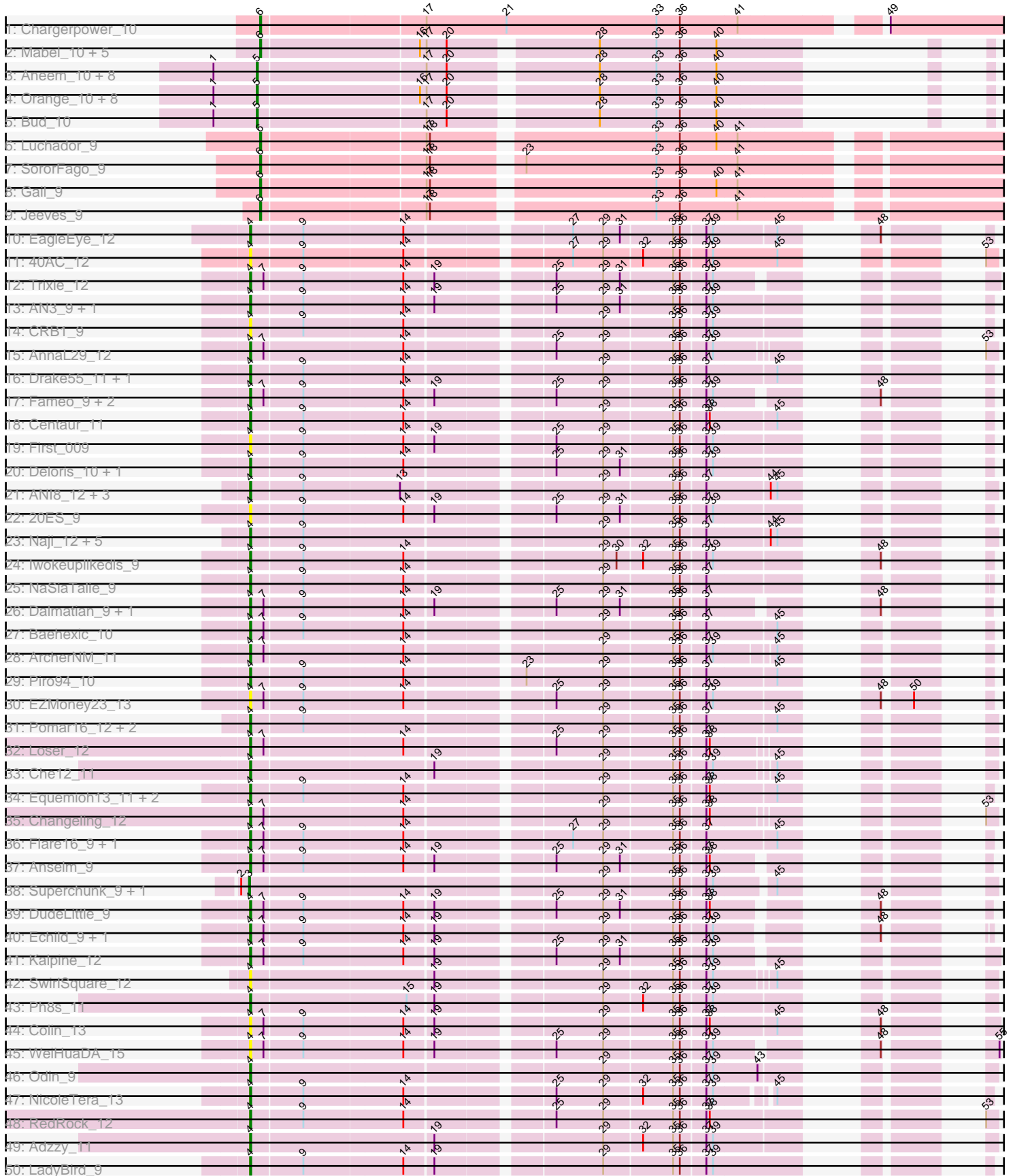
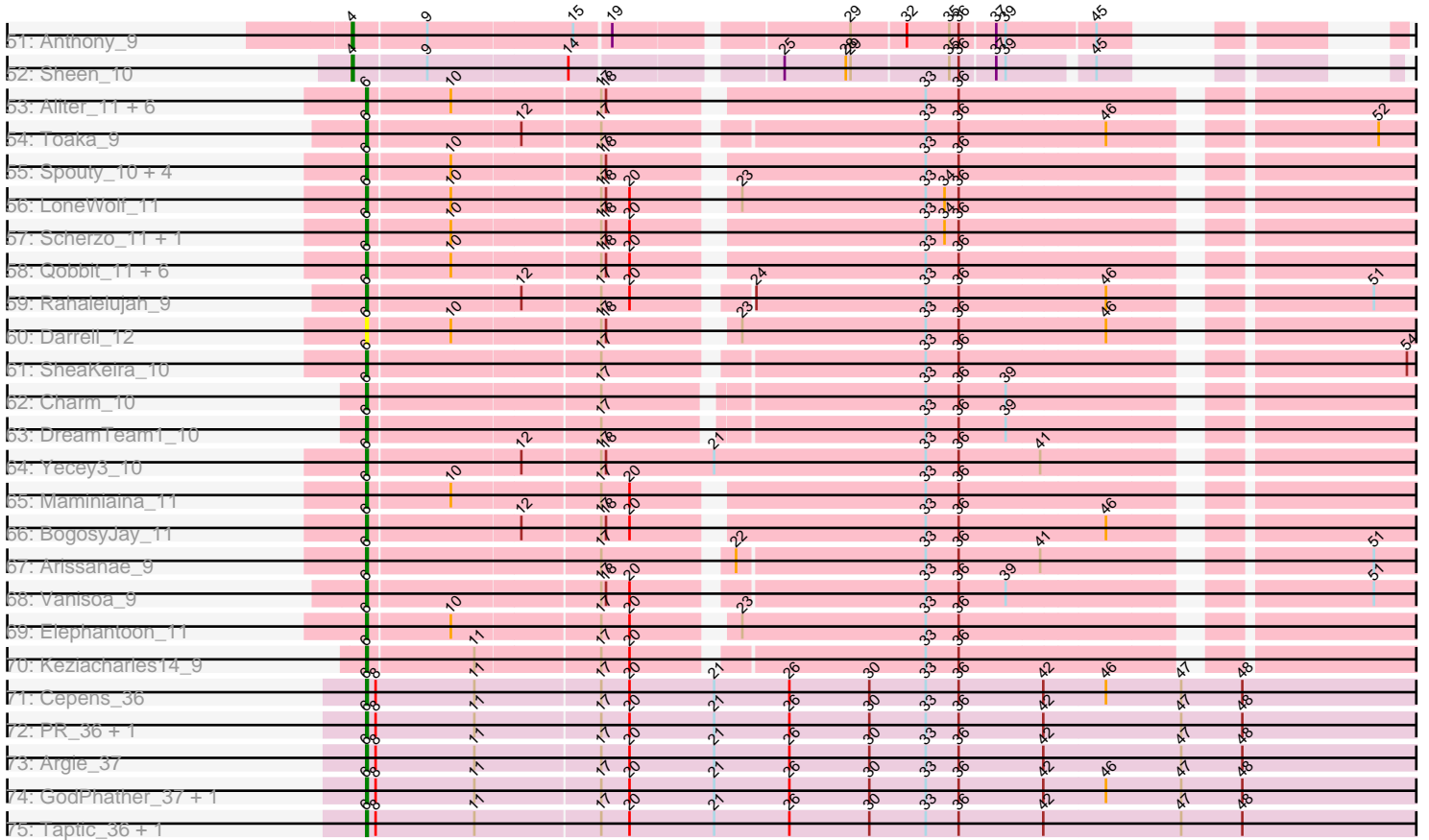


# Zoomed Pham 157673



# Zoomed Pham 157673



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 157673 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157673 has 137 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_10
- Track 2 : Mabel\_10, Jabith\_10, Lucivia\_10, TinyTimmy\_9, Insomnia\_9, Ebony\_10
- Track 3 : Aneem\_10, Munch\_10, MaCh\_10, Bachome\_10, Joselito\_10, Gilberta\_10, Flaverint\_10, Timothy\_10, Bowtie\_10
- Track 4 : Orange\_10, Mulciber\_10, Salz\_10, Sham4\_10, Hutc2\_10, Petersenfast\_9, Et2Brutus\_9, Snape\_10, Fibonacci\_10
- Track 5 : Bud\_10
- Track 6 : Luchador\_9
- Track 7 : SororFago\_9
- Track 8 : Gail\_9
- Track 9 : Jeeves\_9
- Track 10 : EagleEye\_12
- Track 11 : 40AC\_12
- Track 12 : Trixie\_12
- Track 13 : AN3\_9, VA6\_9
- Track 14 : CRB1\_9
- Track 15 : AnnaL29\_12
- Track 16 : Drake55\_11, HarryHoudini\_11
- Track 17 : Fameo\_9, Heffalump\_11, QueenB2\_9
- Track 18 : Centaur\_11
- Track 19 : First\_009
- Track 20 : Deloris\_10, BengiVuitton\_10
- Track 21 : ANI8\_12, AN9\_12, VC3\_12, C3\_07
- Track 22 : 20ES\_9
- Track 23 : Naji\_12, Duplo\_12, D29\_10, D32\_12, StarStuff\_12, Tomathan\_12
- Track 24 : Iwokeuplikedis\_9
- Track 25 : NaSiaTalie\_9
- Track 26 : Dalmatian\_9, Retro23\_9
- Track 27 : Baehexic\_10
- Track 28 : ArcherNM\_11
- Track 29 : Piro94\_10
- Track 30 : EZMoney23\_13
- Track 31 : Pomar16\_12, Kerberos\_12, DBQu4n\_12
- Track 32 : Loser\_12
- Track 33 : Che12\_11
- Track 34 : Equemioh13\_11, WideWale\_11, Updawg\_11
- Track 35 : Changeling\_12

- Track 36 : Flare16\_9, MiculUcigas\_9
- Track 37 : Anselm\_9
- Track 38 : Superchunk\_9, Caraxes\_9
- Track 39 : DudeLittle\_9
- Track 40 : Echild\_9, Benvolio\_9
- Track 41 : Kalpine\_12
- Track 42 : SwirlSquare\_12
- Track 43 : Ph8s\_11
- Track 44 : Colin\_13
- Track 45 : WeiHuaDA\_15
- Track 46 : Odin\_9
- Track 47 : NicoleTera\_13
- Track 48 : RedRock\_12
- Track 49 : Adzzy\_11
- Track 50 : LadyBird\_9
- Track 51 : Anthony\_9
- Track 52 : Sheen\_10
- Track 53 : Aliter\_11, HortumSL17\_11, Catalina\_11, Phaeder\_11, Tubs\_11, Myxus\_11, PackMan\_11
- Track 54 : Toaka\_9
- Track 55 : Spouty\_10, Conquerage\_11, Alma\_11, Priya\_11, Eidsmoe\_11
- Track 56 : LoneWolf\_11
- Track 57 : Scherzo\_11, Ugenie5\_8
- Track 58 : Qobbit\_11, Fayely\_11, Phonnegut\_11, EmyBug\_9, Pioneer\_11, Beemo\_11, ExplosioNervosa\_11
- Track 59 : Rahalelujah\_9
- Track 60 : Darrell\_12
- Track 61 : SheaKeira\_10
- Track 62 : Charm\_10
- Track 63 : DreamTeam1\_10
- Track 64 : Yecey3\_10
- Track 65 : Maminiaina\_11
- Track 66 : BogosyJay\_11
- Track 67 : Arissanae\_9
- Track 68 : Vanisoa\_9
- Track 69 : Elephantoon\_11
- Track 70 : Keziacharles14\_9
- Track 71 : Cepens\_36
- Track 72 : PR\_36, D12\_35
- Track 73 : Argie\_37
- Track 74 : GodPhather\_37, Jeon\_36
- Track 75 : 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 4, it was called in 54 of the 122 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_9, 40AC\_12, AN3\_9, AN9\_12, ANI8\_12, Adzzy\_11, AnnaL29\_12, Anselm\_9, Anthony\_9, ArcherNM\_11, Baehexic\_10, BengiVuitton\_10, Benvolio\_9, C3\_07, CRB1\_9, Centaur\_11, Changeling\_12, Che12\_11, Colin\_13, D29\_10, D32\_12, DBQu4n\_12, Dalmatian\_9, Deloris\_10, Drake55\_11, DudeLittle\_9, Duplo\_12, EZMoney23\_13, EagleEye\_12, Echild\_9, Equemioh13\_11, Fameo\_9, First\_009, Flare16\_9, HarryHoudini\_11, Heffalump\_11, Iwokeuplikedis\_9, Kalpine\_12, Kerberos\_12, LadyBird\_9, Loser\_12, MiculUcigas\_9, NaSiaTalie\_9, Naji\_12, NicoleTera\_13, Odin\_9, Ph8s\_11, Piro94\_10, Pomar16\_12, QueenB2\_9, RedRock\_12, Retro23\_9, Sheen\_10, StarStuff\_12, SwirlSquare\_12, Tomathan\_12, Trixie\_12, Updawg\_11, VA6\_9, VC3\_12, WeiHuaDA\_15, WideWale\_11,

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

- 

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

- Aliter\_11, Alma\_11, Aneem\_10, Argie\_37, Arissanae\_9, Bachome\_10, Beemo\_11, BogosyJay\_11, Bowtie\_10, Bud\_10, Caraxes\_9, Catalina\_11, Cepens\_36, Chargerpower\_10, Charm\_10, Conquerage\_11, D12\_35, Darrell\_12, DreamTeam1\_10, Ebony\_10, Eidsmoe\_11, Elephantoon\_11, EmyBug\_9, Et2Brutus\_9, ExplosioNervosa\_11, Fayely\_11, Fibonacci\_10, Flaverint\_10, Gail\_9, Gilberta\_10, GodPhather\_37, HortumSL17\_11, Hutc2\_10, Insomnia\_9, Jabith\_10, Jeeves\_9, Jeon\_36, Joselito\_10, Keziacharles14\_9, LoneWolf\_11, Luchador\_9, Lucivia\_10, MaCh\_10, Mabel\_10, Maminiaina\_11, Megabear\_36, Mulciber\_10, Munch\_10, Myxus\_11, Orange\_10, PR\_36, PackMan\_11, Petersenfast\_9, Phaeder\_11, Phonnegut\_11, Pioneer\_11, Priya\_11, Qobbit\_11, Rahalelujah\_9, Salz\_10, Scherzo\_11, Sham4\_10, SheaKeira\_10, Snape\_10, SororFago\_9, Spouty\_10, Superchunk\_9, Taptic\_36, Timothy\_10, TinyTimmy\_9, Toaka\_9, Tubs\_11, Ugenie5\_8, Vanisoa\_9, Yecey3\_10,

### Summary by start number:

Start 3:

- Found in 2 of 137 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 122
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caraxes\_9 (A2), Superchunk\_9 (A2),

Start 4:

- Found in 62 of 137 ( 45.3% ) of genes in pham
- Manual Annotations of this start: 54 of 122
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 20ES\_9 (A2), 40AC\_12 (A17), AN3\_9 (A2), AN9\_12 (A2), ANI8\_12 (A2), Adzzy\_11 (A2), AnnaL29\_12 (A2), Anselm\_9 (A2), Anthony\_9 (A20), ArcherNM\_11 (A2), Baehexic\_10 (A2), BengiVuitton\_10 (A2), Benvolio\_9 (A2), C3\_07 (A2), CRB1\_9 (A2), Centaur\_11 (A2), Changeling\_12 (A2), Che12\_11 (A2), Colin\_13 (A2), D29\_10 (A2), D32\_12 (A2), DBQu4n\_12 (A2), Dalmatian\_9 (A2), Deloris\_10 (A2), Drake55\_11 (A2), DudeLittle\_9 (A2), Duplo\_12 (A2), EZMoney23\_13 (A2), EagleEye\_12 (A16), Echild\_9 (A2), Equemioh13\_11 (A2), Fameo\_9 (A2), First\_009 (A2), Flare16\_9 (A2), HarryHoudini\_11 (A2), Heffalump\_11 (A2), Iwokeuplikedis\_9 (A2), Kalpine\_12 (A2), Kerberos\_12 (A2), LadyBird\_9 (A2), Loser\_12 (A2), MiculUcigas\_9 (A2), NaSiaTalie\_9 (A2), Naji\_12 (A2), NicoleTera\_13 (A2), Odin\_9 (A2), Ph8s\_11 (A2), Piro94\_10 (A2), Pomar16\_12 (A2), QueenB2\_9 (A2), RedRock\_12 (A2), Retro23\_9 (A2), Sheen\_10 (A7), StarStuff\_12 (A2),

SwirlSquare\_12 (A2), Tomathan\_12 (A2), Trixie\_12 (A2), Updawg\_11 (A2), VA6\_9 (A2), VC3\_12 (A2), WeiHuaDA\_15 (A2), WideWale\_11 (A2),

Start 5:

- Found in 19 of 137 ( 13.9% ) of genes in pham
- Manual Annotations of this start: 18 of 122
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aneem\_10 (A11), Bachome\_10 (A11), Bowtie\_10 (A11), Bud\_10 (A11), Et2Brutus\_9 (A11), Fibonacci\_10 (A11), Flaverint\_10 (A11), Gilberta\_10 (A11), Hutc2\_10 (A11), Joselito\_10 (A11), MaCh\_10 (A11), Mulciber\_10 (A11), Munch\_10 (A11), Orange\_10 (A11), Petersenfast\_9 (A11), Salz\_10 (A11), Sham4\_10 (A11), Snape\_10 (A11), Timothy\_10 (A11),

Start 6:

- Found in 54 of 137 ( 39.4% ) of genes in pham
- Manual Annotations of this start: 49 of 122
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter\_11 (A9), Alma\_11 (A9), Argie\_37 (W), Arissanae\_9 (A9), Beemo\_11 (A9), BogosyJay\_11 (A9), Catalina\_11 (A9), Cepens\_36 (W), Chargerpower\_10 (A), Charm\_10 (A9), Conquerage\_11 (A9), D12\_35 (W), Darrell\_12 (A9), DreamTeam1\_10 (A9), Ebony\_10 (A11), Eidsmoe\_11 (A9), Elephantoon\_11 (A9), EmyBug\_9 (A9), ExplosioNervosa\_11 (A9), Fayely\_11 (A9), Gail\_9 (A14), GodPhather\_37 (W), HortumSL17\_11 (A9), Insomnia\_9 (A11), Jabith\_10 (A11), Jeeves\_9 (A14), Jeon\_36 (W), Keziacharles14\_9 (A9), LoneWolf\_11 (A9), Luchador\_9 (A14), Lucivia\_10 (A11), Mabel\_10 (A11), Maminiaina\_11 (A9), Megabear\_36 (W), Myxus\_11 (A9), PR\_36 (W), PackMan\_11 (A9), Phaeder\_11 (A9), Phonnegut\_11 (A9), Pioneer\_11 (A9), Priya\_11 (A9), Qobbit\_11 (A9), Rahalelujah\_9 (A9), Scherzo\_11 (A9), SheaKeira\_10 (A9), SororFago\_9 (A14), Spouty\_10 (A9), Taptic\_36 (W), TinyTimmy\_9 (A11), Toaka\_9 (A9), Tubs\_11 (A9), Ugenie5\_8 (A9), Vanisoa\_9 (A9), Yecey3\_10 (A9),

### Summary by clusters:

There are 10 clusters represented in this pham: A20, A14, A17, A16, A11, A7, A2, A, W, A9,

Info for manual annotations of cluster A:

- Start number 6 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A11:

- Start number 5 was manually annotated 18 times for cluster A11.
- Start number 6 was manually annotated 4 times for cluster A11.

Info for manual annotations of cluster A14:

- Start number 6 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A16:

- Start number 4 was manually annotated 1 time for cluster A16.

Info for manual annotations of cluster A2:

- Start number 3 was manually annotated 1 time for cluster A2.
- Start number 4 was manually annotated 51 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 4 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A7:

- Start number 4 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A9:

- Start number 6 was manually annotated 32 times for cluster A9.

Info for manual annotations of cluster W:

- Start number 6 was manually annotated 8 times for cluster W.

### **Gene Information:**

Gene: 20ES\_9 Start: 4690, Stop: 5988, Start Num: 4

Candidate Starts for 20ES\_9:

(Start: 4 @4690 has 54 MA's), (9, 4735), (14, 4822), (19, 4846), (25, 4939), (29, 4981), (31, 4996), (35, 5041), (36, 5047), (37, 5068), (39, 5074), (63, 5230), (76, 5302), (82, 5350), (108, 5569), (115, 5602), (134, 5707),

Gene: 40AC\_12 Start: 6575, Stop: 8080, Start Num: 4

Candidate Starts for 40AC\_12:

(Start: 4 @6575 has 54 MA's), (9, 6620), (14, 6707), (27, 6839), (29, 6866), (32, 6899), (35, 6926), (36, 6932), (37, 6953), (39, 6959), (45, 7016), (53, 7100), (87, 7397), (89, 7421), (97, 7496), (106, 7637), (115, 7688), (121, 7733), (134, 7793), (138, 7829), (144, 7841), (153, 7901), (155, 7919), (166, 8009), (167, 8021),

Gene: AN3\_9 Start: 4672, Stop: 5973, Start Num: 4

Candidate Starts for AN3\_9:

(Start: 4 @4672 has 54 MA's), (9, 4717), (14, 4804), (19, 4828), (25, 4921), (29, 4963), (31, 4978), (35, 5023), (36, 5029), (37, 5050), (39, 5056), (63, 5212), (76, 5284), (82, 5332), (100, 5455), (108, 5551), (115, 5584), (134, 5689), (138, 5725), (155, 5815), (167, 5917),

Gene: AN9\_12 Start: 4696, Stop: 6177, Start Num: 4

Candidate Starts for AN9\_12:

(Start: 4 @4696 has 54 MA's), (9, 4741), (13, 4825), (29, 4987), (35, 5047), (36, 5053), (37, 5074), (44, 5128), (45, 5134), (73, 5302), (78, 5353), (86, 5503), (93, 5584), (115, 5815), (127, 5878), (146, 5977), (166, 6106),

Gene: ANI8\_12 Start: 4696, Stop: 6177, Start Num: 4

Candidate Starts for ANI8\_12:

(Start: 4 @4696 has 54 MA's), (9, 4741), (13, 4825), (29, 4987), (35, 5047), (36, 5053), (37, 5074), (44, 5128), (45, 5134), (73, 5302), (78, 5353), (86, 5503), (93, 5584), (115, 5815), (127, 5878), (146, 5977), (166, 6106),

Gene: Adzzy\_11 Start: 4473, Stop: 5846, Start Num: 4

Candidate Starts for Adzzy\_11:

(Start: 4 @4473 has 54 MA's), (19, 4629), (29, 4764), (32, 4797), (35, 4824), (36, 4830), (37, 4851), (39, 4857), (67, 5043), (69, 5061), (78, 5130), (95, 5292), (99, 5340), (104, 5403), (130, 5565), (131, 5568), (140, 5631), (142, 5634), (155, 5721),

Gene: Aliter\_11 Start: 6074, Stop: 7654, Start Num: 6

Candidate Starts for Aliter\_11:

(Start: 6 @6074 has 49 MA's), (10, 6125), (17, 6215), (18, 6218), (33, 6404), (36, 6425), (56, 6686), (73, 6848), (78, 6899), (83, 7016), (102, 7241), (107, 7313), (125, 7373), (146, 7469), (153, 7514), (155, 7532),

Gene: Alma\_11 Start: 6153, Stop: 7733, Start Num: 6

Candidate Starts for Alma\_11:

(Start: 6 @6153 has 49 MA's), (10, 6204), (17, 6294), (18, 6297), (33, 6483), (36, 6504), (73, 6927), (78, 6978), (83, 7095), (90, 7179), (93, 7203), (96, 7230), (102, 7320), (107, 7392), (125, 7452), (146, 7548), (153, 7593), (155, 7611),

Gene: Aneem\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Aneem\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: AnnaL29\_12 Start: 6416, Stop: 7891, Start Num: 4

Candidate Starts for AnnaL29\_12:

(Start: 4 @6416 has 54 MA's), (7, 6428), (14, 6548), (25, 6665), (29, 6707), (35, 6767), (36, 6773), (37, 6794), (39, 6800), (53, 6932), (62, 6953), (67, 6980), (78, 7067), (85, 7214), (86, 7217), (93, 7298), (107, 7487), (115, 7529), (117, 7547), (118, 7553), (122, 7577), (146, 7691), (149, 7700), (166, 7820), (168, 7853),

Gene: Anselm\_9 Start: 4805, Stop: 6097, Start Num: 4

Candidate Starts for Anselm\_9:

(Start: 4 @4805 has 54 MA's), (7, 4817), (9, 4850), (14, 4937), (19, 4961), (25, 5054), (29, 5096), (31, 5111), (35, 5156), (36, 5162), (37, 5183), (38, 5186), (63, 5333), (65, 5339), (82, 5453), (108, 5672), (115, 5705), (121, 5750), (134, 5810), (155, 5936), (167, 6038),

Gene: Anthony\_9 Start: 3885, Stop: 5264, Start Num: 4

Candidate Starts for Anthony\_9:

(Start: 4 @3885 has 54 MA's), (9, 3930), (15, 4020), (19, 4041), (29, 4176), (32, 4209), (35, 4236), (36, 4242), (37, 4263), (39, 4269), (45, 4323), (78, 4542), (80, 4572), (95, 4704), (99, 4752), (131, 4983), (132, 4986), (140, 5046), (142, 5049),

Gene: ArcherNM\_11 Start: 6513, Stop: 7808, Start Num: 4

Candidate Starts for ArcherNM\_11:

(Start: 4 @6513 has 54 MA's), (7, 6525), (14, 6645), (29, 6804), (35, 6864), (36, 6870), (37, 6891), (39, 6897), (45, 6945), (82, 7167), (108, 7386), (115, 7419), (134, 7524), (143, 7569), (155, 7650), (166, 7740), (167, 7752),

Gene: Argie\_37 Start: 36368, Stop: 37990, Start Num: 6

Candidate Starts for Argie\_37:

(Start: 6 @36368 has 49 MA's), (8, 36374), (11, 36437), (17, 36515), (20, 36533), (21, 36587), (26, 36635), (30, 36686), (33, 36722), (36, 36743), (42, 36797), (47, 36884), (48, 36923), (57, 37061), (60, 37100), (66, 37142), (75, 37205), (81, 37289), (92, 37436), (93, 37442), (102, 37568), (103, 37580), (105, 37610), (109, 37649), (112, 37670), (126, 37703), (128, 37712), (132, 37727), (139, 37775), (141, 37778), (152, 37826), (155, 37862), (158, 37877), (166, 37928),

Gene: Arissanae\_9 Start: 4305, Stop: 5855, Start Num: 6



Candidate Starts for Arissanae\_9:

(Start: 6 @4305 has 49 MA's), (17, 4446), (22, 4518), (33, 4635), (36, 4656), (41, 4707), (51, 4887), (56, 4917), (64, 5007), (78, 5130), (84, 5226), (98, 5367), (102, 5442), (107, 5514), (113, 5544), (125, 5574), (146, 5670), (154, 5730),

Gene: Bachome\_10 Start: 6221, Stop: 7621, Start Num: 5

Candidate Starts for Bachome\_10:

(1, 6182), (Start: 5 @6221 has 18 MA's), (17, 6368), (20, 6386), (28, 6506), (33, 6557), (36, 6578), (40, 6611), (72, 6758), (78, 6821), (79, 6827), (86, 6971), (93, 7052), (96, 7079), (114, 7283), (120, 7304), (126, 7328), (135, 7388), (146, 7421), (156, 7487), (168, 7583),

Gene: Baehexic\_10 Start: 5209, Stop: 6513, Start Num: 4

Candidate Starts for Baehexic\_10:

(Start: 4 @5209 has 54 MA's), (7, 5221), (9, 5254), (14, 5341), (29, 5500), (35, 5560), (36, 5566), (37, 5587), (45, 5647), (61, 5746), (63, 5749), (76, 5821), (108, 6088), (115, 6121), (124, 6175), (134, 6226), (143, 6271), (147, 6289), (163, 6406),

Gene: Beemo\_11 Start: 6180, Stop: 7760, Start Num: 6

Candidate Starts for Beemo\_11:

(Start: 6 @6180 has 49 MA's), (10, 6231), (17, 6321), (18, 6324), (20, 6339), (33, 6510), (36, 6531), (56, 6792), (73, 6954), (78, 7005), (83, 7122), (102, 7347), (107, 7419), (125, 7479), (146, 7575), (153, 7620), (155, 7638),

Gene: BengiVuitton\_10 Start: 5133, Stop: 6422, Start Num: 4

Candidate Starts for BengiVuitton\_10:

(Start: 4 @5133 has 54 MA's), (9, 5178), (14, 5265), (25, 5382), (29, 5424), (31, 5439), (35, 5484), (36, 5490), (37, 5511), (39, 5517), (76, 5742), (82, 5790), (108, 6009), (115, 6042), (134, 6147), (156, 6276),

Gene: Benvolio\_9 Start: 4797, Stop: 6086, Start Num: 4

Candidate Starts for Benvolio\_9:

(Start: 4 @4797 has 54 MA's), (7, 4809), (9, 4842), (14, 4929), (19, 4953), (29, 5088), (35, 5148), (36, 5154), (37, 5175), (39, 5181), (48, 5265), (65, 5331), (82, 5445), (108, 5664), (115, 5697), (134, 5802), (138, 5838), (155, 5928), (167, 6030),

Gene: BogosyJay\_11 Start: 5937, Stop: 7517, Start Num: 6

Candidate Starts for BogosyJay\_11:

(Start: 6 @5937 has 49 MA's), (12, 6030), (17, 6078), (18, 6081), (20, 6096), (33, 6267), (36, 6288), (46, 6378), (56, 6549), (73, 6711), (78, 6762), (90, 6963), (93, 6987), (107, 7176), (125, 7236), (146, 7332), (153, 7377), (155, 7395),

Gene: Bowtie\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Bowtie\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: Bud\_10 Start: 6230, Stop: 7630, Start Num: 5

Candidate Starts for Bud\_10:

(1, 6191), (Start: 5 @6230 has 18 MA's), (17, 6377), (20, 6395), (28, 6515), (33, 6566), (36, 6587), (40, 6620), (72, 6767), (78, 6830), (86, 6980), (93, 7061), (96, 7088), (114, 7292), (120, 7313), (126, 7337), (135, 7397), (146, 7430), (156, 7496), (168, 7592),

Gene: C3\_07 Start: 4696, Stop: 6177, Start Num: 4

Candidate Starts for C3\_07:

(Start: 4 @4696 has 54 MA's), (9, 4741), (13, 4825), (29, 4987), (35, 5047), (36, 5053), (37, 5074), (44, 5128), (45, 5134), (73, 5302), (78, 5353), (86, 5503), (93, 5584), (115, 5815), (127, 5878), (146, 5977), (166, 6106),

Gene: CRB1\_9 Start: 4679, Stop: 5974, Start Num: 4

Candidate Starts for CRB1\_9:

(Start: 4 @4679 has 54 MA's), (9, 4724), (14, 4811), (29, 4970), (35, 5030), (36, 5036), (37, 5057), (39, 5063), (63, 5219), (76, 5291), (82, 5339), (108, 5558), (115, 5591), (134, 5696), (144, 5744),

Gene: Caraxes\_9 Start: 4337, Stop: 5746, Start Num: 3

Candidate Starts for Caraxes\_9:

(2, 4331), (Start: 3 @4337 has 1 MA's), (29, 4628), (35, 4688), (36, 4694), (37, 4715), (39, 4721), (45, 4769), (73, 4937), (78, 4988), (119, 5417), (131, 5468), (132, 5471), (140, 5531), (142, 5534), (168, 5717),

Gene: Catalina\_11 Start: 6147, Stop: 7727, Start Num: 6

Candidate Starts for Catalina\_11:

(Start: 6 @6147 has 49 MA's), (10, 6198), (17, 6288), (18, 6291), (33, 6477), (36, 6498), (56, 6759), (73, 6921), (78, 6972), (83, 7089), (102, 7314), (107, 7386), (125, 7446), (146, 7542), (153, 7587), (155, 7605),

Gene: Centaur\_11 Start: 5188, Stop: 6492, Start Num: 4

Candidate Starts for Centaur\_11:

(Start: 4 @5188 has 54 MA's), (9, 5233), (14, 5320), (29, 5479), (35, 5539), (36, 5545), (37, 5566), (38, 5569), (45, 5626), (61, 5725), (63, 5728), (76, 5800), (82, 5848), (108, 6067), (115, 6100), (124, 6154), (134, 6205), (143, 6250), (147, 6268),

Gene: Cepens\_36 Start: 36083, Stop: 37705, Start Num: 6

Candidate Starts for Cepens\_36:

(Start: 6 @36083 has 49 MA's), (8, 36089), (11, 36152), (17, 36230), (20, 36248), (21, 36302), (26, 36350), (30, 36401), (33, 36437), (36, 36458), (42, 36512), (46, 36551), (47, 36599), (48, 36638), (57, 36776), (60, 36815), (66, 36857), (75, 36920), (81, 37004), (92, 37151), (93, 37157), (102, 37283), (103, 37295), (105, 37325), (109, 37364), (112, 37385), (126, 37418), (128, 37427), (132, 37442), (139, 37490), (141, 37493), (145, 37502), (152, 37541), (155, 37577), (158, 37592), (166, 37643),

Gene: Changeling\_12 Start: 6426, Stop: 7901, Start Num: 4

Candidate Starts for Changeling\_12:

(Start: 4 @6426 has 54 MA's), (7, 6438), (14, 6558), (29, 6717), (35, 6777), (36, 6783), (37, 6804), (38, 6807), (53, 6942), (67, 6990), (70, 7011), (78, 7077), (85, 7224), (86, 7227), (93, 7308), (107, 7497), (115, 7539), (122, 7587), (127, 7602), (146, 7701), (155, 7764), (166, 7830),

Gene: Chargerpower\_10 Start: 4583, Stop: 6187, Start Num: 6

Candidate Starts for Chargerpower\_10:

(Start: 6 @4583 has 49 MA's), (17, 4724), (21, 4796), (33, 4931), (36, 4952), (41, 5003), (49, 5108), (64, 5303), (73, 5375), (78, 5426), (83, 5543), (102, 5768), (111, 5861), (125, 5906), (134, 5957), (146, 6002), (161, 6110),

Gene: Charm\_10 Start: 4360, Stop: 5916, Start Num: 6

Candidate Starts for Charm\_10:

(Start: 6 @4360 has 49 MA's), (17, 4501), (33, 4690), (36, 4711), (39, 4741), (78, 5185), (88, 5323), (98, 5422), (106, 5563), (107, 5569), (125, 5635), (146, 5731),

Gene: Che12\_11 Start: 4473, Stop: 5840, Start Num: 4

Candidate Starts for Che12\_11:

(Start: 4 @4473 has 54 MA's), (19, 4629), (29, 4764), (35, 4824), (36, 4830), (37, 4851), (39, 4857), (45, 4905), (69, 5055), (78, 5124), (95, 5286), (99, 5334), (104, 5397), (130, 5559), (131, 5562), (140, 5625), (142, 5628), (155, 5715),

Gene: Colin\_13 Start: 6391, Stop: 7695, Start Num: 4

Candidate Starts for Colin\_13:

(Start: 4 @6391 has 54 MA's), (7, 6403), (9, 6436), (14, 6523), (19, 6547), (29, 6682), (35, 6742), (36, 6748), (37, 6769), (38, 6772), (45, 6829), (48, 6868), (82, 7057), (108, 7276), (115, 7303), (121, 7348), (134, 7408), (155, 7534), (166, 7624), (167, 7636), (169, 7672),

Gene: Conquerage\_11 Start: 6176, Stop: 7756, Start Num: 6

Candidate Starts for Conquerage\_11:

(Start: 6 @6176 has 49 MA's), (10, 6227), (17, 6317), (18, 6320), (33, 6506), (36, 6527), (73, 6950), (78, 7001), (83, 7118), (90, 7202), (93, 7226), (96, 7253), (102, 7343), (107, 7415), (125, 7475), (146, 7571), (153, 7616), (155, 7634),

Gene: D12\_35 Start: 36653, Stop: 38275, Start Num: 6

Candidate Starts for D12\_35:

(Start: 6 @36653 has 49 MA's), (8, 36659), (11, 36722), (17, 36800), (20, 36818), (21, 36872), (26, 36920), (30, 36971), (33, 37007), (36, 37028), (42, 37082), (47, 37169), (48, 37208), (57, 37346), (58, 37367), (60, 37385), (66, 37427), (75, 37490), (81, 37574), (92, 37721), (93, 37727), (102, 37853), (103, 37865), (105, 37895), (109, 37934), (112, 37955), (126, 37988), (128, 37997), (132, 38012), (139, 38060), (152, 38111), (155, 38147), (158, 38162), (166, 38213), (171, 38270),

Gene: D29\_10 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for D29\_10:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (44, 5129), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: D32\_12 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for D32\_12:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (44, 5129), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: DBQu4n\_12 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for DBQu4n\_12:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: Dalmatian\_9 Start: 4796, Stop: 6088, Start Num: 4

Candidate Starts for Dalmatian\_9:

(Start: 4 @4796 has 54 MA's), (7, 4808), (9, 4841), (14, 4928), (19, 4952), (25, 5045), (29, 5087), (31, 5102), (35, 5147), (36, 5153), (37, 5174), (48, 5264), (63, 5324), (65, 5330), (82, 5444), (108, 5663), (115, 5696), (121, 5741), (134, 5801), (143, 5846), (155, 5927), (167, 6029),

Gene: Darrell\_12 Start: 6369, Stop: 7949, Start Num: 6

Candidate Starts for Darrell\_12:

(Start: 6 @6369 has 49 MA's), (10, 6420), (17, 6510), (18, 6513), (23, 6582), (33, 6699), (36, 6720), (46, 6810), (56, 6981), (64, 7071), (73, 7143), (78, 7194), (83, 7311), (93, 7419), (102, 7536), (107, 7608), (111, 7629), (125, 7668), (146, 7764), (155, 7827),

Gene: Deloris\_10 Start: 5133, Stop: 6422, Start Num: 4

Candidate Starts for Deloris\_10:

(Start: 4 @5133 has 54 MA's), (9, 5178), (14, 5265), (25, 5382), (29, 5424), (31, 5439), (35, 5484), (36, 5490), (37, 5511), (39, 5517), (76, 5742), (82, 5790), (108, 6009), (115, 6042), (134, 6147), (156, 6276),

Gene: Drake55\_11 Start: 5205, Stop: 6509, Start Num: 4

Candidate Starts for Drake55\_11:

(Start: 4 @5205 has 54 MA's), (9, 5250), (14, 5337), (29, 5496), (35, 5556), (36, 5562), (37, 5583), (45, 5643), (61, 5742), (63, 5745), (76, 5817), (108, 6084), (115, 6117), (124, 6171), (134, 6222), (143, 6267), (147, 6285),

Gene: DreamTeam1\_10 Start: 4360, Stop: 5916, Start Num: 6

Candidate Starts for DreamTeam1\_10:

(Start: 6 @4360 has 49 MA's), (17, 4501), (33, 4690), (36, 4711), (39, 4741), (78, 5185), (84, 5281), (98, 5422), (106, 5563), (107, 5569), (125, 5635), (146, 5731),

Gene: DudeLittle\_9 Start: 4798, Stop: 6090, Start Num: 4

Candidate Starts for DudeLittle\_9:

(Start: 4 @4798 has 54 MA's), (7, 4810), (9, 4843), (14, 4930), (19, 4954), (25, 5047), (29, 5089), (31, 5104), (35, 5149), (36, 5155), (37, 5176), (38, 5179), (48, 5266), (63, 5326), (65, 5332), (82, 5446), (108, 5665), (115, 5698), (121, 5743), (134, 5803), (143, 5848), (155, 5929), (167, 6031),

Gene: Duplo\_12 Start: 4738, Stop: 6219, Start Num: 4

Candidate Starts for Duplo\_12:

(Start: 4 @4738 has 54 MA's), (9, 4783), (29, 5029), (35, 5089), (36, 5095), (37, 5116), (44, 5170), (45, 5176), (73, 5344), (78, 5395), (86, 5545), (93, 5626), (107, 5815), (115, 5857), (127, 5920), (146, 6019), (166, 6148),

Gene: EZMoney23\_13 Start: 6684, Stop: 7985, Start Num: 4

Candidate Starts for EZMoney23\_13:

(Start: 4 @6684 has 54 MA's), (7, 6696), (9, 6729), (14, 6816), (25, 6933), (29, 6975), (35, 7035), (36, 7041), (37, 7062), (39, 7068), (48, 7161), (50, 7182), (65, 7230), (76, 7296), (108, 7563), (115, 7596), (134, 7701), (143, 7746), (155, 7827), (167, 7929),

Gene: EagleEye\_12 Start: 5895, Stop: 7142, Start Num: 4

Candidate Starts for EagleEye\_12:

(Start: 4 @5895 has 54 MA's), (9, 5940), (14, 6027), (27, 6159), (29, 6186), (31, 6201), (35, 6246), (36, 6252), (37, 6273), (39, 6279), (45, 6333), (48, 6372), (63, 6435), (65, 6441), (76, 6507), (82, 6555), (108, 6774), (115, 6801), (118, 6825), (123, 6849), (146, 6942), (156, 7008), (159, 7026),

Gene: Ebony\_10 Start: 6285, Stop: 7682, Start Num: 6

Candidate Starts for Ebony\_10:

(Start: 6 @6285 has 49 MA's), (16, 6423), (17, 6429), (20, 6447), (28, 6567), (33, 6618), (36, 6639), (40, 6672), (72, 6819), (78, 6882), (79, 6888), (86, 7032), (93, 7113), (96, 7140), (114, 7344), (120, 7365), (126, 7389), (135, 7449), (146, 7482), (156, 7548), (168, 7644),

Gene: Echild\_9 Start: 4797, Stop: 6086, Start Num: 4

Candidate Starts for Echild\_9:

(Start: 4 @4797 has 54 MA's), (7, 4809), (9, 4842), (14, 4929), (19, 4953), (29, 5088), (35, 5148), (36, 5154), (37, 5175), (39, 5181), (48, 5265), (65, 5331), (82, 5445), (108, 5664), (115, 5697), (134, 5802), (138, 5838), (155, 5928), (167, 6030),

Gene: Eidsmoe\_11 Start: 6176, Stop: 7756, Start Num: 6

Candidate Starts for Eidsmoe\_11:

(Start: 6 @6176 has 49 MA's), (10, 6227), (17, 6317), (18, 6320), (33, 6506), (36, 6527), (73, 6950), (78, 7001), (83, 7118), (90, 7202), (93, 7226), (96, 7253), (102, 7343), (107, 7415), (125, 7475), (146, 7571), (153, 7616), (155, 7634),

Gene: Elephantoon\_11 Start: 5798, Stop: 7378, Start Num: 6

Candidate Starts for Elephantoon\_11:

(Start: 6 @5798 has 49 MA's), (10, 5849), (17, 5939), (20, 5957), (23, 6011), (33, 6128), (36, 6149), (56, 6410), (64, 6500), (73, 6572), (78, 6623), (93, 6848), (102, 6965), (107, 7037), (111, 7058), (125, 7097), (146, 7193),

Gene: EmyBug\_9 Start: 6176, Stop: 7756, Start Num: 6

Candidate Starts for EmyBug\_9:

(Start: 6 @6176 has 49 MA's), (10, 6227), (17, 6317), (18, 6320), (20, 6335), (33, 6506), (36, 6527), (56, 6788), (73, 6950), (78, 7001), (83, 7118), (102, 7343), (107, 7415), (125, 7475), (146, 7571), (153, 7616), (155, 7634),

Gene: Equemioh13\_11 Start: 5191, Stop: 6495, Start Num: 4

Candidate Starts for Equemioh13\_11:

(Start: 4 @5191 has 54 MA's), (9, 5236), (14, 5323), (29, 5482), (35, 5542), (36, 5548), (37, 5569), (38, 5572), (45, 5629), (61, 5728), (63, 5731), (76, 5803), (82, 5851), (108, 6070), (115, 6103), (124, 6157), (134, 6208), (143, 6253), (147, 6271), (163, 6388),

Gene: Et2Brutus\_9 Start: 6227, Stop: 7627, Start Num: 5

Candidate Starts for Et2Brutus\_9:

(1, 6188), (Start: 5 @6227 has 18 MA's), (16, 6368), (17, 6374), (20, 6392), (28, 6512), (33, 6563), (36, 6584), (40, 6617), (72, 6764), (78, 6827), (79, 6833), (86, 6977), (93, 7058), (96, 7085), (114, 7289), (120, 7310), (126, 7334), (135, 7394), (146, 7427), (156, 7493), (168, 7589),

Gene: ExplosioNervosa\_11 Start: 6179, Stop: 7759, Start Num: 6

Candidate Starts for ExplosioNervosa\_11:

(Start: 6 @6179 has 49 MA's), (10, 6230), (17, 6320), (18, 6323), (20, 6338), (33, 6509), (36, 6530), (56, 6791), (73, 6953), (78, 7004), (83, 7121), (102, 7346), (107, 7418), (125, 7478), (146, 7574), (153, 7619), (155, 7637),

Gene: Fameo\_9 Start: 4800, Stop: 6035, Start Num: 4

Candidate Starts for Fameo\_9:

(Start: 4 @4800 has 54 MA's), (7, 4812), (9, 4845), (14, 4932), (19, 4956), (25, 5049), (29, 5091), (35, 5151), (36, 5157), (37, 5178), (39, 5184), (48, 5268), (63, 5328), (65, 5334), (76, 5400), (82, 5448), (108, 5667), (115, 5697), (118, 5721), (146, 5835), (156, 5901), (160, 5925),

Gene: Fayely\_11 Start: 6179, Stop: 7759, Start Num: 6

Candidate Starts for Fayely\_11:

(Start: 6 @6179 has 49 MA's), (10, 6230), (17, 6320), (18, 6323), (20, 6338), (33, 6509), (36, 6530), (56, 6791), (73, 6953), (78, 7004), (83, 7121), (102, 7346), (107, 7418), (125, 7478), (146, 7574), (153, 7619), (155, 7637),

Gene: Fibonacci\_10 Start: 6227, Stop: 7627, Start Num: 5

Candidate Starts for Fibonacci\_10:

(1, 6188), (Start: 5 @6227 has 18 MA's), (16, 6368), (17, 6374), (20, 6392), (28, 6512), (33, 6563), (36, 6584), (40, 6617), (72, 6764), (78, 6827), (79, 6833), (86, 6977), (93, 7058), (96, 7085), (114, 7289), (120, 7310), (126, 7334), (135, 7394), (146, 7427), (156, 7493), (168, 7589),

Gene: First\_009 Start: 4690, Stop: 5988, Start Num: 4

Candidate Starts for First\_009:

(Start: 4 @4690 has 54 MA's), (9, 4735), (14, 4822), (19, 4846), (25, 4939), (29, 4981), (35, 5041), (36, 5047), (37, 5068), (39, 5074), (63, 5230), (76, 5302), (82, 5350), (108, 5569), (115, 5602), (134, 5707),

Gene: Flare16\_9 Start: 4749, Stop: 6053, Start Num: 4

Candidate Starts for Flare16\_9:

(Start: 4 @4749 has 54 MA's), (7, 4761), (9, 4794), (14, 4881), (27, 5013), (29, 5040), (35, 5100), (36, 5106), (37, 5127), (45, 5187), (61, 5286), (63, 5289), (76, 5361), (82, 5409), (108, 5628), (115, 5661), (124, 5715), (134, 5766), (143, 5811), (147, 5829),

Gene: Flaverint\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Flaverint\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: Gail\_9 Start: 4567, Stop: 6147, Start Num: 6

Candidate Starts for Gail\_9:

(Start: 6 @4567 has 49 MA's), (17, 4708), (18, 4711), (33, 4897), (36, 4918), (40, 4951), (41, 4969), (64, 5269), (71, 5329), (73, 5341), (78, 5392), (83, 5509), (95, 5635), (102, 5734), (107, 5806), (111, 5827), (125, 5869), (146, 5965),

Gene: Gilberta\_10 Start: 6221, Stop: 7621, Start Num: 5

Candidate Starts for Gilberta\_10:

(1, 6182), (Start: 5 @6221 has 18 MA's), (17, 6368), (20, 6386), (28, 6506), (33, 6557), (36, 6578), (40, 6611), (72, 6758), (78, 6821), (79, 6827), (86, 6971), (93, 7052), (96, 7079), (114, 7283), (120, 7304), (126, 7328), (135, 7388), (146, 7421), (156, 7487), (168, 7583),

Gene: GodPhather\_37 Start: 36847, Stop: 38469, Start Num: 6

Candidate Starts for GodPhather\_37:

(Start: 6 @36847 has 49 MA's), (8, 36853), (11, 36916), (17, 36994), (20, 37012), (21, 37066), (26, 37114), (30, 37165), (33, 37201), (36, 37222), (42, 37276), (46, 37315), (47, 37363), (48, 37402), (57, 37540), (60, 37579), (66, 37621), (75, 37684), (81, 37768), (92, 37915), (93, 37921), (102, 38047), (103, 38059), (105, 38089), (109, 38128), (112, 38149), (126, 38182), (128, 38191), (132, 38206), (139, 38254), (152, 38305), (155, 38341), (158, 38356), (166, 38407),

Gene: HarryHoudini\_11 Start: 5205, Stop: 6509, Start Num: 4

Candidate Starts for HarryHoudini\_11:

(Start: 4 @5205 has 54 MA's), (9, 5250), (14, 5337), (29, 5496), (35, 5556), (36, 5562), (37, 5583), (45, 5643), (61, 5742), (63, 5745), (76, 5817), (108, 6084), (115, 6117), (124, 6171), (134, 6222), (143, 6267), (147, 6285),

Gene: Heffalump\_11 Start: 6599, Stop: 7834, Start Num: 4

Candidate Starts for Heffalump\_11:

(Start: 4 @6599 has 54 MA's), (7, 6611), (9, 6644), (14, 6731), (19, 6755), (25, 6848), (29, 6890), (35, 6950), (36, 6956), (37, 6977), (39, 6983), (48, 7067), (63, 7127), (65, 7133), (76, 7199), (82, 7247), (108, 7466), (115, 7496), (118, 7520), (146, 7634), (156, 7700), (160, 7724),

Gene: HortumSL17\_11 Start: 6146, Stop: 7726, Start Num: 6

Candidate Starts for HortumSL17\_11:

(Start: 6 @6146 has 49 MA's), (10, 6197), (17, 6287), (18, 6290), (33, 6476), (36, 6497), (56, 6758), (73, 6920), (78, 6971), (83, 7088), (102, 7313), (107, 7385), (125, 7445), (146, 7541), (153, 7586), (155, 7604),

Gene: Hutc2\_10 Start: 6227, Stop: 7627, Start Num: 5

Candidate Starts for Hutc2\_10:

(1, 6188), (Start: 5 @6227 has 18 MA's), (16, 6368), (17, 6374), (20, 6392), (28, 6512), (33, 6563), (36, 6584), (40, 6617), (72, 6764), (78, 6827), (79, 6833), (86, 6977), (93, 7058), (96, 7085), (114, 7289), (120, 7310), (126, 7334), (135, 7394), (146, 7427), (156, 7493), (168, 7589),

Gene: Insomnia\_9 Start: 6279, Stop: 7676, Start Num: 6

Candidate Starts for Insomnia\_9:

(Start: 6 @6279 has 49 MA's), (16, 6417), (17, 6423), (20, 6441), (28, 6561), (33, 6612), (36, 6633), (40, 6666), (72, 6813), (78, 6876), (79, 6882), (86, 7026), (93, 7107), (96, 7134), (114, 7338), (120, 7359), (126, 7383), (135, 7443), (146, 7476), (156, 7542), (168, 7638),

Gene: Iwokeuplikedis\_9 Start: 4489, Stop: 5760, Start Num: 4

Candidate Starts for Iwokeuplikedis\_9:

(Start: 4 @4489 has 54 MA's), (9, 4534), (14, 4621), (29, 4780), (30, 4792), (32, 4813), (35, 4840), (36, 4846), (37, 4867), (39, 4873), (48, 4966), (76, 5098), (82, 5146), (108, 5365), (115, 5398), (118, 5422), (146, 5560), (148, 5569),

Gene: Jabith\_10 Start: 6279, Stop: 7676, Start Num: 6

Candidate Starts for Jabith\_10:

(Start: 6 @6279 has 49 MA's), (16, 6417), (17, 6423), (20, 6441), (28, 6561), (33, 6612), (36, 6633), (40, 6666), (72, 6813), (78, 6876), (79, 6882), (86, 7026), (93, 7107), (96, 7134), (114, 7338), (120, 7359), (126, 7383), (135, 7443), (146, 7476), (156, 7542), (168, 7638),

Gene: Jeeves\_9 Start: 4583, Stop: 6160, Start Num: 6

Candidate Starts for Jeeves\_9:

(Start: 6 @4583 has 49 MA's), (17, 4724), (18, 4727), (33, 4913), (36, 4934), (41, 4985), (58, 5246), (64, 5285), (73, 5357), (77, 5393), (78, 5408), (83, 5525), (95, 5651), (102, 5750), (107, 5822), (110, 5837), (125, 5882), (146, 5978), (153, 6023),

Gene: Jeon\_36 Start: 36589, Stop: 38211, Start Num: 6

Candidate Starts for Jeon\_36:

(Start: 6 @36589 has 49 MA's), (8, 36595), (11, 36658), (17, 36736), (20, 36754), (21, 36808), (26, 36856), (30, 36907), (33, 36943), (36, 36964), (42, 37018), (46, 37057), (47, 37105), (48, 37144), (57, 37282), (60, 37321), (66, 37363), (75, 37426), (81, 37510), (92, 37657), (93, 37663), (102, 37789), (103, 37801), (105, 37831), (109, 37870), (112, 37891), (126, 37924), (128, 37933), (132, 37948), (139, 37996), (152, 38047), (155, 38083), (158, 38098), (166, 38149),

Gene: Joselito\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Joselito\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: Kalpine\_12 Start: 6504, Stop: 7799, Start Num: 4

Candidate Starts for Kalpine\_12:

(Start: 4 @6504 has 54 MA's), (7, 6516), (9, 6549), (14, 6636), (19, 6660), (25, 6753), (29, 6795), (31, 6810), (35, 6855), (36, 6861), (37, 6882), (39, 6888), (82, 7161), (108, 7380), (115, 7407), (121, 7452), (133, 7494), (134, 7512), (143, 7557), (155, 7638), (166, 7728), (167, 7740),

Gene: Kerberos\_12 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for Kerberos\_12:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: Keziacharles14\_9 Start: 4347, Stop: 5900, Start Num: 6

Candidate Starts for Keziacharles14\_9:

(Start: 6 @4347 has 49 MA's), (11, 4413), (17, 4488), (20, 4506), (33, 4677), (36, 4698), (58, 5010), (64, 5049), (77, 5157), (78, 5172), (84, 5268), (88, 5310), (94, 5379), (96, 5394), (98, 5409), (125, 5619), (146, 5715), (150, 5736), (153, 5760),

Gene: LadyBird\_9 Start: 4681, Stop: 5976, Start Num: 4

Candidate Starts for LadyBird\_9:

(Start: 4 @4681 has 54 MA's), (9, 4726), (14, 4813), (19, 4837), (29, 4972), (35, 5032), (36, 5038), (37, 5059), (39, 5065), (76, 5293), (82, 5341), (108, 5560), (115, 5593), (134, 5698), (144, 5746),

Gene: LoneWolf\_11 Start: 5993, Stop: 7573, Start Num: 6

Candidate Starts for LoneWolf\_11:

(Start: 6 @5993 has 49 MA's), (10, 6044), (17, 6134), (18, 6137), (20, 6152), (23, 6206), (33, 6323), (34, 6335), (36, 6344), (56, 6605), (73, 6767), (78, 6818), (83, 6935), (102, 7160), (107, 7232), (125, 7292), (146, 7388), (153, 7433), (155, 7451),

Gene: Loser\_12 Start: 6404, Stop: 7858, Start Num: 4

Candidate Starts for Loser\_12:

(Start: 4 @6404 has 54 MA's), (7, 6416), (14, 6536), (25, 6653), (29, 6695), (35, 6755), (36, 6761), (37, 6782), (38, 6785), (67, 6968), (78, 7055), (85, 7202), (86, 7205), (93, 7286), (107, 7475), (115, 7517), (117, 7535), (118, 7541), (146, 7658), (156, 7724), (162, 7763),

Gene: Luchador\_9 Start: 4568, Stop: 6148, Start Num: 6

Candidate Starts for Luchador\_9:

(Start: 6 @4568 has 49 MA's), (17, 4709), (18, 4712), (33, 4898), (36, 4919), (40, 4952), (41, 4970), (58, 5231), (64, 5270), (71, 5330), (73, 5342), (78, 5393), (83, 5510), (95, 5636), (102, 5735), (107, 5807), (111, 5828), (125, 5870), (146, 5966), (153, 6011),

Gene: Lucivia\_10 Start: 6276, Stop: 7673, Start Num: 6

Candidate Starts for Lucivia\_10:

(Start: 6 @6276 has 49 MA's), (16, 6414), (17, 6420), (20, 6438), (28, 6558), (33, 6609), (36, 6630), (40, 6663), (72, 6810), (78, 6873), (79, 6879), (86, 7023), (93, 7104), (96, 7131), (114, 7335), (120, 7356), (126, 7380), (135, 7440), (146, 7473), (156, 7539), (168, 7635),

Gene: MaCh\_10 Start: 6221, Stop: 7621, Start Num: 5

Candidate Starts for MaCh\_10:

(1, 6182), (Start: 5 @6221 has 18 MA's), (17, 6368), (20, 6386), (28, 6506), (33, 6557), (36, 6578), (40, 6611), (72, 6758), (78, 6821), (79, 6827), (86, 6971), (93, 7052), (96, 7079), (114, 7283), (120, 7304), (126, 7328), (135, 7388), (146, 7421), (156, 7487), (168, 7583),

Gene: Mabel\_10 Start: 6291, Stop: 7688, Start Num: 6

Candidate Starts for Mabel\_10:



(Start: 6 @6291 has 49 MA's), (16, 6429), (17, 6435), (20, 6453), (28, 6573), (33, 6624), (36, 6645), (40, 6678), (72, 6825), (78, 6888), (79, 6894), (86, 7038), (93, 7119), (96, 7146), (114, 7350), (120, 7371), (126, 7395), (135, 7455), (146, 7488), (156, 7554), (168, 7650),

Gene: Maminiaina\_11 Start: 5916, Stop: 7496, Start Num: 6

Candidate Starts for Maminiaina\_11:

(Start: 6 @5916 has 49 MA's), (10, 5967), (17, 6057), (20, 6075), (33, 6246), (36, 6267), (56, 6528), (73, 6690), (78, 6741), (83, 6858), (107, 7155), (125, 7215), (146, 7311), (153, 7356), (155, 7374),

Gene: Megabear\_36 Start: 36026, Stop: 37648, Start Num: 6

Candidate Starts for Megabear\_36:

(Start: 6 @36026 has 49 MA's), (8, 36032), (11, 36095), (17, 36173), (20, 36191), (21, 36245), (26, 36293), (30, 36344), (33, 36380), (36, 36401), (42, 36455), (47, 36542), (48, 36581), (57, 36719), (60, 36758), (66, 36800), (75, 36863), (81, 36947), (92, 37094), (93, 37100), (102, 37226), (103, 37238), (105, 37268), (109, 37307), (112, 37328), (126, 37361), (128, 37370), (132, 37385), (139, 37433), (152, 37484), (155, 37520), (158, 37535), (166, 37586), (171, 37643),

Gene: MiculUcigas\_9 Start: 4749, Stop: 6053, Start Num: 4

Candidate Starts for MiculUcigas\_9:

(Start: 4 @4749 has 54 MA's), (7, 4761), (9, 4794), (14, 4881), (27, 5013), (29, 5040), (35, 5100), (36, 5106), (37, 5127), (45, 5187), (61, 5286), (63, 5289), (76, 5361), (82, 5409), (108, 5628), (115, 5661), (124, 5715), (134, 5766), (143, 5811), (147, 5829),

Gene: Mulciber\_10 Start: 6227, Stop: 7627, Start Num: 5

Candidate Starts for Mulciber\_10:

(1, 6188), (Start: 5 @6227 has 18 MA's), (16, 6368), (17, 6374), (20, 6392), (28, 6512), (33, 6563), (36, 6584), (40, 6617), (72, 6764), (78, 6827), (79, 6833), (86, 6977), (93, 7058), (96, 7085), (114, 7289), (120, 7310), (126, 7334), (135, 7394), (146, 7427), (156, 7493), (168, 7589),

Gene: Munch\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Munch\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: Myxus\_11 Start: 6146, Stop: 7726, Start Num: 6

Candidate Starts for Myxus\_11:

(Start: 6 @6146 has 49 MA's), (10, 6197), (17, 6287), (18, 6290), (33, 6476), (36, 6497), (56, 6758), (73, 6920), (78, 6971), (83, 7088), (102, 7313), (107, 7385), (125, 7445), (146, 7541), (153, 7586), (155, 7604),

Gene: NaSiaTalie\_9 Start: 4749, Stop: 6050, Start Num: 4

Candidate Starts for NaSiaTalie\_9:

(Start: 4 @4749 has 54 MA's), (9, 4794), (14, 4881), (29, 5040), (35, 5100), (36, 5106), (37, 5127), (61, 5283), (63, 5286), (76, 5358), (82, 5406), (108, 5625), (115, 5658), (124, 5712), (134, 5763), (143, 5808), (147, 5826),

Gene: Naji\_12 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for Naji\_12:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (44, 5129), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: NicoleTera\_13 Start: 6467, Stop: 7756, Start Num: 4

Candidate Starts for NicoleTera\_13:

(Start: 4 @6467 has 54 MA's), (9, 6512), (14, 6599), (25, 6716), (29, 6758), (32, 6791), (35, 6818), (36, 6824), (37, 6845), (39, 6851), (45, 6893), (76, 7064), (82, 7112), (108, 7331), (115, 7364), (134, 7469), (138, 7505), (144, 7517), (153, 7577), (155, 7595), (167, 7697),

Gene: Odin\_9 Start: 4473, Stop: 5888, Start Num: 4

Candidate Starts for Odin\_9:

(Start: 4 @4473 has 54 MA's), (29, 4764), (35, 4824), (36, 4830), (37, 4851), (39, 4857), (43, 4896), (73, 5079), (78, 5130), (119, 5559), (131, 5610), (132, 5613), (140, 5673), (142, 5676),

Gene: Orange\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Orange\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (16, 6365), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: PR\_36 Start: 36630, Stop: 38252, Start Num: 6

Candidate Starts for PR\_36:

(Start: 6 @36630 has 49 MA's), (8, 36636), (11, 36699), (17, 36777), (20, 36795), (21, 36849), (26, 36897), (30, 36948), (33, 36984), (36, 37005), (42, 37059), (47, 37146), (48, 37185), (57, 37323), (58, 37344), (60, 37362), (66, 37404), (75, 37467), (81, 37551), (92, 37698), (93, 37704), (102, 37830), (103, 37842), (105, 37872), (109, 37911), (112, 37932), (126, 37965), (128, 37974), (132, 37989), (139, 38037), (152, 38088), (155, 38124), (158, 38139), (166, 38190), (171, 38247),

Gene: PackMan\_11 Start: 6146, Stop: 7726, Start Num: 6

Candidate Starts for PackMan\_11:

(Start: 6 @6146 has 49 MA's), (10, 6197), (17, 6287), (18, 6290), (33, 6476), (36, 6497), (56, 6758), (73, 6920), (78, 6971), (83, 7088), (102, 7313), (107, 7385), (125, 7445), (146, 7541), (153, 7586), (155, 7604),

Gene: Petersenfast\_9 Start: 6227, Stop: 7627, Start Num: 5

Candidate Starts for Petersenfast\_9:

(1, 6188), (Start: 5 @6227 has 18 MA's), (16, 6368), (17, 6374), (20, 6392), (28, 6512), (33, 6563), (36, 6584), (40, 6617), (72, 6764), (78, 6827), (79, 6833), (86, 6977), (93, 7058), (96, 7085), (114, 7289), (120, 7310), (126, 7334), (135, 7394), (146, 7427), (156, 7493), (168, 7589),

Gene: Ph8s\_11 Start: 4474, Stop: 5847, Start Num: 4

Candidate Starts for Ph8s\_11:

(Start: 4 @4474 has 54 MA's), (15, 4609), (19, 4630), (29, 4765), (32, 4798), (35, 4825), (36, 4831), (37, 4852), (39, 4858), (69, 5062), (78, 5131), (99, 5341), (104, 5404), (130, 5566), (131, 5569), (140, 5632), (142, 5635), (155, 5722),

Gene: Phaeder\_11 Start: 6146, Stop: 7726, Start Num: 6

Candidate Starts for Phaeder\_11:

(Start: 6 @6146 has 49 MA's), (10, 6197), (17, 6287), (18, 6290), (33, 6476), (36, 6497), (56, 6758), (73, 6920), (78, 6971), (83, 7088), (102, 7313), (107, 7385), (125, 7445), (146, 7541), (153, 7586), (155, 7604),

Gene: Phonnegut\_11 Start: 6179, Stop: 7759, Start Num: 6

Candidate Starts for Phonnegut\_11:

(Start: 6 @6179 has 49 MA's), (10, 6230), (17, 6320), (18, 6323), (20, 6338), (33, 6509), (36, 6530), (56, 6791), (73, 6953), (78, 7004), (83, 7121), (102, 7346), (107, 7418), (125, 7478), (146, 7574), (153,

7619), (155, 7637),

Gene: Pioneer\_11 Start: 6179, Stop: 7759, Start Num: 6

Candidate Starts for Pioneer\_11:

(Start: 6 @6179 has 49 MA's), (10, 6230), (17, 6320), (18, 6323), (20, 6338), (33, 6509), (36, 6530), (56, 6791), (73, 6953), (78, 7004), (83, 7121), (102, 7346), (107, 7418), (125, 7478), (146, 7574), (153, 7619), (155, 7637),

Gene: Piro94\_10 Start: 5206, Stop: 6510, Start Num: 4

Candidate Starts for Piro94\_10:

(Start: 4 @5206 has 54 MA's), (9, 5251), (14, 5338), (23, 5431), (29, 5497), (35, 5557), (36, 5563), (37, 5584), (45, 5644), (61, 5743), (63, 5746), (76, 5818), (108, 6085), (115, 6118), (124, 6172), (134, 6223), (143, 6268), (147, 6286),

Gene: Pomar16\_12 Start: 4738, Stop: 6219, Start Num: 4

Candidate Starts for Pomar16\_12:

(Start: 4 @4738 has 54 MA's), (9, 4783), (29, 5029), (35, 5089), (36, 5095), (37, 5116), (45, 5176), (73, 5344), (78, 5395), (86, 5545), (93, 5626), (107, 5815), (115, 5857), (127, 5920), (146, 6019), (166, 6148),

Gene: Priya\_11 Start: 6177, Stop: 7757, Start Num: 6

Candidate Starts for Priya\_11:

(Start: 6 @6177 has 49 MA's), (10, 6228), (17, 6318), (18, 6321), (33, 6507), (36, 6528), (73, 6951), (78, 7002), (83, 7119), (90, 7203), (93, 7227), (96, 7254), (102, 7344), (107, 7416), (125, 7476), (146, 7572), (153, 7617), (155, 7635),

Gene: Qobbit\_11 Start: 6176, Stop: 7756, Start Num: 6

Candidate Starts for Qobbit\_11:

(Start: 6 @6176 has 49 MA's), (10, 6227), (17, 6317), (18, 6320), (20, 6335), (33, 6506), (36, 6527), (56, 6788), (73, 6950), (78, 7001), (83, 7118), (102, 7343), (107, 7415), (125, 7475), (146, 7571), (153, 7616), (155, 7634),

Gene: QueenB2\_9 Start: 4800, Stop: 6035, Start Num: 4

Candidate Starts for QueenB2\_9:

(Start: 4 @4800 has 54 MA's), (7, 4812), (9, 4845), (14, 4932), (19, 4956), (25, 5049), (29, 5091), (35, 5151), (36, 5157), (37, 5178), (39, 5184), (48, 5268), (63, 5328), (65, 5334), (76, 5400), (82, 5448), (108, 5667), (115, 5697), (118, 5721), (146, 5835), (156, 5901), (160, 5925),

Gene: Rahalelujah\_9 Start: 4273, Stop: 5823, Start Num: 6

Candidate Starts for Rahalelujah\_9:

(Start: 6 @4273 has 49 MA's), (12, 4366), (17, 4414), (20, 4432), (24, 4495), (33, 4603), (36, 4624), (46, 4714), (51, 4855), (56, 4885), (64, 4975), (78, 5098), (88, 5236), (107, 5482), (113, 5512), (125, 5542), (146, 5638),

Gene: RedRock\_12 Start: 6487, Stop: 7968, Start Num: 4

Candidate Starts for RedRock\_12:

(Start: 4 @6487 has 54 MA's), (9, 6532), (14, 6619), (25, 6736), (29, 6778), (35, 6838), (36, 6844), (37, 6865), (38, 6868), (53, 7009), (67, 7057), (78, 7144), (85, 7291), (86, 7294), (93, 7375), (107, 7564), (115, 7606), (117, 7624), (118, 7630), (122, 7654), (146, 7768), (149, 7777), (166, 7897),

Gene: Retro23\_9 Start: 4797, Stop: 6089, Start Num: 4

Candidate Starts for Retro23\_9:

(Start: 4 @4797 has 54 MA's), (7, 4809), (9, 4842), (14, 4929), (19, 4953), (25, 5046), (29, 5088), (31, 5103), (35, 5148), (36, 5154), (37, 5175), (48, 5265), (63, 5325), (65, 5331), (82, 5445), (108, 5664), (115, 5697), (121, 5742), (134, 5802), (143, 5847), (155, 5928), (167, 6030),

Gene: Salz\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Salz\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (16, 6365), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: Scherzo\_11 Start: 6179, Stop: 7759, Start Num: 6

Candidate Starts for Scherzo\_11:

(Start: 6 @6179 has 49 MA's), (10, 6230), (17, 6320), (18, 6323), (20, 6338), (33, 6509), (34, 6521), (36, 6530), (56, 6791), (73, 6953), (78, 7004), (83, 7121), (102, 7346), (107, 7418), (125, 7478), (146, 7574), (153, 7619), (155, 7637),

Gene: Sham4\_10 Start: 6227, Stop: 7627, Start Num: 5

Candidate Starts for Sham4\_10:

(1, 6188), (Start: 5 @6227 has 18 MA's), (16, 6368), (17, 6374), (20, 6392), (28, 6512), (33, 6563), (36, 6584), (40, 6617), (72, 6764), (78, 6827), (79, 6833), (86, 6977), (93, 7058), (96, 7085), (114, 7289), (120, 7310), (126, 7334), (135, 7394), (146, 7427), (156, 7493), (168, 7589),

Gene: SheaKeira\_10 Start: 4377, Stop: 5927, Start Num: 6

Candidate Starts for SheaKeira\_10:

(Start: 6 @4377 has 49 MA's), (17, 4518), (33, 4707), (36, 4728), (54, 4980), (78, 5202), (84, 5298), (88, 5340), (98, 5439), (107, 5586), (125, 5646), (146, 5742), (154, 5802),

Gene: Sheen\_10 Start: 5731, Stop: 7155, Start Num: 4

Candidate Starts for Sheen\_10:

(Start: 4 @5731 has 54 MA's), (9, 5776), (14, 5863), (25, 5980), (28, 6019), (29, 6022), (35, 6082), (36, 6088), (37, 6109), (39, 6115), (45, 6163), (59, 6256), (73, 6328), (76, 6346), (78, 6379), (91, 6550), (95, 6589), (116, 6790), (119, 6817), (122, 6838), (129, 6862), (136, 6922), (137, 6925), (146, 6955), (151, 6979), (156, 7021), (157, 7024), (161, 7060), (165, 7066), (170, 7138),

Gene: Snape\_10 Start: 6230, Stop: 7630, Start Num: 5

Candidate Starts for Snape\_10:

(1, 6191), (Start: 5 @6230 has 18 MA's), (16, 6371), (17, 6377), (20, 6395), (28, 6515), (33, 6566), (36, 6587), (40, 6620), (72, 6767), (78, 6830), (79, 6836), (86, 6980), (93, 7061), (96, 7088), (114, 7292), (120, 7313), (126, 7337), (135, 7397), (146, 7430), (156, 7496), (168, 7592),

Gene: SororFago\_9 Start: 4555, Stop: 6138, Start Num: 6

Candidate Starts for SororFago\_9:

(Start: 6 @4555 has 49 MA's), (17, 4696), (18, 4699), (23, 4768), (33, 4885), (36, 4906), (41, 4957), (58, 5218), (64, 5257), (71, 5317), (73, 5329), (78, 5380), (83, 5497), (95, 5623), (102, 5722), (107, 5794), (111, 5815), (125, 5860), (146, 5956), (153, 6001),

Gene: Spouty\_10 Start: 6176, Stop: 7756, Start Num: 6

Candidate Starts for Spouty\_10:

(Start: 6 @6176 has 49 MA's), (10, 6227), (17, 6317), (18, 6320), (33, 6506), (36, 6527), (73, 6950), (78, 7001), (83, 7118), (90, 7202), (93, 7226), (96, 7253), (102, 7343), (107, 7415), (125, 7475), (146, 7571), (153, 7616), (155, 7634),

Gene: StarStuff\_12 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for StarStuff\_12:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (44, 5129), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: Superchunk\_9 Start: 4337, Stop: 5746, Start Num: 3

Candidate Starts for Superchunk\_9:

(2, 4331), (Start: 3 @4337 has 1 MA's), (29, 4628), (35, 4688), (36, 4694), (37, 4715), (39, 4721), (45, 4769), (73, 4937), (78, 4988), (119, 5417), (131, 5468), (132, 5471), (140, 5531), (142, 5534), (168, 5717),

Gene: SwirlSquare\_12 Start: 4508, Stop: 5878, Start Num: 4

Candidate Starts for SwirlSquare\_12:

(Start: 4 @4508 has 54 MA's), (19, 4664), (29, 4799), (35, 4859), (36, 4865), (37, 4886), (39, 4892), (45, 4940), (74, 5120), (78, 5159), (95, 5321), (101, 5408), (120, 5555), (131, 5600), (132, 5603), (140, 5663), (142, 5666), (168, 5849),

Gene: Taptic\_36 Start: 36026, Stop: 37648, Start Num: 6

Candidate Starts for Taptic\_36:

(Start: 6 @36026 has 49 MA's), (8, 36032), (11, 36095), (17, 36173), (20, 36191), (21, 36245), (26, 36293), (30, 36344), (33, 36380), (36, 36401), (42, 36455), (47, 36542), (48, 36581), (57, 36719), (60, 36758), (66, 36800), (75, 36863), (81, 36947), (92, 37094), (93, 37100), (102, 37226), (103, 37238), (105, 37268), (109, 37307), (112, 37328), (126, 37361), (128, 37370), (132, 37385), (139, 37433), (152, 37484), (155, 37520), (158, 37535), (166, 37586), (171, 37643),

Gene: Timothy\_10 Start: 6224, Stop: 7624, Start Num: 5

Candidate Starts for Timothy\_10:

(1, 6185), (Start: 5 @6224 has 18 MA's), (17, 6371), (20, 6389), (28, 6509), (33, 6560), (36, 6581), (40, 6614), (72, 6761), (78, 6824), (79, 6830), (86, 6974), (93, 7055), (96, 7082), (114, 7286), (120, 7307), (126, 7331), (135, 7391), (146, 7424), (156, 7490), (168, 7586),

Gene: TinyTimmy\_9 Start: 6279, Stop: 7676, Start Num: 6

Candidate Starts for TinyTimmy\_9:

(Start: 6 @6279 has 49 MA's), (16, 6417), (17, 6423), (20, 6441), (28, 6561), (33, 6612), (36, 6633), (40, 6666), (72, 6813), (78, 6876), (79, 6882), (86, 7026), (93, 7107), (96, 7134), (114, 7338), (120, 7359), (126, 7383), (135, 7443), (146, 7476), (156, 7542), (168, 7638),

Gene: Toaka\_9 Start: 4553, Stop: 6103, Start Num: 6

Candidate Starts for Toaka\_9:

(Start: 6 @4553 has 49 MA's), (12, 4646), (17, 4694), (33, 4883), (36, 4904), (46, 4994), (52, 5138), (56, 5165), (64, 5255), (77, 5363), (78, 5378), (84, 5474), (98, 5615), (102, 5690), (107, 5762), (113, 5792), (125, 5822), (146, 5918), (155, 5981),

Gene: Tomathan\_12 Start: 4697, Stop: 6178, Start Num: 4

Candidate Starts for Tomathan\_12:

(Start: 4 @4697 has 54 MA's), (9, 4742), (29, 4988), (35, 5048), (36, 5054), (37, 5075), (44, 5129), (45, 5135), (73, 5303), (78, 5354), (86, 5504), (93, 5585), (107, 5774), (115, 5816), (127, 5879), (146, 5978), (166, 6107),

Gene: Trixie\_12 Start: 6376, Stop: 7671, Start Num: 4

Candidate Starts for Trixie\_12:

(Start: 4 @6376 has 54 MA's), (7, 6388), (9, 6421), (14, 6508), (19, 6532), (25, 6625), (29, 6667), (31, 6682), (35, 6727), (36, 6733), (37, 6754), (39, 6760), (82, 7033), (108, 7252), (115, 7279), (121, 7324),

(134, 7384), (155, 7510), (166, 7600), (167, 7612),

Gene: Tubs\_11 Start: 6146, Stop: 7726, Start Num: 6

Candidate Starts for Tubs\_11:

(Start: 6 @6146 has 49 MA's), (10, 6197), (17, 6287), (18, 6290), (33, 6476), (36, 6497), (56, 6758), (73, 6920), (78, 6971), (83, 7088), (102, 7313), (107, 7385), (125, 7445), (146, 7541), (153, 7586), (155, 7604),

Gene: Ugenie5\_8 Start: 6179, Stop: 7759, Start Num: 6

Candidate Starts for Ugenie5\_8:

(Start: 6 @6179 has 49 MA's), (10, 6230), (17, 6320), (18, 6323), (20, 6338), (33, 6509), (34, 6521), (36, 6530), (56, 6791), (73, 6953), (78, 7004), (83, 7121), (102, 7346), (107, 7418), (125, 7478), (146, 7574), (153, 7619), (155, 7637),

Gene: Updawg\_11 Start: 5191, Stop: 6495, Start Num: 4

Candidate Starts for Updawg\_11:

(Start: 4 @5191 has 54 MA's), (9, 5236), (14, 5323), (29, 5482), (35, 5542), (36, 5548), (37, 5569), (38, 5572), (45, 5629), (61, 5728), (63, 5731), (76, 5803), (82, 5851), (108, 6070), (115, 6103), (124, 6157), (134, 6208), (143, 6253), (147, 6271), (163, 6388),

Gene: VA6\_9 Start: 4672, Stop: 5973, Start Num: 4

Candidate Starts for VA6\_9:

(Start: 4 @4672 has 54 MA's), (9, 4717), (14, 4804), (19, 4828), (25, 4921), (29, 4963), (31, 4978), (35, 5023), (36, 5029), (37, 5050), (39, 5056), (63, 5212), (76, 5284), (82, 5332), (100, 5455), (108, 5551), (115, 5584), (134, 5689), (138, 5725), (155, 5815), (167, 5917),

Gene: VC3\_12 Start: 4696, Stop: 6177, Start Num: 4

Candidate Starts for VC3\_12:

(Start: 4 @4696 has 54 MA's), (9, 4741), (13, 4825), (29, 4987), (35, 5047), (36, 5053), (37, 5074), (44, 5128), (45, 5134), (73, 5302), (78, 5353), (86, 5503), (93, 5584), (115, 5815), (127, 5878), (146, 5977), (166, 6106),

Gene: Vanisoa\_9 Start: 4264, Stop: 5814, Start Num: 6

Candidate Starts for Vanisoa\_9:

(Start: 6 @4264 has 49 MA's), (17, 4405), (18, 4408), (20, 4423), (33, 4594), (36, 4615), (39, 4645), (51, 4846), (56, 4876), (64, 4966), (77, 5074), (78, 5089), (84, 5185), (88, 5227), (98, 5326), (107, 5473), (113, 5503), (125, 5533), (146, 5629), (154, 5689),

Gene: WeiHuaDA\_15 Start: 6986, Stop: 8281, Start Num: 4

Candidate Starts for WeiHuaDA\_15:

(Start: 4 @6986 has 54 MA's), (7, 6998), (9, 7031), (14, 7118), (19, 7142), (25, 7235), (29, 7277), (35, 7337), (36, 7343), (37, 7364), (39, 7370), (48, 7454), (55, 7511), (82, 7643), (108, 7862), (115, 7889), (121, 7934), (133, 7976), (134, 7994), (143, 8039), (155, 8120), (164, 8192), (167, 8222),

Gene: WideWale\_11 Start: 5191, Stop: 6495, Start Num: 4

Candidate Starts for WideWale\_11:

(Start: 4 @5191 has 54 MA's), (9, 5236), (14, 5323), (29, 5482), (35, 5542), (36, 5548), (37, 5569), (38, 5572), (45, 5629), (61, 5728), (63, 5731), (76, 5803), (82, 5851), (108, 6070), (115, 6103), (124, 6157), (134, 6208), (143, 6253), (147, 6271), (163, 6388),

Gene: Yecey3\_10 Start: 4341, Stop: 5915, Start Num: 6

Candidate Starts for Yecey3\_10:

(Start: 6 @4341 has 49 MA's), (12, 4434), (17, 4482), (18, 4485), (21, 4554), (33, 4689), (36, 4710), (41, 4761), (56, 4971), (68, 5103), (73, 5133), (78, 5184), (88, 5322), (96, 5406), (98, 5421), (107, 5568), (125, 5634), (146, 5730), (150, 5751), (161, 5838),