



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 311532 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311532 has 75 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Yvonnestic\_50, JonJames\_52
- Track 2 : Cardigan\_52
- Track 3 : Bengal\_23, CroZenni\_23, Milomuff\_24, Solea\_25, Albright\_23, Doobus\_23, Avocadoman\_23
- Track 4 : TukTuk\_23, CupcakePrincess\_23
- Track 5 : Burritobowl\_23, DickRichards\_23
- Track 6 : Phisb\_23
- Track 7 : Katzastrophic\_21, Celaena\_21, Bachaco\_21
- Track 8 : Kate33\_23, IndyLu\_23
- Track 9 : Arroyo\_24
- Track 10 : Loviatar\_22, Akino08\_21
- Track 11 : SirBeanington\_23, Albedo\_23
- Track 12 : Stoor\_22, SanaSana\_23
- Track 13 : Buldak\_20
- Track 14 : Teagster\_22
- Track 15 : CliffHanger\_21
- Track 16 : Johnathan\_23
- Track 17 : Finalfrontier\_24
- Track 18 : AvGardian\_23
- Track 19 : SunnyD\_21
- Track 20 : AnnaLie\_24, PhigPhack\_24
- Track 21 : LimaBean\_23
- Track 22 : PastaFagioli\_23
- Track 23 : Lynlen\_23
- Track 24 : Icarian\_23
- Track 25 : BabyDaisy\_24, BelmontSKP\_24, SansAfet\_23
- Track 26 : Lahqtemish\_23, Abigail\_23
- Track 27 : BubbaBear\_23
- Track 28 : Pecas\_23, Jabb\_23, QMacho\_24, Eula\_23, MsUbiquitous\_23
- Track 29 : Squiracle\_20, Olliecat\_20
- Track 30 : Swervy\_23
- Track 31 : Softsoap\_22
- Track 32 : SarBear\_23
- Track 33 : Quenya\_22
- Track 34 : Stromboli\_22, BabyYoda\_22
- Track 35 : Elva\_23
- Track 36 : Jovita\_23

- Track 37 : Kenzers\_23
- Track 38 : CanFranMach\_24
- Track 39 : BAjuniper\_22
- Track 40 : WalkingDead\_22
- Track 41 : Didgeridoo\_24
- Track 42 : PondAmelia\_26
- Track 43 : Cashington\_23
- Track 44 : Slay\_23
- Track 45 : Shayna\_21
- Track 46 : Lilo27\_23
- Track 47 : Nicky22\_24
- Track 48 : AylexOG\_24
- Track 49 : FlameThrower\_21
- Track 50 : DirtyBubble\_22

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

The start number called the most often in the published annotations is 11, it was called in 49 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akino08\_21, Albedo\_23, Albright\_23, AvGardian\_23, Avocadoman\_23, AylexOG\_24, BAjuniper\_22, BabyDaisy\_24, BabyYoda\_22, Bachaco\_21, BelmontSKP\_24, Bengal\_23, BubbaBear\_23, Buldak\_20, Cardigan\_52, Cashington\_23, Celaena\_21, CliffHanger\_21, CroZenni\_23, DirtyBubble\_22, Doobus\_23, Elva\_23, Eula\_23, Finalfrontier\_24, FlameThrower\_21, Icarian\_23, Jabb\_23, Johnathan\_23, JonJames\_52, Katzastrophic\_21, Lilo27\_23, Loviatar\_22, Lynlen\_23, Milomuff\_24, MsUbiquitous\_23, Olliecat\_20, Pecas\_23, Phisb\_23, PondAmelia\_26, QMacho\_24, Quenya\_22, SanaSana\_23, SansAfet\_23, SarBear\_23, Shayna\_21, SirBeanington\_23, Slay\_23, Softsoap\_22, Solea\_25, Squircle\_20, Stoor\_22, Stromboli\_22, SunnyD\_21, Teagster\_22, WalkingDead\_22, Yvonnestic\_50,

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

- Abigail\_23, AnnaLie\_24, Arroyo\_24, Burritobowl\_23, CanFranMach\_24, CupcakePrincess\_23, DickRichards\_23, Didgeridoo\_24, IndyLu\_23, Jovita\_23, Kate33\_23, Kenzers\_23, Lahqtemish\_23, LimaBean\_23, Nicky22\_24, PastaFagioli\_23, PhigPhack\_24, Swervy\_23, TukTuk\_23,

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

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**Summary by start number:**

Start 10:

- Found in 46 of 75 ( 61.3% ) of genes in pham
- Manual Annotations of this start: 18 of 67
- Called 41.3% of time when present
- Phage (with cluster) where this start called: Abigail\_23 (EB), AnnaLie\_24 (EB), Arroyo\_24 (EB), Burritobowl\_23 (EB), CanFranMach\_24 (EB), CupcakePrincess\_23

(EB), DickRichards\_23 (EB), Didgeridoo\_24 (EB), IndyLu\_23 (EB), Jovita\_23 (EB), Kate33\_23 (EB), Kenzers\_23 (EB), Lahqtemish\_23 (EB), LimaBean\_23 (EB), Nicky22\_24 (EB), PastaFagioli\_23 (EB), PhigPhack\_24 (EB), Swervy\_23 (EB), TukTuk\_23 (EB),

Start 11:

- Found in 75 of 75 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 49 of 67
- Called 74.7% of time when present
- Phage (with cluster) where this start called: Akino08\_21 (EB), Albedo\_23 (EB), Albright\_23 (EB), AvGardian\_23 (EB), Avocadoman\_23 (EB), AylexOG\_24 (EB), BAjuniper\_22 (EB), BabyDaisy\_24 (EB), BabyYoda\_22 (EB), Bachaco\_21 (EB), BelmontSKP\_24 (EB), Bengal\_23 (EB), BubbaBear\_23 (EB), Buldak\_20 (EB), Cardigan\_52 (DD), Cashington\_23 (EB), Celaena\_21 (EB), CliffHanger\_21 (EB), CroZenni\_23 (EB), DirtyBubble\_22 (EB), Doobus\_23 (EB), Elva\_23 (EB), Eula\_23 (EB), Finalfrontier\_24 (EB), FlameThrower\_21 (EB), Icarian\_23 (EB), Jabb\_23 (EB), Johnathan\_23 (EB), JonJames\_52 (DD), Katzastrophic\_21 (EB), Lilo27\_23 (EB), Loviatar\_22 (EB), Lynlen\_23 (EB), Milomuff\_24 (EB), MsUbiquitous\_23 (EB), Olliecat\_20 (EB), Pecas\_23 (EB), Phisb\_23 (EB), PondAmelia\_26 (EB), QMacho\_24 (EB), Quenya\_22 (EB), SanaSana\_23 (EB), SansAfet\_23 (EB), SarBear\_23 (EB), Shayna\_21 (EB), SirBeannington\_23 (EB), Slay\_23 (EB), Softsoap\_22 (EB), Solea\_25 (EB), Squircle\_20 (EB), Stoor\_22 (EB), Stromboli\_22 (EB), SunnyD\_21 (EB), Teagster\_22 (EB), WalkingDead\_22 (EB), Yvonnestic\_50 (DD),

### **Summary by clusters:**

There are 2 clusters represented in this pham: DD, EB,

Info for manual annotations of cluster DD:

- Start number 11 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster EB:

- Start number 10 was manually annotated 18 times for cluster EB.
- Start number 11 was manually annotated 47 times for cluster EB.

### **Gene Information:**

Gene: Abigail\_23 Start: 18912, Stop: 19403, Start Num: 10

Candidate Starts for Abigail\_23:

(Start: 10 @18912 has 18 MA's), (Start: 11 @18921 has 49 MA's), (15, 18987), (19, 19011), (20, 19020), (29, 19098), (35, 19155),

Gene: Akino08\_21 Start: 19409, Stop: 19891, Start Num: 11

Candidate Starts for Akino08\_21:

(Start: 11 @19409 has 49 MA's), (18, 19493), (19, 19499), (20, 19508), (27, 19574), (29, 19586), (35, 19643), (42, 19697), (48, 19754), (49, 19760), (53, 19778),

Gene: Albedo\_23 Start: 18798, Stop: 19280, Start Num: 11

Candidate Starts for Albedo\_23:

(Start: 10 @18789 has 18 MA's), (Start: 11 @18798 has 49 MA's), (15, 18864), (19, 18888), (20, 18897), (25, 18954), (29, 18975), (35, 19032),

Gene: Albright\_23 Start: 18679, Stop: 19161, Start Num: 11

Candidate Starts for Albright\_23:

(Start: 10 @18670 has 18 MA's), (Start: 11 @18679 has 49 MA's), (15, 18745), (19, 18769), (20, 18778), (26, 18841), (29, 18856), (35, 18913),

Gene: AnnaLie\_24 Start: 19099, Stop: 19590, Start Num: 10

Candidate Starts for AnnaLie\_24:

(Start: 10 @19099 has 18 MA's), (Start: 11 @19108 has 49 MA's), (15, 19174), (19, 19198), (20, 19207), (26, 19270), (29, 19285), (35, 19342),

Gene: Arroyo\_24 Start: 19299, Stop: 19790, Start Num: 10

Candidate Starts for Arroyo\_24:

(Start: 10 @19299 has 18 MA's), (Start: 11 @19308 has 49 MA's), (15, 19374), (19, 19398), (20, 19407), (26, 19470), (29, 19485), (35, 19542),

Gene: AvGardian\_23 Start: 19023, Stop: 19508, Start Num: 11

Candidate Starts for AvGardian\_23:

(Start: 11 @19023 has 49 MA's), (13, 19080), (14, 19083), (21, 19134), (23, 19152), (43, 19314), (45, 19341), (46, 19353), (47, 19362), (48, 19368), (51, 19380), (52, 19389),

Gene: Avocadoman\_23 Start: 18863, Stop: 19345, Start Num: 11

Candidate Starts for Avocadoman\_23:

(Start: 10 @18854 has 18 MA's), (Start: 11 @18863 has 49 MA's), (15, 18929), (19, 18953), (20, 18962), (26, 19025), (29, 19040), (35, 19097),

Gene: AylexOG\_24 Start: 19135, Stop: 19617, Start Num: 11

Candidate Starts for AylexOG\_24:

(Start: 11 @19135 has 49 MA's), (15, 19201), (19, 19225), (20, 19234), (25, 19291), (26, 19297), (29, 19312), (35, 19369),

Gene: BAjuniper\_22 Start: 19495, Stop: 19983, Start Num: 11

Candidate Starts for BAjuniper\_22:

(4, 19072), (5, 19081), (7, 19327), (8, 19360), (Start: 11 @19495 has 49 MA's), (12, 19510), (18, 19579), (26, 19657), (35, 19729), (38, 19750), (42, 19783), (47, 19834), (50, 19849), (53, 19864), (56, 19960), (57, 19963),

Gene: BabyDaisy\_24 Start: 18924, Stop: 19406, Start Num: 11

Candidate Starts for BabyDaisy\_24:

(Start: 10 @18915 has 18 MA's), (Start: 11 @18924 has 49 MA's), (15, 18990), (19, 19014), (20, 19023), (26, 19086), (29, 19101), (35, 19158),

Gene: BabyYoda\_22 Start: 19492, Stop: 19974, Start Num: 11

Candidate Starts for BabyYoda\_22:

(Start: 11 @19492 has 49 MA's), (14, 19552), (18, 19576), (20, 19591), (26, 19654), (29, 19669), (35, 19726), (42, 19780), (53, 19861),

Gene: Bachaco\_21 Start: 19551, Stop: 20033, Start Num: 11

Candidate Starts for Bachaco\_21:

(Start: 11 @19551 has 49 MA's), (14, 19611), (15, 19617), (18, 19635), (19, 19641), (21, 19662), (25, 19707), (26, 19713), (32, 19752), (35, 19785), (36, 19788), (47, 19890), (54, 19932),

Gene: BelmontSKP\_24 Start: 19108, Stop: 19590, Start Num: 11

Candidate Starts for BelmontSKP\_24:

(Start: 10 @19099 has 18 MA's), (Start: 11 @19108 has 49 MA's), (15, 19174), (19, 19198), (20, 19207), (26, 19270), (29, 19285), (35, 19342),

Gene: Bengal\_23 Start: 18696, Stop: 19178, Start Num: 11

Candidate Starts for Bengal\_23:

(Start: 10 @18687 has 18 MA's), (Start: 11 @18696 has 49 MA's), (15, 18762), (19, 18786), (20, 18795), (26, 18858), (29, 18873), (35, 18930),

Gene: BubbaBear\_23 Start: 18798, Stop: 19280, Start Num: 11

Candidate Starts for BubbaBear\_23:

(Start: 10 @18789 has 18 MA's), (Start: 11 @18798 has 49 MA's), (15, 18864), (19, 18888), (20, 18897), (26, 18960), (29, 18975), (35, 19032),

Gene: Buldak\_20 Start: 17465, Stop: 17950, Start Num: 11

Candidate Starts for Buldak\_20:

(Start: 11 @17465 has 49 MA's), (14, 17525), (18, 17549), (19, 17555), (22, 17579), (28, 17633), (29, 17642), (38, 17720), (48, 17810), (49, 17816), (51, 17822),

Gene: Burritobowl\_23 Start: 18855, Stop: 19346, Start Num: 10

Candidate Starts for Burritobowl\_23:

(1, 17745), (2, 17796), (3, 17901), (Start: 10 @18855 has 18 MA's), (Start: 11 @18864 has 49 MA's), (15, 18930), (19, 18954), (20, 18963), (26, 19026), (29, 19041), (35, 19098),

Gene: CanFranMach\_24 Start: 18789, Stop: 19280, Start Num: 10

Candidate Starts for CanFranMach\_24:

(6, 18423), (Start: 10 @18789 has 18 MA's), (Start: 11 @18798 has 49 MA's), (15, 18864), (19, 18888), (20, 18897), (25, 18954), (26, 18960), (29, 18975), (35, 19032),

Gene: Cardigan\_52 Start: 36612, Stop: 37043, Start Num: 11

Candidate Starts for Cardigan\_52:

(Start: 11 @36612 has 49 MA's), (17, 36693), (31, 36795), (33, 36822), (34, 36825), (35, 36840), (37, 36852),

Gene: Cashington\_23 Start: 18713, Stop: 19195, Start Num: 11

Candidate Starts for Cashington\_23:

(Start: 10 @18704 has 18 MA's), (Start: 11 @18713 has 49 MA's), (15, 18779), (19, 18803), (20, 18812), (26, 18875), (29, 18890), (35, 18947), (49, 19064),

Gene: Celaena\_21 Start: 19499, Stop: 19981, Start Num: 11

Candidate Starts for Celaena\_21:

(Start: 11 @19499 has 49 MA's), (14, 19559), (15, 19565), (18, 19583), (19, 19589), (21, 19610), (25, 19655), (26, 19661), (32, 19700), (35, 19733), (36, 19736), (47, 19838), (54, 19880),

Gene: CliffHanger\_21 Start: 17065, Stop: 17550, Start Num: 11

Candidate Starts for CliffHanger\_21:

(Start: 11 @17065 has 49 MA's), (18, 17149), (48, 17410), (49, 17416), (51, 17422), (57, 17533),

Gene: CroZenni\_23 Start: 18702, Stop: 19184, Start Num: 11

Candidate Starts for CroZenni\_23:

(Start: 10 @18693 has 18 MA's), (Start: 11 @18702 has 49 MA's), (15, 18768), (19, 18792), (20, 18801), (26, 18864), (29, 18879), (35, 18936),

Gene: CupcakePrincess\_23 Start: 18813, Stop: 19304, Start Num: 10

Candidate Starts for CupcakePrincess\_23:

(Start: 10 @18813 has 18 MA's), (Start: 11 @18822 has 49 MA's), (19, 18912), (20, 18921), (26, 18984), (29, 18999), (35, 19056), (48, 19167), (53, 19191),

Gene: DickRichards\_23 Start: 19185, Stop: 19676, Start Num: 10

Candidate Starts for DickRichards\_23:

(1, 18075), (2, 18126), (3, 18231), (Start: 10 @19185 has 18 MA's), (Start: 11 @19194 has 49 MA's), (15, 19260), (19, 19284), (20, 19293), (26, 19356), (29, 19371), (35, 19428),

Gene: Didgeridoo\_24 Start: 18917, Stop: 19408, Start Num: 10

Candidate Starts for Didgeridoo\_24:

(Start: 10 @18917 has 18 MA's), (Start: 11 @18926 has 49 MA's), (15, 18992), (19, 19016), (20, 19025), (24, 19061), (29, 19103), (35, 19160),

Gene: DirtyBubble\_22 Start: 19450, Stop: 19932, Start Num: 11

Candidate Starts for DirtyBubble\_22:

(Start: 11 @19450 has 49 MA's), (16, 19528), (18, 19534), (19, 19540), (20, 19549), (27, 19615), (28, 19618), (29, 19627), (35, 19684), (42, 19738), (48, 19795), (55, 19885),

Gene: Doobus\_23 Start: 19030, Stop: 19512, Start Num: 11

Candidate Starts for Doobus\_23:

(Start: 10 @19021 has 18 MA's), (Start: 11 @19030 has 49 MA's), (15, 19096), (19, 19120), (20, 19129), (26, 19192), (29, 19207), (35, 19264),

Gene: Elva\_23 Start: 19414, Stop: 19896, Start Num: 11

Candidate Starts for Elva\_23:

(Start: 11 @19414 has 49 MA's), (18, 19498), (19, 19504), (20, 19513), (27, 19579), (28, 19582), (29, 19591), (35, 19648), (42, 19702), (48, 19759), (55, 19849),

Gene: Eula\_23 Start: 18783, Stop: 19265, Start Num: 11

Candidate Starts for Eula\_23:

(Start: 10 @18774 has 18 MA's), (Start: 11 @18783 has 49 MA's), (19, 18873), (20, 18882), (26, 18945), (29, 18960), (35, 19017), (48, 19128), (53, 19152),

Gene: Finalfrontier\_24 Start: 19290, Stop: 19772, Start Num: 11

Candidate Starts for Finalfrontier\_24:

(9, 19221), (Start: 10 @19281 has 18 MA's), (Start: 11 @19290 has 49 MA's), (15, 19356), (19, 19380), (20, 19389), (26, 19452), (29, 19467), (35, 19524),

Gene: FlameThrower\_21 Start: 19016, Stop: 19501, Start Num: 11

Candidate Starts for FlameThrower\_21:

(Start: 11 @19016 has 49 MA's), (13, 19073), (15, 19082), (17, 19097), (23, 19145), (35, 19250), (36, 19253), (52, 19382), (53, 19385),

Gene: Icarian\_23 Start: 19329, Stop: 19811, Start Num: 11

Candidate Starts for Icarian\_23:

(Start: 11 @19329 has 49 MA's), (18, 19413), (19, 19419), (20, 19428), (27, 19494), (28, 19497), (29, 19506), (35, 19563), (42, 19617), (48, 19674), (53, 19698),

Gene: IndyLu\_23 Start: 18736, Stop: 19227, Start Num: 10

Candidate Starts for IndyLu\_23:

(9, 18676), (Start: 10 @18736 has 18 MA's), (Start: 11 @18745 has 49 MA's), (15, 18811), (19, 18835), (20, 18844), (26, 18907), (29, 18922), (35, 18979),

Gene: Jabb\_23 Start: 18822, Stop: 19304, Start Num: 11

Candidate Starts for Jabb\_23:

(Start: 10 @18813 has 18 MA's), (Start: 11 @18822 has 49 MA's), (19, 18912), (20, 18921), (26, 18984), (29, 18999), (35, 19056), (48, 19167), (53, 19191),

Gene: Johnathan\_23 Start: 18803, Stop: 19285, Start Num: 11

Candidate Starts for Johnathan\_23:

(Start: 10 @18794 has 18 MA's), (Start: 11 @18803 has 49 MA's), (15, 18869), (19, 18893), (20, 18902), (29, 18980), (35, 19037),

Gene: JonJames\_52 Start: 37513, Stop: 37944, Start Num: 11

Candidate Starts for JonJames\_52:

(Start: 11 @37513 has 49 MA's), (17, 37594), (31, 37696), (33, 37723), (35, 37741), (37, 37753),

Gene: Jovita\_23 Start: 18878, Stop: 19369, Start Num: 10

Candidate Starts for Jovita\_23:

(Start: 10 @18878 has 18 MA's), (Start: 11 @18887 has 49 MA's), (19, 18977), (20, 18986), (26, 19049), (29, 19064), (35, 19121), (48, 19232),

Gene: Kate33\_23 Start: 18738, Stop: 19229, Start Num: 10

Candidate Starts for Kate33\_23:

(9, 18678), (Start: 10 @18738 has 18 MA's), (Start: 11 @18747 has 49 MA's), (15, 18813), (19, 18837), (20, 18846), (26, 18909), (29, 18924), (35, 18981),

Gene: Katzastrophic\_21 Start: 19157, Stop: 19639, Start Num: 11

Candidate Starts for Katzastrophic\_21:

(Start: 11 @19157 has 49 MA's), (14, 19217), (15, 19223), (18, 19241), (19, 19247), (21, 19268), (25, 19313), (26, 19319), (32, 19358), (35, 19391), (36, 19394), (47, 19496), (54, 19538),

Gene: Kenzers\_23 Start: 18764, Stop: 19255, Start Num: 10

Candidate Starts for Kenzers\_23:

(Start: 10 @18764 has 18 MA's), (Start: 11 @18773 has 49 MA's), (19, 18863), (20, 18872), (29, 18950), (35, 19007), (41, 19058),

Gene: Lahqtemish\_23 Start: 18787, Stop: 19278, Start Num: 10

Candidate Starts for Lahqtemish\_23:

(Start: 10 @18787 has 18 MA's), (Start: 11 @18796 has 49 MA's), (15, 18862), (19, 18886), (20, 18895), (29, 18973), (35, 19030),

Gene: Lilo27\_23 Start: 18759, Stop: 19241, Start Num: 11

Candidate Starts for Lilo27\_23:

(Start: 10 @18750 has 18 MA's), (Start: 11 @18759 has 49 MA's), (19, 18849), (20, 18858), (29, 18936), (35, 18993), (48, 19104), (49, 19110), (53, 19128),

Gene: LimaBean\_23 Start: 18790, Stop: 19281, Start Num: 10

Candidate Starts for LimaBean\_23:

(Start: 10 @18790 has 18 MA's), (Start: 11 @18799 has 49 MA's), (15, 18865), (19, 18889), (20, 18898), (26, 18961), (29, 18976), (35, 19033),

Gene: Loviatar\_22 Start: 19424, Stop: 19906, Start Num: 11

Candidate Starts for Loviatar\_22:

(Start: 11 @19424 has 49 MA's), (18, 19508), (19, 19514), (20, 19523), (27, 19589), (29, 19601), (35, 19658), (42, 19712), (48, 19769), (49, 19775), (53, 19793),

Gene: Lynlen\_23 Start: 18773, Stop: 19255, Start Num: 11

Candidate Starts for Lynlen\_23:

(Start: 10 @18764 has 18 MA's), (Start: 11 @18773 has 49 MA's), (19, 18863), (20, 18872), (29, 18950), (35, 19007), (41, 19058),

Gene: Milomuff\_24 Start: 19163, Stop: 19645, Start Num: 11

Candidate Starts for Milomuff\_24:

(Start: 10 @19154 has 18 MA's), (Start: 11 @19163 has 49 MA's), (15, 19229), (19, 19253), (20, 19262), (26, 19325), (29, 19340), (35, 19397),

Gene: MsUbiquitous\_23 Start: 18822, Stop: 19304, Start Num: 11

Candidate Starts for MsUbiquitous\_23:

(Start: 10 @18813 has 18 MA's), (Start: 11 @18822 has 49 MA's), (19, 18912), (20, 18921), (26, 18984), (29, 18999), (35, 19056), (48, 19167), (53, 19191),

Gene: Nicky22\_24 Start: 19224, Stop: 19715, Start Num: 10

Candidate Starts for Nicky22\_24:

(Start: 10 @19224 has 18 MA's), (Start: 11 @19233 has 49 MA's), (19, 19323), (20, 19332), (26, 19395), (29, 19410), (35, 19467),

Gene: Olliecat\_20 Start: 17428, Stop: 17916, Start Num: 11

Candidate Starts for Olliecat\_20:

(Start: 11 @17428 has 49 MA's), (13, 17485), (14, 17488), (22, 17542), (38, 17683), (49, 17779), (51, 17785),

Gene: PastaFagioli\_23 Start: 18778, Stop: 19269, Start Num: 10

Candidate Starts for PastaFagioli\_23:

(Start: 10 @18778 has 18 MA's), (Start: 11 @18787 has 49 MA's), (15, 18853), (19, 18877), (20, 18886), (26, 18949), (29, 18964), (35, 19021),

Gene: Pecas\_23 Start: 18783, Stop: 19265, Start Num: 11

Candidate Starts for Pecas\_23:

(Start: 10 @18774 has 18 MA's), (Start: 11 @18783 has 49 MA's), (19, 18873), (20, 18882), (26, 18945), (29, 18960), (35, 19017), (48, 19128), (53, 19152),

Gene: PhigPhack\_24 Start: 18767, Stop: 19258, Start Num: 10

Candidate Starts for PhigPhack\_24:

(Start: 10 @18767 has 18 MA's), (Start: 11 @18776 has 49 MA's), (15, 18842), (19, 18866), (20, 18875), (26, 18938), (29, 18953), (35, 19010),

Gene: Phisb\_23 Start: 18799, Stop: 19281, Start Num: 11

Candidate Starts for Phisb\_23:

(Start: 10 @18790 has 18 MA's), (Start: 11 @18799 has 49 MA's), (15, 18865), (19, 18889), (20, 18898), (25, 18955), (26, 18961), (29, 18976), (35, 19033),

Gene: PondAmelia\_26 Start: 19473, Stop: 19958, Start Num: 11

Candidate Starts for PondAmelia\_26:

(Start: 11 @19473 has 49 MA's), (13, 19530), (14, 19533), (21, 19584), (23, 19602), (32, 19674), (43, 19764), (45, 19791), (46, 19803), (48, 19818), (51, 19830), (52, 19839),

Gene: QMacho\_24 Start: 19266, Stop: 19748, Start Num: 11

Candidate Starts for QMacho\_24:

(Start: 10 @19257 has 18 MA's), (Start: 11 @19266 has 49 MA's), (19, 19356), (20, 19365), (26, 19428), (29, 19443), (35, 19500), (48, 19611), (53, 19635),

Gene: Quenya\_22 Start: 19022, Stop: 19504, Start Num: 11

Candidate Starts for Quenya\_22:

(Start: 11 @19022 has 49 MA's), (14, 19082), (15, 19088), (18, 19106), (19, 19112), (21, 19133), (26, 19184), (32, 19223), (35, 19256), (36, 19259), (39, 19295), (47, 19361), (54, 19403),

Gene: SanaSana\_23 Start: 19363, Stop: 19845, Start Num: 11

Candidate Starts for SanaSana\_23:

(Start: 11 @19363 has 49 MA's), (18, 19447), (19, 19453), (20, 19462), (27, 19528), (29, 19540), (30, 19546), (35, 19597), (42, 19651), (48, 19708), (49, 19714), (53, 19732),

Gene: SansAfet\_23 Start: 18710, Stop: 19192, Start Num: 11

Candidate Starts for SansAfet\_23:

(Start: 10 @18701 has 18 MA's), (Start: 11 @18710 has 49 MA's), (15, 18776), (19, 18800), (20, 18809), (26, 18872), (29, 18887), (35, 18944),

Gene: SarBear\_23 Start: 18764, Stop: 19246, Start Num: 11

Candidate Starts for SarBear\_23:

(Start: 10 @18755 has 18 MA's), (Start: 11 @18764 has 49 MA's), (19, 18854), (20, 18863), (29, 18941), (35, 18998),

Gene: Shayna\_21 Start: 18113, Stop: 18598, Start Num: 11

Candidate Starts for Shayna\_21:

(Start: 11 @18113 has 49 MA's), (13, 18170), (36, 18350), (48, 18458), (51, 18470), (54, 18494),

Gene: SirBeanington\_23 Start: 18806, Stop: 19288, Start Num: 11

Candidate Starts for SirBeanington\_23:

(Start: 10 @18797 has 18 MA's), (Start: 11 @18806 has 49 MA's), (15, 18872), (19, 18896), (20, 18905), (25, 18962), (29, 18983), (35, 19040),

Gene: Slay\_23 Start: 19306, Stop: 19788, Start Num: 11

Candidate Starts for Slay\_23:

(Start: 10 @19297 has 18 MA's), (Start: 11 @19306 has 49 MA's), (19, 19396), (20, 19405), (35, 19540),

Gene: Softsoap\_22 Start: 18534, Stop: 19016, Start Num: 11

Candidate Starts for Softsoap\_22:

(Start: 10 @18525 has 18 MA's), (Start: 11 @18534 has 49 MA's), (15, 18600), (19, 18624), (20, 18633), (26, 18696), (29, 18711), (35, 18768),

Gene: Solea\_25 Start: 19163, Stop: 19645, Start Num: 11

Candidate Starts for Solea\_25:

(Start: 10 @19154 has 18 MA's), (Start: 11 @19163 has 49 MA's), (15, 19229), (19, 19253), (20, 19262), (26, 19325), (29, 19340), (35, 19397),

Gene: Squircle\_20 Start: 17427, Stop: 17915, Start Num: 11

Candidate Starts for Squircle\_20:

(Start: 11 @17427 has 49 MA's), (13, 17484), (14, 17487), (22, 17541), (38, 17682), (49, 17778), (51, 17784),

Gene: Stoor\_22 Start: 19360, Stop: 19842, Start Num: 11

Candidate Starts for Stoor\_22:

(Start: 11 @19360 has 49 MA's), (18, 19444), (19, 19450), (20, 19459), (27, 19525), (29, 19537), (30, 19543), (35, 19594), (42, 19648), (48, 19705), (49, 19711), (53, 19729),

Gene: Stromboli\_22 Start: 19490, Stop: 19972, Start Num: 11

Candidate Starts for Stromboli\_22:

(Start: 11 @19490 has 49 MA's), (14, 19550), (18, 19574), (20, 19589), (26, 19652), (29, 19667), (35, 19724), (42, 19778), (53, 19859),

Gene: SunnyD\_21 Start: 18117, Stop: 18602, Start Num: 11

Candidate Starts for SunnyD\_21:

(Start: 11 @18117 has 49 MA's), (13, 18174), (34, 18336), (36, 18354), (48, 18462), (51, 18474), (54, 18498),

Gene: Swervy\_23 Start: 18755, Stop: 19246, Start Num: 10

Candidate Starts for Swervy\_23:

(Start: 10 @18755 has 18 MA's), (Start: 11 @18764 has 49 MA's), (19, 18854), (20, 18863), (29, 18941), (35, 18998),

Gene: Teagster\_22 Start: 19074, Stop: 19559, Start Num: 11

Candidate Starts for Teagster\_22:

(Start: 11 @19074 has 49 MA's), (13, 19131), (36, 19311), (48, 19419), (51, 19431), (54, 19455),

Gene: TukTuk\_23 Start: 18813, Stop: 19304, Start Num: 10

Candidate Starts for TukTuk\_23:

(Start: 10 @18813 has 18 MA's), (Start: 11 @18822 has 49 MA's), (19, 18912), (20, 18921), (26, 18984), (29, 18999), (35, 19056), (48, 19167), (53, 19191),

Gene: WalkingDead\_22 Start: 19488, Stop: 19973, Start Num: 11

Candidate Starts for WalkingDead\_22:

(Start: 11 @19488 has 49 MA's), (13, 19545), (14, 19548), (21, 19599), (23, 19617), (32, 19689), (40, 19764), (43, 19779), (44, 19800), (45, 19806), (46, 19818), (47, 19827), (48, 19833), (51, 19845), (52, 19854),

Gene: Yvonnetastic\_50 Start: 35048, Stop: 35479, Start Num: 11

Candidate Starts for Yvonnetastic\_50:

(Start: 11 @35048 has 49 MA's), (17, 35129), (31, 35231), (33, 35258), (35, 35276), (37, 35288),