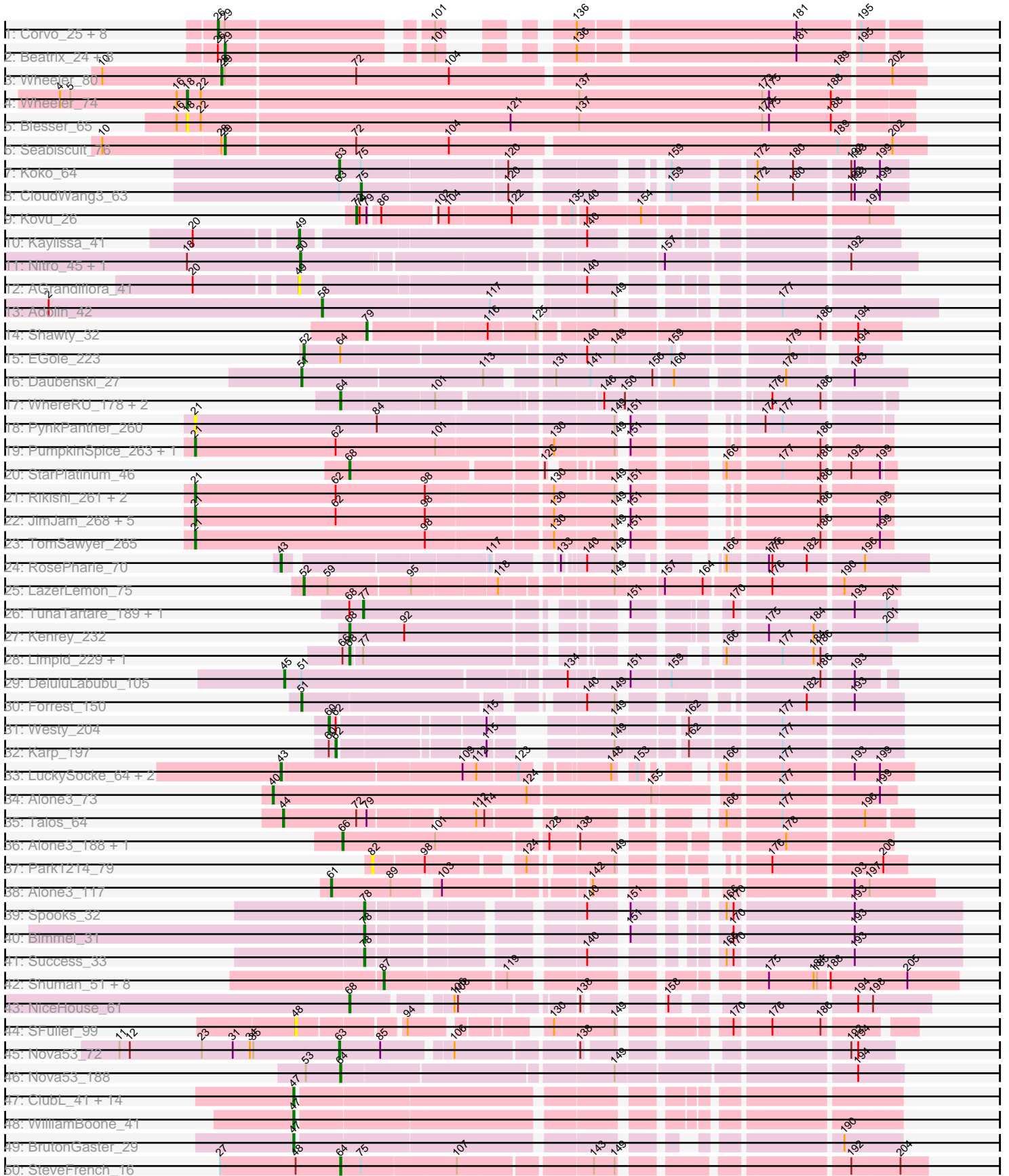
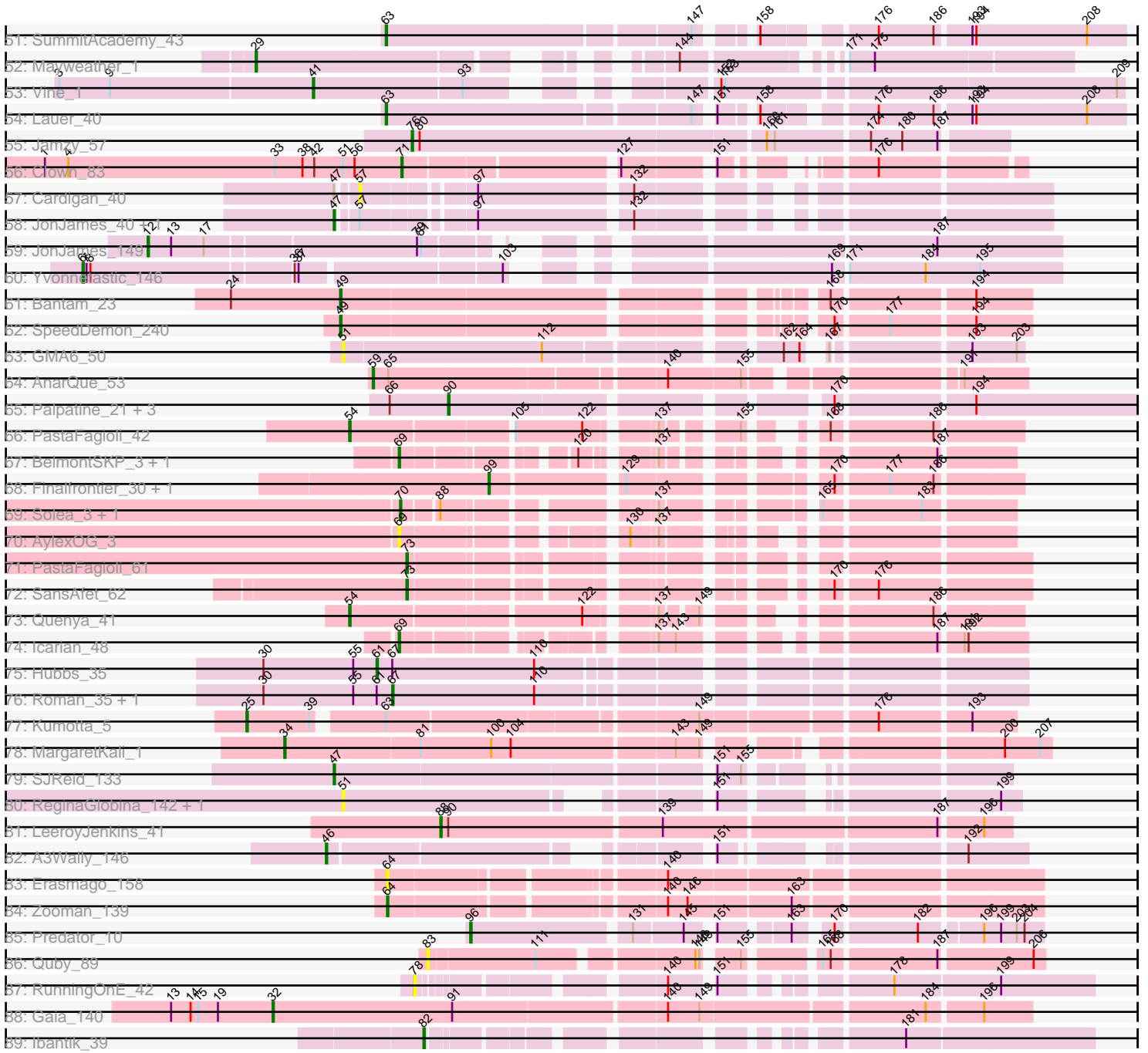


Pham 311321



Pham 311321



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 311321 Report

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

Pham number 311321 has 152 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Corvo\_25, Target\_27, Noxious\_27, GroundGoblin\_26, Snazzy\_23, Pinto\_27, Hermia\_27, Atkinbua\_26, Zeeculate\_24
- Track 2 : Beatrix\_24, KikiBouba\_27, SwissCheese\_25, Trouble\_25, ConceptII\_26, Petruccio\_25, Ashballer\_24, GrecoEtereo\_26, Ajay\_25
- Track 3 : Wheeler\_80
- Track 4 : Wheeler\_74
- Track 5 : Blessor\_65
- Track 6 : Seabiscuit\_76
- Track 7 : Koko\_64
- Track 8 : CloudWang3\_63
- Track 9 : Kovu\_26
- Track 10 : Kaylissa\_41
- Track 11 : Nitro\_45, Community\_49
- Track 12 : AGrandiflora\_41
- Track 13 : Adolin\_42
- Track 14 : Shawty\_32
- Track 15 : EGole\_223
- Track 16 : Daubenski\_27
- Track 17 : WhereRU\_178, Davielle\_179, Persimmon\_179
- Track 18 : PynkPanther\_260
- Track 19 : PumpkinSpice\_263, Wipeout\_252
- Track 20 : StarPlatinum\_46
- Track 21 : Rikishi\_261, AcciDwight\_269, Gibbi\_270
- Track 22 : JimJam\_268, Starbow\_257, CeilingFan\_266, KentuckyRacer\_267, Spilled\_268, Spelly\_265
- Track 23 : TomSawyer\_265
- Track 24 : RosePharie\_70
- Track 25 : LazerLemon\_75
- Track 26 : TunaTartare\_189, Sham\_181
- Track 27 : Kenrey\_232
- Track 28 : Limpid\_229, Annadreamy\_222
- Track 29 : DeluluLabubu\_105
- Track 30 : Forrest\_150
- Track 31 : Westy\_204
- Track 32 : Karp\_197
- Track 33 : LuckySocke\_64, Fudan\_62, Alone3\_65
- Track 34 : Alone3\_73

- Track 35 : Talos\_64
- Track 36 : Alone3\_188, Talos\_188
- Track 37 : Park1214\_79
- Track 38 : Alone3\_117
- Track 39 : Spooks\_32
- Track 40 : Bimmel\_31
- Track 41 : Success\_33
- Track 42 : Shuman\_51, Gollum\_51, UhSalsa\_51, Natosaleda\_50, Nancinator\_51, AppleCloud\_48, Belenaria\_51, Espica\_51, RexFury\_50
- Track 43 : NiceHouse\_61
- Track 44 : SFuller\_99
- Track 45 : Nova53\_72
- Track 46 : Nova53\_188
- Track 47 : ClubL\_41, Geeche\_40, Dusty\_40, Miskis\_39, Cucurbita\_43, Engineer\_42, Abscondus\_40, Toniann\_41, Norvs\_42, PhinkBoden\_41, Lozinak\_41, Aphelion\_41, Smoothie\_42, Culver\_41, Bachita\_43
- Track 48 : WilliamBoone\_41
- Track 49 : BrutonGaster\_29
- Track 50 : SteveFrench\_16
- Track 51 : SummitAcademy\_43
- Track 52 : Mayweather\_1
- Track 53 : Vine\_1
- Track 54 : Lauer\_40
- Track 55 : Jamzy\_57
- Track 56 : Clown\_83
- Track 57 : Cardigan\_40
- Track 58 : JonJames\_40, Yvonnetastic\_38
- Track 59 : JonJames\_149
- Track 60 : Yvonnetastic\_146
- Track 61 : Bantam\_23
- Track 62 : SpeedDemon\_240
- Track 63 : GMA6\_50
- Track 64 : AnarQue\_53
- Track 65 : Palpatine\_21, FireRed\_21, Porky\_21, PhatBacter\_21
- Track 66 : PastaFagioli\_42
- Track 67 : BelmontSKP\_3, AnnaLie\_3
- Track 68 : Finalfrontier\_30, Didgeridoo\_31
- Track 69 : Solea\_3, Milomuff\_3
- Track 70 : AylexOG\_3
- Track 71 : PastaFagioli\_61
- Track 72 : SansAfet\_62
- Track 73 : Quenya\_41
- Track 74 : Icarian\_48
- Track 75 : Hubbs\_35
- Track 76 : Roman\_35, DejaVu\_36
- Track 77 : Kumotta\_5
- Track 78 : MargaretKali\_1
- Track 79 : SJReid\_133
- Track 80 : ReginaGlobina\_142, LeoJr\_143
- Track 81 : LeeroyJenkins\_41
- Track 82 : A3Wally\_146
- Track 83 : Erasmago\_158
- Track 84 : Zooman\_139

- Track 85 : Predator\_10
- Track 86 : Quby\_89
- Track 87 : RunningOnE\_42
- Track 88 : Gaia\_140
- Track 89 : Ibantik\_39

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

The start number called the most often in the published annotations is 47, it was called in 19 of the 134 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abscondus\_40, Aphelion\_41, Bachita\_43, BrutonGaster\_29, ClubL\_41, Cucurbita\_43, Culver\_41, Dusty\_40, Engineer\_42, Geeche\_40, JonJames\_40, Lozinak\_41, Miskis\_39, Norvs\_42, PhinkBoden\_41, SJReid\_133, Smoothie\_42, Toniann\_41, WilliamBoone\_41, Yvonnetastic\_38,

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

- Cardigan\_40,

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

- A3Wally\_146, AGrandiflora\_41, AcciDwight\_269, Adolin\_42, Ajay\_25, Alone3\_117, Alone3\_188, Alone3\_65, Alone3\_73, AnarQue\_53, AnnaLie\_3, Annadreamy\_222, AppleCloud\_48, Ashballer\_24, Atkinbua\_26, AylexOG\_3, Bantam\_23, Beatrix\_24, Belenaria\_51, BelmontSKP\_3, Bimmel\_31, Blessor\_65, CeilingFan\_266, CloudWang3\_63, Clown\_83, Community\_49, Conceptll\_26, Corvo\_25, Daubenski\_27, Davielle\_179, DejaVu\_36, DeluluLabubu\_105, Didgeeridoo\_31, EGole\_223, Erasmago\_158, Espica\_51, Finalfrontier\_30, FireRed\_21, Forrest\_150, Fudan\_62, GMA6\_50, Gaia\_140, Gibbi\_270, Gollum\_51, GrecoEtereo\_26, GroundGoblin\_26, Hermia\_27, Hubbs\_35, Ibantik\_39, Icarian\_48, Jamzy\_57, JimJam\_268, JonJames\_149, Karp\_197, Kaylissa\_41, Kenrey\_232, KentuckyRacer\_267, KikiBouba\_27, Koko\_64, Kovu\_26, Kumotta\_5, Lauer\_40, LazerLemon\_75, LeeroyJenkins\_41, LeoJr\_143, Limpid\_229, LuckySocke\_64, MargaretKali\_1, Mayweather\_1, Milomuff\_3, Nancinator\_51, Natosaleda\_50, NiceHouse\_61, Nitro\_45, Nova53\_188, Nova53\_72, Noxious\_27, Palpatine\_21, Park1214\_79, PastaFagioli\_42, PastaFagioli\_61, Persimmon\_179, Petruchio\_25, PhatBacter\_21, Pinto\_27, Porky\_21, Predator\_10, PumpkinSpice\_263, PynkPanther\_260, Quby\_89, Quenya\_41, ReginaGlobina\_142, RexFury\_50, Rikishi\_261, Roman\_35, RosePharie\_70, RunningOnE\_42, SFuller\_99, SansAfet\_62, Seabiscuit\_76, Sham\_181, Shawty\_32, Shuman\_51, Snazzy\_23, Solea\_3, SpeedDemon\_240, Spelly\_265, Spilled\_268, Spooks\_32, StarPlatinum\_46, Starbow\_257, SteveFrench\_16, Success\_33, SummitAcademy\_43, SwissCheese\_25, Talos\_188, Talos\_64, Target\_27, TomSawyer\_265, Trouble\_25, TunaTartare\_189, UhSalsa\_51, Vine\_1, Westy\_204, Wheeler\_74, Wheeler\_80, WhereRU\_178, Wipeout\_252, Yvonnetastic\_146, Zeeculate\_24, Zooman\_139,

**Summary by start number:**

Start 6:

- Found in 1 of 152 ( 0.7% ) of genes in pham

- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yvonnestic\_146 (DD),

#### Start 12:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: JonJames\_149 (DD),

#### Start 18:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Blesser\_65 (A1), Wheeler\_74 (A1),

#### Start 21:

- Found in 13 of 152 ( 8.6% ) of genes in pham
- Manual Annotations of this start: 10 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AcciDwight\_269 (BE2), CeilingFan\_266 (BE2), Gibbi\_270 (BE2), JimJam\_268 (BE2), KentuckyRacer\_267 (BE2), PumpkinSpice\_263 (BE2), PynkPanther\_260 (BE1), Rikishi\_261 (BE2), Spelly\_265 (BE2), Spilled\_268 (BE2), Starbow\_257 (BE2), TomSawyer\_265 (BE2), Wipeout\_252 (BE2),

#### Start 25:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumotta\_5 (FB),

#### Start 26:

- Found in 18 of 152 ( 11.8% ) of genes in pham
- Manual Annotations of this start: 9 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Atkinbua\_26 (A1), Corvo\_25 (A1), GroundGoblin\_26 (A1), Hermia\_27 (A1), Noxious\_27 (A1), Pinto\_27 (A1), Snazzy\_23 (A1), Target\_27 (A1), Zeeculate\_24 (A1),

#### Start 28:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Wheeler\_80 (A1),

#### Start 29:

- Found in 21 of 152 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 11 of 134
- Called 52.4% of time when present
- Phage (with cluster) where this start called: Ajay\_25 (A1), Ashballer\_24 (A1), Beatrix\_24 (A1), ConceptII\_26 (A1), GrecoEtereo\_26 (A1), KikiBouba\_27 (A1), Mayweather\_1 (CT), Petruccio\_25 (A1), Seabiscuit\_76 (A1), SwissCheese\_25 (A1),

Trouble\_25 (A1),

Start 32:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gaia\_140 (X),

Start 34:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MargaretKali\_1 (FB),

Start 40:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alone3\_73 (BS),

Start 41:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Vine\_1 (CT),

Start 43:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 4 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alone3\_65 (BS), Fudan\_62 (BS), LuckySocke\_64 (BS), RosePharie\_70 (BF),

Start 44:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Talos\_64 (BS),

Start 45:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DeluluLabubu\_105 (BK1),

Start 46:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_146 (GD1),

Start 47:

- Found in 21 of 152 ( 13.8% ) of genes in pham

- Manual Annotations of this start: 19 of 134
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Abscondus\_40 (CQ1), Aphelion\_41 (CQ1), Bachita\_43 (CQ1), BrutonGaster\_29 (CQ2), ClubL\_41 (CQ1), Cucurbita\_43 (CQ1), Culver\_41 (CQ1), Dusty\_40 (CQ1), Engineer\_42 (CQ1), Geeche\_40 (CQ1), JonJames\_40 (DD), Lozinak\_41 (CQ1), Miskis\_39 (CQ1), Norvs\_42 (CQ1), PhinkBoden\_41 (CQ1), SJReid\_133 (FC), Smoothie\_42 (CQ1), Toniann\_41 (CQ1), WilliamBoone\_41 (CQ1), Yvonnetastic\_38 (DD),

#### Start 48:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: SFuller\_99 (CF),

#### Start 49:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 3 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AGrandiflora\_41 (AZ1), Bantam\_23 (DL), Kaylissa\_41 (AZ1), SpeedDemon\_240 (DL),

#### Start 50:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Community\_49 (AZ1), Nitro\_45 (AZ1),

#### Start 51:

- Found in 7 of 152 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Daubenski\_27 (BE1), Forrest\_150 (BK1), GMA6\_50 (DQ), LeoJr\_143 (FC), ReginaGlobina\_142 (FC),

#### Start 52:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EGole\_223 (BE1), LazerLemon\_75 (BH),

#### Start 54:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PastaFagioli\_42 (EB), Quenya\_41 (EB),

#### Start 57:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Cardigan\_40 (DD),

Start 58:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adolin\_42 (AZ1),

Start 59:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_53 (DR),

Start 60:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Westy\_204 (BK1),

Start 61:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Alone3\_117 (BS), Hubbs\_35 (ED1),

Start 62:

- Found in 13 of 152 ( 8.6% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Karp\_197 (BK1),

Start 63:

- Found in 6 of 152 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 4 of 134
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Koko\_64 (A6), Lauer\_40 (CT), Nova53\_72 (CG), SummitAcademy\_43 (CT),

Start 64:

- Found in 8 of 152 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 6 of 134
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Davielle\_179 (BE1), Erasmago\_158 (GD2), Nova53\_188 (CG), Persimmon\_179 (BE1), SteveFrench\_16 (CS2), WhereRU\_178 (BE1), Zooman\_139 (GD2),

Start 66:

- Found in 8 of 152 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Alone3\_188 (BS), Talos\_188 (BS),

Start 67:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 66.7% of time when present
- Phage (with cluster) where this start called: DejaVu\_36 (ED1), Roman\_35 (ED1),

Start 68:

- Found in 7 of 152 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 5 of 134
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Annadreamy\_222 (BK1), Kenrey\_232 (BK1), Limpid\_229 (BK1), NiceHouse\_61 (CE), StarPlatinum\_46 (BE2),

Start 69:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 3 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnaLie\_3 (EB), AylexOG\_3 (EB), BelmontSKP\_3 (EB), Icarian\_48 (EB),

Start 70:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Milomuff\_3 (EB), Solea\_3 (EB),

Start 71:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Clown\_83 (DC2),

Start 72:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Kovu\_26 (AL),

Start 73:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PastaFagioli\_61 (EB), SansAfet\_62 (EB),

Start 75:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 33.3% of time when present
- Phage (with cluster) where this start called: CloudWang3\_63 (A6),

Start 76:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jamzy\_57 (CT),

#### Start 77:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Sham\_181 (BK1), TunaTartare\_189 (BK1),

#### Start 78:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 3 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bimmel\_31 (BT), RunningOnE\_42 (UNK), Spooks\_32 (BT), Success\_33 (BT),

#### Start 79:

- Found in 4 of 152 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Shawty\_32 (BB1),

#### Start 82:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ibantik\_39 (singleton), Park1214\_79 (BS),

#### Start 83:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Quby\_89 (L4),

#### Start 87:

- Found in 9 of 152 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 9 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AppleCloud\_48 (CA), Belenaria\_51 (CA), Espica\_51 (CA), Gollum\_51 (CA), Nancinator\_51 (CA), Natosaleda\_50 (CA), RexFury\_50 (CA), Shuman\_51 (CA), UhSalsa\_51 (CA),

#### Start 88:

- Found in 3 of 152 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 33.3% of time when present
- Phage (with cluster) where this start called: LeeroyJenkins\_41 (GB),

#### Start 90:

- Found in 5 of 152 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 4 of 134

- Called 80.0% of time when present
- Phage (with cluster) where this start called: FireRed\_21 (E), Palpatine\_21 (E), PhatBacter\_21 (E), Porky\_21 (E),

Start 96:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Predator\_10 (H1),

Start 99:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 134
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Didgeridoo\_31 (EB), Finalfrontier\_30 (EB),

### Summary by clusters:

There are 38 clusters represented in this pham: GD1, singleton, DD, BH, GD2, BT, FB, ED1, BS, DR, DL, DQ, A1, BF, CF, A6, CQ2, CQ1, BB1, CS2, E, CA, CG, AL, CE, EB, L4, BK1, X, UNK, DC2, CT, H1, FC, BE2, AZ1, BE1, GB,

Info for manual annotations of cluster A1:

- Start number 18 was manually annotated 1 time for cluster A1.
- Start number 26 was manually annotated 9 times for cluster A1.
- Start number 28 was manually annotated 1 time for cluster A1.
- Start number 29 was manually annotated 10 times for cluster A1.

Info for manual annotations of cluster A6:

- Start number 63 was manually annotated 1 time for cluster A6.
- Start number 75 was manually annotated 1 time for cluster A6.

Info for manual annotations of cluster AL:

- Start number 72 was manually annotated 1 time for cluster AL.

Info for manual annotations of cluster AZ1:

- Start number 49 was manually annotated 1 time for cluster AZ1.
- Start number 50 was manually annotated 1 time for cluster AZ1.
- Start number 58 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster BB1:

- Start number 79 was manually annotated 1 time for cluster BB1.

Info for manual annotations of cluster BE1:

- Start number 51 was manually annotated 1 time for cluster BE1.
- Start number 52 was manually annotated 1 time for cluster BE1.
- Start number 64 was manually annotated 3 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 21 was manually annotated 10 times for cluster BE2.
- Start number 68 was manually annotated 1 time for cluster BE2.

Info for manual annotations of cluster BF:

- Start number 43 was manually annotated 1 time for cluster BF.

Info for manual annotations of cluster BH:

- Start number 52 was manually annotated 1 time for cluster BH.

Info for manual annotations of cluster BK1:

- Start number 45 was manually annotated 1 time for cluster BK1.
- Start number 51 was manually annotated 1 time for cluster BK1.
- Start number 60 was manually annotated 1 time for cluster BK1.
- Start number 62 was manually annotated 1 time for cluster BK1.
- Start number 68 was manually annotated 3 times for cluster BK1.
- Start number 77 was manually annotated 2 times for cluster BK1.

Info for manual annotations of cluster BS:

- Start number 40 was manually annotated 1 time for cluster BS.
- Start number 43 was manually annotated 3 times for cluster BS.
- Start number 44 was manually annotated 1 time for cluster BS.
- Start number 61 was manually annotated 1 time for cluster BS.
- Start number 66 was manually annotated 2 times for cluster BS.

Info for manual annotations of cluster BT:

- Start number 78 was manually annotated 3 times for cluster BT.

Info for manual annotations of cluster CA:

- Start number 87 was manually annotated 9 times for cluster CA.

Info for manual annotations of cluster CE:

- Start number 68 was manually annotated 1 time for cluster CE.

Info for manual annotations of cluster CG:

- Start number 63 was manually annotated 1 time for cluster CG.
- Start number 64 was manually annotated 1 time for cluster CG.

Info for manual annotations of cluster CQ1:

- Start number 47 was manually annotated 15 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 47 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster CS2:

- Start number 64 was manually annotated 1 time for cluster CS2.

Info for manual annotations of cluster CT:

- Start number 29 was manually annotated 1 time for cluster CT.
- Start number 41 was manually annotated 1 time for cluster CT.
- Start number 63 was manually annotated 2 times for cluster CT.
- Start number 76 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster DC2:

- Start number 71 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DD:

- Start number 6 was manually annotated 1 time for cluster DD.
- Start number 12 was manually annotated 1 time for cluster DD.
- Start number 47 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DL:

- Start number 49 was manually annotated 2 times for cluster DL.

Info for manual annotations of cluster DR:

- Start number 59 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster E:

- Start number 90 was manually annotated 4 times for cluster E.

Info for manual annotations of cluster EB:

- Start number 54 was manually annotated 2 times for cluster EB.
- Start number 69 was manually annotated 3 times for cluster EB.
- Start number 70 was manually annotated 1 time for cluster EB.
- Start number 73 was manually annotated 2 times for cluster EB.
- Start number 99 was manually annotated 2 times for cluster EB.

Info for manual annotations of cluster ED1:

- Start number 61 was manually annotated 1 time for cluster ED1.
- Start number 67 was manually annotated 2 times for cluster ED1.

Info for manual annotations of cluster FB:

- Start number 25 was manually annotated 1 time for cluster FB.
- Start number 34 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FC:

- Start number 47 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster GB:

- Start number 88 was manually annotated 1 time for cluster GB.

Info for manual annotations of cluster GD1:

- Start number 46 was manually annotated 1 time for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 64 was manually annotated 1 time for cluster GD2.

Info for manual annotations of cluster H1:

- Start number 96 was manually annotated 1 time for cluster H1.

Info for manual annotations of cluster X:

- Start number 32 was manually annotated 1 time for cluster X.

**Gene Information:**

Gene: A3Wally\_146 Start: 90094, Stop: 90525, Start Num: 46  
Candidate Starts for A3Wally\_146:  
(Start: 46 @90094 has 1 MA's), (151, 90337), (192, 90481),

Gene: AGrandiflora\_41 Start: 29625, Stop: 30068, Start Num: 49  
Candidate Starts for AGrandiflora\_41:  
(20, 29544), (Start: 49 @29625 has 3 MA's), (140, 29847),

Gene: Abscondus\_40 Start: 17135, Stop: 17593, Start Num: 47  
Candidate Starts for Abscondus\_40:  
(Start: 47 @17135 has 19 MA's),

Gene: AcciDwight\_269 Start: 119645, Stop: 119103, Start Num: 21  
Candidate Starts for AcciDwight\_269:  
(Start: 21 @119645 has 10 MA's), (Start: 62 @119522 has 1 MA's), (98, 119444), (130, 119342), (149, 119291), (151, 119288), (186, 119159),

Gene: Adolin\_42 Start: 29874, Stop: 30347, Start Num: 58  
Candidate Starts for Adolin\_42:  
(2, 29637), (Start: 58 @29874 has 1 MA's), (117, 30018), (149, 30111), (177, 30219),

Gene: Ajay\_25 Start: 18878, Stop: 19372, Start Num: 29  
Candidate Starts for Ajay\_25:  
(Start: 26 @18872 has 9 MA's), (Start: 29 @18878 has 11 MA's), (101, 19034), (136, 19094), (181, 19274), (195, 19325),

Gene: Alone3\_73 Start: 27993, Stop: 28508, Start Num: 40  
Candidate Starts for Alone3\_73:  
(Start: 40 @27993 has 1 MA's), (124, 28215), (155, 28320), (177, 28416), (199, 28494),

Gene: Alone3\_188 Start: 97401, Stop: 96985, Start Num: 66  
Candidate Starts for Alone3\_188:  
(Start: 66 @97401 has 2 MA's), (101, 97320), (128, 97230), (138, 97206), (178, 97071),

Gene: Alone3\_117 Start: 62982, Stop: 63413, Start Num: 61  
Candidate Starts for Alone3\_117:  
(Start: 61 @62982 has 2 MA's), (89, 63033), (103, 63066), (142, 63177), (193, 63345), (197, 63357),

Gene: Alone3\_65 Start: 23323, Stop: 23781, Start Num: 43  
Candidate Starts for Alone3\_65:  
(Start: 43 @23323 has 4 MA's), (109, 23473), (112, 23485), (123, 23518), (148, 23581), (153, 23593), (166, 23632), (177, 23674), (193, 23731), (199, 23752),

Gene: AnarQue\_53 Start: 46202, Stop: 45753, Start Num: 59  
Candidate Starts for AnarQue\_53:  
(Start: 59 @46202 has 1 MA's), (65, 46190), (140, 45992), (155, 45938), (191, 45800),

Gene: AnnaLie\_3 Start: 681, Stop: 1031, Start Num: 69  
Candidate Starts for AnnaLie\_3:  
(Start: 69 @681 has 3 MA's), (120, 786), (137, 828), (187, 978),

Gene: Annadreamy\_222 Start: 109759, Stop: 110133, Start Num: 68  
Candidate Starts for Annadreamy\_222:

(Start: 66 @109753 has 2 MA's), (Start: 68 @109759 has 5 MA's), (Start: 77 @109768 has 2 MA's),  
(166, 110005), (177, 110047), (184, 110074), (186, 110080),

Gene: Aphelion\_41 Start: 17404, Stop: 17862, Start Num: 47  
Candidate Starts for Aphelion\_41:  
(Start: 47 @17404 has 19 MA's),

Gene: AppleCloud\_48 Start: 36593, Stop: 36153, Start Num: 87  
Candidate Starts for AppleCloud\_48:  
(Start: 87 @36593 has 9 MA's), (119, 36491), (175, 36314), (184, 36275), (185, 36272), (188, 36263),  
(205, 36197),

Gene: Ashballer\_24 Start: 18821, Stop: 19315, Start Num: 29  
Candidate Starts for Ashballer\_24:  
(Start: 26 @18815 has 9 MA's), (Start: 29 @18821 has 11 MA's), (101, 18977), (136, 19037), (181,  
19217), (195, 19268),

Gene: Atkinbua\_26 Start: 18768, Stop: 19268, Start Num: 26  
Candidate Starts for Atkinbua\_26:  
(Start: 26 @18768 has 9 MA's), (Start: 29 @18774 has 11 MA's), (101, 18930), (136, 18990), (181,  
19170), (195, 19221),

Gene: AylexOG\_3 Start: 681, Stop: 1040, Start Num: 69  
Candidate Starts for AylexOG\_3:  
(Start: 69 @681 has 3 MA's), (130, 819), (137, 837),

Gene: Bachita\_43 Start: 17837, Stop: 18295, Start Num: 47  
Candidate Starts for Bachita\_43:  
(Start: 47 @17837 has 19 MA's),

Gene: Bantam\_23 Start: 14778, Stop: 15239, Start Num: 49  
Candidate Starts for Bantam\_23:  
(24, 14694), (Start: 49 @14778 has 3 MA's), (168, 15099), (194, 15198),

Gene: Beatrix\_24 Start: 19780, Stop: 20274, Start Num: 29  
Candidate Starts for Beatrix\_24:  
(Start: 26 @19774 has 9 MA's), (Start: 29 @19780 has 11 MA's), (101, 19936), (136, 19996), (181,  
20176), (195, 20227),

Gene: Belenaria\_51 Start: 36741, Stop: 36301, Start Num: 87  
Candidate Starts for Belenaria\_51:  
(Start: 87 @36741 has 9 MA's), (119, 36639), (175, 36462), (184, 36423), (185, 36420), (188, 36411),  
(205, 36345),

Gene: BelmontSKP\_3 Start: 681, Stop: 1031, Start Num: 69  
Candidate Starts for BelmontSKP\_3:  
(Start: 69 @681 has 3 MA's), (120, 786), (137, 828), (187, 978),

Gene: Bimmel\_31 Start: 19820, Stop: 19383, Start Num: 78  
Candidate Starts for Bimmel\_31:  
(Start: 78 @19820 has 3 MA's), (151, 19634), (170, 19574), (193, 19475),

Gene: Blessor\_65 Start: 43215, Stop: 42592, Start Num: 18

Candidate Starts for Blesser\_65:

(16, 43224), (Start: 18 @43215 has 1 MA's), (22, 43203), (121, 42936), (137, 42876), (173, 42717), (175, 42711), (188, 42657),

Gene: BrutonGaster\_29 Start: 14029, Stop: 14475, Start Num: 47

Candidate Starts for BrutonGaster\_29:

(Start: 47 @14029 has 19 MA's), (190, 14428),

Gene: Cardigan\_40 Start: 19035, Stop: 19475, Start Num: 57

Candidate Starts for Cardigan\_40:

(Start: 47 @19023 has 19 MA's), (57, 19035), (97, 19110), (132, 19218),

Gene: CeilingFan\_266 Start: 120156, Stop: 119614, Start Num: 21

Candidate Starts for CeilingFan\_266:

(Start: 21 @120156 has 10 MA's), (Start: 62 @120033 has 1 MA's), (98, 119955), (130, 119853), (149, 119802), (151, 119799), (186, 119670), (199, 119625),

Gene: CloudWang3\_63 Start: 38546, Stop: 38136, Start Num: 75

Candidate Starts for CloudWang3\_63:

(Start: 63 @38564 has 4 MA's), (Start: 75 @38546 has 1 MA's), (120, 38423), (159, 38318), (172, 38258), (180, 38228), (192, 38183), (193, 38180), (199, 38159),

Gene: Clown\_83 Start: 53992, Stop: 54378, Start Num: 71

Candidate Starts for Clown\_83:

(1, 53719), (4, 53737), (33, 53896), (38, 53917), (42, 53926), (Start: 51 @53947 has 2 MA's), (56, 53956), (Start: 71 @53992 has 1 MA's), (127, 54142), (151, 54202), (176, 54277),

Gene: ClubL\_41 Start: 17326, Stop: 17784, Start Num: 47

Candidate Starts for ClubL\_41:

(Start: 47 @17326 has 19 MA's),

Gene: Community\_49 Start: 35475, Stop: 35966, Start Num: 50

Candidate Starts for Community\_49:

(Start: 18 @35376 has 1 MA's), (Start: 50 @35475 has 1 MA's), (157, 35763), (192, 35910),

Gene: ConceptII\_26 Start: 19302, Stop: 19796, Start Num: 29

Candidate Starts for ConceptII\_26:

(Start: 26 @19296 has 9 MA's), (Start: 29 @19302 has 11 MA's), (101, 19458), (136, 19518), (181, 19698), (195, 19749),

Gene: Corvo\_25 Start: 19271, Stop: 19771, Start Num: 26

Candidate Starts for Corvo\_25:

(Start: 26 @19271 has 9 MA's), (Start: 29 @19277 has 11 MA's), (101, 19433), (136, 19493), (181, 19673), (195, 19724),

Gene: Cucurbita\_43 Start: 18696, Stop: 19154, Start Num: 47

Candidate Starts for Cucurbita\_43:

(Start: 47 @18696 has 19 MA's),

Gene: Culver\_41 Start: 17135, Stop: 17593, Start Num: 47

Candidate Starts for Culver\_41:

(Start: 47 @17135 has 19 MA's),

Gene: Daubenski\_27 Start: 12504, Stop: 12022, Start Num: 51

Candidate Starts for Daubenski\_27:

(Start: 51 @12504 has 2 MA's), (113, 12348), (131, 12300), (141, 12270), (156, 12216), (160, 12201), (178, 12120), (193, 12066),

Gene: Davielle\_179 Start: 95501, Stop: 95932, Start Num: 64

Candidate Starts for Davielle\_179:

(Start: 64 @95501 has 6 MA's), (101, 95579), (146, 95705), (150, 95723), (176, 95834), (186, 95876),

Gene: DejaVu\_36 Start: 15500, Stop: 15066, Start Num: 67

Candidate Starts for DejaVu\_36:

(30, 15599), (55, 15530), (Start: 61 @15512 has 2 MA's), (Start: 67 @15500 has 2 MA's), (110, 15392),

Gene: DeluluLabubu\_105 Start: 68261, Stop: 68743, Start Num: 45

Candidate Starts for DeluluLabubu\_105:

(Start: 45 @68261 has 1 MA's), (Start: 51 @68276 has 2 MA's), (134, 68492), (151, 68537), (159, 68570), (186, 68690), (193, 68714),

Gene: Didgeridoo\_31 Start: 22465, Stop: 22809, Start Num: 99

Candidate Starts for Didgeridoo\_31:

(Start: 99 @22465 has 2 MA's), (129, 22555), (170, 22678), (177, 22714), (186, 22747),

Gene: Dusty\_40 Start: 17135, Stop: 17593, Start Num: 47

Candidate Starts for Dusty\_40:

(Start: 47 @17135 has 19 MA's),

Gene: EGole\_223 Start: 113552, Stop: 114001, Start Num: 52

Candidate Starts for EGole\_223:

(Start: 52 @113552 has 2 MA's), (Start: 64 @113582 has 6 MA's), (140, 113783), (149, 113807), (159, 113852), (179, 113936), (194, 113981),

Gene: Engineer\_42 Start: 17352, Stop: 17810, Start Num: 47

Candidate Starts for Engineer\_42:

(Start: 47 @17352 has 19 MA's),

Gene: Erasmago\_158 Start: 90400, Stop: 90855, Start Num: 64

Candidate Starts for Erasmago\_158:

(Start: 64 @90400 has 6 MA's), (140, 90589),

Gene: Espica\_51 Start: 36741, Stop: 36301, Start Num: 87

Candidate Starts for Espica\_51:

(Start: 87 @36741 has 9 MA's), (119, 36639), (175, 36462), (184, 36423), (185, 36420), (188, 36411), (205, 36345),

Gene: Finalfrontier\_30 Start: 22829, Stop: 23173, Start Num: 99

Candidate Starts for Finalfrontier\_30:

(Start: 99 @22829 has 2 MA's), (129, 22919), (170, 23042), (177, 23078), (186, 23111),

Gene: FireRed\_21 Start: 12888, Stop: 13358, Start Num: 90

Candidate Starts for FireRed\_21:

(Start: 66 @12843 has 2 MA's), (Start: 90 @12888 has 4 MA's), (170, 13140), (194, 13236),

Gene: Forrest\_150 Start: 82816, Stop: 83256, Start Num: 51

Candidate Starts for Forrest\_150:

(Start: 51 @82816 has 2 MA's), (140, 83032), (149, 83056), (182, 83179), (193, 83215),

Gene: Fudan\_62 Start: 22684, Stop: 23142, Start Num: 43

Candidate Starts for Fudan\_62:

(Start: 43 @22684 has 4 MA's), (109, 22834), (112, 22846), (123, 22879), (148, 22942), (153, 22954), (166, 22993), (177, 23035), (193, 23092), (199, 23113),

Gene: GMA6\_50 Start: 43670, Stop: 43215, Start Num: 51

Candidate Starts for GMA6\_50:

(Start: 51 @43670 has 2 MA's), (112, 43520), (162, 43364), (164, 43352), (167, 43346), (193, 43253), (203, 43220),

Gene: Gaia\_140 Start: 75742, Stop: 76296, Start Num: 32

Candidate Starts for Gaia\_140:

(13, 75664), (14, 75679), (15, 75685), (19, 75700), (Start: 32 @75742 has 1 MA's), (91, 75880), (140, 76036), (149, 76060), (184, 76222), (196, 76261),

Gene: Geeche\_40 Start: 17226, Stop: 17684, Start Num: 47

Candidate Starts for Geeche\_40:

(Start: 47 @17226 has 19 MA's),

Gene: Gibbi\_270 Start: 119649, Stop: 119107, Start Num: 21

Candidate Starts for Gibbi\_270:

(Start: 21 @119649 has 10 MA's), (Start: 62 @119526 has 1 MA's), (98, 119448), (130, 119346), (149, 119295), (151, 119292), (186, 119163),

Gene: Gollum\_51 Start: 36797, Stop: 36357, Start Num: 87

Candidate Starts for Gollum\_51:

(Start: 87 @36797 has 9 MA's), (119, 36695), (175, 36518), (184, 36479), (185, 36476), (188, 36467), (205, 36401),

Gene: GrecoEtereo\_26 Start: 19123, Stop: 19617, Start Num: 29

Candidate Starts for GrecoEtereo\_26:

(Start: 26 @19117 has 9 MA's), (Start: 29 @19123 has 11 MA's), (101, 19279), (136, 19339), (181, 19519), (195, 19570),

Gene: GroundGoblin\_26 Start: 19663, Stop: 20163, Start Num: 26

Candidate Starts for GroundGoblin\_26:

(Start: 26 @19663 has 9 MA's), (Start: 29 @19669 has 11 MA's), (101, 19825), (136, 19885), (181, 20065), (195, 20116),

Gene: Hermia\_27 Start: 19855, Stop: 20355, Start Num: 26

Candidate Starts for Hermia\_27:

(Start: 26 @19855 has 9 MA's), (Start: 29 @19861 has 11 MA's), (101, 20017), (136, 20077), (181, 20257), (195, 20308),

Gene: Hubbs\_35 Start: 15724, Stop: 15278, Start Num: 61

Candidate Starts for Hubbs\_35:

(30, 15811), (55, 15742), (Start: 61 @15724 has 2 MA's), (Start: 67 @15712 has 2 MA's), (110, 15604),

Gene: Ibantik\_39 Start: 18281, Stop: 17859, Start Num: 82

Candidate Starts for Ibantik\_39:

(Start: 82 @18281 has 1 MA's), (181, 17999),

Gene: Icarian\_48 Start: 33307, Stop: 33684, Start Num: 69

Candidate Starts for Icarian\_48:

(Start: 69 @33307 has 3 MA's), (137, 33460), (143, 33472), (187, 33622), (191, 33637), (192, 33640),

Gene: Jamzy\_57 Start: 37955, Stop: 37521, Start Num: 76

Candidate Starts for Jamzy\_57:

(Start: 76 @37955 has 1 MA's), (80, 37949), (160, 37691), (161, 37685), (174, 37619), (180, 37595), (187, 37568),

Gene: JimJam\_268 Start: 121085, Stop: 120543, Start Num: 21

Candidate Starts for JimJam\_268:

(Start: 21 @121085 has 10 MA's), (Start: 62 @120962 has 1 MA's), (98, 120884), (130, 120782), (149, 120731), (151, 120728), (186, 120599), (199, 120554),

Gene: JonJames\_40 Start: 21238, Stop: 21690, Start Num: 47

Candidate Starts for JonJames\_40:

(Start: 47 @21238 has 19 MA's), (57, 21250), (97, 21325), (132, 21433),

Gene: JonJames\_149 Start: 83143, Stop: 83742, Start Num: 12

Candidate Starts for JonJames\_149:

(Start: 12 @83143 has 1 MA's), (13, 83161), (17, 83185), (Start: 79 @83338 has 1 MA's), (81, 83341), (187, 83647),

Gene: Karp\_197 Start: 102737, Stop: 102318, Start Num: 62

Candidate Starts for Karp\_197:

(Start: 60 @102743 has 1 MA's), (Start: 62 @102737 has 1 MA's), (115, 102620), (149, 102542), (162, 102488), (177, 102416),

Gene: Kaylissa\_41 Start: 29646, Stop: 30089, Start Num: 49

Candidate Starts for Kaylissa\_41:

(20, 29565), (Start: 49 @29646 has 3 MA's), (140, 29868),

Gene: Kenrey\_232 Start: 111193, Stop: 111606, Start Num: 68

Candidate Starts for Kenrey\_232:

(Start: 68 @111193 has 5 MA's), (92, 111241), (175, 111484), (184, 111523), (201, 111580),

Gene: KentuckyRacer\_267 Start: 121000, Stop: 120458, Start Num: 21

Candidate Starts for KentuckyRacer\_267:

(Start: 21 @121000 has 10 MA's), (Start: 62 @120877 has 1 MA's), (98, 120799), (130, 120697), (149, 120646), (151, 120643), (186, 120514), (199, 120469),

Gene: KikiBouba\_27 Start: 19670, Stop: 20164, Start Num: 29

Candidate Starts for KikiBouba\_27:

(Start: 26 @19664 has 9 MA's), (Start: 29 @19670 has 11 MA's), (101, 19826), (136, 19886), (181, 20066), (195, 20117),

Gene: Koko\_64 Start: 38904, Stop: 38476, Start Num: 63

Candidate Starts for Koko\_64:

(Start: 63 @38904 has 4 MA's), (Start: 75 @38886 has 1 MA's), (120, 38763), (159, 38658), (172, 38598), (180, 38568), (192, 38523), (193, 38520), (199, 38499),

Gene: Kovu\_26 Start: 17736, Stop: 17326, Start Num: 72

Candidate Starts for Kovu\_26:

(Start: 72 @17736 has 1 MA's), (74, 17733), (Start: 79 @17727 has 1 MA's), (86, 17721), (102, 17676), (104, 17667), (122, 17616), (135, 17574), (140, 17565), (154, 17520), (197, 17346),

Gene: Kumotta\_5 Start: 4506, Stop: 5042, Start Num: 25

Candidate Starts for Kumotta\_5:

(Start: 25 @4506 has 1 MA's), (39, 4554), (Start: 63 @4599 has 4 MA's), (149, 4821), (176, 4944), (193, 5010),

Gene: Lauer\_40 Start: 32937, Stop: 32434, Start Num: 63

Candidate Starts for Lauer\_40:

(Start: 63 @32937 has 4 MA's), (147, 32715), (151, 32706), (158, 32685), (176, 32616), (186, 32574), (193, 32550), (194, 32547), (208, 32463),

Gene: LazerLemon\_75 Start: 51475, Stop: 51948, Start Num: 52

Candidate Starts for LazerLemon\_75:

(Start: 52 @51475 has 2 MA's), (Start: 59 @51496 has 1 MA's), (95, 51565), (118, 51634), (149, 51721), (157, 51760), (164, 51793), (176, 51844), (190, 51901),

Gene: LeeroyJenkins\_41 Start: 21889, Stop: 21473, Start Num: 88

Candidate Starts for LeeroyJenkins\_41:

(Start: 88 @21889 has 1 MA's), (Start: 90 @21883 has 4 MA's), (139, 21724), (187, 21523), (196, 21493),

Gene: LeoJr\_143 Start: 97416, Stop: 97838, Start Num: 51

Candidate Starts for LeoJr\_143:

(Start: 51 @97416 has 2 MA's), (151, 97650), (199, 97824),

Gene: Limpid\_229 Start: 115072, Stop: 115446, Start Num: 68

Candidate Starts for Limpid\_229:

(Start: 66 @115066 has 2 MA's), (Start: 68 @115072 has 5 MA's), (Start: 77 @115081 has 2 MA's), (166, 115318), (177, 115360), (184, 115387), (186, 115393),

Gene: Lozinak\_41 Start: 17407, Stop: 17865, Start Num: 47

Candidate Starts for Lozinak\_41:

(Start: 47 @17407 has 19 MA's),

Gene: LuckySocke\_64 Start: 22633, Stop: 23091, Start Num: 43

Candidate Starts for LuckySocke\_64:

(Start: 43 @22633 has 4 MA's), (109, 22783), (112, 22795), (123, 22828), (148, 22891), (153, 22903), (166, 22942), (177, 22984), (193, 23041), (199, 23062),

Gene: MargaretKali\_1 Start: 50, Stop: 577, Start Num: 34

Candidate Starts for MargaretKali\_1:

(Start: 34 @50 has 1 MA's), (81, 152), (100, 206), (104, 221), (143, 341), (149, 359), (200, 542), (207, 569),

Gene: Mayweather\_1 Start: 38, Stop: 541, Start Num: 29

Candidate Starts for Mayweather\_1:

(Start: 29 @38 has 11 MA's), (144, 284), (171, 377), (175, 395),

Gene: Milomuff\_3 Start: 670, Stop: 1044, Start Num: 70

Candidate Starts for Milomuff\_3:

(Start: 70 @670 has 1 MA's), (Start: 88 @694 has 1 MA's), (137, 826), (165, 910), (183, 979),

Gene: Miskis\_39 Start: 17170, Stop: 17628, Start Num: 47

Candidate Starts for Miskis\_39:

(Start: 47 @17170 has 19 MA's),

Gene: Nancinator\_51 Start: 36741, Stop: 36301, Start Num: 87

Candidate Starts for Nancinator\_51:

(Start: 87 @36741 has 9 MA's), (119, 36639), (175, 36462), (184, 36423), (185, 36420), (188, 36411), (205, 36345),

Gene: Natosaleda\_50 Start: 36740, Stop: 36300, Start Num: 87

Candidate Starts for Natosaleda\_50:

(Start: 87 @36740 has 9 MA's), (119, 36638), (175, 36461), (184, 36422), (185, 36419), (188, 36410), (205, 36344),

Gene: NiceHouse\_61 Start: 34862, Stop: 35269, Start Num: 68

Candidate Starts for NiceHouse\_61:

(Start: 68 @34862 has 5 MA's), (106, 34934), (108, 34937), (138, 35027), (158, 35078), (194, 35207), (198, 35219),

Gene: Nitro\_45 Start: 34067, Stop: 34558, Start Num: 50

Candidate Starts for Nitro\_45:

(Start: 18 @33968 has 1 MA's), (Start: 50 @34067 has 1 MA's), (157, 34355), (192, 34502),

Gene: Norvs\_42 Start: 17409, Stop: 17867, Start Num: 47

Candidate Starts for Norvs\_42:

(Start: 47 @17409 has 19 MA's),

Gene: Nova53\_72 Start: 59567, Stop: 59971, Start Num: 63

Candidate Starts for Nova53\_72:

(11, 59375), (Start: 12 @59384 has 1 MA's), (23, 59447), (31, 59474), (Start: 34 @59489 has 1 MA's), (35, 59492), (Start: 63 @59567 has 4 MA's), (85, 59603), (106, 59657), (138, 59753), (192, 59936), (194, 59942),

Gene: Nova53\_188 Start: 99250, Stop: 99705, Start Num: 64

Candidate Starts for Nova53\_188:

(53, 99220), (Start: 64 @99250 has 6 MA's), (149, 99475), (194, 99667),

Gene: Noxious\_27 Start: 19855, Stop: 20355, Start Num: 26

Candidate Starts for Noxious\_27:

(Start: 26 @19855 has 9 MA's), (Start: 29 @19861 has 11 MA's), (101, 20017), (136, 20077), (181, 20257), (195, 20308),

Gene: Palpatine\_21 Start: 12883, Stop: 13353, Start Num: 90

Candidate Starts for Palpatine\_21:

(Start: 66 @12838 has 2 MA's), (Start: 90 @12883 has 4 MA's), (170, 13135), (194, 13231),

Gene: Park1214\_79 Start: 27965, Stop: 28336, Start Num: 82

Candidate Starts for Park1214\_79:

(Start: 82 @27965 has 1 MA's), (98, 28007), (124, 28079), (149, 28142), (176, 28226), (200, 28316),

Gene: PastaFagioli\_42 Start: 29819, Stop: 30232, Start Num: 54  
Candidate Starts for PastaFagioli\_42:  
(Start: 54 @29819 has 2 MA's), (105, 29933), (122, 29984), (137, 30026), (155, 30068), (168, 30098),  
(186, 30170),

Gene: PastaFagioli\_61 Start: 39171, Stop: 39551, Start Num: 73  
Candidate Starts for PastaFagioli\_61:  
(Start: 73 @39171 has 2 MA's),

Gene: Persimmon\_179 Start: 94749, Stop: 95180, Start Num: 64  
Candidate Starts for Persimmon\_179:  
(Start: 64 @94749 has 6 MA's), (101, 94827), (146, 94953), (150, 94971), (176, 95082), (186, 95124),

Gene: Petruccio\_25 Start: 18798, Stop: 19292, Start Num: 29  
Candidate Starts for Petruccio\_25:  
(Start: 26 @18792 has 9 MA's), (Start: 29 @18798 has 11 MA's), (101, 18954), (136, 19014), (181,  
19194), (195, 19245),

Gene: PhatBacter\_21 Start: 12888, Stop: 13358, Start Num: 90  
Candidate Starts for PhatBacter\_21:  
(Start: 66 @12843 has 2 MA's), (Start: 90 @12888 has 4 MA's), (170, 13140), (194, 13236),

Gene: PhinkBoden\_41 Start: 17790, Stop: 18248, Start Num: 47  
Candidate Starts for PhinkBoden\_41:  
(Start: 47 @17790 has 19 MA's),

Gene: Pinto\_27 Start: 18931, Stop: 19431, Start Num: 26  
Candidate Starts for Pinto\_27:  
(Start: 26 @18931 has 9 MA's), (Start: 29 @18937 has 11 MA's), (101, 19093), (136, 19153), (181,  
19333), (195, 19384),

Gene: Porky\_21 Start: 12697, Stop: 13167, Start Num: 90  
Candidate Starts for Porky\_21:  
(Start: 66 @12652 has 2 MA's), (Start: 90 @12697 has 4 MA's), (170, 12949), (194, 13045),

Gene: Predator\_10 Start: 6815, Stop: 7189, Start Num: 96  
Candidate Starts for Predator\_10:  
(Start: 96 @6815 has 1 MA's), (131, 6929), (145, 6965), (151, 6980), (163, 7025), (170, 7046), (182,  
7103), (196, 7145), (199, 7157), (203, 7169), (204, 7175),

Gene: PumpkinSpice\_263 Start: 119441, Stop: 118899, Start Num: 21  
Candidate Starts for PumpkinSpice\_263:  
(Start: 21 @119441 has 10 MA's), (Start: 62 @119318 has 1 MA's), (101, 119231), (130, 119138),  
(149, 119087), (151, 119084), (186, 118955),

Gene: PynkPanther\_260 Start: 121815, Stop: 121276, Start Num: 21  
Candidate Starts for PynkPanther\_260:  
(Start: 21 @121815 has 10 MA's), (84, 121656), (149, 121461), (151, 121458), (174, 121377), (177,  
121362),

Gene: Quby\_89 Start: 56408, Stop: 56815, Start Num: 83  
Candidate Starts for Quby\_89:

(83, 56408), (111, 56486), (148, 56591), (149, 56594), (155, 56615), (165, 56660), (168, 56666), (187, 56741), (206, 56807),

Gene: Quenya\_41 Start: 29700, Stop: 30113, Start Num: 54

Candidate Starts for Quenya\_41:

(Start: 54 @29700 has 2 MA's), (122, 29865), (137, 29907), (149, 29928), (186, 30051),

Gene: ReginaGlobina\_142 Start: 97638, Stop: 98060, Start Num: 51

Candidate Starts for ReginaGlobina\_142:

(Start: 51 @97638 has 2 MA's), (151, 97872), (199, 98046),

Gene: RexFury\_50 Start: 36830, Stop: 36390, Start Num: 87

Candidate Starts for RexFury\_50:

(Start: 87 @36830 has 9 MA's), (119, 36728), (175, 36551), (184, 36512), (185, 36509), (188, 36500), (205, 36434),

Gene: Rikishi\_261 Start: 119623, Stop: 119081, Start Num: 21

Candidate Starts for Rikishi\_261:

(Start: 21 @119623 has 10 MA's), (Start: 62 @119500 has 1 MA's), (98, 119422), (130, 119320), (149, 119269), (151, 119266), (186, 119137),

Gene: Roman\_35 Start: 15559, Stop: 15125, Start Num: 67

Candidate Starts for Roman\_35:

(30, 15658), (55, 15589), (Start: 61 @15571 has 2 MA's), (Start: 67 @15559 has 2 MA's), (110, 15451),

Gene: RosePharie\_70 Start: 35737, Stop: 36186, Start Num: 43

Candidate Starts for RosePharie\_70:

(Start: 43 @35737 has 4 MA's), (117, 35896), (133, 35941), (140, 35956), (149, 35980), (166, 36025), (175, 36055), (176, 36058), (182, 36088), (196, 36133),

Gene: RunningOnE\_42 Start: 18641, Stop: 18213, Start Num: 78

Candidate Starts for RunningOnE\_42:

(Start: 78 @18641 has 3 MA's), (140, 18488), (151, 18461), (178, 18362), (199, 18284),

Gene: SFuller\_99 Start: 58114, Stop: 58551, Start Num: 48

Candidate Starts for SFuller\_99:

(48, 58114), (94, 58195), (130, 58291), (149, 58342), (170, 58414), (176, 58441), (186, 58483),

Gene: SJReid\_133 Start: 86260, Stop: 86706, Start Num: 47

Candidate Starts for SJReid\_133:

(Start: 47 @86260 has 19 MA's), (151, 86530), (155, 86548),

Gene: SansAfet\_62 Start: 38774, Stop: 39154, Start Num: 73

Candidate Starts for SansAfet\_62:

(Start: 73 @38774 has 2 MA's), (170, 39017), (176, 39044),

Gene: Seabiscuit\_76 Start: 46023, Stop: 45430, Start Num: 29

Candidate Starts for Seabiscuit\_76:

(10, 46128), (Start: 28 @46026 has 1 MA's), (Start: 29 @46023 has 11 MA's), (Start: 72 @45912 has 1 MA's), (104, 45831), (189, 45501), (202, 45459),

Gene: Sham\_181 Start: 98652, Stop: 99035, Start Num: 77

Candidate Starts for Sham\_181:

(Start: 68 @98640 has 5 MA's), (Start: 77 @98652 has 2 MA's), (151, 98844), (170, 98907), (193, 99000), (201, 99027),

Gene: Shawty\_32 Start: 26307, Stop: 26723, Start Num: 79

Candidate Starts for Shawty\_32:

(Start: 79 @26307 has 1 MA's), (116, 26400), (125, 26439), (186, 26661), (194, 26688),

Gene: Shuman\_51 Start: 36753, Stop: 36313, Start Num: 87

Candidate Starts for Shuman\_51:

(Start: 87 @36753 has 9 MA's), (119, 36651), (175, 36474), (184, 36435), (185, 36432), (188, 36423), (205, 36357),

Gene: Smoothie\_42 Start: 17407, Stop: 17865, Start Num: 47

Candidate Starts for Smoothie\_42:

(Start: 47 @17407 has 19 MA's),

Gene: Snazzy\_23 Start: 18265, Stop: 18765, Start Num: 26

Candidate Starts for Snazzy\_23:

(Start: 26 @18265 has 9 MA's), (Start: 29 @18271 has 11 MA's), (101, 18427), (136, 18487), (181, 18667), (195, 18718),

Gene: Solea\_3 Start: 670, Stop: 1044, Start Num: 70

Candidate Starts for Solea\_3:

(Start: 70 @670 has 1 MA's), (Start: 88 @694 has 1 MA's), (137, 826), (165, 910), (183, 979),

Gene: SpeedDemon\_240 Start: 15094, Stop: 15555, Start Num: 49

Candidate Starts for SpeedDemon\_240:

(Start: 49 @15094 has 3 MA's), (170, 15418), (177, 15454), (194, 15514),

Gene: Spelly\_265 Start: 118353, Stop: 117811, Start Num: 21

Candidate Starts for Spelly\_265:

(Start: 21 @118353 has 10 MA's), (Start: 62 @118230 has 1 MA's), (98, 118152), (130, 118050), (149, 117999), (151, 117996), (186, 117867), (199, 117822),

Gene: Spilled\_268 Start: 120017, Stop: 119475, Start Num: 21

Candidate Starts for Spilled\_268:

(Start: 21 @120017 has 10 MA's), (Start: 62 @119894 has 1 MA's), (98, 119816), (130, 119714), (149, 119663), (151, 119660), (186, 119531), (199, 119486),

Gene: Spooks\_32 Start: 20834, Stop: 20397, Start Num: 78

Candidate Starts for Spooks\_32:

(Start: 78 @20834 has 3 MA's), (140, 20675), (151, 20648), (166, 20594), (170, 20588), (193, 20489),

Gene: StarPlatinum\_46 Start: 22656, Stop: 23042, Start Num: 68

Candidate Starts for StarPlatinum\_46:

(Start: 68 @22656 has 5 MA's), (126, 22809), (166, 22911), (177, 22953), (186, 22986), (192, 23007), (199, 23031),

Gene: Starbow\_257 Start: 118397, Stop: 117855, Start Num: 21

Candidate Starts for Starbow\_257:

(Start: 21 @118397 has 10 MA's), (Start: 62 @118274 has 1 MA's), (98, 118196), (130, 118094), (149, 118043), (151, 118040), (186, 117911), (199, 117866),

Gene: SteveFrench\_16 Start: 15937, Stop: 16392, Start Num: 64  
Candidate Starts for SteveFrench\_16:  
(27, 15832), (48, 15898), (Start: 64 @15937 has 6 MA's), (Start: 75 @15955 has 1 MA's), (107, 16036),  
(143, 16144), (149, 16162), (192, 16327), (204, 16369),

Gene: Success\_33 Start: 20053, Stop: 19616, Start Num: 78  
Candidate Starts for Success\_33:  
(Start: 78 @20053 has 3 MA's), (140, 19894), (166, 19813), (170, 19807), (193, 19708),

Gene: SummitAcademy\_43 Start: 31660, Stop: 31157, Start Num: 63  
Candidate Starts for SummitAcademy\_43:  
(Start: 63 @31660 has 4 MA's), (147, 31438), (158, 31408), (176, 31339), (186, 31297), (193, 31273),  
(194, 31270), (208, 31186),

Gene: SwissCheese\_25 Start: 18840, Stop: 19334, Start Num: 29  
Candidate Starts for SwissCheese\_25:  
(Start: 26 @18834 has 9 MA's), (Start: 29 @18840 has 11 MA's), (101, 18996), (136, 19056), (181,  
19236), (195, 19287),

Gene: Talos\_64 Start: 22480, Stop: 22926, Start Num: 44  
Candidate Starts for Talos\_64:  
(Start: 44 @22480 has 1 MA's), (Start: 72 @22543 has 1 MA's), (Start: 79 @22552 has 1 MA's), (112,  
22636), (114, 22642), (166, 22783), (177, 22825), (196, 22891),

Gene: Talos\_188 Start: 95931, Stop: 95515, Start Num: 66  
Candidate Starts for Talos\_188:  
(Start: 66 @95931 has 2 MA's), (101, 95850), (128, 95760), (138, 95736), (178, 95601),

Gene: Target\_27 Start: 19834, Stop: 20334, Start Num: 26  
Candidate Starts for Target\_27:  
(Start: 26 @19834 has 9 MA's), (Start: 29 @19840 has 11 MA's), (101, 19996), (136, 20056), (181,  
20236), (195, 20287),

Gene: TomSawyer\_265 Start: 121328, Stop: 120786, Start Num: 21  
Candidate Starts for TomSawyer\_265:  
(Start: 21 @121328 has 10 MA's), (98, 121127), (130, 121025), (149, 120974), (151, 120971), (186,  
120842), (199, 120797),

Gene: Toniann\_41 Start: 17352, Stop: 17810, Start Num: 47  
Candidate Starts for Toniann\_41:  
(Start: 47 @17352 has 19 MA's),

Gene: Trouble\_25 Start: 19144, Stop: 19638, Start Num: 29  
Candidate Starts for Trouble\_25:  
(Start: 26 @19138 has 9 MA's), (Start: 29 @19144 has 11 MA's), (101, 19300), (136, 19360), (181,  
19540), (195, 19591),

Gene: TunaTartare\_189 Start: 100701, Stop: 101084, Start Num: 77  
Candidate Starts for TunaTartare\_189:  
(Start: 68 @100689 has 5 MA's), (Start: 77 @100701 has 2 MA's), (151, 100893), (170, 100956), (193,  
101049), (201, 101076),

Gene: UhSalsa\_51 Start: 36741, Stop: 36301, Start Num: 87

Candidate Starts for UhSalsa\_51:

(Start: 87 @36741 has 9 MA's), (119, 36639), (175, 36462), (184, 36423), (185, 36420), (188, 36411), (205, 36345),

Gene: Vine\_1 Start: 257, Stop: 790, Start Num: 41

Candidate Starts for Vine\_1:

(3, 65), (9, 104), (Start: 41 @257 has 1 MA's), (93, 368), (152, 497), (153, 500), (209, 785),

Gene: Westy\_204 Start: 103797, Stop: 103372, Start Num: 60

Candidate Starts for Westy\_204:

(Start: 60 @103797 has 1 MA's), (Start: 62 @103791 has 1 MA's), (115, 103674), (149, 103596), (162, 103542), (177, 103470),

Gene: Wheeler\_80 Start: 48775, Stop: 48179, Start Num: 28

Candidate Starts for Wheeler\_80:

(10, 48877), (Start: 28 @48775 has 1 MA's), (Start: 29 @48772 has 11 MA's), (Start: 72 @48661 has 1 MA's), (104, 48580), (189, 48250), (202, 48208),

Gene: Wheeler\_74 Start: 46185, Stop: 45562, Start Num: 18

Candidate Starts for Wheeler\_74:

(4, 46296), (5, 46287), (16, 46194), (Start: 18 @46185 has 1 MA's), (22, 46173), (137, 45846), (173, 45687), (175, 45681), (188, 45627),

Gene: WhereRU\_178 Start: 95501, Stop: 95932, Start Num: 64

Candidate Starts for WhereRU\_178:

(Start: 64 @95501 has 6 MA's), (101, 95579), (146, 95705), (150, 95723), (176, 95834), (186, 95876),

Gene: WilliamBoone\_41 Start: 16716, Stop: 17174, Start Num: 47

Candidate Starts for WilliamBoone\_41:

(Start: 47 @16716 has 19 MA's),

Gene: Wipeout\_252 Start: 120280, Stop: 119738, Start Num: 21

Candidate Starts for Wipeout\_252:

(Start: 21 @120280 has 10 MA's), (Start: 62 @120157 has 1 MA's), (101, 120070), (130, 119977), (149, 119926), (151, 119923), (186, 119794),

Gene: Yvonnetastic\_38 Start: 18787, Stop: 19239, Start Num: 47

Candidate Starts for Yvonnetastic\_38:

(Start: 47 @18787 has 19 MA's), (57, 18799), (97, 18874), (132, 18982),

Gene: Yvonnetastic\_146 Start: 79771, Stop: 80427, Start Num: 6

Candidate Starts for Yvonnetastic\_146:

(Start: 6 @79771 has 1 MA's), (7, 79774), (8, 79777), (36, 79924), (37, 79927), (103, 80071), (169, 80257), (171, 80266), (184, 80323), (195, 80365),

Gene: Zeeculate\_24 Start: 19013, Stop: 19513, Start Num: 26

Candidate Starts for Zeeculate\_24:

(Start: 26 @19013 has 9 MA's), (Start: 29 @19019 has 11 MA's), (101, 19175), (136, 19235), (181, 19415), (195, 19466),

Gene: Zooman\_139 Start: 88579, Stop: 89034, Start Num: 64

Candidate Starts for Zooman\_139:

(Start: 64 @88579 has 6 MA's), (140, 88768), (146, 88783), (163, 88858),

