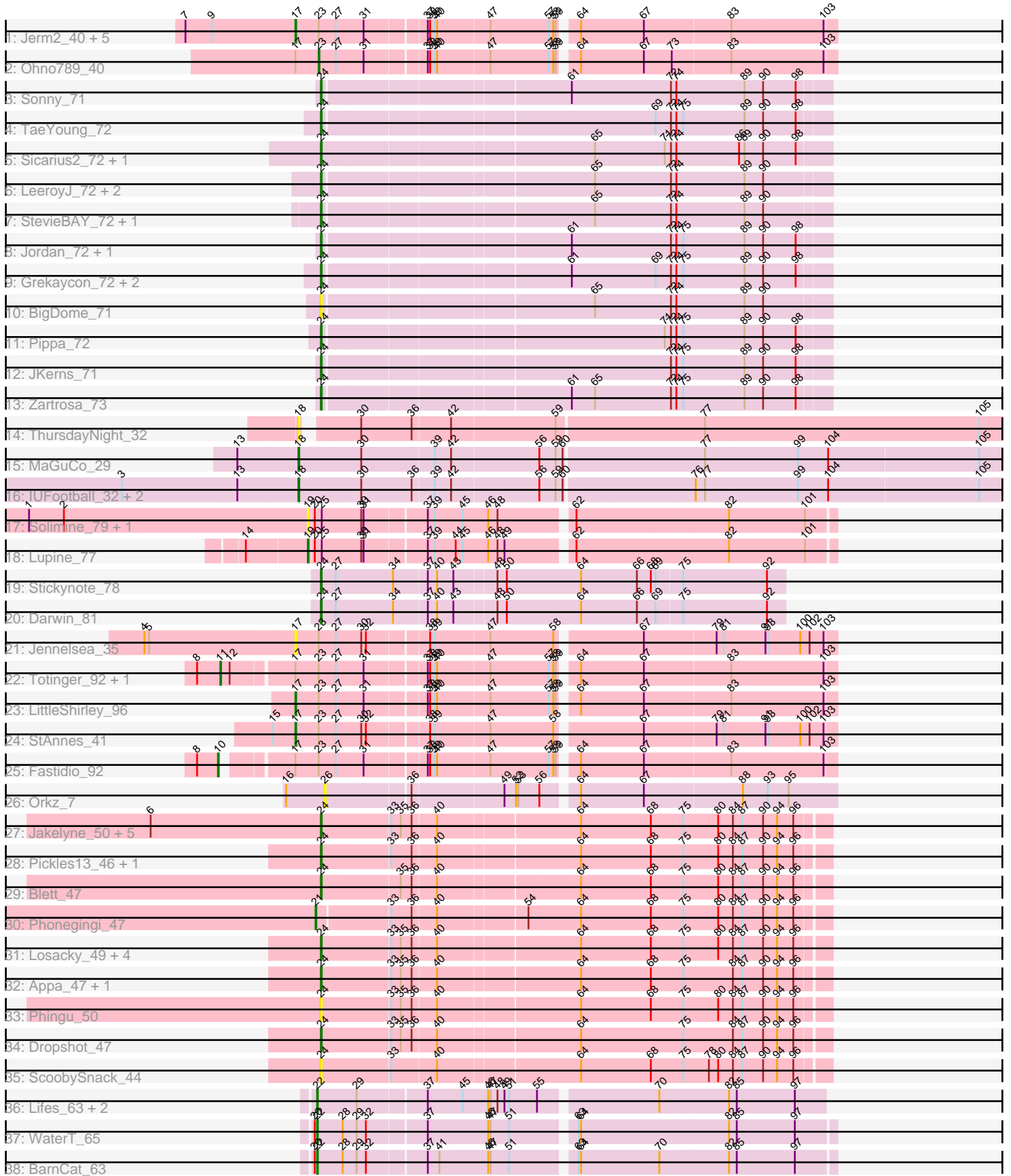


Pham 311573



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 311573 Report

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

Pham number 311573 has 67 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Jerm2\_40, BaconJack\_42, Sorpresa\_39, HermioneGrange\_39, Sandaddy\_39, Rohr\_40
- Track 2 : Ohno789\_40
- Track 3 : Sonny\_71
- Track 4 : TaeYoung\_72
- Track 5 : Sicarius2\_72, Wyborn\_71
- Track 6 : LeeroyJ\_72, GravityBall\_71, Timinator\_72
- Track 7 : StevieBAY\_72, BarretLemon\_71
- Track 8 : Jordan\_72, Shade\_71
- Track 9 : Grekaycon\_72, Martha\_71, BossLady\_73
- Track 10 : BigDome\_71
- Track 11 : Pippa\_72
- Track 12 : JKerns\_71
- Track 13 : Zartrosa\_73
- Track 14 : ThursdayNight\_32
- Track 15 : MaGuCo\_29
- Track 16 : IUFootball\_32, Liebe\_32, Maureen\_32
- Track 17 : Solimine\_79, Solimine\_119
- Track 18 : Lupine\_77
- Track 19 : Stickynote\_78
- Track 20 : Darwin\_81
- Track 21 : Jennelsea\_35
- Track 22 : Totinger\_92, DillTech15\_95
- Track 23 : LittleShirley\_96
- Track 24 : StAnnes\_41
- Track 25 : Fastidio\_92
- Track 26 : Orkz\_7
- Track 27 : Jakelyne\_50, Carrillo\_49, Violeta\_49, Guzman\_47, CookieDog\_47, Antuna\_49
- Track 28 : Pickles13\_46, Warren\_47
- Track 29 : Blett\_47
- Track 30 : Phonegingi\_47
- Track 31 : Losacky\_49, Mariel\_50, Bush\_48, NCRodriguez\_49, MenE\_49
- Track 32 : Appa\_47, PhillyJawn\_48
- Track 33 : Phingu\_50
- Track 34 : Dropshot\_47
- Track 35 : ScoobySnack\_44

- Track 36 : Lifes\_63, LeeroyJenkins\_70, Cassita\_67
- Track 37 : WaterT\_65
- Track 38 : BarnCat\_63

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

The start number called the most often in the published annotations is 24, it was called in 29 of the 50 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antuna\_49, Appa\_47, BarretLemon\_71, BigDome\_71, Blett\_47, BossLady\_73, Bush\_48, Carrillo\_49, CookieDog\_47, Darwin\_81, Dropshot\_47, GravityBall\_71, Grekaycon\_72, Guzman\_47, JKerns\_71, Jakelyne\_50, Jordan\_72, LeeroyJ\_72, Losacky\_49, Mariel\_50, Martha\_71, MenE\_49, NCRodriguez\_49, PhillyJawn\_48, Phingu\_50, Pickles13\_46, Pippa\_72, ScoobySnack\_44, Shade\_71, Sicarius2\_72, Sonny\_71, StevieBAY\_72, Stickynote\_78, TaeYoung\_72, Timinator\_72, Violeta\_49, Warren\_47, Wyborn\_71, Zartrosa\_73,

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

- 

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

- BaconJack\_42, BarnCat\_63, Cassita\_67, DillTech15\_95, Fastidio\_92, HermioneGrange\_39, IUFootball\_32, Jennelsea\_35, Jerm2\_40, LeeroyJenkins\_70, Liebe\_32, Lifes\_63, LittleShirley\_96, Lupine\_77, MaGuCo\_29, Maureen\_32, Ohno789\_40, Orkz\_7, Phonegingi\_47, Rohr\_40, Sandaddy\_39, Solimine\_119, Solimine\_79, Sorpresa\_39, StAnnes\_41, ThursdayNight\_32, Totinger\_92, WaterT\_65,

**Summary by start number:**

Start 10:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fastidio\_92 (F1),

Start 11:

- Found in 2 of 67 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DillTech15\_95 (F1), Totinger\_92 (F1),

Start 17:

- Found in 13 of 67 ( 19.4% ) of genes in pham
- Manual Annotations of this start: 7 of 50
- Called 69.2% of time when present
- Phage (with cluster) where this start called: BaconJack\_42 (A1), HermioneGrange\_39 (A1), Jennelsea\_35 (F1), Jerm2\_40 (A1), LittleShirley\_96 (F1), Rohr\_40 (A1), Sandaddy\_39 (A1), Sorpresa\_39 (A1), StAnnes\_41 (F1),

Start 18:

- Found in 5 of 67 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 3 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: IUFootball\_32 (AZ2), Liebe\_32 (AZ2), MaGuCo\_29 (AZ2), Maureen\_32 (AZ2), ThursdayNight\_32 (AZ),

Start 19:

- Found in 3 of 67 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lupine\_77 (ED1), Solimine\_119 (ED1), Solimine\_79 (ED1),

Start 21:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phonegingi\_47 (GA),

Start 22:

- Found in 5 of 67 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 5 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BarnCat\_63 (GB), Cassita\_67 (GB), LeeroyJenkins\_70 (GB), Lifes\_63 (GB), WaterT\_65 (GB),

Start 23:

- Found in 13 of 67 ( 19.4% ) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Ohno789\_40 (A1),

Start 24:

- Found in 39 of 67 ( 58.2% ) of genes in pham
- Manual Annotations of this start: 29 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antuna\_49 (GA), Appa\_47 (GA), BarretLemon\_71 (AO2), BigDome\_71 (AO2), Blett\_47 (GA), BossLady\_73 (AO2), Bush\_48 (GA), Carrillo\_49 (GA), CookieDog\_47 (GA), Darwin\_81 (EN), Dropshot\_47 (GA), GravityBall\_71 (AO2), Grekaycon\_72 (AO2), Guzman\_47 (GA), JKerns\_71 (AO2), Jakelyne\_50 (GA), Jordan\_72 (AO2), LeeroyJ\_72 (AO2), Losacky\_49 (GA), Mariel\_50 (GA), Martha\_71 (AO2), MenE\_49 (GA), NCRodriguez\_49 (GA), PhillyJawn\_48 (GA), Phingu\_50 (GA), Pickles13\_46 (GA), Pippa\_72 (AO2), ScoobySnack\_44 (GA), Shade\_71 (AO2), Sicarius2\_72 (AO2), Sonny\_71 (AO2), StevieBAY\_72 (AO2), Stickynote\_78 (EN), TaeYoung\_72 (AO2), Timinator\_72 (AO2), Violeta\_49 (GA), Warren\_47 (GA), Wyborn\_71 (AO2), Zartrosa\_73 (AO2),

Start 26:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Orkz\_7 (FL),

### **Summary by clusters:**

There are 10 clusters represented in this pham: F1, EN, A1, ED1, AO2, GA, AZ2, AZ, FL, GB,

Info for manual annotations of cluster A1:

- Start number 17 was manually annotated 5 times for cluster A1.
- Start number 23 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster AO2:

- Start number 24 was manually annotated 17 times for cluster AO2.

Info for manual annotations of cluster AZ2:

- Start number 18 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster ED1:

- Start number 19 was manually annotated 1 time for cluster ED1.

Info for manual annotations of cluster EN:

- Start number 24 was manually annotated 2 times for cluster EN.

Info for manual annotations of cluster F1:

- Start number 10 was manually annotated 1 time for cluster F1.
- Start number 11 was manually annotated 2 times for cluster F1.
- Start number 17 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster GA:

- Start number 21 was manually annotated 1 time for cluster GA.
- Start number 24 was manually annotated 10 times for cluster GA.

Info for manual annotations of cluster GB:

- Start number 22 was manually annotated 5 times for cluster GB.

### **Gene Information:**

Gene: Antuna\_49 Start: 29896, Stop: 30522, Start Num: 24

Candidate Starts for Antuna\_49:

(6, 29677), (Start: 24 @29896 has 29 MA's), (33, 29980), (35, 29992), (36, 30004), (40, 30034), (64, 30208), (68, 30298), (75, 30340), (80, 30385), (84, 30403), (87, 30415), (90, 30442), (94, 30460), (96, 30481),

Gene: Appa\_47 Start: 29661, Stop: 30287, Start Num: 24

Candidate Starts for Appa\_47:

(Start: 24 @29661 has 29 MA's), (33, 29745), (35, 29757), (36, 29769), (40, 29799), (64, 29973), (68, 30063), (75, 30105), (84, 30168), (87, 30180), (90, 30207), (94, 30225), (96, 30246),

Gene: BaconJack\_42 Start: 32551, Stop: 31895, Start Num: 17

Candidate Starts for BaconJack\_42:

(7, 32689), (9, 32656), (Start: 17 @32551 has 7 MA's), (Start: 23 @32521 has 1 MA's), (27, 32503), (31, 32467), (37, 32395), (38, 32392), (39, 32386), (40, 32383), (47, 32317), (57, 32242), (58, 32236), (59, 32233), (64, 32215), (67, 32134), (83, 32026), (103, 31909),

Gene: BarnCat\_63 Start: 38116, Stop: 37484, Start Num: 22

Candidate Starts for BarnCat\_63:

(20, 38119), (Start: 22 @38116 has 5 MA's), (28, 38086), (29, 38068), (32, 38056), (37, 37984), (41, 37969), (46, 37906), (47, 37903), (51, 37879), (63, 37804), (64, 37801), (70, 37702), (82, 37615), (85, 37606), (97, 37531),

Gene: BarretLemon\_71 Start: 45350, Stop: 45970, Start Num: 24

Candidate Starts for BarretLemon\_71:

(Start: 24 @45350 has 29 MA's), (65, 45677), (72, 45773), (74, 45779), (89, 45863), (90, 45887),

Gene: BigDome\_71 Start: 45592, Stop: 46212, Start Num: 24

Candidate Starts for BigDome\_71:

(Start: 24 @45592 has 29 MA's), (65, 45919), (72, 46015), (74, 46021), (89, 46105), (90, 46129),

Gene: Blett\_47 Start: 29847, Stop: 30473, Start Num: 24

Candidate Starts for Blett\_47:

(Start: 24 @29847 has 29 MA's), (35, 29943), (36, 29955), (40, 29985), (64, 30159), (68, 30249), (75, 30291), (80, 30336), (84, 30354), (87, 30366), (90, 30393), (94, 30411), (96, 30432),

Gene: BossLady\_73 Start: 45907, Stop: 46527, Start Num: 24

Candidate Starts for BossLady\_73:

(Start: 24 @45907 has 29 MA's), (61, 46204), (69, 46312), (72, 46330), (74, 46336), (75, 46345), (89, 46420), (90, 46444), (98, 46486),

Gene: Bush\_48 Start: 29795, Stop: 30421, Start Num: 24

Candidate Starts for Bush\_48:

(Start: 24 @29795 has 29 MA's), (33, 29879), (35, 29891), (36, 29903), (40, 29933), (64, 30107), (68, 30197), (75, 30239), (80, 30284), (84, 30302), (87, 30314), (90, 30341), (94, 30359), (96, 30380),

Gene: Carrillo\_49 Start: 29769, Stop: 30395, Start Num: 24

Candidate Starts for Carrillo\_49:

(6, 29550), (Start: 24 @29769 has 29 MA's), (33, 29853), (35, 29865), (36, 29877), (40, 29907), (64, 30081), (68, 30171), (75, 30213), (80, 30258), (84, 30276), (87, 30288), (90, 30315), (94, 30333), (96, 30354),

Gene: Cassita\_67 Start: 38892, Stop: 38269, Start Num: 22

Candidate Starts for Cassita\_67:

(Start: 22 @38892 has 5 MA's), (29, 38844), (37, 38760), (45, 38715), (46, 38682), (47, 38679), (48, 38670), (49, 38661), (51, 38655), (55, 38619), (70, 38478), (82, 38391), (85, 38382), (97, 38307),

Gene: CookieDog\_47 Start: 29769, Stop: 30395, Start Num: 24

Candidate Starts for CookieDog\_47:

(6, 29550), (Start: 24 @29769 has 29 MA's), (33, 29853), (35, 29865), (36, 29877), (40, 29907), (64, 30081), (68, 30171), (75, 30213), (80, 30258), (84, 30276), (87, 30288), (90, 30315), (94, 30333), (96, 30354),

Gene: Darwin\_81 Start: 59286, Stop: 58708, Start Num: 24

Candidate Starts for Darwin\_81:

(Start: 24 @59286 has 29 MA's), (27, 59268), (34, 59196), (37, 59154), (40, 59142), (43, 59121), (48, 59070), (50, 59058), (64, 58965), (66, 58893), (69, 58869), (75, 58836), (92, 58728),

Gene: DillTech15\_95 Start: 50659, Stop: 51399, Start Num: 11

Candidate Starts for DillTech15\_95:

(8, 50629), (Start: 11 @50659 has 2 MA's), (12, 50671), (Start: 17 @50743 has 7 MA's), (Start: 23 @50773 has 1 MA's), (27, 50791), (31, 50827), (37, 50899), (38, 50902), (39, 50908), (40, 50911), (47, 50977), (57, 51052), (58, 51058), (59, 51061), (64, 51079), (67, 51160), (83, 51268), (103, 51385),

Gene: Dropshot\_47 Start: 29496, Stop: 30122, Start Num: 24

Candidate Starts for Dropshot\_47:

(Start: 24 @29496 has 29 MA's), (33, 29580), (35, 29592), (36, 29604), (40, 29634), (64, 29808), (75, 29940), (84, 30003), (87, 30015), (90, 30042), (94, 30060), (96, 30081),

Gene: Fastidio\_92 Start: 48551, Stop: 49279, Start Num: 10

Candidate Starts for Fastidio\_92:

(8, 48524), (Start: 10 @48551 has 1 MA's), (Start: 17 @48623 has 7 MA's), (Start: 23 @48653 has 1 MA's), (27, 48671), (31, 48707), (37, 48779), (38, 48782), (39, 48788), (40, 48791), (47, 48857), (57, 48932), (58, 48938), (59, 48941), (64, 48959), (67, 49040), (83, 49148), (103, 49265),

Gene: GravityBall\_71 Start: 45608, Stop: 46228, Start Num: 24

Candidate Starts for GravityBall\_71:

(Start: 24 @45608 has 29 MA's), (65, 45935), (72, 46031), (74, 46037), (89, 46121), (90, 46145),

Gene: Grekaycon\_72 Start: 45820, Stop: 46440, Start Num: 24

Candidate Starts for Grekaycon\_72:

(Start: 24 @45820 has 29 MA's), (61, 46117), (69, 46225), (72, 46243), (74, 46249), (75, 46258), (89, 46333), (90, 46357), (98, 46399),

Gene: Guzman\_47 Start: 29752, Stop: 30378, Start Num: 24

Candidate Starts for Guzman\_47:

(6, 29533), (Start: 24 @29752 has 29 MA's), (33, 29836), (35, 29848), (36, 29860), (40, 29890), (64, 30064), (68, 30154), (75, 30196), (80, 30241), (84, 30259), (87, 30271), (90, 30298), (94, 30316), (96, 30337),

Gene: HermioneGrange\_39 Start: 31927, Stop: 31271, Start Num: 17

Candidate Starts for HermioneGrange\_39:

(7, 32065), (9, 32032), (Start: 17 @31927 has 7 MA's), (Start: 23 @31897 has 1 MA's), (27, 31879), (31, 31843), (37, 31771), (38, 31768), (39, 31762), (40, 31759), (47, 31693), (57, 31618), (58, 31612), (59, 31609), (64, 31591), (67, 31510), (83, 31402), (103, 31285),

Gene: IUFootball\_32 Start: 24584, Stop: 25471, Start Num: 18

Candidate Starts for IUFootball\_32:

(3, 24359), (13, 24506), (Start: 18 @24584 has 3 MA's), (30, 24662), (36, 24725), (39, 24752), (42, 24773), (56, 24884), (59, 24905), (60, 24914), (76, 25076), (77, 25088), (99, 25205), (104, 25244), (105, 25436),

Gene: JKerns\_71 Start: 45847, Stop: 46467, Start Num: 24

Candidate Starts for JKerns\_71:

(Start: 24 @45847 has 29 MA's), (72, 46270), (74, 46276), (75, 46285), (89, 46360), (90, 46384), (98, 46426),

Gene: Jakelyne\_50 Start: 29862, Stop: 30488, Start Num: 24

Candidate Starts for Jakelyne\_50:

(6, 29643), (Start: 24 @29862 has 29 MA's), (33, 29946), (35, 29958), (36, 29970), (40, 30000), (64, 30174), (68, 30264), (75, 30306), (80, 30351), (84, 30369), (87, 30381), (90, 30408), (94, 30426), (96, 30447),

Gene: Jennelsea\_35 Start: 28453, Stop: 27797, Start Num: 17

Candidate Starts for Jennelsea\_35:

(4, 28645), (5, 28639), (Start: 17 @28453 has 7 MA's), (Start: 23 @28423 has 1 MA's), (27, 28405), (30, 28372), (32, 28366), (38, 28294), (39, 28288), (47, 28219), (58, 28138), (67, 28036), (79, 27946), (81, 27937), (91, 27886), (93, 27883), (100, 27841), (102, 27829), (103, 27811),

Gene: Jerm2\_40 Start: 32182, Stop: 31526, Start Num: 17

Candidate Starts for Jerm2\_40:

(7, 32320), (9, 32287), (Start: 17 @32182 has 7 MA's), (Start: 23 @32152 has 1 MA's), (27, 32134), (31, 32098), (37, 32026), (38, 32023), (39, 32017), (40, 32014), (47, 31948), (57, 31873), (58, 31867), (59, 31864), (64, 31846), (67, 31765), (83, 31657), (103, 31540),

Gene: Jordan\_72 Start: 45972, Stop: 46592, Start Num: 24

Candidate Starts for Jordan\_72:

(Start: 24 @45972 has 29 MA's), (61, 46269), (72, 46395), (74, 46401), (75, 46410), (89, 46485), (90, 46509), (98, 46551),

Gene: LeeroyJ\_72 Start: 45537, Stop: 46157, Start Num: 24

Candidate Starts for LeeroyJ\_72:

(Start: 24 @45537 has 29 MA's), (65, 45864), (72, 45960), (74, 45966), (89, 46050), (90, 46074),

Gene: LeeroyJenkins\_70 Start: 39980, Stop: 39357, Start Num: 22

Candidate Starts for LeeroyJenkins\_70:

(Start: 22 @39980 has 5 MA's), (29, 39932), (37, 39848), (45, 39803), (46, 39770), (47, 39767), (48, 39758), (49, 39749), (51, 39743), (55, 39707), (70, 39566), (82, 39479), (85, 39470), (97, 39395),

Gene: Liebe\_32 Start: 24584, Stop: 25471, Start Num: 18

Candidate Starts for Liebe\_32:

(3, 24359), (13, 24506), (Start: 18 @24584 has 3 MA's), (30, 24662), (36, 24725), (39, 24752), (42, 24773), (56, 24884), (59, 24905), (60, 24914), (76, 25076), (77, 25088), (99, 25205), (104, 25244), (105, 25436),

Gene: Lifes\_63 Start: 36824, Stop: 36201, Start Num: 22

Candidate Starts for Lifes\_63:

(Start: 22 @36824 has 5 MA's), (29, 36776), (37, 36692), (45, 36647), (46, 36614), (47, 36611), (48, 36602), (49, 36593), (51, 36587), (55, 36551), (70, 36410), (82, 36323), (85, 36314), (97, 36239),

Gene: LittleShirley\_96 Start: 51914, Stop: 52570, Start Num: 17

Candidate Starts for LittleShirley\_96:

(Start: 17 @51914 has 7 MA's), (Start: 23 @51944 has 1 MA's), (27, 51962), (31, 51998), (37, 52070), (38, 52073), (39, 52079), (40, 52082), (47, 52148), (57, 52223), (58, 52229), (59, 52232), (64, 52250), (67, 52331), (83, 52439), (103, 52556),

Gene: Losacky\_49 Start: 30027, Stop: 30653, Start Num: 24

Candidate Starts for Losacky\_49:

(Start: 24 @30027 has 29 MA's), (33, 30111), (35, 30123), (36, 30135), (40, 30165), (64, 30339), (68, 30429), (75, 30471), (80, 30516), (84, 30534), (87, 30546), (90, 30573), (94, 30591), (96, 30612),

Gene: Lupine\_77 Start: 47746, Stop: 47105, Start Num: 19

Candidate Starts for Lupine\_77:

(14, 47821), (Start: 19 @47746 has 1 MA's), (20, 47740), (25, 47731), (30, 47683), (31, 47680), (37, 47605), (39, 47596), (44, 47569), (45, 47560), (46, 47527), (48, 47515), (49, 47506), (62, 47428), (82, 47236), (101, 47140),

Gene: MaGuCo\_29 Start: 23232, Stop: 24119, Start Num: 18

Candidate Starts for MaGuCo\_29:

(13, 23154), (Start: 18 @23232 has 3 MA's), (30, 23310), (39, 23400), (42, 23421), (56, 23532), (59, 23553), (60, 23562), (77, 23736), (99, 23853), (104, 23892), (105, 24084),

Gene: Mariel\_50 Start: 30234, Stop: 30860, Start Num: 24

Candidate Starts for Mariel\_50:

(Start: 24 @30234 has 29 MA's), (33, 30318), (35, 30330), (36, 30342), (40, 30372), (64, 30546), (68, 30636), (75, 30678), (80, 30723), (84, 30741), (87, 30753), (90, 30780), (94, 30798), (96, 30819),

Gene: Martha\_71 Start: 45756, Stop: 46376, Start Num: 24

Candidate Starts for Martha\_71:

(Start: 24 @45756 has 29 MA's), (61, 46053), (69, 46161), (72, 46179), (74, 46185), (75, 46194), (89, 46269), (90, 46293), (98, 46335),

Gene: Maureen\_32 Start: 24584, Stop: 25471, Start Num: 18

Candidate Starts for Maureen\_32:

(3, 24359), (13, 24506), (Start: 18 @24584 has 3 MA's), (30, 24662), (36, 24725), (39, 24752), (42, 24773), (56, 24884), (59, 24905), (60, 24914), (76, 25076), (77, 25088), (99, 25205), (104, 25244), (105, 25436),

Gene: MenE\_49 Start: 29918, Stop: 30544, Start Num: 24

Candidate Starts for MenE\_49:

(Start: 24 @29918 has 29 MA's), (33, 30002), (35, 30014), (36, 30026), (40, 30056), (64, 30230), (68, 30320), (75, 30362), (80, 30407), (84, 30425), (87, 30437), (90, 30464), (94, 30482), (96, 30503),

Gene: NCRodriguez\_49 Start: 29988, Stop: 30614, Start Num: 24

Candidate Starts for NCRodriguez\_49:

(Start: 24 @29988 has 29 MA's), (33, 30072), (35, 30084), (36, 30096), (40, 30126), (64, 30300), (68, 30390), (75, 30432), (80, 30477), (84, 30495), (87, 30507), (90, 30534), (94, 30552), (96, 30573),

Gene: Ohno789\_40 Start: 32400, Stop: 31774, Start Num: 23

Candidate Starts for Ohno789\_40:

(Start: 17 @32430 has 7 MA's), (Start: 23 @32400 has 1 MA's), (27, 32382), (31, 32346), (37, 32274), (38, 32271), (39, 32265), (40, 32262), (47, 32196), (57, 32121), (58, 32115), (59, 32112), (64, 32094), (67, 32013), (73, 31977), (83, 31905), (103, 31788),

Gene: Orkz\_7 Start: 4957, Stop: 5580, Start Num: 26

Candidate Starts for Orkz\_7:

(16, 4909), (26, 4957), (36, 5059), (49, 5173), (52, 5188), (53, 5191), (56, 5218), (64, 5257), (67, 5338), (88, 5461), (93, 5491), (95, 5518),

Gene: PhillyJawn\_48 Start: 29658, Stop: 30284, Start Num: 24

Candidate Starts for PhillyJawn\_48:

(Start: 24 @29658 has 29 MA's), (33, 29742), (35, 29754), (36, 29766), (40, 29796), (64, 29970), (68, 30060), (75, 30102), (84, 30165), (87, 30177), (90, 30204), (94, 30222), (96, 30243),

Gene: Phingu\_50 Start: 29883, Stop: 30509, Start Num: 24

Candidate Starts for Phingu\_50:

(Start: 24 @29883 has 29 MA's), (33, 29967), (35, 29979), (36, 29991), (40, 30021), (64, 30195), (68, 30285), (75, 30327), (80, 30372), (84, 30390), (87, 30402), (90, 30429), (94, 30447), (96, 30468),

Gene: Phonegingi\_47 Start: 29697, Stop: 30326, Start Num: 21

Candidate Starts for Phonegingi\_47:

(Start: 21 @29697 has 1 MA's), (33, 29784), (36, 29808), (40, 29838), (54, 29946), (64, 30012), (68, 30102), (75, 30144), (80, 30189), (84, 30207), (87, 30219), (90, 30246), (94, 30264), (96, 30285),

Gene: Pickles13\_46 Start: 29965, Stop: 30591, Start Num: 24

Candidate Starts for Pickles13\_46:

(Start: 24 @29965 has 29 MA's), (33, 30049), (36, 30073), (40, 30103), (64, 30277), (68, 30367), (75, 30409), (80, 30454), (84, 30472), (87, 30484), (90, 30511), (94, 30529), (96, 30550),

Gene: Pippa\_72 Start: 45803, Stop: 46423, Start Num: 24

Candidate Starts for Pippa\_72:

(Start: 24 @45803 has 29 MA's), (71, 46220), (72, 46226), (74, 46232), (75, 46241), (89, 46316), (90, 46340), (98, 46382),

Gene: Rohr\_40 Start: 32228, Stop: 31572, Start Num: 17

Candidate Starts for Rohr\_40:

(7, 32366), (9, 32333), (Start: 17 @32228 has 7 MA's), (Start: 23 @32198 has 1 MA's), (27, 32180), (31, 32144), (37, 32072), (38, 32069), (39, 32063), (40, 32060), (47, 31994), (57, 31919), (58, 31913), (59, 31910), (64, 31892), (67, 31811), (83, 31703), (103, 31586),

Gene: Sandaddy\_39 Start: 32135, Stop: 31479, Start Num: 17

Candidate Starts for Sandaddy\_39:

(7, 32273), (9, 32240), (Start: 17 @32135 has 7 MA's), (Start: 23 @32105 has 1 MA's), (27, 32087), (31, 32051), (37, 31979), (38, 31976), (39, 31970), (40, 31967), (47, 31901), (57, 31826), (58, 31820), (59, 31817), (64, 31799), (67, 31718), (83, 31610), (103, 31493),

Gene: ScoobySnack\_44 Start: 29458, Stop: 30084, Start Num: 24

Candidate Starts for ScoobySnack\_44:

(Start: 24 @29458 has 29 MA's), (33, 29542), (40, 29596), (64, 29770), (68, 29860), (75, 29902), (78, 29935), (80, 29947), (84, 29965), (87, 29977), (90, 30004), (94, 30022), (96, 30043),

Gene: Shade\_71 Start: 45610, Stop: 46230, Start Num: 24

Candidate Starts for Shade\_71:

(Start: 24 @45610 has 29 MA's), (61, 45907), (72, 46033), (74, 46039), (75, 46048), (89, 46123), (90, 46147), (98, 46189),

Gene: Sicarius2\_72 Start: 43729, Stop: 44355, Start Num: 24

Candidate Starts for Sicarius2\_72:

(Start: 24 @43729 has 29 MA's), (65, 44059), (71, 44149), (72, 44155), (74, 44161), (86, 44239), (89, 44245), (90, 44269), (98, 44311),

Gene: Solimine\_79 Start: 48358, Stop: 47717, Start Num: 19

Candidate Starts for Solimine\_79:

(1, 48718), (2, 48673), (Start: 19 @48358 has 1 MA's), (20, 48352), (25, 48343), (30, 48295), (31, 48292), (37, 48217), (39, 48208), (45, 48172), (46, 48139), (48, 48127), (62, 48040), (82, 47848), (101, 47752),

Gene: Solimine\_119 Start: 62477, Stop: 61836, Start Num: 19

Candidate Starts for Solimine\_119:

(1, 62837), (2, 62792), (Start: 19 @62477 has 1 MA's), (20, 62471), (25, 62462), (30, 62414), (31, 62411), (37, 62336), (39, 62327), (45, 62291), (46, 62258), (48, 62246), (62, 62159), (82, 61967), (101, 61871),

Gene: Sonny\_71 Start: 45533, Stop: 46153, Start Num: 24

Candidate Starts for Sonny\_71:

(Start: 24 @45533 has 29 MA's), (61, 45830), (72, 45956), (74, 45962), (89, 46046), (90, 46070), (98, 46112),

Gene: Sorpresa\_39 Start: 32137, Stop: 31481, Start Num: 17

Candidate Starts for Sorpresa\_39:

(7, 32275), (9, 32242), (Start: 17 @32137 has 7 MA's), (Start: 23 @32107 has 1 MA's), (27, 32089), (31, 32053), (37, 31981), (38, 31978), (39, 31972), (40, 31969), (47, 31903), (57, 31828), (58, 31822), (59, 31819), (64, 31801), (67, 31720), (83, 31612), (103, 31495),

Gene: StAnnes\_41 Start: 33295, Stop: 32639, Start Num: 17

Candidate Starts for StAnnes\_41:

(15, 33322), (Start: 17 @33295 has 7 MA's), (Start: 23 @33265 has 1 MA's), (27, 33247), (30, 33214), (32, 33208), (38, 33136), (39, 33130), (47, 33061), (58, 32980), (67, 32878), (79, 32788), (81, 32779), (91, 32728), (93, 32725), (100, 32683), (102, 32671), (103, 32653),

Gene: StevieBAY\_72 Start: 45827, Stop: 46447, Start Num: 24

Candidate Starts for StevieBAY\_72:

(Start: 24 @45827 has 29 MA's), (65, 46154), (72, 46250), (74, 46256), (89, 46340), (90, 46364),

Gene: Stickynote\_78 Start: 58516, Stop: 57938, Start Num: 24

Candidate Starts for Stickynote\_78:

(Start: 24 @58516 has 29 MA's), (27, 58498), (34, 58426), (37, 58384), (40, 58372), (43, 58351), (48, 58300), (50, 58288), (64, 58195), (66, 58123), (68, 58105), (69, 58099), (75, 58066), (92, 57958),

Gene: TaeYoung\_72 Start: 45728, Stop: 46348, Start Num: 24

Candidate Starts for TaeYoung\_72:

(Start: 24 @45728 has 29 MA's), (69, 46133), (72, 46151), (74, 46157), (75, 46166), (89, 46241), (90, 46265), (98, 46307),

Gene: ThursdayNight\_32 Start: 24017, Stop: 24895, Start Num: 18

Candidate Starts for ThursdayNight\_32:

(Start: 18 @24017 has 3 MA's), (30, 24074), (36, 24137), (42, 24185), (59, 24317), (77, 24500), (105, 24851),

Gene: Timinator\_72 Start: 45650, Stop: 46270, Start Num: 24

Candidate Starts for Timinator\_72:

(Start: 24 @45650 has 29 MA's), (65, 45977), (72, 46073), (74, 46079), (89, 46163), (90, 46187),

Gene: Totinger\_92 Start: 50907, Stop: 51647, Start Num: 11

Candidate Starts for Totinger\_92:

(8, 50877), (Start: 11 @50907 has 2 MA's), (12, 50919), (Start: 17 @50991 has 7 MA's), (Start: 23 @51021 has 1 MA's), (27, 51039), (31, 51075), (37, 51147), (38, 51150), (39, 51156), (40, 51159), (47, 51225), (57, 51300), (58, 51306), (59, 51309), (64, 51327), (67, 51408), (83, 51516), (103, 51633),

Gene: Violeta\_49 Start: 29760, Stop: 30386, Start Num: 24

Candidate Starts for Violeta\_49:

(6, 29541), (Start: 24 @29760 has 29 MA's), (33, 29844), (35, 29856), (36, 29868), (40, 29898), (64, 30072), (68, 30162), (75, 30204), (80, 30249), (84, 30267), (87, 30279), (90, 30306), (94, 30324), (96, 30345),

Gene: Warren\_47 Start: 29704, Stop: 30330, Start Num: 24

Candidate Starts for Warren\_47:

(Start: 24 @29704 has 29 MA's), (33, 29788), (36, 29812), (40, 29842), (64, 30016), (68, 30106), (75, 30148), (80, 30193), (84, 30211), (87, 30223), (90, 30250), (94, 30268), (96, 30289),

Gene: WaterT\_65 Start: 38924, Stop: 38292, Start Num: 22

Candidate Starts for WaterT\_65:

(20, 38927), (Start: 22 @38924 has 5 MA's), (28, 38894), (29, 38876), (32, 38864), (37, 38792), (46, 38714), (47, 38711), (51, 38687), (63, 38612), (64, 38609), (82, 38423), (85, 38414), (97, 38339),

Gene: Wyborn\_71 Start: 44464, Stop: 45090, Start Num: 24

Candidate Starts for Wyborn\_71:

(Start: 24 @44464 has 29 MA's), (65, 44794), (71, 44884), (72, 44890), (74, 44896), (86, 44974), (89, 44980), (90, 45004), (98, 45046),

Gene: Zartrosa\_73 Start: 45863, Stop: 46483, Start Num: 24

Candidate Starts for Zartrosa\_73:

(Start: 24 @45863 has 29 MA's), (61, 46160), (65, 46190), (72, 46286), (74, 46292), (75, 46301), (89, 46376), (90, 46400), (98, 46442),