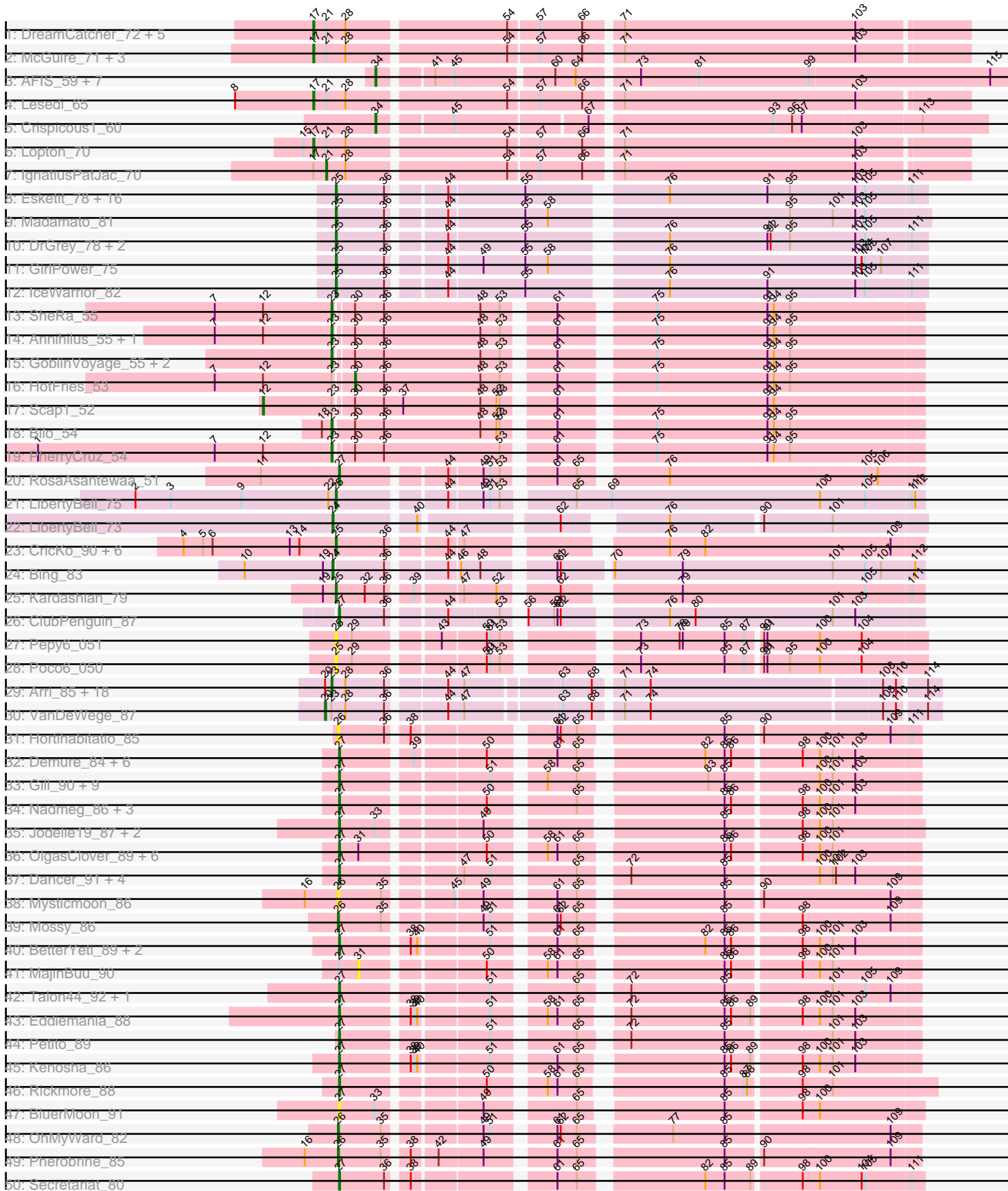
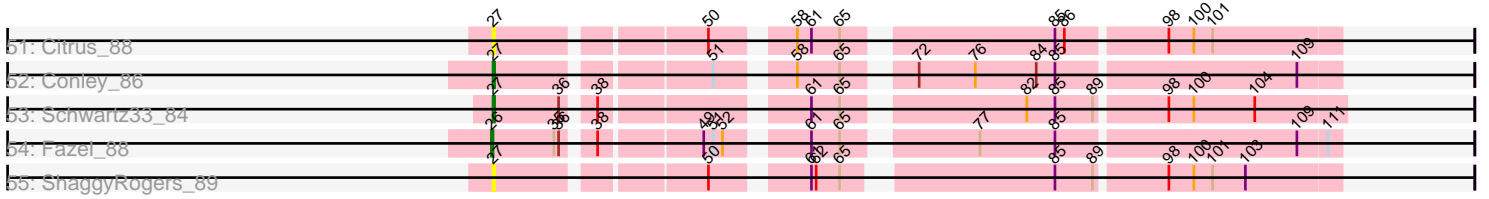


Pham 202742



Pham 202742



Sample	Read ID	Start Position	End Position	
51: Citrus_88	1	21	21	
	2	50	50	
	3	58	61	
	4	61	65	
	5	72	76	
	6	84	86	
	7	98	100	
	8	100	101	
	52: Conley_86	1	21	21
		2	36	36
		3	38	38
		4	50	51
5		61	65	
6		72	76	
7		84	86	
8		98	100	
9		100	104	
10		104	108	
53: Schwartz33_84		1	21	21
		2	36	36
	3	38	38	
	4	50	52	
	5	61	65	
	6	77	77	
	7	84	86	
	8	98	100	
	9	100	104	
	10	104	108	
	11	108	111	
	54: Fazel_88	1	21	21
2		50	50	
3		61	65	
4		72	76	
5		84	86	
6		98	100	
7		100	104	
8		104	108	
55: ShaggyRogers_89		1	21	21
		2	50	50
		3	61	65
		4	72	76
	5	84	86	
	6	98	100	
	7	100	104	
	8	104	108	

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 202742 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202742 has 148 members, 21 are drafts.

Phages represented in each track:

- Track 1 : DreamCatcher\_72, GrecoEtereo\_71, AFIS\_66, Thor\_70, Snazzy\_68, SarFire\_70
- Track 2 : McGuire\_71, Ichabod\_74, Squee\_73, BluSpix\_68
- Track 3 : AFIS\_59, NEHalo\_60, Bruns\_64, SpikeBT\_61, Moose\_64, SwissCheese\_66, GageAP\_64, Forsytheast\_64
- Track 4 : Lesedi\_65
- Track 5 : Crispicous1\_60
- Track 6 : Lopton\_70
- Track 7 : IgnatiusPatJac\_70
- Track 8 : Esketit\_78, TaidaOne\_82, Spectropatronm\_81, Rima\_83, TonyStarch\_81, OlympicHelado\_84, Soshi\_81, TieDye\_78, Jaylociraptor\_82, Meibysrarus\_80, FidgetOrca\_84, HazuAndZazu\_79, Indigenous\_84, Hoshi\_83, Maya\_82, Namu\_84, CherryBlossom\_82
- Track 9 : Madamato\_81
- Track 10 : DrGrey\_78, FrodoSwaggins\_80, Popy\_80
- Track 11 : GirlPower\_75
- Track 12 : IceWarrior\_82
- Track 13 : SheRa\_55
- Track 14 : Annihilus\_55, Moozy\_54
- Track 15 : GoblinVoyage\_55, RavenPuff\_55, Doxi13\_56
- Track 16 : HotFries\_53
- Track 17 : Scap1\_52
- Track 18 : Bilo\_54
- Track 19 : PherryCruz\_54
- Track 20 : RosaAsantewaa\_51
- Track 21 : LibertyBell\_75
- Track 22 : LibertyBell\_73
- Track 23 : CricKo\_90, FromIndy\_88, Rainydai\_87, Regigigas\_90, SendItCS\_82, Miek\_84, Thiqqums\_90
- Track 24 : Bing\_83
- Track 25 : Kardashian\_79
- Track 26 : ClubPenguin\_87
- Track 27 : Pepy6\_051
- Track 28 : Poco6\_050
- Track 29 : Arri\_85, PullumCavea\_83, SmokingBunny\_86, Twister6\_84, Phlop\_82, Salvador\_85, Fireball\_88, PinkCoffee\_86, TillyBobJoe\_83, CherryCola\_85, Evamon\_85, KimmyK\_83, Wizard\_80, Valary\_86, RogerDodger\_88, Togo\_85,

- Portcullis\_85, Savbucketdawg\_80, Shinji\_84
- Track 30 : VanDeWege\_87
  - Track 31 : Hortihabitatio\_85
  - Track 32 : Demure\_84, Hydrus\_87, Untouchable\_89, Zeph\_90, Arataki\_85, Madvan\_86, Phepper\_88
  - Track 33 : Gill\_90, Magel\_91, NoPickles\_88, Roney\_88, Capybara\_87, Kerry\_89, Tanis\_89, Odesza\_88, Captrips\_87, Gravy\_89
  - Track 34 : Nadmeg\_86, Vardy\_86, Burley\_86, Runhaar\_85
  - Track 35 : Jodelie19\_87, Aflac\_88, TenaciousP\_89
  - Track 36 : OlgasClover\_89, Figliar\_86, Duffington\_88, Nithya\_87, Chikenjars\_88, EndAve\_89, AlainaMarie\_88
  - Track 37 : Dancer\_91, FortCran\_88, JulesRay\_89, Avazak\_89, Artorias\_88
  - Track 38 : Mysticmoon\_86
  - Track 39 : Mossy\_86
  - Track 40 : BetterYeti\_89, Crocheter\_87, Gusicorn\_90
  - Track 41 : MajinBuu\_90
  - Track 42 : Talon44\_92, Perkunas\_90
  - Track 43 : Eddiemania\_88
  - Track 44 : Petite\_89
  - Track 45 : Kenosha\_86
  - Track 46 : Rickmore\_88
  - Track 47 : BluerMoon\_91
  - Track 48 : OhMyWard\_82
  - Track 49 : Pherobrine\_85
  - Track 50 : Secretariat\_80
  - Track 51 : Citrus\_88
  - Track 52 : Conley\_86
  - Track 53 : Schwartz33\_84
  - Track 54 : Fazel\_88
  - Track 55 : ShaggyRogers\_89

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

The start number called the most often in the published annotations is 27, it was called in 42 of the 127 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac\_88, AlainaMarie\_88, Arataki\_85, Artorias\_88, Avazak\_89, BetterYeti\_89, BluerMoon\_91, Burley\_86, Captrips\_87, Capybara\_87, Chikenjars\_88, Citrus\_88, ClubPenguin\_87, Conley\_86, Crocheter\_87, Dancer\_91, Demure\_84, Duffington\_88, Eddiemania\_88, EndAve\_89, Figliar\_86, FortCran\_88, Gill\_90, Gravy\_89, Gusicorn\_90, Hydrus\_87, Jodelie19\_87, JulesRay\_89, Kenosha\_86, Kerry\_89, Madvan\_86, Magel\_91, Nadmeg\_86, Nithya\_87, NoPickles\_88, Odesza\_88, OlgasClover\_89, Perkunas\_90, Petite\_89, Phepper\_88, Rickmore\_88, Roney\_88, RosaAsantewaa\_51, Runhaar\_85, Schwartz33\_84, Secretariat\_80, ShaggyRogers\_89, Talon44\_92, Tanis\_89, TenaciousP\_89, Untouchable\_89, Vardy\_86, Zeph\_90,

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

- MajinBuu\_90,

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

- AFIS\_59, AFIS\_66, Annihilus\_55, Arri\_85, Bilo\_54, Bing\_83, BluSpix\_68, Bruns\_64, CherryBlossom\_82, CherryCola\_85, CricKo\_90, Crispicous1\_60, Doxi13\_56, DrGrey\_78, DreamCatcher\_72, Esketit\_78, Evamon\_85, Fazel\_88, FidgetOrca\_84, Fireball\_88, Forsytheast\_64, FrodoSwaggins\_80, FromIndy\_88, GageAP\_64, GirlPower\_75, GoblinVoyage\_55, GrecoEtereo\_71, HazuAndZazu\_79, Hortihabitatio\_85, Hoshi\_83, HotFries\_53, IceWarrior\_82, Ichabod\_74, IgnatiusPatJac\_70, Indigenous\_84, Jaylociraptor\_82, Kardashian\_79, KimmyK\_83, Lesedi\_65, LibertyBell\_73, LibertyBell\_75, Lopton\_70, Madamato\_81, Maya\_82, McGuire\_71, Meibysrarus\_80, Miek\_84, Moose\_64, Moozy\_54, Mossy\_86, Mysticmoon\_86, NEHalo\_60, Namu\_84, OhMyWard\_82, OlympicHelado\_84, Pepy6\_051, Pherobrine\_85, PherryCruz\_54, Phlop\_82, PinkCoffee\_86, Poco6\_050, Popy\_80, Portcullis\_85, PullumCavea\_83, Rainydai\_87, RavenPuff\_55, Regigigas\_90, Rima\_83, RogerDodger\_88, Salvador\_85, SarFire\_70, Savbucketdawg\_80, Scap1\_52, SendItCS\_82, SheRa\_55, Shinji\_84, SmokingBunny\_86, Snazzy\_68, Soshi\_81, Spectropatronm\_81, SpikeBT\_61, Squee\_73, SwissCheese\_66, TaidaOne\_82, Thiqqums\_90, Thor\_70, TieDye\_78, TillyBobJoe\_83, Togo\_85, TonyStarch\_81, Twister6\_84, Valary\_86, VanDeWege\_87, Wizard\_80,

### Summary by start number:

Start 12:

- Found in 6 of 148 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Scap1\_52 (BI2),

Start 17:

- Found in 13 of 148 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 12 of 127
- Called 92.3% of time when present
- Phage (with cluster) where this start called: AFIS\_66 (A1), BluSpix\_68 (A1), DreamCatcher\_72 (A1), GrecoEtereo\_71 (A1), Ichabod\_74 (A1), Lesedi\_65 (A1), Lopton\_70 (A1), McGuire\_71 (A1), SarFire\_70 (A1), Snazzy\_68 (A1), Squee\_73 (A1), Thor\_70 (A1),

Start 20:

- Found in 20 of 148 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 5.0% of time when present
- Phage (with cluster) where this start called: VanDeWege\_87 (DC1),

Start 21:

- Found in 13 of 148 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 7.7% of time when present
- Phage (with cluster) where this start called: IgnatiusPatJac\_70 (A1),

Start 23:

- Found in 30 of 148 ( 20.3% ) of genes in pham
- Manual Annotations of this start: 25 of 127

- Called 90.0% of time when present
- Phage (with cluster) where this start called: Annihilus\_55 (BI2), Arri\_85 (DC1), Bilo\_54 (BI2), CherryCola\_85 (DC1), Doxi13\_56 (BI2), Evamon\_85 (DC1), Fireball\_88 (DC1), GoblinVoyage\_55 (BI2), KimmyK\_83 (DC1), Moozy\_54 (BI2), PherryCruz\_54 (BI2), Phlop\_82 (DC1), PinkCoffee\_86 (DC1), Portcullis\_85 (DC1), PullumCavea\_83 (DC1), RavenPuff\_55 (BI2), RogerDodger\_88 (DC1), Salvador\_85 (DC1), Savbucketdawg\_80 (DC1), SheRa\_55 (BI2), Shinji\_84 (DC1), SmokingBunny\_86 (DC1), TillyBobJoe\_83 (DC1), Togo\_85 (DC1), Twister6\_84 (DC1), Valary\_86 (DC1), Wizard\_80 (DC1),

#### Start 24:

- Found in 2 of 148 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bing\_83 (BI5), LibertyBell\_73 (BI3),

#### Start 25:

- Found in 34 of 148 ( 23.0% ) of genes in pham
- Manual Annotations of this start: 29 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryBlossom\_82 (BI1), CricKo\_90 (BI4), DrGrey\_78 (BI1), Esketit\_78 (BI1), FidgetOrca\_84 (BI1), FrodoSwaggins\_80 (BI1), FromIndy\_88 (BI4), GirlPower\_75 (BI1), HazuAndZazu\_79 (BI1), Hoshi\_83 (BI1), IceWarrior\_82 (BI1), Indigenous\_84 (BI1), Jaylociraptor\_82 (BI1), Kardashian\_79 (BI6), LibertyBell\_75 (BI3), Madamato\_81 (BI1), Maya\_82 (BI1), Meibysrarus\_80 (BI1), Miek\_84 (BI4), Namu\_84 (BI1), OlympicHelado\_84 (BI1), Pepy6\_051 (CC), Poco6\_050 (CC), Popy\_80 (BI1), Rainydai\_87 (BI4), Regigigas\_90 (BI4), Rima\_83 (BI1), SendItCS\_82 (BI4), Soshi\_81 (BI1), Spectropatronm\_81 (BI1), TaidaOne\_82 (BI1), Thiqqums\_90 (BI4), TieDye\_78 (BI1), TonyStarch\_81 (BI1),

#### Start 26:

- Found in 6 of 148 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 4 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fazel\_88 (DJ), Hortihabitatio\_85 (DJ), Mossy\_86 (DJ), Mysticmoon\_86 (DJ), OhMyWard\_82 (DJ), Pherobrine\_85 (DJ),

#### Start 27:

- Found in 54 of 148 ( 36.5% ) of genes in pham
- Manual Annotations of this start: 42 of 127
- Called 98.1% of time when present
- Phage (with cluster) where this start called: Aflac\_88 (DJ), AlainaMarie\_88 (DJ), Arataki\_85 (DJ), Artorias\_88 (DJ), Avazak\_89 (DJ), BetterYeti\_89 (DJ), BluerMoon\_91 (DJ), Burley\_86 (DJ), Captrips\_87 (DJ), Capybara\_87 (DJ), Chickenjars\_88 (DJ), Citrus\_88 (DJ), ClubPenguin\_87 (BI7), Conley\_86 (DJ), Crocheter\_87 (DJ), Dancer\_91 (DJ), Demure\_84 (DJ), Duffington\_88 (DJ), Eddiemania\_88 (DJ), EndAve\_89 (DJ), Figliar\_86 (DJ), FortCran\_88 (DJ), Gill\_90 (DJ), Gravy\_89 (DJ), Gusicorn\_90 (DJ), Hydrus\_87 (DJ), Jodelie19\_87 (DJ), JulesRay\_89 (DJ), Kenosha\_86 (DJ), Kerry\_89 (DJ), Madvan\_86 (DJ), Magel\_91 (DJ), Nadmeg\_86 (DJ), Nithya\_87 (DJ), NoPickles\_88 (DJ), Odesza\_88 (DJ), OlgasClover\_89 (DJ), Perkunas\_90 (DJ), Petite\_89 (DJ), Phepper\_88 (DJ), Rickmore\_88 (DJ), Roney\_88 (DJ), RosaAsantewaa\_51 (BI2), Runhaar\_85 (DJ), Schwartz33\_84 (DJ), Secretariat\_80 (DJ), ShaggyRogers\_89 (DJ), Talon44\_92 (DJ),

Tanis\_89 (DJ), TenaciousP\_89 (DJ), Untouchable\_89 (DJ), Vardy\_86 (DJ), Zeph\_90 (DJ),

Start 30:

- Found in 10 of 148 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 10.0% of time when present
- Phage (with cluster) where this start called: HotFries\_53 (BI2),

Start 31:

- Found in 8 of 148 ( 5.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: MajinBuu\_90 (DJ),

Start 34:

- Found in 9 of 148 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 9 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AFIS\_59 (A1), Bruns\_64 (A1), Crispicous1\_60 (A1), Forsytheast\_64 (A1), GageAP\_64 (A1), Moose\_64 (A1), NEHalo\_60 (A1), SpikeBT\_61 (A1), SwissCheese\_66 (A1),

### **Summary by clusters:**

There are 11 clusters represented in this pham: BI5, DJ, CC, A1, BI6, BI7, BI4, DC1, BI2, BI3, BI1,

Info for manual annotations of cluster A1:

- Start number 17 was manually annotated 12 times for cluster A1.
- Start number 21 was manually annotated 1 time for cluster A1.
- Start number 34 was manually annotated 9 times for cluster A1.

Info for manual annotations of cluster BI1:

- Start number 25 was manually annotated 22 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 12 was manually annotated 1 time for cluster BI2.
- Start number 23 was manually annotated 8 times for cluster BI2.
- Start number 27 was manually annotated 1 time for cluster BI2.
- Start number 30 was manually annotated 1 time for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 24 was manually annotated 1 time for cluster BI3.
- Start number 25 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 25 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 24 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 25 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 27 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DC1:

- Start number 20 was manually annotated 1 time for cluster DC1.
- Start number 23 was manually annotated 17 times for cluster DC1.

Info for manual annotations of cluster DJ:

- Start number 26 was manually annotated 4 times for cluster DJ.
- Start number 27 was manually annotated 40 times for cluster DJ.

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

Gene: AFIS\_59 Start: 40536, Stop: 39979, Start Num: 34

Candidate Starts for AFIS\_59:

(Start: 34 @40536 has 9 MA's), (41, 40494), (45, 40476), (60, 40392), (64, 40374), (73, 40323), (81, 40269), (99, 40167), (115, 39999),

Gene: AFIS\_66 Start: 43840, Stop: 43262, Start Num: 17

Candidate Starts for AFIS\_66:

(Start: 17 @43840 has 12 MA's), (Start: 21 @43828 has 1 MA's), (28, 43810), (54, 43669), (57, 43642), (66, 43603), (71, 43573), (103, 43360),

Gene: Aflac\_88 Start: 56715, Stop: 57197, Start Num: 27

Candidate Starts for Aflac\_88:

(Start: 27 @56715 has 42 MA's), (33, 56748), (49, 56832), (85, 57021), (98, 57087), (100, 57102), (101, 57114),

Gene: AlainaMarie\_88 Start: 56739, Stop: 57221, Start Num: 27

Candidate Starts for AlainaMarie\_88:

(Start: 27 @56739 has 42 MA's), (31, 56757), (50, 56859), (58, 56901), (61, 56910), (65, 56928), (85, 57048), (86, 57054), (98, 57114), (100, 57129), (101, 57141),

Gene: Annihilus\_55 Start: 38912, Stop: 39421, Start Num: 23

Candidate Starts for Annihilus\_55:

(7, 38804), (Start: 12 @38849 has 1 MA's), (Start: 23 @38912 has 25 MA's), (Start: 30 @38927 has 1 MA's), (36, 38954), (48, 39044), (53, 39062), (61, 39101), (75, 39176), (91, 39278), (94, 39284), (95, 39299),

Gene: Arataki\_85 Start: 55860, Stop: 56339, Start Num: 27

Candidate Starts for Arataki\_85:

(Start: 27 @55860 has 42 MA's), (39, 55920), (50, 55980), (61, 56031), (65, 56049), (82, 56148), (85, 56166), (86, 56172), (98, 56232), (100, 56247), (101, 56259), (103, 56280),

Gene: Arri\_85 Start: 56022, Stop: 55507, Start Num: 23

Candidate Starts for Arri\_85:

(Start: 20 @56028 has 1 MA's), (Start: 23 @56022 has 25 MA's), (28, 56010), (36, 55974), (44, 55929), (47, 55914), (63, 55836), (68, 55809), (71, 55788), (74, 55764), (108, 55554), (110, 55542), (114,



55518),

Gene: Artorias\_88 Start: 55253, Stop: 55735, Start Num: 27

Candidate Starts for Artorias\_88:

(Start: 27 @55253 has 42 MA's), (47, 55352), (51, 55376), (65, 55442), (72, 55475), (85, 55562), (100, 55643), (101, 55655), (102, 55658), (103, 55676),

Gene: Avazak\_89 Start: 55682, Stop: 56164, Start Num: 27

Candidate Starts for Avazak\_89:

(Start: 27 @55682 has 42 MA's), (47, 55781), (51, 55805), (65, 55871), (72, 55904), (85, 55991), (100, 56072), (101, 56084), (102, 56087), (103, 56105),

Gene: BetterYeti\_89 Start: 55872, Stop: 56351, Start Num: 27

Candidate Starts for BetterYeti\_89:

(Start: 27 @55872 has 42 MA's), (38, 55929), (40, 55935), (51, 55995), (61, 56043), (65, 56061), (82, 56160), (85, 56178), (86, 56184), (98, 56244), (100, 56259), (101, 56271), (103, 56292),

Gene: Bilo\_54 Start: 39203, Stop: 39715, Start Num: 23

Candidate Starts for Bilo\_54:

(18, 39194), (Start: 23 @39203 has 25 MA's), (Start: 30 @39221 has 1 MA's), (36, 39248), (48, 39338), (52, 39353), (53, 39356), (61, 39395), (75, 39470), (91, 39572), (94, 39578), (95, 39593),

Gene: Bing\_83 Start: 51639, Stop: 52142, Start Num: 24

Candidate Starts for Bing\_83:

(10, 51558), (19, 51630), (Start: 24 @51639 has 2 MA's), (36, 51684), (44, 51729), (46, 51738), (48, 51756), (61, 51813), (62, 51816), (70, 51858), (79, 51921), (101, 52059), (105, 52089), (107, 52104), (112, 52134),

Gene: BluSpix\_68 Start: 40281, Stop: 39703, Start Num: 17

Candidate Starts for BluSpix\_68:

(Start: 17 @40281 has 12 MA's), (Start: 21 @40269 has 1 MA's), (28, 40251), (54, 40110), (57, 40083), (66, 40044), (71, 40014), (103, 39801),

Gene: BluerMoon\_91 Start: 56545, Stop: 57027, Start Num: 27

Candidate Starts for BluerMoon\_91:

(Start: 27 @56545 has 42 MA's), (33, 56578), (49, 56662), (65, 56734), (85, 56851), (98, 56917), (100, 56932),

Gene: Bruns\_64 Start: 41012, Stop: 40455, Start Num: 34

Candidate Starts for Bruns\_64:

(Start: 34 @41012 has 9 MA's), (41, 40970), (45, 40952), (60, 40868), (64, 40850), (73, 40799), (81, 40745), (99, 40643), (115, 40475),

Gene: Burley\_86 Start: 55548, Stop: 56027, Start Num: 27

Candidate Starts for Burley\_86:

(Start: 27 @55548 has 42 MA's), (50, 55668), (65, 55737), (85, 55854), (86, 55860), (98, 55920), (100, 55935), (101, 55947), (103, 55968),

Gene: Captrips\_87 Start: 55033, Stop: 55515, Start Num: 27

Candidate Starts for Captrips\_87:

(Start: 27 @55033 has 42 MA's), (51, 55156), (58, 55195), (65, 55222), (83, 55327), (85, 55342), (100, 55423), (101, 55435), (103, 55456),

Gene: Capybara\_87 Start: 55256, Stop: 55738, Start Num: 27

Candidate Starts for Capybara\_87:

(Start: 27 @55256 has 42 MA's), (51, 55379), (58, 55418), (65, 55445), (83, 55550), (85, 55565), (100, 55646), (101, 55658), (103, 55679),

Gene: CherryBlossom\_82 Start: 50872, Stop: 51381, Start Num: 25

Candidate Starts for CherryBlossom\_82:

(Start: 25 @50872 has 29 MA's), (36, 50917), (44, 50962), (55, 51031), (76, 51145), (91, 51235), (95, 51256), (103, 51316), (105, 51325), (111, 51367),

Gene: CherryCola\_85 Start: 56435, Stop: 55920, Start Num: 23

Candidate Starts for CherryCola\_85:

(Start: 20 @56441 has 1 MA's), (Start: 23 @56435 has 25 MA's), (28, 56423), (36, 56387), (44, 56342), (47, 56327), (63, 56249), (68, 56222), (71, 56201), (74, 56177), (108, 55967), (110, 55955), (114, 55931),

Gene: Chikenjars\_88 Start: 56967, Stop: 57449, Start Num: 27

Candidate Starts for Chikenjars\_88:

(Start: 27 @56967 has 42 MA's), (31, 56985), (50, 57087), (58, 57129), (61, 57138), (65, 57156), (85, 57276), (86, 57282), (98, 57342), (100, 57357), (101, 57369),

Gene: Citrus\_88 Start: 56560, Stop: 57042, Start Num: 27

Candidate Starts for Citrus\_88:

(Start: 27 @56560 has 42 MA's), (50, 56680), (58, 56722), (61, 56731), (65, 56749), (85, 56869), (86, 56875), (98, 56935), (100, 56950), (101, 56962),

Gene: ClubPenguin\_87 Start: 51570, Stop: 52061, Start Num: 27

Candidate Starts for ClubPenguin\_87:

(Start: 27 @51570 has 42 MA's), (36, 51612), (44, 51657), (53, 51702), (56, 51714), (59, 51738), (61, 51741), (62, 51744), (76, 51828), (80, 51852), (101, 51978), (103, 51999),

Gene: Conley\_86 Start: 55548, Stop: 56030, Start Num: 27

Candidate Starts for Conley\_86:

(Start: 27 @55548 has 42 MA's), (51, 55671), (58, 55710), (65, 55737), (72, 55770), (76, 55806), (84, 55845), (85, 55857), (109, 56004),

Gene: CricKo\_90 Start: 53073, Stop: 53564, Start Num: 25

Candidate Starts for CricKo\_90:

(4, 52932), (5, 52950), (6, 52959), (13, 53031), (14, 53040), (Start: 25 @53073 has 29 MA's), (36, 53118), (44, 53163), (47, 53175), (76, 53331), (82, 53364), (109, 53535),

Gene: Crispicious1\_60 Start: 40522, Stop: 39992, Start Num: 34

Candidate Starts for Crispicious1\_60:

(Start: 34 @40522 has 9 MA's), (45, 40462), (67, 40348), (93, 40186), (96, 40168), (97, 40159), (113, 40051),

Gene: Crocheter\_87 Start: 55966, Stop: 56445, Start Num: 27

Candidate Starts for Crocheter\_87:

(Start: 27 @55966 has 42 MA's), (38, 56023), (40, 56029), (51, 56089), (61, 56137), (65, 56155), (82, 56254), (85, 56272), (86, 56278), (98, 56338), (100, 56353), (101, 56365), (103, 56386),

Gene: Dancer\_91 Start: 54990, Stop: 55472, Start Num: 27

Candidate Starts for Dancer\_91:

(Start: 27 @54990 has 42 MA's), (47, 55089), (51, 55113), (65, 55179), (72, 55212), (85, 55299), (100, 55380), (101, 55392), (102, 55395), (103, 55413),

Gene: Demure\_84 Start: 55994, Stop: 56473, Start Num: 27

Candidate Starts for Demure\_84:

(Start: 27 @55994 has 42 MA's), (39, 56054), (50, 56114), (61, 56165), (65, 56183), (82, 56282), (85, 56300), (86, 56306), (98, 56366), (100, 56381), (101, 56393), (103, 56414),

Gene: Doxi13\_56 Start: 39042, Stop: 39551, Start Num: 23

Candidate Starts for Doxi13\_56:

(Start: 23 @39042 has 25 MA's), (Start: 30 @39057 has 1 MA's), (36, 39084), (48, 39174), (53, 39192), (61, 39231), (75, 39306), (91, 39408), (94, 39414), (95, 39429),

Gene: DrGrey\_78 Start: 51385, Stop: 51894, Start Num: 25

Candidate Starts for DrGrey\_78:

(Start: 25 @51385 has 29 MA's), (36, 51430), (44, 51475), (55, 51544), (76, 51658), (91, 51748), (92, 51751), (95, 51769), (103, 51829), (105, 51838), (111, 51880),

Gene: DreamCatcher\_72 Start: 44845, Stop: 44267, Start Num: 17

Candidate Starts for DreamCatcher\_72:

(Start: 17 @44845 has 12 MA's), (Start: 21 @44833 has 1 MA's), (28, 44815), (54, 44674), (57, 44647), (66, 44608), (71, 44578), (103, 44365),

Gene: Duffington\_88 Start: 56767, Stop: 57249, Start Num: 27

Candidate Starts for Duffington\_88:

(Start: 27 @56767 has 42 MA's), (31, 56785), (50, 56887), (58, 56929), (61, 56938), (65, 56956), (85, 57076), (86, 57082), (98, 57142), (100, 57157), (101, 57169),

Gene: Eddiemania\_88 Start: 56862, Stop: 57341, Start Num: 27

Candidate Starts for Eddiemania\_88:

(Start: 27 @56862 has 42 MA's), (38, 56919), (39, 56922), (40, 56925), (51, 56985), (58, 57024), (61, 57033), (65, 57051), (72, 57081), (85, 57168), (86, 57174), (89, 57192), (98, 57234), (100, 57249), (101, 57261), (103, 57282),

Gene: EndAve\_89 Start: 56677, Stop: 57159, Start Num: 27

Candidate Starts for EndAve\_89:

(Start: 27 @56677 has 42 MA's), (31, 56695), (50, 56797), (58, 56839), (61, 56848), (65, 56866), (85, 56986), (86, 56992), (98, 57052), (100, 57067), (101, 57079),

Gene: Esketit\_78 Start: 49973, Stop: 50482, Start Num: 25

Candidate Starts for Esketit\_78:

(Start: 25 @49973 has 29 MA's), (36, 50018), (44, 50063), (55, 50132), (76, 50246), (91, 50336), (95, 50357), (103, 50417), (105, 50426), (111, 50468),

Gene: Evamon\_85 Start: 55834, Stop: 55319, Start Num: 23

Candidate Starts for Evamon\_85:

(Start: 20 @55840 has 1 MA's), (Start: 23 @55834 has 25 MA's), (28, 55822), (36, 55786), (44, 55741), (47, 55726), (63, 55648), (68, 55621), (71, 55600), (74, 55576), (108, 55366), (110, 55354), (114, 55330),

Gene: Fazel\_88 Start: 55520, Stop: 56002, Start Num: 26

Candidate Starts for Fazel\_88:

(Start: 26 @55520 has 4 MA's), (35, 55559), (36, 55562), (38, 55577), (49, 55637), (51, 55643), (52, 55649), (61, 55691), (65, 55709), (77, 55781), (85, 55829), (109, 55976), (111, 55994),

Gene: FidgetOrca\_84 Start: 51423, Stop: 51932, Start Num: 25

Candidate Starts for FidgetOrca\_84:

(Start: 25 @51423 has 29 MA's), (36, 51468), (44, 51513), (55, 51582), (76, 51696), (91, 51786), (95, 51807), (103, 51867), (105, 51876), (111, 51918),

Gene: Figliar\_86 Start: 56571, Stop: 57053, Start Num: 27

Candidate Starts for Figliar\_86:

(Start: 27 @56571 has 42 MA's), (31, 56589), (50, 56691), (58, 56733), (61, 56742), (65, 56760), (85, 56880), (86, 56886), (98, 56946), (100, 56961), (101, 56973),

Gene: Fireball\_88 Start: 56296, Stop: 55781, Start Num: 23

Candidate Starts for Fireball\_88:

(Start: 20 @56302 has 1 MA's), (Start: 23 @56296 has 25 MA's), (28, 56284), (36, 56248), (44, 56203), (47, 56188), (63, 56110), (68, 56083), (71, 56062), (74, 56038), (108, 55828), (110, 55816), (114, 55792),

Gene: Forsytheast\_64 Start: 41180, Stop: 40623, Start Num: 34

Candidate Starts for Forsytheast\_64:

(Start: 34 @41180 has 9 MA's), (41, 41138), (45, 41120), (60, 41036), (64, 41018), (73, 40967), (81, 40913), (99, 40811), (115, 40643),

Gene: FortCran\_88 Start: 55254, Stop: 55736, Start Num: 27

Candidate Starts for FortCran\_88:

(Start: 27 @55254 has 42 MA's), (47, 55353), (51, 55377), (65, 55443), (72, 55476), (85, 55563), (100, 55644), (101, 55656), (102, 55659), (103, 55677),

Gene: FrodoSwaggins\_80 Start: 51780, Stop: 52289, Start Num: 25

Candidate Starts for FrodoSwaggins\_80:

(Start: 25 @51780 has 29 MA's), (36, 51825), (44, 51870), (55, 51939), (76, 52053), (91, 52143), (92, 52146), (95, 52164), (103, 52224), (105, 52233), (111, 52275),

Gene: FromIndy\_88 Start: 52273, Stop: 52764, Start Num: 25

Candidate Starts for FromIndy\_88:

(4, 52132), (5, 52150), (6, 52159), (13, 52231), (14, 52240), (Start: 25 @52273 has 29 MA's), (36, 52318), (44, 52363), (47, 52375), (76, 52531), (82, 52564), (109, 52735),

Gene: GageAP\_64 Start: 42203, Stop: 41646, Start Num: 34

Candidate Starts for GageAP\_64:

(Start: 34 @42203 has 9 MA's), (41, 42161), (45, 42143), (60, 42059), (64, 42041), (73, 41990), (81, 41936), (99, 41834), (115, 41666),

Gene: Gill\_90 Start: 55283, Stop: 55765, Start Num: 27

Candidate Starts for Gill\_90:

(Start: 27 @55283 has 42 MA's), (51, 55406), (58, 55445), (65, 55472), (83, 55577), (85, 55592), (100, 55673), (101, 55685), (103, 55706),

Gene: GirlPower\_75 Start: 50852, Stop: 51361, Start Num: 25

Candidate Starts for GirlPower\_75:

(Start: 25 @50852 has 29 MA's), (36, 50897), (44, 50942), (49, 50972), (55, 51011), (58, 51032), (76, 51125), (103, 51296), (104, 51302), (105, 51305), (107, 51320),

Gene: GoblinVoyage\_55 Start: 38886, Stop: 39395, Start Num: 23

Candidate Starts for GoblinVoyage\_55:

(Start: 23 @38886 has 25 MA's), (Start: 30 @38901 has 1 MA's), (36, 38928), (48, 39018), (53, 39036), (61, 39075), (75, 39150), (91, 39252), (94, 39258), (95, 39273),

Gene: Gravy\_89 Start: 54946, Stop: 55428, Start Num: 27

Candidate Starts for Gravy\_89:

(Start: 27 @54946 has 42 MA's), (51, 55069), (58, 55108), (65, 55135), (83, 55240), (85, 55255), (100, 55336), (101, 55348), (103, 55369),

Gene: GrecoEtereo\_71 Start: 44625, Stop: 44047, Start Num: 17

Candidate Starts for GrecoEtereo\_71:

(Start: 17 @44625 has 12 MA's), (Start: 21 @44613 has 1 MA's), (28, 44595), (54, 44454), (57, 44427), (66, 44388), (71, 44358), (103, 44145),

Gene: Gusicorn\_90 Start: 55873, Stop: 56352, Start Num: 27

Candidate Starts for Gusicorn\_90:

(Start: 27 @55873 has 42 MA's), (38, 55930), (40, 55936), (51, 55996), (61, 56044), (65, 56062), (82, 56161), (85, 56179), (86, 56185), (98, 56245), (100, 56260), (101, 56272), (103, 56293),

Gene: HazuAndZazu\_79 Start: 51132, Stop: 51641, Start Num: 25

Candidate Starts for HazuAndZazu\_79:

(Start: 25 @51132 has 29 MA's), (36, 51177), (44, 51222), (55, 51291), (76, 51405), (91, 51495), (95, 51516), (103, 51576), (105, 51585), (111, 51627),

Gene: Hortihabitatio\_85 Start: 55292, Stop: 55774, Start Num: 26

Candidate Starts for Hortihabitatio\_85:

(Start: 26 @55292 has 4 MA's), (36, 55334), (38, 55349), (61, 55463), (62, 55466), (65, 55481), (85, 55601), (90, 55631), (109, 55748), (111, 55766),

Gene: Hoshi\_83 Start: 51036, Stop: 51545, Start Num: 25

Candidate Starts for Hoshi\_83:

(Start: 25 @51036 has 29 MA's), (36, 51081), (44, 51126), (55, 51195), (76, 51309), (91, 51399), (95, 51420), (103, 51480), (105, 51489), (111, 51531),

Gene: HotFries\_53 Start: 39084, Stop: 39578, Start Num: 30

Candidate Starts for HotFries\_53:

(7, 38961), (Start: 12 @39006 has 1 MA's), (Start: 23 @39069 has 25 MA's), (Start: 30 @39084 has 1 MA's), (36, 39111), (48, 39201), (53, 39219), (61, 39258), (75, 39333), (91, 39435), (94, 39441), (95, 39456),

Gene: Hydrus\_87 Start: 56277, Stop: 56756, Start Num: 27

Candidate Starts for Hydrus\_87:

(Start: 27 @56277 has 42 MA's), (39, 56337), (50, 56397), (61, 56448), (65, 56466), (82, 56565), (85, 56583), (86, 56589), (98, 56649), (100, 56664), (101, 56676), (103, 56697),

Gene: IceWarrior\_82 Start: 50842, Stop: 51351, Start Num: 25

Candidate Starts for IceWarrior\_82:

(Start: 25 @50842 has 29 MA's), (36, 50887), (44, 50932), (55, 51001), (76, 51115), (91, 51205), (103, 51286), (105, 51295), (111, 51337),

Gene: Ichabod\_74 Start: 45654, Stop: 45076, Start Num: 17

Candidate Starts for Ichabod\_74:

(Start: 17 @45654 has 12 MA's), (Start: 21 @45642 has 1 MA's), (28, 45624), (54, 45483), (57, 45456), (66, 45417), (71, 45387), (103, 45174),

Gene: IgnatiusPatJac\_70 Start: 44214, Stop: 43648, Start Num: 21

Candidate Starts for IgnatiusPatJac\_70:

(Start: 17 @44226 has 12 MA's), (Start: 21 @44214 has 1 MA's), (28, 44196), (54, 44055), (57, 44028), (66, 43989), (71, 43959), (103, 43746),

Gene: Indigenous\_84 Start: 51428, Stop: 51937, Start Num: 25

Candidate Starts for Indigenous\_84:

(Start: 25 @51428 has 29 MA's), (36, 51473), (44, 51518), (55, 51587), (76, 51701), (91, 51791), (95, 51812), (103, 51872), (105, 51881), (111, 51923),

Gene: Jaylociraptor\_82 Start: 51008, Stop: 51517, Start Num: 25

Candidate Starts for Jaylociraptor\_82:

(Start: 25 @51008 has 29 MA's), (36, 51053), (44, 51098), (55, 51167), (76, 51281), (91, 51371), (95, 51392), (103, 51452), (105, 51461), (111, 51503),

Gene: Jodelie19\_87 Start: 57758, Stop: 58240, Start Num: 27

Candidate Starts for Jodelie19\_87:

(Start: 27 @57758 has 42 MA's), (33, 57791), (49, 57875), (85, 58064), (98, 58130), (100, 58145), (101, 58157),

Gene: JulesRay\_89 Start: 55349, Stop: 55831, Start Num: 27

Candidate Starts for JulesRay\_89:

(Start: 27 @55349 has 42 MA's), (47, 55448), (51, 55472), (65, 55538), (72, 55571), (85, 55658), (100, 55739), (101, 55751), (102, 55754), (103, 55772),

Gene: Kardashian\_79 Start: 51398, Stop: 51889, Start Num: 25

Candidate Starts for Kardashian\_79:

(19, 51386), (Start: 25 @51398 has 29 MA's), (32, 51425), (36, 51443), (39, 51461), (47, 51500), (52, 51530), (62, 51575), (79, 51668), (105, 51836), (111, 51878),

Gene: Kenosha\_86 Start: 56334, Stop: 56813, Start Num: 27

Candidate Starts for Kenosha\_86:

(Start: 27 @56334 has 42 MA's), (38, 56391), (39, 56394), (40, 56397), (51, 56457), (61, 56505), (65, 56523), (85, 56640), (86, 56646), (89, 56664), (98, 56706), (100, 56721), (101, 56733), (103, 56754),

Gene: Kerry\_89 Start: 55009, Stop: 55491, Start Num: 27

Candidate Starts for Kerry\_89:

(Start: 27 @55009 has 42 MA's), (51, 55132), (58, 55171), (65, 55198), (83, 55303), (85, 55318), (100, 55399), (101, 55411), (103, 55432),

Gene: KimmyK\_83 Start: 56127, Stop: 55612, Start Num: 23

Candidate Starts for KimmyK\_83:

(Start: 20 @56133 has 1 MA's), (Start: 23 @56127 has 25 MA's), (28, 56115), (36, 56079), (44, 56034), (47, 56019), (63, 55941), (68, 55914), (71, 55893), (74, 55869), (108, 55659), (110, 55647), (114, 55623),

Gene: Lesedi\_65 Start: 42530, Stop: 41952, Start Num: 17

Candidate Starts for Lesedi\_65:

(8, 42602), (Start: 17 @42530 has 12 MA's), (Start: 21 @42518 has 1 MA's), (28, 42500), (54, 42359), (57, 42332), (66, 42293), (71, 42263), (103, 42050),

Gene: LibertyBell\_75 Start: 48093, Stop: 48605, Start Num: 25

Candidate Starts for LibertyBell\_75:

(2, 47907), (3, 47940), (9, 48006), (22, 48087), (Start: 25 @48093 has 29 MA's), (44, 48183), (49, 48213), (51, 48219), (53, 48228), (65, 48285), (69, 48318), (100, 48510), (105, 48552), (111, 48594), (112, 48597),

Gene: LibertyBell\_73 Start: 45969, Stop: 46457, Start Num: 24

Candidate Starts for LibertyBell\_73:

(Start: 24 @45969 has 2 MA's), (40, 46038), (62, 46152), (76, 46227), (90, 46308), (101, 46371),

Gene: Lopton\_70 Start: 46302, Stop: 45724, Start Num: 17

Candidate Starts for Lopton\_70:

(15, 46311), (Start: 17 @46302 has 12 MA's), (Start: 21 @46290 has 1 MA's), (28, 46272), (54, 46131), (57, 46104), (66, 46065), (71, 46035), (103, 45822),

Gene: Madamoto\_81 Start: 50680, Stop: 51192, Start Num: 25

Candidate Starts for Madamoto\_81:

(Start: 25 @50680 has 29 MA's), (36, 50725), (44, 50770), (55, 50839), (58, 50860), (95, 51064), (101, 51103), (103, 51124), (105, 51133),

Gene: Madvan\_86 Start: 55589, Stop: 56068, Start Num: 27

Candidate Starts for Madvan\_86:

(Start: 27 @55589 has 42 MA's), (39, 55649), (50, 55709), (61, 55760), (65, 55778), (82, 55877), (85, 55895), (86, 55901), (98, 55961), (100, 55976), (101, 55988), (103, 56009),

Gene: Magel\_91 Start: 55198, Stop: 55680, Start Num: 27

Candidate Starts for Magel\_91:

(Start: 27 @55198 has 42 MA's), (51, 55321), (58, 55360), (65, 55387), (83, 55492), (85, 55507), (100, 55588), (101, 55600), (103, 55621),

Gene: MajinBuu\_90 Start: 56967, Stop: 57431, Start Num: 31

Candidate Starts for MajinBuu\_90:

(Start: 27 @56949 has 42 MA's), (31, 56967), (50, 57069), (58, 57111), (61, 57120), (65, 57138), (85, 57258), (86, 57264), (98, 57324), (100, 57339), (101, 57351),

Gene: Maya\_82 Start: 51022, Stop: 51531, Start Num: 25

Candidate Starts for Maya\_82:

(Start: 25 @51022 has 29 MA's), (36, 51067), (44, 51112), (55, 51181), (76, 51295), (91, 51385), (95, 51406), (103, 51466), (105, 51475), (111, 51517),

Gene: McGuire\_71 Start: 44174, Stop: 43596, Start Num: 17

Candidate Starts for McGuire\_71:

(Start: 17 @44174 has 12 MA's), (Start: 21 @44162 has 1 MA's), (28, 44144), (54, 44003), (57, 43976), (66, 43937), (71, 43907), (103, 43694),

Gene: Meibysrarus\_80 Start: 50406, Stop: 50915, Start Num: 25

Candidate Starts for Meibysrarus\_80:

(Start: 25 @50406 has 29 MA's), (36, 50451), (44, 50496), (55, 50565), (76, 50679), (91, 50769), (95, 50790), (103, 50850), (105, 50859), (111, 50901),

Gene: Miek\_84 Start: 51455, Stop: 51946, Start Num: 25

Candidate Starts for Miek\_84:

(4, 51314), (5, 51332), (6, 51341), (13, 51413), (14, 51422), (Start: 25 @51455 has 29 MA's), (36, 51500), (44, 51545), (47, 51557), (76, 51713), (82, 51746), (109, 51917),

Gene: Moose\_64 Start: 41180, Stop: 40623, Start Num: 34

Candidate Starts for Moose\_64:

(Start: 34 @41180 has 9 MA's), (41, 41138), (45, 41120), (60, 41036), (64, 41018), (73, 40967), (81, 40913), (99, 40811), (115, 40643),

Gene: Moozy\_54 Start: 38896, Stop: 39405, Start Num: 23

Candidate Starts for Moozy\_54:

(7, 38788), (Start: 12 @38833 has 1 MA's), (Start: 23 @38896 has 25 MA's), (Start: 30 @38911 has 1 MA's), (36, 38938), (48, 39028), (53, 39046), (61, 39085), (75, 39160), (91, 39262), (94, 39268), (95, 39283),

Gene: Mossy\_86 Start: 56611, Stop: 57093, Start Num: 26

Candidate Starts for Mossy\_86:

(Start: 26 @56611 has 4 MA's), (35, 56650), (49, 56728), (51, 56734), (61, 56782), (62, 56785), (65, 56800), (85, 56920), (98, 56986), (109, 57067),

Gene: Mysticmoon\_86 Start: 55708, Stop: 56190, Start Num: 26

Candidate Starts for Mysticmoon\_86:

(16, 55678), (Start: 26 @55708 has 4 MA's), (35, 55747), (45, 55801), (49, 55825), (61, 55879), (65, 55897), (85, 56017), (90, 56047), (109, 56164),

Gene: NEHalo\_60 Start: 41604, Stop: 41047, Start Num: 34

Candidate Starts for NEHalo\_60:

(Start: 34 @41604 has 9 MA's), (41, 41562), (45, 41544), (60, 41460), (64, 41442), (73, 41391), (81, 41337), (99, 41235), (115, 41067),

Gene: Nadmeg\_86 Start: 56574, Stop: 57053, Start Num: 27

Candidate Starts for Nadmeg\_86:

(Start: 27 @56574 has 42 MA's), (50, 56694), (65, 56763), (85, 56880), (86, 56886), (98, 56946), (100, 56961), (101, 56973), (103, 56994),

Gene: Namo\_84 Start: 51477, Stop: 51986, Start Num: 25

Candidate Starts for Namo\_84:

(Start: 25 @51477 has 29 MA's), (36, 51522), (44, 51567), (55, 51636), (76, 51750), (91, 51840), (95, 51861), (103, 51921), (105, 51930), (111, 51972),

Gene: Nithya\_87 Start: 56516, Stop: 56998, Start Num: 27

Candidate Starts for Nithya\_87:

(Start: 27 @56516 has 42 MA's), (31, 56534), (50, 56636), (58, 56678), (61, 56687), (65, 56705), (85, 56825), (86, 56831), (98, 56891), (100, 56906), (101, 56918),

Gene: NoPickles\_88 Start: 55105, Stop: 55587, Start Num: 27

Candidate Starts for NoPickles\_88:

(Start: 27 @55105 has 42 MA's), (51, 55228), (58, 55267), (65, 55294), (83, 55399), (85, 55414), (100, 55495), (101, 55507), (103, 55528),

Gene: Odesza\_88 Start: 55145, Stop: 55627, Start Num: 27

Candidate Starts for Odesza\_88:



(Start: 27 @55145 has 42 MA's), (51, 55268), (58, 55307), (65, 55334), (83, 55439), (85, 55454), (100, 55535), (101, 55547), (103, 55568),

Gene: OhMyWard\_82 Start: 56405, Stop: 56887, Start Num: 26

Candidate Starts for OhMyWard\_82:

(Start: 26 @56405 has 4 MA's), (35, 56444), (49, 56522), (51, 56528), (61, 56576), (62, 56579), (65, 56594), (77, 56666), (85, 56714), (109, 56861),

Gene: OlgasClover\_89 Start: 57350, Stop: 57832, Start Num: 27

Candidate Starts for OlgasClover\_89:

(Start: 27 @57350 has 42 MA's), (31, 57368), (50, 57470), (58, 57512), (61, 57521), (65, 57539), (85, 57659), (86, 57665), (98, 57725), (100, 57740), (101, 57752),

Gene: OlympicHelado\_84 Start: 51498, Stop: 52007, Start Num: 25

Candidate Starts for OlympicHelado\_84:

(Start: 25 @51498 has 29 MA's), (36, 51543), (44, 51588), (55, 51657), (76, 51771), (91, 51861), (95, 51882), (103, 51942), (105, 51951), (111, 51993),

Gene: Pepy6\_051 Start: 72091, Stop: 72582, Start Num: 25

Candidate Starts for Pepy6\_051:

(Start: 25 @72091 has 29 MA's), (29, 72106), (43, 72175), (50, 72214), (51, 72217), (53, 72226), (73, 72325), (78, 72361), (79, 72364), (85, 72403), (87, 72421), (90, 72433), (91, 72436), (100, 72484), (104, 72523),

Gene: Perkunas\_90 Start: 55043, Stop: 55525, Start Num: 27

Candidate Starts for Perkunas\_90:

(Start: 27 @55043 has 42 MA's), (51, 55166), (65, 55232), (72, 55265), (85, 55352), (101, 55445), (105, 55475), (109, 55499),

Gene: Petite\_89 Start: 55917, Stop: 56399, Start Num: 27

Candidate Starts for Petite\_89:

(Start: 27 @55917 has 42 MA's), (51, 56040), (65, 56106), (72, 56139), (85, 56226), (101, 56319), (103, 56340),

Gene: Phepper\_88 Start: 56061, Stop: 56540, Start Num: 27

Candidate Starts for Phepper\_88:

(Start: 27 @56061 has 42 MA's), (39, 56121), (50, 56181), (61, 56232), (65, 56250), (82, 56349), (85, 56367), (86, 56373), (98, 56433), (100, 56448), (101, 56460), (103, 56481),

Gene: Pherobrine\_85 Start: 55751, Stop: 56233, Start Num: 26

Candidate Starts for Pherobrine\_85:

(16, 55721), (Start: 26 @55751 has 4 MA's), (35, 55790), (38, 55808), (42, 55829), (49, 55868), (61, 55922), (65, 55940), (85, 56060), (90, 56090), (109, 56207),

Gene: PherryCruz\_54 Start: 39085, Stop: 39594, Start Num: 23

Candidate Starts for PherryCruz\_54:

(1, 38812), (7, 38977), (Start: 12 @39022 has 1 MA's), (Start: 23 @39085 has 25 MA's), (Start: 30 @39100 has 1 MA's), (36, 39127), (53, 39235), (61, 39274), (75, 39349), (91, 39451), (94, 39457), (95, 39472),

Gene: Phlop\_82 Start: 55730, Stop: 55215, Start Num: 23

Candidate Starts for Phlop\_82:

(Start: 20 @55736 has 1 MA's), (Start: 23 @55730 has 25 MA's), (28, 55718), (36, 55682), (44, 55637), (47, 55622), (63, 55544), (68, 55517), (71, 55496), (74, 55472), (108, 55262), (110, 55250), (114, 55226),

Gene: PinkCoffee\_86 Start: 55594, Stop: 55079, Start Num: 23

Candidate Starts for PinkCoffee\_86:

(Start: 20 @55600 has 1 MA's), (Start: 23 @55594 has 25 MA's), (28, 55582), (36, 55546), (44, 55501), (47, 55486), (63, 55408), (68, 55381), (71, 55360), (74, 55336), (108, 55126), (110, 55114), (114, 55090),

Gene: Poco6\_050 Start: 73353, Stop: 73844, Start Num: 25

Candidate Starts for Poco6\_050:

(Start: 25 @73353 has 29 MA's), (29, 73368), (50, 73476), (51, 73479), (53, 73488), (73, 73587), (85, 73665), (87, 73683), (90, 73695), (91, 73698), (95, 73719), (100, 73746), (104, 73785),

Gene: Popy\_80 Start: 51779, Stop: 52288, Start Num: 25

Candidate Starts for Popy\_80:

(Start: 25 @51779 has 29 MA's), (36, 51824), (44, 51869), (55, 51938), (76, 52052), (91, 52142), (92, 52145), (95, 52163), (103, 52223), (105, 52232), (111, 52274),

Gene: Portcullis\_85 Start: 55736, Stop: 55221, Start Num: 23

Candidate Starts for Portcullis\_85:

(Start: 20 @55742 has 1 MA's), (Start: 23 @55736 has 25 MA's), (28, 55724), (36, 55688), (44, 55643), (47, 55628), (63, 55550), (68, 55523), (71, 55502), (74, 55478), (108, 55268), (110, 55256), (114, 55232),

Gene: PullumCavea\_83 Start: 55907, Stop: 55392, Start Num: 23

Candidate Starts for PullumCavea\_83:

(Start: 20 @55913 has 1 MA's), (Start: 23 @55907 has 25 MA's), (28, 55895), (36, 55859), (44, 55814), (47, 55799), (63, 55721), (68, 55694), (71, 55673), (74, 55649), (108, 55439), (110, 55427), (114, 55403),

Gene: Rainydai\_87 Start: 53073, Stop: 53564, Start Num: 25

Candidate Starts for Rainydai\_87:

(4, 52932), (5, 52950), (6, 52959), (13, 53031), (14, 53040), (Start: 25 @53073 has 29 MA's), (36, 53118), (44, 53163), (47, 53175), (76, 53331), (82, 53364), (109, 53535),

Gene: RavenPuff\_55 Start: 39055, Stop: 39564, Start Num: 23

Candidate Starts for RavenPuff\_55:

(Start: 23 @39055 has 25 MA's), (Start: 30 @39070 has 1 MA's), (36, 39097), (48, 39187), (53, 39205), (61, 39244), (75, 39319), (91, 39421), (94, 39427), (95, 39442),

Gene: Regigigas\_90 Start: 52685, Stop: 53176, Start Num: 25

Candidate Starts for Regigigas\_90:

(4, 52544), (5, 52562), (6, 52571), (13, 52643), (14, 52652), (Start: 25 @52685 has 29 MA's), (36, 52730), (44, 52775), (47, 52787), (76, 52943), (82, 52976), (109, 53147),

Gene: Rickmore\_88 Start: 55645, Stop: 56139, Start Num: 27

Candidate Starts for Rickmore\_88:

(Start: 27 @55645 has 42 MA's), (50, 55765), (58, 55807), (61, 55816), (65, 55834), (85, 55951), (87, 55969), (88, 55972), (98, 56017), (101, 56044),

Gene: Rima\_83 Start: 51477, Stop: 51986, Start Num: 25

Candidate Starts for Rima\_83:

(Start: 25 @51477 has 29 MA's), (36, 51522), (44, 51567), (55, 51636), (76, 51750), (91, 51840), (95, 51861), (103, 51921), (105, 51930), (111, 51972),

Gene: RogerDodger\_88 Start: 56495, Stop: 55980, Start Num: 23

Candidate Starts for RogerDodger\_88:

(Start: 20 @56501 has 1 MA's), (Start: 23 @56495 has 25 MA's), (28, 56483), (36, 56447), (44, 56402), (47, 56387), (63, 56309), (68, 56282), (71, 56261), (74, 56237), (108, 56027), (110, 56015), (114, 55991),

Gene: Roney\_88 Start: 55308, Stop: 55790, Start Num: 27

Candidate Starts for Roney\_88:

(Start: 27 @55308 has 42 MA's), (51, 55431), (58, 55470), (65, 55497), (83, 55602), (85, 55617), (100, 55698), (101, 55710), (103, 55731),

Gene: RosaAsantewaa\_51 Start: 38179, Stop: 38670, Start Num: 27

Candidate Starts for RosaAsantewaa\_51:

(11, 38107), (Start: 27 @38179 has 42 MA's), (44, 38266), (49, 38296), (51, 38302), (53, 38311), (61, 38350), (65, 38368), (76, 38437), (105, 38617), (106, 38629),

Gene: Runhaar\_85 Start: 55666, Stop: 56145, Start Num: 27

Candidate Starts for Runhaar\_85:

(Start: 27 @55666 has 42 MA's), (50, 55786), (65, 55855), (85, 55972), (86, 55978), (98, 56038), (100, 56053), (101, 56065), (103, 56086),

Gene: Salvador\_85 Start: 55832, Stop: 55317, Start Num: 23

Candidate Starts for Salvador\_85:

(Start: 20 @55838 has 1 MA's), (Start: 23 @55832 has 25 MA's), (28, 55820), (36, 55784), (44, 55739), (47, 55724), (63, 55646), (68, 55619), (71, 55598), (74, 55574), (108, 55364), (110, 55352), (114, 55328),

Gene: SarFire\_70 Start: 44563, Stop: 43985, Start Num: 17

Candidate Starts for SarFire\_70:

(Start: 17 @44563 has 12 MA's), (Start: 21 @44551 has 1 MA's), (28, 44533), (54, 44392), (57, 44365), (66, 44326), (71, 44296), (103, 44083),

Gene: Savbucketdawg\_80 Start: 55174, Stop: 54659, Start Num: 23

Candidate Starts for Savbucketdawg\_80:

(Start: 20 @55180 has 1 MA's), (Start: 23 @55174 has 25 MA's), (28, 55162), (36, 55126), (44, 55081), (47, 55066), (63, 54988), (68, 54961), (71, 54940), (74, 54916), (108, 54706), (110, 54694), (114, 54670),

Gene: Scap1\_52 Start: 38365, Stop: 38937, Start Num: 12

Candidate Starts for Scap1\_52:

(Start: 12 @38365 has 1 MA's), (Start: 23 @38428 has 25 MA's), (Start: 30 @38443 has 1 MA's), (36, 38470), (37, 38488), (48, 38560), (52, 38575), (53, 38578), (61, 38617), (91, 38794), (94, 38800),

Gene: Schwartz33\_84 Start: 54940, Stop: 55425, Start Num: 27

Candidate Starts for Schwartz33\_84:

(Start: 27 @54940 has 42 MA's), (36, 54982), (38, 54997), (61, 55111), (65, 55129), (82, 55231), (85, 55249), (89, 55273), (98, 55315), (100, 55330), (104, 55369),

Gene: Secretariat\_80 Start: 53208, Stop: 53693, Start Num: 27

Candidate Starts for Secretariat\_80:

(Start: 27 @53208 has 42 MA's), (36, 53250), (38, 53265), (61, 53379), (65, 53397), (82, 53499), (85, 53517), (89, 53541), (98, 53583), (100, 53598), (104, 53637), (105, 53640), (111, 53682),

Gene: SendItCS\_82 Start: 51443, Stop: 51934, Start Num: 25

Candidate Starts for SendItCS\_82:

(4, 51302), (5, 51320), (6, 51329), (13, 51401), (14, 51410), (Start: 25 @51443 has 29 MA's), (36, 51488), (44, 51533), (47, 51545), (76, 51701), (82, 51734), (109, 51905),

Gene: ShaggyRogers\_89 Start: 55632, Stop: 56111, Start Num: 27

Candidate Starts for ShaggyRogers\_89:

(Start: 27 @55632 has 42 MA's), (50, 55752), (61, 55803), (62, 55806), (65, 55821), (85, 55938), (89, 55962), (98, 56004), (100, 56019), (101, 56031), (103, 56052),

Gene: SheRa\_55 Start: 38965, Stop: 39474, Start Num: 23

Candidate Starts for SheRa\_55:

(7, 38857), (Start: 12 @38902 has 1 MA's), (Start: 23 @38965 has 25 MA's), (Start: 30 @38980 has 1 MA's), (36, 39007), (48, 39097), (53, 39115), (61, 39154), (75, 39229), (91, 39331), (94, 39337), (95, 39352),

Gene: Shinji\_84 Start: 55913, Stop: 55398, Start Num: 23

Candidate Starts for Shinji\_84:

(Start: 20 @55919 has 1 MA's), (Start: 23 @55913 has 25 MA's), (28, 55901), (36, 55865), (44, 55820), (47, 55805), (63, 55727), (68, 55700), (71, 55679), (74, 55655), (108, 55445), (110, 55433), (114, 55409),

Gene: SmokingBunny\_86 Start: 56828, Stop: 56313, Start Num: 23

Candidate Starts for SmokingBunny\_86:

(Start: 20 @56834 has 1 MA's), (Start: 23 @56828 has 25 MA's), (28, 56816), (36, 56780), (44, 56735), (47, 56720), (63, 56642), (68, 56615), (71, 56594), (74, 56570), (108, 56360), (110, 56348), (114, 56324),

Gene: Snazzy\_68 Start: 43855, Stop: 43277, Start Num: 17

Candidate Starts for Snazzy\_68:

(Start: 17 @43855 has 12 MA's), (Start: 21 @43843 has 1 MA's), (28, 43825), (54, 43684), (57, 43657), (66, 43618), (71, 43588), (103, 43375),

Gene: Soshi\_81 Start: 51620, Stop: 52129, Start Num: 25

Candidate Starts for Soshi\_81:

(Start: 25 @51620 has 29 MA's), (36, 51665), (44, 51710), (55, 51779), (76, 51893), (91, 51983), (95, 52004), (103, 52064), (105, 52073), (111, 52115),

Gene: Spectropatronm\_81 Start: 51016, Stop: 51525, Start Num: 25

Candidate Starts for Spectropatronm\_81:

(Start: 25 @51016 has 29 MA's), (36, 51061), (44, 51106), (55, 51175), (76, 51289), (91, 51379), (95, 51400), (103, 51460), (105, 51469), (111, 51511),

Gene: SpikeBT\_61 Start: 41461, Stop: 40904, Start Num: 34

Candidate Starts for SpikeBT\_61:

(Start: 34 @41461 has 9 MA's), (41, 41419), (45, 41401), (60, 41317), (64, 41299), (73, 41248), (81, 41194), (99, 41092), (115, 40924),

Gene: Squee\_73 Start: 44893, Stop: 44315, Start Num: 17

Candidate Starts for Squee\_73:

(Start: 17 @44893 has 12 MA's), (Start: 21 @44881 has 1 MA's), (28, 44863), (54, 44722), (57, 44695), (66, 44656), (71, 44626), (103, 44413),

Gene: SwissCheese\_66 Start: 41680, Stop: 41123, Start Num: 34

Candidate Starts for SwissCheese\_66:

(Start: 34 @41680 has 9 MA's), (41, 41638), (45, 41620), (60, 41536), (64, 41518), (73, 41467), (81, 41413), (99, 41311), (115, 41143),

Gene: TaidaOne\_82 Start: 51492, Stop: 52001, Start Num: 25

Candidate Starts for TaidaOne\_82:

(Start: 25 @51492 has 29 MA's), (36, 51537), (44, 51582), (55, 51651), (76, 51765), (91, 51855), (95, 51876), (103, 51936), (105, 51945), (111, 51987),

Gene: Talon44\_92 Start: 55653, Stop: 56135, Start Num: 27

Candidate Starts for Talon44\_92:

(Start: 27 @55653 has 42 MA's), (51, 55776), (65, 55842), (72, 55875), (85, 55962), (101, 56055), (105, 56085), (109, 56109),

Gene: Tanis\_89 Start: 55128, Stop: 55610, Start Num: 27

Candidate Starts for Tanis\_89:

(Start: 27 @55128 has 42 MA's), (51, 55251), (58, 55290), (65, 55317), (83, 55422), (85, 55437), (100, 55518), (101, 55530), (103, 55551),

Gene: TenaciousP\_89 Start: 57721, Stop: 58203, Start Num: 27

Candidate Starts for TenaciousP\_89:

(Start: 27 @57721 has 42 MA's), (33, 57754), (49, 57838), (85, 58027), (98, 58093), (100, 58108), (101, 58120),

Gene: Thiqqums\_90 Start: 53073, Stop: 53564, Start Num: 25

Candidate Starts for Thiqqums\_90:

(4, 52932), (5, 52950), (6, 52959), (13, 53031), (14, 53040), (Start: 25 @53073 has 29 MA's), (36, 53118), (44, 53163), (47, 53175), (76, 53331), (82, 53364), (109, 53535),

Gene: Thor\_70 Start: 43921, Stop: 43343, Start Num: 17

Candidate Starts for Thor\_70:

(Start: 17 @43921 has 12 MA's), (Start: 21 @43909 has 1 MA's), (28, 43891), (54, 43750), (57, 43723), (66, 43684), (71, 43654), (103, 43441),

Gene: TieDye\_78 Start: 50340, Stop: 50849, Start Num: 25

Candidate Starts for TieDye\_78:

(Start: 25 @50340 has 29 MA's), (36, 50385), (44, 50430), (55, 50499), (76, 50613), (91, 50703), (95, 50724), (103, 50784), (105, 50793), (111, 50835),

Gene: TillyBobJoe\_83 Start: 55714, Stop: 55199, Start Num: 23

Candidate Starts for TillyBobJoe\_83:

(Start: 20 @55720 has 1 MA's), (Start: 23 @55714 has 25 MA's), (28, 55702), (36, 55666), (44, 55621), (47, 55606), (63, 55528), (68, 55501), (71, 55480), (74, 55456), (108, 55246), (110, 55234), (114, 55210),

Gene: Togo\_85 Start: 56828, Stop: 56313, Start Num: 23

Candidate Starts for Togo\_85:

(Start: 20 @56834 has 1 MA's), (Start: 23 @56828 has 25 MA's), (28, 56816), (36, 56780), (44, 56735), (47, 56720), (63, 56642), (68, 56615), (71, 56594), (74, 56570), (108, 56360), (110, 56348), (114, 56324),

Gene: TonyStarch\_81 Start: 50778, Stop: 51287, Start Num: 25

Candidate Starts for TonyStarch\_81:

(Start: 25 @50778 has 29 MA's), (36, 50823), (44, 50868), (55, 50937), (76, 51051), (91, 51141), (95, 51162), (103, 51222), (105, 51231), (111, 51273),

Gene: Twister6\_84 Start: 55177, Stop: 54662, Start Num: 23

Candidate Starts for Twister6\_84:

(Start: 20 @55183 has 1 MA's), (Start: 23 @55177 has 25 MA's), (28, 55165), (36, 55129), (44, 55084), (47, 55069), (63, 54991), (68, 54964), (71, 54943), (74, 54919), (108, 54709), (110, 54697), (114, 54673),

Gene: Untouchable\_89 Start: 57058, Stop: 57537, Start Num: 27

Candidate Starts for Untouchable\_89:

(Start: 27 @57058 has 42 MA's), (39, 57118), (50, 57178), (61, 57229), (65, 57247), (82, 57346), (85, 57364), (86, 57370), (98, 57430), (100, 57445), (101, 57457), (103, 57478),

Gene: Valary\_86 Start: 56820, Stop: 56305, Start Num: 23

Candidate Starts for Valary\_86:

(Start: 20 @56826 has 1 MA's), (Start: 23 @56820 has 25 MA's), (28, 56808), (36, 56772), (44, 56727), (47, 56712), (63, 56634), (68, 56607), (71, 56586), (74, 56562), (108, 56352), (110, 56340), (114, 56316),

Gene: VanDeWege\_87 Start: 56351, Stop: 55830, Start Num: 20

Candidate Starts for VanDeWege\_87:

(Start: 20 @56351 has 1 MA's), (Start: 23 @56345 has 25 MA's), (28, 56333), (36, 56297), (44, 56252), (47, 56237), (63, 56159), (68, 56132), (71, 56111), (74, 56087), (108, 55877), (110, 55865), (114, 55841),

Gene: Vardy\_86 Start: 55581, Stop: 56060, Start Num: 27

Candidate Starts for Vardy\_86:

(Start: 27 @55581 has 42 MA's), (50, 55701), (65, 55770), (85, 55887), (86, 55893), (98, 55953), (100, 55968), (101, 55980), (103, 56001),

Gene: Wizard\_80 Start: 55680, Stop: 55165, Start Num: 23

Candidate Starts for Wizard\_80:

(Start: 20 @55686 has 1 MA's), (Start: 23 @55680 has 25 MA's), (28, 55668), (36, 55632), (44, 55587), (47, 55572), (63, 55494), (68, 55467), (71, 55446), (74, 55422), (108, 55212), (110, 55200), (114, 55176),

Gene: Zeph\_90 Start: 56862, Stop: 57341, Start Num: 27

Candidate Starts for Zeph\_90:

(Start: 27 @56862 has 42 MA's), (39, 56922), (50, 56982), (61, 57033), (65, 57051), (82, 57150), (85, 57168), (86, 57174), (98, 57234), (100, 57249), (101, 57261), (103, 57282),