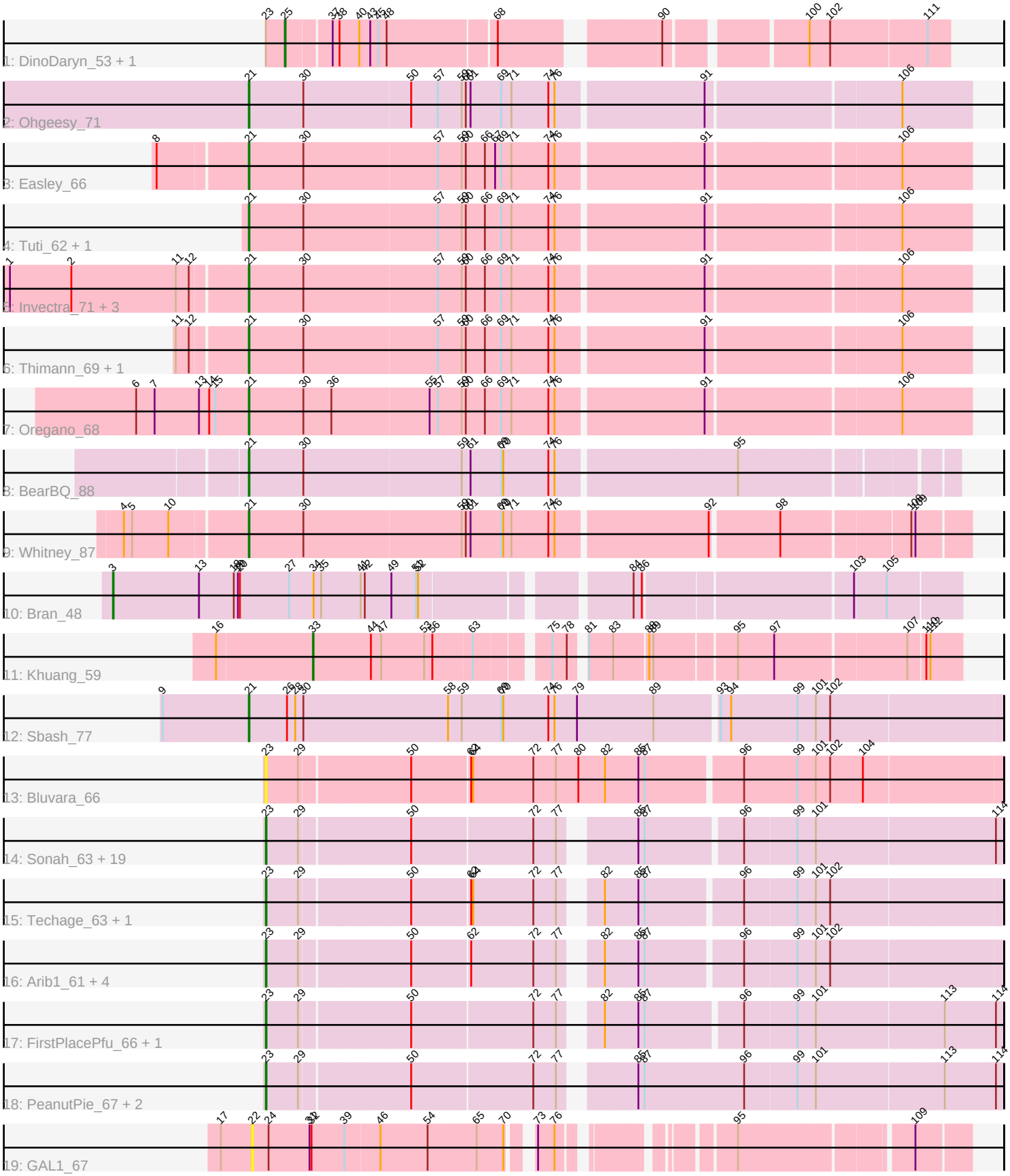
Pham 347694


1: DinoDaryn_53 + 1
2: Ohgeesy_71
3: Easley_66
4: Tuti_62 + 1
5: Invectra_71 + 3
6: Thimann_69 + 1
7: Oregano_68
8: BearBQ_88
9: Whitney_87
10: Bran_48
11: Khuang_59
12: Sbash_77
13: Bluvara_66
14: Sonah_63 + 19
15: Techage_63 + 1
16: Arib1_61 + 4
17: FirstPlacePfu_66 + 1
18: PeanutPie_67 + 2
19: GAL1_67

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 347694 Report

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

Pham number 347694 has 52 members, 6 are drafts.

Phages represented in each track:
• Track 1 : DinoDaryn_53, Huffy_53
• Track 2 : Ohgeesy_71
• Track 3 : Easley_66
• Track 4 : Tuti_62, MichaelScott_69
• Track 5 : Invectra_71, Samman98_69, Beenie_62, Clark_67
• Track 6 : Thimann_69, Rizz_69
• Track 7 : Oregano_68
• Track 8 : BearBQ_88
• Track 9 : Whitney_87
• Track 10 : Bran_48
• Track 11 : Khuang_59
• Track 12 : Sbash_77
• Track 13 : Bluvara_66
• Track 14 : Sonah_63, Juniormint_60, Jung_63, Polkaroo_64, Atcoo_64, Zilizebeth_68, Thespis_64, Malithi_62, Vidya_61, Shipwreck_65, StevieRay_67, Jebeks_63, Necropolis_60, Bogie_65, Dynamo_62, Brusacoram_64, HUHilltop_65, Pygmy_66, Camster_63, Phineas_63
• Track 15 : Techage_63, Xula_58
• Track 16 : Arib1_61, Venti_60, Bartholomew_58, GaloreK_63, QueenHazel_59
• Track 17 : FirstPlacePfu_66, GreaseLightnin_67
• Track 18 : PeanutPie_67, Megiddo_62, Bhagsy_68
• Track 19 : GAL1_67

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

The start number called the most often in the published annotations is 23, it was called in 29 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Arib1_61, Atcoo_64, Bartholomew_58, Bhagsy_68, Bluvara_66, Bogie_65, Brusacoram_64, Camster_63, Dynamo_62, FirstPlacePfu_66, GaloreK_63, GreaseLightnin_67, HUHilltop_65, Jebeks_63, Jung_63, Juniormint_60, Malithi_62, Megiddo_62, Necropolis_60, PeanutPie_67, Phineas_63, Polkaroo_64, Pygmy_66, QueenHazel_59, Shipwreck_65, Sonah_63, StevieRay_67, Techage_63,

Thespis_64, Venti_60, Vidya_61, Xula_58, Zilizebeth_68,

Genes that have the "Most Annotated" start but do not call it:
• DinoDaryn_53, Huffy_53,

Genes that do not have the "Most Annotated" start:
• BearBQ_88, Beenie_62, Bran_48, Clark_67, Easley_66, GAL1_67, Invectra_71, Khuang_59, MichaelScott_69, Ohgeesy_71, Oregano_68, Rizz_69, Samman98_69, Sbash_77, Thimann_69, Tuti_62, Whitney_87,

Summary by start number:

Start 3:
• Found in 1 of 52 (1.9%) of genes in pham
• Manual Annotations of this start: 1 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Bran_48 (EP),

Start 21:
• Found in 14 of 52 (26.9%) of genes in pham
• Manual Annotations of this start: 13 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BearBQ_88 (DN), Beenie_62 (CZ4), Clark_67 (CZ4), Easley_66 (CZ4), Invectra_71 (CZ4), MichaelScott_69 (CZ4), Ohgeesy_71 (CZ), Oregano_68 (CZ4), Rizz_69 (CZ4), Samman98_69 (CZ4), Sbash_77 (I2), Thimann_69 (CZ4), Tuti_62 (CZ4), Whitney_87 (DN1),

Start 22:
• Found in 1 of 52 (1.9%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GAL1_67 (singleton),

Start 23:
• Found in 35 of 52 (67.3%) of genes in pham
• Manual Annotations of this start: 29 of 46
• Called 94.3% of time when present
• Phage (with cluster) where this start called: Arib1_61 (P1), Atcoo_64 (P1), Bartholomew_58 (P1), Bhagsy_68 (P1), Bluvara_66 (I3), Bogie_65 (P1), Brusacoram_64 (P1), Camster_63 (P1), Dynamo_62 (P1), FirstPlacePfu_66 (P1), GaloreK_63 (P1), GreaseLightnin_67 (P1), HUHilltop_65 (P1), Jebeks_63 (P1), Jung_63 (P1), Juniormint_60 (P1), Malithi_62 (P1), Megiddo_62 (P1), Necropolis_60 (P1), PeanutPie_67 (P1), Phineas_63 (P1), Polkaroo_64 (P1), Pygmy_66 (P1), QueenHazel_59 (I1), Shipwreck_65 (P1), Sonah_63 (P1), StevieRay_67 (P1), Techage_63 (P1), Thespis_64 (P1), Venti_60 (P1), Vidya_61 (P1), Xula_58 (I1), Zilizebeth_68 (P1),

Start 25:
• Found in 2 of 52 (3.8%) of genes in pham
• Manual Annotations of this start: 2 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: DinoDaryn_53 (CU1), Huffy_53 (CU1),

Start 33:
• Found in 1 of 52 (1.9%) of genes in pham
• Manual Annotations of this start: 1 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Khuang_59 (FS),

Summary by clusters:

There are 12 clusters represented in this pham: DN, singleton, P1, CU1, I1, I3, I2, CZ4, CZ, FS, DN1, EP,

Info for manual annotations of cluster CU1:
•Start number 25 was manually annotated 2 times for cluster CU1.

Info for manual annotations of cluster CZ:
•Start number 21 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ4:
•Start number 21 was manually annotated 9 times for cluster CZ4.

Info for manual annotations of cluster DN:
•Start number 21 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 21 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster EP:
•Start number 3 was manually annotated 1 time for cluster EP.

Info for manual annotations of cluster FS:
•Start number 33 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster I1:
•Start number 23 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:
•Start number 21 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster P1:
•Start number 23 was manually annotated 27 times for cluster P1.

Gene Information:

Gene: Arib1_61 Start: 39295, Stop: 40290, Start Num: 23
Candidate Starts for Arib1_61:
(Start: 23 @39295 has 29 MA's), (29, 39340), (50, 39490), (62, 39571), (72, 39661), (77, 39694), (82, 39733), (85, 39781), (87, 39790), (96, 39922), (99, 39997), (101, 40024), (102, 40045),

Gene: Atcoo_64 Start: 42672, Stop: 43670, Start Num: 23
Candidate Starts for Atcoo_64:

(Start: 23 @42672 has 29 MA's), (29, 42717), (50, 42867), (72, 43038), (77, 43071), (85, 43158), (87, 43167), (96, 43299), (99, 43374), (101, 43401), (114, 43659),

Gene: Bartholomew_58 Start: 38622, Stop: 39617, Start Num: 23
Candidate Starts for Bartholomew_58:
(Start: 23 @38622 has 29 MA's), (29, 38667), (50, 38817), (62, 38898), (72, 38988), (77, 39021), (82, 39060), (85, 39108), (87, 39117), (96, 39249), (99, 39324), (101, 39351), (102, 39372),

Gene: BearBQ_88 Start: 49499, Stop: 50473, Start Num: 21
Candidate Starts for BearBQ_88:
(Start: 21 @49499 has 13 MA's), (30, 49577), (59, 49802), (61, 49814), (69, 49859), (70, 49862), (74, 49928), (76, 49937), (95, 50192),

Gene: Beenie_62 Start: 43030, Stop: 44043, Start Num: 21
Candidate Starts for Beenie_62:
(1, 42694), (2, 42784), (11, 42937), (12, 42955), (Start: 21 @43030 has 13 MA's), (30, 43108), (57, 43300), (59, 43333), (60, 43339), (66, 43366), (69, 43390), (71, 43405), (74, 43459), (76, 43468), (91, 43675), (106, 43942),

Gene: Bhagsy_68 Start: 41777, Stop: 42787, Start Num: 23
Candidate Starts for Bhagsy_68:
(Start: 23 @41777 has 29 MA's), (29, 41822), (50, 41972), (72, 42143), (77, 42176), (85, 42263), (87, 42272), (96, 42416), (99, 42491), (101, 42518), (113, 42701), (114, 42776),

Gene: Bluvara_66 Start: 43290, Stop: 44321, Start Num: 23
Candidate Starts for Bluvara_66:
(Start: 23 @43290 has 29 MA's), (29, 43335), (50, 43485), (62, 43566), (64, 43569), (72, 43656), (77, 43689), (80, 43722), (82, 43761), (85, 43809), (87, 43818), (96, 43950), (99, 44028), (101, 44055), (102, 44076), (104, 44124),

Gene: Bogie_65 Start: 41654, Stop: 42652, Start Num: 23
Candidate Starts for Bogie_65:
(Start: 23 @41654 has 29 MA's), (29, 41699), (50, 41849), (72, 42020), (77, 42053), (85, 42140), (87, 42149), (96, 42281), (99, 42356), (101, 42383), (114, 42641),

Gene: Bran_48 Start: 34239, Stop: 35393, Start Num: 3
Candidate Starts for Bran_48:
(Start: 3 @34239 has 1 MA's), (13, 34365), (18, 34416), (19, 34422), (20, 34425), (27, 34497), (34, 34533), (35, 34542), (41, 34599), (42, 34605), (49, 34644), (51, 34677), (52, 34680), (84, 34947), (86, 34959), (103, 35244), (105, 35289),

Gene: Brusacoram_64 Start: 41215, Stop: 42213, Start Num: 23
Candidate Starts for Brusacoram_64:
(Start: 23 @41215 has 29 MA's), (29, 41260), (50, 41410), (72, 41581), (77, 41614), (85, 41701), (87, 41710), (96, 41842), (99, 41917), (101, 41944), (114, 42202),

Gene: Camster_63 Start: 40115, Stop: 41113, Start Num: 23
Candidate Starts for Camster_63:
(Start: 23 @40115 has 29 MA's), (29, 40160), (50, 40310), (72, 40481), (77, 40514), (85, 40601), (87, 40610), (96, 40742), (99, 40817), (101, 40844), (114, 41102),

Gene: Clark_67 Start: 42793, Stop: 43806, Start Num: 21
Candidate Starts for Clark_67:

(1, 42457), (2, 42547), (11, 42700), (12, 42718), (Start: 21 @42793 has 13 MA's), (30, 42871), (57, 43063), (59, 43096), (60, 43102), (66, 43129), (69, 43153), (71, 43168), (74, 43222), (76, 43231), (91, 43438), (106, 43705),

Gene: DinoDaryn_53 Start: 33407, Stop: 34255, Start Num: 25
Candidate Starts for DinoDaryn_53:
(Start: 23 @33380 has 29 MA's), (Start: 25 @33407 has 2 MA's), (37, 33467), (38, 33476), (40, 33503), (43, 33518), (45, 33530), (48, 33542), (68, 33689), (90, 33881), (100, 34058), (102, 34088), (111, 34223),

Gene: Dynamo_62 Start: 39688, Stop: 40686, Start Num: 23
Candidate Starts for Dynamo_62:
(Start: 23 @39688 has 29 MA's), (29, 39733), (50, 39883), (72, 40054), (77, 40087), (85, 40174), (87, 40183), (96, 40315), (99, 40390), (101, 40417), (114, 40675),

Gene: Easley_66 Start: 41785, Stop: 42798, Start Num: 21
Candidate Starts for Easley_66:
(8, 41665), (Start: 21 @41785 has 13 MA's), (30, 41863), (57, 42055), (59, 42088), (60, 42094), (66, 42121), (67, 42136), (69, 42145), (71, 42160), (74, 42214), (76, 42223), (91, 42430), (106, 42697),

Gene: FirstPlacePfu_66 Start: 39281, Stop: 40279, Start Num: 23
Candidate Starts for FirstPlacePfu_66:
(Start: 23 @39281 has 29 MA's), (29, 39326), (50, 39476), (72, 39647), (77, 39680), (82, 39719), (85, 39767), (87, 39776), (96, 39908), (99, 39983), (101, 40010), (113, 40193), (114, 40268),

Gene: GAL1_67 Start: 42573, Stop: 43475, Start Num: 22
Candidate Starts for GAL1_67:
(17, 42531), (22, 42573), (24, 42597), (31, 42657), (32, 42660), (39, 42708), (46, 42756), (54, 42825), (65, 42894), (70, 42933), (73, 42954), (76, 42978), (95, 43170), (109, 43401),

Gene: GaloreK_63 Start: 40740, Stop: 41744, Start Num: 23
Candidate Starts for GaloreK_63:
(Start: 23 @40740 has 29 MA's), (29, 40785), (50, 40935), (62, 41016), (72, 41106), (77, 41139), (82, 41178), (85, 41226), (87, 41235), (96, 41379), (99, 41454), (101, 41481), (102, 41502),

Gene: GreaseLightnin_67 Start: 42069, Stop: 43067, Start Num: 23
Candidate Starts for GreaseLightnin_67:
(Start: 23 @42069 has 29 MA's), (29, 42114), (50, 42264), (72, 42435), (77, 42468), (82, 42507), (85, 42555), (87, 42564), (96, 42696), (99, 42771), (101, 42798), (113, 42981), (114, 43056),

Gene: HUHilltop_65 Start: 39911, Stop: 40909, Start Num: 23
Candidate Starts for HUHilltop_65:
(Start: 23 @39911 has 29 MA's), (29, 39956), (50, 40106), (72, 40277), (77, 40310), (85, 40397), (87, 40406), (96, 40538), (99, 40613), (101, 40640), (114, 40898),

Gene: Huffy_53 Start: 33407, Stop: 34255, Start Num: 25
Candidate Starts for Huffy_53:
(Start: 23 @33380 has 29 MA's), (Start: 25 @33407 has 2 MA's), (37, 33467), (38, 33476), (40, 33503), (43, 33518), (45, 33530), (48, 33542), (68, 33689), (90, 33881), (100, 34058), (102, 34088), (111, 34223),

Gene: Invectra_71 Start: 44366, Stop: 45379, Start Num: 21
Candidate Starts for Invectra_71:

(1, 44030), (2, 44120), (11, 44273), (12, 44291), (Start: 21 @44366 has 13 MA's), (30, 44444), (57, 44636), (59, 44669), (60, 44675), (66, 44702), (69, 44726), (71, 44741), (74, 44795), (76, 44804), (91, 45011), (106, 45278),

Gene: Jebeks_63 Start: 39208, Stop: 40206, Start Num: 23
Candidate Starts for Jebeks_63:
(Start: 23 @39208 has 29 MA's), (29, 39253), (50, 39403), (72, 39574), (77, 39607), (85, 39694), (87, 39703), (96, 39835), (99, 39910), (101, 39937), (114, 40195),

Gene: Jung_63 Start: 40211, Stop: 41209, Start Num: 23
Candidate Starts for Jung_63:
(Start: 23 @40211 has 29 MA's), (29, 40256), (50, 40406), (72, 40577), (77, 40610), (85, 40697), (87, 40706), (96, 40838), (99, 40913), (101, 40940), (114, 41198),

Gene: Juniormint_60 Start: 38664, Stop: 39662, Start Num: 23
Candidate Starts for Juniormint_60:
(Start: 23 @38664 has 29 MA's), (29, 38709), (50, 38859), (72, 39030), (77, 39063), (85, 39150), (87, 39159), (96, 39291), (99, 39366), (101, 39393), (114, 39651),

Gene: Khuang_59 Start: 34036, Stop: 34887, Start Num: 33
Candidate Starts for Khuang_59:
(16, 33901), (Start: 33 @34036 has 1 MA's), (44, 34117), (47, 34132), (53, 34195), (56, 34207), (63, 34261), (75, 34351), (78, 34372), (81, 34387), (83, 34420), (88, 34468), (89, 34474), (95, 34585), (97, 34636), (107, 34813), (110, 34837), (112, 34843),

Gene: Malithi_62 Start: 39826, Stop: 40836, Start Num: 23
Candidate Starts for Malithi_62:
(Start: 23 @39826 has 29 MA's), (29, 39871), (50, 40021), (72, 40192), (77, 40225), (85, 40312), (87, 40321), (96, 40465), (99, 40540), (101, 40567), (114, 40825),

Gene: Megiddo_62 Start: 41848, Stop: 42846, Start Num: 23
Candidate Starts for Megiddo_62:
(Start: 23 @41848 has 29 MA's), (29, 41893), (50, 42043), (72, 42214), (77, 42247), (85, 42334), (87, 42343), (96, 42475), (99, 42550), (101, 42577), (113, 42760), (114, 42835),

Gene: MichaelScott_69 Start: 43474, Stop: 44487, Start Num: 21
Candidate Starts for MichaelScott_69:
(Start: 21 @43474 has 13 MA's), (30, 43552), (57, 43744), (59, 43777), (60, 43783), (66, 43810), (69, 43834), (71, 43849), (74, 43903), (76, 43912), (91, 44119), (106, 44386),

Gene: Necropolis_60 Start: 39277, Stop: 40275, Start Num: 23
Candidate Starts for Necropolis_60:
(Start: 23 @39277 has 29 MA's), (29, 39322), (50, 39472), (72, 39643), (77, 39676), (85, 39763), (87, 39772), (96, 39904), (99, 39979), (101, 40006), (114, 40264),

Gene: Ohgeesy_71 Start: 47255, Stop: 48268, Start Num: 21
Candidate Starts for Ohgeesy_71:
(Start: 21 @47255 has 13 MA's), (30, 47333), (50, 47486), (57, 47525), (59, 47558), (60, 47564), (61, 47570), (69, 47615), (71, 47630), (74, 47684), (76, 47693), (91, 47900), (106, 48167),

Gene: Oregano_68 Start: 42348, Stop: 43361, Start Num: 21
Candidate Starts for Oregano_68:

(6, 42189), (7, 42216), (13, 42279), (14, 42294), (15, 42303), (Start: 21 @42348 has 13 MA's), (30, 42426), (36, 42465), (55, 42606), (57, 42618), (59, 42651), (60, 42657), (66, 42684), (69, 42708), (71, 42723), (74, 42777), (76, 42786), (91, 42993), (106, 43260),

Gene: PeanutPie_67 Start: 41780, Stop: 42790, Start Num: 23
Candidate Starts for PeanutPie_67:
(Start: 23 @41780 has 29 MA's), (29, 41825), (50, 41975), (72, 42146), (77, 42179), (85, 42266), (87, 42275), (96, 42419), (99, 42494), (101, 42521), (113, 42704), (114, 42779),

Gene: Phineas_63 Start: 40246, Stop: 41244, Start Num: 23
Candidate Starts for Phineas_63:
(Start: 23 @40246 has 29 MA's), (29, 40291), (50, 40441), (72, 40612), (77, 40645), (85, 40732), (87, 40741), (96, 40873), (99, 40948), (101, 40975), (114, 41233),

Gene: Polkaroo_64 Start: 41992, Stop: 42990, Start Num: 23
Candidate Starts for Polkaroo_64:
(Start: 23 @41992 has 29 MA's), (29, 42037), (50, 42187), (72, 42358), (77, 42391), (85, 42478), (87, 42487), (96, 42619), (99, 42694), (101, 42721), (114, 42979),

Gene: Pygmy_66 Start: 41710, Stop: 42708, Start Num: 23
Candidate Starts for Pygmy_66:
(Start: 23 @41710 has 29 MA's), (29, 41755), (50, 41905), (72, 42076), (77, 42109), (85, 42196), (87, 42205), (96, 42337), (99, 42412), (101, 42439), (114, 42697),

Gene: QueenHazel_59 Start: 39831, Stop: 40829, Start Num: 23
Candidate Starts for QueenHazel_59:
(Start: 23 @39831 has 29 MA's), (29, 39876), (50, 40026), (62, 40107), (72, 40197), (77, 40230), (82, 40269), (85, 40317), (87, 40326), (96, 40458), (99, 40536), (101, 40563), (102, 40584),

Gene: Rizz_69 Start: 43582, Stop: 44595, Start Num: 21
Candidate Starts for Rizz_69:
(11, 43489), (12, 43507), (Start: 21 @43582 has 13 MA's), (30, 43660), (57, 43852), (59, 43885), (60, 43891), (66, 43918), (69, 43942), (71, 43957), (74, 44011), (76, 44020), (91, 44227), (106, 44494),

Gene: Samman98_69 Start: 42896, Stop: 43909, Start Num: 21
Candidate Starts for Samman98_69:
(1, 42560), (2, 42650), (11, 42803), (12, 42821), (Start: 21 @42896 has 13 MA's), (30, 42974), (57, 43166), (59, 43199), (60, 43205), (66, 43232), (69, 43256), (71, 43271), (74, 43325), (76, 43334), (91, 43541), (106, 43808),

Gene: Sbash_77 Start: 49011, Stop: 50084, Start Num: 21
Candidate Starts for Sbash_77:
(9, 48885), (Start: 21 @49011 has 13 MA's), (26, 49065), (28, 49077), (30, 49089), (58, 49296), (59, 49314), (69, 49371), (70, 49374), (74, 49440), (76, 49449), (79, 49482), (89, 49593), (93, 49680), (94, 49695), (99, 49791), (101, 49818), (102, 49839),

Gene: Shipwreck_65 Start: 41685, Stop: 42683, Start Num: 23
Candidate Starts for Shipwreck_65:
(Start: 23 @41685 has 29 MA's), (29, 41730), (50, 41880), (72, 42051), (77, 42084), (85, 42171), (87, 42180), (96, 42312), (99, 42387), (101, 42414), (114, 42672),

Gene: Sonah_63 Start: 39382, Stop: 40380, Start Num: 23
Candidate Starts for Sonah_63:

(Start: 23 @39382 has 29 MA's), (29, 39427), (50, 39577), (72, 39748), (77, 39781), (85, 39868), (87, 39877), (96, 40009), (99, 40084), (101, 40111), (114, 40369),

Gene: StevieRay_67 Start: 42449, Stop: 43447, Start Num: 23
Candidate Starts for StevieRay_67:
(Start: 23 @42449 has 29 MA's), (29, 42494), (50, 42644), (72, 42815), (77, 42848), (85, 42935), (87, 42944), (96, 43076), (99, 43151), (101, 43178), (114, 43436),

Gene: Techage_63 Start: 40250, Stop: 41245, Start Num: 23
Candidate Starts for Techage_63:
(Start: 23 @40250 has 29 MA's), (29, 40295), (50, 40445), (62, 40526), (64, 40529), (72, 40616), (77, 40649), (82, 40688), (85, 40736), (87, 40745), (96, 40877), (99, 40952), (101, 40979), (102, 41000),

Gene: Thespis_64 Start: 41215, Stop: 42213, Start Num: 23
Candidate Starts for Thespis_64:
(Start: 23 @41215 has 29 MA's), (29, 41260), (50, 41410), (72, 41581), (77, 41614), (85, 41701), (87, 41710), (96, 41842), (99, 41917), (101, 41944), (114, 42202),

Gene: Thimann_69 Start: 43153, Stop: 44166, Start Num: 21
Candidate Starts for Thimann_69:
(11, 43060), (12, 43078), (Start: 21 @43153 has 13 MA's), (30, 43231), (57, 43423), (59, 43456), (60, 43462), (66, 43489), (69, 43513), (71, 43528), (74, 43582), (76, 43591), (91, 43798), (106, 44065),

Gene: Tuti_62 Start: 43332, Stop: 44345, Start Num: 21
Candidate Starts for Tuti_62:
(Start: 21 @43332 has 13 MA's), (30, 43410), (57, 43602), (59, 43635), (60, 43641), (66, 43668), (69, 43692), (71, 43707), (74, 43761), (76, 43770), (91, 43977), (106, 44244),

Gene: Venti_60 Start: 38622, Stop: 39617, Start Num: 23
Candidate Starts for Venti_60:
(Start: 23 @38622 has 29 MA's), (29, 38667), (50, 38817), (62, 38898), (72, 38988), (77, 39021), (82, 39060), (85, 39108), (87, 39117), (96, 39249), (99, 39324), (101, 39351), (102, 39372),

Gene: Vidya_61 Start: 39503, Stop: 40501, Start Num: 23
Candidate Starts for Vidya_61:
(Start: 23 @39503 has 29 MA's), (29, 39548), (50, 39698), (72, 39869), (77, 39902), (85, 39989), (87, 39998), (96, 40130), (99, 40205), (101, 40232), (114, 40490),

Gene: Whitney_87 Start: 49909, Stop: 50904, Start Num: 21
Candidate Starts for Whitney_87:
(4, 49741), (5, 49753), (10, 49804), (Start: 21 @49909 has 13 MA's), (30, 49987), (59, 50212), (60, 50218), (61, 50224), (69, 50269), (70, 50272), (71, 50284), (74, 50338), (76, 50347), (92, 50560), (98, 50653), (108, 50824), (109, 50830),

Gene: Xula_58 Start: 39452, Stop: 40450, Start Num: 23
Candidate Starts for Xula_58:
(Start: 23 @39452 has 29 MA's), (29, 39497), (50, 39647), (62, 39728), (64, 39731), (72, 39818), (77, 39851), (82, 39890), (85, 39938), (87, 39947), (96, 40079), (99, 40157), (101, 40184), (102, 40205),

Gene: Zilizebeth_68 Start: 41024, Stop: 42022, Start Num: 23
Candidate Starts for Zilizebeth_68:
(Start: 23 @41024 has 29 MA's), (29, 41069), (50, 41219), (72, 41390), (77, 41423), (85, 41510), (87, 41519), (96, 41651), (99, 41726), (101, 41753), (114, 42011),