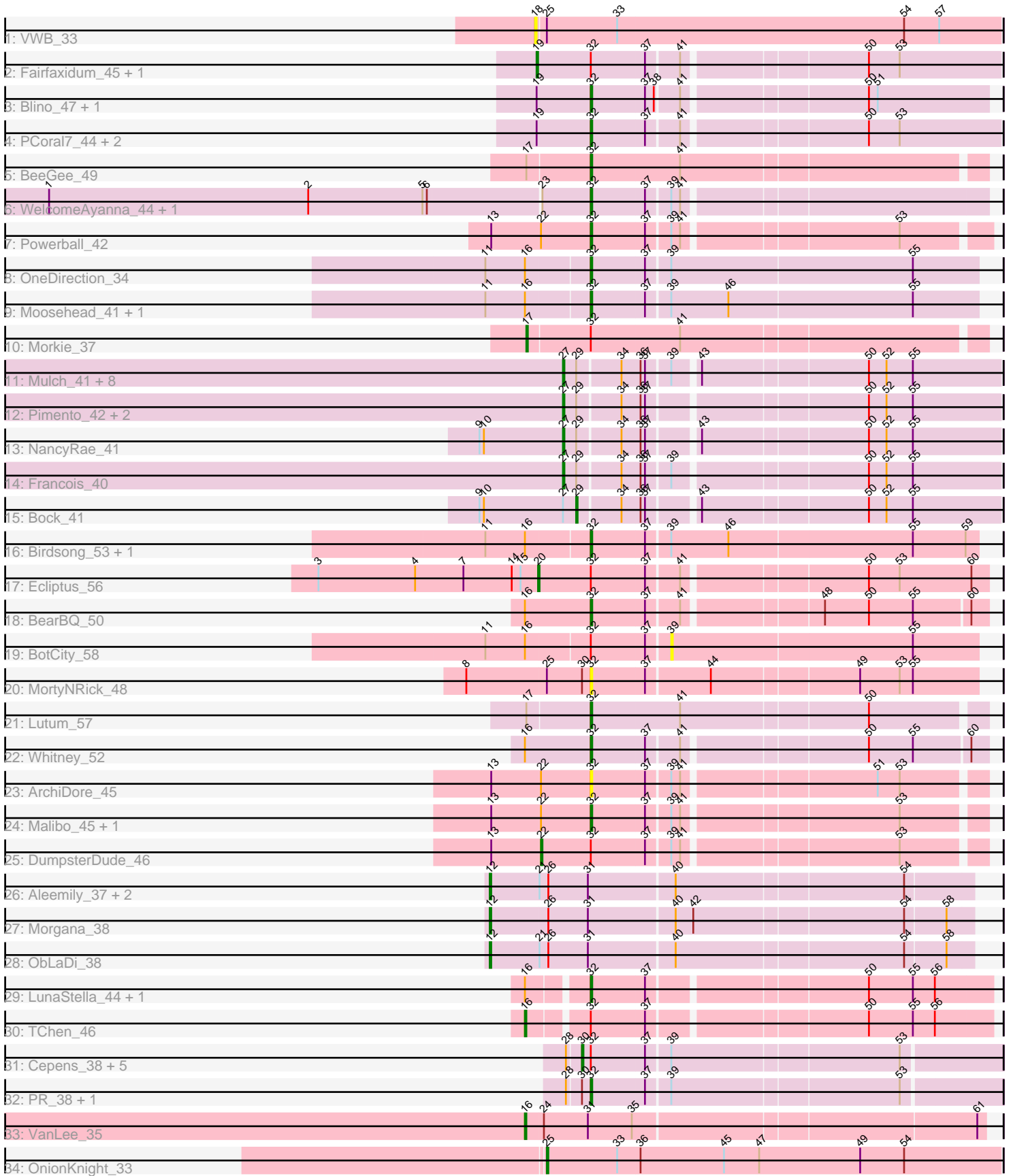


Pham 224577



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 224577 Report

This analysis was run 03/28/25 on database version 593.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 224577 has 61 members, 5 are drafts.

Phages represented in each track:

- Track 1 : VWB_33
- Track 2 : Fairfaxidum_45, Toast_44
- Track 3 : Blino_47, CarolAnn_46
- Track 4 : PCoral7_44, PrincePatrick_43, William_45
- Track 5 : BeeGee_49
- Track 6 : WelcomeAyanna_44, ThankyouJordi_44
- Track 7 : Powerball_42
- Track 8 : OneDirection_34
- Track 9 : Moosehead_41, Phabuloso_54
- Track 10 : Morkie_37
- Track 11 : Mulch_41, Ayotoya_41, Chop_41, GrandSlam_41, Nadeem_41, WheatThin_41, Parada_41, Brylie_41, Hamood_41
- Track 12 : Pimento_42, BetterKatz_41, DelRio_42
- Track 13 : NancyRae_41
- Track 14 : Francois_40
- Track 15 : Bock_41
- Track 16 : Birdsong_53, Asapag_53
- Track 17 : Ecliptus_56
- Track 18 : BearBQ_50
- Track 19 : BotCity_58
- Track 20 : MortyNRick_48
- Track 21 : Lutum_57
- Track 22 : Whitney_52
- Track 23 : ArchiDore_45
- Track 24 : Malibo_45, Ruthy_44
- Track 25 : DumpsterDude_46
- Track 26 : Aleemily_37, Cafasso_38, ModicumRichard_38
- Track 27 : Morgana_38
- Track 28 : ObLaDi_38
- Track 29 : LunaStella_44, MooMoo_43
- Track 30 : TChen_46
- Track 31 : Cepens_38, Argie_39, Jeon_38, GodPhather_39, Megabear_38, Taptic_38

- Track 32 : PR_38, D12_37
- Track 33 : VanLee_35
- Track 34 : OnionKnight_33

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

The start number called the most often in the published annotations is 32, it was called in 23 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ArchiDore_45, Asapag_53, BearBQ_50, BeeGee_49, Birdsong_53, Blino_47, CarolAnn_46, D12_37, LunaStella_44, Lutum_57, Malibo_45, MooMoo_43, Moosehead_41, MortyNRick_48, OneDirection_34, PCoral7_44, PR_38, Phabuloso_54, Powerball_42, PrincePatrick_43, Ruthy_44, ThankyouJordi_44, WelcomeAyanna_44, Whitney_52, William_45,

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

- Argie_39, BotCity_58, Cepens_38, DumpsterDude_46, Ecliptus_56, Fairfaxidum_45, GodPhather_39, Jeon_38, Megabear_38, Morkie_37, TChen_46, Taptic_38, Toast_44,

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

- Aleemily_37, Ayotoya_41, BetterKatz_41, Bock_41, Brylie_41, Cafasso_38, Chop_41, DelRio_42, Francois_40, GrandSlam_41, Hamood_41, ModicumRichard_38, Morgana_38, Mulch_41, Nadeem_41, NancyRae_41, ObLaDi_38, OnionKnight_33, Parada_41, Pimento_42, VWB_33, VanLee_35, WheatThin_41,

Summary by start number:

Start 12:

- Found in 5 of 61 (8.2%) of genes in pham
- Manual Annotations of this start: 4 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily_37 (DZ), Cafasso_38 (DZ), ModicumRichard_38 (DZ), Morgana_38 (DZ), ObLaDi_38 (DZ),

Start 16:

- Found in 12 of 61 (19.7%) of genes in pham
- Manual Annotations of this start: 2 of 56
- Called 16.7% of time when present
- Phage (with cluster) where this start called: TChen_46 (F4), VanLee_35 (singleton),

Start 17:

- Found in 3 of 61 (4.9%) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Morkie_37 (DH),

Start 18:

- Found in 1 of 61 (1.6%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: VWB_33 (BA),

Start 19:

- Found in 7 of 61 (11.5%) of genes in pham
- Manual Annotations of this start: 2 of 56
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Fairfaxidum_45 (CV), Toast_44 (CV),

Start 20:

- Found in 1 of 61 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ecliptus_56 (DN),

Start 22:

- Found in 5 of 61 (8.2%) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 20.0% of time when present
- Phage (with cluster) where this start called: DumpsterDude_46 (DW),

Start 25:

- Found in 3 of 61 (4.9%) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 33.3% of time when present
- Phage (with cluster) where this start called: OnionKnight_33 (singleton),

Start 27:

- Found in 15 of 61 (24.6%) of genes in pham
- Manual Annotations of this start: 14 of 56
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Ayotoya_41 (DI), BetterKatz_41 (DI), Brylie_41 (DI), Chop_41 (DI), DelRio_42 (DI), Francois_40 (DI), GrandSlam_41 (DI), Hamood_41 (DI), Mulch_41 (DI), Nadeem_41 (DI), NancyRae_41 (DI), Parada_41 (DI), Pimento_42 (DI), WheatThin_41 (DI),

Start 29:

- Found in 15 of 61 (24.6%) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Bock_41 (DI),

Start 30:

- Found in 9 of 61 (14.8%) of genes in pham
- Manual Annotations of this start: 6 of 56
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Argie_39 (W), Cepens_38 (W), GodPhather_39 (W), Jeon_38 (W), Megabear_38 (W), Taptic_38 (W),

Start 32:

- Found in 38 of 61 (62.3%) of genes in pham

- Manual Annotations of this start: 23 of 56
- Called 65.8% of time when present
- Phage (with cluster) where this start called: ArchiDore_45 (DW), Asapag_53 (DN1), BearBQ_50 (DN), BeeGee_49 (CY), Birdsong_53 (DN), Blino_47 (CV), CarolAnn_46 (CV), D12_37 (W), LunaStella_44 (F4), Lutum_57 (DN1), Malibo_45 (DW), MooMoo_43 (singleton), Moosehead_41 (CZ6), MortyNRick_48 (DN), OneDirection_34 (CZ6), PCoral7_44 (CV), PR_38 (W), Phabuloso_54 (DN1), Powerball_42 (CZ4), PrincePatrick_43 (CV), Ruthy_44 (DW), ThankyouJordi_44 (CZ1), WelcomeAyanna_44 (CZ1), Whitney_52 (DN1), William_45 (CV),

Start 39:

- Found in 31 of 61 (50.8%) of genes in pham
- No Manual Annotations of this start.
- Called 3.2% of time when present
- Phage (with cluster) where this start called: BotCity_58 (DN),

Summary by clusters:

There are 15 clusters represented in this pham: DN, singleton, F4, BA, DH, DI, CZ1, CZ6, CZ4, CY, DZ, W, DW, DN1, CV,

Info for manual annotations of cluster CV:

- Start number 19 was manually annotated 2 times for cluster CV.
- Start number 32 was manually annotated 5 times for cluster CV.

Info for manual annotations of cluster CY:

- Start number 32 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CZ1:

- Start number 32 was manually annotated 2 times for cluster CZ1.

Info for manual annotations of cluster CZ4:

- Start number 32 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ6:

- Start number 32 was manually annotated 2 times for cluster CZ6.

Info for manual annotations of cluster DH:

- Start number 17 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DI:

- Start number 27 was manually annotated 14 times for cluster DI.
- Start number 29 was manually annotated 1 time for cluster DI.

Info for manual annotations of cluster DN:

- Start number 20 was manually annotated 1 time for cluster DN.
- Start number 32 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 32 was manually annotated 4 times for cluster DN1.

Info for manual annotations of cluster DW:

- Start number 22 was manually annotated 1 time for cluster DW.
- Start number 32 was manually annotated 2 times for cluster DW.

Info for manual annotations of cluster DZ:

- Start number 12 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster F4:

- Start number 16 was manually annotated 1 time for cluster F4.
- Start number 32 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster W:

- Start number 30 was manually annotated 6 times for cluster W.
- Start number 32 was manually annotated 2 times for cluster W.

Gene Information:

Gene: Aleemily_37 Start: 31413, Stop: 31730, Start Num: 12

Candidate Starts for Aleemily_37:

(Start: 12 @31413 has 4 MA's), (21, 31446), (26, 31452), (31, 31479), (40, 31536), (54, 31686),

Gene: ArchiDore_45 Start: 36013, Stop: 36261, Start Num: 32

Candidate Starts for ArchiDore_45:

(13, 35947), (Start: 22 @35980 has 1 MA's), (Start: 32 @36013 has 23 MA's), (37, 36049), (39, 36064), (41, 36070), (51, 36193), (53, 36208),

Gene: Argie_39 Start: 38767, Stop: 39039, Start Num: 30

Candidate Starts for Argie_39:

(28, 38758), (Start: 30 @38767 has 6 MA's), (Start: 32 @38773 has 23 MA's), (37, 38809), (39, 38824), (53, 38974),

Gene: Asapag_53 Start: 35734, Stop: 35991, Start Num: 32

Candidate Starts for Asapag_53:

(11, 35665), (Start: 16 @35692 has 2 MA's), (Start: 32 @35734 has 23 MA's), (37, 35770), (39, 35785), (46, 35824), (55, 35947), (59, 35983),

Gene: Ayotoya_41 Start: 33075, Stop: 33353, Start Num: 27

Candidate Starts for Ayotoya_41:

(Start: 27 @33075 has 14 MA's), (Start: 29 @33084 has 1 MA's), (34, 33111), (36, 33123), (37, 33126), (39, 33141), (43, 33156), (50, 33264), (52, 33276), (55, 33294),

Gene: BearBQ_50 Start: 36850, Stop: 37101, Start Num: 32

Candidate Starts for BearBQ_50:

(Start: 16 @36805 has 2 MA's), (Start: 32 @36850 has 23 MA's), (37, 36886), (41, 36907), (48, 36994), (50, 37024), (55, 37054), (60, 37090),

Gene: BeeGee_49 Start: 36014, Stop: 36271, Start Num: 32

Candidate Starts for BeeGee_49:

(Start: 17 @35972 has 1 MA's), (Start: 32 @36014 has 23 MA's), (41, 36074),

Gene: BetterKatz_41 Start: 32601, Stop: 32837, Start Num: 27

Candidate Starts for BetterKatz_41:

(Start: 27 @32601 has 14 MA's), (Start: 29 @32610 has 1 MA's), (34, 32637), (36, 32649), (37, 32652), (50, 32790), (52, 32802), (55, 32820),

Gene: Birdsong_53 Start: 35955, Stop: 36212, Start Num: 32

Candidate Starts for Birdsong_53:

(11, 35886), (Start: 16 @35913 has 2 MA's), (Start: 32 @35955 has 23 MA's), (37, 35991), (39, 36006), (46, 36045), (55, 36168), (59, 36204),

Gene: Blino_47 Start: 38067, Stop: 38321, Start Num: 32

Candidate Starts for Blino_47:

(Start: 19 @38031 has 2 MA's), (Start: 32 @38067 has 23 MA's), (37, 38103), (38, 38109), (41, 38124), (50, 38241), (51, 38247),

Gene: Bock_41 Start: 32304, Stop: 32573, Start Num: 29

Candidate Starts for Bock_41:

(9, 32238), (10, 32241), (Start: 27 @32295 has 14 MA's), (Start: 29 @32304 has 1 MA's), (34, 32331), (36, 32343), (37, 32346), (43, 32376), (50, 32484), (52, 32496), (55, 32514),

Gene: BotCity_58 Start: 36552, Stop: 36758, Start Num: 39

Candidate Starts for BotCity_58:

(11, 36432), (Start: 16 @36459 has 2 MA's), (Start: 32 @36501 has 23 MA's), (37, 36537), (39, 36552), (55, 36714),

Gene: Brylie_41 Start: 32342, Stop: 32620, Start Num: 27

Candidate Starts for Brylie_41:

(Start: 27 @32342 has 14 MA's), (Start: 29 @32351 has 1 MA's), (34, 32378), (36, 32390), (37, 32393), (39, 32408), (43, 32423), (50, 32531), (52, 32543), (55, 32561),

Gene: Cafasso_38 Start: 31987, Stop: 32304, Start Num: 12

Candidate Starts for Cafasso_38:

(Start: 12 @31987 has 4 MA's), (21, 32020), (26, 32026), (31, 32053), (40, 32110), (54, 32260),

Gene: CarolAnn_46 Start: 38066, Stop: 38320, Start Num: 32

Candidate Starts for CarolAnn_46:

(Start: 19 @38030 has 2 MA's), (Start: 32 @38066 has 23 MA's), (37, 38102), (38, 38108), (41, 38123), (50, 38240), (51, 38246),

Gene: Cepens_38 Start: 38482, Stop: 38754, Start Num: 30

Candidate Starts for Cepens_38:

(28, 38473), (Start: 30 @38482 has 6 MA's), (Start: 32 @38488 has 23 MA's), (37, 38524), (39, 38539), (53, 38689),

Gene: Chop_41 Start: 32822, Stop: 33100, Start Num: 27

Candidate Starts for Chop_41:

(Start: 27 @32822 has 14 MA's), (Start: 29 @32831 has 1 MA's), (34, 32858), (36, 32870), (37, 32873), (39, 32888), (43, 32903), (50, 33011), (52, 33023), (55, 33041),

Gene: D12_37 Start: 39036, Stop: 39302, Start Num: 32

Candidate Starts for D12_37:

(28, 39021), (Start: 30 @39030 has 6 MA's), (Start: 32 @39036 has 23 MA's), (37, 39072), (39, 39087), (53, 39237),

Gene: DelRio_42 Start: 33530, Stop: 33808, Start Num: 27

Candidate Starts for DelRio_42:

(Start: 27 @33530 has 14 MA's), (Start: 29 @33539 has 1 MA's), (34, 33566), (36, 33578), (37, 33581), (50, 33719), (52, 33731), (55, 33749),

Gene: DumpsterDude_46 Start: 38205, Stop: 38486, Start Num: 22

Candidate Starts for DumpsterDude_46:

(13, 38172), (Start: 22 @38205 has 1 MA's), (Start: 32 @38238 has 23 MA's), (37, 38274), (39, 38289), (41, 38295), (53, 38433),

Gene: Ecliptus_56 Start: 37774, Stop: 38064, Start Num: 20

Candidate Starts for Ecliptus_56:

(3, 37624), (4, 37690), (7, 37723), (14, 37756), (15, 37762), (Start: 20 @37774 has 1 MA's), (Start: 32 @37810 has 23 MA's), (37, 37846), (41, 37867), (50, 37984), (53, 38005), (60, 38053),

Gene: Fairfaxidum_45 Start: 35457, Stop: 35756, Start Num: 19

Candidate Starts for Fairfaxidum_45:

(Start: 19 @35457 has 2 MA's), (Start: 32 @35493 has 23 MA's), (37, 35529), (41, 35550), (50, 35667), (53, 35688),

Gene: Francois_40 Start: 32426, Stop: 32704, Start Num: 27

Candidate Starts for Francois_40:

(Start: 27 @32426 has 14 MA's), (Start: 29 @32435 has 1 MA's), (34, 32462), (36, 32474), (37, 32477), (39, 32492), (50, 32615), (52, 32627), (55, 32645),

Gene: GodPhather_39 Start: 39246, Stop: 39518, Start Num: 30

Candidate Starts for GodPhather_39:

(28, 39237), (Start: 30 @39246 has 6 MA's), (Start: 32 @39252 has 23 MA's), (37, 39288), (39, 39303), (53, 39453),

Gene: GrandSlam_41 Start: 32822, Stop: 33100, Start Num: 27

Candidate Starts for GrandSlam_41:

(Start: 27 @32822 has 14 MA's), (Start: 29 @32831 has 1 MA's), (34, 32858), (36, 32870), (37, 32873), (39, 32888), (43, 32903), (50, 33011), (52, 33023), (55, 33041),

Gene: Hamood_41 Start: 32822, Stop: 33100, Start Num: 27

Candidate Starts for Hamood_41:

(Start: 27 @32822 has 14 MA's), (Start: 29 @32831 has 1 MA's), (34, 32858), (36, 32870), (37, 32873), (39, 32888), (43, 32903), (50, 33011), (52, 33023), (55, 33041),

Gene: Jeon_38 Start: 38988, Stop: 39260, Start Num: 30

Candidate Starts for Jeon_38:

(28, 38979), (Start: 30 @38988 has 6 MA's), (Start: 32 @38994 has 23 MA's), (37, 39030), (39, 39045), (53, 39195),

Gene: LunaStella_44 Start: 33802, Stop: 34059, Start Num: 32

Candidate Starts for LunaStella_44:

(Start: 16 @33766 has 2 MA's), (Start: 32 @33802 has 23 MA's), (37, 33838), (50, 33976), (55, 34006), (56, 34021),

Gene: Lutum_57 Start: 36995, Stop: 37252, Start Num: 32

Candidate Starts for Lutum_57:

(Start: 17 @36953 has 1 MA's), (Start: 32 @36995 has 23 MA's), (41, 37055), (50, 37178),

Gene: Malibo_45 Start: 35237, Stop: 35485, Start Num: 32

Candidate Starts for Malibo_45:

(13, 35171), (Start: 22 @35204 has 1 MA's), (Start: 32 @35237 has 23 MA's), (37, 35273), (39, 35288), (41, 35294), (53, 35432),

Gene: Megabear_38 Start: 38403, Stop: 38675, Start Num: 30

Candidate Starts for Megabear_38:

(28, 38394), (Start: 30 @38403 has 6 MA's), (Start: 32 @38409 has 23 MA's), (37, 38445), (39, 38460), (53, 38610),

Gene: ModicumRichard_38 Start: 31986, Stop: 32303, Start Num: 12

Candidate Starts for ModicumRichard_38:

(Start: 12 @31986 has 4 MA's), (21, 32019), (26, 32025), (31, 32052), (40, 32109), (54, 32259),

Gene: MooMoo_43 Start: 34078, Stop: 34335, Start Num: 32

Candidate Starts for MooMoo_43:

(Start: 16 @34042 has 2 MA's), (Start: 32 @34078 has 23 MA's), (37, 34114), (50, 34252), (55, 34282), (56, 34297),

Gene: Moosehead_41 Start: 28984, Stop: 29241, Start Num: 32

Candidate Starts for Moosehead_41:

(11, 28915), (Start: 16 @28942 has 2 MA's), (Start: 32 @28984 has 23 MA's), (37, 29020), (39, 29035), (46, 29074), (55, 29197),

Gene: Morgana_38 Start: 31938, Stop: 32255, Start Num: 12

Candidate Starts for Morgana_38:

(Start: 12 @31938 has 4 MA's), (26, 31977), (31, 32004), (40, 32061), (42, 32073), (54, 32211), (58, 32238),

Gene: Morkie_37 Start: 28817, Stop: 29116, Start Num: 17

Candidate Starts for Morkie_37:

(Start: 17 @28817 has 1 MA's), (Start: 32 @28859 has 23 MA's), (41, 28919),

Gene: MortyNRick_48 Start: 36007, Stop: 36261, Start Num: 32

Candidate Starts for MortyNRick_48:

(8, 35923), (Start: 25 @35977 has 1 MA's), (Start: 30 @36001 has 6 MA's), (Start: 32 @36007 has 23 MA's), (37, 36043), (44, 36085), (49, 36181), (53, 36208), (55, 36217),

Gene: Mulch_41 Start: 32342, Stop: 32620, Start Num: 27

Candidate Starts for Mulch_41:

(Start: 27 @32342 has 14 MA's), (Start: 29 @32351 has 1 MA's), (34, 32378), (36, 32390), (37, 32393), (39, 32408), (43, 32423), (50, 32531), (52, 32543), (55, 32561),

Gene: Nadeem_41 Start: 32342, Stop: 32620, Start Num: 27

Candidate Starts for Nadeem_41:

(Start: 27 @32342 has 14 MA's), (Start: 29 @32351 has 1 MA's), (34, 32378), (36, 32390), (37, 32393), (39, 32408), (43, 32423), (50, 32531), (52, 32543), (55, 32561),

Gene: NancyRae_41 Start: 32352, Stop: 32630, Start Num: 27

Candidate Starts for NancyRae_41:

(9, 32295), (10, 32298), (Start: 27 @32352 has 14 MA's), (Start: 29 @32361 has 1 MA's), (34, 32388), (36, 32400), (37, 32403), (43, 32433), (50, 32541), (52, 32553), (55, 32571),

Gene: ObLaDi_38 Start: 31970, Stop: 32287, Start Num: 12
Candidate Starts for ObLaDi_38:
(Start: 12 @31970 has 4 MA's), (21, 32003), (26, 32009), (31, 32036), (40, 32093), (54, 32243), (58, 32270),

Gene: OneDirection_34 Start: 27370, Stop: 27627, Start Num: 32
Candidate Starts for OneDirection_34:
(11, 27301), (Start: 16 @27328 has 2 MA's), (Start: 32 @27370 has 23 MA's), (37, 27406), (39, 27421), (55, 27583),

Gene: OnionKnight_33 Start: 25282, Stop: 25590, Start Num: 25
Candidate Starts for OnionKnight_33:
(Start: 25 @25282 has 1 MA's), (33, 25330), (36, 25345), (45, 25402), (47, 25426), (49, 25495), (54, 25525),

Gene: PCoral7_44 Start: 34911, Stop: 35174, Start Num: 32
Candidate Starts for PCoral7_44:
(Start: 19 @34875 has 2 MA's), (Start: 32 @34911 has 23 MA's), (37, 34947), (41, 34968), (50, 35085), (53, 35106),

Gene: PR_38 Start: 39013, Stop: 39279, Start Num: 32
Candidate Starts for PR_38:
(28, 38998), (Start: 30 @39007 has 6 MA's), (Start: 32 @39013 has 23 MA's), (37, 39049), (39, 39064), (53, 39214),

Gene: Parada_41 Start: 32342, Stop: 32620, Start Num: 27
Candidate Starts for Parada_41:
(Start: 27 @32342 has 14 MA's), (Start: 29 @32351 has 1 MA's), (34, 32378), (36, 32390), (37, 32393), (39, 32408), (43, 32423), (50, 32531), (52, 32543), (55, 32561),

Gene: Phabuloso_54 Start: 36332, Stop: 36589, Start Num: 32
Candidate Starts for Phabuloso_54:
(11, 36263), (Start: 16 @36290 has 2 MA's), (Start: 32 @36332 has 23 MA's), (37, 36368), (39, 36383), (46, 36422), (55, 36545),

Gene: Pimento_42 Start: 31999, Stop: 32277, Start Num: 27
Candidate Starts for Pimento_42:
(Start: 27 @31999 has 14 MA's), (Start: 29 @32008 has 1 MA's), (34, 32035), (36, 32047), (37, 32050), (50, 32188), (52, 32200), (55, 32218),

Gene: Powerball_42 Start: 33050, Stop: 33301, Start Num: 32
Candidate Starts for Powerball_42:
(13, 32984), (Start: 22 @33017 has 1 MA's), (Start: 32 @33050 has 23 MA's), (37, 33086), (39, 33101), (41, 33107), (53, 33245),

Gene: PrincePatrick_43 Start: 33264, Stop: 33527, Start Num: 32
Candidate Starts for PrincePatrick_43:
(Start: 19 @33228 has 2 MA's), (Start: 32 @33264 has 23 MA's), (37, 33300), (41, 33321), (50, 33438), (53, 33459),

Gene: Ruthy_44 Start: 35600, Stop: 35848, Start Num: 32
Candidate Starts for Ruthy_44:

(13, 35534), (Start: 22 @35567 has 1 MA's), (Start: 32 @35600 has 23 MA's), (37, 35636), (39, 35651), (41, 35657), (53, 35795),

Gene: TChen_46 Start: 35717, Stop: 36010, Start Num: 16

Candidate Starts for TChen_46:

(Start: 16 @35717 has 2 MA's), (Start: 32 @35753 has 23 MA's), (37, 35789), (50, 35927), (55, 35957), (56, 35972),

Gene: Taptic_38 Start: 38403, Stop: 38675, Start Num: 30

Candidate Starts for Taptic_38:

(28, 38394), (Start: 30 @38403 has 6 MA's), (Start: 32 @38409 has 23 MA's), (37, 38445), (39, 38460), (53, 38610),

Gene: ThankyouJordi_44 Start: 36245, Stop: 36499, Start Num: 32

Candidate Starts for ThankyouJordi_44:

(1, 35879), (2, 36056), (5, 36134), (6, 36137), (23, 36212), (Start: 32 @36245 has 23 MA's), (37, 36281), (39, 36296), (41, 36302),

Gene: Toast_44 Start: 34875, Stop: 35174, Start Num: 19

Candidate Starts for Toast_44:

(Start: 19 @34875 has 2 MA's), (Start: 32 @34911 has 23 MA's), (37, 34947), (41, 34968), (50, 35085), (53, 35106),

Gene: VWB_33 Start: 28495, Stop: 28809, Start Num: 18

Candidate Starts for VWB_33:

(18, 28495), (Start: 25 @28501 has 1 MA's), (33, 28549), (54, 28744), (57, 28768),

Gene: VanLee_35 Start: 29075, Stop: 29377, Start Num: 16

Candidate Starts for VanLee_35:

(Start: 16 @29075 has 2 MA's), (24, 29087), (31, 29117), (35, 29147), (61, 29372),

Gene: WelcomeAyanna_44 Start: 36392, Stop: 36646, Start Num: 32

Candidate Starts for WelcomeAyanna_44:

(1, 36026), (2, 36203), (5, 36281), (6, 36284), (23, 36359), (Start: 32 @36392 has 23 MA's), (37, 36428), (39, 36443), (41, 36449),

Gene: WheatThin_41 Start: 32342, Stop: 32620, Start Num: 27

Candidate Starts for WheatThin_41:

(Start: 27 @32342 has 14 MA's), (Start: 29 @32351 has 1 MA's), (34, 32378), (36, 32390), (37, 32393), (39, 32408), (43, 32423), (50, 32531), (52, 32543), (55, 32561),

Gene: Whitney_52 Start: 37087, Stop: 37338, Start Num: 32

Candidate Starts for Whitney_52:

(Start: 16 @37042 has 2 MA's), (Start: 32 @37087 has 23 MA's), (37, 37123), (41, 37144), (50, 37261), (55, 37291), (60, 37327),

Gene: William_45 Start: 34949, Stop: 35212, Start Num: 32

Candidate Starts for William_45:

(Start: 19 @34913 has 2 MA's), (Start: 32 @34949 has 23 MA's), (37, 34985), (41, 35006), (50, 35123), (53, 35144),