





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 223107 Report

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

Pham number 223107 has 71 members, 13 are drafts.

Phages represented in each track:

- Track 1 : BelmontSKP\_17, CroZenni\_16, AnnaLie\_17
- Track 2 : DirtyBubble\_16
- Track 3 : BubbaBear\_16, Albedo\_16
- Track 4 : Nicky22\_17
- Track 5 : Stromboli\_16
- Track 6 : Albright\_16
- Track 7 : Jovita\_16
- Track 8 : Celaena\_15
- Track 9 : Softsoap\_15
- Track 10 : Elva\_17
- Track 11 : BabyYoda\_16
- Track 12 : Buldak\_15
- Track 13 : Quenya\_16
- Track 14 : PastaFagioli\_16
- Track 15 : Swervy\_16, SarBear\_16
- Track 16 : Loviatar\_28, Akino08\_28
- Track 17 : Johnathan\_16
- Track 18 : Kenzers\_16, Lynlen\_16
- Track 19 : BAjuniper\_16
- Track 20 : Icarian\_17
- Track 21 : LimaBean\_16
- Track 22 : Cashington\_16
- Track 23 : Didgeridoo\_17
- Track 24 : CliffHanger\_16
- Track 25 : MsUbiquitous\_16, CupcakePrincess\_16, Jabb\_16
- Track 26 : QMacho\_17, Eula\_16
- Track 27 : Bachaco\_15
- Track 28 : Abigail\_16
- Track 29 : Kieran\_15
- Track 30 : Squircle\_15, Olliecat\_15
- Track 31 : Bengal\_16
- Track 32 : FlameThrower\_15
- Track 33 : ChiliPepper\_15, Sharkboy\_15
- Track 34 : Arroyo\_17
- Track 35 : SanaSana\_17, Stoor\_16
- Track 36 : Phisb\_16
- Track 37 : Shayna\_15, SunnyD\_15

- Track 38 : TukTuk\_16
- Track 39 : Lahqtemish\_16
- Track 40 : Burritobowl\_16
- Track 41 : DickRichards\_16
- Track 42 : Slay\_16
- Track 43 : Milomuff\_18, Solea\_18
- Track 44 : PhigPhack\_17
- Track 45 : SansAfet\_16
- Track 46 : Katzastrophic\_15
- Track 47 : Finalfrontier\_17
- Track 48 : WalkingDead\_16
- Track 49 : IndyLu\_16, Kate33\_16
- Track 50 : Dismas\_15, Rona\_15
- Track 51 : Teagster\_15
- Track 52 : Doobus\_16
- Track 53 : Avocadoman\_16
- Track 54 : AvGardian\_16
- Track 55 : BabyDaisy\_17

***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 52 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abigail\_16, Akino08\_28, Albedo\_16, Albright\_16, AnnaLie\_17, Arroyo\_17, AvGardian\_16, Avocadoman\_16, BAjuniper\_16, BabyDaisy\_17, BabyYoda\_16, Bachaco\_15, BelmontSKP\_17, Bengal\_16, BubbaBear\_16, Burritobowl\_16, Cashington\_16, Celaena\_15, ChiliPepper\_15, CliffHanger\_16, CroZenni\_16, CupcakePrincess\_16, DickRichards\_16, Didgeridoo\_17, DirtyBubble\_16, Dismas\_15, Doobus\_16, Elva\_17, Eula\_16, Finalfrontier\_17, FlameThrower\_15, Icarian\_17, IndyLu\_16, Jabb\_16, Johnathan\_16, Jovita\_16, Kate33\_16, Katzastrophic\_15, Kenzers\_16, Kieran\_15, Lahqtemish\_16, LimaBean\_16, Loviatar\_28, Lynlen\_16, Milomuff\_18, MsUbiquitous\_16, Nicky22\_17, PastaFagioli\_16, PhigPhack\_17, Phisb\_16, QMacho\_17, Quenya\_16, Rona\_15, SanaSana\_17, SansAfet\_16, SarBear\_16, Sharkboy\_15, Slay\_16, Softsoap\_15, Solea\_18, Stoor\_16, Stromboli\_16, Swervy\_16, TukTuk\_16, WalkingDead\_16,

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

- 

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

- Buldak\_15, Olliecat\_15, Shayna\_15, Squiracle\_15, SunnyD\_15, Teagster\_15,

**Summary by start number:**

Start 2:

- Found in 3 of 71 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 3 of 58
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Buldak\_15 (EB), Olliecat\_15 (EB), Squirrel\_15 (EB),

Start 3:

- Found in 3 of 71 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 3 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shayna\_15 (EB), SunnyD\_15 (EB), Teagster\_15 (EB),

Start 7:

- Found in 65 of 71 ( 91.5% ) of genes in pham
- Manual Annotations of this start: 52 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail\_16 (EB), Akino08\_28 (EB), Albedo\_16 (EB), Albright\_16 (EB), AnnaLie\_17 (EB), Arroyo\_17 (EB), AvGuardian\_16 (EB), Avocadoman\_16 (EB), BAjuniper\_16 (EB), BabyDaisy\_17 (EB), BabyYoda\_16 (EB), Bachaco\_15 (EB), BelmontSKP\_17 (EB), Bengal\_16 (EB), BubbaBear\_16 (EB), Burritobowl\_16 (EB), Cashington\_16 (EB), Celaena\_15 (EB), ChiliPepper\_15 (EB), CliffHanger\_16 (EB), CroZenni\_16 (EB), CupcakePrincess\_16 (EB), DickRichards\_16 (EB), Didgeridoo\_17 (EB), DirtyBubble\_16 (EB), Dismas\_15 (EB), Doobus\_16 (EB), Elva\_17 (EB), Eula\_16 (EB), Finalfrontier\_17 (EB), FlameThrower\_15 (EB), Icarian\_17 (EB), IndyLu\_16 (EB), Jabb\_16 (EB), Johnathan\_16 (EB), Jovita\_16 (EB), Kate33\_16 (EB), Katzastrophic\_15 (EB), Kenzers\_16 (EB), Kieran\_15 (EB), Lahqtemish\_16 (EB), LimaBean\_16 (EB), Loviatar\_28 (EB), Lynlen\_16 (EB), Milomuff\_18 (EB), MsUbiquitous\_16 (EB), Nicky22\_17 (EB), PastaFagioli\_16 (EB), PhigPhack\_17 (EB), Phisb\_16 (EB), QMacho\_17 (EB), Quenya\_16 (EB), Rona\_15 (EB), SanaSana\_17 (EB), SansAfet\_16 (EB), SarBear\_16 (EB), Sharkboy\_15 (EB), Slay\_16 (EB), Softsoap\_15 (EB), Solea\_18 (EB), Stoor\_16 (EB), Stromboli\_16 (EB), Swervy\_16 (EB), TukTuk\_16 (EB), WalkingDead\_16 (EB),

### Summary by clusters:

There is one cluster represented in this pham: EB

Info for manual annotations of cluster EB:

- Start number 2 was manually annotated 3 times for cluster EB.
- Start number 3 was manually annotated 3 times for cluster EB.
- Start number 7 was manually annotated 52 times for cluster EB.

### Gene Information:

Gene: Abigail\_16 Start: 10507, Stop: 13266, Start Num: 7

Candidate Starts for Abigail\_16:

(Start: 7 @10507 has 52 MA's), (17, 10660), (18, 10666), (25, 10705), (37, 10891), (47, 10993), (64, 11164), (71, 11230), (73, 11242), (75, 11251), (78, 11266), (81, 11299), (83, 11308), (85, 11326), (95, 11386), (96, 11392), (98, 11401), (99, 11407), (102, 11431), (104, 11443), (108, 11461), (115, 11524), (130, 11638), (134, 11650), (140, 11746), (145, 11785), (162, 11944), (167, 11995), (169, 12004), (172, 12016), (176, 12094), (179, 12208), (182, 12235), (188, 12319), (196, 12430), (197, 12439), (203, 12505), (209, 12571), (223, 12667), (225, 12712), (226, 12727), (231, 12766), (235, 12835), (236, 12853), (237, 12856), (238, 12868), (240, 12895), (245, 13009), (246, 13021), (249, 13051),

(254, 13159),

Gene: Akino08\_28 Start: 10420, Stop: 13050, Start Num: 7

Candidate Starts for Akino08\_28:

(Start: 7 @10420 has 52 MA's), (13, 10480), (17, 10573), (24, 10609), (25, 10618), (33, 10714), (42, 10867), (47, 10906), (64, 11077), (67, 11113), (72, 11146), (76, 11167), (78, 11179), (80, 11197), (83, 11221), (91, 11272), (95, 11299), (96, 11305), (98, 11314), (101, 11332), (110, 11392), (115, 11437), (140, 11524), (143, 11551), (144, 11560), (154, 11626), (160, 11683), (179, 11986), (180, 11989), (182, 12013), (184, 12037), (189, 12148), (194, 12208), (203, 12292), (209, 12358), (211, 12370), (213, 12385), (218, 12433), (221, 12442), (222, 12445), (225, 12505), (226, 12520), (234, 12604), (238, 12652), (246, 12805), (247, 12820), (249, 12835), (253, 12922), (257, 12964),

Gene: Albedo\_16 Start: 10372, Stop: 13134, Start Num: 7

Candidate Starts for Albedo\_16:

(Start: 7 @10372 has 52 MA's), (17, 10525), (25, 10570), (37, 10756), (47, 10858), (64, 11029), (71, 11095), (73, 11107), (75, 11116), (81, 11164), (83, 11173), (85, 11191), (96, 11257), (98, 11266), (99, 11272), (102, 11296), (104, 11308), (115, 11389), (128, 11476), (130, 11503), (133, 11512), (140, 11611), (160, 11770), (164, 11824), (172, 11881), (176, 11959), (179, 12073), (182, 12100), (185, 12145), (189, 12235), (191, 12268), (194, 12295), (203, 12373), (206, 12394), (210, 12442), (223, 12535), (225, 12580), (226, 12595), (231, 12634), (235, 12703), (236, 12721), (237, 12724), (238, 12736), (240, 12763), (246, 12889), (247, 12904), (249, 12919), (254, 13027),

Gene: Albright\_16 Start: 10286, Stop: 13045, Start Num: 7

Candidate Starts for Albright\_16:

(1, 10133), (4, 10214), (Start: 7 @10286 has 52 MA's), (17, 10439), (18, 10445), (25, 10484), (37, 10670), (47, 10772), (64, 10943), (71, 11009), (73, 11021), (75, 11030), (78, 11045), (81, 11078), (83, 11087), (95, 11165), (96, 11171), (98, 11180), (99, 11186), (102, 11210), (104, 11222), (108, 11240), (115, 11303), (130, 11417), (134, 11429), (140, 11525), (145, 11564), (162, 11723), (167, 11774), (169, 11783), (172, 11795), (176, 11873), (179, 11987), (182, 12014), (188, 12098), (193, 12191), (196, 12209), (197, 12218), (203, 12284), (209, 12350), (223, 12446), (225, 12491), (226, 12506), (231, 12545), (235, 12614), (236, 12632), (237, 12635), (238, 12647), (240, 12674), (245, 12788), (246, 12800), (249, 12830), (254, 12938),

Gene: AnnaLie\_17 Start: 10694, Stop: 13453, Start Num: 7

Candidate Starts for AnnaLie\_17:

(Start: 7 @10694 has 52 MA's), (17, 10847), (18, 10853), (25, 10892), (37, 11078), (45, 11162), (47, 11180), (58, 11279), (64, 11351), (71, 11417), (73, 11429), (75, 11438), (78, 11453), (81, 11486), (83, 11495), (85, 11513), (95, 11573), (96, 11579), (98, 11588), (99, 11594), (102, 11618), (104, 11630), (115, 11711), (130, 11825), (134, 11837), (140, 11933), (145, 11972), (157, 12068), (160, 12092), (164, 12146), (167, 12182), (169, 12191), (172, 12203), (176, 12281), (179, 12395), (182, 12422), (188, 12506), (196, 12617), (197, 12626), (203, 12692), (209, 12758), (223, 12854), (225, 12899), (226, 12914), (231, 12953), (235, 13022), (236, 13040), (237, 13043), (238, 13055), (240, 13082), (245, 13196), (246, 13208), (249, 13238), (254, 13346),

Gene: Arroyo\_17 Start: 10895, Stop: 13654, Start Num: 7

Candidate Starts for Arroyo\_17:

(Start: 7 @10895 has 52 MA's), (17, 11048), (25, 11093), (37, 11279), (45, 11363), (47, 11381), (58, 11480), (64, 11552), (71, 11618), (73, 11630), (75, 11639), (78, 11654), (81, 11687), (83, 11696), (85, 11714), (95, 11774), (96, 11780), (98, 11789), (99, 11795), (102, 11819), (104, 11831), (109, 11861), (115, 11912), (130, 12026), (134, 12038), (140, 12134), (145, 12173), (157, 12269), (160, 12293), (164, 12347), (167, 12383), (169, 12392), (176, 12482), (179, 12596), (182, 12623), (188, 12707), (193, 12800), (196, 12818), (197, 12827), (209, 12959), (223, 13055), (225, 13100), (226, 13115), (231, 13154), (235, 13223), (236, 13241), (237, 13244), (238, 13256), (240, 13283), (245, 13397),

(246, 13409), (249, 13439), (254, 13547),

Gene: AvGardian\_16 Start: 10175, Stop: 12796, Start Num: 7

Candidate Starts for AvGardian\_16:

(Start: 7 @10175 has 52 MA's), (17, 10328), (19, 10340), (25, 10373), (28, 10397), (33, 10469), (42, 10622), (47, 10661), (64, 10832), (73, 10910), (79, 10946), (81, 10967), (88, 11006), (98, 11069), (106, 11120), (108, 11129), (110, 11147), (115, 11192), (120, 11210), (140, 11279), (142, 11303), (151, 11351), (154, 11381), (158, 11420), (160, 11438), (165, 11507), (169, 11537), (172, 11549), (179, 11741), (180, 11744), (182, 11768), (188, 11852), (193, 11945), (196, 11963), (197, 11972), (199, 12005), (216, 12167), (220, 12185), (222, 12191), (224, 12209), (225, 12242), (226, 12257), (227, 12266), (228, 12269), (231, 12296), (233, 12344), (237, 12386), (238, 12398), (240, 12425), (246, 12551), (247, 12566), (249, 12581), (253, 12668), (257, 12710),

Gene: Avocadoman\_16 Start: 10450, Stop: 13209, Start Num: 7

Candidate Starts for Avocadoman\_16:

(Start: 7 @10450 has 52 MA's), (17, 10603), (18, 10609), (25, 10648), (37, 10834), (47, 10936), (64, 11107), (71, 11173), (73, 11185), (75, 11194), (78, 11209), (81, 11242), (83, 11251), (85, 11269), (95, 11329), (96, 11335), (98, 11344), (99, 11350), (102, 11374), (104, 11386), (108, 11404), (115, 11467), (130, 11581), (134, 11593), (137, 11620), (140, 11689), (145, 11728), (162, 11887), (167, 11938), (169, 11947), (172, 11959), (176, 12037), (179, 12151), (182, 12178), (188, 12262), (196, 12373), (197, 12382), (203, 12448), (209, 12514), (223, 12610), (225, 12655), (226, 12670), (231, 12709), (235, 12778), (236, 12796), (237, 12799), (238, 12811), (240, 12838), (245, 12952), (246, 12964), (249, 12994), (254, 13102),

Gene: BAjuniper\_16 Start: 10103, Stop: 12796, Start Num: 7

Candidate Starts for BAjuniper\_16:

(Start: 7 @10103 has 52 MA's), (16, 10244), (28, 10322), (44, 10580), (46, 10583), (59, 10724), (61, 10769), (74, 10880), (79, 10910), (84, 10943), (87, 10955), (105, 11042), (115, 11087), (131, 11183), (139, 11237), (143, 11297), (145, 11309), (149, 11336), (150, 11339), (151, 11342), (153, 11363), (160, 11429), (167, 11519), (169, 11528), (172, 11540), (175, 11582), (177, 11636), (179, 11732), (180, 11735), (182, 11759), (184, 11783), (185, 11804), (186, 11807), (189, 11894), (194, 11954), (198, 11993), (199, 12005), (200, 12008), (203, 12038), (210, 12107), (213, 12131), (216, 12167), (218, 12179), (221, 12188), (225, 12251), (226, 12266), (231, 12305), (237, 12386), (238, 12398), (247, 12566), (249, 12581), (253, 12668),

Gene: BabyDaisy\_17 Start: 10507, Stop: 13269, Start Num: 7

Candidate Starts for BabyDaisy\_17:

(Start: 7 @10507 has 52 MA's), (17, 10660), (19, 10672), (28, 10729), (33, 10801), (42, 10954), (47, 10993), (64, 11164), (73, 11242), (76, 11254), (77, 11257), (81, 11299), (94, 11380), (98, 11401), (108, 11461), (110, 11479), (115, 11524), (120, 11542), (125, 11578), (130, 11638), (134, 11650), (137, 11677), (145, 11785), (156, 11869), (160, 11905), (167, 11995), (169, 12004), (172, 12016), (176, 12094), (179, 12208), (182, 12235), (187, 12310), (189, 12370), (194, 12430), (203, 12508), (206, 12529), (210, 12577), (223, 12670), (225, 12715), (226, 12730), (228, 12742), (231, 12769), (235, 12838), (237, 12859), (238, 12871), (240, 12898), (246, 13024), (247, 13039), (249, 13054), (256, 13180), (258, 13255),

Gene: BabyYoda\_16 Start: 10507, Stop: 13137, Start Num: 7

Candidate Starts for BabyYoda\_16:

(Start: 7 @10507 has 52 MA's), (13, 10567), (17, 10660), (18, 10666), (19, 10672), (25, 10705), (33, 10801), (42, 10954), (47, 10993), (54, 11053), (55, 11080), (64, 11164), (73, 11242), (77, 11257), (79, 11278), (81, 11299), (94, 11380), (98, 11401), (108, 11461), (110, 11479), (115, 11524), (117, 11530), (120, 11542), (143, 11638), (144, 11647), (145, 11650), (151, 11683), (153, 11704), (160, 11770), (179, 12073), (180, 12076), (182, 12100), (184, 12124), (189, 12235), (194, 12295), (203, 12379),

(209, 12445), (211, 12457), (213, 12472), (218, 12520), (221, 12529), (222, 12532), (225, 12592), (226, 12607), (234, 12691), (238, 12739), (246, 12892), (247, 12907), (249, 12922), (253, 13009), (257, 13051),

Gene: Bachaco\_15 Start: 9893, Stop: 12670, Start Num: 7

Candidate Starts for Bachaco\_15:

(Start: 7 @9893 has 52 MA's), (10, 9926), (16, 10034), (28, 10112), (43, 10364), (44, 10370), (46, 10373), (59, 10514), (66, 10622), (70, 10646), (71, 10655), (86, 10754), (93, 10802), (105, 10874), (112, 10922), (113, 10925), (116, 10943), (119, 10952), (122, 10973), (143, 11171), (144, 11180), (145, 11183), (154, 11246), (169, 11402), (171, 11408), (172, 11414), (179, 11606), (182, 11633), (185, 11678), (189, 11768), (190, 11792), (192, 11810), (194, 11828), (200, 11882), (203, 11912), (210, 11981), (213, 12005), (221, 12062), (222, 12065), (225, 12125), (226, 12140), (237, 12260), (238, 12272), (240, 12299), (241, 12341), (246, 12425), (247, 12440), (248, 12443), (258, 12656),

Gene: BelmontSKP\_17 Start: 10694, Stop: 13453, Start Num: 7

Candidate Starts for BelmontSKP\_17:

(Start: 7 @10694 has 52 MA's), (17, 10847), (18, 10853), (25, 10892), (37, 11078), (45, 11162), (47, 11180), (58, 11279), (64, 11351), (71, 11417), (73, 11429), (75, 11438), (78, 11453), (81, 11486), (83, 11495), (85, 11513), (95, 11573), (96, 11579), (98, 11588), (99, 11594), (102, 11618), (104, 11630), (115, 11711), (130, 11825), (134, 11837), (140, 11933), (145, 11972), (157, 12068), (160, 12092), (164, 12146), (167, 12182), (169, 12191), (172, 12203), (176, 12281), (179, 12395), (182, 12422), (188, 12506), (196, 12617), (197, 12626), (203, 12692), (209, 12758), (223, 12854), (225, 12899), (226, 12914), (231, 12953), (235, 13022), (236, 13040), (237, 13043), (238, 13055), (240, 13082), (245, 13196), (246, 13208), (249, 13238), (254, 13346),

Gene: Bengal\_16 Start: 10285, Stop: 13044, Start Num: 7

Candidate Starts for Bengal\_16:

(Start: 7 @10285 has 52 MA's), (17, 10438), (18, 10444), (25, 10483), (37, 10669), (47, 10771), (64, 10942), (71, 11008), (73, 11020), (75, 11029), (78, 11044), (81, 11077), (83, 11086), (85, 11104), (95, 11164), (96, 11170), (98, 11179), (99, 11185), (102, 11209), (104, 11221), (108, 11239), (115, 11302), (130, 11416), (134, 11428), (137, 11455), (140, 11524), (145, 11563), (162, 11722), (167, 11773), (169, 11782), (172, 11794), (176, 11872), (179, 11986), (182, 12013), (188, 12097), (193, 12190), (196, 12208), (197, 12217), (203, 12283), (209, 12349), (223, 12445), (225, 12490), (226, 12505), (231, 12544), (235, 12613), (236, 12631), (237, 12634), (238, 12646), (240, 12673), (245, 12787), (246, 12799), (249, 12829), (254, 12937),

Gene: BubbaBear\_16 Start: 10372, Stop: 13134, Start Num: 7

Candidate Starts for BubbaBear\_16:

(Start: 7 @10372 has 52 MA's), (17, 10525), (25, 10570), (37, 10756), (47, 10858), (64, 11029), (71, 11095), (73, 11107), (75, 11116), (81, 11164), (83, 11173), (85, 11191), (96, 11257), (98, 11266), (99, 11272), (102, 11296), (104, 11308), (115, 11389), (128, 11476), (130, 11503), (133, 11512), (140, 11611), (160, 11770), (164, 11824), (172, 11881), (176, 11959), (179, 12073), (182, 12100), (185, 12145), (189, 12235), (191, 12268), (194, 12295), (203, 12373), (206, 12394), (210, 12442), (223, 12535), (225, 12580), (226, 12595), (231, 12634), (235, 12703), (236, 12721), (237, 12724), (238, 12736), (240, 12763), (246, 12889), (247, 12904), (249, 12919), (254, 13027),

Gene: Buldak\_15 Start: 10073, Stop: 13042, Start Num: 2

Candidate Starts for Buldak\_15:

(Start: 2 @10073 has 3 MA's), (5, 10148), (6, 10163), (11, 10271), (12, 10274), (15, 10340), (20, 10397), (22, 10409), (30, 10493), (32, 10544), (35, 10607), (36, 10625), (39, 10670), (40, 10679), (41, 10691), (50, 10772), (52, 10784), (53, 10799), (60, 10871), (65, 10946), (67, 10976), (68, 10988), (80, 11066), (82, 11087), (87, 11114), (92, 11150), (108, 11240), (111, 11273), (114, 11300), (126, 11366), (127, 11384), (132, 11423), (136, 11438), (141, 11534), (147, 11582), (159, 11678), (161, 11699),



(163, 11729), (174, 11810), (177, 11882), (178, 11888), (179, 11978), (185, 12050), (189, 12140), (190, 12164), (194, 12200), (203, 12281), (204, 12290), (208, 12335), (219, 12425), (222, 12434), (225, 12494), (226, 12509), (231, 12548), (232, 12587), (238, 12650), (240, 12677), (244, 12776), (246, 12803), (250, 12848), (252, 12872),

Gene: Burritobowl\_16 Start: 10453, Stop: 13212, Start Num: 7

Candidate Starts for Burritobowl\_16:

(Start: 7 @10453 has 52 MA's), (17, 10606), (18, 10612), (25, 10651), (37, 10837), (45, 10921), (47, 10939), (58, 11038), (64, 11110), (71, 11176), (73, 11188), (75, 11197), (78, 11212), (81, 11245), (83, 11254), (85, 11272), (95, 11332), (96, 11338), (98, 11347), (99, 11353), (102, 11377), (104, 11389), (108, 11407), (115, 11470), (130, 11584), (134, 11596), (140, 11692), (145, 11731), (157, 11827), (160, 11851), (164, 11905), (167, 11941), (169, 11950), (172, 11962), (176, 12040), (179, 12154), (182, 12181), (188, 12265), (196, 12376), (197, 12385), (203, 12451), (209, 12517), (223, 12613), (225, 12658), (226, 12673), (231, 12712), (232, 12751), (235, 12781), (236, 12799), (237, 12802), (238, 12814), (240, 12841), (245, 12955), (246, 12967), (249, 12997), (254, 13105),

Gene: Cashington\_16 Start: 10302, Stop: 13061, Start Num: 7

Candidate Starts for Cashington\_16:

(Start: 7 @10302 has 52 MA's), (17, 10455), (18, 10461), (24, 10491), (25, 10500), (28, 10524), (33, 10596), (47, 10788), (58, 10887), (64, 10959), (73, 11037), (75, 11046), (76, 11049), (81, 11094), (83, 11103), (95, 11181), (96, 11187), (98, 11196), (99, 11202), (102, 11226), (104, 11238), (108, 11256), (115, 11319), (130, 11433), (134, 11445), (137, 11472), (140, 11541), (145, 11580), (162, 11739), (167, 11790), (169, 11799), (172, 11811), (176, 11889), (179, 12003), (182, 12030), (188, 12114), (196, 12225), (197, 12234), (203, 12300), (209, 12366), (223, 12462), (225, 12507), (226, 12522), (231, 12561), (235, 12630), (236, 12648), (237, 12651), (238, 12663), (240, 12690), (246, 12816), (247, 12831), (249, 12846),

Gene: Celaena\_15 Start: 9829, Stop: 12606, Start Num: 7

Candidate Starts for Celaena\_15:

(Start: 7 @9829 has 52 MA's), (10, 9862), (16, 9970), (28, 10048), (43, 10300), (44, 10306), (46, 10309), (59, 10450), (66, 10558), (70, 10582), (71, 10591), (86, 10690), (105, 10810), (112, 10858), (113, 10861), (116, 10879), (119, 10888), (122, 10909), (143, 11107), (144, 11116), (145, 11119), (154, 11182), (169, 11338), (171, 11344), (172, 11350), (179, 11542), (182, 11569), (185, 11614), (189, 11704), (190, 11728), (192, 11746), (194, 11764), (200, 11818), (203, 11848), (210, 11917), (213, 11941), (221, 11998), (222, 12001), (225, 12061), (226, 12076), (237, 12196), (238, 12208), (240, 12235), (241, 12277), (246, 12361), (247, 12376), (248, 12379), (258, 12592),

Gene: ChiliPepper\_15 Start: 10180, Stop: 12810, Start Num: 7

Candidate Starts for ChiliPepper\_15:

(Start: 7 @10180 has 52 MA's), (10, 10213), (13, 10240), (17, 10333), (19, 10345), (24, 10369), (28, 10402), (33, 10474), (42, 10627), (47, 10666), (64, 10837), (73, 10915), (76, 10927), (90, 11029), (98, 11074), (108, 11134), (115, 11197), (125, 11251), (143, 11311), (145, 11323), (150, 11353), (151, 11356), (153, 11377), (160, 11443), (171, 11548), (172, 11554), (176, 11632), (182, 11773), (184, 11797), (186, 11821), (189, 11908), (213, 12145), (216, 12181), (217, 12190), (224, 12223), (225, 12265), (226, 12280), (229, 12304), (238, 12412), (246, 12565), (247, 12580), (249, 12595),

Gene: CliffHanger\_16 Start: 9935, Stop: 12646, Start Num: 7

Candidate Starts for CliffHanger\_16:

(Start: 7 @9935 has 52 MA's), (10, 9968), (20, 10109), (21, 10115), (26, 10151), (28, 10163), (48, 10415), (49, 10421), (59, 10514), (63, 10565), (69, 10631), (97, 10793), (103, 10826), (110, 10862), (121, 10928), (123, 10937), (129, 11000), (135, 11033), (142, 11153), (148, 11189), (152, 11219), (162, 11321), (166, 11363), (168, 11375), (173, 11396), (174, 11408), (179, 11576), (189, 11738), (192, 11780), (194, 11798), (195, 11804), (198, 11834), (207, 11912), (209, 11945), (214, 11999),

(215, 12005), (225, 12092), (226, 12107), (227, 12116), (231, 12146), (238, 12248), (240, 12275),  
(242, 12332), (244, 12374), (246, 12401), (255, 12548),

Gene: CroZenni\_16 Start: 10285, Stop: 13044, Start Num: 7

Candidate Starts for CroZenni\_16:

(Start: 7 @10285 has 52 MA's), (17, 10438), (18, 10444), (25, 10483), (37, 10669), (45, 10753), (47, 10771), (58, 10870), (64, 10942), (71, 11008), (73, 11020), (75, 11029), (78, 11044), (81, 11077), (83, 11086), (85, 11104), (95, 11164), (96, 11170), (98, 11179), (99, 11185), (102, 11209), (104, 11221), (115, 11302), (130, 11416), (134, 11428), (140, 11524), (145, 11563), (157, 11659), (160, 11683), (164, 11737), (167, 11773), (169, 11782), (172, 11794), (176, 11872), (179, 11986), (182, 12013), (188, 12097), (196, 12208), (197, 12217), (203, 12283), (209, 12349), (223, 12445), (225, 12490), (226, 12505), (231, 12544), (235, 12613), (236, 12631), (237, 12634), (238, 12646), (240, 12673), (245, 12787), (246, 12799), (249, 12829), (254, 12937),

Gene: CupcakePrincess\_16 Start: 10399, Stop: 13161, Start Num: 7

Candidate Starts for CupcakePrincess\_16:

(Start: 7 @10399 has 52 MA's), (17, 10552), (18, 10558), (24, 10588), (25, 10597), (28, 10621), (33, 10693), (47, 10885), (58, 10984), (64, 11056), (73, 11134), (75, 11143), (76, 11146), (81, 11191), (83, 11200), (96, 11284), (98, 11293), (99, 11299), (101, 11311), (102, 11323), (104, 11335), (115, 11416), (128, 11503), (130, 11530), (133, 11539), (140, 11638), (145, 11677), (157, 11773), (160, 11797), (164, 11851), (172, 11908), (176, 11986), (179, 12100), (182, 12127), (189, 12262), (194, 12322), (203, 12400), (206, 12421), (210, 12469), (223, 12562), (225, 12607), (226, 12622), (231, 12661), (235, 12730), (236, 12748), (237, 12751), (238, 12763), (240, 12790), (246, 12916), (247, 12931), (249, 12946),

Gene: DickRichards\_16 Start: 10780, Stop: 13539, Start Num: 7

Candidate Starts for DickRichards\_16:

(Start: 7 @10780 has 52 MA's), (17, 10933), (18, 10939), (25, 10978), (37, 11164), (45, 11248), (47, 11266), (58, 11365), (64, 11437), (71, 11503), (73, 11515), (75, 11524), (78, 11539), (81, 11572), (83, 11581), (85, 11599), (95, 11659), (96, 11665), (98, 11674), (99, 11680), (102, 11704), (104, 11716), (109, 11746), (115, 11797), (130, 11911), (134, 11923), (140, 12019), (145, 12058), (157, 12154), (164, 12232), (167, 12268), (169, 12277), (172, 12289), (176, 12367), (179, 12481), (182, 12508), (188, 12592), (193, 12685), (196, 12703), (197, 12712), (203, 12778), (209, 12844), (223, 12940), (225, 12985), (226, 13000), (231, 13039), (235, 13108), (236, 13126), (237, 13129), (238, 13141), (240, 13168), (245, 13282), (246, 13294), (249, 13324), (254, 13432),

Gene: Didgeridoo\_17 Start: 10509, Stop: 13271, Start Num: 7

Candidate Starts for Didgeridoo\_17:

(Start: 7 @10509 has 52 MA's), (17, 10662), (19, 10674), (28, 10731), (33, 10803), (42, 10956), (47, 10995), (64, 11166), (73, 11244), (76, 11256), (77, 11259), (81, 11301), (94, 11382), (98, 11403), (108, 11463), (110, 11481), (115, 11526), (125, 11580), (130, 11640), (134, 11652), (137, 11679), (145, 11787), (156, 11871), (160, 11907), (167, 11997), (169, 12006), (172, 12018), (176, 12096), (179, 12210), (182, 12237), (187, 12312), (189, 12372), (194, 12432), (203, 12510), (206, 12531), (210, 12579), (223, 12672), (225, 12717), (226, 12732), (228, 12744), (231, 12771), (235, 12840), (237, 12861), (238, 12873), (240, 12900), (246, 13026), (247, 13041), (249, 13056), (256, 13182), (258, 13257),

Gene: DirtyBubble\_16 Start: 10465, Stop: 13095, Start Num: 7

Candidate Starts for DirtyBubble\_16:

(Start: 7 @10465 has 52 MA's), (13, 10525), (17, 10618), (18, 10624), (19, 10630), (25, 10663), (33, 10759), (42, 10912), (47, 10951), (54, 11011), (55, 11038), (64, 11122), (73, 11200), (77, 11215), (79, 11236), (80, 11242), (88, 11296), (94, 11338), (98, 11359), (108, 11419), (110, 11437), (115, 11482), (120, 11500), (143, 11596), (144, 11605), (145, 11608), (151, 11641), (153, 11662), (160, 11728),

(179, 12031), (180, 12034), (182, 12058), (184, 12082), (189, 12193), (194, 12253), (203, 12337), (209, 12403), (211, 12415), (213, 12430), (218, 12478), (221, 12487), (222, 12490), (225, 12550), (226, 12565), (234, 12649), (238, 12697), (246, 12850), (247, 12865), (249, 12880), (253, 12967), (257, 13009),

Gene: Dismas\_15 Start: 10180, Stop: 12810, Start Num: 7

Candidate Starts for Dismas\_15:

(Start: 7 @10180 has 52 MA's), (10, 10213), (13, 10240), (17, 10333), (19, 10345), (24, 10369), (28, 10402), (33, 10474), (42, 10627), (47, 10666), (64, 10837), (73, 10915), (76, 10927), (90, 11029), (98, 11074), (108, 11134), (115, 11197), (125, 11251), (143, 11311), (145, 11323), (149, 11350), (150, 11353), (151, 11356), (153, 11377), (160, 11443), (171, 11548), (172, 11554), (176, 11632), (182, 11773), (184, 11797), (186, 11821), (189, 11908), (213, 12145), (216, 12181), (217, 12190), (224, 12223), (225, 12265), (226, 12280), (229, 12304), (238, 12412), (246, 12565), (247, 12580), (249, 12595),

Gene: Doobus\_16 Start: 10637, Stop: 13396, Start Num: 7

Candidate Starts for Doobus\_16:

(Start: 7 @10637 has 52 MA's), (17, 10790), (25, 10835), (34, 10976), (47, 11123), (64, 11294), (71, 11360), (73, 11372), (75, 11381), (81, 11429), (83, 11438), (95, 11516), (96, 11522), (98, 11531), (99, 11537), (102, 11561), (104, 11573), (108, 11591), (115, 11654), (130, 11768), (134, 11780), (140, 11876), (145, 11915), (162, 12074), (167, 12125), (169, 12134), (172, 12146), (176, 12224), (179, 12338), (182, 12365), (188, 12449), (193, 12542), (196, 12560), (197, 12569), (203, 12635), (209, 12701), (223, 12797), (225, 12842), (226, 12857), (231, 12896), (235, 12965), (236, 12983), (237, 12986), (238, 12998), (240, 13025), (245, 13139), (246, 13151), (249, 13181), (254, 13289),

Gene: Elva\_17 Start: 10426, Stop: 13056, Start Num: 7

Candidate Starts for Elva\_17:

(Start: 7 @10426 has 52 MA's), (13, 10486), (17, 10579), (19, 10591), (25, 10624), (33, 10720), (42, 10873), (47, 10912), (54, 10972), (64, 11083), (73, 11161), (75, 11170), (77, 11176), (79, 11197), (81, 11218), (88, 11257), (94, 11299), (98, 11320), (108, 11380), (115, 11443), (120, 11461), (125, 11497), (142, 11554), (145, 11569), (151, 11602), (158, 11671), (160, 11689), (165, 11758), (179, 11992), (182, 12019), (184, 12043), (189, 12154), (194, 12214), (203, 12298), (205, 12316), (209, 12364), (213, 12391), (221, 12448), (222, 12451), (225, 12511), (226, 12526), (234, 12610), (238, 12658), (246, 12811), (247, 12826), (249, 12841), (253, 12928), (257, 12970),

Gene: Eula\_16 Start: 10360, Stop: 13122, Start Num: 7

Candidate Starts for Eula\_16:

(Start: 7 @10360 has 52 MA's), (17, 10513), (24, 10549), (25, 10558), (34, 10699), (37, 10744), (45, 10828), (47, 10846), (64, 11017), (71, 11083), (73, 11095), (75, 11104), (81, 11152), (83, 11161), (96, 11245), (98, 11254), (99, 11260), (101, 11272), (102, 11284), (104, 11296), (115, 11377), (128, 11464), (130, 11491), (133, 11500), (140, 11599), (157, 11734), (160, 11758), (176, 11947), (179, 12061), (182, 12088), (189, 12223), (194, 12283), (203, 12361), (206, 12382), (210, 12430), (223, 12523), (225, 12568), (226, 12583), (231, 12622), (235, 12691), (236, 12709), (237, 12712), (238, 12724), (240, 12751), (246, 12877), (247, 12892), (249, 12907),

Gene: Finalfrontier\_17 Start: 10873, Stop: 13635, Start Num: 7

Candidate Starts for Finalfrontier\_17:

(Start: 7 @10873 has 52 MA's), (17, 11026), (18, 11032), (24, 11062), (25, 11071), (28, 11095), (33, 11167), (47, 11359), (58, 11458), (64, 11530), (73, 11608), (75, 11617), (76, 11620), (81, 11665), (83, 11674), (96, 11758), (98, 11767), (99, 11773), (101, 11785), (102, 11797), (104, 11809), (115, 11890), (128, 11977), (130, 12004), (133, 12013), (140, 12112), (145, 12151), (157, 12247), (160, 12271), (164, 12325), (172, 12382), (176, 12460), (179, 12574), (182, 12601), (187, 12676), (189, 12736), (194, 12796), (203, 12874), (206, 12895), (210, 12943), (223, 13036), (225, 13081), (226, 13096),

(228, 13108), (231, 13135), (235, 13204), (237, 13225), (238, 13237), (240, 13264), (246, 13390), (247, 13405), (249, 13420), (256, 13546), (258, 13621),

Gene: FlameThrower\_15 Start: 9717, Stop: 12494, Start Num: 7

Candidate Starts for FlameThrower\_15:

(Start: 7 @9717 has 52 MA's), (10, 9750), (16, 9858), (28, 9936), (43, 10188), (44, 10194), (46, 10197), (59, 10338), (66, 10446), (70, 10470), (105, 10698), (112, 10746), (113, 10749), (116, 10767), (119, 10776), (122, 10797), (143, 10995), (144, 11004), (145, 11007), (154, 11070), (160, 11127), (169, 11226), (171, 11232), (172, 11238), (179, 11430), (182, 11457), (185, 11502), (189, 11592), (190, 11616), (192, 11634), (194, 11652), (200, 11706), (203, 11736), (210, 11805), (213, 11829), (221, 11886), (222, 11889), (225, 11949), (226, 11964), (237, 12084), (238, 12096), (240, 12123), (241, 12165), (246, 12249), (247, 12264), (248, 12267), (258, 12480),

Gene: Icarian\_17 Start: 10347, Stop: 12977, Start Num: 7

Candidate Starts for Icarian\_17:

(Start: 7 @10347 has 52 MA's), (13, 10407), (17, 10500), (19, 10512), (25, 10545), (33, 10641), (42, 10794), (47, 10833), (64, 11004), (73, 11082), (77, 11097), (79, 11118), (80, 11124), (88, 11178), (98, 11241), (108, 11301), (115, 11364), (120, 11382), (125, 11418), (143, 11478), (144, 11487), (145, 11490), (151, 11523), (153, 11544), (160, 11610), (165, 11679), (179, 11913), (180, 11916), (182, 11940), (184, 11964), (189, 12075), (194, 12135), (203, 12219), (205, 12237), (209, 12285), (212, 12309), (213, 12312), (216, 12348), (221, 12369), (222, 12372), (225, 12432), (226, 12447), (237, 12567), (238, 12579), (246, 12732), (247, 12747), (249, 12762), (253, 12849), (257, 12891),

Gene: IndyLu\_16 Start: 10331, Stop: 13093, Start Num: 7

Candidate Starts for IndyLu\_16:

(Start: 7 @10331 has 52 MA's), (17, 10484), (19, 10496), (28, 10553), (33, 10625), (42, 10778), (47, 10817), (64, 10988), (73, 11066), (76, 11078), (77, 11081), (81, 11123), (94, 11204), (98, 11225), (108, 11285), (110, 11303), (115, 11348), (120, 11366), (125, 11402), (130, 11462), (134, 11474), (137, 11501), (145, 11609), (156, 11693), (160, 11729), (167, 11819), (176, 11918), (179, 12032), (182, 12059), (187, 12134), (189, 12194), (194, 12254), (203, 12332), (206, 12353), (210, 12401), (223, 12494), (225, 12539), (226, 12554), (228, 12566), (231, 12593), (235, 12662), (237, 12683), (238, 12695), (240, 12722), (246, 12848), (247, 12863), (249, 12878), (256, 13004), (258, 13079),

Gene: Jabb\_16 Start: 10399, Stop: 13161, Start Num: 7

Candidate Starts for Jabb\_16:

(Start: 7 @10399 has 52 MA's), (17, 10552), (18, 10558), (24, 10588), (25, 10597), (28, 10621), (33, 10693), (47, 10885), (58, 10984), (64, 11056), (73, 11134), (75, 11143), (76, 11146), (81, 11191), (83, 11200), (96, 11284), (98, 11293), (99, 11299), (101, 11311), (102, 11323), (104, 11335), (115, 11416), (128, 11503), (130, 11530), (133, 11539), (140, 11638), (145, 11677), (157, 11773), (160, 11797), (164, 11851), (172, 11908), (176, 11986), (179, 12100), (182, 12127), (189, 12262), (194, 12322), (203, 12400), (206, 12421), (210, 12469), (223, 12562), (225, 12607), (226, 12622), (231, 12661), (235, 12730), (236, 12748), (237, 12751), (238, 12763), (240, 12790), (246, 12916), (247, 12931), (249, 12946),

Gene: Johnathan\_16 Start: 10389, Stop: 13148, Start Num: 7

Candidate Starts for Johnathan\_16:

(1, 10236), (4, 10317), (Start: 7 @10389 has 52 MA's), (17, 10542), (18, 10548), (25, 10587), (37, 10773), (47, 10875), (64, 11046), (71, 11112), (73, 11124), (75, 11133), (78, 11148), (81, 11181), (83, 11190), (85, 11208), (95, 11268), (96, 11274), (98, 11283), (99, 11289), (102, 11313), (104, 11325), (108, 11343), (115, 11406), (130, 11520), (134, 11532), (140, 11628), (145, 11667), (162, 11826), (167, 11877), (169, 11886), (172, 11898), (176, 11976), (179, 12090), (182, 12117), (188, 12201), (193, 12294), (196, 12312), (197, 12321), (203, 12387), (209, 12453), (223, 12549), (225, 12594), (226, 12609), (231, 12648), (235, 12717), (236, 12735), (237, 12738), (238, 12750), (240, 12777),

(245, 12891), (246, 12903), (249, 12933), (254, 13041),

Gene: Jovita\_16 Start: 10461, Stop: 13223, Start Num: 7

Candidate Starts for Jovita\_16:

(Start: 7 @10461 has 52 MA's), (17, 10614), (18, 10620), (25, 10659), (28, 10683), (33, 10755), (47, 10947), (58, 11046), (64, 11118), (73, 11196), (75, 11205), (76, 11208), (81, 11253), (83, 11262), (96, 11346), (98, 11355), (99, 11361), (101, 11373), (102, 11385), (104, 11397), (115, 11478), (128, 11565), (130, 11592), (133, 11601), (140, 11700), (145, 11739), (157, 11835), (160, 11859), (164, 11913), (167, 11949), (169, 11958), (172, 11970), (179, 12162), (182, 12189), (189, 12324), (194, 12384), (203, 12462), (223, 12624), (225, 12669), (226, 12684), (231, 12723), (235, 12792), (236, 12810), (237, 12813), (238, 12825), (240, 12852), (246, 12978), (247, 12993), (249, 13008),

Gene: Kate33\_16 Start: 10330, Stop: 13092, Start Num: 7

Candidate Starts for Kate33\_16:

(Start: 7 @10330 has 52 MA's), (17, 10483), (19, 10495), (28, 10552), (33, 10624), (42, 10777), (47, 10816), (64, 10987), (73, 11065), (76, 11077), (77, 11080), (81, 11122), (94, 11203), (98, 11224), (108, 11284), (110, 11302), (115, 11347), (120, 11365), (125, 11401), (130, 11461), (134, 11473), (137, 11500), (145, 11608), (156, 11692), (160, 11728), (167, 11818), (176, 11917), (179, 12031), (182, 12058), (187, 12133), (189, 12193), (194, 12253), (203, 12331), (206, 12352), (210, 12400), (223, 12493), (225, 12538), (226, 12553), (228, 12565), (231, 12592), (235, 12661), (237, 12682), (238, 12694), (240, 12721), (246, 12847), (247, 12862), (249, 12877), (256, 13003), (258, 13078),

Gene: Katzastrophic\_15 Start: 9892, Stop: 12669, Start Num: 7

Candidate Starts for Katzastrophic\_15:

(Start: 7 @9892 has 52 MA's), (10, 9925), (16, 10033), (28, 10111), (43, 10363), (44, 10369), (46, 10372), (59, 10513), (66, 10621), (70, 10645), (71, 10654), (86, 10753), (105, 10873), (112, 10921), (113, 10924), (116, 10942), (119, 10951), (122, 10972), (143, 11170), (144, 11179), (145, 11182), (154, 11245), (160, 11302), (169, 11401), (171, 11407), (172, 11413), (179, 11605), (182, 11632), (185, 11677), (189, 11767), (190, 11791), (192, 11809), (194, 11827), (200, 11881), (203, 11911), (210, 11980), (213, 12004), (221, 12061), (222, 12064), (225, 12124), (226, 12139), (237, 12259), (238, 12271), (240, 12298), (241, 12340), (246, 12424), (247, 12439), (248, 12442), (258, 12655),

Gene: Kenzers\_16 Start: 10373, Stop: 13135, Start Num: 7

Candidate Starts for Kenzers\_16:

(Start: 7 @10373 has 52 MA's), (17, 10526), (25, 10571), (37, 10757), (47, 10859), (64, 11030), (71, 11096), (73, 11108), (75, 11117), (81, 11165), (83, 11174), (85, 11192), (96, 11258), (98, 11267), (99, 11273), (102, 11297), (104, 11309), (115, 11390), (134, 11516), (140, 11612), (145, 11651), (160, 11771), (172, 11882), (174, 11906), (179, 12074), (182, 12101), (189, 12236), (190, 12260), (194, 12296), (202, 12365), (209, 12443), (222, 12530), (223, 12539), (225, 12590), (226, 12605), (229, 12629), (237, 12725), (238, 12737), (246, 12890), (249, 12920), (254, 13028),

Gene: Kieran\_15 Start: 10183, Stop: 12813, Start Num: 7

Candidate Starts for Kieran\_15:

(Start: 7 @10183 has 52 MA's), (10, 10216), (13, 10243), (17, 10336), (19, 10348), (24, 10372), (28, 10405), (33, 10477), (42, 10630), (47, 10669), (64, 10840), (73, 10918), (76, 10930), (90, 11032), (98, 11077), (108, 11137), (110, 11155), (115, 11200), (125, 11254), (143, 11314), (145, 11326), (149, 11353), (150, 11356), (151, 11359), (153, 11380), (157, 11422), (160, 11446), (171, 11551), (176, 11635), (182, 11776), (184, 11800), (186, 11824), (189, 11911), (213, 12148), (216, 12184), (217, 12193), (224, 12226), (225, 12268), (226, 12283), (229, 12307), (238, 12415), (246, 12568), (247, 12583), (249, 12598),

Gene: Lahqtemish\_16 Start: 10376, Stop: 13138, Start Num: 7

Candidate Starts for Lahqtemish\_16:

(Start: 7 @10376 has 52 MA's), (17, 10529), (19, 10541), (28, 10598), (33, 10670), (42, 10823), (47, 10862), (64, 11033), (73, 11111), (77, 11126), (81, 11168), (94, 11249), (98, 11270), (108, 11330), (110, 11348), (115, 11393), (118, 11402), (130, 11507), (134, 11519), (137, 11546), (145, 11654), (156, 11738), (160, 11774), (167, 11864), (169, 11873), (172, 11885), (176, 11963), (179, 12077), (182, 12104), (185, 12149), (189, 12239), (191, 12272), (194, 12299), (203, 12377), (206, 12398), (210, 12446), (223, 12539), (225, 12584), (226, 12599), (228, 12611), (231, 12638), (237, 12728), (238, 12740), (240, 12767), (246, 12893), (247, 12908), (249, 12923), (252, 12962), (257, 13052),

Gene: LimaBean\_16 Start: 10388, Stop: 13147, Start Num: 7

Candidate Starts for LimaBean\_16:

(Start: 7 @10388 has 52 MA's), (17, 10541), (18, 10547), (25, 10586), (37, 10772), (47, 10874), (64, 11045), (71, 11111), (73, 11123), (75, 11132), (78, 11147), (81, 11180), (83, 11189), (85, 11207), (95, 11267), (96, 11273), (98, 11282), (99, 11288), (102, 11312), (104, 11324), (108, 11342), (115, 11405), (130, 11519), (134, 11531), (137, 11558), (140, 11627), (145, 11666), (162, 11825), (167, 11876), (169, 11885), (176, 11975), (179, 12089), (182, 12116), (188, 12200), (193, 12293), (196, 12311), (197, 12320), (203, 12386), (209, 12452), (223, 12548), (225, 12593), (226, 12608), (231, 12647), (235, 12716), (236, 12734), (237, 12737), (238, 12749), (240, 12776), (245, 12890), (246, 12902), (249, 12932), (254, 13040),

Gene: Loviatar\_28 Start: 10435, Stop: 13065, Start Num: 7

Candidate Starts for Loviatar\_28:

(Start: 7 @10435 has 52 MA's), (13, 10495), (17, 10588), (24, 10624), (25, 10633), (33, 10729), (42, 10882), (47, 10921), (64, 11092), (67, 11128), (72, 11161), (76, 11182), (78, 11194), (80, 11212), (83, 11236), (91, 11287), (95, 11314), (96, 11320), (98, 11329), (101, 11347), (110, 11407), (115, 11452), (140, 11539), (143, 11566), (144, 11575), (154, 11641), (160, 11698), (179, 12001), (180, 12004), (182, 12028), (184, 12052), (189, 12163), (194, 12223), (203, 12307), (209, 12373), (211, 12385), (213, 12400), (218, 12448), (221, 12457), (222, 12460), (225, 12520), (226, 12535), (234, 12619), (238, 12667), (246, 12820), (247, 12835), (249, 12850), (253, 12937), (257, 12979),

Gene: Lynlen\_16 Start: 10373, Stop: 13135, Start Num: 7

Candidate Starts for Lynlen\_16:

(Start: 7 @10373 has 52 MA's), (17, 10526), (25, 10571), (37, 10757), (47, 10859), (64, 11030), (71, 11096), (73, 11108), (75, 11117), (81, 11165), (83, 11174), (85, 11192), (96, 11258), (98, 11267), (99, 11273), (102, 11297), (104, 11309), (115, 11390), (134, 11516), (140, 11612), (145, 11651), (160, 11771), (172, 11882), (174, 11906), (179, 12074), (182, 12101), (189, 12236), (190, 12260), (194, 12296), (202, 12365), (209, 12443), (222, 12530), (223, 12539), (225, 12590), (226, 12605), (229, 12629), (237, 12725), (238, 12737), (246, 12890), (249, 12920), (254, 13028),

Gene: Milomuff\_18 Start: 10774, Stop: 13533, Start Num: 7

Candidate Starts for Milomuff\_18:

(Start: 7 @10774 has 52 MA's), (17, 10927), (18, 10933), (25, 10972), (37, 11158), (47, 11260), (64, 11431), (71, 11497), (73, 11509), (75, 11518), (78, 11533), (81, 11566), (83, 11575), (85, 11593), (95, 11653), (96, 11659), (98, 11668), (99, 11674), (102, 11698), (104, 11710), (108, 11728), (115, 11791), (130, 11905), (134, 11917), (140, 12013), (145, 12052), (162, 12211), (167, 12262), (169, 12271), (172, 12283), (176, 12361), (179, 12475), (182, 12502), (188, 12586), (193, 12679), (196, 12697), (197, 12706), (203, 12772), (209, 12838), (223, 12934), (225, 12979), (226, 12994), (231, 13033), (235, 13102), (236, 13120), (237, 13123), (238, 13135), (240, 13162), (245, 13276), (246, 13288), (248, 13306), (249, 13318), (254, 13426),

Gene: MsUbiquitous\_16 Start: 10399, Stop: 13161, Start Num: 7

Candidate Starts for MsUbiquitous\_16:

(Start: 7 @10399 has 52 MA's), (17, 10552), (18, 10558), (24, 10588), (25, 10597), (28, 10621), (33, 10693), (47, 10885), (58, 10984), (64, 11056), (73, 11134), (75, 11143), (76, 11146), (81, 11191), (83,

11200), (96, 11284), (98, 11293), (99, 11299), (101, 11311), (102, 11323), (104, 11335), (115, 11416), (128, 11503), (130, 11530), (133, 11539), (140, 11638), (145, 11677), (157, 11773), (160, 11797), (164, 11851), (172, 11908), (176, 11986), (179, 12100), (182, 12127), (189, 12262), (194, 12322), (203, 12400), (206, 12421), (210, 12469), (223, 12562), (225, 12607), (226, 12622), (231, 12661), (235, 12730), (236, 12748), (237, 12751), (238, 12763), (240, 12790), (246, 12916), (247, 12931), (249, 12946),

Gene: Nicky22\_17 Start: 10807, Stop: 13566, Start Num: 7

Candidate Starts for Nicky22\_17:

(Start: 7 @10807 has 52 MA's), (17, 10960), (18, 10966), (25, 11005), (28, 11029), (33, 11101), (47, 11293), (54, 11353), (58, 11392), (64, 11464), (73, 11542), (75, 11551), (76, 11554), (81, 11599), (83, 11608), (96, 11692), (98, 11701), (99, 11707), (101, 11719), (102, 11731), (104, 11743), (115, 11824), (128, 11911), (133, 11947), (140, 12046), (160, 12205), (167, 12295), (169, 12304), (172, 12316), (176, 12394), (179, 12508), (182, 12535), (188, 12619), (193, 12712), (196, 12730), (197, 12739), (203, 12805), (222, 12958), (223, 12967), (225, 13012), (226, 13027), (231, 13066), (235, 13135), (236, 13153), (237, 13156), (238, 13168), (240, 13195), (246, 13321), (249, 13351),

Gene: Olliecat\_15 Start: 10032, Stop: 13001, Start Num: 2

Candidate Starts for Olliecat\_15:

(Start: 2 @10032 has 3 MA's), (5, 10107), (6, 10122), (11, 10230), (20, 10356), (22, 10368), (27, 10401), (34, 10554), (35, 10566), (36, 10584), (38, 10602), (39, 10629), (40, 10638), (41, 10650), (50, 10731), (52, 10743), (53, 10758), (57, 10806), (60, 10830), (62, 10875), (65, 10905), (67, 10935), (68, 10947), (80, 11025), (82, 11046), (89, 11085), (92, 11109), (105, 11190), (107, 11196), (114, 11259), (126, 11325), (127, 11343), (129, 11361), (132, 11382), (147, 11541), (159, 11637), (161, 11658), (178, 11847), (179, 11937), (185, 12009), (189, 12099), (190, 12123), (192, 12141), (194, 12159), (201, 12216), (203, 12240), (204, 12249), (219, 12384), (222, 12393), (225, 12453), (226, 12468), (227, 12477), (231, 12507), (232, 12546), (238, 12609), (240, 12636), (244, 12735), (246, 12762), (247, 12777), (251, 12828), (252, 12831),

Gene: PastaFagioli\_16 Start: 10364, Stop: 13126, Start Num: 7

Candidate Starts for PastaFagioli\_16:

(Start: 7 @10364 has 52 MA's), (17, 10517), (19, 10529), (28, 10586), (33, 10658), (42, 10811), (47, 10850), (64, 11021), (73, 11099), (76, 11111), (77, 11114), (81, 11156), (94, 11237), (98, 11258), (108, 11318), (110, 11336), (115, 11381), (118, 11390), (130, 11495), (134, 11507), (137, 11534), (145, 11642), (156, 11726), (160, 11762), (167, 11852), (172, 11873), (176, 11951), (179, 12065), (182, 12092), (185, 12137), (189, 12227), (191, 12260), (194, 12287), (203, 12365), (206, 12386), (210, 12434), (223, 12527), (225, 12572), (226, 12587), (228, 12599), (231, 12626), (237, 12716), (238, 12728), (240, 12755), (246, 12881), (247, 12896), (249, 12911), (252, 12950), (257, 13040),

Gene: PhigPhack\_17 Start: 10362, Stop: 13121, Start Num: 7

Candidate Starts for PhigPhack\_17:

(Start: 7 @10362 has 52 MA's), (17, 10515), (18, 10521), (25, 10560), (37, 10746), (45, 10830), (47, 10848), (58, 10947), (64, 11019), (71, 11085), (73, 11097), (75, 11106), (78, 11121), (81, 11154), (83, 11163), (85, 11181), (95, 11241), (96, 11247), (98, 11256), (99, 11262), (102, 11286), (104, 11298), (109, 11328), (115, 11379), (130, 11493), (134, 11505), (140, 11601), (145, 11640), (157, 11736), (160, 11760), (164, 11814), (167, 11850), (169, 11859), (172, 11871), (176, 11949), (179, 12063), (182, 12090), (188, 12174), (193, 12267), (196, 12285), (197, 12294), (203, 12360), (209, 12426), (223, 12522), (225, 12567), (226, 12582), (231, 12621), (235, 12690), (236, 12708), (237, 12711), (238, 12723), (240, 12750), (245, 12864), (246, 12876), (249, 12906), (254, 13014),

Gene: Phisb\_16 Start: 10373, Stop: 13135, Start Num: 7

Candidate Starts for Phisb\_16:

(Start: 7 @10373 has 52 MA's), (17, 10526), (25, 10571), (37, 10757), (47, 10859), (64, 11030), (71, 11096), (73, 11108), (75, 11117), (81, 11165), (83, 11174), (85, 11192), (96, 11258), (98, 11267), (99, 11273), (102, 11297), (104, 11309), (115, 11390), (128, 11477), (130, 11504), (133, 11513), (140, 11612), (160, 11771), (164, 11825), (172, 11882), (176, 11960), (179, 12074), (182, 12101), (185, 12146), (189, 12236), (191, 12269), (194, 12296), (203, 12374), (206, 12395), (210, 12443), (223, 12536), (225, 12581), (226, 12596), (231, 12635), (235, 12704), (236, 12722), (237, 12725), (238, 12737), (240, 12764), (246, 12890), (247, 12905), (249, 12920),

Gene: QMacho\_17 Start: 10843, Stop: 13605, Start Num: 7

Candidate Starts for QMacho\_17:

(Start: 7 @10843 has 52 MA's), (17, 10996), (24, 11032), (25, 11041), (34, 11182), (37, 11227), (45, 11311), (47, 11329), (64, 11500), (71, 11566), (73, 11578), (75, 11587), (81, 11635), (83, 11644), (96, 11728), (98, 11737), (99, 11743), (101, 11755), (102, 11767), (104, 11779), (115, 11860), (128, 11947), (130, 11974), (133, 11983), (140, 12082), (157, 12217), (160, 12241), (176, 12430), (179, 12544), (182, 12571), (189, 12706), (194, 12766), (203, 12844), (206, 12865), (210, 12913), (223, 13006), (225, 13051), (226, 13066), (231, 13105), (235, 13174), (236, 13192), (237, 13195), (238, 13207), (240, 13234), (246, 13360), (247, 13375), (249, 13390),

Gene: Quenya\_16 Start: 9890, Stop: 12667, Start Num: 7

Candidate Starts for Quenya\_16:

(Start: 7 @9890 has 52 MA's), (10, 9923), (16, 10031), (28, 10109), (43, 10361), (44, 10367), (46, 10370), (56, 10490), (59, 10511), (66, 10619), (70, 10643), (71, 10652), (105, 10871), (113, 10922), (116, 10940), (119, 10949), (122, 10970), (124, 10982), (143, 11168), (154, 11243), (160, 11300), (167, 11390), (169, 11399), (171, 11405), (172, 11411), (179, 11603), (182, 11630), (184, 11654), (186, 11678), (189, 11765), (192, 11807), (194, 11825), (200, 11879), (203, 11909), (210, 11978), (213, 12002), (221, 12059), (222, 12062), (225, 12122), (226, 12137), (228, 12149), (237, 12257), (238, 12269), (240, 12296), (241, 12338), (243, 12386), (246, 12422), (247, 12437), (248, 12440), (250, 12467),

Gene: Rona\_15 Start: 10180, Stop: 12810, Start Num: 7

Candidate Starts for Rona\_15:

(Start: 7 @10180 has 52 MA's), (10, 10213), (13, 10240), (17, 10333), (19, 10345), (24, 10369), (28, 10402), (33, 10474), (42, 10627), (47, 10666), (64, 10837), (73, 10915), (76, 10927), (90, 11029), (98, 11074), (108, 11134), (115, 11197), (125, 11251), (143, 11311), (145, 11323), (149, 11350), (150, 11353), (151, 11356), (153, 11377), (160, 11443), (171, 11548), (172, 11554), (176, 11632), (182, 11773), (184, 11797), (186, 11821), (189, 11908), (213, 12145), (216, 12181), (217, 12190), (224, 12223), (225, 12265), (226, 12280), (229, 12304), (238, 12412), (246, 12565), (247, 12580), (249, 12595),

Gene: SanaSana\_17 Start: 10377, Stop: 13007, Start Num: 7

Candidate Starts for SanaSana\_17:

(Start: 7 @10377 has 52 MA's), (13, 10437), (17, 10530), (18, 10536), (19, 10542), (25, 10575), (33, 10671), (42, 10824), (47, 10863), (64, 11034), (73, 11112), (77, 11127), (79, 11148), (81, 11169), (88, 11208), (94, 11250), (98, 11271), (108, 11331), (110, 11349), (115, 11394), (117, 11400), (120, 11412), (143, 11508), (144, 11517), (145, 11520), (151, 11553), (153, 11574), (160, 11640), (179, 11943), (180, 11946), (182, 11970), (184, 11994), (189, 12105), (194, 12165), (203, 12249), (209, 12315), (213, 12342), (218, 12390), (221, 12399), (222, 12402), (225, 12462), (226, 12477), (234, 12561), (238, 12609), (246, 12762), (247, 12777), (249, 12792), (253, 12879), (257, 12921),

Gene: SansAfet\_16 Start: 10296, Stop: 13055, Start Num: 7

Candidate Starts for SansAfet\_16:

(Start: 7 @10296 has 52 MA's), (17, 10449), (18, 10455), (25, 10494), (37, 10680), (45, 10764), (47, 10782), (58, 10881), (64, 10953), (71, 11019), (73, 11031), (75, 11040), (78, 11055), (81, 11088), (83,



11097), (85, 11115), (95, 11175), (96, 11181), (98, 11190), (99, 11196), (102, 11220), (104, 11232), (115, 11313), (130, 11427), (134, 11439), (140, 11535), (145, 11574), (157, 11670), (160, 11694), (164, 11748), (167, 11784), (169, 11793), (172, 11805), (176, 11883), (179, 11997), (182, 12024), (188, 12108), (196, 12219), (197, 12228), (203, 12294), (209, 12360), (223, 12456), (225, 12501), (226, 12516), (231, 12555), (235, 12624), (236, 12642), (237, 12645), (238, 12657), (240, 12684), (245, 12798), (246, 12810), (249, 12840), (254, 12948),

Gene: SarBear\_16 Start: 10338, Stop: 13100, Start Num: 7

Candidate Starts for SarBear\_16:

(Start: 7 @10338 has 52 MA's), (17, 10491), (18, 10497), (24, 10527), (25, 10536), (28, 10560), (33, 10632), (47, 10824), (58, 10923), (64, 10995), (73, 11073), (75, 11082), (76, 11085), (81, 11130), (83, 11139), (96, 11223), (98, 11232), (99, 11238), (101, 11250), (102, 11262), (104, 11274), (115, 11355), (128, 11442), (130, 11469), (133, 11478), (140, 11577), (145, 11616), (157, 11712), (160, 11736), (164, 11790), (172, 11847), (176, 11925), (179, 12039), (182, 12066), (189, 12201), (194, 12261), (203, 12339), (206, 12360), (210, 12408), (223, 12501), (225, 12546), (226, 12561), (231, 12600), (235, 12669), (236, 12687), (237, 12690), (238, 12702), (240, 12729), (246, 12855), (247, 12870), (249, 12885),

Gene: Sharkboy\_15 Start: 10179, Stop: 12809, Start Num: 7

Candidate Starts for Sharkboy\_15:

(Start: 7 @10179 has 52 MA's), (10, 10212), (13, 10239), (17, 10332), (19, 10344), (24, 10368), (28, 10401), (33, 10473), (42, 10626), (47, 10665), (64, 10836), (73, 10914), (76, 10926), (90, 11028), (98, 11073), (108, 11133), (115, 11196), (125, 11250), (143, 11310), (145, 11322), (150, 11352), (151, 11355), (153, 11376), (160, 11442), (171, 11547), (172, 11553), (176, 11631), (182, 11772), (184, 11796), (186, 11820), (189, 11907), (213, 12144), (216, 12180), (217, 12189), (224, 12222), (225, 12264), (226, 12279), (229, 12303), (238, 12411), (246, 12564), (247, 12579), (249, 12594),

Gene: Shayna\_15 Start: 9869, Stop: 12856, Start Num: 3

Candidate Starts for Shayna\_15:

(Start: 3 @9869 has 3 MA's), (8, 10031), (9, 10037), (11, 10064), (14, 10094), (35, 10400), (36, 10418), (41, 10484), (51, 10568), (65, 10739), (67, 10769), (92, 10943), (100, 10991), (107, 11030), (126, 11159), (135, 11228), (136, 11231), (138, 11276), (146, 11369), (155, 11435), (162, 11516), (171, 11573), (174, 11603), (181, 11783), (183, 11801), (189, 11933), (198, 12041), (199, 12053), (204, 12095), (207, 12119), (213, 12179), (215, 12212), (225, 12308), (226, 12323), (231, 12362), (238, 12464), (240, 12491), (244, 12590), (246, 12617), (252, 12686), (255, 12764),

Gene: Slay\_16 Start: 10880, Stop: 13642, Start Num: 7

Candidate Starts for Slay\_16:

(Start: 7 @10880 has 52 MA's), (17, 11033), (18, 11039), (24, 11069), (25, 11078), (28, 11102), (33, 11174), (47, 11366), (58, 11465), (64, 11537), (73, 11615), (75, 11624), (76, 11627), (81, 11672), (83, 11681), (96, 11765), (98, 11774), (99, 11780), (101, 11792), (102, 11804), (104, 11816), (115, 11897), (128, 11984), (130, 12011), (133, 12020), (140, 12119), (145, 12158), (157, 12254), (160, 12278), (164, 12332), (172, 12389), (176, 12467), (179, 12581), (182, 12608), (189, 12743), (191, 12776), (194, 12803), (203, 12881), (206, 12902), (210, 12950), (223, 13043), (225, 13088), (226, 13103), (231, 13142), (235, 13211), (236, 13229), (237, 13232), (238, 13244), (240, 13271), (246, 13397), (247, 13412), (249, 13427),

Gene: Softsoap\_15 Start: 10114, Stop: 12876, Start Num: 7

Candidate Starts for Softsoap\_15:

(Start: 7 @10114 has 52 MA's), (17, 10267), (23, 10297), (24, 10303), (25, 10312), (37, 10498), (47, 10600), (64, 10771), (67, 10807), (72, 10840), (73, 10849), (83, 10915), (91, 10966), (96, 10999), (98, 11008), (102, 11038), (104, 11050), (115, 11131), (128, 11218), (130, 11245), (134, 11257), (140, 11353), (145, 11392), (160, 11512), (167, 11602), (169, 11611), (172, 11623), (176, 11701), (179,

11815), (182, 11842), (185, 11887), (189, 11977), (191, 12010), (194, 12037), (203, 12115), (206, 12136), (210, 12184), (223, 12277), (225, 12322), (226, 12337), (231, 12376), (235, 12445), (236, 12463), (237, 12466), (238, 12478), (240, 12505), (246, 12631), (247, 12646), (249, 12661), (254, 12769),

Gene: Solea\_18 Start: 10774, Stop: 13533, Start Num: 7

Candidate Starts for Solea\_18:

(Start: 7 @10774 has 52 MA's), (17, 10927), (18, 10933), (25, 10972), (37, 11158), (47, 11260), (64, 11431), (71, 11497), (73, 11509), (75, 11518), (78, 11533), (81, 11566), (83, 11575), (85, 11593), (95, 11653), (96, 11659), (98, 11668), (99, 11674), (102, 11698), (104, 11710), (108, 11728), (115, 11791), (130, 11905), (134, 11917), (140, 12013), (145, 12052), (162, 12211), (167, 12262), (169, 12271), (172, 12283), (176, 12361), (179, 12475), (182, 12502), (188, 12586), (193, 12679), (196, 12697), (197, 12706), (203, 12772), (209, 12838), (223, 12934), (225, 12979), (226, 12994), (231, 13033), (235, 13102), (236, 13120), (237, 13123), (238, 13135), (240, 13162), (245, 13276), (246, 13288), (248, 13306), (249, 13318), (254, 13426),

Gene: Squircle\_15 Start: 10031, Stop: 13000, Start Num: 2

Candidate Starts for Squircle\_15:

(Start: 2 @10031 has 3 MA's), (5, 10106), (6, 10121), (11, 10229), (20, 10355), (22, 10367), (27, 10400), (34, 10553), (35, 10565), (36, 10583), (38, 10601), (39, 10628), (40, 10637), (41, 10649), (50, 10730), (52, 10742), (53, 10757), (57, 10805), (60, 10829), (62, 10874), (65, 10904), (67, 10934), (68, 10946), (80, 11024), (82, 11045), (89, 11084), (92, 11108), (105, 11189), (107, 11195), (114, 11258), (126, 11324), (127, 11342), (129, 11360), (132, 11381), (147, 11540), (159, 11636), (161, 11657), (178, 11846), (179, 11936), (185, 12008), (189, 12098), (190, 12122), (192, 12140), (194, 12158), (201, 12215), (203, 12239), (204, 12248), (219, 12383), (222, 12392), (225, 12452), (226, 12467), (227, 12476), (231, 12506), (232, 12545), (238, 12608), (240, 12635), (244, 12734), (246, 12761), (247, 12776), (251, 12827), (252, 12830),

Gene: Stoor\_16 Start: 10374, Stop: 13004, Start Num: 7

Candidate Starts for Stoor\_16:

(Start: 7 @10374 has 52 MA's), (13, 10434), (17, 10527), (18, 10533), (19, 10539), (25, 10572), (33, 10668), (42, 10821), (47, 10860), (64, 11031), (73, 11109), (77, 11124), (79, 11145), (81, 11166), (88, 11205), (94, 11247), (98, 11268), (108, 11328), (110, 11346), (115, 11391), (117, 11397), (120, 11409), (143, 11505), (144, 11514), (145, 11517), (151, 11550), (153, 11571), (160, 11637), (179, 11940), (180, 11943), (182, 11967), (184, 11991), (189, 12102), (194, 12162), (203, 12246), (209, 12312), (213, 12339), (218, 12387), (221, 12396), (222, 12399), (225, 12459), (226, 12474), (234, 12558), (238, 12606), (246, 12759), (247, 12774), (249, 12789), (253, 12876), (257, 12918),

Gene: Stromboli\_16 Start: 10505, Stop: 13135, Start Num: 7

Candidate Starts for Stromboli\_16:

(Start: 7 @10505 has 52 MA's), (17, 10658), (18, 10664), (19, 10670), (25, 10703), (33, 10799), (42, 10952), (47, 10991), (54, 11051), (55, 11078), (64, 11162), (73, 11240), (77, 11255), (79, 11276), (80, 11282), (88, 11336), (94, 11378), (98, 11399), (108, 11459), (110, 11477), (115, 11522), (117, 11528), (120, 11540), (143, 11636), (144, 11645), (145, 11648), (151, 11681), (153, 11702), (160, 11768), (179, 12071), (180, 12074), (182, 12098), (184, 12122), (189, 12233), (194, 12293), (203, 12377), (209, 12443), (211, 12455), (213, 12470), (218, 12518), (221, 12527), (222, 12530), (225, 12590), (226, 12605), (234, 12689), (238, 12737), (246, 12890), (247, 12905), (249, 12920), (253, 13007), (257, 13049),

Gene: SunnyD\_15 Start: 9869, Stop: 12856, Start Num: 3

Candidate Starts for SunnyD\_15:

(Start: 3 @9869 has 3 MA's), (8, 10031), (9, 10037), (11, 10064), (14, 10094), (35, 10400), (36, 10418), (41, 10484), (51, 10568), (65, 10739), (67, 10769), (92, 10943), (100, 10991), (107, 11030), (126,

11159), (135, 11228), (136, 11231), (138, 11276), (146, 11369), (155, 11435), (162, 11516), (171, 11573), (174, 11603), (181, 11783), (183, 11801), (189, 11933), (198, 12041), (199, 12053), (204, 12095), (207, 12119), (213, 12179), (215, 12212), (225, 12308), (226, 12323), (231, 12362), (238, 12464), (240, 12491), (244, 12590), (246, 12617), (252, 12686), (255, 12764),

Gene: Swervy\_16 Start: 10338, Stop: 13100, Start Num: 7

Candidate Starts for Swervy\_16:

(Start: 7 @10338 has 52 MA's), (17, 10491), (18, 10497), (24, 10527), (25, 10536), (28, 10560), (33, 10632), (47, 10824), (58, 10923), (64, 10995), (73, 11073), (75, 11082), (76, 11085), (81, 11130), (83, 11139), (96, 11223), (98, 11232), (99, 11238), (101, 11250), (102, 11262), (104, 11274), (115, 11355), (128, 11442), (130, 11469), (133, 11478), (140, 11577), (145, 11616), (157, 11712), (160, 11736), (164, 11790), (172, 11847), (176, 11925), (179, 12039), (182, 12066), (189, 12201), (194, 12261), (203, 12339), (206, 12360), (210, 12408), (223, 12501), (225, 12546), (226, 12561), (231, 12600), (235, 12669), (236, 12687), (237, 12690), (238, 12702), (240, 12729), (246, 12855), (247, 12870), (249, 12885),

Gene: Teagster\_15 Start: 9869, Stop: 12856, Start Num: 3

Candidate Starts for Teagster\_15:

(Start: 3 @9869 has 3 MA's), (8, 10031), (9, 10037), (11, 10064), (14, 10094), (15, 10133), (29, 10256), (31, 10316), (35, 10400), (36, 10418), (41, 10484), (53, 10592), (67, 10769), (92, 10943), (100, 10991), (106, 11027), (126, 11159), (127, 11177), (135, 11228), (136, 11231), (146, 11369), (155, 11435), (162, 11516), (171, 11573), (181, 11783), (183, 11801), (189, 11933), (198, 12041), (199, 12053), (204, 12095), (207, 12119), (213, 12179), (215, 12212), (225, 12308), (226, 12323), (230, 12356), (231, 12362), (238, 12464), (239, 12482), (240, 12491), (244, 12590), (246, 12617), (255, 12764),

Gene: TukTuk\_16 Start: 10396, Stop: 13158, Start Num: 7

Candidate Starts for TukTuk\_16:

(Start: 7 @10396 has 52 MA's), (17, 10549), (18, 10555), (24, 10585), (25, 10594), (28, 10618), (33, 10690), (47, 10882), (58, 10981), (64, 11053), (73, 11131), (75, 11140), (76, 11143), (81, 11188), (83, 11197), (96, 11281), (98, 11290), (99, 11296), (101, 11308), (102, 11320), (104, 11332), (115, 11413), (128, 11500), (130, 11527), (133, 11536), (140, 11635), (145, 11674), (157, 11770), (160, 11794), (164, 11848), (172, 11905), (176, 11983), (179, 12097), (182, 12124), (189, 12259), (194, 12319), (203, 12397), (223, 12559), (225, 12604), (226, 12619), (231, 12658), (235, 12727), (236, 12745), (237, 12748), (238, 12760), (240, 12787), (246, 12913), (249, 12943),

Gene: WalkingDead\_16 Start: 10494, Stop: 13124, Start Num: 7

Candidate Starts for WalkingDead\_16:

(Start: 7 @10494 has 52 MA's), (13, 10554), (17, 10647), (24, 10683), (25, 10692), (33, 10788), (42, 10941), (47, 10980), (64, 11151), (67, 11187), (72, 11220), (76, 11241), (78, 11253), (80, 11271), (83, 11295), (91, 11346), (95, 11373), (96, 11379), (98, 11388), (101, 11406), (110, 11466), (115, 11511), (140, 11598), (143, 11625), (144, 11634), (154, 11700), (160, 11757), (170, 11859), (179, 12060), (180, 12063), (182, 12087), (184, 12111), (186, 12135), (189, 12222), (194, 12282), (203, 12366), (209, 12432), (211, 12444), (213, 12459), (218, 12507), (221, 12516), (222, 12519), (225, 12579), (226, 12594), (234, 12678), (238, 12726), (246, 12879), (247, 12894), (249, 12909), (253, 12996), (257, 13038),