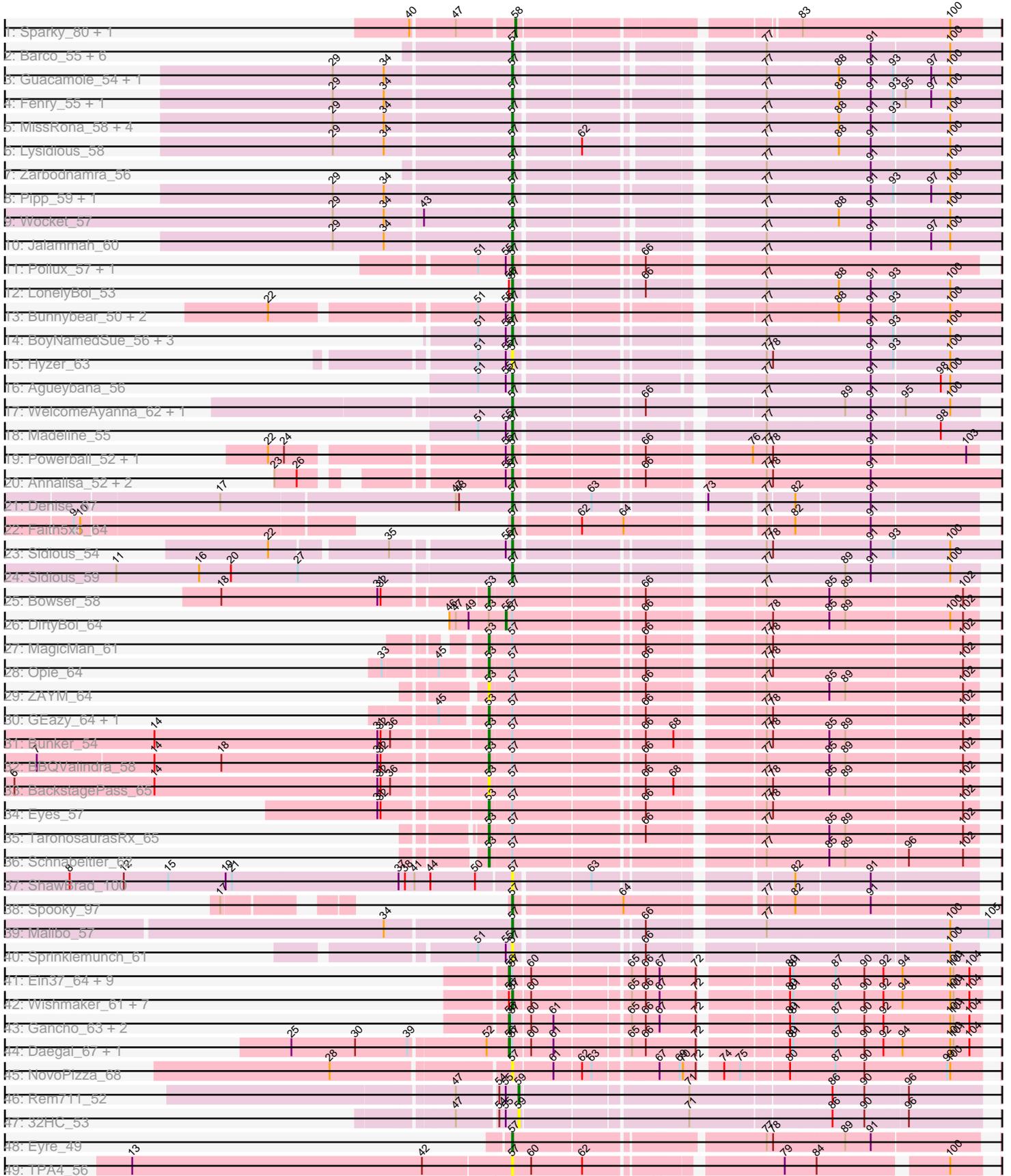Zoomed Pham 283686

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 283686 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283686 has 93 members, 13 are drafts.

Phages represented in each track:
• Track 1 : Sparky_80, Farewell_81
• Track 2 : Barco_55, Hitter_57, Delian_60, CaptainKirk2_57, MintFen_57, Samba_56, Zilla_56
• Track 3 : Guacamole_54, JasperJr_54
• Track 4 : Fenry_55, Petra_53
• Track 5 : MissRona_58, Gambino_60, Mellie_55, Azula_58, Blueberry_57
• Track 6 : Lysidious_58
• Track 7 : Zarbodnamra_56
• Track 8 : Pipp_59, Walrus_55
• Track 9 : Wocket_57
• Track 10 : Jalammah_60
• Track 11 : Pollux_57, Floral_55
• Track 12 : LonelyBoi_53
• Track 13 : Bunnybear_50, Madavieve_52, Maridalia_58
• Track 14 : BoyNamedSue_56, Marteena_53, AlumE_56, EMsquaredA_54
• Track 15 : Hyzer_63
• Track 16 : Agueybana_56
• Track 17 : WelcomeAyanna_62, ThankyouJordi_62
• Track 18 : Madeline_55
• Track 19 : Powerball_52, PhriskyACE_51
• Track 20 : Annalisa_52, Oregano_55, Tuti_55
• Track 21 : Denise_67
• Track 22 : Faith5x5_64
• Track 23 : Sidious_54
• Track 24 : Sidious_59
• Track 25 : Bowser_58
• Track 26 : DirtyBoi_64
• Track 27 : MagicMan_61
• Track 28 : Opie_64
• Track 29 : ZAYM_64
• Track 30 : GEazy_64, HannahD_61
• Track 31 : Bunker_54
• Track 32 : BBQValindra_58
• Track 33 : BackstagePass_65
• Track 34 : Eyes_57
• Track 35 : TaronosaurasRx_65
• Track 36 : Schnabeltier_62

• Track 37 : ShawBrad_100
• Track 38 : Spooky_97
• Track 39 : Malibo_57
• Track 40 : Sprinklemunch_61
• Track 41 : Ein37_64, Kinbote_63, DeepSoil15_64, HH92_63, Webster2_64, LilHazelnut_64, Giles_61, Dewey_61, Hadrien_63, Evanesce_63
• Track 42 : Wishmaker_61, Ubuntu_64, Luna22_61, BloominB_64, Luke_63, Hail_61, Amymech_64, Forge_61
• Track 43 : Gancho_63, OBUpride_64, Gravaillia_62
• Track 44 : Daegal_67, Amochick_65
• Track 45 : NovoPizza_68
• Track 46 : Rem711_52
• Track 47 : 32HC_53
• Track 48 : Eyre_49
• Track 49 : TPA4_56

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

The start number called the most often in the published annotations is 57, it was called in 51 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agueybana_56, AlumE_56, Amymech_64, Annalisa_52, Azula_58, Barco_55, BloominB_64, Blueberry_57, BoyNamedSue_56, Bunnybear_50, CaptainKirk2_57, Delian_60, Denise_67, EMsquaredA_54, Eyre_49, Faith5x5_64, Fenry_55, Floral_55, Forge_61, Gambino_60, Guacamole_54, Hail_61, Hitter_57, Hyzer_63, Jalammah_60, JasperJr_54, LonelyBoi_53, Luke_63, Luna22_61, Lysidious_58, Madavieve_52, Madeline_55, Malibo_57, Maridalia_58, Marteena_53, Mellie_55, MintFen_57, MissRona_58, NovoPizza_68, Oregano_55, Petra_53, PhriskyACE_51, Pipp_59, Pollux_57, Powerball_52, Samba_56, ShawBrad_100, Sidious_54, Sidious_59, Spooky_97, Sprinklemunch_61, TPA4_56, ThankyouJordi_62, Tuti_55, Ubuntu_64, Walrus_55, WelcomeAyanna_62, Wishmaker_61, Wocket_57, Zarbodnamra_56, Zilla_56,

Genes that have the "Most Annotated" start but do not call it:
• Amochick_65, BBQValindra_58, BackstagePass_65, Bowser_58, Bunker_54, Daegal_67, DeepSoil15_64, Dewey_61, DirtyBoi_64, Ein37_64, Evanesce_63, Eyes_57, GEazy_64, Gancho_63, Giles_61, Gravaillia_62, HH92_63, Hadrien_63, HannahD_61, Kinbote_63, LilHazelnut_64, MagicMan_61, OBUpride_64, Opie_64, Schnabeltier_62, TaronosaurasRx_65, Webster2_64, ZAYM_64,

Genes that do not have the "Most Annotated" start:
• 32HC_53, Farewell_81, Rem711_52, Sparky_80,

Summary by start number:

Start 53:
• Found in 13 of 93 (14.0%) of genes in pham
• Manual Annotations of this start: 10 of 80
• Called 92.3% of time when present

• Phage (with cluster) where this start called: BBQValindra_58 (DB), BackstagePass_65 (DB), Bowser_58 (DB), Bunker_54 (DB), Eyes_57 (DB), GEazy_64 (DB), HannahD_61 (DB), MagicMan_61 (DB), Opie_64 (DB), Schnabeltier_62 (DB), TaronosaurasRx_65 (DB), ZAYM_64 (DB),

Start 55:
• Found in 22 of 93 (23.7%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 4.5% of time when present
• Phage (with cluster) where this start called: DirtyBoi_64 (DB),

Start 56:
• Found in 24 of 93 (25.8%) of genes in pham
• Manual Annotations of this start: 15 of 80
• Called 62.5% of time when present
• Phage (with cluster) where this start called: Amochick_65 (Q), Daegal_67 (Q), DeepSoil15_64 (Q), Dewey_61 (Q), Ein37_64 (Q), Evanesce_63 (Q), Gancho_63 (Q), Giles_61 (Q), Gravaillia_62 (Q), HH92_63 (Q), Hadrien_63 (Q), Kinbote_63 (Q), LilHazelnut_64 (Q), OBUpride_64 (Q), Webster2_64 (Q),

Start 57:
• Found in 89 of 93 (95.7%) of genes in pham
• Manual Annotations of this start: 51 of 80
• Called 68.5% of time when present
• Phage (with cluster) where this start called: Agueybana_56 (CZ1), AlumE_56 (CZ1), Amymech_64 (Q), Annalisa_52 (CZ4), Azula_58 (CV), Barco_55 (CV), BloominB_64 (Q), Blueberry_57 (CV), BoyNamedSue_56 (CZ1), Bunnybear_50 (CZ), CaptainKirk2_57 (CV), Delian_60 (CV), Denise_67 (CZ5), EMsquaredA_54 (CY1), Eyre_49 (singleton), Faith5x5_64 (CZ6), Fenry_55 (CV), Floral_55 (CY1), Forge_61 (Q), Gambino_60 (CV), Guacamole_54 (CV), Hail_61 (Q), Hitter_57 (CV), Hyzer_63 (CZ1), Jalammah_60 (CV), JasperJr_54 (CV), LonelyBoi_53 (CY7), Luke_63 (Q), Luna22_61 (Q), Lysidious_58 (CV), Madavieve_52 (CZ1), Madeline_55 (CZ1), Malibo_57 (DW), Maridalia_58 (CZ1), Marteena_53 (CY1), Mellie_55 (CV), MintFen_57 (CV), MissRona_58 (CV), NovoPizza_68 (Q), Oregano_55 (CZ4), Petra_53 (CV), PhriskyACE_51 (CZ4), Pipp_59 (CV), Pollux_57 (CY1), Powerball_52 (CZ4), Samba_56 (CV), ShawBrad_100 (DN1), Sidious_54 (CZ7), Sidious_59 (CZ7), Spooky_97 (DN2), Sprinklemunch_61 (DW), TPA4_56 (singleton), ThankyouJordi_62 (CZ1), Tuti_55 (CZ4), Ubuntu_64 (Q), Walrus_55 (CV), WelcomeAyanna_62 (CZ1), Wishmaker_61 (Q), Wocket_57 (CV), Zarbodnamra_56 (CV), Zilla_56 (CV),

Start 58:
• Found in 2 of 93 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Farewell_81 (AF), Sparky_80 (AF),

Start 59:
• Found in 2 of 93 (2.2%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: 32HC_53 (Z), Rem711_52 (Z),

Summary by clusters:

There are 17 clusters represented in this pham: CZ7, CY1, CY7, AF, CZ6, CZ1, DB, singleton, CZ4, CZ5, Q, CZ, DN1, DN2, DW, Z, CV,

Info for manual annotations of cluster AF:
•Start number 58 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster CV:
•Start number 57 was manually annotated 21 times for cluster CV.

Info for manual annotations of cluster CY1:
•Start number 57 was manually annotated 4 times for cluster CY1.

Info for manual annotations of cluster CY7:
•Start number 57 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster CZ:
•Start number 57 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:
•Start number 57 was manually annotated 7 times for cluster CZ1.

Info for manual annotations of cluster CZ4:
•Start number 57 was manually annotated 3 times for cluster CZ4.

Info for manual annotations of cluster CZ5:
•Start number 57 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:
•Start number 57 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster CZ7:
•Start number 57 was manually annotated 2 times for cluster CZ7.

Info for manual annotations of cluster DB:
•Start number 53 was manually annotated 10 times for cluster DB.
•Start number 55 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DN2:
•Start number 57 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DW:
•Start number 57 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster Q:
•Start number 56 was manually annotated 15 times for cluster Q.
•Start number 57 was manually annotated 7 times for cluster Q.

Info for manual annotations of cluster Z:
•Start number 59 was manually annotated 1 time for cluster Z.

Gene Information:

Gene: 32HC_53 Start: 36136, Stop: 36690, Start Num: 59
Candidate Starts for 32HC_53:
(47, 36082), (54, 36118), (Start: 55 @36124 has 1 MA's), (Start: 59 @36136 has 1 MA's), (71, 36283), (86, 36409), (90, 36439), (96, 36478), (116, 36631), (117, 36640),

Gene: Agueybana_56 Start: 39653, Stop: 40237, Start Num: 57
Candidate Starts for Agueybana_56:
(51, 39623), (Start: 55 @39647 has 1 MA's), (Start: 57 @39653 has 51 MA's), (77, 39854), (91, 39950), (98, 40013), (100, 40022), (107, 40085), (109, 40118), (111, 40121), (115, 40151),

Gene: AlumE_56 Start: 39435, Stop: 40025, Start Num: 57
Candidate Starts for AlumE_56:
(51, 39405), (Start: 55 @39429 has 1 MA's), (Start: 57 @39435 has 51 MA's), (77, 39639), (91, 39735), (93, 39756), (100, 39807), (109, 39903), (111, 39906), (112, 39912), (113, 39915), (115, 39936), (124, 40005),

Gene: Amochick_65 Start: 44443, Stop: 44997, Start Num: 56
Candidate Starts for Amochick_65:
(25, 44248), (30, 44308), (39, 44356), (52, 44422), (Start: 56 @44443 has 15 MA's), (Start: 57 @44446 has 51 MA's), (60, 44461), (61, 44482), (65, 44545), (66, 44557), (72, 44602), (80, 44671), (81, 44674), (87, 44713), (90, 44740), (92, 44758), (94, 44776), (100, 44821), (101, 44824), (104, 44839), (108, 44884), (117, 44944), (121, 44962),

Gene: Amymech_64 Start: 43962, Stop: 44513, Start Num: 57
Candidate Starts for Amymech_64:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Annalisa_52 Start: 35792, Stop: 36379, Start Num: 57
Candidate Starts for Annalisa_52:
(23, 35615), (26, 35636), (Start: 55 @35786 has 1 MA's), (Start: 57 @35792 has 51 MA's), (66, 35900), (77, 35996), (78, 36002), (91, 36092), (107, 36230), (109, 36263), (111, 36266), (112, 36272), (115, 36296),

Gene: Azula_58 Start: 39149, Stop: 39736, Start Num: 57
Candidate Starts for Azula_58:
(29, 38987), (34, 39035), (Start: 57 @39149 has 51 MA's), (77, 39350), (88, 39416), (91, 39446), (93, 39467), (100, 39518), (109, 39614), (111, 39617), (112, 39623), (113, 39626), (115, 39647),

Gene: BBQValindra_58 Start: 41020, Stop: 41751, Start Num: 53
Candidate Starts for BBQValindra_58:
(7, 40606), (14, 40714), (18, 40777), (31, 40924), (32, 40927), (Start: 53 @41020 has 10 MA's), (Start: 57 @41038 has 51 MA's), (66, 41152), (77, 41245), (85, 41302), (89, 41317), (102, 41425), (116, 41545), (118, 41557),

Gene: BackstagePass_65 Start: 40434, Stop: 41168, Start Num: 53
Candidate Starts for BackstagePass_65:
(6, 39999), (14, 40131), (31, 40341), (32, 40344), (36, 40353), (Start: 53 @40434 has 10 MA's), (Start: 57 @40452 has 51 MA's), (66, 40566), (68, 40590), (77, 40659), (78, 40665), (85, 40716), (89, 40731), (102, 40839), (116, 40959), (130, 41157),

Gene: Barco_55 Start: 36423, Stop: 37010, Start Num: 57
Candidate Starts for Barco_55:
(Start: 57 @36423 has 51 MA's), (77, 36624), (91, 36720), (100, 36792), (109, 36888), (111, 36891), (112, 36897), (113, 36900), (115, 36921),

Gene: BloominB_64 Start: 43962, Stop: 44513, Start Num: 57
Candidate Starts for BloominB_64:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Blueberry_57 Start: 39149, Stop: 39736, Start Num: 57
Candidate Starts for Blueberry_57:
(29, 38987), (34, 39035), (Start: 57 @39149 has 51 MA's), (77, 39350), (88, 39416), (91, 39446), (93, 39467), (100, 39518), (109, 39614), (111, 39617), (112, 39623), (113, 39626), (115, 39647),

Gene: Bowser_58 Start: 40743, Stop: 41495, Start Num: 53
Candidate Starts for Bowser_58:
(18, 40503), (31, 40650), (32, 40653), (Start: 53 @40743 has 10 MA's), (Start: 57 @40761 has 51 MA's), (66, 40875), (77, 40968), (85, 41025), (89, 41040), (102, 41148), (116, 41268), (117, 41277), (118, 41280), (127, 41370), (128, 41442), (129, 41463),

Gene: BoyNamedSue_56 Start: 39435, Stop: 40025, Start Num: 57
Candidate Starts for BoyNamedSue_56:
(51, 39405), (Start: 55 @39429 has 1 MA's), (Start: 57 @39435 has 51 MA's), (77, 39639), (91, 39735), (93, 39756), (100, 39807), (109, 39903), (111, 39906), (112, 39912), (113, 39915), (115, 39936), (124, 40005),

Gene: Bunker_54 Start: 39327, Stop: 40058, Start Num: 53
Candidate Starts for Bunker_54:
(14, 39024), (31, 39234), (32, 39237), (36, 39246), (Start: 53 @39327 has 10 MA's), (Start: 57 @39345 has 51 MA's), (66, 39459), (68, 39483), (77, 39552), (78, 39558), (85, 39609), (89, 39624), (102, 39732), (116, 39852), (118, 39864),

Gene: Bunnybear_50 Start: 37443, Stop: 38027, Start Num: 57
Candidate Starts for Bunnybear_50:
(22, 37239), (51, 37413), (Start: 55 @37437 has 1 MA's), (Start: 57 @37443 has 51 MA's), (77, 37644), (88, 37710), (91, 37740), (93, 37761), (100, 37812), (109, 37908), (111, 37911), (112, 37917), (123, 38007),

Gene: CaptainKirk2_57 Start: 36662, Stop: 37249, Start Num: 57
Candidate Starts for CaptainKirk2_57:
(Start: 57 @36662 has 51 MA's), (77, 36863), (91, 36959), (100, 37031), (109, 37127), (111, 37130), (112, 37136), (113, 37139), (115, 37160),

Gene: Daegal_67 Start: 45005, Stop: 45559, Start Num: 56
Candidate Starts for Daegal_67:
(25, 44810), (30, 44870), (39, 44918), (52, 44984), (Start: 56 @45005 has 15 MA's), (Start: 57 @45008 has 51 MA's), (60, 45023), (61, 45044), (65, 45107), (66, 45119), (72, 45164), (80, 45233), (81, 45236), (87, 45275), (90, 45302), (92, 45320), (94, 45338), (100, 45383), (101, 45386), (104, 45401), (108, 45446), (117, 45506), (121, 45524),

Gene: DeepSoil15_64 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for DeepSoil15_64:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Delian_60 Start: 36660, Stop: 37247, Start Num: 57
Candidate Starts for Delian_60:
(Start: 57 @36660 has 51 MA's), (77, 36861), (91, 36957), (100, 37029), (109, 37125), (111, 37128), (112, 37134), (113, 37137), (115, 37158),

Gene: Denise_67 Start: 40135, Stop: 40689, Start Num: 57
Candidate Starts for Denise_67:
(17, 39871), (47, 40084), (48, 40087), (Start: 57 @40135 has 51 MA's), (63, 40201), (73, 40285), (77, 40333), (82, 40357), (91, 40423), (116, 40627),

Gene: Dewey_61 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Dewey_61:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: DirtyBoi_64 Start: 41042, Stop: 41764, Start Num: 55
Candidate Starts for DirtyBoi_64:
(46, 40991), (47, 40997), (49, 41009), (Start: 53 @41027 has 10 MA's), (Start: 55 @41042 has 1 MA's), (Start: 57 @41048 has 51 MA's), (66, 41162), (78, 41261), (85, 41312), (89, 41327), (100, 41423), (102, 41435), (116, 41555), (117, 41564),

Gene: EMsquaredA_54 Start: 38610, Stop: 39200, Start Num: 57
Candidate Starts for EMsquaredA_54:
(51, 38580), (Start: 55 @38604 has 1 MA's), (Start: 57 @38610 has 51 MA's), (77, 38814), (91, 38910), (93, 38931), (100, 38982), (109, 39078), (111, 39081), (112, 39087), (113, 39090), (115, 39111), (124, 39180),

Gene: Ein37_64 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Ein37_64:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Evanesce_63 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Evanesce_63:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Eyes_57 Start: 40795, Stop: 41526, Start Num: 53
Candidate Starts for Eyes_57:
(31, 40702), (32, 40705), (Start: 53 @40795 has 10 MA's), (Start: 57 @40813 has 51 MA's), (66, 40927), (77, 41020), (78, 41026), (102, 41200), (108, 41251), (114, 41293), (116, 41320), (117, 41329), (118, 41332),

Gene: Eyre_49 Start: 34637, Stop: 35221, Start Num: 57

Candidate Starts for Eyre_49:
(Start: 57 @34637 has 51 MA's), (77, 34853), (78, 34859), (89, 34925), (91, 34949), (109, 35096), (116, 35153), (117, 35162), (122, 35192),

Gene: Faith5x5_64 Start: 38441, Stop: 39004, Start Num: 57
Candidate Starts for Faith5x5_64:
(9, 38189), (10, 38195), (Start: 57 @38441 has 51 MA's), (62, 38498), (64, 38537), (77, 38648), (82, 38672), (91, 38738), (107, 38852), (109, 38885), (116, 38942), (117, 38951),

Gene: Farewell_81 Start: 52822, Stop: 53370, Start Num: 58
Candidate Starts for Farewell_81:
(40, 52732), (47, 52771), (Start: 58 @52822 has 2 MA's), (83, 53056), (100, 53191), (116, 53308), (117, 53317), (120, 53329),

Gene: Fenry_55 Start: 38167, Stop: 38757, Start Num: 57
Candidate Starts for Fenry_55:
(29, 38005), (34, 38053), (Start: 57 @38167 has 51 MA's), (77, 38371), (88, 38437), (91, 38467), (93, 38488), (95, 38497), (97, 38521), (100, 38539), (109, 38635), (111, 38638), (112, 38644), (113, 38647), (115, 38668),

Gene: Floral_55 Start: 40516, Stop: 41088, Start Num: 57
Candidate Starts for Floral_55:
(51, 40486), (Start: 55 @40510 has 1 MA's), (Start: 57 @40516 has 51 MA's), (66, 40624), (77, 40720),

Gene: Forge_61 Start: 43962, Stop: 44513, Start Num: 57
Candidate Starts for Forge_61:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: GEazy_64 Start: 40986, Stop: 41714, Start Num: 53
Candidate Starts for GEazy_64:
(45, 40947), (Start: 53 @40986 has 10 MA's), (Start: 57 @41004 has 51 MA's), (66, 41118), (77, 41211), (78, 41217), (102, 41391), (116, 41511), (117, 41520), (118, 41523),

Gene: Gambino_60 Start: 39149, Stop: 39736, Start Num: 57
Candidate Starts for Gambino_60:
(29, 38987), (34, 39035), (Start: 57 @39149 has 51 MA's), (77, 39350), (88, 39416), (91, 39446), (93, 39467), (100, 39518), (109, 39614), (111, 39617), (112, 39623), (113, 39626), (115, 39647),

Gene: Gancho_63 Start: 43686, Stop: 44240, Start Num: 56
Candidate Starts for Gancho_63:
(Start: 56 @43686 has 15 MA's), (Start: 57 @43689 has 51 MA's), (60, 43704), (61, 43725), (65, 43788), (66, 43800), (67, 43812), (72, 43845), (80, 43914), (81, 43917), (87, 43956), (90, 43983), (92, 44001), (100, 44064), (101, 44067), (104, 44082), (108, 44127), (117, 44187), (120, 44199), (121, 44205),

Gene: Giles_61 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Giles_61:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Gravaillia_62 Start: 43967, Stop: 44521, Start Num: 56
Candidate Starts for Gravaillia_62:
(Start: 56 @43967 has 15 MA's), (Start: 57 @43970 has 51 MA's), (60, 43985), (61, 44006), (65, 44069), (66, 44081), (67, 44093), (72, 44126), (80, 44195), (81, 44198), (87, 44237), (90, 44264), (92, 44282), (100, 44345), (101, 44348), (104, 44363), (108, 44408), (117, 44468), (120, 44480), (121, 44486),

Gene: Guacamole_54 Start: 36889, Stop: 37476, Start Num: 57
Candidate Starts for Guacamole_54:
(29, 36727), (34, 36775), (Start: 57 @36889 has 51 MA's), (77, 37090), (88, 37156), (91, 37186), (93, 37207), (97, 37240), (100, 37258), (109, 37354), (111, 37357), (112, 37363), (113, 37366), (115, 37387), (124, 37456),

Gene: HH92_63 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for HH92_63:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Hadrien_63 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Hadrien_63:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Hail_61 Start: 43962, Stop: 44513, Start Num: 57
Candidate Starts for Hail_61:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: HannahD_61 Start: 40353, Stop: 41081, Start Num: 53
Candidate Starts for HannahD_61:
(45, 40314), (Start: 53 @40353 has 10 MA's), (Start: 57 @40371 has 51 MA's), (66, 40485), (77, 40578), (78, 40584), (102, 40758), (116, 40878), (117, 40887), (118, 40890),

Gene: Hitter_57 Start: 36465, Stop: 37052, Start Num: 57
Candidate Starts for Hitter_57:
(Start: 57 @36465 has 51 MA's), (77, 36666), (91, 36762), (100, 36834), (109, 36930), (111, 36933), (112, 36939), (113, 36942), (115, 36963),

Gene: Hyzer_63 Start: 42350, Stop: 42940, Start Num: 57
Candidate Starts for Hyzer_63:
(51, 42320), (Start: 55 @42344 has 1 MA's), (Start: 57 @42350 has 51 MA's), (77, 42554), (78, 42560), (91, 42650), (93, 42671), (100, 42722), (109, 42818), (111, 42821), (112, 42827), (115, 42851),

Gene: Jalammah_60 Start: 39468, Stop: 40055, Start Num: 57
Candidate Starts for Jalammah_60:
(29, 39306), (34, 39354), (Start: 57 @39468 has 51 MA's), (77, 39669), (91, 39765), (97, 39819), (100, 39837), (109, 39933), (111, 39936), (112, 39942), (113, 39945), (115, 39966), (124, 40035),

Gene: JasperJr_54 Start: 36889, Stop: 37476, Start Num: 57
Candidate Starts for JasperJr_54:

(29, 36727), (34, 36775), (Start: 57 @36889 has 51 MA's), (77, 37090), (88, 37156), (91, 37186), (93, 37207), (97, 37240), (100, 37258), (109, 37354), (111, 37357), (112, 37363), (113, 37366), (115, 37387), (124, 37456),

Gene: Kinbote_63 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Kinbote_63:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: LilHazelnut_64 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for LilHazelnut_64:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: LonelyBoi_53 Start: 40470, Stop: 41057, Start Num: 57
Candidate Starts for LonelyBoi_53:
(Start: 56 @40467 has 15 MA's), (Start: 57 @40470 has 51 MA's), (66, 40578), (77, 40674), (88, 40740), (91, 40770), (93, 40791), (100, 40842), (109, 40938), (111, 40941), (112, 40947), (123, 41037),

Gene: Luke_63 Start: 43917, Stop: 44468, Start Num: 57
Candidate Starts for Luke_63:
(Start: 56 @43914 has 15 MA's), (Start: 57 @43917 has 51 MA's), (60, 43932), (65, 44016), (66, 44028), (67, 44040), (72, 44073), (80, 44142), (81, 44145), (87, 44184), (90, 44211), (92, 44229), (94, 44247), (100, 44292), (101, 44295), (104, 44310), (108, 44355), (117, 44415), (121, 44433),

Gene: Luna22_61 Start: 43946, Stop: 44497, Start Num: 57
Candidate Starts for Luna22_61:
(Start: 56 @43943 has 15 MA's), (Start: 57 @43946 has 51 MA's), (60, 43961), (65, 44045), (66, 44057), (67, 44069), (72, 44102), (80, 44171), (81, 44174), (87, 44213), (90, 44240), (92, 44258), (94, 44276), (100, 44321), (101, 44324), (104, 44339), (108, 44384), (117, 44444), (121, 44462),

Gene: Lysidious_58 Start: 38835, Stop: 39422, Start Num: 57
Candidate Starts for Lysidious_58:
(29, 38673), (34, 38721), (Start: 57 @38835 has 51 MA's), (62, 38892), (77, 39036), (88, 39102), (91, 39132), (100, 39204), (109, 39300), (111, 39303), (112, 39309), (115, 39333), (124, 39402),

Gene: Madavieve_52 Start: 38399, Stop: 38983, Start Num: 57
Candidate Starts for Madavieve_52:
(22, 38195), (51, 38369), (Start: 55 @38393 has 1 MA's), (Start: 57 @38399 has 51 MA's), (77, 38600), (88, 38666), (91, 38696), (93, 38717), (100, 38768), (109, 38864), (111, 38867), (112, 38873), (123, 38963),

Gene: Madeline_55 Start: 39843, Stop: 40427, Start Num: 57
Candidate Starts for Madeline_55:
(51, 39813), (Start: 55 @39837 has 1 MA's), (Start: 57 @39843 has 51 MA's), (77, 40044), (91, 40140), (98, 40203), (107, 40275), (109, 40308), (111, 40311), (115, 40341),

Gene: MagicMan_61 Start: 41953, Stop: 42714, Start Num: 53
Candidate Starts for MagicMan_61:

(Start: 53 @41953 has 10 MA's), (Start: 57 @41971 has 51 MA's), (66, 42085), (77, 42178), (78, 42184), (102, 42358), (116, 42478), (117, 42487), (118, 42490),

Gene: Malibo_57 Start: 39555, Stop: 40142, Start Num: 57
Candidate Starts for Malibo_57:
(34, 39441), (Start: 57 @39555 has 51 MA's), (66, 39663), (77, 39759), (100, 39927), (105, 39963), (106, 39984), (107, 39990), (111, 40026), (112, 40032), (115, 40056),

Gene: Maridalia_58 Start: 39189, Stop: 39773, Start Num: 57
Candidate Starts for Maridalia_58:
(22, 38985), (51, 39159), (Start: 55 @39183 has 1 MA's), (Start: 57 @39189 has 51 MA's), (77, 39390), (88, 39456), (91, 39486), (93, 39507), (100, 39558), (109, 39654), (111, 39657), (112, 39663), (123, 39753),

Gene: Marteena_53 Start: 38610, Stop: 39200, Start Num: 57
Candidate Starts for Marteena_53:
(51, 38580), (Start: 55 @38604 has 1 MA's), (Start: 57 @38610 has 51 MA's), (77, 38814), (91, 38910), (93, 38931), (100, 38982), (109, 39078), (111, 39081), (112, 39087), (113, 39090), (115, 39111), (124, 39180),

Gene: Mellie_55 Start: 36842, Stop: 37432, Start Num: 57
Candidate Starts for Mellie_55:
(29, 36680), (34, 36728), (Start: 57 @36842 has 51 MA's), (77, 37046), (88, 37112), (91, 37142), (93, 37163), (100, 37214), (109, 37310), (111, 37313), (112, 37319), (113, 37322), (115, 37343),

Gene: MintFen_57 Start: 37276, Stop: 37863, Start Num: 57
Candidate Starts for MintFen_57:
(Start: 57 @37276 has 51 MA's), (77, 37477), (91, 37573), (100, 37645), (109, 37741), (111, 37744), (112, 37750), (113, 37753), (115, 37774),

Gene: MissRona_58 Start: 39150, Stop: 39737, Start Num: 57
Candidate Starts for MissRona_58:
(29, 38988), (34, 39036), (Start: 57 @39150 has 51 MA's), (77, 39351), (88, 39417), (91, 39447), (93, 39468), (100, 39519), (109, 39615), (111, 39618), (112, 39624), (113, 39627), (115, 39648),

Gene: NovoPizza_68 Start: 45546, Stop: 46103, Start Num: 57
Candidate Starts for NovoPizza_68:
(28, 45390), (Start: 57 @45546 has 51 MA's), (61, 45582), (62, 45606), (63, 45615), (67, 45669), (69, 45687), (70, 45690), (72, 45702), (74, 45717), (75, 45732), (80, 45771), (87, 45813), (90, 45840), (99, 45918), (100, 45921), (117, 46044), (121, 46062),

Gene: OBUpride_64 Start: 43955, Stop: 44509, Start Num: 56
Candidate Starts for OBUpride_64:
(Start: 56 @43955 has 15 MA's), (Start: 57 @43958 has 51 MA's), (60, 43973), (61, 43994), (65, 44057), (66, 44069), (67, 44081), (72, 44114), (80, 44183), (81, 44186), (87, 44225), (90, 44252), (92, 44270), (100, 44333), (101, 44336), (104, 44351), (108, 44396), (117, 44456), (120, 44468), (121, 44474),

Gene: Opie_64 Start: 42071, Stop: 42832, Start Num: 53
Candidate Starts for Opie_64:
(33, 41987), (45, 42032), (Start: 53 @42071 has 10 MA's), (Start: 57 @42089 has 51 MA's), (66, 42203), (77, 42296), (78, 42302), (102, 42476), (116, 42596), (117, 42605), (118, 42608),

Gene: Oregano_55 Start: 36424, Stop: 37011, Start Num: 57
Candidate Starts for Oregano_55:
(23, 36247), (26, 36268), (Start: 55 @36418 has 1 MA's), (Start: 57 @36424 has 51 MA's), (66, 36532),
(77, 36628), (78, 36634), (91, 36724), (107, 36862), (109, 36895), (111, 36898), (112, 36904), (115,
36928),

Gene: Petra_53 Start: 35617, Stop: 36207, Start Num: 57
Candidate Starts for Petra_53:
(29, 35455), (34, 35503), (Start: 57 @35617 has 51 MA's), (77, 35821), (88, 35887), (91, 35917), (93,
35938), (95, 35947), (97, 35971), (100, 35989), (109, 36085), (111, 36088), (112, 36094), (113,
36097), (115, 36118),

Gene: PhriskyACE_51 Start: 36416, Stop: 36979, Start Num: 57
Candidate Starts for PhriskyACE_51:
(22, 36212), (24, 36227), (Start: 55 @36410 has 1 MA's), (Start: 57 @36416 has 51 MA's), (66, 36524),
(76, 36608), (77, 36620), (78, 36626), (91, 36716), (103, 36803), (107, 36830), (109, 36863), (111,
36866), (112, 36872), (115, 36896),

Gene: Pipp_59 Start: 37969, Stop: 38559, Start Num: 57
Candidate Starts for Pipp_59:
(29, 37807), (34, 37855), (Start: 57 @37969 has 51 MA's), (77, 38173), (91, 38269), (93, 38290), (97,
38323), (100, 38341), (109, 38437), (111, 38440), (112, 38446), (113, 38449), (115, 38470),

Gene: Pollux_57 Start: 40516, Stop: 41088, Start Num: 57
Candidate Starts for Pollux_57:
(51, 40486), (Start: 55 @40510 has 1 MA's), (Start: 57 @40516 has 51 MA's), (66, 40624), (77, 40720),

Gene: Powerball_52 Start: 36542, Stop: 37105, Start Num: 57
Candidate Starts for Powerball_52:
(22, 36338), (24, 36353), (Start: 55 @36536 has 1 MA's), (Start: 57 @36542 has 51 MA's), (66, 36650),
(76, 36734), (77, 36746), (78, 36752), (91, 36842), (103, 36929), (107, 36956), (109, 36989), (111,
36992), (112, 36998), (115, 37022),

Gene: Rem711_52 Start: 36120, Stop: 36674, Start Num: 59
Candidate Starts for Rem711_52:
(47, 36066), (54, 36102), (Start: 55 @36108 has 1 MA's), (Start: 59 @36120 has 1 MA's), (71, 36267),
(86, 36393), (90, 36423), (96, 36462), (116, 36615), (117, 36624),

Gene: Samba_56 Start: 39498, Stop: 40085, Start Num: 57
Candidate Starts for Samba_56:
(Start: 57 @39498 has 51 MA's), (77, 39699), (91, 39795), (100, 39867), (109, 39963), (111, 39966),
(112, 39972), (113, 39975), (115, 39996),

Gene: Schnabeltier_62 Start: 41372, Stop: 42097, Start Num: 53
Candidate Starts for Schnabeltier_62:
(Start: 53 @41372 has 10 MA's), (Start: 57 @41390 has 51 MA's), (77, 41597), (85, 41654), (89,
41669), (96, 41726), (102, 41777), (116, 41897), (117, 41906), (118, 41909),

Gene: ShawBrad_100 Start: 50885, Stop: 51478, Start Num: 57
Candidate Starts for ShawBrad_100:
(1, 50216), (2, 50306), (4, 50372), (8, 50474), (12, 50525), (15, 50567), (19, 50621), (21, 50627), (37,
50783), (38, 50789), (41, 50798), (44, 50813), (50, 50855), (Start: 57 @50885 has 51 MA's), (63,
50951), (82, 51107), (91, 51173), (107, 51287), (113, 51335), (116, 51377), (125, 51449), (126,

51473),

Gene: Sidious_54 Start: 38723, Stop: 39313, Start Num: 57
Candidate Starts for Sidious_54:
(22, 38519), (35, 38621), (Start: 55 @38717 has 1 MA's), (Start: 57 @38723 has 51 MA's), (77, 38927),
(78, 38933), (91, 39023), (93, 39044), (100, 39095), (109, 39191), (111, 39194), (112, 39200), (115,
39224),

Gene: Sidious_59 Start: 42258, Stop: 42845, Start Num: 57
Candidate Starts for Sidious_59:
(11, 41895), (16, 41973), (20, 42003), (27, 42066), (Start: 57 @42258 has 51 MA's), (77, 42468), (89,
42540), (91, 42564), (100, 42636), (109, 42711), (110, 42714), (112, 42720), (116, 42765), (117,
42774),

Gene: Sparky_80 Start: 54416, Stop: 54964, Start Num: 58
Candidate Starts for Sparky_80:
(40, 54326), (47, 54365), (Start: 58 @54416 has 2 MA's), (83, 54650), (100, 54785), (116, 54902),
(117, 54911), (120, 54923),

Gene: Spooky_97 Start: 52512, Stop: 53075, Start Num: 57
Candidate Starts for Spooky_97:
(17, 52416), (Start: 57 @52512 has 51 MA's), (64, 52608), (77, 52719), (82, 52743), (91, 52809), (107,
52923), (113, 52971), (116, 53013),

Gene: Sprinklemunch_61 Start: 41882, Stop: 42448, Start Num: 57
Candidate Starts for Sprinklemunch_61:
(51, 41852), (Start: 55 @41876 has 1 MA's), (Start: 57 @41882 has 51 MA's), (66, 41990), (100,
42251), (109, 42326), (111, 42329), (112, 42335),

Gene: TPA4_56 Start: 40632, Stop: 41162, Start Num: 57
Candidate Starts for TPA4_56:
(13, 40278), (42, 40551), (Start: 57 @40632 has 51 MA's), (60, 40650), (62, 40698), (79, 40863), (84,
40893), (100, 41004), (119, 41151),

Gene: TaronosaurasRx_65 Start: 41369, Stop: 42100, Start Num: 53
Candidate Starts for TaronosaurasRx_65:
(Start: 53 @41369 has 10 MA's), (Start: 57 @41387 has 51 MA's), (66, 41501), (77, 41594), (85,
41651), (89, 41666), (102, 41774), (116, 41894), (117, 41903), (118, 41906), (127, 41996),

Gene: ThankyouJordi_62 Start: 43975, Stop: 44550, Start Num: 57
Candidate Starts for ThankyouJordi_62:
(Start: 57 @43975 has 51 MA's), (66, 44089), (77, 44182), (89, 44254), (91, 44278), (95, 44308), (100,
44350), (109, 44425), (111, 44431), (116, 44482),

Gene: Tuti_55 Start: 37172, Stop: 37759, Start Num: 57
Candidate Starts for Tuti_55:
(23, 36995), (26, 37016), (Start: 55 @37166 has 1 MA's), (Start: 57 @37172 has 51 MA's), (66, 37280),
(77, 37376), (78, 37382), (91, 37472), (107, 37610), (109, 37643), (111, 37646), (112, 37652), (115,
37676),

Gene: Ubuntu_64 Start: 43962, Stop: 44513, Start Num: 57
Candidate Starts for Ubuntu_64:

(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Walrus_55 Start: 36777, Stop: 37367, Start Num: 57
Candidate Starts for Walrus_55:
(29, 36615), (34, 36663), (Start: 57 @36777 has 51 MA's), (77, 36981), (91, 37077), (93, 37098), (97, 37131), (100, 37149), (109, 37245), (111, 37248), (112, 37254), (113, 37257), (115, 37278),

Gene: Webster2_64 Start: 43959, Stop: 44513, Start Num: 56
Candidate Starts for Webster2_64:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: WelcomeAyanna_62 Start: 44122, Stop: 44697, Start Num: 57
Candidate Starts for WelcomeAyanna_62:
(Start: 57 @44122 has 51 MA's), (66, 44236), (77, 44329), (89, 44401), (91, 44425), (95, 44455), (100, 44497), (109, 44572), (111, 44578), (116, 44629),

Gene: Wishmaker_61 Start: 43962, Stop: 44513, Start Num: 57
Candidate Starts for Wishmaker_61:
(Start: 56 @43959 has 15 MA's), (Start: 57 @43962 has 51 MA's), (60, 43977), (65, 44061), (66, 44073), (67, 44085), (72, 44118), (80, 44187), (81, 44190), (87, 44229), (90, 44256), (92, 44274), (94, 44292), (100, 44337), (101, 44340), (104, 44355), (108, 44400), (117, 44460), (121, 44478),

Gene: Wocket_57 Start: 37262, Stop: 37849, Start Num: 57
Candidate Starts for Wocket_57:
(3, 36689), (5, 36764), (29, 37100), (34, 37148), (43, 37181), (Start: 57 @37262 has 51 MA's), (77, 37463), (88, 37529), (91, 37559), (100, 37631), (109, 37727), (111, 37730), (112, 37736), (115, 37760),

Gene: ZAYM_64 Start: 41414, Stop: 42145, Start Num: 53
Candidate Starts for ZAYM_64:
(Start: 53 @41414 has 10 MA's), (Start: 57 @41432 has 51 MA's), (66, 41546), (77, 41639), (85, 41696), (89, 41711), (102, 41819), (116, 41939), (117, 41948), (118, 41951),

Gene: Zarbodnamra_56 Start: 36684, Stop: 37271, Start Num: 57
Candidate Starts for Zarbodnamra_56:
(Start: 57 @36684 has 51 MA's), (77, 36885), (91, 36981), (100, 37053), (109, 37149), (111, 37152), (112, 37158), (115, 37182),

Gene: Zilla_56 Start: 36440, Stop: 37027, Start Num: 57
Candidate Starts for Zilla_56:
(Start: 57 @36440 has 51 MA's), (77, 36641), (91, 36737), (100, 36809), (109, 36905), (111, 36908), (112, 36914), (113, 36917), (115, 36938),