26, 39230), (28, 39215), (33, 39167), (35, 39128),

Gene: Buttrmlkdreams_57 Start: 39537, Stop: 39364, Start Num: 22
Candidate Starts for Buttrmlkdreams_57:
(2, 39729), (4, 39696), (8, 39681), (12, 39618), (Start: 22 @39537 has 30 MA's), (24, 39504), (32, 39438), (34, 39423), (35, 39393),

Gene: CanesSauce_54 Start: 38849, Stop: 38676, Start Num: 22
Candidate Starts for CanesSauce_54:
(8, 39029), (10, 39005), (11, 38999), (14, 38948), (18, 38888), (Start: 22 @38849 has 30 MA's), (24, 38816), (32, 38750), (33, 38744), (35, 38705),

Gene: CaramelLatte_54 Start: 38849, Stop: 38676, Start Num: 22
Candidate Starts for CaramelLatte_54:

(8, 39029), (10, 39005), (11, 38999), (14, 38948), (18, 38888), (Start: 22 @38849 has 30 MA's), (24, 38816), (32, 38750), (33, 38744), (35, 38705),

Gene: Carsonalex_58 Start: 39660, Stop: 39487, Start Num: 22
Candidate Starts for Carsonalex_58:
(2, 39879), (3, 39873), (7, 39837), (8, 39831), (11, 39801), (12, 39768), (13, 39762), (Start: 22 @39660 has 30 MA's), (24, 39627), (26, 39618), (28, 39603), (33, 39555), (35, 39516),

Gene: CherryonLim_60 Start: 42554, Stop: 42360, Start Num: 17
Candidate Starts for CherryonLim_60:
(5, 42704), (6, 42701), (9, 42692), (Start: 17 @42554 has 27 MA's), (30, 42443), (33, 42428), (36, 42368),

Gene: ChocoMunchkin_54 Start: 38849, Stop: 38676, Start Num: 22
Candidate Starts for ChocoMunchkin_54:
(8, 39029), (10, 39005), (11, 38999), (14, 38948), (18, 38888), (Start: 22 @38849 has 30 MA's), (24, 38816), (32, 38750), (33, 38744), (35, 38705),

Gene: Cleo_49 Start: 38249, Stop: 38037, Start Num: 17
Candidate Starts for Cleo_49:
(6, 38396), (9, 38387), (15, 38300), (Start: 17 @38249 has 27 MA's), (20, 38219), (21, 38216), (23, 38189), (25, 38168), (27, 38162), (33, 38102),

Gene: CocoaPuff_59 Start: 41080, Stop: 40886, Start Num: 17
Candidate Starts for CocoaPuff_59:
(1, 41419), (6, 41227), (9, 41218), (Start: 17 @41080 has 27 MA's), (23, 41041), (27, 41014), (30, 40969), (31, 40966), (33, 40954), (35, 40915), (36, 40894),

Gene: Cozz_53 Start: 38869, Stop: 38696, Start Num: 22
Candidate Starts for Cozz_53:
(2, 39088), (3, 39082), (7, 39046), (8, 39040), (11, 39010), (12, 38977), (13, 38971), (Start: 22 @38869 has 30 MA's), (24, 38836), (26, 38827), (28, 38812), (33, 38764), (35, 38725),

Gene: Dre3_52 Start: 39093, Stop: 38881, Start Num: 17
Candidate Starts for Dre3_52:
(6, 39240), (9, 39231), (15, 39144), (Start: 17 @39093 has 27 MA's), (20, 39063), (21, 39060), (23, 39033), (25, 39012), (27, 39006), (33, 38946),

Gene: ElJefes_61 Start: 41610, Stop: 41416, Start Num: 17
Candidate Starts for ElJefes_61:
(5, 41760), (6, 41757), (9, 41748), (Start: 17 @41610 has 27 MA's), (30, 41499), (33, 41484), (34, 41475), (36, 41424),

Gene: Elinal_64 Start: 41883, Stop: 41689, Start Num: 17
Candidate Starts for Elinal_64:
(6, 42030), (9, 42021), (Start: 17 @41883 has 27 MA's), (23, 41844), (30, 41772), (31, 41769), (33, 41757), (36, 41697),

Gene: Eliott_55 Start: 39165, Stop: 38992, Start Num: 22
Candidate Starts for Eliott_55:
(2, 39384), (7, 39342), (8, 39336), (11, 39306), (12, 39273), (13, 39267), (Start: 22 @39165 has 30 MA's), (24, 39132), (26, 39123), (28, 39108), (33, 39060), (35, 39021),

Gene: Emalyn_54 Start: 38221, Stop: 38042, Start Num: 19
Candidate Starts for Emalyn_54:
(8, 38359), (10, 38335), (11, 38329), (12, 38296), (Start: 19 @38221 has 1 MA's), (Start: 22 @38215 has 30 MA's), (24, 38182), (28, 38158), (31, 38122), (33, 38110), (35, 38071),

Gene: Feastonyeet_59 Start: 41075, Stop: 40881, Start Num: 17
Candidate Starts for Feastonyeet_59:
(1, 41414), (6, 41222), (9, 41213), (Start: 17 @41075 has 27 MA's), (23, 41036), (27, 41009), (30, 40964), (31, 40961), (33, 40949), (35, 40910), (36, 40889),

Gene: Fribs8_51 Start: 39165, Stop: 38953, Start Num: 17
Candidate Starts for Fribs8_51:
(6, 39312), (9, 39303), (15, 39216), (Start: 17 @39165 has 27 MA's), (20, 39135), (23, 39105), (33, 39018), (34, 39009),

Gene: Gibbous_52 Start: 39093, Stop: 38881, Start Num: 17
Candidate Starts for Gibbous_52:
(6, 39240), (9, 39231), (15, 39144), (Start: 17 @39093 has 27 MA's), (20, 39063), (21, 39060), (23, 39033), (25, 39012), (27, 39006), (33, 38946),

Gene: GoldHunter_55 Start: 39282, Stop: 39109, Start Num: 22
Candidate Starts for GoldHunter_55:
(2, 39501), (3, 39495), (7, 39459), (8, 39453), (11, 39423), (12, 39390), (13, 39384), (Start: 22 @39282 has 30 MA's), (24, 39249), (26, 39240), (28, 39225), (33, 39177), (35, 39138),

Gene: HippoPololi_52 Start: 38402, Stop: 38190, Start Num: 17
Candidate Starts for HippoPololi_52:
(Start: 17 @38402 has 27 MA's), (20, 38372), (21, 38369), (23, 38342), (25, 38321), (27, 38315), (29, 38297), (33, 38255),

Gene: Horseradish_57 Start: 39023, Stop: 38850, Start Num: 22
Candidate Starts for Horseradish_57:
(2, 39215), (4, 39182), (8, 39167), (12, 39104), (Start: 22 @39023 has 30 MA's), (24, 38990), (32, 38924), (34, 38909), (35, 38879),

Gene: KayGee_62 Start: 41883, Stop: 41689, Start Num: 17
Candidate Starts for KayGee_62:
(6, 42030), (9, 42021), (Start: 17 @41883 has 27 MA's), (23, 41844), (30, 41772), (31, 41769), (33, 41757), (36, 41697),

Gene: Lauer_54 Start: 42060, Stop: 41866, Start Num: 17
Candidate Starts for Lauer_54:
(6, 42207), (9, 42198), (15, 42111), (Start: 17 @42060 has 27 MA's), (30, 41949), (33, 41934),

Gene: MAnor_61 Start: 42014, Stop: 41820, Start Num: 17
Candidate Starts for MAnor_61:
(5, 42164), (6, 42161), (9, 42152), (Start: 17 @42014 has 27 MA's), (30, 41903), (33, 41888), (36, 41828),

Gene: MScarn_59 Start: 39205, Stop: 39032, Start Num: 22
Candidate Starts for MScarn_59:
(2, 39397), (4, 39364), (8, 39349), (12, 39286), (Start: 22 @39205 has 30 MA's), (24, 39172), (32, 39106), (34, 39091), (35, 39061),

Gene: MaVan_51 Start: 38517, Stop: 38305, Start Num: 17
Candidate Starts for MaVan_51:
(9, 38655), (15, 38568), (Start: 17 @38517 has 27 MA's), (20, 38487), (23, 38457), (33, 38370),

Gene: Malvina_53 Start: 38340, Stop: 38188, Start Num: 23
Candidate Starts for Malvina_53:
(6, 38547), (9, 38538), (15, 38451), (Start: 17 @38400 has 27 MA's), (20, 38370), (21, 38367), (23, 38340), (25, 38319), (27, 38313), (29, 38295), (33, 38253), (34, 38244),

Gene: Mayweather_63 Start: 42277, Stop: 42083, Start Num: 17
Candidate Starts for Mayweather_63:
(5, 42427), (6, 42424), (9, 42415), (Start: 17 @42277 has 27 MA's), (30, 42166), (33, 42151), (36, 42091),

Gene: McDazzle_61 Start: 41604, Stop: 41410, Start Num: 17
Candidate Starts for McDazzle_61:
(5, 41754), (6, 41751), (9, 41742), (Start: 17 @41604 has 27 MA's), (30, 41493), (33, 41478), (34, 41469), (36, 41418),

Gene: MunkgeeRoachy_53 Start: 38628, Stop: 38455, Start Num: 22
Candidate Starts for MunkgeeRoachy_53:
(2, 38847), (3, 38841), (7, 38805), (8, 38799), (11, 38769), (12, 38736), (13, 38730), (Start: 22 @38628 has 30 MA's), (24, 38595), (26, 38586), (28, 38571), (33, 38523), (35, 38484),

Gene: Nibbles_50 Start: 38210, Stop: 37998, Start Num: 17
Candidate Starts for Nibbles_50:
(9, 38348), (15, 38261), (Start: 17 @38210 has 27 MA's), (20, 38180), (23, 38150), (33, 38063), (34, 38054),

Gene: Nina_55 Start: 39768, Stop: 39595, Start Num: 22
Candidate Starts for Nina_55:
(2, 39987), (3, 39981), (7, 39945), (8, 39939), (11, 39909), (12, 39876), (13, 39870), (Start: 22 @39768 has 30 MA's), (24, 39735), (26, 39726), (28, 39711), (33, 39663), (35, 39624),

Gene: Pons_61 Start: 41619, Stop: 41425, Start Num: 17
Candidate Starts for Pons_61:
(1, 41958), (6, 41766), (9, 41757), (15, 41670), (Start: 17 @41619 has 27 MA's), (23, 41580), (27, 41553), (30, 41508), (31, 41505), (33, 41493), (36, 41433),

Gene: PotPie_59 Start: 42110, Stop: 41916, Start Num: 17
Candidate Starts for PotPie_59:
(1, 42449), (6, 42257), (9, 42248), (Start: 17 @42110 has 27 MA's), (23, 42071), (27, 42044), (30, 41999), (31, 41996), (33, 41984), (35, 41945), (36, 41924),

Gene: PsychoKiller_54 Start: 39166, Stop: 38993, Start Num: 22
Candidate Starts for PsychoKiller_54:
(2, 39385), (7, 39343), (8, 39337), (11, 39307), (12, 39274), (13, 39268), (Start: 22 @39166 has 30 MA's), (24, 39133), (26, 39124), (28, 39109), (33, 39061), (35, 39022),

Gene: Quasar_55 Start: 39870, Stop: 39697, Start Num: 22
Candidate Starts for Quasar_55:

(2, 40089), (3, 40083), (7, 40047), (8, 40041), (11, 40011), (12, 39978), (13, 39972), (Start: 22 @39870 has 30 MA's), (24, 39837), (26, 39828), (28, 39813), (33, 39765), (35, 39726),

Gene: RADical_56 Start: 39160, Stop: 38987, Start Num: 22
Candidate Starts for RADical_56:
(2, 39379), (3, 39373), (7, 39337), (8, 39331), (11, 39301), (12, 39268), (13, 39262), (Start: 22 @39160 has 30 MA's), (24, 39127), (26, 39118), (28, 39103), (33, 39055), (35, 39016),

Gene: RSchmailzl_56 Start: 39325, Stop: 39152, Start Num: 22
Candidate Starts for RSchmailzl_56:
(2, 39544), (3, 39538), (7, 39502), (8, 39496), (11, 39466), (12, 39433), (13, 39427), (Start: 22 @39325 has 30 MA's), (24, 39292), (26, 39283), (28, 39268), (32, 39226), (33, 39220), (35, 39181),

Gene: RedBaron_61 Start: 40243, Stop: 40070, Start Num: 22
Candidate Starts for RedBaron_61:
(2, 40462), (3, 40456), (7, 40420), (8, 40414), (11, 40384), (12, 40351), (13, 40345), (16, 40294), (Start: 22 @40243 has 30 MA's), (24, 40210), (26, 40201), (28, 40186), (32, 40144), (33, 40138), (35, 40099),

Gene: SheckWes_63 Start: 41150, Stop: 40956, Start Num: 17
Candidate Starts for SheckWes_63:
(6, 41297), (9, 41288), (15, 41201), (Start: 17 @41150 has 27 MA's), (30, 41039), (33, 41024), (34, 41015), (36, 40964),

Gene: SketchMex_55 Start: 39090, Stop: 38917, Start Num: 22
Candidate Starts for SketchMex_55:
(2, 39282), (4, 39249), (8, 39234), (12, 39171), (Start: 22 @39090 has 30 MA's), (24, 39057), (32, 38991), (34, 38976), (35, 38946),

Gene: Socotra_56 Start: 39278, Stop: 39105, Start Num: 22
Candidate Starts for Socotra_56:
(2, 39497), (3, 39491), (7, 39455), (8, 39449), (11, 39419), (12, 39386), (13, 39380), (Start: 22 @39278 has 30 MA's), (24, 39245), (26, 39236), (28, 39221), (33, 39173), (35, 39134),

Gene: Sopespian_53 Start: 39167, Stop: 38994, Start Num: 22
Candidate Starts for Sopespian_53:
(2, 39386), (7, 39344), (8, 39338), (11, 39308), (12, 39275), (13, 39269), (Start: 22 @39167 has 30 MA's), (24, 39134), (26, 39125), (28, 39110), (33, 39062), (35, 39023),

Gene: Starburst_55 Start: 39162, Stop: 38989, Start Num: 22
Candidate Starts for Starburst_55:
(2, 39381), (3, 39375), (7, 39339), (8, 39333), (11, 39303), (12, 39270), (13, 39264), (Start: 22 @39162 has 30 MA's), (24, 39129), (26, 39120), (28, 39105), (33, 39057), (35, 39018),

Gene: SteamedHams_56 Start: 38665, Stop: 38492, Start Num: 22
Candidate Starts for SteamedHams_56:
(8, 38845), (10, 38821), (11, 38815), (14, 38764), (18, 38704), (Start: 22 @38665 has 30 MA's), (24, 38632), (32, 38566), (33, 38560), (35, 38521),

Gene: SummitAcademy_59 Start: 41253, Stop: 41059, Start Num: 17
Candidate Starts for SummitAcademy_59:
(1, 41592), (6, 41400), (9, 41391), (Start: 17 @41253 has 27 MA's), (23, 41214), (27, 41187), (30, 41142), (31, 41139), (33, 41127), (35, 41088), (36, 41067),

Gene: Survivors_51 Start: 38410, Stop: 38198, Start Num: 17
Candidate Starts for Survivors_51:
(9, 38548), (15, 38461), (Start: 17 @38410 has 27 MA's), (20, 38380), (23, 38350), (33, 38263),

Gene: SweatNTears_57 Start: 39409, Stop: 39236, Start Num: 22
Candidate Starts for SweatNTears_57:
(2, 39628), (3, 39622), (7, 39586), (8, 39580), (11, 39550), (12, 39517), (13, 39511), (Start: 22 @39409 has 30 MA's), (24, 39376), (26, 39367), (28, 39352), (33, 39304), (35, 39265),

Gene: Tarnish_59 Start: 41434, Stop: 41240, Start Num: 17
Candidate Starts for Tarnish_59:
(1, 41773), (6, 41581), (9, 41572), (15, 41485), (Start: 17 @41434 has 27 MA's), (23, 41395), (27, 41368), (30, 41323), (31, 41320), (33, 41308), (36, 41248),

Gene: Tolls_56 Start: 38936, Stop: 38763, Start Num: 22
Candidate Starts for Tolls_56:
(8, 39116), (10, 39092), (11, 39086), (14, 39035), (18, 38975), (Start: 22 @38936 has 30 MA's), (24, 38903), (32, 38837), (33, 38831), (35, 38792),

Gene: Troje_57 Start: 39428, Stop: 39255, Start Num: 22
Candidate Starts for Troje_57:
(2, 39620), (4, 39587), (8, 39572), (12, 39509), (Start: 22 @39428 has 30 MA's), (24, 39395), (32, 39329), (34, 39314), (35, 39284),

Gene: Typhonomachy_54 Start: 38991, Stop: 38818, Start Num: 22
Candidate Starts for Typhonomachy_54:
(2, 39210), (3, 39204), (7, 39168), (8, 39162), (11, 39132), (12, 39099), (13, 39093), (Start: 22 @38991 has 30 MA's), (24, 38958), (26, 38949), (33, 38886), (35, 38847),

Gene: Vine_62 Start: 41876, Stop: 41682, Start Num: 17
Candidate Starts for Vine_62:
(1, 42215), (6, 42023), (9, 42014), (Start: 17 @41876 has 27 MA's), (23, 41837), (27, 41810), (30, 41765), (31, 41762), (33, 41750), (35, 41711), (36, 41690),

Gene: Wallaby_53 Start: 38451, Stop: 38299, Start Num: 23
Candidate Starts for Wallaby_53:
(9, 38649), (15, 38562), (Start: 17 @38511 has 27 MA's), (20, 38481), (23, 38451), (33, 38364),

Gene: Wolfwood_51 Start: 38485, Stop: 38273, Start Num: 17
Candidate Starts for Wolfwood_51:
(9, 38623), (15, 38536), (Start: 17 @38485 has 27 MA's), (20, 38455), (23, 38425), (33, 38338),

Gene: Yarn_52 Start: 38693, Stop: 38520, Start Num: 22
Candidate Starts for Yarn_52:
(8, 38873), (10, 38849), (11, 38843), (14, 38792), (18, 38732), (Start: 22 @38693 has 30 MA's), (24, 38660), (32, 38594), (33, 38588), (35, 38549),

Gene: Yucky_62 Start: 41668, Stop: 41474, Start Num: 17
Candidate Starts for Yucky_62:
(6, 41815), (9, 41806), (Start: 17 @41668 has 27 MA's), (23, 41629), (27, 41602), (30, 41557), (31, 41554), (33, 41542), (35, 41503), (36, 41482),

Gene: Yummy_57 Start: 39137, Stop: 38964, Start Num: 22
Candidate Starts for Yummy_57:
(2, 39329), (4, 39296), (8, 39281), (12, 39218), (Start: 22 @39137 has 30 MA's), (24, 39104), (32, 39038), (34, 39023), (35, 38993),

Gene: Zareef_51 Start: 38507, Stop: 38295, Start Num: 17
Candidate Starts for Zareef_51:
(9, 38645), (15, 38558), (Start: 17 @38507 has 27 MA's), (20, 38477), (23, 38447), (33, 38360),