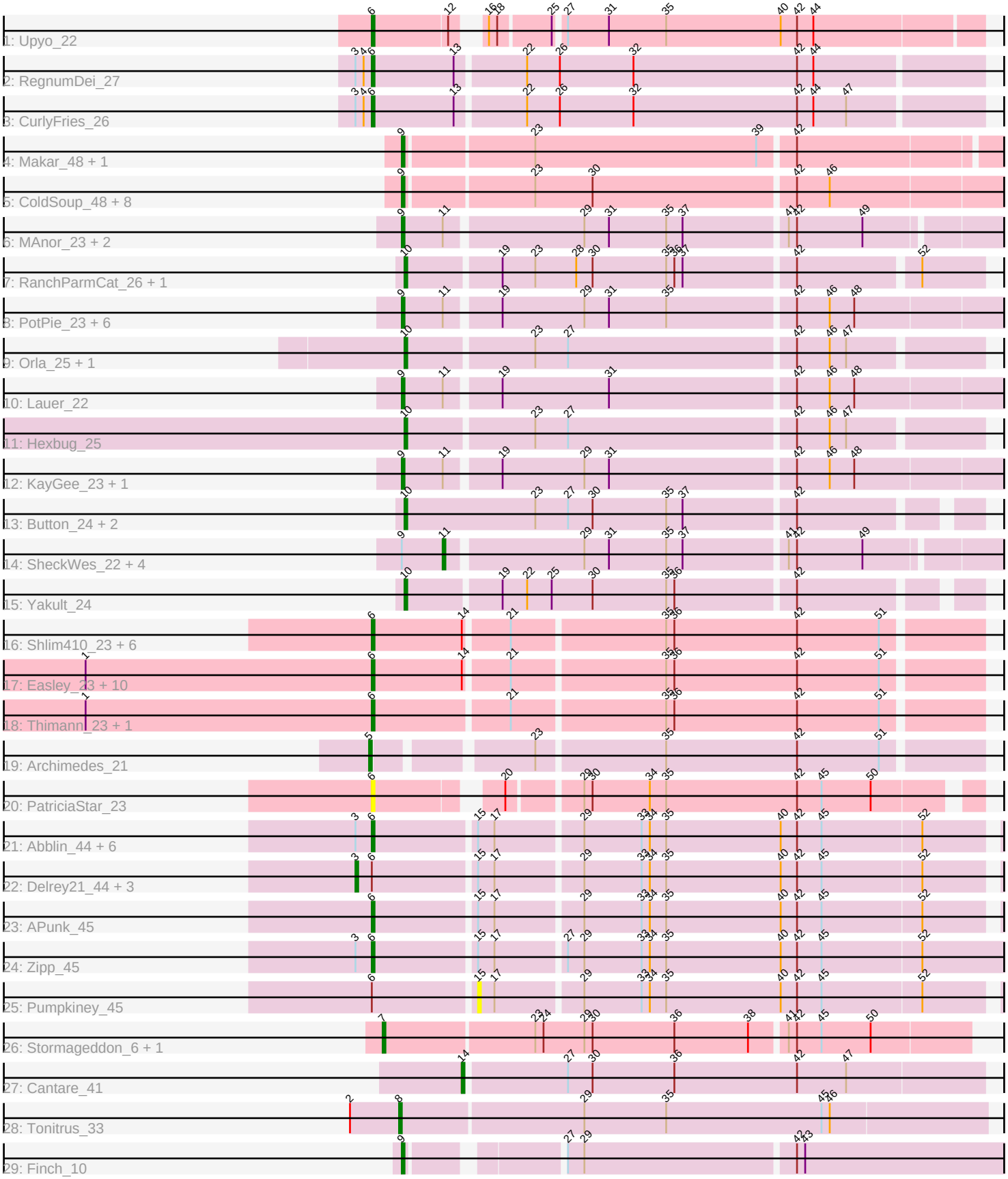
Pham 347520


1: Upyo_22
2: RegnumDei_27
3: CurlyFries_26
4: Makar_48 + 1
5: ColdSoup_48 + 8
6: MAnor_23 + 2
7: RanchParmCat_26 + 1
8: PotPie_23 + 6
9: Orla_25 + 1
10: Lauer_22
11: Hexbug_25
12: KayGee_23 + 1
13: Button_24 + 2
14: SheckWes_22 + 4
15: Yakult_24
16: Shlim410_23 + 6
17: Easley_23 + 10
18: Thimann_23 + 1
19: Archimedes_21
20: PatriciaStar_23
21: Abblin_44 + 6
22: Delrey21_44 + 3
23: APunk_45
24: Zipp_45
25: Pumpkiney_45
26: Stormageddon_6 + 1
27: Cantare_41
28: Tonitrus_33
29: Finch_10

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 347520 Report

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

Pham number 347520 has 82 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Upyo_22
• Track 2 : RegnumDei_27
• Track 3 : CurlyFries_26
• Track 4 : Makar_48, Clawz_47
• Track 5 : ColdSoup_48, KingstonB_45, Amo99_48, Soos_43, Grumio_47, DonTron_47, Jollymon_47, Stillion_46, Sting_46
• Track 6 : MAnor_23, Pons_23, Mayweather_24
• Track 7 : RanchParmCat_26, Margaret_26
• Track 8 : PotPie_23, Vine_24, Yucky_23, BigChungus_22, Bavilard_23, SummitAcademy_22, Feastonyeet_22
• Track 9 : Orla_25, Nodigi_25
• Track 10 : Lauer_22
• Track 11 : Hexbug_25
• Track 12 : KayGee_23, Elinal_24
• Track 13 : Button_24, Jamzy_26, GiKK_26
• Track 14 : SheckWes_22, ElJefes_22, Tarnish_23, McDazzle_22, CherryonLim_24
• Track 15 : Yakult_24
• Track 16 : Shlim410_23, Howe_23, Beenie_23, Twinkle_23, Mcklovin_23, Hortense_23, Adora_23
• Track 17 : Easley_23, MichaelScott_23, Dolores_23, Samman98_23, Rizz_26, Sekhmet_23, WinkNick_23, Clark_23, Annalisa_23, Oregano_23, DobbysSock_22
• Track 18 : Thimann_23, Suerte_21
• Track 19 : Archimedes_21
• Track 20 : PatriciaStar_23
• Track 21 : Abblin_44, ViaConlectus_44, Sampson_44, Natkenzie_44, BigHunkinEater_47, Zitch_47, Scioto_45
• Track 22 : Delrey21_44, Tardus_45, DoctorFroggo_44, Verity_44
• Track 23 : APunk_45
• Track 24 : Zipp_45
• Track 25 : Pumpkiney_45
• Track 26 : Stormageddon_6, RedWattleHog_6
• Track 27 : Cantare_41
• Track 28 : Tonitrus_33
• Track 29 : Finch_10

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

The start number called the most often in the published annotations is 6, it was called in 31 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• APunk_45, Abblin_44, Adora_23, Annalisa_23, Beenie_23, BigHunkinEater_47, Clark_23, CurlyFries_26, DobbysSock_22, Dolores_23, Easley_23, Hortense_23, Howe_23, Mcklovin_23, MichaelScott_23, Natkenzie_44, Oregano_23, PatriciaStar_23, RegnumDei_27, Rizz_26, Samman98_23, Sampson_44, Scioto_45, Sekhmet_23, Shlim410_23, Suerte_21, Thimann_23, Twinkle_23, Upyo_22, ViaConlectus_44, WinkNick_23, Zipp_45, Zitch_47,

Genes that have the "Most Annotated" start but do not call it:
• Delrey21_44, DoctorFroggo_44, Pumpkiney_45, Tardus_45, Verity_44,

Genes that do not have the "Most Annotated" start:
• Amo99_48, Archimedes_21, Bavilard_23, BigChungus_22, Button_24, Cantare_41, CherryonLim_24, Clawz_47, ColdSoup_48, DonTron_47, ElJefes_22, Elinal_24, Feastonyeet_22, Finch_10, GiKK_26, Grumio_47, Hexbug_25, Jamzy_26, Jollymon_47, KayGee_23, KingstonB_45, Lauer_22, MAnor_23, Makar_48, Margaret_26, Mayweather_24, McDazzle_22, Nodigi_25, Orla_25, Pons_23, PotPie_23, RanchParmCat_26, RedWattleHog_6, SheckWes_22, Soos_43, Stillion_46, Sting_46, Stormageddon_6, SummitAcademy_22, Tarnish_23, Tonitrus_33, Vine_24, Yakult_24, Yucky_23,

Summary by start number:

Start 3:
• Found in 14 of 82 (17.1%) of genes in pham
• Manual Annotations of this start: 4 of 73
• Called 28.6% of time when present
• Phage (with cluster) where this start called: Delrey21_44 (DE4), DoctorFroggo_44 (DE4), Tardus_45 (DE4), Verity_44 (DE4),

Start 5:
• Found in 1 of 82 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 73
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Archimedes_21 (DA),

Start 6:
• Found in 38 of 82 (46.3%) of genes in pham
• Manual Annotations of this start: 31 of 73
• Called 86.8% of time when present
• Phage (with cluster) where this start called: APunk_45 (DE4), Abblin_44 (DE4), Adora_23 (CZ4), Annalisa_23 (CZ4), Beenie_23 (CZ4), BigHunkinEater_47 (DE4), Clark_23 (CZ4), CurlyFries_26 (CF), DobbysSock_22 (CZ4), Dolores_23 (CZ4), Easley_23 (CZ4), Hortense_23 (CZ4), Howe_23 (CZ4), Mcklovin_23 (CZ4), MichaelScott_23 (CZ4), Natkenzie_44 (DE4), Oregano_23 (CZ4), PatriciaStar_23 (DB), RegnumDei_27 (CF), Rizz_26 (CZ4), Samman98_23 (CZ4), Sampson_44 (DE4), Scioto_45 (DE4), Sekhmet_23 (CZ4), Shlim410_23 (CZ4), Suerte_21 (CZ4),

Thimann_23 (CZ4), Twinkle_23 (CZ4), Upyo_22 (CD), ViaConlectus_44 (DE4), WinkNick_23 (CZ4), Zipp_45 (DE4), Zitch_47 (DE4),

Start 7:
• Found in 2 of 82 (2.4%) of genes in pham
• Manual Annotations of this start: 2 of 73
• Called 100.0% of time when present
• Phage (with cluster) where this start called: RedWattleHog_6 (DX), Stormageddon_6 (DX),

Start 8:
• Found in 1 of 82 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 73
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Tonitrus_33 (singleton),

Start 9:
• Found in 30 of 82 (36.6%) of genes in pham
• Manual Annotations of this start: 21 of 73
• Called 83.3% of time when present
• Phage (with cluster) where this start called: Amo99_48 (CP), Bavilard_23 (CT), BigChungus_22 (CT), Clawz_47 (CP), ColdSoup_48 (CP), DonTron_47 (CP), Elinal_24 (CT), Feastonyeet_22 (CT), Finch_10 (singleton), Grumio_47 (CP), Jollymon_47 (CP), KayGee_23 (CT), KingstonB_45 (CP), Lauer_22 (CT), MAnor_23 (CT), Makar_48 (CP), Mayweather_24 (CT), Pons_23 (CT), PotPie_23 (CT), Soos_43 (CP), Stillion_46 (CP), Sting_46 (CP), SummitAcademy_22 (CT), Vine_24 (CT), Yucky_23 (CT),

Start 10:
• Found in 9 of 82 (11.0%) of genes in pham
• Manual Annotations of this start: 9 of 73
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Button_24 (CT), GiKK_26 (CT), Hexbug_25 (CT), Jamzy_26 (CT), Margaret_26 (CT), Nodigi_25 (CT), Orla_25 (CT), RanchParmCat_26 (CT), Yakult_24 (CT),

Start 11:
• Found in 18 of 82 (22.0%) of genes in pham
• Manual Annotations of this start: 3 of 73
• Called 27.8% of time when present
• Phage (with cluster) where this start called: CherryonLim_24 (CT), ElJefes_22 (CT), McDazzle_22 (CT), SheckWes_22 (CT), Tarnish_23 (CT),

Start 14:
• Found in 19 of 82 (23.2%) of genes in pham
• Manual Annotations of this start: 1 of 73
• Called 5.3% of time when present
• Phage (with cluster) where this start called: Cantare_41 (singleton),

Start 15:
• Found in 14 of 82 (17.1%) of genes in pham
• No Manual Annotations of this start.
• Called 7.1% of time when present

• Phage (with cluster) where this start called: Pumpkiney_45 (DE4),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, DB, DE4, CF, CZ4, DA, CD, DX, CP, CT,

Info for manual annotations of cluster CD:
•Start number 6 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CF:
•Start number 6 was manually annotated 2 times for cluster CF.

Info for manual annotations of cluster CP:
•Start number 9 was manually annotated 7 times for cluster CP.

Info for manual annotations of cluster CT:
•Start number 9 was manually annotated 13 times for cluster CT.
•Start number 10 was manually annotated 9 times for cluster CT.
•Start number 11 was manually annotated 3 times for cluster CT.

Info for manual annotations of cluster CZ4:
•Start number 6 was manually annotated 19 times for cluster CZ4.

Info for manual annotations of cluster DA:
•Start number 5 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DE4:
•Start number 3 was manually annotated 4 times for cluster DE4.
•Start number 6 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DX:
•Start number 7 was manually annotated 2 times for cluster DX.

Gene Information:

Gene: APunk_45 Start: 39354, Stop: 39626, Start Num: 6
Candidate Starts for APunk_45:
(Start: 6 @39354 has 31 MA's), (15, 39390), (17, 39396), (29, 39426), (33, 39447), (34, 39450), (35, 39456), (40, 39498), (42, 39504), (45, 39513), (52, 39549),

Gene: Abblin_44 Start: 39891, Stop: 40163, Start Num: 6
Candidate Starts for Abblin_44:
(Start: 3 @39885 has 4 MA's), (Start: 6 @39891 has 31 MA's), (15, 39927), (17, 39933), (29, 39963), (33, 39984), (34, 39987), (35, 39993), (40, 40035), (42, 40041), (45, 40050), (52, 40086),

Gene: Adora_23 Start: 21051, Stop: 21284, Start Num: 6
Candidate Starts for Adora_23:
(Start: 6 @21051 has 31 MA's), (Start: 14 @21084 has 1 MA's), (21, 21099), (35, 21153), (36, 21156), (42, 21201), (51, 21231),

Gene: Amo99_48 Start: 26255, Stop: 26506, Start Num: 9
Candidate Starts for Amo99_48:
(Start: 9 @26255 has 21 MA's), (23, 26300), (30, 26321), (42, 26393), (46, 26405),

Gene: Annalisa_23 Start: 20513, Stop: 20746, Start Num: 6
Candidate Starts for Annalisa_23:
(1, 20408), (Start: 6 @20513 has 31 MA's), (Start: 14 @20546 has 1 MA's), (21, 20561), (35, 20615), (36, 20618), (42, 20663), (51, 20693),

Gene: Archimedes_21 Start: 19115, Stop: 19348, Start Num: 5
Candidate Starts for Archimedes_21:
(Start: 5 @19115 has 1 MA's), (23, 19166), (35, 19211), (42, 19259), (51, 19289),

Gene: Bavilard_23 Start: 20262, Stop: 20501, Start Num: 9
Candidate Starts for Bavilard_23:
(Start: 9 @20262 has 21 MA's), (Start: 11 @20277 has 3 MA's), (19, 20295), (29, 20325), (31, 20334), (35, 20355), (42, 20400), (46, 20412), (48, 20421),

Gene: Beenie_23 Start: 20870, Stop: 21103, Start Num: 6
Candidate Starts for Beenie_23:
(Start: 6 @20870 has 31 MA's), (Start: 14 @20903 has 1 MA's), (21, 20918), (35, 20972), (36, 20975), (42, 21020), (51, 21050),

Gene: BigChungus_22 Start: 19520, Stop: 19759, Start Num: 9
Candidate Starts for BigChungus_22:
(Start: 9 @19520 has 21 MA's), (Start: 11 @19535 has 3 MA's), (19, 19553), (29, 19583), (31, 19592), (35, 19613), (42, 19658), (46, 19670), (48, 19679),

Gene: BigHunkinEater_47 Start: 39132, Stop: 39404, Start Num: 6
Candidate Starts for BigHunkinEater_47:
(Start: 3 @39126 has 4 MA's), (Start: 6 @39132 has 31 MA's), (15, 39168), (17, 39174), (29, 39204), (33, 39225), (34, 39228), (35, 39234), (40, 39276), (42, 39282), (45, 39291), (52, 39327),

Gene: Button_24 Start: 18830, Stop: 19045, Start Num: 10
Candidate Starts for Button_24:
(Start: 10 @18830 has 9 MA's), (23, 18878), (27, 18890), (30, 18899), (35, 18926), (37, 18932), (42, 18971),

Gene: Cantare_41 Start: 39115, Stop: 39327, Start Num: 14
Candidate Starts for Cantare_41:
(Start: 14 @39115 has 1 MA's), (27, 39151), (30, 39160), (36, 39190), (42, 39235), (47, 39253),

Gene: CherryonLim_24 Start: 20248, Stop: 20469, Start Num: 11
Candidate Starts for CherryonLim_24:
(Start: 9 @20233 has 21 MA's), (Start: 11 @20248 has 3 MA's), (29, 20296), (31, 20305), (35, 20326), (37, 20332), (41, 20368), (42, 20371), (49, 20395),

Gene: Clark_23 Start: 20513, Stop: 20746, Start Num: 6
Candidate Starts for Clark_23:
(1, 20408), (Start: 6 @20513 has 31 MA's), (Start: 14 @20546 has 1 MA's), (21, 20561), (35, 20615), (36, 20618), (42, 20663), (51, 20693),

Gene: Clawz_47 Start: 26167, Stop: 26412, Start Num: 9
Candidate Starts for Clawz_47:
(Start: 9 @26167 has 21 MA's), (23, 26212), (39, 26293), (42, 26305),

Gene: ColdSoup_48 Start: 26255, Stop: 26506, Start Num: 9
Candidate Starts for ColdSoup_48:
(Start: 9 @26255 has 21 MA's), (23, 26300), (30, 26321), (42, 26393), (46, 26405),

Gene: CurlyFries_26 Start: 25359, Stop: 25610, Start Num: 6
Candidate Starts for CurlyFries_26:
(Start: 3 @25353 has 4 MA's), (4, 25356), (Start: 6 @25359 has 31 MA's), (13, 25389), (22, 25413), (26, 25425), (32, 25452), (42, 25512), (44, 25518), (47, 25530),

Gene: Delrey21_44 Start: 40650, Stop: 40928, Start Num: 3
Candidate Starts for Delrey21_44:
(Start: 3 @40650 has 4 MA's), (Start: 6 @40656 has 31 MA's), (15, 40692), (17, 40698), (29, 40728), (33, 40749), (34, 40752), (35, 40758), (40, 40800), (42, 40806), (45, 40815), (52, 40851),

Gene: DobbysSock_22 Start: 19987, Stop: 20220, Start Num: 6
Candidate Starts for DobbysSock_22:
(1, 19882), (Start: 6 @19987 has 31 MA's), (Start: 14 @20020 has 1 MA's), (21, 20035), (35, 20089), (36, 20092), (42, 20137), (51, 20167),

Gene: DoctorFroggo_44 Start: 40650, Stop: 40928, Start Num: 3
Candidate Starts for DoctorFroggo_44:
(Start: 3 @40650 has 4 MA's), (Start: 6 @40656 has 31 MA's), (15, 40692), (17, 40698), (29, 40728), (33, 40749), (34, 40752), (35, 40758), (40, 40800), (42, 40806), (45, 40815), (52, 40851),

Gene: Dolores_23 Start: 20489, Stop: 20722, Start Num: 6
Candidate Starts for Dolores_23:
(1, 20384), (Start: 6 @20489 has 31 MA's), (Start: 14 @20522 has 1 MA's), (21, 20537), (35, 20591), (36, 20594), (42, 20639), (51, 20669),

Gene: DonTron_47 Start: 26295, Stop: 26546, Start Num: 9
Candidate Starts for DonTron_47:
(Start: 9 @26295 has 21 MA's), (23, 26340), (30, 26361), (42, 26433), (46, 26445),

Gene: Easley_23 Start: 20499, Stop: 20732, Start Num: 6
Candidate Starts for Easley_23:
(1, 20394), (Start: 6 @20499 has 31 MA's), (Start: 14 @20532 has 1 MA's), (21, 20547), (35, 20601), (36, 20604), (42, 20649), (51, 20679),

Gene: ElJefes_22 Start: 19971, Stop: 20192, Start Num: 11
Candidate Starts for ElJefes_22:
(Start: 9 @19956 has 21 MA's), (Start: 11 @19971 has 3 MA's), (29, 20019), (31, 20028), (35, 20049), (37, 20055), (41, 20091), (42, 20094), (49, 20118),

Gene: Elinal_24 Start: 19473, Stop: 19712, Start Num: 9
Candidate Starts for Elinal_24:
(Start: 9 @19473 has 21 MA's), (Start: 11 @19488 has 3 MA's), (19, 19506), (29, 19536), (31, 19545), (42, 19611), (46, 19623), (48, 19632),

Gene: Feastonyeet_22 Start: 19520, Stop: 19759, Start Num: 9

Candidate Starts for Feastonyeet_22:
(Start: 9 @19520 has 21 MA's), (Start: 11 @19535 has 3 MA's), (19, 19553), (29, 19583), (31, 19592), (35, 19613), (42, 19658), (46, 19670), (48, 19679),

Gene: Finch_10 Start: 5269, Stop: 5529, Start Num: 9
Candidate Starts for Finch_10:
(Start: 9 @5269 has 21 MA's), (27, 5317), (29, 5323), (42, 5398), (43, 5401),

Gene: GiKK_26 Start: 19129, Stop: 19344, Start Num: 10
Candidate Starts for GiKK_26:
(Start: 10 @19129 has 9 MA's), (23, 19177), (27, 19189), (30, 19198), (35, 19225), (37, 19231), (42, 19270),

Gene: Grumio_47 Start: 25733, Stop: 25984, Start Num: 9
Candidate Starts for Grumio_47:
(Start: 9 @25733 has 21 MA's), (23, 25778), (30, 25799), (42, 25871), (46, 25883),

Gene: Hexbug_25 Start: 19814, Stop: 20032, Start Num: 10
Candidate Starts for Hexbug_25:
(Start: 10 @19814 has 9 MA's), (23, 19859), (27, 19871), (42, 19952), (46, 19964), (47, 19970),

Gene: Hortense_23 Start: 21098, Stop: 21331, Start Num: 6
Candidate Starts for Hortense_23:
(Start: 6 @21098 has 31 MA's), (Start: 14 @21131 has 1 MA's), (21, 21146), (35, 21200), (36, 21203), (42, 21248), (51, 21278),

Gene: Howe_23 Start: 21098, Stop: 21331, Start Num: 6
Candidate Starts for Howe_23:
(Start: 6 @21098 has 31 MA's), (Start: 14 @21131 has 1 MA's), (21, 21146), (35, 21200), (36, 21203), (42, 21248), (51, 21278),

Gene: Jamzy_26 Start: 19143, Stop: 19358, Start Num: 10
Candidate Starts for Jamzy_26:
(Start: 10 @19143 has 9 MA's), (23, 19191), (27, 19203), (30, 19212), (35, 19239), (37, 19245), (42, 19284),

Gene: Jollymon_47 Start: 26255, Stop: 26506, Start Num: 9
Candidate Starts for Jollymon_47:
(Start: 9 @26255 has 21 MA's), (23, 26300), (30, 26321), (42, 26393), (46, 26405),

Gene: KayGee_23 Start: 19473, Stop: 19712, Start Num: 9
Candidate Starts for KayGee_23:
(Start: 9 @19473 has 21 MA's), (Start: 11 @19488 has 3 MA's), (19, 19506), (29, 19536), (31, 19545), (42, 19611), (46, 19623), (48, 19632),

Gene: KingstonB_45 Start: 25733, Stop: 25984, Start Num: 9
Candidate Starts for KingstonB_45:
(Start: 9 @25733 has 21 MA's), (23, 25778), (30, 25799), (42, 25871), (46, 25883),

Gene: Lauer_22 Start: 19523, Stop: 19762, Start Num: 9
Candidate Starts for Lauer_22:
(Start: 9 @19523 has 21 MA's), (Start: 11 @19538 has 3 MA's), (19, 19556), (31, 19595), (42, 19661), (46, 19673), (48, 19682),

Gene: MAnor_23 Start: 19493, Stop: 19729, Start Num: 9
Candidate Starts for MAnor_23:
(Start: 9 @19493 has 21 MA's), (Start: 11 @19508 has 3 MA's), (29, 19556), (31, 19565), (35, 19586), (37, 19592), (41, 19628), (42, 19631), (49, 19655),

Gene: Makar_48 Start: 26194, Stop: 26439, Start Num: 9
Candidate Starts for Makar_48:
(Start: 9 @26194 has 21 MA's), (23, 26239), (39, 26320), (42, 26332),

Gene: Margaret_26 Start: 19510, Stop: 19728, Start Num: 10
Candidate Starts for Margaret_26:
(Start: 10 @19510 has 9 MA's), (19, 19543), (23, 19555), (28, 19570), (30, 19576), (35, 19603), (36, 19606), (37, 19609), (42, 19648), (52, 19690),

Gene: Mayweather_24 Start: 20109, Stop: 20345, Start Num: 9
Candidate Starts for Mayweather_24:
(Start: 9 @20109 has 21 MA's), (Start: 11 @20124 has 3 MA's), (29, 20172), (31, 20181), (35, 20202), (37, 20208), (41, 20244), (42, 20247), (49, 20271),

Gene: McDazzle_22 Start: 19965, Stop: 20186, Start Num: 11
Candidate Starts for McDazzle_22:
(Start: 9 @19950 has 21 MA's), (Start: 11 @19965 has 3 MA's), (29, 20013), (31, 20022), (35, 20043), (37, 20049), (41, 20085), (42, 20088), (49, 20112),

Gene: Mcklovin_23 Start: 23267, Stop: 23500, Start Num: 6
Candidate Starts for Mcklovin_23:
(Start: 6 @23267 has 31 MA's), (Start: 14 @23300 has 1 MA's), (21, 23315), (35, 23369), (36, 23372), (42, 23417), (51, 23447),

Gene: MichaelScott_23 Start: 20870, Stop: 21103, Start Num: 6
Candidate Starts for MichaelScott_23:
(1, 20765), (Start: 6 @20870 has 31 MA's), (Start: 14 @20903 has 1 MA's), (21, 20918), (35, 20972), (36, 20975), (42, 21020), (51, 21050),

Gene: Natkenzie_44 Start: 39891, Stop: 40163, Start Num: 6
Candidate Starts for Natkenzie_44:
(Start: 3 @39885 has 4 MA's), (Start: 6 @39891 has 31 MA's), (15, 39927), (17, 39933), (29, 39963), (33, 39984), (34, 39987), (35, 39993), (40, 40035), (42, 40041), (45, 40050), (52, 40086),

Gene: Nodigi_25 Start: 19783, Stop: 20001, Start Num: 10
Candidate Starts for Nodigi_25:
(Start: 10 @19783 has 9 MA's), (23, 19828), (27, 19840), (42, 19921), (46, 19933), (47, 19939),

Gene: Oregano_23 Start: 20535, Stop: 20768, Start Num: 6
Candidate Starts for Oregano_23:
(1, 20430), (Start: 6 @20535 has 31 MA's), (Start: 14 @20568 has 1 MA's), (21, 20583), (35, 20637), (36, 20640), (42, 20685), (51, 20715),

Gene: Orla_25 Start: 19787, Stop: 20005, Start Num: 10
Candidate Starts for Orla_25:
(Start: 10 @19787 has 9 MA's), (23, 19832), (27, 19844), (42, 19925), (46, 19937), (47, 19943),

Gene: PatriciaStar_23 Start: 21135, Stop: 21377, Start Num: 6
Candidate Starts for PatriciaStar_23:
(Start: 6 @21135 has 31 MA's), (20, 21174), (29, 21198), (30, 21201), (34, 21222), (35, 21228), (42, 21276), (45, 21285), (50, 21303),

Gene: Pons_23 Start: 19481, Stop: 19717, Start Num: 9
Candidate Starts for Pons_23:
(Start: 9 @19481 has 21 MA's), (Start: 11 @19496 has 3 MA's), (29, 19544), (31, 19553), (35, 19574), (37, 19580), (41, 19616), (42, 19619), (49, 19643),

Gene: PotPie_23 Start: 20339, Stop: 20578, Start Num: 9
Candidate Starts for PotPie_23:
(Start: 9 @20339 has 21 MA's), (Start: 11 @20354 has 3 MA's), (19, 20372), (29, 20402), (31, 20411), (35, 20432), (42, 20477), (46, 20489), (48, 20498),

Gene: Pumpkiney_45 Start: 37248, Stop: 37484, Start Num: 15
Candidate Starts for Pumpkiney_45:
(Start: 6 @37212 has 31 MA's), (15, 37248), (17, 37254), (29, 37284), (33, 37305), (34, 37308), (35, 37314), (40, 37356), (42, 37362), (45, 37371), (52, 37407),

Gene: RanchParmCat_26 Start: 19510, Stop: 19728, Start Num: 10
Candidate Starts for RanchParmCat_26:
(Start: 10 @19510 has 9 MA's), (19, 19543), (23, 19555), (28, 19570), (30, 19576), (35, 19603), (36, 19606), (37, 19609), (42, 19648), (52, 19690),

Gene: RedWattleHog_6 Start: 3833, Stop: 4042, Start Num: 7
Candidate Starts for RedWattleHog_6:
(Start: 7 @3833 has 2 MA's), (23, 3887), (24, 3890), (29, 3905), (30, 3908), (36, 3938), (38, 3965), (41, 3977), (42, 3980), (45, 3989), (50, 4007),

Gene: RegnumDei_27 Start: 26108, Stop: 26362, Start Num: 6
Candidate Starts for RegnumDei_27:
(Start: 3 @26102 has 4 MA's), (4, 26105), (Start: 6 @26108 has 31 MA's), (13, 26138), (22, 26162), (26, 26174), (32, 26201), (42, 26261), (44, 26267),

Gene: Rizz_26 Start: 20870, Stop: 21103, Start Num: 6
Candidate Starts for Rizz_26:
(1, 20765), (Start: 6 @20870 has 31 MA's), (Start: 14 @20903 has 1 MA's), (21, 20918), (35, 20972), (36, 20975), (42, 21020), (51, 21050),

Gene: Samman98_23 Start: 20504, Stop: 20737, Start Num: 6
Candidate Starts for Samman98_23:
(1, 20399), (Start: 6 @20504 has 31 MA's), (Start: 14 @20537 has 1 MA's), (21, 20552), (35, 20606), (36, 20609), (42, 20654), (51, 20684),

Gene: Sampson_44 Start: 39836, Stop: 40108, Start Num: 6
Candidate Starts for Sampson_44:
(Start: 3 @39830 has 4 MA's), (Start: 6 @39836 has 31 MA's), (15, 39872), (17, 39878), (29, 39908), (33, 39929), (34, 39932), (35, 39938), (40, 39980), (42, 39986), (45, 39995), (52, 40031),

Gene: Scioto_45 Start: 39892, Stop: 40164, Start Num: 6
Candidate Starts for Scioto_45:

(Start: 3 @39886 has 4 MA's), (Start: 6 @39892 has 31 MA's), (15, 39928), (17, 39934), (29, 39964), (33, 39985), (34, 39988), (35, 39994), (40, 40036), (42, 40042), (45, 40051), (52, 40087),

Gene: Sekhmet_23 Start: 20864, Stop: 21097, Start Num: 6
Candidate Starts for Sekhmet_23:
(1, 20759), (Start: 6 @20864 has 31 MA's), (Start: 14 @20897 has 1 MA's), (21, 20912), (35, 20966), (36, 20969), (42, 21014), (51, 21044),

Gene: SheckWes_22 Start: 19493, Stop: 19714, Start Num: 11
Candidate Starts for SheckWes_22:
(Start: 9 @19478 has 21 MA's), (Start: 11 @19493 has 3 MA's), (29, 19541), (31, 19550), (35, 19571), (37, 19577), (41, 19613), (42, 19616), (49, 19640),

Gene: Shlim410_23 Start: 21098, Stop: 21331, Start Num: 6
Candidate Starts for Shlim410_23:
(Start: 6 @21098 has 31 MA's), (Start: 14 @21131 has 1 MA's), (21, 21146), (35, 21200), (36, 21203), (42, 21248), (51, 21278),

Gene: Soos_43 Start: 25462, Stop: 25713, Start Num: 9
Candidate Starts for Soos_43:
(Start: 9 @25462 has 21 MA's), (23, 25507), (30, 25528), (42, 25600), (46, 25612),

Gene: Stillion_46 Start: 26047, Stop: 26298, Start Num: 9
Candidate Starts for Stillion_46:
(Start: 9 @26047 has 21 MA's), (23, 26092), (30, 26113), (42, 26185), (46, 26197),

Gene: Sting_46 Start: 25901, Stop: 26152, Start Num: 9
Candidate Starts for Sting_46:
(Start: 9 @25901 has 21 MA's), (23, 25946), (30, 25967), (42, 26039), (46, 26051),

Gene: Stormageddon_6 Start: 3833, Stop: 4042, Start Num: 7
Candidate Starts for Stormageddon_6:
(Start: 7 @3833 has 2 MA's), (23, 3887), (24, 3890), (29, 3905), (30, 3908), (36, 3938), (38, 3965), (41, 3977), (42, 3980), (45, 3989), (50, 4007),

Gene: Suerte_21 Start: 19988, Stop: 20221, Start Num: 6
Candidate Starts for Suerte_21:
(1, 19883), (Start: 6 @19988 has 31 MA's), (21, 20036), (35, 20090), (36, 20093), (42, 20138), (51, 20168),

Gene: SummitAcademy_22 Start: 19551, Stop: 19790, Start Num: 9
Candidate Starts for SummitAcademy_22:
(Start: 9 @19551 has 21 MA's), (Start: 11 @19566 has 3 MA's), (19, 19584), (29, 19614), (31, 19623), (35, 19644), (42, 19689), (46, 19701), (48, 19710),

Gene: Tardus_45 Start: 39240, Stop: 39518, Start Num: 3
Candidate Starts for Tardus_45:
(Start: 3 @39240 has 4 MA's), (Start: 6 @39246 has 31 MA's), (15, 39282), (17, 39288), (29, 39318), (33, 39339), (34, 39342), (35, 39348), (40, 39390), (42, 39396), (45, 39405), (52, 39441),

Gene: Tarnish_23 Start: 19864, Stop: 20085, Start Num: 11
Candidate Starts for Tarnish_23:

(Start: 9 @19849 has 21 MA's), (Start: 11 @19864 has 3 MA's), (29, 19912), (31, 19921), (35, 19942), (37, 19948), (41, 19984), (42, 19987), (49, 20011),

Gene: Thimann_23 Start: 20456, Stop: 20689, Start Num: 6
Candidate Starts for Thimann_23:
(1, 20351), (Start: 6 @20456 has 31 MA's), (21, 20504), (35, 20558), (36, 20561), (42, 20606), (51, 20636),

Gene: Tonitrus_33 Start: 22454, Stop: 22666, Start Num: 8
Candidate Starts for Tonitrus_33:
(2, 22436), (Start: 8 @22454 has 1 MA's), (29, 22520), (35, 22550), (45, 22607), (46, 22610),

Gene: Twinkle_23 Start: 22157, Stop: 22390, Start Num: 6
Candidate Starts for Twinkle_23:
(Start: 6 @22157 has 31 MA's), (Start: 14 @22190 has 1 MA's), (21, 22205), (35, 22259), (36, 22262), (42, 22307), (51, 22337),

Gene: Upyo_22 Start: 18567, Stop: 18791, Start Num: 6
Candidate Starts for Upyo_22:
(Start: 6 @18567 has 31 MA's), (12, 18594), (16, 18600), (18, 18603), (25, 18621), (27, 18624), (31, 18639), (35, 18660), (40, 18702), (42, 18708), (44, 18714),

Gene: Verity_44 Start: 40650, Stop: 40928, Start Num: 3
Candidate Starts for Verity_44:
(Start: 3 @40650 has 4 MA's), (Start: 6 @40656 has 31 MA's), (15, 40692), (17, 40698), (29, 40728), (33, 40749), (34, 40752), (35, 40758), (40, 40800), (42, 40806), (45, 40815), (52, 40851),

Gene: ViaConlectus_44 Start: 38526, Stop: 38798, Start Num: 6
Candidate Starts for ViaConlectus_44:
(Start: 3 @38520 has 4 MA's), (Start: 6 @38526 has 31 MA's), (15, 38562), (17, 38568), (29, 38598), (33, 38619), (34, 38622), (35, 38628), (40, 38670), (42, 38676), (45, 38685), (52, 38721),

Gene: Vine_24 Start: 20486, Stop: 20725, Start Num: 9
Candidate Starts for Vine_24:
(Start: 9 @20486 has 21 MA's), (Start: 11 @20501 has 3 MA's), (19, 20519), (29, 20549), (31, 20558), (35, 20579), (42, 20624), (46, 20636), (48, 20645),

Gene: WinkNick_23 Start: 20489, Stop: 20722, Start Num: 6
Candidate Starts for WinkNick_23:
(1, 20384), (Start: 6 @20489 has 31 MA's), (Start: 14 @20522 has 1 MA's), (21, 20537), (35, 20591), (36, 20594), (42, 20639), (51, 20669),

Gene: Yakult_24 Start: 19364, Stop: 19576, Start Num: 10
Candidate Starts for Yakult_24:
(Start: 10 @19364 has 9 MA's), (19, 19397), (22, 19406), (25, 19415), (30, 19430), (35, 19457), (36, 19460), (42, 19502),

Gene: Yucky_23 Start: 20345, Stop: 20584, Start Num: 9
Candidate Starts for Yucky_23:
(Start: 9 @20345 has 21 MA's), (Start: 11 @20360 has 3 MA's), (19, 20378), (29, 20408), (31, 20417), (35, 20438), (42, 20483), (46, 20495), (48, 20504),

Gene: Zipp_45 Start: 40565, Stop: 40843, Start Num: 6

Candidate Starts for Zipp_45:
(Start: 3 @40559 has 4 MA's), (Start: 6 @40565 has 31 MA's), (15, 40601), (17, 40607), (27, 40631), (29, 40637), (33, 40658), (34, 40661), (35, 40667), (40, 40709), (42, 40715), (45, 40724), (52, 40760),

Gene: Zitch_47 Start: 38681, Stop: 38953, Start Num: 6
Candidate Starts for Zitch_47:
(Start: 3 @38675 has 4 MA's), (Start: 6 @38681 has 31 MA's), (15, 38717), (17, 38723), (29, 38753), (33, 38774), (34, 38777), (35, 38783), (40, 38825), (42, 38831), (45, 38840), (52, 38876),