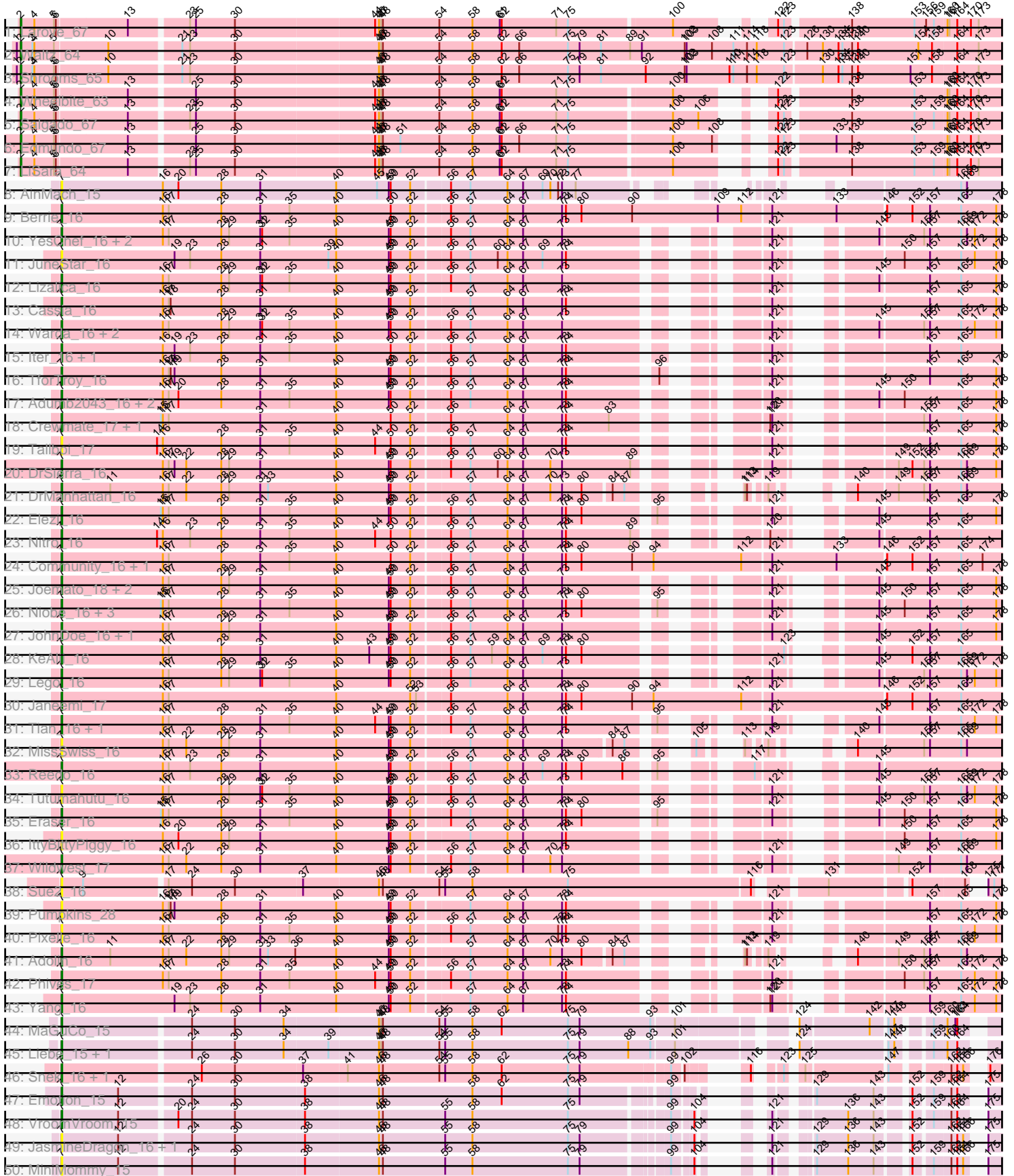
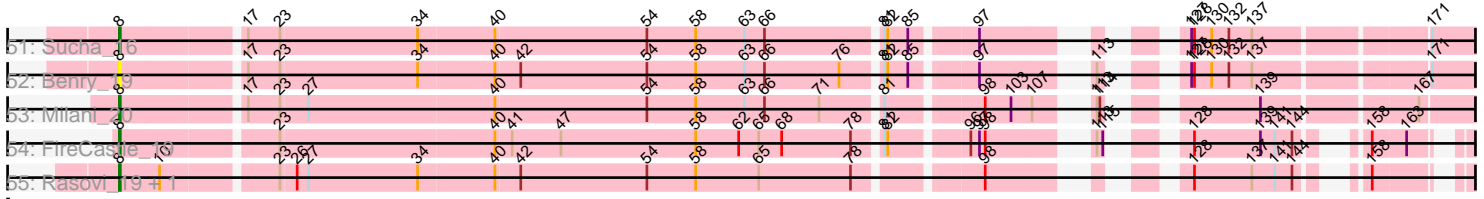


# Zoomed Pham 163566



Zoomed Pham 163566



A series of horizontal lines for manual annotation or editing, spanning the width of the page below the alignment plot.

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 163566 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163566 has 75 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Laroye\_67
- Track 2 : Waltz\_64
- Track 3 : Shrooms\_65
- Track 4 : Wheelbite\_63
- Track 5 : Salgado\_67
- Track 6 : Edmundo\_67
- Track 7 : LiSara\_64
- Track 8 : AinMach\_15
- Track 9 : Berrie\_16
- Track 10 : YesChef\_16, AGrandiflora\_16, Powerpuff\_16
- Track 11 : JuneStar\_16
- Track 12 : Lizalica\_16
- Track 13 : Cassia\_16
- Track 14 : Warda\_16, Mudpuppy\_17, Tbone\_16
- Track 15 : lter\_16, Ascela\_16
- Track 16 : TforTroy\_16
- Track 17 : Adumb2043\_16, AEgle\_16, Turab\_16
- Track 18 : Crewmate\_17, ObiToo\_16
- Track 19 : Tallboi\_17
- Track 20 : DrSierra\_16
- Track 21 : DrManhattan\_16
- Track 22 : Elezi\_16
- Track 23 : Nitro\_16
- Track 24 : Community\_16, Tuck\_17
- Track 25 : Joemato\_18, Kaylissa\_16, Simpson\_18
- Track 26 : Niobe\_16, Jstan\_16, Asa16\_16, London\_16
- Track 27 : JohnDoe\_16, Cyan\_16
- Track 28 : KeAlii\_16
- Track 29 : Lego\_16
- Track 30 : Janeemi\_17
- Track 31 : Tian\_16, Amyev\_16
- Track 32 : MissSwiss\_16
- Track 33 : Reedo\_16
- Track 34 : Tutumahutu\_16
- Track 35 : Eraser\_16
- Track 36 : IttyBittyPiggy\_16
- Track 37 : Wildwest\_17

- Track 38 : Sue2\_16
- Track 39 : Pumpkins\_28
- Track 40 : Pixelle\_16
- Track 41 : Adolin\_16
- Track 42 : Phives\_17
- Track 43 : Yang\_16
- Track 44 : MaGuCo\_15
- Track 45 : Liebe\_15, Maureen\_15
- Track 46 : Snek\_16, Tweety19\_16
- Track 47 : Emotion\_15
- Track 48 : VroomVroom\_15
- Track 49 : JasmineDragon\_16, ShakeltOph\_16
- Track 50 : MiniMommy\_15
- Track 51 : Sucha\_16
- Track 52 : Benry\_19
- Track 53 : Milani\_20
- Track 54 : FireCastle\_19
- Track 55 : Rasovi\_19, Htur\_19

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

The start number called the most often in the published annotations is 7, it was called in 40 of the 51 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle\_16, AGrandiflora\_16, Adolin\_16, Adumb2043\_16, AinMach\_15, Amyev\_16, Asa16\_16, Ascela\_16, Berrie\_16, Cassia\_16, Community\_16, Crewmate\_17, Cyan\_16, DrManhattan\_16, DrSierra\_16, Elezi\_16, Emotion\_15, Eraser\_16, Iter\_16, IttyBittyPiggy\_16, Janeemi\_17, JasmineDragon\_16, Joemato\_18, JohnDoe\_16, Jstan\_16, JuneStar\_16, Kaylissa\_16, KeAlii\_16, Lego\_16, Liebe\_15, Lizalica\_16, London\_16, MaGuCo\_15, Maureen\_15, MiniMommy\_15, MissSwiss\_16, Mudpuppy\_17, Niobe\_16, Nitro\_16, ObiToo\_16, Phives\_17, Pixelle\_16, Powerpuff\_16, Pumpkins\_28, Reedo\_16, ShakeltOph\_16, Simpson\_18, Snek\_16, Sue2\_16, Tallboi\_17, Tbone\_16, TforTroy\_16, Tian\_16, Tuck\_17, Turab\_16, Tutumahutu\_16, Tweety19\_16, VroomVroom\_15, Warda\_16, Wildwest\_17, Yang\_16, YesChef\_16,

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

- 

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

- Benry\_19, Edmundo\_67, FireCastle\_19, Htur\_19, Laroye\_67, LiSara\_64, Milani\_20, Rasovi\_19, Salgado\_67, Shrooms\_65, Sucha\_16, Waltz\_64, Wheelbite\_63,

**Summary by start number:**

Start 2:

- Found in 7 of 75 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 7 of 51
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Edmundo\_67 (AL), Laroye\_67 (AL), LiSara\_64 (AL), Salgado\_67 (AL), Shrooms\_65 (AL), Waltz\_64 (AL), Wheelbite\_63 (AL),

#### Start 7:

- Found in 62 of 75 ( 82.7% ) of genes in pham
- Manual Annotations of this start: 40 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AEgle\_16 (AZ1), AGrandiflora\_16 (AZ1), Adolin\_16 (AZ1), Adumb2043\_16 (AZ1), AinMach\_15 (AZ), Amyev\_16 (AZ1), Asa16\_16 (AZ1), Ascela\_16 (AZ1), Berrie\_16 (AZ1), Cassia\_16 (AZ1), Community\_16 (AZ1), Crewmate\_17 (AZ1), Cyan\_16 (AZ1), DrManhattan\_16 (AZ1), DrSierra\_16 (AZ1), Elezi\_16 (AZ1), Emotion\_15 (AZ4), Eraser\_16 (AZ1), Iter\_16 (AZ1), IttyBittyPiggy\_16 (AZ1), Janeemi\_17 (AZ1), JasmineDragon\_16 (AZ4), Joemato\_18 (AZ1), JohnDoe\_16 (AZ1), Jstan\_16 (AZ1), JuneStar\_16 (AZ1), Kaylissa\_16 (AZ1), KeAlii\_16 (AZ1), Lego\_16 (AZ1), Liebe\_15 (AZ2), Lizalica\_16 (AZ1), London\_16 (AZ1), MaGuCo\_15 (AZ2), Maureen\_15 (AZ2), MiniMommy\_15 (AZ4), MissSwiss\_16 (AZ1), Mudpuppy\_17 (AZ1), Niobe\_16 (AZ1), Nitro\_16 (AZ1), ObiToo\_16 (AZ1), Phives\_17 (AZ1), Pixelle\_16 (AZ1), Powerpuff\_16 (AZ1), Pumpkins\_28 (AZ1), Reedo\_16 (AZ1), ShakeltOph\_16 (AZ4), Simpson\_18 (AZ1), Sneak\_16 (AZ3), Sue2\_16 (AZ1), Tallboi\_17 (AZ1), Tbone\_16 (AZ1), TforTroy\_16 (AZ1), Tian\_16 (AZ1), Tuck\_17 (AZ1), Turab\_16 (AZ1), Tutumahutu\_16 (AZ1), Tweety19\_16 (AZ3), VroomVroom\_15 (AZ4), Warda\_16 (AZ1), Wildwest\_17 (AZ1), Yang\_16 (AZ1), YesChef\_16 (AZ1),

#### Start 8:

- Found in 6 of 75 ( 8.0% ) of genes in pham
- Manual Annotations of this start: 4 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Benry\_19 (EJ), FireCastle\_19 (EJ), Htur\_19 (EJ), Milani\_20 (EJ), Rasovi\_19 (EJ), Sucha\_16 (EJ),

### Summary by clusters:

There are 7 clusters represented in this pham: AZ, EJ, AL, AZ1, AZ2, AZ3, AZ4,

Info for manual annotations of cluster AL:

- Start number 2 was manually annotated 7 times for cluster AL.

Info for manual annotations of cluster AZ1:

- Start number 7 was manually annotated 33 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 7 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 7 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 7 was manually annotated 2 times for cluster AZ4.

Info for manual annotations of cluster EJ:

- Start number 8 was manually annotated 4 times for cluster EJ.

**Gene Information:**

Gene: AEgle\_16 Start: 10734, Stop: 13058, Start Num: 7

Candidate Starts for AEgle\_16:

(Start: 7 @10734 has 40 MA's), (16, 10890), (17, 10899), (20, 10914), (28, 10980), (31, 11040), (35, 11085), (40, 11157), (49, 11238), (50, 11241), (52, 11271), (56, 11325), (57, 11355), (64, 11412), (67, 11436), (73, 11496), (74, 11502), (121, 11721), (145, 11817), (150, 11850), (165, 11937), (178, 11991), (183, 12033), (190, 12072), (202, 12132), (232, 12273), (270, 12402), (274, 12411), (296, 12522), (315, 12654), (316, 12657), (322, 12690), (335, 12768), (342, 12807), (351, 12867), (360, 12957),

Gene: AGrandiflora\_16 Start: 10727, Stop: 13042, Start Num: 7

Candidate Starts for AGrandiflora\_16:

(Start: 7 @10727 has 40 MA's), (16, 10883), (17, 10892), (28, 10973), (29, 10985), (31, 11033), (32, 11036), (35, 11078), (40, 11150), (49, 11231), (50, 11234), (52, 11264), (56, 11318), (57, 11348), (64, 11405), (67, 11429), (73, 11489), (121, 11714), (145, 11810), (155, 11873), (157, 11882), (165, 11930), (169, 11939), (172, 11951), (178, 11984), (183, 12026), (190, 12065), (202, 12125), (232, 12266), (249, 12341), (255, 12353), (270, 12395), (274, 12404), (278, 12428), (294, 12497), (296, 12515), (312, 12626), (315, 12647), (316, 12650), (322, 12683), (335, 12761), (342, 12800), (351, 12860), (354, 12890), (360, 12941), (365, 12986), (368, 13031),

Gene: Adolin\_16 Start: 10723, Stop: 12957, Start Num: 7

Candidate Starts for Adolin\_16:

(Start: 7 @10723 has 40 MA's), (11, 10798), (16, 10879), (17, 10888), (22, 10915), (28, 10969), (29, 10981), (31, 11029), (33, 11041), (36, 11083), (40, 11146), (49, 11227), (50, 11230), (52, 11260), (57, 11344), (64, 11401), (67, 11425), (70, 11467), (73, 11485), (80, 11515), (84, 11554), (87, 11572), (113, 11644), (114, 11647), (119, 11665), (140, 11710), (149, 11767), (155, 11806), (157, 11815), (165, 11863), (169, 11872), (183, 11959), (185, 11971), (190, 11998), (194, 12016), (202, 12058), (223, 12160), (238, 12220), (257, 12292), (268, 12319), (270, 12328), (292, 12418), (295, 12439), (300, 12472), (308, 12526), (311, 12547), (334, 12679), (338, 12709), (363, 12892),

Gene: Adumb2043\_16 Start: 10733, Stop: 13057, Start Num: 7

Candidate Starts for Adumb2043\_16:

(Start: 7 @10733 has 40 MA's), (16, 10889), (17, 10898), (20, 10913), (28, 10979), (31, 11039), (35, 11084), (40, 11156), (49, 11237), (50, 11240), (52, 11270), (56, 11324), (57, 11354), (64, 11411), (67, 11435), (73, 11495), (74, 11501), (121, 11720), (145, 11816), (150, 11849), (165, 11936), (178, 11990), (183, 12032), (190, 12071), (202, 12131), (232, 12272), (270, 12401), (274, 12410), (296, 12521), (315, 12653), (316, 12656), (322, 12689), (335, 12767), (342, 12806), (351, 12866), (360, 12956),

Gene: AinMach\_15 Start: 9852, Stop: 12212, Start Num: 7

Candidate Starts for AinMach\_15:

(Start: 7 @9852 has 40 MA's), (16, 10008), (20, 10032), (28, 10098), (31, 10158), (40, 10275), (45, 10338), (49, 10356), (50, 10359), (52, 10389), (56, 10443), (57, 10473), (64, 10530), (67, 10554), (69, 10584), (70, 10596), (72, 10608), (73, 10614), (77, 10635), (165, 10980), (169, 10989), (202, 11175), (240, 11346), (246, 11391), (247, 11400), (249, 11424), (250, 11436), (252, 11460), (254, 11469), (255, 11478), (278, 11610), (289, 11655), (295, 11688), (297, 11709), (298, 11712), (311, 11796), (317, 11838), (334, 11928), (338, 11958),

Gene: Amyev\_16 Start: 10746, Stop: 13070, Start Num: 7

Candidate Starts for Amyev\_16:

(Start: 7 @10746 has 40 MA's), (16, 10902), (17, 10911), (28, 10992), (31, 11052), (35, 11097), (40, 11169), (44, 11229), (49, 11250), (50, 11253), (52, 11283), (56, 11337), (57, 11367), (64, 11424), (67, 11448), (73, 11508), (74, 11514), (95, 11634), (121, 11733), (145, 11829), (157, 11901), (165, 11949), (172, 11970), (178, 12003), (183, 12045), (190, 12084), (202, 12144), (206, 12159), (218, 12225), (244, 12348), (248, 12357), (270, 12414), (274, 12423), (281, 12480), (282, 12483), (296, 12534), (315, 12666), (316, 12669), (335, 12780), (342, 12819), (343, 12843), (360, 12969),

Gene: Asa16\_16 Start: 10703, Stop: 13027, Start Num: 7

Candidate Starts for Asa16\_16:

(Start: 7 @10703 has 40 MA's), (15, 10856), (16, 10859), (17, 10868), (28, 10949), (31, 11009), (35, 11054), (40, 11126), (49, 11207), (50, 11210), (52, 11240), (56, 11294), (57, 11324), (64, 11381), (67, 11405), (73, 11465), (74, 11471), (80, 11495), (95, 11591), (121, 11690), (145, 11786), (150, 11819), (157, 11858), (165, 11906), (178, 11960), (183, 12002), (190, 12041), (194, 12059), (202, 12101), (220, 12194), (269, 12365), (274, 12380), (296, 12491), (315, 12623), (316, 12626), (322, 12659), (335, 12737), (342, 12776), (351, 12836), (360, 12926),

Gene: Ascela\_16 Start: 10739, Stop: 13054, Start Num: 7

Candidate Starts for Ascela\_16:

(Start: 7 @10739 has 40 MA's), (16, 10895), (19, 10913), (23, 10937), (28, 10985), (31, 11045), (35, 11090), (40, 11162), (50, 11246), (52, 11276), (56, 11330), (57, 11360), (64, 11417), (67, 11441), (73, 11501), (74, 11507), (121, 11726), (157, 11894), (165, 11942), (183, 12038), (190, 12077), (194, 12095), (202, 12137), (207, 12161), (218, 12218), (220, 12230), (244, 12341), (269, 12401), (274, 12416), (296, 12527), (312, 12638), (315, 12659), (316, 12662), (322, 12695), (335, 12773), (342, 12812), (354, 12902), (357, 12914), (365, 12998),

Gene: Benry\_19 Start: 11509, Stop: 13800, Start Num: 8

Candidate Starts for Benry\_19:

(Start: 8 @11509 has 4 MA's), (17, 11626), (23, 11659), (34, 11800), (40, 11878), (42, 11902), (54, 12034), (58, 12085), (63, 12136), (66, 12157), (76, 12235), (81, 12271), (82, 12274), (85, 12295), (97, 12352), (113, 12436), (127, 12481), (128, 12484), (130, 12502), (132, 12520), (137, 12544), (171, 12706), (181, 12772), (185, 12805), (188, 12826), (196, 12859), (197, 12862), (232, 13030), (237, 13048), (241, 13069), (265, 13147), (273, 13180), (293, 13279), (298, 13315), (299, 13321), (304, 13348), (310, 13387), (315, 13432), (318, 13444), (320, 13456), (321, 13465), (322, 13468), (342, 13582), (348, 13633), (350, 13639), (352, 13648),

Gene: Berrie\_16 Start: 10711, Stop: 13188, Start Num: 7

Candidate Starts for Berrie\_16:

(Start: 7 @10711 has 40 MA's), (16, 10867), (17, 10876), (28, 10957), (31, 11017), (35, 11062), (40, 11134), (50, 11218), (52, 11248), (56, 11302), (57, 11332), (64, 11389), (67, 11413), (73, 11473), (74, 11479), (80, 11503), (90, 11581), (109, 11713), (112, 11749), (121, 11791), (133, 11890), (146, 11962), (152, 12001), (157, 12028), (165, 12076), (178, 12130), (183, 12172), (189, 12208), (194, 12229), (202, 12271), (220, 12364), (244, 12475), (249, 12487), (269, 12535), (274, 12550), (315, 12793), (316, 12796), (335, 12907), (342, 12946), (353, 13021), (354, 13036), (365, 13132),

Gene: Cassia\_16 Start: 10826, Stop: 13150, Start Num: 7

Candidate Starts for Cassia\_16:

(Start: 7 @10826 has 40 MA's), (16, 10982), (17, 10991), (18, 10994), (28, 11072), (31, 11132), (40, 11249), (49, 11330), (50, 11333), (52, 11363), (57, 11447), (64, 11504), (67, 11528), (73, 11588), (74, 11594), (121, 11813), (157, 11981), (165, 12029), (178, 12083), (183, 12125), (190, 12164), (202, 12224), (220, 12317), (264, 12470), (267, 12482), (281, 12560), (282, 12563), (296, 12614), (315, 12746), (316, 12749), (335, 12860), (342, 12899),

Gene: Community\_16 Start: 11793, Stop: 14270, Start Num: 7

Candidate Starts for Community\_16:

(Start: 7 @11793 has 40 MA's), (16, 11949), (17, 11958), (28, 12039), (31, 12099), (35, 12144), (40, 12216), (50, 12300), (52, 12330), (56, 12384), (57, 12414), (64, 12471), (67, 12495), (73, 12555), (74, 12561), (80, 12585), (90, 12663), (94, 12696), (112, 12831), (121, 12873), (133, 12972), (146, 13044), (152, 13083), (157, 13110), (165, 13158), (174, 13191), (183, 13254), (194, 13311), (202, 13353), (206, 13368), (220, 13446), (249, 13569), (269, 13617), (274, 13632), (294, 13725), (296, 13743), (297, 13755), (315, 13875), (316, 13878), (335, 13989), (342, 14028), (354, 14118),

Gene: Crewmate\_17 Start: 11180, Stop: 13486, Start Num: 7

Candidate Starts for Crewmate\_17:

(Start: 7 @11180 has 40 MA's), (15, 11333), (16, 11336), (17, 11345), (31, 11486), (40, 11603), (50, 11687), (52, 11717), (56, 11771), (64, 11858), (67, 11882), (73, 11942), (74, 11948), (83, 12014), (120, 12164), (121, 12167), (155, 12326), (157, 12335), (165, 12383), (178, 12437), (183, 12479), (190, 12518), (202, 12578), (206, 12593), (220, 12671), (232, 12719), (249, 12794), (255, 12806), (270, 12848), (274, 12857), (296, 12968), (315, 13100), (316, 13103), (335, 13214), (342, 13253), (349, 13307), (353, 13328), (354, 13343), (363, 13421),

Gene: Cyan\_16 Start: 10730, Stop: 13045, Start Num: 7

Candidate Starts for Cyan\_16:

(Start: 7 @10730 has 40 MA's), (16, 10886), (17, 10895), (28, 10976), (29, 10988), (31, 11036), (40, 11153), (49, 11234), (50, 11237), (52, 11267), (56, 11321), (57, 11351), (64, 11408), (67, 11432), (73, 11492), (121, 11717), (145, 11813), (157, 11885), (165, 11933), (178, 11987), (183, 12029), (190, 12068), (202, 12128), (274, 12407), (278, 12431), (281, 12464), (282, 12467), (296, 12518), (312, 12629), (315, 12650), (316, 12653), (322, 12686), (335, 12764), (342, 12803), (351, 12863), (354, 12893), (360, 12944), (365, 12989), (368, 13034),

Gene: DrManhattan\_16 Start: 10713, Stop: 12947, Start Num: 7

Candidate Starts for DrManhattan\_16:

(Start: 7 @10713 has 40 MA's), (11, 10788), (16, 10869), (17, 10878), (22, 10905), (28, 10959), (29, 10971), (31, 11019), (33, 11031), (40, 11136), (49, 11217), (50, 11220), (52, 11250), (57, 11334), (64, 11391), (67, 11415), (70, 11457), (73, 11475), (80, 11505), (84, 11544), (87, 11562), (113, 11634), (114, 11637), (119, 11655), (140, 11700), (149, 11757), (155, 11796), (157, 11805), (165, 11853), (169, 11862), (183, 11949), (185, 11961), (190, 11988), (194, 12006), (202, 12048), (223, 12150), (238, 12210), (249, 12264), (257, 12282), (268, 12309), (270, 12318), (292, 12408), (295, 12429), (300, 12462), (308, 12516), (311, 12537), (334, 12669), (338, 12699), (359, 12828), (363, 12882),

Gene: DrSierra\_16 Start: 10741, Stop: 13035, Start Num: 7

Candidate Starts for DrSierra\_16:

(Start: 7 @10741 has 40 MA's), (16, 10897), (17, 10906), (19, 10915), (22, 10933), (28, 10987), (29, 10999), (31, 11047), (40, 11164), (49, 11245), (50, 11248), (52, 11278), (56, 11332), (57, 11362), (60, 11404), (64, 11419), (67, 11443), (70, 11485), (73, 11503), (89, 11608), (121, 11728), (149, 11848), (152, 11869), (155, 11887), (157, 11896), (165, 11944), (169, 11953), (178, 11998), (183, 12040), (190, 12079), (194, 12097), (202, 12139), (223, 12241), (233, 12286), (238, 12301), (249, 12355), (257, 12373), (268, 12400), (270, 12409), (292, 12499), (300, 12553), (308, 12607), (311, 12628), (334, 12760), (338, 12790), (363, 12970),

Gene: Edmundo\_67 Start: 37140, Stop: 40157, Start Num: 2

Candidate Starts for Edmundo\_67:

(Start: 2 @37140 has 7 MA's), (4, 37161), (5, 37191), (6, 37194), (13, 37299), (25, 37392), (30, 37452), (44, 37662), (46, 37668), (47, 37671), (48, 37674), (51, 37701), (54, 37761), (58, 37812), (61, 37854), (62, 37857), (66, 37884), (71, 37941), (75, 37959), (100, 38109), (108, 38169), (122, 38202),



(123, 38211), (133, 38277), (138, 38301), (153, 38397), (160, 38445), (161, 38448), (164, 38460), (170, 38481), (173, 38493), (180, 38544), (195, 38637), (197, 38652), (210, 38727), (214, 38760), (217, 38772), (219, 38781), (226, 38811), (229, 38826), (231, 38835), (235, 38850), (245, 38904), (263, 38943), (282, 39069), (311, 39219), (312, 39240), (318, 39273), (319, 39276), (321, 39294), (326, 39318), (328, 39330), (331, 39351), (352, 39486), (355, 39507), (359, 39528), (361, 39570), (362, 39573), (371, 39681), (372, 39705), (373, 39714), (375, 39768), (376, 39777), (378, 39840), (380, 39870), (381, 39879), (383, 39978), (384, 39984), (386, 40014), (387, 40053), (389, 40140),

Gene: Elezi\_16 Start: 10704, Stop: 13028, Start Num: 7

Candidate Starts for Elezi\_16:

(Start: 7 @10704 has 40 MA's), (15, 10857), (16, 10860), (17, 10869), (28, 10950), (31, 11010), (35, 11055), (40, 11127), (49, 11208), (50, 11211), (52, 11241), (56, 11295), (57, 11325), (64, 11382), (67, 11406), (73, 11466), (74, 11472), (80, 11496), (95, 11592), (121, 11691), (145, 11787), (157, 11859), (165, 11907), (178, 11961), (183, 12003), (190, 12042), (194, 12060), (202, 12102), (220, 12195), (269, 12366), (274, 12381), (296, 12492), (315, 12624), (316, 12627), (322, 12660), (335, 12738), (342, 12777), (351, 12837), (360, 12927),

Gene: Emotion\_15 Start: 9044, Stop: 11284, Start Num: 7

Candidate Starts for Emotion\_15:

(Start: 7 @9044 has 40 MA's), (12, 9131), (24, 9233), (30, 9299), (38, 9404), (46, 9515), (48, 9521), (58, 9659), (62, 9704), (75, 9806), (79, 9824), (99, 9938), (129, 10034), (143, 10121), (152, 10160), (159, 10184), (162, 10208), (164, 10217), (175, 10235), (179, 10262), (187, 10313), (190, 10325), (201, 10382), (211, 10436), (224, 10478), (261, 10607), (272, 10664), (297, 10796), (298, 10799), (315, 10916), (332, 11012), (334, 11018), (338, 11048),

Gene: Eraser\_16 Start: 10704, Stop: 13028, Start Num: 7

Candidate Starts for Eraser\_16:

(Start: 7 @10704 has 40 MA's), (15, 10857), (16, 10860), (17, 10869), (28, 10950), (31, 11010), (35, 11055), (40, 11127), (49, 11208), (50, 11211), (52, 11241), (56, 11295), (57, 11325), (64, 11382), (67, 11406), (73, 11466), (74, 11472), (80, 11496), (95, 11592), (121, 11691), (145, 11787), (150, 11820), (157, 11859), (165, 11907), (178, 11961), (183, 12003), (190, 12042), (194, 12060), (202, 12102), (220, 12195), (269, 12366), (274, 12381), (296, 12492), (315, 12624), (316, 12627), (322, 12660), (335, 12738), (342, 12777), (351, 12837),

Gene: FireCastle\_19 Start: 13235, Stop: 15373, Start Num: 8

Candidate Starts for FireCastle\_19:

(Start: 8 @13235 has 4 MA's), (23, 13385), (40, 13604), (41, 13619), (47, 13670), (58, 13811), (62, 13856), (65, 13877), (68, 13901), (78, 13973), (81, 13997), (82, 14000), (96, 14069), (97, 14078), (98, 14084), (113, 14162), (115, 14168), (128, 14210), (139, 14279), (141, 14294), (144, 14312), (158, 14345), (163, 14378), (191, 14477), (197, 14501), (203, 14534), (266, 14756), (275, 14798), (276, 14807), (293, 14873), (318, 15017), (326, 15062), (330, 15083), (332, 15098), (337, 15128), (344, 15188), (350, 15212),

Gene: Htur\_19 Start: 13514, Stop: 15508, Start Num: 8

Candidate Starts for Htur\_19:

(Start: 8 @13514 has 4 MA's), (10, 13553), (23, 13664), (26, 13679), (27, 13691), (34, 13805), (40, 13883), (42, 13907), (54, 14039), (58, 14090), (65, 14156), (78, 14252), (98, 14363), (128, 14489), (137, 14549), (141, 14573), (144, 14591), (158, 14624), (195, 14771), (198, 14789), (205, 14822), (208, 14837), (229, 14903), (302, 15062), (304, 15068), (305, 15074), (315, 15152), (319, 15167), (326, 15209), (337, 15275), (346, 15344), (366, 15482),

Gene: Iter\_16 Start: 10739, Stop: 13054, Start Num: 7

Candidate Starts for Iter\_16:

(Start: 7 @10739 has 40 MA's), (16, 10895), (19, 10913), (23, 10937), (28, 10985), (31, 11045), (35, 11090), (40, 11162), (50, 11246), (52, 11276), (56, 11330), (57, 11360), (64, 11417), (67, 11441), (73, 11501), (74, 11507), (121, 11726), (157, 11894), (165, 11942), (183, 12038), (190, 12077), (194, 12095), (202, 12137), (207, 12161), (218, 12218), (220, 12230), (244, 12341), (269, 12401), (274, 12416), (296, 12527), (312, 12638), (315, 12659), (316, 12662), (322, 12695), (335, 12773), (342, 12812), (354, 12902), (357, 12914), (365, 12998),

Gene: IttyBittyPiggy\_16 Start: 10723, Stop: 13035, Start Num: 7

Candidate Starts for IttyBittyPiggy\_16:

(Start: 7 @10723 has 40 MA's), (16, 10879), (20, 10903), (28, 10969), (29, 10981), (31, 11029), (40, 11146), (49, 11227), (50, 11230), (52, 11260), (57, 11344), (64, 11401), (67, 11425), (73, 11485), (74, 11491), (150, 11839), (157, 11878), (165, 11926), (178, 11980), (183, 12022), (190, 12061), (202, 12121), (220, 12214), (265, 12370), (268, 12382), (270, 12391), (296, 12511), (315, 12643), (316, 12646), (335, 12757), (342, 12796), (343, 12820), (351, 12856), (353, 12871), (363, 12970),

Gene: Janeemi\_17 Start: 11821, Stop: 14298, Start Num: 7

Candidate Starts for Janeemi\_17:

(Start: 7 @11821 has 40 MA's), (16, 11977), (17, 11986), (40, 12244), (52, 12358), (53, 12367), (56, 12412), (64, 12499), (67, 12523), (73, 12583), (74, 12589), (80, 12613), (90, 12691), (94, 12724), (112, 12859), (121, 12901), (146, 13072), (152, 13111), (157, 13138), (165, 13186), (183, 13282), (190, 13321), (194, 13339), (197, 13351), (202, 13381), (218, 13462), (249, 13597), (269, 13645), (274, 13660), (294, 13753), (296, 13771), (297, 13783), (315, 13903), (316, 13906), (335, 14017), (342, 14056), (353, 14131), (354, 14146),

Gene: JasmineDragon\_16 Start: 8971, Stop: 11214, Start Num: 7

Candidate Starts for JasmineDragon\_16:

(Start: 7 @8971 has 40 MA's), (12, 9058), (24, 9160), (30, 9226), (38, 9331), (46, 9442), (48, 9448), (55, 9544), (58, 9586), (75, 9733), (79, 9751), (99, 9868), (104, 9895), (121, 9928), (129, 9964), (136, 10012), (143, 10051), (152, 10090), (162, 10138), (164, 10147), (166, 10156), (175, 10165), (181, 10207), (187, 10243), (190, 10255), (199, 10300), (200, 10306), (205, 10330), (211, 10366), (218, 10384), (224, 10408), (226, 10417), (228, 10429), (233, 10450), (234, 10453), (241, 10483), (298, 10729), (315, 10846), (332, 10942), (334, 10948), (338, 10978),

Gene: Joemato\_18 Start: 10730, Stop: 13045, Start Num: 7

Candidate Starts for Joemato\_18:

(Start: 7 @10730 has 40 MA's), (16, 10886), (17, 10895), (28, 10976), (29, 10988), (31, 11036), (40, 11153), (49, 11234), (50, 11237), (52, 11267), (56, 11321), (57, 11351), (64, 11408), (67, 11432), (73, 11492), (121, 11717), (145, 11813), (157, 11885), (165, 11933), (178, 11987), (183, 12029), (190, 12068), (202, 12128), (274, 12407), (278, 12431), (281, 12464), (282, 12467), (296, 12518), (312, 12629), (315, 12650), (316, 12653), (322, 12686), (335, 12764), (339, 12785), (342, 12803), (351, 12863), (354, 12893), (360, 12944), (365, 12989), (368, 13034),

Gene: JohnDoe\_16 Start: 10725, Stop: 13040, Start Num: 7

Candidate Starts for JohnDoe\_16:

(Start: 7 @10725 has 40 MA's), (16, 10881), (17, 10890), (28, 10971), (29, 10983), (31, 11031), (40, 11148), (49, 11229), (50, 11232), (52, 11262), (56, 11316), (57, 11346), (64, 11403), (67, 11427), (73, 11487), (121, 11712), (145, 11808), (157, 11880), (165, 11928), (178, 11982), (183, 12024), (190, 12063), (202, 12123), (274, 12402), (278, 12426), (281, 12459), (282, 12462), (296, 12513), (312, 12624), (315, 12645), (316, 12648), (322, 12681), (335, 12759), (342, 12798), (351, 12858), (354, 12888), (360, 12939), (365, 12984), (368, 13029),

Gene: Jstan\_16 Start: 10704, Stop: 13028, Start Num: 7

Candidate Starts for Jstan\_16:

(Start: 7 @10704 has 40 MA's), (15, 10857), (16, 10860), (17, 10869), (28, 10950), (31, 11010), (35, 11055), (40, 11127), (49, 11208), (50, 11211), (52, 11241), (56, 11295), (57, 11325), (64, 11382), (67, 11406), (73, 11466), (74, 11472), (80, 11496), (95, 11592), (121, 11691), (145, 11787), (150, 11820), (157, 11859), (165, 11907), (178, 11961), (183, 12003), (190, 12042), (194, 12060), (202, 12102), (220, 12195), (269, 12366), (274, 12381), (296, 12492), (315, 12624), (316, 12627), (322, 12660), (335, 12738), (342, 12777), (351, 12837), (360, 12927),

Gene: JuneStar\_16 Start: 10824, Stop: 13148, Start Num: 7

Candidate Starts for JuneStar\_16:

(Start: 7 @10824 has 40 MA's), (19, 10998), (23, 11022), (28, 11070), (31, 11130), (39, 11235), (40, 11247), (49, 11328), (50, 11331), (52, 11361), (56, 11415), (57, 11445), (60, 11487), (64, 11502), (67, 11526), (69, 11556), (73, 11586), (74, 11592), (121, 11811), (150, 11940), (157, 11979), (165, 12027), (172, 12048), (178, 12081), (183, 12123), (190, 12162), (202, 12222), (220, 12315), (238, 12384), (296, 12612), (312, 12723), (315, 12744), (316, 12747), (335, 12858), (342, 12897),

Gene: Kaylissa\_16 Start: 10731, Stop: 13046, Start Num: 7

Candidate Starts for Kaylissa\_16:

(Start: 7 @10731 has 40 MA's), (16, 10887), (17, 10896), (28, 10977), (29, 10989), (31, 11037), (40, 11154), (49, 11235), (50, 11238), (52, 11268), (56, 11322), (57, 11352), (64, 11409), (67, 11433), (73, 11493), (121, 11718), (145, 11814), (157, 11886), (165, 11934), (178, 11988), (183, 12030), (190, 12069), (202, 12129), (274, 12408), (278, 12432), (281, 12465), (282, 12468), (296, 12519), (312, 12630), (315, 12651), (316, 12654), (322, 12687), (335, 12765), (339, 12786), (342, 12804), (351, 12864), (354, 12894), (360, 12945), (365, 12990), (368, 13035),

Gene: KeAlii\_16 Start: 10771, Stop: 13071, Start Num: 7

Candidate Starts for KeAlii\_16:

(Start: 7 @10771 has 40 MA's), (16, 10927), (17, 10936), (28, 11017), (31, 11077), (40, 11194), (43, 11245), (49, 11275), (50, 11278), (52, 11308), (56, 11362), (57, 11392), (59, 11425), (64, 11449), (67, 11473), (69, 11503), (73, 11533), (74, 11539), (80, 11563), (123, 11776), (145, 11857), (152, 11902), (157, 11929), (165, 11977), (183, 12073), (190, 12112), (192, 12121), (205, 12184), (206, 12187), (223, 12274), (231, 12310), (238, 12334), (274, 12451), (277, 12466), (292, 12532), (303, 12607), (317, 12703), (334, 12793), (338, 12823), (345, 12877), (351, 12898), (363, 13006),

Gene: Laroye\_67 Start: 36530, Stop: 39547, Start Num: 2

Candidate Starts for Laroye\_67:

(Start: 2 @36530 has 7 MA's), (4, 36551), (5, 36581), (6, 36584), (13, 36689), (23, 36773), (25, 36782), (30, 36842), (44, 37052), (46, 37058), (47, 37061), (48, 37064), (54, 37151), (58, 37202), (61, 37244), (62, 37247), (71, 37331), (75, 37349), (100, 37499), (122, 37592), (123, 37601), (138, 37691), (153, 37787), (156, 37805), (159, 37817), (160, 37835), (161, 37838), (164, 37850), (170, 37871), (173, 37883), (180, 37934), (195, 38027), (209, 38114), (214, 38150), (217, 38162), (219, 38171), (226, 38201), (229, 38216), (231, 38225), (245, 38294), (263, 38333), (282, 38459), (300, 38534), (311, 38609), (312, 38630), (318, 38663), (319, 38666), (326, 38708), (328, 38720), (331, 38741), (340, 38795), (355, 38897), (361, 38960), (371, 39071), (373, 39104), (375, 39158), (376, 39167), (380, 39260), (381, 39269), (383, 39368), (384, 39374), (386, 39404), (387, 39443), (389, 39530),

Gene: Lego\_16 Start: 10730, Stop: 13045, Start Num: 7

Candidate Starts for Lego\_16:

(Start: 7 @10730 has 40 MA's), (16, 10886), (17, 10895), (28, 10976), (29, 10988), (31, 11036), (32, 11039), (35, 11081), (40, 11153), (49, 11234), (50, 11237), (52, 11267), (56, 11321), (57, 11351), (64, 11408), (67, 11432), (73, 11492), (121, 11717), (145, 11813), (155, 11876), (157, 11885), (165, 11933), (169, 11942), (172, 11954), (178, 11987), (183, 12029), (190, 12068), (202, 12128), (232, 12269), (249, 12344), (255, 12356), (270, 12398), (274, 12407), (278, 12431), (296, 12518), (312, 12629), (315, 12650), (316, 12653), (322, 12686), (335, 12764), (342, 12803), (351, 12863), (354,

12893), (360, 12944), (365, 12989), (368, 13034),

Gene: LiSara\_64 Start: 36692, Stop: 39709, Start Num: 2

Candidate Starts for LiSara\_64:

(Start: 2 @36692 has 7 MA's), (4, 36713), (5, 36743), (6, 36746), (13, 36851), (23, 36935), (25, 36944), (30, 37004), (44, 37214), (46, 37220), (47, 37223), (48, 37226), (54, 37313), (58, 37364), (61, 37406), (62, 37409), (71, 37493), (75, 37511), (100, 37661), (122, 37754), (123, 37763), (138, 37853), (153, 37949), (159, 37979), (160, 37997), (161, 38000), (164, 38012), (170, 38033), (173, 38045), (180, 38096), (195, 38189), (209, 38276), (214, 38312), (217, 38324), (219, 38333), (226, 38363), (229, 38378), (231, 38387), (245, 38456), (263, 38495), (282, 38621), (300, 38696), (311, 38771), (312, 38792), (318, 38825), (319, 38828), (326, 38870), (328, 38882), (331, 38903), (340, 38957), (355, 39059), (361, 39122), (371, 39233), (373, 39266), (375, 39320), (376, 39329), (379, 39398), (380, 39422), (381, 39431), (383, 39530), (384, 39536), (386, 39566), (387, 39605), (389, 39692),

Gene: Liebe\_15 Start: 9206, Stop: 11569, Start Num: 7

Candidate Starts for Liebe\_15:

(Start: 7 @9206 has 40 MA's), (24, 9395), (30, 9461), (34, 9536), (39, 9602), (46, 9677), (47, 9680), (48, 9683), (54, 9770), (55, 9779), (58, 9821), (75, 9968), (79, 9986), (88, 10061), (93, 10094), (101, 10127), (124, 10268), (147, 10391), (148, 10400), (159, 10439), (160, 10457), (164, 10472), (181, 10532), (182, 10538), (183, 10544), (185, 10556), (186, 10559), (197, 10613), (199, 10625), (201, 10637), (204, 10652), (221, 10724), (226, 10742), (227, 10751), (231, 10766), (234, 10778), (239, 10796), (241, 10808), (295, 11030), (315, 11171), (316, 11174), (322, 11207), (324, 11222), (325, 11228), (332, 11267), (342, 11324), (346, 11366), (354, 11414),

Gene: Lizalica\_16 Start: 10715, Stop: 13030, Start Num: 7

Candidate Starts for Lizalica\_16:

(Start: 7 @10715 has 40 MA's), (16, 10871), (17, 10880), (28, 10961), (29, 10973), (31, 11021), (32, 11024), (35, 11066), (40, 11138), (49, 11219), (50, 11222), (52, 11252), (56, 11306), (57, 11336), (64, 11393), (67, 11417), (73, 11477), (121, 11702), (145, 11798), (157, 11870), (165, 11918), (178, 11972), (183, 12014), (190, 12053), (202, 12113), (232, 12254), (270, 12383), (274, 12392), (278, 12416), (294, 12485), (296, 12503), (312, 12614), (315, 12635), (316, 12638), (322, 12671), (335, 12749), (342, 12788), (351, 12848), (354, 12878), (360, 12929), (365, 12974), (368, 13019),

Gene: London\_16 Start: 10704, Stop: 13028, Start Num: 7

Candidate Starts for London\_16:

(Start: 7 @10704 has 40 MA's), (15, 10857), (16, 10860), (17, 10869), (28, 10950), (31, 11010), (35, 11055), (40, 11127), (49, 11208), (50, 11211), (52, 11241), (56, 11295), (57, 11325), (64, 11382), (67, 11406), (73, 11466), (74, 11472), (80, 11496), (95, 11592), (121, 11691), (145, 11787), (150, 11820), (157, 11859), (165, 11907), (178, 11961), (183, 12003), (190, 12042), (194, 12060), (202, 12102), (220, 12195), (269, 12366), (274, 12381), (296, 12492), (315, 12624), (316, 12627), (322, 12660), (335, 12738), (342, 12777), (351, 12837), (360, 12927),

Gene: MaGuCo\_15 Start: 9140, Stop: 11503, Start Num: 7

Candidate Starts for MaGuCo\_15:

(Start: 7 @9140 has 40 MA's), (24, 9329), (30, 9395), (34, 9470), (46, 9611), (47, 9614), (48, 9617), (54, 9704), (55, 9713), (58, 9755), (62, 9800), (75, 9902), (79, 9920), (93, 10028), (101, 10061), (124, 10202), (142, 10304), (147, 10325), (148, 10334), (159, 10373), (160, 10391), (163, 10403), (164, 10406), (181, 10466), (182, 10472), (183, 10478), (185, 10490), (186, 10493), (190, 10514), (197, 10547), (199, 10559), (201, 10571), (204, 10586), (221, 10658), (225, 10670), (226, 10676), (227, 10685), (231, 10700), (234, 10712), (239, 10730), (241, 10742), (295, 10964), (315, 11105), (316, 11108), (322, 11141), (325, 11162), (332, 11201), (342, 11258), (346, 11300), (354, 11348),

Gene: Maureen\_15 Start: 9206, Stop: 11569, Start Num: 7

Candidate Starts for Maureen\_15:

(Start: 7 @9206 has 40 MA's), (24, 9395), (30, 9461), (34, 9536), (39, 9602), (46, 9677), (47, 9680), (48, 9683), (54, 9770), (55, 9779), (58, 9821), (75, 9968), (79, 9986), (88, 10061), (93, 10094), (101, 10127), (124, 10268), (147, 10391), (148, 10400), (159, 10439), (160, 10457), (164, 10472), (181, 10532), (182, 10538), (183, 10544), (185, 10556), (186, 10559), (197, 10613), (199, 10625), (201, 10637), (204, 10652), (221, 10724), (226, 10742), (227, 10751), (231, 10766), (234, 10778), (239, 10796), (241, 10808), (295, 11030), (315, 11171), (316, 11174), (322, 11207), (324, 11222), (325, 11228), (332, 11267), (342, 11324), (346, 11366), (354, 11414),

Gene: Milani\_20 Start: 12168, Stop: 14459, Start Num: 8

Candidate Starts for Milani\_20:

(Start: 8 @12168 has 4 MA's), (17, 12285), (23, 12318), (27, 12345), (40, 12537), (54, 12693), (58, 12744), (63, 12795), (66, 12816), (71, 12873), (81, 12930), (98, 13017), (103, 13044), (107, 13065), (113, 13095), (114, 13098), (139, 13212), (167, 13356), (185, 13464), (196, 13518), (214, 13629), (237, 13707), (241, 13728), (243, 13740), (260, 13761), (265, 13806), (278, 13872), (293, 13938), (298, 13974), (299, 13980), (304, 14007), (310, 14046), (315, 14091), (316, 14094), (318, 14103), (320, 14115), (321, 14124), (322, 14127), (342, 14241), (348, 14292), (350, 14298),

Gene: MiniMommy\_15 Start: 8972, Stop: 11215, Start Num: 7

Candidate Starts for MiniMommy\_15:

(Start: 7 @8972 has 40 MA's), (12, 9059), (24, 9161), (30, 9227), (38, 9332), (46, 9443), (48, 9449), (55, 9545), (58, 9587), (75, 9734), (79, 9752), (99, 9869), (104, 9896), (121, 9929), (129, 9965), (136, 10013), (143, 10052), (152, 10091), (159, 10115), (162, 10139), (164, 10148), (166, 10157), (175, 10166), (181, 10208), (187, 10244), (190, 10256), (199, 10301), (200, 10307), (205, 10331), (211, 10367), (218, 10385), (224, 10409), (226, 10418), (228, 10430), (233, 10451), (234, 10454), (241, 10484), (298, 10730), (315, 10847), (332, 10943), (334, 10949), (338, 10979),

Gene: MissSwiss\_16 Start: 10713, Stop: 12947, Start Num: 7

Candidate Starts for MissSwiss\_16:

(Start: 7 @10713 has 40 MA's), (16, 10869), (17, 10878), (22, 10905), (28, 10959), (29, 10971), (31, 11019), (40, 11136), (49, 11217), (50, 11220), (52, 11250), (57, 11334), (64, 11391), (67, 11415), (73, 11475), (84, 11544), (87, 11562), (105, 11613), (113, 11634), (119, 11655), (140, 11700), (155, 11796), (157, 11805), (165, 11853), (169, 11862), (183, 11949), (206, 12063), (223, 12150), (233, 12195), (238, 12210), (275, 12330), (277, 12342), (292, 12408), (297, 12450), (300, 12462), (304, 12486), (307, 12507), (308, 12516), (311, 12537), (317, 12579), (334, 12669), (338, 12699), (345, 12753), (363, 12882),

Gene: Mudpuppy\_17 Start: 10729, Stop: 13044, Start Num: 7

Candidate Starts for Mudpuppy\_17:

(Start: 7 @10729 has 40 MA's), (16, 10885), (17, 10894), (28, 10975), (29, 10987), (31, 11035), (32, 11038), (35, 11080), (40, 11152), (49, 11233), (50, 11236), (52, 11266), (56, 11320), (57, 11350), (64, 11407), (67, 11431), (73, 11491), (121, 11716), (145, 11812), (155, 11875), (157, 11884), (165, 11932), (172, 11953), (178, 11986), (183, 12028), (190, 12067), (202, 12127), (232, 12268), (270, 12397), (274, 12406), (278, 12430), (281, 12463), (294, 12499), (296, 12517), (312, 12628), (315, 12649), (316, 12652), (322, 12685), (335, 12763), (342, 12802), (351, 12862), (354, 12892), (360, 12943), (365, 12988), (368, 13033),

Gene: Niobe\_16 Start: 10704, Stop: 13028, Start Num: 7

Candidate Starts for Niobe\_16:

(Start: 7 @10704 has 40 MA's), (15, 10857), (16, 10860), (17, 10869), (28, 10950), (31, 11010), (35, 11055), (40, 11127), (49, 11208), (50, 11211), (52, 11241), (56, 11295), (57, 11325), (64, 11382), (67, 11406), (73, 11466), (74, 11472), (80, 11496), (95, 11592), (121, 11691), (145, 11787), (150, 11820), (157, 11859), (165, 11907), (178, 11961), (183, 12003), (190, 12042), (194, 12060), (202, 12102),

(220, 12195), (269, 12366), (274, 12381), (296, 12492), (315, 12624), (316, 12627), (322, 12660), (335, 12738), (342, 12777), (351, 12837), (360, 12927),

Gene: Nitro\_16 Start: 10728, Stop: 13052, Start Num: 7

Candidate Starts for Nitro\_16:

(Start: 7 @10728 has 40 MA's), (14, 10875), (16, 10884), (23, 10926), (28, 10974), (31, 11034), (35, 11079), (40, 11151), (44, 11211), (50, 11235), (52, 11265), (56, 11319), (57, 11349), (64, 11406), (67, 11430), (73, 11490), (74, 11496), (89, 11595), (120, 11712), (145, 11811), (157, 11883), (165, 11931), (183, 12027), (190, 12066), (194, 12084), (202, 12126), (206, 12141), (220, 12219), (269, 12390), (274, 12405), (281, 12462), (294, 12498), (296, 12516), (315, 12648), (316, 12651), (322, 12684), (335, 12762), (342, 12801), (351, 12861), (360, 12951), (365, 12996), (368, 13041),

Gene: ObiToo\_16 Start: 10917, Stop: 13223, Start Num: 7

Candidate Starts for ObiToo\_16:

(Start: 7 @10917 has 40 MA's), (15, 11070), (16, 11073), (17, 11082), (31, 11223), (40, 11340), (50, 11424), (52, 11454), (56, 11508), (64, 11595), (67, 11619), (73, 11679), (74, 11685), (83, 11751), (120, 11901), (121, 11904), (155, 12063), (157, 12072), (165, 12120), (178, 12174), (183, 12216), (190, 12255), (202, 12315), (206, 12330), (220, 12408), (232, 12456), (249, 12531), (255, 12543), (270, 12585), (274, 12594), (296, 12705), (315, 12837), (316, 12840), (335, 12951), (342, 12990), (349, 13044), (353, 13065), (354, 13080), (363, 13158),

Gene: Phives\_17 Start: 11806, Stop: 14130, Start Num: 7

Candidate Starts for Phives\_17:

(Start: 7 @11806 has 40 MA's), (16, 11962), (17, 11971), (28, 12052), (31, 12112), (35, 12157), (40, 12229), (44, 12289), (49, 12310), (50, 12313), (52, 12343), (56, 12397), (57, 12427), (64, 12484), (67, 12508), (73, 12568), (74, 12574), (121, 12793), (150, 12922), (155, 12952), (157, 12961), (165, 13009), (172, 13030), (178, 13063), (183, 13105), (190, 13144), (202, 13204), (206, 13219), (220, 13297), (234, 13354), (265, 13453), (268, 13465), (270, 13474), (278, 13507), (281, 13540), (282, 13543), (296, 13594), (315, 13726), (316, 13729), (335, 13840), (342, 13879), (351, 13939), (358, 13990), (360, 14029),

Gene: Pixelle\_16 Start: 10749, Stop: 13073, Start Num: 7

Candidate Starts for Pixelle\_16:

(Start: 7 @10749 has 40 MA's), (16, 10905), (17, 10914), (28, 10995), (31, 11055), (35, 11100), (40, 11172), (49, 11253), (50, 11256), (52, 11286), (56, 11340), (57, 11370), (64, 11427), (67, 11451), (72, 11505), (73, 11511), (74, 11517), (121, 11736), (157, 11904), (165, 11952), (172, 11973), (178, 12006), (183, 12048), (190, 12087), (202, 12147), (206, 12162), (218, 12228), (244, 12351), (270, 12417), (274, 12426), (281, 12483), (282, 12486), (296, 12537), (315, 12669), (316, 12672), (335, 12783), (342, 12822), (343, 12846), (360, 12972),

Gene: Powerpuff\_16 Start: 10781, Stop: 13096, Start Num: 7

Candidate Starts for Powerpuff\_16:

(Start: 7 @10781 has 40 MA's), (16, 10937), (17, 10946), (28, 11027), (29, 11039), (31, 11087), (32, 11090), (35, 11132), (40, 11204), (49, 11285), (50, 11288), (52, 11318), (56, 11372), (57, 11402), (64, 11459), (67, 11483), (73, 11543), (121, 11768), (145, 11864), (155, 11927), (157, 11936), (165, 11984), (169, 11993), (172, 12005), (178, 12038), (183, 12080), (190, 12119), (202, 12179), (232, 12320), (249, 12395), (255, 12407), (270, 12449), (274, 12458), (278, 12482), (294, 12551), (296, 12569), (312, 12680), (315, 12701), (316, 12704), (322, 12737), (335, 12815), (342, 12854), (351, 12914), (354, 12944), (360, 12995), (365, 13040), (368, 13085),

Gene: Pumpkins\_28 Start: 10836, Stop: 13160, Start Num: 7

Candidate Starts for Pumpkins\_28:

(Start: 7 @10836 has 40 MA's), (16, 10992), (17, 11001), (18, 11004), (19, 11010), (28, 11082), (31, 11142), (40, 11259), (49, 11340), (50, 11343), (52, 11373), (57, 11457), (64, 11514), (67, 11538), (73, 11598), (74, 11604), (121, 11823), (157, 11991), (165, 12039), (178, 12093), (183, 12135), (190, 12174), (220, 12327), (264, 12480), (267, 12492), (281, 12570), (282, 12573), (296, 12624), (315, 12756), (316, 12759), (322, 12792), (335, 12870), (342, 12909),

Gene: Rasovi\_19 Start: 13514, Stop: 15508, Start Num: 8

Candidate Starts for Rasovi\_19:

(Start: 8 @13514 has 4 MA's), (10, 13553), (23, 13664), (26, 13679), (27, 13691), (34, 13805), (40, 13883), (42, 13907), (54, 14039), (58, 14090), (65, 14156), (78, 14252), (98, 14363), (128, 14489), (137, 14549), (141, 14573), (144, 14591), (158, 14624), (195, 14771), (198, 14789), (205, 14822), (208, 14837), (229, 14903), (302, 15062), (304, 15068), (305, 15074), (315, 15152), (319, 15167), (326, 15209), (337, 15275), (346, 15344), (366, 15482),

Gene: Reedo\_16 Start: 10781, Stop: 13090, Start Num: 7

Candidate Starts for Reedo\_16:

(Start: 7 @10781 has 40 MA's), (16, 10937), (17, 10946), (23, 10979), (28, 11027), (31, 11087), (40, 11204), (49, 11285), (50, 11288), (52, 11318), (56, 11372), (57, 11402), (64, 11459), (67, 11483), (69, 11513), (73, 11543), (74, 11549), (80, 11573), (86, 11636), (95, 11669), (117, 11747), (145, 11864), (180, 12062), (183, 12080), (190, 12119), (195, 12140), (202, 12179), (206, 12194), (212, 12233), (221, 12275), (238, 12341), (277, 12473), (289, 12527), (292, 12539), (303, 12614), (306, 12626), (317, 12710), (323, 12746), (334, 12800), (338, 12830), (356, 12944), (363, 13022),

Gene: Salgado\_67 Start: 36346, Stop: 39363, Start Num: 2

Candidate Starts for Salgado\_67:

(Start: 2 @36346 has 7 MA's), (4, 36367), (5, 36397), (6, 36400), (13, 36505), (23, 36589), (25, 36598), (30, 36658), (44, 36868), (46, 36874), (47, 36877), (48, 36880), (54, 36967), (58, 37018), (61, 37060), (62, 37063), (71, 37147), (75, 37165), (100, 37315), (106, 37354), (122, 37408), (123, 37417), (138, 37507), (153, 37603), (159, 37633), (160, 37651), (161, 37654), (164, 37666), (170, 37687), (173, 37699), (180, 37750), (195, 37843), (209, 37930), (214, 37966), (217, 37978), (219, 37987), (226, 38017), (229, 38032), (231, 38041), (245, 38110), (263, 38149), (282, 38275), (300, 38350), (311, 38425), (312, 38446), (318, 38479), (319, 38482), (326, 38524), (328, 38536), (331, 38557), (340, 38611), (355, 38713), (361, 38776), (371, 38887), (373, 38920), (375, 38974), (376, 38983), (380, 39076), (381, 39085), (383, 39184), (384, 39190), (386, 39220), (387, 39259), (389, 39346),

Gene: ShakeltOph\_16 Start: 8971, Stop: 11214, Start Num: 7

Candidate Starts for ShakeltOph\_16:

(Start: 7 @8971 has 40 MA's), (12, 9058), (24, 9160), (30, 9226), (38, 9331), (46, 9442), (48, 9448), (55, 9544), (58, 9586), (75, 9733), (79, 9751), (99, 9868), (104, 9895), (121, 9928), (129, 9964), (136, 10012), (143, 10051), (152, 10090), (162, 10138), (164, 10147), (166, 10156), (175, 10165), (181, 10207), (187, 10243), (190, 10255), (199, 10300), (200, 10306), (205, 10330), (211, 10366), (218, 10384), (224, 10408), (226, 10417), (228, 10429), (233, 10450), (234, 10453), (241, 10483), (298, 10729), (315, 10846), (332, 10942), (334, 10948), (338, 10978),

Gene: Shrooms\_65 Start: 34492, Stop: 37881, Start Num: 2

Candidate Starts for Shrooms\_65:

(1, 34486), (Start: 2 @34492 has 7 MA's), (3, 34510), (4, 34513), (5, 34543), (6, 34546), (10, 34621), (21, 34723), (23, 34735), (30, 34804), (46, 35020), (47, 35023), (48, 35026), (54, 35113), (58, 35164), (62, 35209), (66, 35236), (75, 35311), (79, 35329), (81, 35362), (92, 35431), (102, 35491), (103, 35494), (110, 35560), (111, 35566), (114, 35587), (118, 35602), (123, 35644), (130, 35698), (134, 35722), (135, 35728), (138, 35743), (140, 35752), (151, 35833), (158, 35866), (164, 35902), (173, 35935), (180, 35986), (184, 36016), (194, 36076), (195, 36079), (209, 36166), (212, 36178), (213, 36187), (219, 36223), (221, 36235), (226, 36253), (232, 36280), (243, 36331), (247, 36364), (251,

36409), (253, 36427), (254, 36433), (256, 36445), (258, 36463), (259, 36472), (263, 36517), (275, 36586), (280, 36631), (283, 36649), (284, 36673), (285, 36676), (286, 36685), (287, 36697), (288, 36709), (290, 36751), (291, 36817), (304, 36907), (309, 36940), (311, 36958), (318, 37012), (319, 37015), (327, 37066), (328, 37069), (331, 37090), (333, 37102), (336, 37126), (338, 37135), (342, 37156), (355, 37246), (359, 37267), (361, 37309), (364, 37327), (370, 37399), (371, 37420), (372, 37444), (373, 37453), (374, 37474), (375, 37507), (380, 37609), (382, 37654), (385, 37720), (387, 37777),

Gene: Simpson\_18 Start: 10730, Stop: 13045, Start Num: 7

Candidate Starts for Simpson\_18:

(Start: 7 @10730 has 40 MA's), (16, 10886), (17, 10895), (28, 10976), (29, 10988), (31, 11036), (40, 11153), (49, 11234), (50, 11237), (52, 11267), (56, 11321), (57, 11351), (64, 11408), (67, 11432), (73, 11492), (121, 11717), (145, 11813), (157, 11885), (165, 11933), (178, 11987), (183, 12029), (190, 12068), (202, 12128), (274, 12407), (278, 12431), (281, 12464), (282, 12467), (296, 12518), (312, 12629), (315, 12650), (316, 12653), (322, 12686), (335, 12764), (339, 12785), (342, 12803), (351, 12863), (354, 12893), (360, 12944), (365, 12989), (368, 13034),

Gene: Snek\_16 Start: 9838, Stop: 12117, Start Num: 7

Candidate Starts for Snek\_16:

(Start: 7 @9838 has 40 MA's), (26, 10042), (30, 10093), (37, 10195), (41, 10261), (46, 10309), (48, 10315), (54, 10402), (55, 10411), (58, 10453), (62, 10498), (75, 10600), (79, 10618), (99, 10747), (102, 10762), (116, 10804), (123, 10825), (125, 10840), (147, 10951), (162, 11023), (164, 11032), (166, 11041), (176, 11053), (182, 11098), (183, 11104), (186, 11119), (190, 11140), (199, 11185), (216, 11263), (234, 11338), (239, 11356), (277, 11503), (298, 11614), (308, 11677), (311, 11698), (314, 11725), (317, 11740), (334, 11830), (338, 11860), (347, 11926), (367, 12052), (369, 12091),

Gene: Sucha\_16 Start: 10506, Stop: 12797, Start Num: 8

Candidate Starts for Sucha\_16:

(Start: 8 @10506 has 4 MA's), (17, 10623), (23, 10656), (34, 10797), (40, 10875), (54, 11031), (58, 11082), (63, 11133), (66, 11154), (81, 11268), (82, 11271), (85, 11292), (97, 11349), (127, 11478), (128, 11481), (130, 11499), (132, 11517), (137, 11541), (171, 11703), (182, 11784), (185, 11802), (188, 11823), (196, 11856), (197, 11859), (215, 11964), (222, 11988), (241, 12066), (242, 12069), (260, 12099), (265, 12144), (273, 12177), (293, 12276), (298, 12312), (299, 12318), (304, 12345), (310, 12384), (315, 12429), (318, 12441), (320, 12453), (321, 12462), (322, 12465), (342, 12579), (348, 12630), (352, 12645),

Gene: Sue2\_16 Start: 10752, Stop: 13142, Start Num: 7

Candidate Starts for Sue2\_16:

(Start: 7 @10752 has 40 MA's), (9, 10785), (17, 10905), (24, 10941), (30, 11007), (37, 11109), (46, 11223), (48, 11229), (54, 11316), (55, 11325), (58, 11367), (75, 11514), (116, 11790), (131, 11874), (152, 11985), (168, 12063), (175, 12069), (177, 12078), (180, 12105), (199, 12204), (221, 12303), (225, 12315), (230, 12342), (234, 12357), (237, 12366), (239, 12375), (260, 12420), (274, 12507), (279, 12552), (306, 12675), (313, 12732), (315, 12750), (316, 12753), (324, 12801), (335, 12864), (342, 12903), (367, 13077),

Gene: Tallboi\_17 Start: 10731, Stop: 13055, Start Num: 7

Candidate Starts for Tallboi\_17:

(Start: 7 @10731 has 40 MA's), (14, 10878), (16, 10887), (28, 10977), (31, 11037), (35, 11082), (40, 11154), (44, 11214), (50, 11238), (52, 11268), (56, 11322), (57, 11352), (64, 11409), (67, 11433), (73, 11493), (74, 11499), (121, 11718), (157, 11886), (165, 11934), (178, 11988), (183, 12030), (190, 12069), (202, 12129), (220, 12222), (270, 12399), (274, 12408), (296, 12519), (315, 12651), (316, 12654), (322, 12687), (335, 12765), (342, 12804), (351, 12864), (354, 12894), (360, 12954),



Gene: Tbone\_16 Start: 10734, Stop: 13049, Start Num: 7

Candidate Starts for Tbone\_16:

(Start: 7 @10734 has 40 MA's), (16, 10890), (17, 10899), (28, 10980), (29, 10992), (31, 11040), (32, 11043), (35, 11085), (40, 11157), (49, 11238), (50, 11241), (52, 11271), (56, 11325), (57, 11355), (64, 11412), (67, 11436), (73, 11496), (121, 11721), (145, 11817), (155, 11880), (157, 11889), (165, 11937), (172, 11958), (178, 11991), (183, 12033), (190, 12072), (202, 12132), (232, 12273), (270, 12402), (274, 12411), (278, 12435), (281, 12468), (294, 12504), (296, 12522), (312, 12633), (315, 12654), (316, 12657), (322, 12690), (335, 12768), (342, 12807), (351, 12867), (354, 12897), (360, 12948), (365, 12993), (368, 13038),

Gene: TforTroy\_16 Start: 10854, Stop: 13178, Start Num: 7

Candidate Starts for TforTroy\_16:

(Start: 7 @10854 has 40 MA's), (16, 11010), (17, 11019), (18, 11022), (19, 11028), (28, 11100), (31, 11160), (40, 11277), (49, 11358), (50, 11361), (52, 11391), (56, 11445), (57, 11475), (64, 11532), (67, 11556), (73, 11616), (74, 11622), (96, 11745), (121, 11841), (157, 12009), (165, 12057), (178, 12111), (183, 12153), (190, 12192), (202, 12252), (220, 12345), (255, 12480), (268, 12513), (270, 12522), (296, 12642), (315, 12774), (316, 12777), (335, 12888), (342, 12927),

Gene: Tian\_16 Start: 10746, Stop: 13070, Start Num: 7

Candidate Starts for Tian\_16:

(Start: 7 @10746 has 40 MA's), (16, 10902), (17, 10911), (28, 10992), (31, 11052), (35, 11097), (40, 11169), (44, 11229), (49, 11250), (50, 11253), (52, 11283), (56, 11337), (57, 11367), (64, 11424), (67, 11448), (73, 11508), (74, 11514), (95, 11634), (121, 11733), (145, 11829), (157, 11901), (165, 11949), (172, 11970), (178, 12003), (183, 12045), (190, 12084), (202, 12144), (206, 12159), (218, 12225), (244, 12348), (248, 12357), (270, 12414), (274, 12423), (281, 12480), (282, 12483), (296, 12534), (315, 12666), (316, 12669), (335, 12780), (342, 12819), (343, 12843), (360, 12969),

Gene: Tuck\_17 Start: 11773, Stop: 14250, Start Num: 7

Candidate Starts for Tuck\_17:

(Start: 7 @11773 has 40 MA's), (16, 11929), (17, 11938), (28, 12019), (31, 12079), (35, 12124), (40, 12196), (50, 12280), (52, 12310), (56, 12364), (57, 12394), (64, 12451), (67, 12475), (73, 12535), (74, 12541), (80, 12565), (90, 12643), (94, 12676), (112, 12811), (121, 12853), (133, 12952), (146, 13024), (152, 13063), (157, 13090), (165, 13138), (174, 13171), (183, 13234), (194, 13291), (202, 13333), (206, 13348), (220, 13426), (249, 13549), (269, 13597), (274, 13612), (294, 13705), (296, 13723), (297, 13735), (315, 13855), (316, 13858), (335, 13969), (342, 14008), (354, 14098),

Gene: Turab\_16 Start: 10733, Stop: 13057, Start Num: 7

Candidate Starts for Turab\_16:

(Start: 7 @10733 has 40 MA's), (16, 10889), (17, 10898), (20, 10913), (28, 10979), (31, 11039), (35, 11084), (40, 11156), (49, 11237), (50, 11240), (52, 11270), (56, 11324), (57, 11354), (64, 11411), (67, 11435), (73, 11495), (74, 11501), (121, 11720), (145, 11816), (150, 11849), (165, 11936), (178, 11990), (183, 12032), (190, 12071), (202, 12131), (232, 12272), (270, 12401), (274, 12410), (296, 12521), (315, 12653), (316, 12656), (322, 12689), (335, 12767), (342, 12806), (351, 12866), (360, 12956),

Gene: Tutumahutu\_16 Start: 10781, Stop: 13096, Start Num: 7

Candidate Starts for Tutumahutu\_16:

(Start: 7 @10781 has 40 MA's), (16, 10937), (17, 10946), (28, 11027), (29, 11039), (31, 11087), (32, 11090), (35, 11132), (40, 11204), (49, 11285), (50, 11288), (52, 11318), (56, 11372), (57, 11402), (64, 11459), (67, 11483), (73, 11543), (121, 11768), (145, 11864), (155, 11927), (157, 11936), (165, 11984), (169, 11993), (172, 12005), (178, 12038), (183, 12080), (190, 12119), (202, 12179), (232, 12320), (249, 12395), (255, 12407), (270, 12449), (274, 12458), (278, 12482), (294, 12551), (296, 12569), (297, 12581), (312, 12680), (315, 12701), (316, 12704), (322, 12737), (335, 12815), (342,

12854), (351, 12914), (354, 12944), (360, 12995), (365, 13040), (368, 13085),

Gene: Tweety19\_16 Start: 9837, Stop: 12116, Start Num: 7

Candidate Starts for Tweety19\_16:

(Start: 7 @9837 has 40 MA's), (26, 10041), (30, 10092), (37, 10194), (41, 10260), (46, 10308), (48, 10314), (54, 10401), (55, 10410), (58, 10452), (62, 10497), (75, 10599), (79, 10617), (99, 10746), (102, 10761), (116, 10803), (123, 10824), (125, 10839), (147, 10950), (162, 11022), (164, 11031), (166, 11040), (176, 11052), (182, 11097), (183, 11103), (186, 11118), (190, 11139), (199, 11184), (216, 11262), (234, 11337), (239, 11355), (277, 11502), (298, 11613), (308, 11676), (311, 11697), (314, 11724), (317, 11739), (334, 11829), (338, 11859), (347, 11925), (367, 12051), (369, 12090),

Gene: VroomVroom\_15 Start: 8983, Stop: 11226, Start Num: 7

Candidate Starts for VroomVroom\_15:

(Start: 7 @8983 has 40 MA's), (12, 9070), (20, 9151), (24, 9172), (30, 9238), (38, 9343), (46, 9454), (48, 9460), (55, 9556), (58, 9598), (75, 9745), (99, 9880), (104, 9907), (121, 9940), (136, 10024), (143, 10063), (152, 10102), (159, 10126), (162, 10150), (164, 10159), (175, 10177), (179, 10204), (181, 10219), (187, 10255), (190, 10267), (199, 10312), (200, 10318), (211, 10378), (218, 10396), (224, 10420), (233, 10462), (234, 10465), (241, 10495), (271, 10603), (315, 10858), (318, 10870), (332, 10954), (334, 10960), (338, 10990),

Gene: Waltz\_64 Start: 34787, Stop: 37879, Start Num: 2

Candidate Starts for Waltz\_64:

(1, 34781), (Start: 2 @34787 has 7 MA's), (3, 34805), (4, 34808), (5, 34838), (10, 34916), (21, 35018), (23, 35030), (30, 35099), (46, 35315), (47, 35318), (48, 35321), (54, 35408), (58, 35459), (62, 35504), (66, 35531), (75, 35606), (79, 35624), (81, 35657), (89, 35702), (91, 35720), (102, 35786), (103, 35789), (108, 35828), (111, 35861), (114, 35882), (118, 35897), (123, 35939), (126, 35969), (130, 35993), (134, 36017), (135, 36023), (138, 36038), (140, 36047), (154, 36140), (158, 36161), (164, 36197), (173, 36230), (180, 36281), (184, 36311), (195, 36374), (203, 36422), (207, 36443), (209, 36461), (212, 36473), (213, 36482), (214, 36497), (219, 36518), (229, 36563), (231, 36572), (236, 36590), (245, 36641), (262, 36671), (263, 36680), (275, 36749), (282, 36806), (309, 36938), (311, 36956), (318, 37010), (319, 37013), (327, 37064), (328, 37067), (338, 37133), (341, 37145), (355, 37244), (359, 37265), (361, 37307), (370, 37397), (371, 37418), (372, 37442), (373, 37451), (374, 37472), (375, 37505), (376, 37514), (380, 37607), (382, 37652), (385, 37718), (387, 37775), (388, 37841),

Gene: Warda\_16 Start: 10726, Stop: 13041, Start Num: 7

Candidate Starts for Warda\_16:

(Start: 7 @10726 has 40 MA's), (16, 10882), (17, 10891), (28, 10972), (29, 10984), (31, 11032), (32, 11035), (35, 11077), (40, 11149), (49, 11230), (50, 11233), (52, 11263), (56, 11317), (57, 11347), (64, 11404), (67, 11428), (73, 11488), (121, 11713), (145, 11809), (155, 11872), (157, 11881), (165, 11929), (172, 11950), (178, 11983), (183, 12025), (190, 12064), (202, 12124), (232, 12265), (270, 12394), (274, 12403), (278, 12427), (281, 12460), (294, 12496), (296, 12514), (312, 12625), (315, 12646), (316, 12649), (322, 12682), (335, 12760), (342, 12799), (351, 12859), (354, 12889), (360, 12940), (365, 12985), (368, 13030),

Gene: Wheelbite\_63 Start: 36504, Stop: 39521, Start Num: 2

Candidate Starts for Wheelbite\_63:

(Start: 2 @36504 has 7 MA's), (4, 36525), (5, 36555), (6, 36558), (13, 36663), (25, 36756), (30, 36816), (44, 37026), (46, 37032), (47, 37035), (48, 37038), (54, 37125), (58, 37176), (61, 37218), (62, 37221), (71, 37305), (75, 37323), (100, 37473), (122, 37566), (138, 37665), (153, 37761), (160, 37809), (161, 37812), (164, 37824), (170, 37845), (173, 37857), (180, 37908), (195, 38001), (197, 38016), (214, 38124), (217, 38136), (219, 38145), (226, 38175), (231, 38199), (235, 38214), (245, 38268), (263, 38307), (282, 38433), (305, 38538), (312, 38604), (319, 38640), (321, 38658), (326,

38682), (328, 38694), (329, 38703), (331, 38715), (340, 38769), (352, 38850), (355, 38871), (359, 38892), (361, 38934), (362, 38937), (371, 39045), (373, 39078), (374, 39099), (376, 39141), (377, 39147), (378, 39204), (380, 39234), (381, 39243), (383, 39342), (384, 39348), (387, 39417), (389, 39504),

Gene: Wildwest\_17 Start: 11664, Stop: 13910, Start Num: 7

Candidate Starts for Wildwest\_17:

(Start: 7 @11664 has 40 MA's), (16, 11820), (17, 11829), (22, 11856), (28, 11910), (31, 11970), (40, 12087), (49, 12168), (50, 12171), (52, 12201), (56, 12255), (57, 12285), (64, 12342), (67, 12366), (70, 12408), (73, 12426), (121, 12651), (149, 12771), (157, 12819), (165, 12867), (169, 12876), (183, 12963), (190, 13002), (194, 13020), (202, 13062), (223, 13164), (233, 13209), (238, 13224), (245, 13269), (268, 13323), (270, 13332), (277, 13356), (294, 13380), (301, 13419), (312, 13497), (315, 13518), (316, 13521), (324, 13569), (335, 13632), (338, 13650), (342, 13671), (363, 13845),

Gene: Yang\_16 Start: 10824, Stop: 13148, Start Num: 7

Candidate Starts for Yang\_16:

(Start: 7 @10824 has 40 MA's), (19, 10998), (23, 11022), (28, 11070), (31, 11130), (40, 11247), (49, 11328), (50, 11331), (52, 11361), (57, 11445), (64, 11502), (67, 11526), (73, 11586), (74, 11592), (120, 11808), (121, 11811), (157, 11979), (165, 12027), (172, 12048), (178, 12081), (183, 12123), (190, 12162), (193, 12174), (202, 12222), (220, 12315), (238, 12384), (267, 12480), (274, 12501), (294, 12594), (296, 12612), (315, 12744), (316, 12747), (335, 12858), (342, 12897),

Gene: YesChef\_16 Start: 10781, Stop: 13096, Start Num: 7

Candidate Starts for YesChef\_16:

(Start: 7 @10781 has 40 MA's), (16, 10937), (17, 10946), (28, 11027), (29, 11039), (31, 11087), (32, 11090), (35, 11132), (40, 11204), (49, 11285), (50, 11288), (52, 11318), (56, 11372), (57, 11402), (64, 11459), (67, 11483), (73, 11543), (121, 11768), (145, 11864), (155, 11927), (157, 11936), (165, 11984), (169, 11993), (172, 12005), (178, 12038), (183, 12080), (190, 12119), (202, 12179), (232, 12320), (249, 12395), (255, 12407), (270, 12449), (274, 12458), (278, 12482), (294, 12551), (296, 12569), (312, 12680), (315, 12701), (316, 12704), (322, 12737), (335, 12815), (342, 12854), (351, 12914), (354, 12944), (360, 12995), (365, 13040), (368, 13085),