Zoomed Pham 347557



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 347557 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347557 has 75 members, 5 are drafts.

Phages represented in each track:
- Track 1 : Turuncu_53
- Track 2 : Flapper_53
- Track 3 : GTE5_40
- Track 4 : Dalilpop_53
- Track 5 : GRU1_38
- Track 6 : GTE8_37
- Track 7 : Jifall16_47, Phomeo_47
- Track 8 : Tracker_48
- Track 9 : Buggaboo_50, SuperSulley_50
- Track 10 : Outis_50, StarStruck_50
- Track 11 : Kabluna_52
- Track 12 : Kurt_48, Emianna_48
- Track 13 : MerCougar_50
- Track 14 : NatB6_48, Arti_48, Foxboro_49, KidneyBean_48, Wheezy_48
- Track 15 : NovumRegina_48, GrootJr_50
- Track 16 : Commandaria_49
- Track 17 : NosilaM_52
- Track 18 : Bonum_52
- Track 19 : RedRaider_56
- Track 20 : Ennea_55
- Track 21 : Skysand_51
- Track 22 : Patio_52
- Track 23 : Lollipop1437_54
- Track 24 : Float294_51
- Track 25 : BiPauneto_50, Sukkupi_49, Yndexa_49
- Track 26 : HubbaBubba_45
- Track 27 : Marietta_50
- Track 28 : WhoseManz_49
- Track 29 : NadineRae_48, Pemberton_50
- Track 30 : IDyn_49
- Track 31 : Scuba_56
- Track 32 : Fury_56, Pleakley_56
- Track 33 : HomeFry_53
- Track 34 : ZAYM_22
- Track 35 : Yvonnetastic_48
- Track 36 : JonJames_50
- Track 37 : Cardigan_49

• Track 38 : Lilbeanie_38
• Track 39 : SussRoloMann_30, Chop_30, Bock_30, Parada_30, Hamood_30, Ayotoya_30, Mulch_30, WheatThin_30, GrandSlam_30
• Track 40 : Nadeem_30, NancyRae_30, Brylie_30
• Track 41 : Francois_30
• Track 42 : Pimento_30
• Track 43 : BetterKatz_30
• Track 44 : DelRio_31
• Track 45 : Ecliptus_27
• Track 46 : Leroy_23, Crater_21, Phistory_24
• Track 47 : Apricot_22, Horus_23
• Track 48 : Bipper_32
• Track 49 : Cracklewink_32

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

The start number called the most often in the published annotations is 15, it was called in 44 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Arti_48, BiPauneto_50, Bonum_52, Buggaboo_50, Cardigan_49, Commandaria_49, Crater_21, Emianna_48, Ennea_55, Float294_51, Foxboro_49, Fury_56, GTE8_37, HomeFry_53, HubbaBubba_45, IDyn_49, Jifall16_47, Kabluna_52, KidneyBean_48, Kurt_48, Leroy_23, Lilbeanie_38, Lollipop1437_54, Marietta_50, MerCougar_50, NadineRae_48, NatB6_48, NosilaM_52, Outis_50, Patio_52, Pemberton_50, Phistory_24, Phomeo_47, Pleakley_56, RedRaider_56, Scuba_56, Skysand_51, StarStruck_50, Sukkupi_49, SuperSulley_50, Tracker_48, Turuncu_53, Wheezy_48, Yndexa_49, Yvonnetastic_48, ZAYM_22,

Genes that have the "Most Annotated" start but do not call it:
• Apricot_22, Dalilpop_53, Ecliptus_27, Flapper_53, GRU1_38, GTE5_40, GrootJr_50, Horus_23, JonJames_50, NovumRegina_48, WhoseManz_49,

Genes that do not have the "Most Annotated" start:
• Ayotoya_30, BetterKatz_30, Bipper_32, Bock_30, Brylie_30, Chop_30, Cracklewink_32, DelRio_31, Francois_30, GrandSlam_30, Hamood_30, Mulch_30, Nadeem_30, NancyRae_30, Parada_30, Pimento_30, SussRoloMann_30, WheatThin_30,

Summary by start number:

Start 12:
• Found in 16 of 75 (21.3%) of genes in pham
• Manual Annotations of this start: 5 of 70
• Called 31.2% of time when present
• Phage (with cluster) where this start called: BetterKatz_30 (DI), Brylie_30 (DI), Nadeem_30 (DI), NancyRae_30 (DI), Pimento_30 (DI),

Start 13:
• Found in 16 of 75 (21.3%) of genes in pham

• Manual Annotations of this start: 10 of 70
• Called 68.8% of time when present
• Phage (with cluster) where this start called: Ayotoya_30 (DI), Bock_30 (DI), Chop_30 (DI), DelRio_31 (DI), Francois_30 (DI), GrandSlam_30 (DI), Hamood_30 (DI), Mulch_30 (DI), Parada_30 (DI), SussRoloMann_30 (DI), WheatThin_30 (DI),

Start 14:
• Found in 49 of 75 (65.3%) of genes in pham
• Manual Annotations of this start: 10 of 70
• Called 24.5% of time when present
• Phage (with cluster) where this start called: Apricot_22 (DN3), Bipper_32 (Y), Cracklewink_32 (Y), Dalilpop_53 (CR1), Ecliptus_27 (DN), Flapper_53 (CR1), GRU1_38 (CR1), GTE5_40 (CR1), GrootJr_50 (CR2), Horus_23 (DN1), NovumRegina_48 (CR2), WhoseManz_49 (CR4),

Start 15:
• Found in 57 of 75 (76.0%) of genes in pham
• Manual Annotations of this start: 44 of 70
• Called 80.7% of time when present
• Phage (with cluster) where this start called: Arti_48 (CR2), BiPauneto_50 (CR4), Bonum_52 (CR2), Buggaboo_50 (CR2), Cardigan_49 (DD), Commandaria_49 (CR2), Crater_21 (DN3), Emianna_48 (CR2), Ennea_55 (CR3), Float294_51 (CR3), Foxboro_49 (CR2), Fury_56 (CR5), GTE8_37 (CR2), HomeFry_53 (CR5), HubbaBubba_45 (CR4), IDyn_49 (CR4), Jifall16_47 (CR2), Kabluna_52 (CR2), KidneyBean_48 (CR2), Kurt_48 (CR2), Leroy_23 (DN1), Lilbeanie_38 (DE5), Lollipop1437_54 (CR3), Marietta_50 (CR4), MerCougar_50 (CR2), NadineRae_48 (CR4), NatB6_48 (CR2), NosilaM_52 (CR2), Outis_50 (CR2), Patio_52 (CR3), Pemberton_50 (CR4), Phistory_24 (DN1), Phomeo_47 (CR2), Pleakley_56 (CR5), RedRaider_56 (CR3), Scuba_56 (CR5), Skysand_51 (CR3), StarStruck_50 (CR2), Sukkupi_49 (CR4), SuperSulley_50 (CR2), Tracker_48 (CR2), Turuncu_53 (CR1), Wheezy_48 (CR2), Yndexa_49 (CR4), Yvonnetastic_48 (DD), ZAYM_22 (DB),

Start 20:
• Found in 45 of 75 (60.0%) of genes in pham
• Manual Annotations of this start: 1 of 70
• Called 2.2% of time when present
• Phage (with cluster) where this start called: JonJames_50 (DD),

Summary by clusters:

There are 13 clusters represented in this pham: CR2, CR3, DN, CR1, CR4, DI, DD, CR5, DB, DE5, DN1, DN3, Y,

Info for manual annotations of cluster CR1:
•Start number 14 was manually annotated 2 times for cluster CR1.
•Start number 15 was manually annotated 1 time for cluster CR1.

Info for manual annotations of cluster CR2:
•Start number 14 was manually annotated 2 times for cluster CR2.
•Start number 15 was manually annotated 19 times for cluster CR2.

Info for manual annotations of cluster CR3:
•Start number 15 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:
•Start number 14 was manually annotated 1 time for cluster CR4.
•Start number 15 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:
•Start number 15 was manually annotated 4 times for cluster CR5.

Info for manual annotations of cluster DD:
•Start number 15 was manually annotated 2 times for cluster DD.
•Start number 20 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DE5:
•Start number 15 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DI:
•Start number 12 was manually annotated 5 times for cluster DI.
•Start number 13 was manually annotated 10 times for cluster DI.

Info for manual annotations of cluster DN:
•Start number 14 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 14 was manually annotated 1 time for cluster DN1.
•Start number 15 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster DN3:
•Start number 14 was manually annotated 1 time for cluster DN3.
•Start number 15 was manually annotated 1 time for cluster DN3.

Info for manual annotations of cluster Y:
•Start number 14 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: Apricot_22 Start: 18919, Stop: 19752, Start Num: 14
Candidate Starts for Apricot_22:
(Start: 14 @18919 has 10 MA's), (Start: 15 @18922 has 44 MA's), (Start: 20 @18949 has 1 MA's), (32, 19009), (38, 19048), (41, 19093), (49, 19207), (50, 19234), (52, 19261), (57, 19303), (63, 19375), (64, 19393), (66, 19402), (74, 19474), (77, 19504), (91, 19633), (93, 19648), (98, 19675),

Gene: Arti_48 Start: 37353, Stop: 38375, Start Num: 15
Candidate Starts for Arti_48:
(Start: 14 @37350 has 10 MA's), (Start: 15 @37353 has 44 MA's), (Start: 20 @37380 has 1 MA's), (32, 37443), (36, 37467), (46, 37596), (69, 37857), (79, 37965), (89, 38040), (94, 38094), (103, 38151), (104, 38157), (110, 38244), (111, 38274),

Gene: Ayotoya_30 Start: 26417, Stop: 27229, Start Num: 13
Candidate Starts for Ayotoya_30:

(9, 26321), (Start: 12 @26408 has 5 MA's), (Start: 13 @26417 has 10 MA's), (Start: 20 @26450 has 1 MA's), (30, 26498), (38, 26549), (41, 26594), (43, 26645), (53, 26759), (62, 26858), (76, 26981), (81, 27020), (86, 27065), (92, 27125), (96, 27158), (101, 27191),

Gene: BetterKatz_30 Start: 25881, Stop: 26702, Start Num: 12
Candidate Starts for BetterKatz_30:
(Start: 12 @25881 has 5 MA's), (Start: 13 @25890 has 10 MA's), (Start: 20 @25923 has 1 MA's), (30, 25971), (38, 26022), (41, 26067), (43, 26118), (53, 26232), (62, 26331), (76, 26454), (81, 26493), (86, 26538), (92, 26598), (96, 26631), (101, 26664),

Gene: BiPauneto_50 Start: 36862, Stop: 37881, Start Num: 15
Candidate Starts for BiPauneto_50:
(8, 36748), (Start: 14 @36859 has 10 MA's), (Start: 15 @36862 has 44 MA's), (25, 36919), (31, 36943), (32, 36952), (55, 37228), (60, 37282), (69, 37366), (80, 37477), (84, 37501), (86, 37522), (94, 37600), (100, 37648), (103, 37657), (104, 37663), (110, 37750), (113, 37801),

Gene: Bipper_32 Start: 28349, Stop: 29002, Start Num: 14
Candidate Starts for Bipper_32:
(Start: 14 @28349 has 10 MA's), (16, 28358), (17, 28364), (Start: 20 @28379 has 1 MA's), (22, 28391), (30, 28427), (33, 28442), (36, 28463), (38, 28478), (41, 28523), (49, 28637), (53, 28694), (55, 28715), (61, 28781), (63, 28805), (65, 28826), (76, 28922),

Gene: Bock_30 Start: 25640, Stop: 26452, Start Num: 13
Candidate Starts for Bock_30:
(9, 25544), (Start: 12 @25631 has 5 MA's), (Start: 13 @25640 has 10 MA's), (Start: 20 @25673 has 1 MA's), (30, 25721), (38, 25772), (41, 25817), (43, 25868), (53, 25982), (62, 26081), (76, 26204), (81, 26243), (86, 26288), (92, 26348), (96, 26381), (101, 26414),

Gene: Bonum_52 Start: 38006, Stop: 39028, Start Num: 15
Candidate Starts for Bonum_52:
(3, 37751), (Start: 14 @38003 has 10 MA's), (Start: 15 @38006 has 44 MA's), (21, 38036), (30, 38084), (32, 38096), (36, 38120), (46, 38249), (72, 38534), (79, 38618), (90, 38705), (97, 38765), (103, 38804), (104, 38810), (107, 38846), (108, 38855), (110, 38897), (111, 38927), (116, 38990),

Gene: Brylie_30 Start: 25619, Stop: 26440, Start Num: 12
Candidate Starts for Brylie_30:
(9, 25532), (Start: 12 @25619 has 5 MA's), (Start: 13 @25628 has 10 MA's), (Start: 20 @25661 has 1 MA's), (30, 25709), (38, 25760), (41, 25805), (43, 25856), (53, 25970), (62, 26069), (76, 26192), (81, 26231), (86, 26276), (92, 26336), (96, 26369), (101, 26402),

Gene: Buggaboo_50 Start: 38485, Stop: 39507, Start Num: 15
Candidate Starts for Buggaboo_50:
(1, 37918), (3, 38230), (Start: 14 @38482 has 10 MA's), (Start: 15 @38485 has 44 MA's), (21, 38515), (30, 38563), (32, 38575), (36, 38599), (46, 38728), (72, 39013), (79, 39097), (90, 39184), (97, 39244), (103, 39283), (104, 39289), (107, 39325), (111, 39406), (116, 39469),

Gene: Cardigan_49 Start: 35257, Stop: 36186, Start Num: 15
Candidate Starts for Cardigan_49:
(Start: 15 @35257 has 44 MA's), (Start: 20 @35284 has 1 MA's), (32, 35347), (41, 35431), (57, 35602), (70, 35734), (73, 35752), (79, 35824), (85, 35860), (99, 35980), (109, 36070),

Gene: Chop_30 Start: 26165, Stop: 26977, Start Num: 13
Candidate Starts for Chop_30:

(9, 26069), (Start: 12 @26156 has 5 MA's), (Start: 13 @26165 has 10 MA's), (Start: 20 @26198 has 1 MA's), (30, 26246), (38, 26297), (41, 26342), (43, 26393), (53, 26507), (62, 26606), (76, 26729), (81, 26768), (86, 26813), (92, 26873), (96, 26906), (101, 26939),

Gene: Commandaria_49 Start: 38469, Stop: 39491, Start Num: 15
Candidate Starts for Commandaria_49:
(Start: 14 @38466 has 10 MA's), (Start: 15 @38469 has 44 MA's), (32, 38559), (57, 38853), (68, 38961), (79, 39081), (84, 39111), (87, 39147), (103, 39267), (104, 39273), (107, 39309), (111, 39390), (114, 39432), (115, 39438), (116, 39453),

Gene: Cracklewink_32 Start: 28349, Stop: 29002, Start Num: 14
Candidate Starts for Cracklewink_32:
(Start: 14 @28349 has 10 MA's), (16, 28358), (17, 28364), (Start: 20 @28379 has 1 MA's), (22, 28391), (33, 28442), (36, 28463), (38, 28478), (40, 28514), (41, 28523), (49, 28637), (53, 28694), (55, 28715), (61, 28781), (63, 28805), (65, 28826), (76, 28922),

Gene: Crater_21 Start: 18922, Stop: 19752, Start Num: 15
Candidate Starts for Crater_21:
(Start: 14 @18919 has 10 MA's), (Start: 15 @18922 has 44 MA's), (Start: 20 @18949 has 1 MA's), (32, 19009), (38, 19048), (41, 19093), (49, 19207), (50, 19234), (52, 19261), (57, 19303), (63, 19375), (64, 19393), (66, 19402), (74, 19474), (77, 19504), (91, 19633), (93, 19648), (98, 19675),

Gene: Dalilpop_53 Start: 39623, Stop: 40648, Start Num: 14
Candidate Starts for Dalilpop_53:
(Start: 14 @39623 has 10 MA's), (Start: 15 @39626 has 44 MA's), (21, 39656), (32, 39716), (72, 40154), (79, 40238), (90, 40325), (103, 40424), (104, 40430), (106, 40448), (110, 40517), (115, 40595), (116, 40610),

Gene: DelRio_31 Start: 26636, Stop: 27448, Start Num: 13
Candidate Starts for DelRio_31:
(9, 26540), (11, 26612), (Start: 12 @26627 has 5 MA's), (Start: 13 @26636 has 10 MA's), (Start: 20 @26669 has 1 MA's), (24, 26690), (30, 26717), (38, 26768), (41, 26813), (43, 26864), (48, 26915), (53, 26978), (62, 27077), (76, 27200), (81, 27239), (86, 27284), (92, 27344), (96, 27377), (101, 27410),

Gene: Ecliptus_27 Start: 21245, Stop: 22066, Start Num: 14
Candidate Starts for Ecliptus_27:
(Start: 14 @21245 has 10 MA's), (Start: 15 @21248 has 44 MA's), (Start: 20 @21275 has 1 MA's), (23, 21293), (27, 21311), (32, 21335), (36, 21359), (38, 21374), (41, 21419), (47, 21491), (50, 21548), (55, 21599), (63, 21689), (64, 21707), (66, 21716), (74, 21788), (77, 21818), (91, 21947),

Gene: Emianna_48 Start: 38345, Stop: 39367, Start Num: 15
Candidate Starts for Emianna_48:
(Start: 14 @38342 has 10 MA's), (Start: 15 @38345 has 44 MA's), (Start: 20 @38372 has 1 MA's), (32, 38435), (36, 38459), (46, 38588), (58, 38735), (69, 38849), (79, 38957), (89, 39032), (94, 39086), (103, 39143), (104, 39149), (110, 39236), (111, 39266),

Gene: Ennea_55 Start: 39348, Stop: 40370, Start Num: 15
Candidate Starts for Ennea_55:
(Start: 14 @39345 has 10 MA's), (Start: 15 @39348 has 44 MA's), (32, 39438), (34, 39453), (39, 39498), (56, 39729), (69, 39852), (79, 39960), (103, 40146), (104, 40152), (110, 40239), (111, 40269), (116, 40332),

Gene: Flapper_53 Start: 39054, Stop: 40079, Start Num: 14

Candidate Starts for Flapper_53:
(Start: 14 @39054 has 10 MA's), (Start: 15 @39057 has 44 MA's), (21, 39087), (32, 39147), (67, 39543), (72, 39585), (79, 39669), (90, 39756), (103, 39855), (104, 39861), (110, 39948), (115, 40026), (116, 40041),

Gene: Float294_51 Start: 38790, Stop: 39812, Start Num: 15
Candidate Starts for Float294_51:
(Start: 14 @38787 has 10 MA's), (Start: 15 @38790 has 44 MA's), (32, 38880), (34, 38895), (39, 38940), (69, 39294), (79, 39402), (103, 39588), (104, 39594), (110, 39681), (111, 39711), (116, 39774),

Gene: Foxboro_49 Start: 38851, Stop: 39873, Start Num: 15
Candidate Starts for Foxboro_49:
(Start: 14 @38848 has 10 MA's), (Start: 15 @38851 has 44 MA's), (Start: 20 @38878 has 1 MA's), (32, 38941), (36, 38965), (46, 39094), (69, 39355), (79, 39463), (89, 39538), (94, 39592), (103, 39649), (104, 39655), (110, 39742), (111, 39772),

Gene: Francois_30 Start: 25654, Stop: 26466, Start Num: 13
Candidate Starts for Francois_30:
(Start: 12 @25645 has 5 MA's), (Start: 13 @25654 has 10 MA's), (18, 25675), (Start: 20 @25687 has 1 MA's), (30, 25735), (38, 25786), (41, 25831), (43, 25882), (53, 25996), (59, 26059), (62, 26095), (76, 26218), (81, 26257), (86, 26302), (92, 26362), (95, 26389),

Gene: Fury_56 Start: 37521, Stop: 38534, Start Num: 15
Candidate Starts for Fury_56:
(Start: 15 @37521 has 44 MA's), (Start: 20 @37548 has 1 MA's), (38, 37638), (40, 37674), (42, 37716), (45, 37734), (55, 37869), (62, 37947), (82, 38127), (103, 38304),

Gene: GRU1_38 Start: 30601, Stop: 31626, Start Num: 14
Candidate Starts for GRU1_38:
(3, 30349), (Start: 14 @30601 has 10 MA's), (Start: 15 @30604 has 44 MA's), (18, 30619), (21, 30634), (23, 30649), (32, 30694), (72, 31132), (79, 31216), (90, 31303), (103, 31402), (104, 31408), (110, 31495), (115, 31573), (116, 31588),

Gene: GTE5_40 Start: 31911, Stop: 32936, Start Num: 14
Candidate Starts for GTE5_40:
(1, 31347), (3, 31659), (Start: 14 @31911 has 10 MA's), (Start: 15 @31914 has 44 MA's), (21, 31944), (32, 32004), (72, 32442), (79, 32526), (90, 32613), (103, 32712), (104, 32718), (110, 32805), (115, 32883), (116, 32898),

Gene: GTE8_37 Start: 31603, Stop: 32625, Start Num: 15
Candidate Starts for GTE8_37:
(Start: 14 @31600 has 10 MA's), (Start: 15 @31603 has 44 MA's), (32, 31693), (34, 31708), (36, 31717), (46, 31846), (51, 31933), (61, 32035), (69, 32107), (79, 32215), (103, 32401), (104, 32407), (108, 32452), (110, 32494), (111, 32524), (116, 32587),

Gene: GrandSlam_30 Start: 26165, Stop: 26977, Start Num: 13
Candidate Starts for GrandSlam_30:
(9, 26069), (Start: 12 @26156 has 5 MA's), (Start: 13 @26165 has 10 MA's), (Start: 20 @26198 has 1 MA's), (30, 26246), (38, 26297), (41, 26342), (43, 26393), (53, 26507), (62, 26606), (76, 26729), (81, 26768), (86, 26813), (92, 26873), (96, 26906), (101, 26939),

Gene: GrootJr_50 Start: 37724, Stop: 38749, Start Num: 14

Candidate Starts for GrootJr_50:
(Start: 14 @37724 has 10 MA's), (Start: 15 @37727 has 44 MA's), (Start: 20 @37754 has 1 MA's), (32, 37817), (36, 37841), (46, 37970), (69, 38231), (79, 38339), (89, 38414), (94, 38468), (103, 38525), (104, 38531), (110, 38618), (111, 38648),

Gene: Hamood_30 Start: 26165, Stop: 26977, Start Num: 13
Candidate Starts for Hamood_30:
(9, 26069), (Start: 12 @26156 has 5 MA's), (Start: 13 @26165 has 10 MA's), (Start: 20 @26198 has 1 MA's), (30, 26246), (38, 26297), (41, 26342), (43, 26393), (53, 26507), (62, 26606), (76, 26729), (81, 26768), (86, 26813), (92, 26873), (96, 26906), (101, 26939),

Gene: HomeFry_53 Start: 36153, Stop: 37187, Start Num: 15
Candidate Starts for HomeFry_53:
(Start: 15 @36153 has 44 MA's), (Start: 20 @36180 has 1 MA's), (38, 36270), (40, 36306), (42, 36348), (44, 36378), (45, 36390), (55, 36525), (62, 36603), (75, 36732), (82, 36780), (103, 36954),

Gene: Horus_23 Start: 19383, Stop: 20216, Start Num: 14
Candidate Starts for Horus_23:
(Start: 14 @19383 has 10 MA's), (Start: 15 @19386 has 44 MA's), (Start: 20 @19413 has 1 MA's), (32, 19473), (38, 19512), (41, 19557), (49, 19671), (50, 19698), (52, 19725), (57, 19767), (63, 19839), (64, 19857), (66, 19866), (74, 19938), (77, 19968), (91, 20097), (93, 20112), (98, 20139),

Gene: HubbaBubba_45 Start: 33880, Stop: 34899, Start Num: 15
Candidate Starts for HubbaBubba_45:
(8, 33766), (Start: 14 @33877 has 10 MA's), (Start: 15 @33880 has 44 MA's), (25, 33937), (31, 33961), (32, 33970), (55, 34246), (60, 34300), (69, 34384), (80, 34495), (84, 34519), (86, 34540), (94, 34618), (100, 34666), (103, 34675), (104, 34681), (105, 34687), (110, 34768), (113, 34819),

Gene: IDyn_49 Start: 35306, Stop: 36325, Start Num: 15
Candidate Starts for IDyn_49:
(8, 35195), (Start: 15 @35306 has 44 MA's), (25, 35363), (28, 35375), (32, 35396), (36, 35420), (55, 35672), (60, 35726), (69, 35810), (80, 35921), (84, 35945), (94, 36044), (100, 36092), (103, 36101), (104, 36107), (110, 36194), (113, 36245),

Gene: Jifall16_47 Start: 37999, Stop: 39021, Start Num: 15
Candidate Starts for Jifall16_47:
(Start: 14 @37996 has 10 MA's), (Start: 15 @37999 has 44 MA's), (Start: 20 @38026 has 1 MA's), (32, 38089), (36, 38113), (46, 38242), (69, 38503), (79, 38611), (89, 38686), (94, 38740), (103, 38797), (104, 38803), (110, 38890), (111, 38920),

Gene: JonJames_50 Start: 36217, Stop: 37089, Start Num: 20
Candidate Starts for JonJames_50:
(Start: 15 @36190 has 44 MA's), (Start: 20 @36217 has 1 MA's), (32, 36280), (41, 36364), (54, 36511), (57, 36535), (73, 36685), (79, 36760), (85, 36796), (102, 36922),

Gene: Kabluna_52 Start: 37421, Stop: 38443, Start Num: 15
Candidate Starts for Kabluna_52:
(1, 36854), (3, 37166), (Start: 14 @37418 has 10 MA's), (Start: 15 @37421 has 44 MA's), (21, 37451), (30, 37499), (32, 37511), (36, 37535), (46, 37664), (72, 37949), (79, 38033), (90, 38120), (97, 38180), (103, 38219), (104, 38225), (107, 38261), (108, 38270), (110, 38312), (111, 38342), (116, 38405),

Gene: KidneyBean_48 Start: 38123, Stop: 39145, Start Num: 15
Candidate Starts for KidneyBean_48:

(Start: 14 @38120 has 10 MA's), (Start: 15 @38123 has 44 MA's), (Start: 20 @38150 has 1 MA's), (32, 38213), (36, 38237), (46, 38366), (69, 38627), (79, 38735), (89, 38810), (94, 38864), (103, 38921), (104, 38927), (110, 39014), (111, 39044),

Gene: Kurt_48 Start: 38360, Stop: 39382, Start Num: 15
Candidate Starts for Kurt_48:
(Start: 14 @38357 has 10 MA's), (Start: 15 @38360 has 44 MA's), (Start: 20 @38387 has 1 MA's), (32, 38450), (36, 38474), (46, 38603), (58, 38750), (69, 38864), (79, 38972), (89, 39047), (94, 39101), (103, 39158), (104, 39164), (110, 39251), (111, 39281),

Gene: Leroy_23 Start: 19387, Stop: 20217, Start Num: 15
Candidate Starts for Leroy_23:
(Start: 14 @19384 has 10 MA's), (Start: 15 @19387 has 44 MA's), (Start: 20 @19414 has 1 MA's), (32, 19474), (38, 19513), (41, 19558), (49, 19672), (50, 19699), (52, 19726), (57, 19768), (63, 19840), (64, 19858), (66, 19867), (74, 19939), (77, 19969), (91, 20098), (93, 20113), (98, 20140),

Gene: Lilbeanie_38 Start: 31874, Stop: 32515, Start Num: 15
Candidate Starts for Lilbeanie_38:
(4, 31697), (5, 31733), (7, 31754), (Start: 15 @31874 has 44 MA's), (19, 31898), (Start: 20 @31901 has 1 MA's), (32, 31961), (35, 31979), (41, 32045), (63, 32315), (83, 32471),

Gene: Lollipop1437_54 Start: 39336, Stop: 40358, Start Num: 15
Candidate Starts for Lollipop1437_54:
(3, 39081), (Start: 14 @39333 has 10 MA's), (Start: 15 @39336 has 44 MA's), (32, 39426), (34, 39441), (39, 39486), (56, 39717), (69, 39840), (79, 39948), (103, 40134), (104, 40140), (110, 40227), (111, 40257), (116, 40320),

Gene: Marietta_50 Start: 35200, Stop: 36219, Start Num: 15
Candidate Starts for Marietta_50:
(8, 35086), (Start: 14 @35197 has 10 MA's), (Start: 15 @35200 has 44 MA's), (25, 35257), (31, 35281), (32, 35290), (55, 35566), (60, 35620), (69, 35704), (80, 35815), (84, 35839), (86, 35860), (94, 35938), (100, 35986), (103, 35995), (104, 36001), (113, 36139),

Gene: MerCougar_50 Start: 38623, Stop: 39645, Start Num: 15
Candidate Starts for MerCougar_50:
(1, 38056), (3, 38368), (Start: 14 @38620 has 10 MA's), (Start: 15 @38623 has 44 MA's), (32, 38713), (46, 38866), (71, 39148), (72, 39151), (78, 39229), (79, 39235), (90, 39322), (103, 39421), (104, 39427), (107, 39463), (110, 39514), (111, 39544), (112, 39559), (116, 39607),

Gene: Mulch_30 Start: 25628, Stop: 26440, Start Num: 13
Candidate Starts for Mulch_30:
(9, 25532), (Start: 12 @25619 has 5 MA's), (Start: 13 @25628 has 10 MA's), (Start: 20 @25661 has 1 MA's), (30, 25709), (38, 25760), (41, 25805), (43, 25856), (53, 25970), (62, 26069), (76, 26192), (81, 26231), (86, 26276), (92, 26336), (96, 26369), (101, 26402),

Gene: Nadeem_30 Start: 25619, Stop: 26440, Start Num: 12
Candidate Starts for Nadeem_30:
(9, 25532), (Start: 12 @25619 has 5 MA's), (Start: 13 @25628 has 10 MA's), (Start: 20 @25661 has 1 MA's), (30, 25709), (38, 25760), (41, 25805), (43, 25856), (53, 25970), (62, 26069), (76, 26192), (81, 26231), (86, 26276), (92, 26336), (96, 26369), (101, 26402),

Gene: NadineRae_48 Start: 34447, Stop: 35466, Start Num: 15
Candidate Starts for NadineRae_48:

(8, 34333), (Start: 14 @34444 has 10 MA's), (Start: 15 @34447 has 44 MA's), (25, 34504), (31, 34528), (32, 34537), (55, 34813), (60, 34867), (69, 34951), (80, 35062), (84, 35086), (86, 35107), (94, 35185), (100, 35233), (103, 35242), (104, 35248), (110, 35335), (113, 35386),

Gene: NancyRae_30 Start: 25628, Stop: 26449, Start Num: 12
Candidate Starts for NancyRae_30:
(9, 25541), (Start: 12 @25628 has 5 MA's), (Start: 13 @25637 has 10 MA's), (Start: 20 @25670 has 1 MA's), (30, 25718), (38, 25769), (41, 25814), (43, 25865), (53, 25979), (62, 26078), (76, 26201), (81, 26240), (86, 26285), (92, 26345), (96, 26378), (101, 26411),

Gene: NatB6_48 Start: 37417, Stop: 38439, Start Num: 15
Candidate Starts for NatB6_48:
(Start: 14 @37414 has 10 MA's), (Start: 15 @37417 has 44 MA's), (Start: 20 @37444 has 1 MA's), (32, 37507), (36, 37531), (46, 37660), (69, 37921), (79, 38029), (89, 38104), (94, 38158), (103, 38215), (104, 38221), (110, 38308), (111, 38338),

Gene: NosilaM_52 Start: 38318, Stop: 39340, Start Num: 15
Candidate Starts for NosilaM_52:
(Start: 14 @38315 has 10 MA's), (Start: 15 @38318 has 44 MA's), (21, 38348), (30, 38396), (32, 38408), (46, 38561), (72, 38846), (79, 38930), (90, 39017), (97, 39077), (103, 39116), (104, 39122), (107, 39158), (110, 39209), (111, 39239), (116, 39302),

Gene: NovumRegina_48 Start: 37723, Stop: 38748, Start Num: 14
Candidate Starts for NovumRegina_48:
(Start: 14 @37723 has 10 MA's), (Start: 15 @37726 has 44 MA's), (Start: 20 @37753 has 1 MA's), (32, 37816), (36, 37840), (46, 37969), (69, 38230), (79, 38338), (89, 38413), (94, 38467), (103, 38524), (104, 38530), (110, 38617), (111, 38647),

Gene: Outis_50 Start: 38317, Stop: 39339, Start Num: 15
Candidate Starts for Outis_50:
(3, 38062), (Start: 14 @38314 has 10 MA's), (Start: 15 @38317 has 44 MA's), (21, 38347), (32, 38407), (46, 38560), (71, 38842), (72, 38845), (78, 38923), (79, 38929), (90, 39016), (103, 39115), (104, 39121), (107, 39157), (110, 39208), (111, 39238), (116, 39301),

Gene: Parada_30 Start: 25628, Stop: 26440, Start Num: 13
Candidate Starts for Parada_30:
(9, 25532), (Start: 12 @25619 has 5 MA's), (Start: 13 @25628 has 10 MA's), (Start: 20 @25661 has 1 MA's), (30, 25709), (38, 25760), (41, 25805), (43, 25856), (53, 25970), (62, 26069), (76, 26192), (81, 26231), (86, 26276), (92, 26336), (96, 26369), (101, 26402),

Gene: Patio_52 Start: 38572, Stop: 39594, Start Num: 15
Candidate Starts for Patio_52:
(Start: 14 @38569 has 10 MA's), (Start: 15 @38572 has 44 MA's), (32, 38662), (34, 38677), (39, 38722), (56, 38953), (69, 39076), (79, 39184), (103, 39370), (104, 39376), (110, 39463), (111, 39493), (116, 39556),

Gene: Pemberton_50 Start: 35179, Stop: 36198, Start Num: 15
Candidate Starts for Pemberton_50:
(8, 35065), (Start: 14 @35176 has 10 MA's), (Start: 15 @35179 has 44 MA's), (25, 35236), (31, 35260), (32, 35269), (55, 35545), (60, 35599), (69, 35683), (80, 35794), (84, 35818), (86, 35839), (94, 35917), (100, 35965), (103, 35974), (104, 35980), (110, 36067), (113, 36118),

Gene: Phistory_24 Start: 20152, Stop: 20982, Start Num: 15

Candidate Starts for Phistory_24:
(Start: 14 @20149 has 10 MA's), (Start: 15 @20152 has 44 MA's), (Start: 20 @20179 has 1 MA's), (32, 20239), (38, 20278), (41, 20323), (49, 20437), (50, 20464), (52, 20491), (57, 20533), (63, 20605), (64, 20623), (66, 20632), (74, 20704), (77, 20734), (91, 20863), (93, 20878), (98, 20905),

Gene: Phomeo_47 Start: 37995, Stop: 39017, Start Num: 15
Candidate Starts for Phomeo_47:
(Start: 14 @37992 has 10 MA's), (Start: 15 @37995 has 44 MA's), (Start: 20 @38022 has 1 MA's), (32, 38085), (36, 38109), (46, 38238), (69, 38499), (79, 38607), (89, 38682), (94, 38736), (103, 38793), (104, 38799), (110, 38886), (111, 38916),

Gene: Pimento_30 Start: 25097, Stop: 25918, Start Num: 12
Candidate Starts for Pimento_30:
(9, 25010), (11, 25082), (Start: 12 @25097 has 5 MA's), (Start: 13 @25106 has 10 MA's), (Start: 20 @25139 has 1 MA's), (30, 25187), (38, 25238), (41, 25283), (43, 25334), (48, 25385), (53, 25448), (62, 25547), (76, 25670), (81, 25709), (86, 25754), (92, 25814), (96, 25847), (101, 25880),

Gene: Pleakley_56 Start: 37522, Stop: 38535, Start Num: 15
Candidate Starts for Pleakley_56:
(Start: 15 @37522 has 44 MA's), (Start: 20 @37549 has 1 MA's), (38, 37639), (40, 37675), (42, 37717), (45, 37735), (55, 37870), (62, 37948), (82, 38128), (103, 38305),

Gene: RedRaider_56 Start: 40594, Stop: 41616, Start Num: 15
Candidate Starts for RedRaider_56:
(Start: 14 @40591 has 10 MA's), (Start: 15 @40594 has 44 MA's), (32, 40684), (39, 40744), (46, 40837), (69, 41098), (79, 41206), (89, 41281), (103, 41392), (104, 41398), (107, 41434), (110, 41485), (111, 41515), (115, 41563), (116, 41578),

Gene: Scuba_56 Start: 37596, Stop: 38609, Start Num: 15
Candidate Starts for Scuba_56:
(Start: 15 @37596 has 44 MA's), (Start: 20 @37623 has 1 MA's), (38, 37713), (40, 37749), (42, 37791), (45, 37809), (55, 37944), (62, 38022), (75, 38151), (82, 38202), (103, 38379),

Gene: Skysand_51 Start: 38792, Stop: 39814, Start Num: 15
Candidate Starts for Skysand_51:
(3, 38537), (Start: 14 @38789 has 10 MA's), (Start: 15 @38792 has 44 MA's), (32, 38882), (34, 38897), (39, 38942), (69, 39296), (79, 39404), (103, 39590), (104, 39596), (107, 39632), (110, 39683), (111, 39713), (116, 39776),

Gene: StarStruck_50 Start: 38317, Stop: 39339, Start Num: 15
Candidate Starts for StarStruck_50:
(3, 38062), (Start: 14 @38314 has 10 MA's), (Start: 15 @38317 has 44 MA's), (21, 38347), (32, 38407), (46, 38560), (71, 38842), (72, 38845), (78, 38923), (79, 38929), (90, 39016), (103, 39115), (104, 39121), (107, 39157), (110, 39208), (111, 39238), (116, 39301),

Gene: Sukkupi_49 Start: 36753, Stop: 37772, Start Num: 15
Candidate Starts for Sukkupi_49:
(8, 36639), (Start: 14 @36750 has 10 MA's), (Start: 15 @36753 has 44 MA's), (25, 36810), (31, 36834), (32, 36843), (55, 37119), (60, 37173), (69, 37257), (80, 37368), (84, 37392), (86, 37413), (94, 37491), (100, 37539), (103, 37548), (104, 37554), (110, 37641), (113, 37692),

Gene: SuperSulley_50 Start: 38485, Stop: 39507, Start Num: 15
Candidate Starts for SuperSulley_50:

(1, 37918), (3, 38230), (Start: 14 @38482 has 10 MA's), (Start: 15 @38485 has 44 MA's), (21, 38515), (30, 38563), (32, 38575), (36, 38599), (46, 38728), (72, 39013), (79, 39097), (90, 39184), (97, 39244), (103, 39283), (104, 39289), (107, 39325), (111, 39406), (116, 39469),

Gene: SussRoloMann_30 Start: 25628, Stop: 26440, Start Num: 13
Candidate Starts for SussRoloMann_30:
(9, 25532), (Start: 12 @25619 has 5 MA's), (Start: 13 @25628 has 10 MA's), (Start: 20 @25661 has 1 MA's), (30, 25709), (38, 25760), (41, 25805), (43, 25856), (53, 25970), (62, 26069), (76, 26192), (81, 26231), (86, 26276), (92, 26336), (96, 26369), (101, 26402),

Gene: Tracker_48 Start: 37144, Stop: 38166, Start Num: 15
Candidate Starts for Tracker_48:
(Start: 14 @37141 has 10 MA's), (Start: 15 @37144 has 44 MA's), (Start: 20 @37171 has 1 MA's), (32, 37234), (36, 37258), (46, 37387), (69, 37648), (79, 37756), (89, 37831), (94, 37885), (103, 37942), (104, 37948), (110, 38035), (111, 38065),

Gene: Turuncu_53 Start: 38719, Stop: 39741, Start Num: 15
Candidate Starts for Turuncu_53:
(1, 38152), (3, 38464), (Start: 14 @38716 has 10 MA's), (Start: 15 @38719 has 44 MA's), (21, 38749), (32, 38809), (72, 39247), (79, 39331), (89, 39406), (90, 39418), (103, 39517), (104, 39523), (110, 39610), (115, 39688), (116, 39703),

Gene: WheatThin_30 Start: 25628, Stop: 26440, Start Num: 13
Candidate Starts for WheatThin_30:
(9, 25532), (Start: 12 @25619 has 5 MA's), (Start: 13 @25628 has 10 MA's), (Start: 20 @25661 has 1 MA's), (30, 25709), (38, 25760), (41, 25805), (43, 25856), (53, 25970), (62, 26069), (76, 26192), (81, 26231), (86, 26276), (92, 26336), (96, 26369), (101, 26402),

Gene: Wheezy_48 Start: 37349, Stop: 38371, Start Num: 15
Candidate Starts for Wheezy_48:
(Start: 14 @37346 has 10 MA's), (Start: 15 @37349 has 44 MA's), (Start: 20 @37376 has 1 MA's), (32, 37439), (36, 37463), (46, 37592), (69, 37853), (79, 37961), (89, 38036), (94, 38090), (103, 38147), (104, 38153), (110, 38240), (111, 38270),

Gene: WhoseManz_49 Start: 34810, Stop: 35832, Start Num: 14
Candidate Starts for WhoseManz_49:
(8, 34699), (Start: 14 @34810 has 10 MA's), (Start: 15 @34813 has 44 MA's), (25, 34870), (31, 34894), (32, 34903), (55, 35179), (60, 35233), (69, 35317), (80, 35428), (84, 35452), (86, 35473), (94, 35551), (100, 35599), (103, 35608), (104, 35614), (110, 35701), (113, 35752),

Gene: Yndexa_49 Start: 36753, Stop: 37772, Start Num: 15
Candidate Starts for Yndexa_49:
(8, 36639), (Start: 14 @36750 has 10 MA's), (Start: 15 @36753 has 44 MA's), (25, 36810), (31, 36834), (32, 36843), (55, 37119), (60, 37173), (69, 37257), (80, 37368), (84, 37392), (86, 37413), (94, 37491), (100, 37539), (103, 37548), (104, 37554), (110, 37641), (113, 37692),

Gene: Yvonnetastic_48 Start: 33725, Stop: 34624, Start Num: 15
Candidate Starts for Yvonnetastic_48:
(Start: 15 @33725 has 44 MA's), (Start: 20 @33752 has 1 MA's), (32, 33815), (41, 33899), (54, 34046), (57, 34070), (73, 34220), (79, 34295), (85, 34331), (102, 34457),

Gene: ZAYM_22 Start: 20018, Stop: 20857, Start Num: 15
Candidate Starts for ZAYM_22:

(2, 19754), (6, 19889), (10, 19928), (Start: 15 @20018 has 44 MA's), (Start: 20 @20045 has 1 MA's), (26, 20081), (29, 20093), (32, 20108), (37, 20141), (49, 20270), (55, 20348), (79, 20570), (88, 20612),