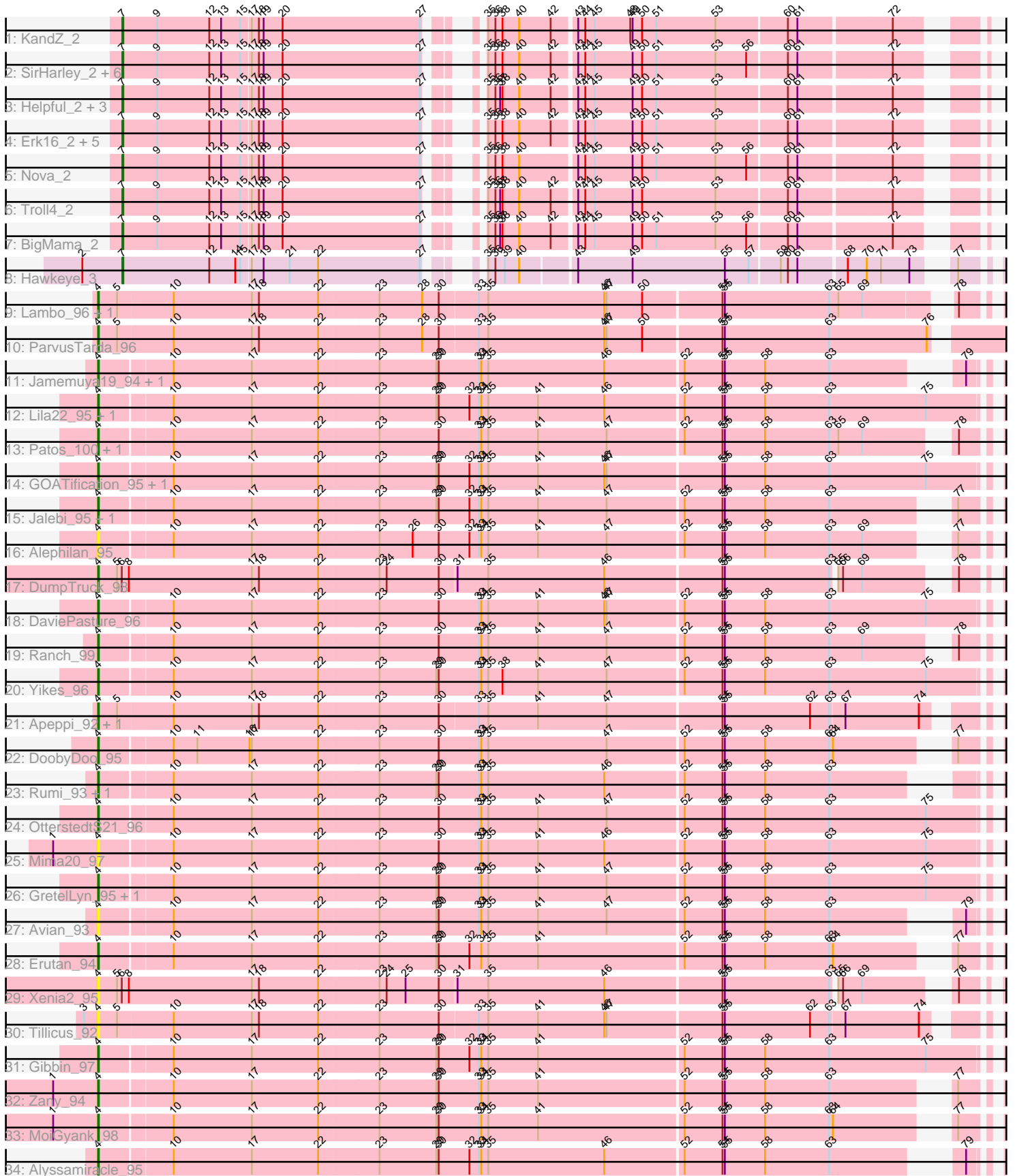


Zoomed Pham 194039



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 194039 Report

This analysis was run 11/02/24 on database version 579.

Pham number 194039 has 57 members, 7 are drafts.

Phages represented in each track:

- Track 1 : KandZ_2
- Track 2 : SirHarley_2, Butterscotch_2, PBI1_2, Adjutor_2, Gumball_2, Giuseppe_2, Visconti_2
- Track 3 : Helpful_2, Delton_2, Penelope2018_2, Prager_2
- Track 4 : Erk16_2, Thoth_2, PLOT_2, Chill_2, WaldoWhy_2, Mopey_2
- Track 5 : Nova_2
- Track 6 : Troll4_2
- Track 7 : BigMama_2
- Track 8 : Hawkeye_3
- Track 9 : Lambo_96, Wojtek_88
- Track 10 : ParvusTarda_96
- Track 11 : Jamemuya19_94, Genamy16_95
- Track 12 : Lila22_95, BirthdayBoy_97
- Track 13 : Patos_100, NorManre_100
- Track 14 : GOATification_95, Fulcrum_95
- Track 15 : Jalebi_95, Sampudon_97
- Track 16 : Alephlan_95
- Track 17 : DumpTruck_98
- Track 18 : DaviePasture_96
- Track 19 : Ranch_99
- Track 20 : Yikes_96
- Track 21 : Apeppi_92, LuckyLeo_94
- Track 22 : DoobyDoo_95
- Track 23 : Rumi_93, NovaSharks_94
- Track 24 : OtterstedtS21_96
- Track 25 : Mima20_97
- Track 26 : GretelLyn_95, Sadboi_95
- Track 27 : Avian_93
- Track 28 : Erutan_94
- Track 29 : Xenia2_95
- Track 30 : Tillicus_92
- Track 31 : Gibbin_97
- Track 32 : Zany_94
- Track 33 : MoiGyank_98
- Track 34 : Alyssamiracle_95

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

The start number called the most often in the published annotations is 4, it was called in 29 of the 50 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alephilan_95, Alyssamiracle_95, Apeppi_92, Avian_93, BirthdayBoy_97, DaviePasture_96, DoobyDoo_95, DumpTruck_98, Erutan_94, Fulcrum_95, GOATification_95, Genamy16_95, Gibbin_97, GretellLyn_95, Jalebi_95, Jamemuya19_94, Lambo_96, Lila22_95, LuckyLeo_94, Mima20_97, MoiGyank_98, NorManre_100, NovaSharks_94, OtterstedtS21_96, ParvusTarda_96, Patos_100, Ranch_99, Rumi_93, Sadboi_95, Sampudon_97, Tillicus_92, Wojtek_88, Xenia2_95, Yikes_96, Zany_94,

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

-

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

- Adjutor_2, BigMama_2, Butterscotch_2, Chill_2, Delton_2, Erk16_2, Giuseppe_2, Gumball_2, Hawkeye_3, Helpful_2, KandZ_2, Mopey_2, Nova_2, PBI1_2, PLOT_2, Penelope2018_2, Prager_2, SirHarley_2, Thoth_2, Troll4_2, Visconti_2, WaldoWhy_2,

Summary by start number:

Start 4:

- Found in 35 of 57 (61.4%) of genes in pham
- Manual Annotations of this start: 29 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alephilan_95 (DV), Alyssamiracle_95 (DV), Apeppi_92 (DV), Avian_93 (DV), BirthdayBoy_97 (DV), DaviePasture_96 (DV), DoobyDoo_95 (DV), DumpTruck_98 (DV), Erutan_94 (DV), Fulcrum_95 (DV), GOATification_95 (DV), Genamy16_95 (DV), Gibbin_97 (DV), GretellLyn_95 (DV), Jalebi_95 (DV), Jamemuya19_94 (DV), Lambo_96 (DV), Lila22_95 (DV), LuckyLeo_94 (DV), Mima20_97 (DV), MoiGyank_98 (DV), NorManre_100 (DV), NovaSharks_94 (DV), OtterstedtS21_96 (DV), ParvusTarda_96 (DV), Patos_100 (DV), Ranch_99 (DV), Rumi_93 (DV), Sadboi_95 (DV), Sampudon_97 (DV), Tillicus_92 (DV), Wojtek_88 (DV), Xenia2_95 (DV), Yikes_96 (DV), Zany_94 (DV),

Start 7:

- Found in 22 of 57 (38.6%) of genes in pham
- Manual Annotations of this start: 21 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adjutor_2 (D1), BigMama_2 (D1), Butterscotch_2 (D1), Chill_2 (D1), Delton_2 (D1), Erk16_2 (D1), Giuseppe_2 (D1), Gumball_2 (D1), Hawkeye_3 (D2), Helpful_2 (D1), KandZ_2 (D1), Mopey_2 (D1), Nova_2 (D1), PBI1_2 (D1), PLOT_2 (D1), Penelope2018_2 (D1), Prager_2 (D1), SirHarley_2 (D1), Thoth_2 (D1), Troll4_2 (D1), Visconti_2 (D1), WaldoWhy_2 (D1),

Summary by clusters:

There are 3 clusters represented in this pham: DV, D2, D1,

Info for manual annotations of cluster D1:

•Start number 7 was manually annotated 20 times for cluster D1.

Info for manual annotations of cluster D2:

•Start number 7 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DV:

•Start number 4 was manually annotated 29 times for cluster DV.

Gene Information:

Gene: Adjutor_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Adjutor_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Alephilan_95 Start: 65669, Stop: 66970, Start Num: 4

Candidate Starts for Alephilan_95:

(Start: 4 @65669 has 29 MA's), (10, 65756), (17, 65855), (22, 65939), (23, 66014), (26, 66056), (30, 66089), (32, 66128), (33, 66140), (34, 66143), (35, 66152), (41, 66215), (47, 66302), (52, 66395), (54, 66443), (55, 66446), (58, 66497), (63, 66578), (69, 66617), (77, 66692), (85, 66866),

Gene: Alyssamiracle_95 Start: 63627, Stop: 64913, Start Num: 4

Candidate Starts for Alyssamiracle_95:

(Start: 4 @63627 has 29 MA's), (10, 63714), (17, 63813), (22, 63897), (23, 63972), (29, 64044), (30, 64047), (32, 64086), (33, 64098), (34, 64101), (35, 64110), (46, 64257), (52, 64353), (54, 64401), (55, 64404), (58, 64455), (63, 64536), (79, 64647), (85, 64809),

Gene: Apeppi_92 Start: 65297, Stop: 66625, Start Num: 4

Candidate Starts for Apeppi_92:

(Start: 4 @65297 has 29 MA's), (5, 65321), (10, 65390), (17, 65489), (18, 65498), (22, 65573), (23, 65648), (30, 65723), (33, 65771), (35, 65783), (41, 65846), (47, 65933), (54, 66074), (55, 66077), (62, 66185), (63, 66209), (67, 66227), (74, 66320), (80, 66389), (85, 66521), (89, 66566),

Gene: Avian_93 Start: 63389, Stop: 64675, Start Num: 4

Candidate Starts for Avian_93:

(Start: 4 @63389 has 29 MA's), (10, 63476), (17, 63575), (22, 63659), (23, 63734), (29, 63806), (30, 63809), (33, 63860), (34, 63863), (35, 63872), (41, 63935), (47, 64022), (52, 64115), (54, 64163), (55, 64166), (58, 64217), (63, 64298), (79, 64409), (85, 64571),

Gene: BigMama_2 Start: 421, Stop: 1542, Start Num: 7

Candidate Starts for BigMama_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (37, 838), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1507),

Gene: BirthdayBoy_97 Start: 65681, Stop: 67027, Start Num: 4

Candidate Starts for BirthdayBoy_97:

(Start: 4 @65681 has 29 MA's), (10, 65768), (17, 65867), (22, 65951), (23, 66026), (29, 66098), (30, 66101), (32, 66140), (33, 66152), (34, 66155), (35, 66164), (41, 66227), (46, 66311), (52, 66407), (54, 66455), (55, 66458), (58, 66509), (63, 66590), (75, 66710), (85, 66923),

Gene: Butterscotch_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Butterscotch_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Chill_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for Chill_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: DaviePasture_96 Start: 65655, Stop: 67001, Start Num: 4

Candidate Starts for DaviePasture_96:

(Start: 4 @65655 has 29 MA's), (10, 65742), (17, 65841), (22, 65925), (23, 66000), (30, 66075), (33, 66126), (34, 66129), (35, 66138), (41, 66201), (46, 66285), (47, 66288), (52, 66381), (54, 66429), (55, 66432), (58, 66483), (63, 66564), (75, 66684), (85, 66897),

Gene: Delton_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for Delton_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (37, 838), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: DoobyDoo_95 Start: 64434, Stop: 65735, Start Num: 4

Candidate Starts for DoobyDoo_95:

(Start: 4 @64434 has 29 MA's), (10, 64521), (11, 64551), (16, 64617), (17, 64620), (22, 64704), (23, 64779), (30, 64854), (33, 64905), (34, 64908), (35, 64917), (47, 65067), (52, 65160), (54, 65208), (55, 65211), (58, 65262), (63, 65343), (64, 65346), (77, 65457), (85, 65631),

Gene: DumpTruck_98 Start: 65883, Stop: 67190, Start Num: 4

Candidate Starts for DumpTruck_98:

(Start: 4 @65883 has 29 MA's), (5, 65907), (6, 65913), (8, 65922), (17, 66078), (18, 66087), (22, 66162), (23, 66237), (24, 66246), (30, 66312), (31, 66333), (35, 66372), (46, 66519), (54, 66663), (55, 66666), (63, 66798), (65, 66801), (66, 66807), (69, 66831), (78, 66918), (82, 67053), (84, 67077), (87, 67098), (88, 67125),

Gene: Erk16_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Erk16_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Erutan_94 Start: 65045, Stop: 66346, Start Num: 4

Candidate Starts for Erutan_94:

(Start: 4 @65045 has 29 MA's), (10, 65132), (17, 65231), (22, 65315), (23, 65390), (29, 65462), (30, 65465), (32, 65504), (34, 65519), (35, 65528), (41, 65591), (52, 65771), (54, 65819), (55, 65822), (58, 65873), (63, 65954), (64, 65957), (77, 66068), (85, 66242),

Gene: Fulcrum_95 Start: 65648, Stop: 66994, Start Num: 4

Candidate Starts for Fulcrum_95:

(Start: 4 @65648 has 29 MA's), (10, 65735), (17, 65834), (22, 65918), (23, 65993), (29, 66065), (30, 66068), (32, 66107), (33, 66119), (34, 66122), (35, 66131), (41, 66194), (46, 66278), (47, 66281), (54, 66422), (55, 66425), (58, 66476), (63, 66557), (75, 66677), (85, 66890),

Gene: GOATification_95 Start: 65648, Stop: 66994, Start Num: 4

Candidate Starts for GOATification_95:

(Start: 4 @65648 has 29 MA's), (10, 65735), (17, 65834), (22, 65918), (23, 65993), (29, 66065), (30, 66068), (32, 66107), (33, 66119), (34, 66122), (35, 66131), (41, 66194), (46, 66278), (47, 66281), (54, 66422), (55, 66425), (58, 66476), (63, 66557), (75, 66677), (85, 66890),

Gene: Genamy16_95 Start: 63676, Stop: 64962, Start Num: 4

Candidate Starts for Genamy16_95:

(Start: 4 @63676 has 29 MA's), (10, 63763), (17, 63862), (22, 63946), (23, 64021), (29, 64093), (30, 64096), (33, 64147), (34, 64150), (35, 64159), (46, 64306), (52, 64402), (54, 64450), (55, 64453), (58, 64504), (63, 64585), (79, 64696), (85, 64858),

Gene: Gibbin_97 Start: 65825, Stop: 67171, Start Num: 4

Candidate Starts for Gibbin_97:

(Start: 4 @65825 has 29 MA's), (10, 65912), (17, 66011), (22, 66095), (23, 66170), (29, 66242), (30, 66245), (32, 66284), (33, 66296), (34, 66299), (35, 66308), (41, 66371), (52, 66551), (54, 66599), (55, 66602), (58, 66653), (63, 66734), (75, 66854), (85, 67067),

Gene: Giuseppe_2 Start: 421, Stop: 1515, Start Num: 7

Candidate Starts for Giuseppe_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1480),

Gene: Gretellyn_95 Start: 65652, Stop: 66998, Start Num: 4

Candidate Starts for Gretellyn_95:

(Start: 4 @65652 has 29 MA's), (10, 65739), (17, 65838), (22, 65922), (23, 65997), (29, 66069), (30, 66072), (33, 66123), (34, 66126), (35, 66135), (41, 66198), (47, 66285), (52, 66378), (54, 66426), (55, 66429), (58, 66480), (63, 66561), (75, 66681), (85, 66894),

Gene: Gumball_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for Gumball_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: Hawkeye_3 Start: 790, Stop: 1944, Start Num: 7

Candidate Starts for Hawkeye_3:

(2, 739), (Start: 7 @790 has 21 MA's), (12, 898), (14, 931), (15, 937), (17, 949), (19, 964), (21, 997), (22, 1033), (27, 1162), (35, 1192), (36, 1201), (39, 1213), (40, 1231), (43, 1294), (49, 1363), (55, 1480), (57, 1510), (59, 1546), (60, 1555), (61, 1567), (68, 1624), (70, 1648), (71, 1666), (73, 1702), (77, 1729), (81, 1801), (88, 1924),

Gene: Helpful_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Helpful_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (37, 838), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937),

(45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Jalebi_95 Start: 66593, Stop: 67894, Start Num: 4

Candidate Starts for Jalebi_95:

(Start: 4 @66593 has 29 MA's), (10, 66680), (17, 66779), (22, 66863), (23, 66938), (29, 67010), (30, 67013), (32, 67052), (33, 67064), (34, 67067), (35, 67076), (41, 67139), (47, 67226), (52, 67319), (54, 67367), (55, 67370), (58, 67421), (63, 67502), (77, 67616), (85, 67790),

Gene: Jamemuya19_94 Start: 63301, Stop: 64587, Start Num: 4

Candidate Starts for Jamemuya19_94:

(Start: 4 @63301 has 29 MA's), (10, 63388), (17, 63487), (22, 63571), (23, 63646), (29, 63718), (30, 63721), (33, 63772), (34, 63775), (35, 63784), (46, 63931), (52, 64027), (54, 64075), (55, 64078), (58, 64129), (63, 64210), (79, 64321), (85, 64483),

Gene: KandZ_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for KandZ_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (48, 994), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Lambo_96 Start: 65885, Stop: 67201, Start Num: 4

Candidate Starts for Lambo_96:

(Start: 4 @65885 has 29 MA's), (5, 65909), (10, 65978), (17, 66077), (18, 66086), (22, 66161), (23, 66236), (28, 66290), (30, 66311), (33, 66359), (35, 66371), (46, 66518), (47, 66521), (50, 66566), (54, 66662), (55, 66665), (63, 66797), (65, 66809), (69, 66839), (78, 66926), (85, 67097),

Gene: Lila22_95 Start: 65625, Stop: 66971, Start Num: 4

Candidate Starts for Lila22_95:

(Start: 4 @65625 has 29 MA's), (10, 65712), (17, 65811), (22, 65895), (23, 65970), (29, 66042), (30, 66045), (32, 66084), (33, 66096), (34, 66099), (35, 66108), (41, 66171), (46, 66255), (52, 66351), (54, 66399), (55, 66402), (58, 66453), (63, 66534), (75, 66654), (85, 66867),

Gene: LuckyLeo_94 Start: 65297, Stop: 66625, Start Num: 4

Candidate Starts for LuckyLeo_94:

(Start: 4 @65297 has 29 MA's), (5, 65321), (10, 65390), (17, 65489), (18, 65498), (22, 65573), (23, 65648), (30, 65723), (33, 65771), (35, 65783), (41, 65846), (47, 65933), (54, 66074), (55, 66077), (62, 66185), (63, 66209), (67, 66227), (74, 66320), (80, 66389), (85, 66521), (89, 66566),

Gene: Mima20_97 Start: 65382, Stop: 66728, Start Num: 4

Candidate Starts for Mima20_97:

(1, 65325), (Start: 4 @65382 has 29 MA's), (10, 65469), (17, 65568), (22, 65652), (23, 65727), (30, 65802), (33, 65853), (34, 65856), (35, 65865), (41, 65928), (46, 66012), (52, 66108), (54, 66156), (55, 66159), (58, 66210), (63, 66291), (75, 66411), (85, 66624),

Gene: MoiGyank_98 Start: 65906, Stop: 67207, Start Num: 4

Candidate Starts for MoiGyank_98:

(1, 65849), (Start: 4 @65906 has 29 MA's), (10, 65993), (17, 66092), (22, 66176), (23, 66251), (29, 66323), (30, 66326), (33, 66377), (34, 66380), (35, 66389), (41, 66452), (52, 66632), (54, 66680), (55, 66683), (58, 66734), (63, 66815), (64, 66818), (77, 66929), (85, 67103),

Gene: Mopey_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Mopey_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: NorManre_100 Start: 66924, Stop: 68237, Start Num: 4

Candidate Starts for NorManre_100:

(Start: 4 @66924 has 29 MA's), (10, 67011), (17, 67110), (22, 67194), (23, 67269), (30, 67344), (33, 67395), (34, 67398), (35, 67407), (41, 67470), (47, 67557), (52, 67650), (54, 67698), (55, 67701), (58, 67752), (63, 67833), (65, 67845), (69, 67875), (78, 67962), (80, 68001), (85, 68133),

Gene: Nova_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for Nova_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: NovaSharks_94 Start: 63376, Stop: 64662, Start Num: 4

Candidate Starts for NovaSharks_94:

(Start: 4 @63376 has 29 MA's), (10, 63463), (17, 63562), (22, 63646), (23, 63721), (29, 63793), (30, 63796), (33, 63847), (34, 63850), (35, 63859), (46, 64006), (52, 64102), (54, 64150), (55, 64153), (58, 64204), (63, 64285), (85, 64558),

Gene: OtterstedtS21_96 Start: 65736, Stop: 67082, Start Num: 4

Candidate Starts for OtterstedtS21_96:

(Start: 4 @65736 has 29 MA's), (10, 65823), (17, 65922), (22, 66006), (23, 66081), (30, 66156), (33, 66207), (34, 66210), (35, 66219), (41, 66282), (47, 66369), (52, 66462), (54, 66510), (55, 66513), (58, 66564), (63, 66645), (75, 66765), (85, 66978),

Gene: PBI1_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for PBI1_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: PLOT_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for PLOT_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: ParvusTarda_96 Start: 65318, Stop: 66667, Start Num: 4

Candidate Starts for ParvusTarda_96:

(Start: 4 @65318 has 29 MA's), (5, 65342), (10, 65411), (17, 65510), (18, 65519), (22, 65594), (23, 65669), (28, 65723), (30, 65744), (33, 65792), (35, 65804), (46, 65951), (47, 65954), (50, 65999), (54, 66095), (55, 66098), (63, 66230), (76, 66350), (85, 66563),

Gene: Patos_100 Start: 66923, Stop: 68236, Start Num: 4

Candidate Starts for Patos_100:

(Start: 4 @66923 has 29 MA's), (10, 67010), (17, 67109), (22, 67193), (23, 67268), (30, 67343), (33, 67394), (34, 67397), (35, 67406), (41, 67469), (47, 67556), (52, 67649), (54, 67697), (55, 67700), (58, 67751), (63, 67832), (65, 67844), (69, 67874), (78, 67961), (80, 68000), (85, 68132),

Gene: Penelope2018_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Penelope2018_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (37, 838), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Prager_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for Prager_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (37, 838), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: Ranch_99 Start: 64973, Stop: 66283, Start Num: 4

Candidate Starts for Ranch_99:

(Start: 4 @64973 has 29 MA's), (10, 65060), (17, 65159), (22, 65243), (23, 65318), (30, 65393), (33, 65444), (34, 65447), (35, 65456), (41, 65519), (47, 65606), (52, 65699), (54, 65747), (55, 65750), (58, 65801), (63, 65882), (69, 65921), (78, 66008), (80, 66047), (85, 66179),

Gene: Rumi_93 Start: 62971, Stop: 64257, Start Num: 4

Candidate Starts for Rumi_93:

(Start: 4 @62971 has 29 MA's), (10, 63058), (17, 63157), (22, 63241), (23, 63316), (29, 63388), (30, 63391), (33, 63442), (34, 63445), (35, 63454), (46, 63601), (52, 63697), (54, 63745), (55, 63748), (58, 63799), (63, 63880), (85, 64153),

Gene: Sadboi_95 Start: 65532, Stop: 66878, Start Num: 4

Candidate Starts for Sadboi_95:

(Start: 4 @65532 has 29 MA's), (10, 65619), (17, 65718), (22, 65802), (23, 65877), (29, 65949), (30, 65952), (33, 66003), (34, 66006), (35, 66015), (41, 66078), (47, 66165), (52, 66258), (54, 66306), (55, 66309), (58, 66360), (63, 66441), (75, 66561), (85, 66774),

Gene: Sampudon_97 Start: 66592, Stop: 67893, Start Num: 4

Candidate Starts for Sampudon_97:

(Start: 4 @66592 has 29 MA's), (10, 66679), (17, 66778), (22, 66862), (23, 66937), (29, 67009), (30, 67012), (32, 67051), (33, 67063), (34, 67066), (35, 67075), (41, 67138), (47, 67225), (52, 67318), (54, 67366), (55, 67369), (58, 67420), (63, 67501), (77, 67615), (85, 67789),

Gene: SirHarley_2 Start: 421, Stop: 1515, Start Num: 7

Candidate Starts for SirHarley_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1480),

Gene: Thoth_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Thoth_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Tillicus_92 Start: 64659, Stop: 65981, Start Num: 4

Candidate Starts for Tillicus_92:

(3, 64641), (Start: 4 @64659 has 29 MA's), (5, 64683), (10, 64752), (17, 64851), (18, 64860), (22, 64935), (23, 65010), (30, 65085), (33, 65133), (35, 65145), (41, 65208), (46, 65292), (47, 65295), (54, 65436), (55, 65439), (62, 65547), (63, 65571), (67, 65589), (74, 65682), (83, 65856), (85, 65877),

Gene: Troll4_2 Start: 421, Stop: 1524, Start Num: 7

Candidate Starts for Troll4_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (37, 838), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1489),

Gene: Visconti_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for Visconti_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (56, 1141), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: WaldoWhy_2 Start: 421, Stop: 1533, Start Num: 7

Candidate Starts for WaldoWhy_2:

(Start: 7 @421 has 21 MA's), (9, 463), (12, 529), (13, 544), (15, 568), (17, 580), (18, 589), (19, 595), (20, 619), (27, 793), (35, 823), (36, 832), (38, 841), (40, 862), (42, 901), (43, 928), (44, 937), (45, 949), (49, 997), (50, 1009), (51, 1027), (53, 1102), (60, 1189), (61, 1201), (72, 1312), (86, 1498),

Gene: Wojtek_88 Start: 65823, Stop: 67139, Start Num: 4

Candidate Starts for Wojtek_88:

(Start: 4 @65823 has 29 MA's), (5, 65847), (10, 65916), (17, 66015), (18, 66024), (22, 66099), (23, 66174), (28, 66228), (30, 66249), (33, 66297), (35, 66309), (46, 66456), (47, 66459), (50, 66504), (54, 66600), (55, 66603), (63, 66735), (65, 66747), (69, 66777), (78, 66864), (85, 67035),

Gene: Xenia2_95 Start: 66264, Stop: 67571, Start Num: 4

Candidate Starts for Xenia2_95:

(Start: 4 @66264 has 29 MA's), (5, 66288), (6, 66294), (8, 66303), (17, 66459), (18, 66468), (22, 66543), (23, 66618), (24, 66627), (25, 66651), (30, 66693), (31, 66714), (35, 66753), (46, 66900), (54, 67044), (55, 67047), (63, 67179), (65, 67182), (66, 67188), (69, 67212), (78, 67299), (82, 67434), (84, 67458), (87, 67479), (88, 67506),

Gene: Yikes_96 Start: 66196, Stop: 67542, Start Num: 4

Candidate Starts for Yikes_96:

(Start: 4 @66196 has 29 MA's), (10, 66283), (17, 66382), (22, 66466), (23, 66541), (29, 66613), (30, 66616), (33, 66667), (34, 66670), (35, 66679), (38, 66697), (41, 66742), (47, 66829), (52, 66922), (54, 66970), (55, 66973), (58, 67024), (63, 67105), (75, 67225), (85, 67438),

Gene: Zany_94 Start: 66336, Stop: 67637, Start Num: 4

Candidate Starts for Zany_94:

(1, 66279), (Start: 4 @66336 has 29 MA's), (10, 66423), (17, 66522), (22, 66606), (23, 66681), (29, 66753), (30, 66756), (33, 66807), (34, 66810), (35, 66819), (41, 66882), (52, 67062), (54, 67110), (55, 67113), (58, 67164), (63, 67245), (77, 67359), (85, 67533),