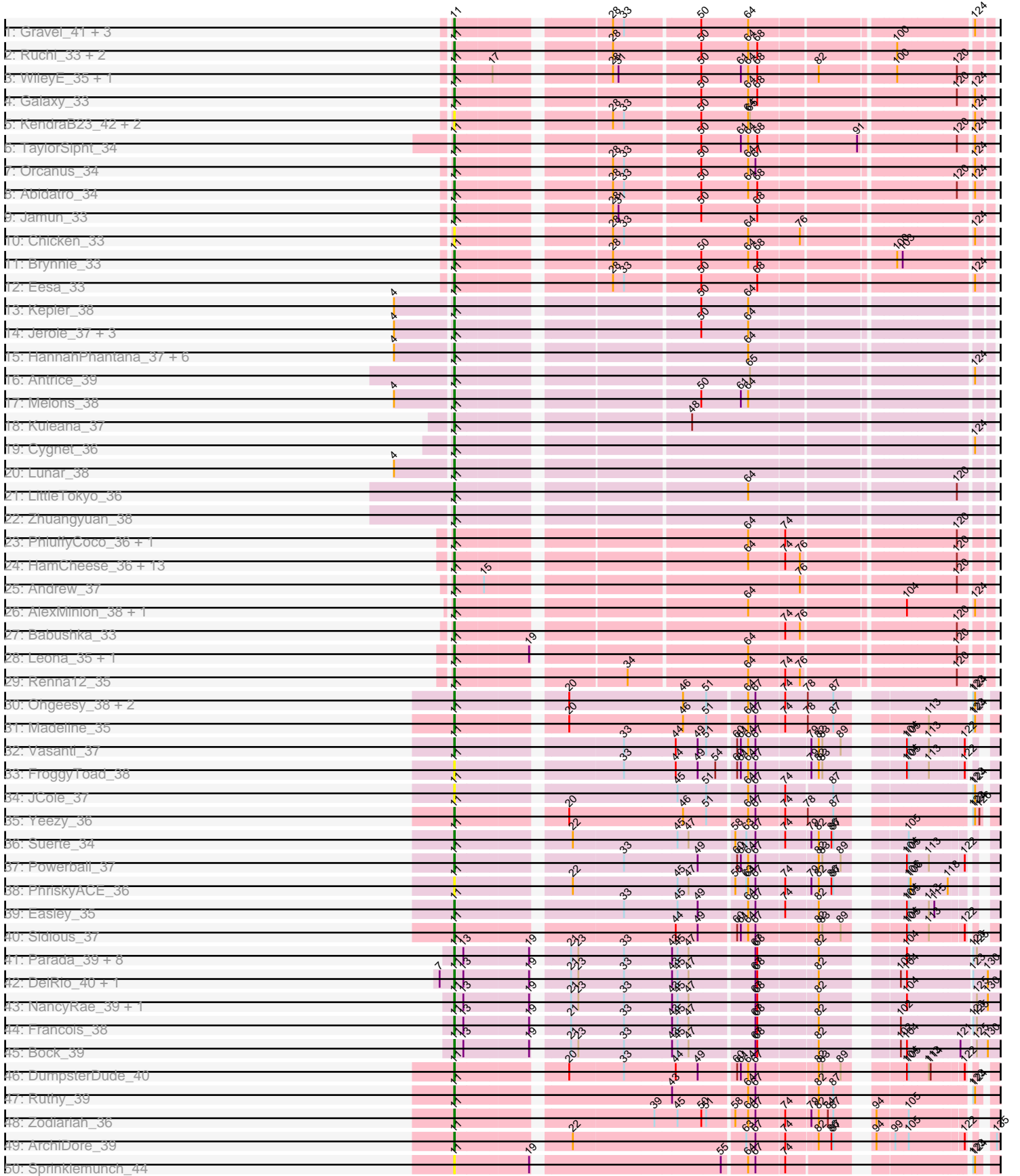
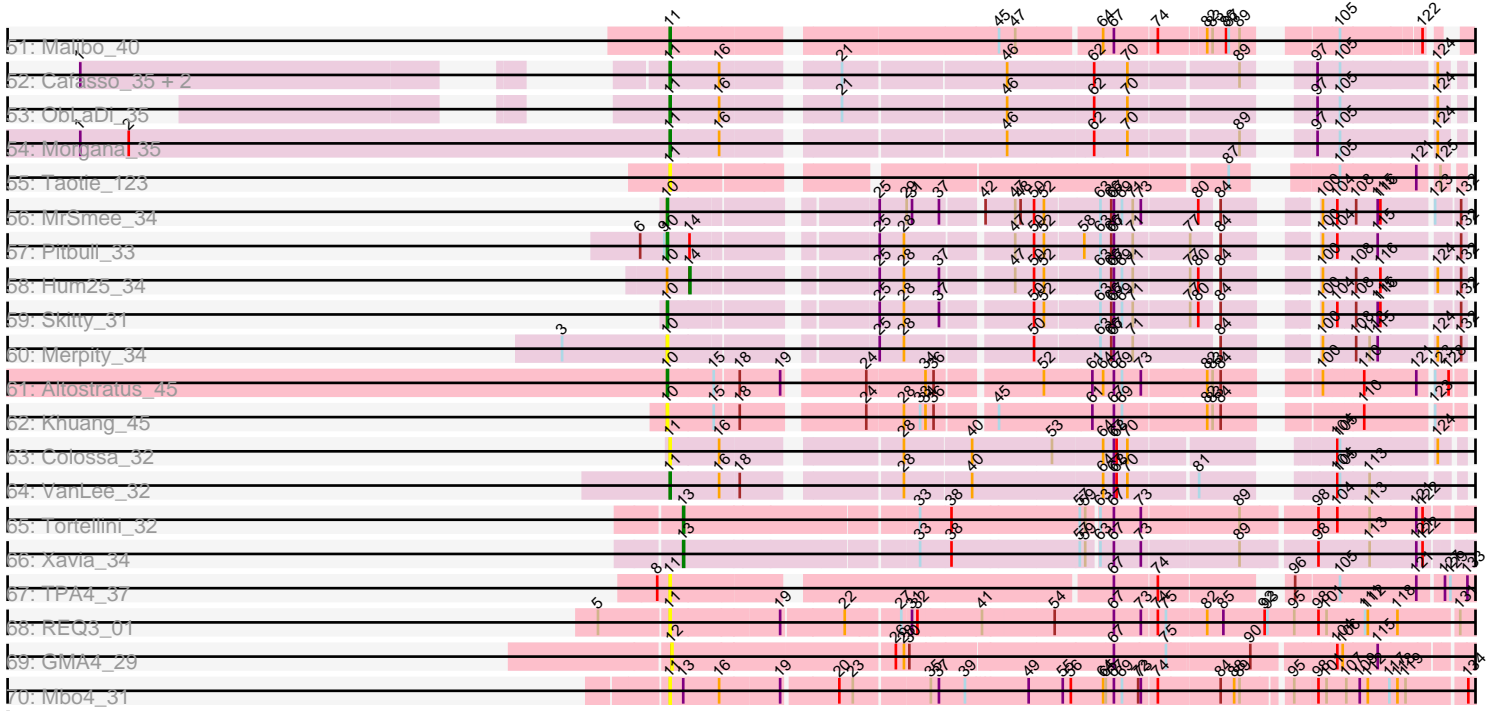


# Zoomed Pham 294561



# Zoomed Pham 294561



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 294561 Report

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

Pham number 294561 has 117 members, 30 are drafts.

Phages represented in each track:

- Track 1 : Gravel\_41, Pelletreau\_41, Westrich\_40, Toad24\_36
- Track 2 : Ruchi\_33, Vulpecula\_33, Basilisk\_34
- Track 3 : WileyE\_35, Chickaboom\_35
- Track 4 : Galaxy\_33
- Track 5 : KendraB23\_42, Shen\_33, Zixiang\_36
- Track 6 : TaylorSipht\_34
- Track 7 : Orcanus\_34
- Track 8 : Abidatro\_34
- Track 9 : Jamun\_33
- Track 10 : Chicken\_33
- Track 11 : Brynnie\_33
- Track 12 : Eesa\_33
- Track 13 : Kepler\_38
- Track 14 : Jerole\_37, Amelia\_36, Daob\_38, Colusalem\_37
- Track 15 : HannahPhantana\_37, Cote\_38, Bedetta\_40, Coral\_36, OtsoOtso\_37, Polka\_36, Pineda\_38
- Track 16 : Antrice\_39
- Track 17 : Melons\_38
- Track 18 : Kuleana\_37
- Track 19 : Cygnet\_36
- Track 20 : Lunar\_38
- Track 21 : LittleTokyo\_36
- Track 22 : Zhuangyuan\_38
- Track 23 : PhluffyCoco\_36, Rattail\_36
- Track 24 : HamCheese\_36, Atlantica\_36, RedFox\_36, AdoptaAdorbs\_35, Camara\_36, Glotell\_37, Oppalora\_35, KHumphrey\_36, Laphuphu24k\_35, Fingolfin\_36, Amphitrite\_36, AmiCi24\_35, Juno112\_35, DanHam62\_36
- Track 25 : Andrew\_37
- Track 26 : AlexMinion\_38, StuartMinion\_28
- Track 27 : Babushka\_33
- Track 28 : Leona\_35, Azaz\_37
- Track 29 : Renna12\_35
- Track 30 : Ohgeesy\_38, BaxterFox\_37, PantheRoc\_37
- Track 31 : Madeline\_35
- Track 32 : Vasanti\_37
- Track 33 : FroggyToad\_38
- Track 34 : JCole\_37

- Track 35 : Yeezy\_36
- Track 36 : Suerte\_34
- Track 37 : Powerball\_37
- Track 38 : PhriskyACE\_36
- Track 39 : Easley\_35
- Track 40 : Sidious\_37
- Track 41 : Parada\_39, Hamood\_39, Chop\_39, Nadeem\_39, WheatThin\_39, Brylie\_39, Mulch\_39, Ayotoya\_39, GrandSlam\_39
- Track 42 : DelRio\_40, Pimento\_39
- Track 43 : NancyRae\_39, BetterKatz\_39
- Track 44 : Francois\_38
- Track 45 : Bock\_39
- Track 46 : DumpsterDude\_40
- Track 47 : Ruthy\_39
- Track 48 : Zodiariah\_36
- Track 49 : ArchiDore\_39
- Track 50 : Sprinklemunch\_44
- Track 51 : Malibo\_40
- Track 52 : Cafasso\_35, Aleemily\_34, ModicumRichard\_35
- Track 53 : ObLaDi\_35
- Track 54 : Morgana\_35
- Track 55 : Taotie\_123
- Track 56 : MrSmee\_34
- Track 57 : Pitbull\_33
- Track 58 : Hum25\_34
- Track 59 : Skitty\_31
- Track 60 : Merpity\_34
- Track 61 : Altostratus\_45
- Track 62 : Khuang\_45
- Track 63 : Colossa\_32
- Track 64 : VanLee\_32
- Track 65 : Tortellini\_32
- Track 66 : Xavia\_34
- Track 67 : TPA4\_37
- Track 68 : REQ3\_01
- Track 69 : GMA4\_29
- Track 70 : Mbo4\_31

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

The start number called the most often in the published annotations is 11, it was called in 80 of the 87 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Abidatro\_34, AdoptaAdorbs\_35, Aleemily\_34, AlexMinion\_38, Amelia\_36, AmiCi24\_35, Amphitrite\_36, Andrew\_37, Antrice\_39, ArchiDore\_39, Atlantica\_36, Ayotoya\_39, Azaz\_37, Babushka\_33, Basilisk\_34, BaxterFox\_37, Bedetta\_40, BetterKatz\_39, Bock\_39, Brylie\_39, Brynnie\_33, Cafasso\_35, Camara\_36, Chickaboom\_35, Chicken\_33, Chop\_39, Colossa\_32, Colusalem\_37, Coral\_36, Cote\_38, Cygnet\_36, DanHam62\_36, Daob\_38, DelRio\_40, DumpsterDude\_40,

Easley\_35, Eesa\_33, Fingolfin\_36, Francois\_38, FroggyToad\_38, Galaxy\_33, Glotell\_37, GrandSlam\_39, Gravel\_41, HamCheese\_36, Hamood\_39, HannahPhantana\_37, JCole\_37, Jamun\_33, Jerole\_37, Juno112\_35, KHumphrey\_36, KendraB23\_42, Kepler\_38, Kuleana\_37, Laphuphu24k\_35, Leona\_35, LittleTokyo\_36, Lunar\_38, Madeline\_35, Malibo\_40, Mbo4\_31, Melons\_38, ModicumRichard\_35, Morgana\_35, Mulch\_39, Nadeem\_39, NancyRae\_39, ObLaDi\_35, Ohgeesy\_38, Oppalora\_35, Orcanus\_34, OtsoOtso\_37, PantheRoc\_37, Parada\_39, Pelletreau\_41, PhluffyCoco\_36, PhriskyACE\_36, Pimento\_39, Pineda\_38, Polka\_36, Powerball\_37, REQ3\_01, Rattail\_36, RedFox\_36, Renna12\_35, Ruchi\_33, Ruthy\_39, Shen\_33, Sidious\_37, Sprinklemunch\_44, StuartMinion\_28, Suerte\_34, TPA4\_37, Taotie\_123, TaylorSipht\_34, Toad24\_36, VanLee\_32, Vasanti\_37, Vulpecula\_33, Westrich\_40, WheatThin\_39, WileyE\_35, Yeezy\_36, Zhuangyuan\_38, Zixiang\_36, Zodiariah\_36,

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

- 

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

- Altostratus\_45, GMA4\_29, Hum25\_34, Khuang\_45, Merpity\_34, MrSmee\_34, Pitbull\_33, Skitty\_31, Tortellini\_32, Xavia\_34,

### Summary by start number:

Start 10:

- Found in 7 of 117 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 4 of 87
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Altostratus\_45 (FS), Khuang\_45 (FS), Merpity\_34 (FQ), MrSmee\_34 (FQ), Pitbull\_33 (FQ), Skitty\_31 (FQ),

Start 11:

- Found in 107 of 117 ( 91.5% ) of genes in pham
- Manual Annotations of this start: 80 of 87
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abidatro\_34 (AS1), AdoptaAdorbs\_35 (AS3), Aleemily\_34 (DZ), AlexMinion\_38 (AS3), Amelia\_36 (AS2), AmiCi24\_35 (AS3), Amphitrite\_36 (AS3), Andrew\_37 (AS3), Antrice\_39 (AS2), ArchiDore\_39 (DW), Atlantica\_36 (AS3), Ayotoya\_39 (DI), Azaz\_37 (AS3), Babushka\_33 (AS3), Basilisk\_34 (AS1), BaxterFox\_37 (CZ3), Bedetta\_40 (AS2), BetterKatz\_39 (DI), Bock\_39 (DI), Brylie\_39 (DI), Brynnie\_33 (AS1), Cafasso\_35 (DZ), Camara\_36 (AS3), Chickaboom\_35 (AS1), Chicken\_33 (AS1), Chop\_39 (DI), Colossa\_32 (KA), Colusalem\_37 (AS2), Coral\_36 (AS2), Cote\_38 (AS2), Cygnet\_36 (AS2), DanHam62\_36 (AS3), Daob\_38 (AS2), DelRio\_40 (DI), DumpsterDude\_40 (DW), Easley\_35 (CZ4), Eesa\_33 (AS1), Fingolfin\_36 (AS3), Francois\_38 (DI), FroggyToad\_38 (CZ2), Galaxy\_33 (AS1), Glotell\_37 (AS3), GrandSlam\_39 (DI), Gravel\_41 (AS1), HamCheese\_36 (AS3), Hamood\_39 (DI), HannahPhantana\_37 (AS2), JCole\_37 (CZ2), Jamun\_33 (AS1), Jerole\_37 (AS2), Juno112\_35 (AS3), KHumphrey\_36 (AS3), KendraB23\_42 (AS1), Kepler\_38 (AS2), Kuleana\_37 (AS2), Laphuphu24k\_35 (AS3), Leona\_35 (AS3), LittleTokyo\_36 (AS2), Lunar\_38 (AS2), Madeline\_35 (CZ1), Malibo\_40 (DW), Mbo4\_31 (singleton), Melons\_38 (AS2), ModicumRichard\_35 (DZ), Morgana\_35 (DZ), Mulch\_39 (DI), Nadeem\_39 (DI), NancyRae\_39 (DI), ObLaDi\_35 (DZ), Ohgeesy\_38 (CZ), Oppalora\_35 (AS3), Orcanus\_34 (AS1), OtsoOtso\_37 (AS2), PantheRoc\_37 (CZ3), Parada\_39 (DI),

Pelletreau\_41 (AS1), PhluffyCoco\_36 (AS3), PhriskyACE\_36 (CZ4), Pimento\_39 (DI), Pineda\_38 (AS2), Polka\_36 (AS2), Powerball\_37 (CZ4), REQ3\_01 (singleton), Rattail\_36 (AS3), RedFox\_36 (AS3), Renna12\_35 (AS3), Ruchi\_33 (AS1), Ruthy\_39 (DW), Shen\_33 (AS1), Sidious\_37 (CZ7), Sprinklemunch\_44 (DW), StuartMinion\_28 (AS3), Suerte\_34 (CZ4), TPA4\_37 (singleton), Taotie\_123 (EQ), TaylorSipht\_34 (AS1), Toad24\_36 (AS1), VanLee\_32 (KA), Vasanti\_37 (CZ2), Vulpecula\_33 (AS1), Westrich\_40 (AS1), WheatThin\_39 (DI), WileyE\_35 (AS1), Yeezy\_36 (CZ3), Zhuangyuan\_38 (AS2), Zixiang\_36 (AS1), Zodiariah\_36 (DW),

Start 12:

- Found in 1 of 117 ( 0.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4\_29 (singleton),

Start 13:

- Found in 18 of 117 ( 15.4% ) of genes in pham
- Manual Annotations of this start: 2 of 87
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Tortellini\_32 (P2), Xavia\_34 (P3),

Start 14:

- Found in 2 of 117 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 87
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hum25\_34 (FQ),

### **Summary by clusters:**

There are 19 clusters represented in this pham: AS3, AS2, AS1, FS, P2, DI, CZ2, CZ3, P3, CZ1, FQ, singleton, CZ4, CZ7, CZ, DZ, DW, EQ, KA,

Info for manual annotations of cluster AS1:

- Start number 11 was manually annotated 13 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 11 was manually annotated 17 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 11 was manually annotated 14 times for cluster AS3.

Info for manual annotations of cluster CZ:

- Start number 11 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 11 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 11 was manually annotated 1 time for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 11 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 11 was manually annotated 3 times for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 11 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DI:

- Start number 11 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DW:

- Start number 11 was manually annotated 5 times for cluster DW.

Info for manual annotations of cluster DZ:

- Start number 11 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster FQ:

- Start number 10 was manually annotated 3 times for cluster FQ.
- Start number 14 was manually annotated 1 time for cluster FQ.

Info for manual annotations of cluster FS:

- Start number 10 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster KA:

- Start number 11 was manually annotated 1 time for cluster KA.

Info for manual annotations of cluster P2:

- Start number 13 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 13 was manually annotated 1 time for cluster P3.

### ***Gene Information:***

Gene: Abidatro\_34 Start: 24278, Stop: 23067, Start Num: 11

Candidate Starts for Abidatro\_34:

(Start: 11 @24278 has 80 MA's), (28, 24059), (33, 24041), (50, 23924), (64, 23849), (68, 23834), (120, 23540), (124, 23519), (136, 23492), (146, 23426), (149, 23414), (155, 23396), (183, 23252), (184, 23243),

Gene: AdoptaAdorbs\_35 Start: 23914, Stop: 22721, Start Num: 11

Candidate Starts for AdoptaAdorbs\_35:

(Start: 11 @23914 has 80 MA's), (64, 23485), (74, 23428), (76, 23404), (120, 23176), (149, 23050), (152, 23038), (157, 23017), (184, 22879), (195, 22798), (207, 22750),

Gene: Aleemily\_34 Start: 29847, Stop: 28720, Start Num: 11

Candidate Starts for Aleemily\_34:

(1, 30327), (Start: 11 @29847 has 80 MA's), (16, 29793), (21, 29688), (46, 29517), (62, 29427), (70, 29391), (89, 29277), (97, 29238), (105, 29214), (124, 29118), (161, 28986), (169, 28941), (183, 28869), (204, 28743),

Gene: AlexMinion\_38 Start: 24097, Stop: 22904, Start Num: 11

Candidate Starts for AlexMinion\_38:

(Start: 11 @24097 has 80 MA's), (64, 23668), (104, 23437), (124, 23338), (149, 23233), (152, 23221), (184, 23062), (207, 22933),

Gene: Altostratus\_45 Start: 28384, Stop: 27227, Start Num: 10

Candidate Starts for Altostratus\_45:

(Start: 10 @28384 has 4 MA's), (15, 28333), (18, 28309), (19, 28264), (24, 28189), (34, 28126), (36, 28117), (52, 28012), (61, 27961), (64, 27949), (67, 27937), (69, 27928), (73, 27907), (82, 27838), (83, 27832), (84, 27823), (100, 27748), (110, 27706), (121, 27649), (123, 27637), (128, 27622), (143, 27568), (147, 27544), (152, 27526), (161, 27505), (164, 27481), (173, 27451), (180, 27400), (183, 27373), (189, 27337), (204, 27247),

Gene: Amelia\_36 Start: 24019, Stop: 22832, Start Num: 11

Candidate Starts for Amelia\_36:

(4, 24109), (Start: 11 @24019 has 80 MA's), (50, 23665), (64, 23590), (149, 23155), (180, 23020),

Gene: AmiCi24\_35 Start: 23912, Stop: 22719, Start Num: 11

Candidate Starts for AmiCi24\_35:

(Start: 11 @23912 has 80 MA's), (64, 23483), (74, 23426), (76, 23402), (120, 23174), (149, 23048), (152, 23036), (157, 23015), (184, 22877), (195, 22796), (207, 22748),

Gene: Amphitrite\_36 Start: 23913, Stop: 22720, Start Num: 11

Candidate Starts for Amphitrite\_36:

(Start: 11 @23913 has 80 MA's), (64, 23484), (74, 23427), (76, 23403), (120, 23175), (149, 23049), (152, 23037), (157, 23016), (184, 22878), (195, 22797), (207, 22749),

Gene: Andrew\_37 Start: 23839, Stop: 22646, Start Num: 11

Candidate Starts for Andrew\_37:

(Start: 11 @23839 has 80 MA's), (15, 23794), (76, 23329), (120, 23101), (149, 22975), (152, 22963), (183, 22813), (207, 22675),

Gene: Antrice\_39 Start: 25191, Stop: 23998, Start Num: 11

Candidate Starts for Antrice\_39:

(Start: 11 @25191 has 80 MA's), (65, 24756), (124, 24429), (143, 24354), (149, 24324), (152, 24312), (155, 24306),

Gene: ArchiDore\_39 Start: 34244, Stop: 33075, Start Num: 11

Candidate Starts for ArchiDore\_39:

(Start: 11 @34244 has 80 MA's), (22, 34082), (63, 33818), (67, 33803), (74, 33758), (82, 33710), (86, 33689), (87, 33686), (94, 33650), (99, 33623), (105, 33602), (122, 33521), (135, 33500), (144, 33443), (161, 33371), (166, 33341), (180, 33284), (181, 33272), (204, 33131), (210, 33092), (211, 33083),

Gene: Atlantica\_36 Start: 23914, Stop: 22721, Start Num: 11

Candidate Starts for Atlantica\_36:

(Start: 11 @23914 has 80 MA's), (64, 23485), (74, 23428), (76, 23404), (120, 23176), (149, 23050), (152, 23038), (157, 23017), (184, 22879), (195, 22798), (207, 22750),

Gene: Ayotoya\_39 Start: 32055, Stop: 30784, Start Num: 11

Candidate Starts for Ayotoya\_39:

(Start: 11 @32055 has 80 MA's), (Start: 13 @32040 has 2 MA's), (19, 31938), (21, 31896), (23, 31884), (33, 31809), (43, 31734), (45, 31725), (47, 31707), (67, 31608), (68, 31605), (82, 31515), (104, 31410), (123, 31314), (125, 31308), (161, 31146), (181, 31005), (187, 30960), (194, 30909), (195, 30900),

(199, 30885), (202, 30873), (205, 30861), (212, 30822),

Gene: Azaz\_37 Start: 23984, Stop: 22791, Start Num: 11

Candidate Starts for Azaz\_37:

(Start: 11 @23984 has 80 MA's), (19, 23870), (64, 23555), (120, 23246), (149, 23120), (152, 23108), (157, 23087), (207, 22820),

Gene: Babushka\_33 Start: 23843, Stop: 22650, Start Num: 11

Candidate Starts for Babushka\_33:

(Start: 11 @23843 has 80 MA's), (74, 23357), (76, 23333), (120, 23105), (149, 22979), (152, 22967), (157, 22946), (184, 22808), (207, 22679),

Gene: Basilisk\_34 Start: 24758, Stop: 23574, Start Num: 11

Candidate Starts for Basilisk\_34:

(Start: 11 @24758 has 80 MA's), (28, 24539), (50, 24404), (64, 24329), (68, 24314), (100, 24113), (146, 23906), (149, 23894), (155, 23876), (157, 23861), (180, 23759), (183, 23732), (184, 23723),

Gene: BaxterFox\_37 Start: 31379, Stop: 30117, Start Num: 11

Candidate Starts for BaxterFox\_37:

(Start: 11 @31379 has 80 MA's), (20, 31223), (46, 31040), (51, 31004), (64, 30944), (67, 30932), (74, 30887), (78, 30854), (87, 30812), (123, 30644), (124, 30641), (141, 30566), (145, 30548), (146, 30545), (161, 30488), (177, 30371), (180, 30359), (187, 30302), (195, 30242), (199, 30227), (202, 30215), (204, 30206), (210, 30167),

Gene: Bedetta\_40 Start: 24167, Stop: 22980, Start Num: 11

Candidate Starts for Bedetta\_40:

(4, 24257), (Start: 11 @24167 has 80 MA's), (64, 23738), (149, 23303), (180, 23168),

Gene: BetterKatz\_39 Start: 31582, Stop: 30311, Start Num: 11

Candidate Starts for BetterKatz\_39:

(Start: 11 @31582 has 80 MA's), (Start: 13 @31567 has 2 MA's), (19, 31465), (21, 31423), (23, 31411), (33, 31336), (43, 31261), (45, 31252), (47, 31234), (67, 31135), (68, 31132), (82, 31042), (104, 30937), (125, 30835), (130, 30817), (161, 30673), (181, 30532), (187, 30487), (194, 30436), (195, 30427), (202, 30400), (205, 30388), (212, 30349),

Gene: Bock\_39 Start: 31274, Stop: 30003, Start Num: 11

Candidate Starts for Bock\_39:

(Start: 11 @31274 has 80 MA's), (Start: 13 @31259 has 2 MA's), (19, 31157), (21, 31115), (23, 31103), (33, 31028), (43, 30953), (45, 30944), (47, 30926), (67, 30827), (68, 30824), (82, 30734), (102, 30638), (104, 30629), (121, 30548), (125, 30527), (130, 30509), (144, 30434), (161, 30365), (181, 30224), (187, 30179), (194, 30128), (195, 30119), (202, 30092), (205, 30080), (212, 30041),

Gene: Brylie\_39 Start: 31322, Stop: 30051, Start Num: 11

Candidate Starts for Brylie\_39:

(Start: 11 @31322 has 80 MA's), (Start: 13 @31307 has 2 MA's), (19, 31205), (21, 31163), (23, 31151), (33, 31076), (43, 31001), (45, 30992), (47, 30974), (67, 30875), (68, 30872), (82, 30782), (104, 30677), (123, 30581), (125, 30575), (161, 30413), (181, 30272), (187, 30227), (194, 30176), (195, 30167), (199, 30152), (202, 30140), (205, 30128), (212, 30089),

Gene: Brynnie\_33 Start: 24636, Stop: 23452, Start Num: 11

Candidate Starts for Brynnie\_33:

(Start: 11 @24636 has 80 MA's), (28, 24417), (50, 24282), (64, 24207), (68, 24192), (100, 23991), (103, 23982), (146, 23784), (149, 23772), (155, 23754), (157, 23739), (180, 23637), (183, 23610),

(184, 23601),

Gene: Cafasso\_35 Start: 30421, Stop: 29294, Start Num: 11

Candidate Starts for Cafasso\_35:

(1, 30901), (Start: 11 @30421 has 80 MA's), (16, 30367), (21, 30262), (46, 30091), (62, 30001), (70, 29965), (89, 29851), (97, 29812), (105, 29788), (124, 29692), (161, 29560), (169, 29515), (183, 29443), (204, 29317),

Gene: Camara\_36 Start: 23916, Stop: 22723, Start Num: 11

Candidate Starts for Camara\_36:

(Start: 11 @23916 has 80 MA's), (64, 23487), (74, 23430), (76, 23406), (120, 23178), (149, 23052), (152, 23040), (157, 23019), (184, 22881), (195, 22800), (207, 22752),

Gene: Chickaboom\_35 Start: 24249, Stop: 23065, Start Num: 11

Candidate Starts for Chickaboom\_35:

(Start: 11 @24249 has 80 MA's), (17, 24192), (28, 24030), (31, 24021), (50, 23895), (61, 23832), (64, 23820), (68, 23805), (82, 23715), (100, 23604), (120, 23511), (146, 23397), (149, 23385), (155, 23367), (183, 23223), (184, 23214),

Gene: Chicken\_33 Start: 24581, Stop: 23397, Start Num: 11

Candidate Starts for Chicken\_33:

(Start: 11 @24581 has 80 MA's), (28, 24362), (33, 24344), (64, 24152), (76, 24071), (124, 23822), (146, 23729), (149, 23717), (155, 23699), (180, 23582), (184, 23546),

Gene: Chop\_39 Start: 31803, Stop: 30532, Start Num: 11

Candidate Starts for Chop\_39:

(Start: 11 @31803 has 80 MA's), (Start: 13 @31788 has 2 MA's), (19, 31686), (21, 31644), (23, 31632), (33, 31557), (43, 31482), (45, 31473), (47, 31455), (67, 31356), (68, 31353), (82, 31263), (104, 31158), (123, 31062), (125, 31056), (161, 30894), (181, 30753), (187, 30708), (194, 30657), (195, 30648), (199, 30633), (202, 30621), (205, 30609), (212, 30570),

Gene: Colossa\_32 Start: 27893, Stop: 26754, Start Num: 11

Candidate Starts for Colossa\_32:

(Start: 11 @27893 has 80 MA's), (16, 27839), (28, 27671), (40, 27599), (53, 27512), (64, 27458), (67, 27446), (68, 27443), (70, 27431), (104, 27260), (105, 27257), (124, 27161), (170, 26984), (172, 26981), (182, 26924), (206, 26777),

Gene: Colusalem\_37 Start: 23996, Stop: 22809, Start Num: 11

Candidate Starts for Colusalem\_37:

(4, 24086), (Start: 11 @23996 has 80 MA's), (50, 23642), (64, 23567), (149, 23132), (180, 22997),

Gene: Coral\_36 Start: 23868, Stop: 22681, Start Num: 11

Candidate Starts for Coral\_36:

(4, 23958), (Start: 11 @23868 has 80 MA's), (64, 23439), (149, 23004), (180, 22869),

Gene: Cote\_38 Start: 24345, Stop: 23158, Start Num: 11

Candidate Starts for Cote\_38:

(4, 24435), (Start: 11 @24345 has 80 MA's), (64, 23916), (149, 23481), (180, 23346),

Gene: Cygnet\_36 Start: 24788, Stop: 23595, Start Num: 11

Candidate Starts for Cygnet\_36:

(Start: 11 @24788 has 80 MA's), (124, 24026), (143, 23951), (149, 23921), (152, 23909),

Gene: DanHam62\_36 Start: 23913, Stop: 22720, Start Num: 11

Candidate Starts for DanHam62\_36:

(Start: 11 @23913 has 80 MA's), (64, 23484), (74, 23427), (76, 23403), (120, 23175), (149, 23049), (152, 23037), (157, 23016), (184, 22878), (195, 22797), (207, 22749),

Gene: Daob\_38 Start: 24353, Stop: 23166, Start Num: 11

Candidate Starts for Daob\_38:

(4, 24443), (Start: 11 @24353 has 80 MA's), (50, 23999), (64, 23924), (149, 23489), (180, 23354),

Gene: DelRio\_40 Start: 32511, Stop: 31240, Start Num: 11

Candidate Starts for DelRio\_40:

(7, 32535), (Start: 11 @32511 has 80 MA's), (Start: 13 @32496 has 2 MA's), (19, 32394), (21, 32352), (23, 32340), (33, 32265), (43, 32190), (45, 32181), (47, 32163), (67, 32064), (68, 32061), (82, 31971), (102, 31875), (104, 31866), (123, 31770), (130, 31746), (161, 31602), (181, 31461), (187, 31416), (194, 31365), (195, 31356), (199, 31341), (202, 31329), (205, 31317), (212, 31278),

Gene: DumpsterDude\_40 Start: 35157, Stop: 33988, Start Num: 11

Candidate Starts for DumpsterDude\_40:

(Start: 11 @35157 has 80 MA's), (20, 35001), (33, 34914), (44, 34833), (49, 34797), (60, 34743), (61, 34737), (64, 34725), (67, 34713), (82, 34620), (83, 34614), (89, 34584), (104, 34515), (105, 34512), (113, 34482), (114, 34479), (122, 34431), (141, 34359), (180, 34197), (181, 34185), (185, 34158), (192, 34098), (194, 34089), (204, 34044), (210, 34005),

Gene: Easley\_35 Start: 28370, Stop: 27201, Start Num: 11

Candidate Starts for Easley\_35:

(Start: 11 @28370 has 80 MA's), (33, 28127), (45, 28043), (49, 28010), (64, 27938), (67, 27926), (74, 27881), (82, 27833), (104, 27728), (105, 27725), (113, 27695), (115, 27686), (141, 27572), (159, 27500), (161, 27497), (164, 27473), (166, 27467), (168, 27455), (180, 27410), (181, 27398), (185, 27371), (199, 27278), (204, 27257), (210, 27218),

Gene: Eesa\_33 Start: 25111, Stop: 23927, Start Num: 11

Candidate Starts for Eesa\_33:

(Start: 11 @25111 has 80 MA's), (28, 24892), (33, 24874), (50, 24757), (68, 24667), (124, 24352), (146, 24259), (149, 24247), (155, 24229), (180, 24112), (184, 24076),

Gene: Fingolfin\_36 Start: 23916, Stop: 22723, Start Num: 11

Candidate Starts for Fingolfin\_36:

(Start: 11 @23916 has 80 MA's), (64, 23487), (74, 23430), (76, 23406), (120, 23178), (149, 23052), (152, 23040), (157, 23019), (184, 22881), (195, 22800), (207, 22752),

Gene: Francois\_38 Start: 31405, Stop: 30134, Start Num: 11

Candidate Starts for Francois\_38:

(Start: 11 @31405 has 80 MA's), (Start: 13 @31390 has 2 MA's), (19, 31288), (21, 31246), (33, 31159), (43, 31084), (45, 31075), (47, 31057), (67, 30958), (68, 30955), (82, 30865), (102, 30769), (123, 30664), (125, 30658), (161, 30496), (181, 30355), (187, 30310), (194, 30259), (199, 30235), (202, 30223), (205, 30211), (212, 30172),

Gene: FroggyToad\_38 Start: 30081, Stop: 28912, Start Num: 11

Candidate Starts for FroggyToad\_38:

(Start: 11 @30081 has 80 MA's), (33, 29838), (44, 29757), (49, 29721), (54, 29694), (60, 29667), (61, 29661), (64, 29649), (67, 29637), (79, 29553), (82, 29544), (83, 29538), (104, 29439), (105, 29436), (113, 29406), (122, 29355), (141, 29283), (148, 29253), (180, 29121), (181, 29109), (192, 29022), (194, 29013), (204, 28968), (210, 28929),

Gene: GMA4\_29 Start: 26449, Stop: 25217, Start Num: 12

Candidate Starts for GMA4\_29:

(12, 26449), (26, 26212), (28, 26203), (30, 26197), (67, 25981), (75, 25924), (90, 25837), (104, 25753), (106, 25747), (115, 25711), (140, 25570), (159, 25498), (183, 25381), (192, 25309), (198, 25276), (200, 25273),

Gene: Galaxy\_33 Start: 24046, Stop: 22862, Start Num: 11

Candidate Starts for Galaxy\_33:

(Start: 11 @24046 has 80 MA's), (50, 23692), (64, 23617), (68, 23602), (120, 23308), (124, 23287), (136, 23260), (146, 23194), (149, 23182), (155, 23164), (183, 23020), (184, 23011),

Gene: Glotell\_37 Start: 24072, Stop: 22879, Start Num: 11

Candidate Starts for Glotell\_37:

(Start: 11 @24072 has 80 MA's), (64, 23643), (74, 23586), (76, 23562), (120, 23334), (149, 23208), (152, 23196), (157, 23175), (184, 23037), (195, 22956), (207, 22908),

Gene: GrandSlam\_39 Start: 31803, Stop: 30532, Start Num: 11

Candidate Starts for GrandSlam\_39:

(Start: 11 @31803 has 80 MA's), (Start: 13 @31788 has 2 MA's), (19, 31686), (21, 31644), (23, 31632), (33, 31557), (43, 31482), (45, 31473), (47, 31455), (67, 31356), (68, 31353), (82, 31263), (104, 31158), (123, 31062), (125, 31056), (161, 30894), (181, 30753), (187, 30708), (194, 30657), (195, 30648), (199, 30633), (202, 30621), (205, 30609), (212, 30570),

Gene: Gravel\_41 Start: 25089, Stop: 23905, Start Num: 11

Candidate Starts for Gravel\_41:

(Start: 11 @25089 has 80 MA's), (28, 24870), (33, 24852), (50, 24735), (64, 24660), (124, 24330), (146, 24237), (149, 24225), (155, 24207), (180, 24090), (184, 24054),

Gene: HamCheese\_36 Start: 23900, Stop: 22707, Start Num: 11

Candidate Starts for HamCheese\_36:

(Start: 11 @23900 has 80 MA's), (64, 23471), (74, 23414), (76, 23390), (120, 23162), (149, 23036), (152, 23024), (157, 23003), (184, 22865), (195, 22784), (207, 22736),

Gene: Hamood\_39 Start: 31803, Stop: 30532, Start Num: 11

Candidate Starts for Hamood\_39:

(Start: 11 @31803 has 80 MA's), (Start: 13 @31788 has 2 MA's), (19, 31686), (21, 31644), (23, 31632), (33, 31557), (43, 31482), (45, 31473), (47, 31455), (67, 31356), (68, 31353), (82, 31263), (104, 31158), (123, 31062), (125, 31056), (161, 30894), (181, 30753), (187, 30708), (194, 30657), (195, 30648), (199, 30633), (202, 30621), (205, 30609), (212, 30570),

Gene: HannahPhantana\_37 Start: 24015, Stop: 22828, Start Num: 11

Candidate Starts for HannahPhantana\_37:

(4, 24105), (Start: 11 @24015 has 80 MA's), (64, 23586), (149, 23151), (180, 23016),

Gene: Hum25\_34 Start: 25182, Stop: 24091, Start Num: 14

Candidate Starts for Hum25\_34:

(Start: 10 @25206 has 4 MA's), (Start: 14 @25182 has 1 MA's), (25, 25011), (28, 24984), (37, 24945), (47, 24876), (50, 24855), (52, 24846), (63, 24789), (66, 24777), (67, 24774), (69, 24765), (71, 24753), (77, 24693), (80, 24684), (84, 24669), (100, 24603), (108, 24570), (116, 24543), (124, 24489), (132, 24468), (143, 24420), (144, 24417), (145, 24405), (147, 24396), (152, 24378), (153, 24375), (156, 24369), (161, 24357), (167, 24324), (180, 24270), (183, 24243), (192, 24171), (204, 24117),

Gene: JCole\_37 Start: 29060, Stop: 27801, Start Num: 11

Candidate Starts for JCole\_37:

(Start: 11 @29060 has 80 MA's), (45, 28730), (51, 28685), (64, 28625), (67, 28613), (74, 28568), (87, 28496), (123, 28328), (124, 28325), (145, 28232), (161, 28172), (177, 28055), (180, 28043), (183, 28016), (187, 27986), (195, 27926), (199, 27911), (202, 27899), (204, 27890), (210, 27851),

Gene: Jamun\_33 Start: 24299, Stop: 23115, Start Num: 11

Candidate Starts for Jamun\_33:

(Start: 11 @24299 has 80 MA's), (28, 24080), (31, 24071), (50, 23945), (68, 23855), (146, 23447), (149, 23435), (155, 23417), (183, 23273), (184, 23264),

Gene: Jerole\_37 Start: 24138, Stop: 22951, Start Num: 11

Candidate Starts for Jerole\_37:

(4, 24228), (Start: 11 @24138 has 80 MA's), (50, 23784), (64, 23709), (149, 23274), (180, 23139),

Gene: Juno112\_35 Start: 23916, Stop: 22723, Start Num: 11

Candidate Starts for Juno112\_35:

(Start: 11 @23916 has 80 MA's), (64, 23487), (74, 23430), (76, 23406), (120, 23178), (149, 23052), (152, 23040), (157, 23019), (184, 22881), (195, 22800), (207, 22752),

Gene: KHumphrey\_36 Start: 23915, Stop: 22722, Start Num: 11

Candidate Starts for KHumphrey\_36:

(Start: 11 @23915 has 80 MA's), (64, 23486), (74, 23429), (76, 23405), (120, 23177), (149, 23051), (152, 23039), (157, 23018), (184, 22880), (195, 22799), (207, 22751),

Gene: KendraB23\_42 Start: 25277, Stop: 24093, Start Num: 11

Candidate Starts for KendraB23\_42:

(Start: 11 @25277 has 80 MA's), (28, 25058), (33, 25040), (50, 24923), (64, 24848), (65, 24845), (124, 24518), (146, 24425), (149, 24413), (155, 24395), (180, 24278), (184, 24242),

Gene: Kepler\_38 Start: 24761, Stop: 23574, Start Num: 11

Candidate Starts for Kepler\_38:

(4, 24851), (Start: 11 @24761 has 80 MA's), (50, 24407), (64, 24332), (149, 23897), (180, 23762), (203, 23612),

Gene: Khuang\_45 Start: 28583, Stop: 27426, Start Num: 10

Candidate Starts for Khuang\_45:

(Start: 10 @28583 has 4 MA's), (15, 28532), (18, 28508), (24, 28388), (28, 28349), (33, 28331), (34, 28325), (36, 28316), (45, 28259), (61, 28160), (67, 28136), (69, 28127), (82, 28037), (83, 28031), (84, 28022), (110, 27905), (123, 27836), (143, 27767), (152, 27725), (159, 27707), (161, 27704), (164, 27680), (173, 27650), (180, 27599), (188, 27539), (189, 27536), (204, 27446),

Gene: Kuleana\_37 Start: 24189, Stop: 23008, Start Num: 11

Candidate Starts for Kuleana\_37:

(Start: 11 @24189 has 80 MA's), (48, 23850), (149, 23325),

Gene: Laphuphu24k\_35 Start: 23900, Stop: 22707, Start Num: 11

Candidate Starts for Laphuphu24k\_35:

(Start: 11 @23900 has 80 MA's), (64, 23471), (74, 23414), (76, 23390), (120, 23162), (149, 23036), (152, 23024), (157, 23003), (184, 22865), (195, 22784), (207, 22736),

Gene: Leona\_35 Start: 23984, Stop: 22791, Start Num: 11

Candidate Starts for Leona\_35:

(Start: 11 @23984 has 80 MA's), (19, 23870), (64, 23555), (120, 23246), (149, 23120), (152, 23108), (157, 23087), (207, 22820),

Gene: LittleTokyo\_36 Start: 23859, Stop: 22669, Start Num: 11

Candidate Starts for LittleTokyo\_36:

(Start: 11 @23859 has 80 MA's), (64, 23427), (120, 23118), (149, 22992), (152, 22980), (205, 22701),

Gene: Lunar\_38 Start: 24679, Stop: 23492, Start Num: 11

Candidate Starts for Lunar\_38:

(4, 24769), (Start: 11 @24679 has 80 MA's), (149, 23815), (180, 23680), (208, 23512),

Gene: Madeline\_35 Start: 31541, Stop: 30279, Start Num: 11

Candidate Starts for Madeline\_35:

(Start: 11 @31541 has 80 MA's), (20, 31385), (46, 31202), (51, 31166), (64, 31106), (67, 31094), (74, 31049), (78, 31016), (87, 30974), (113, 30860), (123, 30806), (124, 30803), (141, 30728), (145, 30710), (146, 30707), (161, 30650), (177, 30533), (180, 30521), (185, 30482), (187, 30464), (195, 30404), (199, 30389), (202, 30377), (204, 30368), (210, 30329), (213, 30299),

Gene: Malibo\_40 Start: 32774, Stop: 31605, Start Num: 11

Candidate Starts for Malibo\_40:

(Start: 11 @32774 has 80 MA's), (45, 32450), (47, 32432), (64, 32345), (67, 32333), (74, 32288), (82, 32240), (83, 32234), (86, 32219), (87, 32216), (89, 32204), (105, 32132), (122, 32051), (161, 31901), (166, 31871), (180, 31814), (181, 31802), (185, 31775), (199, 31682), (204, 31661), (210, 31622), (211, 31613),

Gene: Mbo4\_31 Start: 29712, Stop: 28447, Start Num: 11

Candidate Starts for Mbo4\_31:

(Start: 11 @29712 has 80 MA's), (Start: 13 @29697 has 2 MA's), (16, 29658), (19, 29595), (20, 29538), (23, 29523), (35, 29448), (37, 29439), (39, 29412), (49, 29346), (55, 29310), (56, 29301), (64, 29265), (65, 29262), (67, 29253), (69, 29244), (72, 29226), (73, 29223), (74, 29208), (84, 29142), (88, 29127), (89, 29121), (95, 29076), (98, 29052), (101, 29043), (107, 29022), (109, 29007), (112, 28998), (117, 28974), (118, 28965), (119, 28956), (134, 28893), (137, 28875), (139, 28872), (141, 28830), (144, 28824), (146, 28809), (147, 28803), (154, 28779), (158, 28758), (171, 28707), (174, 28692), (178, 28674), (183, 28638), (185, 28626), (186, 28611), (192, 28563), (193, 28557), (195, 28545), (199, 28530), (202, 28518), (208, 28494), (209, 28488),

Gene: Melons\_38 Start: 24495, Stop: 23308, Start Num: 11

Candidate Starts for Melons\_38:

(4, 24585), (Start: 11 @24495 has 80 MA's), (50, 24141), (61, 24078), (64, 24066), (149, 23631), (180, 23496), (181, 23484), (208, 23328),

Gene: Merpity\_34 Start: 25482, Stop: 24364, Start Num: 10

Candidate Starts for Merpity\_34:

(3, 25599), (Start: 10 @25482 has 4 MA's), (25, 25287), (28, 25260), (50, 25131), (63, 25065), (66, 25053), (67, 25050), (71, 25029), (84, 24945), (100, 24879), (108, 24846), (113, 24831), (115, 24822), (124, 24765), (132, 24744), (143, 24696), (144, 24693), (145, 24681), (147, 24672), (152, 24654), (153, 24651), (156, 24645), (161, 24633), (180, 24546), (192, 24447), (204, 24393),

Gene: ModicumRichard\_35 Start: 30420, Stop: 29293, Start Num: 11

Candidate Starts for ModicumRichard\_35:

(1, 30900), (Start: 11 @30420 has 80 MA's), (16, 30366), (21, 30261), (46, 30090), (62, 30000), (70, 29964), (89, 29850), (97, 29811), (105, 29787), (124, 29691), (161, 29559), (169, 29514), (183, 29442), (204, 29316),

Gene: Morgana\_35 Start: 30175, Stop: 29048, Start Num: 11

Candidate Starts for Morgana\_35:

(1, 30832), (2, 30778), (Start: 11 @30175 has 80 MA's), (16, 30121), (46, 29845), (62, 29755), (70, 29719), (89, 29605), (97, 29566), (105, 29542), (124, 29446), (161, 29314), (169, 29269), (183, 29197), (204, 29071),

Gene: MrSmee\_34 Start: 25508, Stop: 24390, Start Num: 10

Candidate Starts for MrSmee\_34:

(Start: 10 @25508 has 4 MA's), (25, 25313), (29, 25283), (31, 25277), (37, 25247), (42, 25211), (47, 25178), (48, 25172), (50, 25157), (52, 25148), (63, 25091), (66, 25079), (67, 25076), (69, 25067), (71, 25055), (73, 25046), (80, 24986), (84, 24971), (100, 24905), (104, 24890), (108, 24872), (115, 24848), (116, 24845), (123, 24794), (132, 24770), (143, 24722), (145, 24707), (150, 24686), (152, 24680), (161, 24659), (204, 24419),

Gene: Mulch\_39 Start: 31322, Stop: 30051, Start Num: 11

Candidate Starts for Mulch\_39:

(Start: 11 @31322 has 80 MA's), (Start: 13 @31307 has 2 MA's), (19, 31205), (21, 31163), (23, 31151), (33, 31076), (43, 31001), (45, 30992), (47, 30974), (67, 30875), (68, 30872), (82, 30782), (104, 30677), (123, 30581), (125, 30575), (161, 30413), (181, 30272), (187, 30227), (194, 30176), (195, 30167), (199, 30152), (202, 30140), (205, 30128), (212, 30089),

Gene: Nadeem\_39 Start: 31322, Stop: 30051, Start Num: 11

Candidate Starts for Nadeem\_39:

(Start: 11 @31322 has 80 MA's), (Start: 13 @31307 has 2 MA's), (19, 31205), (21, 31163), (23, 31151), (33, 31076), (43, 31001), (45, 30992), (47, 30974), (67, 30875), (68, 30872), (82, 30782), (104, 30677), (123, 30581), (125, 30575), (161, 30413), (181, 30272), (187, 30227), (194, 30176), (195, 30167), (199, 30152), (202, 30140), (205, 30128), (212, 30089),

Gene: NancyRae\_39 Start: 31331, Stop: 30060, Start Num: 11

Candidate Starts for NancyRae\_39:

(Start: 11 @31331 has 80 MA's), (Start: 13 @31316 has 2 MA's), (19, 31214), (21, 31172), (23, 31160), (33, 31085), (43, 31010), (45, 31001), (47, 30983), (67, 30884), (68, 30881), (82, 30791), (104, 30686), (125, 30584), (130, 30566), (161, 30422), (181, 30281), (187, 30236), (194, 30185), (195, 30176), (202, 30149), (205, 30137), (212, 30098),

Gene: ObLaDi\_35 Start: 30398, Stop: 29271, Start Num: 11

Candidate Starts for ObLaDi\_35:

(Start: 11 @30398 has 80 MA's), (16, 30344), (21, 30239), (46, 30068), (62, 29978), (70, 29942), (97, 29789), (105, 29765), (124, 29669), (161, 29537), (169, 29492), (183, 29420), (204, 29294),

Gene: Ohgeesy\_38 Start: 32336, Stop: 31074, Start Num: 11

Candidate Starts for Ohgeesy\_38:

(Start: 11 @32336 has 80 MA's), (20, 32180), (46, 31997), (51, 31961), (64, 31901), (67, 31889), (74, 31844), (78, 31811), (87, 31769), (123, 31601), (124, 31598), (141, 31523), (145, 31505), (146, 31502), (161, 31445), (177, 31328), (180, 31316), (187, 31259), (195, 31199), (199, 31184), (202, 31172), (204, 31163), (210, 31124),

Gene: Oppalora\_35 Start: 23914, Stop: 22721, Start Num: 11

Candidate Starts for Oppalora\_35:

(Start: 11 @23914 has 80 MA's), (64, 23485), (74, 23428), (76, 23404), (120, 23176), (149, 23050), (152, 23038), (157, 23017), (184, 22879), (195, 22798), (207, 22750),

Gene: Orcanus\_34 Start: 24639, Stop: 23455, Start Num: 11

Candidate Starts for Orcanus\_34:

(Start: 11 @24639 has 80 MA's), (28, 24420), (33, 24402), (50, 24285), (64, 24210), (67, 24198), (124, 23880), (146, 23787), (149, 23775), (155, 23757), (180, 23640), (184, 23604),

Gene: OtsoOtso\_37 Start: 23869, Stop: 22682, Start Num: 11

Candidate Starts for OtsoOtso\_37:

(4, 23959), (Start: 11 @23869 has 80 MA's), (64, 23440), (149, 23005), (180, 22870),

Gene: PantheRoc\_37 Start: 30354, Stop: 29092, Start Num: 11

Candidate Starts for PantheRoc\_37:

(Start: 11 @30354 has 80 MA's), (20, 30198), (46, 30015), (51, 29979), (64, 29919), (67, 29907), (74, 29862), (78, 29829), (87, 29787), (123, 29619), (124, 29616), (141, 29541), (145, 29523), (146, 29520), (161, 29463), (177, 29346), (180, 29334), (187, 29277), (195, 29217), (199, 29202), (202, 29190), (204, 29181), (210, 29142),

Gene: Parada\_39 Start: 31322, Stop: 30051, Start Num: 11

Candidate Starts for Parada\_39:

(Start: 11 @31322 has 80 MA's), (Start: 13 @31307 has 2 MA's), (19, 31205), (21, 31163), (23, 31151), (33, 31076), (43, 31001), (45, 30992), (47, 30974), (67, 30875), (68, 30872), (82, 30782), (104, 30677), (123, 30581), (125, 30575), (161, 30413), (181, 30272), (187, 30227), (194, 30176), (195, 30167), (199, 30152), (202, 30140), (205, 30128), (212, 30089),

Gene: Pelletreau\_41 Start: 25089, Stop: 23905, Start Num: 11

Candidate Starts for Pelletreau\_41:

(Start: 11 @25089 has 80 MA's), (28, 24870), (33, 24852), (50, 24735), (64, 24660), (124, 24330), (146, 24237), (149, 24225), (155, 24207), (180, 24090), (184, 24054),

Gene: PhluffyCoco\_36 Start: 23912, Stop: 22719, Start Num: 11

Candidate Starts for PhluffyCoco\_36:

(Start: 11 @23912 has 80 MA's), (64, 23483), (74, 23426), (120, 23174), (149, 23048), (152, 23036), (184, 22877), (195, 22796), (207, 22748),

Gene: PhriskyACE\_36 Start: 30974, Stop: 29805, Start Num: 11

Candidate Starts for PhriskyACE\_36:

(Start: 11 @30974 has 80 MA's), (22, 30812), (45, 30650), (47, 30632), (58, 30566), (63, 30548), (64, 30545), (67, 30533), (74, 30488), (79, 30449), (82, 30440), (86, 30419), (87, 30416), (105, 30332), (106, 30329), (118, 30272), (151, 30137), (161, 30101), (166, 30071), (180, 30014), (181, 30002), (183, 29987), (195, 29897), (199, 29882), (204, 29861), (210, 29822), (211, 29813),

Gene: Pimento\_39 Start: 30980, Stop: 29709, Start Num: 11

Candidate Starts for Pimento\_39:

(7, 31004), (Start: 11 @30980 has 80 MA's), (Start: 13 @30965 has 2 MA's), (19, 30863), (21, 30821), (23, 30809), (33, 30734), (43, 30659), (45, 30650), (47, 30632), (67, 30533), (68, 30530), (82, 30440), (102, 30344), (104, 30335), (123, 30239), (130, 30215), (161, 30071), (181, 29930), (187, 29885), (194, 29834), (195, 29825), (199, 29810), (202, 29798), (205, 29786), (212, 29747),

Gene: Pineda\_38 Start: 24165, Stop: 22978, Start Num: 11

Candidate Starts for Pineda\_38:

(4, 24255), (Start: 11 @24165 has 80 MA's), (64, 23736), (149, 23301), (180, 23166),

Gene: Pitbull\_33 Start: 24636, Stop: 23518, Start Num: 10

Candidate Starts for Pitbull\_33:

(6, 24666), (9, 24639), (Start: 10 @24636 has 4 MA's), (Start: 14 @24612 has 1 MA's), (25, 24441), (28, 24414), (47, 24306), (50, 24285), (52, 24276), (58, 24237), (63, 24219), (66, 24207), (67, 24204), (71, 24183), (77, 24123), (84, 24099), (100, 24033), (104, 24018), (115, 23976), (132, 23898), (143, 23850), (145, 23835), (150, 23814), (152, 23808), (161, 23787), (192, 23601), (204, 23547),

Gene: Polka\_36 Start: 23869, Stop: 22682, Start Num: 11

Candidate Starts for Polka\_36:

(4, 23959), (Start: 11 @23869 has 80 MA's), (64, 23440), (149, 23005), (180, 22870),

Gene: Powerball\_37 Start: 30563, Stop: 29394, Start Num: 11

Candidate Starts for Powerball\_37:

(Start: 11 @30563 has 80 MA's), (33, 30320), (49, 30203), (60, 30149), (61, 30143), (64, 30131), (67, 30119), (82, 30026), (83, 30020), (89, 29990), (104, 29921), (105, 29918), (113, 29888), (122, 29837), (141, 29765), (180, 29603), (181, 29591), (192, 29504), (194, 29495), (204, 29450), (210, 29411),

Gene: REQ3\_01 Start: 1320, Stop: 82, Start Num: 11

Candidate Starts for REQ3\_01:

(5, 1395), (Start: 11 @1320 has 80 MA's), (19, 1203), (22, 1137), (27, 1083), (31, 1074), (32, 1068), (41, 1002), (54, 927), (67, 861), (73, 831), (74, 816), (75, 807), (82, 765), (85, 747), (92, 702), (93, 699), (95, 669), (98, 642), (101, 633), (111, 591), (112, 588), (118, 555), (131, 492), (137, 465), (141, 423), (144, 417), (146, 402), (147, 396), (154, 378), (158, 360), (160, 357), (163, 342), (168, 315), (174, 294), (183, 240), (191, 171), (192, 165), (205, 108), (208, 96),

Gene: Rattail\_36 Start: 23998, Stop: 22805, Start Num: 11

Candidate Starts for Rattail\_36:

(Start: 11 @23998 has 80 MA's), (64, 23569), (74, 23512), (120, 23260), (149, 23134), (152, 23122), (184, 22963), (195, 22882), (207, 22834),

Gene: RedFox\_36 Start: 23911, Stop: 22718, Start Num: 11

Candidate Starts for RedFox\_36:

(Start: 11 @23911 has 80 MA's), (64, 23482), (74, 23425), (76, 23401), (120, 23173), (149, 23047), (152, 23035), (157, 23014), (184, 22876), (195, 22795), (207, 22747),

Gene: Renna12\_35 Start: 23953, Stop: 22760, Start Num: 11

Candidate Starts for Renna12\_35:

(Start: 11 @23953 has 80 MA's), (34, 23710), (64, 23524), (74, 23467), (76, 23443), (120, 23215), (149, 23089), (152, 23077), (207, 22789),

Gene: Ruchi\_33 Start: 24704, Stop: 23520, Start Num: 11

Candidate Starts for Ruchi\_33:

(Start: 11 @24704 has 80 MA's), (28, 24485), (50, 24350), (64, 24275), (68, 24260), (100, 24059), (146, 23852), (149, 23840), (155, 23822), (157, 23807), (180, 23705), (183, 23678), (184, 23669),

Gene: Ruthy\_39 Start: 33142, Stop: 31883, Start Num: 11

Candidate Starts for Ruthy\_39:

(Start: 11 @33142 has 80 MA's), (43, 32821), (64, 32707), (67, 32695), (82, 32602), (87, 32578), (123, 32410), (124, 32407), (145, 32314), (146, 32311), (161, 32254), (177, 32137), (180, 32125), (187, 32068), (199, 31993), (202, 31981), (210, 31933),

Gene: Shen\_33 Start: 23191, Stop: 22007, Start Num: 11

Candidate Starts for Shen\_33:

(Start: 11 @23191 has 80 MA's), (28, 22972), (33, 22954), (50, 22837), (64, 22762), (65, 22759), (124, 22432), (146, 22339), (149, 22327), (155, 22309), (180, 22192), (184, 22156),

Gene: Sidious\_37 Start: 31771, Stop: 30602, Start Num: 11

Candidate Starts for Sidious\_37:

(Start: 11 @31771 has 80 MA's), (44, 31447), (49, 31411), (60, 31357), (61, 31351), (64, 31339), (67, 31327), (82, 31234), (83, 31228), (89, 31198), (104, 31129), (105, 31126), (113, 31096), (122, 31045), (141, 30973), (161, 30898), (180, 30811), (181, 30799), (192, 30712), (194, 30703), (204, 30658), (210, 30619),

Gene: Skitty\_31 Start: 24174, Stop: 23056, Start Num: 10

Candidate Starts for Skitty\_31:

(Start: 10 @24174 has 4 MA's), (25, 23979), (28, 23952), (37, 23913), (50, 23823), (52, 23814), (63, 23757), (66, 23745), (67, 23742), (69, 23733), (71, 23721), (77, 23661), (80, 23652), (84, 23637), (100, 23571), (104, 23556), (108, 23538), (115, 23514), (116, 23511), (132, 23436), (143, 23388), (145, 23373), (150, 23352), (161, 23325), (192, 23139), (204, 23085),

Gene: Sprinklemunch\_44 Start: 33982, Stop: 32723, Start Num: 11

Candidate Starts for Sprinklemunch\_44:

(Start: 11 @33982 has 80 MA's), (19, 33865), (55, 33583), (64, 33547), (67, 33535), (74, 33490), (123, 33250), (124, 33247), (145, 33154), (161, 33094), (175, 33016), (177, 32977), (180, 32965), (187, 32908), (195, 32848), (202, 32821), (204, 32812), (210, 32773), (213, 32743),

Gene: StuartMinion\_28 Start: 20996, Stop: 19803, Start Num: 11

Candidate Starts for StuartMinion\_28:

(Start: 11 @20996 has 80 MA's), (64, 20567), (104, 20336), (124, 20237), (149, 20132), (152, 20120), (184, 19961), (207, 19832),

Gene: Suerte\_34 Start: 29564, Stop: 28395, Start Num: 11

Candidate Starts for Suerte\_34:

(Start: 11 @29564 has 80 MA's), (22, 29402), (45, 29240), (47, 29222), (58, 29156), (63, 29138), (67, 29123), (74, 29078), (79, 29039), (82, 29030), (86, 29009), (87, 29006), (105, 28922), (148, 28739), (151, 28727), (161, 28691), (166, 28661), (180, 28604), (181, 28592), (183, 28577), (195, 28487), (204, 28451), (210, 28412), (211, 28403),

Gene: TPA4\_37 Start: 32608, Stop: 31376, Start Num: 11

Candidate Starts for TPA4\_37:

(8, 32614), (Start: 11 @32608 has 80 MA's), (67, 32161), (74, 32116), (96, 32005), (105, 31960), (121, 31879), (127, 31855), (129, 31849), (133, 31831), (149, 31741), (168, 31654), (176, 31603), (177, 31582), (180, 31570), (192, 31471), (195, 31453), (202, 31426),

Gene: Taotie\_123 Start: 63098, Stop: 61953, Start Num: 11

Candidate Starts for Taotie\_123:

(Start: 11 @63098 has 80 MA's), (87, 62546), (105, 62474), (121, 62393), (125, 62375), (138, 62351), (141, 62315), (147, 62288), (196, 62036), (201, 62015),

Gene: TaylorSipht\_34 Start: 24061, Stop: 22877, Start Num: 11

Candidate Starts for TaylorSipht\_34:

(Start: 11 @24061 has 80 MA's), (50, 23707), (61, 23644), (64, 23632), (68, 23617), (91, 23464), (120, 23323), (124, 23302), (146, 23209), (149, 23197), (183, 23035), (184, 23026),

Gene: Toad24\_36 Start: 25330, Stop: 24146, Start Num: 11

Candidate Starts for Toad24\_36:

(Start: 11 @25330 has 80 MA's), (28, 25111), (33, 25093), (50, 24976), (64, 24901), (124, 24571), (146, 24478), (149, 24466), (155, 24448), (180, 24331), (184, 24295),

Gene: Tortellini\_32 Start: 30878, Stop: 29682, Start Num: 13

Candidate Starts for Tortellini\_32:

(Start: 13 @30878 has 2 MA's), (33, 30632), (38, 30599), (57, 30461), (59, 30455), (63, 30446), (67, 30434), (73, 30404), (89, 30305), (98, 30233), (104, 30212), (113, 30179), (121, 30128), (122, 30122), (142, 30029), (162, 29954), (165, 29933), (178, 29876), (180, 29867), (183, 29840), (185, 29828), (190, 29789), (198, 29735), (204, 29714),

Gene: VanLee\_32 Start: 27924, Stop: 26788, Start Num: 11

Candidate Starts for VanLee\_32:

(Start: 11 @27924 has 80 MA's), (16, 27870), (18, 27852), (28, 27702), (40, 27630), (64, 27489), (67, 27477), (68, 27474), (70, 27462), (81, 27393), (104, 27291), (105, 27288), (113, 27258), (170, 27015), (172, 27012), (179, 26976), (182, 26955), (206, 26808),

Gene: Vasanti\_37 Start: 29057, Stop: 27888, Start Num: 11

Candidate Starts for Vasanti\_37:

(Start: 11 @29057 has 80 MA's), (33, 28814), (44, 28733), (49, 28697), (51, 28685), (60, 28643), (61, 28637), (64, 28625), (67, 28613), (79, 28529), (82, 28520), (83, 28514), (89, 28484), (104, 28415), (105, 28412), (113, 28382), (122, 28331), (141, 28259), (148, 28229), (180, 28097), (181, 28085), (192, 27998), (194, 27989), (204, 27944), (210, 27905),

Gene: Vulpecula\_33 Start: 24379, Stop: 23195, Start Num: 11

Candidate Starts for Vulpecula\_33:

(Start: 11 @24379 has 80 MA's), (28, 24160), (50, 24025), (64, 23950), (68, 23935), (100, 23734), (146, 23527), (149, 23515), (155, 23497), (157, 23482), (180, 23380), (183, 23353), (184, 23344),

Gene: Westrich\_40 Start: 25013, Stop: 23829, Start Num: 11

Candidate Starts for Westrich\_40:

(Start: 11 @25013 has 80 MA's), (28, 24794), (33, 24776), (50, 24659), (64, 24584), (124, 24254), (146, 24161), (149, 24149), (155, 24131), (180, 24014), (184, 23978),

Gene: WheatThin\_39 Start: 31322, Stop: 30051, Start Num: 11

Candidate Starts for WheatThin\_39:

(Start: 11 @31322 has 80 MA's), (Start: 13 @31307 has 2 MA's), (19, 31205), (21, 31163), (23, 31151), (33, 31076), (43, 31001), (45, 30992), (47, 30974), (67, 30875), (68, 30872), (82, 30782), (104, 30677), (123, 30581), (125, 30575), (161, 30413), (181, 30272), (187, 30227), (194, 30176), (195, 30167), (199, 30152), (202, 30140), (205, 30128), (212, 30089),

Gene: WileyE\_35 Start: 24249, Stop: 23065, Start Num: 11

Candidate Starts for WileyE\_35:

(Start: 11 @24249 has 80 MA's), (17, 24192), (28, 24030), (31, 24021), (50, 23895), (61, 23832), (64, 23820), (68, 23805), (82, 23715), (100, 23604), (120, 23511), (146, 23397), (149, 23385), (155, 23367), (183, 23223), (184, 23214),

Gene: Xavia\_34 Start: 31565, Stop: 30369, Start Num: 13

Candidate Starts for Xavia\_34:

(Start: 13 @31565 has 2 MA's), (33, 31319), (38, 31286), (57, 31148), (59, 31142), (63, 31133), (67, 31121), (73, 31091), (89, 30992), (98, 30920), (113, 30866), (121, 30815), (122, 30809), (142, 30716), (147, 30692), (162, 30641), (165, 30620), (178, 30563), (180, 30554), (183, 30527), (185, 30515), (190, 30476), (198, 30422), (204, 30401),

Gene: Yeezy\_36 Start: 30168, Stop: 28906, Start Num: 11

Candidate Starts for Yeezy\_36:

(Start: 11 @30168 has 80 MA's), (20, 30012), (46, 29829), (51, 29793), (64, 29733), (67, 29721), (74, 29676), (78, 29643), (87, 29601), (123, 29433), (124, 29430), (126, 29424), (141, 29355), (145, 29337), (146, 29334), (161, 29277), (177, 29160), (180, 29148), (187, 29091), (195, 29031), (199, 29016), (202, 29004), (204, 28995), (210, 28956), (213, 28926),

Gene: Zhuangyuan\_38 Start: 24716, Stop: 23526, Start Num: 11

Candidate Starts for Zhuangyuan\_38:

(Start: 11 @24716 has 80 MA's), (149, 23849), (152, 23837),

Gene: Zixiang\_36 Start: 24695, Stop: 23511, Start Num: 11

Candidate Starts for Zixiang\_36:

(Start: 11 @24695 has 80 MA's), (28, 24476), (33, 24458), (50, 24341), (64, 24266), (65, 24263), (124, 23936), (146, 23843), (149, 23831), (155, 23813), (180, 23696), (184, 23660),

Gene: Zodiariah\_36 Start: 32793, Stop: 31624, Start Num: 11

Candidate Starts for Zodiariah\_36:

(Start: 11 @32793 has 80 MA's), (39, 32505), (45, 32469), (50, 32430), (51, 32424), (58, 32385), (64, 32364), (67, 32352), (74, 32307), (79, 32268), (82, 32259), (84, 32244), (87, 32235), (94, 32199), (105, 32151), (151, 31956), (161, 31920), (180, 31833), (181, 31821), (195, 31716), (197, 31704), (210, 31641), (211, 31632),