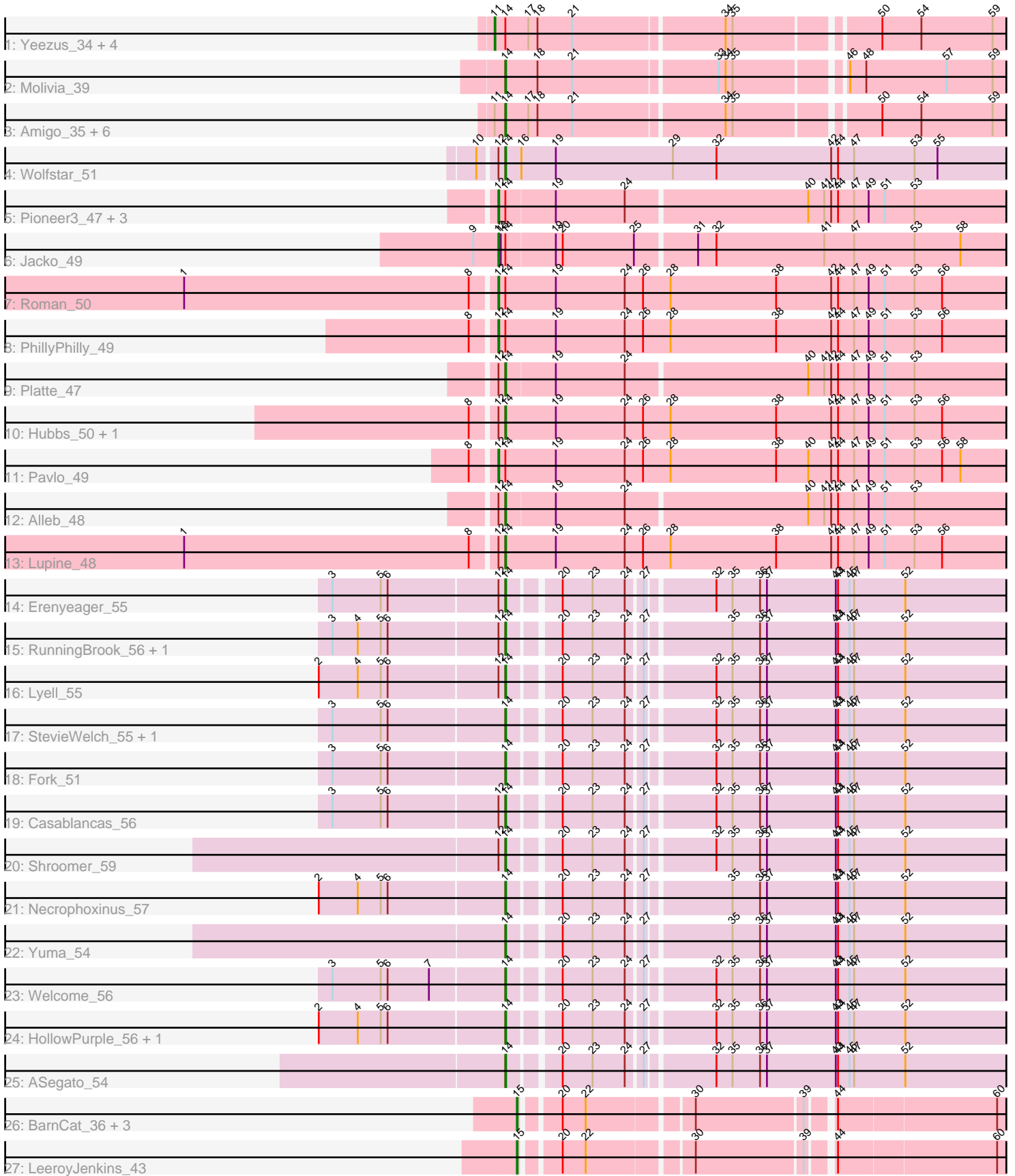


# Zoomed Pham 311728



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 311728 Report

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

Pham number 311728 has 47 members, 0 are drafts.

Phages represented in each track:

- Track 1 : Yeezus\_34, Ichor\_34, Amavida\_38, Boersma\_36, Jaek\_34
- Track 2 : Molivia\_39
- Track 3 : Amigo\_35, Rings\_34, Heylee\_38, Gorgeous\_35, Thunderclap\_35, Anansi\_35, SorJuana\_35
- Track 4 : Wolfstar\_51
- Track 5 : Pioneer3\_47, Tandem\_47, OlinDD\_47, Hortus1\_47
- Track 6 : Jacko\_49
- Track 7 : Roman\_50
- Track 8 : PhillyPhilly\_49
- Track 9 : Platte\_47
- Track 10 : Hubbs\_50, DejaVu\_51
- Track 11 : Pavlo\_49
- Track 12 : Alleb\_48
- Track 13 : Lupine\_48
- Track 14 : Erenyeager\_55
- Track 15 : RunningBrook\_56, DustyDino\_58
- Track 16 : Lyell\_55
- Track 17 : StevieWelch\_55, Musetta\_55
- Track 18 : Fork\_51
- Track 19 : Casablancas\_56
- Track 20 : Shroomer\_59
- Track 21 : Necrophoxinus\_57
- Track 22 : Yuma\_54
- Track 23 : Welcome\_56
- Track 24 : HollowPurple\_56, SteakFry\_57
- Track 25 : ASegato\_54
- Track 26 : BarnCat\_36, Cassita\_42, Lifes\_38, WaterT\_41
- Track 27 : LeeroyJenkins\_43

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

The start number called the most often in the published annotations is 14, it was called in 29 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASegato\_54, Alleb\_48, Amigo\_35, Anansi\_35, Casablanacas\_56, DejaVu\_51, DustyDino\_58, Erenyeager\_55, Fork\_51, Gorgeous\_35, Heylee\_38, HollowPurple\_56, Hubbs\_50, Lupine\_48, Lyell\_55, Molivia\_39, Musetta\_55, Necrophoxinus\_57, Platte\_47, Rings\_34, RunningBrook\_56, Shroomer\_59, SorJuana\_35, SteakFry\_57, StevieWelch\_55, Thunderclap\_35, Welcome\_56, Wolfstar\_51, Yuma\_54,

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

- Amavida\_38, Boersma\_36, Hortus1\_47, Ichor\_34, Jacko\_49, Jaek\_34, OlinDD\_47, Pavlo\_49, PhillyPhilly\_49, Pioneer3\_47, Roman\_50, Tandem\_47, Yeezus\_34,

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

- BarnCat\_36, Cassita\_42, LeeroyJenkins\_43, Lifes\_38, WaterT\_41,

### Summary by start number:

Start 11:

- Found in 12 of 47 ( 25.5% ) of genes in pham
- Manual Annotations of this start: 5 of 47
- Called 41.7% of time when present
- Phage (with cluster) where this start called: Amavida\_38 (AQ), Boersma\_36 (AQ), Ichor\_34 (AQ), Jaek\_34 (AQ), Yeezus\_34 (AQ),

Start 12:

- Found in 20 of 47 ( 42.6% ) of genes in pham
- Manual Annotations of this start: 8 of 47
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Hortus1\_47 (ED1), Jacko\_49 (ED1), OlinDD\_47 (ED1), Pavlo\_49 (ED1), PhillyPhilly\_49 (ED1), Pioneer3\_47 (ED1), Roman\_50 (ED1), Tandem\_47 (ED1),

Start 14:

- Found in 42 of 47 ( 89.4% ) of genes in pham
- Manual Annotations of this start: 29 of 47
- Called 69.0% of time when present
- Phage (with cluster) where this start called: ASegato\_54 (ED2), Alleb\_48 (ED1), Amigo\_35 (AQ), Anansi\_35 (AQ), Casablanacas\_56 (ED2), DejaVu\_51 (ED1), DustyDino\_58 (ED2), Erenyeager\_55 (ED2), Fork\_51 (ED2), Gorgeous\_35 (AQ), Heylee\_38 (AQ), HollowPurple\_56 (ED2), Hubbs\_50 (ED1), Lupine\_48 (ED1), Lyell\_55 (ED2), Molivia\_39 (AQ), Musetta\_55 (ED2), Necrophoxinus\_57 (ED2), Platte\_47 (ED1), Rings\_34 (AQ), RunningBrook\_56 (ED2), Shroomer\_59 (ED2), SorJuana\_35 (AQ), SteakFry\_57 (ED2), StevieWelch\_55 (ED2), Thunderclap\_35 (AQ), Welcome\_56 (ED2), Wolfstar\_51 (ED), Yuma\_54 (ED2),

Start 15:

- Found in 5 of 47 ( 10.6% ) of genes in pham
- Manual Annotations of this start: 5 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BarnCat\_36 (GB), Cassita\_42 (GB), LeeroyJenkins\_43 (GB), Lifes\_38 (GB), WaterT\_41 (GB),

### Summary by clusters:

There are 5 clusters represented in this pham: AQ, ED2, ED1, GB, ED,

Info for manual annotations of cluster AQ:

- Start number 11 was manually annotated 5 times for cluster AQ.
- Start number 14 was manually annotated 8 times for cluster AQ.

Info for manual annotations of cluster ED:

- Start number 14 was manually annotated 1 time for cluster ED.

Info for manual annotations of cluster ED1:

- Start number 12 was manually annotated 8 times for cluster ED1.
- Start number 14 was manually annotated 5 times for cluster ED1.

Info for manual annotations of cluster ED2:

- Start number 14 was manually annotated 15 times for cluster ED2.

Info for manual annotations of cluster GB:

- Start number 15 was manually annotated 5 times for cluster GB.

### **Gene Information:**

Gene: ASegato\_54 Start: 25411, Stop: 26558, Start Num: 14

Candidate Starts for ASegato\_54:

(Start: 14 @25411 has 29 MA's), (20, 25468), (23, 25507), (24, 25549), (27, 25567), (32, 25648), (35, 25669), (36, 25705), (37, 25714), (43, 25804), (44, 25807), (45, 25822), (47, 25828), (52, 25894), (84, 26413), (91, 26470), (93, 26509), (94, 26533), (95, 26545),

Gene: Alleb\_48 Start: 24469, Stop: 25643, Start Num: 14

Candidate Starts for Alleb\_48:

(Start: 12 @24460 has 8 MA's), (Start: 14 @24469 has 29 MA's), (19, 24532), (24, 24622), (40, 24853), (41, 24874), (42, 24883), (44, 24892), (47, 24913), (49, 24931), (51, 24952), (53, 24991), (62, 25174), (75, 25408), (84, 25498),

Gene: Amavida\_38 Start: 17852, Stop: 18936, Start Num: 11

Candidate Starts for Amavida\_38:

(Start: 11 @17852 has 5 MA's), (Start: 14 @17864 has 29 MA's), (17, 17894), (18, 17906), (21, 17951), (34, 18140), (35, 18149), (50, 18320), (54, 18371), (59, 18464), (64, 18590), (66, 18623), (67, 18647), (68, 18665), (70, 18680), (71, 18707), (72, 18725), (73, 18731), (75, 18788), (79, 18812), (81, 18824), (86, 18878), (88, 18893),

Gene: Amigo\_35 Start: 17738, Stop: 18810, Start Num: 14

Candidate Starts for Amigo\_35:

(Start: 11 @17726 has 5 MA's), (Start: 14 @17738 has 29 MA's), (17, 17768), (18, 17780), (21, 17825), (34, 18014), (35, 18023), (50, 18194), (54, 18245), (59, 18338), (64, 18464), (66, 18497), (67, 18521), (68, 18539), (70, 18554), (71, 18581), (72, 18599), (73, 18605), (75, 18662), (79, 18686), (81, 18698), (86, 18752), (88, 18767),

Gene: Anansi\_35 Start: 17747, Stop: 18819, Start Num: 14

Candidate Starts for Anansi\_35:

(Start: 11 @17735 has 5 MA's), (Start: 14 @17747 has 29 MA's), (17, 17777), (18, 17789), (21, 17834), (34, 18023), (35, 18032), (50, 18203), (54, 18254), (59, 18347), (64, 18473), (66, 18506), (67, 18530), (68, 18548), (70, 18563), (71, 18590), (72, 18608), (73, 18614), (75, 18671), (79, 18695), (81, 18707), (86, 18761), (88, 18776),

Gene: BarnCat\_36 Start: 18745, Stop: 19772, Start Num: 15

Candidate Starts for BarnCat\_36:

(Start: 15 @18745 has 5 MA's), (20, 18787), (22, 18817), (30, 18943), (39, 19078), (44, 19105), (60, 19303), (63, 19402), (74, 19570), (77, 19609), (87, 19702),

Gene: Boersma\_36 Start: 17726, Stop: 18810, Start Num: 11

Candidate Starts for Boersma\_36:

(Start: 11 @17726 has 5 MA's), (Start: 14 @17738 has 29 MA's), (17, 17768), (18, 17780), (21, 17825), (34, 18014), (35, 18023), (50, 18194), (54, 18245), (59, 18338), (64, 18464), (66, 18497), (67, 18521), (68, 18539), (70, 18554), (71, 18581), (72, 18599), (73, 18605), (75, 18662), (79, 18686), (81, 18698), (86, 18752), (88, 18767),

Gene: Casablanclas\_56 Start: 25496, Stop: 26643, Start Num: 14

Candidate Starts for Casablanclas\_56:

(3, 25277), (5, 25340), (6, 25349), (Start: 12 @25487 has 8 MA's), (Start: 14 @25496 has 29 MA's), (20, 25553), (23, 25592), (24, 25634), (27, 25652), (32, 25733), (35, 25754), (36, 25790), (37, 25799), (43, 25889), (44, 25892), (45, 25907), (47, 25913), (52, 25979), (84, 26498), (91, 26555), (92, 26570), (93, 26594), (94, 26618), (95, 26630),

Gene: Cassita\_42 Start: 21121, Stop: 22148, Start Num: 15

Candidate Starts for Cassita\_42:

(Start: 15 @21121 has 5 MA's), (20, 21163), (22, 21193), (30, 21319), (39, 21454), (44, 21481), (60, 21679), (63, 21778), (74, 21946), (77, 21985), (87, 22078),

Gene: DejaVu\_51 Start: 24677, Stop: 25863, Start Num: 14

Candidate Starts for DejaVu\_51:

(8, 24638), (Start: 12 @24668 has 8 MA's), (Start: 14 @24677 has 29 MA's), (19, 24743), (24, 24833), (26, 24857), (28, 24893), (38, 25031), (42, 25103), (44, 25112), (47, 25133), (49, 25151), (51, 25172), (53, 25211), (56, 25247), (62, 25394), (65, 25439), (78, 25652), (89, 25754), (90, 25766), (91, 25781),

Gene: DustyDino\_58 Start: 26354, Stop: 27501, Start Num: 14

Candidate Starts for DustyDino\_58:

(3, 26135), (4, 26168), (5, 26198), (6, 26207), (Start: 12 @26345 has 8 MA's), (Start: 14 @26354 has 29 MA's), (20, 26411), (23, 26450), (24, 26492), (27, 26510), (35, 26612), (36, 26648), (37, 26657), (43, 26747), (44, 26750), (45, 26765), (47, 26771), (52, 26837), (84, 27356), (91, 27413), (93, 27452), (94, 27476), (95, 27488),

Gene: Erenyeager\_55 Start: 25746, Stop: 26893, Start Num: 14

Candidate Starts for Erenyeager\_55:

(3, 25527), (5, 25590), (6, 25599), (Start: 12 @25737 has 8 MA's), (Start: 14 @25746 has 29 MA's), (20, 25803), (23, 25842), (24, 25884), (27, 25902), (32, 25983), (35, 26004), (36, 26040), (37, 26049), (43, 26139), (44, 26142), (45, 26157), (47, 26163), (52, 26229), (83, 26745), (84, 26748), (91, 26805), (92, 26820), (93, 26844), (94, 26868), (95, 26880),

Gene: Fork\_51 Start: 25061, Stop: 26208, Start Num: 14

Candidate Starts for Fork\_51:

(3, 24842), (5, 24905), (6, 24914), (Start: 14 @25061 has 29 MA's), (20, 25118), (23, 25157), (24, 25199), (27, 25217), (32, 25298), (35, 25319), (36, 25355), (37, 25364), (43, 25454), (44, 25457), (45,

25472), (47, 25478), (52, 25544), (84, 26063), (91, 26120), (93, 26159), (94, 26183), (95, 26195),

Gene: Gorgeous\_35 Start: 17747, Stop: 18819, Start Num: 14

Candidate Starts for Gorgeous\_35:

(Start: 11 @17735 has 5 MA's), (Start: 14 @17747 has 29 MA's), (17, 17777), (18, 17789), (21, 17834), (34, 18023), (35, 18032), (50, 18203), (54, 18254), (59, 18347), (64, 18473), (66, 18506), (67, 18530), (68, 18548), (70, 18563), (71, 18590), (72, 18608), (73, 18614), (75, 18671), (79, 18695), (81, 18707), (86, 18761), (88, 18776),

Gene: Heylee\_38 Start: 17864, Stop: 18936, Start Num: 14

Candidate Starts for Heylee\_38:

(Start: 11 @17852 has 5 MA's), (Start: 14 @17864 has 29 MA's), (17, 17894), (18, 17906), (21, 17951), (34, 18140), (35, 18149), (50, 18320), (54, 18371), (59, 18464), (64, 18590), (66, 18623), (67, 18647), (68, 18665), (70, 18680), (71, 18707), (72, 18725), (73, 18731), (75, 18788), (79, 18812), (81, 18824), (86, 18878), (88, 18893),

Gene: HollowPurple\_56 Start: 25617, Stop: 26764, Start Num: 14

Candidate Starts for HollowPurple\_56:

(2, 25380), (4, 25431), (5, 25461), (6, 25470), (Start: 14 @25617 has 29 MA's), (20, 25674), (23, 25713), (24, 25755), (27, 25773), (32, 25854), (35, 25875), (36, 25911), (37, 25920), (43, 26010), (44, 26013), (45, 26028), (47, 26034), (52, 26100), (84, 26619), (91, 26676), (92, 26691), (93, 26715), (94, 26739), (95, 26751),

Gene: Hortus1\_47 Start: 24450, Stop: 25633, Start Num: 12

Candidate Starts for Hortus1\_47:

(Start: 12 @24450 has 8 MA's), (Start: 14 @24459 has 29 MA's), (19, 24522), (24, 24612), (40, 24843), (41, 24864), (42, 24873), (44, 24882), (47, 24903), (49, 24921), (51, 24942), (53, 24981), (61, 25110), (62, 25164), (75, 25398), (84, 25488),

Gene: Hubbs\_50 Start: 24889, Stop: 26075, Start Num: 14

Candidate Starts for Hubbs\_50:

(8, 24850), (Start: 12 @24880 has 8 MA's), (Start: 14 @24889 has 29 MA's), (19, 24955), (24, 25045), (26, 25069), (28, 25105), (38, 25243), (42, 25315), (44, 25324), (47, 25345), (49, 25363), (51, 25384), (53, 25423), (56, 25459), (62, 25606), (65, 25651), (78, 25864), (89, 25966), (90, 25978), (91, 25993),

Gene: Ichor\_34 Start: 17726, Stop: 18810, Start Num: 11

Candidate Starts for Ichor\_34:

(Start: 11 @17726 has 5 MA's), (Start: 14 @17738 has 29 MA's), (17, 17768), (18, 17780), (21, 17825), (34, 18014), (35, 18023), (50, 18194), (54, 18245), (59, 18338), (64, 18464), (66, 18497), (67, 18521), (68, 18539), (70, 18554), (71, 18581), (72, 18599), (73, 18605), (75, 18662), (79, 18686), (81, 18698), (86, 18752), (88, 18767),

Gene: Jacko\_49 Start: 22655, Stop: 23829, Start Num: 12

Candidate Starts for Jacko\_49:

(9, 22622), (Start: 12 @22655 has 8 MA's), (13, 22658), (Start: 14 @22664 has 29 MA's), (19, 22727), (20, 22736), (25, 22829), (31, 22904), (32, 22928), (41, 23069), (47, 23108), (53, 23186), (58, 23246), (62, 23369), (65, 23414), (72, 23543), (82, 23678), (84, 23696), (85, 23702), (91, 23750), (94, 23813),

Gene: Jaek\_34 Start: 17726, Stop: 18810, Start Num: 11

Candidate Starts for Jaek\_34:

(Start: 11 @17726 has 5 MA's), (Start: 14 @17738 has 29 MA's), (17, 17768), (18, 17780), (21, 17825), (34, 18014), (35, 18023), (50, 18194), (54, 18245), (59, 18338), (64, 18464), (66, 18497), (67, 18521), (68, 18539), (70, 18554), (71, 18581), (72, 18599), (73, 18605), (75, 18662), (79, 18686), (81, 18698),

(86, 18752), (88, 18767),

Gene: LeeroyJenkins\_43 Start: 22004, Stop: 23031, Start Num: 15

Candidate Starts for LeeroyJenkins\_43:

(Start: 15 @22004 has 5 MA's), (20, 22046), (22, 22076), (30, 22202), (39, 22337), (44, 22364), (60, 22562), (63, 22661), (74, 22829), (77, 22868), (87, 22961),

Gene: Lifes\_38 Start: 18776, Stop: 19803, Start Num: 15

Candidate Starts for Lifes\_38:

(Start: 15 @18776 has 5 MA's), (20, 18818), (22, 18848), (30, 18974), (39, 19109), (44, 19136), (60, 19334), (63, 19433), (74, 19601), (77, 19640), (87, 19733),

Gene: Lupine\_48 Start: 24091, Stop: 25277, Start Num: 14

Candidate Starts for Lupine\_48:

(1, 23680), (8, 24052), (Start: 12 @24082 has 8 MA's), (Start: 14 @24091 has 29 MA's), (19, 24157), (24, 24247), (26, 24271), (28, 24307), (38, 24445), (42, 24517), (44, 24526), (47, 24547), (49, 24565), (51, 24586), (53, 24625), (56, 24661), (61, 24754), (62, 24808), (65, 24853), (75, 25042), (78, 25066), (89, 25168), (90, 25180), (91, 25195),

Gene: Lyell\_55 Start: 25665, Stop: 26812, Start Num: 14

Candidate Starts for Lyell\_55:

(2, 25428), (4, 25479), (5, 25509), (6, 25518), (Start: 12 @25656 has 8 MA's), (Start: 14 @25665 has 29 MA's), (20, 25722), (23, 25761), (24, 25803), (27, 25821), (32, 25902), (35, 25923), (36, 25959), (37, 25968), (43, 26058), (44, 26061), (45, 26076), (47, 26082), (52, 26148), (84, 26667), (91, 26724), (92, 26739), (93, 26763), (94, 26787), (95, 26799),

Gene: Molivia\_39 Start: 17990, Stop: 19065, Start Num: 14

Candidate Starts for Molivia\_39:

(Start: 14 @17990 has 29 MA's), (18, 18032), (21, 18077), (33, 18257), (34, 18266), (35, 18275), (46, 18404), (48, 18425), (57, 18530), (59, 18590), (64, 18716), (66, 18749), (67, 18773), (68, 18791), (69, 18800), (76, 18917), (80, 18944), (85, 18992),

Gene: Musetta\_55 Start: 25781, Stop: 26928, Start Num: 14

Candidate Starts for Musetta\_55:

(3, 25562), (5, 25625), (6, 25634), (Start: 14 @25781 has 29 MA's), (20, 25838), (23, 25877), (24, 25919), (27, 25937), (32, 26018), (35, 26039), (36, 26075), (37, 26084), (43, 26174), (44, 26177), (45, 26192), (47, 26198), (52, 26264), (84, 26783), (91, 26840), (92, 26855), (93, 26879), (94, 26903), (95, 26915),

Gene: Necrophoxinus\_57 Start: 26360, Stop: 27507, Start Num: 14

Candidate Starts for Necrophoxinus\_57:

(2, 26123), (4, 26174), (5, 26204), (6, 26213), (Start: 14 @26360 has 29 MA's), (20, 26417), (23, 26456), (24, 26498), (27, 26516), (35, 26618), (36, 26654), (37, 26663), (43, 26753), (44, 26756), (45, 26771), (47, 26777), (52, 26843), (84, 27362), (91, 27419), (93, 27458), (94, 27482), (95, 27494),

Gene: OlinDD\_47 Start: 24449, Stop: 25632, Start Num: 12

Candidate Starts for OlinDD\_47:

(Start: 12 @24449 has 8 MA's), (Start: 14 @24458 has 29 MA's), (19, 24521), (24, 24611), (40, 24842), (41, 24863), (42, 24872), (44, 24881), (47, 24902), (49, 24920), (51, 24941), (53, 24980), (61, 25109), (62, 25163), (75, 25397), (84, 25487),

Gene: Pavlo\_49 Start: 24727, Stop: 25922, Start Num: 12

Candidate Starts for Pavlo\_49:

(8, 24697), (Start: 12 @24727 has 8 MA's), (Start: 14 @24736 has 29 MA's), (19, 24802), (24, 24892), (26, 24916), (28, 24952), (38, 25090), (40, 25132), (42, 25162), (44, 25171), (47, 25192), (49, 25210), (51, 25231), (53, 25270), (56, 25306), (58, 25330), (62, 25453), (65, 25498), (78, 25711), (89, 25813), (90, 25825), (91, 25840),

Gene: PhillyPhilly\_49 Start: 24261, Stop: 25456, Start Num: 12

Candidate Starts for PhillyPhilly\_49:

(8, 24231), (Start: 12 @24261 has 8 MA's), (Start: 14 @24270 has 29 MA's), (19, 24336), (24, 24426), (26, 24450), (28, 24486), (38, 24624), (42, 24696), (44, 24705), (47, 24726), (49, 24744), (51, 24765), (53, 24804), (56, 24840), (62, 24987), (65, 25032), (78, 25245), (89, 25347), (90, 25359), (91, 25374),

Gene: Pioneer3\_47 Start: 24457, Stop: 25640, Start Num: 12

Candidate Starts for Pioneer3\_47:

(Start: 12 @24457 has 8 MA's), (Start: 14 @24466 has 29 MA's), (19, 24529), (24, 24619), (40, 24850), (41, 24871), (42, 24880), (44, 24889), (47, 24910), (49, 24928), (51, 24949), (53, 24988), (61, 25117), (62, 25171), (75, 25405), (84, 25495),

Gene: Platte\_47 Start: 24251, Stop: 25425, Start Num: 14

Candidate Starts for Platte\_47:

(Start: 12 @24242 has 8 MA's), (Start: 14 @24251 has 29 MA's), (19, 24314), (24, 24404), (40, 24635), (41, 24656), (42, 24665), (44, 24674), (47, 24695), (49, 24713), (51, 24734), (53, 24773), (61, 24902), (62, 24956), (75, 25190), (84, 25280),

Gene: Rings\_34 Start: 17869, Stop: 18941, Start Num: 14

Candidate Starts for Rings\_34:

(Start: 11 @17857 has 5 MA's), (Start: 14 @17869 has 29 MA's), (17, 17899), (18, 17911), (21, 17956), (34, 18145), (35, 18154), (50, 18325), (54, 18376), (59, 18469), (64, 18595), (66, 18628), (67, 18652), (68, 18670), (70, 18685), (71, 18712), (72, 18730), (73, 18736), (75, 18793), (79, 18817), (81, 18829), (86, 18883), (88, 18898),

Gene: Roman\_50 Start: 24728, Stop: 25923, Start Num: 12

Candidate Starts for Roman\_50:

(1, 24326), (8, 24698), (Start: 12 @24728 has 8 MA's), (Start: 14 @24737 has 29 MA's), (19, 24803), (24, 24893), (26, 24917), (28, 24953), (38, 25091), (42, 25163), (44, 25172), (47, 25193), (49, 25211), (51, 25232), (53, 25271), (56, 25307), (62, 25454), (65, 25499), (78, 25712), (89, 25814), (90, 25826), (91, 25841),

Gene: RunningBrook\_56 Start: 26354, Stop: 27501, Start Num: 14

Candidate Starts for RunningBrook\_56:

(3, 26135), (4, 26168), (5, 26198), (6, 26207), (Start: 12 @26345 has 8 MA's), (Start: 14 @26354 has 29 MA's), (20, 26411), (23, 26450), (24, 26492), (27, 26510), (35, 26612), (36, 26648), (37, 26657), (43, 26747), (44, 26750), (45, 26765), (47, 26771), (52, 26837), (84, 27356), (91, 27413), (93, 27452), (94, 27476), (95, 27488),

Gene: Shroomer\_59 Start: 25896, Stop: 27043, Start Num: 14

Candidate Starts for Shroomer\_59:

(Start: 12 @25887 has 8 MA's), (Start: 14 @25896 has 29 MA's), (20, 25953), (23, 25992), (24, 26034), (27, 26052), (32, 26133), (35, 26154), (36, 26190), (37, 26199), (43, 26289), (44, 26292), (45, 26307), (47, 26313), (52, 26379), (84, 26898), (91, 26955), (92, 26970), (93, 26994), (94, 27018), (95, 27030),

Gene: SorJuana\_35 Start: 17747, Stop: 18819, Start Num: 14

Candidate Starts for SorJuana\_35:

(Start: 11 @17735 has 5 MA's), (Start: 14 @17747 has 29 MA's), (17, 17777), (18, 17789), (21, 17834), (34, 18023), (35, 18032), (50, 18203), (54, 18254), (59, 18347), (64, 18473), (66, 18506), (67, 18530), (68, 18548), (70, 18563), (71, 18590), (72, 18608), (73, 18614), (75, 18671), (79, 18695), (81, 18707), (86, 18761), (88, 18776),

Gene: SteakFry\_57 Start: 25617, Stop: 26764, Start Num: 14

Candidate Starts for SteakFry\_57:

(2, 25380), (4, 25431), (5, 25461), (6, 25470), (Start: 14 @25617 has 29 MA's), (20, 25674), (23, 25713), (24, 25755), (27, 25773), (32, 25854), (35, 25875), (36, 25911), (37, 25920), (43, 26010), (44, 26013), (45, 26028), (47, 26034), (52, 26100), (84, 26619), (91, 26676), (92, 26691), (93, 26715), (94, 26739), (95, 26751),

Gene: StevieWelch\_55 Start: 25746, Stop: 26893, Start Num: 14

Candidate Starts for StevieWelch\_55:

(3, 25527), (5, 25590), (6, 25599), (Start: 14 @25746 has 29 MA's), (20, 25803), (23, 25842), (24, 25884), (27, 25902), (32, 25983), (35, 26004), (36, 26040), (37, 26049), (43, 26139), (44, 26142), (45, 26157), (47, 26163), (52, 26229), (84, 26748), (91, 26805), (92, 26820), (93, 26844), (94, 26868), (95, 26880),

Gene: Tandem\_47 Start: 24396, Stop: 25579, Start Num: 12

Candidate Starts for Tandem\_47:

(Start: 12 @24396 has 8 MA's), (Start: 14 @24405 has 29 MA's), (19, 24468), (24, 24558), (40, 24789), (41, 24810), (42, 24819), (44, 24828), (47, 24849), (49, 24867), (51, 24888), (53, 24927), (61, 25056), (62, 25110), (75, 25344), (84, 25434),

Gene: Thunderclap\_35 Start: 17767, Stop: 18839, Start Num: 14

Candidate Starts for Thunderclap\_35:

(Start: 11 @17755 has 5 MA's), (Start: 14 @17767 has 29 MA's), (17, 17797), (18, 17809), (21, 17854), (34, 18043), (35, 18052), (50, 18223), (54, 18274), (59, 18367), (64, 18493), (66, 18526), (67, 18550), (68, 18568), (70, 18583), (71, 18610), (72, 18628), (73, 18634), (75, 18691), (79, 18715), (81, 18727), (86, 18781), (88, 18796),

Gene: WaterT\_41 Start: 20865, Stop: 21892, Start Num: 15

Candidate Starts for WaterT\_41:

(Start: 15 @20865 has 5 MA's), (20, 20907), (22, 20937), (30, 21063), (39, 21198), (44, 21225), (60, 21423), (63, 21522), (74, 21690), (77, 21729), (87, 21822),

Gene: Welcome\_56 Start: 25766, Stop: 26913, Start Num: 14

Candidate Starts for Welcome\_56:

(3, 25547), (5, 25610), (6, 25619), (7, 25673), (Start: 14 @25766 has 29 MA's), (20, 25823), (23, 25862), (24, 25904), (27, 25922), (32, 26003), (35, 26024), (36, 26060), (37, 26069), (43, 26159), (44, 26162), (45, 26177), (47, 26183), (52, 26249), (84, 26768), (91, 26825), (93, 26864), (94, 26888), (95, 26900),

Gene: Wolfstar\_51 Start: 24646, Stop: 25832, Start Num: 14

Candidate Starts for Wolfstar\_51:

(10, 24616), (Start: 12 @24637 has 8 MA's), (Start: 14 @24646 has 29 MA's), (16, 24667), (19, 24712), (29, 24865), (32, 24922), (42, 25072), (44, 25081), (47, 25102), (53, 25180), (55, 25210), (62, 25363), (65, 25408), (84, 25687), (91, 25750),

Gene: Yeezus\_34 Start: 17725, Stop: 18809, Start Num: 11

Candidate Starts for Yeezus\_34:

(Start: 11 @17725 has 5 MA's), (Start: 14 @17737 has 29 MA's), (17, 17767), (18, 17779), (21, 17824), (34, 18013), (35, 18022), (50, 18193), (54, 18244), (59, 18337), (64, 18463), (66, 18496), (67, 18520), (68, 18538), (70, 18553), (71, 18580), (72, 18598), (73, 18604), (75, 18661), (79, 18685), (81, 18697), (86, 18751), (88, 18766),

Gene: Yuma\_54 Start: 25680, Stop: 26827, Start Num: 14

Candidate Starts for Yuma\_54:

(Start: 14 @25680 has 29 MA's), (20, 25737), (23, 25776), (24, 25818), (27, 25836), (35, 25938), (36, 25974), (37, 25983), (43, 26073), (44, 26076), (45, 26091), (47, 26097), (52, 26163), (84, 26682), (91, 26739), (92, 26754), (93, 26778), (94, 26802), (95, 26814),