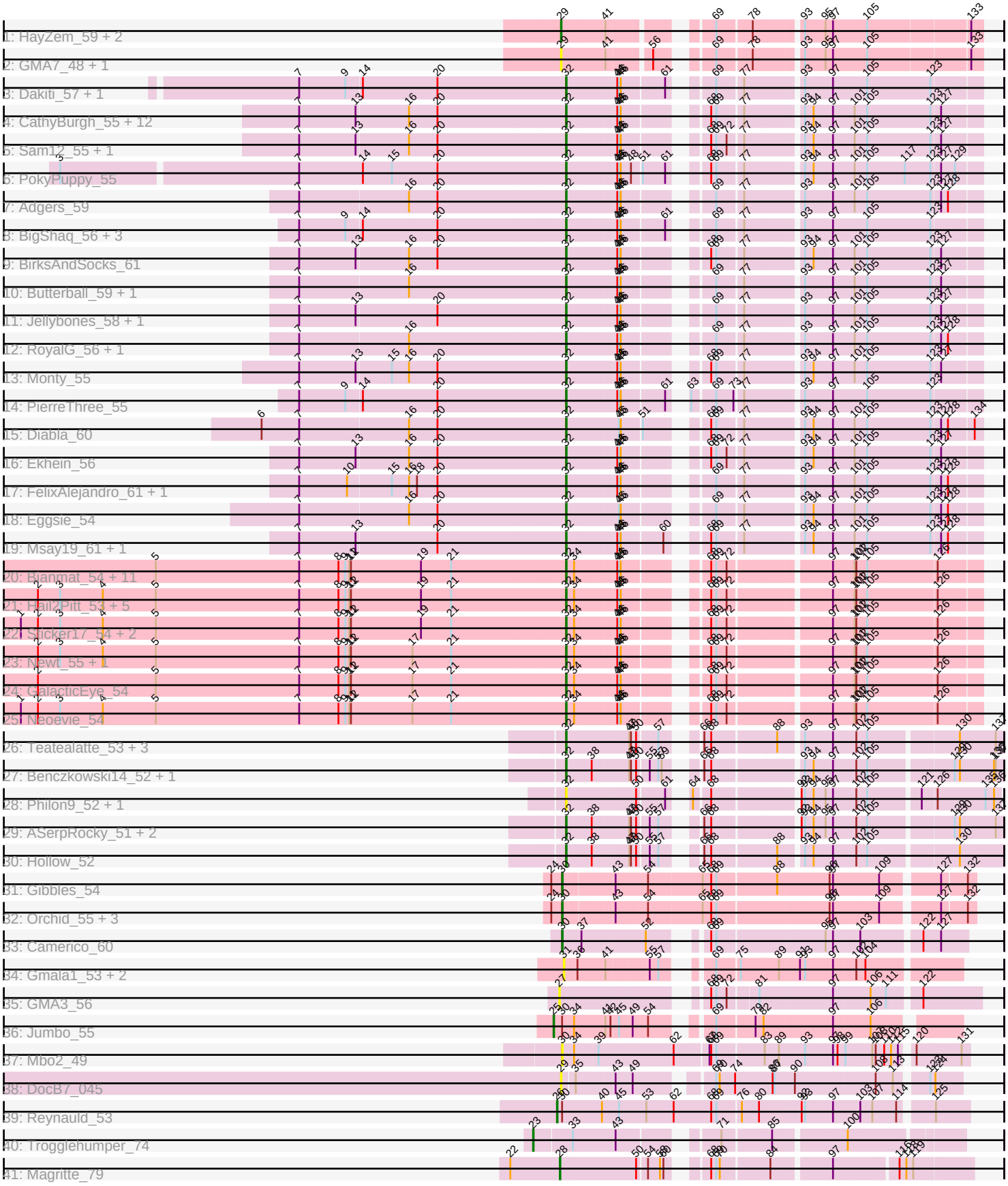
Pham 216041


1: HayZem_59 + 2
2: GMA7_48 + 1
3: Dakiti_57 + 1
4: CathyBurgh_55 + 12
5: Sam12_55 + 1
6: PokyPuppy_55
7: Adgers_59
8: BigShaq_56 + 3
9: BirksAndSocks_61
10: Butterball_59 + 1
11: Jellybones_58 + 1
12: RoyalG_56 + 1
13: Monty_55
14: PierreThree_55
15: Diabla_60
16: Ekhein_56
17: FelixAlejandro_61 + 1
18: Eggsie_54
19: Msay19_61 + 1
20: Bianmat_54 + 11
21: Hail2Pitt_53 + 5
22: Sticker17_54 + 2
23: Newt_55 + 1
24: GalacticEye_54
25: Neoevie_54
26: Teatealatte_53 + 3
27: Benczkowski14_52 + 1
28: Philon9_52 + 1
29: ASerpRocky_51 + 2
30: Hollow_52
31: Gibbles_54
32: Orchid_55 + 3
33: Camerico_60
34: Gmala1_53 + 2
35: GMA3_56
36: Jumbo_55
37: Mbo2_49
38: DocB7_045
39: Reynauld_53
40: Trogglehumper_74
41: Magritte_79

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 216041 Report

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

Pham number 216041 has 97 members, 18 are drafts.

Phages represented in each track:
- Track 1 : HayZem_59, Austin_58, Amore2_59
- Track 2 : GMA7_48, GTE7_47
- Track 3 : Dakiti_57, Chelms_56
- Track 4 : CathyBurgh_55, John316_59, GourdThymes_56, Squibbles_55, RemRem_57, Worcestershire_56, Hotorobo_56, Barbochs_56, Flakey_55, Gorko_55, Lizzo_56, Breezic_56, Beaver_59
- Track 5 : Sam12_55, Exiguo_55
- Track 6 : PokyPuppy_55
- Track 7 : Adgers_59
- Track 8 : BigShaq_56, Linetti_56, BenoitCattle_56, Crete_57
- Track 9 : BirksAndSocks_61
- Track 10 : Butterball_59, Boneham_60
- Track 11 : Jellybones_58, CinnamonToast_62
- Track 12 : RoyalG_56, SteveFrench_55
- Track 13 : Monty_55
- Track 14 : PierreThree_55
- Track 15 : Diabla_60
- Track 16 : Ekhein_56
- Track 17 : FelixAlejandro_61, Sombrero_57
- Track 18 : Eggsie_54
- Track 19 : Msay19_61, Poland_61
- Track 20 : Bianmat_54, Jormungandr_54, Charianelly_54, Nimi13_54, Shelley_54, MrWormie_54, Lahirium_54, Kaseim_54, Lidong_54, Berries_54, Guillaume_54, Jams_54
- Track 21 : Hail2Pitt_53, Luker_55, Anamika_54, Damp_54, Hello_54, Minos_55
- Track 22 : Sticker17_54, Harambe_54, Woes_54
- Track 23 : Newt_55, Teal_54
- Track 24 : GalacticEye_54
- Track 25 : Neoevie_54
- Track 26 : Teatealatte_53, Tredge_53, Niagara_52, Teech_52
- Track 27 : Benczkowski14_52, Katyusha_52
- Track 28 : Philon9_52, Vitaenoii_52
- Track 29 : ASerpRocky_51, Demosthenes_51, Kvothe_51
- Track 30 : Hollow_52
- Track 31 : Gibbles_54
- Track 32 : Orchid_55, RobinSparkles_59, PatrickStar_56, Kampe_56
- Track 33 : Camerico_60

• Track 34 : Gmala1_53, GordDuk1_57, GordTnk2_58
• Track 35 : GMA3_56
• Track 36 : Jumbo_55
• Track 37 : Mbo2_49
• Track 38 : DocB7_045
• Track 39 : Reynauld_53
• Track 40 : Trogglehumper_74
• Track 41 : Magritte_79

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

The start number called the most often in the published annotations is 32, it was called in 66 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ASerpRocky_51, Adgers_59, Anamika_54, Barbochs_56, Beaver_59, Benczkowski14_52, BenoitCattle_56, Berries_54, Bianmat_54, BigShaq_56, BirksAndSocks_61, Boneham_60, Breezic_56, Butterball_59, CathyBurgh_55, Charianelly_54, Chelms_56, CinnamonToast_62, Crete_57, Dakiti_57, Damp_54, Demosthenes_51, Diabla_60, Eggsie_54, Ekhein_56, Exiguo_55, FelixAlejandro_61, Flakey_55, GalacticEye_54, Gorko_55, GourdThymes_56, Guillaume_54, Hail2Pitt_53, Harambe_54, Hello_54, Hollow_52, Hotorobo_56, Jams_54, Jellybones_58, John316_59, Jormungandr_54, Kaseim_54, Katyusha_52, Kvothe_51, Lahirium_54, Lidong_54, Linetti_56, Lizzo_56, Luker_55, Minos_55, Monty_55, MrWormie_54, Msay19_61, Neoevie_54, Newt_55, Niagara_52, Nimi13_54, Philon9_52, PierreThree_55, PokyPuppy_55, Poland_61, RemRem_57, RoyalG_56, Sam12_55, Shelley_54, Sombrero_57, Squibbles_55, SteveFrench_55, Sticker17_54, Teal_54, Teatealatte_53, Teech_52, Tredge_53, Vitaenoii_52, Woes_54, Worcestershire_56,

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

Genes that do not have the "Most Annotated" start:
• Amore2_59, Austin_58, Camerico_60, DocB7_045, GMA3_56, GMA7_48, GTE7_47, Gibbles_54, Gmala1_53, GordDuk1_57, GordTnk2_58, HayZem_59, Jumbo_55, Kampe_56, Magritte_79, Mbo2_49, Orchid_55, PatrickStar_56, Reynauld_53, RobinSparkles_59, Trogglehumper_74,

Summary by start number:

Start 23:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Trogglehumper_74 (singleton),

Start 25:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 79

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jumbo_55 (DF3),

Start 26:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Reynauld_53 (singleton),

Start 27:
• Found in 1 of 97 (1.0%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GMA3_56 (DF2),

Start 28:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Magritte_79 (singleton),

Start 29:
• Found in 6 of 97 (6.2%) of genes in pham
• Manual Annotations of this start: 3 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amore2_59 (CS1), Austin_58 (CS1), DocB7_045 (singleton), GMA7_48 (CS1), GTE7_47 (CS1), HayZem_59 (CS1),

Start 30:
• Found in 9 of 97 (9.3%) of genes in pham
• Manual Annotations of this start: 6 of 79
• Called 77.8% of time when present
• Phage (with cluster) where this start called: Camerico_60 (DF), Gibbles_54 (CX), Kampe_56 (CX), Mbo2_49 (singleton), Orchid_55 (CX), PatrickStar_56 (CX), RobinSparkles_59 (CX),

Start 31:
• Found in 3 of 97 (3.1%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Gmala1_53 (DF1), GordDuk1_57 (DF1), GordTnk2_58 (DF1),

Start 32:
• Found in 76 of 97 (78.4%) of genes in pham
• Manual Annotations of this start: 66 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ASerpRocky_51 (CS4), Adgers_59 (CS2), Anamika_54 (CS3), Barbochs_56 (CS2), Beaver_59 (CS2), Benczkowski14_52 (CS4), BenoitCattle_56 (CS2), Berries_54 (CS3), Bianmat_54 (CS3), BigShaq_56 (CS2), BirksAndSocks_61 (CS2), Boneham_60 (CS2), Breezic_56 (CS2), Butterball_59 (CS2), CathyBurgh_55 (CS2), Charianelly_54 (CS3), Chelms_56 (CS2), CinnamonToast_62 (CS2), Crete_57 (CS2), Dakiti_57 (CS2),

Damp_54 (CS3), Demosthenes_51 (CS4), Diabla_60 (CS2), Eggsie_54 (CS2), Ekhein_56 (CS2), Exiguo_55 (CS2), FelixAlejandro_61 (CS2), Flakey_55 (CS2), GalacticEye_54 (CS3), Gorko_55 (CS2), GourdThymes_56 (CS2), Guillaume_54 (CS3), Hail2Pitt_53 (CS3), Harambe_54 (CS3), Hello_54 (CS3), Hollow_52 (CS4), Hotorobo_56 (CS2), Jams_54 (CS3), Jellybones_58 (CS2), John316_59 (CS2), Jormungandr_54 (CS3), Kaseim_54 (CS3), Katyusha_52 (CS4), Kvothe_51 (CS4), Lahirium_54 (CS3), Lidong_54 (CS3), Linetti_56 (CS2), Lizzo_56 (CS2), Luker_55 (CS3), Minos_55 (CS3), Monty_55 (CS2), MrWormie_54 (CS3), Msay19_61 (CS2), Neoevie_54 (CS3), Newt_55 (CS3), Niagara_52 (CS4), Nimi13_54 (CS3), Philon9_52 (CS4), PierreThree_55 (CS2), PokyPuppy_55 (CS2), Poland_61 (CS2), RemRem_57 (CS2), RoyalG_56 (CS2), Sam12_55 (CS2), Shelley_54 (CS3), Sombrero_57 (CS2), Squibbles_55 (CS2), SteveFrench_55 (CS2), Sticker17_54 (CS3), Teal_54 (CS3), Teatealatte_53 (CS4), Teech_52 (CS4), Tredge_53 (CS4), Vitaenoii_52 (CS4), Woes_54 (CS3), Worcestershire_56 (CS2),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, DF, DF1, DF3, DF2, CX, CS4, CS1, CS3, CS2,

Info for manual annotations of cluster CS1:
•Start number 29 was manually annotated 3 times for cluster CS1.

Info for manual annotations of cluster CS2:
•Start number 32 was manually annotated 33 times for cluster CS2.

Info for manual annotations of cluster CS3:
•Start number 32 was manually annotated 24 times for cluster CS3.

Info for manual annotations of cluster CS4:
•Start number 32 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CX:
•Start number 30 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF:
•Start number 30 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:
•Start number 25 was manually annotated 1 time for cluster DF3.

Gene Information:

Gene: ASerpRocky_51 Start: 50470, Stop: 49820, Start Num: 32
Candidate Starts for ASerpRocky_51:
(Start: 32 @50470 has 66 MA's), (38, 50431), (47, 50371), (48, 50368), (50, 50362), (55, 50347), (57, 50332), (66, 50296), (68, 50284), (92, 50152), (93, 50146), (94, 50131), (95, 50110), (97, 50098), (102, 50062), (105, 50044), (129, 49906), (130, 49897), (137, 49834),

Gene: Adgers_59 Start: 49923, Stop: 49297, Start Num: 32
Candidate Starts for Adgers_59:
(7, 50382), (16, 50193), (20, 50145), (Start: 32 @49923 has 66 MA's), (44, 49845), (45, 49842), (46, 49839), (69, 49725), (77, 49683), (93, 49593), (97, 49545), (101, 49512), (105, 49491), (123, 49380), (127, 49365), (128, 49353),

Gene: Amore2_59 Start: 50370, Stop: 49750, Start Num: 29
Candidate Starts for Amore2_59:
(Start: 29 @50370 has 3 MA's), (41, 50304), (69, 50172), (78, 50115), (93, 50040), (95, 50004), (97, 49992), (105, 49938), (133, 49770),

Gene: Anamika_54 Start: 50720, Stop: 50094, Start Num: 32
Candidate Starts for Anamika_54:
(2, 51641), (3, 51602), (4, 51527), (5, 51434), (7, 51182), (8, 51113), (9, 51101), (11, 51095), (12, 51092), (19, 50969), (21, 50918), (Start: 32 @50720 has 66 MA's), (34, 50708), (44, 50642), (45, 50639), (46, 50636), (68, 50531), (69, 50522), (72, 50504), (97, 50342), (101, 50309), (102, 50306), (105, 50288), (126, 50168),

Gene: Austin_58 Start: 50368, Stop: 49748, Start Num: 29
Candidate Starts for Austin_58:
(Start: 29 @50368 has 3 MA's), (41, 50302), (69, 50170), (78, 50113), (93, 50038), (95, 50002), (97, 49990), (105, 49936), (133, 49768),

Gene: Barbochs_56 Start: 49467, Stop: 48841, Start Num: 32
Candidate Starts for Barbochs_56:
(7, 49926), (13, 49827), (16, 49737), (20, 49689), (Start: 32 @49467 has 66 MA's), (44, 49389), (45, 49386), (46, 49383), (68, 49278), (69, 49269), (77, 49227), (93, 49137), (94, 49122), (97, 49089), (101, 49056), (105, 49035), (123, 48924), (127, 48909),

Gene: Beaver_59 Start: 51237, Stop: 50611, Start Num: 32
Candidate Starts for Beaver_59:
(7, 51696), (13, 51597), (16, 51507), (20, 51459), (Start: 32 @51237 has 66 MA's), (44, 51159), (45, 51156), (46, 51153), (68, 51048), (69, 51039), (77, 50997), (93, 50907), (94, 50892), (97, 50859), (101, 50826), (105, 50805), (123, 50694), (127, 50679),

Gene: Benczkowski14_52 Start: 50741, Stop: 50091, Start Num: 32
Candidate Starts for Benczkowski14_52:
(Start: 32 @50741 has 66 MA's), (38, 50702), (47, 50642), (48, 50639), (50, 50633), (55, 50618), (57, 50603), (59, 50597), (66, 50567), (68, 50555), (93, 50417), (94, 50402), (97, 50369), (102, 50333), (105, 50315), (129, 50177), (130, 50168), (136, 50108), (137, 50105),

Gene: BenoitCattle_56 Start: 49874, Stop: 49248, Start Num: 32
Candidate Starts for BenoitCattle_56:
(7, 50333), (9, 50252), (14, 50225), (20, 50096), (Start: 32 @49874 has 66 MA's), (44, 49796), (45, 49793), (46, 49790), (61, 49721), (69, 49676), (77, 49634), (93, 49544), (97, 49496), (105, 49442), (123, 49331),

Gene: Berries_54 Start: 50692, Stop: 50066, Start Num: 32
Candidate Starts for Berries_54:
(5, 51406), (7, 51154), (8, 51085), (9, 51073), (11, 51067), (12, 51064), (19, 50941), (21, 50890), (Start: 32 @50692 has 66 MA's), (34, 50680), (44, 50614), (45, 50611), (46, 50608), (68, 50503), (69, 50494), (72, 50476), (97, 50314), (101, 50281), (102, 50278), (105, 50260), (126, 50140),

Gene: Bianmat_54 Start: 50732, Stop: 50106, Start Num: 32
Candidate Starts for Bianmat_54:
(5, 51446), (7, 51194), (8, 51125), (9, 51113), (11, 51107), (12, 51104), (19, 50981), (21, 50930), (Start: 32 @50732 has 66 MA's), (34, 50720), (44, 50654), (45, 50651), (46, 50648), (68, 50543), (69, 50534), (72, 50516), (97, 50354), (101, 50321), (102, 50318), (105, 50300), (126, 50180),

Gene: BigShaq_56 Start: 49879, Stop: 49253, Start Num: 32
Candidate Starts for BigShaq_56:
(7, 50338), (9, 50257), (14, 50230), (20, 50101), (Start: 32 @49879 has 66 MA's), (44, 49801), (45, 49798), (46, 49795), (61, 49726), (69, 49681), (77, 49639), (93, 49549), (97, 49501), (105, 49447), (123, 49336),

Gene: BirksAndSocks_61 Start: 51587, Stop: 50961, Start Num: 32
Candidate Starts for BirksAndSocks_61:
(7, 52046), (13, 51947), (16, 51857), (20, 51809), (Start: 32 @51587 has 66 MA's), (44, 51509), (45, 51506), (46, 51503), (68, 51398), (69, 51389), (77, 51347), (93, 51257), (94, 51242), (97, 51209), (101, 51176), (105, 51155), (123, 51044), (127, 51029),

Gene: Boneham_60 Start: 51488, Stop: 50862, Start Num: 32
Candidate Starts for Boneham_60:
(7, 51947), (16, 51758), (Start: 32 @51488 has 66 MA's), (44, 51410), (45, 51407), (46, 51404), (69, 51290), (77, 51248), (93, 51158), (97, 51110), (101, 51077), (105, 51056), (123, 50945), (127, 50930),

Gene: Breezic_56 Start: 49480, Stop: 48854, Start Num: 32
Candidate Starts for Breezic_56:
(7, 49939), (13, 49840), (16, 49750), (20, 49702), (Start: 32 @49480 has 66 MA's), (44, 49402), (45, 49399), (46, 49396), (68, 49291), (69, 49282), (77, 49240), (93, 49150), (94, 49135), (97, 49102), (101, 49069), (105, 49048), (123, 48937), (127, 48922),

Gene: Butterball_59 Start: 51493, Stop: 50867, Start Num: 32
Candidate Starts for Butterball_59:
(7, 51952), (16, 51763), (Start: 32 @51493 has 66 MA's), (44, 51415), (45, 51412), (46, 51409), (69, 51295), (77, 51253), (93, 51163), (97, 51115), (101, 51082), (105, 51061), (123, 50950), (127, 50935),

Gene: Camerico_60 Start: 52716, Stop: 52111, Start Num: 30
Candidate Starts for Camerico_60:
(Start: 30 @52716 has 6 MA's), (37, 52686), (52, 52587), (68, 52524), (69, 52515), (95, 52335), (97, 52323), (103, 52281), (122, 52185), (127, 52155),

Gene: CathyBurgh_55 Start: 50057, Stop: 49431, Start Num: 32
Candidate Starts for CathyBurgh_55:
(7, 50516), (13, 50417), (16, 50327), (20, 50279), (Start: 32 @50057 has 66 MA's), (44, 49979), (45, 49976), (46, 49973), (68, 49868), (69, 49859), (77, 49817), (93, 49727), (94, 49712), (97, 49679), (101, 49646), (105, 49625), (123, 49514), (127, 49499),

Gene: Charianelly_54 Start: 50442, Stop: 49816, Start Num: 32
Candidate Starts for Charianelly_54:
(5, 51156), (7, 50904), (8, 50835), (9, 50823), (11, 50817), (12, 50814), (19, 50691), (21, 50640), (Start: 32 @50442 has 66 MA's), (34, 50430), (44, 50364), (45, 50361), (46, 50358), (68, 50253), (69, 50244), (72, 50226), (97, 50064), (101, 50031), (102, 50028), (105, 50010), (126, 49890),

Gene: Chelms_56 Start: 50023, Stop: 49397, Start Num: 32
Candidate Starts for Chelms_56:

(7, 50482), (9, 50401), (14, 50374), (20, 50245), (Start: 32 @50023 has 66 MA's), (44, 49945), (45, 49942), (46, 49939), (61, 49870), (69, 49825), (77, 49783), (93, 49693), (97, 49645), (105, 49591), (123, 49480),

Gene: CinnamonToast_62 Start: 51547, Stop: 50921, Start Num: 32
Candidate Starts for CinnamonToast_62:
(7, 52006), (13, 51907), (20, 51769), (Start: 32 @51547 has 66 MA's), (44, 51469), (45, 51466), (46, 51463), (69, 51349), (77, 51307), (93, 51217), (97, 51169), (101, 51136), (105, 51115), (123, 51004), (127, 50989),

Gene: Crete_57 Start: 50145, Stop: 49519, Start Num: 32
Candidate Starts for Crete_57:
(7, 50604), (9, 50523), (14, 50496), (20, 50367), (Start: 32 @50145 has 66 MA's), (44, 50067), (45, 50064), (46, 50061), (61, 49992), (69, 49947), (77, 49905), (93, 49815), (97, 49767), (105, 49713), (123, 49602),

Gene: Dakiti_57 Start: 50891, Stop: 50265, Start Num: 32
Candidate Starts for Dakiti_57:
(7, 51350), (9, 51269), (14, 51242), (20, 51113), (Start: 32 @50891 has 66 MA's), (44, 50813), (45, 50810), (46, 50807), (61, 50738), (69, 50693), (77, 50651), (93, 50561), (97, 50513), (105, 50459), (123, 50348),

Gene: Damp_54 Start: 49606, Stop: 48980, Start Num: 32
Candidate Starts for Damp_54:
(2, 50527), (3, 50488), (4, 50413), (5, 50320), (7, 50068), (8, 49999), (9, 49987), (11, 49981), (12, 49978), (19, 49855), (21, 49804), (Start: 32 @49606 has 66 MA's), (34, 49594), (44, 49528), (45, 49525), (46, 49522), (68, 49417), (69, 49408), (72, 49390), (97, 49228), (101, 49195), (102, 49192), (105, 49174), (126, 49054),

Gene: Demosthenes_51 Start: 50446, Stop: 49796, Start Num: 32
Candidate Starts for Demosthenes_51:
(Start: 32 @50446 has 66 MA's), (38, 50407), (47, 50347), (48, 50344), (50, 50338), (55, 50323), (57, 50308), (66, 50272), (68, 50260), (92, 50128), (93, 50122), (94, 50107), (95, 50086), (97, 50074), (102, 50038), (105, 50020), (129, 49882), (130, 49873), (137, 49810),

Gene: Diabla_60 Start: 51546, Stop: 50920, Start Num: 32
Candidate Starts for Diabla_60:
(6, 52071), (7, 52005), (16, 51816), (20, 51768), (Start: 32 @51546 has 66 MA's), (45, 51465), (46, 51462), (51, 51429), (68, 51357), (69, 51348), (77, 51306), (93, 51216), (94, 51201), (97, 51168), (101, 51135), (105, 51114), (123, 51003), (127, 50988), (128, 50976), (134, 50934),

Gene: DocB7_045 Start: 41920, Stop: 41297, Start Num: 29
Candidate Starts for DocB7_045:
(Start: 29 @41920 has 3 MA's), (35, 41899), (43, 41839), (49, 41812), (69, 41707), (70, 41701), (74, 41674), (86, 41608), (87, 41605), (90, 41569), (108, 41431), (113, 41401), (123, 41353), (124, 41344),

Gene: Eggsie_54 Start: 49323, Stop: 48697, Start Num: 32
Candidate Starts for Eggsie_54:
(7, 49782), (16, 49593), (20, 49545), (Start: 32 @49323 has 66 MA's), (45, 49242), (46, 49239), (69, 49125), (77, 49083), (93, 48993), (94, 48978), (97, 48945), (101, 48912), (105, 48891), (123, 48780), (127, 48765), (128, 48753),

Gene: Ekhein_56 Start: 49185, Stop: 48559, Start Num: 32

Candidate Starts for Ekhein_56:
(7, 49644), (13, 49545), (16, 49455), (20, 49407), (Start: 32 @49185 has 66 MA's), (44, 49107), (45, 49104), (46, 49101), (68, 48996), (69, 48987), (72, 48969), (77, 48945), (93, 48855), (94, 48840), (97, 48807), (101, 48774), (105, 48753), (123, 48642), (127, 48627),

Gene: Exiguo_55 Start: 49197, Stop: 48571, Start Num: 32
Candidate Starts for Exiguo_55:
(7, 49656), (13, 49557), (16, 49467), (20, 49419), (Start: 32 @49197 has 66 MA's), (44, 49119), (45, 49116), (46, 49113), (68, 49008), (69, 48999), (72, 48981), (77, 48957), (93, 48867), (94, 48852), (97, 48819), (101, 48786), (105, 48765), (123, 48654), (127, 48639),

Gene: FelixAlejandro_61 Start: 51891, Stop: 51265, Start Num: 32
Candidate Starts for FelixAlejandro_61:
(7, 52350), (10, 52266), (15, 52191), (16, 52161), (18, 52149), (20, 52113), (Start: 32 @51891 has 66 MA's), (44, 51813), (45, 51810), (46, 51807), (69, 51693), (77, 51651), (93, 51561), (97, 51513), (101, 51480), (105, 51459), (123, 51348), (127, 51333), (128, 51321),

Gene: Flakey_55 Start: 50061, Stop: 49435, Start Num: 32
Candidate Starts for Flakey_55:
(7, 50520), (13, 50421), (16, 50331), (20, 50283), (Start: 32 @50061 has 66 MA's), (44, 49983), (45, 49980), (46, 49977), (68, 49872), (69, 49863), (77, 49821), (93, 49731), (94, 49716), (97, 49683), (101, 49650), (105, 49629), (123, 49518), (127, 49503),

Gene: GMA3_56 Start: 49106, Stop: 48480, Start Num: 27
Candidate Starts for GMA3_56:
(27, 49106), (68, 48908), (69, 48899), (72, 48881), (81, 48836), (97, 48713), (106, 48653), (111, 48626), (122, 48578),

Gene: GMA7_48 Start: 44584, Stop: 43964, Start Num: 29
Candidate Starts for GMA7_48:
(Start: 29 @44584 has 3 MA's), (41, 44518), (56, 44452), (69, 44386), (78, 44329), (93, 44254), (95, 44218), (97, 44206), (105, 44152), (133, 43984),

Gene: GTE7_47 Start: 44615, Stop: 43995, Start Num: 29
Candidate Starts for GTE7_47:
(Start: 29 @44615 has 3 MA's), (41, 44549), (56, 44483), (69, 44417), (78, 44360), (93, 44285), (95, 44249), (97, 44237), (105, 44183), (133, 44015),

Gene: GalacticEye_54 Start: 50403, Stop: 49777, Start Num: 32
Candidate Starts for GalacticEye_54:
(2, 51324), (5, 51117), (7, 50865), (8, 50796), (9, 50784), (11, 50778), (12, 50775), (17, 50667), (21, 50601), (Start: 32 @50403 has 66 MA's), (34, 50391), (44, 50325), (45, 50322), (46, 50319), (68, 50214), (69, 50205), (72, 50187), (97, 50025), (101, 49992), (102, 49989), (105, 49971), (126, 49851),

Gene: Gibbles_54 Start: 48737, Stop: 48075, Start Num: 30
Candidate Starts for Gibbles_54:
(24, 48755), (Start: 30 @48737 has 6 MA's), (43, 48659), (54, 48605), (65, 48512), (68, 48497), (69, 48488), (88, 48392), (96, 48305), (97, 48299), (109, 48221), (127, 48131), (132, 48089),

Gene: Gmala1_53 Start: 46814, Stop: 46224, Start Num: 31
Candidate Starts for Gmala1_53:
(31, 46814), (36, 46793), (41, 46751), (55, 46682), (57, 46667), (69, 46616), (75, 46580), (89, 46517), (91, 46484), (93, 46475), (97, 46427), (102, 46391), (104, 46376),

Gene: GordDuk1_57 Start: 47378, Stop: 46788, Start Num: 31
Candidate Starts for GordDuk1_57:
(31, 47378), (36, 47357), (41, 47315), (55, 47246), (57, 47231), (69, 47180), (75, 47144), (89, 47081), (91, 47048), (93, 47039), (97, 46991), (102, 46955), (104, 46940),

Gene: GordTnk2_58 Start: 47532, Stop: 46942, Start Num: 31
Candidate Starts for GordTnk2_58:
(31, 47532), (36, 47511), (41, 47469), (55, 47400), (57, 47385), (69, 47334), (75, 47298), (89, 47235), (91, 47202), (93, 47193), (97, 47145), (102, 47109), (104, 47094),

Gene: Gorko_55 Start: 49189, Stop: 48563, Start Num: 32
Candidate Starts for Gorko_55:
(7, 49648), (13, 49549), (16, 49459), (20, 49411), (Start: 32 @49189 has 66 MA's), (44, 49111), (45, 49108), (46, 49105), (68, 49000), (69, 48991), (77, 48949), (93, 48859), (94, 48844), (97, 48811), (101, 48778), (105, 48757), (123, 48646), (127, 48631),

Gene: GourdThymes_56 Start: 50063, Stop: 49437, Start Num: 32
Candidate Starts for GourdThymes_56:
(7, 50522), (13, 50423), (16, 50333), (20, 50285), (Start: 32 @50063 has 66 MA's), (44, 49985), (45, 49982), (46, 49979), (68, 49874), (69, 49865), (77, 49823), (93, 49733), (94, 49718), (97, 49685), (101, 49652), (105, 49631), (123, 49520), (127, 49505),

Gene: Guillaume_54 Start: 50453, Stop: 49827, Start Num: 32
Candidate Starts for Guillaume_54:
(5, 51167), (7, 50915), (8, 50846), (9, 50834), (11, 50828), (12, 50825), (19, 50702), (21, 50651), (Start: 32 @50453 has 66 MA's), (34, 50441), (44, 50375), (45, 50372), (46, 50369), (68, 50264), (69, 50255), (72, 50237), (97, 50075), (101, 50042), (102, 50039), (105, 50021), (126, 49901),

Gene: Hail2Pitt_53 Start: 50929, Stop: 50303, Start Num: 32
Candidate Starts for Hail2Pitt_53:
(2, 51850), (3, 51811), (4, 51736), (5, 51643), (7, 51391), (8, 51322), (9, 51310), (11, 51304), (12, 51301), (19, 51178), (21, 51127), (Start: 32 @50929 has 66 MA's), (34, 50917), (44, 50851), (45, 50848), (46, 50845), (68, 50740), (69, 50731), (72, 50713), (97, 50551), (101, 50518), (102, 50515), (105, 50497), (126, 50377),

Gene: Harambe_54 Start: 50720, Stop: 50094, Start Num: 32
Candidate Starts for Harambe_54:
(1, 51671), (2, 51641), (3, 51602), (4, 51527), (5, 51434), (7, 51182), (8, 51113), (9, 51101), (11, 51095), (12, 51092), (19, 50969), (21, 50918), (Start: 32 @50720 has 66 MA's), (34, 50708), (44, 50642), (45, 50639), (46, 50636), (68, 50531), (69, 50522), (72, 50504), (97, 50342), (101, 50309), (102, 50306), (105, 50288), (126, 50168),

Gene: HayZem_59 Start: 50367, Stop: 49747, Start Num: 29
Candidate Starts for HayZem_59:
(Start: 29 @50367 has 3 MA's), (41, 50301), (69, 50169), (78, 50112), (93, 50037), (95, 50001), (97, 49989), (105, 49935), (133, 49767),

Gene: Hello_54 Start: 50682, Stop: 50056, Start Num: 32
Candidate Starts for Hello_54:
(2, 51603), (3, 51564), (4, 51489), (5, 51396), (7, 51144), (8, 51075), (9, 51063), (11, 51057), (12, 51054), (19, 50931), (21, 50880), (Start: 32 @50682 has 66 MA's), (34, 50670), (44, 50604), (45, 50601), (46, 50598), (68, 50493), (69, 50484), (72, 50466), (97, 50304), (101, 50271), (102, 50268),

(105, 50250), (126, 50130),

Gene: Hollow_52 Start: 50922, Stop: 50272, Start Num: 32
Candidate Starts for Hollow_52:
(Start: 32 @50922 has 66 MA's), (38, 50883), (47, 50823), (48, 50820), (50, 50814), (55, 50799), (57, 50784), (66, 50748), (68, 50736), (88, 50631), (93, 50598), (94, 50583), (97, 50550), (102, 50514), (105, 50496), (130, 50349),

Gene: Hotorobo_56 Start: 50068, Stop: 49442, Start Num: 32
Candidate Starts for Hotorobo_56:
(7, 50527), (13, 50428), (16, 50338), (20, 50290), (Start: 32 @50068 has 66 MA's), (44, 49990), (45, 49987), (46, 49984), (68, 49879), (69, 49870), (77, 49828), (93, 49738), (94, 49723), (97, 49690), (101, 49657), (105, 49636), (123, 49525), (127, 49510),

Gene: Jams_54 Start: 49892, Stop: 49266, Start Num: 32
Candidate Starts for Jams_54:
(5, 50606), (7, 50354), (8, 50285), (9, 50273), (11, 50267), (12, 50264), (19, 50141), (21, 50090), (Start: 32 @49892 has 66 MA's), (34, 49880), (44, 49814), (45, 49811), (46, 49808), (68, 49703), (69, 49694), (72, 49676), (97, 49514), (101, 49481), (102, 49478), (105, 49460), (126, 49340),

Gene: Jellybones_58 Start: 51163, Stop: 50537, Start Num: 32
Candidate Starts for Jellybones_58:
(7, 51622), (13, 51523), (20, 51385), (Start: 32 @51163 has 66 MA's), (44, 51085), (45, 51082), (46, 51079), (69, 50965), (77, 50923), (93, 50833), (97, 50785), (101, 50752), (105, 50731), (123, 50620), (127, 50605),

Gene: John316_59 Start: 51226, Stop: 50600, Start Num: 32
Candidate Starts for John316_59:
(7, 51685), (13, 51586), (16, 51496), (20, 51448), (Start: 32 @51226 has 66 MA's), (44, 51148), (45, 51145), (46, 51142), (68, 51037), (69, 51028), (77, 50986), (93, 50896), (94, 50881), (97, 50848), (101, 50815), (105, 50794), (123, 50683), (127, 50668),

Gene: Jormungandr_54 Start: 50435, Stop: 49809, Start Num: 32
Candidate Starts for Jormungandr_54:
(5, 51149), (7, 50897), (8, 50828), (9, 50816), (11, 50810), (12, 50807), (19, 50684), (21, 50633), (Start: 32 @50435 has 66 MA's), (34, 50423), (44, 50357), (45, 50354), (46, 50351), (68, 50246), (69, 50237), (72, 50219), (97, 50057), (101, 50024), (102, 50021), (105, 50003), (126, 49883),

Gene: Jumbo_55 Start: 51510, Stop: 50908, Start Num: 25
Candidate Starts for Jumbo_55:
(Start: 25 @51510 has 1 MA's), (Start: 30 @51495 has 6 MA's), (34, 51477), (41, 51429), (42, 51420), (45, 51408), (49, 51387), (54, 51363), (69, 51288), (79, 51228), (82, 51216), (97, 51099), (106, 51039),

Gene: Kampe_56 Start: 48715, Stop: 48053, Start Num: 30
Candidate Starts for Kampe_56:
(24, 48733), (Start: 30 @48715 has 6 MA's), (43, 48637), (54, 48583), (65, 48490), (68, 48475), (69, 48466), (96, 48283), (97, 48277), (109, 48199), (127, 48109), (132, 48067),

Gene: Kaseim_54 Start: 49877, Stop: 49251, Start Num: 32
Candidate Starts for Kaseim_54:
(5, 50591), (7, 50339), (8, 50270), (9, 50258), (11, 50252), (12, 50249), (19, 50126), (21, 50075), (Start: 32 @49877 has 66 MA's), (34, 49865), (44, 49799), (45, 49796), (46, 49793), (68, 49688), (69, 49679), (72, 49661), (97, 49499), (101, 49466), (102, 49463), (105, 49445), (126, 49325),

Gene: Katyusha_52 Start: 50741, Stop: 50091, Start Num: 32
Candidate Starts for Katyusha_52:
(Start: 32 @50741 has 66 MA's), (38, 50702), (47, 50642), (48, 50639), (50, 50633), (55, 50618), (57, 50603), (59, 50597), (66, 50567), (68, 50555), (93, 50417), (94, 50402), (97, 50369), (102, 50333), (105, 50315), (129, 50177), (130, 50168), (136, 50108), (137, 50105),

Gene: Kvothe_51 Start: 50640, Stop: 49990, Start Num: 32
Candidate Starts for Kvothe_51:
(Start: 32 @50640 has 66 MA's), (38, 50601), (47, 50541), (48, 50538), (50, 50532), (55, 50517), (57, 50502), (66, 50466), (68, 50454), (92, 50322), (93, 50316), (94, 50301), (95, 50280), (97, 50268), (102, 50232), (105, 50214), (129, 50076), (130, 50067), (137, 50004),

Gene: Lahirium_54 Start: 50957, Stop: 50331, Start Num: 32
Candidate Starts for Lahirium_54:
(5, 51671), (7, 51419), (8, 51350), (9, 51338), (11, 51332), (12, 51329), (19, 51206), (21, 51155), (Start: 32 @50957 has 66 MA's), (34, 50945), (44, 50879), (45, 50876), (46, 50873), (68, 50768), (69, 50759), (72, 50741), (97, 50579), (101, 50546), (102, 50543), (105, 50525), (126, 50405),

Gene: Lidong_54 Start: 50692, Stop: 50066, Start Num: 32
Candidate Starts for Lidong_54:
(5, 51406), (7, 51154), (8, 51085), (9, 51073), (11, 51067), (12, 51064), (19, 50941), (21, 50890), (Start: 32 @50692 has 66 MA's), (34, 50680), (44, 50614), (45, 50611), (46, 50608), (68, 50503), (69, 50494), (72, 50476), (97, 50314), (101, 50281), (102, 50278), (105, 50260), (126, 50140),

Gene: Linetti_56 Start: 50876, Stop: 50250, Start Num: 32
Candidate Starts for Linetti_56:
(7, 51335), (9, 51254), (14, 51227), (20, 51098), (Start: 32 @50876 has 66 MA's), (44, 50798), (45, 50795), (46, 50792), (61, 50723), (69, 50678), (77, 50636), (93, 50546), (97, 50498), (105, 50444), (123, 50333),

Gene: Lizzo_56 Start: 50057, Stop: 49431, Start Num: 32
Candidate Starts for Lizzo_56:
(7, 50516), (13, 50417), (16, 50327), (20, 50279), (Start: 32 @50057 has 66 MA's), (44, 49979), (45, 49976), (46, 49973), (68, 49868), (69, 49859), (77, 49817), (93, 49727), (94, 49712), (97, 49679), (101, 49646), (105, 49625), (123, 49514), (127, 49499),

Gene: Luker_55 Start: 50910, Stop: 50284, Start Num: 32
Candidate Starts for Luker_55:
(2, 51831), (3, 51792), (4, 51717), (5, 51624), (7, 51372), (8, 51303), (9, 51291), (11, 51285), (12, 51282), (19, 51159), (21, 51108), (Start: 32 @50910 has 66 MA's), (34, 50898), (44, 50832), (45, 50829), (46, 50826), (68, 50721), (69, 50712), (72, 50694), (97, 50532), (101, 50499), (102, 50496), (105, 50478), (126, 50358),

Gene: Magritte_79 Start: 66166, Stop: 66795, Start Num: 28
Candidate Starts for Magritte_79:
(22, 66079), (Start: 28 @66166 has 1 MA's), (50, 66298), (54, 66313), (58, 66334), (60, 66340), (68, 66382), (69, 66391), (70, 66397), (84, 66478), (97, 66571), (116, 66673), (118, 66685), (119, 66697),

Gene: Mbo2_49 Start: 40996, Stop: 40346, Start Num: 30
Candidate Starts for Mbo2_49:
(Start: 30 @40996 has 6 MA's), (34, 40975), (39, 40936), (62, 40816), (67, 40762), (68, 40759), (69, 40750), (83, 40675), (89, 40651), (93, 40609), (97, 40561), (98, 40555), (99, 40543), (107, 40498),

(108, 40492), (110, 40477), (112, 40465), (115, 40453), (120, 40438), (131, 40360),

Gene: Minos_55 Start: 50434, Stop: 49808, Start Num: 32
Candidate Starts for Minos_55:
(2, 51355), (3, 51316), (4, 51241), (5, 51148), (7, 50896), (8, 50827), (9, 50815), (11, 50809), (12, 50806), (19, 50683), (21, 50632), (Start: 32 @50434 has 66 MA's), (34, 50422), (44, 50356), (45, 50353), (46, 50350), (68, 50245), (69, 50236), (72, 50218), (97, 50056), (101, 50023), (102, 50020), (105, 50002), (126, 49882),

Gene: Monty_55 Start: 49207, Stop: 48581, Start Num: 32
Candidate Starts for Monty_55:
(7, 49666), (13, 49567), (15, 49507), (16, 49477), (20, 49429), (Start: 32 @49207 has 66 MA's), (44, 49129), (45, 49126), (46, 49123), (68, 49018), (69, 49009), (77, 48967), (93, 48877), (94, 48862), (97, 48829), (101, 48796), (105, 48775), (123, 48664), (127, 48649),

Gene: MrWormie_54 Start: 49595, Stop: 48969, Start Num: 32
Candidate Starts for MrWormie_54:
(5, 50309), (7, 50057), (8, 49988), (9, 49976), (11, 49970), (12, 49967), (19, 49844), (21, 49793), (Start: 32 @49595 has 66 MA's), (34, 49583), (44, 49517), (45, 49514), (46, 49511), (68, 49406), (69, 49397), (72, 49379), (97, 49217), (101, 49184), (102, 49181), (105, 49163), (126, 49043),

Gene: Msay19_61 Start: 51777, Stop: 51151, Start Num: 32
Candidate Starts for Msay19_61:
(7, 52236), (13, 52137), (20, 51999), (Start: 32 @51777 has 66 MA's), (44, 51699), (45, 51696), (46, 51693), (60, 51627), (68, 51588), (69, 51579), (77, 51537), (93, 51447), (94, 51432), (97, 51399), (101, 51366), (105, 51345), (123, 51234), (127, 51219), (128, 51207),

Gene: Neoevie_54 Start: 50696, Stop: 50070, Start Num: 32
Candidate Starts for Neoevie_54:
(1, 51647), (2, 51617), (3, 51578), (4, 51503), (5, 51410), (7, 51158), (8, 51089), (9, 51077), (11, 51071), (12, 51068), (17, 50960), (21, 50894), (Start: 32 @50696 has 66 MA's), (34, 50684), (44, 50618), (45, 50615), (46, 50612), (68, 50507), (69, 50498), (72, 50480), (97, 50318), (101, 50285), (102, 50282), (105, 50264), (126, 50144),

Gene: Newt_55 Start: 50924, Stop: 50298, Start Num: 32
Candidate Starts for Newt_55:
(2, 51845), (3, 51806), (4, 51731), (5, 51638), (7, 51386), (8, 51317), (9, 51305), (11, 51299), (12, 51296), (17, 51188), (21, 51122), (Start: 32 @50924 has 66 MA's), (34, 50912), (44, 50846), (45, 50843), (46, 50840), (68, 50735), (69, 50726), (72, 50708), (97, 50546), (101, 50513), (102, 50510), (105, 50492), (126, 50372),

Gene: Niagara_52 Start: 50731, Stop: 50081, Start Num: 32
Candidate Starts for Niagara_52:
(Start: 32 @50731 has 66 MA's), (47, 50632), (48, 50629), (50, 50623), (57, 50593), (66, 50557), (68, 50545), (88, 50440), (93, 50407), (97, 50359), (102, 50323), (105, 50305), (130, 50158), (137, 50095),

Gene: Nimi13_54 Start: 50443, Stop: 49817, Start Num: 32
Candidate Starts for Nimi13_54:
(5, 51157), (7, 50905), (8, 50836), (9, 50824), (11, 50818), (12, 50815), (19, 50692), (21, 50641), (Start: 32 @50443 has 66 MA's), (34, 50431), (44, 50365), (45, 50362), (46, 50359), (68, 50254), (69, 50245), (72, 50227), (97, 50065), (101, 50032), (102, 50029), (105, 50011), (126, 49891),

Gene: Orchid_55 Start: 48716, Stop: 48054, Start Num: 30

Candidate Starts for Orchid_55:
(24, 48734), (Start: 30 @48716 has 6 MA's), (43, 48638), (54, 48584), (65, 48491), (68, 48476), (69, 48467), (96, 48284), (97, 48278), (109, 48200), (127, 48110), (132, 48068),

Gene: PatrickStar_56 Start: 48715, Stop: 48053, Start Num: 30
Candidate Starts for PatrickStar_56:
(24, 48733), (Start: 30 @48715 has 6 MA's), (43, 48637), (54, 48583), (65, 48490), (68, 48475), (69, 48466), (96, 48283), (97, 48277), (109, 48199), (127, 48109), (132, 48067),

Gene: Philon9_52 Start: 51588, Stop: 50944, Start Num: 32
Candidate Starts for Philon9_52:
(Start: 32 @51588 has 66 MA's), (50, 51480), (61, 51438), (64, 51426), (68, 51402), (92, 51270), (93, 51264), (94, 51249), (95, 51228), (97, 51216), (102, 51180), (105, 51162), (121, 51078), (126, 51054), (135, 50970), (136, 50955),

Gene: PierreThree_55 Start: 50522, Stop: 49896, Start Num: 32
Candidate Starts for PierreThree_55:
(7, 50981), (9, 50900), (14, 50873), (20, 50744), (Start: 32 @50522 has 66 MA's), (44, 50444), (45, 50441), (46, 50438), (61, 50369), (63, 50360), (69, 50324), (73, 50294), (77, 50282), (93, 50192), (97, 50144), (105, 50090), (123, 49979),

Gene: PokyPuppy_55 Start: 50516, Stop: 49890, Start Num: 32
Candidate Starts for PokyPuppy_55:
(3, 51380), (7, 50978), (14, 50867), (15, 50816), (20, 50738), (Start: 32 @50516 has 66 MA's), (44, 50438), (45, 50435), (46, 50432), (48, 50414), (51, 50399), (61, 50363), (68, 50327), (69, 50318), (77, 50276), (93, 50186), (94, 50171), (97, 50138), (101, 50105), (105, 50084), (117, 50018), (123, 49973), (127, 49958), (129, 49934),

Gene: Poland_61 Start: 51756, Stop: 51130, Start Num: 32
Candidate Starts for Poland_61:
(7, 52215), (13, 52116), (20, 51978), (Start: 32 @51756 has 66 MA's), (44, 51678), (45, 51675), (46, 51672), (60, 51606), (68, 51567), (69, 51558), (77, 51516), (93, 51426), (94, 51411), (97, 51378), (101, 51345), (105, 51324), (123, 51213), (127, 51198), (128, 51186),

Gene: RemRem_57 Start: 49197, Stop: 48571, Start Num: 32
Candidate Starts for RemRem_57:
(7, 49656), (13, 49557), (16, 49467), (20, 49419), (Start: 32 @49197 has 66 MA's), (44, 49119), (45, 49116), (46, 49113), (68, 49008), (69, 48999), (77, 48957), (93, 48867), (94, 48852), (97, 48819), (101, 48786), (105, 48765), (123, 48654), (127, 48639),

Gene: Reynauld_53 Start: 48643, Stop: 47975, Start Num: 26
Candidate Starts for Reynauld_53:
(Start: 26 @48643 has 1 MA's), (Start: 30 @48634 has 6 MA's), (40, 48568), (45, 48544), (53, 48502), (62, 48454), (68, 48388), (69, 48379), (76, 48340), (80, 48313), (92, 48244), (93, 48238), (97, 48190), (103, 48148), (107, 48127), (114, 48085), (125, 48034),

Gene: RobinSparkles_59 Start: 49268, Stop: 48606, Start Num: 30
Candidate Starts for RobinSparkles_59:
(24, 49286), (Start: 30 @49268 has 6 MA's), (43, 49190), (54, 49136), (65, 49043), (68, 49028), (69, 49019), (96, 48836), (97, 48830), (109, 48752), (127, 48662), (132, 48620),

Gene: RoyalG_56 Start: 49972, Stop: 49346, Start Num: 32
Candidate Starts for RoyalG_56:

(7, 50431), (16, 50242), (Start: 32 @49972 has 66 MA's), (44, 49894), (45, 49891), (46, 49888), (69, 49774), (77, 49732), (93, 49642), (97, 49594), (101, 49561), (105, 49540), (123, 49429), (127, 49414), (128, 49402),

Gene: Sam12_55 Start: 49197, Stop: 48571, Start Num: 32
Candidate Starts for Sam12_55:
(7, 49656), (13, 49557), (16, 49467), (20, 49419), (Start: 32 @49197 has 66 MA's), (44, 49119), (45, 49116), (46, 49113), (68, 49008), (69, 48999), (72, 48981), (77, 48957), (93, 48867), (94, 48852), (97, 48819), (101, 48786), (105, 48765), (123, 48654), (127, 48639),

Gene: Shelley_54 Start: 49919, Stop: 49293, Start Num: 32
Candidate Starts for Shelley_54:
(5, 50633), (7, 50381), (8, 50312), (9, 50300), (11, 50294), (12, 50291), (19, 50168), (21, 50117), (Start: 32 @49919 has 66 MA's), (34, 49907), (44, 49841), (45, 49838), (46, 49835), (68, 49730), (69, 49721), (72, 49703), (97, 49541), (101, 49508), (102, 49505), (105, 49487), (126, 49367),

Gene: Sombrero_57 Start: 49764, Stop: 49138, Start Num: 32
Candidate Starts for Sombrero_57:
(7, 50223), (10, 50139), (15, 50064), (16, 50034), (18, 50022), (20, 49986), (Start: 32 @49764 has 66 MA's), (44, 49686), (45, 49683), (46, 49680), (69, 49566), (77, 49524), (93, 49434), (97, 49386), (101, 49353), (105, 49332), (123, 49221), (127, 49206), (128, 49194),

Gene: Squibbles_55 Start: 50060, Stop: 49434, Start Num: 32
Candidate Starts for Squibbles_55:
(7, 50519), (13, 50420), (16, 50330), (20, 50282), (Start: 32 @50060 has 66 MA's), (44, 49982), (45, 49979), (46, 49976), (68, 49871), (69, 49862), (77, 49820), (93, 49730), (94, 49715), (97, 49682), (101, 49649), (105, 49628), (123, 49517), (127, 49502),

Gene: SteveFrench_55 Start: 50212, Stop: 49586, Start Num: 32
Candidate Starts for SteveFrench_55:
(7, 50671), (16, 50482), (Start: 32 @50212 has 66 MA's), (44, 50134), (45, 50131), (46, 50128), (69, 50014), (77, 49972), (93, 49882), (97, 49834), (101, 49801), (105, 49780), (123, 49669), (127, 49654), (128, 49642),

Gene: Sticker17_54 Start: 50434, Stop: 49808, Start Num: 32
Candidate Starts for Sticker17_54:
(1, 51385), (2, 51355), (3, 51316), (4, 51241), (5, 51148), (7, 50896), (8, 50827), (9, 50815), (11, 50809), (12, 50806), (19, 50683), (21, 50632), (Start: 32 @50434 has 66 MA's), (34, 50422), (44, 50356), (45, 50353), (46, 50350), (68, 50245), (69, 50236), (72, 50218), (97, 50056), (101, 50023), (102, 50020), (105, 50002), (126, 49882),

Gene: Teal_54 Start: 50901, Stop: 50275, Start Num: 32
Candidate Starts for Teal_54:
(2, 51822), (3, 51783), (4, 51708), (5, 51615), (7, 51363), (8, 51294), (9, 51282), (11, 51276), (12, 51273), (17, 51165), (21, 51099), (Start: 32 @50901 has 66 MA's), (34, 50889), (44, 50823), (45, 50820), (46, 50817), (68, 50712), (69, 50703), (72, 50685), (97, 50523), (101, 50490), (102, 50487), (105, 50469), (126, 50349),

Gene: Teatealatte_53 Start: 50643, Stop: 49993, Start Num: 32
Candidate Starts for Teatealatte_53:
(Start: 32 @50643 has 66 MA's), (47, 50544), (48, 50541), (50, 50535), (57, 50505), (66, 50469), (68, 50457), (88, 50352), (93, 50319), (97, 50271), (102, 50235), (105, 50217), (130, 50070), (137, 50007),

Gene: Teech_52 Start: 50444, Stop: 49794, Start Num: 32
Candidate Starts for Teech_52:
(Start: 32 @50444 has 66 MA's), (47, 50345), (48, 50342), (50, 50336), (57, 50306), (66, 50270), (68, 50258), (88, 50153), (93, 50120), (97, 50072), (102, 50036), (105, 50018), (130, 49871), (137, 49808),

Gene: Tredge_53 Start: 50643, Stop: 49993, Start Num: 32
Candidate Starts for Tredge_53:
(Start: 32 @50643 has 66 MA's), (47, 50544), (48, 50541), (50, 50535), (57, 50505), (66, 50469), (68, 50457), (88, 50352), (93, 50319), (97, 50271), (102, 50235), (105, 50217), (130, 50070), (137, 50007),

Gene: Trogglehumper_74 Start: 57897, Stop: 57250, Start Num: 23
Candidate Starts for Trogglehumper_74:
(Start: 23 @57897 has 1 MA's), (33, 57834), (43, 57765), (71, 57627), (85, 57552), (100, 57438),

Gene: Vitaenoii_52 Start: 51587, Stop: 50943, Start Num: 32
Candidate Starts for Vitaenoii_52:
(Start: 32 @51587 has 66 MA's), (50, 51479), (61, 51437), (64, 51425), (68, 51401), (92, 51269), (93, 51263), (94, 51248), (95, 51227), (97, 51215), (102, 51179), (105, 51161), (121, 51077), (126, 51053), (135, 50969), (136, 50954),

Gene: Woes_54 Start: 50952, Stop: 50326, Start Num: 32
Candidate Starts for Woes_54:
(1, 51903), (2, 51873), (3, 51834), (4, 51759), (5, 51666), (7, 51414), (8, 51345), (9, 51333), (11, 51327), (12, 51324), (19, 51201), (21, 51150), (Start: 32 @50952 has 66 MA's), (34, 50940), (44, 50874), (45, 50871), (46, 50868), (68, 50763), (69, 50754), (72, 50736), (97, 50574), (101, 50541), (102, 50538), (105, 50520), (126, 50400),

Gene: Worcestershire_56 Start: 49199, Stop: 48573, Start Num: 32
Candidate Starts for Worcestershire_56:
(7, 49658), (13, 49559), (16, 49469), (20, 49421), (Start: 32 @49199 has 66 MA's), (44, 49121), (45, 49118), (46, 49115), (68, 49010), (69, 49001), (77, 48959), (93, 48869), (94, 48854), (97, 48821), (101, 48788), (105, 48767), (123, 48656), (127, 48641),