



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 283839 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283839 has 58 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Applejack\_54
- Track 2 : Briton15\_63, Molly\_60
- Track 3 : Tasp14\_62
- Track 4 : Violet\_57
- Track 5 : Inyanga\_54, Iqorha\_54
- Track 6 : HanShotFirst\_60
- Track 7 : Lamina13\_61
- Track 8 : Conboy\_80, MoyaNatalis\_81, Linus\_82, RosiePosie\_82, JayCookie\_82
- Track 9 : Colucci\_85
- Track 10 : DrYang\_79
- Track 11 : KBurrousTX\_81
- Track 12 : Chocolat\_82, Scavito\_83, Kabreeze\_82, Chipper1996\_830, HumptyDumpty\_82, Mordred\_82, JaNo\_81, Tophat\_83, EdgarPoe\_81
- Track 13 : ArV1\_069
- Track 14 : PrincessTrina\_83
- Track 15 : Chubster\_83
- Track 16 : Lymara\_79
- Track 17 : Belphegor\_66
- Track 18 : Bogg\_99
- Track 19 : Tarkin\_98
- Track 20 : StellaBean\_97
- Track 21 : ShroomBoi\_67
- Track 22 : Brushbloom\_75
- Track 23 : Wee\_78, Taj\_79
- Track 24 : Totinger\_66
- Track 25 : Mova\_70
- Track 26 : Mantra\_64
- Track 27 : OwlsT2W\_66
- Track 28 : SG4\_70
- Track 29 : Kersh\_68
- Track 30 : Phalconet\_70
- Track 31 : Hegedechwinu\_73
- Track 32 : EleanorGeorge\_68
- Track 33 : Royals2015\_69
- Track 34 : PhesterPotato\_66
- Track 35 : StAnnes\_70
- Track 36 : Renaud18\_76

- Track 37 : Gonephishing\_142
- Track 38 : Optimus\_142
- Track 39 : Boilgate\_58
- Track 40 : Thespis\_55
- Track 41 : Nazo\_56
- Track 42 : BigNuz\_55
- Track 43 : MooMoo\_65

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

The start number called the most often in the published annotations is 14, it was called in 17 of the 52 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Chipper1996\_830, Chocolat\_82, Chubster\_83, Conboy\_80, DrYang\_79, EdgarPoe\_81, HumptyDumpty\_82, JaNo\_81, JayCookie\_82, Kabreeze\_82, Linus\_82, Lymara\_79, Mordred\_82, MoyaNatalis\_81, PrincessTrina\_83, RosiePosie\_82, Scavito\_83, Tophat\_83,

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

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

- Applejack\_54, ArV1\_069, Belphegor\_66, BigNuz\_55, Bogg\_99, Boilgate\_58, Briton15\_63, Brushbloom\_75, Colucci\_85, EleanorGeorge\_68, Gonephishing\_142, HanShotFirst\_60, Hegedechwinu\_73, Inyanga\_54, Iqorha\_54, KBurroustX\_81, Kersh\_68, Lamina13\_61, Mantra\_64, Molly\_60, MooMoo\_65, Mova\_70, Nazo\_56, Optimus\_142, OwlsT2W\_66, Phalconet\_70, PhesterPhotato\_66, Renaud18\_76, Royals2015\_69, SG4\_70, ShroomBoi\_67, StAnnes\_70, StellaBean\_97, Taj\_79, Tarkin\_98, Tasp14\_62, Thespis\_55, Totinger\_66, Violet\_57, Wee\_78,

**Summary by start number:**

Start 10:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hegedechwinu\_73 (F1),

Start 11:

- Found in 3 of 58 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 3 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phalconet\_70 (F1), Taj\_79 (F1), Wee\_78 (F1),

Start 12:

- Found in 4 of 58 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 4 of 52
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Kersh\_68 (F1), Mantra\_64 (F1), Mova\_70 (F1), Totinger\_66 (F1),

#### Start 14:

- Found in 18 of 58 ( 31.0% ) of genes in pham
- Manual Annotations of this start: 17 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chipper1996\_830 (AR), Chocolat\_82 (AR), Chubster\_83 (AR), Conboy\_80 (AR), DrYang\_79 (AR), EdgarPoe\_81 (AR), HumptyDumpty\_82 (AR), JaNo\_81 (AR), JayCookie\_82 (AR), Kabreeze\_82 (AR), Linus\_82 (AR), Lymara\_79 (AR), Mordred\_82 (AR), MoyaNatalis\_81 (AR), PrincessTrina\_83 (AR), RosiePosie\_82 (AR), Scavito\_83 (AR), Tophat\_83 (AR),

#### Start 20:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAnnes\_70 (F1),

#### Start 40:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thespis\_55 (P1),

#### Start 46:

- Found in 2 of 58 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belphegor\_66 (DE2), MooMoo\_65 (singleton),

#### Start 47:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boilgate\_58 (K8),

#### Start 49:

- Found in 21 of 58 ( 36.2% ) of genes in pham
- Manual Annotations of this start: 2 of 52
- Called 14.3% of time when present
- Phage (with cluster) where this start called: ArV1\_069 (AR), Colucci\_85 (AR), KBurrousTX\_81 (AR),

#### Start 51:

- Found in 4 of 58 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 4 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PhesterPhotato\_66 (F1), Renaud18\_76 (F4), Royals2015\_69 (F1), ShroomBoi\_67 (F1),

#### Start 54:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OwlsT2W\_66 (F1),

Start 61:

- Found in 2 of 58 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Brushbloom\_75 (F1),

Start 62:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EleanorGeorge\_68 (F1),

Start 64:

- Found in 2 of 58 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigNuz\_55 (P4), Nazo\_56 (P4),

Start 90:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SG4\_70 (F1),

Start 91:

- Found in 3 of 58 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 2 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bogg\_99 (E), StellaBean\_97 (E), Tarkin\_98 (E),

Start 92:

- Found in 8 of 58 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 8 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Applejack\_54 (A1), Briton15\_63 (A1), HanShotFirst\_60 (A1), Lamina13\_61 (A1), Molly\_60 (A1), Optimus\_142 (J), Tasp14\_62 (A1), Violet\_57 (A1),

Start 93:

- Found in 3 of 58 ( 5.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gonephishing\_142 (J), Inyanga\_54 (A1), Iqorha\_54 (A1),

**Summary by clusters:**

There are 11 clusters represented in this pham: F1, singleton, P1, E, P4, DE2, J, A1, AR, F4, K8,

Info for manual annotations of cluster A1:

- Start number 92 was manually annotated 7 times for cluster A1.

Info for manual annotations of cluster AR:

- Start number 14 was manually annotated 17 times for cluster AR.
- Start number 49 was manually annotated 2 times for cluster AR.

Info for manual annotations of cluster DE2:

- Start number 46 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster E:

- Start number 91 was manually annotated 2 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 10 was manually annotated 1 time for cluster F1.
- Start number 11 was manually annotated 3 times for cluster F1.
- Start number 12 was manually annotated 4 times for cluster F1.
- Start number 20 was manually annotated 1 time for cluster F1.
- Start number 51 was manually annotated 3 times for cluster F1.
- Start number 54 was manually annotated 1 time for cluster F1.
- Start number 61 was manually annotated 1 time for cluster F1.
- Start number 62 was manually annotated 1 time for cluster F1.
- Start number 90 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F4:

- Start number 51 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster J:

- Start number 92 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster K8:

- Start number 47 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster P1:

- Start number 40 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P4:

- Start number 64 was manually annotated 2 times for cluster P4.

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

Gene: Applejack\_54 Start: 38217, Stop: 36658, Start Num: 92

Candidate Starts for Applejack\_54:

(Start: 92 @38217 has 8 MA's), (110, 38109), (117, 38064), (126, 37980), (142, 37839), (171, 37689), (174, 37611), (189, 37506), (190, 37503), (197, 37401), (198, 37392), (209, 37185), (216, 37119), (249, 36978), (251, 36975), (258, 36921), (266, 36867), (271, 36834), (279, 36792), (280, 36759),

Gene: ArV1\_069 Start: 53043, Stop: 54641, Start Num: 49

Candidate Starts for ArV1\_069:

(Start: 49 @53043 has 2 MA's), (59, 53115), (70, 53151), (71, 53157), (73, 53175), (76, 53193), (88, 53250), (98, 53286), (101, 53316), (104, 53328), (113, 53391), (127, 53520), (130, 53589), (132, 53616), (146, 53697), (149, 53712), (152, 53727), (158, 53769), (159, 53778), (161, 53796), (168, 53814), (170, 53829), (179, 53913), (188, 53979), (191, 53985), (196, 54039), (210, 54066), (211, 54081), (214, 54105), (216, 54129), (217, 54150), (227, 54213), (235, 54267), (238, 54291), (256, 54405), (268, 54429), (271, 54447), (276, 54468), (283, 54537), (284, 54546), (288, 54588), (292, 54621),

Gene: Belphegor\_66 Start: 51910, Stop: 53616, Start Num: 46

Candidate Starts for Belphegor\_66:

(45, 51907), (Start: 46 @51910 has 2 MA's), (53, 51937), (57, 51979), (65, 52006), (69, 52027), (71, 52036), (84, 52114), (95, 52165), (104, 52216), (114, 52267), (119, 52312), (130, 52456), (136, 52504), (153, 52600), (160, 52645), (172, 52702), (173, 52714), (209, 52918), (214, 52960), (225, 53080), (232, 53146), (265, 53383), (268, 53398), (271, 53416), (282, 53503), (284, 53515), (291, 53584),

Gene: BigNuz\_55 Start: 38221, Stop: 39756, Start Num: 64

Candidate Starts for BigNuz\_55:

(13, 37939), (50, 38140), (55, 38182), (Start: 64 @38221 has 2 MA's), (70, 38248), (71, 38254), (75, 38278), (81, 38314), (82, 38317), (88, 38347), (101, 38413), (122, 38563), (131, 38686), (153, 38824), (165, 38896), (209, 39142), (211, 39160), (228, 39250), (229, 39259), (236, 39301), (258, 39466), (263, 39511), (271, 39553), (274, 39565), (279, 39595), (290, 39709),

Gene: Bogg\_99 Start: 57890, Stop: 59740, Start Num: 91

Candidate Starts for Bogg\_99:

(67, 57743), (72, 57773), (80, 57821), (83, 57836), (87, 57848), (Start: 91 @57890 has 2 MA's), (97, 57908), (110, 58004), (117, 58049), (126, 58133), (134, 58256), (148, 58343), (150, 58349), (162, 58436), (166, 58448), (177, 58580), (192, 58700), (199, 58823), (204, 58910), (209, 59045), (213, 59075), (214, 59087), (232, 59270), (233, 59273), (271, 59561), (279, 59603), (280, 59636), (283, 59651),

Gene: Boilgate\_58 Start: 41641, Stop: 43257, Start Num: 47

Candidate Starts for Boilgate\_58:

(29, 41533), (34, 41566), (Start: 47 @41641 has 1 MA's), (53, 41668), (56, 41698), (71, 41767), (103, 41941), (111, 41992), (114, 41998), (123, 42073), (131, 42193), (167, 42400), (169, 42403), (174, 42451), (176, 42469), (209, 42622), (211, 42640), (213, 42655), (217, 42712), (255, 42904), (271, 43054), (279, 43096), (284, 43153), (291, 43222), (294, 43246),

Gene: Briton15\_63 Start: 42021, Stop: 40291, Start Num: 92

Candidate Starts for Briton15\_63:

(Start: 92 @42021 has 8 MA's), (110, 41913), (117, 41868), (126, 41784), (142, 41643), (171, 41493), (174, 41415), (189, 41310), (190, 41307), (197, 41205), (198, 41196), (213, 40959), (216, 40923), (219, 40860), (232, 40758), (233, 40755), (245, 40677), (258, 40569), (267, 40497), (268, 40485), (269, 40476), (271, 40467), (276, 40446), (278, 40428),

Gene: Brushbloom\_75 Start: 46445, Stop: 47815, Start Num: 61

Candidate Starts for Brushbloom\_75:

(41, 46343), (44, 46352), (Start: 61 @46445 has 1 MA's), (71, 46481), (75, 46505), (81, 46541), (88, 46574), (106, 46658), (118, 46733), (126, 46814), (131, 46895), (147, 46994), (172, 47111), (187, 47213), (209, 47300), (212, 47321), (213, 47330), (216, 47366), (238, 47510), (239, 47513), (253, 47615), (258, 47672), (270, 47729), (277, 47765),

Gene: Chipper1996\_830 Start: 54205, Stop: 56127, Start Num: 14

Candidate Starts for Chipper1996\_830:

(Start: 14 @54205 has 17 MA's), (26, 54277), (Start: 49 @54409 has 2 MA's), (59, 54481), (70, 54517), (73, 54541), (76, 54559), (88, 54616), (98, 54652), (101, 54682), (104, 54694), (127, 54886), (130, 54955), (132, 54982), (146, 55063), (149, 55078), (152, 55093), (159, 55144), (161, 55162), (170, 55195), (179, 55279), (182, 55306), (188, 55345), (191, 55351), (196, 55405), (208, 55426), (209, 55429), (210, 55432), (211, 55447), (216, 55495), (217, 55516), (227, 55579), (230, 55603), (231, 55621), (234, 55630), (238, 55657), (257, 55792), (259, 55810), (262, 55879), (267, 55903), (268, 55915), (269, 55924), (271, 55933), (283, 56023), (284, 56032), (292, 56107), (293, 56113),

Gene: Chocolat\_82 Start: 53912, Stop: 55834, Start Num: 14

Candidate Starts for Chocolat\_82:

(Start: 14 @53912 has 17 MA's), (26, 53984), (Start: 49 @54116 has 2 MA's), (59, 54188), (70, 54224), (73, 54248), (76, 54266), (88, 54323), (98, 54359), (101, 54389), (104, 54401), (127, 54593), (130, 54662), (132, 54689), (146, 54770), (149, 54785), (152, 54800), (159, 54851), (161, 54869), (170, 54902), (179, 54986), (182, 55013), (188, 55052), (191, 55058), (196, 55112), (208, 55133), (209, 55136), (210, 55139), (211, 55154), (216, 55202), (217, 55223), (227, 55286), (230, 55310), (231, 55328), (234, 55337), (238, 55364), (257, 55499), (259, 55517), (262, 55586), (267, 55610), (268, 55622), (269, 55631), (271, 55640), (283, 55730), (284, 55739), (292, 55814), (293, 55820),

Gene: Chubster\_83 Start: 54594, Stop: 56483, Start Num: 14

Candidate Starts for Chubster\_83:

(Start: 14 @54594 has 17 MA's), (26, 54666), (Start: 49 @54798 has 2 MA's), (59, 54837), (70, 54873), (73, 54897), (76, 54915), (88, 54972), (98, 55008), (101, 55038), (104, 55050), (127, 55242), (132, 55338), (146, 55419), (149, 55434), (152, 55449), (159, 55500), (161, 55518), (170, 55551), (179, 55635), (188, 55701), (191, 55707), (196, 55761), (208, 55782), (209, 55785), (210, 55788), (211, 55803), (216, 55851), (217, 55872), (227, 55935), (230, 55959), (231, 55977), (234, 55986), (238, 56013), (257, 56148), (259, 56166), (262, 56235), (267, 56259), (268, 56271), (269, 56280), (271, 56289), (282, 56376), (283, 56379), (284, 56388), (292, 56463), (293, 56469),

Gene: Colucci\_85 Start: 54914, Stop: 56491, Start Num: 49

Candidate Starts for Colucci\_85:

(Start: 49 @54914 has 2 MA's), (70, 55001), (71, 55007), (73, 55025), (88, 55100), (98, 55136), (101, 55166), (130, 55439), (132, 55466), (146, 55547), (149, 55562), (152, 55577), (158, 55619), (159, 55628), (161, 55646), (170, 55679), (188, 55829), (191, 55835), (196, 55889), (210, 55916), (211, 55931), (216, 55979), (217, 56000), (222, 56036), (227, 56063), (235, 56117), (238, 56141), (256, 56255), (267, 56267), (271, 56297), (283, 56387), (284, 56396), (292, 56471),

Gene: Conboy\_80 Start: 53694, Stop: 55583, Start Num: 14

Candidate Starts for Conboy\_80:

(Start: 14 @53694 has 17 MA's), (26, 53766), (Start: 49 @53898 has 2 MA's), (59, 53937), (70, 53973), (73, 53997), (76, 54015), (88, 54072), (98, 54108), (101, 54138), (104, 54150), (127, 54342), (130, 54411), (132, 54438), (146, 54519), (149, 54534), (152, 54549), (159, 54600), (161, 54618), (170, 54651), (179, 54735), (188, 54801), (191, 54807), (196, 54861), (208, 54882), (209, 54885), (210, 54888), (211, 54903), (216, 54951), (217, 54972), (227, 55035), (230, 55059), (231, 55077), (234, 55086), (238, 55113), (257, 55248), (259, 55266), (262, 55335), (267, 55359), (268, 55371), (269, 55380), (271, 55389), (283, 55479), (284, 55488), (292, 55563), (293, 55569),

Gene: DrYang\_79 Start: 54332, Stop: 56248, Start Num: 14

Candidate Starts for DrYang\_79:

(Start: 14 @54332 has 17 MA's), (26, 54404), (38, 54491), (Start: 49 @54536 has 2 MA's), (59, 54602), (70, 54638), (73, 54662), (75, 54668), (81, 54704), (88, 54737), (98, 54773), (101, 54803), (127, 55007), (130, 55076), (132, 55103), (146, 55184), (149, 55199), (152, 55214), (158, 55256), (159,

55265), (168, 55301), (170, 55316), (188, 55466), (191, 55472), (196, 55526), (208, 55547), (209, 55550), (210, 55553), (211, 55568), (215, 55595), (216, 55616), (217, 55637), (227, 55700), (230, 55724), (238, 55778), (246, 55847), (259, 55931), (262, 56000), (266, 56021), (268, 56036), (269, 56045), (271, 56054), (276, 56075), (279, 56096), (283, 56144), (284, 56153), (292, 56228),

Gene: EdgarPoe\_81 Start: 54069, Stop: 55991, Start Num: 14

Candidate Starts for EdgarPoe\_81:

(Start: 14 @54069 has 17 MA's), (26, 54141), (Start: 49 @54273 has 2 MA's), (59, 54345), (70, 54381), (73, 54405), (76, 54423), (88, 54480), (98, 54516), (101, 54546), (104, 54558), (127, 54750), (130, 54819), (132, 54846), (146, 54927), (149, 54942), (152, 54957), (159, 55008), (161, 55026), (170, 55059), (179, 55143), (182, 55170), (188, 55209), (191, 55215), (196, 55269), (208, 55290), (209, 55293), (210, 55296), (211, 55311), (216, 55359), (217, 55380), (227, 55443), (230, 55467), (231, 55485), (234, 55494), (238, 55521), (257, 55656), (259, 55674), (262, 55743), (267, 55767), (268, 55779), (269, 55788), (271, 55797), (283, 55887), (284, 55896), (292, 55971), (293, 55977),

Gene: EleanorGeorge\_68 Start: 43670, Stop: 44953, Start Num: 62

Candidate Starts for EleanorGeorge\_68:

(Start: 62 @43670 has 1 MA's), (71, 43703), (75, 43727), (88, 43796), (120, 43979), (121, 43982), (122, 44000), (123, 44003), (147, 44222), (172, 44339), (187, 44441), (209, 44528), (213, 44558), (253, 44753), (258, 44810), (270, 44867), (277, 44903),

Gene: Gonephishing\_142 Start: 76140, Stop: 77969, Start Num: 93

Candidate Starts for Gonephishing\_142:

(93, 76140), (110, 76248), (117, 76293), (125, 76371), (126, 76377), (134, 76500), (162, 76662), (166, 76674), (177, 76806), (199, 77049), (204, 77136), (209, 77271), (212, 77292), (213, 77301), (216, 77337), (226, 77439), (232, 77502), (233, 77505), (268, 77775), (269, 77784), (271, 77793), (276, 77814), (278, 77832), (280, 77868),

Gene: HanShotFirst\_60 Start: 41970, Stop: 40321, Start Num: 92

Candidate Starts for HanShotFirst\_60:

(Start: 92 @41970 has 8 MA's), (110, 41862), (117, 41817), (126, 41733), (142, 41592), (171, 41442), (174, 41364), (189, 41259), (190, 41256), (197, 41154), (198, 41145), (209, 40938), (213, 40908), (216, 40872), (233, 40785), (268, 40515), (269, 40506), (271, 40497), (276, 40476), (278, 40458), (280, 40422),

Gene: Hegedechwinu\_73 Start: 43329, Stop: 44918, Start Num: 10

Candidate Starts for Hegedechwinu\_73:

(Start: 10 @43329 has 1 MA's), (16, 43368), (21, 43398), (27, 43434), (33, 43467), (69, 43668), (74, 43701), (105, 43878), (108, 43902), (117, 43965), (120, 43989), (121, 43992), (157, 44226), (209, 44328), (212, 44349), (213, 44358), (216, 44394), (252, 44553), (258, 44610), (271, 44712), (274, 44724), (276, 44733), (279, 44754), (290, 44868),

Gene: HumptyDumpty\_82 Start: 53872, Stop: 55794, Start Num: 14

Candidate Starts for HumptyDumpty\_82:

(Start: 14 @53872 has 17 MA's), (26, 53944), (Start: 49 @54076 has 2 MA's), (59, 54148), (70, 54184), (73, 54208), (76, 54226), (88, 54283), (98, 54319), (101, 54349), (104, 54361), (127, 54553), (130, 54622), (132, 54649), (146, 54730), (149, 54745), (152, 54760), (159, 54811), (161, 54829), (170, 54862), (179, 54946), (182, 54973), (188, 55012), (191, 55018), (196, 55072), (208, 55093), (209, 55096), (210, 55099), (211, 55114), (216, 55162), (217, 55183), (227, 55246), (230, 55270), (231, 55288), (234, 55297), (238, 55324), (257, 55459), (259, 55477), (262, 55546), (267, 55570), (268, 55582), (269, 55591), (271, 55600), (283, 55690), (284, 55699), (292, 55774), (293, 55780),

Gene: Inyanga\_54 Start: 39801, Stop: 38044, Start Num: 93

Candidate Starts for Inyanga\_54:

(93, 39801), (110, 39693), (117, 39648), (126, 39564), (134, 39441), (138, 39429), (143, 39384), (162, 39267), (166, 39255), (177, 39123), (199, 38880), (204, 38793), (209, 38658), (213, 38628), (216, 38592), (233, 38505), (258, 38322), (268, 38238), (269, 38229), (271, 38220), (276, 38199), (278, 38181), (280, 38145),

Gene: Iqorha\_54 Start: 39800, Stop: 38043, Start Num: 93

Candidate Starts for Iqorha\_54:

(93, 39800), (110, 39692), (117, 39647), (126, 39563), (134, 39440), (138, 39428), (143, 39383), (162, 39266), (166, 39254), (177, 39122), (199, 38879), (204, 38792), (209, 38657), (213, 38627), (216, 38591), (233, 38504), (258, 38321), (268, 38237), (269, 38228), (271, 38219), (276, 38198), (278, 38180), (280, 38144),

Gene: JaNo\_81 Start: 53843, Stop: 55765, Start Num: 14

Candidate Starts for JaNo\_81:

(Start: 14 @53843 has 17 MA's), (26, 53915), (Start: 49 @54047 has 2 MA's), (59, 54119), (70, 54155), (73, 54179), (76, 54197), (88, 54254), (98, 54290), (101, 54320), (104, 54332), (127, 54524), (130, 54593), (132, 54620), (146, 54701), (149, 54716), (152, 54731), (159, 54782), (161, 54800), (170, 54833), (179, 54917), (182, 54944), (188, 54983), (191, 54989), (196, 55043), (208, 55064), (209, 55067), (210, 55070), (211, 55085), (216, 55133), (217, 55154), (227, 55217), (230, 55241), (231, 55259), (234, 55268), (238, 55295), (257, 55430), (259, 55448), (262, 55517), (267, 55541), (268, 55553), (269, 55562), (271, 55571), (283, 55661), (284, 55670), (292, 55745), (293, 55751),

Gene: JayCookie\_82 Start: 54405, Stop: 56327, Start Num: 14

Candidate Starts for JayCookie\_82:

(Start: 14 @54405 has 17 MA's), (26, 54477), (Start: 49 @54609 has 2 MA's), (59, 54681), (70, 54717), (73, 54741), (76, 54759), (88, 54816), (98, 54852), (101, 54882), (104, 54894), (127, 55086), (130, 55155), (132, 55182), (146, 55263), (149, 55278), (152, 55293), (159, 55344), (161, 55362), (170, 55395), (179, 55479), (188, 55545), (191, 55551), (196, 55605), (208, 55626), (209, 55629), (210, 55632), (211, 55647), (216, 55695), (217, 55716), (227, 55779), (230, 55803), (231, 55821), (234, 55830), (238, 55857), (257, 55992), (259, 56010), (262, 56079), (267, 56103), (268, 56115), (269, 56124), (271, 56133), (283, 56223), (284, 56232), (292, 56307), (293, 56313),

Gene: KBurrousTX\_81 Start: 56110, Stop: 57699, Start Num: 49

Candidate Starts for KBurrousTX\_81:

(39, 56071), (Start: 49 @56110 has 2 MA's), (59, 56176), (70, 56212), (71, 56218), (73, 56236), (88, 56311), (98, 56347), (101, 56377), (127, 56581), (130, 56650), (132, 56677), (146, 56758), (149, 56773), (152, 56788), (158, 56830), (159, 56839), (161, 56857), (168, 56875), (170, 56890), (188, 57040), (191, 57046), (196, 57100), (209, 57124), (211, 57142), (215, 57169), (216, 57190), (217, 57211), (224, 57256), (227, 57274), (235, 57331), (238, 57355), (241, 57361), (242, 57382), (268, 57493), (271, 57511), (276, 57532), (283, 57601), (284, 57610), (285, 57625), (292, 57685), (293, 57691),

Gene: Kabreeze\_82 Start: 53929, Stop: 55851, Start Num: 14

Candidate Starts for Kabreeze\_82:

(Start: 14 @53929 has 17 MA's), (26, 54001), (Start: 49 @54133 has 2 MA's), (59, 54205), (70, 54241), (73, 54265), (76, 54283), (88, 54340), (98, 54376), (101, 54406), (104, 54418), (127, 54610), (130, 54679), (132, 54706), (146, 54787), (149, 54802), (152, 54817), (159, 54868), (161, 54886), (170, 54919), (179, 55003), (182, 55030), (188, 55069), (191, 55075), (196, 55129), (208, 55150), (209, 55153), (210, 55156), (211, 55171), (216, 55219), (217, 55240), (227, 55303), (230, 55327), (231, 55345), (234, 55354), (238, 55381), (257, 55516), (259, 55534), (262, 55603), (267, 55627), (268, 55639), (269, 55648), (271, 55657), (283, 55747), (284, 55756), (292, 55831), (293, 55837),

Gene: Kersh\_68 Start: 45094, Stop: 47070, Start Num: 12

Candidate Starts for Kersh\_68:

(4, 44980), (Start: 12 @45094 has 4 MA's), (21, 45151), (23, 45163), (33, 45220), (56, 45361), (60, 45391), (66, 45406), (74, 45454), (84, 45505), (95, 45568), (102, 45616), (105, 45631), (107, 45640), (108, 45655), (112, 45679), (119, 45736), (120, 45742), (121, 45745), (122, 45763), (123, 45766), (156, 46036), (164, 46084), (172, 46120), (181, 46210), (183, 46228), (209, 46351), (211, 46369), (213, 46381), (214, 46393), (226, 46519), (232, 46582), (233, 46585), (258, 46765), (260, 46795), (271, 46867), (274, 46879), (279, 46909),

Gene: Lamina13\_61 Start: 41357, Stop: 39765, Start Num: 92

Candidate Starts for Lamina13\_61:

(Start: 92 @41357 has 8 MA's), (110, 41249), (117, 41204), (126, 41120), (142, 40979), (171, 40829), (174, 40751), (189, 40646), (190, 40643), (197, 40541), (198, 40532), (209, 40325), (213, 40295), (217, 40238), (250, 40100), (254, 40097), (258, 40043), (268, 39959), (269, 39950), (271, 39941), (276, 39920), (278, 39902), (280, 39866),

Gene: Linus\_82 Start: 54377, Stop: 56299, Start Num: 14

Candidate Starts for Linus\_82:

(Start: 14 @54377 has 17 MA's), (26, 54449), (Start: 49 @54581 has 2 MA's), (59, 54653), (70, 54689), (73, 54713), (76, 54731), (88, 54788), (98, 54824), (101, 54854), (104, 54866), (127, 55058), (130, 55127), (132, 55154), (146, 55235), (149, 55250), (152, 55265), (159, 55316), (161, 55334), (170, 55367), (179, 55451), (188, 55517), (191, 55523), (196, 55577), (208, 55598), (209, 55601), (210, 55604), (211, 55619), (216, 55667), (217, 55688), (227, 55751), (230, 55775), (231, 55793), (234, 55802), (238, 55829), (257, 55964), (259, 55982), (262, 56051), (267, 56075), (268, 56087), (269, 56096), (271, 56105), (283, 56195), (284, 56204), (292, 56279), (293, 56285),

Gene: Lymara\_79 Start: 53015, Stop: 54817, Start Num: 14

Candidate Starts for Lymara\_79:

(Start: 14 @53015 has 17 MA's), (38, 53174), (Start: 49 @53219 has 2 MA's), (58, 53285), (59, 53291), (70, 53327), (73, 53351), (76, 53369), (88, 53426), (98, 53462), (101, 53492), (104, 53504), (113, 53567), (127, 53696), (130, 53765), (132, 53792), (146, 53873), (149, 53888), (152, 53903), (159, 53954), (161, 53972), (170, 54005), (179, 54089), (182, 54116), (188, 54155), (191, 54161), (196, 54215), (208, 54236), (210, 54242), (211, 54257), (214, 54281), (216, 54305), (217, 54326), (227, 54389), (230, 54413), (238, 54467), (268, 54605), (271, 54623), (283, 54713), (284, 54722), (288, 54764), (292, 54797),

Gene: Mantra\_64 Start: 42536, Stop: 44860, Start Num: 12

Candidate Starts for Mantra\_64:

(9, 42488), (Start: 12 @42536 has 4 MA's), (21, 42593), (33, 42662), (69, 42863), (74, 42896), (105, 43073), (108, 43097), (117, 43160), (119, 43178), (120, 43184), (122, 43205), (131, 43328), (162, 43532), (194, 43826), (200, 43922), (203, 44003), (205, 44009), (207, 44042), (209, 44141), (212, 44162), (213, 44171), (216, 44207), (226, 44309), (232, 44372), (233, 44375), (258, 44555), (270, 44654), (271, 44657), (274, 44669), (276, 44678), (279, 44699), (295, 44852),

Gene: Molly\_60 Start: 40691, Stop: 38961, Start Num: 92

Candidate Starts for Molly\_60:

(Start: 92 @40691 has 8 MA's), (110, 40583), (117, 40538), (126, 40454), (142, 40313), (171, 40163), (174, 40085), (189, 39980), (190, 39977), (197, 39875), (198, 39866), (213, 39629), (216, 39593), (219, 39530), (232, 39428), (233, 39425), (245, 39347), (258, 39239), (267, 39167), (268, 39155), (269, 39146), (271, 39137), (276, 39116), (278, 39098),

Gene: MooMoo\_65 Start: 41964, Stop: 43592, Start Num: 46

Candidate Starts for MooMoo\_65:

(Start: 46 @41964 has 2 MA's), (53, 41991), (56, 42021), (71, 42090), (79, 42144), (116, 42321), (122, 42378), (131, 42501), (133, 42534), (139, 42555), (144, 42588), (147, 42603), (168, 42708), (209, 42912), (210, 42915), (214, 42954), (253, 43245), (258, 43302), (271, 43389), (274, 43401), (278, 43428), (279, 43431), (284, 43488), (289, 43536), (291, 43557),

Gene: Mordred\_82 Start: 53968, Stop: 55890, Start Num: 14

Candidate Starts for Mordred\_82:

(Start: 14 @53968 has 17 MA's), (26, 54040), (Start: 49 @54172 has 2 MA's), (59, 54244), (70, 54280), (73, 54304), (76, 54322), (88, 54379), (98, 54415), (101, 54445), (104, 54457), (127, 54649), (130, 54718), (132, 54745), (146, 54826), (149, 54841), (152, 54856), (159, 54907), (161, 54925), (170, 54958), (179, 55042), (182, 55069), (188, 55108), (191, 55114), (196, 55168), (208, 55189), (209, 55192), (210, 55195), (211, 55210), (216, 55258), (217, 55279), (227, 55342), (230, 55366), (231, 55384), (234, 55393), (238, 55420), (257, 55555), (259, 55573), (262, 55642), (267, 55666), (268, 55678), (269, 55687), (271, 55696), (283, 55786), (284, 55795), (292, 55870), (293, 55876),

Gene: Mova\_70 Start: 42582, Stop: 44489, Start Num: 12

Candidate Starts for Mova\_70:

(1, 42405), (2, 42420), (3, 42429), (7, 42525), (Start: 12 @42582 has 4 MA's), (21, 42639), (33, 42708), (69, 42909), (74, 42942), (105, 43119), (108, 43143), (117, 43206), (122, 43251), (135, 43410), (145, 43464), (151, 43491), (177, 43611), (186, 43668), (209, 43776), (213, 43806), (216, 43842), (221, 43920), (223, 43926), (258, 44184), (270, 44283), (271, 44286), (274, 44298), (276, 44307), (279, 44328), (295, 44481),

Gene: MoyaNatalis\_81 Start: 53851, Stop: 55773, Start Num: 14

Candidate Starts for MoyaNatalis\_81:

(Start: 14 @53851 has 17 MA's), (26, 53923), (Start: 49 @54055 has 2 MA's), (59, 54127), (70, 54163), (73, 54187), (76, 54205), (88, 54262), (98, 54298), (101, 54328), (104, 54340), (127, 54532), (130, 54601), (132, 54628), (146, 54709), (149, 54724), (152, 54739), (159, 54790), (161, 54808), (170, 54841), (179, 54925), (188, 54991), (191, 54997), (196, 55051), (208, 55072), (209, 55075), (210, 55078), (211, 55093), (216, 55141), (217, 55162), (227, 55225), (230, 55249), (231, 55267), (234, 55276), (238, 55303), (257, 55438), (259, 55456), (262, 55525), (267, 55549), (268, 55561), (269, 55570), (271, 55579), (283, 55669), (284, 55678), (292, 55753), (293, 55759),

Gene: Nazo\_56 Start: 38421, Stop: 39956, Start Num: 64

Candidate Starts for Nazo\_56:

(13, 38139), (50, 38340), (55, 38382), (Start: 64 @38421 has 2 MA's), (70, 38448), (71, 38454), (75, 38478), (81, 38514), (82, 38517), (88, 38547), (101, 38613), (122, 38763), (131, 38886), (153, 39024), (165, 39096), (209, 39342), (211, 39360), (228, 39450), (229, 39459), (236, 39501), (258, 39666), (263, 39711), (274, 39765), (279, 39795), (289, 39900),

Gene: Optimus\_142 Start: 77338, Stop: 79065, Start Num: 92

Candidate Starts for Optimus\_142:

(Start: 92 @77338 has 8 MA's), (110, 77446), (117, 77491), (126, 77575), (142, 77716), (171, 77866), (174, 77944), (189, 78049), (190, 78052), (197, 78154), (198, 78163), (209, 78370), (212, 78391), (213, 78400), (216, 78436), (226, 78538), (232, 78601), (233, 78604), (258, 78787), (268, 78871), (269, 78880), (271, 78889), (276, 78910), (278, 78928), (280, 78964),

Gene: OwlsT2W\_66 Start: 42373, Stop: 44289, Start Num: 54

Candidate Starts for OwlsT2W\_66:

(24, 42196), (25, 42202), (28, 42211), (30, 42220), (35, 42259), (43, 42316), (Start: 54 @42373 has 1 MA's), (66, 42430), (68, 42442), (77, 42499), (89, 42553), (120, 42766), (121, 42769), (123, 42790), (131, 42910), (134, 42952), (141, 42988), (162, 43132), (166, 43144), (177, 43276), (192, 43396), (199, 43519), (204, 43606), (209, 43741), (213, 43771), (216, 43807), (226, 43909), (237, 43990),

(258, 44146), (264, 44206), (269, 44239), (272, 44248), (273, 44251),

Gene: Phalconet\_70 Start: 43833, Stop: 45551, Start Num: 11

Candidate Starts for Phalconet\_70:

(5, 43743), (6, 43752), (8, 43779), (Start: 11 @43833 has 3 MA's), (16, 43863), (21, 43893), (27, 43929), (33, 43962), (69, 44163), (74, 44196), (105, 44373), (108, 44397), (117, 44460), (120, 44484), (121, 44487), (157, 44721), (209, 44823), (212, 44844), (213, 44853), (216, 44889), (226, 44991), (258, 45243), (271, 45345), (274, 45357), (279, 45387), (290, 45501),

Gene: PhesterPhotato\_66 Start: 41796, Stop: 43328, Start Num: 51

Candidate Starts for PhesterPhotato\_66:

(Start: 51 @41796 has 4 MA's), (58, 41853), (63, 41865), (74, 41922), (85, 41976), (120, 42189), (121, 42192), (123, 42213), (156, 42483), (164, 42531), (172, 42567), (181, 42657), (183, 42675), (209, 42798), (211, 42816), (213, 42828), (214, 42840), (217, 42885), (220, 42933), (248, 43128), (258, 43185), (264, 43245), (269, 43278), (272, 43287), (273, 43290),

Gene: PrincessTrina\_83 Start: 54273, Stop: 56075, Start Num: 14

Candidate Starts for PrincessTrina\_83:

(Start: 14 @54273 has 17 MA's), (26, 54345), (Start: 49 @54477 has 2 MA's), (59, 54549), (70, 54585), (73, 54609), (76, 54627), (88, 54684), (98, 54720), (101, 54750), (104, 54762), (127, 54954), (130, 55023), (132, 55050), (146, 55131), (149, 55146), (152, 55161), (159, 55212), (161, 55230), (170, 55263), (179, 55347), (182, 55374), (188, 55413), (191, 55419), (196, 55473), (208, 55494), (209, 55497), (210, 55500), (211, 55515), (216, 55563), (217, 55584), (227, 55647), (230, 55671), (231, 55689), (234, 55698), (238, 55725), (268, 55863), (271, 55881), (283, 55971), (284, 55980), (292, 56055), (293, 56061),

Gene: Renaud18\_76 Start: 44560, Stop: 46092, Start Num: 51

Candidate Starts for Renaud18\_76:

(17, 44383), (19, 44389), (22, 44398), (23, 44407), (32, 44446), (37, 44503), (Start: 51 @44560 has 4 MA's), (58, 44617), (63, 44629), (74, 44686), (85, 44740), (120, 44953), (121, 44956), (123, 44977), (156, 45247), (164, 45295), (172, 45331), (181, 45421), (183, 45439), (209, 45562), (211, 45580), (213, 45592), (214, 45604), (217, 45649), (220, 45697), (248, 45892), (258, 45949), (264, 46009), (269, 46042), (272, 46051), (273, 46054),

Gene: RosiePosie\_82 Start: 54057, Stop: 55946, Start Num: 14

Candidate Starts for RosiePosie\_82:

(Start: 14 @54057 has 17 MA's), (26, 54129), (Start: 49 @54261 has 2 MA's), (59, 54300), (70, 54336), (73, 54360), (76, 54378), (88, 54435), (98, 54471), (101, 54501), (104, 54513), (127, 54705), (130, 54774), (132, 54801), (146, 54882), (149, 54897), (152, 54912), (159, 54963), (161, 54981), (170, 55014), (179, 55098), (188, 55164), (191, 55170), (196, 55224), (208, 55245), (209, 55248), (210, 55251), (211, 55266), (216, 55314), (217, 55335), (227, 55398), (230, 55422), (231, 55440), (234, 55449), (238, 55476), (257, 55611), (259, 55629), (262, 55698), (267, 55722), (268, 55734), (269, 55743), (271, 55752), (283, 55842), (284, 55851), (292, 55926), (293, 55932),

Gene: Royals2015\_69 Start: 42774, Stop: 44306, Start Num: 51

Candidate Starts for Royals2015\_69:

(17, 42597), (19, 42603), (22, 42612), (32, 42660), (37, 42717), (Start: 51 @42774 has 4 MA's), (58, 42831), (63, 42843), (74, 42900), (85, 42954), (120, 43167), (121, 43170), (123, 43191), (156, 43461), (164, 43509), (172, 43545), (181, 43635), (183, 43653), (209, 43776), (211, 43794), (213, 43806), (214, 43818), (217, 43863), (220, 43911), (248, 44106), (258, 44163), (264, 44223), (269, 44256), (272, 44265), (273, 44268),

Gene: SG4\_70 Start: 43702, Stop: 45480, Start Num: 90

Candidate Starts for SG4\_70:

(Start: 90 @43702 has 1 MA's), (96, 43741), (100, 43771), (106, 43807), (110, 43840), (117, 43885), (142, 44110), (171, 44260), (174, 44338), (189, 44443), (190, 44446), (197, 44548), (198, 44557), (209, 44764), (212, 44785), (213, 44794), (216, 44830), (226, 44932), (232, 44995), (233, 44998), (237, 45013), (258, 45172), (271, 45274), (274, 45286), (276, 45295), (278, 45313), (290, 45430),

Gene: Scavito\_83 Start: 54017, Stop: 55939, Start Num: 14

Candidate Starts for Scavito\_83:

(Start: 14 @54017 has 17 MA's), (26, 54089), (Start: 49 @54221 has 2 MA's), (59, 54293), (70, 54329), (73, 54353), (76, 54371), (88, 54428), (98, 54464), (101, 54494), (104, 54506), (127, 54698), (130, 54767), (132, 54794), (146, 54875), (149, 54890), (152, 54905), (159, 54956), (161, 54974), (170, 55007), (179, 55091), (182, 55118), (188, 55157), (191, 55163), (196, 55217), (208, 55238), (209, 55241), (210, 55244), (211, 55259), (216, 55307), (217, 55328), (227, 55391), (230, 55415), (231, 55433), (234, 55442), (238, 55469), (257, 55604), (259, 55622), (262, 55691), (267, 55715), (268, 55727), (269, 55736), (271, 55745), (283, 55835), (284, 55844), (292, 55919), (293, 55925),

Gene: ShroomBoi\_67 Start: 43105, Stop: 44667, Start Num: 51

Candidate Starts for ShroomBoi\_67:

(17, 42928), (19, 42934), (22, 42943), (23, 42952), (32, 42991), (Start: 51 @43105 has 4 MA's), (58, 43162), (69, 43198), (74, 43231), (115, 43453), (120, 43495), (156, 43789), (164, 43837), (172, 43873), (178, 43942), (181, 43963), (183, 43981), (209, 44104), (212, 44125), (213, 44134), (214, 44146), (226, 44272), (232, 44335), (244, 44404), (258, 44524), (264, 44584), (269, 44617), (272, 44626), (273, 44629),

Gene: StAnnes\_70 Start: 44611, Stop: 46869, Start Num: 20

Candidate Starts for StAnnes\_70:

(15, 44581), (18, 44605), (Start: 20 @44611 has 1 MA's), (31, 44665), (36, 44701), (38, 44734), (48, 44779), (78, 44941), (86, 44983), (94, 45040), (128, 45310), (154, 45514), (163, 45577), (175, 45709), (180, 45730), (184, 45766), (185, 45772), (190, 45811), (193, 45847), (195, 45880), (196, 45901), (201, 45985), (202, 45997), (206, 46042), (209, 46162), (213, 46192), (216, 46228), (232, 46387), (233, 46390), (245, 46468), (258, 46576), (271, 46663), (274, 46675), (276, 46684), (279, 46705),

Gene: StellaBean\_97 Start: 58301, Stop: 60040, Start Num: 91

Candidate Starts for StellaBean\_97:

(67, 58154), (72, 58184), (80, 58232), (83, 58247), (87, 58259), (Start: 91 @58301 has 2 MA's), (97, 58319), (110, 58415), (117, 58460), (126, 58544), (142, 58685), (171, 58835), (174, 58913), (189, 59018), (190, 59021), (197, 59123), (198, 59132), (209, 59339), (213, 59369), (219, 59468), (232, 59570), (233, 59573), (245, 59651), (258, 59759), (267, 59831), (271, 59861), (279, 59903), (280, 59936), (283, 59951),

Gene: Taj\_79 Start: 46662, Stop: 48335, Start Num: 11

Candidate Starts for Taj\_79:

(5, 46572), (6, 46581), (Start: 11 @46662 has 3 MA's), (16, 46692), (21, 46722), (23, 46734), (33, 46791), (69, 46992), (74, 47025), (105, 47202), (108, 47226), (117, 47289), (120, 47313), (121, 47316), (131, 47457), (137, 47499), (155, 47544), (157, 47556), (209, 47661), (212, 47682), (213, 47691), (214, 47703), (218, 47769), (232, 47865), (233, 47868), (252, 47970), (258, 48027), (271, 48129), (274, 48141), (276, 48150), (279, 48171), (290, 48285),

Gene: Tarkin\_98 Start: 58765, Stop: 60504, Start Num: 91

Candidate Starts for Tarkin\_98:

(67, 58618), (72, 58648), (80, 58696), (83, 58711), (87, 58723), (Start: 91 @58765 has 2 MA's), (97, 58783), (110, 58879), (117, 58924), (126, 59008), (129, 59071), (142, 59149), (171, 59299), (174, 59377), (189, 59482), (190, 59485), (197, 59587), (198, 59596), (209, 59803), (212, 59824), (213,

59833), (214, 59845), (219, 59932), (232, 60034), (233, 60037), (245, 60115), (258, 60223), (271, 60325), (279, 60367), (280, 60400), (283, 60415),

Gene: Tasp14\_62 Start: 41981, Stop: 40389, Start Num: 92

Candidate Starts for Tasp14\_62:

(Start: 92 @41981 has 8 MA's), (110, 41873), (117, 41828), (126, 41744), (142, 41603), (171, 41453), (174, 41375), (189, 41270), (190, 41267), (197, 41165), (198, 41156), (209, 40949), (213, 40919), (217, 40862), (250, 40724), (254, 40721), (258, 40667), (268, 40583), (269, 40574), (271, 40565), (276, 40544), (278, 40526), (280, 40490),

Gene: Thespis\_55 Start: 36748, Stop: 38346, Start Num: 40

Candidate Starts for Thespis\_55:

(Start: 40 @36748 has 1 MA's), (42, 36757), (52, 36784), (Start: 61 @36850 has 1 MA's), (75, 36910), (82, 36949), (88, 36979), (99, 37036), (109, 37123), (120, 37201), (124, 37246), (140, 37408), (153, 37483), (165, 37555), (209, 37801), (211, 37819), (214, 37843), (240, 37978), (243, 38008), (247, 38044), (261, 38146), (275, 38203), (281, 38263), (285, 38296), (286, 38305), (287, 38308),

Gene: Tophat\_83 Start: 54206, Stop: 56128, Start Num: 14

Candidate Starts for Tophat\_83:

(Start: 14 @54206 has 17 MA's), (26, 54278), (Start: 49 @54410 has 2 MA's), (59, 54482), (70, 54518), (73, 54542), (76, 54560), (88, 54617), (98, 54653), (101, 54683), (104, 54695), (127, 54887), (130, 54956), (132, 54983), (146, 55064), (149, 55079), (152, 55094), (159, 55145), (161, 55163), (170, 55196), (179, 55280), (182, 55307), (188, 55346), (191, 55352), (196, 55406), (208, 55427), (209, 55430), (210, 55433), (211, 55448), (216, 55496), (217, 55517), (227, 55580), (230, 55604), (231, 55622), (234, 55631), (238, 55658), (257, 55793), (259, 55811), (262, 55880), (267, 55904), (268, 55916), (269, 55925), (271, 55934), (283, 56024), (284, 56033), (292, 56108), (293, 56114),

Gene: Totinger\_66 Start: 41872, Stop: 44196, Start Num: 12

Candidate Starts for Totinger\_66:

(1, 41695), (2, 41710), (3, 41719), (7, 41815), (Start: 12 @41872 has 4 MA's), (21, 41929), (33, 41998), (69, 42199), (74, 42232), (105, 42409), (108, 42433), (117, 42496), (119, 42514), (120, 42520), (122, 42541), (131, 42664), (162, 42868), (194, 43162), (200, 43258), (203, 43339), (205, 43345), (207, 43378), (209, 43477), (211, 43495), (214, 43519), (226, 43645), (232, 43708), (233, 43711), (258, 43891), (270, 43990), (271, 43993), (274, 44005), (276, 44014), (279, 44035), (295, 44188),

Gene: Violet\_57 Start: 42062, Stop: 40485, Start Num: 92

Candidate Starts for Violet\_57:

(Start: 92 @42062 has 8 MA's), (110, 41954), (117, 41909), (126, 41825), (142, 41684), (171, 41534), (174, 41456), (189, 41351), (190, 41348), (197, 41246), (198, 41237), (209, 41030), (212, 41009), (213, 41000), (216, 40964), (253, 40805), (258, 40748), (271, 40661), (279, 40619), (280, 40586),

Gene: Wee\_78 Start: 46738, Stop: 48411, Start Num: 11

Candidate Starts for Wee\_78:

(5, 46648), (6, 46657), (Start: 11 @46738 has 3 MA's), (16, 46768), (21, 46798), (23, 46810), (33, 46867), (69, 47068), (74, 47101), (105, 47278), (108, 47302), (117, 47365), (120, 47389), (121, 47392), (131, 47533), (137, 47575), (155, 47620), (157, 47632), (209, 47737), (212, 47758), (213, 47767), (214, 47779), (218, 47845), (232, 47941), (233, 47944), (252, 48046), (258, 48103), (271, 48205), (274, 48217), (276, 48226), (279, 48247), (290, 48361),