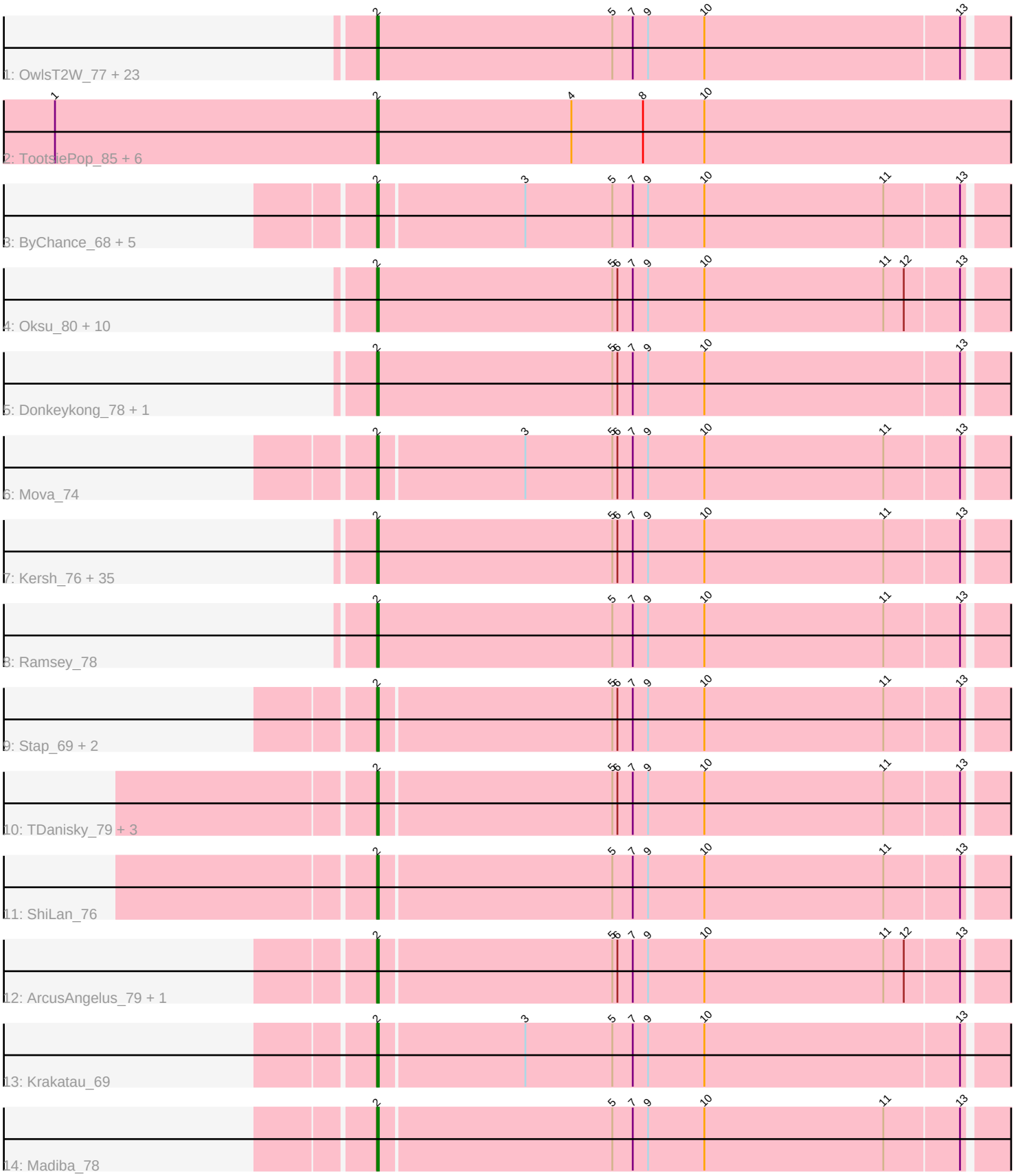
Pham 332685


1: OwlsT2W_77 + 23
2: TootsiePop_85 + 6
3: ByChance_68 + 5
4: Oksu_80 + 10
5: Donkeykong_78 + 1
6: Mova_74
7: Kersh_76 + 35
8: Ramsey_78
9: Stap_69 + 2
10: TDanisky_79 + 3
11: ShiLan_76
12: ArcusAngelus_79 + 1
13: Krakatau_69
14: Madiba_78

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 332685 Report

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

Pham number 332685 has 100 members, 7 are drafts.

Phages represented in each track:
• Track 1 : OwlsT2W_77, Spikelee_81, BuzzLyseyear_81, Ovechkin_78, PatoPoderoso_72, KingJulian_78, Plumbus_76, Violac_76, Cheesepuff_83, DosHalletts_77, Hegedechwinu_76, Corium_72, Spartacus_79, TChen_76, Sarma624_73, MilleniumForce_75, Boomer_76, LunaStella_74, PMC_69, Rockne_73, Hades_75, DaWorst_75, MulchSalad_81, Velveteen_69
• Track 2 : TootsiePop_85, Misha28_85, Aloeri_87, Awesomesauce_86, LilSpotty_81, ChickenDinner_86, DocMcStuffins_83
• Track 3 : ByChance_68, ShowerHandel_78, MisterCuddles_71, Topiatin_79, Girr_71, Ruby_69
• Track 4 : Oksu_80, Starcevich_75, VRedHorse_74, SeaLumen_79, Cornucopia_76, Enzomatic_82, Polo2Bam_81, Pacc40_68, LunaBlu_77, NewHope4_75, Galactic_74
• Track 5 : Donkeykong_78, CaptainTrips_73
• Track 6 : Mova_74
• Track 7 : Kersh_76, BodEinwohner17_80, PhlipPhlop_76, Juniper1_73, FreddyB_83, Mantra_72, Crumble_71, SimranZ1_75, Phasih_71, Pollywog_75, Sabbb_76, Nivrat_71, RockyHorror_75, Radiance_73, LilMoolah_73, Karhdo_73, BlueCrab_77, Peridot_79, Che8_79, Slim_79, Emmaloid_79, Eish_78, Doug_75, Job42_75, Che9d_86, EmiMonkey_75, Rialto_82, Emma_77, Beanstalk_74, Fancypants_79, Estave1_81, Mutaforma13_80, Grimmer_81, Moonbeam_75, Mahavrat_71, Royals2015_81
• Track 8 : Ramsey_78
• Track 9 : Stap_69, Alexphander_76, Renaud18_84
• Track 10 : TDanisky_79, Sparkdehlily_79, Frankie_84, Eradicator_65
• Track 11 : ShiLan_76
• Track 12 : ArcusAngelus_79, Chevrolet_81
• Track 13 : Krakatau_69
• Track 14 : Madiba_78

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

The start number called the most often in the published annotations is 2, it was called in 93 of the 93 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Alexphander_76, Aloeri_87, ArcusAngelus_79, Awesomesauce_86, Beanstalk_74, BlueCrab_77, BodEinwohner17_80, Boomer_76, BuzzLyseyear_81, ByChance_68, CaptainTrips_73, Che8_79, Che9d_86, Cheesepuff_83, Chevrolet_81, ChickenDinner_86, Corium_72, Cornucopia_76, Crumble_71, DaWorst_75, DocMcStuffins_83, Donkeykong_78, DosHalletts_77, Doug_75, Eish_78, EmiMonkey_75, Emma_77, Emmaloid_79, Enzomatic_82, Eradicator_65, Estave1_81, Fancypants_79, Frankie_84, FreddyB_83, Galactic_74, Girr_71, Grimmer_81, Hades_75, Hegedechwinu_76, Job42_75, Juniper1_73, Karhdo_73, Kersh_76, KingJulian_78, Krakatau_69, LilMoolah_73, LilSpotty_81, LunaBlu_77, LunaStella_74, Madiba_78, Mahavrat_71, Mantra_72, MilleniumForce_75, Misha28_85, MisterCuddles_71, Moonbeam_75, Mova_74, MulchSalad_81, Mutaforma13_80, NewHope4_75, Nivrat_71, Oksu_80, Ovechkin_78, OwlsT2W_77, PMC_69, Pacc40_68, PatoPoderoso_72, Peridot_79, Phasih_71, PhlipPhlop_76, Plumbus_76, Pollywog_75, Polo2Bam_81, Radiance_73, Ramsey_78, Renaud18_84, Rialto_82, Rockne_73, RockyHorror_75, Royals2015_81, Ruby_69, Sabbb_76, Sarma624_73, SeaLumen_79, ShiLan_76, ShowerHandel_78, SimranZ1_75, Slim_79, Sparkdehlily_79, Spartacus_79, Spikelee_81, Stap_69, Starcevich_75, TChen_76, TDanisky_79, TootsiePop_85, Topiatin_79, VRedHorse_74, Velveteen_69, Violac_76,

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

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

Summary by start number:

Start 2:
• Found in 100 of 100 (100.0%) of genes in pham
• Manual Annotations of this start: 93 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alexphander_76 (F1), Aloeri_87 (F1), ArcusAngelus_79 (F1), Awesomesauce_86 (F1), Beanstalk_74 (F1), BlueCrab_77 (F1), BodEinwohner17_80 (F1), Boomer_76 (F1), BuzzLyseyear_81 (F1), ByChance_68 (F1), CaptainTrips_73 (F1), Che8_79 (F1), Che9d_86 (F2), Cheesepuff_83 (F1), Chevrolet_81 (F1), ChickenDinner_86 (F1), Corium_72 (F1), Cornucopia_76 (F1), Crumble_71 (F1), DaWorst_75 (F1), DocMcStuffins_83 (F1), Donkeykong_78 (F1), DosHalletts_77 (F1), Doug_75 (F1), Eish_78 (F1), EmiMonkey_75 (F1), Emma_77 (F1), Emmaloid_79 (F1), Enzomatic_82 (F1), Eradicator_65 (F1), Estave1_81 (F1), Fancypants_79 (F1), Frankie_84 (F1), FreddyB_83 (F1), Galactic_74 (F1), Girr_71 (F1), Grimmer_81 (F1), Hades_75 (F1), Hegedechwinu_76 (F1), Job42_75 (F1), Juniper1_73 (F1), Karhdo_73 (F1), Kersh_76 (F1), KingJulian_78 (F1), Krakatau_69 (F1), LilMoolah_73 (F1), LilSpotty_81 (singleton), LunaBlu_77 (F1), LunaStella_74 (F4), Madiba_78 (F1), Mahavrat_71 (F1), Mantra_72 (F1), MilleniumForce_75 (F1), Misha28_85 (F1), MisterCuddles_71 (F1), Moonbeam_75 (F1), Mova_74 (F1), MulchSalad_81 (F7), Mutaforma13_80 (F1), NewHope4_75 (F1), Nivrat_71 (F1), Oksu_80 (F1), Ovechkin_78 (F1), OwlsT2W_77 (F1), PMC_69 (F1), Pacc40_68 (F1), PatoPoderoso_72 (F1), Peridot_79 (F1), Phasih_71 (F1), PhlipPhlop_76 (F1), Plumbus_76 (F1), Pollywog_75 (F1), Polo2Bam_81 (F1), Radiance_73 (F1), Ramsey_78 (F1), Renaud18_84 (F4), Rialto_82 (F1), Rockne_73 (F1), RockyHorror_75 (F1), Royals2015_81 (F1), Ruby_69 (F1), Sabbb_76 (F1), Sarma624_73 (F1), SeaLumen_79 (F1), ShiLan_76

(F1), ShowerHandel_78 (F1), SimranZ1_75 (F1), Slim_79 (F1), Sparkdehlily_79 (F1), Spartacus_79 (F1), Spikelee_81 (F1), Stap_69 (F1), Starcevich_75 (F1), TChen_76 (F4), TDanisky_79 (F1), TootsiePop_85 (F1), Topiatin_79 (F1), VRedHorse_74 (F1), Velveteen_69 (F1), Violac_76 (F1),

Summary by clusters:

There are 5 clusters represented in this pham: F1, singleton, F4, F2, F7,

Info for manual annotations of cluster F1:
•Start number 2 was manually annotated 87 times for cluster F1.

Info for manual annotations of cluster F2:
•Start number 2 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster F4:
•Start number 2 was manually annotated 3 times for cluster F4.

Info for manual annotations of cluster F7:
•Start number 2 was manually annotated 1 time for cluster F7.

Gene Information:

Gene: Alexphander_76 Start: 47602, Stop: 47961, Start Num: 2
Candidate Starts for Alexphander_76:
(Start: 2 @47602 has 93 MA's), (5, 47737), (6, 47740), (7, 47749), (9, 47758), (10, 47791), (11, 47896), (13, 47938),

Gene: Aloeri_87 Start: 51469, Stop: 51840, Start Num: 2
Candidate Starts for Aloeri_87:
(1, 51280), (Start: 2 @51469 has 93 MA's), (4, 51583), (8, 51625), (10, 51661),

Gene: ArcusAngelus_79 Start: 48509, Stop: 48868, Start Num: 2
Candidate Starts for ArcusAngelus_79:
(Start: 2 @48509 has 93 MA's), (5, 48644), (6, 48647), (7, 48656), (9, 48665), (10, 48698), (11, 48803), (12, 48815), (13, 48845),

Gene: Awesomesauce_86 Start: 51705, Stop: 52076, Start Num: 2
Candidate Starts for Awesomesauce_86:
(1, 51516), (Start: 2 @51705 has 93 MA's), (4, 51819), (8, 51861), (10, 51897),

Gene: Beanstalk_74 Start: 46665, Stop: 47027, Start Num: 2
Candidate Starts for Beanstalk_74:
(Start: 2 @46665 has 93 MA's), (5, 46803), (6, 46806), (7, 46815), (9, 46824), (10, 46857), (11, 46962), (13, 47004),

Gene: BlueCrab_77 Start: 48388, Stop: 48750, Start Num: 2
Candidate Starts for BlueCrab_77:
(Start: 2 @48388 has 93 MA's), (5, 48526), (6, 48529), (7, 48538), (9, 48547), (10, 48580), (11, 48685), (13, 48727),

Gene: BodEinwohner17_80 Start: 49477, Stop: 49839, Start Num: 2
Candidate Starts for BodEinwohner17_80:
(Start: 2 @49477 has 93 MA's), (5, 49615), (6, 49618), (7, 49627), (9, 49636), (10, 49669), (11, 49774), (13, 49816),

Gene: Boomer_76 Start: 47572, Stop: 47934, Start Num: 2
Candidate Starts for Boomer_76:
(Start: 2 @47572 has 93 MA's), (5, 47710), (7, 47722), (9, 47731), (10, 47764), (13, 47911),

Gene: BuzzLyseyear_81 Start: 49522, Stop: 49884, Start Num: 2
Candidate Starts for BuzzLyseyear_81:
(Start: 2 @49522 has 93 MA's), (5, 49660), (7, 49672), (9, 49681), (10, 49714), (13, 49861),

Gene: ByChance_68 Start: 43741, Stop: 44100, Start Num: 2
Candidate Starts for ByChance_68:
(Start: 2 @43741 has 93 MA's), (3, 43825), (5, 43876), (7, 43888), (9, 43897), (10, 43930), (11, 44035), (13, 44077),

Gene: CaptainTrips_73 Start: 46778, Stop: 47140, Start Num: 2
Candidate Starts for CaptainTrips_73:
(Start: 2 @46778 has 93 MA's), (5, 46916), (6, 46919), (7, 46928), (9, 46937), (10, 46970), (13, 47117),

Gene: Che8_79 Start: 47587, Stop: 47949, Start Num: 2
Candidate Starts for Che8_79:
(Start: 2 @47587 has 93 MA's), (5, 47725), (6, 47728), (7, 47737), (9, 47746), (10, 47779), (11, 47884), (13, 47926),

Gene: Che9d_86 Start: 47311, Stop: 47673, Start Num: 2
Candidate Starts for Che9d_86:
(Start: 2 @47311 has 93 MA's), (5, 47449), (6, 47452), (7, 47461), (9, 47470), (10, 47503), (11, 47608), (13, 47650),

Gene: Cheesepuff_83 Start: 46972, Stop: 47334, Start Num: 2
Candidate Starts for Cheesepuff_83:
(Start: 2 @46972 has 93 MA's), (5, 47110), (7, 47122), (9, 47131), (10, 47164), (13, 47311),

Gene: Chevrolet_81 Start: 48510, Stop: 48869, Start Num: 2
Candidate Starts for Chevrolet_81:
(Start: 2 @48510 has 93 MA's), (5, 48645), (6, 48648), (7, 48657), (9, 48666), (10, 48699), (11, 48804), (12, 48816), (13, 48846),

Gene: ChickenDinner_86 Start: 51469, Stop: 51840, Start Num: 2
Candidate Starts for ChickenDinner_86:
(1, 51280), (Start: 2 @51469 has 93 MA's), (4, 51583), (8, 51625), (10, 51661),

Gene: Corium_72 Start: 48239, Stop: 48601, Start Num: 2
Candidate Starts for Corium_72:
(Start: 2 @48239 has 93 MA's), (5, 48377), (7, 48389), (9, 48398), (10, 48431), (13, 48578),

Gene: Cornucopia_76 Start: 46202, Stop: 46564, Start Num: 2
Candidate Starts for Cornucopia_76:
(Start: 2 @46202 has 93 MA's), (5, 46340), (6, 46343), (7, 46352), (9, 46361), (10, 46394), (11, 46499), (12, 46511), (13, 46541),

Gene: Crumble_71 Start: 43811, Stop: 44173, Start Num: 2
Candidate Starts for Crumble_71:
(Start: 2 @43811 has 93 MA's), (5, 43949), (6, 43952), (7, 43961), (9, 43970), (10, 44003), (11, 44108), (13, 44150),

Gene: DaWorst_75 Start: 46551, Stop: 46913, Start Num: 2
Candidate Starts for DaWorst_75:
(Start: 2 @46551 has 93 MA's), (5, 46689), (7, 46701), (9, 46710), (10, 46743), (13, 46890),

Gene: DocMcStuffins_83 Start: 53099, Stop: 53470, Start Num: 2
Candidate Starts for DocMcStuffins_83:
(1, 52910), (Start: 2 @53099 has 93 MA's), (4, 53213), (8, 53255), (10, 53291),

Gene: Donkeykong_78 Start: 48504, Stop: 48866, Start Num: 2
Candidate Starts for Donkeykong_78:
(Start: 2 @48504 has 93 MA's), (5, 48642), (6, 48645), (7, 48654), (9, 48663), (10, 48696), (13, 48843),

Gene: DosHalletts_77 Start: 48806, Stop: 49168, Start Num: 2
Candidate Starts for DosHalletts_77:
(Start: 2 @48806 has 93 MA's), (5, 48944), (7, 48956), (9, 48965), (10, 48998), (13, 49145),

Gene: Doug_75 Start: 48431, Stop: 48793, Start Num: 2
Candidate Starts for Doug_75:
(Start: 2 @48431 has 93 MA's), (5, 48569), (6, 48572), (7, 48581), (9, 48590), (10, 48623), (11, 48728), (13, 48770),

Gene: Eish_78 Start: 48184, Stop: 48546, Start Num: 2
Candidate Starts for Eish_78:
(Start: 2 @48184 has 93 MA's), (5, 48322), (6, 48325), (7, 48334), (9, 48343), (10, 48376), (11, 48481), (13, 48523),

Gene: EmiMonkey_75 Start: 51133, Stop: 51495, Start Num: 2
Candidate Starts for EmiMonkey_75:
(Start: 2 @51133 has 93 MA's), (5, 51271), (6, 51274), (7, 51283), (9, 51292), (10, 51325), (11, 51430), (13, 51472),

Gene: Emma_77 Start: 46564, Stop: 46926, Start Num: 2
Candidate Starts for Emma_77:
(Start: 2 @46564 has 93 MA's), (5, 46702), (6, 46705), (7, 46714), (9, 46723), (10, 46756), (11, 46861), (13, 46903),

Gene: Emmaloid_79 Start: 47302, Stop: 47664, Start Num: 2
Candidate Starts for Emmaloid_79:
(Start: 2 @47302 has 93 MA's), (5, 47440), (6, 47443), (7, 47452), (9, 47461), (10, 47494), (11, 47599), (13, 47641),

Gene: Enzomatic_82 Start: 45245, Stop: 45607, Start Num: 2
Candidate Starts for Enzomatic_82:
(Start: 2 @45245 has 93 MA's), (5, 45383), (6, 45386), (7, 45395), (9, 45404), (10, 45437), (11, 45542), (12, 45554), (13, 45584),

Gene: Eradicator_65 Start: 44994, Stop: 45353, Start Num: 2

Candidate Starts for Eradicator_65:
(Start: 2 @44994 has 93 MA's), (5, 45129), (6, 45132), (7, 45141), (9, 45150), (10, 45183), (11, 45288), (13, 45330),

Gene: Estave1_81 Start: 50501, Stop: 50863, Start Num: 2
Candidate Starts for Estave1_81:
(Start: 2 @50501 has 93 MA's), (5, 50639), (6, 50642), (7, 50651), (9, 50660), (10, 50693), (11, 50798), (13, 50840),

Gene: Fancypants_79 Start: 48799, Stop: 49161, Start Num: 2
Candidate Starts for Fancypants_79:
(Start: 2 @48799 has 93 MA's), (5, 48937), (6, 48940), (7, 48949), (9, 48958), (10, 48991), (11, 49096), (13, 49138),

Gene: Frankie_84 Start: 48920, Stop: 49279, Start Num: 2
Candidate Starts for Frankie_84:
(Start: 2 @48920 has 93 MA's), (5, 49055), (6, 49058), (7, 49067), (9, 49076), (10, 49109), (11, 49214), (13, 49256),

Gene: FreddyB_83 Start: 48547, Stop: 48909, Start Num: 2
Candidate Starts for FreddyB_83:
(Start: 2 @48547 has 93 MA's), (5, 48685), (6, 48688), (7, 48697), (9, 48706), (10, 48739), (11, 48844), (13, 48886),

Gene: Galactic_74 Start: 46823, Stop: 47185, Start Num: 2
Candidate Starts for Galactic_74:
(Start: 2 @46823 has 93 MA's), (5, 46961), (6, 46964), (7, 46973), (9, 46982), (10, 47015), (11, 47120), (12, 47132), (13, 47162),

Gene: Girr_71 Start: 47080, Stop: 47439, Start Num: 2
Candidate Starts for Girr_71:
(Start: 2 @47080 has 93 MA's), (3, 47164), (5, 47215), (7, 47227), (9, 47236), (10, 47269), (11, 47374), (13, 47416),

Gene: Grimmer_81 Start: 47377, Stop: 47739, Start Num: 2
Candidate Starts for Grimmer_81:
(Start: 2 @47377 has 93 MA's), (5, 47515), (6, 47518), (7, 47527), (9, 47536), (10, 47569), (11, 47674), (13, 47716),

Gene: Hades_75 Start: 45562, Stop: 45924, Start Num: 2
Candidate Starts for Hades_75:
(Start: 2 @45562 has 93 MA's), (5, 45700), (7, 45712), (9, 45721), (10, 45754), (13, 45901),

Gene: Hegedechwinu_76 Start: 45952, Stop: 46314, Start Num: 2
Candidate Starts for Hegedechwinu_76:
(Start: 2 @45952 has 93 MA's), (5, 46090), (7, 46102), (9, 46111), (10, 46144), (13, 46291),

Gene: Job42_75 Start: 50144, Stop: 50506, Start Num: 2
Candidate Starts for Job42_75:
(Start: 2 @50144 has 93 MA's), (5, 50282), (6, 50285), (7, 50294), (9, 50303), (10, 50336), (11, 50441), (13, 50483),

Gene: Juniper1_73 Start: 46738, Stop: 47100, Start Num: 2

Candidate Starts for Juniper1_73:
(Start: 2 @46738 has 93 MA's), (5, 46876), (6, 46879), (7, 46888), (9, 46897), (10, 46930), (11, 47035), (13, 47077),

Gene: Karhdo_73 Start: 45801, Stop: 46163, Start Num: 2
Candidate Starts for Karhdo_73:
(Start: 2 @45801 has 93 MA's), (5, 45939), (6, 45942), (7, 45951), (9, 45960), (10, 45993), (11, 46098), (13, 46140),

Gene: Kersh_76 Start: 48987, Stop: 49349, Start Num: 2
Candidate Starts for Kersh_76:
(Start: 2 @48987 has 93 MA's), (5, 49125), (6, 49128), (7, 49137), (9, 49146), (10, 49179), (11, 49284), (13, 49326),

Gene: KingJulian_78 Start: 48239, Stop: 48601, Start Num: 2
Candidate Starts for KingJulian_78:
(Start: 2 @48239 has 93 MA's), (5, 48377), (7, 48389), (9, 48398), (10, 48431), (13, 48578),

Gene: Krakatau_69 Start: 43460, Stop: 43819, Start Num: 2
Candidate Starts for Krakatau_69:
(Start: 2 @43460 has 93 MA's), (3, 43544), (5, 43595), (7, 43607), (9, 43616), (10, 43649), (13, 43796),

Gene: LilMoolah_73 Start: 47141, Stop: 47503, Start Num: 2
Candidate Starts for LilMoolah_73:
(Start: 2 @47141 has 93 MA's), (5, 47279), (6, 47282), (7, 47291), (9, 47300), (10, 47333), (11, 47438), (13, 47480),

Gene: LilSpotty_81 Start: 47145, Stop: 47516, Start Num: 2
Candidate Starts for LilSpotty_81:
(1, 46956), (Start: 2 @47145 has 93 MA's), (4, 47259), (8, 47301), (10, 47337),

Gene: LunaBlu_77 Start: 47481, Stop: 47843, Start Num: 2
Candidate Starts for LunaBlu_77:
(Start: 2 @47481 has 93 MA's), (5, 47619), (6, 47622), (7, 47631), (9, 47640), (10, 47673), (11, 47778), (12, 47790), (13, 47820),

Gene: LunaStella_74 Start: 46916, Stop: 47278, Start Num: 2
Candidate Starts for LunaStella_74:
(Start: 2 @46916 has 93 MA's), (5, 47054), (7, 47066), (9, 47075), (10, 47108), (13, 47255),

Gene: Madiba_78 Start: 48657, Stop: 49016, Start Num: 2
Candidate Starts for Madiba_78:
(Start: 2 @48657 has 93 MA's), (5, 48792), (7, 48804), (9, 48813), (10, 48846), (11, 48951), (13, 48993),

Gene: Mahavrat_71 Start: 44946, Stop: 45308, Start Num: 2
Candidate Starts for Mahavrat_71:
(Start: 2 @44946 has 93 MA's), (5, 45084), (6, 45087), (7, 45096), (9, 45105), (10, 45138), (11, 45243), (13, 45285),

Gene: Mantra_72 Start: 46775, Stop: 47137, Start Num: 2
Candidate Starts for Mantra_72:

(Start: 2 @46775 has 93 MA's), (5, 46913), (6, 46916), (7, 46925), (9, 46934), (10, 46967), (11, 47072), (13, 47114),

Gene: MilleniumForce_75 Start: 47446, Stop: 47808, Start Num: 2
Candidate Starts for MilleniumForce_75:
(Start: 2 @47446 has 93 MA's), (5, 47584), (7, 47596), (9, 47605), (10, 47638), (13, 47785),

Gene: Misha28_85 Start: 52404, Stop: 52775, Start Num: 2
Candidate Starts for Misha28_85:
(1, 52215), (Start: 2 @52404 has 93 MA's), (4, 52518), (8, 52560), (10, 52596),

Gene: MisterCuddles_71 Start: 47080, Stop: 47439, Start Num: 2
Candidate Starts for MisterCuddles_71:
(Start: 2 @47080 has 93 MA's), (3, 47164), (5, 47215), (7, 47227), (9, 47236), (10, 47269), (11, 47374), (13, 47416),

Gene: Moonbeam_75 Start: 47593, Stop: 47955, Start Num: 2
Candidate Starts for Moonbeam_75:
(Start: 2 @47593 has 93 MA's), (5, 47731), (6, 47734), (7, 47743), (9, 47752), (10, 47785), (11, 47890), (13, 47932),

Gene: Mova_74 Start: 46081, Stop: 46440, Start Num: 2
Candidate Starts for Mova_74:
(Start: 2 @46081 has 93 MA's), (3, 46165), (5, 46216), (6, 46219), (7, 46228), (9, 46237), (10, 46270), (11, 46375), (13, 46417),

Gene: MulchSalad_81 Start: 49578, Stop: 49940, Start Num: 2
Candidate Starts for MulchSalad_81:
(Start: 2 @49578 has 93 MA's), (5, 49716), (7, 49728), (9, 49737), (10, 49770), (13, 49917),

Gene: Mutaforma13_80 Start: 48195, Stop: 48557, Start Num: 2
Candidate Starts for Mutaforma13_80:
(Start: 2 @48195 has 93 MA's), (5, 48333), (6, 48336), (7, 48345), (9, 48354), (10, 48387), (11, 48492), (13, 48534),

Gene: NewHope4_75 Start: 45391, Stop: 45753, Start Num: 2
Candidate Starts for NewHope4_75:
(Start: 2 @45391 has 93 MA's), (5, 45529), (6, 45532), (7, 45541), (9, 45550), (10, 45583), (11, 45688), (12, 45700), (13, 45730),

Gene: Nivrat_71 Start: 47014, Stop: 47376, Start Num: 2
Candidate Starts for Nivrat_71:
(Start: 2 @47014 has 93 MA's), (5, 47152), (6, 47155), (7, 47164), (9, 47173), (10, 47206), (11, 47311), (13, 47353),

Gene: Oksu_80 Start: 48941, Stop: 49303, Start Num: 2
Candidate Starts for Oksu_80:
(Start: 2 @48941 has 93 MA's), (5, 49079), (6, 49082), (7, 49091), (9, 49100), (10, 49133), (11, 49238), (12, 49250), (13, 49280),

Gene: Ovechkin_78 Start: 47776, Stop: 48156, Start Num: 2
Candidate Starts for Ovechkin_78:
(Start: 2 @47776 has 93 MA's), (5, 47914), (7, 47926), (9, 47935), (10, 47968), (13, 48115),

Gene: OwlsT2W_77 Start: 47307, Stop: 47669, Start Num: 2
Candidate Starts for OwlsT2W_77:
(Start: 2 @47307 has 93 MA's), (5, 47445), (7, 47457), (9, 47466), (10, 47499), (13, 47646),

Gene: PMC_69 Start: 45796, Stop: 46158, Start Num: 2
Candidate Starts for PMC_69:
(Start: 2 @45796 has 93 MA's), (5, 45934), (7, 45946), (9, 45955), (10, 45988), (13, 46135),

Gene: Pacc40_68 Start: 47041, Stop: 47403, Start Num: 2
Candidate Starts for Pacc40_68:
(Start: 2 @47041 has 93 MA's), (5, 47179), (6, 47182), (7, 47191), (9, 47200), (10, 47233), (11, 47338), (12, 47350), (13, 47380),

Gene: PatoPoderoso_72 Start: 48239, Stop: 48601, Start Num: 2
Candidate Starts for PatoPoderoso_72:
(Start: 2 @48239 has 93 MA's), (5, 48377), (7, 48389), (9, 48398), (10, 48431), (13, 48578),

Gene: Peridot_79 Start: 47792, Stop: 48154, Start Num: 2
Candidate Starts for Peridot_79:
(Start: 2 @47792 has 93 MA's), (5, 47930), (6, 47933), (7, 47942), (9, 47951), (10, 47984), (11, 48089), (13, 48131),

Gene: Phasih_71 Start: 45984, Stop: 46346, Start Num: 2
Candidate Starts for Phasih_71:
(Start: 2 @45984 has 93 MA's), (5, 46122), (6, 46125), (7, 46134), (9, 46143), (10, 46176), (11, 46281), (13, 46323),

Gene: PhlipPhlop_76 Start: 51133, Stop: 51495, Start Num: 2
Candidate Starts for PhlipPhlop_76:
(Start: 2 @51133 has 93 MA's), (5, 51271), (6, 51274), (7, 51283), (9, 51292), (10, 51325), (11, 51430), (13, 51472),

Gene: Plumbus_76 Start: 44733, Stop: 45095, Start Num: 2
Candidate Starts for Plumbus_76:
(Start: 2 @44733 has 93 MA's), (5, 44871), (7, 44883), (9, 44892), (10, 44925), (13, 45072),

Gene: Pollywog_75 Start: 48056, Stop: 48418, Start Num: 2
Candidate Starts for Pollywog_75:
(Start: 2 @48056 has 93 MA's), (5, 48194), (6, 48197), (7, 48206), (9, 48215), (10, 48248), (11, 48353), (13, 48395),

Gene: Polo2Bam_81 Start: 45245, Stop: 45607, Start Num: 2
Candidate Starts for Polo2Bam_81:
(Start: 2 @45245 has 93 MA's), (5, 45383), (6, 45386), (7, 45395), (9, 45404), (10, 45437), (11, 45542), (12, 45554), (13, 45584),

Gene: Radiance_73 Start: 47801, Stop: 48163, Start Num: 2
Candidate Starts for Radiance_73:
(Start: 2 @47801 has 93 MA's), (5, 47939), (6, 47942), (7, 47951), (9, 47960), (10, 47993), (11, 48098), (13, 48140),

Gene: Ramsey_78 Start: 49283, Stop: 49645, Start Num: 2

Candidate Starts for Ramsey_78:
(Start: 2 @49283 has 93 MA's), (5, 49421), (7, 49433), (9, 49442), (10, 49475), (11, 49580), (13, 49622),

Gene: Renaud18_84 Start: 48081, Stop: 48440, Start Num: 2
Candidate Starts for Renaud18_84:
(Start: 2 @48081 has 93 MA's), (5, 48216), (6, 48219), (7, 48228), (9, 48237), (10, 48270), (11, 48375), (13, 48417),

Gene: Rialto_82 Start: 48675, Stop: 49037, Start Num: 2
Candidate Starts for Rialto_82:
(Start: 2 @48675 has 93 MA's), (5, 48813), (6, 48816), (7, 48825), (9, 48834), (10, 48867), (11, 48972), (13, 49014),

Gene: Rockne_73 Start: 45808, Stop: 46170, Start Num: 2
Candidate Starts for Rockne_73:
(Start: 2 @45808 has 93 MA's), (5, 45946), (7, 45958), (9, 45967), (10, 46000), (13, 46147),

Gene: RockyHorror_75 Start: 46367, Stop: 46729, Start Num: 2
Candidate Starts for RockyHorror_75:
(Start: 2 @46367 has 93 MA's), (5, 46505), (6, 46508), (7, 46517), (9, 46526), (10, 46559), (11, 46664), (13, 46706),

Gene: Royals2015_81 Start: 47327, Stop: 47689, Start Num: 2
Candidate Starts for Royals2015_81:
(Start: 2 @47327 has 93 MA's), (5, 47465), (6, 47468), (7, 47477), (9, 47486), (10, 47519), (11, 47624), (13, 47666),

Gene: Ruby_69 Start: 47081, Stop: 47440, Start Num: 2
Candidate Starts for Ruby_69:
(Start: 2 @47081 has 93 MA's), (3, 47165), (5, 47216), (7, 47228), (9, 47237), (10, 47270), (11, 47375), (13, 47417),

Gene: Sabbb_76 Start: 44962, Stop: 45324, Start Num: 2
Candidate Starts for Sabbb_76:
(Start: 2 @44962 has 93 MA's), (5, 45100), (6, 45103), (7, 45112), (9, 45121), (10, 45154), (11, 45259), (13, 45301),

Gene: Sarma624_73 Start: 43941, Stop: 44303, Start Num: 2
Candidate Starts for Sarma624_73:
(Start: 2 @43941 has 93 MA's), (5, 44079), (7, 44091), (9, 44100), (10, 44133), (13, 44280),

Gene: SeaLumen_79 Start: 45245, Stop: 45607, Start Num: 2
Candidate Starts for SeaLumen_79:
(Start: 2 @45245 has 93 MA's), (5, 45383), (6, 45386), (7, 45395), (9, 45404), (10, 45437), (11, 45542), (12, 45554), (13, 45584),

Gene: ShiLan_76 Start: 49922, Stop: 50281, Start Num: 2
Candidate Starts for ShiLan_76:
(Start: 2 @49922 has 93 MA's), (5, 50057), (7, 50069), (9, 50078), (10, 50111), (11, 50216), (13, 50258),

Gene: ShowerHandel_78 Start: 47681, Stop: 48040, Start Num: 2

Candidate Starts for ShowerHandel_78:
(Start: 2 @47681 has 93 MA's), (3, 47765), (5, 47816), (7, 47828), (9, 47837), (10, 47870), (11, 47975), (13, 48017),

Gene: SimranZ1_75 Start: 46400, Stop: 46762, Start Num: 2
Candidate Starts for SimranZ1_75:
(Start: 2 @46400 has 93 MA's), (5, 46538), (6, 46541), (7, 46550), (9, 46559), (10, 46592), (11, 46697), (13, 46739),

Gene: Slim_79 Start: 47293, Stop: 47655, Start Num: 2
Candidate Starts for Slim_79:
(Start: 2 @47293 has 93 MA's), (5, 47431), (6, 47434), (7, 47443), (9, 47452), (10, 47485), (11, 47590), (13, 47632),

Gene: Sparkdehlily_79 Start: 45865, Stop: 46224, Start Num: 2
Candidate Starts for Sparkdehlily_79:
(Start: 2 @45865 has 93 MA's), (5, 46000), (6, 46003), (7, 46012), (9, 46021), (10, 46054), (11, 46159), (13, 46201),

Gene: Spartacus_79 Start: 49494, Stop: 49856, Start Num: 2
Candidate Starts for Spartacus_79:
(Start: 2 @49494 has 93 MA's), (5, 49632), (7, 49644), (9, 49653), (10, 49686), (13, 49833),

Gene: Spikelee_81 Start: 49384, Stop: 49746, Start Num: 2
Candidate Starts for Spikelee_81:
(Start: 2 @49384 has 93 MA's), (5, 49522), (7, 49534), (9, 49543), (10, 49576), (13, 49723),

Gene: Stap_69 Start: 44326, Stop: 44685, Start Num: 2
Candidate Starts for Stap_69:
(Start: 2 @44326 has 93 MA's), (5, 44461), (6, 44464), (7, 44473), (9, 44482), (10, 44515), (11, 44620), (13, 44662),

Gene: Starcevich_75 Start: 48358, Stop: 48720, Start Num: 2
Candidate Starts for Starcevich_75:
(Start: 2 @48358 has 93 MA's), (5, 48496), (6, 48499), (7, 48508), (9, 48517), (10, 48550), (11, 48655), (12, 48667), (13, 48697),

Gene: TChen_76 Start: 48867, Stop: 49229, Start Num: 2
Candidate Starts for TChen_76:
(Start: 2 @48867 has 93 MA's), (5, 49005), (7, 49017), (9, 49026), (10, 49059), (13, 49206),

Gene: TDanisky_79 Start: 45865, Stop: 46224, Start Num: 2
Candidate Starts for TDanisky_79:
(Start: 2 @45865 has 93 MA's), (5, 46000), (6, 46003), (7, 46012), (9, 46021), (10, 46054), (11, 46159), (13, 46201),

Gene: TootsiePop_85 Start: 52404, Stop: 52775, Start Num: 2
Candidate Starts for TootsiePop_85:
(1, 52215), (Start: 2 @52404 has 93 MA's), (4, 52518), (8, 52560), (10, 52596),

Gene: Topiatin_79 Start: 47807, Stop: 48166, Start Num: 2
Candidate Starts for Topiatin_79:

(Start: 2 @47807 has 93 MA's), (3, 47891), (5, 47942), (7, 47954), (9, 47963), (10, 47996), (11, 48101), (13, 48143),

Gene: VRedHorse_74 Start: 45020, Stop: 45382, Start Num: 2
Candidate Starts for VRedHorse_74:
(Start: 2 @45020 has 93 MA's), (5, 45158), (6, 45161), (7, 45170), (9, 45179), (10, 45212), (11, 45317), (12, 45329), (13, 45359),

Gene: Velveteen_69 Start: 43941, Stop: 44303, Start Num: 2
Candidate Starts for Velveteen_69:
(Start: 2 @43941 has 93 MA's), (5, 44079), (7, 44091), (9, 44100), (10, 44133), (13, 44280),

Gene: Violac_76 Start: 48215, Stop: 48577, Start Num: 2
Candidate Starts for Violac_76:
(Start: 2 @48215 has 93 MA's), (5, 48353), (7, 48365), (9, 48374), (10, 48407), (13, 48554),