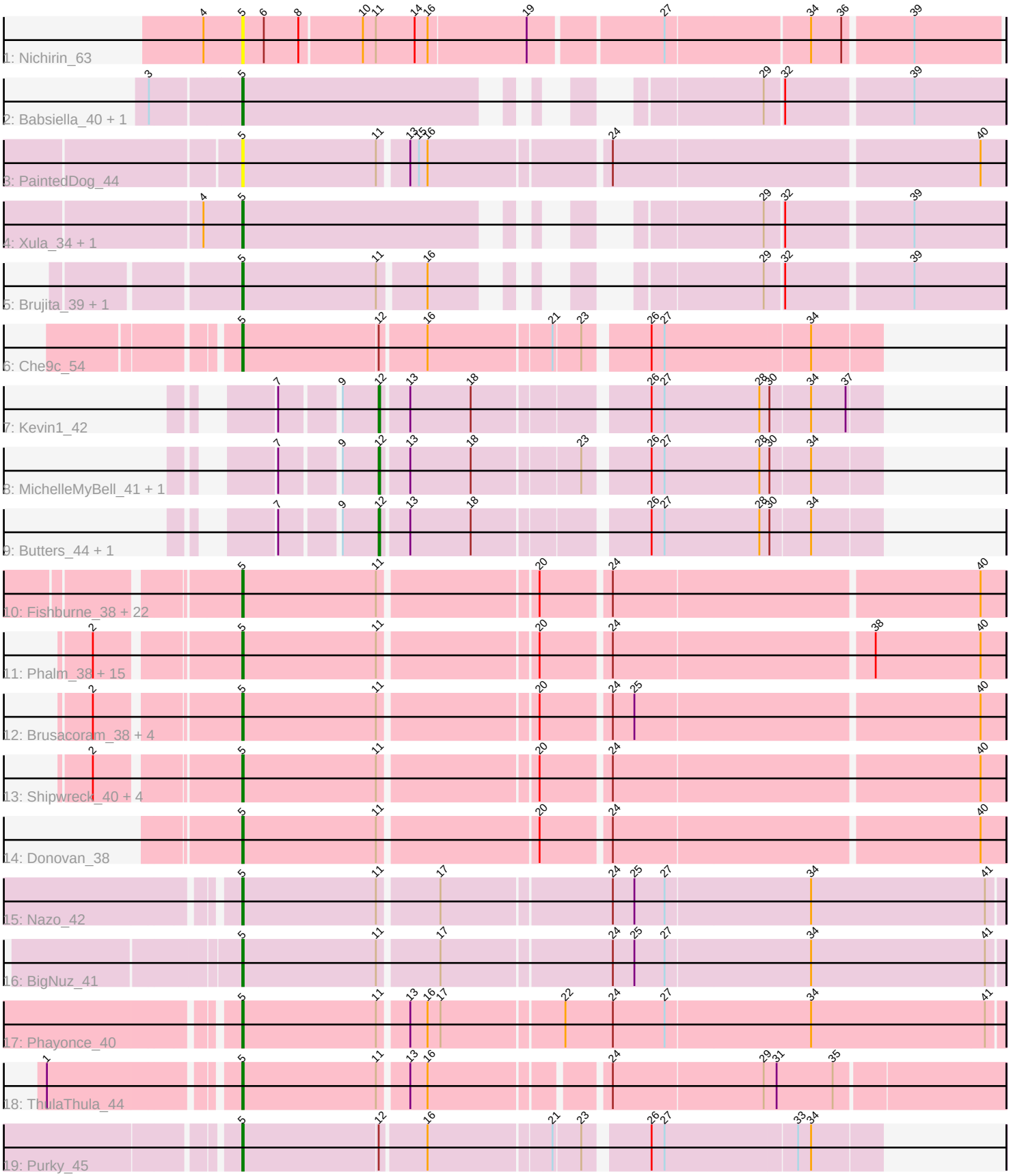
Pham 298413


1: Nichirin_63
2: Babsiella_40 + 1
3: PaintedDog_44
4: Xula_34 + 1
5: Brujita_39 + 1
6: Che9c_54
7: Kevin1_42
8: MichelleMyBell_41 + 1
9: Butters_44 + 1
10: Fishburne_38 + 22
11: Phalm_38 + 15
12: Brusacoram_38 + 4
13: Shipwreck_40 + 4
14: Donovan_38
15: Nazo_42
16: BigNuz_41
17: Phayonce_40
18: ThulaThula_44
19: Purky_45

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 298413 Report

This analysis was run 06/08/26 on database version 649.

Pham number 298413 has 69 members, 8 are drafts.

Phages represented in each track:
• Track 1 : Nichirin_63
• Track 2 : Babsiella_40, HC_38
• Track 3 : PaintedDog_44
• Track 4 : Xula_34, QueenHazel_35
• Track 5 : Brujita_39, Island3_39
• Track 6 : Che9c_54
• Track 7 : Kevin1_42
• Track 8 : MichelleMyBell_41, Philonius_41
• Track 9 : Butters_44, Rubeelu_44
• Track 10 : Fishburne_38, Jebeks_39, Necropolis_38, Venti_38, Bartholomew_37, Dynamo_38, GaloreK_38, Langerak_38, Mangethe_38, Techage_38, BronnyJr_38, Etoile_38, Sonah_38, Phineas_38, Chubbello_38, Zilizebeth_38, Majeke_38, HUHilltop_38, FirstPlacePfu_38, Vidya_38, Kari_38, Phegasus_38, Arib1_38
• Track 11 : Phalm_38, Polkaroo_38, KilKor_38, Bhagsy_38, Willsammy_37, Bunnies_38, PeanutPie_38, Ksquared_38, Jung_37, CactusJack_38, StressBall_38, StevieRay_38, Glaske_38, Juniormint_38, Megiddo_38, Gavriela_38
• Track 12 : Brusacoram_38, Xeno_40, GreaseLightnin_38, Atcoo_38, Thespis_38
• Track 13 : Shipwreck_40, Camster_38, Bogie_40, Malithi_38, Pygmy_40
• Track 14 : Donovan_38
• Track 15 : Nazo_42
• Track 16 : BigNuz_41
• Track 17 : Phayonce_40
• Track 18 : ThulaThula_44
• Track 19 : Purky_45

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

The start number called the most often in the published annotations is 5, it was called in 56 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Arib1_38, Atcoo_38, Babsiella_40, Bartholomew_37, Bhagsy_38, BigNuz_41, Bogie_40, BronnyJr_38, Brujita_39, Brusacoram_38, Bunnies_38, CactusJack_38, Camster_38, Che9c_54, Chubbello_38, Donovan_38, Dynamo_38, Etoile_38,

FirstPlacePfu_38, Fishburne_38, GaloreK_38, Gavriela_38, Glaske_38, GreaseLightnin_38, HC_38, HUHilltop_38, Island3_39, Jebeks_39, Jung_37, Juniormint_38, Kari_38, KilKor_38, Ksquared_38, Langerak_38, Majeke_38, Malithi_38, Mangethe_38, Megiddo_38, Nazo_42, Necropolis_38, Nichirin_63, PaintedDog_44, PeanutPie_38, Phalm_38, Phayonce_40, Phegasus_38, Phineas_38, Polkaroo_38, Purky_45, Pygmy_40, QueenHazel_35, Shipwreck_40, Sonah_38, StevieRay_38, StressBall_38, Techage_38, Thespis_38, ThulaThula_44, Venti_38, Vidya_38, Willsammy_37, Xeno_40, Xula_34, Zilizebeth_38,

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

Genes that do not have the "Most Annotated" start:
• Butters_44, Kevin1_42, MichelleMyBell_41, Philonius_41, Rubeelu_44,

Summary by start number:

Start 5:
• Found in 64 of 69 (92.8%) of genes in pham
• Manual Annotations of this start: 56 of 61
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Arib1_38 (P1), Atcoo_38 (P1), Babsiella_40 (I1), Bartholomew_37 (P1), Bhagsy_38 (P1), BigNuz_41 (P4), Bogie_40 (P1), BronnyJr_38 (P1), Brujita_39 (I1), Brusacoram_38 (P1), Bunnies_38 (P1), CactusJack_38 (P1), Camster_38 (P1), Che9c_54 (I2), Chubbello_38 (P1), Donovan_38 (P1), Dynamo_38 (P1), Etoile_38 (P1), FirstPlacePfu_38 (P1), Fishburne_38 (P1), GaloreK_38 (P1), Gavriela_38 (P1), Glaske_38 (P1), GreaseLightnin_38 (P1), HC_38 (I1), HUHilltop_38 (P1), Island3_39 (I1), Jebeks_39 (P1), Jung_37 (P1), Juniormint_38 (P1), Kari_38 (P1), KilKor_38 (P1), Ksquared_38 (P1), Langerak_38 (P1), Majeke_38 (P1), Malithi_38 (P1), Mangethe_38 (P1), Megiddo_38 (P1), Nazo_42 (P4), Necropolis_38 (P1), Nichirin_63 (F1), PaintedDog_44 (I1), PeanutPie_38 (P1), Phalm_38 (P1), Phayonce_40 (P5), Phegasus_38 (P1), Phineas_38 (P1), Polkaroo_38 (P1), Purky_45 (P6), Pygmy_40 (P1), QueenHazel_35 (I1), Shipwreck_40 (P1), Sonah_38 (P1), StevieRay_38 (P1), StressBall_38 (P1), Techage_38 (P1), Thespis_38 (P1), ThulaThula_44 (P5), Venti_38 (P1), Vidya_38 (P1), Willsammy_37 (P1), Xeno_40 (N), Xula_34 (I1), Zilizebeth_38 (P1),

Start 12:
• Found in 7 of 69 (10.1%) of genes in pham
• Manual Annotations of this start: 5 of 61
• Called 71.4% of time when present
• Phage (with cluster) where this start called: Butters_44 (N), Kevin1_42 (N), MichelleMyBell_41 (N), Philonius_41 (N), Rubeelu_44 (N),

Summary by clusters:

There are 8 clusters represented in this pham: F1, P1, P6, P4, P5, I1, I2, N,

Info for manual annotations of cluster I1:
•Start number 5 was manually annotated 6 times for cluster I1.

Info for manual annotations of cluster I2:
•Start number 5 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster N:
•Start number 5 was manually annotated 1 time for cluster N.
•Start number 12 was manually annotated 5 times for cluster N.

Info for manual annotations of cluster P1:
•Start number 5 was manually annotated 43 times for cluster P1.

Info for manual annotations of cluster P4:
•Start number 5 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:
•Start number 5 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:
•Start number 5 was manually annotated 1 time for cluster P6.

Gene Information:

Gene: Arib1_38 Start: 29810, Stop: 30316, Start Num: 5
Candidate Starts for Arib1_38:
(Start: 5 @29810 has 56 MA's), (11, 29903), (20, 30008), (24, 30053), (40, 30299),

Gene: Atcoo_38 Start: 30284, Stop: 30787, Start Num: 5
Candidate Starts for Atcoo_38:
(2, 30197), (Start: 5 @30284 has 56 MA's), (11, 30377), (20, 30479), (24, 30524), (25, 30539), (40, 30770),

Gene: Babsiella_40 Start: 30786, Stop: 31223, Start Num: 5
Candidate Starts for Babsiella_40:
(3, 30729), (Start: 5 @30786 has 56 MA's), (29, 31065), (32, 31077), (39, 31161),

Gene: Bartholomew_37 Start: 29807, Stop: 30310, Start Num: 5
Candidate Starts for Bartholomew_37:
(Start: 5 @29807 has 56 MA's), (11, 29900), (20, 30002), (24, 30047), (40, 30293),

Gene: Bhagsy_38 Start: 29796, Stop: 30302, Start Num: 5
Candidate Starts for Bhagsy_38:
(2, 29709), (Start: 5 @29796 has 56 MA's), (11, 29889), (20, 29994), (24, 30039), (38, 30213), (40, 30285),

Gene: BigNuz_41 Start: 31916, Stop: 32428, Start Num: 5
Candidate Starts for BigNuz_41:
(Start: 5 @31916 has 56 MA's), (11, 32009), (17, 32048), (24, 32162), (25, 32177), (27, 32198), (34, 32297), (41, 32417),

Gene: Bogie_40 Start: 31583, Stop: 32086, Start Num: 5
Candidate Starts for Bogie_40:
(2, 31496), (Start: 5 @31583 has 56 MA's), (11, 31676), (20, 31778), (24, 31823), (40, 32069),

Gene: BronnyJr_38 Start: 30304, Stop: 30807, Start Num: 5
Candidate Starts for BronnyJr_38:
(Start: 5 @30304 has 56 MA's), (11, 30397), (20, 30499), (24, 30544), (40, 30790),

Gene: Brujita_39 Start: 31520, Stop: 31951, Start Num: 5
Candidate Starts for Brujita_39:
(Start: 5 @31520 has 56 MA's), (11, 31613), (16, 31643), (29, 31793), (32, 31805), (39, 31889),

Gene: Brusacoram_38 Start: 29790, Stop: 30293, Start Num: 5
Candidate Starts for Brusacoram_38:
(2, 29703), (Start: 5 @29790 has 56 MA's), (11, 29883), (20, 29985), (24, 30030), (25, 30045), (40, 30276),

Gene: Bunnies_38 Start: 29814, Stop: 30317, Start Num: 5
Candidate Starts for Bunnies_38:
(2, 29727), (Start: 5 @29814 has 56 MA's), (11, 29907), (20, 30009), (24, 30054), (38, 30228), (40, 30300),

Gene: Butters_44 Start: 31386, Stop: 31709, Start Num: 12
Candidate Starts for Butters_44:
(7, 31326), (9, 31362), (Start: 12 @31386 has 5 MA's), (13, 31404), (18, 31446), (26, 31554), (27, 31563), (28, 31629), (30, 31635), (34, 31662),

Gene: CactusJack_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for CactusJack_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: Camster_38 Start: 29830, Stop: 30333, Start Num: 5
Candidate Starts for Camster_38:
(2, 29743), (Start: 5 @29830 has 56 MA's), (11, 29923), (20, 30025), (24, 30070), (40, 30316),

Gene: Che9c_54 Start: 41194, Stop: 41610, Start Num: 5
Candidate Starts for Che9c_54:
(Start: 5 @41194 has 56 MA's), (Start: 12 @41287 has 5 MA's), (16, 41317), (21, 41398), (23, 41416), (26, 41455), (27, 41464), (34, 41563),

Gene: Chubbello_38 Start: 29803, Stop: 30306, Start Num: 5
Candidate Starts for Chubbello_38:
(Start: 5 @29803 has 56 MA's), (11, 29896), (20, 29998), (24, 30043), (40, 30289),

Gene: Donovan_38 Start: 29827, Stop: 30333, Start Num: 5
Candidate Starts for Donovan_38:
(Start: 5 @29827 has 56 MA's), (11, 29920), (20, 30025), (24, 30070), (40, 30316),

Gene: Dynamo_38 Start: 30215, Stop: 30718, Start Num: 5
Candidate Starts for Dynamo_38:
(Start: 5 @30215 has 56 MA's), (11, 30308), (20, 30410), (24, 30455), (40, 30701),

Gene: Etoile_38 Start: 29807, Stop: 30310, Start Num: 5
Candidate Starts for Etoile_38:
(Start: 5 @29807 has 56 MA's), (11, 29900), (20, 30002), (24, 30047), (40, 30293),

Gene: FirstPlacePfu_38 Start: 29839, Stop: 30342, Start Num: 5
Candidate Starts for FirstPlacePfu_38:
(Start: 5 @29839 has 56 MA's), (11, 29932), (20, 30034), (24, 30079), (40, 30325),

Gene: Fishburne_38 Start: 29807, Stop: 30310, Start Num: 5
Candidate Starts for Fishburne_38:
(Start: 5 @29807 has 56 MA's), (11, 29900), (20, 30002), (24, 30047), (40, 30293),

Gene: GaloreK_38 Start: 29800, Stop: 30306, Start Num: 5
Candidate Starts for GaloreK_38:
(Start: 5 @29800 has 56 MA's), (11, 29893), (20, 29998), (24, 30043), (40, 30289),

Gene: Gavriela_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for Gavriela_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: Glaske_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for Glaske_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: GreaseLightnin_38 Start: 30043, Stop: 30546, Start Num: 5
Candidate Starts for GreaseLightnin_38:
(2, 29956), (Start: 5 @30043 has 56 MA's), (11, 30136), (20, 30238), (24, 30283), (25, 30298), (40, 30529),

Gene: HC_38 Start: 29567, Stop: 30004, Start Num: 5
Candidate Starts for HC_38:
(3, 29510), (Start: 5 @29567 has 56 MA's), (29, 29846), (32, 29858), (39, 29942),

Gene: HUHilltop_38 Start: 29837, Stop: 30343, Start Num: 5
Candidate Starts for HUHilltop_38:
(Start: 5 @29837 has 56 MA's), (11, 29930), (20, 30035), (24, 30080), (40, 30326),

Gene: Island3_39 Start: 31520, Stop: 31951, Start Num: 5
Candidate Starts for Island3_39:
(Start: 5 @31520 has 56 MA's), (11, 31613), (16, 31643), (29, 31793), (32, 31805), (39, 31889),

Gene: Jebeks_39 Start: 29792, Stop: 30295, Start Num: 5
Candidate Starts for Jebeks_39:
(Start: 5 @29792 has 56 MA's), (11, 29885), (20, 29987), (24, 30032), (40, 30278),

Gene: Jung_37 Start: 29761, Stop: 30264, Start Num: 5
Candidate Starts for Jung_37:
(2, 29674), (Start: 5 @29761 has 56 MA's), (11, 29854), (20, 29956), (24, 30001), (38, 30175), (40, 30247),

Gene: Juniormint_38 Start: 29836, Stop: 30339, Start Num: 5
Candidate Starts for Juniormint_38:
(2, 29749), (Start: 5 @29836 has 56 MA's), (11, 29929), (20, 30031), (24, 30076), (38, 30250), (40, 30322),

Gene: Kari_38 Start: 29804, Stop: 30307, Start Num: 5
Candidate Starts for Kari_38:
(Start: 5 @29804 has 56 MA's), (11, 29897), (20, 29999), (24, 30044), (40, 30290),

Gene: Kevin1_42 Start: 30562, Stop: 30885, Start Num: 12
Candidate Starts for Kevin1_42:
(7, 30502), (9, 30538), (Start: 12 @30562 has 5 MA's), (13, 30580), (18, 30622), (26, 30730), (27, 30739), (28, 30805), (30, 30811), (34, 30838), (37, 30862),

Gene: KilKor_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for KilKor_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: Ksquared_38 Start: 29814, Stop: 30317, Start Num: 5
Candidate Starts for Ksquared_38:
(2, 29727), (Start: 5 @29814 has 56 MA's), (11, 29907), (20, 30009), (24, 30054), (38, 30228), (40, 30300),

Gene: Langerak_38 Start: 29820, Stop: 30326, Start Num: 5
Candidate Starts for Langerak_38:
(Start: 5 @29820 has 56 MA's), (11, 29913), (20, 30018), (24, 30063), (40, 30309),

Gene: Majeke_38 Start: 29845, Stop: 30351, Start Num: 5
Candidate Starts for Majeke_38:
(Start: 5 @29845 has 56 MA's), (11, 29938), (20, 30043), (24, 30088), (40, 30334),

Gene: Malithi_38 Start: 29723, Stop: 30226, Start Num: 5
Candidate Starts for Malithi_38:
(2, 29636), (Start: 5 @29723 has 56 MA's), (11, 29816), (20, 29918), (24, 29963), (40, 30209),

Gene: Mangethe_38 Start: 29845, Stop: 30351, Start Num: 5
Candidate Starts for Mangethe_38:
(Start: 5 @29845 has 56 MA's), (11, 29938), (20, 30043), (24, 30088), (40, 30334),

Gene: Megiddo_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for Megiddo_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: MichelleMyBell_41 Start: 29657, Stop: 29980, Start Num: 12
Candidate Starts for MichelleMyBell_41:
(7, 29597), (9, 29633), (Start: 12 @29657 has 5 MA's), (13, 29675), (18, 29717), (23, 29786), (26, 29825), (27, 29834), (28, 29900), (30, 29906), (34, 29933),

Gene: Nazo_42 Start: 32113, Stop: 32625, Start Num: 5
Candidate Starts for Nazo_42:
(Start: 5 @32113 has 56 MA's), (11, 32206), (17, 32245), (24, 32359), (25, 32374), (27, 32395), (34, 32494), (41, 32614),

Gene: Necropolis_38 Start: 29804, Stop: 30307, Start Num: 5
Candidate Starts for Necropolis_38:

(Start: 5 @29804 has 56 MA's), (11, 29897), (20, 29999), (24, 30044), (40, 30290),

Gene: Nichirin_63 Start: 42452, Stop: 42952, Start Num: 5
Candidate Starts for Nichirin_63:
(4, 42425), (Start: 5 @42452 has 56 MA's), (6, 42467), (8, 42491), (10, 42533), (11, 42542), (14, 42569), (16, 42578), (19, 42644), (27, 42731), (34, 42827), (36, 42848), (39, 42893),

Gene: PaintedDog_44 Start: 32418, Stop: 32921, Start Num: 5
Candidate Starts for PaintedDog_44:
(Start: 5 @32418 has 56 MA's), (11, 32511), (13, 32529), (15, 32535), (16, 32541), (24, 32658), (40, 32904),

Gene: PeanutPie_38 Start: 29796, Stop: 30302, Start Num: 5
Candidate Starts for PeanutPie_38:
(2, 29709), (Start: 5 @29796 has 56 MA's), (11, 29889), (20, 29994), (24, 30039), (38, 30213), (40, 30285),

Gene: Phalm_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for Phalm_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: Phayonce_40 Start: 32024, Stop: 32536, Start Num: 5
Candidate Starts for Phayonce_40:
(Start: 5 @32024 has 56 MA's), (11, 32117), (13, 32135), (16, 32147), (17, 32156), (22, 32237), (24, 32270), (27, 32306), (34, 32405), (41, 32525),

Gene: Phegasus_38 Start: 29812, Stop: 30318, Start Num: 5
Candidate Starts for Phegasus_38:
(Start: 5 @29812 has 56 MA's), (11, 29905), (20, 30010), (24, 30055), (40, 30301),

Gene: Philonius_41 Start: 29325, Stop: 29648, Start Num: 12
Candidate Starts for Philonius_41:
(7, 29265), (9, 29301), (Start: 12 @29325 has 5 MA's), (13, 29343), (18, 29385), (23, 29454), (26, 29493), (27, 29502), (28, 29568), (30, 29574), (34, 29601),

Gene: Phineas_38 Start: 30175, Stop: 30678, Start Num: 5
Candidate Starts for Phineas_38:
(Start: 5 @30175 has 56 MA's), (11, 30268), (20, 30370), (24, 30415), (40, 30661),

Gene: Polkaroo_38 Start: 29811, Stop: 30314, Start Num: 5
Candidate Starts for Polkaroo_38:
(2, 29724), (Start: 5 @29811 has 56 MA's), (11, 29904), (20, 30006), (24, 30051), (38, 30225), (40, 30297),

Gene: Purky_45 Start: 32598, Stop: 33014, Start Num: 5
Candidate Starts for Purky_45:
(Start: 5 @32598 has 56 MA's), (Start: 12 @32691 has 5 MA's), (16, 32721), (21, 32802), (23, 32820), (26, 32859), (27, 32868), (33, 32958), (34, 32967),

Gene: Pygmy_40 Start: 31639, Stop: 32142, Start Num: 5
Candidate Starts for Pygmy_40:
(2, 31552), (Start: 5 @31639 has 56 MA's), (11, 31732), (20, 31834), (24, 31879), (40, 32125),

Gene: QueenHazel_35 Start: 29560, Stop: 29997, Start Num: 5
Candidate Starts for QueenHazel_35:
(4, 29536), (Start: 5 @29560 has 56 MA's), (29, 29839), (32, 29851), (39, 29935),

Gene: Rubeelu_44 Start: 31386, Stop: 31709, Start Num: 12
Candidate Starts for Rubeelu_44:
(7, 31326), (9, 31362), (Start: 12 @31386 has 5 MA's), (13, 31404), (18, 31446), (26, 31554), (27, 31563), (28, 31629), (30, 31635), (34, 31662),

Gene: Shipwreck_40 Start: 31614, Stop: 32117, Start Num: 5
Candidate Starts for Shipwreck_40:
(2, 31527), (Start: 5 @31614 has 56 MA's), (11, 31707), (20, 31809), (24, 31854), (40, 32100),

Gene: Sonah_38 Start: 29793, Stop: 30296, Start Num: 5
Candidate Starts for Sonah_38:
(Start: 5 @29793 has 56 MA's), (11, 29886), (20, 29988), (24, 30033), (40, 30279),

Gene: StevieRay_38 Start: 29756, Stop: 30259, Start Num: 5
Candidate Starts for StevieRay_38:
(2, 29669), (Start: 5 @29756 has 56 MA's), (11, 29849), (20, 29951), (24, 29996), (38, 30170), (40, 30242),

Gene: StressBall_38 Start: 30054, Stop: 30557, Start Num: 5
Candidate Starts for StressBall_38:
(2, 29967), (Start: 5 @30054 has 56 MA's), (11, 30147), (20, 30249), (24, 30294), (38, 30468), (40, 30540),

Gene: Techage_38 Start: 29830, Stop: 30336, Start Num: 5
Candidate Starts for Techage_38:
(Start: 5 @29830 has 56 MA's), (11, 29923), (20, 30028), (24, 30073), (40, 30319),

Gene: Thespis_38 Start: 29790, Stop: 30293, Start Num: 5
Candidate Starts for Thespis_38:
(2, 29703), (Start: 5 @29790 has 56 MA's), (11, 29883), (20, 29985), (24, 30030), (25, 30045), (40, 30276),

Gene: ThulaThula_44 Start: 34021, Stop: 34518, Start Num: 5
Candidate Starts for ThulaThula_44:
(1, 33904), (Start: 5 @34021 has 56 MA's), (11, 34114), (13, 34132), (16, 34144), (24, 34255), (29, 34357), (31, 34366), (35, 34405),

Gene: Venti_38 Start: 29807, Stop: 30310, Start Num: 5
Candidate Starts for Venti_38:
(Start: 5 @29807 has 56 MA's), (11, 29900), (20, 30002), (24, 30047), (40, 30293),

Gene: Vidya_38 Start: 29840, Stop: 30343, Start Num: 5
Candidate Starts for Vidya_38:
(Start: 5 @29840 has 56 MA's), (11, 29933), (20, 30035), (24, 30080), (40, 30326),

Gene: Willsammy_37 Start: 29537, Stop: 30040, Start Num: 5
Candidate Starts for Willsammy_37:

(2, 29450), (Start: 5 @29537 has 56 MA's), (11, 29630), (20, 29732), (24, 29777), (38, 29951), (40, 30023),

Gene: Xeno_40 Start: 29132, Stop: 29635, Start Num: 5
Candidate Starts for Xeno_40:
(2, 29045), (Start: 5 @29132 has 56 MA's), (11, 29225), (20, 29327), (24, 29372), (25, 29387), (40, 29618),

Gene: Xula_34 Start: 29084, Stop: 29521, Start Num: 5
Candidate Starts for Xula_34:
(4, 29060), (Start: 5 @29084 has 56 MA's), (29, 29363), (32, 29375), (39, 29459),

Gene: Zilizebeth_38 Start: 29839, Stop: 30342, Start Num: 5
Candidate Starts for Zilizebeth_38:
(Start: 5 @29839 has 56 MA's), (11, 29932), (20, 30034), (24, 30079), (40, 30325),