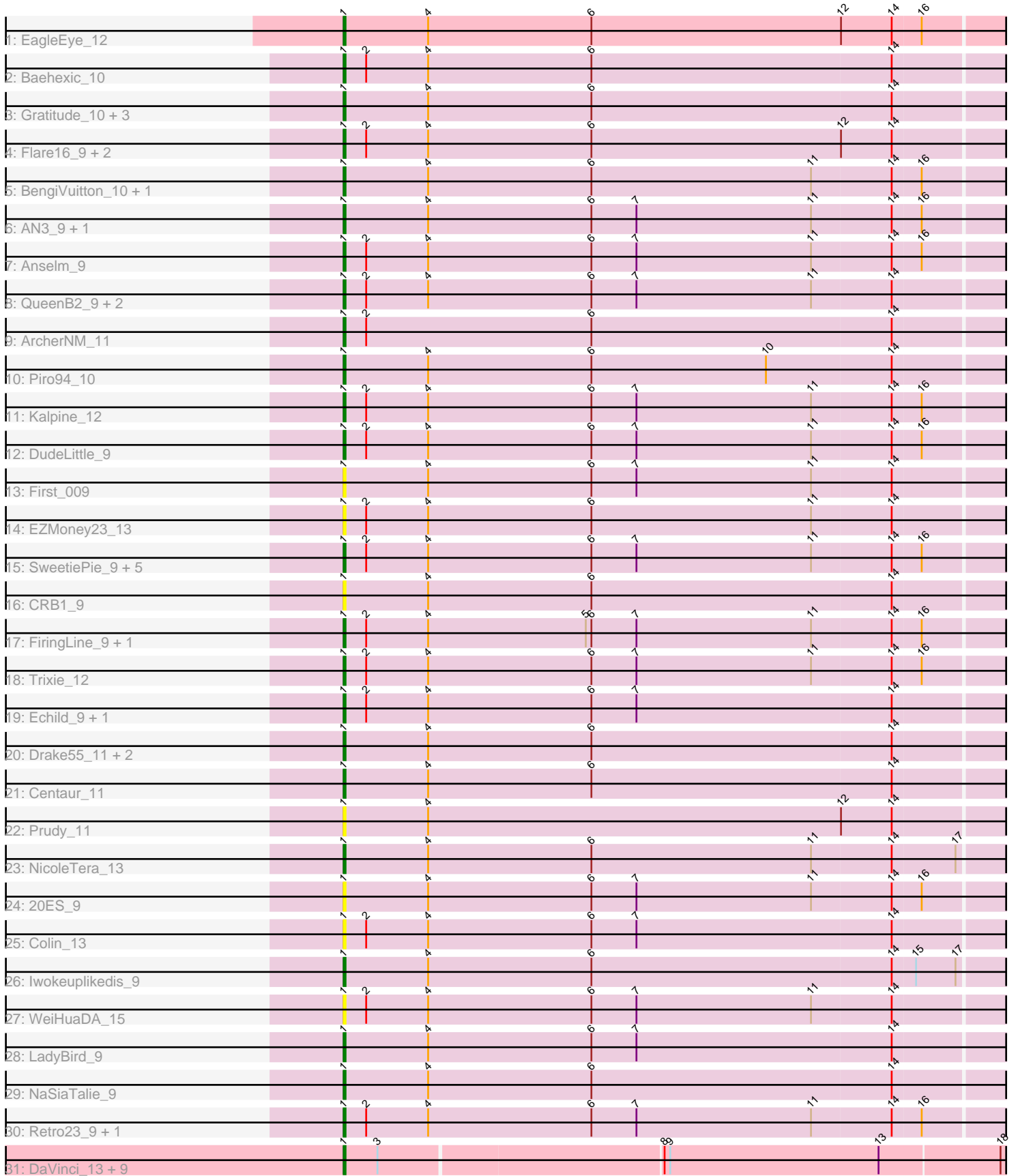


# Zoomed Pham 294758



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 294758 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294758 has 59 members, 11 are drafts.

Phages represented in each track:

- Track 1 : EagleEye\_12
- Track 2 : Baehexic\_10
- Track 3 : Gratitude\_10, Updawg\_11, Equemioh13\_11, WideWale\_11
- Track 4 : Flare16\_9, MiculUcigas\_9, Sknot\_9
- Track 5 : BengiVuitton\_10, Deloris\_10
- Track 6 : AN3\_9, VA6\_9
- Track 7 : Anselm\_9
- Track 8 : QueenB2\_9, Fameo\_9, Heffalump\_11
- Track 9 : ArcherNM\_11
- Track 10 : Piro94\_10
- Track 11 : Kalpine\_12
- Track 12 : DudeLittle\_9
- Track 13 : First\_009
- Track 14 : EZMoney23\_13
- Track 15 : SweetiePie\_9, SemperFi\_11, Georgie2\_9, SnapTap\_9, Crucio\_9, Power\_9
- Track 16 : CRB1\_9
- Track 17 : FiringLine\_9, QueenBeesly\_9
- Track 18 : Trixie\_12
- Track 19 : Echild\_9, Benvolio\_9
- Track 20 : Drake55\_11, Terrific\_13, HarryHoudini\_11
- Track 21 : Centaur\_11
- Track 22 : Prudy\_11
- Track 23 : NicoleTera\_13
- Track 24 : 20ES\_9
- Track 25 : Colin\_13
- Track 26 : Iwokeuplikedis\_9
- Track 27 : WeiHuaDA\_15
- Track 28 : LadyBird\_9
- Track 29 : NaSiaTalie\_9
- Track 30 : Retro23\_9, Dalmatian\_9
- Track 31 : DaVinci\_13, GreedyLawyer\_13, Kipper29\_13, Dorothea\_13, BennyP\_13, McFly\_13, SmellyB\_13, VohminGhazi\_13, Candra\_13, Chartreuse\_13

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

The start number called the most often in the published annotations is 1, it was called in 48 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_9, AN3\_9, Anselm\_9, ArcherNM\_11, Baehexic\_10, BengiVuitton\_10, BennyP\_13, Benvolio\_9, CRB1\_9, Candra\_13, Centaur\_11, Chartreuse\_13, Colin\_13, Crucio\_9, DaVinci\_13, Dalmatian\_9, Deloris\_10, Dorothea\_13, Drake55\_11, DudeLittle\_9, EZMoney23\_13, EagleEye\_12, Echild\_9, Equemioh13\_11, Fameo\_9, FiringLine\_9, First\_009, Flare16\_9, Georgie2\_9, Gratitude\_10, GreedyLawyer\_13, HarryHoudini\_11, Heffalump\_11, Iwokeuplikedis\_9, Kalpine\_12, Kipper29\_13, LadyBird\_9, McFly\_13, MiculUcigas\_9, NaSiaTalie\_9, NicoleTera\_13, Piro94\_10, Power\_9, Prudy\_11, QueenB2\_9, QueenBeesly\_9, Retro23\_9, SemperFi\_11, Sknot\_9, SmellyB\_13, SnapTap\_9, SweetiePie\_9, Terrific\_13, Trixie\_12, Updawg\_11, VA6\_9, VohminGhazi\_13, 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:

- 

### Summary by start number:

Start 1:

- Found in 59 of 59 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 48 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 20ES\_9 (A2), AN3\_9 (A2), Anselm\_9 (A2), ArcherNM\_11 (A2), Baehexic\_10 (A2), BengiVuitton\_10 (A2), BennyP\_13 (A6), Benvolio\_9 (A2), CRB1\_9 (A2), Candra\_13 (A6), Centaur\_11 (A2), Chartreuse\_13 (A6), Colin\_13 (A2), Crucio\_9 (A2), DaVinci\_13 (A6), Dalmatian\_9 (A2), Deloris\_10 (A2), Dorothea\_13 (A6), Drake55\_11 (A2), DudeLittle\_9 (A2), EZMoney23\_13 (A2), EagleEye\_12 (A16), Echild\_9 (A2), Equemioh13\_11 (A2), Fameo\_9 (A2), FiringLine\_9 (A2), First\_009 (A2), Flare16\_9 (A2), Georgie2\_9 (A2), Gratitude\_10 (A2), GreedyLawyer\_13 (A6), HarryHoudini\_11 (A2), Heffalump\_11 (A2), Iwokeuplikedis\_9 (A2), Kalpine\_12 (A2), Kipper29\_13 (A6), LadyBird\_9 (A2), McFly\_13 (A6), MiculUcigas\_9 (A2), NaSiaTalie\_9 (A2), NicoleTera\_13 (A2), Piro94\_10 (A2), Power\_9 (A2), Prudy\_11 (A2), QueenB2\_9 (A2), QueenBeesly\_9 (A2), Retro23\_9 (A2), SemperFi\_11 (A2), Sknot\_9 (A2), SmellyB\_13 (A6), SnapTap\_9 (A2), SweetiePie\_9 (A2), Terrific\_13 (A2), Trixie\_12 (A2), Updawg\_11 (A2), VA6\_9 (A2), VohminGhazi\_13 (A6), WeiHuaDA\_15 (A2), WideWale\_11 (A2),

### Summary by clusters:

There are 3 clusters represented in this pham: A2, A16, A6,

Info for manual annotations of cluster A16:

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

Info for manual annotations of cluster A2:

- Start number 1 was manually annotated 39 times for cluster A2.

Info for manual annotations of cluster A6:

•Start number 1 was manually annotated 8 times for cluster A6.

**Gene Information:**

Gene: 20ES\_9 Start: 4690, Stop: 5988, Start Num: 1

Candidate Starts for 20ES\_9:

(Start: 1 @4690 has 48 MA's), (4, 4735), (6, 4822), (7, 4846), (11, 4939), (14, 4981), (16, 4996), (19, 5041), (20, 5047), (21, 5068), (23, 5074), (31, 5230), (33, 5302), (34, 5350), (36, 5569), (37, 5602), (45, 5707),

Gene: AN3\_9 Start: 4672, Stop: 5973, Start Num: 1

Candidate Starts for AN3\_9:

(Start: 1 @4672 has 48 MA's), (4, 4717), (6, 4804), (7, 4828), (11, 4921), (14, 4963), (16, 4978), (19, 5023), (20, 5029), (21, 5050), (23, 5056), (31, 5212), (33, 5284), (34, 5332), (35, 5455), (36, 5551), (37, 5584), (45, 5689), (48, 5725), (55, 5815), (63, 5917),

Gene: Anselm\_9 Start: 4805, Stop: 6097, Start Num: 1

Candidate Starts for Anselm\_9:

(Start: 1 @4805 has 48 MA's), (2, 4817), (4, 4850), (6, 4937), (7, 4961), (11, 5054), (14, 5096), (16, 5111), (19, 5156), (20, 5162), (21, 5183), (22, 5186), (31, 5333), (32, 5339), (34, 5453), (36, 5672), (37, 5705), (41, 5750), (45, 5810), (55, 5936), (63, 6038),

Gene: ArcherNM\_11 Start: 6513, Stop: 7808, Start Num: 1

Candidate Starts for ArcherNM\_11:

(Start: 1 @6513 has 48 MA's), (2, 6525), (6, 6645), (14, 6804), (19, 6864), (20, 6870), (21, 6891), (23, 6897), (25, 6945), (34, 7167), (36, 7386), (37, 7419), (45, 7524), (49, 7569), (55, 7650), (62, 7740), (63, 7752),

Gene: Baehexic\_10 Start: 5209, Stop: 6513, Start Num: 1

Candidate Starts for Baehexic\_10:

(Start: 1 @5209 has 48 MA's), (2, 5221), (4, 5254), (6, 5341), (14, 5500), (19, 5560), (20, 5566), (21, 5587), (25, 5647), (30, 5746), (31, 5749), (33, 5821), (36, 6088), (37, 6121), (43, 6175), (45, 6226), (49, 6271), (52, 6289), (60, 6406),

Gene: BengiVuitton\_10 Start: 5133, Stop: 6422, Start Num: 1

Candidate Starts for BengiVuitton\_10:

(Start: 1 @5133 has 48 MA's), (4, 5178), (6, 5265), (11, 5382), (14, 5424), (16, 5439), (19, 5484), (20, 5490), (21, 5511), (23, 5517), (33, 5742), (34, 5790), (36, 6009), (37, 6042), (45, 6147), (56, 6276),

Gene: BennyP\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for BennyP\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: Benvolio\_9 Start: 4797, Stop: 6086, Start Num: 1

Candidate Starts for Benvolio\_9:

(Start: 1 @4797 has 48 MA's), (2, 4809), (4, 4842), (6, 4929), (7, 4953), (14, 5088), (19, 5148), (20, 5154), (21, 5175), (23, 5181), (27, 5265), (32, 5331), (34, 5445), (36, 5664), (37, 5697), (45, 5802), (48, 5838), (55, 5928), (63, 6030),

Gene: CRB1\_9 Start: 4679, Stop: 5974, Start Num: 1

Candidate Starts for CRB1\_9:

(Start: 1 @4679 has 48 MA's), (4, 4724), (6, 4811), (14, 4970), (19, 5030), (20, 5036), (21, 5057), (23, 5063), (31, 5219), (33, 5291), (34, 5339), (36, 5558), (37, 5591), (45, 5696), (50, 5744),

Gene: Candra\_13 Start: 5887, Stop: 7098, Start Num: 1

Candidate Starts for Candra\_13:

(Start: 1 @5887 has 48 MA's), (3, 5905), (8, 6052), (9, 6055), (13, 6166), (18, 6229), (24, 6313), (25, 6325), (26, 6358), (34, 6559), (36, 6778), (37, 6805), (38, 6817), (39, 6823), (46, 6886), (64, 7069),

Gene: Centaur\_11 Start: 5188, Stop: 6492, Start Num: 1

Candidate Starts for Centaur\_11:

(Start: 1 @5188 has 48 MA's), (4, 5233), (6, 5320), (14, 5479), (19, 5539), (20, 5545), (21, 5566), (22, 5569), (25, 5626), (30, 5725), (31, 5728), (33, 5800), (34, 5848), (36, 6067), (37, 6100), (43, 6154), (45, 6205), (49, 6250), (52, 6268),

Gene: Chartreuse\_13 Start: 5801, Stop: 7012, Start Num: 1

Candidate Starts for Chartreuse\_13:

(Start: 1 @5801 has 48 MA's), (3, 5819), (8, 5966), (9, 5969), (13, 6080), (18, 6143), (24, 6227), (25, 6239), (26, 6272), (34, 6473), (36, 6692), (37, 6719), (38, 6731), (39, 6737), (46, 6800), (64, 6983),

Gene: Colin\_13 Start: 6391, Stop: 7695, Start Num: 1

Candidate Starts for Colin\_13:

(Start: 1 @6391 has 48 MA's), (2, 6403), (4, 6436), (6, 6523), (7, 6547), (14, 6682), (19, 6742), (20, 6748), (21, 6769), (22, 6772), (25, 6829), (27, 6868), (34, 7057), (36, 7276), (37, 7303), (41, 7348), (45, 7408), (55, 7534), (62, 7624), (63, 7636), (65, 7672),

Gene: Crucio\_9 Start: 4694, Stop: 5941, Start Num: 1

Candidate Starts for Crucio\_9:

(Start: 1 @4694 has 48 MA's), (2, 4706), (4, 4739), (6, 4826), (7, 4850), (11, 4943), (14, 4985), (16, 5000), (19, 5045), (20, 5051), (21, 5072), (22, 5075), (31, 5222), (34, 5342), (36, 5561), (37, 5591), (40, 5615), (42, 5639), (51, 5738), (56, 5804), (57, 5810), (62, 5867),

Gene: DaVinci\_13 Start: 5855, Stop: 7066, Start Num: 1

Candidate Starts for DaVinci\_13:

(Start: 1 @5855 has 48 MA's), (3, 5873), (8, 6020), (9, 6023), (13, 6134), (18, 6197), (24, 6281), (25, 6293), (26, 6326), (34, 6527), (36, 6746), (37, 6773), (38, 6785), (39, 6791), (46, 6854), (64, 7037),

Gene: Dalmatian\_9 Start: 4796, Stop: 6088, Start Num: 1

Candidate Starts for Dalmatian\_9:

(Start: 1 @4796 has 48 MA's), (2, 4808), (4, 4841), (6, 4928), (7, 4952), (11, 5045), (14, 5087), (16, 5102), (19, 5147), (20, 5153), (21, 5174), (27, 5264), (31, 5324), (32, 5330), (34, 5444), (36, 5663), (37, 5696), (41, 5741), (45, 5801), (49, 5846), (55, 5927), (63, 6029),

Gene: Deloris\_10 Start: 5133, Stop: 6422, Start Num: 1

Candidate Starts for Deloris\_10:

(Start: 1 @5133 has 48 MA's), (4, 5178), (6, 5265), (11, 5382), (14, 5424), (16, 5439), (19, 5484), (20, 5490), (21, 5511), (23, 5517), (33, 5742), (34, 5790), (36, 6009), (37, 6042), (45, 6147), (56, 6276),

Gene: Dorothea\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for Dorothea\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: Drake55\_11 Start: 5205, Stop: 6509, Start Num: 1

Candidate Starts for Drake55\_11:

(Start: 1 @5205 has 48 MA's), (4, 5250), (6, 5337), (14, 5496), (19, 5556), (20, 5562), (21, 5583), (25, 5643), (30, 5742), (31, 5745), (33, 5817), (36, 6084), (37, 6117), (43, 6171), (45, 6222), (49, 6267), (52, 6285),

Gene: DudeLittle\_9 Start: 4798, Stop: 6090, Start Num: 1

Candidate Starts for DudeLittle\_9:

(Start: 1 @4798 has 48 MA's), (2, 4810), (4, 4843), (6, 4930), (7, 4954), (11, 5047), (14, 5089), (16, 5104), (19, 5149), (20, 5155), (21, 5176), (22, 5179), (27, 5266), (31, 5326), (32, 5332), (34, 5446), (36, 5665), (37, 5698), (41, 5743), (45, 5803), (49, 5848), (55, 5929), (63, 6031),

Gene: EZMoney23\_13 Start: 6684, Stop: 7985, Start Num: 1

Candidate Starts for EZMoney23\_13:

(Start: 1 @6684 has 48 MA's), (2, 6696), (4, 6729), (6, 6816), (11, 6933), (14, 6975), (19, 7035), (20, 7041), (21, 7062), (23, 7068), (27, 7161), (28, 7182), (32, 7230), (33, 7296), (36, 7563), (37, 7596), (45, 7701), (49, 7746), (55, 7827), (63, 7929),

Gene: EagleEye\_12 Start: 5895, Stop: 7142, Start Num: 1

Candidate Starts for EagleEye\_12:

(Start: 1 @5895 has 48 MA's), (4, 5940), (6, 6027), (12, 6159), (14, 6186), (16, 6201), (19, 6246), (20, 6252), (21, 6273), (23, 6279), (25, 6333), (27, 6372), (31, 6435), (32, 6441), (33, 6507), (34, 6555), (36, 6774), (37, 6801), (40, 6825), (42, 6849), (51, 6942), (56, 7008), (58, 7026),

Gene: Echild\_9 Start: 4797, Stop: 6086, Start Num: 1

Candidate Starts for Echild\_9:

(Start: 1 @4797 has 48 MA's), (2, 4809), (4, 4842), (6, 4929), (7, 4953), (14, 5088), (19, 5148), (20, 5154), (21, 5175), (23, 5181), (27, 5265), (32, 5331), (34, 5445), (36, 5664), (37, 5697), (45, 5802), (48, 5838), (55, 5928), (63, 6030),

Gene: Equemioh13\_11 Start: 5191, Stop: 6495, Start Num: 1

Candidate Starts for Equemioh13\_11:

(Start: 1 @5191 has 48 MA's), (4, 5236), (6, 5323), (14, 5482), (19, 5542), (20, 5548), (21, 5569), (22, 5572), (25, 5629), (30, 5728), (31, 5731), (33, 5803), (34, 5851), (36, 6070), (37, 6103), (43, 6157), (45, 6208), (49, 6253), (52, 6271), (60, 6388),

Gene: Fameo\_9 Start: 4800, Stop: 6035, Start Num: 1

Candidate Starts for Fameo\_9:

(Start: 1 @4800 has 48 MA's), (2, 4812), (4, 4845), (6, 4932), (7, 4956), (11, 5049), (14, 5091), (19, 5151), (20, 5157), (21, 5178), (23, 5184), (27, 5268), (31, 5328), (32, 5334), (33, 5400), (34, 5448), (36, 5667), (37, 5697), (40, 5721), (51, 5835), (56, 5901), (59, 5925),

Gene: FiringLine\_9 Start: 4694, Stop: 5941, Start Num: 1

Candidate Starts for FiringLine\_9:

(Start: 1 @4694 has 48 MA's), (2, 4706), (4, 4739), (5, 4823), (6, 4826), (7, 4850), (11, 4943), (14, 4985), (16, 5000), (19, 5045), (20, 5051), (21, 5072), (22, 5075), (31, 5222), (34, 5342), (36, 5561), (37, 5591), (40, 5615), (42, 5639), (51, 5738), (56, 5804), (57, 5810), (62, 5867),

Gene: First\_009 Start: 4690, Stop: 5988, Start Num: 1

Candidate Starts for First\_009:

(Start: 1 @4690 has 48 MA's), (4, 4735), (6, 4822), (7, 4846), (11, 4939), (14, 4981), (19, 5041), (20, 5047), (21, 5068), (23, 5074), (31, 5230), (33, 5302), (34, 5350), (36, 5569), (37, 5602), (45, 5707),

Gene: Flare16\_9 Start: 4749, Stop: 6053, Start Num: 1

Candidate Starts for Flare16\_9:

(Start: 1 @4749 has 48 MA's), (2, 4761), (4, 4794), (6, 4881), (12, 5013), (14, 5040), (19, 5100), (20, 5106), (21, 5127), (25, 5187), (30, 5286), (31, 5289), (33, 5361), (34, 5409), (36, 5628), (37, 5661), (43, 5715), (45, 5766), (49, 5811), (52, 5829),

Gene: Georgie2\_9 Start: 4695, Stop: 5942, Start Num: 1

Candidate Starts for Georgie2\_9:

(Start: 1 @4695 has 48 MA's), (2, 4707), (4, 4740), (6, 4827), (7, 4851), (11, 4944), (14, 4986), (16, 5001), (19, 5046), (20, 5052), (21, 5073), (22, 5076), (31, 5223), (34, 5343), (36, 5562), (37, 5592), (40, 5616), (42, 5640), (51, 5739), (56, 5805), (57, 5811), (62, 5868),

Gene: Gratitude\_10 Start: 5191, Stop: 6495, Start Num: 1

Candidate Starts for Gratitude\_10:

(Start: 1 @5191 has 48 MA's), (4, 5236), (6, 5323), (14, 5482), (19, 5542), (20, 5548), (21, 5569), (22, 5572), (25, 5629), (30, 5728), (31, 5731), (33, 5803), (34, 5851), (36, 6070), (37, 6103), (43, 6157), (45, 6208), (49, 6253), (52, 6271), (60, 6388),

Gene: GreedyLawyer\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for GreedyLawyer\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: HarryHoudini\_11 Start: 5205, Stop: 6509, Start Num: 1

Candidate Starts for HarryHoudini\_11:

(Start: 1 @5205 has 48 MA's), (4, 5250), (6, 5337), (14, 5496), (19, 5556), (20, 5562), (21, 5583), (25, 5643), (30, 5742), (31, 5745), (33, 5817), (36, 6084), (37, 6117), (43, 6171), (45, 6222), (49, 6267), (52, 6285),

Gene: Heffalump\_11 Start: 6599, Stop: 7834, Start Num: 1

Candidate Starts for Heffalump\_11:

(Start: 1 @6599 has 48 MA's), (2, 6611), (4, 6644), (6, 6731), (7, 6755), (11, 6848), (14, 6890), (19, 6950), (20, 6956), (21, 6977), (23, 6983), (27, 7067), (31, 7127), (32, 7133), (33, 7199), (34, 7247), (36, 7466), (37, 7496), (40, 7520), (51, 7634), (56, 7700), (59, 7724),

Gene: Iwokeuplikedis\_9 Start: 4489, Stop: 5760, Start Num: 1

Candidate Starts for Iwokeuplikedis\_9:

(Start: 1 @4489 has 48 MA's), (4, 4534), (6, 4621), (14, 4780), (15, 4792), (17, 4813), (19, 4840), (20, 4846), (21, 4867), (23, 4873), (27, 4966), (33, 5098), (34, 5146), (36, 5365), (37, 5398), (40, 5422), (51, 5560), (53, 5569),

Gene: Kalpine\_12 Start: 6504, Stop: 7799, Start Num: 1

Candidate Starts for Kalpine\_12:

(Start: 1 @6504 has 48 MA's), (2, 6516), (4, 6549), (6, 6636), (7, 6660), (11, 6753), (14, 6795), (16, 6810), (19, 6855), (20, 6861), (21, 6882), (23, 6888), (34, 7161), (36, 7380), (37, 7407), (41, 7452), (44, 7494), (45, 7512), (49, 7557), (55, 7638), (62, 7728), (63, 7740),

Gene: Kipper29\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for Kipper29\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: LadyBird\_9 Start: 4681, Stop: 5976, Start Num: 1

Candidate Starts for LadyBird\_9:

(Start: 1 @4681 has 48 MA's), (4, 4726), (6, 4813), (7, 4837), (14, 4972), (19, 5032), (20, 5038), (21, 5059), (23, 5065), (33, 5293), (34, 5341), (36, 5560), (37, 5593), (45, 5698), (50, 5746),

Gene: McFly\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for McFly\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: MiculUcigas\_9 Start: 4749, Stop: 6053, Start Num: 1

Candidate Starts for MiculUcigas\_9:

(Start: 1 @4749 has 48 MA's), (2, 4761), (4, 4794), (6, 4881), (12, 5013), (14, 5040), (19, 5100), (20, 5106), (21, 5127), (25, 5187), (30, 5286), (31, 5289), (33, 5361), (34, 5409), (36, 5628), (37, 5661), (43, 5715), (45, 5766), (49, 5811), (52, 5829),

Gene: NaSiaTalie\_9 Start: 4749, Stop: 6050, Start Num: 1

Candidate Starts for NaSiaTalie\_9:

(Start: 1 @4749 has 48 MA's), (4, 4794), (6, 4881), (14, 5040), (19, 5100), (20, 5106), (21, 5127), (30, 5283), (31, 5286), (33, 5358), (34, 5406), (36, 5625), (37, 5658), (43, 5712), (45, 5763), (49, 5808), (52, 5826),

Gene: NicoleTera\_13 Start: 6467, Stop: 7756, Start Num: 1

Candidate Starts for NicoleTera\_13:

(Start: 1 @6467 has 48 MA's), (4, 6512), (6, 6599), (11, 6716), (14, 6758), (17, 6791), (19, 6818), (20, 6824), (21, 6845), (23, 6851), (25, 6893), (33, 7064), (34, 7112), (36, 7331), (37, 7364), (45, 7469), (48, 7505), (50, 7517), (54, 7577), (55, 7595), (63, 7697),

Gene: Piro94\_10 Start: 5206, Stop: 6510, Start Num: 1

Candidate Starts for Piro94\_10:

(Start: 1 @5206 has 48 MA's), (4, 5251), (6, 5338), (10, 5431), (14, 5497), (19, 5557), (20, 5563), (21, 5584), (25, 5644), (30, 5743), (31, 5746), (33, 5818), (36, 6085), (37, 6118), (43, 6172), (45, 6223), (49, 6268), (52, 6286),

Gene: Power\_9 Start: 4694, Stop: 5941, Start Num: 1

Candidate Starts for Power\_9:

(Start: 1 @4694 has 48 MA's), (2, 4706), (4, 4739), (6, 4826), (7, 4850), (11, 4943), (14, 4985), (16, 5000), (19, 5045), (20, 5051), (21, 5072), (22, 5075), (31, 5222), (34, 5342), (36, 5561), (37, 5591), (40, 5615), (42, 5639), (51, 5738), (56, 5804), (57, 5810), (62, 5867),

Gene: Prudy\_11 Start: 6526, Stop: 7824, Start Num: 1

Candidate Starts for Prudy\_11:

(Start: 1 @6526 has 48 MA's), (4, 6571), (12, 6790), (14, 6817), (19, 6877), (20, 6883), (21, 6904), (23, 6910), (25, 6958), (34, 7180), (36, 7399), (37, 7432), (45, 7537), (47, 7555), (48, 7573), (50, 7585), (55, 7663), (62, 7753), (63, 7765),

Gene: QueenB2\_9 Start: 4800, Stop: 6035, Start Num: 1

Candidate Starts for QueenB2\_9:

(Start: 1 @4800 has 48 MA's), (2, 4812), (4, 4845), (6, 4932), (7, 4956), (11, 5049), (14, 5091), (19, 5151), (20, 5157), (21, 5178), (23, 5184), (27, 5268), (31, 5328), (32, 5334), (33, 5400), (34, 5448), (36,

5667), (37, 5697), (40, 5721), (51, 5835), (56, 5901), (59, 5925),

Gene: QueenBeesly\_9 Start: 4694, Stop: 5941, Start Num: 1

Candidate Starts for QueenBeesly\_9:

(Start: 1 @4694 has 48 MA's), (2, 4706), (4, 4739), (5, 4823), (6, 4826), (7, 4850), (11, 4943), (14, 4985), (16, 5000), (19, 5045), (20, 5051), (21, 5072), (22, 5075), (31, 5222), (34, 5342), (36, 5561), (37, 5591), (40, 5615), (42, 5639), (51, 5738), (56, 5804), (57, 5810), (62, 5867),

Gene: Retro23\_9 Start: 4797, Stop: 6089, Start Num: 1

Candidate Starts for Retro23\_9:

(Start: 1 @4797 has 48 MA's), (2, 4809), (4, 4842), (6, 4929), (7, 4953), (11, 5046), (14, 5088), (16, 5103), (19, 5148), (20, 5154), (21, 5175), (27, 5265), (31, 5325), (32, 5331), (34, 5445), (36, 5664), (37, 5697), (41, 5742), (45, 5802), (49, 5847), (55, 5928), (63, 6030),

Gene: SemperFi\_11 Start: 5122, Stop: 6369, Start Num: 1

Candidate Starts for SemperFi\_11:

(Start: 1 @5122 has 48 MA's), (2, 5134), (4, 5167), (6, 5254), (7, 5278), (11, 5371), (14, 5413), (16, 5428), (19, 5473), (20, 5479), (21, 5500), (22, 5503), (31, 5650), (34, 5770), (36, 5989), (37, 6019), (40, 6043), (42, 6067), (51, 6166), (56, 6232), (57, 6238), (62, 6295),

Gene: Sknot\_9 Start: 4749, Stop: 6053, Start Num: 1

Candidate Starts for Sknot\_9:

(Start: 1 @4749 has 48 MA's), (2, 4761), (4, 4794), (6, 4881), (12, 5013), (14, 5040), (19, 5100), (20, 5106), (21, 5127), (25, 5187), (30, 5286), (31, 5289), (33, 5361), (34, 5409), (36, 5628), (37, 5661), (43, 5715), (45, 5766), (49, 5811), (52, 5829),

Gene: SmellyB\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for SmellyB\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: SnapTap\_9 Start: 4694, Stop: 5941, Start Num: 1

Candidate Starts for SnapTap\_9:

(Start: 1 @4694 has 48 MA's), (2, 4706), (4, 4739), (6, 4826), (7, 4850), (11, 4943), (14, 4985), (16, 5000), (19, 5045), (20, 5051), (21, 5072), (22, 5075), (31, 5222), (34, 5342), (36, 5561), (37, 5591), (40, 5615), (42, 5639), (51, 5738), (56, 5804), (57, 5810), (62, 5867),

Gene: SweetiePie\_9 Start: 4694, Stop: 5941, Start Num: 1

Candidate Starts for SweetiePie\_9:

(Start: 1 @4694 has 48 MA's), (2, 4706), (4, 4739), (6, 4826), (7, 4850), (11, 4943), (14, 4985), (16, 5000), (19, 5045), (20, 5051), (21, 5072), (22, 5075), (31, 5222), (34, 5342), (36, 5561), (37, 5591), (40, 5615), (42, 5639), (51, 5738), (56, 5804), (57, 5810), (62, 5867),

Gene: Terrific\_13 Start: 5203, Stop: 6507, Start Num: 1

Candidate Starts for Terrific\_13:

(Start: 1 @5203 has 48 MA's), (4, 5248), (6, 5335), (14, 5494), (19, 5554), (20, 5560), (21, 5581), (25, 5641), (30, 5740), (31, 5743), (33, 5815), (36, 6082), (37, 6115), (43, 6169), (45, 6220), (49, 6265), (52, 6283),

Gene: Trixie\_12 Start: 6376, Stop: 7671, Start Num: 1

Candidate Starts for Trixie\_12:

(Start: 1 @6376 has 48 MA's), (2, 6388), (4, 6421), (6, 6508), (7, 6532), (11, 6625), (14, 6667), (16, 6682), (19, 6727), (20, 6733), (21, 6754), (23, 6760), (34, 7033), (36, 7252), (37, 7279), (41, 7324), (45,

7384), (55, 7510), (62, 7600), (63, 7612),

Gene: Updawg\_11 Start: 5191, Stop: 6495, Start Num: 1

Candidate Starts for Updawg\_11:

(Start: 1 @5191 has 48 MA's), (4, 5236), (6, 5323), (14, 5482), (19, 5542), (20, 5548), (21, 5569), (22, 5572), (25, 5629), (30, 5728), (31, 5731), (33, 5803), (34, 5851), (36, 6070), (37, 6103), (43, 6157), (45, 6208), (49, 6253), (52, 6271), (60, 6388),

Gene: VA6\_9 Start: 4672, Stop: 5973, Start Num: 1

Candidate Starts for VA6\_9:

(Start: 1 @4672 has 48 MA's), (4, 4717), (6, 4804), (7, 4828), (11, 4921), (14, 4963), (16, 4978), (19, 5023), (20, 5029), (21, 5050), (23, 5056), (31, 5212), (33, 5284), (34, 5332), (35, 5455), (36, 5551), (37, 5584), (45, 5689), (48, 5725), (55, 5815), (63, 5917),

Gene: VohminGhazi\_13 Start: 5854, Stop: 7065, Start Num: 1

Candidate Starts for VohminGhazi\_13:

(Start: 1 @5854 has 48 MA's), (3, 5872), (8, 6019), (9, 6022), (13, 6133), (18, 6196), (24, 6280), (25, 6292), (26, 6325), (34, 6526), (36, 6745), (37, 6772), (38, 6784), (39, 6790), (46, 6853), (64, 7036),

Gene: WeiHuaDA\_15 Start: 6986, Stop: 8281, Start Num: 1

Candidate Starts for WeiHuaDA\_15:

(Start: 1 @6986 has 48 MA's), (2, 6998), (4, 7031), (6, 7118), (7, 7142), (11, 7235), (14, 7277), (19, 7337), (20, 7343), (21, 7364), (23, 7370), (27, 7454), (29, 7511), (34, 7643), (36, 7862), (37, 7889), (41, 7934), (44, 7976), (45, 7994), (49, 8039), (55, 8120), (61, 8192), (63, 8222),

Gene: WideWale\_11 Start: 5191, Stop: 6495, Start Num: 1

Candidate Starts for WideWale\_11:

(Start: 1 @5191 has 48 MA's), (4, 5236), (6, 5323), (14, 5482), (19, 5542), (20, 5548), (21, 5569), (22, 5572), (25, 5629), (30, 5728), (31, 5731), (33, 5803), (34, 5851), (36, 6070), (37, 6103), (43, 6157), (45, 6208), (49, 6253), (52, 6271), (60, 6388),