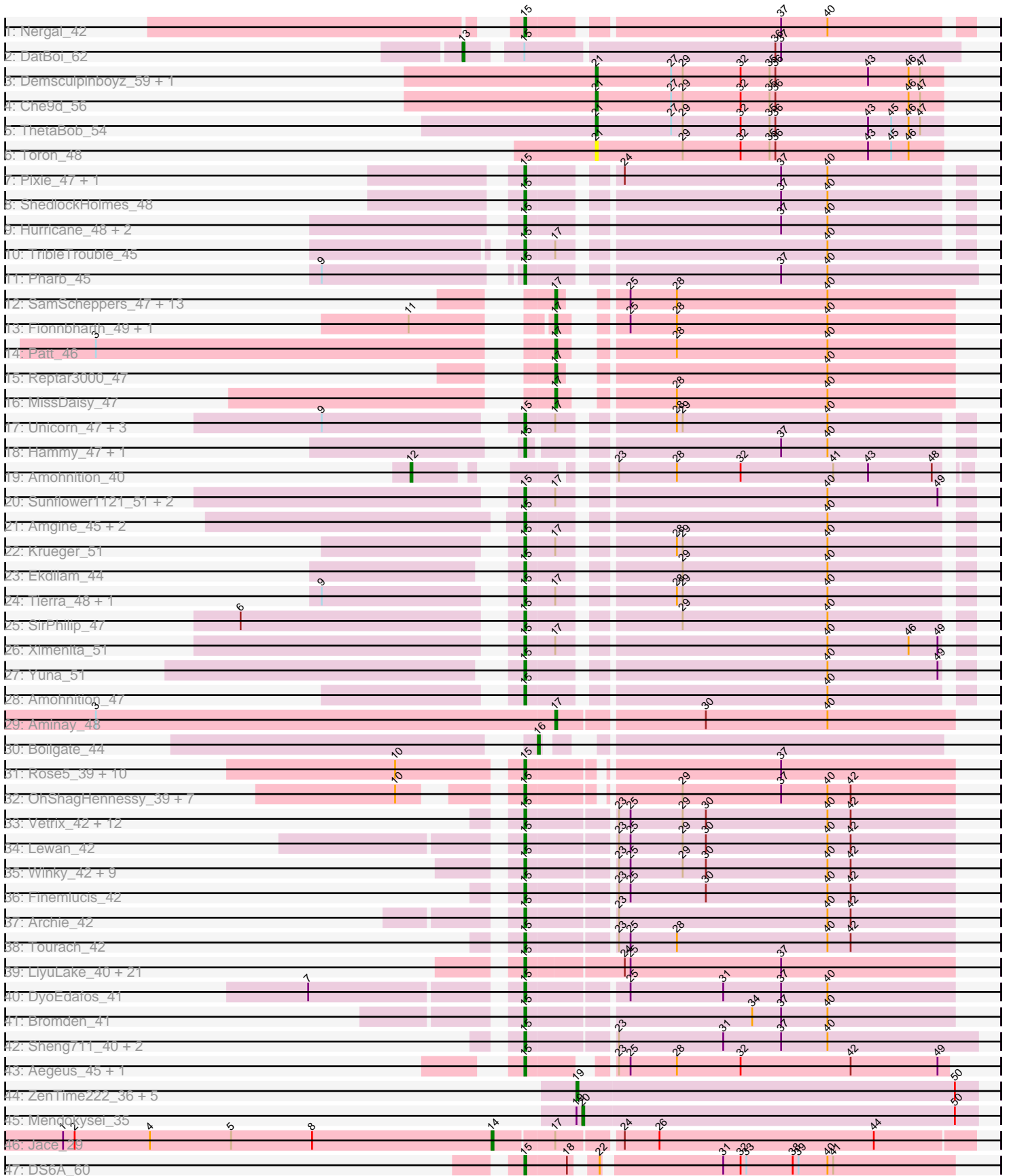


Pham 193808



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 193808 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193808 has 141 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Nergal\_42
- Track 2 : DatBoi\_62
- Track 3 : Demsculpinboyz\_59, Yoshi\_61
- Track 4 : Che9d\_56
- Track 5 : ThetaBob\_54
- Track 6 : Toron\_48
- Track 7 : Pixie\_47, TBond007\_47
- Track 8 : ShedlockHolmes\_48
- Track 9 : Hurricane\_48, Keshu\_49, MacnCheese\_49
- Track 10 : TribbleTrouble\_45
- Track 11 : Pharb\_45
- Track 12 : SamScheppers\_47, Chancellor\_49, Juliette\_51, Slarp\_49, Cheetobro\_49, Wintermute\_49, OmniCritical\_48, Malthus\_50, Taquito\_49, JF1\_49, Y10\_48, Mitti\_49, Ruthiejr\_50, Y2\_48
- Track 13 : Fionnbharth\_49, Eponine\_51
- Track 14 : Patt\_46
- Track 15 : Reptar3000\_47
- Track 16 : MissDaisy\_47
- Track 17 : Unicorn\_47, PhelpsODU\_47, Cain\_48, Bryler\_48
- Track 18 : Hammy\_47, DarthP\_47
- Track 19 : Amohnition\_40
- Track 20 : Sunflower1121\_51, Syra333\_50, Shadow1\_50
- Track 21 : Amgine\_45, Ellie\_43, Fefferhead\_45
- Track 22 : Krueger\_51
- Track 23 : Ekdilam\_44
- Track 24 : Tierra\_48, Phrank\_48
- Track 25 : SirPhilip\_47
- Track 26 : Ximenita\_51
- Track 27 : Yuna\_51
- Track 28 : Amohnition\_47
- Track 29 : Aminay\_48
- Track 30 : Boilgate\_44
- Track 31 : Rose5\_39, Tyson\_39, Halena\_39, MAckerman\_40, CicholasNage\_40, Calm\_40, Wyatt2\_40, Zaria\_40, Silverleaf\_39, AvadaKedavra\_40, Acquire49\_40
- Track 32 : OhShagHennessy\_39, Wamburgxpress\_40, LeBron\_40, Enceladus\_39, JoeDirt\_39, Appletree2\_39, DirkDirk\_39, UPIE\_40

- Track 33 : Vetrix\_42, Nicholasp3\_42, GuuelaD\_42, Kahlid\_42, Crossroads\_42, Loadrie\_42, Gabriela\_42, Gardann\_42, Wilder\_42, Rumpelstiltskin\_42, MkaliMitinis3\_42, Wigglewiggles\_42, Zakai\_42
- Track 34 : Lewan\_42
- Track 35 : Winky\_42, Breezona\_42, Itos\_41, BobsGarage\_42, Netyap\_42, BigCheese\_42, Faith1\_42, DrSeegs\_42, Miley16\_42, LilDestine\_42
- Track 36 : Finemlucis\_42
- Track 37 : Archie\_42
- Track 38 : Tourach\_42
- Track 39 : LiyuLake\_40, Lolly9\_40, MsGreen\_40, Jobypre\_40, Kingsolomon\_40, MiniLon\_40, Krypton555\_40, Whirlwind\_41, Lumos\_40, Samty\_40, Clautastrophe\_40, Bellis\_40, Finnry\_40, Ellson\_40, Snenia\_40, MiniMac\_40, DuncansLeg\_40, KirDoubleO7\_38, BourbonZero\_39, Jubie\_40, Nicholas\_40, Moostard\_40
- Track 40 : DyoEdafos\_41
- Track 41 : Bromden\_41
- Track 42 : Sheng711\_40, Douge\_39, Chaser\_39
- Track 43 : Aegeus\_45, Baudelaire\_45
- Track 44 : ZenTime222\_36, Nairb\_36, Bernal13\_37, Whitty\_37, Ibrahim\_37, RonRayGun\_37
- Track 45 : Mendokysei\_35
- Track 46 : Jace\_29
- Track 47 : DS6A\_60

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

The start number called the most often in the published annotations is 15, it was called in 98 of the 133 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_40, Aegeus\_45, Amgine\_45, Amohnition\_47, Appletree2\_39, Archie\_42, AvadaKedavra\_40, Baudelaire\_45, Bellis\_40, BigCheese\_42, BobsGarage\_42, BourbonZero\_39, Breezona\_42, Bromden\_41, Bryler\_48, Cain\_48, Calm\_40, Chaser\_39, CicholasNage\_40, Clautastrophe\_40, Crossroads\_42, DS6A\_60, DARTH\_47, DirkDirk\_39, Douge\_39, DrSeegs\_42, DuncansLeg\_40, DyoEdafos\_41, Ekdilam\_44, Ellie\_43, Ellson\_40, Enceladus\_39, Faith1\_42, Fefferhead\_45, Finemlucis\_42, Finnry\_40, Gabriela\_42, Gardann\_42, GuuelaD\_42, Halena\_39, Hammy\_47, Hurricane\_48, Itos\_41, Jobypre\_40, JoeDirt\_39, Jubie\_40, Kahlid\_42, Keshu\_49, Kingsolomon\_40, KirDoubleO7\_38, Krueger\_51, Krypton555\_40, LeBron\_40, Lewan\_42, LilDestine\_42, LiyuLake\_40, Loadrie\_42, Lolly9\_40, Lumos\_40, MAckerman\_40, MacnCheese\_49, Miley16\_42, MiniLon\_40, MiniMac\_40, MkaliMitinis3\_42, Moostard\_40, MsGreen\_40, Nergal\_42, Netyap\_42, Nicholas\_40, Nicholasp3\_42, OhShagHennessy\_39, Pharb\_45, PhelpsODU\_47, Phrank\_48, Pixie\_47, Rose5\_39, Rumpelstiltskin\_42, Samty\_40, Shadow1\_50, ShedlockHolmes\_48, Sheng711\_40, Silverleaf\_39, SirPhilip\_47, Snenia\_40, Sunflower1121\_51, Syra333\_50, TBond007\_47, Tierra\_48, Tourach\_42, TribbleTrouble\_45, Tyson\_39, UPIE\_40, Unicorn\_47, Vetrix\_42, Wamburgxpress\_40, Whirlwind\_41, Wigglewiggles\_42, Wilder\_42, Winky\_42, Wyatt2\_40, Ximenita\_51, Yuna\_51, Zakai\_42, Zaria\_40,

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

- DatBoi\_62,

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

- Aminay\_48, Amohntion\_40, Bernal13\_37, Boilgate\_44, Chancellor\_49, Che9d\_56, Cheetobro\_49, Demsculpinboyz\_59, Eponine\_51, Fionnbharth\_49, Ibrahim\_37, JF1\_49, Jace\_29, Juliette\_51, Malthus\_50, Mendokysei\_35, MissDaisy\_47, Mitti\_49, Nairb\_36, OmniCritical\_48, Patt\_46, Reptar3000\_47, RonRayGun\_37, Ruthiejr\_50, SamScheppers\_47, Slarp\_49, Taquito\_49, ThetaBob\_54, Toron\_48, Whitty\_37, Wintermute\_49, Y10\_48, Y2\_48, Yoshi\_61, ZenTime222\_36,

### Summary by start number:

Start 12:

- Found in 1 of 141 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amohntion\_40 (K6),

Start 13:

- Found in 1 of 141 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DatBoi\_62 (DL),

Start 14:

- Found in 1 of 141 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jace\_29 (singleton),

Start 15:

- Found in 106 of 141 ( 75.2% ) of genes in pham
- Manual Annotations of this start: 98 of 133
- Called 99.1% of time when present
- Phage (with cluster) where this start called: Acquire49\_40 (L1), Aegeus\_45 (L5), Amgine\_45 (K6), Amohntion\_47 (K6), Appletree2\_39 (L1), Archie\_42 (L2), AvadaKedavra\_40 (L1), Baudelaire\_45 (L5), Bellis\_40 (L3), BigCheese\_42 (L2), BobsGarage\_42 (L2), BourbonZero\_39 (L3), Breezona\_42 (L2), Bromden\_41 (L4), Bryler\_48 (K6), Cain\_48 (K6), Calm\_40 (L1), Chaser\_39 (L4), CicholasNage\_40 (L1), Clautastrophe\_40 (L3), Crossroads\_42 (L2), DS6A\_60 (singleton), DarthP\_47 (K6), DirkDirk\_39 (L1), Douge\_39 (L4), DrSeegs\_42 (L2), DuncansLeg\_40 (L3), DyoEdafos\_41 (L4), Ekdilam\_44 (K6), Ellie\_43 (K6), Ellson\_40 (L3), Enceladus\_39 (L1), Faith1\_42 (L2), Fefferhead\_45 (K6), Finemlucis\_42 (L2), Finnry\_40 (L3), Gabriela\_42 (L2), Gardann\_42 (L2), GuuelaD\_42 (L2), Halena\_39 (L1), Hammy\_47 (K6), Hurricane\_48 (K3), Itos\_41 (L2), Jobypre\_40 (L3), JoeDirt\_39 (L1), Jubie\_40 (L3), Kahlid\_42 (L2), Keshu\_49 (K3), Kingsolomon\_40 (L3), KirDoubleO7\_38 (L3), Krueger\_51 (K6), Krypton555\_40 (L3), LeBron\_40 (L1), Lewan\_42 (L2), LilDestine\_42 (L2), LiyuLake\_40 (L3), Loadrie\_42 (L2), Lolly9\_40 (L3), Lumos\_40 (L3), MAckerman\_40 (L1), MacnCheese\_49 (K3), Miley16\_42 (L2), MiniLon\_40 (L3), MiniMac\_40 (L3), MkaliMitinis3\_42 (L2), Moostard\_40 (L3), MsGreen\_40 (L3), Nergal\_42 (AG), Netyap\_42 (L2), Nicholas\_40 (L3), Nicholasp3\_42 (L2), OhShagHennessy\_39 (L1), Pharb\_45 (K3), PhelpsODU\_47 (K6), Phrank\_48 (K6),

Pixie\_47 (K3), Rose5\_39 (L1), Rumpelstiltskin\_42 (L2), Samty\_40 (L3), Shadow1\_50 (K6), ShedlockHolmes\_48 (K3), Sheng711\_40 (L4), Silverleaf\_39 (L1), SirPhilip\_47 (K6), Snenia\_40 (L3), Sunflower1121\_51 (K6), Syra333\_50 (K6), TBond007\_47 (K3), Tierra\_48 (K6), Tourach\_42 (L2), TribbleTrouble\_45 (K3), Tyson\_39 (L1), UPIE\_40 (L1), Unicorn\_47 (K6), Vetrix\_42 (L2), Wamburgexpress\_40 (L1), Whirlwind\_41 (L3), Wigglewobble\_42 (L2), Wilder\_42 (L2), Winky\_42 (L2), Wyatt2\_40 (L1), Ximenita\_51 (K6), Yuna\_51 (K6), Zakai\_42 (L2), Zaria\_40 (L1),

Start 16:

- Found in 1 of 141 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boilgate\_44 (K8),

Start 17:

- Found in 33 of 141 ( 23.4% ) of genes in pham
- Manual Annotations of this start: 20 of 133
- Called 60.6% of time when present
- Phage (with cluster) where this start called: Aminay\_48 (K7), Chancellor\_49 (K4), Cheetobro\_49 (K4), Eponine\_51 (K4), Fionnbharth\_49 (K4), JF1\_49 (K4), Juliette\_51 (K4), Malthus\_50 (K4), MissDaisy\_47 (K4), Mitti\_49 (K4), OmniCritical\_48 (K4), Patt\_46 (K4), Reptar3000\_47 (K4), Ruthiejr\_50 (K4), SamScheppers\_47 (K4), Slarp\_49 (K4), Taquito\_49 (K4), Wintermute\_49 (K4), Y10\_48 (K4), Y2\_48 (K4),

Start 19:

- Found in 7 of 141 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 6 of 133
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Bernal13\_37 (T), Ibrahim\_37 (T), Nairb\_36 (T), RonRayGun\_37 (T), Whitty\_37 (T), ZenTime222\_36 (T),

Start 20:

- Found in 1 of 141 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mendokysei\_35 (T),

Start 21:

- Found in 5 of 141 ( 3.5% ) of genes in pham
- Manual Annotations of this start: 4 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Che9d\_56 (F2), Demsculpinboyz\_59 (F2), ThetaBob\_54 (F4), Toron\_48 (F6), Yoshi\_61 (F2),

### Summary by clusters:

There are 17 clusters represented in this pham: singleton, F4, F6, AG, L1, F2, T, K3, L4, L5, L2, K6, K4, K7, K8, DL, L3,

Info for manual annotations of cluster AG:

- Start number 15 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster DL:

- Start number 13 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster F2:

- Start number 21 was manually annotated 3 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 21 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster K3:

- Start number 15 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 17 was manually annotated 19 times for cluster K4.

Info for manual annotations of cluster K6:

- Start number 12 was manually annotated 1 time for cluster K6.
- Start number 15 was manually annotated 20 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 17 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 16 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L1:

- Start number 15 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 15 was manually annotated 27 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 15 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 15 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 15 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster T:

- Start number 19 was manually annotated 6 times for cluster T.
- Start number 20 was manually annotated 1 time for cluster T.

### ***Gene Information:***

Gene: Acquire49\_40 Start: 33342, Stop: 33551, Start Num: 15

Candidate Starts for Acquire49\_40:

(10, 33285), (Start: 15 @33342 has 98 MA's), (37, 33462),

Gene: Aegeus\_45 Start: 37056, Stop: 37259, Start Num: 15

Candidate Starts for Aegeus\_45:

(Start: 15 @37056 has 98 MA's), (23, 37089), (25, 37095), (28, 37119), (32, 37152), (42, 37209), (49, 37254),

Gene: Amgine\_45 Start: 36475, Stop: 36687, Start Num: 15

Candidate Starts for Amgine\_45:

(Start: 15 @36475 has 98 MA's), (40, 36619),

Gene: Aminay\_48 Start: 36910, Stop: 37110, Start Num: 17

Candidate Starts for Aminay\_48:

(3, 36673), (Start: 17 @36910 has 20 MA's), (30, 36982), (40, 37045),

Gene: Amohnition\_40 Start: 32428, Stop: 32189, Start Num: 12

Candidate Starts for Amohnition\_40:

(Start: 12 @32428 has 1 MA's), (23, 32362), (28, 32332), (32, 32299), (41, 32251), (43, 32233), (48, 32200),

Gene: Amohnition\_47 Start: 36488, Stop: 36700, Start Num: 15

Candidate Starts for Amohnition\_47:

(Start: 15 @36488 has 98 MA's), (40, 36632),

Gene: Appletree2\_39 Start: 33269, Stop: 33478, Start Num: 15

Candidate Starts for Appletree2\_39:

(10, 33227), (Start: 15 @33269 has 98 MA's), (29, 33338), (37, 33389), (40, 33413), (42, 33425),

Gene: Archie\_42 Start: 34898, Stop: 35113, Start Num: 15

Candidate Starts for Archie\_42:

(Start: 15 @34898 has 98 MA's), (23, 34940), (40, 35048), (42, 35060),

Gene: AvadaKedavra\_40 Start: 33351, Stop: 33560, Start Num: 15

Candidate Starts for AvadaKedavra\_40:

(10, 33294), (Start: 15 @33351 has 98 MA's), (37, 33471),

Gene: Baudelaire\_45 Start: 37056, Stop: 37259, Start Num: 15

Candidate Starts for Baudelaire\_45:

(Start: 15 @37056 has 98 MA's), (23, 37089), (25, 37095), (28, 37119), (32, 37152), (42, 37209), (49, 37254),

Gene: Bellis\_40 Start: 34953, Stop: 35168, Start Num: 15

Candidate Starts for Bellis\_40:

(Start: 15 @34953 has 98 MA's), (24, 34998), (25, 35001), (37, 35079),

Gene: Bernal13\_37 Start: 30311, Stop: 30517, Start Num: 19

Candidate Starts for Bernal13\_37:

(Start: 19 @30311 has 6 MA's), (50, 30506),

Gene: BigCheese\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for BigCheese\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: BobsGarage\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for BobsGarage\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: Boilgate\_44 Start: 36561, Stop: 36746, Start Num: 16

Candidate Starts for Boilgate\_44:

(Start: 16 @36561 has 1 MA's),

Gene: BourbonZero\_39 Start: 34932, Stop: 35150, Start Num: 15

Candidate Starts for BourbonZero\_39:

(Start: 15 @34932 has 98 MA's), (24, 34980), (25, 34983), (37, 35061),

Gene: Breezona\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for Breezona\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: Bromden\_41 Start: 34169, Stop: 34384, Start Num: 15

Candidate Starts for Bromden\_41:

(Start: 15 @34169 has 98 MA's), (34, 34280), (37, 34295), (40, 34319),

Gene: Bryler\_48 Start: 35349, Stop: 35561, Start Num: 15

Candidate Starts for Bryler\_48:

(9, 35259), (Start: 15 @35349 has 98 MA's), (Start: 17 @35364 has 20 MA's), (28, 35415), (29, 35418), (40, 35493),

Gene: Cain\_48 Start: 35337, Stop: 35549, Start Num: 15

Candidate Starts for Cain\_48:

(9, 35247), (Start: 15 @35337 has 98 MA's), (Start: 17 @35352 has 20 MA's), (28, 35403), (29, 35406), (40, 35481),

Gene: Calm\_40 Start: 33357, Stop: 33566, Start Num: 15

Candidate Starts for Calm\_40:

(10, 33300), (Start: 15 @33357 has 98 MA's), (37, 33477),

Gene: Chancellor\_49 Start: 36414, Stop: 36599, Start Num: 17

Candidate Starts for Chancellor\_49:

(Start: 17 @36414 has 20 MA's), (25, 36432), (28, 36456), (40, 36534),

Gene: Chaser\_39 Start: 33432, Stop: 33659, Start Num: 15

Candidate Starts for Chaser\_39:

(Start: 15 @33432 has 98 MA's), (23, 33474), (31, 33528), (37, 33558), (40, 33582),

Gene: Che9d\_56 Start: 35970, Stop: 36149, Start Num: 21

Candidate Starts for Che9d\_56:

(Start: 21 @35970 has 4 MA's), (27, 36009), (29, 36015), (32, 36045), (35, 36060), (36, 36063), (46, 36132), (47, 36138),

Gene: Cheetobro\_49 Start: 36411, Stop: 36596, Start Num: 17

Candidate Starts for Cheetobro\_49:

(Start: 17 @36411 has 20 MA's), (25, 36429), (28, 36453), (40, 36531),

Gene: CicholasNage\_40 Start: 33378, Stop: 33587, Start Num: 15

Candidate Starts for CicholasNage\_40:



(10, 33321), (Start: 15 @33378 has 98 MA's), (37, 33498),

Gene: Clautastrophe\_40 Start: 34951, Stop: 35166, Start Num: 15

Candidate Starts for Clautastrophe\_40:

(Start: 15 @34951 has 98 MA's), (24, 34996), (25, 34999), (37, 35077),

Gene: Crossroads\_42 Start: 34696, Stop: 34911, Start Num: 15

Candidate Starts for Crossroads\_42:

(Start: 15 @34696 has 98 MA's), (23, 34738), (25, 34744), (29, 34771), (30, 34783), (40, 34846), (42, 34858),

Gene: DS6A\_60 Start: 41278, Stop: 41484, Start Num: 15

Candidate Starts for DS6A\_60:

(Start: 15 @41278 has 98 MA's), (18, 41299), (22, 41308), (31, 41365), (32, 41374), (33, 41377), (38, 41401), (39, 41404), (40, 41419), (41, 41422),

Gene: DarthP\_47 Start: 36375, Stop: 36584, Start Num: 15

Candidate Starts for DarthP\_47:

(Start: 15 @36375 has 98 MA's), (37, 36492), (40, 36516),

Gene: DatBoi\_62 Start: 46946, Stop: 47191, Start Num: 13

Candidate Starts for DatBoi\_62:

(Start: 13 @46946 has 1 MA's), (Start: 15 @46970 has 98 MA's), (36, 47096), (37, 47099),

Gene: Demsculpinboyz\_59 Start: 36079, Stop: 36258, Start Num: 21

Candidate Starts for Demsculpinboyz\_59:

(Start: 21 @36079 has 4 MA's), (27, 36118), (29, 36124), (32, 36154), (35, 36169), (36, 36172), (43, 36220), (46, 36241), (47, 36247),

Gene: DirkDirk\_39 Start: 33329, Stop: 33538, Start Num: 15

Candidate Starts for DirkDirk\_39:

(10, 33287), (Start: 15 @33329 has 98 MA's), (29, 33398), (37, 33449), (40, 33473), (42, 33485),

Gene: Douge\_39 Start: 33370, Stop: 33597, Start Num: 15

Candidate Starts for Douge\_39:

(Start: 15 @33370 has 98 MA's), (23, 33412), (31, 33466), (37, 33496), (40, 33520),

Gene: DrSeegs\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for DrSeegs\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: DuncansLeg\_40 Start: 34969, Stop: 35187, Start Num: 15

Candidate Starts for DuncansLeg\_40:

(Start: 15 @34969 has 98 MA's), (24, 35017), (25, 35020), (37, 35098),

Gene: DyoEdafos\_41 Start: 33704, Stop: 33919, Start Num: 15

Candidate Starts for DyoEdafos\_41:

(7, 33605), (Start: 15 @33704 has 98 MA's), (25, 33752), (31, 33800), (37, 33830), (40, 33854),

Gene: Ekdilam\_44 Start: 35937, Stop: 36149, Start Num: 15

Candidate Starts for Ekdilam\_44:

(Start: 15 @35937 has 98 MA's), (29, 36006), (40, 36081),

Gene: Ellie\_43 Start: 35663, Stop: 35875, Start Num: 15

Candidate Starts for Ellie\_43:

(Start: 15 @35663 has 98 MA's), (40, 35807),

Gene: Ellson\_40 Start: 34945, Stop: 35163, Start Num: 15

Candidate Starts for Ellson\_40:

(Start: 15 @34945 has 98 MA's), (24, 34993), (25, 34996), (37, 35074),

Gene: Enceladus\_39 Start: 33312, Stop: 33521, Start Num: 15

Candidate Starts for Enceladus\_39:

(10, 33270), (Start: 15 @33312 has 98 MA's), (29, 33381), (37, 33432), (40, 33456), (42, 33468),

Gene: Eponine\_51 Start: 37164, Stop: 37352, Start Num: 17

Candidate Starts for Eponine\_51:

(11, 37113), (Start: 17 @37164 has 20 MA's), (25, 37185), (28, 37209), (40, 37287),

Gene: Faith1\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for Faith1\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: Fefferhead\_45 Start: 35614, Stop: 35826, Start Num: 15

Candidate Starts for Fefferhead\_45:

(Start: 15 @35614 has 98 MA's), (40, 35758),

Gene: Finemlucis\_42 Start: 34970, Stop: 35185, Start Num: 15

Candidate Starts for Finemlucis\_42:

(Start: 15 @34970 has 98 MA's), (23, 35012), (25, 35018), (30, 35057), (40, 35120), (42, 35132),

Gene: Finnry\_40 Start: 34954, Stop: 35169, Start Num: 15

Candidate Starts for Finnry\_40:

(Start: 15 @34954 has 98 MA's), (24, 34999), (25, 35002), (37, 35080),

Gene: Fionnbharth\_49 Start: 36562, Stop: 36750, Start Num: 17

Candidate Starts for Fionnbharth\_49:

(11, 36511), (Start: 17 @36562 has 20 MA's), (25, 36583), (28, 36607), (40, 36685),

Gene: Gabriela\_42 Start: 34956, Stop: 35171, Start Num: 15

Candidate Starts for Gabriela\_42:

(Start: 15 @34956 has 98 MA's), (23, 34998), (25, 35004), (29, 35031), (30, 35043), (40, 35106), (42, 35118),

Gene: Gardann\_42 Start: 34695, Stop: 34910, Start Num: 15

Candidate Starts for Gardann\_42:

(Start: 15 @34695 has 98 MA's), (23, 34737), (25, 34743), (29, 34770), (30, 34782), (40, 34845), (42, 34857),

Gene: GuuelaD\_42 Start: 34733, Stop: 34948, Start Num: 15

Candidate Starts for GuuelaD\_42:

(Start: 15 @34733 has 98 MA's), (23, 34775), (25, 34781), (29, 34808), (30, 34820), (40, 34883), (42, 34895),

Gene: Halena\_39 Start: 33353, Stop: 33562, Start Num: 15  
Candidate Starts for Halena\_39:  
(10, 33296), (Start: 15 @33353 has 98 MA's), (37, 33473),

Gene: Hammy\_47 Start: 36363, Stop: 36572, Start Num: 15  
Candidate Starts for Hammy\_47:  
(Start: 15 @36363 has 98 MA's), (37, 36480), (40, 36504),

Gene: Hurricane\_48 Start: 36096, Stop: 36308, Start Num: 15  
Candidate Starts for Hurricane\_48:  
(Start: 15 @36096 has 98 MA's), (37, 36216), (40, 36240),

Gene: Ibrahim\_37 Start: 30757, Stop: 30963, Start Num: 19  
Candidate Starts for Ibrahim\_37:  
(Start: 19 @30757 has 6 MA's), (50, 30952),

Gene: Itos\_41 Start: 33600, Stop: 33815, Start Num: 15  
Candidate Starts for Itos\_41:  
(Start: 15 @33600 has 98 MA's), (23, 33642), (25, 33648), (29, 33675), (30, 33687), (40, 33750), (42, 33762),

Gene: JF1\_49 Start: 36482, Stop: 36667, Start Num: 17  
Candidate Starts for JF1\_49:  
(Start: 17 @36482 has 20 MA's), (25, 36500), (28, 36524), (40, 36602),

Gene: Jace\_29 Start: 24871, Stop: 25110, Start Num: 14  
Candidate Starts for Jace\_29:  
(1, 24649), (2, 24655), (4, 24694), (5, 24736), (8, 24778), (Start: 14 @24871 has 1 MA's), (Start: 17 @24901 has 20 MA's), (24, 24931), (26, 24949), (44, 25060),

Gene: Jobypre\_40 Start: 34951, Stop: 35166, Start Num: 15  
Candidate Starts for Jobypre\_40:  
(Start: 15 @34951 has 98 MA's), (24, 34996), (25, 34999), (37, 35077),

Gene: JoeDirt\_39 Start: 33310, Stop: 33519, Start Num: 15  
Candidate Starts for JoeDirt\_39:  
(10, 33268), (Start: 15 @33310 has 98 MA's), (29, 33379), (37, 33430), (40, 33454), (42, 33466),

Gene: Jubie\_40 Start: 34952, Stop: 35167, Start Num: 15  
Candidate Starts for Jubie\_40:  
(Start: 15 @34952 has 98 MA's), (24, 34997), (25, 35000), (37, 35078),

Gene: Juliette\_51 Start: 36638, Stop: 36823, Start Num: 17  
Candidate Starts for Juliette\_51:  
(Start: 17 @36638 has 20 MA's), (25, 36656), (28, 36680), (40, 36758),

Gene: Kahlid\_42 Start: 34700, Stop: 34915, Start Num: 15  
Candidate Starts for Kahlid\_42:  
(Start: 15 @34700 has 98 MA's), (23, 34742), (25, 34748), (29, 34775), (30, 34787), (40, 34850), (42, 34862),

Gene: Keshu\_49 Start: 36154, Stop: 36366, Start Num: 15  
Candidate Starts for Keshu\_49:

(Start: 15 @36154 has 98 MA's), (37, 36274), (40, 36298),

Gene: Kingsolomon\_40 Start: 34951, Stop: 35166, Start Num: 15

Candidate Starts for Kingsolomon\_40:

(Start: 15 @34951 has 98 MA's), (24, 34996), (25, 34999), (37, 35077),

Gene: KirDoubleO7\_38 Start: 34973, Stop: 35191, Start Num: 15

Candidate Starts for KirDoubleO7\_38:

(Start: 15 @34973 has 98 MA's), (24, 35021), (25, 35024), (37, 35102),

Gene: Krueger\_51 Start: 36343, Stop: 36555, Start Num: 15

Candidate Starts for Krueger\_51:

(Start: 15 @36343 has 98 MA's), (Start: 17 @36358 has 20 MA's), (28, 36409), (29, 36412), (40, 36487),

Gene: Krypton555\_40 Start: 34868, Stop: 35083, Start Num: 15

Candidate Starts for Krypton555\_40:

(Start: 15 @34868 has 98 MA's), (24, 34913), (25, 34916), (37, 34994),

Gene: LeBron\_40 Start: 33354, Stop: 33563, Start Num: 15

Candidate Starts for LeBron\_40:

(10, 33312), (Start: 15 @33354 has 98 MA's), (29, 33423), (37, 33474), (40, 33498), (42, 33510),

Gene: Lewan\_42 Start: 34687, Stop: 34902, Start Num: 15

Candidate Starts for Lewan\_42:

(Start: 15 @34687 has 98 MA's), (23, 34729), (25, 34735), (29, 34762), (30, 34774), (40, 34837), (42, 34849),

Gene: LilDestine\_42 Start: 34692, Stop: 34907, Start Num: 15

Candidate Starts for LilDestine\_42:

(Start: 15 @34692 has 98 MA's), (23, 34734), (25, 34740), (29, 34767), (30, 34779), (40, 34842), (42, 34854),

Gene: LiyuLake\_40 Start: 34935, Stop: 35153, Start Num: 15

Candidate Starts for LiyuLake\_40:

(Start: 15 @34935 has 98 MA's), (24, 34983), (25, 34986), (37, 35064),

Gene: Loadrie\_42 Start: 34726, Stop: 34941, Start Num: 15

Candidate Starts for Loadrie\_42:

(Start: 15 @34726 has 98 MA's), (23, 34768), (25, 34774), (29, 34801), (30, 34813), (40, 34876), (42, 34888),

Gene: Lolly9\_40 Start: 34759, Stop: 34977, Start Num: 15

Candidate Starts for Lolly9\_40:

(Start: 15 @34759 has 98 MA's), (24, 34807), (25, 34810), (37, 34888),

Gene: Lumos\_40 Start: 34948, Stop: 35163, Start Num: 15

Candidate Starts for Lumos\_40:

(Start: 15 @34948 has 98 MA's), (24, 34993), (25, 34996), (37, 35074),

Gene: MAckerman\_40 Start: 33347, Stop: 33556, Start Num: 15

Candidate Starts for MAckerman\_40:

(10, 33290), (Start: 15 @33347 has 98 MA's), (37, 33467),

Gene: MacnCheese\_49 Start: 37043, Stop: 37276, Start Num: 15

Candidate Starts for MacnCheese\_49:

(Start: 15 @37043 has 98 MA's), (37, 37163), (40, 37187),

Gene: Malthus\_50 Start: 36326, Stop: 36511, Start Num: 17

Candidate Starts for Malthus\_50:

(Start: 17 @36326 has 20 MA's), (25, 36344), (28, 36368), (40, 36446),

Gene: Mendokysei\_35 Start: 29852, Stop: 30055, Start Num: 20

Candidate Starts for Mendokysei\_35:

(Start: 19 @29849 has 6 MA's), (Start: 20 @29852 has 1 MA's), (50, 30044),

Gene: Miley16\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for Miley16\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: MiniLon\_40 Start: 34760, Stop: 34978, Start Num: 15

Candidate Starts for MiniLon\_40:

(Start: 15 @34760 has 98 MA's), (24, 34808), (25, 34811), (37, 34889),

Gene: MiniMac\_40 Start: 34757, Stop: 34975, Start Num: 15

Candidate Starts for MiniMac\_40:

(Start: 15 @34757 has 98 MA's), (24, 34805), (25, 34808), (37, 34886),

Gene: MissDaisy\_47 Start: 35801, Stop: 35989, Start Num: 17

Candidate Starts for MissDaisy\_47:

(Start: 17 @35801 has 20 MA's), (28, 35846), (40, 35924),

Gene: Mitti\_49 Start: 36502, Stop: 36687, Start Num: 17

Candidate Starts for Mitti\_49:

(Start: 17 @36502 has 20 MA's), (25, 36520), (28, 36544), (40, 36622),

Gene: MkaliMitinis3\_42 Start: 34696, Stop: 34911, Start Num: 15

Candidate Starts for MkaliMitinis3\_42:

(Start: 15 @34696 has 98 MA's), (23, 34738), (25, 34744), (29, 34771), (30, 34783), (40, 34846), (42, 34858),

Gene: Moostard\_40 Start: 34953, Stop: 35168, Start Num: 15

Candidate Starts for Moostard\_40:

(Start: 15 @34953 has 98 MA's), (24, 34998), (25, 35001), (37, 35079),

Gene: MsGreen\_40 Start: 34951, Stop: 35166, Start Num: 15

Candidate Starts for MsGreen\_40:

(Start: 15 @34951 has 98 MA's), (24, 34996), (25, 34999), (37, 35077),

Gene: Nairb\_36 Start: 30311, Stop: 30517, Start Num: 19

Candidate Starts for Nairb\_36:

(Start: 19 @30311 has 6 MA's), (50, 30506),

Gene: Nergal\_42 Start: 34081, Stop: 34293, Start Num: 15

Candidate Starts for Nergal\_42:

(Start: 15 @34081 has 98 MA's), (37, 34201), (40, 34225),

Gene: Netyap\_42 Start: 34694, Stop: 34909, Start Num: 15

Candidate Starts for Netyap\_42:

(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: Nicholas\_40 Start: 34951, Stop: 35166, Start Num: 15

Candidate Starts for Nicholas\_40:

(Start: 15 @34951 has 98 MA's), (24, 34996), (25, 34999), (37, 35077),

Gene: Nicholasp3\_42 Start: 34695, Stop: 34910, Start Num: 15

Candidate Starts for Nicholasp3\_42:

(Start: 15 @34695 has 98 MA's), (23, 34737), (25, 34743), (29, 34770), (30, 34782), (40, 34845), (42, 34857),

Gene: OhShagHennessy\_39 Start: 33300, Stop: 33509, Start Num: 15

Candidate Starts for OhShagHennessy\_39:

(10, 33258), (Start: 15 @33300 has 98 MA's), (29, 33369), (37, 33420), (40, 33444), (42, 33456),

Gene: OmniCritical\_48 Start: 36311, Stop: 36496, Start Num: 17

Candidate Starts for OmniCritical\_48:

(Start: 17 @36311 has 20 MA's), (25, 36329), (28, 36353), (40, 36431),

Gene: Patt\_46 Start: 35525, Stop: 35713, Start Num: 17

Candidate Starts for Patt\_46:

(3, 35309), (Start: 17 @35525 has 20 MA's), (28, 35570), (40, 35648),

Gene: Pharb\_45 Start: 34846, Stop: 35067, Start Num: 15

Candidate Starts for Pharb\_45:

(9, 34756), (Start: 15 @34846 has 98 MA's), (37, 34966), (40, 34990),

Gene: PhelpsODU\_47 Start: 35370, Stop: 35582, Start Num: 15

Candidate Starts for PhelpsODU\_47:

(9, 35280), (Start: 15 @35370 has 98 MA's), (Start: 17 @35385 has 20 MA's), (28, 35436), (29, 35439), (40, 35514),

Gene: Phrank\_48 Start: 35327, Stop: 35539, Start Num: 15

Candidate Starts for Phrank\_48:

(9, 35237), (Start: 15 @35327 has 98 MA's), (Start: 17 @35342 has 20 MA's), (28, 35393), (29, 35396), (40, 35471),

Gene: Pixie\_47 Start: 35607, Stop: 35819, Start Num: 15

Candidate Starts for Pixie\_47:

(Start: 15 @35607 has 98 MA's), (24, 35646), (37, 35727), (40, 35751),

Gene: Reptar3000\_47 Start: 35516, Stop: 35701, Start Num: 17

Candidate Starts for Reptar3000\_47:

(Start: 17 @35516 has 20 MA's), (40, 35636),

Gene: RonRayGun\_37 Start: 30757, Stop: 30963, Start Num: 19

Candidate Starts for RonRayGun\_37:

(Start: 19 @30757 has 6 MA's), (50, 30952),

Gene: Rose5\_39 Start: 33342, Stop: 33551, Start Num: 15

Candidate Starts for Rose5\_39:

(10, 33285), (Start: 15 @33342 has 98 MA's), (37, 33462),

Gene: Rumpelstiltskin\_42 Start: 34961, Stop: 35173, Start Num: 15

Candidate Starts for Rumpelstiltskin\_42:

(Start: 15 @34961 has 98 MA's), (23, 35003), (25, 35009), (29, 35036), (30, 35048), (40, 35111), (42, 35123),

Gene: Ruthiejr\_50 Start: 36376, Stop: 36561, Start Num: 17

Candidate Starts for Ruthiejr\_50:

(Start: 17 @36376 has 20 MA's), (25, 36394), (28, 36418), (40, 36496),

Gene: SamScheppers\_47 Start: 36805, Stop: 36990, Start Num: 17

Candidate Starts for SamScheppers\_47:

(Start: 17 @36805 has 20 MA's), (25, 36823), (28, 36847), (40, 36925),

Gene: Samty\_40 Start: 34952, Stop: 35167, Start Num: 15

Candidate Starts for Samty\_40:

(Start: 15 @34952 has 98 MA's), (24, 34997), (25, 35000), (37, 35078),

Gene: Shadow1\_50 Start: 36488, Stop: 36700, Start Num: 15

Candidate Starts for Shadow1\_50:

(Start: 15 @36488 has 98 MA's), (Start: 17 @36503 has 20 MA's), (40, 36632), (49, 36689),

Gene: ShedlockHolmes\_48 Start: 36132, Stop: 36344, Start Num: 15

Candidate Starts for ShedlockHolmes\_48:

(Start: 15 @36132 has 98 MA's), (37, 36252), (40, 36276),

Gene: Sheng711\_40 Start: 33476, Stop: 33703, Start Num: 15

Candidate Starts for Sheng711\_40:

(Start: 15 @33476 has 98 MA's), (23, 33518), (31, 33572), (37, 33602), (40, 33626),

Gene: Silverleaf\_39 Start: 33342, Stop: 33551, Start Num: 15

Candidate Starts for Silverleaf\_39:

(10, 33285), (Start: 15 @33342 has 98 MA's), (37, 33462),

Gene: SirPhilip\_47 Start: 36707, Stop: 36919, Start Num: 15

Candidate Starts for SirPhilip\_47:

(6, 36575), (Start: 15 @36707 has 98 MA's), (29, 36776), (40, 36851),

Gene: Slarp\_49 Start: 36414, Stop: 36599, Start Num: 17

Candidate Starts for Slarp\_49:

(Start: 17 @36414 has 20 MA's), (25, 36432), (28, 36456), (40, 36534),

Gene: Snenia\_40 Start: 34952, Stop: 35167, Start Num: 15

Candidate Starts for Snenia\_40:

(Start: 15 @34952 has 98 MA's), (24, 34997), (25, 35000), (37, 35078),

Gene: Sunflower1121\_51 Start: 36589, Stop: 36801, Start Num: 15

Candidate Starts for Sunflower1121\_51:

(Start: 15 @36589 has 98 MA's), (Start: 17 @36604 has 20 MA's), (40, 36733), (49, 36790),

Gene: Syra333\_50 Start: 36256, Stop: 36468, Start Num: 15  
Candidate Starts for Syra333\_50:  
(Start: 15 @36256 has 98 MA's), (Start: 17 @36271 has 20 MA's), (40, 36400), (49, 36457),

Gene: TBond007\_47 Start: 35606, Stop: 35818, Start Num: 15  
Candidate Starts for TBond007\_47:  
(Start: 15 @35606 has 98 MA's), (24, 35645), (37, 35726), (40, 35750),

Gene: Taquito\_49 Start: 36661, Stop: 36846, Start Num: 17  
Candidate Starts for Taquito\_49:  
(Start: 17 @36661 has 20 MA's), (25, 36679), (28, 36703), (40, 36781),

Gene: ThetaBob\_54 Start: 36886, Stop: 37065, Start Num: 21  
Candidate Starts for ThetaBob\_54:  
(Start: 21 @36886 has 4 MA's), (27, 36925), (29, 36931), (32, 36961), (35, 36976), (36, 36979), (43, 37027), (45, 37039), (46, 37048), (47, 37054),

Gene: Tierra\_48 Start: 36138, Stop: 36350, Start Num: 15  
Candidate Starts for Tierra\_48:  
(9, 36048), (Start: 15 @36138 has 98 MA's), (Start: 17 @36153 has 20 MA's), (28, 36204), (29, 36207), (40, 36282),

Gene: Toron\_48 Start: 36637, Stop: 36816, Start Num: 21  
Candidate Starts for Toron\_48:  
(Start: 21 @36637 has 4 MA's), (29, 36682), (32, 36712), (35, 36727), (36, 36730), (43, 36778), (45, 36790), (46, 36799),

Gene: Tourach\_42 Start: 34709, Stop: 34924, Start Num: 15  
Candidate Starts for Tourach\_42:  
(Start: 15 @34709 has 98 MA's), (23, 34751), (25, 34757), (28, 34781), (40, 34859), (42, 34871),

Gene: TribelTrouble\_45 Start: 35497, Stop: 35709, Start Num: 15  
Candidate Starts for TribelTrouble\_45:  
(Start: 15 @35497 has 98 MA's), (Start: 17 @35512 has 20 MA's), (40, 35641),

Gene: Tyson\_39 Start: 33343, Stop: 33552, Start Num: 15  
Candidate Starts for Tyson\_39:  
(10, 33286), (Start: 15 @33343 has 98 MA's), (37, 33463),

Gene: UPIE\_40 Start: 33326, Stop: 33535, Start Num: 15  
Candidate Starts for UPIE\_40:  
(10, 33284), (Start: 15 @33326 has 98 MA's), (29, 33395), (37, 33446), (40, 33470), (42, 33482),

Gene: Unicorn\_47 Start: 35370, Stop: 35582, Start Num: 15  
Candidate Starts for Unicorn\_47:  
(9, 35280), (Start: 15 @35370 has 98 MA's), (Start: 17 @35385 has 20 MA's), (28, 35436), (29, 35439), (40, 35514),

Gene: Vetrix\_42 Start: 34701, Stop: 34916, Start Num: 15  
Candidate Starts for Vetrix\_42:  
(Start: 15 @34701 has 98 MA's), (23, 34743), (25, 34749), (29, 34776), (30, 34788), (40, 34851), (42, 34863),



Gene: Wamburgexpress\_40 Start: 33341, Stop: 33550, Start Num: 15  
Candidate Starts for Wamburgexpress\_40:  
(10, 33299), (Start: 15 @33341 has 98 MA's), (29, 33410), (37, 33461), (40, 33485), (42, 33497),

Gene: Whirlwind\_41 Start: 34710, Stop: 34925, Start Num: 15  
Candidate Starts for Whirlwind\_41:  
(Start: 15 @34710 has 98 MA's), (24, 34755), (25, 34758), (37, 34836),

Gene: Whitty\_37 Start: 30311, Stop: 30517, Start Num: 19  
Candidate Starts for Whitty\_37:  
(Start: 19 @30311 has 6 MA's), (50, 30506),

Gene: Wigglewigggle\_42 Start: 34727, Stop: 34942, Start Num: 15  
Candidate Starts for Wigglewigggle\_42:  
(Start: 15 @34727 has 98 MA's), (23, 34769), (25, 34775), (29, 34802), (30, 34814), (40, 34877), (42, 34889),

Gene: Wilder\_42 Start: 34700, Stop: 34915, Start Num: 15  
Candidate Starts for Wilder\_42:  
(Start: 15 @34700 has 98 MA's), (23, 34742), (25, 34748), (29, 34775), (30, 34787), (40, 34850), (42, 34862),

Gene: Winky\_42 Start: 34694, Stop: 34909, Start Num: 15  
Candidate Starts for Winky\_42:  
(Start: 15 @34694 has 98 MA's), (23, 34736), (25, 34742), (29, 34769), (30, 34781), (40, 34844), (42, 34856),

Gene: Wintermute\_49 Start: 36563, Stop: 36748, Start Num: 17  
Candidate Starts for Wintermute\_49:  
(Start: 17 @36563 has 20 MA's), (25, 36581), (28, 36605), (40, 36683),

Gene: Wyatt2\_40 Start: 33342, Stop: 33551, Start Num: 15  
Candidate Starts for Wyatt2\_40:  
(10, 33285), (Start: 15 @33342 has 98 MA's), (37, 33462),

Gene: Ximenita\_51 Start: 36442, Stop: 36654, Start Num: 15  
Candidate Starts for Ximenita\_51:  
(Start: 15 @36442 has 98 MA's), (Start: 17 @36457 has 20 MA's), (40, 36586), (46, 36628), (49, 36643),

Gene: Y10\_48 Start: 36482, Stop: 36667, Start Num: 17  
Candidate Starts for Y10\_48:  
(Start: 17 @36482 has 20 MA's), (25, 36500), (28, 36524), (40, 36602),

Gene: Y2\_48 Start: 36482, Stop: 36667, Start Num: 17  
Candidate Starts for Y2\_48:  
(Start: 17 @36482 has 20 MA's), (25, 36500), (28, 36524), (40, 36602),

Gene: Yoshi\_61 Start: 38120, Stop: 38299, Start Num: 21  
Candidate Starts for Yoshi\_61:  
(Start: 21 @38120 has 4 MA's), (27, 38159), (29, 38165), (32, 38195), (35, 38210), (36, 38213), (43, 38261), (46, 38282), (47, 38288),

Gene: Yuna\_51 Start: 37201, Stop: 37413, Start Num: 15  
Candidate Starts for Yuna\_51:  
(Start: 15 @37201 has 98 MA's), (40, 37345), (49, 37402),

Gene: Zakai\_42 Start: 34952, Stop: 35167, Start Num: 15  
Candidate Starts for Zakai\_42:  
(Start: 15 @34952 has 98 MA's), (23, 34994), (25, 35000), (29, 35027), (30, 35039), (40, 35102), (42, 35114),

Gene: Zaria\_40 Start: 33357, Stop: 33566, Start Num: 15  
Candidate Starts for Zaria\_40:  
(10, 33300), (Start: 15 @33357 has 98 MA's), (37, 33477),

Gene: ZenTime222\_36 Start: 30311, Stop: 30517, Start Num: 19  
Candidate Starts for ZenTime222\_36:  
(Start: 19 @30311 has 6 MA's), (50, 30506),