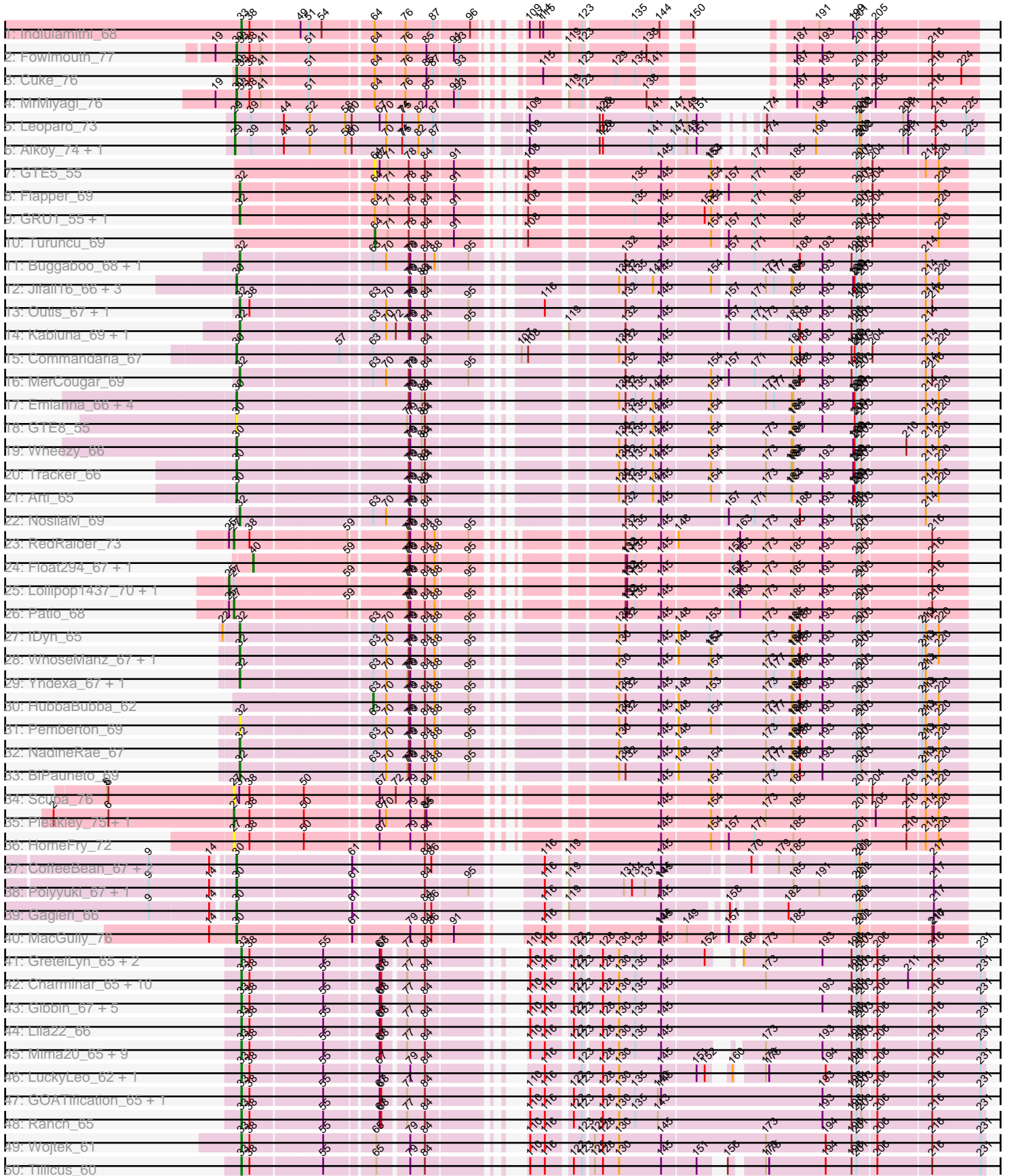


Pham 294453





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 294453 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294453 has 188 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi\_68
- Track 2 : Fowlmouth\_77
- Track 3 : Cuke\_76
- Track 4 : MrMiyagi\_76
- Track 5 : Leopard\_73
- Track 6 : Aikoy\_74, Onyinye\_74
- Track 7 : GTE5\_55
- Track 8 : Flapper\_69
- Track 9 : GRU1\_55, Dalilpop\_70
- Track 10 : Turuncu\_69
- Track 11 : Buggaboo\_68, SuperSulley\_68
- Track 12 : Jifall16\_66, Phomeo\_66, Foxboro\_67, KidneyBean\_67
- Track 13 : Outis\_67, StarStruck\_67
- Track 14 : Kabluna\_69, Bonum\_70
- Track 15 : Commandaria\_67
- Track 16 : MerCougar\_69
- Track 17 : Emianna\_66, NatB6\_66, Kurt\_66, NovumRegina\_66, GrootJr\_68
- Track 18 : GTE8\_55
- Track 19 : Wheezy\_66
- Track 20 : Tracker\_66
- Track 21 : Arti\_65
- Track 22 : NosilaM\_69
- Track 23 : RedRaider\_73
- Track 24 : Float294\_67, Skysand\_68
- Track 25 : Lollipop1437\_70, Ennea\_73
- Track 26 : Patio\_68
- Track 27 : IDyn\_65
- Track 28 : WhoseManz\_67, Marietta\_68
- Track 29 : Yndexa\_67, Sukkupi\_67
- Track 30 : HubbaBubba\_62
- Track 31 : Pemberton\_69
- Track 32 : NadineRae\_67
- Track 33 : BiPauneto\_69
- Track 34 : Scuba\_76
- Track 35 : Pleakley\_75, Fury\_75
- Track 36 : HomeFry\_72
- Track 37 : CoffeeBean\_67, Maselop\_67, Braxoaddie\_67

- Track 38 : Polyuyuki\_67, Apiary\_67
- Track 39 : Gagieri\_66
- Track 40 : MacGully\_76
- Track 41 : GretelLyn\_65, Sadboi\_66, Yikes\_67
- Track 42 : Charminar\_65, Genamy16\_68, RazorC\_65, Stormer\_65, Jamemuya19\_64, Astralis\_65, NovaSharks\_67, Riduram\_65, Alyssamiracle\_68, Avian\_63, Rumi\_66
- Track 43 : Gibbin\_67, Patos\_69, NorManre\_69, BirthdayBoy\_67, Lambo\_63, OtterstedtS21\_65
- Track 44 : Lila22\_66
- Track 45 : Mima20\_65, DoobyDoo\_64, Erutan\_65, Zany\_63, Rota\_62, Jalebi\_64, LavAbarElk\_65, Rukungu\_67, Sampudon\_65, MoiGyank\_68
- Track 46 : LuckyLeo\_62, Apeppi\_60
- Track 47 : GOATification\_65, Fulcrum\_65
- Track 48 : Ranch\_65
- Track 49 : Wojtek\_61
- Track 50 : Tillicus\_60
- Track 51 : DumpTruck\_64
- Track 52 : DaviePasture\_65
- Track 53 : Alephilan\_66
- Track 54 : ParvusTarda\_64
- Track 55 : Xenia2\_63
- Track 56 : Karate\_42
- Track 57 : Bramble\_46, TinyMiny\_46, Ajin\_46, Kors\_46
- Track 58 : Snakehole\_43
- Track 59 : Annapurna\_43, DannyDe\_43, Hiddenleaf\_43, Chivey\_43, FreddieHg\_43
- Track 60 : Erudite\_42, MortySmith\_41, JingleBells\_43, Dauntless\_42
- Track 61 : Sparcetus\_46
- Track 62 : Tongui\_43, Rie18\_43
- Track 63 : Kate\_44, Cybele\_43, Gilda\_43, CoolCookie\_43, Krampus\_43, OhDear\_43, Neptune\_43, Potty\_43, PhunaPhoke\_43, OverHedge\_43
- Track 64 : Pharpay\_43, AnnaSerena\_43, NarutoRun\_43, Anakin\_43, Artiphact\_43
- Track 65 : LordBart\_46
- Track 66 : JDawG\_42, Aesir\_42
- Track 67 : RikSengupta\_46
- Track 68 : Crestdrop\_43
- Track 69 : FountainFog\_42
- Track 70 : Tedro\_43
- Track 71 : Rachella\_43
- Track 72 : Poultruss\_42
- Track 73 : Haunter\_43
- Track 74 : SilentWarrior\_43
- Track 75 : Hager\_44
- Track 76 : Stickynote\_69, Darwin\_70
- Track 77 : Zion\_69, PeteyPab\_68, PotatoChip\_69
- Track 78 : C3PO\_69, Cruella\_69
- Track 79 : Kimchi1738\_70
- Track 80 : Konstantine\_71
- Track 81 : Damien\_67, Beckerton\_66
- Track 82 : Thumb\_68, Megatron06\_68, Phreeze\_66
- Track 83 : BobtimousPrime\_67
- Track 84 : Puissant\_69
- Track 85 : Predator\_68

- Track 86 : Cborch11\_69
- Track 87 : Oaker\_67
- Track 88 : DrLupo\_75
- Track 89 : Barnyard\_72
- Track 90 : Nilo\_71, Riparian\_71, Papyrus\_69, Rope\_69, Weiss13\_69, Candle\_67
- Track 91 : Zenon\_71, Send513\_69
- Track 92 : Yelo\_68
- Track 93 : MontyDev\_71
- Track 94 : Demikore\_83, Madrugua\_79
- Track 95 : Patience\_81, Labelle\_80
- Track 96 : SuperSonics\_83
- Track 97 : ChewyVIII\_80
- Track 98 : Wollypog\_46
- Track 99 : P1201\_73
- Track 100 : Gallia\_70

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

The start number called the most often in the published annotations is 32, it was called in 50 of the 165 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir\_42, Anakin\_43, AnnaSerena\_43, Annapurna\_43, Artiphact\_43, BiPauneto\_69, Bonum\_70, Buggaboo\_68, Chivey\_43, CoolCookie\_43, Crestdrop\_43, Cybele\_43, Dalilpop\_70, DannyDe\_43, Dauntless\_42, Erudite\_42, Flapper\_69, FountainFog\_42, FreddieHg\_43, GRU1\_55, Gilda\_43, Hager\_44, Haunter\_43, Hiddenleaf\_43, IDyn\_65, JDawG\_42, JingleBells\_43, Kabluna\_69, Karate\_42, Kate\_44, Krampus\_43, Marietta\_68, MerCougar\_69, MortySmith\_41, NadineRae\_67, NarutoRun\_43, Neptune\_43, NosilaM\_69, OhDear\_43, Outis\_67, OverHedge\_43, Pemberton\_69, Pharpay\_43, PhunaPhoke\_43, Potty\_43, Poultress\_42, Rie18\_43, SilentWarrior\_43, Snakehole\_43, StarStruck\_67, Sukkupi\_67, SuperSulley\_68, Tedro\_43, Tongui\_43, WhoseManz\_67, Yndexa\_67,

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

- Rachella\_43,

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

- Aikoy\_74, Ajin\_46, Alephilan\_66, Alyssmiracle\_68, Apeppi\_60, Apiary\_67, Arti\_65, Astralis\_65, Avian\_63, Barnyard\_72, Beckerton\_66, BirthdayBoy\_67, BobtimousPrime\_67, Bramble\_46, Braxoaddie\_67, C3PO\_69, Candle\_67, Cborch11\_69, Charminar\_65, ChewyVIII\_80, CoffeeBean\_67, Commandaria\_67, Cruella\_69, Cuke\_76, Damien\_67, Darwin\_70, DaviePasture\_65, Demikore\_83, DoobyDoo\_64, DrLupo\_75, DumpTruck\_64, Emianna\_66, Ennea\_73, Erutan\_65, Float294\_67, Fowlmouth\_77, Foxboro\_67, Fulcrum\_65, Fury\_75, GOATification\_65, GTE5\_55, GTE8\_55, Gagieri\_66, Gallia\_70, Genamy16\_68, Gibbin\_67, GretelLyn\_65, GrootJr\_68, HomeFry\_72, HubbaBubba\_62, Indlulamithi\_68, Jalebi\_64, Jamemuya19\_64, Jifall16\_66, KidneyBean\_67, Kimchi1738\_70, Konstantine\_71, Kors\_46, Kurt\_66, Labelle\_80, Lambo\_63, LavAbarElk\_65, Leopard\_73, Lila22\_66, Lollipop1437\_70, LordBart\_46, LuckyLeo\_62, MacGully\_76, Madrugua\_79, Maselop\_67, Megatron06\_68, Mima20\_65, MoiGyank\_68,

MontyDev\_71, MrMiyagi\_76, NatB6\_66, Nilo\_71, NorManre\_69, NovaSharks\_67, NovumRegina\_66, Oaker\_67, Onyinye\_74, OtterstedtS21\_65, P1201\_73, Papyrus\_69, ParvusTarda\_64, Patience\_81, Patio\_68, Patos\_69, PeteyPab\_68, Phomeo\_66, Phreeze\_66, Pleakley\_75, Polyuyki\_67, PotatoChip\_69, Predator\_68, Puissant\_69, Ranch\_65, RazorC\_65, RedRaider\_73, Riduram\_65, RikSengupta\_46, Riparian\_71, Rope\_69, Rota\_62, Rukungu\_67, Rumi\_66, Sadboi\_66, Sampudon\_65, Scuba\_76, Send513\_69, Skysand\_68, Sparcetus\_46, Stickynote\_69, Stormer\_65, SuperSonics\_83, Thumb\_68, Tillicus\_60, TinyMiny\_46, Tracker\_66, Turuncu\_69, Weiss13\_69, Wheezy\_66, Wojtek\_61, Wollypog\_46, Xenia2\_63, Yelo\_68, Yikes\_67, Zany\_63, Zenon\_71, Zion\_69,

### Summary by start number:

#### Start 12:

- Found in 11 of 188 ( 5.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 9.1% of time when present
- Phage (with cluster) where this start called: BobtimousPrime\_67 (H1),

#### Start 13:

- Found in 7 of 188 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 14.3% of time when present
- Phage (with cluster) where this start called: RikSengupta\_46 (EF),

#### Start 18:

- Found in 11 of 188 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Predator\_68 (H1),

#### Start 20:

- Found in 1 of 188 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChewyVIII\_80 (singleton),

#### Start 21:

- Found in 10 of 188 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 8 of 165
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Beckerton\_66 (H1), Cborch11\_69 (H1), Damien\_67 (H1), Konstantine\_71 (H1), Megatron06\_68 (H1), Oaker\_67 (H1), Phreeze\_66 (H1), Thumb\_68 (H1),

#### Start 23:

- Found in 1 of 188 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Puissant\_69 (H1),

#### Start 25:

- Found in 4 of 188 ( 2.1% ) of genes in pham

- Manual Annotations of this start: 2 of 165
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Ennea\_73 (CR3), Lollipop1437\_70 (CR3),

#### Start 26:

- Found in 5 of 188 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 3 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Demikore\_83 (U), Labelle\_80 (U), Madrugua\_79 (U), Patience\_81 (U), SuperSonics\_83 (U),

#### Start 27:

- Found in 8 of 188 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 4 of 165
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Fury\_75 (CR5), HomeFry\_72 (CR5), Patio\_68 (CR3), Pleakley\_75 (CR5), RedRaider\_73 (CR3), Scuba\_76 (CR5),

#### Start 29:

- Found in 3 of 188 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 3 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy\_74 (AE), Leopard\_73 (AE), Onyinye\_74 (AE),

#### Start 30:

- Found in 28 of 188 ( 14.9% ) of genes in pham
- Manual Annotations of this start: 25 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apiary\_67 (CR6), Arti\_65 (CR2), Barnyard\_72 (H2), Braxoaddie\_67 (CR6), CoffeeBean\_67 (CR6), Commandaria\_67 (CR2), Cuke\_76 (AC), DrLupo\_75 (H2), Emianna\_66 (CR2), Fowlmouth\_77 (AC), Foxboro\_67 (CR2), GTE8\_55 (CR2), Gagieri\_66 (CR6), Gallia\_70 (singleton), GrootJr\_68 (CR2), Jifall16\_66 (CR2), KidneyBean\_67 (CR2), Kurt\_66 (CR2), MacGully\_76 (CR7), Maselop\_67 (CR6), MrMiyagi\_76 (AC), NatB6\_66 (CR2), NovumRegina\_66 (CR2), P1201\_73 (singleton), Phomeo\_66 (CR2), Polyuyuki\_67 (CR6), Tracker\_66 (CR2), Wheezy\_66 (CR2),

#### Start 32:

- Found in 57 of 188 ( 30.3% ) of genes in pham
- Manual Annotations of this start: 50 of 165
- Called 98.2% of time when present
- Phage (with cluster) where this start called: Aesir\_42 (EF), Anakin\_43 (EF), AnnaSerena\_43 (EF), Annapurna\_43 (EF), Artiphact\_43 (EF), BiPauneto\_69 (CR4), Bonum\_70 (CR2), Buggaboo\_68 (CR2), Chivey\_43 (EF), CoolCookie\_43 (EF), Crestdrop\_43 (EF), Cybele\_43 (EF), Dalilpop\_70 (CR1), DannyDe\_43 (EF), Dauntless\_42 (EF), Erudite\_42 (EF), Flapper\_69 (CR1), FountainFog\_42 (EF), FreddieHg\_43 (EF), GRU1\_55 (CR1), Gilda\_43 (EF), Hager\_44 (EF), Haunter\_43 (EF), Hiddenleaf\_43 (EF), IDyn\_65 (CR4), JDawG\_42 (EF), JingleBells\_43 (EF), Kabluna\_69 (CR2), Karate\_42 (EF), Kate\_44 (EF), Krampus\_43 (EF), Marietta\_68 (CR4), MerCougar\_69 (CR2), MortySmith\_41 (EF), NadineRae\_67 (CR4), NarutoRun\_43 (EF), Neptune\_43 (EF), NosilaM\_69 (CR2), OhDear\_43 (EF),

Outis\_67 (CR2), OverHedge\_43 (EF), Pemberton\_69 (CR4), Pharpay\_43 (EF), PhunaPhoke\_43 (EF), Potty\_43 (EF), Poultruss\_42 (EF), Rie18\_43 (EF), SilentWarrior\_43 (EF), Snakehole\_43 (EF), StarStruck\_67 (CR2), Sukkupi\_67 (CR4), SuperSulley\_68 (CR2), Tedro\_43 (EF), Tongui\_43 (EF), WhoseManz\_67 (CR4), Yndexa\_67 (CR4),

Start 33:

- Found in 57 of 188 ( 30.3% ) of genes in pham
- Manual Annotations of this start: 47 of 165
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Alephilan\_66 (DV), Alyssamiracle\_68 (DV), Apeppi\_60 (DV), Astralis\_65 (DV), Avian\_63 (DV), BirthdayBoy\_67 (DV), Candle\_67 (R), Charminar\_65 (DV), DaviePasture\_65 (DV), DoobyDoo\_64 (DV), DumpTruck\_64 (DV), Erutan\_65 (DV), Fulcrum\_65 (DV), GOATification\_65 (DV), Genamy16\_68 (DV), Gibbin\_67 (DV), GretelLyn\_65 (DV), Indlulamithi\_68 (AC), Jalebi\_64 (DV), Jamemuya19\_64 (DV), Lambo\_63 (DV), LavAbarElk\_65 (DV), Lila22\_66 (DV), LuckyLeo\_62 (DV), Mima20\_65 (DV), MoiGyank\_68 (DV), MontyDev\_71 (R), Nilo\_71 (R), NorManre\_69 (DV), NovaSharks\_67 (DV), OtterstedtS21\_65 (DV), Papyrus\_69 (R), ParvusTarda\_64 (DV), Patos\_69 (DV), Ranch\_65 (DV), RazorC\_65 (DV), Riduram\_65 (DV), Riparian\_71 (R), Rope\_69 (R), Rota\_62 (DV), Rukungu\_67 (DV), Rumi\_66 (DV), Sadboi\_66 (DV), Sampudon\_65 (DV), Send513\_69 (R), Stormer\_65 (DV), Tillicus\_60 (DV), Weiss13\_69 (R), Wojtek\_61 (DV), Xenia2\_63 (DV), Yelo\_68 (R), Yikes\_67 (DV), Zany\_63 (DV), Zenon\_71 (R),

Start 34:

- Found in 8 of 188 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 8 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: C3PO\_69 (EN), Cruella\_69 (EN), Darwin\_70 (EN), Kimchi1738\_70 (EN), PeteyPab\_68 (EN), PotatoChip\_69 (EN), Stickynote\_69 (EN), Zion\_69 (EN),

Start 35:

- Found in 7 of 188 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 5 of 165
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Ajin\_46 (EF), Bramble\_46 (EF), Kors\_46 (EF), Sparcetus\_46 (EF), TinyMiny\_46 (EF),

Start 36:

- Found in 1 of 188 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wollypog\_46 (singleton),

Start 37:

- Found in 7 of 188 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 14.3% of time when present
- Phage (with cluster) where this start called: LordBart\_46 (EF),

Start 39:

- Found in 49 of 188 ( 26.1% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 2.0% of time when present
- Phage (with cluster) where this start called: Rachella\_43 (EF),

Start 40:

- Found in 2 of 188 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Float294\_67 (CR3), Skysand\_68 (CR3),

Start 63:

- Found in 18 of 188 ( 9.6% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 5.6% of time when present
- Phage (with cluster) where this start called: HubbaBubba\_62 (CR4),

Start 64:

- Found in 9 of 188 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 22.2% of time when present
- Phage (with cluster) where this start called: GTE5\_55 (CR1), Turuncu\_69 (CR1),

### **Summary by clusters:**

There are 17 clusters represented in this pham: CR2, CR3, AC, H1, CR6, CR7, CR4, CR5, H2, EF, singleton, CR1, R, U, EN, DV, AE,

Info for manual annotations of cluster AC:

- Start number 30 was manually annotated 3 times for cluster AC.
- Start number 33 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AE:

- Start number 29 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster CR1:

- Start number 32 was manually annotated 2 times for cluster CR1.
- Start number 64 was manually annotated 1 time for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 30 was manually annotated 13 times for cluster CR2.
- Start number 32 was manually annotated 8 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 25 was manually annotated 2 times for cluster CR3.
- Start number 27 was manually annotated 2 times for cluster CR3.
- Start number 40 was manually annotated 2 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 32 was manually annotated 7 times for cluster CR4.
- Start number 63 was manually annotated 1 time for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 27 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:

- Start number 30 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster CR7:

- Start number 30 was manually annotated 1 time for cluster CR7.

Info for manual annotations of cluster DV:

- Start number 33 was manually annotated 37 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 13 was manually annotated 1 time for cluster EF.
- Start number 32 was manually annotated 33 times for cluster EF.
- Start number 35 was manually annotated 5 times for cluster EF.
- Start number 37 was manually annotated 1 time for cluster EF.
- Start number 39 was manually annotated 1 time for cluster EF.

Info for manual annotations of cluster EN:

- Start number 34 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster H1:

- Start number 18 was manually annotated 1 time for cluster H1.
- Start number 21 was manually annotated 8 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 30 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 33 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 26 was manually annotated 3 times for cluster U.

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

Gene: Aesir\_42 Start: 28494, Stop: 29621, Start Num: 32

Candidate Starts for Aesir\_42:

(1, 28101), (4, 28182), (Start: 32 @28494 has 50 MA's), (Start: 39 @28515 has 1 MA's), (68, 28725), (84, 28788), (99, 28884), (122, 28989), (144, 29139), (181, 29307), (193, 29373), (209, 29514), (217, 29571),

Gene: Aikoy\_74 Start: 50610, Stop: 51827, Start Num: 29

Candidate Starts for Aikoy\_74:

(Start: 29 @50610 has 3 MA's), (Start: 39 @50637 has 1 MA's), (44, 50691), (52, 50736), (58, 50802), (60, 50814), (70, 50874), (74, 50904), (75, 50907), (82, 50934), (87, 50961), (109, 51090), (126, 51210), (128, 51216), (141, 51306), (147, 51348), (149, 51366), (151, 51384), (174, 51447), (190, 51531), (201, 51606), (202, 51612), (203, 51615), (209, 51684), (211, 51693), (218, 51738), (225, 51795),

Gene: Ajin\_46 Start: 29709, Stop: 30806, Start Num: 35

Candidate Starts for Ajin\_46:

(Start: 13 @29655 has 1 MA's), (Start: 35 @29709 has 5 MA's), (Start: 37 @29712 has 1 MA's), (Start: 39 @29718 has 1 MA's), (68, 29928), (69, 29934), (82, 29979), (84, 29991), (94, 30054), (99, 30087), (122, 30192), (146, 30354), (181, 30489), (188, 30513), (211, 30705), (217, 30753),

Gene: Alephilan\_66 Start: 44039, Stop: 45202, Start Num: 33

Candidate Starts for Alephilan\_66:

(Start: 33 @44039 has 47 MA's), (38, 44054), (55, 44183), (67, 44273), (68, 44276), (77, 44312), (84, 44345), (110, 44459), (116, 44486), (122, 44525), (123, 44540), (124, 44549), (128, 44570), (130, 44600), (133, 44615), (135, 44630), (144, 44675), (145, 44678), (152, 44753), (166, 44774), (173, 44813), (193, 44915), (198, 44969), (201, 44978), (203, 44987), (206, 45011), (216, 45104),

Gene: Alyssamiracle\_68 Start: 43081, Stop: 44298, Start Num: 33

Candidate Starts for Alyssamiracle\_68:

(Start: 33 @43081 has 47 MA's), (38, 43096), (55, 43225), (67, 43315), (68, 43318), (77, 43354), (84, 43387), (110, 43501), (116, 43528), (122, 43567), (123, 43582), (128, 43612), (130, 43642), (135, 43672), (145, 43720), (173, 43909), (198, 44065), (201, 44074), (203, 44083), (206, 44107), (211, 44161), (216, 44200), (231, 44290),

Gene: Anakin\_43 Start: 28820, Stop: 29974, Start Num: 32

Candidate Starts for Anakin\_43:

(1, 28421), (Start: 32 @28820 has 50 MA's), (Start: 39 @28841 has 1 MA's), (46, 28910), (68, 29051), (84, 29114), (99, 29210), (122, 29315), (144, 29465), (154, 29555), (164, 29591), (173, 29621), (193, 29726), (199, 29783), (209, 29867), (217, 29924),

Gene: AnnaSerena\_43 Start: 28855, Stop: 30009, Start Num: 32

Candidate Starts for AnnaSerena\_43:

(1, 28456), (Start: 32 @28855 has 50 MA's), (Start: 39 @28876 has 1 MA's), (46, 28945), (68, 29086), (84, 29149), (99, 29245), (122, 29350), (144, 29500), (154, 29590), (164, 29626), (173, 29656), (193, 29761), (199, 29818), (209, 29902), (217, 29959),

Gene: Annapurna\_43 Start: 28123, Stop: 29250, Start Num: 32

Candidate Starts for Annapurna\_43:

(1, 27730), (3, 27796), (4, 27811), (Start: 32 @28123 has 50 MA's), (Start: 39 @28144 has 1 MA's), (51, 28240), (68, 28354), (84, 28417), (99, 28513), (122, 28618), (144, 28768), (181, 28936), (193, 29002), (199, 29059), (209, 29143), (217, 29200),

Gene: Apeppi\_60 Start: 43297, Stop: 44457, Start Num: 33

Candidate Starts for Apeppi\_60:

(Start: 33 @43297 has 47 MA's), (38, 43312), (55, 43441), (67, 43531), (79, 43576), (84, 43603), (116, 43744), (123, 43795), (128, 43825), (130, 43855), (145, 43933), (151, 43993), (152, 44008), (160, 44029), (173, 44068), (175, 44074), (194, 44176), (198, 44224), (201, 44233), (206, 44266), (216, 44359), (231, 44449),

Gene: Apiary\_67 Start: 50069, Stop: 48903, Start Num: 30

Candidate Starts for Apiary\_67:

(9, 50207), (14, 50099), (Start: 30 @50069 has 25 MA's), (61, 49871), (84, 49748), (95, 49673), (116, 49610), (119, 49583), (131, 49490), (134, 49475), (137, 49451), (144, 49424), (145, 49421), (185, 49211), (191, 49163), (201, 49094), (202, 49088), (217, 48962),

Gene: Arti\_65 Start: 52065, Stop: 50866, Start Num: 30

Candidate Starts for Arti\_65:

(Start: 30 @52065 has 25 MA's), (78, 51777), (79, 51774), (83, 51753), (84, 51747), (130, 51474), (132, 51462), (135, 51444), (142, 51411), (145, 51396), (154, 51309), (173, 51222), (183, 51180), (184, 51177), (193, 51120), (199, 51063), (200, 51060), (201, 51057), (203, 51048), (214, 50940), (220, 50916),

Gene: Artiphact\_43 Start: 28844, Stop: 29998, Start Num: 32

Candidate Starts for Artiphact\_43:

(1, 28445), (Start: 32 @28844 has 50 MA's), (Start: 39 @28865 has 1 MA's), (46, 28934), (68, 29075), (84, 29138), (99, 29234), (122, 29339), (144, 29489), (154, 29579), (164, 29615), (173, 29645), (193, 29750), (199, 29807), (209, 29891), (217, 29948),

Gene: Astralis\_65 Start: 42660, Stop: 43877, Start Num: 33

Candidate Starts for Astralis\_65:

(Start: 33 @42660 has 47 MA's), (38, 42675), (55, 42804), (67, 42894), (68, 42897), (77, 42933), (84, 42966), (110, 43080), (116, 43107), (122, 43146), (123, 43161), (128, 43191), (130, 43221), (135, 43251), (145, 43299), (173, 43488), (198, 43644), (201, 43653), (203, 43662), (206, 43686), (211, 43740), (216, 43779), (231, 43869),

Gene: Avian\_63 Start: 42809, Stop: 44026, Start Num: 33

Candidate Starts for Avian\_63:

(Start: 33 @42809 has 47 MA's), (38, 42824), (55, 42953), (67, 43043), (68, 43046), (77, 43082), (84, 43115), (110, 43229), (116, 43256), (122, 43295), (123, 43310), (128, 43340), (130, 43370), (135, 43400), (145, 43448), (173, 43637), (198, 43793), (201, 43802), (203, 43811), (206, 43835), (211, 43889), (216, 43928), (231, 44018),

Gene: Barnyard\_72 Start: 49524, Stop: 50783, Start Num: 30

Candidate Starts for Barnyard\_72:

(Start: 13 @49479 has 1 MA's), (15, 49482), (17, 49488), (Start: 30 @49524 has 25 MA's), (Start: 39 @49542 has 1 MA's), (47, 49614), (55, 49668), (82, 49833), (84, 49845), (91, 49899), (92, 49905), (111, 50010), (115, 50028), (122, 50073), (135, 50181), (153, 50316), (155, 50325), (165, 50358), (167, 50364), (169, 50370), (185, 50442), (201, 50559), (227, 50751), (231, 50775),

Gene: Beckerton\_66 Start: 50602, Stop: 51891, Start Num: 21

Candidate Starts for Beckerton\_66:

(12, 50563), (Start: 18 @50587 has 1 MA's), (Start: 21 @50602 has 8 MA's), (45, 50716), (48, 50734), (54, 50776), (83, 50950), (84, 50956), (91, 51007), (111, 51121), (115, 51139), (116, 51142), (118, 51157), (122, 51178), (139, 51310), (141, 51316), (168, 51454), (179, 51499), (185, 51517), (193, 51571), (200, 51631), (206, 51667), (217, 51763),

Gene: BiPauneto\_69 Start: 51654, Stop: 50455, Start Num: 32

Candidate Starts for BiPauneto\_69:

(Start: 32 @51654 has 50 MA's), (Start: 63 @51435 has 1 MA's), (70, 51411), (77, 51375), (78, 51372), (79, 51369), (84, 51342), (88, 51324), (95, 51267), (130, 51069), (132, 51057), (145, 50991), (148, 50964), (154, 50904), (173, 50811), (177, 50796), (184, 50766), (185, 50763), (188, 50751), (193, 50709), (201, 50646), (203, 50637), (213, 50535), (214, 50529), (220, 50505),

Gene: BirthdayBoy\_67 Start: 44385, Stop: 45602, Start Num: 33

Candidate Starts for BirthdayBoy\_67:

(Start: 33 @44385 has 47 MA's), (38, 44400), (55, 44529), (67, 44619), (68, 44622), (77, 44658), (84, 44691), (110, 44805), (116, 44832), (122, 44871), (123, 44886), (128, 44916), (130, 44946), (135, 44976), (145, 45024), (193, 45315), (198, 45369), (201, 45378), (203, 45387), (206, 45411), (216, 45504), (231, 45594),

Gene: BobtimousPrime\_67 Start: 50832, Stop: 52193, Start Num: 12

Candidate Starts for BobtimousPrime\_67:

(12, 50832), (Start: 18 @50856 has 1 MA's), (Start: 21 @50871 has 8 MA's), (45, 50985), (47, 50994), (48, 51003), (54, 51045), (83, 51219), (84, 51225), (91, 51276), (111, 51423), (115, 51441), (116, 51444), (118, 51459), (122, 51480), (139, 51612), (141, 51618), (179, 51801), (185, 51819), (193, 51873), (200, 51933), (206, 51969), (217, 52065),

Gene: Bonum\_70 Start: 52948, Stop: 51740, Start Num: 32

Candidate Starts for Bonum\_70:

(Start: 32 @52948 has 50 MA's), (Start: 63 @52726 has 1 MA's), (70, 52702), (72, 52687), (78, 52663), (79, 52660), (84, 52633), (95, 52558), (119, 52441), (132, 52345), (145, 52279), (157, 52168), (171, 52120), (173, 52099), (183, 52057), (188, 52039), (193, 51997), (198, 51943), (201, 51934), (203, 51925), (214, 51817),

Gene: Bramble\_46 Start: 29758, Stop: 30855, Start Num: 35

Candidate Starts for Bramble\_46:

(Start: 13 @29704 has 1 MA's), (Start: 35 @29758 has 5 MA's), (Start: 37 @29761 has 1 MA's), (Start: 39 @29767 has 1 MA's), (68, 29977), (69, 29983), (82, 30028), (84, 30040), (94, 30103), (99, 30136), (122, 30241), (146, 30403), (181, 30538), (188, 30562), (211, 30754), (217, 30802),

Gene: Braxoaddie\_67 Start: 50055, Stop: 48892, Start Num: 30

Candidate Starts for Braxoaddie\_67:

(9, 50193), (14, 50085), (Start: 30 @50055 has 25 MA's), (61, 49857), (84, 49734), (86, 49722), (116, 49596), (119, 49569), (145, 49407), (170, 49263), (179, 49224), (185, 49200), (201, 49083), (202, 49077), (217, 48951),

Gene: Buggaboo\_68 Start: 53499, Stop: 52291, Start Num: 32

Candidate Starts for Buggaboo\_68:

(Start: 32 @53499 has 50 MA's), (Start: 63 @53277 has 1 MA's), (70, 53253), (78, 53214), (79, 53211), (84, 53184), (88, 53166), (95, 53109), (132, 52896), (145, 52830), (157, 52719), (171, 52671), (188, 52590), (193, 52548), (198, 52494), (201, 52485), (203, 52476), (214, 52368),

Gene: C3PO\_69 Start: 50533, Stop: 49421, Start Num: 34

Candidate Starts for C3PO\_69:

(Start: 34 @50533 has 8 MA's), (54, 50398), (61, 50347), (73, 50284), (84, 50233), (90, 50191), (95, 50158), (112, 50095), (114, 50086), (116, 50077), (122, 50041), (128, 49987), (152, 49804), (197, 49615), (201, 49594), (205, 49564), (212, 49492), (215, 49477), (216, 49468),

Gene: Candle\_67 Start: 51720, Stop: 52889, Start Num: 33

Candidate Starts for Candle\_67:

(Start: 33 @51720 has 47 MA's), (38, 51735), (43, 51777), (47, 51810), (81, 52011), (84, 52026), (109, 52158), (122, 52221), (123, 52236), (135, 52326), (140, 52353), (181, 52554), (183, 52560), (185, 52566), (199, 52677), (201, 52683), (217, 52815), (226, 52875),

Gene: Cborch11\_69 Start: 50121, Stop: 51410, Start Num: 21

Candidate Starts for Cborch11\_69:

(12, 50082), (Start: 18 @50106 has 1 MA's), (Start: 21 @50121 has 8 MA's), (45, 50235), (47, 50244), (48, 50253), (54, 50295), (83, 50469), (84, 50475), (91, 50526), (111, 50640), (115, 50658), (116, 50661), (118, 50676), (122, 50697), (139, 50829), (141, 50835), (179, 51018), (185, 51036), (189, 51072), (193, 51090), (200, 51150), (206, 51186), (217, 51282),

Gene: Charminar\_65 Start: 42419, Stop: 43636, Start Num: 33

Candidate Starts for Charminar\_65:

(Start: 33 @42419 has 47 MA's), (38, 42434), (55, 42563), (67, 42653), (68, 42656), (77, 42692), (84, 42725), (110, 42839), (116, 42866), (122, 42905), (123, 42920), (128, 42950), (130, 42980), (135, 43010), (145, 43058), (173, 43247), (198, 43403), (201, 43412), (203, 43421), (206, 43445), (211, 43499), (216, 43538), (231, 43628),

Gene: ChewyVIII\_80 Start: 59181, Stop: 57982, Start Num: 20

Candidate Starts for ChewyVIII\_80:

(7, 59355), (Start: 20 @59181 has 1 MA's), (28, 59148), (44, 59064), (79, 58863), (83, 58842), (84, 58836), (86, 58824), (95, 58761), (113, 58707), (116, 58695), (121, 58662), (128, 58614), (153, 58422), (177, 58314), (178, 58308), (193, 58227), (207, 58095), (208, 58089), (209, 58086), (223, 57990),

Gene: Chivey\_43 Start: 28072, Stop: 29199, Start Num: 32

Candidate Starts for Chivey\_43:

(1, 27679), (3, 27745), (4, 27760), (Start: 32 @28072 has 50 MA's), (Start: 39 @28093 has 1 MA's), (51, 28189), (68, 28303), (84, 28366), (99, 28462), (122, 28567), (144, 28717), (181, 28885), (193, 28951), (199, 29008), (209, 29092), (217, 29149),

Gene: CoffeeBean\_67 Start: 50013, Stop: 48850, Start Num: 30

Candidate Starts for CoffeeBean\_67:

(9, 50151), (14, 50043), (Start: 30 @50013 has 25 MA's), (61, 49815), (84, 49692), (86, 49680), (116, 49554), (119, 49527), (145, 49365), (170, 49221), (179, 49182), (185, 49158), (201, 49041), (202, 49035), (217, 48909),

Gene: Commandaria\_67 Start: 53320, Stop: 52109, Start Num: 30

Candidate Starts for Commandaria\_67:

(Start: 30 @53320 has 25 MA's), (57, 53140), (Start: 63 @53092 has 1 MA's), (84, 52999), (107, 52876), (108, 52867), (130, 52726), (132, 52714), (145, 52648), (184, 52420), (188, 52405), (193, 52363), (198, 52309), (200, 52303), (201, 52300), (203, 52291), (204, 52276), (214, 52183), (220, 52159),

Gene: CoolCookie\_43 Start: 28850, Stop: 30004, Start Num: 32

Candidate Starts for CoolCookie\_43:

(1, 28451), (Start: 32 @28850 has 50 MA's), (Start: 39 @28871 has 1 MA's), (68, 29081), (84, 29144), (99, 29240), (122, 29345), (144, 29495), (154, 29585), (164, 29621), (173, 29651), (193, 29756), (199, 29813), (209, 29897), (217, 29954),

Gene: Crestdrop\_43 Start: 28106, Stop: 29230, Start Num: 32

Candidate Starts for Crestdrop\_43:

(1, 27713), (3, 27779), (4, 27794), (Start: 32 @28106 has 50 MA's), (Start: 39 @28127 has 1 MA's), (68, 28337), (84, 28400), (99, 28496), (122, 28601), (144, 28751), (173, 28880), (193, 28982), (209, 29123), (217, 29180),

Gene: Cruella\_69 Start: 50533, Stop: 49421, Start Num: 34

Candidate Starts for Cruella\_69:

(Start: 34 @50533 has 8 MA's), (54, 50398), (61, 50347), (73, 50284), (84, 50233), (90, 50191), (95, 50158), (112, 50095), (114, 50086), (116, 50077), (122, 50041), (128, 49987), (152, 49804), (197, 49615), (201, 49594), (205, 49564), (212, 49492), (215, 49477), (216, 49468),

Gene: Cuke\_76 Start: 45241, Stop: 46281, Start Num: 30

Candidate Starts for Cuke\_76:

(Start: 30 @45241 has 25 MA's), (Start: 33 @45250 has 47 MA's), (38, 45265), (41, 45286), (51, 45367), (Start: 64 @45475 has 1 MA's), (76, 45526), (85, 45565), (87, 45577), (93, 45619), (115,

45700), (123, 45757), (129, 45811), (135, 45847), (141, 45877), (187, 45961), (193, 46003), (201, 46066), (205, 46096), (216, 46195), (224, 46249),

Gene: Cybele\_43 Start: 28820, Stop: 29974, Start Num: 32

Candidate Starts for Cybele\_43:

(1, 28421), (Start: 32 @28820 has 50 MA's), (Start: 39 @28841 has 1 MA's), (68, 29051), (84, 29114), (99, 29210), (122, 29315), (144, 29465), (154, 29555), (164, 29591), (173, 29621), (193, 29726), (199, 29783), (209, 29867), (217, 29924),

Gene: Dalilpop\_70 Start: 54174, Stop: 52993, Start Num: 32

Candidate Starts for Dalilpop\_70:

(Start: 32 @54174 has 50 MA's), (Start: 64 @53949 has 1 MA's), (71, 53925), (78, 53889), (84, 53859), (91, 53811), (108, 53748), (135, 53577), (145, 53529), (152, 53454), (154, 53442), (171, 53370), (185, 53301), (201, 53184), (203, 53175), (204, 53160), (220, 53043),

Gene: Damien\_67 Start: 50083, Stop: 51372, Start Num: 21

Candidate Starts for Damien\_67:

(12, 50044), (Start: 18 @50068 has 1 MA's), (Start: 21 @50083 has 8 MA's), (45, 50197), (48, 50215), (54, 50257), (83, 50431), (84, 50437), (91, 50488), (111, 50602), (115, 50620), (116, 50623), (118, 50638), (122, 50659), (139, 50791), (141, 50797), (168, 50935), (179, 50980), (185, 50998), (193, 51052), (200, 51112), (206, 51148), (217, 51244),

Gene: DannyDe\_43 Start: 28078, Stop: 29205, Start Num: 32

Candidate Starts for DannyDe\_43:

(1, 27685), (3, 27751), (4, 27766), (Start: 32 @28078 has 50 MA's), (Start: 39 @28099 has 1 MA's), (51, 28195), (68, 28309), (84, 28372), (99, 28468), (122, 28573), (144, 28723), (181, 28891), (193, 28957), (199, 29014), (209, 29098), (217, 29155),

Gene: Darwin\_70 Start: 49774, Stop: 48662, Start Num: 34

Candidate Starts for Darwin\_70:

(Start: 34 @49774 has 8 MA's), (61, 49588), (84, 49474), (90, 49432), (95, 49399), (112, 49336), (114, 49327), (116, 49318), (122, 49282), (128, 49228), (152, 49045), (197, 48856), (201, 48835), (205, 48805), (212, 48733), (215, 48718), (216, 48709),

Gene: Dauntless\_42 Start: 28400, Stop: 29557, Start Num: 32

Candidate Starts for Dauntless\_42:

(1, 28007), (4, 28088), (Start: 32 @28400 has 50 MA's), (Start: 39 @28421 has 1 MA's), (68, 28631), (84, 28694), (99, 28790), (122, 28895), (144, 29045), (180, 29237), (181, 29243), (193, 29309), (209, 29450), (217, 29507),

Gene: DaviePasture\_65 Start: 43993, Stop: 45210, Start Num: 33

Candidate Starts for DaviePasture\_65:

(Start: 33 @43993 has 47 MA's), (38, 44008), (55, 44137), (67, 44227), (68, 44230), (77, 44266), (84, 44299), (110, 44413), (116, 44440), (122, 44479), (123, 44494), (128, 44524), (130, 44554), (135, 44584), (145, 44632), (193, 44923), (198, 44977), (201, 44986), (203, 44995), (206, 45019), (216, 45112), (231, 45202),

Gene: Demikore\_83 Start: 52851, Stop: 54083, Start Num: 26

Candidate Starts for Demikore\_83:

(Start: 26 @52851 has 3 MA's), (42, 52905), (47, 52947), (48, 52956), (53, 52989), (56, 53013), (82, 53178), (84, 53190), (97, 53271), (112, 53355), (117, 53376), (122, 53418), (141, 53556), (148, 53607), (153, 53658), (172, 53694), (185, 53742), (193, 53796), (201, 53859), (221, 54027), (229, 54069),

Gene: DoobyDoo\_64 Start: 43023, Stop: 44186, Start Num: 33

Candidate Starts for DoobyDoo\_64:

(Start: 33 @43023 has 47 MA's), (38, 43038), (55, 43167), (67, 43257), (68, 43260), (77, 43296), (84, 43329), (110, 43443), (116, 43470), (122, 43509), (123, 43524), (128, 43554), (130, 43584), (135, 43614), (145, 43662), (173, 43797), (193, 43899), (198, 43953), (201, 43962), (203, 43971), (206, 43995), (216, 44088), (231, 44178),

Gene: DrLupo\_75 Start: 50706, Stop: 51980, Start Num: 30

Candidate Starts for DrLupo\_75:

(Start: 30 @50706 has 25 MA's), (38, 50730), (55, 50859), (82, 51027), (84, 51039), (91, 51093), (92, 51099), (98, 51132), (102, 51153), (104, 51177), (105, 51183), (115, 51228), (117, 51234), (120, 51267), (121, 51270), (122, 51273), (135, 51381), (153, 51516), (155, 51525), (167, 51564), (169, 51570), (176, 51600), (177, 51606), (185, 51639), (186, 51642), (193, 51693), (195, 51717), (196, 51726), (201, 51756), (217, 51885), (220, 51894), (227, 51948), (231, 51972),

Gene: DumpTruck\_64 Start: 42784, Stop: 43998, Start Num: 33

Candidate Starts for DumpTruck\_64:

(24, 42760), (Start: 33 @42784 has 47 MA's), (38, 42796), (67, 43015), (68, 43018), (79, 43060), (84, 43087), (87, 43102), (116, 43228), (123, 43282), (128, 43312), (130, 43342), (143, 43414), (155, 43513), (163, 43561), (168, 43576), (192, 43708), (198, 43765), (201, 43774), (203, 43783), (206, 43807), (216, 43900), (228, 43969), (231, 43990),

Gene: Emianna\_66 Start: 53297, Stop: 52098, Start Num: 30

Candidate Starts for Emianna\_66:

(Start: 30 @53297 has 25 MA's), (78, 53009), (79, 53006), (83, 52985), (84, 52979), (130, 52706), (132, 52694), (135, 52676), (142, 52643), (145, 52628), (154, 52541), (173, 52454), (177, 52439), (184, 52409), (185, 52406), (193, 52352), (199, 52295), (200, 52292), (201, 52289), (203, 52280), (214, 52172), (220, 52148),

Gene: Ennea\_73 Start: 54279, Stop: 53080, Start Num: 25

Candidate Starts for Ennea\_73:

(Start: 25 @54279 has 2 MA's), (Start: 27 @54270 has 4 MA's), (59, 54072), (77, 53979), (78, 53976), (79, 53973), (84, 53946), (88, 53928), (95, 53871), (132, 53676), (133, 53673), (135, 53658), (145, 53610), (159, 53496), (163, 53484), (173, 53436), (185, 53388), (193, 53334), (201, 53271), (203, 53262), (216, 53142),

Gene: Erudite\_42 Start: 28400, Stop: 29557, Start Num: 32

Candidate Starts for Erudite\_42:

(1, 28007), (4, 28088), (Start: 32 @28400 has 50 MA's), (Start: 39 @28421 has 1 MA's), (68, 28631), (84, 28694), (99, 28790), (122, 28895), (144, 29045), (180, 29237), (181, 29243), (193, 29309), (209, 29450), (217, 29507),

Gene: Erutan\_65 Start: 43665, Stop: 44828, Start Num: 33

Candidate Starts for Erutan\_65:

(Start: 33 @43665 has 47 MA's), (38, 43680), (55, 43809), (67, 43899), (68, 43902), (77, 43938), (84, 43971), (110, 44085), (116, 44112), (122, 44151), (123, 44166), (128, 44196), (130, 44226), (135, 44256), (145, 44304), (173, 44439), (193, 44541), (198, 44595), (201, 44604), (203, 44613), (206, 44637), (216, 44730), (231, 44820),

Gene: Flapper\_69 Start: 53365, Stop: 52184, Start Num: 32

Candidate Starts for Flapper\_69:

(Start: 32 @53365 has 50 MA's), (Start: 64 @53140 has 1 MA's), (71, 53116), (78, 53080), (84, 53050), (91, 53002), (108, 52939), (135, 52768), (145, 52720), (154, 52633), (157, 52609), (171, 52561), (185, 52492), (201, 52375), (203, 52366), (204, 52351), (220, 52234),

Gene: Float294\_67 Start: 53958, Stop: 52795, Start Num: 40

Candidate Starts for Float294\_67:

(Start: 40 @53958 has 2 MA's), (59, 53787), (77, 53694), (78, 53691), (79, 53688), (84, 53661), (88, 53643), (95, 53586), (132, 53391), (133, 53388), (135, 53373), (145, 53325), (159, 53211), (163, 53199), (173, 53151), (185, 53103), (193, 53049), (201, 52986), (203, 52977), (216, 52857),

Gene: FountainFog\_42 Start: 28114, Stop: 29241, Start Num: 32

Candidate Starts for FountainFog\_42:

(Start: 32 @28114 has 50 MA's), (Start: 39 @28135 has 1 MA's), (68, 28345), (84, 28408), (99, 28504), (122, 28609), (144, 28759), (181, 28927), (193, 28993), (209, 29134), (217, 29191),

Gene: Fowlmouth\_77 Start: 47770, Stop: 48810, Start Num: 30

Candidate Starts for Fowlmouth\_77:

(19, 47731), (Start: 30 @47770 has 25 MA's), (Start: 33 @47779 has 47 MA's), (38, 47794), (41, 47815), (51, 47896), (Start: 64 @48004 has 1 MA's), (76, 48055), (85, 48094), (91, 48139), (93, 48148), (119, 48262), (123, 48286), (138, 48397), (187, 48490), (193, 48532), (201, 48595), (205, 48625), (216, 48724),

Gene: Foxboro\_67 Start: 53822, Stop: 52623, Start Num: 30

Candidate Starts for Foxboro\_67:

(Start: 30 @53822 has 25 MA's), (78, 53534), (79, 53531), (83, 53510), (84, 53504), (130, 53231), (132, 53219), (135, 53201), (142, 53168), (145, 53153), (154, 53066), (173, 52979), (177, 52964), (184, 52934), (185, 52931), (193, 52877), (199, 52820), (200, 52817), (201, 52814), (203, 52805), (214, 52697), (220, 52673),

Gene: FreddieHg\_43 Start: 28088, Stop: 29215, Start Num: 32

Candidate Starts for FreddieHg\_43:

(1, 27695), (3, 27761), (4, 27776), (Start: 32 @28088 has 50 MA's), (Start: 39 @28109 has 1 MA's), (51, 28205), (68, 28319), (84, 28382), (99, 28478), (122, 28583), (144, 28733), (181, 28901), (193, 28967), (199, 29024), (209, 29108), (217, 29165),

Gene: Fulcrum\_65 Start: 43693, Stop: 44910, Start Num: 33

Candidate Starts for Fulcrum\_65:

(Start: 33 @43693 has 47 MA's), (38, 43708), (55, 43837), (67, 43927), (68, 43930), (77, 43966), (84, 43999), (110, 44113), (116, 44140), (122, 44179), (123, 44194), (128, 44224), (130, 44254), (135, 44284), (143, 44326), (145, 44332), (193, 44623), (198, 44677), (201, 44686), (203, 44695), (206, 44719), (216, 44812), (231, 44902),

Gene: Fury\_75 Start: 52498, Stop: 51308, Start Num: 27

Candidate Starts for Fury\_75:

(2, 52828), (6, 52726), (Start: 27 @52498 has 4 MA's), (38, 52471), (50, 52378), (67, 52255), (70, 52243), (79, 52201), (84, 52174), (85, 52171), (145, 51841), (154, 51754), (173, 51661), (185, 51613), (201, 51496), (205, 51466), (210, 51409), (214, 51379), (220, 51355),

Gene: GOATification\_65 Start: 43693, Stop: 44910, Start Num: 33

Candidate Starts for GOATification\_65:

(Start: 33 @43693 has 47 MA's), (38, 43708), (55, 43837), (67, 43927), (68, 43930), (77, 43966), (84, 43999), (110, 44113), (116, 44140), (122, 44179), (123, 44194), (128, 44224), (130, 44254), (135, 44284), (143, 44326), (145, 44332), (193, 44623), (198, 44677), (201, 44686), (203, 44695), (206,

44719), (216, 44812), (231, 44902),

Gene: GRU1\_55 Start: 45213, Stop: 44032, Start Num: 32

Candidate Starts for GRU1\_55:

(Start: 32 @45213 has 50 MA's), (Start: 64 @44988 has 1 MA's), (71, 44964), (78, 44928), (84, 44898), (91, 44850), (108, 44787), (135, 44616), (145, 44568), (152, 44493), (154, 44481), (171, 44409), (185, 44340), (201, 44223), (203, 44214), (204, 44199), (220, 44082),

Gene: GTE5\_55 Start: 46020, Stop: 45064, Start Num: 64

Candidate Starts for GTE5\_55:

(Start: 64 @46020 has 1 MA's), (67, 46011), (71, 45996), (78, 45960), (84, 45930), (91, 45882), (108, 45819), (145, 45600), (153, 45516), (154, 45513), (171, 45441), (185, 45372), (201, 45255), (203, 45246), (204, 45231), (214, 45138), (220, 45114),

Gene: GTE8\_55 Start: 46534, Stop: 45335, Start Num: 30

Candidate Starts for GTE8\_55:

(Start: 30 @46534 has 25 MA's), (77, 46249), (79, 46243), (83, 46222), (84, 46216), (132, 45931), (135, 45913), (142, 45880), (145, 45865), (154, 45778), (184, 45646), (185, 45643), (193, 45589), (200, 45529), (201, 45526), (203, 45517), (214, 45409), (220, 45385),

Gene: Gagieri\_66 Start: 50059, Stop: 48929, Start Num: 30

Candidate Starts for Gagieri\_66:

(9, 50194), (14, 50089), (Start: 30 @50059 has 25 MA's), (61, 49861), (84, 49738), (86, 49726), (116, 49600), (119, 49573), (145, 49411), (158, 49318), (182, 49246), (201, 49120), (202, 49114), (217, 48988),

Gene: Gallia\_70 Start: 54274, Stop: 53129, Start Num: 30

Candidate Starts for Gallia\_70:

(Start: 30 @54274 has 25 MA's), (73, 54016), (84, 53965), (85, 53962), (145, 53587), (185, 53422), (189, 53386), (201, 53305), (215, 53188),

Gene: Genamy16\_68 Start: 43067, Stop: 44284, Start Num: 33

Candidate Starts for Genamy16\_68:

(Start: 33 @43067 has 47 MA's), (38, 43082), (55, 43211), (67, 43301), (68, 43304), (77, 43340), (84, 43373), (110, 43487), (116, 43514), (122, 43553), (123, 43568), (128, 43598), (130, 43628), (135, 43658), (145, 43706), (173, 43895), (198, 44051), (201, 44060), (203, 44069), (206, 44093), (211, 44147), (216, 44186), (231, 44276),

Gene: Gibbin\_67 Start: 44498, Stop: 45715, Start Num: 33

Candidate Starts for Gibbin\_67:

(Start: 33 @44498 has 47 MA's), (38, 44513), (55, 44642), (67, 44732), (68, 44735), (77, 44771), (84, 44804), (110, 44918), (116, 44945), (122, 44984), (123, 44999), (128, 45029), (130, 45059), (135, 45089), (145, 45137), (193, 45428), (198, 45482), (201, 45491), (203, 45500), (206, 45524), (216, 45617), (231, 45707),

Gene: Gilda\_43 Start: 28844, Stop: 29998, Start Num: 32

Candidate Starts for Gilda\_43:

(1, 28445), (Start: 32 @28844 has 50 MA's), (Start: 39 @28865 has 1 MA's), (68, 29075), (84, 29138), (99, 29234), (122, 29339), (144, 29489), (154, 29579), (164, 29615), (173, 29645), (193, 29750), (199, 29807), (209, 29891), (217, 29948),

Gene: Gretellyn\_65 Start: 44537, Stop: 45700, Start Num: 33

Candidate Starts for Gretellyn\_65:

(Start: 33 @44537 has 47 MA's), (38, 44552), (55, 44681), (67, 44771), (68, 44774), (77, 44810), (84, 44843), (110, 44957), (116, 44984), (122, 45023), (123, 45038), (128, 45068), (130, 45098), (135, 45128), (145, 45176), (152, 45251), (166, 45272), (173, 45311), (193, 45413), (198, 45467), (201, 45476), (203, 45485), (206, 45509), (216, 45602), (231, 45692),

Gene: GrootJr\_68 Start: 52691, Stop: 51492, Start Num: 30

Candidate Starts for GrootJr\_68:

(Start: 30 @52691 has 25 MA's), (78, 52403), (79, 52400), (83, 52379), (84, 52373), (130, 52100), (132, 52088), (135, 52070), (142, 52037), (145, 52022), (154, 51935), (173, 51848), (177, 51833), (184, 51803), (185, 51800), (193, 51746), (199, 51689), (200, 51686), (201, 51683), (203, 51674), (214, 51566), (220, 51542),

Gene: Hager\_44 Start: 28317, Stop: 29423, Start Num: 32

Candidate Starts for Hager\_44:

(Start: 32 @28317 has 50 MA's), (Start: 39 @28338 has 1 MA's), (68, 28548), (82, 28599), (84, 28611), (99, 28707), (122, 28812), (144, 28962), (193, 29175), (209, 29316), (217, 29373),

Gene: Haunter\_43 Start: 28275, Stop: 29381, Start Num: 32

Candidate Starts for Haunter\_43:

(Start: 32 @28275 has 50 MA's), (Start: 39 @28296 has 1 MA's), (68, 28506), (84, 28569), (99, 28665), (122, 28770), (144, 28920), (193, 29133), (199, 29190), (209, 29274), (217, 29331),

Gene: Hiddenleaf\_43 Start: 28072, Stop: 29199, Start Num: 32

Candidate Starts for Hiddenleaf\_43:

(1, 27679), (3, 27745), (4, 27760), (Start: 32 @28072 has 50 MA's), (Start: 39 @28093 has 1 MA's), (51, 28189), (68, 28303), (84, 28366), (99, 28462), (122, 28567), (144, 28717), (181, 28885), (193, 28951), (199, 29008), (209, 29092), (217, 29149),

Gene: HomeFry\_72 Start: 51202, Stop: 50012, Start Num: 27

Candidate Starts for HomeFry\_72:

(Start: 27 @51202 has 4 MA's), (38, 51175), (50, 51082), (67, 50959), (79, 50905), (84, 50878), (145, 50545), (154, 50458), (157, 50434), (171, 50386), (185, 50317), (201, 50200), (210, 50113), (214, 50083), (220, 50059),

Gene: HubbaBubba\_62 Start: 48109, Stop: 47129, Start Num: 63

Candidate Starts for HubbaBubba\_62:

(Start: 63 @48109 has 1 MA's), (70, 48085), (78, 48046), (79, 48043), (84, 48016), (88, 47998), (95, 47941), (130, 47743), (132, 47731), (145, 47665), (148, 47638), (153, 47581), (173, 47485), (184, 47440), (185, 47437), (188, 47425), (193, 47383), (201, 47320), (203, 47311), (213, 47209), (214, 47203), (220, 47179),

Gene: IDyn\_65 Start: 49575, Stop: 48376, Start Num: 32

Candidate Starts for IDyn\_65:

(22, 49602), (Start: 32 @49575 has 50 MA's), (Start: 63 @49356 has 1 MA's), (70, 49332), (78, 49293), (79, 49290), (84, 49263), (88, 49245), (95, 49188), (130, 48990), (132, 48978), (145, 48912), (148, 48885), (153, 48828), (173, 48732), (184, 48687), (185, 48684), (188, 48672), (193, 48630), (201, 48567), (203, 48558), (213, 48456), (214, 48450), (220, 48426),

Gene: Indlulamithi\_68 Start: 48569, Stop: 49600, Start Num: 33

Candidate Starts for Indlulamithi\_68:

(Start: 33 @48569 has 47 MA's), (38, 48584), (49, 48671), (51, 48686), (54, 48710), (Start: 64 @48794 has 1 MA's), (76, 48845), (87, 48896), (96, 48959), (109, 48995), (114, 49013), (115, 49019), (123, 49076), (135, 49166), (144, 49211), (150, 49250), (191, 49316), (199, 49379), (201, 49385), (205,

49415),

Gene: JDawG\_42 Start: 28489, Stop: 29616, Start Num: 32

Candidate Starts for JDawG\_42:

(1, 28096), (4, 28177), (Start: 32 @28489 has 50 MA's), (Start: 39 @28510 has 1 MA's), (68, 28720), (84, 28783), (99, 28879), (122, 28984), (144, 29134), (181, 29302), (193, 29368), (209, 29509), (217, 29566),

Gene: Jalebi\_64 Start: 44890, Stop: 46053, Start Num: 33

Candidate Starts for Jalebi\_64:

(Start: 33 @44890 has 47 MA's), (38, 44905), (55, 45034), (67, 45124), (68, 45127), (77, 45163), (84, 45196), (110, 45310), (116, 45337), (122, 45376), (123, 45391), (128, 45421), (130, 45451), (135, 45481), (145, 45529), (173, 45664), (193, 45766), (198, 45820), (201, 45829), (203, 45838), (206, 45862), (216, 45955), (231, 46045),

Gene: Jamemuya19\_64 Start: 42672, Stop: 43889, Start Num: 33

Candidate Starts for Jamemuya19\_64:

(Start: 33 @42672 has 47 MA's), (38, 42687), (55, 42816), (67, 42906), (68, 42909), (77, 42945), (84, 42978), (110, 43092), (116, 43119), (122, 43158), (123, 43173), (128, 43203), (130, 43233), (135, 43263), (145, 43311), (173, 43500), (198, 43656), (201, 43665), (203, 43674), (206, 43698), (211, 43752), (216, 43791), (231, 43881),

Gene: Jifall16\_66 Start: 53318, Stop: 52119, Start Num: 30

Candidate Starts for Jifall16\_66:

(Start: 30 @53318 has 25 MA's), (78, 53030), (79, 53027), (83, 53006), (84, 53000), (130, 52727), (132, 52715), (135, 52697), (142, 52664), (145, 52649), (154, 52562), (173, 52475), (177, 52460), (184, 52430), (185, 52427), (193, 52373), (199, 52316), (200, 52313), (201, 52310), (203, 52301), (214, 52193), (220, 52169),

Gene: JingleBells\_43 Start: 28193, Stop: 29350, Start Num: 32

Candidate Starts for JingleBells\_43:

(1, 27800), (4, 27881), (Start: 32 @28193 has 50 MA's), (Start: 39 @28214 has 1 MA's), (68, 28424), (84, 28487), (99, 28583), (122, 28688), (144, 28838), (180, 29030), (181, 29036), (193, 29102), (209, 29243), (217, 29300),

Gene: Kabluna\_69 Start: 52277, Stop: 51069, Start Num: 32

Candidate Starts for Kabluna\_69:

(Start: 32 @52277 has 50 MA's), (Start: 63 @52055 has 1 MA's), (70, 52031), (72, 52016), (78, 51992), (79, 51989), (84, 51962), (95, 51887), (119, 51770), (132, 51674), (145, 51608), (157, 51497), (171, 51449), (173, 51428), (183, 51386), (188, 51368), (193, 51326), (198, 51272), (201, 51263), (203, 51254), (214, 51146),

Gene: Karate\_42 Start: 28845, Stop: 29999, Start Num: 32

Candidate Starts for Karate\_42:

(Start: 32 @28845 has 50 MA's), (Start: 39 @28866 has 1 MA's), (68, 29076), (84, 29139), (99, 29235), (122, 29340), (144, 29490), (164, 29616), (173, 29646), (193, 29751), (209, 29892), (217, 29949),

Gene: Kate\_44 Start: 28852, Stop: 30006, Start Num: 32

Candidate Starts for Kate\_44:

(1, 28453), (Start: 32 @28852 has 50 MA's), (Start: 39 @28873 has 1 MA's), (68, 29083), (84, 29146), (99, 29242), (122, 29347), (144, 29497), (154, 29587), (164, 29623), (173, 29653), (193, 29758), (199, 29815), (209, 29899), (217, 29956),

Gene: KidneyBean\_67 Start: 53442, Stop: 52243, Start Num: 30

Candidate Starts for KidneyBean\_67:

(Start: 30 @53442 has 25 MA's), (78, 53154), (79, 53151), (83, 53130), (84, 53124), (130, 52851), (132, 52839), (135, 52821), (142, 52788), (145, 52773), (154, 52686), (173, 52599), (177, 52584), (184, 52554), (185, 52551), (193, 52497), (199, 52440), (200, 52437), (201, 52434), (203, 52425), (214, 52317), (220, 52293),

Gene: Kimchi1738\_70 Start: 50509, Stop: 49391, Start Num: 34

Candidate Starts for Kimchi1738\_70:

(Start: 34 @50509 has 8 MA's), (54, 50374), (61, 50323), (84, 50209), (90, 50167), (95, 50134), (112, 50071), (114, 50062), (116, 50053), (122, 50017), (128, 49963), (152, 49780), (197, 49591), (201, 49570), (205, 49540), (212, 49468), (215, 49453), (216, 49444),

Gene: Konstantine\_71 Start: 50914, Stop: 52203, Start Num: 21

Candidate Starts for Konstantine\_71:

(12, 50875), (Start: 18 @50899 has 1 MA's), (Start: 21 @50914 has 8 MA's), (45, 51028), (48, 51046), (54, 51088), (83, 51262), (84, 51268), (91, 51319), (111, 51433), (115, 51451), (116, 51454), (118, 51469), (122, 51490), (139, 51622), (141, 51628), (179, 51811), (185, 51829), (193, 51883), (200, 51943), (206, 51979), (217, 52075),

Gene: Kors\_46 Start: 29786, Stop: 30883, Start Num: 35

Candidate Starts for Kors\_46:

(Start: 13 @29732 has 1 MA's), (Start: 35 @29786 has 5 MA's), (Start: 37 @29789 has 1 MA's), (Start: 39 @29795 has 1 MA's), (68, 30005), (69, 30011), (82, 30056), (84, 30068), (94, 30131), (99, 30164), (122, 30269), (146, 30431), (181, 30566), (188, 30590), (211, 30782), (217, 30830),

Gene: Krampus\_43 Start: 28852, Stop: 30006, Start Num: 32

Candidate Starts for Krampus\_43:

(1, 28453), (Start: 32 @28852 has 50 MA's), (Start: 39 @28873 has 1 MA's), (68, 29083), (84, 29146), (99, 29242), (122, 29347), (144, 29497), (154, 29587), (164, 29623), (173, 29653), (193, 29758), (199, 29815), (209, 29899), (217, 29956),

Gene: Kurt\_66 Start: 53312, Stop: 52113, Start Num: 30

Candidate Starts for Kurt\_66:

(Start: 30 @53312 has 25 MA's), (78, 53024), (79, 53021), (83, 53000), (84, 52994), (130, 52721), (132, 52709), (135, 52691), (142, 52658), (145, 52643), (154, 52556), (173, 52469), (177, 52454), (184, 52424), (185, 52421), (193, 52367), (199, 52310), (200, 52307), (201, 52304), (203, 52295), (214, 52187), (220, 52163),

Gene: Labelle\_80 Start: 52685, Stop: 53917, Start Num: 26

Candidate Starts for Labelle\_80:

(Start: 26 @52685 has 3 MA's), (42, 52739), (46, 52778), (47, 52781), (48, 52790), (53, 52823), (56, 52847), (82, 53012), (84, 53024), (97, 53105), (112, 53189), (117, 53210), (122, 53252), (141, 53390), (148, 53441), (153, 53492), (172, 53528), (185, 53576), (193, 53630), (201, 53693), (221, 53861), (229, 53903),

Gene: Lambo\_63 Start: 43490, Stop: 44707, Start Num: 33

Candidate Starts for Lambo\_63:

(Start: 33 @43490 has 47 MA's), (38, 43505), (55, 43634), (67, 43724), (68, 43727), (77, 43763), (84, 43796), (110, 43910), (116, 43937), (122, 43976), (123, 43991), (128, 44021), (130, 44051), (135, 44081), (145, 44129), (193, 44420), (198, 44474), (201, 44483), (203, 44492), (206, 44516), (216, 44609), (231, 44699),

Gene: LavAbarElk\_65 Start: 43284, Stop: 44447, Start Num: 33

Candidate Starts for LavAbarElk\_65:

(Start: 33 @43284 has 47 MA's), (38, 43299), (55, 43428), (67, 43518), (68, 43521), (77, 43557), (84, 43590), (110, 43704), (116, 43731), (122, 43770), (123, 43785), (128, 43815), (130, 43845), (135, 43875), (145, 43923), (173, 44058), (193, 44160), (198, 44214), (201, 44223), (203, 44232), (206, 44256), (216, 44349), (231, 44439),

Gene: Leopard\_73 Start: 50916, Stop: 52133, Start Num: 29

Candidate Starts for Leopard\_73:

(Start: 29 @50916 has 3 MA's), (Start: 39 @50943 has 1 MA's), (44, 50997), (52, 51042), (58, 51108), (60, 51120), (67, 51168), (70, 51180), (74, 51210), (75, 51213), (82, 51240), (87, 51267), (109, 51396), (126, 51516), (128, 51522), (141, 51612), (147, 51654), (149, 51672), (151, 51690), (174, 51753), (190, 51837), (201, 51912), (202, 51918), (203, 51921), (209, 51990), (211, 51999), (218, 52044), (225, 52101),

Gene: Lila22\_66 Start: 44442, Stop: 45659, Start Num: 33

Candidate Starts for Lila22\_66:

(Start: 33 @44442 has 47 MA's), (38, 44457), (55, 44586), (67, 44676), (68, 44679), (77, 44715), (84, 44748), (110, 44862), (116, 44889), (122, 44928), (123, 44943), (128, 44973), (130, 45003), (135, 45033), (145, 45081), (198, 45426), (201, 45435), (203, 45444), (206, 45468), (216, 45561), (231, 45651),

Gene: Lollipop1437\_70 Start: 53959, Stop: 52760, Start Num: 25

Candidate Starts for Lollipop1437\_70:

(Start: 25 @53959 has 2 MA's), (Start: 27 @53950 has 4 MA's), (59, 53752), (77, 53659), (78, 53656), (79, 53653), (84, 53626), (88, 53608), (95, 53551), (132, 53356), (133, 53353), (135, 53338), (145, 53290), (159, 53176), (163, 53164), (173, 53116), (185, 53068), (193, 53014), (201, 52951), (203, 52942), (216, 52822),

Gene: LordBart\_46 Start: 29698, Stop: 30792, Start Num: 37

Candidate Starts for LordBart\_46:

(Start: 13 @29641 has 1 MA's), (Start: 35 @29695 has 5 MA's), (Start: 37 @29698 has 1 MA's), (Start: 39 @29704 has 1 MA's), (68, 29914), (69, 29920), (82, 29965), (84, 29977), (94, 30040), (99, 30073), (122, 30178), (146, 30340), (181, 30475), (188, 30499), (211, 30691), (217, 30739),

Gene: LuckyLeo\_62 Start: 43297, Stop: 44457, Start Num: 33

Candidate Starts for LuckyLeo\_62:

(Start: 33 @43297 has 47 MA's), (38, 43312), (55, 43441), (67, 43531), (79, 43576), (84, 43603), (116, 43744), (123, 43795), (128, 43825), (130, 43855), (145, 43933), (151, 43993), (152, 44008), (160, 44029), (173, 44068), (175, 44074), (194, 44176), (198, 44224), (201, 44233), (206, 44266), (216, 44359), (231, 44449),

Gene: MacGully\_76 Start: 53240, Stop: 52086, Start Num: 30

Candidate Starts for MacGully\_76:

(14, 53291), (Start: 30 @53240 has 25 MA's), (61, 53042), (79, 52946), (84, 52919), (86, 52907), (91, 52871), (116, 52781), (144, 52595), (145, 52592), (149, 52550), (157, 52490), (185, 52394), (201, 52277), (202, 52271), (216, 52148), (217, 52145),

Gene: Madruga\_79 Start: 52639, Stop: 53871, Start Num: 26

Candidate Starts for Madruga\_79:

(Start: 26 @52639 has 3 MA's), (42, 52693), (47, 52735), (48, 52744), (53, 52777), (56, 52801), (82, 52966), (84, 52978), (97, 53059), (112, 53143), (117, 53164), (122, 53206), (141, 53344), (148, 53395), (153, 53446), (172, 53482), (185, 53530), (193, 53584), (201, 53647), (221, 53815), (229,

53857),

Gene: Marietta\_68 Start: 49875, Stop: 48676, Start Num: 32

Candidate Starts for Marietta\_68:

(Start: 32 @49875 has 50 MA's), (Start: 63 @49656 has 1 MA's), (70, 49632), (78, 49593), (79, 49590), (84, 49563), (88, 49545), (95, 49488), (130, 49290), (145, 49212), (148, 49185), (153, 49128), (154, 49125), (173, 49032), (184, 48987), (185, 48984), (188, 48972), (193, 48930), (201, 48867), (203, 48858), (213, 48756), (214, 48750), (220, 48726),

Gene: Maselop\_67 Start: 50089, Stop: 48926, Start Num: 30

Candidate Starts for Maselop\_67:

(9, 50227), (14, 50119), (Start: 30 @50089 has 25 MA's), (61, 49891), (84, 49768), (86, 49756), (116, 49630), (119, 49603), (145, 49441), (170, 49297), (179, 49258), (185, 49234), (201, 49117), (202, 49111), (217, 48985),

Gene: Megatron06\_68 Start: 50660, Stop: 51949, Start Num: 21

Candidate Starts for Megatron06\_68:

(12, 50621), (Start: 18 @50645 has 1 MA's), (Start: 21 @50660 has 8 MA's), (45, 50774), (47, 50783), (48, 50792), (54, 50834), (83, 51008), (84, 51014), (91, 51065), (111, 51179), (115, 51197), (116, 51200), (118, 51215), (122, 51236), (139, 51368), (141, 51374), (168, 51512), (179, 51557), (185, 51575), (193, 51629), (200, 51689), (206, 51725), (217, 51821),

Gene: MerCougar\_69 Start: 54002, Stop: 52794, Start Num: 32

Candidate Starts for MerCougar\_69:

(Start: 32 @54002 has 50 MA's), (Start: 63 @53780 has 1 MA's), (70, 53756), (78, 53717), (79, 53714), (84, 53687), (95, 53612), (132, 53399), (145, 53333), (154, 53246), (157, 53222), (171, 53174), (185, 53105), (188, 53093), (193, 53051), (198, 52997), (201, 52988), (203, 52979), (214, 52871), (216, 52859),

Gene: Mima20\_65 Start: 44053, Stop: 45216, Start Num: 33

Candidate Starts for Mima20\_65:

(Start: 33 @44053 has 47 MA's), (38, 44068), (55, 44197), (67, 44287), (68, 44290), (77, 44326), (84, 44359), (110, 44473), (116, 44500), (122, 44539), (123, 44554), (128, 44584), (130, 44614), (135, 44644), (145, 44692), (173, 44827), (193, 44929), (198, 44983), (201, 44992), (203, 45001), (206, 45025), (216, 45118), (231, 45208),

Gene: MoiGyank\_68 Start: 44818, Stop: 45981, Start Num: 33

Candidate Starts for MoiGyank\_68:

(Start: 33 @44818 has 47 MA's), (38, 44833), (55, 44962), (67, 45052), (68, 45055), (77, 45091), (84, 45124), (110, 45238), (116, 45265), (122, 45304), (123, 45319), (128, 45349), (130, 45379), (135, 45409), (145, 45457), (173, 45592), (193, 45694), (198, 45748), (201, 45757), (203, 45766), (206, 45790), (216, 45883), (231, 45973),

Gene: MontyDev\_71 Start: 51361, Stop: 52530, Start Num: 33

Candidate Starts for MontyDev\_71:

(Start: 33 @51361 has 47 MA's), (38, 51376), (43, 51418), (47, 51451), (81, 51652), (84, 51667), (109, 51799), (122, 51862), (123, 51877), (140, 51994), (181, 52195), (183, 52201), (185, 52207), (186, 52210), (199, 52318), (201, 52324), (217, 52456), (226, 52516),

Gene: MortySmith\_41 Start: 27877, Stop: 29034, Start Num: 32

Candidate Starts for MortySmith\_41:

(1, 27484), (4, 27565), (Start: 32 @27877 has 50 MA's), (Start: 39 @27898 has 1 MA's), (68, 28108), (84, 28171), (99, 28267), (122, 28372), (144, 28522), (180, 28714), (181, 28720), (193, 28786), (209,

28927), (217, 28984),

Gene: MrMiyagi\_76 Start: 48172, Stop: 49212, Start Num: 30

Candidate Starts for MrMiyagi\_76:

(19, 48133), (Start: 30 @48172 has 25 MA's), (Start: 33 @48181 has 47 MA's), (38, 48196), (41, 48217), (51, 48298), (Start: 64 @48406 has 1 MA's), (76, 48457), (85, 48496), (91, 48541), (93, 48550), (119, 48664), (123, 48688), (138, 48799), (187, 48892), (193, 48934), (201, 48997), (205, 49027), (216, 49126),

Gene: NadineRae\_67 Start: 49484, Stop: 48285, Start Num: 32

Candidate Starts for NadineRae\_67:

(Start: 32 @49484 has 50 MA's), (Start: 63 @49265 has 1 MA's), (70, 49241), (78, 49202), (79, 49199), (84, 49172), (88, 49154), (95, 49097), (130, 48899), (145, 48821), (148, 48794), (173, 48641), (184, 48596), (185, 48593), (188, 48581), (193, 48539), (201, 48476), (203, 48467), (213, 48365), (214, 48359), (220, 48335),

Gene: NarutoRun\_43 Start: 28820, Stop: 29974, Start Num: 32

Candidate Starts for NarutoRun\_43:

(1, 28421), (Start: 32 @28820 has 50 MA's), (Start: 39 @28841 has 1 MA's), (46, 28910), (68, 29051), (84, 29114), (99, 29210), (122, 29315), (144, 29465), (154, 29555), (164, 29591), (173, 29621), (193, 29726), (199, 29783), (209, 29867), (217, 29924),

Gene: NatB6\_66 Start: 52381, Stop: 51182, Start Num: 30

Candidate Starts for NatB6\_66:

(Start: 30 @52381 has 25 MA's), (78, 52093), (79, 52090), (83, 52069), (84, 52063), (130, 51790), (132, 51778), (135, 51760), (142, 51727), (145, 51712), (154, 51625), (173, 51538), (177, 51523), (184, 51493), (185, 51490), (193, 51436), (199, 51379), (200, 51376), (201, 51373), (203, 51364), (214, 51256), (220, 51232),

Gene: Neptune\_43 Start: 28820, Stop: 29974, Start Num: 32

Candidate Starts for Neptune\_43:

(1, 28421), (Start: 32 @28820 has 50 MA's), (Start: 39 @28841 has 1 MA's), (68, 29051), (84, 29114), (99, 29210), (122, 29315), (144, 29465), (154, 29555), (164, 29591), (173, 29621), (193, 29726), (199, 29783), (209, 29867), (217, 29924),

Gene: Nilo\_71 Start: 51718, Stop: 52887, Start Num: 33

Candidate Starts for Nilo\_71:

(Start: 33 @51718 has 47 MA's), (38, 51733), (43, 51775), (47, 51808), (81, 52009), (84, 52024), (109, 52156), (122, 52219), (123, 52234), (135, 52324), (140, 52351), (181, 52552), (183, 52558), (185, 52564), (199, 52675), (201, 52681), (217, 52813), (226, 52873),

Gene: NorManre\_69 Start: 44890, Stop: 46107, Start Num: 33

Candidate Starts for NorManre\_69:

(Start: 33 @44890 has 47 MA's), (38, 44905), (55, 45034), (67, 45124), (68, 45127), (77, 45163), (84, 45196), (110, 45310), (116, 45337), (122, 45376), (123, 45391), (128, 45421), (130, 45451), (135, 45481), (145, 45529), (193, 45820), (198, 45874), (201, 45883), (203, 45892), (206, 45916), (216, 46009), (231, 46099),

Gene: NosilaM\_69 Start: 53310, Stop: 52105, Start Num: 32

Candidate Starts for NosilaM\_69:

(Start: 32 @53310 has 50 MA's), (Start: 63 @53091 has 1 MA's), (70, 53067), (78, 53028), (79, 53025), (84, 52998), (132, 52710), (145, 52644), (157, 52533), (171, 52485), (188, 52404), (193, 52362), (198, 52308), (201, 52299), (203, 52290), (214, 52182),

Gene: NovaSharks\_67 Start: 42658, Stop: 43875, Start Num: 33

Candidate Starts for NovaSharks\_67:

(Start: 33 @42658 has 47 MA's), (38, 42673), (55, 42802), (67, 42892), (68, 42895), (77, 42931), (84, 42964), (110, 43078), (116, 43105), (122, 43144), (123, 43159), (128, 43189), (130, 43219), (135, 43249), (145, 43297), (173, 43486), (198, 43642), (201, 43651), (203, 43660), (206, 43684), (211, 43738), (216, 43777), (231, 43867),

Gene: NovumRegina\_66 Start: 52690, Stop: 51491, Start Num: 30

Candidate Starts for NovumRegina\_66:

(Start: 30 @52690 has 25 MA's), (78, 52402), (79, 52399), (83, 52378), (84, 52372), (130, 52099), (132, 52087), (135, 52069), (142, 52036), (145, 52021), (154, 51934), (173, 51847), (177, 51832), (184, 51802), (185, 51799), (193, 51745), (199, 51688), (200, 51685), (201, 51682), (203, 51673), (214, 51565), (220, 51541),

Gene: Oaker\_67 Start: 50680, Stop: 52002, Start Num: 21

Candidate Starts for Oaker\_67:

(12, 50641), (Start: 18 @50665 has 1 MA's), (Start: 21 @50680 has 8 MA's), (45, 50794), (47, 50803), (48, 50812), (54, 50854), (83, 51028), (84, 51034), (91, 51085), (111, 51232), (115, 51250), (116, 51253), (118, 51268), (122, 51289), (139, 51421), (141, 51427), (179, 51610), (185, 51628), (193, 51682), (200, 51742), (206, 51778), (217, 51874),

Gene: OhDear\_43 Start: 28818, Stop: 29972, Start Num: 32

Candidate Starts for OhDear\_43:

(1, 28419), (Start: 32 @28818 has 50 MA's), (Start: 39 @28839 has 1 MA's), (68, 29049), (84, 29112), (99, 29208), (122, 29313), (144, 29463), (154, 29553), (164, 29589), (173, 29619), (193, 29724), (199, 29781), (209, 29865), (217, 29922),

Gene: Onyinye\_74 Start: 50783, Stop: 52000, Start Num: 29

Candidate Starts for Onyinye\_74:

(Start: 29 @50783 has 3 MA's), (Start: 39 @50810 has 1 MA's), (44, 50864), (52, 50909), (58, 50975), (60, 50987), (70, 51047), (74, 51077), (75, 51080), (82, 51107), (87, 51134), (109, 51263), (126, 51383), (128, 51389), (141, 51479), (147, 51521), (149, 51539), (151, 51557), (174, 51620), (190, 51704), (201, 51779), (202, 51785), (203, 51788), (209, 51857), (211, 51866), (218, 51911), (225, 51968),

Gene: OtterstedtS21\_65 Start: 43824, Stop: 45041, Start Num: 33

Candidate Starts for OtterstedtS21\_65:

(Start: 33 @43824 has 47 MA's), (38, 43839), (55, 43968), (67, 44058), (68, 44061), (77, 44097), (84, 44130), (110, 44244), (116, 44271), (122, 44310), (123, 44325), (128, 44355), (130, 44385), (135, 44415), (145, 44463), (193, 44754), (198, 44808), (201, 44817), (203, 44826), (206, 44850), (216, 44943), (231, 45033),

Gene: Outis\_67 Start: 53139, Stop: 51931, Start Num: 32

Candidate Starts for Outis\_67:

(Start: 32 @53139 has 50 MA's), (38, 53121), (Start: 63 @52917 has 1 MA's), (70, 52893), (78, 52854), (79, 52851), (84, 52824), (95, 52749), (116, 52662), (132, 52536), (145, 52470), (157, 52359), (171, 52311), (185, 52242), (193, 52188), (198, 52134), (201, 52125), (203, 52116), (214, 52008), (216, 51996),

Gene: OverHedge\_43 Start: 28810, Stop: 29964, Start Num: 32

Candidate Starts for OverHedge\_43:

(1, 28411), (Start: 32 @28810 has 50 MA's), (Start: 39 @28831 has 1 MA's), (68, 29041), (84, 29104), (99, 29200), (122, 29305), (144, 29455), (154, 29545), (164, 29581), (173, 29611), (193, 29716), (199, 29773), (209, 29857), (217, 29914),

Gene: P1201\_73 Start: 54596, Stop: 53460, Start Num: 30

Candidate Starts for P1201\_73:

(Start: 30 @54596 has 25 MA's), (73, 54338), (84, 54287), (85, 54284), (103, 54173), (145, 53918), (185, 53753), (201, 53636), (215, 53519),

Gene: Papyrus\_69 Start: 51328, Stop: 52497, Start Num: 33

Candidate Starts for Papyrus\_69:

(Start: 33 @51328 has 47 MA's), (38, 51343), (43, 51385), (47, 51418), (81, 51619), (84, 51634), (109, 51766), (122, 51829), (123, 51844), (135, 51934), (140, 51961), (181, 52162), (183, 52168), (185, 52174), (199, 52285), (201, 52291), (217, 52423), (226, 52483),

Gene: ParvusTarda\_64 Start: 43199, Stop: 44413, Start Num: 33

Candidate Starts for ParvusTarda\_64:

(Start: 33 @43199 has 47 MA's), (38, 43214), (55, 43343), (65, 43427), (79, 43478), (84, 43505), (110, 43619), (116, 43646), (123, 43697), (125, 43712), (128, 43727), (130, 43757), (145, 43835), (173, 44024), (194, 44132), (198, 44180), (201, 44189), (203, 44198), (206, 44222), (216, 44315), (231, 44405),

Gene: Patience\_81 Start: 53552, Stop: 54784, Start Num: 26

Candidate Starts for Patience\_81:

(Start: 26 @53552 has 3 MA's), (42, 53606), (46, 53645), (47, 53648), (48, 53657), (53, 53690), (56, 53714), (82, 53879), (84, 53891), (97, 53972), (112, 54056), (117, 54077), (122, 54119), (141, 54257), (148, 54308), (153, 54359), (172, 54395), (185, 54443), (193, 54497), (201, 54560), (221, 54728), (229, 54770),

Gene: Patio\_68 Start: 53007, Stop: 51817, Start Num: 27

Candidate Starts for Patio\_68:

(Start: 25 @53016 has 2 MA's), (Start: 27 @53007 has 4 MA's), (59, 52809), (77, 52716), (78, 52713), (79, 52710), (84, 52683), (88, 52665), (95, 52608), (132, 52413), (133, 52410), (135, 52395), (145, 52347), (159, 52233), (163, 52221), (173, 52173), (185, 52125), (193, 52071), (201, 52008), (203, 51999), (216, 51879),

Gene: Patos\_69 Start: 44889, Stop: 46106, Start Num: 33

Candidate Starts for Patos\_69:

(Start: 33 @44889 has 47 MA's), (38, 44904), (55, 45033), (67, 45123), (68, 45126), (77, 45162), (84, 45195), (110, 45309), (116, 45336), (122, 45375), (123, 45390), (128, 45420), (130, 45450), (135, 45480), (145, 45528), (193, 45819), (198, 45873), (201, 45882), (203, 45891), (206, 45915), (216, 46008), (231, 46098),

Gene: Pemberton\_69 Start: 50049, Stop: 48850, Start Num: 32

Candidate Starts for Pemberton\_69:

(Start: 32 @50049 has 50 MA's), (Start: 63 @49830 has 1 MA's), (70, 49806), (78, 49767), (79, 49764), (84, 49737), (88, 49719), (95, 49662), (130, 49464), (132, 49452), (145, 49386), (148, 49359), (154, 49299), (173, 49206), (177, 49191), (184, 49161), (185, 49158), (188, 49146), (193, 49104), (201, 49041), (203, 49032), (213, 48930), (214, 48924), (220, 48900),

Gene: PeteyPab\_68 Start: 50318, Stop: 49200, Start Num: 34

Candidate Starts for PeteyPab\_68:

(Start: 34 @50318 has 8 MA's), (54, 50183), (61, 50132), (73, 50069), (84, 50018), (90, 49976), (95, 49943), (99, 49922), (112, 49880), (114, 49871), (116, 49862), (122, 49826), (128, 49772), (152, 49589), (197, 49400), (201, 49379), (205, 49349), (212, 49277), (215, 49262), (216, 49253),

Gene: Pharpay\_43 Start: 28865, Stop: 30019, Start Num: 32

Candidate Starts for Pharpay\_43:

(1, 28466), (Start: 32 @28865 has 50 MA's), (Start: 39 @28886 has 1 MA's), (46, 28955), (68, 29096), (84, 29159), (99, 29255), (122, 29360), (144, 29510), (154, 29600), (164, 29636), (173, 29666), (193, 29771), (199, 29828), (209, 29912), (217, 29969),

Gene: Phomeo\_66 Start: 53314, Stop: 52115, Start Num: 30

Candidate Starts for Phomeo\_66:

(Start: 30 @53314 has 25 MA's), (78, 53026), (79, 53023), (83, 53002), (84, 52996), (130, 52723), (132, 52711), (135, 52693), (142, 52660), (145, 52645), (154, 52558), (173, 52471), (177, 52456), (184, 52426), (185, 52423), (193, 52369), (199, 52312), (200, 52309), (201, 52306), (203, 52297), (214, 52189), (220, 52165),

Gene: Phreeze\_66 Start: 49680, Stop: 50969, Start Num: 21

Candidate Starts for Phreeze\_66:

(12, 49641), (Start: 18 @49665 has 1 MA's), (Start: 21 @49680 has 8 MA's), (45, 49794), (47, 49803), (48, 49812), (54, 49854), (83, 50028), (84, 50034), (91, 50085), (111, 50199), (115, 50217), (116, 50220), (118, 50235), (122, 50256), (139, 50388), (141, 50394), (168, 50532), (179, 50577), (185, 50595), (193, 50649), (200, 50709), (206, 50745), (217, 50841),

Gene: PhunaPhoke\_43 Start: 28838, Stop: 29992, Start Num: 32

Candidate Starts for PhunaPhoke\_43:

(1, 28439), (Start: 32 @28838 has 50 MA's), (Start: 39 @28859 has 1 MA's), (68, 29069), (84, 29132), (99, 29228), (122, 29333), (144, 29483), (154, 29573), (164, 29609), (173, 29639), (193, 29744), (199, 29801), (209, 29885), (217, 29942),

Gene: Pleakley\_75 Start: 52499, Stop: 51309, Start Num: 27

Candidate Starts for Pleakley\_75:

(2, 52829), (6, 52727), (Start: 27 @52499 has 4 MA's), (38, 52472), (50, 52379), (67, 52256), (70, 52244), (79, 52202), (84, 52175), (85, 52172), (145, 51842), (154, 51755), (173, 51662), (185, 51614), (201, 51497), (205, 51467), (210, 51410), (214, 51380), (220, 51356),

Gene: Polyzuki\_67 Start: 50081, Stop: 48915, Start Num: 30

Candidate Starts for Polyzuki\_67:

(9, 50219), (14, 50111), (Start: 30 @50081 has 25 MA's), (61, 49883), (84, 49760), (95, 49685), (116, 49622), (119, 49595), (131, 49502), (134, 49487), (137, 49463), (144, 49436), (145, 49433), (185, 49223), (191, 49175), (201, 49106), (202, 49100), (217, 48974),

Gene: PotatoChip\_69 Start: 50320, Stop: 49202, Start Num: 34

Candidate Starts for PotatoChip\_69:

(Start: 34 @50320 has 8 MA's), (54, 50185), (61, 50134), (73, 50071), (84, 50020), (90, 49978), (95, 49945), (99, 49924), (112, 49882), (114, 49873), (116, 49864), (122, 49828), (128, 49774), (152, 49591), (197, 49402), (201, 49381), (205, 49351), (212, 49279), (215, 49264), (216, 49255),

Gene: Potty\_43 Start: 28843, Stop: 29997, Start Num: 32

Candidate Starts for Potty\_43:

(1, 28444), (Start: 32 @28843 has 50 MA's), (Start: 39 @28864 has 1 MA's), (68, 29074), (84, 29137), (99, 29233), (122, 29338), (144, 29488), (154, 29578), (164, 29614), (173, 29644), (193, 29749), (199, 29806), (209, 29890), (217, 29947),

Gene: Poultruss\_42 Start: 29185, Stop: 30312, Start Num: 32

Candidate Starts for Poultruss\_42:

(Start: 32 @29185 has 50 MA's), (Start: 39 @29206 has 1 MA's), (68, 29416), (84, 29479), (99, 29575), (122, 29680), (144, 29830), (181, 29998), (193, 30064), (199, 30121), (209, 30205), (217, 30262),

Gene: Predator\_68 Start: 49458, Stop: 50774, Start Num: 18

Candidate Starts for Predator\_68:

(10, 49386), (11, 49425), (12, 49434), (Start: 18 @49458 has 1 MA's), (Start: 21 @49473 has 8 MA's), (45, 49578), (46, 49584), (48, 49596), (60, 49686), (84, 49818), (87, 49833), (91, 49869), (101, 49932), (104, 49971), (106, 49980), (115, 50022), (119, 50052), (122, 50061), (127, 50106), (136, 50172), (141, 50199), (144, 50214), (150, 50274), (168, 50337), (179, 50382), (189, 50436), (193, 50454), (200, 50514), (206, 50550), (213, 50625), (217, 50646), (219, 50652), (222, 50691), (230, 50727), (232, 50739),

Gene: Puissant\_69 Start: 49917, Stop: 51227, Start Num: 23

Candidate Starts for Puissant\_69:

(8, 49746), (11, 49866), (12, 49875), (Start: 18 @49899 has 1 MA's), (23, 49917), (45, 50019), (48, 50037), (83, 50253), (84, 50259), (89, 50289), (91, 50310), (111, 50457), (115, 50475), (116, 50478), (118, 50493), (119, 50505), (122, 50514), (139, 50646), (141, 50652), (150, 50727), (160, 50778), (179, 50835), (200, 50967), (206, 51003), (213, 51078),

Gene: Rachella\_43 Start: 28867, Stop: 30000, Start Num: 39

Candidate Starts for Rachella\_43:

(1, 28447), (Start: 32 @28846 has 50 MA's), (Start: 39 @28867 has 1 MA's), (46, 28936), (68, 29077), (84, 29140), (99, 29236), (122, 29341), (144, 29491), (154, 29581), (164, 29617), (173, 29647), (193, 29752), (199, 29809), (209, 29893), (217, 29950),

Gene: Ranch\_65 Start: 42668, Stop: 43885, Start Num: 33

Candidate Starts for Ranch\_65:

(Start: 33 @42668 has 47 MA's), (38, 42683), (55, 42812), (67, 42902), (68, 42905), (77, 42941), (84, 42974), (110, 43088), (116, 43115), (122, 43154), (123, 43169), (128, 43199), (130, 43229), (135, 43259), (143, 43301), (193, 43598), (198, 43652), (201, 43661), (203, 43670), (206, 43694), (216, 43787), (231, 43877),

Gene: RazorC\_65 Start: 42812, Stop: 44029, Start Num: 33

Candidate Starts for RazorC\_65:

(Start: 33 @42812 has 47 MA's), (38, 42827), (55, 42956), (67, 43046), (68, 43049), (77, 43085), (84, 43118), (110, 43232), (116, 43259), (122, 43298), (123, 43313), (128, 43343), (130, 43373), (135, 43403), (145, 43451), (173, 43640), (198, 43796), (201, 43805), (203, 43814), (206, 43838), (211, 43892), (216, 43931), (231, 44021),

Gene: RedRaider\_73 Start: 55326, Stop: 54136, Start Num: 27

Candidate Starts for RedRaider\_73:

(Start: 25 @55335 has 2 MA's), (Start: 27 @55326 has 4 MA's), (38, 55299), (59, 55128), (77, 55035), (78, 55032), (79, 55029), (84, 55002), (88, 54984), (95, 54927), (132, 54732), (135, 54714), (145, 54666), (148, 54639), (163, 54540), (173, 54492), (185, 54444), (193, 54390), (201, 54327), (203, 54318), (216, 54198),

Gene: Riduram\_65 Start: 42387, Stop: 43604, Start Num: 33

Candidate Starts for Riduram\_65:

(Start: 33 @42387 has 47 MA's), (38, 42402), (55, 42531), (67, 42621), (68, 42624), (77, 42660), (84, 42693), (110, 42807), (116, 42834), (122, 42873), (123, 42888), (128, 42918), (130, 42948), (135,

42978), (145, 43026), (173, 43215), (198, 43371), (201, 43380), (203, 43389), (206, 43413), (211, 43467), (216, 43506), (231, 43596),

Gene: Rie18\_43 Start: 28391, Stop: 29497, Start Num: 32

Candidate Starts for Rie18\_43:

(Start: 32 @28391 has 50 MA's), (Start: 39 @28412 has 1 MA's), (68, 28622), (84, 28685), (99, 28781), (122, 28886), (144, 29036), (193, 29249), (209, 29390), (217, 29447),

Gene: RikSengupta\_46 Start: 29769, Stop: 30920, Start Num: 13

Candidate Starts for RikSengupta\_46:

(Start: 13 @29769 has 1 MA's), (Start: 35 @29823 has 5 MA's), (Start: 37 @29826 has 1 MA's), (Start: 39 @29832 has 1 MA's), (68, 30042), (69, 30048), (82, 30093), (84, 30105), (94, 30168), (99, 30201), (122, 30306), (146, 30468), (181, 30603), (188, 30627), (211, 30819), (217, 30867),

Gene: Riparian\_71 Start: 51165, Stop: 52334, Start Num: 33

Candidate Starts for Riparian\_71:

(Start: 33 @51165 has 47 MA's), (38, 51180), (43, 51222), (47, 51255), (81, 51456), (84, 51471), (109, 51603), (122, 51666), (123, 51681), (135, 51771), (140, 51798), (181, 51999), (183, 52005), (185, 52011), (199, 52122), (201, 52128), (217, 52260), (226, 52320),

Gene: Rope\_69 Start: 51321, Stop: 52490, Start Num: 33

Candidate Starts for Rope\_69:

(Start: 33 @51321 has 47 MA's), (38, 51336), (43, 51378), (47, 51411), (81, 51612), (84, 51627), (109, 51759), (122, 51822), (123, 51837), (135, 51927), (140, 51954), (181, 52155), (183, 52161), (185, 52167), (199, 52278), (201, 52284), (217, 52416), (226, 52476),

Gene: Rota\_62 Start: 43736, Stop: 44899, Start Num: 33

Candidate Starts for Rota\_62:

(Start: 33 @43736 has 47 MA's), (38, 43751), (55, 43880), (67, 43970), (68, 43973), (77, 44009), (84, 44042), (110, 44156), (116, 44183), (122, 44222), (123, 44237), (128, 44267), (130, 44297), (135, 44327), (145, 44375), (173, 44510), (193, 44612), (198, 44666), (201, 44675), (203, 44684), (206, 44708), (216, 44801), (231, 44891),

Gene: Rukungu\_67 Start: 44741, Stop: 45904, Start Num: 33

Candidate Starts for Rukungu\_67:

(Start: 33 @44741 has 47 MA's), (38, 44756), (55, 44885), (67, 44975), (68, 44978), (77, 45014), (84, 45047), (110, 45161), (116, 45188), (122, 45227), (123, 45242), (128, 45272), (130, 45302), (135, 45332), (145, 45380), (173, 45515), (193, 45617), (198, 45671), (201, 45680), (203, 45689), (206, 45713), (216, 45806), (231, 45896),

Gene: Rumi\_66 Start: 42355, Stop: 43572, Start Num: 33

Candidate Starts for Rumi\_66:

(Start: 33 @42355 has 47 MA's), (38, 42370), (55, 42499), (67, 42589), (68, 42592), (77, 42628), (84, 42661), (110, 42775), (116, 42802), (122, 42841), (123, 42856), (128, 42886), (130, 42916), (135, 42946), (145, 42994), (173, 43183), (198, 43339), (201, 43348), (203, 43357), (206, 43381), (211, 43435), (216, 43474), (231, 43564),

Gene: Sadboi\_66 Start: 44538, Stop: 45701, Start Num: 33

Candidate Starts for Sadboi\_66:

(Start: 33 @44538 has 47 MA's), (38, 44553), (55, 44682), (67, 44772), (68, 44775), (77, 44811), (84, 44844), (110, 44958), (116, 44985), (122, 45024), (123, 45039), (128, 45069), (130, 45099), (135, 45129), (145, 45177), (152, 45252), (166, 45273), (173, 45312), (193, 45414), (198, 45468), (201, 45477), (203, 45486), (206, 45510), (216, 45603), (231, 45693),

Gene: Sampudon\_65 Start: 44890, Stop: 46053, Start Num: 33

Candidate Starts for Sampudon\_65:

(Start: 33 @44890 has 47 MA's), (38, 44905), (55, 45034), (67, 45124), (68, 45127), (77, 45163), (84, 45196), (110, 45310), (116, 45337), (122, 45376), (123, 45391), (128, 45421), (130, 45451), (135, 45481), (145, 45529), (173, 45664), (193, 45766), (198, 45820), (201, 45829), (203, 45838), (206, 45862), (216, 45955), (231, 46045),

Gene: Scuba\_76 Start: 52584, Stop: 51394, Start Num: 27

Candidate Starts for Scuba\_76:

(5, 52815), (6, 52812), (Start: 27 @52584 has 4 MA's), (31, 52575), (38, 52557), (50, 52464), (67, 52341), (72, 52314), (79, 52287), (84, 52260), (145, 51927), (154, 51840), (173, 51747), (185, 51699), (201, 51582), (204, 51558), (210, 51495), (214, 51465), (220, 51441),

Gene: Send513\_69 Start: 51699, Stop: 52868, Start Num: 33

Candidate Starts for Send513\_69:

(Start: 33 @51699 has 47 MA's), (38, 51714), (43, 51756), (47, 51789), (81, 51990), (84, 52005), (109, 52137), (122, 52200), (123, 52215), (140, 52332), (181, 52533), (183, 52539), (185, 52545), (199, 52656), (201, 52662), (217, 52794), (226, 52854),

Gene: SilentWarrior\_43 Start: 28085, Stop: 29212, Start Num: 32

Candidate Starts for SilentWarrior\_43:

(1, 27692), (3, 27758), (4, 27773), (Start: 32 @28085 has 50 MA's), (Start: 39 @28106 has 1 MA's), (51, 28202), (68, 28316), (84, 28379), (99, 28475), (122, 28580), (144, 28730), (181, 28898), (193, 28964), (209, 29105), (217, 29162),

Gene: Skysand\_68 Start: 53458, Stop: 52295, Start Num: 40

Candidate Starts for Skysand\_68:

(Start: 40 @53458 has 2 MA's), (59, 53287), (77, 53194), (78, 53191), (79, 53188), (84, 53161), (88, 53143), (95, 53086), (132, 52891), (133, 52888), (135, 52873), (145, 52825), (159, 52711), (163, 52699), (173, 52651), (185, 52603), (193, 52549), (201, 52486), (203, 52477), (216, 52357),

Gene: Snakehole\_43 Start: 28023, Stop: 29177, Start Num: 32

Candidate Starts for Snakehole\_43:

(1, 27624), (Start: 32 @28023 has 50 MA's), (Start: 39 @28044 has 1 MA's), (68, 28254), (84, 28317), (99, 28413), (122, 28518), (144, 28668), (164, 28794), (173, 28824), (193, 28929), (199, 28986), (209, 29070), (217, 29127),

Gene: Sparcetus\_46 Start: 29700, Stop: 30797, Start Num: 35

Candidate Starts for Sparcetus\_46:

(16, 29652), (Start: 35 @29700 has 5 MA's), (Start: 37 @29703 has 1 MA's), (Start: 39 @29709 has 1 MA's), (68, 29919), (69, 29925), (82, 29970), (84, 29982), (94, 30045), (99, 30078), (122, 30183), (146, 30345), (181, 30480), (188, 30504), (211, 30696), (217, 30744),

Gene: StarStruck\_67 Start: 53139, Stop: 51931, Start Num: 32

Candidate Starts for StarStruck\_67:

(Start: 32 @53139 has 50 MA's), (38, 53121), (Start: 63 @52917 has 1 MA's), (70, 52893), (78, 52854), (79, 52851), (84, 52824), (95, 52749), (116, 52662), (132, 52536), (145, 52470), (157, 52359), (171, 52311), (185, 52242), (193, 52188), (198, 52134), (201, 52125), (203, 52116), (214, 52008), (216, 51996),

Gene: Stickynote\_69 Start: 50521, Stop: 49409, Start Num: 34

Candidate Starts for Stickynote\_69:

(Start: 34 @50521 has 8 MA's), (61, 50335), (84, 50221), (90, 50179), (95, 50146), (112, 50083), (114, 50074), (116, 50065), (122, 50029), (128, 49975), (152, 49792), (197, 49603), (201, 49582), (205, 49552), (212, 49480), (215, 49465), (216, 49456),

Gene: Stormer\_65 Start: 42359, Stop: 43576, Start Num: 33

Candidate Starts for Stormer\_65:

(Start: 33 @42359 has 47 MA's), (38, 42374), (55, 42503), (67, 42593), (68, 42596), (77, 42632), (84, 42665), (110, 42779), (116, 42806), (122, 42845), (123, 42860), (128, 42890), (130, 42920), (135, 42950), (145, 42998), (173, 43187), (198, 43343), (201, 43352), (203, 43361), (206, 43385), (211, 43439), (216, 43478), (231, 43568),

Gene: Sukkupi\_67 Start: 51527, Stop: 50328, Start Num: 32

Candidate Starts for Sukkupi\_67:

(Start: 32 @51527 has 50 MA's), (Start: 63 @51308 has 1 MA's), (70, 51284), (77, 51248), (78, 51245), (79, 51242), (84, 51215), (88, 51197), (95, 51140), (130, 50942), (145, 50864), (154, 50777), (173, 50684), (177, 50669), (184, 50639), (185, 50636), (188, 50624), (193, 50582), (201, 50519), (203, 50510), (213, 50408), (214, 50402),

Gene: SuperSonics\_83 Start: 52580, Stop: 53812, Start Num: 26

Candidate Starts for SuperSonics\_83:

(Start: 26 @52580 has 3 MA's), (42, 52634), (46, 52673), (47, 52676), (48, 52685), (53, 52718), (56, 52742), (82, 52907), (84, 52919), (97, 53000), (117, 53105), (122, 53147), (141, 53285), (148, 53336), (153, 53387), (172, 53423), (185, 53471), (193, 53525), (201, 53588), (221, 53756), (229, 53798),

Gene: SuperSulley\_68 Start: 53499, Stop: 52291, Start Num: 32

Candidate Starts for SuperSulley\_68:

(Start: 32 @53499 has 50 MA's), (Start: 63 @53277 has 1 MA's), (70, 53253), (78, 53214), (79, 53211), (84, 53184), (88, 53166), (95, 53109), (132, 52896), (145, 52830), (157, 52719), (171, 52671), (188, 52590), (193, 52548), (198, 52494), (201, 52485), (203, 52476), (214, 52368),

Gene: Tedro\_43 Start: 28325, Stop: 29431, Start Num: 32

Candidate Starts for Tedro\_43:

(1, 27932), (4, 28013), (Start: 32 @28325 has 50 MA's), (Start: 39 @28346 has 1 MA's), (68, 28556), (84, 28619), (99, 28715), (122, 28820), (144, 28970), (193, 29183), (199, 29240), (209, 29324), (217, 29381),

Gene: Thumb\_68 Start: 50115, Stop: 51404, Start Num: 21

Candidate Starts for Thumb\_68:

(12, 50076), (Start: 18 @50100 has 1 MA's), (Start: 21 @50115 has 8 MA's), (45, 50229), (47, 50238), (48, 50247), (54, 50289), (83, 50463), (84, 50469), (91, 50520), (111, 50634), (115, 50652), (116, 50655), (118, 50670), (122, 50691), (139, 50823), (141, 50829), (168, 50967), (179, 51012), (185, 51030), (193, 51084), (200, 51144), (206, 51180), (217, 51276),

Gene: Tillicus\_60 Start: 43238, Stop: 44398, Start Num: 33

Candidate Starts for Tillicus\_60:

(Start: 33 @43238 has 47 MA's), (38, 43253), (55, 43382), (65, 43466), (79, 43517), (84, 43544), (110, 43658), (116, 43685), (122, 43721), (123, 43736), (125, 43751), (128, 43766), (130, 43796), (145, 43874), (151, 43934), (156, 43961), (173, 44009), (175, 44015), (194, 44117), (198, 44165), (201, 44174), (206, 44207), (216, 44300), (231, 44390),

Gene: TinyMiny\_46 Start: 29721, Stop: 30818, Start Num: 35

Candidate Starts for TinyMiny\_46:

(Start: 13 @29667 has 1 MA's), (Start: 35 @29721 has 5 MA's), (Start: 37 @29724 has 1 MA's), (Start: 39 @29730 has 1 MA's), (68, 29940), (69, 29946), (82, 29991), (84, 30003), (94, 30066), (99, 30099), (122, 30204), (146, 30366), (181, 30501), (188, 30525), (211, 30717), (217, 30765),

Gene: Tongui\_43 Start: 28445, Stop: 29551, Start Num: 32

Candidate Starts for Tongui\_43:

(Start: 32 @28445 has 50 MA's), (Start: 39 @28466 has 1 MA's), (68, 28676), (84, 28739), (99, 28835), (122, 28940), (144, 29090), (193, 29303), (209, 29444), (217, 29501),

Gene: Tracker\_66 Start: 52125, Stop: 50926, Start Num: 30

Candidate Starts for Tracker\_66:

(Start: 30 @52125 has 25 MA's), (78, 51837), (79, 51834), (83, 51813), (84, 51807), (130, 51534), (132, 51522), (135, 51504), (142, 51471), (145, 51456), (154, 51369), (173, 51282), (183, 51240), (184, 51237), (185, 51234), (193, 51180), (199, 51123), (200, 51120), (201, 51117), (203, 51108), (214, 51000), (220, 50976),

Gene: Turuncu\_69 Start: 52823, Stop: 51867, Start Num: 64

Candidate Starts for Turuncu\_69:

(Start: 64 @52823 has 1 MA's), (71, 52799), (78, 52763), (84, 52733), (91, 52685), (108, 52622), (145, 52403), (154, 52316), (157, 52292), (171, 52244), (185, 52175), (201, 52058), (203, 52049), (204, 52034), (220, 51917),

Gene: Weiss13\_69 Start: 51402, Stop: 52571, Start Num: 33

Candidate Starts for Weiss13\_69:

(Start: 33 @51402 has 47 MA's), (38, 51417), (43, 51459), (47, 51492), (81, 51693), (84, 51708), (109, 51840), (122, 51903), (123, 51918), (135, 52008), (140, 52035), (181, 52236), (183, 52242), (185, 52248), (199, 52359), (201, 52365), (217, 52497), (226, 52557),

Gene: Wheezy\_66 Start: 52339, Stop: 51140, Start Num: 30

Candidate Starts for Wheezy\_66:

(Start: 30 @52339 has 25 MA's), (78, 52051), (79, 52048), (83, 52027), (84, 52021), (130, 51748), (132, 51736), (135, 51718), (142, 51685), (145, 51670), (154, 51583), (173, 51496), (184, 51451), (185, 51448), (199, 51337), (200, 51334), (201, 51331), (203, 51322), (210, 51244), (214, 51214), (220, 51190),

Gene: WhoseManz\_67 Start: 49542, Stop: 48343, Start Num: 32

Candidate Starts for WhoseManz\_67:

(Start: 32 @49542 has 50 MA's), (Start: 63 @49323 has 1 MA's), (70, 49299), (78, 49260), (79, 49257), (84, 49230), (88, 49212), (95, 49155), (130, 48957), (145, 48879), (148, 48852), (153, 48795), (154, 48792), (173, 48699), (184, 48654), (185, 48651), (188, 48639), (193, 48597), (201, 48534), (203, 48525), (213, 48423), (214, 48417), (220, 48393),

Gene: Wojtek\_61 Start: 42920, Stop: 44134, Start Num: 33

Candidate Starts for Wojtek\_61:

(Start: 33 @42920 has 47 MA's), (38, 42935), (55, 43064), (65, 43148), (79, 43199), (84, 43226), (110, 43340), (116, 43367), (123, 43418), (125, 43433), (128, 43448), (130, 43478), (145, 43556), (173, 43745), (194, 43853), (198, 43901), (201, 43910), (206, 43943), (216, 44036), (231, 44126),

Gene: Wollypog\_46 Start: 33478, Stop: 34599, Start Num: 36

Candidate Starts for Wollypog\_46:

(Start: 36 @33478 has 1 MA's), (62, 33679), (66, 33697), (80, 33751), (84, 33769), (95, 33844), (130, 34045), (131, 34054), (154, 34210), (161, 34234), (173, 34246), (175, 34252), (183, 34288), (209, 34498), (217, 34549),

Gene: Xenia2\_63 Start: 42310, Stop: 43470, Start Num: 33

Candidate Starts for Xenia2\_63:

(24, 42286), (Start: 33 @42310 has 47 MA's), (38, 42322), (55, 42451), (67, 42541), (68, 42544), (79, 42586), (84, 42613), (87, 42628), (97, 42694), (116, 42754), (123, 42808), (128, 42838), (130, 42868), (143, 42940), (155, 43033), (162, 43042), (175, 43087), (192, 43180), (198, 43237), (201, 43246), (203, 43255), (206, 43279), (216, 43372),

Gene: Yelo\_68 Start: 51781, Stop: 52950, Start Num: 33

Candidate Starts for Yelo\_68:

(Start: 33 @51781 has 47 MA's), (38, 51796), (43, 51838), (47, 51871), (81, 52072), (84, 52087), (100, 52186), (109, 52219), (122, 52282), (123, 52297), (135, 52387), (140, 52414), (181, 52615), (183, 52621), (185, 52627), (199, 52738), (201, 52744), (217, 52876), (226, 52936),

Gene: Yikes\_67 Start: 44984, Stop: 46147, Start Num: 33

Candidate Starts for Yikes\_67:

(Start: 33 @44984 has 47 MA's), (38, 44999), (55, 45128), (67, 45218), (68, 45221), (77, 45257), (84, 45290), (110, 45404), (116, 45431), (122, 45470), (123, 45485), (128, 45515), (130, 45545), (135, 45575), (145, 45623), (152, 45698), (166, 45719), (173, 45758), (193, 45860), (198, 45914), (201, 45923), (203, 45932), (206, 45956), (216, 46049), (231, 46139),

Gene: Yndexa\_67 Start: 51527, Stop: 50328, Start Num: 32

Candidate Starts for Yndexa\_67:

(Start: 32 @51527 has 50 MA's), (Start: 63 @51308 has 1 MA's), (70, 51284), (77, 51248), (78, 51245), (79, 51242), (84, 51215), (88, 51197), (95, 51140), (130, 50942), (145, 50864), (154, 50777), (173, 50684), (177, 50669), (184, 50639), (185, 50636), (188, 50624), (193, 50582), (201, 50519), (203, 50510), (213, 50408), (214, 50402),

Gene: Zany\_63 Start: 44385, Stop: 45548, Start Num: 33

Candidate Starts for Zany\_63:

(Start: 33 @44385 has 47 MA's), (38, 44400), (55, 44529), (67, 44619), (68, 44622), (77, 44658), (84, 44691), (110, 44805), (116, 44832), (122, 44871), (123, 44886), (128, 44916), (130, 44946), (135, 44976), (145, 45024), (173, 45159), (193, 45261), (198, 45315), (201, 45324), (203, 45333), (206, 45357), (216, 45450), (231, 45540),

Gene: Zenon\_71 Start: 51725, Stop: 52894, Start Num: 33

Candidate Starts for Zenon\_71:

(Start: 33 @51725 has 47 MA's), (38, 51740), (43, 51782), (47, 51815), (81, 52016), (84, 52031), (109, 52163), (122, 52226), (123, 52241), (140, 52358), (181, 52559), (183, 52565), (185, 52571), (199, 52682), (201, 52688), (217, 52820), (226, 52880),

Gene: Zion\_69 Start: 50318, Stop: 49200, Start Num: 34

Candidate Starts for Zion\_69:

(Start: 34 @50318 has 8 MA's), (54, 50183), (61, 50132), (73, 50069), (84, 50018), (90, 49976), (95, 49943), (99, 49922), (112, 49880), (114, 49871), (116, 49862), (122, 49826), (128, 49772), (152, 49589), (197, 49400), (201, 49379), (205, 49349), (212, 49277), (215, 49262), (216, 49253),