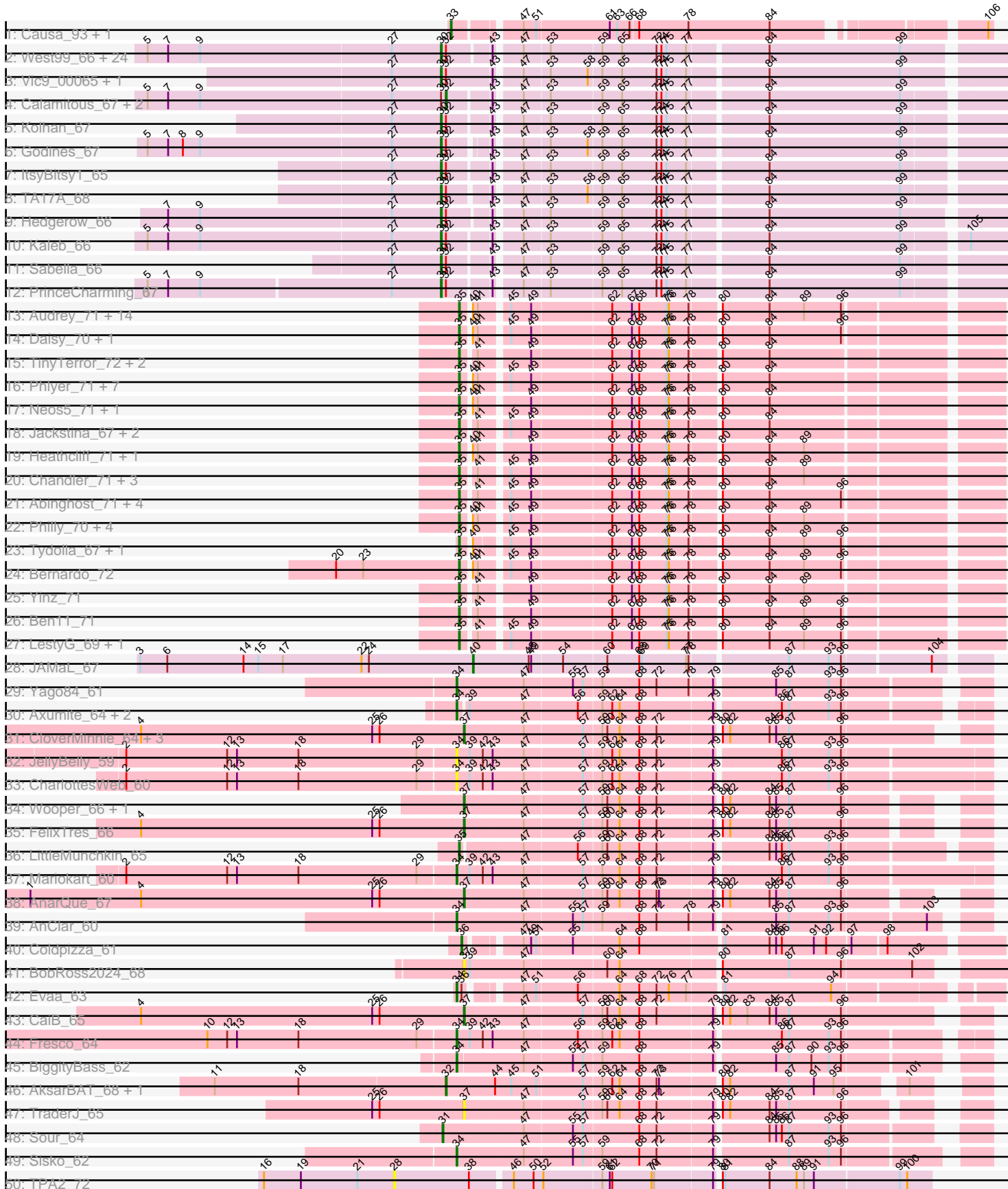


Pham 304816



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 304816 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304816 has 126 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Causa\_93, StAugustine\_92
- Track 2 : West99\_66, Allegro\_66, Kheth\_66, Tres\_66, Ares\_66, Qyrzula\_60, Glass\_67, Blocker23\_66, Rhinoforte\_66, LizLemon\_66, Bananafish\_67, Lars\_67, MasterPo\_67, Lephleur\_66, FrenchFry\_67, Brownie5\_66, Eaglehorse\_66, Coffee\_66, Arbiter\_64, Rosebush\_65, Opia\_67, Holeinone\_66, LilSmirk\_66, Phantasmagoria\_65, Tinciduntolum\_67
- Track 3 : Vic9\_00065, Laurie\_66
- Track 4 : Calamitous\_67, Boyle\_66, Faze9\_65
- Track 5 : Kolhan\_67
- Track 6 : Godines\_67
- Track 7 : ItsyBitsy1\_65
- Track 8 : TA17A\_68
- Track 9 : Hedgerow\_66
- Track 10 : Kaleb\_66
- Track 11 : Sabella\_66
- Track 12 : PrinceCharming\_67
- Track 13 : Audrey\_71, Marlia\_72, Athena\_73, Yahalom\_69, Mulaychimus\_72, Briakila\_71, Corofin\_71, Baloo\_70, RomaT\_71, Halfpint\_70, SlippinJimmy\_74, ChaChing\_71, SwainyDoc\_72, Gervas\_72, Devonte\_70
- Track 14 : Daisy\_70, SynergyX\_71
- Track 15 : TinyTerror\_72, MmasiCarm\_72, Rita1961\_72
- Track 16 : Phlyer\_71, Compostia\_70, Kronus\_71, GlenHope\_72, Shenandoah\_70, RagingRooster\_70, Morty007\_70, Marley1013\_72
- Track 17 : Neos5\_71, Chentzyk\_73
- Track 18 : Jackstina\_67, Phayeta\_74, Mortcellus\_71
- Track 19 : Heathcliff\_71, Olivio\_71
- Track 20 : Chandler\_71, Gadget\_72, Chalmers\_70, Obutu\_73
- Track 21 : Abinghost\_71, Deenasa\_71, Akoma\_71, Nozo\_71, OrangeOswald\_71
- Track 22 : Philly\_70, Casbah\_71, Kamiyu\_71, Phaedrus\_66, Glubnar\_72
- Track 23 : Tydolla\_67, HarveySr\_70
- Track 24 : Bernardo\_72
- Track 25 : Yinz\_71
- Track 26 : Ben11\_71
- Track 27 : LestyG\_69, Pipefish\_74
- Track 28 : JAMaL\_67
- Track 29 : Yago84\_61
- Track 30 : Axumite\_64, Ligma\_64, Shatter\_64

- Track 31 : CloverMinnie\_64, MakoManhole\_62, MossRose\_65, Blackpen\_64
- Track 32 : JellyBelly\_59
- Track 33 : CharlottesWeb\_60
- Track 34 : Wooper\_66, Yeshua\_65
- Track 35 : FelixTres\_66
- Track 36 : LittleMunchkin\_65
- Track 37 : Mariokart\_60
- Track 38 : AnarQue\_67
- Track 39 : AnClar\_60
- Track 40 : Coldpizza\_61
- Track 41 : BobRoss2024\_68
- Track 42 : Evaa\_63
- Track 43 : CaiB\_65
- Track 44 : Fresco\_64
- Track 45 : BiggityBass\_62
- Track 46 : AksarBAT\_68, NHagos\_62
- Track 47 : TraderJ\_65
- Track 48 : Sour\_64
- Track 49 : Sisko\_62
- Track 50 : TPA2\_72

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

The start number called the most often in the published annotations is 35, it was called in 52 of the 113 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost\_71, Akoma\_71, Athena\_73, Audrey\_71, Baloo\_70, Ben11\_71, Bernardo\_72, Briakila\_71, Casbah\_71, ChaChing\_71, Chalmers\_70, Chandler\_71, Chentzyk\_73, Compostia\_70, Corofin\_71, Daisy\_70, Deenasa\_71, Devonte\_70, Gadget\_72, Gervas\_72, GlenHope\_72, Glubnar\_72, Halfpint\_70, HarveySr\_70, Heathcliff\_71, Jackstina\_67, Kamiyu\_71, Kronus\_71, LestyG\_69, LittleMunchkin\_65, Marley1013\_72, Marlia\_72, MmasiCarm\_72, Mortcellus\_71, Morty007\_70, Mulaychimus\_72, Neos5\_71, Nozo\_71, Obutu\_73, Olivio\_71, OrangeOswald\_71, Phaedrus\_66, Phayeta\_74, Philly\_70, Phlyer\_71, Pipefish\_74, RagingRooster\_70, Rita1961\_72, RomaT\_71, Shenandoah\_70, SlippinJimmy\_74, SwainyDoc\_72, SynergyX\_71, TinyTerror\_72, Tydolla\_67, Yahalom\_69, Yinz\_71,

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

- 

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

- AksarBAT\_68, Allegro\_66, AnClar\_60, AnarQue\_67, Arbiter\_64, Ares\_66, Axumite\_64, Bananafish\_67, BiggityBass\_62, Blackpen\_64, Blocker23\_66, BobRoss2024\_68, Boyle\_66, Brownie5\_66, CaiB\_65, Calamitous\_67, Causa\_93, CharlottesWeb\_60, CloverMinnie\_64, Coffee\_66, Coldpizza\_61, Eaglehorse\_66, Evaa\_63, Faze9\_65, FelixTres\_66, FrenchFry\_67, Fresco\_64, Glass\_67, Godines\_67, Hedgerow\_66, Holeinone\_66, ItsyBitsy1\_65, JAMaL\_67, JellyBelly\_59, Kaleb\_66, Kheth\_66, Kolhan\_67, Lars\_67, Laurie\_66, Lephleur\_66, Ligma\_64, LilSmirk\_66, LizLemon\_66, MakoManhole\_62, Mariokart\_60, MasterPo\_67,

MossRose\_65, NHagos\_62, Opia\_67, Phantasmagoria\_65, PrinceCharming\_67, Qyrzula\_60, Rhinoforte\_66, Rosebush\_65, Sabella\_66, Shatter\_64, Sisko\_62, Sour\_64, StAugustine\_92, TA17A\_68, TPA2\_72, Tinciduntolum\_67, TraderJ\_65, Tres\_66, Vic9\_00065, West99\_66, Wooper\_66, Yago84\_61, Yeshua\_65,

### Summary by start number:

#### Start 28:

- Found in 1 of 126 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TPA2\_72 (singleton),

#### Start 30:

- Found in 38 of 126 ( 30.2% ) of genes in pham
- Manual Annotations of this start: 34 of 113
- Called 92.1% of time when present
- Phage (with cluster) where this start called: Allegro\_66 (B2), Arbiter\_64 (B2), Ares\_66 (B2), Bananafish\_67 (B2), Blocker23\_66 (B2), Brownie5\_66 (B2), Coffee\_66 (B2), Eaglehorse\_66 (B2), FrenchFry\_67 (B2), Glass\_67 (B2), Godines\_67 (B2), Hedgerow\_66 (B2), Holeinone\_66 (B2), ItsyBitsy1\_65 (B2), Kaleb\_66 (B2), Kheth\_66 (B2), Kolhan\_67 (B2), Lars\_67 (B2), Laurie\_66 (B2), Lephleur\_66 (B2), LilSmirk\_66 (B2), LizLemon\_66 (B2), MasterPo\_67 (B2), Opia\_67 (B2), Phantasmagoria\_65 (B2), PrinceCharming\_67 (B2), Qyrzula\_60 (B2), Rhinoforte\_66 (B2), Rosebush\_65 (B2), Sabella\_66 (B2), TA17A\_68 (B2), Tinciduntolum\_67 (B2), Tres\_66 (B2), Vic9\_00065 (B2), West99\_66 (B2),

#### Start 31:

- Found in 1 of 126 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sour\_64 (DR),

#### Start 32:

- Found in 40 of 126 ( 31.7% ) of genes in pham
- Manual Annotations of this start: 4 of 113
- Called 12.5% of time when present
- Phage (with cluster) where this start called: AksarBAT\_68 (DR), Boyle\_66 (B2), Calamitous\_67 (B2), Faze9\_65 (B2), NHagos\_62 (DR),

#### Start 33:

- Found in 2 of 126 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Causa\_93 (AI), StAugustine\_92 (AI),

#### Start 34:

- Found in 12 of 126 ( 9.5% ) of genes in pham
- Manual Annotations of this start: 10 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnClar\_60 (DR), Axumite\_64 (DR), BiggityBass\_62 (DR), CharlottesWeb\_60 (DR), Evaa\_63 (DR), Fresco\_64 (DR), JellyBelly\_59 (DR), Ligma\_64 (DR), Mariokart\_60 (DR), Shatter\_64 (DR), Sisko\_62

(DR), Yago84\_61 (DR),

Start 35:

- Found in 57 of 126 ( 45.2% ) of genes in pham
- Manual Annotations of this start: 52 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abinghost\_71 (B3), Akoma\_71 (B3), Athena\_73 (B3), Audrey\_71 (B3), Baloo\_70 (B3), Ben11\_71 (B3), Bernardo\_72 (B3), Briakila\_71 (B3), Casbah\_71 (B3), ChaChing\_71 (B3), Chalmers\_70 (B3), Chandler\_71 (B3), Chentzyk\_73 (B3), Compostia\_70 (B3), Corofin\_71 (B3), Daisy\_70 (B3), Deenasa\_71 (B3), Devonte\_70 (B3), Gadjet\_72 (B3), Gervas\_72 (B3), GlenHope\_72 (B3), Glubnar\_72 (B3), Halfpint\_70 (B3), HarveySr\_70 (B3), Heathcliff\_71 (B3), Jackstina\_67 (B3), Kamiyu\_71 (B3), Kronus\_71 (B3), LestyG\_69 (B3), LittleMunchkin\_65 (DR), Marley1013\_72 (B3), Marlia\_72 (B3), MmasiCarm\_72 (B3), Mortcellus\_71 (B3), Morty007\_70 (B3), Mulaychimus\_72 (B3), Neos5\_71 (B3), Nozo\_71 (B3), Obutu\_73 (B3), Olivio\_71 (B3), OrangeOswald\_71 (B3), Phaedrus\_66 (B3), Phayeta\_74 (B3), Philly\_70 (B3), Phlyer\_71 (B3), Pipefish\_74 (B3), RagingRooster\_70 (B3), Rita1961\_72 (B3), RomaT\_71 (B3), Shenandoah\_70 (B3), SlippinJimmy\_74 (B3), SwainyDoc\_72 (B3), SynergyX\_71 (B3), TinyTerror\_72 (B3), Tydolla\_67 (B3), Yahalom\_69 (B3), Yinz\_71 (B3),

Start 36:

- Found in 2 of 126 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Coldpizza\_61 (DR),

Start 37:

- Found in 11 of 126 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 8 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_67 (DR), Blackpen\_64 (DR), BobRoss2024\_68 (DR), CaiB\_65 (DR), CloverMinnie\_64 (DR), FelixTres\_66 (DR), MakoManhole\_62 (DR), MossRose\_65 (DR), TraderJ\_65 (DR), Wooper\_66 (DR), Yeshua\_65 (DR),

Start 40:

- Found in 38 of 126 ( 30.2% ) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 2.6% of time when present
- Phage (with cluster) where this start called: JAMaL\_67 (B4),

### Summary by clusters:

There are 6 clusters represented in this pham: singleton, A1, B4, B2, B3, DR,

Info for manual annotations of cluster A1:

- Start number 33 was manually annotated 2 times for cluster A1.

Info for manual annotations of cluster B2:

- Start number 30 was manually annotated 34 times for cluster B2.
- Start number 32 was manually annotated 3 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 35 was manually annotated 51 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 40 was manually annotated 1 time for cluster B4.

Info for manual annotations of cluster DR:

- Start number 31 was manually annotated 1 time for cluster DR.
- Start number 32 was manually annotated 1 time for cluster DR.
- Start number 34 was manually annotated 10 times for cluster DR.
- Start number 35 was manually annotated 1 time for cluster DR.
- Start number 36 was manually annotated 1 time for cluster DR.
- Start number 37 was manually annotated 8 times for cluster DR.

### **Gene Information:**

Gene: Abinghost\_71 Start: 57879, Stop: 58478, Start Num: 35

Candidate Starts for Abinghost\_71:

(Start: 35 @57879 has 52 MA's), (41, 57894), (45, 57924), (49, 57948), (62, 58041), (67, 58065), (68, 58074), (75, 58107), (76, 58110), (78, 58134), (80, 58164), (84, 58221), (96, 58305),

Gene: Akoma\_71 Start: 57919, Stop: 58518, Start Num: 35

Candidate Starts for Akoma\_71:

(Start: 35 @57919 has 52 MA's), (41, 57934), (45, 57964), (49, 57988), (62, 58081), (67, 58105), (68, 58114), (75, 58147), (76, 58150), (78, 58174), (80, 58204), (84, 58261), (96, 58345),

Gene: AksarBAT\_68 Start: 53011, Stop: 53595, Start Num: 32

Candidate Starts for AksarBAT\_68:

(11, 52732), (18, 52834), (Start: 32 @53011 has 4 MA's), (44, 53071), (45, 53089), (51, 53119), (57, 53173), (59, 53194), (62, 53206), (64, 53215), (68, 53239), (72, 53260), (73, 53263), (80, 53329), (82, 53338), (87, 53407), (91, 53437), (95, 53461), (101, 53530),

Gene: Allegro\_66 Start: 56167, Stop: 56817, Start Num: 30

Candidate Starts for Allegro\_66:

(5, 55813), (7, 55837), (9, 55876), (27, 56107), (Start: 30 @56167 has 34 MA's), (Start: 32 @56173 has 4 MA's), (43, 56218), (47, 56245), (53, 56275), (59, 56335), (65, 56359), (72, 56401), (74, 56407), (75, 56413), (77, 56437), (84, 56527), (99, 56683),

Gene: AnClar\_60 Start: 52491, Stop: 53087, Start Num: 34

Candidate Starts for AnClar\_60:

(Start: 34 @52491 has 10 MA's), (47, 52569), (55, 52626), (57, 52638), (59, 52659), (68, 52704), (72, 52725), (78, 52764), (79, 52791), (85, 52857), (87, 52872), (93, 52920), (96, 52935), (103, 53031),

Gene: AnarQue\_67 Start: 53185, Stop: 53751, Start Num: 37

Candidate Starts for AnarQue\_67:

(1, 52657), (4, 52792), (25, 53074), (26, 53083), (Start: 37 @53185 has 8 MA's), (47, 53254), (57, 53323), (59, 53344), (60, 53350), (64, 53365), (68, 53389), (72, 53410), (73, 53413), (79, 53476), (80, 53479), (82, 53488), (84, 53536), (85, 53542), (87, 53557), (96, 53620),

Gene: Arbiter\_64 Start: 56199, Stop: 56852, Start Num: 30

Candidate Starts for Arbiter\_64:

(5, 55845), (7, 55869), (9, 55908), (27, 56139), (Start: 30 @56199 has 34 MA's), (Start: 32 @56205 has 4 MA's), (43, 56253), (47, 56280), (53, 56310), (59, 56370), (65, 56394), (72, 56436), (74, 56442), (75, 56448), (77, 56472), (84, 56562), (99, 56718),

Gene: Ares\_66 Start: 56170, Stop: 56823, Start Num: 30

Candidate Starts for Ares\_66:

(5, 55816), (7, 55840), (9, 55879), (27, 56110), (Start: 30 @56170 has 34 MA's), (Start: 32 @56176 has 4 MA's), (43, 56224), (47, 56251), (53, 56281), (59, 56341), (65, 56365), (72, 56407), (74, 56413), (75, 56419), (77, 56443), (84, 56533), (99, 56689),

Gene: Athena\_73 Start: 58654, Stop: 59253, Start Num: 35

Candidate Starts for Athena\_73:

(Start: 35 @58654 has 52 MA's), (Start: 40 @58663 has 1 MA's), (41, 58669), (45, 58699), (49, 58723), (62, 58816), (67, 58840), (68, 58849), (75, 58882), (76, 58885), (78, 58909), (80, 58939), (84, 58996), (89, 59035), (96, 59080),

Gene: Audrey\_71 Start: 57918, Stop: 58517, Start Num: 35

Candidate Starts for Audrey\_71:

(Start: 35 @57918 has 52 MA's), (Start: 40 @57927 has 1 MA's), (41, 57933), (45, 57963), (49, 57987), (62, 58080), (67, 58104), (68, 58113), (75, 58146), (76, 58149), (78, 58173), (80, 58203), (84, 58260), (89, 58299), (96, 58344),

Gene: Axumite\_64 Start: 51329, Stop: 51919, Start Num: 34

Candidate Starts for Axumite\_64:

(Start: 34 @51329 has 10 MA's), (39, 51338), (47, 51401), (56, 51464), (59, 51491), (62, 51503), (64, 51512), (68, 51536), (79, 51623), (86, 51695), (87, 51704), (93, 51752), (96, 51767),

Gene: Baloo\_70 Start: 57751, Stop: 58350, Start Num: 35

Candidate Starts for Baloo\_70:

(Start: 35 @57751 has 52 MA's), (Start: 40 @57760 has 1 MA's), (41, 57766), (45, 57796), (49, 57820), (62, 57913), (67, 57937), (68, 57946), (75, 57979), (76, 57982), (78, 58006), (80, 58036), (84, 58093), (89, 58132), (96, 58177),

Gene: Bananafish\_67 Start: 56100, Stop: 56753, Start Num: 30

Candidate Starts for Bananafish\_67:

(5, 55746), (7, 55770), (9, 55809), (27, 56040), (Start: 30 @56100 has 34 MA's), (Start: 32 @56106 has 4 MA's), (43, 56154), (47, 56181), (53, 56211), (59, 56271), (65, 56295), (72, 56337), (74, 56343), (75, 56349), (77, 56373), (84, 56463), (99, 56619),

Gene: Ben11\_71 Start: 58136, Stop: 58735, Start Num: 35

Candidate Starts for Ben11\_71:

(Start: 35 @58136 has 52 MA's), (41, 58151), (49, 58205), (62, 58298), (67, 58322), (68, 58331), (75, 58364), (76, 58367), (78, 58391), (80, 58421), (84, 58478), (89, 58517), (96, 58562),

Gene: Bernardo\_72 Start: 58117, Stop: 58716, Start Num: 35

Candidate Starts for Bernardo\_72:

(20, 57967), (23, 58000), (Start: 35 @58117 has 52 MA's), (Start: 40 @58126 has 1 MA's), (41, 58132), (45, 58162), (49, 58186), (62, 58279), (67, 58303), (68, 58312), (75, 58345), (76, 58348), (78, 58372), (80, 58402), (84, 58459), (89, 58498), (96, 58543),

Gene: BiggityBass\_62 Start: 53047, Stop: 53640, Start Num: 34

Candidate Starts for BiggityBass\_62:

(Start: 34 @53047 has 10 MA's), (47, 53122), (55, 53179), (57, 53191), (59, 53212), (68, 53257), (79, 53344), (85, 53410), (87, 53425), (90, 53452), (93, 53473), (96, 53488),

Gene: Blackpen\_64 Start: 51624, Stop: 52205, Start Num: 37

Candidate Starts for Blackpen\_64:

(4, 51231), (25, 51513), (26, 51522), (Start: 37 @51624 has 8 MA's), (47, 51693), (57, 51762), (59, 51783), (60, 51789), (64, 51804), (68, 51828), (72, 51849), (79, 51915), (80, 51918), (82, 51927), (84, 51975), (85, 51981), (87, 51996), (96, 52059),

Gene: Blocker23\_66 Start: 56167, Stop: 56817, Start Num: 30

Candidate Starts for Blocker23\_66:

(5, 55813), (7, 55837), (9, 55876), (27, 56107), (Start: 30 @56167 has 34 MA's), (Start: 32 @56173 has 4 MA's), (43, 56218), (47, 56245), (53, 56275), (59, 56335), (65, 56359), (72, 56401), (74, 56407), (75, 56413), (77, 56437), (84, 56527), (99, 56683),

Gene: BobRoss2024\_68 Start: 52748, Stop: 53359, Start Num: 37

Candidate Starts for BobRoss2024\_68:

(Start: 37 @52748 has 8 MA's), (39, 52754), (47, 52817), (60, 52913), (64, 52928), (80, 53042), (87, 53120), (96, 53183), (102, 53264),

Gene: Boyle\_66 Start: 56214, Stop: 56861, Start Num: 32

Candidate Starts for Boyle\_66:

(5, 55854), (7, 55878), (9, 55917), (27, 56148), (Start: 30 @56208 has 34 MA's), (Start: 32 @56214 has 4 MA's), (43, 56262), (47, 56289), (53, 56319), (59, 56379), (65, 56403), (72, 56445), (74, 56451), (75, 56457), (77, 56481), (84, 56571), (99, 56727),

Gene: Briakila\_71 Start: 58117, Stop: 58716, Start Num: 35

Candidate Starts for Briakila\_71:

(Start: 35 @58117 has 52 MA's), (Start: 40 @58126 has 1 MA's), (41, 58132), (45, 58162), (49, 58186), (62, 58279), (67, 58303), (68, 58312), (75, 58345), (76, 58348), (78, 58372), (80, 58402), (84, 58459), (89, 58498), (96, 58543),

Gene: Brownie5\_66 Start: 56210, Stop: 56863, Start Num: 30

Candidate Starts for Brownie5\_66:

(5, 55856), (7, 55880), (9, 55919), (27, 56150), (Start: 30 @56210 has 34 MA's), (Start: 32 @56216 has 4 MA's), (43, 56264), (47, 56291), (53, 56321), (59, 56381), (65, 56405), (72, 56447), (74, 56453), (75, 56459), (77, 56483), (84, 56573), (99, 56729),

Gene: CaiB\_65 Start: 52969, Stop: 53550, Start Num: 37

Candidate Starts for CaiB\_65:

(4, 52576), (25, 52858), (26, 52867), (Start: 37 @52969 has 8 MA's), (47, 53038), (57, 53107), (59, 53128), (60, 53134), (64, 53149), (68, 53173), (72, 53194), (79, 53260), (80, 53263), (82, 53272), (83, 53293), (84, 53320), (85, 53326), (87, 53341), (96, 53404),

Gene: Calamitous\_67 Start: 56104, Stop: 56751, Start Num: 32

Candidate Starts for Calamitous\_67:

(5, 55744), (7, 55768), (9, 55807), (27, 56038), (Start: 30 @56098 has 34 MA's), (Start: 32 @56104 has 4 MA's), (43, 56152), (47, 56179), (53, 56209), (59, 56269), (65, 56293), (72, 56335), (74, 56341), (75, 56347), (77, 56371), (84, 56461), (99, 56617),

Gene: Casbah\_71 Start: 58238, Stop: 58837, Start Num: 35

Candidate Starts for Casbah\_71:

(Start: 35 @58238 has 52 MA's), (Start: 40 @58247 has 1 MA's), (41, 58253), (45, 58283), (49, 58307), (62, 58400), (67, 58424), (68, 58433), (75, 58466), (76, 58469), (78, 58493), (80, 58523), (84, 58580), (89, 58619),

Gene: Causa\_93 Start: 67664, Stop: 68245, Start Num: 33

Candidate Starts for Causa\_93:

(Start: 33 @67664 has 2 MA's), (47, 67733), (51, 67748), (61, 67835), (63, 67844), (66, 67859), (68, 67868), (78, 67928), (84, 68027), (106, 68240),

Gene: ChaChing\_71 Start: 57936, Stop: 58535, Start Num: 35

Candidate Starts for ChaChing\_71:

(Start: 35 @57936 has 52 MA's), (Start: 40 @57945 has 1 MA's), (41, 57951), (45, 57981), (49, 58005), (62, 58098), (67, 58122), (68, 58131), (75, 58164), (76, 58167), (78, 58191), (80, 58221), (84, 58278), (89, 58317), (96, 58362),

Gene: Chalmers\_70 Start: 58369, Stop: 58968, Start Num: 35

Candidate Starts for Chalmers\_70:

(Start: 35 @58369 has 52 MA's), (41, 58384), (45, 58414), (49, 58438), (62, 58531), (67, 58555), (68, 58564), (75, 58597), (76, 58600), (78, 58624), (80, 58654), (84, 58711), (89, 58750),

Gene: Chandler\_71 Start: 58698, Stop: 59297, Start Num: 35

Candidate Starts for Chandler\_71:

(Start: 35 @58698 has 52 MA's), (41, 58713), (45, 58743), (49, 58767), (62, 58860), (67, 58884), (68, 58893), (75, 58926), (76, 58929), (78, 58953), (80, 58983), (84, 59040), (89, 59079),

Gene: CharlottesWeb\_60 Start: 49910, Stop: 50527, Start Num: 34

Candidate Starts for CharlottesWeb\_60:

(2, 49511), (12, 49634), (13, 49646), (18, 49721), (29, 49865), (Start: 34 @49910 has 10 MA's), (39, 49925), (42, 49940), (43, 49952), (47, 49988), (57, 50057), (59, 50078), (62, 50090), (64, 50099), (68, 50123), (72, 50144), (79, 50210), (86, 50282), (87, 50291), (93, 50339), (96, 50354),

Gene: Chentzyk\_73 Start: 58869, Stop: 59468, Start Num: 35

Candidate Starts for Chentzyk\_73:

(Start: 35 @58869 has 52 MA's), (Start: 40 @58878 has 1 MA's), (41, 58884), (49, 58938), (62, 59031), (67, 59055), (68, 59064), (75, 59097), (76, 59100), (78, 59124), (80, 59154), (84, 59211),

Gene: CloverMinnie\_64 Start: 52132, Stop: 52713, Start Num: 37

Candidate Starts for CloverMinnie\_64:

(4, 51739), (25, 52021), (26, 52030), (Start: 37 @52132 has 8 MA's), (47, 52201), (57, 52270), (59, 52291), (60, 52297), (64, 52312), (68, 52336), (72, 52357), (79, 52423), (80, 52426), (82, 52435), (84, 52483), (85, 52489), (87, 52504), (96, 52567),

Gene: Coffee\_66 Start: 56202, Stop: 56855, Start Num: 30

Candidate Starts for Coffee\_66:

(5, 55848), (7, 55872), (9, 55911), (27, 56142), (Start: 30 @56202 has 34 MA's), (Start: 32 @56208 has 4 MA's), (43, 56256), (47, 56283), (53, 56313), (59, 56373), (65, 56397), (72, 56439), (74, 56445), (75, 56451), (77, 56475), (84, 56565), (99, 56721),

Gene: Coldpizza\_61 Start: 52645, Stop: 53241, Start Num: 36

Candidate Starts for Coldpizza\_61:

(Start: 36 @52645 has 1 MA's), (47, 52699), (49, 52708), (51, 52714), (55, 52756), (64, 52810), (68, 52834), (81, 52927), (84, 52981), (85, 52987), (86, 52993), (91, 53032), (92, 53047), (97, 53074), (98, 53113),

Gene: Compostia\_70 Start: 58319, Stop: 58918, Start Num: 35

Candidate Starts for Compostia\_70:

(Start: 35 @58319 has 52 MA's), (Start: 40 @58328 has 1 MA's), (41, 58334), (45, 58364), (49, 58388), (62, 58481), (67, 58505), (68, 58514), (75, 58547), (76, 58550), (78, 58574), (80, 58604), (84, 58661),

Gene: Corofin\_71 Start: 57949, Stop: 58548, Start Num: 35

Candidate Starts for Corofin\_71:

(Start: 35 @57949 has 52 MA's), (Start: 40 @57958 has 1 MA's), (41, 57964), (45, 57994), (49, 58018), (62, 58111), (67, 58135), (68, 58144), (75, 58177), (76, 58180), (78, 58204), (80, 58234), (84, 58291), (89, 58330), (96, 58375),

Gene: Daisy\_70 Start: 57482, Stop: 58081, Start Num: 35

Candidate Starts for Daisy\_70:

(Start: 35 @57482 has 52 MA's), (Start: 40 @57491 has 1 MA's), (41, 57497), (45, 57527), (49, 57551), (62, 57644), (67, 57668), (68, 57677), (75, 57710), (76, 57713), (78, 57737), (80, 57767), (84, 57824), (96, 57908),

Gene: Deenasa\_71 Start: 58785, Stop: 59384, Start Num: 35

Candidate Starts for Deenasa\_71:

(Start: 35 @58785 has 52 MA's), (41, 58800), (45, 58830), (49, 58854), (62, 58947), (67, 58971), (68, 58980), (75, 59013), (76, 59016), (78, 59040), (80, 59070), (84, 59127), (96, 59211),

Gene: Devonte\_70 Start: 57561, Stop: 58160, Start Num: 35

Candidate Starts for Devonte\_70:

(Start: 35 @57561 has 52 MA's), (Start: 40 @57570 has 1 MA's), (41, 57576), (45, 57606), (49, 57630), (62, 57723), (67, 57747), (68, 57756), (75, 57789), (76, 57792), (78, 57816), (80, 57846), (84, 57903), (89, 57942), (96, 57987),

Gene: Eaglehorse\_66 Start: 56088, Stop: 56741, Start Num: 30

Candidate Starts for Eaglehorse\_66:

(5, 55734), (7, 55758), (9, 55797), (27, 56028), (Start: 30 @56088 has 34 MA's), (Start: 32 @56094 has 4 MA's), (43, 56142), (47, 56169), (53, 56199), (59, 56259), (65, 56283), (72, 56325), (74, 56331), (75, 56337), (77, 56361), (84, 56451), (99, 56607),

Gene: Evaa\_63 Start: 50521, Stop: 51108, Start Num: 34

Candidate Starts for Evaa\_63:

(Start: 34 @50521 has 10 MA's), (Start: 36 @50527 has 1 MA's), (47, 50578), (51, 50593), (56, 50641), (64, 50689), (68, 50713), (72, 50734), (76, 50749), (77, 50770), (81, 50806), (94, 50932),

Gene: Faze9\_65 Start: 56233, Stop: 56880, Start Num: 32

Candidate Starts for Faze9\_65:

(5, 55873), (7, 55897), (9, 55936), (27, 56167), (Start: 30 @56227 has 34 MA's), (Start: 32 @56233 has 4 MA's), (43, 56281), (47, 56308), (53, 56338), (59, 56398), (65, 56422), (72, 56464), (74, 56470), (75, 56476), (77, 56500), (84, 56590), (99, 56746),

Gene: FelixTres\_66 Start: 52439, Stop: 53005, Start Num: 37

Candidate Starts for FelixTres\_66:

(4, 52046), (25, 52328), (26, 52337), (Start: 37 @52439 has 8 MA's), (47, 52508), (57, 52577), (59, 52598), (60, 52604), (64, 52619), (68, 52643), (72, 52664), (79, 52730), (80, 52733), (82, 52742), (84, 52790), (85, 52796), (87, 52811), (96, 52874),

Gene: FrenchFry\_67 Start: 56213, Stop: 56866, Start Num: 30

Candidate Starts for FrenchFry\_67:

(5, 55859), (7, 55883), (9, 55922), (27, 56153), (Start: 30 @56213 has 34 MA's), (Start: 32 @56219 has 4 MA's), (43, 56267), (47, 56294), (53, 56324), (59, 56384), (65, 56408), (72, 56450), (74, 56456), (75, 56462), (77, 56486), (84, 56576), (99, 56732),

Gene: Fresco\_64 Start: 51329, Stop: 51925, Start Num: 34

Candidate Starts for Fresco\_64:

(10, 51029), (12, 51053), (13, 51065), (18, 51140), (29, 51284), (Start: 34 @51329 has 10 MA's), (39, 51344), (42, 51359), (43, 51371), (47, 51407), (56, 51470), (59, 51497), (62, 51509), (64, 51518), (68, 51542), (79, 51629), (86, 51701), (87, 51710), (93, 51758), (96, 51773),

Gene: Gadget\_72 Start: 58249, Stop: 58848, Start Num: 35

Candidate Starts for Gadget\_72:

(Start: 35 @58249 has 52 MA's), (41, 58264), (45, 58294), (49, 58318), (62, 58411), (67, 58435), (68, 58444), (75, 58477), (76, 58480), (78, 58504), (80, 58534), (84, 58591), (89, 58630),

Gene: Gervas\_72 Start: 58343, Stop: 58942, Start Num: 35

Candidate Starts for Gervas\_72:

(Start: 35 @58343 has 52 MA's), (Start: 40 @58352 has 1 MA's), (41, 58358), (45, 58388), (49, 58412), (62, 58505), (67, 58529), (68, 58538), (75, 58571), (76, 58574), (78, 58598), (80, 58628), (84, 58685), (89, 58724), (96, 58769),

Gene: Glass\_67 Start: 56215, Stop: 56868, Start Num: 30

Candidate Starts for Glass\_67:

(5, 55861), (7, 55885), (9, 55924), (27, 56155), (Start: 30 @56215 has 34 MA's), (Start: 32 @56221 has 4 MA's), (43, 56269), (47, 56296), (53, 56326), (59, 56386), (65, 56410), (72, 56452), (74, 56458), (75, 56464), (77, 56488), (84, 56578), (99, 56734),

Gene: GlenHope\_72 Start: 57909, Stop: 58508, Start Num: 35

Candidate Starts for GlenHope\_72:

(Start: 35 @57909 has 52 MA's), (Start: 40 @57918 has 1 MA's), (41, 57924), (45, 57954), (49, 57978), (62, 58071), (67, 58095), (68, 58104), (75, 58137), (76, 58140), (78, 58164), (80, 58194), (84, 58251),

Gene: Glubnar\_72 Start: 57815, Stop: 58414, Start Num: 35

Candidate Starts for Glubnar\_72:

(Start: 35 @57815 has 52 MA's), (Start: 40 @57824 has 1 MA's), (41, 57830), (45, 57860), (49, 57884), (62, 57977), (67, 58001), (68, 58010), (75, 58043), (76, 58046), (78, 58070), (80, 58100), (84, 58157), (89, 58196),

Gene: Godines\_67 Start: 56471, Stop: 57118, Start Num: 30

Candidate Starts for Godines\_67:

(5, 56117), (7, 56141), (8, 56159), (9, 56180), (27, 56411), (Start: 30 @56471 has 34 MA's), (Start: 32 @56477 has 4 MA's), (43, 56519), (47, 56546), (53, 56576), (58, 56621), (59, 56636), (65, 56660), (72, 56702), (74, 56708), (75, 56714), (77, 56738), (84, 56828), (99, 56984),

Gene: Halfpint\_70 Start: 57660, Stop: 58259, Start Num: 35

Candidate Starts for Halfpint\_70:

(Start: 35 @57660 has 52 MA's), (Start: 40 @57669 has 1 MA's), (41, 57675), (45, 57705), (49, 57729), (62, 57822), (67, 57846), (68, 57855), (75, 57888), (76, 57891), (78, 57915), (80, 57945), (84, 58002), (89, 58041), (96, 58086),

Gene: HarveySr\_70 Start: 57468, Stop: 58064, Start Num: 35

Candidate Starts for HarveySr\_70:

(Start: 35 @57468 has 52 MA's), (Start: 40 @57477 has 1 MA's), (45, 57510), (49, 57534), (62, 57627), (67, 57651), (68, 57660), (75, 57693), (76, 57696), (78, 57720), (80, 57750), (84, 57807), (89, 57846), (96, 57891),

Gene: Heathcliff\_71 Start: 57876, Stop: 58475, Start Num: 35

Candidate Starts for Heathcliff\_71:

(Start: 35 @57876 has 52 MA's), (Start: 40 @57885 has 1 MA's), (41, 57891), (49, 57945), (62, 58038), (67, 58062), (68, 58071), (75, 58104), (76, 58107), (78, 58131), (80, 58161), (84, 58218), (89, 58257),

Gene: Hedgerow\_66 Start: 56165, Stop: 56818, Start Num: 30

Candidate Starts for Hedgerow\_66:

(7, 55835), (9, 55874), (27, 56105), (Start: 30 @56165 has 34 MA's), (Start: 32 @56171 has 4 MA's), (43, 56219), (47, 56246), (53, 56276), (59, 56336), (65, 56360), (72, 56402), (74, 56408), (75, 56414), (77, 56438), (84, 56528), (99, 56684),

Gene: Holeinone\_66 Start: 56073, Stop: 56723, Start Num: 30

Candidate Starts for Holeinone\_66:

(5, 55719), (7, 55743), (9, 55782), (27, 56013), (Start: 30 @56073 has 34 MA's), (Start: 32 @56079 has 4 MA's), (43, 56124), (47, 56151), (53, 56181), (59, 56241), (65, 56265), (72, 56307), (74, 56313), (75, 56319), (77, 56343), (84, 56433), (99, 56589),

Gene: ItsyBitsy1\_65 Start: 56303, Stop: 56956, Start Num: 30

Candidate Starts for ItsyBitsy1\_65:

(27, 56243), (Start: 30 @56303 has 34 MA's), (Start: 32 @56309 has 4 MA's), (43, 56357), (47, 56384), (53, 56414), (59, 56474), (65, 56498), (72, 56540), (74, 56546), (75, 56552), (77, 56576), (84, 56666), (99, 56822),

Gene: JAMaL\_67 Start: 59483, Stop: 60070, Start Num: 40

Candidate Starts for JAMaL\_67:

(3, 59078), (6, 59111), (14, 59204), (15, 59222), (17, 59252), (22, 59348), (24, 59357), (Start: 40 @59483 has 1 MA's), (48, 59549), (49, 59552), (54, 59588), (60, 59639), (68, 59678), (69, 59681), (77, 59735), (78, 59738), (87, 59846), (93, 59894), (96, 59909), (104, 60011),

Gene: Jackstina\_67 Start: 57801, Stop: 58400, Start Num: 35

Candidate Starts for Jackstina\_67:

(Start: 35 @57801 has 52 MA's), (41, 57816), (45, 57846), (49, 57870), (62, 57963), (67, 57987), (68, 57996), (75, 58029), (76, 58032), (78, 58056), (80, 58086), (84, 58143),

Gene: JellyBelly\_59 Start: 49907, Stop: 50524, Start Num: 34

Candidate Starts for JellyBelly\_59:

(2, 49508), (12, 49631), (13, 49643), (18, 49718), (29, 49862), (Start: 34 @49907 has 10 MA's), (39, 49922), (42, 49937), (43, 49949), (47, 49985), (57, 50054), (59, 50075), (62, 50087), (64, 50096), (68, 50120), (72, 50141), (79, 50207), (86, 50279), (87, 50288), (93, 50336), (96, 50351),

Gene: Kaleb\_66 Start: 56220, Stop: 56873, Start Num: 30

Candidate Starts for Kaleb\_66:

(5, 55866), (7, 55890), (9, 55929), (27, 56160), (Start: 30 @56220 has 34 MA's), (Start: 32 @56226 has 4 MA's), (43, 56274), (47, 56301), (53, 56331), (59, 56391), (65, 56415), (72, 56457), (74, 56463), (75, 56469), (77, 56493), (84, 56583), (99, 56739), (105, 56808),

Gene: Kamiyu\_71 Start: 57878, Stop: 58477, Start Num: 35

Candidate Starts for Kamiyu\_71:

(Start: 35 @57878 has 52 MA's), (Start: 40 @57887 has 1 MA's), (41, 57893), (45, 57923), (49, 57947), (62, 58040), (67, 58064), (68, 58073), (75, 58106), (76, 58109), (78, 58133), (80, 58163), (84, 58220), (89, 58259),

Gene: Kheth\_66 Start: 56132, Stop: 56785, Start Num: 30

Candidate Starts for Kheth\_66:

(5, 55778), (7, 55802), (9, 55841), (27, 56072), (Start: 30 @56132 has 34 MA's), (Start: 32 @56138 has 4 MA's), (43, 56186), (47, 56213), (53, 56243), (59, 56303), (65, 56327), (72, 56369), (74, 56375), (75, 56381), (77, 56405), (84, 56495), (99, 56651),

Gene: Kolhan\_67 Start: 56109, Stop: 56762, Start Num: 30

Candidate Starts for Kolhan\_67:

(27, 56049), (Start: 30 @56109 has 34 MA's), (Start: 32 @56115 has 4 MA's), (43, 56163), (47, 56190), (53, 56220), (59, 56280), (65, 56304), (72, 56346), (74, 56352), (75, 56358), (77, 56382), (84, 56472), (99, 56628),

Gene: Kronus\_71 Start: 58974, Stop: 59573, Start Num: 35

Candidate Starts for Kronus\_71:

(Start: 35 @58974 has 52 MA's), (Start: 40 @58983 has 1 MA's), (41, 58989), (45, 59019), (49, 59043), (62, 59136), (67, 59160), (68, 59169), (75, 59202), (76, 59205), (78, 59229), (80, 59259), (84, 59316),

Gene: Lars\_67 Start: 56193, Stop: 56846, Start Num: 30

Candidate Starts for Lars\_67:

(5, 55839), (7, 55863), (9, 55902), (27, 56133), (Start: 30 @56193 has 34 MA's), (Start: 32 @56199 has 4 MA's), (43, 56247), (47, 56274), (53, 56304), (59, 56364), (65, 56388), (72, 56430), (74, 56436), (75, 56442), (77, 56466), (84, 56556), (99, 56712),

Gene: Laurie\_66 Start: 55873, Stop: 56523, Start Num: 30

Candidate Starts for Laurie\_66:

(27, 55813), (Start: 30 @55873 has 34 MA's), (Start: 32 @55879 has 4 MA's), (43, 55924), (47, 55951), (53, 55981), (58, 56026), (59, 56041), (65, 56065), (72, 56107), (74, 56113), (75, 56119), (77, 56143), (84, 56233), (99, 56389),

Gene: Lephleur\_66 Start: 56058, Stop: 56708, Start Num: 30

Candidate Starts for Lephleur\_66:

(5, 55704), (7, 55728), (9, 55767), (27, 55998), (Start: 30 @56058 has 34 MA's), (Start: 32 @56064 has 4 MA's), (43, 56109), (47, 56136), (53, 56166), (59, 56226), (65, 56250), (72, 56292), (74, 56298), (75, 56304), (77, 56328), (84, 56418), (99, 56574),

Gene: LestyG\_69 Start: 57404, Stop: 58003, Start Num: 35

Candidate Starts for LestyG\_69:

(Start: 35 @57404 has 52 MA's), (41, 57419), (45, 57449), (49, 57473), (62, 57566), (67, 57590), (68, 57599), (75, 57632), (76, 57635), (78, 57659), (80, 57689), (84, 57746), (89, 57785), (96, 57830),

Gene: Ligma\_64 Start: 51329, Stop: 51919, Start Num: 34

Candidate Starts for Ligma\_64:

(Start: 34 @51329 has 10 MA's), (39, 51338), (47, 51401), (56, 51464), (59, 51491), (62, 51503), (64, 51512), (68, 51536), (79, 51623), (86, 51695), (87, 51704), (93, 51752), (96, 51767),

Gene: LilSmirk\_66 Start: 56091, Stop: 56744, Start Num: 30

Candidate Starts for LilSmirk\_66:

(5, 55737), (7, 55761), (9, 55800), (27, 56031), (Start: 30 @56091 has 34 MA's), (Start: 32 @56097 has 4 MA's), (43, 56145), (47, 56172), (53, 56202), (59, 56262), (65, 56286), (72, 56328), (74, 56334),

(75, 56340), (77, 56364), (84, 56454), (99, 56610),

Gene: LittleMunchkin\_65 Start: 54116, Stop: 54709, Start Num: 35

Candidate Starts for LittleMunchkin\_65:

(Start: 35 @54116 has 52 MA's), (47, 54185), (56, 54248), (59, 54275), (60, 54281), (64, 54296), (68, 54320), (72, 54341), (79, 54407), (84, 54467), (85, 54473), (86, 54479), (87, 54488), (93, 54536), (96, 54551),

Gene: LizLemon\_66 Start: 56220, Stop: 56873, Start Num: 30

Candidate Starts for LizLemon\_66:

(5, 55866), (7, 55890), (9, 55929), (27, 56160), (Start: 30 @56220 has 34 MA's), (Start: 32 @56226 has 4 MA's), (43, 56274), (47, 56301), (53, 56331), (59, 56391), (65, 56415), (72, 56457), (74, 56463), (75, 56469), (77, 56493), (84, 56583), (99, 56739),

Gene: MakoManhole\_62 Start: 51487, Stop: 52053, Start Num: 37

Candidate Starts for MakoManhole\_62:

(4, 51094), (25, 51376), (26, 51385), (Start: 37 @51487 has 8 MA's), (47, 51556), (57, 51625), (59, 51646), (60, 51652), (64, 51667), (68, 51691), (72, 51712), (79, 51778), (80, 51781), (82, 51790), (84, 51838), (85, 51844), (87, 51859), (96, 51922),

Gene: Mariokart\_60 Start: 50195, Stop: 50812, Start Num: 34

Candidate Starts for Mariokart\_60:

(2, 49796), (12, 49919), (13, 49931), (18, 50006), (29, 50150), (Start: 34 @50195 has 10 MA's), (39, 50210), (42, 50225), (43, 50237), (47, 50273), (57, 50342), (59, 50363), (64, 50384), (68, 50408), (72, 50429), (79, 50495), (86, 50567), (87, 50576), (93, 50624), (96, 50639),

Gene: Marley1013\_72 Start: 58826, Stop: 59425, Start Num: 35

Candidate Starts for Marley1013\_72:

(Start: 35 @58826 has 52 MA's), (Start: 40 @58835 has 1 MA's), (41, 58841), (45, 58871), (49, 58895), (62, 58988), (67, 59012), (68, 59021), (75, 59054), (76, 59057), (78, 59081), (80, 59111), (84, 59168),

Gene: Marlia\_72 Start: 58347, Stop: 58946, Start Num: 35

Candidate Starts for Marlia\_72:

(Start: 35 @58347 has 52 MA's), (Start: 40 @58356 has 1 MA's), (41, 58362), (45, 58392), (49, 58416), (62, 58509), (67, 58533), (68, 58542), (75, 58575), (76, 58578), (78, 58602), (80, 58632), (84, 58689), (89, 58728), (96, 58773),

Gene: MasterPo\_67 Start: 56090, Stop: 56740, Start Num: 30

Candidate Starts for MasterPo\_67:

(5, 55736), (7, 55760), (9, 55799), (27, 56030), (Start: 30 @56090 has 34 MA's), (Start: 32 @56096 has 4 MA's), (43, 56141), (47, 56168), (53, 56198), (59, 56258), (65, 56282), (72, 56324), (74, 56330), (75, 56336), (77, 56360), (84, 56450), (99, 56606),

Gene: MmasiCarm\_72 Start: 58329, Stop: 58928, Start Num: 35

Candidate Starts for MmasiCarm\_72:

(Start: 35 @58329 has 52 MA's), (41, 58344), (49, 58398), (62, 58491), (67, 58515), (68, 58524), (75, 58557), (76, 58560), (78, 58584), (80, 58614), (84, 58671),

Gene: Mortcellus\_71 Start: 58991, Stop: 59590, Start Num: 35

Candidate Starts for Mortcellus\_71:

(Start: 35 @58991 has 52 MA's), (41, 59006), (45, 59036), (49, 59060), (62, 59153), (67, 59177), (68, 59186), (75, 59219), (76, 59222), (78, 59246), (80, 59276), (84, 59333),

Gene: Morty007\_70 Start: 58826, Stop: 59425, Start Num: 35

Candidate Starts for Morty007\_70:

(Start: 35 @58826 has 52 MA's), (Start: 40 @58835 has 1 MA's), (41, 58841), (45, 58871), (49, 58895), (62, 58988), (67, 59012), (68, 59021), (75, 59054), (76, 59057), (78, 59081), (80, 59111), (84, 59168),

Gene: MossRose\_65 Start: 52447, Stop: 53013, Start Num: 37

Candidate Starts for MossRose\_65:

(4, 52054), (25, 52336), (26, 52345), (Start: 37 @52447 has 8 MA's), (47, 52516), (57, 52585), (59, 52606), (60, 52612), (64, 52627), (68, 52651), (72, 52672), (79, 52738), (80, 52741), (82, 52750), (84, 52798), (85, 52804), (87, 52819), (96, 52882),

Gene: Mulaychimus\_72 Start: 58346, Stop: 58945, Start Num: 35

Candidate Starts for Mulaychimus\_72:

(Start: 35 @58346 has 52 MA's), (Start: 40 @58355 has 1 MA's), (41, 58361), (45, 58391), (49, 58415), (62, 58508), (67, 58532), (68, 58541), (75, 58574), (76, 58577), (78, 58601), (80, 58631), (84, 58688), (89, 58727), (96, 58772),

Gene: NHagos\_62 Start: 50884, Stop: 51486, Start Num: 32

Candidate Starts for NHagos\_62:

(11, 50605), (18, 50707), (Start: 32 @50884 has 4 MA's), (44, 50944), (45, 50962), (51, 50992), (57, 51046), (59, 51067), (62, 51079), (64, 51088), (68, 51112), (72, 51133), (73, 51136), (80, 51202), (82, 51211), (87, 51280), (91, 51310), (95, 51334), (101, 51421),

Gene: Neos5\_71 Start: 58288, Stop: 58887, Start Num: 35

Candidate Starts for Neos5\_71:

(Start: 35 @58288 has 52 MA's), (Start: 40 @58297 has 1 MA's), (41, 58303), (49, 58357), (62, 58450), (67, 58474), (68, 58483), (75, 58516), (76, 58519), (78, 58543), (80, 58573), (84, 58630),

Gene: Nozo\_71 Start: 58685, Stop: 59284, Start Num: 35

Candidate Starts for Nozo\_71:

(Start: 35 @58685 has 52 MA's), (41, 58700), (45, 58730), (49, 58754), (62, 58847), (67, 58871), (68, 58880), (75, 58913), (76, 58916), (78, 58940), (80, 58970), (84, 59027), (96, 59111),

Gene: Obutu\_73 Start: 58508, Stop: 59107, Start Num: 35

Candidate Starts for Obutu\_73:

(Start: 35 @58508 has 52 MA's), (41, 58523), (45, 58553), (49, 58577), (62, 58670), (67, 58694), (68, 58703), (75, 58736), (76, 58739), (78, 58763), (80, 58793), (84, 58850), (89, 58889),

Gene: Olivio\_71 Start: 58141, Stop: 58740, Start Num: 35

Candidate Starts for Olivio\_71:

(Start: 35 @58141 has 52 MA's), (Start: 40 @58150 has 1 MA's), (41, 58156), (49, 58210), (62, 58303), (67, 58327), (68, 58336), (75, 58369), (76, 58372), (78, 58396), (80, 58426), (84, 58483), (89, 58522),

Gene: Opia\_67 Start: 56110, Stop: 56766, Start Num: 30

Candidate Starts for Opia\_67:

(5, 55756), (7, 55780), (9, 55819), (27, 56050), (Start: 30 @56110 has 34 MA's), (Start: 32 @56116 has 4 MA's), (43, 56167), (47, 56194), (53, 56224), (59, 56284), (65, 56308), (72, 56350), (74, 56356), (75, 56362), (77, 56386), (84, 56476), (99, 56632),

Gene: OrangeOswald\_71 Start: 57926, Stop: 58525, Start Num: 35

Candidate Starts for OrangeOswald\_71:

(Start: 35 @57926 has 52 MA's), (41, 57941), (45, 57971), (49, 57995), (62, 58088), (67, 58112), (68, 58121), (75, 58154), (76, 58157), (78, 58181), (80, 58211), (84, 58268), (96, 58352),

Gene: Phaedrus\_66 Start: 57351, Stop: 57950, Start Num: 35

Candidate Starts for Phaedrus\_66:

(Start: 35 @57351 has 52 MA's), (Start: 40 @57360 has 1 MA's), (41, 57366), (45, 57396), (49, 57420), (62, 57513), (67, 57537), (68, 57546), (75, 57579), (76, 57582), (78, 57606), (80, 57636), (84, 57693), (89, 57732),

Gene: Phantasmagoria\_65 Start: 56102, Stop: 56755, Start Num: 30

Candidate Starts for Phantasmagoria\_65:

(5, 55748), (7, 55772), (9, 55811), (27, 56042), (Start: 30 @56102 has 34 MA's), (Start: 32 @56108 has 4 MA's), (43, 56156), (47, 56183), (53, 56213), (59, 56273), (65, 56297), (72, 56339), (74, 56345), (75, 56351), (77, 56375), (84, 56465), (99, 56621),

Gene: Phayeta\_74 Start: 58412, Stop: 59011, Start Num: 35

Candidate Starts for Phayeta\_74:

(Start: 35 @58412 has 52 MA's), (41, 58427), (45, 58457), (49, 58481), (62, 58574), (67, 58598), (68, 58607), (75, 58640), (76, 58643), (78, 58667), (80, 58697), (84, 58754),

Gene: Philly\_70 Start: 57738, Stop: 58337, Start Num: 35

Candidate Starts for Philly\_70:

(Start: 35 @57738 has 52 MA's), (Start: 40 @57747 has 1 MA's), (41, 57753), (45, 57783), (49, 57807), (62, 57900), (67, 57924), (68, 57933), (75, 57966), (76, 57969), (78, 57993), (80, 58023), (84, 58080), (89, 58119),

Gene: Phlyer\_71 Start: 58634, Stop: 59233, Start Num: 35

Candidate Starts for Phlyer\_71:

(Start: 35 @58634 has 52 MA's), (Start: 40 @58643 has 1 MA's), (41, 58649), (45, 58679), (49, 58703), (62, 58796), (67, 58820), (68, 58829), (75, 58862), (76, 58865), (78, 58889), (80, 58919), (84, 58976),

Gene: Pipefish\_74 Start: 59045, Stop: 59644, Start Num: 35

Candidate Starts for Pipefish\_74:

(Start: 35 @59045 has 52 MA's), (41, 59060), (45, 59090), (49, 59114), (62, 59207), (67, 59231), (68, 59240), (75, 59273), (76, 59276), (78, 59300), (80, 59330), (84, 59387), (89, 59426), (96, 59471),

Gene: PrinceCharming\_67 Start: 56142, Stop: 56795, Start Num: 30

Candidate Starts for PrinceCharming\_67:

(5, 55791), (7, 55815), (9, 55854), (27, 56082), (Start: 30 @56142 has 34 MA's), (Start: 32 @56148 has 4 MA's), (43, 56196), (47, 56223), (53, 56253), (59, 56313), (65, 56337), (72, 56379), (74, 56385), (75, 56391), (77, 56415), (84, 56505), (99, 56661),

Gene: Qyrzula\_60 Start: 56221, Stop: 56880, Start Num: 30

Candidate Starts for Qyrzula\_60:

(5, 55867), (7, 55891), (9, 55930), (27, 56161), (Start: 30 @56221 has 34 MA's), (Start: 32 @56227 has 4 MA's), (43, 56281), (47, 56308), (53, 56338), (59, 56398), (65, 56422), (72, 56464), (74, 56470), (75, 56476), (77, 56500), (84, 56590), (99, 56746),

Gene: RagingRooster\_70 Start: 57566, Stop: 58165, Start Num: 35

Candidate Starts for RagingRooster\_70:

(Start: 35 @57566 has 52 MA's), (Start: 40 @57575 has 1 MA's), (41, 57581), (45, 57611), (49, 57635), (62, 57728), (67, 57752), (68, 57761), (75, 57794), (76, 57797), (78, 57821), (80, 57851), (84, 57908),

Gene: Rhinoforte\_66 Start: 56143, Stop: 56793, Start Num: 30

Candidate Starts for Rhinoforte\_66:

(5, 55789), (7, 55813), (9, 55852), (27, 56083), (Start: 30 @56143 has 34 MA's), (Start: 32 @56149 has 4 MA's), (43, 56194), (47, 56221), (53, 56251), (59, 56311), (65, 56335), (72, 56377), (74, 56383), (75, 56389), (77, 56413), (84, 56503), (99, 56659),

Gene: Rita1961\_72 Start: 58284, Stop: 58883, Start Num: 35

Candidate Starts for Rita1961\_72:

(Start: 35 @58284 has 52 MA's), (41, 58299), (49, 58353), (62, 58446), (67, 58470), (68, 58479), (75, 58512), (76, 58515), (78, 58539), (80, 58569), (84, 58626),

Gene: RomaT\_71 Start: 58485, Stop: 59084, Start Num: 35

Candidate Starts for RomaT\_71:

(Start: 35 @58485 has 52 MA's), (Start: 40 @58494 has 1 MA's), (41, 58500), (45, 58530), (49, 58554), (62, 58647), (67, 58671), (68, 58680), (75, 58713), (76, 58716), (78, 58740), (80, 58770), (84, 58827), (89, 58866), (96, 58911),

Gene: Rosebush\_65 Start: 56206, Stop: 56859, Start Num: 30

Candidate Starts for Rosebush\_65:

(5, 55852), (7, 55876), (9, 55915), (27, 56146), (Start: 30 @56206 has 34 MA's), (Start: 32 @56212 has 4 MA's), (43, 56260), (47, 56287), (53, 56317), (59, 56377), (65, 56401), (72, 56443), (74, 56449), (75, 56455), (77, 56479), (84, 56569), (99, 56725),

Gene: Sabella\_66 Start: 56042, Stop: 56695, Start Num: 30

Candidate Starts for Sabella\_66:

(27, 55982), (Start: 30 @56042 has 34 MA's), (Start: 32 @56048 has 4 MA's), (43, 56096), (47, 56123), (53, 56153), (59, 56213), (65, 56237), (72, 56279), (74, 56285), (75, 56291), (77, 56315), (84, 56405), (99, 56561),

Gene: Shatter\_64 Start: 51329, Stop: 51919, Start Num: 34

Candidate Starts for Shatter\_64:

(Start: 34 @51329 has 10 MA's), (39, 51338), (47, 51401), (56, 51464), (59, 51491), (62, 51503), (64, 51512), (68, 51536), (79, 51623), (86, 51695), (87, 51704), (93, 51752), (96, 51767),

Gene: Shenandoah\_70 Start: 57543, Stop: 58142, Start Num: 35

Candidate Starts for Shenandoah\_70:

(Start: 35 @57543 has 52 MA's), (Start: 40 @57552 has 1 MA's), (41, 57558), (45, 57588), (49, 57612), (62, 57705), (67, 57729), (68, 57738), (75, 57771), (76, 57774), (78, 57798), (80, 57828), (84, 57885),

Gene: Sisko\_62 Start: 51559, Stop: 52155, Start Num: 34

Candidate Starts for Sisko\_62:

(Start: 34 @51559 has 10 MA's), (47, 51637), (55, 51694), (57, 51706), (59, 51727), (68, 51772), (72, 51793), (79, 51859), (87, 51940), (93, 51988), (96, 52003),

Gene: SlippinJimmy\_74 Start: 59309, Stop: 59908, Start Num: 35

Candidate Starts for SlippinJimmy\_74:

(Start: 35 @59309 has 52 MA's), (Start: 40 @59318 has 1 MA's), (41, 59324), (45, 59354), (49, 59378), (62, 59471), (67, 59495), (68, 59504), (75, 59537), (76, 59540), (78, 59564), (80, 59594), (84, 59651), (89, 59690), (96, 59735),

Gene: Sour\_64 Start: 53787, Stop: 54392, Start Num: 31

Candidate Starts for Sour\_64:

(Start: 31 @53787 has 1 MA's), (47, 53883), (55, 53940), (57, 53952), (68, 54018), (72, 54039), (79, 54105), (84, 54165), (85, 54171), (86, 54177), (87, 54186), (93, 54234), (96, 54249),

Gene: StAugustine\_92 Start: 69363, Stop: 69944, Start Num: 33

Candidate Starts for StAugustine\_92:

(Start: 33 @69363 has 2 MA's), (47, 69432), (51, 69447), (61, 69534), (63, 69543), (66, 69558), (68, 69567), (78, 69627), (84, 69726), (106, 69939),

Gene: SwainyDoc\_72 Start: 58307, Stop: 58906, Start Num: 35

Candidate Starts for SwainyDoc\_72:

(Start: 35 @58307 has 52 MA's), (Start: 40 @58316 has 1 MA's), (41, 58322), (45, 58352), (49, 58376), (62, 58469), (67, 58493), (68, 58502), (75, 58535), (76, 58538), (78, 58562), (80, 58592), (84, 58649), (89, 58688), (96, 58733),

Gene: SynergyX\_71 Start: 57923, Stop: 58522, Start Num: 35

Candidate Starts for SynergyX\_71:

(Start: 35 @57923 has 52 MA's), (Start: 40 @57932 has 1 MA's), (41, 57938), (45, 57968), (49, 57992), (62, 58085), (67, 58109), (68, 58118), (75, 58151), (76, 58154), (78, 58178), (80, 58208), (84, 58265), (96, 58349),

Gene: TA17A\_68 Start: 56048, Stop: 56698, Start Num: 30

Candidate Starts for TA17A\_68:

(27, 55988), (Start: 30 @56048 has 34 MA's), (Start: 32 @56054 has 4 MA's), (43, 56099), (47, 56126), (53, 56156), (58, 56201), (59, 56216), (65, 56240), (72, 56282), (74, 56288), (75, 56294), (77, 56318), (84, 56408), (99, 56564),

Gene: TPA2\_72 Start: 57781, Stop: 58404, Start Num: 28

Candidate Starts for TPA2\_72:

(16, 57622), (19, 57667), (21, 57736), (28, 57781), (38, 57871), (46, 57916), (50, 57940), (52, 57952), (59, 58021), (61, 58030), (62, 58033), (70, 58081), (71, 58084), (79, 58153), (80, 58156), (81, 58159), (84, 58213), (88, 58246), (89, 58255), (91, 58267), (99, 58366), (100, 58375),

Gene: Tinciduntolum\_67 Start: 56209, Stop: 56862, Start Num: 30

Candidate Starts for Tinciduntolum\_67:

(5, 55855), (7, 55879), (9, 55918), (27, 56149), (Start: 30 @56209 has 34 MA's), (Start: 32 @56215 has 4 MA's), (43, 56263), (47, 56290), (53, 56320), (59, 56380), (65, 56404), (72, 56446), (74, 56452), (75, 56458), (77, 56482), (84, 56572), (99, 56728),

Gene: TinyTerror\_72 Start: 58345, Stop: 58944, Start Num: 35

Candidate Starts for TinyTerror\_72:

(Start: 35 @58345 has 52 MA's), (41, 58360), (49, 58414), (62, 58507), (67, 58531), (68, 58540), (75, 58573), (76, 58576), (78, 58600), (80, 58630), (84, 58687),

Gene: TraderJ\_65 Start: 52573, Stop: 53139, Start Num: 37

Candidate Starts for TraderJ\_65:

(25, 52462), (26, 52471), (Start: 37 @52573 has 8 MA's), (47, 52642), (57, 52711), (59, 52732), (60, 52738), (64, 52753), (68, 52777), (72, 52798), (79, 52864), (80, 52867), (82, 52876), (84, 52924), (85, 52930), (87, 52945), (96, 53008),

Gene: Tres\_66 Start: 56063, Stop: 56716, Start Num: 30

Candidate Starts for Tres\_66:

(5, 55709), (7, 55733), (9, 55772), (27, 56003), (Start: 30 @56063 has 34 MA's), (Start: 32 @56069 has 4 MA's), (43, 56117), (47, 56144), (53, 56174), (59, 56234), (65, 56258), (72, 56300), (74, 56306), (75, 56312), (77, 56336), (84, 56426), (99, 56582),

Gene: Tydolla\_67 Start: 57917, Stop: 58513, Start Num: 35

Candidate Starts for Tydolla\_67:

(Start: 35 @57917 has 52 MA's), (Start: 40 @57926 has 1 MA's), (45, 57959), (49, 57983), (62, 58076), (67, 58100), (68, 58109), (75, 58142), (76, 58145), (78, 58169), (80, 58199), (84, 58256), (89, 58295), (96, 58340),

Gene: Vic9\_00065 Start: 56894, Stop: 57553, Start Num: 30

Candidate Starts for Vic9\_00065:

(27, 56834), (Start: 30 @56894 has 34 MA's), (Start: 32 @56900 has 4 MA's), (43, 56954), (47, 56981), (53, 57011), (58, 57056), (59, 57071), (65, 57095), (72, 57137), (74, 57143), (75, 57149), (77, 57173), (84, 57263), (99, 57419),

Gene: West99\_66 Start: 56236, Stop: 56889, Start Num: 30

Candidate Starts for West99\_66:

(5, 55882), (7, 55906), (9, 55945), (27, 56176), (Start: 30 @56236 has 34 MA's), (Start: 32 @56242 has 4 MA's), (43, 56290), (47, 56317), (53, 56347), (59, 56407), (65, 56431), (72, 56473), (74, 56479), (75, 56485), (77, 56509), (84, 56599), (99, 56755),

Gene: Wooper\_66 Start: 52518, Stop: 53084, Start Num: 37

Candidate Starts for Wooper\_66:

(Start: 37 @52518 has 8 MA's), (47, 52587), (57, 52656), (59, 52677), (60, 52683), (64, 52698), (68, 52722), (72, 52743), (79, 52809), (80, 52812), (82, 52821), (84, 52869), (85, 52875), (87, 52890), (96, 52953),

Gene: Yago84\_61 Start: 51044, Stop: 51640, Start Num: 34

Candidate Starts for Yago84\_61:

(Start: 34 @51044 has 10 MA's), (47, 51122), (55, 51179), (57, 51191), (59, 51212), (68, 51257), (72, 51278), (78, 51317), (79, 51344), (85, 51410), (87, 51425), (93, 51473), (96, 51488),

Gene: Yahalom\_69 Start: 57728, Stop: 58327, Start Num: 35

Candidate Starts for Yahalom\_69:

(Start: 35 @57728 has 52 MA's), (Start: 40 @57737 has 1 MA's), (41, 57743), (45, 57773), (49, 57797), (62, 57890), (67, 57914), (68, 57923), (75, 57956), (76, 57959), (78, 57983), (80, 58013), (84, 58070), (89, 58109), (96, 58154),

Gene: Yeshua\_65 Start: 52495, Stop: 53061, Start Num: 37

Candidate Starts for Yeshua\_65:

(Start: 37 @52495 has 8 MA's), (47, 52564), (57, 52633), (59, 52654), (60, 52660), (64, 52675), (68, 52699), (72, 52720), (79, 52786), (80, 52789), (82, 52798), (84, 52846), (85, 52852), (87, 52867), (96, 52930),

Gene: Yinz\_71 Start: 57793, Stop: 58392, Start Num: 35

Candidate Starts for Yinz\_71:

(Start: 35 @57793 has 52 MA's), (41, 57808), (49, 57862), (62, 57955), (67, 57979), (68, 57988), (75, 58021), (76, 58024), (78, 58048), (80, 58078), (84, 58135), (89, 58174),