



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 291028 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291028 has 95 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Mabel\_10, Jabith\_10, Lucivia\_10, Insomnia\_10, TinyTimmy\_10, Kimba\_10, Ebony\_10
- Track 2 : Aneem\_10, Bowtie\_10, Munch\_10, MaCh\_10, Bachome\_10, Joselito\_10, Gilberta\_10, Flaverint\_10, Timothy\_10
- Track 3 : Orange\_10, Mulciber\_10, Wolpertinger\_9, Salz\_10, Sham4\_10, Snape\_10, Hutc2\_10, Petersenfast\_9, Et2Brutus\_9, Fibonacci\_10
- Track 4 : Saskia\_9
- Track 5 : Bud\_10
- Track 6 : Luchador\_9
- Track 7 : SororFago\_9
- Track 8 : Sunhee\_8
- Track 9 : Gail\_9
- Track 10 : Jeeves\_9
- Track 11 : Kinmap\_8
- Track 12 : Chargerpower\_10
- Track 13 : Minispark\_8
- Track 14 : Aliter\_11, HortumSL17\_11, Catalina\_11, Tubs\_11, Phaeder\_11, Myxus\_11, PackMan\_11
- Track 15 : Toaka\_9
- Track 16 : Ayanochan\_12, Qobbit\_11, Fayely\_11, Phonnegut\_11, EmyBug\_11, Pioneer\_11, Beemo\_11, ExplosioNervosa\_11
- Track 17 : EdogawaKiddo\_9, Scherzo\_11, Horex\_10, Onglai\_10, RyeScarlet\_12, Jiawan\_10, Ugenie5\_8, Sachima\_9, Hanray\_10
- Track 18 : LoneWolf\_11
- Track 19 : Conquerage\_11, Alma\_11, Spouty\_11, Priya\_11, Eidsmoe\_11
- Track 20 : Lilleskat\_9
- Track 21 : Rahalelujah\_9, CogOmlette\_8, Bellris\_8
- Track 22 : WorldCup\_8
- Track 23 : Darrell\_12
- Track 24 : Charm\_10
- Track 25 : DreamTeam1\_10, Klodlith\_10
- Track 26 : Yecey3\_10
- Track 27 : Maminiaina\_11
- Track 28 : BogosyJay\_11
- Track 29 : Arissanae\_9
- Track 30 : SheaKeira\_10
- Track 31 : Keziacharles14\_9

- Track 32 : MegTheThird\_9
- Track 33 : Vanisoa\_9
- Track 34 : Elephantoan\_11
- Track 35 : Celestiallunch\_10
- Track 36 : Stellammi\_35
- Track 37 : Cepens\_36
- Track 38 : PR\_36, D12\_35
- Track 39 : Argie\_37
- Track 40 : GodPhather\_37, Jeon\_36
- Track 41 : Taptic\_36, Megabear\_36

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

The start number called the most often in the published annotations is 3, it was called in 46 of the 72 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aliter\_11, Alma\_11, Arissanae\_9, Ayanochan\_12, Beemo\_11, Bellris\_8, BogosyJay\_11, Catalina\_11, Celestiallunch\_10, Chargerpower\_10, Charm\_10, CogOmlette\_8, Conquerage\_11, Darrell\_12, DreamTeam1\_10, Ebony\_10, EdogawaKiddo\_9, Eidsmoe\_11, Elephantoan\_11, EmyBug\_11, ExplosioNervosa\_11, Fayely\_11, Gail\_9, Hanray\_10, Halex\_10, HortumSL17\_11, Insomnia\_10, Jabith\_10, Jeeves\_9, Jiawan\_10, Keziacharles14\_9, Kimba\_10, Kinmap\_8, Klodlith\_10, Lilleskat\_9, LoneWolf\_11, Luchador\_9, Lucivia\_10, Mabel\_10, Maminina\_11, MegTheThird\_9, Minispark\_8, Myxus\_11, Onglai\_10, PackMan\_11, Phaeder\_11, Phonnegut\_11, Pioneer\_11, Priya\_11, Qobbit\_11, Rahalelujah\_9, RyeScarlet\_12, Sachima\_9, Scherzo\_11, SheaKeira\_10, SororFago\_9, Spouty\_11, Sunhee\_8, TinyTimmy\_10, Toaka\_9, Tubs\_11, Ugenie5\_8, Vanisoa\_9, WorldCup\_8, Yecey3\_10,

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

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

- Aneem\_10, Argie\_37, Bachome\_10, Bowtie\_10, Bud\_10, Cepens\_36, D12\_35, Et2Brutus\_9, Fibonacci\_10, Flaverint\_10, Gilberta\_10, GodPhather\_37, Hutc2\_10, Jeon\_36, Joselito\_10, MaCh\_10, Megabear\_36, Mulciber\_10, Munch\_10, Orange\_10, PR\_36, Petersenfast\_9, Salz\_10, Saskia\_9, Sham4\_10, Snape\_10, Stellammi\_35, Taptic\_36, Timothy\_10, Wolpertinger\_9,

**Summary by start number:**

Start 2:

- Found in 30 of 95 ( 31.6% ) of genes in pham
- Manual Annotations of this start: 26 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aneem\_10 (A11), Argie\_37 (W), Bachome\_10 (A11), Bowtie\_10 (A11), Bud\_10 (A11), Cepens\_36 (W), D12\_35 (W), Et2Brutus\_9 (A11), Fibonacci\_10 (A11), Flaverint\_10 (A11), Gilberta\_10 (A11), GodPhather\_37 (W), Hutc2\_10 (A11), Jeon\_36 (W), Joselito\_10 (A11), MaCh\_10

(A11), Megabear\_36 (W), Mulciber\_10 (A11), Munch\_10 (A11), Orange\_10 (A11), PR\_36 (W), Petersenfast\_9 (A11), Salz\_10 (A11), Saskia\_9 (A11), Sham4\_10 (A11), Snape\_10 (A11), Stellammi\_35 (UNK), Taptic\_36 (W), Timothy\_10 (A11), Wolpertinger\_9 (A11),

Start 3:

- Found in 65 of 95 ( 68.4% ) of genes in pham
- Manual Annotations of this start: 46 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter\_11 (A9), Alma\_11 (A9), Arissanee\_9 (A9), Ayanochan\_12 (A9), Beemo\_11 (A9), Bellris\_8 (A9), BogosyJay\_11 (A9), Catalina\_11 (A9), Celestialunch\_10 (A9), Chargerpower\_10 (A22), Charm\_10 (A9), CogOmlette\_8 (A9), Conquerage\_11 (A9), Darrell\_12 (A9), DreamTeam1\_10 (A9), Ebony\_10 (A11), EdogawaKiddo\_9 (A9), Eidsmoe\_11 (A9), Elephantoon\_11 (A9), EmyBug\_11 (A9), ExplosioNervosa\_11 (A9), Fayely\_11 (A9), Gail\_9 (A14), Hanray\_10 (A9), Horex\_10 (A9), HortumSL17\_11 (A9), Insomnia\_10 (A11), Jabith\_10 (A11), Jeeves\_9 (A14), Jiawan\_10 (A9), Keziacharles14\_9 (A9), Kimba\_10 (A11), Kinmap\_8 (A21), Klodlith\_10 (A9), Lilleskat\_9 (A9), LoneWolf\_11 (A9), Luchador\_9 (A14), Lucivia\_10 (A11), Mabel\_10 (A11), Maminiaina\_11 (A9), MegTheThird\_9 (A9), Minispark\_8 (A9), Myxus\_11 (A9), Onglai\_10 (A9), PackMan\_11 (A9), Phaeder\_11 (A9), Phonnegut\_11 (A9), Pioneer\_11 (A9), Priya\_11 (A9), Qobbit\_11 (A9), Rahalelujah\_9 (A9), RyeScarlet\_12 (A9), Sachima\_9 (A9), Scherzo\_11 (A9), SheaKeira\_10 (A9), SororFago\_9 (A14), Spouty\_11 (A9), Sunhee\_8 (A14), TinyTimmy\_10 (A11), Toaka\_9 (A9), Tubs\_11 (A9), Ugenie5\_8 (A9), Vanisoa\_9 (A9), WorldCup\_8 (A9), Yecy3\_10 (A9),

### **Summary by clusters:**

There are 7 clusters represented in this pham: A14, A22, A11, A21, W, A9, UNK,

Info for manual annotations of cluster A11:

- Start number 2 was manually annotated 18 times for cluster A11.
- Start number 3 was manually annotated 6 times for cluster A11.

Info for manual annotations of cluster A14:

- Start number 3 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A22:

- Start number 3 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A9:

- Start number 3 was manually annotated 35 times for cluster A9.

Info for manual annotations of cluster W:

- Start number 2 was manually annotated 8 times for cluster W.

### **Gene Information:**

Gene: Aliter\_11 Start: 6074, Stop: 7654, Start Num: 3

Candidate Starts for Aliter\_11:

(Start: 3 @6074 has 46 MA's), (5, 6125), (10, 6215), (11, 6218), (19, 6404), (21, 6425), (36, 6686), (51, 6848), (55, 6899), (62, 7016), (82, 7241), (88, 7313), (97, 7373), (110, 7469), (113, 7514), (116, 7532),

Gene: Alma\_11 Start: 6153, Stop: 7733, Start Num: 3

Candidate Starts for Alma\_11:

(Start: 3 @6153 has 46 MA's), (5, 6204), (10, 6294), (11, 6297), (19, 6483), (21, 6504), (51, 6927), (55, 6978), (62, 7095), (71, 7179), (74, 7203), (78, 7230), (82, 7320), (88, 7392), (97, 7452), (110, 7548), (113, 7593), (116, 7611),

Gene: Aneem\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Aneem\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: Argie\_37 Start: 36368, Stop: 37990, Start Num: 2

Candidate Starts for Argie\_37:

(Start: 2 @36368 has 26 MA's), (4, 36374), (6, 36437), (10, 36515), (12, 36533), (13, 36587), (16, 36635), (18, 36686), (19, 36722), (21, 36743), (24, 36797), (27, 36884), (28, 36923), (39, 37061), (41, 37100), (47, 37142), (53, 37205), (60, 37289), (73, 37436), (74, 37442), (82, 37568), (84, 37580), (86, 37610), (89, 37649), (92, 37670), (98, 37703), (99, 37712), (101, 37727), (105, 37775), (106, 37778), (112, 37826), (116, 37862), (118, 37877), (123, 37928),

Gene: Arissanae\_9 Start: 4305, Stop: 5855, Start Num: 3

Candidate Starts for Arissanae\_9:

(Start: 3 @4305 has 46 MA's), (10, 4446), (14, 4518), (19, 4635), (21, 4656), (24, 4707), (32, 4887), (36, 4917), (44, 5007), (55, 5130), (64, 5226), (79, 5367), (82, 5442), (88, 5514), (93, 5544), (97, 5574), (110, 5670), (115, 5730),

Gene: Ayanochan\_12 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for Ayanochan\_12:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Bachome\_10 Start: 6221, Stop: 7621, Start Num: 2

Candidate Starts for Bachome\_10:

(1, 6182), (Start: 2 @6221 has 26 MA's), (10, 6368), (12, 6386), (17, 6506), (19, 6557), (21, 6578), (23, 6611), (50, 6758), (55, 6821), (57, 6827), (65, 6971), (74, 7052), (78, 7079), (94, 7283), (96, 7304), (100, 7328), (104, 7388), (110, 7421), (117, 7487), (124, 7583),

Gene: Beemo\_11 Start: 6180, Stop: 7760, Start Num: 3

Candidate Starts for Beemo\_11:

(Start: 3 @6180 has 46 MA's), (5, 6231), (10, 6321), (11, 6324), (12, 6339), (19, 6510), (21, 6531), (36, 6792), (51, 6954), (55, 7005), (62, 7122), (82, 7347), (88, 7419), (97, 7479), (110, 7575), (113, 7620), (116, 7638),

Gene: Bellris\_8 Start: 4273, Stop: 5823, Start Num: 3

Candidate Starts for Bellris\_8:

(Start: 3 @4273 has 46 MA's), (8, 4366), (10, 4414), (12, 4432), (15, 4495), (19, 4603), (21, 4624), (25, 4714), (32, 4855), (36, 4885), (44, 4975), (55, 5098), (67, 5236), (88, 5482), (93, 5512), (97, 5542), (110, 5638),

Gene: BogosyJay\_11 Start: 5937, Stop: 7517, Start Num: 3

Candidate Starts for BogosyJay\_11:

(Start: 3 @5937 has 46 MA's), (8, 6030), (10, 6078), (11, 6081), (12, 6096), (19, 6267), (21, 6288), (25, 6378), (36, 6549), (51, 6711), (55, 6762), (71, 6963), (74, 6987), (88, 7176), (97, 7236), (110, 7332), (113, 7377), (116, 7395),

Gene: Bowtie\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Bowtie\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: Bud\_10 Start: 6230, Stop: 7630, Start Num: 2

Candidate Starts for Bud\_10:

(1, 6191), (Start: 2 @6230 has 26 MA's), (10, 6377), (12, 6395), (17, 6515), (19, 6566), (21, 6587), (23, 6620), (50, 6767), (55, 6830), (65, 6980), (74, 7061), (78, 7088), (94, 7292), (96, 7313), (100, 7337), (104, 7397), (110, 7430), (117, 7496), (124, 7592),

Gene: Catalina\_11 Start: 6147, Stop: 7727, Start Num: 3

Candidate Starts for Catalina\_11:

(Start: 3 @6147 has 46 MA's), (5, 6198), (10, 6288), (11, 6291), (19, 6477), (21, 6498), (36, 6759), (51, 6921), (55, 6972), (62, 7089), (82, 7314), (88, 7386), (97, 7446), (110, 7542), (113, 7587), (116, 7605),

Gene: Celestiallunch\_10 Start: 4281, Stop: 5834, Start Num: 3

Candidate Starts for Celestiallunch\_10:

(Start: 3 @4281 has 46 MA's), (10, 4422), (19, 4611), (21, 4632), (32, 4863), (34, 4884), (44, 4983), (54, 5091), (55, 5106), (57, 5112), (64, 5202), (67, 5244), (79, 5343), (97, 5553), (103, 5604), (107, 5640), (110, 5649), (111, 5670),

Gene: Cepens\_36 Start: 36083, Stop: 37705, Start Num: 2

Candidate Starts for Cepens\_36:

(Start: 2 @36083 has 26 MA's), (4, 36089), (6, 36152), (10, 36230), (12, 36248), (13, 36302), (16, 36350), (18, 36401), (19, 36437), (21, 36458), (24, 36512), (25, 36551), (27, 36599), (28, 36638), (39, 36776), (41, 36815), (47, 36857), (53, 36920), (60, 37004), (73, 37151), (74, 37157), (82, 37283), (84, 37295), (86, 37325), (89, 37364), (92, 37385), (98, 37418), (99, 37427), (101, 37442), (105, 37490), (106, 37493), (108, 37502), (112, 37541), (116, 37577), (118, 37592), (123, 37643),

Gene: Chargerpower\_10 Start: 4583, Stop: 6187, Start Num: 3

Candidate Starts for Chargerpower\_10:

(Start: 3 @4583 has 46 MA's), (10, 4724), (13, 4796), (19, 4931), (21, 4952), (24, 5003), (29, 5108), (44, 5303), (51, 5375), (55, 5426), (62, 5543), (82, 5768), (91, 5861), (97, 5906), (103, 5957), (110, 6002), (120, 6110),

Gene: Charm\_10 Start: 4360, Stop: 5916, Start Num: 3

Candidate Starts for Charm\_10:

(Start: 3 @4360 has 46 MA's), (10, 4501), (19, 4690), (21, 4711), (22, 4741), (55, 5185), (67, 5323), (79, 5422), (87, 5563), (88, 5569), (97, 5635), (110, 5731),

Gene: CogOmlette\_8 Start: 4273, Stop: 5823, Start Num: 3

Candidate Starts for CogOmlette\_8:

(Start: 3 @4273 has 46 MA's), (8, 4366), (10, 4414), (12, 4432), (15, 4495), (19, 4603), (21, 4624), (25, 4714), (32, 4855), (36, 4885), (44, 4975), (55, 5098), (67, 5236), (88, 5482), (93, 5512), (97, 5542),

(110, 5638),

Gene: Conquerage\_11 Start: 6176, Stop: 7756, Start Num: 3

Candidate Starts for Conquerage\_11:

(Start: 3 @6176 has 46 MA's), (5, 6227), (10, 6317), (11, 6320), (19, 6506), (21, 6527), (51, 6950), (55, 7001), (62, 7118), (71, 7202), (74, 7226), (78, 7253), (82, 7343), (88, 7415), (97, 7475), (110, 7571), (113, 7616), (116, 7634),

Gene: D12\_35 Start: 36653, Stop: 38275, Start Num: 2

Candidate Starts for D12\_35:

(Start: 2 @36653 has 26 MA's), (4, 36659), (6, 36722), (10, 36800), (12, 36818), (13, 36872), (16, 36920), (18, 36971), (19, 37007), (21, 37028), (24, 37082), (27, 37169), (28, 37208), (39, 37346), (40, 37367), (41, 37385), (47, 37427), (53, 37490), (60, 37574), (73, 37721), (74, 37727), (82, 37853), (84, 37865), (86, 37895), (89, 37934), (92, 37955), (98, 37988), (99, 37997), (101, 38012), (105, 38060), (112, 38111), (116, 38147), (118, 38162), (123, 38213), (125, 38270),

Gene: Darrell\_12 Start: 6369, Stop: 7949, Start Num: 3

Candidate Starts for Darrell\_12:

(Start: 3 @6369 has 46 MA's), (5, 6420), (10, 6510), (11, 6513), (14, 6582), (19, 6699), (21, 6720), (25, 6810), (36, 6981), (44, 7071), (51, 7143), (55, 7194), (62, 7311), (74, 7419), (82, 7536), (88, 7608), (91, 7629), (97, 7668), (110, 7764), (116, 7827),

Gene: DreamTeam1\_10 Start: 4360, Stop: 5916, Start Num: 3

Candidate Starts for DreamTeam1\_10:

(Start: 3 @4360 has 46 MA's), (10, 4501), (19, 4690), (21, 4711), (22, 4741), (55, 5185), (64, 5281), (79, 5422), (87, 5563), (88, 5569), (97, 5635), (110, 5731),

Gene: Ebony\_10 Start: 6285, Stop: 7682, Start Num: 3

Candidate Starts for Ebony\_10:

(Start: 3 @6285 has 46 MA's), (9, 6423), (10, 6429), (12, 6447), (17, 6567), (19, 6618), (21, 6639), (23, 6672), (50, 6819), (55, 6882), (57, 6888), (65, 7032), (74, 7113), (78, 7140), (94, 7344), (96, 7365), (100, 7389), (104, 7449), (110, 7482), (117, 7548), (124, 7644),

Gene: EdogawaKiddo\_9 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for EdogawaKiddo\_9:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (12, 6305), (19, 6476), (20, 6488), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Eidsmoe\_11 Start: 6176, Stop: 7756, Start Num: 3

Candidate Starts for Eidsmoe\_11:

(Start: 3 @6176 has 46 MA's), (5, 6227), (10, 6317), (11, 6320), (19, 6506), (21, 6527), (51, 6950), (55, 7001), (62, 7118), (71, 7202), (74, 7226), (78, 7253), (82, 7343), (88, 7415), (97, 7475), (110, 7571), (113, 7616), (116, 7634),

Gene: Elephantoon\_11 Start: 5798, Stop: 7378, Start Num: 3

Candidate Starts for Elephantoon\_11:

(Start: 3 @5798 has 46 MA's), (5, 5849), (10, 5939), (12, 5957), (14, 6011), (19, 6128), (21, 6149), (36, 6410), (44, 6500), (51, 6572), (55, 6623), (74, 6848), (82, 6965), (88, 7037), (91, 7058), (97, 7097), (110, 7193),

Gene: EmyBug\_11 Start: 6176, Stop: 7756, Start Num: 3

Candidate Starts for EmyBug\_11:

(Start: 3 @6176 has 46 MA's), (5, 6227), (10, 6317), (11, 6320), (12, 6335), (19, 6506), (21, 6527), (36, 6788), (51, 6950), (55, 7001), (62, 7118), (82, 7343), (88, 7415), (97, 7475), (110, 7571), (113, 7616), (116, 7634),

Gene: Et2Brutus\_9 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Et2Brutus\_9:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: ExplosioNervosa\_11 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for ExplosioNervosa\_11:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Fayely\_11 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for Fayely\_11:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Fibonacci\_10 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Fibonacci\_10:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: Flaverint\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Flaverint\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: Gail\_9 Start: 4567, Stop: 6147, Start Num: 3

Candidate Starts for Gail\_9:

(Start: 3 @4567 has 46 MA's), (10, 4708), (11, 4711), (19, 4897), (21, 4918), (23, 4951), (24, 4969), (44, 5269), (50, 5329), (51, 5341), (55, 5392), (62, 5509), (76, 5635), (82, 5734), (88, 5806), (91, 5827), (97, 5869), (110, 5965),

Gene: Gilberta\_10 Start: 6221, Stop: 7621, Start Num: 2

Candidate Starts for Gilberta\_10:

(1, 6182), (Start: 2 @6221 has 26 MA's), (10, 6368), (12, 6386), (17, 6506), (19, 6557), (21, 6578), (23, 6611), (50, 6758), (55, 6821), (57, 6827), (65, 6971), (74, 7052), (78, 7079), (94, 7283), (96, 7304), (100, 7328), (104, 7388), (110, 7421), (117, 7487), (124, 7583),

Gene: GodPhather\_37 Start: 36847, Stop: 38469, Start Num: 2

Candidate Starts for GodPhather\_37:

(Start: 2 @36847 has 26 MA's), (4, 36853), (6, 36916), (10, 36994), (12, 37012), (13, 37066), (16, 37114), (18, 37165), (19, 37201), (21, 37222), (24, 37276), (25, 37315), (27, 37363), (28, 37402), (39, 37540), (41, 37579), (47, 37621), (53, 37684), (60, 37768), (73, 37915), (74, 37921), (82, 38047), (84, 38059), (86, 38089), (89, 38128), (92, 38149), (98, 38182), (99, 38191), (101, 38206), (105, 38254), (112, 38305), (116, 38341), (118, 38356), (123, 38407),

Gene: Hanray\_10 Start: 6182, Stop: 7762, Start Num: 3

Candidate Starts for Hanray\_10:

(Start: 3 @6182 has 46 MA's), (5, 6233), (10, 6323), (11, 6326), (12, 6341), (19, 6512), (20, 6524), (21, 6533), (36, 6794), (51, 6956), (55, 7007), (62, 7124), (82, 7349), (88, 7421), (97, 7481), (110, 7577), (113, 7622), (116, 7640),

Gene: Holec\_10 Start: 6182, Stop: 7762, Start Num: 3

Candidate Starts for Holec\_10:

(Start: 3 @6182 has 46 MA's), (5, 6233), (10, 6323), (11, 6326), (12, 6341), (19, 6512), (20, 6524), (21, 6533), (36, 6794), (51, 6956), (55, 7007), (62, 7124), (82, 7349), (88, 7421), (97, 7481), (110, 7577), (113, 7622), (116, 7640),

Gene: HortumSL17\_11 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for HortumSL17\_11:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (19, 6476), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Hutc2\_10 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Hutc2\_10:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: Insomnia\_10 Start: 6279, Stop: 7676, Start Num: 3

Candidate Starts for Insomnia\_10:

(Start: 3 @6279 has 46 MA's), (9, 6417), (10, 6423), (12, 6441), (17, 6561), (19, 6612), (21, 6633), (23, 6666), (50, 6813), (55, 6876), (57, 6882), (65, 7026), (74, 7107), (78, 7134), (94, 7338), (96, 7359), (100, 7383), (104, 7443), (110, 7476), (117, 7542), (124, 7638),

Gene: Jabith\_10 Start: 6279, Stop: 7676, Start Num: 3

Candidate Starts for Jabith\_10:

(Start: 3 @6279 has 46 MA's), (9, 6417), (10, 6423), (12, 6441), (17, 6561), (19, 6612), (21, 6633), (23, 6666), (50, 6813), (55, 6876), (57, 6882), (65, 7026), (74, 7107), (78, 7134), (94, 7338), (96, 7359), (100, 7383), (104, 7443), (110, 7476), (117, 7542), (124, 7638),

Gene: Jeeves\_9 Start: 4583, Stop: 6160, Start Num: 3

Candidate Starts for Jeeves\_9:

(Start: 3 @4583 has 46 MA's), (10, 4724), (11, 4727), (19, 4913), (21, 4934), (24, 4985), (40, 5246), (44, 5285), (51, 5357), (54, 5393), (55, 5408), (62, 5525), (76, 5651), (82, 5750), (88, 5822), (90, 5837), (97, 5882), (110, 5978), (113, 6023),

Gene: Jeon\_36 Start: 36589, Stop: 38211, Start Num: 2

Candidate Starts for Jeon\_36:

(Start: 2 @36589 has 26 MA's), (4, 36595), (6, 36658), (10, 36736), (12, 36754), (13, 36808), (16, 36856), (18, 36907), (19, 36943), (21, 36964), (24, 37018), (25, 37057), (27, 37105), (28, 37144), (39, 37282), (41, 37321), (47, 37363), (53, 37426), (60, 37510), (73, 37657), (74, 37663), (82, 37789), (84, 37801), (86, 37831), (89, 37870), (92, 37891), (98, 37924), (99, 37933), (101, 37948), (105, 37996), (112, 38047), (116, 38083), (118, 38098), (123, 38149),

Gene: Jiawan\_10 Start: 6182, Stop: 7762, Start Num: 3

Candidate Starts for Jiawan\_10:

(Start: 3 @6182 has 46 MA's), (5, 6233), (10, 6323), (11, 6326), (12, 6341), (19, 6512), (20, 6524), (21, 6533), (36, 6794), (51, 6956), (55, 7007), (62, 7124), (82, 7349), (88, 7421), (97, 7481), (110, 7577), (113, 7622), (116, 7640),

Gene: Joselito\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Joselito\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: Keziacharles14\_9 Start: 4347, Stop: 5900, Start Num: 3

Candidate Starts for Keziacharles14\_9:

(Start: 3 @4347 has 46 MA's), (6, 4413), (10, 4488), (12, 4506), (19, 4677), (21, 4698), (40, 5010), (44, 5049), (54, 5157), (55, 5172), (64, 5268), (67, 5310), (75, 5379), (78, 5394), (79, 5409), (97, 5619), (110, 5715), (111, 5736), (113, 5760),

Gene: Kimba\_10 Start: 6279, Stop: 7676, Start Num: 3

Candidate Starts for Kimba\_10:

(Start: 3 @6279 has 46 MA's), (9, 6417), (10, 6423), (12, 6441), (17, 6561), (19, 6612), (21, 6633), (23, 6666), (50, 6813), (55, 6876), (57, 6882), (65, 7026), (74, 7107), (78, 7134), (94, 7338), (96, 7359), (100, 7383), (104, 7443), (110, 7476), (117, 7542), (124, 7638),

Gene: Kinmap\_8 Start: 4508, Stop: 5944, Start Num: 3

Candidate Starts for Kinmap\_8:

(Start: 3 @4508 has 46 MA's), (5, 4559), (10, 4652), (11, 4655), (13, 4724), (19, 4859), (21, 4880), (23, 4913), (31, 5060), (43, 5159), (45, 5162), (53, 5231), (56, 5267), (59, 5279), (61, 5321), (63, 5348), (66, 5372), (69, 5414), (77, 5468), (80, 5513), (83, 5573), (91, 5648), (102, 5705), (109, 5762), (121, 5873),

Gene: Klodlith\_10 Start: 4360, Stop: 5916, Start Num: 3

Candidate Starts for Klodlith\_10:

(Start: 3 @4360 has 46 MA's), (10, 4501), (19, 4690), (21, 4711), (22, 4741), (55, 5185), (64, 5281), (79, 5422), (87, 5563), (88, 5569), (97, 5635), (110, 5731),

Gene: Lilleskat\_9 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for Lilleskat\_9:

(Start: 3 @6146 has 46 MA's), (10, 6287), (11, 6290), (12, 6305), (19, 6476), (20, 6488), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: LoneWolf\_11 Start: 5993, Stop: 7573, Start Num: 3

Candidate Starts for LoneWolf\_11:

(Start: 3 @5993 has 46 MA's), (5, 6044), (10, 6134), (11, 6137), (12, 6152), (14, 6206), (19, 6323), (20, 6335), (21, 6344), (36, 6605), (51, 6767), (55, 6818), (62, 6935), (82, 7160), (88, 7232), (97, 7292), (110, 7388), (113, 7433), (116, 7451),

Gene: Luchador\_9 Start: 4568, Stop: 6148, Start Num: 3

Candidate Starts for Luchador\_9:

(Start: 3 @4568 has 46 MA's), (10, 4709), (11, 4712), (19, 4898), (21, 4919), (23, 4952), (24, 4970), (40, 5231), (44, 5270), (50, 5330), (51, 5342), (55, 5393), (62, 5510), (76, 5636), (82, 5735), (88, 5807), (91, 5828), (97, 5870), (110, 5966), (113, 6011),

Gene: Lucivia\_10 Start: 6276, Stop: 7673, Start Num: 3

Candidate Starts for Lucivia\_10:

(Start: 3 @6276 has 46 MA's), (9, 6414), (10, 6420), (12, 6438), (17, 6558), (19, 6609), (21, 6630), (23, 6663), (50, 6810), (55, 6873), (57, 6879), (65, 7023), (74, 7104), (78, 7131), (94, 7335), (96, 7356), (100, 7380), (104, 7440), (110, 7473), (117, 7539), (124, 7635),

Gene: MaCh\_10 Start: 6221, Stop: 7621, Start Num: 2

Candidate Starts for MaCh\_10:

(1, 6182), (Start: 2 @6221 has 26 MA's), (10, 6368), (12, 6386), (17, 6506), (19, 6557), (21, 6578), (23, 6611), (50, 6758), (55, 6821), (57, 6827), (65, 6971), (74, 7052), (78, 7079), (94, 7283), (96, 7304), (100, 7328), (104, 7388), (110, 7421), (117, 7487), (124, 7583),

Gene: Mabel\_10 Start: 6291, Stop: 7688, Start Num: 3

Candidate Starts for Mabel\_10:

(Start: 3 @6291 has 46 MA's), (9, 6429), (10, 6435), (12, 6453), (17, 6573), (19, 6624), (21, 6645), (23, 6678), (50, 6825), (55, 6888), (57, 6894), (65, 7038), (74, 7119), (78, 7146), (94, 7350), (96, 7371), (100, 7395), (104, 7455), (110, 7488), (117, 7554), (124, 7650),

Gene: Maminiaina\_11 Start: 5916, Stop: 7496, Start Num: 3

Candidate Starts for Maminiaina\_11:

(Start: 3 @5916 has 46 MA's), (5, 5967), (10, 6057), (12, 6075), (19, 6246), (21, 6267), (36, 6528), (51, 6690), (55, 6741), (62, 6858), (88, 7155), (97, 7215), (110, 7311), (113, 7356), (116, 7374),

Gene: MegTheThird\_9 Start: 4281, Stop: 5834, Start Num: 3

Candidate Starts for MegTheThird\_9:

(Start: 3 @4281 has 46 MA's), (10, 4422), (19, 4611), (21, 4632), (34, 4884), (44, 4983), (54, 5091), (55, 5106), (57, 5112), (64, 5202), (67, 5244), (79, 5343), (97, 5553), (103, 5604), (107, 5640), (110, 5649), (111, 5670),

Gene: Megabear\_36 Start: 36026, Stop: 37648, Start Num: 2

Candidate Starts for Megabear\_36:

(Start: 2 @36026 has 26 MA's), (4, 36032), (6, 36095), (10, 36173), (12, 36191), (13, 36245), (16, 36293), (18, 36344), (19, 36380), (21, 36401), (24, 36455), (27, 36542), (28, 36581), (39, 36719), (41, 36758), (47, 36800), (53, 36863), (60, 36947), (73, 37094), (74, 37100), (82, 37226), (84, 37238), (86, 37268), (89, 37307), (92, 37328), (98, 37361), (99, 37370), (101, 37385), (105, 37433), (112, 37484), (116, 37520), (118, 37535), (123, 37586), (125, 37643),

Gene: Minispark\_8 Start: 4273, Stop: 5823, Start Num: 3

Candidate Starts for Minispark\_8:

(Start: 3 @4273 has 46 MA's), (8, 4366), (10, 4414), (12, 4432), (15, 4495), (19, 4603), (21, 4624), (36, 4885), (44, 4975), (55, 5098), (67, 5236), (79, 5335), (88, 5482), (93, 5512), (97, 5542), (110, 5638),

Gene: Mulciber\_10 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Mulciber\_10:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: Munch\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Munch\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: Myxus\_11 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for Myxus\_11:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (19, 6476), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Onglai\_10 Start: 4512, Stop: 6092, Start Num: 3

Candidate Starts for Onglai\_10:

(Start: 3 @4512 has 46 MA's), (5, 4563), (10, 4653), (11, 4656), (12, 4671), (19, 4842), (20, 4854), (21, 4863), (36, 5124), (51, 5286), (55, 5337), (62, 5454), (82, 5679), (88, 5751), (97, 5811), (110, 5907), (113, 5952), (116, 5970),

Gene: Orange\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Orange\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (9, 6365), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: PR\_36 Start: 36630, Stop: 38252, Start Num: 2

Candidate Starts for PR\_36:

(Start: 2 @36630 has 26 MA's), (4, 36636), (6, 36699), (10, 36777), (12, 36795), (13, 36849), (16, 36897), (18, 36948), (19, 36984), (21, 37005), (24, 37059), (27, 37146), (28, 37185), (39, 37323), (40, 37344), (41, 37362), (47, 37404), (53, 37467), (60, 37551), (73, 37698), (74, 37704), (82, 37830), (84, 37842), (86, 37872), (89, 37911), (92, 37932), (98, 37965), (99, 37974), (101, 37989), (105, 38037), (112, 38088), (116, 38124), (118, 38139), (123, 38190), (125, 38247),

Gene: PackMan\_11 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for PackMan\_11:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (19, 6476), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Petersenfast\_9 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Petersenfast\_9:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: Phaeder\_11 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for Phaeder\_11:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (19, 6476), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Phonnegut\_11 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for Phonnegut\_11:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Pioneer\_11 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for Pioneer\_11:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Priya\_11 Start: 6177, Stop: 7757, Start Num: 3

Candidate Starts for Priya\_11:

(Start: 3 @6177 has 46 MA's), (5, 6228), (10, 6318), (11, 6321), (19, 6507), (21, 6528), (51, 6951), (55, 7002), (62, 7119), (71, 7203), (74, 7227), (78, 7254), (82, 7344), (88, 7416), (97, 7476), (110, 7572), (113, 7617), (116, 7635),

Gene: Qobbit\_11 Start: 6176, Stop: 7756, Start Num: 3

Candidate Starts for Qobbit\_11:

(Start: 3 @6176 has 46 MA's), (5, 6227), (10, 6317), (11, 6320), (12, 6335), (19, 6506), (21, 6527), (36, 6788), (51, 6950), (55, 7001), (62, 7118), (82, 7343), (88, 7415), (97, 7475), (110, 7571), (113, 7616), (116, 7634),

Gene: Rahalelujah\_9 Start: 4273, Stop: 5823, Start Num: 3

Candidate Starts for Rahalelujah\_9:

(Start: 3 @4273 has 46 MA's), (8, 4366), (10, 4414), (12, 4432), (15, 4495), (19, 4603), (21, 4624), (25, 4714), (32, 4855), (36, 4885), (44, 4975), (55, 5098), (67, 5236), (88, 5482), (93, 5512), (97, 5542), (110, 5638),

Gene: RyeScarlet\_12 Start: 6182, Stop: 7762, Start Num: 3

Candidate Starts for RyeScarlet\_12:

(Start: 3 @6182 has 46 MA's), (5, 6233), (10, 6323), (11, 6326), (12, 6341), (19, 6512), (20, 6524), (21, 6533), (36, 6794), (51, 6956), (55, 7007), (62, 7124), (82, 7349), (88, 7421), (97, 7481), (110, 7577), (113, 7622), (116, 7640),

Gene: Sachima\_9 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for Sachima\_9:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (12, 6305), (19, 6476), (20, 6488), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Salz\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Salz\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (9, 6365), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: Saskia\_9 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Saskia\_9:

(1, 6188), (Start: 2 @6227 has 26 MA's), (6, 6296), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: Scherzo\_11 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for Scherzo\_11:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (20, 6521), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Sham4\_10 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Sham4\_10:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: SheaKeira\_10 Start: 4377, Stop: 5927, Start Num: 3

Candidate Starts for SheaKeira\_10:

(Start: 3 @4377 has 46 MA's), (10, 4518), (19, 4707), (21, 4728), (34, 4980), (55, 5202), (64, 5298), (67, 5340), (79, 5439), (88, 5586), (97, 5646), (110, 5742), (115, 5802),

Gene: Snape\_10 Start: 6230, Stop: 7630, Start Num: 2

Candidate Starts for Snape\_10:

(1, 6191), (Start: 2 @6230 has 26 MA's), (9, 6371), (10, 6377), (12, 6395), (17, 6515), (19, 6566), (21, 6587), (23, 6620), (50, 6767), (55, 6830), (57, 6836), (65, 6980), (74, 7061), (78, 7088), (94, 7292), (96, 7313), (100, 7337), (104, 7397), (110, 7430), (117, 7496), (124, 7592),

Gene: SororFago\_9 Start: 4555, Stop: 6138, Start Num: 3

Candidate Starts for SororFago\_9:

(Start: 3 @4555 has 46 MA's), (10, 4696), (11, 4699), (14, 4768), (19, 4885), (21, 4906), (24, 4957), (40, 5218), (44, 5257), (50, 5317), (51, 5329), (55, 5380), (62, 5497), (76, 5623), (82, 5722), (88, 5794), (91, 5815), (97, 5860), (110, 5956), (113, 6001),

Gene: Spouty\_11 Start: 6176, Stop: 7756, Start Num: 3

Candidate Starts for Spouty\_11:

(Start: 3 @6176 has 46 MA's), (5, 6227), (10, 6317), (11, 6320), (19, 6506), (21, 6527), (51, 6950), (55, 7001), (62, 7118), (71, 7202), (74, 7226), (78, 7253), (82, 7343), (88, 7415), (97, 7475), (110, 7571), (113, 7616), (116, 7634),

Gene: Stellammi\_35 Start: 25910, Stop: 27592, Start Num: 2

Candidate Starts for Stellammi\_35:

(Start: 2 @25910 has 26 MA's), (7, 25994), (10, 26057), (12, 26075), (19, 26246), (21, 26267), (26, 26396), (28, 26444), (30, 26459), (32, 26528), (35, 26555), (37, 26561), (38, 26570), (42, 26633), (46, 26663), (48, 26690), (52, 26738), (55, 26777), (58, 26792), (68, 26954), (70, 26975), (72, 26984), (76, 27023), (81, 27083), (85, 27179), (94, 27260), (95, 27281), (110, 27398), (114, 27452), (116, 27461), (119, 27482), (122, 27509),

Gene: Sunhee\_8 Start: 4574, Stop: 6157, Start Num: 3

Candidate Starts for Sunhee\_8:

(Start: 3 @4574 has 46 MA's), (10, 4715), (11, 4718), (14, 4787), (19, 4904), (21, 4925), (23, 4958), (24, 4976), (44, 5276), (51, 5348), (55, 5399), (76, 5642), (78, 5651), (88, 5813), (91, 5834), (97, 5876), (110, 5972), (111, 5993), (113, 6017), (122, 6086),

Gene: Taptic\_36 Start: 36026, Stop: 37648, Start Num: 2

Candidate Starts for Taptic\_36:

(Start: 2 @36026 has 26 MA's), (4, 36032), (6, 36095), (10, 36173), (12, 36191), (13, 36245), (16, 36293), (18, 36344), (19, 36380), (21, 36401), (24, 36455), (27, 36542), (28, 36581), (39, 36719), (41, 36758), (47, 36800), (53, 36863), (60, 36947), (73, 37094), (74, 37100), (82, 37226), (84, 37238), (86, 37268), (89, 37307), (92, 37328), (98, 37361), (99, 37370), (101, 37385), (105, 37433), (112, 37484), (116, 37520), (118, 37535), (123, 37586), (125, 37643),

Gene: Timothy\_10 Start: 6224, Stop: 7624, Start Num: 2

Candidate Starts for Timothy\_10:

(1, 6185), (Start: 2 @6224 has 26 MA's), (10, 6371), (12, 6389), (17, 6509), (19, 6560), (21, 6581), (23, 6614), (50, 6761), (55, 6824), (57, 6830), (65, 6974), (74, 7055), (78, 7082), (94, 7286), (96, 7307), (100, 7331), (104, 7391), (110, 7424), (117, 7490), (124, 7586),

Gene: TinyTimmy\_10 Start: 6279, Stop: 7676, Start Num: 3

Candidate Starts for TinyTimmy\_10:

(Start: 3 @6279 has 46 MA's), (9, 6417), (10, 6423), (12, 6441), (17, 6561), (19, 6612), (21, 6633), (23, 6666), (50, 6813), (55, 6876), (57, 6882), (65, 7026), (74, 7107), (78, 7134), (94, 7338), (96, 7359), (100, 7383), (104, 7443), (110, 7476), (117, 7542), (124, 7638),

Gene: Toaka\_9 Start: 4553, Stop: 6103, Start Num: 3

Candidate Starts for Toaka\_9:

(Start: 3 @4553 has 46 MA's), (8, 4646), (10, 4694), (19, 4883), (21, 4904), (25, 4994), (33, 5138), (36, 5165), (44, 5255), (54, 5363), (55, 5378), (64, 5474), (79, 5615), (82, 5690), (88, 5762), (93, 5792), (97, 5822), (110, 5918), (116, 5981),

Gene: Tubs\_11 Start: 6146, Stop: 7726, Start Num: 3

Candidate Starts for Tubs\_11:

(Start: 3 @6146 has 46 MA's), (5, 6197), (10, 6287), (11, 6290), (19, 6476), (21, 6497), (36, 6758), (51, 6920), (55, 6971), (62, 7088), (82, 7313), (88, 7385), (97, 7445), (110, 7541), (113, 7586), (116, 7604),

Gene: Ugenie5\_8 Start: 6179, Stop: 7759, Start Num: 3

Candidate Starts for Ugenie5\_8:

(Start: 3 @6179 has 46 MA's), (5, 6230), (10, 6320), (11, 6323), (12, 6338), (19, 6509), (20, 6521), (21, 6530), (36, 6791), (51, 6953), (55, 7004), (62, 7121), (82, 7346), (88, 7418), (97, 7478), (110, 7574), (113, 7619), (116, 7637),

Gene: Vanisoa\_9 Start: 4264, Stop: 5814, Start Num: 3

Candidate Starts for Vanisoa\_9:

(Start: 3 @4264 has 46 MA's), (10, 4405), (11, 4408), (12, 4423), (19, 4594), (21, 4615), (22, 4645), (32, 4846), (36, 4876), (44, 4966), (54, 5074), (55, 5089), (64, 5185), (67, 5227), (79, 5326), (88, 5473), (93, 5503), (97, 5533), (110, 5629), (115, 5689),

Gene: Wolpertinger\_9 Start: 6227, Stop: 7627, Start Num: 2

Candidate Starts for Wolpertinger\_9:

(1, 6188), (Start: 2 @6227 has 26 MA's), (9, 6368), (10, 6374), (12, 6392), (17, 6512), (19, 6563), (21, 6584), (23, 6617), (50, 6764), (55, 6827), (57, 6833), (65, 6977), (74, 7058), (78, 7085), (94, 7289), (96, 7310), (100, 7334), (104, 7394), (110, 7427), (117, 7493), (124, 7589),

Gene: WorldCup\_8 Start: 4273, Stop: 5823, Start Num: 3

Candidate Starts for WorldCup\_8:

(Start: 3 @4273 has 46 MA's), (8, 4366), (10, 4414), (12, 4432), (15, 4495), (19, 4603), (21, 4624), (25, 4714), (32, 4855), (36, 4885), (44, 4975), (55, 5098), (67, 5236), (79, 5335), (88, 5482), (93, 5512), (97, 5542), (110, 5638),

Gene: Yecey3\_10 Start: 4341, Stop: 5915, Start Num: 3

Candidate Starts for Yecey3\_10:

(Start: 3 @4341 has 46 MA's), (8, 4434), (10, 4482), (11, 4485), (13, 4554), (19, 4689), (21, 4710), (24, 4761), (36, 4971), (49, 5103), (51, 5133), (55, 5184), (67, 5322), (78, 5406), (79, 5421), (88, 5568), (97, 5634), (110, 5730), (111, 5751), (120, 5838),